

Ex Libris
The Pennsylvania
Horticultural Society

Digitized by the Internet Archive
in 2011 with funding from
LYRASIS Members and Sloan Foundation

http://www.archive.org/details/gardenerschronic1859unse

THE

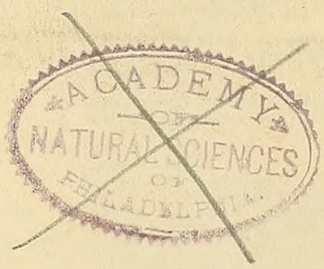
GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE

FOR

1859.



LONDON:

PUBLISHED FOR THE PROPRIETORS,

AT 5, UPPER WELLINGTON STREET, COVENT GARDEN.

1859.

LONDON:
BRADBURY AND EVANS, PRINTERS, WHITEFRIARS.

SB4
.G19



16564

28428

INDEX OF CONTENTS

TO THE

GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE,

For 1859.

A.

Aberdeenshire, vegetation of, 871
Abies bracteata, 362, 928; Douglasii, 789, 829
Abortion, 777
Abutilon insigne, 194, 242
Acacia tree, poisonous, 288; sick, 774; large dealbata, 1055
Acarus, Orchid, 193, 216, 266, 290; Colchester Church, 383, 445, 485
Adder bite, 832
Advertisement impostors, 485, 503
Aerides crispum, 24
Agardh, the late Bishop, 146, 465
Agriculture, progress of, 12, 321, 895; steam guideway, 10, 79, 452; Scottish, 105; Dorsetshire, 127; Journal of, 201, 819; theory of, 222, 319, 451, 698, 778, 814, 855, 875; Fyfe's, 369; examination in, 865; self-maintaining, 391; in British Columbia, 391; Belgian, 432, 452, 472, 514; Liebig's Letters on, 467, 507; Irish, 813, 897, 1025; Yorkshire, 858; Australian, 854; French, 900; of 1859, 974; forces used in, 997, 998
Agricultural Journal, 44, 153, 201, 780, 819
Agricultural importations, 57; prospects, 59; Society of England, 106, 129, 159, 176, 201, 248, 272, 296, 321, 411, 433, 472, 490, 491, 512, 531, 571, 609, 610, 625, 627, 658, 684, 732, 898, 1001, 1025; Warwick Meeting, 173; statistics, 174, 765; education and progress, 248; school, Ruysselade, 394; Implement Society, Irish, 433, 643, 683; Bath, Journal, 532, 729, 732; show, catalogues of, 531; progress, Irish, 681; meetings, 682; report for the Isle of Ely, 860; education on the continent, 875; forces, 1023, 1043; Societies, 1025; Benevolent College, 1026, 1060; contrasts, 1027
Agues, marsh, 562
Algæ, marine, prize for, 40, 75
Allotments, Kitchen, 247
Almanack, Peat's, 898
Alpacas in Australia, 178
Alpine plants, 22
Alpine vegetation, 653
Amateurs, cry from, 425, 466
American Home Gardens, 695
American Horse powers, 1022
Amherstia at Chatsworth, 172
Ammonia, uses of, 198; to manufacture, 516
Amoor river, 144
Analyses, of manures, 83; of milk, 222; of the Potato, 221; of soils, 223; reports on, 513; of Mangels, 571; of fish, 733; of oilcake, 1043
Anamallay mountains, 773
Andromeda polifolia, 315, 466
Anæsthetic, new local, 220
Animal excrement, 894
Animal nutrition, Dr. Daubeny's lecture on, 1036, 1053
Annuals, border, 8
Angræcum sesquipedale, 76
Anobium of the herbarium, 268
Ants, to kill, 98, 218
Aphis powder, Sigma's, 290
Apples, Cox's Orange Pippin, 22, 38
Araucaria imbricata, 193
Araucaria disease, 384
Archæology, Berkshire, 951
Arsenic in superphosphate, 794; in plants, 739, 818; in crops, 857
Arundinaria macrosperma, 338
Asparagus, seed, 40
Asparagus, Kale, 38, 55
Asparagus, Beetle, 508
Asparagus, Bath, 506
Asplenium Petrarchæ, 6
Assafœtida plant, 487
Astrapæa Wallichi, 220
Aubergines, to cook, 776, 792, 812
Australia, voyage to, 830; agriculture, 854
Australian Seaweeds, 39; progress, 42; botany, 220; Cress, 316, 340, 919, 1038; horticulture, 484; medical plants, 709; edgings, 564; statistics, 1018
Aquarium, the, 652
Aquaria, plan of aerating, 488
Aquilegia, 968
Avenues, formation of, 22, 38, 73, 220, 265, 288, 314
Aylesbury Manor Farm, 796
Aynho Farm, 644
Azalea aurea grandiflora, 891

B.

Bailiff and implicit obedience, 796
Bailiff and Gardener, 876, 955
Baker (Mr.), death of, 1057
Bambusa gracilis, 528
Bamboo, growth, &c. of, 362
Banyan tree, 1040
Barking trees, effects of, 403
Barley, Black, 153; sowing, 248; premiums for, 474; cheap, 748
Barter, death of Mr., 869
Barnstaple, notes from, 531
Bath Agricultural Society, 60, 272, 321, 490, 491, 512
Battersea Park, 694, 710
Bean, hybrid Kidney, 71; so called New Zealand, 54, 74, 98, 312, 408, 468, 710; Soy, 425; diseased winter, 677; locust, 712
Bean stalks as food, 819
Bedding plants, to strike, 37; at the Crystal Palace, 788
Bees, 694; in London, 869; and chloroform, 872
Bee boxes, Stewarton, 929
Bee stand indicator, 464, 486
Bee fungus, 96
Beech tree, rent, 386
Beet, culture of, 470; distilling, 474
Belgian Horticultural Exhibition, 908
Belgian agriculture, 432, 452, 472, 514
Belgian Gardens, 741, 848, 869, 993
Belladonna fruit, 832
Bentham (Mr.), medal to, 968
Benningborough Hall, 872
Berwickshire Farmer's Club, 11
Bird's eggs, artificial, 386
Birds and gooseberries, 929, 950, 968, 970, 993
Black puddings, to make, 29, 515
Blackthorn, to sow, 76
Boiler, Monro's, 910, 949
Boilers and incrustations, 40
Bois de Boulogne, 743
Book for young Gardeners, 388
Books, prices of, 428; sale of, 892
Books reviewed (see Reviews).
Bombyx Cynthia, in France, 23
Border annuals, 8
Botany, Australian, 220; of Amoor River, 144
Botanic Garden, Sydney
Botanical, questions, 656; prizes, Edinburgh, 674; excursion, Glasnevin, 709; prize, 832
Botanical Society, Edinburgh, 22, 362, 486, 694
Bothies, 817
Botley Farmers' Club, 28, 1044
Bouquets, 148
Box tree, wonderful, 124, 146
Bread, patent aerated, 391; making, 830; making machine, 391
Brighton Horticultural Society's exhibition, 759
British Columbia, 36, 124, 391, 506
British Museum Natural History Collections, 35, 335, 362, 1035
British Association, 790, 809, 830, 871, 929
Broccoli, Veitch's, 315; new, 468; ditto sprouting, 991
Broughton Hall, 791
Brussels Sprouts, Roseberry, 99
Budding and grafting, 724
Budder, wall tree, 740
Buphane toxicaria, 268
Burnham, Orchids at, 527
Butter, taste in, 450, 470
Butterflies, 929; Stainton's rev., 727

C.

Cacti, Mexican, 290
Caladium Veitchii, 740
Calanthe Veitchii, 1016
Calceolaria disease, 672
Californian Nutmeg, 929; Horticulture, 947; Conifers, 928
Calla oculata, 788
Callicarpa purpurea, 96
Callirrhoe digitata, *alias* pedata, 809, 832
Calves, rearing, 434
Camellias, at Bank Grove, 267; Milne, Arnott & Co's, 291; Fortune's Yellow, 807; open air, 870
Canadian Cotton, 6
Cape Flora, Harvey's, 264
Capnodium, Pear, 194
Carbon and nitrogen, 897
Cardamine, monstrous, 525, 562, 869
Carnations and Picotees, French, 146
Carnations, Sardinian, 486, 525, 562
Carpocapsa saltitans, 909
Carts, harvest, 857, 877
Caterpillar, black, 701; and grubs, 740
Cattle, sales of Short-horn, 101; feeding, open board, 106; London Market, 154; and Cotton-seed cake, 174; Short-horn, 225, 246; feeding fastest, 274; breeding, 345, 762, 876; Dublin, 369; fastening, patent, 391; stalls, floors for, 515; poisoning, 730; fair, Barnet, 748; abortion in, 777; cookery, 814, 815, 836; and Yew, 837; show, Birmingham, 877, 977; weights, 900; hoose in, 915; shed, moveable, 1021; girth of prize, 1021; feeding, 1042
Cattle food, 59, 565, 570, 627, 645; Thorley's, 42, 246, 677, 701, 731, 974; cheap Wheat as, 42; concentrated, 4
Cattleya Dominiana, 948; labiata, 949
Cats, 242
Ceanothus Veitchianus, 604
Cedars of Lebanon, time to move, 448, 1055
Celery, 890; and sawdust, 929; and charred earth, 950
Cental, abandonment of the, 914
Cereus, fruit of night-blowing, 872
Ceylon, ancient Tarsus, 488; Sir J. E. Tennent on, 2039, 1055
Chalking and liming, 587
Chamæbatia foliolosa, 652
Chamærops humilis, 121
Charcoal, to make, 443, 525; as a fertiliser, 567
Chærophyllum bulbosum, 172
Chateau de Vervaene, 407
Cheese, cream, 413; Ayrshire, 956
Cheese, making, 626
Chemistry, Liebig's, 6
Chemico-Agricultural Society, 513, 531, 857
Cheirostemon platanoides, 361
Cherry grub, 654, 672
Cheshire Agricultural Society, 780
Chesnut, autumn blooming, 850
Chicory for grazing, 978
Chinese plants, sale of, 948, 972
Chinese Sugar Cane, 297, 874
Chinese Yam, 992, 994, 1018; culture of, 39, 218, 338; to cook, 932; to raise, 969
Chloris andina, Weddell's, 891
Chou de Milan Sprouts, 100
Chrysanthemums, culture of, 23, 243, 563
Chrysanthemum Society, South Metropolitan, 147, 242
Chrysanthemums, pegs for, 525; at Crystal Palace, 809, 910; Bird's, 891; Temple, 892; Pompone, 890; shows, 890, 929, 971, 995; culture of in 8-inch pots, 890; new, 891, 931; at Stoke Newington, 891, 910; Salter's, 931; fence, 950
Churn, Valcourt's, 515
Cigars, 932
Cinchonas for India, 464
Cinerarias, culture of, 563
Cirencester College, 529
Citrus wood, 446
Climate, Red River, 56; New Zealand, 363; and fruit growing, 424; of Scotland, 715
Climbers, greenhouse, 972
Cliveden, noticed, 447
Cloth of Gold Rose, 464, 528, 584
Clover, to hoe, 896; substitutes for, 913, 936, 976, 1045
Clover Dodder, 933
Clumber, 337
Coffins, pottery ware, 406
Colchester Church Acarus, 383, 445, 485
College, Benevolent Agricultural, 410, 567, 1026; Cirencester Agricultural, 974, 1060
Collodion and wounds, 740
Colour, arrangement of, 216
Colombia, British, 36, 124, 506; agriculture in, 391
Columbine, 968
Colza, culture, 592
Combe St. Nicholas Club, 859
Comfrey, prickly, 370
Common things, teaching, 733
Conifers, sizes of, 362; roots of, 362; remarkable, 789; at Beauport, 829; and manure, 850; Californian, 928
Coniferous seeds, sale of, 244, 387
Copings, wall, 776
Coed Coch Gardens, 912
Cookery, cattle, 814, 815, 836; Aubergines, 776, 792, 812; Chinese Yam, 932
Cordyline indivisa, 868
Corn, transmutation of, 637
Corn Fungi, 973
Corn averages, 976
Corn supplies, foreign, 298
Corn weights, 25, 150, 151
Corn and Cake, Osborne on, 44
Corn sales, "cental," 174
Correa, monstrous, 216
Cottage, Norfolk Farm, 1059
Cottage Improvement Society, 42, 82, 126, 129
Cottages, 153; at Withenshaw, 200; labourers', 201, 451, 859; cost of, 272; Scotch, 817; Burn on, 1044
Cottager's Kale 6, 38, 73, 146, 929, 950, 969, 994
Cottagers' show, Sudbury, 850
Cotton, Canadian, 6, 218; Indian, 871; plant, 892; seed cake, 26, 28, 43, 154, 174, 175
Cox's Orange Pippin Apple, 22, 38
Cow, extraordinary, 1026
Cows, 658; dairy, 658; keeping small, 797; pebbles in, 877
Cracking of fruits, &c., 847
Crab, the Japan, 867
Craven Farmers' Club, 858
Cress, Australian, 316, 340, 909, 1038
Crickets, 466; mole, 24; to kill, 196, 760
Crops, rotation of, 96, 452, 510, 532, 701, 860; fallow, 200, 271, 295; the best means of raising to ensure the greatest profit, 451; rotation of in Flanders, 452; for light soils, 572; grain, 610; appearances of, 610, 626, 642, 657; returns respecting, 678; Berkshire, 682; Cheshire, 682; reports of, 716; agricultural, 731; arsenic in, 857; Wilson on Farm, 859; statistics, 875; in Norfolk, 937; relative value of, 1022; returns, 1041; extraordinary, 1044
Crystal Palace Show, 446, 506, 741; bedding

plants, 788; sale of plants at, 791; Chrysanthemums at, 809
Cucumbers, 466; night temperature for, 311, 338; and bottom heat, 338, 621; growing, 386, 525, 741; winter, 485, 637, 655; without heat, 486; prolific, 637; calyx and corolla of, 654; culture of, 696; field, 707; out door, 725
Cucumber disease, 406
Cucurbits as models, 694
Culture, autumn, 411, 796, 858
Cultivation, modification of, 509; four-course, 532; autumn, 795, 858
Cultivators, Dawes's, 714
Cumberland Farmers' Club, 858
Cuthill's Garden, Camberwell, 695
Cuttings, to turn out, 97; French striking, 504
Cybele Britannica, 911
Cycadeæ, 992

D.

Dahlias, culture of, 339; new, 672, 710; show, national, 811; roots, frozen, 1040
Dairy farm, Cheshire, 490; experience, 567
Dalbergia, Bentham on, 526
Darwin on the Origin of Species, 1051
Datura, 1017; arborea, 969, 993
Daubeney (Dr.), lecture by, 1036, 1053
Davallia canariensis, 266
Death's Head Moth, 38, 790
Deer and tree barking, 242
Derbyshire Agricultural Society, 876
Devon Horticultural Society, 487
Devonshire, mildness of, 6
Dianthus Dampieri, 744
Dibble, Sigma's, 796
Dielytra, succession of, 486; white, 740
Dining, Handbook of, 447, 588
Dioscorea Batatas, 992, 994, 1018; culture of, 39, 218, 338; to cook, 932; to raise, 969
Dipladenias, 605
Disease, influence of Fungi in producing, 4; and Fungi, 828; preventible, 914, 935
Dodder, Clover, 780, 933; Vine, 72; Flax, 242, 745
Dog, the, 732, 952; wild, 792
Drain tile, new, 270
Draining match, Trentham, 45
Drainage, flower-pot, 22; arterial, 125, 129, 174; Russian, 151; subsoil, 295
Drummond Castle, 871
Dry rot, 244
Dublin Agricultural Society, 246
Dun's veterinary medicines, 177
Durham Agricultural Society, 433
Dye, Sophora, 740

E.

Earwigs, 486, 506
Edging tiles, Hogg's, 100
Edgings, Australian, 564
Edinburgh Botanical Society, 22, 362, 486, 694
Education, practical, 83; agricultural, 248; half-time plan for, 321; on the Continent, 875; Gardeners', 909, 927
Egg plant, 744
Electricity and its effects, 405
Elephant remains, 830
Elm, Chichester, 242; in Champs Elysées, 709
Elm tree Scolytus, 6, 403, 772
Entomology, 888, 909
Entomological Society, 74, 195, 291, 363, 486, 563, 673, 711, 830, 870, 970
Ergot in pastures, 1022
Eriobotrya japonica, 909
Erysipelas, cure for, 170
Evergreens, puddle for roots of, 444; transplanting, 672, 774, 790, 849; summer moving of, 829
Everlastings, 656
Excrements, animal, 894
Exhibitions, Crystal Palace, 446, 506, 741; Chrysanthemum, 726, 809, 910, 890, 931, 971; Belgian, 908
Eyles (Mr.), appointment of to Horticultural Society's new garden, 444, 925

F.

Fair, Ballinasloe, 820
Falconry, 971
Fallows, autumn, 225
Farfugium grande, 605
Farm, stocking a clay, 45; labourers, 176; prize dairy, 273; yard Sunday schools, 294; large and small, 318; labour, 393; Tinna Park, 433; buildings, 433; leases, 513; implements, Belgian, 530; entering, 591; Inglismaldie, 716; at Vincennes, 764; Lough Foyle, 836; Deighton, 859; letting, 898; rents, 899; Yew Tree, 916; Haymount, 937; American, 1026; Cottage, 1059
Farming, Courland, 28, 43; Lois-Weedon, 43, 80, 199, 224, 431; Dorsetshire, 224; Prairie, 249, 273; Belgian, 344; Cheshire dairy, 490; Wallis on, 510; French and English, 594; Somerset, 589; Buckingham, 644; Essex, 681; Norfolk, 715; Irish, 813, 856, 955; Mechi on, 977
Farmer, English, 103; Handy Book for, 644; and Gardener, &c., 716; Almanack, 977
Farm Law, Dixon's, 916
Farm Memoranda—Woolston Farm, Bucks 297; Tinna Park, County Wicklow, 433; Aynho Farm, 644; Whichwood Forest, 700; Inglismaldie, Kincardineshire, 716; Imperial at Vincennes, 764; Aylesby, near Great Grimsby, 796; Lough Foyle, 836; Deighton, near Wetherby, 859; Macknade, near Faversham, 899; Yew Tree Farm, Penkridge, 916; Haymount, Kelso, 937; Grand Jouan Farm, 1026; Farm Cottage in Norfolk, 1059
Feeding on open boards, 106
Ferns, tree, 22; hardy exotic, 38; sale of, 340; new garden, 671; nature-printed, 891
Fertility from cultivation, 393
Fig, pot culture of, 98; tombstone lifted by, 425
Filters, 468
Fires, accidental, 320
Fire and rent liability, 127
Fish, 242; and filtered water, 606; analysis, 733; gold, 790
Fish manure, 391, 817
Flax seed, 26
Flax Imperial Society, 125
Flax culture, Belgian, 452, 472; culture in Ireland, 747
Floras, colonial, 268; Harvey's Cape, 264; Manchester, 1040
Flore des Serres, 55
Floriculture among the working classes, 969
Flue heating, 220
Fly, leaf, 37
Flower, pot drainage, 22; gatherer, 144; pots, 244
Flower garden plans, 240, 289, 405, 505, 524
Flower beds, 425
Flowers, spring, 447; pegs for, 525, 637; fragrance of, 525; sepulchral, 624; in the parks, 728
Fodder, inferior, 794
Fontainebleau, 743
Food, Cotton-seed as, 26, 28, 43, 154, 174, 175; cattle, 59, 565, 570, 627; for poultry, 60, 645, 677, 701, 974; department at Kensington Museum, 102; labourers', 222; puff balls as, 242; plants, foreign, 486; plants, arsenic in, 739; and manure, 762, 779; Bean stalks as, 819; chemistry of, 997
Forbidden Fruit, 39
Forcing houses, night temperature of, 311, 312
Forests, North American, 1019; Whichwood, 1059
Forks, Parkes's, 176
Fortune (Mr.), award to, 384; sale of his plants, 484, 508; his Tea plants, 890
Foxhounds, price of, 515
France, garden produce in, 239; weather in, 336; markets in, 1040
Frankincense, 268
Fremontia californica, 52; sale of, 340
French fruit gardening, 407
Frigi Domo, 870, 889
Frost, effects of the late, 314, 338, 887, 909; action of on leaves, 932; the late October, 994
Fruits, for high situations, 8; to increase size of, 120; wall, 656; prices of, 669; weights of, 21, 948; cracking of, 847
Fruit, thinning, 120; and flower gatherer, 144
Fruit, Forbidden, 39
Fruit Garden, Rivers's, rev., 240
Fruit trees, grafting, 120; pruning, 120, 809; hide bound, 242; to check over luxuriance in, 290; protector, 776; lifting, 993
Fruit trees in New Zealand, 20
Fruit prospects, 424, 466
Fruit, spur-grafting, 3, 5, 39
Fuchsia, culture of, 73; hybrid, 266
Fungi, influence of, 4; and timber, 20; spawn of, 22; bee, 96; on Pear trees, 169; animal, 404; and disease, 828; corn, 973; Grass, 1021

G.

Game, 222; preserving, 530
Gardens, Russian, 7; Irish, 710; Belgian, 741, 848, 869, 993; of the Luxembourg, 743; of Prince Troubetzkoy, near Moscow, 7; Messrs. E. G. Henderson's nursery (Wellington Road), 175; Woodlands Nursery, Isleworth (Mr. Dobson's), 99; A. J. Doxat's, Esq., Putney Heath, 147; Chatsworth, 172; A. Mongredien's, Esq., Forest Hill, 195; Messrs. Cutbush & Sons', Highgate, 243; Messrs. Milne & Co.'s Nursery, Vauxhall, 291; S. L. Stevens's, Esq., Grove, Roehampton, 315; Hampton Court Palace Gardens, 364; Fruit Garden of the Château de Vervaine, 407; Garden of Mr. A. Potemkin, Russia, 427; Cliveden, near Maidenhead, 447; Messrs. Rollissons' Nursery, Tooting, 527; Burnham, Somerset, 527; A. J. Doxat's, Esq., Putney Heath, 563; Wood & Son's Nursery, 639; Gowran Castle, Kilkenny, 658; Royal Botanic, Kew, 674; Mr. Cuthill's, Denmark Hill, 695; Mr. Berrenger's, St. Neot's, 712; Palace Gardens, Hampton Court, 727; Horticultural Society's, Chiswick, 743; Tealing House, near Dundee, 776; Broughton Hall, Yorkshire, 791; Royal Exotic Nursery, King's Road, 831; Drummond Castle, Scotland, N.B., 871; Benningborough Hall, 872; Mr. Bird's Nursery, Stoke Newington, 891; Cadlands, 891; Temple Gardens, 892; Coed Coch, in Denbighshire, 912; Mr. Salter's Nursery, Hammersmith, 931; Messrs. Lee's, ditto, 951; Mr. Turner's Nursery, Slough, 971; Geology in, 791; Mr. Macintosh's Nursery, Hammersmith, 1019
Gardening, Glasse's, 73, 290, 312; French fruit, literature of, 427; Russian, 407, 427; spring, 447; Manual of, 487, 525; town, 636; United States, 890; Glenny's Manual of, 487, 525
Gardener for Georgia, 870, 892
Gardener and steward, 1025
Gardeners and their employers, 974, 789, 830; and bailiffs, 876, 955; education, 909, 927; book for young, 388
Gardeners' Benevolent Institution, 52, 74, 405, 464, 465, 504, 525, 848
Garden, hybrids, 98; expenses, 218, 265, 362, 426; plans, 240, 289, 405, 505; produce, French, 288, 524; basins, Portland stone, 774
Gardiner, the late William, 564
Garrya, to gratt, 384; on Aucuba, 425
Gaslime *v.* ants, 218
Gas heating, 242
Geology in the garden, 791
Gentleman, loquacious, 445
Gentiana, to sow, 364
Geraniums, propagation of, 22, 39
Ghent Horticultural School, 772
Ginger Beer, to make, 488
Ginger Bread, to make, 917
Gishurst Compound, 312, 488, 605, 606, 621, 637, 654, 694, 760, 809; *v.* bugs, 654
Gladioli, 621; hybridising, 242; pronunciation of, 694; Brenchleyensis, 694
Glass, Hartley's, 316; dealing, 445, 466; cure for burning by, 740
Glasse's Gardening, 73, 290, 312
Glazing, 98
Gleaning, law as to, 978
Glenny's Manual of Gardening, 487, 525
Goodwood, 756
Gooseberry, buds and birds, 920, 950, 970, 968, 993, 1055; bushes, 992
Gosse's Alabama, 851
Gorilla, 384
Gossamer, 829, 870
Gourds, 830; calyx and corolla of, 654
Gouty-stemmed tree, 172
Gowran Castle Gardens, 656
Grafting, fruit buds, 3, 5; spur, 4, 39, 98; fruit tree, 120; Vines, 167, 171, 217, 242, 564; Rhododendrons, 313; herbaceous, 504; and budding, 724
Grapes, preserving late, 8; outdoor, 74, 909; rust in, 124; spotted, 386, 428; diseased, 710; and tartaric acid, 710; remarks on, 711; Mr. Berrenger's, 712; sulphuring, 740; shanking, 760; Chasselas de Fontainebleau, 290; Golden Hamburgh, 606, 672, 693, 710; Buckland Sweetwater, 672; Bowood Muscat, 694, 710, 726, 758, 789; Muscat, 724, 725; growing, 728; Chasselas Musqué, 790; Trentham, black, 994; Black Hamburgh, 774; select, 810; cracking, 847; in Ireland, 892; large, 950
Grain, fecundity of, 682
Grain statistics, 58
Grammatophyllum speciosum, 809
Grass, Couch, 411
Grass seeds and weeds, 430
Grass land, manuring, 434, 857
Grass Fungus, 1021
Grass seeds, 1045
Grass seeds per acre, 202
Grasses, distribution of, 58
Greenfly, to destroy, 952
Greyhound, Irish, 812
Grubber, Coleman's, 472
Guano, unsold, 42; statistics, 77, 594; prices of, 150; trade, 174; phospho-Peruvian, 201; substitute for, 413; analyses of, 430; Patagonian, 513; Bahia, 531; islands, American, 532; Jarvis Island, 659
Gum trees, 851
Gutta Percha, Surinam, 588
Gynerium (see Pampas Grass)

H.

Hampton Court Gardens, 727
Hand-power, cost of, 998
Harvest temperance, 369
Harvest prospects, 489, 491
Harvest home, 762
Haygarth's (Rev. J. S.), death of, 342
Heating, flue, 220; Hands on, 263; Monro's boiler, 910, 949; gas, 242
Hedgerows, 222
Hedgerow timber, 272, 320, 368
Hemp, narcotic from, 675
Henderson's (Mr.), appointment to Trentham, 96
Henfrey (Prof.), death of, 741
Herbarium, Horsfield's, 972; Anobium, 268
Hibiscus radiatus, 240
Highland Society, 42, 60, 77, 96, 150, 201, 594, 682; and Mr. Lawson, 77; Journal of, 594
Hitcham allotments, 247
Hitcham labourers' show, 623, 771
Hogg's edging tiles, 100
Holcus saccharatus, 297, 874
Hollies, to prune, 340
Holly berries, poisonous, 120
Holly Tea, 828, 848, 850, 909, 1017
Hollyhocks, 217, 728; new, 638
Honeydew, 268
Hornets, sting of, 696
Hornsey Mutual Instruction Society, 427
Hornsey Gardeners' Society, 994
Horse feeding, 197, 393; power, 270; keeping, 272; power, cost of, 293, 296; Chesnut blight, 386; fastening, patent, 391; power, *v.* steam, 412; and his master, rev., 433; to feed, 570; American at Springfield, 587; at Warwick, 642; the, 716; labour, French, 957, 1003; power, efficiency of, 998; labour of the farm, 999; powers, American, 1022
Horse-shoe machine, 154
Horticulture, Australian, 484; Tasmanian, 787; Californian, 947
Horticultural Society (see Societies)
Howardia caracasensis, 336
Husbandry, alternate, 915
Hyacinths, Cutbush's, 243; in glasses, 290, 314; at Hampton Court, 364
Hybrids, leguminous, 71; garden, 98
Hybrid Gladioli, 242; Tropæolums, 242
Hydrangeas, blue, 694

I.

Illustrated Bouquet, 23, 1019
India and its resources, 120
India, Cinchonas for, 464
Ink, for zinc labels, 340
Importations, agricultural, 57; from January to August, 856
Implement, show and prizes, 173
Implements at Warwick, 643; Belgian, 531, 816
Incendiarism, 641
Insects, timber tree, 54, 74; lead eating, 76; tree boring, 120, 121; *v.* tar and oil, 504; and Gishurst Compound, 605, 606; killing agents, 740; spectre, 851; Jumping seed (see Scolytus)
Invalids, jelly for, 917
Inventions, patent, 391
Inverness Farmers' Club, 898
Ireland, pauperism in, 27, 84; Tour in, 775
Isabella Grey Rose, 194, 426, 464, 528, 594
Isle of Ely, Agricultural report of, 860
Italian Rye-grass, 345, 430
Ivy tree, 870

J.

James, death of the Rev. C. T., 820
Japan Crab, the, 867
Jardin des Plantes, 743
Jasmine, Catalonian, 361

K.

Kale, Cottager's, 6, 38, 73, 146, 929, 950, 969, 994; Asparagus, 38, 55
Kelso Farmers' Club, 780
Kemp's (Mrs.), England, 22
Kew Gardens, reports on, 404, 560, 674; museum at, 723
Kidney Bean, so called New Zealand, 54, 74, 98, 312, 408, 468, 700; hybrid, 71
Kilmarnock Farmers' Club, 956
Kingscote Farmers' Club, 780, 956
Kohl Rabi, 1043

L.

Labour, temperance harvest, 105; prices of, 150; farm, 393; prize essay on, 493; on steam and ordinary farms, 999; market, 1042, 1060
Labourer, the, 12; condition of, 81, 201, 819, 1044; British, 102, 126, 129; farm, 176, 858; and the beer-shop system, 452
Labourers, food of, 222; wages, 126, 129, 248, 762, 1000; farm, 858; and cottages, 859; prizes, 853; feeding, 997; demand for, 999; how to obtain, 1000; show, 1021
Labourers' cottages, 201, 431, 859
Lactoscope, 917
Lælia præstans, 240
Lake Burnaby, discovery of, 506
Lambs, loss of, 1021; to fatten, 1061
Land, transfer of, 149, 452
Land company, 778; reclamation of, 820
Landlord and tenant, 429, 471; Hobbs on, 452
Larch decay, 1015, 1036
Lardner's Chemistry, 219
Lattice plant, 564
Lavender, 868
Law of landlord and tenant, 61; implement tools, 61; of fire liabilities, 127; respecting rating, 168; decisions, 246; respecting cattle poisonings, 730; relating to bad manures, 938; as to gleaning, 978; respecting nurserymen's assessments, 168
Leases, 513
Leaves, dimorphism of, 820; causes of dropping, 932
Leek, new, 242; large, 1018
Lee's Nursery, 951
Lemur, habits of, 7
Lentil mules, 71, 524
Letter to the Lime tree, 5
Lettuce, Griffin's Alma, 712
Lichens, British, 21
Liebig's Chemistry, 6; letter on exhaustion, 1057
Liebig's Letters on Agriculture, 467, 507
Light, artificial, and vegetation, 635
Ligustra vaccinia, 289
Lily of the Nile, 972
Lime and salt, 226, 748
Lime tree, 98; letter to, 5; moth, 888
Lindsay (Dr.), Neill medal to, 1039
Linnean Society, 75, 291, 387, 467, 486, 526, 563, 950, 970, 994; Transactions, 171
Linseed-cake manufacture, 343
Lilium grandiflorum, 466, 486, 562, 606, 621
Lithing, 314
Liverpool Agricultural Journal, 700
Locusts, how to cook, 388
Locust Bean, 712
Lois-Weedon, 43, 80, 199, 224, 431; Wheat, 390; experience, 1023
Lomaria chilensis, 774
Loquat, 909
London Farmers' Club, 44
Lovell, the late Mr., 505
Lucifer matches and fires, 682, 693, 714, 748, 762
Lupin, a good plant, 874
Luminosity, 581, 604, 621

M.

Machines, 530, 566, 567, 611, 642, 731, 812
Macintosh's (Mr.) nursery, 1019
Macnade Farm, 899
Magnolia acuminata, 448
Man, antiquity of, 809

Manchester Horticultural Society, 292, 764
Manchester People's Show, 850
Mandrill, jealous, 407
Manetti Rose stock, 74
Mangel, 410, 915, 934, 936, 953, 976, 1042, 1043; crop, 26, 892, 1024, 1025; culture of, 470, 709; beetle, 531; analysis, 571; acreage, 836, 1044; frosted, 876; treatment of ditto, 876, 954
Manures, analyses of, 83; Potato, 60; artificial *v.* farmyard, 60; for Turnips, 104, 153; adulteration of, 224; liquid, 366, 493, 590, 899; fish, patent, 391, 817; artificial, 449; Liebig on, 451; money value of, 490, 511; nitrogen in, 491; dry, 643; pamphlet on, 748; wool dressings as, 756, 774; and food, 762, 779; valuing, 794; and Conifers, 850; making, 856; blood, 877; economical, 897; farm, 915; law relating to worthless, 938; to disinfect, 956; supply of, 1057
Manuring, 572; cheapest, 697
Markets in Mauritius, 316
Marl as top-dressing, 1042
Marseilles, cultivation round, 908
Meadow baldness, 390
Mealy bug, to destroy, 606
Meat, price of, 900
Melbourne Botanic Garden, 72
Melons, quality of, 470; large, 792; withering of, 809
Meteorology, 54, 143
Meteorological tables, 8, 24, 56, 76, 100, 124, 148, 172, 196, 220, 244, 292, 316, 340, 364, 388, 448, 468, 488, 508, 528, 564, 588, 608, 624, 640, 658, 676, 696, 712, 728, 744, 760, 792, 812, 832, 852, 872, 892, 912, 932, 952, 996, 1020, 1040
Miasma, 525
Mice, to destroy, 226
Mignonette, tree, 316
Mildew, Vine, 483; Swede, 714; and drought, 744, 755; cure for, 789; and Gishurst Compound, 809
Mildness of Devonshire, 6
Milk, preservation of, 956
Milner, Mr., 724
Mistletoe, 98, 124, 1039
Mithridatea, Mauritius, 23
Mitraria coccinea, 385
Molucca seed, 672
Monkeys and Sugar-canes, 407, 425
Monstrous Potato, 6
Morels, 445
Morphology, 466, 708, 725
Morren (Prof.) death of, 4
Mortality in Great Britain, 939
Moth, death's head, 38, 790; mottled umber, 888; Lime tree, 888
Moss on walks, 790
Morton, Mr. J. C., not J. L., 559
Mowing-machines, 530, 566, 567, 611, 642; Whitaker's, 812
Mulberry, 789
Mules, queries about, 54; leguminous, 71, 524
Muscari, new, 604
Museum, Kew, 723; British 35, 335, 362, 1035
Mushrooms, 829, 907, 932, 969; open air, 523; spawn, 524; large, 790; on lawns, 790; true, 809; false, 852; field, 870; monstrous, 1018; different kinds on the same bed, 1052
Myosotidium (Cynoglossum) nobile, 756

N.

Nantes Hort. Society, 292
Nasturtium, dwarf yellow, 693; Tom Thumb, 710, 741, 759
Natural History, sums voted for colonial, 361; collections in British Museum, 35
Naturalised plants of New Zealand, 4, 5
Naval volunteers, 995
Nectarine, disease of, 604; McEwen on, 811; Stanwick, 848
Netting, zebra, 340
Nettles, to destroy, 530, 571, 573, 627
New Zealand, jottings from, 4; fruits in, 20; so called Bean from, 54, 74, 93, 312, 408, 468, 700; Lord Lyttelton on, 363; sheep in, 595; seeds for, 728
Niger expedition, 146, 170, 194, 218
Nitrogen and carbon, 897
Nurserymen's assessments, 168
Nut growing, 950
Nutmeg, Californian, 929
Nutrition, Dr. Daubeny on, 1036, 1053
Nuts, Brazil, 361
Nykolsky, garden at, 7

O.

Oak of Autrage, 384
Oak, lightning struck, 562; new Japanese, 949
Oak galls, 315
Oat hay, 320, 394
Oatlands Gardens, 891
Odontoglossum Uroskinneri, 724
Œnotheras, 244
Oilcake, analysis, 1043
Orange trees, 148
Orange flower distillation, 241
Orchards, Cheapside, 888
Orchard houses, 386, 486, 638, 691, 710, 725, 726, 972; Rivers's, 890
Orchids, Dr. Blume on, 99; Madagascar, 100; sale of, 340; fungus, 359; Mr. Reid's, 527; supposed new, 728; growth of, 807; at Burnham, 527
Orchid acarus, 193, 216, 266, 290; to destroy, 216
Ornithological want, 466
Otter hound, 872
Oude, Past and Future, 75
Ouvirandra, 564
Oxford Farmers' Club, 44, 1060
Oxfordshire Downs, 715

P.

Packing seeds, 5; pots, 6; plants, 6
Palace for the People, 97, 620
Pampas Grass, 759, 889, 969
Paper, materials for, 95
Paper hangings, poisonous, 145, 169
Paper duty, repeal of, 95
Paris and its environs, 741
Paris markets, 1040
Parks, flowers in, 726
Paste for poultry, 60
Pastures, old, 874; Ergot in, 1022
Pasture land, 432
Past year, the, 9
Paul's Rose Annual, 7
Paulownia, fruiting of, 55
Pauperism in Ireland, 27
Pea, new hybrid, 6; Lentil, 71, 524, 562; for small gardens, 55, 96; summer, 96; new, 334, 726; Turkish, 620; Dickson's Favourite, 621, 672; Veitch's Perfection, 693; quick growing, 850; list of, 1016
Peach, Salway, 6; stocks, 24; double, 338; twin-fruited, 386, 426; to train, 384; pruning French, 484; disease, 604; Bourdine, 672; border, 776; M'Ewen on, 811
Pear, Josephine de Malines, 54, 74; old spur grafted, 98; new, 169, 384, 385; trees, Fungus on, 169; Zephirin Gregoire, 193; tree, Capnodium on, 194; Délices d'Hardenpont d'Angers, 217; Comte de Flandres, 290; tree, leafless, 290; triple cropper, 361; description of new, 384; grub, 654, 672; what to do with hard, 728; large, 790; second crop of, 870; De Jonghe on, 970; Clémentine, 1038
People's Palace, 97, 620!
Peruvian bark trees for India, 464
Petunia, hardiness of, 22
Pheasant, 899
Photographs, 772
Piassaba Palm, 563
Picea nobilis, 605, 621, 692
Piesse's Magic, 7
Pigs, cinders for, 796, 835
Pig keeping, 661; feeding, 1060
Pike, the, 528
Pinus nobilis, 584
Pinuses, growth of, 98
Pine Apples, diseased, 336, 994
Pine Apple fibre, muslin from, 290
Pipes, earthenware lined, 710, 726
Plants, to pack, 6; Alpine, 22, 653; cross bred, 98, 636, 652, 708, 724, 740, 756, 788, 868, 948; new, 52, 96, 240, 288, 336, 385, 604, 1016; saucers for, 99; for vases, 244; poisonous, 288; injured by the late frost, 314; night growth in, 361; Australian medical, 387, 709; Somerset peat, 466; luminous, 581, 604, 621; latex in, 675; sale of dried, 676; bedding at Crystal Palace, 788; ditto, to strike, 37; how to grow Lilliputian, 773; sales of, 791, 1019; arsenic in, 739, 794, 818, 857; propagation of, 808; in flower now, 850; sale, Cooper's Hill, 850; Lupin, a food, 874; sale of Mr. Fortune's, 948, 972; Lattice, 564; winter, 1019; ennobling wild, 1043; for walls, 1056; origin of species, 1051
Plant sales, 218, 948, 972
Pleuro-pneumonia, 60
Ploughs, wheel *v.* spring, 78, 104, 106; Fowler's steam, 128; steam, 490, 853; rival, 761; Belgian, 816
Ploughing, steam, 225, 389, 1043; trial of, 611
Ploughing match, 857
Plumbago Larpentæ, 741, 759
Pomegranate, 1056
Pomological congress at Bordeaux, 996
Pomological Society, 122, 194, 338, 638, 711, 774, 810
Pomeloes, 39
Pond weeds, 485, 506, 640
Poplar, lightning struck, 192; gigantic, 316
Poppy, monstrous, 708, 725, 726
Porridge, to make milk, 314
Portulacca, dimorphism in, 829
Potato, monstrous, 6; to grow sound, 74; manures, 60; dressing for, 296; culture, 294, 368; how to get large, 445; disease, 562; Melley's Manifold, 789; growing, 850, 869; wild, 891; soup, to make, 917; return, 955
Pots, compartment cutting, 74
Poultice, to make a, 123
Poultry, show, Crystal Palace, 44, 733; directory, 60; food for, 60; to prevent eating their eggs, 298; gapes in, 493; at Birmingham, 976
Progress of agriculture, 12
Pruning, 608
Prunus triloba, 386
Prairie lands, 591
Primula, green, 244; monstrous, 244
Prof. Morren, death of, 4
Puddings, black, 29, 515
Puff balls, 525; as food, 242; large, 672
Pyrenees, Weld on the, 655
Pyrus japonica, 867

R.

Rabbits, 818, 857, 992; to keep from barking trees, 13, 322, 1038, 1055; nuisance, 689, 796; *v.* trees, 1018, 1038
Races, favoured plant, 1051
Radish, prodigious, 98
Railway charges, 889
Railway embankments, 950
Rain fall, 287, 314, 386; at Cirencester, 22; in Sussex, 38; in 1858, 74, 98, 143, 146; at Epping, 170; in Cumberland, 338; east and west, 361; in Cheshire, 445; in E. counties, 465; in Scotland, 486; in Surrey, 653; at Chiswick, 887
Rams, sale of, 797; Webb's, 610; sale of Leicester, 780
Rape-cake, spurious, 730
Rats, 1018; to destroy, 84; water, 428, 584, 620, 621, 657, 654; yellow, 851; Hanoverian, 992
Rat tales, 40
Ratsbane, Fisher's, 1038
Reaping-machines, 11, 368, 642, 747, 764, 914, 999, 1044; self-raking, 391; French trial of, 567
Redbreast, female, 675
Red River, settlement, 36; climate, 56
Reviews: Liebig's Chemistry, 6; Paul's Rose Annual, 7, 930; Piesse's Magic, 7; Mrs. Kemp's England, 22; Henderson's Illustrated Bouquet, 23, 1019; Walper's Annales, 23; Horticultural Society's Reports of the Fruit Committee, 39; Dr. Harvey's Australian Seaweeds, 39; Blackwood's Journal of Agriculture (Highland and Agricultural Society of Scotland), 44, 201, 819; Oude, its Past and its Future, 75; History of the Marine Algæ of the Atlantic, 75; Edinburgh Veterinary Review, 83; Flore des Serres, 55, 147; Poultry Directory, 60; Cattle Epidemic, 60, 171, 363; Dr. Blume's Indian and Japan Orchids, 99; Nees v. Esenbeck's Genera Plantarum Floræ Germanicæ, 99; South's Household Surgery, 123; Kelly's Railway Guide, 124; Byron's Poetical Works (Murray's), 124; West's Half-Hours with the Microscope, 124; Outlines of Physiology, 147; Fowler's Main Drainage, 147; Knight's Cyclopædia, 147; The Student's Hume, 147; Lund's Geometry and Mensuration, 147; Journal of the Agricultural Society of England, 153; Journal of the Linnean Society, 171; Transactions of the Linnean Society, 171; Dun's Veterinary Medicines, 177; Glenny's (G.), Cultivation of the Rose, 195; Folia Orchidacea, 195; Stanford's Geological Map of England and Wales, 195; Croker's Boswell's Life of Johnson, 195; Lardner's Chemistry, 219; Le Jardin Fruitier du Muséum, 219; Bennett's Nutrition in Health and Disease, 243; Caird's Prairie Farming in America, 249; Wood's Illustrated Natural History, 291; Lindley's Synopsis of the British Flora, 291; J. W. Clarke's Hints on the Cultivation of the Holcus saccharatus, 297; British Wild Flowers, 315; Chambers's Encyclopædia, 315; Paget's Half-time System of Education, 321; O'Byrne's Pocket Post Office Directory, 339; Tweed's History, &c., of Italian Rye-grass, 345; Revue Agricole de l'Angleterre, 346; Lord Lyttelton's New Zealand, 363; Hortus Lindenianus, 363; That's it, or Plain Teaching, 363; Fyfe's Agricultural Science, 369; Die Blattskelete der Apetalen (Skeleton leaves of Apetalous plants), 387; the Portrait of a Christian Gentleman (Burgon), 387; King's Italian Valleys of the Pennine Alps, 387; Beeton's Dictionary of Universal Information, 387; Invasion invited by the Defenceless State of England (Key and Williamson), 407; Routledge's Illustrated Natural History, 407; Forbes's Theory of Glaciers, 427; Dr. Parkin on the Causation and Prevention of Disease, 427; Hunt's Horse and His Master, 433; Citrus Wood of the Ancients, 446; Hooker's Figures and Descriptions of Exotic Ferns, 447; Simpson's Handbook of Dining, 447; Stanford's Map of British Columbia and Central Europe, 447; Hardwicke's Handy Book of London, 447; Hobbs on Landlord and Tenant, 452; Liebig's Modern Agriculture, 467, 507; Bohn's Greek New Testament, 468; Tyas's Wild Flowers of England, 468; Our Woodlands, Heaths, and Hedges (Coleman), 487; Pets, by Major E. Leigh, 487; Glenny's Manual of Gardening, 487; Maunder's Treasury of Knowledge, 487; Thomas's Dante's Inferno, 487; Lindley's Folia Orchidacea, 487; Thompson's Gardener's Assistant, 487; Smiles's Life of George Stephenson, 487; Essay on Agricultural Labour, 493; Growth of Cotton in India, 526; Balfour's Botany and Religion, 527; Dresser's Rudiments of Botany, 527; Curtis's Farm Insects, 527; Defences of Great Britain and Ireland, 527; Recreation in Shooting, 527; Bath and West of England Agricultural Journal, 532; Lamartine's Mary Stuart, 563; Baldwin's Agricultural Essays, 572; Bradbury's Nature-Printed Seaweeds, 587; First Impression of the New World, 587; Journal of Agriculture, 594; Beecher's Talk about Fruits, Flowers, &c., 607; Rhine and Paris Guide, 623; Key to Lund's Mensuration, 623; Sense Denied and Lost, 623; How to Brew good Beer, 623; Peaks, Passes, and Glaciers, 638; Handy Book for Farmers, 644; Pyrenees East and West, 653; Guide to the Food Collection in South Kensington Museum, 673; Guide to the Town of Berne, 673; Hawker on Shooting, 673; Quadrupeds and Reptiles of Europe, 673; Nueva Quinologia of Pavon, 673; Nature and her Agents, 674; Watson's American Home Garden, 695; Ship Railway across the Isthmus of Suez, 695; Manchester and Liverpool Agricultural Journal, 700; the Rifle and How to Use It, 711; Form of the Horse, 716; Manual of British Butterflies and Moths, 727; New Zealand Handbook, 727; the Dog in Health and Disease, 732; Paris and its Environs, 742; Pamphlet on Manure, 748; Young Lady's Book, 759; Flora of Tasmania, 759; An Oxonian's Tour in Ireland, 775; Agricultural Society's Journal, 780; Geology in the Garden, 791; Natural History for Beginners, 791; Stainton's Natural History of the Tineina, 791; McEwen's Culture of the Peach and Nectarine, 811; Journal of a Voyage to Australia, 830; Moore's Index Filicum, 831; Hooker's Enumeratio Plantarum Zeylaniæ, 831; Buckland's Elements of Botany, 831; Fern Collector's Album, 831; Gosse's Letters from Alabama, 851; Our Farm Crops (Part I., Wheat crop), J. Wilson, 859; Handbook of Geological Terms, 871; New Exegesis of Shakspeare, 871; the Orchard House, by T. Rivers, 890; Weddell's Chloris andina, 891; Nature-Printed British Ferns, 891; Farmer's Diary, 898; Cybele Britannica, 911; Dixon's Law of the Farm, 916; Tillage a Substitute for Manure, 916; Ure's Dictionary of Art, 931, 996; British Timber Trees, 931; Favourite Flowers and How to Grow them, 931; Denman's English Prose, 931; Der Cacao und die Chocolade, 931; Silva capensis, 931; Quarterly Review, 937; Archæology of Berkshire, 951; National Health and Wealth, 956; G. E. Freeman's Falconry, 971; Knight's British Almanack, 971; Johnstone's Farmer's Almanack for 1860, 978; Morton's Farmer's Almanack for 1860, 978; Self-Help, 995; Naval Volunteers, 995; the Long Bow of the Past the Rifle for the Future, 995; Gardener's Year-Book Almanack, 996; Croker's Boswell's Life of Johnson, 996; Forbes's Natural History of the European Seas, 1018; Encyclopædia Britannica, 1019; Country Rifle Corps, 1019; Paxton's Cottagers' Calendar, 1019; Sir J. E. Tennent's Ceylon, 1039; Grindon's Manchester Flora, 1040; Report of the Botley Farmers' Club, 1044; Burn's Cottage Accommodation of the Labourer, 1044
Rhododendrons, 97, 144, 169, 193, 216, 244, 313, 360; disbudding, 98; to graft, 313; soil for, 605; hirsutum, 829; Fortuni, 868, 1019; Nuttalli, 23, 506
Rhubarb, Sangster's, 637; forcing, 694; seedling, 931
Rifles, 448, 711; shooting, 851
Ripley Farmers' Club, 796
Rollissons', Messrs., Nursery, 527
Roots, structure of, 669; condition of, 887
Roots pulping, 895; storing, 896; Caversham, 954; weight of, 1044
Root shows, 997
Root crops, 794, 954; culture of, 469, 566; to store, 513, 835, 895
Roots and autumn culture, 368
Rootlets, 692
Root pruning, 240
Rose, Bacchus, 98; Isabella Gray, 194, 426, 464, 528, 584; distillation, 241; Cloth of Gold, 464, 528, 584; show, national, 484; old and new, 584; Lælia, 621, 637; Eugène Appert, 670
Rose insects, 621
Roses and Rose growing, 19
Roses, pruning, 73, 528; remarks on, 55, 129; on Manetti, 194, 621, 655, 851; new, 589; Messrs. Wood's, 639; attar of, 671
Rose seed, 38
Rose Annual, Paul's, 7, 930
Rose stock, Manetti, 74
Royal Botanical Society, 315, 362, 466, 525, 606; anniversary, 673
Royal Society of Edinburgh, 1039
Rugeley Farmers' Club, 858
Russian gardens, 7, 437
Russian drainage, 151; setter, superiority of, 952
Ruysselade Agricultural School, 394
Ryder *v.* Phipps, 471
Rye, early, 369; St. John's day, 818
Rye-grass, Italian, 345

S.

Salt and lime, 226, 748
Salter's (Mr.) Chrysanthemums, 931
Salway Peach, 6
Sawdust *v.* charred earth for blanching, 950
School, village, 511; Ruysselade, 394; Ghent Horticultural, 772
Scale and its enemy, 670
Scolytus destructor, 74, 120, 121, 403, 741, 744
Scotland, climate of, 715
Season in Ireland, 55; in Isle of Wight, 194; warmth of, 759
Seaweeds, Australian, 39
Seed, to pack, 5, 832; for New Zealand, 5, 832; selecting, 22; kept in gum, 22; Sardinian, 122; adulteration of, 246; weed, 318; germination of, 320, 386; bearding and dressing machine, 391; exporting, 676; vitality of, 819; weeds in, 834; jumping, 909; sale of coniferous, 244, 387
Seeding, thick and thin, 512, 747; rational, 857
Self-Help, 995
Sewage, 685, 956; treatment of, 11; Liebig on, 59; utilisation of, 296; to deodorise, 854; town, 914, 915, 933; question, 1057
Sheep, cross-breeding, 28; ewe keep, 129; dressing, Long's, 153; management, 153, 175, 202, 216; foot-rot, 177; boots, 202; washes, 200; and Elliott's dip, 341; dipping, 473, 819; *v.* cattle, 571; in New Zealand, 595; Leicester, 642; feeding, 656, 897; Shropshire, 820, 933, 953; disease in, 877, 997
Ship railway, 695
Short-horns, 569; Oxford, 225; sale of, 395
Sidney Botanical Garden, 5
Silkworms in France, 23; and Fungi, 39
Slaughterhouses in America, 587
Smithfield Club, 514, 997, 1002, 1021
Smoking, 682
Snakes, Madagascar, 292; and toads, 760
Societies—
Agricultural of England, 106, 129, 153, 176, 201, 248, 296, 321, 345, 411, 433, 452, 472, 491, 512, 531, 571, 593, 610, 627, 658, 732, 898, 1001, 1025
Agricultural Improvement of Ireland, 369, 433, 643, 683, 684, 732
Agricultural Benevolent, 1026
Bath and West of England, 60, 321, 491, 512
Birmingham Agricultural, 977
Brighton Horticultural, 759
British Association, 790, 809, 830, 871, 929
Chemico-Agricultural, Ulster, 513, 531, 857
Combe St. Nicholas Agricultural, 859
Cottage Improvement, 42, 82
Craven Agricultural, 858
Crystal Palace, 446, 506, 741, 910
Cumberland Agricultural, 858
Devon and Exeter Botanical, 487
Dublin Chemical, 83
Durham, 433
East Derbyshire Agricultural, 876
East London Chrysanthemum, 930
Edinburgh Botanical, 22, 362, 486
Entomological, 74, 195, 291, 363, 486, 563, 673, 711, 830, 870, 970
Essex Chrysanthemum, 971
Highland and Agricultural, 60, 82, 106, 201, 594, 682
Hitcham Horticultural, 623, 742

Societies—*continued*:
Hornsey Gardeners' Mutual Instruction, 427, 994
Horticultural, Fruit Committee, 39, 55, 99, 170, 218, 666, 672, 830, 890, 994; Floral Committee, 638, 672, 710, 741, 790, 929, 994; address to Fellows, 121: Chiswick a trial garden for new fruits and vegetables, 192; exhibition at St. James's Hall, 423, 426; distribution of plants, 359, 638; election of Fellows, 994; report of garden at Chiswick, 743; anniversary meeting, 406; New garden at Kensington Gore, 504, 559, 619, 708, 760; special general meeting respecting, 581, 584, 621; list of subscribers to, 925; qualifications of a superintendent for, 828; Mr. Eyles's appointment to, 925
Horticultural of Edinburgh, 339
Horticultural of Ireland, 995
Linnean, 75, 291, 387, 467, 486, 526, 563, 950, 970, 994
Madras Agricultural and Horticultural, 871
Manchester and Liverpool, 764
National Dahlia, 811
North-Western Chrysanthemum, 971
Norwood Chrysanthemum, 930
Peckham and Hatcham Chrysanthemum, 930
Pomological, 122, 194, 338, 711, 774, 810
Royal Botanic, 315, 362, 466, 525, 606, 673
Royal Dublin, 369
Royal of Edinburgh, 1039
Rugeley Agricultural, 858
Rural, 1055
Scottish Society of Arts, 225
Society of Arts, 1043
Scottish ditto, 225
South Australian Agricultural and Horticultural, 485
South-Eastern Chrysanthemum, 929
South London Chrysanthemum, 890
South Metropolitan Chrysanthemum, 147, 242, 930
Stoke Newington Chrysanthemum, 726, 890, 910
Stow-on-the-Wold Agricultural, 858
Sudbury Cottagers, 850
Tower Hamlets Chrysanthemum, 930
Yorkshire Agricultural, 659, 684
Farmers' Clubs:
Cheadle, 748
Cheshire, 780
Berwickshire, 11
Botley, 28
Braintree, 977
Galashiels, 106, 153
Hexham, 225, 296
Inverness, 898
Kelso, 780
Kingscote, 780, 956
Kilmarnock, 956
Lockerby, 176
London Central, 44, 129, 225, 248, 321, 411, 452, 532, 915, 936
Long Sutton (Lincolnshire), 853
Newcastle-upon Tyne, 513
North Walsham, 60
Oxford, 44, 473
Wenlock, 345
Wokingham, 819
Soils, remarks on, 223; heat of mountain, 653; exhaustion of English, 954; 1057
Solanums, qualities of, 1016; capsicastrum, 1016, 1019
Sophora, dye from, 740
Sorgho feeding, 453
South London Chrysanthemum Show, 890
Southill, 582
Soy, 388, 425
Sparrows and Nets, 1016
Species, origin of, 1051
Spergula pilifera, 145, 195, 268, 292, 406, 829 850, 1056
Spraguea umbellata, 636
Springs, theory of, 969
Spur grafting, 4, 39, 98
Swede mildew, 714
Stable management, 393
Statistics, grain, 58; agricultural, 174, 765, 999; Irish agricultural, 298, 566, 817, 854, 936; crop, 875
Steam, culture, 10, 246, 317, 320, 342, 368, 411, 430, 760, 731, 763, 1044; Plough, Fowler's, 128; ploughing, 225, 389; cultivators, 610; racing, 678; engine explosions, 813, 814; high pressure *v.* horse power, 814; engine, portable, 834, 836; power, 998; work, quality of, 998
Stephanophysum Baikiei, 385
Stocks, German, 51; culture of, 52
Stock feeding, 78, 795, 816; farming, 222; wintering, 342, 367; and the weather, 835; profit on, 856; exhibition of fat, 873; does live pay, 897; husk in young, 915
Straw, waste, 247; feeding, 296; litter, 370
Strawberries, early, 486; May Queen, 562, 605; in America, 587, 670; and Seaweed, 695; from seed, 608; Elton, 672; list of, 693, 807; forcing, 927; notes on, 949
Strawberry runners, 606, 621
Subsoiling, 105
Succulents, 654
Sudbury Cottagers' Show, 850
Sulphate of ammonia, 413
Sunflower, large, 672, 694
Superphosphate, 28; arsenic in, 794
Surgery, Household, 123
Swede crop, 1042
Syphon watering, 656
Syringa oblata, 868

T.

Tar and oil *v.* insects, 504
Tarsus, Ceylon the ancient, 488
Tasmania, Thistles in, 828, 849
Tasmanian horticulture, 787
Tea plants, &c at Washington, 464
Tea, Holly, 828, 848, 850, 909, 1017; in United States, 967; East India, 1040
Tealing House, 776
Temperature, low night, 311, 312, 338, 425, 444; ground, 651; of mountain soil, 653
Tenant right, 60
Tenant and Landlord, 429, 471
Tenant, incoming, and Clover, 854
Tendrils, coiling of, 169
Tetanus, 952
Thistles, to eradicate, 763; in Tasmania, 828 849, 888
Tillage, *v.* grazing, 570; Tullian, 916
Timber, hedgerow, 272, 320
Timber tree insects (see Scolytus)
Tithe commutation, 43.
Title by insurance, 894
Toad *v.* snake, 760
Tobacco, substitute for, 244
Tobacco paper, 362
Toil, implement, 61
Tomatoes, 932; in pots, 870
Top dressings, 412, 1042
Torreya myristica, 929
Tortworth Court, show at, 1021
Town Hall of Canterbury, N. Z., 4
Town Gardening, 636
Trade lists, J. Grier (Ambleside), 7; L. Van Houtte (Ghent), 7, 243, 727, 1040; R. Starke (Edinburgh), 23; W. Cutbush (Highgate), 23, 727; W. Holmes (Hackney), 23; Kennedy & Co. (Dumfries), 40; Carey Tyso (Wallingford), 75; Carter (Holborn), 55, 743; James Lothian (Cambeltown), 55; Milne, Arnott & Co. (Wandsworth), 55, 468; Bass & Brown (Sudbury), 56, 315; J. Cattell (Westerham), 56, 791, 912; Drummond & Sons (Stirling), 56; E. P. Dixon (Hull), 99, 468; J. H. Cottrell (Birmingham), 99; Butler & M'Culloch (Covent Garden), 99, 775; Campbell & Sons (Dublin), 124; Chivas (Chester), 124; Daly & Sons (Coleraine), 124; Hooper & Co. (Covent Garden), 124; Vilmorin & Co. (Paris), 124, 172, 195, 339, 695; W. Chater (Saffron Walden), 147; C. W. Hargraves (Winchmore Hill), 147; J. Samuel & Co. (Newry), 147; Downie & Laird (Edinburgh), 147; Wheeler & Son (Gloucester), 147; E. G. Henderson (Wellington Road), 147, 447, 775; W. Hall (Enfield), 172; Parker & Williams, 195, 727; Avoux et Crozy, 220; S. Stafford (Hyde), 220; Keynes (Salisbury), 220; C. Turner (Slough), 220, 951; J. Salter (Hammersmith), 220; Plymouth Seed Company, 220, 1040; Linden's Catalogue des Plantes Exotiques, 220; Edw. Shenton (Hendon), 243; Dodwell & Bayley (Chadderton), 243; — Barba (Chauré à Vitry le Français), 243; J. Scott (Crewkerne), 291; J. Morse (Dursley), 291; W. W. Johnstone (Dundee), 291; Thos. Barnes (Danecroft), 315; S. Sims (Foot's Cray), 315; G. Smith (Macclesfield), 339; A. Campbell & Sons (Dublin), 339, 852; A. Henderson (Pineapple Place), 364, 1019; Fisher, Holmes, & Co. (Handsworth), 407; Wm. Barnes (Camberwell), 447, 1019; Youell & Co. (Great Yarmouth), 658; Messrs. Syme & Co. (Glasgow), 674; H. Low & Co. (Clapton), 695; A. Dickson & Sons (Chester), 729; J. Veitch (King's Road), 760; Edw. Taylor (Malton), 760; Suttons (Reading), 760; Dickson & Co. (Manchester), 760; Jackman & Son (Woking), 701; Chater (Saffron Walden), 791, 971; J. Linden (Brussels), 791; A. Verschaffelt (Ghent), 812; Bradley (Southwell), 831; W. Wood & Son (Macclesfield), 831; A. Paul & Sons (Cheshunt), 851; E. P. Francis (Hertford), 851; J. Waterer (Bagshot), 871; J. Cranston (Hereford), 871; Peter Lawson & Sons (Edinburgh), 891; Mr. Young (Milford), 891; Thos. Rivers (Sawbridgeworth), 891; Stewart & Son (Dundee), 912; J. Carter (Keighly), 912; G. Chivas (Chester), 912; Wm. Barratt (Wakefield), 971; James Meikle (Folkestone), 971; W. R. Prince (New York), 971; F. W. Wendel (Erfurt), 1019
Trade memoranda, 338, 1017, 1036, 1053
Trade, courtesies of, 466; honesty in, 1038
Training, double oblique, 408
Transplanting, Parisian mode of, 620; August, 651; evergreens, 774, 790; summer, 829; large, 849; machines, 910, 929
Tree-Ferns, 22
Trees and rabbits, 13, 322, 1018, 1038, 1055
Trees for avenues, 22, 38, 54, 73
Trees, prices of in New Zealand, 20; for St. Giles's, 55; with ailing branches, 145; Paris Elm, 620; self-renovation in, 168; on walls, 217; decortication of, 315, 338, 386: effects of severe ditto, 403; for India, 464; tar and oil on, 504; summer moving of, 829; transplanting large, 849; Californian Coniferous, 928; lifting fruit, 993; insects affecting (see Scolytus); the Gouty stem, 172; barking and deer, 242; roots, puddle for, 444; stump extractor, 564; wounds and collodion, 740
Trentham, 53
Trifolium incarnatum, 713
Tritoma uvaria, 710
Tropæolums, hybrid, 242; Lobbianum elegans, 710. 758
Truffles, 637
Tulips, early, 408
Turner's (Mr.) nursery, 971
Turnips, 893; manure for, 104, 153; weights of, 176; manuring, 344; and manure, 450; fly, 473, 643; experiment, Craigo, 491; crops and guano, 532; culture *v.* fly and drought, 568; caterpillar, 626; singling, 699; failure, 858; crop, 955; substitutes for, 997
Twitch, 411

V.

Valerian leaves and wounds, 384
Vanilla lutescens, 288
Vegetation on human bones, 605
Vegetation and artificial light, 635
Veitch's (Mr.) nursery, 831
Ventilation, 361; new mode of, 337
Ventilator, self-acting, 809
Verbena, Tiley's "Magnet," 468, 485
Veterinary Review, 83; medicines, 177; surgeons, 411
Veronicas, hybrid, 563
Victoria (Australia), 42
Villa garden plans, 289, 405, 505, 524
Village school, 511; Hitcham, 192, 771
Vine, Dodder, 72; grafting, 167, 171, 217, 242, 559; insects, 425; mildew, 483; disease, 788; growing, French, 950
Vines, 445; ringing, 359, 993; to bud, 506, 584; select, 744; yards in England, 910; cider less for, 1038
Vine borders, 929; covers for, 290, 584; treatment of, 604
Vineries, plants in, 74; American, 587; orchard, 868
Violet, Neapolitan, 99; change of colour in, 290

W.

Wadeworth speech, 948
Wages in West of England, 80; in Dorsetshire, 105; labourers', 126, 129, 248, 762, 1000; near Mansfield, 178; Northumbrian, 296
Walks, Moss on, 790
Walnut trees and cattle, 290
Wallace's (Mr.) appointment, 952
Wall fruits, 656; plants, 1056
Wall, trees, 217; and root moisture, 290; to trellis, 710; copings to, 776; ventilation, 912
Waltonian cases, 290, 315, 360, 406, 445
Warwick Meeting (see Agricultural Society)
Waste, utilisation of, 150, 152, 174, 368
Waterford and Wexford, 730, 780
Water, Subterranean, 392, 410; Cresses, 445; rats, 584, 620, 621; bad, 584, 604, 637, 654, 672; Spongilla in, 604; filtered, *v.* fish, 606; raising, windmills for, 1018, 1055; pipes earthenware, lined, 710, 726; boring for, 929; supply for Wolverhampton, 929
Watering, syphon, 656, 694; underground, 710
Weather, the, 143, 603, 869; in Devon, 74, 386; at Plymouth, 201; in France, 336; in Yorkshire, 869; in Staffordshire, 869; in Ireland, 870; in Essex, 1038; in Cornwall, 1055
Weeds, in seeds, 318, 430, 834; in ponds, 485, 640; what is a, 937
Weinmann, death of, 244
Weigela amabilis, 525
Weights, corn, 25; of fruit, 21, 948; sales by, 150, 151; of Turnips, 176; and measures, French, 488; cental, 594; of cattle, 900; of roots, 1044
Wells, fluctuations in, 169; foul, 621
Wellingtonia gigantea, 744, 789, 890; size of, 218; cones on, 850
Wexford and Waterford, 730, 780
Weyhill fair, 836
Wheat, prices of, 29, 533; top dressings, &c., 366, 917; Lois-Weedon, 390, 953; rise in price of, 409; dressing for, 413, 917; blacks in, 573; mildew, 657; experiments with, 780; changing, 790; sorts of, 837; Piper's, 857; price in England from 1815 to 1859, 976
Whichwood forest, 1059
Wireworms, to kill, 316
Windmills for water raising, 1018, 1055
Wokingham Farmers' Club, 819
Woodlice, 386, 388
Woodborers, 120, 121, 912
Woods, various, 724; Citrus, 446
Wood's nursery, Maresfield, 639
Woolston Farm, 297
Wool manure, 756, 774
Worms, value of, 572
Wounds, to heal, 384; and collodion, 740

Y.

Yam, Chinese, 992, 994, 1018; culture of, 39, 218, 338; to cook, 932; to raise, 969
Yards, covered, 202
Yarrow, bulbiferous, 672
Year, the past, 9; 1858, at Weybridge
Yew, its effect on cattle, 837
York Agricultural Meeting, 657; report of, 659
Yucca gloriosa, 22, 525, 830

Z.

Zinc labels, ink for, 340, 624
Zoological collections in British Museum, 362
Zoology, Malay, 950

LIST OF WOODCUTS IN THE PRESENT VOLUME.

A.

Acarus, Orchid, 193; Colchester church, 383
Aerides crispum, 24

B.

Bee stand indicator, 241
Broccoli, Lee's new Sprouting, 992

C.

Callicarpa purpurea, 96
Chrysanthemum peg, 525
Colchester church Acarus, 383
Colours, diagram illustrating contrast of, 216
Correa, monstrous, 216
Cottager's Kale, 146
Cucumbers, calyx and corolla of, 654.

D.

Dodder, of the Vine, 72; of the Flax, 746

F.

Farm Cottage in Norfolk, 1059
Flax Dodder, 746
Fremontia californica, 52
Fruit tree protectors, 424, 766, 912

G.

Garden plans, 241, 405, 505, 524
Geranium, root struck, 541
Grafting, spur, 4; Rhododendrons, 313

H.

Horticultural Society's new garden, plans illustrating size of, 637

J.

Jumping seeds, illustration of, 909

K.

Kensington Gore, plans illustrating the size of the new Horticultural Garden there, 627

M.

Moth, Mottled umbre, 888; of the jumping seeds, 909

O.

Orchid Acarus, 193

P.

Peach pruning, French, 484
Pear, great Oregon, 21
Pears Beurré Gris d'Hiver Nouveau, 169; Baronne de Mello, 169; Zephirin Gregoire, 193; Delices d'Hardenpont d'Angers, 217; Beurré superfin, 265; Comte de Flandres, 290; Poire d'Avril, 385; Beurré d'Anjou, 385; Commissaire Delamotte (Grégoire) 970; Clementine, 1038
Poppy, monstrous, 708
Protectors, fruit tree, 424, 766, 912
Pyrus japonica, fruit, 868

R.

Rhododendron grafting, 313

S.

Seeds, jumping, 909
Spur-grafting, 4

V.

Ventilation, modes of, 337, 36
Vinery, Curate's 264, 289
Vine Dodder, 72

THE GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 1.—1859.] SATURDAY, JANUARY 1. {Price Fivepence. Stamped Edition, 6d.

INDEX.

Agriculture, progress of	9 c—12 b	Lime tree, letter to	5 c
— steam guideway	10 c	Morren Prof.) death of	4 c
Annuals, border	8 c	New Zealand, jottings from	4 c
Asplenium Petrarchæ	6 a	Nykolsky, gardens at	7 b
Berwickshire Farmers' Club	11 c	Packing seeds	5 a
Botanic Garden, Sidney	9 c	Packing pots	6 b
Chemistry, Liebig's, rev.	6 b	Pea, new hybrid	6 a
Cottager's Kale	8 a	Peach, Salway	6 b
Cotton, Canadian	6 a	Piesse's Magic, noticed	7 b
Devonshire, mildness of	6 a	Potato, monstrous	6 b
Disease, influence of Fungi in producing	4 a	Rabbits and trees	13 a
Elm tree Scolytus	6 a	Reaping machine	11 c
Fruits for high situations	8 c	Rose Annual, Paul's	7 a
Fruit-bud grafting	3 c—5 b	Seeds, to pack	5 a
Fungi, influence of	4 a	Sewage, treatment of	11 b
Gardens, Russian	7 b	Sidney Bot. Garden	5 c
Grafting, fruit-bud	3 c—5 b	Steam culture	10 c
Grapes, preserving late	8 c	Trade lists	7 b
Labourer, the	12 c	Trees and rabbits	13 a
		Year, the past	9 c

HORTICULTURAL SOCIETY OF LONDON.—Meetings of the Fruit Committee will be held at 21, Regent Street, at 12, noon, on TUESDAY, January 11, 1859; on TUESDAY, February 1, 1859; and TUESDAY, March 1, 1859.

The Committee have decided on offering Prizes for the following Pears:—

	1st Prize.	2d Prize.
At the Meeting in Jan. for WINTER NELIS	20s.	10s.
,, ,, Feb. for EASTER BEURRE	20s.	10s.
,, ,, Mar. for BEURRE RANCE	20s.	10s.

N.B." The carriage of packages of fruit for the above meetings will be paid.

THE HORTICULTURAL SOCIETY OF EDINBURGH will hold two EXHIBITIONS during the approaching season, on SATURDAYS June 4 and Sept. 10, in the Hall of the Zoological Gardens, Broughton Park.

Prize Lists for Garden Produce, Essays, and an Herbarium are now ready, and may be had at the various Seed shops.

ROBERT M. STARK, Secretary.

The SCOTTISH PANSY SOCIETY will hold its Annual Meeting in same place on June 4.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY (LIMITED) supply every requisite for the Farm and the Garden.
Registered Offices, Union Road, Plymouth.

STOCK VERBENAS.

GEORGE SMITH, FLORIST, Lorrimore Road, Walworth, can supply strong healthy plants of the above, comprising most of the best sorts, from 6s. per dozen. Also fine healthy plants of CARNATIONS, PICOTEES, PINKS, CYCLAMEN, GERANIUMS, and CHRYSANTHEMUMS.
CATALOGUES by enclosing a postage stamp.

JOHN DOBSON AND SONS will be happy to supply the following at the prices affixed. The plants are very fine. Catalogues may be had on application.

12 splendid Cinerarias, by name, for 12s.; 12 fine show Geraniums, from 12s. per dozen; Camellias, well set with bloom, 2s. 6d. each; Azaleas, ditto, 2s. 6d. each.
Woodlands Nursery, Isleworth, W.

AZALEA INDICA.

J. IVERY AND SON beg respectfully to invite growers of the above named to an inspection of their unrivalled Stock of Young Specimens of all the newest and best varieties, many of which have been exhibited at the Metropolitan Exhibitions. They are clean and healthy, well set with bloom, and moderate in price.—Catalogues forwarded post free upon application.

EARLIEST WRINKLED PEA.

FAIRHEAD AND SON, SEED GROWERS AND MERCHANTS, Lewisham, Kent, beg respectfully to offer their new EXCELSIOR PEA, of robust habit, delicious flavour; much earlier than Napoléon or Eugenie. They can confidently recommend it as the earliest and best Wrinkled Marrow Pea in cultivation. Price on application.

THE EARLIEST PEA.—DUNNETT'S FIRST EARLY is in every respect superior to "Daniel O'Rourke," being several days earlier, having finer pods, and richer in flavour, height 2½ feet. For an early dish of fine-flavoured Peas we can confidently recommend this; 2s. per quart.

CHAMPION CABBAGE, the earliest and best sort, if sown in succession, may be had fit for table throughout the year, 3d. per ounce, or 1s. post free.
BUTLER & MCCULLOCH, Covent Garden Market, London.

EARLY PEAS.

WAITE'S DANIEL O'ROURKE PEA; the earliest Pea in cultivation.
EARLY NAPOLEON; a Blue Wrinkled Marrow Pea, as early as EMPEROR.
EARLY EUGENE; a White Wrinkled Marrow Pea, as early as EMPEROR.
Prices to be had on application of J. G. WAITE, Seed Establishment, 181, High Holborn, London, W. C.

TOM THUMB PEA.

CAUTION.—There are two distinct kinds selling under this name. They were grown side by side in Hertfordshire last summer, and the one is in every way inferior to the other. The best and earliest kind as originally shown by A. PAUL & SON at the Regent's Park, Crystal Palace, and elsewhere, may be had in pint packets, 2s. 6d. each. It is 10 days earlier than Sangster's No. 1.—Nurseries, Cheshunt, Herts.

NEW ZEALAND RUNNING BEAN.—This Bean was found by a gentleman in the centre of New Zealand, where it forms the cheap vegetable food of the natives. It was not known at Auckland. My own observations on it last summer were that it grows tall and strong with a large heart-shaped leaf which droops at sunset. Blossom pinky white, a great Bean; pod size of Scarlet Runner but more tender and richer in flavour. The pod while ripening gets beautifully crimson and green striped. Mr. Henderson, of Pine-apple Place, says that it is quite new to him, and has ordered several hundreds of it. A printed account of it sent with each parcel. Price per doz. 3s.; extra Beans allowed to the trade post free. With each order please to enclose stamps or Post-office Order on Camberwell.—JAMES CUTHILL, Camberwell, London, S.

GRAPE VINES FROM EYES, EXTRA STRONG.

LUCOMBE, PINCE, AND CO. have a large stock of all the choicest sorts of GRAPE VINES, with fine well ripened shoots, fit for immediate use.
Exeter Nursery, Exeter.

SUTTON'S SEED CATALOGUE FOR 1859 is now ready, and will be sent post free on application.
Royal Berkshire Seed Establishment, Reading.—Jan. 1.

WILLIAM YOUNG'S DESCRIPTIVE CATALOGUE OF NEW HARDY ORNAMENTAL PLANTS, CONIFERÆ, ROSES, RHODODENDRONS, FOREST TREES, &c. Can be had on application.—Milford Nurseries, near Godalming.

GEORGE BAKER begs to inform the Nobility and Public that his DESCRIPTIVE CATALOGUE OF AMERICAN PLANTS AND GENERAL NURSERY STOCK will be sent free on application.
American Nursery, Windlesham, near Bagshot, Surrey, about 1 mile from Sunningdale Station, South Western Railway.

GEORGE JACKMAN AND SON'S PRICED and DESCRIPTIVE CATALOGUE of GENERAL NURSERY STOCK for 1858 and 1859 can be had free on application.
Woking Nursery, Woking, Surrey.

VEGETABLE, FLOWER, AND AGRICULTURAL SEEDS.

WILLIAM BARNES'S CATALOGUE of the above is now ready, and may be obtained postage free, upon application. It will be found to contain every article of known value, among them some that cannot be excelled, the stock of which having been saved specially for himself by private and competent friends, he can recommend with the greatest confidence. Every article is warranted of the purest and most genuine kind, as well as very moderate in price.
Camden Nursery, Camberwell.

NEW SEEDS FOR 1859.

WM. CUTBUSH AND SON beg respectfully to intimate that their PRICED CATALOGUE OF VEGETABLE AND FLOWER SEEDS, &c., is now ready post free on application. WM. C. AND SON devote particular attention to this department of their business, and most of the choicer kinds of culinary seeds and roots are saved under their own inspection, and they can confidently guarantee the quality of all offered.—Highgate Nurseries, London, N. Established A.D. 1695.

NEW SEEDS.
CHARLES TURNER'S

CATALOGUE OF VEGETABLE, FLOWER, AND AGRICULTURAL SEEDS, CULINARY ROOTS, &c., is now ready, and may be had on application. The lists are Descriptive, and in addition to Selections of all the old and established favourite varieties, contains some valuable new additions, the most prominent of which are DR. MACLEAN'S FINE DWARF NEW PEAS, THE FROGMORE PROTECTING BROCCOLI, SCARLET GEM MELON, COTTAGER'S KALE, ROSEBERRY BRUSSELS SPROUTS, PERENNIAL SPINACH, &c.—The Royal Nurseries, Slough.

MESSRS. ROEZL AND CO'S CATALOGUE OF MEXICAN SEEDS AND PLANTS to be had on application to Messrs. B. A. GRAUTOFF & Co., 4, Lime Street Square, London.

TO THE TRADE.

E. P. DIXON'S WHOLESALE SEED CATALOGUE for 1858 and 1859 is now ready, and may be had free on application.
Seed Establishment, 57, Queen Street, Hull.

R. M. STARK begs to intimate that his CATALOGUES for the season, consisting of GENERAL NURSERY STOCK, GARDEN AND FLOWER SEEDS, &c., are now ready and may be had on application.
Edinburgh, 31, Castle Street, and Edgehill, Dean.—Jan. 1.

JOHN GRIER'S NEW PRICED CATALOGUE, with brief descriptive and cultural remarks of a selection of TREES, SHRUBS, and PLANTS cultivated for sale at the Waterhead Nursery, Ambleside, Westmorland, may be had upon application.
Waterhead Nursery, Ambleside, Westmorland.

ROSE MANETTI STOCKS.

JOHN GRIER begs to inform the Trade and others that he has several Thousands of the above to offer for Sale, price of which may be had upon application.
Waterhead Nursery, Ambleside.—Jan. 1.

YELLOW ROSES.—Madame William, orange yellow; Isabella Gray, golden yellow. Strong plants, fit for immediate forcing, 8s. 6d. the pair.
A. PAUL & SON, Nurseries, Cheshunt, Herts.

GARDEN SEEDS.

HUGH LOW AND CO. are now prepared to supply SEEDS for the Vegetable and Flower Garden, which have been selected with the greatest care, and will be found of the very best quality.
Clapton Nursery, London, N.E.—Jan. 1.

CHAMPION CABBAGE can be had in any quantity at 2s. per lb.
J. G. WAITE, Seed Establishment, 181, High Holborn, London.

EARLY CUCUMBER.

CARTER'S EARLY CHAMPION CUCUMBER, price 20s. per oz., to be had in any quantity of J. G. WAITE, Seed Establishment, 181, High Holborn, London, W.C.

WANTED, AT TAYLOR'S "GRAND STAND."

PINES, 2½ to 3¼ lbs. each	BLACK & WHITE GRAPES
LARGE DESSERT PEARS	SMALL MUSHROOMS
CHOICE FLOWERS	CUCUMBERS
SEAKALE	ASPARAGUS

And other choice Garden Produce.
Forward to GEORGE TAYLOR,
CHOICE FRUIT AND VEGETABLE SALLESMAN.
St. John's Market, Liverpool.

TWO MILLIONS OF 1 AND 2-YEAR SEEDLING AND TRANSPLANTED LARCH FIR, ALSO TRANSPLANTED SPANISH CHESNUTS.

WM. WOOD AND SON have to offer a very fine stock of the above, also Seedlings of the following:—
ALDER, BEECH, SPANISH CHESNUTS, SCOTCH, SPRUCE, and SILVER FIRS, OAKS, CRAB, PEAR, EVERGREEN OAKS, and other Seedlings.
Prices will be forwarded on application.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

TO THE TRADE.—MAGNIFICENT DWARF-TRAINED PEACHES, NECTARINES, AND APRICOTS.

WM. WOOD AND SON refer with pleasure to their truly superb and extensive stock of the above, which for growth and quality are quite unsurpassed, each tree being furnished with from 9 to 12 branches, well ripened and admirably trained. Also very fine Dwarf Maiden NECTARINES.
The Trade supplied on advantageous terms.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

FIGS IN POTS FOR FORCING.

THOMAS RIVERS can supply fine trees, three years old, fit for immediate forcing, of the following first-rate kinds. They have been raised from single eyes, grown under glass, and have clear 1-foot stems:—
White Marseilles, Brown Turkey or Lee's Perpetual, White Ischia. First size, 5s. each; second do., 3s. 6d. Carriage paid to London.—Nurseries, Sawbridgeworth.

PYRAMIDAL PEACH TREES IN POTS.

THOMAS RIVERS offers the following kinds of PEACHES as close pyramids; their shoots have been pinched in during the summer, and they are full of fruiting spurs up their stems; well calculated for forcing or for orchard houses, as they occupy but a very small space:—
Noblesse, Royal George, French Galande, Reine des Vergers, Grosse Mignonne, Early Grosse Mignonne, George the Fourth, Belle de Doue, Monstreuse de Doue, all from 3 to 4 ft. in height, 5s. each. Carriage paid to London.—Nurseries, Sawbridgeworth.

PLANTING SEASON.

WILLIAM URQUHART AND SONS' (Dundee) PRICED LIST OF SEEDLING AND TRANSPLANTED FOREST TREES, SHRUBS, FLOWERS, AND FERNS, is now ready on application.

THREE MILLIONS OF TRANSPLANTED QUICKS.

GEORGE CHIVAS, Chester, offers the above to the notice of Planters, which for extent and quality he believes are unequalled in the kingdom. A Sample Bale containing 100 of each five sizes forwarded on receipt of a Post-office Order for 15s. Truck loads delivered free at any Railway Station having through communication with Chester.

500,000 Transplanted LARCH, 2, 3, and 4 feet; 200,000 Transplanted SPANISH CHESNUTS, 2, 3, and 4 feet; 200,000 Transplanted HAZEL, 2, 3, and 4 feet. Samples (with prices delivered in quantity free to London, Reigate, or Reading,) on application to WATERER & GODFREY, Knap Hill Nursery, Woking, Surrey.

SEEDLING AND TRANSPLANTED FOREST AND ORNAMENTAL TREES, HEDGE PLANTS, SHRUBS, CONIFERÆ, RHODODENDRONS, &c.—The Subscribers inviting attention to their extensive, varied, and well-grown stocks as above, have pleasure in intimating that their CATALOGUES, priced as moderately as possible, are now ready, and will be forwarded on application.—DAVID REID & SON, Nurserymen and Seedsmen, Edinburgh.

PAMPAS GRASS (GYNERIUM ARGENTEUM).—The beauty of this extraordinary plant has this season been fully appreciated. It can be supplied by the dozen, hundred, or thousand, by CHARLES NOBLE, Bagshot, Surrey.

PERENNIAL AND ITALIAN RYE-GRASS.

MCBLAIN AND CO., SEEDSMEN, Newry, Ireland, offer to the Trade PERENNIAL AND ITALIAN RYE-GRASS of every description. Samples and offers on application.

EARLY ASHLEAF KIDNEY POTATOES.

JAMES FAIRHEAD AND SON, SEED GROWERS, Lewisham, Kent, offer an extra selected genuine stock of the above of home growth.—Price 10s. per cwt.; 168s. per ton, free to London.

THE EARLIEST ASH-LEAVED KIDNEY POTATOES.—For the true early short-top Lancashire kind, unsurpassed for forcing and early borders, price 16s. per cwt., apply to JAMES TYNAN, Seedsman, 68, Great George Street, Liverpool.

SEED POTATOES.—Fluke, Ashleaf, Kirk's Kidneys, and all other kinds of the best cropping Potatoes, to be had of Messrs. JOHN & GEORGE BELL, Potato Salesmen, Covent Garden, and Hungerford Wharf, Strand. PRICE LISTS sent on application. All orders from unknown correspondents must be accompanied with a reference in London, or Post-office order to Messrs. J. & G. BELL.

MILLER'S MANIFOLD POTATO.—The undersigned begs to intimate that he has appointed the following Seedsmen as Agents for the sale of the above POTATO, that has hitherto resisted the disease; and as extensive circulation is required rather than profitable speculation, the price is fixed at 2s. 6d. per stone, so as to be within the reach of all interested in the culture of that valuable esculent:—
Messrs. J. & C. LEE, Hammersmith, London.
,, GEORGE CUNNINGHAM & SON, Oak Vale, Liverpool.
,, DRUMMOND & SONS, 58, Dawson Street, Dublin.
ALEX. ROBERTSON, Powerscourt.

BEST POTATO IN THE WORLD—IMPERIAL KIDNEY.

M. WEBB, of Calcot, having succeeded in raising a quantity of the above excellent POTATO, begs to offer it to the public as the Best of its Class in every respect. Its quality cannot be surpassed, its yield most abundant, and its size from 2 inches to 9 inches long. Price 1s. per bushel, and no less quantity than 1 bushel disposed of. Also about 3000 true KENTISH COB NUT Trees from 2 to 4 feet high.—Apply to Messrs. JOSH. MAY & Co., 1, Wellington Street, Strand, or to M. WEBB, Calcot, near Reading, Berks.

GARDENERS' CHRONICLE NEWSPAPER ONE PENNY

TO THE TRADE.

WOOD AND INGRAM beg to offer the following articles which they have of extra fine growth :—

STANDARD, DWARF, AND TRAINED CHERRIES, of all the best sorts.
OAKS, 1 and 2 year seedling, 2 to 3, and 3 to 4 feet.
" Evergreens, 1 year seedling.
" Turkey, 1 year ditto.
SYCAMORE, 1 year ditto.
WHITETHORN, 2 year ditto.
ELM, narrow-leaved English, 1 year ditto.
CHESNUT, Spanish, 3 to 4, 4 to 5, and 5 to 7 feet.
FIR, Scotch, 1½ to 2, 2 to 2½, and 3 feet.
HAZELS, 2 to 3, and 3 to 4 feet.
POPLAR, Black Italian, 3 to 4, 4 to 5, and 5 to 6 feet.
" Lombardy, 4 to 5, 5 to 6, and 7 to 8 feet.
BOX, sorts, 2 to 3, and 3 to 4 feet.
LAURELS, 1 year bedded.
Prices on application.—Huntingdon Nurseries.

ESTABLISHED 1823.

NEW PLANTS.

AMBROISE VERSCHAFFELT, NURSERYMAN, Ghent, Belgium, begs to offer the following new Plants :—

Alstrœmeria argentco-guttata	£0	16	0
Azalea indica Baron de Vrière	0	2	6
" gigantiflora..	0	2	6
" Grande Duchesse Hélène	0	8	0
" magniflora (Spae)	0	2	6
16 new Ghent Azaleas, hardy (figured in VERSCHAFFELT's "Illustration"), nice bushy plants, and most of them with flower buds. The set	0	16	0
Camellia Grande Duchesse Hélène	0	12	0
" Princesse de Prusse	0	8	0

(These are two of the finest Camellias of all. The correct figure can be seen in VERSCHAFFELT's Camellia work.)

Clematis Sophia flore-pleno, hardy	£0	16	0
Cydonia Mallardi, hardy	0	4	0
" Moerloosi, hardy	0	2	6
Magnolia Lenné, the finest hardy Magnolia of all ..	0	7	0
Rhododendron acutilobum, greenhouse..	0	4	0
" crispiflorum "	0	4	0
" Bylsianum, hardy, extra	1	0	0
" Madame Wagner, hardy	0	3	6
" Prince Camille de Rohan, hardy ..	0	3	6

Nearly all the above plants are figured in VERSCHAFFELT's "Illustration Horticole."

The 12th Number (December) of 1858 of the "ILLUSTRATION HORTICOLE" is now ready, and will be sent out in a few days. It contains :—

Leschenaultia biloba, v. Huntsi	Burlingtonia venusta
Erica cerinthoïdes coronata	New Pear Général Totleben

With the new postal convention the work can be sent FREE to all parts of England, Scotland, &c., at 14*s.* 6*d.* a year. A Specimen Number will be sent free on application.

MESSRS. WATERER AND GODFREY respectfully invite the attention of parties engaged in planting to the following list of very desirable plants, all of which may be seen growing in the open quarters of their Nursery, and are in the finest possible condition for transplanting :—

Araucaria imbricata, 9 to 12 inches, 5*l.* per 100 ; 40*l.* per 1000
" " 1½, 2, 3, 4, 5, 6, and 8 feet high. Our stock of this plant exceeds 100,000
Wellingtonia gigantea, stout handsome plants from seed, 84*s.* per dozen ; 25*l.* per 100. These are all in the open ground, and are believed to be the finest lot of seedling plants in the Trade.
Cedrus Deodara, 1½ to 2 feet, 18*s.* per dozen ; 6*l.* per 100
Do. 3, 4, 5, 6, 7, 8, 10 and 12, and 15 feet. Our stock of Deodars at the present moment occupies several acres of land ; they have been constantly removed, and with fair usage not one in a thousand would fail. We offer them on very advantageous terms either in large or small quantities
Cedrus atlantica, 4, 5, 6, and 7 feet
Cupressus macrocarpa, magnificent plants, 7, 8, and 10 feet high
" Lawsoniana, stout handsome plants from seed, 18 inches, by the dozen or 100
Abies nobilis, from open ground, 6*l.* 6*s.* per doz. ; 40*l.* per 100
" do. 1, 2, and 3 feet high
" Nordmanniana, a large number of beautiful plants, all from seed, 2, 3, 4, 5, and 6 feet high
" Pinsapo, do. do.
[We believe we are justified in stating our stock of the three last-mentioned Firs offers a selection to be met with in no other Nursery.]
" Douglasi, 6, 7, 10, and 12 feet
" orientalis, 3, 4, 5, and 6 feet
Pinus Benthamiana, stout seedling plants, about 1 foot, 18*s.* per dozen ; 5*l.* per 100 ; 40*l.* per 1000. Unquestionably the finest of all the long-leaved Californian kinds, and well known to be perfectly hardy. It is the most valuable of all for timber.
Juniper, Chinese, 2, 3, 5, 7, 8, and 10 feet high
" Irish Upright, 3, 4, 5, 6, 7, and 8 feet. The Irish and Chinese Junipers are grown by us to a very large extent
Thuja aurea.—This plant originated in our Nursery, and our stock of it offers a choice of many hundred specimens from 1½, 2, 3, 4, and 5 feet high, and measuring from 2 to 10 and 15 feet in circumference. Nothing can well exceed the beauty of these plants, and certainly are to be met with in no other Nursery
Thuja gigantea, stout seedling plants, 1½ to 2 feet high
" Wareana, 3, 4, 5, 6, 7, and 8 feet
Thujopsis borealis, handsome plants, in quantity, 1½ & 2 ft. high
Taxus, Yew, Common English.—A large quantity, and of all sizes up to 5, 6, and 7 feet
" Irish Yew, 4, 5, 6, 7, and 10 feet. Many thousands of these beautifully formed plants grown to one stem
" Golden Yews in large quantities and of all sizes up to 6, 7, and 8 feet
We also have them worked on the Common and Irish Yew as Standards, with heads from 12 to 15 years' growth
Holly, Variegated, Scottica, laurifolia, &c. We hold probably the largest stock of good sized variegated Hollies in the kingdom, especially of the better kinds of silver and gold striped
Rhododendron ponticum, for cover, stout plants, 1' to 2½ feet, by the 1000. All the well-known proved hardy late blooming kinds, in any quantity, at from 30*s.*, 42*s.*, to 84*s.* per dozen
Standard Rhododendrons of all kinds
Azaleas, stout bushy plants, covered with bloom buds, from 18 inches to 2 feet high, and of all colours, 9*s.*, 12*s.*, 18*s.*, and 24*s.* per dozen ; 50*s.*, 75*s.*, to 100*s.* per 100
Hardy Heaths, a first-rate collection, at 35*s.* per 100 ; 15*l.* p. 1000
Roses, fine Standards, of the most popular kinds, at very low prices.

As well as the above, we are very large holders of the ordinary kinds of Nursery Stock, which may be judged from the fact that the Nursery far exceeds 100 acres in extent of all such things as Laurels, Box, Lilacs, Limes, Purple Beech, and the commoner descriptions of Evergreens and Deciduous Flowering Shrubs. An enormous stock of Fruit and Forest Trees are also grown extensively.

Goods are delivered free to London, Reading, or Reigate. The Nursery is reached in an hour from Waterloo, and conveyances are always to be had at the Woking Station.

CATALOGUES, Priced and Descriptive, will be sent on application, enclosing one penny stage stamp, to
WATERER & GODFREY, Knap Hill, Woking, Surrey.

ROSES.

A. PAUL AND SON invite attention to the following facts in reference to their position at the Rose Shows during the present year :—

May 12.	Royal Botanic Society, 10 Roses in pots ..	1st Prize
" 22.	Crystal Palace .. 12 ditto ..	2d Prize
June 2.	Royal Bot. Society, Collection of Cut Roses	1st Prize
" " "	24 Cut Roses	1st Prize
June 10.	London Horticultural Society, 50 Cut Roses	1st Prize
" " "	10 Roses in pots ..	2d Prize
June 16.	Crystal Palace, 50 Cut Roses	1st Prize
" " "	24 ditto	1st Prize
" 23.	Royal Botanic Society, 50 Cut Roses ..	1st Prize
" " "	24 ditto	1st Prize
July 1.	Grand National Rose Show, Collection of Roses (unlimited)	1st Prize
" " "	48 Cut Roses	1st Prize
" " "	Collection of Moss Roses..	1st Prize
" " "	Ditto Tea & Noisette Roses	2d Prize
" " "	Ditto of Gallica Roses ..	2d Prize
July 7.	Stamford Horticultural Society, 24 Cut Roses	1st Prize
Sept. 8.	Crystal Palace, 50 Cut Roses	1st Prize

The sorts which obtained these prizes are offered, strong healthy plants from 18*s.* to 24*s* per dozen standards, and from 12*s.* to 18*s.* per dozen for dwarfs or dwarf standards. For further particulars and general information on Roses see Descriptive Catalogue just published, and furnished post free on application.—Nurseries, Cheshunt, Herts.

GRAPE VINES FROM EYES.

JOHN AND CHARLES LEE beg to offer an immense stock of strong well-ripened VINES FROM EYES, of the following kinds :—

Alicant	Hamburgh, Pope's
Barbarossa	" Victoria
Bidwell's Seedling	Hâtif de Jura
Black Cluster	Isabella
Black Constantia	Lady Down's Seedling
Black Damascus	Marchioness of Hastings
Black Prince	Muscadine, Royal
Blanche Vigne	" Parsley leaved
Calabrian Raisin	Muscat, August
Charlsworth Tokay	" Bowood
Chasselas Frocklaboulay	" Cannon Hall
Chasselas Musqué	" Hamburgh
Duzetto	" Noir Hâtif
Esperione	" of Alexandria
Frontignan, black	" of Fontainebleau
" grizzly	Pitmaston Cluster white
" white	Raisin des Carmes
Hamburgh, black	Sweet Water, Dutch
" Champion	Syrian
" Dutch	Trebiana
" golden	Tripoli
" Mill Hill	West's St. Peter's

Nursery and Seed Establishment, Hammersmith, London.

SEEDLING FOREST TREES, &c.

		Per 1000—*s.*	*d.*
3,000,000	1-year Larch	1	0
1,000,000	" Scotch Fir	0	10
300,000	" Alder	1	0
200,000	" Birch	1	6
200,000	" Elms	1	6
150,000	" Ash	1	6
100,000	" Sycamore	1	6
300,000	" English Oak	2	6
10,000	" Evergreen Oak	40	0
20,000	" Horse Chesnut	5	0
40,000	" Chinese Arbor-vitæ	10	0
70,000	" Cupressus horizontalis	8	0
80,000	" Pinus Laricio	10	0
100,000	" Pinus austriaca	6	0
300,000	" Pinus maritima	2	6
20,000	" Common Laurel	17	6
20,000	" Crab Apple	3	6
250,000	" Quick	2	0
10,000	" Laburnum	2	6
10,000	2-year do.	4	0
1,000,000	" Norway Spruce Fir	1	6
40,000	" White Spruce Fir	4	0
50,000	3-year Silver Fir	7	0
800,000	2 " Scotch Fir	1	6
100,000	1 " bedded Scotch Fir	2	6
100,000	2 " Beech	3	0
60,000	2 " Birch	3	0
30,000	2 " Alder	3	0

The Subscriber begs to call attention of his friends and the public in general to the above stock of SEEDLINGS, and is happy to intimate to them that they are generally fine in quality, and trusts they will give satisfaction. Any order, large or small, will be promptly attended to. All delivered free of expense at Dublin, and thence half carriage paid to any part of England, &c.—Apply to MICHAEL BURKE, Drumlargan Nursery, Summerhill, county Meath, Ireland.

WINTER AND SPRING-FLOWERING PLANTS.

HUGH LOW AND CO. have to offer the undernamed articles, the quality of which they believe to be unsurpassed :—

ERICA WILMOREA, in 32-pots, plants 18 to 20 inches in height, with 12 flowering shoots. Each, 2*s.* 6*d.*
ERICA WILMOREA, in 48-pots, plants 12 to 15 inches in height, with from 6 to 8 flowering shoots. Each, 1*s.* 6*d.*
ERICA HYEMALIS, in 48-pots, 9 to 12 flowering shoots. Each, 1*s.* 6*d.*
ERICA REGERMINANS, in 54-pots, plants 1 foot high, with from 12 to 15 flowering shoots. Each, 1*s.*
ERICA SINDRYANA, in 48-pots, plants 12 to 15 inches in height, with from 12 to 15 flowering shoots. Each, 1*s.* 6*d.*
EPACRIS IMPRESSA CARNEA, in 48-pots, plants 12 to 15 inches in height, with from 20 to 25 flowering shoots. Each, 1*s.* 6*d.*
EPACRIS DELICATA, in 48-pots, plants 12 to 20 inches in height, with from 15 to 18 flowering shoots. Each, 1*s.* 6*d.*
EPACRIS KINGHORNI, in 48-pots, plants 12 to 15 inches in height, with from 12 to 15 flowering shoots. Each, 1*s.* 6*d.*
EPACRIS AND ERICAS, in very large variety, all strong bushy plants, in 48 pots, 1*s.* 6*d.* to 3*s.* 6*d.* each.
CAMELLIAS, in variety, with flower buds, plants 9 to 15 inches in height, 2*s.* 6*d.* to 3*s.* 6*d.* each.
BORONIA DRUMMONDI, 9 to 12 inches in height, with 12 flowering shoots. Each, 1*s.* 6*d.*
AZALEA AMŒNA, one of the most lovely plants grown for early spring-flowering, plants in 48-pots, 9 inches high and the same in diameter, with from 20 to 25 flowering shoots. Each, 2*s.* 6*d.*
AZALEA INDICA, in large variety, 2*s.* 6*d.* to 7*s.* 6*d.* each.
CHOROZEMAS, in variety, well set with flower buds. Each, 1*s.* 6*d.*
CLEMATIS LANUGINOSA, the finest of all the hardy species, strong plants, 5*s.* to 7*s.* 6*d.* each.
ORANGE TREES, in fruit, 2 to 3 feet high, 7*s.* 6*d.* to 10*s.* 6*d.*
Half-specimen ERICAS, EPACRIS, & AUSTRALIAN PLANTS, in large variety. The greater part are in 8-inch pots, 7*s.* 6*d.* to 10*s.* 6*d.* each.

With the single exception of the Orange Trees, all the articles named above can be supplied to the Trade by the dozen and hundred of each kind. Wholesale Prices on application. Inspection of the General Nursery Stock respectfully invited.
Clapton Nursery, London, N.E.

TO BRITISH AND EXOTIC BOTANISTS.

FREDERICK Y. BROCAS has for 12 years devoted his time principally to botanical pursuits, and has accumulated about 90,000 British and Exotic specimens. He has also had ample experience in the conservation of an Exotic Herbarium.

F. Y. B. is prepared to receive orders for supplying collections or desiderata ; and having lately returned from a month's excursion, during which he paid especial attention to collecting seeds, can supply sets of the same, which include many critical species.

⁂ A few nearly complete sets are now ready ; and also small collections for Gardeners, Schools, or private instruction, at a reduced price. Collections named, arranged, mounted, and an allowance made for duplicates.

Inquiries addressed to FREDERICK Y. BROCAS, Botanist, 85, St. Martin's Lane, London, W.C., will receive immediate attention.

TO THE TRADE AND PUBLIC IN GENERAL.

M. A. LAKE begs to offer 1000 DWARF TRAINED FRUIT TREES of the following kinds, viz., Peaches, Apricots, Nectarines, Plums, Pears, and Apples ; Standard Pears, all of which are of the choicest kinds and warranted true to name ; also a large stock of 3 and 4 years old Gooseberries, named sorts ; 20,000 Currants, consisting of Red and White Grape, Raby Castle, Wilmot's Superb Red, and Black Naples, strong 3 and 4 years old bushes ; Lake's Superb and Falstoff Raspberries ; Laurels and Laurustinus, very fine ; also a large well-grown stock of Lime, Sycamore, Spanish and Horse Chesnuts, Beech, Mountain Ash, Yew, Birch, Turkey, Ilex, and English Oak, Hazel, Spruce Fir, Cypress, Cedrus Deodara, Pinus excelsa, Seedling Holly, and Ilex Oak. Privet, very fine, 2 and 3 years Seedling ; Thorns, Standard and Dwarf Roses, and Asparagus Roots.

The above will be sold at very low prices, which can be obtained on application, especially if quantities are taken.
The Nurseries, Bridgewater, Somerset.

THE SUBSCRIBERS respectfully invite attention to their superior stock of the following, all of which have been frequently transplanted, and will remove with every chance of success.

CONIFERÆ.

Araucaria imbricata, 1 to 1½ foot, a large quantity ; also some fine specimens 4, 5, and 6 feet
Biota meldensis, quite new, 1½ to 2 feet
" glauca, 1 to 1½ foot
Cedrus Deodara, 2½ to 3 feet
" robusta, 1 to 1½ foot, very distinct and beautiful
" viridis, 1 to 1½ foot
Cryptomeria japonica, 4 to 5 feet, fine specimens
Cupressus ericoides, 1 to 2 feet, fine
" fastigiata, 1, 2, and 3 feet
" Lambertiana, 1 to 1½ foot
" macrocarpa, 2, 3, 4, and 5 feet
" Lawsoniana, 9 inches
Pinus austriaca, 2, 3, and 4 feet
" Laricio, 1 to 2 feet
" Montezumæ, from seed, very fine
Taxodium distichum, 3, 4, and 5 feet
Thuja aurea, 9 to 12 inches
" Knighti, 2, 3, 4, and 5 feet. fine

EVERGREENS, &c.

Ivies, Irish, New Giant, and Regeneriana, very strong
Junipers, English, Irish, and Swedish
Laurels, common, 2 and 3 ft., very fine, in very large quantities
Laurustinus, black-leaved, 3 to 4 feet
Privet Evergreen, very strong
Rhododendron ponticum, 1 to 2 ft., very fine, by the 100 or 1000
Ailanthus glandulosa, 6 to 8 feet
Ash, Weeping, 8 to 10 feet, stems very fine
Rose Acacias
Sophora japonica, 4 to 6 feet

With a very large quantity of every description of Nursery Stock. CATALOGUES sent free on application.
Plants presented free to compensate for distant carriage.
WM. WOOD AND SON.

ABERGAVENNY NURSERY GROUNDS.

JAMES SAUNDERS has a large Stock of SCOTCH FIR, 1½ to 2 feet ; Do., 2 to 3 feet. LARCH and SPRUCE of all sizes, WEYMOUTH PINE, SILVER and BALM of GILEAD FIR. A large quantity of Pinus austriaca, varying from 1 to 5 feet, particularly fine ; many choice varieties of Pinus ; 20,000 to 30,000 Black Italian and other sorts of POPLAR ; several thousands of Chichester and English ELM, with other choice kinds, all of various sizes ; Spanish and Horse Chesnut ; Sycamore, from 3 to 20 feet ; Turkey and Evergreen Oak ; Acacia, Norway Maple, Oriental Plane, and other Ornamental Trees and Shrubs of all kinds and sizes. A large number of fine Trees for Parks and Plantations where immediate effect is an object.

An extensive collection of Standard, Half Standard, and Dwarf ROSES ; 2000 to 3000 Perpetual and other kinds of ROSES, in pots, suitable for beds and bordering ; Trained and other FRUIT TREES ; Standard APPLES and PEARS : DWARF APPLES on Paradise Stocks ; a choice collection of PEARS on Quince Stocks. The whole of the extensive Stock, on upwards of 20 acres of Land, is remarkably healthy and well grown. A liberal discount for cash.

About 350 FERNS, MOSSES, ORCHIDS, and other Stove Plants, to be disposed of.—All Orders and other communications to be addressed to JAMES SAUNDERS.

RED LODGE NURSERY AND AMERICAN GROUNDS, SOUTHAMPTON.—These Grounds, extending over 60 acres, and consisting of every variety of soil, contain a large and choice assortment of AMERICAN PLANTS, including many thousands of Scarlet, Pink, White, and Hybrid RHODODENDRONS, of the newest and best varieties ; also half a million of RHODODENDRON PONTICUM, suitable for covers or large Plantations.

KALMIAS, AZALEAS, ANDROMEDAS, &c.

Transplanted FOREST TREES of every denomination, in immense quantity, including 600,000 Scotch, Larch, and Sea Pines.

FRUIT TREES of the choicest kinds, strong, well grown, and mostly in a bearing state.

Strong plants of the beautiful GYNERIUM ARGENTEUM, or PAMPAS GRASS.

QUICKSETS, for Fencing, about two millions.

ORNAMENTAL TREES, EVERGREENS, and FLOWERING SHRUBS, in great variety, and of all sizes.

Standard and Dwarf ROSES, upwards of 20,000, in 500 named sorts.

Beautiful specimens of CONIFERÆ, including Cedrus Deodara, Crytomeria japonica, Libocedrus chiliensis, Araucaria imbricata, Thujopsis borealis, Thuja aurea, Abies Douglassi, Pinus Lambertiana, Pinus Pinsapo, Pinus Jeffreyana, Cupressus macrocarpa, do. Bedfordiana, do. Lawsoniana, do. McNabiana, do. torulosa, Abies Brunoniana, Pinus excelsa, Cedars of Lebanon, Cedrus africanus, Irish and Golden Yews, Pinus Cembra, Pinus insignis, the magnificent Wellingtonia gigantеum, and 50 other elegant varieties, mostly of recent introduction, all more or less interesting and beautiful. The specimens, from frequent removal, are well rooted, and transplant with a certainty of success.

An inspection of the General Stock growing in this unrivalled Nursery is earnestly and respectfully solicited.

All orders are promptly executed and carefully packed.

CATALOGUES and every information may be obtained on application to W. H. ROGERS, Red Lodge Nursery, or at his Seed Establishment, 130, High Street, Southampton.

ROSES.

WM. WOOD AND SON beg leave to offer ROSES on the following terms, selection of sorts left to themselves:—

Extra tall Standards, budded with 2 to 3 different varieties of Climbing Roses in each stem, 3s. 6d. to 5s. each. Per dozen.

Superior selected Standards	18s. to 21s.
Fine Dwarf ditto	12 ,, 18
Superb Dwarfs, for exhibition	12 ,, 18
Fine Dwarfs	9 ,, 15
Hybrid Perpetuals, on 6-inch stems	9 ,, 15
Tea-scented, in 48-pots	12
,, in 24-pots	24 ,, 30
Climbing Roses, without names	4
Good Dwarfs ,,	4

Plants presented to compensate for carriage.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their NEW PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Stove, Greenhouse, and Hardy Ferns, Miscellaneous Stove, Greenhouse, and Hardy Plants, Variegated and Ornamental foliaged Plants, Conifers, Roses, Rhododendrons, Indian Azaleas, Gloxinias, Fuchsias, Cactuses, &c., is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

ORANGE TREES, JUST ARRIVED, OTAHEITE, ST. MICHAEL, and MYRTLE-LEAVED; CITRON and LEMON TREES, with from 2 to 20 fruit on each, in beautiful condition, at 2s. 6d., 3s. 6d., 5s., 7s. 6d. each; best HYACINTHS, 6s. per dozen; ditto, 4s.; mixed CROCUSES, 1s. 6d. per 100; VAN THOL TULIPS, 3s. per 100; Double mixed ditto, 4s.; JONQUILS, 4s.; mixed NARCISSUS, 1s. 6d. per dozen; GLADIOLUS FLORIBUNDUS, 1s. 6d. per dozen; GANDAVENSIS, 2s.

PRICED LISTS of FERNS and BULBS may be had on application to ROBT. GREEN, 154, Kingsland Road, 55 doors from Shoreditch Church.

HALF-SHRUBBY CALCEOLARIAS. — To meet the difficulty experienced by Amateurs in dealing with the above in the earlier stages of their culture, the undersigned has provided a quantity of healthy unblocomed Seedlings for flowering in May, which he now offers at 4s. per doz. Package and carriage included.

These novel and charming varieties are very distinct from most others in cultivation, being chiefly shaded Selfs, of violet, crimson, purple, lavender, and many other colours, and of exquisite form and habit,

They have also been awarded the First Prizes at the Bath, Bristol, and Clifton Horticultural Exhibitions two successive seasons.

A few practical remarks as to soil and peculiar treatment will accompany each order.

ROBT. ALEXANDER, Nurseryman, Lyncombe Vale, Bath.

LODGE'S NEW HYBRID RHODODENDRON, "COUNTESS OF WILTON," the best and hardiest Rhododendron in cultivation; obtained a first class Certificate at the Manchester Botanical Gardens. Strong bushy plants from 2 to 4 feet high are now ready, and can also be had from the following agents:—

Mr. John Waterer, American Nursery, Bagshot, Surrey
Messrs. Wm. Rollisson & Sons, Tooting, near London
,, E. G. Henderson & Son, St. John's Wood, London
,, Wm. Wood & Son, Maresfield, Sussex
,, Thomas Jackson & Sons, Kingston, Surrey
,, Benjamin Reid & Co., Aberdeen

A remittance or reference is requested from unknown correspondents. Post-office Orders made payable to JAMES LODGE, Park Nurseries, Singleton Brook, Broughton, Manchester.

Descriptive circulars can be had as above, or from any of the agents.

BEAUTIFUL NEW TORENIA.

JOHN AND CHARLES LEE are now prepared to send out their beautiful new TORENIA PULCHERRIMA, which has been so much admired. It is figured in the present Number of Henderson's "Illustrated Bouquet," and undoubtedly surpasses all other Torenias by the great contrast it exhibits in the rich dark velvet, approaching to black, of the side lobes, and the pure white of the lip.

Dr. Lindley thus describes it in the *Gardeners' Chronicle* of October 30, 1858:—"We have received from Messrs. Lee of the Hammersmith Nursery a singularly beautiful variety of the favourite Torenia asiatica. The tube of the corolla and its eye are an intense purple violet; the two side lobes are the same colour, fading at the edge into pure violet; the upper lobe is pale violet; the lower is white, with a purple oblate blotch at the point. This variety puts the old original kind quite out of the field."

Price 10s. 6d. The usual discount to the Trade.
Nursery and Seed Establishment, Hammersmith, London.

CHRYSANTHEMUM TRICOLOR BURRIDGEANUM. CHRYSANTHEMUM TRICOLOR VENUSTUM.

F. K. BURRIDGE, SEED GROWER, Lexden Road, Colchester, has much pleasure in inviting the special attention of the Seed Trade to the above-named new Hardy Annuals, which he now offers for the first time, believing they will be found among the finest novelties of the season. The variety Burridgeanum differs from the old C. tricolor in having a fine crimson ring surrounding the yellow circle next the eye of the flower, the rest of the ray being snow white. The variety venustum has the ray florets of a deep reddish purple or plum colour for about one-half their length, shading into yellow at the base, and stained on the under side with purple. Both varieties are striking objects in the flower border, and from their bold conspicuous character, free blooming qualities, and perfect hardiness, together with their adaptability for bouquets, F. K. B. confidently predicts that they will become universal favourites.

A beautifully-coloured group of the two varieties has been prepared, and may be had on application, price 1s.; or gratis to Purchasers of 1 oz. of seed.

CHRYSANTHEMUMS—CHRYSANTHEMUMS.

J. H. BIRD, F.H.S., NURSERYMAN, Stoke Newington, the largest grower and most successful exhibitor of the Chrysanthemum in the British Empire, begs to call the attention of the lovers of the above beautiful autumn flower to his matchless collection, the stock of which amounts to upwards of 50,000 plants. Amongst them will be found the following new and rare varieties:—Admirable, Aimée Ferrière, Augustine, Constantine, Louisa, Louis Bonamy, Madame Leo, Norfolk Hero, Progne, Raymond, Beauté de Nord, Dr. Maclean, Queen of England, Plutus, Alfred Salter, Stellaris globosa, Beauty, Themis, Dupont de l'Eure, &c.

J. H. B. can supply strong plants, one dozen for 6s.; or five dozen in 30 varieties, containing two of each variety, for 1l.; or he can supply 100 plants in 50 varieties, two of each variety, for 1l. 10s. Also POMPONES in great variety; 50 Pompones in 25 varieties, two of each variety, for 10s.; or 100 in 50 varieties, two of each variety for 1l. Strong plants of the beautiful new Pompone the Golden Cedo Nulli, 5s. each, will be ready in March with the usual allowance to the Trade. Every order will be accompanied by a popular work on the Chrysanthemum.

Post-office Orders payable to J. H. BIRD, Stoke Newington, will be immediately attended to.

FRUIT TREES IN POTS.

JOHN AND CHARLES LEE have now the largest and finest stock of FRUIT TREES IN POTS in a bearing state for FORCING AND ORCHARD HOUSES ever offered. They consist of the following kinds, a CATALOGUE of which may be had on application:—

APRICOTS	FIGS	PEARS
PEACHES	PLUMS	APPLES.
NECTARINES	CHERRIES	ALSO,

VINES AND STRAWBERRIES.

Nursery and Seed Establishment, Hammersmith, London.

FRUITING VINES.

JOHN AND CHARLES LEE beg to offer extra strong short-jointed and well-ripened FRUITING VINES of the following kinds:—

BLACK HAMBURGH	BLACK FRONTIGNAN
CHAMPION HAMBURGH	WHITE FRONTIGNAN
MILL HILL HAMBURGH	BLACK PRINCE
GOLDEN HAMBURGH	ROYAL MUSCADINE
MUSCAT OF ALEXANDRIA	BIDWELL'S SEEDLING
	BOWOOD MUSCAT.

Nursery and Seed Establishment, Hammersmith, London.

ROYAL EXOTIC NURSERY, CHELSEA, S.W.

JAMES VEITCH, JUN., respectfully announces that his CATALOGUE of KITCHEN GARDEN and FLOWER SEEDS for 1859, with a List of Implements and other Garden requisites, is now published, and will be forwarded post free on application.

J. V., Jun., devoting his personal attention to this department of his business can warrant his seeds TRUE TO NAME and of the MOST GENUINE description.—Jan. 1.

PINE-APPLE NURSERY, EDGEWARE ROAD (W.).

ARTHUR HENDERSON AND CO. beg respectfully to announce that their CATALOGUE OF KITCHEN GARDEN AND FLOWER SEEDS FOR 1859, with a List of Garden Implements and other requisites is now published, and will be forwarded, post free, on application.

They particularly desire to call the attention of the public to their "celebrated Short-topped Garden Beet," the only variety that really will repay the grower; colour, flavour, and quality are such as to render it worthy of extensive cultivation; also "Kite's Branching Marrow Pea," a very valuable and prolific bearer for every day use; "Snow's true White Winter Broccoli;" "Snow's Champion Cos Lettuce," a large crisp summer and autumn Lettuce, and for these seasons unequalled. In this select List will also be found the "Moor Park Lettuce," those very superior sorts as yet but little known, namely, the "Palatine" and "Versailles" Cabbage Lettuce; neither of these are disposed to run to seed during the hot summer months. The White and Black spined Imperial Cucumber, the new sprouting or Feather-stemmed Savoy, a scarce but most delicious Green; the "Waterloo framed short-topped seeding Potato," raised between the "Albion" and "Frame;" it is earlier than either, very productive, and the sort that must eventually be depended upon as the best early frame and forcer, as soon as its merits become better known. The "Australian Salad Cress"; this plant grows about 1 foot in height, branching and spreading all round the stem; it may be constantly cut and gathered throughout the summer, the leaves are of a peculiarly delicate light green, the flavour is exquisite, grateful, and piquant.

ROYAL BERKSHIRE SEED ESTABLISHMENT.

PRIZE MANGEL AND SWEDE SEED.—ORDERS ARE NOW RECEIVED for new Seeds of SUTTON'S choice sorts of Mangel Wurzel and Swede, saved from similar roots to those so much admired on Messrs. SUTTON'S Stands at the Smithfield Club Show, Baker Street Bazaar. The prices will be as under:

SUTTON'S CHAMPION SWEDE, 1s. per lb., or 4s. per bush.
SKIRVING'S IMPROVED SWEDE, 9d. per lb., or 30s. per do.
SUTTON'S LARGE YELLOW GLOBE MANGEL, 9d. per lb., or 70s. per cwt.
SUTTON'S ELVETHAM LONG RED MANGEL, 10d. per lb., or 84s. per cwt.
GREEN-TOP WHITE BELGIAN CARROT, 1s. per lb.
HOLCUS SACCHARATUS, OR CHINESE SUGAR CANE GRASS, 2s. 6d. per lb.
DIOSCOREA BATATAS, OR CHINESE YAM, 5s. per dozen.
KOHL RABI, OR TURNIP-ROOTED CABBAGE, 5s. per lb.

Immediate orders are requested and recommended to insure the above choice sorts at the moderate prices quoted. Goods delivered Carriage Free, and 5 per cent. allowed for cash payment.

PRICE LISTS of every description of FARM AND GARDEN SEEDS may be had post free.

Address, SUTTON & SONS, Reading, Berks.

SHAW AND CROSLAND'S RICHMOND DWARF, late WHITE BROCCOLI.—This Broccoli has proved to be the hardiest in cultivation, having been grown on the most exposed situations, producing fine heavy heads from the middle of May to the middle of June. It gained the First and Second Prizes at the Sheffield Floral and Horticultural Society's Exhibition, held at the Sheffield Botanical Gardens, June, 1856. SEEDS can be had in sealed packets, price 2s. 6d. each, at the Richmond Nursery, Sheffield; or of

Charlwood & Cummins, Covent Garden	Henderson, E. G. & Son, St. John's Wood
Chaundy & Co., Lewisham	Kernan, Mr. J., Great Russell Street
Chatter's, Mr. Wm., Saffron Walden	Kearsley, Mr. J., Leeds
Davies, Thos. & Co., Wavertree, Liverpool	Low & Co., Clapton
Dean, Mr. Wm., Bradford, Yorkshire	Laing, Mr. Alex., Beverley
Flanagan & Son, Mansion House Street	Stewart & Son, Dundee
Godwin, Mr. F., Sheffield	Sharpe & Co., Sleaford
Hurst & M'Mullen, Leadenhall Street	Turner, Mr. C., Slough
	Urquhart & Son, Dundee
	Wheeler, Mr., Geo., Warminster
	Wood & Ingram, Huntingdon

P.S. Fine Transplanted Larch 1½ to 3 feet. Samples and Price to be had on application.—Richmond Nursery, Sheffield.

NEW SPLENDID SEEDLING GLADIOLI. — 15 named varieties of Seedlings from RAMOSUS, and 15 ditto from GANDAVENSIS, for 1l. 1s., carriage paid. Large bulbs of Gladioli gandavensis, ramosus, and floribundus, 2s. 6d. per dozen. Fine Anemones per 100, Mixed Double, 6s.; Scarlet Double, 10s.; Mixed Single, 4s.; Scarlet Single, 6s. Fine mixed Persian Ranunculus, 3s. per 100. Scarlet Turban, 2s. 6d. per 100. A DESCRIPTIVE PRICED CATALOGUE of GLADIOLI, &c., sent free and post paid on application.

BUTLER & MCCULLOCH, Seedsmen, Covent Garden Market, London.

NEW EXOTIC FERN,
NEPHRODIUM MOLLE, VARIETY CORYMBIFERUM.
Named and described in the *Gardeners' Chronicle* of May 22, 1858.

ROBERT SIM is now prepared to supply, at 15s. each, vigorous and well-established profusely crested plants of this beautiful and unique variety, of which he possesses the entire stock. It ought to prove quite a greenhouse kind.

The customary discount to the trade. Price per dozen on application. Carriage paid to London. Post-office Orders on Foot's Cray.—Nursery, Foot's Cray, Kent, S.E.

AMERICAN BLACKBERRY. — The Subscribers have received from New Rochelle a few plants of a BLACKBERRY (BRAMBLE) which their correspondent assures them "is by far the best of the many varieties cultivated in New York State," adding that "he has known 400 dollars' worth of the fruit taken from one acre of ground." Any one wishing to try whether this Blackberry will succeed in this country may have a plant or plants at 5s. each on application to EDWARD SANG & SONS, Kirkcaldy, N.B.

SPLENDID NEW SEEDLING CROCUS per 100. Albion, large white, 3s. 6d.; Mrs. Beecher Stowe, clear white, 3s. 6d.; Queen Victoria, pure white, 3s.; Ne plus Ultra, light blue, 3s.; Othello, very dark, 5s.; David Rizzio, purple, 4s. 6d.; Prince Albert, lilac, 4s.; Sir Walter Scott, beautifully striped, 4s.; New Golden, very large, 4s.; large yellow, 3s.; Dutch Crocus, 2s. 6d.; Cloth of Gold, 2s. 6d.; and many other handsome varieties.—PRICED AND DESCRIPTIVE LIST on application.—BUTLER & MCCULLOCH, Seedsmen, Covent Garden Market, London.

"JACK OF NEWBURY" SWEDE, ETC.

PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN, &c., 27, Great George Street, Westminster, respectfully request attention to their very genuine Stock of the above excellent Swede; also of the LOTHIAN PURPLE-TOP SWEDE, both of which have been selected with the greatest care. They have also a very fine Stock of the KOHL RABI, or TURNIP-ROOTED CABBAGE, specimens of which were shown at their Stands at Smithfield Club Show. The Kohl Rabi was largely grown last season, and may now be relied on as a substitute for the Turnip and Mangel, where these roots do not succeed, or for filling up blanks where there is a partial failure. Its feeding qualities, hardiness, and weight per acre are equal to the Swede, and all kinds of stock prefer it to other roots.

P. L. & SON have also selected a first-rate Stock of MANGEL WURZEL SEED, which they can confidently recommend. Their natural GRASS SEEDS have been also saved with very great care, and they are ready to supply them separately or in mixture, for laying down Permanent Pastures, Lawns, &c.

P. L. & SON have arranged to deliver Seeds free throughout England and Wales from their London Establishment, for all quantities exceeding 20s. in value.

LISTS OF PRICES of the above and all other Seeds, Plants, &c., may be had on application.
27, Great George Street, Westminster.

CHAMPION OF SCOTLAND PEA. —A new and first-rate sort, declared by all who grew it last year to be the most distinct and best flavoured Pea in cultivation. To be had only at PETER LAWSON & SON'S, the Queen's Seedsmen, &c., who are also prepared to execute orders for all sorts of Garden and Flower Seeds of the finest quality.
27, Great George Street, Westminster.

ORCHARD HOUSES.

LUCOMBE, PINCE, AND CO. invite attention to their very superior Stock of
FRUIT TREES IN POTS
for the above purpose, consisting of all the best kinds of
APRICOTS, CHERRIES, FIGS, NECTARINES, PEACHES, PEARS AND PLUMS,
thoroughly established in their pots, and full of well ripened wood, so that they are capable of bearing abundantly next season.

Prices will be found very moderate, and can be had on application to them.—Exeter Nursery, Exeter, established 1720.

GENUINE GARDEN SEEDS.

LUCOMBE, PINCE, AND CO. very respectfully announce that their Stock of KITCHEN GARDEN SEEDS for 1859 is now complete, and comprises many novelties of great promise, and all the best old sorts of acknowledged merit. The quality of all their seeds is this season particularly fine, and as they take great pains in selecting the whole from the *purest stocks, and prove their vitality previously to sending them out*, L., P., & Co. are enabled with great confidence strongly to recommend them. CATALOGUES of the above are now ready, and may be had on application to
LUCOMBE, PINCE, & CO., Exeter Nursery, Exeter.

The Gardeners' Chronicle.

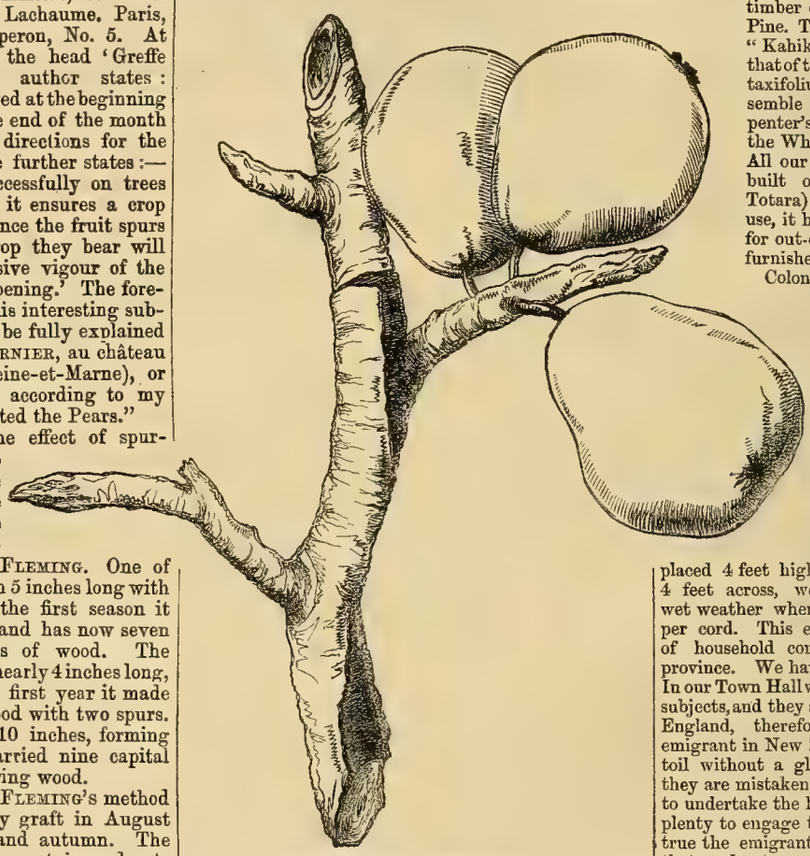
SATURDAY, JANUARY 1, 1859.

THE great interest excited by the method of immediately rendering barren fruit trees fertile by using fruit spurs or buds as scions is so great that we lose no time in returning to the subject. In another column will be found a translation of a good practical paper by Mons. BALTET, a French nurseryman, in which he fully describes his mode of operating. The following memorandum from the valuable correspondent who first drew attention to the practice, also throws further light upon the question:—

"The notice, in a late Number, of a sentence contained in the brief report sent to you of the Exhibition of flowers, fruits, &c., held by the Horticultural Society of Paris last September, viz., 'that the finest Pears exhibited were produced from flower-buds which had been inserted on barren spurs of other trees during the previous autumn,' leads me to offer some additional information on the matter. You state you are not surprised at the inquiry made about this novel operation, and farther, that no success has attended your examination of French works on gardening relative to it, consequently you are driven to the conclusion 'that the reporter was misinformed, or

else that the method of grafting (budding I would rather call it) is undescribed.' In reference to the foregoing, I would beg to state in the first place, that my opinion on the superiority of the fruit appears to have coincided with that of the judges, who awarded a first-class prize to the group; and in the second, that it was under the supposition that the latter of your conclusions is correct, at least in so far as English practice and works on horticulture are concerned, that I considered the subject worthy of being recorded. My imperfect knowledge of the French language might make me doubt whether I understood exactly the information given to me by the gentleman who exhibited the fruit in question, but it was fully borne out by what I saw. The spurs on the parent tree on which the fruit buds were inserted were cut off together with the latter growing on them, and the fruit still attached, of which I made the accompanying rough sketch. Judging from the extracts you give of M. PEPIN'S report and M. BOURGEOIS' garden, I consider the budding with fruit buds to be similar both in practice and effect to that in question. I may also refer to another French work where this method of budding fruit buds is very pointedly alluded to, viz.: 'Méthode Elémentaire pour tailler et conduire soi-même les Poiriers, Pommiers, et autres Arbres Fruitiers,' &c., par Jean Lachaume. Paris, Bouchard-Huzard, Rue de l'Eperon, No. 5. At page 49 of that work, under the head 'Greffe de boutons à fruits,' the author states: 'This mode of working is employed at the beginning of August for Apples, and at the end of the month for Pears;' and after giving directions for the performance of the operation, he further states:—'This method is employed successfully on trees which are obstinately barren; it ensures a crop the following year; and when once the fruit spurs are fixed on such trees, the crop they bear will completely overcome the excessive vigour of the stock, and hasten the time of ripening.' The foregoing may assist inquirers on this interesting subject, which I have no doubt can be fully explained and dilated on by M. LOUIS BERNIER, au château de Boulayes, près Tournan (Seine-et-Marne), or his gardener, M. MAYEE, who according to my notes are the parties who exhibited the Pears."

In further illustration of the effect of spur-grafting we have before us two branches of the Easter Beurré thus treated at Trentham, where the method has for some time been employed under the intelligent management of Mr. FLEMING. One of these specimens had been a scion 5 inches long with a single spur on the side. In the first season it made 3 inches further growth, and has now seven magnificent Pears on 8 inches of wood. The other specimen had been a scion nearly 4 inches long, with a spur near its base. The first year it made rather more than 3 inches of wood with two spurs. The second year it extended 10 inches, forming four spurs; and this year it carried nine capital fruit on about 17 inches of bearing wood.



In one important respect Mr. FLEMING'S method differs from the French. They graft in August only, he grafts both in spring and autumn. The French seem to have taken August in order to avoid with certainty the chance of the fruit spurs breaking into wood and forming branches, as we should have feared they would do. No such bad consequence appears however to have been experienced at Trentham. The method of working there adopted is the common English side grafting, the only kind that can be conveniently followed.

That this process will come largely into use can hardly be doubted, for it enables the gardener immediately to cover the old naked branches of his wall Pears with bearing wood not only of the same variety but of any other variety—an immense advantage—and it also invigorates old trees in a very remarkable manner by aid of the abundance of new healthy wood, which these stranger spurs immediately organise all over the old alburnum. For so complete is the junction between stock and scion in this spur-grafting that no force will separate the two after the first year.

WE ventured a short time since, on information upon which we had every reason to depend, to make some remarks upon the unwillingness of practical men in some parts of the United States to admit those facts as to the agency of fungi in the production of several vegetable maladies, which are now received almost everywhere in Europe as undoubted verities. It was far from our intention to give offence, and though the remarks upon the article in MOORE'S Rural New Yorker are expressed in no very courteous phrase, we are not so thin skinned as to think it necessary to make any formal reply, assured as we are from the remarks themselves, that even the practical men whom we are accused in our conceit and arrogance of treating so slanderously and unjustly, are beginning to allow that there is some weight in the assertion that these complaints are produced by fungi.

The fact is that it was only after a 10 years' struggle that the influence of fungi in the production of the Potato murrain and Vine and Hop mildews obtained credence in Europe even amongst scientific men, and at the present day they are still sometimes spoken of as the effect and not the cause of disease. The ventilation of the question has however resulted in the amelioration of two forms of disease at least, viz., those of the Vine and Hop, and it is now universally acknowledged, as the result of experience, that when the parasite is destroyed, the disease ceases.

We have not indeed at present any certain method of contending against such fungi as those which cause such disastrous consequences to Pears and Apples, but a knowledge of the cause of the evil will in all probability eventually result in some remedy. It is foolish to sneer at those who indicate the cause, merely because they are obliged to use phrases and words which are not in general use, and because their explanations do not accord with popular notions. Such misplaced ridicule is sure in the end to lead to private loss, if it does not inflict a public injury. At the very moment when the sulphured Hop grounds alone in Kent presented an abundant crop, there were many scoffers who had scarcely a Hop to show, and who tried in vain to excite a public prejudice against the use of the Hops produced in grounds where sulphur had been employed; and if the Vine growers as a body were disposed to try the sulphur, though in some districts there were strong exceptions, it was because the ridicule which had been cast upon the upholders of the Fungal Theory in respect of the Potato murrain had at length subsided. Had the Potato murrain been unknown, it is pretty certain that the Vine mildew would not so soon have been attacked successfully.

We rejoice therefore at any indication of a disposition to give proper deference to science amongst ourselves and our American brethren, with the latter of whom we have too many bonds of sympathy, not to mention any personal obligations, to offend them willingly even in so small a matter as the present. An acrimonious tone is ill suited for such discussions, and we can safely say that if articles conceived in such a strain as a whole file of extracts from American Journals which we have now before us relative to the Pear blight were to appear frequently in our own or any cognate Journal, it could only be at the risk of forfeiting the support of its subscribers. Such a tone was too common at the beginning of the present autumn, but happily this has vanished together with a host of other things far better honoured in the breach than the observance. *M. J. B.*

WE regret to announce the decease of Professor CHARLES MORREN at Liège on the 17th ult., in the 52d year of his age, after a very long and cruel illness. He was the author of a considerable number of curious papers on various points of interest in Vegetable Physiology, but was best known as the Editor of the *Annales de la Société Royale d'Agriculture et de Botanique de Gand*, a Belgian work of the same class as Paxton's Flower Garden, which terminated in 1849 with its 5th volume.

JOTTINGS RELATING TO THE PROVINCE OF CANTERBURY, NEW ZEALAND.

RAIN-water at the present time dropping from the clouds in quantities never before witnessed on the plains of Canterbury, has put a stop to out-door employment and allowed me to send you a few jottings, relating to our infant community in this province.

We have our Town Hall, which is well supported, a spacious edifice, built of the indigenous timber of New Zealand. The building is 70 feet long by 35 feet wide, and about 35 feet high from the floor. The timber employed consists of White and Black Pine. The native name of the White kind is "Kahikatêa" (Dacrydium excelsum), and that of the Black "Mai or Matai" (Dacrydium taxifolium). The timbers of these two resemble each other in quality as far as carpenter's work is concerned; but of the two the White is found to be the most durable. All our cottages, places of worship, &c., are built of this; but Totatara (Podocarpus Totara) timber is now coming much into use, it having been found to be very durable for out-door purposes. Our supply of fuel is furnished by these three kinds of trees.

Colonial geologists have not yet been able to ascertain exactly where and at what depth our native coal-fields lie; but it is to be hoped that their exact position will soon be found. The extensive forests within the district of Wellington, however, afford a supply of fire-wood which will last for many generations yet to come. Nevertheless coals are much wanted. An abundance of them would do away with the high price which we have to pay for fire-wood. For a "cord" of wood, consisting of trunks of Black and White Pine, 8 feet long, placed 4 feet high in the dray which conveys it, and 4 feet across, we pay in fine weather 3*l.*, and in wet weather when the roads are bad, 4*l.* and upwards per cord. This enormous price for this staple article of household comfort is a great drawback to this province. We have to pay 10*s.* for half a cwt. of coals. In our Town Hall we often have good lectures on scientific subjects, and they are generally well attended; people in England, therefore, who picture the life of an emigrant in New Zealand to be a dull round of dreary toil without a gleam of sunny pleasure, will see that they are mistaken, all that is required is a little pluck to undertake the long sea voyage. When here there is plenty to engage the mind as well as the body. It is true the emigrant must work; but it is equally true that moderate working, compared with what he has at home, either of head or hands, will give him plenty and to spare. If he will only be industrious, and that for a couple of years, he will be sure to obtain his own cottage and his own garden. All of us, whatever may be our trade or profession, when we have been here for a time feel a great desire to possess these comforts, and in the end we generally obtain our wish. I find that the homesteads of those who have settled before myself are growing under their hands, and that they are living in a state of comparative independence. It is not all chop, chip, dig, dig, with us; why should it be? The cottager's garden here is of a description very superior to any in the mother country. This may startle some, but such is the fact.

Of naturalised early spring flowering plants on the plains of Canterbury, we have in flower during this month—Cape Broom, (Genista canariensis) which is very beautiful when allowed to grow into a large bush. It grows rapidly, and makes handsome hedges when kept clipped with shears. Common Gorse: This is in flower all the year round, and makes very rapid growth. In its duration of flowering it forms an exception to everything else. Common Yellow Broom is just in flower. New blooms are opening daily. Common Blood-red single Wallflower: This is beautifully in flower at every cottager's door. Double Blood-red Wallflower is in flower here and there. This variety is rather scarce. Sweet Violets, blue and white, are very fragrant during the day in showery weather. Single Blue Hyacinth: This is as yet scarce. It is a great treat to see such an old acquaintance. Bulbs of all sorts received up to the present time from England turn out to be rotten and mouldy on their arrival. The long sea-voyage does not suit them. They might arrive sound if packed in dry silver sand. Single

White Hyacinth: This, like the blue, is as yet scarce. Common Double Red and White Daisy: These grow and flower freely. Red and Purple Brompton Stocks flower all through the winter. Heartsease: Of these odd flowers may be seen opening here and there. Polyanthus flowers very freely in most of the cottagers' gardens. Primroses and Cowslips: These are very plentiful in our little gardens; they are great favourites. Every cottager nurses them with great care. Hazel Nuts are scarce; the trees are generally very dwarf and bushy. Standard Peaches are in blossom, and look as if they would bear good crops, provided the late spring frosts here do not cut them off just when the calyx is shrivelling. Broad-leaved Periwinkle, which is very fond of a warm nook or corner, flowers freely, as does also the small-leaved variety. Common Thyme flowers and seeds profusely. Nemophila insignis: This is very beautiful, the blossoms being produced by self-sown plants in autumn. Other self-sown annuals are growing fast. Collinsia grandiflora and Leptosiphon densiflorum will be the next annuals in flower. Lupinus nanus stood the winter, and remained in flower.

From the beginning of this month (August) we date the commencement of spring, which closely resembles the changeable characteristics of an English February—one day is warm and pleasant; a second mild and agreeable, with growing showers and hot sunshine; a third cold, wet, stormy, with a very sharp frost in the morning, after which several delightful days may succeed, with gentle showers rapidly exciting vegetation, which at the present time is progressing rapidly. Blossom-buds on the Apple, Pear, Plum, and Cherry are swelling fast. The fruit of the Gooseberry can just be seen among the infant leaves. The only two trees in which the sap does not appear to be in motion are the seedling Walnuts and seedling English Oaks. Showers are frequent; it is common for us to go home at 5 P.M. soaked with rain or the humidity of the climate at this season of the year. We have become like naturalised fruits, vegetables, and flowers—used to it. Early Peas for Christmas Day next are up and growing fast. Green Peas are thought as much of here on Christmas Day as roast beef and plum pudding are in England.

In the immediate neighbourhood where I am living—indeed, at the very spot where I now rent a cottage and ½ of an acre of land ready for the reception of my family on their arrival from England—at about 3 feet deep from the surface are immense trunks of trees, the circumference of which cannot be well ascertained, they are so bulky. They look as if an ancient forest had disappeared or been swallowed up on the plains here. The land around me is a huge bog. What kind of tree the submerged trunks may be is hard to tell. "Fat earth" is a very appropriate name for the top spit of this bog. I was very much struck last summer with the cereals on it. Their straw or stalks on the average were the height of a man, and the leaves very long and of a very dark green hue. Crops of this rank-growing corn were very heavy. All kinds of culinary vegetables grow rapidly on this boggy land, particularly the Brassica tribe. The Early York Cabbage comes very true to its character. Only put the plants in the ground and they will be sure to form good Cabbages in a much shorter time than in England. I mean next summer to dry some turves of this bog for fuel, and stack them away in a dry place for winter. It may be thought that we are quite enthusiasts out here when I relate that we succeed very well with grafting the Lime on the Aspen.

During the last seven years great efforts have been made to introduce forest-tree seeds into this province, but without good success, the long sea voyage generally destroying their germinating and vegetative properties. The seeds on their arrival appear good, but the growing point on examination generally turns out to be black. About six weeks ago 21 large casks of different kinds of seeds arrived from England, most of them in good condition, with the exception of Portugal and Common Laurel berries and Scarlet Runners, which were perfectly black and decomposed. The Laurel berries would no doubt have arrived in good condition had they been mixed in dry silver sand or even dry chaff instead of having been put in brown paper bags. Fermentation of the outer coat of the seeds caused decomposition. Sand or chaff would have absorbed the moisture and the seeds would have reached us in a sound state. The following is the condition in which the different seeds were received:—Apple pips were sound and good; they were sown about three weeks since and are now germinating; Pear pips, germinating like the Apple pips; these were in canvass bags; Arbutus seed, mixed with dry silver sand in a tin canister, and hermetically closed from air and moisture, are now germinating in the open ground; Medlar pips, mixed with silver sand, are sound, and will doubtless grow; Mezereon Berries, packed in the same way, are swelling in the ground and will soon sprout; Plum-stones, in a canvas bag, are sound—around them, inside the cask, were Elm-chats, which are sown and appear to be in good condition; Sycamore seed is germinating by the 1000, although only sown about three weeks ago it is all up above ground; Ash-keys, equally good as the Sycamore; Beech-mast sound and swelling in the ground, and will soon sprout; Evergreen Cypress seeds good and plump, swelling in the ground; Juniper Berries, good and plump, swelling; Alder seed, germinating freely; Birch seed, good and sound, germinating freely; Platanus orientalis, bad; White Cedar (Cupressus thyoides), seeds swelling, will germinate; Laurustinus, doubtful; Pyracantha berries, ditto; Black Mulberry, germinating, very scarce; Yew Berries, swelling and will germinate; Chinese Arbor-Vitæ, good and germinating; American Arbor-Vitæ, do., do.; Sweet Bay, dead; Pomegranate, sound and germinating; Hornbeam, plump and swelling; Lime, seed good, germinating; Kalmia and Rhododendron, doubtful; common Berberry, good, germinating by the 1000; Blue Gum seed (from Australia), germinating; Service tree, berries good and plump, swelling; Box tree, good, swelling; Spindle tree, do., do.; Alaternus, doubtful. Acorns: Evergreen Oak, dead; English Oak, germinated in the cask during the voyage; they would have remained sound all the way if they had been mixed with dry chaff; hundreds of them had the radicle just protruding through the outer shell. These have been dibbed in the ground in rows, the radicles having taken hold and lifted up the two fleshy cotyledons above ground with the plumule between them. By-and-bye the cotyledons will drop off, then we shall have some nice seedlings. At present, to persons not acquainted with their nature, a row of acorns in a straight line on the surface of the ground looks very curious. Laurustinus berries, Barcelona Nuts, Scotch Laburnum, and Cobbett's Thorn Acacia, are the only seeds that germinated freely after being sown last spring with us. The two first this spring are germinating freely, and just appearing above ground; and the two last were up very quickly just after being sown.

A few more nick-nacks will end my list; Forget-me-Not, mixed Pæony, mixed Pansy, Mimulus, Auricula, and Lily of the Valley. Seedlings of all these are coming up.

The wet weather here of late has been bad enough to evoke expressions of misery, but now it has ceased to be the fashionable complaint since the arrival of the English mail for May; and if it is bad for us, it is good for the seeds when once put into the ground. They germinate freely and are up quickly. Warm showers and hot sunshine effect wonders here.

From my list it will be seen that most of the seeds have been received in good condition, and this may be mainly attributed to their having been packed in good sound air-tight casks and the interstices between the canvas bags inside the casks filled in with dry chaff. Garden and agricultural seeds were also in excellent condition when received. *William Swale, Christchurch, Canterbury, New Zealand, August* 30.

FRUIT BUD GRAFTING.

By M. Charles Baltet, Nurseryman, Troyes, France.

For the last eight years we have practised grafting blossom buds in order to cause barren trees to bear fruit; and the results have always been satisfactory. In endeavouring to extend the practice, we cannot do better than give some explanation as to the mode of proceeding.

In the course of the month of August, cut off fruit spurs from trees where they are too numerous. Let them be shortened to lengths of from ½ to 1½ inch, and cut slanting as if for crown grafting; then make in the branch a T cut for the reception of the scion as if in budding. The graft should be tightly tied with matting or Rushes; and as there is always a space at the upper part of the wound surround it with grafting clay, pitch, or liquid mastick. In the following spring the fruit buds thus inserted will flower and fruit quite as well as if they had not been removed. Frequently, indeed, the fruit is much larger than that on the tree from which the grafts were taken. We should endeavour as much as possible to graft on a vigorous branch, and near its base; and even on the main stem very handsome fruits are in this way produced. These fruit spurs retain their bearing properties in succeeding years; and if an eye produce a wood shoot, it must be successively pinched back in the usual way.

It will be seen that by this system it is easy to utilise fruit buds which have been cut off in pruning, as well as those on trees which have to be transplanted, or on branches which are to be cut off, &c. Every eye should be turned to account; those fruit buds which have no spur may be raised up and worked like common buds; and spurs on which the fruit buds are crowded may be split longitudinally; in fact it is impossible to explain every mode of cutting the scion, for that must be left to the judgment of the operator.

The most suitable period for this operation is when the flow of sap is declining, for if performed too soon the fruit bud might become a wood bud; it is sufficient that the edges of the bark can be easily raised; and it is almost needless to add that the bud should have some alburnum attached to it, which must not be removed. We have made some experiments with this process, but the Pear has always afforded the best results. We have one tree which bears, besides two varieties of Pears, the White Beam and two sorts of Service, covered with fruit.

Pears, Williams's Bon Chrétien, Colmar d'Aremberg, Duchesse d'Angoulême, Esperen, Beurré Clairgeau, Nouveau Poiteau, Alexandrine Douillard, Spoëlberg, and other very productive varieties, succeed perfectly well, and produce every year handsome and very good fruit. Experiments with large-fruited varieties worked with small ones, and melting kinds with those that are not so, have led to no conclusive results. Nevertheless several kinds of Pears may be gathered from the same tree. The length to which the scion ought to be inserted is very variable; it should be in proportion to the length of the part not inserted, and a length of 1 centimètre, (four-tenths of an inch) has succeeded quite as well as one of 15 centimètres (nearly 6 inches). We are of opinion that some kinds of ornamental shrubs may be treated in the same way.

M. Luizet, of Écully (Rhone), was the first who called attention to this mode of grafting in 1849; after him a horticulturist at Rouen, and we were amongst the first who practised it in France. M. Luizet also increases the size of his Pears by inarching an herbaceous or young growing shoot on their footstalks, and maintaining the fruits in a horizontal position. We have witnessed these facts and can vouch for the whole of them. *Annales de l'Académie d'Horticulture de Gand.*

THE BOTANIC GARDEN, SYDNEY, N.S.W.

We learn from the *Sydney Herald* that some important additions have been made to this excellent establishment, which, under the direction of Mr. Chas. Moore, is becoming one of the most important gardens out of Europe.

The visitors to the Botanic Gardens had long regarded as an eyesore a tract of sand and rock of about 4 acres, at the North-East extremity of the lower garden, over which the tide washed at high water. To reclaim this from the waters of the bay was seen to be not a difficult, but a tedious and somewhat expensive operation; nevertheless Sir William Denison decided upon having it undertaken, and a money vote from his Parliament having been obtained, the work is rapidly approaching completion. Eight large lighters and punts have been, and continue to be daily employed in conveying to the garden the silt which the dredging machine raises in the harbour, and which is, to a great extent, composed of the soil washed down during heavy rains from the neighbouring streets and lanes. This is largely intermixed with sewage matter, which on exposure to the sun becomes quite prepared for the growth of plants. At the commencement of the work, boisterous weather impeded the reclaiming process, as the high tides washed the silt into the bay as soon as it was thrown upon the bank. This difficulty was, however, overcome, and the greater part of the sand and rock is now covered with the silt, in layers from 7 to 9 feet in depth. On the southern side Mr. Moore has commenced planting operations, selecting for his first experiments varieties of Sorghum, such as saccharatum and other kinds. It is understood that Sir William Denison proposes to apply to the Legislative Council for a further vote, with a view to carrying the work of reclamation still further, so as to form a carriage drive and promenade near the garden.

We are further informed that the Governor has set apart 2 acres for the growth of Conifers alone, which the Australian climate seems to suit, and of which a rather considerable number of species has been already introduced.

At the date of the last letters from Sydney Mr. Moore was preparing to join a Government expedition to the furthest advanced settlements towards the interior, passing through districts which as yet are but little known, for the purpose of inquiring into the causes of a disease among cattle of a very fatal character.

Home Correspondence.

A Letter to the Lime Tree.—Poor old thing! is that all you have to say for yourself? Can you find no better defence of your quality than to say that you are modest, handsome, old, and a favourite? Why, a deal of that was given to you in our Editor's speech when he proposed to shelve you, and to take under his patronage some other creatures of the genus tree. None but a spoiled, petted, conceited old lady would have compared such flattery to dirty water, or been spiteful enough to sneer at her neighbours. We too are trees. We come from the land of freedom, where, if everybody is at liberty to abuse everything, everybody has also the privilege of praising himself; it is the inalienable right of an independent citizen of the greatest country in the universal world, and I shan't permit any old white-wooded stranger to us to speak small of our merits without a reply. What do you mean by calling us American Maples "such a common piece of goods?" I would have you to know that we are so much your superiors that we should be ashamed of your company anywhere except among the Britishers; for them you may be good enough; if they like you let them have you, and joy to them for their choice. But don't turn up your nose at us. Where have you the noble majestic air of the great Oregon Sycamore, which beats out of the whole field all but the Plane tree that Turks smoke under? And what are you in the autumn with your dirty yellow leaves at a time when another of us, the most graceful creature in the forest, is one glow of rosy light? You don't seem to know of what you are talking, my good Madam. Then you presume to say that a Black Walnut tree and a Tulip tree might give variety, but you don't know what they would be worth a hundred years hence. Don't know! why then talk about them? But we'll tell you. When you soft-hearted Lime tree are smothered in soot, and eaten up by grubs, these two friends of ours will be in the beginning of their majestic treehood. Were you ever in Kentucky, or Virginia, or Tennessee, Mrs. Lime? I should think not. Your weak nerves would be shaken to pieces at the sight of us glorious Tulip trees, sometimes a couple of yards through the bole and 100 feet high, and at us splendid Black Walnuts not much smaller. Well! if you never were there you had better set out on your

travels down West, and then perhaps you'll learn to treat your superiors with proper respect. *White Maple* (I don't choose to be nicknamed Sir Charles Somebody's; for I am my own and nobody's else), *Oregon Sycamore, Tulip Tree, Black Walnut.*

New Hybrid Pea.—I observe in the Nov. Bulletin of the Paris Horticultural Society, p. 763, in a translation from a paper by Dr. Rauch, an account of a hybrid between the Pea and the Lentil, said to be very productive of long pods with large somewhat cylindrical seeds, nearer to the Lentil than the Pea. It is called Erblinse, or Pea-Lentil. Do you know anything of it? I should be very curious to see a very productive hybrid between two species so very distant as Pisum sativum and Ervum Lens, although Visiani and others do reduce the latter also to the genus Lathyrus. *B.*

Canadian Cotton.—The following appeared in a recent Canadian paper:—"Public attention has lately been directed here to some specimens of Canadian Cotton, gathered by Mr. Nettle, which equals silk in texture, and which can be procured in any quantity. This is indigenous to the country, and grows as a weed in the greatest abundance, and has been long used by the Canadian farmers for various domestic purposes. It is not improbable that at some future and not very distant day its value will be better appreciated, and that after due attention has been paid to its culture it may enter largely into competition with the foreign product upon which we are now exclusively dependent." If this is true our seedsmen ought immediately to avail themselves of the aid of their "correspondents" to obtain seed of this plant, which seems to offer quite a new branch to the agriculture of temperate climates, as should all horticultural societies wlether national or local, for distribution to experimentalise with. *J. M., Hawkchurch, near Axminster, Devon.*

Cottager's Kale.—I got in the spring a small packet of this Kale, and sowed it in the usual way. All the seed came up, though slowly; I planted out in well manured ground 2 feet apart every way (next year I intend to give 3 feet distance between the rows); it is now on an average 3 to 4 feet high, and beginning to be covered with plenty of sprouts, which will be fit for use in about a month. The seed was not mixed; every plant is true, but there appears to be two kinds, each to all appearance taking after its parent—some purple like Purple Broccoli, and some like Brussels Sprouts in the head, but not in the sprouts. I have been using the heads or top shoot of the purple kind for some time past, and without doubt it is the most delicious vegetable I ever ate; far superior to Asparagus or Seakale. The tops of the green kind are not near so good. As far as I know there is no Greens or Cabbage at all superior or anything approaching it; and I intend growing it as long as I live for winter use, conceiving that I will be well repaid by the tops of the purple kind, even if I never got a sprout. *Ballintemple, Cork.*

Asplenium Petrarchæ.—I observe an article on this plant (p. 941 of last volume) which will not bring its spores to perfection in this country. Is not that owing to climate? I have never found it elsewhere than in the clefts of hot limestone rocks fully exposed to the burning sun of the Mediterranean region. For although it grows so deep in the clefts that it has not the direct rays of the sun much on it and certainly not on the roots, yet the whole rock gets heated and I could never find it except upon a southern aspect. I have gathered it at Vaucluse, on a similar rock at the source of the Lec, near Montpellier, and in Roussillon. *B.*

Mildness of Devonshire.—The following is a list of flowers gathered out-of-doors in my garden on Christmas Day, viz.:—Scarlet-flowered Sage, Salvia fragrans, Yellow Calceolaria, Yellow shrubby ditto, Fuchsia Carolina, globosa, longiflora, fulgens, common red; Nierembergia, White Jasmine, Jasminum nudiflorum, Yellow Coronella, Heliotrope, Sweet Verbena; also Brillant de Vaise, Emma, and White Perfection Verbenas; Hellebore, or Winter Rose; Wallflower, Red Stock, Hydrangea, Vinca major and minor, Sparmania africana, Acanthus major, common Blue Veronica and V. Andersoni, Small-leaved and other Myrtle, White Pentstemons, Chinese Primrose, White Potentilla, Lonicera flexuosa, large Yellow, Dwarf Yellow, Temple of Solomon, and large Pink Chrysanthemums; Mignonette, Pelargonium Sylph, Ageratum mexicanum, single Clove Pinks, China, Auguste Mie, and Souvenir de la Malmaison Roses; Escallonia rubra and alba, White Daphne, Yellow Poppy, large Pink and Creeping lilac Antirrhinums, Scarlet and other Geraniums, together with Neapolitan and Russian Violets, Wild Sweet do.; Sweet-scented, Rose-scented, dwarf do., Cut-leaved dwarf do., Pheasant's Foot, Cinnamon-scented, Peppermint-scented, Prince of Orange, Sir John Moore, dwarf do., Pink variegated, Flower of the Day, Ivy-leaf three sorts, and other Geraniums; &c. *V. P. C., Langdon Court, near Plymouth, Dec.* 29.

Scolytus destructor.—I have been very much interested in the communications which have lately been made on this subject, and your remarks thereon. The mischief seems rapidly to gain upon us, notwithstanding that there are gentlemen who do not believe that insects bore holes in trees to effect their destruction, and who do not also believe that what are called "the fine old trees of St. Giles's" have been destroyed by these creatures. Living, as I do, in close proximity to these unhappy trees, and taking much interest in the subject, I have carefully watched the progress of their malady, and am fully of opinion that the cause of their death is attributable to the insect in question. That some of the trees were partly diseased, and emitted their sap, which flowed in black streams down their sides, I admit, and that trees thus weakened might tempt the Scolyti to attack them does not appear unreasonable, but whence came they? not having been observed before. At this place, Nuneham Park, which has the most stately Elms I ever saw, in the year 1840 we had a large tree attacked by this beetle. At my suggestion it was cut down and the bark burned; and since that time I have not seen any of them till this year 1858, when we have several trees affected by them simultaneously with the Oxford trees. In our case the worst of the trees are from 100 to 200 years old, while younger and more vigorous trees are attacked by the insect for food. The Oxford trees do not exced 100 years of age, and may be said to be in the prime of life. I wonder how persons can be so incredulous as to doubt this insect destroying Elms when we read in Loudon's "Arboretum Britannicum" that at that period it had destroyed trees at Brussels, Paris, St. Loo, Caen, Dunkirk, and Havre de Grace. In our own time we have to deplore the loss of trees in Hyde Park and Kensington Gardens, Nuneham and Oxford, with many other instances. The disappearance of the insect here for the period of 18 years seems to be a most mysterious fact, taking into account how readily they propagate. Is there no limit to the vitality of their eggs? and is a dry hot season favourable to their development? or must this be explained by the now extinct doctrine of equivocal generation? The infected trees at Oxford have been sold to various persons who are in all probability ignorant of the insect disease from which they have suffered. These persons should be cautioned that they ought to strip off the bark and burn it, and that they should not carry the timber away in its present state and lay it in proximity to other trees which may at present be unaffected, thus unintentionally spreading this pest, and hastening the time when our English Elms shall have disappeared. To check the progress of this pest every effort should be used, for the Elm seems to be doomed, and in rural districts it will be much missed, for it is used for a great variety of purposes. I think the remedy you propose is one likely to disgust the insects, but at the same time the task of applying it all over the surface of a large Elm seems to me somewhat superhuman. *Henry Bailey.*

Salway Peach.—In reply to your appeal on behalf of your "Constant Reader," who inquires how it is that this Peach has not been produced in public, I may state, for your correspondent's information, that it was shown at one of the autumn meetings of the Fruit Committee of the Horticultural Society, on which occasion it proved in every way excellent—though very similar in character to another first-class late yellow fleshed variety, shown by Mr. Rivers, an American kind of which I have forgotten the name. I conclude that the reports of the meetings held by this Committee will very shortly be ready for distribution—probably by the time it again assembles on January 11th, as the secretary was some time since directed to have these reports printed for the purpose of giving publicity to the opinions it had formed on the subjects submitted to it for examination. *M.*

Packing Plants.—I would suggest the use of pots with three or four tubes placed at equal distances on their inside for the insertion of the sticks when a plant requires to be packed for travelling. This would obviate the necessity of employing the present rough and barbarous method of forcing sticks into the soil, tearing and lacerating the tender roots, and often causing serious injury or death to valuable plants. *A Sufferer.*

Monstrous Potato.—I send you a sketch which represents a remarkable instance of the effects of the late summer on the Potato. It is taken from a specimen found in my garden, the actual size, of the variety known by the local name of Antelope or Clumper. Rain after a long drought on a very dry gravelly subsoil seems the cause. Whole acres in this neighbourhood have thus been rendered unfit for human food. *J. M., Hawkchurch, near Axminster, Devon.* [The sketch which accompanied this communication represented what may be described as an ordinary Potato 2 inches in diameter, with five others or rather extensions of itself of nearly equal size attached to its sides. Such malformations are far from being uncommon, but it is only in extremely dry warm seasons like the past that they occur to the extent mentioned by our correspondent. The nature of successive attempts at extension of this kind has been scientifically explained at p. 52 of the present year's volume, and at p. 4, 1849, where will be found a representation of a Potato much resembling a man's hand.]

Reviews.

Familiar Letters on Chemistry, in its relation to Physiology, Dietetics, Agriculture, Commerce, and Political Œconomy. By J. v. Liebig. 4th ed. revised and enlarged. Edited by Dr. Blyth. Small 8vo, pp. 536. Walton and Maberly.

It is something to announce a new edition of Liebig's famous Letters on Chemistry, especially when it can be added that they have been revised and amplified by the author himself. For, with all their faults, it must be conceded that the works of the learned Prof. have given an impulse to the diffusion of chemical knowledge in this country, for which, in their absence, we might have waited half a century. The following extracts from the author's Preface will show what, in his opinion, are the most material alterations to be found in the volume before us:—

"Besides extending considerably the former letters, I have in the present edition added a number of new letters, which refer to general scientific questions and to the most remarkable discoveries recently made in the departments of chemistry and physics. Among these are letter 2d, on the Study of the Natural Sciences; letter 13th, on the Correlation of the Forces of Inorganic Nature; letter 15th, on the Alteration of Properties in Bodies; letter 23d, on Materialism in Connection with Natural Inquiries. Some investigations which I instituted last year on soils, and their comportment with the soluble food of plants, which were principally occasioned by the excellent papers of Way, have led to new and unexpected views of the nutrition of plants, and of their mode of absorbing food. Further, a series of experiments on cultivation has been undertaken by many agricultural societies in Germany, and particularly by the general committee of the Agricultural Society of Bavaria, in which I took part. The experimental results thus obtained induced me to discuss more fully certain highly important agricultural questions indicated in the 35th letter of the former edition. I have embodied my conclusions in a separate series of agricultural chemical letters on 'Theoretical and Practical Agriculture,' to which I must refer the reader. My friend Dr. Gregory, who assisted me in the former editions, has, meantime, been removed by a Higher Power from his family and from science. I have requested Dr. Blyth, professor of chemistry, Queen's College, Cork, my friend and former pupil, to edit the present edition of my letters. Dr. Blyth is one of the most distinguished chemists of Great Britain."

It will thus be seen that of the new chapters one is wholly occupied with a disclaimer on the part of the author of all leaning whatsoever towards the doctrines of materialism. The disavowal was wanted; for although no one could put his finger upon passages in Liebig's works directly maintaining the opinions alluded to, yet the common belief that the learned author did advocate such views is, we think, conclusive proof that there was an apparent tendency that way. No physiologist can, in the presence of other physiologists, sustain the doctrines of materialism without immediately sinking to zero in their estimation; and we are glad to learn, however late, that the high merits of the author are not neutralised by a false, and most absurd philosophy. In what manner he deals with this subject will be seen by the following extracts from the 23d letter of the volume before us:—

"The life of plants is dependent on the food obtained from the air, from water, and the soil. The elements of their living structures are derived from the inorganic substances, carbonic acid, water, ammonia, sulphuric, phosphoric, and silicic acids, and from alkalies, alkaline earths, and iron. But the processes which take place in the inorganic world are quite opposite to those which occur in plants. In inorganic nature predominate mechanical and chemical forces. The weathering of stones, the disintegration of lofty rocks, depend on changes of temperature, on the influence of water and air; and organised beings, when life is extinct, are again resolved, by the action of oxygen, into the original compounds from which their bodies were formed. In the living organic frame of plants, however, air, water, oxygen, and carbonic acid, lose their chemical character, and exert no influence either through affinity or by their presence in preponderating quantities. Removed from the sphere of the vital force, oxygen exerts its powerful attraction for the combustible elements carbon and hydrogen; but when subjected to this influence in the interior of plants, the hydrogen of water and the carbon of carbonic are separated from oxygen, and the latter is again restored to the air. The vital process in plants thus exhibits itself as a process of reduction—the opposite of the process of oxidation which takes place in inorganic nature. * * * By ultimate chemical analysis we do not obtain the slightest clue to the real properties of organic compounds. Hence, in investigating the different vital products of plants, chemists have latterly directed all their efforts to ascertain the order of grouping of their elements, on which they see that their properties are dependent. * * * In the structure and development of the lowest, as well as of the highest orders of plants, their materials are arranged with a beauty and regularity far surpassing the utmost efforts of the architect in the erection of his house. In each species of plants the same plan is repeated; and this, from its unchangeableness, comes to be regarded as the natural law of that species. We see it stand before us at last perfect and complete in all its parts, and ready to be reproduced after a certain time in the seeds. Our senses can only see the hand of the architect in his work. We can recognise an idea, a plan in the development of these forms according to fixed laws, but we cannot see the forces which have controlled the resisting materials, and forced them into the prescribed arrangement. Our reason, however, tells us that the idea must have had an author, and that there exists in the living body a cause which controls the chemical and physical forces of matter, and determines it to assume forms never observed out of the living organism. * * * The opponents of this opinion are easily seen to be total strangers to all investigations connected with chemical and physical forces. No well-informed natural philosopher or chemist has ever ranged himself on their side. If we refer the question to our

great physiologists, to whom we are indebted for the discovery of those facts on which the opponents of a vital force found their assertions, these masters of science will reply, that such assertions are utterly without foundation. They are the speculations of amateurs, who assume the right, after a very slight acquaintance with the investigation of natural phenomena, of expounding to an ignorant and credulous public the wonders of creation and of life, and of setting forth to them what progress has been attained in the highest departments of science. And such ignorant and presumptuous dreamers are listened to more readily than the most philosophic inquirer. * * * To do justice to the materialists, we must take into consideration that their views are in reality but the consequence of an extreme reaction against the prevailing doctrines of a few years ago. The physiology of that period did not possess the firm foundation of exact inquiry, viz., experiment. All the processes of nutrition, respiration, and motion, were referred by it to a single imaginary cause, viz., the vital force. In the organic frame, physical and chemical forces had no part. The organism produced in its own peculiar way the iron and other materials which it required, just as it did heat. Exact inquiry has, however, proved that all material laws are actually in operation in the various organic processes, and the consequence has been, that the extreme reaction against the earlier views has led to the opinion, that no forces but those of chemistry and physics preside over the phenomena of life. Incapable as the natural philosophers of a former period were to prove the operation of a vital force in every process of the organism, the materialists of a later period are equally unable to show that their inorganic forces take the place of the vital force, and even give rise to the manifestations of mind. The assertions of both parties are equally without foundation, and arise from the want of a true knowledge of the processes of the living body. Between these extremes lies the truth, which rises above all partial speculations, and recognises in the living frame, in addition to the physical and chemical forces, another cause which presides over, and determines the forms of organic structures."

The great author's chemical explanation of the manner in which clay is altered in its nature by the mere act of burning must close our extracts for the present. On some future occasion we shall certainly return to some of the subjects now first discussed:—

"A no less favourable influence than that of lime is exercised upon clay soil by the mere act of burning it. This greatly enhances its fertility. We have not long been acquainted with the remarkable change which the properties of clay undergo by burning. The observation was first made in the process of analysing the clay silicates. Many of these, in their natural state, are not acted on by acids, but they become perfectly soluble if heated to redness before the application of the acid. This property belongs to potters' clay, pipe clay, loam, and many different modifications of clay in soils. In their natural state they may be boiled in concentrated sulphuric acid, without sensible change; but if greatly calcined, as is done with the pipe-clay in many alum manufactories, they dissolve in the acid with the greatest facility, the contained silica being separated like a jelly in a soluble state. Potters' clay belongs to the most sterile kinds of soil, and yet it contains within itself all the constituent elements essential to a most luxurious growth of plants; but their mere presence is insufficient to secure this end. The soil must be accessible to the atmosphere, to its oxygen, to its carbonic acid; these must penetrate it, in order to secure the conditions necessary to a happy and vigorous development of the roots. The elements present must be brought into that peculiar state of combination which will enable them to enter into plants. Plastic clay is wanting in these properties; but they are imparted to it by a general calcination. At Hardwicke Court, near Gloucester, I have seen a garden (Mr. Baker's) consisting of a stiff clay, which was perfectly sterile, become, by mere burning, extremely fertile. The operation was extended to a depth of 3 feet. This was an expensive process, certainly; but it was effectual.

"The great difference in the properties of burnt and unburnt clay is illustrated by what is seen in brick houses built in moist situations. In the town of Flanders, for instance, where most buildings are of brick, efflorescences of salts cover the surfaces of the walls, like a white crust, within a few days after they are erected. If this saline incrustation is washed away by the rain, it soon reappears: and this is even observed on walls which, like the gateway of Lisle, have stood for centuries. These saline incrustations consist of carbonates and sulphates, with alkaline bases; and it is well known these act an important part in vegetation. The influence of lime in their production is manifested by their appearing first at the place where the mortar and brick come in contact."

We add with regret that the Index is quite unworthy the text. A work so filled with the most varied subjects demanded the most full, and perfectly arranged alphabetical references which care and skill could produce.

The Rose Annual for 1858-9. By Wm. Paul, F.H.S. Large 8vo, pp. 55, with four coloured plates. Piper & Co.

The author of *The Rose Garden*, and its *Supplement*, two good works indispensable to all lovers of the Rose, has this year produced, in the same form and manner, a very satisfactory account, first, of what has been doing in the world of Roses since 1853, and secondly what the present planting season can add to the amateur's stock of things worth *having*. In addition to this we have extracts from Mr. Paul's Rose Journal, in which will be found many points of interest.

The plates which accompany this annual are well drawn and coloured and do credit to the practised pencil of Mr. Andrews. The first of these is *Louis Chaix*, a rival of Lord Raglan and Géant des Batailles, and an uncommonly handsome one. The second represents *Madame William*, a very handsome pale yellow Tea-scented kind with very fine firm petals. Nothing attracted more notice than this at the great Rose festival in St. James's Hall. "It is a good Rose out-of-doors." The third figure is that of *Lord Palmerston*, a superb crimson "Bourbon Perpetual." The fourth represents a little perpetual Moss called the *Empress Eugenie*. It looks as if it were a mossy sport from the old De Meaux, and if as good as its picture is something to be proud of.

Piesse's Chymical, Natural, and Physical Magic (Longmans, 12mo) is a well devised attempt at showing schoolboys how some simple jugglers' tricks may be easily performed. We heartily recommend it as a capital book for Christmas holidays. The explanations and directions are as plain and simple as words can make them, but they must be *exactly* followed.

TRADE LISTS RECEIVED.—*John Grier* (Waterhead Nursery, Ambleside), *a Priced Catalogue, with brief descriptions and cultural Remarks, of a selection of Trees, &c.*—This is one of a class of Trade Catalogues which show the great improvement that a few years have produced in this kind of publication. Mr. Grier's directions and descriptions appear to be clear, correct, and to the purpose.—*Louis* v. *Houtte* (Ghent) *Prix Courant des graines.* A closely printed duodecimo pamphlet of 50 pages, containing priced lists of one of the most extensive trade collections in Europe. It is a great merit to have excluded all the trashy annuals, which are now worth nobody's growing, except in Botanic Gardens. Could Mr. v. Houtte give us any information concerning the *Erblinse*, a hybrid between the Pea and the Lentil, described by Dr. Rauch of Bamberg in the Zeitschrift des Landwirthschaft's Verein in Baiern, Nov. 1858. We should much like to see its seeds.

Garden Memoranda.

THE GARDENS OF PRINCE PETER TROUBETZKOY AT NYKOLSKY, NEAR MOSCOW.—Prince Troubetzkoy has devoted about 25 acres to the establishment of an English garden and park near his splendid residence at Nykolsky, and which we have visited several times. Its creation, though only dating from 1849, nevertheless deserves attention in various respects.

As in all designs of this kind made by professional men, the most charming and agreeable part of the landscape is near the mansion. This portion, called the English flower garden, is exclusively devoted to the cultivation of the newest and most remarkable annuals which have been introduced into our gardens. On the same plan are cultivated biennial and herbaceous perennials from all countries, and in the acclimatising of these the Prince is always making experiments, and his able directions are attended with speedy success. Only a few years ago the number of herbaceous plants known to resist the Russian winters was but few; but now the Prince has, by expensive and well directed experiments, succeeded in greatly extending the list. As examples I may mention Dielytra spectabilis, Phlox decussata, and all the herbaceous Pæonies without exception.

Up to the present time but few amateurs have thought of acclimatising in this high latitude the useful and ornamental trees. The Prince, during the last eight years, has devoted his park to such trees, and already more than 300 species of all sizes are growing and in thriving condition in ground which a few years ago contained only common Oaks, Birch, Sycamore, Acer tataricum, Populus tremula, Alder, Pine, and Spruce. Among those which have been recently introduced, and which may be considered fairly acclimatised, we may content ourselves with pointing out those which are of real use: such are the Acer platanoides, Negundo, striatum, and pennsylvanicum; Æsculus tricolor, rubicunda, and lutea; Celtis orientalis, Fraxinus excelsior, crispa, pendula, and macrophylla; Gymnocladus canadensis, Juglans cinerea and nigra, Populus Lindleyana (?) and ontariensis, Quercus rubra and Banisteri, Sorbus aucuparia, Tilia canadensis and begoniæfolia; Ulmus campestris, montana, pyramidalis, and oxoniensis; Fagus atropurpurea, variegata, crispa, and aspleniifolia; Cytisus Laburnum, Amygdalus communis, &c.

Many shrubs which have not yet been trusted in the open air grow very well at Nykolsky, and appear in no way to suffer. Nevertheless, we remarked that those which had been grafted on the wild stocks of the country were more vigorous than those which had been imported from abroad. Among these may be mentioned Berberis canadensis and purpurea, Cratægus quercifolia, Halesia tetraptera, Philadelphus nepalensis, Rhododendron hirsutum, Azalea pontica, Mahonia aquifolium, Ribes sanguineum and palmatum, Sambucus laciniata and monstrosa; Spiræa ariæfolia, prunifolia flore pleno, Reevesi, and lanceolata; Tamarix caspica, Euonymus japonicus, Marly Lilac, Weigela, Deutzia, Lonicera, &c.

This establishment, the only one of its kind in the vast empire of Russia, likewise contains a fine collection of Conifers. To give an idea of its riches it may be remarked that there are 14 sorts of Araucaria; and among the species which are on trial in the open ground it was not without surprise that we observed handsome plants of Thujopsis borealis, Abies Nordmanniana, and Thuja Warreana.

The Prince, encouraged by his success in trying the hardiness of many kinds of trees and shrubs, conceived the idea of planting in the open ground some varieties of Pear trees; but here it must be admitted the attempt completely failed; for, with the exception of the Poire sans Pepins, none could withstand the cold of winter. But, on the other hand, the collection of fruit trees obtained from France and England, and cultivated under glass, is very remarkable. They are subjected to the same mode of culture as Orange trees are with us. Several conservatories of various forms and heights are appropriated to them. I remarked with satisfaction that the true principles of pruning, as yet so little understood, had been applied to them; and already were these young trees in full bearing.

The glass houses, altogether, measured nearly 1000 feet in length; and their architecture, in accordance with that of the mansion, is elegant. They appeared to us well adapted for the numerous and rich collections which they contain. They consist—

1. Of a splendid Orchid house, containing a collection of more than 400 species, obtained from nurserymen in all parts of Europe. Among these we should more especially advert to fine specimens of Vanda suavis and tricolor, Ansellia africana, Uropedium Lindeni, Eriopsis Sceptrum, Chysis Limminghi, Saccolabium Blumei, Phalænopsis grandiflora, Sobralia dichotoma, Odontoglossum nævium, &c.

2. Two Palm-houses, containing the richest collection of these plants that we have seen in Europe. There are 250 species, some of which have not been published, and others are very rare in the trade, such as Areca lutescens, Platonia chiragua, Iriartea præmorsa, and a species from Peru, Chamærops stauracantha, Hyospathe elegans, Leopoldinia Piassaba, Calamus rudentum, Brahea dulcis et species, Attalea macrocarpa and Magdalenæ, Ceratolobus glaucescens, Latania rubra, &c.

The collection of Ferns, which occupies a whole house, consists of 220 of the rarest species. Amongst these we remarked 20 arborescent kinds, such as Hemitelia horrida, integrifolia, Karsteniana, Klotzschiana, and spectabilis, together with the gigantic Balantium antarcticum and Karstenianum, the Cyathea aurea, and a new species. The stems of the two Balantiums were at least 9 or 10 feet high; I saw them landed at Ghent 12 years ago for the fine establishment of Van Houtte, and it was not without astonishment that I rediscovered them at Moscow, in the houses to which I here refer.

In the same range are some fine Orange trees planted in tubs, which are nearly 5 feet in diameter. These trees were bought by the Prince at Palermo, in 1850. Their stems are 13 inches in diameter, and 10 feet high. They were forwarded without branches, and furnished with only some small roots near the stems; but notwithstanding this almost complete privation of roots, these Orange trees now present large heads.

The Camellia-house contains 400 varieties of all sizes. In this fine collection the most interesting novelties have been directly obtained from France and Italy; and in the same house there is also a fine selection of 100 species and varieties of Azaleas, and at least 50 of Rhododendron arboreum, with which are associated the fine species recently brought from the Himalaya.

This establishment is likewise furnished with an aquarium, rich in Nelumbiums and Nymphæas. We also believe that in this was received the first plant of Victoria regia introduced into Russia.

There are also two other houses, one for New Holland and the other for Cape plants. *Masson in Journal de l'Academie d'Horticulture de Gand.* [We are not responsible for the names here mentioned, which stand upon the authority of M. Masson.]

Miscellaneous.

Habits of the Lemur.—I had repeatedly seen lemurs of more than one species in the market at Tamatave, and numbers among the people of the place. There were two or three of the large-ruffed lemur in a house near my own dwelling, and they seemed to be quite domesticated. Though covered with thick, almost woolly hair, they appeared to be ill at ease in wet or cold weather, but to luxuriate in the warm sunshine. I often noticed two or three of them together, on a fine morning after rain, raised up on their hind legs, on the outside of the house, leaning back against the wall of the house, with their fore legs spread out, evidently enjoying the warmth of the sun which was shining upon them. They are often kept tame by the natives for a long time, and numbers are sold to the masters of vessels and others visiting the port. We had one on board the ship in which I made my first voyage from Madagascar. It was a fine animal, and during the 28 days of our passage I had frequent opportunities of observing its disposition and habits. It was tied to a boat on the deck; and in a basket under the fore part of the boat it found a partial shelter from the rain and the wind. It conveyed its food, boiled rice and fruit, to its mouth by the hand. It was gentle and sociable, seemingly grateful for any trifling notice or kindness. I frequently gave it water, which it lapped like a dog, and occasionally a banana; and in a short time it seemed to

watch my movements whenever I came on deck, jumping on my arm or shoulder, if I approached the boat; but was most delighted when, attaching a long line to the short piece tied round its body, I loosened it from the boat and allowed it to run up the cords or rigging, which it ascended with astonishing ease and speed, sitting sometimes with apparent pleasure on the extremity of the yard. It was scrupulously clean, and seemed unable to endure any tar or other dirt on its shaggy coat. One morning, during a heavy gale of wind, when there was much motion in the ship, and great confusion and noise among the sailors, the lemur seemed unusually excited, and repeatedly raised itself up on its hind legs, and clapped its hands together, and chattered loud in a most extraordinary manner, occasioning great uneasiness among our crew of Malagasy sailors, who declared it was an omen of evil to the ship, and that some fearful calamity might be expected.—*Ellis's Madagascar.*

Calendar of Operations.

(For the ensuing Week.)

PLANT DEPARTMENT.

CONSERVATORY, &c.—As severe weather may now at any time be expected, a good supply of dry litter, Fern, or other materials should be in readiness for extra coverings when required. If not already done, lose no time in getting under cover a supply of the various loams, peat, &c., required for spring potting. The principal work in plant houses will consist in keeping them and their inmates scrupulously clean. Moderate fires and ventilation with frequent washing of stove plants will be necessary. The conservatory and show house should now be gay with Camellias and forced plants, which will take the place of the Chrysanthemums now over. Keep up a regular succession of plants to bloom through the spring, by bringing forward the stock of forcing plants as wanted. Roses, both dwarf and standard, Honeysuckles, Scarlet Thorns, Hybrid Rhododendrons, and Azaleas, with a host of other things, will enable cultivators in addition to the usual occupants of the houses to make a brilliant show through spring. Hyacinths, Narcissus, Tulips, Lily of the Valley, and other plants of the above class must be duly forwarded as wanted. Hard-wooded plants will require a dry pure atmosphere to guard against mildew and damp.

FORCING DEPARTMENT.

The forcing of fruit trees in pots has become both useful and interesting, and where separate houses do not exist for each kind a valuable addition to the dessert in spring may be secured by growing a collection of Peaches, Nectarines, Apricots, Figs, Plums, Cherries, and Raspberries in pots; they are easily managed in this form, provided there are one or two houses at work to hold them during the later stages of their growth. All the above kinds (with the exception of Raspberries) should have been grown in pots two years at least, and be well furnished with fruit-buds. Raspberries are best obtained by taking up the strongest suckers early in September and potting them either singly or three together in rich soil, shading them for a few days to make fresh roots, and then placing them against a south wall to ripen. Where a stock of the above fruits is prepared for forcing the advantages of a deep pit with a bed of leaves will be apparent; the slight bottom heat thus afforded will be found beneficial in setting the roots in action. Cherries and Raspberries are the most impatient of heat and should be brought forward in a very low temperature, and unless they are required very early they will succeed better when started next month. The remainder should be started with a top heat ranging between 40° and 60°, with a gentle syringing daily, and air according to the state of the weather. Here they may remain till they are nearly in bloom, when a drier atmosphere being necessary, they may be removed to vacant shelves or stages in any house at work where a moderate heat is kept up. Peaches and Nectarines may even be placed on the back shelves of the Pine-houses after they have set their fruit, though a more moderate temperature would suit them better. In carrying out the subsequent treatment we may add that Figs, Peaches, &c., should occupy the warmest part of the house in which they are to fruit, and Apricots, Plums, and Cherries the coolest end. If required, Raspberries will succeed well in pits or in the partial shade of other plants. If circumstances permit of the whole being kept plunged in a gentle heat it will assist the swelling of the fruit, but with proper attention in supplying them with manure water they will do well without that assistance. Prepared plants of the most suitable kinds of the above fruits may be obtained at most of the principal nurseries, or maiden plants of each may now be potted in rich turfy loam for future operations, getting them into a bearing state by judicious stopping rather than by the use of the knife. Pursue former directions as regards the early Vinery and Peach house. Be careful not to use too much fire heat at first.

STRAWBERRIES.—Where ripe fruit is wanted early, a portion of the most promising plants should now be selected and placed in a pit where they can be afforded a gentle bottom-heat; or if this cannot be commanded, a Peach-house or Vinery which has just been closed for forcing will do. They must, however, be kept close to the glass, for they require all the light that can possibly be afforded them at this season, and a free admission of air on mild days, with a low temperature until the fruit is fairly set, and if these conditions can be combined with bottom-heat, success will be more certain than under any other circumstances, and this will be more easily done in a small pit than in a house, the temperature of which must be regulated to suit other things.

FLOWER GARDEN AND SHRUBBERIES.

Where any of the beds or borders require a dressing of fresh soil this should be provided, in order to have it in readiness to wheel on when favourable weather for such work may occur. Fresh soil is in most cases preferable as a dressing for flower beds to manure, which is apt to cause too luxuriant a growth for a first-rate display of flowers. On soils that are naturally poor however and where neither fresh mould nor decayed leaves can be had a moderate dressing of well rotted farm-yard manure will be useful, but this should be well mixed with the mould the full depth of the bed, and not carelessly turned in and left in lumps near the surface, for in this case a gross habit of growth would be promoted early in the season, and as the principal part of the roots would be near the surface in the manure, the plants would soon feel the effects of dry weather, whereas if the manure is well incorporated with the soil to the depth of about 18 inches, no ordinary amount of dry weather will injure the plants after they once get fairly established. Shrubberies may be thinned when this involves only the cutting out of overgrown plants or lopping deciduous trees or the hardier kinds of evergreens, but where evergreens generally require pruning, the work had better be deferred until March, except in favourable localities, for although when the winter proves mild such work may be successfully performed at any time, it is never safe to depend upon this. Avoid treading upon or working the ground when it is in a sodden state; and if the workmen cannot be profitably employed out-doors, get a good stock of Dahlia stakes, brooms, and things of that kind prepared for use when wanted.

HARDY FRUIT AND KITCHEN GARDEN.

If any transplanting of fruit trees has yet to be done this season, it should be seen to while the weather is favourable for such work; also see to getting ground intended to be planted with young trees prepared, and spare no pains or expense to have this properly done. Make sure of thorough drainage, and where the subsoil is unkind this should be removed, replacing it with some good fresh loam. When a large breadth has to be planted in one season this expensive kind of preparation cannot be always afforded, but it is better to do such work only in such quantities as will allow of every precaution being used with the view of securing success. Attend to keeping up a supply of Rhubarb, Seakale, and Asparagus by introducing quantities of the roots into heat at intervals of about a fortnight. Where there is room in the Mushroom house the two former will be found to do exceedingly well there, and a supply will be obtained with little trouble. For land that has long been cropped with vegetables a good dressing of fresh loam would in many cases be preferable to manure, and where this is wanted and can be obtained, it should be got to hand in order that advantage may be taken of frosty days for wheeling it upon the ground. Where fresh soil cannot be obtained, charred vegetable refuse, such as prunings of shrubberies, edgings of walks, and many things which turn up in course of the season may be cheaply made to form an excellent substitute.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the 6 Days ending Dec. 22, 1858, as observed at the Horticultural Gardens

Dec.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Temperature of the Air. Min.	Temperature of the Air. Mean	Temperature of the Earth 1 foot deep.	Temperature of the Earth 2 feet deep.	Wind.	Rain.
Friday 17	12	30.025	29.783	42	38	40.0	44	45	S.E.	.00
Satur. 18	13	29.618	29.457	49	34	41.5	45	45	S.	.62
Sunday 19	14	29.453	29.440	48	29	38.5	46	44½	S.W.	.09
Mon. 20	●	29.677	29.542	46	38	42.0	45	45	S.W.	.04
Tues. 21	16	29.732	29.577	52	43	47.5	46	45	S.W.	.03
Wed. 22	17	29.742	29.628	49	41	45.0	47	45	S.W.	.01
Average		29.708	29.571	47.6	37.1	42.4	45.5	44.9		0.79

Dec. 17—Overcast; hazy; fine at night.
— 18—Cloudy; clouds in strata, the upper tinged with red; heavy rain at night.
— 19—Rain; fine; rain at night.
— 20—Slight frost; fine; rain.
— 21—Rain; overcast; fine.
— 22—Heavy low clouds; showers; fine.
Mean temperature of the 6 days, 3 deg. above the average.

RECORD OF THE WEATHER AT CHISWICK
During the last 32 years, for the ensuing Week, ending Jan. 1, 1859.

Dec. and Jan.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 26	42.9	32.0	37.4	11	0.39 in.	2	4	3	4	4	9	3	3
Mon 27	42.5	29.4	35.9	13	0.40	5	4	1	—	5	7	6	4
Tues. 28	41.5	28.6	35.1	9	0.16	4	3	3	3	3	8	5	5
Wed. 29	43.0	33.9	38.4	14	0.17	2	5	1	3	4	7	6	4
Thurs. 30	44.6	32.5	38.6	10	0.30	1	5	2	2	3	9	9	1
Friday 31	43.9	32.8	38.3	8	0.44	—	6	1	1	6	10	4	4
Satur. 1	43.2	31.2	37.2	9	0.70	5	3	2	3	4	7	5	4

The highest temperature during the above period occurred on the 28th, 1855—therm. 58 deg.; and the lowest on the 28th, 1853—therm. 8 deg.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the 8 Days ending Dec. 30, 1858, as observed at the Horticultural Gardens.

Dec.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Temperature of the Air. Min.	Temperature of the Air. Mean	Temperature of the Earth 1ft. deep	Temperature of the Earth 2ft. deep	Wind.	Rain.
Thurs. 23	18	29.600	29.157	51	37	44.0	45½	45½	S.W	.04
Friday 24	19	29.516	29.475	47	31	39.0	46½	45½	S.W.	.01
Satur. 25	20	29.638	29.335	46	40	43.0	45	44	S.W.	.25
Sunday 26	21	29.376	29.220	48	37	42.5	45	45	W.	.17
Mon. 27	○	29.424	29.353	44	37	40.5	45	44½	W.	.05
Tues. 28	23	29.707	29.630	44	28	36.0	44½	44½	W.	.02
Wed. 29	24	30.047	29.825	43	24	33.5	44	44	N.W	.00
Thurs. 30	25	30.124	30.049	40	39	39.5	43	43½	W.	.01
Average		29.681	29.518	45.4	34.1	39.7	44.8	44.5		.55

Dec. 23—Densely overcast; rain; boisterous.
— 24—Clear, quite cloudless; very fine.
— 25—Fine; rain; clear at night.
— 26—Overcast; clear and fine, boisterous; rain.
— 27—Fine; clear and fine; windy.
— 28—Partially overcast; very fine; overcast
— 29—Clear and fine; very clear at night; frosty.
— 30—Foggy; drizzly; hazy; foggy at night.
Mean temperature of the 8 days, 5½ deg. above the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 33 years, for the ensuing Week, ending Jan. 8, 1859.

Jan.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 2	42.4	30.1	36.3	13	0.21 in.	3	1	5	1	3	9	4	7
Mon. 3	43.0	31.6	37.3	16	0.56	1	2	6	1	6	7	4	6
Tues. 4	42.3	31.7	37.0	15	0.86	3	3	4	6	2	10	2	3
Wed. 5	41.0	30.7	35.9	12	0.40	6	5	5	1	1	11	3	1
Thurs. 6	40.7	30.0	35.3	12	0.33	2	7	4	4	4	9	3	—
Friday 7	41.4	29.7	35.6	12	0.34	2	5	4	3	4	7	5	5
Satur. 8	40.3	31.5	35.9	10	0.26	3	4	8	4	—	12	1	1

The highest temperature during the above period occurred on the 5th, 1844, and 7th, 1845—therm. 54 deg.; and the lowest on the 2d, 1854—therm. 4 deg.

Notices to Correspondents.

ANNUALS: *Sub.* You may make a pretty border (4 feet wide, with the following, sown in lines in April where they are to grow, viz., Nemophila insignis, blue; Platystemon californicum, yellow; Sweet Alyssum, white; Collinsia atrorubens, dark red; Leptosiphon androsaceus, purplish lilac; and Limnanthes grandiflora, yellow and white.‡

BEDDING PLANTS: *Saltwood* will be obliged by some practical gardener informing him whether it is not possible to obtain good bedding plants of the Scarlet Geranium equally well propagated in March as in October or September?

BOOKS: *A B C.* Mills's treatise on the Pine Apple can only be had of the author. His address is Uxbridge Road, Ealing.‡

FRUIT TREES: *Old Sub.* The following sorts of Apples and Pears are good kinds, and may be tried as espaliers in your high locality, 750 feet above the sea. At that elevation it is impossible for us, or perhaps for any one, to say which will succeed best; we therefore give the most probable. Those that you find do not succeed can be readily grafted with those that do:—Apples: Oslin, Early Med Margaret, Wormsley Pippin, Golden Reinette, Kerry Pippin, Early Nonpareil, Blenheim Pippin, Margil, Court of Wick, Syke House Russet, Ribston Pippin, Pitmaston Russet Nonpareil, Baxter's Pearmain, Scarlet Nonpareil, Boston Russet, Cockle Pippin, Wyken Pippin, Sturmer Pippin, Dutch Codlin, Dumelow's Seedling, Northern Greening, Alfriston, Tower of Glamnis, Rymer, Waltham Abbey Seedling, Keswick Codlin, Yorkshire Greening. Pears: Williams's Bon Chrétien, Seckel, Aston Town, Beurré de Capiaumont, Forell, Eyewood, Knight's Monarch, Louise Bonne (of Jersey), Broom Park, Comtesse Lamy, Verulam. Harrison's work on Fruit Trees, good in many respects, requires to be modernised.‖

NAMES OF FRUITS: May we beg our correspondents to send their specimens, *carriage paid*, to our Office, No. 5, Upper Wellington Street, Covent Garden, London: AND TO NO OTHER PLACE WHATEVER.—*R H, Henning.* 5, Chaumontel: 6, Ne plus Meuris; 9, Waltham Abbey Seedling; 12, Margil; 13, Blenheim Pippin; 16, London Pippin. 1 or 2, Fondante du Bois; 1 or 2, Van Mons Léon le Clerc. Fruit partly decayed, the paper wet, so that the Nos. 1 and 2 could not be distinguished.—*J S.* 1, Grosse Calebasse; 2, Beurré Diel.—*J B N.* 3, Beurré Diel; 4, ~~Beurré Rance~~; 5, Easter Beurré; 6, Old Colmar; 2, Nonsuch; 4, Downton; 5, London Pippin; 6, Kirke's Lord Nelson.—*A Correspondent.* 1, London Pippin; 2, "Long Keeper" is the same as one known near London as the Orme Apple; 3, Norfolk Paradise.—*James Kitley.* 1, Probably Bishop's Thumb; 2, 3, Glou Morceau; 4, Sucré Vert; 5, Beurré Rance; 6, Easter Beurré; 8, Blenheim Pippin.—*R Anderson.* 2, Dumelow's Seedling; 3, Veiny Pippin; 4, Wyken Pippin; 5, Pearson's Plate; 6, Cluster Golden Pippin; 8, Orange Pippin; 9, Blenheim Pippin; 10, Beauty of Kent; 11, Alfriston; 12, Beauty of Kent; 15, Court of Wick; 16, Hawthornden; 17, Scarlet Nonpareil.—*B L.* Not known. The small, round, very gritty Pear is sweet but not rich. The long one resembles a St. Germain, grown in the garden.—*C Truman.* 2, Wyken Pippin; 6, Scarlet Nonpareil; 8, Golden Reinette; 9, Court-pendu Plat; 12, Royal Russet; 13, Norfolk Beaufin; 15, Burr Knot; 20, a stewing Pear; 21, Beurré Rance; the other large Pear is Easter Beurré (Nos. detached); 23, Uvedale's St. Germain; 24, quite worthless; 27, Swan's Egg.‖

NAMES OF PLANTS.—We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have or could have undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*R H.* 1, Chorozema varium; 2, C. cordatum; 3, C. nanum.—*Exon.* Eugenia apiculata, not E. Ugni.—*Elizabeth.* It is difficult to name uncommon trees not in leaf. One of yours, however, is certainly Gymnocladus Canadensis, the other probably Acer Negundo.—*Jacques.* The White Lime is a totally different species from the common Lime. It could not be made into an avenue unless it were to be obtained on its own roots, which we fear could scarcely be accomplished in this country where it is propagated by grafting on a stock that does not suit it well.—*R C.* Cacalia articulata.—*Juvenis.* Ruscus hypoglossum.

PINE APPLES: *Ashford.* It is impossible to tell the cause of the disease in your Pine Apple. Most probably wet and cold at the root.‖

PRESERVING LATE GRAPES: *Buchan.* Three conditions are at least absolutely necessary in order to insure success; 1st, the berries must be well fed, plump, and well coloured; 2d, they must be thoroughly ripened by the end of August; and 3d, they should receive abundance of ventilation, and the air of the house must be kept as dry as possible. To ensure the latter a little fire heat may be necessary during dull weather. The outside border should also be covered with wooden shutters or tarpauling to keep it from being saturated with wet. By strict attention to these matters Grapes may be induced to hang on the Vines after they are ripe, plump, and sound for a long time.‡

RED SPIDER: *W M.* You will find a good account of the habits and history of this pest in our Volume for 1841, p. 164‡

SERVANTS AND MASTERS: *A G T.* Obey those who are set in authority over you. If you don't like your place, you are free to quit it. But you are not free to act disrespectfully and to neglect your charge. Imagine yourself a master with an ill-conditioned servant, and do as you would then be done by.

*** As usual, many communications have been received too late, and others are detained till the necessary inquiries can be made. We must also beg the indulgence of those correspondents the insertion of whose contributions is still delayed.

ARTIFICIAL MANURES. &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

LONDON MANURE COMPANY, removed to 116, Fenchurch Street, E.C. (Established 1840), have the following MANURES ready for delivery:—

CORN MANURE for SPRING TOP DRESSING } all of
URATE } guaranteed
SUPERPHOSPHATE OF LIME } quality.
BLOOD MANURE

In consequence of the reduction in the price of raw material the London Manure Co. are enabled to lower the price of their Superphosphate of Lime, and to materially improve the Corn Manure and Urate.

The London Manure Co. also supply PERUVIAN GUANO (direct from Messrs. A. Gibbs and Sons), SULPHATE of AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of value. Wholesale dealers supplied.

116, Fenchurch Street, E.C. EDWARD PURSER, Secretary.

POTTER'S CELEBRATED GUANO.—Established 16 years, during which period it has been used on every variety of crop and soil with great success. See Mr. POTTER'S numerous testimonials. Price 7*l.* 10*s.* per ton. Also POTTER'S SUPERPHOSPHATE OF LIME, 6*l.* 10*s.* per ton.—28, Clapham Road Place, S.

*** A very liberal allowance to Agents. Mr. POTTER'S work on Agricultural Chemistry sent free for 6 stamps.

ESTABLISHED 1812.

H. AND T. PROCTOR'S TURNIP MANURE.—Messrs. H. & T. P. draw particular attention to this valuable Manure, which contains all the elements necessary for the full development of the Turnip Crop, so combined, that, from their chemical knowledge and long experience, they feel satisfied is most advantageous to the consumer. It has been very extensively used by most of the eminent Agriculturists of the day, and has attained a high reputation throughout England, Scotland, and Wales, and, they venture to say, is unrivalled for the weight and quality of the Bulbs which it produces. The application of this Manure to the Turnips will be found to benefit considerably the after crops of Barley, Clover, and Wheat.

POTATO, GRASS, BARLEY, CLOVER, AND WHEAT MANURES; also BONE DUST, PERUVIAN GUANO, and SUPERPHOSPHATE of LIME, warranted of the best quality.

Apply to H. & T. PROCTOR, West of England Depôt for Artificial Manures, Cathay, Bristol; or PROCTOR & RYLAND, Birmingham, and Saltney, near Chester.

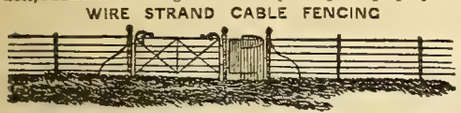
PRICES REDUCED.

H. J. MORTON AND CO., Galvanised Iron Works, 2, Basinghall Buildings, Leeds.

GALVANISED IRON ROOFING

for Farm Buildings and other Roofs; the cheapest, most durable, and neatest Roofing in use: also Spouting at 10½*d.* per yard.

WIRE STRAND CABLE FENCING



(formed of Twisted Wires like a rope or cable), the strongest, cheapest, and neatest fence in use, will resist the largest cattle, and will not bend or get out of form by trespassing upon or over. Price, with five lines of the Galvanised Strand, iron main posts, and pronged Standards, 1*s.* 2½*d.* per yard.

This fence is far cheaper than posts and rails, or any kind of iron fencing; and possesses four times the strength of solid bars. Will not rust nor corrode. Upwards of 1200 miles of this Fencing supplied.

GALVANISED GAME AND POULTRY NETTING.



Galvanised, 24 ins. wide, 2-inch mesh, 5*d.*, 6*d.*, 7½*d.*, and 10*d.* per yard.

Galvanised, 24 ins. wide, 3-inch mesh, 4*d.*, 5*d.*, and 7*d.* per yard. The Netting made any width, and with openings of any size.

GALVANISED IRON CHAIN CAMP STOOLS & CHAIRS, POULTRY FOUNTAINS & FEEDERS, PRONGED DAHLIA RODS AND ROSE STAKES, &c.

Strong CATTLE HURDLES from 2*s.* per yard.

PATENT IMPROVED GAS WORKS

of all sizes for the use of Private Houses, Mansions, Railway Stations, Mills, Collieries, Mines, Villages, &c. Works from 10 to 500 lights estimated for. The works can be entrusted to an ordinary labourer.—Apply to

HENRY J. MORTON & Co. 2, Basinghall Buildings, Leeds.

WROUGHT IRON HURDLES AND FENCING MADE BY MACHINERY.



THOMAS GREEN, Smithfield Iron Works, begs to call the attention of parties requiring machine-made Hurdles, which are a very superior article, as well as being both cheap and durable. The above cut represents a Hurdle 6 feet long by 3 feet 6 inches high: the top bar ⅜ of an inch diameter, the four low bars 1 inch by ¼ inch, the uprights 1¼ by ¼ inch. The Prongs fasten 12 inches in the ground. Price 4*s.* 6*d.* each, or 2*s.* 3*d.* per yard. If the four lower bars were made of ¾ inch diameter instead of 1 inch by ¼ inch iron, the price would be 4*s.* 2*d.* each, or 2*s.* 1*d.* per yard. The above are the lowest net cash prices at the Works.

THOMAS GREEN, Smithfield Iron Works, Leeds, Yorkshire, Manufacturer of every description of Iron and Wire Fencing, Iron Work of all kinds, both plain and ornamental, Entrance Gates, Palisading, Tomb Railing, Iron Bedsteads, &c. Illustrated Catalogues may be had free on application at the Works.

N.B. Also Patentee and Sole Manufacturer of GREEN'S Patent Lawn Mowing, Collecting, and Grass Rolling Machines, which have proved to be the best in all cases of competition.

LIQUID MANURE.



JAMES' PATENT LIQUID MANURE DISTRIBUTOR OR WATER-CART, warranted not to choke up or otherwise get out of order. It is thoroughly adapted for Drill Crops, or Pasture Land, or for Watering Streets; has been awarded SIX FIRST PRIZES. Full Particulars and Testimonials may be obtained of the Patentee, ISAAC JAMES, Tivoli Waggon Works, Cheltenham.—Improved LIQUID MANURE PUMPS supplied.

WARNER'S IMPROVED LIQUID MANURE OR GENERAL PORTABLE PUMP.



These Pumps are fitted with J. W. & Son's Patent Buckets and Suckers, and cannot clog in action. The barrel is of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure. The legs will fold together, and the whole may be carried on the shoulder to any pond or tank required.

Price of 4½ in. Pump, with legs, 3*l.* 3*s.* If with planished copper barrel and galvanised iron handle, &c., 14*s.* extra. The barrel is 27½ in. long, and the legs are 5 ft. high.

These Pumps are also made without the legs, with strong wrought-iron straps for screwing on to any ordinary water butt or cart, and fitted with 1½ inch brass union for attaching flexible suction. Price 50*s.*

1½ inch Gutta Percha Suction Pipe, 1*s.* 11*d.* per foot.

Rubber and Canvas Suction and Delivery Hose, from ½ inch to 4 inches diameter, in lengths of 60 feet to order. Branch Pipes with Cocks, Union Screws, &c., at reduced prices.

May be obtained of any Ironmonger or Plumber in town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin St., London.

WARNER'S PATENT VIBRATING STANDARD PUMPS.

PATENT CAST-IRON PUMPS, fitted with J. W. & SON'S Patent Buckets and Suckers, which cannot clog in action, for Farms, Cottages, and Wells, not exceeding 28 feet.

Diameter of Barrel.	Height.		£	*s.*	*d.*
2½ in.	short	Fitted for lead, gutta percha, or cast iron flanged pipe, as required.	1	10	0
2½ ,,	long 3 ,, 3 ,,		1	14	0
3 ,,	ditto 3 ,, 6 ,,		2	8	0
3½ ,,	ditto 3 ,, 6 ,,		2	12	0
4 ,,	ditto 3 ,, 6 ,,		3	3	0
2½ ,,	short, with 15 feet of Lead Pipe attached, ready for fixing		2	14	0
2½ in.	long ditto ditto	ditto	2	18	0

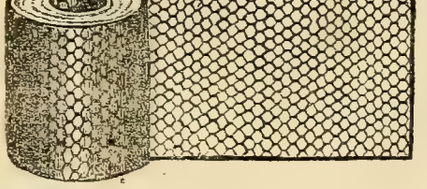


The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.

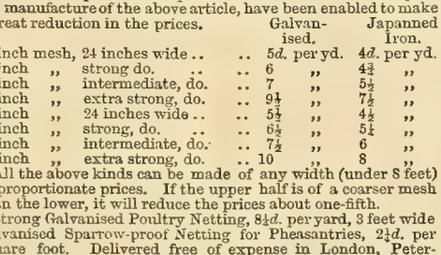
May be obtained of any Ironmonger or Plumber in Town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

PAXTON WORKS, SHEFFIELD, ESTABLISHED 1738.



SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.—Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.



BARNARD AND BISHOP, Market Place, Norwich, in consequence of improvements in their machinery for the manufacture of the above article, have been enabled to make a great reduction in the prices.

		Galvanised.	Japanned Iron.
2-inch mesh, 24 inches wide ..	..	5*d.* per yd.	4*d.* per yd.
2-inch ,, strong do. ..	..	6 ,,	4½ ,,
2-inch ,, intermediate, do.	..	7 ,,	5½ ,,
2-inch ,, extra strong, do.	..	9½ ,,	7½ ,,
1⅝-inch ,, 24 inches wide ..	..	5½ ,,	4½ ,,
1⅝-inch ,, strong, do. ..	..	6½ ,,	5½ ,,
1⅝-inch ,, intermediate, do.	..	7½ ,,	6 ,,
1⅝-inch ,, extra strong, do.	..	10 ,,	8 ,,

All the above kinds can be made of any width (under 8 feet) at proportionate prices. If the upper half is of a coarser mesh than the lower, it will reduce the prices about one-fifth.

Strong Galvanised Poultry Netting, 8½*d.* per yard, 3 feet wide Galvanised Sparrow-proof Netting for Pheasantries, 2½*d.* per square foot. Delivered free of expense in London, Peterborough, Hull, or Newcastle. Manufacturers of Improved Strained Wire Cattle and Deer Fencing, Iron Hurdles, &c.

Illustrated Catalogues and Patterns forwarded by post.

SMITH'S PATENT STEAM PLOUGHS are the only implements that can be of use to the farmers of England. His mode of applying steam-power to the cultivation of the soil is the only one with which the irregular hills and cold clays of England can be worked. He thanks the farmers of England for the liberal adoption of his system, and for the aid they have thus rendered him. Ireland has now adopted his system, and lent her aid to the road of progress.

Mr. SMITH'S Steam-tilled Farm is open to the inspection of all. The fullest information may be had either there or at his Office, 40, Mark Lane, London.

Woolston, Bletchley Station.—Jan. 1.

AGRICULTURAL MACHINERY.

E. R. AND F. TURNER, Ipswich, manufacture Prize Mills for Crushing Corn, Seed, Malt, &c.; Portable Grinding Mills, Steam Engines fixed and portable from 2 horse-power and upwards; Threshing Machines, Chaff Cutter Oilcake Breakers, Horse Gears, Saw Tables, &c., all of a superior description and adapted for Home, Colonial, and Foreign use. Illustrated Price Lists sent free on application.

HALKETT'S GUIDEWAY STEAM AGRICULTURE.—Every operation of the Farm performed by Steam. At a large reduction of cost, and a great improvement in the result upon the land. Early in February Mr. Halkett's Cultivator will again be exhibited in operation. Cards stating the days and place will be forwarded, with an Illustrated pamphlet, and a paper read before the Society of Arts, upon receipt of two postage stamps.—Office, 80, Chancery Lane, W.C.

WIRE NETTING for GAME, POULTRY, and PHEASANTRIES, &c., by improved machinery.

Illustrated Catalogues sent free.—THOMAS P. HAWKINS, Manufacturer, 27, Dale End, Birmingham.

PATENT GUTTA PERCHA SOLES.—IMPORTANT TO GARDENERS.—The Gutta Percha Company have the pleasure to acknowledge the receipt of the following letter from G. GLENNY, Esq., the celebrated Florist:—

"420, Strand, London.

"Gentlemen,—I have worn Gutta Percha Soles and Heels these two years, and being so much in a garden as I necessarily am in all weathers, and with the ground in all states, I would on no account be without them. As a matter of economy I would recommend Gardeners to use them, for they may repair the worn part at all times by warming the material at the fire, and pressing it from the thick parts to the worn parts as easily as if it were so much dough. I think it the duty of all persons who must occasionally wet their feet to adopt a material that completely defies damp. Many a gardener would escape colds and rheumatism by the use of Gutta Percha Soles.

"Your obedient servant, G. GLENNY."

Every variety of Gutta Percha articles, such as Mill Bands, Tubing, Soles, Goloshes, Sheet, Pump Buckets, Fire Buckets, Bosses, Union Joints, Flasks, Bottles, Bowls, Chamber Vessels, Toilet Trays, Sponge Bags, Curtain Rings, Galvanic Batteries, Talbotype Trays, &c., manufactured by the Gutta Percha Company, and sold by their wholesale dealers in town or country.—The Gutta Percha Company, Patentees, 18, Wharf Road, City Road, London.

LAND DRAINAGE.—Works of Drainage of any extent are executed by the GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY on all descriptions of Property, whether Freehold, Entailed, Mortgaged, Trust, Ecclesiastical, Corporate, or Collegiate.

Repayment may be made by the Landowner as successive portions of the Works are completed, or the actual expenditure, with a Commission thereon, may be charged on the property improved by way of rent charge for any term not exceeding 50 years, the instalments to repay principal and interest being thereby kept down nearly to 5 per cent. per annum.

No investigation of title being required, and the charge not being affected by incumbrances, no legal expenses are incurred.

Works of Irrigation, Enclosing, Wood Grubbing, Road Making, and Farm Buildings are executed in a similar manner.

The Company also assist Landowners in executing any of the improvements by their own agents, and charge the amount expended on the property improved.

Applications to be made to WILLIAM CLIFFORD, the Secretary, at the Offices of the Company, 52, Parliament Street, London.

TO LANDOWNERS.

THE PERMANENT WAY COMPANY having been appointed the sole Licensees for the use of Dr. BOUCHERIE'S Patent Process for Preserving Timber, beg to inform Landowners and others interested in the use of English Timber that a Pamphlet, with full explanations of this cheap and most effectual process, may be had gratis on application to the undersigned. Landowners having Beech, Elm, Fir, or other Timber fit for Railway Sleepers are requested to communicate particulars of quantity, locality, and prices.

WILLIAM HOWDEN, Secretary.

26, Great George Street, Westminster.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.

Principal—J. C. NESBIT, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

The Agricultural Gazette.

SATURDAY, JANUARY 1, 1859.

THERE is not a task the living year brings with it, to be compared in interest—or in difficulty—with that it leaves behind it when it dies. *Respice finem*, "Look to *the end!*" said the sage: tell us not of cotemporary happiness or sorrow: that this man is successful, and envied, and that one marked by misfortune. Look to the end! Wait till death has set its seal upon the closed biography: who shall pronounce judgment on a case not heard *throughout?*

And as it is with individual men, so is it with that ever progressive element in which their acts are measured, marked off, cut up into chapter and verse. 'Time is the stuff Life is made of'—the smooth blank scroll—for ever 'paying out' as the stamp of Current Events falls on it, and leaves the indelible cypher machine-marked there for all time, telegraphing to future ages the thing that is, and was, and has been! A common-place truth this; trite, and old; but amid all the novelties

and wonders that Time brings, which of us does not cast a thought of wonder sometimes at that greatest mystery and marvel of all—its own silent insidious relentless speed? It seems but the other day, and we were welcoming a new-born year! It has gone—gone like the rest, each if possible more quickly than its predecessor: and all that remains to us is to tell its tale, to sum up its account, to cast its balances like an executor, and say what it has bequeathed to those that come after.

Is Agriculture an exception to the universal rule? Does Time bring nothing new in this one branch of human history? Is it indeed true, as Mr. PUSEY said at the end of seventeen years' labour at the Royal Agricultural Society's Journal, that 'Farming is written *out*,' and has nothing left to furnish an essay! Is this true? or is it nearer the truth to say that in the whole catalogue of subjects the new-born year suggests to our prospective views and thoughts, there is scarcely one so pregnant with matter, and with coming change? Is there any one conversant with the present state of farming in this country who does not feel this, or at least suspect it? We have before drawn notice to the fact that when the inclosure of fresh land is exhausted, then begins the real struggle for improving our resources upon the acreage that *we have*. The question is not, as simply stated by the Irish Dean, 'how to grow two blades of corn where but one grew before,' but how to grow them at *less cost*. There is hardly a farmer now who does not know that the second blade may be bought too dear; that the essence of improvement in any and in every branch of industry, manufacturing or agricultural, lies not in the bare problem of increased production, but in that relatively with diminished cost. And is not *this* the pressing problem *now?*

The year whose tale has just run out has left us with the price of Wheat, once the unchallenged criterion of 'agricultural prosperity,' at about as low a figure as the most doubtful friend would wish to see. The question now is, how are we to meet it? We cannot command prices any more than seasons: the two problems are not unsimilar; indeed there are not wanting those who have declared that during 'awkward times' they have made the highest profits. How was this? Was there a mine discovered on the farm? did the 'bowels of the land' help to eke out what its surface soil failed to accomplish? What did it consist of? Gold and silver alas! are out of the question here: was it some subterranean marvel of the 'Food for Cattle' order fattening the Team by magic, and releasing to better use and profit that heavy portion of the farm that was once required to feed the power that cultivated it? A famous country that for farming! where the horse-power could thus be furnished *from below*, and rent is paid no longer for acres idly spent from year to year in foddering the Team. Have *we* any prospect of such a consummation? It was but the other day that a new coal mine was opened in Cheshire, which it was calculated would produce 500 tons a month for 500 years. If STEAM-POWER be cheaper than horse power how many acres of land may be thus in time set free for growing food for men instead of horses? The question would have sounded strange not long ago, but if it only be considered how large a portion of the produce of every farm in England is consumed by the power that cultivates it, the subject of steam-agriculture is one of no light moment in a country that imports ten million quarters of corn from abroad, half of it wheat, every year, and *doubles its number of mouths*, in forty.

It is easy for France, with its stand-still population, and unfelled forests of 'protected' firewood, to ask of England how free trade in corn has operated on its agriculture: but it is scarcely in a position to understand or to apply even the answers that have been, much less those that might be given. The mere difference in the tenure and distribution of land in the two countries, deprives the cases of all practical analogy. The application of improved machinery both of horse and steam power, presents two separate elements of diversity between the countries, which the most exact statistics would fail to meet, even had we statistics to give.

But the plainest truth in which reply could dress itself would be to acknowledge that in fact we have no reply to furnish. If we were, in the judgment of the first NAPOLEON, a 'Nation of Shopkeepers,' we shall yet perhaps surprise the *Third* when he finds that our greatest branch of business is one that never 'takes stock.' The Inclosure Commissioners tell us, once a year, how much, or rather how little land,—"small by degrees, and beautifully less"—has been enclosed; the Census, once in ten, the rate at which our numbers multiply; and the Board of Trade, once a month, how much food we import; but how much we *grow ourselves*, or ever grew, we simply do not know; but leave it to the curious in such matters to calculate the cunning problem in their heads, how much we *must* grow that every one may have a little, and be fed; leaving it to Mr. M'CULLOCH's and Mr. PORTER's tables to decide the knotty problem whether seven bushels, or a quarter of wheat per annum represent the average consumption per head, and to Mr. CAIRD to draw conclusions.

But these are important questions,—Steam-agriculture, Tenures, Land Statistics. Are they exhausted? Are they so used up that there is nothing more for worn-out country pens to write about? And supposing for an instant that they were, does nothing more remain behind? What about the Transfer of Land? Have we probed to the bottom the effect which the costly penalties of sale, or mortgage, produce upon millions of acres that cannot change hands, or borrow for their own improvement, without leaving such a toll in that of the 'conveyancer' as cripples the transaction, exactly robbing it of that profit-portion of the price for which men *do* sell and buy? If every other article which money can measure had to be so clipped under the hammer of the Auctioneer, to prove its right and title to be sold, what would become of the markets of the world? and who would be a buyer, or a seller? The turning-point, the gist of every bargain between man and man is, not the fixed gross value of the article itself, but that elastic morsel at the end of it, that little increment which industry is ever adding on, or sloth deducting, and which bears the same relation to the mere carcase-price that the finishing-off does to the half-fed beast, or to any and every other matter-in-the-rough that nature has submitted to man's agency and skill. It is this that men work for, and fight for, and bargain for, and take to market, whether it be a yard of manufactured ribbon or a hundred acres of land. But let a *third hand* step in between the seller and the buyer and chop off this portion, and that not once, but *every time it changes hands*, and good bye to all real commerce in the article! The thing is in truth so obvious that its exposition would be laughable, in the case of any other thing but *that one* which feudalism, before the days of Trade and Traffic, held actually, and consistently, intransferable, and the laws and customs it engenhave, in spite of growing Commerce, kept their iron gripe upon, yielding to no expansion from within—like the women's shoes in China,—till the minds of Englishmen were 'to the manner born,' and fairly disbelieved at first the power of the 'Encumbered Estates Act' which broke the fetters off before their eyes, and showed that LAW could set land free in spite of lawyers—at least *in Ireland*.

In spite of lawyers? As well might the occupant of some cobweb-smitten chambers sit down despondent and blame the spiders. Spiders must live, like other folk, and draw their nets as opportunity offers, and there is space to draw them: but they have the wit to know that little flies are plentier far than large ones. Blue-bottles are a noble meal; when they come; but the breed is comparatively scarce; and the small mesh catches faster than the large one, and is less open to remark, and obnoxious to the broom. In truth, the best of our Lawyers, of every rank and grade, desire to see this pressing evil remedied. Intelligence is justified of her children! But who can do for the owners of land what they won't do for themselves? The very thing in which their capital consists is put out of market by being confined to the rarest class of buyers. And it is precisely because the class of buyers, and sellers, is thus reduced, that Parliament is not besieged by numberless petitions to get this measure passed, and land made really and practicably saleable.

We talk of improvements in Agriculture; but all improvement is mainly advanced by the *numbers* who improve: give but facility of sale and purchase, abolish the mediæval folly of hampering the purchaser with the cost of *proving the seller's right to sell*, at an expense he does not know and cannot calculate beforehand; set the land free to the ordinary and healthy action of the self-interest of the greatest number, and more will be done for agricultural improvement than can be judged of by anything we have yet seen, think as we may of the progress of the last ten years. Owners of land are not practically aware how every inconvenience and expense thrown upon a purchaser really recoils upon themselves. The holders of Consols would feel themselves half-ruined were such a fall to take place in the 3 per Cents. as would immediately follow any measure rendering Bank Stock as intransferable as land. Those who had never entertained a thought of 'selling out' would be as much alarmed as the professed Stockjobber. It would be felt as a *common interest;* and nothing but the habit of the thing prevents the acre-owners from seeing the existing detriment to their capital in the same light. If they will not stir in the matter, the law-lords may talk, and bring in Bills, and Commissions may sit from Session to Session, but no one can help those who have the power to help but will not help themselves.

There has been, and there still is, in this country, too much narrowness of view in the sources to which men look for improvement in agriculture; and it shows itself not less in the causes to which they refer it. Prizes for this, and a gold or silver medal for that, and a 'meeting of influential gentlemen to promote' the other, are very pretty playthings and amusements in their way; and let us not undervalue their motives, or their results. But there is something that nauseates upon the free and healthy palate, in this factitious and everlasting system of stimulants and tonics. It is below the dignity, out of keeping with the real proportions, of the subject. If you want your cattle to go into a better pasture, the first thing to be done is to *set the gate open*. Has the change wrought in Ireland during the last ten years been bought by prizes for the best show of Turnips and the highest bred Short-horn, or a medal for the least clumsy conjugation of a plough with a Steam Engine? These are indeed the incidents and efflorescence that fitly accompany the revival of a Nation from a death-like paralysis of the soil; but the great re-agent that has occasioned the most rapid and wonderful change that that or any other country has ever exemplified, lies far deeper than these. We have not to seek it: we know it. The 'experiment,' with its whole result, far outstripping expectation, lies under our eyes. We acknowledge, and applaud the *result*. And then, like a magician startled at the product of his own spell, or an empiric who has stumbled upon a 'perfect cure,' we stand secretly amazed at the success we take the credit of. Never is the obtuseness of incapacity more striking than when a clear and obvious success fails to convince the operator's own intelligence, and guide him out of the path of former quackery. The mainspring of 'Improvement' lies deep and out of sight: the tricks by which we strive to set it working resemble often those of the child who vainly pushes on 'the hands' that appear upon the face, and mark the hour: one skilful touch in the right place sets the whole machine in genuine and spontaneous action; every wheel performs its proper round, and henceforward the hands take care of themselves, and need no pushing. When will Agriculture have learnt this manly lesson? Let us not be unthankful for the leading-strings and 'prizes' that have coaxed and helped it on in infancy and youth, but may we not look forward to the day when it will have outgrown the system of extrinsic aids and persuasions, and obtains its freest action and development in an emancipated soil, and its most powerful and independent motive in the mainspring that lies within?

HALKETT'S GUIDEWAY AGRICULTURE.

"WHAT sized pipe do you use in your drains?" was a question often asked a few years ago. At present, the inquiry would rather be, "Which is the best kind of rail for a 'guideway?'" But before the latter becomes common-place we shall have everybody seeking or giving an opinion as to "the best drum for a wire-rope," or it may be "the best shape of cutter for a rotary digger." There might be a long discussion on the many points propounded by Mr. Halkett; but I think this is hardly the time for raising it, excepting by way of occasional gleams in the pages of this journal projecting dimly the long shadows of "events" that are distantly yet clearly "coming." We are too busy just now to engage in studying which may be the best plan of laying out cash equal to 10 years' rent, to prepare land for steam cultivation.

Market gardeners may, perhaps, find it practicable to lay down a rail at every 10 or 15 yards along the land; it may be found that the creosoted wood rail at 10*l.* per acre will last long enough to pay; or that the brick and iron rail, at 20*l.* per acre, will not turn up and laugh at you after a hard frost; or that the fixing of the rails and levelling the ground between them can be done efficiently and permanently for the sum estimated. The fact remains that tenant farmers are not in a position to look at the scheme at all; and while some landlords are too embarrassed already or careless, with a mere life interest, to invest so enormously on their property, the

area of ground open to unrestricted and daring commercial speculation is small indeed compared with that which is occupied by business men holding under large proprietors. Parallel rails above ground may be as commonly considered, hereafter, as parallel drains below; and while adding to the fee-simple of the land may be thought as necessary for farming as buildings or main ditches. But we have now other and lower-priced alternatives for applying steam power to cultivation; let us strive to perfect these, and extend their adoption as far as they will promise profit to those who can employ them. Enterprising farmers will spend a pound an acre in the purchase of a steam cultivator that is to save their expenses and increase their produce; but I have no expectation whatever that landowners will be found to spend ten or twenty times that amount per acre, let the spec. glitter never so brightly—seeing, as we do, such a pitiful extent of drainage yet executed, compared with the vast breadth of ground requiring it, and the scantiness of good buildings, roads, and main channels or rivers, compared with those demanded by the necessities of an improved husbandry.

At the same time, we are much obliged to Mr. Halkett for his zeal and industry in setting before us a novel species of tillage; and it may perhaps turn out that we are indebted to him for other and more available proposals than those of permanent guideways.

Looking at Mr. Halkett's system, I observe the advantages to reside in three things: the steam-engine and machinery have a good road to travel on, formed upon narrow strips of ground given up for the purpose and not cultivated; the field is equally accessible to the machine in all parts, no matter what state of tillage or crop the land may be in; and the land is worked, crops cleaned and nurtured, and manure and produce carried, without the machine or implement bearing with any pressure upon the soil. Now, can the same advantages be secured without the costly aid of the guideway rails?—the operations less cheaply performed it may be, but still at a great economy compared with horse-labour. Suppose a trussed platform, as at present, 10 or 15 yards long, with an 8-horse engine at each end, mounted upon say eight travelling-wheels (four at each end) fitted with Boydell's endless rails. This to traverse up and down the field in the same track, till all the tillage of that compartment is done, and then be shunted sideways at the end either by the arrangement already employed, or by some simpler means. If the wheels took up a width of half a yard at each end, there would be one-twentieth or one-thirtieth part of the entire surface left as hard uncultivated strips for the machine to travel on; the platform with its implements, &c., could be conveyed over the land at any time, without touching the tilled part extending between the hard strips or ways, and all the processes accomplished by Mr. Halkett could be effected with sufficient accuracy—provided you can steer straight without the guideways. Well, the whole apparatus is much like a parallel ruler on an enlarged scale: driving the wheels at both ends the same pace, the machine will be propelled in a generally straight direction; and to give all the steerage nicety you want, nothing seems requisite but that either you must be able to drive at pleasure one set of wheels rather slower than the other by means of a friction-box arrangement, or all the wheels should be capable of turning a little inwards or outwards, as they might do if each were hung in a transom or as on a castor.

I spoke of "shunting" without having the costly tramway and shifting truck on headlands levelled for the purpose lower than the general surface of the field; and, if the Boydell wheels will answer for traversing up and down the field, why may they not be turned at right angles for passing along the headland till the platform comes opposite the next course to be cultivated? All that would be necessary, each wheel being in a transom or on a castor, is to remove the parallel connecting-rods which brace all the wheels together—the means by which the engine drives all the wheels and gets the greatest possible amount of hold or grip on the ground.

If the system be so beneficial in promise as we hear it represented, such a modification is well worth consideration; and I am of opinion, that while on tolerably level land (on such only would the scheme be attempted) the endless rails would be amply sufficient to prevent any "skid" of the wheel in hauling powerful implements, the extra power required, as compared with that on fixed guideways, would be trifling in comparison with the expense saved in rails. And certainly an item of 1500*l.* outlay is much more likely to tempt a 500-acre farmer to a trial than such an enormous sum as 6000*l.* to 12,000*l.*

Ploughing at 3*s.* per acre, subsoiling or scarifying at unprecedently low rates, are great inducements; then fancy drilling or hoeing 30 or 50 feet width at once, stirring or earthing up between rows of growing plants, watering, manuring, reaping, carrying the crop, and all the innumerable operations that are not only partially done now by labourers or by horses, but would be found admirable and amazingly productive if steam power could be engaged in them all. Our wire rope methods of hauling implements can only perform a few of the heavier operations of tillage; our locomotive traction engines or locomotive rotary digging machines are comparatively useless after the ground has been broken up the first time; but with the machine proposed steam cultivation can be followed up to the very harvest day if required; and it appears as if horses might be completely banished from the farm, and coal and manures fetched and produce delivered at market by the teams of the "common carrier."

As to the untilled strips of ground being able to bear the pressure, what is the whole weight to be supported—would it be 12 or 16 tons? If so, then each of the large Boydell wheels would bear only 1½ to 2 tons; and this is nothing compared with the 456 tons which such wheels have already carried well over arable land. In conclusion, will Mr. Halkett, or some engineering gentleman, reduce this idea to reality? *I. A. C.*

Home Correspondence.

What should be done with the Sewage?—I think it should not be taken, as proposed, parallel with the Thames, to as near its mouth or junction with the sea as possible, in large sewers open or otherwise; but it should be taken at once across the country in iron pipes to some headland, promontory, or place projecting into the sea, where the current runs strong and away from the shore, and that it should be forced along those pipes in the same way as the water is supplied to us from the waterworks. The capacity of the water-pipes supplying London with water, added together, would give some rough idea of the capacity that would be required to take it away after it had been used, allowing for the additions it would receive. The storm or rain water (except that used in domestic purposes) may discharge itself into the Thames as at present, only taking the mouth of the sewers into low water, except the first portion of the storm or rain, which would have in suspension a great amount of animal and other matter from the land that would be good for manure, and might be allowed to go into the house sewage, the remainder into the river. I would send it by different routes across country, which would have many advantages; the principal one I consider, it would be at hand over a great portion of the country when its use and how to use it as a manure are known and appreciated as it ought to be, and will be, I have no doubt. Again, by dividing it we shall not have so great a bulk in any one place, consequently not so formidable in any respect, and easier managed. I think it should travel along the principal railways, either close to the base of the embankments or cuttings, or some few yards away, diverging only to escape formidable constructions or other things that would be too costly to remove; the advantages would be that the materials and workmen for construction could be conveyed to the spot where wanted at the least cost, and the route is in some instances the shortest to the sea, and crosses a great number of turnpike and other roads (from which it may branch if required), to fields and farms, where it may be tried as manure at the smallest possible outlay, because so near at hand, only a few feet of piping being required to manure many hundred acres, which if not successful, would not be much loss; but if successful would be a gold mine to the country in the extra quantities of hay, corn, beef, mutton, pork, &c., it would give. The relative level of the railways should be followed for laying down the pipes, to facilitate the forcing operation. If this plan was followed, the sewage would soon be all used as manure, and none of it go into the sea but at intervals; and as practice makes perfect, very soon none at all. Should this plan be thought advisable, but the expense too great to carry it so great distance at once, it might be carried only part of the way and drop into some creek, canal, or river in the country for the present, which would take it to the sea, and thus form an open sewer, except near habitations, where it should be covered. The sewage might be used on the lands at all seasons I believe, and thousands of acres now looking miserable for want of manure might be made "to smile and blossom as the Rose." The following plan I would follow to spread the sewage: it should be taken to one spot on the farm that would command the rest, *i.e.*, the highest, in iron pipes connected with the main, from whence it should run underground to a spot in every field that would command the rest, in earthenware pipes (6 inches); those strong red pipes that are made by pressure would do well; from thence it should run over the ground in zinc or other pipes (3 in.) in lengths of 6 or 7 feet, fitting to each other as the rose to a watering pot—zinc, because it would be light to move when empty of sewage. I would have some leather, gutta percha, or other piping to use as occasion may require, such as passing over a stank or hollow; the zinc pipes would leak too much at the joints at such places. Being thus prepared, I would connect the zinc or other pipes together, and begin manuring the furthest off or lowest spot; let it flow out by gravitation or gentle pressure, would have a short length or two, or a short length of flexible tubing, to spread it right and left. One man and boy, what could they do! No treading of horses or grinding wheels spoiling the land,—but see that man guiding and spreading the liquid as it flows out of the last pipe, on the parched meadows which have been cleared of hay, and as he perceives it has had enough ahead right and left, he takes off a joint, fastens a line to it, the boy draws it to himself and takes it to the place next wanted, and so on to the last joint; then stops the flow till he has connected with the next line of operations which the boy has been preparing, and so on acres and acres are manured at a trifling expense compared with the old method, no teams stopped from other work, and the Grass begins to grow the instant the manure is applied, and what is that worth sometimes I will not venture to say. The Grass land having had enough, the fallows having been cleared but want manure, a good dose of the liquid stuff before the last ploughing, and what crops of corn! The harvest in this field of stubble is very clean, and would grow a good crop again if it had a little manure, but I have not time to do it, the horses are busy. Well, set the pipes and man to work, and you may plough and sow as though you had double teams the while. This field (stubble) I want to sow with Italian Rye-grass, but it is too dry, try sewage again and sow as soon as dry enough. What a crop! It is "cut and come again." Well, there is this stubble; I should like to get it into good heart and grow a first-rate crop of Wurzel, but it is so far off from the muck hill; well, set the liquid going. Ah! make a pond of it, and let it have a good swill. Done; the water filtered away down the drains, causing the manure to follow it to a great depth, which I think will suit the Wurzel very well. The result a good crop, no doubt—the same application for Swedes. Then there are Cabbage, Parsnips, Rape, Flax. Plenty of cake and oil, because I have plenty of liquid manure, consequently plenty of beef, mutton, pork, &c.; also Wheat, &c., and other advantages which I can see well present themselves to every thoughtful cultivator of the soil. I see nothing in this sewage question but what may successfully and advantageously be carried out with success. *A Reader.*

Farmers' Clubs.

EAST BERWICKSHIRE: *The Reaping Machine.*—At the late meeting of this society, letters were written from many members describing their experience with the reaping machine, some of which in a condensed form we here present to our readers. Mr. Hunter, Thurston, reported as follows:—"I have had four of Bell's in constant work at harvest time. The operation was decidedly satisfactory, so much so that I will never let a shearer enter a field if it is possible to use a reaping machine. The use of the machines was more economical than other modes of reaping.

"The only field I have a complete statement of is a field of Oats, 30 acres of which were cut by Bell's machines in 30 hours, the expense of which was, including one pair of horses and two men at 12*s.* per day, or 1*s.* 6*d.* per hour of eight hours per day £2 5 0

83 men and women gathering, tying, and stooking half day each, at 2*s.* 6*d.* per day, or 41½ for a whole day 5 3 9

Total, £7 8 9

For 30 acres equal to, per acre 0 4 11½

I may here state that the same men and horses work Bell's machines with me eight hours a-day, viz., from 8 A.M. to 12 noon, and then from 2 P.M. to 6 P.M., weather permitting. Some people say: Why not keep the machines going all day by changing men and horses? My answer is that every man and horse works best with the tools he is used to, and I find that I get more work out of the machine in eight hours, keeping the same men and horses at their own machines, than I used to do when I kept the machines going for 12 hours and changing the men and horses. The way I generally do is to have the head rigs cut by shearers and stooked close up to the fence; that enables me to take the four machines into the field and put each into its own division of 8 or 12 rigs, or whatever number I think advisable, and they each go on with their own portion of the field without interfering with one another; whereas with the side-working machine, if any person has four of them as I have of Bell's there is no help for them, they must follow one another round and round the field till they come to nothing in the centre; and if one meets with any breakage or stoppage they must all stop, and I believe that most of the side-delivery machines require a lot of people in the field in attendance upon them, and if one breaks or stops the whole party are thrown idle. I can only say that if any one made me an offer of either a Hussey or M'Cormick for nothing I should decline the gift, as they would be of no earthly use to me to work with the ones I have.

"The amounts that I cut with the machine this year were—Oats, 148 acres in 172 hours; Barley, 117 acres in 145 hours; and Wheat, 46 acres in 41 hours; altogether 311 acres in 358 hours. Some of the fields I could only cut one way, and other fields, generally, from the situation of my farm, have to be cut up the hill, which, of course, is much more severe upon the horses. One field of Wheat of 27 acres I cut down in 19 hours' work, as nearly as possible 1½ acre per hour to each machine. The difference in the stubbles generally between the machines and the shearers is decidedly in favour of the machines, and the additional quantity of straw to the stackyard for fodder for cattle is beyond calculation, to say nothing of your not having a particle of corn shaken out by the machines, and the whole of it going through the mill and into the market, instead of sometimes as much as two "seeds" being knocked out by the shearers under the present slashing system."

Mr. J. M'Gall, Hallydown, reported as follows:—"The reaping machine I used last harvest was M'Cormick's with Burgess and Key's improvements. The operation was on the whole satisfactory. I was anxious to do the maximum amount of work—1½ acre per hour, and for that end I cut round each field, very seldom going empty or without cutting, so that where the grain was laid or partially so, I was cutting half or at least quarter of the field the opposite way it should have been cut, consequently the stubble was not so low as I would have liked to have seen it; the other half or three-quarters of the field being cut beautifully low, as it lay to the machine. What was even, cut high, and was quite clean laid from the cut portion into the swathe. I usually get four reapers and one binder to cut and tie 2 acres per day, and I find that with or after the machine two takers-up and one binder manage 2 acres, thus saving one woman or man per acre. The wages with me averaged 20*s.* per week, exclusive of food, which was equal to 3*s.* 4*d.* to 3*s.* 8*d.*—or 4*s.* per

acre. If the takers-up were to work as fast as they do when they are reaping with the hook, the difference would be still more. I may add that I have been much worse pleased with the taking up than with the cutting.

"I like Bell's Crosskill best in so far as at the beginning of a field there is not any one needed to open up its way; but very much object to the attachment of the horses, and the seeming labour to both men and horses in its working, and however heavy the work may be, the position of the horses is such, that you cannot yoke another to help them. Dray's Hussey is compacter and more manageable than the other reapers, and suits well in a wet harvest, by compelling the farmer to take up and stook as fast as the grain is cut, as the way has to be cleared for the next round of the machine; but it is objectionable in not being self delivering, and the delivery being behind and not at the side, necessitates a distribution of hands over a considerable area, which militates against the dispatch desirable at such a busy season. Burgess and Key's M'Cormick's we think the best. It is not, like Crosskill's Bell's, a self-opener up of a field, but its spiral delivery is much superior, and the attachment of the horses decidedly better, as a third and fourth horse can be attached if necessary. We would generally recommend that three horses be yoked to the machine, as we found we got better on; they were able to go five or six miles without being oppressed. A driver's seat being provided on this machine makes it a greater favourite with the servants than the other reapers, where there is a good deal of bodily labour required. By being self-side delivering, (same as Bell's in this respect, and superior to Dray's Hussey's behind delivery) in fine weather a field of grain can be cut down a day or two before the takers-up and binders enter; by this exposure the corn will be ready for the stack in one-half the time necessary if it was tied up immediately after it was cut down."

Mr. Dove, Eccles Newton, used Bell's machine, made by Crosskill, in 1857. Its operation was perfectly satisfactory. What was cut with the machine this year cost 5*s.* 9*d.* per acre, while cutting similar crops with the sickle cost 8*s.* 9*d.*

Mr. Hardie, Ross, used M'Cormick's with Burgess & Key's improved platform; its cost, with two sets of knives, was 43*l.* 2*s.* 8*d.* When the machine was in good going order, the crop suitable, and the field well finished with harrowing and rolling without deep furrows or stones, the operation was good, clean cut, and beautifully laid, without a head in the bottom of the swathe. The saving by the machine was considered to be 2*s.* 6*d.*, per acre.

Mr. Gibson, of Foulden West Mains, used one of Burgess & Key's machines. Its operation was on the whole satisfactory and economical; 150 acres were cut with it, trying it on both Wheat, Barley, and Oats.

"Of course the land to be reaped by the machine must be carefully stoned, all stones being lifted off the land which have any chance of coming in contact with the knives of the machines. The land should also be rolled. The machine should not be used when the corn is damp. The gearing of the machine should be often examined and kept regularly oiled. To get the full benefit of the machine it is best to drive it in what is called 'double tides,' that is, start at 4 with the first set going till 8, then with second set going till 12, then with first set going till 4, and then with second set going till 8. This may be done when weather permits. It is best that each set should have three horses and two men, one to drive, the other to walk behind the kepping board to keep all right, and to oil when needed."

Mr. Johnson, Templehall, used Messrs. Dray & Co.'s reaping-machine. The cutting was satisfactory. The reaping-machine is by far the best way to cut corn, being a great saving, it is so well done. "I do not wish to push my horses, therefore I only keep four people lifting the corn, and four binding, one man taking off the corn and a boy managing the horses—10 people in all, and these last two harvests we have cut on an average 8 acres a day."

Mr. Logan, Legerwood, used one of Burgess & Key's reapers last harvest. Its operation was satisfactory, saving in expense fully 4*s.* per acre.

Mr. Jas. Anderson, Greystonelees, used Messrs. Burgess & Key's. "It is fully adapted to cut any white crop, and that with great facility and neatness. It cuts exceedingly low and uniform, not leaving a stalk of corn upon the part operated on; all is taken up, and if the belts are kept properly tightened, the reel exactly adjusted so as to answer a strong or short crop, there is no doubt whatever but the screws (with few exceptions) have the full power of throwing the cut corn in a direct line, and in such regular order, that not a head is laid in a wrong position. Comparing the expense this season with that of the previous year, without giving details, I have nearly saved the half of the purchase money."

Mr. Shaw, of Whiterigg, used Burgess and Key's M'Cormick's. Very satisfactory. More economical than by either hook or scythe, by 40 per cent. on the former, and 35 per cent. on the latter.

"I have this harvest cut 210 acres of Wheat, Barley, Oats, and Beans, with the reaping machine at about an average rate of half an acre per hour, but on several occasions, when circumstances were favourable, at the rate of one and a half, and one and three quarters per hour. I have generally used only two horses, but have sometimes added a third one, which caused greater steadiness in working."

Mr. Hope, Fenton Barns, had two reaping machines, both Bell's made by Crosskill, Beverley, at work last harvest. Their operation was highly satisfactory and economical.

"I consider Bell's machine the best, if the cutting can be done up and down the ridges, or if the land is prepared for it by the complete obliteration of all furrows, but both Lord Kinnaird's machine and Burgess and Key's M'Cormick have a decided advantage in crossing furrows."

Mr. Calder, Kelloe Mains, Edrom, used M'Cormick's reaper as improved by Messrs. Burgess and Key. Its working generally was most satisfactory. It effected a saving of from 40 to 50 per cent. as compared with the sickle, not charging for the horses' labour which were in better condition than had they been idle, as otherwise they would have been.

"I cut about 170 acres of Wheat, Barley, and Oats: two of the farm servants attended the machine the whole harvest and were never changed, as it took a little time to understand it properly, and being alone responsible, they were more attentive to keeping it in order. While one drove, the other with the scythe rounded the corners, or cleared any laid pieces, and was at hand to assist at any stoppage. Weather permitting they worked it during daylight. Most of the Wheat cut was standing, part a very heavy crop, and a portion as light. Most of this, after opening a road with the scythe, was cut right round and round; the last day a 20-acre field was cut in 12 hours, but for the whole harvest it did not average much above an acre per hour, the Barley and Oats being so much laid, that it had to go empty round one side. I may conclude by adding that it made me independent of Irishmen, and I only employed 11 extra hands last harvest, instead of about four times that number, no small comfort when wages were so high."

Mr. J. Wilson, Edington Mains, used two of Bell's machines made by Crosskill for several years, and one of Burgess & Key's machines during last harvest. Bell's machines worked well when the crop was tall and standing tolerably erect; but they did not reap short crops satisfactorily. Burgess & Key's machines did exceedingly well. "I am not prepared to present any exact tabular statement of the cost of reaping by the several modes which I used this season; but I know that the use of these machines enabled me to cut down my crop in shorter time and with considerably fewer people than would have been required to reap it by hand labour. My harvest bill for crop 1858 was less than that for the previous year on the item of wages by 47*l.* If the high rate of wages this year is set against the longer time that the work was on hand last year, the above sum may fairly enough be put to the credit of the reaping machines. The saving of time is even more important than the saving of wages, and the quality of the work performed by these machines is certainly much superior to the average of hand reaping. I can corroborate what has been already suggested by others, viz., that Burgess & Key's machine should always be worked with three horses. While I still think favourably of Bell's machine, which I believe can reap tall Wheat on level land better than any of its rivals, yet for general usefulness I certainly give the preference to Burgess & Key's. In my experience the latter is lighter in draught than Bell's, is easier to manage, less affected by a damp state of the crop, and less liable to derangement."

Mr. Wilson, Edington Mains, said there was one thing that seemed to be overlooked in all the reports, viz., that there was no allusion to the establishment of a depôt in the county, where the more wearable parts of the machines might be obtained. It was felt to be a serious inconvenience, and entailed a deal of expense, that farmers had to send all the way to the makers for any article they required for the machine—these makers, too, for the most part being resident in the southern counties of England, and not at all accessible. It would, therefore, he thought, be a very great convenience if some local agent were appointed who could supply these articles when wanted. He also thought that these makers would be only consulting their own interest by being somewhat more candid and communicative with their customers. It so happened that a machine said, for instance, to cost 40*l.*, ultimately cost the purchaser 43*l.* or 44*l.*—the additional expense being incurred in fitting with knives, brasses, &c. This came to be a serious item, and he thought the makers ought always to be a little more explicit and straightforward on the subject—stating at once the amount required from the purchaser.

Notices of Books.

Progress in Agriculture; with a Description of the "Multum in Parvo" and other Implements. By Sigma. Ridgway: Piccadilly.

This little book, although professedly an advertisement of the useful and ingenious machines invented by our clever correspondent, "Sigma," and manufactured by Mr. Powell of Hurstgreen, Sussex, does really contain many useful readable and attractive pages on the more general subject of agricultural progress and improvement, which will obtain for it a circulation independently of that which it will receive among intending purchasers of "Sigma's" tools.

Take the following passage, for instance, on the tillage operations of the farm:—

"Generally speaking, it is not necessary to make known the system of cultivation I pursued to cleanse and fallow foul land; but there are many still in darkness, and during my travels last autumn through many hundred miles of the midland counties I was much surprised to find how little the plan of hoeing, stirring, and pulverising was practised between the rows of drilled crops. For miles and miles the Beans were growing in a perfect wilderness of weeds; I hardly saw, during my whole journey, what I considered a clean fallow crop. They told me the Uley cultivator wiped out all stains; but no one can make me believe that such crops of weeds as I then saw do not exhaust the land of half its wealth; besides, what benefit can the after crop receive from fallowing? Weeds I believe were created on purpose to oblige man to hoe and stir his crop; and it is this hoeing, stirring, and pounding Mother Earth, which causes her to yield up her stores. Pulverise the soil, you let in air and moisture, and it is this air in union with moisture which corrodes and renders soluble the earthy ingredients for building up the structure of the future plants; ammonia is absorbed besides, which exerts in various ways so powerful an influence on the soil. Now, let me ask, what is the effect of turning over and baking large clods of earth? It dries, it exhausts, it dissipates every particle of organic food capable of being absorbed by plants. It is altogether a mistake that by baking earth mineral ingredients are rendered soluble: no chemical effect can be produced without the aid of moisture. Hard dry clods certainly become pulverised by rain; with this I find no fault. The benefit to be derived by turning over large dry clods is very questionable, and, in many instances, I believe, does actual injury. Soil is not composed of minerals alone; vegetable matters, stored up through ages, are with them combined. Exposing these to air and sun by continual summer ploughings causes all that is volatile to fly away, to be again brought down by rain, but on another's land. Things so costly, and that have been collected with so much care, should be locked up. Do we expose and throw about our dung-heaps? They would in time become a worthless mass; and what is soil but a mixture of earth and vegetable matter in a less concentrated form? And why we should expose every particle of soil to the exhausting rays of Father Sol, to be robbed of everything combustible (or capable of decay), I can't conceive. To reduce soil to the finest tilth, and thus cause it to retain its moisture, also to let in air, would hasten the decay of vegetable, and the corrosion of mineral ingredients; the stores that have accumulated would thus be reduced to food proper for plants. This seems to me the thing that is required; and it is a system I adopt, and have always found to answer. In winter, when evaporation is at its lowest ebb and the sun almost powerless, then to plough and stir and pulverise by frost does good, and much advances the decomposition of the soil; but in summer, to turn over and expose its treasures to be dried up and to the four winds cast, is not my plan. At that time I would on every acre have a growing crop, which by means of its leaves should rob the air each moment. The wealth that is absorbed by plants from air alone is far beyond the comprehension of the world at large. So much for Summer Fallows!"

There is much more of good writing like this: and the pamphlet may itself be described as being "Multum in Parvo," although that is the name more properly belonging to one of the tools which it describes.

Miscellaneous.

The Labourer.—Labour is the very best of capital when employed, but we will not employ it with money payments, nor allow it to employ itself without money payments by means of allotments. We grasp and grudge the industrious labourer's patch of ground, but inconsistently enough pay cheerfully heavy gaol, police, or pauper rates, to restrain or punish the crimes consequent on his non-employment, poverty, and demoralisation. I mention these matters as strong evidence of the necessity of applying the surplus capital of towns to the improvement of agriculture. A man with his cow, pig, and an acre of ground, has a stake in the soil. If non-employment and poverty fill your gaols, it is a logical deduction that employment and comfort can alone empty them. Self-interest should alone induce us to take up the question, but the higher moral sense of justice to the general welfare commands us so to do. Honour is due to those counties, Lincolnshire for one, where their cottagers can keep a pig or a cow without being suspected of robbing their masters. Those masters will be found to be, as a natural consequence, men of talent, capital, and education; and their workmen many degrees in advance of those without either cow, pig, or land (the comparative criminal records of these districts would be instructive), ragged, and half starving, on 7*s.* or 8*s.* per week. The condition of the cottager is too frequently a true index to the character and position of his employer. *Mechi's How to Farm Profitably.*

Calendar of Operations.

DECEMBER.

DORSETSHIRE: *Dec.* 20.—We had a fine dry time for Wheat sowing, which was begun and finished last month, and the earliest sowings are now showing pretty strong in the rows. The plough and the drill were employed on Turnip land fed off with sheep (given an allowance of hay), and on Clover leas. Our Wheat is put in here rather later than in many other parts, Dorsetshire being, as you must be aware, a bleak backward county, and this part of it particularly so. To use the words of the Rev. Mr. Rham, author of the "Dictionary of the Farm" (which I may perhaps be permitted to quote): "The climate though mild and healthy is not so warm as its geographical situation would lead us to expect, a circumstance owing to the nature of the soil and the bareness of the chalk hills; there being little or nothing to break the force of the winds that sweep over them. The air is keen and bracing rather than soft and warm. At present the harvest is not in general earlier than in the midland counties, and although the snow seldom lies long on the ground the land is not fit for sowing in spring sooner than in many parts of England where the winters are more severe. A considerable portion of the soil in the south-east part of this county is similar to that of Bagshot Heath, and not more fertile, being a loose sand and gravel with a portion of ferruginous loam. The whole surface of the county consists chiefly of this loose sand and gravel, clay and chalk." Sand and gravel on chalk are the chief features of the part of the county from which I am writing; it is land, therefore, very easy to work, soon drying up after rain, and very suitable for root crops, which are good this year, especially Swedes. There are still large tracts of heath-land left uncultivated, parts of which however are from time to time broken up; but it would not pay to enclose the whole, nor would it be desirable, as the poor are allowed to have the run of the heath, to supply themselves with fuel. This is a great boon to them, as though their wages may be rather low (though not so low as in some other parts of the county quoted) every cottager has his stack of turf and Furze before his door to supply him for the winter. This is generally carried for them by their employers, when it is usual to make it a kind of festive occasion. Many of the farmers too sell their Wheat to their men at much less than the cost price. Our farms round here are mostly small, and our fields smaller than they need be, but I think it may be said, on the whole, we keep pace with the improved spirit of the times. Our lands are well drained, artificial manures have been introduced, hedges kept neat, stock improved, steam (and water-power where available) is now universally employed for threshing our corn; and you never see more

than a pair of horses in the ploughs. There seems to be a desire among the labourers to improve, if not their own minds, at least the minds of their children, by giving the time not passed in the fields to mental culture. Some of their sons attend the night school of our parish set up during the winter months four times a week, by which it is hoped their brains as well as their hands are prevented from lying fallow. They attend from 6 to 8, and average an attendance of 20 lads out of a population of 650. There are many small landholders here whose little plots are not yet swallowed up by the large occupiers; a sturdy, honest, and independent class of men, who boast their two or three cows and pigs, and say from 5 to 10 acres of land, which they cultivate chiefly in Potatoes and Wheat, with perhaps a few Mangels, and who brew their own beer and bake their own bread. We are able to speak more favourably of the Potato crop this season. The disease has been very partial, very few Potatoes having been affected, while those that are good are of larger and better quality than usual.

CHESHIRE: *Dec.* 29.—Although the year is nearly brought to a close, the weather is quite mild and the fields have a freshness in appearance which is seldom seen at this time of the year, and Wheat sowing has been continued unusually late; in fact, field operations of every kind are in a forward state, owing chiefly to the fine dry weather which has characterised the autumnal season. The frost in November, which was rather severe, in some measure retarded the ploughing, but had the effect of putting the land into better working condition than it was before, and Wheat sowing was resumed under very favourable auspices as regards the crop, but as regards prices there certainly is a drawback, for although we cannot pretend to predict what the price of Wheat will be when the crops come off the ground, with present prospects we are not sanguine enough to anticipate remunerative prices to the grower, who, after all the expense of preparing his land has to wait 12 months for any return. Generally speaking the crops of Mangel Wurzel were very good, and secured without much injury by frost, but Turnips have not done so well, probably to some extent owing to the dryness of the season, which occasioned mildew, attacks from insects of various tribes and other causes, which we think have not been very satisfactorily ascertained, some ascribing their failure to the want of lime, which others will not admit. That disease has prevailed to some extent is very evident, and many opinions have been expressed regarding this valuable root, as to the cause and probable cure, some affirming that marl when it can be procured of good quality is an antidote to "club" or "anbury," whilst others are of opinion that the Swede has become deteriorated and must eventually go out of cultivation. If this was really the case we should not still see some very good crops of Swedes and some very indifferent ones from the same stock of seed. There is unquestionably a great deal owing to the management of Turnips and selection of seed, and after all very frequent disappointments will occur, but the value of that root is too well known to be discarded from our green crops, especially as our experience tells us that a season which may be unfavourable to the growth of Mangel Wurzel may be most favourable to the Turnip. Potatoes are keeping well; and the prices in the market moderate as compared with former years. *W. P.*

WEST SUSSEX. *Dec.* 29.—We have now got to the end of another year, and in looking back upon it we find that it has be en a very favourable one for getting the work well kept up. It has upon the whole been very dry, yet we had showers sufficient to make our stiff clays work well, and an early harvest has enabled us to get all our autumn work closely done up, and until about 10 days ago any operation could be easily carried on. Since then we have had some heavy falls of rain, which in many places was much required, as many have been badly off for water; millers have been obliged to work short time, and in some cases to call in the aid of steam. Prices have been on the whole favourable for stock, if we except pigs, which have taken a great and rapid turn downwards, and have lately been almost unsaleable: but there are now signs that they are on the turn upwards again. Stock cattle have come down to a more reasonable price, but still there is nothing to be got for fatting, as artificial food is so dear; and without that few attempt to do anything in that way. Sheep in the early part of the summer came lower; but towards the autumn, when the old ewes are sold off, they rose, and are now but little below their last year's value. Horses are easier to buy, and for two reasons—work is done up closely, and the high prices lately common have caused more to turn breeders, and we may expect that they will not be so high for some time again. Respecting the corn crops, Wheat has been quite an average, but the price is very low though the quality is good. There is much less than the usual quantity yet threshed, and the opinion is general that the market has seen the lowest. Barley commanding a high rate has come into market freely, and has dropped a little in price, but that I believe is owing to the extra supply, and when that is over, no doubt the price will improve. The strange state of the pig market has caused a better demand for the inferior qualities, which have sold far better than we could have expected, for pigs have been fatted off at all ages and sizes to get rid of them. The yield on the whole is bad. Oats command a fair price and are generally of middling quality. Root crops promised badly, but have turned out much better, and as we have up to the present had open weather, we hope they will stand out the season. Work being well done up, as a consequence some hands are out of work, while wages are reduced 1*s.* or 2*s.* a week, the general run being 10*s.* and 11*s.*, carters and shepherds having their cottages free. Of course they are all better off than they were a year ago at 13*s.*, as both bread and pork are one-third to one-fourth lower. But cutting down wages is not much in favour with masters any more than it is with the men, and is not readily had recourse to. *G. S.*

Notices to Correspondents.

AGRICULTURAL LIBRARY: *O.* We know of no circulating agricultural library. Such a thing would, we are persuaded, be a good speculation; and we commend it to the attention of the bookselling trade.

BURNED CLAY: *An Original Subscriber.* Mr. Denton's essay appeared in vol. xviii. of the Journal of the English Agricultural Society, page 82. It is an essay on road making.

LUCERNE: *G A.* Sow in shallow drills about 12 inches apart. It may be drilled across the Barley; but it is better sown without any other crop.

RABBITS: *R* says a simple and perfectly efficacious recipe for preventing rabbits and hares from barking trees is to take as much thoroughly skimmed milk as required, and mix it up with soot till about as thick as paint. With this paint over the tree with a whitewash brush. It is done very quickly, and is no expense or trouble. It lasts well one season. His garden is open—full of Apples or Pears, and unless they are annually painted over, they are sure to be destroyed, but this fully preserves them. He took the plan many years ago from one of our correspondents.

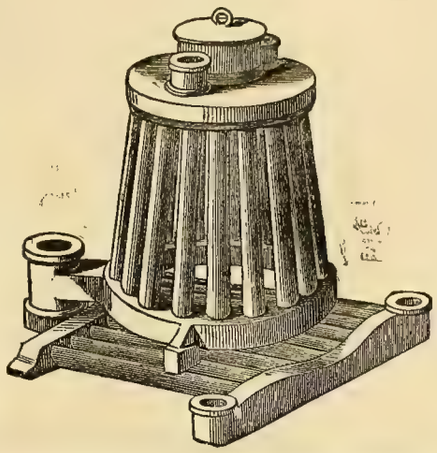
SUNDRIES: *E Little.* 1. Savine has considerable effect on the uterus, and its administration would probably be the cause of the mare slipping her foal. We do not think it to be the cause of blindness in the young horse. No carter ought to be allowed to drug his master's horses. 2. Mangel Wurzel given freely and early to heavy ewes will certainly endanger the slipping of the lamb. Turnips have produced the same effect. As a rule ewes should not have roots before they lamb—probably the use of the pulper with a little meal strewed over the cut roots would obviate the risk. *W C S.*

BY HER MAJESTY'S ROYAL LETTERS PATENT.

ORMSON'S PATENT JOINTLESS TUBULAR BOILER.

SEVEN YEARS' WARRANTRY.

HENRY ORMSON



HAVING fixed many of these excellent and powerful BOILERS in extensive Establishments, and having received the highest Testimonials as to their efficient and economical capabilities, feels himself fully justified in giving the above WARRANTRY, and in calling public attention to their very superior qualities.

THE IMMENSE ADVANTAGE

Of this invention is its evident safety from LEAKAGE in the fact of there not being a SINGLE JOINT in the entire BOILER exposed to the action of the fire. The furnace bars being also joint less tubes through which the return water passes.

These Boilers are made of various sizes to suit either the Amateur's Garden or the most extensive Establishments.

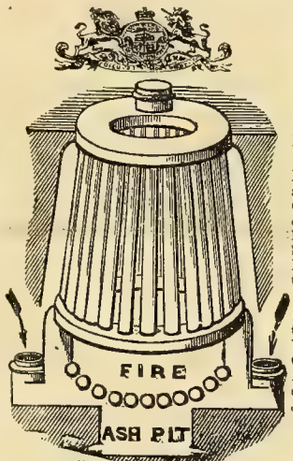
Thousands of feet of Pipe can be efficiently and economically heated from one of these powerful Boilers.

N.B. Sole Manufacturer of Meston's Registered Fruit and Blossom Protector. Specimens were exhibited at the Horticultural Society's Garden, Chiswick, at the Grand Show in June last; and are now to be seen at Messrs. Veitch's Nursery, King's Road Chelsea. Prices will be forwarded on application.

HORTICULTURAL BUILDING AND HOT-WATER APPARATUS MANUFACTORY,
Stanley Bridge, King's Road, Chelsea.

WEEKS' ONE BOILER SYSTEM.

THE
LARGEST HORTICULTURAL ESTABLISHMENT IN EUROPE
IS NOW SUCCESSFULLY HEATED BY
JOHN WEEKS & CO. on their One Boiler System.



EVERY YEAR FURNISHES NUMEROUS ADDITIONAL PROOFS of the success and efficiency of J. WEEKS & Co.'s Hot-water Apparatus. Within the last few years upwards of 1000 have been erected, all of which are working most satisfactorily. Among the most important, J. WEEKS & Co. have the honour to announce Mr. LOUIS VAN HOUTTE, of Ghent. The whole of his immense Establishment is now effectually and most satisfactorily heated on WEEKS' ONE BOILER SYSTEM. This may be justly termed the masterpiece of the world in the science of Heating by Hot Water.

Also at the extensive Nursery of Mr. CHARLES WOODROFFE, Kensal Green, Harrow Road. Mr. Woodrofte will be happy to show the Apparatus.

J. WEEKS & Co. also beg to refer to the celebrated Nurseries of the Messrs E. G. HENDERSON & SON, St. John's Wood. There will be found ONE OF WEEKS' BOILERS attached to various Hothouses, &c., equal to 1200 feet long, also to all the various Offices, Seed Shops, and Warehouses, the Hot Water circulating through 5500 feet of cast-iron pipe. Any one house can be heated separately either with top or bottom heat, or the whole together, or any part regulated at pleasure; also to Messrs. F. & A. SMITH'S Village of Glass at Dulwich. There will be found Hothouses, &c., 3000 feet long, the whole heated upon WEEKS' ONE BOILER SYSTEM, the Hot Water circulating through 10,000 feet of cast-iron pipe.

J. WEEKS & Co. further beg particular attention to their OWN HORTICULTURAL ESTABLISHMENT AT CHELSEA, the whole of which is reserved expressly for reference, and to exhibit all modern improvements in Horticultural Building and Heating by Hot Water. These extensive ranges of Hothouses, together with the renowned Winter Garden, the whole equal to a range 1300 feet long, are now being managed as a FRUIT FORCING ESTABLISHMENT; and in future Pines, Grapes, Peaches, Figs, &c., will be forced early and in succession throughout the year. This will prove the great power of J. WEEKS & Co.'s Hot-Water Apparatus, and also the economy of the ONE BOILER SYSTEM.

CHURCHES, MANSIONS, HOTHOUSES, &c., HEATED BY HOT WATER.

Illustrated Pamphlets of Horticultural Buildings, also Plans and Estimates on application.

JOHN WEEKS & COMPANY, KING'S ROAD, CHELSEA.

COTTAM & COMPANY, Engineers, Founders, &c.,
2, WINSLEY STREET, LONDON, W.



A SHOW ROOM DEVOTED ENTIRELY TO ARTICLES OF HORTICULTURE.
ILLUSTRATED CATALOGUES UPON APPLICATION.

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	,, Syringes	Garden Bordering
Hot-water Apparatus	Ornamental Wire Work	Hurdles	,, Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

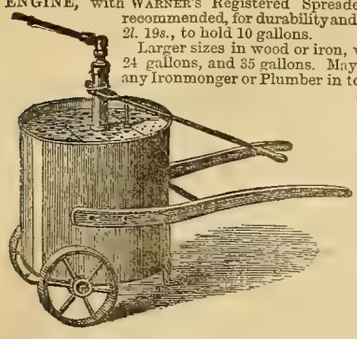
Iron Hurdles, Strained Wire Fencing, Game Netting, &c.
AGRICULTURAL LIST UPON APPLICATION.

Every description of Plain, Ornamental, Cast and Wrought Iron, and Wire Work.

EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

N.B. COTTAM AND CO. beg to make it known that the entrance to their establishment is no longer in Oxford St., as formerly; but they have made a second entrance from 2, Winsley t. Oxford St., W., by the side of the old entrance to their works.

JOHN WARNER AND SONS, Crescent, Jewin Street, London.—GALVANISED IRON TUB GARDEN ENGINE, with WARNER'S Registered Spreader, is strongly recommended, for durability and low price, viz., 2*l.* 19*s.*, to hold 10 gallons.



Larger sizes in wood or iron, viz., 14 gallons, 24 gallons, and 35 gallons. May be obtained of any Ironmonger or Plumber in town or country, or of the patentees and Manufacturers, as also Machinery of all kinds for raising Water from any depth to any height by Steam, Horse, or Manual Power. Prices sent on application.

Syringes of various constructions and sizes from 9*s.* upwards. Metallic String from 5*d.* to 1*s.* 3*d.* per lb.

MICROSCOPES.

JOSEPH AMADIO'S Improved Compound MICROSCOPE, 2*l.* 2*s.*; Students', 3*l.* 13*s.* 6*d.*

"Both these are from Amadio, of Throgmorton Street, and are excellent of their kind, the more expensive one especially."—*Household Words*, No. 345.

A large Assortment of ACHROMATIC MICROSCOPES.

Just published, an ILLUSTRATED CATALOGUE, containing the names of 1000 Microscopic objects, post free, for 4 stamps.

IMPROVEMENTS IN HEATING, ETC.

MUSGRAVE'S PATENT SLOW-COMBUSTION STOVE, for Warming Public Buildings, Halls, Shops, Conservatories, Factories, Drying Rooms, &c. Will burn in Churches from Saturday till Sunday evening, avoiding attention during the hours of worship. In Halls will burn day and night for weeks, with little care. Capable of warming a large apartment for 24 hours, at a cost of 3*d.*; and deserving of special attention, because of its safety, healthfulness, durability, and extreme simplicity. This stove is the nearest approach to warming by hot-water.

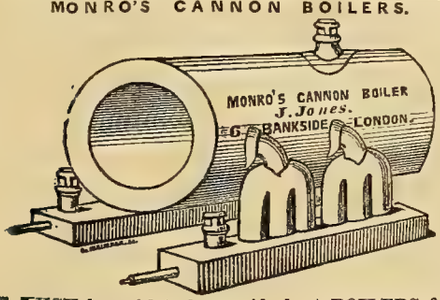


MUSGRAVE'S PATENT SLOW-COMBUSTION COOKING RANGE on the same plan.

MUSGRAVE'S PATENT STABLE FITTINGS.

These inventions will repay public inquiry. For Particulars address the Makers, MUSGRAVE BROTHERS, 59, High St., Belfast.

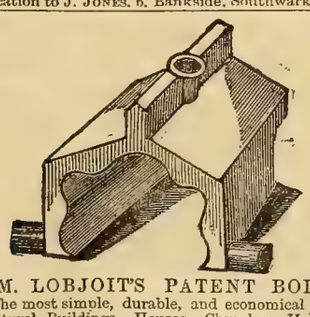
MONRO'S CANNON BOILERS.



MUCH has of late been said about BOILERS for Heating by Hot Water, but these Boilers have now proved themselves to be the best at present invented. They are adapted for heating every description of building, and are made of various sizes. The Price of the

24 inch Cast Iron is	..	..	.. £5 10*s.* 0*d.*	each
24 inch Wrought ditto	..	..	.. 6 10 0	,,
36 inch Cast ditto	..	..	.. 8 0 0	,,
36 inch Wrought ditto	..	..	.. 8 10 0	,,

References to Gentlemen and Nurserymen where these Boilers are now at work. The Cannon Boilers are now kept in stock, and are to be had only of J. JONES, 6, Bankside. Also, every description of Saddle and Cylinder Boilers. Hot Water Pipes and Connections at prices lower than those of any other house in London. Estimates for Hot-water Apparatus erected complete in any part of the country, and an Illustrated Catalogue on application to J. JONES, 6, Bankside, Southwark, London.



T. M. LOBJOIT'S PATENT BOILERS.—The most simple, durable, and economical for Heating Horticultural Buildings, Houses, Churches, Halls, &c., by Hot-water Apparatus. Estimates given for Building and Heating all descriptions of Horticultural Buildings.

TESTIMONIALS.

"Sir,—The Boiler you fixed here for me I can assure you works with entire satisfaction, as the water begins to circulate in about two or three minutes after the fire is kindled, and gives so little trouble in attendance, only requiring looking to about once in 12 or 16 hours, and giving a very regular temperature. I only burn cinders, which I find give out greater heat than burning coal, and last longer, particularly as it has to heat both Vineries at once, which it does remarkably well. In fact I cannot speak in too high praise of it.—Yours, &c., JOHN KENDALL, Gardener to the Hon. C. H. Cust, Arthingworth, Northampton.

"To Mr. Thos. M. Lobjoit, Turnham Green."

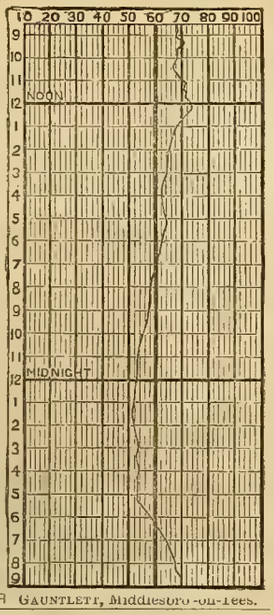
"Sir,—In reference to your Hot-water Boiler, which you fixed here, I am happy to say it is giving every satisfaction. I have had different sorts of boilers during my practice, but I can say with confidence the one you fixed here is the best I have had to do with; it takes the least labour and the smallest quantity of fuel. It heats a stove 60 feet by 10; also a Camellia house, 30 feet by 15, and am confident it is capable of heating more.—I am, &c., D. NEIL, Gardener to the Hon. F. Villiers, Sulby Hall, Welford, Northamptonshire.

"To Mr. Lobjoit, Sept. 29."

THOMAS M. LOBJOIT, Manufacturing Ironmonger, Smith, and Bellhanger, Gas Fitter, Turnham Green and Acton.

TO HORTICULTURISTS.

GAUNTLETT'S PATENT CHRONOMETRICAL THERMOMETER

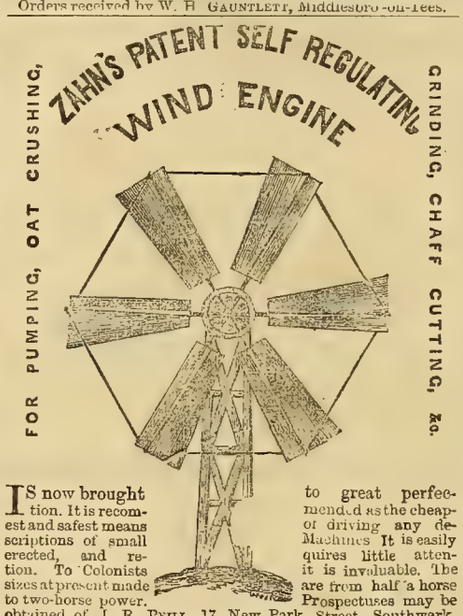


This instrument, which combines an eight-day clock of the best English make showing time, with a newly-patented Thermometer, wherein glass and quicksilver are dispensed with, writes down the temperature of the atmosphere on a slip of paper, and when placed in a Hothouse, Forcing House, or Conservatory, &c., supplies a valuable record of the temperature, with all its variations, showing the time when any change took place, and how long such change continued.

The above slip (reduced in size) exhibits the temperature of the Royal Agricultural Society's show yard at Chester. July 22, 1858, written off by one of these instruments, to which was awarded the Society's SILVER MEDAL.

This is the only instrument that registers temperature continuously and writes it down, and no horticulturist should be without it.

Orders received by W. H. GAUNTLETT, Middlesbro'-on-Tees.



IS now brought to great perfection. It is recommended as the cheapest and safest means of driving any descriptions of small Machines. It is easily erected, and requires little attention. To Colonists it is invaluable. The sizes at present made are from half a horse to two-horse power. Prospectuses may be obtained of J. R. PEILL, 17, New Park Street, Southwark, where a Wind Engine in full work can be inspected.

MAPPIN'S PRUNING KNIVES IN EVERY VARIETY.
WARRANTED GOOD BY THE MAKERS.



MAPPIN BROTHERS, Queen's Cutlery Works, Sheffield; and 67 and 68, King William Street, London.

MAPPIN'S "SHILLING" RAZORS Shave well for Twelve Months without Grinding.

MAPPIN'S 2*s.* RAZORS Shave well for Three Years.

MAPPIN'S 3*s.* RAZORS (suitable for Hard or soft Beards) Shave well for Ten Years.

MAPPIN BROTHERS, Queen's Cutlery Works, Sheffield; and 67, King William Street, City, London; where the largest Stock of Cutlery in the world is kept.

MAPPIN'S SUPERIOR TABLE-KNIVES maintain their unrivalled Superiority—handles cannot possibly become loose—the blades are all of the very first quality, being their own Sheffield manufacture.

	Tble. Kns.	Dst. Kns.	Carvers.
Ivory 3⅝ in. Handle, balanced,	20*s.* p. doz.;	16*s.* p. doz.;	6*s.* p. pair
Do. 4 in. do. ..	25*s.* ,,	18*s.* ,,	9*s.* ,,

MAPPIN'S SILVER-PLATED DESSERT KNIVES and FORKS, in Mahogany Cases.

12 Pairs Knives and Forks, Ivory Handles, in Case ..		80*s.*
12 Do.	Pearl Handles, do. ..	130*s.*
12 Do.	Silver-Plated Handles, do. ..	80*s.*

MAPPIN'S ELECTRO-SILVER PLATE.—MAPPIN BROTHERS, Manufacturers by Special Appointment to the Queen, are the only Sheffield makers who supply the consumers in London. Their LONDON SHOW ROOMS, 67 and 68, King William Street, London Bridge, contain by far the largest STOCK of ELECTRO-SILVER PLATE in the World, which is transmitted direct from their Manufactory, Queen's Cutlery Works, Sheffield.

	Fiddle Pattern.	Double Thread.	King's Pattern
12 Table Forks, best quality	£1 16 0	£2 14 0	£3 0
12 Table Spoons, best quality	1 16 0	2 14 0	3 0
12 Dessert Forks, best quality	1 7 0	2 0 0	2 4
12 Dessert Spoons, best quality	1 7 0	2 0 0	2 4
12 Tea Spoons, best quality	0 16 0	1 4 0	1

Messrs. Mappin Brothers respectfully invite buyers to inspect their unprecedented display, which, for beauty of design, exquisite workmanship and novelty, stands unrivalled. Their illustrated Catalogue, which is continually receiving addition of New Designs, free on application.—MAPPIN BROTHERS, 67 and 68, King William Street, London Bridge; Manufactory, Queen's Cutlery Works, Sheffield.

JAMES PHILLIPS AND CO.'S PRICES of GLASS for the present month.

HORTICULTURAL GLASS, STOCK SIZES, in 100 feet boxes.

	3rds.	4ths.
11 by 9, 12 by 9, 13 by 9, 14 by 9 .. / 12 ,, 10, 13 ,, 10, 14 ,, 10, 15 ,, 10 ..	14*s.* 6*d.*	12*s.* 6*d.*
13 ,, 11, 14 ,, 11, 15 ,, 11, 16 ,, 11 .. / 14 ,, 12, 15 ,, 12, 16 ,, 12, 17 ,, 12 .. / 18 ,, 12, 19 ,, 12, 16 ,, 13, 17 ,, 13 .. / 18 ,, 13, 19 ,, 13, 20 ,, 13, 21 ,, 13 .. / 16 ,, 14, 17 ,, 14, 18 ,, 14 .. .. / 19 ,, 14, 20 ,, 14, 21 ,, 14	16*s.* 6*d.*	14*s.* 0*d.*

PACKED IN CASES.

200 feet	£2 2 0	16 oz.
300 feet	3 3 0	
200 feet	2 18 0	21 oz.

ORCHARD HOUSE SIZES,
As supplied by us to Mr. Rivers.

		16 oz.	21 oz.
20 in. by 12 in. / 20 in. by 13 in. / 20 in. by 14 in. / 20 in. by 15 in.	Common	14*s.* 0*d.* ..	£1 1*s.*
	Superior do. ..	16 6 ..	1 5
	English Glass ..	18 0 ..	1 9

SMALL SQUARES.—Per 100 feet.

6 by 4	6½ by 4½	7 by 5	7½ by 5½ / 11 6
8 ,, 6	8½ ,, 6½	9 ,, 7	9½ ,, 7½ /
10 ,, 8	10½ ,, 8½ ..	.. ..	.. .. 12 6

JAMES PHILLIPS AND CO.,

180. Bishopsgate St. Without, London, E.C.

HORTICULTURAL GLASS—JUNE TARIFF.

THOMAS MILLINGTON'S reduced Tariff of GLASS, &c.

6 by 4, 7 by 5, 8 by 6, 9 by 7 / 6½ by 4½, 7½ by 5½, 8½ by 6½, 9½ by 7½ } 16 oz. to the foot, 11*s.* 6*d.* per 100 feet.

In 100 boxes,—4ths quality, 12*s.* 6*d.*; 3ds do., 14*s.* 4*d.*

10 by 8, 12 by 9, 12½ by 10½, 14½ by 10½, 13 by 11
10½ by 8½, 12½ by 9½, 13 by 10, 15 by 10, 13½ by 11½
11 by 9, 13 by 9, 13½ by 10½, 12 by 11, 14 by 11
11½ by 9½, 12 by 10, 14 by 10, 12½ by 11½ .. ..

20 by 12 / 20 by 13 / 20 by 14 / 20 by 15 — per 100 feet: 16 oz. 21 oz. Common .. 16*s.* .. 24*s.* Superior . 18*s.* .. 27*s.*

All Boxes included.

Orchard House sizes as supplied to Mr. Rivers.

Hartley's improved Rough Plate Glass from ⅛ to ⅜ in thickness.

Coloured Glass in great variety, at 9*d.* and 1*s.* per foot.

Paints, Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, Lamp Glasses, &c.

87, Bishopsgate Street Without, same side as Eastern Counties Railway.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

HETLEY AND CO. are supplying 16-oz. Sheet Glass of British Manufacture, packed in boxes, containing 100 square feet each, at the following REDUCED PRICES for cash. A reduction made on 1000 feet.

Sizes.—Inches.	Inches.	Per foot.	Per 10 feet.
	Under 6 by 4 at	1½*d.* is	£0 12 6
From 6 by 4	,, 7 ,, 5 ,,	2*d.* ,,	0 16 8
,, 7 ,, 5	,, 8 ,, 6 ,,	2½*d.* ,,	0 18 9
,, 8 ,, 6	,, 10 ,, 8 ,,	2½*d.* ,,	1 0 10
,, 10 ,, 8	,, 12 ,, 9 ,,	2⅔*d.* ,,	1 2 11

Larger sizes, not exceeding 40 inches long.

16 oz. from 3*d.* to 3½*d.* per square foot, according to size.
21 oz. ,, 3½*d.* to 5*d.* ,, ,, ,,
26 oz. ,, 3½*d.* to 7½*d.* ,, ,, ,,

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS, for Horticultural purposes, at reduced prices, by the 100 square feet.

GLASS TILES AND SLATES made to any size or pattern, either in Sheet or Rough Plate Glass.

Propagating Glasses, Beehive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in Glass.

PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.

GLASS SHADES, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the excise duty, reduced one-half. List of Prices and Estimates forwarded on application to JAMES HETLEY & Co., 35, Soho Square, London.

ARTIFICIAL ROCKWORK executed in the only way it should be, viz., in close imitation of Nature, in Caves, Waterfalls, to sides of Streams, Ponds, Rocky Passes, and for Ferneries, not to look as if built up by hand, with the usual arches, pinnacles, &c. Also Artificial Ruins, so as to be supposed real; Remains of Castles, Churches, Towers, Gateways, &c., for picturesque scenery and effect in Gardens, and of guaranteed durability in stone or cement, by JAMES PULHAM, of Broxbourne.

Numerous references given of works executed over many years.

SHAW'S TIFFANY.—The best and cheapest material for Shading Conservatories, Protecting Fruit from Birds and Wasps, &c. Sold in pieces 20 yards long by 38 inches wide. No. 1, best quality, 5*s.* per piece; second quality, 4*s.* per piece. Extra strong and thick (see Circular sent free by post with samples).

Address JOHN SHAW & Co., Manufacturers and Dealers, Princess Street, Manchester.

"FRIGI DOMO."—Patronised by her Majesty the Queen, the Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence, of Ealing Park, and — Collier, Esq., of Dartford.

PROTECTION FROM COLD WINDS AND MORNING FROSTS.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths. Two yards wide, 1*s.* 6*d.* per yard run; four, 3*s.* per yard. Also, an improved make for Shading Purposes. Three yards wide, 2*s.* 6*d.* per yard run.

ELISHA THOMAS ARCHER, whole and sole manufacturer, 7, Trinity Lane, Cannon Street, City, and of all Nurserymen and Seedsmen throughout the kingdom. "It is much cheaper than mats as a covering."

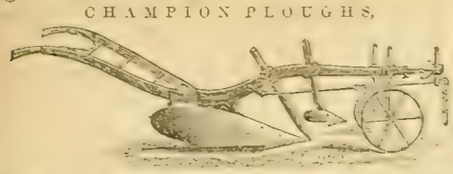
PRIZE MEDAL, PARIS EXHIBITION 1855.

METCALFE, BINGLEY, AND CO.'S New Pattern and Penetrating Tooth Brushes, Penetrating unbleached Hair Brushes, Improved Flesh and Cloth Brushes, and genuine Smyrna Sponges; and every description of Brush, Comb, and Perfumery for the Toilet. The Tooth Brushes search thoroughly between the divisions of the Teeth and clean them most effectually—the hairs never come loose. M., B., and Co. are sole makers of the Oatmeal and Camphor, and Orris Root Soaps—sold in Tablets (bearing their names and address) at 6*d.* each, of METCALFE'S celebrated Alkaline Tooth Powder, 2*s.* per box; and of the New Bouquets.—Sole Establishment, 130B and 131, Oxford St., 2d and 3d doors west from Holles St., London.

HOWARDS' PRIZE IMPLEMENTS. 1859.

JAMES AND FREDK. HOWARD, Britannia Iron Works, Bedford, beg to direct attention to their

CHAMPION PLOUGHS,



For which they received All the First Prizes last offered by the Royal Agricultural Society of England, viz.:—

The First Prize for the best Plough for general purposes.
The First Prize for the best Plough for Light Land.
The First Prize for the best Plough for heavy land.

The only Prize ever offered by the Society for the best Double Breast or Ridging Plough was also awarded to J. & F. HOWARD.

J. & F. HOWARD have discontinued troubling the Public with a long List of Prizes awarded to their Implements, but they would just state that for PLOUGHS, HARROWS, and HORSE RAKES, they have for several years gained every Prize for which they have competed.

PLOUGHS.

P PLOUGH, with two wheels, for light work ..	£4	7	6
PP PLOUGH, " for general purposes	4	12	6
SKIM COULTER	0	5	6

STEEL BREASTS, 7s. and 7s. 6d. extra.

HARROWS.

A Set of Three 4-Beam HARROWS, with Whippletree, recommended as general Seed Harrows, 9½ feet wide, marked No. 12	3	3	14
A Set of Three 4-Beam HARROWS, with Whippletree, adapted for 3 Horses, 10 feet wide, marked No. 11 ..	4	4	

HORSE RAKES.

Price of small size RAKE, marked A, with 24 iron teeth, extreme width 7½ feet	7	10	0
Ditto, with Steel Teeth	8	0	0
Price of large size, marked B, with 28 iron teeth, extreme width 8½ feet	8	0	0
Price of large size, marked B, with steel teeth ..	8	10	0
Price of extra large size, marked C, with 24 steel teeth, extreme width, 8½ feet	10	10	
Price of a Set of 15 Prongs, to be attached to the above when used as Weed Extirpators	1	10	0

Free Delivery to Birmingham, Bristol, Derby, Gloucester, Lincoln, Liverpool, London, Manchester, Norwich, Nottingham, Retford, Wisbeach, and Worcester; or to Dublin, Edinburgh, Glasgow, and other parts at fixed rates.

HOWARDS' NEW CATALOGUE, containing prices and description of their Patent Ploughs, Harrows, Horse Rakes, and other Implements, including Smith's Steam Cultivators, for which they received at Chester the Gold Medal of the Royal Agricultural Society of England, sent free on application to

J. & F. HOWARD, Britannia Iron Works, Bedford.

LAMPES à MODERATEUR, from 6s. to 7l. 7s. WILLIAM S. BURTON has collected from the different makers here and in France a variety that defies competition. As many imported from France are inferior in the works, WILLIAM S. BURTON selects at Paris from the best makers only, and he can guarantee each lamp he sells as perfect in all parts.

His stock comprises also an extensive assortment of SOLAR, CAMPHINE, PALMER'S, and all other LAMPS.

Pure Colza Oil .. 4s. 3d. per gallon.
Palmer's Candles .. .. 9½d. per lb.
Illustrated Catalogues sent (per post) free.

THE PERFECT SUBSTITUTE FOR SILVER.—The REAL NICKEL SILVER, introduced more than 20 years ago by WILLIAM S. BURTON, when PLATED by the patent process of Messrs. Elkington & Co., is beyond all comparison the very best article next to sterling silver that can be employed as such, either usefully or ornamentally, as by no possible test can it be distinguished from real silver. A small useful plate chest, containing a set, guaranteed of first quality for finish and durability, as follows:—

	Fiddle or Old Silver Pattern.			Thread or Brunswick Pattern.			King's Pattern.			Military Pattern.		
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
12 Table Forks	1	18	0	2	8	0	3	0	0	3	10	0
12 Table Spoons	1	18	0	2	8	0	3	0	0	3	10	0
12 Dessert Forks	1	10	0	1	15	0	2	2	0	2	10	0
12 Dessert Spoons ..	1	10	0	1	15	0	2	2	0	2	10	0
12 Tea Spoons	0	18	0	1	4	0	1	10	0	1	18	0
6 Egg Spoons, gilt bowls..	0	12	0	0	15	0	0	18	0	1	1	0
2 Sauce Ladles	0	7	0	0	8	6	0	10	6	0	16	0
1 Gravy Spoon	0	8	0	0	11	0	0	13	6	0	16	0
2 Salt Spoons, gilt bowls..	0	4	0	0	5	0	0	6	0	0	7	6
1 Mustard Spoon, gilt bowl	0	2	0	0	2	6	0	3	0	0	3	9
1 Pair of Sugar Tongs ..	0	3	0	0	3	9	0	5	0	0	7	0
1 Pair of Fish Carvers ..	1	4	0	1	7	6	1	12	0	1	18	0
1 Butter Knife	0	3	6	0	5	9	0	7	0	0	8	0
1 Soup Ladle	0	13	0	0	17	6	1	0	0	1	1	0
1 Sugar Sifter	0	4	0	0	4	9	0	5	9	0	8	6
Total	11	14	6	14	11	3	17	14	9	21	4	9

Any article to be had singly at the same prices. An oak chest to contain the above, and a relative number of knives, &c., 2l. 15s. Tea and coffee sets, cruet and liqueur frames, waiters, candlesticks, &c., at proportionate prices. All kinds of re-plating done by the patent process.

WILLIAM S. BURTON'S GENERAL FURNISHING IRONMONGERY CATALOGUE may be had gratis, and free by post. It contains upwards of 400 Illustrations of his illimited Stock of Electro and Sheffield Plate, Nickel Silver and Britannia Metal goods, Dish Covers and Hot-water Dishes, Stoves, Fenders, Marble Chimney-pieces, Kitchen Ranges, Lamps, Gaseliers, Tea Urns and Kettles, Tea Trays, Clocks, Table Cutlery, Baths and Toilet Ware, Turnery, Iron and Brass Bedsteads, Bedding, Bed Hangings, &c., with Lists of Prices and Plans of the 16 large Show Rooms at 39, Oxford Street; 1, 1a, 2, and 3, Newman Street; and 4, 5, and 6, Perry's Place, London.—Established 1820.

HOLLOWAY'S PILLS AND OINTMENT.—Anxiety is the greatest obstacle to human happiness. The prudent pride themselves in adopting measures for avoiding it—they insure their houses and ships, and the still more thoughtful assure their lives—Yet what is life without health? Can pain and enjoyment dwell harmoniously together? The wisest man secures his own well-being, and in HOLLOWAY'S remedies finds a perfect and indisputable policy of assurance against most of the diseases by which humanity is assailed. These preparations ward off many an attack that without them would leave desolation in its track, and cause the heart-rent mourners unavailingly to regret that these two policies. HOLLOWAY'S Pills and Ointment, were not numbered amongst their household treasures.

WHISKIES (EQUALISATION OF DUTY).—The choicest Scotch and Irish, from 14s. to 18s. per gallon.—OWEN & Co., 75, Lower Thames Street, London, E.C., opposite the Custom House. Shipping and the Trade supplied.

GLENFIELD PATENT STARCH
USED IN THE ROYAL LAUNDRY,
And pronounced by HER MAJESTY'S Laundresses to be
THE FINEST STARCH SHE EVER USED.
Sold by all Chandlers, Grocers, &c.

CHUBB'S LOCKS, FIREPROOF SAFES, DOOR LATCHES, CASH AND DEED BOXES. Illustrated Price Lists sent free.—57, St. Paul's Churchyard, London; 16, Lord Street, Liverpool; 16, Market Street, Manchester; and at Wolverhampton.

COLT'S PATENT SIX-SHOT REVOLVER.—7½ inch rifle-barrel six-shot, weight 2 lbs. 8 ozs.; also 4, 5, and 6-inch barrel pocket-revolvers, for travellers and house protection. Avoid counterfeits. Note.—Every genuine arm is proved; stamped on the barrel. Address, "Colonel COLT, London."—14, Pall Mall, S.W.

ALLENS' ILLUSTRATED CATALOGUE OF PATENT PORTMANTEAUS, with four compartments, DISPATCH BOXES, WRITING and DRESSING CASES, TRAVELLING BAGS, with square opening; and 500 other Articles for travelling. By post for two stamps.

J.W. & T. ALLEN, Manufacturers of PORTABLE BARRACK-ROOM FURNITURE and MILITARY OUTFITTERS.

(See separate Catalogue.)—18 and 22, Strand.

HEAL AND SONS' EIDER DOWN QUILTS, from One Guinea to 10 Guineas. Also, GOOSE DOWN QUILTS, from 8s. 6d. to 24s. List of prices and sizes sent free by post.

HEAL & SONS' NEW ILLUSTRATED CATALOGUE of BEDSTEADS and PRICE LIST of BEDDING also sent post free.

196, Tottenham Court Road, W.

CHRISTMAS, 1858.

MESSRS. MAPPIN invite attention to their ELEGANT STOCK OF NOVELTIES FOR THE PRESENT SEASON, now on View at their SHOW ROOMS, 67 & 68, King William Street, London.

	£	s.	d.
12 ivory handle silver-plated Fish-eating Knives, in mahogany case	4	2	0
12 pairs ivory-handle silver-plated Desserts, in case ..	4	0	0
Lady's Travelling Toilet Bag	2	12	0
Elegant Tea and Coffee Service, electro silver-plated..	6	4	0
Silk Velvet Case, containing four pairs finest Scissors	1	5	0
Lady's Morocco Scent Case, with silver-capp'd Bottles	1	0	0
Lady's Rosewood full-size Dressing Case, completely fitted with Bottles, Cutlery, Brushes, &c... ..	4	0	0
Gentleman's solid Leather Dressing Case, fitted ..	1	0	0
Gentleman's solid Leather Dressing Case, more completely fitted	2	2	0
A Set of Three Papier-mâché Tea Trays	1	11	0

A costly Book of Engravings, with prices attached, forwarded by post on receipt of 12 stamps.

MAPPIN BROTHERS, 67 & 68, King William Street, London.
Manufactory: Queen's Cutlery Works, Sheffield.

NEW YEAR'S GIFTS.—The most appropriate offerings are those which tend to the promotion of personal beauty in the fair and youthful, who at this festive season are more than usually desirous to shine to advantage under the gaze of their friends: none can be more acceptable than ROWLANDS' MACASSAR OIL, a delightfully fragrant and transparent preparation for the hair; and as an invigorator and beautifier beyond all precedent. ROWLANDS' KALYDOR, unequalled for its rare and inestimable qualities in imparting a radiant bloom to the Complexion, and a softness and delicacy to the hands and arms. And ROWLANDS' ODONTO, or, PEARL DENTIFRICE, which bestows on the teeth a pearl-like whiteness, strengthens the gums, and renders the breath sweet and pure. The patronage of Royalty, and rank and fashion, throughout Europe, and their universally-known efficacy, give these preparations a celebrity unparalled, and render them peculiarly elegant and seasonable presents.—Sold by A. ROWLAND & SONS, 20, Hatton Garden, London, and by Chemists and Perfumers.

DO YOU WANT LUXURIANT HAIR, WHISKERS, &c.?—COUPELLE'S CRINUTRIAR is guaranteed to produce whiskers, moustachios, eyebrows, &c., in two or three weeks with the utmost certainty, strengthen weak hair, prevent its falling off, check greyness in all its stages, and reproduce the hair in baldness, from whatever cause, price 2s. Sold by all chemists in the world; or will be sent post free, on receipt of 24 penny postage stamps, by Miss COUPELLE, 69, Castle Street, Newman Street, Oxford Street, London. A toilet guide sent post free for four penny postage stamps. "It completely restored my hair."—Miss Davis. "My whiskers are now growing freely."—H. Merry, Esq.

KNOW THYSELF.—MARIE COUPELLE continues to give her graphic and interesting delineations of character, discoverable from an examination of the handwriting, in an unique style of description peculiarly her own. All persons desirous of knowing themselves, or any friend in whom they are interested, must send a specimen of the writing, stating the sex and age, and enclosing 13 penny postage stamps, and a directed envelope, to Miss COUPELLE, 69, Castle Street, Oxford Street, London, and they will receive in a few days a minute detail of the talents, tastes, virtues, and failings of the writer, with many other things hitherto unsuspected. All letters are considered strictly confidential.

KEATING'S COD LIVER OIL for the MILLION. Light Brown, as imported, possessing medicinal qualities equal to any yet introduced, while it is offered at one-third the price, that it may be within the reach of all classes.—Sold at 79, St. Paul's Churchyard. Pints 1s. 8d., Quarts 3s., imperial measure.

TESTIMONIAL FROM DR. URE.

"Having examined a sample of Cod Liver Oil, submitted to me by Mr. KEATING, of St. Paul's Churchyard, I find it of excellent quality, possessing the usual properties of the Oil, and well adapted for medicinal use. (Signed)

"London, Jan. 29, 1853." "ANDREW URE, M.D., F.R.S."

DR. DE JONGH'S
(Knight of the Order of Leopold of Belgium.)

LIGHT BROWN COD LIVER OIL, prescribed, in consequence of its vast superiority over every other kind, as the safest, speediest, and most effectual remedy for

CONSUMPTION, BRONCHITIS, COUGHS, GOUT, RHEUMATISM, NEURALGIA, DISEASES OF THE SKIN, INFANTILE WASTING, RICKETS, GENERAL DEBILITY, AND ALL SCROFULOUS AFFECTIONS.

OPINION OF C. H. BARLOW, ESQ., M.D., F.R.C.P.,
Physician to Guy's Hospital, &c., &c.

"I have frequently recommended persons consulting me to make use of Dr. DE JONGH'S Cod Liver Oil. I have been well satisfied with its effects, and believe it to be a pure Oil, well fitted for those cases in which the use of that substance is indicated."

Sold ONLY in IMPERIAL Half-pints, 2s. 6d.; Pints, 4s. 9d.; Quarts, 9s., capsuled and labelled with Dr. DE JONGH'S signature, WITHOUT WHICH NONE CAN POSSIBLY BE GENUINE, by respectable Chemists.—SOLE AGENTS,
ANSAR, HARFORD, & CO., 77, STRAND, LONDON, W.C.

TRELOAR'S COCOA-NUT FIBRE WAREHOUSE, 42, Ludgate Hill.—Matting, Mats, Mattresses, Sheep Netting, Hammocks, &c. Prize Medals awarded, London, New York, and Paris. Catalogues, containing prices, and every particular, free by post.—T. TRELOAR, Cocoa-Nut Fibre Manufacturer, 42, Ludgate Hill, London, E.C.

ASTHMA.—DR. LOCOCK'S PULMONIC WAFERS give instant relief, and a rapid cure of Asthma, Consumption, Coughs, and all disorders of the breath and lungs. They have a most pleasant taste. Price 1s. 1½d., 2s. 9d., and 11s. per box. Sold by all medicine vendors.

TO THE NERVOUS OF BOTH SEXES.—A Retired Clergyman, having been restored to health in a few days, after many years of nervous suffering, is willing to assist others by sending (free), on receiving a stamped envelope, properly addressed, a copy of the prescription used.—Direct, the Rev. E. DOUGLASS, 18, Holland Street, Brixton, London.

TO THE NERVOUS AND DEBILITATED.—CHARLES WATSON, M.D., Fellow and Honorary Vice-President of the Imperial African Institute of France, and late Physician to the Bedford Dispensary, 27, Alfred Place, Bedford Square, London, continues to issue, on receipt of six stamps, "The GUIDE TO SELF CURE." "The true guide to those who desire a speedy and private cure." "The first man of the day in these complaints."—*Medical Review*, July, 1856.

For qualifications, vide Diplomas and Medical Directory.

THE FLORIST, FRUITIST, AND GARDEN MISCELLANY. By C. TURNER, F.H.S., and J. SPENCER, F.H.S. Monthly, price 1s. Volumes for 1858 of this beautifully illustrated and truly useful work, handsomely bound in cloth, are now ready. For New Year's gifts they are especially desirable, each containing, as it does, 14 charmingly-coloured Plates of some of the finest flowers of the season. The first Number for this year is just published. Volumes free by post, 13s. 6d. each. Back Vols. and Numbers to complete sets may still be had.

Office of the "Florist," 23, Henrietta Street, Covent Garden, London; and all Booksellers.

Lately Published,

THE ELEMENTS OF BOTANY, STRUCTURAL AND PHYSIOLOGICAL. With a Glossary of Technical Terms, and numerous Illustrations. 12s. cloth.

This completes the series of Elementary Botanical Works by Professor LINDLEY, of which "School Botany," and "The Vegetable Kingdom," form the other parts.

The first two Parts of THE ELEMENTS OF BOTANY, comprising Structural and Physiological Botany, and a Glossary of Technical Terms, are published in one octavo volume, price 12s.

These three parts form a complete manual of Botany for Medical and other Students who have made themselves acquainted with the author's "School Botany."

N.B. The Glossary may be had separately, price 5s.

BRADBURY & EVANS, 11, Bouverie Street.

In consequence of the new postal arrangements, parties in the country who desire it can have two copies sent by post for one stamp, five for two stamps, or eleven for four, in addition to the cost of the numbers.

Price 3d. each, or 5s. for 25 copies for distribution among Cottage Tenantry, delivered anywhere in London, on a Post-office Order being sent to the Publisher, JAMES MATTHEWS, at the Office of the *Gardeners' Chronicle*.

THE COTTAGER'S CALENDAR OF GARDEN OPERATIONS. By Sir JOSEPH PAXTON, M.P.

Reprinted from the GARDENERS' CHRONICLE. Upwards of 126,000 have already been sold.

J. MATTHEWS, 5, Upper Wellington Street, Covent Garden, London, W.C.

Price 1s. 6d., free by post, 1s. 7d.

LABELS FOR THE HERBARIUM,
CONSISTING OF THE NAMES OF THE
CLASSES, ALLIANCES, ORDERS, AND SUB-ORDERS,
OF
PROFESSOR LINDLEY'S "VEGETABLE KINGDOM."

So printed in large type, that they can be cut out and pasted into THE HERBARIUM.

J. MATTHEWS, 5, Upper Wellington Street, Covent Garden, London, W.C.

Third Edition, considerably enlarged, price 5s. 6d., free by post, 5s. 10d.,

RURAL CHEMISTRY.

By EDWARD SOLLY, F.R.S., F.L.S., F.G.S.

Honorary Member of the Royal Agricultural Society of England, Professor of Chemistry to the Horticultural Society of London, Lecturer on Chemistry in the Hon. E. I. Co.'s Military Seminary at Addiscombe, &c., &c.

J. MATTHEWS, 5, Upper Wellington St., Covent Garden, London, W.C.

Second Edition, revised and enlarged, price 5s. 6d. cloth; free by post, 5s. 10d.,

ORNAMENTAL AND DOMESTIC POULTRY;

THEIR HISTORY AND MANAGEMENT.

By the Rev. EDMUND SAUL DIXON, M.A.

J. MATTHEWS, 5, Upper Wellington Street, Covent Garden.

TO NURSERYMEN AND OTHERS.

TO BE DISPOSED OF, AN OLD ESTABLISHED NURSERY, adjoining a very populous town, and close to the Railway Station. The Greenhouses, &c., are of recent erection, replete with every convenience, and the grounds are pleasantly situated and well stocked; such an advantageous opportunity seldom occurs, and one commanding capital could not fail to do well. The Advertiser (who is prepared to make a considerable sacrifice) can give satisfactory reasons for relinquishing it.—Address for particulars to G. B. A., Messrs. Hurst & M'Mullen, Seedsmen, 6, Leadenhall Street, Cornhill.

TO NURSERYMEN, SEEDSMEN, ETC.

TO BE DISPOSED OF, the DENBIGH ROAD NURSERY, Westbourne Grove, West Bayswater, where a good business has been successfully carried on by the late Mr. GILL, whose decease is the sole cause of its disposal: also in connection with the same is a compact Nursery adapted for the growth of Plants for Market or otherwise. The premises have been fitted up regardless of cost, and the houses are in good repair and heated by hot water, and contain a clean and healthy Stock of Plants. There is an unexpired Lease of 90 years. The Nurseries will be Let together or separate, and such an offer seldom occurs to any person seeking a good business.—For further particulars, apply as above.

RED HILL AND REIGATE.

To GARDENERS, FLORISTS, AND OTHERS.

TO BE LET, with immediate possession, the well established SMALL NURSERY (situated about five minutes' walk from the Red Hill Junction Railway Station), consisting of an eight-roomed House, ¾ Acre of Land well suited for the purpose, ranges of Greenhouses, 76 and 30 feet by 14 feet, well stocked with plants and other conveniences. This is an eligible opportunity for a good plant grower, as there is an excellent business in that branch.—For particulars apply on the Premises to Mr. JAMES SYRED, Monson Nursery, Red Hill, Reigate, Surrey.

HARDY SCARLET RHODODENDRONS AND AMERICAN PLANTS GENERALLY.

WATERER AND GODFREY'S PRICED and DESCRIPTIVE CATALOGUE of the above beautiful tribe of plants, as exhibited by them in London and Manchester, may now be had on application inclosing one stamp for postage. The Catalogue also furnishes the heights and prices of their unequalled stock of Conifers and Evergreens, &c. Catalogues may also be had of Messrs. J. MAY & Co., Seedsmen, &c., Wellington Street, Strand.

Knap Hill Nursery, Woking, Surrey.

CALLICARPA PURPUREA.

JOHN STANDISH, the exhibitor of the above (at St. James's Hall), can supply a few good plants at 7*s.* 6*d.* each. The following passage from Dr. Lindley's leading article in the *Gardeners' Chronicle* for Nov. 20 will give an idea of its beauty:—"Callicarpa purpurea, quite insignificant when in flower, was beautiful in its winter dress of innumerable rich purple berries, about the size of swan shot." It is easily cultivated, and does well in a cold greenhouse or conservatory planted out, where it will produce thousands of bright purple berries resembling glass beads, and remaining on nearly the whole winter.—Bagshot, Jan. 1.

RHODODENDRONS.

JOHN WATERER'S CATALOGUE OF UNRIVALLED HARDY SCARLET AND OTHER CHOICE RHODENDRONS, as Exhibited by him at the Royal Botanic Gardens, Regent's Park, London, is published, and will be forwarded on application.

☞ This List is recommended as a work of reference, as it contains accurate descriptions of all the esteemed varieties.

The American Nursery, Bagshot, Surrey, near the Sunningdale Station, South Western Railway.

STRONG VINES AND FRUITING TRAINED TREES.—Strong well ripened BLACK HAMBURGH and GOLDEN HAMBURGH VINES, in 11-inch pots, 10*s.* 6*d.* and 21*s.* each. These are adapted for forcing and bearing a good crop this season.

Large Dwarf and Standard trained PEACHES, NECTARINES, APRICOTS, and PLUMS, full of flower-buds, well suited for planting in houses to bear a crop this season, 7*s.* 6*d.* to 21*s.* each. Dwarf and standard trained trees of nearly all the favourite kinds, 2*s.* 6*d.* to 7*s.* 6*d.* each. Fine Vines for planting, 5*s.* each.

THOMAS JACKSON & SON, Nursery, Kingston, Surrey, S.W.

TO GRAPE GROWERS.

BUSBY'S STOCKWOOD GOLDEN HAMBURGH GRAPE.



JAMES VEITCH, JUN.,

BEGS to call attention to this SPLENDID GRAPE, of which he is now supplying VINES at the undermentioned prices:—

Fine extra strong Vines, in 12-inch pots, fit for fruiting in 1859 (with well-ripened Wood) **30s. each**
Fine strong do., in 9-inch pots, with good well ripened Canes ... ... 15s. ,,
Fine 1-year old Vines ... ... 10s. 6d. ,,

☞ *Special and advantageous prices to the Trade, varying with the quantity taken, on application.*

This Grape having been so frequently before the Public, J. V., Jun., deems it unnecessary to speak any further as to its qualities; he is, however, happy to say that he has received the most satisfactory reports from those who have grown and fruited it during the present season, which fully confirm all that has heretofore been said of it.

☞ PRIZES will be offered for the above Grape at the Summer and Autumn Exhibitions of 1859, full particulars of which will be duly announced when the dates of the Meetings are published.

Royal Exotic Nursery, Chelsea, S.W.—Jan. 1.

GENUINE KITCHEN GARDEN SEEDS.

JAMES CARTER & CO.

ARE NOW READY TO SUPPLY SEEDS FOR THE VEGETABLE GARDEN, WHICH WILL BE FOUND, AS USUAL, OF THE BEST QUALITY ONLY.

CARTER'S
"ENCYCLOPÆDIC CATALOGUE OF SEEDS, AND GARDENER'S VADE MECUM."

The Twenty-fourth Annual Issue of the above is now ready, and, in addition to its usual comprehensiveness, has affixed a CALENDAR OF OPERATIONS for each month in the year for the Vegetable and Flower GARDEN, also for the Stove, Conservatory, Greenhouse, Orchid House, Pineries, Vineries, Pits, Frames, &c., forming a complete Gardener's book of reference, which it is hoped will be found useful alike to the Amateur and professional Gardener. Forwarded free of charge and post paid to all parts of the world upon application.

JAMES CARTER & CO., Seedsmen, 238, High Holborn, London, W.C.

NEW AND GENUINE SEEDS.

JOHN DOBSON & SONS

BEG TO ANNOUNCE THAT THEIR

SELECT LIST of VEGETABLE, FLOWER, and AGRICULTURAL SEEDS for 1859

is now ready, and will be forwarded post free on application.

The very great satisfaction their Seeds have hitherto given on account of the purity of the Stock and excellent germinating qualities, together with moderate prices, has induced them to increase this department of their business, and they trust that by adhering to the principle of sending out nothing but a genuine article they will receive an increased share of public patronage. Orders of 20*s.* and upwards Carriage paid to all Stations on the South-Western and Great Western Railways, except for heavy goods, such as Potatoes, Clover, &c. Seeds for exportation packed on a new principle, which has given very great satisfaction on their arrival at their destination. All orders acknowledged by return of post.

Woodlands Nursery, Isleworth, W.; and High Street, Hounslow, W.

EXCELLENCE, ECONOMY, AND CONVENIENCE.

SUTTON'S COMPLETE COLLECTIONS
OF
KITCHEN GARDEN SEEDS FOR ONE YEAR'S SUPPLY.

GENTLEMEN who do not employ a professed Gardener, or who for other reasons may prefer ordering their Seeds themselves, will find it most convenient to order one of SUTTON'S COMPLETE COLLECTIONS, which are so assorted as to contain the proper quantities of the best kinds to supply a family for the whole year.

The entire charge for the largest Collection (No. 1) is £3 } For Cash
Ditto ditto Collection (No. 2) is £2 } only.

And Complete Collections for Smaller Gardens may be had at proportionately lower sums.

The No. 1 Collection contains 20 quarts of the best sorts of Peas, 10 quarts Garden Beans, 5 pints French or Kidney Beans, and all other Vegetable Seeds in due proportion.

N B. If any kinds of Seeds are already possessed they should be named, that we may omit them and increase the quantities of others in lieu of them. Those purchasers who may prefer making their own selection are recommended to apply for our

GENERAL SEED CATALOGUE FOR 1859.

It contains all the newest and best kinds of KITCHEN GARDEN AND FLOWER SEEDS yet introduced, many of them from the Continent, with the prices affixed to each article.

SUTTON & SONS, Seed Growers and Merchants, Reading, Berks.

THE NEW MUSCAT HAMBURGH VINE.

MESSRS. ARTHUR HENDERSON AND Co. have much pleasure in directing the attention of Grape Growers to the new Muscat Hamburgh, Plants of which they are now sending out. In consequence of the extraordinary demand for the large three guinea fruiting plants, they are unable to supply any more of this size, but they still have excellent Plants at two guineas, suitable for fruiting next spring in pots, and also good plants at one guinea each.

Pine-apple Place, Edgware Road, London, W.

TO THE TRADE.

ISAAC DAVIS having an over stock of the following TREES will be happy to supply them per dozen or hundred, at reduced prices:—Weeping Mountain Ash, three and four years grafted; Weeping Ash, two years grafted; Dwarf Pears and Apples, three and four years grafted, cut to form pyramidal trees; Purple Beech, 7 to 8 feet, four times transplanted.

Larkfield Nursery, Wavertree, near Liverpool.

GARDEN SEEDS.

THOMAS KENNEDY AND CO., NURSERYMEN and SEEDSMEN, Dumfries, N.B., beg respectfully to intimate that they have got to hand their VEGETABLE AND FLOWER SEEDS, and are now prepared to execute orders for the same.

Their DESCRIPTIVE PRICED CATALOGUE FOR 1859, "which is of a most practical character, supplying all the information needed by the purchaser," is now ready and will be sent post free on application.

Free delivery. For particulars see Catalogue.

CELOSIA AUREA VAR. PYRAMIDALIS.

DICKSON'S AND CO., NURSERYMEN AND SEEDSMEN, Waterloo Place, Edinburgh, have now a limited supply of the above rare and beautiful Annual. Packets 5*s.* each sent free by post on receipt either of a Post-Office Order or postage stamps from unknown correspondents. See description in *Gardeners' Chronicle* of December 25, 1858.

Waterloo Place, Edinburgh.—January 1.

RICH BOG AND LOAM.—Gentlemen and Nurserymen will do well to apply early for the above to refresh their American beds. To be had in any quantity upon reasonable terms, by land or water carriage.

ROBERT NEAL, Nurseryman, Wandsworth Common, Surrey.

FLOUR, Warranted Unadulterated, free to any part of London (not less than 14 lbs.); Whites, for pastry, at per bushel (56 lbs.), 8*s.* 4*d.*; households, for bread-making, 7*s.* 8*d.*; seconds, 7*s.* 0*d.*; Wheatmeal, for brown bread, 7*s.* 0*d.*; best fine and coarse Scotch Oatmeal.—Address, HORSNAIL & CATCHPOOL, Bullford Mill, near Witham, Essex, or 97, Goswell Road, City Road, E.C. Directions for bread making gratis. Terms, cash. Bags lent. German yeast. A half sack (140 lbs.), or upwards, free to any railway station within 200 miles.

TO PIG AND POULTRY FEEDERS AND MILLERS.

CHICKEN RICE, 7*s.* 6*d.* per cwt., in bags 1½ cwt. each. SCREENED RICE, 10*s.* per cwt., in bags 1½ cwt. each. RICE MEAL, 6*s.* 9*d.* to 8*s.* 9*d.* per cwt. RICE for grinding. An allowance per Ton.—Sold for Cash by W. & R. JUPP, 6, Cross Lane, St. Mary-at-Hill, Eastcheap, E.C.

PIGS WILL PAY FOR FEEDING. — On receipt of stamps for 3*s.* 6*d.* will be forwarded a DETAILED STATEMENT of MANAGEMENT and FEEDING, proving that they can easily be fattened in 12 weeks after leaving the teat, at less than 2*d.* per head per day. The food costs about 3*s.* 9*d.* per cwt. or 7 lbs. for 2¾*d.*, and can easily be prepared by the owners of the Pigs. Testimonials from well known breeders.—Address, Mr. GEORGE MARGARETTS, Stock Breeder, Mr. Wells, Chemist, Fitzroy Square, London.

GENUINE TOBACCO PAPER FOR FUMIGATING.

H. APPLEBY (Foreman to Messrs. Ivery & Son, Nurserymen, Dorking, Surrey), begs to inform his friends and the public that he now offers the above article at a reduced price. Sold in 4-lb. packets, 1*s.* 3*d.* per lb. A great reduction to the trade; price on application. For testimonials that will guarantee its quality, see *Gardeners' Chronicle*, Dec. 11, 1858, page 920.

SHEET IRON POTS FOR FUMIGATING, 3*s.* 6*d.* each.

N.B. All Orders to be accompanied with a Post-office Order, payable to HENRY APPLEBY, Dorking, Surrey.

HORTICULTURAL WORKS, DANVERS STREET CHELSEA, SEPTEMBER, 1857.
DISSOLUTION OF PARTNERSHIP.

MR. GRAY begs most respectfully to announce to his patrons and friends that the Partnership hitherto existing between Mr. ORMSON and himself is now at an end, and that the Business will be carried on by him as usual, and he hopes to be honoured with a continuance of that support and patronage with which this establishment has been so long favoured.

Mr. GRAY avails himself of this opportunity to tender his grateful thanks to the many kind friends and supporters by whose patronage this establishment has been raised to its present position, and he begs to assure them that it will be his most anxious care and study to maintain it.

NOTICE.

VOKINS AND HURD (removed from Smith Street to Seymour House, Jubilee Place, King's Road, Chelsea), HORTICULTURAL BUILDERS and HOT-WATER APPARATUS MANUFACTURERS. Estimates forwarded.

HOT-WATER PIPES, at wholesale prices, with Elbows, Syphons, Tee Pipes, and every other connection. Wrought and Cast-iron Boilers, Saddle, Conical, Cylinder and Flat, from 21*s.* each. Boilers and Iron Stands to use without Brickwork. Valves, from 12*s.* 6*d.* each. Furnace Doors, Furnace Bars, Supply Cisterns and Castings of every description in Stock, at Mr. LYNCH WHITE'S Iron Wharf, Upper Ground Street, Blackfriars Bridge, London.

HEATING BY HOT WATER ON HAMMOND'S improved principle, for Horticultural Works, Mansions, Churches, Public Buildings, in fact everywhere that heat is required. Also his improved Ventilating Greenhouses, which can be erected at 1*s.* per foot, and entirely prevent the possibility of scorching the Vines or plants. The Patent Hot-water Register Stove.—Estimates at No. 18, George Street, Portman Square. Workmen sent into the country.

BLOSSOM OF WALL-FRUIT TREES.—Worsted Net, so very generally approved, 7*d.* per square yard—will last 10 years; plan of fixing it sent free. All kinds of Garden, Fishing, and Sheep Net, made by machinery, very cheap.

GALVANISED WIRE-WORK, less than 2-inch mesh, 16-gauge, 8*d.* per square yard; mesh 3 inches by 2 inches, for Poultry, 5*d.* per square yard; for Sheep, 4*d.* per square yard.

TRANSPARENT SHEETING, near 2 yards wide, 1*s.* per yard run.

WATERPROOF CAPES, long enough to protect a man from wet while stooping down, 3*s.* each; Police Capes, 18*s.* to 24*s.* per doz.; Tarpaulings for Carts, 12*s.*; Waggons, 25*s.*; Sheepskin Coats, 8*s.* each; Roofing Canvas, 1*d.* per square foot, 6 feet wide.

R. RICHARDSON, White Horse Factory, Bidborough Street, Judd Street; Office, 99, Euston Road, London.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, and FREDERICK MULLETT EVANS, of No. 20, Queen's Road West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and published by them at the Office, No. 5, Upper Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—SATURDAY, January 1, 1859.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 2.—1859.] SATURDAY, JANUARY 8. {Price Fivepence. STAMPED EDITION, 6d.

INDEX.

Aerides crispum	24 c	Mangel crop	26 c
Alpine plants	22 c	Mithridatea, Mauritius	23 c
Apple, Cox's Orange Pippin	22 a	New Zealand, fruits in	20 b
Avenues, trees for	22 a	Pauperism, Irish	27 a
Bombyx Cynthia in France	23 c	Peach stocks	24 c
Botanical Society, Edinburgh	22 b	Pear, Great Oregon	21 b
Botley Farmers' Club	28 c	Petunia, hardiness of	22 b
Chrysanthemums, culture of	23 b	Plants, Alpine	22 c
Corn weights	25 c	Puddings, black	28 a
Cotton-seed cake	26 a—28 a	Rain, Cirencester	22 b
Cricket, mole	24 c	Rhododendron Nuttalli	23 b
Drainage, flower-pot	22 b	Roses and Rose growing	19 c
Farming in Courland	22 b	Seeds, selecting	22 a
Ferns, tree	22 b	— kept in gum	22 c
Flax seed	26 a	Sheep, cross breeding	23 c
Flower-pot drainage	22 b	Silkworms, in France	23 c
Food, Cotton seed as	26 a—28 a	Society of Arts and Agriculture	26 a
Fruit trees in New Zealand	20 b	Superphosphate	22 a
Fungi and timber	20 b	Trade lists	23 b
— spawn of	22 b	Trees for avenues	22 a
Geraniums, propagation of	22 b	Trees, prices of in New Zealand	20 c
Illustrated Bouquet	23 a	Weights, corn	25 c
Ireland, pauperism in	27 a	— of fruit	21 b
Kemp's (Mrs.) England	22 c	Wheat, prices of	22 a
Lichens, British	21 a	Yucca gloriosa	22 b

HORTICULTURAL SOCIETY OF LONDON.—Meetings of the Fruit Committee will be held at 21, Regent Street, at 12, noon, on TUESDAY, January 11, 1859; on TUESDAY, February 1, 1859; and TUESDAY, March 1, 1859.

The Committee have decided on offering Prizes for the following Pears:—

	1st Prize.	2d Prize.
At the Meeting in Jan. for WINTER NELIS	20s.	10s.
" " Feb. for EASTER BEURRE	20s.	10s.
" " Mar. for BEURRE RANCE	20s.	10s.

N.B. The carriage of packages of fruit for the above meetings will be paid.

CHAMPION CABBAGE can be had in any quantity at 2s. per lb.
J. G. WAITE, Seed Establishment, 181, High Holborn, London.

TOM THUMB PEA.

CAUTION.—There are two distinct kinds selling under this name. They were grown side by side in Hertfordshire last summer, and the one is in every way inferior to the other. The best and earliest kind as originally shown by A. PAUL & SON at the Regent's Park, Crystal Palace, and elsewhere, may be had in pint packets, 2s. 6d. each. It is 10 days earlier than Sangster's No. 1.—Nurseries, Cheshunt, Herts.

EARLY PEAS.

WAITE'S DANIEL O'ROURKE PEA; the earliest Pea in cultivation.
EARLY NAPOLEON; a Blue Wrinkled Marrow Pea, as early as EMPEROR.
EARLY EUGENE; a White Wrinkled Marrow Pea, as early as EMPEROR.
Prices to be had on application of J. G. WAITE, Seed Establishment, 181, High Holborn, London, W. C.

THE EARLIEST PEA.—DUNNETT'S FIRST EARLY is in every respect superior to "Daniel O'Rourke," being several days earlier, having finer pods, and richer in flavour, height 2½ feet. For an early dish of fine-flavoured Peas we can confidently recommend this; 2s. per quart.
CHAMPION CABBAGE, the earliest and best sort, if sown in succession, may be had fit for table throughout the year, 8d. per ounce, or 1s. post free.
BUTLER & MCCULLOCH, Covent Garden Market, London.

EXCELSOR MARROW PEA (KNIGHT'S).—This new Pea is a decided improvement on the well known Ringwood Marrow, being quite as early, greater cropper, longer pod, larger pea, superior flavour, and greener in colour. A great acquisition either for the amateur or the market gardener. 2s. 6d. per quart. Price to the trade upon application. To be had of NUTTING & SONS, Seedsmen, 60, Barbican, London. E.C.

EARLIEST WRINKLED PEA.

FAIRHEAD AND SON, SEED GROWERS AND MERCHANTS, Lewisham, Kent, beg respectfully to offer their new EXCELSIOR PEA, of robust habit, delicious flavour; much earlier than Napoleon or Eugenie. They can confidently recommend it as the earliest and best Wrinkled Marrow Pea in cultivation. Price on application.

SEED POTATOES.—Fluke, Ashleaf, Kirk's Kidneys, and all other kinds of the best cropping Potatoes, to be had of Messrs. JOHN & GEORGE BELL, Potato Salesmen, Covent Garden, and Hungerford Wharf, Strand. PRICE LISTS sent on application. All orders from unknown correspondents must be accompanied with a reference in London, or Post-office order to Messrs. J. & G. BELL.

THE EARLIEST ASH-LEAVED KIDNEY POTATOES—for the true early short-top Lancashire kind, unsurpassed for forcing and early borders, price 16s. per cwt., apply to JAS. TYNAN, Seedsman, 68, Great George St., Liverpool.

EARLY POTATOES, LEMON KIDNEYS.—Selected Seed of this choice and early variety (*vide* article in "Royal Agricultural Journal," Part I., Vol. xviii.), may now be had on application to the Author's Bailiff, JOHN HELM, Morecombe, near Lancaster, price 2s. 6d. per stone.
N.B. A reserve of seed has been retained from sprouting for the purpose of supplying late orders. Copies of the article (third edition) may be had from the above address, price by post, 1s. 1d.

MR. WEBB, Calcott, Reading, begs to inform the Trade and the Public that he has disposed of his Stock of best EARLY OXFORD POTATOES to Messrs. J. MAY & Co., Seedsmen, 1, Wellington Street, Strand, where they may be obtained genuine.

BEST POTATO IN THE WORLD—IMPERIAL KIDNEY.

MR. WEBB, of Calcot, having succeeded in raising a quantity of the above excellent POTATO, begs to offer it to the public as the Best of its Class in every respect. Its quality cannot be surpassed, its yield most abundant, and its size from 2 inches to 9 inches long. Price 16s. per bushel, and no less quantity than 1 bushel disposed of. Also about 3000 true KENTISH COB NUT Trees from 2 to 4 feet high.—Apply to Messrs. JOHN MAY & Co., 1, Wellington Street, Strand, or to Mr. WEBB Calcot, near Reading, Berks.

GRAPE VINES FROM EYES, EXTRA STRONG.

LUCOMBE, PINCE, AND CO. have a large stock of all the choicest sorts of GRAPE VINES, with fine well ripened shoots, fit for immediate use.
Exeter Nursery, Exeter.

SUTTON'S SEED CATALOGUE FOR 1859 is now ready, and will be sent post free on application.
Royal Berkshire Seed Establishment, Reading.—Jan. 8.

GEORGE JACKMAN AND SON'S PRICED and DESCRIPTIVE CATALOGUE of GENERAL NURSERY STOCK for 1858 and 1859 can be had free on application.
Woking Nursery, Woking, Surrey.

WILLIAM YOUNG'S DESCRIPTIVE CATALOGUE OF NEW HARDY ORNAMENTAL PLANTS, CONIFERÆ, ROSES, RHODODENDRONS, FOREST TREES, &c. Can be had on application.—Milford Nurseries, near Godalming.

GEORGE BAKER begs to inform the Nobility and Public that his DESCRIPTIVE CATALOGUE OF AMERICAN PLANTS AND GENERAL NURSERY STOCK will be sent free on application.
American Nursery, Windlesham, near Bagshot, Surrey, about 1 mile from Sunningdale Station, South Western Railway.

TO THE TRADE.

E. P. DIXON'S WHOLESALE SEED CATALOGUE for 1858 and 1859 is now ready, and may be had free on application.
Seed Establishment, 57, Queen Street, Hull.

GAINES'S DESCRIPTIVE CATALOGUE is now printed and can be sent Post Free upon application to T. GAINES, Nurseryman and Florist, Surrey Lane, Battersea, Surrey.

NEW CHRYSANTHEMUMS.

JOHN SALTER begs to inform the numerous applicants for his NEW CATALOGUE OF CHRYSANTHEMUMS that it will be published in February, in which his splendid Seedlings and other new varieties for 1859 will be fully described, as well as his unrivalled general collection, which is the largest in Europe.—Versailles Nursery, William Street, near Hammersmith Turnpike, W.

JOHN GRIER'S NEW PRICED CATALOGUE, with brief descriptive and cultural remarks of a selection of TREES, SHRUBS, and PLANTS cultivated for sale at the Waterhead Nursery, Ambleside, Westmorland, may be had upon application.
Waterhead Nursery, Ambleside, Westmorland.

ROSE MANETTI STOCKS.

JOHN GRIER begs to inform the Trade and others that he has several Thousands of the above to offer for Sale, price of which may be had upon application.
Waterhead Nursery, Ambleside.—Jan. 8.

YELLOW ROSES.—Madame William, orange yellow; Isabella Gray, golden yellow. Strong plants, fit for immediate forcing, 8s. 6d. the pair.
A. PAUL & SON, Nurseries, Cheshunt, Herts.

SURPLUS STOCK OF ROSES.

TO BE SOLD CHEAP, in quantities not less than 100, the surplus stock of a Rose Grower, consisting of the leading kinds, both standards and dwarfs. They will be delivered Carriage Free to London. For prices and other particulars apply (by letter only) to S. S., 12, Shaftesbury Terrace, Pimlico.

RASPBERRIES.—Victoria (nearly out), 2s.; Carter's Prolific, 4s. per dozen; Fillbasket, Fastolf, Large Fruited, Monthly, and White, 10s. per 100. CURRANTS.—Good plants 12s. per 100, strong 3s. per dozen. Large Laurustinus, &c.
GEO. CORNWELL, Market Gardener, Seedsman, &c., Barnet, N.

TRUE SHROPSHIRE DAMSONS.—Fine Standard Plants of the above can be obtained from H. J. OLDROYD, Nurseryman, Shrewsbury. at 24s. per dozen, cash.

CARTER'S EXCELSIOR MELON.—A green-fleshed variety of delicious flavour, netted; fruit averages 4 lbs., requires scarcely any heating, and is very prolific. R. Hogg, Esq., President of the Pomological Society, and Turner and Spencer's "Florist," pronounce this variety to be one of the finest ever tasted. Seeds 1s. per packet.—JAMES CARTER & Co., Seedsmen, 238, High Holborn, London, W.C.

EARLY CUCUMBER.

CARTER'S EARLY CHAMPION CUCUMBER, price 20s. per oz., to be had in any quantity of J. G. WAITE, Seed Establishment, 181, High Holborn, London, W.C.

GARDEN SEEDS.

HUGH LOW AND CO. are now prepared to supply SEEDS for the Vegetable and Flower Garden, which have been selected with the greatest care, and will be found of the very best quality.
Clapton Nursery, London, N.E.—Jan. 8.

WANTED, AT TAYLOR'S "GRAND STAND."

PINES, 2½ to 3½ lbs. each	BLACK & WHITE GRAPES
LARGE DESSERT PEARS	SMALL MUSHROOMS
CHOICE FLOWERS	CUCUMBERS
SEAKALE	ASPARAGUS

And other choice Garden Produce.
Forward to GEORGE TAYLOR,
CHOICE FRUIT and VEGETABLE SALESMAN.
St. John's Market, Liverpool.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their NEW PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Stove, Greenhouse, and Hardy Ferns, Miscellaneous Stove, Greenhouse, and Hardy Plants, Variegated and Ornamental foliaged Plants, Conifers, Roses, Rhododendrons, Indian Azaleas, Gloxinias, Fuchsias, Cactuses, &c., is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

FRUIT TREES IN POTS.

JOHN AND CHARLES LEE have now the largest and finest stock of FRUIT TREES IN POTS in a bearing state for FORCING AND ORCHARD HOUSES ever offered. They consist of the following kinds, a CATALOGUE of which may be had on application:—

APRICOTS	FIGS	PEARS
PEACHES	PLUMS	APPLES.
NECTARINES	CHERRIES	ALSO,

VINES AND STRAWBERRIES.
Nursery and Seed Establishment, Hammersmith, London.

FRUITING VINES.

JOHN AND CHARLES LEE beg to offer extra strong short-jointed and well-ripened FRUITING VINES of the following kinds:—

BLACK HAMBURGH	BLACK FRONTIGNAN
CHAMPION HAMBURGH	WHITE FRONTIGNAN
MILL HILL HAMBURGH	BLACK PRINCE
GOLDEN HAMBURGH	ROYAL MUSCADINE
MUSCAT OF ALEXANDRIA	BIDWELL'S SEEDLING
	BOWOOD MUSCAT.

Nursery and Seed Establishment, Hammersmith, London.

TO THE TRADE.—MAGNIFICENT DWARF-TRAINED PEACHES, NECTARINES, AND APRICOTS.

WM. WOOD AND SON refer with pleasure to their truly superb and extensive stock of the above, which for growth and quality are quite unsurpassed, each tree being furnished with from 9 to 12 branches, well ripened and admirably trained. Also very fine Dwarf Maiden NECTARINES.
The Trade supplied on advantageous terms.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

TWO MILLIONS OF 1 AND 2-YEAR SEEDLING AND TRANSPLANTED LARCH FIR, ALSO TRANSPLANTED SPANISH CHESNUTS.

WM. WOOD AND SON have to offer a very fine stock of the above, also Seedlings of the following:—
ALDER, BEECH, SPANISH CHESNUTS, SCOTCH, SPRUCE, and SILVER FIRS, OAKS, CRAB, PEAR, EVERGREEN OAKS, and other Seedlings.
Prices will be forwarded on application.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

SEEDLING AND TRANSPLANTED FOREST AND ORNAMENTAL TREES, HEDGE PLANTS, SHRUBS, CONIFERÆ, RHODODENDRONS, &c.—The Subscribers inviting attention to their extensive, varied, and well-grown stocks as above, have pleasure in intimating that their CATALOGUES, priced as moderately as possible, are now ready, and will be forwarded on application.—DAVID REID & SON, Nurserymen and Seedsmen, Edinburgh.

THREE MILLIONS OF TRANSPLANTED QUICKS.

GEORGE CHIVAS, Chester, offers the above to the notice of Planters, which for extent and quality he believes are unequalled in the kingdom. A Sample Bale containing 100 of each five sizes forwarded on receipt of a Post-office Order for 15s. Truck loads delivered free at any Railway Station having through communication with Chester.

LIME TREES.

WILLIAM MAULE AND SONS having a large stock of this Tree 10 to 12 feet, well suited for planting Avenues, Public Parks, Cemeteries, &c., beg to call the attention of Corporations, Burial Boards, and Public Companies. Prices forwarded on application.
Stapleton Road, and Stoke Nurseries, Bristol.

NURSERY STOCK.

THE Subscribers are disposing of their extensive stock of SEEDLING and TRANSPLANTED FOREST TREES, ORNAMENTAL TREES, EVERGREEN and DECIDUOUS SHRUBS, STANDARD and DWARF-TRAINED FRUIT TREES, GOOSEBERRIES and CURRANTS, &c., at prices considerably reduced in consequence of dissolving partnership.—Priced Lists may be had on application.
Glasgow, Jan. 8. FOWLER & WRIGHT.

ONE MILLION ONE-YEAR SEEDLING OAKS (STRONG AND STOUT).

JAMES MELDRUM, NURSERYMAN, Kendal, Westmoreland, offers the above in quantities to suit purchasers, price reasonable, upon application.
N.B. Also a quantity of strong clean Transplanted Crab Stocks, 3 to 4 feet; Alders, 4 feet; and a quantity of Larch of different ages.

500,000 Transplanted LARCH, 2, 3, and 4 feet; 200,000 Transplanted SPANISH CHESNUTS, 2, 3, and 4 feet; 200,000 Transplanted HAZEL, 2, 3, and 4 feet. Samples (with prices delivered in quantity free to London, Reigate, or Reading,) on application to WATERER & GODFREY, Knap Hill Nursery, Woking, Surrey.

ASPARAGUS FOR FORCING AND PLANTING.—A few thousand roots, very strong, 2 to 7 years old.—For price, &c., apply to HENRY PAGE, Gardener, St. John's, Fulham, S. W.

PINE PLANTS.

WANTED, a few plants of PROVIDENCE (FRUITING AND SUCCESSION); also other large kinds.—Apply to J. M., Post Office, Hurstperpoint, Sussex.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY (LIMITED) supply every requisite for the Farm and the Garden.
Registered Offices, Union Road, Plymouth.

DOUBLE ITALIAN TUBEROSES.

JAMES CARTER AND CO. are now ready to supply strong flowering BULBS of the above at 4s. per dozen.
JAMES CARTER & Co., Seedsmen, 238, High Holborn, W.C.

PERENNIAL AND ITALIAN RYE-GRASS.

McBLAIN AND CO., SEEDSMEN, Newry, Ireland, offer to the Trade PERENNIAL and ITALIAN RYE-GRASS of every description. Samples and offers on application.

PAMPAS GRASS (GYNERIUM ARGENTEUM).—The beauty of this extraordinary plant has this season been fully appreciated. It can be supplied by the dozen, hundred, or thousand, by CHARLES NOBLE, Bagshot, Surrey.

33 PENNY STAMP

NEW ZEALAND RUNNING BEAN.—This Bean was found by a gentleman in the centre of New Zealand, where it forms the cheap vegetable food of the natives. It was not known at Auckland. My own observations on it last summer were that it grows tall and strong with a large heart-shaped leaf which droops at sunset. Blossom pinky white, a great bearer; pod size of Scarlet Runner but more tender and richer in flavour. The pod while ripening gets beautifully crimson and green striped. Mr. Henderson, of Pine-apple Place, says that it is quite new to him, and has ordered several hundreds of it. A printed account of it sent with each parcel. Price per doz. 3s.; extra Beans allowed to the trade post free. With each order please to enclose stamps or Post-office Order on Camberwell.—JAMES CUTHILL, Camberwell, London, S.

TO NOBLEMEN, GENTLEMEN, PUBLIC COMPANIES, AND OTHERS ENGAGED IN PLANTING.

JOHN WATERER having a very great quantity of the undernamed desirable PLANTS in excellent condition (from frequent removal) for transplanting, offers them at a very reduced scale of charges.

☞ Intending Planters having the object of immediate effect in view are respectfully informed that in selecting specimens for such purposes they would find a visit of inspection amply repaid, it being our determination to treat on the most liberal terms.

The Nursery is easily reached, being a short distance from Sunningdale Station, South-Western Railway (Reading Branch), where excellent conveyances meet all trains.

Wellingtonia gigantea, handsome plants, about 1 foot, 15l. per 100; 1 to 1½ foot, 5s. each or 20l. per 100; 1½ to 2 feet, 10s. 6d. to 21s. each; larger, up to 5 and 7 feet
Araucaria imbricata, 2 to 3 feet, 10s. 6d. each; 3 to 4 feet, 21s. to 31s. 6d. each; large beautiful specimens, up to 9 feet
Thuja aurea, good plants, 10l. per 100; about 15 inches, very globular handsome plants, 42s. per dozen, or 15l. per 100; 1½ to 2 feet, 5s. to 7s. 6d. each, or 20l. per 100; larger, 2 to 3, and 4 to 5 feet
Thuja gigantea, 1 to 1½ foot, 5s. to 7s. 6d. each; 1½ to 2 feet, 10s. 6d. each; 2 to 3 feet, 21s. each; large handsome plants, 3 to 4, and 5 to 8 feet
Thuja chilensis, 2 to 3 feet, 3s. 6d. each; 3 to 4 and 5 feet, 5s. to 7s. 6d. each
Cedrus Deodara, 3 to 4 feet, 5s. each, or 20l. per 100; 4 to 5 to 6 feet, 7s. 6d. to 10s. 6d. each; 6 to 8, 10, and 12 to 18 feet
Cedrus Libani, 4 to 5 feet, 5s. to 7s. 6d. each; 5 to 6, 7, and 8 to 10 feet
Cupressus macrocarpa, 2 to 3 feet, 30s. per dozen; 3 to 4 feet, 3s. 6d. each; 4 to 5 feet, 5s. each
Cryptomeria japonica, 4 to 6 feet, 5s.; 20l. per 100; 6 to 8, 10 to 15 feet
Cryptomeria japonica viridis, 3 to 4 feet, 5s. each; 4 to 6 feet, 7s. 6d. each
Juniperus hibernica, 2 to 3 feet, 24s. per dozen, or 7l. 10s. per 100; 3 to 4 feet, 42s. per dozen, or 12l. 10s. per 100; 4 to 6, 8 to 10 feet
Juniperus chinensis, 3 to 4 feet, 5s. each; 4 to 5 feet, 7s. 6d. each; larger, 5 to 7 and 8 feet
Juniperus virginiana (Red Cedar), 2 to 3 feet, 5l. per 100
Thujopsis borealis, about 1½ foot, 42s. per dozen, or 15l. per 100; larger, 2 to 3 feet
Cephalotaxus Fortuni, 1 to 2 feet, 5s. to 7s. 6d. each; larger, 2 to 3, and 4 feet
Taxus hibernica, 2 to 3 feet, 24s. per dozen, or 7l. 10s. per 100; 3 to 4 feet, 3s. 6d. each; 4 to 5 feet, 5s.; larger, 5 to 10 feet, all trained to a single stem
FitzRoya patagonica, 3 to 4 ft., 42s. per doz.; 4 to 5 ft., 5s. each
Pinus Beardsleyana, 1 to 1½ foot, 5s. each; 2 to 3 feet
,, Benthamiana, 3 to 4 feet, 7s. 6d. each
,, canadensis, 4 to 6 feet, 3s. 6d. each
,, Cembra, 2 to 3 feet, 3s. 6d. each; 3 to 4 feet, 5s. each; large, 4 to 6 and 8 feet
,, Craigiana (new), 1 to 1½ foot, 3s. 6d. each; 1½ to 2 feet, 5s.
,, Douglasi, 1 to 1½ foot, 30s. per dozen, or 10l. per 100; 2 to 3 feet, 42s. per dozen, or 15l. per 100; 3 to 5 feet, 5s. each; 5 to 6, and 6 to 15 feet
,, excelsa, 1½ to 2 feet, 12s. per dozen, or 50s. per 100
,, insignis, 1½ to 2 feet, 10l. per 100; 2 to 3 feet, 3s. 6d., or 15l. per 100; 3 to 4 feet, 5s., or 20l. per 100; 4 to 6 feet, very fine
,, Jeffreyana, 1 to 1½ foot, 5s. each; 1½ to 2 feet, 7s. 6d. (A new species allied to but more distinct, and reported to be the most handsome and valuable of the long-leaved Californian Conifers.)
,, Lambertiana, 2 to 3 feet, 7s. 6d. each; 3l. 10s. per dozen; large, 3 to 4 and 5 to 12 feet
,, Nordmanniana, small plants, 15l. per 100; about 1 foot, 10s. 6d. each; 1 to 1½ ft., 21s. each; 1½ to 2 ft., 42s. each; 2 to 3 feet, 63s. to 84s. each; 3 to 4 and 5 feet, perfect specimens
,, Pinsapo, 1 to 1½ foot, 5s. each; 1½ to 2 feet, 7s. 6d. each; large, 2 to 4, 6 to 8 feet
,, ponderosa, 1½ to 2 feet, 5s. each
,, Sabiniana, 3 to 4 feet, 5s. each
,, taxifolia (Jeffery), 1½ to 2 feet, 10s. each
(With the single exception of Pinus Lambertiana, the whole of the above are Seedlings)

ROSES.—Select Perpetual and Bourbon, do. varieties, Standards, 4l. 4s. per 100; do. Dwarfs, 2l. 10s. per 100
RHODODENDRONS, of all the superior kinds of scarlet, crimson, rose, white, &c., such as are annually displayed by us at the Great Exhibition of American Plants at the Royal Botanic Gardens, Regent's Park, London, in good plants, 42s. to 63s. per dozen
,, Fine varieties, for extensive planting, 24s. to 30s. per doz.
,, Catawbiense and mixed Hybrids, good plants, 1½ to 2 feet, 7l. 10s. per 100
,, Standards of the superior crimson varieties, good plants, 42s. to 63s., to 105s. each
,, ponticum (the only evergreen that entirely escapes the ravages of hares and rabbits), good plants, fit for immediate planting into woods for cover, 7l. 10s. per 1000; extra strong, 21s. to 25s. and 30s. per 100
,, Dwarf-growing varieties, 4l. 4s. to 5l. per 100
AZALEAS, good common kinds, consisting of scarlet, pink, yellow, &c., and for extensive planting, in good plants, 5s. per 100
,, superior, 12s., 18s., to 24s. per doz., or 3l. to 7l. 10s. p. 100
,, Standard, in fine sorts, 42s. each
KALMIA LATIFOLIA, 1 to 1½ foot, covered with bloom buds, 7l. per 100; larger, 18s. to 30s. per dozen
,, MYRTIFOLIA, fine plants, 30s. to 60s. per dozen (a superior kind to latifolia).
HARDY HEATHS.—A collection of 25 distinct kinds, 30s. per 100, or 12l. 10s. per 1000
Transplanted FOREST TREES, of which about 100,000 of each are in hand. We shall have great pleasure in forwarding samples on application.

Ash, 2 to 3 and 4 feet	Beech, 2 to 3 feet
Hazel, 2 to 3, and 4 to 5 feet	Birch, 2 to 3 and 4 feet
Chesnut, Spanish, 2 to 3, and 4 to 6 feet	Larch, 2 to 3 and 4 feet
	Scotch 1½ to 2 feet

A large quantity of bushy COMMON LAURELS, 2 to 3, & 4 ft.
Also the commoner kinds of Evergreens, such as HOLLIES, of kinds; BAYS, ARBUTUS, PHILLYREA, AUCUBA, PORTUGAL LAURELS, &c.

CATALOGUES containing descriptions of everything relating to Rhododendrons and Conifers forwarded on application to JOHN WATERER, American Nursery, Bagshot, Surrey.

UNEQUALLED NEW CUCUMBER, "DR. LIVINGSTONE."—This is one of the finest long hybrid Cucumbers for exhibition purposes that has ever yet been offered to the public; it is a splendid black spine, length 22 to 26 inches, a very free setter, and an abundant bearer. Price 2s. 6d. per packet.

Also the following fine CUCUMBERS can be supplied:—

	Per packet—s. d.		Per packet—s. d.
General Outram	2 0	Sunderland Wick	1 0
Perfection	1 0	Hunter's Prolific	1 0
Sir Colin Campbell	1 0	Mill's Jewess	1 0
General Canrobert	1 0	Cheltenham Surprise	1 0
Phenomena	1 0	Manchester Prize	1 0
Ipswich Standard	1 0	Sion House (true)	1 0
Lord Kenyon	1 0	Cuthill's Black Spine	1 0
Essex Hero	1 0	Conqueror of the West	1 0
Victory of Bath	1 0	Lynch's Star of the West	1 0
Gordon's White Spine	1 0	&c. &c.	&c.

"QUEEN OF THE WEST" MELON, a superb new variety, green flesh, very handsome in appearance, beautifully netted, and excellent in flavour. It obtained several first prizes during the past season. This Melon has proved itself to be one of the best varieties ever yet offered for early forcing. It sets well, and will carry an immense crop. Fruit weighing 2½ lbs. was cut on the 20th of April, and the plants continued bearing abundantly until the end of July. Seeds 2s. 6d. per packet.

NEW MELON "GENERAL HAVELOCK," sent out for the first time last season. It is a green flesh, of a very handsome shape, and beautifully netted; a very thick substance, thin skin, of a melting and most delicious flavour, and an abundant bearer. Weight from 3 to 4 lbs. It is very hardy, and may be grown as easily in a cold frame in the summer as a Vegetable Marrow. Seed 1s. per packet.

Also the following fine varieties of MELONS:—

	Per packet—s. d.		Per packet—s. d.
M'Ewen's Arundel Hybrid Scarlet-flesh	1 0	Bowood	1 0
M'Ewen's Arundel Hybrid Green-flesh	1 0	Victory of Bath	1 0
Monro's Crystal Palace Hero	1 0	Cashmere	1 0
Monro's Golden Gage	1 0	Camerton Court	1 0
The Queen	1 0	Beechwood	1 0
Orion	1 0	Windsor Prize	1 0
Golden Drop	1 0	Emperor	1 0
Green Gage	1 0	Fleming's Hybrid Persian	1 0
Bromham Hall	1 0	Blackall Green-flesh	1 0
Incomparable	1 0	Bailey's	1 0
Golden Ball	1 0	Snow's Hybrid	1 0
		Golden Perfection	1 0
		Scarlet King	1 0

A packet of any var. of Cucumber marked at 1s. per packet sent with a packet of the Dr. Livingstone Cucumber for 3s.
A packet of any var. of Melon marked at 1s. per packet sent with a packet of the Queen of the West Melon for 3s.
Extra fine mixed Hollyhock Seed, saved from all named vars., 1s. per packet.
Early Emperor Celery, the finest ever yet sent out, 1s. p. pkt.
Tiley's Solid White Celery, 6d. per packet.
Delphinium formosum, 6d. per packet.
Digitalis, or Foxglove Seed, 6d. per packet.
A remittance must accompany every order in Cash or Penny Postage Stamps, when the whole or any part, as the case may be, will be immediately sent.
EDWARD TILEY, NURSERYMAN, SEEDSMAN, AND FLORIST, 14, Abbey Church Yard, Bath.

ESTABLISHED 1823.
NEW PLANTS.
AMBROISE VERSCHAFFELT, NURSERYMAN, Ghent, Belgium, begs to offer the following new Plants:—

Alstroemeria argenteo-guttata	£0 16 0
Azalea indica Baron de Vrière	0 2 6
,, gigantiflora	0 2 6
,, Grande Duchesse Hélène	0 8 0
,, magniflora (Spae)	0 2 6
16 new Ghent Azaleas, hardy (figured in VERSCHAFFELT'S "Illustration"), nice bushy plants, and most of them with flower buds. The set	0 16 0
Camellia Grande Duchesse Hélène	0 12 0
,, Princesse de Prusse	0 8 0
(These are two of the finest Camellias of all. The correct figure can be seen in VERSCHAFFELT'S Camellia work.)	
Clematis Sophia flore-pleno, hardy	£0 16 0
Cydonia Mallardi, hardy	0 4 0
,, Moerloosi, hardy	0 2 6
Magnolia Lenné, the finest hardy Magnolia of all	0 7 0
Rhododendron acutilobum, greenhouse	0 4 0
,, crispiflorum ,,	0 4 0
,, Bylsianum, hardy, extra	1 0 0
,, Madame Wagner, hardy	0 3 6
,, Prince Camille de Rohan, hardy	0 3 6

Nearly all the above plants are figured in VERSCHAFFELT'S "Illustration Horticole."
The 12th Number (December) of 1858 of the "ILLUSTRATION HORTICOLE" is now ready, and will be sent out in a few days. It contains:—

Leschenaultia biloba, v. Huntsi	Burlingtonia venusta
Erica cerinthoides coronata	New Pear Général Totleben

With the new postal convention the work can be sent FREE to all parts of England, Scotland, &c., at 14s. 6d. a year. A Specimen Number will be sent free on application.

SEEDLING FOREST TREES, &c.

		Per 1000—s. d.
3,000,000	1-year Larch	1 0
1,000,000	,, Scotch Fir	0 10
300,000	,, Alder	1 0
200,000	,, Birch	1 6
200,000	,, Elms	1 6
150,000	,, Ash	1 6
100,000	,, Sycamore	1 6
300,000	,, English Oak	2 6
10,000	,, Evergreen Oak	40 0
20,000	,, Horse Chesnut	3 0
40,000	,, Chinese Arbor-vitæ	10 0
70,000	,, Cupressus horizontalis	8 0
80,000	,, Pinus Laricio	10 0
100,000	,, Pinus austriaca	6 0
300,000	,, Pinus maritima	2 6
20,000	,, Common Laurel	17 6
20,000	,, Crab Apple	3 6
250,000	,, Quick	2 0
10,000	,, Laburnum	2 6
10,000	2-year do.	4 0
1,000,000	,, Norway Spruce Fir	1 6
40,000	,, White Spruce Fir	4 0
50,000	3-year Silver Fir	7 0
800,000	2 ,, Scotch Fir	1 6
100,000	1 ,, bedded Scotch Fir	2 6
100,000	2 ,, Beech	3 0
60,000	2 ,, Birch	3 0
30,000	2 ,, Alder	3 0

The Subscriber begs to call attention of his friends and the public in general to the above stock of SEEDLINGS, and is happy to intimate to them that they are generally fine in quality, and trusts they will give satisfaction. Any order, large or small, will be promptly attended to. All delivered free of expense at Dublin, and thence half carriage paid to any part of England, &c.—Apply to MICHAEL BURKE, Drumlargan Nursery, Summerhill, county Meath, Ireland.

CALLICARPA PURPUREA.

JOHN STANDISH, the exhibitor of the above (at St. James's Hall), can supply a few good plants at 7s. 6d. each. The following passage from Dr. Lindley's leading article in the *Gardeners' Chronicle* for Nov. 20 will give an idea of its beauty:—"Callicarpa purpurea, quite insignificant when in flower, was beautiful in its winter dress of innumerable rich purple berries, about the size of swan shot." It is easily cultivated, and does well in a cold greenhouse or conservatory planted out, where it will produce thousands of bright purple berries resembling glass beads, and remaining on nearly the whole winter.—Bagshot, Jan. 8.

THE SUBSCRIBERS respectfully invite attention to their superior stock of the following, all of which have been frequently transplanted, and will remove with every chance of success.

CONIFERÆ.

Araucaria imbricata, 1 to 1½ foot, a large quantity; also some fine specimens 4, 5, and 6 feet
Biota meldensis, quite new, 1½ to 2 feet
,, glauca, 1 to 1½ foot
Cedrus Deodara, 2½ to 3 feet
,, robusta, 1 to 1½ foot, very distinct and beautiful
,, viridis, 1 to 1½ foot
Cryptomeria japonica, 4 to 5 feet, fine specimens
Cupressus ericoides, 1 to 2 feet, fine
,, fastigiata, 1, 2, and 3 feet
,, Lambertiana, 1 to 1½ foot
,, macrocarpa, 2, 3, 4, and 5 feet
,, Lawsoniana, 9 inches
Pinus austriaca, 2, 3, and 4 feet
,, Laricio, 1 to 2 feet
,, Montezumæ, from seed, very fine
Taxodium distichum, 3, 4, and 5 feet
Thuja aurea, 9 to 12 inches
,, Knighti, 2, 3, 4, and 5 feet, fine

EVERGREENS, &c.

Ivies, Irish, New Giant, and Regeneriana, very strong
Junipers, English, Irish, and Swedish
Laurels, common, 2 and 3 ft., very fine, in very large quantities
Laurustinus, black-leaved, 3 to 4 feet
Privet Evergreen, very strong
Rhododendron ponticum, 1 to 2 ft., very fine, by the 100 or 1000
Ailanthus glandulosa, 6 to 8 feet
Ash, Weeping, 8 to 10 feet, stems very fine
Rose Acacias
Sophora japonica, 4 to 6 feet
With a very large quantity of every description of Nursery Stock. CATALOGUES sent free on application.
Plants presented free to compensate for distant carriage.

WM. WOOD AND SON,
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

MESSRS. WATERER AND GODFREY respectfully invite the attention of parties engaged in planting to the following list of very desirable plants, all of which may be seen growing in the open quarters of their Nursery, and are in the finest possible condition for transplanting:—

Araucaria imbricata, 9 to 12 inches, 5l. per 100; 40l. per 1000
,, ,, 1½, 2, 3, 4, 5, 6, and 8 feet high. Our stock of this plant exceeds 100,000
Wellingtonia gigantea, stout handsome plants from seed, 84s. per dozen; 25l. per 100. These are all in the open ground, and are believed to be the finest lot of seedling plants in the Trade.
Cedrus Deodara, 1½ to 2 feet, 18s. per dozen; 6l. per 100
Do. 3, 4, 5, 6, 7, 8, 10 and 12, and 15 feet. Our stock of Deodars at the present moment occupies several acres of land; they have been constantly removed, and with fair usage not one in a thousand would fail. We offer them on very advantageous terms either in large or small quantities
Cedrus atlantica, 4, 5, 6, and 7 feet
Cupressus macrocarpa, magnificent plants, 7, 8, and 10 feet high
,, Lawsoniana, stout handsome plants from seed, 18 inches, by the dozen or 100
Abies nobilis, from imported seed, 6l. 6s. per doz.; 40l. per 100
,, do. 1, 2, and 3 feet high
,, Nordmanniana, a large number of beautiful plants, all from seed, 2, 3, 4, 5, and 6 feet high
,, Pinsapo, do. do.
[We believe we are justified in stating our stock of the three last-mentioned Firs offers a selection to be met with in no other Nursery.]
,, Douglasi, 6, 7, 10, and 12 feet
,, orientalis, 3, 4, 5, and 6 feet
Pinus Benthamiana, stout seedling plants, about 1 foot, 18s. per dozen; 5l. per 100; 40l. per 1000. Unquestionably the finest of all the long-leaved Californian kinds, and well known to be perfectly hardy. It is the most valuable of all for timber.
Juniper, Chinese, 2, 3, 5, 7, 8, and 10 feet high
Irish Upright, 3, 4, 5, 6, 7, and 8 feet. The Irish and Chinese Junipers are grown by us to a very large extent
Thuja aurea.—This plant originated in our Nursery, and our stock of it offers a choice of many hundred specimens from 1½, 2, 3, 4, and 5 feet high, and measuring from 2 to 10 and 15 feet in circumference. Nothing can well exceed the beauty of these plants, and certainly are to be met with in no other Nursery
Thuja gigantea, stout seedling plants, 1½ to 2 feet high
,, Wareana, 3, 4, 5, 6, 7, and 8 feet
Thujopsis borealis, handsome plants, in quantity, 1½ & 2 ft. high
Taxus, Yew, Common English.—A large quantity, and of all sizes up to 5, 6, and 7 feet
,, Irish Yew, 4, 5, 6, 7, and 10 feet. Many thousands of these beautifully formed plants grown to one stem
,, Golden Yews in large quantities and of all sizes up to 6, 7, and 8 feet
We also have them worked on the Common and Irish Yew as Standards, with heads from 12 to 15 years' growth
Holly, Variegated, Scottica, laurifolia, &c. We hold probably the largest stock of good sized variegated Hollies in the kingdom, especially of the better kinds of silver and gold striped
Rhododendron ponticum, for cover, stout plants, 1½ to 2½ feet, by the 1000. All the well-known proved hardy late blooming kinds, in any quantity, at from 30s., 42s., to 84s. per dozen
Standard Rhododendrons of all kinds
Azaleas, stout bushy plants, covered with bloom buds, from 18 inches to 2 feet high, and of all colours, 9s., 12s., 18s., and 24s. per dozen; 50s., 75s., to 100s. per 100
Hardy Heaths, a first-rate collection, at 35s. per 100; 15l. p. 1000
Roses, fine Standards, of the most popular kinds, at very low prices.
As well as the above, we are very large holders of the ordinary kinds of Nursery Stock, which may be judged from the fact that the Nursery far exceeds 100 acres in extent of all such things as Laurels, Box, Lilacs, Limes, Purple Beech, and the commoner descriptions of Evergreens and Deciduous Flowering Shrubs. An enormous stock of Fruit and Forest Trees are also grown extensively.
Goods are delivered free to London, Reading, or Reigate. The Nursery is reached in an hour from Waterloo, and conveyances are always to be had at the Woking Station.
CATALOGUES, Priced and Descriptive, will be sent on application, enclosing one postage stamp, to
WATERER AND GODFREY, Knap Hill, Woking, Surrey.

SEEDS.

JOSEPH MAY AND Co. beg to announce the arrival of their new VEGETABLE, AGRICULTURAL, & FLOWER SEEDS, which they have selected with the greatest care. Amongst Peas they would particularly recommend, as the two best kinds for early sowing, Waite's Daniel O'Rourke and Dickson's Favourite, the latter producing 8 to 14 Peas in a pod, and will do for sowing at any season. Collections of vegetable seeds made up from 10s. to 20s. and upwards, according to size of garden for which they are intended. These collections gave great satisfaction last season. Flower Seeds in collections: 12 packets choice seeds, 6s.; 30 packets hardy ditto, 5s.; 15 packets ditto, 2s. 6d., free by post.

Cucumber "Ne plus ultra" from specimens 27 to 31 inches each—straight and handsome—per packet, 1s.; all other best kinds, 6d. per packet. Melons, choicest kinds, 6d. and 1s. Gourds, the large hundredweight and others, 12 packets, free by post, 3s. Potatoes, all the best kinds. Grasses and all kinds of Agricultural Seeds of the best quality.

Trees, Plants, and Seeds packed for Australia, &c., at the lowest prices.—1, Wellington Street, Strand, W. C.

CHRYSANTHEMUMS—CHRYSANTHEMUMS.

J. H. BIRD, F.H.S., NURSERYMAN, Stoke Newington, the largest grower and most successful exhibitor of the Chrysanthemum in the British Empire, begs to call the attention of the lovers of the above beautiful autumn flower to his matchless collection, the stock of which amounts to upwards of 50,000 plants. Amongst them will be found the following new and rare varieties:—Admirable, Aimée Ferrière, Augustine, Constantine, Louisa, Louis Bonamy, Madame Leo, Norfolk Hero, Progne, Raymond, Beauté de Nord, Dr. Maclean, Queen of England, Plutus, Alfred Salter, Stellaris globosa, Beauty, Themis, Dupont de l'Eure, &c.

J. H. B can supply strong plants, one dozen for 6s.; or five dozen in 30 varieties, containing two of each variety, for 1l.; or he can supply 100 plants in 50 varieties, two of each variety, for 1l. 10s. Also POMPONES in great variety; 50 Pompones in 25 varieties, two of each variety, for 10s.; or 100 in 50 varieties, two of each variety for 1l. Strong plants of the beautiful new Pompone the Golden Cedo Nulli, 5s. each, will be ready in March with the usual allowance to the Trade. Every order will be accompanied by a popular work on the Chrysanthemum.

Post-office Orders payable to J. H. BIRD, Stoke Newington, will be immediately attended to.

CHRYSANTHEMUM TRICOLOR BURRIDGEANUM. CHRYSANTHEMUM TRICOLOR VENUSTUM.

F. K. BURRIDGE, SEED GROWER, Lexden Road, Colchester, has much pleasure in inviting the special attention of the Seed Trade to the above-named new Hardy Annuals, which he now offers for the first time, believing they will be found among the finest novelties of the season. The variety Burridgeanum differs from the old C. tricolor in having a fine crimson ring surrounding the yellow circle next the eye of the flower, the rest of the ray being snow white. The variety venustum has the ray florets of a deep reddish purple or plum colour for about one-half their length, shading into yellow at the base, and stained on the under side with purple. Both varieties are striking objects in the flower border, and from their bold conspicuous character, free blooming qualities, and perfect hardiness, together with their adaptability for bouquets, F. K. B. confidently predicts that they will become universal favourites.

A beautifully-coloured group of the two varieties has been prepared, and may be had on application, price 1s.; or gratis to Purchasers of 1 oz. of seed.

N.B. The Botanical Magazine for the present month (Jan. 1859), contains a coloured plate of the above.

SHAW AND CROSLAND'S RICHMOND DWARF late WHITE BROCCOLI.—This Broccoli has proved to be the hardiest in cultivation, having been grown on the most exposed situations, producing fine heavy heads from the middle of May to the middle of June. It gained the First and Second Prizes at the Sheffield Floral and Horticultural Society's Exhibition, held at the Sheffield Botanical Gardens, June, 1856. SEEDS can be had in sealed packets, price 2s. 6d. each, at the Richmond Nursery, Sheffield; or of

Charlwood & Cummins, Covent Garden	Henderson, E. G. & Son, St. John's Wood
Chaundy & Co., Lewisham	Kernan, Mr. J., Great Russell Street
Chatter's, Mr. Wm., Saffron Walden	Kearsley, Mr. J., Leeds
Davies, Thos. & Co., Wavertree, Liverpool	Low & Co., Clapton
Dean, Mr. Wm., Bradford, Yorkshire	Laing, Mr. Alex., Beverley
Flanagan & Son, Mansion House Street	Stewart & Son, Dundee
Fisher, Holmes & Co., Sheffield	Sharpe & Co., Sleaford
Godwin, Mr. F., Sheffield [St	Turner, Mr. C., Slough
Hurst & M'Mullen, Leadenhall	Urquhart & Son, Dundee
	Wheeler, Mr., Geo., Warminster
	Wood & Ingram, Huntingdon

P.S. Fine Transplanted Larch 1½ to 3 feet. Samples and Price to be had on application.—Richmond Nursery, Sheffield

WINTER AND SPRING-FLOWERING PLANTS.

HUGH LOW AND CO. have to offer the undernamed articles, the quality of which they believe to be unsurpassed:—

ERICA WILMOREA, in 32-pots, plants 18 to 20 inches in height, with 12 flowering shoots. Each, 2s. 6d.

ERICA WILMOREA, in 48-pots, plants 12 to 15 inches in height, with from 6 to 8 flowering shoots. Each, 1s. 6d.

ERICA HYEMALIS, in 48-pots, 9 to 12 flowering shoots. Each, 1s. 6d.

ERICA REGERMINANS, in 54-pots, plants 1 foot high, with from 12 to 15 flowering shoots. Each, 1s.

ERICA SINDRYANA, in 48-pots, plants 12 to 15 inches in height, with from 12 to 15 flowering shoots. Each, 1s. 6d.

EPACRIS IMPRESSA CARNEA, in 48-pots, plants 12 to 15 inches in height, with from 20 to 25 flowering shoots. Each, 1s. 6d.

EPACRIS DELICATA, in 48-pots, plants 12 to 20 inches in height, with from 15 to 18 flowering shoots. Each, 1s. 6d.

EPACRIS KINGHORNI, in 48-pots, plants 12 to 15 inches in height, with from 12 to 15 flowering shoots. Each, 1s. 6d.

EPACRIS AND ERICAS, in very large variety, all strong bushy plants, in 48 pots, 1s. 6d. to 3s. 6d. each.

CAMELLIAS, in variety, with flower buds, plants 9 to 15 inches in height, 2s. 6d. to 3s. 6d. each.

BORONIA DRUMMONDI, 9 to 12 inches in height, with 12 flowering shoots. Each, 1s. 6d.

AZALEA AMŒNA, one of the most lovely plants grown for early spring-flowering, plants in 48-pots, 9 inches high and the same in diameter, with from 20 to 25 flowering shoots. Each, 2s. 6d.

AZALEA INDICA, in large variety, 2s. 6d. to 7s. 6d. each.

CHOROZEMAS, in variety, well set with flower buds. Each, 1s. 6d.

CLEMATIS LANUGINOSA, the finest of all the hardy species, strong plants, 5s. to 7s. 6d. each.

ORANGE TREES, in fruit, 2 to 3 feet high, 7s. 6d. to 10s. 6d

Half-specimen ERICAS, EPACRIS, & AUSTRALIAN PLANTS, in large variety. The greater part are in 8-inch pots, 7s. 6d. to 10s. 6d. each.

With the single exception of the Orange Trees, all the articles named above can be supplied to the Trade by the dozen and hundred of each kind. Wholesale Prices on application. Inspection of the General Nursery Stock respectfully invited.

Clapton Nursery, London, N.E.

ROYAL EXOTIC NURSERY, CHELSEA, S.W.

JAMES VEITCH, JUN., respectfully announces that his CATALOGUE of KITCHEN GARDEN and FLOWER SEEDS for 1859, with a List of Implements and other Garden requisites, is now published, and will be forwarded post free on application.

J. V., Jun., devoting his personal attention to this department of his business can warrant his seeds TRUE TO NAME and of the MOST GENUINE description.—Jan. 8.

PRICED CATALOGUE OF SEEDS FOR 1859.

Just published by MILNE, ARNOTT, & CO., and will be forwarded free upon application,

A PRICED AND DESCRIPTIVE CATALOGUE OF SEEDS, containing select lists of the best kinds all from the most genuine stocks, and of excellent quality. Orders above 1l. carriage free to any station within 100 miles of London; above 5l. to any station or port in the United Kingdom.—MILNE, ARNOTT, & Co., Wandsworth Road, London, S., successors to Messrs. Chandler & Sons (established upwards of 60 years).

PINE-APPLE NURSERY, EDGEWARE ROAD (W.).

ARTHUR HENDERSON AND CO. beg respectfully to announce that their CATALOGUE OF KITCHEN GARDEN AND FLOWER SEEDS FOR 1859, with a List of Garden Implements and other requisites is now published, and will be forwarded, post free, on application.

They particularly desire to call the attention of the public to their "celebrated Short-topped Garden Beet," the only variety that really will repay the grower; colour, flavour, and quality are such as to render it worthy of extensive cultivation; also "Kite's Branching Marrow Pea," a very valuable and prolific bearer for every day use; "Snow's true White Winter Broccoli;" "Snow's Champion Cos Lettuce," a large crisp summer and autumn Lettuce, and for these seasons unequalled. In this select List will also be found the "Moor Park Lettuce," those very superior sorts as yet but little known, namely, the "Palatine" and "Versailles" Cabbage Lettuce; neither of these are disposed to run to seed during the hot summer months. The White and Black spined Imperial Cucumber, the new sprouting or Feather-stemmed Savoy, a scarce but most delicious Green; the "Waterloo framed short-topped seeding Potato," raised between the "Albion" and "Frame;" it is earlier than either, very productive, and the sort that must eventually be depended upon as the best early frame and forcer, as soon as its merits become better known. The "Australian Salad Cress"; this plant grows about 1 foot in height, branching and spreading all round the stem; it may be constantly cut and gathered throughout the summer, the leaves are of a peculiarly delicate light green, the flavour is exquisite, grateful, and piquant.

CHAMPION OF SCOTLAND PEA.—A new and first-rate sort, declared by all who grew it last year to be the most distinct and best flavoured Pea in cultivation. To be had only at PETER LAWSON & SON'S, the Queen's Seedsmen, &c., who are also prepared to execute orders for all sorts of Garden and Flower Seeds of the finest quality.

27, Great George Street, Westminster.

"JACK OF NEWBURY" SWEDE, ETC.

PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN, &c., 27, Great George Street, Westminster, respectfully request attention to their very genuine Stock of the above excellent Swede: also of the LOTHIAN PURPLE-TOP SWEDE, both of which have been selected with the greatest care. They have also a very fine Stock of the KOHL RABI, or TURNIP-ROOTED CABBAGE, specimens of which were shown at their Stands at Smithfield Club Show. The Kohl Rabi was largely grown last season, and may now be relied on as a substitute for the Turnip and Mangel, where these roots do not succeed, or for filling up blanks where there is a partial failure. Its feeding qualities, hardiness, and weight per acre are equal to the Swede, and all kinds of stock prefer it to other roots.

P. L. & SON have also selected a first-rate Stock of MANGEL WURZEL SEED, which they can confidently recommend. Their natural GRASS SEEDS have been also saved with very great care, and they are ready to supply them separately or in mixture, for laying down Permanent Pastures, Lawns, &c.

P. L. & SON have arranged to deliver Seeds free throughout England and Wales from their London Establishment, for all quantities exceeding 20s. in value.

LISTS OF PRICES of the above and all other Seeds, Plants, &c. may be had on application.

27, Great George Street, Westminster.

THE PLYMOUTH SEED COMPANY'S COLLECTIONS OF VEGETABLE SEEDS.—These Collections have for many years been sent out, and have given universal satisfaction. They combine excellent germinating qualities, superior sorts, and may be deemed economical in the truest sense of the word.

No. 1.—Complete Collection, sufficient for a large Garden, 3l.
No. 2.—Complete Collection for a moderate size Garden, 2l.
No. 3.—Complete Collection in small quantities, 1l. 5s.
No. 4.—Complete Collection for a small Garden, 15s.

COLLECTIONS OF FLOWER SEEDS.—Post Free.

	Large Pkts.	Small Pkts.
No. 1.—100 Packets	£1 5s. ..	£1 0s.
No. 2.—60 ,, ...	0 15 .	0 12
No. 3.—25 ,, ...	0 8 ..	0 6
No. 4.—12 ,, ...	0 4 ..	0 3

Freight and Carriage.

All orders for Seeds above 1l. forwarded free to any Stations between Plymouth and Paddington. All orders above 2l., free to all Broad Gauge Stations, to most other Railway Stations, and by steamers to Cork, Dublin, Liverpool, Guernsey and Jersey. All orders above 5l. free to all Railway Stations in England and Wales, and to any Steam Port in the United Kingdom.—For other and full particulars, the reader is respectfully referred to the General Price Current of the Plymouth Seed, Agricultural Implement and Manure Company Limited, (late Rendle's Price Current), which is now published and ready for delivery, on application to the Secretary of the Company. Copies can also be obtained from any bookseller in town and country through Messrs. SIMPRIN, MARSHALL, & Co., Stationers' Hall Court, London.

Free for 6 stamps, or gratis to customers.

TO THE SEED TRADE.

CHOICE STOCKS OF SEEDS GROWTH OF 1858.—The undermentioned Seeds having been grown from choice stocks in larger quantities than we required for retailing, we are prepared to offer a portion of each kind, or either of them at very low prices:—

IMPROVED GLOUCESTERSHIRE WHITE SWEDE
SUTTON'S LINCOLNSHIRE RED GLOBE TURNIP
SUTTON'S IMPERIAL CABBAGE
SUTTON'S EARLY DWARF COMBE CABBAGE

Reading Onion	Paradise Marrow Pea
Danver's Yellow ditto	Tweeddale Purple-top Turnip
James's Long-keeping ditto	Yellow Tankard Turnip
Dickson's Favourite Pea	Green Globe ditto

Green Round Turnip (old sort).

The above were grown by or expressly for us from our own stocks and can be confidently recommended. Applications for prices, stating quantity required, addressed as below, will be replied to promptly and liberally.

SUTTON & SONS, Seed Growers, Reading, Berks.

BEAUTIFUL NEW TORENIA.

JOHN AND CHARLES LEE are now prepared to send out their beautiful new TORENIA PULCHERRIMA, which has been so much admired. It is figured in the present Number of Henderson's "Illustrated Bouquet," and undoubtedly surpasses all other Torenias by the great contrast it exhibits in the rich dark velvet, approaching to black, of the side lobes, and the pure white of the lip.

Dr. Lindley thus describes it in the *Gardeners' Chronicle* of October 30, 1858:—"We have received from Messrs. Lee of the Hammersmith Nursery a singularly beautiful variety of the favourite Torenia asiatica. The tube of the corolla and its eye are an intense purple violet; the two side lobes are the same colour, fading at the edge into pure violet; the upper lobe is pale violet; the lower is white, with a purple oblate blotch at the point. This variety puts the old original kind quite out of the field."

Price 10s. 6d. The usual discount to the Trade.

Nursery and Seed Establishment, Hammersmith, London.

ORCHARD HOUSES.

LUCOMBE, PINCE, AND CO. invite attention to their very superior Stock of

FRUIT TREES IN POTS

for the above purpose, consisting of all the best kinds of APRICOTS, CHERRIES, FIGS, NECTARINES, PEACHES, PEARS AND PLUMS,

thoroughly established in their pots, and full of well ripened wood, so that they are capable of bearing abundantly next season.

Prices will be found very moderate, and can be had on application to them.—Exeter Nursery, Exeter, established 1720.

GENUINE GARDEN SEEDS.

LUCOMBE, PINCE, AND CO. very respectfully announce that their Stock of KITCHEN GARDEN SEEDS for 1859 is now complete, and comprises many novelties of great promise, and all the best old sorts of acknowledged merit. The quality of all their seeds is this season particularly fine, and as they take great pains in selecting the whole from *the purest stocks, and prove their vitality previously to sending them out*, L., P., & Co. are enabled with great confidence strongly to recommend them. CATALOGUES of the above are now ready, and may be had on application to

LUCOMBE, PINCE, & Co., Exeter Nursery, Exeter.

The Gardeners' Chronicle.

SATURDAY, JANUARY 8, 1859.

MEETINGS FOR THE FOLLOWING WEEK.

TUESDAY, Jan. 11 { Horticultural (Fruit Committee at 21, Regent Street)..... Noon.

"THE discussion," says a correspondent, "on the merits of the Rose Isabella Gray was very interesting and useful to amateur Rose growers, and has led to the hope that it might be followed by others on the same subject, as those who have not the opportunity of judging for themselves at the great Rose shows, or of testing the merits of many of the new varieties, look with eager eyes for the information they may derive from the pages of the *Gardeners' Chronicle*. The description which Mr. RIVERS gives in his excellent little book of some of the new Roses is very tempting, and the opinion of so sober-minded an enthusiast leads to great hopes that the result may be favourable. I and others of your readers would be obliged by being informed if some of the new Perpetual Roses, as Triomphe des Beaux Arts, Madame Vigneron, Caroline Riguet, &c., and the Tea Auguste Vacher, can now take first places as free bloomers and vigorous growers. Much was anticipated from Arthur de Sansal last season; but he does not seem to advance in favour. May this arise from the habit of growth being delicate? Will you inform me if the vigorous Perpetuals, such as General Jacqueminot, Jules Margottin, Louise Odier, could be trained as *weeping* Roses on a Briar stock of 4 or 5 feet high?"

We print thus prominently an inquiry which would, under ordinary circumstances, be placed in another part of our columns, because the writer expresses clearly some of the wants which all lovers of the Rose, whether within reach of the great nurseries or not, must necessarily experience. In truth the whole question of Rose growing, as well as of Rose qualities, is one of the most complicated in modern gardening; and more than almost any other in need of very ample discussion. Considering the intense interest which great numbers of persons take in the growth of Roses, and the hopelessness of all, or even many, acquiring personal experience concerning their various, and let us add variable, qualities, there is nothing which stands more in need of copious illustration by comparing notes of the results obtained in all sorts of climates and soils.

No plant is more influenced by the nature of

soil, or the degree of summer and winter temperature, or the dryness or moisture of the atmosphere; and the conflicting testimony to be met with so abundantly arises evidently out of unappreciated differences of this kind. For example, the most trustworthy information that the United States can supply about Roses is valueless with us. It is useless to say that the Isabella Gray flowers profusely at Boston; for owing to the wide difference between Massachussetts and England success in the former is not in the smallest degree a guarantee of its attending growth in the latter. And so it proves, for, until artificial heat is provided the hopes of Miss Gray's admirers have, hitherto at least, been doomed to disappointment. Take again the old double yellow Rose (*R. sulphurea*), an oriental plant, the glory of the countries washed by the waters of the Mediterranean; to this day we have no certainty that it will flower properly in England; and when it does none know the reason why. Then there is the vexed question about the value of that variety of *Rosa alpina* called Manettii, after a late able horticulturist at Monza near Milan. How is that to be settled? One grower finds it admirable, another pronounces it worthless. We in our cold heavy Middlesex land, being asked for an opinion say it is a very bad stock here; but that does not justify us in denouncing it everywhere. We want information. Is it for light land only? or for chalk? or for what? We have at present no right to accuse its advocates of exaggeration. A dozen testimonials from amateurs with gardens in different soils would settle the matter one way or other. In truth, as we have already remarked, there is nothing within the whole range of horticulture which so much needs elucidation and explanation as the Rose. Our readers would therefore confer very great mutual benefit on themselves and others if they would carefully communicate the experience they have gained in various soils and climates. It was for such inter-communication that our Journal was originally undertaken, and the unquestionable service it has rendered to horticulture has been greatly owing to the temperate discussion of an infinite variety of facts and opinions freely published in its columns.

With regard to the questions proposed by our correspondent whose inquiry has led to these remarks, we shall be rather curious to know whether the information we ourselves can communicate from personal experience will agree with that of others. First then as to Arthur de Sansal, a thoroughly bad grower; we can make nothing of him. As to Jacqueminot and Jules Margottin they grow famously, and make as good a balloon tree as Coupe d'Hébé itself, which is saying a great deal. The General moreover, on his own legs makes a splendid bed, which on light warm Hampshire land is one of the most effective things we have seen. What Louise Odier may be good for as a weeper we cannot say; she is a good autumn sort. Among weepers, for ballooning, we have a great fancy for a Tea sort called Sombreuil, which grows prodigiously on the common hedge stock; it has fine white blossoms, not very good in form, but most abundant, and the kind is hardy. Caroline Riguet is a capital white, and a strong grower, but nothing like so hardy as Sombreuil. Auguste Vacher seems not to have much merit. We know nothing of Madame Vigneron, and as for Triomphe des Beaux Arts, a beautiful sort undoubtedly, we do not think it is much of an improvement on General Jacqueminot, said to be its father.

While touching upon this subject there is another point on which we think it well to offer a word or two. No one has more constantly than ourselves urged the necessity of reducing the varieties of cultivated plants. The seedsmen's lists of Peas and other esculents, the florists' of Hyacinths, Crocuses, Geraniums, Fuchsias, &c., are great inconveniences, unattended by the slightest advantage to the buyer. But with Roses it is quite different; the more good sorts the better; for if two are much alike in flower they may be quite unlike in manner of growth, in constitution, or duration. Some like one place, some another. Heat is the nurse of one, and the pest of another. One requires dryness, another can only live in damp; and then there is the season of flowering, the fragrance, and a hundred other little peculiarities unknown in the greater part of domesticated flowers. He therefore who really loves the Rose should plant all the sorts he can afford to buy; get them to grow, and himself discard what does not suit him. A field, instead of a garden, is as good a place as any for this sort of investigation; and, since Roses in profusion are what we would most wish to have, so the ample area of a field gives us the best opportunity of gratifying the desire. We for one therefore say to nurserymen: keep plenty of sorts for the various tastes of customers; and for the same reason to the managers of exhibitions: set no limit to the number of sorts which may be exhibited.

A FEW years since the destruction of ships by dryrot was one of the most formidable items of expense in our dockyards. Ships when scarcely off the stocks were speedily condemned as untrustworthy, while in other cases a large portion of the timbers had to be renewed, before the launching of the vessel. Improved ventilation and a careful selection of timber, independent of the use of any chemical antiseptics, have made such disasters matters of history. The slightest suspicious hue in the wood admitted into the dockyards is quite enough to condemn it, and the condemnation is not attended in general with pecuniary loss, as there are plenty of purchasers of it for other purposes.

Some facts have lately come before us which tend to show that a more accurate inspection of timber in other cases besides ship building might be attended with great advantage. The wheelwright, for example, if he wishes to establish a steady trade, must be extremely particular in the selection of his materials. And for the most part he is sufficiently aware of the wisdom, if not of the necessity of peculiar care. He is anxious to buy the best trees; he does not saw them out till he considers them sufficiently seasoned to make sound work, and he keeps the planks or blocks when cut out for two or three years before he makes use of them. He is not, however, aware that before the trees are cut up, an insidious process is frequently taking place, which is undermining all his precautions. He leaves, for instance, his Elm trees, of which the naves of the wheels besides other parts are made, exposed to the weather; fungi appear in abundance upon the bark, the bark separates, the wood is considered to be ready for sawing, and no longer liable to split, as is sure to be the case if sawed up green, and he therefore fancies that all is well. If, however, he were to examine the cross cut he would perhaps perceive differences of tint in the several parts of the surface, which indicate too surely the penetration of fungus-spawn into the wood, the consequence of which is that whenever it becomes damp, it may be a year or two after it has been fabricated, the spawn grows, the wood is further decomposed, its strength and toughness consequently impaired, and under some more heavy strain than usual the work gives way, to the disgust of the purchaser, and the astonishment of the maker, whose intention was to employ only the best materials.

The facts to which we allude as illustrative of these observations are as follows. A quantity of fine Elm trees were cut down in the winter of 1855, and lay exposed to the weather for seasoning in a wheelwright's yard up to Christmas 1858. The bark was everywhere covered with *Agaricus velutipes*, the white spawn of which penetrated it in every direction. Between the bark and the wood was an abundant development of the peculiar production known under the name of *Rhizomorpha subcorticalis*, which arises from the imperfect growth of several different fungi, where unable to reach the light. The trees were all supposed to be quite sound, but one attracted our attention more especially than the rest. Its trunk was 3 feet in diameter, and was undoubtedly sound to the very base when felled. When however the butt was cut off it was at once apparent that the spawn had penetrated from the bark deeply into the heart wood. In general it was easily traced for 12 inches into the tree, and to show that it was not the sap-wood only which was affected, it is sufficient to state that in one part it had reached to within 4 inches of the centre. This was however on the north side of the tree, on which the rings of growth are usually the narrowest. We did not see a cross cut high up in this tree, but in another of equal dimensions a section half way up presented the same phenomena. An inspection of the wood under the microscope exhibited a quantity of extremely delicate spawn threads, which were however apparently confined to the longitudinal tissue without penetrating the medullary rays. It is quite clear that wherever this wood when used should be exposed to the weather, the spawn would grow, and would, as a matter of course, either cause the decay of the tissues, or if the exposure was sufficiently long, develope its proper fungus.

It is evident then that the exposure of timber to the weather for the purpose of seasoning is not unattended with danger. It is not always convenient to place trees under cover, but where this is impossible it may be worth consideration whether it might not be prudent to remove the bark; for though this would not absolutely prevent the growth of fungi, it would at any rate be more evident what was going on, and the wood would be more rapidly seasoned.

In conclusion it may be remarked, that in addition to the mycelium of the Agaric the wood was slightly penetrated by a dark-coloured spawn, of which the perfect plant was not developed. This had impaired the colour of the timber materially, as far as it penetrated, while the spawn of the Velvet-footed Agaric had caused only a slightly paler tint than that of the rest of the wood. *M. J. B.*

PRICES OF FRUIT AND FOREST TREES IN NEW ZEALAND.

THE following are notes made at a public auction for the sale of Nelson fruit and forest trees in the Market Place, Christchurch, Canterbury, New Zealand. The consignment was advertised to consist of Cherry, Plum, Pear, Apple, Currant, Filbert, Sweet Chesnut, Mulberry and Peach; English and Turkey Oak, Ash, Horse Chesnut, Elm, and Silver Gum (*sic*); Roses; Herrya (*sic*) japonica, Dutch Honeysuckle; 3000 Privets and 30,000 Hawthorns; the season having arrived for planting fruit and forest trees, but more particularly fruit trees. The large prices realised, and keen competition in bidding is owing to the great scarcity there is of such things, and shows how prevalent the desire is to possess trees and fruits of our fatherland.

The following table will give English nurserymen some idea of the demand for fruit and forest trees here.

Name.	Height.	Age.	Quantity.	Price put up at.	Price knocked down at.	Remarks.
				s. d.	s. d. s. d.	
FRUIT TREES.						
Cherries	18 inches	1 year grafted	One dozen	14 0	24 0	Good sorts — Bigarreau, Black Heart, &c.
Plums	18 inches	Ditto	Ditto	12 0	25 0	Good sorts.
Pears	2 feet	Ditto	Ditto	21 0	24 0 to 36 0	Marie Louise, and other good sorts
Apples	18 inches	Ditto	Ditto	15 0	21 0 to 27 0	Good kinds.
Filberts	Ditto	1 year seedlings	Half a dozen	5 0	10 0	
White Currants ..	Ditto	1 year old cuttings	One dozen	12 0	17 0 to 19 0	
Black ,, ...	Ditto	Ditto	Ditto	5 0	12 0	
Sweet Chesnuts ..	Ditto	1 year seedlings	Ditto	21 0	40 0	Very scarce.
Peaches	2½ feet high	1 year budded	Ditto	15 0	45 0	Royal George, and other good sorts.
Dutch Medlars	1 foot high	1 year seedlings	Single plants	12 0	15 0 to 19 0	Very scarce.
Mulberries	Ditto	Ditto	Ditto	10 0	15 0 to 20 0	Ditto.
Walnuts	9 feet high	6 years old	One dozen	15 0	27 0	Plentiful.
FOREST TREES, &c.						
English Oaks	9 feet high	6 years old	One dozen	15 0	27 0	Scarce.
Laburnums	Ditto	Ditto	Ditto	10 0	21 0	Plentiful.
Turkey Oaks	9 inches	1 year seedlings	Ditto	8 0	12 0	Scarce.
Ash	Ditto	Ditto	Ditto	10 0	15 0	Ditto.
Elm	2 feet high	2 year seedlings	Ditto	7 0	15 0	Ditto.
Horse Chesnut	1 foot high	1 year seedlings	Single plants	2 6	8 0	Very scarce.
Sycamore	9 inches	Ditto	100 plants	20 0	36 0	Scarce.
Silver Gums	Ditto	Ditto	One dozen	10 0	12 0	Common.
Roses	Ditto	1 year old cuttings	Single plants	1 0	2 6	Ditto.
Common Privet ..	Ditto	Ditto	1000 plants	6 0	8 0	Plentiful.
Hawthorns	Ditto	1 year seedlings	Ditto	12 0	14 0	Ditto.

The climate is very nearly that of this district, and suits fruit and forest trees remarkably well. The six-year-old Oaks had young shoots from 3 to 4 feet in length and tap roots of similar size. They were excellent examples of what forest trees may become here by-and-bye. Acorns of the English Oak from England are realising the high price of 14*l.* per bushel and Ash seed 17*s.* per lb.

I have assisted to lift during this month and beginning of last more than 3000 different sorts of fruit trees for distribution in every part of this province. Apples one year grafted are sold at 2*s.* 6*d.* each; two year, 3*s.* 6*d.*; three years and upwards, 5*s.* to 6*s.* Pears are much higher priced. Two thousand at least of the fruit trees distributed have been Apple trees. The great demand for these I can attribute to nothing else but the high price we have to pay for the Apple in its ripe and green state, namely, 1*s.* 4*d.* for a lb. The Apple promises well, and seems adapted to our district. Nonpareils attain the size of the Blenheim Orange, and so on. With reference to this king of fruits in this part of New Zealand, I may state that it will by-and-bye, under attentive and scientific cultivation, become an increasing treasure both of wealth

and utility to the inhabitants of this and the neighbouring provinces.

I may add that I tried an experiment this last season in the garden of a friend with respect to planting Potatoes. I planted 10 lbs. of sets in the way suggested by the late T. A. Knight, Esq. I gave them plenty of room by having the rows a yard asunder, and the Potatoes 18 inches apart from set to set in the row. Instead of earthing them up in ridges in the usual way, when ready for that operation, I laid the shoots flat down on the surface of the ground and placed the earth upon them, and from time to time as growth increased I added more earth until they stopped growing. At digging-up time I was well rewarded for my trouble. The crop of good-sized Potatoes weighed without chats 130 lbs. Four or five joints up the stem the Potatoes hung like ropes of Onions, but the nearer the top of the shoots the Potatoes became gradually smaller. Here the Potato is particularly productive. *William Swale, July* 25, 1858.

ON THE BRITISH LICHENS:

THEIR CHARACTER AND USES.

By CUTHBERT COLLINGWOOD, M.B., F.L.S.

No section of the organic kingdom is, perhaps, at first sight, so valueless as Lichens; nevertheless, the words which that great philosopher, Shakespeare, puts into the mouth of Friar Lawrence when he goes forth in the morning to cull his simples, are peculiarly applicable to them—

"For nought so vile that on the earth doth live,
But to the earth some special good doth give."

For whether we regard them structurally or from a commercial point of view, or even merely æsthetically, as an element of the picturesque in the landscape, they are equally worthy our attention.

Linnæus applied to the Mosses the term *servi*, or slaves, and it has been considered by some that this term would have been more applicable to Lichens; but *servi* strictly means prisoners of war reduced to slavery (*bello servati*). The title, however, given by the great Swede to the Algæ, viz., *vernaculi*, and which signifies slaves born in their master's house, rather expresses the position of the family in question; for where they first spring up, there they live a life of labour as it were, reducing the solid rock to powder, and rendering it fit for higher plants—and there, after vegetating for an almost unlimited period, they die.

The most important uses therefore of this tribe of plants — those which are most general in their influence, and which affect the physical conditions of the globe—consists in their capability of producing and disseminating fertile cells, which can find a suitable nidus in situations where no other vegetable production can find food capable of assimilation. For like Algæ among vegetables, they possess no true root; and like them also, and entozoa among animals, they derive nourishment from the surrounding fluids. Air and moisture appear to supply them with all the materials necessary for their growth, which is consequently slow and imperceptible. Thus they are able to affix themselves in situations in which no other vegetable could exist. They are the first workers upon newly-exposed rocks—they are also the last organisms met with upon the most elevated Alpine crags, and in the highest Polar latitudes. Lecidea geographica is found in both these situations—a grey crustaceous Lichen; nevertheless their geographical distribution is not by any means confined to such spots, for the green and coloured foliaceous species attain their maximum development in the regions of the tropics.

It does not appear that there is any rock whose hardness and impenetrability suffice to secure it from their attacks. Lecidea immersa, rimosa, and epipolia prefer calcareous rocks; Lecidea lucida and intricata sandstone; Lecanora frustulosa grows upon the Scotch micaceous schists; Lecidea geographica, on trap. Many attack granite, as Lecidea polytropa, and Lecanora ventosa; Lecanora tuberculosa prefers flints; and even quartz in its smoothest form is disintegrated by Gyrophoras and Lecidea geographica. Many of them secrete an acid (chiefly oxalic) by means of which they corrode the rock, and become inseparable from it. As a general rule, the crustaceous Lichens affect rocks and walls, and foliaceous ones the barks of trees; but this is not universal. Some, however, are only found upon wrought wood; others affect particular trees; many grow upon Mosses; and one, Parmelia hypnorum, appears to lie quite loosely upon the ground.

If, in the animal or vegetable kingdom, we attempt to form a chain of beings, in which one shall succeed another in regular order, we shall be disappointed; for we shall ever be branching off from the main line, to accommodate forms which will not be bound by any law of a single series. Kingdoms of nature, as well as sub-kingdoms, rather run parallel with one another, than succeed each other. Fungi and Algæ are not so much "inferior forms" of vegetation, as parallel series of forms, differing in the main points of their habits and economy, but still both of them alike touching in certain points the class we are considering. Thus some Lichens so much resemble fungi in appearance, that they were long passed over as such by botanists, who did not make fungi an especial study. The genus Baeomyces (especially B. roseus) resembles in odour, texture, and form, a Helvella. Acharius long referred Endocarpon pulchellum to the genus Thelephora. Collema spongiosum used to be mistaken for a Peziza. So also Lecanora pezizoides, &c. On the other hand, the fam. Algæ has its imitators. Collema pubescens was long claimed as an Alga, and both Verrucaria submersa and Endocarpon miniatum resemble Algæ in their habit. Hence has arisen much misconception, and very erroneous views as to the permanency or otherwise of species and classes, which more enlarged views and increased knowledge have helped to dispel.

Most Lichens arrive at perfection in the winter season, and afford much employment to the botanist at that period which is usually looked upon as the dead season. Their powers of absorbing moisture also render them more conspicuous in wet weather, when they are sometimes totally changed in appearance and in colour; as Endocarpon sorediatum, which thus changes from earthy-brown to olive-green. From a consideration of these facts, we shall not be surprised to find that the largest and handsomest Lichens inhabit Alpine regions. The most conspicuous British Lichen, Parmelia glomulifera, whose thallus is often 2 or 3 feet in diameter, as well as the handsome Parmelia caperata and conspersa, and the most splendid Cup-lichen, Scyphophorus bellidiflorus, whose scarlet apothecia resemble the flower of a double red Daisy, are Alpine. So also are the grass-green Solorina crocea, and the fimbriated Usnea florida, which has a strong claim to be the flowering Lichen, just as Osmunda is the flowering Fern.

There are many obscure points in the history of Lichens which require diligent examination; and although they have attracted a large share of the attention of able inquirers of late years—as Acharius, Swartz, Wahlenberg, Borrer, Schærer, Fries, Fée, Meyer, Wallroth, Montagne, and Von Flotow—still there is a wide field in which a student, armed with perseverance and ardour, may add to our knowledge. Many species are extremely ill-defined, and present difficulties of distinction of no ordinary kind. Such are the close affinities of Verrucaria muralis and V. viridula, as well as those existing among the species of the genus Scyphophorus, which Sir J. E. Smith characterises as one of the most difficult problems in botany. Their peculiar mode of reproduction is not their least remarkable and puzzling character; and it cannot fail to strike the observer with considerable astonishment, that the shield-like fructification should so frequently be absent. Not only is it very rarely seen in certain species, as Parmelia sinuosa and Borreri, Sticta limbata, &c., but the shields of Cetraria Juniperina and nivalis, Cornicularia vulpina, &c., are absolutely unknown; and yet these Lichens flourish in abundance. No wonder that the theory of spontaneous generation gained strength from these facts, until G. F. Meyer established the fact that Lichens were possessed of a layer of cells, which are capable, in the absence of apothecia, and without impregnation, of reproducing the plant. This *gonidic* layer, as it is called, lies immediately beneath the cortex of the thallus, and its isolated green cells are peculiar and characteristic of this class of vegetables; being "intermediate in their function between the vegetative and reproductive cell, assuming the offices, and partaking of the characters of both." According to Schærer, their reproductive power is even greater than that of the spores. The whole history of the reproduction of the Cryptogamia is most remarkable, and taken in connexion with some facts referred to by Schleiden in his last edition of "The Plant," very significant. It seems as though the whole theory of generation, both of plants and animals, were in a transition state, from the pressure of the facts alluded to, added to those of parthenogenesis, &c.; and awaits the time when a sufficient collection of facts shall authorise a new generalisation.

The author next proceeded to refer to the uses of Lichens as food and medicine. The nutritive properties of Lichens chiefly consist of gum and starch—the gum very similar in its character and properties to gum arabic, and the starch of two kinds, viz., lichenin and inuline, the former peculiar to Lichens, the second shared by some plants. Lichen starch may be considered intermediate in its properties between ordinary starch and dextrine. It exists largely in Iceland Moss (*Cetraria Islandica*), which is consumed to a great extent even in this country, the imports having reached the amount of 20,500 lbs. in a year. It is here, however, used rather as a medicine than as a food. Gyrophoras and Ramalina farinacea also yield much starch and gum, the latter producing a mucilage almost equal to Iceland Moss. Rein-deer Moss (*Cladonia rangiferina*), although not eaten in this country, nor indeed by man anywhere, must not be omitted; for in ice-bound regions, where man is dependent upon his domestic animals for everything, those animals find a table spread bounteously for them in the most unpromising situations, where their instinct alone would lead them to search for it.

The medicinal properties of Lichens were more valued under the reign of signature medicine than they are at present. Thus, Cetraria Juniperina, a very yellow Lichen, was long in repute as a useful medicine in jaundice, for no other reason apparently than because of its resemblance to the tint assumed in that disease. So, also, Sticta pulmonaria, from the resemblance its thallus bears to the lobes and pits of the lungs, was thought useful in pulmonic disorders. But, as Sir James Smith observes, the signature was not an untrue one, for this Lichen possesses, in a marked degree, those mucilaginous and bitter properties which make certain Lichens so useful as pectoral medicines. Peltigera canina was long in vogue as a specific against hydrophobia; while P. aphthosa is still used as a medicine for aphthæ, and Scyphophorus pyxidatus for whooping cough. But the common properties of these and many others are the same—viz., their bitter principle and their demulcent character. Some Lichens possess them to a more marked extent than others, but both are possessed in an eminent degree by Iceland Moss, or Lichen as it is called *par excellence*; which may, therefore, fairly supersede all others for medicinal purposes, and which in some cases is really a very useful production. The medicinal principles of Iceland Moss consist chiefly of two acids—cetraric ($C_{34}H_{16}O_{15}$), and lichestearic ($C_{24}H_{28}O_6$), according to Schneidermann and Knop's analysis.

But the properties which render these vegetables most valuable in a commercial point of view are the dyes which they so abundantly yield. The most important dye-Lichens are themselves colourless, and require certain combinations to be effected before they become apparent. Lindsay, indeed says, that the more showy and brilliantly coloured the thallus, the less probability is there of the Lichen being possessed of valuable colouring matters. Thus the scarlet apothecia of Scyphophori and the yellow Parmelia parietina are valueless as dye-Lichens.

The accidental action of ammonia upon Lichens has usually been the cause of the discovery of their dyeing properties. Thus Lichens are often noticed to be tinged with red in situations where they have been exposed to the urine of wild animals, a fact which always points to their capability of yielding dyes in combination with ammonia; and this is the principle of Helot's test, which consists in digesting the powdered Lichens at a temperature of 130° in a solution of ammonia; when if fit for the dyer, it will yield a violet-red liquor.

Green, yellow, brown, red, and purple dyes have been obtained; and these are in the order of their value and application. Green is very rare as a dye, but Lindsay mentions that Lecanora ventosa yielded a rich green reaction with ammonia, "a reaction," he adds, "which we found in no other Lichen whose colorific capabilities we examined." Among yellow dyes, Cornicularia flavicans and vulpina afford the chief—in the cortical layer of these it exists in the form of a resinoid principle (vulpinic acid.) Usnea barbata affords an orange dye in America. The Scottish peasantry have long been in the habit of collecting Lichens, which they macerate in tanks of urine, applying their colorific products (chiefly shades of brown) for the dyeing of their stuffs. Among those so used are Parmelia ceratophylla and saxatilis, and Sticta pulmonaria.

Red dyes are yielded by Ramalina scopulorum, R. pollinaria,

THE GREAT OREGON PEAR.

WE find in the American "Country Gentleman" the following account of what bears the above name, but is probably the well-known Uvedale's St. Germain Pear. It is a striking illustration of the extraordinary size acquired in California by European fruits. A Mr. Walling states that he raised on several two and three year grafts eleven Pears that weighed in the aggregate 34 lbs., the heaviest weighing 4 lbs. and the lightest 2 lbs. "The scions were taken from a tree of the Pound Pear, or English Bell variety—were grafted into the White Thorn, very common here along the large watercourses—two trees, the tops bound together, the heels of which are situated about 8 feet apart, the base of the grafts being about 4 feet from the ground." Mr. Walling would further state that the soil is made land—black, rich, and deep, and somewhat moist. He placed under the tree during the growing season a half-barrel tub filled with water. "The location of the trees is distant from the river some 20 or 25 rods. The largest Pear, of which I send a full-sized representation, measured 18 inches round it, and 21 inches lengthwise. I refused 75 dols. for it previous to its leaving Portland. The production of such an enormous Pear has awakened a new and increased interest here in the fruit line." This confirms the account given by Mr. Seyd of the extraordinary size at which European garden produce arrives in California, concerning which people in Europe have been incredulous. Among other instances that author gives the following, viz.:—"A Beet weighing 73 lbs.; a Carrot weighing 10 lbs., measuring 1 foot 8 inches in circumference, and 3 feet 3 inches in length; fifty in the same bed of equal size. An Onion weighing 2 lbs. 15 ozs., and measuring 22 inches in circumference. A sweet Potato weighing 11 lbs. 2 oz., and one 21 lbs. An Irish Potato weighing 7¾ lbs. A bunch of Potatoes from a single eye weighing 10 lbs. Grapes — several bunches, weighing over 4 lbs. each, one bunch weighing 14 lbs. A Citron Lemon, 16½ by 18¾ inches in circumference, weighing 2 lbs. 14 ozs. Peaches in 28 months from the seed over 9 inches in circumference, and weighing from 7 to 8½ ozs.; 34 of these on one tree. An Apple measuring 15⅓ inches each way, and weighing 23 ozs. Eight Onions, weighing together over 25 lbs., one weighed 4 lbs. 2 ozs. A Quince measuring 14¼ inches one way, and 13¼ the other. A Beet measuring 3 feet 6 inches in circumference, but as yet young, not having completed its growth. Salad heads as big as ordinary Cabbage in the old countries, with but little 'green;' the heart, or 'white,' being very large, and of the greatest fineness and mellowness. A Cabbage weighed 32 lbs., not overgrown and coarse; the outer leaves had been taken off before sending it to market, and the solid firm head weighed as stated 32 lbs; the enclosing leaves were already white, and when two or three layers had been pulled off, the whole head remaining was as white as snow, and after a part was boiled, it was found to be of the utmost fineness and delicacy of flavour."

and Physcia prunastri. But the dyes which render this tribe of plants important in a commercial point of view are derived from a few species which go under the general name of orchils. The chief of these are the species of Roccella and Lecanora, which yield orchil and cudbear, though fine orchil dyes are yielded by Umbilicaria vellea and pustulata, Parmelia perlata, and some Urceolarias. There are, however four species, which yield the finest dye, Roccella tinctoria and fuciformis, and Lecanora Perella and tartarea. The Roccellæ are maritime in character, and in Britain are confined to the south coasts. About 600 tons are annually imported for the purpose of manufacturing orchil, the best being from the Canaries, averaging 30*l*. per ton, and Azores, 23*l*. per ton; while the Cape weed only fetches 2*l*. The Lecanoræ are not uncommon in Scotland, upon both stones and trees, the Perella yielding the best dye. Litmus is principally prepared in Holland (by a secret process) from orchil, by the addition probably of potash; and with an infusion of this lichen-blue, as it is termed by Pereira, paper is dipped, and thus prepared for testing. *Pharmaceutical Journal.*

Home Correspondence.

Trees for Avenues.—I have enclosed a twig with leaves on it of Ulmus sinensis gathered January 1. The tree is very conspicuous still in its autumn foliage, being the only deciduous forest tree that has any leaves on excepting the dead ones that adhere to the Turkey Oak. I send these leaves from reading your remarks on the avenues about to be planted in the Parks, in which I generally agree, especially in what you say about Lime trees. I am a lover of all trees, but of some more than others. I however object to Lime trees from their not being early in leaf, and being one of the first trees to shed their foliage; also on account of their liability to honey dew in excess, and the habit this tree has of throwing out lateral branches from the ground, renewing them when shrouded. The scent of the blossoms, too, although very well for a single tree, would be sickening in an avenue. I would suggest the Turkey Oak, provided it will grow in the London clay and gravel as it does here—straight, rapidly, and lofty, every tree varying in form of leaf, and retaining them nearly all winter. The Ulmus sinensis, of which I send leaves, has a rather pendent growth in the young shoots and a tendency to branch—the first a great recommendation, giving it a weeping character; the latter objectionable for an avenue, unless capable of being corrected by pruning. It would be a perfect tree to line the promenades of Cheltenham. On the whole my plan would be to plant alternately two different kinds, first, visiting Syon or other localities of the same soil and climate, and learning with certainty what trees flourish in old age and grow rapidly. I must not omit one fast-growing tree, the Acer pseudo-platanus, so full of delicate blossoms of a yellow green in April as to appear to be in leaf, so beautiful in summer from the finely cut leaf, and so gorgeous in autumn with its red stalks and orange leaves. Since writing the above I have been walking in a plantation of evergreens, which are so beautiful that I have second thoughts whether one avenue at least should not be planted with Conifers, provided the soil will suit and it is far enough away from smoke. My choice, influenced by my own locality, would be to plant Beech; but still I would recommend the planting one avenue at least with evergreen Conifers rather thickly, and including some of the new kinds, which if afterwards proved unfit may be cut out. But on no account when planting for posterity omit that which may prove at last the glory of the avenue. *Thomas C. Brown, Cirencester.* [Conifers will not thrive at Kensington Gore. We doubt the Elm sent us being U. sinensis. As to common Sycamores, they are by no means handsome enough.]

Cox's Orange Pippin Apple.—In reply to some remarks that have recently been made condemnatory of the decision of the judges who awarded a prize to this Apple at the Great Fruit Show at Willis's Rooms in 1857, I beg to say that the award in question was not lightly or carelessly given; but after carefully tasting the several Apples exhibited for superior flavour, it was found by the judges that Cox's Orange Pippin was better than the Ribston; under such circumstances no other course was open to the judges than to award the prize to the Orange Pippin. Judges have nothing to do with the question of the operation of future seasons upon the quality of fruits; they have merely to reward merit where they find it. The same Apple I find obtained the 2d prize at the Horticultural Society's second Great Fruit Show in 1858, the Cornish Gilliflower coming first. This recognition of the great merits of an Apple before unknown by a different set of judges is surely sufficiently confirmatory of the excellence of the Apple; that another Apple not the Ribston should beat it detracts nothing from its deserved fame. *A Judge of* 1857. [We agree with the judges complained of.]

Importance of Selecting Seed, &c., for Early Crops.—When visiting the district about the Land's End, in Cornwall, in June, 1858, where an abundant supply of early Potatoes is raised for the London and Birmingham markets, I was informed by one of these cultivators, a thorough Cornish native, that having heard that if they could procure their seed Potatoes from some warmer country enjoying an earlier spring they might probably obtain earlier crops in Cornwall, "we procured," said he, "some seed Potatoes from Portingal [Portugal], and from them obtained Potatoes a fortnight earlier than from any other sets." *R. J. B.*

A Corner of the Kingdom where a very useful Vegetable Production is still Unknown.—After climbing up the Loggan Rock (Cornwall) my guide noticed me plucking a few leaves of the Wild Sorrel (Rumex acetosella) and eating them, the day being very warm. "That's a pleasant herb," said he. "They tell me there's a grand herb, something of that nature, now grown in large quantities; they call it Rhubarb; have you seen it, sir?" On my replying in the affirmative, and repeating the same question to him, he said, "No, I have not yet seen the plant, but hope to do so some day or other." *R. J. B.*

Yucca gloriosa.—A lady having noticed Mr. Cuthill's inquiry about this in the *Gardeners' Chronicle*, writes to say that here the Yucca grows and flowers freely. She had them from a place where they grow in masses, here and there throwing up flowering stems to the height of 12 feet and more, covered with white bell-shaped flowers, in perfection in July and August; but for the last four or five years the plants have thrown up flowering stems in autumn. These never have come to perfection, and the summer bloom is lost. This season she has had these late shoots cut off the moment they appeared, and thus hopes to restore the proper seasons. She has had three stems in flower here at once. *Ireland, Dec.* 28.

Fungus Spawn.—What is the name of the inclosed plant? It grew below a gravestone, inside an old church, not far from the wall, and in some places formed a thick interlaced mass. The church is in the middle of a large manufacturing town, and it is believed that there has not been any Ivy, or other flowering plant growing near the walls for above 100 years. *S. P., Chepstow.* [It is what was once called a Rhizomorpha, now known to be the mycelium or spawn of some large fungus.]

Propagation of Scarlet Geraniums.—A correspondent (see p. 8) wishes to know whether it is not possible to have as good Scarlet Geraniums propagated in March as in September. I should say he would not, for two reasons: in the first place, Geraniums struck in autumn flower sooner after being bedded out than those struck in spring, a consideration of some importance; secondly, plants from spring cuttings are generally propagated in heat, and consequently are more tender and less likely to withstand spring frosts than September plants; and last, but not least, a Scarlet Geranium to produce 20 good strong cuttings in spring equal to those propagated in autumn would take up as much room as three cutting pots each holding 10 autumn-struck plants. *A Practical Gardener.*

Rain at Cirencester in 1858.—

	Inches.		Inches.
January	0.60	Brought forward	15.58
February	1.0	August	1.97
March	0.90	September ..	2.94
April	5.25	October	1.76
May	2.65	November ..	0.83
June	3.18	December ..	2.56
July	2.0		
Total ..	15.58	Total ..	25.64

Average of 12 years, 31 inches. *T. C. Brown.*

Tree Ferns.—Among the Tree Ferns of Australia and New Zealand are there any, especially from the latter country, that might with any degree of probability be expected to bear the climate of the south of England? [We think not, unless in some sheltered cove in S. Cornwall or Devon.] If so, could not spores be conveyed to England and propagated there? What a desirable addition to our ornamental park scenery. *G.*

Flower-pot Drainage.—I beg to suggest the use of perforated earthenware cylinders instead of potsherds, stones, &c., for this purpose. These, if merely covered with a thin layer of Moss, fibrous-rooted Peat, or charcoal, would, doubtless, answer admirably. *A. B. C.*

Hardiness of the Petunia.—It may not be uninteresting to know that under proper treatment many plants may be made to endure more cold than most people imagine. I have several things illustrative of this, but that which I consider the most striking is a "Shrubland Rose" Petunia, of which I send examples. This has stood two summers and last winter against the wall of my dwelling-house, and seems in a fair way to stand this winter. It has never received the slightest protection of any kind, except the wall against which it is nailed. *F. J., Faringdon, Berks, Jan.* 5. [The specimens sent were fresh and green, and evidently in vigorous health.]

Societies.

BOTANICAL OF EDINBURGH: *Dec.* 9, 1858.—The President in the chair. Among donations to the museum at the Botanic Gardens were:—From J. Balfour, Esq., Melbourne, per B. Stewart, Esq., caterpillars with a species of sphæria growing from their bodies. From R. C. Bell, Esq., Milton, Lockerbie, bark of Quillaia Saponaria from South America. Mr. Bell remarks—"I practised for 15 years in Chile, where an extract and infusion of this bark have been long in great repute for the cure of baldness and for promoting the growth of hair. Its saponaceous qualities render it useful in cleansing the hair. It is also administered medicinally as a febrifuge." From Mrs. R. Brooking, Rossville, per Mrs. Miller, cones and roots, of a remarkable length, of Abies nigra; also basket and cloth, made from the roots by the Indians. Professor Balfour read the following notice from Mr. Gair relative to the cones of Cupressus Lambertiana, from a plant grown at the Kilns, near Falkirk:—"The plant from which these cones are taken is of the hardy spreading variety of the species known as C. Lambertiana. It is only about 8½ feet high, and 7½ feet through at the widest part, and the stem near the ground is about 1 foot in circumference. The plant has never been injured by frost, while others of the same spreading habit, got at the same time, have been severely injured here; and many of the upright growing species, generally known as C. macrocarpa, have been completely killed by frost and exposure. The plant stands fully exposed to the south. There are 23 cones upon it, and it is remarkable that they are all on the northern side of the tree, and generally on that part of the tree which is between 2 or 3 feet from the ground. There are two clusters of four cones, one cluster of three, two clusters of two, and the rest are single cones. They are all towards the extremity of the branches, as in the specimen sent." Mr. Robertson, of Golden Acres Nursery, sent a dried specimen of Œnothera tetraptera, grown from seeds 50 years old, which had been enclosed in gum. The seeds had been received from Mr. J. E. Hussey Taylor. "They were soaked in cold water about 20 hours before they were sown, and they were afterwards placed in heat until they grew. The gum referred to contained seeds of Poppies, Lentils, Acacias, Mesembryanthemums, and Convolvulus, but none of the sorts grew except the Œnothera tetraptera, of which nearly every seed which was sown germinated." The following communication was read:—Account of an Excursion to Switzerland with Pupils, in Aug. 1858, by Prof. Balfour. The chief botanical ground which they examined was at the Grimsel and Zermatt, where they made a large collection of Alpine plants. Among them may be mentioned species of Ranunculus, Arabis and Cardamine, Viola, Arenaria, Gypsophila and Silene, Astragalus and Oxytropis, Potentilla, Epilobium, Sedum and Crassula, Saxifraga, Achillea, Gnaphalium, Arnica, Artemisia, Aster, Erigeron, Chrysanthemum, Hieracium, Senecio, Campanula, Phyteuma, Rhododendron, Gentiana, Veronica, Linaria, Pedicularis, Androsace, Primula, Salix, Orchis, Tofieldia, Juncus, Luzula, Carex, along with numerous Grasses, Ferns, Mosses, and Lichens. There were observed in all between 500 and 600 species. Professor Balfour remarked that it is of importance for the student of botany to see the floras of different countries. It is thus only that he can acquire a clear view of the geographical distribution of plants, and correct his notions regarding the species found in his own country. Mr. Bentham says—"There is probably not a single species of flowering plants peculiar to our islands. Those which are confined to our western counties and to Ireland may generally be traced down the western departments of France to Spain and Portugal; the mountain plants of Scotland are mostly to be found in greater abundance in Norway and Sweden, and often, though at great elevation, on the Alps and Pyrenees; in our eastern counties there are occasionally found a very few of the east European species, which, although extending over the Scandinavian Peninsula and Denmark, do not in Central Europe spread much to the westward of the Rhine; our southern coasts here and there shelter the extreme northern representatives of species common in the warmer regions of southern Europe, whilst the bulk of our flora, the more common inhabitants of our lower hills, plains, and sea-coasts, are, in similar situations, more or less spread over the continent of Europe and that vast portion of temperate or northern Asia now under the Russian dominion, extending frequently beyond Eastern Siberia to the shores of the Pacific." During the excursion the party met with a great number of plants belonging to the British flora. In the Alpine districts, which were particularly examined, they met with many of the rare species of the Scottish mountains; while on the less elevated districts the flora of the British Islands, called Germanic by Forbes, was seen. Professor Balfour noticed the general distribution of plants on the Alps visited by the party, dividing them into different regions:—1. The region of the plains or lower hills, on which the common Germanic flora occurs. 2. The lower mountain region, extending to about 2000 or 2500 feet, called by botanists the zone of the Chesnut. 3. The upper mountain region, from about 2000 to 4000 feet, characterised as the zone of the Beech, and including the Ash, Cherry, Oak, and Maple. 4. The sub-Alpine region, from 4000 to 6500 feet, where many Coniferous plants occur, as Fir, Spruce, Larch, and herbaceous species, such as Alchemilla alpina, Gentiana verna, Dryas octopetala, Saxifraga oppositifolia, &c. 5. The Alpine region, from about 6000 to 7000 feet, where shrubs, such as Rhododendron ferrugineum, with Juniper and dwarf Alder, occur. 6. Subnival region, from about 7000 to 8500 feet, in which the plants which attain the highest elevation are seen belonging to the genera already enumerated. Some of these plants extend to 10,000 or even 11,000 feet. Some of the Gentians, Saxifrages, Aretias, Silenes, and Ranunculuses have been found at 10,700. Chrysanthemum alpinum and Phyteuma pauciflora have been gathered at the Lys Glacier, on Monte Rosa, at the height of 11,352 feet. 7. The nival or snowy region destitute of all vegetation. Office-bearers were chosen for the ensuing year, and several new members elected.

Notices of Books.

Mrs. Kemp's Conversations on England as it Was and Is, designed for Schools and Home Tuition. (Longmans, 8vo). In 673 well printed pages Mrs. Kemp carries her pupils through every county in England, pointing out what is most noteworthy in each, whether historically, archæologically, commercially, or otherwise. The plan seems to have been well

executed, the volume containing a large quantity of really useful information arranged upon sound principles, and placed in a familiar form. For ourselves indeed we cannot but think that the teaching by means of imaginary conversations is a mistake; this however is an opinion in which we are far from saying that teachers and pupils concur, whatever may be the case with mere readers. We must give one example in justice to the fair authoress; and select what relates to Cardinal à Becket, whose history is of course inseparable from that of Kent:—

"*Mrs. Leslie.* Some of the things I shall have to tell you would appear very odd at the present day. At the period when Becket was in the highest favour with his sovereign, Henry the Second, whom he rivalled in the magnificence of his entertainments, his biographer, after speaking of his splendid hangings, gold and silver vessels, and the luxury of his table, gives a further instance of his extravagance by stating that 'the apartments of the chancellor were every day in winter covered with clean hay or straw, and in summer with green rushes or boughs, lest the gentlemen who came to visit him, and who could not, by reason of the great number of the guests, find room to sit at table, should soil their clothes by sitting on a dirty floor.'—*Kate.* I think the Flemings did not set up the woollen manufacture in England before it was wanted. There appears to be such an inconsistency in drinking out of gold and silver, and having the floor covered like a stable! But pray go on, mamma.—*Mrs. Leslie.* Becket's style of travelling was even more ostentatious than his household appointments. Everywhere he went he was attended by a vast retinue of barons, knights, esquires, priests, huntsmen, falconers, and a host of serving men splendidly attired. His baggage was conveyed in eight large waggons, drawn by five horses each. One waggon contained the furniture of his chapel, another that of his bedchamber, a third conveyed his plate and wardrobe, a fourth his ale and wine, while the remainder were appropriated to his kitchen utensils and the baggage of his servants. —*Herbert.* What a motley cavalcade! Of course the kitchen apparatus was under the care of the black-guard.—*Kate.* The black-guard, Herbert! What can you mean?—*Herbert.* Just what I say, Katie. I have lately been reading Trench on the 'Study of Words,' and I find, that in the times of which we are speaking, when it was usual for a person of distinction to carry his furniture with him from one of his castles to another, the care of the kitchen utensils fell to the lot of the most menial of his servants, who, from the black or dirty nature of the goods conveyed by them, were called the black-guard. There was then nothing disreputable in the appellation, it simply denoted the particular department of those to whom it was applied. In course of time the word became associated with character, and any one guilty of a dishonourable, or as it was vulgarly expressed, a dirty action, was called a blackguard. But I am sorry I have interrupted you, mamma.—*Mrs. Leslie.* I was merely going to add, in reference to Becket's style of travelling, that in a journey he made through some parts of France, the people exclaimed, 'What manner of man must the king of England be, when his chancellor can travel with so much state?'—*Willie.* But you know, mamma, you have to tell us about the change in Becket during the latter part of his life.—*Mrs. Leslie.* As soon as Becket was made Archbishop of Canterbury, he gave up his former gay and luxurious style of living, and became all at once the most austere and solemn monk. Nothing could exceed the severity of his self-inflicted penances; he wore rough sackcloth next his skin, and changed it so seldom that it was full of dirt and vermin. His usual diet was bread, and his drink water in which Fennel had been boiled, on purpose to make it unpleasant to the taste. He daily washed the feet of 13 beggars, and mangled his back by frequent scourgings.—*Marion.* I suppose it was all this self-mortification that gained him the name and reputation of a saint.—*Mrs. Leslie.* In that ignorant and superstitious age, his assumed sanctity made him while living an object of veneration to the people; and the manner and circumstances of his death invested him with the glory of martyrdom. He was, moreover, an Englishman, and the first of Saxon blood who had attained to any high position in church or state since the Norman conquest. All these circumstances combined to make his shrine more frequented than that of any other in England. You will have some idea of the estimation in which St. Thomas à Becket was held by his ignorant and superstitious votaries, when I tell you the value of the contributions made on two successive years to *his* shrine, the *Virgin Mary's*, and *Christ's*. The offerings amounted to—

First year:	£	s.	d.	Second year:	£	s.	d.
Christ's altar ..	3	2	6	Christ's altar ..	0	0	0
Virgin Mary's ..	68	5	6	Virgin Mary's ..	4	1	8
Becket's	882	12	9	Becket's	954	6	3

Kate. How very shocking to set up Becket above the Saviour."

The Illustrated Bouquet, published by Messrs. Henderson, of the Wellington Road Nursery, improves with time. Part V. now before us contains some very remarkable things extremely well figured. First and foremost is a capital figure of the Bootan Rhododendron called R. Nuttallii, certainly one of the most glorious plants in cultivation, not yielding precedence to even R. Dalhousianum itself. With noble leaves of the largest size it bears masses of golden-eyed snow white flowers, represented in the drawing as 18 inches round the edge, and actually, in a dried specimen before us, measuring something more; a real goddess this among the crowds of inferior deities that follow in the train of Flora. Unfortunately the species is strictly greenhouse, not being able to bear even an inconsiderable degree of frost. It is probably the same as the Rhododendron found by Griffith in Bootan, on the ascent to Chupcha, growing in a wood of Quercus ilicifolia at an elevation of 8000 to 8500 feet, and described as a small tree (see *his Itinerary Notes*, p. 192). The following is the account of the plant given in the Bouquet:—

"The noble evergreen shrub which is the subject of the accompanying plate forms part of the very valuable collection of Rhododendrons made in the Assam and Bhotan mountains, by Mr. T. J. Booth, by whom they were sent to Mr. Thomas Nuttall, of Rainhill, near Liverpool. Our present subject, R. Nuttallii, forms a robust growing, sparingly branched tree-like shrub, well suited for conservatory or greenhouse culture. The young growth of the plant is green, changing, in the second year on the under side of the leaves, to a rich cinnamon red, which ultimately passes to a pale brown. Another peculiarity of the species is that its young green shoots are thickly dotted over with rusty brown scales, which ultimately disappear from the stems and the upper surface of the leaves, but are retained longer on the lower surface. The leaves are for the most part disposed in nearly opposite pairs along the stems, arranging themselves in whorls or flattish tufts at the extremities; they are ovate-oblong, with a small prominent point, large—being almost or quite a foot in length, and 4 to 6 inches in width, the mid-rib and veins of the under surface tinted red whilst young, and becoming green afterwards; they are thick and rigid in texture, and wrinkled with raised bosses on the upper side, and corresponding depressions beneath, where the prominent nerves spread out from the central rib. The flowers are produced in colossal corymbose heads upwards of a foot in diameter, containing each from six to ten blossoms, which are individually extremely beautiful, being bell-shaped and massive, measuring upwards of 6 inches in diameter, and expanding into a graceful cup, with broad, compact, marginal lobes; these lobes are snow white, relieved by a rich golden tint in the interior of the cup, and elegantly suffused with rose on the outside. The filaments of the stamens are tipped by light brown anthers, and the long style is terminated by a large capitate five-lobed stigma. This magnificent plant may, on account of the wonderful proportions of its parts, chaste outline, and purity of colour, and exquisite fragrance of its flowers, be considered as one of the finest of the genus. The accompanying figure was made from a specimen which flowered last spring in the garden of Herr Otto Forster, of Augsburg, Bavaria, who was, we believe, the first to bloom this remarkable species."

The second plate is occupied by a very good figure of Tritoma Uvaria, that gorgeous autumn hardy plant which has recovered its long-lost reputation in consequence of having been taken into the favour of Royalty at Osborne. The author of the remarks accompanying the plate makes five species of Tritoma, and three varieties of T. Uvaria itself.

A third plate is filled with huge flowers of four new Indian Azaleas, from the pencil of a Belgian artist; viz., Leopold I. and Duc de Brabant, rose-coloured and much alike; Etoile de Gand, pink, with a few spots of carmine; and Reine des Panachées, white, streaked with crimson, apparently rather coarse and too much like other stripes now in cultivation.

The last plate includes a variety of Gardenia radicans, and a very faithful representation of Messrs. Lee's beautiful Torenia noticed in our last year's volume, p. 800, and now called pulcherrima, without exaggeration.

Walpers' Annales. Vol. 5, fasc. 1 of this compilation, by Dr. Karl Müller, has just appeared. Systematic botanists must find it very useful, notwithstanding the absence of all original matter. It may indeed be questioned whether it could be published at all if it were done better. The part before us once more travels over the road from Passiflora to Stevia.

TRADE LISTS RECEIVED.—*R. Stark's* (Edgehill Nursery, Edinburgh) *Catalogue of Choice and Select Fruit Trees.* What is the difference between choice and select? Also *Catalogue of American Plants.* Good descriptive lists of a good trade assortment.—*W. Cutbush & Son's* (Nursery, Highgate) *Catalogue of Vegetable, Flower, and Agricultural Seeds for* 1859. A very good list of well selected seeds, with occasional useful remarks on cultivation.—*Wm. Holmes* (Well Street, Hackney), *a Descriptive Catalogue of Chrysanthemums, Dahlias, &c., grown in Frampton Park Nursery.* A very nice assortment of Florists' Flowers, especially of Chrysanthemums, which seem to be Mr. Holmes's favourites, and concerning the cultivation of which he gives the following good practical directions:—"Presuming the month to be April, the whole of your stock should be well established in small 60 pots, kept in a cold frame, with abundance of air; protect only from severe frost, for bear in mind, should the heart of the plant be injured either by frost or aphis, the plant receives a check, which I am of opinion it never recovers, or in other words, such plants never produce blooms of first-rate quality. Towards the close of the month, or early in the following month, shift the plants into 48's, two plants in each pot. As soon as the pot becomes filled with root, shift again into 24's, in which pots they may remain till their final shift. Let the pots be thoroughly drained, oyster shells will be found the best material for this purpose; broken oyster shells may be liberally mixed with the soil during every stage of their growth; the soil used should be porous but not rich, the object being to secure a strong sturdy growth; it is a mistake to endeavour at this period to induce a luxuriant growth. As a general rule, shift into their blooming pots by the middle of July, the size we recommend are 11 inches, deferring till the last the early blooming varieties; two-thirds loam, one-third leaf mould, or manure from an old hot-bed, with broken oyster shells or sand, will be found the most suitable compost; thoroughly drain the pots; as the plants advance in growth, remove all laterals or side branches; keep them at this stage especially free from aphis, which can easily be kept in check by the free use of tobacco-water; if this is neglected, the result will be blindness in the plant, which will be fatal as regards the bloom of many varieties; use liquid manure at all times sparingly. If the foregoing instructions have been properly attended to, and the plants are in a tolerably vigorous and healthy state, their bloom buds will make their appearance about the middle or latter end of August; in most places laterally, but in some cases (especially if the plant be of weakly habit) terminally. The lateral bud will be found in the fork of the newly formed leaders, which leaders should be pinched off as soon as the operation can be performed without bruising or otherwise damaging the bud; if however this the first bud should set before the time mentioned, 'a very common occurrence with plants overgrown in the early part of the season,' the grower must nip off all superfluous shoots, and take his chance of a later and in all probability a vastly inferior flower. The terminal bud appears on the tips of the leaders, and is the centre of a cluster of smaller ones, which smaller ones should be removed as soon as possible, care being taken not to bruise or in any way injure the centre or main bud, which with the growth of the footstalk becomes gradually disengaged from the lesser buds. As the taking of the bud is an element of the utmost importance in the treatment of the Chrysanthemum, I cannot too strongly impress upon the grower the absolute necessity of watching his plants more closely than ever after the first week in August, and for this reason, however well they may have been grown, and whatever time and attention may have been bestowed upon them, all will ultimately prove futile if the proper buds be not taken at the proper time."

Miscellaneous.

On the introduction of Bombyx Cynthia into France.—One of the most active and distinguished of the members of the Society of Acclimation, M. Guérin-Méneville, who has been especially interested in the introduction of new silkworms, has just succeeded in acclimatising in France a new silkworm from China, where it lives on the Varnish tree (Ailanthus glandulosus). The species is the true Bombyx Cynthia of Drury (1773), figured for the first time by Daubenton, jun., in his coloured plates, which were published between 1760 and 1765, and raised for some centuries in China, where its silk clothes the people, Roxburgh, in 1804, supposed the Eria which is raised in British India to be the same; and this confusion has continued till recently.—so that the Eria (or "Arrindy-arria," as it is called in Hindostan) has gone by the name of Bombyx Cynthia. The Eria is a different species, living on the Ricinus. The study of the species by Guérin-Méneville has brought to light differences between the two in the cocoons and the habits of the worms. The cocoons carded give an excellent flock of silk, which is used in China and Bengal for very firm tissues. The colour of the silk is a fine flax-gray; and clothes made of it are not injured by the rain, or oil, and wear long. Now that the introduction of the silkworm is accomplished, attention is turned to the extension of it industrially. Guérin-Méneville proposes for this end the making of plantations of Ailanthus, a tree that grows easily on poor soil, then to place upon them in spring the worms that were hatched in the month of May, and let them eat the leaves. Care should be taken to preserve them from the birds, which is easily done by an invalid workman incapable of other work, as has been the custom for centuries in China. At the end of June the first crop may be gathered, and a second in August. The cocoons for reproduction should be preserved until the next May, which requires, as with the silkworm of the Ricinus and the Dipsacus Fullonum, special care in the winter.—*Silliman's Journal*, November 1858. *Annals of Natural History.*

The Mithridatea of the Mauritius.—One of my companions soon surpassed all our discoveries by finding amongst the Ferns, and near the ground, on the stem of a tree which was thicker than my arm, 6 or 8 thick, leathery, fleshy flowers, and a great many buds about the size and shape of a Fig. Some of the buds just opening appeared like a wine-glass with a Vandyck rim, and others, more open, appeared like the most beautiful Anœctochilus, the flower 5 or 6 inches across, and presenting a dark-green velvety ground, with pink and lilac spots; and until I satisfied myself that it was the actual blossom of the tree itself, I thought it was really an Anœctochilus. We marked the place, and charged the natives to take especial notice, so that we might find it again on our descent. However, we soon saw many others, and became satisfied that we had only

met with a curiosity without making a discovery. I brought specimens of this flower to M. Bojer, who said it was a most curious plant, the Mithridatea tamburissa; and that after the open flower was fertilised it closed up again, the seams all united, and it swelled into a fruit as large as a small Gourd or Pumpkin, filled with bright red berries like a Pomegranate. He said it was vulgarly called Monkey Apple.—*Ellis's Madagascar.*

Calendar of Operations.

(For the ensuing Week.)

PLANT DEPARTMENT.

CONSERVATORY, &c.—Where the twiners for covering the roof are grown in boxes or have but limited root room, as much of the surface soil should be removed annually as can be done without seriously injuring the roots, replacing it with some good, rich, fresh material, and this cannot be done at a better season than the present. The conservatory or show-house should very soon be full of floral beauty. Camellias, Luculias, Epacrises, Heaths, Primulas, Mignonette, Tree Violets, Cinerarias, Indian Daphnes, and many other showy things may easily be had in bloom about this time, and with proper convenience a few Roses and other forced plants, as Oranges, bulbs, &c., should also be coming in, and will greatly assist in maintaining the gaiety so desirable in this house.

FORCING DEPARTMENT.

The forcing of fruit trees in pots is easily managed, provided there are one or two houses at work to hold them during the later stages of their growth. Most kinds, as stated last week, should have been grown in pots two years at least, and be well furnished with fruit buds. In the case of Raspberries, however, take up the strongest suckers early in September and pot them either singly or three together in rich soil, shading them for a few days to make fresh roots, and then placing them against a south wall to ripen. Where a stock of the above fruits is prepared for forcing the advantages of a deep pit with a bed of leaves will be apparent; the slight bottom heat thus afforded will be found beneficial in setting the roots in action. Cherries and Raspberries are the most impatient of heat and should be brought forward in a very low temperature, and unless they are required very early they will succeed better when started next month. The remainder should be started with a top heat ranging between 40° and 60°, with a gentle syringing daily and air according to the state of the weather. Here they may remain till they are nearly in bloom, when a drier atmosphere being necessary, they may be removed to vacant shelves or stages in any house at work where a moderate heat is kept up. Peaches and Nectarines may even be placed on the back shelves of the Pine-houses after they have set their fruit, though a more moderate temperature would suit them better. In carrying out the subsequent treatment we may add that Figs, Peaches, &c., should occupy the warmest part of the house in which they are to fruit, and Apricots, Plums, and Cherries the coldest end. If required Raspberries will succeed well in pits or in the partial shade of other plants. If circumstances permit of the whole being kept plunged in a gentle heat it will assist the swelling of the fruit, but with proper attention in supplying them with manure water they will do well without that assistance. Prepared plants of the most suitable kinds of the above fruits may be obtained at most of the principal nurseries, or maiden plants of each may now be potted in rich turfy loam for future operations, getting them into a bearing state by judicious stopping rather than by the use of the knife. Pursue former directions as regards the early Vinery and Peach house.

FLOWER GARDEN AND SHRUBBERIES.

Where the turf is at all unlevel time should be spared in course of this or next month to repair this, as if lifted in February it might require some attention to get it to take quickly. Unlevel turf is an eyesore the season round, and it makes the mowing more tedious and difficult; hence it is worth an effort to spare time to make whatever little repairs may be necessary here. Sweep lawns occasionally to clear them of fallen bits of branches, &c., and use the roller here and on gravel frequently, to secure a firm smooth surface. Let the stock of plants, except those that may be wanted to furnish cuttings, be freely exposed to air whenever the weather will admit, so as to keep them hard, and render them less liable to damp off in the event of their having to be kept covered up for some time. Any of the stock from which many cuttings are wanted should be removed to a light warm situation without loss of time, first washing the pots, and clearing and adding a little fresh soil to the surface of the ball. Some kinds of Verbenas, &c., are very subject to mildew when placed in heat in the winter season; but this is easily kept in check by means of sulphur; take care, however, that the sulphur is applied the moment the pest makes its appearance. Now is as good a time as any for putting in cuttings or suckers of Chrysanthemums. In selecting them take the strongest, which always make the best plants. When potted in sandy loam place them in cold frames.

HARDY FRUIT AND KITCHEN GARDEN.

If any planting of fruit trees still remains to be done this should be seen to very soon, and every available despatch used to get it completed. If it is worth while to occupy ground with fruit trees and incur the expense, &c., of planting them, it certainly is worth consideration whether the ground is in the best possible state of preparation for being planted with fruit trees, and to incur any expense and trouble which may be requisite in order to render the soil as suitable as can be made for the kind of trees with which it is to be planted. To do this is seldom a work involving much direct outlay, for provided the ground is well drained there is little else required except labour, materials for concreting, and a supply of good loamy soil, all of which can generally be obtained about most places. But it is useless to plant trees except there is a fair prospect of their doing well, and the necessary preparations for securing this can be more conveniently, cheaply, and efficaciously made before planting than afterwards, and the requisite preparations should be made even if doing this should necessitate putting off planting until another season. Push forward the digging or trenching as the case may be, and get all vacant ground turned over as soon after this as circumstances will admit. In the kitchen garden as in other departments alterations will occasionally be required, such as taking up and relaying Box edgings that have become imperfect, or those that have grown too strong and bulky, turning or surfacing walks with fresh gravel, and such jobs should be done if possible before the busy season.

MONTHLY DEPTH OF RAIN, in inches and hundredth parts of an inch, which fell at Chiswick in the years 1841 to 1858 inclusive.

	1841.	1842.	1843.	1844.	1845.	1846.	1847.	1848.	1849.	1850.	1851.	1852.	1853.	1854.	1855.	1856.	1857.	1858.
	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.
January	2.60	1.06	1.33	2.25	2.97	2.85	1.31	1.16	1.73	1.43	3.07	2.72	2.14	1.92	0.10	1.76	2.09	0.41
February ..	0.76	1.23	2.35	2.27	0.03	1.47	1.34	3.12	2.52	0.95	0.90	0.35	0.59	0.78	1.35	0.62	0.31	1.48
March	1.32	1.81	2.44	2.27	1.26	1.02	0.41	3.05	0.85	0.13	3.57	1.06	1.48	0.42	1.75	0.97	0.73	0.88
April	1.58	0.15	1.62	0.33	0.95	3.93	0.92	3.06	2.31	1.79	1.65	0.52	2.58	0.30	0.26	1.97	1.77	2.13
May	2.16	1.73	5.26	0.25	2.89	1.35	1.59	0.28	3.53	1.84	0.74	1.74	1.60	4.03	1.94	4.38	0.87	2.05
June	2.45	1.58	1.62	0.97	1.36	0.80	1.31	3.20	0.31	1.40	1.33	4.69	2.54	1.53	1.48	0.88	1.91	0.78
July	3.56	1.53	1.67	2.10	2.31	1.78	0.79	2.21	2.82	2.68	3.90	2.28	4.17	2.40	6.30	1.48	1.22	2.55
August	2.69	2.81	3.28	1.84	2.79	4.50	1.50	4.70	1.60	0.97	2.03	3.71	1.87	1.77	1.45	3.50	2.80	1.46
September..	3.71	3.39	0.98	1.31	1.77	1.76	1.66	2.20	2.49	2.36	0.42	3.54	2.41	0.58	1.15	1.99	3.52	1.05
October	4.61	1.71	4.19	4.13	1.39	5.54	1.75	2.93	2.18	1.55	2.01	3.87	3.78	2.61	6.15	2.40	4.01	1.36
November ...	3.41	4.43	2.13	3.06	2.11	1.43	2.26	0.90	1.32	2.03	0.55	6.39	0.91	1.31	1.34	0.94	1.53	0.08
December ...	2.12	0.76	0.53	0.39	2.61	1.21	1.81	2.03	1.38	1.15	0.62	1.97	0.30	1.27	1.11	1.88	0.30	1.43
Annual amount	30.97	22.27	25.48	21.84	23.83	27.71	16.65	28.84	22.84	18.28	20.79	32.55	24.97	18.92	24.88	22.72	21.06	15.66

The amount of rain in 1858 is 5 1-10th inches below the average; and very nearly 1 inch less than that of any other year since 1836, when the Chiswick observations begun.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the Week ending Jan. 6, 1859, as observed at the Horticultural Gardens.

Dec. and Jan.	Moon's Age	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth. 1 foot deep	Of the Earth. 2 feet deep.	Wind.	Rain.
Thurs. 31	26	30.182	30.134	42	40	41.0	44	43½	N.E	.01
Friday 1	28	30.404	30.331	43	30	36.5	44½	44	N.E.	.03
Satur. 2	29	30.566	30.544	39	29	34.0	44½	44	W.	.00
Sunday 3	29	30.591	30.483	38	31	34.5	43	43	S.W.	.01
Mon. 4	●	30.524	30.442	41	35	38.0	43½	43	S.W.	.00
Tues. 5	1	30.537	30.380	43	34	38.5	43½	43½	E.	.00
Wed. 6	2	30.459	30.312	38	31	34.5	43½	43½	S.W.	.02
Average		30.466	30.375	40.5	32.8	36.7	43.8	43.5		.07

Dec. 31—Foggy; hazy; overcast; temperature, day and night, nearly uniform.
Jan. 1—Drizzly; foggy; overcast.
" 2—Foggy throughout; slight rain.
" 3—Foggy; hail; overcast at night; barometer very high.
" 4—Foggy; hazy; overcast.
" 5—Foggy; hazy; overcast.
" 6—Foggy; uniformly overcast.
Mean temperature of the week equal to the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 33 years, for the ensuing Week, ending Jan. 15, 1859.

Jan.	Average Temp. of the Week	Average Temp. of the Week	Average Temp. of the Week	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 9..	40.5	31.4	36 0	14	0.71 in.	1	2	4	3	3	9	5	1
Mon. 10..	41.9	30.7	36.3	16	0.40	2	4	3	4	5	5	4	2
Tues. 11..	41.2	30.9	36.0	13	0.83	2	4	3	2	5	8	3	1
Wed. 12..	41.9	30.7	36.3	15	0.76	2	4	1	3	5	10	3	2
Thurs. 13..	42.6	32.2	37.4	16	0.29	4	5	2	3	6	5	3	3
Friday 14..	42.2	29.6	35.9	16	0.80	3	6	4	3	3	6	6	3
Satur. 15..	41.5	29.3	35.4	11	0.54	3	4	3	3	3	7	7	3

The highest temperature during the above period occurred on the 14th, 1849, and 15th, 1852—therm. 56 deg.; and the lowest on the 14th, 1838—therm. 4 deg.

Notices to Correspondents.

AERIDES CRISPUM: *L. W.* Either this is a very variable plant, or more than one species is included under the name. It is easily known from A. maculosum by not having a great tubercle at the base of the lip, as well as by the flowers not being spotted, both characteristic marks of A. maculosum. Instead of the tubercle A. crispum has two fleshy horns or teeth at the base of the lip, as is shown in the accompanying cut; which represents a variety which we call A. crispum ovatum, its lip being entire and nearly ovate, instead of being truncate and toothletted at the edge. We have seen no wild specimen and suspect it to be some garden hybrid.



GARDEN IMPLEMENTS: *J T Halliday.* We should be sorry to hear that gardeners have so little mechanical skill as to use such a contrivance. It is as bad as a plough, the rudest implement left behind by rude ages, and the disgrace of this age of engineers.



HERBARIA: *Beginner.* As has been previously stated every young gardener who desires to rise above the common level should form a small collection of dried plants, taking care that they are *correctly* named. A folio volume of cartridge paper, done up with narrow slips at back, will hold a great many, probably as many as he wants; and the cost is not more than is too often wasted upon beer and tobacco.

INSECTS: *John Hunter.* It is a fine specimen of the mole cricket, of which the following account is given in White's Selborne, a charming book that gardeners would find useful:—"While the field cricket delights in sunny dry banks, and the house cricket rejoices amidst the glowing heat of the kitchen hearth or oven, the Gryllus Gryllotalpa (the mole cricket) haunts most moist meadows, and frequents the sides of ponds and banks of streams, performing all its functions in a swampy wet soil. With a pair of fore-feet, curiously adapted to the purpose, it burrows and works underground like the mole, raising a ridge as it proceeds, but seldom throwing up hillocks. As mole crickets often infest gardens by the sides of canals, they are unwelcome guests to the gardener, raising up ridges in their subterraneous progress, and rendering the walks unsightly. If they take to the kitchen quarters they occasion great damage among the plants and roots by destroying whole beds of Cabbage, young Legumes, and flowers. When dug out they seem very slow and helpless, and make no use of their wings by day; but at night they come abroad, and make long excursions, as I have been convinced by finding stragglers in a morning in improbable places. In fine weather, about the middle of April, and just at the close of day, they begin to solace themselves with a low, dull, jarring note, continued for a long time without interruption, and not unlike the chattering of the fern owl or goat sucker, but more inward. About the beginning of May they lay their eggs, as I was once an eye-witness, for a gardener at a house where I was on a visit happening to be mowing on the 6th of that month, by the side of a canal, his scythe struck too deep, pared off a large piece of turf, and laid open to view a curious scene of domestic economy. There were many caverns and winding passages leading to a kind of chamber, neatly smoothed and rounded, about the size of a moderate snuff box. Within this secret nursery were deposited near 100 eggs, of a dirty yellow colour, and enveloped in a tough skin; but too lately excluded to contain any rudiments of young, being full of a viscous substance. The eggs lay but shallow, and within the influence of the sun, just under a little heap of fresh moved mould, like that which is raised by ants. When mole crickets fly, they move *cursu undoso*, rising and falling in curves, like the other species mentioned before. In different parts of the kingdom people call them fen crickets, churr worms, and eve churrs, all very apposite names."

NAMES OF FRUITS: May we beg our correspondents to send their specimens, *carriage paid*, to our Office, No. 5, Upper Wellington Street, Covent Garden, London: AND TO NO OTHER PLACE WHATEVER.—*T P.* 1, Poire d'Austrassie; 3, a sort of Red Streak; 4, Dumelow's Seedling—*Querist.* No. 3 is Court pendu Plat. Of the names of the other two we are not certain. No. 1 is very like the Autumn Pearmain; late for that sort, but grown in your climate (Carlisle) it may have kept till this time; 2 is perhaps the Dutch Mignonne.

NAMES OF PLANTS.—We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have or could have undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*J Slatter.* Your Alga is a Batrachospermum, not a Draparnaldia. We do not see anything peculiar about the specimen. *M J B.*—*W W F.* A small specimen of Fuchsia arborescens.—*Darv.* 1, Pteris longifolia; 2, Nephrodium molle; 3, Adiantum cuneatum; 4, Pteris serrulata.—*B S, Lambeth.* Not numbered. Polystichum acrostichoides, quite hardy in cool situations.—*T W.* 1. Pilea macrophylla; 2. Asplenium fragrans; 3. Onychium japonicum; 4. Goniophlebium neriifolium.

PEACH STOCKS: *Beta.* The Muscle and Pear Plum are the only stocks generally suited to Peaches and Nectarines. The latter is used for what are called French Peaches. You may graft Peaches and Nectarines if you think it worth while.

VINES: *Rusticus.* We believe the sorts you name to have equal merit, with the exception of Bidwell's Seedling, with which we are unacquainted. They all suit the same temperature as the B. Hamburgh requires. At least the growers say so. We should put the Muscats at the warmest end of the house.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

LONDON MANURE COMPANY, removed to 116, Fenchurch Street, E. C. (Established 1840), have the following MANURES ready for delivery:—

CORN MANURE for SPRINGTOP DRESSING
URATE
SUPERPHOSPHATE OF LIME
BLOOD MANURE
} all of guaranteed quality.

In consequence of the reduction in the price of raw material the London Manure Co. are enabled to lower the price of their Superphosphate of Lime, and to materially improve the Corn Manure and Urate.

The London Manure Co. also supply PERUVIAN GUANO (direct from Messrs. A. Gibbs and Sons), SULPHATE of AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of value. Wholesale dealers supplied.

116, Fenchurch Street, E.C. EDWARD PURSER, Secretary.

POTTER'S CELEBRATED GUANO.—Established 16 years, during which period it has been used on every variety of crop and soil with great success. See Mr. POTTER'S numerous testimonials. Price 7*l.* 10*s.* per ton. Also POTTER'S SUPERPHOSPHATE OF LIME, 6*l.* 10*s.* per ton.—28, Clapham Road Place, S.

*** A very liberal allowance to Agents. Mr. POTTER'S work on Agricultural Chemistry sent free for 6 stamps.

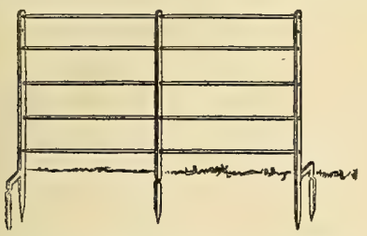
ESTABLISHED 1812.

H. AND T. PROCTOR'S TURNIP MANURE.—Messrs. H. & T. P. draw particular attention to this valuable Manure, which contains all the elements necessary for the full development of the Turnip Crop, so combined, that, from their chemical knowledge and long experience, they feel satisfied is most advantageous to the consumer. It has been very extensively used by most of the eminent Agriculturists of the day, and has attained a high reputation throughout England, Scotland, and Wales, and, they venture to say, is unrivalled for the weight and quality of the Bulbs which it produces. The application of this Manure to the Turnips will be found to benefit considerably the after crops of Barley, Clover, and Wheat.

POTATO, GRASS, BARLEY, CLOVER, AND WHEAT MANURES; also BONE DUST, PERUVIAN GUANO, and SUPERPHOSPHATE of LIME, warranted of the best quality.

Apply to H. & T. PROCTOR, West of England Depôt for Artificial Manures, Cathay, Bristol; or PROCTOR & RYLAND, Birmingham, and Saltney, near Chester.

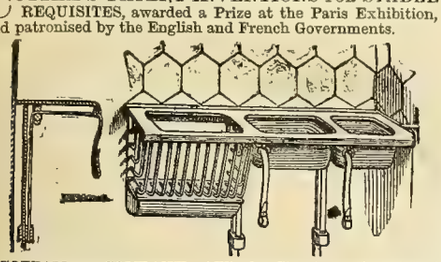
IRON HURDLES, FENCING, &c., MADE BY MACHINERY.



COTTAM AND COMPANY, of Winsley Street, have invented machinery for making Hurdles, &c.; the bars, instead of being pointed by hand in the old fashioned style, are nipped down by the machine, leaving a shoulder so as to more effectually tighten the standards when rivetted. They are made of superior iron only, and will compete in price with those made by hand from cinder or common iron which so frequently break. Iron Fencing, Gates, and Iron Work of all kinds, both Plain and Ornamental, Conservatories, Hot Water Apparatus and Garden Implements.

Illustrated CATALOGUES free on application to COTTAM & COMPANY, Ironfounders, 2, Winsley Street, Oxford Street, W.

COTTAM'S PATENT INVENTIONS FOR STABLE REQUISITES, awarded a Prize at the Paris Exhibition, and patronised by the English and French Governments.



COTTAM AND COMPANY, of Winsley Street, are the original inventors of the PATENT ENAMELLED MANGER, Water Trough, and Wrought Iron Rack, united to an iron top-plate, and forming one complete and useful fixture, having COTTAM'S patent noiseless halter guide and collar rein attached, which is taken to the back of the manger, and works with ease and freedom up or down the guide-bar.

COTTAM'S NEW PATENT SEED-BOX, an important addition to the above fittings, being simple in construction, light, and durable, promotes cleanliness, and is economical in its results.



COTTAM'S PATENT SADDLE and HARNESS BRACKET combined, can be used with great advantage where space is an object, as it can be turned up out of the way when not in use.

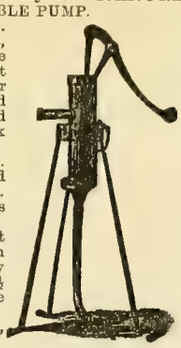
COTTAM'S IMPROVED SURFACE GUTTER, with perforated moveable cover, the use of which prevents accidents, and can be easily cleaned out.

COTTAM'S CAST-IRON SANITARY TRAP, from its improved construction, gives a full water passage, and does not allow any smell to ascend from the drain.

PATENT LOOSE-BOX FITTINGS, and every article for the harness-room and stable, kept in stock, plain, galvanised, and enamelled. Iron gates, fencing, hurdles, &c.

The New Illustrated Catalogue and Estimates, gratis, upon application to COTTAM and COMPANY, 2, Winsley Street, Oxford Street.

WARNER'S IMPROVED LIQUID MANURE OR GENERAL PORTABLE PUMP.



These Pumps are fitted with J. W. & SON'S Patent Buckets and Suckers, and cannot clog in action. The barrel is of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure. The legs will fold together, and the whole may be carried on the shoulder to any pond or tank required.

Price of 4½ in. Pump, with legs, 3*l.* 3*s.*

If with planished copper barrel and galvanised iron handle, &c., 14*s.* extra. The barrel is 27½ in. long, and the legs are 5 ft. high.

These Pumps are also made without the legs, with strong wrought-iron straps for screwing on to any ordinary water butt or cart, and fitted with 1½ inch brass union for attaching flexible suction. Price 50*s.*

1¾ inch Gutta Percha Suction Pipe, 1*s.* 11*d.* per foot.

Rubber and Canvas Suction and Delivery Hose, from ½ inch to 4 inches diameter, in lengths of 60 feet to order. Branch Pipes with Cocks, Union Screws, &c., at reduced prices.

May be obtained of any Ironmonger or Plumber in town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin St., London.

WARNER'S PATENT VIBRATING STANDARD PUMPS.

PATENT CAST-IRON PUMPS, fitted with J. W. & SON'S Patent Buckets and Suckers, which cannot clog in action, for Farms, Cottages, and Wells, not exceeding 28 feet.

Diameter of Barrel.	Height.		£	*s.*	*d.*
2½ in. short	1 ft. 7 in.	Fitted for lead,	1	10	0
2½ „ long	3 „ 8 „	gutta percha,	1	14	0
3 „ ditto	3 „ 6 „	or cast iron	2	8	0
3½ „ ditto	3 „ 6 „	flanged pipe,	2	12	0
4 „ ditto	3 „ 6 „	as required.	3	3	0
2½ „ short, with 15 feet of Lead Pipe attached, ready for fixing			2	14	0
2½ in. long	ditto	ditto ditto	2	18	0

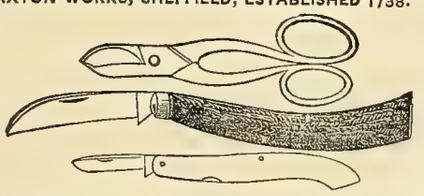


The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.

May be obtained of any Ironmonger or Plumber in Town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

PAXTON WORKS, SHEFFIELD, ESTABLISHED 1738.

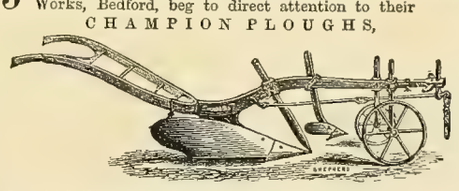


SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.—Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

HOWARDS' PRIZE IMPLEMENTS, 1859.

JAMES AND FREDK. HOWARD, Britannia Iron Works, Bedford, beg to direct attention to their

CHAMPION PLOUGHS,



For which they received All the First Prizes last offered by the Royal Agricultural Society of England, viz.:—

The First Prize for the best Plough for general purposes.
The First Prize for the best Plough for light land.
The First Prize for the best Plough for heavy land.

The only Prize ever offered by the Society for the best Double Breast or Ridging Plough was also awarded to J. & F. HOWARD.

J. & F. HOWARD have discontinued troubling the Public with a long List of Prizes awarded to their Implements, but they would just state that for PLOUGHS, HARROWS, and HORSE RAKES, they have for several years gained every Prize for which they have competed.

PLOUGHS.

P PLOUGH, with two wheels, for light work ..	£4	7	6
PP PLOUGH, „ for general purposes	4	12	6
SKIM COULTER	£0	5	6

STEEL BREASTS, 7*s.* and 7*s.* 6*d.* extra.

HARROWS.

A Set of Three 4-Beam HARROWS, with Whippletree, recommended as general Seed Harrows, 9½ feet wide, marked No. 12	£3	14	
A Set of Three 4-Beam HARROWS, with Whippletree, adapted for 3 Horses, 10 feet wide, marked No. 11 ..	4	4	

HORSE RAKES.

Price of small size RAKE, marked A, with 24 iron teeth, extreme width 7½ feet	£7	10	0
Ditto, with Steel Teeth	8	0	0
Price of large size, marked B, with 28 iron teeth, extreme width 8½ feet	8	0	0
Price of large size, marked B, with steel teeth ..	£8	10	0
Price of extra large size, marked C, with 24 steel teeth, extreme width, 8½ feet	10	10	0
Price of a Set of 15 Prongs, to be attached to the above when used as Weed Extirpators	1	10	0

Free Delivery to Birmingham, Bristol, Derby, Gloucester, Lincoln, Liverpool, London, Manchester, Norwich, Nottingham, Retford, Wisbeach, and Worcester; or to Dublin, Edinburgh, Glasgow, and other parts at fixed rates.

HOWARDS' NEW CATALOGUE, containing prices and description of their Patent Ploughs, Harrows, Horse Rakes, and other Implements, including Smith's Steam Cultivators, for which they received at Chester the Gold Medal of the Royal Agricultural Society of England, sent free on application to

J. & F. HOWARD, Britannia Iron Works, Bedford.

AGRICULTURAL MACHINERY.

E. R. AND F. TURNER, Ipswich, manufacture Prize Mills for Crushing Corn, Seed, Malt, &c.; Portable Grinding Mills, Steam Engines fixed and portable from 2 horse-power and upwards; Threshing Machines, Chaff Cutter Oilcake Breakers, Horse Gears, Saw Tables, &c., all of a superior description and adapted for Home, Colonial, and Foreign use. Illustrated Price Lists sent free on application.

SMITH'S PATENT STEAM PLOUGHS are the only implements that can be of use to the farmers of England. His mode of applying steam-power to the cultivation of the soil is the only one with which the irregular hills and cold clays of England can be worked. He thanks the farmers of England for the liberal adoption of his system, and for the aid they have thus rendered him. Ireland has now adopted his system, and lent her aid to the road of progress.

Mr. SMITH'S Steam-tilled Farm is open to the inspection of all. The fullest information may be had either there or at his Office, 40, Mark Lane, London.

Woolston, Bletchley Station.—Jan. 8.

HALKETT'S GUIDEWAY STEAM AGRICULTURE.—Every operation of the Farm performed by Steam. At a large reduction of cost, and a great improvement in the result upon the land. Early in February Mr. Halkett's Cultivator will again be exhibited in operation. Cards stating the days and place will be forwarded, with an Illustrated pamphlet, and a paper read before the Society of Arts, upon receipt of two postage stamps.—Office, 80, Chancery Lane, W.C.

THE LANDS IMPROVEMENT COMPANY, 2, Old Palace Yard, Westminster, S.W.

To Landowners, the Clergy, Solicitors, Estate Agents, Surveyors, &c.—The Company is incorporated by Special Act of Parliament for England, Wales, and Scotland.—Under the Company's Acts Tenants for Life, Trustees, Mortgagees in possession, Incumbents of Livings, Bodies Corporate, certain Lessees, and other Landowners, are empowered to charge the inheritance with the cost of Improvements, whether the money be borrowed from the Company or advanced by the Landowner out of his own funds.

The Company advance money, unlimited in amount, for Works of Land Improvement, the Loans and incidental expenses being liquidated by a rentcharge for a specified term of years.

No investigation of Title is required, and the Company being of a strictly commercial character do not interfere with the plans and execution of the works, which are controlled only by the Enclosure Commissioners.

The improvements authorised comprise Drainage, Irrigation, Warping, Embanking, Enclosing, Clearing, Reclaiming, Planting, Erecting and Improving Farm Houses and Buildings for Farm purposes, Farm Roads, Jetties, Steam Engines, Water Wheels, Tanks, Pipes, &c.

Owners in fee may effect improvements on their Estates without incurring the expense and personal responsibilities incident to Mortgages, and without regard to the amount of existing incumbrances. Proprietors may apply jointly for the execution of Improvements mutually beneficial, such as a Common Outfall, Roads through the District, Water Power, &c. For further information and for forms of application apply to the Hon. W. NAPIER, Managing Director, 2, Old Palace Yard, Westminster, S.W.

LAND DRAINAGE.—Works of Drainage of any extent are executed by the GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY on all descriptions of Property, whether Freehold, Entailed, Mortgaged, Trust, Ecclesiastical, Corporate, or Collegiate.

Repayment may be made by the Landowner as successive portions of the Works are completed, or the actual expenditure, with a Commission thereon, may be charged on the property improved by way of rent charge for any term not exceeding 50 years, the instalments to repay principal and interest being thereby kept down nearly to 5 per cent. per annum.

No investigation of title being required, and the charge not being affected by incumbrances, no legal expenses are incurred.

Works of Irrigation, Enclosing, Wood Grubbing, Road Making, and Farm Buildings are executed in a similar manner.

The Company also assist Landowners in executing any of the improvements by their own agents, and charge the amount expended on the property improved.

Applications to be made to WILLIAM CLIFFORD, the Secretary, at the Offices of the Company, 52, Parliament Street, London.

TO LANDOWNERS.

THE PERMANENT WAY COMPANY having been appointed the sole Licensees for the use of Dr. BOUCHERIE'S Patent Process for Preserving Timber, beg to inform Landowners and others interested in the use of English Timber that a Pamphlet, with full explanations of this cheap and most effectual process, may be had gratis on application to the undersigned. Landowners having Beech, Elm, Fir, or other Timber fit for Railway Sleepers are requested to communicate particulars of quantity, locality, and prices.

WILLIAM HOWDEN, Secretary.

26, Great George Street, Westminster.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.

Principal—J. C. NESBIT, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

The Agricultural Gazette.

SATURDAY, JANUARY 8, 1859.

THERE is a considerable movement at many important centres of the corn trade, especially in the north of England, in favour of adopting weight instead of measure in sales and purchases of grain. The Liverpool corn trade has adopted the "cental" of 100 lbs. as their invariable unit of quantity; Hull has also resolved to adopt the "cental." Belfast, as represented by the North-East Agricultural Association of Ireland, has acquiesced; and no doubt so reasonable a proposition will ultimately command universal assent. It cannot be admitted as an objection to the plan that even after it has been adopted purchasers of grain will require their "cental" warranted to weigh so much per bushel. Weight is the only unquestionable test of *quantity*. Purchasers of grain may apply what tests and use what guarantees of *quality* they please. Their experience may not differ from that of purchasers of many other sorts of goods. It *is*

difficult to determine quality and to ensure that the bulk be exactly as the sample was. This is true, whether it be grain or sugar, wool or cotton that is offered. But having determined upon the price proper to the quality exhibited in sample, it is weight alone that can determine accurately the quantity which changes hands. Possibly the "cental" may not be everywhere considered in the corn trade the most convenient unit of quantity by which to buy and sell; but that transactions will ultimately be universally guided by weight alone, applied to a sample priced according to quality, we have not a doubt.

—— We have to announce the recurrence next May of the Society of Arts' annual examinations. Agriculture is one of their subjects. There were in 1856 four candidates for the Society's certificate of excellence, proficiency, or competency in this class. In 1857 there were two, and in 1858 there were none! It is announced that no paper of questions will be set on this subject, unless before February 1st the Council of the Society is informed that 10 candidates are to present themselves for examination. The Institutes in union with the Society are not the most likely channel through which to reach the agricultural class; but it is hardly possible that if any gentlemen in the different localities (upwards of 40) where these examinations are to be conducted will interest themselves in making known the nature of the proposed examination, so few as ten candidates should not present themselves. The examination will embrace so much of the theory of agriculture as concerns the influence of tillage operations and of manures upon fertility and the relations of food to animal growth, and so much of the practice of agriculture as is included in the cultivation of the principal crops and the management of the principal domesticated animals.

A properly authenticated certificate of excellence, proficiency, or competency in knowledge of these subjects will certainly be of some use hereafter to a young man, and we hope that some of the readers of this paragraph will take pains to make the subject of it known.

We may add here that the Society of Arts offer their gold and silver medals for essays and reports on various subjects, among which are the following:—

The economical production of cyanogen compounds in the arts or as manures.

An essay on the theory and practice of fermentation, particularly as applied to the art of brewing.

An account of the best machinery for preparing, grinding, and dressing Barley and Oats.

For the best method of converting precipitated or extracted sewage matters into a dry state valuable for agricultural purposes.

—— We direct attention to a paragraph in another page on the mischief arising from the consumption of cake from rough Cotton seed as food. The cakes analysed and recommended by Professor VOELCKER are made of decorticated Cotton seed—a distinction that must be carefully borne in mind.

THE old adage which assures us that "the best is ever the cheapest" is generally as true of agricultural as of any other produce. We have frequently protested against the glaring absurdity of purchasing cheap and always dirty seeds, and shown in the clearest manner how this has become a source of weed cultivation to be afterwards atoned for by additional labour; and we would now direct the serious attention of readers to another phase of this interesting subject of inquiry of equal importance to the thinking and carefully calculating farmer.

Among the plants of agricultural value which are daily rising into increased importance there is perhaps none that surpasses the Flax or Linseed; its fibre being valued for the production of a fabric for which the sister island is justly celebrated, its seeds yield the useful Linseed oil, and their remains are brought to the farmers' market in the shape of flattened slabs, under the title of oilcake.

A plant so useful as Flax could hardly have escaped experiment and discussion as to its capabilities for home cultivation, and as a result, it has been grown with greater or less success in England, Scotland, and Ireland; but probably the cost at which we grow it has precluded the necessary amount of profit to render it remunerative, and so most of the Flax fibre as well as seed used in Great Britain is derived from foreign sources.

Now what we more particularly wish to urge on the present occasion may be summed up in the following propositions:—

1st. Flax is not so remunerative a crop as it ought to be, because dirty seed is usually employed in its cultivation; and

2dly. Unless oilcake be priced strictly in accordance with its feeding value, the cheapest seed but not the best will be preferred in its production.

1. As regards the first position everybody knows the expenses entailed in the cultivation of a crop of Flax to be very heavy, and yet when the soil is finely pulverised and has been made, to use a farming phrase, "as clean as a flower garden," it is too often found at harvest most disappointing in its results from a paucity of Flax both in fibre and seed, and a great increase of weeds, many of which are left as a perpetual legacy to the Flax growing farmer. That these things should be so will not surprise any one who will take the trouble to analyse such samples of seed as may be shown them in the Flax market, and in order to put this matter in as clear a light as possible, we at once give the result of an examination of a sample of Flax seed which we lately took direct from a cake mill, where it was deposited ready for the operation of crushing.

The following table is made up from an examination of 2 ozs. by measure of the Flax as we casually took it up. Now this table acquaints us with the startling fact that every such sample of seed used by the farmer for sowing contains as many as *four thousand seven hundred and sixty* weeds to the pint, in themselves enough to stock the land, however cleanly it may have been previously farmed; and if, as is not unusually the case, the destructive Flax Dodder (Cuscuta epilinum) should be amongst them, no wonder disappointment as to the result should render it as our farmers say a "casualty crop," and consequently one of which remuneration is uncertain, even putting altogether out of the question the subject of fouling and exhausting the land.

Two ounces by measure of Flax seed yielded the following weeds.	Number of seeds &c.	Weight in Grains.	Remarks.
Sinapensis arvensis }	292	24	Probably other Mustards also.
" nigra }			
Agrostemma Githago, Corn Cockle.	24	12	A large weed very common in most foreign seeds.
Various undetermined weeds.	160	40	Some of Grasses, as Millet, and hence a dilution of the seed but not of the cake.
Bits of dirt and stones	..	160	Probably derived from the Flax roots.
	476	236	

Why then will not the Flax grower purchase good and pure seed? It can be got if he will pay for it; but if he prefers the example before us because he can purchase it at a few pence less, what wonder that little trouble should be taken by him who has to sell the seed; for in this, as in all similar circumstances, the difference in price between pure and impure seed is always in favour of the seller. In the sample before us can we suppose that the purchaser got it for half the price of a pure seed?—and yet he should do so to have the advantage in the transaction on his side, the sum being as follows:—

	Grains.	Grains.
In a pint of this sample we have WEEDS .. =	760 }	= 2360
STONES and Dirt .. .. .. =	1600 }	
Weight of separated seed .. .. .. =	..	2680

2. The figures just quoted forcibly point out the urgency of our second proposition, for in investigating Flax seed we have to take into consideration its uses as a cattle feeding stuff.

In this sample of seed we have a large proportion of Mustard seeds; these are well known to be not only not of feeding value but absolutely poisonous to cattle; and though probably the small quantity here found would not be productive of a directly injurious effect, yet we may safely affirm that its qualities are negative, and therefore its admixture is so much loss. If again we take this in connection with the dirt and stones, we can only come to the conclusion that the cake crusher, who no doubt buys this at a less cost than he would purer seed, is a loser by the transaction, if only in the matter of oil—and how much more loss would he suffer if cake was properly tested before purchasing it? But here is a matter in which the consumer of cake is immensely interested, and a greater service could hardly be done him than the pointing out some easy and simple method by which cake might be tested, at least, as to some of its more important characters, a subject which would best be handled by our learned friend Professor VOELCKER.

It will be seen that cake made from the seed before us may be sweet to the taste and smell, and, indeed, as we happened to examine it, we can testify that it was good to look at, so much so that neither from our first view of the seed nor the subsequent one of the resulting cake, were we at all prepared for the result which our seed analysis has demonstrated. At the same time all examinations which we have been enabled to make of Linseed—especially of foreign samples—convince us that they are immensely impure. The sum of this impurity may, however, be readily ascertained, whether as a matter for the buyer of seed for planting or for cake-crushing, and we have called attention to this important subject as showing the amount of dilution—probably seldom the result of deliberate adulteration—which both seed and cake are liable to. A careful examination may, however, detect this; and if this should result in a demand for a cleaner and purer article, we have no more doubt of its being produced than we have that it would redound to the profit of the consumer.*

With the sample of seed we have been describing freight has been paid upon nearly half its weight of dirt: surely this is a most expensive way even of dilution; surely it would be better to do as was recommended to the purveyor of skyblue when the tint of the fluid was more cerulean than usual: "Bring it as pure as you can, and we will dilute it as we require it."

THE MANGEL WURZEL CROP.

As the subject of the Mangel Wurzel crop is one of very great importance to the agricultural community of these countries, and as it is at present engaging a large share of attention, as shown by the numerous queries addressed to you on its cultivation, &c., I have thought that the following remarks might not be devoid of interest to some of the readers of your Journal. The crop of the various sorts of Mangel grown on this farm in the past year, as the subjoined table will show, was very superior. I admit that the roots were not such monsters in size as are to be seen at the exhibitions of farm produce, and which, I believe, it is pretty generally acknowledged do not obtain their great magnitude by ordinary manuring and management. I have often thought (and if I mistake not, the same feeling is becoming pretty general) that it would be both more sensible, and more useful, to offer prizes for a well cultivated and generally good crop of some extent than holding out inducements to growers to spend so much of their time in raising a few giant roots.

I shall now proceed to detail as concisely as possible the mode of management adopted in the cultivation of the crop on this farm. I may premise that the soil is formed from the calp, or mountain limestone, and the division of the farm on which the Mangels were grown has been thorough-drained to a depth of about 3½ feet. In Dec. 1857 a two-horse plough, turning a furrow 6 inches in depth, was followed by 16 of the pupils, who, with the ordinary spades stirred the soil to a depth of 8 inches, and at the same time threw up a portion of the subsoil on the surface. A subsoil plough, drawn by a pair of bullocks, followed and loosened the subsoil to an additional depth of 6 inches. The land remained in this state until the first week in April, when the rough surface which the field presented after the subsoiling (or partial trenching) had been finely reduced by the winter's frost. A double turn of the grubber, and one harrowing, followed by the roller, prepared the land for drilling. The drills were made 32 inches wide, and only as many drills opened as could be manured, closed, and sown on the same or following day. The farmyard manure intended for this crop had been previously well prepared, and when applied at the time of sowing the crop, it was in a well decomposed condition. By attention to this point, and sowing the seed on the freshly made up drills, I have never failed to secure a full plant of Mangels even in the driest season. The sowing of the crop commenced on the 24th of April, and ended on the 4th of May, heavy rains having interrupted the sowing for an entire week. The manures applied per statute acre were:—25 tons of farmyard dung, 1½ cwt. of Peruvian guano, and 8 cwt. of salt.

The salt was sown over the drills after spreading the farmyard manure; the drills were then made up with the double mould-board plough, the guano at the same time (mixed with mould) applied on the half-closed drill. The practice on this farm is to sow the seed by hand, and four of the pupils sowed a statute acre in a day of 10 hours. A portion of the seed was steeped before sowing, but with no apparent advantage. In thinning out the crop I prefer leaving two plants in one space (but not quite close together) for some time, and on going over them at the second thinning the least promising plants are drawn out. This pays well for the additional expense incurred. The distance between the plants on the drill is usually from 12 to 15 inches. Two hand hoeings and three drill grubbings, at different periods, complete the after culture.

The early sown crop is more liable to throw up seed stems than later sowings, but the latter will generally be found deficient in acreable produce when compared with the former. I have the seed stems cut off as soon as convenient after they appear, and in this way large roots are obtained, which, though they contain a large proportion of woody fibre, nevertheless are of considerable value. I invariably find the Long Red variety most subject to run to seed.

The removal of a portion of the Mangel leaves has been a regular practice on this farm for many years; and as some of your correspondents seem to doubt the propriety of this course, I subjoin some statistics of the feeding obtained from this source, and (as experiments on this farm have shown) with very little injury, if

* Correspondents would much oblige by sending us all the samples of Flax seed they can.

any, to the general crop, if the work is carefully performed. I began to strip off a portion of the under leaves about the beginning of September; but those only which showed signs of decay were removed. By going regularly over 10 statute acres from the above date to the end of October (when storing began) 60 tons of leaves were obtained, which gave 160 stones per day for 60 days. Twenty-four milch cows were thus provided each with (in round numbers) 7 stones of leaves daily, and this quantity, with one feed of Turnips, and good fresh straw, kept them in good condition, and in full milk during the above period. I calculate that it would take 3 acres of Aberdeen or other Turnips to supply the place of 60 tons of Mangel leaves, and the farmer and the chemist can both prove this to their satisfaction. I have also found, from numerous experiments carefully conducted on this farm, that Mangel leaves are quite equal to Turnips or Italian Rye-grass for the production of milk and butter as regards quantity, but the butter produced from the former will be deficient in colour.

I beg to call attention to the following extract from Tynan's pamphlet on the "Cultivation, &c., of Mangel Wurzel":—

"The value of Mangel leaves as a food for milch cows stands high amongst green fodder, as tested by a series of carefully conducted experiments made at this (the Albert) Institution, of which the following table shows the results:—

No.	Date of experiment.	Kind of feeding.	Butter produced by 40 quarts of milk.	
	1857.		Lbs.	Ozs.
1	4th May	Italian Rye-grass alone ..	3	5
2	5th Sept.	Italian Rye-grass & Pasture..	3	13
3	28th Sept.	Mangel Leaves and Pasture	3	14
4	6th Oct.	Mangel leaves alone	4	—

"The leaves of the plant," remarks Professor Wilson, "also appear to possess a far higher value, both as a feeding and as a manuring substance, than we are accustomed to assign to them. Boussingault (Annales de Chimie) gives us an organic analysis of the roots and the leaves of the plants; a comparison between their respective compositions will be very much in favour of the leaves for the purposes just mentioned. The substance were dried necessarily previous to their analysis. Their proportions of water were about the same, and their elementary composition was as follows:—

	Root.	Root.	Leaves.
Carbon	42.75	42.93	38.1
Hydrogen	5.77	5.94	5.1
Oxygen	43.58	43.23	30.8
Nitrogen	1.66	1.66	4.5
Ash	6.24	6.24	21.5

Thus showing that, in a chemical point of view, the leaves were three times as valuable as the same weight of roots would be." *Journal of the Royal Agricultural Society of England*, Vol. XIII., p. 160.

The following table gives the acreable produce, &c., of the several kinds of Mangel grown on this farm in the present year:—

No.	Varieties.	Date of Sowing.	Manures applied.	Produce per stat. Acre.	
				Tons	cwt.
1	Yellow Globe	24th April	25 tons farmyard, 1¼ cwt. Per. guano, 8 cwt. salt	35	2
2	Long Red	Do.	Do. Do.	34	5
3	Red Globe	3d May	Do. Do.	35	2
4	Long Red Bugle	Do.	Do. Do.	36	4
5	Long Yellow	Do.	Do. Do.	36	14
6	Deep Orange Globe	4th May	Do. Do.	31	5
7	New Yellow Oval	Do.	Do. Do.	41	13
8	New Red Oval	Do.	Do. Do.	31	0

OBSERVATIONS.—The entire crop of each variety was weighed, and 1 ton per acre deducted for adhering clay.

It will be seen that the New Yellow Oval yielded 5 tons per acre more than any any other of the 8 varieties and 10 tons per acre more than Nos. 6 and 8. For weight per acre, and beauty of shape, it appears to me that it will surpass all the other sorts with which I am acquainted. The seed was obtained from Messrs. W. Drummond and Sons, Dawson Street, Dublin. The long yellow and the Long Red Bugle are the next highest on the list: the latter usually gives a large produce; but, as it falls to either side of the drill at an early period of its growth, it obstructs the after culture considerably. Besides, if frost should set in before storing it is more liable to injury than any other variety from its peculiar habit of growth. *William Boyle, Albert Institution, Glasnevin, Dublin.*

PAUPERISM IN IRELAND.

FROM Mr. Fonblanque's last statistic report of pauperism in the United Kingdom it would appear that Ireland has emerged from its poverty in a wonderful measure. The total number of her registered paupers in 1857 was only 56,910 against 73,525 in 1856, and 89,619 in 1855; and the per centage ratio to the population was a fraction under 1 per cent. That Ireland, whose people have been so notoriously miserable, so overrun with beggars, and so over-stocked with poor labourers and their swarms of children, even within a short period of time, should in the present day be represented as the least pauperised portion of the United Kingdom may well excite surprise. The statistic tables demonstrate that more than 4½ per cent. in England and Wales, and 4 per cent. in Scotland of the population are stated to have been paupers in the same year. Lest any one should be deceived into the notion that there are only about 60,000 paupers throughout the Emerald Isle, while there are nearly a third more in Scotland, with much less too than half the population of Ireland, and nearly 100,000 in England and Wales, I take leave to offer the following remarks.

In the Irish enumeration of paupers none are entered as relieved (with a very trivial exception) but those who are inmates of the union houses, whereas in England and Wales the contrary practice of giving out-door relief—and this in six cases out of seven on the average—has prevailed. This explains to any persons unacquainted with our poor-law system the inconsistency of obvious pauperism to a great extent with the foregoing return. This state of poverty has indeed much abated, and even diminished somewhat within the past year, but still it is a sad reality, and will painfully manifest its existence during the ensuing winter season. Great numbers of destitute families and individuals who in my judgment ought to be allowed out-door relief remain in their cabins dependent on the charity of benevolent neighbours and casual charity for their subsistence. They will not, except under such extreme pressure as a national famine might produce, leave their homes, though for the better accommodation of the poor-house, dreading the severance of domestic connections, the prison-like order of the asylum, with which they associate also the ideas of disgrace. If the destitute widow with helpless children, the worn-out labourer who can no longer earn wages, and the sick families temporally deprived of the ability to labour, were in Ireland, as in England, placed on the pauper roll, the return now made public with regard to Irish pauperism would be far less favourable.

I think that with due precautions, and without increasing the amount of our poor rates to a burdensome extent, adequate out-door relief might be granted; humanity calls for it loudly, and economy suggests that the timely allowance of money and bread to families under temporary distress from sickness, or other visitations of Providence, would prevent their decided pauperism and ultimate permanent and burdensome charge upon their unions, or on individual benevolence. In the electoral divisions around me the present (annual) rate does not exceed 9*d.* in the 1*l.* on the rental. As there are only individuals from our district in the union house, we receive, under all the present circumstances of the country, no direct advantage from the poor rate and the existing system—except medical aid for the sick poor—though we have the satisfaction, I readily admit, the great advantage too, of having a House of Refuge kept open for our poor in case of any extreme and unforeseen calamity. An increase of the present rate to a small amount would meet what I consider urgent claims for out-door relief. This surplus rate I am convinced would be much less burdensome to the benevolent and generous of the ratepayers than the voluntary amount of relief which they afford in various ways to the pauper families around them; and the hard-hearted and niggardly ratepayers whose private charities are insignificant might justly be compelled to contribute to an object of great social good.

The expenditure (which had decreased from 849,951*l.* in 1855) was 619,514*l.* for the maintenance of the Irish poor in 1857. Yet the cost of maintenance for each individual of the 56,910, at the usual average of 5*l.* per head per annum, could only have been 284,550*l.* The remainder, viz. 334,964*l.*, has been principally absorbed in rents, salaries of staffs of management, the support of the medical charities of 720 dispensing districts, which cost about 90,000*l.* per annum, and of poor law union fever hospitals.

The maintenance of less than 60,000 paupers in the union houses, and the medical aid afforded by the medical charities in dispensaries and fever hospitals are the only legalised benefits of which the Irish paupers are now partakers. As to their maintenance in the union houses it is meagre in the extreme, as will appear by comparison with that of the English pauper. One example will suffice. An English male pauper usually consumes weekly 8½ lbs. of bread, 13½ pints of gruel, 1¾ pints of pea soup, 1 lb. cooked meat, 1 lb. of suet pudding, 3 lbs. of vegetables, and 12 oz. of cheese. He is allowed breakfast, dinner, and supper, the latter meal being of bread with either cheese or gruel. The Irishman consumes, in a union house in the province of Ulster, 4 lbs. 12 oz. of bread, 5 quarts of soup, 4 lbs. 12 oz. of oatmeal (in porridge), and 5 pints of buttermilk. In the other provinces something less, as he is rarely allowed the supper meal except in Ulster. Children however under the age of 16 are allowed bread for supper. With two meals only—the far more general rule in the Irish union houses (or if there be a third, with a very small increase to the quantity of weekly food allowed)—it is not surprising that the Irish pauper will take his chance for food anywhere, with freedom of action, rather than in the poorhouse.

This question may occur to some minds: Were the "Commissioners for administering the laws for the relief of the poor in Ireland," when framing the poor-house dietary tables and refusing support to the extern poor, influenced by the notion that they were thereby promoting a tendency to the remultiplication of the people whose numbers had so fearfully decreased by famine, fever, and emigration? I have accidentally opened an old volume of Blackwood's Magazine, in which I find* a train of reasoning theoretically such as may have actuated the commissioners in working out the practical details under my consideration. The writer, addressing Lord Brougham on the Malthusian doctrine which he impugns, argues in this manner respecting what he holds to be an admitted law of nature:—

"When a species, whether animal or vegetable, is put in danger, Nature invariably provides an extraordinary effort for its perpetuation; and on the contrary, when the means of perpetuation are profuse the powers of perpetuation are diminished. In short, the 'plethoric state' is unfavourable to increase, the plethoric state (or opposite state) is favourable to it. * * * First, as to the vegetable world: all gardeners and botanists know that if a tree, plant, or flower be placed in mould too rich for it the 'plethoric state' is immediately produced, and it ceases to be fruitful. If a tree, it runs to superfluous wood, blossoms irregularly, and is destitute of fruit. If a flowering shrub or flowering plant, it becomes double, and loses its power of producing seed: and next ceases, or nearly ceases, even to flower. In order to remedy this, gardeners and florists are accustomed to produce the opposite, or 'deplethoric' state, by artificial means. This they denominate 'giving a check.' In short, they put the species in danger, in order to produce a correspondingly determined effort of nature to insure perpetuation and their end is attained."

I shall not recapitulate the various illustrations of checking luxuriant growth by ringing the bark of a tree, &c. Having shown that a gardener will not give extra manure or warmth, but the contrary, to a fruit or flower which he would have full seeded, and asserted that Vines and other fruiting trees and shrubs bear most abundantly after severe winter, the writer advances from vegetable to animal life:—

"What does the farmer, the grazier, or the breeder if he wishes to obtain a breed from some particular animal? Does he fatten it in order to secure its fecundity? He does precisely the contrary. He keeps it lean; he keeps it in that state in which Nature keeps all animals engaged in search and travel for food, and exposed to perpetual interruption during their time of feeding. He does this because he knows that to 'fatten' the animal, to bring it into the plethoric state by means of plenty of food and leisure, would be to destroy the chances of its fruitfulness."

To the main point the writer gradually advances, and after several interesting remarks and allusions to the fecundity of the ancient people termed Ichthyophagi or fish-eaters, says, "That any people living exclusively upon the low and meagre diet of fish must be unnaturally prolific, the experience of modern times will sufficiently prove. The fecundity, however, is not because the sustenance is *fish*, but because the sustenance is poor. This I shall make apparent by a comparison between the prolificness of people such as the inhabitants of the Highlands and Western Islands of Scotland, who subsist upon a low diet, chiefly of fish and vegetables, and that of the natives of more favourable countries, whose fare is richer, more plentiful, and more solid, and whose labour and exposure are less. This general notion of a thin and meagre diet being favourable to fruitfulness is borne out by the recorded opinions of medical writers upon this subject down to the present day. Several instances are enumerated by them, of persons who, being childless during their prosperity, became parents of families after being subjected to privations and the scanty table and hard bed of misfortune." By substituting oatmeal gruel or Indian meal, or why not the Potato, for "fish," or any other "meagre" diet, we have here the case of the pauper Irishman, whether in or out of the poor-house, subsisting on two meals per day, weight 22 ounces, of bread and oatmeal and a little butter-milk or broth, or kept "in search and travel for food, and exposed to perpetual interruptions during his hours of feeding." Thus Irish pauperism and vagrancy may become physical causes of fecundity.

I shall now advert to the real benefit conferred upon the poor of Ireland by the Medical Charities Act passed in 1851, under the authority of which the Board of Guardians provide requisite accommodation for the dispensaries in the several districts, medicines and appliances, and pay the salaries of the medical officers; the expenses being charged upon the poor-rates of the electoral divisions, comprised in the dispensary district. The 162 unions containing 3439 electoral divisions are divided into 720 dispensary districts, giving an average of more than four divisions to each district, the average population of the districts being about 9000, and for each medical officer thereof. There were in 1857 982 dispensaries and 777 medical officers; in some districts an apothecary also is appointed, and in some few (the total being 13) a midwife also. There are also, under the same Act, Poor-law fever hospitals, the expenses of which are charged upon the union-rates, and county and district hospitals and county and city infirmaries, supported by county presentments and private subscriptions, and in the instance of infirmaries by other means also irrespective of poor rates.† The poor, therefore, may enjoy the privilege of obtaining every requisite medicine through their medical officer, if he state that they are necessary for them. The guardians do not refuse to order for their respective dispensaries any medicines, even such as are very costly, if absolutely required by the medical officers. And in this point of detail the Irish seems to be free from an objection urged against the English system, viz., that expensive medicines, however necessary to the recovery of the sick, cannot be generously afforded to them by the medical officers, because these gentlemen (who are often inadequately paid and over-worked) are bound to supply at their own cost all medicines for their pauper patients. Sir John Trollope took occasion in the House of Commons to call the attention of the President of the Poor-law Board to the fact that in many English unions "the mere medicines required would absorb the whole of the salaries given to the medical officers. Under the operation of excessive competition, they have been induced to take contracts at a lower scale than they can afford to do. It is

* March, 1837.

† See Thom's admirable Almanac and Official Directory for the year 1857.

notorious that in the case of illness of paupers private charity is compelled to supply the medical comforts which the Poor-law Unions do not provide." Now, on this particular point the Irish mode contrasts favourably with that adopted in England; but in the other circumstance, of good nourishment during sickness, supplied by the poor rates as a matter of course if ordered by the medical gentleman through the relieving officer, and other things so frequently afforded by private charity in England where wealth and liberality abound, the case is reversed. In numerous Irish electoral divisions there are no gentry or other individuals able or disposed to give such sustenance as the sick poor require. If in Ireland the medical officer visits a cabin in which sickness exists, he must either give from his own limited resources the means of purchasing some necessary nourishment, or leave the sick without the means of regaining health and strength. He cannot be sure that the Board of Guardians would sanction a disbursement at his discretion, and generally there are such impediments presented against any mode of giving casual relief that few of the medical men will encounter them. Liberally disposed and considerate guardians are, it must be presumed, often out-voted in their proposed kindly treatment of sick out-of-door paupers by others of the opposite dispositions. I think that the medical officers are, from education, professional knowledge, and position, the best judges of the quality and measure of relief which the pauper cases under their management may call for; and therefore that they—whose lives too are in continued peril while pursuing their vocation — should have more authority than is now vested in them, and while duly responsible to the Board of Guardians, be legally allowed to do as a matter of right what they now must ask as a favour, or do at their own risk. *M. D.*

Home Correspondence.

Cotton Cake.—I shall be obliged by your inserting in the *Agricultural Gazette* the following report of a case of death of a bullock from eating Cotton-cake. I was present at the examination, and can vouch for the correctness of the report in every particular. I enclose samples of the Cotton-cake in its natural state, and as it appears boiled, and as it came from the bowel of the bullock. It seems a most important matter to ascertain whether other farmers have met with similar cases. *John Fryer, Jun., Manor House, Chatteris.*

COTTON CAKE.—*(case by J. G. Cooper, V.S., Chatteris.)* "A bullock doing well was taken seriously ill on Wednesday, December 22. I found him labouring under symptoms of 'mad staggers,' running his head against posts, and then falling down as if dead. There was evidently congestion of the brain, and giving it as my opinion that the case was beyond the reach of medicine, with the sanction of the owner it was slaughtered forthwith. I regret that illness prevented me conducting the *post mortem*, but I found a most efficient substitute in my neighbour, Mr. Wright, Surgeon. I give his report. 'This bullock had evidently being doing well. Every viscus so healthy that the cause had to be sought for with care. The paunch was enormously distended with food; the upper stomachs perfectly overloaded, the lower one empty. The cause of all this distention and mischief was discovered in the first bowel, 2 feet of which were blocked up with Cotton husks, pressed so tightly into the bowel as to give externally the appearance of stones. Here was an obstruction that could never have been foreseen, and that it was impossible to overcome. The duodenum was not inflamed—other bowels empty. Signed, J. HALL WRIGHT, M.R.C.S.'—On the following day, in conjunction with Mr. Wright, we divided half a Cotton-cake (from the same store), powdering one-fourth, steeping another in cold, another in water at 98°, and the last fourth in boiling water for eight hours each. By this means we procured a large quantity of husks, that not only resembled those found blocking up the bowel when examined by the naked eye, but under the microscope their identity was perfect. Experiments precisely similar with Linseed-cake revealed the facts that whereas in Cotton-cake there is an enormous quantity of insoluble matter, in Linseed-cake there is none at all. These Cotton husks are all concave, and seem to have a special aptitude for adhering to mucous membranes. The food was Mangels, Cotton-cake, goop hay and straw, with a little Barley-meal soaked three days in water. One would imagine that the bowel had been gradually coating, and that on the night in question, the obstruction becoming complete, the symptoms were matters of course."

Superphosphate of Lime.—The following remarks have been suggested by the perusal of an article on this subject in your Paper of the 25th ult. It is not my intention to find fault with the writer of that article, but rather to offer some opinions and observations of my own, in the hope that they may be useful to your readers. Superphosphate, as you are aware, is entirely a mineral manure, and does not, therefore, necessarily contain either organic matter or nitrogen. I cannot therefore agree with the writer of the book, from which your extract is made, when he asserts that superphosphate of lime can *only* be valued by the percentage of organic matter, sand, and ammonia which it contains. Such a statement would be perfectly correct if made with reference to a nitro-phosphate, but that is quite another article. Superphosphate ought, as the writer says in another place, to be valued according to the amount of bi-phosphate (soluble phosphate) which is found in it. But here is a difficulty. How is the buyer to know the per-centage of soluble phosphate which any given sample contains? It is not difficult to determine that by analysis, yet even here it is easy to make a blunder; and it is very clear that farmers as a body cannot do it for themselves. It is not sufficient that an analysis has once been made of a certain maker's superphosphate, supposing that analysis to have been correct, because, unless the manufacturer understands the principles on which he works, and I fear there is not a tithe of them who do, his manure will be liable to very great variation in point of quality. I have known superphosphate, from the same manufactory, which contained in one case only 4, and in another nearly 40 per cent. of bi-phosphate; the former was not worth more than 2*l.*, and the latter would have been cheap at 10*l.* per ton. To obtain a constant article it is absolutely necessary that the manufacturer should be able to determine the strength of his acid, the composition of his bone ash, coprolites, &c., and then to calculate the exact quantity of each he must use, in order, not only to make the most of his ingredients, but to guide him in the reduction of his manure to an uniform strength. This is necessary, because these materials are of very uncertain composition. Again, the maker ought frequently to examine his superphosphate as the manufacture of it proceeds, in order that he may know whether he has the quantity of soluble phosphate which he expects, and whether he has an insufficiency or a superabundance of acid. From such a maker as this the manure might be depended upon, and it would make very little difference whether he employed in its manufacture bone earth, animal charcoal, coprolites, or any other of the materials now in the market. But the farmer's difficulty—that of getting a constant article—does not end with the maker. Superphosphate, like everything else, is adulterated after it leaves the manufactory. That there are as honest agents of manures as of anything else nobody can doubt, but that some of them are in the habit of mixing inexpensive and useless things with their manures is a well-known fact. I understand from some of the manufacturers that their customers are generally satisfied if you can show them a large per centage of phosphate, soluble or insoluble. If it contains a small amount of the former but a large quantity of the latter they are contented, believing that the one makes up for the other. Now this is an unfortunate state of things for the purchaser, but very convenient for the maker, who needs only to shovel into his poor superphosphate a quantity of ground coprolites in order to swell the per centage of insoluble phosphate, which will be found on analysis. My advice to farmers on this subject is—1. Purchase from a respectable maker or agent, I mean one of respectable character and ability. 2. Remember that superphosphate may be manufactured of any strength, and that, consequently, it may be quite as expensive at 5*l.* as at 7*l.* per ton. 3. Obtain, if you can, an analysis of the kind you think of buying, and if it contains 14 per cent. and upwards of soluble it is a good manure. Such an article should not cost this year more than 6*l.* or 6*l.* 10*s.* per ton, as both bone and acid are cheap. 4. Observe that the effect of the manure will be proportioned to quantity applied, up to a certain point, and after that nearly all will be wasted, as it is extremely soluble and will pass through a porous subsoil or the drain pipes. This point, which ought to be reached, but not exceeded, depends not only upon the requirement of the roots but also upon the strength of the superphosphate and upon the character and condition of the soil to which it is applied. From these statements it is clear that only general directions can be given as to the quantity necessary to be used; but a few experiments, conducted on the same land, and during the same season, with different quantities of superphosphate, will determine this matter with sufficient accuracy. *Moses Pullen, Painswick, Gloucestershire.* [The statement that a superphosphate is to be valued partly according to the nitrogen it contains may be objected to on the score that superphosphate of lime really does not contain nitrogen; but it is nevertheless true, because it refers not to superphosphate as a true chemical salt, but to a class of very mixed manures which are known in the market by this name.]

Foreign Correspondence.

FARMING IN COURLAND.—Now that free trade appears to be an established fact I am surprised that more of the young farmers do not find their way to this country. The reason being probably that it is but little known in England, I will endeavour to give you an impartial sketch of it. Sixty years since it was independent, and governed by a duke. The whole land was and still is divided into 500 estates, the greater half of which are owned by German barons, who settled here at various times during the last 600 years; the remainder are let, and the proceeds are employed for paying the State expenses. Although it has since been ceded to Russia, yet affairs remain nearly the same; they have their own officials, and the German language is still the predominant, and used in all the courts of law, &c., and in fact Russian is seldom heard. It may therefore be said to be a German State under the protection of Russia.

The soil is diluvial, situated on the limestone. It varies from nearly pure sand to heavy loams, but heavy wet clays like those of Essex are not to be found. A large proportion of lime is to be found everywhere, and, as may be supposed, several descriptions of Clover, including the Alsike, are to be found wild. On my farm there is an open ditch full of Alsike Clover, to the exclusion of other Grasses, which neither time nor ill treatment seems possible to exterminate. We have no hedge rows or trees standing in the arable land, but all open like Mr. Mechi's; neither have we any damage done by game, for we have no rabbits, and but a small quantity of hares and partridges, in consequence of the game laws not being severe. Instead of the arable lands of the several farms or estates joining each other as in England, we have around each farm a certain quantity of pasture land and wood which affords fuel; there is also a portion of water meadow belonging to each farm, giving about 10 tons of hay per annum per 100 acres of arable, and neither the pasture or water meadow are reckoned on the tenant. For the arable land, exclusive of roads, site of buildings, &c., about 9*s.* per acre are paid, which includes all rates and taxes, and leases of 6, 12, and even 24 years are common. The dwelling and farm buildings are generally large and good, and many are even better than in England. Belonging to every estate are a number of small farmers, who formerly did all the work of the home farm, but now they are let quite distinct, but have still all the public burdens of the estate to bear, such as the mending of the high roads, the keeping of the poor, and the liability of soldiers being quartered upon them. Ten years since the three-field system of fallow, winter corn, summer corn were general, but since that Clover is usually sown, and the most common rotation now is fallow, Wheat or Rye, Clover, ditto for pasture, Barley fallow, winter corn, Peas, Potatoes, Flax, and Oats, making nine years. Turnips have only been tried by a few enterprising men, some of whom have been very successful. Rye-grass is not yet used, but a few acres I sowed last year did exceedingly well. I am living near the centre of the best Flax district, and as the soil and climate suit it remarkably well, there is scarcely a farm which does not produce a small quantity, say 6 acres in every 100; more than that they do not find it advisable to grow, because the preparing of it occupies a great deal of time, and as the seed is generally sold at good prices for export, it gives neither winter provender nor manure. It is all managed in the old fashioned way—soaked in a pond or hole dug out for the purpose immediately after being pulled for five or six days, until the bone or wood easily breaks between the fingers; it is then laid out on a clear piece of Grass or stubble for a few weeks, turned once over, tied as dry as possible in bundles with straw and scutched at leisure. As it is always sown in the place of Barley or Oats it does not displace a portion of Wheat, and so managed and treated as advocated, I believe, also, by Mr. Warner, I think worthy the attention of every agriculturist in England; there is no costly apparatus, nothing necessary but what a few shillings will pay for. It grows here on all soils, the only condition being that it gets a few showers of rain. The troublesome operation of weeding also, which we have been so often told to be absolutely necessary, is here totally dispensed with.

The land is ploughed with an instrument which defies description, and I believe peculiar to this part of Europe. It acts something like a pair of scissors slightly opened, with the points turning inward, and held at an angle of 45°; two shafts, nearly horizontal, are fixed to it, and it is drawn by one strong pony. About 3 inches is the usual depth moved. Many persons, however, are now getting implements from England. I and a few others have tried drainage, but with the exception of low situations, without much effect. This may be accounted for by the climate, which I will endeavour to explain in another communication, together with statistics of expenses and returns, if the subject be considered sufficiently interesting for insertion. *W. Grossmith, Bauske, Courland, Russia.*

Farmers' Clubs.

BOTLEY: *The Cross Breeding of Sheep.*—Mr. John Twynam, of Winchester, in a statement on this subject at a recent meeting of this club, said that the experience of late years had fully proved that the sheet anchor of the cultivator of the soil was the green crop system. The next important consideration which presented itself was the best mode of converting them, and the animals the most fitted to accomplish it; and in reference to at least three-fourths of the arable land of this kingdom, the sheep stood forth as the most prominent indispensable agent for that purpose. The lecturer then entered into the history of the Southdown, the Leicester, the Cotswold, and the Hampshire Downs. Amongst the finer qualities, the Southdown held the foremost rank where the taste of the epicure is to be consulted; old mutton required parks to be fed, or on arable lands of a dry subsoil, in a warm locality, these sheep might graze with as great advantage as any other. They would also go well long distances without injury, making a close bite on short herbage, but in the winter season were not so good proof against our fickle climate in exposed situations. The Leicester, for grazing purposes, on rich pastures, where no folding was required, the temperature warm, and weight of carcase, with early maturity in view, were perhaps to be preferred to all others, especially when they remembered that this breed had partaken, with other breeds, of the improvements of the day; for they no longer found them as in the days of Bakewell, beautiful indeed in symmetry and high in blood, but too often like so many rolling tallow-tubs, fit more for the chandler's than the butcher's shop. There was now a better intermixture of muscle or lean meat with fat, by which the quality of the mutton was much improved, and the fleece was a third heavier, without having suffered any deterioration in quality. The Cotswolds, in former days, were of a large yet rather coarse-grained carcass, with a heavy fleece of wool, possessing a good proportion of lean, more hardy than the Leicester, by judicious crossing with which they have been much improved, arriving much earlier at maturity, yielding a fleece of finer quality, scarcely diminished in weight, and adapted to the same purposes to which the Leicesters alone had hitherto been devoted, with the additional advantage of retaining with the cross their original hardier

nature. "I have known them," said Mr. Twynam, "wintered on the arable soils of Hampshire in the open air, with hay and Turnips, become superfluously fat; while other breeds, fed on the same food, side by side, have barely sustained themselves in store condition." The aim of the Hampshire and Wiltshire breeds is to combine size, quality, aptitude to arrive at early maturity, and a heavy fleece of good quality, with a constitution sufficiently hardy to undergo the process of consuming the green crops and folding on the ground where they go, thereby leaving a full dressing for the crop of corn which is to follow. The better points of different breeds require to be fused into one mould; and this daring exploit—for daring it was declared to be by a public prejudice against the smallest deviation from the beaten track—has been made with signal success by many of the more enlightened flockmasters of these counties. They saw population had so gained on the heels of production, that a greater weight of meat was annually required to be grown; that, simultaneously with increase of number of sheep, they bethought themselves that to improve the symmetry, increase the aptitude to fatten, and arrive at heavier weights, with the same food, might be quite as economical a mode of supplying the increased demand, as to effect it solely by the increase of numbers. They had before their eyes the parent-breed of the matchless South-downs, Leicesters, and improved Cotswolds. These, in their separate state, were unfit for the system of arable-land farming, as well as for the description of carcase which has the "call" in the market at the present day. To meet the requirements of both, an amalgamation was decided on; and the result was a carcase of mutton exhibiting the early maturity of the Leicester, the muscle of rich lean of the Cotswold, and superior grain of the Down—a carcase "ripe" at 14 months old, instead of at three or four years, as formerly. From this admixture, assisted by the original Hampshire breed, which was founded about the beginning of the present century, on (the then prevailing breed of the country) the old horn-ewe and Sussex ram, the present new Hampshire breed was formed. No long pedigree of what is called "purity of blood" can be claimed by any Hampshire flock-master: but he has the satisfaction of knowing that it is the admixture he has made which constitutes the value of his stock; for neither of the parent-breeds from which he derived it can claim comparison with his own for the union of qualities necessary to form the most useful and best-adapted sheep for the profitable consumption of his green crops, or so satisfactorily to meet the demand of the consumers of mutton or of wool.

Miscellaneous.

Sickles and Cycles.—Mr. Wren Hoskyns calls attention in the *Times* of January 6 to the fact that "for no less a period than 32 years—ever since 1827—the price of Wheat in this country has moved in quadrennial periods—four years up and four years down—with a regularity so steady and invariable that it is difficult to cast one's eyes over the scale of 'annual averages' and escape the impression it conveys of a perfect natural cycle. No expansion into verbal statement will do justice to the expressive tale which the diagram of annual prices affords to the eye. Briefly told, however, and omitting fractional figures, it is as follows:—From 1827 to 1831, the first quadrennial period, the prices of Wheat rose from 58*s.* in the first-named year to 66*s.* in the last. Thence to 1835 it fell by regular annual steps, 58*s.*, 52*s.*, and 46*s.*, to 39*s.* In the next four years it rose again with equal regularity, through 48*s.*, 55*s.*, and 64*s.* to 70*s.* in 1839. Then down, by the gradations of 66*s.*, 64*s.*, and 57*s.*, to 50*s.* in 1843. Up again, through 50*s.*, 51*s.*, and 54*s.*, to 69*s.* in 1847. Down again, in turn, by the regular stages of 50*s.*, 44*s.*, 40*s.*, to the figure fearful to agricultural eyes of 38*s.* in 1851. The next four years it mounted again by the encouraging degrees of 41*s.*, 53*s.*, 72*s.* to the Crimean altitude of 74*s.* in 1855; whence it has declined, in obedience to the same singular law of succession, to 69*s.* and 56*s.* in 1856 and 1857, and to the still lower figure it holds in the year just expired, the third, and happily the penultimate, of our present descending series. From this statement (unavoidably tiresome and ineffective in the mere reading) any one caring to take the trouble can readily draw the diagram for himself, and observe the instructive, or, at any rate, suggestive picture it furnishes."

Notices to Correspondents.

BLACK PUDDINGS: *R S, Tottenham.* Take 1 quart of whole oatmeal, boil it and let it steep all night in the water; boil a penny loaf in milk, put in 2 lbs. of hog fat cut small, four eggs, some Pennyroyal, Sage, sweet Leeks, or Onions, black pepper, Nutmeg, Cloves, and Mace, and what blood you think proper; fill the intestine a little more than half full. Boil it three quarters of an hour. The blood should be stirred when hot to prevent its congealing. *S.*

CLAY FARM: *E L S.* Mangel Wurzel is the best root crop for stiff soils whether for consumption by sheep or cattle. If by the former they had better be fed in Grass fields or yards. In recommending Mangel Wurzel we suppose that you farm in south or midland England. In Scotland Swedish and other Turnips are better.

DUTCH CLOVER: *M R.* You had better sow it with a thin crop of Barley; and do not stock it too heavily. Read Mr. Thompson's paper in the last number of the Journal.

STEAM BOILER: *W B H.* Apply to Stanley, of Peterborough, and Richmond and Chandler, of Salford.

TOP-DRESSING WHEAT: *E L S.* Notwithstanding its price we would apply genuine Peruvian guano in preference to almost anything else. Nitrate of soda 1 cwt. per acre, along with 2 cwt. of common salt, is also a good dressing.

GENUINE TOBACCO PAPER.

MESSRS. JACKSON'S Workmen are now selling their Genuine RAG and TOBACCO PAPER at 10*d.* per lb. Money Orders made payable to BEN BAXTER, Messrs. Jackson & Sons, Lady Lane, Leeds.

GENUINE TOBACCO PAPER FOR FUMIGATING.

H. APPLEBY (Foreman to Messrs. Ivery & Son, Nurserymen, Dorking, Surrey), begs to inform his friends and the public that he now offers the above article at a reduced price. Sold in 4-lb. packets, 1*s.* 3*d.* per lb. A great reduction to the trade; price on application. For testimonials that will guarantee its quality, see *Gardeners' Chronicle*, Dec. 11, 1858, page 920.

SHEET IRON POTS FOR FUMIGATING, 3*s.* 6*d.* each.

N.B. All Orders to be accompanied with a Post-office Order, payable to HENRY APPLEBY, Dorking, Surrey.

JAMES PHILLIPS AND CO.'S PRICES of GLASS for the present month.

HORTICULTURAL GLASS, STOCK SIZES, in 100 feet boxes.

	3rds.	4ths.
11 by 9, 12 by 9, 13 by 9, 14 by 9 .. / 12 „ 10, 13 „ 10, 14 „ 10, 15 „ 10 .. / 13 „ 11, 14 „ 11, 15 „ 11, 16 „ 11 ..	14*s.* 6*d.*	12*s.*6*d.*
14 „ 12, 15 „ 12, 16 „ 12, 17 „ 12 .. / 18 „ 12, 19 „ 12, 16 „ 13, 17 „ 13 .. / 18 „ 13, 19 „ 13, 20 „ 13, 21 „ 13 .. / 16 „ 14, 17 „ 14, 18 „ 14 .. .. / 19 „ 14, 20 „ 14, 21 „ 14	16*s.* 6*d.*	14*s.*0*d.*

PACKED IN CASES.

200 feet	£2 2 0	16 oz.
300 feet	3 3 0	
200 feet	2 18 0	21 oz.

ORCHARD HOUSE SIZES,
As supplied by us to Mr. Rivers.

20 in. by 12 in. / 20 in. by 13 in. / 20 in. by 14 in. / 20 in. by 15 in.	Common	16 oz.	21 oz.
	.. ..	14*s.* 0*d.* ..	£1 1*s.*
	Superior do. ..	16 6 ..	1 5
	English Glass ..	18 0 ..	1 9

SMALL SQUARES.—Per 100 feet.

6 by 4	6½ by 4½	7 by 5	7½ by 5½ / 9½ „ 7½ 11 6
8 „ 6	8½ „ 6½	9 „ 7	
10 „ 8	10½ „ 8½		12 6

JAMES PHILLIPS AND CO.,

180, Bishopsgate St. Without, London, E.C.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz SHEET GLASS of British Manufacture at prices varying from 2*d.* to 3*d.* per square foot for the usual sizes required, many thousands of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES, and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

HORTICULTURAL GLASS—JUNE TARIFF.

THOMAS MILLINGTON'S reduced Tariff of GLASS, &c.

6 by 4, 7 by 5, 8 by 6, 9 by 7 } 16 oz. to the foot, 11*s.* 6*d.*
6½ by 4½, 7½ by 5½, 8½ by 6½, 9½ by 7½ } per 100 feet.

In 100 boxes,—4ths quality, 12*s.* 6*d.*; 3ds do., 14*s.* 4*d.*

10 by 8,	12 by 9,	12½ by 10½,	14½ by 10½, 13 by 11
10½ by 8½,	12½ by 9½,	13 by 10,	15 by 10, 13½ by 11¼
11 by 9,	13 by 9,	13½ by 10½,	12 by 11, 14 by 11
11½ by 9½,	12 by 10,	14 by 10,	12½ by 11½ .. ..

20 by 12 / 20 by 13 / 20 by 14 / 20 by 15	per 100 feet	16 oz.	21 oz.
	Common ..	16*s.* ..	24*s.*
	Superior .	18*s.* ..	27*s.*

All Boxes included.

Orchard House sizes as supplied to Mr. Rivers.

Hartley's improved Rough Plate Glass from ¼ to ⅜ in thickness.

Coloured Glass in great variety, at 9*d.* and 1*s.* per foot.

Paints, Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, Lamp Glasses, &c.

87, Bishopsgate Street Without, same side as Eastern Counties Railway.

NETTING! NETTING! NETTING! FOR GARDENS, YOUNG PLANTATIONS, NURSERIES, POULTRY YARDS, AND PHEASANTRIES.

THE SUBSCRIBERS have much pleasure in offering the following very low prices for their PREMIUM PRIZE WIRE NETTING, now universally acknowledged the only reliable article in the market, the monopoly of which it has almost entirely secured. The quality which they supply has gained the Silver Medal from the principal Agricultural Shows in England, Scotland, and Ireland; it is all hand made, giving it an eminent superiority over that manufactured by machinery, as by the latter process the wire is split, and in a very short time the meshes break and gave way. The Subscribers cannot give a better idea of the undoubted excellence of their PREMIUM PRIZE NETTING than by stating that the weight of 1 yard of their 24 inch is equal to about 3 yards of another article in the market the same width, at 9*d.* per yard.

PRICES.

12 inches high		6*d.* per yard	Premium Prize Netting
24 „	1*s.* 0	do.	do.
36 „	1 6	do.	do.
12 inches high		4½ per yard	Medium Netting
24 „		9 do.	do.
36 „	1 1½	do.	do.
12 inches high		3 per yard,	Light Wire Netting
24 „		6 do.	do.
36 „		9 do.	do.

Made any height. If a web of 100 yards is ordered it will be delivered free at any Railway Station. All coated with their Impervient Composition for preservation, and thus rendered superior to galvanised netting.

THOMAS PEARSON & Co., 71, Queen Street, Glasgow.

PATENT GUTTA PERCHA SOLES.—IMPORTANT TO GARDENERS.—The Gutta Percha Company have the pleasure to acknowledge the receipt of the following letter from G. GLENNY, Esq., the celebrated Florist:—

"420, Strand, London.

"Gentlemen,—I have worn Gutta Percha Soles and Heels these two years, and being so much in a garden as I necessarily am in all weathers, and with the ground in all states, I would on no account be without them. As a matter of economy I would recommend Gardeners to use them, for they may repair the worn part at all times by warming the material at the fire, and pressing it from the thick parts to the worn parts as easily as if it were so much dough. I think it the duty of all persons who must occasionally wet their feet to adopt a material that completely defies damp. Many a gardener would escape colds and rheumatism by the use of Gutta Percha Soles.

"Your obedient servant, G. GLENNY."

Every variety of Gutta Percha articles, such as Mill Bands, Tubing, Soles, Goloshes, Sheet, Pump Buckets, Fire Buckets, Bosses, Union Joints, Flasks, Bottles, Bowls, Chamber Vessels, Toilet Trays, Sponge Bags, Curtain Rings, Galvanic Batteries, Talbotype Trays, &c., manufactured by the Gutta Percha Company, and sold by their wholesale dealers in town or country.—The Gutta Percha Company, Patentees, 18, Wharf Road, City Road, London.

HORTICULTURAL WORKS,
DANVERS STREET, CHELSEA, SEPTEMBER, 1857.
DISSOLUTION OF PARTNERSHIP.

MR. GRAY begs most respectfully to announce to his patrons and friends that the Partnership hitherto existing between Mr. ORMSON and himself is now at an end, and that the Business will be carried on by him as usual, and he hopes to be honoured with a continuance of that support and patronage with which this establishment has been so long favoured.

Mr. GRAY avails himself of this opportunity to tender his grateful thanks to the many kind friends and supporters by whose patronage this establishment has been raised to its present position, and he begs to assure them that it will be his most anxious care and study to maintain it.

NOTICE.

VOKINS AND HURD (removed from Smith Street to Seymour House, Jubilee Place, King's Road, Chelsea), HORTICULTURAL BUILDERS and HOT-WATER APPARATUS MANUFACTURERS. Estimates forwarded.

HEATING BY HOT WATER ON HAMMOND'S improved principle, for Horticultural Works, Mansions, Churches, Public Buildings, in fact everywhere that heat is required. Also his improved Ventilating Greenhouses, which can be erected at 1*s.* per foot, and entirely prevent the possibility of scorching the Vines or plants. The Patent Hot-water Register Stove.—Estimates at No. 18, George Street, Portman Square. Workmen sent into the country.

C. STEPHENSON, late STEPHENSON AND SONS, 61, Gracechurch Street, London, Manufacturer of Iron Hurdles, Fencing, &c., Improved Iron and Copper Conical Boilers and Apparatus for Warming Buildings of every description by Hot Water.

Prices and Estimates furnished upon application.

SCIENTIFIC GARDEN INSTRUMENTS.

CASELLA'S POPULAR SERIES includes GARDEN THERMOMETER FOR REGISTERING COLD.. 4*s.* 0*d.*
Do. GARDEN do. for HEAT 7 6
COTTAGE BAROMETER 11 6
GARDENER'S RAIN-GAUGE 15 6
THERMOMETER for Hotbeds 21 0
SCHOOL or GARDEN MICROSCOPE, with Rack-work and six Powers complete 21 0
MILK TEST for the Dairy, 4*s.* 6*d.*; Cream do. .. 3 0

Illustrated descriptions on receipt of stamp. Every trial ensures commendation.—23, Hatton Garden, London.

THE "ART JOURNAL" for January contains an Illustrated and descriptive notice of a Visit to the TERRA COTTA WORKS of JAMES PULHAM, Broxbourne, who was awarded a Prize Medal of 1851 for Garden and Architectural Decorations, with special notice of Artistic Merit; exhibited in Fine Arts Court, Class 30 and 27, and will send Stereographs (like seeing the objects in minature) on receipt of 12 stamps, and card of address.

PULHAM'S STONE COLOUR CEMENT to match with Terra Cotta, and both guaranteed for durability. References to works executed during 36 years. Specimens at the Kensington Museum and Polytechnic.

Scagliola Modelling and General Plasterers' work in first-rate style in any part of the country.

BLOSSOM OF WALL-FRUIT TREES.—Worsted Net, so very generally approved, 7*d.* per square yard—will last 10 years; plan of fixing it sent free. All kinds of Garden, Fishing, and Sheep Net, made by machinery, very cheap.

GALVANISED WIRE-WORK, less than 2-inch mesh, 16-gauge, 8*d.* per square yard; mesh 3 inches by 2 inches, for Poultry, 5*d.* per square yard; for Sheep, 4*d.* per square yard.

TRANSPARENT SHEETING, near 2 yards wide, 1*s.* per yard run.

WATERPROOF CAPES, long enough to protect a man from wet while stooping down, 3*s.* each; Police Capes, 18*s.* to 24*s.* per doz.; Tarpaulings for Carts, 12*s.*; Waggons, 25*s.*; Sheepskin Coats, 8*s.* each; Roofing Canvas, 1*d.* per square foot, 6 feet wide.

R. RICHARDSON, White Horse Factory, Bidborough Street, Judd Street; Office, 99, Euston Road, London.

2000 YARDS SECOND-HAND WIRE FENCING, five wires deep; the two top wires of No. 4 wire are new, the three lower wires in a perfectly sound state, equal to new. Price for the whole, 8*l.* per 1000 yards, including straining bolts. It is suitable for fastening on wood posts, with staples or otherwise.—R. RICHARDSON, White Horse Factory, Bidborough Street, Judd Street. Office: 99, Euston Road, London.

TRELOAR'S COCOA-NUT FIBRE WAREHOUSE 42, Ludgate Hill.—Matting, Mats, Mattresses, Sheep Netting, Hassocks, &c. Prize Medals awarded, London, New York, and Paris. Catalogues, containing prices, and every particular, free by post.—T. TRELOAR, Cocoa-Nut Fibre Manufacturer, 42, Ludgate Hill, London, E.C.

SHAW'S TIFFANY.—The best and cheapest material for Shading Conservatories, Protecting Fruit from Birds and Wasps, &c. Sold in pieces 20 yards long by 38 inches wide. No. 1, best quality, 5*s.* per piece; second quality, 4*s.* per piece. Extra strong and thick (see Circular sent free by post with samples).

Address JOHN SHAW & Co., Manufacturers and Dealers, Princess Street, Manchester.

HENRY J. MORTON AND CO., 2, Basinghall Buildings, Leeds.

GALVANISED IRON WATER CISTERNS

for Cottage Houses, &c., to contain 50 gallons, 25*s.*; 80 gallons, 30*s.* each; and 140 gallons, 36*s.*, and fitted with tap, keeping the water perfectly sweet and clean; will not rust or corrode. Cisterns of all sizes.

GALVANISED IRON PUMPS

for Liquid Manure or Domestic Use, 3 inches diameter, 30*s.* and 32*s.* 6*d.* each; Tail Pipe for same at from 10*d.* per foot.

GALVANISED IRON SWING WATER BARROWS

for Garden or Farm use, containing about 20 gallons, entirely formed of iron, 32*s.* 6*d.* each.

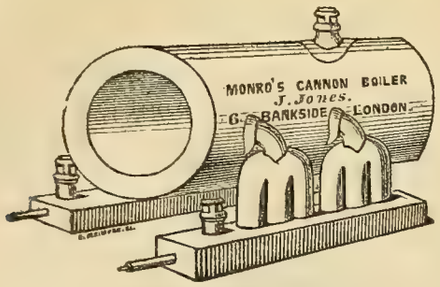
"FRIGI DOMO."—Patronised by her Majesty the Queen, the Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence, of Ealing Park, and—Collier, Esq., of Dartford.

PROTECTION FROM COLD WINDS AND MORNING FROSTS.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths. Two yards wide, 1*s.* 6*d.* per yard run; four, 3*s.* per yard. Also, an improved make for Shading Purposes. Three yards wide, 2*s.* 6*d.* per yard run.

ELISHA THOMAS ARCHER, whole and sole manufacturer, 7, Trinity Lane, Cannon Street, City, and of all Nurserymen and Seedsmen throughout the kingdom. "It is much cheaper than mats as a covering."

HEATING BY HOT WATER.



24-inch Cast Iron is ... ... £5 10 each.

24-inch Wrought ditto ... ... 6 10 „

36-inch Wrought ditto ... ... 8 10 „

MONRO'S CANNON BOILER.

MUCH has of late been said about Boilers for Heating by Hot Water, but these Boilers have now proved themselves to be the best at present invented. They are adapted for Heating every description of Building, and are made of various sizes. These Boilers are to be had only of J. JONES, 6, Bankside, Southwark, London. References to Gentlemen and Nurserymen where these Boilers are now at work. Among others may be mentioned the Establishment of

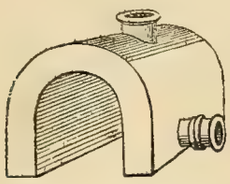
Messrs. H. LOW & CO., Clapton Nurseries,

where three of these Boilers are now at work—two of 36 inches long, heating 800 feet of 4-inch pipe each, and one of 24 inches, heating 600 feet of 4-inch pipe.

Mr. BEATON, in the "Cottage Gardener," of November 30, 1858, says:—"The hottest work I ever saw done with cannon was at the Clapton Nursery. MONRO's Cannon Boiler was fixed and fired there in earnest, and did the work so unlike other cannons, by saving the lives of thousands of plants from hurt and harm, that a second Cannon Boiler was ordered while the iron was hot; and I have seen them both at work on new targets, in the shape of 'a world of new glass' houses. 'Bless you, Sir, they burns any mortal thing you likes to give 'em,' as Sam would say. And the foundations for them need not be more than 3 feet deep below the level of the pipes. The best proof of their efficiency is the fact that one of them, which cost 8*l.* 10*s.*, does the work of four or five older boilers; and that as soon as its power was proved, a second one, costing 5*l.* 10*s.*, was set to work in a new Camellia-house, which is a span-roof, north and south, 135 feet long, and 15 feet wide; also, an Epacris-house of the same shape and size—say, 600 feet of 4-inch pipes—worked by a Five-guinea Cannon Boiler, which burns 'any mortal thing.' In addition to the two long span-houses mentioned, there is a high lean-to house, 145 feet long and 14 feet wide; also, a lean-to tan pit;—all heated by the two Cannon Boilers, and 4-inch pipes. Fourteen pounds for two boilers!"

Messrs. Low & Co. will be happy to show these Boilers to any parties interested in the matter.

J. JONES has also the largest Stock in London of

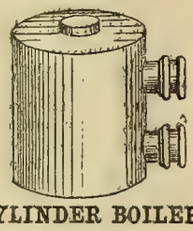


SADDLE BOILER.

HOT-WATER PIPES, ELBOWS, and TEES, CYLINDER and SADDLE BOILERS, of both Wrought and Cast Iron; DOUBLE DOORS,

And every description of Fitting required for the same.

☞ *Prices given for the materials, which will be found cheaper than those of any other house, or Estimates for the work, fixed complete in any part of the country, and an Illustrated Catalogue on application to*

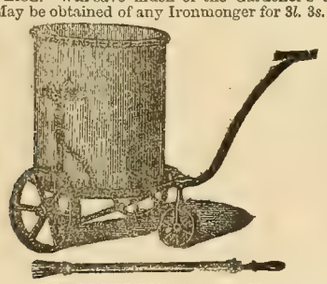


CYLINDER BOILER.

J. JONES, 6, BANKSIDE, SOUTHWARK, LONDON,

WHERE ONE OF THE CANNON BOILERS CAN BE SEEN FIXED.

WARNER'S SWING WATER-BARROW (TO HOLD FORTY GALLONS) MOUNTED ON WHEELS 20 INCHES HIGH. Will save much of the Gardener's time and labour. May be obtained of any Ironmonger for 3*l.* 3*s.*

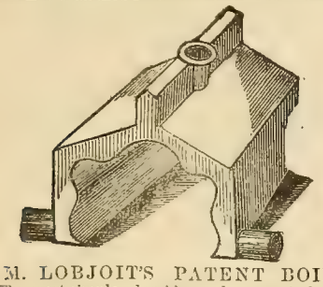


BRASS SYRINGES, 9*s.* to 18*s.*

Also a great variety of effective Machines for Hydraulic purposes, and to supply Gardens, Hothouses, Cottages, Farms, Mansions, or Boards of Health, with every requisite connected with the conveyance and distribution of Liquids.

Fountains suitable for Conservatories, Lawns, &c.

JOHN WARNER & SONS, 8, Crescent, Jewin Street, London.



T. M. LOBJOIT'S PATENT BOILERS.—The most simple, durable, and economical for Heating Horticultural Buildings, Houses, Churches, Halls, &c., by Hot-water Apparatus. Estimates given for Building and Heating all descriptions of Horticultural Buildings.

TESTIMONIALS.

"Sir,—The Boiler you fixed here for me I can assure you works with entire satisfaction, as the water begins to circulate in about two or three minutes after the fire is kindled, and gives so little trouble in attendance, only requiring looking to about once in 12 or 16 hours, and giving a very regular temperature. I only burn cinders, which I find give out greater heat than burning coal, and last longer, particularly as it has to heat both Vineries at once, which it does remarkably well. In fact I cannot speak in too high praise of it.—Yours, &c., JOHN KENDALL, Gardener to the Hon. C. H. Cust, Arthingworth, Northampton.

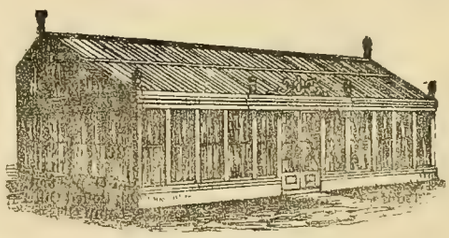
"To Mr. Thos. M. Lobjoit, Turnham Green."

"Sir,—In reference to your Hot-water Boiler, which you fixed here, I am happy to say it is giving every satisfaction. I have had different sorts of boilers during my practice, but I can say with confidence the one you fixed here is the best I have had to do with; it takes the least labour and the smallest quantity of fuel. It heats a stove 60 feet by 10; also a Camellia house, 30 feet by 15, and am confident it is capable of heating more.—I am, &c., D. NEIL, Gardener to the Hon. F. Villiers, Sulby Hall, Welford, Northamptonshire.

"To Mr. Lobjoit, Sept. 29."

THOMAS M. LOBJOIT, Manufacturing Ironmonger, Smith, and Bellhanger, Gas Fitter, Turnham Green and Acton.

HOTHOUSES, CONSERVATORIES, FRAMES & LIGHTS OR PITS, CUCUMBER & MELON BOXES & LIGHTS.



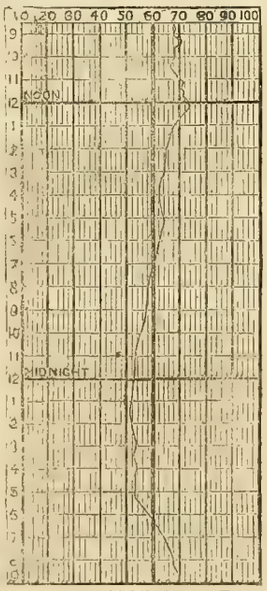
JAMES WATTS, HOTHOUSE BUILDER, 8, Claremont Place, Old Kent Road, London.

Green and Hothouses, 9, 10, 11, 12, 13, and 14 feet wide, any length, from 16 to 100 feet. Frames and Lights for Pits, 6ft. 6in., 7 ft., 7 ft. 6 in., 8 ft., and 8 ft. 6 in. wide, any length, from 12 to 100 feet. Upwards of 200 Cucumber and Melon Boxes and Lights, from 4 ft. by 3 to 10 ft. 6 in. by 5 ft. 6 in., kept ready, glazed with stout sheet glass, painted four times, complete, ready for immediate use, all made of best material, packed and sent to all parts of the kingdom.—References may be had to the Nobility, Gentry, and the Trade in most of the counties in England. Horticultural Buildings of every description heated on the most approved and economical principles.

TO HORTICULTURISTS.

GAUNTLETT'S PATENT CHRONOMETRICAL THERMOMETER.

This instrument, which combines an eight-day clock of the best English make showing time, with a newly-patented Thermometer, wherein glass and quicksilver are dispensed with, writes down the temperature of the atmosphere on a slip of paper, and when placed in a Hothouse, Forcing House, or Conservatory, &c., supplies a valuable record of the temperature, with all its variations, showing the time when any change took place, and how long such change continued.



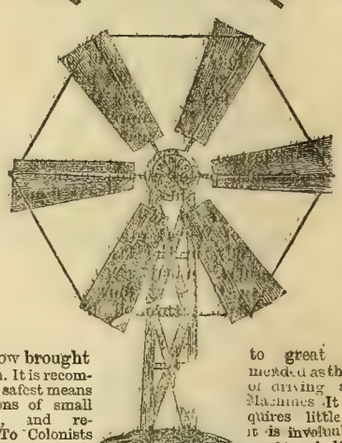
The above slip (reduced in size) exhibits the temperature of the Royal Agricultural Society's show yard at Chester, July 22, 1858, written off by one of these instruments, to which was awarded the Society's SILVER MEDAL.

This is the only instrument that registers temperature continuously and writes it down, and no horticulturist should be without it.

Orders received by W. H. GAUNTLETT, Middlesbro'-on-Tees.

ZAHN'S PATENT SELF REGULATING WIND ENGINE

FOR PUMPING, OAT CRUSHING, GRINDING, CHAFF CUTTING, &c.



IS now brought to great perfection. It is recommended as the cheapest and safest means of driving any descriptions of small machines. It is easily erected, and requires little attention. To Colonists it is invaluable. The sizes at present made are from half a horse to two-horse power. Prospectuses may be obtained of J. R. PEILL, 17, New Park Street, Southwark, where a Wind Engine in full work can be inspected.

MICROSCOPES.

J. AMADIO'S BOTANICAL MICROSCOPES, packed in mahogany case, with three powers, condenser, pincers, and two slides, will show the animalculæ in water. Price 18*s.* 6*d.*—Address JOSEPH AMADIO, 7, Throgmorton Street. A large assortment of Achromatic Microscopes.

"It is marvellously cheap, and will do everything which the lover of nature can wish it to accomplish either at home or in the open air."—*The Field*, June 6, 1857.

Just published, an Illustrated Catalogue, containing the names of 1000 Microscopic objects, post free for 4 stamps.

PARKES' STEEL DIGGING FORKS.

BURGESS AND KEY, 95, Newgate Street, London, being the Wholesale and Retail Agents for these celebrated TOOLS have always a large Stock on hand from which their Customers may select what they may require.

ANTHONY'S PATENT AMERICAN CHURN.—The FIRST PRIZE was again awarded to this Churn in Competition with several others at the Chester Meeting of the Royal Agricultural Society; it has obtained the First Prize given by the Society at every Meeting since 1850.

Messrs. BURGESS & KEY, 95, Newgate Street, strongly recommend it as the most perfect Churn now in use. Full particulars sent on application.

TO THE NERVOUS AND DEBILITATED.—CHARLES WATSON, M.D., Fellow and Honorary Vice-President of the Imperial African Institute of France, and late Physician to the Bedford Dispensary, 27, Alfred Place, Bedford Square, London, continues to issue, on receipt of six stamps, "The GUIDE TO SELF CURE." "The true guide to those who desire a speedy and private cure." "The first man of the day in these complaints."—*Medical Review*, July, 1856.

For qualifications, vide Diplomas and Medical Directory.

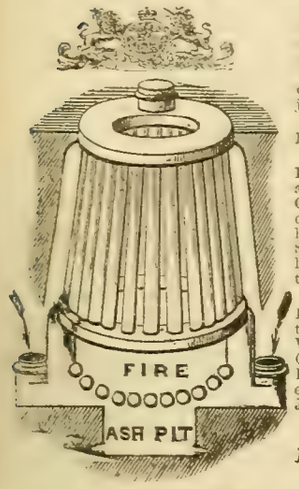
WEEKS' ONE BOILER SYSTEM.

THE

LARGEST HORTICULTURAL ESTABLISHMENT IN EUROPE

IS NOW SUCCESSFULLY HEATED BY

JOHN WEEKS & CO. on their One Boiler System.



EVERY YEAR FURNISHES NUMEROUS ADDITIONAL PROOFS of the success and efficiency of J. WEEKS & Co.'s Hot-water Apparatus. Within the last few years upwards of 100 have been erected all of which are working most satisfactorily. Among the most important, J. WEEKS & Co. have the honour to announce Mr. LOUIS VAN HOUTTE, of Ghent. The whole of his immense Establishment is now effectually and most satisfactorily heated on WEEKS' ONE BOILER SYSTEM. This may be justly termed the masterpiece of the world in the science of Heating by Hot Water.

Also at the extensive Nursery of Mr. CHARLES WOODROFFE, Kensal Green, Harrow Road. Mr. Woodroffe will be happy to show the Apparatus.

J. WEEKS & Co. also beg to refer to the celebrated Nurseries of the Messrs E. G. HENDERSON & SON, St. John's Wood. There will be found ONE OF WEEKS' BOILERS attached to various Hothouses, &c., equal to 1200 feet long, also to all the various Offices, Seed Shops, and Warehouses, the Hot Water circulating through 5500 feet of cast-iron pipe. Any one house can be heated separately either with top or bottom heat, or the whole together, or any part regulated at pleasure; also to Messrs. F. & A. SMITH'S Village of Glass at Dulwich. There will be found Hothouses, &c., 3000 feet long, the whole heated upon WEEKS' ONE BOILER SYSTEM, the Hot Water circulating through 18,000 feet of cast-iron pipe.

J. WEEKS & Co. further beg particular attention to their own HORTICULTURAL ESTABLISHMENT AT CHELSEA, the whole of which is reserved expressly for reference, and to exhibit all modern improvements in Horticultural Building and Heating by Hot Water. These extensive ranges of Hothouses, together with the renowned Winter Garden, the whole equal to a range 1300 feet long, are now being managed as a FRUIT FORCING ESTABLISHMENT; and in future Pines, Grapes, Peaches, Figs, &c., will be forced early and in succession throughout the year. This will prove the great power of J. WEEKS & Co.'s Hot-Water Apparatus, and also the economy of the ONE BOILER SYSTEM.

CHURCHES, MANSIONS, HOTHOUSES, &c., HEATED BY HOT WATER.

Illustrated Pamphlets of Horticultural Buildings, also Plans and Estimates on application.

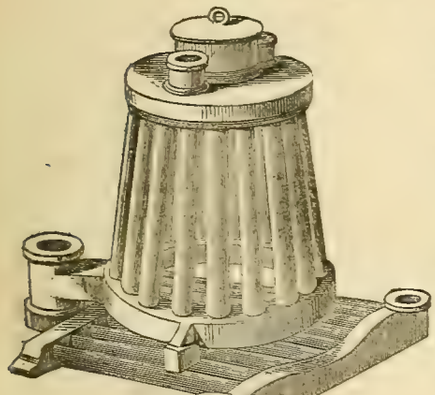
JOHN WEEKS & COMPANY, KING'S ROAD, CHELSEA.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

ORMSON'S PATENT JOINTLESS TUBULAR BOILER.

SEVEN YEARS' WARRANTRY.

HENRY ORMSON



HAVING fixed many of these excellent and powerful BOILERS in extensive Establishments, and having received the highest Testimonials as to their efficient and economical capabilities, feels himself fully justified in giving the above WARRANTRY, and in calling public attention to their very superior qualities.

THE IMMENSE ADVANTAGE

Of this invention is its evident safety from LEAKAGE in the fact of there not being a SINGLE JOINT in the entire BOILER exposed to the action of the fire. The furnace bars being also joint less tubes through which the return water passes.

These Boilers are made of various sizes to suit either the Amateur's Garden or the most extensive Establishments.

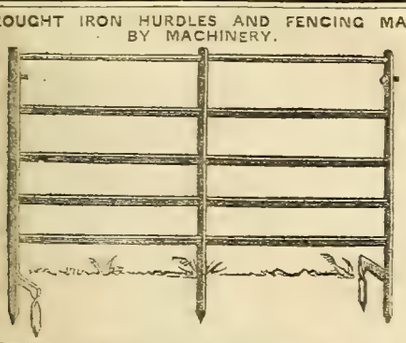
Thousands of feet of Pipe can be efficiently and economically heated from one of these powerful Boilers.

N.B. Sole Manufacturer of Meston's Registered Fruit and Blossom Protector. Specimens were exhibited at the Horticultural Society's Garden, Chiswick, at the Grand Show in June last; and are now to be seen at Messrs. Veitch's Nursery, King's Road Chelsea. Prices will be forwarded on application.

HORTICULTURAL BUILDING AND HOT-WATER APPARATUS MANUFACTORY,

Stanley Bridge, King's Road, Chelsea.

WROUGHT IRON HURDLES AND FENCING MADE BY MACHINERY.



THOMAS GREEN, Smithfield Iron Works, begs to call the attention of parties requiring machine-made Hurdles, which are a very superior article, as well as being both cheap and durable. The above cut represents a Hurdle 6 feet long by 3 feet 6 inches high; the top bar ⅝ of an inch diameter, the four low bars 1 inch by ½ inch, the uprights 1½ by ½ inch. The Prongs fasten 12 inches in the ground. Price 4*s.* 6*d.* each, or 2*s.* 3*d.* per yard. If the four lower bars were made of ½ inch diameter instead of 1 inch by ½ inch iron, the price would be 4*s.* 2*d.* each, or 2*s.* 1*d.* per yard. The above are the lowest net cash prices at the Works.

THOMAS GREEN, Smithfield Iron Works, Leeds, Yorkshire, Manufacturer of every description of Iron and Wire Fencing, Iron Work of all kinds, both plain and ornamental, Entrance Gates, Palisading, Tomb Railing, Iron Bedsteads, &c. Illustrated Catalogues may be had free on application at the Works.

N.B. Also Patentee and Sole Manufacturer of GREEN'S Patent Lawn Mowing, Collecting, and Grass Rolling Machines, which have proved to be the best in all cases of competition.

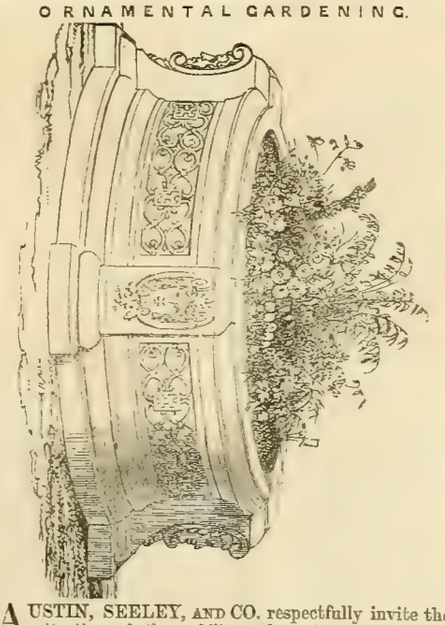
GLENFIELD PATENT STARCH

USED IN THE ROYAL LAUNDRY,

And pronounced by HER MAJESTY'S Laundress to be THE FINEST STARCH SHE EVER USED.

Sold by all Chandlers, Grocers, &c.

ORNAMENTAL GARDENING.



AUSTIN, SEELEY, AND CO. respectfully invite the attention of the nobility and gentry to their large FLOWER BASINS or "PORTE-FLEURS," of which they have now some handsome designs, from 7 to 20 feet diameter.

Any such work ordered IMMEDIATELY might be ready for fixing in March, so as to be well settled by the time for planting.—371 to 375, Euston Road.

MAPPIN'S PRUNING KNIVES IN EVERY VARIETY.

WARRANTED GOOD BY THE MAKERS.



MAPPIN BROTHERS, Queen's Cutlery Works, Sheffield; and 67 and 68, King William Street, London.

MAPPIN'S "SHILLING" RAZORS Shave well for Twelve Months without Grinding.

MAPPIN'S 2*s.* RAZORS Shave well for Three Years.

MAPPIN'S 3*s.* RAZORS (suitable for Hard or soft Beards) Shave well for Ten Years.

MAPPIN BROTHERS, Queen's Cutlery Works, Sheffield; and 67, King William Street, City, London; where the largest Stock of Cutlery in the world is kept.

MAPPIN'S SUPERIOR TABLE-KNIVES maintain their unrivalled Superiority—handles cannot possibly become loose—the blades are all of the very first quality, being their own Sheffield manufacture.

	Tble. Kns.	Dst. Kns.	Carvers.
Ivory 3½ in. Handle, balanced,	20*s.* p. doz.	16*s.* p. doz.	6*s.* p. pair
Do. 4 in. do. ..	25*s.* ,,	18*s.* ,,	9*s.* ,,

MAPPIN'S SILVER-PLATED DESSERT KNIVES and FORKS, in Mahogany Cases.

12 Pairs Knives and Forks,	Ivory Handles, in Case..	80*s.*
12	Do. Pearl Handles, do. ..	120*s.*
12	Do. Silver-Plated Handles, do. ..	80*s.*

MAPPIN'S ELECTRO-SILVER PLATE.—MAPPIN BROTHERS, Manufacturers by Special Appointment to the Queen, are the only Sheffield makers who supply the consumers in London. Their LONDON SHOW ROOMS, 67 and 68, King William Street, London Bridge, contain by far the largest STOCK of ELECTRO-SILVER PLATE in the World, which is transmitted direct from their Manufactory, Queen's Cutlery Works, Sheffield.

	Fiddle Pattern.	Double Thread.	King's Pattern
12 Table Forks, best quality	£1 16 0	£2 14 0	£3 0
12 Table Spoons, best quality	1 16 0	2 14 0	3 0
12 Dessert Forks, best quality	1 7 0	2 0 0	2 4
12 Dessert Spoons, best quality	1 7 0	2 0 0	2 4
12 Tea Spoons, best quality	0 16 0	1 4 0	1

Messrs. Mappin Brothers respectfully invite buyers to inspect their unprecedented display, which, for beauty of design, exquisite workmanship and novelty, stands unrivalled. Their illustrated Catalogue, which is continually receiving addition of New Designs, free on application.—MAPPIN BROTHERS, 67 and 68, King William Street, London Bridge; Manufactory, Queen's Cutlery Works, Sheffield.

DO YOU WANT LUXURIANT HAIR, WHISKERS, &c.?—COUPELLE'S CRINUTRIAR is guaranteed to produce whiskers, moustachios, eyebrows, &c., in two or three weeks with the utmost certainty, strengthen weak hair, prevent its falling off, check greyness in all its stages, and reproduce the hair in baldness, from whatever cause, price 2*s.* Sold by all chemists in the world; or will be sent post free, on receipt of 24 penny postage stamps, by Miss COUPELLE, 69, Castle Street, Newman Street, Oxford Street, London. A toilet guide sent post free for four penny postage stamps. "It completely restored my hair."—Miss Davis. "My whiskers are now growing freely."—H. Merry, Esq.

HOLLOWAY'S OINTMENT AND PILLS.—FEMALE COMPLAINTS.—Climate, fashion, and neglect hurry thousands of England's beauteous daughters to the silent tomb ere their youthful graces have shed more than one glimpse of brightness over the domestic hearth; which, with prudence and vigilance, their loveliness and virtues would have illumined for many happy years. Fond parents, dismayed by the desponding look and drooping form of their cherished daughter, may exult in the discovery of HOLLOWAY'S remedies, which invariably prove a panacea for all female irregularities, whether constitutional or functional, chronic or recent. All may use these medicines, the young and middle aged, the delicate and robust, with advantage. At the turn of life nothing secures against disease so effectually as HOLLOWAY'S preparations.

FLOUR, Warranted Unadulterated, free to any part of London (not less than 14 lbs.); Whites, for pastry, at per bushel (56 lbs.), 8*s.* 4*d.*; households, for bread-making, 7*s.* 8*d.*; seconds, 7*s.* 0*d.*; Wheatmeal, for brown bread, 7*s.* 0*d.*; best fine and coarse Scotch Oatmeal.—Address, HORSNAIL & CATCHPOOL, Bullford Mill, near Witham, Essex, or 97, Goswell Road, City Road, E.C. Directions for bread making gratis. Terms, cash. Bags lent. German yeast. A half sack (140 lbs.), or upwards, free to any railway station within 200 miles.

FARM.—WANTED TO RENT, either at Lady Day or Michaelmas next, from 200 to 300 Acres Arable and Pasture, with a House suitable for a gentleman's occupation. Distance from London not above 100 miles preferred.—Address WM. BOWKER, Esq., No. 1, Gray's Inn Square, London.

WANTED TO DISPOSE OF, A NURSERY BUSINESS with a first-class connection of 60 years' standing. The Land is held upon Lease, broken up from Grass within the last three years; the stock upon it is young and flourishing, and can be taken to at any time at a valuation not exceeding 300*l.*—For further particulars apply to WALTER PENNINGTON, Nurseryman, South Retford, Notts.

RICHMOND, SURREY.—TO GREENGROCERS AND FRUITERERS.

TO BE DISPOSED OF, A FRUITERER'S and GREENGROCERY BUSINESS, established for upwards of 50 years, excellently situated in a populous part of the town. The fixtures to be taken at a valuation, and a small sum required for goodwill; a well-stocked Fruit Garden may be taken with or without the business. Satisfactory reasons will be given for parting with the same.—Particulars may be obtained by application to Mr. W. T. ATWOOD, Land Agent, Mortlake, Surrey.

TO BE SOLD, by Private Contract, the CONTENTS OF AN ORCHARD-HOUSE, consisting of 12 Peaches, 7 Nectarines, and 4 Apricots. The whole were received from Mr. Rivers in 1856 and 1857, and are now in a most promising state, the wood being well ripened and full of blossom-buds.—Apply to Mr. BURGESS, Holme Pierrepont, Nottingham, who is parting with them on account of an alteration in his premises.

POULTRY SALE (EXTRA).

MR. J. C. STEVENS will Sell by Auction at his Great Room, 38, King Street, Covent Garden, on TUESDAY, January 18, at 12 o'clock precisely, A VERY CHOICE SELECTION OF POULTRY, sent by Mrs. L. Stow, Mrs. H. Fookes, Messrs. G. Botham, Bridges, Leno, Rev. W. G. Holmes, and others, including some very superior Spanish, Dorkings, Cochins, Brahmas, Polands, Hamburghs, Sebright Bantams, Ducks, Guinea Fowl. Also a few lots of good Pigeons.—Catalogues, by enclosing a stamped directed envelope to Mr. J. C. STEVENS, 38, King Street, Covent Garden, W.C.

NEW SEEDS.

CHARLES TURNER'S

CATALOGUE OF VEGETABLE, FLOWER, AND AGRICULTURAL SEEDS, CULINARY ROOTS, &c., is now ready, and may be had on application. The lists are Descriptive, and in addition to Selections of all the old and established favourite varieties, contains some valuable new additions, the most prominent of which are DR. MACLEAN'S FINE DWARF NEW PEAS, THE FROGMORE PROTECTING BROCCOLI, SCARLET GEM MELON, COTTAGER'S KALE, ROSEBERRY BRUSSELS SPROUTS, PERENNIAL SPINACH, &c.—The Royal Nurseries, Slough.

VEGETABLE, FLOWER, AND AGRICULTURAL SEEDS.

WILLIAM BARNES'S CATALOGUE of the above is now ready, and may be obtained postage free, upon application. It will be found to contain every article of known value, among them some that cannot be excelled, the stock of which having been saved specially for himself by private and competent friends, he can recommend with the greatest confidence. Every article is warranted of the purest and most genuine kind, as well as very moderate in price.

Camden Nursery, Camberwell.

NEW SEEDS FOR 1859.

WM. CUTBUSH AND SON beg respectfully to intimate that their PRICED CATALOGUE OF VEGETABLE AND FLOWER SEEDS, &c., is now ready post free on application. WM. C. AND SON devote particular attention to this department of their business, and most of the choicer kinds of culinary seeds and roots are saved under their own inspection, and they can confidently guarantee the quality of all offered.—Highgate Nurseries, London, N. Established A.D. 1695.

HARDY SCARLET RHODODENDRONS AND AMERICAN PLANTS GENERALLY.

WATERER AND GODFREY'S PRICED and DESCRIPTIVE CATALOGUE of the above beautiful tribe of plants, as exhibited by them in London and Manchester, may now be had on application inclosing one stamp for postage. The Catalogue also furnishes the heights and prices of their unequalled stock of Conifers and Evergreens, &c. Catalogues may also be had of Messrs. J. MAY & Co., Seedsmen, &c., Wellington Street, Strand.

Knap Hill Nursery, Woking, Surrey.

RHODODENDRONS.

JOHN WATERER'S CATALOGUE OF UNRIVALLED HARDY SCARLET AND OTHER CHOICE RHODENDRONS, as Exhibited by him at the Royal Botanic Gardens, Regent's Park, London, is published, and will be forwarded on application.

☞ This List is recommended as a work of reference, as it contains accurate descriptions of all the esteemed varieties.

The American Nursery, Bagshot, Surrey, near the Sunningdale Station, South Western Railway.

CELOSIA AUREA VAR. PYRAMIDALIS.

DICKSON'S AND CO., NURSERYMEN AND SEEDSMEN, Waterloo Place, Edinburgh, have now a limited supply of the above rare and beautiful Annual. Packets 5*s.* each sent free by post on receipt either of a Post-Office Order or postage stamps from unknown correspondents. See description in *Gardeners' Chronicle* of December 25, 1858.

Waterloo Place, Edinburgh.—January 8.

AZALEA INDICA.

J. IVERY AND SON beg respectfully to invite growers of the above named to an inspection of their unrivalled Stock of Young Specimens of all the newest and best varieties, many of which have been exhibited at the Metropolitan Exhibitions. They are clean and healthy, well set with bloom, and moderate in price. Catalogues forwarded post free upon application.—Dorking Nursery, Jan. 8.

AMERICAN BLACKBERRY. — The Subscribers have received from New Rochelle a few plants of a BLACKBERRY (BRAMBLE) which their correspondent assures them "is by far the best of the many varieties cultivated in New York State," adding that "he has known 400 dollars' worth of the fruit taken from one acre of ground." Any one wishing to try whether this Blackberry will succeed in this country may have a plant or plants at 5*s.* each on application to EDWARD SANG & SONS, Kirkcaldy, N.B.

RED MATCHLESS CELERY.

JENKINS'S RED MATHLESS CELERY, the best for years in Covent Garden Market, per packet 1*s.*
SHILLING'S QUEEN CABBAGE (the very best out), true, per oz. 1*s.*
INVISIBLE WHITE BROCCOLI, very hardy, 1*s.*
COTTAGERS' KALE (Turner's), 1*s.*
NEW HEADING (Turner's), an excellent kind, 6*d.*
BRUSSELS SPROUTS, 6*d.*
LONDON WHITE COS LETTUCE, 1*s.*
MAUNDER'S PEARLY CAULIFLOWER, 1*s.*
TRUE WALCHEREN ditto, 1*s.*

The above sent post free. CATALOGUE of VEGETABLE and FLOWER SEEDS forwarded on application.—JOSEPH MAY & Co., Wellington Street, Strand, W.C.

TO BRITISH AND EXOTIC BOTANISTS.

FREDERICK Y. BROCAS has for 12 years devoted his time principally to botanical pursuits, and has accumulated about 90,000 British and Exotic specimens. He has also had ample experience in the conservation of an Exotic Herbarium.

F. Y. B. is prepared to receive orders for supplying collections or desiderata; and having lately returned from a month's excursion, during which he paid especial attention to collecting seeds, can supply sets of the same, which include many critical species.

*** A few nearly complete sets are now ready; and also small collections for Gardeners, Schools, or private instruction, at a reduced price. Collections named, arranged, mounted, and an allowance made for duplicates.

Inquiries addressed to FREDERICK Y. BROCAS, Botanist, 85, St. Martin's Lane, London, W.C., will receive immediate attention.

ABERCAVENNY NURSERY GROUNDS.

JAMES SAUNDERS has a large Stock of SCOTCH FIR, 1½ to 2 feet; Do., 2 to 3 feet. LARCH and SPRUCE of all sizes, WEYMOUTH PINE, SILVER and BALM of GILEAD FIR. A large quantity of Pinus austriaca, varying from 1 to 5 feet, particularly fine; many choice varieties of Pinus; 20,000 to 30,000 Black Italian and other sorts of POPLAR; several thousands of Chichester and English ELM, with other choice kinds, all of various sizes; Spanish and Horse Chesnut; Sycamore, from 3 to 20 feet; Turkey and Evergreen Oak; Acacia, Norway Maple, Oriental Plane, and other Ornamental Trees and Shrubs of all kinds and sizes. A large number of fine Trees for Parks and Plantations where immediate effect is an object.

An extensive collection of Standard, Half Standard, and Dwarf ROSES; 2000 to 3000 Perpetual and other kinds of ROSES, in pots, suitable for beds and bordering; Trained and other FRUIT TREES; Standard APPLES and PEARS; DWARF APPLES on Paradise Stocks; a choice collection of PEARS on Quince Stocks. The whole of the extensive Stock, on upwards of 20 acres of Land, is remarkably healthy and well grown. A liberal discount for cash.

About 350 FERNS, MOSSES, ORCHIDS, and other Stove Plants, to be disposed of.—All Orders and other communications to be addressed to JAMES SAUNDERS.

NEW EXOTIC FERN,

NEPHRODIUM MOLLE, VARIETY CORYMBIFERUM.

Named and described in the *Gardeners' Chronicle* of May 22, 1858.

ROBERT SIM is now prepared to supply, at 15*s.* each, vigorous and well-established profusely crested plants of this beautiful and unique variety, of which he possesses the entire stock. It ought to prove quite a greenhouse kind.

The customary discount to the trade. Price per dozen on application. Carriage paid to London. Post-office Orders on Foot's Cray.—Nursery, Foot's Cray, Kent, S.E.

NEW SPLENDID SEEDLING GLADIOLI. — 15 named varieties of Seedlings from RAMOSUS, and 15 ditto from GANDAVENSIS, for 1*l.* 1*s.*, carriage paid. Large bulbs of Gladioli gandavensis, ramosus, and floribundus, 2*s.* 6*d.* per dozen. Fine Anemones per 100, Mixed Double, 6*s.*; Scarlet Double, 10*s.*; Mixed Single, 4*s.*; Scarlet Single, 6*s.* Fine mixed Persian Ranunculus, 3*s.* per 100. Scarlet Turban, 2*s.* 6*d.* per 100. A DESCRIPTIVE PRICED CATALOGUE of GLADIOLI, &c., sent free and post paid on application.

BUTLER & MCCULLOCH, Seedsmen, Covent Garden Market.

ORANGE TREES, JUST ARRIVED, OTAHEITE, ST. MICHAEL, and MYRTLE-LEAVED; CITRON and LEMON TREES, with from 2 to 20 fruit on each, in beautiful condition, at 2*s.* 6*d.*, 3*s.* 6*d.*, 5*s.*, 7*s.* 6*d.* each; best HYACINTHS, 6*s.* per dozen; ditto, 4*s.*; mixed CROCUSES, 1*s.* 6*d.* per 100; VAN THOL TULIPS, 3*s.* per 100; Double mixed ditto, 4*s.*; JONQUILS, 4*s.*; mixed NARCISSUS, 1*s.* 6*d.* per dozen; GLADIOLUS FLORIBUNDUS, 1*s.* 6*d.* per dozen; GANDAVENSIS, 2*s.*

PRICED LISTS of FERNS and BULBS may be had on application to ROBT. GREEN, 154, Kingsland Road, 55 doors from Shoreditch Church.

ROSES.

WM. WOOD AND SON beg leave to offer ROSES on the following terms, selection of sorts left to themselves:—

Extra tall Standards, budded with 2 to 3 different varieties of Climbing Roses in each stem, 3*s.* 6*d.* to 5*s.* each.

	Per dozen.
Superior selected Standards	18*s.* to 24*s.*
Fine Dwarf ditto	12 ,, 18
Superb Dwarfs, for exhibition	12 ,, 18
Fine Dwarfs	9 ,, 15
Hybrid Perpetuals, on 6-inch stems	9 ,, 15
Tea-scented, in 48-pots	12
,, in 24-pots	24 ,, 30
Climbing Roses, without names	4
Good Dwarfs ,,	4

Plants presented to compensate for carriage.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

TO THE TRADE.

THOS. CRIPPS, NURSERYMAN, &C., Tunbridge Wells, Kent, respectfully offers the following fine strong SPANISH CHESNUT PLANTS, 4 feet to 6 feet in height, 40*s.* per 1000; Blush CHINA ROSES, fine strong plants, 15*s.* per 100; Crimson do., very strong, 25*s.* per 100; fine Standard and Half-standard ROSES, 60*s.* per 100; good do., do., 50*s.* per 100; Dwarf Perpetual and other ROSES by name, 42*s.* per 100; Double Yellow PRIMROSE, 20*s.* per 100 or 400 for 3*l.*; PINUS INSIGNIS and P. RADIATA from Seed, 15 inches to 28 inches, 7*l.* 10*s.* per 100; MANETTI STOCKS, 50*s.* per 1000; do. second size, 40*s.* per 1000; IRISH YEWS, 2 feet to 3 feet, 50*s.* per 100; Hardy HEATHS, a fine collection, 25*s.* per 100; LONICERA SHEPHERDI, or new Scarlet-trumpet HONEYSUCKLE, fine strong plants, 4*s.* per dozen.

Orders from unknown correspondents unaccompanied by a remittance will not be noticed.

GRAPE VINES FROM EYES.

JOHN AND CHARLES LEE beg to offer an immense stock of strong well-ripened VINES FROM EYES, of the following kinds:—

Alicant	Hamburgh, Pope's
Barbarossa	,, Victoria
Bidwell's Seedling	Hâtif de Jura
Black Cluster	Isabella
Black Constantia	Lady Down's Seedling
Black Damascus	Marchioness of Hastings
Black Prince	Muscadine, Royal
Blanche Vigne	,, Parsley leaved
Calabrian Raisin	Muscat, August
Charlsworth Tokay	,, Bowood
Chasselas Frocklaboulay	,, Cannon Hall
Chasselas Musqué	,, Hamburgh
Duzetto	,, Noir Hâtif
Esperione	,, of Alexandria
Frontignan, black	,, of Fontainebleau
,, grizzly	Pitmaston Cluster white
,, white	Raisin des Carmes
Hamburgh, black	Sweet Water, Dutch
,, Champion	Syrian
,, Dutch	Trebiana
,, golden	Tripoli
,, Mill Hill	West's St. Peter's

Nursery and Seed Establishment, Hammersmith, London.

SEEDLING CHERRY "BEDFORD PROLIFIC."

J. SHEPPARD intends sending out the above this autumn. It has twice received the commendation of the Pomological Society, viz., July 1857 and 1858. It is a very fine large Black Cherry; flesh firm and sweet, resembling the Circassian but larger, quite hardy, and an excellent bearer, having never failed to produce a good crop since it came into bearing, more than 12 lbs. being produced on a small tree last summer. It is a strong and free grower.

Dwarf maiden plants 5*s.* 0*d.* each. | Standards 6*s.* 0*d.* each.

Plants may be obtained of the undernamed persons:—

Messrs. A. Henderson & Co., Pine-apple Place	Messrs. H. Lane & Son, Great Berkhampstead
Messrs. E. G. Henderson & Son, Wellington Road	Messrs. Wood & Ingram, Huntingdon
Messrs. Hugh Low & Co., Clapton	Mr. R. Smith, Worcester
Messrs. Fisher & Holmes, Sheffield	Mr. C. Noble, Bagshot
	Mr. H. Cobbett, Woking
	and James Sheppard, Nurseryman, Bedford

P.S. Orders received by Messrs. Hurst & M'Mullen, 6, Leadenhall Street.

TO THE TRADE AND PUBLIC IN GENERAL.

M. A. LAKE begs to offer 1000 DWARF TRAINED FRUIT TREES of the following kinds, viz., Peaches, Apricots, Nectarines, Plums, Pears, and Apples; Standard Pears, all of which are of the choicest kinds and warranted true to name; also a large stock of 3 and 4 years old Gooseberries, named sorts; 20,000 Currants, consisting of Red and White Grape, Raby Castle, Wilmot's Superb Red, and Black Naples, strong 3 and 4 years old bushes; Lake's Superb and Falstoff Raspberries; Laurels and Laurustinus, very fine; also a large well-grown stock of Lime, Sycamore, Spanish and Horse Chesnuts, Beech, Mountain Ash, Yew, Birch, Turkey, Ilex, and English Oak, Hazel, Spruce Fir, Cypress, Cedrus Deodara, Pinus excelsa, Seedling Holly, and Ilex Oak. Privet, very fine, 2 and 3 years Seedling; Thorns, Standard and Dwarf Roses, and Asparagus Roots.

The above will be sold at very low prices, which can be obtained on application, especially if quantities are taken.

The Nurseries, Bridgewater, Somerset.

THE GREAT VINE AT HAMPTON COURT.

THE SUBSCRIBERS being the holders of the Royal Kitchen Gardens, Hampton Court, are enabled to offer genuine the famous and truly excellent HAMPTON COURT BLACK HAMBURGH GRAPE.

Strong well-ripened plants in 9-inch pots, 42*s.* and 60*s.* per doz.

,, ,, fruiting plants in 12-inch pots, 10*s.* 6*d.* each.

If purchased in large numbers a considerable reduction will be made in price.—JACKSON & SON, Nurseries, Kingston, S.W.

SPLENDID NEW SEEDLING CROCUS per 100. Albion, large white, 3*s.* 6*d.*; Mrs. Beecher Stowe, clear white, 3*s.* 6*d.*; Queen Victoria, pure white, 3*s.*; Ne plus Ultra, light blue, 3*s.*; Othello, very dark, 5*s.*; David Rizzio, purple, 4*s.* 6*d.*; Prince Albert, lilac, 4*s.*; Sir Walter Scott, beautifully striped, 4*s.*; New Golden, very large, 4*s.*; large yellow, 3*s.*; Dutch Crocus, 2*s.* 6*d.*; Cloth of Gold, 2*s.* 6*d.*; and many other handsome varieties.—PRICED AND DESCRIPTIVE LIST on application.—BUTLER & MCCULLOCH, Seedsmen, Covent Garden Market, London.

LODGE'S NEW HYBRID RHODODENDRON, "COUNTESS OF WILTON," the best and hardiest Rhododendron in cultivation; obtained a first class Certificate at the Manchester Botanical Gardens. Strong bushy plants from 2 to 4 feet high are now ready, and can also be had from the following agents:—

Mr. John Waterer, American Nursery, Bagshot, Surrey
Messrs. Wm. Rollisson & Sons, Tooting, near London
,, E. G. Henderson & Son, St. John's Wood, London
,, Wm. Wood & Son, Maresfield, Sussex
,, Thomas Jackson & Sons, Kingston, Surrey
,, Benjamin Reid & Co., Aberdeen

A remittance or reference is requested from unknown correspondents. Post-office Orders made payable to JAMES LODGE, Park Nurseries, Singleton Brook, Broughton, Manchester.

Descriptive circulars can be had as above, or from any of the agents.

TO THE TRADE.

WOOD AND INGRAM beg to offer the following articles which they have of extra fine growth:—

STANDARD, DWARF, AND TRAINED CHERRIES, of all the best sorts.
OAKS, 1 and 2 year seedling, 2 to 3, and 3 to 4 feet.
,, Evergreens, 1 year seedling.
,, Turkey, 1 year ditto.
SYCAMORE, 1 year ditto.
WHITETHORN, 2 year ditto.
ELM, narrow-leaved English, 1 year ditto.
CHESNUT, Spanish, 3 to 4, 4 to 5, and 5 to 7 feet.
FIR, Scotch, 1½ to 2, 2 to 2½, and 3 feet.
HAZELS, 2 to 3, and 3 to 4 feet.
POPLAR, Black Italian, 3 to 4, 4 to 5, and 5 to 6 feet.
,, Lombardy, 4 to 5, 5 to 6, and 7 to 8 feet.
BOX, sorts, 2 to 3, and 3 to 4 feet.
LAURELS, 1 year bedded.

Prices on application.—Huntingdon Nurseries.

VEGETABLE AND AGRICULTURAL SEEDS, &c.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that they are now prepared to execute with new and genuine SEEDS all orders they may be favoured with. Their PRICED and DESCRIPTIVE CATALOGUE, containing all new VEGETABLES proved to be good, and all the best of the older varieties, &c., will be forwarded post free on application.

The following are particularly recommended, all being very superior in quality, and valuable acquisitions to the most select collections:—Beet (Pine Apple Short Top), per oz., 2*s.*; Broccoli, Winter White (Snow's), per oz., 3*s.* 6*d.*; ditto, Penzance White (Mitchinson's), per packet, 1*s.*; Celery, Nonsuch (Ivery's), per packet, 1*s.*; Cottager's Kale, per packet, 1*s.*; Lettuce, Alma Cos (Griffin's), per packet, 1*s.*; ditto, Moor Park Cos, per packet, 1*s.*; Marrow, Custard (Thomson's), per packet, 6*d.*—Paradise Nursery, Seven Sisters and Hornsey Road, Holloway, London, N.

NEW SEEDLING PEA.

COTTON'S LEVIATHAN PROLIFIC MARROW. —A tall, large wrinkled Marrow, flavour excellent, boils very green. From one Pea 11,000 were produced the second year; 17 quarts sown last March (notwithstanding the unfavourable season) yielded 11 bushels; they were in blossom and pod in June; height about 6 feet; a very distinct Pea. See *Gardeners' Chronicle*, August 7, 1858.

May be had of GILBERT KNILL COTTON, Barnstaple, Devon, at 3*s.* per quart, and of all the principal London Seedsmen.

DICKSON'S EARLY FAVOURITE PEA.

FRANCIS AND ARTHUR DICKSON AND SONS, SEED MERCHANTS and NURSERYMEN, 106, Eastgate Street, Chester, have again the pleasure and satisfaction to offer the above PEA, which has now established itself a standard variety, and is pronounced by all who have grown it these last four seasons to be the very best second Early Pea in cultivation. It grows about 4 feet high, and the haulm is literally covered with pods, each containing on an average 10 Peas, the flavour and quality of which are all that could be desired. Testimonials as to its general excellence and desirability have been received from several hundreds of the first gardeners in the Kingdom. As many worthless varieties have been substituted for this Pea, and in order that parties at a distance may have an opportunity of getting the true variety, F. and A. Dickson and Sons will send one quart extra with every four quarts ordered, to compensate for carriage.—Price 1*s.* 6*d.* per quart.

F. AND A. DICKSON AND SONS respectfully announce that their CATALOGUE of KITCHEN GARDEN and FLOWER SEEDS for 1859, including a list of Garden Implements and other requisites, is published, and will be forwarded (post free) on application.

RICH BOG AND LOAM.—Gentlemen and Nurserymen will do well to apply early for the above to refresh their American beds. To be had in any quantity upon reasonable terms, by land or water carriage.

ROBERT NEAL, Nurserymen, Wandsworth Common, Surrey.

TO COWKEEPERS AND OTHERS.

A QUANTITY OF MANGEL WURZEL for Sale at 21*s.* per ton.—Apply WILLIAM CLARK'S, Seedsman, 25, Bishopsgate Within.

TO PIG AND POULTRY FEEDERS AND MILLERS.

CHICKEN RICE, 7*s.* 6*d.* per cwt., in bags 1½ cwt. each. SCREENED RICE, 10*s.* per cwt., in bags 1½ cwt. each. RICE MEAL, 6*s.* 9*d.* to 8*s.* 9*d.* per cwt. RICE for grinding. An allowance per Ton.—Sold for Cash by W. & R. JUPP, 6, Cross Lane, St. Mary-at-Hill, Eastcheap, E.C.

PIGS WILL PAY FOR FEEDING. — On receipt of stamps for 3*s.* 6*d.* will be forwarded a DETAILED STATEMENT of MANAGEMENT and FEEDING, proving that they can easily be fattened in 12 weeks after leaving the teat, at less than 2*d.* per head per day. The food costs about 3*s.* 9*d.* per cwt. or 7 lbs. for 2¾*d.*, and can easily be prepared by the owners of the Pigs. Testimonials from well known breeders.—Address, Mr. G. MARGARETTS, Stock Breeder, Mr. Wells, Chemist, Fitzroy Square, London.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, and FREDERICK MULLETT EVANS, of No. 20, Queen's Road West, both in the Parish of St. Pancras, in the Co of Middlesex, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and published by them at the Office, No. 5, Upper Wellington St., Parish of St. Paul's, Covent Garden in the said Co.—SATURDAY, January 8, 1859.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 3.—1859.] SATURDAY, JANUARY 15. {Price Fivepence. STAMPED EDITION, 6d.

INDEX.

Agricultural Journal	44 c	Fly leaf	37 c
Akaw, marine, prize for	40 a	Forbidden Fruit	39 a
Apple, Cox's Pippin	38 c	Fruit, spur grafting	39 a
Asparagus seed	40 c	Geraniums, striking scarlet	39 a
— Kale	38 b	Grafting fruit spurs	39 a
Australian Seaweeds	39 c	Guano, unsold	42 a
— progress	42 b	Highland Society	42 a
Avenue trees	38 b	Horticultural Society's Fruit Committee's report	39 b
Bedding plants, to strike	37 c	Lois-Weedon	43 a
Boilers and incrustations	40 c	London Farmers' Club	44 a
British Columbia	36 b	Moth, Death's Head	38 c
— Museum Natural History collections	35 c	Oxford Farmers' Club	44 a
Cattle food, Thorley's	42 a	Pomeloes, or Forbidden Fruit	39 a
— — cheap Wheat as	42 a	Poultry Show, Crystal Palace	44 a
— — concentrated	44 c	Rain fall, Sussex	38 b
Corn and cake, Osborne on	44 a	Rat tales	40 a
Cottage Imp. Society	42 b	Red River settlement	36 b
Cottager's Kale	38 b	Rose seed	38 c
Cotton cake	43 b	Seaweeds, Australian	39 c
Dioscorea, culture of	39 c	Silkworms and fungi	39 b
Draining match, Trentham	45 a	Tithe commutation	43 c
Farm, stocking a clay	45 a	Trade memoranda	43 b
Farming in Courland	43 c	Trees for avenues	38 b
Ferns, hardy exotic	38 c	Victoria, Australia	42 b

HORTICULTURAL SOCIETY OF LONDON.—At a Meeting of the FRUIT COMMITTEE of this Society, held at 21, Regent Street, Jan. 11th, Prizes were awarded for Winter Nelis Pears as follows:—

FIRST PRIZE to Mr. Cox, F.H.S., Gardener to William Wells, Esq., Redleaf, Penshurst, Kent.

SECOND PRIZE to Mr. A. Ingram, Gardener to J. J. Blandy, Esq., F.H.S., High Grove, Reading.

NATIONAL FLORICULTURAL SOCIETY.—Raisers of Seedling Florists' Flowers, Amateurs, and Nurserymen in general are invited to give small special Prizes for Collections of their favourite Flowers, to be Exhibited at the Society's ordinary meetings during the present year.

Early communications should be made to the Secretary, naming the sum offered, and the number of plants or blooms to be exhibited. RICHARD DEAN, Secretary.

21, Regent Street, London, S.W.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY (LIMITED) supply every requisite for the Farm and the Garden.

Registered Offices, Union Road, Plymouth.

CHAMPION CABBAGE can be had in any quantity at 2s. per lb.

J. G. WAITE, Seed Establishment, 181, High Holborn, London.

EARLY CUCUMBER.

CARTER'S EARLY CHAMPION CUCUMBER, price 20s. per oz., to be had in any quantity of J. G. WAITE, Seed Establishment, 181, High Holborn, London, W.C.

CHINA MELON.—The Subscriber can supply the nobility and gentry with SEED of this fine variety, the best extant for early or late cultivation. A packet forwarded free by post on receipt of 12 stamps.—J. ROGERS, Chelsea, S.W.

CARTER'S EXCELSIOR MELON.—A green-fleshed variety of delicious flavour, netted; fruit averages 4 lbs., requires scarcely any heating, and is very prolific. R. Hogg, Esq., President of the Pomological Society, and Turner and Spencer's "Florist," pronounce this variety to be one of the finest ever tasted. Seeds 1s. per packet.—JAMES CARTER & Co., Seedsmen, 238, High Holborn, London, W.C.

EARLY PEAS.

WAITE'S DANIEL O'ROURKE PEA; the earliest Pea in cultivation.

EARLY NAPOLEON; a Blue Wrinkled Marrow Pea, as early as EMPEROR.

EARLY EUGENE; a White Wrinkled Marrow Pea, as early as EMPEROR.

Prices to be had on application of J. G. WAITE, Seed Establishment, 181, High Holborn, London, W. C.

THE EARLIEST PEA.—DUNNETT'S FIRST EARLY is in every respect superior to "Daniel O'Rourke," being several days earlier, having finer pods, and richer in flavour, height 2½ feet. For an early dish of fine-flavoured Peas we can confidently recommend this; 2s. per quart.

CHAMPION CABBAGE, the earliest and best sort, if sown in succession, may be had fit for table throughout the year, 3d. per ounce, or 1s. post free.

BUTLER & McCULLOCH, Covent Garden Market, London.

EARLIEST WRINKLED PEA.

FAIRHEAD AND SON, SEED GROWERS AND MERCHANTS, Lewisham, Kent, beg respectfully to offer their new EXCELSIOR PEA, of robust habit, delicious flavour; much earlier than Napoléon or Eugenie. They can confidently recommend it as the earliest and best Wrinkled Marrow Pea in cultivation. Price on application.

TOM THUMB PEA.

CAUTION.—There are two distinct kinds selling under this name. They were grown side by side in Hertfordshire last summer, and the one is in every way inferior to the other. The best and earliest kind as originally shown by A. PAUL & SON at the Regent's Park, Crystal Palace, and elsewhere, may be had in pint packets, 2s. 6d. each. It is 10 days earlier than Sangster's No. 1.—Nurseries, Cheshunt, Herts.

SUTTON'S ELVETHAN MANGEL WURZEL, and SELECTED YELLOW GLOBE.—These two sorts of Mangel are still preferred to all others by the principal root-growers throughout the kingdom. SUTTON & SONS have some fine seed of each sort, at very moderate prices Price Lists may be had post free.—Royal Berkshire Seed Establishment.

GARDEN SEEDS.

THOMAS KENNEDY AND CO., NURSERYMEN and SEEDSMEN, Dumfries, N.B., beg respectfully to intimate that they have got to hand their VEGETABLE AND FLOWER SEEDS, and are now prepared to execute orders for the same

Their DESCRIPTIVE PRICED CATALOGUE FOR 1859, "which is of a most practical character, supplying all the information needed by the purchaser," is now ready and will be sent post free on application.

Free delivery. For particulars see Catalogue.

JAMES CARTER AND CO. are now ready to supply SEEDS for the VEGETABLE and FLOWER GARDEN which will be found to be, as usual, of the best quality only.

SUTTON'S SEED CATALOGUE FOR 1859 is now ready, and will be sent post free on application.

Royal Berkshire Seed Establishment, Reading.—Jan. 15.

JOHN JEYES' Select SEED CATALOGUE will be ready in a few days, and will contain every variety of real value. Applications for it are respectfully solicited.—Northampton.

CATALOGUE.

YOUELL AND CO'S GENERAL AND DESCRIPTIVE PRICED CATALOGUE for this season is now ready, and will be sent free on application.

It contains detailed Lists of Greenhouse Plants, Conifers, Shrubs, as well as all the newest introductions in Soft-wooded Plants.—Royal Nursery, Great Yarmouth.

GEORGE BAKER begs to inform the Nobility and Public that his DESCRIPTIVE CATALOGUE OF AMERICAN PLANTS AND GENERAL NURSERY STOCK will be sent free on application.

American Nursery, Windlesham, near Bagshot, Surrey, about 1 mile from Sunningdale Station, South Western Railway.

WILLIAM YOUNG'S DESCRIPTIVE CATALOGUE OF NEW HARDY ORNAMENTAL PLANTS, CONIFERÆ, ROSES, RHODODENDRONS, FOREST TREES, &c. Can be had on application.—Milford Nurseries, near Godalming.

GEORGE JACKMAN AND SON'S PRICED and DESCRIPTIVE CATALOGUE of GENERAL NURSERY STOCK for 1858 and 1859 can be had free on application.

Woking Nursery, Woking, Surrey.

TO THE TRADE.

E. P. DIXON'S WHOLESALE SEED CATALOGUE for 1858 and 1859 is now ready, and may be had free on application.

Seed Establishment, 57, Queen Street, Hull.

NEW CHRYSANTHEMUMS.

JOHN SALTER begs to inform the numerous applicants for his NEW CATALOGUE OF CHRYSANTHEMUMS that it will be published in February, in which his splendid Seedlings and other new varieties for 1859 will be fully described, as well as his unrivalled general collection, which is the largest in Europe.—Versailles Nursery, William Street, near Hammersmith Turnpike, W.

CROCUS AND TULIP BULBS.—Finest imported Crocus mixed, 16s. per 1000, 2s. per 100. Splendid Double Tulips, Scarlet 7s. per 100, Yellow 7s. do., Variegated 7s. do., Mixed all sorts, 6s. do.—BUTLER & McCULLOCH, Covent Garden Market.

YELLOW ROSES.—Madame William, orange yellow; Isabella Gray, golden yellow. Strong plants, fit for immediate forcing, 8s. 6d. the pair.

A. PAUL & SON, Nurseries, Cheshunt, Herts.

TRUE SHROPSHIRE DAMSONS.—Fine Standard Plants of the above can be obtained from H. J. OLDROYD, Nurseryman, Shrewsbury. at 24s. per dozen, cash.

WANTED, AT TAYLOR'S "GRAND STAND."

PINES, 2½ to 3½ lbs. each	BLACK & WHITE GRAPES
LARGE DESSERT PEARS	SMALL MUSHROOMS
CHOICE FLOWERS	CUCUMBERS
SEAKALE	ASPARAGUS

And other choice Garden Produce:

Forward to GEORGE TAYLOR,

CHOICE FRUIT and VEGETABLE SALESMAN.

St. John's Market, Liverpool.

AZALEA INDICA.

J. IVERY AND SON beg respectfully to invite growers of the above named to an inspection of their unrivalled Stock of Young Specimens of all the newest and best varieties, many of which have been exhibited at the Metropolitan Exhibitions. They are clean and healthy, well set with bloom, and moderate in price. Catalogues forwarded post free upon application.—Dorking Nursery, Jan. 15.

HOLCHUS SACCHARATUS, or North China Sugar Cane, 2s. per lb. Pamphlet, "A Visit and a Plant;" or Hints on the Cultivation of the above, and its Uses. Post free 6d., or gratuitous with all orders for 10 lbs. and upwards.

DIOSCOREA BATATAS, or Chinese Yam; strong roots, 4s. per dozen; with directions for cultivation.

JOHN W. CLARKE, Whittlesea, Cambridgeshire.

DIOSCOREAS—FINE LARGE ROOTS CHEAP.

SUTTON AND SONS, Reading, can supply DIOSCOREA BATATAS, 9 inches long, at 5s. per dozen, or 40s. per 100. This vegetable is worthy of all that has been said in its favour, and will thrive in almost any soil and situation.

SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

SEED POTATOES.

SUTTON AND SONS, SEED GROWERS, Reading, have a large stock of the early kinds of POTATOES, very true, and free from disease. Also true Flukes, Regents, and others. Prices, &c., will be sent post free on application.

THE EARLIEST ASH-LEAVED KIDNEY POTATOES.—For the true early short-top Lancashire kind, unsurpassed for forcing and early borders, price 16s. per cwt., apply to JAS. TYNAN, Seedsman, 68, Great George St., Liverpool.

BEST POTATO IN THE WORLD—IMPERIAL KIDNEY.

MR. WEBB, of Calcot, having succeeded in raising a quantity of the above excellent POTATO, begs to offer it to the public as the Best of its Class in every respect. Its quality cannot be surpassed, its yield most abundant, and its size from 2 inches to 9 inches long. Price 16s. per bushel, and no less quantity than 1 bushel disposed of. Also about 3000 true KENTISH COB NUT Trees from 2 to 4 feet high.—Apply to Messrs. JOSH. MAY & Co., 1, Wellington Street, Strand, or to Mr. WEBB, Calcot, near Reading, Berks.

GRAPE VINES FROM EYES.

J. EATON has a few left, very strong and quite ripe, which he can recommend for Forcing; sorts, Black Hamburgh, Muscat Alexandria, and Sweetwater. Likewise a very fine stock of Vines, wood ripe, fit for bedding out. An early inspection is recommended.

Shacklewell Road, Stoke Newington, N.

THE GREAT VINE AT HAMPTON COURT.

THE SUBSCRIBERS being the holders of the Royal Kitchen Gardens, Hampton Court, are enabled to offer genuine the famous and truly excellent HAMPTON COURT BLACK HAMBURGH GRAPE.

Strong well-ripened plants in 9-inch pots, 42s. and 60s. per doz.
" " fruiting plants in 12-inch pots, 10s. 6d. each.

If purchased in large numbers a considerable reduction will be made in price.—JACKSON & SON, Nurseries, Kingston, S.W.

FRUITING VINES.

JOHN AND CHARLES LEE beg to offer extra strong short-jointed and well-ripened FRUITING VINES of the following kinds:—

BLACK HAMBURGH	BLACK FRONTIGNAN
CHAMPION HAMBURGH	WHITE FRONTIGNAN
MILL HILL HAMBURGH	BLACK PRINCE
GOLDEN HAMBURGH	ROYAL MUSCADINE
MUSCAT OF ALEXANDRIA	BIDWELL'S SEEDLING
	BOWOOD MUSCAT.

Nursery and Seed Establishment, Hammersmith, London.

FRUIT TREES IN POTS.

JOHN AND CHARLES LEE have now the largest and finest stock of FRUIT TREES IN POTS in a bearing state for FORCING AND ORCHARD HOUSES ever offered. They consist of the following kinds, a CATALOGUE of which may be had on application:—

APRICOTS	FIGS	PEARS
PEACHES	PLUMS	APPLES.
NECTARINES	CHERRIES	ALSO,

VINES AND STRAWBERRIES.

Nursery and Seed Establishment, Hammersmith, London.

TO PLANTERS OF CONIFERS.

YOUELL AND CO. supply 50 species of RARE and HARDY CONIFERS in good plants for 5l., package included and carriage paid to Manchester, Newcastle-on-Tyne, Hull, London, Peterborough, or to any Railway Station within 150 miles of the Nursery. A LIST of the above can be had on application.—Royal Nursery, Great Yarmouth, Norfolk.

NURSERY STOCK.

THE Subscribers are disposing of their extensive stock of Seedling and Transplanted Forest Trees, Ornamental Trees, Evergreen and Deciduous Shrubs, Standard and Dwarf-trained Fruit Trees, Gooseberries and Currants, &c., at prices considerably reduced in consequence of dissolving partnership.—Priced Lists may be had on application.

Glasgow, Jan. 15. FOWLER & WRIGHT.

LIME TREES.

WILLIAM MAULE AND SONS having a large stock of this Tree 10 to 12 feet, well suited for planting Avenues, Public Parks, Cemeteries, &c., beg to call the attention of Corporations, Burial Boards, and Public Companies. Prices forwarded on application.

Stapleton Road, and Stoke Nurseries, Bristol.

THREE MILLIONS OF TRANSPLANTED QUICKS.

GEORGE CHIVAS, Chester, offers the above to the notice of Planters, which for extent and quality he believes are unequalled in the kingdom. A Sample Bale containing 100 of each five sizes forwarded on receipt of a Post-office Order for 15s. Truck loads delivered free at any Railway Station having through communication with Chester.

TO PLANTERS.

200,000 FINE TRUE SCOTCH FIR, 1½ to 2 feet, at 14s. per 1000.—Large quantities of strong LARCH, QUICKWOOD, BEECH, SPRUCE FIR, SILVER FIR, &c.—Address, HENRY MAY, The Hope Nurseries, near Bedale, Yorkshire.

TAXUS BREVIFOLIA OR ADPRESSA, fine bushy plants.

CEDRUS DEODARA, good sized specimens.

Prices and further particulars upon application.

JAMES DICKSON & SONS, Newton Nurseries, Chester.

WANTED, 30,000 SEEDLING GORSE, by GEO. WYATT, Nurseryman, Banbury, Oxon.

WANTED, 32,000 STRONG QUICK, three years old, to be delivered, carriage free, at Kirkstead, Great Northern Railway.—Apply by letter stating all particulars to A. B., care of Mrs. Toynbee, near Sleaford, Lincolnshire.

TO NURSERYMEN AND GARDENERS.

WANTED TO PURCHASE 4 DWARF-TRAINED MOORPARK APRICOTS; 3 STANDARD do. do; not less than 4 years old, as they are required for immediate fruiting. Write, stating price, delivered either to Oxford or Aylesbury Station.—H. MEARS, Nurseryman, Thame.

AUSTRALIAN SEEDS.—Received by Overland Mail, three SETS of SEEDS from King George's Sound, 135 varieties, price 6l. 10s. each set.—W. CUTTER, Crystal Palace

PAMPAS GRASS (GYNERIUM ARGENTEUM).—The beauty of this extraordinary plant has this season been fully appreciated. It can be supplied by the dozen, hundred or thousand, by CHARLES NOBLE, Bagshot, Surrey.

PERENNIAL AND ITALIAN RYE-GRASS.

McBLAIN AND CO., SEEDSMEN, Newry, Ireland, offer to the Trade PERENNIAL AND ITALIAN RYE-GRASS of every description. Samples and offers on application.

TO THE SEED TRADE.

J. DIXON, SEEDSMAN, BACON & BUTTER FACTOR, and GENERAL PRODUCE MERCHANT, Kendal, Westmoreland, has for sale pure ITALIAN RYE-GRASS SEED at 30s. per cwt. Also a parcel of very prime Rib Grass at 20s. per cwt. Worthy of notice. (Terms Cash.)

SEEDS.

BASS AND BROWN'S New SEED CATALOGUE (28th annual edition) will be supplied free on application. It this year contains much descriptive information, with copious remarks on culture, &c., and a drawing of their Improved Custard Vegetable Marrow, totally distinct from the one figured in the periodicals of last year. It also contains lists of choice Bulbs for spring planting, with various other choice Bulbs in pots.

VEGETABLE SEEDS (ASSORTED COLLECTIONS).

These for quality and selection of sorts will not be surpassed. The names of sorts contained in the three largest collections appear in the Catalogue.

No. 1 Collection	.. ..	£3	0s. 0d.
No. 2 ,,	.. ..	2	0 0
No. 3 ,,	.. ..	1	5 0
No. 4 ,,	.. ..	0	15 0
No. 5 ,,	.. ..	0	10 6

Goods (20s. and upwards) carriage free to all stations in London, &c.—See Catalogue. Post-office Orders payable to BASS & BROWN, or to STEPHEN BROWN. Remittances requested from unknown correspondents.

BASS & BROWN, Seed Growers, &c., Sudbury, Suffolk.

THE SALWAY PEACH.

CHARLES TURNER can supply strong dwarf trained Trees of this new and valuable late Peach at 7s. 6d. each. Maiden Trees, 5s. each. The SALWAY PEACH is strongly recommended as an acquisition of great worth.

Having maintained the high opinion formed of it when first exhibited, it has subsequently been shown at the great Fruit Show, held at Willis's Rooms in 1857, and an Autumn Meeting of the Fruit Committee of the Horticultural Society, 1858.

The Royal Nurseries, Slough, near Eton and Windsor, and also at Salt Hill.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their NEW PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Stove, Greenhouse, and Hardy Ferns, Miscellaneous Stove, Greenhouse, and Hardy Plants, Variegated and Ornamental foliaged Plants, Conifers, Roses, Rhododendrons, Indian Azaleas, Gloxinias, Fuchsias, Cactuses, &c., is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

CALLICARPA PURPUREA.

JOHN STANDISH, the exhibitor of the above (at St. James's Hall), can supply a few good plants at 7s. 6d. each. The following passage from Dr. Lindley's leading article in the *Gardeners' Chronicle* for Nov. 20 will give an idea of its beauty:—"Callicarpa purpurea, quite insignificant when in flower, was beautiful in its winter dress of innumerable rich purple berries, about the size of swan shot." It is easily cultivated, and does well in a cold greenhouse or conservatory planted out, where it will produce thousands of bright purple berries resembling glass beads, and remaining on nearly the whole winter.—Bagshot, Jan. 15.

FLOWER AND VEGETABLE SEEDS OF BEST QUALITY.—The Advertisers respectfully solicit applications for their extensive and DESCRIPTIVE CATALOGUE OF FLOWER AND VEGETABLE SEEDS, which they will feel pleasure in forwarding to any address throughout the world without charge, and postage free. It will be found to contain, beside the usual names of garden occupants, a numerous list of very CHOICE, NEW, and RARE SEEDS of all classes of the floral world, with many not to be met with elsewhere; and also of the Kitchen Garden Department, to the quality and purity of which they pay particular attention. Collections made up for all climates.—Address HOOPER & Co., Seedsmen, Covent Garden Market, London, W.C.

GRASS SEEDS FOR ALL SOILS.

SUTTON AND SONS have had the honour of supplying their GRASS SEEDS to the ROYAL FARMS near Windsor and at OSBORNE PALACE; also to the CRYSTAL PALACE COMPANY, the Grass Seeds by which so many acres of arable land have been converted into the beautiful Park and Lawns now so much admired at Sydenham; also to the HORTICULTURAL SOCIETY OF LONDON, for the Gardens at Turnham Green, and to most of the Public Parks, Gardens, Asylums, &c., in the Kingdom, including the PEOPLE'S PARK, Halifax. This magnificent Park, presented to the town of Halifax by Frank Crossley, Esq., M.P., was laid down with SUTTON'S Permanent Grass Seeds, and at the inaugural meeting held last summer, had already become a beautiful sward (see *Illustrated London News*, August 22, 1857). SUTTON & SONS have since been honoured with further orders for Seeds to extend the Pleasure Grounds.

THE ALDERSHOT CAMP.

From a supply of SUTTON'S Grass Seeds especially adapted to the soil and situation there are now some very perfect swards formed on these bleak hills, forming a pleasing contrast to the surrounding barren waste.

Messrs. SUTTONS' charges for Grasses are very moderate, varying according to the quantity required, and other circumstances.

Prices and other particulars may be obtained on application, addressed, SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

THE READING ONION.

THE TRUE READING ONION is so highly esteemed that SUTTON & SONS have annual demands for large quantities of Seed from all parts of the kingdom: the town of Reading having been famed for Onion Seed for upwards of a century.

Besides many similar communications the following have been received quite unsolicited:—

From Mr. JAS. MCINTOSH, *Gardener to the Duke of Buccleugh, at Drumlanrig.*

"Your Onion is particularly fine."

From the Rev. F. T. SCOTT, *Sibertswold Vicarage, near Dover.*

"The seeds of last year gave great satisfaction, especially the Onions, which were superb."

From the Rev. J. A. CARR, *Belshford Rectory, Horncastle.*

"Your Onions are the largest and best I ever grew or saw."

From Mr. W. ROBINSON, *Gardener at Atherstone, Sept.* 10, 1858.

"The seeds I have had from you for the present year satisfied me to the utmost, the Onions, Carrots, and White Cos Lettuce especially."

From Major J. RICHARDSON, *Willowmead, South Molyneux, Otago, New Zealand, Feb.* 2, 1858.

"Before asking you to pack up my present order, I must state that those with which you furnished me before were universally approved. I might almost say that not one seed failed. Even the Onion, so very seldom successful here, was not an exception."

From Capt. FRANCIS T. BROWN, *Penn-Moor, Hay, Jan.* 29, 1858.

"I hope the seeds will do as well as last year, which were all good. The Onions were the finest I ever saw in England."

From Mr. DURY, *Master of Clutton Union, Somerset.*

"I have grown your Lettuce, Leeks, and Reading Onion, the like of which I never saw before."

N.B. Fine new Seed is now selling by the undersigned at 4d per ounce (5d. free by post), or much cheaper in large quantities. Carriage free.

SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

THE PLYMOUTH SEED COMPANY'S COLLECTIONS OF VEGETABLE SEEDS.—These Collections have for many years been sent out, and have given universal satisfaction. They combine excellent germinating qualities, superior sorts, and may be deemed economical in the truest sense of the word.

No. 1.—Complete Collection, sufficient for a large Garden, 3l.
No. 2.—Complete Collection for a moderate size Garden, 2l.
No. 3.—Complete Collection in small quantities, 1l. 5s.
No. 4.—Complete Collection for a small Garden, 15s.

COLLECTIONS OF FLOWER SEEDS.—Post Free.

	Large Pkts.	Small Pkts.
No. 1.—100 Packets	.. £1 5s. ..	£1 0s.
No. 2.—50 ,, ...	.. 0 15 .	0 12
No. 3.—25 ,, ...	.. 0 8 ..	0 6
No. 4.—12 ,, ...	.. 0 4 ..	0 3

Freight and Carriage.

All orders for Seeds above 1l. forwarded free to any Stations between Plymouth and Paddington. All orders above 2l., free to all Broad Gauge Stations, to most other Railway Stations, and by steamers to Cork, Dublin, Liverpool, Guernsey and Jersey. All orders above 5l. free to all Railway Stations in England and Wales, and to any Steam Port in the United Kingdom.—For other and full particulars, the reader is respectfully referred to the General Price Current of the Plymouth Seed, Agricultural Implement and Manure Company Limited, (late Rendle's Price Current), which is now published and ready for delivery, on application to the Secretary of the Company. Copies can also be obtained from any bookseller in town and country through Messrs. SIMPKIN, MARSHALL, & Co., Stationers' Hall Court, London.

Free for 6 stamps, or gratis to customers.

SHAW AND CROSLAND'S RICHMOND DWARF late WHITE BROCCOLI.—This Broccoli has proved to be the hardiest in cultivation, having been grown on the most exposed situations, producing fine heavy heads from the middle of May to the middle of June. It gained the First and Second Prizes at the Sheffield Floral and Horticultural Society's Exhibition, held at the Sheffield Botanical Gardens, June, 1856. SEEDS can be had in sealed packets, price 2s. 6d. each, at the Richmond Nursery, Sheffield; or of

Charlwood & Cummins, Covent Garden
Chaundy & Co., Lewisham
Chatter's, Mr. Wm., Saffron Walden
Davies, Thos. & Co., Waver-tree, Liverpool
Dean, Mr. Wm., Bradford, Yorkshire
Flanagan & Son, Mansion House Street
Fisher, Holmes, & Co., Sheffield
Godwin, Mr. F., Sheffield [St
Hurst & M'Mullen, Leadenhall
Henderson, E. G. & Son, St. John's Wood
Kernan, Mr. J., Great Russell Street
Kearsley, Mr. J., Leeds
Low & Co., Clapton
Laing, Mr. Alex., Beverley
Noble, Cooper, & Bolton, Fleet Street
Stewart & Son, Dundee
Sharpe & Co., Sleaford
Turner, Mr. C., Slough
Urquhart & Son, Dundee
Wheeler, Mr., Geo., Warminster
Wood & Ingram, Huntingdon

FRANCIS AND ARTHUR DICKSON AND SONS, SEED MERCHANTS and NURSERYMEN, respectfully announce that their CATALOGUE OF KITCHEN GARDEN & FLOWER SEEDS FOR 1859, including a List of Garden Implements and other requisites, is published, and will be forwarded post free on application. Their special personal attention being directed to this department of their business, and as the whole of their Seeds have been carefully saved from select Stocks, and are all the growth of 1858, they can guarantee them to be true to name and of the most genuine description.

In addition to their carefully selected Stock of Seeds generally, they would direct particular attention to the novelties specified at foot, all of which they believe to be valuable acquisitions to their respective classes

In order to save the trouble of writing out seed orders in full, they have this season also published a Catalogue with blank columns for the quantities required, which can be filled up and returned to them by post or otherwise.

PEA, DICKSON'S EARLY FAVOURITE.—Pronounced by all who have grown it to be the best Second Early Pea in cultivation. See Advertisement. Price 1s. 6d. per quart.

PEA, DUNNETT'S FIRST EARLY.—The raiser affirms that "this Pea is fit for gathering many days earlier than 'Sangster's No. 1;' is of excellent flavour and an abundant cropper." 2s 6d. per quart.

PEA, CHAMPION OF SCOTLAND.—A new white wrinkled marrow Pea, of great merit, considered superior in many respects to "Champion of England." 2s. 6d. per quart.

BEET, DICKSON'S DWARF-TOP BLACK.—A very small Beet of deep crimson colour, nearly black; particularly tender and of most delicious flavour. Highly recommended. 6d. per packet or 1s. per oz.

BROCCOLI, FROGMORE PROTECTING.—A very hardy variety, of dwarf habit, the heads large, white, and tender. A much superior variety to "Knight's Protecting." 2s. 6d. per packet.

BROCCOLI, SNOW'S SUPERB WINTER (True).—This invaluable Broccoli is hardly to be met with true. The seed here offered is direct from Mr. Snow. 1s. 6d. and 2s. 6d. per packet.

CABBAGE, ESSEX CHAMPION.—A new very dwarf variety, said to be the earliest grown. It stands longer than most other varieties before going to seed, and by a succession of sowings may be had fit for use all the year round. 6d. per packet; 1s. per ounce.

CAULIFLOWER, LEONORMAND'S.—A new variety from France, said to be the largest and best in cultivation. 2s. 6d. per packet.

CAULIFLOWER, EARLY PARIS.—The variety which is found in the Paris market so early in the season; of a beautiful white colour; large and excellent. 1s. per pckt., or 3s. 6d. p. oz.

CELERY, INCOMPARABLE DWARF WHITE.—A very dwarf variety, solid, crisp, and juicy; keeps in perfection longer than any other variety. 1s. per packet.

CUCUMBER, COPPACK'S SEEDLING.—One of the best in cultivation, grows 18 to 20 inches long, of deep green colour, fills up well in the shoulder, and is altogether a particularly handsome variety, well adapted for exhibition. 1s. and 2s. per packet.

LETTUCE, DICKSON'S NEW HARDY WINTER CABBAGE.—Undoubtedly the best winter Lettuce in cultivation; much hardier, more solid than the "Hardy Hammersmith," and of excellent quality. 1s. per packet.

LETTUCE, DICKSON'S CHAMPION COS.—This is perhaps the largest Cos Lettuce in cultivation, and altogether a great acquisition to our Summer Lettuces. Notwithstanding its large size, it is in every respect of first-rate quality, being tender, crisp, self blanching, and stands longer than any other variety before running to seed. 1s. per packet.

CARRIAGE OF SEEDS.

*** It is now a very common practice to advertise Seeds "carriage paid." However tempting this may appear at first sight, it is evident that the cost of carriage must be charged indirectly on the price of the Seeds.

F. & A. DICKSON & SONS prefer sending out really superior Seeds at strictly moderate prices (without paying carriage), and are convinced that they will be found more satisfactory in every way, as well as cheaper in the end.

F. & A. D. & SONS have however special arrangements with the various Railway Companies for the cheap and quick conveyance of all goods, and will be happy to prepay the carriage, when desired, charging cost of same to account.

106, Eastgate Street, Chester.

NEW SEEDS FOR 1859.

WM. CUTBUSH AND SON beg respectfully to intimate that their PRICED CATALOGUE OF VEGETABLE AND FLOWER SEEDS, &c., is now ready post free on application. WM. C. AND SON devote particular attention to this department of their business, and most of the choicer kinds of culinary seeds and roots are saved under their own inspection, and they can confidently guarantee the quality of all offered.—Highgate Nurseries, London, N. Established A.D. 1695.

VEGETABLE, FLOWER, AND AGRICULTURAL SEEDS.

WILLIAM BARNES'S CATALOGUE of the above is now ready, and may be obtained postage free, upon application. It will be found to contain every article of known value, among them some that cannot be excelled, the stock of which having been saved specially for himself by private and competent friends, he can recommend with the greatest confidence. Every article is warranted of the purest and most genuine kind, as well as very moderate in price.

Camden Nursery, Camberwell.

TO THE TRADE.

MESSRS. MASTERS AND SON have to dispose of some fine clean grown WILLOWS, with stems 6 to 8 feet, fit for working the Weeping varieties upon. Also a very large Collection of the best named Azaleas, Rhododendrons, and other American Plants, of small sizes fit for Stock, as well as larger specimens with flower-buds for immediate planting. Prices furnished upon application.—Exotic Nursery, Canterbury, and Fant Nursery, Maidstone, Jan. 15.

BUYERS OF ROSES, HOLLYHOCKS, DAHLIAS CHRYSANTHEMUMS, GERANIUMS, FRUIT TREES, PLANTS and SEEDS, are recommended to rely on the Advertisers in GLENNY'S ANNUAL POCKET ADVERTISER. They comprise the most trustworthy men in the trade. Advertisements must be all in early in the week. GLENNY'S list of SIXTY Flower Seeds for Amateurs free on receipt of a directed envelope. Glenny's Improved Balsam, 6 classes, 37 stamps, mixed, 13.—G. GLENNY, Horticultural Agent and Valuer, Fulham, S.W.

BEAUTIFUL NEW TORENIA.

JOHN AND CHARLES LEE are now prepared to send out their beautiful new TORENIA PULCHERRIMA, which has been so much admired. It is figured in the present Number of Henderson's "Illustrated Bouquet," and undoubtedly surpasses all other Torenias by the great contrast it exhibits in the rich dark velvet, approaching to black, of the side lobes, and the pure white of the lip.

Dr. Lindley thus describes it in the *Gardeners' Chronicle* of October 30, 1858:—"We have received from Messrs. Lee of the Hammersmith Nursery a singularly beautiful variety of the favourite Torenia asiatica. The tube of the corolla and its eye are an intense purple violet; the two side lobes are the same colour, fading at the edge into pure violet; the upper lobe is pale violet; the lower is white, with a purple oblate blotch at the point. This variety puts the old original kind quite out of the field."

Price 10s. 6d. The usual discount to the Trade.

Nursery and Seed Establishment, Hammersmith, London.

VEGETABLE AND AGRICULTURAL SEEDS, &c.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that they are now prepared to execute with new and genuine SEEDS all orders they may be favoured with. Their PRICED and DESCRIPTIVE CATALOGUE, containing all new VEGETABLES proved to be good, and all the best of the older varieties, &c., will be forwarded post free on application.

The following are particularly recommended, all being very superior in quality, and valuable acquisitions to the most select collections:—Beet (Pine Apple Short Top), per oz., 2s.; Broccoli, Winter White (Snow's), per oz., 3s. 6d.; ditto, Penzance White (Mitchinson's), per packet, 1s. 6d.; Celery, Nonsuch (Ivery's), per packet, 1s.; Cottager's Kale, per packet, 1s.; Lettuce, Alma Cos (Griffin's), per packet, 1s.; ditto, Moor Park Cos, per packet, 1s.; Marrow, Custard (Thomson's), per packet, 6d.—Paradise Nursery, Seven Sisters and Hornsey Road, Holloway, London, N.

TO THE SEED TRADE.

CHOICE STOCKS OF SEEDS GROWTH OF 1858.—The undermentioned Seeds having been grown from choice stocks in larger quantities than we required for retailing, we are prepared to offer a portion of each kind, or either of them at very low prices:—

IMPROVED GLOUCESTERSHIRE WHITE SWEDE
SUTTON'S LINCOLNSHIRE RED GLOBE TURNIP
SUTTON'S IMPERIAL CABBAGE
SUTTON'S EARLY DWARF COMBE CABBAGE

Reading Onion	Paradise Marrow Pea
Danver's Yellow ditto	Tweeddale Purple-top Turnip
James's Long-keeping ditto	Yellow Tankard Turnip
Dickson's Favourite Pea	Green Globe ditto

Green Round Turnip (old sort).

The above were grown by or expressly for us from our own stocks and can be confidently recommended. Applications for prices, stating quantity required, addressed as below, will be replied to promptly and liberally.

SUTTON & SONS, Seed Growers, Reading, Berks.

TO THE TRADE.

WOOD AND INGRAM beg to offer the following articles which they have of extra fine growth:—

STANDARD, DWARF, AND TRAINED CHERRIES, of all the best sorts.
OAKS, 1 and 2 year seedling, 2 to 3, and 3 to 4 feet.
,, Evergreens, 1 year seedling.
,, Turkey, 1 year ditto.
SYCAMORE, 1 year ditto.
WHITETHORN, 2 year ditto.
ELM, narrow-leaved English, 1 year ditto.
CHESNUT, Spanish, 3 to 4, 4 to 5, and 5 to 7 feet.
FIR, Scotch, 1¼ to 2, 2 to 2½, and 3 feet.
HAZELS, 2 to 3, and 3 to 4 feet.
POPLAR, Black Italian, 3 to 4, 4 to 5, and 5 to 6 feet.
,, Lombardy, 4 to 5, 5 to 6, and 7 to 8 feet.
BOX, sorts, 2 to 3, and 3 to 4 feet.
LAURELS, 1 year bedded.

Prices on application.—Huntingdon Nurseries.

(CIRCULAR.)

SEED WAREHOUSE, 86, High Street, Borough, London, S.E., January, 1859.—We beg to inform you our late traveller, Mr. John J. Polden, is no longer in our employ, having accepted a similar situation with a recently established firm in the Seed trade; therefore, for the future, he is NOT empowered to receive orders, or transact any business on our account. We return you many thanks for your past favours, and hope to receive a continuance of the same.—We remain, yours very respectfully, CLARKE & COMPANY. Established above 30 years.

P.S. Our Wholesale CATALOGUE OF SEEDS is now ready, and may be had on application.

RICH BOG AND LOAM.—Gentlemen and Nurserymen will do well to apply early for the above to refresh their American beds. To be had in any quantity upon reasonable terms, by land or water carriage.

ROBERT NEAL, Nurseryman, Wandsworth Common, Surrey.

NEW SEED CATALOGUE.

MESSRS. E. G. HENDERSON & SON

RESPECTFULLY announce that they will forward, post free, their NEW SEED CATALOGUE FOR 1859 (which will shortly be published); in its pages all the principal novelties of the season will be introduced or noticed with full descriptions, and only those that are known to be valuable will be recommended for cultivation. Much useful information as regards Cropping of Gardens, Sowing, &c., will be given, and E. G. HENDERSON & SON trust that the hints thrown out will be acceptable and practically useful to amateur cultivators.

THE ILLUSTRATED BOUQUET

Of rare and beautiful flowers is now published (Part V.), and contains a magnificent illustration of RHODODENDRON NUTTALLI; also of the truly splendid TRITOMA UVARIA, the finest of all summer and autumn-flowering herbaceous plants, and the intensely rich violet-blue TORENIA PULCHERRIMA, grouped with the fine large-flowered variety of GARDENIA RADICANS MAJOR, with fragrant snow-white flowers.

P.S. The figure and descriptions given of TRITOMA UVARIA (GLAUCESCENS) will enable cultivators to determine whether they possess the fine variety now illustrated.

Wellington Nursery, St John's Wood, London.

SUTTON'S COLLECTIONS OF GARDEN SEEDS.

CARRIAGE FREE, WITH INSTRUCTIONS ON CULTIVATION.

No. 1.	A COMPLETE COLLECTION of KITCHEN GARDEN SEEDS for a LARGE GARDEN, for one whole year's supply	£3	0 0
No. 2.	A COMPLETE COLLECTION of DITTO, in quantities proportionately reduced	2	0 0
No. 3.	A COMPLETE COLLECTION of DITTO DITTO	1	5 0
No. 4.	A COMPLETE COLLECTION of DITTO DITTO	0	15 0

The sorts of Vegetable included in these Collections are those which we have proved to be the most prolific, best flavoured, and most worthy of general cultivation, and of which sorts we have therefore grown large crops of Seed; by this means we are enabled to furnish "A Complete Collection for One Year's Supply," of superior quality, and at much less expense than when a Gentleman or his Gardener makes his own selection.

COLLECTIONS OF FLOWER SEEDS TO BE SENT FREE BY POST.

The best 100 sorts of FLOWER SEEDS, hardy, half-hardy, and tender, with instructions	£1	1	0
The best 50 sorts of DITTO, with instructions	0	10	6
The best 36 sorts ditto ditto	0	7	6
The best 24 sorts ditto ditto	0	5	0

Also NATURAL GRASSES for Lawns and Meadows, fine MANGEL WURZEL, TURNIP, and other AGRICULTURAL SEEDS.

Post-office Orders payable to SUTTON & SONS, Seed Growers, Reading, Berks.

SEEDS OF ALPINE PLANTS.

(SUITABLE FOR ROCK WORK.)

JAMES CARTER AND CO. beg to announce the arrival of a Consignment of SEEDS (many of which are extremely rare) from Monsieur Ortgies, Curator of the Botanic Gardens, Zurich. The Seeds have been collected amongst the Alps, during the past autumn, under his immediate superintendence, and J. C. & Co. have no doubt they will give great satisfaction.

12 selected varieties	2s. 6d.	
25 ,,	5	0
50 ,,	10	0

238, High Holborn, London, W.C.

ASPARAGUS AND SEAKALE.

YOUELL AND CO. having a large Stock of the above growing on the Sea Coast, of the finest quality, beg to offer it at the following prices:—

ASPARAGUS, GIANT, three years old 3s. 6d. per 100.
,, ,, two years 2s. 6d. ,,
SEA KALE 6s. 0d. ,,

RHUBARB.—Myatt's Victoria, Myatt's Linnæus, Mitchell's Royal Albert, strong roots, 8s. per dozen.

Hawke's Champagne Rhubarb, 9s. per dozen.

All orders of 2l. and upwards are delivered Carriage Free to London, Manchester, Newcastle, and Hull, as well as to any Railway Station within 150 miles of the Nursery.

Royal Nursery, Great Yarmouth, Norfolk.

RHODODENDRONS.

JOHN WATERER'S CATALOGUE OF UNRIVALLED HARDY SCARLET AND OTHER CHOICE RHODENDRONS, as Exhibited by him at the Royal Botanic Gardens, Regent's Park, London, is published, and will be forwarded on application.

☞ This List is recommended as a work of reference, as it contains accurate descriptions of all the esteemed varieties.

The American Nursery, Bagshot, Surrey, near the Sunningdale Station, South Western Railway.

HARDY SCARLET RHODODENDRONS AND AMERICAN PLANTS GENERALLY.

WATERER AND GODFREY'S PRICED and DESCRIPTIVE CATALOGUE of the above beautiful tribe of plants, as exhibited by them in London and Manchester, may now be had on application inclosing one stamp for postage. The Catalogue also furnishes the heights and prices of their unequalled stock of Conifers and Evergreens, &c. Catalogues may also be had of Messrs. J. MAY & Co., Seedsmen, &c., Wellington Street, Strand.

Knap Hill Nursery, Woking, Surrey.

NEW EXOTIC FERN, NEPHRODIUM MOLLE, VARIETY CORYMBIFERUM.

Named and described in the *Gardeners' Chronicle* of May 22, 1858.

ROBERT SIM is now prepared to supply, at 15s. each, vigorous and well-established profusely crested plants of this beautiful and unique variety, of which he possesses the entire stock. It ought to prove quite a greenhouse kind.

The customary discount to the trade. Price per dozen on application. Carriage paid to London. Post-office Orders on Foot's Cray.—Nursery, Foot's Cray, Kent, S.E.

NEW SPLENDID SEEDLING GLADIOLI. — 15 named varieties of Seedlings from RAMOSUS, and 15 ditto from GANDAVENSIS, for 1l. 1s., carriage paid. Large bulbs of Gladioli gandavensis, ramosus, and floribundus, 2s. 6d. per dozen. Fine Anemones per 100, Mixed Double, 6s.; Scarlet Double, 10s.; Mixed Single, 4s.; Scarlet Single, 6s. Fine mixed Persian Ranunculus, 3s. per 100. Scarlet Turban, 2s. 6d. per 100. A DESCRIPTIVE PRICED CATALOGUE of GLADIOLI, &c., sent free and post paid on application.

BUTLER & MCCULLOCH, Seedsmen, Covent Garden Market.

LODGE'S NEW HYBRID RHODODENDRON, "COUNTESS OF WILTON," the best and hardiest Rhododendron in cultivation; obtained a first class Certificate at the Manchester Botanical Gardens. Strong bushy plants from 2 to 4 feet high at 1½, 2, and 3 guineas each, according to size, are now ready, and can also be had from the following agents:—

Mr. John Waterer, American Nursery, Bagshot, Surrey
Messrs. Wm. Rollisson & Sons, Tooting, near London
,, E. G. Henderson & Son, St. John's Wood, London
,, Wm. Wood & Son, Maresfield, Sussex
,, Thomas Jackson & Sons, Kingston, Surrey
,, Benjamin Reid & Co., Aberdeen

A remittance or reference is requested from unknown correspondents. Post-office Orders made payable to JAMES LODGE, Park Nurseries, Singleton Brook, Broughton, Manchester.

Descriptive circulars can be had as above, or from any of the agents.

LAING'S MAMMOTH RED CELERY.—This is the largest yet grown, attaining the extraordinary weight of from 10 to 12 lbs., and is perfectly solid. It is nearly perennial in its habit, as it will not under any circumstances run to seed the first season. In flavour it is unsurpassed, and may be deemed a new feature in the garden from the fact that it may be had for use all the year. Packets free per post, 1s.; large trade packets, 3s. 6d. Postage stamps received in payment.—YOUELL & Co., Royal Nursery, Great Yarmouth.

ROSES, &c. — Fine Tall Standard Roses, best kinds per dozen £0 18 0
Fine Standard and Half-Standard Roses, per dozen 0 12 0
,, named Lancashire Gooseberries per 100 0 8 0
,, White and Red Currants per 100 0 8 0
,, Hardy Herbaceous and Alpine plants, one of the best collections extant, per 100 sorts 1 5 0
,, Hardy Shrubs by name per 100 sorts 2 10 0
,, named Hollyhocks, good plants per dozen 0 6 0
,, named Phloxes do. do. do. 0 4 0
,, named Pyramidal Pears on Quince do. 0 15 0

Catalogues of all the above sent free on application to HENRY MAY, The Hope Nurseries, near Bedale, Yorkshire.

RED MATCHLESS CELERY.

JENKINS'S RED MATCHLESS CELERY, the best for years in Covent Garden Market, per packet 1s.
SHILLING'S QUEEN CABBAGE (the very best out), true, per oz. 1s.
INVISIBLE WHITE BROCCOLI, very hardy, 1s.
COTTAGERS' KALE (Turner's), 1s.
NEW HEADING (Turner's), an excellent kind, 6d.
BRUSSELS SPROUTS, 6d.
LONDON WHITE COS LETTUCE, 1s.
MAUNDER'S PEARLY CAULIFLOWER, 1s.
TRUE WALCHEREN ditto, 1s.

The above sent post free. CATALOGUE of VEGETABLE and FLOWER SEEDS forwarded on application.—JOSEPH MAY & Co., Wellington Street, Strand, W.C.

PRICED CATALOGUE OF SEEDS FOR 1859.

Just published by MILNE, ARNOTT, & Co., and will be forwarded free upon application,

A PRICED AND DESCRIPTIVE CATALOGUE OF SEEDS, containing select lists of the best kinds all from the most genuine stocks, and of excellent quality. Orders above 1l. carriage free to any station within 100 miles of London; above 5l. to any station or port in the United Kingdom.—MILNE, ARNOTT, & Co., Wandsworth Road, London, S., successors to Messrs. Chandler & Sons (established upwards of 60 years).

PINE-APPLE NURSERY, EDGEWARE ROAD (W.).

ARTHUR HENDERSON AND CO. beg respectfully to announce that their CATALOGUE OF KITCHEN GARDEN AND FLOWER SEEDS FOR 1859, with a List of Garden Implements and other requisites is now published, and will be forwarded, post free, on application.

They particularly desire to call the attention of the public to their "celebrated Short-topped Garden Beet," the only variety that really will repay the grower; colour, flavour, and quality are such as to render it worthy of extensive cultivation; also "Kite's Branching Marrow Pea," a very valuable and prolific bearer for every day use; "Snow's true White Winter Broccoli;" "Snow's Champion Cos Lettuce," a large crisp summer and autumn Lettuce, and for these seasons unequalled. In this select List will also be found the "Moor Park Lettuce," those very superior sorts as yet but little known, namely, the "Palatine" and "Versailles" Cabbage Lettuce; neither of these are disposed to run to seed during the hot summer months. The White and Black spined Imperial Cucumber, the new sprouting or Feather-stemmed Savoy, a scarce but most delicious Green; the "Waterloo framed short-topped seeding Potato," raised between the "Albion" and "Frame;" it is earlier than either, very productive, and the sort that must eventually be depended upon as the best early frame and forcer, as soon as its merits become better known. The "Australian Salad Cress"; this plant grows about 1 foot in height, branching and spreading all round the stem; it may be constantly cut and gathered throughout the summer, the leaves are of a peculiarly delicate light green, the flavour is exquisite, grateful, and piquant.

NEW SEEDS.

CHARLES TURNER'S CATALOGUE OF VEGETABLE, FLOWER, AND AGRICULTURAL SEEDS, CULINARY ROOTS, &c., is now ready, and may be had on application. The lists are Descriptive, and in addition to Selections of all the old and established favourite varieties, contains some valuable new additions, the most prominent of which are DR. MACLEAN'S FINE DWARF NEW PEAS, THE FROGMORE PROTECTING BROCCOLI, SCARLET GEM MELON, COTTAGER'S KALE, ROSEBERRY BRUSSELS SPROUTS, PERENNIAL SPINACH, &c.—The Royal Nurseries, Slough.

THE NEW MUSCAT HAMBURGH VINE.

MESSRS. ARTHUR HENDERSON AND Co. have much pleasure in directing the attention of Grape Growers to the new Muscat Hamburgh, Plants of which they are now sending out. In consequence of the extraordinary demand for the large three-guinea fruiting plants, they are unable to supply any more of this size, but they still have excellent Plants at two guineas, suitable for fruiting next spring in pots, and also good plants at one guinea each.

Pine-apple Place, Edgware Road, London, W.

NEW ZEALAND RUNNING BEAN.—This Bean was found by a gentleman in the centre of New Zealand, where it forms the chief vegetable food of the natives. It was not known at Auckland. My own observations on it last summer were that it grows tall and strong with a large heart-shaped leaf which droops at sunset. Blossom pinky white, a great bearer; pod size of Scarlet Runner but more tender and richer in flavour. The pod while ripening gets beautifully crimson and green striped. Mr. Henderson, of Pine apple Place, says that it is quite new to him, and has ordered several hundreds of it. A printed account of it sent with each parcel. Price per doz. 3s.; extra Beans allowed to the trade post free. With each order please to enclose stamps or Post-office Order on Camberwell.—JAMES CUTHILL, Camberwell, London, S.

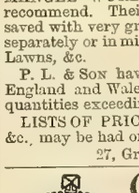
VEGETABLE AND FLOWER SEEDS, ETC.



JAMES DICKSON AND SONS, SEED MERCHANTS and NURSERYMEN, Chester, respectfully intimate the publication of their ANNUAL LIST OF VEGETABLE AND FLOWER SEEDS, which they will be happy to transmit prepaid to those who may apply for it. The whole of the seeds they offer have been selected with great care, and they therefore feel confidence in recommending them as being of really good quality.

Their Nursery Grounds at Newton-by-Chester, which lie in a high and exposed situation, contain a large and valuable Stock of FOREST and FRUIT TREES, SHRUBS, &c., all healthy and vigorous; also a great quantity of transplanted QUICKS, suitable for forming new fences, &c. Lists and every information furnished upon application.

Communications should be addressed JAMES DICKSON & SONS 102, Eastgate Street, and Newton Nurseries, Chester.



"JACK OF NEWSBURY" SWEDE, ETC.

PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN, &c., 27, Great George Street, Westminster, respectfully request attention to their very genuine Stock of the above excellent Swede; also of the LOTHIAN PURPLE-TOP SWEDE, both of which have been selected with the greatest care. They have also a very fine Stock of the KOHL RABI, or TURNIP-ROOTED CABBAGE, specimens of which were shown at their Stands at Smithfield Club Show. The Kohl Rabi was largely grown last season, and may now be relied on as a substitute for the Turnip and Mangel, where these roots do not succeed, or for filling up blanks where there is a partial failure. Its feeding qualities, hardiness, and weight per acre are equal to the Swede, and all kinds of stock prefer it to other roots.

P. L. & SON have also selected a first-rate Stock of MANGEL WURZEL SEED, which they can confidently recommend. Their natural GRASS SEEDS have been also saved with very great care, and they are ready to supply them separately or in mixture, for laying down Permanent Pastures, Lawns, &c.

P. L. & SON have arranged to deliver Seeds free throughout England and Wales from their London Establishment, for all quantities exceeding 20s. in value.

LISTS OF PRICES of the above and all other Seeds, Plants, &c., may be had on application.

27, Great George Street, Westminster.



CHAMPION OF SCOTLAND PEA. —A new and first-rate sort, declared by all who grew it last year to be the most distinct and best flavoured Pea in cultivation. To be had only at PETER LAWSON & SON'S, the Queen's Seedsmen, &c., who are also prepared to execute orders for all sorts of Garden and Flower Seeds of the finest quality.

27, Great George Street, Westminster.

The Gardeners' Chronicle.

SATURDAY, JANUARY 15, 1859.

MEETINGS FOR THE FOLLOWING WEEK.

THURSDAY, Jan. 20—Linnean ..... 8 P.M.

SOME weeks since we printed a copy of a memorial addressed to the Chancellor of the Exchequer, by a few working naturalists, representing in what manner in the judgment of the memorialists it would be desirable to rearrange the Natural History Department of the British Museum, whenever it is removed from Great Russell Street. Now that Parliament is about to meet and consider the subject we venture to offer a few remarks explanatory of the document alluded to.

That our public Natural History collections must be speedily separated from the library, and the fine art and archæological treasures now crowded into a space far too small even to contain them if

shut up in packing cases, is now pretty generally admitted. Then arise two questions: Whither shall they go? and How shall they be rendered most useful to the public on the one hand and to the student of Natural Science on the other?

Upon the first of these questions it will be seen that the memorialists have not touched. They may have thought that, provided the collections are removed from the dust and dirt of a London street, and placed in some accessible locality where space in abundance can be found, it is not of much importance where the space should be found. Nor, indeed, could they as a body have presumed to insist upon such a point, locality being a subject upon which a judgment may be formed without possessing any of that special knowledge which is required for determining upon the organisation of a department of science. But although they have themselves made no suggestion we need not on our own part conceal the fact that the opinion is gaining ground that no situation near London is so eligible as the land belonging to the Royal Commissioners at Kensington Gore. There are to be found combined ample space, good air, dry soil, and a space more easily accessible than any other in the suburbs of the metropolis, especially now that all our northern and southern railway lines are about to be concentrated in Brompton.

It is to the future organisation of our Natural History collections that the memorialists exclusively address themselves. They suggest that Natural History should be arranged under distinct heads, in manner following:—

MUSEUMS.

Popular; in which typical forms of Animals and Plants should be so displayed as to diffuse a general knowledge of Science, and to serve as a general introduction to the Student of Natural History. 1. *Botanical.* 2. *Zoological.*

Scientific; in which Collections should be disposed for study; and to which should be attached an appropriate Library of Books relating to Science. 3. *Botanical.* 4. *Zoological.*

Economic; in which Economic Products, with illustrations of the processes by which they are obtained and applied to use, should be so disposed as best to assist the progress of Commerce and the Arts. 5. *Botanical.* 6. *Zoological.*

GARDENS.

7. *Zoological*, for living animals.

8. *Botanical*, for living plants.

Of these eight divisions, the two last already exist in a state of perfect organisation; the 7th in the Regent's Park, the 8th at Kew. Moreover the 5th is complete at Kew, a nucleus of the 3d also exists in the same place, and the 6th is actually in progress towards formation at South Kensington. Therefore supposing Government to adopt the views of the memorialists there would be only four of these museums to form anew, viz.:—

1. *The Popular Botanical.* | 3. *The Scientific Botanical.*
2. *The Popular Zoological.* | 4. *The Scientific Zoological.*

For these four museums materials belonging to the public already abound in the British Museum and at Kew. All that is wanted is a suitable building to contain them all, and the means of displaying its contents, so that the public and naturalists shall have daily access whether for sight seeing, instruction, or study, without interfering with one another. The nucleus of the other, namely the Scientific Botanical, No. 3, also exists, partly at Kew, in the form of the Great Benthamian Herbarium, and partly within the walls of the British Museum itself; all that this Museum would really require is an increase of materials. So that the formation of eight Natural History Collections, at first sight a formidable undertaking for even the English Government, shrinks, when closely examined, to four and a half, most of the materials for which are only waiting to be judiciously employed.

Let us now assume that Kensington Gore or South Kensington was determined on as the locality in which to place the Zoological Museums, then the whole scheme recommended by the memorialists would stand thus:—

2 and 4, ZOOLOGICAL MUSEUMS; *Popular* and *Scientific*. Kensington—to be formed.

1, 3, and 5, BOTANICAL MUSEUMS; *Popular, Scientific, and Œconomical.* The Popular, to be formed at Kensington, in the same building with 2 and 4; the Scientific partly, and the Œconomical wholly, formed already at Kew.

7. ZOOLOGICAL GARDEN; already formed in the Regent's Park.

8. BOTANICAL GARDEN; already formed at Kew.

Such is a very condensed abridgement of the suggestions offered to the Chancellor of the Exchequer by the memorialists. For the details of their scheme gentlemen will doubtless refer to the memorial itself, which will be found at p. 861 of our last year's volume.

THE formation of a new British colony out of a part of what was once called the Hudson's Bay Company's Territory in North-West America is by far the most important incident in the history of 1858, and will undoubtedly be found pregnant with events of the highest political interest. A temperate climate, a fertile soil, natural wealth of every kind, especially timber that yields to none in commercial value, for the Douglas Fir, the weed of the colony, is of the very highest excellence for every purpose of construction, gigantic, strong, and durable, British Columbia offers great inducement to emigrants to settle there, especially to gardeners, or active young men acquainted with country life. It has moreover one of the finest coast lines in the world, with natural harbours capacious enough to float a navy, a secure anchorage, and shelter on all sides. When we add to this the direct and easy communication which British Colombia may have with Japan, China, and all our Asiatic possessions, it is not too much to anticipate its capital, Victoria, becoming the emporium of the Pacific.

There is however at present the rather important disadvantage of its being difficult of access. The only roads yet open are by way of Panama, or by the new coach track reported to run through the United States to California, unless indeed a passage is taken by sea round Cape Horn. The Canadian Government has therefore naturally taken into consideration the possibility of forming a line of communication between its territory and British Columbia, the two countries lying in the same latitude and in fact touching by the whole of their eastern and western frontiers. But that frontier is a chain of lofty mountains whose very name, "the Rocky," sufficiently shows how formidable a barrier they must be; and on the Canadian side the border line can only be reached through vast prairies and interminable labyrinths of lakes, and rapids, extending for more than 2000 miles as the crow flies from the head of Lake Superior to Victoria, the capital of British Columbia. The great problem for the Canadian Government to solve is whether it is possible to overcome those difficulties, so far at least that by degrees a way may be found from the Atlantic to the Pacific through British American territory. Were that possible Canada and British Columbia would become the great highway between eastern Asia and Europe.

With this grand object in view an expedition was organised in July, 1857, for the preliminary object of ascertaining what obstacles there might be to overcome between Lake Superior and a post of the Hudson's Bay Company called Fort Garry, situated at the confluence of the Assinaboine with Red River, a great stream running due south from Lake Winipeg into the state of Minnesota. (If the reader will place before him a good modern map of N. America, such for example as BLACK'S, which may be had for 1*s.* uncoloured, he will readily understand the description that follows.) The expedition was placed in charge of Mr. GLADMAN, assisted by Prof. HIND as geologist and naturalist, Mr. NAPIER as engineer, and Mr. DAWSON as surveyor, and their copious report is before us.* They were instructed that—

The primary object of the expedition was to make a thorough examination of the tract of country between Lake Superior and Red River, by which may be determined the best route for opening a facile communication through British territory from the lake to the Red River Settlements, and ultimately to the great tracts of cultivable land beyond them. After being landed at Fort William, a place on Lake Superior, they were to proceed by the present Hudson's Bay Canal route—by the Kaministiquia River, Dog Lake, Lake of the Thousand Islands, &c., to Lac La Croix, and thence by Rainy Lake, Lake of the Woods, Winipeg River to Lake Winipeg, and up the Red River to Fort Garry. From Rainy Lake to Lake Winipeg, the route already existing affords a good navigation for boats of considerable size, with the interruption however of some short portages; but from Rainy Lake eastward to Lake Superior the route is very much interrupted, and rendered laborious, tedious, and expensive by the great number of portages, some of considerable length, which have to be encountered to avoid the falls and rapids in the ravines and creeks which this route follows. It was therefore of the first importance to find some track which should be independent of the River Winipeg, its lakes, swamps, shallows, narrows and rapids, and of similar obstacles lying between the Lake of the Woods and Lake Superior. The volume quoted above relates in ample detail what the exploring party was able to discover.

The result was satisfactory; it was found that a good communication could be formed in the following way; by land from Lake Superior to Dog Lake; then, crossing it by water, up the Savannah river into Lac des Mille Lacs; thence by land, in a line to Rainy Lake; across this to Fort Francis; next along a practicable stream right across the Lake of the Woods to its north-west extremity; and finally from this point straight across country to Fort Garry on the Red River. The whole distance from this station to Lake Superior being between 450 and 500 miles, of which at least half is by water. So far then an advance westward is practicable. Above 1200 miles more remain to be surveyed, up to the Rocky Mountains.

It is known that this western country is hopelessly barren within the boundary of the United States, so that a road to the Pacific through American territory is to all appearance impracticable. But the Report informs us that within British boundary it is exactly the reverse. Nearly due west from Fort Garry runs a river called the Assinaboine, which communicates with a southern arm of the Saskatchewan, a river rising in the Rocky Mountains themselves. It is in this direction that emigration must flow, and hereabouts that a way through the Rocky Mountains to British Columbia must be sought. As far as information at present extends, it appears that the whole of this vast north-west American British territory, touching on the frontier of British Columbia, is as remarkable for fertility as the United States' ground within the same degrees of longitude is for its hopeless barrenness. "This," says Mr. BLODGET, a recent writer of high authority, "is a wedge-shaped tract, 10 degrees of longitude in width at its base along the 47th parallel, inclined north-westward to conform to the bend of the Rocky Mountains, and terminating not far from the 60th parallel in a narrow line which still extends along the Mackenzie for three or four degrees of latitude in a climate barely tolerable. Lord SELKIRK began his efforts at colonisation here as early as 1805, and from personal knowledge he then claimed for this tract a capacity to support 30 millions of inhabitants.

"All the grains of the cool temperate latitudes are produced abundantly. Indian Corn may be grown on both branches of the Saskatchewan, and the Grass of the plains is singularly abundant and rich; not only in the earliest period of exploration of these plains, but now, they are the great resort for buffalo herds, which, with the domestic herds, and the horses of the Indians and the colonists, remain on them and their woodland borders through the year. The simple fact of the presence of these vast herds of wild cattle on plains at so high a latitude is ample proof of the climatological and productive capacity of the country. Of these plains and their woodland borders the valuable surface measures fully 500,000 square miles."

Indeed the Canadian explorers give an account of the country, near Fort Garry, 500 miles west of Lake Superior, for which very few persons in this country can be prepared:—

"At the hospitable home of the Rev. Archdeacon Hunter," says Mr. HIND, "I saw Tomatoes ripening in the house; they had been gathered before maturity, in anticipation of frost, and were laid upon a shelf in the same way as we are accustomed to dispose of them in Canada under similar circumstances. Tomatoes, well known to be very susceptible of frost, can be grown in the open air at Red River, under the lee of fences or the side of a house, but unless the maturity of the fruit is accelerated by careful cultivation the autumnal frosts generally arrive before it ripens thoroughly in the open air. So late as the 7th October, the day before my departure from Red River, I gathered Mignonette and several other annuals in Mrs. Bird's garden, near the middle settlement, and saw similar garden flowers still in bloom and untouched by frost in Mr. Logan's garden, and also in Mr. McDermott's. In the large and well ordered gardens attached to the Upper and Lower Forts, every variety of vegetable commonly grown in Canada was flourishing in the greatest luxuriance. Cauliflowers, Windsor Beans, Celery, Beets, several varieties of Cabbages, in fact every desirable vegetable, was seen in profusion, and of excellent growth. Lastly, and certainly not the least important in its relation to summer climate, Melons of many varieties I had the good fortune to see and eat in several parts of the settlement. In every case I inquired into they were grown in the open air, without any assistance beyond throwing up the soil into the form of a little hill. The seed was planted in the earth in May, and the fruit gathered towards the end of August. From a small patch in the garden belonging to the very hospitable and generous Recorder and Governor of Assiniboia, James Johnston, Esq., no less than 103 Melons were produced. At the time when I had the oppor-

* *Report on the Exploration of the Country between Lake Superior and the Red River Settlement.* Printed by order of the Legislative Assembly. Toronto. 1858.

tunity of seeing this feat of horticulture 56 Melons (a green-flesh variety) had been gathered and 57 still remained, all of which had nearly reached maturity. I did not measure the bed, but to the best of my recollection it did not exceed 25 feet in length by 10 or 12 in breadth. Having been accustomed to cultivate Melons myself near Toronto, the surprise I felt at the remarkable yield of a delicate fruit which does not always ripen in the open air at Toronto could scarcely be attributed to a want of familiarity with the requirements of soil and climate necessary to produce this result. In other parts of the settlement I saw Melons in great profusion, but perhaps in no instance in such rich abundance and of such excellent flavour as in Mr. Johnson's garden. I find in my notes, however, the following memorandum:—'September 10: saw in Mr. Logan's house several Melons which were grown in the open air, without any protection. Mr. Mackenzie informed me that this year he raised from one seed 30 Melons. On the 10th of August one Melon weighed by actual measurement 6 lbs.' I look upon the cultivation of the Melon in the open air, without any kind of assistance beyond weeding, as second to the production of Indian Corn in its relation to the climatic adaptation of a country for agricultural purposes; and in view of this connection I have ventured to introduce the foregoing facts relating to its cultivation and growth in Assiniboia."

Again—

"Of the valley of Red River I find it impossible to speak in any other terms than those which may express astonishment and admiration. The description which I had read previous to my arrival there certainly did not in any way prepare me for the magnificent country at present occupied and controlled by those whose interests, no one seeks to deny, have been opposed to settlement or communication with what may be termed the outer world. I entirely concur in the brief but expressive description given to me by an English settler on the Assiniboine, that the valley of Red River, including a large portion belonging to its great affluent, is a 'paradise of fertility.' The summer climate of this region appears to be very well adapted for agricultural operations. The summer temperature is nearly 4° warmer than at Toronto, as ascertained by a comparison of corresponding observations. Indian Corn, if properly cultivated, and an early variety selected, may always be relied on. The Melon grows with the utmost luxuriance without any artificial aid, and ripens perfectly before the end of August. And yet with these natural and most truthful registers of climate, we are accustomed to hear of late spring and early autumn frosts deplored, lamented, and held up as one of the great drawbacks of Red River. All kinds of farm produce common in Canada succeed admirably in the district of Assiniboia; these are Wheat, Oats, Barley, Indian Corn, Hops, Flax, Hemp, Potatoes, root crops, and all kinds of common garden vegetables. The Potatoes, Cauliflowers, and Onions I have not seen surpassed at any of our provincial fairs; an enumeration of the weight of some of these productions of the garden and farm will be found in the text, and numerous specimens accompany this report. The character of the soil in Assiniboia, within the limits of the ancient lake ridges, cannot be surpassed. It is a rich black mould 10 to 20 inches deep, reposing on a lightish coloured alluvial clay about 4 feet deep, which again rests upon lacustrine or drift clay to the level of the water in all the rivers and creeks inspected. I frequently examined the soil some miles distant from the rivers along my line of route, as shown on the map, and I invariably found the prairie portion to exhibit a uniform fertility. The area occupied by fertile prairies I visited and saw certainly exceeds 1,500,000 acres, and as will appear from an inspection of the map of Minnesota; the greater portion of the rich and available prairie land in the valley of the Red River lies within British territory, while the valley of the Assiniboine is wholly within it. The altitude of the valley of the Red River above the level of the sea is about 680 feet, or 320 feet less than the elevation given to it by high authority, and from which erroneous conclusions respecting its climate, in relation to agriculture, have been drawn. As an agricultural country, I have no hesitation in expressing the strongest conviction that it will one day rank amongst the most distinguished."

In another part of the Report we have still further details concerning this little known country, which already posseses industrious prosperous settlers, schools, clergy, magistrates, and a population of some 7000 distributed through 10 parishes. The following account is of the highest interest to emigrating cultivators:—

"One of the farms which I visited was occupied by Mr. Gowler; it is situated on the Assiniboine, nine miles from Fort Garry, and is marked on the map which accompanies this report. On the 16th September, the day I visited Mr. Gowler's house and farm, nearly all farming operations were over. A small stack-yard was filled with stacks of Wheat and hay; his barn, which was very roomy, was crammed with Wheat, Barley, Potatoes, Pumpkins, Turnips and Carrots. His roots were shortly to be transferred to root houses, which he had constructed by excavating chambers near the high bank of the Assiniboine, and draining them into the river. The drain was supplied with a close and tightly fitting trap, which was closed when the water rose during the spring above its mouth, which at that time might be 8 feet above the level of the river. The chambers were about 9 feet high, and their ceilings 3 feet below the prairie level. Access was obtained through a hole in the ceiling, which was covered with a neat little moveable roof. There were three of these cellars or root-houses before the dwelling-house, and between it and the river. Frost never entered them, and he found no difficulty in preserving any quantity of Potatoes and Turnips through the severe winters of this region.—Mr. Gowler farmed 50 acres in white and green crops, hay and pasture being furnished by the prairie. He owned much more land, but found it useless to crop it, as no market for surplus produce existed. Last year he had sold many bushels of Potatoes at 6*d.* per bushel, and had carted them 9 miles. I had been previously informed of the extraordinary success of Mr. Gowler in growing Wheat, but I found upon inquiry that the practice he employed was simply not to grow Wheat after Wheat; he had grown 56 measured bushels to the acre. The price of Wheat at the time of my departure was 4*s.* 5*d.* sterling a bushel, but last year at the same time it had been 3*s.* 6*d.* sterling. His Turnips (Swedes) were magnificent; four of them weighed 70 lbs., two weighed 39 lbs., and two others 31 lbs. Whatever manure his yard and stables supplied he gave to green crops and the garden. A portion of the Potato crop was still in the ground; they far surpassed in quantity, quality, and size any I had ever seen before. Mr. Gowler very kindly turned them up out of the soil wherever I pointed out. I counted 13, 14, and 16 Potatoes, averaging 3½ inches in diameter, at each root. They were a round white-skinned variety, and seemed to be like those known in Canada as the 'English White.' The Potatoes were planted on the 1st June, and were ready for eating on the 16th or 18th August. The winter supply was rarely taken out of the ground before the beginning of October. The greatest enemy to the Turnip crop is the cut-worm (the grub of an elater). Indian Corn succeeds well on Mr. Gowler's farm, and Onions of rare dimensions were growing in his garden. He had had this year a splendid crop of Melons, the seed being sown in the open air at the end of May, and the fruit gathered about the 1st September. At the time of my visit the Melons had all been consumed, but I had several opportunities of tasting and enjoying this fruit, at Fort Garry and elsewhere, on the Assiniboine and Red River. In every instance they were grown in the open air, without any artificial aid beyond weeding, from the time the seed was planted to the maturation of the fruit. Mr. Gowler insisted on my tasting his wife's cheese, and smoking his tobacco, before I departed. The cheese was tolerable; the tobacco, which was grown in the neighbourhood and highly prized by Mr. Gowler, was dreadfully strong, and would involve, I should think, long training in order to acquire a taste for its qualities. Nevertheless, Mr. Gowler preferred it to some excellent Fig-leaf which I offered him; he remarked that he had grown and prepared it himself, and knew what it was. I may here relate, with a view to show how long old associations linger in the recollections of the European portion of the population in this remote region, that when I sat down to table Mr. Gowler turned inquiringly to his wife saying, 'And where is my plate?' 'Oh, John! you would not think of sitting at table with gentlemen?' Mr. John seemed puzzled for a moment; his son-in-law and children were looking in silence from different corners of the room. He cast a hasty glance around, and the true feelings of independence and manly right showed themselves, as he exclaimed, 'Give me a chair and a plate; am I not a gentleman, too? Is not this my house, my farm, and these my victuals? Give me a plate.' Mr. Gowler had been in Rupert's Land for I think 23 years. His native county was Cambridgeshire. He considered the Assiniboine River to be a 'Paradise of fertility,' and all that was wanted in his opinion to make it a region which, if known, would soon attract a large emigration, found expression in the words 'market' and 'labour.' I venture to introduce here some remarks which Mr. Gowler made, as he accompanied me to the gate of his farmyard, where my horse was tied. 'Look at that prairie; 10,000 head of cattle might feed and fatten there for nothing. If I found it worth my while I could enclose 50, 100, or 500 acres, and from every acre get 36 to 40 bushels of Wheat year after year. I could grow Indian Corn, Barley, Oats, Flax, Hemp, Hops, Turnips, Tobacco, anything you wish, and to any amount, but what would be the use? There are no markets; it's a chance if my Wheat is taken, and my Potatoes I may have to give to the pigs. If we had only a market you'd have to travel long before you would see the like of these prairies about the Assiniboine.'—The substantial character of the barn, stables, and piggeries, all constructed of wood, their neatness and cleanliness, the admirable arrangement of the hammels for cattle and the sheds for sheep, all showed how far a little energy and determination, instructed by the experience of earlier years, would go in reproducing amidst the boundless prairies of Assiniboia the comforts and enjoyments which are by no means the rule among the small farmers of Great Britain. I have brought specimens of Mr. Gowler's Barley, Wheat, prairie hay, and Carroway seed, which I took at random from the stacks in the yards, or from the garden, where the last-named fragrant herb was growing largely. I regret to say that a few days before my visit the grasshoppers had arrived from the south-west, and consumed in a single day every green leaf in the garden, which remained exposed to their attacks."

One rather important fact remains to be added. There does not appear to be any serious danger from the native Indians. The exploring party met with no opposition from them, although the natives did not approve of its visit, and had no mind to help it on its way. Notwithstanding the length to which these remarks have extended—not too great let us hope considering the intense interest of the subject to this country—we must find room for a part of the conference that took place at the Lake of the Woods between Professor HIND and an Indian Chief:—

"*Chief.* 'Tell them all these they see around me are my own tribe. It is our custom to smoke before talking. We shall follow the practice of our fathers.' About half-an-hour was devoted to the distribution of tobacco, the filling of pipes, and the smoke, after which the chief resumed.—*Chief.* We do not think you will start to-day, we wish to know what you are doing in our country (to the interpreter), what are these men, are they ministers, surveyors, or what are they?—*Reply.* We are instructed by our chief to journey to Red River, and have been told to take this route.—*Chief.* We have heard that you have been gathering flowers, what does that mean?—*Reply.* To amuse ourselves when on the portages or in camp; we have gathered your flowers because some of them we have never seen before.—*Chief.* The white man looks at our flowers and trees and takes away the Indian's land. Did these men see nothing near the Fort on Rainy River?—*Reply.* They saw nothing extraordinary.—*Chief.* Did they not see a grave near the fort? A single grave: a chief's grave. All these people here are descendants of that chief; and they do not know for what purpose you have been sent here, or why you pass through this part of our country.—*A Brave.* Why did their chief send them by this route?—*Reply.* Our government gave orders to our chief and he told us to go by this route to Red River; they thought it was the shortest way; we are not traders but messengers.—*A Brave.* Why did you not go with your chief?—*Reply.* Our chief sent us, and waits for us at Red River. He will return by the Rat Portage, and give every explanation to you; he will return in three weeks.—*Chief.* We think you want to do something with these paths, and that is the reason why you have been sent.—*Reply.* We have been sent by this route because it is the shortest, and we have to obey our instructions. We ask you now to send us one of your young men to show us the road; we shall pay him well, and send back presents to you; what do you ask?—*Chief.* It is hard to deny your request, but we see how the Indians are treated far away. The white man comes, looks at their flowers, their trees, and their rivers; others soon follow him; the lands of Indians pass from their hands, and they have a home nowhere. You must go by the way the white man has hitherto gone. I have told you all.—*Reply.* We paid you for your corn in tobacco; we tell you now that we are anxious to go by that Muskeg Road to Red River, because we have learned that the path is travelled by the Americans (Long-Knives); we want to see if it be true, if they come through this country, and what these white men are doing. Remember, we are your friends, and we shall be glad to be always friendly with you.—*Chief.* Why did you not say that at first; we know you had good reason for going through those bad paths?"

In conclusion we may recommend Mr. HAZLITT's work on British Columbia* to favourable notice. Although a very imperfect compilation by a gentleman unacquainted with the country, it is the only work to which the public can have access; and it contains long extracts from a communication made by Colonel COLQUHOUN GRANT to the Royal Geographical Society on the subject of Vancouver Island.

ANOTHER FLY LEAF.

[(*See p.* 925, 1858.)

I NEVER like doing things by halves, that is to say, when my advice is asked and given, I am always anxious to know the result. This therefore is the only plea I have to offer for paying a second visit to —— Castle to see my young friend Tom, who when we last parted was "halting" between two opinions.

Never afraid to show my face, I walked up to the garden door as bold as brass. "Good morning," said I.—"Good morning, sir," said Tom, "glad to see you. Come in, come and see this." Following Tom at the rate of four miles an hour, without speaking a word, we soon arrived at the Calceolaria pit where we last parted. "There now sir," said Tom, with an air of importance, "what do'e think o' that? That rather licks 'em, don't it? Five hundred and seven there, sir, and there hasn't so much as one looked o'er its shoulder. There they are, sir, you can see for youself; I did as you said, and I ain't sorry for it."—"Glad to hear it, Tom," said I. "Now don't you think that knowledge is worth a Fly Leaf?"—"Worth a Fly Leaf?—worth a five pound note to anybody. I wish I could trump every trick in the same style. How would Verbenas do? I find I'll be rather short on 'em. If I could hit on a plan of doing 'em off in that way, why I could soon stock a nation." "You may do that very easily, Tom," said I, "if you go the right way about it. What have you got in the mixt pit?"—"Cauliflowers, sir; rather strange, isn't it, that they should want the same treatment as Calceolarias in winter? This other is a deal of money sunk to no manner o' purpose; it's too big for a pit and it's too small for a house—in fact it isn't any use whatever; I wish it were down."—"Down," said I, "why not use it as a propagating-house? You cannot have a better. You are short of Verbenas, you say; don't you want anything else?"—"Of course I do; I wants all I can get in the way of bedding."—"Well, Tom, there are two beautiful slate shelves," said I, "not too far from the glass, with, let me see, ledges about 3 inches high. Now, if you will fill these up with clean-washed drift sand, put through a fine sieve, you might here strike bedding-out stuff for

* *British Columbia and Vancouver Island, &c., with a Map.* By W. C. HAZLITT. 12mo. Routledge. 1*s.* 6*d.*

the million. Look you," said I, scoring on the slate, as a schoolmaster would do on a copy-book, "suppose this to be on the sand, each line an inch apart, or such a distance as your cuttings will not touch each other when put in—no black art is required here—dibble in your cuttings the same distance apart in the lines; give such as Verbenas, Lobelias, Ageratums, Cupheas, &c., plenty of water to keep them up, and I'll guarantee 99 out of the 100 to succeed. Bottom-heat is unnecessary; only keep up comfortable greenhouse temperature. At this season, in a fortnight or three weeks all the plants I have mentioned will be rooted and ready to pot off in 2½ inch pots. Petunias like to be shaded from strong sun when it comes, and they do not require much water; Scarlet Geraniums do not require much water either, but all the sunshine you can give them. I might, however, stand here and preach to you all day, and yet do you no good if you don't try. Practice makes perfect, Tom. Try; that is the way to get on. I know a place where they will this season plant out no less than 40,000 plants, the greater part of them propagated in the way I have described; and were you to see the little convenience for so doing you would think it impossible to turn out as many hundreds. Now, Tom," said I, "I think I have just told you as much as you will think of at once. I may call again in the summer time to see what your beds look like, when we may have a gossip about them." Tom thanked me, shook hands heartily, and wishing each other a happy new year we parted, even better friends than we met. *An Old Showman.*

Home Correspondence.

Vines at Raby.—Having perused Mr. Roberts' doleful letter on the above Vines, and the chapter of accidents connected therewith, I should have let the matter rest, as far as I am concerned, but for one paragraph. Mr. Roberts says, "I cannot think that his love for a theory will induce him to repeat the process throughout the range," meaning the replanting of the Vines. It appears that in 1812 Mr. Roberts published a work on the Vine (did he write it?), in which he starts a theory which he is unable to carry out; he attempts to teach a practice to others he shrinks from following himself. He recommends carrion for borders, while he states he does not employ it: so much for "practical authority"—one at least I shall not follow, as I do not wish to build on another's foundation, not wishing to risk the chance of a crop, by tinkering up the old rotten borders, and trusting to fibreless Vines. Having already replanted the Vines in one house and part of a second, an account of the borders and Vines may be interesting. The bottom of the borders was concreted in a very efficient manner; over this a good layer of broken bricks, the interstices of which had become filled with a fine aluminous mass, I believe from percolation; over this from 12 to 14 inches of a tenacious clayey mass containing a great quantity of whole bones and large stones (some of them 6 and 8 stone weight); over this a quantity of dark-coloured soil containing strong traces of partially decomposed vegetable and animal matter. This upper soil appeared in layers, as if put on at various periods. In this the whole of the roots were found; remains of dead roots were visible in the lower tenacious mass, but appear to have perished some time back. The borders when first opened emitted the effluvium too frequently perceived in old crowded graveyards. I am inclined to believe that one cause of the sour solidity of the border was caused by the large quantity of fermenting materials used for several months in the year; the drainings from this and the filling up of the interstices of the broken bricks having caused the borders to become anything but genial to the growth of Vines. The wood in the first house was bad, that in the second worse, as it is not ripe, and very poor. Mr. Roberts states that "the wood in the first and second house was indifferent, but in the third and fourth very good, and the fruit equally good and a very heavy crop." When I came to Raby no Grapes had been cut out of the fourth house, and very few from the third. I consider the quantity anything but heavy. Bunches enough in all conscience! But oh, such bunches! I firmly believe not one would weigh 1½ lb., the average being below ½ lb., and the berries small. As for the Nice Grape, spoken of, which by-the-bye has oval berries, I have seen much larger shoulders of bunches at Welbeck than any one whole bunch in the gardens of Raby, and I must add that the Grapes from a flued wall at Selby, 3 miles from this, were infinitely superior in size, colour, and form. I was told by authority it would not be right for me to dispute that instead of the Grapes improving they have gradually grown worse, anything but creditable productions of a model Vinery; and I doubt not Mr. Roberts has had more than one complaint of their inferiority. Now for these "model Vineries." I will take Mr. Roberts's measurement, viz., 164 feet long by 18 feet wide, a creditable size—sufficient to supply any reasonable family. The four houses are heated by two boilers, and two rows of 6-inch pipes in front; well, what did this model range cost? Near 2000*l.*, exclusive of endless after-claps in alterations, ventilation, &c. The borders are 20 feet wide, in front of which runs a large flue to carry out some grand theory not explained; but from some unfortunate accident or ignorance in the construction it refused to act, as the smoke would not travel. The houses are heavy and dark, the squares being only 6½ inches wide, glazed with as good sheet glass as I ever saw; in fact, such as will be used in the two new houses now erecting. It is not everybody that can afford to spend such a sum on model Vineries, and God forbid they should; much more ought to be, and can be obtained for that sum, and satisfaction given. Mr. Roberts states:—"My employer wished to have one house forced to supply early Grapes for town, a second house soon followed." But why should a "second house soon follow?" Simply because the first house failed, and the blank must be filled from some quarter—this was why the second followed. When a person fills a gardener's situation for emolument more than employment, he is apt to let the sun get up before him in a morning, and scorch his Vines before he is out of bed, and some people are so stupid that air must only be admitted at a certain hour! Then oh! this sheet glass, I wish I had never seen it; but the Grapes are gone, and my lord has the honour of keeping a gentleman to carry out his theories at an endless expense, and nothing to show for the outlay. In the gardens at Raby is an old Vinery planted by the predecessor of Mr. Roberts, the borders of which I am told have not received a dose of "the pabulum to produce the nectar of Bacchus;" how the border was formed I know not, nor do I intend to disturb it, as with a little care the Vines can be brought round. These Vines are in a far better state than any in the model range, although I am credibly informed they have been doing double duty for some time; even here some "irregularities occur," as the favourite theory has failed also, and no sheet glass to blame. In conclusion, I may add that the Vines in the first house replanted have broken down to the lowest eye very regularly, and much stronger than I anticipated. The practice, not theory, of replanting will be carried out through the whole range; and as many of the old Vines are useless or past redemption, young strong Vines in a bearing state are at hand to fill the vacancies, and 50 or 60 others to fruit in pots to fill the blanks. The model houses are open to the inspection of practical men; the Vines are many of them unpruned; and the border can be opened for inspection till such time as the work of replanting is commenced, AS THERE IS NO DANGER OF INJURING THE ROOTS. *K. Short, Raby Gardens, Jan. 4.*

Fall of Rain in Sussex in 1858.—

	Museum, Chichester.	Westdean in the Downs.
January	1.00	1.74
February	1.21	1.13
March	0.96	1.66
April	2.11	2.83
May	1.72	2.31
June	0.47	0.63
July	2.52	3.58
August	2.85	2.71
September	1.77	2.57
October	1.73	2.29
November	1.37	1.82
December	2.87	3.86
	20.58	27.07

These two stations are only a few miles apart. *H.*

Avenues at Kensington Gore.—I think Mr. Brown refers to the Norway Maple, not to the common Sycamore, as desirable for avenues. He is right in his observations as to the beauty of colouring of this tree, but the general form of the tree is rarely good. In combining beauty of outline with beauty of foliage, perhaps no hardy deciduous tree comes up to the Oriental Plane. I think in your list of desirable trees you did not notice the Abele, which I think thrives well in London, and is sometimes very handsome. I have a word to say on your remarks about the merits of different kinds of Roses, in which I entirely concur. Why should not the Horticultural Society form a committee to investigate the hardiness and other merits of Roses? They could do it very well if they would do so. *C. W. Strickland, Hildenley.*

The Cottager's and Asparagus Kales.—I am a great lover of such tender and delicate flavoured members of the Cabbage tribe as young Cabbages in May and Cauliflowers in the summer, but for most of the tribe of "greens," such as Savoys, Kale, and Brussels Sprouts, even when cooked with the greatest nicety as to colour and tenderness, I have no great liking—rather the contrary. Even White Broccoli are, to my taste, strong, for they have a slight Cabbagy smell and taste, the former perhaps the most disagreeable of all smells. Premising this, I hailed the advent of the Cottager's Kale, which was so highly lauded, and procured some seed from Mr. Turner. My plants are now 3 feet high, and most of them full of sprouts at their sides. There are however many among them untrue, and varying from pink to purple in colour. I do not blame the seedsman for this; it is merely unfortunate for him that the seed was grown by some one who did not look sharply enough into his neighbours' gardens, and so the bees, with their usual industry, hybridised his Kale, and made the seed produce some very uninteresting varieties. The true kind, as it appears to me, has rather light green curled leaves (as if it were a hybrid of the Brussels Sprouts) and numerous open sprouts up its stem. No vegetable of the kind can be more sweet, tender, and excellent, without the least Cabbagy flavour. I shall most certainly never grow another plant of the Brussels Sprouts, which although such pretty little green knobs when brought on to the table, either *au naturel*, or with savoury sauce in the continental way, are always strong when cut open. There is another Kale which I do not think is new, but it is not in the seedsmen's lists—the Asparagus Kale. I received some seeds of this from a great garden lover in South Wales. The plants are like Swedish Turnips without the bulb, growing close to the ground without any stem; its leaves are of a light glaucous green, and its leaf stalks whitish green. It throws up its sprouts in March; when they are about 6 inches long they should be cut, tied in bunches like Asparagus, and cooked. When I say that, if possible, they are more tender and sweet than even the Cottager's Kale, I have said enough. They are, indeed, almost as good as Asparagus, and very superior to Sealkale, however well blanched. *Brassica.*

Exotic Ferns hardy in the South of England.—The *Gardeners' Chronicle* asks or suggests southern tree Ferns might do in Cornwall and Devon. I have had the beautiful Cyathea dealbata out some years, but it does not grow up. A very handsome one to plant at the foot of an old wall or a mossy tree, up which, in time, it will climb, is Phymatodes Billardieri. The Allantodias succeed well here, Lomaria alpina, and particularly Cyrtomium falcatum, Lomaria chilensis, Pteris cretica finer than ever in a greenhouse, and Polystichum falcinellum. Asplenium lucidum has lived out some years here, and Woodwardia radicans and Adiantum Cunninghami or Cummingi—I know not which. Some of the so-called hardy North American are harder to preserve than any of them. *I., Abbotsbury, Dorset.*

Trees for London Avenues.—I read an article on alleys of trees for towns; there must be some oversight. Ulmus sinensis I never saw but as a small evergreen weeping tree, not fit for a street, and tender at Kew. Acer platanoides must be meant—not pseudo-platanus; the former is the more ornamental. Evergreens would become too dirty; clean leaves are as requisite as clean linen in London. Turkey Oaks I should say were the best of all—quick growers, straight, stately trees, and of all Oaks singular in growing one like another, almost to a pattern. *I.* [Undoubtedly the statement respecting Ulmus sinensis was a mistake, as we hinted. The leaves sent us were not recognisable, having been smashed in the Post Office. They probably belonged to Ulmus glabra.]

Death's Head Moth.—I received a letter the other day from a most intelligent natural historian and reliable correspondent, a passage in which exhibits the tenacity of life in these creatures in such a marked manner that I thought it might interest your readers. "Had you an unusual supply of Death's Head caterpillars and moths this autumn? Both have been unusually numerous here, although I could only get three or four perfect moths. One I found amongst some growing Potatoes on our premises, and proceeded to kill and set it up. I first chloroformed it, then punctured its chest with a small tube containing prussic acid, and cut open and emptied its abdomen, dressed the inside of the skin with creosote and spirits of wine, and stuffed it with cotton wool. I then displayed it on a board with the wings open and fastened by pins, and concluded all would be right; but on going to the creature next morning I found it had upset all the pins (except the one in the thorax), had got its wings closed, and when I touched it it emitted the grating shriek so peculiar to the insect. I of course immediately set to work and killed it again, by blowing the prussic acid out of the tube into the chest or thorax. I obtained about 30 chrysalids from men 'Tater-lifting,' but only one became a perfect insect; about six others hatched in an imperfect state, their wings being undeveloped (some of them not more than a quarter of an inch long); the other chrysalids died in the earth." *Wm. Marshall, Ely.*

Cox's Orange Pippin Apple.—In my capacity of judge at the exhibition of fruit in Willis's Rooms in 1857, I ate of this Apple and placed it in my estimation as one of the most delicious I had ever tasted. It was again exhibited at St. James's Hall last November, and I took an opportunity of eating a portion of a fine specimen, feeling a wish to know if it sustained its reputation. I found it most decidedly inferior to the specimens I had tasted in 1857, being simply a good Apple, sweet but not very juicy, and with scarcely any aroma. Bearing this in mind I to-day visited my fruit cellar to have a "bout" at Apple tasting. My first essay was with a medium-sized fruit of Cox's Orange Pippin; it was yellow and beautifully streaked with red. To my great delight I found it most delicious; flesh sugary and tender, yet crisp, with a fine aroma, and so full of juice that it seemingly gushed out and filled the mouth when only slightly crushed with the teeth. In this respect it differs from most of our good dessert Apples at this season, for they nearly all require grinding down with the teeth before their juice and flavour are brought out. My fruit were grown on dwarf trees growing in a heavy dark coloured soil, with strong calcareous clay underneath. *Thos. Rivers, Jan 10.*——As one of the judges of Apples at the late show will you allow me to express my admiration of Cox's Orange Pippin both as to appearance and quality. Ribston Pippins were not fairly represented there; there were no really fine specimens shown. *C. W. Strickland, Hildenley.*

Rose Seed.—Last March I received from a nurseryman a packet of H. P. Rose seed, which was then sown in a seed-pan and placed first in a moderate hot-bed along with my Balsams, &c., and afterwards in a greenhouse; but up to this period not a single plant has made its appearance. Upon my representing the circumstance to the party who supplied the seed I was informed that "it took two years to vegetate." Is this really the case? It appears to me strange that it should be so, because in September, 1856, I sowed some seed of a double summer Rose, saved by myself the preceding

year, the whole of which came up in about five weeks afterwards, and the plants blossomed splendidly last summer, 21 months after the seed was sown. While on the subject of Roses, may I ask how it was that at the great Rose Show, held in St. James's Hall last autumn, there did not appear, so far as I could discover, a single bloom of H. P. "Bacchus?" In 1857 I obtained two small plants of this variety for 10*s.* 6*d.* each. One of them was planted in a cold frame, where it remained throughout the winter, and the other in the open ground. From the beginning of June until the end of August last the former produced a succession of magnificent blooms, quite as double and superior in size and colour (the latter being more persistent) to its parent "Géant des Batailles," while the other in comparison appeared very insignificant. I am therefore led to believe that this Rose must be of a rather delicate habit; it however puzzles me to know why it was not present at the "Court of Roses" in question. Perhaps Mr. Paul or some other of your correspondents may be able to throw some light on the matter, for the variety is certainly well worth cultivating, although expunged from sundry Rose catalogues for 1859 now before me. *A Subscriber, South Wales.* [Rose seed is very capricious. If you sow a bushel you will find part come up the first year and part the second.]

Autumn and Spring-struck Scarlet Geraniums.—If well managed good plants of scarlet Geraniums may be obtained by propagating them in March, but if cuttings struck in September or October are equally well managed they will be by far the best at planting-out time; if however the spring-struck cuttings are grown well and a thumb pot only is devoted to the autumn-struck ones until turning-out time, say the middle of May, then the spring stock will have the advantage, for if the latter are turned out of 4-inch pots it is evident that the roots of these are in a much better condition to take hold of the new soil than those that have been cramped in thumb pots during a period of six or seven months. Under these circumstances, after the spring-struck stock is turned out, they start into growth sooner and grow more vigorously than the autumn stock; but we must bear in mind that if the latter be well treated they will be in beauty a month earlier than spring-struck cuttings. It is also much more convenient to have autumn stock in the busy months of March and April, when every inch of room is a consideration. We may shift it about the latter end of February or in March from small pots into larger ones, and then set it anywhere out of the reach of frost. Or if pots are scarce, about the latter end of March beds may be prepared in sheltered situations and the plants turned out, protecting them in severe weather with mats or any other material that will answer the purpose, and thus we get pots and room for other fast growing bedding plants which cannot be obtained satisfactorily with spring stock, as the roots would not be sufficiently matted to hold together a ball of earth when lifted for planting in the flower garden. *A Propagator of Autumn and Spring Bedding Geraniums.*

Rendering barren Fruit Trees fertile.—It fell to my lot some 10 years ago to take charge of some barren old Pear trees with long spurs full of cankers. Although I took a different course from the one you have lately been advocating to render them fertile, I have the satisfaction of observing that all the old stocks are well filled with bearing wood. The horizontal branches were all cut off and a graft or two put on the stumps or short arms, except in some places where buds were inserted and allowed to replace the branch; those put on in the shape of buds make less wood than the others, but are very productive. The trees first grafted have nearly covered the walls; they bore fruit freely on the second year's growth, and the year after the produce became greater. I allude to this to show that it would have been a mistake where there is a great consumption of winter fruit to have torn up the old trees and planted young ones. In the latter case I should have had to wait long and patiently for the first fruit bud (unless root-pruning had been resorted to), while now I have plenty of growth and abundance of fruit. I think grafted trees will continue longer in bearing than if buds had been inserted in branches. I may mention another fact not a little interesting. Last spring a Barbarossa Vine produced bunches somewhat irregularly, leaving a longer space without fruit than I liked to see. I took a shoot from its neighbour, a Hamburgh, with a bunch just coming into flower, inarched it, and put a small bottle of water to the end of it. This was done merely as an experiment, but to my astonishment every flower became a berry. The bunch progressed and was to every one here a curiosity; it coloured well and became a compact little bunch in September. *Thorp Perrow.*

Pomeloes or Forbidden Fruit.—I would feel obliged by your giving me the botanical name of the fruit sold in Covent Garden market under the name of Pomeloes, or Forbidden Fruit, and if they are really the fruit so called. *Ignoramus, Exeter.* [The fruit to which our correspondent alludes we believe to be a variety of Citrus decumana, the Shaddock of English gardens, and the Pompelmouse of the French. As to what is *really* the Forbidden Fruit, we confess we are not sufficiently acquainted with such subjects of antiquity to give a decided opinion. We may, however, observe that Dr. Sickler, an authority on this class of productions, considers the fruit in question to be a variety of Citrus medica, or Citron; while MM. Risso and Poiteau, in their beautiful work entitled "Histoire Naturelle des Oranges," regard the Forbidden Fruit as being a small variety of Shaddock. We are unable to say which conjecture is right, there being as much uncertainty about it as there is about the "Golden Apples" of the garden of the Hesperides which Juno gave to Jupiter on the day of their nuptials. *B.*]

Fungi attacking Silkworms.—In 1856 I purchased a few dozens of silkworms in Covent Garden market of various sizes, and carried them to Catteris Romford, where I had two very large fruitful Black Mulberry trees. The larger worms soon became sick, and died one after the other, and instead of being solid their bodies were chiefly a mass of fluid. The situation being very favourable for the growth of moulds, ripe Mulberries in still weather even being attacked before they fell off the tree, and knowing that the atmosphere of an attic was not so likely to suit Fungi, I removed the remainder to the top of the house, a fourth story, and when that was done the progress of the disease was retarded. All however died 10 days after I had purchased the worms. I went to the party from whom I had them, and in answer to very inquisitive inquiries, I learnt and saw that those from amongst which mine had been taken were quite healthy and well. I would have repeated the experiment had I not had to leave the south, as I was desirous of avoiding the cause of illness, which was occasioned by having kept the worms in a paper bag for about 3½ hours, and then having given them fresh leaves, of which they ate rather voraciously, while they would have been accustomed to rather dry leaves in Covent Garden. *W. Wooler.*

Choice of trees for planting in a very gravelly situation.—Would some of your readers skilled in arboriculture say whether any, and if so, which of the trees recently recommended to be planted in the new roads at Kensington Gore would thrive in St. Giles' Oxford, where the soil is for many feet deep a thoroughly drained gravel, with only a very thin face of mould? The authorities of St. John's College are desirous of having the best advice previous to planting, and that is to be obtained in the pages of the *Gardeners' Chronicle.* *J. O. W.*

Notices of Books.

Horticultural Society of London. Reports of the Fruit Committee. Report on the Great Fruit Show held in St. James's Hall, Piccadilly, 8vo. Sent gratis to all Fellows of the Society, upon application.

In these pages we have in the first place an official account of what the Committee found most noteworthy in fruits and esculents exhibited in Regent Street during the last autumn. The information thus collected proves a good beginning of what we trust may in time become a very important department of the Horticultural Society. Among other matters of interest we find the following note upon the Chinese Yam.

"*Vegetables.*—Messrs. Ivery and Son, Dorking, exhibited nine roots of Dioscorea Batatas, accompanied by the following letter from Mr. James Ivery, F.H.S.:—'I have sent nine roots of Dioscorea Batatas, thinking they may be interesting to the meeting. The three largest roots were obtained from whole roots planted the first week in April, and then weighed about 1 lb. each. The other six roots were obtained from cut sets planted at the same time, and side by side. The ground was trenched to the depth of 3 feet, and had a good coat of hot-bed manure; they were planted 1 foot apart in the row, and 2½ feet between the rows (there being only two rows). When they began to grow, I had them sticked with Pea-sticks, but for these the plants soon got too strong, and I then had placed between the two rows some Fir-poles, to which the plants soon clung, as the points of the shoots twist round the pole, in the same manner as those of the Hop. The foliage of the plant is very ornamental; and the bloom, though small, is very fragrant.' The roots were very fine; the largest weighed 4 lbs., and when taken up 4 lbs. 6 oz. The above mode of cultivation may therefore be recommended. It is reasonable to suppose, that, as the plant is adapted for twining, its foliage will be in a more natural position, and better exposed to light, when elevated, then if left to trail on the damp soil; and will consequently better elaborate sap for the production of roots of larger size, and superior quality."

The report of the GREAT FRUIT SHOW in St. James's Hall in last November is a masterly description of the crowd of articles there produced. The author is Mr. Hogg, assisted by Mr. Moore and Mr. Thompson. "Such," says the reporter, "was the quantity of fruit exhibited on this occasion, that it was found impossible to examine the whole of it minutely. Notwithstanding that the reporters applied themselves most assiduously to the work for two whole days, no time was left to enter upon the examination of the characters and relative merits of the Apples, and consequently they were obliged to be passed over. The reporters regret that the responses made to the schedules issued by the Committee were so few. The object of these schedules was to ascertain particulars respecting the climate, soil, and subsoil of the locality where the respective fruits were grown, and the circumstances under which they were produced. Such of these schedules as were returned filled up have been incorporated in the Report; and, where such is the case, it will at once be seen how desirable it would have been if similar information could have been given in every instance." Let us hope that this gentle hint will not have been thrown away on our gardening friends. We extract two or three notes, which will be welcome to some of our readers.

"*Pine Apples.*—The seedling from Mr. Oates, gardener to the Right Hon. Lord Leigh, Stoneleigh Abbey, Kenilworth, was, however, submitted to the judgment of a committee, the report of which is as follows;—'The fruit weighs 3¼ lbs.; is of a conical shape and pale orange colour. The pips are rather large, flat, and depressed in the centre, and the scales cover one-third of their surface; the intermediate space between the pips forms spiral ridges round the fruit. The flesh is yellowish, solid, and tender, very juicy and free from fibre, brisk, sweet, and well flavoured. A better late Pine than the Queen.'

"*Muscat Grapes.*—The three bunches exhibited by Mr. Drewett were objects of universal admiration, and were excellent examples of first-rate culture. They were large, handsome, and well set; the berries also were large, of a fine amber colour, and almost as uniform in size as if they had all been cast in the same mould. Their flavour was rich, and the Muscat aroma was delicate and subdued. [See our own report p. 846 of last year.] Those of Mr. Crawshay were longer and very much narrower in the bunches, less shouldered, and not nearly so highly coloured. Their flavour was more piquant, and with a more powerful aroma, but not so delicate and sugary in flavour as the former."

Apples.—The first prize having been won by Mr. Newton, gardener to G. J. Graham, Esq., of Enfield Chase, whose fruit has, for two successive seasons, possessed extraordinary beauty, we have the following useful account of the circumstances under which it was produced. "In Mr. Newton's schedule it was stated that the locality is in North Middlesex, sheltered from the north by Lime trees, from the east by Scotch Firs, from the south by shrubberies, and from the west by buildings. The soil is turfy loam 1 foot deep; subsoil yellow clay, with veins of gravel. The surface slopes to the south 1 foot in 50. The fruit was all grown on standard trees, which are of middle age, healthy and vigorous, and grafted on Crab stocks. The orchard is laid down with Grass, and was manured with 16 cart-loads of manure to the acre in 1856, and in 1857 it was drained with pipes 4 feet deep. The cross branches are pruned out every two years."

Phycologia Australica, or a History of Australian Seaweeds. By W. H. Harvey, M. D. Vol. I. 8vo. tab. pict. 60. 1858.

The plan of this admirable work is precisely that of the Phycologia Britannica, which has done so much not merely to advance the knowledge of seaweeds, but to recommend a delightful pursuit to many of our countrymen, who have found in it a relief from care and anxiety, and a pleasing employment of many an hour which would otherwise have proved dull and objectless. It may seem at first sight a hopeless task to bring out a work like the present, which from its very nature can only have a limited circulation. There is, however, a growing taste amongst our brethren in the southern hemisphere for accurate illustrations of the beautiful objects of natural history with which they are so richly and even redundantly surrounded. Much has been done to foster and excite such a taste by the splendid works on New Zealand, Tasmania, and other southern isles, which have been published by Dr. Hooker under the auspices of the Government; and while the colonial authorities have not been backward in promoting a spirit of research, the demands of the colonists themselves are pressing enough to give a certain degree of encouragement to works which can at the best merely be expected to pay their way, without any prospect of emolument. It is hoped, however, in the present instance that in addition to the wants of the especial student of this attractive branch of botany, there will be considerable aid from those persons who are already in possession of the History of British Seaweeds. An acquaintance with the Algæ of their own coasts will, it is thought, excite their curiosity respecting those of another hemisphere, and, as the work is published on the same liberal terms as that with which they are so well acquainted, there is no doubt that many a copy will be taken by persons who are not professed Algologists, but who love to know a little of Nature in her more elegant forms. It is a work which can never be taken up without pleasure, and we sincerely hope that it will not prove a loss to the excellent author.

We must now say a few words of the work itself and of the circumstances which gave rise to it. At the solicitations of many scientific men, Dr. Harvey undertook in 1853 an expedition to the southern hemisphere in search of Algæ. He had already fully investigated those of the Cape, and it was matter of interest to himself and others to be able to institute a strict comparison between them and the Algæ of more southern regions. He was assisted in the object by the University and Royal Society of Dublin, and a very numerous body of Algologists engaged to take specimens towards the payment of the heavy expenses inseparable from such a voyage.

Dr. Harvey was not however left entirely to his own resources on his arrival at the scene of his labours, for he received effectual and sometimes unexpected aid from several residents who were interested in the subject, and indeed in some cases their assistance was so valuable that he candidly confesses that he could not have arrived at a satisfactory completion of his object without it. The result of the expedition was a collection consisting of upwards of 20,000 specimens, comprising 600 species of Algæ. It is not intended indeed

in the present work to give more than 300 plates. Every genus however will be illustrated, and such a selection of species will be made as may give a correct general view of the riches of the marine flora of Australia.

As regards the execution of the work it may be confidently stated that the plates are upon the whole superior to those of the British Seaweeds; indeed we cannot point out one which is a decided failure, and wherever it has been possible copious details are given of structure and fructification. Dr. Harvey is not disposed to multiply genera needlessly; but where there is decided difference of structure and fruit he very wisely adopts or himself proposes a distinct genus. He treads in fact in the steps of J. Agardh and Montagne, without giving way to the vagaries of Kützing. The genera are necessarily founded on characters which are not to be ascertained without the help of the microscope, but the student will soon find that the habit alone will seldom lead him astray, and that differences of habit are for the most part accompanied by differences of structure. The characters of Cryptogamic plants must necessarily be more or less recondite; but those who would lay this as a charge against their study, should remember that in Phænogams the best characters are oftener those which are the least obvious.

In conclusion, we would express a hope that the work will be in the hands of botanists generally, and that it will not be confined to those who have been purchasers of the sets of Algæ which it illustrates.

TRADE LISTS RECEIVED.—*Messrs. Kennedy & Co.'s* (Dumfries) *Catalogue of Selected Vegetable and Flower Seeds.* This is one of the most convenient lists we have seen. The *se*lection (let us rejoice in hearing no more of *col*lections) is good, and especially adapted to Scotland; there are nice figures of various tools and implements used by gardeners, and in addition there is a skeleton list for orders, which saves purchasers all trouble except that of inserting the quantities they desire to have.

Miscellaneous.

Society of Arts.—The sum of 100*l.* has been placed at the disposal of the Council of the Society of Arts by Sir Walter C. Trevelyan, as a prize to be awarded for the best essay on the applications of the marine algæ and their products as food or medicine for man and domestic animals, or for dyeing and other manufacturing purposes. Competitors must give the results of their original investigations on seaweeds, and they must prepare a series of specimens illustrative of the best modes of collecting, preserving, and preparing the several species. Mere compilations will not be admitted to competition. The essays, with accompanying specimens, must be sent to the Society of Arts by the 31st of December, 1860. Each essay must be marked "Essay on Marine Algæ," and must have a motto or distinctive mark attached, which mark must also be written on a sealed letter, containing the name and address of the author. The letters containing the names and addresses of the authors will remain with the Society of Arts, and none will be opened except that bearing the motto or mark attached to the essay to which the adjudicators award the prize.

Rat Tales.— Quite lately, in Paris, a specimen was given of the force in which rats can muster, where they have gained only a provisional footing. The historical Halles, or markets, having been re-built and re-arranged on a more commodious plan, the 26th of October last was fixed for the moving of the dealers in flour-stuffs, green vegetables, poultry, and Potatoes, from the ground they have occupied near the church of Saint Eustache to their new stalls and shops in the Halles Centrales. After the departure of the human tenants of the old provisional market, the workmen proceeded to pull down the sheds. Beneath these sheds a colony of rats had fixed their domicile for some time past. A regiment of boys, armed with sticks and backed by all the dogs of the quarter, mustered in a pack, awaiting the unearthing of the game from their cover. A crowd of spectators made the lofty buildings around re-echo with their shouts and their bursts of laughter. Several rats, alarmed at the disturbance and the barking of the dogs, climbed up the persons of the lookers-on, to find a refuge on their shoulders or on their heads. One girl, feeling a rat taking a walk round her neck, was so overcome with terror that she fainted. One thousand is the estimated number of rats who fell victims to this inhospitable reception; but it may be presumed that those who saved their bacon were in considerable majority. This is nothing to what occurs at Monte Video (unless it is greatly changed from what it was), where the only drawback upon the delightful way in which an evening may be spent, is the necessity of returning home through long narrow streets so infested with voracious rats as sometimes to make the way perilous. There are no sanitary regulations in the town, except those provided by the showers of rain, which at intervals carry off the heaps of filth from long-established resting-places. Around huge mountains of carrion, vegetables, and stale fruit, here accumulated, rats muster in legions. If you attempt to pass near these formidable banditti, or to interrupt their orgies, they will gnash their teeth at you fiercely, like so many wolves. So far are they from running off in affright to their burrows that they will turn round, set up an ominous cry, and will then make a rush at your legs in a way to make your hair stand on end. Between them and the venturesome stranger many a hazardous affray occurs, and though sometimes he may fight his way home victoriously by the aid of a stout stick, on other occasions he will be forced to fly down some narrow cross lane, leaving the rats undisputed masters of the field. * * * It is something to have made best French kid gloves out of the skins of Parisian rats, and best French beaver hats from their fur. A man of genius—a Swede, with an unpronounceable name—has done more. Lamenting probably the dearth of dramatic talent, he conceived the idea of raising rats to the dignity of tragic and comic stars. His training succeeded admirably. Hamlet, followed by a comic farce, acted by rats in a portable theatre, which the manager could carry on his shoulders from place, obtained a colossal success in Sweden and Germany. *Dickens's Household Words.*

Calendar of Operations.

(*For the ensuing Week.*)

PLANT DEPARTMENT.

CONSERVATORY, &C.—When it is found necessary to water the beds of this house choose a fine morning for the operation, and give enough to well moisten the soil, using lukewarm water for the purpose, and be careful to guard against damp for a few days afterwards by giving air, or when this cannot be done use sufficient fire heat to secure a gentle circulation of the atmosphere. Go carefully over the plants every morning, and remove any decaying leaves or flowers as soon as they are perceptible, for no amount of floral display will render a house agreeable unless accompanied by cleanliness and neatness. And as soon as the beauty of any of the pot specimens is over remove them to suitable quarters elsewhere, and supply their places with others in full flower. Do not excite stove plants at present; wait for longer days and more light.

FORCING DEPARTMENT.

PINERY.—There is often considerable difficulty experienced in getting the requisite number of plants to show fruit at this season, and where this is the case every advantage should be taken of mild weather to maintain a brisk temperature, which may be kept at from 70° to 75° by night, and 80° to 85° by day. The difficulty of getting plants to show fruit is generally the result of their growth not having been properly matured in time to allow the plants a period of comparative rest before subjecting them to forcing with the view of getting them to show fruit, and where any difficulty of this kind is experienced timely attention should be given to the preparation of the plants for another season, which is the only means of having them at command. All that can be done this season, however, with backward plants will be to take advantage of bright days to maintain a brisk temperature, letting it rise to 80° or 85° with sunshine, and 70° to 75° should be secured at night. Maintain a moist growing atmosphere, but do not syringe plants overhead that are showing fruit. Also see that the roots are in a properly moist state, using tepid water where any is wanted.

VINERY.—In houses being started use means to get the buds to break regularly, and where necessary bend the Vines, raising the backward buds to the highest point; maintain a moist atmosphere, and sprinkle the Vines morning and afternoon. When the buds begin to break the night temperature may be increased a few degrees, but it should not exceed 55° until they are all fairly started, and 65° by day should not be exceeded except with sunshine and air. Rub off all superfluous buds, taking care to leave the strongest ones, but in cases where there is any fear about the show of fruit, it will be advisable to leave all promising buds until the bunches can be perceived. It is only in cases, however, where the Vines are in a bad state that there need be any fear about destroying all superfluous buds as soon as this can be done. Admit air on every mild day, using a sufficient amount of fire-heat to maintain the proper temperature. Look well to the border, and see that it is protected from wet or sudden changes of weather; and where fermenting materials are used turn them as often as necessary, adding a small quantity of fresh leaves and dung, in order to maintain a steady heat.

FLOWER GARDEN AND SHRUBBERIES.

With the exception of pruning, or thinning and wheeling when the weather is frosty, little can be done in these departments at present. Any of the shrubbery borders which may require a dressing of fresh soil or manure should however be attended to whenever the weather is favourable for such work. Any alterations that may be in hand involving the removal of a considerable bulk of soil, cutting walks, or anything which can be judiciously done now, should be pushed forward expeditiously, in order to have the hands at liberty for the ordinary routine of spring work, which will be soon demanding attention. When out-door operations cannot be profitably proceeded with, see to getting an ample stock of stakes made and painted, also pegs, labels, brooms, &c., and put them aside ready for use when wanted. The preparation of these things is sometimes omitted until they are wanted for use, and then it is generally difficult to spare time for such tedious work; therefore see that there is a sufficient stock of all such things in readiness before the busy season arrives.

HARDY FRUIT AND KITCHEN GARDEN.

The pruning of orchard trees is a matter which is too frequently neglected, and the result is that the heads of the trees get so crowded with wood as to render a crop of fruit, except upon the extremities of the outer branches, not to be expected, and the thicket of worse than useless spray which the trees have to support is injurious both to the size and quality of the fruit, and also to the general health of the tree. Where this state of things has been allowed to prevail, advantage should be taken of the first opportunity to give the trees a careful pruning, thinning out the inner branches severely. In the case of large branches being cut off, the surface of the wound should be neatly trimmed off with a sharp tool and covered with a coat of paint to prevent the wet soaking into and rotting the wood. See to the protection of Lettuces, Cauliflowers, &c., under glass, by guarding them from frost; but take every opportunity of exposing such things to light and air. Introduce roots of Asparagus, Seakale, and Rhubarb into heat at regular intervals, so as to make sure of a constant supply. Rhubarb and Seakale do well on a shelf or the floor of a Mushroom house, where they are probably less troublesome than elsewhere.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the Week ending Jan. 13, 1859, as observed at the Horticultural Gardens.

Jan.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Temperature of the Air. Min.	Temperature of the Air. Mean	Temperature of the Earth 1 foot deep.	Temperature of the Earth 2 feet deep.	Wind.	Rain.
Friday 7	3	30.464	30.402	37	27	32.0	43	43	N.	.00
Satur. 8	4	30.503	30.580	38	23	30.5	42	43	N.	.00
Sunday 9	5	30.702	30.651	36	24	30.0	42	42	W.	.00
Mon. 10	6	30.695	30.567	45	30	37.5	42	42	S.W.	.00
Tues. 11	7	30.484	30.422	47	42	44.5	40	40½	W.	.00
Wed. 12	☽	30.426	30.366	48	31	39.5	43	42	W.	.00
Thurs. 13	9	30.443	30.414	42	32	37.0	43½	43	W.	.00
Average		30.545	30.486	41.8	29.8	35.8	42.2			.00

Jan. 7—Clear throughout; slight frost at night.
— 8—Cloudy; slight shower of small granular snow; fine; overcast.
— 9—Frosty; foggy; fine; clear and frosty.
— 10—Fine; uniformly overcast; fine.
— 11—Fine throughout.
— 12—Fine; clear at night.
— 13—Fine; cloudy; fine at night.
Mean temperature of the week, ½ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 33 years, for the ensuing Week, ending Jan. 22, 1859.

Jan.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday16..	41.9	31.4	36.7	19	0.34 in.	1	7	5	1	5	7	4	3
Mon. 17..	42.5	31.0	36.7	11	0.48	3	6	2	3	3	8	4	4
Tues. 18..	42.6	31.3	36.9	13	0.55	3	6	2	3	2	9	5	3
Wed. 19..	42.8	30.5	36.7	13	0.88	4	2	4	2	5	8	6	2
Thurs. 20..	42.1	30.7	36.4	13	0.65	4	1	1	1	6	7	2	2
Friday 21..	43.3	32.2	37.8	14	0.48	1	3	4	1	7	8	5	2
Satur. 22..	43.4	32.9	38.1	13	0.57	3	5	1	5	3	12	2	2

The highest temperature during the above period occurred on the 19th, 1838—therm. 60 deg.; and the lowest on the 19th, 1838—therm. 4½ deg. below zero.

Notices to Correspondents.

APPLES: *J Roper.* Is it not possible for an Apple pip to vegetate in the bark of the Apple tree—become parasitical and afterwards to adhere or become grafted into it?

ASPARAGUS: *R Landon.* Sow the seed in rows some time in March or the beginning of April. The rows may be 12 or 15 inches apart, according to the richness of the soil. The richest may be closest. A pound of seed is enough for about 60 yards.

BOILERS: *T D.* You may effectually prevent incrustation in the inside of boilers by never using any other than rain water. As to removing it we doubt whether it can be done effectually except by knocking it off. It has however been said that it may be dissolved and rendered harmless by putting sal ammoniac into the water—say 10lbs. weight to 100 gallons; but if you try the experiment you must dissolve the sal ammoniac before putting it into the supply cistern. It would not do to put it in in lumps.

BOOKS: *Viridis.* There is no book which fulfils all your conditions. Loudon's two Encyclopædias of Gardening and of Plants will give you as much information as is attainable in a moderate space. They are remarkable volumes, and should be in all garden libraries.

INSECTS: *C M.* Without seeing specimens it is difficult to assert what may have been the cause of the injury to the Pears you mention. We suppose it, however, to have been either the caterpillars of the Codling Moth (Tortrix Pomonana) or those of an allied species, which were the delinquents. *W.*

NAMES OF FRUITS: May we beg our correspondents to send their specimens, *carriage paid*, to our Office, No. 5, Upper Wellington Street, Covent Garden, London: AND TO NO OTHER PLACE WHATEVER.—*E B.* 1, Golden Russet; 2, Ross Nonpareil; 3, Court pendu Plat; 5, Royal Russet; 7, Cluster Golden Pippin; 11, Boston Russet; 12, Early Nonpareil; 13, Beauty of Kent; 15, resembles Golden Noble; 17, Barcelona Pearmain; 19, Christie's Pippin. 1, Beurré Diel; 2, Beurré Rance; 2, Uvedale's St. Germain; 4, Crassane; 5, Spanish Bon Chrétien; 7, Passe Colmar; 12, Franc Réal d'Hiver; 13, Verulam; 14, Bezi Voet.—*Amnon.* 1, Easter Beurré; 2, perhaps Louise Bonne; 3, Brown Beurré; 4, Swan's Egg; 6, Blenheim Pippin (?); 7, Hollandbury; 8, a Red Streak; 10, Dumelow's Seedling; 12, Dutch Mignonne.—*Robinson & Son.* M 1, not the Catillac, it is Uvedale's St. Germain; M 2, Black Worcester; H 1, Easter Beurré; H 2, Glou Morceau; H 3, Winter Nelis. H 1, Apple, Golden Noble; H 2, Cluster Golden Pippin.—*A Constant Reader.* 1, Hollandbury; 2, Dutch Mignonne; 4, Cockle Pippin; 5, Golden Pippin; 7, Early Nonpareil; 9, White Russet. 1, Passe Colmar; 4, Hacon's Incomparable; 5, Uvedale's St. Germain; 6, Knight's Monarch; 7, Catillac; 8, Beurré Diel.—*W J B.* 1, Beauty of Kent; 2, decayed, appears to be Mère de Ménage; 3, Court pendu Plat; 4, Blenheim Pippin; 5, Bedfordshire Foundling. 1, Knight's Monarch; 2, Beurré Diel; 3, Bequêne Musqué; 4, Poire d'Austrassie.||

NAMES OF PLANTS.—We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have or could have undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*Cork.* Your specimens are broken to pieces, and most have lost their labels. We name our usual number, viz., four:—No. 6 is Cuscuta Epithymum; 2, Fumaria officinalis; in the other fragments are Mentha rotundifolia and Mentha arvensis.

PEACH WOOD: *A Constant Reader.* We suspect your plant to be in for a fit of mildew. All you can do now is to cut away as much of the diseased wood as you can spare; and when the mildew appears to dose it with flowers of sulphur.

WARDIAN CASES: *Flora D.* Mr. Ward published his own method of managing these contrivances. You can obtain his little volume through your bookseller.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

LONDON MANURE COMPANY, removed to 116, Fenchurch Street, E. C. (Established 1840), have the following MANURES ready for delivery :—

CORN MANURE for SPRINGTOP DRESSING } all of
URATE } guaranteed
SUPERPHOSPHATE OF LIME } guaranteed
BLOOD MANURE } quality.

In consequence of the reduction in the price of raw material the London Manure Co. are enabled to lower the price of their Superphosphate of Lime, and to materially improve the Corn Manure and Urate.

The London Manure Co. also supply PERUVIAN GUANO (direct from Messrs. A. Gibbs and Sons), SULPHATE of AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of value. Wholesale dealers supplied.

116, Fenchurch Street, E.C. EDWARD PURSER, Secretary.

POTTER'S CELEBRATED GUANO.—Established 16 years, during which period it has been used on every variety of crop and soil with great success. See Mr. POTTER'S numerous testimonials. Price 7*l.* 10*s.* per ton. Also POTTER'S SUPERPHOSPHATE OF LIME, 6*l.* 10*s.* per ton.—28, Clapham Road Place, S.

*** A very liberal allowance to Agents. Mr. POTTER'S work on Agricultural Chemistry sent free for 6 stamps.

ESTABLISHED 1812.

H. AND T. PROCTOR'S TURNIP MANURE.—Messrs. H. & T. P. draw particular attention to this valuable Manure, which contains all the elements necessary for the full development of the Turnip Crop, so combined, that, from their chemical knowledge and long experience, they feel satisfied is most advantageous to the consumer. It has been very extensively used by most of the eminent Agriculturists of the day, and has attained a high reputation throughout England, Scotland, and Wales, and, they venture to say, is unrivalled for the weight and quality of the Bulbs which it produces. The application of this Manure to the Turnips will be found to benefit considerably the after crops of Barley, Clover, and Wheat.

POTATO, GRASS, BARLEY, CLOVER, AND WHEAT MANURES; also BONE DUST, PERUVIAN GUANO, and SUPERPHOSPHATE of LIME, warranted of the best quality.

Apply to H. & T. PROCTOR, West of England Depôt for Artificial Manures, Cathay, Bristol; or PROCTOR & RYLAND, Birmingham, and Saltney, near Chester.

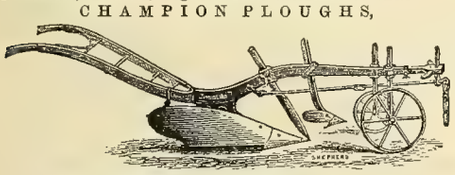
AGENCY FOR A VALUABLE MANURE.—Wanted, respectable Agents for a Manure which commands a ready sale, as its goodness is certified by 3000 testimonials from all parts of the United Kingdom, and by many farmers who have used it several years.—Address, with occupation and references, N. Y., at Messrs. J. & E. Saunders, 4, Cannon Street, London.

THORLEY'S FOOD FOR CATTLE.—Every person having an interest in domestic or farm animals should obtain a supply of this celebrated and economical food which will prove invaluable during the approaching season. For keeping horses in good condition, it is unequalled. Pigs fatten with surprising rapidity upon it, and their flesh increases in flavour and value, Cowkeepers will find great advantage in the increased quantity and improved quality of the milk during its use. All animals are benefited by it. A pamphlet on this interesting subject, accompanied by Testimonials from the principal Nobility, Gentry and Agriculturists forwarded on application. In casks containing 448 feeds (measures inclosed), price 50*s.*, carriage paid to any Railway Station in the United Kingdom. Post-office Orders payable to JOSEPH THORLEY, 77, Newgate Street, London.—N.B. The public are cautioned against being imposed upon by worthless imitations.

HOWARDS' PRIZE IMPLEMENTS, 1859.

JAMES AND FREDK. HOWARD, Britannia Iron Works, Bedford, beg to direct attention to their

CHAMPION PLOUGHS,



For which they received All the First Prizes last offered by the Royal Agricultural Society of England, viz. :—

The First Prize for the best Plough for general purposes.
The First Prize for the best Plough for light land.
The First Prize for the best Plough for heavy land.

The only Prize ever offered by the Society for the best Double Breast or Ridging Plough was also awarded to J. & F. HOWARD.

J. & F. HOWARD have discontinued troubling the Public with a long List of Prizes awarded to their Implements, but they would just state that for PLOUGHS, HARROWS, and HORSE RAKES, they have for several years gained every Prize for which they have competed.

PLOUGHS.

P PLOUGH, with two wheels, for light work .. £4 7 6
PP PLOUGH, ,, for general purposes 4 12 6
SKIM COULTER £0 5 6

STEEL BREASTS, 7*s.* and 7*s.* 6*d.* extra.

HARROWS.

A Set of Three 4-Beam HARROWS, with Whippletree, recommended as general Seed Harrows, 9¼ feet wide, marked No. 12 .. .. £3 14
A Set of Three 4-Beam HARROWS, with Whippletree, adapted for 3 Horses, 10 feet wide, marked No. 11 .. 4 4

HORSE RAKES.

Price of small size RAKE, marked A, with 24 iron teeth, extreme width 7½ feet £7 10 0
Ditto, with Steel Teeth 8 0 0
Price of large size, marked B, with 28 iron teeth, extreme width 8½ feet 8 0 0
Price of large size, marked B, with steel teeth .. £8 10 0
Price of extra large size, marked C, with 24 steel teeth, extreme width, 8½ feet 10 10 0
Price of a Set of 15 Prongs, to be attached to the above when used as Weed Extirpators 1 10 0

Free Delivery to Birmingham, Bristol, Derby, Gloucester, Lincoln, Liverpool, London, Manchester, Norwich, Nottingham, Retford, Wisbeach, and Worcester; or to Dublin, Edinburgh, Glasgow, and other parts at fixed rates.

HOWARDS' NEW CATALOGUE, containing prices and description of their Patent Ploughs, Harrows, Horse Rakes, and other Implements, including Smith's Steam Cultivators, for which they received at Chester the Gold Medal of the Royal Agricultural Society of England, sent free on application to

J. & F. HOWARD, Britannia Iron Works, Bedford.

WARNER'S IMPROVED LIQUID MANURE OR GENERAL PORTABLE PUMP.



These Pumps are fitted with J. W. & SON'S Patent Buckets and Suckers, and cannot clog in action. The barrel is of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure. The legs will fold together, and the whole may be carried on the shoulder to any pond or tank required.

Price of 4½ in. Pump, with legs, 3*l.* 3*s.* If with planished copper barrel and galvanised iron handle, &c., 14*s.* extra. The barrel is 27½ in. long, and the legs are 5 ft. high.

These Pumps are also made without the legs, with strong wrought-iron straps for screwing on to any ordinary water butt or cart, and fitted with 1½ inch brass union for attaching flexible suction. Price 50*s.*

1¾ inch Gutta Percha Suction Pipe, 1*s.* 11*d.* per foot.

Rubber and Canvas Suction and Delivery Hose, from ¼ inch to 4 inches diameter, in lengths of 60 feet to order. Branch Pipes with Cocks, Union Screws, &c., at reduced prices.

May be obtained of any Ironmonger or Plumber in town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin St., London

WARNER'S PATENT VIBRATING STANDARD PUMPS.

PATENT CAST-IRON PUMPS, fitted with J. W. & SON'S Patent Buckets and Suckers, which cannot clog in action, for Farms, Cottages, and Wells, not exceeding 28 feet.

Diameter of Barrel.	Height.		£	s.	d.
2½ in. short	1 ft. 7 in.	Fitted for lead,	1	10	0
2½ ,, long	3 ,, 3 ,,	gutta percha,	1	14	0
3 ,, ditto	3 ,, 6 ,,	or cast iron	2	8	0
3½ ,, ditto	3 ,, 6 ,,	flanged pipe,	2	12	0
4 ,, ditto	3 ,, 6 ,,	as required.	3	3	0
2½ ,, short, with 15 feet of Lead Pipe attached, ready for fixing			2	14	0
2½ in. long	ditto	ditto ditto	2	18	0



The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.

May be obtained of any Ironmonger or Plumber in Town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

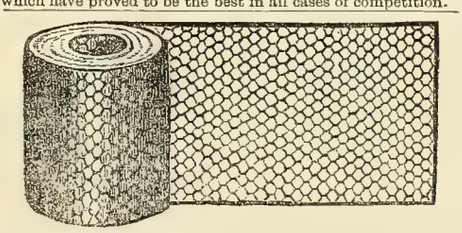
WROUGHT IRON HURDLES AND FENCING MADE BY MACHINERY.



THOMAS GREEN, Smithfield Iron Works, begs to call the attention of parties requiring machine-made Hurdles, which are a very superior article, as well as being both cheap and durable. The above cut represents a Hurdle 6 feet long by 3 feet 6 inches high; the top bar ⅝ of an inch diameter, the four low bars 1 inch by ¼ inch, the uprights 1¼ by ¼ inch. The Prongs fasten 12 inches in the ground. Price 4*s.* 6*d.* each, or 2*s.* 3*d.* per yard. If the four lower bars were made of ¼ inch diameter instead of 1 inch by ¼ inch iron, the price would be 4*s.* 2*d.* each, or 2*s.* 1*d.* per yard. The above are the lowest net cash prices at the Works.

THOMAS GREEN, Smithfield Iron Works, Leeds, Yorkshire, Manufacturer of every description of Iron and Wire Fencing, Iron Work of all kinds, both plain and ornamental, Entrance Gates, Palisading, Tomb Railing, Iron Bedsteads, &c. Illustrated Catalogues may be had free on application at the Works.

N.B. Also Patentee and Sole Manufacturer of GREEN'S Patent Lawn Mowing, Collecting, and Grass Rolling Machines, which have proved to be the best in all cases of competition.



BARNARD AND BISHOP, Market Place, Norwich, in consequence of improvements in their machinery for the manufacture of the above article, have been enabled to make a great reduction in the prices.

	Galvanised.	Japanned Iron.
2-inch mesh, 24 inches wide	5*d.* per yd.	4*d.* per yd.
2-inch ,, strong do. ..	6 ,,	4½ ,,
2-inch ,, intermediate, do.	7 ,,	5½ ,,
2-inch ,, extra strong, do.	9¼ ,,	7½ ,,
1⅝-inch ,, 24 inches wide ..	5½ ,,	4½ ,,
1⅝-inch ,, strong, do. ..	6½ ,,	5½ ,,
1⅝-inch ,, intermediate, do.	7½ ,,	6 ,,
1⅝-inch ,, extra strong, do.	10 ,,	8 ,,

All the above kinds can be made of any width (under 8 feet at proportionate prices. If the upper half is of a coarser mesh than the lower, it will reduce the prices about one-fifth.

Strong Galvanised Poultry Netting, 8½*d.* per yard, 3 feet wide Galvanised Sparrow-proof Netting for Pheasantries, 2½*d.* per square foot. Delivered free of expense in London, Peterborough, Hull, or Newcastle. Manufacturers of Improved Strained Wire Cattle and Deer Fencing, Iron Hurdles, &c.

Illustrated Catalogues and Patterns forwarded by post.

THE CHAMPION.

SMITH'S CULTIVATORS AND APPARATUS are got up not for Show but for Work. The Cultivators are almost indestructible, easily turned, and therefore double cumbersome implements are avoided. The Windlass is simple, convenient, and its working easily understood; it is very strong, and like the Implements subject to little or no damage from working. The Rope required averages only about five chains more than an endless rope, its friction only one-fourth: it never slips, and the tension is only one half at a time. The whole Apparatus can work all useful implements on all shapes and forms of ground; is admirable for autumnal cultivation; has stood the test of three years' work, and has produced "results most astonishing and invaluable;" and while the total cost is not more than half that of the Endless Rope one, it can be worked by an ordinary engine without alteration.

Woolston, Bletchley Station.—Jan. 15.

TO LANDOWNERS.

THE PERMANENT WAY COMPANY having been appointed the sole Licensees for the use of Dr. BOUCHERIE'S Patent Process for Preserving Timber, beg to inform Landowners and others interested in the use of English Timber that a Pamphlet, with full explanations of this cheap and most effectual process, may be had gratis on application to the undersigned. Landowners having Beech, Elm, Fir, or other Timber fit for Railway Sleepers are requested to communicate particulars of quantity, locality, and prices.

WILLIAM HOWDEN, Secretary.

26, Great George Street, Westminster.

LAND DRAINAGE.—Works of Drainage of any extent are executed by the GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY on all descriptions of Property, whether Freehold, Entailed, Mortgaged, Trust, Ecclesiastical, Corporate, or Collegiate.

Repayment may be made by the Landowner as successive portions of the Works are completed, or the actual expenditure, with a Commission thereon, may be charged on the property improved by way of rent charge for any term not exceeding 50 years, the instalments to repay principal and interest being thereby kept down nearly to 5 per cent. per annum.

No investigation of title being required, and the charge not being affected by incumbrances, no legal expenses are incurred.

Works of Irrigation, Enclosing, Wood Grubbing, Road Making, and Farm Buildings are executed in a similar manner.

The Company also assist Landowners in executing any of the improvements by their own agents, and charge the amount expended on the property improved.

Applications to be made to WILLIAM CLIFFORD, the Secretary, at the Offices of the Company, 52, Parliament Street, London.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.

Principal—J. C. NESBIT, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.

Patron—His Royal Highness the PRINCE CONSORT.
President of Council—Earl BATHURST.
Principal—Rev. J. S. HAYGARTH, M.A.

PROFESSORS, &c.

Chemistry—J. A. C. Voelcker, Ph.D., F.C.S. (Consulting Chemist to the Royal Agricultural Society of England).
Zoology, Geology, and Botany—Jas. Buckman, F.G.S., F.L.S.
Veterinary Medicine and Surgery—G. T. Brown, M.R.C.V.S.
Surveying, Civil Engineering, and Mathematics—J. A. Jarman, C.E.
Practical Agriculture—J. Coleman.
Assistant to Chemical Professor—A. Sibson.

The FIRST SESSION OF 1859 begins February 2.

Fees for Boarders:—Under 16 years of age, 55 guineas per annum; between 16 and 18, 70 guineas; above 18, 80 guineas. The fee for Out-students is 40*l.* per annum.

Prospectuses and information can be had on application to the Principal.

The Agricultural Gazette.

SATURDAY, JANUARY 15, 1859.

MEETINGS FOR THE ENSUING WEEK.

WEDNESDAY, Jan 19—Highland and Agricultural Society.

THE general meeting of the Highland and Agricultural Society will take place at Edinburgh on the 19th inst. It is likely to be unusually interesting, owing to certain differences which have arisen between the directors and large numbers of the members. Among them is their resolution to confine the *prestige* of their patronage to the older of the two veterinary schools now at work in Edinburgh. Professor SYME is to move at the ensuing meeting—

"That the teaching of veterinary surgery in Scotland should not be restricted to one school, since advantage may be expected from competition in this no less than in other departments of education."

—a resolution which certainly appears on the face of it to deserve adoption.—Some resolution will also probably be adopted in connection with the memorial which was some time since presented about the relations of judges and exhibitors at the Aberdeen Show. That the feeling which has been excited on this point runs high is plain from the following formula, which is, we understand, obtaining signatures :—

"I hereby declare that I will not henceforth exhibit any animal at any of the Highland and Agricultural Society's shows, unless all exhibitors are strictly excluded from the show yards, till such time as the judges have given in their awards."

While, however, some resolution in accordance with this statement will probably be adopted, we are glad to know that its immediate cause is no longer a matter of difference between the Directors and the members. A common ground has been found on which all will act for the prevention in

future of the irregularities complained of at the late Show at Aberdeen.

——The circumstances connected with Mr. LAWSON'S resignation of his curatorship of the Society's Museum and of his position as the Society's seedsman will also probably engage attention.

—— Dr HASSALL has published his opinion of THORLEY'S food for cattle. He has witnessed the process of manufacture and analysed samples of the manufactured article. And he asserts—that the ingredients used are all of excellent quality, and are purchased without regard to expense; that the recipe according to which the food is prepared is an admirable one, no ingredient being selected on account of its cheapness, but those only being chosen which are best adapted to fulfil the objects intended: that the food is highly nutritious and fattening; it is a tonic and gentle stimulant, aiding, when mixed with other descriptions of food, materially the digestive powers of an animal: that it is infinitely superior to any others at present known to Dr. HASSALL. All which may be perfectly true and yet throw no light whatever on the policy of using THORLEY'S food for cattle. That depends simply on the price charged for it as compared with the price of other articles of known value as food. Dr. HASSALL'S statement would in every particular be true of a mixture of Linseed and Bean meal flavoured with a little salt. Such a mixture might cost 10*s.* a cwt.* Dr. HASSALL'S testimonial to the quality of this food entirely shirks the only point in which agriculturists are interested, and we greatly prefer the opinion of the *North British Agriculturist*, which speaks thus in one of its paragraphs on the past year's agricultural history:—

"A comparatively new trade, cattle foods, has been very active in 1858. Mixtures of Carob Beans, Bean meal, and of the meals of cereals, with a flavouring substance such as Coriander seed, have been vended at from 30*l.* to 40*l.* per ton, while the real feeding value may be taken at something like one-half that of Linseed cake, or 5*l.* The extent to which a trade of this kind is carried on is evidence of an extreme facileness on the part of the owners of the domesticated animals, the horse, the ox, and the pig."

—— Mr. HUDSON, of Castleacre, calls attention in the *Mark Lane Express*, as Mr. W. WOOD, of Burton-on-Trent, did many months ago in our columns, to the use of cheap Wheat as food for cattle. He says:—

"When Wheat was selling at from 60*s.* to 70*s.* a quarter, almost every farmer was endeavouring to grow as many acres of Wheat as he possibly could. His Mangel Wurzel land, and that where early Turnips were fed off, was all sown with Wheat, in addition to the whole of his regular quantity after Clover; but now the price has receded to about 40*s.* a quarter, very little land is sown with Wheat beyond the usual quantity after Clover. My farm now consists of about 800 acres of arable land, 200 acres being in Wheat after Clover, and for several years I have sown 100 acres of Wheat in addition after the root crop, but now there is nothing to induce me to pursue that system. We now grow all the Barley we can, and one-third fewer acres of Wheat than we have done for several years past. The very low price of Wheat has induced us to feed our cattle upon Wheat on a large scale, it being cheaper than Linseed cake. I never remember so large a quantity of Wheat consumed by cattle as there has been during this season, and a great deal is being made into malt instead of Barley; surely this must tell upon prices by-and-bye; and the farmers intend to keep a large quantity in stock, to see the result of another harvest."

—— The London Farmers' Club has issued its card of subjects to be discussed at its ensuing monthly meetings. They will be found in another column. Arterial Drainage, Agricultural Education, Agricultural Progress, Advantages of Steam in Agriculture, Mixed soil Husbandry under existing circumstances, Growth of Clover, Composition and Value of Various Foods—are to be successively discussed. The list contains some old subjects and some very large subjects, and is not equal in point and utility to those of previous years. The most useful of the series is named for discussion at the June meeting, when the smallest attendance can be expected. Mr. BAKER, of Writtle, who has done more than any other person for the Club, and more than any other through it for English agriculture, is then to state the system of cultivation on mixed soils which he considers most profitable under existing circumstances.

—— The annual circulars in the manure trade intimate an enormous accumulation of guano in the hands of the importers. It is said that owing to the high prices fixed by the Peruvian Government they have upwards of 600,000 tons in the hands of their agents unsold—and 400,000 lying thus in Liverpool and London alone. The imports during the past four years into the United Kingdom have been 305,061 tons, 191,501 tons, 288,362, and 312,000 tons respectively—and a larger quantity than the whole of last year's importation is lying in the hands of the importers. A reduced price must no doubt be submitted to in order to clear away this stock in the face of the competition with artificial manure makers.

—— A correspondence with the Cottage Improvement Society (18, Adam Street, Adelphi), has been handed to us by Mr. BAILEY DENTON, from which it appears that a reader of this Paper has seen it announced that a pair of cottages designed by the Society and approved of by the Inclosure Commissioners could be erected for 160 guineas, and has applied in consequence to the General Land Drainage and Improvement Society to erect two such pairs of cottages. Mr. DENTON, their engineer, applies to the Cottage Improvement Society for the name of any builder who will undertake the erection of these cottages on these terms, and to the Inclosure Commissioners to know if the design had received the approval of the Board: and he finds (1) that there are several points in the designs which do not meet the approval of the Board, and (2) that no builder is forthcoming to undertake their erection at the price. He thinks that these things ought to be made known in the same column in which the original announcement on the subject was made, and agreeing with him on this point we add here the concluding sentences of his letter—

"I have had the cottages No. 2 tendered for by a builder, *and the amount is* 242*l.*; and this is so different from 168*l.*, the price stated by the Society, that the imposition ought to be exposed, for landowners would consider the honest tradesman the imposter, and not the Society (whose object is philanthropical) and would decline to make themselves the victims of such robbery as the difference in figures would imply."

FROM a recent Report of the Registrar-General on the Progress of Victoria in S. Australia during seven years terminating in June last, we collect many facts highly important and interesting in social, commercial, and agricultural points of view.

It is to be premised that this marvellously progressing colony comprehends an area of 90,000 square miles, equal in extent to that of Great Britain and Ireland combined, and embraces from north to south the district between the River Murray and Bass's Straits.

The first settlement commenced in 1835, and the population in 1851 (of whom about 23,000 were congregated in the town of Melbourne alone) amounted to 77,345 persons: these, with the foregoing deduction of souls inhabiting Melbourne town — now a city — were located in the counties of Bourke and Grant, in the latter of which the town of Geelong is situated. The total population of Victoria amounted in March last to nearly 500,000. Morally, we may have great reason to regret that an immigration of nearly 35,000 Chinese, almost entirely males, has been absorbed into the population. The discouragement of this unwelcome accession to the Anglo-Saxon and Celtic colonists has been sought in restrictions by special taxations of these "Celestials" throughout South Australia and New South Wales. The eager thirst for gold in the auriferous districts has been productive of this unquestionable evil.

The rapidity with which the population has multiplied, of recent years especially, is astonishing. Between the censuses taken in 1851 and 1854 it had trebled, and in the course of the four last years doubled. Melbourne and Geelong were the only corporate towns previously to 1855; there are now 21 such towns enjoying the privileges of self government, which (though all the statistical returns had not been received when the official report was issued) possessed rateable property amounting in annual value to 2,115,136*l.*, with a revenue for the year 1857 of 239,579*l.* The expenditure on streets alone in the 21 towns has been 1,191,734*l.* The arrivals of emigrants for the last six years are thus given:—

In 1852	.. .. ..	94,664 persons
1853	.. .. ..	92,312 ,,
1854	.. .. ..	83,410 ,,
1855	.. .. ..	66,571 ,,
1856	.. .. ..	41,594 ,,
1857	.. .. ..	63,260 ,,

Many of these from various causes, viz., the realisation of sufficient independence enabling them to return to their native lands, or a desire to locate themselves elsewhere in Australia, have left the colony. Of such the numbers increased prodigiously from 1851 to 1853 inclusive. In the first the number was only 2962, but in the succeeding year 31,038 departed, and in 1853, 42,443 left.

We now come to considerations more directly bearing on our agricultural department.

Out of the 55,571,840 acres contained within the limits of Victoria, 2,748,415 have been disposed of to colonists, of which 1,781,347 realised 3,994,524*l.* during the four past years (ending December 1857), being at an average price of 2*l.* 4*s.* 10*d.* per acre—so great was the demand for land beyond the limited supply in those years, especially in the towns and their adjacent lands. But it is anticipated that the Government price of 1*l.* per acre will be henceforward no unusual rate. The yet unsold lands are reported to be mostly close to markets, and this anomaly is explained by the unusual fact that the population, instead of being dispersed over a large area, is concentrated in masses in consequence of the general diffusion of the metallic wealth of the land.

The agricultural statistical returns made up in March last present these returns of produce for the past year:—

Wheat	.. ..	1,808,438 bushels
Maize	.. ..	6,558 ,,
Barley	.. ..	156,458 ,,
Oats	.. ..	1,249,799 ,,
Potatoes	.. ..	51,114 tons

besides other crops. 382 acres were planted as Vineyards, which produced 5761 gallons of wine, and supplied nearly half a million lbs. of Grapes for the table.

From the table, which exhibits the average yield of corn per acre during the three preceding years, Victoria stands comparatively with Tasmania, South Australia, New South Wales, States of New York and California, at the head of the list as to Wheat, Oats, and (excepting California) Barley; the quantities being Wheat, 23.1; Barley, 30.3; and Oats, 29.3 bushels per acre. California rates next. Wheat, 20.0; Barley, 31.5; Oats, 20.2. The yield of Wheat in South Australia has been but a fraction less than half per acre of that obtained in Victoria, though fully equal as to the returns of Barley and Oats, and far above New York, which exhibits but 14.0 bushels of Wheat, 16.0 do. of Barley, and 26. do. of Oats. It is to be observed, too, that Mr. M'CULLOCH, who gives the above estimate for New York, has affirmed that "this State possesses some of the best corn-growing land in the Union." A return from the State of Michigan, published by authority in 1849, declared that the average produce of Wheat did not exceed 10⅝ bushels per acre, and, concludes Mr. M'CULLOCH, "it would appear from the best attainable information on the subject, that if we take the produce of the new States generally at 12 or 13 bushels per imperial acre, we shall not be within but beyond the mark." The fertility then of Victoria in this the most important of cereals, as also in productiveness of Barley and Oats, is a subject for our hearty congratulations to the agriculturist in that great colony.

Labour and capital seem to be unceasingly employed, not only in extracting the precious gold from the soil, but in tilling the land also. The number of occupiers of land in six counties has increased from 9800 in the year 1856 to 29,820 in 1857; those of Talbot and Dalhousie having the greatest increments — and being absolutely an increase on the whole of 282 per cent. in one year. In 11 districts, those of Bourke and Grant, with about 5000 holders of land, the total number of acres under cultivation in the past year has been 223,316, of which 123,326 were under grain crops. Since 1854 the progress of agriculture throughout Victoria has been far greater than that of population; the agricultural increase in 1857 was more than 400 per cent.; that of population being 73 per cent. Of 237,729 acres under cultivation in the present year, 87,230 have been under Wheat; 5407 under Barley; 40,118 under Oats; 20,693 under Potatoes (which would indicate a large proportion of Irish in the population); and 84,281 under other crops, in which we suppose meadow Grasses must preponderate, because in the reported value of the crops raised hay is estimated at 140,516*l.* The Wheat at the Melbourne prices is valued at nearly 800,000*l.*, and Potatoes (much above the Barley in value), upwards of 690,000*l.*

The colonial administration have not complained of any difficulties in the attainment of the agricultural statistics now officially presented to the Chief Secretary, from the Registrar-General's office, by means of a carefully organised staff. They have ascertained thereby in addition to the foregoing particulars the amount of live stock. We learn that though there has been a considerable decrease in the number of sheep since 1851, when tillage

* See Professor Anderson's Opinion in page 44.

had made but little progress and population was inconsiderable, there has been an increase of 188,150 sheep over the numbers returned in 1856, and that the increase of horned cattle has more than compensated for the falling off in the other instance. The vastly increased demand for beef, milk, and butter, has by the reciprocal agencies of supply and demand induced an increase of 80,424 horned cattle. Pigs have multiplied also, and horses in about equal numbers with the porcine race. The northern side of the river Murray has, however, contributed to the raising of the above enumerated live stock, the population in that quarter being numerically insufficient to the consumption of the whole of their own stock. A notice of the details regarding commerce, gold, mills, manufactories, revenues, banks, education, religion, railways, however important and interesting to many persons, is hardly suited to our pages. We therefore omit them here, with the exception of one or two paragraphs bearing altogether upon our proper department, or so intrinsically momentous as to attract attention from every reflecting man in our social community.

Under the head of imports and exports we find that Victoria holds the fourth rank among the chief countries (eight in number), which import manufactures from Great Britain. The first in the order is the United States; the second, British East Indies; the third, the Hanse Towns; the fourth, Victoria, importing to the value of between six and seven millions sterling—about a third of the amount of imports by the United States. Victoria takes 50 per cent. more of the manufactures of the parent country than all the British settlements in North America.

The total amount in value of exports from the colony during the year 1857 was 15,079,512*l.* The wool was valued at 1,335,642*l.*, and hides and leather at 190,746*l.*

Most of the foregoing details attest the marvellous agricultural progress of Victoria, besides her great advancement in commercial prosperity. We unwillingly close the report, in which there are many other details of exceeding interest.

LOIS-WEEDON TILLAGE.

SURELY it is much to be regretted that the Lois-Weedon system finds so few followers; and yet more, that of these few followers the greater part are, as Pat would say, "no followers at all." They very much appear to enter upon it without due consideration, if not without any defined ideas of the principles upon which it is founded; hence failures naturally follow. They adopt some part of its details, and think they have done everything, when, instead of attributing their want of success to their shortcomings and overdoings, they ascribe it to the system, and console themselves by fancying Mr. Smith owes his to some occult property in his field. It is indebted to an oolitic subsoil, says an Irish writer.

Because Mr. Smith works deeply, forgetting that he does so progressively, they turn their spadesmen or forkmen, as it may be, into the field, and excavate at once to some extraordinary depth, throwing upon the surface a mass of crude matters which would require the sun and frosts and atmospheric solvents of years to reduce. Nor do they call to mind that in thus burying the tender and friable active soil they place it out of the reach of the early rooting process of the young plants, on which their future development so much depends. While at the same time, perhaps, they neglect by frequent surface breakings to open out these crude substances to aërial actions or to arrest the growth of weeds. Or instead of the merely superficial stirrings called for to these ends they delve deeply and mix their crude substances with the fertile soil to its detriment, as also to the injurious loosening of the deeper rootings of the plants. To such deep spring working and to the consequent loosening of the roots Mr. Calwell, of Belvedere, in the county of Down, attributed his failure in a very large and spirited experiment in 1854.

This gentleman even went to the expense of a journey to Lois Weedon previous to his entering on his experiment, which with a spirit evinced by few, if equalled by any, he extended over 14 acres in 1845, and 29 in 1855, but after all he seems to have sown the seed too late, not having finished his sowing till the 19th Nov., 1853, and to have forked his intervals deeply in the following spring stated to have taken place the 31st March, 1854. His return on the 14 acres was but 5 tons 17 cwt. But as Mr. Calwell says the stooks stood as thick on the ground as they did on land sown broadcast after Potatoes, the short crop did not appear to arise from want of straw, but, as he remarks, from the heads not filling, which he ascribes to the deep spring forking loosening the roots; it is then fair to suppose the crop would have been considerably greater but for these mistakes. In his experiments of 1855 on 29 acres in part he had a very fair crop, in other parts there was failure, but of this I cannot at present lay my hand on my memoranda. But, if I recollect rightly, Mr. Calwell attributed them to inclemency of weather, which appears to have been most unpropitious.

Again, the expediency of an early sowing, on which depends so much the success of all thin sowings—and all drill sowings must be considered as thin ones—appears frequently to be neglected, as well as Mr. Smith's injunction that tillering should take place before winter, and his observation that spring tillering should be avoided as tending to mildew.

Failure may also occur in the first crop (which certainly does not depend on Mr. Smith's working) from the previous state of the land, and from deficient preparation for which there appears, under ordinary circumstances, after a grain crop not sufficient time, and, indeed, with Mr. Smith, his first sowing appears to have been late; in Ireland I am sure this must be very generally the case, as not only are our harvests late, but the ground is in a foul state.

Whether Mr. Smith's system will admit of variations in details may be a question, but its principles will admit of none; it absolutely depends on a gradual raising to the surface before winter for exposure to the disintegrating action of alternate frosts and thaws, and to subsequent aerial influences, of small quantities of mineral substances that have hitherto been but partially acted upon by these solvents, and by frequently moving them through the summer months to assist these aerial influences. It stands, as matter of course, that it is not only unnecessary, but may be injurious to bring up to the surface more of these mineral substance than the ammonia and carbonic acid in the air can amalgamate with, for though the power of oxidation in the air is unlimited, it is far from being so with those matters which act on the oxides and render them fit for vegetable assimilation; besides this, by bringing up too great an amount of crude mineral substances the fertility of the active soil may be for a long time impaired, and, which is a known practical fact, the ground is poisoned. The deep working of the soil is therefore an exclusive ante-winter operation, and must be strictly restricted to it, while the summer ones must be as strictly confined to superficial ones so frequently repeated as to expose continually fresh surfaces to the air at the same time that they prevent the vegetation of weeds. Deep working in the spring or summer would not only bring again the yet undigested mineral matters, but by loosening the soil about the roots of the plants, possibly prove injurious to them, perhaps even stimulate a too long continued growth of straw. And moreover it is generally supposed that Wheat requires a sound or firm bottom, and this would be impaired for the successive crop by such late working. In the last edition of "A Word in Season" I see Mr. Smith now subsoils the intervals after earthing up the rows in summer.

Thus early sowing is not only required for the early development of the tillering process, but also as affording time for the deep ante-winter forking. If the sowing is deferred till the latter part of October or to November, with all the chances of weather, I do not see how, on anything like an extensive scale, this can be effected, at least a month of winter exposure would be lost.

These are the great principles of Mr. Smith's system, a neglect of which will certainly bring disappointment. Modifications in the details of his economy may perhaps be admitted—Mr. Smith himself has done so, for after having attained a depth of 16 or 18 inches he has been "satisfied for the four following years with a single spit." But such modifications should be adopted with much caution, and in no case can experiments under them be admitted as evidence against the plan. *J. M. G., Granard.*

TRADE MEMORANDA.

MR. ALDERMAN MECHI having reason to fear (it having just come to his knowledge) that many hundreds of his friends and acquaintances throughout the kingdom have been defrauded of a guinea each, by a person pretending to collect for a testimonial to him, requests that such information may be sent to him as may lead to the arrest and punishment of the offender. 4, *Leadenhall Street, January* 11.

Home Correspondence.

Cotton Cake.—I was sorry to see a report recently of the death of a bullock from having been fed on Cotton-seed cake. Your readers will probably bear in mind that I sent you heretofore some observations on this subject, which you inserted, recommending Cotton-seed cake as useful and economical for feeding purposes, and at the same time especially cautioning farmers on the point of quality. I gave some analyses in order to show the extreme variations in quality, and pointed out that there were Cotton cakes in the market which it would be unsafe to use. I have recently seen a sample from Hull at the price of 6*l.* per ton, not only absolutely worthless, but which I have little doubt would produce just the same mischief as was found in the stomach of the bullock whose death was reported. The sample of cake I refer to was of a very dark colour, and containing all the husk of the seeds. The safe and highly nutritious cake is made from the decorticated seed, and the fracture of it resembles the fracture of a cake of bees-wax nearer than anything which occurs to me, only that the surface is more mealy; the colour is nearly the same. The present price of this article is from 7*l.* to 7*l.* 10*s.* per ton. I have had a large stock of sheep and bullocks thriving on it for many months most satisfactorily. It is a pity that communications of importance to agriculturists generally, sent to any one agricultural periodical, should not be extracted by the others for the general benefit. *C. Lawrence, Cirencester, January* 11.——I have given 1 lb. of Cotton cake per diem with Mangel, hay, and straw, to two milch cows for six weeks past. The cows have improved in condition, and for the first month the yield of cream was decidedly increased. For the last fortnight the same quantity of milk has yielded much less cream. Yet the cows appear in good health. Can this failure be connected with the experience of your correspondent from Chatteris? *A. B., Iver, Jan.* 10.

Tithe Commutation.—As many of your readers may feel anxious to know the result of the corn averages for the seven years to Christmas, 1858, published by authority in the *London Gazette* of this evening, viz.—

Wheat	.. .. ..	7*s.* 4*d.*	per imperial bushel,
Barley	.. .. ..	4 5½	ditto
Oats	.. .. ..	3 0½	ditto

I beg to state for their information that each 100*l.* of tithe rent-charge will, for the year 1859, amount to 108*l.* 19*s.* 6¼*d.*, which is a little more than 3 per cent. above the last year's value. The following statement from my "Annual Tithe Commutation Tables" will show the worth of 100*l.* of tithe rent-charge for each year since the passing of the Tithe Commutation Act, viz.—

For the year	1837	.. ..	.. £98	13*s.* 9¾*d.*
,, ,,	1838	.. ..	.. 97	7 11
,, ,,	1839	.. ..	.. 95	7 9
,, ,,	1840	.. ..	.. 98	15 9½
,, ,,	1841	.. ..	.. 102	12 5¼
,, ,,	1842	.. ..	.. 105	8 2¾
,, ,,	1843	.. ..	.. 105	12 2¼
,, ,,	1844	.. ..	.. 104	3 5½
,, ,,	1845	.. ..	.. 103	17 11¼
,, ,,	1846	.. ..	.. 102	17 8¾
,, ,,	1847	.. ..	.. 99	18 10¼
,, ,,	1848	.. ..	.. 102	1 0
,, ,,	1849	.. ..	.. 100	3 7¾
,, ,,	1850	.. ..	.. 98	16 10
,, ,,	1851	.. ..	.. 96	11 4¾
,, ,,	1852	.. ..	.. 93	16 11¼
,, ,,	1853	.. ..	.. 91	13 5¾
,, ,,	1854	.. ..	.. 90	19 5
,, ,,	1855	.. ..	.. 89	15 8¾
,, ,,	1856	.. ..	.. 93	18 1¼
,, ,,	1857	.. ..	.. 99	13 7¼
,, ,,	1858	.. ..	.. 105	16 3½
,, ,,	1859	.. ..	.. 108	19 6¼
			23) 2287	2 0½
General average for 23 years		..	.. £99	8 9¼

Charles M. Willich, Actuary University Life Assurance Society, 25, Suffolk Street, Pall Mall East, S. W., Jan. 7.

Foreign Correspondence.

FARMING IN COURLAND (*continued*).—The latitude is about the same as Edinburgh, but on account of its being more eastward and adjoining the continent the winters and summers are both more decided in character. Thus, from the 1st of May to the end of August the temperature is equal to the south of England, and in consequence of the days being much longer the growth is much more rapid; for instance, spring Wheat which in Sussex requires 150 days to ripen will do the same here in 100, and so with other things in proportion. The Wheat harvest begins also the first week in August. Altogether, it is perhaps the most agreeable summer climate in Europe. The winter commences about the first week in November with a little snow, then a good frost, then snow again, which covers the fields from 3 to 6 inches deep, and protects the Wheat from any variations of weather throughout the winter. In the spring the snow gradually disappears from the fields by evaporation, so that there is seldom any superfluous quantity of water either in summer, autumn, or winter. This is why drainage has not been found of general service. Most of the large farms have small distilleries attached to them, on the refuse of which, during the winter, they fatten oxen; but the other farms use principally cow manure, and as the cows are but badly fed the manure is very weak. It is nevertheless to me astonishing to see how well Wheat grows in the climate with only cow-dung. A neighbour of mine had last year 30 bushels per acre on an average of 250 acres; and another this year on the first three acres he threshed had 120 bushels; the corn is also of excellent quality, resembling the White Dantzic. My farm consists of 150 acres of arable and 50 of pasture and meadow, with excellent buildings. The rent, rates, taxes, &c., together with five cubic fathoms of wood for fuel, is 60*l.* sterling. I require also about six men, two lads, and two maids, which cost me about 100*l.*; seven horses, 50*l.*; and tradesmen's bills 10*l.*; total, 220*l.* for rent and labour, or about 30*s.* an acre for the arable land. The prices at present, which are about the average, are Wheat 5*s.* 6*d.* per bushel; Rye, 3*s.*; Barley, 2*s.* 9*d.*; Oats, 1*s.* 9*d.*; but as I grow more Wheat in proportion to other corn, I get an average of 3*s.* per bushel. I have therefore nearly 1500 bushels to grow to pay all expenses on 150 acres of arable land. One disadvantage here is that you can seldom take a farm in good condition, so that for the first three or four years you cannot do much more than pay your expenses. On the other hand it is advantageous, as but a small capital is necessary to enter with. We enter in the spring, when you will find all the winter fields sown, and seed in the granary for the summer ditto. You have to pay half a year's rent in advance, but there is generally a certain number of cows or horses belonging to the farm which

are valued, but for which you do not pay. These belong to the inventory, and are let with the farm, and already included in the rent. The labourers are paid in the Scotch fashion, a certain number of bushels of Rye and Barley per annum, with the Grass and winter food of a cow, with a patch of land to grow Flax and Potatoes on, so that no money is wanted to pay the labour of the current year. Thus for 150*l.* to 200*l.* one can take a farm of from 200 to 300 acres. We have also a good market in Riga, which is distant about 40 miles; but as I sell nothing but Wheat and Flax, I prefer selling the former to flour mills in the neighbourhood, and the latter to dealers. Of good society we have no reason to complain. On an average there is a respectable house every three miles, and the upper classes are hospitable, well educated and agreeable. The whole Government are Protestants, there being I believe but one Russian church, and that is in the chief town, Mitau, for the military. The labouring population are particularly quiet and inoffensive. If any of your readers should be desirous of further information, I shall be happy to give it them to the best of my power. P.S. I must not neglect to mention that serfdom has not existed in Courland since 1818. *W. Grossmith, Bauske, Courland, Russia.*

Societies.

CRYSTAL PALACE POULTRY SHOW.—The number of local and metropolitan Poultry Shows, the value of the prizes offered at them, and the extraordinary interest taken in them during the past few years, is one of the most remarkable features of recent agricultural history. We read advertisements of eggs and birds of first-rate strains and pure breeds offered by gentlemen who have won nearly 500 prizes! And the Poultry Directory lately published tells yet more strikingly how much care and attention is now bestowed, when formerly mere chance work and neglect resulted how they might in mongrel and inferior poultry produce. The difference between the present and a very recent past in this particular is of course still seen most at shows of birds. It is when you compare the heavy Dorking or Cochin China fowl, the beautifully shaped Spanish, or elegant Hamburgh with the generality of farmyard poultry as it used to be that you are most struck with the useful result of the so-called poultry mania; but the farm-yard birds now commonly to be met with are also much improved, and it does not now need a difficult and laborious selection of birds to produce a show worth looking at.

The Crystal Palace Company have had a winter show of Poultry now for several seasons. The one just held much surpasses any previous one in number and in quality. It has comprised 120 pens of the black Spanish fowl, more than 200 pens of coloured and white Dorkings, 110 pens of Cochin Chinas, 200 pens of game fowl, 170 pens of the various sorts of Hamburgh fowl, 50 pens of Polish fowl, a large show of other sorts, as well as of geese, turkeys, ducks, making in all 1117 pens, to which must be added 300 lots of pigeons.

The classes of Dorkings, game, and Spanish birds were of wonderful excellence. The prize list contains a number of the old names as well as new ones, as Messrs. Botham, Fowler, Rodbard, Punchard, Captain Hornby, Archer, and many others. We have not room for the prize list.

Farmers' Clubs.

LONDON CENTRAL.—The following subjects have been selected for discussion during the ensuing year:—

February 7.—Arterial Drainage—including the state of our Rivers and Water-courses—proposed by Mr. J. A. Clarke, Long Sutton, Lincoln.

March 7.—The Education, Discipline, and Introduction of the young Farmer to Life—Mr. R. Bond, Kentwell, Long Melford, Suffolk.

April 4.—The Progress of Agriculture — Mr. R. Smith, Emmett's Grange, South Molton.

May 2.—The Advantages of Steam in Agriculture—how far they have been availed of—Mr. J. J. Mechi, Tiptree Hall, Essex.

June 6.—What System of Cultivation upon Mixed Soils will, under present circumstances, be found most profitable?—Mr. R. Baker, Writtle, Essex.

November 7.—The Growth of Seeds in alternate Husbandry, without the admixture of Trefoil or Rye-grass—Mr. J. Marshall, Riseholme, Lincoln.

December 5.—The Composition of Different Varieties of Vegetables and Plants, and their respective Values as Food—Mr. J. C. Nesbit, Kennington Lane.

The discussion will commence at half-past 5 o'clock, P.M. Members unable to attend these meetings are invited to forward practical information upon them. Their letters will be handed to the introducer of the subject to which reference is made.

OXFORD: *Kinds of Corn and Cake most Economical at Present Prices.*—Mr. Osborne said: They did not want to pay 7*d.* per lb. for mutton, but would prefer to have more mutton at a lower rate, and keep the bread a little higher than it was. Barley was much the same price as Wheat, but Beans were higher, and for that reason he was in favour of Wheat for sheep, as it was well adapted for producing mutton and wool. Some persons had a great objection to give Wheat to sheep; but he had tried it, and never found the slightest harm or loss from using it. He commenced by taking his sheep home, and starving them down till they became used to bran and water, and when that had gone through their system, then he used Wheat. He gave them a pint, or 1lb. per head, per day; and if they adopted the plan of starving them down to it, they would find no loss; but if they did not do so, and threw in a quantity, some of the sheep would, perhaps, take a quart, which would do them an injury, while others would get none. Looking, therefore, at the present price of wool (2*l.* per tod), it was to their interest to grow all the wool they could; and if they could feed the people with more mutton and less bread, they would be only doing their duty. With regard to cake for sheep, he believed that the best description of oilcake was the best and most economical for that purpose, and that if they did not use the best description, they would have to pay the penalty. At the same time, he was bound to say that when he gave his sheep a mixture of Wheat, Beans, and cake, they picked out the Wheat, and left the Beans and cake, clearly showing which they preferred; and, therefore, the less they went against nature in feeding sheep the better. Mr. Osborne concluded by moving, "That of all kinds of corn, Wheat, at its present price, is the most economical for feeding sheep on roots; and of cake, the best oilcake for the same purpose."—The Rev. J. Clutterbuck said it was generally supposed that if they gave Wheat to animals it would have a tendency to heat them, and therefore few gave it alone; it might be found necessary and advisable to mix it with other food which gave meat and muscle, for Wheat gave bone, containing, as it did, phosphate of lime. The ashes of a large Swede would lie in a man's hand, and consisted of phosphate of lime, of which animals were made, and substances of which they were made they would consume; and therefore it was necessary to consider what food was most consistent with the nature of the animal itself. There was nothing so nourishing to man as Wheat, but it had been considered a sin and a waste to give it to animals; but they gave their pigs offal, which now it was very difficult to procure; and what nourished pigs would do the same for sheep, and therefore he saw no reason why Wheat should not be consumed in this way as well as in any other. Some parties objected to grow certain descriptions of Wheat which was very productive, but, at the same time, was coarse; but if they could grow 6 quarters to the acre, instead of from 4½ to 5, it might not be a bad sort for feeding purposes. As they could not take Wheat out of the land without returning Wheat to it, he thought that the best way was to consume the Wheat on the land, and for these reasons he had very great pleasure in seconding Mr. Osborne's motion.

Mr. James Williams, of Northcourt, said roots alone were of a purgative character, a large per-centage being water; and they wanted to correct that, and the best corn for that purpose had been found to be good old Beans, not so much for the formation of fat, but for supplying that which was wanting in feeding on roots. In looking at Wheat, they naturally inferred a tendency to scour, which was increased by the consumption of roots. He had watched a flock for some months that had been consuming half a pint of Wheat per day; they thrived quickly and came very heavy to the scale, but there was a tendency to scour, and he had asked the shepherd if he continued to give them Wheat, and he told him he was obliged to leave off the Wheat because it scoured the lambs, and for the last month he had given them Clover, hay, and Turnips, upon which they made the same progress; but he doubted whether they did so well without corn as with it. They ought not, however, to look to the effect of any kind of food independent of other food. He had seen a very fine flock of 250, which made 70*s.* each, and they consumed 1 lb. of oilcake per day, and he had asked the party if old Beans would not have been cheaper, but his reply was that, from his experience, oilcake was not only the safest thing to consume, but was cheaper than any other description of food. That was the experience of a man who farmed largely, and who produced most excellent crops. They found from experience that by feeding with new or old Beans they lost sheep from congestion of the brain, brought on by indigestion, and thus it was a great question whether Beans were equal to, or as safe as, oilcake, which did not produce that effect. He had lambed 550 ewes, when he fatted the lambs with oilcake alone, but his experience with oilcake this year led him to give it up, for it produced a good deal of fever, and they did not progress so well as with split Beans. One year he fed his lambs with Peas, and he found they did best on old Peas, which were not so apt to scour, or to engender disease, as new Peas. Then came the question as to whether Wheat was the most profitable article to consume for sheep, and, as far as his experience went, Beans or old Peas were preferable, as being not only cheaper and safer, but possessing equal feeding properties. He could not advocate using Wheat alone; for, as such, he did not think it either the safest or cheapest, but it might be used in company with other corn. He disagreed with Mr. Osborne's plan of using Wheat alone, and was of opinion that a mixture of one-third Wheat, one-third cake, and one-third old Beans would be preferable, as the cake would produce fat, Beans made muscle, while Wheat would give strength to the general frame.

Mr. James Walker, of Begbroke Hill Farm, said that for some years past he had been an extensive consumer of oilcake, and the more he used it the better he liked it. The price of Beans was so near to that of Wheat that he strongly upheld the feeding of sheep with Beans on roots; he was however in favour of a mixture of cake, Barley, and Beans, and moved as an amendment, "That a mixture of Beans, Barley, and cake is preferable as food for sheep."

Mr. Williams remarked, that if they took the price of Beans at 44*s.* per quarter, they could get a ton of cake at 10 guineas, which would produce as much as five quarters of Beans, whereas they could buy old Peas at 38*s.* per quarter, which would compete with Beans. At the same time, they could not throw overboard cake, Beans, or Peas. He had consumed some hundreds of quarters of Wheat; but what would feed pigs would not feed sheep, because they had not to contend against the purgative property of roots, which sheep consumed, but which pigs did not.

On a division the amendment was carried.

Reviews.

The Journal of Agriculture and the Transactions of the Highland and Agricultural Society of Scotland. Blackwood & Sons.

The number just issued of this quarterly periodical is more than usually good, containing a number of useful papers interesting both particularly to Scottish farmers and generally to agriculturists of both divisions of the island. Among the former may be enumerated Mr. Turnbull's report on Mangel Wurzel, a plant whose merits in English agriculture are already generally admitted, though in Scotland they are still doubted, and indeed generally considered doubtful. Among the latter is Mr. Russell's excellent paper on Anbury or Finger and Toe in the Turnip crop, to which we shall hereafter direct attention. The Journal contains papers by Mr. Burn on the Novelties of the Agricultural Shows of last year, by Mr. Russell on Finger and Toe; by a Farmer on the Present Position of Agriculture, on the Selling of Grain by Weight or Measure, on the British Grasses, Specifications of Patents, on Steam Culture, and various paragraphs under the head of Farmers' Note-book. The Transactions contains papers on River Embankments, on Mangel Wurzel, on Draught in Ploughing, on the Disease of Stomach Staggers, on Professor Anderson's Laboratory Researches and Experiments. From these latter we extract the following *Note on Concentrated Cattle Food*:—

"I had prepared some months since a short notice regarding the nature of some of the substances now so extensively advertised as foods for cattle, which circumstances prevented appearing at the time it was written. Since then, Mr. Lawes has published in the Journal of the Royal Agricultural Society of England, a paper on the same subject, in which he expresses opinions completely concordant with my own, and has rendered my observations unnecessary. But as there are probably many readers of the Transactions into whose hands Mr. Lawes's paper may not fall, it may be of some use to put on record two analyses of such foods, merely for the sake of showing how little they merit the encomiums bestowed on them, or the price at which they are advertised:—

	I.	II.
Water	14.38	12.65
Oil	7.05	4.00
Albuminous compounds ..	10.00	7.94
Gum, sugar, &c...	54.37	69.81
Fibre	7.61	
Ash..	6 59	5.60
	100.00	100.00
Nitrogen	1.60	1.27

"These substances are made up of a variety of different kinds of ordinary food, among which Indian Corn and Beanmeal appear to be the principal, mixed with a small quantity of some aromatic seed (in one case apparently Caraway seed) for the purpose of giving the mixture an attractive flavour. The exact nature of the latter substance cannot be determined without a long and elaborate examination, which, under the circumstances, it did not appear necessary to undertake; for the results, so far as they go, are sufficiently conclusive as to the value of the articles. It is obvious that they are cattle-foods of the most ordinary description, of comparatively low value, and not for a moment to be be compared with the ordinary cereals, Beans, or oil-cake. And yet No. 2 is offered for sale at 42*l.* per ton, being at the rate of 4½*d.* per lb., when the meat it is to produce is sold for about 6*d.* The materials of which these foods are made cannot, when reckoned at the very highest rates, be worth more than from 7*l.* to 10*l.* per ton; so that the farmer who purchases is made to give an unreasonable and unfair price, which he ought not to pay, even if the food fulfilled the promises of the sellers. That the traffic in these articles must be carried on very extensively cannot be doubted; and it is a matter of the very greatest regret that farmers should give countenance to it by testimonials, of which a long list is to be found appended to the advertisements. So strong is my opinion on this point, that I have absolutely refused to make analyses of these foods for their makers, lest the results should be used in any way to lead farmers into the belief that I am favourable to them.

"It is worthy of notice that all foods of this description have a small quantity of an aromatic substance mixed with them, which may serve the part of a condiment, and induce the animals fed upon them to consume a larger quantity of their ordinary food, and, by

promoting digestion, cause the animal to fatten more rapidly than it otherwise would. But on this point we have no information; and it would be of interest to have a few experiments made on the effect of such substances mixed in small proportion with the food of animals. But even supposing a favourable result to be obtained from such substances, it would not in any way invalidate the remarks now made, or form an argument for the farmer's paying 40*l.* per ton for what is worth 7*l.* or 8*l.*"

Miscellaneous.

Draining Match on the Estate of the Duke of Sutherland at Trentham.—Under the auspices of this nobleman and the management of George Loch, Esq., first agent to his Grace, an interesting draining trial took place last week, the competitors being workmen in the employ of the Dukes of Sutherland and Cleveland, the Marquises of Westminster and Cholmondeley, the Earls of Carlisle, Radnor, and Ellesmere, Lord Denbigh, W. Egerton, Esq., and other gentlemen from the adjoining counties. A suitable piece of ground in Trentham Ley, near the far-famed ornamental pleasure grounds of Trentham House, having been selected and enclosed by hurdles for the purpose, the stalwart competitors (24 sets of three men in each) commenced operations at 9 o'clock. The lines of the drains were marked, the sod upturned, and then spits of soil and subsoil were thrown out of the trenches in rapid succession. Very great interest was evinced in the operations. Everything in connection with the match was conducted most satisfactorily, and very great praise is due to the chief agent, Mr. G. Loch, with whom it originated. In draining, the Earl of Ellesmere's men obtained the first prize; the second being taken by the Earl of Carlisle's, and the third by the Duke of Cleveland's. In pipe laying, the Duke of Sutherland's took the first prize, and those of William Egerton, Esq., the second.

Calendar of Operations.

DECEMBER.

ISLE OF ELY: *Dec.* 30.—The past year has been one which the agricultural interest has not characterised as a prosperous one. The unremunerative price of meat in the early part of the year, and the very low price of corn prevailing during the latter part of it, have tended to make the farmers' profits very small, and in many instances have doubtless occasioned an actual loss. But we must not despond, but look forward cheerfully to the future, resolving not to relax our energies, or abate our zeal, and sooner or later the well-directed and vigorous efforts of the diligent and persevering shall be requited. Our local report of the doings and employments upon a Fen farm at this season of the year must necessarily be dull and uninteresting. Work is almost wholly of a routine character for two or three months in the depth of winter; ploughing, threshing, waiting upon stock, and claying, are the chief employments. And when the frost sets in, carting manure from the yards and upon the lands designed for spring cropping may be added. The weather since the severe frost of November broke up has been upon the whole mild and seasonable, and we have had some very good rains, which have been highly beneficial, but yet not sufficiently heavy to make the springs rise or to occasion a flood. A wet "dripping" winter is generally advantageous to our Fen soils; they become consolidated, and are consequently better enabled to bear the frosts and drying easterly winds which prevail so much in the early spring months. During the last month our Wheats have improved considerably, and are getting well rooted and strong. Work is generally very forward, ploughing almost finished, and a frost will soon be required to enable us to remove manure to find employment for both men and horses. Coleseeds eat away quickly, and mutton is getting thinner. The meat trade has been active, and prices good at the Christmas markets. The corn trade also, after a long period of intense dullness, has shown some little symptoms of activity, and prices are slightly advancing, but are still low and un-remunerative. *Your Fen Reporter.*

Notices to Correspondents.

GREEN FOOD FOR LATE SOILING: *An Ely Islander* says, "I have been a grower of Carrots (Belgium White) for 13 or 14 years, and have always at the time of digging been able to furnish my horses, cattle, and even pigs with a considerable amount of green food, but it was not until last year that it struck me Carrot tops might be grown as green food for use in the yard; but I am now confident they can be grown most successfully for that purpose." [It is hardly probable we shall be able to compare Carrot tops and Tares for you exactly; and though analyses could be obtained they would be those only of the specimens analysed; while no doubt the chemist would bear out what the farmer knows, that Tares vary much in nutritive quality according to age and circumstances of growth, &c. We shall be very glad to receive the account of your experience.]

MIXED SEEDS: *A Young Farmer* asks for the experience of any one who has tried Trifolium incarnatum for filling blanks in Clover. [It is we fear too late now for sowing it.]

RAPE-CAKE: *Ignorance.* If it destroys wire-worm it may be used horticulturally as well as agriculturally. Mr. Mechi's meaning is no doubt what you suppose. Whether he reads his own experience rightly in the matter is uncertain.

STOCKING OF A CLAY FARM: *Dentatus* says:—"It would enlighten many of those engaged in farming pursuits if any of your practically intelligent correspondents would give the following information:—How many horned cattle and sheep would be considered full stocking for a stiff land farm consisting of 130 acres of arable, 40 acres of meadow, and 160 acres of pasture land? The latter are good pastures, full of Grass during the summer and autumn months. The farm is cultivated on the four-course system, and from 20 to 30 acres of Mangel Wurzel and Swedes are grown yearly. Is it generally considered that purchasing straw pays the farmer? That is, does he get an equivalent return for 20*s.* per load in the good it does the cattle and the manure produced from it? It has been asserted that one load of straw produces four loads of dung. Is this a fact? If this should meet the eye of some of the practical farmers of our land, such as Mr. Bond and others, who have entered closely into the minutiæ of production and expense, they would not only enlighten many of the fraternity, but nearly all those who style themselves gentlemen farmers by giving a full reply to the questions proposed, as the stocking of farms of larger or smaller dimensions could be calculated accordingly. [We hope next week to state the data on which calculations of this kind must be made.]

CHRYSANTHEMUMS—CHRYSANTHEMUMS.

J. H. BIRD, F.H.S., NURSERYMAN, Stoke Newington, the largest grower and most successful exhibitor of the Chrysanthemum in the British Empire, begs to call the attention of the lovers of the above beautiful autumn flower to his matchless collection, the stock of which amounts to upwards of 50,000 plants. Amongst them will be found the following new and rare varieties:—Admirable, Aimée Ferrière, Augustine, Constantine, Louisa, Louis Bonamy, Madame Leo, Norfolk Hero, Progne, Raymond, Beauté de Nord, Dr. Maclean, Queen of England, Plutus, Alfred Salter, Stellaris globosa, Beauty, Themis, Dupont de l'Eure, &c.

J. H. B. can supply strong plants, one dozen for 6*s.*; or five dozen in 30 varieties, containing two of each variety, for 1*l.*; or he can supply 100 plants in 50 varieties, two of each variety, for 1*l.* 10*s.* Also POMPONES in great variety; 50 Pomponcs in 25 varieties, two of each variety, for 10*s.*; or 100 in 50 varieties, two of each variety for 1*l.* Strong plants of the beautiful new Pompone the Golden Cedo Nulli, 5*s.* each, will be ready in March with the usual allowance to the Trade. Every order will be accompanied by a popular work on the Chrysanthemum.

Post-office Orders payable to J. H. BIRD, Stoke Newington, will be immediately attended to.

CHRYSANTHEMUM TRICOLOR BURRIDGEANUM.
CHRYSANTHEMUM TRICOLOR VENUSTUM.

F. K. BURRIDGE, SEED GROWER, Lexden Road, Colchester, has much pleasure in inviting the special attention of the Seed Trade to the above-named new Hardy Annuals, which he now offers for the first time, believing they will be found among the finest novelties of the season. The variety Burridgeanum differs from the old C. tricolor in having a fine crimson ring surrounding the yellow circle next the eye of the flower, the rest of the ray being snow white. The variety venustum has the ray florets of a deep reddish purple or plum colour for about one-half their length, shading into yellow at the base, and stained on the under side with purple. Both varieties are striking objects in the flower border, and from their bold conspicuous character, free blooming qualities, and perfect hardiness, together with their adaptability for bouquets, F. K. B. confidently predicts that they will become universal favourites.

A beautifully-coloured group of the two varieties has been prepared, and may be had on application, price 1*s.*; or gratis to Purchasers of 1 oz. of seed.

N.B. The Botanical Magazine for the present month (Jan. 1859), contains a coloured plate of the above.

THE GARDEN.

IN THE CATALOGUE OF VEGETABLE AND FLOWER SEEDS issued by W. DRUMMOND & SONS, Stirling, the intelligent gardener will be gratified to find the system of inserting only the best and really distinct varieties in the various classes still strictly adhered to; and from the brief but correct descriptions affixed thereto, as well as the general simplicity of the whole, it will be found a ready guide to the amateur in making a suitable selection.

W. D. & SONS will, on application, be glad to forward a copy of their Catalogue, post free, to any address.

Stirling is most favourably placed in point of railway accommodation, there being direct and constant traffic to all the principal stations in Scotland and England, and by steamers (*viâ* Glasgow) almost daily to the chief ports in Ireland, thereby insuring a speedy delivery of goods, all of which are, with a limited exception, forwarded carriage paid.

W. DRUMMOND & SONS: Seed Warehouse, Stirling, N.B.; and 58, Dawson Street, Dublin.

R. M. STARK, SEEDSMAN, &c., 31, Castle Street, Edinburgh, begs to intimate that his CATALOGUE OF GARDEN, FARM, AND FLOWER SEEDS for the Season is now ready. Of the numerous interesting additions to his Stock he would especially notice the following:—Peas: Champion of Scotland, Excelsior Marrow, Dunnett's First Early. Broccoli: Penzance and Snow's Superb. Cabbage: Champion and Shepherd's Marrow. Lettuce: Crystal and Superb White Cos. Potatoes of fine sorts, &c. &c.

FLOWER SEEDS.	Per pkt—*s.*	*d.*
Bravoa geminiflora, beautiful Iris-like plant, with spikes of rich orange waxy flowers	0	6
Brizopyrum siculum, very ornamental Grass	1	6
Callirhoe pedata (Malvaceæ), crimson with white eye, fine	2	6
Chrysobactron Hookeri, fine new Asphodel from New Zealand	1	0
Datura humilis fl. flavo pl., from Texas, flowers golden yellow	2	6
Eryngium yuccæfolium, fine hardy species	1	6
Fenzlia (Gilia) dianthoides, rosy pink		
Lupinus Menziesi, new yellow species	1	0
Portulacca caryophylloides	1	0
Solanum capsicastrum, ornamental fruit suitable for pot	1	0
Stock, Stark's intermediate, brighter in colour than Young's	1	0
Trifolium tomentosum, ornamental dwarf species with woolly heads	0	6
Zinnia elegans striata	0	6

With many others of equal interest purchased or collected on the Continent by R. M. S. in the course of last season.

Edinburgh, Jan. 15.

SEEDLING FOREST TREES, &c.

			Per 1000—*s.*	*d.*
3,000,000	1-year	Larch	1	0
1,000,000	,,	Scotch Fir	0	10
300,000	,,	Alder	1	0
200,000	,,	Birch	1	6
200,000	,,	Elms	1	6
150,000	,,	Ash	1	6
100,000	,,	Sycamore	1	6
300,000	,,	English Oak	2	6
10,000	,,	Evergreen Oak	40	0
20,000	,,	Horse Chesnut	5	0
40,000	,,	Chinese Arbor-vitæ	10	0
70,000	,,	Cupressus horizontalis	8	0
80,000	,,	Pinus Laricio	10	0
100,000	,,	Pinus austriaca	6	0
300,000	,,	Pinus maritima	2	6
20,000	,,	Common Laurel	17	6
20,000	,,	Crab Apple	3	6
250,000	,,	Quick	2	0
10,000	,,	Laburnum	2	6
10,000	2-year	do.	4	0
1,000,000	,,	Norway Spruce Fir	1	6
40,000	,,	White Spruce Fir	4	0
50,000	3-year	Silver Fir	7	0
800,000	2 ,,	Scotch Fir	1	6
100,000	1 ,,	bedded Scotch Fir	2	6
100,000	2 ,,	Beech	3	0
60,000	2 ,,	Birch	3	0
20,000	2 ,,	Alder	3	0

The Subscriber begs to call attention of his friends and the public in general to the above stock of SEEDLINGS, and is happy to intimate to them that they are generally fine in quality, and trusts they will give satisfaction. Any order, large or small, will be promptly attended to. All delivered free of expense at Dublin, and thence half carriage paid to any part of England, &c.—Apply to MICHAEL BURKE, Drumlargan Nursery, Summerhill, county Meath, Ireland.

"JEYES'S CONQUEROR PEA," 3*s.* 6*d.* per quart.—This remarkable Pea was sent out to a few private growers a few years since, and it has established its own reputation so much, that although I have kept on increasing my supply every year, I have always had to deal it out with great caution lest my regular customers should not be supplied; and long before the season for sowing was over I have been sold out and had to turn away many scores of customers. To prevent a repetition of such a short supply I engaged with two gentlemen to grow me five acres each, and forwarded them the seed very early in the spring. The present stock is the result of that arrangement, and it is with much pleasure and confidence that I offer it to the criticism of the whole gardening world.

I have much pleasure in submitting to notice the following testimonials respecting this wonderful Pea.—JOHN JEYES, Northampton.

Delapre Garden, January 1, 1859.

Dear Sir,—I have grown your "Conqueror Pea" for several seasons, in fact ever since its introduction. During that period I have had its qualities tested in comparison with the numerous varieties of recent introduction, and the result has been invariably favourable to your Pea. As a second early and main cropper, its immense supply and continued bearing make it truly valuable, and if my humble testimonial to its great worth should be the means of bringing it into more general notice, I shall rest satisfied that its merit will make it become a universal favourite.—I am, dear Sir, yours very truly,

Mr. J. Jeyes. GEORGE MACKIE.

Sir,—After having grown and tested your marrow Pea, "Conqueror," for three consecutive seasons, including the past dry and unfavourable one, I have no hesitation in stating that it is a really valuable addition to our culinary garden. Its fine branching habit, bearing a profusion of pods, having from eight to ten large sized fine green coloured Peas in each, will make it of sterling value to growers, when its merits become more universally known.—I am, Sir, yours, &c.,

Moulton Grange. J. R. TANTON.

Northampton, January 4, 1859.

Sir,—I have grown your "Conqreror Pea" for the last six years, and cannot speak too highly of it, indeed it is such a fine thing that it cannot be flattered. It will yield better than any other Pea sell more freely, and fetch half as much more money.—Yours truly, JOHN MORING, Market Gardener.

56, Gold Street, Northampton, January 8, 1859.

Dear Sir,—We feel great pleasure in bearing testimony to the excellent quality of your "Conqueror Pea." It stands so far above any other Pea we produce as to fetch a much higher price; it is THE favourite with our customers.—We are, dear Sir, very truly yours, WATTS & SON, Market Gardeners, &c.

Mr. John Jeyes.

Hundreds of testimonials can be given and all most complimentary.

The following Firms have received a large supply, and are authorised Agents:—

Messrs. NOBLE, COOPER, & BOLTON, Fleet Street, London.
Messrs. FAIRHEAD & SON, Borough Market, London.

MESSRS. WATERER AND GODFREY respectfully invite the attention of parties engaged in planting to the following list of very desirable plants, all of which may be seen growing in the open quarters of their Nursery, and are in the finest possible condition for transplanting:—

Araucaria imbricata, 9 to 12 inches, 5*l.* per 100; 40*l.* per 1000
,, ,, 1½, 2, 3, 4, 5, 6, and 8 feet high. Our stock of this plant exceeds 100,000
Wellingtonia gigantea, stout handsome plants from seed, 84*s.* per dozen; 25*l.* per 100. These are all in the open ground, and are believed to be the finest lot of seedling plants in the Trade.
Cedrus Deodara, 1½ to 2 feet, 18*s.* per dozen; 6*l.* per 100
Do. 3, 4, 5, 6, 7, 8, 10 and 12, and 15 feet. Our stock of Deodars at the present moment occupies several acres of land; they have been constantly removed, and with fair usage not one in a thousand would fail. We offer them on very advantageous terms either in large or small quantities
Cedrus atlantica, 4, 5, 6, and 7 feet
Cupressus macrocarpa, magnificent plants, 7, 8, and 10 feet high
,, Lawsoniana, stout handsome plants from seed, 18 inches, by the dozen or 100
Abies nobilis, from imported seed, 6*l.* 6*s.* per doz.; 40*l.* per 100
,, do. 1, 2, and 3 feet high
,, Nordmanniana, a large number of beautiful plants, all from seed, 2, 3, 4, 5, and 6 feet high
,, Pinsapo, do. do.
[We believe we are justified in stating our stock of the three last-mentioned Firs offers a selection to be met with in no other Nursery.]
,, Douglasi, 6, 7, 10, and 12 feet
,, orientalis, 3, 4, 5, and 6 feet
Pinus Benthamiana, stout seedling plants, about 1 foot, 18*s.* per dozen; 5*l.* per 100; 40*l.* per 1000. Unquestionably the finest of all the long-leaved Californian kinds, and well known to be perfectly hardy. It is the most valuable of all for timber.
Juniper, Chinese, 2, 3, 5, 7, 8, and 10 feet high
Irish Upright, 3, 4, 5, 6, 7, and 8 feet. The Irish and Chinese Junipers are grown by us to a very large extent
Thuja aurea.—This plant originated in our Nursery, and our stock of it offers a choice of many hundred specimens from 1½, 2, 3, 4, and 5 feet high, and measuring from 2 to 10 and 15 feet in circumference. Nothing can well exceed the beauty of these plants, and certainly are to be met with in no other Nursery
Thuja gigantea, stout seedling plants, 1½ to 2 feet high
,, Wareana, 3, 4, 5, 6, 7, and 8 feet
Thujopsis borealis, handsome plants, in quantity, 1½ & 2 ft. high
Taxus, Yew, Common English.—A large quantity, and of all sizes up to 5, 6, and 7 feet
,, Irish Yew, 4, 5, 6, 7, and 10 feet. Many thousands of these beautifully formed plants grown to one stem
,, Golden Yews in large quantities and of all sizes up to 6, 7, and 8 feet
We also have them worked on the Common and Irish Yew as Standards, with heads from 12 to 15 years' growth
Holly, Variegated, Scottica, laurifolia, &c. We hold probably the largest stock of good sized variegated Hollies in the kingdom, especially of the better kinds of silver and gold striped
Rhododendron ponticum, for cover, stout plants, 1½ to 2½ feet, by the 1000. All the well-known proved hardy late blooming kinds, in any quantity, at from 30*s.*, 42*s.*, to 84*s.* per dozon
Standard Rhododendrons of all kinds
Azaleas, stout bushy plants, covered with bloom buds, from 18 inches to 2 feet high, and of all colours, 9*s.*, 12*s.*, 18*s.*, and 24*s.* per dozen; 50*s.*, 75*s.*, to 100*s.* per 100
Hardy Heaths, a first-rate collection, at 35*s.* per 100; 15*l.* p. 1000
Roses, fine Standards, of the most popular kinds, at very low prices.

As well as the above, we are very large holders of the ordinary kinds of Nursery Stock, which may be judged from the fact that the Nursery far exceeds 100 acres in extent of all such things as Laurels, Box, Lilacs, Limes, Purple Beech, and the commoner descriptions of Evergreens and Deciduous Flowering Shrubs. An enormous stock of Fruit and Forest Trees are also grown extensively.

Goods are delivered free to London, Reading, or Reigate. The Nursery is reached in an hour from Waterloo, and conveyances are always to be had at the Woking Station.

CATALOGUES, Priced and Descriptive, will be sent on application, enclosing one postage stamp, to

WATERER AND GODFREY, Knap Hill, Woking, Surrey.

GRAPE VINES FROM EYES.

JOHN AND CHARLES LEE beg to offer an immense stock of strong well-ripened VINES FROM EYES, of the following kinds:—

Alicant
Barbarossa
Bidwell's Seedling
Black Cluster
Black Constantia
Black Damascus
Black Prince
Blanche Vigne
Calabrian Raisin
Charlsworth Tokay
Chasselas Frocklaboulay
Chasselas Musqué
Duzetto
Esperione
Frontignan, black
,, grizzly
,, white
Hamburgh, black
,, Champion
,, Dutch
,, golden
,, Mill Hill
Hamburgh, Pope's
,, Victoria
Hâtif de Jura
Isabella
Lady Down's Seedling
Marchioness of Hastings
Muscadine, Royal
,, Parsley leaved
Muscat, August
,, Bowood
,, Cannon Hall
,, Hamburgh
,, Noir Hâtif
,, of Alexandria
,, of Fontainebleau
Pitmaston Cluster white
Raisin des Carmes
Sweet Water, Dutch
Syrian
Trebiana
Tripoli
West's St. Peter's

Nursery and Seed Establishment, Hammersmith, London.

UNEQUALLED NEW CUCUMBER, "DR. LIVINGSTONE."—This is one of the finest long hybrid Cucumbers for exhibition purposes that has ever yet been offered to the public; it is a splendid black spine, length 22 to 26 inches, a very free setter, and an abundant bearer. Price 2*s.* 6*d.* per packet.

Also the following fine CUCUMBERS can be supplied:—

	Per packet—*s.* *d.*		Per packet—*s.* *d.*
General Outram	2 0	Sunderland Wick	1 0
Perfection	1 0	Hunter's Prolific ..	1 0
Sir Colin Campbell ..	1 0	Mill's Jewess	1 0
General Canrobert ..	1 0	Cheltenham Surprise ..	1 0
Phenomena	1 0	Manchester Prize ..	1 0
Ipswich Standard ..	1 0	Sion House (true) ..	1 0
Lord Kenyon	1 0	Cuthill's Black Spine ..	1 0
Essex Hero	1 0	Conqueror of the West .	1 0
Victory of Bath	1 0	Lynch's Star of the West	1 0
Gordon's White Spine ..	1 0	&c. &c. &c.	

"QUEEN OF THE WEST" MELON, a superb new variety, green flesh, very handsome in appearance, beautifully netted, and excellent in flavour. It obtained several first prizes during the past season. This Melon has proved itself to be one of the best varieties ever yet offered for early forcing. It sets well, and will carry an immense crop. Fruit weighing 2½ lbs. was cut on the 20th of April, and the plants continued bearing abundantly until the end of July. Seeds 2*s.* 6*d.* per packet.

NEW MELON "GENERAL HAVELOCK," sent out for the first time last season. It is a green flesh, of a very handsome shape, and beautifully netted; a very thick substance, thin skin, of a melting and most delicious flavour, and an abundant bearer. Weight from 3 to 4 lbs. It is very hardy, and may be grown as easily in a cold frame in the summer as a Vegetable Marrow. Seed 1*s.* per packet.

Also the following fine varieties of MELONS:—

	Per packet—*s.* *d.*		Per packet—*s.* *d.*
M'Ewen's Arundel Hybrid Scarlet-flesh	1 0	Bowood	1 0
		Victory of Bath	1 0
M'Ewen's Arundel Hybrid Green-flesh	1 0	Cashmere	1 0
		Camerton Court	1 0
Monro's Crystal Palace Hero	1 0	Beechwood	1 0
		Windsor Prize	1 0
Monro's Golden Gage ..	1 0	Emperor	1 0
The Queen	1 0	Fleming's Hybrid Persian	1 0
Orion	1 0		
Golden Drop	1 0	Blackall Green-flesh ..	1 0
Green Gage	1 0	Bailey's	1 0
Bromham Hall	1 0	Snow's Hybrid	1 0
Incomparable	1 0	Golden Perfection ..	1 0
Golden Ball	1 0	Scarlet King	1 0

A packet of any var. of Cucumber marked at 1*s.* per packet sent with a packet of the Dr. Livingstone Cucumber for 3*s.*

A packet of any var. of Melon marked at 1*s.* per packet sent with a packet of the Queen of the West Melon for 3*s.*

Extra fine mixed Hollyhock Seed, saved from all named vars., 1*s.* per packet.

Early Emperor Celery, the finest ever yet sent out, 1*s.* p. pkt.
Tiley's Solid White Celery, 6*d.* per packet.
Delphinium formosum, 6*d.* per packet.
Digitalis, or Foxglove Seed, 6*d.* per packet.

A remittance must accompany every order in Cash or Penny Postage Stamps, when the whole or any part, as the case may be, will be immediately sent.

EDWARD TILEY, NURSERYMAN, SEEDSMAN, AND FLORIST,
14, Abbey Church Yard, Bath.

FLOUR, Warranted Unadulterated, free to any part of London (not less than 14 lbs.); Whites, for pastry, at per bushel (56 lbs.), 8*s.* 4*d.*; households, for bread-making, 7*s.* 8*d.*; seconds, 7*s.* 0*d.*; Wheatmeal, for brown bread, 7*s.* 0*d.*; best fine and coarse Scotch Oatmeal.—Address, HORNSAIL & CATCHPOOL, Bullford Mill, near Witham, Essex, or 97, Goswell Road, City Road, E.C. Directions for bread making gratis. Terms, cash. Bags lent. German yeast. A half sack (140 lbs.), or upwards, free to any railway station within 200 miles.

GENUINE TOBACCO PAPER FOR FUMIGATING.

H. APPLEBY (Foreman to Messrs. Ivery & Son, Nurserymen, Dorking, Surrey), begs to inform his friends and the public that he now offers the above article at a reduced price. Sold in 4-lb. packets, 1*s.* 3*d.* per lb. A great reduction to the trade; price on application. For testimonials that will guarantee its quality, see *Gardeners' Chronicle*, Dec. 11, 1858, page 929.

SHEET IRON POTS FOR FUMIGATING, 3*s.* 6*d.* each.

N.B. All Orders to be accompanied with a Post-office Order, payable to HENRY APPLEBY, Dorking, Surrey.

TOBACCO PAPER OR CLOTH.—TO NURSERYMEN, &c.

GENUINE TOBACCO PAPER OR CLOTH at 10*d.* per lb. to be had of C. DARLINGTON, Tobacco Cutter, 16, Wellington Place, Warner Place, Hackney Road, London.—All orders to be accompanied with a Post-office Order, payable to GEORGE DARLINGTON, Hackney Road, London.

OF THE GREATEST IMPORTANCE TO GARDENERS.

A COMPOSITION FOR "GRAFTING," vastly superior to that generally used, quickly prepared, easily applied, and most successful in its results, can be made at a very trifling cost, and kept for any number of years in a state of purity.

The above is highly approved of and strongly recommended by Mr. Richard Scott, late head gardener to the Hon. R. Curzons, Parham Park, Sussex.

A Recipe forwarded post free for 30 postage stamps.—Address Rev. F. G. SHARP, Pulborough, Petworth, Sussex.

RIMMEL'S CITY BRANCH, 24, Cornhill, Corner of Change Alley, opposite the Royal Exchange, will OPEN on MONDAY next for the Sale of his well known PERFUMERY and Toilet Requisites. Shipping Orders taken.—RIMMEL, Perfumer to her Majesty, 96, Strand, and 24, Cornhill. Manufactory, 96, Strand, W.

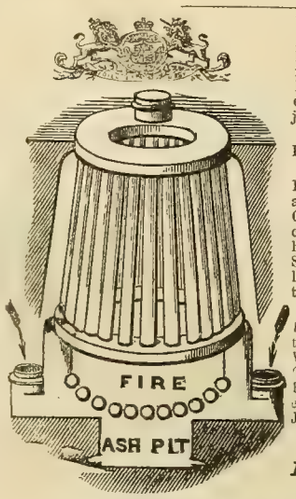
WEEKS' ONE BOILER SYSTEM.

THE

LARGEST HORTICULTURAL ESTABLISHMENT IN EUROPE

IS NOW SUCCESSFULLY HEATED BY

JOHN WEEKS & CO. on their One Boiler System.



EVERY YEAR FURNISHES NUMEROUS ADDITIONAL PROOFS of the success and efficiency of J. WEEKS & Co.'s Hot-water Apparatus. Within the last few years upwards of 1000 have been erected all of which are working most satisfactorily. Among the most important, J. WEEKS & Co. have the honour to announce Mr. LOUIS VAN HOUTTE, of Ghent. The whole of his immense Establishment is now effectually and most satisfactorily heated on WEEKS' ONE BOILER SYSTEM. This may be justly termed the masterpiece of the world in the science of Heating by Hot Water.

Also at the extensive Nursery of Mr. CHARLES WOODROFFE, Kensal Green, Harrow Road. Mr. Woodroffe will be happy to show the Apparatus.

J. WEEKS & Co. also beg to refer to the celebrated Nurseries of the Messrs E. G. HENDERSON & SON, St. John's Wood. There will be found ONE OF WEEKS' BOILERS attached to various Hothouses, &c., equal to 1200 feet long, also to all the various Offices, Seed Shops, and Warehouses, the Hot Water circulating through 5500 feet of cast-iron pipe. Any one house can be heated separately either with top or bottom heat, or the whole together, or any part regulated at pleasure; also to Messrs. F. & A. SMITH'S Village of Glass at Dulwich. There will be found Hothouses, &c., 3000 feet long, the whole heated upon WEEKS' ONE BOILER SYSTEM, the Hot Water circulating through 10,000 feet of cast-iron pipe.

J. WEEKS & Co. further beg particular attention to their OWN HORTICULTURAL ESTABLISHMENT AT CHELSEA, the whole of which is reserved expressly for reference, and to exhibit all modern improvements in Horticultural Building and Heating by Hot Water. These extensive ranges of Hothouses, together with the renowned Winter Garden, the whole equal to a range 1300 feet long, are now being managed as a FRUIT FORCING ESTABLISHMENT; and in future Pines, Grapes, Peaches, Figs, &c., will be forced early and in succession throughout the year. This will prove the great power of J. WEEKS & Co.'s Hot-Water Apparatus, and also the economy of the ONE BOILER SYSTEM.

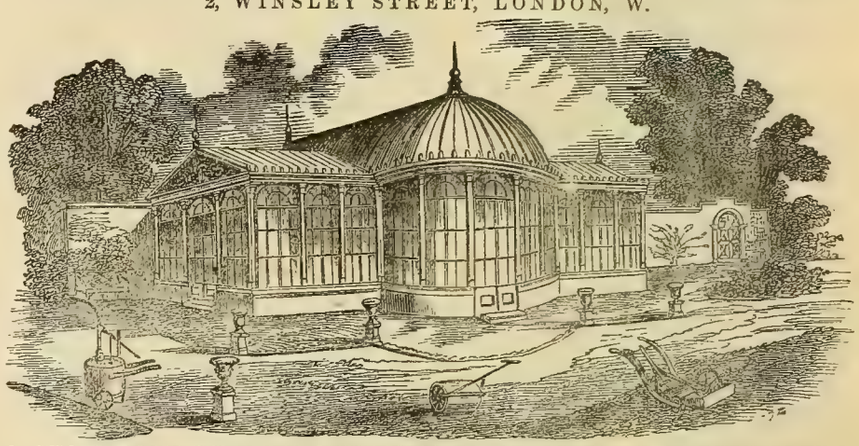
CHURCHES, MANSIONS, HOTHOUSES, &c., HEATED BY HOT WATER.

Illustrated Pamphlets of Horticultural Buildings, also Plans and Estimates on application.

JOHN WEEKS & COMPANY, KING'S ROAD, CHELSEA.

COTTAM & COMPANY, Engineers, Founders, &c.,

2, WINSLEY STREET, LONDON, W.



A SHOW ROOM DEVOTED ENTIRELY TO ARTICLES OF HORTICULTURE.

ILLUSTRATED CATALOGUES UPON APPLICATION.

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	,, Syringes	Garden Bordering
Hot-water Apparatus	Ornamental Wire Work	Hurdles	,, Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

Iron Hurdles, Strained Wire Fencing, Game Netting, &c.

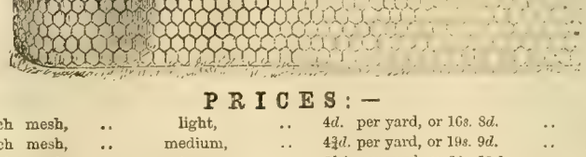
AGRICULTURAL LIST UPON APPLICATION.

Every description of Plain, Ornamental, Cast and Wrought Iron, and Wire Work.

EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

N.B. COTTAM AND CO. beg to make it known that the entrance to their establishment is no longer in Oxford St., as formerly but they have made a second entrance from 2, Winsley St. Oxford St., W., by the side of the old entrance to their works.

STRONG PREMIUM RABBIT-PROOF WIRE NETTING.



PRICES:—

24 inches high, 2-inch mesh, ..	light, ..	4*d.* per yard, or 16*s.* 8*d.* ..	per roll of 50 yards
24 inches high, 2-inch mesh, ..	medium, ..	4½*d.* per yard, or 19*s.* 9*d.* ..	per roll of 50 yards
24 inches high, 2-inch mesh, ..	strong, ..	5½*d.* per yard, or 22*s.* 11*d.* ..	per roll of 50 yards
24 inches high, 2-inch mesh, ..	extra strong, ..	7½*d.* per yard, or 31*s.* 3*d.* ..	per roll of 50 yards
24 inches high, 1⅝-inch mesh, ..	light, ..	4½*d.* per yard, or 18*s.* 9*d.* ..	per roll of 50 yards
24 inches high, 1⅝-inch mesh, ..	medium, ..	5½*d.* per yard, or 21*s.* 10*d.* ..	per roll of 50 yards
24 inches high, 1⅝-inch mesh, ..	strong, ..	6*d.* per yard, or 25*s.* ..	per roll of 50 yards
24 inches high, 1⅝-inch mesh, ..	extra strong, ..	8*d.* per yard, or 33*s.* 4*d.* ..	per roll of 50 yards

All effectually varnished or japanned. If galvanised, 1*d.* and 1½*d.* per yard extra. The extra strong Netting of 2-inch mesh at 7½*d.*, and 1⅝-inch mesh at 8*d.*; 2*d.* per yard extra for galvanising. Quantities of 100 yards or upwards delivered free at nearly all the principal Railway Stations and Shipping Ports in England; also by special estimate to any part of Scotland or Ireland.

Mixed mesh GAME NETTING (the upper half of the Netting of a larger sized mesh than the lower), about a fifth lower in price than the above quotations. Any width of Netting under 8 feet made at proportionate prices.

POULTRY NETTING, 36 inches wide, 2½-inch mesh, 6½*d.* and 7½*d.* per yard. SPARROW-PROOF NETTING for Aviaries and Pheasantries, 1-inch mesh, 2*d.*, and ⅝-inch mesh 2½*d.* per square foot. Best improved hand-made HEXAGON MESH NETTING, from ½*d.* to 1½*d.* per yard extra.

☞ *Every description of Netting warranted to give satisfaction, and if not approved to be exchanged or returned unconditionally.*

J. B. BROWN & CO., 18, CANNON STREET, LONDON, E.C.

HORTICULTURAL WORKS,
DANVERS STREET, CHELSEA, SEPTEMBER, 1857.
DISSOLUTION OF PARTNERSHIP.

MR. GRAY begs most respectfully to announce to his patrons and friends that the Partnership hitherto existing between Mr. ORMSON and himself is now at an end, and that the Business will be carried on by him as usual, and he hopes to be honoured with a continuance of that support and patronage with which this establishment has been so long favoured.

Mr. GRAY avails himself of this opportunity to tender his grateful thanks to the many kind friends and supporters by whose patronage this establishment has been raised to its present position, and he begs to assure them that it will be his most anxious care and study to maintain it.

HEATING BY HOT WATER ON HAMMOND'S improved principle, for Horticultural Works, Mansions, Churches, Public Buildings, in fact everywhere that heat is required. Also his improved Ventilating Greenhouses, which can be erected at 1*s.* per foot, and entirely prevent the possibility of scorching the Vines or plants. The Patent Hot-water Register Stove.—Estimates at No. 18, George Street, Portman Square. Workmen sent into the country.

NOTICE.

VOKINS AND HURD (removed from Smith Street to Seymour House, Jubilee Place, King's Road, Chelsea), HORTICULTURAL BUILDERS AND HOT-WATER APPARATUS MANUFACTURERS. Estimates forwarded

---

HORTICULTURAL WORKS. — HOT-WATER APPARATUS from 5*l.*, at E. ELEY'S, City Road opposite the Eagle Tavern, London. N.B. Patentee of the Fluted Pipes for obtaining moisture, saving fuel, labour, &c. See Prospectus by post. E. ELEY being a practical and scientific workman defies competition. Boilers of every description supplied. Old work taken down, remodelled, and refixed.

HOT-WATER PIPES at wholesale prices, with Elbows, Syphons, Tee Pipes, and every other connection. Wrought and cast iron Boilers, Saddle, Conical, Cylinder, and Elliptic, from 21*s.* each. Boilers and Iron Stands to use without brickwork. Valves from 12*s.* 6*d.* each. Furnace Doors, Furnace Bars, Supply Cisterns, and Builders' Castings of every description in stock, at Mr. LYNCH WHITE'S Iron Wharf, Upper Ground Street, Blackfriars Bridge, London.

ARTIFICIAL ROCKWORK executed in the only way it should be, viz., in close imitation of Nature, in Caves, Waterfalls, to sides of Streams, Ponds, Rocky Fasses, and for Ferneries, not to look as if built up by hand, with the usual arches, pinnacles, &c. Also Artificial Ruins, so as to be supposed real; Remains of Castles, Churches, Towers, Gateways, &c., for picturesque scenery and effect in Gardens, and of guaranteed durability in stone or cement, by

JAMES PULHAM, of Broxbourne.

Numerous references given of works executed over many years.

WIRE NETTING for GAME, POULTRY, and PHEASANTRIES, &c., by improved machinery.

Illustrated Catalogues sent free.—THOMAS P. HAWKINS, Manufacturer, 27, Dale End, Birmingham.

BRITTAIN'S GARDEN NET completely protects Fruit Blossoms from injury by frost, and provides for the circulation of air and admission of light, so essential to healthy growth; 55 inches wide, 5*d.*, 6*d.*, and 7*d.* a yard; good yard wide TIFFANY, 2½*d.* do.—Manchester, Jan. 15.

NETTING! NETTING! NETTING! FOR GARDENS, YOUNG PLANTATIONS, NURSERIES, POULTRY YARDS, AND PHEASANTRIES.

THE SUBSCRIBERS have much pleasure in offering the following very low prices for their PREMIUM PRIZE WIRE NETTING, now universally acknowledged the only reliable article in the market, the monopoly of which it has almost entirely secured. The quality which they supply has gained the Silver Medal from the principal Agricultural Shows in England, Scotland, and Ireland; it is all hand made, giving it an eminent superiority over that manufactured by machinery, as by the latter process the wire is split, and in a very short time the meshes break and gave way. The Subscribers cannot give a better idea of the undoubted excellence of their PREMIUM PRIZE NETTING than by stating that the weight of 1 yard of their 24 inch is equal to about 3 yards of another article in the market the same width, at 9*d.* per yard.

PRICES.

12 inches high		6*d.* per yard	Premium Prize Netting
24	,, 1*s.* 0	do.	do.
36	,, 1 6	do.	do.
12 inches high		4½ per yard	Medium Netting
24	,, 9	do.	do.
36	,, 1 1½	do.	do.
12 inches high		3 per yard,	Light Wire Netting
24	,, 6	do.	do.
36	,, 9	do.	do.

Made any height. If a web of 100 yards is ordered it will be delivered free at any Railway Station. All coated with their Impervient Composition for preservation, and thus rendered superior to galvanised netting.

THOMAS PEARSON & Co., 71, Queen Street, Glasgow.

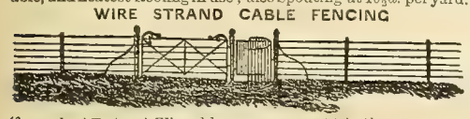
PRICES REDUCED.

H. J. MORTON AND CO., Galvanised Iron Works, 2, Basinghall Buildings, Leeds.

GALVANISED IRON ROOFING

for Farm Buildings and other Roofs; the cheapest, most durable, and neatest Roofing in use; also Spouting at 10½*d.* per yard.

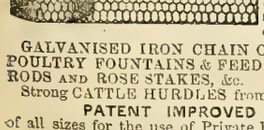
WIRE STRAND CABLE FENCING



(formed of Twisted Wires like a rope or cable), the strongest cheapest, and neatest fence in use, will resist the largest cattle, and will not bend or get out of form by trespassing upon or over. Price, with five lines of the Galvanised Strand, iron main posts, and pronged Standards, 1*s.* 2½*d.* per yard.

This fence is far cheaper than posts and rails, or any kind of iron fencing; and possesses four times the strength of solid bars. Will not rust nor corrode. Upwards of 1200 miles of this Fencing supplied.

GALVANISED GAME AND POULTRY NETTING.



Galvanised, 24 ins. wide, 2-inch mesh, 5*d.*, 6*d.*, 7½*d.*, and 10*d.* per yard.

Galvanised, 24 ins. wide, 3-inch mesh, 4*d.*, 5*d.*, and 7*d.* per yard. The Netting made any width, and with openings of any size.

GALVANISED IRON CHAIN CAMP STOOLS & CHAIRS, POULTRY FOUNTAINS & FEEDERS, PRONGED DAHLIA RODS AND ROSE STAKES, &c.

Strong CATTLE HURDLES from 2*s.* per yard.

PATENT IMPROVED GAS WORKS

of all sizes for the use of Private Houses, Mansions, Railway Stations, Mills, Collieries, Mines, Villages, &c. Works from 10 to 500 lights estimated for. The works can be entrusted to an ordinary labourer.—Apply to

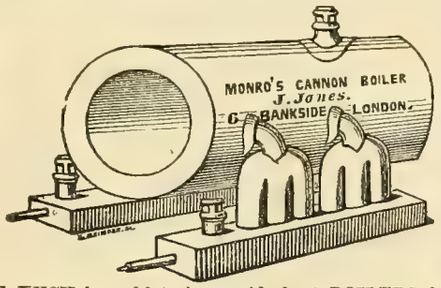
HENRY J. MORTON & Co. 2, Basinghall Buildings, Leeds.

GEORGE SPILL, St. George's Street, London Docks, E., LEAD, OIL, and COLOUR WORKS; WHITE LEAD, TAR, and TURPENTINE MERCHANT; WHITE ZINC, PAINT, COLOURS, and VARNISHES. To meet the desire of purchasers in the country the following colours are prepared ready for use:—Pruning Colour, Red and Yellow Paint, Buff Stone, Lead, and Green Colours. Putty, Painter's Tools and Brushes, Refined Coal and Stockholm Tars; Pure Colza, Olive, Sperm, and Nut Oils.

LOOMES AND CO., Whittlesea, MANUFACTURERS OF BRICKS, TILES, POTTERY, &c., beg to call attention to their new CABLE PATTERN GARDEN BORDER EDGING, which not only surpasses others in appearance and durability, but is free from the dangerous points and sharp edges of most.—Price, delivered on any Railway at Peterborough, 5*d.* per yard.



MONRO'S CANNON BOILERS.



MUCH has of late been said about BOILERS for Heating by Hot Water, but these Boilers have now proved themselves to be the best at present invented. They are adapted for heating every description of building, and are made of various sizes. The Price of the

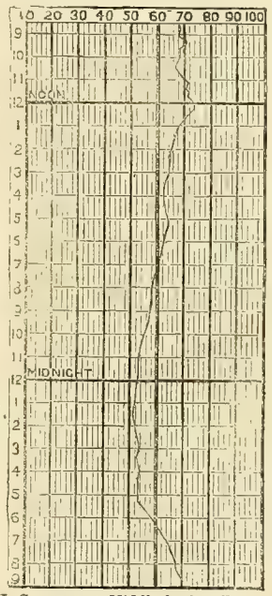
24 inch Cast Iron is	.. ..	.. £5	10*s.* 0*d.*	each
24 inch Wrought ditto	.. ..	.. 6	10 0	,,
36 inch Cast ditto ..	.. ..	.. 8	0 0	,,
36 inch Wrought ditto	.. ..	.. 8	10 0	,,

References to Gentlemen and Nurserymen where these Boilers are now at work. The Cannon Boilers are now kept in stock, and are to be had only of J. JONES, 6, Bankside. Also, every description of Saddle and Cylinder Boilers. Hot Water Pipes and Connections at prices lower than those of any other house in London. Estimates for Hot-water Apparatus erected complete in any part of the country, and an Illustrated Catalogue on application to J. JONES, 6, Bankside, Southwark, London.

TO HORTICULTURISTS.

GAUNTLETT'S PATENT CHRONOMETRICAL THERMOMETER.

This instrument, which combines an eight-day clock of the best English make showing time, with a newly-patented Thermometer, wherein glass and quicksilver are dispensed with, writes down the temperature of the atmosphere on a slip of paper, and when placed in a Hothouse, Forcing House, or Conservatory, &c., supplies a valuable record of the temperature, with all its variations, showing the time when any change took place, and how long such change continued.



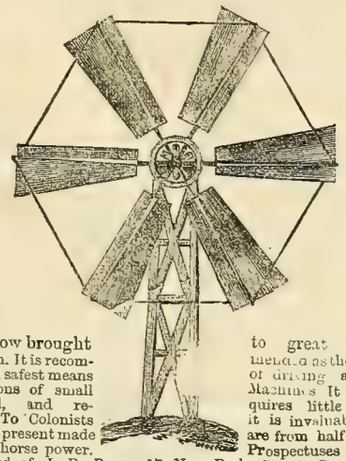
The above slip (reduced in size) exhibits the temperature of the Royal Agricultural Society's show yard at Chester, July 22, 1858, written off by one of these instruments, to which was awarded the Society's SILVER MEDAL.

This is the only instrument that registers temperature continuously and writes it down, and no horticulturist should be without it.

Orders received by W. H. GAUNTLETT, Middlesbro'-on-Tees.

ZAHN'S PATENT SELF REGULATING WIND ENGINE

FOR PUMPING, OAT CRUSHING, GRINDING, CHAFF CUTTING, &c.



IS now brought to great perfection. It is recommended as the cheapest and safest means of driving any descriptions of small Machines. It is easily erected, and requires little attention. To Colonists it is invaluable. The sizes at present made are from half a horse to two-horse power. Prospectuses may be obtained of J. R. PEILL, 17, New Park Street, Southwark where a Wind Engine in full work can be inspected.

AGRICULTURAL MACHINERY.

E. R. AND F. TURNER, Ipswich, manufacture Prize Mills for Crushing Corn, Seed, Malt, &c.; Portable Grinding Mills, Steam Engines fixed and portable from 2 horse-power and upwards; Threshing Machines, Chaff Cutter Oilcake Breakers, Horse Gears, Saw Tables, &c., all of a superior description and adapted for Home, Colonial, and Foreign use. Illustrated Price Lists sent free on application.

TO PIG AND POULTRY FEEDERS AND MILLERS.

CHICKEN RICE, 7*s.* 6*d.* per cwt., in bags 1½ cwt. each. SCREENED RICE, 10*s.* per cwt., in bags 1½ cwt. each. RICE MEAL, 6*s.* 9*d.* to 8*s.* 9*d.* per cwt. RICE for grinding. An allowance per Ton.—Sold for Cash by W. & R. JUPP, 6, Cross Lane, St. Mary-at-Hill, Eastcheap, E.C.

PIGS WILL PAY FOR FEEDING. — On receipt of 24 stamps will be forwarded a DETAILED PRINTED STATEMENT of MANAGEMENT and FEEDING, proving that they can easily be fattened in 12 weeks after leaving the teat, at less than 2*d.* per head per day. The food costs about 3*s.* 9*d.* per cwt. or 7 lbs. for 3*d.*, and can easily be prepared by the owners of the Pigs.—Address, Mr. G. MARGARETTS, Mr. Wells, Chemist, Fitzroy Square, London.

DORKING SPANISH BUFF AND WHITE COCHIN FOWLS FOR SALE, 10*s.* 6*d.* a Pair, also 1*s.* for each basket. They are from the strains of Captains Hornby and Squire, and Mr. Terry.—Apply to A. COTTIS (the Bailiff), Sewels Galley Wood, Chelmsford.

RICHMOND, SURREY.—TO GREENGROCERS AND FRUITERERS.

TO BE DISPOSED OF, A FRUITERER'S and GREENGROCERY BUSINESS, established for upwards of 50 years, excellently situated in a populous part of the town. The fixtures to be taken at a valuation, and a small sum required for goodwill; a well-stocked Fruit Garden may be taken with or without the business. Satisfactory reasons will be given for parting with the same.—Particulars may be obtained by application to Mr. W. T. ATWOOD, Land Agent, Mortlake, Surrey.

WANTED TO DISPOSE OF, A NURSERY BUSINESS with a first-class connection of 60 years' standing. The Land is held upon Lease, broken up from Grass within the last three years; the stock upon it is young and flourishing, and can be taken to at any time at a valuation not exceeding 300*l.*—For further particulars apply to WALTER PENNINGTON, Nurseryman, South Retford, Notts.

NURSERY GROUND.

TO BE LET, WHITTINGTON NURSERY, Upper Holloway, to be entered on immediately.—For particulars apply to J. F. MARSON, Esq., Small Pox Hospital; or to Mr. BUNNEY, Nurseryman, Stratford, Essex.

TO BE LET ON LEASE, for 12 years from Lady-day next, a MARKET GARDEN, consisting of 8 acres of Fruit Ground, five Peach Houses, six Vineries, four Pine Pits, three Strawberry Houses, &c. A 7-Roomed House, Stabling, Sheds, &c. Terms for coming in very moderate, with immediate possession.—Apply to Mr. JOHN THOMSON, Hope Cottage, Ealing, Middlesex.

Sales by Auction.

FRUIT TREES FROM BELGIUM.

MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on FRIDAY, Jan. 21, at half-past 12 o'clock, FIVE HUNDRED PEAR TREES from Belgium, including many of the choicest sorts, some trained as Pyramids; TWENTY VINES, &c.—May be viewed on the morning of Sale and Catalogues had.

ACRE LANE NURSERY, BRIXTON.

To GENTLEMEN, NURSERYMEN, & OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed by the Assignees of Mr. Francis Sharon, (a bankrupt) to Sell by Auction on the Premises, Acre Lane, Brixton, and Clapham, on FRIDAY, January 21, at 11 o'Clock, the whole of the NURSERY STOCK and the Surplus Stock of a Nurseryman, comprising Berberis aquifolia, Common Laurels, Aucubas, and other evergreens; 500 handsome Standard ROSES of the choicest kinds; FRUIT TREES, including Dwarf-trained Peaches, Nectarines, and Apricots, Standard Apples and Pears; Asparagus plants; about 60 rod of Colewort, Cauliflowers, and Brussel Sprouts, &c. Also Scarlet Geraniums, Acacias, and various Greenhouse plants, together with the HOUSEHOLD FURNITURE, 65 Glazed Lights; two 2-light Boxes; 40 Iron-gratings; 18 Wheelbarrows; a quantity of Paving Tiles and Stones; 43 Planks, and sundry effects.—May be viewed, previous to the Sale. Catalogues may be had on the Premises; of Mr. Gerard, No. 3, Foley Place, Wandsworth Road; of H. H. Stansfield, Esq., Official Assignee, 10, Basinghall Street, City; of the principal Seedsmen in London, and of the Auctioneers, American Nursery, Leytonstone, Essex.

ALDRIDGE'S, ST. MARTIN'S LANE, LONDON.

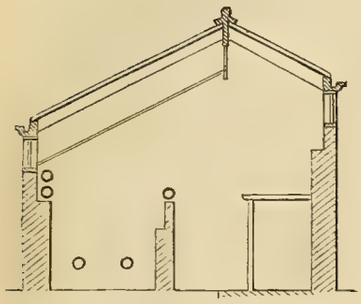
TO BE SOLD BY AUCTION, on WEDNESDAY, Feb. 2, the following pure bred Suffolk CART HORSES, the property of T. Beale Brown, Esq., of Salperton Park, Gloucestershire:—1. PRINCE, stallion, 8 years old off, by the Suffolk Champion out of a pure bred mare, won the first prize at Killarney; Suffolk Champion won the first prize at the National Show at Exeter, and was afterwards sold to the Emperor of Russia. 2. DRAGON, stallion, 7 years old off; sire, Champion. 3. BOXER, stallion, 3 years old off, out of a beautiful mare, by Suffolk Champion. 4. DUKE, stallion, 3 years old off, by Champion out of a pure bred mare. 5. VIOLET, a mare, 3 years old off, by Champion out of Violet. All the horses are quiet steady workers on the Farm.—On view at ALDRIDGE'S, St. Martin's Lane, London, two days before and on the morning of Sale.

EGHAM, HYTHE.—EGHAM, SURREY.

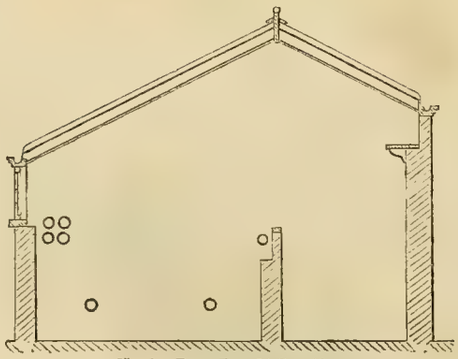
MESSRS. ADAMS AND OADES beg most respectfully to announce that they have been favoured with instructions to Sell by Auction, on THURSDAY, January 20, at 11 o'clock, upon the premises, situate near Staines Bridge, by order of the Proprietor, J. G. Chillingworth, Esq., who is giving up his farm, the whole of his first-class and valuable live and dead FARMING STOCK and effects, which comprise five superior young Cart-horses (fit for London work), five fat Devon Oxen, three fat Welsh Heifers, four choice half-bred Alderney and Shorthorn Cows, three 2-year old Welsh Heifers, five 2-year old Steers, two yearling Bulls, three improved Berkshire and Chichester Sows, improved Chichester Boar, eleven fat Hogs, a quantity of Poultry, handsome black Setter Bitch, Scotch Deer-hound, and Yard Dog, together with the whole of the valuable Implements, which have been purchased within 2 years, regardless of cost; Stumps of Clover and Meadow Hay, six Ricks of Wheat and Oat straw, about 35 tons of Mangel Wurzel, and numerous effects.—May be viewed the day preceding and morning of Sale, and Catalogues had at the place of Sale; Railway Station, Staines; Staines Bridge Toll Gate; the neighbouring Inns; in London at 166, Edgeware Road, and of Messrs. MAY & Co., Seedsmen, Wellington Street, Waterloo Bridge, Strand, and at the Offices of Messrs. ADAMS & OADES, Auctioneers and Surveyors, Hythe Farm, and the Hill, Egham, Surrey.

HORTICULTURAL BUILDINGS MANUFACTURED BY STEAM POWER MACHINERY.

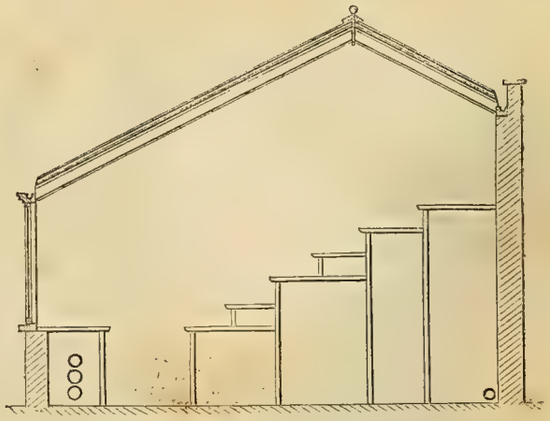
BEST MATERIALS AND LOWEST PRICES.



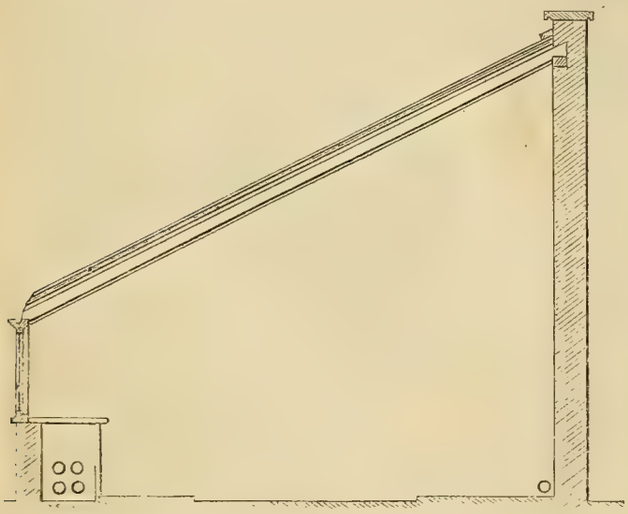
No. 1.—CUCUMBER AND MELON PITS, 10 ft. wide.



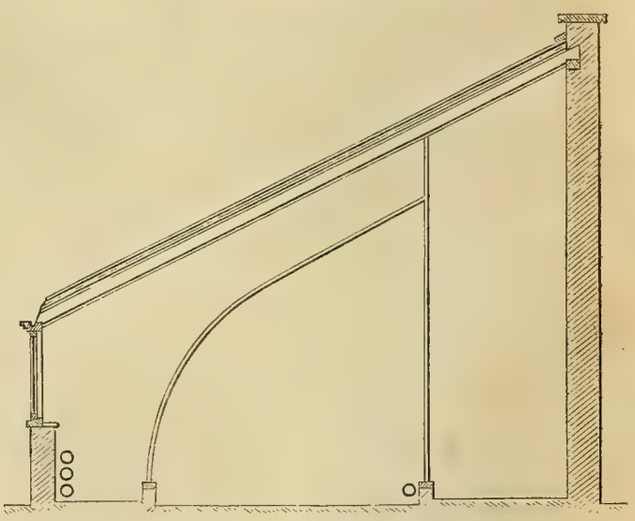
No. 2.—PINE PIT, 14 ft. wide.



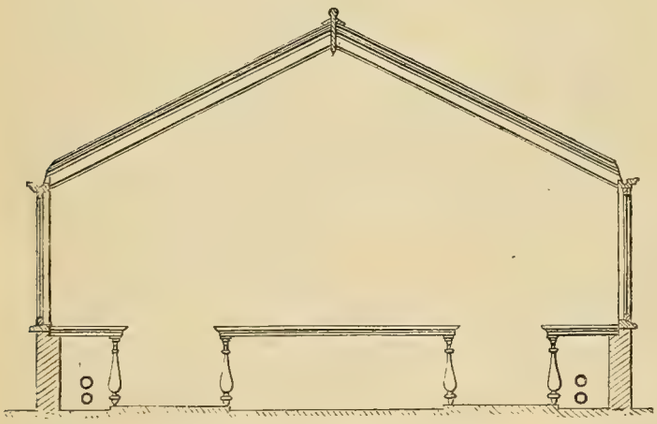
No. 3.—GREENHOUSE, from 14 to 18 ft. wide.



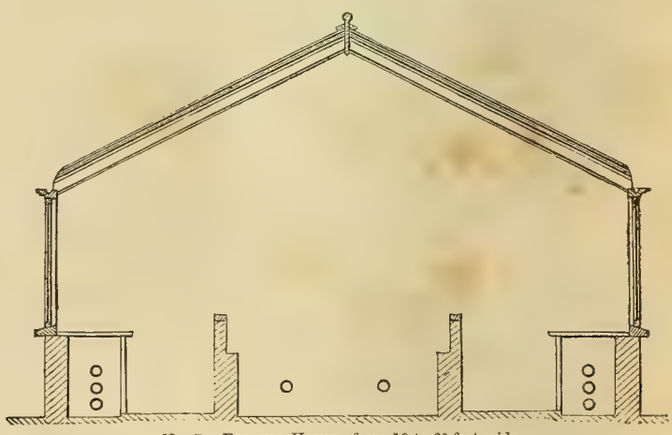
No. 4.—VINERY, from 15 to 18 ft. wide.



No. 5.—PEACH HOUSE, from 15 to 18 ft. wide.



No. 6.—GREENHOUSE, from 18 to 20 ft. wide.



No. 7.—FORCING HOUSE, from 18 to 20 feet wide.

HENRY ORMSON,

HORTICULTURAL BUILDER & HOT-WATER APPARATUS MANUFACTURER,

STANLEY BRIDGE, KING'S ROAD, CHELSEA, LONDON,

Deeply grateful for the very liberal and kind patronage bestowed upon him since his commencement on his own account, begs most respectfully to inform the Nobility, Gentry, Nurserymen, &c., that it being his determination to spare no pains to merit a continuance of their favours, and that he may be enabled to execute his extensive and increasing orders punctually, and at the lowest possible cost (agreeably with the best Materials and Workmanship), he has erected a most complete set of Steam Power Machines, peculiarly adapted for the purposes of his Trade.

PARTIES DESIRING INFORMATION as to prices, &c., will, by referring to any of the above sections, receive immediate attention.

PLANS, SPECIFICATIONS, and ESTIMATES for plain and inexpensive practical Structures, and for the most elaborate Architectural Erections, either in Wood or Iron, forwarded on application.

N.B. ORMSON'S Patent, Jointless, Tubular Boilers of all sizes, always on view and for sale at

THE MANUFACTORY.

Editorial Communications should be addressed to "The Editor"—Advertisements and Business Letters to "The Publisher"—at the Office 5, Upper Wellington Street, Covent Garden, London, W.C.
Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, and FREDERICK MULLETT EVANS, of No. 20, Queen's Road West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and published by them at the Office, No. 5, Upper Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—SATURDAY, January 15, 1859.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 4.—1859.] SATURDAY, JANUARY 22. {Price Fivepence. Stamped Edition, 6*d*.

INDEX.

Agricultural importations	57 *c*	Meteorology	54 *b*
— prospects	59 *a*	Mules, queries about	55 *b*
Asparagus Kale	55 *b*	Paulownia, fruiting of	55 *a*
Bath Agri. Society	60 *a*	Peas for small gardens	55 *c*
Cattle food	59 *c*	Pear, Josephine de Malines	54 *c*
Climate, Red River	56 *a*	Plants, new	52 *c*
Flore des Serres	55 *c*	Pleuro-pneumonia	60 *c*
Food, cattle	59 *c*	Potato manures	60 *a*
Fremontia californica	52 *c*	Poultry Directory	60 *b*
Gardeners' Benevolent Institution	52 *b*	Red River climate	56 *a*
Grain statistics	58 *a*	Roses, remarks on	55 *a*
Grasses, distribution of	58 *a*	Season in Ireland	55 *b*
Highland Agri. Society	60 *a*	Sewage, Liebig on	59 *c*
Horticultural Society	55 *b*	Statistics, grain	58 *a*
Importations, agricultural	57 *c*	Stocks, German	51 *c*
Insects, timber tree	54 *b*	Tenant right	60 *c*
Kale Asparagus	55 *b*	Timber tree insects	54 *b*
Kidney Bean, New Zealand	54 *c*	Toll implements	61 *a*
Law of landlord and tenant	61 *a*	Trade lists	55 *c*
— of implement tolls	61 *a*	Trees, avenue	54 *c*
Manures, Potato	60 *a*	— for St. Giles's	55 *b*
— artificial *v.* farmyard	60 *b*	Trentham	53 *a*
		Walsham Farmers' Club	60 *b*

CRYSTAL PALACE.—FLOWER SHOWS for 1859 are fixed to take place on the following days:—WEDNESDAY, May 18; June 8, September 7 and 8; and CHRYSANTHEMUM SHOW, on November 9 and 10.
By Order, GEO. GROVE, Secretary.

NATIONAL FLORICULTURAL SOCIETY.—Raisers of Seedling Florists' Flowers, Amateurs, and Nurserymen in general are invited to give small special Prizes for Collections of their favourite Flowers, to be Exhibited at the Society's ordinary meetings during the present year.
Early communications should be made to the Secretary, naming the sum offered, and the number of plants or blooms to be exhibited. RICHARD DEAN, Secretary.
21, Regent Street, London, S.W.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—At a General Meeting of the Members of this Institution, held on Tuesday, January 11, for the purpose of Electing Three Pensioners on the Funds of the Charity, the following was the result of the Ballot:—

CANDIDATES.

No.	Name.	Application.	Age	Votes
1	James Smith	Tenth	73	319
2	William Dungate (a Subscriber 6 years)	Ninth	72	664
3	William Priest (a Subscriber 7 years)	Sixth	64	337
4	Sarah Ayres (Husband subscribed 4 years)	Fifth	74	607
5	William Croucher	Fifth	69	127
6	John Mackintosh (a Subscriber 5 years)	Fifth	68	172
7	William Baillie	Fourth	66	808
8	George Drury	Fourth	73	39
9	John Alderman	Third	70	116
10	John Flinn	Third	67	75
11	Margaret Mitchinson (Husband subscribed 7 years)	Third	65	41
12	John Downing	Second	72	420
13	Thomas Jenkins (a Subscriber 11 years)	Second	71	171
14	James Wallis	Second	81	55
15	George Annaball	First	62	56
16	Samuel Faulkner (a Subscriber 6 years)	First	65	—
17	William Smith	First	82	15
18	Maria Squibbs (Husband subscribed 14 years)	First	60	575

The Meeting then declared William Baillie, William Dungate, and Sarah Ayres, as having the greatest number of Votes, duly elected Pensioners. (By Order)
E. R. Cutler, Sec., 14, Tavistock Row, W.C.

TO THE MEMBERS OF THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—Henry McMillan, in behalf of himself and Maria Squibbs, sincerely thanks those Members who kindly assisted in placing her in so prominent a position on the Poll at the late Election; and hopes at the next Election to be again favoured with their support, which shall ever be remembered with the warmest gratitude.—Westerham, January 22.

[Circular]
86, High Street, Borough, London, January, 1859.
IN reply to numerous inquiries from our Customers, we beg to say we have no connection whatever with Fairhead & Son, of the Borough Market.
(Signed) Clarke & Company,
Wholesale and Retail Seedsmen.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY (Limited) supply every requisite for the Farm and the Garden.
Registered Offices, Union Road, Plymouth.

YELLOW ROSES.—Madame William, orange yellow; Isabella Gray, golden yellow. Strong plants, fit for immediate forcing, 8*s*. 6*d*. the pair.
A. Paul & Son, Nurseries, Cheshunt, Herts.

DESCARTES ROSE STOCKS.—The best Dwarf Rose Stock known is the cultivated ROSE DESCARTES, being proved nine years. Price 12*s*. per 100, with trade allowance. STANDARD MANETTIS, 9*s*. per 100; also fine tall LAURELS, with other EVERGREENS, SHRUBS, &c.—Apply to J. J Foster, Edgware Nurseries.

TO BE SOLD CHEAP, EUGENIA UGNI, true, 1 foot high, very bushy, per doz. or hundred; also Dwarf FRENCH ROSES, at half price, best kinds.—Isaac Davies, Larkfield Nursery, Wavertree, near Liverpool.

TO THE TRADE.
TO BE DISPOSED OF, a few thousand very superior PERSIAN RANUNCULI in mixture, at 20*s*. per 1000, the surplus stock from an amateur's collection.—Apply to John Morse, Nurseryman, &c., Dursley, Gloucestershire.

RICH BOG AND LOAM.—Gentlemen and Nurserymen will do well to apply early for the above to refresh their American beds. To be had in any quantity upon reasonable terms, by land or water carriage.
Robert Neal, Nurseryman, Wandsworth Common, Surrey.

GEORGE BAKER begs to inform the Nobility and Public that his DESCRIPTIVE CATALOGUE OF AMERICAN PLANTS AND GENERAL NURSERY STOCK will be sent free on application.
American Nursery, Windlesham, near Bagshot, Surrey, about 1 mile from Sunningdale Station, South Western Railway.

GEORGE JACKMAN AND SON'S PRICED and DESCRIPTIVE CATALOGUE of GENERAL NURSERY STOCK for 1858 and 1859 can be had free on application.
Woking Nursery, Woking, Surrey.

WILLIAM YOUNG'S DESCRIPTIVE CATALOGUE OF NEW HARDY ORNAMENTAL PLANTS, CONIFERÆ, ROSES, RHODODENDRONS, FOREST TREES, &c. Can be had on application.—Milford Nurseries, Godalming.

NEW CHRYSANTHEMUMS.
JOHN SALTER begs to inform the numerous applicants for his NEW CATALOGUE OF CHRYSANTHEMUMS that it will be published in February, in which his splendid Seedlings and other new varieties for 1859 will be fully described, as well as his unrivalled general collection, which is the largest in Europe.—Versailles Nursery, William Street, near Hammersmith Turnpike, W.

CATALOGUE.
YOUELL AND CO'S GENERAL AND DESCRIPTIVE PRICED CATALOGUE for this season is now ready, and will be sent free on application.
It contains detailed Lists of Greenhouse Plants, Conifers, Shrubs, as well as all the newest introductions in Soft-wooded Plants.—Royal Nursery, Great Yarmouth.

JOHN GRIER'S NEW PRICED CATALOGUE, with brief descriptive and cultural remarks of a selection of TREES, SHRUBS, and PLANTS, may be had upon application by enclosing One Stamp for Postage.—Waterhead Nursery, Ambleside, Jan. 22.

JAMES LOTHIAN respectfully intimates that his ANNUAL LIST OF VEGETABLE, FLOWER, AND AGRICULTURAL SEEDS for 1859 is now ready, and will be forwarded upon application.—Campbellton, Argyleshire.

KITCHEN GARDEN SEEDS.
JOHN CATTELL begs respectfully to announce that his CATALOGUE of the above may be had free by return of Post. It contains selections of the most approved culinary vegetables in cultivation, nearly the whole of them having been saved under J. C.'s own personal superintendence.—Nursery and Seed Establishment, Westerham, Kent.

MESSRS. B. ROEZL AND CO.'S CATALOGUE OF MEXICAN SEEDS AND PLANTS to be had on application to Messrs. B. A. Grautoff & Co., 4, Lime Street Square, London.

GRAPE VINES FROM EYES.
J. EATON has a few left, very strong and quite ripe, which he can recommend for Forcing; sorts, Black Hamburgh, Muscat Alexandria, and Sweetwater. Likewise a very fine stock of Vines, wood ripe, fit for bedding out. An early inspection is recommended.
Shacklewell Road, Stoke Newington, N.

THE GREAT VINE AT HAMPTON COURT.
THE SUBSCRIBERS being the holders of the Royal Kitchen Gardens, Hampton Court, are enabled to offer genuine the famous and truly excellent HAMPTON COURT BLACK HAMBURGH GRAPE.
Strong well-ripened plants in 9-inch pots, 42*s*. and 60*s*. per doz.
" " fruiting plants in 12-inch pots, 10*s*. 6*d*. each.
If purchased in large numbers a considerable reduction will be made in price.—Jackson & Son, Nurseries, Kingston, S.W.

CROCUS AND TULIP BULBS.—Finest imported Crocus mixed, 16*s*. per 1000, 2*s*. per 100. Splendid Double Tulips, Scarlet 7*s*. per 100, Yellow 7*s*. do., Variegated 7*s*. do., Mixed all sorts, 6*s*. do.—Butler & McCulloch, Covent Garden Market.

PINE APPLES WANTED,
Forward "Immediately" to
GEORGE TAYLOR,
Choice Fruit and Vegetable Salesman,
St. John's Market, Liverpool.

EARLY CUCUMBER.
CARTER'S EARLY CHAMPION CUCUMBER, price 20*s*. per oz., to be had in any quantity of J. G. Waite, Seed Establishment, 181, High Holborn, London. W C.

CHAMPION CABBAGE can be had in any quantity at 2*s*. per lb.
J. G. Waite, Seed Establishment, 181, High Holborn, London.

THE ROSEBERRY BRUSSELS SPROUT.—"We never before saw any so fine. The stalks, 18 inches high, were literally studded with sprouts throughout their length, and many of the sprouts were as large as moderately-sized Apples."—*Cottage Gardener*. 1*s*. per packet.
Royal Nurseries, Slough.

NEW PERENNIAL SPINACH.—Mr. Poulter, Gardener to Lord Chesham, writes:—"This is one of the most valuable additions to the kitchen garden which we have had for years; no one who has a demand for Spinach should be without it." 1*s*. per packet.—The Royal Nurseries, Slough.

PAMPAS GRASS (Gynerium argenteum).—The beauty of this extraordinary plant has this season been fully appreciated. It can be supplied by the dozen, hundred, or thousand, by Charles Noble, Bagshot, Surrey.

PERENNIAL AND ITALIAN RYE-GRASS.
McBLAIN AND CO., Seedsmen, Newry, Ireland, offer to the Trade PERENNIAL AND ITALIAN RYE-GRASS of every description. Samples and offers on application.

JOHN CULVERWELL, Taunton, begs to call the attention of Agriculturists to his superior selection of GRASS SEEDS, which for Purity, change of Soil, and Climate, will bear comparison with any house in the kingdom. Prices, terms, and samples forwarded on application.

CONIFERÆ.
A. PAUL AND SON have a large stock of the above, very handsome, in fine order for removal, many suited for immediate effect. For particulars see Advertisements in *Gardeners' Chronicle* of November and December last.—Nurseries, Cheshunt, Herts.

ONE MILLION ONE-YEAR SEEDLING OAKS
(Strong and Stout).
JAMES MELDRUM, Nurseryman, Kendal, Westmoreland, offers the above in quantities to suit purchasers. Price reasonable, on application.
N. B. Also a quantity of strong clean Transplanted CRAB STOCKS 3 to 4 feet; ALDERS, 4 feet; and a quantity of LARCH of different ages.

THREE MILLIONS OF TRANSPLANTED QUICKS.
GEORGE CHIVAS, Chester, offers the above to the notice of Planters, which for extent and quality he believes are unequalled in the kingdom. A Sample Bale containing 100 of each five sizes forwarded on receipt of a Post-office Order for 15*s*. Truck loads delivered free at any Railway Station having through communication with Chester.

TO PLANTERS.
200,000 FINE TRUE SCOTCH FIR, 1½ to 2 feet, at 14*s*. per 1000.—Large quantities of strong LARCH, QUICKWOOD, BEECH, SPRUCE FIR, SILVER FIR, &c.—Address, Henry May, The Hope Nurseries, near Bedale, Yorkshire.

NURSERY STOCK.
THE Subscribers are disposing of their extensive stock of Seedling and Transplanted Forest Trees, Ornamental Trees, Evergreen and Deciduous Shrubs, Standard and Dwarf-trained Fruit Trees, Gooseberries and Currants, &c., at prices considerably reduced in consequence of dissolving partnership.—Priced Lists may be had on application.
Glasgow, Jan. 22. Fowler & Wright.

LIME TREES.
WILLIAM MAULE AND SONS having a large stock of this Tree 10 to 12 feet, well suited for planting Avenues, Public Parks, Cemeteries, &c., beg to call the attention of Corporations, Burial Boards, and Public Companies. Prices forwarded on application.
Stapleton Road, and Stoke Nurseries, Bristol.

JOHN ADAMS AND CO., Nurserymen, Brentford, Middlesex, have a large stock of very fine DWARF MAIDEN MOORPARKS; strong cut-back DWARF APPLES of the best kinds, fit for Market Garden planting. Very fine DWARF-TRAINED CHERRIES and PEACHES and NECTARINES.

WANTED, strong SPRUCE and SILVER FIRS, 4 feet, well rooted and clean leaders; also MAGNOLIA GRANDIFLORA EXMOUTH, 5 feet.—James Dickson & Sons, The "Newton" Nurseries, and 102, Eastgate Street, Chester.
P.S. Description and price to J. D. & Sons.

PINE PLANTS always on Sale at Stedham Hall, Midhurst.—Apply to James Newman.

TO THE TRADE.
R. GLENDINNING begs to offer the following MAIDEN TREES of first class quality; they comprise the leading sorts, and guaranteed true to name, Peaches, Nectarines, Apricots, Plums, and Apples.
Chiswick Nursery, near London, W.—Jan. 22.

GRAPE VINES FROM EYES.
R. GLENDINNING has this season a very large and extensive assortment of all the best kinds of GRAPE VINES. They comprise all the well known established varieties, as well as those recently sent out; the wood is ripened from 5 to 10 feet high. Those who intend planting Vines would do well to inspect this collection.
Chiswick Nursery, near London.—Jan. 22.

TO THE TRADE.
2000 yards of superior DWARF BOX for Edging. Price on application.
CURRANT AND GOOSEBERRY TREES, 16*s*. per 100.
James Holder, Nurseryman, Reading, Berks.

HOLCUS SACCHARATUS, or North China Sugar-Cane, 2*s*. per lb. Pamphlet, "A Visit and a Plant;" or Hints on the Cultivation of the above, and its Uses. Post free 6*d*., or gratuitous with all orders for 10 lbs. and upwards.
DIOSCOREA BATATAS, or Chinese Yam; strong roots, 4*s*. per dozen; with directions for cultivation.
John W. Clarke, Whittlesea, Cambridgeshire.

DIOSCOREAS—FINE LARGE ROOTS CHEAP.
SUTTON AND SONS, Reading, can supply DIOSCOREA BATATAS, 9 inches long, at 5*s*. per dozen, or 40*s*. per 100. This vegetable is worthy of all that has been said in its favour, and will thrive in almost any soil and situation.
Sutton & Sons, Royal Berkshire Seed Establishment, Reading.

SEED POTATOES.
SUTTON AND SONS, Seed Growers, Reading, have a large stock of the early kinds of POTATOES, very true, and free from disease. Also true Flukes, Regents, and others. Prices, &c., will be sent post free on application.

THE EARLIEST ASH-LEAVED KIDNEY POTATOES.—For the true early short-top Lancashire kind, unsurpassed for forcing and early borders, price 16*s*. per cwt., apply to Jas. Tynan, Seedsman, 68, Great George St., Liverpool.

VERY TRUE, SHORT TOPPED, ASH-LEAVED KIDNEY POTATOES, 14*s*. per cwt., warranted true.
Henry May, The Hope Nurseries, near Bedale, Yorkshire.

EARLY POTATOES, LEMON KIDNEYS.—Selected Seed of this choice and early variety (*vide* article in "Royal Agricultural Journal," Part I., Vol. xviii.), may now be had on application to the Author's Bailiff, John Helm, Morecombe, near Lancaster, price 2*s*. 6*d*. per stone.
N.B. A reserve of seed has been retained from sprouting for the purpose of supplying late orders. Copies of the article (third edition) may be had from the above address, price by post, 1*s*. 1*d*.

NEW MELON.

TURNER'S SCARLET GEM MELON.—An early and most prolific variety, and by far the best flavoured of the scarlet-fleshed Melons, having taken Seven First Prizes during the past season at the great exhibitions. It is well netted and handsome.

Mr. Bailey, the very successful fruit grower, of Shardeloes Gardens, Amersham, having grown this variety for two seasons, reports that "it is by far the best Melon he has ever cultivated of either class. Its superior flavour alone entitles it to a first place, besides other good qualities, among which is its easy culture." 2*s.* 6*d.* per packet.—The Royal Nurseries, Slough.

TO PLANTERS OF CONIFERS.

YOUELL AND CO. supply 50 species of RARE and HARDY CONIFERS in good plants for 5*l.*, package included and carriage paid to Manchester, Newcastle-on-Tyne, Hull, London, Peterborough, or to any Railway Station within 150 miles of the Nursery. A LIST of the above can be had on application.—Royal Nursery, Great Yarmouth, Norfolk.

ASPARAGUS AND SEAKALE.

YOUELL AND CO. having a large Stock of the above growing on the Sea Coast, of the finest quality, beg to offer it at the following prices:—

ASPARAGUS, GIANT, three years old .. 3*s.* 6*d.* per 100.
" " two years .. .. 2*s.* 6*d.* "
SEA KALE .. .. 6*s.* 0*d.* "
RHUBARB.—Myatt's Victoria, Myatt's Linnæus, Mitchell's Royal Albert, strong roots, 8*s.* per dozen.

Hawke's Champagne Rhubarb, 9*s.* per dozen.

All orders of 2*l.* and upwards are delivered Carriage Free to London, Manchester, Newcastle, and Hull, as well as to any Railway Station within 150 miles of the Nursery.

Royal Nursery, Great Yarmouth, Norfolk.

VEGETABLE, FLOWER, AND AGRICULTURAL SEEDS.

WILLIAM BARNES'S CATALOGUE of the above is now ready, and may be obtained postage free, upon application. It will be found to contain every article of known value, among them some that cannot be excelled, the stock of which having been saved specially for himself by private and competent friends, he can recommend with the greatest confidence. Every article is warranted of the purest and most genuine kind, as well as very moderate in price.

Camden Nursery, Camberwell.

NEW SEEDS FOR 1859.

WM. CUTBUSH AND SON beg respectfully to intimate that their PRICED CATALOGUE OF VEGETABLE AND FLOWER SEEDS, &c., is now ready post free on application. WM. C. AND SON devote particular attention to this department of their business, and most of the choicer kinds of culinary seeds and roots are saved under their own inspection, and they can confidently guarantee the quality of all offered.—Highgate Nurseries, London, N. Established A.D. 1695.

HARDY SCARLET RHODODENDRONS AND AMERICAN PLANTS GENERALLY.

WATERER AND GODFREY'S PRICED and DESCRIPTIVE CATALOGUE of the above beautiful tribe of plants, as exhibited by them in London and Manchester, may now be had on application inclosing one stamp for postage. The Catalogue also furnishes the heights and prices of their unequalled stock of Conifers and Evergreens, &c. Catalogues may also be had of Messrs. J. MAY & Co., Seedsmen, &c., Wellington Street, Strand.

Knap Hill Nursery, Woking, Surrey.

RHODODENDRONS.

JOHN WATERER'S CATALOGUE OF UNRIVALLED HARDY SCARLET AND OTHER CHOICE RHODENDRONS, as Exhibited by him at the Royal Botanic Gardens, Regent's Park, London, is published, and will be forwarded on application.

☞ This List is recommended as a work of reference, as it contains accurate descriptions of all the esteemed varieties.

The American Nursery, Bagshot, Surrey, near the Sunningdale Station, South Western Railway.

NEW EXOTIC FERN,

NEPHRODIUM MOLLE, VARIETY CORYMBIFERUM.

Named and described in the *Gardeners' Chronicle* of May 22, 1858.

ROBERT SIM is now prepared to supply, at 15*s.* each, vigorous and well-established profusely crested plants of this beautiful and unique variety, of which he possesses the entire stock. It ought to prove quite a greenhouse kind.

The customary discount to the trade. Price per dozen on application. Carriage paid to London. Post-office Orders on Foot's Cray.—Nursery, Foot's Cray, Kent, S.E.

CHARLES CLARKE, NURSERYMAN, SEEDSMAN, &c., 179, Windmill Street, Gravesend, Kent; or home Nursery, Windmill Hill.

Fruit Trees and Forest do., in any quantities; full-trained Peaches, Nectarines, Apricots, &c., remarkably fine; large bushy Yews, Portugal and Common Laurels, and other Evergreens, very handsome and good colour; Rhubarb Roots, Seakale, Asparagus for forcing, pricked out Strawberry Plants, Globe Artichokes, &c. Prices very moderate. Cash or a reference is respectfully requested from unknown correspondents.

N.B. Spanish Chesnuts 4 to 5 feet, and Standard Roses, a great quantity very cheap.

"PINUS DOUGLASSI CONES."

JAMES DICKSON AND SONS, NURSERYMEN and SEEDSMEN, Hanover Street, Edinburgh, have the pleasure of informing their numerous friends that they have received a large quantity of CONES of the above beautiful Pine. They are of last year's saving, and have been found to contain from 8 to 15 good seeds in a Cone.

They will be sent out at the following very low prices, viz., 7*s.* 6*d.* per dozen, and 45*s.* per 100 Cones. A liberal discount to the Trade.

N.B. A fine lot of Succession Pine Plants for Sale.

NEW SPLENDID SEEDLING GLADIOLI.—15 named varieties of Seedlings from RAMOSUS, and 15 ditto from GANDAVENSIS, for 1*l.* 1*s.*, carriage paid. Large bulbs of Gladioli gandavensis, ramosus, and floribundus, 2*s.* 6*d.* per dozen. Fine Anemones per 100, Mixed Double, 6*s.*; Scarlet Double, 10*s.*; Mixed Single, 4*s.*; Scarlet Single, 6*s.* Fine mixed Persian Ranunculus, 3*s.* per 100. Scarlet Turban, 2*s.* 6*d.* per 100. A DESCRIPTIVE PRICED CATALOGUE of GLADIOLI, &c., sent free and post paid on application.

BUTLER & MCCULLOCH, Seedsmen, Covent Garden Market.

TO THE TRADE.

THOS. CRIPPS, NURSERYMAN, &c., Tunbridge Wells, Kent, respectfully offers the following fine strong SPANISH CHESNUT PLANTS, 4 feet to 6 feet in height, 40*s.* per 1000; Blush CHINA ROSES, fine strong plants, 15*s.* per 100; Crimson do., very strong, 25*s.* per 100; fine Standard and Half-standard ROSES, 60*s.* per 100; good do., do., 50*s* per 100; Double Yellow PRIMROSE, 20*s.* per 100 or 400 for 3*l.*; PINUS INSIGNIS and P. RADIATA from Seed, 15 inches to 28 inches, 6*l.* per 100; MANETTI STOCKS, 50*s.* per 1000; do. second size, 40*s.* per 1000; IRISH YEWS, 2 feet to 3 feet, 50*s.* per 100; Hardy HEATHS, a fine collection, 25*s.* per 100; large plants, good do., 20*s.* per 100; LARCH FIR, fine stout plants, 2 to 3 feet; LONICERA SHEPHERDI, or new Scarlet-trumpet HONEYSUCKLE, fine strong plants, 4*s.* per dozen; RHODODENDRON MAXIMUM, fine bushy plants, 18 inches to 2 feet, 60*s.* per 100. Orders from unknown correspondents unaccompanied by a remittance will not be noticed.

NEW SORTS OF SEEDS.—

Sutton's Berkshire Hero Pea	New Zealand Runner Bean
Turner's Cottager's Kale	Asparagus Kale
Standhoulder Cauliflower	Frogmore Protecting Broccoli
Winnigstaddt Cabbage	Ward's Late White ditto
Intermediate Carrot	Pomeranian Cabbage
Sutton's Superb Lettuce	New Giant Onion
Tom Thumb Pea, 1*s.* 6*d.* quart	White Olive-shaped Radish

Also many new and rare kinds of Flower Seeds and Agricultural Seeds. Price List on application.

SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

ROSES, &c.—Fine Tall Standard Roses, best kinds .. .. per dozen £0 18 0
Fine Standard and Half-Standard Roses, per dozen 0 12 0
" named Lancashire Gooseberries .. per 100 0 8 0
" White and Red Currants .. .. per 100 0 8 0
" Hardy Herbaceous and Alpine plants, one of the best collections extant, per 100 sorts 1 5 0
" Hardy Shrubs by name .. per 100 sorts 2 10 0
" named Hollyhocks, good plants .. per dozen 0 6 0
" named Phloxes do. do. do. 0 4 0
" named Pyramidal Pears on Quince do. do. 0 15 0

Catalogues of all the above sent free on application to HENRY MAY, The Hope Nurseries, near Bedale, Yorkshire.

NEW FLORAL CATALOGUE, 1859.

CAREY TYSO, FLORIST and SEEDSMAN, Wallingford, Berks, announces that his NEW CATALOGUE OF FLOWERS AND SEEDS will be sent to any address, free, for one label.

Selections therefrom as under:—	*s.*	*d.*		£	*s.*	*d.*
*Double Anemones, 50 fine sorts	10	6	to	0	13	0
*Ranunculus, 50 ditto	20	0	"	2	0	0
*Ditto, 100 fine mixed	8	0	"	1	0	0
Carnations and Picotees, 25 pairs	35	0	"	3	0	0

New edition of *Treatise on Ranunculus for 7 labels. *Ditto on Anemone, 4 labels.

* These articles can be forwarded by post.

STOUT WELL-ROOTED TRANSPLANTED	
CHESNUT, 2 feet	25*s.* per 1000
SCOTCH, 2 to 3 feet	10*s.* per 100
AUSTRIACA, 3 to 4 feet	30*s.* per 100
STONE PINE, do.	30*s.* per 100
Large PORTUGAL LAURELS, very bushy, 4 to 5 feet, very large bulbs, warranted to move, 21*s.* to 24*s.* p. doz.	
PINUS EXCELSA, 3 to 4 feet	21*s.* per doz.
SMITHIANA, 2 to 3 feet	20*s.* per doz.

Carriage paid to London.—GEO. HODSON, Ashford, Kent.

TREES FOR CRATEWOOD, GAME COVERS, &c.

Ash, strong transplanted, 2, 3, 4, and 5 feet.	Berberis (Mahonia) aquifolia, strong transplanted, 1, 2, 3, and 4 feet.
Alder, do.	Berberry, common, do.
Mountain Ash, do.	Box (Tree), do.
Birch, do.	Broom, do.
Elms, do.	Holly, do.
Hornbeam, do.	Blackthorn, do.
Hazel, do.	Laurel, do.
Willow, do.	Rhododendrons, do.

We offer the above of best quality at moderate prices, which will be furnished upon application.

JAMES DICKSON & SONS, Newton Nursery, Chester.

SHAW AND CROSLAND'S RICHMOND DWARF late WHITE BROCCOLI.—This Broccoli has proved to be the hardiest in cultivation, having been grown on the most exposed situations, producing fine heavy heads from the middle of May to the middle of June. It gained the First and Second Prizes at the Sheffield Floral and Horticultural Society's Exhibition, held at the Sheffield Botanical Gardens, June, 1856. SEEDS can be had in sealed packets, price 2*s.* 6*d.* each, at the Richmond Nursery, Sheffield; or of

Charlwood & Cummins, Covent Garden	Kernan, Mr. J., Great Russell Street
Chaundy & Co., Lewisham	Kearsley, Mr. J., Leeds
Chatter's, Mr. Wm., Saffron Walden	Low & Co., Clapton
Davies, Thos. & Co., Wavertree, Liverpool	Laing, Mr. Alex., Beverley
Dean, Mr. Wm., Bradford, Yorkshire	Noble, Cooper, & Bolton, Fleet Street
Flanagan & Son, Mansion House Street	Stewart & Son, Dundee
Fisher, Holmes, & Co., Sheffield	Sharpe & Co., Sleaford
Godwin, Mr. F., Sheffield [St	Turner, Mr. C., Slough
Hurst & M'Mullen, Leadenhall	Urquhart & Son, Dundee
Henderson, E. G. & Son, St. John's Wood	Wheeler, Mr., Geo., Warminster
	Wood & Ingram, Huntingdon

GRAPE VINES FROM EYES.

JOHN AND CHARLES LEE beg to offer an immense stock of strong well-ripened VINES FROM EYES, of the following kinds:—

Alicant	Hamburgh, Pope's
Barbarossa	" Victoria
Bidwell's Seedling	Hâtif de Jura
Black Cluster	Isabella
Black Constantia	Lady Down's Seedling
Black Damascus	Marchioness of Hastings
Black Prince	Muscadine, Royal
Blanche Vigne	" Parsley leaved
Calabrian Raisin	Muscat, August
Charlsworth Tokay	" Bowood
Chasselas Frocklaboulay	" Cannon Hall
Chasselas Musqué	" Hamburgh
Duzetto	" Noir Hâtif
Esperione	" of Alexandria
Frontignan, black	" of Fontainebleau
" grizzly	Pitmaston Cluster white
" white	Raisin des Carmes
Hamburgh, black	Sweet Water, Dutch
" Champion	Syrian
" Dutch	Trebiana
" golden	Tripoli
" Mill Hill	West's St. Peter's

Nursery and Seed Establishment, Hammersmith, London.

THE GARDEN.

IN THE CATALOGUE OF VEGETABLE AND FLOWER SEEDS issued by W. DRUMMOND & SONS, Stirling, the intelligent gardener will be gratified to find the system of inserting only the best and really distinct varieties in the various classes still strictly adhered to; and from the brief but correct descriptions affixed thereto, as well as the general simplicity of the whole, it will be found a ready guide to the amateur in making a suitable selection.

W. D. & SONS will, on application, be glad to forward a copy of their Catalogue, post free, to any address.

Stirling is most favourably placed in point of railway accommodation, there being direct and constant traffic to all the principal stations in Scotland and England, and by steamers (*vid* Glasgow) almost daily to the chief ports in Ireland, thereby insuring a speedy delivery of goods, all of which are, with a limited exception, forwarded carriage paid.

W. DRUMMOND & SONS: Seed Warehouse, Stirling, N.B.; and 58, Dawson Street, Dublin.

FRUIT TREES.—The Trade can be supplied with an excellent Stock of DWARF MAIDEN MOORPARKS and strong, cut back DWARF APPLES, consisting of Manks Codlin, King of the Pippins, Dumelow's Seedling, Blenheims, Hawthorndens and Keswick Codlins; also a large Stock of very fine DWARF-TRAINED CHERRIES and DWARF-TRAINED PEACHES and NECTARINES, all strong handsome plants. Early application is necessary, to JOHN ADAMS & Co., Nurserymen, Brentford, Middlesex.

SORGHUM OR HOLCUS SACCHARATUS;

CHINESE SUGAR CANE GRASS.

SUTTON AND SONS having imported largely of new Seed of the true HOLCUS SACCHARATUS, can supply it at reduced price according to quantity required.

CAUTION.—SUTTON & SONS respectfully intimate to intending cultivators of the Sorghum or Holcus saccharatus, that other varieties are in the market which are comparatively destitute of saccharine and nutritive properties.

The Stock SUTTON & SONS have provided is the true saccharine species procured from the same Continental source from which they have imported in previous seasons. Present price 2*s.* 6*d.* per lb.; quantity required per acre, 8 lbs. Instructions on Cultivation will be sent with the Seed.

Royal Berkshire Seed Establishment, Reading.—Jan. 22.

BEAUTIFUL NEW TORENIA.

JOHN AND CHARLES LEE are now prepared to send out their beautiful new TORENIA PULCHERRIMA, which has been so much admired. It is figured in the present Number of Henderson's "Illustrated Bouquet," and undoubtedly surpasses all other Torenias by the great contrast it exhibits in the rich dark velvet, approaching to black, of the side lobes, and the pure white of the lip.

Dr. Lindley thus describes it in the *Gardeners' Chronicle* of October 30, 1858:—"We have received from Messrs. Lee of the Hammersmith Nursery a singularly beautiful variety of the favourite Torenia asiatica. The tube of the corolla and its eye are an intense purple violet; the two side lobes are the same colour, fading at the edge into pure violet; the upper lobe is pale violet; the lower is white, with a purple oblate blotch at the point. This variety puts the old original kind quite out of the field."

Price 10*s.* 6*d.* The usual discount to the Trade.

Nursery and Seed Establishment, Hammersmith, London.

FLOWER AND VEGETABLE SEEDS OF BEST QUALITY.—The Advertisers respectfully solicit applications for their extensive and DESCRIPTIVE CATALOGUE OF FLOWER AND VEGETABLE SEEDS, which they will feel pleasure in forwarding to any address throughout the world without charge, and postage free. It will be found to contain, beside the usual names of garden occupants, a numerous list of very CHOICE, NEW, and RARE SEEDS of all classes of the floral world, with many not to be met with elsewhere; and also of the Kitchen Garden Department, to the quality and purity of which they pay particular attention. Collections made up for all climates.—Address HOOPER & Co., Seedsmen, Covent Garden Market, London, W.C.

WM. IVERY respectfully announces that his Select CATALOGUE of GARDEN and AGRICULTURAL SEEDS for 1859 is now ready, post free on application, containing none but the very best quality at moderate prices. W. I. has great pleasure in offering his Nonsuch Celery as the best in cultivation for crispness and flavour, not to be equalled by any other variety, 1*s.* per packet. This can also be obtained of the principal seedsmen in London. IVERY'S Nonsuch Lettuce Black Seeded White Cos, will stand one month longer than any other known without running to seed in hot weather, a very fine large Lettuce of exquisite flavour, blanching itself, 1*s.* 6*d.* per packet. W. I. begs to inform the Trade that he can now finish the supply of New Mushroom Spawn, of the best quality.—Hanover Nursery, Peckham, London, S. E.—Jan 22.

TO THE TRADE AND OTHERS ENGAGED IN PLANTING.

WILLIAM CORNWELL begs to offer the following, of which he has a large stock on hand, well grown and warranted true to name:—Standard and Dwarf ROSES of all the leading kinds; Dwarf Trained Peaches, Nectarines, and Apricots; Dwarf Maiden Do. Do.; Dwarf Trained Apples, Pears, Plums, &c.; Red and Black Currants; Larch Fir, 2 to 3 feet; Scotch Do., 1½ to 2 feet; Do., 2 to 3 feet; Cedrus Deodara, 2 to 3 feet; White and Yellow Broom, 2 to 3 feet; Double Furze in pots; Cotoneaster microphylla in pots; Irish Ivies in pots; Berberis aquifolium, 2 to 3 feet; Box Edging; Box, green, 2 feet; Laurel, common, 2 to 3 feet and 3 to 4 feet, bushy; Passiflora cærulea in pots; Privet Evergreen, 2 to 3 feet; large Scarlet Rhododendrons, 4 to 8 feet; ponticum and Catawbiense, do.; Andromedas, Hardy Heaths, Ledums, &c.; a large stock of most kinds of Evergreens, Flowering Shrubs, Ornamental Trees, &c.—The Nurseries, Barnet, Herts.

CHRYSANTHEMUM TRICOLOR BURRIDGEANUM. CHRYSANTHEMUM TRICOLOR VENUSTUM.

F. K. BURRIDGE, SEED GROWER, Lexden Road, Colchester, has much pleasure in inviting the special attention of the Seed Trade to the above-named new Hardy Annuals, which he now offers for the first time, believing they will be found among the finest novelties of the season. The variety Burridgeanum differs from the old C. tricolor in having a fine crimson ring surrounding the yellow circle next the eye of the flower, the rest of the ray being snow white. The variety venustum has the ray florets of a deep reddish purple or plum colour for about one-half their length, shading into yellow at the base, and stained on the under side with purple. Both varieties are striking objects in the flower border, and from their bold conspicuous character, free blooming qualities, and perfect hardiness, together with their adaptability for bouquets, F. K. B. confidently predicts that they will become universal favourites.

A beautifully-coloured group of the two varieties has been prepared, and may be had on application, price 1*s.*; or gratis to Purchasers of 1 oz. of seed.

N.B. The Botanical Magazine for the present month (Jan. 1859), contains a coloured plate of the above.

CHRYSANTHEMUMS—CHRYSANTHEMUMS.

J. H. BIRD, F.H.S., NURSERYMAN, Stoke Newington, the largest grower and most successful exhibitor of the Chrysanthemum in the British Empire, begs to call the attention of the lovers of the above beautiful autumn flower to his matchless collection, the stock of which amounts to upwards of 50,000 plants. Amongst them will be found the following new and rare varieties:—Admirable, Aimée Ferrière, Augustine, Constantine, Louisa, Louis Bonamy, Madame Leo, Norfolk Hero, Progne, Raymond, Beauté de Nord, Dr. Maclean, Queen of England, Plutus, Alfred Salter, Stellaris globosa, Beauty, Themis, Dupont de l'Eure, &c.

J. H. B. can supply strong plants, one dozen for 6*s.*; or five dozen in 30 varieties, containing two of each variety, for 1*l.*; or he can supply 100 plants in 50 varieties, two of each variety, for 1*l.* 10*s.* Also POMPONES in great variety; 50 Pompones in 25 varieties, two of each variety, for 10*s.*; or 100 in 50 varieties, two of each variety for 1*l.* Strong plants of the beautiful new Pompone the Golden Cedo Nulli, 5*s.* each, will be ready in March with the usual allowance to the Trade. Every order will be accompanied by a popular work on the Chrysanthemum.

Post-office Orders payable to J. H. BIRD, Stoke Newington, will be immediately attended to.

FIVE SILVER CUPS
WERE AWARDED TO

A. PAUL AND SON, NURSERYMEN, Cheshunt, Herts, for five Collections of ROSES at the Grand National Rose Show held in St. James's Hall, London, in July. Also FIVE FIRST PRIZES at the Royal Botanic Society's Shows in May and June last. The sorts which won these prizes are now offered at 18s. to 24s. per dozen for standards, 12s. to 18s. per dozen for dwarfs. A PRICED DESCRIPTIVE CATALOGUE forwarded on application, post free.

SEEDS FOR 1859.

HARGRAVE'S SELECTIONS OF KITCHEN GARDEN SEEDS are arranged in quantities and sorts suitable for a succession of Vegetables through the whole year. That adapted for a moderate-sized garden contains 10 pints of the choicest kinds of Peas, 6 pints of superior garden Beans, 3 pints of very fine French or Kidney Beans, and a fair assortment of small Seeds too numerous for specifying here. Cash price, One Guinea, package included.

C. W. HARGRAVE, Nurseryman, Florist, Seed Grower, and Importer.—The Nursery, Winchmore Hill, N.

THE SALWAY PEACH.

CHARLES TURNER can supply strong dwarf-trained Trees of this new and valuable late Peach at 7s. 6d. each. Maiden Trees, 5s. each. The SALWAY PEACH is strongly recommended as an acquisition of great worth.

A dish of this fruit was sent to the Meeting of the Fruit Committee of the Horticultural Society, October 19, 1858, who reported:—"The Salway Peach is a melting variety, with orange flesh, sweet and rich. It was considered a first-rate late Peach."—The Royal Nurseries, Slough.

TO THE TRADE.

MESSRS. MASTERS AND SON have to dispose of some fine clean grown WILLOWS, with stems 6 to 8 feet, fit for working the Weeping varieties upon. Also a very large Collection of the best named Azaleas, Rhododendrons, and other American Plants, of small sizes fit for Stock, as well as larger specimens with flower-buds for immediate planting. Prices furnished upon application.—Exotic Nursery, Canterbury, and Fant Nursery, Maidstone. Jan. 22.

CALLICARPA PURPUREA.

JOHN STANDISH, the exhibitor of the above (at St. James's Hall), can supply a few good plants at 7s. 6d. each. The following passage from Dr. Lindley's leading article in the *Gardeners' Chronicle* for Nov. 20 will give an idea of its beauty:—"Callicarpa purpurea, quite insignificant when in flower, was beautiful in its winter dress of innumerable rich purple berries, about the size of swan shot.' It is easily cultivated, and does well in a cold greenhouse or conservatory planted out, where it will produce thousands of bright purple berries resembling glass beads, and remaining on nearly the whole winter.—Bagshot, Jan. 22.

EARLY PEAS.

WAITE'S DANIEL O'ROURKE PEA; the earliest Pea in cultivation.

EARLY NAPOLEON; a Blue Wrinkled Marrow Pea, as early as EMPEROR.

EARLY EUGENE; a White Wrinkled Marrow Pea, as early as EMPEROR.

Prices to be had on application of J. G. WAITE, Seed Establishment, 181, High Holborn, London, W. C.

EXCELSOR MARROW PEA (KNIGHT'S).—This new Pea is a decided improvement on the well known Ringwood Marrow, being quite as early, greater cropper, longer pod, larger pea, superior flavour, and greener in colour. A great acquisition either for the amateur or the market gardener. 2s. 6d. per quart. Price to the trade upon application. To be had of NUTTING & SONS, Seedsmen, 60, Barbican, London. E.C.

THE EARLIEST PEA.—DUNNETT'S FIRST EARLY is in every respect superior to "Daniel O'Rourke," being several days earlier, having finer pods, and richer in flavour, height 2½ feet. For an early dish of fine-flavoured Peas we can confidently recommend this; 2s. per quart.

CHAMPION CABBAGE, the earliest and best sort, if sown in succession, may be had fit for table throughout the year, 8d. per ounce, or 1s. post free.

BUTLER & MCCULLOCH, Covent Garden Market, London.

EARLIEST WRINKLED PEA.

FAIRHEAD AND SON, SEED GROWERS AND MERCHANTS, Lewisham, Kent, beg respectfully to offer their new EXCELSIOR PEA, of robust habit, delicious flavour; much earlier than Napoléon or Eugenie. They can confidently recommend it as the earliest and best Wrinkled Marrow Pea in cultivation. Price on application.

POTATO GROWING.—Extraordinary Produce again in 1858 (See Advertisement in *Gardeners' Chronicle*, Jan 15). 600 Bushels to the Acre, free from disease, of that most delicate, most liable to disease, and best Potato, the LAPSTONE KIDNEY, which at 4s. per bushel gives 100*l.* an acre clear profit on land in one year. The Book forwarded post free for 18 postage stamps.—Address R. B., Post Office, Hathersage, Derbyshire.

BEST POTATO IN THE WORLD—IMPERIAL KIDNEY.

MR. WEBB, of Calcot, having succeeded in raising a quantity of the above excellent POTATO, begs to offer it to the public as the Best of its Class in every respect. Its quality cannot be surpassed, its yield most abundant, and its size from 2 inches to 9 inches long. Price 16s. per bushel, and no less quantity than 1 bushel disposed of. Also about 3000 true KENTISH COB NUT Trees from 2 to 4 feet high.—Apply to Messrs. JOSH. MAY & Co., 1, Wellington Street, Strand, or to Mr. WEBB, Calcot, near Reading, Berks.

NEW ZEALAND RUNNING BEAN.—This Bean was found by a gentleman travelling in Central New Zealand. It is not known by Mr. Arthur Henderson, Mr. James Veitch, Messrs. Sutton, Mr. Carter, Mr. Hooper, nor at the Hort. Society. Price per doz., 3s.; trade allowed Beans extra. A printed account will be sent with each order; see last week's advertisement. Melon, Cucumber, and true Custard Marrow, 1s. per packet. J. C.'s Pamphlets always on sale.—JAMES CUTHILL, Camberwell, London.

SEED POTATOES.—The best Early Kinds are:—
ASHLEAF, true.
ASHLEAF, MYATT'S PROLIFIC, a very excellent first early variety, the productiveness of which is remarkable.
EARLY OXFORD (SODEN'S), a fine variety for frame or first crop. One of the best Potatoes grown.
EARLY SURPRISE, early, a fine large variety, and a good cropper.

Also the following select varieties for general crop:—

Brighton Kidney	Early Uxbridge
Brockley Kidney	Early Frame
Fluke	Fortyfold
Hooker's Kidney	Flourball
ROUND VARIETIES.	Hundredfold
	Perkins's Seedling
American Seedling	Prince of Wales
White Fortyfold, alias British Queen	Tarku's Seedling
	Wellington

CHARLES TURNER has fine samples of the above. The Royal Nurseries, Slough.

CHAMPION OF SCOTLAND PEA.—A new and first-rate sort, declared by all who grew it last year to be the most distinct and best flavoured Pea in cultivation. To be had only at PETER LAWSON & SON'S, the Queen's Seedsmen, &c., who are also prepared to execute orders for all sorts of Garden and Flower Seeds of the finest quality.

27, Great George Street, Westminster.

"JACK OF NEWBURY" SWEDE, ETC.

PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN, &c., 27, Great George Street, Westminster, respectfully request attention to their very genuine Stock of the above excellent Swede; also of the LOTHIAN PURPLE-TOP SWEDE, both of which have been selected with the greatest care. They have also a very fine Stock of the KOHL RABI, or TURNIP-ROOTED CABBAGE, specimens of which were shown at their Stands at Smithfield Club Show. The Kohl Rabi was largely grown last season, and may now be relied on as a substitute for the Turnip and Mangel, where these roots do not succeed, or for filling up blanks where there is a partial failure. Its feeding qualities, hardiness, and weight per acre are equal to the Swede, and all kinds of stock prefer it to other roots.

P. L. & SON have also selected a first-rate Stock of MANGEL WURZEL SEED, which they can confidently recommend. Their natural GRASS SEEDS have been also saved with very great care, and they are ready to supply them separately or in mixture, for laying down Permanent Pastures, Lawns, &c.

P. L. & SON have arranged to deliver Seeds free throughout England and Wales from their London Establishment, for all quantities exceeding 20s. in value.

LISTS OF PRICES of the above and all other Seeds, Plants, &c., may be had on application.

27, Great George Street, Westminster.

VEGETABLE AND FLOWER SEEDS, ETC.

JAMES DICKSON AND SONS, SEED MERCHANTS and NURSERYMEN, Chester, respectfully intimate the publication of their ANNUAL LIST OF VEGETABLE AND FLOWER SEEDS, which they will be happy to transmit prepaid to those who may apply for it. The whole of the seeds they offer have been selected with great care, and they therefore feel confidence in recommending them as being of really good quality.

Their Nursery Grounds at Newton-by-Chester, which lie in a high and exposed situation, contain a large and valuable Stock of FOREST and FRUIT TREES, SHRUBS, &c., all healthy and vigorous; also a great quantity of transplanted QUICKS, suitable for forming new fences, &c. Lists and every information furnished upon application.

Communications should be addressed JAMES DICKSON & SONS, 102, Eastgate Street, and Newton Nurseries, Chester.

PRICED CATALOGUE OF SEEDS FOR 1859.

Just published by MILNE, ARNOTT, & Co., and will be forwarded free upon application,

A PRICED AND DESCRIPTIVE CATALOGUE OF SEEDS, containing select lists of the best kinds all from the most genuine stocks, and of excellent quality. Orders above 1*l.* carriage free to any station within 100 miles of London; above 5*l.* to any station or port in the United Kingdom.—MILNE, ARNOTT, & Co., Wandsworth Road, London, S., successors to Messrs. Chandler & Sons (established upwards of 60 years).

PINE-APPLE NURSERY, EDGEWARE ROAD (W.).

ARTHUR HENDERSON AND CO. beg respectfully to announce that their CATALOGUE OF KITCHEN GARDEN AND FLOWER SEEDS FOR 1859, with a List of Garden Implements and other requisites is now published, and will be forwarded, post free, on application.

They particularly desire to call the attention of the public to their "celebrated Short-topped Garden Beet," the only variety that really will repay the grower; colour, flavour, and quality are such as to render it worthy of extensive cultivation; also "Kite's Branching Marrow Pea," a very valuable and prolific bearer for every day use; "Snow's true White Winter Broccoli;" "Snow's Champion Cos Lettuce," a large crisp summer and autumn Lettuce, and for these seasons unequalled. In this select List will also be found the "Moor Park Lettuce," those very superior sorts as yet but little known, namely, the "Palatine" and "Versailles" Cabbage Lettuce; neither of these are disposed to run to seed during the hot summer months. The White and Black spined Imperial Cucumber, the new sprouting or Feather-stemmed Savoy, a scarce but most delicious Green; the "Waterloo framed short-topped seeding Potato," raised between the "Albion" and "Frame;" it is earlier than either, very productive, and the sort that must eventually be depended upon as the best early frame and forcer, as soon as its merits become better known. The "Australian Salad Cress"; this plant grows about 1 foot in height, branching and spreading all round the stem; it may be constantly cut and gathered throughout the summer, the leaves are of a peculiarly delicate light green, the flavour is exquisite, grateful, and piquant.

VEGETABLE AND AGRICULTURAL SEEDS, &c.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that they are now prepared to execute with new and genuine SEEDS all orders they may be favoured with. Their PRICED and DESCRIPTIVE CATALOGUE, containing all new VEGETABLES proved to be good, and all the best of the older varieties, &c., will be forwarded post free on application.

The following are particularly recommended, all being very superior in quality, and valuable acquisitions to the most select collections:—Beet (Pine Apple Short Top), per oz., 2s.; Broccoli, Winter White (Snow's), per oz., 3s. 6d.; ditto, Penzance White (Mitchinson's), per packet, 1s. 6d.; Celery, Nonsuch (Ivery's), per packet, 1s.; Cottager's Kale, per packet, 1s.; Lettuce, Alma Cos (Griffin's), per packet, 1s.; ditto, Moor Park Cos, per packet, 1s.; Marrow, Custard (Thomson's), per packet, 6d.—Paradise Nursery, Seven Sisters and Hornsey Road, Holloway, London, N.

ROYAL SOUTH HANTS SEED ESTABLISHMENT.
UNDER THE PATRONAGE OF H.R.H. THE PRINCE CONSORT, THE AGRICULTURAL, HORTICULTURAL SOCIETY OF INDIA, AND THE LEADING AGRICULTURISTS OF THE UNITED KINGDOM.

PAGE AND TOOGOOD can now supply GARDEN AND FARM SEEDS, carriage free; SEED POTATOES, &c. The numerous Prizes gained by their Stocks are convincing proofs of superior quality, and their prices compete with any house in the kingdom. WHOLESALE and RETAIL PRICED CATALOGUES upon application.

Agents for ODAMS' Blood Manure, Superphosphate, &c. Seeds Packed for Exportation to all Parts of the world,

37 and 38, Oxford Street (facing the Railway Terminus); and 58, Above Bar, Southampton.

BRITISH POMOLOGICAL SOCIETY, ST. JAMES'S HALL, 69 and 71, Regent Street, London, W.

MEETINGS AND PREMIUMS FOR THE YEAR 1859. THURSDAYS.

Feb. 3.—2*l.* 2s., and 1*l.* 1s., for the best and second best collections of Six varieties of Late Dessert Pears. (Open to growers only.)

March 3.—2*l.* 2s., and 1*l.* 1s., for the best and second best collection of well-kept Apples and Pears, accompanied by careful descriptions of the manner in which they have been kept (Open to growers only.)

May 5.—1*l.* 1s., for the best late Seedling Kitchen Apple.

June 16.—1*l.* 1s., and 10s. 6d., for the best and second best collections of Strawberries.

June 23.—1*l.* 1s., and 10s. 6*d*, for Strawberries, as before.
1*l.* 1s. for the best Seedling Strawberry.

July 7.—1*l.* 1s., and 10s. 6*d.*, for Strawberries, as before.
2*l.* 2s., 1*l.* 1s., and 10s. 6*d.*, for the best, second, and third collections of Figs.
2*l.* 2s., and 1*l.* 1s., for the best and second best collections of Melons.

July 21.—2*l.* 2s., and 1*l.* 1s., for Melons, as before.
1*l.* 1s., and 10s. 6*d.*, for Strawberries, as before.
2*l.* 2s., for the best Seedling Early Apricot.
1*l.* 1s., for the best Early Dessert Pear.
General collections of Cherries, Raspberries, and Currants are also specially requested at this meeting.

Aug. 4.—**ANNUAL GENERAL MEETING.**
2*l.* 2s., for the best Seedling Early Peach.
2*l.* 2s., for the best Seedling Early Nectarine.
3*l.* 3s., 2*l.* 2s., and 1*l.* 1s., for the best, second, and third collections of Grapes.

Aug. 18.—2*l.* 2s., 1*l.* 1s., and 10s. 6*d.*, for Figs, as before.
2*l.* 2s., for the best Seedling Grape, having a Muscat flavour.
2*l.* 2s., for the best Seedling Grape of any other description, and not having a Muscat flavour.
2*l.* 2s., for the best Grape, not a Seedling, raised in this country, and not in general commerce.

Sept. 1.—2*l.* 2s., for the best Seedling Late Strawberry.
1*l.* 1s., for the best dish of Golden Hamburgh Grapes.

Sept. 22.—3*l.* 3s., 2*l.* 2s., and 1*l.* 1s., for Grapes, as August 4. (Open to growers only.)

Oct. 6.—2*l.* 2s., for the best Late Seedling Apricot.
2*l.* 2s., for the best Late Seedling Peach.
2*l.* 2s., for the best Late Seedling Nectarine.

Oct. 27.—1*l.* 1s., for the best dish of Six Salway Peaches.

Nov. 17.—10s. 6*d.*, for the best dish of Cox's Orange Pippin.

Dec. 15.—The premiums to be offered at this Meeting will be announced at a later period.

The premiums will be awarded if specimens be exhibited in accordance with the Society's regulations, and if considered worthy by the members present, who will be the judges on the respective occasions.

The word Seedling is intended to apply to varieties raised in this country, and which, at the time of exhibition, are not in the hands of more than two parties, who may represent the rrisers and the propagators. All premiums offered for such subjects, but not taken this year, will be announced for competition at or about the same time in next and subsequent years, until such varieties are brought forward as shall be considered worthy of the Society's commendation.

The premiums offered for Collections of Grapes, Melons, Figs, and Strawberries are offered for the purpose of obtaining, if possible, examples of all the varieties in cultivation, that the Society may be enabled to determine their nomenclature, and pronounce on their relative values. It is not necessary in these competitions that the exhibitions should all have been cultivated by the parties sending them. Every subject exhibited for competition must be accompanied by information filled up in forms obtainable on application to the Secretary.

Of Apples and Pears, in February and March, not less than three, and at other periods not less than six specimens to be exhibited of each variety; 10 specimens should be sent of culinary varieties.

Strawberries to be exhibited in dishes of not less than 20 fruits, accompanied by leaves and flowers when possible.

Peaches, Nectarines, Apricots, and Figs, in dishes of not less than three fruits, in all cases accompanied by a shoot with three or four perfect leaves.

All fruit which will endure being packed up for 24 hours should be sent, if by public conveyance, early enough to arrive on the day previous to the Meeting; and if by hand, not later than 10 o'clock on the morning of Meeting.

The room will be open to members and the friends they introduce at 2 o'clock each day, and the chair will be taken at half-past 2.

Forms, Copies of Rules, instructions for packing, or other information may be obtained upon application to Mr. W. DAVIDSON, Secretary, to whom parcels, &c., should be addressed, at St. James's Hall, 69-71, Regent Street, London, W., and letters (to avoid delay), at 2, Randolph Road, Maida Hill, London, W.

The Gardeners' Chronicle.

SATURDAY, JANUARY 22, 1859.

MEETINGS FOR THE FOLLOWING WEEK.

MONDAY, Jan. 24—Entomological ..... 8 P.M.
WEDNESDAY, — 26—Microscopical ..... 8 P.M.

GERMAN STOCKS! who that is a lover of gardens does not know how much these are prized above those of France and England? In CARTER'S list no fewer than 50 sorts are offered for sale; VAN HOUTTE has 35 "of the brightest and most exquisite colours," to say nothing of quantities more. Every great seed list puts them forward among the best novelties to be offered; and travellers bring them home in packets as the most acceptable present that can be offered to their friends. To rival the German seed appears hopeless, and in a climate like ours possibly may be so. Nevertheless, considering what other "impossi-

bilities" have been overcome, such for instance as persuading the Chinese Yam to be gracious, it seems worth while to explain what the Germans consider to be the master key to their success. This we are enabled to do by means of a paper in the *Illustrirte Gartenzeitung*, translated for the Horticultural Society of Paris by M. COURTIN.

It appears that the finest possible seed is sown in the beginning of March on a gentle hotbed covered with light rich sandy soil. Care must be taken not to sow the seeds too thickly, for if that is done the seedlings are weak. A little earth is scattered over the seed and gently pressed down with a very even board, after which they are slightly watered with a fine rose. The sashes are immediately afterwards covered down, and left so till the young plants appear. After that a little air is given whenever the weather permits, it being of the first importance that the seedlings should not be drawn up, but be short and strong. In places where there is risk of air being too moist, in spite of ventilation, so as to make the seedlings damp off, it is then found expedient to cover the soil with a thin layer of fine soft dry loam, and after the seeds are sown to cover them gently with the same soil. As soon as the seedlings have formed their first leaves they are pricked out on a cold bed at about 1 inch apart. This bed should be formed either of good light soil mixed with old rotten leaf-mould, or of light earth from a heap of well worked turf. In pricking out, the end of the tap root is cut off, and the seedlings are plunged up to the seed leaves. The young plants are then gently watered, the frames are shut down close, and kept so for a few days. When the sun is strong the lights are shaded by some thin transparent canvas; but as soon as the seedlings are seen to have taken air and sun are by degrees admitted freely. In fine warm sunny days the lights are taken off, and replaced at night. This kind of pricking out is the most important part of the operation; it causes plenty of roots to form continually. In short nothing can be more striking than the difference between plants thus treated, and seedlings which are removed at once from the seed bed to the place where they are to grow. Experience also shows that roots hold together better in the kind of soil above described than in any other, a most important circumstance.

The beds on which the young Stocks are to be planted out are prepared the previous autumn by a good dressing of stable dung dug in immediately. In the spring the beds receive a pretty good coating of pigeons' dung, or fowls' dung, which is left exposed till the planting out takes place (guano would doubtless do as well). Just before this happens it is thoroughly well worked in.

About the end of April the seedlings are strong enough to be planted out. This is done for the most part in the evening. Care must be taken that the soil is not too wet. The plants generally stand between 5 and 6 inches apart. After being put into the ground they are well watered. It seems, however, that many gardeners object to planting out so early, because of the check likely to be given by late frosts. It is, however, asserted that nothing is to be feared on this account, provided the Stocks are well established and have been properly hardened off; for if that is done neither snow nor frosts will injure them.

After the Stocks are planted out they merely require watering night and morning in dry weather, and to be kept perfectly clean from weeds. As soon as the flower buds begin to show the beds must be covered an inch or two deep with old horsedung perfectly rotted down; such as comes from an old hot-bed. But the greatest care must be taken that this material does not touch the stems of the plant. Water is given over this manure, which carries down to the plants such an abundant supply of food that they become extraordinarily strong, and produce abundance of fine flowers.

If Stocks are to be grown in pots they are planted out on a bed by themselves, so that they can be lifted with a good ball when the time comes. That time is as soon as it is possible to see whether the blossoms will be single or double. When potted they are placed in the shade in a rather close place, until it is seen that they have taken. They are then plunged in well worked soil, up to the rim of the pots in an open situation exposed to the sun. They are regularly watered, and fed from time to time with strong liquid manure made from cowdung or sheep's droppings. Should it be wished to flower them late the leading stem is stopped so as to force it to produce laterals which not only flower later, but often have finer blooms than if the plants are not pinched. The gardener must not, however, be too late in doing this, and he must only nip off the blossoms without touching the smallest leaf.

In conclusion we are informed that seed of the finest quality is obtained from plants in pots, and that the best seeds are those which have a very small border, but which are irregular in form, rather angular, and not flat.

Let us add that these directions are applicable to many other annuals besides German Stocks. The manner and time of sowing, the preparation of the bed, how and when to manure, how to water, when to turn out, how to manage the potted plants, and what changes to make in the kind of manure are all conformable to the strictest rules of theory, on which it is clear that intelligent gardeners have built up their practical routine.

AT the general meeting of the GARDENERS' ROYAL BENEVOLENT INSTITUTION, which took place on the 11th inst., for the purpose of electing three pensioners, the following was the result of the ballot.

Number.	Name.	Subscriber.	Application.	Votes.
1	JAS. SMITH	..	10th	319
2	WM. DUNGATE ..	6	9	664
3	WM. PRIEST	7	6	337
4	SARAH AYRES ..	4	5	607
5	WM. CROUCHER ..	..	5	127
6	JNO MACINTOSH ..	5	5	172
7	WM. BAILLIE	..	4	808
8	GEO. DRURY	..	4	39
9	JNO. ALDERMAN ..	..	3	116
10	J. FLINN	..	3	75
11	M. MITCHINSON ..	7	3	41
12	J. DOWNING	..	2	420
13	T. JENKINS	11	2	171
14	J. WILLIS	..	2	55
15	G. ANNABALL ..	..	1	56
16	S. FAULKNER ..	6	1	..
17	WM. SMITH	..	1	15
18	MARY SQUIBBS ..	14	1	575

In printing this return, while we heartily congratulate the elected pensioners—all most worthy persons—upon the success that has attended the exertions of their friends, we must also draw attention to the determination now evinced by the majority of the subscribers to throw the weight of their support upon the side of those applicants who have themselves done the most to support the charity. This is conspicuously the case with No. 18, who upon the first application reaches within 32 votes of the position which it has taken others at least four years to attain—a circumstance undoubtedly owing to her poor husband having subscribed 14 years. We cannot but repeat the conviction we have so often already expressed, that this consideration ought always to have very great weight with voters; and we trust the present instance may be regarded as a sign that a large number of the most powerful supporters of the charity entertain the same opinion.

Let it not be imagined that this remark is intended to convey anything resembling an objection to the proceedings of the Committee of Management. On the contrary, the gentlemen who have for so long a time undertaken the duty of administering the affairs of the charity deserve the warmest thanks of gardeners for the disinterested care with which they have watched over its interests. And that, not merely for what they have done, which is a very great deal with the small means placed at their disposal, but for what they have refused to do. They have shut their ears to clamour; they have steadily opposed the schemes of imprudent advisers; and they have deliberately acted upon their own judgment, whether it pleased or displeased the praters at their meetings. In this way they have won public confidence, and so long as they continue in such a course they are certain to preserve it. It may be indeed that their progress is slow, but it is sure, as their annual accounts, now more flourishing than ever, unmistakeably demonstrate. For ourselves we readily admit that where we have had the misfortune to differ from the Committee upon some points of detail, those points have always been fairly discussed, and we have bowed to the decision of the Committee with the same deference as would be shown to the verdict of a jury.

We believe the Committee now possess something less than 5000*l.* invested in the public funds, out of the interest of which and annual subscriptions their pensions are paid—12*l.* to widows, and 16*l.* to destitute Gardeners—scanty pittances, it must be owned—but as much as the means of the charity can prudently afford. Inconsiderate people are to be found who cry out at the smallness of these allowances, and blame the Committee for not paying twice as much, forgetting that it is better to give 20 poor persons even 10*l.* a year than to allow 20*l.* a year to only ten. We take the liberty to point out to the gentlemen here alluded to that the real blame attaches to the parsimony of the public, which niggardly withholds the aid that is indispensable to a more liberal action of the Committee. Let those gentlemen subscribe more, canvas more, keep the charity more before the world, at the same time carping less, and then, if the Committee are found to hoard their means instead of expending them wisely, it will be time enough to talk of illiberality.

All experience shows that in this country money will always be contributed freely for charitable purposes, provided the donors have confidence in those who are entrusted with the management of it, and are satisfied that it will be prudently expended upon really deserving objects. Surely there is no one class of society more deserving the aid of the wealthy, and, indeed, of all who have money to spare, than decayed gardeners of irreproachable character, and their aged widows. It is upon these that the means which the charity before us possesses are expended—as we think most judiciously—by a body of gentlemen of unimpeachable integrity, who by their position are able to judge with unfailing accuracy whether applicants are proper objects for relief or not. And it is on these grounds that we most earnestly appeal for more energetic support of the Gardeners' Royal Benevolent Institution.

New Plants.

212. FREMONTIA CALIFORNICA; *Torrey in Smithsonian Contributions to Knowledge, Vol. V. t. 2.*

Of this most remarkable plant a solitary individual was raised in 1851 in the garden of the Horticultural Society from a seed received from Mr. Robert Wrench. In April 1854 it produced flowers for the first time, as large as those of Trollius asiaticus, brilliant yellow inside, apricot coloured outside, with the addition of some cinnamon coloured down; and their substance was so thick that each flower remained in perfection for weeks.

Since that time it has proved to be a beautiful hardy shrub, with a habit wholly unlike that of every hardy plant in cultivation, most resembling indeed some of the Hibiscuses of Western Australia. The plant has hitherto resisted all attempts at propagation, and still remains at Chiswick unique in Europe.

The seed paper bore the following superscription. "A shrub 4 feet high with blossoms the size of the Quince, of a deep yellow colour, sessile, and covering the branches. The capsules are an inch in diameter resembling fruit."



This most interesting shrub was first described by Dr. Torrey in the work above quoted, from dried specimens gathered by the Rev. A. Fitch at the sources of the Sacramento, in the northern part of the Sierra Nevada of California. Also on hill-sides, Mariposa county, especially near the gold works of the Merced Company; flowering in May.

We also find a dried specimen, for which we are indebted to Messrs. Veitch, among the plants (No. 410) collected for that enterprising firm by Wm. Lobb on the Sierra Nevada at the height of 5000 feet, marked "Deciduous Shrub, 3 to 4 feet high."

The description given by Dr. Torrey is as follows:—

"A beautiful shrub, usually from 3 to 4 feet high, but occasionally reaching a height of 10 feet, and having very much the appearance of an ordinary Fig

tree. The bark is of a brownish gray colour; the wood is hard, and apparently of slow growth. Most of the leaves and flowers are produced at the extremity of very short lateral branches or spurs. The former are petiolate, roundish in outline, from three-fourths of an inch to an inch, or sometimes even 3 inches, in diameter, three to seven-lobed; the lobes entire, or crenate-toothed, of a thick (and when old of a somewhat coriaceous) texture, green and sparsely stellate-pubescent on the upper surface, ferruginous-tomentose underneath; the petioles from 4 to 6 lines long. In the specimens from Mariposa county, the leaves of the young shoots are less deeply and more numerously lobed. The peduncles are about as long as the petioles, stout, straight, or somewhat recurved. Immediately under each flower, and closely applied to the calyx, are three small lanceolate bracts. The calyx is sulphur-yellow widely campanulate, about an inch and a quarter in diameter, deeply five-parted; the segments roundish-obovate, and usually with a short abrupt point, or sometimes mucronate. Externally the calyx is sparsely stellate-pubescent, and on the inside at the base it is densely villous. The stamens are equal, shorter than the calyx, and opposite to its segments: the filaments are glabrous, the upper half filiform, spreading and distinct; the lower part united into a tube which embraces the ovary and nearly conceals it: the anthers are about three lines long, extrorse, adnate, tortuous, and incurved at each end. In the bud they are four-celled, but only two-celled in the expanded flower; the cells are distinct and open longitudinally their whole length. Under the microscope the pollen appears triangular-globose and reticulated. The ovary is ovoid, and densely clothed with short conical hairs or processes. It is usually five-celled; each cell containing eight or ten horizontal anatropous ovules: the style is about one third longer than the stamens, and gradually tapers towards the summit, where it terminates in a minute undivided stigma. The capsule is about as large as that of Hibiscus Syriacus, and is closely covered with short stiff reddish stellate hairs; a portion of the calyx remaining at its base. At maturity it splits loculicidally nearly to the base into five valves. Only two or three seeds ripen in each cell; and these are smooth, resembling those of the Ochra.

"This genus is a near ally of the celebrated Cheirostemon of Humboldt, the Hand Tree of Mexico. The latter differs, however, in the form and texture of the calyx, the lobes of which are deciduous; in the much longer stamineal column and secund mucronate free portion of the filaments; in the straight parallel anther-cells, and in some other characters of less importance."

Whenever it shall have been found possible to propagate this plant we shall have added an uncommonly fine thing to our list of small neat hardy shrubs.

TRENTHAM.

THIS magnificent palace residence of his Grace the Duke of Sutherland is situated something more than a mile from the very pretty station of that name on the North Staffordshire Railway. From thence the road leads over a flat and open country; passing through a portion of the village of Trentham and crossing the Trent by an ancient four-arched bridge, it enters the park by an unpretending gate and sweeping round to the western or entrance point (which is close at hand), it passes between two richly ornamented lodges immediately in front of the mansion, which is a noble pile of a pure and chaste style of Italian architecture, elaborately and richly ornamented, the parapet adorned with an open balustrade surmounted at intervals with lofty urns and vases. A lofty open-columned tower 100 feet in height rises from its centre, conferring a certain degree of majesty on the whole mass, and there is an Orangery and conservatory at either end, of the same unique and magnificent character. The large adjoining masses of offices, stables, artificial shops and farm buildings are of a secondary class of the same order of architecture, or what is usually known as the Anglo-Italian style, which is preserved in a great measure through the village, and even to the buildings at the railway station; the towers and projecting pantile roofs producing on the landscape the most pleasing and picturesque effect.

The south or garden front is on a scale commensurate with the noble proportions of the mansion to which it forms so admirable an appendix. That portion immediately in front of the principal rooms is some 10 or 11 acres in extent—a parallelogram in form, and laid out in terrace and panel gardens of a purely Italian character; they are separated from the park on the western side by a slight screen of a dwarf and mixed plantation; the south end abuts on the lake—a large and beautiful sheet of water of 85 acres in extent, and from which it is separated by an open balustrade fence. The main walk of the lower or Italian garden is 250 yards long, and 14 yards wide, at the lower end of which there is an admirable bronze figure; there are also parallel walks on either side, and the whole is lined with Portugal Laurels in large boxes, trained with nicely formed heads, and producing an excellent effect. These walks are again crossed by other walks, which divide the whole space into six compartments, and each is formed into panel, the raised portion in the middle having as a centre a simple fountain and jet; the surrounding beds partake of the same character, the latter edged with Oak, Cotoneaster, Yew, Berberis, &c., all trained to a uniform height, and the whole was filled with the choicest description of bedding plants, arranged and managed with the most scrupulous taste, alike in regard to height and harmony of colour. Fine specimens of Humea elegans were used with much effect in relieving alike the flatness of the surface and intensity of colouring in the beds. Every compartment is lined with fine specimens of upright Cypress and the Irish Yew, producing an excellent effect, and each division is a counterpart of the other. On the east and west sides of this garden are raised terraces of some considerable width, on which are placed at regular intervals polished granite seats, vases, busts, and ornamental baskets, the latter filled with beautiful plants in flower. At the lower end of the eastern terrace there is an iron-covered trellis walk 140 yards long and 15 feet high, over which are trained Roses, Clematis, Ivy, Aristolochia Sipho, &c., furnishing during the summer months a sheltered promenade of the most inviting character. The terrace is some 2 or 3 feet higher than the walks of the Italian garden, from which it is divided by an open balustrade surmounted with vases artistically disposed, and these are filled with flowering plants, producing a most charming effect. The approach is by wide steps ornamented on the ascent by bronze vases and baskets of choice flowers; the pavement of this terrace is of slate bordered with stone, on which are some raised beds, and the whole is replete with rich marble vases and bronze statuary, apparently of much value, and gorgeous in their effect and character. The sides of the lawn windows facing this terrace are each fitted with a China box, and filled with flowering plants, chiefly Geraniums. Advantage seems to be taken of every available space in this "garden of gardens" for a rich display of the very best description of flowering plants, and here the elegant Humea is again brought into contrast with the finest possible effect. This garden is bounded by a conservatory at the west end—a building of considerable dimensions, and containing some noble specimens of Orange trees, Camellias, and others of a kindred character, in the most perfect health, ornamented with quantities of Fuchsias, Geraniums, Achimenes, the whole being interspersed with a considerable collection of nicely grown specimens of Ferns and Lycopods. Creepers, too, descending in festoons from the roof added much to the beauty of the whole. The east end of the terrace is bounded by the private apartments, which project like the conservatory from the main portion of the building. Passing along this terrace garden one cannot help admiring the beautiful view that presents itself, and I would here note that although it was somewhat late in the season when I had the rich treat afforded me of visiting these beautiful gardens and grounds, and that too after the heavy rains had fallen in the middle part of September, which had considerably detracted from the beauty of the flower-buds, still enough was left to show the gorgeous character of the scene as well as the artistic and tasteful manner in which all had been treated. Everything was in the most perfect order and neatness. In the foreground were long walks lined with avenues of Laurel trees in boxes, having nicely formed heads; the latter are more appropriate than Orange trees in a northern climate; and these viewed in contrast with the light and erect forms of Cypress and Irish Yew, through which the gorgeous masses of the flower-beds are seen to great advantage, look uncommonly well, while the noble bronzes, balustrades, figures, vases, &c., with which this garden is so liberally adorned produce an effect of the most charming and perfect kind. Adjoining this gorgeous scene the large and beautiful lake in its irregular outline stretches onwards to the south, and is lost in the vast amphitheatre of wood which rises beyond, whilst densely clothed green islands rest on its bosom, and stately swans proudly glide on its crystal-faced surface. A little to the right the highest point of the wooded hill is crowned by a colossal bronze statue, 15 feet in height, of the late Duke of Sutherland, after the original by Sir Francis Chantrey, and erected, as the inscription informs us, by a "mourning and grateful tenantry;" a noble object in the landscape, and seen from a great distance in the surrounding country. From here the hill stretches northward to a considerable distance beyond the mansion, where it terminates somewhat abruptly, and is clothed for a considerable part of its length with a range of stately wood; the magnificent park of some 400 acres in the foreground is nicely broken by large masses and specimens of ancient timber, amongst which the noble herds of deer and West Highland cattle roam undisturbed; immediately opposite the mansion, and beyond the range of wood a large knoll rises up majestically in the horizon, the apex of which is covered with a noble group of Scotch Fir, producing an excellent effect, and giving much variety to the scene. Here the ground is thickly covered with groups of "Bracken," which has a very nice appearance, and from this spot there is an excellent view over a bare and somewhat flat country, embracing however in its extent a vast field of industry, the pottery towns of North Staffordshire, the site of each being well marked by huge volumes of fire and smoke. It is worthy of remark that this magnificent park is open at all times for the amusement and recreation of the dense population of these towns, and there are certain occasions during the "Stoke wakes" when thousands enjoy the advantages so liberally offered by the Duke of Sutherland.

The Orangery is a long and somewhat narrow building; it contains many noble specimens in rude health. In front there is a very pretty garden, centered with a Cupid fountain, the beds being effectively planted, and the whole is further ornamented by a handsome gilt railing. The pleasure grounds contain some 50 acres of an irregular form, and are charmingly disposed in masses broken into glades, through which the silvery surface of the water appears glittering in the sun. It also contains very nice specimens of Araucaria and other Conifers, Tulip trees, Magnolias, &c., and is further decorated by masses of flowers effectively disposed. The Trent winds through these grounds, and its waters are spanned by an iron bridge of 90 feet. There is also a ferry boat at some little distance up the river. From this spot onwards to a considerable distance the water is fringed on either side by Water Lilies and other flowering aquatics; and from here one observes the gigantic operation which has been resorted to in changing the course of the river from the bed of the lake, and which formerly used to silt it up in all directions; that beautiful sheet of water is now fed exclusively from a rivulet on the opposite side. Of late years another enemy has overtaken it; this is the water weed, Anacharis alsinastrum, an American pest of a determined character, which has spread alike over the surface of the river and lake. Near this spot some 10 or 12 acres have been recovered from a quagmire condition by draining, all which has been laid out with much judgment and good taste, and added to the existing pleasure ground; the masses are generally large, and have been skilfully planted with Evergreens and early flowering shrubs, white and yellow Broom, Double Furze, Ferns, Heath, &c., the whole being interspersed with Conifers, Hollies, Thorns, &c. Many of the latter are covered with creeping Roses, Honeysuckles, and Clematis, and these latter at the period of my visit presented a somewhat singular but excellent effect.

Immediately facing the bridge and sloping to the river on a parallellogram of gravel, and appropriately surrounded by "Forget-me-not," are the following inscriptions laid down in broad Box, in large letters:—

ELIZABETH LORN | CAROLINE KILDARE
EVELYN BLANTYRE | CONSTANCE GROSVENOR
VIREAT MEMORIA.

These ladies are the daughters of the Duke and Duchess of Sutherland, and married to the noblemen whose names they bear; the first named is now Duchess of Argyll. Close at hand is an excellent conservatory 89 feet long, 60 feet wide, and 14 feet high, of a ridge and furrow construction and admirably adapted for plant cultivation. It contains many fine specimens of Camellias, Azaleas, Acacias, Brugmansias, &c.; the general style of training is of a pyramidal character, which has an excellent effect, and being cramped at the roots by brick-work, they are now splendidly set with flower-buds. The roof is prettily festooned with creepers of the most showy kinds; suspended baskets with trailing plants adding much to the general effect. The whole is kept gay during the season by a constant succession of flowering plants liberally distributed over the whole house. At the period of my visit it was richly decorated with Fuchsias, Geraniums, Achimenes, Liliums, &c., all capital specimens, producing a rich mass of beauty and effectiveness; and I would observe in passing from these grounds that the whole of the Grass and gravel are kept in the most perfect order by the aid of machinery, the former by a horse machine wherever it can be worked, a small hand instrument being used in places of difficult access; the latter is kept in order by a salting machine, the invention of Mr. Fleming, and judging from the beautiful condition of the gravel in every direction, I should say that it was altogether most efficient.

Adjoining the conservatory is the principal entrance to the kitchen garden through some very elegant iron gates, opposite to which is a noble walk 200 yards in length, with wide borders on either side most effectively disposed in ribboned stripes, the colours being well contrasted, and producing an admirable effect. On the left hand side, and occupying the whole south wall of the garden, is the famous "Trentham Case," a very beautiful structure; it has a narrow slate path up the entire centre, and forms a most delightful promenade. The fruit when I saw it was all gathered; the appearance of the wood, however, for the next season's crop seemed all that could be desired. The western aspect of the east wall is also covered with the same unique and magnificent building, from which excellent crops are obtained, and with certainty of success. The northern wall is covered with a noble range of glass erections of elegant designs and construction; there are several Peach-houses with arched trellis in front, and the back walls covered also with trees; and the whole of the trees looked in the most perfect health; the wood being strong and full of well rounded fruit buds.

Adjoining these is the new ridge and furrow roofed Vinery, erected for the cultivation of the Trentham Black Grape; it is 134 feet long and of considerable width. The ventilation of the roof is of the most perfect kind; the cap in each ridge moves simultaneously by machinery, and the whole of the foliage is stirred by the wind on the least air being given. [We hope to be able shortly to publish a detailed account of this building, a representation of which is now before us.] Another excellent plan has also been adopted here; a large tank has been formed in the house for the reception of the rain-water from the roof, and a hot-water pipe is laid into it in order to render the water tepid, and judging from my

own experience in this particular, the plan is worthy of adoption everywhere. The early Vinery immediately adjacent contained some excellent rods which were expected to produce fruit of no ordinary character for the exhibition in the coming May month; they were produced from a Vine planted about the centre part of the back wall of the house, the stem of which was mossed and trained down one of the rafters to the front border of the house, and then laid along in its whole length. From this mode shoots of the greatest promise had been produced; and surely with this extraordinary amount of feeding some magnificent fruit may at least be expected. Other Vine houses contained some beautiful Muscat and other Grapes faultless alike in regard to colour and size.

The Pineries are contained in an inclosed square a little southward of the Peach-houses, and from the fame these gardens have obtained in the production of this king of fruits, I fully expected to find some noble specimens; nor was I disappointed, for the pits contained not only some admirable plants but there were then just fully ripe four of the most beautiful and unique specimens of Black Prince I ever beheld—of that peculiar redness for which this variety is distinguished. The whole of the forcing structure in these gardens has just been reheated on the "pair of boilers" system, and by a mode different from others I have recently had an opportunity of seeing—the flue pipes from the boilers being of a much greater diameter. The different modes of training fruit trees and bushes in these gardens are worthy of remark; on either side of the middle walk Pear trees are trained—pyramidal, bell-shaped, and cylindrical—not more than 4 or 5 feet in height; they appeared to be in perfect health, and were producing excellent crops of fine fruit; the roots alike of Pears and other fruit-bearing trees were kept periodically shortened, and with the best effect. I also observed a quantity of excellent Apple trees trained on these cylindrical forms, and producing fine specimens of unspotted fruit, and the trees, as far as I observed, were altogether free from canker. Gooseberries and Currants were trained as standards with nicely formed heads, strong, and covered with excellent fruit. The iron trellised arches are covered with Pears, and are very productive. Mr. Fleming's mode of managing these trees has recently been reported on and specimens laid before the Fruit Committee of the Horticultural Society, and further noticed at p. 4 of the present year's *Gardeners' Chronicle*. I can only add that the system of grafting fruit spurs in the autumn or spring appears to be a most successful one, producing fruit of the best quality, and they are inserted down the branches wherever there is sufficient room for a spur—a ready mode of renewing old trees or changing the sorts if required. The walks are well proportioned, dry, and firm; they are edged with Ivy trained and kept to a uniform height, and backed with Musk, Mimulus, and rows of flowering plants, and these are again relieved by patches of Sweet Peas and Hollyhocks at intervals, producing a very good effect. What struck me as remarkable was the smallness of the garden in comparison with the requirements of a first-rate establishment (only 5 acres). I have, however, long been of opinion that in a choice of evils a small garden is preferable to a large one.

Behind the long range of forcing houses in a low inclosed situation there are some excellent houses and pits for the cultivation of subjects of particular interest; thus in a range of three houses of nice construction, the eastern one is devoted to the growth of Geraniums, and had recently been filled with nice plants of the scarlet tribe coming freely into flower. They had an edging of the variegated sorts, and in a very short period the whole would be a blaze of flowers, which would doubtless continue in perfection for a long time. The centre house is an aquarium, and is most effectively disposed in its internal arrangement. The back wall is covered with irregular masses of sandstone rocks on which Ferns and Lycopods are displayed to much advantage. In the centre is the water tank with a continual stream, in which several species of Nymphæa are apparently at home. Towards the back wall are some Musas and other fine foliaged plants, supported by Dracæna terminalis, Caladium pictum, varieties of Maranta, &c., and the front plate is covered with a zinc pan, some 6 inches or more in width, the whole length of the front wall, and this is filled with the minute Lycopodium apodum, producing a unique and beautiful effect. Creeping plants hung here in graceful festoons from the roof, consisting of Cissus discolor, Stephanotis floribunda, Ipomæa Leari, Allamanda cathartica, &c. The beautiful flowers of these mixed with the glorious foliage of the Cissus were truly charming, and these were again relieved by globular masses of Moss, suspended at intervals from the roof. The whole indeed was a scene of much beauty, novelty, and interest, produced by the fine foliage and flowers of these remarkable plants.

The next house contained a quantity of useful plants in pots. Near this range there is a very large and well constructed greenhouse, well filled with Chinese Azaleas and other kindred plants all nicely trained and most effective specimens in excellent health. This house is also kept gay with flowering plants at all periods, introduced at intervals amongst the specimens. A little distance further on there is a large stove with a walk behind, chiefly used for the growth of plants for the mansion and conservatories; here I noticed many specimens in fine pans which fit into vases and other works of art, each in its proper position. There are also some nicely constructed pits for the special cultivation of Heaths and Geraniums. The Melon house is another well constructed and efficient building, in which were some very fine hybridised specimens, and for which Trentham gardens have long been famous. The grounds about these numerous houses and pits are laid out ornamentally, and were gay with flowering plants. Immediately behind are the children's gardens, in which is a pretty cottage surrounded by beds of flowering plants very effectively disposed. Hence the beautiful lawn stretches onward beneath the umbrageous shade of lofty trees to the ferry boat already referred to immediately in front of the large mass of stable and office building. Leaving these grounds and proceeding by a rustic bridge over a tributary of the Trent, we came in front of Mr. Fleming's house, a very pretty Elizabethan structure of some considerable size, situated at a short distance from the end of the range of forcing houses; its walls are covered with creepers, and the borders immediately surrounding it with strong flowering plants; there are also some raised baskets on the gravel covered with Ivy and gay with flowers. A little to the right there are three arches by which there is an entrance to the garden. In the side wall of these there is a projecting square block of stone on which a date and Mr. Fleming's initials are cut by the special order of the Duke of Sutherland—a tribute to the master spirit who for a long series of years not only conducted works of vast magnitude to a successful termination (the changing the bed of the river may be adduced as one example), but also by the triumphs of his skill, under circumstances of much difficulty, has made the name of these gardens famous through the length and breadth of the civilised world. *D.*

[Merit like that of Mr. Fleming does not go unrewarded. The gardening world has heard with much gratification—let us even say with pride—that his Grace the Duke of Sutherland has recently appointed this most able and faithful servant to the great post of manager of the whole Trentham estate. Mr. Fleming is now succeeded in the detailed management of the gardens by Mr. Wren, a young man of much practical knowledge and ability—a former pupil at Trentham, and lately gardener to the Duke of Leinster at Carton, near Maynooth.]

THE YEAR 1858 AT WEYBRIDGE.

Wind.		Weather.	Departure from average of last three years. +, *above*; —, *below*.
Prevailing winds.	On days.		
N.	17	Mean height of barometer .. .. inches 29.907	ins. .0381+
N.E.	97	Mean height of thermometer :—	
E.	11	Highest { In the sun.. 66°.3515 / In the shade 59°.8196	.3014°+ / .4542°—
S.E.	18	Lowest .. .. .. 39°.6013	1.174° —
S.	19	Mean temperature .. 49°.7186	.79° —
S.W.	84	Rain-fall in inches, &c. 19.946	2.4808 —
W.	7	(NOTE.—1 inch deep of rain is equal to 22,622½ gallons per acre.)	
N.W.	40	Number of wet days .. 30	days 3.7—
		Number of days on which rain, &c., fell 166	7.3—
Highest winds		Driest month .. November	
		Wettest ditto .. July	
January 20, 21		Range of barometer .. ins. 1.64	ins. .12—
February 25		Do. of thermometer.. .. 80°.5	.83°—
March 1, 3, 6		Jan. 24 — Barometer, highest.. ins. 30.58	ins. .01—
April 5		March 31 — Barometer, lowest .. ins. 28.94	.11+
May 19		June 15—Thermometer :	
July 9, 25		Highest { In the sun .. 105° / In the shade.. 96°.5	.5°+ / equal
October 7, 19		Nov. 23—Thermometer :	
November 14, 15		Lowest (in the night of) 16°	.83°+
Dec. 23, 26, 27			

—*W. F. Harrison, Bartropps, Weybridge Heath January* 3.

Home Correspondence.

Insects attacking Timber Trees.—I was very sorry to perceive an article by that venerable naturalist Mr. Waterton in your pages of the 18th ult., in which that excellent writer has adopted the theory that insects never bore through the bark of healthy trees, and then form a settlement in the wood beneath, and consequently that the Elms of St. Giles's, Oxford, have not been destroyed by the attacks of Scolytus destructor, that pest which has done so much mischief in and round London. This opinion of Mr. Waterton is, I know, a very generally received one, and we have heard all sorts of other causes assigned for the first germ of disease being laid in the trees—bad drainage, leakage from gas pipes, improper soil, cutting through the roots for the formation of drains, &c., and then when the tree is already in a state of disease it is attacked by insects, which soon, as in the case of the Scolytus, complete its destruction by cutting through the whole of the sap vessels. That the course of the decay of some trees may be in accordance with Mr. Waterton's observations there is perhaps no reason to doubt; but to affirm that insects do not attack healthy trees, and that the Scolytus in question waits until the Elm is already diseased before it burrows into it, first for food, and secondly to prepare a place for the deposition of its eggs, is, I conceive, unwarranted both from analogy and the direct observation of fact. Every practical entomologist knows, for example, that Hylobius abietis gnaws the bark of young Pines and Fir trees to such an extent as to become a positive detriment, especially in the Pine woods of Scotland. Again, Hylurgus piniperda always selects the healthiest leading shoot of the Pine and other Conifers into which to burrow for obtaining a supply of food. So again, I have now before me portions of the bark of a young Ash tree not more than a foot in diameter, in which there is scarcely a space of more than an eighth of an inch which is not bored into by the female Hylesinus fraxini and its larvæ. Hundreds of other instances of insects attacking healthy trees might be advanced. So much for analogy derived from a set of insects belonging for the most part to the same natural family as the Scolytus. Then as to direct observation of fact, there is always a difficulty in proving that a tree, only known to be in an ill state of health when suffering from a bad attack of Scolytus, was not previously suffering from some other cause, but if the ordinary conditions for insuring the health of a tree exist, and yet that tree is attacked by Scolytus, I apprehend it is warrantable to assert that the Scolytus is the cause of the mischief. The usual cause assigned for the decay of the Elm, noticed in the early part of this communication, did not exist in the case of the Elm trees destroyed some years ago in Kensington Gardens, and the *Gardeners' Chronicle* of last week contained another instance from this neighbourhood, where every condition was in favour of the health of the trees, and yet they have been destroyed, and as the Scolytus is found to be present, I consider we are warranted in ascribing the damage to it alone. The young trees in the grounds at Nuneham Park had only been planted from 35 to 40 years; they were very luxuriant in their growth, the drainage good, the soil a light gravelly loam resting upon the new sand, but they grew in the neighbourhood of older and infected trees, as I am informed by Mr. Bailey, the intelligent gardener at Nuneham, and hence the mischief. *J. O. Westwood, M.A., Taylor Institute, Oxford.*

Josephine de Malines Pear.—Owing to some little delay in their being forwarded to me, the inclosed specimens of this very fine late Pear were not exhibited at the meeting of the Fruit Committee of the Horticultural Society on the 11th inst. I now send them to you to taste and test their merit. Under common circumstances I should not have troubled you to give an opinion on this well-known variety, but those now sent are from a tree grafted on a common Whitethorn stock (Cratægus oxyacantha). The tree in question is now about 12 years old and is a half standard, growing in the open air in the garden of a gentleman in that steep hill of gravel close to Hertford, called Port Hill. It was grafted on a stout stock growing in the hedge, and commenced to bear at three years from the time of grafting. It has continued to bear regularly and well; has failed but once or twice in giving a crop, and now bears from two to three pecks annually. One would suppose that a Pear grafted on a Thorn and growing in gravel would give fruit inclined to be gritty and stony at the core, and owing to the dryness of the site on which it grows—what is called a "hot gravel"—one would think that they must ripen early in the season. On the contrary, these Pears always ripen slowly, commencing in January and keeping in fine condition till March. This variety seems to like the Thorn for a stock, for grafts put in here last March on stout stocks have made most vigorous shoots; whether they will bear abundantly in a deep loamy soil as well as the Hertford tree growing in gravel remains to be seen. I send you three Pears of the same kind from a tree growing in the open air grafted on the genuine stock merely to test their quality as compared with the others. *T. R., Herts.*

[We much prefer the fruit from the Thorn stock, which was delicious and not at all gritty. Is the faint tinge of salmon colour near the core a constant character in this variety?]

New Zealand Kidney Bean.—My attention was directed last week to an advertisement in your Paper, under the title of "New Zealand Running Bean." Now, would you kindly inform the public whether it is indeed a new variety, or only one of our old sorts puffed off under this new and attractive title? I am unable to understand how this Bean should form the chief vegetable food of the natives, and yet be unknown to the settlers. Can you solve this enigma? *P. Kitteman.* [There is no doubt in our mind that the Bean in question has at some time or other been sent to New Zealand from Europe or India. The Beans are roundish and speckled, and unlike any in the trade in this country. It is, however, well known that a large number of varieties of the Kidney Bean which are not cultivated here are grown on the Continent and elsewhere.]

Trees for Avenues.—In everything that has been said lately about trees for avenues, their merits and demerits as to appearance seem to be estimated entirely from the character of their foliage. It is strange that not one word has been written concerning their winter aspect. Surely trees are not to be regarded as nonentities all the while from October to May. Greenhouse shrubs may often be put out of sight during their time of rest. You can't do this with great trees; but, from the dead silence on the subject of their winter appearance, it almost seems that men would if they could. Now no one loves foliage more than I do, but that does not hinder me from loving the trees now in January. Their beauty now seems to me as various as in June; and it is not always the best leaved tree that makes the best show when bare. The charming

foliage of the Ash, the Spanish and Horse Chestnuts, and generally the Beech is not supported by a very beautiful system of sprays. Also the last three of these are often without much dignity in their large boughs. Through your attacks, ably seconded by those of the "Scolytus," it seems to be all over with the dear old English Elm; but though with trembling, let me ask what tree can be less easily spared as an element in the beautiful landscapes of this country; and this not in summer and autumn only, but in winter too, and perhaps then most of all? The minute divisions into which the boughs branch at their ends form a mass, and, consequently, light and shade such as no other large non-evergreen can show at this season. I grant that these masses have at times a bunchy Cauliflower outline; but this is the exception. The Oak spray is also very fine; but that of sessiliflora is, I fancy, less so than robur. Speaking of the Elm reminds me to ask if you will have the kindness to tell me the name of a certain small but most beautiful kind. It may easily be known by its remarkably straight stem, and by its laudable perseverance in holding its leaves in the autumn. Its leaves are small. I suppose it to be a common sort, but I have never been able to learn its name. *H. J. Moule, Wentworth-Woodhouse, Jan.* 17. [If you will send us a bit when next in leaf we shall be happy to name it. We only object to Elms when it is proposed to plant them in unsuitable soil. It is, however, not a long-lived tree under any circumstances.]

Fruiting of Paulownia imperialis.—It may be interesting to some to hear that the Paulownia has fruited freely this year at the seat of Wm. H. Pole Carew, Esq. The seed vessels are wide at the base and coming to a sharp point, something like an exaggeration of a Filbert, but with the beard of the Filbert closing to a sharp point instead of foliating, and the base of the nut is far wider. These trees were planted about eight years ago, and have flowered more or less profusely for the last four or five years, but until this last autumn have never ripened any seed. The trees at Mr. Pole Carew's, Antonie House, Cornwall, are at this moment covered with long spikes of flower-buds and seed-vessels. *C. L. C.* [The seeds of this plant are beautiful microscopical objects. Some of those with which our correspondent has favoured us are perfect enough to grow.]

A few Words upon Roses.—Although the great show which was held in St. James's Hall last summer was expected to turn out an array of new faces—something that would astonish the world in new colours, fine forms, and thick petals—yet little did appear worth noticing except well-known favourites, which we had been accustomed to look at in previous years. Certainly nothing could have surpassed the beauty of H. P. General Jacqueminot, now a well proven and faithful friend to the Rose grower; but he is producing sad havoc among his neighbours by lessening their ranks. It may be remarked, however, that I have never seen our favourites "done up" in better style than they were on that occasion. Madame Vidot made her début in richest white silvery satin, and in a manner not seen to be forgotten. M. Revel was robed in richest velvety scarlet and never on any occasion did he look better, perfection was stamped on every petal. One bloom of Prince de la Moskwa was of the deepest dark velvety purple, and although he did not belong to the numerously petalled class, he was nevertheless very handsome. Lord Raglan kept his place with great dignity, but he wears a different dress in England from what he does in Scotland, being scarlet in the former country and purple in the latter. Sir John Franklin appeared with more than ordinary brilliancy and took a very prominent position. Toujours Fleurie looked fiery in the face, and seemed to entertain a spiteful opposition towards M. Revel. Madame Hector Jacquin, Comte de Nanteuil, and Graziella got a fair share of attention. Ornement des Jardins was neither so brilliant nor so large as I have it in Scotland. Amongst the celebrities must not be forgotten Jules Margottin, which is one of the best Roses in cultivation; Mathurin Regnier, Madame Place, William Griffith, and Madame Masson. These all appeared in great perfection. Victor Trouillard seemed to be a noble addition to the class of dark hybrid perpetuals. It is a pity he does not grow a little more freely. Madame Bravy was one of the best Tea-scented Roses in the hall. Cardinal Patrizzi was fine in colour, but not so large as we have it here. Salvator Rosa in Mr. Turner's collection was a credit to the grower, and Madame Phelip, although last not least, was attired in superb pink. The foregoing may be said to have been the most distinguished of the notables that arrested my attention out of the thousands of blooms with which the large hall was so copiously supplied. I expected to have seen in the prize stands such reputed members of the new Rose-world as Evêque de Nîmes, Madame Vigneron, and Triomphe des Beaux Arts, but I am sorry to say that I could not discover them. I have no hesitation however in saying that they will be acquisitions to the next national show. *Paul Ricaut, Falkirk.*—I am glad to see the discussion about Roses resumed. In this county, Oxfordshire, I find that standards of the Tea-scented and China grow as well as any of the hybrid perpetuals. Last season I had standards of Adam, Bougère, Comte de Paris, Devoniensis, Gloire de Dijon, Le Pactole, Safranot, Souvenir d'un Ami, Niphetos, and Victoria flowering beautifully; also standards of the Cloth of Gold and Lamarque. I find here that hybrid perpetuals on Manettii stocks grow stronger than those on the common Brier. I may add that the soil is light, the subsoil limestone, the situation dry, and in summer very warm. *A. J., Blenheim.*

Asparagus Kale.—A correspondent (see p. 38) intimates that this Kale (a vegetable the merits of which are not sufficiently well known) is not offered in seedsmen's lists. We beg to state that the *true* sort has been offered in our list for some years. *James Carter & Co.*, 238, *High Holborn.*

Queries about Mules.—Is there any well authenticated instance of the hybridisation of a composite plant, or of the Grape Vine? Now don't all speak at once. Will any one, amateur or professional, who has stated himself the producer or vendor of such plant answer the following questions? Which was the male plant and which the female? Were the anthers removed from the seed-bearing parent before the pollen was shed? Describe accurately your manipulation in crossing the plant in question? After writing the above it struck me that it might be thought I was tilting at somebody in particular; such, however, is not the case. I couch my lance at nothing but error, and really wish for information. My good friends the Messrs. Carter, for instance, have a hybrid Gaillardia. Now, how the plague anybody could cross a Gaillardia I don't know, unless it was the man that poisoned the flea by putting a pinch of flea-powder into his mouth. Again, to fertilise artificially the Vine blossom will require the patience of Job and the fingers of a lady, let alone total disregard for a crick in your neck. I have tried my hand (a tolerably practised one) on both these subjects. The attempts made with the Compositæ failed entirely. My Grapes swelled, only, however, to be cut off and thrown away as a "skimpy bunch." This arose from my not having set my seal, a piece of red worsted, on the bunch; not red tape, that would have soon caused death from atrophy. Other hybrids, too, exist (on paper) as plenty as Blackberries, of which I should like to hear the history where the qualities do not indicate the origin. They say that Captain is a good travelling name; I don't know, never having commanded anything but what Sir Charles Napier would call "a horrid old tub," and so perhaps "hybrid" is a good selling one. *Quien sabe.* You see I have been studying modern languages; but they don't come up to the old Greek. *Diogenes.*

Mildness of the Season in Ireland.—In proof of the extreme mildness of the season, I beg to forward you a blossom taken from one of several young Apple trees planted here about two years since. Judging from the appearance of the fruit trees and some Roses in full bearing, one could scarcely imagine we had so lately partaken of roast beef and plum pudding. I also send you a bud taken from a fine Rose, Gloire de Dijon, at present covered with blossom. We certainly cannot complain of our climate in this part of the Green Isle. *John Nunn, Gr. to Thomas Smith, Esq., Seamore Park, Wicklow.*

Trees for St. Giles, Oxford.—In reply to the inquiry of "J. O. W." (see p. 39), I would suggest that the decayed Elm trees in St. Giles, Oxford, should be replaced with Tulip trees, as I find that the latter succeed admirably in the soil alluded to by your correspondent. I have seen some now about 50 feet high planted about 28 years ago in a similar soil, only a few miles distant from the place in question. I would advise the ground where the trees are to be planted to be well trenched, and all decayed roots eradicated. *An Oxonian.*—I can say that the varieties of Birch and Alder thrive in dry gravelly soil, in exposed situations, in this district. Acer platanoides, Alnus glutinosa laciniata, and A. cordifolia are very ornamental, the latter generally retaining its foliage till Christmas. I am aware that the above are not in the list "J. O. W." refers to. *W. F., Stroud.*

Societies.

HORTICULTURAL: *Fruit Committee Meeting*, 21, *Regent Street, Jan.* 11.—Mr. Edmonds in the chair. At this meeting prizes were offered for the best Winter Nelis Pears, in dishes, each containing six specimens. The following were the competitors:—

Mr. Tillery, gr. to his Grace the Duke of Portland, at Welbeck; Mr. Harrison, Oatlands Palace Gardens, Weybridge; Mr. A. Ingram, gr. to J. J. Blandy, Esq., High Grove, Reading; Mr. Cox, gr. to W. Wells, Esq., Redleaf, Penshurst, Kent; Mr. Shoesmith, gr. to J. Moorman, Esq., Bexhill, Sussex; Mr. W. Ingram, gr. to his Grace the Duke of Rutland, Belvoir Castle, Lincolnshire; Mr. D. Judd, Althorp Gardens, Northampton.

The first prize was awarded to Mr. Cox, and the second to Mr. A. Ingram. These two exhibitions consisted of fruit of the richest flavour; but all produced was very fine; those from Mr. Shoesmith were large, remarkably well grown, and finely russeted.

Mr. Evans, gr. to Archdeacon Jones, Brynsteddfod, near Conway, sent very fine large specimens of Glou Morceau, but they were scarcely ripe; Mr. Tillery, large specimens of Glou Morceau from a west wall; and Mr. Culverwell very large Marie Louise kept sound till this time, but the flavour was inferior.

Mrs. Webber & Co., fruiterers, Covent Garden, sent, but not for competition, very fine specimens of Winter Nelis, equal in size to the largest of that kind exhibited; also some very good Ne Plus Meuris. Mr. William Ingram exhibited a dish of the Orpheline d'Enghien, which is the original name of the real Beurré d'Aremberg, concerning which an erroneous figure in the Transactions of the Horticultural Society has led to great confusion. The specimens were pale, smooth skinned, and more attenuated towards the stalk than is usual when the variety assumes its true character, which is that of being more turbinate, with a short oblique stalk, and somewhat russeted skin; then the fruit is generally rich, with a slight refreshing acidity; but when not russeted the acidity prevails too much. Mr. Judd sent dishes of the Beurré Diel and Glou Morceau, as specimens of Northamptonshire growth, and handsome they were; but the Beurré Diel was not found sufficiently melting, nor could the Glou Morceau stand the test of comparison, as regards flavour, with the same sort grown in more southern counties. Mr. Whiting submitted for trial a specimen of the Vauquelin Pear fruited for the first time in this country; its quality was found to be very indifferent. He also exhibited very fine large fruit of the Sweeny Nonpareil Apple, and well-coloured specimens of Adams's Pearmain. J. Allnutt, Esq., sent some Easter Beurré Pears; on account of their being now ripe they did not possess the usual quality of the variety. It was supposed to be owing to the trees having been too dry at the root. A seedling Grape was exhibited by Mr. Newton, gr., East Lodge, Enfield Chase, but it was not considered equal to other sorts already in cultivation. Mr. Melville, gr. to the Earl of Rosebery, sent some Brussels Sprouts, hybridised with the Savoy; the effect produced was sprouts of more than ordinary size, but somewhat open.

Notices of Books.

The *Flore des Serres* for October, 1857, has rapidly succeeded the number for September. It contains original figures of *Campanumœa javanica*, a climbing greenhouse plant with yellow bell-shaped flowers streaked with red; *Bouvardia Oriana*, a very handsome rich red hybrid obtained by Mr. Parsons, of Brighton, between B. longiflora and leiantha; *Datura Meteloides*, a pale lilac-flowered plant allied to the old and well known Purple Stramonium, like which it is best treated as a tender annual; *Arisæma ringens*, a showy-looking greenhouse Arad, with great purple and green spathes, and large ternate leaves. Under plate 1272, representing the curious *Rheum nobile*, copied from Hooker and Thomson's Illustrations of Himalayan plants we find the following honest tribute offered by a foreign horticulturist to one of the most distinguished of our English naturalists:—

"Encore une de ces merveilles dues au voyage devenu célèbre de M. J. D. Hooker! En vérité, à la vue d'aussi admirables découvertes, ne sent-on pas l'urgence, ô Sociétés d'horticulture! de voter une légère médaille d'or, comme témoignage de gratitude, à un aussi intrépide explorateur!—Et, si la gratitude des gens *brillait par son absence*, ne serait-il pas d'une bonne politique (Proh pudor!) de montrer à la génération qui s'apprête à affronter des dangers semblables quelque sympathie, au moins simulée, envers leurs devanciers?"

Shall we never see this wondrous Chuka, as the Lepchas call it, in our gardens? A figure of it will be found at p. 103 of our volume for 1855.

TRADE LISTS.—*Carter's* (238, Holborn) *Spring Catalogue of Seeds and Gardeners' Vade Mecum.* In this enormous Catalogue of seeds that are ready for sale we have 80 closely printed pages in large 8vo, including, in addition to its usual well-known contents, much useful practical information, and a Kalendar of operations. It seems to contain everything that a purchaser can want with the exception of those worthless kinds of vegetables which no well-informed gardener now thinks of asking for.—*James Lothian's* (Campbeltown) *List of Garden and other Seeds:* a useful little catalogue of such articles as Scotch country gardeners are likely to want.—*Milne, Arnott, & Co.'s* (Wandsworth) *Priced Catalogue of Seeds.* Another selection of horticultural articles in common use, with practical remarks here and there, of which we select one on the subject of Peas:—"For small gardens, sowings of the following in the order noted will secure a constant succesions of excellent Peas; they are merely quoted again here to assist purchasers who may require only a few sorts, and who might be puzzled which to choose from the above list; in compiling which, while endeavouring to make it as concise as possible, it has also been necessary to take care to include all distinct sorts of merit,—Sangster's No. 1 or Emperor, Auvergne, Champion of England, Perfection or Hair's Mammoth, British Queen. As a good *late* crop of Peas is very desirable, and not often secured, a plan originally recommended by the Horticultural Society of London, and which has been proved a good one, may not be out of place here, nor perhaps altogether unacceptable to amateurs who have not heard of it before:—'The ground is dug over in the usual way, and the places to be occupied by the future rows of Peas are well soaked with water. The mould upon each side is then collected, so as to form ridges 7 or 8 inches above the previous level of the ground, and these ridges are well watered. The seeds are now sown in single rows along the top of the ridges. The plants grow vigorously owing to the depth of soil and abundant moisture. If dry weather at any time sets in, water is supplied profusely once a week. In this way the plants continue green and vigorous, resisting mildew and yielding fruit, till subdued by frost." It is to be regretted that a pale blue ink has been employed by the printer, as it renders the type fatiguing to the eyes, and indeed, to

out people, quite difficult.—*Bass & Brown's* (Sudbury) *No.* 2 *Catalogue of Plants, and No.* 3 *Catalogue of Vegetable and Flower Seeds.* An extensive list of good things, with numerous short practical notes, which gardeners will find useful.—*John Cattell's* (Westerham) *Catalogue No.* 1 *of Seeds and Culinary Roots, &c.* A list of selected articles with useful practical hints.—*Drummond & Sons'* (Stirling) *Catalogue of Select Vegetable and Flower Seeds—and practical directions for sowing and cultivation.* We see no reason to modify the favourable opinion we expressed last year of these lists, which are among the best and most convenient of their class, especially for cottage gardeners, not only in Scotland but in all parts of the three Kingdoms.

Miscellaneous.

Climate of the Red River Settlement in North Western British America (see p. 36 of the present volume).—The climate of the valley of Red River exhibits the extremes of many characteristics, which belong to the interior of continents in corresponding latitudes. High summer temperatures, with winter cold of extraordinary severity, appear to prevail in Assiniboia, as in the interior of North Eastern Europe and Asia. It cannot fail to be noticed, however, that the general absence of late spring and early autumn frosts, with an abundant fall of rain, during the agricultural months, are the distinguishing features of the climate of the valley of Red River. The Melon growing in the open air, and arriving at perfect maturity in August and September, Indian Corn succeeding invariably when due precautions are used to ensure ripening before the middle of September, are strong proofs of the almost uniform absence of summer frosts. * * * The summer of Red River is nearly 4° warmer than the summer at Toronto, and with this remarkable excess of temperature we find the unexpected difference of 21.74 inches of rain in favour of Red River. These meteorological facts explain the wonderful richness of the prairie vegetation, and the vast accumulation of vegetable matter which is now found there. * * * The small difference between the temperature of the spring at Toronto and Red River is another interesting fact. While the summer shows an excess of 3.78 the spring gives a deficiency of 2.83, so that the mean of the spring and summer months at Red River is nearly 1° higher than the corresponding months of Toronto. No feature in the meteorology of this distant region is likely to excite so much interest as the extraordinary fall of rain during the agricultural months. It is well known that the cause of the sterility of a vast region on the east of the Rocky Mountains, within the limits of the United States, is traced to extreme aridity. The great American desert which places so vast a barrier between the Mississippi valley and the west flank of the Rocky Mountains derives its barrenness from the absence of rain during the summer months. A fall of 30 inches in the valley of Red River during the summer of 1855, with a corresponding fall of 8.76 at Toronto, shows the remarkable difference in the humidity of the two places, and one which report states is generally maintained in other years. * * * We find upon inspection of Dove's Tables that there is not one locality within the limits of the United States where so low an annual mean attains. At Kasan (Russia) lat. 55°48, long. 47°7, the mean of 10 years was 35°45, and the difference between the hottest and coldest months 61°33, while at Red River the difference was 82°15. The difference between summer and winter at Kasan was 56°, and at Red River 74°61. At Orenburg, lat. 50°46, or in nearly the same latitude as that part of Red River Settlement where these observations were made, and in long. 55°6, the annual mean is 35°6; the difference between the hottest and coldest month 66°38, and the difference between winter and summer 59°66. At Quebec the difference between the hottest and coldest month is 60°75; at Red River Settlement 82°15, or 21°40 in excess. At Fort Snelling the difference is 61°89, or about one degree more than Quebec. * * * At Quebec the difference between the mean temperature of summer and winter is 53°93; at Fort Snelling 56°81; and at Red River Settlement 74°61. * * * The summer temperature of Red River, and the absence of frosts during that season, determines its fitness for agricultural purposes. The following table exhibits a comparison between the summer temperature of the settlement and various other well-known places in Canada:—

Summer temperature at Red River Settlement	67.76
Montreal, Canada	66.62
Quebec	62.91
Toronto	63.98

* * * The prevailing characters of the winter months are long continued intense cold, with a clear dry atmosphere. Mercury often freezes, and remains congealed for many days together. In calm weather, exposure to such intense cold is not described as producing inconvenience or suffering, and when the wind is blowing, the cold is rarely so intense. The half-breeds, and of course the Indians, camp out in the open plain during the whole winter, and the only protection they enjoy consists of a buffalo skin tent, and an abundence of buffalo robes. * * * The salubrity of the climate of Red River is indicated by the extent of professional services in the settlements. One medical man, not overburthened with work, to a population nearly reaching 7000, may be accepted as a fair standard by which to estimate their sanitary condition. It will be understood that the foregoing comparisons refer to corresponding months of the same years, and are of course liable to those annual fluctuations to which the climatic elements of all countries are subject. It is very probable that more extended observations will reduce the extremes. *Official Report on Lake Superior and Red River.*

Calendar of Operations.

(For the ensuing Week.)

PLANT DEPARTMENT.

CONSERVATORY, &c.—In pruning and training the climbers in this and other houses some regard must be paid to the time when it is desirable the plants should bloom. Thus, with stove climbers not required to flower before autumn, pruning may be deferred for some time yet, but for earlier display it should be done at once. Passion flowers, Bignonias, and similar plants which make long annual shoots should only have their branches thinned and slightly shortened, while others, as Combretums for instance, may be spurred in. Kennedyas will soon be showing bloom, and what training they require should be done at once, but the pruning of these should not take place till after they have done flowering. Where Orange trees are grown to decorate the flower garden in summer care should be taken to prevent their beginning to push previous to their removal to the open air, and this more especially if the trees are wintered in a dark-roofed house. Where such happens the young leaves have always a thin flabby appearance, and soon turn brown after the plants have been set out-of-doors, whereas if growth is prevented till the trees are in the open air the foliage will bear any amount of sunshine, and still look green and healthy.

FORCING DEPARTMENT.

PINERIES.—Cold changeable weather will necessitate the use of a considerable amount of fire-heat, particularly where a high temperature is being maintained with the view of inducing the plants to show fruit, and in the case of swelling fruit see that a proportionate amount of atmospheric moisture is secured, for accommodating as the Pine must be admitted to be, it is by no means benefited by a warm parched state of the atmosphere; see that none of the stock is allowed to suffer for want of water at the root. For succession plants a temperature of from 50° to 55° by means of fire-heat will be sufficiently high, but it should not be allowed to fall below 50°. VINERIES.—The early house will now require careful attention, and as the Vines in some places will probably be in bloom, the night temperature must not be allowed to fall below 60°, and 70° should be secured during the day. Maintain a healthy growing atmosphere by sprinkling the floors, &c., as may be necessary, and admit fresh air whenever this can be safely done. Also attend carefully to the border, and if fermenting material is used do not allow the heat to decline, and where this is not used see that whatever covering is employed is efficient. PEACH HOUSE.—Discontinue syringing where the blossoms are beginning to open, but secure a nice, moist, healthy state of the atmosphere by sprinkling the passages, &c., as may be necessary, but avoid anything like dampness while the trees are in bloom. Maintain a steady night temperature of 50° to 55° while the trees are in flower. Take every possible opportunity of admitting fresh air, and where the external air can be made to pass over the heating apparatus, so as to get warm before coming in contact with the plants, a gentle circulation should be constantly kept up until the fruit is fairly set. Avoid the admission of currents of dry cold air, however, which would be most injurious to the trees.

FLOWER GARDEN AND SHRUBBERIES.

Those who are fortunate enough to have the command of a gravel pit should get a good supply of this provided whenever the weather is favourable for that kind of work. Let everything in the shape of in-door operations which can be done now to save time in spring be attended to. See to having plenty of soil prepared for striking cuttings in, as also for potting off, and have plenty of draining materials prepared and sorted out in sizes. Where the stock of bedding-out plants is short the strongest store plants should be selected and placed in a moist growing temperature, keeping them as near the glass as possible, in order to secure strong growth and obtain good cuttings. If the plants are well rooted it will be advisable soon to give them a shift, using rich soil, for it is of great importance to obtain strong cuttings, as they are not half the time becoming established plants as when weakly dwindling shoots have to be used for that purpose.

HARDY FRUIT AND KITCHEN GARDEN.

Where orchard trees are infested with insects or Moss, the bark should be well scraped with a blunt tool to remove as many of the larvæ of the insect as possible, after which the parts should receive a coat of the following composition; viz., hot lime and soot in equal quantities mixed with water from the cow-house until it attains the consistency of thick paint. This composition should be well rubbed into the crevices of the bark in order to make sure of its reaching every hiding place of the enemy; and if a little cow manure was worked up in the composition it would be useful in causing it to adhere better. It is a tedious task to properly cover large old trees with this, but its effect in clearing them of insects will repay the trouble, and an occasional coat to young trees will be useful in keeping them clean. Where early sown Peas are likely to be a failure a quantity should be sown in strips of turf and raised in a gentle heat, to be hardened off and planted out towards the end of next month. Also make a successional sowing of an early variety on a warm border as soon as the state of the weather permits. Sangster's No. 1 is the earliest variety we know of. Likewise get in some early Mazagan Beans, and a sowing of some variety of Pea of good quality, as Champion of England, should be made, in order to have these in as early as possible.

COTTAGERS' GARDEN.

Plant Horseradish, Jerusalem Artichokes, Seakale, and Rhubarb. The Artichokes will do in any waste corner, or as a boundary screen to protect tender things. Make cuttings of choice Gooseberries and Currants, also Honeysuckles in the same manner, and Irish Ivy for covering naked fences. Lose no time in planting a good breadth of Potatoes, especially Kidneys; if the first sprout is lost from these they are of little use. If planted in well managed beds, Drumhead or other Cabbages may be planted in the alleys, and will come in very serviceable for the cow. Get some ground trenched for Parsnips. Make a slope and sow a little Horn Carrots, to come in early.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the Week ending Jan. 20, 1859, as observed at the Horticultural Gardens.

Day.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth. 1 foot deep.	Of the Earth. 2 feet deep.	Wind.	Rain.
Friday 14	10	30.418	30.332	41	26	33.5	43¼	43	N.	.00
Satu 15	11	30.309	30.202	39	22	30.5	43	43	S.W.	.00
Sunday 16	12	30.154	30.036	42	26	34.0	42¼	42¼	S.W.	.00
Mon 17	13	29.933	29.844	49	43	46.0	44½	43½	S.W.	.06
Tues. 18	14	29.757	29.694	52	41	46.5	45	43½	S.W.	.02
Wed. 19	15	30.037	29.882	48	23	35.5	46	44	S.W.	.00
Thurs. 20	16	30.156	30.098	49	40	44.5	46	44	S.W.	.00
Average		30.109	30.012	45.7	31.5	38.6	44.3	43.3		.08

Jan. 14—Cloudy; partially overcast and fine; slight frost.
— 15—Fine; very fine; frosty.
— 16—Clear and frosty; fine; slight frost at night.
— 17—Overcast; rain; drizzly and mild.
— 18—Rain; densely clouded; boisterous.
— 19—Fine throughout; clear and frosty at night.
— 20—Densely overcast; very fine throughout.
Mean temperature of the week, 2 deg. above the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 38 years, for the ensuing Week, ending Jan. 29, 1859.

Jan.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 23..	44.5	33.0	38.7	13	0.27 in.	2	3	2	3	5	10	4	4
Mon. 24..	43.5	32.0	37.7	15	0.51	3	4	2	1	4	12	5	2
Tues. 25..	44.1	32.7	38.4	16	0.90	1	4	3	1	5	10	5	4
Wed. 26..	44.4	31.5	38.0	14	0.34	1	5	3	4	1	12	4	3
Thurs. 27..	43.5	30.9	37.2	16	0.43	2	5	2	—	1	4	12	4	1
Friday 28..	44.4	30.6	37.5	17	0.17	2	5	2	—	1	13	7	3
Satur. 29..	44.8	31.2	38.0	13	0.32	5	4	—	1	2	10	5	6

The highest temperature during the above period occurred on the 23d, 1834—therm. 58 deg.; and the lowest on the 25th, 1827, and 27th, 1855—therm. 15 deg.

Notices to Correspondents.

APPLES: *J Roper.* By a typographical error you received last week a wrong answer. The reply should have been, "It is not possible for an Apple pip to vegetate in the bark of the Apple tree—become parasitical and afterwards to adhere or become grafted into it."

DWARF APPLES AND PEARS: *A Scotchman* will do well to refrain from pruning his trees beyond removing the extreme ends of the strong shoots. From his statement it would appear that the trees are already making too much wood. Thirty-six inches in a year is a great deal; and the more such shoots are cut back the less they will be inclined to form spurs.

ERBSENLINSE: *H B.* Just arrived. A thousand thanks. It is uncertain whether the work by Dr. Lindley to which you refer will ever appear. We have nothing as yet comparable to Loudon's Arboretum. But Gordon's *Pinetum* should be added to it, as the most complete account of Conifers at present published.

HEATING: *W W B.* Use 4-inch pipes *once* round the whole inside wall, and a boiler presenting 4 square feet or something less to the action of heat. Or you may confine your pipes to the front wall and ends if your back wall is well sheltered. Whatever you do employ Ormson's ventilating pipes.

HORTICULTURAL SOCIETY: *F H S.* It has just been settled that a number of valuable and useful plants shall be distributed among the Fellows by method of ballot. There will be three drawings in the course of the year, viz., two in the spring and one in the autumn. The famous Pinus Don Pedri will thus be distributed among the four-guinea Fellows. You will soon receive official notice of this and other important matters. Seeds are not yet ready, but will be in ample time for the season.

MELBOURNE: *Stroud.* Very much obliged, but we have the official report, which will appear next week if we can find room.

MICE: *Enquirer* asks if it is a fact that Peas and Beans soaked in nitre are free from the attacks of mice, and if so he will be glad to be informed if it would be equally effective in preventing their ravages in the case of other firm-bodied garden grains.

NAMES OF FRUITS: May we beg our correspondents to send their specimens, *carriage paid*, to our Office, No. 5, Upper Wellington Street, Covent Garden, London: AND TO NO OTHER PLACE WHATEVER.—*T T Notts.* The Winter Nelis.—*Cymro.* 1, Mère de Ménage; 3, Norfolk Beaufin; 4, Winter Pearmain; 5, Passe Colmar; 6, Forelle.‖

NAMES OF PLANTS.—We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have or could have undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*B S.* No. 3 is Begonia hydrocotylifolia, the others are also Begonias, but being unaccompanied by leaves are indeterminable.

NOTICE TO QUIT: *J C.* Six months' notice only need be given, unless a longer notice has been bargained. There is no exemption in favour of nurserymen

TRANSPLANTING: *Clericus.* We should not move the Holly till August. But we would open a circular trench now round the tree, so as to cut the lateral roots, and then fill the hole again with good mould. By that means you will have plenty of fine fibres newly formed when August comes. Plant the following Apples:—Wellington, Northern Greening, Tower of Glamis, London Pippin.

VINES AT RABY: *Erratum.* Page 38, col. *b*, line 11 from top, "for emolument more than employment," *read* "employment more than emolument."

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

POTTER'S CELEBRATED GUANO.—Established 16 years, during which period it has been used on every variety of crop and soil with great success. See Mr. POTTER'S numerous testimonials. Price 7l. 10s. per ton. Also POTTER'S SUPERPHOSPHATE OF LIME, 6l. 10s. per ton.—28, Clapham Road Place, S.

* A very liberal allowance to Agents. Mr. POTTER'S work on Agricultural Chemistry sent free for 6 stamps.

LONDON MANURE COMPANY, removed to 116, Fenchurch Street, E. C. (Established 1840), have the following MANURES ready for delivery:—

CORN MANURE for SPRINGTOP DRESSING
URATE
SUPERPHOSPHATE OF LIME
BLOOD MANURE
} all of guaranteed quality.

In consequence of the reduction in the price of raw material the London Manure Co. are enabled to lower the price of their Superphosphate of Lime, and to materially improve the Corn Manure and Urate.

The London Manure Co. also supply PERUVIAN GUANO (direct from Messrs. A. Gibbs and Sons), SULPHATE of AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of value. Wholesale dealers supplied.

116, Fenchurch Street, E.C. EDWARD PUTSER, Secretary.

ESTABLISHED 1812.

H. AND T. PROCTOR'S TURNIP MANURE.—Messrs. H. & T. P. draw particular attention to this valuable Manure, which contains all the elements necessary for the full development of the Turnip Crop, so combined, that, from their chemical knowledge and long experience, they feel satisfied is most advantageous to the consumer. It has been very extensively used by most of the eminent Agriculturists of the day, and has attained a high reputation throughout England, Scotland, and Wales, and they venture to say, is unrivalled for the weight and quality of the Bulbs which it produces. The application of this Manure to the Turnips will be found to benefit considerably the after crops of Barley, Clover, and Wheat.

POTATO, GRASS, BARLEY, CLOVER, AND WHEAT MANURES; also BONE DUST, PERUVIAN GUANO, and SUPERPHOSPHATE of LIME, warranted of the best quality.

Apply to H. & T. PROCTOR, West of England Depôt for Artificial Manures, Cathay, Bristol; or PROCTOR & RYLAND, Birmingham, and Saltney, near Chester.

SOLUBLE PHOSPHATE OF LIME.

FREDERIC CORNWELL begs to inform his friends and the Agricultural public that he can now supply a "SUPERPHOSPATE of LIME" superior to anything yet produced. Each Bag guaranteed to contain from 20 to 25 per cent. of "Soluble Phosphate of Lime." Price 5l. 10s. per ton, delivered free to any Railway or Wharf in London. Dealers and the trade supplied.

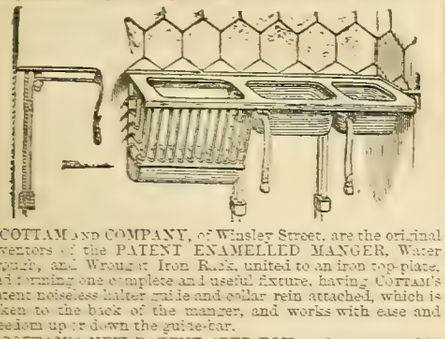
Linseed-cakes, Cotton-cakes, and all descriptions of Artificial Manures at lowest market prices.—Offices, 7, Great St. Helen's, London, E. C.

THE CHAMPION.

SMITH'S CULTIVATORS AND APPARATUS are got up not for Show but for Work. The Cultivators are almost indestructible, easily turned, and therefore double cumbersome implements are avoided. The Windlass is simple, convenient, and its working easily understood; it is very strong, and like the Implements subject to little or no damage from working. The Rope required averages only about five skeins more than an endless rope, its friction only one-fourth; it never slips, and the tension is only one half at a time. The whole Apparatus can work all useful implements on all shapes and forms of ground; is admirable for autumnal cultivation; has stood the test of three years' work, and has produced "results astonishing and invaluable;" and while the total cost is not more than half that of the Endless Rope one, it can be worked by an ordinary engine without alteration.

Woolston, Bletchley Station.—Jan. 22.

COTTAM'S PATENT INVENTIONS FOR STABLE REQUISITES, awarded a Prize at the Paris Exhibition, and patronised by the English and French Governments.



COTTAM AND COMPANY, of Winsley Street, are the original inventors of the PATENT ENAMELLED MANGER, Water Trough, and Wrought Iron Rack, united to an iron top-plate, and forming one complete and useful fixture, having COTTAM'S patent noiseless halter guide and collar rein attached, which is taken to the back of the manger, and works with ease and freedom upon down the guide-bar.

COTTAM'S NEW PATENT SEED-BOX, an important addition to the above fittings, being simple in construction, light, and durable, promotes cleanliness, and is economical in its results.



COTTAM'S PATENT SADDLE and HARNESS BRACKET combined, can be used with great advantage where space is an object, as it can be turned up out of the way when not in use.

COTTAM'S IMPROVED SURFACE GUTTER, with perforated moveable cover, the use of which prevents accidents, and can be easily cleaned out.

COTTAM'S CAST-IRON SANITARY TRAP, from its improved construction, gives a full water passage, and does not allow any smell to ascend from the drain.

PATENT LOOSE-BOX FITTINGS, and every article for the harness-room and stable, kept in stock, plain, galvanised, and enamelled. Iron gates, fencing, hurdles, &c.

The New Illustrated Catalogue and Estimates, gratis, upon application to COTTAM and COMPANY, 2, Winsley Street, Oxford Street.

WARNER'S IMPROVED LIQUID MANURE OR GENERAL PORTABLE PUMP



These Pumps are fitted with J. W. & Son's Patent Buckets and Suckers, and cannot clog in action. The barrel is of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure. The legs will fold together, and the whole may be carried on the shoulder to any pond or tank required.

Price of 4½ in. Pump, with legs, 3l. 3s.

If with planished copper barrel and galvanised iron handle, &c., 14s. extra. The barrel is 27½ in. long, and the legs are 5 ft. high.

These Pumps are also made without the legs, with strong wrought-iron straps for screwing on to any ordinary water butt or cart, and fitted with 1¼ inch brass union for attaching flexible suction. Price 30s.

1¼ inch Gutta Percha Suction Pipe, 1s. 11d. per foot.

Rubber and Canvas Suction and Delivery Hose, from ½ inch to 4 inches diameter, in lengths of 60 feet to order. Branch Pipes with Cocks, Union Screws, &c., at reduced prices.

May be obtained of any Ironmonger or Plumber in town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin St., London.

WARNER'S PATENT VIBRATING STANDARD PUMPS.

PATENT CAST-IRON PUMPS, fitted with J. W. & Son's Patent Buckets and Suckers, which cannot clog in action, for Farms, Cottages, and Wells, not exceeding 28 feet.

Diameter of Barrel.	Height.		£	s.	d.
2½ in.	short 1 ft. 7 in.	Fitted for lead,	1	10	0
2½ ,,	long 3 ,, 3 ,,	gutta percha,	1	14	0
3 ,,	ditto 3 ,, 6 ,,	or cast iron	2	8	0
3½ ,,	ditto 3 ,, 6 ,,	flanged pipe,	2	12	0
4 ,,	ditto 3 ,, 6 ,,	as required.	3	3	0
2½ ,,	short, with 15 feet of Lead Pipe attached, ready for fixing		2	14	0
2½ in.	long ditto ditto	ditto	2	18	0

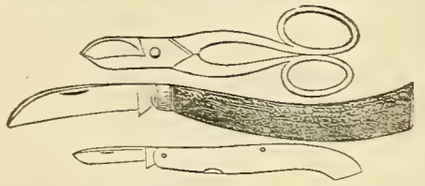


The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.

May be obtained of any Ironmonger or Plumber in Town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

PAXTON WORKS, SHEFFIELD, ESTABLISHED 1738.

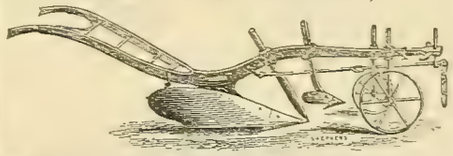


SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.—Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

HOWARDS' PRIZE IMPLEMENTS, 1859.

JAMES AND FREDK. HOWARD, Britannia Iron Works, Bedford, beg to direct attention to their

CHAMPION PLOUGHS,



For which they received All the First Prizes last offered by the Royal Agricultural Society of England, viz.:—

The First Prize for the best Plough for general purposes.
The First Prize for the best Plough for light land.
The First Prize for the best Plough for heavy land.

The only Prize ever offered by the Society for the best Double Breast or Ridging Plough was also awarded to J. & F. HOWARD.

J. & F. HOWARD have discontinued troubling the Public with a long List of Prizes awarded to their Implements, but they would just state that for PLOUGHS, HARROWS, and HORSE RAKES, they have for several years gained every Prize for which they have competed.

PLOUGHS.

P PLOUGH, with two wheels, for light work ..	£4	7	6
PP PLOUGH, ,, for general purposes	4	12	6
SKIM COULTER	£0	5	6

STEEL BREASTS, 7s. and 7s. 6d. extra.

HARROWS.

A Set of Three 4-Beam HARROWS, with Whippletree, recommended as general Seed Harrows, 9 feet wide, marked No. 12	£3	14	
A Set of Three 4-Beam HARROWS, with Whippletree, adapted for 3 Horses, 10 feet wide, marked No. 11 ..	4	4	

HORSE RAKES.

Price of small size RAKE, marked A, with 24 iron teeth, extreme width 7½ feet	£7	10	0
Ditto, with Steel Teeth	8	0	0
Price of large size, marked B, with 28 iron teeth, extreme width 8½ feet	8	0	0
Price of large size, marked B, with steel teeth ..	£8	10	0
Price of extra large size, marked C, with 24 steel teeth, extreme width, 8½ feet	10	10	0
Price of a Set of 15 Prongs, to be attached to the above when used as Weed Extirpators	1	10	0

Free Delivery to Birmingham, Bristol, Derby, Gloucester, Lincoln, Liverpool, London, Manchester, Norwich, Nottingham, Retford, Wisbeach, and Worcester; or to Dublin, Edinburgh, Glasgow, and other parts at fixed rates.

HOWARDS' NEW CATALOGUE, containing prices and description of their Patent Ploughs, Harrows, Horse Rakes, and other Implements, including Smith's Steam Cultivators, for which they received at Chester the Gold Medal of the Royal Agricultural Society of England, sent free on application to

J. & F. HOWARD, Britannia Iron Works, Bedford.

AGRICULTURAL MACHINERY.

E. R. AND F. TURNER, Ipswich, manufacture Prize Mills for Crushing Corn, Seed, Malt, &c.; Portable Grinding Mills, Steam Engines fixed and portable from 2 horse-power and upwards; Threshing Machines, Chaff Cutter Oilcake Breakers, Horse Gears, Saw Tables, &c., all of a superior description and adapted for Home, Colonial, and Foreign use. Illustrated Price Lists sent free on application.

"FRIGI DOMO."—Patronised by her Majesty the Queen, the Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence, of Ealing Park, and — Collier, Esq., of Dartford.

PROTECTION FROM COLD WINDS AND MORNING FROSTS.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths. Two yards wide, 1s. 6d. per yard run; four, 3s. per yard. Also, an improved make for Shading Purposes. Three yards wide, 2s. 6d. per yard run.

ELISHA THOMAS ARCHER, whole and sole manufacturer, 7, Trinity Lane, Cannon Street, City, and of all Nurserymen and Seedsmen throughout the kingdom. "It is much cheaper than mats as a covering."

TO LANDOWNERS.

THE PERMANENT WAY COMPANY having been appointed the sole Licensees for the use of Dr. BOUCHERIE'S Patent Process for Preserving Timber, beg to inform Landowners and others interested in the use of English Timber that a Pamphlet, with full explanations of this cheap and most effectual process, may be had gratis on application to the undersigned. Landowners having Beech, Elm, Fir, or other Timber fit for Railway Sleepers are requested to communicate particulars of quantity, locality, and prices.

WILLIAM HOWDEN, Secretary.
26, Great George Street, Westminster.

THE LANDS IMPROVEMENT COMPANY, 2, Old Palace Yard, Westminster, S.W.

To Landowners, the Clergy, Solicitors, Estate Agents, Surveyors, &c.—The Company is incorporated by Special Act of Parliament for England, Wales, and Scotland.—Under the Company's Acts Tenants for Life, Trustees, Mortgagees in possession, Incumbents of Livings, Bodies Corporate, certain Lessees, and other Landowners, are empowered to charge the inheritance with the cost of Improvements, whether the money be borrowed from the Company or advanced by the Landowner out of his own funds.

The Company advance money, unlimited in amount, for Works of Land Improvement, the Loans and incidental expenses being liquidated by a rentcharge for a specified term of years.

No investigation of Title is required, and the Company being of a strictly commercial character do not interfere with the plans and execution of the works, which are controlled only by the Enclosure Commissioners.

The improvements authorised comprise Drainage, Irrigation, Warping, Embanking, Enclosing, Clearing, Reclaiming, Planting, Erecting and Improving Farm Houses and Buildings for Farm purposes, Farm Roads, Jetties, Steam Engines, Water Wheels, Tanks, Pipes, &c.

Owners in fee may effect improvements on their Estates without incurring the expense and personal responsibilities incident to Mortgages, and without regard to the amount of existing incumbrances. Proprietors may apply jointly for the execution of Improvements mutually beneficial, such as a Common Outfall, Roads through the District, Water Power, &c. For further information and for forms of application apply to the Hon. W. NAPIER, Managing Director, 2, Old Palace Yard, Westminster, S.W.

LAND DRAINAGE.—Works of Drainage of any extent are executed by the GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY on all descriptions of Property, whether Freehold, Entailed, Mortgaged, Trust, Ecclesiastical, Corporate, or Collegiate.

Repayment may be made by the Landowner as successive portions of the Works are completed, or the actual expenditure, with a Commission thereon, may be charged on the property improved by way of rent charge for any term not exceeding 50 years, the instalments to repay principal and interest being thereby kept down nearly to 5 per cent. per annum.

No investigation of title being required, and the charge not being affected by incumbrances, no legal expenses are incurred.

Works of Irrigation, Enclosing, Wood Grubbing, Road Making, and Farm Buildings are executed in a similar manner.

The Company also assist Landowners in executing any of the improvements by their own agents, and charge the amount expended on the property improved.

Applications to be made to WILLIAM CLIFFORD, the Secretary, at the Offices of the Company, 52, Parliament Street, London.

AGRICULTURAL EDUCATION.

HIGHLAND AND AGRICULTURAL SOCIETY OF SCOTLAND.—The BOARD OF EXAMINERS, nominated in terms of the Society's Charter, will meet in the Museum Hall, George IV. Bridge, Edinburgh, on APRIL 6th and 7th, between the hours of 11 and 4, to examine CANDIDATES for the Society's Agricultural Diploma. The subjects of Examination will be:—

Science and Practice of Agriculture	Natural History
Mechanics and Architecture of the Farm	Technology
Botany	Veterinary Surgery
Chemistry	Field Engineering and Surveying
	Book-keeping and Accounts

Candidates must intimate their names to the Secretary, not later than March 10. JAS. HALL MAXWELL, Secretary.

Edinburgh, January 22

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.

Principal—J. C. NESBIT, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

The Agricultural Gazette.

SATURDAY, JANUARY 22, 1859.

A VERY remarkable series of Tables was published last week in a supplement to the *Economist*, containing pictures of our commerce since the commencement of the century, from which we

extract the following figures which will be interesting to the agriculturist.

The following are the imports during the 10 years preceding 1858 :—

QUANTITIES OF THE PRINCIPAL ARTICLES IMPORTED INTO THE UNITED KINGDOM.

Articles.	1848	1849	1850	1851	1852	1853	1854	1855	1856	1857
Butter .. .. cwts	294,427	281,969	330,579	353,718	285,497	403,289	482,514	447,266	513,392	441,606
Cheese	441,635	390,147	347,803	338,659	289,458	396,404	388,714	384,192	406,323	393,323
Corn—Wheat .. .. .. qrs.	2,580,959	3,845,378	3,738,995	3,812,008	3,060,268	4,915,430	3,431,227	2,667,702	4,072,833	3,437,957
Other kinds	4,364,533	5,806,578	4,181,869	4,281,393	3,581,461	3,932,178	3,419,271	3,061,539	4,124,420	5,107,225
Flour of Wheat .. .. cwts.	1,754,449	3,349,839	3,819,440	5,314,414	3,865,173	4,621,506	3,646,505	1,904,224	3,970,100	2,178,148
Other kinds	275,788	162,001	18,568	18,955	1,546	16,504	58,656	18,094	21,267	6,028
Eggs .. .. No.	88,012,585	97,745,849	105,689,060	115,526,245	108,281,233	123,450,678	121,946,801	99,732,800	117,230,600	126,818,600
Flax, dressed and undressed.. cwts.	1,463,661	1,806,673	1,822,918	1,194,184	1,408,714	1,883,374	1,303,235	1,293,435	1,687,041	1,866,250
Guano .. .. tons.	71,414	83,438	116,925	243,014	129,889	123,166	235,111	305,061	191,501	288,362
Hemp, undressed .. .. cwts.	845,771	1,061,893	1,048,635	1,293,412	1,068,155	1,237,872	1,211,297	1,267,678	1,502,626	1,401,104
Potatoes .. .. cwts.	940,707	1,417,867	1,348,883	636,771	773,619	1,133,609	116,446	58,261	109,838	955,057
Rice	996,372	976,195	785,451	734,847	987,813	1,504,629	1,342,748	2,238,158	3,692,001	3,416,557
In the husk .. .. .. qrs.	34,627	31,828	37,150	31,481	23,670	19,477	18,956	18,673	33,694	20,900
Saltpetre and cubic nitre .. cwts.	515,076	566,794	529,012	465,007	565,588	641,014	893,344	506,084	697,361	808,646
Seeds, Clover	99,813	130,254	93,649	184,567	124,629	214,695	141,114	173,698	169,449	171,585
Flax and Linseed .. .. qrs.	799,650	626,495	608,984	603,471	799,402	1,035,335	828,513	756,951	1,180,180	1,051,113
Rape	79,970	29,480	107,029	822,394	146,230	86,815	103,155	162,353	264,920	220,495
Total of timber, not sawn or split ..	928,741	817,909	868,179	1,102,069	923,970	1,180,135	1,216,209	908,514	1,081,223	1,178,689
Total of timber, sawn or split ..	864,593	809,783	794,178	1,009,708	1,118,350	1,345,393	1,262,461	934,579	1,352,256	1,316,275
Wool—sheep, lamb and alpaca lbs.	70,864,847	76,768,647	74,326,778	83,311,975	93,761,458	119,396,449	106,121,995	99,300,446	116,211,392	129,749,898

But from these figures there have to be deducted from 5000 to 9000 cwts. of cheese exported, and in like manner 60,000 to 90,000 quarters of Wheat, and 80,000 to 100,000 cwts. of flour annually, together with smaller quantities of the other articles named, before the exact quantities added to our home consumption can be ascertained. The re-exportation of guano however has amounted to from 20,000 to 60,000 tons annually ; reaching 64,103 tons in 1856, and 23,741 tons in 1857.

Our contemporary gives a number of other most instructive tables describing the recent rapid increase in various branches of trade and manufacture, and in the consumption of imported food.

We add to the figures already extracted a table showing the quantity of recorded sales of Wheat, Barley, and Oats during the past 10 years.

QUANTITIES OF BRITISH WHEAT, BARLEY, AND OATS, SOLD IN THE PRINCIPAL MARKET TOWNS IN ENGLAND AND WALES, IN EACH YEAR.

	1848	1849	1850	1851	1852	1853	1854	1855	1856	1857
	Quarters.	Quarters.	Quarters.	Quarters.	Quarters.	Quarters.	Quarters.	Quarters.	Quarters.	Quarters.
Wheat	5,399,834	4,453,983	4,688,247	4,487,041	4,804,513	4,560,912	3,913,257	5,256,874	5,046,736	5,243,940
Barley	2,401,737	2,099,821	2,235,271	2,333,710	2,389,489	2,474,206	2,267,997	2,608,862	2,678,936	2,262,733
Oats	1,022,875	851,080	866,082	940,006	947,550	880,408	765,438	816,688	701,159	537,364

In considering the agricultural value of the British Grasses, we cannot perhaps commence better than by arranging them in groups according to the nature of the soil and circumstances under which they are formed.

In the following Table therefore will be found arranged a more or less complete list of the *genera* of our native Grasses, in such a manner that we can see at a glance the number of species which occur under the different and often well-defined conditions, under which the species of even a small genus are marked.

It should however be remarked that as yet we are not in possession of sufficient information to say that any particular allocation is absolutely correct, nor indeed are the specific limits of the tribe at all firmly established, yet the Table will sufficiently illustrate some important principles connected with the subject, and which will be presently dwelt upon.

Table of the Distribution of British Wild Grasses.

Forty Genera.	Pasture.	Agrarian.	Wood.	Moor and Heath.	Water.	Sea-side.	Number of Species.
Anthoxanthum	1	..	..	..	..	..	1
Nardus	..	..	..	1	..	..	1
Alopecurus	1	1	..	2	2	..	6
Phleum	2	..	..	3	..	1	6
Ammophila	..	..	..	..	..	1	1
Lagurus	..	..	..	..	..	1	1
Phalaris	..	1	..	..	1	..	2
Gastridium	..	1	..	..	..	..	1
Polypogon	..	1	..	..	..	1	2
Milium	..	..	1	..	..	..	1
Calamagrostis	..	..	3	..	..	1	4
Agrostis	2	1	..	2	..	1	6
Rottboellia	..	..	..	..	..	1	1
Spartina	..	.	..	1	..	..	1
Cynodon	..	1	..	..	..	..	1
Digitaria	..	1	..	..	..	..	1
Setaria	..	2	..	..	..	..	2
Panicum	..	1	..	..	..	..	1
Molinia	..	.	..	1	..	..	1
Melica	..	..	2	..	..	..	2
Catabrosa	..	..	..	..	1	..	1
Aira	2	..	1	3	..	1	7
Triodia	..	..	..	1	..	..	1
Holcus	1	..	..	1	..	..	2
Arrhenatherum	1	..	..	..	..	..	1
Hierochloe	..	..	..	1	..	..	1
Sesleria	..	..	..	1	..	..	1
Cynosurus	1	..	..	..	..	1	2
Arundo	..	..	..	..	1	..	1
Elymus	..	..	1	..	..	2	3
Hordeum	1	1	..	..	..	1	3
Triticum	..	1	1	..	..	3	5
Brachypodium	..	..	1	1	..	..	2
Lolium	2	1	..	..	..	..	3
Poa	2	4	1	2	2	4	15
Briza	..	..	..	2	..	..	2
Dactylis	1	..	..	..	..	..	1
Festuca	4	..	1	2	..	2	9
Bromus	1	7	2	..	..	..	10
Avena	2	2	..	3	..	..	7
Total	24	26	14	27	7	21	119

This Table then amongst other facts teaches us the highly interesting one that in a country pre-eminently pastoral, and in which pasture forms so large a portion of our soil, we have yet only 40 genera of the important natural order *Graminaceæ*, and though these number as many as 119 species, yet the species absolutely of use as food for cattle are so few as that at a first glance the list can hardly be believed. If however we dwell for a few moments on the divisions as laid down in the Table, we shall be in a better position for grappling with this curious and important inquiry.

1. *Pasture Grasses* occupy the first column, and these we see to consist of 15 genera, divided into 24 species. Now, in all probability the reader will express astonishment and be ready to inquire : "What? Only 24 species of Grass in England of good pasture quality?" The answer will be :—Search if you were going to lay down a piece of land for permanent pasture how few even of these would you employ. Again if we look over the species contained in a good meadow, we see the list of Grasses making up the true Grass part of the herbage to be ridiculously small—small almost in proportion to their goodness, and though the list would be greatly augmented by adding the names of pasture plants to which the term Grass is wrongly applied, it is a question whether a meadow is not the better for being Grass simply, and whether the quantity of Grass, which is abstracted by the growth of other herbage, is ever made up for either in *quantity* or the still more important element of *quality*.

2. *Agrarian Grasses.*—It is a somewhat curious circumstance that tilled or arable land should have as constant attendants some kinds or other of Grasses — the species differing not so much with the management as with the soil. Thus a sand, clay, or limestone subsoil can at once be predicated amid very great changes of tillage from the presence of certain species of Grasses; and these are forms that have tracked the farmer into very remote regions, English Couch, Fiorin, Hassock, and other Grasses being now common to agriculture in North America.

This list is somewhat larger than the preceding, being 26 species, belonging to 16 genera. They can only be considered as weeds; and though they are constantly being attacked in various ways, yet from the little known about them and their natural history the very mechanical means adopted for their eradication only tend to their greater spread ; and besides, the seeds of agrarian Grasses are just those that the farmer is constantly sowing, having too often paid a large price for them in the seeds of his crop.

3. *Wood Grasses.*—This again is a tolerably distinct list, many species of Grass seeming to prefer the shade of covert, to which indeed they often add in a most efficient manner. In such situations they get on remarkably well, but none of the wood Grasses grow so well even on the margins of woods. Some one or two however have been recommended to be sown in glades between plantations, amongst which may be particularly mentioned the *Poa sylvatica*, Wood Meadow Grass, which certainly answers the purpose tolerably well.

4. *Moor and Heath Grasses.*—These, though they might probably have been more accurately distinguished, yet for our present purpose will sufficiently illustrate the principles we contend for. The wild exposed moor and exposed heath are both liable to that jungle or separate method of growth in Grasses which render a matted and well mingled turf almost impossible ; such Grasses as delight to grow in this way are particularly innutritious, and thus indicate a kind of connection with the Carices or Sedges, whose natural habitat is ever the moor or the heath, some sorts being peculiar to the more or less sandy parts thereof, whilst others are favoured by stiffness and moisture. The list is one of the largest of all our groups, its 16 genera numbering 27 species ; these are probably less dependant upon soil or climate, or mere geological or geographical details than upon the absence of cultivation, for even a year of folding sheep upon a portion and rolling with heavy rollers, treatment with salt, and indeed almost any cultivative process will inevitably destroy a great part of the worst of these Grasses, when the better ones, which in every soil however bad and ungenial will still have a remnant left, immediately begin to develope their powers. Thus then the wild moor and heath Grasses may be considered as weeds not incidental to cultivation, like the agrarian set of Grasses, but occupying uncultivated and waste places only to give up their reign when man with his skill takes possession. And yet, wild as they are, they have had high destinies to perform. They have aided in filling up swamps and making a humus soil out of what would perhaps have been but a waste of water for a great part of the year, and the soil so prepared has nourished an exceedingly beautiful flora, which in its turn has been a nidus for many insect tribes. Thus, although it is a high prerogative to till the soil so as to obtain food and increase, yet in reality Nature has no waste, no void, and just in proportion as we cultivate, so have we cultivative results, whilst neglect only tends to wildness.

5. *Water Grasses.*—Though the list of these is but small, yet they constitute an interesting section ; their habits are so decidedly aquatic, that under common circumstances they are never found except where water prevails. For at least a large part of the year they are of no use to the farmer, but their trailing method of growth and the large herbage which they usually present render them mischievous in stopping up water-courses, and thus preventing that ready escape of water which in main conduits, such as ditches, rivulets, and brooks, is so important an element in thorough drainage.

At the same time that we remark that this section will not naturally grow out of water, yet some curious experiments which we have lately instituted upon the *Phalaris arundinacea*, *Poa aquatica*, and *P. fluitans* have not been without important results, as showing that Grasses, like other plants, when made to grow under conditions and circumstances to which they have not been used, result in new and different forms which tend very much to confuse our present ideas of species. These however are facts which will be dwelt upon more at length in a future article, as if Grass is, as we would have it to become, a cultivated crop, it is of as much importance to develope the principle upon which new forms or varieties of these can be obtained, suitable for different circumstances, as it is that we should be enabled to develope new forms of grain or other crops.

6. *Sea-side Grasses.*—Of those which elect to grow on the sea coast the list is comparatively large, consisting of 14 genera and 21 species. Of these probably most choose their position on account of the purely silicious conditions which so often pertain ; others in all probability are influenced in their choice by atmospheric causes ; but however this may be, few Grasses are more useless as fodder than the marine forms, being uniformly coarse and rough ; those however with *rhizomata* having their uses in binding together the otherwise loose sands of the low shelving beaches on which they grow.

These remarks upon the habitats of Grasses are sufficient to show us how widely different are the conditions to which the several members of this

group of plants are attached. The presence therefore of some species and the absence of others may well serve to instruct in many matters connected with the nature and condition of land, and if we take into consideration the facility with which we can bring about a change in the grassy carpet of any spot, according as we observe or neglect certain laws connected with their growth, we see that a knowledge of Grasses, involving an intimate acquaintance with what they do and how they do it, is a desideratum of no small value to farmers in general.

HISTORY AND PROSPECTS OF AGRICULTURE.

MR. GREY, of Dilston, has recently added one more to the admirable addresses which he has occasionally given to farmers' clubs and agricultural societies. The following passages are extracted from the speech to which we refer, delivered at a recent meeting of the Hexham Farmers' Club.

"I shall turn back the thoughts of those who are old enough with myself to recollect what things were, about the beginning of this century, and direct your attention to the great changes which have taken place, which the farmer could not be blamed for not having anticipated, because what would have been the use of increasing your produce to such an amazing extent as it has been increased unless there were people to feed, mouths to be filled, and money to pay for it? But I would rescue the farmers from the imputation of slowness in this, because the moment the impulse was given, the moment remuneration was shown, the moment it was seen we had a population to feed which could afford to buy their beef and mutton as they do now, the farmer put the spur to the wheel, and he has been found to produce that which is sufficient for them. You will recollect, I dare say, at the time I speak of, when it was the habit to allow young cattle and sheep to go in a very meagre way upon very poor pastures; and after they had attained an age when it was fancied they might be matured and brought to market they were taken up and fattened. Now, that won't do in the present day. We had then a scanty fleece of wool every year from the sheep, and when the sheep got to be two or three years older they were fed. But what is the fact now? On high ground you see that they are taken a year sooner that they were at those times; on low ground you can hardly say that a sheep is allowed to go till he is two years old. We should consider that a perfect waste. Sheep are brought to market at 14 or 15 months old, and you are deriving from sheep of that age as much wool as you derived from sheep that had gone two years longer, and occupied your ground more unprofitably. In the same way it is with cattle; and the secret of raising the greatest amount of produce, whether in beef or mutton, I believe to be this, that you never ought to allow the animal to be so pinched or starved as that it retrogrades in the least. You should keep it progressing from the first month of its birth, and never let it lose the flesh it has acquired, because if you have an animal losing for one month, it takes another month to make it up, and then a month more to bring it into a regular healthy condition. The secret, then, I believe is, and it is now pretty well understood, that from their birth forward the animals ought to be brought forward to the condition which they are intended to be in, without ever losing one day. And thus you see the practice of some of my neighbours, of storing their Turnips in the fields in heaps, so that the hardest frosts that come will not make the sheep have a hungry day—they have always fresh food to go to. In this way it is that we find we have it in our power to supply to a considerable degree the greatly increased consumption of the people; but yet we do not find that this is overdone, for when I talk, as I do at present, upon the head of stock, I would just turn your view to the different prices which beef and mutton have maintained for a long period, as compared with other articles of farming produce. When I first recollect farming, the common way was for a man to select a portion of his fallow which was best suited for Turnips. That portion got all the manure which was made upon the farm; it was not so much as might have been, I am sorry to say, because we recollect the quantities that were lost as the stubble of the field, as compared with now-a-days, when the machine cuts it so close that sportsmen complain that a partridge cannot find a hiding place from one end of the farm to another upon a stubble-field. Well, that portion of fallow received the whole of the manure; what was left, perhaps, got a little scanty dose of lime, and then it was expected to grow a crop of Wheat. We know what kind of crops were grown; we know that, as compared with now, there was not above two-thirds, or perhaps, in many cases, not one-half, of the produce of corn. There was not, certainly, nearly one-half of the produce of butchers' meat which there is at this moment. Then with regard to wool. Look at the prices which wool is maintaining, and the desirability there is for the cultivation of that kind of stock which not only gives you the carcase at the end, but gives you an annual produce of wool. It is said, and may be said truly with regard to some farms, that it is impossible that the farmer can thrive with the average price of Wheat at 40*s.* and below it. I saw it stated in one of our periodical papers the other day that the farmer would be ruined by the price of Wheat. So say I, if there are farms which have nothing else but Wheat to depend upon. This is the case, certainly, on some small farms of cold land; but it will hardly be the case, as it might have been if beef and mutton were at 4*d.* a lb. instead of 7*d.* and 8*d.*, and had wool been at 18*s.* or 20*s.* the stone instead of 36*s.*, as we have had it formerly, or instead of 42*s.* as it is now; for, it may be of some consequence for you to know, and some consolation to those who have much to sell, that I know of one person who has been offered for his next year's clip of between 200 and 300 stones 42*s.* a stone, to be paid within a fortnight of his clipping it. I think there is a lesson taught by that, when I have directed your attention to the low price ruling for Wheat and other grain, though Oats and Barley are not so depressed; but when I have drawn your attention to the low price of Wheat and to the high comparative price of butchers' meat, I think this lesson meets you that there are countries more favourable as to the soil and climate for the production of Wheat than our own; that Wheat is an article which can be transferred from one part of the world or one part of the country to another, and is of small bulk as compared with its value, but that no one can injure or come up to us either in beef or mutton or in the growth of wool. We have pastures for summer feed; we have capabilities for rearing root crops, as you all know, to make up the supply when the summer food fails; and we have the opportunity, if we have the judgment, the skill, and the liberality to do it, to raise beef and mutton beyond any other country on the face of the globe. It is very astonishing to look to the statistics of France and of this country, and to see the wonderful difference between the amount that is produced in butchers' meat here; and there is this to console you in the prospect of it, that there is now such a consumption of this description of food that it will hardly be outdone in this country. For my own part I think it has ruled rather as much too high as Wheat has ruled too low for some time past. Since I recollect it was hardly the case that the labouring population of this country were able to indulge themselves with eating butchers' meat at home. The father of a family thought himself very well off if he could feed one or two pigs, and exceedingly well off if he could maintain a cow; but you now see the butcher's shop in every village, and the butcher's cart dispensing joints of meat at every cottage door as you go along the road. Such is the difference in the way of living, and I am sure you will all rejoice with me in thinking that it is so. Then since these changes have taken place in the improvement and in the increase of the quantity of butchers' meat which we are now able to take from our farmers to market, has not a corresponding increase taken place in corn?—because the very thing that creates one gives a stimulant to the other. You manure your lands that you may rear root crops, and you use guano, bone phosphates, and every kind of combination which can increase the quantity. The quantity increased in that respect goes again to increase the manure in your foldyard. You have had the wisdom to adopt a very different plan of reaping your corn and harvesting it from that which prevailed when I first knew this county. At that time you might have gone into the fields and into the stubbles, where it would have taken you almost up to the knees, and you would have seen a proportionate amount of heads of corn scattered among it, and which could not have been saved in that slovenly mode of harvesting. I am glad to see now that from one end of the Tyne to the other you hardly see a field which, as I said before, would give cover to a partridge. Therefore the quantity of manure is not only increased in your foldyards, but you increase it also by the purchase of those foreign and adventitious manures which have had so great an effect in producing your root crops, and those root crops produce to you what all of you who have had experience in farming know is so profitable—that is, butchers' meat and wool. I should like to say one word in the cause of sheep stock. There is a friend of mine here to whom I have talked for the last 20 years on the subject, and I am happy to say I have no cause to change my opinion, and it is this—that the wealth and success of a farmer may be pretty well calculated by the amount of his sheep stock. Sheep are said to be the animals with the golden hoof, that they enrich where they go, and that is true. They not only enrich the master, but the soil. Their manure has a peculiarly efficacious quality, and it is distributed throughout the land in a way very different from that which is left in patches by horned cattle; but there is this also, that while you have the mutton, probably as valuable at the end of the sheep's life as beef, it has given you, year after year, the fleece, which is of itself so important, and which, in the progress of the manufacture of this country, I think we have no reason to fear ever again seeing at a very disastrous price." After enumerating the improvements which had taken place in agriculture for the last 20 years, Mr. Grey continued:—

"If we contemplate the increase of the population in this country as 360,000 a year, we shall see that, unless from wars or emigration, all the efforts we can use will fall far short of supplying them with food. It is on this ground that I think that you must have farms of considerable extent if you intend that the progress of agriculture should go on. It is consistent with theory that it should be so, because on a farm of considerable extent, where all the arrangements are regular, and the operations are conducted with skill and good management, you have skilled hands needful for each kind of work. If you go to the farm of a man who has eight or 10 horses, you see as regular a system as in any other manufactory; you see ploughs sent to make the drill rows, you see carts putting manure into these rows, and followed by another set of ploughs covering that up, and then comes the row drill to put in the seed, and before night 10 or 12 acres are sown and covered in the most promising way; but, on the other hand, the poor man on a small farm, with a pair of horses and a hind, how is he to succeed? He make a few rows in the morning, he changes all the harness of his horses, and puts them into the cart, and gets his wife and daughters, or whoever he can catch, to help him to put in a little manure, and then he changes his horses again from the cart to the plough, and perhaps by working an hour or two over, he gets it sown with Turnips; but all the time it was exposed to a baking sun, and it might be that unfortunately rain came, and he was laid off altogether for a week. If you compare the probable success and cheapness of management of the one with those of the other, you will find that all the hard work, all the poor hoeing, all the parsimony employed—and which is all a poor man has to employ upon a small farm—is not at all adequate to the system, the arrangement, and the skilful operations of larger establishments. I have had through my hands a good many farms of different descriptions, and for the last three years, when I have had a small farm of 100 a year or less to let, I have been obliged to take the same rent, or perhaps less than before; but, when I have had a large farm of 500*l.* a year, I have been able to realise a great advance of rent: and, if I have had a farm of 1000*l.* or 1200*l.* a year, then I have had 25 or 30 per cent. advance. I do not say I rejoice in this, but it forces itself on my observation. The only liking I have for a small farm is that it affords a kind of stepping-stone to the industrious labourer to advance himself in society. I have seen instances of this, and I have been very glad to encourage it; but, whether we look to individual interest or the national good, I must give my vote for farms of a considerable size, where there is abundant capital to employ all the improvements and implements known, and to purchase all the manures found to be advantageous, and to make that division of labour which is so essential to the good working of a large establishment. Under all progress and improvement it is our bounden duty to try to cultivate the minds of our men as well as to cultivate our land. It will be unnecessary to turn your attention to the fact that it is most desirable that we should produce that which the country offers the greatest home market for, and that which will at the same time be most remunerative. I know there is a way of reckoning upon Wheat as productive and remunerative; it has been fixed upon to guide the commutation of tithes and various other things, but it is proved to be a fallacious ground for computing the prosperity of a farmer. I have heard many people inveighing against the low market price of Wheat at the present moment, and saying, 'How can a farmer thrive?' But there is a fallacy in this, and many of you will hold me out in saying that, notwithstanding the very low prices, the crop of this year is remunerating you very much better than the crop of the two former years did. Therefore the actual price is not a fair criterion of the profit which the farmer is making. But again, if you turn to the remunerating prices that the farmer is receiving for both beef and mutton, I need not recommend you to pursue the rearing of beef and mutton, but more especially the enlargement of your flocks of sheep to the utmost extent they are capable of receiving, because this I do believe is the great object we must look to hereafter as the staple commodity of our farms."

Home Correspondence.

Liebig on Sewerage.—["C. L." sends to the *Times* the following translation of a letter received from Professor von Liebig:—]

"Munich, Jan. 9.

"Pray accept my best thanks for your continued interest in my lectures on theoretical and practical agriculture; they are being translated by Dr. Blyth of Cork, who has by this time nearly completed them. Since last week I have been lecturing on sewage; and I am firmly of opinion that if England wishes to remain an agricultural country she must use as manure the nightsoil and similar residues produced in large cities. This necessity would be increased in the event of a war with America, when the supplies of guano would cease. The price of corn depends upon that of guano, and it is most unnatural that, in a country like England, the production of corn and meat should be so dependent on the supplies of foreign manure. The heads of even the most enlightened agriculturists have been turned by a theory propounded by Mr. Lawes, viz., that nitrogen or ammonia are the most necessary ingredients in manure, and that consequently solid excrements are valueless, the urine alone being of use. These views expose utter ignorance, and prove that in England leading agriculturists do not pay sufficient attention to the fundamental principles of chemistry. It is difficult, nay, perhaps impossible, at this moment to convince them of their error. I have tried to do so in my Letters on Chemistry I have just published, and I shall feel most grateful to you, as well as to all who, like yourself, take an interest in the welfare of their country, for any assistance that may be rendered me in propagating this great truth. *Justus von Liebig.*"

Food for Cattle.—The compound used here for fattening beasts and keeping sheep in a growing and healthy state during the winter months has been one part Beans or Peas (old if possible), one of Linseed, which I prefer to oilcake as it contains all the oil, one Barley, and one Wheat, all mixed and ground up together. This combination I believe to be equal to any artificial preparation now sold at four times the value, particularly if a small quantity of some warm seed be mixed with it to aid digestion. We have here gluten for flesh, starch for fat, and pure oil for burning in the lungs to keep up the animal heat. Judging from the effects, I think this compound to be more valuable than oilcake,

and without the adulteration. It is given dry with cut Turnips to the fattening beasts, to be moistened by the saliva. This I consider tends to a more perfect digestion than if mixed with warm water, and at the same time it may be said that as the animal chews the cud there can be no want of saliva. The quantity given to sheep has been at the rate of half a bushel to 100 sheep, merely sprinkled over the Turnips as a condiment and corrective, as we use pepper for our Turnips; little enough certainly, still it has the desired effect. I feel certain that nothing is gained by stinting sheep in winter; where we gain one by saving in food, we loose doubly through leanness and want of vigour in spring. I have no scouring. *Sigma.*

Portable Manures for Potato Growing.—The field on which the experiments noted below was tried is a clay loam, drained and in fair condition. It bore Oats in 1857, was ploughed with a deep furrow that autumn, cross ploughed and broken down in spring, 1858, dunged in the drills (28 inches wide) with 20 loads good farm-yard manure per acre, and planted the second week of April with Potatoes of the Dalmahoy variety. It did not wholly escape the attack of disease, but, in consequence of the earliness of that variety (it comes in at least three weeks earlier than the Prince Regent, to which in colour, shape, and quality it bears otherwise a strong resemblance), the tubers were little if at all affected, not above 8 per cent. of the gross produce being diseased. They were lifted the first week of September; and the quantities below are those of sound Potatoes gathered and stored, viz.:—

	Tons	cwt.	lbs.
Where farmyard alone was used, per imp. acre	6	5	45
Together with farmyard manure were sown in the drills (at the cost of 24*s.* per acre), 1 cwt. Peruvian guano and 3 bushels dissolved bones, per imperial acre	7	9	88
Drills with farmyard manure alone were top-dressed on June 21, with 1¾ cwt. Peruvian guano (at the cost of 24*s.* 11*d.* per acre) ..	7	13	30

Showing in the one case an extra production of $24\frac{43}{112}$ cwt. at the cost of 24*s.*; in the other an extra production of $27\frac{17}{112}$ at the cost of 24*s.* 11*d.* This is a cheap purchase money for Potatoes, without taking into consideration the benefit the subsequent Wheat crop will undoubtedly receive from the remains of the artificial manure stored up for its use in that unfailing bank the soil. Of the certainty of such benefit being derived, we think no one can doubt who has read the very interesting series of experiments as to the effect on the second crop, resulting from the application of guano and other fertilisers, communicated to the Highland and Agricultural Society by Mr. Ferguson Coupar Angus, and published in No. 61 (July 1858) of that Society's Journal. This is a most valuable paper to practical men; and it is one which has, we think, attracted much less general attention than it merits. We would remark further in regard to Potato planting that we shall in future choose a loamy in preference to a gravelly soil for them. We tried two fields, one clay loam, as described in the above experiment; the other sharp gravel, a first-rate Turnip and Barley soil, and maiden to Potatoes for at least 25 years. The crop on the gravel was nearly 2 tons per acre behind that on the clay mould field, though in respect to manuring and preparation it was rather the best attended to of the two. We purpose planting our whole crop of Dalmahoys this season in the latter end of March, shall top-dress them with Peruvian guano 2 cwt. per acre in early May, and anticipate having them sound and safe in their winter pits by the first week of August. *S., Inverness-shire.*

Societies.

HIGHLAND SOCIETY, *Jan.* 19.—A large and exciting meeting of this Society took place this day, of which we must give a fuller account next week. It was presided over by the Duke of Atholl. Upward of 800 members were present, and 100 new members were elected. Mr. Hall Maxwell was reinstated as secretary by a formal motion, seconded by the Duke of Buccleugh. Mr. Caird, M.P., moved in like manner the reinstatement of Mr. Lawson as honorary seedsman. The Earl of Rosslyn defended the Directors of the Society in the course taken by them on the differences which had arisen, and which had led to Mr. Lawson's resignation. Lord Panmure seconded Mr. Caird's motion. Sir George Clark objected to a motion which was a vote of censure on the Directors. Sir Thomas Gladstone proposed as an amendment that the Directors should expunge a certain passage from their minutes of the proceedings, to which Mr. Lawson and his friends objected. Mr. D. McLaren defended Mr. Lawson. The Duke of Buccleugh seconded Sir T. Gladstone's amendment, and it was ultimately declared to be carried. But this was disputed by Lord Panmure and others, and a poll was demanded. This however and other business was ultimately postponed until that day fortnight.

BATH AND WEST OF ENGLAND: *Jan.* 15.—*Abolition of the Implement Prize System.*—Mr. Gabriel Poole brought up the report of the committee setting forth the regulations made in the implement department for the forthcoming exhibition at Barnstaple. It was also resolved, "That the council, in abandoning the system of prizes for implements, beg to record their sincere thanks to the judges of implements for their valuable services, which have in past years conduced so much to the welfare and prosperity of the society, and that a copy of this resolution be sent to the judges."

Proposed Extension of the Exhibitions to Arts and Manufactures.—Mr. Thomas Dyke Acland introduced this subject in the form of a "memorandum" for the consideration of the council. This document, which was very lengthy, described the success which had each year attended the exhibitions since the meetings of the society became migratory, and stated that the agricultural implements exhibited increased in number from 400 in 1852 to 1100 in 1857. What was still more important, the practical character of the implements had steadily improved, and the attendance of exhibitors from a distance had increased from 16 to above 40. The increasing number of visitors, including a large proportion of ladies, had led to the exhibition of many articles not directly agricultural, with a view to their advertisement and sale; and in order to facilitate the disposal of the products of local industry or talent, it was now proposed to extend the exhibition of 1859 to agricultural implements, viz., in the mechanical department, scientific department, domestic or economical department, and an artistic department, &c. The memorandum having been debated at some length, it was resolved—"That a committee be appointed to carry into effect the proposed extension of the exhibition to arts and manufactures, with reference to the memorandum prepared by Mr. Acland." Several members of the council offered handsome donations towards a special fund for carrying out the extension of the Barnstaple exhibition to arts and manufactures.

Farmers' Clubs.

NORTH WALSHAM: *Artificial* v. *Farm-yard Manures.*—Mr. W. Cubitt, of North Walsham, spoke on the growth of Mangel Wurzel, and said it had become a question with him, not as to whether the Mangel ought to be cultivated more than at present, but as to whether it ought not entirely to supersede the use of the common Turnip, for they found it could be used early and late, and in this and the two preceding years, the crop of the Mangel had almost doubled the weight of the common Turnip. They had found in the weighing, that the extreme breadth of drill did not answer, and that the greatest weights were produced from a moderate width. His opinion was, that from 22 to 25 inches in drilling Swedes was the best width to be adopted for producing the greatest weights per acre. Where farm-yard manure was used, he had found the Turnips more full of growth than otherwise, and of better quality; but he wished to say a word or two on artificial manure, for in the *Times* of that morning he had seen in one of the agricultural reports, of which that paper was full just now, the statement of Mr. Jonas, of Cambridgeshire, that the farmers were humbugged by artificial manure. Now, he could not agree with Mr. Jonas entirely, although there was no doubt that the farmers were humbugged by artificial manures to the extent of some tens of thousands annually. For the last 10 years he had used home-made superphosphate with bones dissolved on his own premises, and under his own inspection, and having tried various other manures, he had come to the conclusion that, as an artificial manure, there was nothing equal to the home-made superphosphate. He must, however, caution the farmers as to how they used it. He had heard many farmers having good land say it was useless, and throwing money away, to use artificial manure; and the reason of this was, that too much farm-yard manure was used with it. He could grow as good a body of Swedes with the artificial manure and six or eight loads of farm-yard dung as he could with that quantity of artificial manure and three times the quantity of farm-yard dung. A very small quantity of farm-yard dung, with 6 bushels of dissolved bones, would grow a good body of Turnips. He was particular in urging the cultivation of the root-crop as most important to the farmer, and as that which alone rendered the English farmer superior to every other, and would prevent others from competing with him; for, in whatever quantities they might export corn, they never could export beef and mutton to bring down the price in this country—in fact, it was a question with him, whether, with the increasing prosperity of the country, they could in a few years keep down animal food at a reasonable price to the consumer.

Reviews.

A Directory to the Principal Exhibitors of Poultry, Pigeons, and Rabbits, &c. By the Editor of the "Poultry Diary." *Essex and West Suffolk Gazette* Office, Colchester.

This is a most laboriously compiled pamphlet, containing a list of exhibitions during the year 1857, a list of judges, a list of 84 varieties of fowl referred to, and a list of 1455 exhibitions of poultry, &c., with a statement of all the prizes, and where and for what, that each has won during the period. The whole is closed with a series of miscellaneous paragraphs on poultry feeding, the management of birds for exhibition, &c. The following is one of them on the preparation of pastes for feeding poultry:—

"Potatoes should be well cooked, mashed, and mixed in such a manner as to be brought to a proper consistence, with a certain quantity of mill refuse, or Barley-meal, or bran, or with all these substances combined, to form a very fine paste for the feeding troughs; to this may be added herbs of all kinds, or half-cooked vegetables, which produce a very good effect. Barley is ground, or rather bruised, so as to preserve the flour, and keep all the parts of the grain together. We put into a pail a certain quantity of water or whey, proportioned to the quantity of paste desired, which is very soon ascertained by experience. A few handfuls are thrown in, and the whole stirred till they are soaked. Then further handfuls are added, and worked in the same manner, no portion being left at the bottom of the pail in an unsoaken state. This process is continued until the paste becomes thickened, when the mass is well worked throughout from the bottom to the top, by means of the hand and the grasp of the fingers, until it is brought to a sufficiently firm consistence. It is then well pressed and flattened, and the surface sprinkled with a little dry Barley-meal. At the end of an hour or two the paste will have become so firm as to be brittle, and may be given to the poultry, which relish it much. In Normandy it is made over night, in order that by the next day it may have acquired a fermented flavour, which renders it still more palatable. In England a very hard paste is made of Barley-meal and Oatmeal mixed, formed into large balls the size of the fist, which is given from time to time to the chickens and valuable hens."

Common Sense about the Murrain, Pleuro-pneumonia or Cattle Epidemic, with Cases of its Successful Treatment. By Joseph Major, V.S.

This pamphlet asserts that the Rinderpest of Eastern Europe exists in England—that Professor Simonds's researches last year have been fruitless, and his report useless—that the Veterinary College knows nothing about it—and in short that only Mr. Major is in possession of the infallible specific. Cases of his successful treatment are of course described, and duly enforced by woodcuts of the "look-on-this-picture-and-on-that" style—wherein Mr. Major is represented standing with a bottle in his hand beside the quadruped which he has restored to health, while his rivals of the Veterinary College surround an animal prostrate and dying, which, with all their instruments and treatment, they have been unable to save.

Miscellaneous.

On the General Subject of Tenant Right, and the difficulty of its enforcement by any legislative enactment applying over the whole country, we add a paragraph. The questions into which this matter resolves itself, were submitted some years ago to a committee of the Law Amendment Society, from whom they received the following answers:—1st. That a landowner ought not to be compelled to pay for an addition to his property for which he has not bargained: that the tenant of land binds himself, by the mere occupation of it, to what in the neighbourhood is understood to be good husbandry; indeed, the art of cultivation being progressive, he is even bound to preserve his place in the movement: that when his improvements, however, involve extraordinary outlay, capable of reimbursement only after several years, they constitute an addition to the *corpus* of the landlord's property, and it may be advisable to enforce upon the latter a condition for the purchase. 2d. That the improvements for which compensation should be thus allowed being dependent for their value, their cost, and their permanence, upon the circumstances under which they are made, it is impossible to frame any one statutory rule which would be fair for the whole country. 3d. That the landlord ought to have the option of making these improvements himself. 4th. That no way has yet been devised of valuing improvements for compensation, insuring justice to both parties; for to take the increased value of the land at the close of the tenancy as the amount of the tenant's claim, would not be just to the landlord, it being only that portion of the increased value due to the improvements in question for which the tenant can contend. And, on the other hand, to take the prime cost of the works, subject to an annual deduction during the continuance of the tenancy, as the basis of the calculation might not be fair, and would not be easy. Suppose the case is one of valuing an unexpired claim for drainage, that 14 years is the term allowed, and six of them have elapsed, then $\frac{8}{14}$ is the portion of the original cost to which the tenant lays claim; but the original sum may have been wastefully or injudiciously expended; and while there are difficulties in the way of valuing to the tenant an actual increased value which has attached itself to his farm during his occupation of it, there seems to be a still more obvious injustice in awarding to him sums, according to some mere formula of calculation, for which, in point of fact, he may have no increased value whatever to exhibit. We refer to these points in order to show how impossible it is, by any form of words, to enact justice for all circumstances between parties who should have secured it for themselves at the commencement of their connection, by agreements adapted to the circumstances of each particular case. *J. C. M. in Morton's Cyclopædia of Agriculture.*

Calendar of Operations.

JANUARY.

INVERNESS.—[Our correspondent "S." has forwarded to us his quarterly report to the *North British Agriculturist*, and from it we extract the following passages.] The price of and returns from Wheat have been so unsatisfactory for the last two years that little desire was shown to put much in the ground in the autumn; the breadth will be less than usual.

What was sown in October brairded quickly, and looks vigorous in health and thick in plant; the November sown has sprung very slowly, and scarcely shows a braird yet. This is, we fear, prognostic of future weakly growth. The turning over of the stubble preparatory to green crop was much favoured by the weather of November and December. It was almost universally completed towards the middle of the latter month; and a good commencement has been made in the ploughing of the lea for Oats; altogether, the autumnal work was satisfactorily and expeditiously performed. To this item of agricultural comfort and good hope has to be added another in the shape of a striking improvement in the Turnip crop after the rains of early October. The result of this crop now is, that Swedes are a full average, or perhaps something more; yellows are much deficient in bulk, but their feeding properties would appear to be very good, for they are standing much more eating than was anticipated both in the cattle folds and sheep-nettings. It was supposed in autumn that for sheep wintering the crop would scarcely supply the demand; but from the openness of the early winter, permitting the use of the pasture unusually long, it is now anticipated that the supply will exceed the demand—hence the pressure on the market and the acceptance of unremunerative rates per acre. The prices of the grain of the year's crop sold to this time have been about 40*s.* per qr. for Wheat, 30*s.* for Barley, and 20*s.* for Oats; and even these low rates were realised only from the full, or rather extra, weight of the general run of the crop. These are rates at which, under present arrangements of rental, corn growing will not remunerate the producer: and we cannot see that they will be much exceeded until a season of scarcity clears out the world's overflowing granaries. This state of matters—not a very promising one for the occupiers of arable land with their present ideas that corn should be the staple of their production—will, we believe, pave the way for a better creed of farming, belief in which green crops, with their resulting well-fed bullocks and thickly-woolled sheep, will be the department of cultivation from which the largest and surest returns will be calculated upon. This branch promises exceedingly well this year. Cattle are thriving well, and beef and dairy produce bring very full prices; whilst mutton and wool are in great demand at unusual rates. In this branch we have no rivalry from abroad to fear, and it is one the extent of which is yearly increasing at an astonishing rate. In fact, the value of the meat, wool, and dairy production of the kingdom is already three to fourfold of the corn production: and each year is adding to this disproportion. Thus, while there is no real cause for alarm or despondency, there is a great necessity for looking the true state of affairs fairly in the face, and shaping our plans and proceedings accordingly. The Potato crop has kept tolerably well in the pits; and a fair demand now exists for Regents at 3*l.* per ton. Those grown in this district have a good character in the south-western parts of England, and the Caledonian Canal affords an easy passage for small vessels coming for and returning with cargoes. For the coarser kind—Rocks and Orkney reds—there is little or no demand yet: but the opening up of our railway communication with the north-eastern counties of Scotland, where the failure of the Potato crop was almost entire, gives promise of a market in the spring months. The weather, so unusually open to the New Year, has caused sheep on the hills to have a good bite of Grass hitherto, and unless the weather in the ensuing quarter is more than ordinarily severe the "woolly people" will have a winter of more than ordinary plenty, and thus present themselves in summer full of flesh and well clothed with wool. Less than the ordinary amount of drainage and other land improvement has been recently in progress, but our working population has been so thinned by emigration that there is no redundant labour. For farm-servants wages have latterly had rather a drooping tendency.

Notices to Correspondents.

ANALYSIS: *G D S.* There are many chemical laboratories in London and elsewhere where accurate analyses of manures may be obtained. If you are a member of the English Agricultural Society send to Prof. Voelcker at Cirencester, Gloucestershire. If of the Highland Society send to Prof. Anderson, at Glasgow.

CALCULATED TABLES: *Gate Neu.* The Agriculturist's Calculator published by Blackie & Son, of Warwick Square, E.C., contains many such tables, though whether they are exactly adapted to your purpose we do not know. It costs 5*s.* or 6*s.*

CARTWRIGHT'S CHAIN HARROW: *Hazel* asks if this will brush manure into Grass land as well as the ordinary brush harrow; that is, a hurdle wound with Thorns; and whether it will spread the recent droppings of cattle, sheep, and horses on pasture land.

EGGS: *R.* There are more than 6000*l.* worth more of eggs than of wine imported from France to this country. There are something like 9000 tons weight of eggs thus imported—equal to nearly 240,000,000 in number.

LAW OF LANDLORD AND TENANT: *J J.* The *Law Observer* informs us that Mr Tennant, formerly tenant of the farm of Shields, here had in the course of his occupancy erected, at his own cost, several sheds for the accommodation of his cattle. On leaving the farm it was insisted by the landlord that he was entitled to leave these in good tenantable repair. A reference on the point was agreed to be submitted to James Morton, Esq., writer, who gave the following judgment in the negative:—"The referee having considered the within reference, and heard parties' procurators, finds, in accordance with the decision of the Supreme Court, in 'Oliphant of Rossie against John Thomson,' 8th February, 1822, that Mr. Tennant, the late tenant of Sandyford, is not bound to leave in good tenantable repair the cattle sheds voluntarily erected by him on said farm, at his own expense."

STEAM THRESHING MACHINES: *R.* A case of some importance has just been decided by a bench of West Riding magistrates at Otley, in Yorkshire, involving the question as to the liability to toll of steam threshing machines, and the bench then held that such machines were not exempt from toll after they had passed above two miles upon the turnpike road, but at the same time they granted a case for the opinion of the Court of Queen's Bench upon the point. It was afterwards found that in consequence of a defect in the proceedings it would be again necessary to raise the question before the magistrates. The point was an important one to farmers and others, as it extended to all implements of husbandry and agricultural produce. The charge in the second instance was brought by Messrs. Humphrey & Co., of Leeds, steam threshing-machine manufacturers, against Peter Todd and Joseph Holdsworth, collectors of tolls on the Otley and Skipton turnpike road, for having, on the 22d day of October last, unlawfully taken 3*s.* toll for one of their machines passing along the turnpike road on its way to the farm of Mr. Hunter, of Draughton, to thresh corn. It was contended that, according to the proper construction of the Turnpike Act, threshing machines and all other implements of husbandry were exempt from toll, whatever distance they travelled upon the road, and that the limitation of the Act to two miles applied to an entirely distinct matter. After the case had been argued at great length, the magistrates came to the conclusion that the former decision must be reversed, and that the threshing machine was exempt from toll whatever distance it went upon the road.

STOCKING A CLAY FARM: *Dunstan.* We must for this week be satisfied with directing your attention to the paper read by Mr. Bond before the London Farmers' Club in December; and to the writings of Mr. Lawes in the Journal of the English Agricultural Society.

FIRST-CLASS GERANIUMS.

J. CATTELL offers the following in good healthy plants; the price includes hamper and carriage paid to London.

The following 13 new French varieties, 18*s.*:—Mesdames Pescatore, Heine, Fertado, Lathy, Sueur; Perrugino, Monte Christe, Dr. Andry, Florence, Hendersonia, Dr. Marjolin, General Eugène Cavaignac, Van Houtti.

The following 13 older showy French varieties, 12*s.*:—Auguste Oller, Adèle Odier, James Odier, Mesdames Lamoricière, Chereau, Andry; Chauvieri, Triomphe de la Tour, Susette Mallet, Jacques Duval, Medaille d'Or, Roi des Pourpres, Auguste Miellez.

	s.	d.
13 very superior new Florist or Show Geraniums	18	0
13 very good ditto	12	0
13 good ditto 6*s.* to	9	0

NEW VARIEGATED GERANIUMS.

	Each—*s.*	*d.*		Each—*s.*	*d.*
Bijou	3	6	Perfection	3	6
Bridal Wreath	3	6	Shottisham Pet	3	6
Culford Beauty	2	0	St. Clair	1	6

New variegated crimson Ivy-leaved, 1*s.* 6*d.*

NEW VARIETIES OF THE SCARLET SECTION.

Christiana	2	6	Rose Perfection		
Pink Perfection			extra fine	2	0
extra fine	2	0	Rose Queen	2	6

One of each of the last 11 varieties, 24*s.*

CALCEOLARIAS.—Seedlings from J. C.'s superb collection, 4*s.* per dozen.

Nursery and Seed Establishment, Westerham, Kent.

TO NURSERYMEN.

3,000,000 RHODODENDRONS, 2, 3, 4, and 5 years old; small and strong Portugal and common Laurel, small Red Cedar, Chinese Arbor-Vitæ, Berberis, &c.; layers of Erica Alporti, vulgaris, alba carnea, and many other things to be sold very cheap.—For price, apply to JAMES SMITH, Darley Dale Nursery, near Matlock. Jan. 22.

R. M. STARK, SEEDSMAN, &c., 31, Castle Street. Edinburgh, begs to intimate that his CATALOGUE OF GARDEN, FARM, AND FLOWER SEEDS for the Season is now ready. Of the numerous interesting additions to his Stock he would especially notice the following:—Peas: Champion of Scotland, Excelsior Marrow, Dunnett's First Early. Broccoli: Penzance and Snow's Superb. Cabbage: Champion and Shepherd's Marrow. Lettuce: Crystal and Superb White Cos. Potatoes of fine sorts, &c. &c.

FLOWER SEEDS. Per pkt—*s.* *d.*

Bravoa geminiflora, beautiful Iris-like plant, with spikes of rich orange waxy flowers	0	6
Brizopyrum siculum, very ornamental Grass	1	6
Callirhoe pedata (Malvaceæ), crimson with white eye, fine	2	6
Chrysobactron Hookeri, fine new Asphodel from New Zealand	1	0
Datura humilis fl. flavo pl., from Texas, flowers golden yellow	2	6
Eryngium yuccæfolium, fine hardy species	1	6
Fenzlia (Gilia) dianthoides, rosy pink	2	6
Lupinus Menziesi, new yellow species	1	0
Portulacca caryophylloides	1	0
Solanum capsicastrum, ornamental fruit suitable for pot	1	0
Stock, Stark's intermediate, brighter in colour than Young's	1	0
Trifolium tomentosum, ornamental dwarf species with woolly heads	0	6
Zinnia elegans striata	0	6

With many others of equal interest purchased or collected on the Continent by R. M. S. in the course of last season.

Edinburgh, Jan. 22.

UNEQUALLED NEW CUCUMBER, "DR. LIVINGSTONE"—This is one of the finest long hybrid Cucumbers for exhibition purposes that has ever yet been offered to the public; it is a splendid black spine, length 22 to 26 inches, a very free setter, and an abundant bearer. Price 2*s.* 6*d.* per packet.

Also the following fine CUCUMBERS can be supplied:—

	Per packet—*s.*	*d.*		Per packet—*s.*	*d.*
General Outram	2	0	Sunderland Wick	1	0
Perfection	1	0	Hunter's Prolific	1	0
Sir Colin Campbell	1	0	Mill's Jewess	1	0
General Canrobert	1	0	Cheltenham Surprise	1	0
Phenomena	1	0	Manchester Prize	1	0
Ipswich Standard	1	0	Sion House (true)	1	0
Lord Kenyon	1	0	Cuthill's Black Spine	1	0
Essex Hero	1	0	Conqueror of the West	1	0
Victory of Bath	1	0	Lynch's Star of the West	1	0
Gordon's White Spine	1	0	&c. &c.	&c.	

"QUEEN OF THE WEST" MELON, a superb new variety, green flesh, very handsome in appearance, beautifully netted, and excellent in flavour. It obtained several first prizes during the past season. This Melon has proved itself to be one of the best varieties ever yet offered for early forcing. It sets well, and will carry an immense crop. Fruit weighing 2½ lbs. was cut on the 20th of April, and the plants continued bearing abundantly until the end of July. Seeds 2*s.* 6*d.* per packet.

NEW MELON "GENERAL HAVELOCK," sent out for the first time last season. It is a green flesh, of a very handsome shape, and beautifully netted; a very thick substance, thin skin, of a melting and most delicious flavour, and an abundant bearer. Weight from 3 to 4 lbs. It is very hardy, and may be grown as easily in a cold frame in the summer as a Vegetable Marrow. Seed 1*s.* per packet.

Also the following fine varieties of MELONS:—

	Per packet—*s.*	*d.*		Per packet—*s.*	*d.*
M'Ewen's Arundel Hybrid Scarlet-flesh	1	0	Bowood	1	0
M'Ewen's Arundel Hybrid Green-flesh	1	0	Victory of Bath	1	0
Monro's Crystal Palace Hero	1	0	Cashmere	1	0
Monro's Golden Gage	1	0	Camerton Court	1	0
The Queen	1	0	Beechwood	1	0
Orion	1	0	Windsor Prize	1	0
Golden Drop	1	0	Emperor	1	0
Green Gage	1	0	Fleming's Hybrid Persian	1	0
Bromham Hall	1	0	Blackall Green-flesh	1	0
Incomparable	1	0	Bailey's	1	0
Golden Ball	1	0	Snow's Hybrid	1	0
			Golden Perfection	1	0
			Scarlet King	1	0

A packet of any var. of Cucumber marked at 1*s.* per packet sent with a packet of the Dr. Livingstone Cucumber for 3*s.*

A packet of any var. of Melon marked at 1*s.* per packet sent with a packet of the Queen of the West Melon for 3*s.*

Extra fine mixed Hollyhock Seed, saved from all named vars., 1*s.* per packet.

Early Emperor Celery, the finest ever yet sent out, 1*s.* p. pkt.
Tiley's Solid White Celery, 6*d.* per packet.
Delphinium formosum, 6*d.* per packet.
Digitalis, or Foxglove Seed, 6*d.* per packet.

A remittance must accompany every order in Cash or Penny Postage Stamps, when the whole or any part, as the case may be, will be immediately sent.

EDWARD TILEY, NURSERYMAN, SEEDSMAN, AND FLORIST,
14, Abbey Church Yard, Bath.

THE PLYMOUTH SEED COMPANY'S COLLECTIONS OF VEGETABLE SEEDS.—These Collections have for many years been sent out, and have given universal satisfaction. They combine excellent germinating qualities, superior sorts, and may be deemed economical in the truest sense of the word.

No. 1.—Complete Collection, sufficient for a large Garden, 3*l.*
No. 2.—Complete Collection for a moderate size Garden, 2*l.*
No. 3.—Complete Collection in small quantities, 1*l.* 5*s.*
No. 4.—Complete Collection for a small Garden, 15*s.*

COLLECTIONS OF FLOWER SEEDS.—Post Free.

	Large Pkts.	Small Pkts.
No. 1.—100 Packets	£1 5*s.*	£1 0*s.*
No. 2.—50 ,,	0 15	0 12
No. 3.—25 ,,	0 8	0 6
No. 4.—12 ,,	0 4	0 3

Freight and Carriage.

All orders for Seeds above 1*l.* forwarded free to any Stations between Plymouth and Paddington. All orders above 2*l.* free to all Broad Gauge Stations, to most other Railway Stations, and by steamers to Cork, Dublin, Liverpool, Guernsey and Jersey. All orders above 5*l.* free to all Railway Stations in England and Wales, and to any Steam Port in the United Kingdom.—For other and full particulars, the reader is respectfully referred to the General Price Current of the Plymouth Seed, Agricultural Implement and Manure Company Limited, (late Rendle's Price Current), which is now published and ready for delivery, on application to the Secretary of the Company. Copies can also be obtained from any bookseller in town and country through Messrs. SIMPKIN, MARSHALL, & Co., Stationers' Hall Court, London.

Free for 6 stamps, or gratis to customers.

GRASS SEEDS FOR ALL SOILS.

SUTTON AND SONS have had the honour of supplying their GRASS SEEDS to the ROYAL FARMS near WINDSOR and at OSBORNE PALACE; also to the CRYSTAL PALACE COMPANY, the Grass Seeds by which so many acres of arable land have been converted into the beautiful Park and Lawns now so much admired at Sydenham; also to the HORTICULTURAL SOCIETY OF LONDON, for the Gardens at Turnham Green, and to most of the Public Parks, Gardens, Asylums, &c., in the Kingdom, including the PEOPLE'S PARK, HALIFAX. This magnificent Park, presented to the town of Halifax by Frank Crossley, Esq., M.P., was laid down with SUTTON'S PERMANENT GRASS SEEDS, and at the inaugural meeting held last summer, had already become a beautiful sward (see *Illustrated London News*, August 22, 1857). SUTTON & SONS have since been honoured with further orders for Seeds to extend the Pleasure Grounds.

THE ALDERSHOT CAMP.

From a supply of SUTTON'S Grass Seeds especially adapted to the soil and situation there are now some very perfect swards formed on these bleak hills, forming a pleasing contrast to the surrounding barren waste.

Messrs. SUTTONS' charges for Grasses are very moderate, varying according to the quantity required, and other circumstances.

Prices and other particulars may be obtained on application, addressed, SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

SEEDS.

BASS AND BROWN'S New SEED CATALOGUE (28th annual edition) will be supplied free on application.

It this year contains much descriptive information, with copious remarks on culture, &c., and a drawing of their Improved Custard Vegetable Marrow, totally distinct from the one figured in the periodicals of last year. It also contains lists of choice Bulbs for spring planting, with various other choice Bulbs in pots.

VEGETABLE SEEDS (ASSORTED COLLECTIONS).

These for quality and selection of sorts will not be surpassed. The names of sorts contained in the three largest collections appear in the Catalogue.

No. 1 Collection	£3	0*s.*	0*d.*
No. 2 ,,	2	0	0
No. 3 ,,	1	5	0
No. 4 ,,	0	15	0
No. 5 ,,	0	10	6

Goods (20*s.* and upwards) carriage free to all stations in London, &c.—See Catalogue. Post-office Orders payable to BASS & BROWN, or to STEPHEN BROWN. Remittances requested from unknown correspondents.

BASS & BROWN, Seed Growers, &c., Sudbury, Suffolk.

SEEDLING CHERRY "BEDFORD PROLIFIC."

J. SHEPPARD intends sending out the above this autumn. It has twice received the commendation of the Pomological Society, viz., July 1857 and 1858. It is a very fine large Black Cherry; flesh firm and sweet, resembling the Circassian but larger, quite hardy, and an excellent bearer, having never failed to produce a good crop since it came into bearing, more than 12 lbs. being produced on a small tree last summer. It is a strong and free grower.

Dwarf maiden plants 5*s.* 0*d.* each. | Standards 6*s.* 0*d.* each.

Plants may be obtained of the undernamed persons:—

Messrs. A. Henderson & Co., Pine-apple Place
Messrs. E. G. Henderson & Son, Wellington Road
Messrs. Hugh Low & Co., Clapton
Messrs. Fisher & Holmes, Sheffield
Messrs. H. Lane & Son, Great Berkhampstead
Messrs. Wood & Ingram, Huntingdon
Mr. R. Smith, Worcester
Mr. C. Noble, Bagshot
Mr. H. Cobbett, Woking
and James Sheppard, Nurseryman, Bedford

P.S. Orders received by Messrs. Hurst & M'Mullen, 6, Leadenhall Street.

SEED CATALOGUE.

E. P. DIXON has great pleasure in announcing to his patrons and friends that his CATALOGUE OF KITCHEN GARDEN, FLOWER SEEDS, &c., is now ready, and he will be happy to forward a copy free upon application.

NOVELTIES.

KEMP'S EARLY INCOMPARABLE CABBAGE is quite a distinct variety, and superior to any other known kind; of delicious flavour, dwarf habit, extra early, attains a very large size, does not run to seed, and every plant warranted to Cabbage.

EARLY FORCING CAULIFLOWER, the largest and best for early work, 1*s.* per packet.

SUNDERLAND WICK PRIZE CUCUMBER, wherever exhibited has always obtained the first prize, 1*s.* 6*d.* per packet.

YORKSHIRE PRIZE CUCUMBER, fine dark green, and very free bearer, 1*s.* 6*d.* per packet.

DIXON'S EARLY DWARF INCOMPARABLE CELERY, a very dwarf variety, cannot be excelled for firmness, flavour, and crispness; keeps in perfection longer than any other: 1*s.* per packet.

DUNNETT'S FIRST EARLY PEA, the earliest, 2*s.* 6*d.* per qt.

MELONS.—The following sorts 6*d.* per packet, or six varieties for 2*s.*, post free:—Seymour's Golden Perfection, Seymour's Golden Prince, Beechwood, Marshal Peisster, Netted Egyptian Green-fleshed, Trentham Hybrid, Golden Drop, Bailey's Green-fleshed, Black Rock, Robinson's Scarlet Cantaloupe, Greek Green-fleshed, Sir Gore Ouseley's, Holme Hall.

PETURION GOURD, 1*s.* per packet.

Seed Establishment, 57, Queen Street, Hull.

IMPORTANT TO PLANTERS.

ENGLISH YEWS.—The Subscribers having many Thousands of fine bushy well-grown Plants, with excellent roots, can offer them at the following unprecedented low prices, for Cash only :—

2½ to 3 feet extra transplanted 30*s.* per 100, £10 10 per 1000.
3 to 4 feet ,, ,, 45*s.* ,, 20 0 ,,
4 to 5 feet ,, ,, 63*s.* ,, 30 0 ,,

Also a fine Stock of unusually well-grown Cedrus Deodara (from seed), Cedrus Libani, Juniperus sinensis, and other Coniferæ.

DESCRIPTIVE CATALOGUES sent gratis and post paid on application to RICHARD BRADLEY & SON, Halam Nursery, near Southwell, Notts.

TO NOBLEMEN, GENTLEMEN, PUBLIC COMPANIES, AND OTHERS ENGAGED IN PLANTING.

JOHN WATERER having a very great quantity of the undernamed desirable PLANTS in excellent condition (from frequent removal) for transplanting, offers them at a very reduced scale of charges.

*** Intending Planters having the object of immediate effect in view are respectfully informed that in selecting specimens for such purposes they would find a visit of inspection amply repaid, it being our determination to treat on the most liberal terms.

The Nursery is easily reached, being a short distance from Sunningdale Station, South-Western Railway (Reading Branch), where excellent conveyances meet all trains.

Wellingtonia gigantea, handsome plants, about 1 foot, 15*l.* per 100 ; 1 to 1½ foot, 5*s.* each or 20*l.* per 100 ; 1½ to 2 feet, 10*s.* 6*d.* to 21*s.* each ; larger, up to 5 and 7 feet
Araucaria imbricata, 2 to 3 feet, 10*s.* 6*d.* each ; 3 to 4 feet, 21*s.* to 31*s.* 6*d.* each ; large beautiful specimens, up to 9 feet
Thuja aurea, good plants, 10*l.* per 100 ; about 15 inches, very globular handsome plants, 42*s.* per dozen, or 15*l.* per 100 ; 1½ to 2 feet, 5*s.* to 7*s.* 6*d.* each, or 20*l.* per 100 ; larger, 2 to 3, and 4 to 5 feet
Thuja gigantea, 1 to 1½ foot, 5*s.* to 7*s.* 6*d.* each ; 1½ to 2 feet, 10*s.* 6*d.* each ; 2 to 3 feet, 21*s.* each ; large handsome plants, 3 to 4, and 5 to 8 feet
Thuja chilensis, 2 to 3 feet, 3*s.* 6*d.* each ; 3 to 4 and 5 feet, 5*s.* to 7*s.* 6*d.* each
Cedrus Deodara, 3 to 4 feet, 5*s.* each, or 20*l.* per 100 ; 4 to 5 to 6 feet, 7*s.* 6*d.* to 10*s.* 6*d.* each ; 6 to 8, 10, and 12 to 18 feet
Cedrus Libani, 4 to 5 feet, 5*s.* to 7*s.* 6*d.* each ; 5 to 6, 7, and 8 to 10 feet
Cupressus macrocarpa, 2 to 3 feet, 30*s.* per dozen ; 3 to 4 feet, 3*s.* 6*d.* each ; 4 to 5 feet, 5*s.* each
Cryptomeria japonica, 4 to 6 feet, 5*s.* ; 20*l.* per 100 ; 6 to 8, 10 to 15 feet
Cryptomeria japonica viridis, 3 to 4 feet, 5*s.* each ; 4 to 6 feet, 7*s.* 6*d.* each
Juniperus hibernica, 2 to 3 feet, 24*s.* per dozen, or 7*l.* 10*s.* per 100 ; 3 to 4 feet, 42*s.* per dozen, or 12*l.* 10*s.* per 100 ; 4 to 6, 8 to 10 feet
Juniperus chinensis, 3 to 4 feet, 5*s.* each ; 4 to 5 feet, 7*s.* 6*d.* each ; larger, 5 to 7 and 8 feet
Juniperus virginiana (Red Cedar), 2 to 3 feet, 5*l.* per 100
Thujopsis borealis, about 1½ foot, 42*s.* per dozen, or 15*l.* per 100 ; larger, 2 to 3 feet
Cephalotaxus Fortuni, 1 to 2 feet, 5*s.* to 7*s.* 6*d.* each ; larger, 2 to 3, and 4 feet
Taxus hibernica, 2 to 3 feet, 24*s.* per dozen, or 7*l.* 10*s.* per 100 ; 3 to 4 feet, 3*s.* 6*d.* each ; 4 to 5 feet, 5*s.* ; larger, 5 to 10 feet, all trained to a single stem
FitzRoya patagonica, 3 to 4 ft., 42*s.* per doz. ; 4 to 5 ft., 5*s.* each
Pinus Beardsleyana, 1 to 1½ foot, 5*s.* each ; 2 to 3 feet
,, Benthamiana, 3 to 4 feet, 7*s.* 6*d.* each
,, canadensis, 4 to 6 feet. 3*s.* 6*d.* each
,, Cembra, 2 to 3 feet, 3*s.* 6*d.* each ; 3 to 4 feet, 5*s.* each ; large, 4 to 6 and 8 feet
,, Craigiana (new), 1 to 1½ foot, 3*s.* 6*d.* each ; 1½ to 2 feet, 5*s.*
,, Douglasi, 1 to 1½ foot, 30*s.* per dozen, or 10*l.* per 100 ; 2 to 3 feet, 42*s.* per dozen, or 15*l.* per 100 ; 3 to 5 feet, 5*s.* each ; 5 to 6, and 8 to 15 feet
,, excelsa, 1½ to 2 feet, 12*s.* per dozen, or 50*s.* per 100
,, insignis, 1½ to 2 feet, 10*l.* per 100 ; 2 to 3 feet, 3*s.* 6*d.*, or 15*l.* per 100 ; 3 to 4 feet, 5*s.*, or 20*l.* per 100 ; 4 to 6 feet, very fine
,, Jefferyana, 1 to 1½ foot, 5*s.* each ; 1½ to 2 feet, 7*s.* 6*d.* (A new species allied to Benthamiana but more distinct, and reported to be the most handsome and valuable of the long-leaved Californian Conifers.)
,, Lambertiana, 2 to 3 feet, 7*s.* 6*d.* each ; 3*l.* 10*s.* per dozen ; large, 3 to 4 and 5 to 12 feet
,, Nordmanniana, small plants, 15*l.* per 100 ; about 1 foot, 10*s.* 6*d.* each ; 1 to 1½ ft , 21*s.* each ; 1½ to 2 ft., 42*s.* each ; 2 to 3 feet, 63*s.* to 84*s.* each ; 3 to 4 and 5 feet, perfect specimens
,, Pinsapo, 1 to 1½ foot, 5*s.* each ; 1½ to 2 feet, 7*s.* 6*d.* each ; large, 2 to 4, 6 to 8 feet
,, ponderosa, 1½ to 2 feet, 5*s.* each
,, Sabiniana, 3 to 4 feet, 5*s.* each
,, taxifolia (Jeffery), 1½ to 2 feet, 10*s.* each
(With the single exception of Pinus Lambertiana, the whole of the above are Seedlings.)

ROSES.—Select Perpetual and Bourbon, do. varieties, Standards, 4*l.* 4*s.* per 100 ; do. Dwarfs, 2*l.* 10*s.* per 100
RHODODENDRONS, of all the superior kinds of scarlet, crimson, rose, white, &c., such as are annually displayed by us at the Great Exhibition of American Plants at the Royal Botanic Gardens, Regent's Park, London, in good plants, 42*s.* to 63*s.* per dozen
,, Fine varieties, for extensive planting, 24*s.* to 30*s.* per doz.
,, Catawbiense and mixed Hybrids, good plants, 1½ to 2 feet, 7*l.* 10*s.* per 100
,, Standards of the superior crimson varieties, good plants, 42*s.* to 63*s.*, to 105*s.* each
,, ponticum (the only evergreen that entirely escapes the ravages of hares and rabbits), good plants, fit for immediate planting into woods for cover, 7*l.* 10*s.* per 1000 ; extra strong, 21*s.* to 25*s.* and 30*s.* per 100
,, Dwarf-growing varieties, 4*l.* 4*s.* to 5*l.* per 100
AZALEAS, good common kinds, consisting of scarlet, pink yellow, &c., and for extensive planting, in good plants, 50*s.* per 100
,, superior, 12*s.*, 18*s.*, to 24*s.* per doz., or 3*l.* to 7*l.* 10*s.* p. 100
,, Standard, in fine sorts, 42*s.* each
KALMIA LATIFOLIA, 1 to 1½ foot, covered with bloom buds, 5*l.* per 100 ; larger, 18*s.* to 30*s.* per dozen
,, MYRTIFOLIA, fine plants, 30*s.* to 60*s.* per dozen (a superior kind to latifolia).
HARDY HEATHS.—A collection of 25 distinct kinds, 30*s.* per 100, or 12*l.* 10*s.* per 1000
Transplanted FOREST TREES, of which about 100,000 of each are in hand. We shall have great pleasure in forwarding samples on application.

Ash, 2 to 3 and 4 feet	Beech, 2 to 3 feet
Hazel, 2 to 3, and 4 to 5 feet	Birch, 2 to 3 and 4 feet
Chesnut, Spanish, 2 to 3, and 4 to 6 feet	Larch, 2 to 3 and 4 feet
	Scotch, 1½ to 2 feet

A large quantity of bushy COMMON LAURELS, 2 to 3, & 4 ft.
Also the commoner kinds of Evergreens, such as HOLLIES, of kinds ; BAYS, ARBUTUS, PHILLYREA, AUCUBA, PORTUGAL LAURELS, &c.

CATALOGUES containing descriptions of everything relating to Rhododendrons and Conifers forwarded on application to JOHN WATERER, American Nursery, Bagshot, Surrey.

FRANCIS & ARTHUR DICKSON & SONS, SEED MERCHANTS and NURSERYMEN, respectfully announce that their CATALOGUE OF KITCHEN GARDEN AND FLOWER SEEDS FOR 1859, including a List of Garden Implements and other requisites, is published, and will be forwarded post free on application.

The whole of their Seeds having been carefully saved from *select* Stocks, and being all the growth of 1858, they can *guarantee* them to be *true* to name and of the most *genuine* description.

They beg to direct particular attention to the following novelties, all of which they believe to be *valuable acquisitions* to their respective classes.

PEA, DICKSON'S EARLY FAVOURITE.—Pronounced by all who have grown it to be the best Second Early Pea in cultivation. See Advertisement in *Gardeners' Chronicle*, Jan. 9, 1859. Price 1*s.* 6*d.* per quart.

PEA, CHAMPION OF SCOTLAND.—2*s.* 6*d.* per quart.

BEET, DICKSON'S DWARF-TOP BLACK.—Highly recommended. 6*d.* per packet or 1*s.* per oz.

BROCCOLI, FROGMORE PROTECTING.—A much superior variety to "Knight's Protecting." 2*s.* 6*d.* per packet.

BROCCOLI, SNOW'S SUPERB WINTER (TRUE), direct from Mr. Snow.—1*s.* 6*d.* and 2*s.* 6*d.* per packet.

CABBAGE, ESSEX CHAMPION.—6*d.* per pkt. ; 1*s.* per oz.

CAULIFLOWER, LEONORMAND'S.—2*s.* 6*d.* per packet.

CAULIFLOWER, EARLY PARIS.—1*s.* per packet, or 3*s.* 6*d.* per ounce.

CELERY, INCOMPARABLE DWARF WHITE.—1*s.* per packet.

CUCUMBER, COPPACK'S SEEDLING.—1*s.* and 2*s.* per pkt.

LETTUCE, DICKSON'S NEW HARDY WINTER CABBAGE.—The best winter Lettuce in cultivation. 1*s.* per packet.

LETTUCE, DICKSON'S CHAMPION COS.—Perhaps the largest Cos Lettuce in cultivation, and of first-rate quality. 1*s.* per packet.

☞ The whole of the above are *fully described* in the *Gardeners' Chronicle* of January 15, 1859.

CARRIAGE OF SEEDS.

*** It is now a common practice to advertise Seeds "carriage paid." However *tempting* this may appear at first sight, it is *evident* that the cost of carriage *must* be charged indirectly *on the price* of the Seeds.

F. & A. DICKSON & SONS prefer sending out really superior Seeds at *strictly moderate* prices (without paying carriage), and are convinced that they will be found more satisfactory in every way, as well as *cheaper* in the end.

F. & A. D. & SONS have however special arrangements with the various Railway Companies for the *cheap* and *quick* conveyance of all goods, and will be happy to prepay the carriage, when desired, charging cost of same to account.

106, EASTGATE STREET, CHESTER.

MESSRS. WATERER AND GODFREY respectfully invite the attention of parties engaged in planting to the following list of very desirable plants, all of which may be seen growing in the open quarters of their Nursery, and are in the finest possible condition for transplanting :—

Araucaria imbricata, 9 to 12 inches, 5*l.* per 100 ; 40*l.* per 1000
,, ,, 1½, 2, 3, 4, 5, 6, and 8 feet high. Our stock of this plant exceeds 100,000
Wellingtonia gigantea, stout handsome plants from seed, 84*s.* per dozen ; 25*l.* per 100. These are all in the open ground, and are believed to be the finest lot of seedling plants in the Trade.
Cedrus Deodara, 1½ to 2 feet, 18*s.* per dozen ; 6*l.* per 100
Do. 3, 4, 5, 6, 7, 8, 10 and 12, and 15 feet. Our stock of Deodars at the present moment occupies several acres of land ; they have been constantly removed, and with fair usage not one in a thousand would fail. We offer them on very advantageous terms either in large or small quantities
Cedrus atlantica, 4, 5, 6, and 7 feet
Cupressus macrocarpa, magnificent plants, 7, 8, and 10 feet high
,, Lawsoniana, stout handsome plants from seed, 18 inches, by the dozen or 100
Abies nobilis, from imported seed, 6*l.* 6*s.* per doz. ; 40*l.* per 100
,, do. 1, 2, and 3 feet high
,, Nordmanniana, a large number of beautiful plants, all from seed, 2, 3, 4, 5, and 6 feet high
,, Pinsapo, do. do.
[We believe we are justified in stating our stock of the three last-mentioned Firs offers a selection to be met with in no other Nursery.]
,, Douglasi, 6, 7, 10, and 12 feet
,, orientalis, 3, 4, 5, and 6 feet
Pinus Benthamiana, stout seedling plants, about 1 foot, 18*s.* per dozen ; 5*l.* per 100 ; 40*l.* per 1000. Unquestionably the finest of all the long-leaved Californian kinds, and well known to be perfectly hardy. It is the most valuable of all for timber.
Juniper, Chinese, 2, 3, 5, 7, 8, and 10 feet high
Irish Upright, 3, 4, 5, 6, 7, and 8 feet The Irish and Chinese Junipers are grown by us to a very large extent
Thuja aurea.—This plant originated in our Nursery, and our stock of it offers a choice of many hundred specimens from 1½, 2, 3, 4, and 5 feet high, and measuring from 2 to 10 and 15 feet in circumference. Nothing can well exceed the beauty of these plants, and certainly are to be met with in no other Nursery
Thuja gigantea, stout seedling plants, 1½ to 2 feet high
,, Wareana, 3, 4, 5, 6, 7, and 8 feet
Thujopsis borealis, handsome plants, in quantity, 1½ & 2 ft. high
Taxus, Yew, Common English.—A large quantity, and of all sizes up to 5, 6, and 7 feet
,, Irish Yew, 4, 5, 6, 7, and 10 feet. Many thousands of these beautifully formed plants grown to one stem
,, Golden Yews in large quantities and of all sizes up to 6, 7, and 8 feet
We also have them worked on the Common and Irish Yew as Standards, with heads from 12 to 15 years' growth
Holly, Variegated, Scottica, laurifolia, &c. We hold probably the largest stock of good sized variegated Hollies in the kingdom, especially of the better kinds of silver and gold striped
Rhododendron ponticum, for cover, stout plants, 1½ to 2½ feet, by the 1000. All the well-known proved hardy late blooming kinds, in any quantity, at from 30*s.*, 42*s.*, to 84*s.* per dozen
Standard Rhododendrons of all kinds
Azaleas, stout bushy plants, covered with bloom buds, from 18 inches to 2 feet high, and of all colours, 9*s.*, 12*s.*, 18*s.*, and 24*s.* per dozen ; 50*s.*, 75*s.*, to 100*s.* per 100
Hardy Heaths, a first-rate collection, at 35*s.* per 100 ; 15*l.* p. 1000
Roses, fine Standards, of the most popular kinds, at very low prices.

As well as the above, we are very large holders of the ordinary kinds of Nursery Stock, which may be judged from the fact that the Nursery far exceeds 100 acres in extent of all such things as Laurels, Box, Lilacs, Limes, Purple Beech, and the commoner descriptions of Evergreens and Deciduous Flowering Shrubs. An enormous stock of Fruit and Forest Trees are also grown extensively.

Goods are delivered free to London, Reading, or Reigate. The Nursery is reached in an hour from Waterloo, and conveyances are always to be had at the Woking Station.

CATALOGUES, Priced and Descriptive, will be sent on application, enclosing one postage stamp, to

WATERER AND GODFREY, Knap Hill, Woking, Surrey.

TO THE TRADE.

WOOD AND INGRAM beg to offer the following articles which they have of extra fine growth :—

STANDARD, DWARF, AND TRAINED CHERRIES, of all the best sorts.
OAKS, 1 and 2 year seedling, 2 to 3, and 3 to 4 feet.
,, Evergreens, 1 year seedling.
,, Turkey, 1 year ditto.
SYCAMORE, 1 year ditto.
WHITETHORN, 2 year ditto.
ELM, narrow-leaved English, 1 year ditto.
CHESNUT, Spanish, 3 to 4, 4 to 5, and 5 to 7 feet.
FIR, Scotch, 1½ to 2, 2 to 2½, and 3 feet.
HAZELS, 2 to 3, and 3 to 4 feet.
POPLAR, Black Italian, 3 to 4, 4 to 5, and 5 to 6 feet.
,, Lombardy, 4 to 5, 5 to 6, and 7 to 8 feet.
BOX, sorts, 2 to 3, and 3 to 4 feet.
LAURELS, 1 year bedded.

Prices on application.—Huntingdon Nurseries.

ROSES.—The following varieties can be supplied true to name ; they are all of the most superior growth, and will give satisfaction to all purchasers :—

Plants on stems, 1½ to 2½ feet in height, 1*s.* each or 12*s.* p. doz. When three or more of a sort taken, 9*s.* per doz. or 60*s.* per 100. Dwarfs (worked), 10*s.* per doz., 60*s.* per 100. When three or more of a sort taken, 8*s.* per doz., or 50*s.* per 100. Purchaser's selection.

HYBRID PERPETUALS.—Alexandrine Bachmeteff, Arthur de Sansal, Auguste Mie, Baronne de Heckeren, Baronne Hallez, Baronne Laray, Baronne Prevost, Belle Anglaise, Berceau Imperial, Caroline de Sansal, Colonel Foissy, Colonel Rougemont, Comte de Durois, Deuil de Willermoz, Dr. Marx, Duc d'Aumale, Duchesse de Cambacères, Duchesse de Montpensier, Duchesse d'Orleans, Duchess of Sutherland, Emperor Napoleon, Eugène Sue, Géant des Batailles, General Brea, General Castellane, General Jacqueminot, General Pelissier, General Simpson, Jeanne d'Arc, Joseph Decaisne, Jules Margottin, Lady Alice Peel, Lady Stuart, La Reine, Laure Ramand, L'Enfant du Mont Carmel, Le Lion des Combats, Lord Raglan, Louise Peyronny, Lucie de Barante, Madame Andry, Madame Campbell d' Islay, Madame de Mansel, Madame Desiré Giraud, Madame Domage, Madame Ducher, Madame Freemion, Madame Guillot, Madame Hector Jacquin, Madame Heraud, Madame Knoor, Madame Lamoricière, Madame Masson, Madame Phelip, Madame Place, Madame Rivers, Mathurin Regnier, Panaché d'Orleans, Paul Dupuy, Pius IX, Prince Chipetouzikoff, Prince Imperial, Prince Leon, Reine des Fleurs, Reine Mathilde, Robert, Robin Hood, Sir John Franklin, Souvenir de la Reine d'Angleterre, Souvenir de Leveson Gower, Standard of Marengo, Standard of Sebastopol, Triomphe de L'Exposition, Triomphe de Paris, Victoria Volta, William Griffiths.

BOURBONS.—Bouquet de Flore, Comice de Seine et Marne, Edouard Desfosses, George Cuvier, Louise Odier, Menoux, Paul Joseph, Paxton, Queen Reveil, Scipion, Souvenir de la Malmaison.

TEA-SCENTED CHINA.—Gloire de Dijon, half standards only ; Isabella Grey, half standards, 2*s.* each.

HYBRID BOURBON.—Charles Lawson, Coupe d'Hébé, Paul Ricaut.

PERPETUAL MOSS.—Alfred de Dalmas, André Thouin, bicolor, White, Salet.

Named Climbing Roses, 6*s.* per doz. Summer Roses of the most superior varieties. Many other both old and new varieties can be supplied.

DESCRIPTIVE CATALOGUES sent gratis and post paid on application to RICHARD BRADLEY & SON, Halam Nursery, near Southwell, Notts,

P.S. A satisfactory reference or a remittance must accompany all orders from unknown correspondents.

REIGATE SILVER SAND, best quality for Florists, 16*s.* per ton ; less quantities, 1*s.* 6*d.* per bushel ; delivered to any London Wharf or Railway. Leaf Mould, Peat, and Loam of various kinds, in large or small quanties. Sacks for Sand 1*s.* 9*d.* each, on hire 6*d.* each (five hold a ton).—JOHN KENNARD, Purveyor to her Majesty, Swan Place, Old Kent Road, S.E.

FLOUR, Warranted Unadulterated, free to any part of London (not less than 14 lbs.) ; Whites, for pastry, at per bushel (56 lbs.), 8*s.* 4*d.* ; households, for bread-making, 7*s.* 8*d.* ; seconds, 7*s.* 0*d.* ; Wheatmeal, for brown bread, 7*s.* 0*d.* ; best fine and coarse Scotch Oatmeal.—Address, HORSNAIL & CATCHPOOL, Bullford Mill, near Witham, Essex, or 97, Goswell Road, City Road, E.C. Directions for bread making gratis. Terms, cash. Bags lent. German yeast. A half sack (140 lbs.), or upwards, free to any railway station within 200 miles.

TOBACCO PAPER OR CLOTH.—To NURSERYMEN, &c. GENUINE TOBACCO PAPER OR CLOTH at 10*d.* per lb. to be had of G. DARLINGTON, Tobacco Cutter, 16, Wellington Place, Warner Place, Hackney Road, London.—All orders to be accompanied with a Post-office Order, payable to GEORGE DARLINGTON, Hackney Road, London.

GENUINE TOBACCO PAPER FOR FUMIGATING.

H. APPLEBY (Foreman to Messrs. Ivery & Son, Nurserymen, Dorking, Surrey), begs to inform his friends and the public that he now offers the above article at a reduced price. Sold in 4-lb. packets, 1*s.* 3*d.* per lb. A great reduction to the trade ; price on application. For testimonials that will guarantee its quality, see *Gardeners' Chronicle*, Dec. 11, 1858, page 920.

SHEET IRON POTS FOR FUMIGATING, 3*s.* 6*d.* each.

N.B. All Orders to be accompanied with a Post-office Order, payable to HENRY APPLEBY, Dorking, Surrey.

TO PIG AND POULTRY FEEDERS AND MILLERS.

CHICKEN RICE, 7*s.* 6*d.* per cwt., in bags 1½ cwt. each. SCREENED RICE, 10*s.* per cwt., in bags 1½ cwt. each. RICE MEAL, 6*s.* 9*d.* to 8*s.* 9*d.* per cwt. RICE for grinding. An allowance per Ton.—Sold for Cash by W. & R. JUPP, 6, Cross Lane, St. Mary-at-Hill, Eastcheap, E.C.

PATENT GUTTA PERCHA SOLES.—IMPORTANT TO GARDENERS.—The Gutta Percha Company have the pleasure to acknowledge the receipt of the following letter from G. GLENNY, Esq., the celebrated Florist :—

"420, Strand, London.

"Gentlemen,—I have worn Gutta Percha Soles and Heels these two years, and being so much in a garden as I necessarily am in all weathers, and with the ground in all states, I would on no account be without them. As a matter of economy I would recommend Gardeners to use them, for they may repair the worn part at all times by warming the material at the fire, and pressing it from the thick parts to the worn parts as easily as if it were so much dough. I think it the duty of all persons who must occasionally wet their feet to adopt a material that completely defies damp. Many a gardener would escape colds and rheumatism by the use of Gutta Percha Soles.

"Your obedient servant, G. GLENNY."

Every variety of Gutta Percha articles, such as Mill Bands, Tubing, Soles, Goloshes, Sheet, Pump Buckets, Fire Buckets, Bosses, Union Joints, Flasks, Bottles, Bowls, Chamber Vessels, Toilet Trays, Sponge Bags, Curtain Rings, Galvanic Batteries, Talbotype Trays, &c., manufactured by the Gutta Percha Company, and sold by their wholesale dealers in town or country.—The Gutta Percha Company, Patentees, 18, Wharf Road, City Road, London.

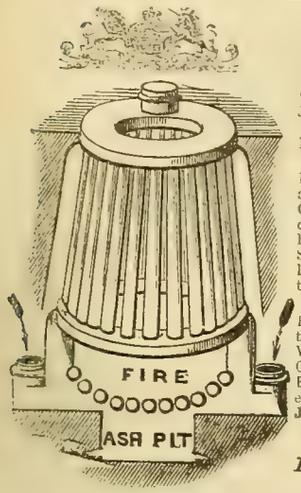
WEEKS' ONE BOILER SYSTEM.

THE

LARGEST HORTICULTURAL ESTABLISHMENT IN EUROPE

IS NOW SUCCESSFULLY HEATED BY

JOHN WEEKS & CO. on their One Boiler System.



EVERY YEAR FURNISHES NUMEROUS ADDITIONAL PROOFS of the success and efficiency of J. WEEKS & Co.'s Hot-water Apparatus. Within the last few years upwards of 1000 have been erected all of which are working most satisfactorily. Among the most important, J. WEEKS & Co. have the honour to announce Mr. LOUIS VAN HOUTTE, of Ghent. The whole of his immense Establishment is now effectually and most satisfactorily heated on WEEKS' ONE BOILER SYSTEM. This may be justly termed the masterpiece of the world in the science of Heating by Hot Water.

Also at the extensive Nursery of Mr. CHARLES WOODROFFE, Kensal Green, Harrow Road. Mr. Woodroffe will be happy to show the Apparatus.

J. WEEKS & Co. also beg to refer to the celebrated Nurseries of the Messrs E. G. HENDERSON & SON, St. John's Wood. There will be found ONE OF WEEKS' BOILERS attached to various Hothouses, &c., equal to 1200 feet long, also to all the various Offices, Seed Shops, and Warehouses, the Hot Water circulating through 5500 feet of cast-iron pipe. Any one house can be heated separately either with top or bottom heat, or the whole together, or any part regulated at pleasure; also to Messrs. F. & A. SMITH'S Village of Glass at Dulwich. There will be found Hothouses, &c., 3000 feet long, the whole heated upon WEEKS' ONE BOILER SYSTEM, the Hot Water circulating through 10,000 feet of cast-iron pipe.

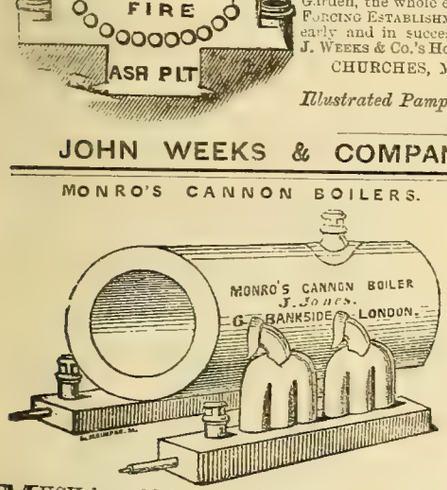
J. WEEKS & Co. further beg particular attention to their OWN HORTICULTURAL ESTABLISHMENT AT CHELSEA, the whole of which is reserved expressly for reference, and to exhibit all modern improvements in Horticultural Building and Heating by Hot Water. These extensive ranges of Hothouses, together with the renowned Winter Garden, the whole equal to a range 1300 feet long, are now being managed as a FRUIT FORCING ESTABLISHMENT; and in future Pines, Grapes, Peaches, Figs, &c., will be forced early and in succession throughout the year. This will prove the great power of J. WEEKS & Co.'s Hot-Water Apparatus, and also the economy of the ONE BOILER SYSTEM.

CHURCHES, MANSIONS, HOTHOUSES, &c., HEATED BY HOT WATER.

Illustrated Pamphlets of Horticultural Buildings, also Plans and Estimates on application.

JOHN WEEKS & COMPANY, KING'S ROAD, CHELSEA.

MONRO'S CANNON BOILERS.

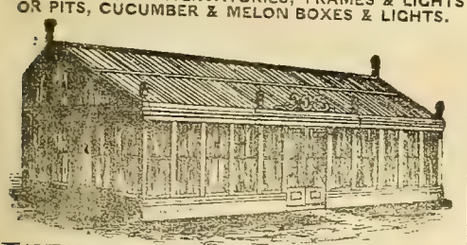


MUCH has of late been said about BOILERS for Heating by Hot Water, but these Boilers have now proved themselves to be the best at present invented. They are adapted for heating every description of building, and are made of various sizes. The Price of the

24 inch Cast Iron is	.. ..	.. £5 10s. 0d.	each
24 inch Wrought ditto	.. ..	.. 6 10 0	,,
36 inch Cast ditto	.. ..	.. 8 0 0	,,
36 inch Wrought ditto	.. ..	.. 8 10 0	,,

References to Gentlemen and Nurserymen where these Boilers are now at work. The Cannon Boilers are now kept in stock, and are to be had only of J. JONES, 6, Bankside. Also, every description of Saddle and Cylinder Boilers. Hot Water Pipes and Connections at prices lower than those of any other house in London. Estimates for Hot-water Apparatus erected complete in any part of the country, and an Illustrated Catalogue on application to J. JONES, 6, Bankside, Southwark, London.

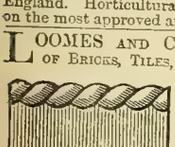
HOTHOUSES, CONSERVATORIES, FRAMES & LIGHTS OR PITS, CUCUMBER & MELON BOXES & LIGHTS.



JAMES WATTS, HOTHOUSE BUILDER, 8, Claremont Place, Old Kent Road, London.

Green and Hothouses, 9, 10, 11, 12, 13, and 14 feet wide, any length, from 16 to 100 feet. Frames and Lights for Pits, 6ft. 6 in., 7 ft., 7 ft. 6 in., 8 ft., and 8 ft. 6 in. wide, any length, from 12 to 100 feet. Upwards of 200 Cucumber and Melon Boxes and Lights, from 4 ft. by 3 to 10 ft. 6 in. by 5 ft. 6 in., kept ready, glazed with stout sheet glass, painted four times, complete, ready for immediate use, all made of best material, packed and sent to all parts of the kingdom.—References may be had to the Nobility, Gentry, and the Trade in most of the counties in England. Horticultural Buildings of every description heated on the most approved and economical principles.

LOOMES AND CO., Whittlesea, MANUFACTURERS OF BRICKS, TILES, POTTERY, &c., beg to call attention to their new CABLE PATTERN GARDEN BORDER EDGING, which not only surpasses others in appearance and durability, but is free from the dangerous points and sharp edges of most.—Price, delivered on any Railway at Peterborough, 5*d.* per yard.

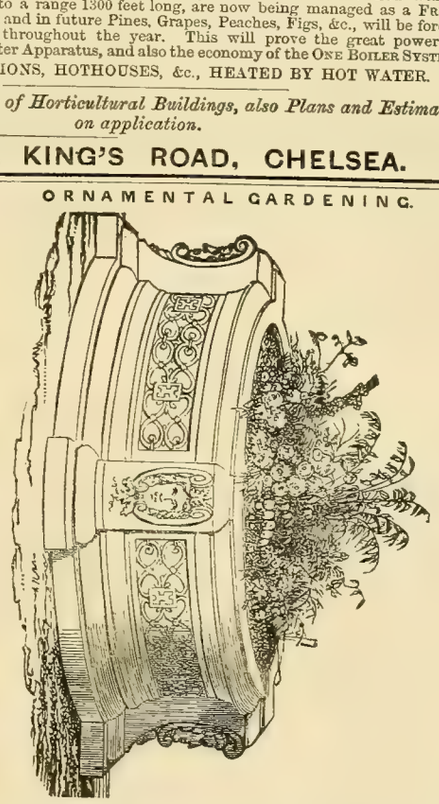


TRELOAR'S COCOA-NUT FIBRE WAREHOUSE 42, Ludgate Hill.—Matting, Mats, Mattresses, Sheep Netting, Hassocks, &c. Prize Medals awarded, London, New York, and Paris. Catalogues, containing prices, and every particular, free by post.—T. TRELOAR, Cocoa-Nut Fibre Manufacturer, 42, Ludgate Hill, London, E.C.

SHAW'S TIFFANY.—The best and cheapest material for Shading Conservatories, Protecting Fruit from Birds and Wasps, &c. Sold in pieces 20 yards long by 38 inches wide. No. 1, best quality, 5*s.* per piece; second quality, 4*s.* per piece. Extra strong and thick (see Circular sent free by post with samples).

Address JOHN SHAW & Co., Manufacturers and Dealers, Princess Street, Manchester.

ORNAMENTAL GARDENING.



AUSTIN, SEELEY, AND CO. respectfully invite the attention of the nobility and gentry to their large FLOWER BASINS or "PORTE-FLEURS," of which they have now some handsome designs, from 7 to 20 feet diameter.

Any such work ordered IMMEDIATELY might be ready for fixing in March, so as to be well settled by the time for planting.—3 71 to 375, Euston Road.

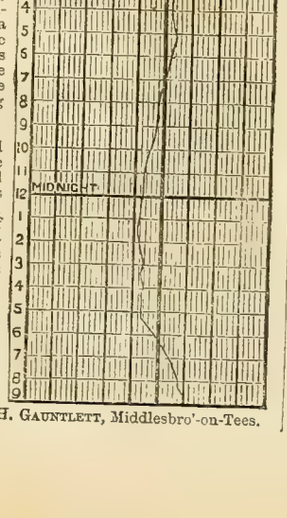
TO HORTICULTURISTS.

GAUNTLETT'S PATENT CHRONOMETRICAL THERMOMETER.

This instrument, which combines an eight-day clock of the best English make showing time, with a newly-patented Thermometer, wherein glass and quicksilver are dispensed with, writes down the temperature of the atmosphere on a slip of paper, and when placed in a Hothouse, Forcing House, or Conservatory, &c., supplies a valuable record of the temperature, with all its variations, showing the time when any change took place, and how long such change continued.

The above slip (reduced in size) exhibits the temperature of the Royal Agricultural Society's show yard at Chester, July 22, 1858, written off by one of these instruments, to which was awarded the Society's SILVER MEDAL.

This is the only instrument that registers temperature continuously and writes it down, and no horticulturist should be without it.



Orders received by W. H. GAUNTLETT, Middlesbro'-on-Tees.

HORTICULTURAL WORKS,

DANVERS STREET, CHELSEA, SEPTEMBER, 1857.

DISSOLUTION OF PARTNERSHIP.

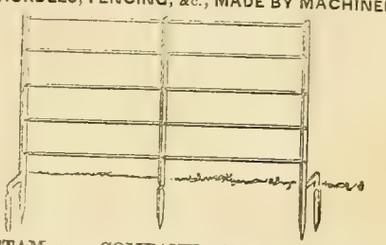
MR. GRAY begs most respectfully to announce to his patrons and friends that the Partnership hitherto existing between Mr. ORMSON and himself is now at an end, and that the Business will be carried on by him as usual, and he hopes to be honoured with a continuance of that support and patronage with which this establishment has been so long favoured.

Mr. GRAY avails himself of this opportunity to tender his grateful thanks to the many kind friends and supporters by whose patronage this establishment has been raised to its present position, and he begs to assure them that it will be his most anxious care and study to maintain it.

C. STEPHENSON, late STEPHENSON AND SONS, 61, Gracechurch Street, London, Manufacturer of Iron Hurdles, Fencing, &c., Improved Iron and Copper Conical Boilers and Apparatus for Warming Buildings of every description by Hot Water.

Prices and Estimates furnished upon application.

IRON HURDLES, FENCING, &c., MADE BY MACHINERY.

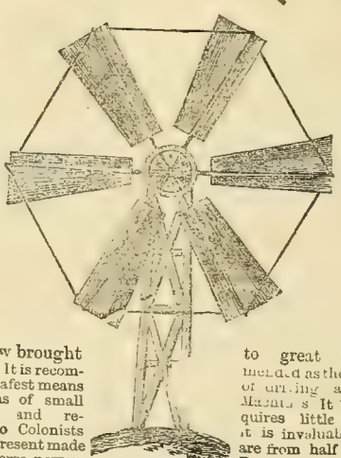


COTTAM AND COMPANY, of Winsley Street, have invented machinery for making Hurdles, &c.; the bars, instead of being pointed by hand in the old fashioned style, are nipped down by the machine, leaving a shoulder so as to more effectually tighten the standards when rivetted. They are made of superior iron only, and will compete in price with those made by hand from cinder or common iron which so frequently break. Iron Fencing, Gates, and Iron Work of all kinds, both Plain and Ornamental, Conservatories, Hot Water Apparatus and Garden Implements.

Illustrated CATALOGUES free on application to COTTAM & COMPANY, Ironfounders, 2, Winsley Street, Oxford Street, W.

ZAHN'S PATENT SELF REGULATING WIND ENGINE

FOR PUMPING, OAT CRUSHING, GRINDING, CHAFF CUTTING, &c.



IS now brought to great perfection. It is recommended as the cheapest and safest means of grinding any descriptions of small Materials. It is easily erected, and requires little attention. To Colonists it is invaluable. The sizes at present made are from half a horse to two-horse power. Prospectuses may be obtained of J. R. PEILL, 17, New Park Street, Southwark where a Wind Engine in full work can be inspected.

HEAL AND SON'S NEW ILLUSTRATED CATALOGUE contains designs and prices of every description of BEDROOM FURNITURE, as well as of 100 Bedsteads, and prices of every description of Bedding. Sent free by post.—HEAL & SON, Bedstead, Bedding, and Bedroom Furniture Manufacturers, 196, Tottenham Court Road, W.

WANTED TO DISPOSE OF, A NURSERY BUSINESS with a first-class connection of 60 years' standing. The Land is held upon Lease, broken up from Grass within the last three years; the stock upon it is young and flourishing, and can be taken to at any time at a valuation not exceeding 300*l.*—For further particulars apply to WALTER PENNINGTON, Nurseryman, South Retford, Notts.

TO GARDENERS, FLORISTS, AND OTHERS.—A very desirable opportunity now presents itself in the above Trade, in the very improving and fashionable neighbourhood of Red Hill and Reigate abounding with gentlemen's Villas and others in course of erection. The premises consist of a good 8-roomed House and 2 Greenhouses 76 and 31 by 14 feet, with pits and other conveniences, containing in all ¾ of an acre of Land very suitable for the Trade.—Apply on the premises to Mr. JAMES SYRED MONSON, Nursery, Red Hill, Surrey; or to W. O. TUCKER, Esq., Solicitor, 31, New City Chambers, Bishopsgate, City.

TO BE DISPOSED OF, a genuine SEED BUSINESS with RETAIL CORN TRADE attached, in a large Market Town in Kent. The proprietor has an excellent connection both at home and upon several country markets. Another line of business is the sole cause for its disposal. Incoming moderate.—For full particulars apply to J. S. L., Stanbury's Booking Office, Rochester.

TO NURSERYMEN, SEEDSMEN, ETC.

TO BE DISPOSED OF, the DENBIGH ROAD NURSERY, Westbourne Grove, West Bayswater, where a good business has been successfully carried on by the late Mr. GILL, whose decease is the sole cause of its disposal; also in connection with the same is a compact Nursery adapted for the growth of Plants for Market or otherwise. The premises have been fitted up regardless of cost, and the houses are in good repair and heated by hot water, and contain a clean and healthy Stock of Plants. There is an unexpired Lease of 90 years. The Nurseries will be Let together or separate, and such an offer seldom occurs to any person seeking a good business.—For further particulars, apply as above.

MEADOW AND PASTURE GRASS SEEDS.

GEORGE GIBBS & Co., Seedsmen, 26, Down Street,

BEG to announce that their mixtures of GRASS SEEDS are now ready for delivery. These mixtures are made up expressly to suit the various soils and the growth of each variety is fully tested previous to being bulked. G. G. & Co. having supplied the Seeds for *Hyde Park, St. James's, and Regent's Park, Kensington Gardens, Kennington Park,* &c., for many years, feel assured no further testimonials are requisite. The Seeds are made up into two different mixtures, as they do not sow well together; 2 bushels of the light and 12 lbs. of the heavy seeds are allowed per acre.

Mr. GIBBS, giving his personal attention to the assorting of these mixtures assures his friends that every care is taken with regard to the proper proportions.

MIXTURES FOR PERMANENT MEADOW & PASTURE (adapted to the different soils) 32s. to 34s. per acre.
MIXTURES FOR IMPROVING & RENOVATING OLD GRASS LAND (8 to 12 lbs. per acre) 1s. per lb.
MIXTURES OF THE FINEST SORTS FOR LAWNS, GRASS PLOTS, BOWLING GREENS, &c, 1s. 3d. per lb.

SELECT STOCKS OF THE UNDERMENTIONED AGRICULTURAL SEEDS SUPPLIED AT THE PRICES STATED FOR THE PRESENT MONTH:—

MANGEL WURZEL.	Per lb.—s. d.	CARROTS.	Per lb.—s. d.	SWEDES.	Per lb.—s. d.	RYE-GRASS.	Per bushel—s. d.	CLOVERS.	Per lb.—s. d.	VARIOUS.	Per lb.—s. d.
Long Red	.. 0 9	White Belgian	.. 1 0	Ashcroft ..	.. 0 9	Gibbs' Improved Italian	7 0	English Red ..	9d. to 0 10	Holcus saccharatus	.. 2 0
Elvethan Long Red ..	.. 0 10	Yellow Belgian	.. 1 3	Skirving's	.. 0 9	Dickenson's Italian	.. 7 0	White Dutch ..	10d. to 1 0	Lucerne	.. 1 0
Yellow Globe	.. 0 9	Large Altringham	.. 1 6	Matson's	.. 1 0	Fine Imported do.	.. 7 0	Trefoil	4d. to 0 5	Drumhead Cabbage	.. 3 0
Red Globe	.. 0 9	Long Surrey ..	.. 1 6	Kentish Green Crown	1 0	Common English..	.. 6 0	Alsike Hybrid ..	.. 2 0	Large Cattle Parsnip	.. 1 6
Long Yellow	.. 0 9	James's Scarlet	.. 1 6	Marshall's Purple Top	.. 1 0	Pacey's Perennial..	6s. to 7 0	True Cow-grass..	.. 1 0	Kohl Rabi	.. 5 0

Full Priced Catalogues sent free on application.—Cash or reference required from unknown Correspondents.

GEORGE GIBBS & Co., 26, Down Street, Piccadilly, London, W.

LAING'S MAMMOTH RED CELERY.—This is the largest yet grown, attaining the extraordinary weight of from 10 to 12 lbs., and is perfectly solid. It is nearly perennial in its habit, as it will not under any circumstances run to seed the first season. In flavour it is unsurpassed, and may be deemed a new feature in the garden from the fact that it may be had for use all the year. Packets free per post, 1s.; large trade packets, 3s. 6d. Postage stamps received in payment.—YOUELL & Co., Royal Nursery, Great Yarmouth.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their NEW PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Stove, Greenhouse, and Hardy Ferns, Miscellaneous Stove, Greenhouse, and Hardy Plants, Variegated and Ornamental foliaged Plants, Conifers, Roses, Rhododendrons, Indian Azaleas, Gloxinias, Fuchsias, Cactuses, &c., is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

PAGE'S BLIGHT COMPOSITION.

Extra strong, 4s. per gallon, sufficient to make Four.

TEN GALLONS AND UPWARDS CARRIAGE FREE TO LONDON.

SEVEN YEARS' EXTENSIVE MANUFACTURE HAS ENABLED

PAGE & TOOGOOD

TO effect great improvement in their Blight Composition. It is prepared upon chemical principles to destroy SCALE, THRIP, MEALY BUG, RED SPIDER, MILDEW, &c., without injuring vegetation. The Testimonials have become too numerous to publish and they append the names only, but even these form but a small proportion of those who use it.

A. Toward, Esq., Osborne
F. Malleson, Esq., Claremont
Mr. Forbes, Woburn Abbey
Mr. Butcher, Middleton Park
Mr. Snow, Wrest Park
Mr. Bailey, Nuneham Park
Mr. Dowling, Holly Hill
Mr. Farthing, Grange Park
Mr. Moore, Hawick Hall
Mr. Lucas, Broadlands
Mr. Dawson, Panshanger
Mr. Whale, Rushmore
Mr. Stephenson, Lambton Cstl.
Mr. Sage, Gopsall Hall
Mr. Challis, Trafalgar House
Mr. Mitchell, Escrick Park
Mr. Poole, Packington Hall
Mr. Porter, Chesterford
Mr. Brown, Wilton House
Mr. Tillyard, Heckfield
Mr. Watt, Aswarby Park
Mr. Doat, Wiston Hall
Mr. Russ, Boscombe Lodge
Mr. Chard, Clarendon Park
Mr. Robertson, Easton Hall
Mr. Oliver, Ewell Grove
Mr. Doswell, Mottisfont
Mr. Martin, Lullingstone Cstl.
Mr. Allen, Stratton Park
Mr. Thorn, Holly Brook
Mr. Smithers, New Appleton
Mr. Packman, Ewell Castle
R. J. Spranger, Esq., Southend House
The Rev. F. Glossop, West Dean Rectory
Mr. Thorne, Melchet Park
Mr. Robinson, Warnford Park
T. Higgs, Esq., Stapleton Road
Mr. Robeson, Vale Lodge
Mr. Challis, Bramshaw Hill
C. Lane, Esq., Badgemore
Mr. Hamlett, Lisle Villa
Mr. M'Donald, Sennicotts
Mr. Steptoe, Upton House
Miss Parry, Westbury House
Mr. Peel, Cambridge House
Mr. Taylor, Ruddington Grnge
Mr. Beagarie, Tring Park
Mr. Shakespear, Manchester
Mr. Lambert, Oakwood
Mr. Dawes, Marelands
Mrs. Gundry, Hyde
Mr. Jones, Hampworth Lodge
Mr. Olarenshaw, Somerford Hall
Mr. Campbell, Sutton Hall
Mr. Underwood, Stoke Park
Mr. Shepherd, High Elms
Mrs. Fenwick, Field Green
T. Hoskins, Esq., Haselbury
Mr. Clayton, Cantley Hall
Mr. Gregory, Hazeley House
Mr. Campbell, Avington Park
Mr. Warren, Somerton
W. H. F. Cavendish, Esq., Agot St. Lawrence
Mr. Cleeton, Dumbleton House
Mr. Cox, Readleaf
Mr. Perkins, Northampton
Mr. Winzer, Wracklefield House
Mr. Jobson, Rotherfield Park
Mr. Reith, Preston Candover
Mr. Buckland, Little Houghton
Mr. Mackie, Delapre Abbey
Mr. Bell, Abbey Manor
W. Stride, Esq., Redbridge
Mr. Dummer, Bishopstoke
The Rev. E. T. Richards, Farlington
J. Staples, Esq, Belmont Hse.
Mr. Wilkins, Marchwood Ldge
Mr. Forbes, Warrens
Mr. Wilson, Wimborne
Mr. Haslar, Bannister Court
Mr. Robbins, Oakley Hall
Mr. Menzies, Ferne Park
Mr. Pullinger, Brookfield Ldg.
Mr. Hibbard, Fir Grove
Mr. Smith, Barnfield
Mr. Menmuir, Brooklands
Mr. Hocking, Fox Hills
Mr. Bowen, Dean House
Mr. Ratty, Hartley Grange
Mr. Lush, Bevois Mount
Mr. Bundey, North Stoneham
Major Munday, Hollybank
Mr. Minnett, Tweed
Mr. Taylor, Portswood
Mr. Gosling, Wherwell Priory
Mr. Cull, Boldre
Mr. Mitchell, Dudmaston Hall
Mr. White, Paultons
Mr. Spivey, Hallingbury
Mr. Gaiger, Southington House
Mrs. Moore, Wickham
Mr. Smith, Botleys Park
Mr. Atkins, Botley Hill
Mr. Barnes, Hamble Rectory
Mr. Jones, Southgate House
Mr. Wraight, Sittingbourne
Mr. Harris, Tatchbury Mount
Mr. Daniels, Swycombe House
Mr. Page, Birches Green
Mr. Jones, Bossington House
The Hon. and Rev. F. Curzon, Mickleover
The Rev. W. M. Frost, Tring Rectory
Mr. Hume, Poles
Mr. Hawes, Woodbridge Cottage
W. H. T. Hawley, Esq., West Green House
Mr. Cooke, Badger Hall
Mr. Percy, Highfield Rectory
Mr. Walker, Pylewell House
Mr. Lucas, Burley Manor
Mr. Wren, Moreton Hall
Mr. Warren, East Court
W. Dickinson, Esq., New Park
Mr. Coleman, Norton Lodge
Mr. Sendall, Burningham Hall
Mr. Egerton, Bishopstoke
Mr. Dixon, Rownham Park
Mr. Webb, Smedmore
R. G. Linzee, Esq., Jermyn's House
Mr. Pratt, Bonchurch
The Rev. W. Bernard, Clatworthy
Mr. Burham, Hastings
Mr. Pomeroy, Bitterne
W. F. Rose, Esq., Rock House
A. Rowland, Esq., Rosenthal
Mr. Thomson, Stansted Park
Mr. Mountford, Kimnel Park
Mr. Priffet, Corcall Park
Mr. Johnson, Strathfieldsaye
Mr. Poole, St. Ives House
Mr. Harding, Drakelowe Hall
Mr. Frisby, Blankney Hall
Mr. Challis, Buttey
J. B. Daubrey, Esq., Offington
Mr. Perkins, Thornham Hall
Mr. Riddell, West Park
Mr. Humphreys, Bangor
J. M. Vipan, Esq., Stibbington
Messrs. Henderson & Co., Pine-apple Place
Mr. Whomes, Windsor
Messrs. Bass & Brown, Sudbury
The Rev. Jos. Gedge, Bildeston Rectory
G. Courtauld, Esq., Bocking
Mr. Jeffries, Woodbridge
Mr. W. J. Epps, Maidstone
Messrs. Wood & Ingram, Huntingdon
Mr. R. Tyers, Ripton Hall
Mr. Rackley, Down Place
Mr Afford, Wokefield Park
Mr. Marshall, Brant, Broughton
W. R. Brockton, Esq., Farndon
Mr. Talbot, Stoke Hall
Mr. Williams, Ossington
Mr. Barton, Oxton
Mr. W. F Smith, Seven Oaks
Messrs. F. & A. Dickson & Co., Manchester
Mr. Froud, Barnfield
Mr. J. Kellen, Whatley Villa
Mr. Johnson, Mauldeth Hall
Mr. Laurence, Chatteris
Mr. Baskerville, Bristol
R. Congreve, Esq., Burton
Mr. Passay, Abberly Hall
Mr. Barnes, Camberwell
Mr. Hawkins, Park Corner
Mr. Sandy, Stafford
F. Smedley, Esq., Grove Lodge
The Rev. F. Murray, Chislehurst
W. Kynvett, Esq., Marine Villa
Mr. Marriott, Nunneaton
C. King, Esq., Olney Cottage
Mr. Steel, Blandford
Mr. Graham, Chichester

AGENTS:—

Henderson & Co., Pine-apple place, London
Milne, Arnott, & Co., Wandsworth Road
Hooper & Co., Covent Garden
Veitch & Son, Chelsea & Exeter
Cutbush & Son, Highgate
W. Barnes, Camden Nursery
G. Clark, Streatham Place, Brixton Hill
F. Hopgood, Shepherd's Bush, Bayswater
Bass & Brown, Sudbury
P. & A. Dickson & Co., 14, Corporation St., Manchester
F. & A. Dickson & Sons, 106, Eastgate Street, Chester
Sutton & Sons, Reading
Wheeler & Son, Gloucester
A. Pontey, Plymouth
E. Paul, Derby
G. Wheeler, Warminster
Masters & Son, Canterbury
E. Taylor, Malton, Yorkshire
Freeman, Woburn
Fisher, Holmes, & Co., Handsworth Nursery, Sheffield
E. R. Greenus, Watford
J. B. Austen, Chemist, Banbury
Brown & Austin, Glasgow
Graham, Chichester
Standish, Bagshot
J. Sandy, Stafford
Wild, Ipswich
Page, Chelmsford
Merryweather, Leicester
Dickson, Farrell & Co., Belfast
Newcomb, Stamford
Jefferies, Cirencester
Walker, Thame
Jennings, Shipton-on-Stour
J. H. Kershaw, Chemist, Halifax
J. Perkins, Northampton
C. Turner, Slough
J. Whomes, Windsor
Mitchinson & Co., Truro
F. Brewer, Birmingham
Wood & Ingram, Huntingdon
Baskerville, Bristol
Leake & Smith, Bridgenorth
G. Davison, Hereford
G. Smith, Welwyn, Herts
R. M. Mills, Bourn
Caparn, Newark
J. Cattell, Westerham
Ivery & Son, Dorking and Reigate
Drummond & Sons, Dublin
E. P. Dixon, Hull
J. C. Fox, Witney
H. Steel, Shefford, Beds.
Wood & Son, Barbourne, Worcester
Steel, Blandford
Imrie & Son, Ayr
Gentle & Son, Peebles
W. H. Humphreys, Bangor
T. McKenzie, Cork
Jas. Dickson & Sons, Edinburgh
Saunders & Son, Abergavenny, and of

PAGE & TOOGOOD, Seed Growers and Merchants,
37 and 38, Oxford Street, adjoining Radley's Hotel (10 yards from the Railway Station), and
58, ABOVE BAR, SOUTHAMPTON.

TO THE TRADE.—MAGNIFICENT DWARF-TRAINED PEACHES, NECTARINES, AND APRICOTS.

WM. WOOD AND SON refer with pleasure to their truly superb and extensive stock of the above, which for growth and quality are quite unsurpassed, each tree being furnished with from 9 to 12 branches, well ripened and admirably trained. Also very fine Dwarf Maiden NECTARINES.
The Trade supplied on advantageous terms.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

TWO MILLIONS OF 2-YEAR SEEDLING AND TRANSPLANTED LARCH FIR,
ALSO TRANSPLANTED SPANISH CHESNUTS.

WM. WOOD AND SON have to offer a very fine stock of the above, also Seedlings of the following:—
ALDER, BEECH, SPANISH CHESNUTS, SCOTCH, SPRUCE, and SILVER FIRS, OAKS, CRAB, PEAR, EVERGREEN OAKS, and other Seedlings.
Prices will be forwarded on application.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

FRUITING VINES.

JOHN AND CHARLES LEE beg to offer extra strong short-jointed and well-ripened FRUITING VINES of the following kinds:—

BLACK HAMBURGH	BLACK FRONTIGNAN
CHAMPION HAMBURGH	WHITE FRONTIGNAN
MILL HILL HAMBURGH	BLACK PRINCE
GOLDEN HAMBURGH	ROYAL MUSCADINE
MUSCAT OF ALEXANDRIA	BIDWELL'S SEEDLING
	BOWOOD MUSCAT.

Nursery and Seed Establishment, Hammersmith, London.

FRUIT TREES IN POTS.

JOHN AND CHARLES LEE have now the largest and finest stock of FRUIT TREES IN POTS in a bearing state for FORCING AND ORCHARD HOUSES ever offered. They consist of the following kinds, a CATALOGUE of which may be had on application:—

APRICOTS	FIGS	PEARS
PEACHES	PLUMS	APPLES.
NECTARINES	CHERRIES	ALSO,

VINES AND STRAWBERRIES.
Nursery and Seed Establishment, Hammersmith, London.

AZALEA INDICA.

J. IVERY AND SON beg respectfully to invite growers of the above named to an inspection of their unrivalled Stock of Young Specimens of all the newest and best varieties, many of which have been exhibited at the Metropolitan Exhibitions. They are clean and healthy, well set with bloom, and moderate in price. Catalogues forwarded post free upon application.—Dorking Nursery, Jan. 22.

NEW SEEDS.
CHARLES TURNER'S

CATALOGUE OF VEGETABLE, FLOWER, AND AGRICULTURAL SEEDS, CULINARY ROOTS, &c., is now ready, and may be had on application. The lists are Descriptive, and in addition to Selections of all the old and established favourite varieties, contains some valuable new additions, the most prominent of which are DR. MACLEAN'S FINE DWARF NEW PEAS, THE FROGMORE PROTECTING BROCCOLI, SCARLET GEM MELON, COTTAGER'S KALE, ROSEBERRY BRUSSELS SPROUTS, PERENNIAL SPINACH, &c.—The Royal Nurseries, Slough.

THE FROGMORE PROTECTING BROCCOLI.—"A variety raised by Mr. Ingram, of the Royal Gardens. Its merits consist in its extreme hardiness, in its being very dwarf, in its leaves cabbaging or wrapping very closely over the heads till they are large enough for use to effectually protect them from the action of severe weather. In the latter respect it is much superior to Knight's Protecting; the heads are large, white, tender, and excellent, and altogether it must be considered a great acquisition to the class to which it belongs."—*Gardeners' Chronicle*, May 15, 1858. 2s. 6d. per packet.
The Royal Nurseries, Slough.

TO THE SEED TRADE.

CHOICE STOCKS OF SEEDS GROWTH OF 1858.—The undermentioned Seeds having been grown from choice stocks in larger quantities than we required for retailing, we are prepared to offer a portion of each kind, or either of them at very low prices:—

IMPROVED GLOUCESTERSHIRE WHITE SWEDE
SUTTON'S LINCOLNSHIRE RED GLOBE TURNIP
SUTTON'S IMPERIAL CABBAGE
SUTTON'S EARLY DWARF COMBE CABBAGE

Reading Onion	Paradise Marrow Pea
Danver's Yellow ditto	Tweeddale Purple-top Turnip
James's Long-keeping ditto	Yellow Tankard Turnip
Dickson's Favourite Pea	Green Globe ditto

Green Round Turnip (old sort).

The above were grown by or expressly for us from our own stocks and can be confidently recommended. Applications for prices, stating quantity required, addressed as below, will be replied to promptly and liberally.
SUTTON & SONS, Seed Growers, Reading, Berks.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, and FREDERICK MULLETT EVANS, of No. 20, Queen's Road West, both in the Parish of St. Pancras, in the Co of Middlesex, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and published by them at the Office, No. 5, Upper Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—SATURDAY, January 22, 1859.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 5.—1859.] SATURDAY, JANUARY 29. {Price Fivepence. STAMPED EDITION, 6d.

INDEX.

Agriculture, steam	79 b	Kale, Cottager's	73 c
Algæ, marine	75 c	Labourer, condition of	81 b
Analyses of manures	83 a	Lentil mules	71 c
Angræcum sesquipedale	76 a	Linnean Society	75 a
Avenues, trees for	73 c	Lois-Weedon farming	80 b
Bean, Hybrid Kidney	71 c	Manures, analyses of	83 a
— New Zealand	74 c	Melbourne Bot. Garden	72 c
Blackthorn, to sow	76 c	Mules, Leguminous	71 c
Chemical Society, Dublin	83 a	Oude, Past and Present	75 a
Cottager's Kale	73 c	Pear, Josephine de Malines	71 c
Cottage Imp. Society	82 a	Pea Lentil	71 c
Dodder, Vine	72 a	Ploughs, wheel v. spring	75 c
Education, practical	83 c	Potatoes, to grow sound	74 c
Entomological Society	74 c	Pots, compartment cutting	74 c
Farming, Lois-Weedon	80 b	Rain in 1858	74 b
Fuchsia, culture of	73 c	Roses, pruning	73 b
Gardeners' Benevolent Institution	74 b	Rose stock, Manetti	74 a
Glass's Gardening	74 b	Scolytus destructor	74 a
Grapes, out-door	74 c	Stock feeding	78 a
Guano statistics	77 c	Timber tree insects	74 c
Henderson's (E. G.) nursery	75 c	Trade Lists	75 c
Highland Soc. and Mr. Lawson	77 c	Trees for avenues	73 c
Hybrids, Leguminous	71 c	Veterinary Review	83 b
Insects, timber tree	74 a	Vine Dodder	72 a
— leaf eating	76 a	Vineries, plants in	74 a
Irish pauperism	84 a	Wages, W. of England	80 c
		Weather in Devon	74 a

BRITISH POMOLOGICAL SOCIETY, St. James's Hall, 60—71, Regent Street — The next Meetings for the Examination of FRUITS will be held on THURSDAYS, February 3 and March 3. For further particulars see last week's Paper, or apply to

WILLIAM DAVIDSON, Secretary.
2, Randolph Road, Maida Hill.

The following Premiums will be offered:—

Feb. 3.—*2l.* *2s.* and *1l.* *1s.*, for the best and second best collections of Six varieties of Late Dessert Pears. (Open to growers only.)

March 3.—*2l.* *2s.* and *1l.* *1s.*, for the best and second best collection of well-kept Apples and Pears, accompanied by careful descriptions of the manner in which they have been kept. (Open to growers only.)

ALEXANDER FORSYTH, Landscape Gardener, 13, Islington Square, Salford, Manchester.

GRAPE VINES FROM EYES.

J. EATON has a few left, very strong and quite ripe, which he can recommend for Forcing; sorts, Black Hamburgh, Muscat Alexandria, and Sweetwater. Likewise a very fine stock of Vines, wood ripe, fit for bedding out. An early inspection is recommended.
Shacklewell Road, Stoke Newington, N.

GRAPE VINES FROM EYES.

R. GLENDINNING has this season a very large and extensive assortment of all the best kinds of GRAPE VINES. They comprise all the well known established varieties, as well as those recently sent out; the wood is ripened from 5 to 10 feet high. Those who intend planting Vines would do well to inspect this collection.
Chiswick Nursery, near London.—Jan. 29.

THE GREAT VINE AT HAMPTON COURT.

THE SUBSCRIBERS being the holders of the Royal Kitchen Gardens, Hampton Court, are enabled to offer genuine the famous and truly excellent HAMPTON COURT BLACK HAMBURGH GRAPE.

Strong well-ripened plants in 9-inch pots, 42*s.* and 60*s.* per doz.
" " fruiting plants in 12-inch pots, 10*s.* 6*d.* each.

If purchased in large numbers a considerable reduction will be made in price.—Jackson & Son, Nurseries, Kingston, S.W.

ON SALE, or in EXCHANGE for VINES, about 200 PINE PLANTS, 1 and 2 years old.—Apply to Mr. J. Hargreaves, High Street Gardens, Lancaster.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY (Limited) supply every requisite for the Farm and the Garden.
Registered Offices, Union Road, Plymouth.

DODECATHEON ELEGANS.

DOWNIE and LAIRD have a large healthy stock of the above beautiful, hardy, herbaceous Plant, which they offer to the trade at 25*s.* per 100.
17, Frederick Street, Edinburgh.

YELLOW ROSES.—Madame William, orange yellow; Isabella Gray, golden yellow. Strong plants, fit for immediate forcing, 8*s.* 6*d.* the pair.
A. Paul & Son, Nurseries, Cheshunt, Herts.

DESCARTES ROSE STOCKS.—The best Dwarf Rose Stock known is the cultivated ROSE DESCARTES, being proved nine years. Price 12*s.* per 100, with trade allowance. STANDARD MANETTIS, 9*s.* per 100; also fine tall LAURELS, with other EVERGREENS, SHRUBS, &c.—Apply to J. J. Foster, Edgware Nurseries.

PINE APPLES WANTED,
Forward "Immediately" to
GEORGE TAYLOR,
Choice Fruit and Vegetable Salesman,
St. John's Market, Liverpool.

EARLY CUCUMBER.

CARTER'S EARLY CHAMPION CUCUMBER, price 20*s.* per oz., to be had in any quantity of J. G. Waite, Seed Establishment, 181, High Holborn, London, W.C.

CHAMPION CABBAGE can be had in any quantity at 2*s.* per lb.
J. G. Waite, Seed Establishment, 181, High Holborn, London.

NEW PERENNIAL SPINACH.—Mr. Poulter, Gardener to Lord Chesham, writes:—"This is one of the most valuable additions to the kitchen garden which we have had for years; no one who has a demand for Spinach should be without it." 1*s.* per packet.—The Royal Nurseries, Slough.

THE ROSEBERRY BRUSSELS SPROUTS.—"We never before saw any so fine. The stalks, 18 inches high, were literally studded with sprouts throughout their length, and many of the sprouts were as large as moderately-sized Apples."—*Cottage Gardener.* 1*s.* per packet.
Royal Nurseries, Slough.

PURCHASERS OF LARGE QUANTITIES OF GARDEN OR FARM SEEDS will be treated liberally on application to Sutton & Sons, Royal Berkshire Seed Establishment, Reading.

CATALOGUE.

YOUELL and CO'S GENERAL and DESCRIPTIVE PRICED CATALOGUE for this season is now ready, and will be sent free on application.
It contains detailed Lists of Greenhouse Plants, Conifers, Shrubs, as well as all the newest introductions in Soft-wooded Plants.—Royal Nursery, Great Yarmouth.

KITCHEN GARDEN SEEDS.

JOHN CATTELL begs respectfully to announce that his CATALOGUE of the above may be had free by return of Post. It contains selections of the most approved culinary vegetables in cultivation, nearly the whole of them having been saved under J. C.'s own personal superintendence.—Nursery and Seed Establishment, Westerham, Kent.

JOHN GRIER'S NEW PRICED CATALOGUE, with brief descriptive and cultural remarks of a selection of TREES, SHRUBS, and PLANTS, may be had upon application by enclosing One Stamp for Postage.—Waterhead Nursery, Ambleside, Jan. 29.

WILLIAM YOUNG'S DESCRIPTIVE CATALOGUE of NEW HARDY ORNAMENTAL PLANTS, CONIFERÆ, ROSES, RHODODENDRONS, FOREST TREES, &c. Can be had on application.—Milford Nurseries, Godalming.

GEORGE BAKER begs to inform the Nobility and Public that his DESCRIPTIVE CATALOGUE of AMERICAN PLANTS and GENERAL NURSERY STOCK will be sent free on application.
American Nursery, Windlesham, near Bagshot, Surrey, about 1 mile from Sunningdale Station, South Western Railway.

GEORGE JACKMAN and SON'S PRICED and DESCRIPTIVE CATALOGUE of GENERAL NURSERY STOCK for 1858 and 1859 can be had free on application.
Woking Nursery, Woking, Surrey.

JAMES LOTHIAN respectfully intimates that his ANNUAL LIST OF VEGETABLE, FLOWER, AND AGRICULTURAL SEEDS for 1859 is now ready, and will be forwarded upon application.—Campbellton, Argyleshire.

NEW CHRYSANTHEMUMS.

JOHN SALTER begs to inform the numerous applicants for his NEW CATALOGUE OF CHRYSANTHEMUMS that it will be published in February, in which his splendid Seedlings and other new varieties for 1859 will be fully described, as well as his unrivalled general collection, which is the largest in Europe.—Versailles Nursery, William Street, near Hammersmith Turnpike, W.

MESSRS. B. ROEZL and CO.'S CATALOGUE OF MEXICAN SEEDS AND PLANTS to be had on application to Messrs. B. A. Grautoff & Co., 4, Lime Street Square, London.

CHOICE NEW GLADIOLI.

CHARLES ALEXANDER, 30, West Register Street, Edinburgh, has a fine STOCK of the above from France and Holland.—Descriptive Priced Lists free on application.

GOLDEN CHAIN GERANIUMS.

WILLIAM HUSSEY begs to offer the above at 4*s.* per dozen, or 30*s.* per 100. Also several thousand seedling HOLLYHOCKS, raised from a fine named Collection, at 2*s.* per dozen, or 12*s.* per 100.—Horticultural Gardens, Norwich.

LANCASHIRE SHOW GOOSEBERRIES.—Two selected varieties, the heaviest and finest flavoured from our unrivalled stock, 6*s.* per dozen; Black Currants, 2*s.* per dozen; Red Currants, 3*s.* per dozen; White Currants, 3*s.* per dozen, the finest varieties.—Holland, Dodwell & Bayley, Bradshaw Gardens, Chadderton, Manchester.

RASPBERRIES 10*s.*, CURRANTS, good plants, 12*s.* per 100; Strawberries, British Queens, Elton Pine and Keen Seedlings, 10*s.* per 1000 or 1*s.* 6*d.* per 100. Large Laurustinus.—George Cornwell, Market Gardener, Barnet.

EARLY POTATOES FOR SEED.—A quantity of German and Dutch SILVERSKINS, just imported, quite free from disease, price 10*s.* per bushel, package included. Country orders require a remittance or a reference in London.—Address, T. Chamberlayne, Hungerford Wharf, W.C.

NEW SORTS OF POTATOES.

FIFTYFOLD KIDNEY.	RED EARLY ASH-LEAF.
WELLINGTONS.	OMAR PACHA.

Sutton & Sons, Reading, recommend the above as prolific and fine flavoured Potatoes, which come off early so as to escape the disease. Price 3*s.* 6*d.* per peck, or cheaper in large quantities.

VERY TRUE, SHORT TOPPED, ASH-LEAVED KIDNEY POTATOES, 14*s.* per cwt., warranted true.
Henry May, The Hope Nurseries, near Bedale, Yorkshire.

YORK REGENTS.—Warranted True. Excellent Sets will be delivered free at the Kingston or Twickenham Stations, in quantities not less than 1 bushel; or if a sack is taken, within a distance of 6 miles from Teddington, at 3*s.* per bushel.—Address R. D. Blackmore, Corycian Garden, Teddington, S. W.

HOLCUS SACCHARATUS, or CHINA SUGAR-CANE GRASS.—Seed of this lately introduced Fodder plant can be supplied by Nutting and Sons in any quantity. Price on application.—Seed Warehouses, 60, Barbican, London, E.C.

HOLCUS SACCHARATUS, or North China Sugar-Cane, 2*s.* per lb. Pamphlet, "A Visit and a Plant;" or Hints on the Cultivation of the above, and its Uses. Post free 6*d.*, or gratuitous with all orders for 10 lbs. and upwards.

DIOSCOREA BATATAS, or Chinese Yam; strong roots, 4*s.* per dozen; with directions for cultivation.
John W. Clarke, Whittlesea, Cambridgeshire.

TO THE TRADE.—Magnificent Dwarf-trained Peaches, Nectarines, and Apricots.

WM. WOOD and SON refer with pleasure to their truly superb and extensive stock of the above, which for growth and quality are quite unsurpassed, each tree being furnished with from 9 to 12 branches, well ripened and admirably trained. Also very fine Dwarf Maiden NECTARINES.
The Trade supplied on advantageous terms.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

CONIFERÆ.

A. PAUL and SON have a large stock of the above, very handsome, in fine order for removal, many suited for immediate effect. For particulars see Advertisements in *Gardeners' Chronicle* of November and December last.—Nurseries, Cheshunt, Herts.

TO THE TRADE.

R. GLENDINNING begs to offer the following MAIDEN TREES of first class quality; they comprise the leading sorts, and guaranteed true to name, Peaches, Nectarines, Apricots, Plums, and Apples.
Chiswick Nursery, near London, W.—Jan. 29.

JOHN ADAMS and CO., Nurserymen, Brentford, Middlesex, have a large stock of very fine DWARF MAIDEN MOORPARKS; strong cut-back DWARF APPLES of the best kinds, fit for Market Garden planting. Very fine DWARF-TRAINED CHERRIES and PEACHES and NECTARINES.

COMMON LAURELS FOR IMMEDIATE EFFECT.

THE SUBSCRIBERS beg to offer their immense Stock of the above, strong transplanted bushy plants grown singly, 1½ to 2½ ft., 3*l.* 10*s.*; 3 ft., 5*l.*; 3 to 4 and 5 ft., 6*l.* per 1000, and all other Nursery Stock equally reasonable. Prices on application.—Wm. Jackson & Co., Nurseries, Bedale, Yorkshire

NURSERY STOCK.

THE Subscribers are disposing of their extensive stock of Seedling and Transplanted Forest Trees, Ornamental Trees, Evergreen and Deciduous Shrubs, Standard and Dwarf-trained Fruit Trees, Gooseberries and Currants, &c., at prices considerably reduced in consequence of dissolving partnership.—Priced Lists may be had on application.
Glasgow, Jan. 29. Fowler & Wright.

FRUIT TREES.—The Trade can be supplied with an excellent Stock of DWARF MAIDEN MOORPARKS and strong, cut back DWARF APPLES, consisting of Manks Codlin, King of the Pippins, Dumelow's Seedling, Blenheims, Hawthorndens and Keswick Codlins; also a large Stock of very fine DWARF-TRAINED CHERRIES and DWARF-TRAINED PEACHES and NECTARINES, all strong handsome plants. Early application is necessary, to John Adams & Co., Nurserymen, Brentford, Middlesex.

ONE MILLION ONE-YEAR SEEDLING OAKS
(Strong and Stout).

JAMES MELDRUM, Nurseryman, Kendal, Westmoreland, offers the above in quantities to suit purchasers. Price reasonable, on application.
N. B. Also a quantity of strong clean Transplanted CRAB STOCKS 3 to 4 feet; ALDERS, 4 feet; and a quantity of LARCH of different ages.

THREE MILLIONS OF TRANSPLANTED QUICKS.

GEORGE CHIVAS, Chester, offers the above to the notice of Planters, which for extent and quality he believes are unequalled in the kingdom. A Sample Bale containing 100 of each five sizes forwarded on receipt of a Post-office Order for 15*s.* Truck loads delivered free at any Railway Station having through communication with Chester.

TO PLANTERS.—Fine stock of Larch, 1½ to 3 feet Scotch Firs, 1½ to 2 feet; Beech, 1½ to 4 feet; Elms, 3 to 6 feet; Evergreen Privets, Common Hollies, 1 to 1½ foot; fine Healthy Plants, with all other kinds of Nursery Stock. Samples and price on application to John Scholey, Pontefract Nurseries.

TO PLANTERS.

200,000 FINE TRUE SCOTCH FIR, 1½ to 2 feet, at 14*s.* per 1000.—Large quantities of strong LARCH, QUICKWOOD, BEECH, SPRUCE FIR, SILVER FIR, &c.—Address, Henry May, The Hope Nurseries, near Bedale, Yorkshire.

500,000 EXTRA FINE TRANSPLANTED LARCH FIR, from 1 to 5 feet. Also SPANISH CHESNUTS.—Samples and Prices can be had on application to Wm. Wood & Son, Woodlands Nursery, Maresfield, near Uckfield, Sussex.

TO THE TRADE.

2000 yards of superior DWARF BOX for Edging. Price on application.
CURRANT AND GOOSEBERRY TREES, 16*s.* per 100.
James Holder, Nurseryman, Reading, Berks.

PAMPAS GRASS (Gynerium Argenteum).—The beauty of this extraordinary plant has this season been fully appreciated. It can be supplied by the dozen, hundred, or thousand, by Charles Noble, Bagshot, Surrey.

PERENNIAL AND ITALIAN RYE-GRASS.

McBLAIN and CO., Seedsmen, Newry, Ireland, offer to the Trade PERENNIAL and ITALIAN RYE-GRASS of every description. Samples and offers on application.

GIANT SAINFOIN SEED.—Seed of this excellent and productive Plant may be had of Raynbird & Harvey, Basingstoke, and 89, Seed Market, Mark Lane. Samples and prices on application.
N.B. R. & H. can also supply Common Sainfoin both of English and French growth at market prices.

THE PRIMULARY.—Expressly for the cultivation of Latter's superb Semi-double Fimbriated CHINESE PRIMROSES of world-wide celebrity, with all the latest improvements in size, shape, substance, and colours. Seed in packets, post free, to all parts of the world on receipt of 2*s.* in stamps.
Thomas Wild, The Primulary, Hanford [illegible]

NEW SEEDS.

CHARLES TURNER'S

CATALOGUE OF VEGETABLE, FLOWER, AND AGRICULTURAL SEEDS, CULINARY ROOTS, &c., is now ready, and may be had on application. The lists are Descriptive, and in addition to Selections of all the old and established favourite varieties, contains some valuable new additions, the most prominent of which are DR. MACLEAN'S FINE DWARF NEW PEAS, THE FROGMORE PROTECTING BROCCOLI, SCARLET GEM MELON, COTTAGER'S KALE, ROSEBERRY BRUSSELS SPROUTS, PERENNIAL SPINACH, &c.—The Royal Nurseries, Slough.

THE SALWAY PEACH.

CHARLES TURNER can supply strong dwarf-trained Trees of this new and valuable late Peach at 7*s.* 6*d.* each. Maiden Trees, 5*s.* each. The SALWAY PEACH is strongly recommended as an acquisition of great worth.

A dish of this fruit was sent to the Meeting of the Fruit Committee of the Horticultural Society, October 19, 1858, who reported:—"The Salway Peach is a melting variety, with orange flesh, sweet and rich. It was considered a first-rate late Peach."—The Royal Nurseries, Slough.

NEW MELON.

TURNER'S SCARLET GEM MELON.—An early and most prolific variety, and by far the best flavoured of the scarlet-fleshed Melons, having taken Seven First Prizes during the past season at the great exhibitions. It is well netted and handsome.

Mr. Bailey, the very successful fruit grower, of Shardeloes Gardens, Amersham, having grown this variety for two seasons, reports that "it is by far the best Melon he has ever cultivated of either class. Its superior flavour alone entitles it to a first place, besides other good qualities, among which is its easy culture." 2*s.* 6*d.* per packet.—The Royal Nurseries, Slough.

THE FROGMORE PROTECTING BROCCOLI.—"A variety raised by Mr. Ingram, of the Royal Gardens. Its merits consist in its extreme hardiness, in its being very dwarf, in its leaves cabbaging or wrapping very closely over the heads till they are large enough for use to effectually protect them from the action of severe weather. In the latter respect it is much superior to Knight's Protecting; the heads are large, white, tender, and excellent, and altogether it must be considered a great acquisition to the class to which it belongs."—*Gardeners' Chronicle*, May 15, 1858. 2*s.* 6*d.* per packet.
The Royal Nurseries, Slough.

TURNER'S COTTAGER'S KALE.—Specimens of this new, hardy, prolific, and delicious Vegetable were exhibited in February last, and were found to possess superior excellence, the Horticultural Society of London awarding it a Certificate of Merit. It was also exhibited at the Great Fruit Show, St. James's Hall, in November last, and again received a Certificate, Professor Lindley pronouncing it to be both "new and invaluable," being unsurpassed for sweetness and tenderness. Sealed packets, 1*s.* each. A list of Agents that can supply it true was published Oct. 16, 1858, in the *Gardeners' Chronicle*.—The Royal Nurseries, Slough.

SEED POTATOES.—The best Early Kinds are:—
ASHLEAF, true.
ASHLEAF, MYATT'S PROLIFIC, a very excellent first early variety, the productiveness of which is remarkable.
EARLY OXFORD (SODEN'S), a fine variety for frame or first crop. One of the best Potatoes grown.
EARLY SURPRISE, early, a fine large variety, and a good cropper.

Also the following select varieties for general crop:—

Brighton Kidney	Early Uxbridge
Brockley Kidney	Early Frame
Fluke	Fortyfold
Looker's Kidney	Flourball
	Hundredfold
ROUND VARIETIES.	Perkins's Seedling
American Seedling	Prince of Wales
White Fortyfold, alias British Queen	Tarku's Seedling
	Wellington

CHARLES TURNER has fine samples of the above.
The Royal Nurseries, Slough.

NEW SEEDS FOR 1859.

WM. CUTBUSH AND SON beg respectfully to intimate that their PRICED CATALOGUE OF VEGETABLE AND FLOWER SEEDS, &c., is now ready post free on application. WM. C. AND SON devote particular attention to this department of their business, and most of the choicer kinds of culinary seeds and roots are saved under their own inspection, and they can confidently guarantee the quality of all offered.—Highgate Nurseries, London, N. Established A.D. 1695.

SEED CATALOGUE.

E. P. DIXON has great pleasure in announcing to his patrons and friends that his CATALOGUE OF KITCHEN GARDEN, FLOWER SEEDS, &c., is now ready, and he will be happy to forward a copy free upon application.

KEMP'S EARLY INCOMPARABLE CABBAGE is quite a distinct variety, and superior to any other known kind; of delicious flavour, dwarf habit, extra early, attains a very large size, does not run to seed, and every plant warranted to Cabbage, 1*s.* per packet.

SUNDERLANDWICK PRIZE CUCUMBER, wherever exhibited has always obtained the first prize, 1*s.* 6d. per packet.

YORKSHIRE PRIZE CUCUMBER, fine dark green, and very free bearer, 1*s.* 6*d.* per packet.

PETURION GOURD, 1*s.* per packet.

CATALOGUE of CONIFERÆ, &c., now ready.
Seed Establishment, 57, Queen Street, Hull.

SORGHUM OR HOLCUS SACCHARATUS,

CHINESE SUGAR CANE GRASS.

SUTTON AND SONS having imported largely of new Seed of the true HOLCUS SACCHARATUS, can supply it at reduced price according to quantity required.

CAUTION.—SUTTON & SONS respectfully intimate to intending cultivators of the Sorghum or Holcus saccharatus, that other varieties of Sorghum are in the market which are comparatively destitute of saccharine and nutritive properties.

The Stock SUTTON & SONS have provided is the true saccharine species procured from the same Continental source from which they have imported in previous seasons. Present price 2*s.* 6*d.* per lb., or cheaper in large quantities; quantity required per acre, 8 lbs. Instructions on Cultivation will be sent with the Seed.

Royal Berkshire Seed Establishment, Reading.—Jan 29.

TO THE TRADE AND OTHERS ENGAGED IN PLANTING.

WILLIAM CORNWELL begs to offer the following, of which he has a large stock on hand, well grown and warranted true to name:—Standard and Dwarf ROSES of all the leading kinds; Dwarf Trained Peaches, Nectarines, and Apricots; Dwarf Maiden Do. Do.; Dwarf Trained Apples, Pears, Plums, &c.; Red and Black Currants; Larch Fir, 2 to 3 feet; Scotch Do., 1½ to 2 feet; Do., 2 to 3 feet; Cedrus Deodara, 2 to 3 feet; White and Yellow Broom, 2 to 3 feet; Double Furze in pots; Cotoneaster microphylla in pots; Irish Ivies in pots; Berberis aquifolium, 2 to 3 feet; Box Edging; Box, green, 2 feet; Laurel, common, 2 to 3 feet and 3 to 4 feet, bushy; Passiflora cærulea in pots; Privet Evergreen, 2 to 3 feet; large Scarlet Rhododendrons, 4 to 8 feet; ponticum and Cattawbiense, do.; Andromedas, Hardy Heaths, Ledums, &c.; a large stock of most kinds of Evergreens, Flowering Shrubs, Ornamental Trees, &c.—The Nurseries, Barnet, Herts.

NEW SORTS OF SEEDS.—

Sutton's Berkshire Hero Pea	New Zealand Runner Bean
Turner's Cottager's Kale	Asparagus Kale
Standhoulder Cauliflower	Frogmore Protecting Broccoli
Winnigstaddt Cabbage	Ward's Late White ditto
Intermediate Carrot	Pomeranian Cabbage
Sutton's Superb Lettuce	New Giant Onion
Tom Thumb Pea, 1*s.* 6*d.* quart	White Olive-shaped Radish

Also many new and rare kinds of Flower Seeds and Agricultural Seeds. Price List on application.
SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

SPECIMEN TEA-SCENTED ROSES, in 8-inch pots. Strong plants for Exhibition, from 3*s.* 6*d.* to 5*s.* each.

The same kinds and many other leading sorts can be supplied as Half-specimen Plants, in 6-inch pots, at 24*s.* and 30*s.* per doz.

TEA-SCENTED.—Buret, Blanche de Solville, Bougère, Canaris Clara Sylvain, Comte de Paris, David Pradel, Elize Sauvage, Eugénie Desgaches, Général Tartas, Goubault, Jeannie Deans, La Sylphide, Laurette, Le Cameléon, Le Pactôle, Léontine de Laporte, Madame Bravy, Maréchal Bugeaud, Mélanie Willermoz, Mélanie Oger, Nina, Safrano, &c.

The Subscribers will be happy to furnish extra fine strong plants of the above named Roses adapted for Exhibition.

Early orders are respectfully solicited to ensure the strongest plants.—WM. WOOD & SON, Woodlands Nursery, Maresfield, near Uckfield, Sussex.

THE LARGEST STOCK OF

TEA-SCENTED ROSES in the kingdom.—Upwards of 10,000 DWARF TEA ROSES in pots, fine healthy plants now ready for sending out, consisting of all the best leading kinds, and comprising among others—

750 Mélanie Willermoz	300 Maréchal Bugeaud
500 ,, Oger (yellow)	300 Madame Bravy
500 Vicomtesse de Cazes (do.)	300 Le Pactôle, yellow
500 Souvenir d'un Ami	300 Niphetos, fine white
500 Safrano	300 Goubault
400 Devoniensis	300 Canari (yellow)
400 Adam	

400 Miss Gray or Isabella Gray, TRUE, yellow Rose, &c.

Plants presented to compensate for carriage.—Address WM. WOOD & SON, Woodlands Nursery, Maresfield, near Uckfield, Sussex.

A COLLECTION OF SUPERB YELLOW ROSES.

TEA-SCENTED.	Dwarf plants in 4-inch pots.	Dwarf plants in 6-inch pots.
	Each.	Each.
Barillet Deschamps, pale lemon	1*s.* 6*d.*	2*s.* 6*d.*
Canari, bright yellow	1 6	2 6
Elize Sauvage, yellow, very fine	2 0	3 0
Gloire de Dijon, fawn shaded salmon	1 0	2 0
Le Pactôle, lemon; yellow centre	1 6	2 6
Louise de Savoie, lemon yellow	2 6	3 6
Mélanie Oger, pale yellow ..	1 6	2 6
Pauline Plantier, yellowish white	1 6	2 6
Vicomtesse de Cazes, bright orange yellow	2 0	3 0
Yellow, or Jaune; pale sulphur	1 6	2 6
YELLOW NOISETTE ROSES.		
Adelaide Pavie (new) pale lemon	3 6	
Augusta, sulphur; similar to Solfaterre	1 6	2 6
Claudia Augustin, white, with yellow centre	3 6	
Lamarque, lemon; very large ..	1 6	2 6
Madame Schulz, canary-shaded carmine	2 0	3 0
Miss Gray, or Isabella Gray; bright yellow	2 6	3 6
Narcisse, sulphur yellow ..	2 0	3 0
Solfaterre, bright sulphur yellow	1 6	2 6

WM. WOOD & SON beg leave to offer fine strong plants of the above-named superb yellow Roses. Plants will be presented to compensate for distant carriage.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

ROSES, &c.—Fine Tall Standard Roses, best kinds .. .. per dozen £0 18 0
Fine Standard and Half-Standard Roses, per dozen 0 12 0
,, named Lancashire Gooseberries .. per 100 0 8 0
,, White and Red Currants .. .. per 100 0 8 0
,, Hardy Herbaceous and Alpine plants, one of the best collections extant, per 100 sorts 1 5 0
,, Hardy Shrubs by name .. per 100 sorts 2 10 0
,, named Hollyhocks, good plants .. per dozen 0 6 0
,, named Phloxes do. do. do. 0 4 0
,, named Pyramidal Pears on Quince do. 0 15 0

Catalogues of all the above sent free on application to HENRY MAY. The Hope Nurseries, near Bedale, Yorkshire.

DWARF ROSES ON MANETTI STOCKS & CINERARIAS.

THE following ROSES are offered in fine Plants with shoots 2 to 4 feet long, at 8*s.* 6*d.* per doz., true to name:—Jules Margottin, La Reine, Baronne Prevost, Coupe d'Hébé, Wm. Griffiths, Duc de Cazes, Wm. Jesse, Duchess of Sutherland, Victoria (Paul's), Paul Ricaut, La "Leo" des Combats, Earl Talbot, Pius IX., Alexandrine Bachmeteff, Madame Domage, Souvenir de la Reine d'Angleterre, &c.

Also the annexed CINERARIAS in 48-inch pots, true to name, 8*s.* per dozen:—Alma, Admiration, Brilliant (R), Brilliant (L), Lady Paxton, Lord Palmerston, optima, Pride of Uttoxeter, Eupatoria, Purple Standard, Fascination, Magnum Bonum, &c. Post-office Orders payable at Haverhill.
JOHN CHATER & SON, Nurseries, Haverhill.

FIRST-CLASS CERANIUMS.

J. CATTELL offers the following in good healthy plants; the price includes hamper and carriage paid to London.

The following 13 new French varieties, 18*s.*:—Mesdames Pescatore, Heine, Fertado, Laffay, Sueur; Perrugino, Monte Christe, Dr. Andry, Florence, Hendersonia, Dr. Marjolin, General Eugène Cavaignac, Van Houtti.

The following 13 older showy French varieties, 12*s.*:—Auguste Odier, Adèle Odier, James Odier, Mesdames Lamoricière, Chercau, Andry; Chauvieri, Triomphe de la Tour, Susette Mallet, Jacques Duval, Medaille d'Or, Roi des Pourpres, Auguste Miellez.

	s.	d.
13 very superior new Florist or Show Geraniums ..	18	0
13 very good ditto	12	0
13 good ditto .. .. 6*s.* to	9	0

NEW VARIEGATED GERANIUMS.

	Each—s.	d.		Each—s.	d.
Bijou	3	6	Perfection	3	6
Bridal Wreath ..	3	6	Shottisham Pet ..	3	6
Culford Beauty ..	2	0	St. Clair	1	6

New variegated crimson Ivy-leaved, 1*s.* 6*d.*

NEW VARIETIES OF THE SCARLET SECTION.

Caristiana	2	6	Rose Perfection extra fine ..	2	0
Pink Perfection extra fine ..	2	0	Rose Queen	2	6

One of each of the last 11 varieties, 24*s.*

CALCEOLARIAS.—Seedlings from J. C.'s superb collection 4*s.* per dozen.
Nursery and Seed Establishment, Westerham, Kent.

SEEDS OF ALPINE PLANTS

(SUITABLE FOR ROCK WORK).

JAMES CARTER AND CO. beg to announce the arrival of a Consignment of SEEDS (many of which are extremely rare) from Monsieur Ortgies, Curator of the Botanic Gardens, Zurich. The Seeds have been collected amongst the Alps during the past autumn, under his immediate superintendence, and J. C. & Co. have no doubt they will give great satisfaction.

12 selected varieties.. 2*s.* 6*d.* | 25 selected varieties .. 5*s.* 0*d.*
50 selected varieties .. .. .. 10*s.* 0*d.*
238, High Holborn, London, W.C.

NEW ZEALAND RUNNING BEAN.—This Bean was found by a gentleman travelling in Central New Zealand. It is not known by Mr. Arthur Henderson, Mr. James Veitch, Messrs. Sutton, Mr. Carter, Mr. Hooper, Mr. Wrench, Mr. Flanagan, nor at the Hort. Society. Price per doz., 3*s.*; trade allowed Beans extra. A printed account will be sent with each order; see last week's advertisement. Melon, Cucumber, and true Custard Marrow, 1*s.* per packet. J. C.'s Pamphlets always on sale.—JAMES CUTHILL, Camberwell, London.

GARDEN SEEDS.

THOMAS KENNEDY AND CO., NURSERYMEN and SEEDSMEN, Dumfries, N.B., beg respectfully to intimate that they have got to hand their VEGETABLE AND FLOWER SEEDS, and are now prepared to execute orders for the same

Their DESCRIPTIVE PRICED CATALOGUE FOR 1859, "which is of a most practical character, supplying all the information needed by the purchaser," is now ready and will be sent post free on application.

Free delivery. For particulars see Catalogue.

KITCHEN GARDEN AND FLOWER SEEDS.

THOMAS GIBBS AND CO., THE SEEDSMEN TO THE "ROYAL AGRICULTURAL SOCIETY OF ENGLAND," beg to announce that they are now prepared to execute orders for their Collections of KITCHEN GARDEN SEEDS for either large or small Gardens, containing a proper selection of all the new and most approved varieties. Packets of Flower Seeds, containing all the new and choice kinds. Packets of German Flower Seeds in the original imported Packets.

Descriptive priced Catalogues forwarded free on application. T. G. & Co.'s Priced List of AGRICULTURAL and GRASS SEEDS will be ready in February.

THOMAS GIBBS & Co., Corner Half-Moon Street, Piccadilly, London, W.

GARDEN SEEDS.

JOHN PERKINS is now prepared to supply SEEDS for the VEGETABLE and FLOWER GARDENS, and in addition to well-known old varieties, many new and valuable ones have been added to his collection.

J. P. having devoted his personal attention to this department of his business, most of the choice kinds of Seeds have been saved under his own inspection. In addition to his general stock, he begs to offer the following:—

	In packets.
BROCCOLI, Snow's superb Winter White, fine, each	1*s.* 0*d.*
,, Perkins's Northampton White	1 0
,, Late White	1 0
CUCUMBERS, Perkins's Prizetaker, Black Spine; good shape, length 18 to 24 inches—a great bearer, and superior for forcing.	
,, Perkins's No. 1 Black Spine; a good bearer—an excellent kind for all purposes.	

Catalogues of the above will be sent free upon application.
Seed Warehouse, 5, West Side, Market Square, Northampton.

AGRICULTURAL, FLOWER AND KITCHEN GARDEN SEEDS.

GARAWAY, MAYES, AND CO. invite attention to their Establishment for the sale of all kinds of AGRICULTURAL, FLOWER AND KITCHEN GARDEN SEEDS, their long connection with the trade and the well-known respectability of their house being a sufficient guarantee that all articles supplied by them will be of the very best quality. All seeds are proved by them before sending out, and their stock being large, and purchased from the first houses in the trade, offers great inducement to purchasers.

Their Stock of AGRICULTURAL SEEDS is produced from the best sources, and all are guaranteed by them to be of the best quality.

GRASS SEEDS of all kinds for Lawns or permanent Pasture; and the high testimonials they have received from their customers warrant them in stating that their quality is unsurpassed.—Catalogues on application.

Durdham Down Nurseries, Bristol.—January 29.

TO THE TRADE.

JOHN PALMER, NURSERYMAN, Annan, begs leave to inform his Friends and the Trade generally, that he has on hand the following—all of excellent quality—which he is disposed to offer on very reasonable Terms:—

SEEDLINGS.

4,000,000 1-year Larch	40,000 1-year Laburnum drills
1,000,000 2-year Scotch Fir.	
1,000,000 2-year Spruce	100,000 2-year Weymouth Pine
200,000 1-year Beech	100,000 1-year Pear stocks, drills
300,000 1-year Alder	100,000 1-year Crab stocks, drills
300,000 1-year Oak, drills	100,000 1-year Wild Cherry stocks, drills
100,000 1-year Turkey Oak, drills	100,000 1-year Portugal Laurel
100,000 1-year Spanish Chesnuts, drills	200,000 1-year Yew
	50,000 1-year bedded American Arbor-vitæ
100,000 1-year Horse Chesnuts, drills	20,000 bedded common Laurel
200,000 2-year Ash, drills	20,000 bedded Portugal Laurel

TRANSPLANTED.

300,000 2-year tr. Larch	100,000 2-year tr. Spruce
100,000 2-year tr. Scotch Fir	400,000 2-year tr. Thorns

Prices to be had on application, and all orders will be promptly and carefully attended to. Carriage will be prepaid to London, Liverpool, Birmingham, Newcastle, Glasgow, and Edinburgh, and the half thereof charged to the buyer.

JOHN PERKINS begs to offer the following, all of which are unusually fine:—Dwarf trained PEACHES, NECTARINES, APRICOTS, PLUMS, PEARS, and CHERRIES. From 4000 to 5000 extra strong Standard APPLES and PEARS. Also a large Stock of fine Specimen Cedrus Deodara, Araucaria imbricata, Abies Pinsapo from 1 to 8 feet, and all the intermediate sizes; Abies Nordmanniana, beautiful plants 2 to 3 feet; a fine stock of Wellingtonia gigantea from seed; Thujopsis borealis, from 1 to 3 feet, fine; Cupressus Lawsoniana, from 1 to 2½ feet; also a large stock of strong transplanted Privets and Berberis aquifolia, Spanish Chesnuts, Mountain Ash, Hazel, Birch, Elms, Alder, averaging from 2½ to 4 feet; Balm of Gilead and Weymouth Pine Fir; Pinus austriaca, several thousand beautiful plants, from 1 to 2 feet; standard Limes, fine, 8, 10, to 12 feet; strong Asparagus plants for forcing.

J. P.'s DESCRIPTIVE CATALOGUE OF GENERAL STOCK for 1859 will be sent free upon application. Nurseries about a quarter of a mile on the Bedford Road; also on the Billing Road.

Seed Warehouse, 5, West side, Market Square, Northampton.

FIVE SILVER CUPS

WERE AWARDED TO

A. PAUL AND SON, NURSERYMEN, Cheshunt, Herts, for five Collections of ROSES at the Grand National Rose Show held in St. James's Hall, London, in July. Also FIVE FIRST PRIZES at the Royal Botanic Society's Shows in May and June last. The sorts which won these prizes are now offered at 18s. to 24s. per dozen for standards, 12s. to 18s. per dozen for dwarfs. A PRICED DESCRIPTIVE CATALOGUE forwarded on application, post free.

FRUIT TREES IN POTS.

JOHN AND CHARLES LEE have now the largest and finest stock of FRUIT TREES IN POTS in a bearing state for FORCING AND ORCHARD HOUSES ever offered. They consist of the following kinds, a CATALOGUE of which may be had on application:—

APRICOTS	FIGS	PEARS
PEACHES	PLUMS	APPLES.
NECTARINES	CHERRIES	ALSO,

VINES AND STRAWBERRIES.

Nursery and Seed Establishment, Hammersmith, London.

FRUITING VINES.

JOHN AND CHARLES LEE beg to offer extra strong short-jointed and well-ripened FRUITING VINES of the following kinds:—

BLACK HAMBURGH	BLACK FRONTIGNAN
CHAMPION HAMBURGH	WHITE FRONTIGNAN
MILL HILL HAMBURGH	BLACK PRINCE
GOLDEN HAMBURGH	ROYAL MUSCADINE
MUSCAT OF ALEXANDRIA	BIDWELL'S SEEDLING
	BOWOOD MUSCAT.

Nursery and Seed Establishment, Hammersmith, London.

THE NEW MUSCAT HAMBURGH VINE.

MESSRS. ARTHUR HENDERSON AND Co. have much pleasure in directing the attention of Grape Growers to the new Muscat Hamburgh, Plants of which they are now sending out. In consequence of the extraordinary demand for the large three-guinea fruiting plants, they are unable to supply any more of this size, but they still have excellent Plants at two guineas, suitable for fruiting next spring in pots, and also good plants at one guinea each.

Pine-apple Place, Edgware Road, London, W.

CARTER'S EXCELSIOR MELON.—A green-fleshed variety of delicious flavour, netted; fruit averages 4 lbs., requires scarcely any heating, and is very prolific. R. Hogg, Esq., President of the Pomological Society, and Turner and Spencer's "Florist," pronounce this variety to be one of the finest ever tasted. Seeds 1s. per packet.—JAMES CARTER & Co., Seedsmen, 238, High Holborn, London, W.C.

DOUBLE ITALIAN TUBEROSE ROOTS, 4s. per dozen.—The annual importation of the above named beautiful and fragrant Flower has just been received, and large and well selected Bulbs may be obtained, without disappointment, at A. COBBETT'S Foreign Warehouse, 18, Pall Mall.

N.B. Printed regulations for treatment sent; also, just arrived, very moist and open Parmesan Cheeses.

HOLLYHOCK SEED FROM NEW VARIETIES.

J. CHATER AND SON offer the above from 12 new varieties, separate packets, the collection, 3s. 6d.

24 varieties, best older sorts, 3s. 6d.

Best mixed, 20 sorts, 200 seeds, 1s. 6d.

J. C. & SON feel confident the above will give satisfaction, having been saved with great care.

Strong seedling plants, 20s. per 100.

If sown now will flower by September.

Nurseries, Haverhill.

RANUNCULUSES.—The admirers of this beautiful flower have now an opportunity of purchasing some that will flower as free as Daisies.

T. MELLON, having grown this flower from seed for a number of years with great success, is now willing to dispose of a portion of them, and impart his mode of cultivation to any purchaser. These Ranunculuses are very hardy, perfectly double, and warranted to bloom. Satisfactory references can be given as to the quality of these flowers. Price 5l. per 100.

T. MELLON, 71, New Street, Birmingham.

CAMELLIAS, double flowering, in pots, well set for bloom, 18s., 21s., and 24s. per doz.; Azaleas in pots, in six sorts, 12s. per doz.; larger plants, in 30 sorts, 18s. per doz.; best Hyacinths, 5s. per doz.; second ditto, 4s.; third ditto, 3s.; Gladiolus gandavensis, 2s.; floribundus, 1s. 6d.; Queen Victoria, 2s; Beauty of England, 2s.; Byzantinus, 6d.; Psillicinus, 9d.; ramosus, 1s. 6d.; double Van Thol Tulips, 2s. per 100; fine double mixed, 3s. per 100; finest mixed Ranunculus, 5s. per 100; good ditto, 3s. 6d. and 2s. 6d.; mixed Crocuses, 1s. 6d.; finest new Seedlings, 3s. per 100; Ash-leaved Kidney Potatoes, 7s. bushel; and every other sort of bulb and seed of the best quality, equally cheap.—ROBT. GREEN, 154, Kingsland Road, 55 doors from Shoreditch Church.

AZALEA INDICA.

J. IVERY AND SON beg respectfully to invite growers of the above named to an inspection of their unrivalled Stock of Young Specimens of all the newest and best varieties, many of which have been exhibited at the Metropolitan Exhibitions. They are clean and healthy, well set with bloom, and moderate in price. Catalogues forwarded post free upon application.—Dorking Nursery, Jan. 29.

TO PLANTERS.

WILLIAM MASTERS AND SON respectfully inform the public that they have fine plants of Chestnut fit for filling up woods, as well as Scots and Spruce Firs, Larch and Austrian Pines, also Oaks, Elms, Beech, Sycamore, Norway and other Maples, Acacias and other Forest Trees in great variety and abundance. Their Stock of Ornamental Evergreens and Shrubs is exceedingly rich both in quantity and variety. They may especially refer to their beautiful assortment of Rhododendrons, Azaleas, Hardy Heaths, and of so called American Plants generally, to the culture of which they have devoted an entire nursery. Deodars they can supply from 1 to 6 feet, and of Coniferæ their collection is of unusual extent. Orders are respectfully solicited.

Exotic Nursery, Canterbury, and Fant Nursery, Maidstone.

SEEDS.

JOSEPH MAY AND Co. beg to announce the arrival of their new VEGETABLE, AGRICULTURAL, & FLOWER SEEDS, which they have selected with the greatest care, Amongst Peas they would particularly recommend, as the two best kinds for early sowing, Waite's Daniel O'Rourke and Dickson's Favourite, the latter producing 8 to 14 Peas in a pod, and will do for sowing at any season. Collections of vegetable seeds made up from 10s. to 20s. and upwards, according to size of garden for which they are intended. These collections gave great satisfaction last season. Flower Seeds in collections: 12 packets choice seeds, 6s.; 30 packets hardy ditto, 5s.; 15 packets ditto, 2s. 6d., free by post.

Cucumber "Ne plus ultra" from specimens 27 to 31 inches each—straight and handsome—per packet, 1s.; all other best kinds, 6d. per packet. Melons, choicest kinds, 6d. and 1s. Gourds, the large hundredweight and others, 12 packets, free by post, 3s. Potatoes, all the best kinds. Grasses and all kinds of Agricultural Seeds of the best quality.

Trees, Plants, and Seeds packed for Australia, &c., at the lowest prices—1, Wellington Street, Strand W.C.

SUTTON'S GRASS SEEDS

AT THE ROYAL FARMS NEAR WINDSOR, AND IN THE ISLE OF WIGHT.

SUTTON'S GRASS SEEDS FOR PERMANENT PASTURE, PARKS, AND LAWNS are now sown at the ROYAL FARMS, at OSBORNE PALACE, the CRYSTAL PALACE, SYDENHAM, the HORTICULTURAL SOCIETY'S GARDENS, the ALDERSHOT CAMPS, and in the formation of the NEW PARK at HALIFAX, called the "PEOPLE'S PARK," the munificent gift of Frank Crossley, Esq., M.P., and on most of the largest estates in the kingdom. Messrs. SUTTON'S Grass Seeds being mixed expressly to suit the soil for which they are required, are never known to fail.

SUTTON'S MIXTURES FOR LAYING DOWN LAND TO PERMANENT MEADOW OR PASTURE.—The sorts contained in these Mixtures are grown in different localities, and gathered separately by the hand expressly for this purpose, by which means all noxious weeds are excluded; they consist of the most nutritive kinds of Fescues, Poas, Sweet Vernal, Perennial Clovers, Loliums, &c., and each sort being kept separate, they are subsequently mixed in such sorts and proportions as are most suitable to the soil to be laid down. The quantity we usually supply is 2 bushels of light Seeds and 12 lbs. heavy Seeds per acre. For large quantities special contracts may be made at reduced prices.

The Mixtures above referred to are mixed expressly as under:

MIXTURES FOR CLAYS AND HEAVY MARLS.
MIXTURES FOR SHARP GRAVELS AND LIGHT SOILS.
MIXTURES FOR DRY SANDY SOIL.
MIXTURES FOR GOOD LOAMS OF MEDIUM TEXTURE, OR GOOD BARLEY LAND.
MIXTURES FOR RECLAIMED MARSHES & HEATH LANDS
MIXTURES FOR CHALKY UPLANDS & SHEEP DOWNS.
MIXTURES FOR WATER MEADOWS.
MIXTURES FOR PARK LAWNS.

EVERGREEN GRASSES FOR CHURCHYARDS AND CEMETERIES.

SUTTON'S RENOVATING MIXTURE for improving Parks, Meadows, and Pastures, 9d. per lb., or 80s. per cwt. (8 to 12 lbs. per acre required).

MIXTURES FOR ONE, TWO, OR THREE YEARS' PASTURE OR HAY.—These we can supply of best quality, at 20s. to 24s. per acre. In ordering these Mixtures it is necessary to state whether they are required principally for pasture or for hay.

MIXTURES OF CLOVERS AND RYE-GRASS to be sown with Corn, for a crop of Clover, &c., in the following year. These we can supply of best quality at 19s. per acre, or 20s. with ITALIAN Rye-grass.

SUTTON'S FINE LAWN GRASS SEEDS.—The finest garden lawns are furnished from these Seeds, which are perfectly free from weeds and coarse Grasses. Price of seeds, 1s. per lb., or 20s. per bushel. Quantity required for making new Lawns, 3 bushels, or 60 lbs. per acre; for improving old Lawns, 10 to 15 lbs.

SUTTON'S PRICED LIST OF FARM AND GARDEN SEEDS

WILL BE SENT POST FREE.

ALL KINDS OF SEEDS CARRIAGE FREE EXCEPT SMALL PARCELS.

SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

IMPROVEMENT OF GRASS LANDS

BY SOWING GOOD SEEDS OF THE MOST SUITABLE KINDS.

SUTTON'S RENOVATING GRASS SEEDS

CONSIST of the finest GRASSES and PERENNIAL CLOVERS, producing great improvement in the Pasture, and at a small expense. *Quantity of Seed required, 8 to 12 lbs. per acre.* Price reduced to **9d. per lb., or 80s. per cwt.** Sow in February and March. *Parks, Meadows, and Upland Pastures may be increased in value 50 per cent. by sowing these Seeds, the cost of Seeds being only 5s. to 9s. per acre.*

The following extracts from letters are similar to many others received unsolicited:—

From SHAFTESBURY WALMSLEY, Esq., *Mottistone, Isle of Wight.*

"The Grass Seeds were extremely good, and answered my purpose uncommonly well; they gave me a famous crop of hay last summer, 2½ tons per acre, where I never saw anything but Bents and rubbish grow before. I strongly recommend your Renovating Seeds; they are clean, and I believe safely to be depended upon."

From Mr. THOMAS BOWICK, *Farm Bailiff to Lord Leigh, Stoneleigh Abbey Farm.*

"The Renovating Mixture with which you supplied Lord Leigh last season, for 40 acres of old turf, has more than equalled our expectations. I would add that the other seeds supplied have each proved clean, true to name, and active in vegetative powers."

SEEDS CARRIAGE FREE TO ALL PARTS, EXCEPT SMALL PARCELS. CATALOGUES POST FREE

GRASS SEEDS, for Laying Down Permanent Pasture, 30s. to 34s. per acre.

SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

MANGEL SEED FROM LARGE BULBS.

SUTTON'S YELLOW GLOBE MANGEL

IS SAVED EXCLUSIVELY FROM FULLY DEVELOPED ROOTS, THE ADVANTAGES OF WHICH HAVE BEEN PROVED FOR SEVERAL YEARS PAST.

(SEE THE FOLLOWING LETTERS.)

From the Right Hon. Lord BERWICK, *Cronkhill, Dec.* 22.

"Let me have the same Globe Mangel as last year, which has given me the best crop I ever grew, good both as to bulk of crop, and also in the fineness of roots and freedom from fangs and irregular growth; when pulled, the roots were nearly as clean and free from fibre as a Globe Turnip, and I had 50 loads per acre and more."

From Mr. HORSBURGH, *Steward to* R. BENYON, Esq., *Englefield, October* 11.

"One of the Long White Mangels washed up by the heavy rains weighed 45½ lbs. I will bring it you next market day."

From Mr. GRAY, *Bailiff to* G. RAWLINS, Esq., *Bullington House.*

"I believe we had one of the finest lots of Mangels and Swedes in the country. We had not quite enough of your seed of Mangel, and sent elsewhere for some to finish the field, and though sown the same day, and with exactly similar treatment, we had not so much weight by one-third as on the part sown with your seed."

From Mr. ANDREW NANCE, *Portsmouth, January* 28.

"I have had the largest crop of Mangel I ever saw from your Elvetham; I therefore order 80 lbs. of that kind this season."

From H. N. MIDDLETON, Esq., *Islington House, Dorchester, Nov.* 11.

"My crop of Elvetham Mangel is astonishingly fine."

From J. C. ADKINS, Esq., *Milcote, Stratford-on-Avon, Dec.* 17.

"It is again my pleasure to be able to inform you how good a crop of Orange Globe and Red Globe Mangels I had from the seed you sent me last spring. My plant was so uniform that on the whole field I could not have wished for another bulb. They were very handsome and remarkably small in the top."

From the Wexford Independent.

"In the show of roots Mr. Kineally (Mr. Walker's steward) was a host in himself. The Elvetham Mangel transplanted after a crop of Vetches were monstrous, and exceeded any thing in the way of Mangels ever grown. The seed was procured from Messrs. SUTTON'S Royal Berkshire Seed Establishment."

The FIRST PRIZES at Birmingham and other Shows throughout the Kingdom have been taken by Messrs. SUTTON'S customers both for Mangel and for their "Champion" Swede. The price of SUTTON'S Large Yellow Globe Mangel Wurzel is 9d. per lb., or cheaper in large quantities.

Priced Lists of other kinds of Mangel, Swedes, Turnips, Grasses, &c., will be sent gratis and post free.

CARRIAGE FREE TO ALL PARTS EXCEPT SMALL PARCELS.

Address SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

THE

GARDENERS' ROYAL BENEVOLENT INSTITUTION.

INSTITUTED 1838.

PATRONESS.—Her Most Gracious Majesty the QUEEN. **PATRON.—His Royal Highness the PRINCE CONSORT, K.G.**

LIST OF SUBSCRIBERS.

HER MOST GRACIOUS MAJESTY THE QUEEN, Patroness of the Institution ... ... } £50
HIS ROYAL HIGHNESS THE PRINCE CONSORT, K.G., Patron of the Institution ... ... }
HIS GRACE THE LATE DUKE OF DEVONSHIRE, K.G. £137

	Donat. £ s.	An. Sub £ s.
Acton, J., Townsend, Esq. (legacy)	100 0	
Acland, Sir Thomas Dyke, Bart., Killerton		2 2
Abbott, Isaac, Gr. to H. S. Thornton, Esq.		1 1
Addiscott, W., 6, Leadenhall Street	1 1	1 1
Aiton, John, Gr. to the Earl of Stamford		1 1
Allam, John, East Tisted, Alton, Hants		1 1
Allan, Richard, Gr. to Col. Close		1 1
Amos, J. H., Plaistow Lodge, Bromley		1 1
§§Anderson, A., Esq., Norwood Grove, Norwood	21 0	
Andrews, W., Gardener, 11, Mount Nod Sq., Greenwich		1 1
§Angerstein, John, Esq., Woodlands, Charlton ..	10 10	
§Annesley, Hon. and Rev. C. F., Eydon Hall		2 2
Arnott, R. A., Gordon Road, Peckham		1 1
Appleby, Thomas, 32, Church Street, Sheffield ..		1 1
Atkins, Robert, Gr. to Viscount Gage		1 1
§Atlee, Richard, Nurseryman, Stockwell	10 10	
Austin & Mc Aslan, Messrs., Nurserymen, Glasgow ..		1 1
Ayres, W. P., Gr. to W. Duckworth, Esq.	3 3	1 1
Baring, Thos., Esq., M.P., Upper Grosvenor Street	21 0	
§§Bohn, H. G., Esq., Twickenham	42 0	
Bailey, Hy., Gardener, Nuneham Gardens, Oxford ..		1 1
Bailey, Henry, Gardener, Upper Clapton		1 1
Baker, George, American Nursery, Bagshot		1 1
Baker, Henry, Gr. to Isaac Harrison, Esq.		1 1
Baldock, William, Gr. to J. Metcalf, Esq.		1 1
Bannon, J., Gardener, Aldenham Abbey		1 1
Barnes, James, Gr. to Lady Rolle		1 1
Barnes, William, Camden Nursery, Camberwell ..	10 10	1 1
Barnett, Wm., Gr. to Lord Ebury		1 1
Bartlett, John, Gr. to Dr. Yeo		1 1
Bassett, Peter, Gr. to R. S. Holford, Esq.		1 1
Batley, George, Nurseryman, Rugby	10 10	
Batt, Rutley, & Silverlock, Messrs., Strand ..	11 11	1 1
Baxendale, J., Esq., Woodside, Whetstone ..	31 10	
Beale, John, Gr. to Abel Smith, Esq.		1 1
Beaton, Donald, Surbiton, Kingston, Surrey		1 1
Beaufoy, George, Esq., South Lambeth	10 10	
Beck, Henderson, & Child, Messrs., Seedsmen ..	8 8	2 2
Bedford, the Duke of	10 10	
Bell, C., Gr. to W. B. Beaumont, Esq.		1 1
Bell, W., Gr. to W. Peters, Esq.		1 1
Bennett, Thomas, Gr. to Mrs. Martin		1 1
Benson, P., 19, Park Street, Greenwich	10 10	
Berens, R., Esq., Sidcup, Kent	10 10	
Betham & Blackith, Lower Thames Street		1 1
§Betts, E. L., Esq., Preston Hall, Maidstone ..	15 15	
Bevis, George, Nurseryman, Coventry		1 1
Bircham & Ward, Messrs., Bungay, Suffolk		1 1
Binder, Wm., Gr. to the Rev. T. Staniforth		1 1
Bishop, George, Esq., South Villa, Regent's Park	10 10	
Bissett, John, Gr. to the Earl of Sefton		1 1
Blackburn, Joseph, Wormwood Street		1 1
Blackwell, John, Gardener, Walthamstow		1 1
Blackwell, J., Esq., 9, Charles Street		1 1
§Blandy, J. J., Esq., High Grove, Reading ..	10 10	
Bond, George, Gr. to Earl Powis		1 1
Booth & Sons, Messrs. Hamburgh		1 1
Booth, Charles, Gr. to J. W. Buller, Esq.		1 1
§Booth, William B., Esq., 21, Regent Street ..	15 15	
Boswell, J., 9, Harleyford Street, Kennington ..	10 10	
Botanical Society of London, The Royal	26 5	
Bradley, Wm., Gr. to Sir Morton Peto, Bart., M.P. ..		1 1
Brampton, J., Esq., Stoke Newington		1 1
§Brande, E. A., Esq., Turnham Green		1 1
Bray, Thomas, Gr. to E. B. Lousada, Esq.		1 1
Brewer, F., Messrs. Henderson's & Co.		1 1
Bridgeman, George, 6, Leadenhall Street	1 1	1 1
Bright, Miss, Brande Lodge, Malvern Wells		1 1
B., Mrs., Easton, near Stamford	21 0	
Briggs, S., Esq., Gracechurch Street		1 1
§Brown, George, Esq., Kingsley Cottage, Alton ..	2 2	1 1
Brown, George, Gr., Powis Castle		1 1
Brown, Hay, Gardener, Porkington Hall		1 1
Browne, J. G., Seedsman and Florist, Hackney		1 1
Browne, James, Gr. to H. Hall, Esq.		1 1
Brown, J., Gr. to Rt Hon. Sidney Herbert, M.P. ..		1 1
Brown, W., Gr. to W. J. Dugdale, Esq., M.P.		1 1
Bruce, James, Gr. to B. Miller, Esq.		1 1
Bryant, R. M., Esq., Market Street, Bristol		1 1
Buchan, W., Gr. to Lord Bagot		1 1
Bulgen, H., Gr. to R. Wrench, Esq.		1 1
Bulman, Samuel, Gr., Half Moon Lane, Dulwich	10 10	
Bundy, C., Gr. to T. M. Goodlake, Esq.		1 1
Bunney, J. G., Nurseryman, Stratford, Essex		1 1
Burbank, J., Gr. to John Neeld, Esq., M.P.		1 1
Burn, H., Gr. to the Marquis of Ailesbury		1 1
Burn, John, Gr. to the Hon. Douglas Pennant		1 1
Burnett, E., 58, Rawstone Street, Clerkenwell ..		1 0
Burton, John, Gr. to the Marquis of Salisbury ..		1 1
Busby, Henry, Gr. to T. L. Hodges, Esq.		1 1
§Busby, Matthew, Harrow Road	10 10	1 1
Butler, John, Esq., Woolwich		1 1
Buxton, John, Gr. to R. Mills, Esq.		1 1
Byvoet, M., Haarlem, Holland		1 1
Cleveland, His Grace the Duke of, K. G.	10 10	
§Carlisle, The Rt Hon. the Earl of, Grosvenor Place	21 0	
§Cathcart, Sir John, Bart., Cooper's Hill, Chertsey ..		1 1
Caie, John, Gardener, Inverary Castle, Argyllshire ..		1 1
Cain, Henry, Gr. to the Rev. Dr. Spyers		1 1
Callander, John, Gr. to the Duke of Buccleuch		1 1
Cameron, Geo., Gr. to the Duke of Richmond ..	10 10	
Canning, John, Esq., Finchdean, Horndean, Hants ..		1 1
Carson, S. M., Gr. to W. F. G. Farmer, Esq. ..	10 10	
Carter & Co., Messrs., Seedsmen, 238, High Holborn ..		1 1
Catleugh, Mrs., Hans Place, Sloane Street, Chelsea ..		1 1
Cattell, John, Nurseryman, Westerham, Kent		1 1
Catton, John, Gr. to J. Adeane, Esq.		1 1
§Chance & Co., Messrs., Glass Works, Birmingham	21 0	
Chandler, Alfred, Nurseryman, Vauxhall		1 1
Chandler, Thomas, Gr. to J. R. Corbett, Esq.		1 1
Charlwood & Cummins, Messrs., Seedsmen, Tavistock Row, Covent Garden		3 3
Charmes, T. G., Seedsmen, 195, High Street, Exeter ..		1 1
Chase, W., Esq., Petersfield, Hants		1 1
Cheney, H. R., Esq., Badger Hall, Shiffnal ..	10 10	
Cheshire, William, Gr. to C. Longman, Esq.		1 1
§Child, George, Esq., Adelphi Wharf, Strand, ..	13 13	
Chivas, George, Nurseryman, Chester		1 1
Christie, Alex., Gr., Avington, near Winchester		1 1
Christie, William, Agent to Viscount Folkestone ..		1 1
Clarke, Bernard, Gr. to John Lloyd Wynne, Esq. ..		1 1
Clark, John, Gr. to Col. Johnstone, Carnstallock		1 1
Clarke, George, Nurseryman, Streatham		1 1
Clarke, William, Gr. to C. Webb, Esq.		1 1
Cleave, Thomas, Gr. to the Hon. G. Fortescue		1 1
Cobb, Fred., Gr. to Lady Mordaunt		1 1
Cock, William, Esq., Chiswick		1 1
Cockburn, George, Gr., Caen Wood, Hampstead		1 1
Coe, David, Gr. to Earl Stanhope		1 1
Cole, J., Birchfield Nursery, Birmingham		1 1
Cole, William, Withington, near Manchester		1 1
Coles, Mrs., Woodcote, Alresford, Hants		1 1
Collins, B., Gr., St. Matthew Place, Brixton		1 1
Collins, John, Gr., Kingston House, Dorchester ..		1 1
Collinson, John, Gr. to the Marquis of Westminster ..		1 1
§Cook, James, Esq., Brooklands, Blackheath Park	21 0	
Cooke, George, Gr. to H. R. Cheney, Esq.		1 1
Cooks, J., Esq., 4, Rosedale Terrace, Notting Hill ..		1 1
Cooper, Cornelius, Gr. to C. Packe, Esq.		1 1
Cooper, Robert, Esq., 152, Fleet Street	10 10	
Copeland, W. T., Esq., M.P., 160, New Bond Street	10 10	
Coutts, Miss A. Burdett, Stratton Street, Piccadilly	10 10	
Cottage Gardener, Proprietors of, Paternoster Row	15 15	
Cox, John, Gr., Redleaf, Penshurst, Kent		1 1
Coysh, John, Florist, Thurmaston Rd., Leicester ..		1 1
Crafts, Richard, the Red Lion, Petersfield		1 1
Cramb, Alexander, Gr. to Earl Ducie		1 1
Cragg, William, Gr. to Sir T. Dyke Acland, Bt.		1 1
Crawford, Alexander, Gr. to R. Arabin, Esq.		1 1
§Crossley, A., Esq., 34, Lombard Street	10 10	
§Crossley, Frank, Esq., M.P., 60, Eaton Square ..	10 10	
Cunningham, David, Gr. to Sir Ralph Howard, Bt. ..		1 1
§Cunningham, George, & Sons, Messrs., Nurserymen, Oak Vale, Liverpool	2 2	1 1
Cunningham, John, Gr. to the Hon. J. J. Carnegie ..		1 1
Curtis, Thos., Esq., Salway House, Stratford		1 1
Cutbush & Son, Messrs., Nurserymen, Highgate ..		1 1
Cutbush, William, Nurseryman, Barnet		1 1
Cuthbert, G., Nurseryman, Southgate		1 1
Cuthbert, Richard, Gr. to Mrs. Overend		1 1
§Cutler & Barker, Messrs., 32, King William Street ..		1 1
Douglas, the Lady Georgina		1 1
Duncombe, the Hon. Mrs. Arthur		1 1
Dakin, George, Gr. to Earl Somers		1 1
Dancer, Alexander, Nurseryman, Fulham ..	12 12	
Dancey, John, Gr. to Miss Milwards		1 1
§Dandy, C.D., Esq., 12, Medina Villas, Dalston ..	5 5	1 1
Davidson, Alexander, Gr. to the Earl of Bradford ..		1 1
Davidson, James, Gr., Welford Park, Newbury		1 1
Davidson, William, 2, Randolph Road, Maida Hill ..		1 1
Davis, T., Gr. to the Rev. A. Hanbury, Colchester ..		1 1
Dawson, Thos., Gr. to Earl Cowper, Panshanger		1 1
Day, William, Nurseryman, Oxford		1 1
Deacon, Mrs., 4, Portman Square	10 10	1 1
Dean, George, Nurseryman, Croydon		1 1
Dean, William, Florist, Bradford, Yorkshire		1 1
Denby, William, Gr. to Miss Leveson Gower ..	10 10	
Dew, Benjamin, Market Gardener, Ham, Surrey		1 1
§Denton, J. Bailey, Esq., Stevenage, Herts ..	10 10	
§Denyer, Edward, Esq., 1, Paragon, Brixton ..	21 0	1 1
Dickens, C., Esq., Tavistock House, Tavistock Sq.	10 10	
Dickson, James, Sen., Nurseryman, Chester		1 1
Dickson, F. & A. & Sons, Messrs., Nurserymen, Chester ..		1 1
§Dilke, C. Wentworth, Esq., 76, Sloane Street ..	21 0	
Dixon, Mrs., Stansted Park, Emsworth, Hants ..	10 10	
§Dockar, W., Esq., 38, Broad Street Buildings ..	10 10	
Dods, George, Cooper's Hill Gardens, Chertsey		1 1
Dodds, John, Bailiff to Charles Penruddock, Esq. ..		1 1
Dodds, Wm., Gr. to Colonel Baker, Salisbury		1 1
Dodemeade, William, Messrs. Henderson & Co.		1 1
§Donald & Son, Messrs., Nurserymen, Goldworth ..	14 14	
Dougall, J., Gr. to Viscount Villiers		1 1
Dowdell, Robert, Gr., Bridgend		1 1
Downes, D., Gr. to T. N. Sibeth, Esq., Herne Hill ..		1 1
Draper, R., Gr. to G. S. Scovell, Esq.		1 1
Draper, George, Gr. to the Bishop of Salisbury		1 1
Drewett, Jas., Gr., the Denbies, Dorking		1 1
Drewett, John, Gr. to H. W. Schneider, Esq.		1 1
Duncan, R., Gr. to J. Malcolm, Esq.		1 1
Duncan, James, Gr. to Joseph Martineau, Esq.		1 1
Dunn, George, Gr., Rufford Hall, Ormskirk		1 1
§Ebury, the Right Hon. Lord	21 0	
Eagles, A., Nurseryman, Highgate		1 1
Eckford, Henry, Gr. to the Earl of Radnor		1 1
Edgar, William, Esq., Clapham Common	10 10	1 1
Edmonds, Charles, Gr. to the Duke of Devonshire	1 1	1 1
Edmonds, W., Gr. to Lewis Buck, Esq., M.P.		1 1
§§Edward, John, Esq., 20, Sharp's Alley, London ..	10 10	1 1
§Ellis, Wynn, Esq., Ponsbourne Park, Herts		1 1
Elliott, G. M., Gr., Kirby Hall, York		1 1
Elliott, G., Gr. to Sir George Palmer		1 1
Ellwood, Henry, Esq., Norbury Hill, Norwood		1 1
Embleton, Cuthbert, Gr., Ingleton Street, Brixton ..		1 1
§§Epps, W. J., Bower Nursery, Maidstone	13 13	
Errington, Robt., Oulton Park, Cheshire		1 1
Eyles, George, the Crystal Palace, Sydenham ..	10 10	
§Forbes, Sir Charles, Bart, Broom Wood, Clapham ..		1 1
Falkner, S., Gr., Orphan Working School		1 1
Fancourt, John, at Messrs. Henderson & Co.		1 1
§§Farmer, W. F. G., Esq., Nonsuch Park, Cheam ..	15 15	1 1
Farquhar, T. N., Esq., Sydenham, Kent	10 10	
Farthing, William, Gr. to Lord Ashburton		1 1
Fenton, James, Messrs. Lee, Hammersmith ..	10 10	
Field, John, Gr., Half Moon Lane, Dulwich		1 1
Finch, Robert, Gr. to James Bentley, Esq. ..	10 10	
Finney, S. & Co., Messrs., Nurserymen, Gateshead ..		1 1
Fish, Robert, Gr. to Colonel Sowerby		1 1
Fisher, Holmes, & Co., Messrs., Sheffield		1 1
Fisher, J., Gr., Dulwich		1 1
Fitzgerald, John, Gr., Gray's Court		1 1
Fleming, George, Gr. to the Duke of Sutherland ..		1 1
Fleming, John, Gr. to the Duke of Sutherland		1 1
Forbes, George, Esq., Bereleigh House, Petersfield ..		1 1
Forbes, J., Gr., Woburn Abbey, Bedfordshire		1 1
Forsyth, William, Gr. to Baron Rothschild		1 1
Foster, William, Esq., Emsworth, Hants		1 1
Forster, John, Gr. to J. Barber, Esq.		1 1
§Fowlie, W., Esq., Red House, Hursley, Winchester	1 1	1 1
Fox, William, Gr. to Joseph Sandars, Esq.		1 1
Francis, Edward, Nursery, Hertford		1 1
Francis, Thomas, Esq., Emsworth, Hants		1 1
Fraser, Richardson, & Goad, Messrs., Seedsmen, 82, Bishopsgate Street		1 1
Fraser, James, Esq., 25, Westland Row, Dublin		1 1
Fraser, James, The Gardens, Luton Hoo, Beds ..	10 10	
§Fraser, J. & J., Messrs., Nur., Lea Bridge Road	10 10	1 1
Friend, Richard, Gr., Grove Hill, Falmouth		1 1
Frost, Thomas, Gr. to E. L. Betts, Esq.		1 1
§Fuller, Fran., Esq., Parliament St., Westminster	10 10	
Fuller, John, Gr. to G. S. Bosanquet, Esq.		1 1
Fuller, William, Gr. to G. Forbes, Esq.		1 1
§Goldsmid, De, the Baron, Regent's Park	10 10	
Gadd, Henry, Gr., Wollaton Hall, Notts		1 1
Gadd, John, Castle Gardens, Dorking		1 1
Gaines, Thomas, Nurseryman, Battersea		1 1
Gardeners' Chronicle, Proprietors of	10 10	
Gardiner, W., Gr. to Sir George Phillip, Bart.		1 1
Gardiner, Samuel, Gr., West Place, Herne Hill		1 1
§§Garaway, Mayes, & Co., Messrs., Nurserymen, Durdham Down, Bristol	10 10	2 2
Gibbons, Michael, Messrs. Lee, Hammersmith		1 1
Gibbs, Thos., & Co., Messrs., Seedsmen, Half Moon Street, Piccadilly		2 2
§Gibbs, B. T. Brandreth, Esq., Half-Moon Street ..	11 11	
Gibson, J., Bushey Park, Middlesex		1 1
Giffkins, John, Gr. to the Rev. C. F. Annesley		1 1
Gillman, Miss, 8, Grosvenor Place, Cheltenham		1 1
§Glendinning, R., Nurseryman, Turnham Green ..	17 17	1 1
Glover, James, Gr. to G. Horsley, Esq.		1 1
Godfrey, James, Gr. to Lord Rayleigh		1 1
§Good, J. H., Esq., 21, Upper Hamilton Terrace		1 1
Good, Wm., Gr. to E. Majoribanks, Esq.		1 1
§Gordon, Thomson, & Co., Messrs., 25, Fenchurch St.	17 17	2 2
Gosling, James, Gr. to Mrs. Fisher		1 1
Graham, James, Nurseryman, Chichester		1 1
Gray, George, Esq., Rose Cottage, Bow Road ..	12 12	
§Gray, James, Danvers Street, Chelsea	14 14	1 1
Gray, William, Esq., Montpelier, Lambeth		1 1
Green, George, Gr. to T. Curtis, Esq.		1 1
Green, J., Gr. to Sir Edmund Antrobus, Bart.		1 1
§§Gregory, William, Esq., Cirencester	14 14	
Grier, John, Waterhead Nursery, Ambleside		1 1
§§Grissell, Thomas, Esq., Norbury Park	21 0	1 1
Gunner, James, Gr. to G. Finch, Esq.		1 1
Gurney, H. E., Esq., 65, Lombard Street		1 1
Gurney, Hudson, Esq., Keswick, Norwich ..	10 10	
Gurney, Samuel, Esq., 65, Lombard Street		1 1
Guthrie, D., Proprietor of the *Scottish Gardener*		1 1
§§§Hanbury, Robert, Esq., Poles, Ware, Herts ..	47 5	
§§§Holford, Robert Steiner, Esq., Westonbirt ..	21 0	
§§§Hope, Henry Thomas, Esq., The Deep Dene ..	31 10	
Hackwell, T., Gr. to the Dowager Lady Rodney		1 1
Hakins, Wm., Gr., Carne House, Dorchester		1 1
Hall, Wm., Nurseryman, Enfield		1 1
Halley, John, Nurseryman, Blackheath		1 1
Hamp, E. A., Gr. to J. Thorne, Esq.	10 10	
Hampton, Rd., Gr., Trevethow, near Hayle		1 1
Hanafy, P. J., Messrs. Lee, Hammersmith		1 1
Hancock, Edward, Gr., Oxford House		1 1
Harbin, George, Esq., Newton House, Yeovil		1 1
§Harcourt, Admiral O. Vernon, Swinton Park ..	10 10	1 1
§Harcourt, George Granville, Esq., Oxford		2 2
Hardie, William, Gr., Castle Ashby Gardens		1 1
Harding, Thomas, Gr. to Mrs. Kemble		1 1
Hardwick, William, Gr. to T. Morris, Esq.		1 1
Harrington, William, Nurseryman, Dalston ..	2 2	1 1
Harris, John, Nurseryman, Bloomfield		1 1
Harrison, John, Nurseryman, Darlington		1 1
Haslar, Francis, Gr. to the Rev. W. A. Fitzhugh		1 1
Hawkins, Col. J. P., Minsterworth		1 1
§Hay, Sangster, & Co., Messrs., Seedsmen	14 14	
Hayter, John, "The White Hart," Old Brompton	10 10	
Heale, William, Nurseryman, Calne, Wilts		1 1
§Henderson, Andrew, Wellington Nursery	2 2	1 1
Henderson, E. G., ditto		1 1
Henderson, J. A., Esq., 64, Hamilton Terrace ..	12 12	2 2
Henderson, John, Gr., Deysbrook		1 1
Henderson, Messrs., & Co., Pine-apple Place ..	31 10	
§Henderson, Arthur, ditto		1 1
Henderson, M., Gr., Cole Orton Hall		1 1
Henderson, William, Landscape Gardener		1 1
Henderson, Wm., Oxton Hill Nursery, Birkenhead ..		1 1
Herod, Thomas, Messrs. Henderson & Co.		1 1
Hervey, William, Esq.	10 10	

GARDENERS' BENEVOLENT ADVERTISEMENT CONTINUED.

	Donat. £ s.	An. Sub £ s.
Hillhouse, Chas., Esq., Herne Hill, Surrey		1 1
Hill, Isaac, Gr. to Thos. Grissell, Esq.		1 1
Hill, William, Horticultural Builder, Brixton		1 1
Hobson, Ed., Esq., Stoke Park, Bristol		1 1
Hodding, T., Esq., 7, Delahay Street, Westminster		1 1
Hodge, James, Gr., Wadsley House, near Sheffield		1 1
Hogg, Robert, Esq., 61, Winchester Street		1 1
Holland, Henry, Gr., Brent Lodge, Hendon		1 1
Holland, William, Nurseryman, Fulham Road		1 1
Horsley, G., Esq., South Lambeth		1 1
Howe, James, Esq., 18, Maida Hill, West		1 1
Huggett, W. T., Gr., to Colonel Harcourt		1 1
Hume, Leonard, Gr. to Rob. Hanbury, Esq.	10 10	
Hurst, Evan, Gr. to S. Holes, Esq.		1 1
Hurst, W., Gr. to J. Batho, Esq., Cheshunt		1 1
§Hurst & M'Mullen, Seedsmen, 6, Leadenhall Street	21 0	2 2
§Hurst, W., jun., Esq., 6, Leadenhall Street	10 10	1 1
Hurst, Henry, Esq., ditto	1 1	1 1
Hutchison, Jas., Gr., Kidbrooke Park		1 1
Hutchison, William, Stratford-on-Avon		1 1
Hutt, Chas., Gr. to Miss Burdett Coutts		1 1
Hutt, James, Gr. to W. H. May, Esq.		1 1
Hutton, Thomas, Esq., Balham Hill, Surrey		1 1
Ingram, J., Royal Gardens, Windsor		1 1
Ingram, John, Gr. to Earl Brownlow		1 1
Ivery, Charles, Gr. to E. Hobson, Esq.		1 1
Ivery, James, Nurseryman, Reigate, Surrey		1 1
Ivery, Thomas, Gr. to F. Perkins, Esq.	10 10	
Ivery, William, Nurseryman, Peckham		1 1
Iveson, John, Gr., Sion House, Isleworth		1 1
§Johnstone, Sir J. V. P. Bart., M.P., Grosvenor Sq.	5 5	1 1
§Johnson, W. S., "Nassau Press," 60, S. Martin's La.	10 10	1 1
Jackman, George, Nurseryman, Woking, Surrey	2 2	1 1
Jackson, Henry, Gr. to G. Beaufoy, Esq.		1 1
Jackson, T. & Son, Messrs., Nurserymen, Kingston		1 1
Jenkins, T., Gr. Park Place, Dulwich		1 1
Jobson, John, Gr. to J. Winter Scott, Esq.		1 1
§Johnson, G. W., Esq., West Highlands, Winchester		1 1
Johnson, Jas., Nurseryman, Prescot, Lancashire		1 1
§Johnston, E., Esq., Beaulieu, Middlesex	10 10	
Johnston, Rev. F., Marston Rectory, near York		1 1
Jones, Robert, Gr. to W. Cotton, Esq.		1 1
Jones, John, Esq., Irongate Wharf, Southwark		1 1
§Jones, Wm., Esq., Clythe, Raglan, Monmouthshire		2 2
Jones, Wm., at Messrs. Rollisson, Tooting, Surrey		1 1
Joy, T., Gr. to Mrs. Colston, Roundaway Pk., Devizes		1 1
Judd, Daniel, Gr. to Earl Spencer, Althorp		1 1
Kay, Peter, Nurseryman, Finchley		1 1
Keele, W. G., Gr. to J. Butler, Esq., Woolwich		1 1
Keith, John, Gr. to Mrs. Simpson, Great Marlow		1 1
Kelman, J., Gr. to Admiral Hamilton, Chingford		1 1
Kemp, B., Gr., Rockbread House, Exeter		1 1
Kent, Henry, Gr., Tyttenhanger, St. Albans		1 1
Ker, Robert, 15, Queen Square, Liverpool		1 1
Kerr, William, Stanton, near Bakewell		1 1
Kernan, J., Great Russell Street, Covent Garden		1 1
Keynes, John, Nurseryman, Salisbury		1 1
Kidd, D., Gr., The Stud House, Hampton Court		1 1
King, T., Gr. to G. Lawrence, Esq., Salisbury		1 1
Kinghorne, F. R., Sheen Nursery, Richmond		1 1
Knight, John, Royal Gardens, Frogmore		1 1
§§§Lindley, John, Esq., 21, Regent Street	35 15	
Legge, the Hon. Mrs., Bramdean House, Alresford		1 1
Laing, D. G., Esq., Villiers Street, Strand		1 1
Laing, Samuel, Esq., M.P., Brighton	21 0	
Lake, T., Gr., West Derby, Liverpool		1 1
Lancaster, R., Gr. to Mrs. Upton, Sedburgh		1 1
Lane, J., Gr. to Horsley Palmer, Esq., Fulham		1 1
§Lane & Sons, Messrs., Berkhampstead		1 1
Lawrence, J., Gr. to J. Porson, Esq., Ham		1 1
Lawson, P., & Sons, Edinburgh and London	15 15	1 1
§§Lee, J. & C., Messrs., Nurserymen, Hammersmith	42 0	2 2
Legge, The Rev. Mr., Ashstead, near Epsom		1 1
L., Mrs., Balham Hill, Surrey	21 0	
Lessells, J., Gr., to Sir J. Boughey, Bart., Newport		1 1
Liddiard, J., Gr., The Grange, near Uxbridge	10 10	
Little & Ballantyne, Messrs., Carlisle		1 1
Llewellyn, J. D., Esq., Penttigar, near Swansea		2 2
Lochner, C. P., Esq., Doctors' Commons		1 1
§Loddiges, Conrad, Esq., Hackney	10 10	1 1
§London Manure Company, E. Purser, Esq., Sec.		1 1
§Low, H., & Co., Messrs., Nurserymen, Clapton	13 13	2 2
Low, Stuart, H., ditto	1 1	1 1
§Loyd, Lewis, Esq., jun., 20, Hyde Park Gardens	10 10	
Lovelock, D., Gr. to T. W. Gifford, Esq.		1 1
Lucas, J., Gr., Kimbolton Castle, Kimbolton		1 1
Lucking, W. J., Florist, Paddington		1 1
Lucombe, Pince, & Co., Messrs., Exeter		1 1
§Lyall, George, Esq., jun., Gatton Park, Surrey	10 10	
Mansfield, The Rt. Hon. the Earl of, Hampstead		1 1
§§Martineau, J., Esq., Basing Park, Alton, Hants	31 10	1 1
§§Mechi, J. J., Esq., Tiptree Hall, Kelvedon, Essex	45 5	
Meux, Sir Henry, Bart., M.P., Waltham Cross		2 2
Mordaunt, Lady, Walton House, Warwick		1 1
M'Arthur, Peter, Nurseryman, Edgware Road	1 1	2 2
M'Bey, G., Gr., Sudbrooke Holme, Lincoln		1 1
M'Donald, J., at Messrs. Low & Co.'s, Clapton		1 1
M'Ewen, D., Gr. to Col. Wyndham, Sussex		1 1
M'Ewen, G., Esq., Horticultural Gardens, Chiswick		1 1
M'Intosh, Donald, Seedsman, Salisbury		1 1
M'Millan, H., Mr Cattell's Nursery, Kent		1 1
M'Pherson, R., Nurseryman, Plaistow, Essex		1 1
M'Robie, Charles, Gr. to O. Ricardo, Esq., M.P.		1 1
M'Mullen, W., Esq., jun., 6, Leadenhall Street		1 1
Mackay, J. B., Nurseryman, Totteridge, Herts		1 1
Mackay, James, Gr., Longworth, Ledbury		1 1
Mackintosh, George, Nurseryman, Hammersmith		1 1
Maclaren, John B., Gr. to S. C. Whitbread, Esq.	10 10	
Madgwick, R., The Swan Hotel, Alton, Hants		1 1
Malcolm, John, Esq., Lamorby, Bexley, Kent	10 10	
Mallison, Fred. T., Royal Gardens, Claremont		1 1
§Marnock, Robert, Esq., Royal Botanic Gardens	5 5	1 1
Marter, Wm., Ottershaw Nursery, Chertsey		1 1
Martin, John, Gr. to Sir P. Dyke		1 1
Mason, James, Gr., Hill House Gardens, Bristol		1 1
Matthews, Alexander, Nurseryman, Sheffield		1 1
May, Richard, 1, Albert Place, Penge, Kent	10 10	
Maybee, Charles, Esq., Kingsley, Alton, Hants		1 1
Meeking, Charles, Esq., Wood Lodge, Streatham		1 1
Meldrum, James, Nurseryman, Kendal		1 1
Mennie, A., at Messrs. Donald & Sons, Surrey	10 10	
Mercer, William, Esq.	10 10	
Metcalf, Jacob, Esq., Edgware Road		1 1
Methven, Thomas, Stanwell Nursery, Edinburgh		1 1
Mileham, James, Gr. to Sir Chas. Taylor, Bart.		1 1
Meller, Walter, Esq.	10 10	
Mills, George, Uxbridge Road, Ealing		1 1
Mills, R., Esq., Court Yard, Eltham, Kent		1 1
§Milner, E., Esq., Crystal Palace, Sydenham	10 10	
Milne, G., Gr. to Sir R. Throckmorton, Bart.		1 1
Milne, Arnott, & Co., Nursery, Vauxhall		2 2
Milroy, Peter, Gr. to J. W. Napier, Esq.		1 1
§Minier, Nash, & Nash, Messrs., Seedsmen, Strand	26 5	
Mitchell, J., Gr. to Lord Wenlock, Escrick Park		1 1
Moffatt, T., Clumber Gardens, Worksop, Notts		1 1
Moore, Thomas, Botanic Gardens, Chelsea		1 1
Moore, William, New Hall, Salisbury		1 1
Moore, William, Nurseryman, East Dereham		1 1
Mortlock, John, Esq., Melbourne, Royston	10 10	
Moses, George, Gr., Pepper Hall, Northallerton		1 1
Mountford, William, Gr., Kinmell Park		1 1
Mowl, Josh., Markhouse Common, Walthamstow		1 1
Moxon, Miss, Leyton, Essex	10 10	
Moxon, Felix, Esq., 27, Throgmorton Street	5 5	1 1
§§Moxon, Thomas, Esq., Leyton, Essex	10 10	
Muirhead, William, Gr. to Lord Charles Wellesley	10 10	
Murdoch, John, Gr., Sandgate Lodge, Sussex		1 1
Murdoch, John, Markham Gardens		1 1
Murray, William, Gr., Ormsby Gardens		1 1
Munro, J., Forester to the Marquis of Northampton		1 1
Murrison, James, Gr. to the Duke of Montrose		1 1
Mylam, John, Gr. to G. Reed, Esq., Burnham	10 10	
§Northumberland, His Grace the Duke of	253 6	
§§Norman, George Warde, Esq., Bromley, Kent	21 0	1 1
Norman, Mrs., Carshalton, Surrey		1 1
Norman, George, Esq., ditto		1 1
Nash, Francis, Esq., Pickle Herring Wharf		1 1
Neeld, John, Esq., M.P., Chippenham	10 10	
Nethercote, H. O., Esq., Northampton		1 1
§Noble, Cooper, & Bolton, Messrs., Seedsmen	10 10	
Nutting & Sons, Messrs., Seedsmen, Barbican		1 1
§Overstone, The Right Hon. Lord	21 0	
Oakes, Ralph, Gr. to W. H. Jones, Esq.		1 1
Odell, Islip, Esq., Upper Clapton		1 1
Ogden, John, Nurseryman, Coventry		1 1
Orchard, George, Gr., to J. Rigby, Esq., Kew		1 1
§Ormson, Henry, Horticultural Builder	17 17	1 1
Orr, William, Nurseryman, Hulme, Manchester		1 1
Osborne & Sons, Messrs., Nurserymen, Fulham		2 2
Owen, Richard, Leamington		2 2
§Paxton, Sir Joseph, M.P., Sydenham	105 0	
§Pownall, Henry, Esq., 20, Ladbroke Square	10 10	
Peto, Sir S. Morton, Bart., Kensington	21 0	2 2
Page, Joseph, 7, Woodstock St., Oxford St.		1 1
Page, Thos., Gr. to W. Leaf, Esq., Streatham		1 1
Pain, Robert, Nurseryman, Uxbridge		1 1
Palmer, Charles (legacy)	50 0	
Palmer, John, Nurseryman, Annan, Dumfries-shire		1 1
Pamplin, James, Nurseryman, Walthamstow		1 1
Pantling, John G., Gr. to B. Smith, Esq.		1 1
Pape, R., Gr. to Joseph Pease, Esq.		1 1
Parker, John, Messrs. Fisher & Co., Sheffield		1 1
Parker & Williams, Messrs., Paradise Nursery		2 2
Parsons, Anthony, Gr. to W. Blake, Esq.		1 1
§Paul, George, Nurseryman, Cheshunt		1 1
Paul, William, Nurseryman, Cheshunt		1 1
Pawley, W., Bromley	10 10	
Paxton, George, Esq., Rock Hill, Sydenham	10 10	
Pease, Joseph, Esq.	10 10	
Pearson, James, Nurseryman, Hampstead Road		1 1
Peel, John, Gr. to H. Bevan, Esq.		1 1
Peers, J. D., Gr. to J. Groom, Esq.		1 1
Perkins, Thomas, Gr. to S. C. Fletcher, Esq.		1 1
Perceval, Miss, Bramdean Lodge, Alresford		1 1
Perceval, Miss C., ditto ditto		1 1
Perceval, the Hon. and Rev. C. G.		1 1
Perry, J., Algerkirk Gardens, Spalding, Lincolnsh.		1 1
Phelps, Jas., Gr. to H. Bright, Esq.		1 1
Phipps & Co., Messrs., Upper Thames Street	11 11	
Pillens, Wm., Gr. to the Duke of Northumberland		1 1
§Pince, Robert T., Esq., Exeter		1 1
Pitman, W. F., Esq., Threadneedle Street		1 1
Plymouth, The Seed, Agric. Imp. and Man. Comp., Union Road, Plymouth, W. E. Rendle, Manager	2 2	
Preston, T., Gr., Woodford Hall, Woodford, Essex		1 1
Pond, James, 6, Elm Place, Bath		1 1
§Pontey, Alexander, Nurseryman, Plymouth	10 10	1 1
Pope, Thos., Gr. to Sir G. Osborne, Bart.		1 1
Pott, R., Esq., Bridge Street, Southwark	10 10	
Prior, Edw., Esq., 48, York Terrace, Regent's Park		1 1
Protheroe, J., Roll's Gardens, Chigwell, Essex		1 1
Protheroe & Morris, Messrs., Nur., Leytonstone		1 1
§Rothschild, The Baron, M.P., Gunnersbury Park	42 0	
Rucker, Sigismund, Esq., Wandsworth	31 10	
Rothschild, The Baroness, Gunnersbury Park		1 1
Rothschild, Messrs., New Court, St Swithin's Lane	21 0	
Ramsay, Henry, Brooklands Nursery, Chelsea		1 1
Reed, George, Esq., Burnham, near Bridgewater	10 10	
Reeves, J. R., Esq., King's Arms Yard, Moorgate St.	10 10	
Reed, John L., Messrs. Lee, Hammersmith		1 1
Reith, Alexander, C. Loddiges, Esq., Hackney		1 1
Richardson, W., Esq., Charles St., Horselydown		1 1
§Ridgway, G. S., Esq., Burlington Villa, Chiswick	10 10	
§Rivers, T., Nurseryman, Sawbridgeworth, Herts	26 5	2 2
Robins, E., Gr. to Colonel Hawkins		1 1
Robins, William, Gr. to W. Beach, Esq.	10 10	
Robinson, F. E., Esq., Old Bank, Oxford		1 1
Robinson, George, Gr. to E. R. Tunno, Esq.		1 1
Robinson, James, Gr., Chiselhurst		1 1
Robinson, Joseph	10 10	
Robson, John, 15, Clifton Terrace, Brighton		1 1
§Rollisson & Sons, Messrs., Nurserymen, Tooting	10 10	2 2
Ronalds, Robert, Nurserymen, Brentford		1 1
§Rosher, E., Esq., St. John's Wood		1 1
§Roupell, Wm., Esq., M.P., Roupell Park, Brixton	15 15	1 1
Rowell, William, Gr., Boldon House, West Boldon		1 1
Rowe, Frederick, Gr., Peterborough House, Fulham		1 1
§Rowland, A., Esq., Rosenthal, Lewisham	5 5	
Roy, J., Nurseryman, Aberdeen	10 10	
Russell, Lord John, M.P.	10 10	
Rye, Henry, Gr. to O. S. Onley, Esq.		1 1
Sutherland, his Grace the Duke of, K.G.		1 1
Sefton, the Right Hon. the Earl of, Croxteth Hall	10 10	
South, Sir James, Campden Hill, Kensington		1 1
§Sullivan, Rt. Hon. Laurence, Broom House, Fulham	10 10	
Sanders, James, Gr., Ashurst, Dorking		1 1
Sanders, John, Gr. to J. Assheton Smith, Esq.		1 1
Sansom, John, Gr. to the Hon. Mrs. Legge		1 1
Scarboro, William, Gr., Hendon		1 1
Scholey, Wm., Gr., Burnham Hall, Norfolk	10 10	
§Schroeder, J. H., Esq., Brighton	10 10	
Schroeder, Mrs., ditto	10 10	
Scobie, John, Gr., Holland House, Kensington		1 1
Scott, Alexander, Gr. to Sir G. Staunton, Bart.		1 1
Scott, H., Gr., Ponsbourne Park, Hertford		1 1
§Scott, J. R., Esq., Crouch End, Hornsey		1 1
Scott, James, Gr. to R. V. Yates, Esq.		1 1
Sealey, John, Mugland, Nursery, Bristol		1 1
Searle, William, Gr. to T. L. Whitmore, Esq.		1 1
Selkirk, John, Gr., Porters, near Barnet		1 1
Shackley, Edward, Gr., Croft Lodge, Ambleside		1 1
Shanks & Son, Messrs., Arbroath		1 1
Shakshaft, Samuel, 25, Park Street, Islington		1 1
Sharland, Thomas, Gr., Gunnersbury House, Acton		1 1
Shepherd, James, Gr., West Dean House, Chichester	10 10	
Sheppard, S., Gr. to T. S. Oudon, Esq.		1 1
Shuard, John, Gr., Herne Hill		1 1
Shilling, Stephen, Nurseryman, North Warnboro		1 1
Shurvin, Joseph, Gr. to W. Miskin, Esq., Eltham		1 1
Sim, R., Nurseryman, Footscray, Kent		1 1
Simpson, Edward, Gr. to Lord Wrottesley		1 1
Simpson, Geo., Esq., the Old Palace, Richmond		1 1
Simpson, T. B., Esq., Cremorne Gardens, Chelsea		1 1
Skene, John, Gr. to Sir R. G. Gerard, Bart.		1 1
Skinner, George Ure, Esq., Rickmansworth	33 6	
Slade, A. F., Esq., Broad Street	10 10	
Smith, Abel, Esq.	10 10	
Smith, Charles, Gr. to Captain Chawner		1 1
Smith, C., Gardener, Park Place, Dulwich		1 1
Smith, Charles, Gr. to A. Anderson, Esq.		1 1
Smith, George, Gr. to J. Hargreaves, Esq.		1 1
§Smith, W. B., Esq., 27, Gt. George St., Westminster		1 1
Smith, J., Gr. to Lord Tenterden		1 1
Smith, John, Royal Botanical Gardens, Kew		1 1
Smith, John, Gr. to Miss Webb		1 1
Smith, John, Gr. to the Earl of Scarborough		1 1
Smith, Oswald, Esq., Bexley, Kent	10 10	
Smith, Richard, Nurseryman, Worcester	10 10	
Smith, Thomas, Gr. to the Hon. and Rev. J. Somers Cocks, Mathon Lodge, Malvern		1 1
Snow, Seward, Gr. to Earl de Grey, Wrest Park	10 10	
Snow, W., Gr. to Earl de Grey, Putney		1 1
Soden, J., & Co., Messrs., Nurserymen, Woodstock		1 1
Solomon, L., Fruiterer, Covent Garden	1 1	1 1
Sowerby, James De Carle, Esq., Royal Botanic Gardens, Regent's Park		1 1
Spary, E., Queen's Graperies, Brighton		1 1
Spavy, George, Clumber Park, Worksop		1 1
Speed, Joseph, Gardener, Saffron Walden		1 1
Spencer, James, Esq., Leicester		1 1
§Spencer, J., Gr. to the Marquis of Lansdowne	10 10	
Spire, Robert, Gr. to W. Taylor, Esq.		1 1
Spivey, Edward, Gr. to J. N. Houblon, Esq.		1 1
Staniforth, Rev. T.	10 10	
Stanley, George, Bexley, Kent	10 10	
Stanley, Wm., Gr. to O. Smith, Esq.		1 1
Stannard, J., Gardener, Priory, Roehampton		1 1
Starkey, J. B., Esq., Spye Park, Chippenham		1 1
§Stevens, J. C., Esq., King St., Covent Garden	16 11	
Stephens, Charles, Esq., Brixton, Surrey		1 1
Stephenson, Jas., Gr. to Harvey Combe, Esq.		1 1
Stewart, Alexander, Loughcrew, Ireland		1 1
Stewart, G., Gr. to Sir J. Pollen, Bart.		1 1
Stone, Mrs., Dulwich		1 1
Streacy, T., Pewter Platter, Norton Folgate		1 1
§Strachan, J. M., Esq., Teddington Grove		1 1
Stuart, William, Esq., 18, Hill St., Berkeley Sq.	10 10	
Sutherland, George, Yorkshire		1 1
Sutton & Sons, Messrs., Seedsmen, Reading		2 2
Tanqueray, Charles, Esq., Vine St., Bloomsbury	5 5	1 1
Tanqueray, John S., Esq., ditto		1 1
Tarent, G., Gr., Plumber's Lane, Camberwell		1 1
§Tayloe, Thos., Esq., 4, Scott's Yard, Cannon St.	11 11	
Taylor & Son, Messrs., Kensall Green		1 1
Taylor, Adam, Gr. to Weston Wood, Esq.		1 1
Taylor, George, St. John's Market, Liverpool		1 1
Taylor, Wm., Mineral Wells, Streatham, Surrey	1 1	1 1
Thibaut & Keteleer, Messrs., Paris		1 1
Thomas, George, Gr. to J. Baxendale, Esq.		1 1
Thomson, David, Leith Walk, Edinburgh		1 1
Thomson, George, Gr. to Mrs. Dixon		1 1
Thompson, Geo., Gr. to George Lane Fox, Esq.	10 10	
Thomson, Wm., Gr. to the Duke of Buccleuch		1 1
§§Thorne, J., Esq., Mawbey House, South Lambeth	11 11	
Tillery, William, Gr. to the Duke of Portland		1 1
Tiley, E., Nurseryman, Bath		1 1
Tillyard, G., Gr. to Rt. Hon. Earl Eversley		1 1
Tobutt, Wm., 5, Priory Cottages, South Lambeth		1 1
Todman, James, Nurseryman, Eltham, Kent		1 1
Toogood, C., Gr. to Sir T. F. Lewis, Bart.		1 1
Toward, Andrew, Royal Gardens, Cowes	10 10	
§Travers, J. H., Esq., St. Swithin's Lane, City	10 10	
Trotter, J., Gr. to the Duke of Beaufort		1 1
Truelove, William, Gr., Buckland Court, Dorking		1 1
Truman, Hanbury, & Co., Messrs, Spitalfields	10 10	
§Turner, Charles, Nurseryman, Slough	11 11	1 1
Turrill, John, Hartley Maudit, Alton, Hants		1 1
Turtle, James, Gr. to E. R. Pickering, Esq.		1 1
Tylor, Francis, Esq., Uppingham		1 1
Vair, James, Gr. to Lady Neville, Dangstein		1 1
Veitch, James, Nursery, Exeter		1 1
§§Veitch, Jas., jun., Royal Exotic Nursery, Chelsea	47 5	1 1
Veitch, John Gould, ditto ditto		1 1
Vickers, William, Gr. to Viscount Folkestone		1 1
Videon, G., 1, Clarendon Place, Edgeware Road		1 1
Wrench & Sons, Messrs., London Bridge	52 12	
Wackrell, Uriah, Gr. to H. Wheeler, Esq.		1 1
Wadey, Michael, Gr. to C. Meeking, Esq.		1 1
Wainwright, John, Gr., Ruston Hall, Kettering		1 1
Ward, E. M., Gr. to C. Kinnersley, Esq.		1 1
Ward, R. C., Seedsman, Bath		1 1
§Warner, C. B., Esq., Stratford, Essex	1 1	1 1
Wartnaby, Wm., Esq., Market Harborough		1 1
Waterer & Godfrey, Messrs., Nurserymen	23 2	
Waterer, John, Nurseryman, Bagshot		1 1
Weaver, Thomas, Gr. to Kevill Davis, Esq.		1 1
Webb, John, Gr. to W. H. Cox, Esq.	10 10	
Webber, M., & Co., Messrs., Covent Garden		1 1
Wedlake, George, Gr. to Mrs. Wade Brown		1 1
§Weeks, J., King's Road, Chelsea	12 12	
Wells, Chas., Gr., Highnam Court, Gloucester		1 1
Wells, George, Gr. to J. Hussey, Esq., Kent		1 1
Wells, Joseph, Shorn, near Gravesend		1 1
Wells, J., Gr. to J. B. Phillipson, Esq.		1 1
Wells, Samuel, Gr., Holme Lacy, Hereford		1 1
§Wheeler, J. C., & Sons, Messrs., Seedsmen		1 1
White, John, Gr., Norman's Court, Stockbridge		1 1
Whiting, J. B., Gr. to H. T. Hope, Esq.		1 1
Wighton, J., Gr. to Lord Stafford, Cossey Hall		1 1
Wilder, E., Esq.	10 10	
Wilder, Mrs., Belmont House, Havant		1 1
Wilkins, William, Nurseryman, Newport	10 10	
Williamson, Joseph, Gr. to the Earl of Lonsdale		1 1
Wilcox, —, Dunham Massey, Altringham		1 1
Wilson, Isaac, Gr. to A. Mortimer, Esq.		1 1
Wilson, R., Esq., Corn Exchange, Sheffield		1 1
Wilson, William, Gr. to Lord Melford		1 1
Winfield, William, Gr., Warwick		1 1
Winston, Rev. B., Harcourt Buildings, Temple		1 1
Wintle, Thomas, Esq., Swanswick Villa, Bath		1 1
Witham, William, Horticultural Builder		1 1
Wood & Ingram, Messrs., Nurserymen	1 1	1 1
Wood, William & Son, Messrs., Nurserymen		1 1
Woodbourne, Jas., Esq., Kingsley, Alton, Hants		1 1
Woods, W., Heath Nursery, Leighton Buzzard		1 1
Wood, Western, Esq.	10 10	
§Woods, Rd., Bedford Nursery, Hampstead Road	26 5	1 1
Woods, John, Gr., Ollerton, Notts		1 1
§Woodroffe, Charles, Harrow Road	10 10	1 1
Woolley, Samuel, Gr. to H. B. Ker, Esq.	10 10	
Wortley, B., at Mr. Barnes', Camden Nursery		1 1
Wortley, Gr. to Mrs. Maubert, Norwood		1 1
Wright, George, Mitcham Common, Surrey		1 1
X. Z., per Mr. Chandler, Vauxhall	10 10	
Yates, —, Esq., Sale Moor, Manchester		1 1
Yole, Francis, Gr., Plymouth		1 1
Young, Andrew, Tadsworth, Banstead, Surrey		1 1
Young, George, Gr. to Mrs. Stone, Dulwich		1 1
Young, George, Gr. to Lord Braybrooke, Essex		1 1
Young, John, Esq., Elm Cottage, Taunton		1 1

[Those marked thus § have served the office of Stewards.

ROYAL SOUTH HANTS SEED ESTABLISHMENT.

UNDER THE PATRONAGE OF H.R.H. THE PRINCE CONSORT, THE AGRICULTURAL, HORTICULTURAL SOCIETY OF INDIA, AND THE LEADING AGRICULTURISTS OF THE UNITED KINGDOM.

PAGE AND TOOGOOD can now supply GARDEN AND FARM SEEDS, carriage free; SEED POTATOES, &c. The numerous Prizes gained by their Stocks are convincing proofs of superior quality, and their prices compete with any house in the kingdom. WHOLESALE and RETAIL PRICED CATALOGUES upon application.

Agents for ODAMS' Blood Manure, Superphosphate, &c. Seeds Packed for Exportation to all Parts of the world,

37 and 38, Oxford Street (facing the Railway Terminus); and 58, Above Bar, Southampton.

PRICED CATALOGUE OF SEEDS FOR 1859.

Just published by MILNE, ARNOTT, & Co., and will be forwarded free upon application,

A PRICED AND DESCRIPTIVE CATALOGUE OF SEEDS, containing select lists of the best kinds all from the most genuine stocks, and of excellent quality. Orders above 1*l.* carriage free to any station within 100 miles of London; above 5*l.* to any station or port in the United Kingdom.—MILNE, ARNOTT, & Co., Wandsworth Road, London, S., successors to Messrs. Chandler & Sons (established upwards of 60 years).

PINE-APPLE NURSERY, EDGEWARE ROAD (W.).

ARTHUR HENDERSON AND CO. beg respectfully to announce that their CATALOGUE OF KITCHEN GARDEN AND FLOWER SEEDS FOR 1859, with a List of Garden Implements and other requisites is now published, and will be forwarded, post free, on application.

They particularly desire to call the attention of the public to their "celebrated Short-topped Garden Beet," the only variety that really will repay the grower; colour, flavour, and quality are such as to render it worthy of extensive cultivation; also "Kite's Branching Marrow Pea," a very valuable and prolific bearer for every day use; "Snow's true White Winter Broccoli;" "Snow's Champion Cos Lettuce," a large crisp summer and autumn Lettuce, and for these seasons unequalled. In this select List will also be found the "Moor Park Lettuce," those very superior sorts as yet but little known, namely, the "Palatine" and "Versailles" Cabbage Lettuce; neither of these are disposed to run to seed during the hot summer months. The White and Black spined Imperial Cucumber, the new sprouting or Feather-stemmed Savoy, a scarce but most delicious Green; the "Waterloo framed short-topped seeding Potato," raised between the "Albion" and "Frame;" it is earlier than either, very productive, and the sort that must eventually be depended upon as the best early frame and forcer, as soon as its merits become better known. The "Australian Salad Cress"; this plant grows about 1 foot in height, branching and spreading all round the stem; it may be constantly cut and gathered throughout the summer, the leaves are of a peculiarly delicate light green, the flavour is exquisite, grateful, and piquant.

CHAMPION OF SCOTLAND PEA. —A new and first-rate sort, declared by all who grew it last year to be the most distinct and best flavoured Pea in cultivation. To be had only at PETER LAWSON & SON'S, the Queen's Seedsmen, &c., who are also prepared to execute orders for all sorts of Garden and Flower Seeds of the finest quality.

27, Great George Street, Westminster.

"JACK OF NEWBURY" SWEDE, ETC. PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN, &c., 27, Great George Street, Westminster, respectfully request attention to their very genuine Stock of the above excellent Swede; also of the LOTHIAN PURPLE-TOP SWEDE, both of which have been selected with the greatest care. They have also a very fine Stock of the KOHL RABI, or TURNIP-ROOTED CABBAGE, specimens of which were shown at their Stands at Smithfield Club Show. The Kohl Rabi was largely grown last season, and may now be relied on as a substitute for the Turnip and Mangel, where these roots do not succeed, or for filling up blanks where there is a partial failure. Its feeding qualities, hardiness, and weight per acre are equal to the Swede, and all kinds of stock prefer it to other roots.

P. L. & SON have also selected a first-rate Stock of MANGEL WURZEL SEED, which they can confidently recommend. Their natural GRASS SEEDS have been also saved with very great care, and they are ready to supply them separately or in mixture, for laying down Permanent Pastures, Lawns, &c.

P. L. & SON have arranged to deliver Seeds free throughout England and Wales from their London Establishment, for all quantities exceeding 20*s.* in value.

LISTS OF PRICES of the above and all other Seeds, Plants, &c., may be had on application.

27, Great George Street, Westminster.

CALLICARPA PURPUREA.

JOHN STANDISH, the exhibitor of the above (at St. James's Hall), can supply a few good plants at 7*s.* 6*d.* each. The following passage from Dr. Lindley's leading article in the *Gardeners' Chronicle* for Nov. 20 will give an idea of its beauty:—"Callicarpa purpurea, quite insignificant when in flower, was beautiful in its winter dress of innumerable rich purple berries, about the size of swan shot.' It is easily cultivated, and does well in a cold greenhouse or conservatory planted out, where it will produce thousands of bright purple berries resembling glass beads, and remaining on nearly the whole winter.—Bagshot, Jan. 29.

FLOWER AND VEGETABLE SEEDS OF BEST QUALITY.—The Advertisers respectfully solicit applications for their extensive and DESCRIPTIVE CATALOGUE OF FLOWER AND VEGETABLE SEEDS, which they will feel pleasure in forwarding to any address throughout the world without charge, and postage free. It will be found to contain, beside the usual names of garden occupants, a numerous list of very CHOICE, NEW, and RARE SEEDS of all classes of the floral world, with many not to be met with elsewhere; and also of the Kitchen Garden Department, to the quality and purity of which they pay particular attention. Collections made up for all climates.—Address HOOPER & Co., Seedsmen, Covent Garden Market, London, W.C.

NEW FLORAL CATALOGUE, 1859.

CAREY TYSO, FLORIST and SEEDSMAN, Wallingford, Berks, announces that his NEW CATALOGUE will be sent to any address, free, for one postage label.

Selections therefrom as under:—

Double Anemones	..	50 fine sorts	..	10*s.* 6*d.*	to	£0	13*s.*	0*d.*
Ranunculuses	..	50 splendid do.		20	0	to 2	0	0
Seedling ditto	..	50 ditto	..	60	0	to 3	10	0
Carnations and Picotees		25 pairs ditto		35	0	to 3	0	0

C. T. has saved some Choice Ranunculus, Pink, and Sweet William Seeds, in packets 2*s.* 6*d.* and 5*s.* each, post free.

Imported German Seeds of best quality.

HARDY SCARLET RHODODENDRONS AND AMERICAN PLANTS GENERALLY.

WATERER AND GODFREY'S PRICED and DESCRIPTIVE CATALOGUE of the above beautiful tribe of plants, as exhibited by them in London and Manchester, may now be had on application inclosing one stamp for postage. The Catalogue also furnishes the heights and prices of their unequalled stock of Conifers and Evergreens, &c. Catalogues may also be had of Messrs. J. MAY & Co., Seedsmen, &c., Wellington Street, Strand.

Knap Hill Nursery, Woking, Surrey.

SEED CORN FROM THE CHALK.

MESSRS. RAYNBIRD AND HARVEY beg to offer to Agriculturists requiring change of SEED Talavera, Red Nursery, and April WHEAT, the best sorts for Spring sowing.

Chevalier, Thanet, Golden Drop, Long-eared Nottingham, American, Hudson's Golden Melon, Banham's Sprat, and other varieties of BARLEY.

Canadian Potato, Hopetoun, Poland, and Tartarian OATS.

Fine CLUSTER BEANS, weighing 68 lbs. per bushel.

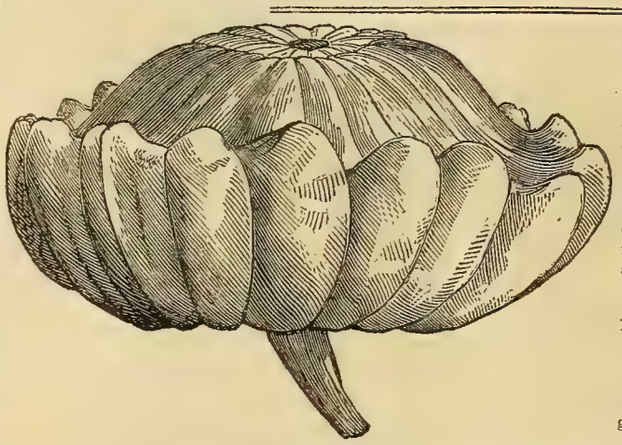
Samples and Prices on application.

Address—Basingstoke, and 89, Seed Market, Mark Lane, London, E.C.

POTATOES FOR EARLY PLANTING.

MYATT'S PROLIFIC SEEDLING ASH-LEAF KIDNEY.—For description of this valuable variety, which has again given such universal satisfaction, see Dr. Lindley's report in the *Gardeners' Chronicle* of August 1, 1857, at the Horticultural Society's Garden, wherein it is described as a "better cropper than the old Ash-Leaf, and one of the best early kinds." Price per bushel, 7*s.* To be had of Mr. J. MYATT, Evesham; or of Mr. J. MYATT, Camberwell. A small quantity of Yellow Globe Mangel Seed saved from large selected roots for stock. The trade on application.

IMPROVED CUSTARD VEGETABLE MARROW.



THIS handsome variety is totally distinct from the one figured in the Horticultural Periodicals of last season. We forwarded a specimen of the Fruit (as above) to PROFESSOR LINDLEY last Spring, which was exhibited by him at the HORTICULTURAL ROOMS in Regent Street, and noticed in The *Gardeners' Chronicle* (page 175). Its unique shape, agreeable flavour, and easy culture, added to its large productiveness, is a strong recommendation to its having a place in every garden.

We are this season enabled to offer the New Seed at a reduced price, as under.

Packets of 18 Seeds, 1*s.* 9 Seeds, 6*d.*

Price to the Trade per 100 or 1000 will be given on application.

BASS & BROWN, SUDBURY, SUFFOLK.

CHOICE FLOWERS.

BUTLER & McCULLOCH'S SPRING CATALOGUE OF SEEDS,

ARRANGED on a new and original plan, with copious Descriptive and Cultural Notes, and containing many new and rare species and varieties not found in any other Catalogue, now ready and may be had free and post paid on application.

FLOWER, SHRUB, TREE, and VEGETABLE SEEDS, the crop of 1858, saved with the greatest care, by the most eminent growers.

We may also state that the Sardinian correspondent of Messrs. JAMES CARTER & Co., whose Seeds, especially Carnations and Picotees, have given such universal satisfaction, has transferred the Agency from that firm and appointed us his representative in this country. To meet the growing demand for first class flowers, particularly FLORISTS' FLOWERS, we have adopted our usual maxim of charging the lowest possible prices.

A selection of 44 pkts. of beautiful Annual Flower Seeds						7*s.*	6*d.*	
Ditto	33	ditto	ditto	..	..	5	6	
Ditto	21	ditto	ditto	..	..	3	6	
A selection of 40 pkts. of beautiful Biennial and Perennial ditto		.. ..				10	6	
Ditto	31	ditto	ditto	..	..	7	6	
Ditto	24	ditto	ditto	..	..	5	6	

An Assortment of Vegetable Seeds, 20 quarts of Peas, and other Seeds in proportion for 1 year's supply						£3	3*s.*	0*d.*
Ditto	ditto	12 quarts of Peas	ditto	..		2	2	0
Ditto	ditto	6	ditto	ditto	..	1	1	0
Ditto	ditto	5	ditto	ditto	..	0	15	0

All Flower Seeds sent post paid, and Vegetable or Vegetable and Flower Seeds amounting to 1*l.* 1*s.* Carriage Paid to any principal Railway Station in England, Wales, and Scotland, or any port on the Irish Coast.

BUTLER & McCULLOCH, Covent Garden Market.

SEEDS RIPENED ON THE CONTINENT.

JAMES CARTER & Co.

HAVING observed their name mentioned in an advertisement in connection with a late correspondent, feel it their duty to state that, preferring to have their Seeds from the Continental growers *direct*, one of the Firm has travelled during the past autumn with that object, *and purposes doing so every season*; the services of the correspondent alluded to are therefore dispensed with. Their Seeds for the present season, having been *personally* selected, are better than any they have hitherto offered.

JAMES CARTER & CO., Seedsmen, 238, High Holborn, London, W.C.

GENUINE KITCHEN GARDEN SEEDS.

JAMES CARTER & CO.

ARE NOW READY TO SUPPLY SEEDS FOR THE VEGETABLE AND FLOWER GARDEN, WHICH WILL BE FOUND, AS USUAL, OF THE BEST QUALITY ONLY.

CARTER'S "ENCYCLOPÆDIC CATALOGUE OF SEEDS,

AND GARDENER'S VADE MECUM."

The Twenty-fourth Annual Issue of the above is now ready, and, in addition to its usual comprehensiveness, has affixed a CALENDAR OF OPERATIONS for each month in the year for the Vegetable and Flower GARDEN, also for the Stove, Conservatory, Greenhouse, Orchid House, Pineries, Vineries, Pits, Frames, &c., forming a complete Gardener's Book of reference, which it is hoped will be found useful alike to the Amateur and professional Gardener. Forwarded free of charge and post paid to all parts of the world upon application.

JAMES CARTER & CO., Seedsmen, 238, High Holborn, London, W.C.

MEADOW AND PASTURE GRASS SEEDS.

GEORGE GIBBS & Co., Seedsmen, 26, Down Street,

BEG to announce that their mixtures of GRASS SEEDS are now ready for delivery. These mixtures are made up expressly to suit the various soils and the growth of each variety is fully tested previous to being bulked. G. G. & Co. having supplied the Seeds for *Hyde Park, St. James's, and Regent's Park, Kensington Gardens, Kennington Park*, &c., for many years, feel assured no further testimonials are requisite. The Seeds are made up into two different mixtures, as they do not sow well together; 2 bushels of the light and 12 lbs. of the heavy seeds are allowed per acre.

Mr. GIBBS, giving his personal attention to the assorting of these mixtures assures his friends that every care is taken with regard to the proper proportions.

MIXTURES FOR PERMANENT MEADOW & PASTURE (adapted to the different soils) 32s. to 34s. per acre.
MIXTURES FOR IMPROVING & RENOVATING OLD GRASS LAND (6 to 12 lbs. per acre) 1s. per lb.
MIXTURES OF THE FINEST SORTS FOR LAWNS, GRASS PLOTS, BOWLING GREENS, &c, 1s. 3d. per lb.

SELECT STOCKS OF THE UNDERMENTIONED AGRICULTURAL SEEDS SUPPLIED AT THE PRICES STATED FOR THE PRESENT MONTH:—

MANGEL WURZEL.	Per lb.—s. d.	CARROTS.	Per lb.—s. d.	SWEDES.	Per lb.—s. d.	RYE-GRASS.	Per bushel—s. d	CLOVERS.	Per lb.—s. d.	VARIOUS.	Per lb.—s. d.
Long Red	0 9	White Belgian ..	1 0	Ashcroft	0 9	Gibbs' Improved Italian	7 0	English Red ..	9d. to 0 10	Holcus saccharatus ..	2 0
Elvethan Long Red	0 10	Yellow Belgian ..	1 3	Skirving's	0 9	Dickenson's Italian ..	7 0	White Dutch ..	10d. to 1 0	Lucerne	1 0
Yellow Globe	0 9	Large Altringham ..	1 6	Matson's	1 0	Fine Imported do. ..	7 0	Trefoil	4d. to 0 5	Drumhead Cabbage ..	3 0
Red Globe	0 9	Long Surrey	1 6	Kentish Green Crown .	1 0	Common English.. ..	6 0	Alsike Hybrid	2 0	Large Cattle Parsnip ..	1 6
Long Yellow	0 9	James's Scarlet ..	1 6	Marshall's Purple Top ..	1 0	Pacey's Perennial..	6s. to 7 0	True Cow-grass.. ..	1 0	Kohl Rabi	5 0

Full Priced Catalogues sent free on application —Cash or reference required from unknown Correspondents.

GEORGE GIBBS & Co., 26, Down Street, Piccadilly, London, W.

NEW SEED CATALOGUE.

MESSRS. E. G. HENDERSON & SON

RESPECTFULLY announce that they will forward, post free, their NEW CATALOGUE for 1859, in which the following novelties of the season will be introduced or noticed with full descriptions of management, cultivation, and adaptation; and only those that are known to be valuable are recommended for cultivation. Much useful information on the cropping of Gardens, sowing, &c., is also given for the guidance of cultivators. The following NEW FLOWERS and other Seeds are offered by E. G. HENDERSON & SON for the first season, full descriptions of which, with treatment, are given in the Catalogue.

THE GIANT EMPEROR ASTER, of rosy carmine colour, 1s. 6d. (The splendid lavender-blue variety of this Aster, we had the pleasure of introducing last season, proved the very finest of its class yet known).

NUTTALLIA PEDATA, var., see Catalogue for the description of this beautiful plant, 2s. 6d.

CLIANTHUS DAMPIERI, 2s. 6d., 5s. and 10s. per packet. A most beautiful cool greenhouse plant, from 1 to 2 or 3 feet in height, with neat winged leaves and drooping clusters of large rich scarlet long petalled Pea-shaped flowers, 3 to 4 inches in length, and in form somewhat resembling the splendid blossoms of the Coral-tree, but still longer and more pointed, each individual blossom being also picturesquely marked with a large conspicuous front black cloud-like blotch. The seeds of this magnificent flowering shrub have been received in fine condition by the most expeditious and safe mode: through the post by the overland mail. The proper culture and best situation and soil for the growth of this plant, and of young plants in particular through the winter months, are fully given in the Catalogue.

THE LAWTON BLACKBERRY (new American Fruit), 2s. 6d. each; 25s. per dozen. For its value and descriptive features, see the Catalogue.

NEW FLOWER SEEDS OF 1859.

Price per packet is given in the Catalogue. A select assortment for 6s. from the following New Flowers for 1859.

Acroclinium roseum album
Celosia pyramidalis
Chrysanthemum Burridgeanum
,, venustum
Datura humilis (flava pleno)
Dianthus hybridus corymbosus flore pleno
Gaillardia hybrida grandiflora
Fenzlia dianthæflora
Ipomœa hederacea superba lilacina
,, ,, atropurpurea
Lupinus Hartwegi cœlestinus
Myosotis azurea grandiflora (Large-flowered Forget-me-Not)
New Double Orange French Marigold
Nasturtium Tom Thumb (dwarf)
Nasturtium Brilliant (not Lobbi Brilliant)
Pharbites (Convolvulus) hybrida marginata
Portulacsa caryophylloides
Œnothera bistorta Veitchi
,, Drummondi nana
Viscaria cœli rosa alba
,, Dunnetti
Silene rubella alba

Also the following Choice and Rare Seeds:—

Nolana paradoxa violacea
Intermediate Stock (red)
,, ,, (white) see description in Catalogue
Datura Wrighti (see note on this plant in Catalogue)
Tritoma Uvaria
Tropæolum elegans
Tacsonia ignea
Perilla Nankinensis (see Catalogue for decorative purposes)
Lobelia erinus speciosa (see fine features for use in Catalogue)
Calliopsis Burridgeanum
Dianthus chinensis coronata
Balsams, Camellia-flowered and Rose-flowered
Gaillardia splendidissima, and G. rosea lutea
Aster, new crowned, or two coloured
,, English quilled, finest quality
,, French pyramidal quilled
Aster, Chrysanthemum-flowered, new dwarf (see note in Descriptive Catalogue of this splendid variety)
Carnation, Picotees, and perpetual flowering varieties (extra choice)
Petunia Marquis de la Ferté, the rose-coloured variety for bedding, and others
Phlox Drummondi (new varieties)
Marigold, double striped flowered
Californian Sunflower, splendid double orange

A List of Sixty ORNAMENTAL GRASSES, a few of which are adapted for margins to beds, borders, &c.

A Descriptive Priced List of that most splendid tribe of hardy bulbs: Gladiolus Gandavensis.

The new vegetable CHÆROPHYLLUM BULBOSUM, and now well-known DIOSCOREA BATATAS (the Chinese Potato or Yam). Seed of the former and sets of the latter per dozen or 100, large tubers for tasting of both, per lb.

A List of 100 Select ORNAMENTAL GOURDS and MARROWS.

SPERGULA PILIFERA, a perfect substitute for Grass Lawns, &c., in Villa Gardens, without mowing.

SPERGULA PILIFERA in its style of growth is a neat dwarf hardy perennial tufted Alpine plant, forming close compact wiry Grass-like stems, from a quarter to half an inch in height, at first erect, afterwards decumbent, clothed with closely set green bristle-like leaves which, by permanent growth and occasional rolling, forms an unbroken level velvet-like surface, of the richest conceivable verdure, remaining uninjured in severe drought or intense cold, and assumes the same beautiful verdurous tint during the winter months, as in summer. The seedling plant of this highly interesting object starts into growth with a single unbranched perpendicular radicle or root, and afterwards manifests a remarkable power of extension in its ramifying hair-like roots, penetrating to the depth of 1 to 2 feet; a fact quite sufficient to account for its enduring the opposite extremes of severe heat and cold. In addition to its hardiness, under the vicissitudes of an English climate, its value is considerably enhanced in its adaptation to all the varieties of common garden soil, requiring but a thin firm surface stratum of one inch ordinary sifted or broken loam. Maintaining its verdant freshness alike beneath storm and sunshine, it combines every needful feature of adaptation with economy, and an uniform aspect of neatness with the least possible care or attention. Its fertility in bloom during the month of July is equally beautiful, being at that period studded over with myriads of low compact salver-shaped snow-white blossoms, appearing not as in fancy, but in reality, the living picture of an emerald-green velvet carpet, spangled with innumerable silver stars. From the preceding remarks, it will be seen, that the established growth of this plant maintains a dwarf close web of green verdure, and entirely dispenses with the extra toil and expense of mowing; its numerous small brittle flower-scapes being removed by the gentlest movement of a wing or brush over the surface of the lawn, either whilst in bloom or afterwards, and these constitute the only surface growth, or tokens of its beauty, which require this operation but once a year. For small or medium-sized lawns, terraces, verges, mounds, &c., this remarkably interesting and beautiful little plant offers an object of great interest to every lover of gardening pursuits, and every lady amateur cultivator may superintend and personally manage the slight attentions required to preserve the terrace margins or velvet lawn in the highest condition. The permanent and uniform condition of dense growth, with the penetrative power of its roots, preserves it from all risks of being parched by extreme exposure in sultry weather, and the progressive accumulation of its Moss-like growth gives an elastic pressure to the foot, much softer than the finest Turkey carpet. It is also admirably adapted for picturesque green tufts and edgings on avenue lines and borders, for grouping the front spaces of massive rock-work, and surfacing partially raised mounds around classic fountains and basins or artistic columns where Grass is unavailable for mowing, and equally telling for cultivation in larger vases, in alternate effect with the silvery sheen of the beautiful *Cerastium tomentosum*, on terrace verges and architectural approaches.

A practical proof of the success of *Spergula pilifera* for the objects above stated may be seen in the gardens of A. Mongredien, Esq., at Forest Hill, Sydenham, Kent, where a rich and verdant plot or lawn has been established 4 years by Mr. Summers, the intelligent gardener there, and is now in fine condition. In the same gardens, a considerable space is allotted for further illustration of its perfect adaptation, which may be seen on application. 6d., 2s. 6d., 5s., and 10s. packets. For directions for sowing see Catalogue.

Wellington Nursery, St. John's Wood, London.

THE EARLIEST PEA.—DUNNETT'S FIRST EARLY is in every respect superior to "Daniel O'Rourke," being several days earlier, having finer pods, and richer in flavour, height 2½ feet. For an early dish of fine-flavoured Peas we can confidently recommend this; 2s. per quart.

CHAMPION CABBAGE, the earliest and best sort, if sown in succession, may be had fit for table throughout the year, 3d. per ounce, or 1s. post free.

BUTLER & MCCULLOCH, Covent Garden Market, London.

EARLY PEAS.

WAITE'S DANIEL O'ROURKE PEA; the earliest Pea in cultivation.
EARLY NAPOLEON; a Blue Wrinkled Marrow Pea, as early as EMPEROR.
EARLY EUGENE; a White Wrinkled Marrow Pea, as early as EMPEROR.

Prices to be had on application of J. G. WAITE, Seed Establishment, 181, High Holborn, London, W. C.

The Gardeners' Chronicle.

SATURDAY, JANUARY 29, 1859.

MEETINGS FOR THE FOLLOWING WEEK.
THURSDAY, Feb. 3—Linnean ..... 8 P.M.

GARDEN wonders will never cease. At least it seems so in the important department that belongs to the Hybridist, out of which so many surprising changes have been produced. The old dogmata of KŒLREUTER and his disciples have, one by one, proved untenable; species the most unlike have been found to mix freely and produce permanent successors, as in the case of the Banksian and China Roses, the latter and the old European forms, the famous Narcissi of Dean HERBERT, and many others; and we suppose the day will come when some quick-eyed dexterous operator will even overcome the repugnance of the Bramble to the Raspberry, the Apple to the Pear, the Peach to the Plum, and the Gooseberry to the Currant. At least there is something like evidence that a mixture far more improbable has been brought about in Germany.

In a late number of the Journal of the Horticultural Society of Paris are to be found translated extracts from a paper by Dr. RAUCH, of Bamberg, on his experiments with new Leguminous plants. The greater part of the results which he obtained relates to trials of Peas, Kidney Beans, and ordinary Lentils. But among the statements is the following:—"PEA LENTIL (*Erblinse*). This is a hybrid between the Pea and the Lentil, nearest however to the latter. It bears long pods, great slightly cylindrical seeds, and is very productive. The taste of its seeds is very agreeable, and, says the author, suited to those who do not like Lentils." The memoir by Dr. RAUCH, which appeared in the November number of the *Journal of the Agricultural Society of Bavaria*, not having reached us we can give no further details. But the announcement in question, meagre as it is, could not fail to excite much curiosity in this country. A *true mule, productive enough to be the subject of extensive cultivation*, and *between* two such totally different plants as *a Garden Pea and a Garden Lentil!* The case seems incredible, so contrary is it to all experience. We have not before had a single example of a Leguminous mule. Of course we do not refer to crossbreds, which are common and familiar.

Hitherto we have not had a single example, satisfactorily attested, of a Leguminous mule. For the Cytisus Adami or purple Laburnum is a mere case of the sap of a Laburnum so tainted by the sap of Cytisus purpureus, as to have acquired in some degree the nature of the latter. That example has no analogy with the Pea Lentil. So deter-

mined has been the resistance of Leguminous flowers to experimental hybridizers that all report against the possibility, or at least probability, of effecting such a union. Cases have been mentioned indeed of Vetches having intermingled with the Garden Pea, but GÆRTNER, the greatest of modern experimentalists upon this curious subject, regarded them as "more or less uncertain in some part of their history." If such mules were ever obtained they soon disappeared. Dean HERBERT could make nothing of muling Peaflowered plants. They were equally unmanageable in the hands of Mr. ANDREW KNIGHT, although he, like others, found no difficulty in producing cross-breds. And notwithstanding the long-continued cultivation of Peas, Beans, Kidney Beans *pêle mêle* in gardens, no one appears ever to have observed an accidental mule, a circumstance the more remarkable considering how much their flowers are frequented by bees. Nor indeed is it foreign to the subject to add that we know of no reputed wild mule among Leguminous plants except a plant intermediate now and then between Lucerne and Medicago falcata, themselves so closely allied as to render their distinction as species quite problematical.

In the face of all this experience we have the sudden announcement that Dr. RAUCH has obtained a mule of fixed habits, fit for cultivation, between the garden Pea and Lentil! Gardeners as well as naturalists may well be incredulous. Very strong proof is required before the report can be received as free from all doubt. We are, however, in a position to declare that evidence in our own possession supports the statement so far as any opinion can be formed from an examination of the seeds. By the prompt courtesy of Mr. BEHRENS, of Travemünde, we have received a parcel of this seed, transmitted by Dr. RAUCH himself; and certainly it is in appearance exactly what a seed between the Garden Pea and Lentil might be expected to prove. The colour is like that of the best ripened early frame Pea, a little heightened so as to verge upon Apricot. In form the seeds are compressed like a Lentil, not spherical like a Pea. In size they are generally about twice as large as that of a fine Lentil, or even somewhat bigger, but they are by no means even in magnitude.

Since the Bavarian Journal containing the original memoir has not reached us, the foregoing statement is founded upon the language of the French translator. We understand however that the words used by Dr. RAUCH are not expressly "a *hybrid* between the Pea and Lentil;" but "a fruit standing between the Pea and the Lentil, and nearest approaching the latter," which is by no means the same thing as a hybrid. At all events the production in question is of the highest interest to those who are occupied with the domestication of plants, and enough is known to assure us that it must be the forerunner of experiments, the importance of which cannot be overrated.

As we were going to press the following translation of a letter from Dr. RAUCH to Mr. VAN HOUTTE has reached us from the latter indefatigable correspondent, along with a further supply of seed:—

"I have the honour to send you the seed you have wished for, gathered from my hybrid called *Erblinse*.

"This has got now already some renown, and is more productive than the common Lentil. It has a peculiar taste, altogether characteristic, but very agreeable indeed. The hybridisation has been effected by fecundating the common Lentil with the pollen of a variety of Pea called *Honigerbse*.*

"Further particulars on this plant and many other new varieties are given in a work published some time ago under the title of 'Essay on the Culture of New and Unknown Useful Plants,' by Dr. A. RAUCH."

It thus appears that the seed is certainly the produce of a real hybrid.

SOME of the French newspaper scribes have been alarming their readers with more terrible news about the VINE. According to these well informed gentlemen the Oidium or mildew has suddenly changed its nature, and instead of remaining a mere mould has assumed the condition of long beards hanging down from among the Grapes. It seems never to have occurred to the learned editors that such marvellous stories were unworthy the age; but they have allowed the new Medusa's head to be shaken before their public till at last the French naturalists have taken the trouble to explain the real meaning of a curious fact most ridiculously distorted.

It appears that in several places bunches of Grapes have this year presented the strange phænomenon of producing a long beard of living threads or hairs, which to those unacquainted with natural history may probably have been regarded as alarming as the tail of a comet. Bunches became matted with a strange stringy substance which grew longer every day, and half concealed the berries, hanging down like a coarse mane, or "the hair of BERENICE," as is shown in the annexed cut. The explanation of this appearance is given well and in considerable detail, in a late number of the Journal of the Paris Horticultural Society, by M. C. MULLET and Prof. DUCHARTRE, from whom we borrow our details. Appearances of the kind are not new. Bearded bunches of Grapes were mentioned as prodigies in the 16th century by CONRAD WOLFHART, who wrote under the name of LYCOSTHENES. Other authors of a later period occasionally speak of them; and in 1827 the botanist BROTERO, having found them in Portuguese Vineyards, figured them in his Phytographia, at the same time explaining their real nature.

The "new" enemy, instead of being a transformation, or rather a progress in development, of the mould which mildews the Vine, is merely a Dodder or Cuscuta which here and there takes possession of the Vine in more parts of the world than France, just as such parasites seize upon Lucerne, Clover, Heather, and other plants everywhere. We



have now before us the larger Dodder (*Cuscuta monogyna*) growing on a Vine gathered in some Vineyard in Provence by Mr. BENTHAM, as well as both Cuscuta Saururi and Lepidanche adpressa, a similar parasite, strangling Cissus stans in the United States. Considering, indeed, the indiscriminate appetite of these Dodders, the Vine can hardly hope to escape them whenever they can get at its soft succulent shoots. That the Dodder should seize upon a Vine is anything rather than surprising; that which is really unaccountable is its having taken possession of bunches of Grapes. For the seed of Dodders always germinates in the ground; the time of its infancy, however short, is passed there. On the soil it is nourished until it gets strong enough to suck its neighbours, when it ceases to consume mere dead food, and ever after preys upon living matter. Had the bearded bunches of Grapes been lying on the surface of the ground, or were there any trace of the Cuscuta on the stem of the Vine, its appearance upon the bunches would be easily explained; but nothing of the kind was observed. The branches had no Cuscuta, and the Grapes which it had seized upon were far from the ground. M. MULLET, who personally examined some Vines whose bunches had formed beards, describes what he saw to the following effect:—"The bunch with the shortest beard hung from a plant at the edge of an alley, and was about a yard from the ground, towards which the threads of Cuscuta were becoming directed. They had been turned from their road by the leaves, which had caused them to take an oblique course, and upon which some of the threads had fixed themselves. A second bunch was taken from a trellis against a wall; it was about 2 yards up, hung freely without being interfered with, and had a beard a yard and quarter long." The Dodder had fixed itself on the very berries, on the stalks, and on the branches of the bunch. In a bunch of black Grapes the berries seized by the Cuscuta remained green, altogether or only in the places where the Dodder had fixed its suckers, around which spread a little green stain (*auréole*).

How then could the Dodder have gained access to the Grapes? M. MULLET suggests that its seeds might have been deposited by birds. We agree with Prof. DUCHARTRE in thinking that improbable. The suggestion which our learned friend himself offers is the following. The threads of Cuscuta have a vital energy, and a rapidity of development as surprising as they are formidable. An experiment of ALMERICO BENVENUTI, the author of a curious Italian memoir on Cuscuta,* will show how quickly the threads extend and propagate. This observer fixed to a small table some fragments of Cuscuta, separated from all support, after which he placed near them about 2 inches off a pot containing a plant of Lucerne. In three days the plant was seized by the parasite, which immediately spread all over it and separated itself from the original fragments which remained dried up on the table. M. KETELEER, the celebrated Paris Nurseryman, also states that he has seen the young men in the horticultural establishment of Fromont amuse themselves by putting bits of Cuscuta on bunches of Grapes, which were immediately attacked by it. So that bearded Grapes can thus be produced at pleasure.

Curious as these statements undoubtedly are it must be owned that they are very far from explaining how the Dodder gets at Grapes under ordinary circumstances. The fact, like many another, must remain for the present without explanation. It is, however, important enough as it stands—for it teaches gardeners to be cautious how they admit into cultivation such dangerous guests as the Dodder—a warning not uncalled for, considering that we have ourselves seen the enemy springing up from peat soil and scrambling over Geraniums and other potted plants with a vigour which could only be arrested by the fire heap.

BOTANIC GARDEN, MELBOURNE.

The following are extracts from Dr. Ferd. Mueller's official report, dated Oct. 24, 1858; and show how rapidly the Botanical Garden of Melbourne is rising into an establishment of the first order under the management of its able and indefatigable director.]

Of the ground destined for an arrangement of plants according to their botanical affinity, 2 acres were trenched, and by gradually securing the requisite genera and species, more than 100 of the principal exogenous orders are now represented in this plantation by about 1700 plants. This class-ground cannot fail to become a still greater source of instruction to the botanical inquirer than it has been already, especially when extended over the endogenous orders, and when its plants are more advanced in growth.

A further increase of the cultivated ground has been effected by the enlargement of several borders and by laying out a new nursery of plants on the slopes of our southern valley.

The barren declivity which fronts the western portion of the lagoon has been planted for the formation of a future Pine forest, with lines of Aleppo Pine, with rows of Moreton Bay and Norfolk Island Araucarias, and with groups of miscellaneous Coniferæ, comprising 226 trees, many of great rarity, and all equally calculated to beautify the spot and to become an ornament in our landscape. In planting this Pinetum the silurian rock had to be replaced by trap soil from the banks of the Yarra, and was used in raising a new walk on the south-western side of the lagoon.

During the summer and autumn season an effectual system of draining was adopted throughout the greater portion of the cultivated ground, by laying numerous lines of lasting underground drain-pipes, varying from 4 inches to 9 inches in width, and by lining many of the walks and borders with brick or stone gutters, the material for the latter and for the largest drains being obtained in our quarry. Thus much labour formerly lost in repairs, after those devastations which every rainstorm left on the undulated ridges of our garden, will henceforth be saved.

The whole of the cultivated ground, extending now over about 18 acres, has been dug this season, and many improvements have been effected by additions to the variety of plants in the shrubberies, by their occasional re-arrangement, and by the completion and partial renewal of the edges.

In order to afford the shade necessary for the enjoyment of a pleasant walk, in a climate like ours, avenues have been planted through most of the lawns. The quick growing Moreton Bay Grevillea (Gr. robusta) and

(*) Honig signifies honey—Honey Pea, a species of Sugar Pea.

* Sulla Cuscuta europæa. Modena. 1847.

the Maple-like Flame-tree of Illawarra (Brachychiton acerifolium), were principally chosen for this purpose, not only as being readily available, but also as combining a beautiful evergreen foliage with ornamental flowers. The soil for planting these trees had also to be brought from a considerable distance. The lines of Blue Gum trees (Eucalyptus globulus), planted along the banks of the Yarra towards the city and along the St. Kilda Road, have been extended over the southern limits of our ground.

We also proceeded with laying out the remainder of the garden walks, some of which, however, are yet to be covered with layers of gravel. Their continuation throughout the reserve, in combination with avenues, the formation of islands in the lagoon for the habitation of aquatic birds, and the extension of the Yan Yean pipes to the higher parts of our ground for irrigation, will probably be works of future years.

About 780 conspicuous iron labels, containing the scientific and (where such exist) the vernacular name of the plant to which they are attached, as well as its classification and native country, have been distributed over the ground, and by contracts already entered into this number will probably be augmented to 2000 before the end of the year.

We enjoyed weekly at the pavilion, till late in the autumn, the excellent music of the military band; and the greatest thanks are due to the kindness of the Officers of the 40th Regiment, and to the exertions of Mr. Johnson, the master, and the other members of the regimental band, in offering such an additional charm to the visitors of the garden.

The aviary and the menagerie, both established within the year, have likewise become very attractive to the public. The former already contains a fair variety of singing birds and is placed in the dense shrubbery of the valley between the rustic bridge and the lake, in order that the sight and song of the birds may be fully enjoyed without disturbing them. This aviary will be extended to the other side of the bridge, and in adding the new wing, an arched bower over the bridge and a sheltered passage of flight may be formed.

The menagerie, established without special provision for conducting it, suffered from a scantiness of accommodation for the animals, and therefore sustained several losses, chiefly in the kangaroo tribe. It comprises, at present, emus, a Sumatra and 12 English fallow deer, some monkeys, coalos or native bears, wallabys, Cape Barren geese, native companions, black swans, eagles, gulls, &c.

The hitherto only flock of Angora goats in this colony, introduced under great sacrifices by E. F. Sichel, Esq., and comprising seven in number, has been secured by purchase for the Zoological Gardens. The probable importance of these fine-fleeced animals in the future rural and pastoral economy of Australia will now become more generally patent. From the proposed union of the Botanical and Zoological Gardens manifold advantages are likely to arise, the dry ridges of the former being far better adapted for the healthy preservation of most animals, than the low basaltic flats on the opposite bank of the Yarra, originally granted for the formation of a Zoological Garden, but which will become highly valuable to us in rearing an arboretum of such trees as it is almost hopeless to cultivate on this side of our area.

The entrances to our extensive area being numerous, it lay not within our means to ascertain the exact number of our visitors during the year; but since within the last five months 51,000 were counted as entering the gardens on Sunday afternoons at the principal gates, notwithstanding much unfavourable weather during that period, it may be assumed that the total number of visitors during the last year must have rather exceeded than have fallen short of 200,000.

During the year, 39 public institutions in the colony and 53 abroad, as well as 206 private applicants (the latter in reciprocation or under a promise of sending equivalents), have been furnished with supplies from this department, the number of plants contributed by us to the gardens of the colony amounting to 7120, and the papers of seeds to the large amount of 22,438, besides which cuttings have been supplied to 57 gardens; whilst we furnished on 57 occasions bows and flowers needed for decoration in celebrating public festivals or aiding benevolent purposes.

Arrangements have been made to render next session a still larger supply of plants available for distribution; and in the same degree as the completion of the garden will strengthen our labours in this particular branch of the service, and in proportion to our constant additions and improvements in the means of forcing and rearing plants, the utility of our establishment in this direction may be expected to increase.

Three shows of the Horticultural Society and a bazaar in aid of the South Yarra Episcopal School fund have been held on our ground; and exhibitions so pleasing and useful as these are likely to be of more frequent occurrence after the contemplated erection of a larger pavilion for such purposes.

How far we have succeeded in adding to the richness of this establishment may be observed by a comparison of the Garden Catalogue which accompanies this report, with the Index of Plants under cultivation here at the beginning of 1857, since which period the number of plants has become more than doubled. The new Catalogue enumerates about 3300 species, but it might have been vastly augmented had we added the mere garden varieties, although often of greater value to the horticulturist than new and distinct species, or had we included in the enumeration those endless numbers of hybrid plants which supersede in gardens generally too much the simple forms of nature.

The compilation of the Catalogue caused work much beyond anticipation, since so many plants were received nameless, or under erroneous appellations. For the above reason several hundred plants have been excluded which are not yet sufficiently developed for an accurate botanical examination. The future annual supplements will furnish ready means of measuring the progress of our establishment in this direction. By the contributions expected from kindred institutions in many parts of the globe, and by the friendly co-operation promised by several of the greatest *savants* in botanical science, and it is hoped by the continued patronage and exertions of the many friends of our garden, we shall probably add very extensively to the garden plants from the seeds to be gathered for us at the approaching season, and when the dormant state of trees and shrubs with deciduous leaves facilitates their transmission from distant countries. Both for interchange, and for enriching our own establishment, seedlings of the remarkable and rare plants of the Grampians were secured at the season favourable for their transit; and Mr. Dallachy, who carried out very successfully this part of the service, is now engaged in transferring to us from the Murray desert those botanical treasures which scarcely any garden yet possesses.

A botanical collector has been employed periodically in the Moreton Bay district, and steps have also been taken to secure this season for the garden more yet of the singular vegetation of Western Australia than during the preceding one; inasmuch as no country, South Africa excepted, furnishes a greater variety of highly ornamental plants calculated to resist the dry heat of the Australian summer.

In importing plants due preference has been given to those of utility and more general interest, and many of practical value are already contained in our collection. Amongst them various Spice plants, the Tallow tree, the Nettle tree of Illawarra, the Desert Clianthus (which was figured as a notable flower already by Capt. Dampier), the Bottle tree of Sir Thomas Mitchell, the Litchi tree, the Cherimoyer, the Banyan tree, the tall Pampas Grass, the prolific Prairie Festuca, the edible Hovenia, the Gunyang, the Staranis, the Paraguay and the Chinese Tea, the Camphor tree, the Tulip tree, Waratah, Bananas, the American Sarsaparilla, the Cork tree, the Giant Pine of California, the Cochineal Cactus, the Chinese Grass-cloth plant, the Australian and Indian Rotang, the Coffee tree, the Cotton plant (which now without protection occasionally ripens its pods), the Red Cedar, the Kaurie Pines from East Australia, Polynesia, and New Zealand, Bog Bean, Acorus, Nelumbium or Sacred Pythagorean Bean, many medicinal plants, &c.

The intended erection of a larger building in the reserve will offer to the Government botanist the opportunity not only to deliver a regular course of phytological lectures during future seasons, and collect gradually, for the formation of a botanical museum and experimental laboratory, the vegetable products of the colony, but also to give the fullest access to his extensive and carefully examined botanical collections, which he desires, although they have absorbed the greater part of his private means and nearly all his leisure time for the last eighteen years, to transfer permanently to this department as a nucleus of a state collection. It comprises one of the most important series of Australian plants anywhere in existence, which will probably be consulted centuries hereafter, and which amounts to about 6000 well marked species in very numerous varieties, and embraces also an herbarium of miscellaneous plants from all parts of the globe, enhanced in value by many authentic specimens from the hands of celebrated botanical authors, the whole forming an accumulation of about 45,000 equally well preserved and arranged specimens, and exhibiting in about 15,000 species nearly one sixth of the hitherto revealed vegetation of the world.

MR. GLASSE'S GARDENING BOOK.—No. V.

25. *About Pruning Roses.*

WHEN I was an apprentice it was a rule to prune all sorts of Roses in the hard weather of winter; and many a day have I stood in the nurseries, cutting the Roses back to four or five good eyes, while the wind almost cut off my fingers. That was 50 years ago and more, for I am 70, and worked at my business before Chinas came into fashion. [That is to say about 1790. *P. G.*]

I had had a place for several years when master brought home one summer, from Lee & Kennedy's, what was called a China Rose; it was a poor spindling thing with no bloom on it, but I knew it to be a Rose by its hooks and its leaves. Well, we planted it in a warm place near the house and it got on pretty well. Not knowing exactly what to do with it in winter, and as it came from China, a warmish country I expect, we put a mat over it till spring came. It was a very mild winter that, and when we undid the China it had made some shoots 3 or 4 inches long, almost blanched for want of light and air. But it didn't signify much, for when the blanched shoots were cut off it shot from the bottom wood, and by the summer had become a niceish bush, with a good many flowers, not with much smell, like our old ones, but as much as could be expected from a foreigner. Now, our old Roses never would bloom after July; but this China went on flowering and flowering as if it would never have done, and only left off when hard weather set in in earnest. Thought I to myself, thought I, as my dear wife used to say, "I shan't have any long blanched shoots this time, anyhow; for we won't mat up the China any more, but leave it and prune it in January, like other Roses." It so happened that we had a very warm February, with no frost to speak of, and as the Rose was in a nice warm corner it had begun to push its bottom buds ever so much, quite contrary to our old ones' ways. But by and bye the weather changed; the end of March and April were nothing but snow storms and hard frosts at night; and the new shoots of the China were all nipped and blacked as if they'd been burnt. And I really thought it was dead; and master looked very cross, for he'd paid a good deal for the plant. Sure enough it was almost Midsummer before it sent up some ground shoots and began to recover, so from that time I never pruned my China in winter, but waited till Jack Frost had spent himself on the ends of the branches; for I found that if they were let grow the bottom buds wouldn't stir, but remained snug and quiet till frost was gone; and as for the ends the plants seemed to be all the better for having them cut off. This was my first experience with foreign Roses.

Home Correspondence.

Avenues.—I am much obliged to your correspondents "I." and "C. W. Strickland" for correcting the name, which I found out when too late. Acer platanoides, or the Norway Maple, is the tree I intended to recommend, and which, whether suitable in all respects for Kensington Gore or not, is one of the most attractive trees I am acquainted with. The Ulmus sinensis, so called in my former letter, is the name given by the nurseryman who supplied me with it; but it is certainly not the common Ulmus glabra, or Wych—it comes nearest to montana. It affords another proof of the remark of Dr. Lindley, that this genus is in a state of confusion. One thing is certain, the weeping character, the small leaves, the late retaining of leaves. Any one desirous of buds or grafts may be supplied on application to me. *Thos. C. Brown, Mather Barton, Cirencester, Jan.* 20.

[Our correspondent must excuse us for saying that Ulmus montana, not glabra, is the Wych Elm. We retain our opinion that the leaves sent did really belong to U. glabra, one of the best characters of which is its weeping habit.]

Culture of the Fuchsia.—My plan is as follows:—I place my old plants in heat about the latter end of December, and as soon as they have made shoots about an inch long I take off cuttings close to the old wood; I then fill a sufficient number of small pots with a mixture of loam and leaf mould to within an inch of the top, adding on the top of that half an inch of silver sand. I water gently to make firm, then I put in the cuttings after trimming off the lower leaves; I give another gentle watering, and then place them in a mild hotbed. As soon as the cuttings are sufficiently rooted to bear handling I pot them singly in 3 inch pots and keep them close and moist until they are fully established; a temperature of from 50° to 55° will be sufficient during the first month; and if kept free from insects and properly supplied with water and a moist growing atmosphere maintained, their progress will be very rapid. If struck in January the plants should be strong and vigorous by the end of March and ready for a shift into 6-inch pots; keep them rather close after shifting to encourage root action. Syringe overhead freely on fine warm days, and keep the atmosphere ranging from 55° to 65° by day; but water carefully till the growth indicates that they have taken to the fresh soil. I then admit air freely at all times when the external temperature is mild, but close early in the afternoon. Clear manure water should be used as soon as the pots are moderately filled with roots. If the plants are required in perfection in July or August they should be shifted into 9-inch pots, and discontinue the stopping of the side shoots after the middle of June; a great point to secure well-grown specimens is to maintain a regular temperature from 55° to 65°. Excepting a rise of a few degrees by sunshine the plants will require clear manure water three times a week at all times when the pots are filled with roots. The soil for Fuchsias should be light, rich, and porous, consisting of a strong mellow loam one-half, well decomposed manure a quarter, leaf-mould a quarter, together with a good sprinkling of silver sand; it should not be sifted but well mixed and broken together. A cool airy house is the proper situation for them while in bloom, and they should be liberally supplied with water, and they will continue in bloom until the end of the season. *T. L. B.*

Cottagers' Kale.—Having noticed the controversy which has taken place respecting this Kale, I have much pleasure in bearing testimony to its good qualities. When it was first exhibited I confess that I could not see any particular merit in it, but knowing Mr. Turner to be a straightforward person I asked him in what its good properties consisted. His reply was: Its delicate flavour. Upon this recommendation I bought a packet of seeds and cultivated some plants, which I showed to a good many persons during their growth. Some at once pronounced the plant to be a humbug, others said it was an ugly coarse thing, and could not think how Turner and Dr. Lindley could father such rubbish. I kept to my own opinion, believing that Mr. Turner could not afford to make such a noise about a worthless thing. I have now tasted it, and others who had

previously from appearance pronounced it worthless have also tasted it at my table, and all think it a green of the highest excellence—in fact, superior to any other in cultivation. Last week some friends from Scotland dined with me; they partook of it, and, like others, pronounced it the tenderest and most delicate green they had ever tasted. I hear too that the water in which this green has been boiled does not smell so disagreeably as that in which any other of the Cabbage tribe has been cooked. *J. Standish, Bagshot.*

The Weather in Devon.—The flowers in following list were in full bloom on the 8th inst. in a garden at Little Efford, Plymouth:—Fuchsias, two varieties; Narcissus; Rhododendrons, three varieties; Anemones, various; Intermediate and Ten Week Stocks; Mignonette; Calceolaria; Salvias; Roses, white, red, and pink; Ageratum; Yellow Poppy; Chrysanthemums; Periwinkle, large purple; French Honeysuckle; Virginian Stock; Tom Thumb Geraniums; Yellow Jasmine; Clove Pink; Clematis; Pyrus japonica; Purple Veronica; Violets, white, Neapolitan, Russian, and common blue; Scarlet Daisies; Pink and White Heath; Arabis; Alyssum; Laurustinus; Double Bramble; Berberry; Gentianella; Pentstemon; Cuphea; Heartsease; Arbutus. [To a statement like this the writer should attach his name.]

Flowers and Grapes in the same house.—I am constantly assured by gardeners and other learned persons that it is impossible to have Grapes and flowers in the same greenhouse. On the other hand, I have all my life seen both together in as much apparent perfection as are required by me—neither a gardener nor a botanist—but a mere squire who likes both flowers and fruit, if they are not too costly. May I ask you to say what is really possible in the matter. *E. S.* [What is very possible to many is impossible to some. All depends on skill.]

Scolytus destructor.—I beg to thank Mr. Westwood for the kind and gentle manner in which he has noticed my remarks on insects attacking timber-trees. In sending those remarks to the *Gardeners' Chronicle*, it was not my intention to combat the opinions and experience of a gentleman whose acquirements in the science of entomology are of undoubted weight and importance, and far surpass any trifling information that I myself may have picked up whilst roving here and there. The fact is, entomology is not my province. I know more about birds than bugs. I merely ventured to state my own notions of the calamity which has befallen the unlucky old Elms in the vicinity of St. Giles's, as the deeds of the Scolytus were not entirely unknown to me. I happen to be literally surrounded here by Oaks, Ashes, Elms, Sycamores, Firs, Beeches, Willows, Chesnuts, Hollies, Limes, and Larches. Some time ago, in a grove of magnificent Spruce Firs (said to be the finest in all England for their age), one of the trees fell sick and died. I know not at what precise period of its distemper the destroying beetle had claimed it for his own, but he had certainly got possession of it, as you shall see in the sequel. When we came to saw it into boards, we found that the hungry insect had made snug lodgments in every part of it, for himself and for his future family. As I could not find any signs of similar workings in any of the surrounding Firs, I fancied that, somehow or other, they were all beyond the destroyer's reach. Under this supposition, I gave it as my opinion that the Scolytus had made free with the unhealthy Fir solely because sickness had rendered it delicious to his taste and serviceable for his domestic arrangements. Furthermore, I persuaded myself that, had any other Spruce Firs, or neighbouring trees, been equally affected by disease, he could not have resisted the offered opportunity to tap their tainted juices. Why, then, I would gently ask, should the destroying insect, here in Yorkshire, gratify his appetite solely on the contents of an unhealthy tree, when there are thousands, and tens of thousands, of other trees in health and beauty, quite at his disposal? Methinks I hear the dreaded beetle say to these healthy trees, "My friends, I need not touch you yet. Your present state instinctively informs me that you have just now nothing within you that will suit me and my forthcoming household. But, with your permission, I will tarry here a little longer, in expectation of something good. In the meantime, should a serious fit of illness smite you, as it has already smitten your departed brother, I will not fail to be on the look out. So, adieu, fair trees, till sickly days approach. Like Virgil's Harpies, my appetite is strong and constant. I am sure to be with you at pudding-time." *Charles Waterton, Walton Hall, January 25th.* [We take sides with Mr. Waterton, in the conviction that he is right. Trees are ailing long before those unfamiliar with their constitution perceive it. One point seems conclusive. No one ever saw, that we know of, young, vigorous trees, or even the vigorous shoots of old trees, attacked by Scolytus.]

Manetti Rose Stock.—I had great hopes that your invitation to discuss the merits of Roses in general and those on the Manetti stock in particular would have been better responded to. Surely it is not too much to expect that some of the many who have so signally benefited by the introduction of this stock should say a word or two in its favour. Pray allow me however to introduce the remarks I am about to make by questioning the accuracy of your own conclusions, viz., "That it is unsuited to the cold Middlesex clays." I send yearly increasing consignments to that clay, and I have abundant proof that when properly prepared and treated, even there it beats all competitors. That it is ill-adapted for cold clayey or any other soil, as it is too often prepared, I readily admit, and I believe that a want of knowledge of the management required has led to the failures which have occurred, and the seemingly endless controversy on the subject. Even now in many nurseries nothing can be more unsuited to it than the treatment it receives, and its deplorable condition when so mismanaged is certain to be triumphantly pointed out as conclusive proof of its worthlessness. As a stock for Dwarf Roses generally I believe it to be unequalled, but as a stem it is decidedly the very worst imaginable, and trying to make it the latter has produced much misunderstanding regarding the matter. On its introduction Mr. Rivers, who has the merit of introducing and bringing it into notice, committed in the first instance the fatal mistake of working it far too high, even trying to produce standards and half-standards of it. This at that time was laudable enough, as nothing but experiments could decide its capabilities. But now that these are better understood no person at all conversant with its successful cultivation attempts anything of the sort. Yet in the face of such facts we still hear of standard Manetti. Being thus entirely unfitted to form stems, in no case should this stock be worked so high that the junction of it and scion remains above ground after planting. Therefore any person having Roses on this stock sent them with from 6 to 12 inches of it above ground when planted ought to return them or consign them at once to the faggot heap, as the result, especially with bad growing sorts, can be nothing but disappointment. Some may consider it troublesome to work low enough to comply with these conditions, but if insisted on there will be no want of properly prepared stock to meet the demand. After procuring proper plants the following easily practised rules will generally succeed. Plant in deeply dug, well drained, highly manured ground. Be sure in planting to entirely cover the stock, and on no account neglect to transplant every autumn. Mr. Rivers, when first mentioning this new feature in its cultivation, designated it in the *Gardeners' Chronicle* as the Folkestone system of yearly removal, and recommended it as beneficial to Roses growing on light sandy soil. And so it is most decidedly; but if he contends that its benefits are confined to such, I beg to differ from him; for if anything it benefits those on clayey, damp, ill-conditioned soils the most, as by keeping the roots (by this process rendered numerous) in the best position that circumstances admit of, the plant is enabled to produce the healthy well matured wood and foliage requisite to produce a perfect bloom of Roses, or anything else, and the father of root pruning ought to know it. *J. M., Folkestone.*

Rain in 1858.—

1858.	Hunton Court, Kent.	Linton Park, Kent.	Gorhambury, Herts.
January	0.77	0.79	0.70
February ..	0.44	0.77	1.40
March	0.71	0.80	1.06
April	1.91	1.93	2.45
May	2.22	2.16	2.66
June	0.46	0.67	0.94
July	2.39	2.69	2.85
August	1.72	1.20	1.75
September ..	0.94	1.19	1.37
October	1.95	1.45	1.85
November ..	0.89	0.77	0.91
December ..	2.19	1.91	2.06
	16.59	16.33	20.00

—*G. Goddard.*

Rain at Itchen Abbas in 1858.—

January	0.62	Brought forward	9.84
February	1.00	August	1.70
March	1.35	September	2.16
April	2.49	October	2.24
May	2.10	November	1.87
June	0.46	December	3.40
July	1.82		
Carry forward ..	9.84	Total	21.21
Average of 8 preceding years			29.20

—*W. W. Spicer.*

Who is to be Master?—I live in a remote part of Ireland where much of the old feudal feeling still exists between landlord and occupiers of the soil, where nearly the entire parish belongs to me, and where an almost affectionate regard has subsisted for many years between me and the humblest inhabitant. I mention these particulars, because otherwise you would not exactly understand my position in the case on which I ask your advice. My gardener (a Scotchman) requires to have uncontrolled power to hire and discharge labourers as he pleases. I require, on the contrary, that before he discharges a labourer he should consult me and explain his reasons. I never yet have required him to employ a labourer whom he considers incompetent, nor is it at all likely (with a view to my own interest) that I ever would do so, but circumstanced as I am, and living almost constantly on my estate I think it my duty not to abdicate all interference in the matter. May I ask you what you believe to be the general custom in such matters, and what you would do were my case yours? *K. K.* [We presume you to be the master of your own establishment; and we cannot advise you to abdicate in favour of your gardener.]

Gardeners' Royal Benevolent Institution.—I beg to forward you the following information respecting this charity, which perhaps you may think interesting:—From Jan. 1843 to Dec. 1858 no less a sum than 6684*l.* has been paid in pensions. During the same period 99 pensioners have been placed on the list. Out of this number 7 were added without an election, they or their husbands having subscribed 15 years to the Society consecutively. *Vide* rule 6. Out of this number 99 seven have left widows, who succeeded their husbands at a pension of 12*l.* Out of the number 99 (after deducting the seven who claimed the pension) 23 had been subscribers to the Society. *Edward R. Cutler, Secretary.*

Out-door Grapes.—I wonder that the growing of Grapes out of doors is not practised to a greater extent than it is in England, especially in the south by means of flued walls. It is found practicable in Scotland, in some places at least. I know personally that in a garden by the banks of the Clyde, Hamburghs and others have been for many years grown with great success; so much so that first prizes have been obtained at Horticultural meetings by fruit from a flued wall. The simple protection of a net in the earlier part of the year is all that was employed. The Vines were however under the care of a good gardener. But apart from first-class treatment the thing is in most cases practicable. I hope the gardener in question will communicate his experience on the subject. *H. D., Airdlamont, Greenock.*

How to have Potatoes free from Disease.—In your impression of the 15th inst. I observe there is advertised a "Treatise on Potato Culture" by one who gives his address, "R. B., Hathersage, Derbyshire." I have had some experience of the plan "R. B." advocates, which has the double object in view of producing large crops, and of securing them against disease. So long as the Potato continues liable to this disease, any plan which affords a reasonable hope of protection from its ravages is well worth attention. As my experience so far leads me to believe that this plan does hold out such a hope, I shall beg of you to admit one or two observations on the subject. They may invite consideration to what must always be a matter of interest. I happened to be present when "R. B." took up a crop of the well-known Lapstone Kidneys on the 30th July last, and which had been set on the 26th of March preceding. The haulm having been cut away, the Potatoes were raised and placed, still attached to the roots, in a line exactly as they grew. It was really a remarkable sight, the roots all touching one another without interval from end to end of the line. There was not a diseased Potato amongst them; weighed in lengths of 3 yards at a time, the produce was at the rate of 600 bushels per acre at 80 lbs. the bushel. At dinner that same day we had some of the Potatoes boiled, and more mealy or better flavoured I never wish to taste. I have myself tried the system in my own garden. The best result I obtained was with a round Potato, known, I believe, as the "White Rock," and which I got from Lord Combermere's home farm, in Cheshire. Of this I raised some on the 1st August; one root gave the enormous number of 37 tubers fit for table. The whole crop was at the rate of 560 bushels per acre by weight. They were quite free from disease, and are so now; whilst some of the same sort, taken up the end of August and the end of September respectively, and indeed all the rest of my Potatoes, were diseased to the extent of one-third at least. Without pledging myself to every detail, which further experience may improve, I yet feel so persuaded that the main principles of "R. B.'s" system are correct, that I feel justified in recommending it to a fair trial without misgiving as to the result. *Hugh Ford Bacon, Vicarage, Castleton, Derbyshire.*

The New Zealand Bean.—Having seen in the *Gardeners' Chronicle* Mr. Cuthill's advertisement of the "New Zealand Runner Bean," and your answer to the inquiry of Mr. Kitteman, I inclose you a few Beans answering in every respect the description given in the advertisement. They were brought from Holland two years ago by a relative of mine, and called the "Striped podded Runner." I shall be obliged by your informing me if you consider it the same variety. *Wm. Smith, Seedsman and Florist, St. Peter's Street, Hereford.* [They are precisely the same.]

Compartment Cutting Pots.—In turning cuttings out of the present pots the roots are liable to be broken off and otherwise injured. To prevent this let shallow pots be made into compartments (which may be so many tubes placed close together), so that each cutting can have a division to itself, and preserve its roots entire when removed. This plan has the advantage also of preventing their fogging off, as they will be placed at a trifling greater distance apart than by the old method; and, besides, should any die or require to be removed, it can be done without disturbing the others—a desideratum now unattainable. *An Old Subscriber.*

Josephine de Malines Pear.—The faint rosy or salmon tint in the flesh of this Pear is very common, but only when it is well ripened and in fine condition. *T. R., Herts.*

Societies.

ENTOMOLOGICAL: *January* 3.—The President in the chair. Mr. S. Stevens exhibited some very rare Coleoptera received from the interior of Peru, and Mr. Augustus Sheppard various beetles from Melbourne, Australia. Mr. Geo. R. Waterhouse announced the capture of two new British Coleoptera, one belonging to a genus not hitherto recognised as indigenous to this country, namely, Symbiotes latus, Redtenbacher, taken by sweeping low herbage in the Isle of Wight; also a species of Tachyusa from Highgate. Mr. Janson stated that he had also obtained the Symbiotes latus from the nest of Formica flava, and also under bark, and that it had been characterised by Mr. Wollaston under the name

of Microchondrus. Mr. Pickard exhibited a new British Tinea, from Portland, and Mr. White a drawing of a very remarkable Crustaceous animal belonging to the Isopodous family Sphæromidæ, taken at Bass's Straits, and furnished with a horn in the front of the head, a character occurring in no known species of the family. He proposed to name it Cephaloniscus Grayanus, and pointed out an analogous form amongst the fossil Trilobites forming the genus Encrinurus. Mr. Walker exhibited a vegetable gall from Sierra Leone, formed, as was stated, by a species of Thrips. The galls on the leaves of the Lime tree alluded to at a former meeting were produced by a mite, Sarcoptes Tiliæ, described in the Mémoires de l'Institut for 1835. Mr. Frederick Smith read a notice on Hymenopterous insects which he had observed to have been attacked by the parasitic Stylopidæ. In addition to the species of bees belonging to the genera Halictus and Andrena, he enumerated Polistes, Ammophila, Sphex, Pelopœus, Eumenes, and Odynerus as having been observed with the exuviæ of these parasites still remaining between the segments of the body. Some of these parasites had occurred in almost every quarter of the world. Mr. Westwood reminded the members that he had also indicated the presence of these parasites in two still more striking instances, viz., in an ant sent by Mr. Nietner from Ceylon, and in a Homopterous insect sent from Borneo by Mr. Wallace. Mr. Waterhouse read a detailed account of the British species of Latridius and Corticaria, two genera of minute beetles. A new part of the Transactions, completing the 4th volume of the new series, was announced, and notice was given of the alterations in the Council and officers to be proposed at the anniversary meeting.

LINNEAN: *Jan.* 20.—The President in the chair. T. Anderson, Esq., M.D., T. Boycott, Esq., Hon. Walter Elliot, Rev. W. Houghton, Dr. Ferdinand Müller, H. T. Stainton, Esq., and Major R. Strachey, were elected Fellows. The following papers were read:—1. "Notice of Entozoa found in various animals dissected at the Zoological Society's Garden," by Dr. Cobbold. 2. "On Tomopteris," by Dr. Carpenter. 3. "Dennisonia, Barklya, et Laboucheria, genera Floræ Australiæ nondum cognita," described by Dr. F. Müller. 4. "On the anatomical characters of three Australian species of Tunicata," by J. D. M'Donald, Esq.

Notices of Books.

Oude, its Past and its Future. By L. E. R. Rees. Longmans. A pamphlet of 34 pages.

The author of this pamphlet resided for several years in Oude, of which country he possesses as much real knowledge as any European can well have. After assisting in the defence of Lucknow, of which he published one of the earliest narratives, he seems to have returned to England, where he now resides. The pamphlet before us, dated London, Dec. 21, 1858, is for the most part a reprint of an article published in June, 1856, in the Calcutta Review, and therefore shows the state of the country before the lamentable outbreak. By all who are interested in the great future of India it cannot fail to be read with interest; for it relates wholly to matters of fact, connected with the productive resources of an Asiatic kingdom, blessed by Nature with inexhaustible resources of the greatest value, and cursed by the vilest system of government that even an Indian Prince has yet devised.

"Oude," writes Mr. Rees, "is undoubtedly one of the most fertile provinces in India. Its surface extends over about 23,740 square miles. An infinity of rivers and nuddees intersect it, and issuing either from the Himalaya Mountains or the Tarae forest which skirts the Nepal Hills, flow gently through the country, and without cutting too deep into the soil so admirably irrigate it, that there is scarcely a single acre of ground which is not capable of being well tilled. The people are strong, industrious, and well acquainted with agriculture, so that under a powerful and equitable Government Oude would be one vast garden, rich, fertile, and densely peopled."

"Oude is rich in rivers which render the earth productive and fruitful; for in the midst, and in spite of the greatest disorders and the most sanguinary conflicts, tillage is still carried on. The land often yields three, but generally only two crops. In the *khareef*, or autumn and winter harvest, the following crops embellish the surface of the arable lands permitted to be cultivated:—Rice of eight kinds; Indian Corn of two sorts; Till (*Sesamum*), a species of fine oil seed; bajara (*Penicillaria spicata*), a fine grain for birds; and Indigo. In spring the soil can yield in great abundance the following harvest, called the *rubby* crops. Wheat; Indian Corn; gram (*Cicer arietinum*); Mustard; Surson, a kind of fine Mustard; Opium; Arhur (*Cajanus*) (Pulse), of two kinds; Musoor (*Ervum Lens*); Pulse; Moong (*Phaseolus*) or cutils (Pulse); Peas of four sorts; Sugar Cane of six kinds; Safflower; Palma Christi and Linseed.

"The whole kingdom is studded with magnificent trees, whose dense foliage and beautiful blossoms add a charming feature to the general aspect of the surface of this country, so favoured by nature, but so ungratefully treated by man. The Banyan with its ever spreading branches, producing numerous offsprings of the parent tree, round which they cluster, ever multiplying, ever increasing; the Mango, with its yellow and luscious fruit; the Sheesha (?) resembling our Oak in stateliness; the Tamarind, thickly shaded and covered with its red Bean-like produce; the Jamun (?), with its purple Plum-like berries, beautiful to look at, but sharp and acid to the taste; the Peepul (*Ficus religiosa*), with its round thick leaves and shady branches; the Bale (?) with its cocoa-like nuts, whose hard shell contains the sweet juicy fibres along with the Sloe-like bitter of its manifold kernels; the wild Fig; the Cotton tree, with its snow-white blossoms so charmingly relieved by the surrounding green; the Jack (*Artocarpus integrifolia*) with its huge trunk and its curious rough surfaced monstrous oval produce; the Mahooa (*Bassia latifolia*), from the fruit of which a spirit is distilled; the Owla (*Phyllanthus Emblica?*); the Neem (*Melia Azedarach*) with its long thin zigzag shaped leaves so useful to native medical practitioners; the Sandal, and other handsome trees are everywhere discernible, either in fine groves or standing in solitary grandeur, looking proudly on the rich fields beneath, or appearing to protest by their verdancy and beauty against the violence which desolates the country around them." (The italics and (?) are our own.)

"Of the articles of commerce which Oude furnishes, I must say a few words. The trade in hides and horns has been in existence for several years, but was only known to, and carried on by a very few enterprising individuals, who, notwithstanding the great number of servants to be employed for the collection and protection of these articles, and the taxes extorted from the landholders through whose estates they have had to pass, always found it exceedingly profitable. Thousands and thousands of horned cattle in a wild state swarm in the hill forests of the Tarae, and in the jungles of the interior. There hides are rotting by thousands, and horns are lying about by hundreds of thousands, only requiring the trouble of being picked up to be saved from destruction. Under a government where roads and a police are not myths, trade in these might be made very productive. Tallow, already a considerable article of commerce, could also be obtained in greater quantities, for hides, horns, and a good portion of the fat of the cattle, wild and tame, with which Oude abounds, are now literally thrown away.

"Oude might yield Indigo, as to quantity, at least half of the amount produced in Bengal, and as to quality, as good as that grown in the Tirhoot and the Doab. The planter might choose at liberty out of an extent of 24,000 square miles, and in spots where there would be little flooding, and seldom or never a scarcity of rain when it was needed. One with energy might in a very short time make his fortune in the manufacture of this useful article; nor need his capital be very great, as his principal outlay would be the building of vats and factories, though it would be as well if he likewise purchased a few villages."

This is doubtless a highly coloured picture and reads a good deal like puff; nevertheless it is substantially true. But all this natural treasure has been rendered unavailable to the people of Oude by the rapacity and barbarity of those great feudal chiefs, the destruction of whose power has been well nigh accomplished by our gallant troops. Those who think that hard measure has been dealt to these fearful despots will change their opinion by the time they have read Mr. Rees's account of their method of government. It is sufficient to say that treachery, cruelty, murder, and brutal avarice seem to have been the all but universal characteristics of their sway.

In conclusion Mr. Rees touches upon the Cotton question:—

"I feel it particularly deserves the attention of those who take an interest in the growth of Cotton, to remark how peculiarly Oude is fitted for its cultivation. The best proof of this is that no inconsiderable quantity has been exported from it, even during the mismanagement of the native Government, which affected Cotton in the same way as, or even more than, the other natural products of Oude. The immense importance of a supply of Cotton from India (the only one of our colonies that seems capable of producing it in sufficient quantities) is fully appreciated by our manufacturers, whose very existence as such depends on an independent and regular supply of that article. Its successful growth, we must consider, depends upon both the soil and the irrigation. Both the rich black soil, and the more meagre red, which is in the opinion of many quite as fitted for the growth of Cotton, exist in Oude, particularly in many of the jungles. These, however, might, and should, as I have already pointed out, be made available for purposes of cultivation. Indeed, one firm, Messrs. Burns & Co., I understand, have actually undertaken the contract to clear the Jugdeespore jungle, the fifth in my list. There is sufficient water in the streams and rivers in Oude, which have the further advantage of not being, like the Ganges and other rivers, 50 to 100 feet below the level of the soil; the natives being thus enabled, with even their rude implements, to attend to its cultivation with greater facility than in most other parts of India. But I see no reason why, when European science is brought to bear upon native enterprise, this advantage could not be turned to still further account. European supervision is not so much required for its production as for Sugar or Indigo. Unlike those, Cotton is the raw produce of the tree, and with the increased facilities for transport which must arise, the native would easily be induced to pay sufficient attention to its cultivation to render it equal to any other kind of Cotton.

"The only serious obstacle to the production in sufficient quantities to supply all the demands of our markets is the defective and costly means of transport, nowhere so apparent as in Oude, which not only prevents the native from successfully competing with the American in delivering cheap Cotton at a seaport, but also materially damages the quality of the article."

We must warn our Lancashire friends not to be misled by this flourish. That Oude may be able to grow Cotton of good quality is, we believe, true; but rent and other circumstances must greatly alter before it can possibly produce it with profit to the cultivator. Speculators will find it safer to rely on its Pulse and oilseed, hides and tallow.

Nereis Boreali-Americana; or Contributions towards a History of the Marine Algæ of the Atlantic and Pacific Coasts of North America. Part III. *Chlorospermeæ.* By W. H. Harvey, M.D., 4to, pp. 140, tab. pict. 14.

We have already noticed a portion of this work comprising the red and black-spored Algæ. The present part, which concludes the whole, comprises what are commonly known as the green-spored Algæ, including however such red-spored Algæ as the Porphyræ, which constitute the Laver or marine sauce which is considered so great a dainty by those to whom it is not "Caviare," and some other allied species. The Laver is not indeed the only culinary production afforded by the Algæ. The Caulerpæ, which grow for the most part upon hard sand or sand-covered rocks between high and low water mark, not only help to fatten the turtles but are eaten by the natives of the Pacific Archipelagos, and the Nostocs, which abound in a peculiar form of Bassorin, are highly nutritious, presenting an approved article of food in China, and considered far superior to the Tripe de Roche by the Arctic voyagers, both from the absence of the bitter taste which renders the Lichen unpalatable, and the purgative qualities which make it so unwholesome to some stomachs.

Apart from these economical properties, the structure of many of these Algæ is extremely curious. In Caulerpa and one or two allied genera, we have vegetable cells of such a size, exceeding sometimes several inches in length with a proportionate breadth, as we shall in vain search for in any other department of botany; the mode of fecundation and reproduction in many genera is most curious, and accompanied by the most extraordinary phenomena; while forms of the greatest elegance occur everywhere, especially amongst those species which in external characters approach the Corallines, and which are at the same time highly attractive and instructive. The ornamental arts indeed have not at present availed themselves sufficiently of the fertile source of beauty, both as regards form and colour, which is presented in such redundant plenty by the Algæ. There is one species especially figured in this volume, *Anadyomene flabellata*, which if well imitated would yield the goldsmith or silversmith an incomparable pattern. A magnified photographic view of a well selected specimen would, we are sure, produce in the hands of a clever workman an almost inconceivably beautiful design. Much, however, would depend upon the faithfulness with which the exquisite network, so fantastically arranged, should be reproduced. Other species also, as certain Halimedæ, Acetabulariæ, &c., might prove highly suggestive.

The execution of the volume, like all which comes from the hands of the author, is most satisfactory. He has wisely abstained from describing those fresh-water species which he could not describe from recent specimens and which lose half their characters in the herbarium except when mounted after Mr. Thwaites' method, the great drawback to which is the necessity of very nice manipulation and great expense of time, which are not always at the service of collectors. Nor indeed did these come within the original design, which was rather directed to Marine than Fresh Water Algæ. The Diatomaceæ are altogether omitted, together with the Desmidiaceæ, as having been already so well worked out by Mr. Bailey. We cordially congratulate the Smithsonian Institution on the completion of this highly useful production, and wish it all prosperity in its noble career.

TRADE LISTS RECEIVED.—*Carey Tyso* (Wallingford), *a Descriptive Catalogue of Flower Roots, &c.* Rich in Anemones, Ranunculuses, and all sorts of florists' flowers. It is a pity that it should be printed in the old-fashioned form of a broadside. A little book would not have cost more, and would be much more handy.

Garden Memoranda.

MESSRS. E. G. HENDERSON'S NURSERY, WELLINGTON ROAD, ST. JOHN'S WOOD.—Even at this season the glass houses here are well worth inspection; for already are the show houses becoming gay with flowering plants, and places in which there is at present little blossom have been decorated with plants remarkable for fine foliage, so as to set them off to the best advantage. Among things in flower were Chinese Primulas, both single and double; the former handsomer than the latter, and being from seed they are more easily increased. Cultivators, however, who are fond of the latter, and have but few plants of them in their possession, may readily have more by dividing them into as many pieces as they have crowns, and potting them separately. This is a surer and better way of multiplying them than by cuttings, as each portion thus detached has roots to it, and is enabled to

begin growing without much check. Among other plants in flower were Early Tulips, Cyclamens, Daphnes, whose fragrance renders them favourites with everybody, and varieties of Epiphyllum truncatum; Mignonette sown last July and brought on in cold pits was also coming into bloom, while some sown in August is growing on to succeed it, and thus by sowing at intervals a supply is kept up all through the spring.

In Stoves the red berries of Ardisias are just now very attractive, and not less so are the large scarlet bracts of Poinsettia pulcherrima, young plants of which, it may be useful to know, produce these gay floral leaves of larger size than old ones. Thyrsacanthus Schomburgki, sometimes erroneously called T. rutilans, was also in blossom, and for effect at this time of year few plants can equal it. Its long drooping clusters of scarlet flowers are extremely ornamental. Gloxinias and Gesneras for early blooming are now receiving attention, and of Ferns and other fine-foliaged plants, for which this nursery is remarkable, there is a beautiful assortment.

In what is called the "winter garden" (*i.e.* a large house, the occupants of which are neatly grouped on the floor instead of being on stages), we noticed some fine plants intermixed with Camellias and Azaleas. Among these were handsome pyramidal Bays, Palm trees, and variegated Yuccas, as well as beautiful plants of the finer kinds of Conifers. Of Bhotan Rhododendrons there were also some fine specimens, especially of Nuttalli, which is one of the very finest of the genus yet introduced. We likewise noticed good examples of Clianthus Dampieri, which attracted (and deservedly) so much attention when shown in St. James's Hall last spring. This is stated to be somewhat difficult to cultivate in pots, and on that account it has been planted out here on prepared beds near the glass. Thus treated it grows luxuriantly and will evidently soon make a handsome specimen. In the same house were some pretty plants of Lapageria rosea. This was also planted out in a mixture of rough pieces of turfy loam, peat, leaf-mould, and sand. Of variegated-leaved Neriums we noticed some fine plants, which had been worked on the common kind.

Among the immense quantities of bedding plants which are raised here every year we noticed a new Golden Chain Geranium which is stated to possess greater merits than the old kind, and to be better able to withstand the effects of cold and wet in autumn. Of variegated Geraniums there is also here a fine collection: for pot culture, Culford Beauty, Fontainebleau, and Golden Admiration are perhaps best adapted. Of these a few specimens are invaluable for autumn display, and under glass their rich markings become beautifully developed. Of dwarf Dahlias Messrs. Henderson also possess many useful sorts for bedding purposes. Among these may be named Titian, yellow; alba floribunda nana, white; Captain Ingram, crimson; Crystal Palace scarlet and Trentham, white. These all bloomed finely in this nursery during the past autumn, and were considered to be among the best of their class. Tree Carnations are cultivated here extensively; during winter and spring they are very valuable and are so easily grown that no one possessing a strip of ground and a cold frame should be without them.

It may perhaps be useful to mention that Weeks's "one boiler system of heating" has been tried here with excellent success. One boiler does the work of several under the old arrangement, and thus a great saving of expense in the shape of fuel and labour is effected. It has been in operation here for several winters.

HAWKESYARD GARDENS NEAR RUGELEY, STAFFORDSHIRE.—Angræcum sesquipedale, a young plant purchased of Messrs. Veitch and Son May twelvemonth, is now in flower here. The plant when obtained was 8 inches high; it is now 18 inches in height. The flower spike is 10 inches long, and has two flowers on it, one open measuring 4½ inches in diameter, and has a tail 14 inches in length; the other will expand soon; its tail is now 12 inches in length, the colour is greenish white, the centre resembling the head of a newt and very interesting, This is the second or third time this species has flowered in this country.

Miscellaneous.

Lead-eating Insects.—At a meeting of the Imperial Academy of Sciences of St. Petersburgh on the 9th (21st) October, 1857, a communication was read, addressed to the President by the Minister of War, dated the 26th September, 1857, and accompanied by a letter from Marshal Vaillant to Count Kisselev of the 9th September. Marshal Vaillant had sent to the Paris Academy an account of a rather curious phenomenon. The French troops which fought in the Crimea brought home packets of cartridges, of which several presented a remarkable peculiarity. Some of the balls were simply furrowed, whilst others were pierced through and through by an insect which has not been found in the larva state, but which in the perfect state appears to be a hymenopterous fly about 2 centimètres* long. The gallery hollowed by the perforating insect is from 3 to 4 millimètres* in diameter; it runs in a straight line, and the surface is perfectly smooth. Marshal Vaillant observes that the perforations in question differ essentially from those observed in sheets of lead placed upon terraces or vaults of earth, which are pierced through and through by the Cetonia aurata, whose work cannot be compared with the regular and evenly bored galleries of the insect now under consideration. Marshal Vaillant stated that the Academie des Sciences at Paris was desirous of knowing whether the perforation of packets of cartridges had been observed in the Crimea in the Russian army? Whether it is common? Whether it occurs on a large scale? Whether it has been observed elsewhere? Whether the Russian entomologists have studied the habits of this new insect? What name they have given to it? The Society having listened to this communication, and being desirous of replying to the questions transmitted by Marshal Vaillant from the Academie des Sciences, directed M. Brandt to make the necessary inquiries, and resolved that the Minister of War should be requested to send specimens of the perforated balls, and that M. Steven should be asked to communicate any observations which may have been made on this subject in the Crimea.

* 1 inch equals 2½ centimètres, or 25 millimètres.

Calendar of Operations.

(For the ensuing Week.)

PLANT DEPARTMENT.

CONSERVATORY, &c.—This structure where proper means are allowed should now be getting gay; hybrid Rhododendrons, Camellias, &c., which should be in flower, make a fine display. Large plants of the above that have been some time in their pots or tubs will require much water, more than people commonly imagine, and tepid liquid manure may be given more occasionally with advantage. In stoves heat may soon be indulged in on sunny days by shutting up early after a thorough ventilation. To obtain this keep rather a lively fire from 7 in the morning until 11 o'clock, from which time it may decline until the following morning. By taking the air entirely away an hour afterwards, and watering floors or other temperate surfaces (not pipes or flues), a delightful atmosphere will be created. Begin to repot Orchids, taking them exactly in the order in which they bud; be sure that your material is scalded or half charred to destroy insects. Keep the plants well elevated, and use plenty of charcoal in lumps of considerable size, fastening the whole at last so that the plant cannot be loosened by agitation. Sphagnum or other Moss pegged on the top makes a good finish, and is to be recommended in houses which are unavoidably deficient of atmospheric moisture. Syringe plants on blocks occasionally. Let the temperature be 60° by night, 65° by day, rising to 70° on sunny afternoons.

FORCING DEPARTMENT.

VINERIES.—Discontinue syringing Vines that are showing fruit; but secure plenty of moisture in the atmosphere by frequently sprinkling the passages, &c. Be satisfied with as low a temperature as will be safe under the state of the Vines at night, and on cold cloudy days, but take advantage of sunshine to raise it considerably, and be cautious how cold air is admitted where the Vines are in leaf. As the Grapes are cleared from late houses, prune and wash the Vines with soft soap, and a little soot and lime; also thoroughly clean the woodwork, glass, &c., and have everything clean and ready for next campaign. PEACH HOUSE.—Discontinue syringing where the blossoms are beginning to open, but secure a nice, moist, healthy state of the atmosphere by sprinkling the passages, &c., as may be necessary, but avoid anything like dampness while the trees are in bloom. Maintain a steady night temperature of 50° to 55° while the trees are in bloom. Take every possible opportunity of admitting fresh air, and where the external air can be made to pass over the heating apparatus, so as to get heated before coming in contact with the plants, a gentle circulation should be constantly kept up until the fruit is fairly set. Avoid the admission of currents of dry, cold air, however, which would be most injurious to the trees. FIGS.—See that trees planted out are properly moist at the roots, and also keep those in pots and tubs carefully supplied with water, for any excess as respects the presence or absence of moisture at the root is very dangerous after the appearance of the fruit, and is the frequent cause of its dropping off. Maintain a moist atmosphere, and if necessary to water the border, use tepid water, giving enough to nicely moisten the whole of the soil. Let the temperature range from 50° or 55° at night to 60° or 65° by day, giving air whenever it can be done with perfect safety.

FLOWER GARDEN AND SHRUBBERIES.

Continue to make the necessary preparations for clumps or masses by sweetening or renewing the soil. Plant out things of biennial character in masses where requisite in borders. The rearrangement of perennials had better stand over till the latter begin to bud in March. Lose no time in finishing the planting of trees or shrubs.

HARDY FRUIT AND KITCHEN GARDEN.

Push forward all kinds of wheeling while the ground is in a favourable state for such work. Soils of a heavy tenacious character are improved for working the more they can be exposed to the action of frost, and some persons dig such ground a second time, turning in the frozen surface, in order to expose a further portion to the action of the weather, but where it may be desirable to do this the frozen part should not be dug in deep. Look well to the protection of Lettuce, Cauliflowers, &c., under glass, and take every opportunity of exposing such things to air. Some of the strongest roots of early Rhubarb might be covered with pots or boxes, and sufficient leaves and stable litter to produce a gentle warmth; this would save injuring the roots by removing them for forcing, but where there is a good stock of roots this is of little importance, and is hardly worth the trouble and litter which it causes. Get ground prepared by heavy manuring and trenching for fresh plantations of Rhubarb, Seakale, and Asparagus, and remember that the ground for these things can hardly be made too rich.

COTTAGERS' GARDEN.

The cottager's leisure hours should be occupied in collecting together all ditchings, road scrapings, and other refuse matters to improve his soil. What other folks call rubbish will be to him a valuable manure if husbanded aright. He should take care that his dung-heap is secure at bottom by means of puddling or otherwise, and an escape drain should be provided at one end (the lowest) with a stopper, so that in the case of abundance of manure-water through rains or otherwise, the cottager could draw off the surplus into a sunken pit waterproof, and by means of a water-barrow supply it to his crops. Consult the Kitchen Garden Calendar for information on other matters.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.
For the Week ending Jan. 27, 1859, as observed at the Horticultural Gardens.

Jan.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Min.	Mean	Temperature of the Earth. 1 foot deep.	2 feet deep.	Wind.	Rain.
Friday 21	17	30.089	29.942	48	42	45	45	44	S.W.	.00
Satur. 22	18	29.913	29.887	47	32	39.5	45½	44	S.W.	.01
Sunday 23	19	29.641	29.262	45	29	37	45	44	S.	.22
Mon. 24	20	29.781	29 646	48	41	44.5	45	44	S.W.	.00
Tues. 25	0	29.967	29.661	49	35	42	45	44	S.W.	.08
Wed. 26	22	29.772	29.741	49	37	43	46	45	S.W.	.00
Thurs. 27	23	29.722	29.688	51	37	44	46	45	W.	.00
Average		29.840	29.689	48.1	36 1	42.2	45.2	44.3		.31

Jan. 21—Densely overcast; fine throughout.
— 22—Slight rain; densely clouded; clear at night.
— 23—Boisterous and densely clouded; rain; clear; slight frost.
— 24—Clear; fine; overcast and mild.
— 25—Cloudy; overcast; boisterous at night.
— 26—Clear; fine throughout.
— 27—Cloudy; fine; overcast at night.
Mean temperature of the week, 4 1-5th deg. above the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 33 years, for the ensuing Week, ending Feb. 5, 1859.

Jan. and Feb.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 30..	43.8	31.5	37.7	14	0.38 in.	2	3	3	3	3	9	7	3
Mon. 31..	43.7	30.3	37.0	14	0.38	4	5	1	2	9	7	3	2
Tues. 1..	42.5	30.6	36.5	12	0.42	5	6	1	2	3	8	4	4
Wed. 2..	43.1	30.4	36.7	12	0.75	2	6	5	3	2	8	5	2
Thurs. 3..	44.0	31.0	37.5	15	0.42	2	4	4	3	2	13	3	2
Friday 4..	44.2	32.3	38.2	16	0.31	3	4	4	1	6	9	4	2
Satur. 5..	45.0	33.1	39.0	14	0.39	2	3	2	2	3	12	4	5

The highest temperature during the above period occurred on the 1st, 1852, and 3d, 1850—therm. 57 deg.; and the lowest on the 5th, 1830—therm. 10 deg.

Notices to Correspondents.

BLACKTHORN: *Buckthorn.* It is best to mix the sloes with sand and leave them out of doors all winter in a heap; sowing them in beds in March. They do not grow so readily if put in without any previous preparation.

BOOKS; *W Turnbull.* There is no separate treatise on the propagation of evergreen shrubs by cuttings.—*E James.* We really have not one word to say in favour of the book; and it would be unwise of you to buy it. In the other matter take Hamilton on the Pine Apple (published by Masters) as a safe and sensible guide.—*Ottley.* The book of Neumann's called *Art de construire et gouverner les Serres* is a thin oblong 4to, with 21 plates, published in Paris by Audot. You may get some very useful hints from it, especially about Orangeries. But you must not look to France for specimens of the most skilful hothouse heating and building.—*J O B.* There is no such book, nor will there ever be.

HOUSEHOLD WORDS: *R B* sends us the following extract from this work:—"They (the Japanese) are on the whole an industrious and cultivated people. Their horticultue is advanced yet odd. They can enlarge or decrease to any size they like; *make Plum blossoms four times os big as China Roses, and Radishes of 50 or 60 pounds in weight*"!! And *R B* asks us to inform him upon what authority these prodigious statements are made. We are entirely unable to enlighten him.

INSECTS: *W W.* The grubs found at the root of your Vine are the larvæ of the destructive weevil Otiorhynchus. We know no better plan than that of opening the earth carefully round the plants and picking out the larvæ. In the summer the stems may also be carefully searched after dusk with a light to find the perfect beetles.—*A Gloucestershire Sub.* Your "blight" is a mass of the eggs of the common lackey moth arranged spirally round the twig of a Plum tree.—*M C.* The Ash bark is infested with a species of Coccus to a woful extent. The species has not been illustrated. Your specimen is remarkable for consisting entirely of hundreds of male scales, which will probably enable us to determine the species.—*E S D.* Your Picotee stem has been gnawed through by the larva of a small two-winged fly (Phytomyza? sp. ?), which, after assuming the black pupa state, has made its escape. If you can forward specimens either of the larvæ or of the pupa from which the fly has not escaped, we shall feel much obliged. *W.*

NAMES OF FRUITS: May we beg our correspondents to send their specimens, *carriage paid*, to our Office, No. 5, Upper Wellington Street, Covent Garden, London: AND TO NO OTHER PLACE WHATEVER.—*Darlington.* 1 was decayed, and an unpromising seedling. 2 is the true Glou Morceau.—*Eatington.* Very fine specimens of the Pear-shaped Service, just ripe. How did you keep them so late?

NAMES OF PLANTS.—We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have or could have undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*C H, Manchester.* Jasminum nudiflorum.—*Anon.* Chimonanthus grandiflorus.—*M D.* 1, Begonia fuchsioides; 2, B. manicata; 3, B. Evansiana perhaps.—*Eisteddvodd.* The little dried thing is Campanula hederacea, often found near waterfalls in the west.—*An Earnest Inquirer.* The climber with a pink blossom is doubtless some Phaseolus; but we are unacquainted with the seed.—*H.* We presume that your Juniper from Alupka is *J. excelsa*, a common Crimean tree. There were good specimens of it at the Monastery of St. George, overlooking Balaclava.—*C C.* It is Odontoglossum cariniferum of Reichenbach.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

SOLUBLE PHOSPHATE OF LIME.

FREDERIC CORNWELL begs to inform his friends and the Agricultural public that he can now supply a "SUPERPHOSPATE of LIME" superior to anything yet produced. Each Bag guaranteed to contain from 20 to 25 per cent. of "Soluble Phosphate of Lime." Price 5*l.* 10*s.* per ton, delivered free to any Railway or Wharf in London. Dealers and the trade supplied.

Linseed-cakes, Cotton-cakes, and all descriptions of Artificial Manures at lowest market prices.—Offices, 7, Great St. Helen's, London, E. C.

POTTER'S CELEBRATED GUANO.—Established 16 years, during which period it has been used on every variety of crop and soil with great success. See MR. POTTER'S numerous testimonials. Price 7*l.* 10*s.* per ton. Also POTTER'S SUPERPHOSPHATE OF LIME, 6*l.* 10*s.* per ton.—28, Clapham Road Place, S.

*** A very liberal allowance to Agents. Mr. POTTER'S work on Agricultural Chemistry sent free for 6 stamps.

LONDON MANURE COMPANY, removed to 116, Fenchurch Street, E. C. (Established 1840), have the following MANURES ready for delivery:—

CORN MANURE for SPRINGTOP DRESSING
URATE
MANGEL MANURE
SUPERPHOSPHATE OF LIME
BLOOD MANURE
} all of guaranteed quality.

In consequence of the reduction in the price of raw material the London Manure Co. are enabled to lower the price of their Superphosphate of Lime, and to materially improve the Corn Manure and Urate.

The London Manure Co. also supply PERUVIAN GUANO (direct from Messrs. A. Gibbs and Sons), SULPHATE of AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of value. Wholesale dealers supplied.

116, Fenchurch Street, E.C. EDWARD PURSER, Secretary.

ESTABLISHED 1812.

H. AND T. PROCTOR'S TURNIP MANURE.—Messrs. H. & T. P. draw particular attention to this valuable Manure, which contains all the elements necessary for the full development of the Turnip Crop, so combined, that, from their chemical knowledge and long experience, they feel satisfied is most advantageous to the consumer. It has been very extensively used by most of the eminent Agriculturists of the day, and has attained a high reputation throughout England, Scotland, and Wales, and, they venture to say, is unrivalled for the weight and quality of the Bulbs which it produces. The application of this Manure to the Turnips will be found to benefit considerably the after crops of Barley, Clover, and Wheat.

POTATO, GRASS, BARLEY, CLOVER, AND WHEAT MANURES; also BONE DUST, PERUVIAN GUANO, and SUPERPHOSPHATE of LIME, warranted of the best quality.

Apply to H. & T. PROCTOR, West of England Depôt for Artificial Manures, Cathay, Bristol; or PROCTOR & RYLAND, Birmingham, and Saltney, near Chester.

Important to every man who keeps



THORLEY'S FOOD FOR CATTLE,
77, NEWGATE STREET, LONDON.
Beware of spurious imitations.

HALKETT'S GUIDEWAY STEAM AGRICULTURE will be Exhibited at Canning Place, Kensington Toll Gate, south of Kensington Gardens, on WEDNESDAYS, the 9th, 16th, and 23d of February, and to private view upon previous appointment. By this system every operation of the Farm is performed by steam power, the land largely increased in value, and the cost of cultivation greatly reduced. "When they considered the numerous advantages of the plan, that it could be used in all weathers, and used untiringly, and also at night, and above all, the superior manner in which the work itself was done," &c., J. J. MECHI.—"Any gentleman unacquainted with the extraordinary difficulties of a clay soil cannot have the least idea of the benefits to be derived from this mode of cultivation. ..... Then we shall be able to make 12 months' soils instead of what farmers call six months' soils." WREN HOSKYNS.—"I will be happy to lay down 50*l.* as a share, with others, to see your system carried out on a large scale."—SMITH, of Woolston, the successful inventor of Smith's Steam Plough. A Paper read before the Society of Arts, illustrations, &c., will be forwarded upon application to the Office, 80, Chancery Lane, W. C.

SHAW'S TIFFANY.—The best and cheapest material for Shading Conservatories, Protecting Fruit from Birds and Wasps, &c. Sold in pieces 20 yards long by 38 inches wide. No. 1, best quality, 5*s.* per piece; second quality, 4*s.* per piece. Extra strong and thick (see Circular sent free by post with samples).

Address JOHN SHAW & Co., Manufacturers and Dealers, Princess Street, Manchester.

"FRIGI DOMO."—Patronised by her Majesty the Queen, the Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence, of Ealing Park, and—Collier, Esq., of Dartford.

PROTECTION FROM COLD WINDS AND MORNING FROSTS.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths. Two yards wide, 1*s.* 6*d.* per yard run; four, 3*s.* per yard. Also, an improved make for Shading Purposes. Three yards wide, 2*s.* 6*d.* per yard run.

ELISHA THOMAS ARCHER, whole and sole manufacturer, 7, Trinity Lane, Cannon Street, City, and of all Nurserymen and Seedsmen throughout the kingdom. "It is much cheaper than mats as a covering."

WARNER'S IMPROVED LIQUID MANURE OR GENERAL PORTABLE PUMP.



These Pumps are fitted with J. W. & SON'S Patent Buckets and Suckers, and cannot clog in action. The barrel is of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure. The legs will fold together, and the whole may be carried on the shoulder to any pond or tank required.

Price of 4½ in. Pump, with legs, 3*l.* 3*s.* If with planished copper barrel and galvanised iron handle, &c., 14*s.* extra. The barrel is 27½ in. long, and the legs are 5 ft. high.

These Pumps are also made without the legs, with strong wrought-iron straps for screwing on to any ordinary water butt or cart, and fitted with 1¼ inch brass union for attaching flexible suction. Price 50*s.*

1¾ inch Gutta Percha Suction Pipe, 1*s.* 11*d.* per foot.

Rubber and Canvas Suction and Delivery Hose, from ½ inch to 4 inches diameter, in lengths of 60 feet to order. Branch Pipes with Cocks, Union Screws, &c., at reduced prices.

May be obtained of any Ironmonger or Plumber in town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin St., London.

WARNER'S PATENT VIBRATING STANDARD PUMPS.

PATENT CAST-IRON PUMPS, fitted with J. W. & SON'S Patent Buckets and Suckers, which cannot clog in action, for Farms, Cottages, and Wells, not exceeding 28 feet.

Diameter of Barrel.	Height.		£ s. d.
2½ in. short	1 ft. 7 in.	Fitted for lead, gutta percha, or cast iron flanged pipe, as required.	1 10 0
2½ ,, long	3 ,, 3 ,,		1 14 0
3 ,, ditto	3 ,, 6 ,,		2 8 0
3½ ,, ditto	3 ,, 6 ,,		2 12 0
4 ,, ditto	3 ,, 6 ,,		3 3 0
2½ ,, short, with 15 feet of Lead Pipe attached, ready for fixing			2 14 0
2½ in. long	ditto	ditto ditto	2 18 0



The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.

May be obtained of any Ironmonger or Plumber in Town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

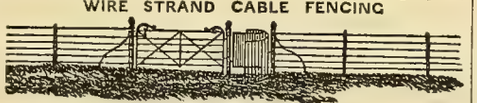
PRICES REDUCED.

H. J. MORTON AND CO., Galvanised Iron Works, 2, Basinghall Buildings, Leeds.

GALVANISED IRON ROOFING

for Farm Buildings and other Roofs; the cheapest, most durable, and neatest Roofing in use; also Spouting at 10½*d.* per yard.

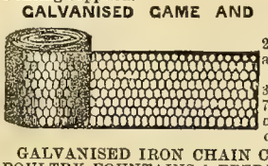
WIRE STRAND CABLE FENCING



(formed of Twisted Wires like a rope or cable), the strongest, cheapest, and neatest fence in use, will resist the largest cattle, and will not bend or get out of form by trespassing upon or over. Price, with five lines of the Galvanised Strand, iron main posts, and pronged Standards, 1*s.* 2½*d.* per yard.

This fence is far cheaper than posts and rails, or any kind of iron fencing; and possesses four times the strength of solid bars. Will not rust nor corrode. Upwards of 1200 miles of this Fencing supplied.

GALVANISED GAME AND POULTRY NETTING.



Galvanised, 24 ins. wide, 2-inch mesh, 5*d.*, 6*d.*, 7½*d.*, and 10*d.* per yard.

Galvanised, 24 ins. wide, 3-inch mesh, 4*d.*, 5*d.*, and 7*l.* per yard. The Netting made any width, and with openings of any size.

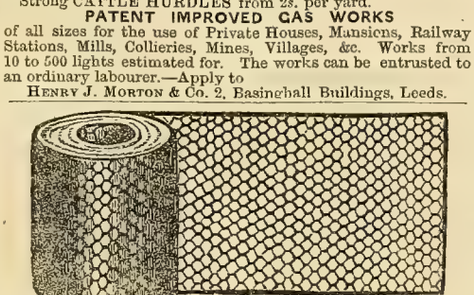
GALVANISED IRON CHAIN CAMP STOOLS & CHAIRS, POULTRY FOUNTAINS & FEEDERS, PRONGED DAHLIA RODS AND ROSE STAKES, &c.

Strong CATTLE HURDLES from 2*s.* per yard.

PATENT IMPROVED GAS WORKS

of all sizes for the use of Private Houses, Mansions, Railway Stations, Mills, Collieries, Mines, Villages, &c. Works from 10 to 500 lights estimated for. The works can be entrusted to an ordinary labourer.—Apply to

HENRY J. MORTON & Co. 2, Basinghall Buildings, Leeds.



BARNARD, BISHOP, AND BARNARD, Market Place, Norwich, in consequence of improvements in their machinery for the manufacture of the above article, have been enabled to make a great reduction in the prices.

	Galvanised.	Japanned Iron.
2-inch mesh, 24 inches wide	5*d.* per yd.	4*d.* per yd.
2-inch ,, strong do.	6 ,,	4¾ ,,
2-inch ,, intermediate, do. ..	7 ,,	5½ ,,
2-inch ,, extra strong, do. ..	9½ ,,	7½ ,,
1⅝-inch ,, 24 inches wide	5½ ,,	4½ ,,
1⅝-inch ,, strong, do.	6½ ,,	5¼ ,,
1⅝-inch ,, intermediate, do. ..	7½ ,,	6 ,,
1⅝-inch ,, extra strong, do. ..	10 ,,	8 ,,

All the above kinds can be made of any width (under 8 feet at proportionate prices. If the upper half is of a coarser mesh than the lower, it will reduce the prices about one-fifth.

Strong Galvanised Poultry Netting, 8¼*d.* per yard, 3 feet wide Galvanised Sparrow-proof Netting for Pheasantries, 2¾*d.* per square foot. Delivered free of expense in London, Peterborough, Hull, or Newcastle. Manufacturers of Improved Strained Wire Cattle and Deer Fencing, Iron Hurdles, &c.

Illustrated Catalogues and Patterns forwarded by post.

B. SAMUELSON, AGRICULTURAL ENGINEER and MACHINIST, Warehouses, 76, Cannon Street, West, London (Works at Banbury), informs Merchants, the trade, and Agriculturists, that he has opened the above Warehouses as a depôt for his own manufactures and those of Messrs. Barrett, Clayton, Howard, Hornsby, Nicholson, Richmond, Tuxford, Smith, and all other first-class makers, whose implements he is prepared to offer on makers' terms.

The BRITANNIA SELF-RAKING REAPING MACHINE, with side delivery in sheaf, no rakers or gatherers required; and all the most improved Food-preparing Machines of the season, may be inspected at the above depôt.

B. SAMUELSON, 76, Cannon Street, West, London; and Britannia Works, Banbury.

THE CONSERVATIVE LAND SOCIETY.—Trustees: Viscount RANELAGH, the Right Hon. R. A. CHRISTOPHER N. HAMILTON, and J. C. COBBOLD, Esq., M.P. Persons desirous of investing savings and capital are requested to apply for the new Prospectus. The system is adapted for all classes of the community, and the business can be as easily carried on by correspondence as by attendance at the Offices, No. 33, Norfolk Street, Strand, London, W.C. The Society will be found most convenient as well as eligible, as investors can make use of it either as a Deposit or Savings Bank, combining a good rate of interest with the privilege of prompt withdrawal when required, and incurring no liabilities either as a shareholder or a depositor. Freehold land, the taking of which is quite optional, can be acquired in small or large lots by easy monthly repayments.

CHARLES LEWIS GRUNEISEN, Secretary.

LAND DRAINAGE.—Works of Drainage of any extent are executed by the GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY on all descriptions of Property, whether Freehold, Entailed, Mortgaged, Trust, Ecclesiastical, Corporate, or Collegiate.

Repayment may be made by the Landowner as successive portions of the Works are completed, or the actual expenditure, with a Commission thereon, may be charged on the property improved by way of rent charge for any term not exceeding 50 years, the instalments to repay principal and interest being thereby kept down nearly to 5 per cent. per annum.

No investigation of title being required, and the charge not being affected by incumbrances, no legal expenses are incurred.

Works of Irrigation, Enclosing, Wood Grubbing, Road Making, and Farm Buildings are executed in a similar manner.

The Company also assist Landowners in executing any of the improvements by their own agents, and charge the amount expended on the property improved.

Applications to be made to WILLIAM CLIFFORD, the Secretary, at the Offices of the Company, 52, Parliament Street, London.

TO LANDOWNERS.

THE PERMANENT WAY COMPANY having been appointed the sole Licensees for the use of Dr. BOUCHERIE'S Patent Process for Preserving Timber, beg to inform Landowners and others interested in the use of English Timber that a Pamphlet, with full explanations of this cheap and most effectual process, may be had gratis on application to the undersigned. Landowners having Beech, Elm, Fir, or other Timber fit for Railway Sleepers are requested to communicate particulars of quantity, locality, and prices.

WILLIAM HOWDEN, Secretary.

26, Great George Street, Westminster.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.

Principal—J. C. NESBIT, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

The Agricultural Gazette.

SATURDAY, JANUARY 29, 1859.

CONSIDERING the national importance and great influence of the Highland Society of Scotland, its late general meeting held in Edinburgh is unquestionably the most important agricultural event of the month. The report in another page, though considerably abridged from that of the Edinburgh daily papers, is sufficiently full to indicate the very excited personal feeling which found expression both in the addresses delivered and in the confusion prevailing on that occasion. A still more angry expression of it had appeared some days before in a pamphlet arguing, "What is to become of the Highland Society?!" It is satisfactory to know that the Society is not likely to suffer from the intemperate statement of the case against its office-bearers which the anonymous author of this pamphlet has laid before the public. Mr. LAWSON, whose treatment by the Directors and their secretary is one of the points insisted on, prefers to resign his official connection with the Society, and bear, unquestioning, the injustice which appears to have been done to him rather than remain the innocent occasion of another angry discussion. To some extent indeed justice has been already done to him at the general meeting just held. His withdrawal of the pamphlet in which an appeal was made from the Directors to the members had been recorded in the minutes of the Society as a "retractation" of its statements. The general meeting of members has directed the "Directors" to expunge the latter word and substitute the former, so that Mr. LAWSON now appears, not in the false light of having made an unfounded complaint, but simply as withdrawing for the sake of peace from a personal contest which threatened to injure the Society's usefulness.

What the details of this personal contest have been we do not care to inquire. If a principal in the affair resolves on silence, no mere spectator has a right to disturb it. And Mr. LAWSON undoubtedly deserves the thanks of his fellow

members and of agriculturists generally for accepting such an *amende* as has been made to him; thus as he could not honourably retain his connection with the Society, becoming as he himself has put it, "honourably quit of it."

For what might have been the upshot of a prolonged dispute? Party feeling threatened to result in the resignation of the Directors of the Society; and that would undoubtedly have been greatly to be lamented; or members in large numbers would have ceased connection with it, and that would have been a still more serious calamity. And we are perfectly sure that the resignation of his office as Secretary by Mr. HALL MAXWELL, which might have ensued, would, notwithstanding all the angry feeling which has connected itself with his proceedings, have been almost universally regarded as a heavy blow upon the usefulness of the Society. Whatever the injury occasionally done or suffered by the impulsive utterances and deeds of an energetic man, there can be little doubt that he is much to be preferred for such a position as Mr. MAXWELL holds to one who is satisfied with the merely careful routine performance of office duties. The activity of a living body which really leads public opinion and gets useful work actually done is more satisfactory, notwithstanding irregular outbursts of ill-regulated vitality, than if it were content with merely expressing public opinion, or with representing and describing work done by others—for which, indeed, the "vitality" of a faithful mirror is all that would be needed.

Let us, however, hope that for the future the Directors of the Society will personally exhibit somewhat of the energy and activity of their Secretary, and take that guidance of the Society's affairs which their office requires of them; and which ought not to be delegated to others.

WE have to correct a statement made at page 42, upon the authority of a trade circular. It is there stated that, owing to the high prices fixed by the Peruvian Government, they have upwards of 600,000 tons in the hands of their agents in this and other countries unsold, and 400,000 lying thus in London and Liverpool alone. The stock of Peruvian guano lying at present in London and Liverpool is, we find, not 400,000 tons, but 290,000 tons; and this constitutes nearly all the stock of Great Britain.

THE paper read by Mr. BOND, of Kentwell, at the last meeting of the Central Farmers' Club does to some extent answer the questions put by a recent correspondent as to the stock required by a certain extent of arable and pasture land.

In the case of fatting stock we have been accustomed to calculate the daily consumption of green food by a full grown sheep having, when ready for the butcher, a carcase weight of 28 lbs. a quarter, at a quarter of a cwt.—and this is a datum which enables one to estimate the power of almost every sort of green crop to maintain live stock. Clover yielding 40 cwt. and meadow 30 cwt. of hay per acre may be supposed when cut to yield four times that weight of green fodder; and the aftermath may be nearly such another quantity. Mangel Wurzel and Turnips yielding 25 and 15 tons per acre respectively should have at least 10 per cent. (often very much more) deducted from them on account of waste from disease and frost, &c.

A breeding stock may be supposed to be maintained for two or three months in the year on straw alone, *i. e.*, their partial maintenance on straw during four or five months of winter may be considered equal to a whole maintenance during the shorter time. A cow will eat as much as eight or 10 sheep—varying of course according to age, and breed, and size, and condition, &c.; and perhaps it may be accepted as a general rule, that an animal will eat, if on green food alone, as much as a quarter of its own carcase weight, supposing it to be at the time in fair condition for the butcher. Of course if grain, or cake, and hay, or dry fodder be given in addition to the green food or in substitution for it, the consumption of the latter may be reduced to any extent; and it is by thus utilising to the utmost extent all the dry food of the farm, and by purchasing artificial food in addition to the natural produce of the land, that the large stock now kept on highly farmed lands is maintained, by which a corresponding quantity of manure is made so as to preserve the fertility of the land at its high artificial pitch.

The particulars thus given will enable our correspondent in a rough way to estimate for himself the quantity of stock he is able to maintain upon a given extent of land. And the particulars of Mr. BOND'S management will still further help him.

On 600 acres of arable, and 200 acres of pasture land, Mr. BOND has kept a flock of 500 ewes, rearing 650 lambs annually, and fattening 200 sheep—he has fattened 40 beasts—reared 30 young beasts, kept 15 cows, 15 colts, and 30 horses, together with an average number of pigs. Mr. BOND declares that there is nothing extraordinary in all this; but we must not forget what the *ordinary* agricultural experience of farmers is. Mr. BOND'S statement indicates a maintenance on the whole equal to nearly three sheep per acre, which is certainly extraordinary.

How this is done is described as follows;—"The secret has been large and increasing breadths of Mangel Wurzels, till this year, upon the four-course system, we have extended the breadth to 100 acres, which at an average of 30 tons per acre equals 3000 tons of good valuable food; and in our eastern counties exceeds by one-third the produce of Swedes, and the Mangel Wurzels have superior fattening qualities. Independently of our permanent course in keeping a flock of breeding ewes, we have varied our system of grazing, generally buying calves, rearing and fattening them for sale at two years old; but if beasts in good fresh condition have promised to be beneath the value at which we could rear them, we have then purchased beasts in the autumn, or in the spring, when partially fattened; or if beasts have been dear, and sheep proportionately cheaper, we have then fattened sheep in yards instead of beasts. After every trial we pronounce greatly in favour of the flock of 500 ewes, as the most paying; and from the improved condition of the land, the number of ewes might now be advantageously increased from 25 to 40 scores; and I believe such an increase of the flock to be the best remedy against the present depression in the price of Wheat. Last year the produce of the 500 ewes realised, for 600 lambs sold in August, 884*l.*; 61 tods of wool, 144*l.*; total, 1028*l.*, which exceeds the rental value of the land. This year the produce of the flock was 650 lambs, and 60 tods of wool, which realised 970*l.*; and in other years the return has been in the same ratio. We have gradually been substituting Hampshire ewes for Southdown ewes; and we have crossed with Cotswold tups, hired of Mr. Sexton, of Earl's Hall, Cockfield, Suffolk. Mutton and wool answers infinitely better than breeding and blood. Size and frame are necessary for early maturity. We made trial of some pure bred lambs, by selecting a few of the best Southdown ewes, and placing with them Southdown tups hired from the best flocks, but the progeny were very unpaying, even allowing that they consumed less food when compared with the lambs of the first cross. In the management of the flock, from the ewes being the scavengers of the farm, they are kept inexpensively; but they are always maintained in a sound, healthy, thriving condition; and one main point is, to have them upon the arable land as much as possible, because of the manure, but never at a wet or improper time. In October the ewes are placed in different lots upon the maiden layers and stubbles generally, whilst the tupping is going on; also upon the Mangel Wurzel tops, after the roots have been carted. In November they have the Swede tops, perhaps a piece of Rape, also the pick of the old Grass on the pastures, and, as the weather becomes wet and cold, they are taken to two good, roomy, well-drained, well-shedded yards, where they receive cut Barley, Oat, Pea, Bean, or Wheat straw in troughs, also a supply of any clean, fresh-threshed straw, placed between hurdles, or in racks, from which they eat the straw most freely. We adhere to the yards in the winter, as ewes folded at night upon a bleak field, exposed to severe frosts, cold cutting winds, rain, sleet, and snow, are in a poor position for progress; and we prefer to cart the manure to the field in a dry season, rather than to deposit it there under such unfavourable circumstances to the animal and to the soil. Each day the ewes have gentle exercise, or a free ramble upon an adjoining pasture, where they receive an allowance of 100 bushels of Swedes or Mangel Wurzel per diem. This treatment is continued till within a month or five weeks of lambing, when a few bushels of crushed Rape-cake are daily added to the straw chaff, which cake we consider may advantageously be passed through the animal instead of applying it direct for a grain crop to the soil. The Rape-cake is always eagerly consumed; and even such inexpensive artificial food is very beneficial in preventing too great a reduction in the condition of the ewes prior to parturition About 3 acres of Cow Cabbage are grown, some of which are given to the ewes 10 days previous to lambing, or they have a small bait upon aftermath Grass, which assists to ease in parturition, and secures a flow of milk. After lambing, the ewes are placed with the lambs upon a piece of aftermath Grass, which has been reserved, where they receive Mangel Wurzel and Cabbages, and return to the yards at night for Rape-cake and cut roots with straw chaff, till the weather becomes sufficiently warm for the lambs to sleep out, which is not usually till April. The lambs are allowed Cabbages, and a small supply of Bean meal and Rape or oilcake, apart from the ewes. In May or June the flock of ewes and lambs receive Mangel Wurzels upon the Rye or Rye-grass or pasture, the lambs running forward for the best feed; after which, in July, the lambs are weaned, and placed upon good Clover or pasture, where they continue to receive a small supply of artificial food, and are sold usually at the commencement of August. After weaning the lambs, the refuse ewes are withdrawn and fattened; whilst the flock ewes are shifted to inferior food, and gradually prepared for the following tupping season; they are allowed a fold of Tares or Rape, or second crop of Clover, in August and September; and have the run of some pastures, also the stubbles, after harvest."

We do not give Mr. BOND'S statement of his experience in detail. The upshot of it all, so far as the sheep stock is concerned, is stated in the following terms:—

"Attendance	£40	0*s.*
Autumn quarter at 3*s.* per week per score, 13 weeks	48	15
Winter quarter at 5*s.* per score per week	81	5
Spring quarter at 15*s.* per score per week	243	15
Summer quarter at 10*s.* per score per week	162	10
Interest	50	0
Loss	50	0
Tups	60	0
	£736	5

"I have placed all the food at cost price; and the calculation is based upon the crones being fattened out at the value, and at the same time that the stock ewes are bought in; only 50*l.* is placed for deaths of ewes, which the loss has not exceeded; consequent gain in 1857, after deducting 736*l.* 5*s.* (the cost), from 1028*l.* (the return), 291*l.* 15*s.* profit: in 1858 736*l.* 5*s.* (the cost), deducted from 970*l.* (the return), 233*l.* 15*s.* profit. Now such profits, with the additional value of the manure, are, I think, worthy of consideration; and I advocate a flock of ewes, in preference to fatting sheep, because the poor quality of the land, and of the produce of heavy land generally, is much better adapted for a breeding than for a fattening flock. I believe lamb breeding the most paying course."

This excludes the profit or loss of the cattle and horse accounts; and to this we may refer hereafter. But the statement already given is sufficient to show how large a live stock may be profitably kept upon a farm; and how important it is to be prepared, as Mr. BOND already is, to take the full advantage of the present relative conditions of the corn and meat markets.

WHEEL *VERSUS* SWING PLOUGHS.

"Facts are chiels that winna ding,
An' canna be disputed."

I DO not assume the office of dictator, but rather appear as a learner desirous of further information, and the elucidation of both sides of the question. With steam tillage looming in the not far distant future—whether under the shape of Fowler's Ploughs, Smith's Cultivator, or Halkett's "Guideway"—it may be thought late in the day to take up the pen on such a subject. But believing that the death-knell of the plough will not be sounded in our day, I embrace the leisure of a winter's evening to jot down a few thoughts thereon, original or otherwise.

It is usually found that local customs have some solid basis, and it is not wise rashly to depart therefrom. By doing so, many a one has had to gain wisdom and pay heavy fees in the School of Experience; while the jog-trot practitioner has been reaping a golden harvest in the well trodden path. Therefore we do not ask from our brethren on the north of the Tweed either a hasty acquiescence in, or a churlish dissent from, anything that may be advanced. Take the remarks for what they are worth. If all is chaff or verbosity, cast it aside; but if there is any grain of truth—even although disagreeing with a previously formed belief—let it have its due weight in practice. Although a very large number of wheel ploughs have been introduced into Scotland, during the last three years, there is still a considerable amount of distaste—(I do not call it prejudice, for that is a weed that I hope does not vegetate freely in the minds of the intelligent farmers beyond the Tweed)—with which they are regarded. But those who have known and used the best of both classes of implements—who have both a Scottish and English experience—ought to be in the best position for the formation of a correct judgment on this point. I have, therefore, obtained from men of undoubted ability and position, who combine the two requirements above named, opinions that I have no hesitation in endorsing.

We have at present nothing whatever to do with the ploughs turned out by Howard, Ransome, Ball, Busby, or Hensman in the south, as a class; nor of Kirkwood's, Scoular's, Cowan's, Ponton's, Sellar's, or Barrowman's, in the north. It is simply the principle of Wheels or

no Wheels. They are often objected to, as being a piece of unnecessary complication, without any counterbalancing advantages. But there are those advantages, whether you choose to admit them or not. Complication they can hardly be charged with, since we see daily proofs to the contrary. The system in Scotland fortunately does not send the lads to the fields at so tender an age as with us. But here you often find good regular ploughing turned out by youths who would only be entrusted with the "orra horse" in Scotland. Strange proof of complication this! In a neighbouring parish—where, however, a considerable stimulus has been exerted by a few men of intelligence and industry—I mean Berkswell, the majority of the ploughmen are halflans—the implements manufactured at Bedford or Ipswich—and the turning over of the soil second in quality or quantity to no district with which we are acquainted. The late lamented Earl of Aylesford, whose seat is in this parish, held an annual ploughing match on the home farm, at which it was a perfect treat to see the work, the workmen, and the tools. The fact is, that a good wheel plough, when well set, depends far less for the perfect execution of its work on the skill of the holder than does its swing compeer of the most approved construction. It was but this morning that I saw a ploughman engaged in the double operation of ploughing, and, at the same time, removing a partial range of hurdles which threatened to interfere with his return furrow. Over some 10 or 12 chains of its length, he never touched the plough with a finger, while the furrow was laid correctly and beautifully, at the approved dimensions of 6 by 9. Not that there is no room for the due exercise of skill and judgment in the use of this implement; for with it, as with any other, we find that the quality of the work is proportioned to the skill of the ploughman. Still, I do contend, that with a secondary amount of ability, the results are cent. per cent. in favour of the wheels.

A first-class ploughman is undoubtedly a great acquisition on a farm, and the yearly or half-yearly feeing markets fully recognise this. Some farmers will have such hands at whatever cost, and, like the late Mr. Gorrie, in the Carse of Gowrie, judge not the extra few pounds thus entailed. But it is evident that all cannot obtain the best men; and on the generality of Scotch farms probably not more than one or two of such will be found. Hence arises one advantage of the improved wheel ploughs, in that you can obtain as good and equable work, or nearly so, from the second and third-rate hands, without any deterioration of that produced by the others. The farmer obtains the advantage, and is rendered far less dependent on those in his employment. His foreman, or himself, can see, if needful, the setting of the wheels, which are simple of adjustment, and readily altered according to the nature of the work. The new lever neck is an efficient contrivance for giving the ploughshare more or less dip into the land, while the coulter fittings afford unequalled facilities for placing this part in any required position. All the wearing parts can also be readily replaced in the field by a ploughman of average capacity, which saves many a weary and tedious journey to the smithy. Their strength and durability are beyond question, and with new wearing parts, as required, they retain the firmly-framed mellowness of a new plough—the desirableness of which all practical men are agreed upon, as an old shaky plough, of whatever make, is of far heavier draught than when it originally entered the field. There is no reason why one of these ploughs should not, with moderate care and attention, be equally serviceable at the close of the longest lease, or "life-rent," as at its commencement. A well-known East Lothian agriculturist, who has successfully used them on his farm, says that his men consider them more difficult to turn at the end of the field. Good ploughmen in the south complain of swing ploughs for this and other reasons. Custom would speedily remove the barrier in either case. At all events, we find Scotch ploughmen in England almost invariably preferring the wheel plough, and acquiring the plan of balancing on the furrow-wheel in turning at the land's end. With deep ploughing, say 11 or 12 inches, this is indeed tight work when turning to the left. But as far as turning is concerned, wheel ploughs could be much more advantageously worked in Scotland than in England, since the country is generally laid out in larger fields and wider lands.

Before coming to the important question of draught, there is another objection to which I would refer. It is obviously the interest of the farmer to obtain an implement of the most generally-useful character; not a plough or harrow which could only be economically worked on one portion of his farm, while for the remainder it was valueless. I by no means advocate the *multum in parvo* principle, as desirable for farm utensils generally. There are old-fashioned ploughs, such as the Kentish turn-wrest, which may be converted into a broad-share, scarifier, or horsehoe, and do all these operations moderately well. Such great conglomerations are often, in plain language, great humbugs. But a Scotch farmer often wishes a plough which will not only do its legitimate turn-over work, but can also be used, by a "ribbing" process, if memory serves aright, for opening and closing the Bean, Potato, and Turnip ridges. Here, again, the wheel plough is complained of, though with what justice I cannot profess to say, as we invariably use and prefer the double-mould, or ridging plough, for these objects. However, in the Warwick neighbourhood, I find that they are pretty freely adapted for this purpose, by the addition of a small block of wood to the forepart of the frame, on the near side. And I have there seen, on farms well managed by Roxburgh men, ridging of a character that would please the taste of the nicest connoisseur. Taking Howard's P P plough, for instance, you can use it for this purpose in May or June; apply a paring share to it, and skim foul stubbles, 2 inches deep, in September; turn over the Clover or "seeds" for Wheat in October; divest it of the mould-board, and add a penetrating share, so as to form a first-rate subsoil plough (following another plough) at Christmas, on the land for next season's roots. In these varied capacities, saving the ridging above referred to, I have repeatedly used this plough, and found it as good a common plough as ever, when the parts were replaced. A Berwickshire friend, now farming his own property in this county, who has had an extensive experience on both sides of the Border says he is convinced that "no plough should be without wheels; but a good wheel plough should also be a good swing plough; and there is no difficulty in obtaining such ploughs. I do not, under all circumstances, use the wheels." The occasions in which he dispenses with the wheels are probably in the cross-ploughing of cloddy land, or on wet sticky soil, where the land wheel clogs, and in which case a "foot" should be used instead of the wheel. A very practical man, Mr. Bower, of Long Bennington, writes me on this subject that he finds another great advantage in these ploughs. "When I break up," says he, "Clover stubbles for Wheat, after harvest, in dry weather—which I consider the best season for strong soils—I can plough with a wheel plough when a swing plough would scarcely face it at all. I also use Howard's in breaking up land for green crops, and in ploughing 10 inches deep with four horses, without straining or hurting the plough in the least." For the latter description of work, my own experience is, that a heavier plough, of the same make, is invaluable. Some agriculturists express their decided conviction that on the lighter descriptions of soils alone are wheel ploughs any considerable advantage; while others say that on heavy soils and deep loams the most favourable comparative results are obtained. I would strike the balance midway, and say that for all soils, saving very stony land, or steep hill-sides, their use would be found desirable. This reminds me of the notable report given respecting Ransome's ploughs, at the Southampton meeting of the R. A. S. E., in days gone by. The two-wheel ploughs, one-wheel ploughs, and swing ploughs were tried in classes, both on heavy and light land, according to the tastes of the exhibitors. "By this arrangement not only was the quantity done by each implement displayed, but a fair opportunity offered itself for observing and comparing the quality of the work as executed in the same soil, and under the same circumstances, by the three classes of the implements. The skill of the individual construction was also manifested; and on this occasion the remarkable result came out, that one particular plough excelled all the others, whether working with two wheels, with one wheel, or without a wheel. This plough was one of the three in the field, from the manufactory of Messrs. Ransome, marked Y. L. When fitted with two wheels, its performance was like that of a planing machine; the furrow slices were cut vertically from the land, the floors or bottoms were left perfectly flat and clean, and the slices were deposited at an angle of about 45°, with such truth that they could be turned back to their original horizontal bed without gaining or losing ground. According to the generally received principles of perfect ploughing (whether they be correct and equally suitable to all soils and modes of culture or not), it is imagined that practice has, in this instance, closely approached to their fulfilment. How did it happen that the same plough proved to be equally fit for light and heavy land? Messrs. Ransome changed the mould-board from one adapted to light land to one suited to heavy land, an alteration effected in less than five minutes; and abundant proof was afforded to, and acknowledged by, the judges, that one given form of mould-board is utterly inadequate to suit both soils" (*vide* Jour. vol. v. p. 367). This firm has been in the plough trade for a long series of years, and as far back as 1785 the late Robert Ransome, of Ipswich, took out a patent for "making shares of cast iron." Since then other candidates have made most rapid and successful advances for public favour—so much so that the name Howard, Ransome, or Ball may almost be regarded as the synonym for a first-class wheel plough. *T. Bowick.*

(To be continued).

GUIDEWAY AGRICULTURE.

THE "Journal of the Society of Arts" contains a paper by Mr. W. Bridges Adams on the Culture of Food, in which he refers to the agriculture, horticulture, and food provision of the French *habitans* of Canada, of the lithe and dark-eyed inhabitants of the Pampas of South America, and of the natives of Chilé and Patagonia, lastly describing the most advanced speculations of agriculturists and inventors among ourselves. The contrast is sufficiently great. Mr. Adams recites his own advocacy of applied steam power as an agricultural auxiliary in the pages of the "Westminster Review," and at the meeting of the Society of Arts quoting such passages as the following:—

"In sober earnestness we propose to convey artificial heat beneath the earth on open land, so as to maintain the temperature suited to the growth and development of the vegetable tribes by means of pipes of metal or earthenware circulating steam or hot water or air from a close boiler or stove. These pipes to be laid at depths of 4 to 5 feet in the manner of deep draining. Also by a similar process to inject the ground with gaseous manure, as ammonia and carbon, so that the heat and gases may be constantly ascending towards the surface, and thus be absorbed by the roots of the plants. We shall yet see the time when rails will be laid along the surfaces of our fields, whereon cylinder harrows will traverse, driven by the same stationary power, to break the soil into fragments fit for the growth of plants."

He then describes as follows Mr. Halkett's scheme, to which allusion has been already made in our columns:

"Thoroughly convinced of the practicability of such a system of cultivation by steam machinery combined with rails, I had purposed, amongst other projects, to give my imaginations practical effect, or rather to combine existing practice into a whole, whenever leisure might obtain. It was, therefore, with no small pleasure that I listened to the paper read by Mr. P. A. Halkett before the Society of Arts, on the 8th of December last, on 'Guideway Agriculture, being a system enabling all the operations of the farm to be performed by steam power.' It was not left for Lancashire or Yorkshire to do this thing, but to Peter Alexander Halkett, of the Windham Club, St. James's, in our own London, and I understand a naval officer to boot, and not an agriculturist, showing that now, as often before, improvements come from outsiders looking on, rather than from regular practitioners.

"To any competent mechanic the diagrams would have sufficed without the paper, but on the following day I visited Mr. Halkett's machinery at Kensington, and found in Mr. Grafton a most intelligent and practical exponent of the whole system, which in general terms amounts to this:—

"The travelling platform frame of the builder, such as we see at the Houses of Parliament and Westminster Bridge, and at Portland and Holyhead moving by man power on rails, on the tops of high scaffolds, is enlarged in width and breadth, and placed on rails on the surface of the land to be cultivated, raised to such a height as to clear the plants, and instead of man power is moved by engine power, which also serves to put in operation the various tools required for dealing with the land. The tramway frame of the builder is thus practically married to the portable engine of the farmer, and is furnished with tools from the workshop of the engineer. The mill that cuts iron like cheese has ceased to be a fixture, and is made moveable over the face of the land, to cut and carve the soil into fragments, to rake it into fine mould, to free it from weeds, and clean it from stones if needed. This, at Kensington, is the practical germ of the process that will multiply four-fold the farmer's crops, that will convert the farm labourer from an ill-clad, uncultivated human being into a well-clad, intelligent mechanic, working under covered shelter from the sun and rain, and with all the advantages of fresh air for his workshop; that will enable this intelligent mechanic to work on a sugar or cotton plantation with a steam fan if needed, keeping his body constantly cool; that will give to the white man the practical dominion over tropical labour he thinks now only attainable by the negro; that will make as great a revolution for humanity as was done by the advent of railroads, which destroyed the practice of cruelty in overdriving post-horses; that will render the night equally available with the day for all the processes of cultivation. The plough, the harrow, and the hoe, the rake and the dibble, broadcast and drill sowing, may all be set in motion by steam, and hoeing between rows of Wheat may at last be accomplished.

"For the purpose of depositing liquid manure at the roots of the plants instead of on the surface, Mr. Halkett has constructed a tool in imitation of the tooth of the poisonous serpent or the sting of the wasp. The liquid exudes through the end of the pipe which cuts the trench below the surface. But there is yet a very important tool that requires adding, a vertical drill with cutting edges, which, as it advances, will comminute and aërate the soil between rows of plants, and produce a far better result than the man hoe."

"The tank carried on the platform will be very available for liquid manure, but for the purposes of general irrigation a new method is desirable, as it would be impossible to carry sufficient water on wheels. Perforated pipes of earthenware should be deposited at 2 feet depth below the surface, provided with entrance for the water but no exit. These pipes being filled from the nearest level, the water will be absorbed by the spongy superincumbent soil, and carried to the plants without caking the surface. This is a most important process, for it will render level uplands more valuable than the low-lying lands called meadows, usually selected for market gardens, as Greenwich and Deptford.

"An arrangement of this kind would be peculiarly adapted for hot climates, were it only to save water. The valley of Valencia, in Spain, is a large triangular plain, sloping to the Mediterranean, between two lofty mountain ranges, which unite where the river rushes down. This river, the Guadalquiver, would be, in the warm season, wholly absorbed for the purposes of useful irrigation, but probably one-third of it is evaporated by the sun, and another third wasted on surface weeds, and the scarcity of water is so great that perennially faction fights occur amongst the peasantry quarrelling for water, which have to be put down by the soldiery

and though scarcely a drop reaches the sea, large quantities of fine land lie waste.

"On this system of cultivation by machinery it is obvious that a straight surface of soil is the best, and that a level surface will involve less power than an incline. It is obvious, also, that the longer the run of the machine the more convenient will be the operation and the less the cost of rails, as there will be less proportional amount of heading, and, doubtless, as the system goes on, levelling of the soil will take place, as on roads, to facilitate draught. Other things being equal, the level surface will be worked at less cost than the incline, as is the case when horses are used.

"I now come to the question of the rails and machinery as set out by Mr. Halkett.

"To work a railway economically with the least consumption of fuel, it is essential that the rails should not deflect either vertically or horizontally. The greater the pressure the stiffer the rail must be, and the shorter the length over which that pressure extends the greater must be the strength of the rail. If traction be performed by the adhesion of driving wheels, the greater the number of driving wheels with a given load the more the pressure will be distributed, and the lighter may be the rail. As the cost of the rail is proportionately greater than that of the machine, Mr. Halkett prefers to use light rails and a large number of driving wheels.

"On an ordinary line of railway the wheels have a single flange in the inside, and the peripheries are in the form of cones and not of cylinders. The object of this is to compensate for curves on the rails. The result is a great pressure, tending to force the rails out and widen the gauge. For this reason strong cross ties are essential to hold the rails together. For the purpose of cultivation these cross ties are inadmissible, and therefore the wheels of the machine must be made cylindrical and with two flanges. In this mode there will be no tendency to vary the width of the gauge.

"In using a single pair of driving wheels for the purpose of propelling in a straight line, there should be no rubbing friction, provided the wheels are exactly of the same diameter. And whatever is the number of the driving wheels, the exactness must exist both in the peripheries and in the crank pins and connecting rods, or in the connecting chains if chains be used. It becomes, therefore, a question between stiff rails and few drivers, or light rails and many drivers, as to cost. If cast wheels be used not turned to exactness in the lathe, some compensation must be provided to prevent the rubbing of the tyres on the rails, which would soon destroy both. Mr. Halkett, dealing at present with very flexible rails, which can scarcely be permanent, does not sufficiently estimate the amount of this difficulty, which will occur when solid machines and sufficiently firm rails are used. Moreover, if stiffness be not provided in the rails, it must be in the frame. A flexible frame would not distribute the load, but would suffer every wheel to sink into the successive hollows.

"The rail Mr. Halkett has chosen—a light angle-iron, is the worst form for strength that can be contrived, unless we suppose it to be firmly fastened down to a solid base. I have used such rails for light purposes in machinery, but it is a serious objection that they deflect vertically and widen laterally, decreasing their vertical strength rapidly as their load increases. If with a given weight of metal Mr. Halkett does not find his rail deflect, it will simply prove that he is using iron in waste.

"The system is made to depend, not on the strength of the rail itself, but on a substructure of burnt clay or concrete 15 inches wide. The cost is stated at 20*l.* per acre, leaving a serious nuisance on the ground, if at any time the course of the rails needs to be changed. There is no need whatever for this substructure, for at the same cost a self-contained rail of great strength can be applied on the surface in such a mode that it can be taken away without any waste and removed to another position when required. If a rail be used so weak as to depend on substructure, there will need a constant patching and mending. If a stiff rail be used, the ordinary surface will be sufficient.

"The frame, pair of engines and tools, are estimated to weigh about 24 tons, on 24 wheels, or a ton per wheel. As this weight is all adhesive or propelling, it will be equivalent to 6 tons of traction force, supposing no undue friction. If cylinders of 6 inches diameter be used with a 4-feet wheel and 16 inches stroke of piston, the locomotive will give out about 2500 lbs. at the periphery of the wheel, and as little more than 250 lbs. will be needed for the purpose of propulsion at 13 lbs. per ton, 2250 lbs. will be left to work the machinery at a speed of 10 miles per hour.

"But if instead of a level there be an incline of one in one hundred, the resistance to traction will absorb about 740 lbs.; on an incline of one in 25, about 2312 lbs., nearly the whole force.

"If the driving wheels be worked at a slower speed, with a toothed pinion at the periphery, there will of course be more available power for the machinery.

"The system of Mr. Halkett, in making a double engine for an enormously wide gauge by a connecting beam, thus keeping the chief load direct on the rails, displays great ingenuity, but whether the multiplicity of driving wheels in connection with it for the sake of a light rail will prove the best system remains yet to be seen, and it would be quite worth while to try the plan of Mr. Boydell with a similar structure.

"There is little doubt that a gauge of 60 feet may be worked on this system, which will only require 250 yards of rail per acre including headings, calculating a farm of a square mile, or 640 acres at a cost of 20*l.* per acre, or 12,800*l.* per mile. The machine may be estimated at 2000*l.*, making a total of 14,800*l.*, which for interest and materials will be 3*l.* annually per acre. But the machine will go over the whole mile in 44 hours, say, three times in a week, so that four square miles may be estimated to one machine. Reflecting that the rails of four square miles, or 2560 acres, only weigh 5000 tons, and the machine 25 tons—total weight 5025 tons, and total cost 53,200*l.*, and total annual interest and material 6384*l.*, it does not seem a matter beyond the reach of a company of tenant farmers with a moderately long lease, inasmuch as they can carry off the whole of the materials at the end of the lease, and the more especially with the probability of a double crop of the same extent of ground at half the cost of labour.

"If this manifestly practical plan, doubling the strength and power of the English nation, be suffered to lie in abeyance, it will be a standing satire upon the agricultural bodies ranking amongst them the oldest traditional names of our country."

LOIS-WEEDON TILLAGE.

I HAVE said that after attending to the great principles of the Lois-Weedon system with that liberty which we all like to enjoy, judicious modifications under due caution may be admitted. But while the Lois-Weedon plan should be followed in its integrity as an ascertained fact, such modifications must be instituted and held as experiments. I have myself somewhat different views in these carryings out, for while I entertain the highest admiration of Mr. Smith's labours and would give all praise to him for what he has effected, still I am not satisfied that an acre in fallow and crop under such judicious treatment should produce no more than a good average of an acre fully cropped, nor shall I be till I see it amount on the general run to an average of the highest amounts now obtained from an acre under full crop—say to five or six quarters. I feel very confident that this may be effected from various experiments I have made for 40 years past; it is true, for the sake of quicker verification and from other circumstances, they have generally been confined to Barley, yet I see not that the same realisations may not be obtained in Wheat. I have had them in Oats. May not this have been owing to the more intimate relation of the fallowed strips and the sown ones? My products have been obtained by equidistant rows. In the few experiments I have made with three proximate rows, with wide intervals between every set of them, I have found that the centre rows have been far inferior in yield to the external rows, and this I have ascertained by reaping them separately and counting the sheaves. If I do not forget, the centre row was about half the yield of an outside row. Now, if this is so the centre row must have suffered from the proximity of the outer rows, which also must have suffered more or less from that of the centre row. From this I would infer that by substituting equidistant rows for triplex ones a considerable increase might be obtained.

In the substitution of equidistant rows for the triple ones the same previous preparation is required, but, as some may be deterred by so much hard labour the plough may be employed either by one deep operation or by a plough following in the track of another, so as always to bring up some fresh soil, the land grubbed or well harrowed in the spring, and then drilled either by machine, or by opening drills with a double mould board, and sowing the Oats by a barrow drill, covering by the harrow: the intervals between the drills being of course hoed or grubbed two or three times in the summer, and, as a last operation, a light double mould-board passed through them to throw the well worked clay against the rows of grain to earth them up, and which would also leave a track for the succeeding crop. This would only require a cleaning out by the same implement to leave a drill for the seed corn, and little delay would then occur in getting in the Wheat. As soon as the rows of Wheat appear I would pass a hand-hoe between them and the stubbles, as I hold an immediate surface breaking essential to future development; after this should follow as soon as possible the stubble forking, which need only be of the breadth of the fork, with even more gradual deepening than recommended by Mr. Smith; all the light summer hoeings or grubbings should of course ensue, and as they will be but superficial, and as they ought to be so frequently repeated as to leave the surface friable, a single horse should only be employed in them, and again as a last operation this friable soil thrown against the standing rows of corn. Thus I think all the objects desired by Mr. Smith may be obtained without incurring an expense in manual labour that may hitherto have deterred many from following it; the common implements in everyday use also will only be required.

Impatience to try the Lois-Weedon plan has, I suspect, very frequently, I might say almost always, led to a fatal error, the commencing the experiment with a Wheat crop on hastily and ill-prepared land, which also entailed a late sowing: to those, then, who would wish to give the plan a fair, steady, and cool trial, I would suggest attention to Mr. Smith's instruction to his "friend with the clear head and brave spirit and sinewy arm," p. 32, 10th edition of "A Word in Season, 1852." "I take," says Mr. Smith, "many things for granted; and suppose that the land is drained and cleaned for the important commencement. Let your gang, then, of 5 or 10 men dig up your 10 acres at once a good spit deep, mixing the soil and subsoil together, and leaving it hollow and loose. Let it lie thus till spring. Then well harrow and pulverise and level the whole. After that, as an intermediate crop will not be unacceptable at this stage, mark out by line and stick the whole 10 acres into compartments or narrow lands of 5 feet. Mark the centre of each 5 feet. There set or drill three rows of Oats 1 foot apart—the middle row being in the centre of each 5 feet compartment."

"While your Oats are growing, be preparing for your Wheat crop; and stir the land incessantly with a suitable horse-hoe or scuffler."

In giving our attention to the Wheat sowing of Lois-Weedon we must not forget that it is merely a part, and perhaps the least important part of Mr. Smith's system. The great feature in it is by its rendering available natural sources of fertility and of action on the mineral ingredients of the soil to the production of grain crops, and which alone are necessary to them, it permits the application of the whole manure of the farm, including the straw and refuse of the very grain crops themselves, to those cattle feeding crops for which manure and rankness of soil can scarcely ever be found in excess; thus while a portion of the farm most suitable to the production of grain crops is appropriated to them, another portion by receiving all the manure is made to produce an amount of cattle food so increased as to very much augment the capability of the farm to feed a greater number of stock, and to render outlay unnecessary in the purchase of foreign manure.

I have more than once suggested the possibility of Mr. Smith's raising a larger amount of mineral ingredients than necessary, and that therefore some of the expense of his tillage might be saved; he seems himself to be now of that opinion, for for four years he did not bring up any fresh matters, nor having attained the depth of 16 or 18 inches does he appear to consider it necessary to delve any deeper. Thousands of years, says Liebig, have been necessary for the reduction of rocks to soil, and thousands of years more will pass before this soil gives up its wealth to the labours of the husbandman. A saving then of manual labour, in bringing up both in smaller quantities and at more distant periods these mineral ingredients, may encourage those who grudge the expense in manual labour incurred by Mr. Smith to try his plan. Beside we have the evidence of Mr. Piper's experience, of as many years as Mr. Smith's, that continuous crops, and as large ones, too, of Wheat have been reaped without any deepening of the soil, a small quantity of hand manure, however, having been applied.

The late discoveries of Way and Liebig also throw into doubt all our foreconceived notions of the solutions of either organic or mineral substances being accessible to plants, except from some root actions of which we know nothing. This may render somewhat questionable the necessity of exposing large quantities of mineral substances to those actions which render them soluble.

Methinks our great object should be by surface operations to promote an early and large development of leaf and root; this seems more likely effected by superficial operations, keeping the surface so open as to admit at all times the inflow of the oxygen of the air that it may operate on the carbonaceous matters about the roots. *J. M. G., Granard.*

P.S. In Wheat after Wheat there is an advantage I omitted to notice: it can always be sown in good season, which often is not to be done after green crops. It is rather a curious coincidence that about the time Mr. Smith commenced his operations, that is, in the early years of the Potato failure, I suggested, as affording an immediate and increased supply of food, and at the same time giving a more rational employment to the people than breaking up roads, to dig something deeper than ordinary the supposed exhausted stubbles, sow Oats in them in rows 2 feet apart, with summer workings of the intervals to prepare them as seed-beds for the succeeding crop, and so on in succession.

WAGES IN THE WEST OF ENGLAND.

IF we wish the labourer to be anything more than a mere tool—if we wish him to exercise prudence and forethought, to be conscious of personal responsibility, piece-work must be adopted in all cases where practicable, *i.e.* in employments of a fixed character, such as hoeing Turnips, reaping, mowing, hedging and ditching, paring and burning. Once give the skilful labourer a chance of raising himself above the dead level of the common drudge, and he will put forth all his energies to complete the work intrusted to him. Nor need it be feared that the quality of the work must decrease in proportion as the quantity increases. Any serious failing or imperfection is so readily discerned in agricultural operations, that the slovenly workman has but little chance of escaping the vigilance of the farmer. We are gratified to find that in nearly all of the numerous communications which we have received from the agriculturists of the West of England, the system of piecework is strongly recommended, and seems to be generally practised.*

It is by no means certain that the system of the payment of wages in kind is entirely bad. It has its supporters, able and practical men who have much to say by way of argument, and much as a matter of fact,

* Mr. Raynbird, in his "Prize Essay on Measure Work" (Royal Agricultural Journal, 1846), has enumerated the various advantages of piecework that arise both to the labourer and the employer.

in favour of their view. It is urged by paying wages in kind the labourer is spared the retail dealer's profit, for it is clear that, if a baker sells flour, he must charge something more than cost price in order to obtain a livelihood. Now the farmer in paying his men in grain rarely seeks to gain thereby, and thus the labourer is saved so much per cent. on the articles of his food. There is another argument which deserves attention. If the farmer supplies his workmen with necessaries they are not compelled to lose valuable time in going to the nearest market town; and hence, too, they are spared many of the temptations which so peculiarly beset the agricultural labourer in large towns. The master is no less a gainer by this system. In times when grain is high it will happen that he has to pay his servants more than the ordinary rate of wages. But this temporary loss occurs when he is best able to bear it. On the other hand, when grain is plentiful, the farmer pays the men less than the ordinary rate of wages; and thus reaps a benefit when economy is most needed. While, it is further argued, is it not better that the labourer should not be subject to fluctuations of price for which he is not prepared? To all this we reply, your arguments tend to make the labourer an irresponsible being. Strength of character does not consist in security from temptation. A man is not taught to be provident by being deprived of all power to be improvident. Moreover it is not well that any one man should be so completely in the power of another, as the labourer would be in the power of the land occupier if all his wages were invariably paid in kind. Too frequently this system creates the very evils which it is supposed to remedy, since in the West of England large quantities of cider are given in lieu of money. On this point we shall presently dwell more fully. After careful deliberation it would seem that by far the best mode of payment is to give the labourer all his wages in money, and it ought to be clearly understood that the purchase from his employer at cost price of such articles of food as he may require shall be entirely optional on the part of the labourer. This opinion is entertained by many of our correspondents, amongst whom we may mention Sir Stafford Northcote; Mr. Henry T. Mudge, of Paignton; Mr. Gabriel Poole, of Bridgwater; Mr. Tindall Harris, of Egham, Surrey; Mr. Gregory, of Street, Somerset; and many other gentlemen who have kindly favoured us with their opinions on this and similar questions.

The rate of wages.—The current rate of wages is not a matter of great certainty, since it differs with the season, and also not unfrequently year by year. So far as we can judge from the information which we have received through a large number of correspondents, the following Table will pretty accurately represent the amount paid in wages throughout the different counties of Cornwall, Somerset, Devon, and Dorset. Cornwall: Weekly wages, 12*s.*; but where the labourer is hired by the year or for any great length of time he receives 9*s.*; little cider is given; hoeing Turnips twice, from 8*s.* to 15*s.* per acre; reaping, 2*s.* 6*d.* to 3*s.* per day with board and cider. Somerset: Weekly wages, 8*s.* to 10*s.* with cider 3 pints per diem, at from 6*d.* to 10*d.* per gallon, according to the season and the crop; hoeing Turnips twice, 10*s.* to 12*s.*; reaping, 5*s.* to 7*s.* per acre, with 2 gallons of cider; mowing, 2*s.* to 3*s.* per acre. Devon: Weekly wages, 7*s.* to 8*s.* in North Devon; 8*s.* to 10*s.* in South Devon. A large quantity of cider is commonly given, amounting to 3 or 4 pints ordinarily, but in harvest this sum is increased to, in some cases, 8 quarts per acre; hoeing once, 4*s.* to 5*s.* 6*d.*; reaping, 4*s.* 6*d.* to 6*s.* per acre, with 6 to 8 quarts of cider; mowing, 2*s.* 3*d.* to 2*s.* 6*d.* per acre. Dorset: 7*s.* weekly wages; the practice of cider payments does not appear to prevail to the same degree as in Devon and Somerset. It will at once be seen that Cornwall ranks highest in the amount of wages paid—that Somerset comes next in order, then South Devon, followed by North Devon, while Dorset brings up the rear. It is not uncommon for the labourers of North Devon to remove to Cornwall, where they may gain larger earnings. Somersetshire stands about on a par with Wiltshire—while Cornwall is equalled only by those parts of Gloucestershire which lie immediately in the neighbourhood of Bristol.

Payment of part of the wages in cider.—There is one peculiarity in the payment of wages prevalent in the West of England (Cornwall excepted) that must be regarded with strong feelings of regret; we allude to the payment of a portion of the wages in cider. We desire to approach this question with all due deference to the opinions of many practical men, who regard this custom in a different light.

We believe a candid examination of these opinions will corroborate the remarks of Mr. Acland in his "Farming of Somerset," page 98, in which he says:—

"The fact is, the masters and men play into each other's hands, the women and children suffer, and the men too in the long run. The labourer in a year takes off his master's hands about 2 hogsheads of cider and satisfies one of his own bodily appetites at the cost of 15 per cent. of his earnings.* The liquor refreshes and stimulates him, but wears him out, for common cider is not nourishing, but exciting like spirits and water. West Country labourers will never be what they might be as long as this system goes on.'

In many returns it is presumed that the labourer would object to receive money instead of cider. This perhaps arises from the fact that he frequently does not get a sufficient money equivalent. Where the full value of the cider is given, the experiment of paying the wages entirely in money appears to have succeeded.

* Our returns show the percentage to be nearer 20 than 15.

Whilst speaking on this subject we will allude to a kindred one—the "harvest homes"—which instead of being the times of innocent enjoyment and rejoicing, such as the poets have sung, are frequently a season of drunken revelry. We are glad to see that a better system of celebrating the ingathering of the harvest has undergone much discussion in Herefordshire. Mr. Booker Blakemore, M. P., and the local clergy, are actively heading this agitation. Their scheme involves a reform of the general condition of the labourer.

"It has hitherto been the custom in this county for the farmers to pay their workmen partly in money and the remainder in cider, and the keeping of 'harvest home' consisted in an unlimited supply of the famed beverage of the district, which always led to rioting and drunkenness, and in some cases even to loss of life in these bacchanalian orgies. It is now proposed to abolish the system of paying the labourers partly in cider, and substitute for the harvest home drinking bouts parochial tea parties for the men with their wives and families; and the subject, having been taken in hand at all the recent agricultural meetings in the neighbourhood, is gaining much in favour, and seems likely to lead to a large measure of social reform."

It is well known that the same question has been very successfully agitated in Norfolk under the auspices of the Earl of Albemarle and other benevolent and influential persons, where the whole inhabitants of the parish (including wives and children, so often forgotten at labourers' merry-makings) join in a festival where bread, butter, and meat, coffee and tea form the bill of fare. At such meetings as these the rector, and the squire, and the farmers, with the ladies of their respective households, find it a great pleasure and privilege to attend, and that healthy feeling of mutual confidence and respect which should exist between all classes of society has been promoted and extended—

"When none was for a party,
And all were for the State;
And the great man helped the poor,
And the poor man loved the great."

Messrs. Spender and Isaac on the Labourer in the Bath and West of England Agricultural Society's Journal.

Home Correspondence.

The Condition of the Labourer.—"S. G. O." lately stated, through the medium of the *Times*, that farm labourers "are now, with little exception, paid their earnings in money;" that "here and there a few employers may be found who expect their labourers to take 'tailing,' Wheat at more than it would fetch in the market: they are generally of a class whose days as tenant-farmers are numbered, for they are far in the rear of that intelligence by the exercise of which a renting occupier of land can live." (*Agricultural Gazette*, p. 850 for 1858.) Since your report of the verbal and written statements at a late meeting of the Berwickshire Farmers' Club speaks for the enterprising spirit that pervades the tenant-farmers in that district, I may state that, as the bondage system peculiar to the border counties and the extensive cultivation of Turnips are coeval, farmers paid the married ploughmen 1*s.* per day for three-quarters of the year, and 10*d.* per day from Nov. 22 to March 1, for the bondagers' work, from the commencement of that oppressive, degrading system till the general stagnation which lasted for some time after the conclusion of the last continental war, which the farmers took advantage of and reduced the female farm labourers' wages 2*d.* per day throughout the year. The hinds made several attempts to both throw off the bondage system and likewise get their wages raised; but for the want of an organised, determined effort they have always failed with regard to the former, and the demand for female labour has compelled the majority of farmers in that district to again raise the bondagers' wages 2*d.* per day and not charge the hind for house rent, but the bondagers' wages absorb all that advance of wages to the hind. The married ploughmen in the counties of Berwick, Roxburgh, and the east part of Selkirkshire are termed "hinds," who bind themselves in their agreement to engage a female farm labourer, be responsible for her wages, give her board, lodgings, and purchase materials for washing her clothes; but few farmers bind themselves to keep the "bondagers" constantly employed throughout the year, and should any of the bondagers be unable to work through illness, the hind not only is not paid her day's wages for the time she is absent, but he has to pay the bondager her wages in full for the time she was engaged. I may explain more fully what I have already stated in the *Agricultural Gazette*, that from 3*l.* 10*s.* to 7*l.* or 8*l.* of money; from 1000 to 1800 yards of drills for growing Potatoes—the amount of money given being regulated by the extent of land allowed for growing Potatoes; 100 imperial stones of Oatmeal, or 60 bushels of Oats; from 18 to 24 bushels of Barley; 6 bushels of Peas is the annual wage of a hind; together with porridge and milk for breakfast, an 18-oz. loaf of bread, and one-sixth of an imperial gallon of "harvest ale" for dinner, and six pecks of Barley as an equivalent for 24 suppers of porridge and milk for a month's food during harvest, or 1*l.* as a substitute. Those who can purchase a cow have it fed on the farm, but those who cannot, either have the milk of one of their master's cows, or from 5*l.* to 7*l.* as a substitute for a cow's keep; they have liberty to keep a pig, but some farmers who don't allow their resident yearly servants to keep a pig, give them 10 imperial stones of pork; all this together with the cartage of six or seven cartloads of coals, and a house rent free, is the general rate of married farm-servants' wages in the above-named district. Taking the aggregate average price of grain at Liverpool from Sept. 25th to Oct. 30th, and taking 3*l.* as the sum that farmers give as an equivalent for 1000 yards of Potato drills when the hinds wanted money instead of land for growing Potatoes, which was such a precarious form of payment during the general prevalence of the Potato blight; 4*l.* of money, which is the average amount a hind receives when he has 1500 yards of Potato drills, let him be a first-class farm servant, and 20, 30, or 50 years of age; 1*l.* as an equivalent for a month's food; 7*l.* as the maximum that is given as a substitute for a cow's keep; 2*l.* 10*s.* for 10 imperial stones of pork; 2*l.* 16*s.* for the cartage of seven cartloads of coals—8*s.* being what some farmers paid lime drivers for the cartage of each cart-load of lime previous to the formation of railways, as an equivalent for the cartage of about the same weight of coals; 2*l.* 16*s.* for a house rent free, as some farmers' harvest lasted 24 days, when each farm servant found a reaper for the rental of a one-roomed hovel only one story high (very few of them had more), and some of those which are still standing have a loft, or more than three or four joists across the family room (such hovels, with their smoke-begrimed rafters, bedecked with cobwebs, present a grotesque appearance before the occupants get all the queer like places shut up with paper, cloth, boards and Reeds); 8*l.* 18*s.* 1½*d.* for Oats, 5*l.* 7*s.* 9*d.* for Barley, 1*l.* 13*s.* 6*d.* for Peas, and reckoning the hind to receive 6*s.* per week for 37 weeks, 14*s.* per week for two weeks during harvest, 5*s.* per week for 13 weeks, and the bondager to have had no holidays; 54*l.* 16*s.* 4½*d.* is all the hind receives for his own wages, for paying the bondager's wages, giving her board, lodgings, and materials for washing her clothes. Since the farmer reckons a comfortable dwelling-house or a mere hovel as part of his servant's wages, a hind is entitled to be remunerated for not only giving an entire stranger her board, but for giving her lodgings, he and his wife having to deaden themselves to every sense of shame, by not having it in their power to act like sensitive rational beings! Deducting 6*s.* per week for the bondager's board and lodgings, and 11*l.* as the present general rate of bondager's wages, 28*l.* 4*s.* 4½*d.* is, according to the above calculation, the maximum value of a married farm servant's wages for 12 months' service. I have known some farm servants on one farm have 4*l.* of money and 40 six-bushel sacks of Potatoes; and the servants of an adjoining farm had only 3*l.* 10*s.* of money and only 14 six-bushel sacks of Potatoes of the same extent of land. I have known one ploughman have 30 sacks of Potatoes and some of his fellow workmen's crop not exceed seven and eight sacks. Farmers are like any other class of employers—some are anxious to make their servants comfortable whatever be their form of payment; but causes over which they have no control, such as their servants planting bad seed, or a course of dry weather, account for a total or partial failure of Potatoes like any other kind of crop. Reckoning 16 imperial stones the average weight of a six-bushel sack of Potatoes, and 4*l.* the value of a ton, there may be a difference of 13*l.* 4*s.* in the value of some hinds' Potato crop. A hind who has about 3 tons of Potatoes, whose cow's milk with good management will produce 8 or 10 lbs. of butter a week during summer, will make a few good cheeses and feed one or two pigs, besides having a dish of Potatoes for the family's dinner the greater part of the year. Reckoning a good cow to be worth 10*l.* per annum to a working man's family, such a form of payment may sometimes be equivalent to 44*l.* 4*s.* 4½*d.* per annum. The seven cartloads of coals will cost about 1*l.* 15*s.* A married hind with six children and a bondager will consume all the oatmeal during the twelvemonth by making use of it for breakfast and supper, and the Peas and Barley meal which is baked into bread in six months. Married farm servants with such a family, and borne down by the bondager, who have a good crop of Potatoes, manage to feed a pig. But a man with such a family, who has a useless cow and only a few sacks of Potatoes, cannot feed a pig; neither has he money to purchase bread, any other household requisite, nor suitable clothing to protect him from the inclemency of the weather to which he is sometimes unavoidably exposed. Suppose a young ploughman to have engaged himself to a farm, at some of the annual hiring markets which are held about the beginning of March, with the intention of getting married previous to entering upon his duties on the 27th of last May. Some farmers would give him 20 stones of oatmeal, one half of the specified quantity of Barley and Peas he receives for the twelvemonth, and a cartload of coals on the evening of the 26th of May; but some would not give him any oatmeal till after harvest. The above meal, grain, and coals is, according to the customs of the district, all that he would be entitled to till after harvest, when he would receive another load of oatmeal, the other half of the grain at Martinmas, and some farmers will ere this time have given all the servants the whole of the corn part of payment. Here is a newly married couple and their bondager expected to live on 20 stones of oatmeal, 9 or 12 bushels of Barley, and 3 bushels of Peas, the produce of a cow which may not be worth 2*s.* per week, and the young Potatoes, from the 26th of May to the beginning of harvest. The young hind would have to pay his bondager's wages last Martimas, which might vary from 6*l.* 10*s.* to nearly 8*l.*; he probably not receiving more than 8*l.* 10*s.* from his master for her wages, board, lodgings and washing. The farmer sends the Oats to the mill, the meal is delivered to the hind, the hind must send his Barley to the mill

to be ground into meal, the hind gets a horse and cart to deliver what grain and meal he has to sell to those who purchase it. The farmers advance the money for the hinds' coals as they are purchased, pay part of the "sheep," "hen," and "lint" money at Martinmas, and settle up once a year, Although the above is only a local form of payment, "S. G. O.'s" remarks cannot be regarded as applicable to Scotland; and I should feel obliged for "S. G. O." or any English farmer to show me, through the medium of the *Agricultural Gazette*, how "the shillings due on Saturday can go further to furnish the week's necessaries" than formerly? With the exception of the present low price of bread, butcher's meat and dairy produce is as high as would satisfy your correspondent "A Suffering Farmer" during a continental war. *A Labourer.*

The Cottage Improvement Society.—As a member of the Council of the Cottage Improvement Society (18, Adam Street, Adelphi), may I ask you to insert these few following remarks contradicting the statement in the leading article in the *Gardeners' Chronicle* of last week. The plans which we have issued have, as I believe, been approved by the Inclosure Commissioners. Many builders have offered to build pairs of cottages, according to the plans of the Society, at the prices specified and guaranteed by the Society. Several pairs have been put up at these prices. All the plans sent out by the Society are accompanied by estimates for the guidance of the landowners or builders. The cottages can be put up at the prices named in our estimates; of course builders will charge more if they see they can get it. *C. Whitehead, Barnjet, Maidstone, Jan.* 18. [The following letter from Mr. Denton, together with the correspondence which it introduces, is a sufficient answer to the assertion in the above paragraph:—"Sir, you are fully at liberty to do just as you please with respect to my correspondence with the Cottage Improvement Society and Mr. Punnett, but as I have not the authority of the Inclosure Commissioners to publish their objections, I will content myself with repeating the desire entertained by all earnest agriculturists to reduce to the utmost limit consistent with durability the cost of labourers' cottages, and of which I beg respectfully to give a practical illustration by subscribing personally 10*l.* 10*s.* to the Cottage Improvement Society on two conditions only:—1st. That the Society will guarantee that a builder of established respectability will erect any number of double cottages with three bedrooms each, and proper out-door privies, drains, and fences, which the General Land Drainage and Improvement Company may require, to be approved and certified by the Inclosure Commissioners at a cost of 168*l.* per pair; and 2d, That the builder will make a declaration after he has built two or three pairs that he has gained a profit (the lowest profit, say 10 per cent.), which should fairly satisfy a tradesman. I enclose the cheque, and will simply ask you to hold it until you are satisfied that these two conditions are fulfilled, and in order that it may not be considered that this proposal is mere professional talk, I will at once point out a place where the builder may go to work, viz., at Dibden, opposite Southampton (referred to in the correspondence), where all materials are exceedingly reasonable; bricks, 25*s.* per 1000, delivered on the spot. I am led to make this proposal, through your kind agency, under a conviction that there are few questions connected with agriculture of greater importance, and in which the landed proprietors take greater interest than in the provision of healthy, commodious, and economical dwellings for the labouring poor. But I submit that the best and only recognisable way of advancing that object is by the promulgation of facts upon which there can be no doubt; and I would suggest that the Society should at once ascertain and make publicly known whether the Inclosure Commissioners will sanction their design No. 2, and publish the names of any builders who will (upon prescribed prices) erect those cottages, approved by the Commissioners, for 168*l.* the pair. In the meantime I am obliged to declare that my inquiries entirely deny their professions. *J. Bailey Denton.*

Communications on the Subject of Agricultural Labourers' Cottages.—1. See article in *Agricultural Gazette* of Oct. 2d, 1858.—2. Letter from E. H. Harvey, Esq., of Dibden, Oct. 12th, 1858, to Mr. Bailey Denton:—"In an article of the *Gardeners' Chronicle* of Oct. 2d I find a pair of cottages approved of by the Inclosure Commissioners can be erected for 160 guineas; it comes from the Cottage Improvement Society, No. 18, Adam Street, Adelphi. Now, if this can be done, I should like to have two pairs erected."—3. A letter to the Cottage Improvement Society dated October 18th, was despatched by Mr. Denton, "Requesting the Secretary to give the name of any builder who would undertake to build such cottages as were referred to in the article of Oct. 2d at the prices named, and with the condition that the Inclosure Commissioners' approval should be gained." No answer.—4. Interview, same date, at the offices of the Society, 18, Adam Street, Adelphi. The plans and specifications of the Society's two cottages were then obtained, and after some hesitation the name of Mr. Punnett, of Tonbridge, was mentioned as a builder who had actually erected some of the cottages at the cost stated.—5. Second Letter to the Secretary of the Society, 20th October.—"I sent you a note by hand on the 18th instant, requesting the favour of being furnished with the name of any builder who would erect a cottage according to No. 2 of the Society's plans for the sum stated thereon. I have received the plans which you so kindly forwarded, but you omitted to supply any builder's name.—J. Bailey Denton."—6. No answer—but the Secretary of the Society called on 25th October, and stated that he thought it unnecessary to give the name of any builder, as the object of the Society was to induce local builders to take up the matter in their several districts.—7. Plans of the Society submitted to the Inclosure Commissioners on the 19th Oct. and a letter was sent to them, in reply to which certain objections were pointed out by them with reference to which the plan would need to be rearranged before it could receive the sanction of the Commissioners.—8. Letter to Mr. Punnett of Tonbridge, proposing to him the erection of a dozen pairs of cottages in different parts, if the conditions of the Society's designs are complied with.—9. No answer to this letter, but Mr. Punnett called and declined proposal made.]

Societies.

HIGHLAND AND AGRICULTURAL: *Jan.* 19.—A general meeting was held in the Queen Street Hall, the Duke of Athole, President of the Society in the chair. The hall was crowded in every part, and the meeting was probably the largest the Society has ever had. The ballot for the election of new members having been performed, the next business was the election of Secretary.

Mr. Hope Johnstone said: Some dissatisfaction had been exhibited with regard to Mr. Hall Maxwell, their Secretary, and the symptoms of dissatisfaction had been crowned by the publication within these few days of a pamphlet which, though it appeared in an anonymous form, and under circumstances of very studied concealment, still, taken in connection with other events that had occurred, and other manifestations of feeling that had been exhibited, was not to be altogether disregarded. He did not stand there to justify every expression that Mr. Hall Maxwell might have used on every occasion, but he did stand there to express his firm opinion that Mr. Hall Maxwell had discharged his duties as an officer of this Society with great zeal, with great ability, and much to the advantage of the Society. (Loud applause). He thought that in his hands the Society had not only suffered no damage, but that it stood now, both with regard to the number of its members and with regard to its financial position, in a better condition than it had done at any previous time. Being firmly impressed with that opinion, he (Mr. Hope Johnstone) had no hesitation whatever in saying that it would be an act of great injustice to expel Mr. Hall Maxwell from the position he had so usefully filled, and he therefore begged to move his re-election as Secretary of the Society.—The Duke of Buccleugh said this was the first occasion he had known, during a period of 30 years, of feelings of anger being expressed among its members, or feelings of hostility directed against any of its office-bearers. He begged to second the motion that the election of Mr. Hall Maxwell as Secretary, which had been unanimously agreed to by the Directors, should be confirmed by this general meeting of the Society. That Mr. Hall Maxwell had served this Society well and faithfully he thought no one could deny, looking to the advantageous position in which the Society was now placed.—Sir William Johnston regretted that the motion he was about to make should have come so personally in contact with Mr. Hall Maxwell's name, and he would rather his amendment had been pitted against a motion for re-election of the whole office-bearers than against Mr. Hall Maxwell's name alone. He might remind the Society that, at the last general meeting in July, he took the liberty to suggest that the whole matter respecting the Messrs. Lawson and Mr. Hall Maxwell should be recommitted to the Directors. This motion was ultimately carried, and he believed he expressed the opinion of a very large portion of the meeting when he said that they fully expected that the Directors would have called for evidence, and made inquiries, and brought up to the present meeting a full and satisfactory report on the question. This had not, however, been done. They had no evidence here that the Directors had taken the question in hand at all, and therefore he felt his only alternative was to move the amendment he now did. When they last met, Mr. Lawson, very much against his (Sir William's) wish and inclination, withdrew the pamphlet, which had been rather celebrated. He (Sir William) was no party to that arrangement, and he thought it was a wrong step that was then taken. Neither was he a party to Mr. Lawson's resignation—another step which, he thought, had been taken at a wrong time; but while he made these admissions, he was also bound to say that he could not approve of the very hasty way in which the Directors acknowledged and published that withdrawal, and far less could he approve of their misquoting a portion of that letter, and putting forth to the whole members of the Society and to the public a word which Mr. Lawson never used—namely, calling his letter a "retractation" of his statement, when they knew from Mr. Lawson himself that all he meant was a withdrawal of that paper. He had to state that the place which he occupied to-day had been taken by him at the earnest request of the Marquis of Tweeddale, who was unable to be present. Sir William Johnston then read the following resolution, which the Marquis of Tweeddale had sent to him:—"That this meeting having had under their consideration the unfortunate misunderstandings which have lately occurred between the Directors, Mr. Hall Maxwell, and Mr. Lawson, it is expedient, with a view to preserving that confidence and union among the members of the Society which are so essential to its continued existence and prosperity, that impartial inquiry be made into all the circumstances which have given rise to these misunderstandings; this meeting resolves that a committee be appointed to make such inquiry, with power to take such evidence and to hear such explanations as may enable them to report to a future meeting of the Society whether the resolutions of the Directors, of the 26th of February and 2d of August last, ought or ought not to be confirmed by the Society." Sir William expressed his hope that the Directors would cordially acquiesce in it, as being a very reasonable proposal in itself, and that they would cordially enter into the inquiry on the plain and obvious ground of doing justice to all parties concerned. He certainly sincerely sympathised with Mr. Hall Maxwell in this matter; but he could not forget, and a public Society ought not to forget what was due to one of its oldest, most honoured, and most generous members. Notwithstanding all that had been said of Mr. Lawson's conduct in regard to these untoward matters, he could not help honouring him for his stout defence of a very worthy and dutiful son, a son of whom any parent might well be proud; and he therefore trusted, if the Directors consented to this inquiry, that those gentlemen would come out of it, to be held in still higher estimation than ever by the Society. It being ultimately arranged that Sir William Johnstone's motion should be taken up immediately after Mr. Hope Johnstone's had been disposed of, the latter was put to the meeting, and declared carried.

The case of Mr. Lawson—Sir William Johnston then moved his resolution in a substantive form.

Mr. Caird then said it was understood that he should second the motion of Sir W. Johnston, but he thought it more proper that a direct motion should be put to the meeting than any reference to a committee. He was not one of those who held up their hands against the re-election of Mr. Hall Maxwell. He entertained no ill-feeling against him. He believed him to be an exceedingly zealous public servant. He (Mr. Caird) might have opinions of his own as to various personal matters, but he threw them aside in a matter of this description. He perfectly agreed with the Duke of Buccleugh that it was a pity to see a great national Society convulsed and agitated by paltry personal squabbles. These were not the objects for which they had all met at that inclement season of the year. They had met to do justice to one of their office-bearers who, he believed, had not been fairly treated. The seedsman of the Society had been connected with them many years before Mr. Hall Maxwell had had any connection with it whatever. He had a name which was not Scotch only, but European; and he might tell them that at the meeting in Paris, where the world was collected to see objects of agricultural science from all quarters of Europe, no man had more distinguished his country by his exhibitions than Mr. Lawson had done; and he thought it a public disgrace to any national society of this country that they should submit to such a course as should deprive them of such services as his, especially when that had arisen from no demerits of his own. He therefore rose to propose that, instead of referring this question to a committee, they should follow the example Mr. Hope Johnstone had set. He moved that "the resignation of Mr. Lawson be not accepted, and that he be reinstated as honorary seedsman of the Society, disjoined from the office of curator of the Museum." They were all aware that Mr. Lawson's connection with the Museum had not been one of any profit or advantage to himself; the seedsmanship he had no doubt had been a matter of great profit, and quite right that it should be so, and it was given to him with that view. It was 23 years or thereby since Mr. Lawson had first been elected by acclamation, and he trusted they would still continue him in the office of seedsman, without reference to the office of curator of the Museum.—The Earl of Rosslyn said that by the motion of the hon. gentleman they were not only called on to re-elect Mr. Lawson, and thereby sanction his repudiation of the withdrawal of his statement, and of all that could be considered to be offensive in it, but they were called on, as a corollary to that re-election, to pass a vote of censure on their Directors and on their Secretary, whom they had just re-elected with every mark of confidence and approbation: he concluded by moving a negative to Mr. Caird's motion.—Lord Panmure, who was received with loud cheers, said he strongly recommended Sir W. Johnston to withdraw his motion, to allow Mr. Caird to take the direct opinion of the meeting. It was not (he said) his intention to have taken any active part in this discussion, but the speech they had just heard had entirely made up his mind that Mr. Lawson deserved at the hands of this Society some token that its members at least did not desert the cause of one of its oldest servants, whatever its Directors might do. He believed that Mr. Lawson had not received justice at the hands of the Directors; he thought they had failed to make sufficient inquiry into his case, that they had not directed their attention to all the evidence which he should have called before them, and that they had given, in the first place, an *ex parte* decision in the matter. He believed, also, that Mr. Lawson was justly offended with a word that was used in the last communication of the Directors—namely, the word "retractation." He drew a very marked difference between "retractation" and "withdrawal;" and, had the latter term been used in the letter of the Directors, he, for one, would never have supported Mr. Lawson in the course he now took in resuming all his proceedings *de novo*. The word "retractation" inferred confession of guilt in the party retracting. Now, he was convinced Mr. Lawson never meant to confess himself guilty of anything, but that he meant, for peace' sake in the Society, to put an end to his complaint, and take himself quietly out of the way. He therefore supported the motion to continue Mr. Lawson in the office of honorary seedsman, as a just tribute to his long services, and he did not look upon it as a vote of condemnation of the Directors at all.—Sir George Clerk expressed his belief that they could not overlook all the circumstances that had occurred since the 28th of July—his withdrawal of his letter, his resignation, and his republication of the offensive pamphlet, besides the additional statement which was now made to it. He held that it was impossible after all that they could receive Mr. Lawson again with the same cordiality as before.—Sir Thomas Gladstone proposed to move the following amendment, which he did without having had any concert with others:—"That the word 'retractation' be expunged from the minutes, and that the word 'withdrawal' be substituted." What might be thought of his amendment he knew not; it was proposed with the most cordial feelings towards all parties, but with the deepest anxiety that justice should be done to a man who, he thought, had been very hardly treated, to say the least. (Cheers.)—Mr. D. M'Laren defended Mr. Lawson in a very effective speech.—The Duke of Buccleugh said, so far as Mr. Lawson personally was concerned, his regard for him was so great that he would go a long way to do what was in his power to have settled this unhappy question. Upon public grounds, from his public services to the Highland Society, as well as to the country and public at large, he thought every consideration was due to him. His (the Duke's) knowledge of the transactions which had taken place had been confined almost entirely to what he would call the unfortunate publishing of the original statement, which he thought had been chiefly the cause of the great misunderstanding that had taken place. He would not enter into the discussion of all the details of what had taken place in regard to this matter. The word "retractation," he thought, was an unfortunate word, and he thought "withdrawal" would have been the better word. Had matters been left as they were, no one would have more cordially or more warmly seconded, or even perhaps have moved, that Mr. Lawson should be requested again to accept the office of honorary seedsman to the Society. He would have done that with pleasure, but now with pain he felt himself compelled to say that what he had now done had rendered it impossible for him either to move or to second that resolution, or even to support it. The Duke of Buccleugh begged leave to second the amendment of Sir Thomas Gladstone, and in so doing intimated that he had ascertained that the Directors were perfectly satisfied with it.—Mr. Caird said: If we are to understand that the motion made by Sir Thomas Gladstone, and seconded by the Duke of Buccleugh, implies that the case of Mr. Lawson shall be again considered; that, in short, the reason why the whole difficulty has occurred, the use of the offensive word is removed; by that word being expunged, then, Mr. Lawson's resignation is withdrawn. We are all, I apprehend, desirous of peace, and do not wish the break up of this great Society; when one of the Directors threatened that if we did not do as he wanted, he and all the other Directors would resign, and while I agree with another gentleman who said that if they did, others could be found, I would ask the Directors to consider that Directors may resign, but that members may resign too; and so you may break up the whole Society. If the noble lord who seconded my motion will permit me, I would withdraw it on the understanding that the whole question is replaced in the position in which it was before that offensive word was used, and that Mr. Lawson's resignation be also allowed to be withdrawn.—Mr. Lawson (who was received with loud cheers) said: From the first of this debate, my mind was made up either to be honourably associated with the Society or honourably quit from it. The former it is for the meeting to do, the latter is a matter of my own. I feel highly gratified indeed by the expression of kindly feeling which has emanated from many members. I rejoice in the opportunity I now have of returning my sincere thanks for all the favours I have received and the kindness expressed towards me by this Society. The only circumstance that could have induced me to send in my letter of resignation was the use in the minute of that one word "retractation;" and that being removed, I am quite ready to withdraw my resignation, if it is the pleasure of the meeting to permit me.—Lord Panmure: I understand Mr. Caird proposes to withdraw his motion for the amendment of Sir Thomas Gladstone, to substitute "withdrawal" for "retractation." Now, inasmuch as the use of that word retractation was the cause, as we have just heard avowed by Mr. Lawson himself, of his resignation of the office of honorary seedsman, I think the dignity of the Directors themselves, the dignity of the Society is concerned that they should not settle this matter by halves, and leave a sore rankling at the bottom of the wound,

but that they should follow the matter to its original source, and the word "retractation" being expunged and "withdrawal" substituted in its place, that Mr. Lawson should be permitted to withdraw his resignation and resume his position. It appears to me so strongly to be the right and reasonable course of justice, that unless the Directors are prepared to agree to it, I cannot consent to the withdrawal of Mr. Caird's motion. The two resolutions were then put to the meeting, and the Chairman declared Sir Thomas Gladstone's amendment carried, and the motion negatived.

A scene of great confusion ensued. Lord Panmure protesting against the decision of the Chairman and demanding a poll—the secretary persisting in proceeding to the next item of business.

Provost Roughead, of Haddington, said the members of the Society were being treated with great disrespect, but they were determined to have the real sentiments of the Society brought out. If the members were to be so treated, either by the Chairman or the Directors, they must soon expect to hear the death-knell of the Society rung. He was confident that if they were deprived of the services of Mr. Lawson, it would be a great loss to the agricultural interests of the country. He demanded an adjournment.—The Duke of Buccleuch said he should be sorry that any portion of the meeting should suppose that anything unjust was attempted to be done. The mistake was that the poll was not demanded earlier; and if granted now, when many had left the room, it could not be held to represent the opinion of the meeting when the show of hands was taken, whatever that might chance to be.—Mr. Milne Holme said it was obvious from the large meeting that had assembled that strong public feeling prevailed in the country, and he feared the only way of settling the matter was to allow a poll in terms of the charter. Ultimately, on the motion of Sir William Gibson-Craig, seconded by Mr. Duncan M'Laren, the meeting then adjourned till that day fortnight at noon in the same hall.

DUBLIN CHEMICAL: *Jan.* 20.—Dr. Cameron presented the following report, embodying the results of some of the proceedings in the laboratory since the last meeting:—

HAUGHTON'S (OF CARLOW) BONE MANURE.

	No. 1.	No. 2.
Water	18.16	23.16
Nitrogenous organic matter } Salts of ammonia } Carbon	29.34	16.23
Bi-phosphate of lime	11.66	14.17
Phosphates of lime and magnesia	6.20	7.80
Sulphate of lime	26.55	32.55
Alkaline salts	3.85	3.34
Insoluble matters	4.24	2.75
	100.00	100.00
Ammonia	2.64	3.18

NATIONAL GUARANTEED MANURE COMPANY'S SUPERPHOSPHATE OF LIME.

Water	16.48
Organic matter and salts of ammonia	19.64
Yielding ammonia	(00.84)
Bi-phosphate of lime	11.97
Equal to bone phosphate made soluble	(17.65)
Insoluble phosphates	7.32
Alkaline salts	3.82
Sulphate of lime	31.98
Insoluble matters	8.81
	100.00

PHOSPHO-PERUVIAN GUANO. (This season's arrival.)

100 parts of phospho-Peruvian guano contained the following:—

Water	11.22
Organic matter and salts of ammonia*	16.22
Bi-phosphate of lime	15.84
Phosphates of lime and magnesia	20.16
Hydrated sulphate of lime	22.16
Alkaline salts	7.89
Insoluble matter	6.51
	100.00

*Capable of yielding ammonia, 4.45, corresponding to 19.66 per cent. of crystallised sulphate of ammonia.

The total amount of phosphoric acid in combination with alkalis and alkaline earths is equivalent to 49.18 per cent. of tribasic phosphate of lime; of this amount considerably more than one-half exists in the soluble, and, therefore, immediately available condition. Contrasting the present analysis of phospho-Peruvian guano with that made last season, I have no hesitation in expressing my conviction that this variety of guano is yearly improving in composition; and I have further to express my belief that its practical trials in the field the ensuing season will be attended with marked success.

KOORIA MOORIA GUANO (of recent importation).

Organic matter*	8.27
Phosphate of lime	45.16
Sulphate of lime	8.06
Alkaline salts	4.22
Water, sand, and other useless matters	34.29
	100.00
*Yielding ammonia	1.47

The analysis of this variety of guano proves it to be of very low value.

SOMBRERO PHOSPHATE.

Water	7.44
Phosphate of lime	42.08
Phosphate of alumina	38.15
Phosphate of iron	6.12
Carbonate of lime	4.26
Alkaline salts	1.17
Silica	0.78
	100.00

This substance, a specimen of which yielded the above analytical results, was sent to me for examination by the Messrs. Pickford, of London. It is said to exist in enormous quantities on the little island of Sombrero. It occurs as a soft, rather light, and easily pulverisable stone. The Messrs. Pickford purpose, as I understand, selling it to manufacturers of superphosphate of lime as a substitute for bones and coprolites. A substance somewhat analogous to the Sombrero phosphate is met with on the Monk's Island (where the phospho-Peruvian guano is obtained); but as it contains only phosphate of alumina, it is not, although existing in enormous quantities, imported for agricultural purposes, as it is generally believed that phosphoric acid, when in combination with alumina, is incapable of ministering to the wants of vegetable life. As, however, M. P. Thenard has recently shown that the phosphoric acid which exists in soils is invariably combined with sesquioxide bases (alumina or peroxide of iron), and never with protoxide (lime or magnesia), it is more than probable that the phosphate of alumina in the Sombrero and Monk's Island's minerals might be really available to plants, without being even subjected to the vitriolising process. To say the least, it would be in the highest degree desirable to institute experiments with the view of testing the agricultural value of these substances when used *per se*.

BRADLEY'S CATTLE FOOD (100 parts contain).

Water	12.09
Oil	5.80
Albuminous compounds	10.36
Gum, sugar, mucilage, &c.	60.21
Fibre	5.32
Ash	6.22
	100.00

This "concentrated" cattle food sells at 42*l.* per ton, but is really not worth, at the very most, 7*l.* It is far inferior an article of food to either Linseed cake or Rape cake, as may be seen by comparing its analysis with that of an average sample, say of Linseed cake—

LINSEED CAKE contains in 100 parts—

Water	11.30
Oil	9.23
Albuminous compounds	29.60
Sugar, gum, fibre, &c.	48.81
Ash	7.06
	100.00

Reviews.

Edinburgh Veterinary Review. No. III. Simpkin, Marshall & Co.

Among the more notable papers in the current number of this clever and energetic journal are the introductory lecture delivered in the New Veterinary College, Edinburgh, by Mr. Gamgee, to which reference has already been made in our columns—a useful paper, proving the contagious nature of pleuro-pneumonia in cattle, strangely disbelieved by men who have suffered loss enough to shake their scepticism—a long and detailed account of "sturdy" in sheep—a severe review of Professor Spooner's introductory address in October last at the Royal Veterinary College—a statement of the case between the new Veterinary College and the Highland Society, and a number of short reviews and notices of works, continental as well as English.

The following is a passage from Mr. Horsburgh's paper on the contagious nature of pleuro-pneumonia. He says:—

"In all cases (and I must say, with very few exceptions my employers coincided with me) I treated it with the idea of destroying infection; and in every case where that was properly done the progress of the disease was cut short, and many places kept perfectly free, while neighbouring farms, where no means were taken to stop it, suffered severely, and do so yet. I had formed an idea that there was no use in beginning controversy about diseases being contagious or infectious or epidemic, or to split straws about meanings of names. If I ever had doubted the infectious nature of pleuro-pneumonia, it was doing no harm to treat it as infectious, and avoid its spread if I could.

"The means used for destroying infection I will explain by relating the measures adopted in a dairy. Mr. Laing, of Melville Grange, 4 miles from Edinburgh, kept about 50 cows. When pleuro-pneumonia broke out, he was naturally afraid. His stock was insured in the Mutual Farmers' and Graziers' Insurance, of which I was inspector. One morning a messenger brought an order for my immediate attendance. On reaching Melville Grange, Mr. Laing told me he had a cow just taken ill, which, on the previous evening, appeared in perfect health. I examined her, and told him it was pleuro-pneumonia. What was to be done? I advised him to have her slaughtered at once, to save the others. She was immediately sent to Gilmerton, where we went—Mr. L. to be sure that it was that disease, and I to save the calf, of which the cow was about to be delivered in a few days (she had been purchased three days before). He was perfectly satisfied that it was the disease—one of the lungs was so far affected as to show that it had been diseased long prior to the purchase. His byres were all fumigated with chlorine gas, and tar burned in them; a force pump used in hothouses was purchased and the walls washed with a solution of chloride of lime twice a week. Mr. Laing never after purchased a cow in the Edinburgh Market, but about the country where no desease existed. This was continued for many years (about seven at least), and though that disease was at every farm surrounding him, he had never another case till he purchased two cows from a farmer about three miles distant, on the Marquis of Lothian's estate. There disease existed amongst the young stock, and several had died or were killed. The two cows were nearly calving, and within eight days after their purchase, pleuro-pneumonia broke out amongst his stock, and in about three weeks before it could be stopped he lost seventeen. He has now given up the dairy, but I think he lost no more after the latter outbreak.

"This is simply the means I have always taken from the first time I saw pleuro-pneumonia. Till this time the results have been the same. I never attend to easterly or northerly exposures; never blame dirty byres, never look for broken water-roans, want of air in some byres, and too much draught in others. We have seen byres ten times worse kept, in every sense of the word, than what they now are; we know farms that have been standing in the same situations for the last century, and pleuro-pneumonia was never known till within the last 17 years.

"I may contrast Mr. Laing's case with one of his near neighbours. Mr. Barrowman of Muirhouse, near Liberton Kirk, and about 3 miles from Edinburgh, kept a dairy. He called on me one night to have a conversation about pleuro-pneumonia, and to see how Mr. Laing's cows were treated, because he heard Mr. L. had lost no cows, while he had lost at that time 50. Mr. B. was then a stranger to me. I told him my opinion of that disease, from which he differed, saying he had some cows had stood beside diseased ones, and had never taken it. I told him that was no argument that the disease was not infectious; I did not think it required every one that came in contact with either the body of the party affected, or the air they moved in, to take diseases known to be infectious, or nurses in hospitals, surgeons, &c., attending patients with fevers would have little chance of escape; but I promised to go next day to examine his premises. He had a newly-made byre for 40 cows in two rows, a passage down the centre in which a cart might be driven, a broad passage on each side, doors at the sides and ends; two rows of windows, glass in the upper parts, and sliding bars below, plenty of ventilation at the top, and boiling-house separate at the end. A better byre I never saw; it could have been made a stove if doors and windows had been all closed, or as much air might be allowed as 40 cows could require. I thought it was faultless. A new division, 6 feet high, of half-inch deal, ran through the middle of the byre. On asking what it had been recently put up for, he told me he had Mr. Dick out examining his cows, and he advised the partition being put up, because the draught in the byre would make his cows take the disease. I advised him to purchase no more cows in the Edinburgh market, fumigate his byre to destroy infection, remove at once his diseased animals; but that the partition in the middle of his byre was useless as a preventive. I attended Mr. B.'s horses and cows for a number of years after that, but I never could make him believe pleuro-pneumonia to be contagious, or take any means to prevent his cows being destroyed, unless constantly waging war with his fine byre. His landlord was surely a condescending one, he had altered it several times; the last time I saw it, it was made into three divisions by two stone walls built from floor to top, the cows' heads being turned to solid wall to prevent this fatal disease getting into their lungs, but all to no purpose. Mr. Dick, in his essay, read in the Highland Society's Hall, on the non-contagion or non-infection of these diseases in cattle, printed in the *North British Agriculturist* a few months ago, says Mr. B. had lost 172 cows from pleuro-pneumonia, and does not think it infectious yet. 'He, at least, *has* paid for his folly, I think.'"

Miscellaneous.

Practical Education.—Truth is stranger than fiction, and if the history of many a family in our rural population could find a chronicler it would very often convey a more striking lesson than the cleverest novel; and a record of this kind is the more valuable now that our people are so generally attracted to towns as presenting the only or chief field for energy and success. Besides, every rank in life is now so generally influenced by a love of change, and the facility of indulging it is so great, that it is a rare thing to meet with a person whose personal observation of his neighbours in any one spot has not been interrupted through a long course of years. Hence it is a common notion that the labouring class in the country have had no, or very little, chance of rising into a higher grade, especially during the last generation, when the means of what is called education were rarely to be met with in rural districts; and it is justly considered to be an especial advantage of this age that the schoolmaster is really and efficiently abroad. But the tale I am going to tell from personal knowledge of the village of my birth, where I have been familiar with the history of its families for more than 40 years, tends, I think, to show that much more depends upon the individual energy and character of the parent than upon any advantages of schools, and that that is the truest, best, and most efficient education which each one of us, provided he is furnished by his parents with the early instruction suited to his place in life, works out for himself under the blessing of God upon honest painstaking. I have no reason to suppose that my cases are rare or exceptional ones, If they were, the inference from them would be of no value. But I believe them to be not uncommon, though unobserved; and I assure my reader my tale is quite unembellished, literally true, and the cases selected out of a population of only 380. My hero, now a hale man of 78 years of age, one of a large and poor family, born to eat his bread in the sweat of his brow, was placed out with a farmer at seven years of age, having just learnt to read, and, keeping up his little knowledge by the kind encouragement of his mistress on Sunday evenings, continued in that kind of service till he married, when, having been prudent, he was soon enabled to rent a little ground, enough for two or three cows. This he holds at this moment, having brought up 14 children without parish help, eight girls and six boys. Two of the sons have met violent deaths, one in farm service, one in the late Indian war, a private in the Carabineers. The eldest is a very respectable labourer, who has also reared a large family, several of whom are earning their bread in their different occupations. Another son, having been a servant, now rents a farm of the gentleman he served, having a wife and family. Another, having also been a servant, has become a prosperous innkeeper, so much so as to have been recently able to buy the house and land his father rents, at a dear rate, in order to secure his aged parents from being turned out by another purchaser. Six of the girls had married

happily, and two (one of them in bad health, receive pay from a club) live at home with their parents, both having been in good service. The heroine of my tale is a widow, 65 years old, who was left 22 years ago with five children above and five below 10 years of age. The little fund her husband (a labouring man) left was soon exhausted, so that for some years she could not do without parish help. But her energy communicated itself to her children, so that she was soon enabled to dispense with it, and about 15 years ago her eldest son, having gone as a boy to sea, sent home half his pay to his mother, when she went to the board of guardians to thank them for past aid, and to decline it for the future—not that she leant upon her children for support, but has up to this hour continued to keep a dame's school, saving what she can for herself and children, but never omitting to pay her weekly penny to the Society for Propagating the Gospel. The second son is now the owner of some houses and several hundred acres of land in Australia, having gone out there as a shepherd; the third has been a successful gold digger; the fourth, having risen through the lower stages of a sailor's career, has become a petty officer; and the other two sons are honest labourers at home, the daughters having all married creditably. It should be observed that no one of these children had any other teaching than what their parents provided through the village school; but all of them were constant attendants at the Sunday school in their turn, and were all working for their bread at 10 years old or under. I do not pretend to imply that the exemplary conduct and piety of the parents have been reflected in all their children; but I know that they have all been distinguished for sobriety and diligence in their callings, and have many of them risen in life, while the children of other parents, born to comparative affluence, and kept longer at school, have sunk to a lower grade. Nor, again, would I imply that education as it is at present facilitated is not a great advantage; but I would strengthen in parents the feeling of their responsibility, which the present system has, I fear, some tendency to weaken—the feeling that the temporal and eternal welfare of their children depends much more upon their example, upon the home associations they give rise to, upon the habits of diligence, sobriety, and fear of God which they show, than upon any advantages of schooling. *A Devonshire Rector in the Times.*

Irish Pauperism.—If the following assertion of Doctor Wallis in evidence before a Committee of the House of Commons in 1854 be correct,—"the number of paupers made paupers through sickness constitutes 72 per cent. of all those made paupers through all causes," then Irish rural labourers in particular have less facilities for escaping decided and unmitigated pauperism as a consequence of lengthened sickness than the same class in Great Britain. One consideration more. The labourer's wife in England, or any poor woman in childbirth, can obtain in case of need the obstetrical assistance of the medical officer of the union, for which he receives a fee of 10*s.* 6*d.* or 2*l.* 2*s.*, according to the nature of the case. This *honorarium* which is sometimes an important item to him where the average payments for attendance on paupers, medicines included, are insignificant in amount—insures special attention to the woman in her hour of danger and difficulty. But the official practitioner in Ireland, who is obliged to attend in similar cases, receives no special compensation for his time and skill on the occasion. It cannot be supposed, then, that the patient in the latter case always receives as prompt and assiduous attendance as in the former. *M. D.*

Notices to Correspondents.

BARLEY: *D.* We would take a crop of Barley. Choose a short-strawed kind. Sow a cwt. of common salt per acre about seed time, and another cwt. in rainy weather in April.

CANADA: *Emigrant* asks for guidance. Perhaps our kind correspondent writing from Plymouth may be able to assist him—either by direct information through our columns, or by indicating the most trustworthy sources of information.

HOUSEHOLD SERVANTS: *H.* The best criticism we can make upon your difficulty is in the words of "S. G. O.," in the columns of the *Times*:—'I am growing old; I never recollect a time in which I have not been told that 'it is *now* impossible to get good servants,' yet I have never had to discharge more than two male or to change for ill conduct more than three female servants. Whether it is that I and mine live with our servants, or they live with us, I cannot say exactly; I know the connection is seldom broken between us but with equal regret on both sides. The secret is—take pains to get good servants, pay fair wages, give kind treatment, be strict, but be just. Treat them as fellow-creatures, not as mere domestic automatons wound up by the key of wages. They will not be perfect—no more are you; it must be bear and forbear; and, after all, remember you might have been born to shake a duster, wield a broom, or fry yourself in July before the fire which cooks the joint you will have done to a turn."

MOLES; *G P.* Will any one give his experience as a mole-catcher—first of methods and second of results?

POLITICAL ECONOMY: *A Commoner.* We cannot discuss questions of taxation—nor can we inquire into the possibility of preserving a uniform price of grain except by such means as good farming supplies for meeting the influences of a variable climate.

POULTRY: *Hamburgh* asks for a definition of the terms "pencilled" and "spangled." We understand the effect to be produced in the one case by alternate feathers, and in the other by alternate *parcels* of feathers of different colour.

RATS: *Hudcott House.* They say that phosphorus pills are the most effective—inducing intense thirst and death on drinking water.—We doubt the possibility of selling Mangel Wurzel grown in Devonshire at a paying price in London. Sales by auction in the field near London do not exceed 20*s.* per ton, and it will cost you that to deliver by railway.

REFORM FROM A BREWERY: *Zeta.* What particular reform do you refer to?

SEEDS IN RYE-GRASS: *Cor.* The question cannot be answered this week.

RHODODENDRONS.

JOHN WATERER'S CATALOGUE OF UNRIVALLED HARDY SCARLET AND OTHER CHOICE RHODENDRONS, as Exhibited by him at the Royal Botanic Gardens, Regent's Park, London, is published, and will be forwarded on application.

☞ This List is recommended as a work of reference, as it contains accurate descriptions of all the esteemed varieties.

The American Nursery, Bagshot, Surrey, near the Sunningdale Station, South Western Railway.

NEW EXOTIC FERN,
NEPHRODIUM MOLLE, VARIETY CORYMBIFERUM.

Named and described in the *Gardeners' Chronicle* of May 22, 1858.

ROBERT SIM is now prepared to supply, at 15*s.* each, vigorous and well-established profusely crested plants of this beautiful and unique variety, of which he possesses the entire stock. It ought to prove quite a greenhouse kind.

The customary discount to the trade. Price per dozen on application. Carriage paid to London. Post-office Orders on Foot's Cray.—Nursery, Foot's Cray, Kent, S.E.

HUDSON'S GOLDEN MELON BARLEY.—Selected Samples for Seed of this most valuable variety, superior both for produce and malting quality, may be had of RAYNBIRD & HARVEY, of Basingstoke; and 89, Seed Market, Mark Lane, E.C.

ITALIAN RYE-GRASS.

SUTTON'S IMPROVED ITALIAN RYE-GRASS has proved the best kind for general cultivation, being the most productive and hardy, growing freely in all soils.

From FREDERICK F. HALLETT, Esq., *the Manor House, Brighton, March* 15, 1858.

"I mowed your Italian Rye-Grass at Christmas, 1856, within three months after sowing; again April 12, 1857; three times since, and am mowing it again now (March 15). The cut on April 12 was 4 feet high, and a perfect mass of Grass."

Messrs. SUTTONS' crop of Seed being large, the prices will be lower this season. Quantity to be sown per acre, 3 bushels.

Priced Lists post free.—Address SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

EXCELLENCE AND ECONOMY COMBINED.

SUTTON'S COLLECTION OF GARDEN SEEDS FOR 1859.

KITCHEN GARDEN SEEDS.

		£	*s.*	*d.*
No. 1.	A complete Collection for one year's supply of a large Garden	3	0	0
No. 2.	A complete Collection, in smaller quantities	2	0	0
No. 3.	Ditto ditto ditto	1	0	0
No. 4.	Ditto ditto ditto	0	10	6

If some of the sorts are already possessed, increased quantities of others will be given in lieu of those to be omitted.

HARDY AND SHOWY FLOWER SEEDS (POST FREE),
Which may be sown where they are intended to bloom.

A	Collection of the best 100 sorts known	£1	1 0
A	Collection of the best 50 sort known	0	10 6
A	Collection of the best 36 sorts known	0	7 6
A	Collection of the best 24 sorts known	0	5 0

BOKHARA CLOVER, BORAGE, AND OTHER SEEDS FOR BEES.

Carriage Free by Rail to almost all parts of the Kingdom.

Address SUTTON & SONS, Seed Growers, Reading, Berks.

THE GARDEN.

IN THE CATALOGUE OF VEGETABLE AND FLOWER SEEDS issued by W. DRUMMOND & SONS, Stirling, the intelligent gardener will be gratified to find the system of inserting only the best and really distinct varieties in the various classes still strictly adhered to; and from the brief but correct descriptions affixed thereto, as well as the general simplicity of the whole, it will be found a ready guide to the amateur in making a suitable selection.

W. D. & SONS will, on application, be glad to forward a copy of their Catalogue, post free, to any address.

Stirling is most favourably placed in point of railway accommodation, there being direct and constant traffic to all the principal stations in Scotland and England, and by steamers (*viâ* Glasgow) almost daily to the chief ports in Ireland, thereby insuring a speedy delivery of goods, all of which are, with a limited exception, forwarded carriage paid.

W. DRUMMOND & SONS: Seed Warehouse, Stirling, N.B.; and 58, Dawson Street, Dublin.

SURPLUS STOCK.

JOHN SHARPE is offering to the Trade, on very reasonable terms, the following SEEDS of his own growing, 1858:—

Carrot, fine large Altringham	Turnip, Skirving's Swede
,, large White Belgian	,, Purple-topt do.
Mangel, Yellow Globe	,, Green Globe
,, Long Giant Red	
Cabbage, Early Enfield	,, Purple-topt Scotch

Prices of not less than sacks and cwts. on application.

Bardney Hall, near Lincoln.

GRAPE VINES FROM EYES.

JOHN AND CHARLES LEE beg to offer an immense stock of strong well-ripened VINES FROM EYES, of the following kinds:—

Alicant	Hamburgh, Pope's
Barbarossa	,, Victoria
Bidwell's Seedling	Hâtif de Jura
Black Cluster	Isabella
Black Constantia	Lady Down's Seedling
Black Prince	Marchioness of Hastings
Blanche Vigne	Muscadine, Royal
Calabrian Raisin	,, Parsley leaved
Charlsworth Tokay	Muscat, August
Chasselas Frocklaboulay	,, Bowood
Chasselas Musqué	,, Cannon Hall
Duzetto	,, Hamburgh
Esperione	,, Noir Hâtif
Frontignan, black	,, of Alexandria
,, grizzly	,, of Fontainebleau
,, white	Pitmaston Cluster white
Hamburgh, black	Raisin des Carmes
,, Champion	Syrian
,, Dutch	Trebiana
,, golden	Trentham Black
,, Mill Hill	Tripoli
	West's St. Peter's

Nursery and Seed Establishment, Hammersmith, London.

TO THE TRADE.

THOS. CRIPPS, NURSERYMAN, &C., Tunbridge Wells, Kent, respectfully offers the following fine strong SPANISH CHESNUT PLANTS, 4 feet to 6 feet in height, 40*s.* per 1000; Blush CHINA ROSES, fine strong plants, 15*s.* per 100; Crimson do., very strong, 25*s.* per 100; fine Standard and Half-standard ROSES, 60*s.* per 100; good do., do., 50*s* per 100; Double Yellow PRIMROSE, 20*s.* per 100 or 400 for 3*l.*; PINUS INSIGNIS and P. RADIATA from Seed, 15 inches to 28 inches, 6*l.* per 100; MANETTI STOCKS, 50*s.* per 1000; do. second size, 40*s.* per 1000; IRISH YEWS, 2 feet to 3 feet, 50*s.* per 100; Hardy HEATHS, a fine collection, 25*s.* per 100; large plants, good do., 20*s.* per 100; LARCH FIR, fine stout plants, 2 to 3 feet; LONICERA SHEPHERDI, or new Scarlet-trumpet HONEYSUCKLE, fine strong plants, 4*s.* per dozen; RHODODENDRON MAXIMUM, fine bushy plants, 18 inches to 2 feet, 60*s.* per 100. Orders from unknown correspondents unaccompanied by a remittance will not be noticed.

THE PLYMOUTH SEED COMPANY'S COLLECTIONS OF VEGETABLE SEEDS.—These Collections have for many years been sent out, and have given universal satisfaction. They combine excellent germinating qualities, superior sorts, and may be deemed economical in the truest sense of the word.

No. 1.—Complete Collection, sufficient for a large Garden, 3*l.*
No. 2.—Complete Collection for a moderate size Garden, 2*l.*
No. 3.—Complete Collection in small quantities, 1*l.* 5*s.*
No. 4.—Complete Collection for a small Garden, 15*s.*

COLLECTIONS OF FLOWER SEEDS.—Post Free.

	Large Pkts.	Small Pkts.
No. 1.—100 Packets	£1 5*s.*	£1 0*s.*
No. 2.—50 ,,	0 15	0 12
No. 3.—25 ,,	0 8	0 6
No. 4.—12 ,,	0 4	0 3

Freight and Carriage.

All orders for Seeds above 1*l.* forwarded free to any Stations between Plymouth and Paddington. All orders above 2*l.*, free to all Broad Gauge Stations, to most other Railway Stations, and by steamers to Cork, Dublin, Liverpool, Guernsey and Jersey. All orders above 5*l.* free to all Railway Stations in England and Wales, and to any Steam Port in the United Kingdom.—For other and full particulars, the reader is respectfully referred to the General Price Current of the Plymouth Seed, Agricultural Implement and Manure Company Limited, (late Rendle's Price Current), which is now published and ready for delivery, on application to the Secretary of the Company. Copies can also be obtained from any bookseller in town and country through Messrs. SIMPKIN, MARSHALL, & Co., Stationers' Hall Court, London.

Free for 6 stamps, or gratis to customers.

VEGETABLE AND AGRICULTURAL SEEDS, &C.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that they are now prepared to execute with new and genuine SEEDS all orders they may be favoured with. Their PRICED and DESCRIPTIVE CATALOGUE, containing all new VEGETABLES proved to be good, and all the best of the older varieties, &c., will be forwarded post free on application.

The following are particularly recommended, all being very superior in quality, and valuable acquisitions to the most select collections:—Beet (Pine Apple Short Top), per oz., 2*s.*; Broccoli, Winter White (Snow's), per oz., 3*s.* 6*d.*; ditto, Penzance White (Mitchinson's), per packet, 1*s.* 6*d.*; Celery, Nonsuch (Ivery's), per packet, 1*s.*; Cottager's Kale, per packet, 1*s.*; Lettuce, Alma Cos (Griffin's), per packet, 1*s.*; ditto, Moor Park Cos, per packet, 1*s.*; Marrow, Custard (Thomson's), per packet, 6*d.*—Paradise Nursery, Seven Sisters and Hornsey Road, Holloway, London, N.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their NEW PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Stove, Greenhouse, and Hardy Ferns, Miscellaneous Stove, Greenhouse, and Hardy Plants, Variegated and Ornamental foliaged Plants, Conifers, Roses, Rhododendrons, Indian Azaleas, Gloxinias, Fuchsias, Cactuses, &c., is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

BEST POTATO IN THE WORLD—IMPERIAL KIDNEY.

MR. WEBB, of Calcot, having succeeded in raising a quantity of the above excellent POTATO, begs to offer it to the public as the Best of its Class in every respect. Its quality cannot be surpassed, its yield most abundant, and its size from 2 inches to 9 inches long. Price 16*s.* per bushel, and no less quantity than 1 bushel disposed of. Also about 3000 true KENTISH COB NUT Trees from 2 to 4 feet high.—Apply to Messrs. JOSH. MAY & Co., 1, Wellington Street, Strand, or to Mr. WEBB, Calcot, near Reading, Berks.

AMERICAN PLANTS, FRUIT TREES, ETC.

MESSRS. J. AND H. BROWN will forward any of the following to any part of the kingdom:—

	s.	*d.*
Andromeda floribunda, strong plants, per doz.	18	0
25 Azaleas, new hardy Belgian varieties, one of a sort by name, on their own roots, well set	20	0
25 Azaleas, American varieties, ditto ditto	15	0
Hardy Heaths, Ledums, and Kalmias, per doz.	6	0
25 Hardy American Plants, one of a sort by name	10	6
12 Rhododendrons, including scarlet, white, and rose	12	0
Fine hardy scarlet Rhododendrons, 1 to 2 feet, per doz.	12	0
Fine hardy white Rhododendrons, per doz.	10	0
6 fine hardy Magnolias, one of a sort	10	0
50 dwarf Roses on their own roots, in variety	15	0
Standard and half-stnd. Roses, superb sorts, per doz. 12*s.* to 15*s.*		
Climbing Roses, fine sorts, strong plants, per doz.	6	0
Greenhouse Azaleas, including best new sorts, per doz. 9*s.* to 12*s.*		
12 Camellias, well set, first-rate sorts	30	0
50 choice Greenhouse Plants, one of a sort	40	0
Orchidæa, beautiful species, good plants, per doz.	40	0
24 choice Ericas, one of a sort, in small pots	16	0

Hyacinths and other Bulbs for early forcing, good and cheap.

CHOICE FRUIT TREES.

Fine standard and dwarf Apricots, Peaches, Nectarines, Plums, Pears, and Cherries, 2*s.* 6*d.* each, or 25*s.* per dozen.

Fine dwarf plants of all the above, grown and trained especially for pot culture, 18*s.* per dozen.

Fine Gooseberries, Currants, and Raspberries, 3*s.* per dozen.

Fig, Medlars, Quinces, Walnuts, and Mulberries, 2*s.* each.

Filberts, new thin-shelled, Red and Cob Nuts, 3*s.* per dozen.

Fine strong Vines from eyes, and layers in pots, 2*s.* 6*d.* to 3*s.* 6*d.* each. [of all kinds.

A large assortment of Ornamental Trees and Evergreen Shrubs

Albion Nursery, Stoke Newington, London.—Jan. 29.

GERMAN STOCKS, ASTERS, ETC.

DO NOT PURCHASE MORE SEEDS THAN YOU REQUIRE.

JAMES TYNAN begs to offer FLOWER SEEDS of the choicest kinds in packets to suit the wants of purchasers not requiring them to take large quantities in order to obtain the best varieties.

TRUFFAUT'S PÆONY-FLOWERED ASTERS, the finest grown.—20 varieties in separate colours, in packets, 2*d.* each, any number sent; the same mixed in packets, 3*d.* and 6*d.* each.

NEW CHRYSANTHEMUM-FLOWERED ASTERS.—5 varieties in separate colours, 4*d.* each; the same mixed in packets, 6*d.* each.

FINEST GERMAN STOCKS.—24 varieties in separate colours, 2*d.* each; the same mixed in packets, 3*d.* and 6*d.* each.

Finest large-flowering, 20 varieties in separate colours in packets, 2*d.* each; the same mixed in packets, 3*d.* and 6*d.* each.

DOUBLE GERMAN WALLFLOWER.—6 varieties, separate colours, packets, 3*d.* each; the same mixed, packets, 3*d.* and 6*d.* each.

Very fine PHLOX DRUMMONDI.—In pckts. 4*d.* and 6*d.* each.

The choicest CALCEOLARIA, 6*d.* and 1*s.* per packet.
,, CINERARIA, 6*d.* and 1*s.* ,, ,,
,, GLOXINIA, .. 1*s.* ,, ,,
,, PRIMULA, 6*d.* and 1*s.* ,, ,,
Agent for SMITH'S BALSAMS 1*s.* ,, ,,

Selections of FLOWER SEEDS sent post free:—

No. 1.—50 packets	12*s.*	6*d.*
No. 2.—25 packets	6	3
No. 3.—12 packets	3	0

Large packets, or by the ounce, at prices equally moderate.

JAMES TYNAN, Importer of Continental Seeds, Seed Warehouse, 68, Great George Street, Liverpool.

BEAUTIFUL NEW TORENIA.

JOHN AND CHARLES LEE are now prepared to send out their beautiful new TORENIA PULCHERRIMA, which has been so much admired. It is figured in the present Number of Henderson's "Illustrated Bouquet," and undoubtedly surpasses all other Torenias by the great contrast it exhibits in the rich dark velvet, approaching to black, of the side lobes, and the pure white of the lip.

Dr. Lindley thus describes it in the *Gardeners' Chronicle* of October 30, 1858:—"We have received from Messrs Lee of the Hammersmith Nursery a singularly beautiful variety of the favourite Torenia asiatica. The tube of the corolla and its eye are an intense purple violet; the two side lobes are the same colour, fading at the edge into pure violet; the upper lobe is pale violet; the lower is white, with a purple oblate blotch at the point. This variety puts the old original kind quite out of the field."

Price 10*s.* 6*d.* The usual discount to the Trade.

Nursery and Seed Establishment, Hammersmith, London.

THE FAMOUS PINUS DON PEDRI.—This noble Pinus is one of the long-leaved Weymouth tribe, and is spoken of by Dr. Lindley (see *Gardeners' Chronicle*, March 27, 1858,) as a "magnificent novelty." Mr. Gordon, in "The Pinetum" (page 231), says, "A noble tree, rivalling Pinus Lambertiana, and growing 140 feet high at an elevation of from 11,000 to 12,000 feet. It will no doubt be hardy, coming, as it does, from so great an elevation and a cold climate."

The undersigned is now prepared to supply stout Seedling plants in pots, raised last summer, at 21*s.* each, or 9*l.* 9*s.* per dozen. The usual allowance to the Trade.

J. HENCHMAN, Edmonton, London.

"JEYES'S CONQUEROR PEA;" 3*s.* 6*d.* per Quart. —This remarkable Pea was sent out to a few private growers a few years since, and it has established its own reputation so much, that although I have kept on increasing my supply every year, I have always had to deal it out with great caution, lest my regular customers should not be supplied; and long before the season for sowing was over I have been sold out, and had to turn away many scores of customers.

For Testimonials and descriptions see *Gardeners' Chronicle* of Jan 8. The following gentlemen have permitted me to say they consider it the very best Pea in cultivation:—Mr. Mackie, Delapre Abbey, Northampton; Mr. Tanton, Moulton Grange, Northampton; Mr. Judd, Althorp Park, Northampton; Mr. Thos. Watts, Market Gardener, Northampton; Mr. John Moring, Market Gardener, Northampton; and hundreds of others.—It can be had genuine of Messrs. NOBLE & Co., Fleet Street, London; Messrs. FLANAGAN & SON, Mansion House St., London; Messrs. NUTTING & SON, Barbican, London; and all respectable Seed-merchants in the United Kingdom.

18, Sheep Street, Northampton.

THE READING ONION.

THE TRUE READING ONION is so highly esteemed that SUTTON & SONS have annual demands for large quantities of Seed from all parts of the kingdom; the town of Reading having been famed for Onion Seed for upwards of a century.

Besides many similar communications the following have been received quite unsolicited:—

From Mr. JAS. M'INTOSH, *Gardener to the Duke of Buccleugh, at Drumlanrig.*

"Your Onion is particularly fine."

From the Rev. F. T. SCOTT, *Sibertswold Vicarage, near Dover.*

"The seeds of last year gave great satisfaction, especially the Onions, which were superb."

From the Rev. J. A. CARR, *Belshford Rectory, Horncastle.*

"Your Onions are the largest and best I ever grew or saw."

From Mr. W. ROBINSON, *Gardener at Atherstone, Sept.* 10, 1858.

"The seeds I have had from you for the present year satisfied me to the utmost, the Onions, Carrots, and White Cos Lettuce especially."

From Major J. RICHARDSON, *Willowmead, South Molyneux, Otago, New Zealand, Feb.* 2, 1858.

"Before asking you to pack up my present order, I must state that those with which you furnished me before were universally approved. I might almost say that not one seed failed. Even the Onion, so very seldom successful here, was not an exception."

From Capt. FRANCIS T. BROWN, *Peny-Maer, Hay, Jan.* 29, 1858.

"I hope the seeds will do as well as last year, which were all good. The Onions were the finest I ever saw in England."

From Mr. DURY, *Master of Clutton Union, Somerset.*

"I have grown your Lettuce, Leeks, and Reading Onion, the like of which I never saw before."

N.B. Fine new Seed is now selling by the undersigned at 4*d.* per ounce (8*d.* free by post), or much cheaper in large quantities. Carriage free.

SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

CHRYSANTHEMUMS—CHRYSANTHEMUMS.

J. H. BIRD, F.H.S., NURSERYMAN, Stoke Newington, the largest grower and most successful exhibitor of the Chrysanthemum in the British Empire, begs to call the attention of the lovers of the above beautiful autumn flower to his matchless collection, the stock of which amounts to upwards of 50,000 plants. Amongst them will be found the following new and rare varieties:—Admirable, Aimée Ferrière, Augustine, Constantine, Louisa, Louis Bonamy, Madame Leo, Norfolk Hero, Progne, Raymond, Beauté de Nord, Dr. Maclean, Queen of England, Plutus, Alfred Salter, Stellaris globosa, Beauty, Themis, Dupont de l'Eure, &c.

J. H. B. can supply strong plants, one dozen for 6*s.*; or five dozen in 30 varieties, containing two of each variety, for 1*l.*; or he can supply 100 plants in 50 varieties, two of each variety, for 1*l.* 10*s.* Also POMPONES in great variety; 50 Pompones in 25 varieties, two of each variety, for 10*s.*; or 100 in 50 varieties, two of each variety for 1*l.* Strong plants of the beautiful new Pompone the Golden Cedo Nulli, 5*s.* each, will be ready in March with the usual allowance to the Trade. Every order will be accompanied by a popular work on the Chrysanthemum.

Post-office Orders payable to J. H. BIRD, Stoke Newington, will be immediately attended to.

CHRYSANTHEMUM TRICOLOR BURRIDGEANUM. CHRYSANTHEMUM TRICOLOR VENUSTUM.

F. K. BURRIDGE, SEED GROWER, Lexden Road, Colchester, has much pleasure in inviting the special attention of the Seed Trade to the above-named new Hardy Annuals, which he now offers for the first time, believing they will be found among the finest novelties of the season. The variety Burridgeanum differs from the old C. tricolor in having a fine crimson ring surrounding the yellow circle next the eye of the flower, the rest of the ray being snow white. The variety venustum has the ray florets of a deep reddish purple or plum colour for about one-half their length, shading into yellow at the base, and stained on the under side with purple. Both varieties are striking objects in the flower border, and from their bold conspicuous character, free blooming qualities, and perfect hardiness, together with their adaptability for bouquets, F. K. B. confidently predicts that they will become universal favourites.

A beautifully-coloured group of the two varieties has been prepared, and may be had on application, price 1*s.*; or gratis to Purchasers of 1 oz. of seed.

N.B. The Botanical Magazine for the present month (Jan. 1859), contains a coloured plate of the above.

SEEDS.

BASS AND BROWN'S New SEED CATALOGUE (28th annual edition) will be supplied free on application.

It this year contains much descriptive information, with copious remarks on culture, &c., and a drawing of their Improved Custard Vegetable Marrow, totally distinct from the one figured in the periodicals of last year. It also contains lists of choice Bulbs for spring planting, with various other choice Bulbs in pots.

VEGETABLE SEEDS (ASSORTED COLLECTIONS).

These for quality and selection of sorts will not be surpassed. The names of sorts contained in the three largest collections appear in the Catalogue.

No. 1 Collection	.. .. ..	£3	0*s.* 0*d.*
No. 2 ,,	.. .. ..	2	0 0
No. 3 ,,	.. .. ..	1	5 0
No. 4 ,,	.. .. ..	0	15 0
No. 5 ,,	.. .. ..	0	10 6

Goods (20*s.* and upwards) carriage free to all stations in London, &c.—See Catalogue. Post-office Orders payable to BASS & BROWN, or to STEPHEN BROWN. Remittances requested from unknown correspondents.

BASS & BROWN, Seed Growers, &c., Sudbury, Suffolk.

JOHN KERNAN, SEEDSMAN, 4, Great Russell Street, Covent Garden, W. C., takes the opportunity of a new season to return his sincere thanks for the very extensive patronage he has for so many years experienced, and especially to express his warmest gratitude to all those ladies and gentlemen who, not content with repeated assurances of their own individual satisfaction, have, unsolicited, by their recommendations to their friends conferred an additional debt never to be effaced. He has now the honour to submit to their notice the following selection from his General List, which may be had free on application.

SEEDS OF VEGETABLES FOR EARLY SOWING.

PEAS, 1*s.* per quart.
Prince Albert
Early Emperor
Bishop's new Longpod
Fairbeard's Champion of England
Napoleon
Blue Scimetar
Victoria Marrow
And all other desirable vars.

BEET, 6*d.* per oz.
Fine London Red
Silver or Seakale

BORECOLE, 6*d.* per oz.
New Heading
And other varieties

BRUSSELS SPROUTS.
Best imported, 6*d.* per oz.

BROCCOLI, 1*s.* per oz.
Myatt's Early Purple Cape
Dancer's Early White
Chappell's Cream
Snow's True White Winter
And other varieties

CABBAGE, 6*d.* per oz.
Nonpareil
Shilling's Queen
Atkins's Matchless Dwarf
Enfield Market
And all the best varieties.

BEANS, 8*d.* per quart.
Early Mazagan
Sword Longpod
Johnson's Wonderful
Taylor's Windsor
Green Genoa
Dwarf French (of sorts), 1*s.* per quart
Scarlet Runners, 1*s.* per quart
And the best varieties worth cultivating.

CARROT.
Early French Horn, 6*d.* per oz.
,, Dutch, 6*d.* per oz.
Fine Surrey, 3*d.* per oz.
Altringham, 3*d.* per oz.
White, for agriculture, 1*s.* p. lb.
Hollow Crown Parsnip, 3*d.* p. oz.

CAULIFLOWER.
Mercer's Fine Pearly, 1*s.* p. oz.
London Particular, 1*s.* per oz.
Large Asiatic, 1*s.* per oz.
Walcheren, 1*s.* 6*d.* per oz.

CRESS, all the varieties.
Plain and curled, 1*s.* per qt.
Water Cress, 3*d.* per oz.

CUCUMBER.
All the best-known varieties, 3*d.* to 1*s.* per packet

ENDIVE, 6*d.* per oz.
Green curled
New Moss
Batavian

LEEK, 6*d.* per oz.
London Flag, and other vars.

LETTUCE, 1*s.* per oz.
Crystal White Cos, and all the choicest varieties

MELONS, 6*d.* per packet.
Seymour's Golden Perfection
Caubull
Beechwood, and other varieties saved from the finest fruit brought to this market.

ONION, 6*d.* per oz.
James's long-keeping fine white Spanish
Globe
Strasbourg
Deptford
Silver-skin
Tripoli
Blood Red
Two-bladed, for pickling

PARSLEY, 3*d.* per oz.
Myatt's extra curled
Hambro', or long-rooted
Giant

RADISH, 1*s.* 6*d.* per pint.
Kernan's olive-shaped scarlet, a new delicious variety, raised fit for table in 21 days on moderate heat, or over early Potato beds
Long Scarlet, 1*s.*, do.
Red and White Turnip, 1*s.*

SPINACH, of sorts, 1*s.* per qt.

SWEET HERBS of all descriptions, 3*d.* per packet.

TURNIPS, 3*d.* per oz.
Early Dutch imported
,, Six Weeks
,, Snowball and other varieties

POTATOES.
Kirk's true Ashleaf Kidney, 6*s.* per bushel
Fine Early Frame, 6*s.* per bush.
,, Oxford, 6*s.* ,,
,, Cockney, 6*s.* ,,
Walnut-leaved Kidney, 6*s.* per bushel
Early Shaw, 4*s.* per bushel
,, Regent, 4*s.* ,,
Fortyfold, 4*s.* ,,
Fluke and other varieties, 4*s.* per bushel

Agricultural and Flower Seeds of every denomination, of which a list may be had on application.
Aviary Seeds of all sorts.
Garlic, 4*d.*; Shallots, 4*d.*; Mushroom Spawn, 5*s.* per bushel
Budding and Pruning Knives, Russia Mats, Cuba Bass, and Guano
Seeds of all the best varieties of Currants, Gooseberries, Raspberries, and Strawberries, at 6*d.* per pkt.

JOHN KERNAN has much pleasure, in consequence of the satisfaction generally expressed, in continuing to offer his judgment and experience in the selection of the most indispensable and useful Vegetable, Agricultural, and Flower Seeds to any amount that may be required (parties naming anything in particular of which they would like a more abundant supply), the liberality of the discount being of course commensurate to that of the order, especially on Seeds for distribution amongst tenants and cottagers, the cultivation of which will be found to humanise the peasantry much faster than any other leading string to win their hearts to God and man.

Preparing for immediate publication, a treatise on the cultivation of the Sorghum, and on its properties as food for cattle, showing the immense benefits farmers will derive from substituting this Sugar-grass for Turnip and other winter fodder. Seed of the above, for sowing in March or April, 6*d.* per ounce. "See Treatise."

A list of Asters, Balsams, Calceolariæ, Stocks, &c., the finest imported, as well as of all other new and choice flower seeds, may be had on application.

Anemones, Gladioli, Liliums, Ranunculi, Tigridiums, Double Italian Tuberoses, Fruit and Forest Trees, Standard, Dwarf, and Climbing Roses.

30 hardy and showy California Annuals for immediate sowing, 5*s.*; 15 ditto, 2*s.* 6*d.*

A list of choice new Flower Seeds will be published in time for March and April sowing.

A mixture of Annuals, as recommended by Dr. Lindley for the front of shrubberies, 5*s.*

Asparagus, Seakale, and Rhubarb Roots, plants of all the best Strawberries, Oilcake, Locust Beans, and Lentils for fattening sheep.

ROSE NURSERIES, HERTFORD.

EDWARD P. FRANCIS begs to inform his patrons and the public that he has still on hand fine plants of all the best ROSES, either Standards, half Standards, or Dwarfs, worked low on the Manetti Stock, PRICED CATALOGUES of which he will be happy to forward on application.

E. P. F. takes this opportunity of announcing that he will be prepared to supply on and after the month of May next the following new Hybrid Perpetual Roses of 1859, at 7*s.* each, which have been carefully selected as good and desirable from amongst the numerous French varieties:—

Anna Alexieff	Empereur de Maroc
Stephanie Beauharnais	Armide
Ambroise Verschaffelt	Princesse Olympie
Impératrice Eugènie	Anna de Diesbach
Albert de Stella	Beauté de Rosyhem
Virginale	Comtesse Cecile de Chabrilland
Margottin	De la Mothe
Trouillard	Guinnoiseau
Vindrin	Beluze
Oger	Robichon
Guillot	Marest
Lacharme	Avoux and Crozy
Altesse Impériale	François Arago
Ardoisée de Lyon	Lord Elgin
[These two varieties had the Gold Medal as seedlings at Lyons]	Madame Bruny
	Orderic Vital
	Salomon
Comte de Beaufort, Boyan	Reine de la Cité
L'Oriflamme de St. Louis, Baudry	Francis the 1st
[These two are splendid new Roses]	Mignard
	Madame Jenny Vavin
	Oger
Docteur Bretonneau	Baltet frère

Full descriptive particulars of the above Roses will be issued shortly. The usual discount to the trade.

Rose Nurseries, Hereford.

CARTER'S SELECT LIST OF NOVELTIES OF MERIT FOR 1859.—The subjoined LIST OF SEEDS we have selected for recommendation from the general body of our Catalogue, as being either desirable new varieties, or old-established favourites highly improved by careful cultivation. All the undermentioned, whether saved in England or on the Continent, may be depended on as true to description: we have travelled the Continent during the past Autumn, and seen the plants in a growing state. The numbers prefixed refer to their position in our Catalogue.

(1891) CARTER'S TOM THUMB NASTURTIUM (Plate No. 5).—A new variety in colour and habit, particularly adapted for bedding, and also for growing in pots and ornamental vases; is the same colour as Tom Thumb Geranium, and the flowers are well thrown up above the foliage; very dwarf and compact in habit.

(1890) NEW DWARF SPOTTED NASTURTIUM (Plate No. 5).—This variety was offered last year for the first time, colour a bright golden orange, with a chocolate blotch at the base of each petal; habit the same as Tom Thumb, with which it harmonises admirably, their colours contrasting most brilliantly; both sorts are admirably adapted for bedding, as they continue in bloom for three months, or even more.

(1265) ŒNOTHERA DRUMMONDI NANA (Plate No. 2).—As its name indicates, it is a dwarf variety from Drummondi, introduced by us from Texas three years since. We had the pleasure of offering it last year; and the results have been most gratifying. It grows about 8 inches high, and is covered with a profusion of bright yellow flowers, many of which measure 4 inches in diameter; it continues in bloom from June to November.

(1246) NOLANA PARADOXA VIOLACEA (Plate No. 5).—The Nolana has long been a favourite annual; and this new variety is particularly pleasing; the flowers are larger than those of the old paradoxa; colour rosy violet.

(1122) LUPINUS HARTWEGI CŒLESTINUS (Plate No. 5) —This new variety is very distinct from all other kinds of Lupines, grows 1½ ft. high; colour, a delicate sky-blue, with pink edgings.

(773) FENZLIA DIANTHIFLORA (Plate No. 5). — This lovely Annual is of a beautiful rose-lilac colour, having five dark blood-coloured spots surrounding an orange-coloured eye in centre of each flower; it is of a very dwarf and compact habit, producing blossoms in profusion: it blooms through the summer months, and continues long in flower if sufficiently supplied with moisture. It has a fine effect in small beds, and is also well adapted for growing in pots or boxes for greenhouse decoration.

(1262) ŒNOTHERA BISTORTA VEITCHI (Plate No. 5).—This beautiful Œnothera is of a brilliant yellow colour with a blood-coloured spot at the base of each petal; it is one of the very best yellow-flowering plants for either bedding or rock-work, continuing in bloom nearly four months. It is figured, and highly commended by Sir W. J. Hooker, in Curtis's 'Botanical Magazine' of October 1858.

(1821) NEW MINIATURE STRIPED GOURD (Lagenaria vittata, Plate No. 5).—A remarkably handsome miniature species of the old Bottle Gourd, particularly adapted for ornamental trellis-work or the conservatory: the fruit when full grown is about 3 inches in circumference, shape very symmetrical, the neck and upper portion of the body are of a bright orange colour, and the lower half of a deep laurel green: it has also regular stripes of a cream colour from the apex to the base equidistant, about a quarter of an inch; will succeed well in any warm situation.

(785) GAILLARDIA HYBRIDA GRANDIFLORA (Plate No. 5). —This truly magnificent hardy herbaceous perennial blooms the first year, has been hitherto offered in plants only: it is the result of an hybridisation between Gaillardia aristata and picta, having the robust habit of the former with the brilliant colour of the latter: the flowers are nearly double the size of the old picta; and the plant is without doubt the finest of its class.

(310) COSMIDIUM BURRIDGI (Plate No. 6).—This we consider we are justified in stating to be the handsomest of the showy tribe of Coreopsis; the blossoms are large, and the colour a deep crimson copper with a broad margin of gold.

(1093) LOBELIA FORMOSA (Plate No. 6).—A large beautiful deep-blue variety of Lobelia, very dwarf in habit and well adapted for bedding.

(1133) LUPINUS NANUS ALBUS.—The old Lupinus nanus has long been a favourite for its neat appearance and general adaptability for bedding; and this, a white variety, forms a very agreeable contrast with it.

(1708) VISCARIA CŒLI-ROSA ALBA (Plate No. 6).—This is a pure white variety of the Old Viscaria cœli-rosa; forms an admirable edging, and beds excellently well.

(1711) VISCARIA DUNNETTI (Plate No. 6).—A new variety of the much-admired "oculata;" colour rosy blush with a dark eye: its general appearance is very attractive; and we can highly recommend it.

(1864) MARIGOLD, tall French Orange (Plate No. 6).—A fine tall Orange Double French Marigold, distinct from the old French varieties, having the beautiful colour of the Orange African; the petals are very broad.

JAMES CARTER & Co., 238, High Holborn, W.C.

VEGETABLE, FLOWER, AND AGRICULTURAL SEEDS.

WILLIAM BARNES'S CATALOGUE of the above is now ready, and may be obtained postage free, upon application. It will be found to contain every article of known value, among them some that cannot be excelled, the stock of which having been saved specially for himself by private and competent friends, he can recommend with the greatest confidence. Every article is warranted of the purest and most genuine kind, as well as very moderate in price.

Camden Nursery, Camberwell.

CHARLES CLARKE, NURSERYMAN, SEEDSMAN, &c., 179, Windmill Street, Gravesend, Kent; or home Nursery, Windmill Hill.

Fruit Trees and Forest do., in any quantities; full-trained Peaches, Nectarines, Apricots, &c., remarkably fine; large oushy Yews, Portugal and Common Laurels, and other Evergreens, very handsome and good colour; Rhubarb Roots, Sea-kale, Asparagus for forcing, pricked out Strawberry Plants, Globe Artichokes, &c. Prices very moderate. Cash or a reference is respectfully requested from unknown correspondents.

N.B. Spanish Chesnuts 4 to 5 feet, and Standard Roses, a great quantity very cheap.

WM. IVERY respectfully announces that his Select CATALOGUE of GARDEN and AGRICULTURAL SEEDS for 1859 is now ready, post free on application, containing none but the very best quality at moderate prices. W. I. has great pleasure in offering his Nonsuch Celery as the best in cultivation for crispness and flavour, not to be equalled by any other variety, 1s. per packet. This can also be obtained of the principal seedsmen in London. IVERY'S Nonsuch Lettuce Black Seeded White Cos, will stand one month longer than any other known without running to seed in hot weather, a very fine large Lettuce of exquisite flavour, blanching itself, 1s. 6d. per packet. W. I. begs to inform the Trade that he can now finish the supply of New Mushroom Spawn, of the best quality.—Hanover Nursery, Peckham, London, S. E.—Jan 29.

TANSLEY NURSERY, NEAR MATLOCK.

To GENTLEMEN PLANTING AND THE TRADE.

J. SMITH begs to offer his STOCK OF TREES AND SHRUBS, of various sizes, and in addition to his general stock of the leading kinds, he has this season to offer an Extra Stock of many hundred thousands of fine Larches, Scotch Firs, and Highland Pines; a large quantity of Evergreens, Privets, Mahonia aquifolia, and other plants for planting under cover. Many things are grown in large quantities, and will be sold on advantageous terms to the trade and gentlemen requiring large lots.—Catalogues sent free on application. The Nurseries are on the Mansfield and Nottingham roads, and 2 miles from Matlock Bridge Station on the Midland Railway.

MESSRS. WATERER AND GODFREY respectfully invite the attention of parties engaged in planting to the following list of very desirable plants, all of which may be seen growing in the open quarters of their Nursery, and are in the finest possible condition for transplanting:—

Araucaria imbricata, 9 to 12 inches, 5*l.* per 100; 40*l.* per 1000
,, ,, 1½, 2, 3, 4, 5, 6, and 8 feet high. Our stock of this plant exceeds 100,000
Wellingtonia gigantea, stout handsome plants from seed, 84*s.* per dozen; 25*l.* per 100. These are all in the open ground, and are believed to be the finest lot of seedling plants in the Trade.
Cedrus Deodara, 1½ to 2 feet, 18*s.* per dozen; 6*l.* per 100
Do. 3, 4, 5, 6, 7, 8, 10 and 12, and 15 feet. Our stock of Deodars at the present moment occupies several acres of land; they have been constantly removed, and with fair usage not one in a thousand would fail. We offer them on very advantageous terms either in large or small quantities
Cedrus atlantica, 4, 5, 6, and 7 feet
Cupressus macrocarpa, magnificent plants, 7, 8, and 10 feet high
,, Lawsoniana, stout handsome plants from seed, 18 inches, by the dozen or 100
Abies nobilis, from imported seed, 6*l.* 6*s.* per doz.; 40*l.* per 100
,, do. 1, 2, and 3 feet high
,, Nordmanniana, a large number of beautiful plants, all from seed, 2, 3, 4, 5, and 6 feet high
,, Pinsapo, do. do.
[We believe we are justified in stating our stock of the three last-mentioned Firs offers a selection to be met with in no other Nursery.]
,, Douglasi, 6, 7, 10, and 12 feet
,, orientalis, 3, 4, 5, and 6 feet
Pinus Benthamiana, stout seedling plants, about 1 foot, 18*s.* per dozen; 5*l.* per 100; 40*l.* per 1000. Unquestionably the finest of all the long-leaved Californian kinds, and well known to be perfectly hardy. It is the most valuable of all for timber.
Juniper, Chinese, 2, 3, 5, 7, 8, and 10 feet high
Irish Upright, 3, 4, 5, 6, 7, and 8 feet. The Irish and Chinese Junipers are grown by us to a very large extent
Thuja aurea.—This plant originated in our Nursery, and our stock of it offers a choice of many hundred specimens from 1½, 2, 3, 4, and 5 feet high, and measuring from 2 to 10 and 15 feet in circumference. Nothing can well exceed the beauty of these plants, and certainly are to be met with in no other Nursery
Thuja gigantea, stout seedling plants, 1½ to 2 feet high
,, Wareana, 3, 4, 5, 6, 7, and 8 feet
Thujopsis borealis, handsome plants, in quantity, 1½ & 2 ft. high
Taxus, Yew, Common English.—A large quantity, and of all sizes up to 5, 6, and 7 feet
,, Irish Yew, 4, 5, 6, 7, and 10 feet. Many thousands of these beautifully formed plants grown to one stem
,, Golden Yews in large quantities and of all sizes up to 6, 7, and 8 feet
We also have them worked on the Common and Irish Yew as Standards, with heads from 12 to 15 years' growth
Holly, Variegated, Scottica, laurifolia, &c. We hold probably the largest stock of good sized variegated Hollies in the kingdom, especially of the better kinds of silver and gold striped
Rhododendron ponticum, for cover, stout plants, 1½ to 2½ feet, by the 1000. All the well-known proved hardy late blooming kinds, in any quantity, at from 30*s.*, 42*s.*, to 84*s.* per dozen
Standard Rhododendrons of all kinds
Azaleas, stout bushy plants, covered with bloom buds, from 18 inches to 2 feet high, and of all colours, 9*s.*, 12*s.*, 18*s.*, and 24*s.* per dozen; 50*s.*, 75*s.*, to 100*s.* per 100
Hardy Heaths, a first-rate collection, at 35*s.* per 100; 15*l.* p. 1000
Roses, fine Standards, of the most popular kinds, at very low prices.

As well as the above, we are very large holders of the ordinary kinds of Nursery Stock, which may be judged from the fact that the Nursery far exceeds 100 acres in extent of all such things as Laurels, Box, Lilacs, Limes, Purple Beech, and the commoner descriptions of Evergreens and Deciduous Flowering Shrubs. An enormous stock of Fruit and Forest Trees are also grown extensively.

Goods are delivered free to London, Reading, or Reigate. The Nursery is reached in an hour from Waterloo, and conveyances are always to be had at the Woking Station.

CATALOGUES, Priced and Descriptive, will be sent on application, enclosing one postage stamp, to

WATERER AND GODFREY, Knap Hill, Woking, Surrey.

LAING'S MAMMOTH RED CELERY.—This is the largest yet grown, attaining the extraordinary weight of from 10 to 12 lbs., and is perfectly solid. It is nearly perennial in its habit, as it will not under any circumstances run to seed the first season. In flavour it is unsurpassed, and may be deemed a new feature in the garden from the fact that it may be had for use all the year. Packets free per post, 1*s.*; large trade packets, 3*s.* 6*d.* Postage stamps received in payment.—YOUELL & Co., Royal Nursery, Great Yarmouth.

GLENNY'S LIST OF THE BEST SIXTY SEEDS for amateurs, free on receipt of a directed envelope. GLENNY'S IMPROVED BALSAM, six classes, 37 stamps; mixed 13; Dungannon House Cineraria, 13 or 37; East Neuk of Fife Cabbage, Haslem's Solid Maltese Cos Lettuce, Black-seeded ditto, Linsay's Beet, Pine Apple do., True Incomparable dwarf Celery, Oliver's ditto, 7*d.* per packet.—G. GLENNY, Horticultural Agent and Valuer, Fulham, S.W.

A PRIZE FOR ENGLISH GARDENERS.

NEW "DEFIANCE CABBAGE," a neat distinct variety.—Its unrivalled excellence for being very early, coming to perfection quick, of dwarf habit, does not run to seed, and flavour not to be surpassed make it an acquisition to every one. Numerous local testimonials could be given.

The following is from Mr. HILL, Gr. to W. R. SNEYD, Esq., Keel Hall. "Sir—Your 'Defiance Cabbage' has been grown the last two seasons by the side of several of the leading kinds, and foundso superior in every respect, that for future we intend growing no other kind. "W. HILL."

Post free on receipt of Cash or Postage Stamps at 2*s.* per oz. To be issued this season in February in 1 oz and ½ oz. packets only, by GEORGE JENKINSON, Nurseryman and Seedsman, Newcastle, Staffordshire.

SEEDLING FOREST TREES, &c.

			Per 1000.—*s.*	*d.*
3,000,000	1-year	Larch	1	0
1,000,000	,,	Scotch Fir	0	10
500,000	,,	Alder	1	0
200,000	,,	Birch	1	6
200,000	,,	Elms	1	6
150,000	,,	Ash	1	6
100,000	,,	Sycamore	1	6
300,000	,,	English Oak	2	6
10,000	,,	Evergreen Oak	40	0
20,000	,,	Horse Chesnut	5	0
40,000	,,	Chinese Arbor-vitæ	10	0
70,000	,,	Cupressus horizontalis	8	0
80,000	,,	Pinus Laricio	10	0
100,000	,,	Pinus austriaca	6	0
300,000	,,	Pinus maritima	2	6
20,000	,,	Common Laurel	17	6
20,000	,,	Crab Apple	3	6
250,000	,,	Quick	2	0
10,000	,,	Laburnum	2	6
10,000	2-year	do.	4	0
1,000,000	,,	Norway Spruce Fir	1	6
40,000	,,	White Spruce Fir	4	0
50,000	3-year	Silver Fir	7	0
800,000	2 ,,	Scotch Fir	1	6
100,000	1 ,,	bedded Scotch Fir	2	6
100,000	2 ,,	Beech	3	0
60,000	2 ,,	Birch	3	0
30,000	2 ,,	Alder	3	0

The Subscriber begs to call attention of his friends and the public in general to the above stock of SEEDLINGS, and is happy to intimate to them that they are generally fine in quality, and trusts they will give satisfaction. Any orders, large or small, will be promply attended to. All delivered free of expense at Dublin, and thence half carriage paid to any part of England, &c.—Apply to MICHAEL BURKE, Drumlargan Nursery, Summerhill, county Meath, Ireland.

UNEQUALLED NEW CUCUMBER, "DR. LIVINGSTONE."—This is one of the finest long hybrid Cucumbers for exhibition purposes that has ever yet been offered to the public; it is a splendid black spine, length 22 to 26 inches, a very free setter, and an abundant bearer. Price 2*s.* 6*d.* per packet.

Also the following fine CUCUMBERS can be supplied:—

	Per packet—*s.*	*d.*		Per packet—*s.*	*d.*
General Outram	2	0	Sunderland Wick	1	0
Perfection	1	0	Hunter's Prolific	1	0
Sir Colin Campbell	1	0	Mill's Jewess	1	0
General Canrobert	1	0	Cheltenham Surprise	1	0
Phenomena	1	0	Manchester Prize	1	0
Ipswich Standard	1	0	Sion House (true)	1	0
Lord Kenyon	1	0	Cuthill's Black Spine	1	0
Essex Hero	1	0	Conqueror of the West	1	0
Victory of Bath	1	0	Lynch's Star of the West	1	0
Gordon's White Spine	1	0	&c.	&c.	

"QUEEN OF THE WEST" MELON, a superb new variety, green flesh, very handsome in appearance, beautifully netted, and excellent in flavour. It obtained several first prizes during the past season. This Melon has proved itself to be one of the best varieties ever yet offered for early forcing. It sets well, and will carry an immense crop. Fruit weighing 2½ lbs. was cut on the 20th of April, and the plants continued bearing abundantly until the end of July. Seeds 2*s.* 6*d.* per packet.

NEW MELON "GENERAL HAVELOCK," sent out for the first time last season. It is a green flesh, of a very handsome shape, and beautifully netted; a very thick substance, thin skin, of a melting and most delicious flavour, and an abundant bearer. Weight from 3 to 4 lbs. It is very hardy, and may be grown as easily in a cold frame in the summer as a Vegetable Marrow. Seed 1*s.* per packet.

Also the following fine varieties of MELONS:—

	Per packet—*s.*	*d.*		Per packet—*s.*	*d.*
M'Ewen's Arundel Hybrid Scarlet-flesh	1	0	Bowood	1	0
M'Ewen's Arundel Hybrid Green-flesh	1	0	Victory of Bath	1	0
Monro's Crystal Palace Hero	1	0	Cashmere	1	0
Monro's Golden Gage	1	0	Camerton Court	1	0
The Queen	1	0	Beechwood	1	0
Orion	1	0	Windsor Prize	1	0
Golden Drop	1	0	Emperor	1	0
Green Gage	1	0	Fleming's Hybrid Persian	1	0
Bromham Hall	1	0	Blackall Green-flesh	1	0
Incomparable	1	0	Bailey's ,,	1	0
Golden Ball	1	0	Snow's Hybrid	1	0
			Golden Perfection	1	0
			Scarlet King	1	0

A packet of any var. of Cucumber marked at 1*s.* per packet sent with a packet of the Dr. Livingstone Cucumber for 3*s.*

A packet of any var. of Melon marked at 1*s.* per packet sent with a packet of the Queen of the West Melon for 3*s.*

Extra fine mixed Hollyhock Seed, saved from all named vars., 1*s.* per packet.

Early Emperor Celery, the finest ever yet sent out, 1*s.* p. pkt.
Tiley's Solid White Celery, 6*d.* per packet.
Delphinium formosum, 6*d.* per packet.
Digitalis, or Foxglove Seed, 6*d.* per packet.

A remittance must accompany every order in Cash or Penny Postage Stamps, when the whole or any part, as the case may be, will be immediately sent.

EDWARD TILEY, NURSERYMAN, SEEDSMAN, AND FLORIST, 14, Abbey Church Yard, Bath.

GIANT DRUMHEAD CABBAGE SEED FOR SALE.—New seed grown with great care, to be had in 14 lb. bags, at 15*s.* per bag, or 4*l.* 5*s.* 6*d.* per cwt., free to London. All orders to be prepaid by Post-office Orders on Maidstone Office. The Advertiser has also 6 acres of Cabbage growing of the above stock open to inspection, and would like to treat for a part or the whole of the produce thereof.—Address H. STONHAM, Detling, Maidstone, Kent.

RICH BOG AND LOAM.—Gentlemen and Nurserymen will do well to apply early for the above to refresh their American beds. To be had in any quantity upon reasonable terms, by land or water carriage.

ROBERT NEAL, Nurseryman, Wandsworth Common, Surrey.

REIGATE SILVER SAND, best quality for Florists, 16*s.* per ton: less quantities, 1*s.* 6*d.* per bushel; delivered to any London Wharf or Railway. Leaf Mould, Peat, and Loam of various kinds, in large or small quanties. Sacks for Sand 1*s.* 9*d.* each, on hire 6*d.* each (five hold a ton).—JOHN KENNARD, Purveyor to her Majesty, Swan Place, Old Kent Road, S.E.

FLOUR, Warranted Unadulterated, free to any part of London (not less than 14 lbs.); Whites, for pastry, at per bushel (56 lbs.), 8*s.* 4*d.*; households, for bread-making, 7*s.* 8*d.*; seconds, 7*s.* 0*d.*; Wheatmeal, for brown bread, 7*s.* 6*d.*; best fine and coarse Scotch Oatmeal.—Address, HORSNAIL & CATCHPOOL, Bullford Mill, near Witham, Essex, or 97, Goswell Road, City Road, E.C. Directions for bread making gratis. Terms. cash. Bags lent. German yeast. A half sack (140 lbs.), or upwards, free to any railway station within 200 miles.

TO PIG AND POULTRY FEEDERS AND MILLERS.

CHICKEN RICE, 7*s.* 6*d.* per cwt., in bags 1½ cwt. each. SCREENED RICE, 10*s.* per cwt., in bags 1½ cwt. each. RICE MEAL, 6*s.* 9*d.* to 8*s.* 9*d.* per cwt. RICE for grinding. An allowance per Ton.—Sold for Cash by W. & R. JUPP, 6, Cross Lane, St. Mary-at-Hill, Eastcheap, E.C.

GENUINE TOBACCO PAPER FOR FUMIGATING.

H. APPLEBY (Foreman to Messrs. Ivery & Son, Nurserymen, Dorking, Surrey), begs to inform his friends and the public that he now offers the above article at a reduced price. Sold in 4-lb. packets, 1*s.* 3*d.* per lb. A great reduction to the trade; price on application. For testimonials that will guarantee its quality, see *Gardeners' Chronicle*, Dec. 11, 1858, page 920.

SHEET IRON POTS FOR FUMIGATING, 3*s.* 6*d.* each.

N.B. All Orders to be accompanied with a Post-office Order, payable to HENRY APPLEBY, Dorking, Surrey.

GENUINE ROLL TOBACCO CLOTH.

WARRANTED EQUAL IN STRENGTH TO TOBACCO.

JOSEPH BAKER, 10, Gough Square, Fleet Street, E.C., having dealt upwards of 20 years in the above, can confidently recommend it as the best article for destroying the Fly. 1*s.* 4*d.* per lb., over 10 lbs. 1*s.* Post-office Orders, payable Strand Office.

JAMES PHILLIPS AND CO.'S PRICES of GLASS for the present month.

HORTICULTURAL GLASS, STOCK SIZES, in 100 feet boxes.

	3rds.	4ths.
11 by 9, 12 by 9, 13 by 9, 14 by 9 .. / 12 ,, 10, 13 ,, 10, 14 ,, 10, 15 ,, 10 ..	14*s.* 6*d.*	12*s.* 6*d.*
13 ,, 11, 14 ,, 11, 15 ,, 11, 16 ,, 11 .. / 14 ,, 12, 15 ,, 12, 16 ,, 12, 17 ,, 12 .. / 18 ,, 12, 19 ,, 12, 16 ,, 13, 17 ,, 13 .. / 18 ,, 13, 19 ,, 13, 20 ,, 13, 21 ,, 13 .. / 16 ,, 14, 17 ,, 14, 18 ,, 14 .. .. / 19 ,, 14, 20 ,, 14, 21 ,, 14	16*s.* 6*d.*	14*s.* 0*d.*

PACKED IN CASES.

200 feet	£2 2 0	16 oz.
300 feet	3 3 0	
200 feet	2 18 0	21 oz.

ORCHARD HOUSE SIZES,
As supplied by us to Mr. Rivers.

		16 oz.	21 oz.
20 in. by 12 in. / 20 in. by 13 in. / 20 in. by 14 in. / 20 in. by 15 in.	Common	14*s.* 0*d.*	£1 1*s.*
	Superior do.	16 6	1 5
	English Glass	18 0	1 9

SMALL SQUARES.—Per 100 feet.

6 by 4 / 8 ,, 6 / 10 ,, 8	6½ by 4½ / 8½ ,, 6½ / 10½ ,, 8½ ..	7 by 5 / 9 ,, 7	7½ by 5½ / 9½ ,, 7½	11 6 / 12 6

JAMES PHILLIPS AND CO.,
130, Bishopsgate St. Without, London, E.C.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz SHEET GLASS of British Manufacture at prices varying from 2*d.* to 3*d.* per square foot for the usual sizes required, many thousands of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES, and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

HORTICULTURAL GLASS—JUNE TARIFF.

THOMAS MILLINGTON'S reduced Tariff of GLASS, &c.

6 by 4, 7 by 5, 8 by 6, 9 by 7 } 16 oz. to the foot, 11*s.* 6*d.*
6½ by 4½, 7½ by 5½, 8½ by 6½, 9½ by 7½ } per 100 feet.

In 100 boxes,—4ths quality, 12*s.* 6*d.*; 3ds do., 14*s.* 4*d.*

10 by 8,	12 by 9,	12½ by 10½,	14½ by 10½,	13 by 11
10½ by 8½,	12½ by 9½,	13 by 10,	15 by 10,	13½ by 11½
11 by 9,	13 by 9,	13½ by 10½,	12 by 11,	14 by 11
11½ by 9½,	12 by 10,	14 by 10,	12½ by 11½	.. ..

20 by 12 / 20 by 13 / 20 by 14 / 20 by 15	per 100 feet	16 oz.	21 oz.
	Common ..	16*s.* ..	24*s.*
	Superior .	18*s.* ..	27*s.*

All Boxes included.

Orchard House sizes as supplied to Mr. Rivers.

Hartley's improved Rough Plate Glass from ⅛ to ⅝ in thickness.

Coloured Glass in great variety, at 9*d.* and 1*s.* per foot.

Paints, Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, Lamp Glasses, &c.

87, Bishopsgate Street Without, same side as Eastern Counties Railway.

BLOSSOM OF WALL-FRUIT TREES.—Worsted Net, so very generally approved, 7*d.* per square yard—will last 10 years; plan of fixing it sent free. All kinds of Garden, Fishing, and Sheep Net, made by machinery, very cheap.

GALVANISED WIRE-WORK, less than 2-inch mesh, 16-gauge, 8*d.* per square yard; mesh 3 inches by 2 inches, for Poultry, 5*d.* per square yard; for Sheep, 4*d.* per square yard.

TRANSPARENT SHEETING, near 2 yards wide, 1*s.* per yard run.

WATERPROOF CAPES, long enough to protect a man from wet while stooping down, 3*s.* each; Police Capes, 18*s.* to 24*s.* per doz.; Tarpaulings for Carts, 12*s.*; Waggons, 25*s.*; Sheepskin Coats, 8*s.* each; Roofing Canvas, 1*d.* per square foot, 6 feet wide.

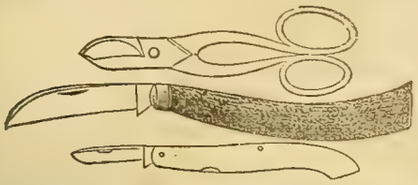
R. RICHARDSON, White Horse Factory, Bidborough Street, Judd Street; Office, 90, Euston Road, London.

GLAZIERS' DIAMONDS for CUTTING HORTICULTURAL and other GLASS, to be had of the Wholesale Manufacturer, JOHN EDWARDS, 20, Sharp's Alley, West Smithfield, London, E.C. Prices from 10*s.* to 27*s.* 6*d.*

LOOMES AND CO., Whittlesea, MANUFACTURERS OF BRICKS, TILES, POTTERY, &c., beg to call attention to their new CABLE PATTERN GARDEN BORDER EDGING, which not only surpasses others in appearance and durability, but is free from the dangerous points and sharp edges of most.—Price, delivered on any Railway at Peterborough, 5*d.* per yard.

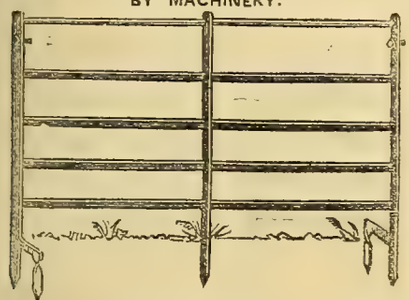


PAXTON WORKS, SHEFFIELD, ESTABLISHED 1738.



SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.—Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

WROUGHT IRON HURDLES AND FENCING MADE BY MACHINERY.



THOMAS GREEN, Smithfield Iron Works, begs to call the attention of parties requiring machine-made Hurdles, which are a very superior article, as well as being both cheap and durable. The above cut represents a Hurdle 6 feet long by 3 feet 6 inches high; the top bar § of an inch diameter, the four low bars 1 inch by ¼ inch, the uprights 1¼ by ¼ inch. The Prongs fasten 12 inches in the ground. Price 4*s.* 6*d.* each, or 2*s.* 3*d.* per yard. If the four lower bars were made of ½ inch diameter instead of 1 inch by ¼ inch iron, the price would be 4*s.* 2*d.* each, or 2*s.* 1*d.* per yard. The above are the lowest net cash prices at the Works.

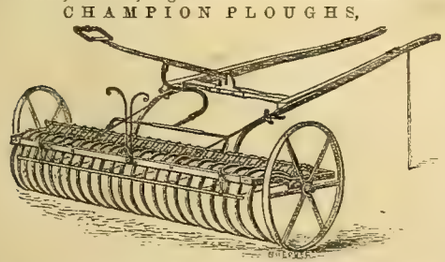
THOMAS GREEN, Smithfield Iron Works, Leeds, Yorkshire, Manufacturer of every description of Iron and Wire Fencing, Iron Work of all kinds, both plain and ornamental, Entrance Gates, Palisading, Tomb Railing, Iron Bedsteads, &c. Illustrated Catalogues may be had free on application at the Works.

N.B. Also Patentee and Sole Manufacturer of GREEN'S Patent Lawn Mowing, Collecting, and Grass Rolling Machines, which have proved to be the best in all cases of competition.

HOWARDS' PRIZE IMPLEMENTS, 1859.

JAMES AND FREDK. HOWARD, Britannia Iron Works, Bedford, beg to direct attention to their

CHAMPION PLOUGHS,



For which they received All the First Prizes last offered by the Royal Agricultural Society of England, viz.:—

The First Prize for the best Plough for general purposes.
The First Prize for the best Plough for light land.
The First Prize for the best Plough for heavy land.

The only Prize ever offered by the Society for the best Double Breast or Ridging Plough was also awarded to J. & F. HOWARD.

J. & F. HOWARD have discontinued troubling the Public with a long List of Prizes awarded to their Implements, but they would just state that for PLOUGHS, HARROWS, and HORSE RAKES, they have for several years gained every Prize for which they have competed.

PLOUGHS.

P PLOUGH, with two wheels, for light work ..	£4 7 6
PP PLOUGH, ,, for general purposes	4 12 6
SKIM COULTER	£0 5 6

STEEL BREASTS, 7*s.* and 7*s.* 6*d.* extra.

HARROWS.

A Set of Three 4-Beam HARROWS, with Whippletree, recommended as general Seed Harrows, 9½ feet wide, marked No. 12	£3 14
A Set of Three 4-Beam HARROWS, with Whippletree, adapted for 3 Horses, 10 feet wide, marked No. 11 ..	4 4

HORSE RAKES.

Price of small size RAKE, marked A, with 24 iron teeth, extreme width 7½ feet	£7 10 0
Ditto, with Steel Teeth	8 0 0
Price of large size, marked B, with 28 iron teeth, extreme width 8½ feet	8 0 0
Price of large size, marked B, with steel teeth ..	£8 10 0
Price of extra large size, marked C, with 24 steel teeth, extreme width, 8½ feet	10 10 0
Price of a Set of 15 Prongs, to be attached to the above when used as Weed Extirpators	1 10 0

Free Delivery to Birmingham, Bristol, Derby, Gloucester, Lincoln, Liverpool, London, Manchester, Norwich, Nottingham, Retford, Wisbeach, and Worcester; or to Dublin, Edinburgh, Glasgow, and other parts at fixed rates.

HOWARDS' NEW CATALOGUE, containing prices and description of their Patent Ploughs, Harrows, Horse Rakes, and other Implements, including Smith's Steam Cultivators, for which they received at Chester the Gold Medal of the Royal Agricultural Society of England, sent free on application to

J. & F. HOWARD, Britannia Iron Works, Bedford.

COTTAM & COMPY., Engineers, Founders, &c.,

2, WINSLEY STREET, LONDON, W.



A SHOW ROOM DEVOTED ENTIRELY TO ARTICLES OF HORTICULTURE.

THE NEW ILLUSTRATED CATALOGUE UPON APPLICATION.

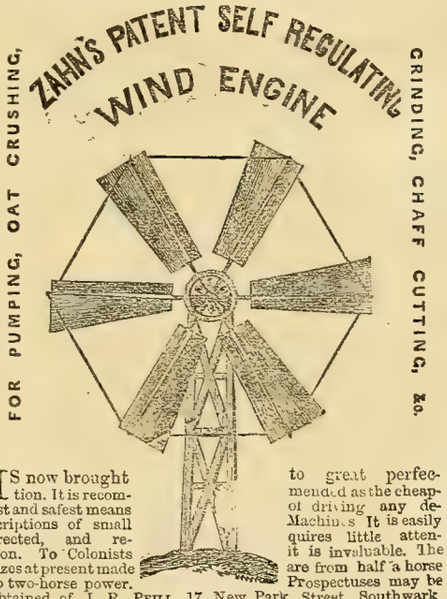
Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	,, Syringes	Garden Bordering
Hot-water Apparatus	Ornamental Wire Work	Hurdles	,, Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

Iron Hurdles, Strained Wire Fencing, Game Netting, &c.

Every description of Plain, Ornamental, Cast and Wrought Iron, and Wire Work.

EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

N.B. COTTAM AND CO. beg to make it known that there is no longer an entrance to their establishment from Oxford St., but that they have made a second entrance from 2, Winsley St. Oxford St., W., by the side of the old entrance to their works.

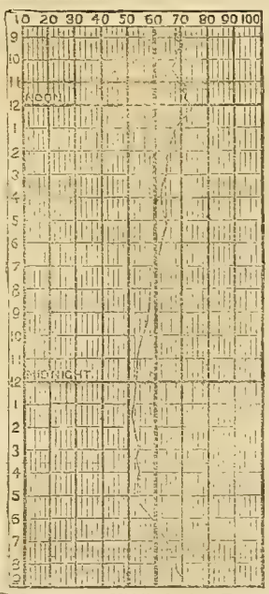


IS now brought to great perfection. It is recommended as the cheapest and safest means of driving any description of small Machines erected, and requires little attention. It is easily repaired at present made are from half a horse power. Prospectuses may be to two-horse power. obtained of J. R. PEILL, 17, New Park Street, Southwark where a Wind Engine in full work can be inspected.

TO HORTICULTURISTS.

GAUNTLETT'S PATENT CHRONOMETRICAL THERMOMETER.

This instrument, which combines an eight-day clock of the best English make showing time, with a newly-patented Thermometer, wherein glass and quicksilver are dispensed with, writes down the temperature of the atmosphere on a slip of paper, and when placed in a Hothouse, Forcing House, or Conservatory, &c., supplies a valuable record of the temperature, with all its variations, showing the time when any change took place, and how long such change continued.

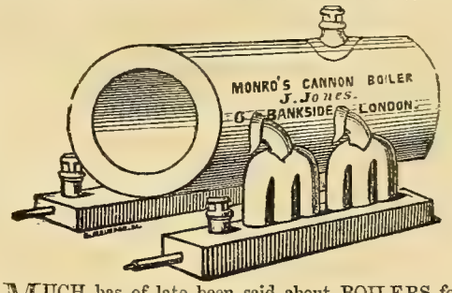


The above slip (reduced in size) exhibits the temperature of the Royal Agricultural Society's show yard at Chester, July 22, 1858, written off by one of these instruments, to which was awarded the Society's SILVER MEDAL.

This is the only instrument that registers temperature continuously and writes it down, and no horticulturist should be without it.

Orders received by W. H. GAUNTLETT, Middlesbro'-on-Tees.

MONRO'S CANNON BOILERS.



MUCH has of late been said about BOILERS for Heating by Hot Water, but these Boilers have now proved themselves to be the best at present invented. They are adapted for heating every description of building, and are made of various sizes. The Price of the

24 inch Cast Iron is	£5 10*s.* 0*d.* each
24 inch Wrought ditto	6 10 0 ,,
36 inch Cast ditto	8 0 0 ,,
36 inch Wrought ditto	8 10 0 ,,

References to Gentlemen and Nurserymen where these Boilers are now at work. The Cannon Boilers are now kept in stock, and are to be had only of J. JONES, 6, Bankside. Also, every description of Saddle and Cylinder Boilers. Hot Water Pipes and Connections at prices lower than those of any other house in London. Estimates for Hot-water Apparatus erected complete in any part of the country, and an Illustrated Catalogue on application to J. JONES, 6, Bankside, Southwark, London.

BRITTAIN'S GARDEN NET completely protects Fruit Blossoms from injury by frost, and provides for the circulation of air and admission of light, so essential to healthy growth; 55 inches wide, 5*d.*, 6*d.*, and 7*d.* a yard; good yard wide TIFFANY, 2½*d.* do.—Manchester, Jan. 29.

TO BRICK AND TILE MANUFACTURERS.

TO BE SOLD, by Private Contract, an excellent BRICK AND TILE YARD, standing on Six Acres of Land, with a plentiful supply of excellent Clay. There are two large Kilns on the property, most convenient and extensive Shedding, new and patent Machinery, together with every convenience for doing an extensive and lucrative trade. Also Four Cottages for Labourers. The premises are situated close to the Morchard Road Station, on the North Devon Railway, and are held by the present proprietor under a Lease, of which 18 years are unexpired. The Buildings are in excellent repair, having been erected within the last three years. This will be found an excellent opportunity for investment of capital, the present proprietor relinquishing the business from ill health only.—The premises may be viewed on application at the Yard, and further particulars may be obtained of Mr. WEBBER, Halberton Court, Tiverton; or of Mr. J. A. TOMS, Solicitor, Tiverton.

MRS. FERGUSSON BLAIR.

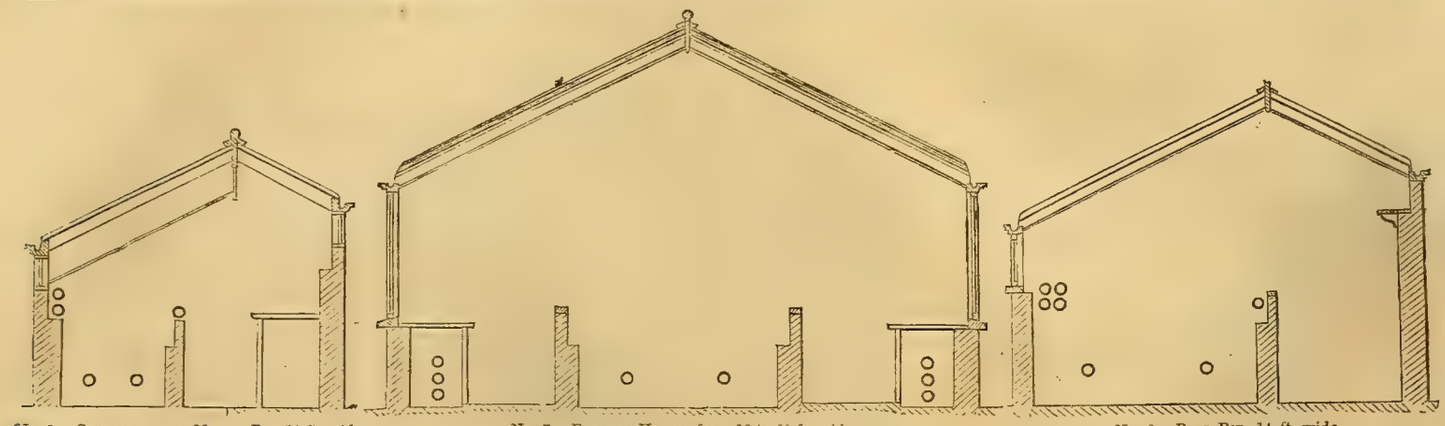
PRIZE POULTRY.—MRS. BLAIR, who has won 216 Prizes in the last two years, will have EGGS to Dispose of, at the following prices:—Silver Grey Dorking Eggs, 1*l.* 1*s.* a Sitting of Thirteen; Grey ditto, 12*s.* ditto; Dark Brahma Pootra, 1*l.* 1*s.* ditto; Light ditto, 1*l.* 1*s.* ditto; Buff Cochin, 1*l.* 1*s.* ditto; Crève Cœur, 12*s.* ditto; Old Scotch Grey, 12*s.* ditto; American Turkeys, 1*l.* 1*s.* ditto; Black Norfolk ditto, 15*s.* ditto; Rouen Ducks, 15*s.* ditto; Toulouse Geese, 15*s.* ditto.

Also, a few pens of Young Birds of these varieties.

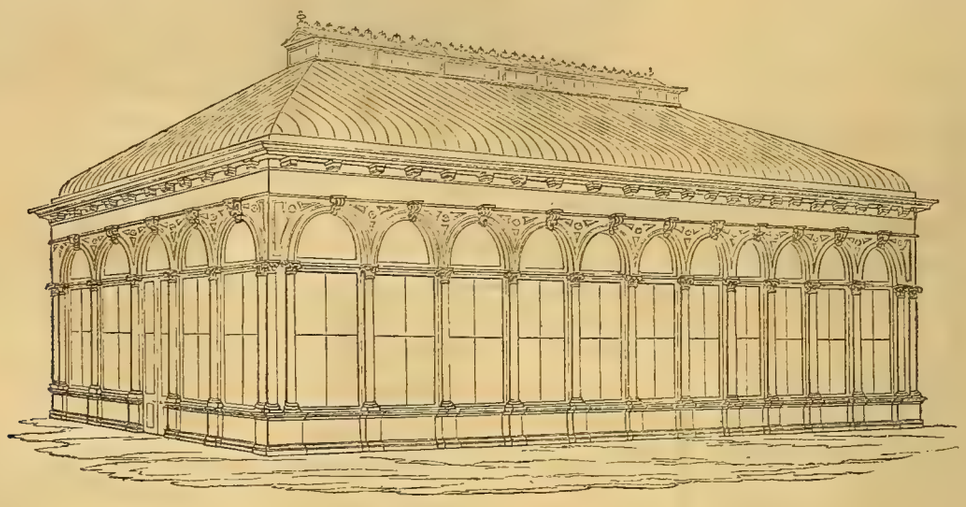
Apply to JAMES M'EWEN, Cottage, Inchmartin, Inchture, N.B.

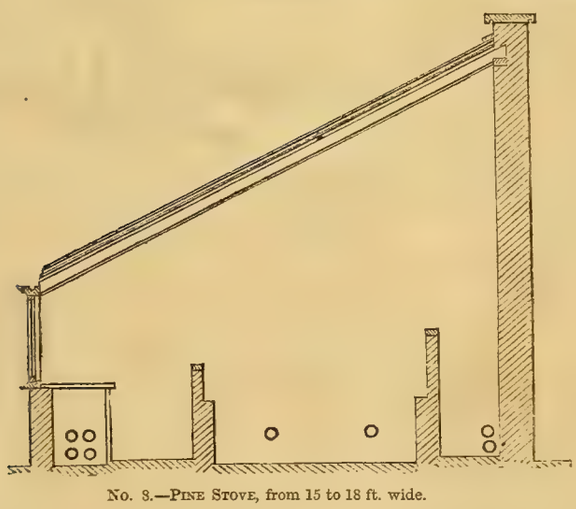
CAMELLIAS, AZALEAS, ROSES, &c., FROM BELGIUM, AND A COLLECTION OF PINE CONES, FROM MEXICO.

MR. J. C. STEVENS will Sell by Auction at his GREAT ROOM, 38, King Street, Covent Garden, on WEDNESDAY, February 9, at half-past 12 precisely, 300 CAMELLIAS, well set with buds; 300 INDIAN AZALEAS, of the best sorts, ditto; 500 Standard and Half-standard Perpetual ROSES; 500 strong Bulbs of GLADIOLUS GANDAVENSIS; and a Collection of 100 species of PINE CONES from Mexico, with a branch to each (in one lot).—May be viewed on the morning of sale, and Catalogues had; if for the country, by enclosing a stamped directed envelope.

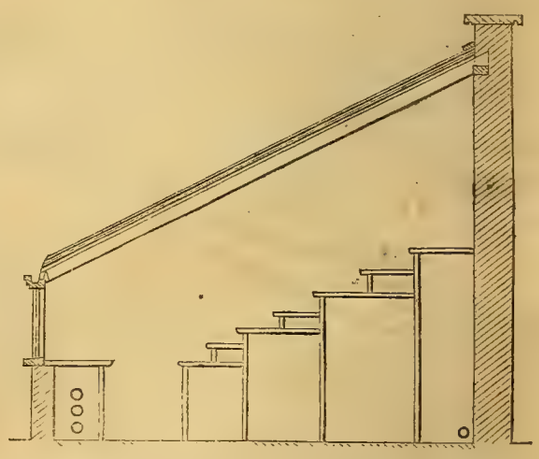


No. 1.—Cucumber and Melon Pit, 10 ft. wide. No. 7.—Forcing House, from 18 to 20 ft. wide. No. 2.—Pine Pit 14 ft. wide.





No. 8.—Pine Stove, from 15 to 18 ft. wide.



No. 3.—Green House, from 14 to 18 feet wide.

HORTICULTURAL BUILDINGS MANUFACTURED BY STEAM POWER MACHINERY.

BEST MATERIALS AND LOWEST PRICES.

HENRY ORMSON,

HORTICULTURAL BUILDER & HOT-WATER APPARATUS MANUFACTURER,

STANLEY BRIDGE, KING'S ROAD, CHELSEA, LONDON,

Deeply grateful for the very liberal and kind patronage bestowed upon him since his commencement on his own account, begs most respectfully to inform the Nobility, Gentry, Nurserymen, &c., that it being his determination to spare no pains to merit a continuance of their favours, and that he may be enabled to execute his extensive and increasing orders punctually, and at the lowest possible cost (agreeably with the best Materials and Workmanship), he has erected a most complete set of Steam Power Machines, peculiarly adapted for the purposes of his Trade.

PARTIES DESIRING INFORMATION as to prices, &c., will, by referring to any of the above sections, or Elevation, receive immediate attention.

PLANS, SPECIFICATIONS, and ESTIMATES for plain and inexpensive practical Structures, and for the most elaborate Architectural Erections, either in Wood or Iron, forwarded on application.

N.B. ORMSON'S Patent, Jointless, Tubular Boilers of all sizes, always on view and for sale at

THE MANUFACTORY.

Editorial Communications should be addressed to "The Editor"—Advertisements and Business Letters to "The Publisher"—at the Office, 5, Upper Wellington Street, Covent Garden, London, W.C.
Printed by William Bradbury, of No. 13, Upper Woburn Place, and Frederick Mullett Evans, of No. 20, Queen's Road West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and published by them at the Office, No. 5, Upper Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—Saturday, January 29, 1859.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 6.—1859.] SATURDAY, FEBRUARY 5. {Price Fivepence. Stamped Edition, 6d.

INDEX.

Agriculture, Scottish	105 c	Labourer, British	102 b
Agri. Soc. of England	106 a	Lime tree	98 c
Ants, to kill	98 c	Manures for Turnips	104 c
Bean, New Zealand	98 a	Mistleto	98 a
Bee fungus	96 a	Orchids, Dr. Blume on	99 a
Brussels Sprouts, Roseberry	99 a	— Madagascar	100 a
Calliscirpa purpurea	98 b	Palace for the people	97 b
Cattle feeding, open board	106 c	Paper duty, repeal of	98 c
— sales of short horn	101 c	Pears, old, spur grafted	98 c
Crops, rotation of	96 c	Pears, summer	96 c
Cuttings, to turn out	97 c	Pinuses, growth of	98 b
Dobson's Mr. nursery	99 c	Plants, new	96 b
Farmer, English	103 a	— cross bred	98 b
Feeding on open boards	106 c	Plant saucers	99 a
Fig, pot culture of	98 a	Ploughs, wheely spring, 104 a—106 a	
Food department at Kensington	102 a	Radish, prodigious	98 a
Fungus, bee	96 a	Rain fall in 1858	98 b
Garden hybrids	98 b	Rhododendrons	97 a
Grazing	98 c	— disbudding	98 a
Grafting old spars	98 c	Rose Bacchus	98 c
Henderson's Mr. appointment	96 b	Subsoiling	105 b
Highland and Agri. Soc.	106 b	Trade lists	99 b
Horticultural Society	99 a	Turnips, manure for	104 c
Labour, temperance harvest	105 c	Violet, Neapolitan	99 a
		Wages, Dorsetshire	105 c

ALEXANDER FORSYTH, LANDSCAPE GARDENER, 18, Islington Square, Salford, Manchester.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY (LIMITED) supply every requisite for the Farm and the Garden.
Registered Offices, Union Road, Plymouth.

SEEDS FOR THE FARM.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY, LIMITED, beg to announce that their SPRING LIST OF FARM SEEDS is now ready. The same will be sent free to any address, on application to the Secretary by letter or otherwise, at the Company's Offices, Plymouth.—Feb. 5.

EARLY CUCUMBER.

CARTER'S EARLY CHAMPION CUCUMBER, price 2*s.* per oz., to be had in any quantity of J. G. WAITE, Seed Establishment, 181, High Holborn, London, W.C.

CHAMPION CABBAGE can be had in any quantity at 2*s.* per lb.
J. G. WAITE, Seed Establishment, 181, High Holborn, London.

DODECATHEON ELEGANS.

DOWNIE AND LAIRD have a large healthy stock of the above beautiful, hardy, herbaceous Plant, which they offer to the trade at 25*s.* per 100.
17, Frederick Street, Edinburgh.

CHOICE NEW GLADIOLI.

CHARLES ALEXANDER, 30, West Register Street, Edinburgh, has a fine STOCK of the above from France and Holland.—Descriptive Priced Lists free on application.

NEW PELARGONIUM QUEEN OF THE ISLES.—This was a seedling from Larkfield Rival, crossed with Virgin Queen: it is a white, with medium-sized black blotch in top petals; a very large stout round flower, free blooming and good truss, price 7*s.* 6*d.* Strong plants of Larkfield Rival, 3*s.* 6*d.*; also the fancy varieties—Mrs. Turner and Acme, 3*s.* each. Discount to the trade.
ISAAC DAVIES, Larkfield Nursery, Wavertree, near Liverpool.

HOLCUS SACCHARATUS, or North China Sugar-Cane, 2*s.* per lb. Pamphlet, "A Visit and a Plant;" or Hints on the Cultivation of the above, and its Uses. Post free 6*d.*, or gratuitous with all orders for 10 lbs. and upwards.
DIOSCOREA BATATAS, or Chinese Yam; strong roots, 4*s.* per dozen; with directions for cultivation.
JOHN W. CLARKE, Whittlesea, Cambridgeshire.

EARLY OXFORD POTATOES,

FOR SALE, about 20 Tons of the above at 5*l.* per Ton, in large or small quantities.—Apply to Mr. R. RICHARDSON, Cottenham Park, Wimbledon, Surrey.

THE EARLIEST ASH-LEAVED KIDNEY POTATOES.—For the true early short-top Lancashire kind, unsurpassed for forcing and early borders, price 16*s.* per cwt., apply to JAS. TYNAS, Seedsman, 68, Great George St., Liverpool.

EARLY POTATOES FOR SEED.—A quantity of German and Dutch SILVERSKINS, just imported, quite free from disease, price 10*s.* per bushel, package included. Country orders require a remittance or a reference in London.—Address, T. CHAMBERLAYNE, Hungerford Wharf, W.C.

EARLY POTATOES, LEMON KIDNEYS.—Selected Seed of this choice and early variety (*vide* article in "Royal Agricultural Journal," Part I., Vol. xviii.), may now be had on application to the Author's Bailiff, JOHN HELM, Morecombe, near Lancaster, price 2*s.* 6*d.* per stone.
N.B. A reserve of seed has been retained from sprouting for the purpose of supplying late orders. Copies of the article (third edition) may be had from the above address, price by post, 1*s.* 1*d.*

BEST POTATO IN THE WORLD—IMPERIAL KIDNEY.

MR. WEBB, of Calcot, having succeeded in raising a quantity of the above excellent POTATO, begs to offer it to the public as the Best of its Class in every respect. Its quality cannot be surpassed, its yield most abundant, and its size from 2 inches to 9 inches long. Price 16*s.* per bushel, and no less quantity than 1 bushel disposed of. Also about 3000 true KENTISH COB NUT Trees from 2 to 4 feet high.—Apply to Messrs. JOSH. MAY & Co., 1, Wellington Street, Strand, or to Mr. WEBB, Calcot, near Reading, Berks.

POTATOES FOR EARLY PLANTING.

MYATT'S PROLIFIC SEEDLING ASH-LEAF KIDNEY.—For description of this valuable variety, which has again given such universal satisfaction, see Dr. Lindley's report in the *Gardeners' Chronicle* of August 1, 1857, at the Horticultural Society's Garden, wherein it is described as a "better cropper than the old Ash-Leaf, and one of the best early kinds." Price per bushel, 7*s.* To be had of Mr. J. MYATT, Evesham; or of Mr. J. MYATT, Camberwell. A small quantity of Yellow Globe Mangel Seed saved from large selected roots for stock. The trade on application.

FRESH IMPORTED GERMAN FLOWER SEEDS (post free).

SUTTON AND SONS, Reading, Berks, have just received a choice importation of GERMAN FLOWER SEEDS, a List of which will be sent gratis and post free on application.

PURCHASERS OF LARGE QUANTITIES OF FARM AND GARDEN SEEDS will be treated liberally on application to SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

GEORGE JACKMAN AND SON'S PRICED and DESCRIPTIVE CATALOGUE of GENERAL NURSERY STOCK for 1858 and 1859 can be had free on application.
Woking Nursery, Woking, Surrey.

GEORGE BAKER begs to inform the Nobility and Public that his DESCRIPTIVE CATALOGUE OF AMERICAN PLANTS AND GENERAL NURSERY STOCK will be sent free on application.
American Nursery, Windlesham, near Bagshot, Surrey, about 1 mile from Sunningdale Station, South Western Railway.

WILLIAM YOUNG'S DESCRIPTIVE CATALOGUE OF NEW HARDY ORNAMENTAL PLANTS, CONIFERÆ, ROSES, RHODODENDRONS, FOREST TREES, &c. Can be had on application.—Milford Nurseries, Godalming.

JOHN GRIER'S NEW PRICED CATALOGUE, with brief descriptive and cultural remarks of a selection of TREES, SHRUBS, and PLANTS, may be had upon application by enclosing One Stamp for Postage.—Waterhead Nursery, Ambleside, Feb. 5.

KITCHEN GARDEN SEEDS.

JOHN CATTELL begs respectfully to announce that his CATALOGUE of the above may be had free by return of Post. It contains selections of the most approved culinary vegetables in cultivation, nearly the whole of them having been saved under J. C.'s own personal superintendence.—Nursery and Seed Establishment, Westerham, Kent.

NEW DAHLIAS.

JOHN KEYNES'S SELECT CATALOGUE OF DAHLIAS, ROSES, CARNATIONS, PINKS, &c., containing Lists of all the valuable Show Flowers in each class, is now ready and will be sent on application.
Castle Street Nursery, Salisbury.—Feb. 5.

THE GREAT VINE AT HAMPTON COURT.

THE SUBSCRIBERS being the holders of the Royal Kitchen Gardens, Hampton Court, are enabled to offer genuine the famous and truly excellent HAMPTON COURT BLACK HAMBURGH GRAPE.
Strong well-ripened plants in 9-inch pots, 42*s.* and 60*s.* per doz. fruiting plants in 12-inch pots, 10*s.* 6*d.* each.
" " "
If purchased in large numbers a considerable reduction will be made in price.—JACKSON & SON, Nurseries, Kingston, S.W.

TO THE LOVERS OF DELICIOUS FRUIT.

ORION MELON.—Six old Seeds out of the only fruit that ever won four prizes at two shows, viz., Crystal Palace and Regent Street, for weight and flavour, free by post to all parts of the world on receipt of 12 penny stamps.
THOS WILD, the Primulary, Ipswich.

THE NEW ZEALAND RUNNER BEAN.

CHARLES TURNER has purchased Mr. Smith's Stock of this remarkable BEAN, which Professor Lindley has pronounced to be identical with the variety named above. In 2*s.* 6*d.* packets, containing 20 Beans. The Trade supplied on the usual terms.—The Royal Nurseries, Slough.

LAING'S MAMMOTH RED CELERY.—The largest and best flavoured Celery known, and will not run to seed until the second year. (See former advertisement.)
Packets, 1*s.* each; large trade do., 3*s.* 6*d.*, per post prepaid. Stamps received in payment.
YOUELL & Co., Royal Nursery, Great Yarmouth.

JOHN CULVERWELL, Taunton, begs to call the attention of Agriculturists to his superior selection of GRASS SEEDS, which for PURITY, change of SOIL, and CLIMATE, will bear comparison with any house in the kingdom. Prices, terms, and samples forwarded on application.

PERENNIAL AND ITALIAN RYE-GRASS.

MCBLAIN AND CO., SEEDSMEN, Newry, Ireland, offer to the Trade PERENNIAL AND ITALIAN RYE-GRASS of every description. Samples and offers on application.

PAMPAS GRASS (GYNERIUM ARGENTEUM).—The beauty of this extraordinary plant has this season been fully appreciated. It can be supplied by the dozen, hundred, or thousand, by CHARLES NOBLE, Bagshot, Surrey.

GIANT SAINFOIN SEED.—Seed of this excellent and productive Plant may be had of RAYNBIRD & HARVEY, Basingstoke, and 89, Seed Market, Mark Lane. Samples and prices on application.
N.B. R. & H. can also supply Common Sainfoin both of English and French growth at market prices.

SUTTON'S ELVETHAN MANGEL WURZEL, and SELECTED YELLOW GLOBE.—These two sorts of Mangel are still preferred to all others by the principal root-growers throughout the kingdom. SUTTON & SONS have some fine seed of each sort, at very moderate prices. Price Lists may be had post free.—Royal Berkshire Seed Establishment.

GIANT DRUMHEAD CABBAGE SEED FOR SALE.—New seed grown with great care, to be had in 1¼ lb. bags, at 15*s.* per bag, or 4*l.* 5*s.* 6*d.* per cwt., free to London. All orders to be prepaid by Post-office Orders on Maidstone Office. The Advertiser has also 6 acres of Cabbage growing of the above stock open to inspection, and would like to treat for a part or the whole of the produce thereof.—Address H. STONHAM, Detling, Maidstone, Kent.

HUDSON'S GOLDEN MELON BARLEY.—Selected Samples for Seed of this most valuable variety, superior both for produce and malting quality, may be had of RAYNBIRD & HARVEY, of Basingstoke; and 89, Seed Market, Mark Lane, E.C.

FIVE SILVER CUPS
WERE AWARDED TO
A. PAUL AND SON, NURSERYMEN, Cheshunt, Herts, for five Collections of ROSES at the Grand National Rose Show held in St. James's Hall, London, in July. Also FIVE FIRST PRIZES at the Royal Botanic Society's Shows in May and June last. The sorts which won these prizes are now offered at 18*s.* to 24*s.* per dozen for standards, 12*s.* to 18*s.* per dozen for dwarfs. A PRICED DESCRIPTIVE CATALOGUE forwarded on application, post free.

TO THE TRADE.—MAGNIFICENT DWARF-TRAINED PEACHES, NECTARINES, AND APRICOTS.
WM. WOOD AND SON refer with pleasure to their truly superb and extensive stock of the above, which for growth and quality are quite unsurpassed, each tree being furnished with from 9 to 12 branches, well ripened and admirably trained. Also very fine Dwarf Maiden NECTARINES.
The Trade supplied on advantageous terms.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

CONIFERÆ.

A. PAUL AND SON have a large stock of the above, very handsome, in fine order for removal, many suited for immediate effect. For particulars see Advertisements in *Gardeners' Chronicle* of November and December last.—Nurseries, Cheshunt, Herts.

TO PLANTERS.—Fine stock of Larch, 1½ to 3 feet; Scotch Firs, 1½ to 2 feet; Beech, 1½ to 4 feet; Elms, 3 to 6 feet; Evergreen Privets, Common Hollies, 1 to 1½ foot; fine Healthy Plants, with all other kinds of Nursery Stock. Samples and price on application to JOHN SCHOLEY, Pontefract Nurseries.

COMMON LAURELS FOR IMMEDIATE EFFECT.

THE SUBSCRIBERS beg to offer their immense Stock of the above, strong transplanted bushy plants grown singly, 1½ to 2½ ft., 3*l.* 10*s.*; 3 ft., 5*l.*; 3 to 4 and 5 ft., 6*l.* per 1000, and all other Nursery Stock equally reasonable. Prices on application.—WM. JACKSON & Co., Nurseries, Bedale, Yorkshire.

A VERY LARGE STOCK OF
FINE COMMON LAURELS, 1, 2, and 3 feet high, bushy and a good colour. Also very strong transplanted true Evergreen Privet, 3 to 6 feet.—Prices moderate on application to WILLIAM WOOD & SON, Woodlands Nursery, Maresfield, near Uckfield, Sussex.

NURSERY STOCK.

THE Subscribers are disposing of their extensive stock of Seedling and Transplanted Forest Trees, Ornamental Trees, Evergreen and Deciduous Shrubs, Standard and Dwarf-trained Fruit Trees, Gooseberries and Currants, &c., at prices considerably reduced in consequence of dissolving partnership.—Priced Lists may be had on application.
Glasgow, Feb. 5. FOWLER & WRIGHT.

HALF A MILLION ONE-YEAR SEEDLING OAKS
(STRONG AND STOUT).
JAMES MELDRUM, NURSERYMAN, Kendal, Westmoreland, offers the above in quantities to suit purchasers. Price reasonable, on application.

THREE MILLIONS OF TRANSPLANTED QUICKS.

GEORGE CHIVAS, Chester, offers the above to the notice of Planters, which for extent and quality he believes are unequalled in the kingdom. A Sample Bale containing 100 of each five sizes forwarded on receipt of a Post-office Order for 15*s.* Truck loads delivered free at any Railway Station having through communication with Chester.

500,000 EXTRA FINE TRANSPLANTED LARCH FIR, from 1 to 5 feet. Also SPANISH CHESNUTS.—Samples and Prices can be had on application to WM. WOOD & SON, Woodlands Nursery, Maresfield, near Uckfield, Sussex.

TO THE TRADE.

2000 yards of superior DWARF BOX for Edging. Price on application.
CURRANT AND GOOSEBERRY TREES, 16*s.* per 100.
JAMES HOLDER, Nurseryman, Reading, Berks.

TO NURSERYMEN.

3,000,000 RHODODENDRONS, 2, 3, 4, and 5 years old; small and strong Portugal and Common Laurel, small Red Cedar, Chinese Arbor-Vitæ, Berberis, &c.; layers of Erica Alporti, vulgaris, alba carnea, and many other things to be sold very cheap.
For price, apply to JAMES SMITH, Darley Dale Nursery, near Matlock.—Feb. 5.

ON SALE, or in EXCHANGE for VINES, about 200 PINE PLANTS, 1 and 2 years old.—Apply to Mr. J. HARGREAVES, High Street Gardens, Lancaster.

LANCASHIRE SHOW GOOSEBERRIES True.—Selected varieties, the heaviest and finest flavoured from our unrivalled stock, 6*s.* per dozen; Black Currants, 2*s.* per dozen; Red Currants, 3*s.* per dozen; White Currants, 3*s.* per dozen, the finest varieties.—HOLLAND, DODWELL & BAYLEY, Bradshaw Gardens, Chadderton, Manchester.

PLANTS IN FLOWER.

F. AND A. SMITH have now in bloom Acacia, Azalea indica, Cinerarias (fine), Cytisus, Dielytra spectabilis, Erica Willmoreana, E. perspicua nana, E. Syndriana, Geraniums, Fairy Roses, Primula sinensis fimbriata, &c.
The above are healthy, strong and well-grown plants, prepared for sending away. Prices on application.
Dulwich, Surrey, S.

GARDEN SEEDS.

WILLIAM P. LAIRD, NURSERYMAN and SEEDSMAN, Dundee, is now prepared to execute orders for GARDEN AND FLOWER SEEDS. He can particularly recommend his stocks of Cauliflower, true Musselburgh Leek, Dwarf Red Beet, Brussels Sprouts, Broccoli, and Cabbage of sorts, these having been carefully saved by himself and by gardeners specially for him.
Lists of Seeds and Plants sent on application.

BULBS FOR SPRING PLANTING.

BASS AND BROWN have pleasure in offering as under, all strong and fine roots for flower.

GLADIOLUS.—12 fine Ramosus Hybrids for 10*s*. These grow 2 feet in height, richly marked and striped, and flower from August to the approach of winter; they are best planted without delay to secure their flowering early. 15 choice Gandavensis Hybrids for 15*s*., which flower from August to October. Gandavensis, per doz., 2*s*. 6*d*. ; Floribundus, per doz., 2*s*. 6*d*.

RANUNCULUS.—Fine Border varieties mixed, 4*s*. per 100. Very fine mixed, 10*s*. per 100 ; Œil Noir, the best black, 7*s*. 6*d*. per dozen. Turbans, of separate colours, see Catalogue. Ranunculi priced 10*s*. per 100 or upwards will be supplied free by post.

ANEMONES.—10 choice varieties of rich colour, six roots of each for clumping, 10*s*. 6*d*., or three roots of each for 6*s*. Finest Mixed Double Scarlets. 1*s*. 6*d*. per dozen. La Brillante Eclatante, bright single scarlet 7*s*. 6*d*. per 100, or 1*s*. per doz. Fine new mixed single, 4*s*. per 100.

LILIUMS.—Lancifolium album, flowering roots, 1*s*. each, extra strong, 1*s*. 6*d*. to 2*s*. 6*d*. ; Lancifolium rubrum, do., 2*s*. 6*d*. each ; extra strong, 5*s*. each ; testaceum, very beautiful spikes of pendent yellow flowers, each, 3*s*. 6*d*. Six beautiful varieties, including the above, for 10*s*. Giganteum, a large noble variety, 5*s*. to 10*s*. 6*d*. each.

Tigridia pavonia, 2*s*. 6*d*. per doz., or 18*s*. per 100.
" canariensis, 9*d*. each ; cœlestis, 1*s*. each.
Tritonea aurea, fine strong roots, 1*s*. 6*d*. each ; 15*s*. per dozen.
Tuberoses, double Italian, 4*s*. per dozen.

Also a great variety of other roots for spring planting, comprising Oxalis, Amaryllis, Cypella, Pancratium, Rigidilla, &c. &c. See No. III. Catalogue.

Goods (20*s*. and upwards) carriage free to all stations in London, &c., see Catalogue, and with orders of 40*s*. and upwards extra roots or plants added gratis.

Post-office Orders payable to BASS & BROWN, or to STEPHEN BROWN. Remittances required from unknown correspondents.

Seed and Nursery Establishment, Sudbury, Suffolk.

CARTER'S SELECT LIST OF NOVELTIES OF MERIT FOR 1859.—The subjoined LIST OF SEEDS we have selected for recommendation from the general body of our Catalogue, as being either desirable new varieties, or old-established favourites highly improved by careful cultivation. All the undermentioned, whether saved in England or on the Continent, may be depended on as true to description ; we have travelled the Continent during the past Autumn, and seen the plants in a growing state. The numbers prefixed refer to their position in our Catalogue.

(1891) CARTER'S TOM THUMB NASTURTIUM (Plate No. 5).—A new variety in colour and habit, particularly adapted for bedding, and also for growing in pots and ornamental vases; is the same colour as Tom Thumb Geranium, and the flowers are well thrown up above the foliage ; very dwarf and compact in habit.

(1890) NEW DWARF SPOTTED NASTURTIUM (Plate No. 5).—This variety was offered last year for the first time, colour a bright golden orange, with a chocolate blotch at the base of each petal ; habit the same as Tom Thumb, with which it harmonises admirably, their colours contrasting most brilliantly ; both sorts are admirably adapted for bedding, as they continue in bloom for three months, or even more.

(1265) ŒNOTHERA DRUMMONDI NANA (Plate No. 2).—As its name indicates, it is a dwarf variety from Drummondi, introduced by us from Texas three years since. We had the pleasure of offering it last year ; and the results have been most gratifying. It grows about 8 inches high, and is covered with a profusion of bright yellow flowers, many of which measure 4 inches in diameter; it continues in bloom from June to November.

(1246) NOLANA PARADOXA VIOLACEA (Plate No. 5).—The Nolana has long been a favourite annual ; and this new variety is particularly pleasing ; the flowers are larger than those of the old paradoxa ; colour rosy violet.

(1122) LUPINUS HARTWEGI CŒLESTINUS (Plate No. 5) —This new variety is very distinct from all other kinds of Lupines, grows 1½ ft. high ; colour, a delicate sky-blue, with pink edgings.

(773) FENZLIA DIANTHIFLORA (Plate No. 5). — This lovely Annual is of a beautiful rose-lilac colour, having five dark blood-coloured spots surrounding an orange-coloured eye in centre of each flower ; it is of a very dwarf and compact habit, producing blossoms in profusion : it blooms through the summer months, and continues long in flower if sufficiently supplied with moisture. It has a fine effect in small beds, and is also well adapted for growing in pots or boxes for greenhouse decoration.

(1262) ŒNOTHERA BISTORTA VEITCHI (Plate No. 5).—This beautiful Œnothera is of a brilliant yellow colour with a blood-coloured spot at the base of each petal ; it is one of the very best yellow-flowering plants for either bedding or rock-work, contnuing in bloom nearly four months. It is figured, and highly commended by Sir W. J. Hooker, in Curtis's "Botanical Magazine" of October 1858.

(1821) NEW MINIATURE STRIPED GOURD (Lagenaria vittata, Plate No. 5).—A remarkably handsome miniature species of the old Bottle Gourd, particularly adapted for ornamental trellis-work or the conservatory : the fruit when full grown is about 3 inches in circumference, shape very symmetrical, the neck and upper portion of the body are of a bright orange colour, and the lower half of a deep laurel green : it has also regular stripes of a cream colour from the apex to the base equidistant, about a quarter of an inch ; will succeed well in any warm situation.

(785) GAILLARDIA HYBRIDA GRANDIFLORA (Plate No. 5).—This truly magnificent hardy herbaceous perennial blooms the first year, has been hitherto offered in plants only ; it is the result of an hybridisation between Gaillardia aristata and picta, having the robust habit of the former with the brilliant colour of the latter : the flowers are nearly double the size of the old picta ; and the plant is without doubt the finest of its class.

(310) COSMIDIUM BURRIDGI (Plate No. 6).—This we consider we are justified in stating to be the handsomest of the showy tribe of Coreopsis ; the blossoms are large, and the colour a deep crimson copper with a broad margin of gold.

(1093) LOBELIA FORMOSA (Plate No. 6).—A large beautiful deep-blue variety of Lobelia, very dwarf in habit and well adapted for bedding.

(1133) LUPINUS NANUS ALBUS.—The old Lupinus nanus has long been a favourite for its neat appearance and general adaptability for bedding ; and this, a white variety, forms a very agreeable contrast with it.

(1708) VISCARIA CŒLI-ROSA ALBA (Plate No. 6).—This is a pure white variety of the Old Viscaria cœli-rosa ; forms an admirable edging, and beds excellently well.

(1711) VISCARIA DUNNETTI (Plate No. 6).—A new variety of the much-admired "oculata ;" colour rosy blush with a dark eye ; its general appearance is very attractive ; and we can highly recommend it.

(1864) MARIGOLD, tall French Orange (Plate No. 6).—A fine tall Orange Double French Marigold, distinct from the old French varieties, having the beautiful colour of the Orange African ; the petals are very broad.

JAMES CARTER AND CO., 238, High Holborn, W.C.

CRYSTAL PALACE.—TO FLORISTS.—The Directors are desirous of receiving TENDERS for the occupation of a Piece of Ground containing rather more than 4 acres, situated between Thicket's Lane, and the Crystal Palace Branch Railway, immediately adjoining the Park, as a FLOWER GARDEN, in connection with a Stall in the Palace, for the sale of Flowers in Pots, Cut Flowers, Bouquets, &c. Further particulars may be obtained at the Secretary's Office, Crystal Palace. By Order,

Crystal Palace, Feb. 5. GEO. GROVE, Sec.

*** The above is well worth the notice of any Country Nurseryman wishing to obtain a connection in London.

GRAPE VINES FROM EYES.

JOHN AND CHARLES LEE beg to offer an immense stock of strong well-ripened VINES FROM EYES, of the following kinds :—

Alicant	Hamburgh, Pope's
Barbarossa	" Victoria
Bidwell's Seedling	Hâtif de Jura
Black Cluster	Isabella
Black Constantia	Lady Down's Seedling
Black Prince	Marchioness of Hastings
Blanche Vigne	Muscadine, Royal
Calabrian Raisin	" Parsley leaved
Charlsworth Tokay	Muscat, August
Chasselas Frocklaboulay	" Bowood
Chasselas Musqué	" Cannon Hall
Duzetto	" Hamburgh
Esperione	" Noir Hâtif
Frontignan, black	" of Alexandria
" grizzly	" of Fontainebleau
" white	Pitmaston Cluster white
Hamburgh, black	Raisin des Carmes
" Champion	Syrian
" Dutch	Trebiana
" golden	Trentham Black
" Mill Hill	Tripoli
	West's St. Peter's

Nursery and Seed Establishment, Hammersmith, London.

R. M. STARK, SEEDSMAN, &c., 31, Castle Street, Edinburgh, begs to intimate that his CATALOGUE OF GARDEN, FARM, AND FLOWER SEEDS for the Season is now ready. Of the numerous interesting additions to his Stock he would especially notice the following :—Peas : Champion of Scotland, Excelsior Marrow, Dunnett's First Early. Broccoli : Penzance and Snow's Superb. Cabbage : Champion and Shepherd's Marrow. Lettuce : Crystal and Superb White Cos. Potatoes of fine sorts, &c. &c.

FLOWER SEEDS. Per pkt—*s. d.*

Bravoa geminiflora, beautiful Iris-like plant, with spikes of rich orange waxy flowers	0 6
Brizopyrum siculum, very ornamental Grass	1 6
Callirhoe pedata (Malvaceæ), crimson with white eye, fine	2 6
Chrysobactron Hookeri, fine new Asphodel from New Zealand	1 0
Datura humilis fl. flavo pl., from Texas, flowers golden yellow	2 6
Eryngium yuccæfolium, fine hardy species	1 6
Fenzlia (Gilia) dianthoides, rosy pink	2 6
Lupinus Menziesi, new yellow species	1 0
Portulacca caryophylloides	1 0
Solanum capsicastrum, ornamental fruit suitable for pot	1 0
Stock, Stark's intermediate, brighter in colour than Young's	1 0
Trifolium tomentosum, ornamental dwarf species with woolly heads	0 6
Zinnia elegans striata	0 6

With many others of equal interest purchased or collected on the Continent by R. M. S. in the course of last season.

Edinburgh, Feb. 5.

TO THE TRADE.

JOHN PALMER, NURSERYMAN, Annan, begs leave to inform his Friends and the Trade generally, that he has on hand the following—all of excellent quality—which he is disposed to offer on very reasonable Terms :—

SEEDLINGS.

4,000,000 1-year Larch	40,000 1-year Laburnum drills
1,000,000 2-year Scotch Fir,	100,000 2 year Weymouth Pine
1,000,000 2-year Spruce	100,000 1-year Pear stocks, drills
200,000 1-year Beech	100,000 1-year Crabstocks, drills
300,000 1-year Alder	100,000 1-year Wild Cherry stocks, drills
300,000 1-year Oak, drills	100,000 1-year Portugal Laurel
100,000 1-year Turkey Oak, drills	200,000 1-year Yew
100,000 1-year Spanish Chestnuts, drills	50,000 1-year bedded American Arbor-vitæ
100,000 1-year Horse Chestnuts, drills	20,000 bedded common Laurel
200,000 2-year Ash, drills	20,000 bedded Portugal Laurel

TRANSPLANTED.

300,000 2-year tr. Larch	100,000 2-year tr. Spruce
100,000 2-year tr. Scotch Fir	400,000 2-year tr. Thorns

Prices to be had on application, and all orders will be promptly and carefully attended to. Carriage will be prepaid to London, Liverpool, Birmingham, Newcastle, Glasgow, and Edinburgh, and the half thereof charged to the buyer.

SEEDLING FOREST TREES, &c.

		Per 1000.—*s.*	*d.*
3,000,000	1-year Larch	1	0
1,000,000	" Scotch Fir	0	10
300,000	" Alder	1	0
200,000	" Birch	1	6
200,000	" Elms	1	6
150,000	" Ash	1	6
100,000	" Sycamore	1	6
300,000	" English Oak	2	6
10,000	" Evergreen Oak	40	0
20,000	" Horse Chesnut	5	0
40,000	" Chinese Arbor-vitæ	10	0
70,000	" Cupressus horizontalis	8	0
80,000	" Pinus Laricio	10	0
100,000	" Pinus austriaca	6	0
300,000	" Pinus maritima	2	6
20,000	" Common Laurel	17	6
20,000	" Crab Apple	3	6
250,000	" Quick	2	0
10,000	" Laburnum	2	6
10,000	2-year do.	4	0
1,000,000	" Norway Spruce Fir	1	6
40,000	" White Spruce Fir	4	0
50,000	3-year Silver Fir	7	0
800,000	2 " Scotch Fir	1	6
100,000	1 " bedded Scotch Fir	2	6
100,000	2 " Beech	3	0
60,000	2 " Birch	3	0
30,000	2 " Alder	3	0

The Subscriber begs to call attention of his friends and the public in general to the above stock of SEEDLINGS, and is happy to intimate to them that they are generally fine in quality, and trusts they will give satisfaction. Any orders, large or small, will be promptly attended to. All delivered free of expense at Dublin, and thence half carriage paid to any part of England, &c.—Apply to MICHAEL BURKE, Drumlargan Nursery, Summerhill, county Meath, Ireland.

THE PRIMULARY.—Expressly for the cultivation of Latter's superb Semi-double Fimbriated CHINESE PRIMROSES of world-wide celebrity, with all the latest improvements in size, shape, substance, and colours. Sealed packets, post free, to all parts of the world on receipt of 2*s*. 6*d*. in stamps.

THOMAS WILD, The Primulary, Handford Road, Ipswich.

WANTED, the ADDRESSES of the Principal Market Gardeners who Grow for Covent Garden Market Choice Vegetables and Fruit, such as

Asparagus	Pine Apples
Cucumbers	Grapes
Mushrooms	New Potatoes
Brussels Sprouts	Seakale, &c.

Address Box P. 5, General Post Office, Liverpool.

THE GARDEN.

IN THE CATALOGUE OF VEGETABLE AND FLOWER SEEDS issued by W. DRUMMOND & SONS Stirling, the intelligent gardener will be gratified to find the system of inserting only the best and really distinct varieties in the various classes still strictly adhered to ; and from the brief but correct descriptions affixed thereto, as well as the general simplicity of the whole, it will be found a ready guide to the amateur in making a suitable selection.

W. D. & SONS will, on application, be glad to forward a copy of their Catalogue, post free, to any address.

Stirling is most favourably placed in point of railway accommodation, there being direct and constant traffic to all the principal stations in Scotland and England, and by steamers (*viâ* Glasgow) almost daily to the chief ports in Ireland, thereby insuring a speedy delivery of goods, all of which are, with a limited exception, forwarded carriage paid.

W. DRUMMOND & SONS : Seed Warehouse, Stirling, N.B. ; and 58, Dawson Street, Dublin.

UNEQUALLED NEW CUCUMBER, DR LIVINGSTONE.—This is one of the finest long hybrid Cucumbers for exhibition purposes that has ever yet been offered to the public ; it is a splendid black spine, length 22 to 26 inches, a very free setter, and an abundant bearer. Price 2*s*. 6*d*. per packet.

QUEEN OF THE WEST MELON, a superb new variety green-flesh, very handsome in appearance, beautifully netted and excellent in flavour. It obtained several first prizes during the past season. Seeds 2*s*. 6*d*. per packet.

NEW MELON GENERAL HAVELOCK, sent out for the first time last season. It is a green-flesh, very handsome shape, and beautifully netted ; a very thick substance, thin skin, of a melting and most delicious flavour, and an abundant bearer. Weight from 3 to 4 lbs. ; it gave the greatest satisfaction to all purchasers during the past season. Seeds 1*s*. per packet.

Extra fine mixed HOLLYHOCK SEED, saved from all named varieties, 1*s*. per packet.

Early Emperor CELERY, red, the finest ever yet sent out, 1*s*. per packet.

TILEY'S Solid White Celery, 6*d*. per packet.

DELPHINIUM FORMOSUM, 6*d*. per packet.

DIGITALIS, or Fox-glove Seed, 6*d*. per packet.

For further particulars, and list of Cucumbers and Melons, see Advertisement in *Gardeners' Chronicle* of Jan. 29, 1859.

A remittance must accompany every order in cash or penny postage stamps, when the whole or any part, as the case may be, will be immediately sent.

EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Church Yard, Bath.

GEORGE SMITH, in offering the following six Superb SEEDLING FUCHSIAS, warrants them to give satisfaction. They are all of good growth, fine habit, and free bloomers, viz. :—

ECLAT (SMITH).—This beautiful flower obtained a first-class Certificate at the National Floricultural Society ; at the same time the Judges gave the following description in their report of the proceedings of the Society's General Meeting, Oct. 7, 1858 :—"First-class Certificate to Fuchsia Eclat. Habit good ; a free and abundant bloomer, sepals and tube scarlet, inside of sepal delicate rose, corolla clear white, a decided improvement on the white corolla'd varieties." G. S. has only to add that it is a plant of strong growth and fine habit, in every way calculated to please as well as the Princess of Prussia, being quite distinct. 10*s*. 6*d*. Figured in the "Florist," Feb. 1859.

CHANCELLOR (SMITH), see report of the National Floricultural Society, July 22, 1858.—Certificate of Merit to Fuchsia Chancellor ; character and habit first-rate, form good, size medium, substance fine, scarlet crimson tube and sepals, with violet purple corolla. The tube of this flower was considered rather too short, or it would have received a higher award.

SCIPIO (SMITH), see report of the National Floricultural Society, Aug. 5, 1858. — First-class Certificate to Fuchsia Scipio ; habit dwarf, tube short, sepals broad, corolla bold and expanding, colour coral red sepals, with violet purple corolla, a great improvement on existing globosa varieties, and remarkable for its distinctness and boldness in bud ; 10*s*. 6*d*.

FASCINATION (SMITH), tube rather shorter than the Princess of Prussia, the sepals broader, the corolla very large and pure, seen to great advantage by the graceful manner in which the sepals reflex ; 7*s*. 6*d*.

PERICLES (SMITH), a brilliant flower of average size, very smooth and good form, sepals crimson scarlet, broad and well reflexed, corolla violet purple, also an abundant bloomer ; 7*s*. 6*d*.

GOLDEN PLOVER, a flower in form and colour of Souvenir de Chiswick. This is particularly recommended for the elegant foliage, which is of a golden green heavily veined with purple lake, giving the plant a conspicuous and splendid appearance, fine habit ; 7*s*. 6*d*.

NEW VERBENAS.

G. S. can confidently recommend the following three New Verbenas as distinct, and worthy to be added to all good collections, viz. :—

CYRUS (SMITH), brilliant rosy purple, primrose eye, fine form, a strong grower ; 5*s*.

MARS (SANKEY), brilliant crimson scarlet, conspicuous lemon eye, particularly recommended as a bedding variety ; received a Certificate at the National Floricultural Society ; 5*s*.

STRIATA PERFECTA (SMITH), bright lavender, with broad white stripe, of good form and habit. This is one of the most distinct and beautiful Verbenas that has been offered for years, for all purposes ; 5*s*.

SEEDLING CINERARIAS.

Three Cinerarias raised by Mr. Sharman, of Dulwich, and exhibited at the National Floricultural Society, where they obtained first-class Certificates. G. S. is happy to announce that they are now ready, in strong plants, at 7*s*. 6*d*. each, to be sent out by him, viz. :—

LADY PALMERSTON (SHARMAN), white, rosy purple tips, with dark bold disc, well proportioned, and of general good properties.

MARY QUEEN OF SCOTS (SHARMAN), white, well defined, bright rosy purple tips.

PRESIDENT (SHARMAN), white, deeply tipped purplish crimson, dark and fine disc.

A CATALOGUE of all the newest and best kinds of GERANIUMS of Show, Fancy, Spotted, and French, Fuchsias, Verbenas, Dahlias, and Petunias, is just published, and will be forwarded in exchange for one postage stamp.

Tollington Nursery, Hornsey Road, Islington, London, N.

KITCHEN GARDEN SEEDS.

THOMAS GIBBS AND CO., THE SEEDSMEN TO THE "ROYAL AGRICULTURAL SOCIETY OF ENGLAND," beg to announce that they are now prepared to execute orders for their

COLLECTIONS OF KITCHEN GARDEN SEEDS

for either large or small Gardens, containing a proper selection of all the new and most approved varieties.

PACKETS OF FLOWER SEEDS, containing all the new and choice kinds.

Do. GERMAN IMPORTED FLOWER SEEDS, in the original imported Packets.

DESCRIPTIVE PRICED CATALOGUES forwarded free on application. T. G. & Co.'s PRICED LIST OF AGRICULTURAL AND GRASS SEEDS will be ready early in February.

THOMAS GIBBS AND CO.,
Corner HALF-MOON STREET, Piccadilly, London, W.

VEGETABLE AND AGRICULTURAL SEEDS, &c.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that they are now prepared to execute with new and genuine SEEDS all orders they may be favoured with. Their PRICED and DESCRIPTIVE CATALOGUE, containing all new VEGETABLES proved to be good, and all the best of the older varieties, &c., will be forwarded post free on application.

The following are particularly recommended, all being very superior in quality, and valuable acquisitions to the most select collections:—Beet (Pine Apple Short Top), per oz., 2s.; Broccoli, Winter White (Snow's), per oz., 3s. 6d.; ditto, Penzance White (Mitchinson's), per packet, 1s. 6d.; Celery, Nonsuch (Ivery's), per packet, 1s.; Cottager's Kale, per packet, 1s.; Lettuce, Alma Cos (Griffin's), per packet, 1s.; ditto, Moor Park Cos, per packet, 1s.; Marrow, Custard (Thomson's), per packet, 6d.—Paradise Nursery, Seven Sisters and Hornsey Road, Holloway, London, N.

WM. IVERY respectfully announces that his Select CATALOGUE of GARDEN and AGRICULTURAL SEEDS for 1859 is now ready, post free on application, containing none but the very best quality at moderate prices. W. I. has great pleasure in offering his Nonsuch Celery as the best in cultivation for crispness and flavour, not to be equalled by any other variety, 1s. per packet. This can also be obtained of the principal seedsmen in London. IVERY'S Nonsuch Lettuce Black Seeded White Cos, will stand one month longer than any other known without running to seed in hot weather, a very fine large Lettuce of exquisite flavour, blanching itself, 1s. 6d. per packet. W. I. begs to inform the Trade that he can now finish the supply of New Mushroom Spawn, of the best quality.—Hanover Nursery, Peckham, London, S. E.—Feb. 5.

AGRICULTURAL, FLOWER AND KITCHEN GARDEN SEEDS.

GARAWAY, MAYES, AND CO. invite attention to their Establishment for the sale of all kinds of AGRICULTURAL, FLOWER AND KITCHEN GARDEN SEEDS, their long connection with the trade and the well-known respectability of their house being a sufficient guarantee that all articles supplied by them will be of the very best quality. All seeds are proved by them before sending out, and their stock being large, and purchased from the first houses in the trade, offers great inducement to purchasers.

Their Stock of AGRICULTURAL SEEDS is produced from the best sources, and all are guaranteed by them to be of the best quality.

GRASS SEEDS of all kinds for Lawns or permanent Pasture; and the high testimonials they have received from their customers warrant them in stating that their quality is unsurpassed.—Catalogues on application.

Durdham Down Nurseries, Bristol.—Feb. 5.

DWARF ROSES ON MANETTI STOCKS & CINERARIAS.

THE following ROSES are offered in fine Plants with shoots 2 to 4 feet long, at 8s. 6d. per doz., true to name:—Jules Margottin, La Reine, Baronne Prevost, Coupe d'Hébé, Wm. Griffiths, Duc de Cazes, Wm. Jesse, Duchess of Sutherland, Victoria (Paul's), Paul Ricaut, La "Leo" des Combats, Earl Talbot, Pius IX., Alexandrine Bachmeteff, Madame Domage, Souvenir de la Reine d'Angleterre, &c.

Also the annexed CINERARIAS in 48-inch pots, true to name, 8s. per dozen:—Alma, Admiration, Brilliant (R), Brilliant (L), Lady Paxton, Lord Palmerston, optima, Pride of Uttoxeter, Eupatoria, Purple Standard, Fascination, Magnum Bonum, &c. Post-office Orders payable at Haverhill.

JOHN CHATER & SON, Nurseries, Haverhill.

THE FAMOUS PINUS DON PEDRI.—This noble Pinus is one of the long-leaved Weymouth tribe, and is spoken of by Dr. Lindley (see *Gardeners' Chronicle*, March 27, 1858,) as a "magnificent novelty." Mr. Gordon, in "The Pinetum" (page 231), says, "A noble tree, rivalling Pinus Lambertiana, and growing 140 feet high at an elevation of from 11,000 to 12,000 feet. It will no doubt be hardy, coming, as it does, from so great an elevation and a cold climate."

The undersigned is now prepared to supply stout Seedling plants in pots, raised last summer, at 21s. each, or 9l. 9s. per dozen. The usual allowance to the Trade.

J. HENCHMAN, Edmonton, London.

SEED CORN FROM THE CHALK.

MESSRS. RAYNBIRD AND HARVEY beg to offer to Agriculturists requiring change of SEED Talavera, Red Nursery, and April WHEAT, the best sorts for Spring sowing.

Chevalier, Thanet, Golden Drop, Long-eared Nottingham, American, Hudson's Golden Melon, Banham's Sprat, and other varieties of BARLEY.

Canadian Potato, Hopetoun, Poland, and Tartarian OATS.

Fine CLUSTER BEANS, weighing 68 lbs. per bushel.

Samples and Prices on application.

Address—Basingstoke, and 89, Seed Market, Mark Lane, London, E.C.

TANSLEY NURSERY, NEAR MATLOCK.

To GENTLEMEN PLANTING AND THE TRADE.

J. SMITH begs to offer his STOCK OF TREES AND SHRUBS, of various sizes, and in addition to his general stock of the leading kinds, he has this season to offer an Extra Stock of many hundred thousands of fine Larches, Scotch Firs, and Highland Pines; a large quantity of Evergreens, Privets, Mahonia aquifolia, and other plants for planting under cover. Many things are grown in large quantities, and will be sold on advantageous terms to the trade and gentlemen requiring large lots.—Catalogues sent free on application. The Nurseries are on the Mansfield and Nottingham roads, and 2 miles from Matlock Bridge Station on the Midland Railway.

TO PLANTERS.

WILLIAM MASTERS AND SON respectfully inform the public that they have fine plants of Chestnut fit for filling up woods, as well as Scots and Spruce Firs, Larch and Austrian Pines, also Oaks, Elms, Beech, Sycamore, Norway and other Maples, Acacias and other Forest Trees in great variety and abundance. Their Stock of Ornamental Evergreens and Shrubs is exceedingly rich both in quantity and variety. They may especially refer to their beautiful assortment of Rhododendrons, Azaleas, Hardy Heaths, and of so called American Plants generally, to the culture of which they have devoted an entire nursery. Deodars they can supply from 1 to 6 feet, and of Coniferæ their collection is of unusual extent. Orders are respectfully solicited.

Exotic Nursery, Canterbury, and Faut Nursery, Maidstone.

NEW ROSES FOR 1859.

J. AND J. FRASER, Lea Bridge Road Nurseries, near London, N. E., beg to offer the following NEW ROSES, which may be depended on as being the best selection from the varieties of this year:—

HYBRID PERPETUAL.
Altesse Impériale
Anna de Diesbach
Anna Alexieff
Ardoise de Lyon
Armide
Beauté de Rayghem
Comte de Beaufort
Comtesse de Chabrilland
Empereur de Maroc
Impératrice Eugenie
Orderic Vital
Oriflamme de St. Louis
Princesse Olympie
Virginal

BOURBON.
Docteur Berthet
Edith de Murat
Mdlle. Aline Pierron
Octavie Fontaine

TEA SCENTED.
Mdme. Damaizin
Mdme. Joseph Halphen
Reine des Pays Bas

DESCRIPTIVE PRICED LIST of the above may be had on application.

THE LARGEST STOCK OF

TEA-SCENTED ROSES in the kingdom.—Upwards of 10,000 DWARF TEA ROSES in pots, fine healthy plants now ready for sending out, consisting of all the best leading kinds, and comprising among others—

750 Mélanie Willermoz	300 Maréchal Bugeaud
500 ,, Oger (yellow)	300 Madame Bravy
500 Vicomtesse de Cazes (do.)	300 Le Pactôle, yellow
500 Souvenir d'un Ami	300 Niphetos, fine white
500 Safrano	300 Goubault
400 Devoniensis	300 Canari (yellow)
400 Adam	

400 Miss Gray or Isabella Gray, TRUE, yellow Rose, &c.

Plants presented to compensate for carriage.—Address WM. WOOD & SON, Woodlands Nursery, Maresfield, near Uckfield, Sussex.

SPECIMEN TEA-SCENTED ROSES, in 8-inch pots. Strong plants for Exhibition, from 3s. 6d. to 5s. each. The same kinds and many other leading sorts can be supplied as Half-specimen Plants, in 6-inch pots, at 24s. and 30s. per doz.

TEA-SCENTED. — Buret, Blanche de Solville, Bougère, Canaris Clara Sylvain, Comte de Paris, David Pradel, Elize Sauvage, Eugénie Desgaches, Général Tartas, Goubault, Jeannie Deans, La Sylphide, Laurette, Le Cameléon, Le Pactôle, Léontine de Laporte, Madame Bravy, Maréchal Bugeaud, Mélanie Willermoz, Mélanie Oger, Nina, Safrano, &c.

The Subscribers will be happy to furnish extra fine strong plants of the above named Roses adapted for Exhibition.

Early orders are respectfully solicited to ensure the strongest plants.—WM. WOOD & SON, Woodlands Nursery, Maresfield, near Uckfield, Sussex.

A COLLECTION OF SUPERB YELLOW ROSES.

TEA-SCENTED	DWARF PLANTS in 4-inch pots. Each.	in 6-in. pots. Each.
	1s. 6d.	2s. 6d.
Barillet Deschamps, pale lemon	1 6	2 6
Canari, bright yellow	2 0	3 0
Elize Sauvage, yellow, very fine	1 0	2 0
Gloire de Dijon, fawn shaded salmon.. ..	1 6	2 6
Le Pactôle, lemon; yellow centre	2 6	3 6
Louise de Savoie, lemon yellow	1 6	2 6
Mélanie Oger, pale yellow	1 6	2 6
Pauline Plantier, yellowish white	2 0	3 0
Vicomtesse de Cazes, bright orange yellow ..	1 6	2 6
Yellow, or Jaune; pale sulphur		
YELLOW NOISETTE ROSES.		
Adelaide Pavie (new) pale lemon	3 6	
Augusta, sulphur; similar to Solfaterre ..	1 6	2 6
Claudia Augustin, white, with yellow centre	3 6	
Lamarque, lemon; very large	1 6	2 6
Madame Schulz, canary-shaded carmine ..	2 0	3 0
Miss Gray, or Isabella Gray; bright yellow..	2 6	3 6
Narcisse, sulphur yellow	2 0	3 0
Solfaterre, bright sulphur yellow	1 6	2 6

WM. WOOD & SON beg leave to offer fine strong plants of the above-named superb yellow Roses. Plants will be presented to compensate for distant carriage.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

ROSES! ROSES! ROSES!

JOHN HARRISON begs to inform his friends and the public generally that he has still on hand a splendid stock of Standard and Dwarf ROSES, Catalogues of which can be had free on application. J. H.'s stock of Roses are as usual of unequalled excellence, and in the most perfect health and vigour. J. H. having carefully revised his stock has rejected all varieties that do not possess first-class properties, and in addition has marked with an asterisk those varieties that are the most constant for exhibitional purposes. J. H. begs to observe that his plants being grown in the county of Durham (acknowledged to be the coldest in England), renders them suitable for any climate, the following letter from Australia being evidence of this assertion:—

"Dear Sir,—I herewith beg to hand you a cheque on the London and Westminster Bank through the Bank of Victoria, Melbourne, for the Roses you sent me; they arrived in beautiful condition after upwards of two months' voyage of 16,000 miles; I only lost one variety out of 500 plants. As you most justly observe, your plants are unequalled. I never received such before from England, France, or any other country. I hope to receive per next steamer another supply from you, according to my last order.—I am, dear Sir, yours respectfully, R. HOLSGROVE."

"Mr. John Harrison, Darlington, England."

Orders promptly executed and liberally dealt with.

The Nurseries, Darlington.

ALEXANDER CAMPBELL AND SONS, 7, Eden Quay, and Churchill Nurseries, Glasnevin, Dublin, most respectfully beg to acquaint their numerous customers and the public that they have just received their second consignment of new and very superior SEEDS, SEED POTATOES, &c., suited alike for the use of the Garden and Farm. Their Nurseries are well stocked with the finest Fruit Trees, Roses, Carnations, Piccotees, Pinks, Pansies, Climbing and other Shrubs, with an immense stock of their well-known collection of Pelargoniums, Cinerarias, Azaleas, Ericas, and other Greenhouse Plants, &c., DESCRIPTIVE CATALOGUES of which may be had on application, post free, or at the Seed Warehouse, 7, Eden Quay.

SEEDS FOR 1859.

HARGRAVE'S SELECTIONS OF KITCHEN GARDEN SEEDS are arranged in quantities and sorts suitable for a succession of Vegetables through the whole year. That adapted for a moderate-sized garden contains 10 pints of the choicest kinds of Peas, 6 pints of superior garden Beans, 3 pints of very fine French or Kidney Beans, and a fair assortment of small Seeds too numerous for specifying here. Cash price, ONE GUINEA, package included.

C. W. HARGRAVE, Nurseryman, Florist, Seed Grower, and Importer.—The Nursery, Winchmore Hill, N.

SEEDS.

JOSEPH MAY AND CO. beg to announce the arrival of their new VEGETABLE, AGRICULTURAL, AND FLOWER SEEDS, which they have selected with the greatest care. Amongst PEAS they would particularly recommend, as the two best kinds for early sowing, Waite's Daniel O'Rourke and Dickson's Favourite, the latter producing 8 to 14 Peas in a pod, and will do for sowing at any season. COLLECTIONS OF VEGETABLE SEEDS made up from 10s. to 20s. and upwards, according to size of garden for which they are intended. These collections gave great satisfaction last season.

FLOWER SEEDS in collections: 12 packets, choice seeds, 5s.; 30 packets hardy ditto, 5s.; 15 packets ditto, 2s. 6d., free by post.

CUCUMBER, "Ne Plus Ultra," from specimens, 27 to 31 inches each—straight and handsome—per packet, 1s.; all other best kinds, 6d. per packet.

MELONS, choicest kinds, 6d. and 1s.

GOURDS, the large hundredweight and others, 12 packets, free by post, 3s.

POTATOES, all the best kinds; Grasses and all kinds of Agricultural Seeds of the best quality.

TREES, PLANTS, AND SEEDS, packed for Australia, &c., at the lowest prices.

1, Wellington Street, Strand, W. C., near Waterloo Bridge.

A PRIZE FOR ENGLISH GARDENERS.

NEW "DEFIANCE CABBAGE," a neat distinct variety.—Its unrivalled excellence for being very early, coming to perfection quick, of dwarf habit, does not run to seed, and flavour not to be surpassed make it an acquisition to every one. Numerous local testimonials could be given.

The following is from Mr. HILL, Gr. to W. R. SNEYD, Esq., Keel Hall. "Sir—Your 'Defiance Cabbage' has been grown the last two seasons by the side of several of the leading kinds, and found so superior in every respect, that for future we intend growing no other kind. "W. HILL."

Post free on receipt of Cash or Postage Stamps at 2s. per oz. To be issued this season in February in 1 oz. and ½ oz. packets only, by GEORGE JENKINSON, Nurseryman and Seedsman, Newcastle, Staffordshire.

NEW KINDS OF VEGETABLES.

CHARLES TURNER can supply seed of the following valuable new varieties:—

	Per packet—s. d.		Per packet—s. d.
Incomparable Cabbage ..	1 0	Royal Dwarf Pea (Pois nain très hâtif à chassis), per quart	2 6
New Zealand Runner Bean	2 6		
Perennial Spinach ..	1 0		
Pine-apple Short Top Beet	1 0		
Powell's Early Tomato ..	1 0	Turner's Cottagers' Kale	1 0
Roseberry Brussels Sprouts..	1 0	The Frogmore Protecting Broccoli	2 6

The above are strongly recommended. Also TURNER'S Scarlet Gem Melon, 2s. 6d. per packet. A GENERAL DESCRIPTIVE CATALOGUE of SEEDS may be had on application.

The Royal Nurseries, Slough.

NEW VARIETIES OF POTATOES.

CHARLES TURNER has fine samples, free from disease, of the following:—

KIDNEY VARIETIES.—Ashleaf, Myatt's Prolific, a very excellent first early variety, the productiveness of which is remarkable. Brockley Kidney, an excellent variety, very early, and a great cropper; worthy of general cultivation. Looker's Kidney, an early and handsome variety, of good flavour.

ROUND VARIETIES.—Early Surprise, early, a fine large variety, and a good cropper. Hundredfold, very prolific, and of good quality. Tarku's Seedling, pink eye, an excellent late variety, very heavy cropper.

Also the following old varieties:—

KIDNEYS.

Ashleaf	Brighton	Dean's Seedling
Fluke	Fiftyfold	Red Ashleaf

ROUND.

American Seedling	Prince of Wales	Early Frame
Early Uxbridge	British Queen	Fortyfold
,, Oxford (Soden)	*alias*	Perkins' Seedling
Flour Ball	White Fortyfold	Wellington

The Royal Nurseries, Slough.

TO THE TRADE AND OTHERS ENGAGED IN PLANTING.

WILLIAM CORNWELL begs to offer the following, of which he has a large stock on hand, well grown and warranted true to name:—Standard and Dwarf ROSES of all the leading kinds; Dwarf Trained Peaches, Nectarines, and Apricots; Dwarf Maiden Do. Do.; Dwarf Trained Apples, Pears, Plums, &c.; Red and Black Currants; Larch Fir, 2 to 3 feet; Scotch Do., 1½ to 2 feet; Do., 2 to 3 feet; Cedrus Deodara, 2 to 3 feet; White and Yellow Broom, 2 to 3 feet; Double Furze in pots; Cotoneaster microphylla in pots; Irish Ivies in pots; Berberis aquifolium, 2 to 3 feet; Box Edging; Box, green, 2 feet; Laurel, common, 2 to 3 feet and 3 to 4 feet, bushy; Passiflora cærulea in pots; Privet Evergreen, 2 to 3 feet; large Scarlet Rhododendrons, 4 to 8 feet; ponticum and Catawbiense, do.; Andromedas, Hardy Heaths, Ledums, &c.; a large stock of most kinds of Evergreens, Flowering Shrubs, Ornamental Trees, &c.—The Nurseries, Barnet, Herts.

GERMAN STOCKS, ASTERS, ETC.

DO NOT PURCHASE MORE SEEDS THAN YOU REQUIRE.

JAMES TYNAN begs to offer FLOWER SEEDS of the choicest kinds in packets to suit the wants of purchasers not requiring them to take large quantities in order to obtain the best varieties.

TRUFFAUT'S PÆONY-FLOWERED ASTERS, the finest grown.—20 varieties in separate colours, in packets, 2d. each, any number sent; the same mixed in packets, 3d. and 6d. each.

NEW CHRYSANTHEMUM-FLOWERED ASTERS.—5 varieties in separate colours, 4d. each; the same mixed in packets, 6d. each.

FINEST GERMAN STOCKS.—24 varieties in separate colours, 2d. each; the same mixed in packets, 3d. and 6d. each. Finest large-flowering, 20 varieties in separate colours in packets, 2d. each; the same mixed in packets, 3d. and 6d. each.

DOUBLE GERMAN WALLFLOWER.—6 varieties, separate colours, packets, 3d. each; the same mixed, packets, 3d. and 6d. each.

Very fine PHLOX DRUMMONDI.—In pckts. 4d. and 6d. each.

The choicest CALCEOLARIA, 6d. and 1s. per packet.
,, CINERARIA, 6d. and 1s. ,, ,,
,, GLOXINIA, .. 1s. ,, ,,
,, PRIMULA, 6d. and 1s. ,, ,,
Agent for SMITH'S BALSAMS 1s. ,, ,,

Selections of FLOWER SEEDS sent post free:—
No. 1.—50 packets .. .. 12s. 6d.
No. 2.—25 packets 6 3
No. 3.—12 packets 3 0

Large packets, or by the ounce, at prices equally moderate.

JAMES TYNAN, Importer of Continental Seeds, Seed Warehouse, 6S, Great George Street, Liverpool.

REIGATE SILVER SAND, best quality for Florists, 16s. per ton; less quantities, 1s. 6d. per bushel; delivered to any London Wharf or Railway. Leaf Mould, Peat, and Loam of various kinds, in large or small quantities. Sacks for Sand 1s. 9d. each, on hire 6d. each (five hold a ton).—JOHN KENNARD, Purveyor to her Majesty, Swan Place, Old Kent Road, S.E.

SORGHUM OR HOLCUS SACCHARATUS,
CHINESE SUGAR CANE GRASS.

SUTTON AND SONS having imported largely of new Seed of the true HOLCUS SACCHARATUS, can supply it at reduced price according to quantity required.

CAUTION.—SUTTON & SONS respectfully intimate to intending cultivators of the Sorghum or Holcus saccharatus, that other varieties of Sorghum are in the market which are comparatively destitute of saccharine and nutritive properties.

The Stock SUTTON & SONS have provided is the true saccharine species procured from the same Continental source from which they have imported in previous seasons. Present price 2*s.* 6*d.* per lb., or cheaper in large quantities; quantity required per acre, 8 lbs. Instructions on Cultivation will be sent with the Seed.

Royal Berkshire Seed Establishment, Reading.—Feb. 5

TO NOBLEMEN, GENTLEMEN, PUBLIC COMPANIES, AND OTHERS ENGAGED IN PLANTING.

JOHN WATERER having a very great quantity of the undernamed desirable PLANTS in excellent condition (from frequent removal) for transplanting, offers them at a very reduced scale of charges.

*** Intending Planters having the object of immediate effect in view are respectfully informed that in selecting specimens for such purposes they would find a visit of inspection amply repaid, it being our determination to treat on the most liberal terms.

The Nursery is easily reached, being a short distance from Sunningdale Station, South-Western Railway (Reading Branch), where excellent conveyances meet all trains.

Wellingtonia gigantea, handsome plants, about 1 foot, 15*l.* per 100; 1 to 1½ foot, 5*s.* each or 20*l.* per 100; 1½ to 2 feet, 10*s.* 6*d.* to 21*s.* each; larger, up to 5 and 7 feet

Araucaria imbricata, 2 to 3 feet, 10*s.* 6*d.* each; 3 to 4 feet, 21*s.* to 31*s.* 6*d.* each; large beautiful specimens, up to 9 feet

Thuja aurea, good plants, 10*l.* per 100; about 15 inches, very globular handsome plants, 42*s.* per dozen, or 15*l.* per 100; 1½ to 2 feet, 5*s.* to 7*s.* 6*d.* each, or 20*l.* per 100; larger, 2 to 3, and 4 to 5 feet

Thuja gigantea, 1 to 1½ foot, 5*s.* to 7*s.* 6*d.* each; 1½ to 2 feet, 10*s.* 6*d.* each; 2 to 3 feet, 21*s.* each; large handsome plants, 3 to 4, and 5 to 8 feet

Thuja chilensis, 2 to 3 feet, 3*s.* 6*d.* each; 3 to 4 and 5 feet, 5*s.* to 7*s.* 6*d.* each

Cedrus Deodara, 3 to 4 feet, 5*s.* each, or 20*l.* per 100; 4 to 5 to 6 feet, 7*s.* 6*d.* to 10*s.* 6*d.* each; 6 to 8, 10, and 12 to 18 feet

Cedrus Libani, 4 to 5 feet, 5*s.* to 7*s.* 6*d.* each; 5 to 6, 7, and 8 to 10 feet

Cupressus macrocarpa, 2 to 3 feet, 30*s.* per dozen; 3 to 4 feet, 3*s.* 6*d.* each; 4 to 5 feet, 5*s.* each

Cryptomeria japonica, 4 to 6 feet, 5*s.*; 20*l.* per 100; 6 to 8, 10 to 15 feet

Cryptomeria japonica viridis, 3 to 4 feet, 5*s.* each; 4 to 6 feet, 7*s.* 6*d.* each

Juniperus hibernica, 2 to 3 feet, 24*s.* per dozen, or 7*l.* 10*s.* per 100; 3 to 4 feet, 42*s.* per dozen, or 12*l.* 10*s.* per 100; 4 to 6, 8 to 10 feet

Juniperus chinensis, 3 to 4 feet, 5*s.* each; 4 to 5 feet, 7*s.* 6*d.* each; larger, 5 to 7 and 8 feet

Juniperus virginiana (Red Cedar), 2 to 3 feet, 5*l.* per 100

Thujopsis borealis, about 1½ foot, 42*s.* per dozen, or 15*l.* per 100; larger, 2 to 3 feet

Cephalotaxus Fortuni, 1 to 2 feet, 5*s.* to 7*s.* 6*d.* each; larger, 2 to 3, and 4 feet

Taxus hibernica, 2 to 3 feet, 24*s.* per dozen, or 7*l.* 10*s.* per 100; 3 to 4 feet, 3*s.* 6*d.* each; 4 to 5 feet, 5*s.*; larger, 5 to 10 feet, all trained to a single stem

FitzRoya patagonica, 3 to 4 ft., 42*s.* per doz.; 4 to 5 ft., 5*s.* each

Pinus Beardsleyana, 1 to 1½ foot, 5*s.* each; 2 to 3 feet

" Benthamiana, 3 to 4 feet, 7*s.* 6*d.* each

" canadensis, 4 to 6 feet, 3*s.* 6*d.* each

" Cembra, 2 to 3 feet, 3*s.* 6*d.* each; 3 to 4 feet, 5*s.* each; large, 4 to 6 and 8 feet

" Craigiana (new), 1 to 1½ foot, 3*s.* 6*d.* each; 1½ to 2 feet, 5*s.*

" Douglasi, 1 to 1½ foot, 30*s.* per dozen, or 10*l.* per 100; 2 to 3 feet, 42*s.* per dozen, or 15*l.* per 100; 3 to 5 feet, 5*s.* each; 5 to 6, and 8 to 15 feet

" excelsa, 1½ to 2 feet, 12*s.* per dozen, or 50*s.* per 100

" insignis, 1½ to 2 feet, 10*l.* per 100; 2 to 3 feet, 3*s.* 6*d.*, or 15*l.* per 100; 3 to 4 feet, 5*s.*, or 20*l.* per 100; 4 to 6 feet, very fine

" Jefferyana, 1 to 1½ foot, 5*s.* each; 1½ to 2 feet, 7*s.* 6*d.* (A new species allied to Benthamiana but more distinct, and reported to be the most handsome and valuable of the long-leaved Californian Conifers.)

" Lambertiana, 2 to 3 feet, 7*s.* 6*d.* each; 3*l.* 10*s.* per dozen; large, 3 to 4 and 5 to 12 feet

" Nordmanniana, small plants, 15*l.* per 100; about 1 foot, 10*s.* 6*d.* each; 1 to 1½ ft., 21*s.* each; 1½ to 2 ft., 42*s.* each; 2 to 3 feet, 63*s.* to 84*s.* each; 3 to 4 and 5 feet, perfect specimens

" Pinsapo, 1 to 1½ foot, 5*s.* each; 1½ to 2 feet, 7*s.* 6*d.* each; large, 2 to 4, 6 to 8 feet

" ponderosa, 1½ to 2 feet, 5*s.* each

" Sabiniana, 3 to 4 feet, 5*s.* each

" taxifolia (Jeffery), 1½ to 2 feet, 10*s.* each

(With the single exception of Pinus Lambertiana, the whole of the above are Seedlings.)

ROSES.—Select Perpetual and Bourbon, do. varieties, Standards, 4*l.* 4*s.* per 100; do. Dwarfs, 2*l.* 10*s.* per 100

RHODODENDRONS, of all the superior kinds of scarlet, crimson, rose, white, &c., such as are annually displayed by us at the Great Exhibition of American Plants at the Royal Botanic Gardens, Regent's Park, London, in good plants, 42*s.* to 63*s.* per dozen

" Fine varieties, for extensive planting, 24*s.* to 30*s.* per doz.

" Catawbiense and mixed Hybrids, good plants, 1½ to 2 feet, 7*l.* 10*s.* per 100

" Standards of the superior crimson varieties, good plants, 42*s.* to 63*s.*, to 105*s.* each

" ponticum (the only evergreen that entirely escapes the ravages of hares and rabbits), good plants, fit for immediate planting into woods for cover, 7*l.* 10*s.* per 1000; extra strong, 21*s.* to 25*s.* and 30*s.* per 100

" Dwarf-growing varieties, 4*l.* 4*s.* to 5*l.* per 100

AZALEAS, good common kinds, consisting of scarlet, pink yellow, &c., and for extensive planting, in good plants, 50*s.* per 100

" superior, 12*s.*, 18*s.*, to 24*s.* per doz., or 3*l.* to 7*l.* 10*s.* p. 100

" Standard, in fine sorts, 42*s.* each

KALMIA LATIFOLIA, 1 to 1½ foot, covered with bloom buds, 5*l.* per 100; larger, 18*s.* to 30*s.* per dozen

" MYRTIFOLIA, fine plants, 30*s.* to 60*s.* per dozen (a superior kind to latifolia).

HARDY HEATHS.—A collection of 25 distinct kinds, 30*s.* per 100, or 12*l.* 10*s.* per 1000

Transplanted FOREST TREES, of which about 100,000 of each are in hand. We shall have great pleasure in forwarding samples on application.

Ash, 2 to 3 and 4 feet	Beech, 2 to 3 feet
Hazel, 2 to 3, and 4 to 5 feet	Birch, 2 to 3 and 4 feet
Chesnut, Spanish, 2 to 3, and 4 to 6 feet	Larch, 2 to 3 and 4 feet
	Scotch, 1½ to 2 feet

A large quantity of bushy COMMON LAURELS, 2 to 3, & 4 ft. Also the commoner kinds of Evergreens, such as HOLLIES, of kinds; BAYS, ARBUTUS, PHILLYREA, AUCUBA, PORTUGAL LAURELS, &c.

CATALOGUES containing descriptions of everything relating to Rhododendrons and Conifers forwarded on application to JOHN WATERER, American Nursery, Bagshot, Surrey.

CHRYSANTHEMUM TRICOLOR BURRIDGEANUM. CHRYSANTHEMUM TRICOLOR VENUSTUM.

F. K. BURRIDGE, SEED GROWER, Lexden Road, Colchester, has much pleasure in inviting the special attention of the Seed Trade to the above-named new Hardy Annuals, which he now offers for the first time, believing they will be found among the finest novelties of the season. The variety Burridgeanum differs from the old C. tricolor in having a fine crimson ring surrounding the yellow circle next the eye of the flower, the rest of the ray being snow white. The variety venustum has the ray florets of a deep reddish purple or plum colour for about one-half their length, shading into yellow at the base, and stained on the under side with purple. Both varieties are striking objects in the flower border, and from their bold conspicuous character, free blooming qualities, and perfect hardiness, together with their adaptability for bouquets, F. K. B. confidently predicts that they will become universal favourites.

A beautifully-coloured group of the two varieties has been prepared, and may be had on application, price 1*s.*; or gratis to Purchasers of 1 oz. of seed.

N.B. The Botanical Magazine for the present month (Jan. 1859), contains a coloured plate of the above.

CHRYSANTHEMUMS—CHRYSANTHEMUMS.

J. H. BIRD, F.H.S., NURSERYMAN, Stoke Newington, the largest grower and most successful exhibitor of the Chrysanthemum in the British Empire, begs to call the attention of the lovers of the above beautiful autumn flower to his matchless collection, the stock of which amounts to upwards of 50,000 plants. Amongst them will be found the following new and rare varieties:—Admirable, Aimée Ferrière, Augustine, Constantine, Louisa, Louis Bonamy, Madame Leo, Norfolk Hero, Progne, Raymond, Beauté de Nord, Dr. Maclean, Queen of England, Plutus, Alfred Salter, Stellaris globosa, Beauty, Themis, Dupont de l'Eure, &c.

J. H. B. can supply strong plants, one dozen for 6*s.*; or five dozen in 30 varieties, containing two of each variety, for 1*l.*; or he can supply 100 plants in 50 varieties, two of each variety, for 1*l.* 10*s.* Also POMPONES in great variety; 50 Pompones in 25 varieties, two of each variety, for 10*s.*; or 100 in 50 varieties, two of each variety for 1*l.* Strong plants of the beautiful new Pompone the Golden Cedo Nulli, 5*s.* each, will be ready in March with the usual allowance to the Trade. Every order will be accompanied by a popular work on the Chrysanthemum.

Post-office Orders payable to J. H. BIRD, Stoke Newington, will be immediately attended to.

SEEDS OF FIRST QUALITY.

BASS AND BROWN offer the following from their CATALOGUE, which may be had free on application:—

A FEW NEW AND SELECT VEGETABLE SEEDS.

For descriptions of most of these, see Catalogue.

Peas, per quart.—Standard Bearer, 3*s.* 6*d.*; Cotton's Leviathan, 3*s.* 6*d.*; Dunnett's First Early, 2*s.*; Beck's Gem, 1*s.* 6*d.*; Rising Sun, 1*s.* 6*d.*; Ne Plus Ultra, 1*s.* 6*d.*

Beans, Syon House (the earliest), 1*s.* 3*d.* per quart.

Beet, Atking's Scarlet Melford Hall, 1*s.* per oz.

" Laing's Dark, 6*d.* per oz.

Broccoli, Mitchinson's New Penzance, 6*d.* per packet, 5*s.* p. oz.

" Giant, late white, 2*s.* per oz., very fine late sort.

" Ward's Late White, the latest, 2*s.* per oz.

Belgium Brussels Sprouts, imported, 1*s.* per oz.

Cabbage, Furnell's Early Edwardstone, 1*s.* per oz.

Carrot, French Horn, very early, 6*d.* per oz.

Cauliflower, Early Paris, 1*s.* per packet; Lenormand's, 1*s.* 6*d.* per packet.

Celery, Ivery's Nonsuch, 6*d.* per packet; Goodwin's Early York, 1*s.* per oz.

Cottager's Kale, 1*s.* per packet.

Lettuce, Neapolitan, very fine, 1*s.* per oz.

Parsley, extra triple curled, 6*d.* per oz.

Savoy, the Early Ulm, 1*s.* per oz.

Turnip, Polly's Nonsuch, 1*s.* per oz.

Cucumber, each, 1*s.* per packet.—Conqueror of the West, Mill's Jewess, Hunter's Prolific, Sir Colin Campbell, General Canrobert, Gladiator, Glory of Armstadt, Essex Hero, Cheltenham Surprise, Lord Kenyon's Favourite, and many other choice.

Melons, each, 1*s.* per packet.—M'Ewen's Hybrid, Fleming's Trentham Hybrid and Cocoanut-flavoured, Snow's Horticultural Prize, Munro's Crystal Palace, Bromham Hall, and other choice sorts.

COLLECTIONS OF VEGETABLE SEEDS.

These comprise all first-rate sorts. A considerable reduction in price is secured by ordering these collections. For price and quality they are not to be surpassed.

No. 1 Collection	.. ..	.. £3	0 0
2 "	.. ..	.. 2	0 0
3 "	.. ..	.. 1	5 0
4 "	.. ..	.. 0	15 0
5 "	.. ..	.. 0	10 6

The names of sorts contained in Nos. 1, 2, and 3 are given in the Catalogue. If any sorts are not wished for enlarged quantities of the others will be sent instead.

Peas, 15 finest sorts for succession,	1 qt. of each	..	17*s.* 6*d.*
Peas, 10 do.	do.	1 qt. of each ..	9 6
Broccoli, a packet of each of 10 finest sorts for succession, 6*s.*; six sorts			3 6
Lettuce, a packet of each of six finest sorts ..		..	2 0

FINEST LAWN GRASSES.

In mixture of the best dwarf sorts. These are excellent. Per lb., 1*s.* 3*d.*; or 18*s.* per bushel.

Holcus saccharatus, an abundant cropper for cattle feed, 1*s.* 6*d.* per lb.

The Improved Custard Marrow, 18 seeds, 1*s.*; nine seeds, 6*d.*

Dioscorea Batatas, strong tubers, 9 inches to 1 foot long, 5*s.* per dozen; extra large, 10*s.* per dozen.

FLOWER SEEDS—BEST ASSORTMENTS.

(Free by Post.)

Hardy Annuals, 100 very select, including choice novelties, 15*s.*; 50 for 8*s.* 6*d.*; 30 for 5*s.* 6*d.*; 20 for 1*s.*

Half hardy Annuals, including choice novelties, 50 very select, 12*s.* 6*d.*; 30 for 8*s.*; 20 for 6*s.*

Hardy and Half-hardy, including choice novelties, 100 for 20*s.*; 50 for 10*s.* 6*d.*; 30 for 7*s.*; 20 for 5*s.*

Dwarf Hardy Annuals, in large packets, for filling beds on lawns, &c., 20 for 7*s.* 6*d.*; 12 for 5*s.*

Greenhouse Annuals, Greenhouse Perennials, Hardy Biennials and Perennials, &c., in assortments, see Catalogue.

Flower Seeds, cheaper assortments, see Catalogue.

IMPORTED GERMAN SEEDS.

The varieties of German Stocks, Asters, Larkspurs, Wallflowers, &c., are remarkably fine and double, see Catalogue.

SEEDS OF CHOICE FLORISTS' FLOWERS.

These, comprising Calceolaria, Cineraria, Geranium, Fuchsia, Carnation, Piccotee, Holyhock, and numerous others have been saved from very choice and first-rate collections, and are nearly all of our own saving.

NEW AND VERY SELECT FLOWER SEEDS.

A List of a few of these is given separately, extracted from the body of the Catalogue, with full descriptions. See Catalogue, page 55.

Goods (not under 20*s.*) carriage free to all the Railway Stations in London, &c. See Catalogue.

Post-office Orders payable to BASS & BROWN, or to STEPHEN BROWN. Remittances required from unknown correspondents.

BASS AND BROWN, SEED GROWERS, &c., Sudbury, Suffolk.

TO THE TRADE.

THOS. CRIPPS, NURSERYMAN, &c., Tunbridge Wells, Kent, respectfully offers the following fine strong SPANISH CHESNUT PLANTS, 4 feet to 6 feet in height, 40*s.* per 1000; Blush CHINA ROSES, fine strong plants, 15*s.* per 100; Crimson do., very strong, 25*s.* per 100; fine Standard and Half-standard ROSES, 60*s.* per 100; good do., do., 50*s* per 100; Double Yellow PRIMROSE, 20*s.* per 100 or 400 for 3*l.*; PINUS INSIGNIS and P. RADIATA from Seed, 15 inches to 28 inches, 6*l.* per 100; MANETTI STOCKS, 50*s.* per 1000; do. second size, 40*s.* per 1000; IRISH YEWS, 2 feet to 3 feet, 50*s.* per 100; Hardy HEATHS, a fine collection, 25*s.* per 100; large plants, good do., 20*s.* per 100; LARCH FIR, fine stout plants, 2 to 3 feet; LONICERA SHEPHERDI, or new Scarlet-trumpet HONEYSUCKLE, fine strong plants, 4*s.* per dozen; RHODODENDRON MAXIMUM, fine bushy plants, 18 inches to 2 feet, 60*s.* per 100. Orders from unknown correspondents unaccompanied by a remittance will not be noticed.

MESSRS. WATERER AND GODFREY respectfully invite the attention of parties engaged in planting to the following list of very desirable plants, all of which may be seen growing in the open quarters of their Nursery, and are in the finest possible condition for transplanting:—

Araucaria imbricata, 9 to 12 inches, 5*l.* per 100; 40*l.* per 1000

" " 1½, 2, 3, 4, 5, 6, and 8 feet high. Our stock of this plant exceeds 100,000

Wellingtonia gigantea, stout handsome plants from seed, 84*s* per dozen; 25*l.* per 100. These are all in the open ground and are believed to be the finest lot of seedling plants in the Trade.

Cedrus Deodara, 1½ to 2 feet, 18*s.* per dozen; 6*l.* per 100

Do. 3, 4, 5, 6, 7, 8, 10 and 12, and 15 feet. Our stock of Deodars at the present moment occupies several acres of land; they have been constantly removed, and with fair usage not one in a thousand would fail. We offer them on very advantageous terms either in large or small quantities

Cedrus atlantica, 4, 5, 6, and 7 feet

Cupressus macrocarpa, magnificent plants, 7, 8, and 10 feet high

" Lawsoniana, stout handsome plants from seed, 18 inches, by the dozen or 100

Abies nobilis, from imported seed, 6*l.* 6*s.* per doz.; 40*l.* per 100

" do. 1, 2, and 3 feet high

" Nordmanniana, a large number of beautiful plants, all from seed, 2, 3, 4, 5, and 6 feet high

" Pinsapo, do. do.

[We believe we are justified in stating our stock of the three last-mentioned Firs offers a selection to be met with in no other Nursery.]

" Douglasi, 6, 7, 10, and 12 feet

" orientalis, 3, 4, 5, and 6 feet

Pinus Benthamiana, stout seedling plants, about 1 foot, 18*s.* per dozen; 5*l.* per 100; 40*l.* per 1000. Unquestionably the finest of all the long-leaved Californian kinds, and well known to be perfectly hardy. It is the most valuable of all for timber.

Juniper, Chinese, 2, 3, 5, 7, 8, and 10 feet high

Irish Upright, 3, 4, 5, 6, 7, and 8 feet. The Irish and Chinese Junipers are grown by us to a very large extent

Thuja aurea.—This plant originated in our Nursery, and our stock of it offers a choice of many hundred specimens from 1½, 2, 3, 4, and 5 feet high, and measuring from 2 to 10 and 15 feet in circumference. Nothing can well exceed the beauty of these plants, and certainly are to be met with in no other Nursery

Thuja gigantea, stout seedling plants, 1½ to 2 feet high

" Wareana, 3, 4, 5, 6, 7, and 8 feet

Thujopsis borealis, handsome plants, in quantity, 1½ & 2 ft. high

Taxus, Yew, Common English.—A large quantity, and of all sizes up to 5, 6, and 7 feet

" Irish Yew, 4, 5, 6, 7, and 10 feet. Many thousands of these beautifully formed plants grown to one stem

" Golden Yews in large quantities and of all sizes up to 6, 7, and 8 feet

We also have them worked on the Common and Irish Yew as Standards, with heads from 12 to 15 years' growth

Holly, Variegated, Scottica, laurifolia, &c. We hold probably the largest stock of good sized variegated Hollies in the kingdom, especially of the better kinds of silver and gold striped

Rhododendron ponticum, for cover, stout plants, 1½ to 2½ feet, by the 1000. All the well-known proved hardy late blooming kinds, in any quantity, at from 30*s.*, 42*s.*, to 84*s.* per dozen

Standard Rhododendrons of all kinds

Azaleas, stout bushy plants, covered with bloom buds, from 18 inches to 2 feet high, and of all colours, 9*s.*, 12*s.*, 18*s.*, and 24*s.* per dozen; 50*s.*, 75*s.*, to 100*s.* per 100

Hardy Heaths, a first-rate collection, at 35*s.* per 100; 15*l.* p. 1000

Roses, fine Standards, of the most popular kinds, at very low prices.

As well as the above, we are very large holders of the ordinary kinds of Nursery Stock, which may be judged from the fact that the Nursery far exceeds 100 acres in extent of all such things as Laurels, Box, Lilacs, Limes, Purple Beech, and the commoner descriptions of Evergreens and Deciduous Flowering Shrubs. An enormous stock of Fruit and Forest Trees are also grown extensively.

Goods are delivered free to London, Reading, or Reigate. The Nursery is reached in an hour from Waterloo, and conveyances are always to be had at the Woking Station.

CATALOGUES, Priced and Descriptive, will be sent on application, enclosing one postage stamp, to

WATERER AND GODFREY, Knap Hill, Woking, Surrey.

RICH BOG AND LOAM.—Gentlemen and Nurserymen will do well to apply early for the above to refresh their American beds. To be had in any quantity upon reasonable terms, by land or water carriage.

ROBERT NEAL, Nurseryman, Wandsworth Common, Surrey.

GENUINE TOBACCO PAPER FOR FUMIGATING.

H. APPLEBY (Foreman to Messrs. Ivery & Son, Nurserymen, Dorking, Surrey), begs to inform his friends and the public that he now offers the above article at a reduced price. Sold in 4-lb. packets, 1*s.* 3*d.* per lb. A great reduction to the trade; price on application. For testimonials that will guarantee its quality, see *Gardeners' Chronicle*, Dec. 11, 1858, page 920.

SHEET IRON POTS FOR FUMIGATING, 3*s.* 6*d.* each.

N.B. All Orders to be accompanied with a Post-office Order, payable to HENRY APPLEBY, Dorking, Surrey.

TOBACCO PAPER AND CORD FOR FUMIGATING, in its pure and unmanufactured state, containing only the oil exuding from the Cavendish Tobacco in the process of manufacture, 1 lb. of which is equal to 3 lbs. of that usually offered. The following amongst many other testimonials have been received:—

From Messrs. JAMES VEITCH & SON, *Nurserymen, Exeter.*

"Gentlemen,—We are much pleased with the Tobacco Paper received last week, and should therefore feel obliged by your sending us as soon as possible 56 lbs. of the same sort.—Yours respectfully, (Signed) "JAMES VEITCH & SON."

The above will be forwarded in any quantity at 1*s.* 6*d.* per lb. on receipt of Post-office Orders payable to YOUELL & Co., Royal Nursery, Yarmouth, Norfolk, who are appointed Sole Agents for its sale.

THE

GARDENERS' ROYAL BENEVOLENT INSTITUTION.

INSTITUTED 1838.

PATRONESS.—Her Most Gracious Majesty the QUEEN. **PATRON.—His Royal Highness the PRINCE CONSORT, K.G.**

PRESIDENT.—The Right Hon. the Earl of CARLISLE.

VICE-PRESIDENTS.

HIS GRACE THE DUKE OF CLEVELAND, K.G.
HIS GRACE THE DUKE OF NORTHUMBERLAND, K.G.
THE RIGHT HON. THE EARL OF MANSFIELD.
THE RIGHT HON. LORD OVERSTONE.
THE RIGHT HON. LORD EBURY.
THE BARON ROTHSCHILD, M.P.
SIR THOMAS DYKE ACLAND, BART., M.P.
SIR JOSEPH PAXTON, M.P.
THOMAS BARING, ESQ., M.P.
JOSEPH BAXENDALE, ESQ.
HENRY GEORGE BOHN, ESQ.
ROBERT HANBURY, ESQ.
ROBERT STEINER HOLFORD, ESQ., M.P.
HENRY THOMAS HOPE, ESQ.
JOHN LINDLEY, ESQ.
JOSEPH MARTINEAU, ESQ.
JOHN JOSEPH MECHI, ESQ.
GEORGE WARDE NORMAN, ESQ.
HENRY POWNALL, ESQ.
SIGISMUND RUCKER, ESQ.

LIST OF OFFICERS FOR 1858.

TREASURER.—ROBERT WRENCH, Esq., London Bridge.
TRUSTEES.—Mr. JOHN ANDREW HENDERSON, Hamilton Terrace.—Mr. JOHN LEE, Hammersmith.—Mr. JAMES VEITCH, Junr, Chelsea.
AUDITORS.—Messrs. CHARLWOOD, LEE, & FORSYTH.

COMMITTEE:—

Messrs. WILLIAM ADDISCOTT, Leadenhall St.
,, RICHARD ATLEE, Stockwell.
,, R. N. ARNOTT, Vauxhall.
,, WILLIAM BARNES, Camberwell.
,, JAMES BRUCE, Tooting.
,, M. BUSBY, Harrow Road.
Messrs. C. D. DANDY, Dalston.
,, JAMES CUTBUSH, Highgate.
,, JAMES DUNCAN, Alton.
A. EAGLES, Highgate.
,, THOMAS HARDING, Camberwell.
,, ARTHUR HENDERSON, Wellington Road.
Messrs. JOHN A. HENDERSON, Hamilton Terrace.
,, ROBERT HOGG, Winchester Street
,, CHARLES HUTT, Highgate.
,, THOMAS PAGE, Streatham.
,, JOHN PEEL, Twickenham.
,, THOMAS RIVERS, Sawbridgeworth.
Messrs. JOHN SCOBIE, Kensington.
,, JOHN STEWARD, Herne Hill.
,, WM. B. SMITH, Great George Street.
,, THOMAS TAYLOR, Covent Garden.
,, CHARLES TURNER, Slough
,, CHARLES WOODROFFE, Harrow Road.

BANKERS.—Messrs. GLYNN, MILLS, & Co., Lombard Street. SECRETARY.—Mr. EDWARD ROGER CUTLER, 14, Tavistock Row, Covent Garden, W.C.

Post-office Orders to be made payable at King Street, Covent Garden, W.C.

ABSTRACT FROM RULES AND REGULATIONS.

3. That the only persons who shall be considered eligible for the Pension of this Institution shall have been either head gardeners, or their foremen, market gardeners, nurserymen, and seedsmen, and foremen of nurserymen and seedsmen, for 20 years at least, subject to the following conditions:—1st. Gardeners who have served in the capacity of head gardeners, or their foremen, in the establishments of ladies or gentlemen for 20 years, and the foremen to nurserymen and seedsmen who have served as such the same number of years. 2nd. Market gardeners who have cultivated not less than 5 acres of land for 20 years. 3rd. Nursery and seedsmen who shall have been regularly engaged in the business 20 years.

4. That no person shall be eligible as a candidate for the pension under 60 years of age, cases of total incapacity alone excepted; age to be verified by a baptismal certificate, or such other documents as may satisfy two-thirds of the Committee that the applicant is of the required age. Incapacity to be verified by a medical certificate. The production of both or either of such certificates, or other evidence as the case may be, shall be indispensable.

5. That no widow shall be eligible to be relieved in virtue of the occupation of her first husband as a gardener, foreman to a gardener, market gardener, nurserymen or seedsmen, or foreman to any nurseryman or seedsman, pursuant to Rule 3, after her marriage with another not a gardener, or otherwise coming within either of the descriptions in Rule 3, and qualified as therein mentioned, though she become a second time a widow; and no widow shall be eligible to be a candidate by virtue of her second husband's occupation unless she shall have been married to such second husband at least 10 years; and that no widow of a pensioner shall be eligible to be placed on the pension list who shall have lived separate from her husband, and shall have continued to do so until the time of his decease, if during the time of such separation she had other means of support than those furnished by her husband.

6. That none but head gardeners, or their foremen, market gardeners, nurserymen, seedsmen, and foremen of nurserymen and seedsmen, respectively qualified pursuant to Rule 3, and who have subscribed 15 years consecutively to the funds of the Institution, or their widows, shall be considered eligible while a sufficient number of such persons are on the list (the object being to give a decided preference to those persons who have been contributing to assist others), so that if the funds should enable the Committee to call for the election of five persons, and there were two or three candidates who had been subscribing 15 years, such persons would be appointed pensioners in preference to the other candidates who had not subscribed for so long a period, or who had not been subscribers, and the election would be for the remaining number to make up the five; but subject, nevertheless, to the conditions of Rules 12 and 13, and such other Rules as apply to the election of pensioners.

8. That the amount of relief to be given be 16*l.* per annum to males, and 12*l* per annum to females, to be paid quarterly; but if the Committee think it necessary, in consequence of a change of circumstances, to recommend that such pension be discontinued or reduced, they shall call a Special General Meeting, which alone shall have power to discontinue or reduce the annuity of any pensioner.

13. That no person shall be considered eligible as a candidate for the pension who is in the receipt of parochial relief.

19. That all life subscriptions of 10*l.* 10*s.* and upwards, and all legacies, shall be invested in the names of the Trustees in the Three per Cent. Consols, and only the interest thereon, the annual subscriptions and donations of less than 10*l.* 10*s.*, be applied to general purposes.

20. That two General Meetings shall be held in each year, one in the month of January, and the other in the month of June:—that in January for the election of Officers, receiving the Report of the Committee, and the accounts of the Society for the past year; and that in June for transacting any business that may be requisite relative to the affairs of the Institution; and that 10 Subscribers then present shall be considered as a quorum for the purposes of such meeting.

REPORT OF THE COMMITTEE FOR THE YEAR ENDING DECEMBER 1858.

The Committee have the pleasure of presenting their report for the year 1858.

During the past year three pensioners have died, and nine added to the list, six by election from among the general body of subscribers, and three without election in conformity with Rule No. 6.

Four more will also be added to the list this day.

The Society has, in common with many others, to lament the loss of its late noble president His Grace the Duke of Devonshire—a nobleman who by his invariable kindness and unostentatious liberality had endeared to all classes of the community, and whose many virtues demand a lasting remembrance.

The Committee have to present their sincere thanks to Henry Pownall, Esq., one of the Vice-Presidents, who in the absence of Lord John Russell at the shortest notice occupied the chair at the late Anniversary Dinner, for the able and strenuous manner in which he advocated the cause of the Charity; also to those several gentlemen who filled the office of steward for their liberality and that of their friends.

The Committee have to express their gratitude to those many friends who again assisted the Society by the contribution of Fruit, Flowers, and rare valuable plants to decorate the room on occasion of the late dinner. They also beg to tender their warmest thanks to the Editor of the *Gardeners' Chronicle* for the very full and able report of the proceedings which appeared in the columns of that Journal. This they have every reason to believe has been productive of great good to the Society.

It affords your Committee great pleasure to announce that the Hon. Mr. Justice Haliburton has consented to preside at the Anniversary in June next. The Committee beg to draw the attention of Subscribers to the system of advertising in the list of subscribers, by which no less a sum than 52*l.* 11*s.* 6*d.* has been realised. They are thus enabled to circulate a large number of books at a very little expense.

Your Committee have devoted some very serious attention to the subject of increasing the amount of the pensions. But although it would afford them the greatest pleasure to do so, they regret they cannot at the present time recommend any change, but they will take care the matter is not lost of, and when the proper opportunity recurs will not fail to reconsider the matter.

The state of the pension list is as follows:—

15 WOMEN ... . £12 | 27 MEN.. .. .. .. £16

STATEMENT OF THE RECEIPTS AND PAYMENTS OF THE GARDENERS' ROYAL BENEVOLENT INSTITUTION,

FOR THE YEAR ENDING DECEMBER 31, 1858.

DR.	£	s.	d.	£	s.	d.
To Balance, 1857				326	17	9
To Annual Subscriptions	614	5	0			
To Donations received at and in consequence of Annual Dinner, including portion of a Legacy from the late C. Palmer, Esq.	266	4	0			
To Dividends on Stock	128	14	0			
To Advertisements	52	11	6			
				1061	14	6
				1388	12	3

CR.	£	s.	d.	£	s.	d.
By Pensions and Gratuities				578	0	0
,, Stock Purchased 200*l.*				197	7	6
,, Secretary's Salary				60	0	0
,, Printing..				75	9	6
,, Stationery				7	7	0
,, Advertising				10	16	0
,, Expense of Annual Dinner				16	7	7
,, Expense of Postages, &c.				31	1	6
				976	9	1
Balance at Bankers				412	3	2
				1388	12	3

STOCK 4600*l.*, 3 per cent Consols in the names of the Trustees.

Audited January 7, 1859.—JOHN LEE, WILLIAM FORSYTH, GEORGE CHARLWOOD.

LEGACIES.—1851, JOHN TOWNSEND AITON, Esq., £100.; CHARLES PALMER, Esq., £50.

RHODODENDRONS.

JOHN WATERER'S CATALOGUE OF UNRIVALLED HARDY SCARLET AND OTHER CHOICE RHODENDRONS, as Exhibited by him at the Royal Botanic Gardens, Regent's Park, London, is published, and will be forwarded on application.

☞ This List is recommended as a work of reference, as it contains accurate descriptions of all the esteemed varieties.

The American Nursery, Bagshot, Surrey, near the Sunningdale Station, South Western Railway.

NEW SEEDS FOR 1859.

WM. CUTBUSH AND SON beg respectfully to intimate that their PRICED CATALOGUE OF VEGETABLE AND FLOWER SEEDS, &c., is now ready post free on application. WM. C. AND SON devote particular attention to this department of their business, and most of the choicer kinds of culinary seeds and roots are saved under their own inspection, and they can confidently guarantee the quality of all offered.—Highgate Nurseries, London, N. Established A.D. 1695.

HARDY SCARLET RHODODENDRONS AND AMERICAN PLANTS GENERALLY.

WATERER AND GODFREY'S PRICED and DESCRIPTIVE CATALOGUE of the above beautiful tribe of plants, as exhibited by them in London and Manchester, may now be had on application inclosing one stamp for postage. The Catalogue also furnishes the heights and prices of their unequalled stock of Conifers and Evergreens, &c. Catalogues may also be had of Messrs. J. MAY & Co., Seedsmen, &c., Wellington Street, Strand.

Knap Hill Nursery, Woking, Surrey.

VEGETABLE, FLOWER, AND AGRICULTURAL SEEDS.

WILLIAM BARNES'S CATALOGUE of the above is now ready, and may be obtained postage free, upon application. It will be found to contain every article of known value, among them some that cannot be excelled, the stock of which having been saved specially for himself by private and competent friends, he can recommend with the greatest confidence. Every article is warranted of the purest and most genuine kind, as well as very moderate in price.

Camden Nursery, Camberwell.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their NEW PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Stove, Greenhouse, and Hardy Ferns, Miscellaneous Stove, Greenhouse, and Hardy Plants, Variegated and Ornamental foliaged Plants, Conifers, Roses, Rhododendrons, Indian Azaleas, Gloxinias, Fuchsias, Cactuses, &c., is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

NEW CHRYSANTHEMUMS.

JOHN SALTER begs to inform the numerous applicants for his NEW CATALOGUE OF CHRYSANTHEMUMS that it will be published at the end of February, in which his splendid Seedlings and other new varieties for 1859 will be fully described, as well as his unrivalled general collection, which is the largest in Europe.—Versailles Nursery, William Street, near Hammersmith Turnpike, W.

HOLLYHOCK SEED FROM NEW VARIETIES.

J. CHATER AND SON offer the above from 12 new varieties, separate packets, the collection, 3s. 6d.
24 varieties, best older sorts, 3s. 6d.
Best mixed, 20 sorts, 200 seeds, 1s. 6d.

J. C. & SON feel confident the above will give satisfaction, having been saved with great care.

Strong seedling plants, 20s. per 100.
If sown now will flower by September.
Nurseries, Haverhill.

DOUBLE ITALIAN TUBEROSE ROOTS, 4s. per dozen.—The annual importation of the above named beautiful and fragrant Flower has just been received, and large and well selected Bulbs may be obtained, without disappointment, at A. COBBETT'S Foreign Warehouse, 18, Pall Mall.

N.B. Printed regulations for treatment sent; also, just arrived, very moist and open Parmesan Cheeses.

AZALEA INDICA.

J. IVERY AND SON beg respectfully to invite growers of the above named to an inspection of their unrivalled Stock of Young Specimens of all the newest and best varieties, many of which have been exhibited at the Metropolitan Exhibitions. They are clean and healthy, well set with bloom, and moderate in price. Catalogues forwarded post free upon application.—Dorking Nursery, Feb. 5.

NEW ZEALAND RUNNING BEAN.—This Bean was found by a gentleman travelling in Central New Zealand. It is not known by Mr. Arthur Henderson, Mr. James Veitch, Messrs. Sutton, Mr. Carter, Mr. Hooper, Mr. Wrench, Mr. Flanagan, nor at the Hort. Society. Price per doz., 3s.; trade allowed Beans extra. A printed account will be sent with each order; see last week's advertisement. Melon, Cucumber, and true Custard Marrow, 1s. per packet. J. C.'s Pamphlets always on sale.—JAMES CUTHILL, Camberwell, London.

LONG-PODDED RUNNER BEANS, a new and very desirable variety raised by J. Harvey, Esq., Oulton High House. The following is the description he gives of it:—Flowers bright pink, Beans curiously marked, very prolific, and handsome in the pod, far superior to the common Scarlet Runner in flavour, and successive crops will produce till the cold of winter cuts them off. 2s. 6d. per quart.

Lynch's Star of the West Cucumber, true .. 1s. 0d. p. packet
Ayres's Perpetual Black Spine .. .. .. 1 6 ,,
Melville's Treble Curled Garnishing Borecole 1 0 ,,

Price for the above to the Trade on application.

The Plymouth Seed Company, Plymouth.

EXCELSIOR MARROW PEA (KNIGHT'S).—This new Pea is a decided improvement on the well-known Ringwood Marrow, being quite as early, greater cropper, longer pod, larger pea, superior flavour, and greener in colour. A great acquisition either for the amateur or the market gardener. 2s. 6d. per quart. Price to the trade upon application. To be had of NUTTING & SONS, Seedsmen, 60, Barbican, London, E.C.

EARLY PEAS.

WAITE'S DANIEL O'ROURKE PEA; the earliest Pea in cultivation.

EARLY NAPOLEON; a Blue Wrinkled Marrow Pea, as early as EMPEROR.

EARLY EUGENE; a White Wrinkled Marrow Pea, as early as EMPEROR.

Prices to be had on application of J. G. WAITE, Seed Establishment, 131, High Holborn, London, W. C.

THE EARLIEST PEA.—DUNNETT'S FIRST EARLY is in every respect superior to "Daniel O'Rourke," being several days earlier, having finer pods, and richer in flavour, height 2½ feet. For an early dish of fine-flavoured Peas we can confidently recommend this; 2s. per quart.

CHAMPION CABBAGE, the earliest and best sort, if sown in succession, may be had fit for table throughout the year, 3d. per ounce, or 1s. post free.

BUTLER & MCCULLOCH, Covent Garden Market, London.

SEEDS OF ALPINE PLANTS
(SUITABLE FOR ROCK WORK).

JAMES CARTER AND CO. beg to announce the arrival of a Consignment of SEEDS (many of which are extremely rare) from Monsieur Ortgies, Curator of the Botanic Gardens, Zurich. The Seeds have been collected amongst the Alps during the past autumn, under his immediate superintendence, and J. C. & Co. have no doubt they will give great satisfaction.

12 selected varieties.. 2s. 6d. | 25 selected varieties .. 5s. 0d.
50 selected varieties .. .. .. 10s. 0d.

238, High Holborn, London, W.C.

CARTER'S EXCELSIOR MELON.—A green-fleshed variety of delicious flavour, netted; fruit averages 4 lbs., requires scarcely any heating, and is very prolific. R. Hogg, Esq., President of the Pomological Society, and Turner and Spencer's "Florist," pronounce this variety to be one of the finest ever tasted. Seeds 1s. per packet.—JAMES CARTER & Co., Seedsmen, 238, High Holborn, London, W.C.

NEW EXOTIC FERN,
NEPHRODIUM MOLLE, VARIETY CORYMBIFERUM.

Named and described in the *Gardeners' Chronicle* of May 22, 1858.

ROBERT SIM is now prepared to supply, at 15s. each, vigorous and well-established profusely crested plants of this beautiful and unique variety, of which he possesses the entire stock. It ought to prove quite a greenhouse kind.

The customary discount to the trade. Price per dozen on application. Carriage paid to London. Post-office Orders on Foot's Cray.—Nursery, Foot's Cray, Kent, S.E.

FRUIT TREES IN POTS.

JOHN AND CHARLES LEE have now the largest and finest stock of FRUIT TREES IN POTS in a bearing state for FORCING AND ORCHARD HOUSES ever offered. They consist of the following kinds, a CATALOGUE of which may be had on application:—

APRICOTS	FIGS	PEARS
PEACHES	PLUMS	APPLES.
NECTARINES	CHERRIES	ALSO,

VINES AND STRAWBERRIES.

Nursery and Seed Establishment, Hammersmith, London.

FRUITING VINES.

JOHN AND CHARLES LEE beg to offer extra strong short-jointed and well-ripened FRUITING VINES of the following kinds:—

BLACK HAMBURGH	BLACK FRONTIGNAN
CHAMPION HAMBURGH	WHITE FRONTIGNAN
MILL HILL HAMBURGH	BLACK PRINCE
GOLDEN HAMBURGH	ROYAL MUSCADINE
MUSCAT OF ALEXANDRIA	BIDWELL'S SEEDLING
	BOWOOD MUSCAT.

Nursery and Seed Establishment, Hammersmith, London.

CALLICARPA PURPUREA.

JOHN STANDISH, the exhibitor of the above (at St. James's Hall), can supply a few good plants at 7s. 6d. each. The following passage from Dr. Lindley's leading article in the *Gardeners' Chronicle* for Nov. 20 will give an idea of its beauty:—"Callicarpa purpurea, quite insignificant when in flower, was beautiful in its winter dress of innumerable rich purple berries, about the size of swan shot." It is easily cultivated, and does well in a cold greenhouse or conservatory planted out, where it will produce thousands of bright purple berries resembling glass beads, and remaining on nearly the whole winter.—Bagshot, Feb. 5.

SUPERB DOUBLE BALSAMS.

F. AND A. SMITH are now sending out Seed of their superb BALSAMS, which are unrivalled for size, form, brilliancy of colour, doubleness of flower, and habit of plant.

In collections of nine separate colours .. .. 2s. 6d.
,, ,, mixed ,, ... 2 0
,, ,, ,, ,, half quantity 1 0

The above are *genuine only* in our sealed packets, and may be had of most respectable Nurserymen and Seedsmen in the United Kingdom.—Dulwich, Surrey, S.

TO THE SEED TRADE.

CHOICE STOCKS OF SEEDS, GROWTH OF 1858.

Improved Gloucestershire White Swede
Sutton's Lincolnshire Red Globe Turnip
Yellow Tankard Turnip | Green Globe Turnip

The above were grown by or expressly for us, from our own stocks, in larger quantities than we require for retailing, and can be confidently recommended. Also a few other choice Stocks. Applications for prices, stating quantity required, addressed as below, will be replied to promptly and liberally.

SUTTON & SONS, Seed Growers, Reading, Berks.

FLOWER AND VEGETABLE SEEDS OF BEST QUALITY.—The Advertisers respectfully solicit applications for their extensive and DESCRIPTIVE CATALOGUE OF FLOWER AND VEGETABLE SEEDS, which they will feel pleasure in forwarding to any address throughout the world without charge, and postage free. It will be found to contain, beside the usual names of garden occupants, a numerous list of very CHOICE, NEW, and RARE SEEDS of all classes of the floral world, with many not to be met with elsewhere; and also of the Kitchen Garden Department, to the quality and purity of which they pay particular attention. Collections made up for all climates.—Address HOOPER & Co., Seedsmen, Covent Garden Market, London, W.C.

RANUNCULI.—The admirers of these beautiful flowers have now an opportunity of purchasing some that will flower as free as Daisies.

T. MELLON, having grown this flower from seed for anumber of years with great success, is now willing to dispose of a portion of them, and impart his mode of cultivation to any purchaser. These Ranunculi are very hardy, perfectly double, and warranted to bloom. Satisfactory references can be given as to the quality of these flowers. Price 5s. per 100.

T. MELLON, 71, New Street, Birmingham.



CHAMPION OF SCOTLAND PEA.—A new and first-rate sort, declared by all who grew it last year to be the most distinct and best flavoured Pea in cultivation. To be had only at PETER LAWSON & SON'S, the Queen's Seedsmen, &c., who are also prepared to execute orders for all sorts of Garden and Flower Seeds of the finest quality.

27, Great George Street, Westminster.



"JACK OF NEWBURY" SWEDE, ETC.

PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN, &c., 27, Great George Street, Westminster, respectfully request attention to their very genuine Stock of the above excellent Swede; also of the LOTHIAN PURPLE-TOP SWEDE, both of which have been selected with the greatest care. They have also a very fine Stock of the KOHL RABI, or TURNIP-ROOTED CABBAGE, specimens of which were shown at their Stands at Smithfield Club Show. The Kohl Rabi was largely grown last season, and may now be relied on as a substitute for the Turnip and Mangel, where these roots do not succeed, or for filling up blanks where there is a partial failure. Its feeding qualities, hardiness, and weight per acre are equal to the Swede, and all kinds of stock prefer it to other roots.

P. L. & SON have also selected a first-rate Stock of MANGEL WURZEL SEED, which they can confidently recommend. Their natural GRASS SEEDS have been also saved with very great care, and they are ready to supply them separately or in mixture, for laying down Permanent Pastures, Lawns, &c.

P. L. & SON have arranged to deliver Seeds free throughout England and Wales from their London Establishment, for all quantities exceeding 20s. in value.

LISTS OF PRICES of the above and all other Seeds, Plants, &c., may be had on application.

27, Great George Street, Westminster.

VEGETABLE AND FLOWER SEEDS, ETC.

JAMES DICKSON AND SONS, SEED MERCHANTS and NURSERYMEN, Chester, respectfully intimate the publication of their ANNUAL LIST OF VEGETABLE AND FLOWER SEEDS, which they will be happy to transmit prepaid to those who may apply for it. The whole of the seeds they offer have been selected with great care, and they therefore feel confidence in recommending them as being of really good quality.



Their Nursery Grounds at Newton-by-Chester, which lie in a high and exposed situation, contain a large and valuable Stock of FOREST and FRUIT TREES, SHRUBS, &c., all healthy and vigorous; also a great quantity of transplanted QUICKS, suitable for forming new fences, &c. Lists and every information furnished upon application.

Communications should be addressed JAMES DICKSON & SONS, 102, Eastgate Street, and Newton Nurseries, Chester.

NEW SEED CATALOGUE.

MESSRS. E. G. HENDERSON & SON

RESPECTFULLY announce that they will forward, post free, their NEW CATALOGUE for 1859, in which the following novelties of the season will be introduced or noticed with full descriptions of management, cultivation, and adaptation; and only those that are known to be valuable are recommended for cultivation. Much useful information on the cropping of Gardens, sowing, &c., is also given for the guidance of cultivators. The following NEW FLOWERS and other Seeds are offered by E. G. HENDERSON & SON for the first season, full descriptions of which, with treatment, are given in the Catalogue.

THE ROSY CARMINE GIANT EMPEROR ASTER, 1s. 6d.
NUTTALLIA PEDATA, var., see Catalogue for the description of this beautiful plant, 2s. 6d.

CLIANTHUS DAMPIERI, 2s. 6d., 5s. and 10s. per packet.
THE LAWTON BLACKBERRY (new American Fruit), 2s. 6d. each; 25s. per dozen.

NEW FLOWER SEEDS OF 1859.

Price per packet is given in the Catalogue. A select assortment of 12 varieties for 6s.

Acroclinium roseum album
Celosia pyramidalis
Chrysanthemum Burridgeanum
,, venustum
Datura humilis (flava pleno)
Dianthus hybridus corymbosus flore pleno
Gaillardia hybrida grandiflora
Fonzlia dianthæflora
Ipomœa hederacea superba lilacina
,, ,, atropurpurea
Lupinus Hartwegi cœlestinus
Myosotis azurea grandiflora (Large-flowered Forget-me-Not)
New Double Orange French Marigold
Nasturtium Tom Thumb (dwarf)
Nasturtium Brilliant (not Lobbi Brilliant)
Nolana paradoxa violacea
Pharbites (Convolv.) hybrida marginata
Portulacsa caryophylloides
Œnothera bistorta Veitchi
,, Drummondi nana
Viscaria cœli rosa alba
,, Dunnetti
Silene rubella alba

A List of Sixty ORNAMENTAL GRASSES, a few of which are adapted for margins to beds, borders, &c.

A Descriptive Priced List of that most splendid tribe of hardy bulbs: Gladiolus Gandavensis.

The new vegetable CHÆROPHYLLUM BULBOSUM, and now well-known DIOSCOREA BATATAS (the Chinese Potato or Yam). Seed of the former and sets of the latter per dozen or 100, large tubers for tasting of both, per lb.

A List of 100 Select ORNAMENTAL GOURDS and MARROWS.

Wellington Nursery, St. John's Wood, London.

MEADOW AND PASTURE GRASS SEEDS.

GEORGE GIBBS & Co., Seedsmen, 26, Down Street,

BEG to announce that their mixtures of GRASS SEEDS are now ready for delivery. These mixtures are made up expressly to suit the various soils and the growth of each variety is fully tested previous to being bulked. G. G. & Co. having supplied the Seeds for *Hyde Park, St. James's, and Regent's Park, Kensington Gardens, Kennington Park*, &c., for many years, feel assured no further testimonials are requisite. The Seeds are made up into two different mixtures, as they do not sow well together; 2 bushels of the light and 12 lbs. of the heavy seeds are allowed per acre.

Mr. GIBBS, giving his personal attention to the assorting of these mixtures assures his friends that every care is taken with regard to the proper proportions.

MIXTURES FOR PERMANENT MEADOW & PASTURE (adapted to the different soils) 32s. to 34s. per acre.
MIXTURES FOR IMPROVING & RENOVATING OLD GRASS LAND (8 to 12 lbs. per acre) 1s. per lb.
MIXTURES OF THE FINEST SORTS FOR LAWNS, GRASS PLOTS, BOWLING GREENS, &c, 1s. 3d. per lb.

SELECT STOCKS OF THE UNDERMENTIONED AGRICULTURAL SEEDS SUPPLIED AT THE PRICES STATED FOR THE PRESENT MONTH:—

MANGEL WURZEL.	Per lb.—s. d.	CARROTS.	Per lb.—s. d.	SWEDES.	Per lb.—s. d.	RYE-GRASS.	Per bushel—s. d.	CLOVERS.	Per lb.—s. d.	VARIOUS.	Per lb.—s. d.
Long Red	0 9	White Belgian ..	1 0	Ashcroft	0 9	Gibbs' Improved Italian	7 0	English Red ..	9d. to 0 10	Holcus saccharatus ..	2 0
Elvethan Long Red ..	0 10	Yellow Belgian ..	1 3	Skirving's	0 9	Dickenson's Italian ..	7 0	White Dutch ..	10d. to 1 0	Lucerne	1 0
Yellow Globe	0 9	Large Altringham ..	1 6	Matson's	1 0	Fine Imported do. ..	7 0	Trefoil	4d. to 0 5	Drumhead Cabbage ..	3 0
Red Globe	0 9	Long Surrey	1 6	Kentish Green Crown .	1 0	Common English.. ..	6 0	Alsike Hybrid	2 0	Large Cattle Parsnip ..	1 6
Long Yellow	0 9	James's Scarlet ..	1 6	Marshall's Purple Top ..	1 0	Pacey's Perennial..	6s. to 7 0	True Cow-grass.. ..	1 0	Kohl Rabi	5 0

Full Priced Catalogues sent free on application.—Cash or reference required from unknown Correspondents.

GEORGE GIBBS & Co., 26, Down Street, Piccadilly, London, W.

GRASS SEEDS FOR ALL SOILS.

SUTTON AND SONS

HAVE had the honour of supplying their GRASS SEEDS to the ROYAL FARMS near WINDSOR and at OSBORNE PALACE; also to the CRYSTAL PALACE COMPANY, the Grass Seeds by which so many acres of arable land have been converted into the beautiful Park and Lawns now so much admired at Sydenham; also to the HORTICULTURAL SOCIETY OF LONDON, for the Gardens at Turnham Green, and to most of the Public Parks, Gardens, Asylums, &c., in the Kingdom, including the PEOPLE'S PARK, HALIFAX. This magnificent Park, presented to the town of Halifax by Frank Crossley, Esq., M.P., was laid down with SUTTON'S PERMANENT GRASS SEEDS, and at the inaugural meeting held last summer, had already become a beautiful sward (see *Illustrated London News*, August 22, 1857). SUTTON & SONS have since been honoured with further orders for Seeds to extend the Pleasure Grounds.

THE ALDERSHOT CAMP.

From a supply of SUTTON'S Grass Seeds especially adapted to the soil and situation there are now some very perfect swards formed on these bleak hills, forming a pleasing contrast to the surrounding barren waste.

Messrs. SUTTONS' charges for Grasses are very moderate, varying according to the quantity required, and other circumstances. Prices and other particulars may be obtained on application, addressed

SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

CHOICE FLOWERS.

BUTLER & McCULLOCH'S SPRING CATALOGUE OF SEEDS,



ARRANGED on a new and original plan, with copious Descriptive and Cultural Notes, and containing many new and rare species and varieties not found in any other Catalogue, now ready and may be had free and post paid on application.

FLOWER, SHRUB, TREE, and VEGETABLE SEEDS, the crop of 1858, saved with the greatest care, by the most eminent growers.

We may also state that the Sardinian correspondent of Messrs. JAMES CARTER & Co., whose Seeds, especially Carnations and Picotees, have given such universal satisfaction, has transferred the Agency from that firm and appointed us his representative in this country. To meet the growing demand for first class flowers, particularly FLORISTS' FLOWERS, we have adopted our usual maxim of charging the lowest possible prices.

A selection of 44 pkts. of beautiful Annual Flower Seeds						7s.	6d.	An Assortment of Vegetable Seeds, 20 quarts of Peas, and other Seeds in proportion for 1 year's supply			£3 3s. 0d.
Ditto	33	ditto	ditto	..	..	5	6	Ditto	ditto	12 quarts of Peas	ditto .. 2 2 0
Ditto	21	ditto	ditto	..	..	3	6	Ditto	ditto	6	ditto ditto .. 1 1 0
A selection of 40 pkts. of beautiful Biennial and Perennial ditto						10	6	Ditto	ditto	5	ditto ditto .. 0 15 0
Ditto	31	ditto	ditto	..	..	7	6				
Ditto	24	ditto	ditto	..	..	5	6				

All Flower Seeds sent post paid, and Vegetable or Vegetable and Flower Seeds amounting to 1*l.* 1*s.* Carriage Paid to any principal Railway Station in England, Wales, and Scotland, or any port on the Irish Coast.

BUTLER & McCULLOCH, Covent Garden Market.

SEEDS RIPENED ON THE CONTINENT.

JAMES CARTER & Co.

HAVING observed their name mentioned in an advertisement in connection with a late correspondent, feel it their duty to state that, preferring to have their Seeds from the Continental growers *direct*, one of the Firm has travelled during the past autumn with that object, *and purposes doing so every season*; the services of the correspondent alluded to are therefore dispensed with. Their Seeds for the present season, having been *personally* selected, are better than any they have hitherto offered.

JAMES CARTER & CO., Seedsmen, 238, High Holborn, London, W.C.

GENUINE KITCHEN GARDEN SEEDS.

JAMES CARTER & CO.

ARE NOW READY TO SUPPLY SEEDS FOR THE VEGETABLE AND FLOWER GARDEN, WHICH WILL BE FOUND, AS USUAL, OF THE BEST QUALITY ONLY.

CARTER'S "ENCYCLOPÆDIC CATALOGUE OF SEEDS,

AND GARDENER'S VADE MECUM."

The Twenty-fourth Annual Issue of the above is now ready, and, in addition to its usual comprehensiveness, has affixed a CALENDAR OF OPERATIONS for each month in the year for the Vegetable and Flower GARDEN, also for the Stove, Conservatory, Greenhouse, Orchid House, Pineries, Vineries, Pits, Frames, &c., forming a complete Gardener's Book of reference, which it is hoped will be found useful alike to the Amateur and professional Gardener. Forwarded free of charge and post paid to all parts of the world upon application.

JAMES CARTER & CO., Seedsmen, 238, High Holborn, London, W.C.

ROYAL BERKSHIRE SEED ESTABLISHMENT.

GOOD SEEDS, CARRIAGE FREE.

SEEDS DIRECT FROM THE GROWERS THE MOST CERTAIN MEANS OF PREVENTING DISAPPOINTMENT.

SUTTON AND SONS, SEED GROWERS, Reading, Berks, can supply every kind of FARM AND GARDEN SEEDS of genuine and superior quality.

Agriculturists residing in the most remote parts of the kingdom can procure good Seeds at very moderate prices from this Establishment.—For particulars apply to SUTTON & SONS, Seed Growers, Reading, Berks.

ROYAL SOUTH HANTS SEED ESTABLISHMENT.

UNDER THE PATRONAGE OF H.R.H. THE PRINCE CONSORT, THE AGRICULTURAL, HORTICULTURAL SOCIETY OF INDIA, AND THE LEADING AGRICULTURISTS OF THE UNITED KINGDOM.

PAGE AND TOOGOOD can now supply GARDEN AND FARM SEEDS, carriage free; SEED POTATOES, &c. The numerous Prizes gained by their Stocks are convincing proofs of superior quality, and their prices compete with any house in the kingdom. WHOLESALE and RETAIL PRICED CATALOGUES upon application.

Agents for ODAMS' Blood Manure, Superphosphate, &c. Seeds Packed for Exportation to all Parts of the world,

37 and 38, Oxford Street (facing the Railway Terminus); and 58, Above Bar, Southampton.

The Gardeners' Chronicle.

SATURDAY, FEBRUARY 5, 1859.

MEETINGS FOR THE FOLLOWING WEEK.

MONDAY, Feb. 7—Entomological ..... 8 P.M.

THE value of that resolution of the House of Commons which declared last session that the Paper duty ought to be repealed will soon be brought to the test of a parliamentary trial. It is clear that the friends of a repeal of the paper duties are ready for the conflict; and a decision, one way or the other, must soon be arrived at. It is no business of ours to ask whether duties amounting to thirteen or fourteen hundred thousand pounds a year can be spared. That is a question for political parties to settle. Nor indeed should we have regarded the subject in its present aspect as being at all within our limits, had it not been that some opponents of the repeal of the duty have asserted that in the event of its being carried the remission would be useless *because materials for the production of a much larger manufacture of paper cannot be found.* Not found! Nothing but a determination to throw dust of any kind in men's eyes could have led to such a statement. Not to be found! Why, materials for paper making surround us on every side, and if our country friends are alive to their own interests, the paper market is more likely to be glutted than starved. The only substance out of which paper can be made is that which constitutes the framework of vegetation. There is not a root, a blade of Grass, a straw, a leaf, a stalk, a twig, that is not fit for this manufacture. Straw itself is now in general use for the purpose; Flax refuse is establishing itself; mere wood is grinding down into paper; the refuse of Beetroot distilleries can all be worked up; Hemp waste is an excellent article; the water-logged marshes of every fen country are full of the most valuable material; Mr. MARTIN makes capital paper from the shavings of common white deal, as we learn from specimens now before us; Hop bines are patented by Messrs. Plunkett & Bower; Potato haulm, Buckwheat straw, Melilot straw, Jerusalem Artichoke stems, Rhubarb leaves, Docks, Thistles, Mallows, Nettles, Furze, Broom, Bram-

bles, Briars, and weeds of every conceivable kind are convertible to this purpose. As to other countries their produce is without limit. And yet, in the face of all this we are told that materials for paper making on any larger scale than the present cannot be found.

It is doubtless true that such substances as have been now enumerated are of unequal value, some being far more suitable to the manufacture than others. But they are all convertible, and by such mixtures as any paper maker would employ, they will all make paper fit for use. Some will bleach better than others, some will break down more easily than others, some are tougher than others; but since nobody expects all paper to be of equally good quality, so nobody should be so unreasonable as to expect that materials for the making it should be all alike. Beet root pulp and straw are two as unpromising substances as could well be named, and yet, with the assistance of longer fibres to improve their staple, they make paper fit for an infinite variety of purposes. It is to be expected that some difficulties may be met with, at the outset, in converting new vegetable substances into paper pulp: but it would be a disgrace to the chemical and mechanical skill of the age if they could not be overcome.

The pretence that it would be useless to take off the paper duty because the increased consumption consequent upon its repeal would speedily exhaust available materials is therefore most absurd. We believe that the market might be supplied by Mr. MARTIN'S process alone.

What effect the repeal of the duty may have upon literature we leave others to insist upon. The strongest argument in our eyes is that derived from the great demand it would create for the labour of the weak, the infirm, and the old. There can be no doubt that untaxed paper would lead to an enormous manufacture of small articles in which children, women, cripples, and aged persons might be profitably employed. And no one will deny that it is sound public policy to favour whatever will conduce to so important an end. Machinery, indeed, would be brought into immediate action for the purpose of dispensing with hand labour; but we believe there is no instance of machinery having really diminished labour. All that it does is to force it into new channels, which is obviously unimportant. If we only consider how many women and children would be required to collect the refuse demanded by the mills were paper untaxed, and they would be largely fed by refuse, it must be evident that a very sensible effect would be produced upon poor rates in every village in the kingdom. Surely this should render the repeal of the paper duties a matter of deep interest with all who have really at heart the welfare of the most helpless portion of the labouring population.

SOME account was given last year in this Journal, at p. 783, of the destruction of some bees by a fungus, as was supposed, which occurred in their intestines. Specimens were forwarded to us from Liverpool, but unfortunately in such a state that we could arrive at no satisfactory conclusion. A fungal growth was indeed observed, but not in such a condition as to enable us to refer it with any certainty to any particular genus, and Mr. HIGGINS who made the communication was scarcely more successful.

Within a few days, however, we have received from Dr. MONTAGNE a short sketch of a memoir read by him before the Imperial Society of Agriculture at Paris, respecting a fungus found in the same situation by Monsieur LEUCKART, and described by HOFFMANN in the 19th number of Hedwigia. It is not indeed certain that the fungus is the same as that observed by Mr. HIGGINS; but it appears certain from the memoir that bees, like silkworms, are liable to be destroyed by fungi.

Monsieur LEUCKART'S fungus is found in the second stomach of the diseased bees, that, viz., in which the chyme is formed. The mycelium is seated on the wall between the epithelial cells, and consists of numerous highly branched transparent threads which have a few dissepiments. These threads increase continually, and at last distend the stomach enormously, and destroy the insect. With the filaments is found an enormous quantity of extremely minute spores. The threads decrease in number proceeding downwards, and are very sparingly produced in the narrow intestine, disappearing altogether in the rectum, while a few spores only and conidia are found, and these not in a state of germination.

The fructification appears in two forms, viz., in that of a vesicle filled with spores constituting a *Mucor* or true mould, and moniliform threads like those of an *Oidium*. The perfect plant is described as *Mucor melittochthonus*, while to the Oidioid form, which is however probably a mere state of the other, the name of *Oidium Leuckarti* has been assigned.

In conclusion, we may observe that the important part played by fungi in the production of disease, both in the animal and vegetable kingdoms, is daily becoming more evident; and it is fortunate when, as in the present instance, new forms of disease fall under the notice of persons competent to give a decisive opinion as to the real nature of the productions by which disease has been induced. *M. J. B.*

IT was only the other day that we gave a somewhat lengthened account of the magnificent gardens at TRENTHAM. It is now our office to announce that Mr. ARCHIBALD HENDERSON, the Superintendent of the Horticultural Garden at Chiswick, has been appointed to the charge of this vast establishment, in the place of Mr. WREN, whose health is said to have failed him. The able manner in which Mr. HENDERSON has managed the Chiswick garden justifies us in expressing a confident belief that he will be found worthy of the signal honour that has been conferred upon him.

New Plants.

213. CALLICARPA PURPUREA. *Juss. Ann. Mus.* 7, 69. *Schauer in D.C., Prodr., xi.* 645.

No plant excited more interest at the last autumn meeting of the Horticultural Society in St. James's Hall, than a little shrub from Mr. Standish, of Bagshot, loaded with the most beautiful shining deep violet berries. Few had seen such a species before, or suspected what it might be; the fact being that Callicarpa, the genus to which it belonged, has never before produced the beautiful fruit, from which its botanical name has been formed. The accompanying figure will convey a good idea of its general appearance.



Not having seen the flowers or the old leaves, we are in some doubt to what species of Callicarpa it should be referred; and in selecting that called *purpurea* we by no means overlook the possibility of its proving botanically distinct. In the form of the leaves, and the proportional size of the clusters of berries, it agrees very well; but the hairiness is that of *C. rubella*, quite a different plant. But these Callicarpas certainly vary much in hairiness at different periods of growth and under different circumstances. All that we can say for the present is that it seems to be a state of C. purpurea, the Porphyra dichotoma of Loureiro; but that it may possibly be the C. lasiantha. At all events it is a most interesting little greenhouse shrub, brought from China, we believe by Mr. Fortune. What makes it so extremely useful is that its berries retain their beautiful colour till long after Christmas. Some indeed now before us are as brilliant as they were in November.

SUMMER PEAS, ROTATION OF CROPS, &c.

IN your notices of seed catalogues, p. 60, you have given a quotation on the growth of summer Peas. No doubt the plan recommended is a very good one; but still I believe not the best that can be adopted. There is a very general opinion extant that it is wrong to manure for Peas; but that is a great mistake, for if you give sufficient room for light and air to play freely on all sides of the plants, I believe it is almost impossible to give too much manure to summer crops. For many years past I have sown Peas in trenches prepared as for Celery, mulched them with good dung, and irrigated with manure water, and yet never found them suffer from over-luxuriance. I need not say how much superior Peas so grown, especially early ones, are to the wretched "shot-like" things generally sold in our markets. It will of course be argued that the latter are early; true, but is the produce of such half-starved plants forced into premature fruitfulness fit to eat? Certainly, as compared with well-grown Peas a few days later, it is not; and for that reason I have discarded the class of early Peas altogether. I have reduced my assortment of Peas to three kinds, viz., Harrison's Glory and Perfection, and Hair's Mammoth, and these three kinds sown the first week in every month from Christmas to August will give a good succession to the end of October, and sometimes in this locality to the end of November. These three kinds I grow for the parlour table, but have a "glut" of Scimetar or Bedman's Imperial for the servants' hall. Now, according to my standard, a row of Peas—say No. 1 or Daniel O'Rourke, which are generally marked in the seed catalogues as 3 feet high, and with scarcely branches sufficient to cover the sticks—should be from 4 to 5 feet high, and quite that much through the plants or haulm. A row of Peas of this description will produce as many Peas as any four rows such as are generally grown, while the produce individually will be almost double the ordinary size, and of course much superior in quality. As a general rule I never grow Peas closer than from 15 to 20 feet apart in the row, but of course the ground is cropped between the Peas with other vegetables. Under such circumstances the rows are prepared as for Celery; that is, after the ground has been well winter dug it is marked out in rows running from north to south, and trenches are taken out 18 inches wide and two spades deep; the bottom is filled from 6 to 8 inches deep with well-rotted manure, and after being well incorporated with the under soil the top spit is returned to the trench leaving a ridge on each side, so that when water is required a trench is provided to receive it. Where a regular system of rotation is followed these Pea stations will be prepared at the winter digging, or at any rate when the ground is prepared for the regular crops, and hence Pea sowing has not to wait for other crops to be cleared before they can be got into the ground.

With the general or main supply of vegetables I find a four-course rotation to be the most convenient and profitable. Celery I take as my leading crop, and for that the ground is being prepared at the present time, though the seed is not yet sown. This is bastard trenched, if not trenched in the usual manner; as I make it, like the London market gardener, a rule to stir the under soil for every crop, and bring it to the surface as frequently as I can. Well, the ground being rough dug I proceed for the Celery crop. I grow all my Celery in beds, not on the Scotch system of five or six rows in a bed, by which means the inner rows are generally very inferior; but I have my beds 3 feet wide, and plant two rows of plants in each bed, which admits of the rows being 1 foot apart and the plants such a distance apart in the row as circumstances or the size of the variety planted may render necessary. The ground is therefore marked out into spaces 3 feet and 4 feet wide alternately, the earth is taken from the narrow spaces and placed upon the wide ones, and thus we have a trench 3 feet deep and a ridge the same height alternately. Of course it is too soon to plant Celery at present, therefore I do not fill the trenches with rotten dung, but leaves, weeds, vegetable refuse, &c., are wheeled in, and sufficient hot dung is added to bring the whole, when properly incorporated, to a nice growing temperature. On these nice mixed hotbeds two rows of previously prepared Ash-leaf Potatoes are planted, and as the plants progress they are protected with Ferns or such other dry litter as may be most convenient. These beds give a good supply of Potatoes through part of May and June, and as fast as the trenches are cleared of Potatoes the manure is forked over, well soaked with manure water, and planted with Celery, the plants having of course been prepared elsewhere. In this way all the trenches are successionally occupied, and one advantage of this system will now be manifest, viz., that no manure has to be wheeled into the garden at a time when in most gardens the men's hands are more than full. So much for the

trenches, now a word for the ridges; these from centre to centre are 7 feet apart, and hence afford first-rate stations for the dwarfer kinds of Peas, as Harrison's Glory, &c. On each side the rows of Peas there is now a row of Lettuce, but it will be well so to time the crop that the Lettuce may be off before the Peas are fit to gather. Thus the ground is fully occupied the first season, and in the twelve months may be said to carry four crops.

The deep cultivation which the ground gets for Celery prepares it capitally for root crops, and hence it is occupied with Onions, Carrots, Parsnips, Beet, &c. In the third year it is occupied with Cabbage, Cauliflower, and other Brassicas, and in the fourth year with Potatoes, which are cleared off in time for a dressing of dung, and a good crop of autumn and winter Coleworts or Turnips—and these give place again in turn for Celery trenches and early Potatoes, as at the commencement of the rotation. It must be observed that in addition to the Celery ridges the whole of the ground specified is occupied with Peas in rows, 20 feet apart, care being taken so to divide the ground that Peas do not come on the station without a change of crop.

I do not advance this system of rotation as anything new, as I gave a similar detail in the *Gardeners' Chronicle* now 17 years ago, and others follow the same plan. Experience however has satisfied me that it is the right system, and one especially adapted for small gardens. There is neatness and method in it, and a rotation of cropping very preferable to the higgledy piggledy system of cropping, a bit here and a bit there, followed in many places where better things might be expected. *A. P. H., Orchardleigh Park, Frome.*

RHODODENDRONS.—No. I.

THE Rhododendron has justly been styled the queen of flowering shrubs. It is every day increasing in popularity and importance. "American gardens," of which it is the chief occupant and ornament, have come to be considered as almost necessary features in the grounds of every country residence, large or small, successfully competing with the Rosery in brilliancy and variety of colour, and rivalling it in masses of rich deep evergreen foliage.

The commercial growers of this plant have, with laudable exertions, at once administered to and augmented the popular taste by producing a succession of novelties each more beautiful and striking than the preceding, till at length beauty of form and colour, with size of flower and substance of petal, have been so successfully combined as apparently, to the uninitiated at least, to leave nothing to hope for or desire. But as will be shown in the course of these papers, the results hitherto obtained, great and important though they be, must be considered merely as stepping stones to still greater achievements.

The present important horticultural position of this shrub, coupled with the wishes of several correspondents for detailed instruction on its management, has induced us to undertake a series of articles which shall, as far as possible, meet their requirements. In fact it is proposed to give a complete treatise on the cultivation of this popular plant, combining its treatment both as a pot plant and in the open ground throughout the year, with all necessary instructions as to soil and propagation—a treatise in fact which shall at once initiate the beginner and instruct the more advanced amateur.

Up to a comparatively recent date the materials in the hands of the hybridiser (to whom, in fact, the present important position of the Rhododendron as a hardy garden shrub is mainly due) were limited, and though by skill and industry he was continually producing new change and combination of the materials at his command, he began to feel the want of some new source from whence he could derive the requisites to enable him to produce still greater diversity as well as new combinations. At the moment when the important discoveries of Dr. Hooker in Sikkim Himalaya were announced to the gardening world, and before the expectation and enthusiasm which the announcement of such discoveries had necessarily created had subsided, they received additional stimulus from the publication of "The Rhododendrons of Sikkim Himalaya," giving life-like and life-sized portraits of these magnificent plants. Seeds of the greater portion of these, thanks to the liberality of Sir William Hooker, were quickly disseminated throughout the country, and, according to the skill of the recipients, were more or less successfully raised. Very many of the species have now flowered; some are much superior, others little inferior to the published representations just referred to.

As in all new discoveries, much misapprehension arose in connection with these plants. Their value as individuals and directly must, on the whole, be looked for in a direction opposite to that in which it was supposed to lie; *i. e.*, not as hardy plants but as denizens of our conservatories and greenhouses; indirectly, but not the less valuable, as materials for infusing new blood into our already abundant and beautiful race of garden hybrids, and producing forms and colours hitherto undreamed of in the most enthusiastic cultivator's philosophy. Nor is this all; that great desideratum with many, a hardy, scented Rhododendron, is looming in the distance. Edgeworthi, the prince of fragrant plants, belong to whatsoever genus they may, has contracted an alliance with a cousin, and the union has produced a numerous progeny. But we must quit, at least for the present, anticipations for realities—hoped-for results for present facts, and, fortunately, in so doing we have no lack of brilliant materials to occupy our attention.

As a hardy flowering shrub, in which by the bye the Rhododendron is most directly valuable, it presents us with a combination of desirable qualities not possessed by any other. Its flowers is very diversified in colour. Every shade from white to crimson, purple, and scarlet, with innumerable combinations, are to be obtained. And the early period in the life of the plants at which these flowers are produced is a highly important feature. Formerly many years elapsed between the sowing of a pan of Rhododendron seed and the flowering of the plants. Now the same results can often be obtained in one-fifth part of the time; and this precocity is entirely due to the results of judicious cross-breeding. Nor is the precocity less remarkable than the abundance of the flowers produced—plants 6 inches high having as many heads of bloom, and larger plants in proportion.

Then in the Sikkim and Bootan kinds we have, besides the colours already mentioned, yellow in various shades, with a vast augmentation in the size of leaf and flower, and, in many instances, a marvellous perfection of shape in the latter. Falconeri, for instance, has a head of primrose-coloured bells, with a recurved rim of exquisite form, and of which the fine drawing in the work before alluded to gives no adequate idea. And no less remarkable is the foliage of this fine plant. Individual leaves 18 inches long by half a dozen broad are by no means exceptions. Then there is the famous scented Edgeworthi, the admired of Royalty, with its large Gum Cistus-like flowers, 4 or 5 inches in diameter; and Hodgsoni and Maddeni, and the magnificent Nuttalli of Augsburg celebrity.* The influence of these on our garden hybrids and *vice versâ* has already commenced. That the results will be of the highest importance no one can doubt.

Although the treatment of the Sikkim and hardy hybrid Rhododendrons has much in common, we shall, we think, be consulting the benefit of our readers by treating them as far as possible separately. This we shall do step by step, beginning with the hardy hybrids as being most generally cultivated. ***

(To be continued.)

"PALACE FOR THE PEOPLE."

AN influential company is in course of formation, with the object of erecting a second Crystal Palace under the above title at Muswell Hill—a delightful situation between Hornsey and Highgate, where an estate of 450 acres, admirably adapted as a site for the proposed building and grounds, has, we hear, been purchased for that purpose. The proposed building, which, like its great precursors in Hyde Park and Sydenham, is to be a magnificent structure of iron and glass, is from the designs of Mr. Owen Jones, who has, however, introduced very considerable alterations both in the elevation and interior arrangements, and which, in our opinion, constitute great improvements, and will make the building much superior, in many respects, to the Sydenham Palace. The centre of the proposed building, which altogether is upwards of 1200 feet long and 400 feet wide, consists of an immense circular dome of 200 feet span, and 136 feet high, completely divided from the rest of the building, and intended as a winter garden or tropical conservatory, beneath whose capacious and lofty roof Palms and other types of the magnificent vegetation of the tropics will find room enough to attain their utmost development. The great advantage of having this compartment devoted to a conservatory divided from the naves will be to prevent the humid atmosphere necessary for the growth of plants penetrating the rest of the building; and thereby to preserve many fine art productions and delicate manufactures which are found to suffer where the least dampness prevails. One nave is to be devoted to works of practical utility, manufactures, &c., and the other to the fine arts and scientific objects. Besides, there are proposed minor sub-divisions, to include museums, class rooms, show rooms, &c. A grand concert room or theatre is also provided, which forms a circular projection to the building on the north front; this will contain sitting room for 10,000 spectators, and yet is so arranged that it does not interfere with the other interior arrangements.

It is proposed to surround the palace with terrace gardens on a magnificent scale in the early English, Italian, Dutch, and French styles, as well as modern English, to represent the progression of this department of ornamental gardening. An experimental horticultural establishment is also one of the objects contemplated by the promoters, as well as the cultivation of those plants which enter into the arts and manufactures; their object being to make the Palace an educational establishment, as well as to afford amusement and recreation. Useful or economic botany, as well as horticulture, arboriculture, and agriculture, will be introduced in a popular manner, so as to convey a clear view of the principles of cultivation included under each head.

As we stated above, the whole estate comprises about 450 acres, beautifully undulated, and well furnished with timber. The site of the proposed Palace will be at an elevation of 200 feet above the general level, and the view from the building and adjoining terraces will embrace a wide circle, extending over the metropolis to the Surrey hills, and the Sydenham Palace; Kent Middlesex, and Essex. The situation is, in fact, one of the most picturesque to be met with, and remarkably so, considering its close proximity to London, and the ease with which it may be reached from the metropolitan districts north of the Thames. The extent of ground intended for the gardens and park will be about 200 acres; the soil is a sandy loam, varying to that in which clay predominates, and very suitable for the growth of trees, as is evidenced by those growing on the spot, and the luxuriance of the shrubs and exotic trees in the neighbouring gardens growing in similar soil. In addition to the grand architectural terrace gardens, which will enclose the Palace on all sides, the rest of the grounds are to be laid out in the natural style, and will include some 40 or 50 acres laid out as a park, to be stocked with deer and other animals, and also ample spaces of ground for every species of recreation. A broad carriage drive is to be carried entirely round the grounds, which will be a great boon to invalids and equestrians. A lake of 30 acres will occupy the low ground facing the terrace front of the Palace, and will prove a great feature, as seen from the higher grounds. The introduction of ornamental trees and shrubs is intended to be on a most extensive scale, and it is expected will add greatly to the interest and novelty of the gardens, admirably adapted as the features of the ground already are for carrying out the natural style of landscape gardening. The above are the principal features connected with English gardening which the promoters of this undertaking contemplate introducing into their scheme. There can be no question that the idea of making British gardening popular as well as instructive is a step in the right direction; and that there is no reason why the highest attainment of the landscape gardener's art, and the most successful examples of cultivation, may not be made subservient for imparting a knowledge of plants under every form of employment and combination — a beautiful and suggestive idea, worthy of the age. Notwithstanding the great popularity of Kew—maintained by national resources—we think much remains to be accomplished before all the instructive lessons which may be taught through the medium of the vegetable kingdom, and the various uses and objects to which plants can be applied, are fully comprehended by the masses. We can therefore most heartily wish success to a company who, it appears, are endeavouring to carry out such ideas, and who seem desirous of making the grounds belonging to the "Palace for the People" not only as interesting and beautiful as Art can make them, but, by embodying the educational principle in their scheme, they will create thereby a school for studying an important department of natural history, as well as the principles of cultivation applicable to the garden and the farm. *From the Florist of February.*

Home Correspondence.

Turning out Rooted Cuttings from Striking Pots.—Under the title of "Compartment Cutting Pots," there is in your last Paper (p. 74) a description of a pot of that kind, the object of which is to facilitate the turning out of plants from striking pots, without injuring the roots, which are commonly liable to be broken off or greatly damaged, especially when two or more cuttings have been struck in the same pot. Without discussing the merits of the plan proposed for that purpose by your "Subscriber," (which I think he will find to be a great mistake), I will describe a simple method of performing the above process, which with proper management will always answer perfectly. Let the rooted cutting be carefully turned out into one hand without disturbing the earth, and then turned over again into its natural position, and held with both hands under water (which is of course to be warmed where it may be required by the kind of plant, or for the comfort of the operator) and by gentle shaking and pressure on all sides with the separated fingers, the earth may be very gently coaxed away from the root, and allowed to fall to the bottom of the water, which it will readily do and leave the roots quite clean and uninjured; the most brittle roots, which if I remember rightly are those of Fuchsia cuttings, may be so preserved entire. When two or more cuttings have been struck in the same pot, and their roots are entangled with each other, they may be disentangled in the same careful manner, by judiciously disposing them between the fingers of both hands and gradually pulling them apart—under water. Where it is proper to dry the roots, which it is when the cuttings are to be immediately repotted, it may be done by throwing over them enough dry earth or sand, which will fall from them again by its own weight when the roots are lifted out of it; but when it clings to them, which it will do where enough has not been used or the operation has been hurried, and always when the roots are tender, care must be taken to lift them out of it in the direction of their growth. It need not be added that the same process applies equally in all cases of removing plants from pots, when the roots are to be separated from the earth in which they have been growing—with proper modifications where they are large and heavy; and it is essential to sound practice that rooted cuttings should never be repotted or transplanted without removing it from them. But will the great gardeners of these days be patient with me when I tell them that the business of repotting or transplanting in the vast majority of cases is still performed in the very worst possible manner? *N.*

*To M. Otto Förster, of Augsburg, Bavaria, belongs the honour of having first grown this fine plant. A plate of it is given in the current Number (the fifth) of Messrs. Henderson's "Illustrated Bouquet." The flowers were hybridised, and a fine head of capsules is the result These have been consigned to Mr. Standish, from whose nursery the plant was originally sent to M. Förster.

The Prodigies of Household Words (see p. 76).—I can bid higher for the admiration of wonder-loving readers than the author you have referred to. Radishes weighing 50 or 60 lbs. are trifles. I know of something much more grand. I was both an eye-witness and ear-witness of a late meeting at Leyden of the "Society to Promote the Introduction into Holland of the Plants of Java and Japan"—a very notable association I can assure you, and presided over by no less a personage than Dr. v. Siebold. After the business was over, the learned President delivered an address to the meeting, concluding his remarks in the following words:—"Gentlemen, before we separate permit me to have the pleasure of offering each of you a few seeds of a Radish which it requires the strength of two donkeys to carry to market (*que deux ânes réunis peuvent seuls porter au marché*). I need not add that the meeting was almost moved to tears by the President's touching generosity. *Batavus.*

Glazing.—What is the best plan that I can adopt for stopping the laps of my glass? I have had a large plant-house erected, and the roof of it is glazed with Hartley's rough plate glass; unfortunately the glaziers have not allowed quite a sufficient length to lap more than ½ inch, and the sheets being rather round in some of them the opening is ½ inch or more, so that when we have rain accompanied with wind I find that the wet comes through. I am not an advocate for stopping the lap of any glass building for plants, but under the present circumstances I am obliged to do so. I now wish to ask what you would advise me to do, and what kind of material to use that will not appear to darken the laps, and that will not quickly perish? *A Subscriber.* [There is nothing better than good "tacky" glazier's putty.]

New Zealand Kidney Bean.—I inclose some Beans which I presume are similar to those advertised as the "New Zealand Running Bean." Will you oblige me by stating if they differ from those you have received? The seeds sent were produced from a few taken from the crop of a wild pigeon that was shot in America several years since. They are not so prolific as the Scarlet Bean, but the legume is rather ornamental when arriving at maturity. *N. S. Hodson, Botanic Gardens, Bury St. Edmunds.* [We doubt whether these are the same. They are too long and too large.]

Rhododendrons.—Is there any way of causing these to flower in autumn? I have been told that if the flower-buds are picked off now they would blossom in the autumn of 1860. This refers to the common varieties of R. ponticum, or is there any other species that would do so? *G. W. H., Sheffield.*

Josephine de Malines Pear, &c.—In answer to your question in the *Gardeners' Chronicle* for January 22 about this Pear, I beg to say that the salmon-colour of the flesh is *not* constant, though it often pervades the whole Pear. There is no apparent difference in ripeness or quality in fruit where it is present, and I cannot account for it. I wish to repeat a question I asked last spring, but to which I had no answer. It had reference to the *yellow ground* Carnations and Picotees, seed of which is now sold at a very high price by most of the first-rate seedsmen, and which is said to produce 80 per cent. of double flowers, yellow, orange, and buff grounds, with scarlet, maroon, lavender, and other coloured stripes. What I wish to ask is, if any of your readers have raised plants of these varieties, and what the result is? *A. R., Bromley.*

Culture of the Fig in pots.—It is generally admitted that great improvement has been made in the culture of most fruits; but the Fig, one of the most wholesome, and when properly managed the most fruitful tree with which I am acquainted, appears not to have received so much attention as it is justly entitled to. To force Figs with success they should be root pruned at least once in two years, cutting from 2 to 3 inches less than the pot they are in, refill the pots with good rich soil mixed with rotten dung, and when potted, which of course will be in autumn, keep them from frost, and they should not receive any water. If ripe Figs are wanted in June, they should be put into heat, say the third week in January, keeping the house at 40° at night and from 50° to 55° by day for the first three weeks, syringing twice a day; the roots will now begin to grow and must be attended to with water; but water given before is apt to sour the soil. The house should be shut at 1 o'clock in the day, but air should be given when it can be done with safety. The buds will now be swelling a little, when the temperature may be raised from 4° to 10°—the former by night and the latter with sun heat, till the plants show fruit; keep the house well damped and give water freely once a day, with air as circumstances will admit; but avoid cold draughts. As the fruit advances carefully raise the temperature, but in doing this take every advantage of sun heat; do not get over 60° by night. When the fruit shows signs of ripening, gradually withhold water, keeping the house moist by sprinkling the pipes. Air, which may now be given with safety, should be admitted freely till the first crop is gathered, when a top dressing should be given to the pots, which will encourage the roots and enable the plants to ripen a second crop. Keeping the house moist is what Figs enjoy. *H. S. G.*

Mistletoe.—Four or five years ago, or more, being in Mr. Fowell's nursery at Okerthorp, near Alfreton, Derbyshire, my attention was directed to some Mistletoe growing on two very young Crab stocks, not so large then as walking-sticks, and about 1 foot from the ground. Mr. Fowell lifted one into a pot, but the Mistletoe then died out. The other now remains and is a fine bunch at least 18 inches in diameter. Mr. Fowell has succeeded in inarching several pieces on small Crab stocks placed in pots around it. Two are severed from the parent, and seem to be doing well. The stock, I think, shows signs of pushing more Mistletoe in several places. No attempt has been made to insert seed, nor has the stock been wounded in any way. It is healthy and the bark quite smooth, except where I think the parasite is bursting through it. Has Mistletoe ever been propagated in this way before? *W. P., Butterley Hall, near Alfreton.*

Growth of Pinuses at Esher Place, Surrey.—

	January.		
	1857.	1858.	1859.
	Ft. ins.	Ft. ins.	Ft. ins.
Abies canadensis	..	5 2	5 11
,, Douglasii	..	8 6	10 0
,, cephalonica	..	6 2	7 7
,, Pinsapo	14 7	16 2	17 8
,, Khutrow	..	8 2	10 0
Cedrus atlantica	2 0	2 10	4 0
,, Deodara	17 6	18 8	19 6
Pinus Devoniana	9 5	10 0	11 7
,, Coulteri	26 0	29 10	32 0
,, Sabiniana	..	8 0	9 5
,, Pyrenaica	12 0	14 0	16 3
Araucaria imbricata	10 0	10 8	12 1
Thuja plicata	..	7 3	8 0
Cupressus Goveniana	..	8 0	8 10
Taxodium sempervirens	17 3	21 6	25 4
Cryptomeria japonica	18 0	20 6	22 0

—*W. W. Spicer.*

Rain at Stoneleigh Abbey, Warwickshire, 1858.—

	Rainy days.	Inches.
January	8	.43
February	7	.97
March	11	.90
April	9	2.85
May	13	2.45
June	4	2.51
July	8	2.48
August	10	2.87
September	11	2.50
October	6	2.20
November	6	0.55
December	13	2.05
	106	22.76

J. B.

Rain at Dorward's Hall, Witham, in 1858.—

	Ins.		Ins.
January	0.75	Brought forward	8.92
February	0.81	August	0.98
March	0.17	September	0.93
April	2.15	October	1.41
May	1.86	November	0.82
June	0.77	December	1.64
July	2.41		
Carried forward	8.92	Total	14.70

One-third below average.

Henry Dixon.

Rain in 1858 *at Burraton, Sheepstow, Dartmoor*, measured by Howard's gauge:—

	Ins.		Ins.
January	3.03	Brought forward	22.90
February	3.26	August	3.99
March	2.08	September	4.80
April	3.55	October	3.81
May	5.23	November	4.37
June	2.13	December	7.68
July	3 62		
Carried forward	22.90	Total inches	47.55

Henry Terrell.

Rain at Cobham, Surrey, in 1858.—

	Ins.		Ins.
January	0.78	Brought forward	11.04
February	1.68	August	2.00
March	0.55	September	0.86
April	2.34	October	1.48
May	1.83	November	0.82
June	1.39	December	1.07
July	2.47		
Carried forward	11.04	Total	17.87

C. Molesworth, Cobham, Surrey.

Rain in 1858 *at Goodamore, Plympton St. Mary, Devon*, as measured by Howard's rain gauge:—

	Ins.		Ins.
January	2.81	Brought forward	25.91
February	3.37	August	3.11
March	2.85	September	3.95
April	6.58	October	4.02
May	4.08	November	3.99
June	1.48	December	8.10
July	4.74		
Carried forward	25.91	Total inches	49.08

Henry Hele, Treby.

Rain in North Lancashire in 1858.—

	Ins.		Ins.
January	0.8	Brought forward	24.4
February	.8	August	6.3
March	5.4	September	9.2
April	4.3	October	7.2
May	3.7	November	3.4
June	1.4	December	8.8
July	2.0		
Carried forward	24.4	Total inches	59.3

Robert Aitken, Gardener to J. G. Marshall, Esq., Monk Coniston Park, North Lancashire.

Garden Hybrids.—The case of chance hybrid intermixture amongst the Kidney Beans is new to me, and very interesting. I have another case to add to those hitherto observed—that of the Onion. My gardener, Mr. Thomas Smith, planted bulbs of the White Spanish and Brown Deptford in proximity. The produce was an undoubted cross as to a large per centage of the bulbs, and according to my judgment an improvement on both. I sent a few bulbs to the authorities at Chiswick for their opinion. We have also verified this year the assertion that the pollen of double flowers communicates the habit to the offspring. Mr. Smith fertilised a single Fuchsia with the pollen of Mr. Henderson's handsome double variety, and raised seedlings, most of which were more or less double, and one scarcely differing from the male parent, indeed, I think even a slight improvement. Fragrance was communicated by the male parent in the case of the scentless yellow Honeysuckle (hirsuta), from which I raised scented seedlings by the pollen of the common Woodbine. Cross-bred Michaelmas Daisies were said to have been raised by a French cultivator by tying together the heads of bloom, but here the evidence is not direct, any more than in the case of the garden Cinerarias with their numberless varying and intermediate tints. The Anemone certainly crosses itself, for I have produced the same effects by manipulation between the blues and reds. The Dahlia I believe to be an instance of legitimate sporting into colour from its own bisexual individuality, and the germs of several colours may be easily detected in the wild species superflua. Mr. Carter's Gaillardia was raised by a distinguished Continental cultivator, and is I believe an extremely handsome plant. This may have been an effect of proximity in the seed-bearing plants, as in the cases alluded to, and would indicate the expediency of ceasing to consider the idea of inoculation by insects as a bugbear, and turning the knowledge to account by growing such plants together expressly for the purpose of the improvement of species. One instance, that of Dale's (or rather Dean Herbert's) hybrid Swede Turnip, would alone point out the importance of this system. *R. T. Clarke.*

Grafting Old Spurred Pear Trees, &c.—In your Number for January 15, p. 39, your correspondent "Thorp Perrow" speaks of his success in grafting old spurred Pear trees, and thus rendering them fruitful; and also of grafting or inarching one Vine with another. I am enabled to corroborate his success by the experience in my own garden. Seven years ago I was about to cut down a great number of old, unfruitful espalier Apples and Pears; my gardener, then newly appointed, Mr. John Abrahams, begged me not to do so, but to allow him to show me what he could do with them. He, like your correspondent, freely cut away old shoots, cankers, and useless and fruitless wood, and engrafted the young and vigorous shoots of the same plants upon such bare spaces as could be reached by them. He frequently engrafted a young leading or head shoot upon an old espalier—where no young shoot could otherwise have been produced. The result, in seven years, is that I have as fruitful a garden as any one can desire. The situation is high—on the Cotswold hills, from 600 to 700 feet above the vale—upon the rubble of the oolite, and where the present soil does not average 4 inches. These experiments have for the time mentioned been successfully carried on upon the Apple, Pear, Plum, and Cherry. Mr. Abrahams has been equally successful in making one kind of Grape grow upon another. For the last 30 years he assures me he has practised the intermixture, and I can bear testimony to his success of recent years. The last season, being one congenial to the growth of out-door Grapes, he ripened very many pounds of the different colours, engrafted upon each other, and which were visited and admired by many people. Should the next season permit of the same result to the fruit, any of your readers will be readily introduced to the fact of one coloured Grape growing upon a Vine of the opposite colour, if he will take the trouble to visit these gardens. *J. H., Sandywell Park, near Cheltenham.*

Rose Bacchus.—In reply to your correspondent (see p. 89) I am unable to say whether the Rose Bacchus was exhibited at St. James's Hall in July last. It may be remarked however that as it is an early bloomer the first flowering was probably over. It was in our stand of 50 varieties which gained the first prize at the Crystal Palace Show, on the 16th of June last; also in our collection of 50 varieties, to which the first prize was awarded at the Royal Botanic Society's Show, on the 23d of the same month. As it is rather small this may be the reason it does not appear oftener in winning stands. It was never recommended as a show Rose; but supports all that was said of it, and it is one of the most attractive in the garden, especially if planted in a bed on its own roots. The colour is exceedingly rich, bright, and durable, not fading like its parent the Géant des Batailles; the flowers are produced in great profusion. It is of dwarf habit, but not delicate. No doubt your correspondent's treatment of it in "a cold frame" is congenial to its nature, for a correspondent writing from Jamaica says—"Bacchus is magnificent, it is never out of bloom." From the increasing demand for this Rose, we infer that it is a favourite with that portion of the Rose-loving world who do not consider size the sole test of merit. *William Paul, Nurseries, Cheshunt, Herts.*

The Lime-tree.—Although this may be suitable for grouping, there is one decided objection to its being employed for avenues. In several parts of this city branches of this tree extend over the flags in the streets, and are coated over to such an extent with the honey which exudes from the blossoms, that one is in danger of becoming a chrysalis, if we stop to inquire into this extraordinary appearance. Apiarians might grow a few trees profitably for bee food, as they resort to the trees abundantly when in bloom. *W. Godsall, Nurseryman, Hereford.*

Ants.—To kill these, mix a small quantity of moist-

ened loaf sugar and arsenic in equal parts, and drop it on pieces of glass near their runs; they will soon partake of it, and die. If your correspondent "K. M. C." will place a toad in his kitchen for a week or two—allowing it to have a place of retreat in the day-time, say a small flower-pot laid upon its side with a handful of dry Moss in it—nothing will be seen of it during daylight, but at night when all is quiet it will sally forth, destroying every ant, small beetle, fly, &c. which may come within its reach. I have for years adopted the latter method in my early and late Graperies, Melon pits, and flower houses, during the summer months, and I have never found it to fail. *J. Begbie, Gardens, Missenden Abbey, Bucks.*

Culture of the Neapolitan Violet.—Many questions having lately been asked respecting the culture of this Violet, I venture to offer a few remarks on the subject. It is I need not say a useful little plant, whose fragrance during the winter and spring months is welcome to every lover of flowers. Strong plants may be obtained by dividing the old ones of the previous season's growth. This operation should take place in May; a sloping border under the shade of a north wall should be selected, where they should be planted with a trowel 10 inches apart. Care should be taken to keep the soil loose, and during the summer season a little manure-water would be found beneficial if applied twice a week from July until the beginning of September. Apply it by means of a small-spouted watering pot, but keep the heart of the plants dry, otherwise the liquid might prove injurious. The runners should be kept entirely close from the time they are planted in the border until the time they are removed to the frame, which should take place about the middle of October; the plants should then be carefully raised with a ball of earth to each, and placed in the frame, which should be three parts filled with garden soil. The frame may be placed upon a bed of leaves about 2 feet thick. The plants should be placed 4 inches apart and about 3 inches from the glass; the frame should be kept close and shaded, only admitting about an inch of air in the evening, which may remain until early the following morning. Let this be continued for a week or ten days, after which the plants will enjoy plenty of light and air; great care must be taken not to overwater during the winter months. Strong stakes driven round the frame in an upright position, 1 foot apart each way, and the interval well filled with straw, will prove a good protection from severe frosts. *Robert Eyres, Stubton Gardens.*

Improved Plant Saucers.—It is very useful and saves trouble to set plants in saucers filled with water in hot dry weather, but it is most injurious to the roots of some of them to let them stand in saucers as at present manufactured. If however a rim was made all round the saucer to allow the pot to rest within half an inch of the surface the water would be drawn up by the roots as required, and would last much longer as not being exposed to the sun, and evaporation would be less. *An Old Subscriber.*

Societies.

Horticultural: *Feb.* 1.—At a meeting of the Fruit Committee held on this occasion at 21, Regent Street, two prizes were awarded to Easter Beurré Pears in sixes. The first to Mr. Cox, gr. to W. Wells, Esq., Redleaf, and the second to Mr. Hall, gr. to T. Lucas, Esq., Lower Grove House, Roehampton. Both exhibitions consisted of large and beautiful fruit of this well-known variety. Other contributions of this Pear came from Mr. Evans, gr. to Archdeacon Jones; Mr. Tucker, gr. to J. Moorman, Esq.; Mr. Masterson, gr. to K. Greenaway, Esq.; Mr. Clarke, Cobham Hall; Mr. Judd, Althorp, Northamptonshire; Mr. Catt, gr. to Colonel Cavendish; and Mr. Douglas, gr. to H. B. Simpson, Esq. J. Allnutt, Esq., of Clapham, also sent a dish of small fruit of this variety.

Of Winter Greens, Mr. Turner sent a remarkably fine specimen of his Cottagers' Kale, of which we hope to give a representation next week. Mr. Melville, gr. to the Earl of Roseberry, Dalmeney Park, near Edinburgh, also furnished examples of the Roseberry Brussels Sprout, which is certainly different from any at present in cultivation. Its distinguishing peculiarity is the size of the Sprouts, each of which is as large and round as a moderate-sized Apple, and they are produced on the stem in great abundance from bottom to top. An open Cabbage sprout called Chou de Milan from the same grower upon trial did not prove good; along with these also came some specimens of a white sprouting Cabbage, which looked exactly as if it had been blanched.

Notices of Books.

Collection des Orchidées [*Collection of the most remarkable Orchids of the Indian Archipelago and Japan*]. By Ch. L. de Blume. Folio. Amsterdam, 1858. Parts 1 and 2.

This is a work printed on superfine paper, decorated with coloured and uncoloured plates, written by a learned Dutch botanist and dedicated to the King of Wurtemberg. The address to his Majesty is like all such addresses and need not be described. The preface opens with an attack upon the Dutch Government for overlooking the learned author's merit and for not paying the expense of his works. Dr. Blume tells his readers that the materials which he has accumulated (and he might have added kept to himself) are enormous, and must be published at his own charge in order that they may not be lost to science; he vouchsafes a little praise of some of the modern Dutch collectors of plants, carefully excluding all notice of others, and he concludes his preface with an explanation of his own theoretical views of the structure of Orchids, with which we shall not trouble our readers, and to which he promises to return at the end of the 24 parts of which this costly book is to consist.

The frontispiece represents a dance performed by three hideous half-naked meretricious figures which an ingenious friend suggests are probably intended for women. The body of the work consists of Latin and French descriptions of certain genera, illustrated by figures black and coloured. Of these the first is Phaius, occupying 14 pages, succeeded by Bletia, Thelasis, Dilochia, and Pachychilus. To the manner and form of this portion of Prof. Blume's work we have nothing to object; his technical language is clear, and his observations are arranged in logical order. But we regret to add that his criticisms are hasty and unsatisfactory, while his neglect of the well-known works of others is most reprehensible. His book appeared in the end of 1858; we received our copy on the 3d of November. His first article is on the genus Phaius, several Java species of which were very sufficiently published and even figured by Prof. Reichenbach long since, one, P. cupreus, in the Bonplandia, as long ago as Aug. 1, 1855. Of none of these is the slightest notice taken. So again with Pachychilus, a name needlessly altered from Pachystoma, a very good account of whose species was also given some years since in the Bonplandia by the same able German botanist, who even pointed out its identity with Apaturia, a name which must give way; yet Prof. Blume passes him over in utter silence as if he had never written a word on the subject. Against conduct like this it is the duty of all friends of science to protest. Such *suppressio veri* is, we believe, unexampled, and while it inflicts a wrong upon contemporary writers, is nothing less than a fraud in the history of discovery. We have the less hesitation in speaking thus strongly because we have ourselves little personally to complain of.

Minute criticism of the systematical part of Dr. Blume's new work we reserve for a future occasion; but there are a few points to which it will be as well at once to advert. The learned author in reducing Pesomeria to Phaius wholly overlooks the very important peculiarities on which the former genus was founded. So again of Dilochia he says that the author of the genus ascribed to it 4 pollen masses instead of 8, which is literally true, the figure 4 having been accidentally misprinted for 8, in the technical description of the genus; but it was an obvious typographical error, corrected in the analytical table given a few pages earlier, as a little care would have enabled Prof. Blume to discover. Nor is his account of his own Java species of the genus less a mistake; his D. Wallichii being perfectly distinct from the species from Singapore, as is sufficiently evident to any attentive reader. It is in fact the D. pentandra of Reichenbach, published under that name in the Bonplandia more than a year and half earlier, that is to say, on 1st March 1857. Whether this determination to ignore the works of others arises from intention or ignorance we shall not venture to determine, but in either case it is as discreditable as, to the honour of naturalists be it said, it is unexampled. Such treatment of by far the most able of the continental Orchidologists will not meet with the support of men of science, who will know how to render to Prof. Reichenbach the justice which Dr. Blume has done his utmost to withhold. Since Dilochia, Phaius, and Bletia will soon find a place in the Folia Orchidacea, we withhold special criticism for the present. Of Thelasis we shall only remark that Dr. Blume's account of his Thelasis capitata is a mere nest of mistakes. In the first place he refers Griffith's Euproboscis pygmæa to his own Thelasis capitata, to which, judging from the figure and description, it has little resemblance; then he declares this Euproboscis to be a distinct species, calling it Th. pygmæa; and finally he makes a third species, Th. triandra, out of a monster (Peloria) figured by Wight. We hardly know how confusion can be carried further.

Of *Nees v. Esenbeck's Genera Plantarum Floræ Germanicæ*, the 30th fasciculus has at last appeared, under the care of Messrs. Schnitzlein & Brandis, chiefly occupied by Papilionaceous plants and Heathworts. The excellence of the figures and descriptions is fully sustained, and when complete the work will be one of the greatest use to botanists. But for how much longer is it to drag its slow length along?

Trade Lists received.—*Edmund Philip Dixon's* (Sculcoates, Hull) *Catalogue of Select Shrubs, Conifers, &c.* A list of useful hardy plants; small, but large enough for the world in general. But what are the "novelties" here offered under the names of Cupressus Bregeoni, Juniperus Langoldiana, and Thuja Caucasica? Some authority should be quoted, or some history given of such things?—*J. H. Cottrell's* (Birmingham) *New Catalogue of Vegetable, Flower, and other Seeds.* A considerable list of useful sorts printed in small 4to., a very inconvenient form for buyers to keep. All trade lists should be as nearly as may be in the same sized 8vo. We regret to be obliged to add that Mr. Cottrell's address to his customers is in the very worst taste; language like his is now confined to traders in quack medicine and cheap manure.—*Butler & McCulloch's* (Covent Garden) *Spring Catalogue of Choice Flower, Shrub, Tree, and Vegetable Seeds.* This list fills 84 closely-printed 8vo. pages, and is remarkably well got up. It appears that the correspondent in Sardinia who formerly supplied one of the great London houses with seeds raised in that warm part of Europe, has now transferred what he saves to Messrs. Butler & McCulloch. Let us add, that it yields to no trade list in the abundance of its materials or the excellence of its arrangements.

Garden Memoranda.

Woodlands Nursery, Isleworth.—Mr. Dobson, the proprietor of this nursery, has always been famous for growing good specimen Geraniums, of which he has a fine stock both for sale and for exhibition. At the entrance are some neatly arranged beds, which, when filled with summer plants, are very attractive. In these the following have been very gay during the past season, viz., Verbenas: Mrs. Holford, Géant des Batailles, Purple King; Variegated Geraniums: Brilliant and Alma; Calceolarias: Kayi, aurea floribunda, and Prince of Orange; Delphinium formosum, Tom Thumb Geranium, Petunia magnifica, Lobelia speciosa, Perilla nankinensis, &c., all admirable plants for fine effect. On the walls of the seed shop is trained the beautiful winter-blooming Jasminum nudiflorum, which well deserves universal cultivation; no plant is better suited for exposed situations than this is, and it flowers well even in the hardest winters. It is now in full beauty.

Of glass houses, the first, a long span-roofed one, is filled with hundreds of Geraniums, most of which were shifted into their blooming pots a month ago; though stopped back previously the shoots are now an inch long; having thus overcome the repotting, abundance of air is given on every favourable opportunity; this induces them to keep dwarf and bushy. They are turned round once a fortnight. The next house is also a span-roofed one, moveable at top, front, and back, by which means abundance of air can be given; this is particularly essential during the autumn and spring months when the plants are growing. It is filled with large well-grown plants in the best of health, which at the present time measure from 2 to 3 feet across, and are very promising. None are grown here but the best sorts for exhibition, such as The Bride, Rose Leaf, Rose Celestial, Rosalie, Sanspareil, Saracen, Carlos, Admirable, Etna, Euphemia, Gem of the West, Emperor, Richard Benyon, Vestal, Fairest of the Fair, Aurelia, Wonderful, Una, Laura, and Eclipse. These are large and well furnished with shoots. They have not been long tied out, and are now getting strong. On account of the mildness of the weather little fire-heat has been required, while a judicious admission of air has been observed early in the morning, and the sashes are left open till late in the afternoon. Weak liquid manure water is given once a week to induce strong growth. The plants for exhibition in June have started nicely, and are about to receive their final repotting, while those for July are being encouraged to make growth previous to their being stopped back in March. All look clean and free from green-fly—a matter not to be overlooked. The next is a lean-to house about 50 feet long, with a partition in the middle; one half is used as a propagating house, and for bringing plants into early bloom; the other is employed as an intermediate house for hardening off fresh struck plants. Here were a few good fancy Geraniums, each of which has just been stopped for the last time. We also noticed some good Roses in pots; some of the varieties, such as General Jacqueminot, La Reine, William Jesse, Louis Philippe, D'Angers, Gloire de Dijon, Mrs. Bosanquet, Géant des Batailles, &c., were covered with buds. In the propagating house were some Fuchsias, now in 8-inch pots, about a foot high; these are in good rich soil, and are occasionally syringed; they are allowed to grow in a pyramidal form till they get about 3 feet high, when they are topped, and by June and July they are large handsome plants. About the middle of March they are finally repotted, and about a fortnight after that they are removed to a colder house. Those which appeared to be the best growers were Rose of Castille, Queen of Hanover, Prince Frederick of Prussia, Princess of Prussia, British Sailor, Miss Hawtrey, Souvenir de Chiswick, Glory, and Guiding Star. They are liberally supplied during their growing season with manure water.

A large double span-roofed house is filled with named Cinerarias, seedling herbaceous and shrubby Calceolarias, and an immense stock of Tom Thumb Geraniums. On a ledge all round are Verbenas in store pots, such as Earl of Shaftesbury, Eclipse, Mrs. Holford, Lord Raglan, General Simpson, Mrs. Woodroffe, Defiance, Purple King, &c.; on these was not the least sign of mildew, to the attacks of which Verbenas are very subject. In one part of this house were some very fine specimens of named Cinerarias, some 18 inches and more across, with from 20 to 30 shoots. These have been trained in the same way as the Geraniums, and when in bloom must be very effective. The sorts were:—Lord Palmerston, Baroness Rothschild, Mrs. Colmar, Attraction, Sir Charles Napier, picturata, Mrs. Hoyle, Kate Kearney, Brilliant, Admiral Dundas, Mars, Imperial Prince, Perfection, Mrs. Livingstone, and Lady Inglis. In the same house we observed some fine specimens of herbaceous Calceolarias in their

blooming pots; 11-inch ones are used; the plants appeared promising, many of them having 20 and 30 blooming shoots. All who have attended our metropolitan exhibitions must have observed the beautiful plants exhibited from this nursery.

In another house, also a span-roofed one, is a large quantity of Geraniums both Show and Fancy kinds for early flowering, and in a lean-to-house with a north aspect were some nice young Camellias, Azaleas, and Heaths—all well furnished with blooming buds. Some brick pits were full of Roses, Violets, Pansies, Dielytra spectabilis, Deutzia gracilis, Stocks, &c. Out of doors were fine specimens of Deodars, Hollies, Rhododendrons, and Irish Yews. Among herbaceous plants were Delphinium formosum, Aconitum chinense, Pæonies, Double Scarlet Lychnis, Phlox omniflora compacta, and other varieties; Anemone Japonica, Hepaticas, Tritoma Uvaria, and other useful and ornamental plants which are not half so largely grown as they ought to be. We may add that the grounds were everywhere beautifully clean and neat.

Miscellaneous.

Madagascar Orchids.—Orchids were abundant, and often occupied positions in which the growers of these plants in England would little expect to find them, but in which they gave an indescribable singularity and charm to the landscape. The Limodorums were numerous in parts of the road, and formed quite a ball of interlaced roots at the base of the bulbs. A small species, resembling in habit and growth the Camarotis purpurea, but quite unknown to me, and bearing a vast profusion of white and sulphur-tinted flowers, often enlivened the sides of the road along which we passed. But the Angræcums, both A. superbum and A. sesquipedale, were the most abundant and beautiful. I noticed that they grew most plentifully on trees of thinnest foliage, and that the A. sesquipedale was seldom, if ever, seen on the ground, but grew high up amongst the branches, often throwing out long straggling stems terminating in a few small, and often apparently shrivelled leaves. The roots also partook of the same habit. They were seldom branched or spreading, but long, tough, and single, sometimes running down the branch or trunk of a tree, between the fissures in the rough bark, to the length of 12 or 15 feet; and so tough and tenacious that it required considerable force to detach or break them. Many of them were in flower; and, notwithstanding the small, shrivelled appearance of the leaves, the flowers were large, and the yellow colour strongly marked. On more than one occasion I saw a splendid Angræcum sesquipedale growing on the trunk of a decaying or fallen tree, sending its tough roots down the trunk to the moist parts of the vegetation on the ground. I found one decayed tree lying on the ground almost overgrown with Grass and Ferns, on the rotten trunk of which the A. sesquipedale was growing most luxuriantly. The roots which had penetrated the soft trunk of this dead tree were white and fleshy, while the leaves were longer and comparatively soft and green. There were neither flowers nor flower-stalks on any of the plants growing in the rich vegetable mould furnished by this old dead tree. The habits of the superbum were quite different. Of these the fleshy roots formed a sort of network at the base of the bulb. During the journey I occasionally noticed both kinds growing not only on the branches of living trees, but very often high up on the bare barked trunks of the dead trees. Sometimes in the angle formed by the junction of an arm with the trunk of a large naked tree, apparently without a fragment of bark adhering to the trunk, a bunch of Moss, or a cluster of Orchids, or both mingled together, would be growing apparently with great vigour, and often in full flower. More than one tall bare trunk 12 or 18 inches in diameter, and 30 feet high, stood surmounted, or surrounded near its summit, by a cluster of Angræcums, with their long, sword-shaped, fleshy leaves; or, what was more beautiful still, a fine specimen of some species of Birdsnest Fern. The contrast between the white, shining, barkless trunk, and these verdant clusters of plants on the top, was sometimes very striking; especially as the Orchids were often in flower, and by their growth altogether suggested the idea that by the decay of their own roots a receptacle was formed for the moisture or the rain by which the plant was nourished. This combination of life and death, growth and decay, presented one of the most singular amongst the many, to me new and curious aspects of nature which my journey afforded.—*Ellis's Madagascar.*

Calendar of Operations.

(*For the ensuing Week.*)

PLANT DEPARTMENT.

CONSERVATORY, &c.—Pursue the directions given in regard to temperature, &c., laid down in previous Calendars. Climbers may be looked over, and if an early display of their beauties is required, some of the irregular wood may be pruned forthwith. Passion-flowers and others may receive this treatment; but permanent plants, as Acacias, &c., will of course point out of themselves an exception. Camellias require at this time abundance of water, and keep a sharp eye to Heaths, Epacrises, and other things that are liable to get pot bound. STOVE.—Let all increase of heat take place on bright days, chiefly early in the afternoon, and then accompanied by a somewhat moist air. Get a batch of Gloxinias repotted and placed in bottom-heat, using peat, loam, charcoal, and sand for compost, in a fibrous state. Stove climbers on trellises in pots or tubs, that require to be shifted soon, should be cut in previously to plump buds preparatory to disrooting or shifting. Attend to shifting Amaryllises where requisite; as soon as they show signs of growth let them be introduced to this house, and give them a little water, increasing it gradually as leaves unfold themselves. Orchids commencing growth should be immediately attended to; keep them at the warmest end of the house, and beware of drip lodging in the young buds. Some of the large specimens that require shifting, and that are very dry, had better be immersed in tepid water for an hour a day or two previously to shifting. COLD PITS OR FRAMES.—Some calculation should now be made as to how far the inmates of these structures will be able to supply the masses in the flower garden. Cold and damp will doubtless have reduced the number of some kinds.

FORCING DEPARTMENT.

PINERIES.—Where the bottom-heat is maintained by means of fermenting materials such beds as may have been recently renewed should be carefully watched, and if the heat at the bottom of the pots is found to exceed 90° the pots should be slightly raised in order to prevent injury to the roots. It is not usual now to subject the roots of Pines to a temperature of 110° or more, as we have seen growers of the old school quietly doing, but it is still too common a practice to allow the bottom-heat at times to become too strong, throwing the plants prematurely into fruit or otherwise injuring them. Indeed we believe that more harm is done to Pines by too much bottom-heat than by any other cause, and success cannot reasonably be expected while the roots are occasionally subjected to a baking heat. Maintain a steady bottom-heat of about 85° during the growing season, but depend upon it that 90° cannot be exceeded with safety. See that the soil about the roots of growing plants is not allowed to become too dry, and secure a moist state of the atmosphere, but use the syringe carefully, until the sun becomes more powerful to dry the hearts of the plants. VINERIES.—The weather for some time past has not been at all unfavourable for early forcing; nevertheless, careful attention will be necessary with houses where the Vines are fairly in leaf. Take every opportunity to admit fresh air to strengthen the shoots and foliage, &c.; but do this cautiously, and by small openings near the heating apparatus, and shut up early in the afternoon, letting the glass rise to 80°. Where the Vines are in bloom, let the night temperature range between 60° and 65°, raising it 10° by day, and Muscats need hardly be expected to set well unless they can be kept some 5° warmer; but it will be better in every case to let the temperature sink a few degrees on sharp nights than to over-heat the pipes, and render the atmosphere unhealthy. When the syringe cannot be used the evaporating pans must be kept at work, and the floors, &c., sprinkled in the morning or as often as may be necessary to secure a moist state of the atmosphere; for unless this is attended to, red spider will be very apt to make its appearance. But perhaps the great cause of red spider is an unhealthy root action, producing thin, weakly foliage, which despite the most careful internal management is sure to be attacked by this pest, therefore use every means to secure a dry, warm state of the borders. Give Vines in pots a liberal supply of manure-water in a tepid state.

FLOWER GARDEN AND SHRUBBERIES.

The demand for bedding out plants (in the spring) is greater than the room devoted for their wintering can supply. It will in this case be necessary to commence propagating to make good the deficiencies. For all the soft-wooded and free-growing plants a common dung frame having a slight bottom-heat will suffice; fill up to within 12 inches of the glass, upon which place 4 inches of dry sandy soil, in which the cuttings may be put directly you can procure a young growth for the purpose. As the display of flowers during the early summer months depends mainly on the health of the stock at planting time it will save labour and increase the size and healthiness of the plants by turning them out of their pots or cutting pans into low pits or frames, and a light sandy compost will serve for them to grow in, and if batches of these are placed over a very light bottom heat the plants will soon make rapid growth, and you will have the advantage of an abundance of cuttings for propagation, if wanted. Calceolarias, Petunias, Verbenas, and such things answer best for this; but where time and pot room are objects, Scarlet Geraniums and nearly every description of bedding plant may be managed on the above plan. Before putting out time, the plants should be checked by raising them once or twice with a spade. Put in cuttings of Bouvardias in a brisk bottom-heat, and also of such kinds of Geraniums as are at all difficult to strike in the ordinary way or of which cuttings are not easily obtained. Sow Maurandyas, Lophospermums, and other plants of that kind to get them strong by May. Keep pleasure grounds swept and rolled frequently to keep down Moss.

HARDY FRUIT AND KITCHEN GARDEN.

Sow Tomatoes in heat, also Basil, Marjoram, &c. Get hand-glasses ready for Cauliflowers in pots; enrich the stations very much, adding fresh loam if at hand. Turn out four strong plants from the pots one at each angle; they should be well soaked with weak liquid manure previously. Plant Box edging, and thoroughly drain any portion of the garden which exhibits the least appearance of stagnation. Plant Horseradish, if not already done; trench it deeply, placing manure at the bottom of the trench. Get all fruit trees planted as soon as possible, and stake and mulch. Remember to drain thoroughly. Nowhere is this advice more necessary than in the orchard; although Apples and Pears are fond of stiff soils they will never prove profitable where water is allowed to accumulate. Examine all old or overborne trees. Many of this character may be improved by applying manure to the extremities of their roots, and also by good top-dressings, which should always be applied the moment the leaf begins to fall in autumn.

COTTAGERS' GARDEN.

If not already done a few broad Beans may now be sown, and also a few Peas, and do not forget a sprinkling of Radish among the early Carrots; in fact with most broadcast crops a sprinkling of Radish or Lettuce may be put in through the spring. The Thousand-headed Cabbage, Cottagers' Kale, and Early Ulm Savoy are valuable greens, which no cottage garden should be without. A little Spinach may also soon be sown, and some Mustard and Cress in a warm corner. Take care also to have a few Red Cabbages for pickling.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the Week ending Feb. 3, 1859, as observed at the Horticultural Gardens.

Jan. and Feb.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Temperature of the Air. Min.	Temperature of the Air. Mean	Temperature of the Earth. 1 foot deep.	Temperature of the Earth. 2 feet deep.	Wind.	Rain.
Friday 28	24	29.791	29.768	50	28	39.0	43½	45	W.	.00
Satur. 29	25	29.842	29.504	50	43	46.5	45½	44½	S.W.	.08
Sunday 30	26	29.510	29.405	45	30	37.5	46	44	W.	.06
Mon. 31	27	29.584	29.515	43	31	37.0	44	44	S.W.	.02
Tues. 1	28	29.867	29.712	46	34	40.0	44	43½	N.W.	.02
Wed. 2	29	29.539	29.416	45	30	37.5	44	43½	W.	.00
Thurs. 3	○	30.150	29.932	39	24	31.5	43½	43	N.	.00
Average		29.754	29.607	45.4	31.4	38.4	44.6	43.9		.18

Jan. 28—Uniformly overcast; very fine; clear at night.
— 29—Fine; overcast; stormy with rain.
— 30—Densely overcast; fine; clear at night.
— 31—Overcast; very fine; showers at night.
Feb. 1—Cloudy; fine; overcast; rain at night.
— 2—Clear; very fine; overcast.
— 3—Clear; slight frost; clear air; frosty at night.
Mean temperature of the week, 2 deg. above the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 33 years, for the ensuing Week, ending Feb. 12, 1859.

Feb.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 6..	45.9	33.0	39.5	17	0.25 in.	2	3	3	4	4	7	7	3
Mon. 7..	46.6	33.5	40.1	17	0.28	2	2	4	—	4	12	6	3
Tues. 8..	45.5	33.3	39.4	17	0.67	1	3	4	1	4	13	4	3
Wed. 9..	45.4	31.9	38.7	13	0.40	—	5	3	2	2	13	5	3
Thurs. 10..	44.5	30.2	37.4	13	0.52	4	6	3	2	5	8	3	2
Friday 11..	44.3	30.1	37.2	14	0.34	8	4	2	—	5	8	2	4
Satur. 12..	44.6	30.0	37.3	14	0.28	3	5	1	—	5	10	7	2

The highest temperature during the above period occurred on the 10th, 1831—therm. 65 deg.; and the lowest on the 10th, 1855—therm. 1 deg.

Notices to Correspondents.

BEANS; *A B Y.* They have no resemblance to those advertised by Mr. Cuthill.

FOREIGN CORRESPONDENCE.—We must request German correspondents to write in Roman, not illegible Gothic characters. We cannot read the latter. G. of Göttingen will excuse this remark.

HOGG'S EDGING TILES: *C A M.* These are upon a good pattern, but as originally made they would not stand the weather and were useless. We understand that they are now manufactured properly, in which case we recommend them.

IMPROVED CHOU DE MILAN SPROUTS. A Correspondent asks our opinion of this esculent. After a trial we are obliged to report unfavourably of it. It is inferior in flavour to Brussels Sprouts, and can bear no comparison with Cottagers' Kale.

INSECTS: *L.* The mite on the Orchids is apparently an undescribed species, and shall be illustrated.—*S.* The insects sent as destroying the Grass of the lawn are—1, a half-grown larva of the common cockchafer with a specimen of the perfect female already developed, waiting till the hot weather comes; 2, several larvæ of *Byrrhus pilula*, mistaken for the small cockchafer (are you sure that these added to the mischief?); 3, a dried-up larva of a two-winged fly belonging to the family *Muscidæ*; 4, caterpillars of one of the *Noctuideous* moths, most probably *Cerapteryx graminis*. The first and fourth are the chief depredators, and at the present time we know no other plan of getting rid of them than turning over the soil and picking out the grubs. In the summer children should be employed to collect the perfect insects. *W.*

NAMES OF PLANTS.—We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have or could have undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*Hannah* and *B H.* The beautiful evergreen Rhododendron davuricum.—*B J.* Oncidium bicallosum.—*G W M.* Some American Fraxinus not to be named in the absence of leaves. *Eugenio.* A bit of Torreya grandis no doubt.—*Davy.* 1, Nephrolepis pectinata; 2, Phlebodium aureum; 3, Blechnum cognatum; 4, Polystichum capense.

ORCHIDS: *O.* Your Orchids are affected with the disease which has been of late years so prevalent in collections. You will find much information on the subject in our columns of last year. We beg leave to refer you especially to p. 476 as containing the information you desire. *M J B.*

PINE APPLES: *R G.* Your Pines are covered with scale in different stages of development. This is an indication of some defect in the management, and you will probably find if you examine the roots that they are in a bad condition, which has induced decay. The mould with which they are covered, and which exists in the interior of the fruit, where there is no immediate communication with the outward air, is the common Penicillium, and has nothing to do with the disease. If you require further information, and can send a fruit (by post) in an *incipient* stage of decay, and at the same time a portion of the roots, directed Rev. M. J. B., King's Cliffe, we may perhaps be able to give you some further information. The disease is too far advanced in the specimens you have transmitted. *M J B.*

MISC.: *Southsea.* When public writers have recourse to personal abuse their motive is commonly twofold. 1. They have nothing else to say. 2. They imagine abuse to be profitable. We have no experience upon this subject.

THE PATENT

NITROPHOSPHATE OR BLOOD MANURE COMPANY (LIMITED),

CONSISTING OF TENANT FARMERS, OCCUPYING UPWARDS OF 30,000 ACRES OF LAND.

TRUSTEES.

ABEL SMITH, Jun., Esq., Walton House, Ware, Herts.
CHARLES DIMSDALE, Esq., Essendon Place, Herts.
EDWARD BALL, Esq., M.P., 8, Belgrave Road, Pimlico
MAJOR-GENERAL HALL, M.P., Western Colville, Linton, Cambridge
JOHN BRADY, Esq., M.P., Warwick Terrace, Belgrave Sq.

DIRECTORS.

Chairman.—JONAS WEBB, Esq., Babraham, Cambridgeshire.
Deputy-Chairman.—JOHN COLLINS, Esq., Myddleton Square, Pentonville.
EDWARD BELL, Esq., Tottenham, Middlesex
JOHN CLAYDEN, Esq., Littlebury, Essex
RICHARD HUNT, Esq., Stanstead Abbot, Herts.
THOMAS KNIGHT, Esq., Edmonton, Middlesex.
ROBERT LEEDS, Esq., West Lexham, Norfolk.
ROBERT MORGAN, Esq., 72, Camden Villas, Camden Town.
GEORGE SAVILL, Esq., Ingthorpe, near Stamford.
WILLIAM COLLINS, Esq., 105, St. John Street Road.
Bankers.—Messrs. BARNETT, HOARE & Co., Lombard Street.
Solicitors.—Messrs. KINGSFORD & DORMAN, 23, Essex Street, Strand.
Auditor.—G. W. BROWN, Esq., 28, Parliament Street.
Manager.—Mr. JAMES ODAMS.
Secretary.—Mr. C. T. MACADAM.

Offices, 109, Fenchurch Street, London.—Manufactory, Plaistow Marshes, Essex.

THE Directors beg to inform their Friends and the Agricultural Public that the following Manures are now ready:—

ODAMS'S BLOOD MANURE FOR CORN AND MANGEL.

ODAMS'S BLOOD MANURE FOR ROOTS.

ODAMS'S SUPERPHOSPHATE OF LIME.

Full particulars may be had at the Company's Offices, or of the local Agents.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

LONDON MANURE COMPANY, removed to 116, Fenchurch Street, E. C. (Established 1840), have the following MANURES ready for delivery:—

CORN MANURE for SPRINGTOP DRESSING
URATE
MANGEL MANURE
SUPERPHOSPHATE OF LIME
BLOOD MANURE
} all of guaranteed quality.

In consequence of the reduction in the price of raw material the London Manure Co. are enabled to lower the price of their Superphosphate of Lime, and to materially improve the Corn Manure and Urate.

The London Manure Co. also supply PERUVIAN GUANO (direct from Messrs. A. Gibbs and Sons), SULPHATE of AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of value. Wholesale dealers supplied.

116, Fenchurch Street E.C. EDWARD PURSER, Secretary.

REDUCTION IN PRICE OF LAWES'S MANURES.

MR. LAWES begs to announce that he has this season reduced the price of the Manures manufactured by him, viz.:—

TURNIP MANURE	from £7	to £6	6
SUPERPHOSPHATE OF LIME ..	,, 7	to 6	6
MINERAL do. ..	,, 6	to 5	5
BARLEY MANURE..		8	0

Prof. Way and Dr. Voelcker have sampled from a bulk of 500 to 600 tons at his factories, and their report and analyses are given in full in Circular to be obtained on application at his office, 1, Adelaide Place, London Bridge, E.C.

N.B. Genuine Peruvian Guano direct from Messrs. GIBBS, Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures. American Cotton-seed Cake supplied.

ESTABLISHED 1812.

H. AND T. PROCTOR'S TURNIP MANURE.—Messrs. H. & T. P. draw particular attention to this valuable Manure, which contains all the elements necessary for the full development of the Turnip Crop, so combined, that, from their chemical knowledge and long experience, they feel satisfied is most advantageous to the consumer. It has been very extensively used by most of the eminent Agriculturists of the day, and has attained a high reputation throughout England, Scotland, and Wales, and, they venture to say, is unrivalled for the weight and quality of the Bulbs which it produces. The application of this Manure to the Turnips will be found to benefit considerably the after crops of Barley, Clover, and Wheat.

POTATO, GRASS, BARLEY, CLOVER, AND WHEAT MANURES; also BONE DUST, PERUVIAN GUANO, and SUPERPHOSPHATE of LIME, warranted of the best quality.

Apply to H. & T. PROCTOR, West of England Depôt for Artificial Manures, Cathay, Bristol; or PROCTOR & RYLAND, Birmingham, and Saltney, near Chester.

SOLUBLE PHOSPHATE OF LIME.

FREDERIC CORNWELL begs to inform his friends and the Agricultural public that he can now supply a "SUPERPHOSPATE of LIME" superior to anything yet produced. Each Bag guaranteed to contain from 20 to 25 per cent. of "Soluble Phosphate of Lime." Price 5*l.* 10*s.* per ton, delivered free to any Railway or Wharf in London. Dealers and the trade supplied. Linseed-cakes, Cotton-cakes, and all descriptions of Artificial Manures at lowest market prices.

Offices, 7, Great St. Helen's, London, E. C.

THE CHAMPION.

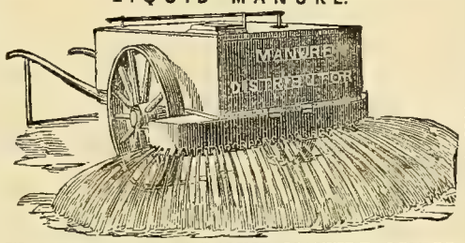
SMITH'S CULTIVATORS AND APPARATUS are got up not for Show but for Work. The Cultivators are almost indestructible, easily turned, and therefore double cumbersome implements are avoided. The Windlass is simple, convenient, and its working easily understood; it is very strong, and like the Implements subject to little or no damage from working. The Rope required averages only about five chains more than an endless rope, its friction only one-fourth; it never slips, and the tension is only one half at a time. The whole Apparatus can work all useful implements on all shapes and forms of ground; is admirable for autumnal cultivation; has stood the test of three years' work, and has produced "results most astonishing and invaluable;" and while the total cost is not more than half that of the Endless Rope one, it can be worked by an ordinary engine without alteration.

Woolston, Bletchley Station.—Feb. 5.

SIGMA'S INVENTIONS.—A Prospectus with engravings sent of the Bean, Mangel, and Corn Planters; the "Multum in Parvo" with its numerous useful appurtenances, Hoes, Cultivators, Aphis Powder, &c.

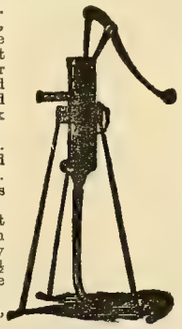
C. POWELL, Hurstgreen, Sussex.

LIQUID MANURE.



JAMES'S PATENT LIQUID MANURE DISTRIBUTOR OR WATER-CART, warranted not to choke up or otherwise get out of order. It is thoroughly adapted for Drill Crops, or Pasture Land, or for Watering Streets; has been awarded SIX FIRST PRIZES. Full Particulars and Testimonials may be obtained of the Patentee, ISAAC JAMES, Tivoli Waggon Works, Cheltenham.—Improved LIQUID MANURE PUMPS supplied.

WARNER'S IMPROVED LIQUID MANURE OR GENERAL PORTABLE PUMP.



These Pumps are fitted with J. W. & SON'S Patent Buckets and Suckers, and cannot clog in action. The barrel is of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure. The legs will fold together, and the whole may be carried on the shoulder to any pond or tank required.

Price of 4½ in. Pump, with legs, 3*l.* 3*s.* If with planished copper barrel and galvanised iron handle, &c., 14*s.* extra. The barrel is 27½ in. long, and the legs are 5 ft. high.

These Pumps are also made without the legs, with strong wrought-iron straps for screwing on to any ordinary water butt or cart, and fitted with 1½ inch brass union for attaching flexible suction. Price 50*s.*

1¾ inch Gutta Percha Suction Pipe, 1*s.* 11*d.* per foot.

Rubber and Canvas Suction and Delivery Hose, from ½ inch to 4 inches diameter, in lengths of 60 feet to order. Branch Pipes with Cocks, Union Screws, &c., at reduced prices.

May be obtained of any Ironmonger or Plumber in town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin St., London.

WARNER'S PATENT VIBRATING STANDARD PUMPS.

PATENT CAST-IRON PUMPS, fitted with J. W. & SON'S Patent Buckets and Suckers, which cannot clog in action, for Farms, Cottages, and Wells, not exceeding 28 feet.

Diameter of Barrel.	Height.		£	s.	d.
2½ in. short	1 ft. 7 in.	Fitted for lead,	1	10	0
2½ ,, long	3 ,, 3 ,,	gutta percha,	1	14	0
3 ,, ditto	3 ,, 6 ,,	or cast iron	2	8	0
3½ ,, ditto	3 ,, 6 ,,	flanged pipe,	2	12	0
4 ,, ditto	3 ,, 6 ,,	as required.	3	3	0
2½ ,, short, with 15 feet of Lead Pipe attached, ready for fixing			2	14	0
2½ in. long ditto ditto ditto			2	18	0



The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.

May be obtained of any Ironmonger or Plumber in Town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

LAND DRAINAGE.—Works of Drainage of any extent are executed by the GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY on all descriptions of Property, whether Freehold, Entailed, Mortgaged, Trust, Ecclesiastical, Corporate, or Collegiate.

Repayment may be made by the Landowner as successive portions of the Works are completed, or the actual expenditure, with a Commission thereon, may be charged on the property improved by way of rent charge for any term not exceeding 50 years, the instalments to repay principal and interest being thereby kept down nearly to 5 per cent. per annum.

No investigation of title being required, and the charge not being affected by incumbrances, no legal expenses are incurred.

Works of Irrigation, Enclosing, Wood Grubbing, Road Making, and Farm Buildings are executed in a similar manner.

The Company also assist Landowners in executing any of the improvements by their own agents, and charge the amount expended on the property improved.

Applications to be made to WILLIAM CLIFFORD, the Secretary, at the Offices of the Company, 52, Parliament Street, London.

THE LANDS IMPROVEMENT COMPANY, 2, Old Palace Yard, Westminster, S.W.

To Landowners, the Clergy, Solicitors, Estate Agents, Surveyors, &c.—The Company is incorporated by Special Act of Parliament for England, Wales, and Scotland.—Under the Company's Acts Tenants for Life, Trustees, Mortgagees in possession, Incumbents of Livings, Bodies Corporate, certain Lessees, and other Landowners, are empowered to charge the inheritance with the cost of Improvements, whether the money be borrowed from the Company or advanced by the Landowner out of his own funds.

The Company advance money, unlimited in amount, for Works of Land Improvement, the Loans and incidental expenses being liquidated by a rentcharge for a specified term of years.

No investigation of Title is required, and the Company being of a strictly commercial character do not interfere with the plans and execution of the works, which are controlled only by the Enclosure Commissioners.

The improvements authorised comprise Drainage, Irrigation, Warping, Embanking, Enclosing, Clearing, Reclaiming, Planting, Erecting and Improving Farm Houses and Buildings for Farm purposes, Farm Roads, Jetties, Steam Engines, Water Wheels, Tanks, Pipes, &c.

Owners in fee may effect improvements on their Estates without incurring the expense and personal responsibilities incident to Mortgages, and without regard to the amount of existing incumbrances. Proprietors may apply jointly for the execution of Improvements mutually beneficial, such as a Common Outfall, Roads through the District, Water Power, &c. For further information and for forms of application apply to the Hon. W. NAPIER, Managing Director, 2, Old Palace Yard, Westminster, S.W.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL AND GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.

Principal—J. C. NESBIT, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

The Agricultural Gazette.

SATURDAY, FEBRUARY 5, 1859.

MEETINGS FOR THE ENSUING WEEK.

MONDAY, Feb. 7 { Central Farmers' Club. (Mr. J. A. Clarke on Arterial Drainage.)
WEDNESDAY, — 9— Agri. Society of England .... Noon

ADVERTISEMENTS of the forthcoming sales of pure bred short-horned cattle* naturally lead to a discussion of the varying annual market value of such stock, notwithstanding their constant and probably increasing intrinsic worth. That well bred cattle should not maintain a price so much above their cost as that at which in 1856 for instance they stood, is not to be surprised at considering their enormous extension in this country—the increasing numbers of their breeders here—and we must add their increasing numbers in America and France, from which the greatest demand for them has hitherto come.

Mr. STRAFFORD'S continually enlarging volumes of COATES'S Herd-book coming too at constantly diminishing intervals, are proof that there is now a larger supply in the Short-horn market than has been ever known.

The wonder is not that prices should have somewhat diminished, but that they should have been so nearly maintained. For what has been the history of this matter during the past few years?

We do not speak of the cheques for single animals we have seen, representing their purchase money 1050*l.* and 1260*l.* respectively—nor of the high average prices they have in past years reached: as, for instance, 47 sold at 150*l.* apiece; 60 at 128*l.* 16*s.* each; 62 at 151*l.* apiece; 101 sold at 77*l.* 13*s.* each; whole herds at 67*l.* and 68*l.* 17*s.* apiece; 50 sold at 84*l.* each; 57 sold at 56*l.* each; 59 sold at 90*l.* each; 78 sold at 80*l.* each; these being the prices at which the herds of CHARLES and ROBERT COLLINGS, the Earl of DUCIE, Mr. TANQUERAY, Mr. BATES, Earl SPENCER, Mr. AMBLER, Mr. CATOR, Mr. MARJORIBANKS, and Sir C. KNIGHTLEY, respectively, were parted with. These figures were not reached in 1858: nevertheless prices can be named which prove that a well-bred bull or heifer is still worth a great deal of money; and the exportation to Canada, to America, to Buenos Ayres and Australia, as well as to various Euro-

* The herds of Mr. J. SMITH (Welton, Garth, Feb. 17); Mr. WETHERALL (Aldborough, April); Mr. SPRAGGON (Nafferton, March 8); Mr. J. E. TROUTBECK (Blencow, Penrith, March 9) Mr. HARVEY COMBE (March 23).

pean countries, still largely affects the English market, so that long prices must be offered to get the best blood. Mr. Booth, whose herd probably now stands highest in the market, furnishes the most striking instances of this. In 1857 25 bulls from this herd were *let* for 3000 guineas—and the bull "Hopewell" was let for two years for 200 guineas a year to Mr. Torr, of Aylesby: a son of this bull—"Baron Hopewell"—was sold in Ireland for 300 guineas to Colonel Towneley. As other instances of long prices during the past year we may mention the sale of "the Lamp of Lothian" at Dublin, for 200 guineas—of a cow named Eugenie, her calf, with young "Master Butterfly," to the Emperor of the French, for 500 guineas—of Baltic, a young bull from Bessy, one of the cheapest cows at Lord Ducie's sale, for 120 guineas—and of "St. Patrick," a bull bought for 60 or 70 guineas by Mr. Drake, at Sir C. Knightley's sale, for no less a sum than 600 guineas, in Australia. And taking the sales by Mr. Strafford of the herds of Mr. Chrisp, Mr. Cartwright, Mr. Allerton, and Mr. Bate during the past year—we cull the following particulars as illustrating still more fairly the current value of good stock. At the first of these sales, "Hawkesworth," a two year old bull, was sold for 200 guineas; "Zierow," a yearling, fetched 180 guineas; and "Mainfred," a five year old bull, reached the price of 200 guineas; "Picotee" and "Laura," heifers, sold for 100 and 150 guineas respectively. At Mr. Cartwright's sale five cows and heifers were sold, varying from 10 months to 6 years old, at prices averaging upwards of 100 guineas; and the "2nd Duke of Cambridge," a four year old bull, reached the price of 140 guineas.

These instances show that well-bred stock of first-class families in the Short-horn breed still fetch enormous prices; and though we are not acquainted with the herds about to be brought to the hammer, and know not whether their prices are likely to illustrate this position, yet there is every reason to believe that the sales of well bred stock throughout the coming year are as likely as those of previous years to prove the high estimation in which the Short-horn breed is held.

If any of those who have been interested in recent discussions of the merits and demerits of English dinners wish to learn what, after all, is the intrinsic value of our different foods they cannot do better than spend a morning in the "Food Department" of the Kensington Museum, which is in the especial charge of Dr. Edwin Lankester, of whom as a gentleman of high scientific attainments few of our readers can have failed to have heard. His arrangement of the materials which have come under his charge—for as yet this portion of the Museum is by no means complete—is at once philosophical and simple, capable of teaching the most important truths to the simplest understanding.

Good examples of the different vegetable products, as of Pulse or grain, are put in compartments of a glass case appropriately labelled, while the other compartments of each case are devoted to the several proximate components of the particular specimen, each being present in the exact proportion in which they occur in the natural specimen. Thus in Wheat the amount of water, starch, gum, and sugar of a given quantity will be found in their relative proportionals side by side, so that the observer can not only see the nature of these, but by looking at other kinds of grain he can compare them, so as to ascertain at a glance their different degrees of nutrient power.

This will be rendered more clear by the annexed Table:—

Table of the per centage composition of Wheat, Maize, and Rice.

	Wheat.	Maize.	Rice.
Water	14.0	14.0	13.5
Gluten	12.8	12.0	6.5
Albumen	1.8	..	..
Starch	59.7	60.0	74.1
Sugar	5.5	0.3	0.4
Gum	1.7		1.0
Fat	1.2	7.7	0.7
Fibre	1.7	5.0	3.3
Ashes	1.6	1.0	0.5

Each of these in these proportions has its place under glass side by side with the others. They are equal to the following:—

Water	14.0	14.0	13.5
Flesh-forming substances	14.6	12.0	6.5
Heat-giving substances	69.8	73.0	79.5
Mineral matters	1.6	1.0	0.5

Here then we have at a glance the relative amount of both the useful and the useless matters in three primary feeding elements, the one of the northern, the other of the western, and the last of eastern nations; and while the study of these explains so fully their different capabilities as applied to distinct peoples, so will it explain to us in these islands that while we get different feeding matters from all parts of the world it would be dearer to make British muscle from Rice which costs us 4*d.* per lb., when Wheat is only 1*d.* for the same quantity and yields twice the amount of flesh-forming matter. Again, look at the simple element fat. Can we wonder that the Americans who consume Maize in every form, especially with butter and molasses, should be, as they acknowledge, a "nation of dyspeptics," when their daily food contains so much fat? Facts of this instructive character will, however, come out in a much stronger light if we examine in like manner the composition of such kinds of Pulse as Peas, Lentils, Beans, and compare them with the results of the preceding Table, in which we again quote from the labelled samples in the Kensington Museum where Pulse "food stuffs" are arranged in the same manner as the grain foods.

Table of the per centage composition of Peas, Lentils, Beans.

	Peas.	Lentils.	Beans.
Water	14.1	14.0	14.8
Casein or cheese	23.4	26.0	24.0
Starch	37.0	35.0	36.0
Sugar	2.0	2.0	2.0
Gum	9.0	7.0	8.5
Fat	2.0	2.0	2.0
Woody fibre	10.0	12.5	9.2
Mineral matter	2.5	1.5	3.5

The woody fibre and mineral matter being principally derived from the *testa* or seed covering is less in *split* or decorticated Pulse.

Equal to the following:—

Water	14.1	14.0	14.8
Flesh formers	23.4	26.0	24.0
Heat givers	60.0	58.5	57.7 = Carbon 36
Mineral matters	2.5	1.5	3.5

From this table we see that while in the three kinds of Pulse the amount of water is practically equal, and that in this respect there is a remarkable similarity between these and the grain analyses, yet in the important particulars of flesh-forming and heat-giving substances what a decided disparity!—double the amount of the matter of muscle in Peas and Beans when compared with Wheat, and four times as much as in Rice. No wonder then that horses fed on Beans should be strong for work, or that hard work should be said to "get the Beans out of them;" and again no wonder that the miller should defend the mixing of Beans with Wheat in forming flour, "because it gives it greater proof;" the word "proof" in agricultural language being very expressive, as a practical enunciation of relative feeding properties. Maize accordingly would have less proof than Beans and Rice less than Maize, and this accounts for the circumstance which we have noticed in America with respect to horses. In the States horses usually look sleek and well, but they are as a rule incapable of the long-continued exertion of our home animals. They are fed on Maize or Indian Corn, which has not the proof of our Oats and Beans.

We conclude by again recommending all who are interested in the production of food to avail themselves of the first opportunity of visiting the Food Department of the Kensington Museum, where on Tuesdays or Saturdays they will not only find the whole collection open free of charge, but meet the Curator of the Food Department, Dr. Lankester himself. There is no greater treat than to hear him explaining, in simple but convincing style, the practical results which science has arrived at with regard to food production and the use of feeding materials.

THE CASE OF THE BRITISH LABOURER.

In your *Gazette* of last week, 22d inst., there is a report of one of Mr. Grey, of Dilston's, "admirable addresses," in which he says that the labourers in his neighbourhood can now afford to consume "butchers' meat," which has hitherto been beyond their reach; that large farms are more valuable than small farms; and that the English farmers, because it is so much less profitable to grow Wheat than beef and mutton, should henceforth direct their chief attention to the growth of beef and mutton instead of Wheat.

Now the greater value of large farms is contrary to the state of the case in almost all the rest of England, and must arise from the abundance of capital in his neighbourhood, which always engenders a greater scale of farming, though not always, by any means, a greater acreable produce; and "the beef and mutton" is an opinion which Mr. Grey will find to be much more difficult to establish than affirm. But what he says about the food of the labourers is so important to the science of their present condition and its causes, and is so astonishing, that it is really quite incumbent on him to confirm what he says, by informing us how it is that they are enabled to live so much better than the peasantry elsewhere, and in so very sumptuous a manner; and therefore what is the amount of their wages; the value to them, or the resources, of the premises in which they live; the rent that they pay, &c. Mr. Grey may be assured that all those who have studied "the case of the British labourer," will read his explanation with the deepest interest. *N.*

In your No. of 22d inst. you have given extracts from an interesting and instructive lecture on "the History and Progress of Agriculture," by Mr. Grey of Dilston, in which the above subject is touched upon.

According to your report Mr. Grey seems to have stated all the advantages likely to arise from the large farm system, and at the same time he hints in a general kind of way at one of the drawbacks.

In discussing such a question facts, where they can be had, are much to be preferred to theories; and I think I can furnish a few bearing on the subject.

In the north-east of Scotland the large farm system has of late years in many cases superseded the small; and the result has been increased productiveness, higher rents, and general improvement, but the picture is not without its shady side.

Along with these improvements there is a universally admitted deterioration in the agricultural labourers. Labour has become in many cases scarce, and in every case dear; and the labourers, though earning high wages, are not improving either morally or socially. In this county (Morayshire) a ploughman receives from 18*l.* to 24*l.* a year besides his board; female out-workers get from 7*l.* to 10*l.* a year with board; cattlemen about 20*l.* with board, and boys about 15 years of age from 12*l.* to 15*l.*, also with board. Day labourers are to be had at less money this season, but for several years past they have been receiving from 2*s.* to 2*s.* 6*d.* a day.

It is not, however, the high price of labour that employers complain of, so much as the positive deterioration of the labouring class. Servants are neither so industrious, so temperate, so respectful, nor so trustworthy, now as of old; and the low state of morality among this class has in this quarter become proverbial. Public attention has of late been much directed to the cause of these evils; and it is now admitted on all hands that the destruction or swallowing up of crofts and small holdings is the root of the evil.

Formerly a farm servant, if careful and industrious, could look forward to becoming the possessor of a holding of from 10 to 50 acres; and this hope induced men of character and integrity to become servants. Now, it is next to impossible to get such small holdings, and the direct consequence is that the better class of the rural population almost invariably bring up their children as tradesmen rather than as servants. The same cause has driven many to emigrate, and hence the scarcity of agricultural labour. Thus, too, we have got an inferior class of men as servants, men who too often are thoughtless and improvident, and careless as to acquiring a good character. They know that they need never want a place, so great is the demand for farm servants and so limited the supply; and they have no sufficient stimulus to industry, as it is quite a rare thing for one of this class to become independent, or to find a home for himself in his old age with a bit of land attached to it sufficient to maintain his family.

This then is the great evil of the large farm system when too exclusively adopted; and it is the sincere desire of all disinterested and unprejudiced men in this quarter to have it very considerably modified. It is all very well to speak of improvements in the cultivation of the soil, and of cheapening the necessaries of life. But "man shall not live by bread alone," and if these advantages are purchased by the moral and social degradation of the industrious classes, they are manifestly too dearly bought.

By all means let us have the large farmer to lead the way in improving, but let us have the small farmer too, and let us not imagine that when we have introduced every sort of material improvement, we have gained the ultimate end we should have in view.

Our peasantry, the country's pride and strength, ought not to be sacrificed to any consideration such as that of mere gain; and already there are symptoms in many districts of such a sacrifice having been at least begun. I trust you will pardon the liberty I have taken in referring to this subject; and as you profess to collect information from all quarters of the country, will give this statement a place in your columns. *A Friend to the Labourer.*

To this we append the following letter from the columns of the *Times*: — The incumbent of a parish in Wiltshire, with kindly feelings for the labouring poor, seems to have received with surprise and incredulity the remarks made by me at the Hexham Farmers' Club upon the increased consumption of butcher's meat by the labouring classes in this county, and states that the wages of an agricultural labourer in Wiltshire are 7*s.* 6*d.* per week, out of which he has to support his family and pay 1*s.* per week for house-rent. That is certainly very inconsistent with the use of meat at 8*d.* per lb. Such a family, one would think, is placed under great temptation to beg and to steal. Even in Norfolk, which is more advanced in cultivation than Wiltshire, the county of the large-minded and patriotic Coke, that great pioneer in rural improvements, I believe wages are only 8*s.* and 9*s.* a week. This is certain

most inadequate to the wants of a family, and I believe is also impolitic as regards the employer; for it is unreasonable to expect that a man existing on the borders of starvation can be possessed of strength, energy, and spirit to perform a good day's work, or that his children can be brought up in health and vigour.

A striking example of the inefficiency of such labourers was found not many years ago, when a near relative of mine, who has large sums through his hands in superintending works of "land improvement," was brought into communication with parties in the southern counties who complained of want of employment and low wages among their peasantry, which led to his offering to give work to 100 of them, if they could find their way to this county with tools for draining, at which men were making from 17*s.* to 21*s.* per week at piece-work, according to their capacity and application.

Some benevolent persons supplied a party of men with money for their journey and the purchase of tools. The poor men came, so ignorant as not to know whether they could reach Northumberland without crossing the sea. They were lodged and set to work, but proved to be so wanting in method and in power that few of them could make more than half the wages which the men of the country gained. The experiment failed, and ended by their disappearing gradually in poverty and disappointment. It is therefore to be questioned whether, however low the rate of wages may be in some counties, the price of labour is actually less than in this. With men so ill-fed, and children reared in such poverty, the race must become physically and mentally deteriorated. I have many men in my employment, and at wages by no means the highest in the county, because the employment is certain and constant. Some old men have only 10*s.* and 11*s.* a week. Men engaged for the year, with a house and garden free of rent, have 14*s.* 6*d.* per week; and others, who find their own houses, 16*s.* all the year round; while scores of others, employed at draining and other work by measurement, open to the public, are making regularly from 18*s.* to 20*s.* a week. Such men apply themselves with vigour and energy. They require the support of meat as well as bread, and they can afford to use it. I have seen it stated that the regiment of Northumberland Militia occupy more standing ground than any other regiment, because the men have broader shoulders than others, which may be readily believed, if the children of the peasantry are brought up like those in the counties described, on wages of 7*s.* to 9*s.* a week. A proud sentiment is expressed by the elegant Mrs. Barbauld, as a compensation for our want of the richer productions of more luxurious climes—

"But men are ripened in our northern sky."

Men will not ripen, however, on 8*s.* a week for the support of a family. If such a system lasts, the succeeding generations must dwindle and decay. *John Grey, Dilston, Northumberland, Jan.* 29.

THE LIFE OF AN ENGLISH FARMER.

A TESTIMONIAL to the personal worth and public services of a most excellent man was recently presented by his friends and neighbours to Mr. John Clarke, of Long Sutton, Lincolnshire, and we take from the columns of the *Mark Lane Express* the following sketch of his career extracted from his reply on the occasion. Mr. Clarke said:—

The outlines of a life like mine cannot be very interesting, or possess any remarkable features worth your notice; for I was born where I now live: "I till the and my forefathers tilled." Still it may not be inappropriate to this occasion, and may tend to encourage ome of my young friends present to prosecute a course of industrious usefulness—I say, to encourage my young riends; for bear in mind, we do not all possess the ame natural powers, either mentally or physically; ve can, however, by industry and care improve both; ve can strengthen our minds by reading and study and nental effort, just as we can add vigour and hardihood o our bodies by athletic exercise and manual labour. Now, I verily believe that few young men have commenced their career under more disadvantageous ircumstances than myself, as respects mental acquirements and effort. I frankly and freely tell you it was n this way I became impressed with the foolish idea hat my family was well to do; if not rich I should do ery well in the world, and therefore might enjoy myself. more fatal idea to prevent mental effort could not take ossession of the mind; consequently field sports, cricket, nd the like, had full predominance; and so I went on om year to year. I, however, attended to farm duties aily, and for 12 years worked hard on my father's rms and our own, as a constant ploughman; and for 2 harvests I stacked a large proportion of the corn, nd in the various labours of the farm took my part; nis I don't at all regret. I never heard a man complain nat he worked too hard, or attended too much to his usiness in his young days; recollect that, in the main, othing but persevering industry can achieve success; uperior talent is of great value, but careful persevering oddling industry will beat the finest talents in most ses. Well, young, inexperienced, and self-sufficient as was, I recollect at the age of 17 or 18 I came to this solution (for I felt it was incumbent upon me to adopt d persevere in some definite course)—*i.e.*, that I ould endeavour, 1st, to make myself a good member of ciety, 2dly, a good parishioner, and 3dly, a good and eful man of business. There cannot be a doubt that solutions of this sort made in youth, and conscientiously acted upon, would be of vast benefit to the community. We have all our several duties to fulfil, both in public and in private. The world, and particularly that minute portion of it with which we are immediately connected, should be the better for our living in it; otherwise we nearly live in vain, or live wholly for ourselves. Well, to become a good member of society (a vast deal is included in being a good member of society), I set about making myself; I became a teacher in our Church Sunday school, and was superintendent of another for many years. I took great interest in music, and in promoting good congregational singing. I managed a large Friendly Society (this I have done for upwards of 40 years). As time rolled on I became greatly interested in other matters. The days of ploughing matches and prize stacks were scarcely known; the only way we had of encouraging the one and the other was by frequent inspections; and though some evil arose from these inspections, it served to promote the very object I and some of my young friends had in view. The evil was this: It was the invariable custom for the ploughmen around Long Sutton to do their best on the Saturday to leave their primest work, so that passers-by on the Sunday might view it. This soon led to a good deal of Sabbath breaking; and groups of young men might be seen every Sunday taking their stroll round the district or through the marshes to see the straight furrows or the best stacks; and I regret to say, finishing their walk at "The Wash;" and more particularly on tidal Sundays, when many disgraceful scenes were enacted. Long Sutton Fair was at this time merely a servants' holiday; and it was no uncommon thing for young men of more strength than wit to try their prowess in boxing, and many such matches came off in my early days; so many that it became a matter of serious thought as to what should be done to put an end to this disgraceful course, for it was notorious that if a young man was known to be a fighter he had to defend himself from more than one challenger at these meetings; indeed the test of championship seemed to be put off to this very meeting, and I recollect as a ploughboy hearing of the arrangements got up for the strife. Well, things could not go on so. A meeting was got up at Sutton, called a drawing-match—that is, the ploughman who could draw the straightest furrow or make the best ridge received a copper teakettle, or some equally homely but useful prize. I thought this far better than boxing-matches and the like; and at once did my best to encourage it, in which I was aided by several friends. This was our first effort in ploughing matches. We kept it up for some years with very good effect. It drew off from Sutton many refractory spirits; the zest of drinking and boxing was allayed; and as the parties were thus divided, the worst features of Long Sutton Fair subsided. It is now a quiet, orderly meeting—in fact, a pattern of a convivial, pleasant assemblage of servants for mutual recognition and congratulation—a meeting of a very useful kind, as serving to keep up great nationality of character and feeling—a holiday no one grudges, but that all desire consistently, in reason and moderation, to enjoy. The Long Sutton market was soon after this time established, and the fair assumed a higher character. A better order of things prevailed; a decided elevation in the character of our population was to be noticed, owing, I believe, to the many public meetings held—such as bible, missionary, tract meetings, and others, aided by extended and efficient religious teaching in the pulpit and Sunday schools. Gentlemen, it was by giving my best aid in all these movements that I endeavoured to become a good member of society.

But I resolved to fit myself for becoming a good parishioner—that is, I resolved to see wherein I could be useful to my parish, either to aid as I best could in the management of parochial business, or in correcting any of the abuses or irregularities that had, or may, in the course of time, have arisen. When I commenced business, now over 40 years ago, the poor were managed by assistant or deputy overseers, who received each a handsome salary (for at the time I speak of we had two). The parish doctor received from 100*l.* to 110*l.*; bailey constables, at handsome salaries—35*l.* each. At this time the poor had nearly the mastery over the overseers; for it was only requisite for the pauper to go to a magistrate and make oath that he was destitute, and at once to receive a peremptory order for relief, and it was at the peril of the overseer to refuse it. The rates were consequently very high for relief; but added to this it was customary to pay the rents of a great many paupers' cottages, so that the poor's-rate became an enormous burthen (6*s.* to 7*s.* in the pound). A few of us set about its reduction, and many unhappy dissensions we had. We speedily got rid of the assistant-overseers, most of the cottage rents, and by establishing a system of labour either on the roads or otherwise, materially reduced the relief list, and consequently the rates, as I believe with real contentment to the poor. A great many gross inequalities had crept into the rate-book, and I have now in my possession the book which I made out under direction of our committee, which so forcibly showed the absurdity of some of the ratings, that we soon had these rectified. Then there was the making the rate (highway-rate); that is, a chosen or customary party went to the vestry, an adjournment was soon moved to the Bull Inn, a capital dinner and wine was provided, the rate was made, and the dinner bill paid out of it. The charities came next to be considered. These were in a most unsatisfactory state. The lands were let to the friends and relatives of the trustees at low rents. The trustees were very few in number, and in some charities nearly extinct. The church rates also engaged our serious attention; they were very heavy, and included mole catching, sparrow catching, besides all footways and bridges, &c. The steeple was always under repair, and I believe much money was fictitiously expended upon it. The rates had been collected for eight years without being accounted for. What would our church-rate abolitionists say to this? Well, we set about reforming all these matters, and we gradually effected them, and in a way that works satisfactorily up to this time. I often wonder what our zealous young reformers would have done in those days; those were real reforms in parochial affairs; now I reckon them only gleaners in the reform field. All this was not done without some odium and unkindness. It was thus that I sought to make myself useful as a parishioner.

I have one more point. I resolved to qualify myself to become a useful man of business, both in public and private. Well, this I found to be the most difficult thing to attain to; and which I have not nor ever shall attain. However, there was nothing like setting about it. I recollect very well borrowing of Mr. Thomas Peele a number of Evans & Ruffy's *Farmers' Journal, the* agricultural newspaper of 40 years back. I was greatly interested in reading about Holkham sheep-shearings and Woburn gatherings, ploughing meetings, and the like. I soon began to take unusual pleasure in such matters at home; and although we had no matches to test the skill and powers of our workmen, yet the best of them were pretty well known in the district, such as Carter's Will, Forster's Billy Percival, Mr. Peele's George Barton. As time passed on, the whole country became aroused by the success which attended the Holkham and Woburn meetings, and the Holkham system of agriculture. Agricultural societies began to spring up and there, were soon on the increase everywhere, and it was not likely that the inhabitants of this district, who have always stood prominent in promoting every improvement likely to benefit their country, would long be without a society of their own. In the meantime I paid great attention to the introduction into this district of new varieties of grain, seeds, Turnips, Mangels, Cabbages, Kohl-rabi, Chicory, Carrots, Lucerne, and Sainfoin; and after a time the whole country was aroused to inquiry, and now you hear of new "sorts" everywhere, and everybody getting them. I also endeavoured to promote improvements in culture, such as autumn culture, subsoil ploughing, hollow-draining: on the latter subject permit me to state that I wrote and published the first pamphlet ever printed at Long Sutton (this was by Mr. Swain). I also undertook to keep up a breed of large-framed and heavy-woolled sheep for the use of the neighbourhood. It was in this way that I sought in my small capacity to be a useful man of business. I now come to the business of this to me very interesting day, and wherein I have been enabled to act more in a public capacity. I have said that Long Sutton will never be behindhand in promoting improvements; consequently the establishment of an Agricultural Society was often talked over, and at length a fitting time came, and it is one of the many good things which have emanated from this annual meeting for the benefit of the neighbourhood. It was at a meeting of this association held on January 23d, 1837 (22 years next Monday), that the Long Sutton Agricultural Society was mooted. The following Friday, February 3d, was fixed for holding the meeting for establishing the society and drawing up the rules, and by adjournment to the 17th, when they were finally carried, and the society established upon its present basis. The operations, however, for the first year were restricted to the parishes of Long Sutton, Sutton St. James, St. Edmund's, and Gedney, but in the following year it was extended to its present boundary. W. Skelton, Esq., was appointed treasurer, and myself secretary. The premium list comprised prizes for stock, and rewards for labourers; and this order was maintained with varied success up to the meeting of 1844, when the prizes for stock were discontinued. In the course of the first year an amalgamation was attempted with a similar society formed at Holbeach, which failed. In 1839 we numbered 130 members. In 1841 Mr. Skelton was elected president of the society, and myself treasurer as well as secretary. In 1843, the first prizes were offered for mowing Wheat, which speedily had the effect of putting down all prejudices against that course. In 1844, the first prizes were offered for hollow-draining. In 1847, the first prizes were offered for allotments. In 1854 the All-England or Champion ploughing class was established, and the first educational prizes were given. In 1857, the steam-plough was introduced, the Potato-digger, and a large collection of implements was exhibited. In 1858, steam-ploughing and steam cultivation in several of its best phases, a clever locomotive steam-engine, and an economical reaping machine were shown; indeed it has been my aim as your officer to introduce to your notice specimens of our most useful implements, or such as were obtaining the greatest popularity, in order that they might be seen, and, if approved, adopted. I have now gone through with this review, which is chiefly about myself. I ask you to forgive this egotism; you must pardon this setting forth of my doings; it is meant in some sense as an answer to your distinguished token of approval. You have this day honoured me above and before all others in this district: this splendid testimonial is the first given here to any individual for services of this character, by the general public. I shall not stop to point out the great benefit

this society has conferred upon the locality: these beautiful and valuable tokens are a sufficient testimony that you think it a valuable society, and that you approve of my efforts in helping to conduct it. I wish they had been more worthy your approval. What I have done has been from a strong sense of public duty. I am a true believer in the prize system: to it we owe the improvements in British agriculture. I believe that we have mainly to look for our prosperity as farmers—to agricultural improvements, in the judicious adoption of the best breeds of stock, the best modes of culture, the best varieties of grain and of roots, the best implements, the best manures, and the best and most economical management of the whole. It is in this way we may—and I would add that we will—defy the whole world to beat us.

WHEEL *VERSUS* SWING PLOUGHS.

(*Concluded from page* 78.)

Some people tell us that on land of a hilly character the wheel plough can never make headway, as it is heavier and apparently more unwieldy than the swing construction. Now, although we cannot here boast of mountains rivalling the noble Grampian chain, there are yet elevations under culture which manifest the same class of difficulties as may be met among their glens and brae-sides. Take the Cotswolds, in Gloucestershire, for instance. On their escarpment will be found a system of husbandry peculiar to the locality, but admirably adapted to it. If my reader has ever travelled the bleak road from Cirencester to Stow-on-the Wold, on a biting blustering morning in March, he requires not to be told that there are heavy physical obstacles with which the district has to contend, crests to be surmounted, and braes to be ploughed by implements of some kind or another. The soil is often thin and brashy, the rock at a very shallow depth, and stones in many cases numerous. Surely here then the improved wheel plough must hide its diminished head. In many cases it does so. We find the wooden beam and handles prevailing, with cast mould-board, and wrought iron shares. These are turned out in the locality much the same as is practised in Scotland. But the mould-board is often on a very incorrect principle—occasionally manufactured of wood—and the draught severe. First-class wheel ploughs are however making a steady onward progress. If a leaf of practice is worth a volume of theory, we are ready to adduce the former. A farmer on the Cotswolds, whose practice is second to none I have elsewhere seen, kindly addresses me on this point. He is the occupier of over 1000 acres in the neighbourhood of Northleach:—

"I have worked (says he) Howards' ploughs for the last three or four years, and consider them the best for general purposes, doing their work well, and much superior to any others I ever had. I think them better adapted for ploughing light stoney land, and having two wheels you can more easily set them—with greater truth; and when set, requiring comparatively little strength to hold. You will in very stoney land break a few shares; but their cost replacing is not expensive; neither any blacksmith to pay—a great nuisance saved, as they are very doubtful after being 'done,' and frequently the plough goes badly. I work 12 of them in preference to others. They are particularly good for ploughing our old seeds—('Clover')—for Wheat, and old Sainfoin for Swedes and Turnips after burning—a system not pursued in your neighbourhood."

It does not follow that because an implement is in itself heavier than another, its draught is either literally or proportionally greater. Look at the case of a 6-horse portable engine and threshing machine—the former weighing 55 cwt., and the latter three-fourths of a ton less. Yet on the road it is not needful to put more strength to one part than to the other. And my own impression is, that of the two the lighter part is the heaviest draught for the horses. This arises from the greater longitudinal as well as lateral spread of the threshing machine between the wheels; while the engine is a firm compact body, occupying less space. So of wheel ploughs, which you often find from 50 to 75 per cent. heavier than a swing plough for the like work. At Paris in 1855 Ball's plough, which looks fully as heavy as any other, registered 380 lbs., with a furrow of 8 inches by 10; while at the trial on Mr. Alexander's farm, near Laurencekirk in November last, one of the best swing ploughs registered 694 lbs., when cutting 6¾ in. by 9½ in. I readily admit the comparison to be incomplete, without a knowledge of the tenacity of the respective soils, and other attendant circumstances, although it does seem that the difference is indeed great. However, there was also one of Howards' ploughs on the ground, at Bent of Halkerton, which registered 369 lbs. at 6¾ in. by 9 ins.; while its most successful compeer at the same dimensions is given at 560 lbs. Surely, there must be some ground for reasoning from a fact like this. At another trial in my native district, also in November last, at Carcary, near Brechin, there was at least 1 cwt. of difference in favour of the wheel plough, as compared with the swing at the like depth. Equally successful results have been reported from Athole, and the neighbourhood of Perth; the former ploughing match being adjudged by men who stand in the first rank of Scottish agriculturists—Messrs, Watson, Keillor, Dickson, Saughton Mains, and Elliott, Laighwood. The *Perthshire Advertiser* of Nov. 25 says that:—

"The time for executing the allotted task of a quarter of an acre to each plough was three hours and 15 minutes. About 30 minutes before the time fixed the Bedford plough had finished its work, and one of the Scotch ploughs within three minutes; but a considerable number of the latter having still a good deal of ground to turn over, the time was extended for half an hour, and even with this extension many of the ploughmen had great difficulty in bringing their work to a close."

I must not omit to add that one of the Scotch ploughs showed the same draught on the dynamometer, viz., 3 cwt., as Howards'. Having repeatedly tested the draught of a good plough under different circumstances, such as increased or lessened depth or width, with the coulter at different angles, with wheels and without, with or without the skim, drawing from the end or middle of the beam or from the body, with additional weight on the plough, at different paces, up-hill, or down-hill, or level work, *et hoc genus omne*—I know full well the care that is needed, in order to ensure a correct reading of the dynameter. I would almost go so far as to say that the nice fluctuations may be given either way, if the object is to serve a given purpose. Plate XII. in the "Cyclopedia of Agriculture," with the corresponding Article at p. 724, will fully illustrate my meaning. But the Scottish trials appear to have been made with care and correctness, and often in the presence of those whose tastes were not in favour of the superior implement. It is true that the ploughman was a first-rate hand, but he had to compete with first-rate hands. It is true that the wheel ploughs were the best of their kind; but it is not less true that in these instances in which the approximation was closest, local plough-makers had become aware of the trials, and lent their aid in bringing new coulters and shares—and in more than one instance, new ploughs—all of which were in advance of those usually found in practice. Whereas, at the present moment, I doubt not but many ploughs in the north will show nearly twice the draught of a good wheel plough, with the same size of furrow slice. I make this remark cautiously, but not without fair proof thereof.

As a whole, these and other trials exhibit the draught as a saving of fully one-third in favour of the wheel plough. This is a matter worthy of the deepest consideration. With prime Wheat not much over 5*s.* per bushel, there is every reason for retrenchment. And if the writer is correct in his remarks, here is an item of an important character. The saving on one plough being considerable, how much more must it be when multiplied by the ploughs of a large farm, or of braid Scotland

"Frae Maidenkirk to Johnnie Groats."

Sir John Forbes lately remarked, that "with three and a half millions of arable acres in Scotland, a saving of an hour per acre in ploughing three-fifths of it would be a gain to the country of 100,000 working days of 10 hours each; a saving of 1 cwt. of draught in that operation (to 150,000 work horses) represents an enormous amount of tear and wear." To enter a little further into details, we may take the arable acreage of Scotland at 56,000 acres over Sir John's estimate. Now, according to the statistical return for 1857, this would give the following extent of crops, on a farm of 500 acres:—

59	acres	Wheat and Barley.
136	,,	Oats, Rye, and Bere.
9	,,	Beans, Peas, and Vetches.
91	,,	Roots and Fallow.
205	,,	Clover.
500		Total.

My object is not to construct a rotation, and I therefore follow the statistical order; but taking the Clover, or "seeds," as being of first and second years' growth, we can see how (by seeding down a portion of the Oats after roots) a five years' course could be constructed—or something nearly approaching thereto. On a well-managed farm of this size there would be some 500 acres of ploughing annually, allowing the roots to be preceded by three furrows. I know that there are many farmers who would manage medium soils with less than 400. The cultivator—and especially Biddell's scarifier in Norfolk—is to some extent exchanged for the plough. A good Warwickshire farmer, who has travelled in Scotland, and profited by it, says he is not in favour of the land being often ploughed, especially if it is of a light description. "On my farm," he adds, "I do not generally plough more than three times for five crops. First, plough up the seeds for Oats; second, manure and plough for Beans and Peas—then scarify for Wheat; third, give a deep furrow for Swedes—afterwards scarify for Barley, and sow down to seeds again." But to return from this digression. With 126,471 working horses in Scotland, the strength for such a farm would be about nine pairs. Although the calculation is seemingly high, we simply give it as founded on these data. A saving of one-third in draught ought to show it somewhere; either in the corn-bin, in the earlier finish of the operation, or in effecting a deeper and more complete tillage of the soil. It is not too much to say that it would show itself, to a greater or less extent, in all these respects. If I take Sir John's hypothesis of an hour per acre saved in the operation, from less expenditure of strength, we gain at least eight weeks' ploughing of a pair of horses—no mean adjunct it will be readily be allowed. We believe, however, that the saving would manifest itself in a less obtrusive, though not in a less tangible form. Mr. Lennie's Gold Medal Report of ploughing experiments, in the Journal of Agriculture, gives some tabular results of a valuable character. Comparing the produce of Oats, after ploughing performed by Small's, Howards' Yester, and Currie ploughs, he says:—

"Howards' prize wheel plough gives the greatest amount of produce both in grain and straw, taking its combined plots, as given in Table No. III. The work was exceedingly well executed, especially of No. 4, the man having a premium awarded to him. The work of No. 9 (both Howards') was nicely cut; but not so well closed as it should have been. This plough, from its light draught, and being easily held, promises to come into extensive use. It is so constructed that it can be adjusted to any kind of work in the field by the ploughman with facility. The furrow-slice is rectangular, the sole of which is cut flatter, and is cleaner taken up than that of any other plough the reporter has seen working."

There are other matters to which I might refer, were my object to aim at "special pleading." I have endeavoured, in the preceeding remarks, to show that wheel ploughs are not the complicated pieces of mechanism which some people give them credit for being; that they are simple of adjustment, and can readily be repaired; that they are decidedly advantageous to the farmer, in improving the work of his second-rate hands; that they are easier for the ploughman, lighter for the horses, and of national importance, as a saving of useful power. If anything has been advanced contrary to facts, I will gladly acknowledge the mistake. If aught has been said in a dogmatical or discourteous tone, the writer honestly regrets the same. But he lays down the pen in the fullest conviction of having adduced facts worthy of unbiassed consideration, and thoroughly believing that at no distant date will wheel ploughs predominate on the north of the Tweed. *T. Bowick, Stoneleigh Abbey Farm, Kenilworth.*

MANURES FOR TURNIPS.

The Haddington Agricultural Club resolved at their meeting last year to conduct experimenrs for ascertaining the most profitable manures for the growth of Turnips, recommending to the members the following list on trial:—

No. 1. 4 cwt. Peruvian guano per acre.
No. 2. 2 cwt. Peruvian and 2 cwt. West Indian do.
No. 3. 2 cwt. Peruvian and 2 cwt. dissolved bones do,
No. 4. 2 cwt. Peruvian and 2 cwt. superphosphate do.
No. 5. A mixture in equal value of dissolved bones and Rape dust do., same money value as No. 1.
No. 6. ¾ cwt. of nitrate of soda, ¾ cwt. of sulphate of ammonia, 2 cwt. of dissolved bones.

At the last monthly meeting the reports of those who had carried out the recommendation were read. The chairman, Mr. R. Scott Skirving, introduced the subject with the following observations. He said:—You will find many clever, intelligent, practical, and most successful farmers, who annually order from 10 to 50 tons of Peruvian guano, and never use any other artificial manure—because they found Peruvian guano the cheapest, grew the best crops, and, with the exception, perhaps, of Rape dust and drill bones, all the other stuffs they had ever tried were little else than adulterated humbug. This might all be very true were the supplies of guano to last for ever, and to continue at a moderate price. But what were the results should the supplies of guano suddenly cease. Why, instead of having been a blessing its loss would be our ruin. I believe at this moment the use of guano has become an absolute necessity—we could not cultivate our farms without it. Now by making experiments we give encouragement to those who are at great expense to find out some new and cheap fertiliser, besides the benefit we may derive from ascertaining the best substitute for it. The reason also given by those who never use anything but guano is this—We can always depend upon getting it pure. The temptation to adulterate artificial manures cannot be strong now. Easy and immediate detection by analysis must check any attempt at this. I have a sample of every artificial manure I used last season, sealed up and ready for analysis, if the experiments made this season gave occasion to draw any peculiar inference. When the fertilising powers of guano became generally known the demand proportionally increased, and the price rose higher and higher. Every autumn a circular was issued, informing agriculturists that, owing to the increased demand for, and the difficulties of obtaining a supply, Peruvian guano would be sold next season at an advance of 1*l.* per ton. Now, where was this to end, unless the demand were put a stop to, by showing that artificial fertilisers could be manufactured and sold at a much lower price than guano, and though not possessing the productive powers of guano, still more profitable to use in greater quantities, because sold at a much lower rate? In this lies the great benefit of making experiments. In making these trials, half a Scotch acre was allowed for each. I may also add that farmyard manure was applied at the rate of 25 carts to the acre. These experiments were made with Swedish Turnips sown on the 12th of May. I will now read over the table of my results, which were as follow:—

	Cost per acre.	Loss.	Crop.			Deficiency of Crop.		
	£ s. d.	per acre. s. d.	tons.	cwt.	st. lbs.	tons.	cwt.	st. lbs.
1. 4 cwt. Per. guano, at 14*s.*	2 16 0		24	2	3 11			
2. 2 cwt. Per. guano, 2 cwt. West Indian, at 11*s.* ..	2 4 0	12 0	24	1	3 11	0	1	0 0
3. 2 cwt. Per. guano, 2 cwt. dissolved bones, at 11*s.* 6*d.*	2 6 0	10 0	20	19	3 10	3	3	0 1
4. 2 cwt. Per. guano, 2 cwt. superphosphate, at 10*s.* 6*d.*	2 2 0	13 0	21	7	1 13	2	15	1 12
5. 4 cwt. Rape dust, at 7*s.*; 3 cwt. bones, at 9*s.*	2 15 0	1 0	22	0	6 6	2	1	5 5
6. ¾ cwt. sulphate, ¾ cwt. nitrate, 2 cwt. bones ..	2 9 6	6 6	22	8	2 10	1	14	1 1

No. 1 table of experiments were made upon light gravelly Turnip land.

The following conclusions may be drawn from this experiment:—First of all, guano is proved to be the most powerful

stimulant to vegetation; but it is not the most profitable; the weight of Turnips produced by No. 2 being only 1 cwt. per acre less, with a saving of 12*s.* per acre. The superiority of No. 2 over Nos. 3 and 4 is very marked. But I was not surprised at this result, as I tried West Indian guano alone last year, against equal weights both of dissolved bones and superphosphate, and found it superior to both. The result of No. 3 is rather a surprise. The cheaper mixture with superphosphate has a decided advantage over dissolved bones. No. 5 is a very important trial, as far as ascertaining the real value of guano; being a mixture of rapedust and dissolved bones, same money value as No. 1. But the result is much in favour of guano; the produce of No. 5 being 2 tons 1 cwt. 5 st. 5 lbs. below No. 1. The mixture of rapedust and dissolved bones is not a good one. Had West Indian guano or superphosphate been used, the result might have been different. I now come to No. 6, where we again try to find a substitute for guano, but the result is still in favour of No. 1, but the deficiency is less, being 1 ton 14 cwt. 1 st. 1 lb.

The experiments at Saltcoats are of little value, the crop being so very bad. The field where the experiments were made was heavily manured in the stubble, partly from a dunghill and partly from the feeding courts, ploughed in time for all the frost we had last winter. The part where the experiments were made was three times grubbed, the Turnips sown with as fine a mould as it was possible to wish for. Guano was applied at the rate of 4 cwt. per imperial acre, and the produce not to reach 14 tons per imperial acre, is most unaccountable. But all the farms along the sea-coast suffered very much from the ravages of a caterpillar known as "black Jack." They hung upon the leaves of the Turnips in such numbers that on one Purple-top I counted 64. The variety known as Skirving's Top were totally destroyed by them, but the Swedes partially recovered.

	£	*s.*	*d.*	tons.	cwt.	st.	lbs.
1. 4 cwt. Peruvian guano, at 14*s.*	2	16	0	13	19	5	11
2. 2 cwt. Peruvian guano, and 2 cwt. West Indian, at 11*s.*	2	4	0	12	3	3	5
3. 2 cwt. Peruvian guano, and 2 cwt. dissolved bones, at 11*s.* 6*d.*	2	6	0	12	3	3	5
4. 2 cwt. Peruvian guano, and 2 cwt. superphosphate, at 10*s.* 6*d.*	2	2	9	12	18	2	13
5. 4 cwt. Rape dust, at 7*s.*; 3 cwt. bones, at 9*s.*	2	15	0	11	6	2	10
6. ¾ cwt. sulphate, ¾ cwt. nitrate, 2 cwt. bones	2	9	6	12	18	2	13
7. 4 cwt. Dall's manure, at 10*s.*	2	0	0	13	13	2	7
8. 4 cwt. phospho-Peruvian, at 12*s.* .	2	8	0	13	13	2	7

No. 2 table of experiments, the soil was of a more clayey tendency. Besides the published list of experiments, I made two others—one with phospho-Peruvian guano, and another with Mr. Dall's concentrated manure;* the results of both were exactly alike, and next to No. 1. I also tried phospho-Peruvian with white Turnips, in a very light soil; against the same weight of Peruvian, the crop was decidedly superior. Notwithstanding the difficulties against which it had to contend, you see even here No. 1 shows a decided superiority; the mixture of No. 5 is the worst. Nos. 2 and 3 exactly the same, and Nos. 4 and 6 the same. The experiment was made on half an imperial acre—eight drills in each trial. I weighed the Turnips in 50 yards of the whole eight drills of each. But from the fact of so many of them being equal, shows how the season almost totally destroyed the power of testing the manures—the Turnips were the Purple-top Swede, sown on the 31st of May.

Mr. Hope, Fenton Barns, said: I have brought with me the result of some experiments, and in reporting the trial I made with different manures in the growth of Swedish Turnips, I have to premise that the soil on which the experiment was made is naturally of excellent quality—I may say the best on the farm; that the field was dunged on the stubble during the winter to the extent of at least 20 carts per Scotch acre. I selected a piece that I thought was of uniform quality, and intended to sow 100 yards of eight drills 27 inches apart with each kind of manure, and they were weighed up for that purpose. The person that measured the length of the drills with the 60 feet line had only gone on four times in place of five, and the first lot of manure was sown before I felt certain that the ground was not 100 yards in length. On trial it was found just 80 yards. This made the quantity applied one-fourth more than I intended; however, I resolved to make the others the same. In order to test them better, eight drills got nothing, except of course the manure on the stubble with the others. The whole 80 yards in length of eight drills of each were taken up and weighed, and when the manures employed and the weights obtained are calculated by the Scotch acre the following table exhibits the results:—

SWEDES.

No.	Tons	cwt.	qr.	lb.
1. Nothing—gave per Scotch acre	17	11	2	7
2. 6½ cwt. Peruvian guano	19	7	2	0
3. 3⅛ cwt. „ „ and 4½ cwt bone dust	20	10	3	21
4. 4½ cwt. bone dust, 131 lbs. nitrate of soda, 131 lbs. sulphate of ammonia, and 3 cwt. common salt	18	15	0	0
5. 6¼ cwt. concentrated manure of National Guaranteed Company, bought from Mr. Dall, North Berwick	20	17	0	3
6. 6½ cwt. Peruvian guano, and 6½ cwt. common salt	16	5	0	0
7. 6½ cwt. Phospho-Peruvian guano, from Messrs. Seagrave, Liverpool	19	4	1	14

The whole crop suffered from the fly, but what got no special manure looked fully as well as any of the lots until some time after they were singled. While lots 4 and 6 to which salt was applied brairded very ill, and when singled with the others the plants were few in number and very small; indeed, I thought they were irretrievably ruined. After harvest No. 4 recovered amazingly, but No. 6, which had double the quantity of salt, never looked thriving. The greatest effect produced by the manures over nothing is 3 tons 6 cwt. by the concentrated manure, the cost for the same being 3*l.* 5*s.* 6*d.*, or about 20*s.* per ton. I tried a somewhat similar experiment with yellow Turnips. Guano and bones produce the largest crop, but 3 cwt. guano produced more Turnips than 5 cwt. by itself; the concentrated manure, and the 5 cwt. guano were nearly he same—the crop however was a wretched one.

* Mr. Dall is the agent at North Berwick for the National Guaranteed Manure Company, 2, Moorgate Street, London.

I made another experiment with White Globe Turnip on sandy link land at Dirleton, the land had been long in Grass, and had carried only one white crop after being broken up. The following is the result:—

	Tons.	cwt.	qr.
4 cwt. guano and 1 qr. bone dust per S. acre produced	12	14	0
5 cwt. concentrated manure	11	13	0
2½ cwt. Peruvian guano, and 2½ Indian guano ..	9	2	0
5 cwt. phosphate Peruvian guano	10	12	26
2½ cwt. Peruvian guano, and 2½ brown sulphuretted carbon	10	11	48
5 cwt. Peruvian guano	10	4	72

The whole, as will be observed, are a very poor crop, but to all appearance the soil was equal, and no farmyard dung was applied to any of them.

Mr. R. Scott Skirving, of Campton, then read the following series of experiments, 14 in number—the outside figures referred to his own experiments, and the numerals referring to those given out by the Club:—

		Imp. acre. Tons.	cwt.
1.	Home mixture—say 3 cwt. Peruvian guano and 3 cwt. dissolved bones, with 1 qr. crushed bones; this for Scotch acre in proportion to imperial	18	10
2.	2 cwt. Peruvian guano at 13*s.* 9*d.* and 3 cwt. dissolved bones at 8*s.* 7½*d.*—2*l.* 13*s.* 4½*d.* ..	13	12
3. VI.	2 cwt. dissolved bones at 8*s.* 7½*d.*, ¾ cwt. nitrate of soda at 30*s.*, ¾ cwt. sulphate of ammonia at 20*s.*—2*l.* 7*s.* 3*d.*	15	1
4.	Dissolved bones, Rape dust, sulphate of ammonia, superphosphate of lime, in all 5 cwt.—2*l.* 10*s.*	15	0
5. I.	4 cwt. Peruvian guano—2*l.* 15*s.*	15	4
6. II.	2 cwt. Peruvian guano, and 2 cwt. West Indian guano (mixed at home)	14	4
7. III.	2 cwt. Peruvian guano and 2 cwts. dissolved bones (mixed at home)	13	17
8.	Dissolved bones, crushed bones, West Indian guano, and Peruvian guano, (all equal), total, 4 cwt. (mixed at home)	13	10
9. V.	3 cwt. 20 lbs. dissolved bones and 4 cwt. 18 lbs. Rape dust—2*l.* 15*s.*	14	14
10. II.	2 cwt. Peruvian guano and 2 cwt. West Indian	13	15
11. VI.	¾ cwt. nitrate of soda, ¾ cwt. sulphate of ammonia, and 2 cwt. dissolved bones ..	13	16
12. IV.	2 cwt. Peruvian guano and 2 cwt. superphosphate	14	12
13.	2 cwt. Peruvian guano and 2 cwt. Californian guano	15	6
14.	Home mixture as No. 1, but inferior dung ..	17	1

In conclusion, Mr. Skirving said, that the practical conclusion of the whole matter was, that the Club should not be content with a few experiments, but repeat them until they arrived at something like truth. Another remark he had to make was, that he thought they should all grow more Mangel Wurzel. He had done so for the last eight or 10 years, and while it had never failed with him, Turnips often did. He entirely coincided with the results shown in Mr. Hope's experiments by the use of salt; and was of opinion that there was enough of salt in the soil of itself, and no more should be added to it.

Home Correspondence.

Subsoiling.—We are indebted to a writer in a recent Number of your *Gazette* for the idea of using the subsoil plough between the ridges of land prepared for root crops, and the plan might be extended by subsoiling between the rows of growing crops or recently sown ridges. If this were done early in the year and followed in due time by the horse hoe, the effects of drought need not be feared, but favourable results might be anticipated from the action of the air on the subsoil. The result of the experiment detailed in the article above referred to was satisfactory, so far as the single subsoiling was concerned, as it appeared that the crop of Mangel Wurzel on the subsoil ridges was equal to that on the manured portion; but the result on the ground which was both manured and subsoiled fell far short of what might have been expected from the combined operation, and throws considerable doubt on the trustworthiness of the experiment. The facts were these:—(1) The land which received 12 tons of manure per acre yielded 27 tons 8 cwt. per acre. (2) The land which was subsoiled yielded 26 tons per acre. (3) The land which was subsoiled and manured yielded 28 tons 18 cwt. There was, in fact, no more difference in the three cases than would be found in different plots of the same field which had received one uniform treatment. Subsoiling appears then in this case to have been equivalent, or nearly so in effect to 12 tons of manure; and probably in these two cases the natural produce of the land was raised from some 15 tons to 27 tons of roots per acre. But in the third case the addition of 12 tons of manure to the subsoiling adds nothing, or but 2½ tons to the above yield. How is this? How can this small return for this liberal outlay be explained? for if the 12 tons had been added to the dressing of 12 tons in the first case, making in all 24 tons, the produce would probably have been from 35 to 40 tons per acre. This perhaps may be considered an unwarrantable assumption, but a comparison of many experiments shows that there is scarcely any limit to the weight per acre that may be obtained of this root by a liberal manuring; and, taking the average of soils, manure, and management, that we shall not be far wrong in assuming 15 tons for the natural produce per acre of land in good heart, and in reckoning ton for every additional load of manure. To return, then, to the question—how is it that in subsoiled land manure fails to perform its duty, as it has clearly done in the case under review? It may be answered, that in this loosened soil the manure may have been washed down below the reach of the roots, or that the roots have penetrated beyond reach of the manure. Either explanation is however unsatisfactory, and we need not reason too closely in the present case. Other trials will probably tend to elucidate the question, and in the mean time we must thank your correspondent at Cirencester for suggesting the idea, and communicating the first though somewhat inconsistent results of the experiment. *G. P. S.*

Scottish Agriculture.—A great many farmers in various parts of the United Kingdom can say "my farm is all regularly drained;" but few can say "the subsoil between and equidistant from each drain is dried to a sufficient depth for the growing of any kind of crop, and the drains are cut to a depth beyond the reach of any disturbing agent, such as the roots of Mangel Wurzel." Hence since draining is the first sure step towards agricultural progress—since so many men depend on draining for a livelihood, there are few labourers but like myself "will agree with your correspondent that there is plenty of room for advantageous money-spending in Scotch agriculture" (*Agricultural Gazette*, p. 835 for 1858). But let us see what has already in many places been spent. I have assisted to drain land in Berwickshire, which cost 10*d.* per rood of 6 yards for cutting the furrow drains 42 inches deep at 20 feet intervals. These are filled with pipes 14 inches long, which cost 22*s.* 6*d.* per thousand. To this large outlay must be added the expenses connected with the cutting of the main drains and filling them with larger pipes and cutting the ends of the furrow drains into the main drains. Some farmers whose farms lie between that extensive farm and the lime kilns paid 7*s.* for the cartage of each cartload of lime; the price of the lime at the kilns was 10*d.* per boll if paid within a given time, but its price was 1*s.* per boll if not paid within the time specified. The farmer of that extensive farm drained it in four, and applied 10 cartloads of lime per acre within five consecutive years. What does such an outlay for a parallel system of drainage, and 5*l.* per acre for lime, add to the yearly rental of every 100 acres of the farm for 19 years, reckoning one-fourth of the whole farm to be drained each of the first four, and one-fifth of the whole farm to be limed each of the first five consecutive years? *A Labourer.*

Temperance Harvest Labour.—In your paper of Jan. 29th there is an article from the Bath and West of England Agricultural Society's Journal on the destructive effects of payment of any part of labourers' wages in cider, with a notice of a movement in Herefordshire, headed by an M.P. and the local clergy, to substitute parochial tea parties for labourers and their wives instead of unlimited supplies of cider to celebrate "harvest homes." As there is no doubt that drinking is the curse and will be the ruin of Great Britain if some effectual check is not speedily found, and as example is often more efficacious than the most eloquent dissertation, it may be interesting and useful to those persons who desire to benefit humanity by the suppression of drinking instead of injuring them by its encouragement, to mention that on the farms of the Right Hon. Sir Benjamin Hall at Llanner, in South Wales, everything is conducted during the hay and corn harvest on this gentleman's grounds, as well as at other times, without either beer or cider. The men are able to work much better, and are not only free from all degrading temptations to excess, but from those dreadful seizures so common in summer which frequently cause sudden death where the harvest is worked upon intoxicating drinks. I am not now prepared to state every particular, though no doubt they might be procured in detail, but every man receives in money the value of a gallon of beer per acre, besides receiving his pay by the acre for his work, on condition that no fermented liquor is brought on the premises; also a beverage (called in Wales *Glás Dwfr*) is freely supplied by the employer, being one part sweet skim milk to two parts spring water, which is found to refresh without clogging, as milk undiluted would do. Tea ready mixed and hot is served round at four o'clock with bread and cheese, brought to the field ready cut for each man, and another supply of the same is carried round between 6 and 8, if the weather allows of the continuance of labour. When hay making begins, men and women receive in money the value of the usual allowance of beer besides their labour wages, and the supplies of milk and water, and two meals of tea, and bread and cheese (or plum bread), before and after 6 o'clock. No remark is needed to prove that this is striking at the root of the evil so much to be deplored. It is not more expensive than beer—it ensures health and promotes morality, and being an undeviating system during hard work will do more to check excess than any occasional parochial tea party after weeks of daily excess can ever accomplish. It is dreadful to think how many youths are forced into habits of drinking, and even women by having nothing but intoxicating liquors given to them to drink, when a crust of home-made bread and a glass of water would often be more acceptable, and a blessing to their sinking strength which is kept beyond their reach. If any further information on this subject is desired I shall be happy to supply an answer to further queries. *G. G.*

Wages in Dorsetshire.—Having seen in your Paper of this week the rate of wages given in the western counties, and that the county of Dorset stands at 7*s* a week, I cannot allow it to remain any longer unanswered. I had certainly hoped that some one more competent than myself would have defended us before this, as the Journal of the Bath and West of England

Agricultural Society, and also the Sherborne Journal, made the same statement some time since. I am pleased to hear the labouring classes are so well paid in other counties, as if Dorset stands the lowest in the list the labourers in the western counties are tolerably well off. Now, I think before people fill up the newspapers with such gross untruths endeavouring to set the labourers and their employers at variance, they should make some inquiry into the matter, as I see the other counties have authority from the farmers, but for poor unhappy Dorset the wages are quoted at 7*s.* a week without any authority whatever. I believe that I am paying the same rate of wages as the farmers in my neighbourhood (at any rate I should not give more if I knew it), which is 8*s.* a week with cottage, garden, Potato land, and, though last not least, fuel, carried home to them free of expense, with the exception of making the faggots, for which they are expected to pay. Now I must give you to understand these 8*s.* a-week men are at piecework a great portion of their time. I have taken from my labour-book the amount of money paid to 20 men for the last year, which will average 10*s.* 5½*d.* weekly exclusive of the advantages I have before named; added to this, they are allowed ale or cider for all extra work, such as haymaking, Turnip-hoeing, harvesting, &c. I am fully assured that the same rate of wages is being paid generally in this neighbourhood (Dorchester). I do not mean to say there may not be found solitary cases where old or disabled men may be receiving 7*s.* a week only, which I have no doubt may be found in other counties as well, but I am speaking of able-bodied men. In conclusion, I would venture to suggest that your correspondent should, ere he again attempts to malign the county, or rather the farmers of Dorset, visit our labourers and personally ascertain whether they are the ill-paid, unhappy class of men he has represented them to be. *Charles Hawkins, Alton Pancras, Dorsetshire.*

Wheel Ploughs.—I was glad to see the remarks of your correspondent on ploughs, and I am sure it is a subject that can be discussed through your columns with profit. The subject has been broached very opportunely in my case, as I was about to recommend my employer to purchase a plough, and having been accustomed to the light swing and other ploughs used in the north of England and Scotland, I have an instinctive aversion to the immense wooden ploughs that are used in this part of Kent, drawn by four horses at a very slow pace—iron ploughs are almost unknown here. But as your correspondent remarks, "local customs generally have some solid basis," and as I do not understand the matter sufficiently myself, I was apprehensive that if I recommended any of the iron ploughs they would prove useless, as the people here tell me they will. Will some of your correspondents favour me with their opinion? The soil in this locality is generally of a mellow description; sometimes very chalky and light, others gritty, flinty soil, which works light; other parts are very strong, adhesive loams, yet on all the different kinds the large, heavy 4-horse plough is used almost without exception, and as a general rule they do not plough more than 6 inches or 7 inches deep. Now, it appears to me to be a very clumsy and expensive method of ploughing light land, and I am, therefore, anxious to introduce a plough of a lighter description, which I think ought to plough our light loam with two horses in a satisfactory manner. Perhaps some of the Kentish farmers would give us their reason for still adhering to this cumbrous machine. *G. P., Folkestone.* [Apply to Howards or Ransomes.]

Farmers' Clubs.

Galashiels: *Report on Experiments with Manures on Turnip Crop*, 1858:—

No. I.—Conducted by Mr. Gibson, Fernieherst.

Description of manures.	Cost per Imp. acre.	Weight of Bulbs per acre. Ton	cwt.
Peruvian guano (Dun)	£2 16*s.*	28	13
Dissolved bones (Pat)	.. ..	28	2
Ammoniacal bones (Ovens)	.. ..	27	9
West Indian guano	.. ..	23	17
Mixture of above manures	.. ..	28	5
Fish manure	.. ..	19	19
Economical manure	18*s.* 6*d.*	17	16
No application	.. ..	17	12

Remarks.—Variety of Turnip, Fordel Yellow—sown June 1st, and bulbs weighed December 25th. All the lots suffered considerably from fly. The lots sown with dissolved and ammoniacal bones suffered least. In the early part of the season the lot sown with Peruvian guano was decidedly behind, but about the middle of August it began to improve rapidly. The soil is a dry loam, and newly improved; and therefore very rich in organic matter.

No. II.—Conducted by Mr. Haldane, Fernielee.

Manures.	Cost.	Weight. Ton	cwt.
Peruvian guano (Dun)	£2 0*s.* 10*d.*	24	10
Valparaiso	.. ..	25	18
Bolivian	.. ..	24	10
Fish manure	.. ..	24	17
Bailey	.. ..	24	10
Drill bones	.. ..	24	10
Dissolved bones	.. ..	25	18

Remarks.—Variety of Turnip, Aberdeen Yellow Bullock. The soil is stiff clay, resting on a retentive subsoil, and was newly limed; and although no farm-yard manure was applied either in autumn or in spring, previous to the Turnip crop, yet the soil is in a high manurial condition.

No. III.—Conducted by Mr. Clapperton, Caddonlee.

Manures.	Cost.	Weight. Ton	cwt.
Peruvian guano	£2 2*s.*	13	15
Bailey	.. ..	15	2
Fish	.. ..	12	14
Pigeon manure	.. ..	16	1

Remarks.—Variety of Turnip, White Globe—sown 3d June, and pulled and weighed 4th November. The soil is dry and porous. As the field where this crop is only undergoing the second rotation since it was reclaimed, no farmyard manure has ever been applied.

No. IV.—Conducted by Mr. Gibson, Windydoors.

Manures.	Cost.	Weight. Ton	cwt.
Townsend's manure	£2 15*s.*	13	7
Peruvian guano	.. ..	13	17
Dissolved bones	.. ..	13	15
Dissolved bones and Peruvian guano, mixed in equal value	.. ..	15	17
West India guano	.. ..	12	17
Fish manure	.. ..	12	0
Farmyard manure, 24 cartloads per acre	.. ..	15	3

Remarks.—Variety of Turnip, Green Top Yellow—sown on the 28th of May, and pulled and weighed on the 22d of November. The soil is earthy, with a mixture of clay, and is poor from a long course of cropping. It was limed in 1853, and no farm-yard manure has been applied since that time.

No. V.—Conducted by Mr. Elliott, Hollybush.

Manures.	Cost.	Weight. Ton	cwt.
Peruvian guano	£2 16*s.*	26	0
Peruvian guano and bone-dust	.. ..	28	12
Fish manure	.. ..	22	8
Hodgson's British guano	.. ..	25	12
Townsend	.. ..	26	8

Remarks.—The Turnips were sown on the 1st June, and lifted and weighed on the 13th November. Variety, Fosterton's Hybrid. The soil, which is rather deficient in vegetable matter, is a thin clay, resting on a hard subsoil. It has recently been well manured and limed. All the lots suffered from fly. The lots sown with Peruvian guano and the mixture of bones and guano suffered most. *(To be continued).*

Societies.

ROYAL AGRICULTURAL OF ENGLAND.

Monthly Council, *Feb.* 2.—His Grace the Duke of Marlborough, President, in the chair. Fifty-two new members were elected.

Finances.—Mr. Raymond Barker, Chairman of the Finance Committee, presented the report on the accounts of the Society, from which it appeared that the current cash-balance in the hands of the bankers was 3026*l.* The Chairman further reported that the authorities of Warwick had transmitted to the Society, towards the expenses of the ensuing country meeting to be held at that place in the week commencing Monday, the 11th of July next, a subscription of 1500*l.*, which was included in that general balance. He also laid on the table, for the information of members, the usual quarterly statements of income and expenditure, and of assets and liabilities.

Journal.—Mr. Thompson, Chairman of the Journal Committee, presented the following report, which was adopted:—

1. Vol. xix., Part 2, of the Journal is now ready, and copies laid on the table.
2. In the Miscellaneous Class (VIII.) of Essays, the prize is withheld by the Judges; but in the Essay on Liquid Manure Tanks and Under-ground Pipes for Irrigation there are some ingenious suggestions, and the Committee recommend that the author be requested to allow it to be printed in the Journal at the ordinary rate of payment.

Agricultural Chemistry.—Mr. Wren Hoskyns, Chairman of the Chemical Committee, reported to the Council some suggestions for alteration in the wording of the notice for Members' privileges of chemical analysis; and detailed an interesting series of investigations which Prof. Voelcker, the consulting-chemist of the Society, was about to commence under the direction of the Committee.

Warwick Meeting.—Lord Leigh, Vice-Chairman of the General Warwick Committee, reported their recommendation of the plan of the Show-yard, submitted to them by the Honorary Directors of the Show and the Society's contractor of works. His lordship also reported the various steps taken by the Committee in making preliminary arrangements for the meeting. An offer made to the Council to defray the expenses connected with the exhibition of Warwickshire cheese in the Show-yard was referred to the General Warwick Committee for their report at the next Monthly Council. Mr. Wren Hoskyns conveyed to the Council, on the part of the County Magistrates of Warwickshire, an offer to place the Judges' House in Warwick at the disposal of the Stewards of the Society, during the period of the ensuing Warwick Meeting. On the motion of Mr. Raymond Barker, seconded by Mr. Hutton, the Council accepted this offer with their best acknowledgments.

Implement Judges.—On the motion of the Hon. W. G. Cavendish, M.P., seconded by Colonel Challoner, the following resolution was unanimously adopted:—"That in future the Implement Committee shall be requested to nominate the Judges not later than the first Wednesday in June, in order that they may be able to lay before the Council on the first Wednesday in July the names of those Judges that are able and willing to act."

Veterinary Inspection.—On the motion of Mr. Milward, the Council unanimously adopted the following resolution:—"That an additional Assistant-Veterinary-Inspector be appointed; and that the Report of the Veterinary Inspectors shall be furnished to the Stewards before the Judges commence their work."—It was then moved by Lord Feversham, seconded by Mr. Jonas Webb, and carried unanimously that Professor Spooner, of the Royal Veterinary College, should be requested to accept the appointment of one of the Assistant-Veterinary-Inspectors at the country meetings of the Society.

Protest.—Mr. Milward, as one of the Stewards of Cattle at the Chester Meeting, reported that the protest lodged with the Stewards against the award of one of the local prizes for horses had received their most careful investigation; they considered the animal to be fully qualified for the prize, and recommended that it be no longer withheld, but now paid in due course to the winner. The Council confirmed this decision, and gave instructions accordingly.

Member of Council.—Sir Archibald Macdonald, Bart., addressed a letter to the Council, stating that having served five years as a Steward, he considered himself no longer as eligible for immediate active service, and he thought it would be for the benefit of the Society if his place on the Council were filled by one both willing and able to act as Steward, and make himself generally useful. His farming operations, he added, were not now of the same extent as when he first became a Member of the Council, and "as the governing body of that important Society consisted of men eminent either for their ability or their position, as owners and occupiers of land, he had clearly no claim to that seat in the Council which he then begged leave to resign." The Council having with great unwillingness accepted Sir Archibald Macdonald's resignation, it was moved by Mr. Henry Wilson, seconded by Colonel Challoner, and carried unanimously, that the Secretary be instructed to write a suitable letter to Sir Archibald Macdonald, expressing to him the great regret of the Council that any circumstances should deprive them of his valuable co-operation, and the high sense entertained both by the Council and the Society of the important services he had rendered to agriculture.

The Council having appointed the Standing Committees for the year, adjourned to their weekly meeting on Wednesday, the 9th of February.

Highland Society: *Feb.* 2.—At the adjourned general meeting of this society, the house-lists of extraordinary and ordinary directors were after some discussion appointed; and Professor Syme's motion, "That the teaching of veterinary surgery in Scotland should not be restricted to one school, since advantage may be expected from competition in this no less than other departments of education," was carried. The report to the society of the committee on this subject had stated that it was not for the advantage of veterinary instruction in Scotland that the prayer of the petition should be granted—that was to say, that it was not for the benefit of veterinary surgery that Mr. Gamgee, who has established a new veterinary school in Edinburgh, should continue to teach. Professor Syme called on the society to withdraw that statement; nay, more, to retract it. He did not think the society called upon to give its exclusive patronage to one school, and he believed that by refusing to recognise Mr. Gamgee's instruction a blow had been struck at the interests of veterinary surgery. Sir John Stuart Forbes seconded the motion, which was ultimately carried by a large majority.

On the management of future shows, it was resolved, after an angry discussion, that in future no exhibitor shall act as a judge or attending member, nor shall he, nor his factor, nor land-steward, on any pretext whatsoever, be allowed to enter the showyard, or remain in it from the time the judges commence their duties till their awards are declared.

The meeting was then adjourned to Wednesday, Feb. 9.

Miscellaneous.

Feeding on Open Boards.—Experience has taught me and will teach others, that in order to succeed in farming, we must procure a much larger quantity of meat, on our farms than at present, and at less cost. In order to do this advantageously, it becomes necessary to consume a large portion of the straw of the farm, cut into chaff, and cook it with meal or ground oil-cake. We are thus deprived of the usual cattle-bedding, and must find a substitute. Having practised the system rather extensively, I will communicate to you the details; observing that, although attended, as every system must be, with certain disadvantages, the balance of benefit is sufficiently considerable to induce me to continue and extend it. The quantity of stock I now have on boards is—

Lambs	100	Bullocks	30
Sheep	50	Cows	10
Calves	60	Pigs	200

We are indebted to the worthy and Rev. A. Huxtable for the idea; but I found his space of three-quarters of an inch between the planks insufficient. I therefore measured the hoofs of the various animals, and arranged my openings accordingly, Thus:—

	Inches thick.	Inches wide.	Inches space.
For bullocks	3	4	1⅞
For sheep	1½	3	1¼
For pigs	1½	3	1¼
For small pigs and lambs	1½	3	1
For calves	2	3	1⅝

For large Cotswold or Kent sheep, 1⅞ opening would

not be too large. 1¼ openings do well for Hampshire Down lambs, but are rather too large for small Sussex Downs. One cannot too highly appreciate the system on heavy lands, where animals cannot be profitably folded during winter. The area allowed for each animal and its feeding apparatus is thus :

	Superficial feet.
Small sheep	8
Large ditto	10
Small bullocks	30 to 40
Large ditto	50 to 60
Small pigs	6 to 8
Large ditto	9 to 11

Very much depends on the season and weather. In old weather, pigs and bullocks can scarcely be packed oo close, so long as there is room for them to lie down omfortably. Sheep require a little more room, or entilation. In fact, it requires a nice observation to ljust the ventilation and temperature. This is best one by a thermometer, because our own feelings are not ways a sufficient criterion. Every cattle-shed should el as comfortably warm as a drawing room. The pening for ventilation should be at the highest point. ine-bred pigs, having little hair, must have a much armer temperature than sheep. When pigs huddle to- ther it is a sure sign that they are not warm enough. old, stopping the circulation in the skin, drives the blood the internal organs, and causes inflammation. I have ten been struck on seeing how soon my groom will t a horse into condition, by warmth, cleanliness, and od. The same remark applies to a lady's lap dog. y bullocks are all groomed daily by a boy, whose sole cupation it is. The cost is about one farthing per ad per week, and I am sure it pays. Before I leave e open boards, I should say that the bars or planks ay be either of straight yellow deals, or of straight- ained hard woods. The latter are to be preferred for avy animals, as they wear off the edges of the deals. depth of the pits may be from 2 to 4 feet. is necessary, once in a way, to level the manure to vent its touching the boards; it would soften them, cause them to break. I should say that we never ep the floor; but the animals are perfectly clean. course the manure is taken at once from under the ds to the field, without the interventional expense double carting, shooting or turning over of a dung- p. The effect on the crops is unmistakable. In er to pay you 10 per cent. on your investment for whole building and floor, complete, with troughing, you would charge your bullocks 1½*d.* per week ; ep and pigs, ¼*d.* per week. The cost of erecting ered homestalls, complete with boarded floors, will exceed 1*s.* to 1*s.* 3*d.* per superficial foot. One man my farm feeds and entirely attends to 250 pigs. It ld require two men on the old straw bed system. pigs are never cramped now. Formerly, they l to be, owing to the manure heating under them, the cold giving those parts rheumatism. One stout at 3*s.* 6*d.* per week, will feed and attend to 30 ocks; another attends to 60 growing calves. *Mechi's to Farm Profitably.*

Calendar of Operations.

FEBRUARY.

ST SUSSEX: *Feb.* 1.—There is not much to report at this of the year, and lately work has been at a stand in the , as it has been pretty wet. We have had rain more or luring all last month, though not in very large quantity, ve still want more to fill all the ponds as they usually are is time of the year; but it has been extremely mild, and eadows are beginning to assume a greener appearance they had. The Wheat looks well, but not so as usual; it has stood upright all the winter, d of lying flat on the ground, which is no doubt caused e mild weather, that has kept it constantly in a partially ng state. Although it looks well there is no fear of its winter proud. The Turnips are lasting well, and we now t to get through the winter comfortably. A great many Down lambs fell last month, and I believe upon the the luck has been good. There are a great many couples g in the market, and the prices are from 54*s.* down to 46*s.* owns. Mutton is in fair supply and a good sale. Beef the Pigs are also dearer, and will no doubt continue to advance. arket is very full of Wheat, and will be so for some time, re is now time to thresh and the straw must be had. We lso a large supply of Barley, but generally of a very r quality; and for such the demand has greatly fallen Oats, Peas, and Beans rule steady at 24*s.*, 40*s.*, and 42*s.* being forward there are a good many hands out of work, ust be so for a long time, as there is not much to do for ers till hay making and Turnip sowing begin. *G. P.*

Notices to Correspondents.

SHEEP DRESSING: *A Ross.* It is spoken well of. We have no personal experience of it. Perhaps some of our ers who have may give us an account of it.

E: *C A J.* Guano 2 cwt. per acre, if for Grass at once. o 1 cwt., and superphosphate 3 cwt., if for Turnips, h should be the crop by right, and this being eaten off eep will make the land ready for Grass seeds again.

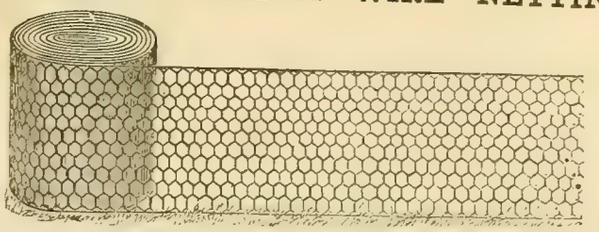
D AND SODA: *A Young Farmer.* In most places we sup- common salt is the cheapest source of soda, and wood s of potash.

RVATION OF POTATOES: *Young Farmer.* Common salt ed with green Swede and Mangel Wurzel leaves in a or pit preserves them for a certain period, *i.e.*, the mess s thrown out some months afterwards will not, we e, be refused by cattle. But we have never heard of "preservation of Potatoes for a length of time in the pits liberal use of salt which destroys their vitality."

RYE-GRASS: *J P.* The seeds taken from your samples ye-grass are—No. 1, seeds of Medicago lupulina, the Hop oil of the farmer, differing from the Hop Trefoil of the nist, which is Trifolium procumbens. No. 2, seeds of ass mollis, soft Brome or Lop-grass; the larger seed is a one of a locusta or bunch of flowers, the smaller ones he terminal seeds. *J B.*

ORM: *N.* Do all the burning you can whether of weeds ods before seed time. Sow plenty of seed with a ing to make it grow rapidly. Roll and trample it. out by hoe the patches of corn which may not have thinned out by wireworm.

IMPROVED PREMIUM WIRE NETTING.



PRICES PER LINEAL YARD, 24 INCHES HIGH:—

Size of mesh.	Mostly used for	Light.		Medium.		Strong.		Extra strong.	
		Japanned.	Galvanized.	Japanned.	Galvanized.	Japanned.	Galvanized.	Japanned.	Galvanized.
2½ inch	Hares, Dogs, Poultry	3½*d.*	4½*d.*	4½*d.*	5½*d.*	5*d*	6½*d.*	6*d.*	8*d.*
2 inch	Game Netting	4*d.*	5*d.*	4¾*d.*	6*d.*	5½*d.*	7*d.*	7½*d.*	9½*d.*
1⅝ inch	Small Rabbits, Hares, &c.	4½*d.*	5½*d.*	5¼*d.*	6½*d.*	6*d.*	7½*d.*	8*d.*	10*d.*
1½ inch	Smallest Rabbits	6*d.*	7½*d.*	7½*d.*	9*d.*	9*d.*	11*d.*	11*d.*	13*d.*

PRICES PER FOOT SUPERFICIAL:—

Size of mesh.	Mostly used for	Light.		Medium.		Strong.		Extra strong.	
		Japanned.	Galvanized.	Japanned.	Galvanized.	Japanned.	Galvanized.	Japanned.	Galvanized.
1¼ inch	Pigeon Houses, Pheasantries,&c.	1½*d.*	1⅝*d.*	1⅝*d.*	2*d.*	2⅛*d.*	2⅜*d.*	2⅜*d.*	3½*d.*
1⅛ inch	Pigeon Houses, &c.	1⅝*d.*	2*d.*	2*d.*	2½*d.*	2½*d.*	3*d.*	3*d.*	3½*d.*
1 inch	Pheasantries and Small Birds	2*d.*	2¼*d.*	2¼*d.*	2⅞*d.*	2⅝*d.*	3¼*d.*	3½*d.*	4*d.*
⅞ inch	Aviaries, Window Guards, &c.	2¼*d.*	2½*d.*	2⅝*d.*	3¼*d.*	3¼*d.*	4*d.*	4*d.*	5*d.*

Quantities of 100 yards, or upwards, delivered free at nearly all the principal Railway Stations and Shipping Ports in England; also by special estimate to any port of Scotland or Ireland. Any width of Netting under 8 feet made at proportionate prices. Best Improved HAND-MADE HEXAGON MESH NETTING, from ½*d.* to 1½*d.* per yard extra on the above price for 24 inches high.

☞ *Every description of Netting warranted to give satisfaction, and if not approved will be exchanged, or may be returned unconditionally.*

J. B. BROWN & CO., 18, CANNON STREET, LONDON, E.C.

ST. PANCRAS IRON WORKS, OLD ST. PANCRAS ROAD.

IRON HURDLES, FENCING, AND GATES.

THE PROPRIETORS OF THE ST. PANCRAS IRON WORKS, Old St. Pancras Road, London, were awarded the Silver Medal of the Royal Agricultural Society for their IRON HURDLES and GATES, which, by their peculiar construction, are more than twice as strong and durable as those in ordinary use. Lists per post on application. Gates from 30*s.* to 500*l.*

The Hurdles can be seen in process of Manufacture at the Works.

PROFESSOR VARNELL'S MANGERS.

THESE PATENT MANGERS and STABLE FITTINGS obtained the Commendation and the Silver Medal of the Royal Agricultural Society of England and the Royal Agricultural Society of Ireland, are adopted by the Royal Veterinary College, and Professor Spooner of that Institution states that they should be used by all who value the health and comfort of their horses. They can be had plain, galvanised, or enamelled. A Show Room is devoted entirely to every description of Stable Furniture, and full-sized stalls and loose boxes are erected for inspection at St. Pancras Iron Works.

ADDRESS.—THE MANAGERS,
ST. PANCRAS IRON WORKS, OLD ST. PANCRAS ROAD, LONDON.
Opposite Old St. Pancras Church.

SHADING.

BROWN'S FLORAL SHADING still maintains its superiority for cheapness and efficiency over all other materials used for a similar purpose, viz., shading plants under glass from the scorching rays of the sun, protecting Wall Fruit Trees when in bloom from frost, and preserving the fruit from the attacks of birds, flies, and wasps. Sold in pieces 20 yards long, 38 inches wide :—

No. 1 per piece .. 4*s.* 0*d.* | No. 2 per piece .. 4*s.* 3*d.*

To be obtained of all the principal Nurserymen and Seedsmen in town and country. Samples sent free on application to the Manufacturer, CHARLES BROWN, Greenheys, Manchester.

MICROSCOPES.

J. AMADIO'S BOTANICAL MICROSCOPES, packed in mahogany case, with three powers, condenser, pincers, and two slides, will show the animalculæ in water. Price 18*s.* 6*d.*—Address JOSEPH AMADIO, 7, Throgmorton Street. A large assortment of Achromatic Microscopes.

"It is marvellously cheap, and will do everything which the lover of nature can wish it to accomplish either at home or in the open air."—*The Field*, June 6, 1857.

Just published, an Illustrated Catalogue, containing the names of 1000 Microscopic objects, post free for 4 stamps.

PATENT GUTTA PERCHA SOLES.—IMPORTANT TO GARDENERS.—The Gutta Percha Company have the pleasure to acknowledge the receipt of the following letter from G. GLENNY, Esq., the celebrated Florist :—

"Gentlemen,—I have worn Gutta Percha Soles and Heels these two years, and being so much in a garden as I necessarily am in all weathers, and with the ground in all states, I would on no account be without them. As a matter of economy I would recommend Gardeners to use them, for they may repair the worn part at all times by warming the material at the fire, and pressing it from the thick parts to the worn parts as easily as if it were so much dough. I think it the duty of all persons who must occasionally wet their feet to adopt a material that completely defies damp. Many a gardener would escape colds and rheumatism by the use of Gutta Percha Soles.

"Your obedient servant, G. GLENNY."

Every variety of Gutta Percha articles, such as Mill Bands, Tubing, Soles, Goloshes, Sheet, Pump Buckets, Fire Buckets, Bosses, Union Joints, Flasks, Bottles, Bowls, Chamber Vessels, Toilet Trays, Sponge Bags, Curtain Rings, Galvanic Batteries, Talbotype Trays, &c., manufactured by the Gutta Percha Company, and sold by their wholesale dealers in town or country.—The Gutta Percha Company, Patentees, 18, Wharf Road, City Road, London.

HORTICULTURAL BUILDING & HEATING BY HOT WATER.

BY APPOINTMENT.



JOHN WEEKS & COMPANY,

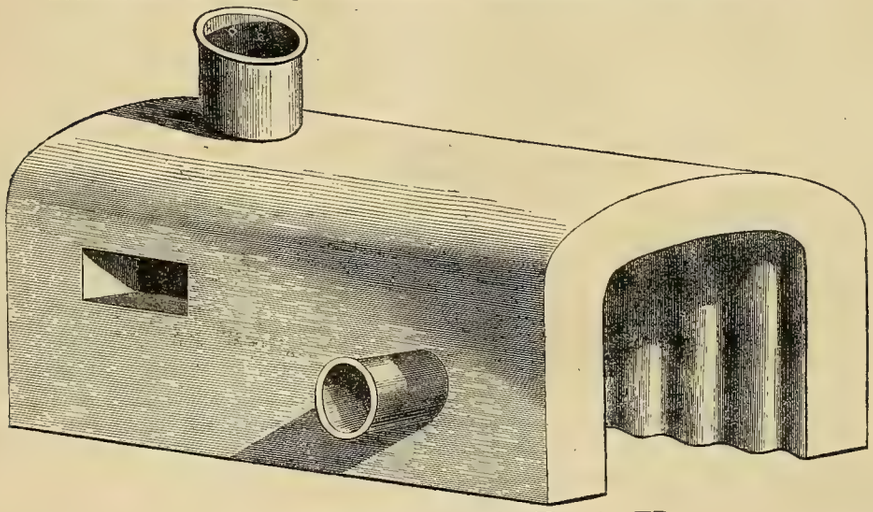
KING'S ROAD, CHELSEA, LONDON.

HORTICULTURAL BUILDERS AND HOT-WATER APPARATUS MANUFACTURERS, ENGINEERS, AND IRON FOUNDERS.

PLANS, ESTIMATES, & ILLUSTRATED CATALOGUES FREE ON APPLICATION.

HORTICULTURAL WORKS,

DANVERS STREET, PAULTON'S SQUARE, CHELSEA, S.W.



JAMES GRAY

RESPECTFULLY begs to inform the nobility, gentry, Nurserymen, Gardeners, and others, that he continues to carry on the business in all its branches at the above old established premises.

CONSERVATORIES, GREENHOUSES, FORCING HOUSES, VINERIES, PITS, &c.,
of every description, erected on the most approved principles.

HEATING BY HOT WATER.

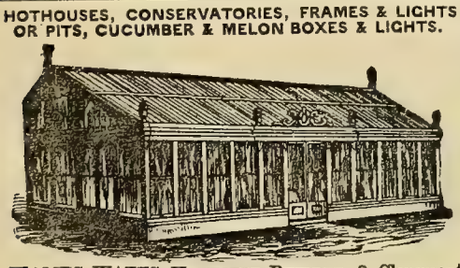
J. G. having specially devoted his attention for many years to this part of the business, is now fully prepared to Heat every description of public and private buildings, viz :—Churches, Mansions, Warehouses, &c., as well as all structures connected with Horticulture, in the most efficient manner. His system is the most simple that can be adopted—which he has found from long experience to be the best—can be constructed at less cost, and is more easily managed than those of a complicated nature which have attracted the notice of the public.

J. G. begs to call attention to his CAST-IRON CORRUGATED ARCH BOILER, which from its simplicity of construction has not the liability to fracture to which those of a more complex design are always subject. They have been extensively used for many years, and have given the greatest satisfaction.

All business is conducted at this establishment on the principle of lowest remunerative profits consistent with best materials and workmanship.

Plans and Estimates furnished on the shortest notice.

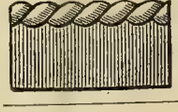
HOTHOUSES, CONSERVATORIES, FRAMES & LIGHTS OR PITS, CUCUMBER & MELON BOXES & LIGHTS.



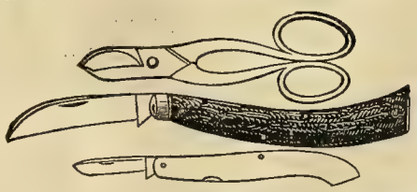
JAMES WATTS, Hothouse Builder, 8, Claremont Place, Old Kent Road, London.

Green and Hothouses, 9, 10, 11, 12, 13, and 14 feet wide, any length, from 16 to 100 feet. Frames and Lights for Pits, 6ft. 6 in., 7 ft., 7 ft. 6 in., 8 ft., and 8 ft. 6 in. wide, any length, from 12 to 100 feet. Upwards of 200 Cucumber and Melon Boxes and Lights, from 4 ft. by 3 to 10 ft. 6 in. by 5 ft. 6 in., kept ready, glazed with stout sheet glass, painted four times, complete, ready for immediate use, all made of best material, packed and sent to all parts of the kingdom.—References may be had to the Nobility, Gentry, and the Trade in most of the counties in England. Horticultural Buildings of every description heated on the most approved and economical principles.

LOOMES AND CO., Whittlesea, Manufacturers of Bricks, Tiles, Pottery, &c., beg to call attention to their new CABLE PATTERN GARDEN BORDER EDGING, which not only surpasses others in appearance and durability, but is free from the dangerous points and sharp edges of most.—Price, delivered on any Railway at Peterborough, 5d. per yard.



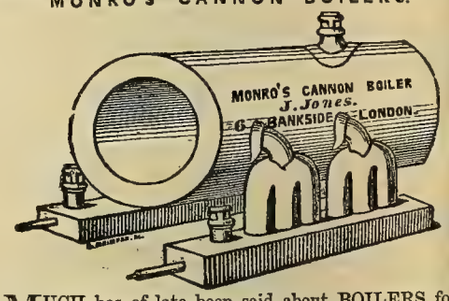
PAXTON WORKS, SHEFFIELD, ESTABLISHED 1738.



SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.—Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

HEATING BY HOT WATER ON HAMMOND'S improved principle, for Horticultural Works, Mansions, Churches, Public Buildings, in fact everywhere that heat is required. Also his improved Ventilating Greenhouses, which can be erected at 1s. per foot, and entirely prevent the possibility of scorching the Vines or plants. The Patent Hot-water Register Stove.—Estimates at No. 18, George Street, Portman Square. Workmen sent into the country.

MONRO'S CANNON BOILERS.



MUCH has of late been said about BOILERS for Heating by Hot Water, but these Boilers have now proved themselves to be the best at present invented. They are adapted for heating every description of building, and are made of various sizes. The Price of the

24 inch Cast Iron is	.. .. ..	£5 10s. 0d. each
24 inch Wrought ditto	.. .. ..	6 10 0 ,,
36 inch Cast ditto	.. .. ..	8 0 0 ,,
36 inch Wrought ditto	.. .. ..	8 10 0 ,,

References to Gentlemen and Nurserymen where these Boilers are now at work. The Cannon Boilers are now kept in stock, and are to be had only of J. Jones, 6, Bankside. Also every description of Saddle and Cylinder Boilers. Hot Water Pipes and Connections at prices lower than those of any other house in London. Estimates for Hot-water Apparatus erected complete in any part of the country, and an Illustrated Catalogue on application to J. Jones, 6, Bankside, Southwark, London.

ORNAMENTAL GARDENING.

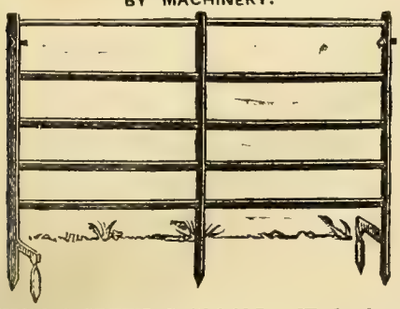


AUSTIN, SEELEY, AND CO. respectfully invite the attention of the nobility and gentry to their large FLOWER BASINS or "PORTE-FLEURS," of which they have now some handsome designs, from 7 to 20 feet diameter.

Any such work ordered IMMEDIATELY might be ready for fixing in March, so as to be well settled by the time for planting.—3 71 to 375, Euston Road.

VOKINS AND HURD, Seymour House, Jubilee Place, King's Road, Chelsea, BUILDERS OF HOTHOUSES, CONSERVATORIES, GREENHOUSES, PITS, and every description of erections in Glass work, either in Wood or Iron; also Heating the same by hot water on the most approved plans and at the lowest prices consistent with good work. Estimates forwarded.

WROUGHT IRON HURDLES AND FENCING MADE BY MACHINERY.

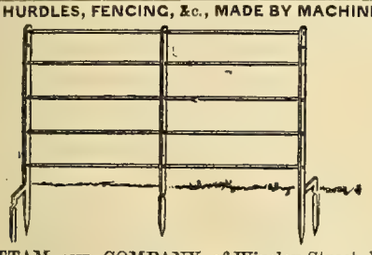


THOMAS GREEN, Smithfield Iron Works, begs to call the attention of parties requiring machine-made Hurdles, which are a very superior article, as well as being both cheap and durable. The above cut represents a Hurdle 6 feet long by 3 feet 6 inches high; the top bar $\frac{5}{8}$ of an inch diameter, the four low bars 1 inch by $\frac{1}{4}$ inch, the uprights $1\frac{1}{2}$ by $\frac{1}{4}$ inch. The Prongs fasten 12 inches in the ground. Price *4s. 6d.* each, or *2s. 3d.* per yard. If the four lower bars were made of $\frac{1}{4}$ inch diameter instead of 1 inch by $\frac{1}{4}$ inch iron, the price would be *4s. 2d.* each, or *2s. 1d.* per yard. The above are the lowest net cash prices at the Works.

THOMAS GREEN, Smithfield Iron Works, Leeds, Yorkshire, Manufacturer of every description of Iron and Wire Fencing, Iron Work of all kinds, both plain and ornamental, Entrance Gates, Palisading, Tomb Railing, Iron Bedsteads, &c. Illustrated Catalogues may be had free on application at the Works.

N.B. Also Patentee and Sole Manufacturer of GREEN'S Patent Lawn Mowing, Collecting, and Grass Rolling Machines, which have proved to be the best in all cases of competition.

IRON HURDLES, FENCING, &c., MADE BY MACHINERY.

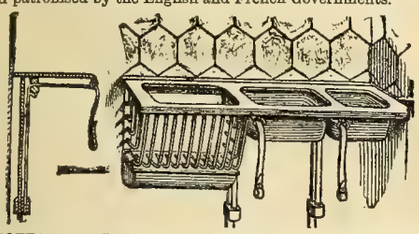


COTTAM AND COMPANY, of Winsley Street, have invented machinery for making Hurdles, &c.; the bars, instead of being pointed by hand in the old fashioned style, are nipped down by the machine, leaving a shoulder so as to more effectually tighten the standards when rivetted. They are made of superior iron only, and will compete in price with those made by hand from cinder or common iron which so frequently break. Iron Fencing, Gates, and Iron Work of all kinds, both Plain and Ornamental, Conservatories, Hot Water Apparatus and Garden Implements.

Illustrated CATALOGUES free on application to COTTAM & COMPANY, Ironfounders, 2, Winsley Street, Oxford Street, W.

N.B. COTTAM & Co. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

COTTAM'S PATENT INVENTIONS FOR STABLE REQUISITES, awarded a Prize at the Paris Exhibition, and patronised by the English and French Governments.



COTTAM AND COMPANY, of Winsley Street, are the original inventors of the PATENT ENAMELLED MANGER, Water Trough, and Wrought Iron Rack, united to an iron top-plate, and forming one complete and useful fixture, having COTTAM'S patent noiseless halter guide and collar rein attached, which is taken to the back of the manger, and works with ease and freedom up or down the guide-bar.

COTTAM'S NEW PATENT SEED-BOX, an important addition to the above fittings, being simple in construction, light, and durable, promotes cleanliness, and is economical in its results.



COTTAM'S PATENT SADDLE and HARNESS BRACKET combined, can be used with great advantage where space is an object, as it can be turned up out of the way when not in use.

COTTAM'S IMPROVED SURFACE GUTTER, with perforated moveable cover, the use of which prevents accidents, and can be easily cleaned out.

COTTAM'S CAST-IRON SANITARY TRAP, from its improved construction, gives a full water passage, and does not allow any smell to ascend from the drain.

PATENT LOOSE-BOX FITTINGS, and every article for the harness-room and stable, kept in stock, plain, galvanised, and enamelled. Iron gates, fencing, hurdles, &c.

The New Illustrated Catalogue and Estimates, gratis, upon application to COTTAM and COMPANY, 2, Winsley Street, Oxford Street.

N.B. COTTAM & Co. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

HOT-WATER PIPES at wholesale prices, with Elbows, Syphons, Tee Pipes, and every other connection. Wrought and cast iron Boilers, Saddle, Conical, Cylinder, and Elliptic, from 21*s.* each. Boilers and Iron Stands to use without brickwork. Valves from 12*s.* 6*d.* each. Furnace Doors, Furnace Bars, Supply Cisterns, and Builders' Castings of every description in stock, at Mr. LYNCH WHITE'S Iron Wharf, Upper Ground Street, Blackfriars Bridge, London.

C. STEPHENSON, late STEPHENSON AND SONS, 61, Gracechurch Street, London, Manufacturer of Iron Hurdles, Fencing, &c., Improved Iron and Copper Conical Boilers and Apparatus for Warming Buildings of every description by Hot Water.

Prices and Estimates furnished upon application.

J. MEREDITH begs to inform the nobility, gentry, and their gardeners that he will have great pleasure in treating with them for the rearrrangement of badly constructed HOT-WATER APPARATUS, as well as for the HEATING of newly erected Hothouses, Mansions, Churches, Chapels, &c.

References may be had from the following parties:—

Mr. G. Fleming, Agent to his Grace the Duke of Sutherland, Trentham, Staffordshire; Mr. Tillery, Gr. to his Grace the Duke of Portland, Welbeck, Notts; Mr. James, Gr. to his Grace the Duke of Leinster, Carton, near Maynooth; Mr. G. Brown, Gr. to the Earl of Powis, Powis Castle, Welsh Pool, Montgomeryshire; Mr. Sheen, Gr. to Sir Robt. Gerrard, Garswood Park, near St. Helen's, Lancashire; Mr. Bellis, Gr. to R. C. Naylor, Esq., Hooton Park, Cheshire; Mr. Smith, Gr. to H. Littledale, Esq., Liscard Hall, Cheshire; Mr. Williams, Gr. to J. N. Walker, Esq., Calderstones, near Wavertree, Liverpool; Mr. Forbes, Gr. to Mrs. Moss, Otterspool, near Liverpool; Mr. Young, Gr. to T. E. Moss, Esq., Roby Hall, near Liverpool; Mr. Sorley, Gr. to E. Zwilchenbart, Esq., Aigburth, near Liverpool; Mr. Mitchell, Gr. to P. Heywood, Esq., Norris Green, West Derby, near Liverpool; Mr. Lucas, Gr. to G. C. Schwabe, Esq., Handstyle House, West Derby, near Liverpool.

J. M. could name many more extensive places where he has done Heating, besides his own extensive establishment at Vine Cottage, Garston, near Liverpool, Lancashire.

N.B.—J. M. begs to state that he will be happy to give estimates for the Erection as well as the Heating of all kinds of Hothouses.

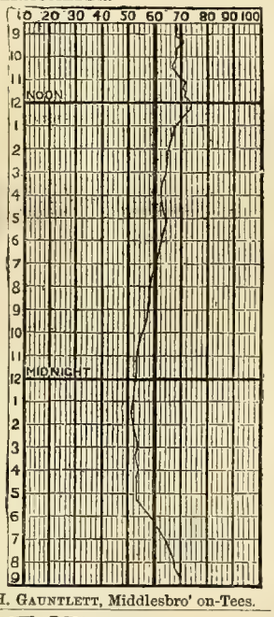
J. M. has a few choice Hybrid KENYON CUCUMBER SEED of his own saving for Sale, 36 seeds for 3*s.*; also some good VINES, of which he has always an immense stock.

HANDS'S PATENT is the only system to circulate Heat, and for WARMING, FUMIGATING, and VENTILATING Hothouses, Greenhouses, Winter Orchards, &c.; to keep vegetation healthy in a humid atmosphere, and can be applied to any kind or shape of Forcing-houses and Conservatories now existing at trifling cost.—For particulars apply at the Office, 10, Charlotte Street, Fitzroy Square, London; or to Mr. JOHNSON HANDS, Epsom.

TO HORTICULTURISTS.

GAUNTLETT'S PATENT CHRONOMETRICAL THERMOMETER.

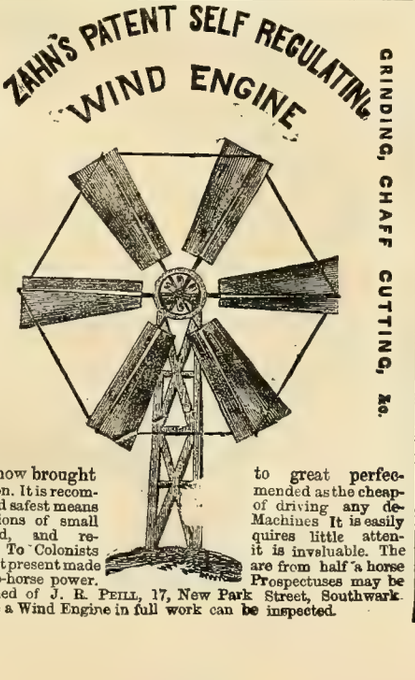
This instrument, which combines an eight-day clock of the best English make showing time, with a newly-patented Thermometer, wherein glass and quicksilver are dispensed with, writes down the temperature of the atmosphere on a slip of paper, and when placed in a Hothouse, Forcing House, or Conservatory, &c., supplies a valuable record of the temperature, with all its variations, showing the time when any change took place, and how long such change continued.



The above slip (reduced in size) exhibits the temperature of the Royal Agricultural Society's show yard at Chester, July 22, 1858, written off by one of these instruments, to which was awarded the Society's SILVER MEDAL.

This is the only instrument that registers temperature continuously and writes it down, and no horticuturist should be without it.

Orders received by W. H. GAUNTLETT, Middlesbro' on-Tees.



IS now brought to great perfection. It is recommended as the cheapest and safest means of driving any descriptions of small Machines. It is easily erected, and requires little attention. To Colonists it is invaluable. The sizes at present made are from half a horse to two-horse power. Prospectuses may be obtained of J. R. PEILL, 17, New Park Street, Southwark, where a Wind Engine in full work can be inspected.

HOTHOUSES FOR SALE.

TO BE SOLD CHEAP, two nearly new SPAN-ROOF HOUSES, each 65 feet long by 18 feet wide, price 100*l.* each; also a handsome OCTAGON CONSERVATORY, 22 feet diameter with glass all round, quite new, price 90*l.* All these houses are warranted to be of the best materials and workmanship. The reason of their being now Sold is to make room for an extensive alteration and addition to our Workshops and Steam Machinery.—Apply to Messrs. JOHN WEEKS & Co., King's Road, Chelsea, where the whole of the above can be seen, as also a great variety of other Horticultural Erections.

TROTMAN'S RUSTIC WORK, a great variety always on view. Thatched Summer Houses, Pagoda-roof Zinc ditto; Yew, Oak, and Swiss Tables, Chairs, Benches, Yew Seats and Stools, Flower Vases and Baskets, Perambulators, Bath Chairs, &c., ready for delivery, always on view at TROTMAN'S Manufactory, 12, Alfred Terrace, Upper Holloway. Delivered free to any Railway Station.

HENRY J. MORTON AND CO., 2, Basinghall Buildings, Leeds.

GALVANISED IRON WATER CISTERNS

for Cottage Houses, &c., to contain 50 gallons, 25*s.*; 80 gallons, 30*s.* each; and 140 gallons, 36*s.*, and fitted with tap, keeping the water perfectly sweet and clean; will not rust or corrode. Cisterns of all sizes.

GALVANISED IRON PUMPS

for Liquid Manure or Domestic Use, 3 inches diameter, 30*s.* and 32*s.* 6*d.* each; Tail Pipe for same at from 10*d.* per foot.

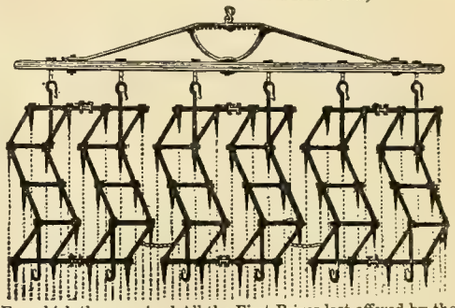
GALVANISED IRON SWING WATER BARROWS

for Garden or Farm use, containing about 20 gallons, entirely formed of iron, 32*s.* 6*d.* each.

HOWARDS' PRIZE IMPLEMENTS, 1859.

JAMES AND FREDK. HOWARD, Britannia Iron Works, Bedford, beg to direct attention to their

PATENT PRIZE HARROWS,



For which they received All the First Prizes last offered by the Royal Agricultural Society of England, viz.:—

The First Prize for the best Plough for general purposes.
The First Prize for the best Plough for light land.
The First Prize for the best Plough for heavy land.

The only Prize ever offered by the Society for the best Double Breast or Ridging Plough was also awarded to J. & F. HOWARD.

J. & F. HOWARD have discontinued troubling the Public with a long List of Prizes awarded to their Implements, but they would just state that for PLOUGHS, HARROWS, and HORSE RAKES, they have for several years gained every Prize for which they have competed.

PLOUGHS.

P PLOUGH, with two wheels, for light work	£4	7 6
PP PLOUGH, " for general purposes	4	12 6
SKIM COULTER	£0	5 6

STEEL BREASTS, 7*s.* and 7*s.* 6*d.* extra.

HARROWS.

A Set of Three 4-Beam HARROWS, with Whippletree, recommended as general Seed Harrows, 9½ feet wide, marked No. 12	£3	14
A Set of Three 4-Beam HARROWS, with Whippletree, adapted for 3 Horses, 10 feet wide, marked No. 11	4	4

HORSE RAKES.

Price of small size RAKE, marked A, with 24 iron teeth, extreme width 7½ feet	£7	10 0
Ditto, with Steel Teeth	8	0 0
Price of large size, marked B, with 28 iron teeth, extreme width 8½ feet	8	0 0
Price of large size, marked B, with steel teeth	£8	10 0
Price of extra large size, marked C, with 24 steel teeth, extreme width, 8½ feet	10	10 0
Price of a Set of 15 Prongs, to be attached to the above when used as Weed Extirpators	1	10 0

Free Delivery to Birmingham, Bristol, Derby, Gloucester, Lincoln, Liverpool, London, Manchester, Norwich, Nottingham, Retford, Wisbeach, and Worcester; or to Dublin, Edinburgh, Glasgow, and other parts at fixed rates.

HOWARDS' NEW CATALOGUE, containing prices and description of their Patent Ploughs, Harrows, Horse Rakes, and other Implements, including Smith's Steam Cultivators, for which they received at Chester the Gold Medal of the Royal Agricultural Society of England, sent free on application to

J. & F. HOWARD, Britannia Iron Works, Bedford.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

"NO ONE KNOWING the value of your Patent WASHING, WRINGING, and MANGLING MACHINE, would be without one."—*Vide Mrs. Hall.*



THOMAS BRADFORD, Patentee, Manchester.

Descriptive Pamphlet, with Prices, free by post.

"FRIGI DOMO."—Patronised by her Majesty the Queen, the Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence, of Ealing Park, and — Collier, Esq., of Dartford.

PROTECTION FROM COLD WINDS AND MORNING FROSTS

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths. Two yards wide, 1*s.* 6*d.* per yard run; four, 3*s.* per yard. Also, an improved make for Shading Purposes. Three yards wide, 2*s.* 6*d.* per yard run.

ELISHA THOMAS ARCHER, whole and sole manufacturer, 7, Trinity Lane, Cannon Street, City, and of all Nurserymen and Seedsmen throughout the kingdom. "It is much cheaper than mats as a covering."

JAMES PHILLIPS AND CO.'S PRICES of GLASS for the present month.

HORTICULTURAL GLASS, STOCK SIZES, in 100 feet boxes.

		3rds.	4ths.
11 by 9, 12 by 9, 13 by 9, 14 by 9 ..		14s. 6d.	12s. 6d.
12 „ 10, 13 „ 10, 14 „ 10, 15 „ 10 ..			
13 „ 11, 14 „ 11, 15 „ 11, 16 „ 11 ..			
14 „ 12, 15 „ 12, 16 „ 12, 17 „ 12 ..			
18 „ 12, 19 „ 12, 16 „ 13, 17 „ 13 ..		16s. 6d.	14s. 0d.
18 „ 13, 19 „ 13, 20 „ 13, 21 „ 13 ..			
16 „ 14, 17 „ 14, 18 „ 14			
19 „ 14, 20 „ 14, 21 „ 14			

PACKED IN CASES.

200 feet	£2 2 0	16 oz.
300 feet	3 3 0	
200 feet	2 18 0	21 oz.

ORCHARD HOUSE SIZES, As supplied by us to Mr. Rivers.

20 in. by 12 in.		16 oz.	21 oz.
20 in. by 13 in.	Common	14s. 0d. ..	£1 1s.
20 in. by 14 in.	Superior do. ..	16 6 ..	1 5
20 in. by 15 in.	English Glass ..	18 0 ..	1 9

SMALL SQUARES.—Per 100 feet.

6 by 4	6½ by 4½	7 by 5	7½ by 5½ 11 6
8 „ 6	8½ „ 6½	9 „ 7	9½ „ 7½
10 „ 8	10½ „ 8½ ..	.. ..	.. .. 12 6

JAMES PHILLIPS AND CO.,

180, Bishopsgate St. Without, London, E.C.

HORTICULTURAL GLASS—JUNE TARIFF.

THOMAS MILLINGTON'S reduced Tariff of GLASS, &c.

6 by 4, 7 by 5, 8 by 6, 9 by 7 } 16 oz. to the foot, 11s. 6d.
6½ by 4½, 7½ by 5½, 8½ by 6½, 9½ by 7½ } per 100 feet.

In 100 boxes,—4ths quality, 12s. 6d.; 3ds do., 14s. 4d.

10 by 8, 12 by 9, 12½ by 10½, 14½ by 10½, 13 by 11
10½ by 8½, 12½ by 9½, 13 by 10, 15 by 10, 15½ by 11½
11 by 9, 13 by 9, 13½ by 10½, 12 by 11, 14 by 11
11½ by 9½, 12 by 10, 14 by 10, 12½ by 11½ .. ..

20 by 12	per 100 feet	16 oz.	21 oz.
20 by 13	Common ..	16s. ..	24s.
20 by 14	Superior .	18s. ..	27s.
20 by 15			

All Boxes included.

Orchard House sizes as supplied to Mr. Rivers.

Hartley's improved Rough Plate Glass from ¼ to ⅜ in thickness.

Coloured Glass in great variety, at 9d. and 1s. per foot.

Paints, Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, Lamp Glasses, &c.

87, Bishopsgate Street Without, same side as Eastern Counties Railway.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

HETLEY AND CO. are supplying 16-oz. Sheet Glass of British Manufacture, packed in boxes, containing 100 square feet each, at the following REDUCED PRICES for cash. A reduction made on 1000 feet.

Sizes.—Inches.		Per foot.		Per 10 feet.
Under 6 by 4	at	1½d.	is	£0 12 6
From 6 by 4 „ 7 „ 5	„	2d.	„	0 16 8
„ 7 „ 5 „ 8 „ 6	„	2¼d.	„	0 18 9
„ 8 „ 6 „ 10 „ 8	„	2½d.	„	1 0 10
„ 10 „ 8 „ 12 „ 9	„	2¾d.	„	1 2 11

Larger sizes, not exceeding 40 inches long.

16 oz. from 3d. to 3½d. per square foot, according to size.
21 oz. „ 3½d. to 5d. „ „ „
26 oz. „ 3½d. to 7½d. „ „ „

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS, for Horticultural purposes, at reduced prices, by the 100 square feet.

GLASS TILES AND SLATES made to any size or pattern, either in Sheet or Rough Plate Glass.

Propagating Glasses, Beehive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in Glass.

PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.

GLASS SHADES, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the excise duty, reduced one-half. List of Prices and Estimates forwarded on application to

JAMES HETLEY & Co., 35, Soho Square, London.

GEORGE SPILL, ST. GEORGE'S STREET, LONDON DOCKS, E., LEAD, OIL, and COLOUR WORKS; WHITE LEAD, TAR, and TURPENTINE MERCHANT; WHITE ZINC, PAINT, COLOURS, and VARNISHES. To meet the desire of purchasers in the country the following colours are prepared ready for use:—Priming Colour, Red and Yellow Paint, Buff Stone, Lead, and Green Colours. Putty, Painter's Tools and Brushes, Refined Coal and Stockholm Tars; Pure Colza, Olive, Sperm, and Nut Oils.

SHAW'S TIFFANY.—The best and cheapest material for Shading Conservatories, Protecting Fruit from Birds and Wasps, &c. Sold in pieces 20 yards long by 38 inches wide. No. 1, best quality, 5s. per piece; second quality, 4s. per piece. Extra strong and thick (see Circular sent free by post with samples).

Address JOHN SHAW & Co., Manufacturers and Dealers, Princess Street, Manchester.

HORTICULTURAL POTTERIES.

ADJOINING THE STAPLETON ROAD NURSERIES, BRISTOL.

MAULE AND SONS have just completed an extensive enlargement of their Manufactories, which will afford them greater facilities for increasing their supplies of all kinds of GARDEN POTS, VASES, and other ORNAMENTAL POTTERY, suitable both for utility and Horticultural decorations and emblishments.

Horticulturists who have not yet favoured this establishment with their patronage will find every advantage both as regards quality and price.

The first workmen are employed, and the whole of their talents and attention is concentrated in the production of Horticultural Pottery alone, an advantage not to be found in the kingdom besides.

ILLUSTRATED CATALOGUES and LISTS of PRICES sent on application.

Nurserymen and the Trade supplied on advantageous terms.

IMPROVED PATENT TURNIP AND MANGEL GRATER MANUFACTURED BY

JOHN WARNER AND SONS, No. 8, Crescent, Jewin Street, London, E.C.—J. W. & SONS, in introducing their IMPROVED PATENT TURNIP AND MANGEL GRATER to the notice of Agriculturists, beg to state that they have personally tested its capabilities during the last three seasons, and as such feel that they can, with the greatest confidence, recommend it as a machine that will upon trial, satisfy the requirements of Feeders of Stock generally; one man or strong lad being able with comparative ease to grate 20 bushels of roots in 10 minutes.—Price of the Machine complete, 4l. 10s. Carriage paid to any Railway Station in England. To be procured of any Ironmonger or Agricultural Machine Agent in Town or Country, or of the Manufacturers.

GLAZIERS' DIAMONDS for CUTTING HORTICULTURAL and other GLASS, to be had of the Wholesale Manufacturer, JOHN EDWARDS, 20, Sharp's Alley, West Smithfield, London, E.C. Prices from 10s. to 27s. 6d.

PARKES' STEEL DIGGING FORKS.

BURGESS AND KEY, 95, Newgate Street, London, being the Wholesale and Retail Agents for these celebrated TOOLS have always a large Stock on hand from which their Customers may select what they may require.

ANTHONY'S PATENT AMERICAN CHURN.—The FIRST PRIZE was again awarded to this Churn in Competition with several others at the Chester Meeting of the Royal Agricultural Society; it has obtained the First Prize given by the Society at every Meeting since 1850.

Messrs. BURGESS & KEY, 95, Newgate Street, strongly recommend it as the most perfect Churn now in use. Full particulars sent on application.

AGRICULTURAL MACHINERY.

E. R. AND F. TURNER, Ipswich, manufacture Prize Mills for Crushing Corn, Seed, Malt, &c.; Portable Grinding Mills, Steam Engines fixed and portable from 2 horse-power and upwards; Threshing Machines, Chaff Cutter Oilcake Breakers, Horse Gears, Saw Tables, &c., all of a superior description and adapted for Home, Colonial, and Foreign use. Illustrated Price Lists sent free on application.

THE ROYAL AGRICULTURAL SOCIETY'S PRIZE CHURN.—This Churn has taken all the prizes offered by the Royal Agricultural Society from 1850 to 1858 inclusive. Price list and testimonials sent free. Illustrated Catalogue on receipt of six postage stamps.

BURGESS & KEY, Patentees and Manufacturers, 95, Newgate Street, London.

B. SAMUELSON, AGRICULTURAL ENGINEER and MACHINIST, Warehouses, 76, Cannon Street, West, London (Works at Banbury), informs Merchants, the trade, and Agriculturists, that he has opened the above Warehouses as a depôt for his own manufactures and those of Messrs. Barrett, Clayton, Howard, Hornsby, Nicholson, Richmond, Tuxford, Smith, and all other first-class makers, whose implements he is prepared to offer on makers' terms.

The BRITANNIA SELF-RAKING REAPING MACHINE, with side delivery in sheaf, no rakers or gatherers required; and all the most improved Food-preparing Machines of the season, may be inspected at the above depôt.

B. SAMUELSON, 76, Cannon Street, West, London; and Britannia Works, Banbury.

HALKETT'S GUIDEWAY STEAM AGRICULTURE will be Exhibited at Canning Place, Kensington Toll Gate, south of Kensington Gardens, on WEDNESDAYS, the 9th, 16th, and 23d of February, and to private view upon previous appointment. By this system every operation of the Farm is performed by steam power, the land largely increased in value, and the cost of cultivation greatly reduced. "When they considered the numerous advantages of the plan, that it could be used in all weathers, and used untiringly, and also at night, and above all, the superior manner in which the work itself was done," &c., J. J. MECHI.—"Any gentleman unacquainted with the extraordinary difficulties of a clay soil cannot have the least idea of the benefits to be derived from this mode of cultivation. ..... Then we shall be able to make 12 months' soils instead of what farmers call six months' soils." WREN HOSKYNS.—"I will be happy to lay down 50l. as a share, with others, to see your system carried out on a large scale."—SMITH, of Woolston, the successful inventor of Smith's Steam Plough. A Paper read before the Society of Arts, illustrations, &c., will be forwarded upon application to the Office, 80, Chancery Lane, W. C.

PRIZE MEDAL, PARIS EXHIBITION 1855.

METCALFE, BINGLEY, AND CO.'S New Pattern and Penetrating Tooth Brushes, Penetrating unbleached Hair Brushes, Improved Flesh and Cloth Brushes, and genuine Smyrna Sponges; and every description of Brush, Comb, and Perfumery for the Toilet. The Tooth Brushes search thoroughly between the divisions of the Teeth and clean them most effectually—the hairs never come loose. M., B., and Co. are sole makers of the Oatmeal and Camphor, and Orris Root Soaps—sold in Tablets (bearing their names and address) at 6d. each, of METCALFE'S celebrated Alkaline Tooth Powder, 2s. per box; and of the New Bouquets.—Sole Establishment, 130B and 131, Oxford St., 2d and 3d doors west from Holles St., London.

FENDERS, STOVES, AND FIRE-IRONS.—Buyers of the above are requested, before finally deciding, to visit WILLIAM S. BURTON'S SHOW ROOMS. They contain such an assortment of FENDERS, STOVES, RANGES, FIRE-IRONS, and GENERAL IRONMONGERY as cannot be approached elsewhere, either for variety, novelty, beauty of design, or exquisiteness of workmanship. Bright Stoves, with ormolu ornaments and two sets of bars, 3l. 15s. to 33l. 10s.; Bronzed Fenders, with standards, 7s. to 5l. 12s.; Steel Fenders, 2l. 15s. to 11l.; ditto, with rich ormolu ornaments, 2l. 15s. to 18l.; Fire-Irons, from 2s. 3d. the set to 4l. 4s. The BURTON and all other PATENT STOVES, with radiating hearth-plates.

BEDSTEADS, BATHS, AND LAMPS.—WILLIAM S. BURTON has SIX LARGE SHOW ROOMS devoted exclusively to the SEPARATE DISPLAY of Lamps, Baths, and Metallic Bedsteads. The stock of each is at once the largest, newest, and most varied ever submitted to the public, and marked at prices proportionate with those that have tended to make his establishment the most distinguished in this country.

Bedsteads, from ..	..	..	12s. 6d. to £20	0s. each.
Shower Baths, from ..	..	8 0	„ 6 0	„
Lamps (Moderateur), from ..	6 0	„ 7 7	„	

(All other kinds at the same rate.)

Pure Colza Oil .. .. 4s. 3d. per gallon.

DISH COVERS AND HOT-WATER DISHES.—In every material, in great variety, and of the newest and most recherché patterns. Tin Dish Covers, 7s. 6d. the set of six; Block Tin, 12s. 3d. to 27s. 0d. the set of six; elegant modern patterns, 35s. 6d. to 62s. 6d. the set; Britannia Metal, with or without silver-plated handles, 3l. 11s. 0d. to 6l. 8s. 0d. the set; Sheffield plated, 10l. to 16l. 10s. the set; Block-tin Hot-water Dishes, with wells for gravy, 12s. to 30s.; Britannia Metal, 22s. to 77s.; Electro-plated on Nickel, full size, 11l. 11s.

WILLIAM S. BURTON'S GENERAL FURNISHING IRONMONGERY CATALOGUE may be had gratis, and free by post. It contains upwards of 400 Illustrations of his illimited Stock of Electro and Sheffield Plate, Nickel Silver and Britannia Metal goods, Dish Covers and Hot-water Dishes, Stoves, Fenders, Marble Chimney pieces, Kitchen Ranges, Lamps, Gaseliers, Tea Urns and Kettles, Tea Trays, Clocks, Table Cutlery, Baths and Toilet Ware, Turnery, Iron and Brass Bedsteads, Bedding, Bed Hangings, &c., with Lists of Prices and Plans of the 16 large Show Rooms at 39, Oxford Street; 1, 1A, 2, and 3, Newman Street; and 4, 5, and 6, Perry's Place, London.—Established 1820.

TO THE NERVOUS OF BOTH SEXES.—A Retired Clergyman, having been restored to health in a few days, after many years of nervous suffering, is willing to assist others by sending (free), on receiving a stamped envelope, properly addressed, a copy of the prescription used.—Direct, the Rev. E. DOUGLASS, 18, Holland Street, Brixton, London.

FLOUR, Warranted Unadulterated, free to any part of London (not less than 14 lbs.); Whites, for pastry, at per bushel (56 lbs.), 8s. 4d.; households, for bread-making, 7s. 8d.; seconds, 7s. 0d.; Wheatmeal, for brown bread, 7s. 0d.; best fine and coarse Scotch Oatmeal.—Address, HORSNAIL & CATCHPOOL, Bullford Mill, near Witham, Essex, or 97, Goswell Road, City Road, E.C. Directions for bread making gratis. Terms, cash. Bags lent. German yeast. A half sack (140 lbs.), or upwards, free to any railway station within 200 miles.

WHISKIES (EQUALISATION OF DUTY). — The choicest Scotch and Irish, from 14s. to 18s. per gallon.—OWEN & Co., 75, Lower Thames Street, London, E.C., opposite the Custom House. Shipping and the Trade supplied.

GLENFIELD PATENT STARCH USED IN THE ROYAL LAUNDRY.

And pronounced by HER MAJESTY'S Laundress to be THE FINEST STARCH SHE EVER USED.

When you ask for Glenfield Patent Starch, see that you get it, as inferior kinds are often substituted. Sold by all Chandlers, Grocers, &c.—WOTHERSPOON & Co., Glasgow and London.

VINEGAR—Patronised by her Majesty's Government.

CONDY'S PATENT PURE CONCENTRATED MALT VINEGAR.—Families, by using this delicious Vinegar, insure purity, and effect a saving of 50 per cent. See Report of Dr. Letheby, City Officer of Health; Dr. Hassall of the *Lancet* Commission, and others. Six Quart Sample sent free to any Railway for 3s. 6d.—Sold by the Trade, in bottles, labelled and capsuled; wholesale, 63, King William Street, London Bridge, E.C.

FRY AND SONS' CHOCOLATES AND COCOAS.—Victoria Chocolate, Bon Bons, Soluble Cocoa, &c., in great variety. These delicious beverages are now sold at very moderate prices, and many of them are highly economical.

FRY'S HOMŒOPATHIC COCOA is an article of unexceptionable quality. FRY'S SOLUBLE COCOA, in Hexagon packets, and FRY'S PEARL COCOA, are strongly recommended.

FRY AND SONS, MANUFACTURERS TO THE QUEEN.

Liebig, the celebrated Chemist, asserts that nitrogen is essential to the healthy action of the bile, and the growth, sustenance, and invigoration of the body. No stronger recommendation of Cocoa and Chocolate can therefore be given than the following statement:—Caffeine and Theine each contain only about 29 per cent., whilst Theobromine (or essence of Cocoa) contains upwards of 35 per cent. of nitrogen.

KNOW THYSELF.—MARIE COUPELLE continues to give her graphic and interesting delineations of character, discoverable from an examination of the handwriting, in an unique style of description peculiarly her own. All persons desirous of knowing themselves, or any friend in whom they are interested, must send a specimen of the writing, stating the sex and age, and enclosing 13 penny postage stamps, and a directed envelope, to Miss COUPELLE, 69, Castle Street, Oxford Street, London, and they will receive in a few days a minute detail of the talents, tastes, virtues, and failings of the writer, with many other things hitherto unsuspected. All letters are considered strictly confidential.

DO YOU WANT LUXURIANT HAIR, WHISKERS, &c.?—COUPELLE'S CRINUTRIAR is guaranteed to produce whiskers, moustachios, eyebrows, &c., in two or three weeks with the utmost certainty, strengthen weak hair, prevent its falling off, check greyness in all its stages, and reproduce the hair in baldness, from whatever cause, price 2s. Sold by all chemists in the world; or will be sent post free, on receipt of 24 penny postage stamps, by Miss COUPELLE, 69, Castle Street, Newman Street, Oxford Street, London. A toilet guide sent post free for four penny postage stamps. "It completely restored my hair."—Miss Davis. "My whiskers are now growing freely."—H. Merry, Esq.

THE FIRST PRODUCTION IN THE WORLD, FOR THE GROWTH AND IMPROVEMENT OF THE HUMAN HAIR, IS

ROWLANDS' MACASSAR OIL, proved beyond question by its successful results for more than half a century past, and when other specifics have failed. The high esteem in which it is universally held, and the numerous testimonials constantly received of its efficacy, afford the best and surest proofs of its merits. It prevents hair from falling off or turning grey, strengthens weak hair, cleanses it from scurf and dandriff, and makes it beautifully soft, pliable, and glossy. In the growth of the beard, whiskers, and mustachios, it is unfailing in its stimulative operation. For children it is especially recommended, as forming the basis of a beautiful head of hair. Price 3s. 6d. and 7s.; Family bottles (equal to four small), 10s. 6d.; and double that size, 21s. CAUTION.—On the wrapper of each bottle are the words, "ROWLANDS' MACASSAR OIL," &c., in white letters, and their signature, "A. ROWLAND & SONS," in red ink.—Sold at 20, Hatton Garden, London, and by Chemists and Perfumers.

KEATING'S COD LIVER OIL FOR THE MILLION. Light Brown, as imported, possessing medicinal qualities equal to any yet introduced, while it is offered at one-third the price, that it may be within the reach of all classes.—Sold at 79, St. Paul's Churchyard. Pints, 1s. 8d., Quarts 3s., imperial measure.

TESTIMONIAL FROM DR. URE.

"Having examined a sample of Cod Liver Oil, submitted to me by Mr. KEATING, of St. Paul's Churchyard, I find it of excellent quality, possessing the usual properties of the Oil, and well adapted for medicinal use. (Signed)

"London, Jan. 29, 1855." "ANDREW URE, M.D., F.R.S."

HOLLOWAY'S OINTMENT AND PILLS.—INFLUENZA—COLDS.—In diseases of the throat and chest so prevalent in this country during the winter, nothing so speedily relieves or so certainly cures as these inestimable remedies. These disorders are too often neglected at the commencement, or are injudiciously treated, resulting in either case in disastrous consequences. Whatever the condition of the patient, HOLLOWAY'S medicines will restore if recovery be possible: they will retard the alarming symptom, till the blood is purified, and Nature consummates the cure; gradually restoring strength and vital nervous power. By persevering in the use of HOLLOWAY'S preparations tone is conferred on the stomach and frame generally, the fluids are regenerated, morbific matter is expelled, and a happy revolution occurs throughout the system.

PAINS IN THE BACK, Gravel, Lumbago, Rheumatism, Gout, Indigestion, Flatulency, Nervousness, Debility, Stricture, &c.—Dr. DE ROOS' COMPOUND RENAL PILLS, as their name renal (or the kidneys) indicates, have been long established as a most safe and efficacious remedy for the above dangerous complaints, discharges of any kind, retention of urine, and diseases of the kidneys, bladder and urinary organs generally, which, if neglected, frequently end in stone in the bladder and a lingering death. For depression of spirits, blushing, incapacity for society, study or business, confusion, giddiness, drowsiness, sleep without refreshment, fear, nervousness, and insanity itself, when arising from or combined with urinary diseases, they are unequalled. By their salutary action in correcting bile and acidity of the stomach, purifying and promoting the renal secretions, they prevent the formation of stone, and establish the healthy functions of all these organs.—Price 1s. 1½d., 2s. 9d., 4s. 6d., 11s., and 33s. per box, through all Medicine Vendors, or sent free on receipt of the amount in postage stamps, by Dr. DE ROOS, 10, Berners Street, Oxford Street.

Now Published (entered at Stationers' Hall), Second Edition, an Entire New System on

THE CULTURE OF THE POTATO. Extraordinary produce again in 1858, see advertisement in *Gardeners' Chronicle*, January 15; 600 bushels to the acre, free from disease, of that most delicate, most liable to disease, and best Potato, the Lapstone Kidney, which, at 4*s.* per bushel, gives 100*l.* per acre clear profit on land in one year. The Book forwarded post free for 18 postage stamps.

Address R. B., Post Office, Hathersage, Derbyshire.

MR. MECHI'S SYSTEM OF FARMING.

In One Vol., price 2*s.* boards, or 2*s.* 6*d.* half-bound,

HOW TO FARM PROFITABLY. By Mr. ALDERMAN MECHI. With Illustrations from Photographs by Mayall.

GENERAL CONTENTS.—How to Farm Profitably on Heavy Clays—What will Pay—Land Drainage—Shelter—Meat Making—Buying and Selling—Cheap Manuring—Artificial Manures—Sewage Manure—Tiptree Hall, its Drainage and Details—Subsoiling after Drainage—Thin Sowing—Cattle Feeding—On Burning Clay—Over-Seeding—Trip to North Devon—Liquid Manure and Irrigation.

London: ROUTLEDGE, WARNES, & ROUTLEDGE, Farringdon St.

"Will repay a careful perusal."—*North British Agriculturist.*

Price 1*s.* 6*d.* sewed, or 2*s.* cloth,

AGRICULTURAL CHEMISTRY. By ALFRED SIBSON (First Assistant in the Laboratory of the Royal Agricultural College, Cirencester). With a Recommendatory Preface by Dr. AUGUSTUS VOELCKER (Consulting Chemist of the Royal Agricultural Society).

GENERAL CONTENTS. — Chemistry of the Atmosphere—Chemistry of the Soils—Chemistry of Water—Chemistry of the Plant—Grain Crops—Root Crops—Leguminous Crops—Fodder Crops—Soils and Manures best suited for them—Vegetable Produce of the Farm—Means of Restoring the Impaired Fertility of Land exhausted by the growth of Cultivated Crops—Improving Land naturally Infertile—Annual Produce of the Farm—Principles of Nutrition, &c.

London: ROUTLEDGE, WARNES, & ROUTLEDGE, Farringdon Street.

This day, the Ninth Edition, with Woodcuts, 1*s.* 6*d.*,

SISTER MARY'S TALES IN NATURAL HISTORY.

London: JOHN W. PARKER & SON, West Strand.

ORNAMENTAL FOLIAGED PLANTS.

Now Publishing in Monthly Parts, 1*s.* each, royal 8vo, to be completed in about Twenty, each Part containing Three Coloured Plates, and several Wood Engravings,

BEAUTIFUL LEAVED PLANTS; being a Description of the most beautiful ornamental foliaged Plants in cultivation in this country. By E. J. LOWE, Esq., F.R.A.S., &c., assisted by W. HOWARD, F.H.S.

London: GROOMBRIDGE & SONS, 5, Paternoster Row.

PROFESSOR LINDLEY'S INTRODUCTION TO BOTANY, 4th Edition, with Corrections and Additions, now ready, in 2 vols. 8vo, with Six Copper Plates and numerous Wood Engravings. Price 24*s.* cloth.

London: LONGMAN, BROWN, & Co.

THE ENGLISH LANGUAGE AND COMPOSITION.

I.

GRAHAM'S ENGLISH, or the Art of Composition explained. New Edition. Fcp. 8vo. 5*s.*

II.

GRAHAM'S ENGLISH STYLE: A Course of Instruction for attaining a good style of writing. Fcp. 8vo. 7*s.*

III.

GRAHAM'S ENGLISH SYNONYMES classified and explained, with Practical Exercises. Third Edition. Fcp. 8vo. 6*s.*

IV.

DR. ROGET'S THESAURUS OF ENGLISH WORDS AND PHRASES classified and arranged. Seventh Edition. Crown 8vo. 10*s.* 6*d.*

V.

REV. DR. BREWER'S GUIDE TO ENGLISH COMPOSITION: 120 Subjects analysed, &c. Fcp. 8vo. 5*s.* 6*d.*

VI.

REV. J. HUNTER'S TEXT-BOOK OF ENGLISH GRAMMAR, including Exercises, &c. New Edition, 12mo. 2*s.* 6*d.*

VII.

DR. BLACK'S STUDENT'S MANUAL OF ENGLISH WORDS derived from the GREEK, 18mo. 2*s.* 6*d.*

VIII.

DR. BLACK'S SEQUEL TO STUDENT'S MANUAL: English Words derived from the LATIN, 18mo. 5*s.* 6*d.*

IX.

M'LEOD'S Improved Edition of CARPENTER'S SCHOLAR'S SPELLING ASSISTANT, 12mo. 1*s.* 6*d.*

X.

REV. F. C. COOK'S FIRST BOOK OF POETRY, for Elementary Schools. New Edition, 18mo. 9*d.*

London: LONGMAN, BROWN, & Co., Paternoster Row.

COMPLETION OF DR. COPLAND'S MEDICAL DICTIONARY.

Just published, Parts XIX. and XX. (a double part, completion, with classified Contents and a copious Index) price 9*s.* sewed; and Vol. III. (in two parts) 8vo, price 2*l.* 11*s.* cloth,

A DICTIONARY OF PRACTICAL MEDICINE: Comprising General Pathology, the Nature and Treatment of Diseases, Morbid Structures, and the Disorders especially incidental to Climates, to Sex, and to the different Epochs of Life; with numerous approved Formulæ of the Medicines recommended, &c. By JAMES COPLAND, M.D., F.R.S., &c.

*** Vols. I. and II. price 60*s.* cloth, may also be had: and the work complete, in 3 vols., price 5*l.* 11*s.* cloth.—The Parts may at present be had separately; but the publishers will be obliged by the Subscribers perfecting their Sets with as little delay as possible.

"In Dr. COPLAND'S 'Dictionary of Practical Medicine' we see a reflex of German erudition, French acuteness, and British practical common sense. It has long had an European reputation, and will, we have no doubt, successfully maintain what it has taken its author so much patient trouble to acquire."—*Lancet.*

"His ideas, his doctrines, his descriptions, and his instructions are conveyed in language at once terse, clear, forcible, and condensed; and his whole work is in itself a library of pathological doctrine and therapeutical lore, of which English literature has every reason to be proud."

Medical Times and Gazette.

London: LONGMAN, BROWN, & Co., Paternoster Row.

Second Edition, revised and enlarged, price 5*s.* 6*d.* cloth; free by post, 5*s.* 10*d.*,

ORNAMENTAL AND DOMESTIC POULTRY; THEIR HISTORY AND MANAGEMENT.

By the Rev. EDMUND SAUL DIXON, M.A.

J. MATTHEWS, 5, Upper Wellington Street, Covent Garden.

Third Edition, considerably enlarged, price 5*s.* 6*d.*, free by post, 5*s.* 10*d.*,

RURAL CHEMISTRY.

By EDWARD SOLLY, F.R.S., F.L.S., F.G.S.

Honorary Member of the Royal Agricultural Society of England, Professor of Chemistry to the Horticultural Society of London, Lecturer on Chemistry in the Hon. E. I. Co.'s Military Seminary at Addiscombe, &c., &c.

J. MATTHEWS, 5, Upper Wellington St., Covent Garden, London, W.C.

Price 1*s.* 6*d.*, free by post, 1*s.* 7*d.*

LABELS FOR THE HERBARIUM, CONSISTING OF THE NAMES OF THE

CLASSES, ALLIANCES, ORDERS, AND SUB-ORDERS,

OF

PROFESSOR LINDLEY'S "VEGETABLE KINGDOM."

So printed in large type, that they can be cut out and pasted into THE HERBARIUM.

J. MATTHEWS, 5, Upper Wellington Street, Covent Garden, London, W.C.

Just published, price 5*s.*

FOLIA ORCHIDACEA. Parts VI. and VII., completing the First Volume, containing Oncidium, Calanthe, Limatodis, and Geodorum.

J. MATTHEWS, 5, Upper Wellington St., Covent Garden, London, W.C.

In consequence of the new postal arrangements, parties in the country who desire it can have two copies sent by post for one stamp, five for two stamps, or eleven for four, in addition to the cost of the numbers.

Price 3*d.* each, or 5*s.* for 25 copies for distribution among Cottage Tenantry, delivered anywhere in London, on a Post-office Order being sent to the Publisher, JAMES MATTHEWS, at the Office of the *Gardeners' Chronicle.*

THE COTTAGER'S CALENDAR OF GARDEN OPERATIONS. By Sir JOSEPH PAXTON, M.P.

Reprinted from the GARDENERS' CHRONICLE. Upwards of 126,000 have already been sold.

CONTENTS:—

African Lilies	Gentianella	Planting
Agapanthus	Gilias	Plums
Anemones	Gooseberries	Polyanthus
Annuals	Grafting	Potatoes
Apples	Green-fly	Pruning
Apricot	Heartsease	Privet [tings
Auriculas	Herbs [nials	Propagation by cut-
Beans	Herbaceous Peren-	Pyracantha
Beet	Heliotrope	Radishes
Biennials	Hollyhocks	Ranunculus
Black Fly	Honeysuckle	Raspberries
Books for Cottagers	Horse-radish	Rhubarb
Borage	Hyacinths	Rockets
Borecole	Hydrangeas	Roses
Box Edgings	Hyssop	Rue
Broccoli	Indian Cress	Rustic Vases
Brussels Sprouts	Iris	Sage
Budding	Kidney Beans	Salvias
Bulbs	Lavender	Savoys
Cabbage	Layering	Saxifrage
Cactus	Leeks	Scarlet Runner Beans
Calceolarias	Leptosiphons	Seeds
Californian Annuals	Lettuce	Sea Daisy or Thrift
Campanulas	Lobelias	Seakale
Carnations	London Pride	Select Flowers
Carrots	Lychnis, double	Select Vegetables and Fruit
Cauliflowers	Marigold	Snails and Slugs
Celery	Marjoram	Snowdrops
Cherries	Manures	Spinach
China Asters	Marvel of Peru	Spruce Fir
China Roses	Mesembryanthemums	Spur Pruning
Chrysanthemums, Chinese	Mignonette	Stocks
Chives	Mint	Strawberries
Clarkias	Mustard	Summer Savory
Clematis	Narcissus	Sweet William
Collinsias	Nemophilas	Thorn Hedges
Colewort	Œnothera bifrons	Thyme
Cress	Onions	Tigridia Pavonia
Creepers	Pæonies	Transplanting
Crocus	Parsnip	Tree Lifting
Crown Imperials	Parsley	Tulips
Cucumbers	Peaches	Turnips
Cultivation of flowers in windows	Pea-haulm	Vegetable Cookery
Dahlias	Pears	Venus's Looking Glass
Daisies	Peas	Verbenas
Dog's-tooth Violets	Pelargoniums	Vines
Exhibitions, preparing articles for	Perennials	Virginian Stocks
Felts, as protection for borders	Persian Iris	Wallflowers
Fuchsias	Petunias	Willows
	Phlox	Zinnias
	Pigs	
	Pinks	

J. MATTHEWS, 5, Upper Wellington Street, Covent Garden, London, W.C.

Published Monthly, Price One Shilling,

THE AGRICULTURAL REVIEW: A Journal of Rural Economy and Industrial Science. Edited by Dr. CHARLES A. CAMERON, Professor to the Dublin Chemical Society, and other eminent Agricultural writers.

Each Number consists of 48 pages of condensed matter, and contains several original articles, both scientific and practical, on Agricultural Chemistry, the Progress of Agriculture Abroad, Improvements in Agricultural Implements and Machinery, the Breeding and Rearing of Stock, New Discoveries, Reports of Papers Read at the Meetings of Agricultural Societies and the discussions which follow them, Agricultural Exhibitions, &c &c.

*** The Numbers for January and February commence a new volume.

Dublin: WILLIAM ROBERTSON; London: SIMPKIN, MARSHALL, & Co.; Edinburgh: JOHN MENZIES.

Published Monthly, price 6*d.* free by Post,

GOSSIP OF THE GARDEN: A Handbook for the Florest and Suburban Horticulturist. Conducted by E. S. DODWELL and A.S.H. "A plain practical book, by practical men, for plain practical folks. Gives ample information, in language so plain that 'he who runs may read.' One feature of the serial is a part set aside for 'Notes and Queries,' designed to be a 'medium of intercommunication' for all who have a difficulty to solve—and who has not? If one has no difficulties, he has not much knowledge. The whole is summed up by a valuable 'Calendar of operations,' containing directions for the proper management of flowers, vegetables, &c."—*Banffshire Journal.*

"To amateurs especially it will be found valuable."—*Gardeners' Chronicle.*

London: HOULSTON & WRIGHT, Paternoster Row; Derby: ROWBOTTOM, Iron Gate; and of all Booksellers, Newsmen, and Nurserymen.

CHRYSANTHEMUMS.

HOLMES'S TREATISE, with Descriptive Lists, is now ready, and may be had in exchange for one stamp.

W. H.'s success as an exhibitor for so many years is some guarantee for its value.—Frampton Park Nursery, Hackney.

TO LANDOWNERS.

THE PERMANENT WAY COMPANY having been appointed the sole Licensees for the use of Dr. BOUCHERIE'S Patent Process for Preserving Timber, beg to inform Landowners and others interested in the use of English Timber that a Pamphlet, with full explanations of this cheap and most effectual process, may be had gratis on application to the undersigned. Landowners having Beech, Elm, Fir, or other Timber fit for Railway Sleepers are requested to communicate particulars of quantity, locality, and prices.

WILLIAM HOWDEN, Secretary.

26, Great George Street, Westminster.

TO PIG AND POULTRY FEEDERS AND MILLERS.

CHICKEN RICE, 7*s.* 9*d.* per cwt., in bags 1½ cwt. each. SCREENED RICE, 10*s.* per cwt., in bags 1½ cwt. each. RICE MEAL, 6*s.* 9*d.* to 8*s.* 9*d.* per cwt. RICE for grinding. An allowance per Ton. American Oilcake, per ton, only 10*l.* 15*s.* in bags, 11*l.* 5*s.* in barrels.—Sold for Cash by W. & R. JOPP, 6, Cross Lane, St. Mary-at-Hill, Eastcheap, E.C.

LILLIPUTIAN BRAHMIN CATTLE.

TO BE SOLD, A BULL and COW of the above rare breed; they are exceedingly handsome and wonderfully small, and would be an ornamental acquisition to any nobleman's park or pleasure grounds. The cow is supposed to be in calf. Ages, three and four years; height about 36 and 40 inches.—Apply to Mr. GEORGE TAYLOR, Fruit Salesman, St. John's market, Liverpool.

TO BE SOLD, PHEASANTS. Fifty-five Hens and ten Cocks, in one or more lots, the property of a gentleman.—Address, C. C. C., Mr. Watson's, St. Anne's Lane, Post Office, London.

TO GARDENERS, ETC.

TO BE SOLD, THE STOCK, FIXTURES, AND GOODWILL OF A FLORIST.—Ill health the sole cause of proprietor leaving. To be had on Lease. Terms moderate.—Apply Brunswick Nursery, Cold Harbour Lane, Camberwell, S.

TO BRICK AND TILE MANUFACTURERS.

TO BE SOLD, by Private Contract, an excellent BRICK AND TILE YARD, standing on Six Acres of Land, with a plentiful supply of excellent Clay. There are two large Kilns on the property, most convenient and extensive Shedding, new and patent Machinery, together with every convenience for doing an extensive and lucrative trade. Also Four Cottages for Labourers. The premises are situated close to the Morchard Road Station, on the North Devon Railway, and are held by the present proprietor under a Lease, of which 18 years are unexpired. The Buildings are in excellent repair, having been erected within the last three years. This will be found an excellent opportunity for investment of capital, the present proprietor relinquishing the business from ill health only.—The premises may be viewed on application at the Yard, and further particulars may be obtained of Mr. WEBBER, Halberton Court, Tiverton; or of Mr. J. A. TOMS, Solicitor, Tiverton.

Sales by Auction.

POULTRY SALE (EXTRA).

MR. J. C. STEVENS will Sell by Auction at his Great Room, 38, King Street, Covent Garden, on TUESDAY, 15th February, at 12 precisely, POULTRY AND PIGEONS, including choice Dorkings, Spanish, Brahmas, Cochins, Hamburghs, Polands, Game, Bantams, Aylesbury Ducks, Silver Pheasants, &c., from numerous breeders of first-class Stock. Amongst the Pigeons are many choice Birds from the celebrated stud of E. B. Muddiford, Esq.—Catalogues by enclosing a stamped directed envelope to Mr. J. C. STEVENS, 38, King Street, Covent Garden, W. C.

CAMELLIAS, AZALEAS, ROSES, &c., FROM BELGIUM, AND A COLLECTION OF PINE CONES, FROM MEXICO.

MR. J. C. STEVENS will Sell by Auction at his GREAT ROOM, 38, King Street, Covent Garden, on WEDNESDAY, February 9, at half-past 12 precisely, 300 CAMELLIAS, well set with buds; 300 INDIAN AZALEAS, of the best sorts, ditto; 500 Standard and Half-standard Perpetual ROSES; 500 strong Bulbs of GLADIOLUS GANDAVENSIS; and a Collection of 100 species of PINE CONES from Mexico, with a branch to each (in one lot).—May be viewed on the morning of sale, and Catalogues had; if for the country, by enclosing a stamped directed envelope.

IMPORTANT SALE OF ABOUT 300 CHOICE DOUBLE CAMELLIAS, VARYING FROM 1 TO 7 FEET, AND 300 HANDSOME STANDARD AND DWARF ROSES, &c.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Hally, of Blackheath, to Sell by Auction at the Mart, Bartholomew Lane, on THURSDAY, February 17, at 12 o'Clock, about 300 choice Double Camellias, from 1 to 7 feet, consisting of all the approved kinds, beautifully furnished with bloom buds; Azalea indica. Also a choice assortment of 300 very handsome Standard and Dwarf Roses; a fine collection of American Plants, comprising Ghent and other Azaleas, Hybrid Rhododendrons, Kalmias, Magnolias, Andromeda floribunda, &c.; a few Eugenia Ugni and Otaheite Oranges, with Lilium lancifolium, sorts; choice Dahlias in dry roots; Pæonias, Fuchsias, and Verbenas, &c —May be viewed the morning of Sale. Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO NURSERYMEN AND OTHERS.—LAWRENCE STREET AND LAYERTHORPE NURSERIES, AND BRIDGE STREET, YORK.

Important and Extensive Sale of Fruit Trees, Forest Trees, Hardy Plants and Shrubs, Agricultural and Garden Seeds, Shop Fixtures, Pony and Cart, &c.

MESSRS. ACTON AND SON have received Instructions to Sell by Auction, without Reserve, on WEDNESDAY, Feb. 16, and following days, at 10 o'Clock each Day, until the whole is disposed of, on the Premises, Lawrence Street, Layerthorpe, and Bridge Street, as above, occupied by the late Mr. Bainbridge, Nurseryman, the whole of the Extensive and Valuable Nursery Stock, comprising Forest, Coniferous, and other Ornamental Trees; Evergreens, and Deciduous Shrubs; Fruit Trees, including Standard and Dwarf Trained Peaches, Nectarines, Apples, Plums, Pears, Cherries, Standard and Dwarf Apples, Pears, &c.; also a great Variety of Standard and Dwarf Roses; Stove and Greenhouse Plants, of which there are many New Varieties, and several very Fine Specimens; together with a large Stock of Bedding Plants, Florist Flowers, Herbaceous and other Hardy Plants, &c. An Extensive Assortment of Garden and Agricultural Seeds.

ORDER OF SALE.—Wednesday and Thursday, the 16th and 17th Inst. Fruit Trees, Shrubs, and Seeds, at Lawrence Street Nursery; Friday and Saturday, the 18th and 19th, the Stove and Greenhouse Plants, Coniferous Plants in Pots, &c., at the Layerthorpe Nursery.

GLEIG'S SCHOOL SERIES.

A NEW SERIES OF ELEMENTARY SCHOOL-BOOKS.

EACH BOOK (IN MOST INSTANCES) COMPLETE IN ITSELF, PRICE NINEPENCE. INTENDED TO COMPRISE A COMPLETE COURSE OF ELEMENTARY EDUCATION.

PROJECTED AND EDITED BY THE REV. G. R. GLEIG, M.A.

Chaplain-General to the Forces, and Prebendary of St. Paul's.

ASSISTED BY

WALTER MACLEOD, F.R.G.S.
THE REV. T. BOWMAN, M.A.
CAPTAIN A. C. GLEIG, R.A.
THOMAS TATE, F.R.A.S.
W. J. REYNOLDS, M.A.

WILLIAM HUGHES, F.R.G.S.
THE REV. PROFESSOR R. W. BROWNE, M.A.
Dr. R. J. MANN, M.R.C.S.E.
A. K. ISBISTER, M.A.
&c. &c.

☞ In consequence of the large circulation which the Works in this series have now attained, and with a view of further extending their use, the Publishers have determined to REDUCE THE PRICE OF EACH PART FROM ONE SHILLING TO NINEPENCE. The Prospectus of the series is given below.

THE object of the Projectors of this SCHOOL SERIES is to produce a succession of little books, containing progressive lessons suitable to the capacities of every description of learners. In "My First School-Book," the pupil, after being made familiar with the shapes of letters, is taught how the union of letters produces words, and how words awaken images in the mind. He next learns in "Simple Truths," to connect words of one syllable with grave ideas. His third step is to "My Second School-Book," which contains a vast amount of information on "Common Things," systematically arranged. He then proceeds to "The First Book of History," which sets forth, in words advancing from one syllable to four, an outline of the annals of his native country. After this, the histories of the "British Colonies," of "British India," of "Greece," "Rome," "France," and "Modern Europe," are successively placed before him; while from the "Sacred History" he acquires the knowledge of those great truths on which all Christians are agreed.

Meanwhile, the principles on which language is universally based, as well as the peculiar features of his own, are made clear to the pupil in the "Explanatory Grammar"; and a concise "History" of the "English Language" enables him to trace his own tongue from its source to its present state. He is next made acquainted with the laws which regulate the movements of nature, in Treatises on "Astronomy," "Hydrostatics, Hydraulics, Pneumatics, &c." "Experimental Chemistry," "Light, Heat," "Magnetism, Electricity," and the "Steam Engine." In the department of the Exact Sciences, namely, in "Arithmetic," in "Geometry," in "Algebra," and in "Mechanics," the pupil is gradually set forward in a right course.

The Series further contains Elementary Treatises on Geography, both general and particular. The "Child's First Book of Geography" is a collection of easy reading-lessons. The book of "General Geography" sets forth the great distinguishing physical features of the various regions and countries of the globe; while the "Geography of the British Empire" explains all that appertains, physically and politically, to Britain and its dependencies. The "Hand Atlas of General Geography" (sold for 2s. 6d.) is composed of 29 full coloured maps compiled by Mr M'Leod. Mr. M'Leod's "Class Atlas of Physical Geography" (also sold for 2s. 6d.) comprises a set of 30 full coloured Maps, Sections, and Diagrams, exhibiting the natural features of every region of the terraqueous globe. In writing, Mr. M'Leod's "Graduated Series of Copy Books" leads the pupil forward by easy and progressive steps. M. Isbister's "Treatise on Book-keeping" is the cheapest and most concise extant; and a set of eight forms of Account-Books (price 6d. each), by Mr. Isbister, has recently been added to it. The Series also now comprises a "Book of Health," giving a descriptive outline as well of the human frame as of the ordinary causes which tend either to invigorate or impair it; and a book of "Domestic Economy," conveying sound elementary knowledge of all that relates to food, clothing, and the management of a small income. A short "History of Modern Europe," a concise account of the "English Constitution," an introduction to "Agricultural Chemistry," and a simplified work on "Natural History," illustrative of the principles of the Classification of Animals, and by a "Book of Biography," containing sketches of the careers of individuals who have risen by their own merits, and exercised a powerful influence over their fellow-men, are preparing for publication.

That the public in general has not been indifferent to the merits of these Works is proved by the very wide circulation to which most of them have already attained. Of the "Grammar" there have been sold above 40,000 copies; of the "History of England" above 50,000; of the other Histories, collectively, upwards of 120,000 copies; of the Treatises on Natural Philosophy collectively, above 30,000; of the Geographical Works, collectively, above 60,000; of the "Arithmetic" above 19,000; and of the "Copy-Books" collectively above One Million:—And in consequence of this great success the Publishers have resolved (Jan. 1859) to reduce the original price of One Shilling to Nine Pence for each work.

WORKS PUBLISHED WHICH MAY NOW BE HAD:—

FIRST SCHOOL-BOOK to TEACH READING and WRITING ... ... 6d.
SECOND SCHOOL-BOOK to TEACH READING and SPELLING ... ... 9d.
GRADUATED SERIES of COPY-BOOKS, Nine Numbers ... ... each 3d.
SIMPLE TRUTHS from SCRIPTURE ... ... 6d.
EXPLANATORY ENGLISH GRAMMAR ... 9d.
HISTORY of the ENGLISH LANGUAGE ... 9d.
BOOK of HEALTH ... ... 9d.
BOOK of DOMESTIC ECONOMY ... ... 9d.
CHILD'S FIRST GEOGRAPHY ... ... 9d.
GEOGRAPHY of the BRITISH EMPIRE ... 9d.
GENERAL GEOGRAPHY ... ... 9d.
HAND-ATLAS of GENERAL GEOGRAPHY, full coloured (half bound, 3s.) ... ... 2s. 6d.
CLASS ATLAS of PHYSICAL GEOGRAPHY, full coloured (half bound, 3s.) ... ... 2s. 6d.
BOWMAN'S QUESTIONS on the above ... ... 1s.
SACRED HISTORY, in a volume, price 2s. cloth, or Two Parts, each ... ... 9d.
HISTORY of ENGLAND, in a volume, price 2s. cloth, or Two Parts, each ... ... 9d.
HISTORY of the BRITISH COLONIES ... 9d.
HISTORY of BRITISH INDIA ... ... 9d.
HISTORICAL QUESTIONS, Part I. ... ... 9d.
HISTORY of FRANCE ... ... 9d.
HISTORY of ANCIENT GREECE ... ... 9d.
HISTORY of ANCIENT ROME ... ... 9d.
ASTRONOMY and the USE of the GLOBES ... 9d.
MANUAL of ARITHMETIC ... ... 9d.
BOOK-KEEPING by SINGLE and DOUBLE ENTRY ... ... 9d.
EIGHT ACCOUNT BOOKS adapted to the above, each ... ... 6d.
ELEMENTS of ALGEBRA ... ... 9d.
ELEMENTS OF EUCLID ... ... 9d.
HYDROSTATICS, HYDRAULICS, and PNEUMATICS, for Beginners ... ... 9d.
ELECTRICITY, for Beginners ... ... 9d.
LIGHT and HEAT, simplified for Beginners ... 9d.
MAGNETISM, VOLTAIC ELECTRICITY, ELECTRO-DYNAMICS, for Beginners ... ... 9d.
EXPERIMENTAL CHEMISTRY ... ... 9d.
MECHANICS and the STEAM ENGINE ... 9d.

London: LONGMAN, BROWN, and Co., Paternoster Row.

CHEAPER EDITION OF

LOUDON'S GARDENING.

In One Volume 8vo, with many hundred Woodcuts, price 31s. 6d.,

LOUDON'S ENCYCLOPÆDIA OF GARDENING Comprising everything relative to Flower Gardens, Kitchen Gardens, Landscape Gardening, Hothouses, Conservatories, &c. &c. &c. New Edition, corrected and improved by Mrs. Loudon.

This Work, which is admitted to be the best work on Gardening, is now brought within the reach of Head Gardeners, Nurserymen, and of those gentlemen who wish to provide their Gardeners with a complete work on the Theory and Practice of Gardening. The work comprises above 1300 closely printed pages, minutely classified in all the divisions of Floriculture, Arboriculture, Kitchen Garden, Landscape Gardening, &c. &c., and is illustrated with above One Thousand Engravings on Wood. A figure is prefixed for reference to every paragraph; and the whole number is upwards of six thousand four hundred. The Table of Contents occupies eight pages, printed in double columns; and the following selections will serve to indicate the general nature and variety of the subjects comprised in the work:—

Of Earths and Soils
Of Manures
Of the agency of heat, light, electricity, and water in vegetable culture
Of the agency of the atmosphere in vegetation
Principles of Landscape Gardening
Implements of Gardening
Structures used in Gardening
Propagation by Layering
Propagation by Inarching
Propagation by Grafting
Propagation by Budding
Propagation by Cuttings
Operations for retarding or accelerating Vegetation
The formation of a Kitchen Garden
Of the distribution of Fruit Trees in a Kitchen Garden
Of the selection and arrangement of Wall Fruit Trees
Of the selection and arrangement of Espaliers and Dwarf Standards
Of tall Standard Fruit Trees in a Kitchen Garden
Of the formation and planting of an Orchard subsidiary to the Kitchen Garden
Of the general cultivation and management of a Kitchen Garden
Of the general management of Orchards
The Cabbage Tribe
Potato
Turnip
Carrot
Spinach
Onion
Asparagus
Lettuce
Endive
Sweet Herbs
Plants used in tarts, confectionery, and domestic medicine
Plants used as preserves and pickles
Edible Wild Plants, neglected, or not in cultivation
Horticultural Catalogue.—Hardy Fruit Trees, Shrubs, and Plants
Kernel Fruits
Apple
The Peach and Nectarine
Apricot
Black or Garden Mulberry
Gooseberry
Red Currant
Tropical and Exotic Fruits in general cultivation
Exotic and Tropical Fruits well known, but neglected as such
Horticultural productions which may be expected from a first-rate Kitchen Garden managed in the best style
Of the formation of the Flower Garden
Of planting the Flower Garden
Of forming the Shrubbery
Of planting the Shrubbery
General culture and management of the Flower Garden and Shrubbery
Florists' or select Flowers
Border Flowers
Flowers for particular purposes
Catalogue of Hardy Trees, with showy Flowers
Deciduous Trees, with showy Flowers
Evergreen Trees
Greenhouse Plants
Dry stove Plants
Hot-house or Bark-stove Plants
The practice of Agriculture, or the planting of Trees
Of the uses of Trees and Plantations, and the profits attending their culture
Of the different kinds of Trees and Plantations
Of the Formation of Plantations, in which utility is the principal object
On forming Plantations, in which ornament or effect is the leading consideration
Of the culture and management of Plantations
Of appropriating the products of Trees, preparing them for use or sale, and estimating their value
Of the formation of a Nursery Garden for the Propagation and Rearing of Trees and Shrubs
Of the culture and management of a Nursery for Trees and Shrubs
The Practice of Landscape Gardening
General Observations on the duties of a Landscape Gardener
Practical details of the mode of laying out different kinds of Gardens
Laying out the Gardens of Private Residences
Laying out Public Gardens

On the same plan as the above,
And uniform in size and price,

LOUDON'S ENCYCLOPÆDIA OF AGRICULTURE: Comprising the Theory and Practice of the Valuation, Transfer, Laying Out, Improvement, and Management of Landed Property, and of the Cultivation and Economy of the Animal and Vegetable Productions of Agriculture. Fifth and cheaper Edition, in One Vol., with nearly 1300 Woodcuts....8vo, 31s. 6d.

LONDON:
LONGMAN, BROWN, AND CO.

Printed by William Bradbury, of No. 13, Upper Woburn Place, and Frederick Mullett Evans, of No. 20, Queen's Road West, both in the Parish of St. Pancras, in the Co of Middlesex, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and published by them at the Office, No. 5, Upper Wellington St., Parish of St. Paul's Covent Garden, in the said Co.—Saturday, February 5, 1859.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 7.—1859.] SATURDAY, FEBRUARY 12. {Price Fivepence. Stamped Edition, 6d.

INDEX.

Agriculture, Dorsetshire	127 a	Holly berries, poisonous	130 a
Agri. Soc. of England	129 b	Horticultural Society	121 b
Plants, noticed	124 a	India and its resources	130 a
Box tree, wonderful	124 c	Insects, tree boring	130 b—121 c
British Pomological Society	122 a	Labourer, British	126 b—129 a
Cruciferous humilis	121 c	Law of fire liabilities	127 c
Columbia, British	124 c	Plough, Fowler's steam	128 b
Cottage Imp. Society	126 a—129 a	Roses	122 a
Dictionary, Smith's Latin	129 b	Scolytus destructor	130 b—121 c
Drainage, arterial	125 c—129 c	Seeds, Sardinian	122 a
Farmers' Club, London	129 c	Sheep, ewe keep	130 a
Fire and rent liability	127 c	Surgery, Household	124 b
Flax Imp. Society	125 c	Trade Lists	121 a
Fruits, to increase size of	130 c	Tree-boring insects	130 b—121 c
Grapes, rust in	124 c	Wages, labourers'	126 —129 c

BRIGHTON AND SUSSEX FLORICULTURAL AND HORTICULTURAL SOCIETY'S EXHIBITIONS for 1859 are fixed to be held on the following days:—Summer Show, WEDNESDAY and THURSDAY, June 22 and 23; Autumn Show, WEDNESDAY and THURSDAY, Sept. 14 and 15; on the same grand scale as in former years. Schedules will shortly be published, to be obtained of the Secretary, 96, St. James's Street: or of E. SPARY, Queen's Graperies, General Superintendent of Exhibition.

EDWARD CARPENTER, Secretary.
THOS. ATTREE, Esq., Chairman of Committee.
Brighton.—February 12.

BISHOP AUCKLAND FLORAL AND HORTICULTURAL SOCIETY.—The ANNUAL EXHIBITION of the above Society will be held at Bishop Auckland on FRIDAY, September 2, when Prizes far exceeding those of previous Shows will be offered, including the following. Open to Great Britain.

A Piece of Plate, value 10*l.*, for the best 6 Stove and Greenhouse Plants; 2d prize, 7*l.*; 3d, 4*l.*; 4th, 2*l.*; 5th, 1*l.*

A Piece of Plate value 10*l.*, for the best 24 Dissimilar Blooms of Dahlias; 2d prize, 7*l.*; 3d, 4*l.*; 4th, 2*l.*; 5th, 1*l.*

A Piece of Plate, value 3*l.*, for the best 12 Dissimilar Blooms of Fancy Dahlias; 2d prize, 2*l.*; 3d, 1*l.*; 4th, 10*s.*

A Piece of Plate, value 7*l.*, for the best 11 Spikes of Hollyhocks (Dissimilar); 2d prize, 5*l.*; 3d, 3*l.*; 4th, 1*l.*

A Piece of Plate, value 3*l.*, for the best 24 Blooms of Hollyhooks (Dissimilar); 2d prize, 2*l.*; 3d, 1*l.*; 4th, 10*s.*

Also liberal prizes in the Gentlemen's Gardeners, Amateurs' and Cottagers' Classes.

Silver Plate and other valuable prizes for Wax Flowers, Fruit, &c.

The gainer of any of the Pieces of Plate can have the value of the same in money, if preferred. Schedules of the Prizes are now ready, and will be forwarded on application to the Secretary, S. J. CHEERETT.

Market Place, Bishop Auckland.—Feb. 12.

ALEXANDER FORSYTH, LANDSCAPE GARDENER, 13, Islington Square, Salford, Manchester.

HORTICULTURAL VALUATIONS.

MR. ALFRED CHANDLER (of the late firm of Chandler & Sons, Vauxhall), begs to inform his Friends that he is at liberty to undertake the valuation of Collections of Plants, Nursery Stock, Horticultural Buildings, &c.

A. C. is also open to engagements as Umpire at Horticultural Exhibitions, in which capacity he has had long and extensive experience.—28, Priory Road, Wandsworth Road, S.

CHOICE NEW GLADIOLI.

CHARLES ALEXANDER, 30, West Register Street, Edinburgh, has a fine STOCK of the above from France and Holland.—Descriptive Priced Lists free on application.

DODECATHEON ELEGANS.

DOWNIE AND LAIRD have a large healthy stock of the above beautiful, hardy, herbaceous Plant, which they offer to the trade at 25*s.* per 100.

17, Frederick Street, Edinburgh.

DOUBLE ITALIAN TUBEROSES.

JAMES CARTER AND CO. have just received a supply of Extra Strong Flowering Roots of the above which they can offer at 4*s.* per dozen.

JAMES CARTER & Co., Seedsmen, 238, High Holborn, W.C.

DIOSCOREAS—FINE LARGE ROOTS CHEAP.

SUTTON AND SONS, Reading, can supply DIOSCOREA BATATAS, 9 inches long, at 5*s.* per dozen, or 40*s.* per 100. This vegetable is worthy of all that has been said in its favour, and will thrive in almost any soil and situation.

SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

THE EARLIEST ASH-LEAVED KIDNEY POTATOES.—For the true early short-top Lancashire kind, unsurpassed for forcing and early borders, price 16*s.* per cwt., apply to JAS. TYNAN, Seedsman, 68, Great George St., Liverpool.

EARLY OXFORD POTATOES.

FOR SALE, about 20 Tons of the above at 5*l.* per Ton, in large or small quantities.—Apply to Mr. R. RICHARDSON, Cottenham Park, Wimbledon, Surrey.

EARLY POTATOES FOR SEED.—A quantity of German and Dutch SILVERSKINS, just imported, quite free from disease, price 10*s.* per bushel, package included. Country orders require a remittance or a reference in London.—Address, T. CHAMBERLAYNE, Hungerford Wharf, W.C.

SUPERB DOUBLE HOLLYHOCKS.

WILLIAM CHATER can now supply fine healthy plants from his Collection, having a large stock ready for immediate planting.

See DESCRIPTIVE CATALOGUE, to be had on application.

Nurseries, Saffron Walden.

DOUBLE ITALIAN TUBEROSE ROOTS, 4*s.* per dozen.—The annual importation of the above named beautiful and fragrant Flower has just been received, and large and well selected Bulbs may be obtained, without disappointment, at A. CORBETT'S Foreign Warehouse, 18, Pall Mall.

N.B. Printed regulations for treatment sent; also, just arrived, very moist and open Parmesan Cheeses.

PURCHASERS OF LARGE QUANTITIES OF FARM AND GARDEN SEEDS will be treated liberally on application to SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY (LIMITED) supply every requisite for the Farm and the Garden.

Registered Offices, Union Road, Plymouth.

SEEDS FOR THE FARM.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY, LIMITED, beg to announce that their SPRING LIST OF FARM SEEDS is now ready. The same will be sent free to any address, on application to the Secretary by letter or otherwise, at the Company's Offices, Plymouth.—Feb. 12.

NEW DAHLIAS.

JOHN KEYNES'S SELECT CATALOGUE OF DAHLIAS, ROSES, CARNATIONS, PINKS, &c., containing Lists of all the valuable Show Flowers in each class, is now ready and will be sent on application.

Castle Street Nursery, Salisbury.—Feb. 12.

JOHN GRIER'S NEW PRICED CATALOGUE, with brief descriptive and cultural remarks of a selection of TREES, SHRUBS, and PLANTS, may be had upon application by enclosing One Stamp for Postage.—Waterhead Nursery, Ambleside, Feb. 12.

WILLIAM YOUNG'S DESCRIPTIVE CATALOGUE OF NEW HARDY ORNAMENTAL PLANTS, CONIFERÆ, ROSES, RHODODENDRONS, FOREST TREES, &c. Can be had on application.—Milford Nurseries, Godalming.

GEORGE JACKMAN AND SON'S PRICED and DESCRIPTIVE CATALOGUE of GENERAL NURSERY STOCK for 1858 and 1859 can be had free on application.

Woking Nursery, Woking, Surrey.

GEORGE BAKER begs to inform the Nobility and Public that his DESCRIPTIVE CATALOGUE OF AMERICAN PLANTS AND GENERAL NURSERY STOCK will be sent free on application.

American Nursery, Windlesham, near Bagshot, Surrey, about 1 mile from Sunninglade Station, South Western Railway.

KITCHEN GARDEN SEEDS.

JOHN CATTELL begs respectfully to announce that his CATALOGUE of the above may be had free by return of Post. It contains selections of the most approved culinary vegetables in cultivation, nearly the whole of them having been saved under J. C.'s own personal superintendence.—Nursery and Seed Establishment, Westerham, Kent.

NEW CHRYSANTHEMUMS.

JOHN SALTER begs to inform the numerous applicants for his NEW CATALOGUE OF CHRYSANTHEMUMS that it will be published at the end of February, in which his splendid Seedlings and other new varieties for 1859 will be fully described, as well as his unrivalled general collection, which is the largest in Europe.—Versailles Nursery, William Street, near Hammersmith Turnpike, W.

CATALOGUE.

YOUELL AND CO.'S GENERAL AND DESCRIPTIVE PRICED CATALOGUE for this season is now ready, and will be sent free on application.

It contains detailed Lists of Greenhouse Plants, Conifers, Shrubs, as well as all the newest introductions in Soft-wooded Plants.—Royal Nursery, Great Yarmouth.

TO THE LOVERS OF DELICIOUS FRUIT.

ORION MELON.—Six old Seeds out of the only fruit that ever won four prizes at two shows, viz., Crystal Palace and Regent Street, for weight and flavour, free by post to all parts of the world on receipt of 12 penny stamps.

THOS WILD, the Primulary, Ipswich.

LANCASHIRE SHOW GOOSEBERRIES True.—Selected varieties, the heaviest and finest flavoured from our unrivalled stock, 6*s.* per dozen; Black Currants, 2*s.* per dozen; Red Currants, 3*s.* per dozen; White Currants, 3*s.* per dozen, the finest varieties.—HOLLAND, DODWELL & BAYLEY, Bradshaw Gardens, Chadderton, Manchester.

TO THE TRADE.

CHARLES SHARPE AND CO. have a surplus stock of DANIEL O'ROURKE and HARRISON'S PERFECTION PEAS to offer, of their own growing, true and good stocks. Samples and prices on application.

Seed Establishment, Sleaford.

EARLIEST WRINKLED PEA.

FAIRHEAD AND SON, SEED GROWERS AND MERCHANTS, Lewisham, Kent, beg respectfully to offer their new EXCELSIOR PEA, of robust habit, delicious flavour; much earlier than Napoléon or Eugénie. They can confidently recommend it as the earliest and best Wrinkled Marrow Pea in cultivation. Price on application.

THE NEW ZEALAND RUNNER BEAN.

CHARLES TURNER has purchased Mr. Smith's Stock of this remarkable BEAN, which Professor Lindley has pronounced to be identical with the variety named above. In 2*s.* 6*d.* packets, containing 20 Beans. The Trade supplied on the usual terms.—The Royal Nurseries, Slough.

HENRY'S HYBRID SCOTCH LEEK.

CHARLES ALEXANDER, SEEDSMAN, Edinburgh, offers Seeds of the above unrivalled LEEK at 1*s.* and 2*s.* 6*d.* per packet.

He exhibited three in December last which weighed 9 lbs., and blanched to upwards of 12 inches each.

LAING'S MAMMOTH RED CELERY.—The largest and best flavoured Celery known, and will not run to seed until the second year. (See former advertisement.)

Packets, 1*s.* each; large trade do., 3*s.* 6*d.*, per post prepaid. Stamps received in payment.

YOUELL & Co., Royal Nursery, Great Yarmouth.

CONIFERÆ.

A. PAUL AND SON have a large stock of the above, very handsome, in fine order for removal, many suited for immediate effect. For particulars see Advertisements in *Gardeners' Chronicle* of November and December last.—Nurseries, Cheshunt, Herts.

TO PLANTERS OF CONIFERS.

YOUELL AND CO. supply 50 species of RARE and HARDY CONIFERS in good plants for 5*l.*, package included and carriage paid to Manchester, Newcastle-on-Tyne, Hull, London, Peterborough, or to any Railway Station within 150 miles of the Nursery. A LIST of the above can be had on application.—Royal Nursery, Great Yarmouth, Norfolk.

A VERY LARGE STOCK OF

FINE COMMON LAURELS, 1, 2, and 3 feet high, bushy and a good colour. Also very strong transplanted true Evergreen Privet, 3 to 6 feet.—Prices moderate on application to WILLIAM WOOD & SON, Woodlands Nursery, Maresfield, near Uckfield, Sussex.

NURSERY STOCK.

THE Subscribers are disposing of their extensive stock of Seedling and Transplanted Forest Trees, Ornamental Trees, Evergreen and Deciduous Shrubs, Standard and Dwarf-trained Fruit Trees, Gooseberries and Currants, &c., at prices considerably reduced in consequence of dissolving partnership.—Priced Lists may be had on application.

Glasgow, Feb. 12. FOWLER & WRIGHT.

TO PLANTERS.—Fine stock of Larch, 1½ to 3 feet; Scotch Firs, 1½ to 2 feet; Beech, 1½ to 4 feet; Elms, 3 to 6 feet; Evergreen Privets, Common Hollies, 1 to 1½ foot; fine Healthy Plants, with all other kinds of Nursery Stock. Samples and price on application to JOHN SCHOLEY, Pontefract Nurseries.

CHARLES DALY AND SON, Coleraine, Ireland, will sell Irish YEWS, 1 to 2 feet, 12*s.* per 100; common LAUREL, 1 to 2 feet, 15*s.* per 1000; 1 year transplanted do., 20*s.* per 1000; 1 year seedling THORNS, 2*s.* 6*d.* per 1000; Portugal LAUREL, 18 inches, 4*s.* per 100; 2 years SPRUCE FIR, 2*s.* per 1000. Free in Liverpool or in Glasgow for cash to Messrs. HURST & M'MULLEN, or with order.

THREE MILLIONS OF TRANSPLANTED QUICKS.

GEORGE CHIVAS, Chester, offers the above to the notice of Planters, which for extent and quality he believes are unequalled in the kingdom. A Sample Bale containing 100 of each five sizes forwarded on receipt of a Post-office Order for 15*s.* Truck loads delivered free at any Railway Station having through communication with Chester.

HALF A MILLION ONE-YEAR SEEDLING OAKS

(STRONG AND STOUT).

JAMES MELDRUM, NURSERYMAN, Kendal, Westmoreland, offers the above in quantities to suit purchasers. Price reasonable, on application.

500,000 EXTRA FINE TRANSPLANTED LARCH FIR, from 1 to 5 feet. Also SPANISH CHESNUTS.—Samples and Prices can be had on application to WM. WOOD & SON, Woodlands Nursery, Maresfield, near Uckfield, Sussex.

TO GENTLEMEN, GARDENERS, AND OTHERS.

WANTED, some PALMS, CITRUS, or any other tall Trees in pots or tubs, in good condition, for greenhouse. A line stating sorts, heights, and lowest prices, will have immediate attention.—Address to A. B., 26, Bride Lane, Fleet Street, London, E.C.

YELLOW ROSES.—Madame William, orange yellow; Isabella Gray, golden yellow. Strong plants, fit for immediate forcing, 3*s.* 6*d.* the pair.

A. PAUL & SON, Nurseries, Cheshunt, Herts.

TO MANGEL GROWERS.

SUTTON'S ELVETHAM MANGEL WURZEL, and SELECTED YELLOW GLOBE.—These two sorts of Mangel are still preferred to all others by the principal root-growers throughout the kingdom. SUTTON & SONS have some fine seed of each sort, price 9*d.* per lb, or cheaper by the cwt.—Royal Berkshire Seed Establishment, Reading.

GIANT SAINFOIN SEED.—Seed of this excellent and productive Plant may be had of RAYNBIRD & HARVEY, Basingstoke, and 89, Seed Market, Mark Lane. Samples and prices on application.

N.B. R. & H. can also supply Common Sainfoin both of English and French growth at market prices.

PAMPAS GRASS (GYNERIUM ARGENTEUM).—The beauty of this extraordinary plant has this season been fully appreciated. It can be supplied by the dozen, hundred, or thousand, by CHARLES NOBLE, Bagshot, Surrey.

TO THE SEED TRADE.—The Advertiser has a quantity of ITALIAN RYE-GRASS SEED at 25*s.* per cwt.; also about half ton of RIB GRASS at 46*s.* cash (a decided bargain, and worthy of early notice).—Apply to JOSEPH DIXON, Seedsman, Kendal

JOHN CULVERWELL, Taunton, begs to call the attention of Agriculturists to his superior selection of GRASS SEEDS, which for PURITY, change of SOIL, and CLIMATE, will bear comparison with any house in the kingdom. Prices, terms, and samples forwarded on application.

HUDSON'S GOLDEN MELON BARLEY.—Selected Samples for Seed of this most valuable variety, superior both for produce and malting quality, may be had of RAYNBIRD & HARVEY, of Basingstoke; and 89, Seed Market, Mark Lane, E.C.

PLANTS IN FLOWER.

F. AND A. SMITH have now in bloom Acacia, Azalea indica, Cinerarias (fine), Cytisus, Dielytra spectabilis, Erica Willmoreana, E. perspicua nana, E. Syndriana, Geraniums, Fairy Roses, Primula sinensis fimbriata, &c.

The above are healthy, strong and well-grown plants, prepared for sending away. Prices on application.

Dulwich, Surrey, S.

CHOICE SARDINIAN FLOWER SEEDS.

MESSRS. HOOPER AND CO., seeing that the writer at page 99 of the *Gardeners' Chronicle* has evidently mistaken the meaning of other advertisers with regard to the transference of an agency for the above, and fearing that others of their extensive connection might also be misled, beg to state that they have this season, as for several years past, received their usual consignment of Seeds of PICOTEES, CARNATIONS, and other choice and rare Flowers, ripened in Sardinia, from the same unrivalled collection.

H. & Co. therefore hasten to assure their friends that there is no SOLE AGENCY for the choice seeds collected and saved by the justly celebrated "Sardinian Correspondent" in question.

Seeds of the above-named CARNATIONS and PICOTEES both show flowers and perpetuals, white and yellow grounds, in COLLECTIONS OF 12 VARIETIES. (For detailed list see our Catalogue, page 4.) Ditto in mixture each per packet, 1*s.* 6*d.* and 2*s.* 6*d.* The variety of their colours, with their constancy and doubleness, render these such as cannot be excelled.

A GENERAL COLLECTION, consisting of the most beautiful and useful kind of Shrubs, Perennials, Annuals, and Climbers of every description, well assorted, for Greenhouse or Conservatory, in all 50 varieties, for 20*s.* This collection includes all the novelties of merit, and can be recommended with confidence. All Flower Seeds sent free by Post.

HOOPER & CO.'S Comprehensive and Descriptive Priced CATALOGUE of FLOWER and VEGETABLE SEEDS for 1859 forwarded to all parts of the world post free.

Seed Warehouse, Centre Avenue, Covent Garden Market, London, W.C.

COMMON LAURELS.

S. PONSFORD begs to announce to the Trade or other extensive planters that he has a large Stock of the above, from 2 to 5 feet high, bushy, which he is prepared to supply on reasonable terms.

Also a fine Stock of Dwarf-trained PEACHES, NECTARINES, APRICOTS, &c., of the leading varieties. Standard APPLES, PLUMS, &c.

S. P. would also call attention to his Standard and Dwarf ROSES, most of the leading kinds of which he can still supply in fine healthy condition. Prices on application.

CATALOGUES of GENERAL NURSERY STOCK forwarded on receipt of one stamp.

Loughborough Park Nurseries, Brixton, S.

TO THE TRADE.

JOHN PALMER, NURSERYMAN, Annan, begs leave to inform his Friends and the Trade generally, that he has on hand the following—all of excellent quality—which he is disposed to offer on very reasonable Terms:—

SEEDLINGS.

4,000,000 1-year Larch	40,000 1-year Laburnum drills
1,000,000 2-year Scotch Fir.	100,000 2 year Weymouth Pine
1,000,000 2-year Spruce	100,000 1-year Pear stocks, drills
200,000 1-year Beech	100,000 1-year Crab stocks, drills
300,000 1-year Alder	100,000 1-year Wild Cherry stocks, drills
300,000 1-year Oak, drills	100,000 1-year Portugal Laurel
100,000 1-year Turkey Oak, drills	200,000 1-year Yew
100,000 1-year Spanish Chestnuts, drills	50,000 1-year bedded American Arbor-vitæ
100,000 1-year Horse Chestnuts, drills	20,000 bedded common Laurel
200,000 2-year Ash, drills	20,000 bedded Portugal Laurel

TRANSPLANTED.

300,000 2-year tr. Larch	100,000 2-year tr. Spruce
100,000 2-year tr. Scotch Fir	400,000 2-year tr. Thorns

Prices to be had on application, and all orders will be promptly and carefully attended to. Carriage will be prepaid to London, Liverpool, Birmingham, Newcastle, Glasgow, and Edinburgh, and the half thereof charged to the buyer.

FOREST AND ORNAMENTAL TREES.

THOMAS IMRIE AND SONS, NURSERYMEN, Ayr, beg to inform their Customers and the Trade generally that they have on hand the following well-grown plants, viz.:—

TRANSPLANTED FOREST TREES.

30,000 Alder, 2 to 4 feet	300,000 Larch, 2 year 2 year, 2½ to 3½ feet
60,000 Ash, 2 to 3½ feet	400,000 Scotch Fir, 1 year 2 year
150,000 Beech, 1½ to 3½ feet	200,000 do. 2 year 2 year
20,000 Elm, 3 to 4 feet	400,000 Spruce Fir, 2 year 2 year, 12 to 18 inches
40,000 Oak, 2½ to 3½ feet	200,000 Privet, 2½ to 3 feet
20,000 Plane, 2 to 3 feet	500,000 Thorns, 2 and 3 year (STRONG)
20,000 Black Italian Poplar, 4 to 8 feet	20,000 Laburnum, 3 to 5 feet
10,000 Lombardy do., 3 to 6 ft.	
400,000 Larch, 2 year 1 year, 2½ to 3½ feet	

SEEDLINGS.

100,000 Ash, 2 year	500,000 Beech, 2 year (drilled)
1,000,000 Scotch Fir, 2 year	200,000 Oak, 1 year (do.)
1,000,000 Norway Spruce, 2 year	50,000 Laburnum, 1 year
20,000 Portugal Laurel, 1 foot	20,000 Common Bays, 1 to 3 feet
10,000 do. do., 2½ to 4 ft.	

50,000 Rhododendrons, 6 inches to 4 feet, and other Evergreens in great variety.

Dwarf-trained Apples, Pears, Peaches, Nectarines, and Apricots. Rider-trained Peaches, Nectarines, and Apricots.

Gooseberries, Currants, Seakale, Asparagus, &c.

Price Lists on application.

CHEAP AND SELECT NURSERY STOCK.

WILLIAM JACKSON AND CO., Bedale, Yorkshire, beg to offer the following at annexed very reasonable prices. Having a soil peculiarly suitable for the growth of all kinds of Trees and Shrubs, they possess a constitution and stamina hardly ever seen in nurseries.

	£	*s.*	*d.*
12 dwarf growing hardy Rhododendrons, by name, nice bushy plants, scarlet, crimson, blush, &c..	1	0	0
12 Rhododendron campanulatum, 1½ to 2 ft., large..	1	10	0
12 do. standards, good heads	6	0	0
12 Roses, standards, on good stems, best prize varieties (4*l.* per 100), selected plants, 12*s.* to ..	0	18	0
12 Roses, dwarfs, budded, best prize varieties ..	0	9	0
12 new Persian crimson Lilac (standards 18*s.*) ..	0	9	0
12 Berberis Darwini, very pretty (each, 2*s.*) ..	0	12	0
12 Kalmia latifolia, new scarlet with flower-buds ..	3	0	0
100 dwarf Roses, on own roots, including yellow ..	1	10	0
100 evergreen and flowering Shrubs, two of a sort ..	2	0	0
100 common Laurels, 1½ to 2½ feet, strong (70*s.* p. 1000)	0	10	0
100 do. do., 3 to 5 feet, strong (100*s.* per 1000)	0	15	0
100 Arbor-vitæ, 4 to 5 feet, grown singly, fine plants	3	0	0
100 Green Tree Box, best varieties, do. do., 3 to 4 feet	2	10	0
100 Variegated ditto, best variety, grown singly, 3 to 4 feet	3	0	0
100 Green Hollies, twice transplanted, 1 to 2 feet (60*s.* per 1000)	0	8	0

200,000 true Scotch Fir transplanted, at 10*s.* per 1000.
500,000 Larch, transplanted, 1 foot up to 4 feet, cheap.

FRUIT TREES, per dozen.

Cherries, Pears, Plums, and Apples, strong dwarfs ..	0	9	0
Do. do. do. standards ..	0	18	0
Gooseberries and Currants, best kinds	0	3	0

Seakale, strong, 2 years old, 5*s* per 100; 40*s.* per 1000.
Do. do. 3 years old, 6*s.* per 100; 50*s.* per 1000.
Asparagus, 1 year old, 10*s.*; 2 years, 20*s.*; 3 years, 30*s.* do.
Rhubarb, best kinds, 6*s.* to 12*s.* per dozen.

A reference or remittance is respectfully solicited from unknown correspondents. The Trade supplied.

SUPERB DOUBLE BALSAMS.

F. AND A. SMITH are now sending out Seed of their superb BALSAMS, which are unrivalled for size, form, brilliancy of colour, doubleness of flower, and habit of plant.

In collections of nine separate colours	2*s.*	6*d.*	
,, ,, mixed ,, ...	2	0	
,, ,, ,, ,, half quantity	1	0	

The above are *genuine only* in our sealed packets, and may be had of most respectable Nurserymen and Seedsmen in the United Kingdom.—Dulwich, Surrey, S.

SEED POTATOES from the North of Scotland.—

The following varieties, carefully grown by the Subscribers for several years, and recommended for seed:—

FLUKES: DALMAHOYS.—A variety allied to the Regent, but 3 to 4 weeks earlier in redness.

PROTESTANTS.—A late White variety; large cropper, and has hitherto escaped disease. Price of each kind, 12*s.* per 2-cwt. sack, free to London or Newcastle.

Orders and remittances to be addressed to ALEXANDER SIMPSON, Beauly, Inverness-shire, who refers to the Editor of the *Agricultural Gazette*.

FRUITING VINES.

JOHN AND CHARLES LEE beg to offer extra strong short-jointed and well-ripened FRUITING VINES of the following kinds:—

BLACK HAMBURGH	BLACK FRONTIGNAN
CHAMPION HAMBURGH	WHITE FRONTIGNAN
MILL HILL HAMBURGH	BLACK PRINCE
GOLDEN HAMBURGH	ROYAL MUSCADINE
MUSCAT OF ALEXANDRIA	BIDWELL'S SEEDLING
	BOWOOD MUSCAT.

Nursery and Seed Establishment, Hammersmith, London.

GRAPE VINES FROM EYES.

JOHN AND CHARLES LEE beg to offer an immense stock of strong well-ripened VINES FROM EYES, of the following kinds:—

Alicant	Hamburgh, Pope's
Barbarossa	,, Victoria
Bidwell's Seedling	Hâtif de Jura
Black Cluster	Isabella
Black Constantia	Lady Down's Seedling
Black Prince	Marchioness of Hastings
Blanche Vigne	Muscadine, Royal
Calabrian Raisin	,, Parsley leaved
Charlsworth Tokay	Muscat, August
Chasselas Frocklaboulay	,, Bowood
Chasselas Musqué	,, Cannon Hall
Duzetto	,, Hamburgh
Esperione	,, Noir Hâtif
Frontignan, black	,, of Alexandria
,, grizzly	,, of Fontainebleau
,, white	Pitmaston Cluster white
Hamburgh, black	Raisin des Carmes
,, Champion	Syrian
,, Dutch	Trebiana
,, golden	Trentham Black
,, Mill Hill	Tripoli
	West's St. Peter's

Nursery and Seed Establishment, Hammersmith, London.

FRUIT TREES IN POTS.

JOHN AND CHARLES LEE have now the largest and finest stock of FRUIT TREES IN POTS in a bearing state for FORCING AND ORCHARD HOUSES ever offered. They consist of the following kinds, a CATALOGUE of which may be had on application:—

APRICOTS	FIGS	PEARS
PEACHES	PLUMS	APPLES.
NECTARINES	CHERRIES	ALSO,

VINES AND STRAWBERRIES.

Nursery and Seed Establishment, Hammersmith, London.

FRUIT TREES.

YOUELL AND CO., in offering the following, beg to remark that the greatest care has been observed in working only such kinds as possess sterling merit, all of which may be depended upon as correct to name.

	Per doz.—£	*s.*	*d.*
Apples, Dwarf Maiden	0	9	0
,, ,, two years cut back	0	12	0
,, ,, trained	1	4	0
Apricots, dwarf trained .. .. .. 1*l.* 16*s.* to	2	2	0
Cherries, standard	0	18	0
,, dwarf maiden	0	12	0
,, ,, trained	1	16	0
Currants, Black Naples	0	4	0
,, Ogden's black	0	4	0
,, long-bunched red Dutch	0	4	0
,, short-bunched red Dutch	0	3	0
,, large red Grape	0	3	0
,, large Cherry red	0	6	0
,, Victoria or Raby Castle, very fine large red	0	4	0
,, Wilmot's white Grape	0	4	0
,, large white Dutch	0	4	0
,, Fox's red Grape	0	4	0
,, Knight's sweet red	0	6	0
,, ,, large red	0	6	0
Figs, of most approved kinds, 2*s.* 6*d.* each.			
Gooseberries, 100 of the finest varieties by name (including the best of the Lancashire Prize sorts) selected for size and flavour, 30*s.* per 100	0	4	0
Medlars, standards, 2*s.* 6*d.* each.			
Peaches and Nectarines, dwarf trained .. 1*l.* 16*s.* to	2	2	0
Pears, dwarf maiden	0	9	0
,, ,, trained .. ..24*s.* to	1	16	0
,, pyramidal trees, on Quince stocks	0	18	0
Plums, dwarf maiden	0	12	0
,, ,, trained .. ..24*s.* to	1	10	0
Quinces of sorts	0	9	0
Raspberries, Fastolff "true" (as originally sent out by us) .. .. .. per 100	0	10	0
,, large white .. .. ,,	0	18	0
,, Magnum Bonum .. .. .. ,,	1	5	0
,, Carter's Prolific .. .. per doz.	0	6	0
,, New monthly fruiting .. per 100	0	18	0
Strawberries, a collection of all the most approved sorts .. .. per 100	0	3	6

Vines from eyes, in pots, fine, according to age, 3*s.* 6*d.* to 5*s.* each.
Filberts of best kinds, 6*s.* per dozen.

ASPARAGUS AND SEAKALE.

YOUELL & CO. having a large Stock of the above growing on the Sea Coast, of the finest quality, beg to offer it at the following prices:—

ASPARAGUS, GIANT, two years ..	2*s.* 6*d.* per 100.
,, three years	3*s.* 6*d.* ,,
SEA KALE	6*s.* 0*d.* ,,

RHUBARB.—Myatt's Victoria, Myatt's Linnæus, Mitchell's Royal Albert, strong roots, 8*s.* per dozen.
Hawke's Champagne Rhubarb, 9*s.* per dozen.
Artichokes, Globe and Pine-apple shaped, 6*s.* per dozen.
Dioscorea Batatas (Chinese Potato), 6*s.* per dozen.

All orders of 2*l.* and upwards are delivered Carriage Free to London, Manchester, Newcastle, and Hull, as well as to any Railway Station within 150 miles of the Nursery.

Royal Nursery, Great Yarmouth, Norfolk.

CARTER'S EXCELSIOR MELON.—A green-fleshed variety of delicious flavour, netted; fruit averages 4 lbs., requires scarcely any heating, and is very prolific. R. Hogg, Esq., President of the Pomological Society, and Turner and Spencer's "Florist," pronounce this variety to be one of the finest ever tasted. Seeds 1*s.* per packet.—JAMES CARTER & Co., Seedsmen, 238, High Holborn, London, W.C.

MAJOR'S CALCEOLARIA SEED.

MR. HENRY MAJOR, Knosthorpe, near Leeds, begs to announce that he is now sending out the above Seed saved from his unrivalled collection, in packets at 2*s.* 6*d.* each, or three for 5*s.* Post free. If sown this month the plants will bloom about August. Postage Stamps in payment.

THE PRIMULARY.—Expressly for the cultivation of Latter's superb Semi-double Fimbriated CHINESE PRIMROSES of world-wide celebrity, with all the latest improvements in size, shape, substance, and colours. Sealed packets, post free, to all parts of the world on receipt of 2*s.* 6*d.* in stamps.

THOMAS WILD, The Primulary, Handford Road, Ipswich.

HOLCUS SACCHARATUS, or CHINA SUGAR CANE GRASS.—Seed of this lately introduced Food plant can be supplied by NUTTING and SONS in any quantity. Price on application.

Seed Warehouses, 60, Barbican, London, E.C.

HOLCUS SACCHARATUS, or North China Sugar-Cane, 2*s.* per lb. Pamphlet, "A Visit and a Plant," or Hints on the Cultivation of the above, and its Uses. Post free 6*d.*, or gratuitous with all orders for 10 lbs. and upwards.

DIOSCOREA BATATAS, or Chinese Yam; strong roots, 4*s.* per dozen; with directions for cultivation.

JOHN W. CLARKE, Whittlesea, Cambridgeshire.

VERY SUPERIOR BEET.

CHARLES SOUTHBY (late FAIRBAIRN) begs to inform those who gave the above a trial last season, that he can now supply 1 oz. free by Post for 1*s.* 3*d.*; ½ oz. ditto 9*d.*—Clapham, London.

PANSIES (competing varieties), 6*s.* to 9*s.* per doz.
First-Class HOLLYHOCKS, 9*s.* to 12*s.* per doz.

The above plants can be well recommended. Trade price on application.—Apply at CASTAIRS's Nursery, Inverleith Row, Edinburgh.

TO THE TRADE AND OTHERS ENGAGED IN PLANTING.

WILLIAM CORNWELL begs to offer the following, of which he has a large stock on hand, well grown and warranted true to name:—Standard and Dwarf ROSES of all the leading kinds; Dwarf Trained Peaches, Nectarines, and Apricots; Dwarf Maiden Do. Do.; Dwarf Trained Apples, Pears, Plums, &c.; Red and Black Currants; Larch Fir, 2 to 3 feet; Scotch Do., 1½ to 2 feet; Do., 2 to 3 feet; Cedrus Deodara, 2 to 3 feet; White and Yellow Broom, 2 to 3 feet; Double Furze in pots; Cotoneaster microphylla in pots; Irish Ivies in pots; Berberis aquifolium, 2 to 3 feet; Box Edging; Box, green, 2 feet; Laurel, common, 2 to 3 feet and 3 to 4 feet, bushy; Passiflora cærulea in pots; Privet Evergreen, 2 to 3 feet; large Scarlet Rhododendrons, 4 to 8 feet; ponticum and Catawbiense, do.; Andromedas, Hardy Heaths, Ledums, &c.; a large stock of most kinds of Evergreens, Flowering Shrubs, Ornamental Trees, &c.—The Nurseries, Barnet, Herts.

GEORGE SMITH, in offering the following six Superb SEEDLING FUCHSIAS, warrants them to give satisfaction. They are all of good growth, fine habit, and free bloomers, viz.:—

ECLAT (SMITH).—This beautiful flower obtained a first-class Certificate at the National Floricultural Society; at the same time the Judges gave the following description in their report of the proceedings of the Society's General Meeting, Oct. 7, 1858:—"First-class Certificate to Fuchsia Eclat. Habit good, a free and abundant bloomer, sepals and tube scarlet, inside of sepal delicate rose, corolla clear white, a decided improvement on the white corolla'd varieties." G. S. has only to add that it is a plant of strong growth and fine habit, in every way calculated to please as well as the Princess of Prussia, being quite distinct. 10*s.* 6*d.* Figured in the "Florist," Feb. 1859.

CHANCELLOR (SMITH), see report of the National Floricultural Society, July 22, 1858.—Certificate of Merit to Fuchsia Chancellor; character and habit first-rate, form good, size medium, substance fine, scarlet crimson tube and sepals, with violet purple corolla. The tube of this flower was considered rather too short, or it would have received a higher award.

SCIPIO (SMITH), see report of the National Floricultural Society, Aug. 5, 1858.—First-class Certificate to Fuchsia Scipio; habit dwarf, tube short, sepals broad, corolla bold and expanding, colour coral red sepals, with violet purple corolla, a great improvement on existing globosa varieties, and remarkable for its distinctness and boldness in bud; 10*s.* 6*d.*

FASCINATION (SMITH), tube rather shorter than the Princess of Prussia, the sepals broader, the corolla very large and pure, seen to great advantage by the graceful manner in which the sepals reflex; 7*s.* 6*d.*

PERICLES (SMITH), a brilliant flower of average size, very smooth and good form, sepals crimson scarlet, broad and well reflexed, corolla violet purple, also an abundant bloomer; 7*s.* 6*d.*

GOLDEN PLOVER, a flower in form and colour of Souvenir de Chiswick. This is particularly recommended for the elegant foliage, which is of a golden green heavily veined with purple lake, giving the plant a conspicuous and splendid appearance, fine habit; 7*s.* 6*d.*

NEW VERBENAS.

G. S. can confidently recommend the following three New Verbenas as distinct, and worthy to be added to all good collections, viz.:—

CYRUS (SMITH), brilliant rosy purple, primrose eye, fine form, a strong grower; 5*s.*

MARS (SANKEY), brilliant crimson scarlet, conspicuous lemon eye, particularly recommended as a bedding variety; received a Certificate at the National Floricultural Society; 5*s.*

STRIATA PERFECTA (SMITH), bright lavender, with broad white stripe, of good form and habit. This is one of the most distinct and beautiful Verbenas that has been offered for years for all purposes; 5*s.*

SEEDLING CINERARIAS.

Three Cinerarias raised by Mr. Sharman, of Dulwich, and exhibited at the National Floricultural Society, where they obtained first-class Certificates. G. S. is happy to announce that they are now ready, in strong plants, at 7*s.* 6*d.* each, to be sent out by him, viz.:—

LADY PALMERSTON (SHARMAN), white, rosy purple tips, with dark bold disc, well proportioned, and of general good properties.

MARY QUEEN OF SCOTS (SHARMAN), white, well defined, bright rosy purple tips.

PRESIDENT (SHARMAN), white, deeply-tipped purplish crimson, dark and fine disc.

A CATALOGUE of all the newest and best kinds of GERANIUMS of Show, Fancy, Spotted, and French, Fuchsias, Verbenas, Dahlias, and Petunias, is just published, and will be forwarded in exchange for one postage stamp.

Tollington Nursery, Hornsey Road, Islington, London, N.

HARDY SCARLET RHODODENDRONS AND AMERICAN PLANTS GENERALLY.

WATERER AND GODFREY'S PRICED and DESCRIPTIVE CATALOGUE of the above beautiful tribe of plants, as exhibited by them in London and Manchester, may now be had on application inclosing one stamp for postage. The Catalogue also furnishes the heights and prices of their unequalled stock of Conifers and Evergreens, &c. Catalogues may also be had of Messrs. J. MAY & Co., Seedsmen, &c., Wellington Street, Strand.

Knap Hill Nursery, Woking, Surrey.

RHODODENDRONS.

JOHN WATERER'S CATALOGUE OF UNRIVALLED HARDY SCARLET AND OTHER CHOICE RHODENDRONS, as Exhibited by him at the Royal Botanic Gardens, Regent's Park, London, is published, and will be forwarded on application.

☞ This List is recommended as a work of reference, as it contains accurate descriptions of all the esteemed varieties.

The American Nursery, Bagshot, Surrey, near the Sunningdale Station, South Western Railway.

GARDEN SEEDS.

THOMAS KENNEDY AND CO., NURSERYMEN and SEEDSMEN, Dumfries, N.B., beg respectfully to intimate that they have got to hand their VEGETABLE AND FLOWER SEEDS, and are now prepared to execute orders for the same.

Their DESCRIPTIVE PRICED CATALOGUE FOR 1859, "which is of a most practical character, supplying all the information needed by the purchaser," is now ready and will be sent post free on application.

Free delivery. For particulars see Catalogue.

KITCHEN GARDEN SEEDS.

THOMAS GIBBS AND CO., THE SEEDSMEN TO THE "ROYAL AGRICULTURAL SOCIETY OF ENGLAND," beg to announce that they are now prepared to execute orders for their

COLLECTIONS OF KITCHEN GARDEN SEEDS

for either large or small Gardens, containing a proper selection of all the new and most approved varieties.

PACKETS OF FLOWER SEEDS, containing all the new and choice kinds.

Do. GERMAN IMPORTED FLOWER SEEDS, in the original imported Packets.

DESCRIPTIVE PRICED CATALOGUES forwarded free on application. T. G. & Co.'s PRICED LIST OF AGRICULTURAL AND GRASS SEEDS will be ready early in February.

THOMAS GIBBS AND CO.,

Corner HALF-MOON STREET, Piccadilly, London, W.

VEGETABLE, FLOWER, AND AGRICULTURAL SEEDS.

WILLIAM BARNES'S CATALOGUE of the above is now ready, and may be obtained postage free, upon application. It will be found to contain every article of known value, among them some that cannot be excelled, the stock of which having been saved specially for himself by private and competent friends, he can recommend with the greatest confidence. Every article is warranted of the purest and most genuine kind, as well as very moderate in price.

Camden Nursery, Camberwell.

VEGETABLE AND AGRICULTURAL SEEDS, &c.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that they are now prepared to execute with new and genuine SEEDS all orders they may be favoured with. Their PRICED and DESCRIPTIVE CATALOGUE, containing all new VEGETABLES proved to be good, and all the best of the older varieties, &c., will be forwarded post free on application.

The following are particularly recommended, all being very superior in quality, and valuable acquisitions to the most select collections:—Beet (Pine Apple Short Top), per oz., 2s.; Broccoli Winter White (Snow's), per oz., 3s. 6d.; ditto, Penzance White (Mitchinson's), per packet, 1s. 6d.; Celery, Nonsuch (Ivery's), per packet, 1s.; Cottager's Kale, per packet, 1s.; Lettuce, Alma Cos (Griffin's), per packet, 1s.; ditto, Moor Park Cos, per packet, 1s.; Marrow, Custard (Thomson's), per packet, 6d.—Paradise Nursery, Seven Sisters and Hornsey Road, Holloway, London, N.

AGRICULTURAL, FLOWER AND KITCHEN GARDEN SEEDS.

GARAWAY, MAYES, AND CO. invite attention to their Establishment for the sale of all kinds of AGRICULTURAL, FLOWER AND KITCHEN GARDEN SEEDS, their long connection with the trade and the well-known respectability of their house being a sufficient guarantee that all articles supplied by them will be of the very best quality. All seeds are proved by them before sending out, and their stock being large, and purchased from the first houses in the trade, offers great inducement to purchasers.

Their Stock of AGRICULTURAL SEEDS is produced from the best sources, and all are guaranteed by them to be of the best quality.

GRASS SEEDS of all kinds for Lawns or permanent Pasture; and the high testimonials they have received from their customers warrant them in stating that their quality is unsurpassed.—Catalogues on application.

Durdham Down Nurseries, Bristol.—Feb. 12.

TANSLEY NURSERY, NEAR MATLOCK.

TO GENTLEMEN PLANTING AND THE TRADE.

J. SMITH begs to offer his STOCK OF TREES AND SHRUBS, of various sizes, and in addition to his general stock of the leading kinds, he has this season to offer an Extra Stock of many hundred thousands of fine Larches, Scotch Firs, and Highland Pines; a large quantity of Evergreens, Privets, Mahonia aquifolia, and other plants for planting under cover. Many things are grown in large quantities, and will be sold on advantageous terms to the trade and gentlemen requiring large lots.—Catalogues sent free on application. The Nurseries are on the Mansfield and Nottingham roads, and 2 miles from Matlock Bridge Station on the Midland Railway.

FINE HEALTHY ROSES.—
STANDARDS .. .. .. 18s. per doz.
DWARFS (on the Manetti) .. 12s. ,, ,,

As the weather still continues mild and favourable for planting, GEORGE CLARKE begs to state he has still a fine stock of all the leading kinds to offer at the above prices, the selection being left to him. The Plants are all healthy and well rooted, therefore calculated to give the greatest satisfaction. Plants carefully packed for any distance. Carriage of all packages paid to London; and in all orders amounting to 20s. plants are added to compensate for distant carriage.

GEORGE CLARKE, The Nursery, Brixton Hill.

DWARF ROSES ON MANETTI STOCKS & CINERARIAS.

THE following ROSES are offered in fine Plants with shoots 2 to 4 feet long, at 8s. 6d. per doz., true to name:—Jules Margottin, La Reine, Baronne Prevost, Coupe d'Hébé, Wm. Griffiths, Duc de Cazes, Wm. Jesse, Duchess of Sutherland, Victoria (Paul's), Paul Ricaut, Le "Leo" des Combats, Earl Talbot, Pius IX., Alexandrine Bachmeteff, Madame Domage, Souvenir de la Reine d'Angleterre, &c.

Also the annexed CINERARIAS in 48-inch pots, true to name, 8s. per dozen:—Alma, Admiration, Brilliant (R). Brilliant (L), Lady Paxton, Lord Palmerston, optima, Pride of Uttoxeter, Eupatoria, Purple Standard, Fascination, Magnum Bonum, &c. Post-office Orders payable at Haverhill.

JOHN CHATER & SON, Nurseries, Haverhill.

NEW ROSES FOR 1859.

J. AND J. FRASER, Lea Bridge Road Nurseries, near London, N. E., beg to offer the following NEW ROSES, which may be depended on as being the best selection from the varieties of this year:—

HYBRID PERPETUAL.

Altesse Impériale
Anna de Diesbach
Anna Alexieff
Ardoise de Lyon
Armide
Beauté de Rayghem
Comte de Beaufort
Comtesse de Chabrilland
Empereur de Maroc
Impératrice Eugenie
Orderic Vital
Oriflamme de St. Louis
Princesse Olympie
Virginal

BOURBON.

Docteur Berthet
Edith de Murat
Mdlle. Aline Pierron
Octavie Fontaine

TEA SCENTED.

Mdme. Damaizin
Mdme Joseph Halphen
Reine des Pays Bas

DESCRIPTIVE PRICED LIST of the above may be had on application.

NEW HYBRID PERPETUAL ROSES FOR 1859.

E. P. FRANCIS offers the following NEW ROSES which he will be prepared to send out on and after the first week in May, at 5s. each. They have been carefully selected from amongst the numerous new French varieties:—

Anna Alexieff
Stephanie Beauharnais
Ambroise Verschaffelt
Imperatrice Eugénie
Albert de Stella
Virginale
Altesse Impériale } L'Oriflamme de St. Louis
Ardoisée de Lyon } Lord Elgin
[These two splendid varieties were awarded the Gold Medal as Seedlings at Lyons.]
Comte de Beaufort
Docteur Bretonneau
Empereur de Maroc
Armide
Princess Olympie
Anna de Diesbach
Beauté de Royghem
Comtesse Cecile de Chabrilland
De la Mothe
François Arago
Madame Bruny
Orderic Vital
Salomon
Reine de la Cité
François 1st
Mignard
Madame Jenny

Hertford Nurseries.

THE LARGEST STOCK OF

TEA-SCENTED ROSES in the kingdom.—Upwards of 10,000 DWARF TEA ROSES in pots, fine healthy plants now ready for sending out, consisting of all the best leading kinds, and comprising among others—

750 Mélanie Willermoz
500 ,, Oger (yellow)
500 Vicomtesse de Cazes (do.)
500 Souvenir d'un Ami
500 Safrano
400 Devoniensis
400 Adam
300 Maréchal Bugeaud
300 Madame Bravy
300 Le Pactôle, yellow
300 Niphetos, fine white
300 Goubault
300 Canari (yellow)

400 Miss Gray or Isabella Gray, TRUE, yellow Rose, &c.

Plants presented to compensate for carriage.—Address WM. WOOD & SON, Woodlands Nursery, Maresfield, near Uckfield, Sussex.

SPECIMEN TEA-SCENTED ROSES, in 8-inch pots. Strong plants for Exhibition, from 3s. 6d. to 5s. each. The same kinds and many other leading sorts can be supplied as Half-specimen Plants, in 6-inch pots, at 24s. and 30s. per doz.

TEA-SCENTED.—Buret, Blanche de Solville, Bougère, Canaris Clara Sylvain, Comte de Paris, David Pradel, Elize Sauvage, Eugénie Desgaches, Général Tartas, Goubault, Jeannie Deans, La Sylphide, Laurette, Le Cameléon, Le Pactôle, Léontine de Laporte, Madame Bravy, Maréchal Bugeaud, Mélanie Willermoz, Mélanie Oger, Nina, Safrano, &c.

The Subscribers will be happy to furnish extra fine strong plants of the above named Roses adapted for Exhibition.

Early orders are respectfully solicited to ensure the strongest plants.—WM. WOOD & SON, Woodlands Nursery, Maresfield, near Uckfield, Sussex.

A COLLECTION OF SUPERB YELLOW ROSES.

TEA-SCENTED	Dwarf Plants in 4-inch pots. Each.	in 6-in. pots. Each.
Barillet Deschamps, pale lemon	1s. 6d.	2s. 6d.
Canari, bright yellow	1 6	2 6
Elize Sauvage, yellow, very fine	2 0	3 0
Gloire de Dijon, fawn shaded salmon..	1 0	2 0
Le Pactôle, lemon; yellow centre	1 6	2 6
Louse de Savoie, lemon yellow	2 6	3 6
Mélanie Oger, pale yellow	1 6	2 6
Pauline Plantier, yellowish white	1 6	2 6
Vicomtesse de Cazes, bright orange yellow ..	2 0	3 0
Yellow, or Jaune; pale sulphur	1 6	2 6
YELLOW NOISETTE ROSES.		
Adelaide Pavie (new) pale lemon	3 6	
Augusta, sulphur; similar to Solfaterre ..	1 6	2 6
Claudia Augustin, white, with yellow centre	3 6	
Lamarque, lemon; very large	1 6	2 6
Madame Schulz, canary-shaded carmine ..	2 0	3 0
Miss Gray, or Isabella Gray; bright yellow..	2 6	3 6
Narcisse, sulphur yellow	2 0	3 0
Solfaterre, bright sulphur yellow	1 6	2 6

WM. WOOD & SON beg leave to offer fine strong plants of the above-named superb yellow Roses. Plants will be presented to compensate for distant carriage.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

THE BEST NEW ROSES FOR 1859.

WM. WOOD AND SON will be prepared to send out strong healthy plants in pots of the following new ROSES, about the end of April, which are offered as the best of the varieties to be sent out this season:—

HYBRID PERPETUAL.

Albert de Stella
Anna de Diesbach
Anna Alexieff
Armide
Ardoisé de Lyon
Altesse impériale
Beauté de Royghem
Bouquet de Marie
Comte de Beaufort
Comtesse Cecile de Chabrillan
Empereur de Maroc
Impératrice Eugénie
Joseph Vernet
Lord Elgin
Le Mont Vésuve
Mathilde de Mondeville
Orderic Vital
Oriflamme de St. Louis
Princesse Olympie
Salomon
Virginal
Madame Bruny

BOURBON.

Aline Pierron
Comtesse de Barbantanne
Docteur Berthet
Edith de Murat
Molière
Octavie Fontaine

NOISETTE.

Beauty of Greenmount
Cornélie

TEA-SCENTED.

Enfant de Lyon
Homère
Madame Damaizan
,, Darru
,, Falcot
Madame Joseph Halphen
Ophelia
Roi des Pays Bas
Socrate

Good Plants will be supplied at 5s. each, with the usual discount to the Trade.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

BUSBY'S GOLDEN HAMBURGH GRAPE.

JAMES VEITCH, JUN., begs to announce that he offers PRIZES of Five Guineas for the Best Three Bunches of the above Grape at the two following Exhibitions:—

June 29 and 30, — London Horticultural Society, at St. James's Hall .. .. 5l. 5s.
September 7 and 8, at the Crystal Palace .. .. 5l. 5s.
Royal Exotic Nursery, King's Road, Chelsea.

FIVE SILVER CUPS

WERE AWARDED TO

A. PAUL AND SON, NURSERYMEN, Cheshunt, Herts, for five Collections of ROSES at the Grand National Rose Show held in St. James's Hall, London, in July. Also FIVE FIRST PRIZES at the Royal Botanic Society's Shows in May and June last. The sorts which won these prizes are now offered at 18s. to 24s. per dozen for standards, 12s. to 18s. per dozen for dwarfs. A PRICED DESCRIPTIVE CATALOGUE forwarded on application, post free.

THE GREAT VINE AT HAMPTON COURT.

THE SUBSCRIBERS being the holders of the Royal Kitchen Gardens, Hampton Court, are enabled to offer genuine the famous and truly excellent HAMPTON COURT BLACK HAMBURGH GRAPE.

Strong well-ripened plants in 9-inch pots, 42s. and 60s. per doz.
,, ,, fruiting plants in 12-inch pots, 10s. 6d. each.

If purchased in large numbers a considerable reduction will be made in price.—JACKSON & SON, Nurseries, Kingston, S.W.

THE NEW MUSCAT HAMBURGH VINE.

MESSRS. ARTHUR HENDERSON AND Co. have much pleasure in directing the attention of Grape Growers to the new Muscat Hamburgh, Plants of which they are now sending out. In consequence of the extraordinary demand for the large three-guinea fruiting plants, they are unable to supply any more of this size, but they still have excellent Plants at two guineas, suitable for fruiting next spring in pots, and also good plants at one guinea each.

Pine-apple Place, Edgware Road, London, W.

NEW SEEDS FOR 1859.

WM. CUTBUSH AND SON beg respectfully to intimate that their PRICED CATALOGUE OF VEGETABLE AND FLOWER SEEDS, &c., is now ready post free on application. WM. C. AND SON devote particular attention to this department of their business, and most of the choicer kinds of culinary seeds and roots are saved under their own inspection, and they can confidently guarantee the quality of all offered.—Highgate Nurseries, London, N. Established A.D. 1695.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Stove, Greenhouse, and Hardy Ferns, Miscellaneous Stove, Greenhouse, and Hardy Plants, Variegated and Ornamental foliaged Plants, Conifers, Roses, Rhododendrons, Indian Azaleas, Gloxinias, Fuchsias, Cactuses, &c., is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

CALLICARPA PURPUREA.

JOHN STANDISH, the exhibitor of the above (at St. James's Hall), can supply a few good plants at 7s. 6d. each. The following passage from Dr. Lindley's leading article in the *Gardeners' Chronicle* for Nov. 20 will give an idea of its beauty:—"Callicarpa purpurea, quite insignificant when in flower, was beautiful in its winter dress of innumerable rich purple berries, about the size of swan shot." It is easily cultivated, and does well in a cold greenhouse or conservatory planted out, where it will produce thousands of bright purple berries resembling glass beads, and remaining on nearly the whole winter.—Bagshot, Feb. 12.

HOLLYHOCK SEED FROM NEW VARIETIES.

J. CHATER AND SON offer the above from 12 new varieties, separate packets, the collection, 3s. 6d.
24 varieties, best older sorts, 3s. 6d.
Best mixed, 20 sorts, 200 seeds, 1s. 6d.

J. C. & Son feel confident the above will give satisfaction, having been saved with great care.

Strong seedling plants, 20s. per 100.

If sown now will flower by September.

Nurseries, Haverhill.

100 GOOD PHLOXES FOR 40s.
50 Ditto Ditto for 25s.
25 Ditto Ditto for 12s. 6d.
12 Ditto Ditto at 6s. and 9s. per doz.

The best and newest continental varieties from 12s. to 18s. per dozen.

CATALOGUES sent free on application, and extra plants presented for distant carriage.

WM. WOOD & SON, having imported all the best and newest PHLOXES from the Continent, will be happy to supply them in collections as stated above, in fine strong plants grown in the open ground.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

SEEDS FOR 1859.

HARGRAVE'S SELECTIONS OF KITCHEN GARDEN SEEDS are arranged in quantities and sorts suitable for a succession of Vegetables through the whole year. That adapted for a moderate-sized garden contains 10 pints of the choicest kinds of Peas, 6 pints of superior garden Beans, 3 pints of very fine French or Kidney Beans, and a fair assortment of small Seeds too numerous for specifying here. Cash price, ONE GUINEA, package included.

C. W. HARGRAVE, Nurseryman, Florist, Seed Grower, and Importer.—The Nursery, Winchmore Hill, N.

R. LAING, TWICKENHAM NURSERIES, S.W., begs to offer Dwarf-trained Moorpark Apricots, 5s. each; Wistaria sinensis (very strong), 18s. per doz.; strong Boursault, Ayrshire, and other Climbing Roses, 12s. per doz.; Standard and Dwarf Roses of all the leading sorts; 18s. and 12s. per doz.; Laing's Prolific Red Raspberry, one of the best in cultivation, 12s. per 100. The following choice selected SEEDS at 6d. per packet:—Delphinium formosum, German Aster, New Double Sunflower, Double Dwarf Mixed Rocket Larkspur, Camellia-flowered Balsam, superior Crimson Candytuft.

TO THE TRADE.

THOS. CRIPPS, NURSERYMAN, &c., Tunbridge Wells, Kent, respectfully offers the following fin strong SPANISH CHESNUT PLANTS, 4 feet to 6 feet in height, 40s. per 1000; Blush CHINA ROSES, fine strong plants, 15s. per 100; Crimson do., very strong, 25s. per 100; fine Standard and Half-standard ROSES, 60s. per 100; good do., do., 50s per 100; Double Yellow PRIMROSE, 20s. per 100 or 400 for 3l.; PINUS INSIGNIS and P. RADIATA from Seed, 15 inches to 28 inches, 6l. per 100; MANETTI STOCKS, 50s. per 1000; do. second size, 40s. per 1000; IRISH YEWS, 2 feet to 3 feet, 50s. per 100; Hardy HEATHS, a fine collection, 25s. per 100; large plants, good do., 20s. per 100; LARCH FIR, fine stout plants, 2 to 3 feet; LONICERA SHEPHERDI, or new Scarlet-trumpet HONEYSUCKLE, fine strong plants, 4s. per dozen; RHODODENDRON MAXIMUM, fine bushy plants, 18 inches to 2 feet, 60s. per 100. Orders from unknown correspondents unaccompanied by a remittance will not be noticed.

FRUIT TREES FOR ORCHARD-HOUSES.

HUGH LOW AND CO. have a fine stock of PEACHES in the very best health, grown as bushes and covered with blossom-buds. They are of two sizes; the larger, being from 3 to 4 feet high and as much through, are admirably adapted for planting out in the borders of orchard-houses or for growing in tubs. The second size, about 2 to 2½ feet high, and bushy, are for pot culture. The whole having been transplanted last year will move with abundance of fibrous roots. Prices and lists of sorts on application.

Upper Clapton Nursery, London, N.E.

NEW SORTS OF SEEDS.—

	Per packet—s.	d.
CUTHILL'S NEW ZEALAND RUNNING BEAN ..	2	6
TURNER'S COTTAGERS' KALE	1	0
SUTTON'S SUPERB WHITE COS LETTUCE	1	0
HOLCUS SACCHARATUS (or Sorghum)	0	6
TRUE ASPARAGUS KALE	0	6

SUTTON & SONS can supply the above, post free, all warranted new and genuine.

Royal Berkshire Seed Establishment, Reading.

IGNAME OF CHINA (DIOSCOREA BATATAS).

M. M. PAILLET AND SONS, of Paris, first Growers of the Igname from China, a nutritious root which has been fully appreciated in this country by all those persons who have been able to partake of it in its state of perfection, have decided upon exporting a quantity of it to England at such prices that the English public, as well as amateurs, may be enabled to appreciate its utility and put an end to all the comments that have been made by certain persons incapable of judging its merits. The result of the first crop on a large scale has been most satisfactory (about 30,000 kilos or 60,000 lbs.); this alimentary tubercle may be treated in the same manner as the Potato, with the exception that they should be planted more thickly in order to reduce the expense attendant on the gathering in of the crop.

Messrs. PAILLET & SON feel confident that after a fair trial this new Chinese vegetable will be found an agreeable and useful acquisition to the table, and that it will be fully appreciated in England, and increase the number of those vegetables we already possess.

PRICES:—The 100 lbs. weight, 2*l.* Persons desirous of obtaining Choice Roots can have them forwarded in cases of 50 or 100 at the price of 2*l.* 5*s.* or 4*l.* 5*s.* Those wishing to make a plantation more or less considerable can have portions of the Roots fit for planting at the following prices:—One year's growth, per 100, 12*s.*; ditto per 1000, 5*l.* For young bulbs two years' growth, per Quart, 3*s.* 6*d.*; ditto per Gallon, 12*s.* 6*d.*

All orders sent free of carriage to London with case and packing included in the above prices.

All letters enclosing a Money Order, addressed post free to Mons. Philipp, agent of the Messageries Impériales, Regent Circus, Piccadilly, London, will be immediately attended to.

MESSRS. WATERER AND GODFREY respectfully invite the attention of parties engaged in planting to the following list of very desirable plants, all of which may be seen growing in the open quarters of their Nursery, and are in the finest possible condition for transplanting:—

Araucaria imbricata, 9 to 12 inches, 5*l.* per 100; 40*l.* per 1000
,, ,, 1½, 2, 3, 4, 5, 6, and 8 feet high. Our stock of this plant exceeds 100,000
Wellingtonia gigantea, stout handsome plants from seed, 84*s.* per dozen; 25*l.* per 100. These are all in the open ground, and are believed to be the finest lot of seedling plants in the Trade.
Cedrus Deodara, 1½ to 2 feet, 18*s.* per dozen; 6*l.* per 100
Do. 3, 4, 5, 6, 7, 8, 10 and 12, and 15 feet. Our stock of Deodars at the present moment occupies several acres of land; they have been constantly removed, and with fair usage not one in a thousand would fail. We offer them on very advantageous terms either in large or small quantities
Cedrus atlantica, 4, 5, 6, and 7 feet
Cupressus macrocarpa, magnificent plants, 7, 8, and 10 feet high
,, Lawsoniana, stout handsome plants from seed, 18 inches, by the dozen or 100
Abies nobilis, from imported seed, 6*l.* 6*s.* per doz.; 40*l.* per 100
,, do. 1, 2, and 3 feet high
,, Nordmanniana, a large number of beautiful plants, all from seed, 2, 3, 4, 5, and 6 feet high
,, Pinsapo, do. do.
[We believe we are justified in stating our stock of the three last-mentioned Firs offers a selection to be met with in no other Nursery.]
,, Douglasi, 6, 7, 10, and 12 feet
,, orientalis, 3, 4, 5, and 6 feet
Pinus Benthamiana, stout seedling plants, about 1 foot, 18*s.* per dozen; 5*l.* per 100; 40*l.* per 1000. Unquestionably the finest of all the long-leaved Californian kinds, and well known to be perfectly hardy. It is the most valuable of all for timber.
Juniper, Chinese, 2, 3, 5, 7, 8, and 10 feet high
Irish Upright, 3, 4, 5, 6, 7, and 8 feet. The Irish and Chinese Junipers are grown by us to a very large extent
Thuja aurea.—This plant originated in our Nursery, and our stock of it offers a choice of many hundred specimens from 1½, 2, 3, 4, and 5 feet high, and measuring from 2 to 10 and 15 feet in circumference. Nothing can well exceed the beauty of these plants, and certainly are to be met with in no other Nursery
Thuja gigantea, stout seedling plants, 1½ to 2 feet high
,, Wareana, 3, 4, 5, 6, 7, and 8 feet
Thujopsis borealis, handsome plants, in quantity, 1½ & 2 ft. high
Taxus, Yew, Common English.—A large quantity, and of all sizes up to 5, 6, and 7 feet
,, Irish Yew, 4, 5, 6, 7, and 10 feet. Many thousands of these beautifully formed plants grown to one stem
,, Golden Yews in large quantities and of all sizes up to 6, 7, and 8 feet
We also have them worked on the Common and Irish Yew as Standards, with heads from 12 to 15 years' growth
Holly, Variegated, Scottica, laurifolia, &c. We hold probably the largest stock of good sized variegated Hollies in the kingdom, especially of the better kinds of silver and gold striped
Rhododendron ponticum, for cover, stout plants, 1½ to 2½ feet, by the 1000. All the well-known proved hardy late blooming kinds, in any quantity, at from 30*s.*, 42*s.*, to 84*s.* per dozen
Standard Rhododendrons of all kinds
Azaleas, stout bushy plants, covered with bloom buds, from 18 inches to 2 feet high, and of all colours, 9*s.*, 12*s.*, 18*s.*, and 24*s.* per dozen; 50*s.*, 75*s.*, to 100*s.* per 100
Hardy Heaths, a first-rate collection, at 35*s.* per 100; 15*l.* p. 1000
Roses, fine Standards, of the most popular kinds, at very low prices.

As well as the above, we are very large holders of the ordinary kinds of Nursery Stock, which may be judged from the fact that the Nursery far exceeds 100 acres in extent of all such things as Laurels, Box, Lilacs, Limes, Purple Beech, and the commoner descriptions of Evergreens and Deciduous Flowering Shrubs. An enormous stock of Fruit and Forest Trees are also grown extensively.

Goods are delivered free to London, Reading, or Reigate. The Nursery is reached in an hour from Waterloo, and conveyances are always to be had at the Woking Station.

CATALOGUES, Priced and Descriptive, will be sent on application, enclosing one postage stamp, to

WATERER AND GODFREY, Knap Hill, Woking, Surrey.

CRYSTAL PALACE.—SURPLUS PLANTS.—The Company having on hand a considerable surplus stock of healthy and well established CAMELLIAS in pots (principally Double Whites), and a few ORANGE TREES, it has been determined to offer such surplus stock for sale. With this view these plants have been separately marked with their prices. Intending purchasers may apply to Mr. EYLES, Superintendent of Interior Gardens; Office in the Corridor of the Central Transept entrance. By order,

February 12. GEO. GROVE, Secretary.

CRYSTAL PALACE.—TO FLORISTS.—The Directors are desirous of receiving TENDERS for the occupation of a Piece of Ground containing rather more than 4 acres, situated between Thicket's Lane, and the Crystal Palace Branch Railway, immediately adjoining the Park, as a FLOWER GARDEN, in connection with a Stall in the Palace, for the sale of Flowers in Pots, Cut Flowers, Bouquets, &c. Further particulars may be obtained at the Secretary's Office, Crystal Palace. By Order,

Crystal Palace, Feb. 12. GEO. GROVE, Sec.

*** The above is well worth the notice of any Country Nurseryman wishing to obtain a connection in London.

LONG-PODDED RUNNER BEANS, a new and very desirable variety raised by J. Harvey, Esq., Oulton High House. The following is the description he gives of it:—Flowers bright pink, Beans curiously marked, very prolific, and handsome in the pod, far superior to the common Scarlet Runner in flavour, and successive crops will produce till the cold of winter cuts them off. 2*s.* 6*d.* per quart.

Lynch's Star of the West Cucumber, true .. 1*s.* 0*d.* p. packet
Ayres's Perpetual Black Spine .. .. .. 1 6 ,,
Melville's Treble Curled Garnishing Borecole 1 0 ,,

Price for the above to the Trade on application.

The Plymouth Seed Company, Plymouth.

NEW ZEALAND RUNNER BEAN, 1*s.* per doz.; 7*s.* 6*d.* per 100.

AUSTRALIAN do. do., a great acquisition, pods similar to Dwarf Beans, 1*s.* per 100.

True COTTAGER'S KALE, 1*s.* per packet.

DAVIS'S INCOMPARABLE NEW BROCCOLI, 1*s.* per packet.

CUSTARD VEGETABLE MARROW, 6*d.* per packet.

PAGE'S IMPERIAL ORANGE GLOBE MANGEL. This variety has superseded all others, 8*d.* per lb.

PAGE'S IMPROVED SUSSEX SWEDE, withstands mildew, ensuring good results from an early plant, 1*s.* per lb.

PAGE & TOOGOOD, Seed Growers and Merchants, Southampton.

POTATOES FOR EARLY PLANTING.

MYATT'S PROLIFIC SEEDLING ASH-LEAF KIDNEY.—For description of this valuable variety, which has again given such universal satisfaction, see Dr. Lindley's report in the *Gardeners' Chronicle* of August 1, 1857, at the Horticultural Society's Garden, wherein it is described as a "better cropper than the old Ash-Leaf, and one of the best early kinds." Price per bushel, 7*s.* To be had of Mr. J. MYATT, Evesham; or of Mr. J. MYATT, Camberwell. A small quantity of Yellow Globe Mangel Seed saved from large selected roots for stock. The trade on application.

THE BEST FLOWER SEEDS FREE BY POST.

THOMAS SHERMAN, SEEDSMAN, &c., begs to offer the following FLOWER SEEDS at 3*d.* per packet, except those priced. Payment received in postage stamps.

Abronia umbellata, pink
Acroclinium roseum, rose
Alonsoa Warzewicsi, scarlet, yellow centre
Aster, French (Truffaut's), mixed
,, new, very dwarf bouquet, mixed
,, new Chrysanthemum-flowered, mixed, 6*d.* per packet
,, pyramidal circle, double white edged with crimson, 6*d.*
Balsam, double, mixed from Smith's varieties, 6*d.*
Calandrinia umbellata, deep crimson (good for beds)
Centranthus macrosiphon nanus (new pink)
Chenopodium atriplis (very ornamental)
Chænostoma polyantha, lilac
Chrysanthemum Pompone, fine mixed, 6*d.*
Clarkia pulchella marginata, rose edged with white
Clintonia pulchella, blue, white, and yellow
Coreopsis tinctoria, fine new quilled variety, 6*d.*
Cosmidium Burridgi, crimson edged with gold
Eschscholtzia tenuifolia, new straw colour
Eutoca alba striata
Fuchsia, fine hybrid, mixed, 1*s.*
Gaillardia picta nana, very dwarf
Gypsophila muralis, scarlet lilac tinge, good for beds
Ipomopsis elegans aurea, orange scarlet
Kaulfussia amelioides rosea
Larkspur tricolor, double branching
Leptosiphon aureum, golden orange centre
Linum grandiflorum coccineum, scarlet
Marigold, very dwarf double French
Nasturtium, new dwarf spotted, 6*d.*
Nemophila marginata, blue edged with white
Nyctarene selaginoides, white and blue orange centre
Obeliscaria pulcherrima
Petunia, fine green edged
Portulacca, fine mixed
Salpiglossis atrococcinea, fine deep scarlet, 6*d.*
Stock, fine German 10-week mixed, 6*d.*
Stock, new Rose Virginian
Tropæolum minus coccineum, new, very dwarf, 6*d.*
Viscaria Dunnetti, new rose, dark eye, 6*d.*
,, cœli rosea alba, 6*d.*
Also about 150 bushels Green Globe Turnips.

A Descriptive Priced Catalogue of Kitchen Garden and Flower Seeds forwarded (and post paid) to any address upon application.—5, Cumberland Place, Newington Butts, London.

GERMAN STOCKS, ASTERS, ETC.

DO NOT PURCHASE MORE SEEDS THAN YOU REQUIRE.

JAMES TYNAN begs to offer FLOWER SEEDS of the choicest kinds in packets to suit the wants of purchasers not requiring them to take large quantities in order to obtain the best varieties.

TRUFFAUT'S PÆONY-FLOWERED ASTERS, the finest grown.—20 varieties in separate colours, in packets, 2*d.* each, any number sent; the same mixed in packets, 3*d.* and 6*d.* each.

NEW CHRYSANTHEMUM-FLOWERED ASTERS.—5 varieties in separate colours, 4*d.* each; the same mixed in packets, 6*d.* each.

FINEST GERMAN STOCKS.—24 varieties in separate colours, 2*d.* each; the same mixed in packets, 3*d.* and 6*d.* each.

Finest large-flowering, 20 varieties in separate colours in packets, 2*d.* each; the same mixed in packets, 3*d.* and 6*d.* each.

DOUBLE GERMAN WALLFLOWER.—6 varieties, separate colours, packets, 3*d.* each; the same mixed, packets, 3*d.* and 6*d.* each.

Very fine PHLOX DRUMMONDI.—In pckts. 4*d.* and 6*d.* each.

The choicest CALCEOLARIA, 6*d.* and 1*s.* per packet.
,, CINERARIA, 6*d.* and 1*s.* ,, ,,
,, GLOXINIA, .. 1*s.* ,, ,,
,, PRIMULA, 6*d.* and 1*s.* ,, ,,
Agent for SMITH'S BALSAMS 1*s.* ,, ,,

Selections of FLOWER SEEDS sent post free:—
No. 1.—50 packets .. .. 12*s.* 6*d.*
No. 2.—25 packets 6 3
No. 3.—12 packets 3 0

Large packets, or by the ounce, at prices equally moderate.

JAMES TYNAN, Importer of Continental Seeds, Seed Warehouse, 68, Great George Street, Liverpool.

SEEDS.

JOSEPH MAY AND CO. beg to announce the arrival of their new VEGETABLE, AGRICULTURAL, AND FLOWER SEEDS, which they have selected with the greatest care. Amongst PEAS they would particularly recommend, as the two best kinds for early sowing, Waite's Daniel O'Rourke and Dickson's Favourite, the latter producing 8 to 14 Peas in a pod, and will do for sowing at any season. COLLECTIONS OF VEGETABLE SEEDS made up from 10*s.* to 20*s.* and upwards, according to size of garden for which they are intended. These collections gave great satisfaction last season.

FLOWER SEEDS in collections: 12 packets, choice seeds, 6*s.*; 30 packets hardy ditto, 5*s.*; 15 packets ditto, 2*s.* 6*d.*, free by post.

CUCUMBER, "Ne Plus Ultra," from specimens, 27 to 31 inches each—straight and handsome—per packet, 1*s.*; all other best kinds, 6*d.* per packet.

MELONS, choicest kinds, 6*d.* and 1*s.*

GOURDS, the large hundredweight and others, 12 packets, free by post, 3*s.*

POTATOES, all the best kinds; Grasses and all kinds of Agricultural Seeds of the best quality.

TREES, PLANTS, AND SEEDS, packed for Australia, &c., at the lowest prices.

1, Wellington Street, Strand, W. C., near Waterloo Bridge.

CHRYSANTHEMUMS—CHRYSANTHEMUMS.

J. H. BIRD, F.H.S., NURSERYMAN, Stoke Newington, the largest grower and most successful exhibitor of the Chrysanthemum in the British Empire, begs to call the attention of the lovers of the above beautiful autumn flower to his matchless collection, the stock of which amounts to upwards of 50,000 plants. Amongst them will be found the following new and rare varieties:—Admirable, Aimée Ferrière, Augustine, Constantine, Louisa, Louis Bonamy, Madame Leo, Norfolk Hero, Progne, Raymond, Beauté de Nord, Dr. Maclean, Queen of England, Plutus, Alfred Salter, Stellaris globosa, Beauty, Themis, Dupont de l'Eure, &c.

J. H. B. can supply strong plants, one dozen for 6*s.*; or five dozen in 30 varieties, containing two of each variety, for 1*l.*; or he can supply 100 plants in 50 varieties, two of each variety, for 1*l.* 10*s.* Also POMPONES in great variety; 50 Pompones in 25 varieties, two of each variety, for 10*s.*; or 100 in 50 varieties, two of each variety for 1*l.* Strong plants of the beautiful new Pompone the Golden Cedo Nulli, 5*s.* each, will be ready in March with the usual allowance to the Trade. Every order will be accompanied by a popular work on the Chrysanthemum.

Post-office Orders payable to J. H. BIRD, Stoke Newington, will be immediately attended to.

CHRYSANTHEMUM TRICOLOR BURRIDGEANUM. CHRYSANTHEMUM TRICOLOR VENUSTUM.

F. K. BURRIDGE, SEED GROWER, Lexden Road Colchester, has much pleasure in inviting the special attention of the Seed Trade to the above-named new Hardy Annuals, which he now offers for the first time, believing they will be found among the finest novelties of the season. The variety Burridgeanum differs from the old C. tricolor in having a fine crimson ring surrounding the yellow circle next the eye of the flower, the rest of the ray being snow white. The variety venustum has the ray florets of a deep reddish purple or plum colour for about one-half their length, shading into yellow at the base, and stained on the under side with purple. Both varieties are striking objects in the flower border, and from their bold conspicuous character, free blooming qualities, and perfect hardiness, together with their adaptability for bouquets, F. K. B. confidently predicts that they will become universal favourites.

A beautifully-coloured group of the two varieties has been prepared, and may be had on application, price 1*s.*; or gratis to Purchasers of 1 oz. of seed.

N.B. The Botanical Magazine for January, 1859, contains a coloured plate of the above.

WANTED, the ADDRESSES of the Principal Market Gardeners who Grow for Covent Garden Market Choice Vegetables and Fruit, such as

Asparagus	Pine Apples
Cucumbers	Grapes
Mushrooms	New Potatoes
Brussels Sprouts	Seakale, &c.

Address Box P. 5, General Post Office, Liverpool.

UNEQUALLED NEW CUCUMBER, DR. LIVINGSTONE.—This is one of the finest long hybrid Cucumbers for exhibition purposes that has ever yet been offered to the public; it is a splendid black spine, length 22 to 26 inches, a very free setter, and an abundant bearer. Price 2*s.* 6*d.* per packet.

QUEEN OF THE WEST MELON, a superb new variety, green-flesh, very handsome in appearance, beautifully netted, and excellent in flavour. It obtained several first prizes during the past season. Seeds 2*s.* 6*d.* per packet.

NEW MELON GENERAL HAVELOCK, sent out for the first time last season. It is a green-flesh, very handsome shape, and beautifully netted; a very thick substance, thin skin, of a melting and most delicious flavour, and an abundant bearer. Weight from 3 to 4 lbs.; it gave the greatest satisfaction to all purchasers during the past season. Seeds 1*s.* per packet.

Extra fine mixed HOLLYHOCK SEED, saved from all named varieties, 1*s.* per packet.

Early Emperor CELERY, red, the finest ever yet sent out, 1*s.* per packet.

TILEY'S Solid White Celery, 6*d.* per packet.

DELPHINIUM FORMOSUM, 6*d.* per packet.

DIGITALIS, or Fox-glove Seed, 6*d.* per packet.

For further particulars, and list of Cucumbers and Melons, see Advertisement in *Gardeners' Chronicle* of Jan. 29, 1859.

A remittance must accompany every order in cash or penny postage stamps, when the whole or any part, as the case may be, will be immediately sent.

EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Church Yard, Bath.

WALTON NURSERY, LIVERPOOL.

TO NOBLEMEN AND GENTLEMEN PLANTING NEW PLEASURE GROUNDS, OR IMPROVING PARKS OR DRIVES, AND TO COMPANIES PLANTING PUBLIC PARKS OR CEMETERIES.

WSKIRVING begs to offer his Stock of TREES and SHRUBS, of various sizes, adapted either for immediate effect, or for extensive new Plantations, where smaller sizes and less expensive Plants are required.

In addition to his general Stock of the leading kinds of Trees and Shrubs, which is allowed to be the most extensive in England, he has this season to offer, at reduced prices, several acres of well-grown CEDRUS DEODARA, varying from 2 to 10 feet in height.

Also, a very large stock of ARAUCARIA IMBRICATA, from 1 to 10 feet, and of all the best varieties of Hardy Pines, Cedars, Cryptomeria, Cypress, Yew (Irish and Common), Holly (Green and Variegated), Rhododendrons, &c.

WELLINGTONIA GIGANTEA, a fine stock, all from Seed.

Strong transplanted Thorn Quicks for hedge planting, and a most extensive stock of Forest Trees, Underwood, &c., of all ages and sizes, at very moderate prices.

FRUIT TREES, a large collection of all the most approved kinds.

CATALOGUES on application.

AZALEA INDICA.

J. IVERY AND SON beg respectfully to invite growers of the above named to an inspection of their unrivalled Stock of Young Specimens of all the newest and best varieties, many of which have been exhibited at the Metropolitan Exhibitions. They are clean and healthy, well set with bloom, and moderate in price. Catalogues forwarded post free upon application.—Dorking Nursery, Feb. 12.

YOUNG'S SCARLET STOCK SEED, our own saving, *6d.* to 1*s.* per packet; WHITE INTERMEDIATE STOCK SEED, 1*s.* per packet. Both are perfectly hardy, and should be sown immediately for Autumn flowering.
CARSTAIRS, Florist, 106, George Street, Edinburgh.

EARLY STRAWBERRIES.—MAY QUEEN: "One of the earliest of all its race, as proved last season at the Chiswick Gardens." Ripe at Egglescliffe, Durham, May 28, 1858. 12*s.* per doz.; 1*l.* per 25; 1*l.* 15*s.* per 50; 3*l.* per 100. Good strong plants.
TRIOMPHE.—"A most abundant bearer, Hudson's Bay breed." Ripe as above, June 3d. 12*s.* per 50; 20*s.* per 100. Good strong plants.
DUC DE MALAKOFF.—"The earliest of the very large varieties, good." 12*s.* per 50; 20*s.* per 100; very strong plants. Nearly every other sort known can be supplied at reasonable prices. Many new interesting and excellent varieties can be recommended, all having been well tried. Early orders will oblige.
WILLIAM J. NICHOLSON, Egglescliffe, Yarm, Yorkshire.

RICH BOG AND LOAM.—Gentlemen and Nurserymen will do well to apply early for the above to refresh their American beds. To be had in any quantity upon reasonable terms, by land or water carriage.
ROBERT NEAL, Nurseryman, Wandsworth Common, Surrey.

REIGATE SILVER SAND, best quality for Florists, 16*s.* per ton; less quantities, 1*s.* 6*d.* per bushel; delivered to any London Wharf or Railway. Leaf Mould, Peat, and Loam of various kinds, in large or small quanties. Sacks for Sand 1*s.* 9*d.* each, on hire 6*d.* each (five hold a ton).—JOHN KENNARD, Purveyor to her Majesty, Swan Place, Old Ken Road, S.E.

FLOUR, Warranted Unadulterated, free to any part of London (not less than 14 lbs.); Whites, for pastry, at per bushel (56 lbs.), 8*s.* 4*d.*; households, for bread-making, 7*s.* 8*d.*; seconds, 7*s.* 0*d.*; Wheatmeal, for brown bread, 7*s.* 0*d.*; best fine and coarse Scotch Oatmeal.—Address, HORSNAIL & CATCHPOOL, Bullford Mill, near Witham, Essex, or 97, Goswell Road, City Road, E.C. Directions for bread making gratis. Terms cash. Bags lent. German yeast. A half sack (140 lbs.), or upwards, free to any railway station within 200 miles.

TO PIG AND POULTRY FEEDERS AND MILLERS.

CHICKEN RICE, 7*s.* 9*d.* per cwt., in bags 1½ cwt. each. SCREENED RICE, 10*s.* per cwt., in bags 1¾ cwt. each. RICE MEAL, 6*s.* 9*d.* to 8*s.* 9*d.* per cwt. RICE for grinding. An allowance per Ton. American Oilcake, per ton only, 10*l.* 15*s.* in bags, 11*l.* 5*s.* in barrels.—Sold for Cash by W. & R. JUPP, 6, Cross Lane, St. Mary-at-Hill, Eastcheap, E.C.

GENUINE TOBACCO PAPER FOR FUMIGATING.

H. APPLEBY (Foreman to Messrs. Ivery & Son, Nurserymen, Dorking, Surrey), begs to inform his friends and the public that he now offers the above article at a reduced price. Sold in 4-lb. packets, 1*s.* 3*d.* per lb. A great reduction to the trade; price on application. For testimonials that will guarantee its quality, see *Gardeners' Chronicle*, Dec. 11, 1858, page 920.
SHEET IRON POTS FOR FUMIGATING, 3*s.* 6*d.* each.
N.B. All Orders to be accompanied with a Post-office Order, payable to HENRY APPLEBY, Dorking, Surrey.

GENUINE TOBACCO PAPER.

MESSRS. JACKSON AND SONS' WORKMEN are selling their unequalled TOBACCO PAPER at 4*l.* per cwt., any less quantity 10*d.* per lb.—Address BEN BAXTER, Messrs. Jackson & Son, Lady Lane, Leeds.

BEES.—Strong early SWARMS, in improved Bar Hives, will be obtainable at Mr. LOWE'S Apiary, Broad Oak, Accrington, Securely packed for carriage by rail. Immediate application is desirable.

RATS, RATS TAKEN WITHOUT POISON OR TRAPS BY WHOLESALE.—Ships, Barns, Stables, Granaries, Mills, Warehouses, Farmsteads, Houses, &c., cleared at one sweep. ANY PERSON can by this method clear the entire premises of every RAT, however numerous they may be, in one single night. Printed directions how to entice and secure the whole lot alive, sent free by return of post for Two Shillings by WILLIAM GOODWIN, High Halstow, near Rochester.

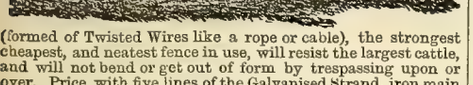
PRICES REDUCED.

H. J. MORTON AND CO., Galvanised Iron Works, 2, Basinghall Buildings, Leeds.

GALVANISED IRON ROOFING

for Farm Buildings and other Roofs; the cheapest, most durable, and neatest Roofing in use; also Spouting at 10½*d.* per yard.

WIRE STRAND CABLE FENCING



(formed of Twisted Wires like a rope or cable), the strongest cheapest, and neatest fence in use, will resist the largest cattle, and will not bend or get out of form by trespassing upon or over. Price, with five lines of the Galvanised Strand, iron main posts, and pronged Standards, 1*s.* 2½*d.* per yard.
This fence is far cheaper than posts and rails, or any kind of iron fencing; and possesses four times the strength of solid bars. Will not rust nor corrode. Upwards of 1200 miles of this Fencing supplied.

GALVANISED GAME AND POULTRY NETTING.



Galvanised, 24 ins. wide, 2-inch mesh, 5*d.*, 6*d.*, 7½*d.*, and 10*d.* per yard.
Galvanised, 24 ins. wide, 3-inch mesh, 4*d.*, 5*d.*, and 7*d.* per yard. The Netting made any width, and with openings of any size.
GALVANISED IRON CHAIN CAMP STOOLS & CHAIRS, POULTRY FOUNTAINS & FEEDERS, PRONGED DAHLIA RODS AND ROSE STAKES, &c.
Strong CATTLE HURDLES from 2*s.* per yard.

PATENT IMPROVED GAS WORKS

of all sizes for the use of Private Houses, Mansions, Railway Stations, Mills, Collieries, Mines, Villages, &c. Works from 10 to 500 lights estimated for. The works can be entrusted to an ordinary labourer.—Apply to
HENRY J. MORTON & CO. 2, Basinghall Buildings, Leeds.

TROTMAN'S RUSTIC WORK, a great variety always on view. Thatched Summer Houses, Pagoda-roof Zinc ditto; Yew, Oak, and Swiss Tables, Oak Benches, Yew Seats and Stools, Flower Vases and Baskets, Perambulators, Bath Chairs, &c., ready for delivery, always on view at TROTMAN'S Manufactory, 12, Alfred Terrace, Upper Holloway. Delivered free to any Railway Station.

JAMES PHILLIPS AND CO.'S PRICES of GLASS for the present month.

HORTICULTURAL GLASS, STOCK SIZES, in 100 feet boxes.

		3rds.	4ths.
11 by 9, 12 by 9, 13 by 9, 14 by 9 ..	}	14*s.* 6*d.*	12*s.*6*d.*
12 ,, 10, 13 ,, 10, 14 ,, 10, 15 ,, 10 ..			
13 ,, 11, 14 ,, 11, 15 ,, 11, 16 ,, 11 ..			
14 ,, 12, 15 ,, 12, 16 ,, 12, 17 ,, 12 ..	}	16*s.* 6*d.*	14*s.*0*d.*
18 ,, 12, 19 ,, 12, 16 ,, 13, 17 ,, 13 ..			
18 ,, 13, 19 ,, 13, 20 ,, 13, 21 ,, 13 ..			
16 ,, 14, 17 ,, 14, 18 ,, 14			
19 ,, 14, 20 ,, 14, 21 ,, 14			

PACKED IN CASES.

200 feet	£2	2	0	} 16 oz.
300 feet	3	3	0	
200 feet	2	18	0	21 oz.

ORCHARD HOUSE SIZES,
As supplied by us to Mr. Rivers.

		16 oz.	21 oz.
20 in. by 12 in.	} Common	14*s.*0*d.* ..	£1 1*s.*
20 in. by 13 in.			
20 in. by 14 in.	} Superior do. ..	16 6 ..	1 5
20 in. by 15 in.	} English Glass ..	18 0 ..	1 9

SMALL SQUARES.—Per 100 feet.

6 by 4	6½ by 4½	7 by 5	7½ by 5½ } 11 6
8 ,, 6	8½ ,, 6½	9 ,, 7	9½ ,, 7½ }
10 ,, 8	10½ ,, 8½ ..	.. ..	.. .. 12 6

JAMES PHILLIPS AND CO.,
130, Bishopsgate St. Without, London, E.C.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz SHEET GLASS of British Manufacture at prices varying from 2*d.* to 3*d.* per square foot for the usual sizes required, many thousands of which are kept ready packed for immediate delivery.
Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES, and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London.
See *Gardeners' Chronicle* first Saturday in each month.

HORTICULTURAL GLASS—JUNE TARIFF.

THOMAS MILLINGTON'S reduced Tariff of GLASS, &c.

6 by 4, 7 by 5, 8 by 6, 9 by 7 } 16 oz. to the foot, 11*s.* 6*d.*
6½ by 4½, 7½ by 5½, 8½ by 6½, 9½ by 7½ } per 100 feet.
In 100 boxes,—4ths quality, 12*s.* 6*d.*; 3ds do., 14*s.* 4*d.*
10 by 8, 12 by 9, 12½ by 10½, 14½ by 10½, 13 by 11
10½ by 8½, 12½ by 9½, 13 by 10, 15 by 10, 13½ by 11½
11 by 9, 13 by 9, 13½ by 10½, 12 by 11, 14 by 11
11½ by 9½, 12 by 10, 14 by 10, 12½ by 11½ .. ..

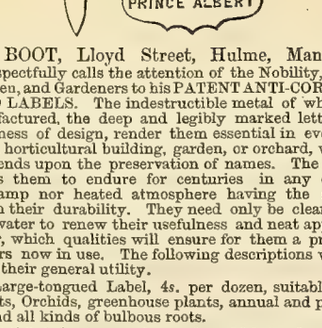
20 by 12	} per 100 feet	16 oz.	21 oz.
20 by 13		Common ..	16*s.* .. 24*s.*
20 by 14		Superior .	18*s.* .. 27*s.*
20 by 15			

All Boxes included.
Orchard House sizes as supplied to Mr. Rivers.
Hartley's improved Rough Plate Glass from ⅛ to ⅝ in thickness.
Coloured Glass in great variety, at 9*d.* and 1*s.* per foot.
Paints, Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, Lamp Glasses, &c.
87, Bishopsgate Street Without, same side as Eastern Counties Railway.

GLAZIERS' DIAMONDS for CUTTING HORTICULTURAL and other GLASS, to be had of the Wholesale Manufacturer, JOHN EDWARDS, 20, Sharp's Alley, West Smithfield, London, E.C. Prices from 10*s.* to 27*s.* 6*d.*

200 ONE, TWO, and THREE-LIGHT MELON BOXES and LIGHTS, of the best seasoned materials, ready for immediate use.—JAS. WATTS, Hothouse Builder and Hot-water Apparatus Manufacturer, Old Kent Road, London.

PATENT ANTI-CORROSIVE MARKED LABELS.



A. J. BOOT, Lloyd Street, Hulme, Manchester, respectfully calls the attention of the Nobility, Gentry, Nurserymen, and Gardeners to his PATENT ANTI-CORROSIVE MARKED LABELS. The indestructible metal of which they are manufactured, the deep and legibly marked letters, and their neatness of design, render them essential in every well-conducted horticultural building, garden, or orchard, where so much depends upon the preservation of names. The inventor guarantees them to endure for centuries in any climate; neither damp nor heated atmosphere having the slightest effect upon their durability. They need only be cleaned with soap and water to renew their usefulness and neat appearance every year, which qualities will ensure for them a preference to all others now in use. The following descriptions will give an idea of their general utility.
No. 1. Large-tongued Label, 4*s.* per dozen, suitable for all stove plants, Orchids, greenhouse plants, annual and perennial flowers, and all kinds of bulbous roots.
No. 2. Wall Labels, 4*s.* per dozen, for all kinds of wall trees, standards, Vines, Roses, Dahlias, Hollyhocks, or for fixing on blocks of wood for orchidaceous plants and all kinds of shrubs or ornamental plants and nursery stock in general.
No. 3. Small-tongued Numbered Label, 6*s.* per 100, for Polyanthus, Auriculas, Tulips, and all descriptions of florists' flowers
No. 4. Small Numbered Label, 5*s.* per 100, for numbering every description of choice and tender plants, Rose trees, &c.

PATENT GUTTA PERCHA SOLES.—IMPORTANT TO GARDENERS.—The Gutta Percha Company have the pleasure to acknowledge the receipt of the following letter from G. GLENNY, Esq., the celebrated Florist:—

"420, Strand, London.

"Gentlemen,—I have worn Gutta Percha Soles and Heels these two years, and being so much in a garden as I necessarily am in all weathers, and with the ground in all states, I would on no account be without them. As a matter of economy I would recommend Gardeners to use them, for they may repair the worn part at all times by warming the material at the fire, and pressing it from the thick parts to the worn parts as easily as if it were so much dough. I think it the duty of all persons who must occasionally wet their feet to adopt a material that completely defies damp. Many a gardener would escape colds and rheumatism by the use of Gutta Percha Soles.

"Your obedient servant, G. GLENNY."

Every variety of Gutta Percha articles, such as Mill Bands, Tubing, Soles, Goloshes, Sheet, Pump Buckets, Fire Buckets, Bosses, Union Joints, Flasks, Bottles, Bowls, Chamber Vessels, Toilet Trays, Sponge Bags, Curtain Rings, Galvanic Batteries, Talbotype Trays, &c., manufactured by the Gutta Percha Company, and sold by their wholesale dealers in town or country.—The Gutta Percha Company, Patentees, 18, Wharf Road, City Road, London.

HEATING BY HOT WATER ON HAMMOND'S improved principle, for Horticultural Works, Mansions, Churches, Public Buildings, in fact everywhere that heat is required. Also his improved Ventilating Greenhouses, which can be erected at 1*s.* per foot, and entirely prevent the possibility of scorching the Vines or plants. The Patent Hotwater Register Stove.—Estimates at No. 18, George Street, Portman Square. Workmen sent into the country.

HOT-WATER PIPES at wholesale prices, with Elbows, Syphons, Tee Pipes, and every other connection. Wrought and cast iron Boilers, Saddle, Conical, Cylinder, and Elliptic, from 21*s.* each. Boilers and Iron Stands to use without brickwork. Valves from 12*s.* 6*d.* each. Furnace Doors, Furnace Bars, Supply Cisterns, and Builders' Castings of every description in stock, at Mr. LYNCH WHITE'S Iron Wharf, Upper Ground Street, Blackfriars Bridge, London.

HANDS'S PATENT is the only system to circulate Heat, and for WARMING, FUMIGATING, and VENTILATING Hothouses, Greenhouses, Winter Orchards, &c.; to keep vegetation healthy in a humid atmosphere, and can be applied to any kind or shape of Forcing-houses and Conservatories now existing at trifling cost.—For particulars apply at the Office, 10, Charlotte Street, Fitzroy Square, London; or to Mr. JOHNSON HANDS, Epsom.

VOKINS AND HURD, Seymour House, Jubilee Place, King's Road, Chelsea, BUILDERS OF HOTHOUSES, CONSERVATORIES, GREENHOUSES, PITS, and every description of erections in Glass work, either in Wood or Iron; also Heating the same by hot water on the most approved plans and at the lowest prices consistent with good work. Estimates forwarded.

GREENHOUSES.

HENRY FREEMAN, HOTHOUSE BUILDER and HOT-WATER APPARATUS MANUFACTURER, Triangle, Hackney, Established 20 years. Good substantially built GREENHOUSES, fixed in any part of the kingdom, for cash, 42 ft. long by 13 ft, 90*l.*; 21 ft by 13 ft., 50*l.* 12½ ft. by 10 ft., 30*l.* A first-rate Conservatory, 30 ft. by 16 ft, 130*l.* A large assortment kept. Estimates for heating, or any branch in wood, iron, or Park Fencing.

HORTICULTURAL BUILDINGS AND HEATING BY HOT WATER.

JOHN R. PEILL, 17, New Park Street, Southwark, Manufacturer of every description of Buildings for Horticultural purposes, and Inventor of the Improved Conical Boiler for heating the same, is prepared to undertake works of any magnitude, and refers among others to the celebrated range of FORCING HOUSES at HER MAJESTY'S GARDENS, FROGMORE, and at SIR ROBERT PEEL'S, DRAYTON MANOR, constructed under the superintendence of his Manager, MR. JOHN JONES; and also to his BOILERS fixed at the CRYSTAL PALACE, the ROYAL BOTANIC GARDENS, REGENT'S PARK, and KEW, and at several hundreds of the Nobility's seats, Public Establishments, and Manufactories in London and the provinces. J. R. P. also manufactures every description of Iron Roofs, Iron Houses, and Iron Fencing, plain and ornamental. Strong Iron Hurdles for Sheep (6 feet long, 3 feet high, with 5 bars), 4*s.* 3*d.* each; ditto for cattle, 4*s.* 9*d.* each.
Prices and other particulars forwarded on receipt of one postage stamp.

HOTHOUSES FOR SALE.

TO BE SOLD CHEAP, two nearly new SPAN-ROOF HOUSES, each 65 feet long by 18 feet wide, price 100*l.* each; also a handsome OCTAGON CONSERVATORY, 22 feet diameter with glass all round, quite new, price 90*l.* All these houses are warranted to be of the best materials and workmanship. The reason of their being now Sold is to make room for an extensive alteration and addition to our Workshops and Steam Machinery.—Apply to Messrs. JOHN WEEKS & Co., King's Road, Chelsea, where the whole of the above can be seen, as also a great variety of other Horticultural Erections.

HORTICULTURAL POTTERIES.

ADJOINING THE STAPLETON ROAD NURSERIES, BRISTOL.

MAULE AND SONS have just completed an extensive enlargement of their Manufactories, which will afford them greater facilities for increasing their supplies of all kinds of GARDEN POTS, VASES, and other ORNAMENTAL POTTERY, suitable both for utility and Horticultural decorations and embellishments.
Horticulturists who have not yet favoured this establishment with their patronage will find every advantage both as regards quality and price.
The first workmen are employed, and the whole of their talents and attention is concentrated in the production of Horticultural Pottery alone, an advantage not to be found in the kingdom besides.
ILLUSTRATED CATALOGUES and LISTS of PRICES sent on application.
Nurserymen and the Trade supplied on advantageous terms.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

E. DENCH, KING'S ROAD, CHELSEA, & HAMPSTEAD ROAD, Patentee and Sole Manufacturer of PATENT GALVANISED IRON HOTHOUSES AND CONSERVATORIES, has Two SPAN-ROOFED HOUSES left for Sale, a great Bargain. Patent Hothouses, every way superior to any other material, at 1*s.* 3*d.* per foot super, with excellent heavy good quality Glass. Printed Price List sent on application. Heating by Hot Water with efficiency and economy.

GREEN'S PATENT LAWN MOWERS.

PRELIMINARY ANNOUNCEMENT.

THOS. GREEN begs to inform the Public that he has made several improvements in the Patent Lawn Mowers, and has brought them as near perfection as possible.
Illustrated Price Lists will be ready in a short time, which may be had on application at the Works.
Address, THOS. GREEN, Patent Lawn Mowing Machine Works, Leeds, Yorkshire.

"FRIGI DOMO."—Patronised by her Majesty the Queen, the Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence, of Ealing Park, and — Collier, Esq., of Dartford.
PROTECTION FROM COLD WINDS AND MORNING FROSTS.—"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths. Two yards wide, 1*s.* 6*d.* per yard run; four, 3*s.* per yard. Also, an improved make for Shading Purposes. Three yards wide, 2*s.* 6*d.* per yard run.
ELISHA THOMAS ARCHER, whole and sole manufacturer, 7, Trinity Lane, Cannon Street, City, and of all Nurserymen and Seedsmen throughout the kingdom. "It is much cheaper than mats as a covering."

SORGHUM OR HOLCUS SACCHARATUS,
CHINESE SUGAR CANE GRASS.

SUTTON AND SONS having imported largely of new Seed of the true HOLCUS SACCHARATUS, can supply it at reduced price according to quantity required.

The Stock SUTTON & SONS have provided is the true saccharine species procured from the same Continental source from which they have imported in previous seasons. Present price 2s. 6d. per lb., or cheaper in large quantities; quantity required per acre, 8 lbs. Instructions on Cultivation will be sent with the Seed. Packets for the Garden, 6d. each.

Royal Berkshire Seed Establishment, Reading.—Feb. 12.

IMPROVEMENT OF GRASS LANDS
BY SOWING GOOD SEEDS OF THE MOST SUITABLE KINDS.

SUTTON'S RENOVATING GRASS SEEDS consist of the finest GRASSES and PERENNIAL CLOVERS, producing great improvement in the Pasture, and at a small expense. Quantity of Seed required, 8 to 12 lbs. per acre. Price reduced to 9d. per lb., or 80s. per cwt. Sow in February and March. Parks, Meadows, and Upland Pastures may be increased in value 50 per cent. by sowing these Seeds, the cost of Seeds being only 5s. to 9s. per acre.

The following extract from a letter is similar to many others received unsolicited:—

From Mr. THOMAS BOWICK, *Farm Bailiff to Lord Leigh, Stoneleigh Abbey Farm.*

"The Renovating Mixture with which you supplied Lord Leigh last season, for 40 acres of old turf, has more than equalled our expectations. I would add that the other seeds supplied have each proved clean, true to name, and active in vegetative powers."

Seeds Carriage Free to all parts, except small parcels. Catalogues post free.

GRASS SEEDS, for Laying Down Permanent Pasture, 30s. to 34s. per acre.—SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

THE EARLIEST PEA.—DUNNETT'S FIRST EARLY is in every respect superior to "Daniel O'Rourke," being several days earlier, having finer pods, and richer in flavour, height 2½ feet. For an early dish of fine-flavoured Peas we can confidently recommend this; 2s. per quart.

CHAMPION CABBAGE, the earliest and best sort, if sown in succession, may be had fit for table throughout the year, 3d. per ounce, or 1s. post free.

BUTLER & MCCULLOCH, Covent Garden Market, London.

EARLY PEAS.

WAITE'S DANIEL O'ROURKE PEA; the earliest Pea in cultivation.

EARLY NAPOLEON; a Blue Wrinkled Marrow Pea, as early as EMPEROR.

EARLY EUGENE; a White Wrinkled Marrow Pea, as early as EMPEROR.

Prices to be had on application of J. G. WAITE, Seed Establishment, 181, High Holborn, London, W. C.

VERY LARGE ECONOMY IN THE PURCHASE OF SEEDS
THE ASSORTED COLLECTIONS OFFERED BY

BASS AND BROWN will be found full 25 per cent. more value than other collections offered, and for quality of growth and selection of sorts are not to be surpassed. For names of sorts contained in the three largest collections, see Catalogue, sent free on application.

No. 1 Collection..	£3 0s. 0d.	No. 3 Collections	£1 5s. 0d.
No. 2 ,, ..	2 0 0	No. 4 ,, ..	0 15 0

The assortments of Flower Seeds of their own selection also include the novelties of the season and are very select, with reasonable charges.

Goods (20s. and upwards) free to all stations in London, &c. See Catalogue.

BASS & BROWN, Seed Growers, Sudbury, Suffolk.

FIRST-CLASS HOLLYHOCKS.
FINE SEEDLINGS FROM

WILLIAM CHATER'S Celebrated and Newest Varieties that will flower well in September at 30s. per 100
ditto ditto ditto 20s. ,, 100
Ground Roots according to colour, also at .. 30s. ,, 100
Seed in 12 separate colours, the Collection .. 10s. 0d.
,, 6 ,, ,, ,, ... 5 0
From varieties such as Pourpre de Tyre, Memnon, White Globe, Hon. Mrs. H. Ashley, Canary, &c., in 12 separate colours, the Collection .. .. 7s. 6d.
Ditto in 6 separate colours, the Collection .. 4 0
Seed from 20 of the best varieties, mixed, per pkt. 5 0
,, 12 ,, ,, ,, ,, 2 6
,, good mixed, also a single variety ,, 1 0

The above can be procured from the Nurseries, Saffron Walden, Essex.

THE FAMOUS PINUS DON PEDRI.—This noble Pinus is one of the long-leaved Weymouth tribe, and is spoken of by Dr. Lindley (see *Gardeners' Chronicle*, March 27, 1858,) as a "magnificent novelty." Mr. Gordon, in "The Pinetum" (page 231), says, "A noble tree, rivalling Pinus Lambertiana, and growing 140 feet high at an elevation of from 11,000 to 12,000 feet. It will no doubt be hardy, coming, as it does, from so great an elevation and a cold climate."

The undersigned is now prepared to supply stout Seedling plants in pots, raised last summer, at 21s. each, or 9l. 9s. per dozen. The usual allowance to the Trade.

J. HENCHMAN, Edmonton, London.

SURPLUS STOCK.

JOHN SHARPE is offering to the Trade, on very reasonable terms, the following SEEDS of his own growing, 1858:—

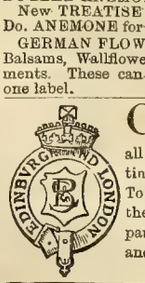
Carrot, fine large Altringham	Turnip, Skirving's Swede
,, large White Belgian	,, Purple-topt do.
Mangel, Yellow Globe	,, Green Globe
,, Long Giant Red	,, Purple-topt Scotch
Cabbage, Early Enfield	

Prices of not less than sacks and cwts. on application.
Bardney Hall, near Lincoln.

PLANT THIS MONTH!

CAREY TYSO, FLORIST and SEEDSMAN, Wallingford, Berks, offers healthy flowering roots as under:—
RANUNCULI, 100 splendid named sorts, 40s. to .. £4 0s. 0d.
,, 100 fine mixed sorts, 8s., 15s. ,, .. 1 0 0
,, 25 choice seedlings, 25s. ,, .. 1 15 0
DOUBLE ANEMONES, 50 fine varieties, 10s. 6d. to 0 13 6
New TREATISE on RANUNCULI, by post for seven labels.
Do. ANEMONE for four labels.

GERMAN FLOWER SEEDS.—Choice named Asters, Stocks, Balsams, Wallflowers, Zinnias, &c., in 1s. and 2s. 6d. assortments. These can be sent by post. CATALOGUES free for one label.



CHAMPION OF SCOTLAND PEA.—A new and first-rate sort, declared by all who grew it last year to be the most distinct and best flavoured Pea in cultivation. To be had only at PETER LAWSON & SON'S, the Queen's Seedsmen, &c., who are also prepared to execute orders for all sorts of Garden and Flower Seeds of the finest quality.

27, Great George Street, Westminster.



"JACK OF NEWBURY" SWEDE, ETC. PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN, &c., 27, Great George Street, Westminster, respectfully request attention to their very genuine Stock of the above excellent Swede; also of the LOTHIAN PURPLE-TOP SWEDE, both of which have been selected with the greatest care. They have also a very fine Stock of the KOHL RABI, or TURNIP-ROOTED CABBAGE, specimens of which were shown at their Stands at Smithfield Club Show. The Kohl Rabi was largely grown last season, and may now be relied on as a substitute for the Turnip and Mangel, where these roots do not succeed, or for filling up blanks where there is a partial failure. Its feeding qualities, hardiness, and weight per acre are equal to the Swede, and all kinds of stock prefer it to other roots.

P. L. & SON have also selected a first-rate Stock of MANGEL WURZEL SEED, which they can confidently recommend. Their natural GRASS SEEDS have been also saved with very great care, and they are ready to supply them separately or in mixture, for laying down Permanent Pastures, Lawns, &c.

P. L. & SON have arranged to deliver Seeds free throughout England and Wales from their London Establishment, for all quantities exceeding 20s. in value.

LISTS OF PRICES of the above and all other Seeds, Plants, &c., may be had on application.

27, Great George Street, Westminster.

NEW KINDS OF VEGETABLES.

CHARLES TURNER can supply seed of the following valuable new varieties:—

	Per packet—s. d.		Per packet—s. d.
Incomparable Cabbage..	1 0	Royal Dwarf Pea (Pois nain très hâtif à chassis), per quart	2 6
New Zealand Runner Bean	2 6		
Perennial Spinach ..	1 0		
Pine-apple Short Top Beet	1 0	Turner's Cottagers' Kale	1 0
Powell's Early Tomato ..	1 0	The Frogmore Protecting Broccoli	2 6
Roseberry Brussels Sprouts..	1 0		

The above are strongly recommended. A GENERAL DESCRIPTIVE CATALOGUE of SEEDS may be had on application.

The Royal Nurseries, Slough.

TURNER'S COTTAGER'S KALE.—Specimens of this new, hardy, prolific, and delicious Vegetable were exhibited in February last, and were found to possess superior excellence, the Horticultural Society of London awarding it a Certificate of Merit. It was also exhibited at the Great Fruit Show, St. James's Hall, in November last, and again received a Certificate, Professor Lindley pronouncing it to be both "new and invaluable," being unsurpassed for sweetness and tenderness. Sealed packets, 1s. each. A list of Agents that can supply it true was published Oct. 16, 1858, in the *Gardeners' Chronicle*.—The Royal Nurseries, Slough.

NEW MELON.

TURNER'S SCARLET GEM MELON.—An early and most prolific variety, and by far the best flavoured of the scarlet-fleshed Melons, having taken Seven First Prizes during the past season at the great exhibitions. It is well netted and handsome.

Mr. Bailey, the very successful fruit grower, of Shardeloes Gardens, Amersham, having grown this variety for two seasons, reports that "it is by far the best Melon he has ever cultivated of either class. Its superior flavour alone entitles it to a first place, besides other good qualities, among which is its easy culture." 2s. 6d. per packet.—The Royal Nurseries, Slough.

CHOICE FLOWER SEEDS.

CHARLES TURNER recommends the following, being saved from his well-known collections:—

	Per packet—s. d.		Per packet—s. d.
Calceolaria	2 6	Pink	1 6
Carnation..	1 6	Primula, mixed or in separate colours ..	2 6
Cineraria	2 6		
Dahlia	2 6	Aster's, Betteridge's fine quilled, in 12 varieties	2 6
Pansy	2 6		
Pelargonium	2 6	Ditto, mixed	1 0
,, fancy	2 6	Balsam, in 8 varieties, each colour separate..	3 0
,, French spotted	2 6		
Picotee	1 6	Ditto, mixed	1 0
Polyanthus, fine mixed	1 6		

ALSO THE FOLLOWING IMPORTED SEEDS.

	Per packet—s. d.
Asters, Chrysanthemum-flowered, in 5 varieties	2 6
,, Ranunculus ,, 6 ,, ...	3 6
,, Truffaut's Pæony ,, 12 ,, .. .	3 6
Balsam, Camellia-flowered 8 ,, ...	2 0
,, Rose ,, 6 ,, ...	2 0
Stocks, superb Hambro', Ten-week, 12 ,, ...	3 6
,, new large flowered 10 ,, ...	3 6
,, ,, Perpetual, or Emperor 6 ,, ...	3 6
Ten-Week Stock, New Pyramidal, scarlet	1 0
,, ,, ,, purple	
Aster, New Cockade, white with red border	
,, ,, ,, blue ,, ...	

The Royal Nurseries, Slough.

SEED CORN FROM THE CHALK.

MESSRS. RAYNBIRD AND HARVEY beg to offer to Agriculturists requiring change of SEED Talavera, Red Nursery, and April WHEAT, the best sorts for Spring sowing.

Chevalier, Thanet, Golden Drop, Long-eared Nottingham, American, Hudson's Golden Melon, Banham's Sprat, and other varieties of BARLEY.

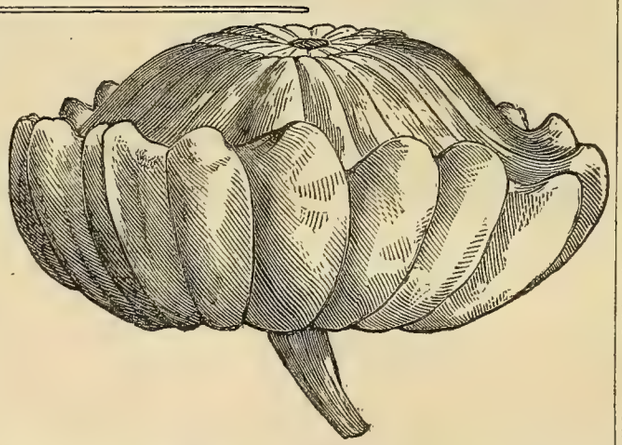
Canadian Potato, Hopetoun, Poland, and Tartarian OATS.

Fine CLUSTER BEANS, weighing 68 lbs. per bushel.

Samples and Prices on application.

Address—Basingstoke, and 89, Seed Market, Mark Lane, London, E.C.

IMPROVED CUSTARD VEGETABLE MARROW.



THIS handsome variety is totally distinct from the one figured in the Horticultural Periodicals of last season. We forwarded a specimen of the Fruit (as above) to PROFESSOR LINDLEY last Spring, which was exhibited by him at the HORTICULTURAL ROOMS in Regent Street, and noticed in The *Gardeners' Chronicle* (page 175). Its unique shape, agreeable flavour, and easy culture, added to its large productiveness, is a strong recommendation to its having a place in every garden.

We are this season enabled to offer the New Seed at a reduced price, as under.

Packets of 18 Seeds, 1s. 9 Seeds, 6d.

Price to the Trade per 100 or 1000 will be given on application.

BASS & BROWN, SUDBURY, SUFFOLK.

NEW SEED CATALOGUE,

MESSRS. E. G. HENDERSON & SON

RESPECTFULLY announce that they will forward, post free, their NEW CATALOGUE for 1859, in which the following novelties of the season will be introduced or noticed with full descriptions of management, cultivation, and adaptation; and only those that are known to be valuable are recommended for cultivation. Much useful information on the cropping of Gardens, sowing, &c., is also given for the guidance of cultivators. The following NEW FLOWERS and other Seeds are offered by E. G. HENDERSON & SON for the first season, full descriptions of which, with treatment, are given in the Catalogue.

THE ROSY CARMINE GIANT EMPEROR ASTER, 1s. 6d.
NUTTALLIA PEDATA, var., see Catalogue for the description of this beautiful plant, 2s. 6d.

CLIANTHUS DAMPIERI, 2s. 6d., 5s. and 10s. per packet.
THE LAWTON BLACKBERRY (new American Fruit), 2s. 6d. each; 25s. per dozen.

NEW FLOWER SEEDS OF 1859.

Price per packet is given in the Catalogue. A select assortment of 12 varieties for 6s.

Acroclinium roseum album
Clarkia pyramidalis
Chrysanthemum Burridgeanum
,, venustum
Datura humilis (flava pleno)
Dianthus hybridus corymbosus flore pleno
Gaillardia hybrida grandiflora
Gilia dianthæflora
Ipomœa hederacea superba lilacina
,, ,, atropurpurea
Lupinus Hartwegi cœlestinus
Myosotis azurea grandiflora (Large-flowered Forget-me-Not)
New Double Orange French Marigold
Nasturtium Tom Thumb (dwarf)
Nasturtium Brilliant (not Lobbi Brilliant)
Nolana paradoxa violacea
Pharbites (Convolv.) hybrida marginata
Portulacca caryophylloides
Œnothera bistorta Veitchi
,, Drummondi nana
Viscaria cœli rosa alba
,, Dunnetti
Silene rubella alba

A List of Sixty ORNAMENTAL GRASSES, a few of which are adapted for margins to beds, borders, &c.

A Descriptive Priced List of that most splendid tribe of hardy bulbs: Gladiolus Gandavensis.

The new vegetable CHÆROPHYLLUM BULBOSUM, and now well-known DIOSCOREA BATATAS (the Chinese Potato or Yam). Seed of the former and sets of the latter per dozen or 100, large tubers for tasting of both, per lb.

A List of 100 Select ORNAMENTAL GOURDS and MARROWS.

Wellington Nursery, St. John's Wood, London.

MEADOW AND PASTURE GRASS SEEDS.

GEORGE GIBBS & Co., Seedsmen, 26, Down Street,

BEG to announce that their mixtures of GRASS SEEDS are now ready for delivery. These mixtures are made up expressly to suit the various soils and the growth of each variety is fully tested previous to being bulked. G. G. & Co. having supplied the Seeds for *Hyde Park, St. James's, and Regent's Park, Kensington Gardens, Kennington Park*, &c., for many years, feel assured no further testimonials are requisite. The Seeds are made up into two different mixtures, as they do not sow well together; 2 bushels of the light and 12 lbs. of the heavy seeds are allowed per acre.

Mr. GIBBS, giving his personal attention to the assorting of these mixtures assures his friends that every care is taken with regard to the proper proportions.

MIXTURES FOR PERMANENT MEADOW & PASTURE (adapted to the different soils) 32s. to 34s. per acre.
MIXTURES FOR IMPROVING & RENOVATING OLD GRASS LAND (8 to 12 lbs. per acre) 1s. per lb.
MIXTURES OF THE FINEST SORTS FOR LAWNS, GRASS PLOTS, BOWLING GREENS, &c., 1s. 3d. per lb.

SELECT STOCKS OF THE UNDERMENTIONED AGRICULTURAL SEEDS SUPPLIED AT THE PRICES STATED FOR THE PRESENT MONTH:—

MANGEL WURZEL. Per lb.—s. d.		CARROTS. Per lb.—s. d.		SWEDES. Per lb.—s. d.		RYE-GRASS. Per bushel—s. d		CLOVERS. Per lb.—s. d.		VARIOUS. Per lb.—s. d.	
Long Red	0 9	White Belgian	1 0	Ashcroft	0 9	Gibbs' Improved Italian	7 0	English Red	9d. to 0 10	Holcus saccharatus	2 6
Elvethan Long Red	0 10	Yellow Belgian	1 3	Skirving's	0 9	Dickenson's Italian	7 0	White Dutch	10d. to 1 0	Lucerne	1 0
Yellow Globe	0 9	Large Altringham	1 6	Matson's	1 0	Fine Imported do.	7 0	Trefoil	4d. to 0 5	Drumhead Cabbage	3 0
Red Globe	0 9	Long Surrey	1 6	Kentish Green Crown	1 0	Common English..	6 0	Alsike Hybrid	2 0	Large Cattle Parsnip	1 6
Long Yellow	0 9	James's Scarlet	1 6	Marshall's Purple Top	1 0	Pacey's Perennial..	6s. to 7 0	True Cow-grass..	1 0	Kohl Rabi	5 0

Full Priced Catalogues sent free on application.—Cash or reference required from unknown Correspondents.

GEORGE GIBBS & Co., 26, Down Street, Piccadilly, London, W.

SEEDS RIPENED ON THE CONTINENT.

JAMES CARTER & Co.

HAVING observed their name mentioned in an advertisement in connection with a late correspondent, feel it their duty to state that, preferring to have their Seeds from the Continental growers *direct*, one of the Firm has travelled during the past autumn with that object, *and purposes doing so every season*; the services of the correspondent alluded to are therefore dispensed with. Their Seeds for the present season, having been *personally* selected, are better than any they have hitherto offered.

JAMES CARTER & CO., Seedsmen, 238, High Holborn, London, W.C.

GENUINE KITCHEN GARDEN SEEDS.

JAMES CARTER & CO.

ARE NOW READY TO SUPPLY SEEDS FOR THE VEGETABLE AND FLOWER GARDEN, WHICH WILL BE FOUND, AS USUAL, OF THE BEST QUALITY ONLY.

CARTER'S "ENCYCLOPÆDIC CATALOGUE OF SEEDS,

AND GARDENER'S VADE MECUM."

The Twenty-fourth Annual Issue of the above is now ready, and, in addition to its usual comprehensiveness, has affixed a CALENDAR OF OPERATIONS for each month in the year for the Vegetable and Flower GARDEN, also for the Stove, Conservatory, Greenhouse, Orchid House, Pineries, Vineries, Pits, Frames, &c., forming a complete Gardener's Book of reference, which it is hoped will be found useful alike to the Amateur and professional Gardener. Forwarded free of charge and post paid to all parts of the world upon application.

JAMES CARTER & CO., Seedsmen, 238, High Holborn, London, W.C.

SELECT LIST OF NOVELTIES FROM CATALOGUE 1859.

Carter's Tom Thumb Nasturtion
Lagenaria vittata
Œnothera Drummondi nana
Lupinus Hartwegi cœlestinus
Œnothera bistorta Veitchi
Cosmidium Burridgi

Lupinus nanus albus
Viscaria Dunetti
Laxton's Hybrid Pinks
Dwarf spotted Nasturtion
Nolana paradoxa violacea

Fenzlia dianthiflora
Gaillardia hybrida grandiflora
Lobelia formosa
Viscaria cœli rosa alba
Marigold French Orange.

J. C. & Co. also wish to call attention to their Splendid Collections of Imported

GERMAN & FRENCH ASTERS, GERMAN STOCKS, BALSAMS, & WALLFLOWERS,

UNIVERSALLY ACKNOWLEDGED TO BE UNSURPASSED.

For a Full Description of the above articles they beg to refer to their CATALOGUE, which will be forwarded gratis and post free on application to

JAMES CARTER & Co., Seedsmen, 238, High Holborn, W.C.

CHOICE FLOWERS.

BUTLER & McCULLOCH'S SPRING CATALOGUE OF SEEDS,

ARRANGED on a new and original plan, with copious Descriptive and Cultural Notes, and containing many new and rare species and varieties not found in any other Catalogue, now ready and may be had free and post paid on application.

FLOWER, SHRUB, TREE, and VEGETABLE SEEDS, the crop of 1858, saved with the greatest care, by the most eminent growers.

We may also state that the Sardinian correspondent of Messrs. JAMES CARTER & Co., whose Seeds, especially Carnations and Picotees, have given such universal satisfaction, has transferred the Agency from that firm and appointed us his representative in this country. To meet the growing demand for first class flowers, particularly FLORISTS' FLOWERS, we have adopted our usual maxim of charging the lowest possible prices.

A selection of 44 pkts. of beautiful Annual Flower Seeds						7s.	6d.		
Ditto	38	ditto	ditto	..	..	5	6		
Ditto	21	ditto	ditto	..	..	3	6		
A selection of 40 pkts. of beautiful Biennial and Perennial ditto						10	6		
Ditto	31	ditto	ditto	..	..	7	6		
Ditto	24	ditto	ditto	..	..	5	6		

An Assortment of Vegetable Seeds, 20 quarts of Peas, and other Seeds in proportion for 1 year's supply						£3	3s.	0d.	
Ditto	ditto	12 quarts of Peas	ditto	..		2	2	0	
Ditto	ditto	6	ditto	ditto	..	1	1	0	
Ditto	ditto	5	ditto	ditto	..	0	15	0	

All Flower Seeds sent post paid, and Vegetable or Vegetable and Flower Seeds amounting to 1*l.* 1*s.* Carriage Paid to any principal Railway Station in England, Wales, and Scotland, or any port on the Irish Coast.

Professor LINDLEY in the *Gardeners' Chronicle* of February 5th, has the following notice of B. & McC.'s Catalogue.

"BUTLER & McCULLOCH'S (Covent Garden) Spring Catalogue of Choice Flower, Shrub, Tree, and Vegetable Seeds. This list fills 84 closely printed 8vo pages, and is remarkably well got up. It appears that the correspondent in Sardinia, who formerly supplied one of the great London houses with seeds raised in that warm part of Europe, has now transferred what he saves to Messrs. BUTLER & McCULLOCH. Let us add, that it yields to no Trade List in the abundance of its materials or the excellence of its arrangements."

BUTLER & McCULLOCH, Covent Garden Market.

ROYAL BERKSHIRE SEED ESTABLISHMENT.

GOOD SEEDS, CARRIAGE FREE.

SEEDS DIRECT FROM THE GROWERS THE MOST CERTAIN MEANS OF PREVENTING DISAPPOINTMENT.

SUTTON AND SONS, SEED GROWERS, Reading, Berks, can supply every kind of FARM AND GARDEN SEEDS of genuine and superior quality.

Agriculturists residing in the most remote parts of the kingdom can procure good Seeds at very moderate prices from this Establishment.—For particulars apply to

SUTTON & SONS, Seed Growers, Reading, Berks.

ROYAL SOUTH HANTS SEED ESTABLISHMENT.

UNDER THE PATRONAGE OF H.R.H. THE PRINCE CONSORT, THE AGRICULTURAL, HORTICULTURAL SOCIETY OF INDIA, AND THE LEADING AGRICULTURISTS OF THE UNITED KINGDOM.

PAGE AND TOOGOOD can now supply GARDEN AND FARM SEEDS, carriage free; SEED POTATOES, &c. The numerous Prizes gained by their Stocks are convincing proofs of superior quality, and their prices compete with any house in the kingdom. WHOLESALE and RETAIL PRICED CATALOGUES upon application.

Agents for ODAMS' Blood Manure, Superphosphate, &c. Seeds Packed for Exportation to all Parts of the world,

37 and 38, Oxford Street (facing the Railway Terminus); and 58, Above Bar, Southampton.

The Gardeners' Chronicle.

SATURDAY, FEBRUARY 12, 1859.

IT is not without some feeling of personal satisfaction that we observe our manufacturing friends awakening from commercial lethargy and acting like men of business. They are in urgent need of more or cheaper Cotton, and of more and cheaper fibrous substances. But they no longer cry to HERCULES to help them. They cease to besiege Government with petitions for assistance and remonstrances for disregarding their prayers. It is no longer "grow Cotton for us to purchase," or "collect fibres at your Indian outports and ship them for Liverpool, where we may go and buy them." These were demands which their good sense should have told manufacturers it was impossible for any Government, European or Indian, to grant with a due regard to public policy.

To be sure they did succeed in persuading the late East India Company to try various costly experiments in the cultivation of Cotton; and those experiments, although unskilfully conducted elsewhere, have proved in the Madras presidency that excellent Cotton, though not Sea Island, the most valuable of all, may be grown in India in any quantity at ample profit to the Ryots. And this is a most important fact, incontestably established by Dr. WIGHT. But, we repeat, it was not the business of the Government of India to carry on such experiments. It is no more the duty of a Government to grow Cotton than to grow food. The moment such an attempt is made individual enterprise is paralysed, self-reliance disappears, and the very scarcity which such ill-judged interference is intended to avert, is certain to become intensified. We have always insisted on this, and at last manufacturers acknowledge its justice.

It is now understood that Chambers of Commerce have resolved upon sending competent AGENTS to India to examine and report upon all such subjects as those to which we here refer. They are to ascertain what commercial difficulties have to be removed, or facilities to be discovered; and, as their name implies, to act for their principals as circumstances may require. If they do this a very little aid from Indian Governors will

enable them to discover that it is in our vast Eastern possessions that the great mine of vegetable wealth is to be most profitably worked. That such aid will be rendered freely, we cannot bring ourselves to doubt, unless they ask for money, which could not and ought not to be granted. The recent appointment of one of the ablest and most experienced of our Government officers is an ample guarantee that this will be done. As Governor of the Madras Presidency, Sir Charles Trevelyan will be called upon to develope the productive resources of one of the finest parts of India, and perhaps the most impoverished. And that he well knows how to do, provided he receives from the Indian Council and the Supreme Government those powers without which beneficial changes are impossible. The first object of an enlightened governor would be to reorganise the whole system of land tenure, securing land to its present owners, freeing it from the monstrous shackles in which it is now bound up, and giving to all landholders titles that will be good against the world. That measure alone will immediately encourage European capitalists to invest their money in Indian estates. The estates secured, European skill and energy will do the rest. As matters now stand nobody in the money-market will look at an Indian estate. Not a shilling would be advanced upon it. Make the title absolutely secure, allow the owners to cultivate as they please, and land in India will stand in the same position as property in Canada or Ireland. That being done capital will flow in, European settlers will occupy the soil and teach the ryots the art of profitable husbandry, unproductive crops will become productive, and such a stimulus will be given to industry as India has not yet witnessed. "Old Indians" may disapprove, may even resist to the extent of their power, but they will find it impossible to prevent the flood of progress from finding that natural level to which no amount of prejudice or wrongheadedness can oppose a serious obstacle. Then too our manufacturers will have a second New Orleans in the East, and they will have learned that individual prosperity and consequently national wealth are inseparable from good laws and even-handed justice firmly administered, beyond which no enlightened government will go. For all the rest men must trust to their own right hands, which guided by knowledge have never yet been known to fail them.

The appointment of intelligent *commercial agents* is a great step towards developing the resources of India. But it will soon be found that something more is wanted. The rude cultivation of the natives will demand improvement: and intelligent practical gardeners will have to be sent out. English farmers, with all their modern skill, are so unaccustomed to any kind of cultivation beyond that of ordinary agricultural routine, that they would scarcely be selected for teaching the growers of Coffee, and Cotton, and tropical fibres, and Asiatic oil seeds or Pulse, in what way their husbandry can be made more remunerative. Skilful intelligent gardeners, on the contrary, accustomed as they are to the most varied kinds of cultivation, now applying themselves to Orchid growing, now to Fern growing, now to fruits of various kinds, and the endless kinds of hothouse, greenhouse, and kitchen garden produce, are the very men to perceive the defects or advantages of Indian cropping as soon as they shall have gained a year's experience of the climate. And it is to them that the owners of Indian estates will do well to look for advice and practical assistance.

A case of poisoning by eating the berries of the common Holly has been brought to our notice by a correspondent. In the *Chelmsford Chronicle* of last week appeared the following paragraph:—

"Death from eating Holly Berries.—A little boy named Fuller, the son of a labouring man at Northiam, died a few days since from the effects of eating the red berries of the Holly. His parents appear not to have known the poisonous nature of the berry, and allowed the child to eat about 20 or 30 before it was discovered by a neighbour. Though he was very ill and vomited during the night, medical aid was not called in till the morning, when it was too late to save the child. Mr. Harris, a surgeon, said the berries had produced violent inflammation of the intestines, and caused death. The jury at the inquest returned a verdict of 'Died from inflammation of the stomach caused by eating a vegetable irritant.'"

This lamentable accident will, we trust, draw attention to a source of danger very little suspected. There is not one person in a county who dreams that the berries, whether red or yellow, with which churches and country houses are so copiously decorated from Christmas to Candlemas, are little less dangerous than so many pills of red-lead, or even arsenic. And it is to be feared that this fatal case in Essex is only one of many which have occurred without the cause being suspected. It is scarcely possible indeed that such tempting berries should have been annually thrown in the way of children without having been eaten—with what consequences is now seen.

It is not a little curious that the berries of the Holly tree should be never named as poisons, even by writers on the subject of vegetable products. Orfila is silent as far as we can discover in a couple of heavy volumes without an index. Christison says nothing, at least not in the third edition of his book on poisons. Pereira, Geiger, Richard, Wood and Bache, and such other Materia Medica authors as we have at hand treat the Holly as a harmless tree. All that Smith could find to relate is that "The Druids are said to have introduced this custom (that of Christmas) for the accommodation of certain sylvan spirits of a chilly constitution while the Oaks were leafless!" And yet he might have found something more worthy of science than such anility; for Rembrandt Dodoens had 250 years before announced that Holly berries are purgative in doses of 10 or 12.

There are, however, botanical writers who have pointed out the dangerous properties of these berries. De Candolle, in his *Flore Française*, says they are purgative; Achille Richard quotes Dodoens; Endlicher in his *Enchiridion* describes them as being violently purgative (*vehementiùs purgant*); and in Lindley's Vegetable Kingdom their character is given still more distinctly, "The berries are purgative and emetic; six or eight will occasion violent vomiting." It would seem, however, that none of these authors had heard of fatal cases. And we believe that so important a fact is now for the first time established by the verdict of a coroner's jury. Let us hope that it will prove a warning, and that the danger of placing Holly berries, whether red or yellow, within the reach of children, will never again be forgotten by parents or servants.

Before quitting this subject we must take the liberty of adding a word or two of censure upon the coroner's jury. These gentlemen were told that the child had died from eating Holly berries; that was what the evidence proved; and it was their bounden duty to say so. But they did no such thing. Their verdict was that the child died from eating *a vegetable irritant*. Some may doubt whether the jury knew the meaning of their own words. At all events they could not know that a vegetable irritant was the cause of death; they could not know whether it was irritation caused by Holly berries, or something else caused by Holly berries which had caused death. Mr. Harris, the surgeon, could not have possessed absolute certainty on the subject; more effects may be caused by poisons than men dream of in their philosophy; all that he could say was that he found inflammation, and he found Holly berries. It was open to question whether inflammation caused death; there was no question that death was caused by Holly berries, and the verdict should have been accordingly.

If jurymen would condescend to use plain English, understood by everybody, especially in a case like this which was to be a warning to country people, instead of rummaging a dictionary for Latin words which to peasants are incomprehensible, they would not only act a more sensible part, but they would not so word their verdict as to leave it doubtful, after all, whether death was caused by Holly berries or something else, as they have done in this case, without intending it.

ON TREES AND TREE-BORING INSECTS.

It is commonly believed that insects eat through the bark of healthy trees, and then enter the wood itself. I have already stated that this is not my belief. The workings of boring insects would not shorten the life of a tree, by consuming a portion of the wood, provided there were enough of wood left to ensure the tree against the formidable assaults of the wintry blast. And, as for the bark; if the tree were healthy, every hole which the insect had made through it would be repaired in due time by the fostering hand of Nature.

During the proper season for increase of new wood, it is invariably formed at the periphery; and it steadily rolls on over the old wood already made. Insects do not possess the power of raising up the bark from the wood. The borers merely perforate it. When we discover different insects lurking betwixt the bark and the wood, we must not accuse them of mischief; but we must attribute the separation of the two component parts of a tree either to some injury from without, or to disease from within. The insects assemble there, merely for safety and comfort.

Bark once separated from the wood, which it has covered, will never more adhere to it. The disaster which the separation has made evident can only be repaired by new bark; and this new bark will appear exactly at the place where the effect from the accident has ceased, or where the internal disease has worn itself out. No actual renovation of wood ever takes place after the wood itself has once been formed. Holes made in it will always be holes; and they will retain their original shape and size, so long as the tree itself exists.

Now, if you take a butcher's knife, and cut your way deeply into the bowels of an animal (an ox to wit), the animal in a minute or two will be as dead as Julius Cæsar. Not so with a tree. You may use your axe, and hew out two-thirds of the bole of a tree, without destroying its vital powers. In the course of time Dame Nature from without, by her admirable process at the periphery, will assist the tree in its need; and eventually will heal the gaping wound.

So that I am never much alarmed, or down in the mouth, at huge limbs being torn from the trees by the raging winds. Their loss of limbs is undoubtedly very great in some cases, and gives an unsightly appearance to the trees. Still these trees will live on, be the extent of the accident what it may. I am speaking of healthy trees only.

But when I examine a magnificent tree, with round holes made by the insect through its bark, oh dear me! I shake my head in sorrow—my very heart misgives me, and I exclaim, "Grand ornament of our groves and lawns, it is nearly over with thee. Thy 'days are dwindled to the shortest span.' Some dire disease must have tainted thy once healthy juices, long before the Scolytus applied for a residence within thee. Should the wants of the oven-man not demand thee for the present, thou mayest yet remain erect for some time to come. But, of this be certain—that, although thou hadst no attractions for the boring-insect in thy day of health, believe me, now that thou art sick and feeble, he is sure to pounce upon thee; and he will ultimately bring thee to the dust in useless ruins; and that too at the very time when all the neighbouring trees are vigorous around thee—setting thy keen devourer at defiance."

I invite the anxious reader to pay attention to any tree at which the Scolytus is pursuing his ordinary calling. Then, let him examine the same tree during the following summer, and he will find the little round holes in the bark, just as the insect had made them, without any alteration whatever. After this, let him take a gimlet, and bore as many dozens of holes as he may think fit in the sound bark of some undeniably healthy trees. Let him visit these in the course of the next summer, and he will perceive every gimlet hole made up, by new bark underneath the old bark.

This being the case, I trust it would tend to convince him that, whilst the Scolytus singles out some sickly tree wherein to form a lodgment for his wife and children, he knowingly neglects a healthy one. *Charles Waterton, Walton Hall, Feb. 5.*

HOW TO INCREASE THE SIZE OF FRUITS.

BY A. DUBREUIL.

Several persons having requested information as to the processes by which we may increase the size of fruits, we shall here point out the principal operations for obtaining this result.

1. *Grafting the Trees on a weak species of Stock.*—Fruits, like leaves, have the power of attracting the sap from the roots, and of transforming it into cambium, or organisable matter. But contrary to that which takes place in the leaves, they employ all the cambium which they thus elaborate for their own nourishment. If the stock on which the tree is worked is naturally possessed of great vigour, the tree will produce numerous long shoots which will appropriate the greater portion of the sap, to the detriment of the fruits, which will consequently not attain a large size. They will, on the contrary, acquire a larger size if their absorptive power can counterbalance that of the shoots. It is for this reason that, all other things being equal, the fruit of trees worked on the Quince stock is larger than that from trees worked on the Pear stock. The same thing takes place with regard to Apple trees grafted on the Paradise, as compared with those on the Crab stock.

2. *Subjecting the Trees to a proper mode of Pruning.*—This operation, when well performed, has the effect of depriving the trees of a certain portion of their shoots. Hence it follows that a great portion of sap which would have been absorbed by the parts cut off goes to increase the size of the fruit. The object of summer pruning is likewise the complete or partial removal of a large number of shoots by disbudding and pinching. These operations also contribute to turn the sap to the benefit of the fruit; and under like circumstances, the fruit of well pruned trees is always larger than that from trees left unpruned.

3. *Operating so that the Bearing Shoots may be as short as possible, and in immediate connection with the main branches.*—If the mode of pruning adopted is such that the bearing shoots immediately proceed from the principal branches, the consequence is that the fruit receiving the sap more directly from the roots acquires a larger size. In fact, it is seen that fruit growing on the stem is always larger than that situated at the extremities of long slender branches.

4. *Thinning the Fruits when too numerous.*—The quantity of sap, disposable for the growth of the tree, does not increase in proportion to the fruit which it

bears. It is, therefore, apparent that the more numerous the fruits, the less the amount which each receives. Hence the utility of thinning, in order that those retained may be better nourished and become larger. The proper time for performing this operation is when the fruits are fully set.

5. *Shortening the Principal Branches.*—If the length of the principal branches is to a certain extent diminished by shortening them at the winter pruning, a result analogous to that produced by ordinary pruning will follow; but the effect on the fruit is much more intense because the action of the sap is confined within narrower limits. It is, however, important to check in summer the vigorous shoots, of which a great number will be sure to make their appearance, otherwise they would absorb a large amount of sap to the detriment of the fruit.

6. *Supporting the Fruits so that their Weight may not cause a strain upon the Footstalk.*—The sap from the roots enters the fruit by means of vessels passing along the footstalk, and which ramify to an infinite extent throughout the cellular mass. Bulky fruits, such as Pears and Apples, soon attain such a weight that they exert a strain on their footstalks, which, by tightening the woody fibres and vessels, tends to collapse them. The tissues of the stalk being thus compressed, the passage of fluids is, to some extent, obstructed in that part. Moreover, if fruits are attached to a branch having a more or less vertical direction, their gravity will cause a bending of the stalk, and will thus still further obstruct the passage of the sap. Again, it often happens that the fruit does not make an equal growth on both sides of its longitudinal axis, and a twisting of the stalk and strangling of the vessels takes place, in consequence of which the circulation is partially intercepted. Now, if a support is placed beneath the fruit so as to prevent these effects on the stalk, it is very evident that the sap will flow in much greater abundance into the fruit, which will then become larger. This is the reason why those fruits which accidentally rest on branches or trellises are always of greater size than the rest.

7. *Moderating the amount of Evaporation from the Fruit.*—In order that fruits may swell, their epidermis or skin must be continually expanding, so as to make room for fresh tissues which are forming in the interior, and the new fluids that are accumulating there. If all the parts of fruit are directly exposed to the full force of the sun and the drying action of the air, it will lose by evaporation an amount of fluid nearly equal to that which it receives from the roots, and its growth will therefore be less rapid. On the other hand, the tissues nearest the outside will acquire a greater degree of firmness, and lose to some extent their elasticity; they will offer more resistance to the expansion of the interior tissue, and will consequently restrict the growth of the fruit. If, on the contrary, the latter is kept in the shade, these influences will not affect it, and it will become larger. Indeed, this may be observed in the greater proportion of fruits covered by leaves as compared with those on the same tree, not so covered. It is necessary, however, in order that shading may not affect the quality of the fruit, to expose the latter when full grown to the direct action of the sun. To diminished evaporation must also be attributed the considerable increase in size which always takes place in fruit introduced into bottles soon after it is set. The mouth of the bottle being closed after the portion of branch with the young fruit is introduced, the latter is secluded from the drying action of the air, and is constantly surrounded with a moist warm atmosphere, which keeps the epidermis pliable, and stimulates the growth of the tissues.

8. *Moistening the Fruits with a Solution of Iron (copperas).*—We have already stated that fruit has the power of drawing towards it sap from the roots. If means can be found of stimulating its vital energy it will be perceived that it will absorb a greater amount of sap and attain a larger size. Now, M. Eusèbe Gris has proved that a solution of sulphate of iron applied to the leaves has the effect of increasing their absorptive powers, and stimulating their cellular tissue; and it was only reasonable to suppose that salt would produce the same effect on the fruit. This, indeed, has been ascertained by M. Arthur Gris, who has continued the interesting researches of his father. He has proved that Melons, and various species of fruit trees, the green parts of which had been watered on several occasions with a weak solution of sulphate of iron, yielded much larger fruits than those not so treated. One of my pupils repeated the same experiment in 1854 and 1855 on Pear trees. He gave the first watering as soon as the fruits were fairly set, in the end of June. He repeated the moistening every fortnight, in the evening, in order to prevent evaporation, and that absorption might be completely effected during the night. The solution was at the rate of 26 grains to a quart for the first three, and 35 grains per quart for the two last waterings. He sent us, in the end of February from a tree thus treated, an Easter Beurré, so large that it could scarcely be recognised. He obtained like results in the following season.

But we doubt whether the results would not be still more successful if the fruits alone were moistened with the solution, for then they only would experience the stimulation of their absorptive powers, and would thus draw to themselves a much greater quantity of sap, inasmuch as the absorption by the leaves would be much less intense. Experiments should therefore be made with regard to this point.

9. *Ringing the Shoot or Branch immediately below the Flowers.*—Lancry exhibited to the Société d'Agriculture de Paris in 1776 a branch of a Plum tree which he had ringed. The fruits situated above the incision were much larger than those beneath it, and their ripening much farther advanced. Colonel Bouchotte, of Metz, thought of practising this operation on Vines, in order to accelerate their ripening. He ringed about 60 perches, and the Grapes were larger and 15 days earlier. I have within the last 12 years repeated the experiment nearly every year on Vines against walls and always with like results. I have also tried it with the same success on the bearing shoots of the Peach tree. It is necessary to perform the operation when the flowers are opening; the longer it is delayed after this period, the less is the effect produced. The incision should penetrate to the wood, and the ring of bark removed should have a width equal to half the diameter of the shoot. The width, however, should not exceed one-fifth of an inch, otherwise the wound will not close up, and the success of the operation will be affected. For removing this ring of bark we have invented a small instrument, called a *coupe-sève*.

10. *Inserting on vigorous trees fruit-buds, with a portion of wood attached (Greffes en écusson Girardin).*—This proceeding is only applicable to Apples and Pears. [Chiefly to these we should say; for it has succeeded even in the case of stone-fruit.] A tree which in consequence of excessive vigour has never produced blossom buds, may by this means be made to produce fruit of large size from the abundant supply of sap which the inserted blossom buds will receive. But in order to derive the greatest benefit, it is necessary during the growing season to pinch the vigorous shoots of the tree, otherwise these shoots would absorb the largest portion of the sap to the injury of the fruit.

11. *Inarching vigorous shoots on the footstalks of young fruits on the same tree, or on the bearing shoots near to where the fruits are attached.*—Professor Thouin describes, Monographie des Greffes, a similar operation under the name of Greffe par approche Leberriays. M. Luizet, of Equilly, who certainly did not know of that description, again discovered this kind of inarching, and practised it with the view of increasing the size of fruits. This is how he operates:—About the end of June he selects a vigorous shoot which he inarches upon the peduncle of a fruit; then as soon as the union is effected and the shoot has grown sufficiently to draw the sap in large quantity towards the junction, he pinches the shoot in order to prevent it from absorbing too much sap to the injury of the fruit. When the stalk is too short, the shoot is inarched on the opposite side of the branch to that on which the fruit is situated. In both cases the shoot thus inarched acts as a nurse to the fruit, by drawing to its vicinity a large quantity of sap, and thus contributing to greatly increase its bulk. M. Luizet exhibited, in September last, at the Exhibition of the Paris Horticultural Society, Easter Beurré and Grosse Calebasse Pears, and likewise Clingstone Peaches, which had been treated according to this method; and they were much above the ordinary size of these varieties. *Journal de l'Academie d'Horticulture de Gand.*

HORTICULTURAL SOCIETY.

[THE following address to the Fellows of the Society has been issued by the Council.]

"21, Regent Street, London, S.W., Jan. 29, 1859.

"The Council of the Horticultural Society finding that notwithstanding the liberal manner in which a considerable Subscription was made by a number of the Fellows, and the expenditure out of the ordinary income of the Society of other large sums in maintaining and adorning the Garden at Chiswick, it remains almost unvisited even by the Fellows; and that the public is evidently deterred by the distance from going so far, even on the days of Exhibition, have arrived at the conclusion that they must discontinue the experiment of retaining a Show Garden at so great a distance from town. In the meanwhile, however, the Council have resolved to maintain Chiswick as an Experimental Garden until a situation more advantageous to the Society can be found.

"Suggestions have been made on this subject which may be very beneficial to the Society, but are not yet ripe for adoption. In the meantime, as the change of position must necessarily be attended with considerable expense, it has been resolved to sell the house in Regent Street, which is much larger than the Society requires, now that it has the advantage of other large public rooms for its London Shows. The Council have long found themselves cramped for room on the occasion of their Town Exhibitions, although the Society pays what may be termed an enormous rental for the house. The Council, therefore, propose to engage, at a small cost, a suitable Office in the neighbourhood for the transaction of the daily business of the Society, hiring a Public Meeting Room only when it is wanted. The sale of the house in Regent Street will deprive the Council of space for the whole of their Library and the large collection of Original Drawings connected with it. A Sale will therefore take place of such works as experience shows that the Fellows of the Society seldom or never consult.

"Notwithstanding the difficulties which this state of transition must inevitably produce, the Council entreat the Fellows to rely upon their unceasing exertions to promote the interests of the Society by giving every encouragement to useful and ornamental Gardening, and exhibiting to the public from time to time whatever is most new and interesting in Horticulture. For this purpose they propose to have recourse to three such beautiful Exhibitions as those which gave so much satisfaction last year at St. James's Hall*; and the usual distribution of Seeds will be made to those who ask for them in the spring. In addition to this it has been determined that Ballots for plants of interest shall again take place as in the year just past. Three of these Ballots will be held—two during the spring—one in the autumn—and arrangements will be made to admit the new Two-guinea Members for the first time to a share in them.

"By Order of the Council,

"W. B. BOOTH, Assistant-Secretary."

* The first Meeting in St. James's Hall, for the Exhibition of Flowers and Fruit, will take place on Thursday and Friday, the 12th and 13th May. The second Meeting will be on Wednesday and Thursday, the 29th and 30th June. The third Meeting will be on Wednesday, Thursday, and Friday, the 7th, 8th, and 9th December, during the meeting of the Smithfield Club.

Home Correspondence.

Chamærops humilis.—Please to give some information about this, also called the "Dwarf Fan Palm." Is it a desirable plant to have? It is stated to be hardy or very nearly so. Carter & Co. and Butler & McCulloch advertise seeds of it. How should I sow and rear these? The seeds are cheap, 6*d.* and 4*d.* per packet. This would seem to argue that they are not scarce, and are in demand. Do you know and can you tell us anything about them? *Tom Pouce.* [Chamærops humilis is the dwarf Palm of Italy, and the more southern parts of Europe. It is very useful as an ornament of greenhouses; its handsome fan-shaped leaves forming a beautiful contrast with those of Camellias, Oranges, Rhododendrons, Azaleas, and other simple-leaved shrubs. You will scarcely get it above 3 feet high, although it is said to become a tree when very old. The following extract from Loudon's Arboretum Britannicum will probably interest you. Don't think of treating it as a hardy plant in your climate. "Though this Palm is designated dwarf, yet, according to the Nouveau Du Hamel, it grows to the height of 30 feet or 40 feet in Spain; and one in the Jardin des Plantes, in a tub, attained the height of 30 feet. In England, one in an old conservatory at Buckridge House, near Godalming, was in 1836 upwards of 12 feet high. The trunk of plants of this size is cylindrical, perfectly naked from the ground to within a short distance of the leaves, where scales commence, of a reddish hue, being the bases of the foot stalks, which remain for some years after the leaves and petioles have dropped off; and which scales, with great plausibility, have been considered as giving the first hint for the foliaged capitals of Corinthian columns. As this Palm produces abundance of seed in Italy and Sardinia, if large quantities of it were imported, and the plants raised from it exposed to the frost, some would doubtless be found more hardy than others; and these might be perpetuated from the suckers, which arise abundantly from the roots. The soil which this Palm prefers is a deep sand; in which soil it is said to grow in the south of Europe, and spread over the surface, in the same manner as the Fern does in England. As a single object on a British lawn, few, in rarity and singularity, can surpass a handsome Fan Palm. A plant has stood out in the open air in the Edinburgh Botanic Garden for several winters, with scarcely any protection." Sow your seeds in March on a hot-bed, and when the young plants appear treat them like any other greenhouse shrub, hardening them by gradual exposure to sun and air.]

Scolytus destructor.—Without wishing to derogate in the slightest manner from Mr. Westwood's position as an authority on all subjects connected with entomology, I am sorry to have it in my power to adduce some facts relative to this destructive insect strongly corroborative of the position which Mr. Waterton has assumed. The park at this place is rich in stately Elms, some of them of very magnificent proportions. In the formation of the new gardens it was desirable to retain two of these fine trees upon the terrace, but in carrying out the groundwork, draining, making walks, &c., a large portion of the surface roots was considerably mutilated, if not entirely destroyed. Notwithstanding this the trees look strong, and until about midsummer looked healthy. At that time they assumed a sickly hue, but still as the summer was dry, it did not cause any particular uneasiness. As the autumn however approached the trees became much infested by hornets, who seemed to feed upon the sap, which in places exuded through the old bark. One gentleman remarked that "trees rarely recovered after being visited by hornets," but still though I knew the roots had been much injured, I thought they might recover. Finding however a day or two back the Scolytus busy at work on some sickly trees in another part of the park, I was induced to examine the trees upon the terrace, when I found the bark on the upper part of the trees completely riddled with the perforations of the Scolytus; and having since taken the trees down I think I may safely affirm there is not a square foot of living bark upon the two trees. Now, you will perceive these two trees were unhealthy; but healthy trees immediately contiguous are, as far as a very minute inspection enables me to judge, quite unscathed. Again, in the early part of July, a heavy gale of wind brought down a moderate-sized branch from each of three different trees; these branches were not removed at the time, but upon examining them recently, I found the whole bark a mass of perforations and grubs; but singular to relate, the parent tree in all three instances appears quite healthy and free from attack. Here, again, disease manifests itself, and no doubt the sap in the fallen branches had undergone such a chemical change as to render it acceptable to this truly destructive pest. Of trees in other places I cannot speak; but of those in Hyde Park and Kensington Gardens, many of them were no doubt in an unhealthy state. Perhaps Mr. Bailey can tell us something of the state of the trees previous to attack at Newnham and Oxford. Admitting that the Scolytus does attack healthy trees, I think the fact above stated relative to the fallen branches is a clear proof they prefer unhealthy ones; for in one case the fallen branch had lodged in one of the lower limbs, and yet not the slightest trace of injury from the insect could be discovered. What the summer may bring forth I cannot tell, but one fact manifests itself, viz., the propriety of removing the fallen branches before the

Scolytus has time to attack them. *W. P. Ayres, Orchardleigh Park, Frome.*

Roses.—I am glad to see, in a late Number, a communication inviting experience respecting the cultivation of Roses in various soils and climates; permit me to offer my mite of practical knowledge. My locality is in Northumberland, the situation high and exposed—particularly to the south and south-east—the soil a strong rich loam with clay underneath. I have found it admirably suited for the Dog-Rose stocks, on which I now always bud my Roses, having ascertained that the Manetti stocks do not answer, the wood of them being poor and small. My principal Rose beds lie in front of the house, which faces a little to the east and south, and are partially sheltered in that direction by clumps of evergreens; they are well manured every autumn with thoroughly decomposed cow manure, or the remains of an old hotbed, but I find that Roses in these beds, which are well sheltered from the south-east wind, flourish much better than those which are exposed to it; and Tea Roses so exposed though in a situation fronting the south are leafless, when others of the same class facing the west, but well sheltered from the wind, and in winter nearly altogether screened from the sun, retain their foliage till quite late in the season, even in the midst of frost and snow; and as far as my experience goes, bloom much finer. Against the front of the house, the Roses, consisting of Teas, Bourbons, &c., grow and bloom most luxuriantly without any protection in the winter. In such a northern climate, therefore, unless Rose trees are trained against a wall, shelter seems to be of primary importance, as nothing could do better last year than plants of Lord Raglan, Jules Margottin, and Prince Leon (on a slightly enriched soil, and budded the previous season), which stood in a snug, sheltered spot, almost entirely shaded by evergreens; the foliage was magnificent, and the bloom, particularly of the latter, perfect and highly fragrant. Lord Raglan seemed too luxuriant to bloom, and continued through the whole season, though constantly stopped, to put forth most vigorous shoots, the wood of which ripened well. Can any of your readers inform me why in the same soil and situation, within a few yards of each other, some Roses, such as Triomphe de l'Exposition, Enfant du Mont Carmel, Gloire de France, &c., should, almost before the summer bloom is over, lose their leaves, which become marked with brown spots, shrivel and fall off, whilst others of the same class retain their beautiful foliage all through the season? Souvenir de la Reine d'Angleterre is of the latter number, and bloomed splendidly both in summer and autumn last season, while Baronne Hallez—not a yard distant — scarcely maintained its struggling existence. *G. P.*

Sardinian Seeds.—Observing from your remarks in last week's *Gardeners' Chronicle*, under the head of "Trade Lists Received," that you are evidently labouring under a mistake with regard to the agency for choice seeds saved by the "celebrated correspondent in Sardinia," we beg publicly to correct that error, and to state that we have for several years been, and are still, supplied with seeds from that very excellent source, and that a sole agency for them does not exist, as might be inferred from your remarks, and also from some advertisements which have appeared in your Journal. *Hooper & Co., Covent Garden, Feb.* 10. [Our statement was made upon what we understood Messrs. Butler and McCulloch to mean in the notices prefixed to their excellent Catalogue. Personal knowledge we of course have none.]

Societies.

British Pomological: *Dec.* 16.—R. Hogg, Esq., in the chair. E. Banks, Esq., and W. Wigan, Esq., were elected members. Of examples of fruit, the following were the most interesting:—

Grapes.—Mr. Wighton, Cossey Hall, Norfolk, again sent his Seedling, observing that he had cut the first bunch from the same Vine on August 5th, when the crop was first ripe, showing that the bunch now sent had been kept over four months. He also stated that he began forcing the house in which they had grown in December last, and that it had stood open for some time past, and in two instances exposed to several degrees of frost. On the former occasion, the meeting expressed a favourable opinion of it, desiring to see it again at this season, to test its keeping properties. Doubts, however, were felt as to its being perfectly distinct from some varieties of the St. Peter section, evident affinity thereto being proved by its foliage; and on this occasion it was not considered quite so juicy as West's St. Peter's. The meeting was of opinion that Mr. Wighton should be invited to send it again next year, on the days specially appointed for the examination of collections of Grapes, and that the final opinion of the Society regarding it should be reserved until then. Mr. Melville (Dalmeney Park, near Edinburgh) again sent his seedling Muscat Grape, which had been laid before previous meetings (August 19th and September 9th), and being then considered promising, was invited to be exhibited in a higher state of development next year. In this instance, a small bunch was sent, upon a *third* lateral shoot, to evince the prolific habit of the variety.

Pears.—Premiums of 1*l.* and 10*s.* for the best and second best six fruits of Glou Morceau (growers in the Channel Islands excluded from competing in this class). Nine very excellent dishes were exhibited. The following, however, is the order in which they were placed:—1st prize to Mr. J. Hall (gr. to T. Lucas, Esq., Lower Grove House, Roehampton) for fruit from a west wall, free stock; soil light and sandy, over very porous and drained subsoil. Fruit medium sized for the variety, handsome and perfect, deliciously juicy and melting, with rich, sugary flavour. Considered one of the finest dishes of Pears which had been exhibited at the Society's Rooms this year. 2d prize, to Mr. Tiley, Abbey Churchyard, Bath, for fruit from an espalier, on Pear stock; soil stiff loam, over strong clay. Fruit small, compared with that from walls, juicy, melting and sugary. From the facts collected on this occasion concerning aspect, district, soil, &c., the following deductions may be gleaned:—1st. That it is generally a variety requiring a wall, although succeeding well on espaliers in the south-western counties. 2d. That the quality of the fruit graduates very nearly as the soil passes from light sandy loam, over porous subsoils, to strong loam over retentive clays. 3d. That size increases, but flavour diminishes when the trees grow on rich garden mould. 4th. That the more favourable aspects on which the trees are grown, in Essex and Cheshire, are insufficient to compensate for the stronger soil, combined with the difference in latitude. 5th. That, in the south-western district, the difference of climate is sufficient to compensate for that between wall and espalier, and between strong soil and light. It is proper to mention, that in the above deduction the leading features only of the information furnished have been made use of; there are many other points—such as shelter and exposure, altitude, inclination of surface, &c.—which modify the effect of the more important conditions and circumstances, and which will be useful in more extended analyses, by explaining results which would otherwise appear discrepant.

Premiums of 1*l.* and 10*s.* for the best and second best six fruits of Winter Nelis Pear. Nine dishes also were exhibited; but their general quality, either in appearance or flavour, was not proportionately equal to those in the previous class. The finest dish, in every respect, was one placed, "not for competition," by Messrs. M. Webber and Co. 1st prize to Mr. Cox, for fruit from a south wall (soil, see Glou Morceau). They were large, juicy and melting, vinous, and sugary in flavour. 2d, to Mr. Wighton, for fruit from an espalier. Small, somewhat shrivelled and spotted, but deliciously juicy, melting, and finely flavoured. Reported to be much subject to mildew. The quality of the remaining dishes was according to the order in which they are described. Exhibited by Mr. Tiley, from an espalier. Medium sized, melting, and sugary. By Mr. M'Laren (gr. to J. C. Whitbread, Esq., Cardington, near Bedford), from east wall, on light, black, gravelly soil, over porous subsoil. Fruit medium sized, melting, and sweet, but slightly astringent. By Mr. J. Holder, of Reading, from standard; soil rich, over sandy loam. Large and fine in appearance, promising to be equally so in flavour, but not ripe enough to compare with others. By Mr. Melville (gr. to the Earl of Rosebury, Dalmeny, near Edinburgh), from a south wall, re-grafted on an old Crassane tree. The latter variety is a shy bearer in this garden; but the Winter Nelis is reported to be one of their best December Pears. Soil deep light loam, over rather gravelly rock. Fruit medium-sized, clear, and healthy, but very green, buttery, and melting, but deficient in flavour. Good, however, for the latitude. By Mr. Newton (gr. to G. J. Graham, Esq., East Lodge, Enfield Chase), from a wall, on Quince stock; soil rich garden mould over London clay. Fruit large and handsome, melting, but watery in flavour. By Mr. Smith, Cheshire, from a pyramid, Pear stock; planted on a prepared station. Similar in appearance and quality to the last. By Mr. Elliott (gr. to the Marquis of Stafford, Lillishall), from a south wall, with the ground much shaded by massive, projecting buttresses; soil strong clayey loam; subsoil clay, over old red sandstone; high and exposed. Fruit small, and indifferent in appearance, dry in texture compared with the previous varieties, and watery in flavour.

Premiums of 1*l.* and 10*s.* for the best and second best six of any other kind of Dessert Pear in season, excepting Glou Morceau and Winter Nelis. 1st prize to Marie Louise, exhibited by Mr. Shoesmith (gr. to J. Morman, Esq., Bexhill, Sussex), from south-west wall; soil, medium loam, over stiff clay. Fruit in fine condition, large, clouded with russet, buttery and melting; flavour rich and sugary. 2d, to Van Mons (Leon le Clerc), also by Mr. Shoesmith, from espalier; large, russety, buttery, and melting; rich, aromatic, and sugary. This dish was scarcely ripe, or it would have been first instead of second. Comte de Lamy was exhibited by Mr. Holder, from a standard. Fruit juicy, but rather rough and gritty; good aroma; flavour rich, vinous, but rather sharp. Bergamotte Cadette, or Beurré Beauchamp, by Mr. Whiting, of the Deepdene, from a pyramid, on Quince stock (soil, see Glou Morceau). This is a little-known, small, roundish-obovate Pear; average size, 2 3-16 inches greatest length, by 2 5-16 inches greatest diameter; colour, bright lemon, with patches of light russet, and very dark, irregular spots; calyx open and perfect; juicy and melting; aroma slight; flavour sweet, but not rich. Mr. Whiting reports, that this variety possesses, in a greater degree than any other variety he knows, the quality of ripening so as to furnish a long succession from the same tree. Beurré d'Aremberg, by Mr. Shoesmith, from south-east wall, in nice condition. Juicy and melting, but rather gritty; flavour rather acid, but pleasant. Old Colmar, by Mr. Underwood, from an old tree, on south wall. Juicy and melting, but not rich. Matthews' Eliza, by Mr. Matthews, of Clapham Rise. This variety was brought as a Seedling before the Society on December 3d, 1857, and then highly commended. It was not, however, on this occasion found to be so fine in flavour, though juicy and melting. Passe Colmar, by Mr. M'Laren, from dwarf standard, on Quince stock. Unripe, by Mr. Smith, Cheshire, from south wall. Large, handsome, but dry and deficient in flavour. By Mr. Wighton, from south wall. Sugary and juicy, but not melting. By Mr. Melville, also from south wall. Juicy, and half melting, but deficient in flavour. Good for the locality. By Mr. Spivey (gr. to J. A. Houblon, Esq., Halingbury Place, Essex), from pyramid, on Quince stock; soil rich garden mould, over strong but well-drained subsoil. Large, handsome, and ripe; melting and juicy; sweet, but not high flavoured, although the best dish exhibited in this variety. Forelle, by Mr. Morris (gr. to T. White, Esq., Manor House, Wethersfield), from espalier Pear stock; soil sandy, over dry, sandy subsoil. Fruit handsome, juicy, and half melting, but deficient in flavour. Belle de Noel, by Mr. Morris, from a pyramid, on Quince stock. Fruit juicy, but only half melting, not high flavoured. Orpheline d'Engheim, by Mr. Morris, from an espalier, on Quince stock. Fruit good in size and appearance, but indifferent in texture and flavour. Eyewood, by Mr. Shoesmith. Fruit in good condition, juicy and melting; flavour pleasant, but acid. Vicar of Winkfield, by G. Wolsey, Esq., St. Andrew's, Guernsey. Good in appearance, juicy, and half melting, but deficient in flavour. Susette de Bavay, by Mr. Wighton, from a south wall, regrafted on Crassane. Good in appearance, but rather dry, soft, and, though sweet, not high flavoured. Reported to be a free-bearing and useful kind in the district, and that last year it was excellent in March.

Apples.—Premiums of 1*l.* and 10*s.* for the best and second best six fruits of Old Nonpareil. 1st prize to Mr. Swinerd (gr. to J. Swinford, Esq., Minster Abbey, Isle of Thanet), who sent two dishes; one from a dwarf, growing in hazel loam, over brick earth; tree subject to canker. Fruit small, juicy and sharp, and possessing the true Nonpareil flavour. The second dish was from an espalier, in rich garden mould, and less subject to canker. Fruit large, juicy and sweet, but not so true in flavour. 2d, to Mr. Holder, of Reading, from a standard (soil, see next class). Fruit juicy, acid, and with a slight, but not high, Nonpareil flavour. Mr. Short (gr. to the Duke of Cleveland, Raby Castle, Durham), sent a dish from a very old tree, on a south wall; situation low and damp. Fruit large, juicy, and sub-acid; deficient in Nonpareil flavour; their merit was, moreover, much injured by having been packed or laid in straw, or some material which had spoiled their flavour. Mr. Short reports that his predecessor, Mr. Roberts, was in the habit of painting the trees with a mixture of cowdung, soot, and a little soap, previous to which they had been in a cankered and dying state, covered with scale and American blight, but that now they are healthy, vigorous, and productive. Mr. Wright (gr. to Sir H. Cotterell, Bart., M.P., Garnon's, near Hereford), sent a dish from an old standard; soil strong loam, over marl, naturally dry. Fruit dry, acid, and affected by subcutaneous disease.

Premiums of 1*l.* and 10*s.* for the best and second best six of any other Dessert Apple in season, excepting Old Nonpareil. 1st prize to Mr. Holder, of Reading, for Golden Harvey, from a standard; soil rich, subsoil sandy loam, over gravel. Fruit fine-coloured, richly vinous, and sugary in flavour, and, but for being somewhat shrivelled—probably owing to having been somewhat too early gathered—they would have been, in every respect, one of the best dishes ever laid before the Society. The same was also sent by Mr. Simpson (gr. to Lady Molyneux, Stoke Farm, near Slough). Plump and juicy, but small, and slightly astringent. 2d, to Mr. Duncan (gr. to J. Malcolm, Esq., Lamb Abbey, Eltham, Kent), for Lamb Abbey Pearmain, from a tree seventy years old; soil loam and gravel, over chalk. In fine condition, well coloured, juicy, rich, and sugary. Of Scarlet Nonpareil five dishes were sent, none of high merit, but in consecutive value as follows:—By Mr. M'Laren, under the name of Old Nonpareil, from standards. Medium sized, juicy, but acid, and over-ripe.—And from espaliers, much smaller in size, with rather more sugary flavour. By Mr. Elliott, Lillishall, from an arched trellis. Fruit, large, sweet, and juicy, but over-ripe. By Mr. Newton, from standard. Large, and in fine condition, but rather dry, and not high flavoured.—And by Mr. Short, from old tree, on a south wall (see Nonpareil). Fruit small, but tender fleshed, juicy, and sweet. Sweeney Nonpareil was again sent by Mr. Whiting, in good condition, juicy, thin skinned, and sugary. This was one of the eight best dishes selected by the Committee for final adjudication. Autumn Nonpareil, by Mr. Swinerd, from standard. This was an Apple of considerable merit, one of the best eight, and apparently little known, the name not appearing in catalogues, although, probably, recognised under some other name (said to have been obtained from Mr. Kennett's nursery). Fruit oblate, slightly conoid: average greatest diameter—tranversely, 2½ inches; longitudinally, 2 inches. Stalk medium length, slender, deeply inserted, eye puckered; colour pale yellowish green, almost entirely covered with pale russet; flesh tender, juicy; nice Nonpareil flavour. Aromatic Russet, by Mr. Swinerd, from standard, one of the best eight. Juicy, with rich vinous flavour. Cornish Gilliflower, by Mr. Ferguson, of Stowe, in fine

condition, one of the best eight. Juicy, rich, and sugary. —By Mr. Newton. Fine in appearance and juiciness, but not equal in condition to those exhibited at previous Meetings, and injured by having been in contact with some material which had given its flavour to the fruit. —A variety much resembling the above, but hardier, heavier, and later, was sent by M. Shepherd, Esq., Howard Lodge, Upper Tulse Hill. It was asked for again, with more information regarding it. Old Golden Pippin, by the same gentleman, and also by Mr. Newton, from standards. Both fine in appearance, plump, juicy, and possessing the true flavour of the variety in as fine a degree as it is usually found. They were of the best eight.—Under this name, also, was sent a variety, evidently nearly related, but not quite true, by Mr. Short; not equal to the above in texture or flavour, sweet but dry. Russet Nonpareil, by Mr. Swinerd (without name, No. 4), from a standard. In good condition externally, but dry and deficient in flavour. Golden Russet, by Mr. Newton, from a standard. This was another variety not known in catalogues. Fruit oblate: average diameter—transversely, 2½ inches; longitudinally, 1, 7-16 inches; eye slightly depressed, calyx perfect; stalk long, slender, deeply inserted; skin thick, pale green, russety, with large, dark excoriations; texture juicy; flavour rich and sweet. This, however, with several others of Mr. Newton's fruits, were much injured in flavour by having been laid on hay or something similar. Screveton's Golden Pippin, by Mr. Newton, from a standard. Fruit apparently gathered too soon, tough, and not juicy. Ribston Pippin, by Mr. Elliott, grown in the gardens of the Marquis of Stafford, Tarbot House, Ross-shire, on a wall; soil light, over sand, about 400 yards from the sea; trees old, reported to be vigorous. The fruit had suffered in flavour from packing, but was juicy and sweet, quite equal to another dish of the same kind, by Mr. Wright (Garnon's, Hereford), from a standard, and which had been good flavoured, though rather dry and slightly over-ripe. Old trees are reported to be healthy in this case also. Soil strong loam, over marl, naturally dry.—Another dish, but not true, was sent by Mr. Short. Golden Drop, by Mr. Swinerd, in good condition, from a dwarf bush. Flesh tender, juicy, sweet, and vinous. Blenheim Pippin, by Mr. Elliott, Lillishall. Very fine in size and appearance, but dry and deficient in flavour.—By Mr. Wright. Large, but not good enough for dessert. It may be useful to remark, that when not good enough for dessert, this is an excellent kitchen variety, as it bakes down to a sweet, juicy, soft, light-brown pulp, requiring little or no sugar. Cox's Orange Pippin was again sent by Mr. Simpson. Very juicy and good, but damaged in flavour, by having been in contact with straw.—And by Mr. Holder, from a pyramid. Tender and juicy, sweet, but not richly flavoured. Newtown Pippin, by Mr. Holder. Evidently true, by the peculiar taste and aroma; but so small and otherwise out of character, as is usually the case when grown in this country, that it would scarcely be recognised.

Of General Dessert Apples. Coronation Pippin was exhibited by Mr. Swinerd. It is a variety not hitherto described. Oblate, slightly turbinate, somewhat ribbed. Average diameter—transversely, 2 3-16 inches; longitudinally, 2 1-16 inches. Pale greenish-yellow, slightly striped, scattered over with small, round, dark spots; pale russet round the stalk, which is of medium length, slender, and deeply inserted; depressed at apex; flesh tender, very juicy; flavour brisk sub-acid. Spring Ribstone Pippin, or Baddow Pippin, by Mr. Lane, of Berkhampstead. This is a little-known variety, but one deserving of more general growth. Fruit roundish, irregular. Average diameter—transversely, 2⅝ inches; longitudinally, 2¼ inches. Rind thick; colour pale green much clouded by small patches of russet and spots of darker colour; eye puckered; cavity within calyx deep and hollow; stalk short, thick, inserted deeply; flesh tender, very juicy, sweet, with a slight Nonpareil flavour. The specimens exhibited had, unfortunately, been gathered before they were ripe, and were rather shrivelled; but it is generally reported to be a useful, late-keeping variety.

Kitchen Apples.—Riplin, by Mr. Sendall, of Burningham Hall, Aylsham, Norfolk. Reported to be a great bearer, and was considered likely to be a useful cottager's Apple; medium-sized, green, Codlin-shaped. Fruit juicy, tender flesh, producing, when baked, a soft, pale brown pulp, sub-acid. Colonel Vaughan, or Lady's Finger, by Mr. Smith. An old and very beautiful, striped, wax-like, conical-shaped Apple; juicy, and in some districts a favourite variety for mince-meat and cider. The same variety was sent by John Ferme, Esq., of Haddington. Pomme de Cire, by G. Wolsey, Esq., St. Andrew's, Guernsey. Reported to be much esteemed in the island for dessert or kitchen use. Fruit medium-sized, pale yellow, tender; flesh juicy, and sub-acid, but not calculated for dessert; when baked producing a delicious, soft, syrupy pulp, having a rich pleasant flavour, and requiring no sugar. Violet Apple, by Mr. Ferguson. A handsome, striped, conical, medium-sized, but soft fruit, said to be very productive and useful; when baked, producing soft and sub-acid, but not syrupy, pulp, requiring sugar; probably most suitable as a sauce Apple. A very similar Apple in every respect, except that it was more solid, and likely to keep longer, was sent by Mr. Swinerd, under the name of Scarlet Nonpareil.

Seedling Apples.—G. Wolsey, Esq., of St. Andrew's, sent a Seedling, supposed to be a cross between Golden Pippin and Nonpareil, and was considered to possess considerable merit. Fruit small, oblong, slightly conical; average diameter, 2¼ inches each way; eye puckered, slightly depressed; stalk medium length, stout; skin thin, pale green, yellowish on the sunward side, much flaked, and covered with pale brown russet; texture very tender and juicy; flavour brisk, sugary, rich, and aromatic. It was hoped that Mr. Wolsey would send it again, with information concerning the age of the tree, &c. Mr. Ferguson sent a Seedling Apple, called the Cottager's Ribston Pippin. Reported to be a vigorous grower, great bearer, and excellent for puddings, requiring no sugar. Fruit large and sweet. Tested, and found to be exceedingly sweet and syrupy, when boiled or baked, and whitish coloured, but not breaking down into a nice soft pulp. Messrs. Youell's (of Yarmouth) Seedling Apples again came before the meeting; but not any of them were considered, from the present exhibition, worthy of being commended as acquisitions. Several of the most promising varieties, however, had suffered so much from having been gathered in an unripe state, that it may be worth while to receive them again in a better condition next year.

Notices of Books.

Household Surgery; or, Hints on Emergencies. By J. F. South. Fourth Edit., 18mo. Murray. Pp. 386. We are not surprised at learning that 17,000 copies of this admirable book have been already sold, for it ought to be in every house in the kingdom. When a surgeon of the acknowledged eminence of Mr. South, in plain simple language, instructs his readers what to do in the event of a serious accident occurring where surgical assistance cannot be immediately procured, he confers an inestimable benefit on society; for no one can question the soundness of the advice offered by such a man; and he must be more than ordinarily obstinate who prefers what he fancies to be proper to that which so eminent an authority tells him to do. The learned author in a familiar way that will be found delightful by all who can appreciate the quiet pleasantry of a gentleman, first instructs his readers in the mysteries of Poultices, Fomentations, Lotions, Liniments, Ointments and Plasters. Having thus armed the operator with materials required in almost every case he proceeds to show what should and *what should not* be done in bleeding, blistering, bruises, wounds, broken limbs, scalds, burns, chilblains, drowning, stifling, poisoning, and a hundred other affections which occur occasionally in every family. His account of POULTICES is inimitable. Speaking of the great Abernethy, he observes:—

"With a large and comprehensive mind, Abernethy did not despise the day of small things; he did not think lightly of what many consider little matters in surgery, not worth knowing to a practitioner, and still less fitting to attract the notice of a professor and teacher. Hence his painstaking to impress on his pupils the importance of knowing

How to make a Poultice.

"'Blessings or curses,' as he used to say, 'as they are well or ill made.' And accordingly when Professor of Surgery at the Royal College of Surgeons, he described with great humour, as he was accustomed to his own private class, how this important branch of surgical cookery should be managed, and made the following apology for so doing, in his own peculiar but impressive style:—'A pretty fellow, truly, are you, to be appointed Professor of Surgery to the Royal College of Surgeons; could you find no other subject better worth the attention of your audience than poultices? But I said, if any young surgeon has had a troublesome disease to deal with, it would be good for him that he had been in trouble, for poultices are either blessings or curses, as they are well or ill made, and more commonly, as they are made, only irritate, instead of doing good.'

"According to this great professor of the art, poultices are of two kinds, *the evaporating poultice* or *local tepid bath*, and the *greasy poultice*, each of which serves a special purpose, and must be employed according to circumstances.

"'The most soothing application for local disease,' said Abernethy, 'is tepid bathing, and this we can manage by putting on a poultice, being careful that the person is kept in bed, otherwise the poultice will serve the purpose of a cold bath. The poultice of which I am fond above all others is

The Bread and Water Poultice, or Evaporating Poultice.

And I tell you the mode of making it. Scald out a basin, for you can never make a good poultice unless you have perfectly boiling water; then having put in some hot water, throw in coarsely crumbled bread, and cover it with a plate. When the bread has soaked up as much water as it will imbibe, drain off the remaining water, and there will be left a light pulp. Spread it, a third of an inch thick, on folded linen, and apply it when of the temperature of a warm bath. It may be said that this poultice will be very inconvenient, if there be no lard in it, for it will soon get dry; but this is the very thing you want, and it can easily be moistened by dropping warm water on it, whilst a greasy poultice will be moist, but not wet.'

"A poultice thus made may be the *vehiculum crassum* of the doctors, the stock of the cooks, to be medicined or seasoned with laudanum, or Poppy water, with Carrot or Horseradish juice, or with decoctions of herbs, anciently known by the name of Stoups, with which the patient or the doctor may be inclined to medicate it, instead of loading an already irritable and very sensitive part with a heap of hard Poppy-shells, or scraped Carrots and Horseradish, called Poppy, Carrot, and Horseradish poultices, but which increase rather than allay the sufferer's pains.

"When vegetables—as Carrots, Horseradish, and others—are used to medicate poultices, they should be bruised, put into a pot, covered with water, and simmered for about half an hour. The juice is then to be strained off and mixed with bread and water or Linseed-meal, to the consistence of a poultice. The Poppy fomentation may be used with bread or meal in the same way."

Read, too, this graphic account of CROTON OIL LINIMENT, "of which 10 or a dozen drops are to be rubbed in lightly with the fingers, guarded with a piece of oiled silk, for two or three nights. Generally on the second day the surface is red and puffy, and on the third day a large crop of little blisters about the size of Hemp-seed cover the skin. When these appear the rubbing must be stopped. In the course of a few hours the fluid in the blisters changes to matter, and these pustules begin to tingle and itch furiously. As soon as this happens, prick each with the point of a needle and press out the matter with a handkerchief; or if you have not patience for this, run the back of your nails smartly over them in various directions, and crack the pustules as fast as you can. The sensation is rather agreeable than otherwise; and soon after, the luxury of a good scratch is beyond all price. Sometimes a few of the pustules are so tough that they cannot be thus broken, and, unless pricked and emptied, become excessively painful, forming a sort of small boil, which the sooner it is got rid of the better. In the course of a week the skin has been completely reproduced, and then the croton oil may be used again; but it does not blister quite so quickly as when first applied. The croton may be used for months, and is a most excellent mild irritant, and infinitely superior to that most cruel and inhuman of all human inventions, a perpetual blister, as it is called; that is, a blister from which the skin having been cut off, the raw surface is dressed with savine ointment. I am sure no person who has ever smarted under this awful torment would order it for another."

In conclusion we recommend Mr. South's opinion upon DRESSING and TIGHT LACING to such of our fair friends as it concerns:—

"When the child begins to run about, the top of her dress, though in some degree altered, being still too wide to allow the proper resting of the straps upon the shoulders, so as to keep it up, the dress slips down first on one side and then on the other, and to relieve herself from this inconvenience, and even to prevent the dress dropping entirely, the child is constantly hitching up first one shoulder and then the other, or even both at once. Usually, however, both sleeves do not drop down equally, and thus one shoulder becomes the habitual hitcher, and the trunk in this action being continually thrown to the opposite side, the spine naturally bends that way, and hence very frequently originates a crooked or curved spine, which is usually first discovered by the medical attendant whose advice is asked, on the mother's attention being drawn to one shoulder being higher than the other, and wishing to have it corrected.

"The mode of preventing these fearful consequences is simple enough. The soundness of the child's lungs, and the straightness of her spine, are preserved by one and the same mode of management. Dress the girl properly by having the frock at least as high as the collar-bones, and the upper opening of the other parts of her dress only so wide, that the shoulder-straps can have a good bearing, and not slip off the shoulders; the dress will then be supported as it should be, on the shoulders, and cannot slip down, consequently there will be no hitching, nor any curved spine from that most common cause of it, and the chest will at the same time be protected from cold.

"The next ill treatment to which a girl is subjected, is that of enclosing the greater part of her body in bone stays, which, covering about the lower two-thirds of her chest, and reaching as low as the tops of the hip-bones, wide at the top and bottom, but narrow enough in the middle, with a broad steel or wooden busk in front, curved forwards, but with its ends bent backwards, and with a pair of stiff whalebones behind at the lacing edges, besides a large array of other smaller bones of the same kind, are so ingeniously contrived as not merely to prevent the expansion of the chest necessary for the proper performance of inspiration, but actually to diminish its capacity at its lower or widest part; so that the poor child has her chest really put into a vice, and can only breathe very imperfectly, for the silly purpose of preventing her waist being thick, which is the real object of wearing stays. Mothers, however, sometimes delude themselves with the notion that they thus encase their girls in steel and whalebone for the purpose of giving them support, whilst in reality they are destroying their children's health and constitutional powers by jamming up the great organs of respiration and circulation into a very much smaller space than is necessary for the due performance of their functions, and thereby disposing the lungs to that fatal disorder consumption, which, though commonly attributed to the variability of our climate, may, I believe, not less frequently be traced to this most abominable custom of stay-wearing, and its attendant, tight lacing: for being early impressed with the notion that the elegance of their figure depends on the tightness of their stays, most girls greedily imbibe this pernicious habit, and

screw their waists so tight that they suffer constant distress for the sake of fashion. This stay-wearing is as needless for the attainment of its object as it is serious in its results; for I have known a few as well-grown and finely formed women as could be met with, who never wore a bone stay till 18 or 19 years of age, one of whom, however, was silly enough so to encase herself on her wedding-day for the first time."

Such is the excellent instruction conveyed in Mr South's book. We can only regret that the dirty practice of sweeping roads with long petticoats, and the hideous custom of putting the lower limbs into balloons cannot be so connected with household surgery as to enable him to introduce these odious fashions in a future edition of his work.

Let us add that to emigrants, squatters, and all who are dependent on their own resources, the volume before us would be a companion of inestimable value.

Kelly's Railway Guide is an extension of the plan called A B C, for conveying plain information amidst the complications of railway travelling. It is clearly printed and well arranged, and will be found a very useful companion, not rival, to Bradshaw.

A popular edition of Lord Byron's Poetical Works has begun to be issued by Mr. Murray, to be completed in nine monthly parts, price a shilling each. The edition is beautifully printed, illustrated with excellent engravings on steel, and when finished will be complete in all respects, even as to the notes, which are from the hands of Sir Walter Scott, Bishop Heber, Thomas Moore, Lord Broughton, Campbell, and other eminent writers. Such an edition will be welcome to all lovers of poetry, and its extremely low price renders it attainable by very humble people.

Half Hours with the Microscope, by Tuffen West (12mo, Hardwicke, pp. 84), is a very nice companion for microscopical amateurs. It contains extremely useful practical advice as to the manner of using the instrument and preparing objects to be examined by it; and is illustrated by eight plates so exquisitely drawn as to leave nothing to desire.

TRADE LISTS RECEIVED.—*A. Campbell & Son's* (Glasnevin, Dublin) *Descriptive Catalogue of Kitchen Garden Seeds, &c., &c.* A good set of good things well arranged. Mr. Campbell seems to be a fancier of Stocks, Balsams, and Asters, of which he offers extensive collections.—*Chivas's* (Chester) *Catalogue of Seeds, &c.* Forty-three neatly printed pages, with useful monthly and other instruction; but Mr. Chivas is ill seconded by his printer.—*Daly & Son's* (Coleraine) *Catalogue of Vegetable and Flower Seeds.* A small useful assortment of such as Irish gardeners are most likely to require.—*Hooper & Co.'s* (Covent Garden, London) *Catalogue of Vegetable and Flower Seeds.* A large list with the novelties printed in a distinct black-faced type for the guidance of buyers—very convenient. Growers of Alpine plants should procure this list, and so should the fanciers of Carnations and Picotees.—*Vilmorin & Co.'s* (Quai de la Mégisserie, Paris) *Catalogue des Graines d'Arbres.* A very large and remarkable list of tree seeds, among which are most of what are called "the new Mexican Pines." There are also new Oaks from the Atlas, Peaches, Rhododendrons, &c., of much interest to plant collectors.

Calendar of Operations.

(For the ensuing Week.)

PLANT DEPARTMENT.

CONSERVATORY, &C.—This should now be nearly as gay as at any period during the whole year. Any Camellias done blooming should if possible be removed forthwith to some of the houses at work; a moist atmosphere, a temperature averaging 65°, and a slight shade in bright weather are the requisites in order to cause them to produce wood freely, and large healthy leaves. STOVE.—Some little increase of temperature may take place here, and that chiefly, as before observed, in the afternoon, by shutting up early, at the same time using a sufficiency of moisture. Look over the fastenings of Orchids on blocks or in baskets, and renew the wires where necessary. Examine and shift all plants that require such attention, and cut back kinds which it may be desirable to increase after flowering in order to get a supply of cuttings.

FORCING DEPARTMENT.

VINERIES.—Very careful management will be necessary in the present state of the weather, where the Vines are in an advanced state or fairly started, and care must be exercised to counteract the drying effects of so much fire-heat by means of the evaporating pans, and sprinkling the floors, &c. See that inside borders are not allowed to become too dry, and give a good soaking of tepid manure water in a weak state where it is found necessary. Look at last week's directions, and use fire-heat as sparingly as may be safe under the state of the Vines, &c. FIGS.—Stop the young shoots regularly before the fourth or fifth leaf, and keep them regular and sufficiently thin to admit light and air, so as to get the wood matured, and secure a second crop. Where the trees incline to grow too luxuriantly, keep them rather sparingly supplied with water at the root, giving no more than may be absolutely necessary for the present crop, for unless short-jointed firm wood can be obtained, there will be little chance of obtaining an abundant second crop. CUCUMBERS.—There is no doing any good with these without the command of a brisk, moist temperature, which should average 70° at night, and 75° to 85° by day, according to the state of the weather. Sprinkle the foliage frequently with the syringe, and keep the soil in a nice healthy state as to moisture, giving clear weak tepid manure water, also keep the shoots thin and regular, and trained near the glass, so as to expose every part to all the light possible. Take every opportunity of admitting fresh air, but do this very cautiously, for cold draughts would ruin the foliage. Where Melons are wanted early in June, seed of some known good early sort should be got in without further delay, and the young plants should be kept near the glass from the moment they appear above the soil, admitting a little fresh air on every favourable opportunity, with the view of getting strong short-jointed plants, which afford a much better chance of success than long-jointed weakly plants. Ridge out early plants as soon as they are sufficiently strong, and before they sustain any check by being confined in pots; but see that there is a nice regular bottom-heat of about 85° before committing the plants to the hills, and that the soil is in a healthy state as to moisture.

FLOWER GARDEN AND SHRUBBERIES.

Give lawns a good rolling after wet, and if it may be necessary to take up any of the turf for the purpose of levelling the ground, this should be done as soon as possible. Proceed with edging the walks, and keep these clean, and roll frequently to make them firm for walking upon, and also to prevent the growth of weeds. Where it may be necessary to increase the stock of any of the varieties of Dahlias, these should be placed in heat at once in order to secure cuttings. Look to Crocus bulbs, &c., planted in beds, and protect them from the depredations of mice.

HARDY FRUIT AND KITCHEN GARDEN.

Pruning of all kinds should now be brought to a close, except Figs, which may yet remain. When Filberts are closely pruned a deficiency of male blossoms sometimes occurs, in which case stick some of the common Hazel having a crop of catkins on about the bushes to fertilise the female flowers. Before Peaches are tied to the walls they should be dressed with a composition consisting of soft soap, tobacco water, and sulphur, to which add quick lime to give it consistence. Whenever any appearance of scale is found on other wall fruits, they should be dressed during winter with the above composition. To provide against failures in the crops already sown, or where the climate is too cold to trust to seeds for the present to the open ground, we advise sowing Peas, Beans, Spinach, &c., in addition to the kinds named in our last Calendar; good early varieties of the former should be selected. They may either be sown in small pots for the more easy transferring to the open ground, or when the quantity is considerable cut fresh pieces of turf 12 inches long and 4 or 5 inches wide; turn the Grassy side downwards and form a channel along the centre of the now upper part in which sow the crop as yon would in the open ground.

COTTAGERS' GARDEN.

An important crop for cottagers is the Parsnip; yet it is difficult to persuade them to cultivate it. It is not like the Potato, liable to be ruined by disease; all kinds of stock will eat it, and it will succeed on almost any soil. A good way to keep it in winter is to spread over the crowns in November the manure that is intended for the next crop, and to trench them out as wanted, leaving the soil in ridges. The ground for Parsnips should be trenched, putting the manure in the bottom, and the seed should be sown now in drills 15 inches apart.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.
For the Week ending Feb. 10, 1859, as observed at the Horticultural Gardens.

Feb.	Month's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Temperature of the Air. Min.	Temperature of the Air. Mean	Temperature of the Earth. 1 foot deep.	Temperature of the Earth. 2 feet deep.	Wind.	Rain.
Friday 4	1	30.089	29.685	48	34	41.0	43	43	S.W.	.15
Satur. 5	2	29.544	29.391	52	36	44.0	43	43	S.W.	.22
Sunday 6	3	29.273	29.239	45	27	36.0	45	43½	S.W.	.02
Mon. 7	4	29.322	29.279	43	23	33.0	44	43	S.	.00
Tues. 8	5	29.480	29.430	45	33	39.0	44	43	S.	.10
Wed. 9	6	29.478	29.303	47	36	41 5	44½	43	S.W.	.14
Thurs. 10	☽	29.460	29.417	50	35	42.5	45	43½	S.W.	.09
Average		29.521	29.393	47.1	32 0	39.5	44.1	43.1		.72

Feb. 4—Cloudy; overcast; boisterous, with rain.
— 5—Cloudy; exceedingly fine; rain at night.
— 6—Rain; cloudy; overcast; slight frost.
— 7—Fine; very fine; heavy clouds; clear and frosty.
— 8—Fine; overcast; cloudy; rain at night.
— 9—Overcast; boisterous, with rain; overcast.
— 10—Overcast; cloudy; rain at night.
Mean temperature of the week, ½ deg. above the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 33 years, for the ensuing Week, ending Feb. 19, 1859.

Feb.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday13..	44.2	32.3	38.2	12	0.37 in.	2	3	5	1	6	8	6	2
Mon. 14..	45.0	33.1	39.0	12	0.50	1	3	3	2	4	10	6	2
Tues. 15..	45.9	33.0	39.5	10	0.25	3	4	3	1	5	8	7	3
Wed. 16..	44.6	33.5	39.1	5	0.23	6	4	2	3	1	8	6	3
Thurs. 17..	45.5	33.3	39.4	11	0 32	3	3	3	3	4	6	9	2
Friday 18..	45.4	31.9	38.7	13	0.30	4	3	4	1	4	8	6	3
Satur. 19..	44.5	30.2	37.4	11	0.64	5	2	5	1	1	8	4	3

The highest temperature during the above period occurred on the 15th, 1849; 17th, 1847, and 18th, 1850—therm. 57 deg.; and the lowest on the 13th, 1855—therm. 0 deg.

Notices to Correspondents.

AMERICAN CORRESPONDENCE: *R B S.* Much obliged. But it has very little interest here; and we will not trouble you to send it.

BOOKS: *Musselburgh.* There is no small Latin Dictionary at all comparable to Dr. Smith's "Smaller Latin English Dictionary," which is as cheap as it is excellent, the price being only 7*s.* 6*d.* Since you are acquainted with the rudiments, and want to improve, we strongly recommend you to procure this, which is a real treasure (or Thesaurus as they say) to all students. It is very creditable to you, as a young gardener, to wish to improve yourself in other subjects besides horticulture; and you will hereafter find your account in having done so.—*F C D.* It is difficult to name a book in every way suitable for your purpose. Under the circumstances, perhaps the best are Neill's Fruit, Flower, and Kitchen Garden, and the Manse Garden.†—*Hortulanus Barbaricus.* 1. There is no better work on hardy trees and shrubs than Loudon's "Arboretum et Fruticetum," 2d edition; 2. No book on practical gardening has yet superseded Loudon's Encyclopædia of Gardening; 3. The Theory and Practice of Horticulture by Lindley explains both principles and practice; 4. We are not sufficiently acquainted with Hogg's British Pomology to offer an opinion upon it. The other book is rubbish. 5. The best work on fruit trees either in English, French, or German is the last edition of the Catalogue of the Horticultural Society.

BRITISH COLUMBIA: *Telemachus.* The usual route is from New York or Southampton to Chagres, then across the isthmus to Panama, and on by steamer. Only you must take care to pick a ship of good reputation—if from New York, for some of the American skippers treat their passengers infamously. But if we wished to go from N. York we should endeavour to cross from the Bay of Campeachy to Tehuantepec, a line very little known, but far preferable to Panama unless you are overloaded with luggage. Concerning this route a correspondent in the Pacific sends us a statement, upon which implicit reliance may be placed:—"We have several on board who came by the *Tehuantepec route*, crossing that isthmus partly on mules. They describe the country of Yucatan as very beautiful, abounding in fowls, turkeys, Sugar-cane, Cocoa-nut, Indigo, white cranes, alligators, deer, corn, Oranges, Lemons, and endless other vegetable productions. A steamer took them from New York across the Gulf of Mexico—up the Coazacoalco river 20 miles. Thence they embarked in a small steamer called the Sachelles, and ascended other 90 miles, from which point they went on mule back for an additional 70 miles, whence a stage coach carried them 35 miles to Ventosa, where the steamer Oregon took them on board, landing them at Acapulco, 300 miles along the Mexican coast, to await our arrival four days after, and go on with us to San Francisco—making in all 220 miles across this isthmus, a far healthier and more pleasant route than that by Panama. The charge for third class was 150 dollars. The food excellent all through. They seemed delighted with the route. The country along the isthmus of Tehuantepec they describe as being mountainous, the hill tops covered with vegetation, alternating with occasional spots of about 15 acres of bright green Grass, well adapted for feeding stock. The soil they thought too gravelly. Timber, Rosewood, Mahogany, &c., abundant." We give you this full information, because if British Columbia succeeds, the selection of a good route and cheap must continue to be of great consequence to England and her new Colony, until a railroad to the Pacific shall be established through Canada, when all other routes will then be to us comparatively unimportant.

COTTAGERS' KALE: *N.* It is Ragged Jack and not at all like Cottagers' Kale.

GARDENERS: *G N.* It is quite out of our way. Send your testimonials, with a recommendation from some Fellow of the Horticultural Society, to W. B. Booth, Esq., 21, Regent Street, London, S. W.

HEATING: *J G R.* Certainly, since warm water rises, you need have no difficulty in placing your boiler at the lower end of the incline. Quite the contrary.

HORSE CHESNUTS: *D C.* Although this tree is acrid and its seeds somewhat poisonous, yet we should not apprehend danger from its roots striking through the sides of a well into the water.

INSECTS: *C A J.* The round body found in the body of the bee is the chrysalis of some large fly, whose maggot has found a cozy resting-place in the inside of the dead bee, and the leaves that covered it.

LAWNS: *W M.* Neither Spergula pilifera nor anything else will form a well-kept lawn if it is to be covered with litter, whether from trees or any other source. A good lawn is constantly kept clean. As for Spergula pilifera, we know no more about it than was stated the other day.—*James.* The advice we gave you was, we dare say, unpalatable. Physic is unpalatable.

LYCOPODS: *A Subscriber.* Selaginella has the leaves growing from opposite sides of the stem, so as to form a flat surface. Lycopodium has the leaves growing all round the stem. Hooker's Muscologia Britannica.

MISELTOE: *Limerick.* Undoubtedly it will grow in Ireland. Sow the seed now, if the birds have left any berries, on the Whitethorn, or Apple tree, or Lime tree. You must obtain the seed through some private hand. We cannot undertake that office. (See also p. 98, col. *a*, of last week's *Gardeners' Chronicle.*)

NAMES OF PLANTS.—We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have or could have undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*Beta.* Your Orange looks like a small specimen of the Otaheite.—*Diss.* We believe the leaves to be:—1, Cotoneaster affinis; 2, C. frigida; 3, C. bacillaris. But you must not rely upon the first two names, because flowers are wanted to render their identification certain.

NEW ZEALAND BEAN: *J Sims, H Holloway, R Marvell.* We see no difference between your Beans and those from New Zealand. But we have never had the pods of the latter for examination.—*R F.* They have no resemblance to the Bean in question.

RUST IN GRAPES: *Wiltshire.* It is impossible to say what causes your Grapes to rust. That disease arises from anything that injures the skin of the berries when young and tender. Dry heat, cold, draughts of cold air, handling, and all such accidents will produce it. So may steam condensed on the berries, and then suddenly evaporated again, or exposed to sudden night cold for even a few minutes. If you write again pray use ink, not ink and water; we have had great difficulty in making out your pallid writing.

THE ORCHID DISEASE: *E P.* We have this subject under examination. The facts are all familiar to us. Your letter shall be used by and by.

THE PEA LENTIL OR ERBSENLINSE: *Grotius.* We can give you a few seeds if you send your address with a penny stamp enclosed.

TREE SEEDS: *Cork.* Sow Bay berries and Benthamia seed in the end of April, in pans under glass, so as to be protected from night cold,

WONDERFUL BOX TREE. Can any ingenious correspondent assist us in interpreting the following extraordinary advertisement:—"To be Sold, the most beautiful Box Tree in Europe, of remarkable form and extraordinary size, situated at 80 metres from a river, whence it can be easily transported. Price, 2000*l.*—Address, in French (pre-paid), to M. Bourgeois, Payers, Rheims, France." A Box tree worth two thousand pounds sterling is indeed a marvel.

*** As usual, many communications have been received too late, and others are detained till the necessary inquiries can be made. We must also beg the indulgence of those correspondents the insertion of whose contributions is still delayed.

THE PATENT

NITROPHOSPHATE OR BLOOD MANURE COMPANY (LIMITED),

CONSISTING OF TENANT FARMERS, OCCUPYING UPWARDS OF 30,000 ACRES OF LAND.

TRUSTEES.

ABEL SMITH, Jun., Esq., Walton House, Ware, Herts. | MAJOR-GENERAL HALL, M.P., Western Colville, Linton, Cambridge
CHARLES DIMSDALE, Esq., Essendon Place, Herts.
EDWARD BALL, Esq., M.P., 8, Belgrave Road, Pimlico | JOHN BRADY, Esq., M.P., Warwick Terrace, Belgrave Sq.

DIRECTORS.

Chairman.—JONAS WEBB, Esq., Babraham, Cambridgeshire.
Deputy-Chairman.—JOHN COLLINS, Esq., Myddleton Square, Pentonville.

EDWARD BELL, Esq., Tottenham, Middlesex | ROBERT LEEDS, Esq., West Lexham, Norfolk.
JOHN CLAYDEN, Esq., Littlebury, Essex | ROBERT MORGAN, Esq., 72, Camden Villas, Camden Town.
RICHARD HUNT, Esq., Stanstead Abbot, Herts. | GEORGE SAVILL, Esq., Ingthorpe, near Stamford.
THOMAS KNIGHT, Esq., Edmonton, Middlesex. | WILLIAM COLLINS, Esq., 105, St. John Street Road.

Bankers.—Messrs. BARNETT, HOARE & Co., Lombard Street.
Solicitors.—Messrs. KINGSFORD & DORMAN, 23, Essex Street, Strand.
Auditor.—G. W. BROWN, Esq., 28, Parliament Street.
Manager.—Mr. JAMES ODAMS. | *Secretary.*—Mr. C. T. MACADAM.

Offices, 109, Fenchurch Street, London.—Manufactory, Plaistow Marshes, Essex.

THE Directors beg to inform their Friends and the Agricultural Public that the following Manures are now ready:—

ODAMS'S BLOOD MANURE FOR CORN AND MANGEL.

ODAMS'S BLOOD MANURE FOR ROOTS.

ODAMS'S SUPERPHOSPHATE OF LIME.

Full particulars may be had at the Company's Offices, or of the local Agents.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

LONDON MANURE COMPANY, removed to 116, Fenchurch Street, E. C. (Established 1840), have the following MANURES ready for delivery:—

CORN MANURE for SPRINGTOP DRESSING
URATE
MANGEL MANURE
SUPERPHOSPHATE OF LIME
BLOOD MANURE
} all of guaranteed quality.

In consequence of the reduction in the price of raw material the London Manure Co. are enabled to lower the price of their Superphosphate of Lime, and to materially improve the Corn Manure and Urate.

The London Manure Co. also supply PERUVIAN GUANO (direct from Messrs. A. Gibbs and Sons), SULPHATE of AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of value. Wholesale dealers supplied.

116, Fenchurch Street E.C. EDWARD PURSER, Secretary.

SOLUBLE PHOSPHATE OF LIME.

FREDERIC CORNWELL begs to inform his friends and the Agricultural public that he can now supply a "SUPERPHOSPHATE of LIME" superior to anything yet produced. Each Bag guaranteed to contain from 20 to 25 per cent. of "Soluble Phosphate of Lime." Price 5*l.* 10*s.* per ton, delivered free to any Railway or Wharf in London. Dealers and the trade supplied. Linseed-cakes, Cotton-cakes, and all descriptions of Artificial Manures at lowest market prices.

Offices, 7, Great St. Helen's, London, E. C.

REDUCTION IN PRICE OF LAWES'S MANURES.

MR. LAWES begs to announce that he has this season reduced the price of the Manures manufactured by him, viz.:—

TURNIP MANURE	from £7 to	£6 6
SUPERPHOSPHATE OF LIME ..	,, 7 to	6 6
MINERAL do. ..	,, 6 to	5 5
BARLEY MANURE..		8 0

Prof. Way and Dr. Voelcker have sampled from a bulk of 5000 to 6000 tons at his factories, and their report and analyses are given in full in Circular to be obtained on application at his office, 1, Adelaide Place, London Bridge, E.C., or of his local Agents.

N.B. Genuine Peruvian Guano direct from Messrs. GIBBS, Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures. American Cotton-seed Cake supplied.

ESTABLISHED 1812.

H. AND T. PROCTOR'S TURNIP MANURE.—Messrs. H. & T. P. draw particular attention to this valuable Manure, which contains all the elements necessary for the full development of the Turnip Crop, so combined, that, from their chemical knowledge and long experience, they feel satisfied is most advantageous to the consumer. It has been very extensively used by most of the eminent Agriculturists of the day, and has attained a high reputation throughout England, Scotland, and Wales, and, they venture to say, is unrivalled for the weight and quality of the Bulbs which it produces. The application of this Manure to the Turnips will be found to benefit considerably the after crops of Barley, Clover, and Wheat.

POTATO, GRASS, BARLEY, CLOVER, AND WHEAT MANURES; also BONE DUST, PERUVIAN GUANO, and SUPERPHOSPHATE of LIME, warranted of the best quality.

Apply to H. & T. PROCTOR, West of England Depôt for Artificial Manures, Cathay, Bristol; or PROCTOR & RYLAND, Birmingham, and Saltney, near Chester.

THORLEY'S FOOD FOR CATTLE.—Every person having an interest in domestic or farm animals should obtain a supply of this celebrated and economical food which will prove invaluable during the approaching season. For keeping horses in good condition, it is unequalled. Pigs fatten with surprising rapidity upon it, and their flesh increases in flavour and value. Cowkeepers will find great advantage in the increased quantity and improved quality of the milk during its use. All animals are benefited by it. A pamphlet on this interesting subject, accompanied by Testimonials from the principal Nobility, Gentry and Agriculturists forwarded on application. In casks containing 448 feeds (measures inclosed), price 50s., carriage paid to any Railway Station in the United Kingdom. Post-office Orders payable to JOSEPH THORLEY, 77, Newgate Street, London.—N.B. The public are cautioned against being imposed upon by worthless imitations.

WARNER'S IMPROVED LIQUID MANURE OR GENERAL PORTABLE PUMP.



These Pumps are fitted with J. W. & SON'S Patent Buckets and Suckers, and cannot clog in action. The barrel is of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure. The legs will fold together, and the whole may be carried on the shoulder to any pond or tank required.

Price of 4½ in. Pump, with legs, 3*l.* 3*s.* If with planished copper barrel and galvanised iron handle, &c., 14*s.* extra. The barrel is 27½ in. long, and the legs are 5 ft. high.

These Pumps are also made without the legs, with strong wrought-iron straps for screwing on to any ordinary water butt or cart, and fitted with 1¼ inch brass union for attaching flexible suction. Price 50*s.*

1¾ inch Gutta Percha Suction Pipe, 1*s.* 11*d.* per foot.

Rubber and Canvas Suction and Delivery Hose, from ¼ inch to 4 inches diameter, in lengths of 60 feet to order. Branch Pipes with Cocks, Union Screws, &c., at reduced prices.

May be obtained of any Ironmonger or Plumber in town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin St., London.

WARNER'S PATENT VIBRATING STANDARD PUMPS.

PATENT CAST-IRON PUMPS, fitted with J. W. & SON'S Patent Buckets and Suckers, which cannot clog in action, for Farms, Cottages, and Wells, not exceeding 28 feet.

Diameter of Barrel.	Height.		£	s.	d.
2½ in.	short 1 ft. 7 in.	Fitted for lead, gutta percha, or cast iron flanged pipe, as required.	1	10	0
2½ ,,	long 3 ,, 3 ,,		1	14	0
3 ,,	ditto 3 ,, 6 ,,		2	8	0
3½ ,,	ditto 3 ,, 6 ,,		2	12	0
4 ,,	ditto 3 ,, 6 ,,		3	3	0
2½ ,,	short, with 15 feet of Lead Pipe attached, ready for fixing		2	14	0
2½ in.	long ditto ditto	ditto	2	18	0



The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.

May be obtained of any Ironmonger or Plumber in Town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

THE CHAMPION.

SMITH'S CULTIVATORS AND APPARATUS are got up not for Show but for Work. The Cultivators are almost indestructible, easily turned, and therefore double cumbersome implements are avoided. The Windlass is simple, convenient, and its working easily understood; it is very strong, and like the Implements subject to little or no damage from working. The Rope required averages only about five chains more than an endless rope, its friction only one-fourth; it never slips, and the tension is only one half at a time. The whole Apparatus can work all useful implements on all shapes and forms of ground; is admirable for autumnal cultivation; has stood the test of three years' work, and has produced "results most astonishing and invaluable;" and while the total cost is not more than half that of the Endless Rope one, it can be worked by an ordinary engine without alteration.

Woolston, Bletchley Station.—Feb. 12.

SHADING.

BROWN'S FLORAL SHADING still maintains its superiority for cheapness and efficiency over all other materials used for a similar purpose, viz., shading plants under glass from the scorching rays of the sun, protecting Wall Fruit Trees when in bloom from frost, and preserving the fruit from the attacks of birds, flies, and wasps. Sold in pieces 20 yards long, 38 inches wide:—

No. 1 per piece .. 4*s.* 0*d.* | No. 2 per piece .. 4*s.* 3*d.*

To be obtained of all the principal Nurserymen and Seedsmen in town and country. Samples sent free on application to the Manufacturer, CHARLES BROWN, Greenheys, Manchester.

THE ROYAL AGRICULTURAL SOCIETY'S PRIZE CHURN.—This Churn has taken all the prizes offered by the Royal Agricultural Society from 1850 to 1858 inclusive. Price list and testimonials sent free. Illustrated Catalogue on receipt of six postage stamps.

BURGESS & KEY, Patentees and Manufacturers, 95, Newgate Street, London.

AGRICULTURAL MACHINERY.

E. R. AND F. TURNER, Ipswich, manufacture Prize Mills for Crushing Corn, Seed, Malt, &c.; Portable Grinding Mills, Steam Engines fixed and portable from 2 horse-power and upwards; Threshing Machines, Chaff Cutter, Oilcake Breakers, Horse Gears, Saw Tables, &c., all of a superior description and adapted for Home, Colonial, and Foreign use. Illustrated Price Lists sent free on application.

HALKETT'S GUIDEWAY STEAM AGRICULTURE will be Exhibited at Canning Place, Kensington Toll Gate, south of Kensington Gardens, on WEDNESDAYS, the 9th, 16th, and 23d of February, and to private view upon previous appointment. By this system every operation of the Farm is performed by steam power, the land largely increased in value, and the cost of cultivation greatly reduced. "I will be happy to lay down 50*l.* as a share, with others, to see your system carried out on a large scale."—SMITH, of Woolston, the successful inventor of Smith's Steam Plough. A Paper read before the Society of Arts, illustrations, &c., will be forwarded upon application to the Office, 80, Chancery Lane, W. C.

AGENCY FOR A VALUABLE MANURE.—Wanted, respectable Agents for a Manure, which commands a ready sale, as its goodness is certified by 3000 Testimonials from all parts of the United Kingdom, and by many farmers who have used it for several years.—Address, with occupation and references, N. Y., at Messrs. J. & E. Saunders', 4, Cannon Street, London.

TO LANDOWNERS.

THE PERMANENT WAY COMPANY having been appointed the sole Licensees for the use of Dr. BOUCHERIE'S Patent Process for Preserving Timber, beg to inform Landowners and others interested in the use of English Timber that a Pamphlet, with full explanations of this cheap and most effectual process, may be had gratis on application to the undersigned. Landowners having Beech, Elm, Fir, or other Timber fit for Railway Sleepers are requested to communicate particulars of quantity, locality, and prices.

WILLIAM HOWDEN, Secretary.
26, Great George Street, Westminster.

LAND DRAINAGE.—Works of Drainage of any extent are executed by the GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY on all descriptions of Property, whether Freehold, Entailed, Mortgaged, Trust, Ecclesiastical, Corporate, or Collegiate.

Repayment may be made by the Landowner as successive portions of the Works are completed, or the actual expenditure, with a Commission thereon, may be charged on the property improved by way of rent charge for any term not exceeding 50 years, the instalments to repay principal and interest being thereby kept down nearly to 5 per cent. per annum.

No investigation of title being required, and the charge not being affected by incumbrances, no legal expenses are incurred.

Works of Irrigation, Enclosing, Wood Grubbing, Road Making, and Farm Buildings are executed in a similar manner.

The Company also assist Landowners in executing any of the improvements by their own agents, and charge the amount expended on the property improved.

Applications to be made to WILLIAM CLIFFORD, the Secretary, at the Offices of the Company, 52, Parliament Street, London.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.

Principal—J. C. NESBIT, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

The Agricultural Gazette.

SATURDAY, FEBRUARY 12, 1859.

MEETINGS FOR THE ENSUING WEEK.

WEDNESDAY, Feb. 16—Agri. Society of England .... Noon

AN abridged report of Mr. CLARKE'S very interesting paper ON ARTERIAL DRAINAGE, read before the London Farmers' Club last Monday, will be found elsewhere. A discussion ensued upon it, in which Mr. BAILEY DENTON, Mr. BAKER, of Writtle, and others took part. The main point insisted on was the need of Government interference, in order to the general treatment of the subject, and the settlement of the diverse interests which in every locality are affected by it. The fact is that every year as the value of land increases the interests damaged by the existing nuisance increase in importance, while every year, as steam power relatively to water power increases in profit and economy, the interests bound up in the continuance of the nuisance diminish in importance. There is thus a better opportunity now than there ever yet has been for a useful interference between landowners and millowners, or between landowners amongst themselves alone, in order to the removal of natural and artificial obstructions to the rapid discharge of river water. The dry seasons of late years have, as Mr. DENTON observed, made the subject of less immediate urgency than it generally has been; but wet weather for a year or two would make it impossible any longer to delay attention to it.

—— Among the other agricultural events of the last few days we regret to have to announce the final winding up of the Flax Improvement Society of Ireland—an association which has been in operation for 17 years—successfully engaged since 1841 in the publication of information on Flax culture, and on the best methods of handling the crop after

harvesting it. "Every means," we quote the *Irish Farmers' Gazette*, "calculated to promote the object of the Society were adopted. Young men, specially selected for the purpose, were sent to Belgium, with the view of acquiring a knowledge of the system of cultivation followed in that country, and of the different details connected with the harvesting, steeping, and drying of the plant. These young men, and others trained by them, were afterwards sent out through this country, as practical instructors, and most painstaking were they in the performance of their duties; whilst the information afforded by them has been productive of much benefit, by introducing and establishing improved methods of cultivation and management. Of late years this system of practical instruction had not been so vigorously pursued by the Society, and we would not feel surprised to learn that in this circumstance will be found a reason which partly explains the want of vitality which latterly characterised its operations." The space which has been hitherto occupied by it must now be taken by the national and local agricultural societies, which will doubtless see it to be their interest to give more attention than hitherto to the cultivation of Flax.

—— We hope next week to draw attention to the recently published results of experiments with manures upon the Turnip crop in various parts of Scotland, which are of especial interest just now when the alternative of guano or artificial fertilisers is occupying the minds of intending purchasers. We may mention here that a trial by Mr. RICHARDSON, of Hibaldstowe, near Lincoln, of several manures purchased, not of the manufacturers, but of customers supplied by them, resulted in the superiority of ODAMS's superphosphate and the phospho-Peruvian guano over other competitors.

—— Since the adjourned meeting of the Highland Society Mr. HALL MAXWELL, the Secretary, has issued a letter to the members, answering in succession the several charges brought against him by the writer of the pamphlet, inquiring "What's to become of the Highland Society?" to which we alluded at page 77. No reference is made in this reply to the case of Mr. Lawson; but on all the points taken up the answer appears to us to be complete.

WE have received at the last moment before going to press a letter from Mr. C. J. COOKE, of 2, Middle Row, Maidstone, the Hon. Secretary to the Cottage Improvement Society, in answer to the criticism on their proceedings published by Mr. BAILEY DENTON in a recent number of this Paper. He says:—

"In answer to his remarks upon our cottages, I have only to say that Mr. BAILEY DENTON'S objections are just those with which we were met at first; but Mr. DENTON is now a little too late, as a considerable number of cottages have been built already within the prices specified by us. Of these I may mention as nearest to London, that Sir CULLING EARDLEY has erected at Erith a pair of cottages (Plan No. I.) at the cost estimated. With respect to these, Mr. HABERSHON, Sir CULLING'S architect, wrote to me at the request of Mr. MARTIN, our agent, to state the results. His letter contains the following passage:—

"'Mr. MARTIN requests me to say that I have carried out for Sir CULLING EARDLEY two cottages on his estate at Erith, according, in all respects, to the published plans, and that they give me great satisfaction. They will be built within the cost named (155 guineas), and will, so far as I am able to judge, answer their end perfectly.'

"Mr. DENTON speaks of a fair profit to the builder, to which I reply that it is not likely builders will work without profit, and therefore on that point the following letter will be conclusive.

"'Having erected several pairs of cottages according to the Society's plans, we are willing to carry out the same on the Society's estimates, to any extent, where the bricks can be obtained at 28*s.* per thousand.

'SEAGRAVE and BLOFIELD,* *London, Nov.* 3, 1858.'

"I beg to refer Mr. DENTON to the following gentlemen whose names occur to me at this moment, as having built our cottages:—F. DASHLEY, Esq., Bexley; H. E. GURNEY, Esq., Reigate; T. HIBBLE, Esq., Hadlow; Lord SONDES, Norfolk; T. SQUAREY, Esq., Berks. There are a great many others all over England building according to our plans, and we purpose shortly to publish a list. With regard to the Enclosure Commissioners, our Plan No. 2 was taken up to their office before it was lithographed, and verbally approved of by Mr. DARBY and the other Commissioners, who were called by this gentleman into his room, and the plan submitted to them. They all expressed their satisfaction, and requested lithographs to be sent to them as soon as ready. As I perceive Mr. PUNNETT'S name mentioned by Mr. DENTON, I have only to say that that gentleman, who is a most respectable and responsible person, is quite ready to erect the cottages at our estimate, within a reasonable distance of Tonbridge, where he lives; and I may add for Mr. DENTON'S satisfaction that Mr. GURNEY'S builder (BARNES of Nutfield) has undertaken to do the same. In fact, in any locality there will be found no lack of builders if the resident gentry only furnish the means for effecting an improvement so essential to the well-being—physical, social, moral, and religious—of their labourers."

* The originals of these copies may be seen at the Society's Office, 18, Adam Street, Adelphi.

THE CASE OF THE BRITISH LABOURER.

[The following letters on this subject have appeared in the columns of the *Times* newspaper.]

Wiltshire.—In your impression of January 21 you kindly allowed a "Wiltshire Clergyman" to make a statement of the wages paid to Wiltshire labourers; may I beg the favour of being allowed space to make a few observations on the earnings of the said agricultural labourers? If, before making such an *ex parte* statement, the rev. gentleman had inquired of those "first-rate cattle breeders" and "skilful agriculturists," for which he says his parish is justly celebrated, he, doubtless, would have been informed that carters, shepherds, ox and nag men receive a higher rate of wages per week than the regular day labourers; whereas, the earnings of the latter class average for the year from 11*s.* to 12*s.* per week, independent of beer supplied them by their masters, amounting in value during hay and harvest times to several shillings per week. Their wives, too, get fully employed during the time of year in which out-of-door work can be done; and every boy able to "drive a team a-field," and every girl that can pull a weed, or handle a prong, is equally well employed. The "Wiltshire Clergyman" is correct as to the rent paid by the labourers for their cottages, a less sum than is paid by a traveller for a night's lodging at a common "mumper's lodge," or a working mechanic for a place to lay his head in London, or other large places, but for which 1*s.* per week (less than 2*d.* per diem) the farmer's labourer obtains a decent dwelling-house, garden, and appurtenances, which, with the land he gets in his master's field gratis, supplies himself and family with vegetables the year through; the Wheat usually gleaned in the fields by his wife and children keeps the family in bread, on an average, three months. Respecting coals, your rev. correspondent has overshot the mark, not being, perhaps, aware that the labourers seldom pay more than the depôt price, which throughout the country is not more than 1*s.* per cwt., having the advantage of its being brought home in their master's waggons on their return from market at little or no expense. The rev. gentleman is equally at fault touching the labourer's inability to patronise the butcher, or feed pigs; whereas, in my parish (which, from the description your correspondent gives of his locality, I am inclined to suppose it to be no great distance from my own, consequently but little difference in the circumstances of the labouring class), there is scarce a cottager that has not, this winter, killed his fat pig, averaging something like 15 score each. Wiltshire is famed for its bacon, and I assure you, sir, the cottagers here pride themselves, and justly so, in having a good fat pig in their sties; and my astonishment is that the clergyman should be ignorant of it, as I think it probable that, when making his pastoral visits, his olfactory nerves would make him sensible of the whereabout of the poor man's grunter's dwelling place. On passing through the villages in this neighbourhood you would not see a shoeless child or a slipshod woman, but all decently clad in suitable and substantial clothing. Enter their cottages, and you find them decently kept and suitably furnished—none of those distressing and heartrending scenes so vividly depicted in your journal under the head of "The Homeless Poor." By the press, parsons, and demagogues the English farmer, more particularly us of the western counties, have been held up as the most hard-hearted oppressive race of mortals, but were the true position of ourselves and workpeople better known, I flatter myself that even you, sir, would think that we, like a certain nameless gentleman, are not quite so black as painted. *A Wiltshire Farmer, Feb.* 1.

Wiltshire.—I hope you will pardon a poor labouring man's boldness in begging you to print a few words to contradict the "Wiltshire Farmer" about wages to labourers, for it is but just that everybody should know the truth concerning it. I, with scores of other people, received 8*s.* a week till the fall of the year. In harvest time we had 4*s.* a week more, with beer for one month, and though we be no scholards, we think this would average 8*s.* 3½*d.* all the year through. Since that time we have had 7*s.* a week, and this is nothing but the truth, as you would find, sir, if you would come to Wiltshire and see us. We should like uncommonly to labour for that kind "Wiltshire Farmer" who gives his labourers 11*s.* and 12*s.* a week all the 12 months, but we do not know where to find him in these parts where we live. When we have paid house rent (which master keeps back when we reckon), and bought a bit of firing, which is very dear, there is not much left out of 7*s.* to buy victuals for ourselves and poor families—far less to feed such fat pigs as that gentleman talks about in his letter, which is nothing more or less than gammon. *A Wiltshire Labourer, Feb.* 5.

Suffolk.—It is not often that a poor man like myself gets a look at *The Times*, but to-day your paper, which contains a letter from a "Wiltshire Farmer," has fallen into my hands, and if you will allow me an opportunity of writing a word in reply to it I shall be truly thankful to you. I am a labourer with a wife and four small children, and if what the "Wiltshire Farmer" states about the wages of workmen in Wiltshire be correct I should be very thankful to any lady or gentleman who would assist me to remove to that highly favoured county. I can assure you, sir, we never see 14*s.* per week here, in Suffolk, all the year round. Horse-men are receiving at present in my parish 9*s.* and labourers 8*s.* per week. In hay and corn harvesting we receive more, as the "Wiltshire Farmer" states; but he ought in common fairness to have told you that then we work longer hours—say, from 5 o'clock in the morning till 7 and 8 o'clock at night. Our work is piecework then, and we receive so much per acre. For six weeks we may make on an average—say, 20*s.* per week, and this would include beer. I am an ablebodied labourer, and my wages at the present rate would stand as follows:—

46 weeks at 8*s.* per week		£18 8 0
6 weeks at 20*s.*		6 0 0
		£24 8 0
Now deduct house rent	£4 0 0	
Coals 1*s.* per week	2 12 0	
		6 12 0
Which will leave		£17 16 0

the actual sum upon which myself and wife and four children have to subsist. It is quite true that my wife might find work in the fields at 8*d.* a day, but is it possible for her to leave her baby to earn this pittance? I look forward with good hope to my eldest boy Jack, who is a very promising lad and is getting on nicely with his learning; but when he goes into the field to "keep crows" or to "herd swine," his wages will not exceed 1*s.* 6*d.* a week—a small sum, sir, I think you will say, on which to maintain a boy in food and clothing. My wife, who is a sort of religious woman, has a great objection to girls going to work in the fields, for she says they learn bad morals there, and, as my two next eldest children are girls, I fear I cannot look forward with the same hope as I do to the boy, of getting anything by their labour. For some years to come, therefore, if I remain in Suffolk, I can only expect poverty, poverty, poverty. I cannot help feeling that the "Wiltshire Farmer" would have you understand that by employing our children farmers are actually benefiting us, while there is no mutual benefit to themselves. Now, sir, believe me that farmers know the value of a boy or girl as well as a sheep or a cow, and that they would not employ our children unless they got "their money out of them." There are boys now working on this farm upon which I have worked for 20 years, and only receiving 5*s.* per week, actually doing men's work. I don't like to see men held up unfairly as hard-hearted or unfeeling, but, judging from experience, I fear there is a great deal of hard-heartedness among the class to which the "Wiltshire Farmer" belongs. Farmers, as a body, do not show real sympathy for their workmen. Of course there are exceptions, but from what I have seen and known I should say the general feeling is this,—"How much can I get out of this man?" and not, "How shall I make this man comfortable and happy so long as he serves me faithfully?" I might add a word in defence of the parsons, if they were not able to defend themselves; but as they are I will only say that I am deeply grateful to the parson of this parish for his kindness towards me and mine. Through his efforts my two eldest children are being educated for 1*d.* a week, and we were all partially clothed last Christmas out of his clothing club. He is the friend of the poor, and I only wish your Wiltshire correspondent would follow the parson's example. When he and the class to which he belongs do this depend upon it they will not be painted so black as that nameless gentleman to which he refers. *A Suffolk Labourer, Feb.* 5.

Berkshire.—I should feel greatly obliged if you could find a place in your valuable paper for the following statement. It will show how differently the poor of a village in Berkshire fare to those mentioned in the letter of the "Wiltshire Farmer." The wages of our carters, shepherds, ox and nag-men, as well as the labourers in winter, never exceed 9*s.* a week, and are more frequently down to 8*s.* a week. The wives earn 8*d.* a day, and boys and girls of the ages of from 10 to 14 years get 2*s.* 6*d.* and 3*s.* a week. In the harvest the wages average 12*s.* a week. No farmer in the village will draw coals for the poor, and the plots of land in the allotments are paid for by each occupant. This with bread and rent varying from 1*s.* to 2*s.* 3*d.* a week nearly consumes the poor man's wages. Most of our people have large young families, and out of a population of 400 only nine families are rich enough to keep a pig. Where the people find money for clothes, shoes, candles, soap, &c., is a mystery to me. We have had a great deal of low fever in the village since December, and I heard accidentally that a family were suffering much from it. I went to see them, and found the husband ill at home from his work, and three of their seven children (all under nine years of age) bad with fever, and the wife, who daily expects to be confined, told me upon my asking her that she had nothing in the house but 4 lbs. of bread, and their master stopped William's wages while he was at home ill. Surely, sir, even in London there cannot be more abject distress than this, and with this difference, too, that the poor of London have so many good and benevolent persons to sympathise and help them, while here in the country we have only doled out charity from the Union for our afflicted poor brethren. *A Resident in a Berkshire Village, Feb.* 4.

IMPEDIMENTS TO AGRICULTURAL IMPROVEMENT IN DORSETSHIRE.

AGRICULTURAL improvement has been and is still a favourite and fruitful theme both with landlords and tenants—the former we hope will give every encouragement to the latter by the erection of all necessary and suitable buildings by giving security for capital lying in the soil and by removing all those antiquated restrictions in leases and agreements which were inserted by lawyer agents. The tenants we hope will, in return for even-handed justice and liberal treatment, farm on those improved principles that will benefit both themselves and their landlords.

Now this heading leaves a wide field for those gentlemen who have leisure, ability, and inclination to enter on it and search for the facts that lie hidden under those of past time. The mighty advance which has been and is still being made in science and practice, the progress of chemistry and other sciences, the wonderful advance in the knowledge of mechanical power, and the increased consumption of manures and feeding stuffs that enrich our soils, give a far different aspect to farming matters to what it wore a few years back.

What does this increased fertility of our soils and the consequent increased amount of capital lying dormant in our soils point to? Why, to long leases containing stipulations unthought of by our fathers. The vast expenditure incurred in the purchase of new implements, without which we could not compete with our neighbours and with continental and American agriculturists, and in manures and feeding stuffs, without which our land would be impoverished and our stock discreditable and less profitable—the increased expenditure thus incurred lessens the margin for profit, but increases the risk when we have not security for the capital employed. Greater crops are grown with increased expense, and greater danger is encountered through the increase of capital in the soil; still without carrying out the improvements in modern agriculture we should be left behind in the struggle against low prices, caused by increased competition, and against increased poor rates, &c.

Now the past year has been one eventful, in Dorset, for useful discussions at Farmers' Clubs and on paper on many interesting agricultural subjects. Much light has been thrown on them, and much good has resulted from it; but we are sorry to say that this vexed question of farm leases has been left undiscussed, but not unthought of. We are inclined to believe that a better knowledge of the wants of their tenantry would lead many landlords to grant leases on those liberal terms required with improved husbandry, for we are sure that they will agree with us that it is absurd to say, "Improve, improve," in the teeth of a set of covenants, or under circumstances which say, "Do it if you dare!"

It is easy to show that much loss is caused to both landlord and tenant through this disheartening policy of yearly tenure being adhered to. The disadvantage attending the impoverishment of the soil by the out-going tenant is incalculable, and cannot be easily prevented with justice to the tenants, except by granting them long leases with restrictions as to cropping during the last few years of their tenancy. The tenant, even the yearly tenant, is bound, in justice to his landlord, to advance with the times; therefore no farm should be left in the same foul and barren state in which it was taken—it is only just of his landlord to expect it. Yet as yearly occupants the tenants cannot and will not leave it in the state in which the in-coming tenant ought to find it. He probably entered that farm when the soil was full of weeds of the worst description, and of seeds ready to germinate and become his enemies the first month of his tenure. This perhaps was not the greater evil, for probably the land was in that vile state of sterility which time and good cultivation alone would remedy. He cleans that land only to see it again covered with weeds that sprung from those rootlets which no implements can get out of the soil, and which can only be destroyed by exposure on the surface and by frequent stirring, and from those seeds which were shed on the soil in former years. He manures heavily for his crop of Turnips, and by spending much extra money in these manures and in hoeing he has the satisfaction of getting an average crop of roots. These are fed off by the sheep which leave a covering of manure that would, under ordinary circumstances, produce not only a luxuriant but a profitable crop of corn. This must not yet be expected from this soil, for the addition of these crude manures, although they produce an abundance of straw and increase the yield of grain, will not give that yield of grain on which the profits depend—will not give that yield from the straw which time and good cultivation will bring about. Heavy crops of straw can be produced by heavy manuring, but this land cannot be made to produce its maximum yield for some years, and the result is the farmer goes on losing money, from this and other causes, that he will never regain unless he has the farm many years. Does not this again point to long leases? to security for capital employed in the cultivation of the land? Is not this state of the farm brought about wholly through the out-going tenant being subjected to quit his farm at six or twelve months' notice?

Giving long leases is the only practical means of finding out what knowledge is possessed by the occupiers of land, for immediate profit is the aim of the yearly tenant. There is a wide difference between a man of great knowledge in his profession and a man whose acquirements are small. The former requires less capital than the man of little experience, he has knowledge of the capital required, he knows what stock and implements are required, and that which is best suited to the soil; he knows the best crops for the descriptions of soil under his care, he knows how to clean and cultivate it, he knows what to expect from the soil, and he farms with advantage and ultimately with profit. Now what does this farmer find? He finds that one great requisite is security for the capital he has in the soil. He is not bold enough to treat his land liberally, he has not got the daring spirit that would place money in another man's hands when he imagines that there is danger of losing it, and he farms in that style which brings him little profit and less credit.

The following, which appeared in the *Mark Lane Express* many years ago, may be quoted as an instance and a proof of the advantage to be derived by both landlord and tenant from a long lease, and gives a very intelligible conception of the stipulations and restrictions required for security to both. It was intimated to a tenant that if he wished for a lease his landlord was willing to give it. He therefore allowed but little time to elapse before he presented himself, when the following conversation took place:—

Landlord.—You wish for a lease, I believe?

Tenant.—Yes, my lord, if you have no objection.

Landlord.—If I grant you a lease for 21 years, what restrictions as to cultivation can you agree to?

Tenant.—No restrictions at all, my lord. The noble lord, who was not remarkable for unbending to inferiors, could not here restrain a smile; but, seeming to allow for the simplicity of the tenant, began again:—

Landlord.—If, then, you object to restrictions, by what way do you propose to proceed?

Tenant.—My lord, I conceive that, in a lease of 21 years, I can do the farm no injury during the first 15 or 16 years of it without inflicting upon myself a greater; and I think my own welldoing (so far as the portion of time I have mentioned) is a sufficient security to your lordship; but I am ready to allow that for the last five or six years it is possible for me to benefit myself, and yet do great injury to the farm; therefore for that portion of the time, I am willing to submit to any conditions your lordship may think fit to impose.

Landlord.—Well, that is not so unreasonable. Then, for the last seven years, you will not object to farm the land equal to what has been done in the former part; say, one-seventh part fallow, the usual proportion of good preparation for Wheat—such as Clover lea, Bean or Pea stubble—and so on to the end?

Tenant.—My lord, I shall be happy to take the lease upon these terms.

A lease was granted immediately for the time specified; no other restraint was imposed upon the tenant; the lease expired; a second lease was granted upon the same terms, and is now in progress.

This case requires no comment: we recommend it to the notice of liberal landlords with the assurance, which we take from the same authority, that this tenant purchased extra manure annually to the extent of two-thirds of his rent.

The late Lord Eldon was an advocate for and saw the benefit which he and his tenants derived from leases, as may be seen in a letter published in his "Life," by Horace Twiss. In alluding to the improvements made in their farms, his lordship says, "For this I thank you; and I cannot but attribute these beneficial effects, in a great measure, to the alteration which you have made in the tenure of your farms in taking them for a term, instead of from year to year. It is evident to me, as it must, I think, be to you all, that a tenant who is liable to be removed in a year from his farm cannot satisfactorily to himself make those improvements which he will do when he is sure that he can remain on his farm long enough to reap the benefit to himself of those improvements. I thank you all for your management."

"Tenant right" is another form of security to the occupier. This form of agreement was a subject with which the public mind was filled to overflowing a few years back, and many were the rules drawn up by competent hands to meet the demands of tenants when prices of stock and corn were low.

The term "tenant right" is not in our opinion what ought to have been used to express what was intended, even-handed justice, for it was not wished by the tenantry of England that the rules should be drawn up for the purpose of preserving their rights and giving them security, any more than that of their landlords. It is repulsive to our mind, as showing that the landlord's rights are lost sight of, or at least are not to be taken care of, whilst those of the occupiers are to be scrupulously guarded.

If those landlords who let their farms from year to year with six or twelve months' notice to quit are determined to adhere to the antiquated system, we cannot see how the occupiers are to be compensated for unexhausted improvements, unless they do get a list of rules drawn up similar to those which have been carried into practice on the estates of Mr. Sturt, of Critchel (see "Farmers' Magazine," 1849). One of those rules is very objectionable, and which perhaps ought to receive our attention with the object of directing the attention of others to it that are more directly interested in its decision. "Rule 4.—Lime if used by itself, or with common mould, according to the following scales. Heavy soils, six years:—

1st year,	the out-going tenant to be allowed	20*s.*	in the pound.
2d year,	,,	,,	,,	17*s.*	,,
3d year,	,,	,,	,,	14*s.*	,,
4th year,	,,	,,	,,	11*s.*	,,
5th year,	,,	,,	,,	8*s.*	,,
6th year,	,,	,,	,,	5*s.*	,,

Light soils, three years:—

1st year,	the out-going tenant to be allowed	15*s.*	in the pound.
2d year,	,,	,,	,,	10*s.*	,,
3d year,	,,	,,	,,	5*s.*	,,

It ought to be stated that the "first year" means the year in which the lime was laid on and previous to a corn crop being taken. We are well aware that lime ought not to be applied to light soils in a caustic state, and we presume that it was with this view that the rule for light soils was drawn different from that for heavy soils. We do not hold this opinion as an undeviating rule, but it holds good generally; there may now and then be an isolated case where caustic lime may be used on a light soil with advantage to the occupier. Now, this does not alter the general standing of Rule 4. The in-coming tenant will be really paying his predecessor in the second year 17*s.* in the pound for an unexhausted improvement!! What? does caustic lime improve our Dorsetshire clays at the rate of 17*s.* in the pound in the second year? We thought that it was well known that caustic lime exhausts the soil, improving and increasing the yield of the Wheat crop, to which it is usually applied to the detriment of the crops that follow. It destroys organic matter that is often abundant in the soil, and causes it to become food for growing plants, and it liberates other ingredients of the soil that would be otherwise inert. These are carried into the plants by the vehicle, water, there to assist in building up its structure. Now, what does it add to that soil? It adds lime, that one constituent of plants, lime, and how rarely do we find any other valuable ingredients, such as phosphate of lime. Well this, we must say, is picking the pocket of the in-coming tenant. Had those gentlemen who framed those rules forgotten the old and correct view of liming? Had they forgotten the old saying that it enriches the father but impoverishes the son? Or, perhaps, they might have been misled by this old saying, owing to its not being sufficiently explicit—perhaps they thought it required some years for this caustic lime to return to a carbonate. If this rule was reversed—if the out-going tenant were made to pay this sum instead of receiving it, it would more nearly meet our view.

We are against "tenant right" in any form, for who amongst us as tenants have any desire to place his money in another man's hands that he may spend it in manures according to his judgment? He may be a very spendthrift in manures, cake, &c., and spend it, through ignorance, to that disadvantage to his successor which may cause much loss and consequent ill-feeling.

The conclusion we must draw from this hasty, slight, and imperfect sketch of some of the impediments to agricultural improvement in Dorset is, that it is to the interest of landed proprietors to seek carefully for tenants of extensive knowledge, give them long leases, offer them every advantage compatible with the interest of both, and expect in return that the land should be farmed on those improved principles and with that neatness and regard to appearance of which the occupier may be justly proud.

Whilst we have insufficient buildings, yearly tenures, and no security for capital lying in the soil, what are we to do? We are afraid to treat our land liberally because of the great changes that are constantly going on. Death comes amongst us every day, and who can say that the next victim may not be our respected and valued landlord, in whom we have confidence, and who can say that his successor may not follow the example of some young gentlemen who have lately come into large landed estates in England? Give us good farm buildings and leases for 21 years and we will employ more horse and manual labour—will use more manure and feeding stuffs, and will farm with greater credit to ourselves and to our landlords. We will increase our green crops and add to our flocks—will grow more mutton, more wool, and more corn—in fact we will grow nine sacks of corn where we now grow eight, and that contented, cheerful, and happy spirit will prevail which is the precursor to all that is progressive. *G. S.*

LIABILITIES OF FARMERS FOR RENT IN CASE OF FIRE.

EVERY farmer in England—nay, every tenant householder for a term of one year or more—who has not made a special stipulation for the contingency of fire, is deeply concerned in the decision of the judges of the Court of Queen's Bench, in the case of *Lofft and others v. Dennis*, which will be found in our present paper. We are not going to discuss the merits of this particular case—whether the conduct of the tenant justified the landlords in refusing to rebuild, or whether the claim of rent under the circumstances was, as alleged for the defendant, "a most unrighteous one;" the question with which the public have to do is the law of the case, as expounded by Lord Campbell and confirmed by the concurrence of the other judges. The broad facts of the case are these: the farm buildings were burnt down, and the landlords, though they received the insurance money, refused to rebuild them, but held the tenant to payment of the rent, without abatement for the loss of accommodation; and the Court decides that the tenant is by law liable to pay it. It is admitted that the tenant hired the farm with certain buildings thereon, which of course formed part of the consideration of his hire. It is not pretended that he was liable to replace them in case of fire—indeed, the fact of insurance by the landlord proves the contrary. The highest authority on the law of real

property, Lord St. Leonard's, in his manual of "Property Law," which was written for the express purpose of enlightening the unlearned in the law as to the sale, purchase, leasing, and other modes of dealing with real estate, has laid it down that, if a landlord has insured and received the money, he cannot compel payment of rent if he declines to lay out the money in rebuilding. But the Court of Queen's Bench has unanimously upset the dictum of the ex-Lord-Chancellor. By the Scotch law, says Lord Campbell, the tenant would in such case be relieved from rent, but, by the law of England, if there be an absolute covenant to pay rent, the covenant must be performed, though the tenant is deriving no benefit from the premises. See, then, the position in which every tenant in England is placed, if his lease or terms of hire contain no provision for the cessation or abatement of rent in case of fire until the premises are reinstated—unless the tenant be bound by his covenants to reinstate, and therefore to insure for himself. It may be that few landlords would take advantage of such a state of the law, or that few tenants would place themselves in such relations towards a landlord as to provoke him to stand upon so seemingly "unrighteous" a "right;" and therefore it is that tenants have remained so long unconsciously in this state of jeopardy, and only one, not very old case, is cited to prove that the great property-lawyer is in error. But the fact that the law has generally slept, does not make it less the duty of every tenant to see that it remains law no longer, or to protect himself by requiring stipulations from his landlord, or, if that be not in his power, to protect himself during the currency of his lease or hire, by insuring in his own name the buildings which he occupies. For let us just see how this promulgation of the law will work. As a general rule, though there are some exceptions, the landlord insures: it now appears that, if there be no stipulation with the tenant, the landlord, whether insured or uninsured, is not bound to rebuild: he may therefore decline to insure what he is not bound to replace and throw the onus on the tenant; or he may do worse—he may take advantage, when a fire occurs, of a "sleeping lion," as such laws have been called, and impose upon a tenant the burden of reinstating, for which he had not covenanted, or the loss and inconvenience attending the want of accommodation for his business. We have no doubt that the Court of Queen's Bench is right, and that Lord St. Leonard's is wrong in the law: indeed on the face of it there is no reasonableness in the statement of the "Handy Book," that the landlord is not bound to insure, and if the house be burnt down, uninsured, the tenant must continue to pay the rent for what he is no longer enjoying the use of; but otherwise, if the landlord had insured. The insurance is a bargain between the landlord and the Insurance Office only, by which the latter takes the place of the former for a certain consideration; but a contract to which he is no party, and of which he may have no cognisance, cannot give to a tenant a right of which he was not before in enjoyment.

Farmers and tenant-householders, then, have an interest—more urgent than for Parliamentary Reform—to obtain an immediate assimilation of the law of England to that of Scotland, in which they are promised the assistance of the Lord Chief Justice; and we cannot believe that legislating landlords will justify the assertions of Mr. Bright by resisting such a measure. It is nothing to say that, in the case referred to, the law afforded to the landlords the means of redress, or retaliation, for losses to which, as they affirm, they were put by the tenant in another matter. It is not for us to inquire how a tenant without a lease could retain possession, to the detriment of a sale, against the wish of his landlord—and we know that the tenant in this case alleges something on the other side; but however this may be, the principles of justice do not allow that wrong on one side should be redressed by wrong on the other.

In a word, the farmer or the householder must either obtain an alteration of the law, or an engagement from the landlord, if he have not one already; or failing either of these, he must insure his occupation till relief is afforded.

COURT OF QUEEN'S BENCH, Jan. 21.

Lofft and others v. *Dennis*.—This important case came on for argument before the full court upon demurrer. Mr. Godfrey appeared for Mr. Capel Lofft, of Bridgewater, Somersetshire, barrister-at-law; the Rev. Thos. Settlewood Gleadowe, of Fodesley, Shropshire, clerk; and the Rev. Frederick Elwes, of Wixoe Rectory, Halstead, Essex, clerk, plaintiffs; and Mr. Phipson and Mr. Joseph Kay appeared for the defendant, who is a farmer, residing at Wicken, in Cambridgeshire. Mr. Jackson, Haverhill, attorney for plaintiffs; Mr. Cross, Ely, for defendant.

By the statement of the defendant's case it appeared that defendant was tenant, under the plaintiffs, of a farm called "Spinney Abbey," in the parish of Wicken, Cambridgeshire. At the time when he entered into possession there were the usual farm buildings and conveniences; no agreement was made respecting insuring the buildings, but the lessors effected an insurance, paid the annual premiums, and sometimes employed their tenant to pay the policy for them. The defendant, knowing that the buildings were so insured, and not being bound to insure, and believing that, if the buildings were injured or destroyed by fire, the lessors would be bound to restore them, did not effect any other insurance upon the premises. After the defendant had been in possession for many years, the premises were destroyed by a fire, which took place in June, 1856, and thereupon the plaintiffs applied to the Royal Exchange Insurance Office, and received the full value of the damages (about 1000*l.*) which had been caused by the fire. They refused, however, to rebuild the premises or any part of them, and subsequently, when the rent became due, they brought an action against the defendant for his rent, making no reduction on account of the destruction of the farm buildings. The defendant objected to pay, on the ground that his landlords had received the value of the buildings and refused to restore them. These facts he stated in the form of an equitable plea to the plaintiffs' declaration. The plaintiffs objected by demur to these facts, as being no answer to their claim.

It was contended for the defendant that the claim was a most unrighteous one, and that there were many authorities in the books to show that it could not be established. The defendant relied on various cases decided, and particularly on the case of *Brown* v. *Quilter*, 2 Ambler's Reports 619, in which the then Lord Chancellor said: "The justice of the case is clear, that a man should not pay rent for what he cannot enjoy, and that occasioned by an accident which he did not undertake to stand to. I am much surprised it should be looked upon as so clear a thing that there should be no defence to such an action at law, and that such a case should not be considered as much an eviction as if it had been an eviction of title, for the destruction of the house is the destruction of the thing. When an action is brought for rent after the house is burnt down there is good ground of equity for an injunction till the house is rebuilt." Defendant's counsel further relied on Lord St. Leonard's Handy Book, in the 15th letter of which it is thus laid down: "If you (the landlord) have insured, although not bound to do so, and received the money, you cannot compel payment of the rent, if you decline to lay out the money in rebuilding."

The counsel for the plaintiffs stated that there were peculiar circumstances which led to the non-reinstatement of the premises, and for which the defendant had himself alone to blame. Immediately after the money was received from the Insurance Office, the Rev. J. Elwes, one of the plaintiffs, went to the farm with his builder, to make arrangements for the reinstating of the buildings; but he withdrew when he found that the defendant, who was only a yearly tenant, set up a claim to have a lease. By that claim he prevented his landlords from accepting an offer to purchase the farm, which was afterwards sold at a loss of 750*l.* The defendant paid the rent for three successive half years after the fire, without any claim to a set-off on the ground of the buildings not having been restored. The farm was sold last summer, and it was not till after the sale, when the defendant was called upon for the half-year's rent to Lady-day (235*l.*), that he laid claim to such set-off, although, as a yearly tenant, he might have previously quitted possession. But for his own obstinacy the premises would have been reinstated soon after they were destroyed. On the question of the legal right to recover the rent, plaintiff's counsel relied upon the case of *Leeds* v. *Cheetham*, 1 Simons' Report 146, decided by Vice-Chancellor Sir John Leech, which was opposed to the authorities cited in favour of the defendant.

Lord Campbell said that by the law of Scotland, if premises were burnt down, the tenant was relieved from the payment of rent; but, by the law of England, if there was an absolute covenant to pay rent, the covenant must be performed, though the tenant derived no benefit from the premises. So also in Scotland, where shootings were rented, and it turned out there was no grouse, the payment of rent might be resisted. But, by the law of England, it was no answer to an action for the rent to say that the premises had been burnt down; nor was it any ground for the interference of a Court of Equity. It was said the plaintiffs had insured, though they had not entered into any covenant to do so, and had received the money. It might be that they would act unhandsomely, if, under such circumstances, they did not lay out the money in rebuilding, and harshly, if they brought an action against the tenant for the rent; but that was not the equity which formed the ground for the interference of a Court of Equity. The case of *Leeds* v. *Cheetham* (1 Simons, 146) was an authority on that point by a court of co-ordinate jurisdiction, and by it this Court ought to be bound. If the defendant wished to overturn it, he must go to a Court of Error; but he (Lord Campbell) must say, he entirely approved it. It made no difference that the landlords had received the money, for they were not bound to lay it out. His Lordship added some strong expressions in favour of Lord St. Leonard's "Handy Book," and said that if it were proposed to make it law, he should support such a proposal; but at present it was only the opinion of a learned Judge, and the Court could not be governed by it, contrary to a most solemn decision. The other Judges (Justices Wightman, Crompton, and Hill) were of the same opinion, that the plea was no answer to the action.—Judgment for the plaintiffs. *Bury and Norwich Post, February* 1, 1859.

FOWLER'S STEAM PLOUGH.

THE following is the report by the judges on the trial of ploughing by steam, on the farm of Stewarthall, near Stirling, occupied by Mr. W. Forrester, in October and November, 1858:—

"With a view to the further encouragement of steam cultivation, a subscription was entered into during the year by a few landed proprietors and others in the neighbourhood of Stirling, supplemented by a donation from the Highland Society; two premiums were offered—one of 50*l.* and one of 15*l.*—for the two most efficient steam ploughs or cultivators, the conditions being, to plough or cultivate at the trial at least 70 acres, if required, and to be more economical than horses.

"Although these premiums were pretty widely advertised, and circulars sent to most of the leading implement makers, to the regret of the judges, only two entered the lists for competition, viz., Mr. Fowler, of London, and Balderston, of Glasgow.

"The trial was fixed to take place on the farm of Stewarthall, possessed by Mr. William Forrester, and to commence on the 26th of October.

"The following gentlemen were named as a committee of judges to award the premiums:—Messrs. John Murray, of Touchadam; Robert Graham Moir, of Leckie; David Stewart, of Stewarthall; John Miller, of Leithen; James Stirling, C.E., Edinburgh; George Hope, farmer, Fenton Barns; Peter M'Ewen, farmer, Driphill; John S. Jack, farmer, Carrat; and John Patterson, farmer, Cowie.

"On the morning of the trial Mr. Balderston intimated that, owing to certain breakages, he could not be at the trial with his machine. The principle of this machine we understand to be, a locomotive engine of eight-horse power having gearing attached to a spade 4 feet wide, placed behind the hinder wheels, by which spade the land is dug over as the engine moved along. Mr. Fowler's plough however was on the ground, and the business which remained for the judges was to determine whether that plough was worthy to receive the premium.

"The first day of the trial was very unsatisfactory from the engine brought forward having only one cylinder, making the start at every turning of the plough very unsteady and difficult. It was agreed, therefore, to postpone the trial until a more suitable engine was got, and the following calculations are based on work performed in part of four days, when the new double cylinder engine was at work.

"On the two public trial days and 1½ day previous 20¾ acres were ploughed in 23¾ hours, which is at the rate of 52¼ acres in 60 hours, or 6 days, working ten hours a day. One half of the land was ploughed 6 ins., and the other 7 inches deep.

"The judges are of opinion that the cost of ploughing this land by horses would be 8*s.* 9*d.* per acre, and would amount to 22*l.* 15*s.*: allowing, however, time for removal, short days and wet weather, four days a week is reckoned the average of working time for the steam plough throughout the year; this would give 35 acres per week, which at 8*s.* 9*d.* per acre is 15*l.* 6*s.* 3*d.*

"The daily cost of the steam plough is, engineer, 4*s.* 6*d.*, ploughman, 3*s.*; labourer, 2*s.* 6*d.*; three boys at 1*s.*, 3*s.*; coals, 7*s.*; water, 6*s.*; oil, &c., 1*s.* 6*d.*; interest at 5 per cent., and tear and wear at 20 per cent., 10*s.* 6*d.*; cost of removal, 4*s.*, being at the rate of 2*l.* 2*s.* per day, or 12*l.* 12*s.* per week.

Cost of ploughing 35 acres by horses at 8*s.* 9*d.* per acre	£15	6	3
Weekly cost of steam plough 12*l.* 12*s.* As the foregoing calculations are made on four days' work per week, two days' coal and water are deducted from the weekly expense, 6*s.* and 7*s.* each per day, 1*l.* 6*s.*	11	6	0
Weekly balance in favour of steam plough	£4	0	3

"Note.—The work performed by the steam plough was equal to anything done by the common plough.

"After ploughing 60 acres at Stewarthall, it was taken to Polmaise Home Farm, where it trenched several acres of heavy clay; here the work was not quite so satisfactory as the trenching in the alluvial soil at Stewarthall, which might be attributed in a great measure to the trench plough not being properly set for that description of soil; still, what it did was great work.

"As it was considered desirable to see the plough work on undulating dryfield land, it was taken to the farm of Cowie, possessed by Mr. John Patterson, on the Polmaise estate, where it ploughed several acres in first-rate style. On the top of the hill a few additional rope porters were required for the bearance of the wire rope, and as owing to the undulating nature of the soil the ploughman was out of sight of the engineer at the anchor end, the boy attending the anchor signalled from the top of the hill.

"Mr. Fowler since exhibiting here in 1857 has greatly improved his apparatus, in making the engine and windlass in separate parts, by which it is more easily transported from field to field, as also having the wire rope working on and off two grooved pulleys instead of coiling and uncoiling on and off two drums, thereby lessening the length and friction of the wire rope.

"From the foregoing calculations it appears there is a large saving by the employment of the steam plough, but the mere lessening of expense is not the principal advantage to be derived from steam cultivation. It gives the agriculturist a greater command of the soil, and makes him more independent of the season, and enables him to plough the land in weather when horses could not be employed.

"We therefore consider Mr. Fowler well entitled to the premium of 50*l.* JOHN MURRAY, Chairman.
"D. STEWART, JOHN PATTERSON,
PETER M'EWEN, J. MILLER,
JOHN S. JACK, ROBT. GRAHAM MOIR.

"Having only attended the first day when the working of the engine was unsatisfactory, I could not sign the above, but having seen the plough at work since I have no doubt of the correctness of the report.
"GEORGE M. HOPE."

A short time subsequent to the competition a meeting of landed proprietors, farmers, &c., was held in the Golden Lion Hotel, to take into consideration the propriety of purchasing a ploughing machine for the district. The following minute will explain the result of the meeting:—

"Gibb's Hotel, Stirling, Jan. 14.

"At a meeting of the subscribers for the purchase of a steam-engine, with ploughs and threshing machine, held here this day, Mr. Murray, of Polmaise, in the chair, the chairman stated that Mr. Fowler offered to supply a 12-horse double cylinder engine of Clayton & Shuttleworth's, with all necessary gearing; also with subsoil ploughs, adapted for ploughing 11 inches deep, and ordinary ploughs, such as he exhibited here; likewise a double blast threshing machine of Clayton & Shuttleworth's, with patent axles and double shafts: the engine, ploughs, and threshing machine to have all the most recent improvements, up to the time of their delivery, for the sum of 954*l.*

"The meeting unanimously agree to accept of the offer; and Mr. Greig, on behalf of Mr. Fowler, agreed to deliver the above-mentioned machinery at Stirling (carriage paid by the company) on the 1st September.

"It is understood, in conformity with Mr. Fowler's letter, that before the company are required to take over and pay for the above, they shall have done their work to the satisfaction of Mr. Miller, of Leithen."

The *Stirling Journal and Advertiser*, from which we copy the above report, observes:—

"We are glad to see the enterprise displayed by our

agriculturists in thus spending about 1000*l.* on ploughing and threshing machinery. It is an example which might well be followed by other districts of Scotland, and it speaks volumes for the desire of our landed proprietors and farmers to keep pace with all the improvements of the day. We wish them much success in this speculation, which we can hardly doubt after the report given above, will turn out a very successful one. The principal parties who form the company are John Murray, Esq., of Touchadam and Polmaise; Robert Graham Moir, Esq., of Leckie; Wm. Stirling, Esq., of Keir, M.P.; James Johnstone, Esq., of Alva; John Miller, Esq., of Millfield and Leithen; Captain Nicolson, of Carnock; David Stewart, Esq., of Stewarthall; along with a number of enterprising farmers, including William Forrester, Esq., Stewarthall, who has all along shown such an interest in the success of the movement for ploughing by steam. This gentleman deserves much credit for his unwearied exertions on this occasion."

Home Correspondence.

What does it cost to keep a Hampshire Down Ewe for twelve months, including the keep of her Lamb until sold as a Stock Lamb in June or July?—Mr. Bond in his very useful paper read before the London Farmers' Club estimates it at 5*d.* per week, or 21*s.* 8*d.* per annum, charging the food at cost price. Having an impression that the cost is greater than this, I should be glad to see some of your correspondents' estimates. The cost price of Mangel in our county would be about 7*s.* 6*d.* per ton, or 2*d.* per bushel. Swedes with us would cost 10*s.* per ton at least. Would it be safe to reckon on less than half the cost of a fattening sheep as the proper charge? Ewes are great consumers when giving milk, to which must be added the food of the lamb, and the cross of the Cotswold quoted by Mr. Bond would produce a large consuming lamb. Mr. Lawes (in his valuable papers on Sheep Feeding, Society's Journal, vols. 10, 12, and 13) shows the weekly cost of fattening a Hampshire Down sheep to be—

	s.	*d.*
8 lbs. oilcake, at 1½*d.* per lb.	0	10
7 lbs. Clover-hay, at ½*d.* per lb.	0	3½
106 lbs. Swedes, at 5*d.* per 112 lbs.; or 8*s.* 4*d.* per ton	0	4¾
	1	6¼

for a period of six months under favourable circumstances of shelter. This accords with my own experience. After paying for the purchased food (Clover-hay, and oilcake), nothing was left to pay for the Swedes, attendance and shelter. Mr. Bond estimates the keep of the sheep and lamb during the three spring months at 9*d.* per head per week. Is this enough? Would not such an animal with her large cross-breed lamb consume as much as a fattening sheep? Again, during the three summer months the estimate is 6*d.* per week for the ewe with her lamb? How does this contrast with Mr. Lawes's 1*s.* 6*d.* per week? My object is merely to elicit truth and a sound basis, because Mr. Bond's statement of profit beyond the manure would be entirely annihilated if the ewe cost 7½*d.* per week instead of 5*d.* We know that stock ewes are excellent scavengers on a farm, but they are large consumers; I hope Mr. Bond will be kind enough to tell us how many acres of produce are consumed annually by the 300 ewes and their lambs, and what is the rent and quality of the land. A neighbour of mine told me that 70 fattening sheep having 1 lb. of cake per day consumed 36 acres of his produce. He thought 100 ewes would require the produce of 50 acres at least. On this calculation Mr. Bond's flock would require 250 acres; at his estimate of annual cost, 21*s.* 8*d.* each, the return upon this 250 acres would be but 542*l.* I do not agree with Mr. Bond about two years' Clover. I find that my first mowing of Clover for hay sells for about 8*l.* per acre. I then allow the second crop to grow fully and feed it with sheep eating 1 lb. of Rape-cake per day. This gives me a heavy crop of Red Wheat, succeeded by 5 or 6 quarters of Rivett Wheat. On my farm of 170 acres I grow 50 acres of Wheat annually, and 50 acres of Oats, Barley, and Beans. I presume from Mr. Bond's statement that on his 800 acres of land he only grows 150 acres of Wheat. In these times we must produce much corn as well as meat. Two years Clover leas are not likely to do this, nor are poor pastures. Breeding lambs and fattening them for the butcher would produce more corn than selling them as lean stock. Mr. Bond's paper having appeared in many publications I have also distributed these remarks with a view to an elucidation of the subject. *J. J. Mechi, Tiptree Hall, Kelvedon, Essex, Feb. 7.*

Rates of Wages.—In reference to the statement from the Bath and West of England Agricultural Society's Journal of the comparative rates of wages in different counties, I believe it will be found upon inquiry that although the wages of South Devon are at the apparently low rate of 7*s.* or 8*s.* a week, the real amount is much augmented by the custom which prevails there, that the labourer is to be supplied with his corn at a fixed price through the year, much below the market prices; by which means he is made more independent of fluctuations in food and wages, and more satisfaction exists between master and workman. *J. G., Bury St. Edmunds.*

The Cottage Improvement Society.—Having carefully studied a set of the plans of the Cottage Improvement Society, I think that there are many objections to be found with these cottages, and as I hope that it may lead to further discussion on the subject, I will now attempt to describe them. The cottage having three bedrooms, the living room 11 by 9.4 is too small for a large family; it ought to be 12 by 11. The kitchen, 11.4 by 9.4, is larger than necessary; 7 by 7 would be sufficient for a scullery. The pantry is badly placed, as no fresh air can enter it. This would not answer in the country, especially if cottages are on the farms, and goods bought perhaps only once a week. One door only to cottage; this is bad; there ought always to be a back door. The aspect for entrance door must be bad for one cottage, being either to the north or east, the other being south or west. The boys' bed-room is too small. The brickwork between cottages too thin, only 4½ work. "Necessary" badly placed, being under bedroom windows; better to follow the old plan, and place it in a wood and tool house, about 20 feet behind the cottage. There also appear to me to be several objectionable points in the specification, and that in aiming at the low price of 168*l.* for two cottages any landowner erecting such cottages would have very unsatisfactory buildings; and that he would find it more satisfactory in every respect to build cottages at a cost of 200*l.* to 250*l.* the pair on his farm ("to be let with the farms"), and should the supply of labour be short, the tenants would gladly pay him interest for such an outlay. The best plan of cottage that I have seen has been one combining the English and Scotch systems. A dining-room and a bedroom on the ground-floor with two bedrooms over. The scullery and the pantry were in a lean-to at the back of dining-room. The entrance was in the centre through a porch. As you entered the dining-room was on your left, the bedroom on the right, the stairs facing you. *Anon.*

Societies.

ROYAL AGRICULTURAL OF ENGLAND.

WEEKLY COUNCIL: *Feb.* 9.—The Rev. L. Vernon Harcourt in the chair.

Captain Burgess, Secretary of the United Service Institution, transmitted specimens of Guano from Shark's Bay, West Australia, and a portion of soil from the same locality, sent to England by Captain Denham, R.N., of H.M. surveying ship Herald.—The Royal Agricultural Society of Belgium announced a second trial of reapers, to be instituted in that kingdom this year.—The Smithfield Club presented a cask of Wheat sent to them by the Port Phillip Farmers' Society, at Melbourne; samples of which, in bags, for trial, may be had on applying at Messrs. Thomas Gibbs & Co., the Society's seedsmen, by such of the members as may feel disposed to test its merits by trial, and report the result to the Council of the Society.—Mr. S. Kitto, having returned from California with a supply of Wheat from that country, offered to place it at the disposal of the Council under the condition that it should have a "fair trial."—Captain Childers favoured the Council with an offer to communicate to the Society any information he could afford relating to the temperature of the Island of Jersey, its physical character, and population, native and resident.—M. Carl Loeffler transmitted a work on the breeding of poultry in Germany, and Mrs. Eliza Acton a copy of her "English Bread Book;" and several foreign societies their current Transactions.

FARM-YARD SEWERAGE.—Mr. G. Rochfort Clarke, of Chesterton Lodge, Bicester, Oxfordshire, transmitted the following suggestions:—

"I wish to bring the following observations, on the subject of sewerage, under the consideration of the Council of the Royal Agricultural Society. The subject has already attracted their attention; but, considering that the modern plan of conducting all sewerage into brooks and rivers is causing an enormous loss of manure, and is, at the same time, polluting the waters of all parts of the kingdom at a rapidly increasing rate, it appears to me that the time has come when the subject should be made a more distinct and prominent branch of the Society's operations. The collecting and applying of sewerage suitable for manure, and the preservation of the purity of water in brooks, rivers, wells, and ponds, may be advantageously treated of in essays, accompanied by experiments, and followed by prizes, and in the following order:—1. The amount and valure of the manure which is lost to the agriculturist; then the ill construction of cesspools, and the difficulty of emptying them. 2. The amount and value of the manure which is lost to the agriculturist by the modern plan of conducting the sewerage into streams and rivers. 3. The effect of different kinds of water on health, growth, fattening, and length of life of cattle. 4. The effect of sewerage, when introduced into water, on the health, growth, fattening, and length of life of cattle. The following amongst other prizes might be offered:—1. For essays treating of the above subjects generally. 2. For the best mode of constructing cesspools, both for privies and as receptacles for sewerage from drains, farm-yards, &c., whether of separate houses or villages, and for intercepting the sewerage passing through existing sewers. 3. For the best contrivances for emptying cesspools and ponds, as regards both liquid and solid matter, with a view to its use for agricultural purposes. 4. For the best method of disposing of the materials when emptied out, whether in combination with other solid substances, or with water, or otherwise. 5. For the best plan of collecting the sewerage of villages and towns, and of delivering the same to the agriculturist on equitable terms; keeping in view the health, convenience, and advantage of all parties, and their mutual co-operation, and their fair, rateable contribution towards the labour and expense of the operations."

Professor Simonds, in recommending that this communication should be referred to the Journal Committee, expressed his deep sense of the importance of the subject to which it related, and his assurance that many of the vital energies of breeding stock were seriously injured by their drinking polluted water.

Adjourned to Feb. 16.

Farmers' Clubs.

LONDON: *Feb.* 7.—*Arterial Drainage.*—A paper on this subject was read by Mr. J. A. Clarke, of Long Sutton, from which the following are extracts:—The subject of arterial or trunk drainage appears to have been asleep for several years, and we have had complaints of a scanty rain-fall that has left the soil comparatively uncharged with water; lowered our springs; made drink for cattle scarce in ponds, wells, and ditches; and kept the half-filled rivers pretty regularly within the brim of their wandering channels. But if we have not recently suffered from severe floods, which a wet season, however, would bring down upon us more disastrously than ever, the periodical overflow of some streams, the injuriously high level of others, and the inefficient and obstructed condition of thousands of brooks, drains, and water-courses intersecting the surface of the kingdom, are all the time working far greater evils than those which occasionally startle the public when a river happens to break loose and sweep away their property. The nature of these evils, to which through long custom we so quietly submit, will appear in the course of my paper. I will just say here that another kind of "inundation" seems threatening to make itself felt by the farmer more heavily than before; I mean the abundance of low-priced bread-corn: and I bring the subject of river reform before you, because I believe it to be one of those great measures of relief and means of profit which are now so urgently needed by the cultivator of the soil. When prices rule low, our only resource lies either in a diminished expenditure or a greater produce, or indeed in both. At present, the agricultural mechanic is doing his part toward meeting the difficulty, by reducing steam tillage to a practical reality; and undoubtedly, if the tenant-farmer is left to fight the battle of the corn market single-handed, the steam-cultivator promises to be his ablest weapon. But we look to better subsoil drainage as one of the surest provisions "against a rainy day;" and here comes in the duty of the landed proprietor to render such an improvement possible upon his estate, with all its after-results of deep tillage and high management, by opening an adequate outfall for any amount of drain-water. An unlooked for high range of prices has been only postponing the fulfilment of several great helps which the landowners and the legislature can rightfully give to the "unprotected" farmer. And among the coming questions affecting our welfare, such as Agricultural Statistics, a Tenant-Right Law, cheap Transfer of Land, alteration of the Law of Settlement, and so on, this one of our general drainage is not the least important and momentous. You see I connect the subject with legislation, and after briefly adverting to the facts of the case, I propose to consider the necessity for Parliamentary interference, and to offer my views of the way in which that assistance may be conferred. To convey an idea of the extensiveness of the subject, I must be a little geographical.

The drainage of our island passes off to sea in a generally eastern direction; the largest English rivers, except the Severn, emptying upon the low east coast, and those of Scotland (all but the Clyde) following the same course. Of English rivers, the principal points of delivery are the estuaries of the Humber, the Wash, the Thames, and the Severn; their respective drainage areas being very large. The Yorkshire Ouse, Trent, and other Humber rivers radiate into the counties of Westmoreland, Stafford, Warwick, Leicester, Derby, and Nottingham; traversing broad meadows throughout their course. The sluggish Wash rivers, the Ouse, Nene, Welland, &c., embrace in their system of flat valleys parts of Lincolnshire, Rutland, Leicestershire, Northamptonshire, Bedfordshire, Buckinghamshire, Huntingdonshire, Cambridgeshire, Suffolk, and Norfolk. The Thames and its feeders extend inland into Buckinghamshire, Oxfordshire, Gloucestershire, Wiltshire, Berkshire, Hampshire, besides Surrey, Middlesex, Kent, and Essex; fringed with peaty or more solid wet lands. The Severn stretching inland through the counties of Gloucester, Worcester, and Salop, into Warwickshire, Staffordshire, and Montgomeryshire, with the Wye and other tributaries ramifying through the counties of Monmouth, Hereford, Radnor, and Brecknock, bring down the rapid floods from the Welsh mountains, and frequently deluge large tracts of the wide-spreading plains. In addition to these chief drains of the central counties, we have streams from the lake district, the Welsh high lands, and the southern, eastern, and northern provinces; aggregating into considerable estuaries round the coast-line, such as the Eden, Lune, Ribble, Mersey, Dee, Conway, Towy, Taff, Usk, Avon, Parret, Taw, Tamar, Dart, Exe, Test, Arun, Rother, Stour, Medway, Crouch, Blackwater, Colne, Orwell, Yar, Tees, Wear, Tyne, and Tweed; not including an innumerable succession of outlets of more or less importance. These, with an immense network of channels branching from them, together with all the mill-streams and other accessories of the main arteries already named, form our natural drains for the whole of England and Wales.

Now, Solomon says, "All the rivers run into the sea." But the grievance is that they don't; for whether or not the oriental streams with which the wise king was familiar may have overflowed at intervals like the Nile and Jordan, it is certain that English fresh waters at the present day seem inclined to linger in the valleys and repose on the meadows, or wander anywhere rather than roll straight down to the ocean. In some cases the outfalls, or river-mouths, are in a defective state; but, generally speaking, the exigencies of their alluvial deltas or estuary marshes have caused them to be to a considerable extent opened, embanked, and watchfully preserved.

Thus, great outfall works have been executed on the river Dee, below Chester; in Somersetshire, at the mouth of the Parret and its connected rivers; in several harbours and estuaries along the shingly coast of the Channel; in East Norfolk; in the estuaries of the Ouse, Nene, and other Wash rivers; and in the streams converging to the Humber; while in Scotland we have the example of the Clyde improvements; and, again, the similar dredging of a deep channel for the Tay. But many great alterations and improvements yet remain to be carried out. However, it is the inland course of the streams that principally calls for ameliora-

tion. These natural arteries are employed for every purpose that water is good for, and the water is thus detained for such uses, in spite of drainage necessities, instead of being conducted speedily to the sea. They are dammed into reservoirs, intercepted for canals, especially in the central, northern, and western counties; and besides being neglected and choked with weeds or with Osiers, or obstructed by strangulating bridges, innumerable brooks and rivulets are suffering from the diptheria of a water-mill, or a succession of mill-wheels appropriating the whole descent of the stream. Sometimes hundreds of acres of meadow are ruined by the picturesque dilapidations of a mill mentioned in Domesday, or by the pounding of the water for the few baskets of fish. Not that there is any objection to the employment of running water as a motive power, or a means of transport, or a supply for towns, as an ornament in a park, or for the refreshing of a meadow, provided that damage of greater consequence is not inflicted upon any interest, and that there is an amply capacious channel for the outlet of the heaviest downfall, without overflow and without injury to lands by the prevention of the best husbandry. How many among the myriad watercourses of our country are all that can be desired in this respect I cannot undertake to say, but the following record of actual disaster—to say nothing at present of the still greater mischief of good culture prevented—shows the prevalence of defective and ill-managed rivers. [Cases of violent inundation from the precipitous western districts were then enumerated.]

These items, picked up by my own observation, or gleaned from newspapers of the period, do not comprise anything like complete details of damage done by half the flooding streams of our country; and you perceive that the marsh and fen districts situated at various parts of the coast around our island, but chiefly in the Great Level surrounding the Wash, have not been mentioned at all. In fact, being constructed and conserved upon system, under companies or local acts, with drainage taxes to defray the cost of the works, the Fen rivers do not overflow their margins; and when a deluge does take place, it is from the failure of some embankment or other artificial erection. However, were an action brought against the English streams to recover the value of even what I have enumerated as losses experienced by all the various interests and classes in town and country—manufacturers, millers, agriculturists, landowners, and the community at large—the sum would amount to an immensely heavy figure. But I have not made out half the strength of the case against these incontinent rivers.

There are greater evils than those arising from the occasional or frequent destruction of produce and property by violent inundation. And it is only because we have been for ages accustomed to have our valleys wet with sodden meadows, and spacious districts of flat arable land cultivated with the very shallowest ideas of infiltration and aëration as means of fertility, that we do not hear louder complaints and demands than those which are forced out by some unusual deluge. To be sure, we have articles in newspapers and reviews setting forth the damage to property and danger to public health incurred by the present condition of our arterial drainage. The Royal Agricultural Society's county "Reports" notice the necessity for amelioration; active under-drainers and improving farmers perceive the impossibility of carrying out first-class husbandry without better outlets for the rapidly-increasing amount of water to be discharged. But the reason why there is not a more wide-spread agitation and appeal to the Legislature, may be because the great body of those who directly or indirectly suffer are looking upon amendment as almost hopeless from its cost and from the apathy or conflicting views of different interests concerned. I have not time to illustrate the various kinds of injury permanently and perpetually caused by defective brooks and rivers; but take some of them. That the bulk of coarse hay furnished by marginal meadows without asking any return of manure does render them of considerable value to the upland farms with which they are associated is perfectly true; but it is also the fact that this value is hazardous and precarious, owing to the capricious irrigation or sedimentary manuring of the stream that may serve as your Nile; so that if one year you get a fair pasture, in another it is too watery to be grazed. If for one or more years (according to locality) your hay harvest is successful, the next season utterly spoils your crop, leaving also a gritty aftermath that stock cannot relish.

But the evil effects of river-floods are not only agricultural; for, in the neighbourhood of towns, just where the meadows may be rented as "accommodation land" at 2*l.* or 3*l.*, or more per acre (and the proprietors might therefore doubt the advantage of drying them), siderations demand our care. Every man thinks his own home peculiarly healthy, until the Registrar-General dispels the pleasing illusion, and the tabular statistics of public health prove most undeniably that districts abutting upon a flooding river, or intersected with marshy hollows and choked rivulets, are above all others (excepting crowded and filthy cities) the haunts of fever and glandular disease.

Thus Northampton, on the sluggish Nene, which overtops its banks, held up as a navigation and pounded back by mill after mill along its winding course, is shown by the "returns" to be one of the few most deadly places in England; and typhoid and milder but enfeebling maladies constantly visit the villages that inhale the hot-weather malaria of the swampy meadows. The Ouse has a like unhealthy character, as shown by the excessive rate of mortality in Buckinghamshire, Huntingdonshire, &c; and, indeed, so have all our gloomy and lifeless rivers, as exemplified at Norwich, surrounded by the heavily-flowing Wensum and Yare—at Colchester, on the dull and tardy Colne—at Salisbury and the fashionable Bath, on the inactive and cheerless Avon; and the smaller towns and parishes flanking the streams are the hotbeds of intermittent fever, rheumatic and liver complaints, and scrofulous and pulmonary disorders, aggravated if not originated by the cold damps and poisonous exhalations from which the inhabitants have no means of escape. Trunk drainage, however, would prove a marvellous preventive. I am informed that at the village of Cople, in Bedfordshire, the Duke of Bedford cut a deep brook which relieved the parish of stagnant water, and although up to that time typhus fever was rarely out of the parish, only a single case has since happened in a period of eight years. The Duke is cutting a deep brook or drain, at the present time, through the adjoining parish; and in that county, as well as in others, many landlords might employ the surplus labour in straightening their watercourses, exchanging angles of land where necessary, and save or reclaim ground enough to pay all the expense.

I have now alluded to the four great mischiefs arising from the defective state of our rivers and watercourses—namely, actual damages by deluge—the prevention of agricultural improvement in the immediate vicinity of the streams—the injuries sustained by the lands situated above the reach of floods, but suffering from obstructions to their drainage—and the calamitous influence of the reeking and pestilential valleys upon the lives of a great proportion of our population. Were I to enter upon a consideration of the various obstacles causing the damage, the nature of the new works or enlargements required, and the means by which opposing interests may be reconciled or compensated, and the burden of the improvement equitably apportioned according to advantages conferred, my paper would be prolonged far beyond any reasonable limits.

One of the most general impediments is the utilisation of a stream for water-power; and, as Captain Blithe said two centuries ago, "mills drown and boggify more gallant land than themselves are worth to the commonwealth." Thus, the upper valley of the Nene has 33 mills in a length of 60 miles; the river Welland, between Market Deeping and Market Harborough, is much obstructed by flower-mills; and upon a small stream in Dorsetshire there are no fewer than five mills within a total distance of four miles. The escape-weirs are generally inadequate to the discharge of the excess of downfall, which therefore overspreads the low lands; and, besides this, the water-level is often held up for the purpose of navigation. As I have before said, no single method of improvement will apply to all districts; in one case, a small breadth of land injured may not be half so valuable as the mill or factory causing the mischief; in another, it may be possible to purchase and abolish a long line of mills, and set the waters free. In one valley you may accomplish the same end cheaply by substituting steam for water power, with a compensation for the greater expensiveness of this motive-power, or by building windmills instead; in another, you may have the assistance of the millers, and provide their wheels with a more copious and regular supply. In one case there may be a canal company to treat with for total removal; in another, you may unite a better navigation with securer drainage. In one instance there may not be a sufficient area of land to warrant a complete measure, and you must be satisfied with an improved regulation of the irrigating waters; in another, half measures would defeat the object in view, and there may be ample means in the town and country interests combined to relieve from all possibility of flood, and give a deep outfall to the hitherto soaked and hurtful lands. As a fine example of what a district may accomplish in arterial drainage, I may refer you to a description of the "Rye and Derwent Drainage" in Yorkshire, given in the Royal Agricultural Society's Journal of 1853. In this case, under a local Act of Parliament, 27,000 acres were charged for the improvement; and 20,000*l.* out of the 30,000*l.* raised was paid to the three mills for their adoption of steam instead of water power. The pecuniary advantages of the works are apparent from the fact that a single flood, such as frequently overflowed the land, has been known to do more damage, if fairly valued in money, than the whole sum expended under the Act. For details of the present Nene Valley improvement — now, unfortunately, in a stagnant plight, the causes of which may be traced to great errors committed in times gone by—I may refer you to an "Essay on Trunk Drainage," written by myself in the Society's "Journal" for 1854. In this case, only one out of a long succession of mills is to be removed and the water power of the remainder increased: the navigation is to be benefited, 20,000 acres made scarce from their present frequent floods, 7000 acres more provided with a better outfall, and Wisbech harbour improved.

Now comes the question: By whom are the desired improvements to be effected? Well, the cost ought of course to be defrayed by the district benefited; and those who pay their money should, according to English usage, have the control of it. But by what organisation or under what authority are the works to be undertaken and maintained? That a universal issuing of sewers commissions under the great seal would answer the purpose, we cannot for a moment believe, seeing that navigations continue to pen up our streams, to float barges over shoals, bridges contract their channels, and mills dam back our drain-water, in spite of sewers "presentments" of the evils, or of their decrees fixing the legal "heads" and falls. They cannot touch half the small drains which unneighbourly neighbours will not cleanse for us; still less provide the additional water-way demanded by annually augmenting delivery; and still less could they deal with mill-dams or ancient canals.

The power of a local Act of Parliament is the authority upon which all our modern fen drainages, our harbour and outfall works, our internal river improvements, and many enclosures of salt marsh from the sea are at present effected. But so many difficulties are connected with the procuring of local Acts, that, if this is to remain the only course open to us, it is pretty certain that hundreds of flooded valleys will continue in a hopeless plight. The voluntary initiation of relief measures, the getting up of an agitation, and the carrying of an Act of Parliament for a larger or smaller district, when no organisation and no court of appeal previously exists, requires a boldness and independence of mind, a degree of enterprise, and a harassing and expensive series of preliminary proceedings, which not only deter proprietors from attempting to combine, but place the subject of river improvement beyond their thought as chimerical or incapable of realisation; and the expense is often enormous. I cannot ascertain what has been the united cost of the Acts of Parliament for our numerous fen-drainings, but I have no doubt that, if we could add together the sums expended in the mere obtaining of the Acts for all the piece-meal estuary works, embanking, sluice-building, digging new cuts, or scouring and enlarging old ones, we should find an amount wasted that might have completed a large portion of the work. In the case of the Eau-brink cut, on the Ouse above Lynn, the first Act, in 1795, contemplated an outlay of 40,000*l.*; yet, owing to a heavy and obstinate contest, the promoters alone had to spend 12,000*l.* in merely carrying the Bill. In the estimated cost of the Nene Valley drainage, which was to come to 275,000*l.* altogether, the expense of the Act of Parliament was set down as 10,000*l.* to begin with.

I believe one general Act embracing the whole kingdom may enable river reform to be instituted on a great scale without any necessity for a local Act in each separate case.

It appears to my mind that a general Act for this kingdom should apportion the whole surface (as I have before said) into drainage districts; each including a main river or watercourse, with all its branches and feeding ditches from the outfall to the very source—being in fact the entire catchment basin of the stream. And this because each river system is independent of all others; while its separate divisions, whether in the estuary delta, the upper valley, or the thousand feelers along its course, are mutually affected by and dependent upon each other. Not that all rights and responsibilities upon the river are to be swamped and set aside; but a jurisdiction is to be established over all. To conserve and improve the drainage of a district, to regulate all matters concerning mill-power, irrigation, or inland navigation, let there be trustees or commissioners; either a representative body or sort of water-parliament, elected by all the different interests or constituted in a different manner, if this were considered objectionable or unlikely to answer the end in view. Proper officers might be appointed to watch over and examine every portion of the tract, from the tidal harbour to the farm ditch, through which may run a right of water way; and a model for such duties may be found in our fen drainage management. The district could devise, support, or oppose any scheme of improvement as at present; and there would exist an organisation for submitting proposals to the direct sanction or rejection of all parties concerned. The advantage of the general Act would be in its provisions empowering the district board (however constituted) to deal with mills, properties, &c., and rate the charge for outlay, &c., according to fixed principles laid down for different cases, thus obviating the necessity for the host of local Acts that would otherwise be necessary for draining the kingdom, and which, because of their very number, will never be obtained. This is merely thrown out by way of collateral suggestion; but that a general Act of some description is requisite, I most firmly believe. It is evident that general rules for compensation, &c., could be framed, after due investigation of the existing state of things throughout the country, because our rivers are capable of being classified, according as they subserve the purposes of flour-mills or factories, navigation or simple drainage, and so on; and the remedial measures will be similar in certain descriptions of cases; as where water-mills must be removed, or steam-power provided in place of the water, or the water-power itself increased; where navigation must be abandoned, or, on the other hand, may be combined with better drainage, and so on. And there is already a sufficient number of precedents of the purchase of mills and canals, and compensations of all kinds, to guide us in framing a new general Act, comprehensively embracing all specific cases likely to arise. A measure of this kind, laying down principles upon which claims are to be regulated, would be a novelty; but one approaching to the general character I have been insisting upon is already before the public. For in the spring of 1852, a Bill for the "Drainage and Embankment of Lands" was presented to the House of Lords by the Earl of Carlisle, who, on withdrawal from office, brought it in as a bequest to the Ministry succeeding that of which his lordship was a member.

I do not admire a centralised government; preferring, as far as is expedient, to administer my own affairs. Yet I do think that some such measure as I have lightly sketched out would be applicable to our present situation, without trenching too closely upon the liberties of the subject. There appears however to be a feeling with some parties in favour of a universal arterial drainage carried out by the Government, according to the designs and under the inspection of commissioners—with a staff of hydraulic engineers like those of our neighbours the marshy Hollanders, or of our own India, or of Northern Italy, where the warm climate renders water almost an institution of the country, and irrigating liquid is measured out to the husbandman almost by the quart. But of course under any system short of absolute despotism it must be left for every locality at any rate to say whether it will remain drowned or no. We certainly do permit the Government to aid us in many ways besides "protecting person and property;" it carries our letters, enlightens the inventive minds of would-be patentees, surveys and maps our country, has jurisdiction over tidal streams and marshes, lights our shores, and makes charts of rocks and soundings for shipping, secures us a penny-a-mile ride by the railway, and violates theoretic political economy by fixing (not the standard value of precious metals, but) the fare we are to pay poor cabby. Whether the same power that figures so well as a military storekeeper (on "the Weedon system") would shine better in drainage works I cannot tell; but it is clear that Government *can* collect statistics and institute surveys, and I shall therefore close my lengthy address by making the following proposal:—

As a preliminary step to the framing of a general Act of Parliament, let a Royal Commission be appointed to examine the real drainage condition of the whole country, reporting upon the needful works and other requirements of our river valleys, somewhat as another commission has already done for our tidal harbours. What extent of grounds in this kingdom is subject to inundation? What still larger area is imperfectly furnished with outfalls for drained arable and pasture? What actual damages are periodically suffered? What does the country lose by the extent of good husbandry prevented? In what degree do the town and rural populations owe the prevalence of disease to the stagnant or deluging rivers? What are the special evils and obstructions to be removed in each district? How could these be equitably abolished? In which cases would the increased value of the lands or other benefit pay for amelioration? Where are the cases in which improvement would be too costly? We ought to possess full and clear answers to these and similar inquiries; but at present all we know is fragmentary, collected by individuals who, with all their painstaking, cannot measure the mischief or form a just idea of the alterations required. To arrive at approximate statistics on all these points (in many cases not needing a minute survey) a commission need not expend a very heavy sum of money. And then, still further, besides inquiring into the most satisfactory methods of dealing with conflicting claims and interests, with a view to the framing of a general Act, investigations of an engineering character might be instituted—as, for instance, into the maximum daily downfall and the possible discharge of districts varying in climate and geological structure; the augmentation of drainage delivery, by improved farm management; the effects of the tidal flow in different river channels; the rate of deposition of alluvial sediment upon salt marshes, and so on—most important points for the guidance of the drainage engineer, and without a knowledge of which in greater fullness than at present exists, works will be made of unsuitable dimensions, and money may be squandered in vain. The appointment of a drainage commission, consisting of individuals conversant both with engineering and agriculture, and capable of taking broad views of the multitudinous claims and interests that would come before them, is a step that the Government could easily take, and one that would undoubtedly win the approbation of all classes of the community. There are plenty of precedents, too, for such a proceeding on the part of the Crown, as keeper of the soil of the kingdom, to be found in the records of fen drainage, extending indeed back to the early institution of our Commissions of Sewers.

Mr. Clarke having finished reading his paper, which excited great attention, proposed a memorial being presented to Parliament requesting an inquiry into the general state of rivers and watercourses throughout the kingdom. Mr. Bailey Denton, in a speech of considerable length, observed that in the years 1852 and 1853, in consequence of those very wet

seasons, Lord Carlisle's proposed bill had stimulated some localities to adopt the system of drainage, but regretted the subsequent dry seasons had put a stop to the advancement of such desirable objects. He also complimented the Society on the introduction of the plan of distributing a printed copy of the paper about to be read, giving great advantage to persons peculiarly interested therein, and likely to state their opinions thereon. Mr. Holmes, of Sussex, clerk to the Commissioners of Sewers, spoke in high terms of approval of the paper read, and likewise of the plan suggested. Mr. Mechi, after commenting in favourable terms on Mr. Clark's able paper, instanced the advantage of steam-power in grinding over any other means, more particularly as regarded expense. Mr. Baker, of Writtle, took a very comprehensive view of the subject, considering it as of national importance, and, consequently, that it should be taken up by Parliament in a similar way to the General Inclosure Act. He also gave a decided opinion in favour of the adoption of steam-power for grinding. Mr. Sidney also viewed it as a national question, and that the expense should be borne by the nation generally, but was of opinion a memorial at present from this Society would be unavailing, recommending that first competent persons should take the question in hand, and make the public generally acquainted with the necessity of it before applying for any legislative interference. He strongly urged the adoption of it by the Agricultural Society. Mr. Howard, of Bedford, confirmed the unhealthy state of the neighbourhood of Cople previous to the drainage adopted by the Duke of Bedford in that locality, and the great advantage resulting therefrom. Mr. Owen Wallis spoke of the necessity of its becoming a national question, instancing the great local expense in the Valley of Nene, which opinion was supported by Mr. Amos, of Wisbeach, stating the expense was too great to be borne solely by the parties residing in the localities requiring the drainage. It was finally resolved that the subject should be laid before the committee at the next general meeting.

Calendar of Operations.

FEBRUARY.

WESTER ROSS, *Feb. 7.*—Last month was exceedingly boisterous and wet, and very unsuitable for out-door labour. The fineness of the previous months, however, admitted of the ploughing being so far advanced that a short interruption is of less consequence. Seldom have we desiderated as we did last month some method of conveying manure to our fields, either in a liquid or solid state, which would have saved horse labour. In the previous months we took advantage of their peculiar fineness for having everything ploughed that required it, expecting in due season continued frost to admit of easy cartage of manure; but, instead of this, nearly every day has had its frost and thaw, with torrents of rain and frost again, so that our courts are full to overflowing, and cannot be emptied without damaging men, horses, and land. If not frost, dry weather will come by and bye. It was sad to see the plight in which the sheep on Turnip fields have been for some time. The dryest land has been wet; and with us, there being a considerable admixture of clay, the soil gets into such a puddle that the animal having extricated a foot appears at a loss to know where next to place it. It is wonderful to see how well they stand out in such weather; but manifestly, in such circumstances, the Cheviot sheep, with its short, close, compact covering, has greatly the advantage over the longer-woolled kinds. Dry weather is much needed to allow them to regain in flesh what they have lately lost. Cattle have been doing well both in court and byre, and for both sheep and cattle we expect a continuance of the present remunerating prices. Barley has been fetching a fair price; but the yield is below our expectations. Wheat in threshing comes nearer our calculations, but the price is so very low—at present about 40*s.* per quarter—that very little can be made of it. Oats perhaps never yielded more abundantly. The profit derived from last year's grain crop will be small indeed, but will be somewhat enhanced, we anticipate, by the more than usual profits derived from stock. Our working classes have passed the winter months easily and comfortably. Labour has been abundant, wages have been high, food of all kinds has been cheap, and Potatoes having kept better have been more abundant than they have been for years.

Notices to Correspondents.

COTTON-CAKE, &c.: *J M.* asks if it be good for ewes about to lamb. Sudden changes of food are wrong in such cases; but it may be gradually introduced with safety. On Market Gardening there is no published book that we know. Mr. Cuthill published some papers on it a few years ago in the *Gardeners' Chronicle*, and also an article in "Morton's Cyclopædia of Agriculture."

DAIRY: *Old Subscriber.* Your former letter did not reach us. If you remove all old mortar and soil from mason work and floor to a sufficient depth, thoroughly cleanse with chlorine water, &c., and re-paint and plaster, we should think it would be possible to convert a stable into a dairy.

DRAINAGE COMPANIES: *A Very Old Customer.* The cost of haulage is properly included in the sum which Government or Drainage Companies will lend you for drainage. Apply to any of the companies advertising in our columns.

GRASS LAND: *D G.* A smooth roller is best for Grass land.

ITALIAN RYE-GRASS: *D W.* Italian Rye-grass and Clover alone will not make a permanent sward.

LAW OF LANDLORD AND TENANT: *Delta.* The *Ayr Observer* informs us that Mr. Tennant, formerly tenant of the farm of Shields, here had in the course of his occupancy erected, at his own cost, several sheds for the accommodation of his cattle. On leaving the farm it was insisted by the landlord that he was entitled to leave these in good tenantable repair. A reference on the point was agreed to be submitted to James Morton, Esq., writer, who gave the following judgment in the negative:—"The referee having considered the within reference, and heard parties' procurators, finds, in accordance with the decision of the Supreme Court, in 'Oliphant of Rossie against John Thomson,' 8th February, 1822, that Mr. Tennant, the late tenant of Sandylord, is not bound to leave in good tenantable repair the cattle sheds voluntarily erected by him on said farm, at his own expense."

LIQUID MANURE: *Old Subscriber.* There is no separate manual on the subject. Mr. Mechi's "Sayings and Doings" have been published by Routledge. There is a considerable demand for manuals on different sections of farm practice which ought to be better supplied. The strength of liquid manure is to be ascertained by an analysis for ammonia which it contains.

FOWLER'S PATENT STEAM PLOUGH.

THIS IMPLEMENT OBTAINED
THE FIVE HUNDRED POUNDS PRIZE AT THE ROYAL AGRICULTURAL SOCIETY'S SHOW AT CHESTER, JULY 1858 (AFTER THREE YEARS' COMPETITION),
AND HAS ALSO OBTAINED
THREE HUNDRED AND SEVENTY-FIVE POUNDS AT VARIOUS OTHER AGRICULTURAL SHOWS IN THE UNITED KINGDOM.

THE WINDLASS CAN BE FITTED TO ANY AGRICULTURAL ENGINE.

For further Particulars, Prices, and Catalogues, apply to
JOHN FOWLER, Jun., 28, Cornhill, London, E. C.

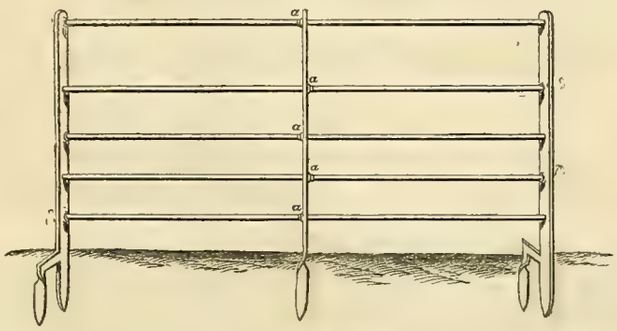
ADDRESS: THE MANAGERS, ST. PANCRAS IRONWORKS.

THE ST. PANCRAS IRON WORKS ARE OPPOSITE THE OLD ST. PANCRAS CHURCH,
OLD ST. PANCRAS ROAD, LONDON.

IRON COLLAR BAR HURDLES.

BY HER MAJESTY'S ROYAL LETTERS PATENT.
Obtained the Silver Medal of the Royal Agricultural Society.

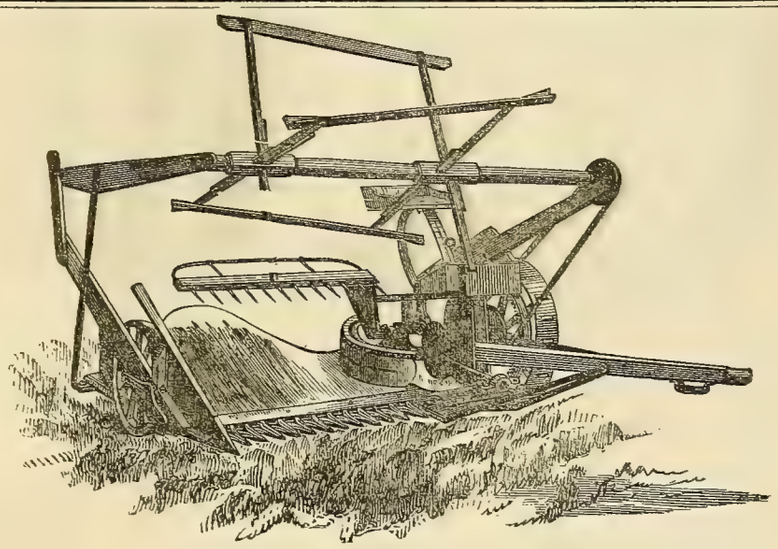
ST. PANCRAS IRON WORKS,



OLD ST. PANCRAS ROAD, LONDON.

The improvement by this PATENT consists in the COLLARS on the Bars which, being placed on alternate sides of the centre upright bar, keep it in its position, confine the bars to short bearings, prevent their being strained, and give more than DOUBLE STRENGTH and RIGIDITY to the HURDLE.

PROFESSOR VARNELL'S MANGERS AND STABLE FITTINGS.



B. SAMUELSON,

AGRICULTURAL ENGINEER AND MACHINIST,

WAREHOUSE, 76, CANNON STREET WEST, LONDON,
WORKS AT BANBURY,

INFORMS MERCHANTS, the TRADE, and AGRICULTURISTS, that he has opened the above Warehouses as a depôt for his own manufactures and those of Messrs. Barrett, Clayton, Howard, Hornsby, Nicholson, Richmond, Tuxford, Smith, and all other first-class makers, whose implements he is prepared to offer on makers' terms.

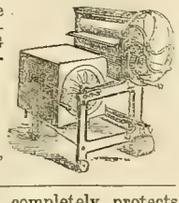
THE BRITANNIA SELF-RAKING REAPING MACHINE,

With side delivery in sheaf, no rakers or gatherers required; and all the most improved Food-preparing Machines of the season, may be inspected at the above depôt.

B SAMUELSON, 76, Cannon Street West, London: and Britannia Works, Banbury.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

"NO ONE KNOWING the value of your Patent WASHING, WRINGING, and MANGLING MACHINE, would be without one."—*Vide Mrs. Hall.*

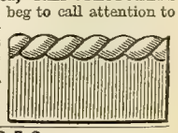


THOMAS BRADFORD, Patentee, Manchester.

Descriptive Pamphlet, with Prices, free by post.

BRITTAIN'S GARDEN NET completely protects Fruit Blossoms from injury by frost, and provides for the circulation of air and admission of light, so essential to healthy growth; 55 inches wide, 5*d.*, 6*d.*, and 7*d.* a yard; good yard wide TIFFANY, 2½*d.* do.—Manchester, Feb. 12.

LOOMES AND CO., Whittlesea, MANUFACTURERS OF BRICKS, TILES, POTTERY, &c., beg to call attention to their new CABLE PATTERN GARDEN BORDER EDGING, which not only surpasses others in appearance and durability, but is free from the dangerous points and sharp edges of most.—Price, delivered on any Railway at Peterborough, 5*d.* per yard.



MICROSCOPES.

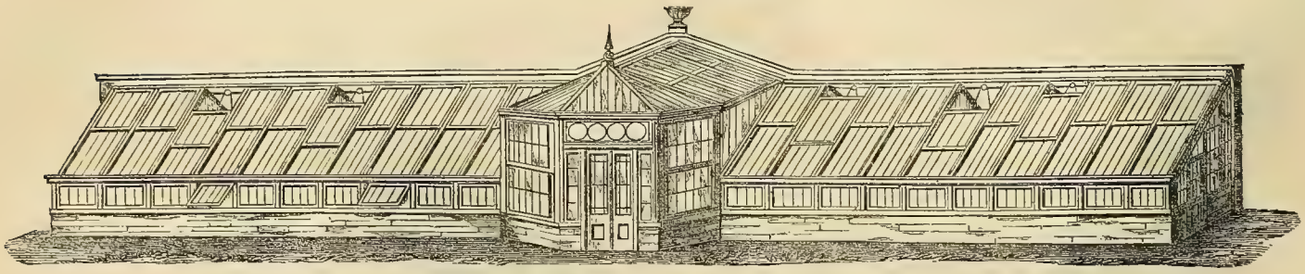
JOSEPH AMADIO'S Improved Compound MICROSCOPE, 2*l.* 2*s.*; Students', 3*l.* 13*s.* 6*d.*

"Both these are from Amadio, of Throgmorton Street, and are excellent of their kind, the more expensive one especially."—*Household Words*, No. 345.

A large Assortment of ACHROMATIC MICROSCOPES.
Just published, an ILLUSTRATED CATALOGUE, containing the names of 1000 Microscopic objects, post free, for 4 stamps.

HORTICULTURAL BUILDING & HEATING BY HOT WATER.

BY APPOINTMENT.



JOHN WEEKS & COMPANY,

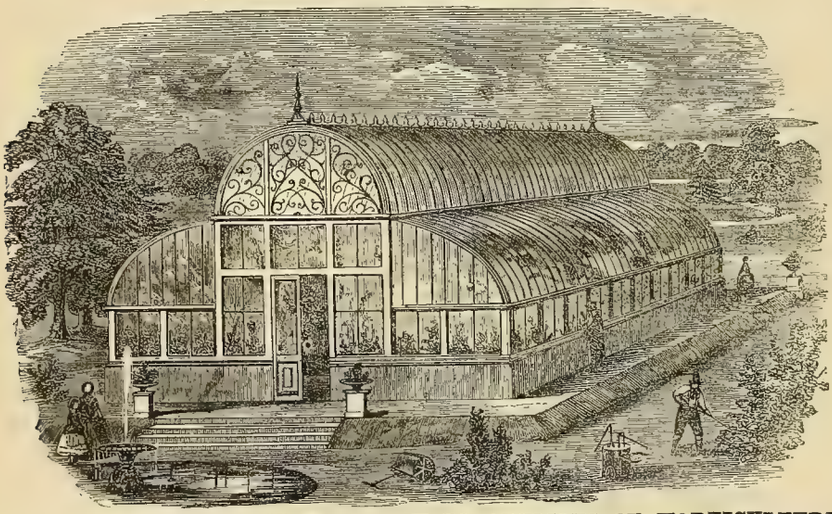
KING'S ROAD, CHELSEA, LONDON.

HORTICULTURAL BUILDERS AND HOT-WATER APPARATUS MANUFACTURERS, ENGINEERS, AND IRON FOUNDERS.

PLANS, ESTIMATES, & ILLUSTRATED CATALOGUES FREE ON APPLICATION.

COTTAM & COMPY., Engineers, Founders, &c.,

2, WINSLEY STREET, LONDON, W.



A SHOW ROOM DEVOTED ENTIRELY TO ARTICLES OF HORTICULTURE.

THE NEW ILLUSTRATED CATALOGUE UPON APPLICATION.

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	,, Syringes	Garden Bordering
Hot-water Apparatus	Ornamental Wire Work	Hurdles	,, Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

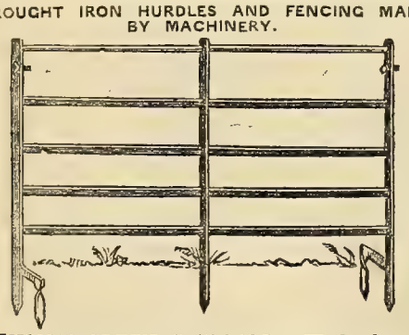
Iron Hurdles, Strained Wire Fencing, Game Netting, &c.

Every description of Plain, Ornamental, Cast and Wrought Iron, and Wire Work.

EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

N.B. COTTAM AND COY. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

WROUGHT IRON HURDLES AND FENCING MADE BY MACHINERY.

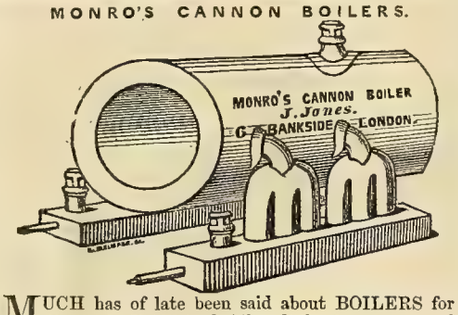


THOMAS GREEN, Smithfield Iron Works, begs to call the attention of parties requiring machine-made Hurdles, which are a very superior article, as well as being both cheap and durable. The above cut represents a Hurdle 6 feet long by 3 feet 6 inches high; the top bar ⅝ of an inch diameter, the four low bars 1 inch by ¼ inch, the uprights 1¼ by ¼ inch. The Prongs fasten 12 inches in the ground. Price 4*s.* 6*d.* each, or 2*s.* 3*d.* per yard. If the four lower bars were made of ⅛ inch diameter instead of 1 inch by ¼ inch iron, the price would be 4*s.* 2*d.* each, or 2*s.* 1*d.* per yard. The above are the lowest net cash prices at the Works.

THOMAS GREEN, Smithfield Iron Works, Leeds, Yorkshire, Manufacturer of every description of Iron and Wire Fencing, Iron Work of all kinds, both plain and ornamental, Entrance Gates, Palisading, Tomb Railing, Iron Bedsteads, &c. Illustrated Catalogues may be had free on application at the Works.

N.B. Also Patentee and Sole Manufacturer of GREEN'S Patent Lawn Mowing, Collecting, and Grass Rolling Machines, which have proved to be the best in all cases of competition.

MONRO'S CANNON BOILERS.



MUCH has of late been said about BOILERS for Heating by Hot Water, but these Boilers have now proved themselves to be the best at present invented. They are adapted for heating every description of building, and are made of various sizes. The Price of the

24 inch Cast Iron is	.. .. ..	£5 10*s.* 0*d.* each
24 inch Wrought ditto	.. .. ..	6 10 0 ,,
36 inch Cast ditto	.. .. ..	8 0 0 ,,
36 inch Wrought ditto	.. .. ..	8 10 0 ,,

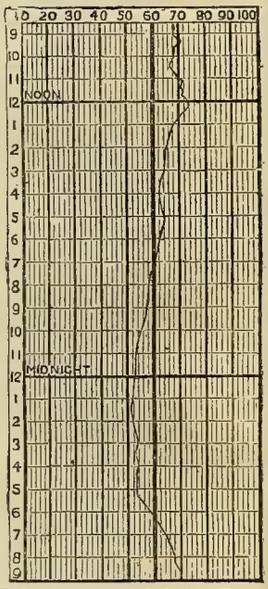
References to Gentlemen and Nurserymen where these Boilers are now at work. The Cannon Boilers are now kept in stock, and are to be had only of J. JONES, 6, Bankside. Also, every description of Saddle and Cylinder Boilers. Hot Water Pipes and Connections at prices lower than those of any other house in London. Estimates for Hot-water Apparatus erected complete in any part of the country, and an Illustrated Catalogue on application to J. JONES, 6, Bankside, Southwark, London.

WHISKIES (EQUALISATION OF DUTY). — The choicest Scotch and Irish, from 14*s.* to 18*s.* per gallon.—OWEN & Co., 75, Lower Thames Street, London, E.C., opposite the Custom House. Shipping and the Trade supplied.

TO HORTICULTURISTS.

GAUNTLETT'S PATENT CHRONOMETRICAL THERMOMETER.

This instrument, which combines an eight-day clock of the best English make showing time, with a newly-patented Thermometer, wherein glass and quicksilver are dispensed with, writes down the temperature of the atmosphere on a slip of paper, and when placed in a Hothouse, Forcing House, or Conservatory, &c., supplies a valuable record of the temperature, with all its variations, showing the time when any change took place, and how long such change continued.



The above slip (reduced in size) exhibits the temperature of the Royal Agricultural Society's show yard at Chester, July 22, 1858, written off by one of these instruments, to which was awarded the Society's SILVER MEDAL.

This is the only instrument that registers temperature continuously and writes it down, and no horticuturist should be without it.

Orders received by W. H. GAUNTLETT, Middlesbro' on-Tees.

MAPPIN'S PRUNING KNIVES IN EVERY VARIETY.

WARRANTED GOOD BY THE MAKERS.



MAPPIN BROTHERS, Queen's Cutlery Works, Sheffield; and 67 and 68, King William Street, London.

MAPPIN'S "SHILLING" RAZORS Shave well for Twelve Months without Grinding.

MAPPIN'S 2*s.* RAZORS Shave well for Three Years.

MAPPIN'S 3*s.* RAZORS (suitable for Hard or soft Beards,) Shave well for Ten Years.

MAPPIN'S SUPERIOR TABLE-KNIVES maintain their unrivalled Superiority—handles cannot possibly become loose—the blades are all of the very first quality, being their own Sheffield manufacture.

	Tble. Kns.	Dst. Kns.	Carvers.
Ivory 3⅝ in. Handle, balanced,	20*s.* p. doz.;	16*s.* p. doz.;	6*s.* p. pair
Do. 4 in. do. ..	25*s.* ,,	18*s.* ,,	9*s.* ,,

MAPPIN'S SILVER-PLATED DESSERT KNIVES and FORKS, in Mahogany Cases.

12 Pairs Knives and Forks,	Ivory Handles, in Case..	80*s.*
12 Do.	Pearl Handles, do. ..	130*s.*
12 Do.	Silver-Plated Handles, do. ..	80*s.*

MAPPIN'S ELECTRO-SILVER PLATE.—MAPPIN BROTHERS, Manufacturers by Special Appointment to the Queen, are the only Sheffield makers who supply the consumers in London. Their LONDON SHOW ROOMS, 67 and 68, King William Street, London Bridge, contain by far the largest STOCK of ELECTRO-SILVER PLATE in the World, which is transmitted direct from their Manufactory, Queen's Cutlery Works, Sheffield.

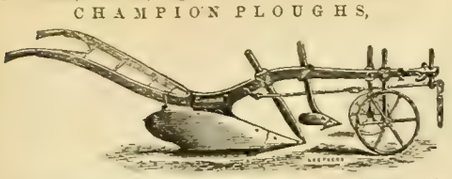
	Fiddle Pattern.	Double Thread.	King's Pattern.
12 Table Forks, best quality	£1 16 0	£2 14 0	£3 0
12 Table Spoons, best quality	1 16 0	2 14 0	3 0
12 Dessert Forks, best quality	1 7 0	2 0 0	2 4
12 Dessert Spoons, best quality	1 7 0	2 0 0	2 4
12 Tea Spoons, best quality	0 16 0	1 4 0	1 7

Messrs. MAPPIN BROTHERS respectfully invite buyers to inspect their unprecedented display, which, for beauty of design, exquisite workmanship, and novelty, stands unrivalled. Their illustrated Catalogue, which is continually receiving addition of New Designs, sent per post on receipt of 12 stamps.—MAPPIN BROTHERS, 67 and 68, King William Street, London Bridge; Manufactory, Queen's Cutlery Works, Sheffield.

HOWARDS' PRIZE IMPLEMENTS, 1859.

JAMES AND FREDK. HOWARD, Britannia Iron Works, Bedford, beg to direct attention to their

CHAMPION PLOUGHS,



For which they received All the First Prizes last offered by the Royal Agricultural Society of England, viz. :—

The First Prize for the best Plough for general purposes.
The First Prize for the best Plough for light land.
The First Prize for the best Plough for heavy land.

The only Prize ever offered by the Society for the best Double Breast or Ridging Plough was also awarded to J. & F. HOWARD.

J. & F. HOWARD have discontinued troubling the Public with a long List of Prizes awarded to their Implements, but they would just state that for PLOUGHS, HARROWS, and HORSE RAKES, they have for several years gained every Prize for which they have competed.

PLOUGHS.

P PLOUGH, with two wheels, for light work ..	£4 7 6
PP PLOUGH, ,, for general purposes	4 12 6
SKIM COULTER	£0 5 6

STEEL BREASTS, 7s. and 7s. 6d. extra.

HARROWS.

A Set of Three 4-Beam HARROWS, with Whippletree, recommended as general Seed Harrows, 9¼ feet wide, marked No. 12	£3 14
A Set of Three 4-Beam HARROWS, with Whippletree, adapted for 3 Horses, 10 feet wide, marked No. 11 ..	4 4

HORSE RAKES.

Price of small size RAKE, marked A, with 24 iron teeth, extreme width 7½ feet	£7 10 0
Ditto, with Steel Teeth	S 0 0
Price of large size, marked B, with 28 iron teeth, extreme width 8½ feet	S 0 0
Price of large size, marked B, with steel teeth ..	£8 10 0
Price of extra large size, marked C, with 24 steel teeth, extreme width, 8½ feet	10 10 0
Price of a Set of 15 Prongs, to be attached to the above when used as Weed Extirpators	1 10 0

Free Delivery to Birmingham, Bristol, Derby, Gloucester, Lincoln, Liverpool, London, Manchester, Norwich, Nottingham, Retford, Wisbeach, and Worcester; or to Dublin, Edinburgh, Glasgow, and other parts at fixed rates.

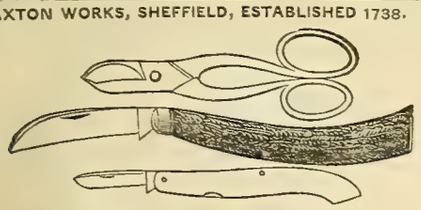
HOWARDS' NEW CATALOGUE, containing prices and description of their Patent Ploughs, Harrows, Horse Rakes, and other Implements, including Smith's Steam Cultivators, for which they received at Chester the Gold Medal of the Royal Agricultural Society of England, sent free on application to

J. & F. HOWARD, Britannia Iron Works, Bedford.

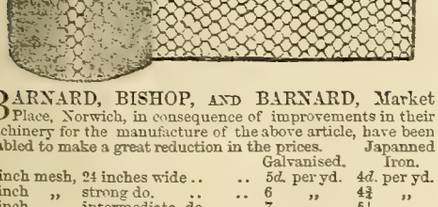
TREES COMING INTO BLOOM will be protected from Frosts, Hail, &c., by using HAYTHORN'S HEXAGON AND CHISWICK GARDEN NETS, now used and recommended by all the principal Gardeners; the Nets will also preserve the Fruit from Wasps, Flies, Birds, &c.—For Patterns, Prices, and Testimonials, direct to Mr. HAYTHORN, Nottingham.

TANNED GARDEN NETTING, for preserving Fruit Trees from frost, blight, birds, &c., and as a fence for fowls, &c. One yard wide 1½*d.*, 2 yards 3*d.*, 3 yards 4*d.*, and 4 yards 6*d.*, per yard, in any quantity, may be had at C. WRIGHT'S, 376, Strand, W.C.—A liberal allowance to Nurserymen.

PAXTON WORKS, SHEFFIELD, ESTABLISHED 1738.



SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.—Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.



BARNARD, BISHOP, AND BARNARD, Market Place, Norwich, in consequence of improvements in their machinery for the manufacture of the above article, have been enabled to make a great reduction in the prices.

		Galvanised.	Japanned Iron.
2-inch mesh, 24 inches wide		5*d.* per yd.	4*d.* per yd.
2-inch ,, strong do.		6 ,,	4¾ ,,
2-inch ,, intermediate, do. ..		7 ,,	5½ ,,
2-inch ,, extra strong, do. ..		9½ ,,	7½ ,,
1⅝-inch ,, 24 inches wide		5½ ,,	4½ ,,
1⅝-inch ,, strong, do.		6½ ,,	5¼ ,,
1⅝-inch ,, intermediate, do. ..		7½ ,,	6 ,,
1⅝-inch ,, extra strong, do. ..		10 ,,	8 ,,

All the above kinds can be made of any width (under 8 feet at proportionate prices. If the upper half is of a coarser mesh than the lower, it will reduce the prices about one-fifth.

Strong Galvanised Poultry Netting, 8½*d.* per yard, 3 feet wide Galvanised Sparrow-proof Netting for Pheasantries, 2½*d.* per square foot. Delivered free of expense in London, Peterborough, Hull, or Newcastle. Manufacturers of Improved Strained Wire Cattle and Deer Fencing, Iron Hurdles, &c.

Illustrated Catalogues and Patterns forwarded by post.

SHAW'S TIFFANY.—The best and cheapest material for Shading Conservatories, Protecting Fruit from Birds and Wasps, &c. Sold in pieces 20 yards long by 38 inches wide. No. 1, best quality, 5*s.* per piece; second quality, 4*s.* per piece. Extra strong and thick (see Circular sent free by post with samples).

Address JOHN SHAW & Co., Manufacturers and Dealers, Princess Street, Manchester.

CHUBB'S LOCKS, FIREPROOF SAFES, DOOR LATCHES, CASH AND DEED BOXES. Illustrated Priced Lists sent free.—57, St. Paul's Churchyard, London; 28, Lord Street, Liverpool; 16, Market Street, Manchester; and at Wolverhampton.

MOIRE ANTIQUES.—The most Fashionable Dress of the Season in Black and Colours, 4½ gs. to 6½. 500 Check Silk Dresses, 12 yards, wide width, carriage paid, 35s. —SOIE DES FEES, the New Evening Dress (not ignitable). SEWELL & Co., Compton Street, and Frith Street, Soho.

GLENFIELD PATENT STARCH
USED IN THE ROYAL LAUNDRY,
And pronounced by HER MAJESTY'S Laundress to be
THE FINEST STARCH SHE EVER USED.

When you ask for Glenfield Patent Starch, see that you get it, as inferior kinds are often substituted. Sold by all Chandlers, Grocers, &c.—WOTHERSPOON & Co., Glasgow and London.

HANDSOME BRASS AND IRON BEDSTEADS.—HEAL & SON'S Show Rooms contain a large assortment of Brass Bedsteads, suitable both for Home use and for Tropical Climates; handsome Iron Bedsteads with Brass Mountings and elegantly Japanned; Plain Iron Bedsteads for Servants; every description of Wood Bedstead that is manufactured, in Mahogany, Birch, Walnut-tree Woods, Polished Deal and Japanned, all fitted with Bedding and Furniture complete, as well as every description of Bedroom Furniture.

HEAL AND SON'S ILLUSTRATED CATALOGUE, containing Designs and Prices of 100 Bedsteads, as well as of 150 different articles of Bedroom Furniture, sent free by post.—HEAL & SON, Bedstead, Bedding, and Bedroom Furniture Manufacturers, 196, Tottenham Court Road, W.

CONDY'S PATENT PURE CONCENTRATED MALT VINEGAR.—Families, by using this delicious Vinegar, insure purity, and effect a saving of 50 per cent. See Report of Dr. Letheby, City Officer of Health; Dr. Hassall of the *Lancet* Commission, and others. Six Quart Sample sent free to any Railway for 3*s.* 6*d.*—Sold by the Trade, in bottles, labelled and capsuled; wholesale, 63, King William Street, London Bridge, E.C.

PRIZE MEDAL, PARIS EXHIBITION 1855.

METCALFE, BINGLEY, AND CO.'S New Pattern and Penetrating Tooth Brushes, Penetrating unbleached Hair Brushes, Improved Flesh and Clothes Brushes, and genuine Smyrna Sponges; and every description of Brush, Comb, and Perfumery for the Toilet. The Tooth Brushes search thoroughly between the divisions of the Teeth and clean them most effectually—the hairs never come loose. M., B., and Co. are sole makers of the Oatmeal and Camphor, and Orris Root Soaps—sold in Tablets (bearing their names and address) at 6*d.* each, of METCALFE'S celebrated Alkaline Tooth Powder, 2*s.* per box; and of the New Bouquets.—Sole Establishment, 130B and 131, Oxford St., 2d and 3d doors west from Holles St., London.

In Two Vols. demy 8vo. with a Coloured Map, price 28*s.*,

CIVILIZED AMERICA.—By THOMAS COLLEY GRATTAN, Late Her Britannic Majesty's Consul for the State of Massachusetts; Hon. Member of the American Institute; the New York and Boston Historical Societies, &c. &c.; Author of "Highways and Byways," &c. &c.

"This work will no doubt scatter many delusions that are prevalent among us and correct many mistakes."—*Literary Gazette.*

"Besides the number and variety of his subjects, Mr. Grattan had good opportunities for closer observation than most travellers possess, and his style, whatever else may be said of it, moves along without impediment."—*Spectator.*

London: BRADBURY & EVANS, 11, Bouverie Street, Fleet St.

Lately Published,

THE ELEMENTS OF BOTANY, STRUCTURAL AND PHYSIOLOGICAL. With a Glossary of Technical Terms, and numerous Illustrations. 12*s.* cloth.

This completes the series of Elementary Botanical Works by Professor LINDLEY, of which "School Botany," and "The Vegetable Kingdom," form the other parts.

The first two Parts of THE ELEMENTS OF BOTANY, comprising Structural and Physiological Botany, and a Glossary of Technical Terms, are published in one octavo volume, price 12*s.*

These three parts form a complete manual of Botany for Medical and other Students who have made themselves acquainted with the author's "School Botany."

N.B. The Glossary may be had separately, price 5*s.*

BRADBURY & EVANS, 11, Bouverie Street.

This day is published, in one vol. 8vo, with numerous Woodcuts, price 7*s.* 6*d.*,

MEDICAL AND ŒCONOMICAL BOTANY; or An Account of the Principal Plants employed in Medicine or Domestic Œconomy.

EXTRACT FROM THE AUTHOR'S PREFACE.

"The Vegetable Kingdom contains, among a large quantity of plants of no known importance to man, various useful species employed in medicine, the arts, or in the many branches of domestic œconomy. The principal part of those which can be brought by teachers in Europe under the notice of students, or which, from their great importance, deserve to be among the earliest subjects of study, are mentioned in the following pages, where they are arranged in the manner proposed in the 'VEGETABLE KINGDOM' of the author, with the sequence of matter departed from in a few instances, when it was believed that the convenience of younger students would be consulted by doing so. The author trusts that this selection will be found to have been made in such a way that all teachers who possess reasonably extensive means of illustrating their lectures, and all Botanic Gardens, may furnish the larger part of the species which are mentioned. A small selection was indispensable; firstly, because a greater work would have been beyond the reach of the majority of purchasers; and secondly, because experience shows us that those who have to study a science of observation, such as Botany, require to concentrate their attention, in the first instance, upon a limited number of objects."—BRADBURY & EVANS, 11, Bouverie Street.

In Sixpenny Fortnightly Parts,

BOSWELL'S LIFE OF JOHNSON, Illustrated with 250 Engravings, Portraits, Views, and Characters. To be completed in 20 Sixpenny Parts. Also, uniform,

HALF-HOURS WITH THE BEST AUTHORS. Selected and Edited, with short biographical and critical notices, by CHARLES KNIGHT. Illustrated with Portraits, and 52 Engravings by Harvey. Will be completed in 22 Numbers. Part I. of each work will be ready for delivery on February 28th.

London: ROUTLEDGE, WARNES, & ROUTLEDGE, Farringdon St.

TO THE READERS OF THE "GARDENERS' CHRONICLE."—The Advertiser will be glad to post weekly a stamped edition of the "Cottage Gardener," in return for the *Gardeners' Chronicle.*—Address A. B., care of Rev. B. Jones-Bateman, Olton Hall, Birmingham.

CHEAP AND CORRECT PRINTING FOR THE NURSERY AND SEED TRADES.—Send your orders to ROBT. EDM. TAYLOR, PRINTER, Sea Coal Lane, Skinner Street, Snow Hill, London, E. C. Estimates forwarded.

Second Edition, revised and enlarged, price 5*s.* 6*d.* cloth; free by post, 5*s.* 10*d.*,

ORNAMENTAL AND DOMESTIC POULTRY;
THEIR HISTORY AND MANAGEMENT.
By the Rev. EDMUND SAUL DIXON, M.A.
J. MATTHEWS, 5, Upper Wellington Street, Covent Garden.

Third Edition, considerably enlarged, price 5*s.* 6*d.*, free by post, 5*s.* 10*d.*,

RURAL CHEMISTRY.
By EDWARD SOLLY, F.R.S., F.L.S., F.G.S.

Honorary Member of the Royal Agricultural Society of England, Professor of Chemistry to the Horticultural Society of London, Lecturer on Chemistry in the Hon. E. I. Co.'s Military Seminary at Addiscombe, &c., &c.

J. MATTHEWS, 5, Upper Wellington St., Covent Garden, London, W.C.

Price 1*s.* 6*d.*, free by post, 1*s.* 7*d.*

LABELS FOR THE HERBARIUM,
CONSISTING OF THE NAMES OF THE
CLASSES, ALLIANCES, ORDERS, AND SUB-ORDERS,
OF
PROFESSOR LINDLEY'S "VEGETABLE KINGDOM."

So printed in large type, that they can be cut out and pasted into THE HERBARIUM.

J. MATTHEWS, 5, Upper Wellington Street, Covent Garden, London, W.C.

In consequence of the new postal arrangements, parties in the country who desire it can have two copies sent by post for one stamp, five for two stamps, or eleven for four, in addition to the cost of the numbers.

Price 3*d.* each, or 5*s.* for 25 copies for distribution among Cottage Tenantry, delivered anywhere in London, on a Post-office Order being sent to the Publisher, JAMES MATTHEWS, at the Office of the *Gardeners' Chronicle.*

THE COTTAGER'S CALENDAR OF GARDEN OPERATIONS. By Sir JOSEPH PAXTON, M.P.

Reprinted from the GARDENERS' CHRONICLE. Upwards of 126,000 have already been sold.

CONTENTS:—

African Lilies
Agapanthus
Anemones
Annuals
Apples
Apricot
Auriculas
Beans
Beet
Biennials
Black Fly
Books for Cottagers
Borage
Borecole
Box Edgings
Broccoli
Brussels Sprouts
Budding
Bulbs
Cabbage
Cactus
Calceolarias
Californian Annuals
Campanulas
Carnations
Carrots
Cauliflowers
Celery
Cherries
China Asters
China Roses
Chrysanthemums, Chinese
Chives
Clarkias
Clematis
Collinsias
Colewort
Cress
Creepers
Crocus
Crown Imperials
Cucumbers
Cultivation of flowers in windows
Dahlias
Daisies
Dog's-tooth Violets
Exhibitions, preparing articles for
Felts, as protection for borders
Fuchsias
Gentianella
Gilias
Gooseberries
Grafting
Green-fly
Heartsease
Herbs
Herbaceous Perennials
Heliotrope
Hollyhocks
Honeysuckle
Horse-radish
Hyacinths
Hydrangeas
Hyssop
Indian Cress
Iris
Kidney Beans
Lavender
Layering
Leeks
Leptosiphons
Lettuce
Lobelias
London Pride
Lychnis, double
Marigold
Marjoram
Manures
Marvel of Peru
Mesembryanthemums
Mignonette
Mint
Mustard
Narcissus
Nemophilas
Œnothera bifrons
Onions
Pæonies
Parsnip
Parsley
Peaches
Pea-haulm
Pears
Peas
Pelargoniums
Perennials
Persian Iris
Petunias
Phlox
Pigs
Pinks
Planting
Plums
Polyanthus
Potatoes
Pruning
Privet
Propagation by cuttings
Pyracantha
Radishes
Ranunculus
Raspberries
Rhubarb
Rockets
Roses
Rue
Rustic Vases
Sage
Salvias
Savoys
Saxifrage
Scarlet Runner Beans
Seeds
Sea Daisy or Thrift
Seakale
Select Flowers
Select Vegetables and Fruit
Snails and Slugs
Snowdrops
Spinach
Spruce Fir
Spur Pruning
Stocks
Strawberries
Summer Savory
Sweet William
Thorn Hedges
Thyme
Tigridia Pavonia
Transplanting
Tree Lifting
Tulips
Turnips
Vegetable Cookery
Venus's Looking Glass
Verbenas
Vines
Virginian Stocks
Wallflowers
Willows
Zinnias

J. MATTHEWS, 5, Upper Wellington Street, Covent Garden, London, W.C.

"Will repay a careful perusal."—*North British Agriculturist.*

Price 1*s.* 6*d.* sewed, or 2*s.* cloth,

AGRICULTURAL CHEMISTRY. By ALFRED SIBSON (First Assistant in the Laboratory of the Royal Agricultural College, Cirencester). With a Recommendatory Preface by Dr. AUGUSTUS VOELCKER (Consulting Chemist of the Royal Agricultural Society).

GENERAL CONTENTS.—Chemistry of the Atmosphere—Chemistry of the Soils—Chemistry of Water—Chemistry of the Plant—Grain Crops—Root Crops—Leguminous Crops—Fodder Crops—Soils and Manures best suited for them—Vegetable Produce of the Farm—Means of Restoring the Impaired Fertility of Land exhausted by the growth of Cultivated Crops—Improving Land naturally Infertile—Annual Produce of the Farm—Principles of Nutrition, &c.

London: ROUTLEDGE, WARNES, & ROUTLEDGE, Farringdon Street.

On the 1st of March will be Published the First Volume of a Re-issue of the

ENCYCLOPÆDIA BRITANNICA, in Volumes elegantly half-bound Russia, price 30*s.*; or in cloth 24*s.* each. One volume to be issued every two months, and the whole to be completed within three years. In the publication of the Eighth Edition of the "Encyclopædia Britannica," the Proprietors as well as the Subscribers had reason to regret the delays which occasionally occurred in the issue of some of the volumes, notwithstanding all the efforts of the Publishers to secure punctuality. From the great number of contributors, many of them writers of the greatest celebrity, whose convenience it was necessary to consult, the publication of several volumes had either to be retarded, or very valuable contributions lost to the "Encyclopædia." Had the Publishers consulted their own immediate interests, they would have urged on the Publication with materials more readily accessible, rather than have waited for articles, many of them the ablest contributions to Science and Literature in the English language. In this Re-issue, however, there can be no danger of the smallest interruption in the publication of the volumes, as 17 of them are completed at press, and it is fully expected that the work will be finished in 1860, when those who may prefer completing their sets, rather than wait for the regular issue, will have an opportunity of doing so.

Edinburgh: ADAM & CHARLES BLACK; London: SIMPKIN, MARSHALL & Co

A New Edition, with numerous Woodcuts, Plates, and an engraved Field Book; in 8vo, price 12s. cloth,

NESBIT'S PRACTICAL LAND-SURVEYING, for the use of Schools and Private Students. Tenth Edition, revised and enlarged. To which are added, Plane Trigonometry, with its application to the Mensuration of Inaccessible Heights and Distances; the Method of Surveying by the Theodolite, including Railway Surveying; Railway Engineering, including the Principles and Practice of Levelling, Parliamentary Plan and Section, Methods of Laying-out Railway Curves, Cutting and Embanking Railways, Contents of Cuttings by means of General Auxiliary Tables, Tunnelling, Viaducts, Super-Elevation of exterior Rail in Curves, &c. By T. Baker, Land-Surveyor and Civil Engineer.

London: Longman, Brown, & Co.

New Edition, 12mo, with Plates, &c., price 6s. 6d.; KEY, 2s. 6d.,

KEITH'S TREATISE ON THE USE OF THE GLOBES; or, a Philosophical View of the Earth and Heavens. A New Edition, enlarged and greatly improved, by

Alfred S. Taylor, M.D., F.R.S., Lecturer on Chemistry, &c., in Guy's Hospital;

R. A. Le Mesurier, B.A., Scholar of Corpus Christi College, Oxford; and

J. Middleton, Esq., Professor of Astronomy.

London: Longman, Brown, & Co., Paternoster Row.

A New Edition, in 12mo, price 5s.; Key, 4s. 6d.

AN ELEMENTARY TREATISE ON ALGEBRA, Theoretical and Practical. By J. Thomson, LL.D., late Professor of Mathematics in the University of Glasgow.

"We recommend it to mathematical readers, teachers, and students, as incomparably the best elementary treatise and the most comprehensive text-book of the science."—*Atlas.*

London: Longman, Brown, & Co.

RIDDLE'S LATIN DICTIONARIES AND LEXICON.

New and cheaper edition, in square 12mo, price 10s 6d. bound,

THE YOUNG SCHOLAR'S LATIN-ENGLISH AND ENGLISH-LATIN DICTIONARY. By the Rev. J. E. Riddle, M.A., of St. Edmund Hall, Oxford. New Edition.

Separately { The LATIN-ENGLISH DICTIONARY, price 6s. / The ENGLISH-LATIN DICTIONARY, price 5s.

Also, in One Volume, 8vo, price 21s. cloth,

RIDDLE'S COMPLETE LATIN-ENGLISH AND ENGLISH-LATIN DICTIONARY. New and cheaper Edition.

Separately { The LATIN-ENGLISH DICTIONARY, price 15s. / The ENGLISH-LATIN DICTIONARY, price 7s.

Also, New and cheaper Edition, in 4to, price 31s. 6d. cloth,

RIDDLE'S COPIOUS AND CRITICAL LATIN-ENGLISH LEXICON, founded on the German-Latin Dictionaries of Dr. W. Freund. Second Edition.

Also, New Edition, in royal 32mo, price 4s. bound,

RIDDLE'S DIAMOND LATIN-ENGLISH DICTIONARY.

London: Longman, Brown, & Co., Paternoster Row.

GOLDSMITH'S GEOGRAPHY IMPROVED BY E. HUGHES.

A New Edition, in fcp. 8vo, price 3s. 6d. bound; KEY, 1s.,

GOLDSMITH'S GRAMMAR OF GENERAL GEOGRAPHY. An entirely New Edition, Carefully corrected, enlarged, and improved: With the Physical Geography of each of the Great Continents and of the Globe incorporated; a new Set of Maps and Diagrams, including a large coloured Physical Map of the World, and separate Maps of the World in Hemispheres, Europe, Asia, Africa, North and South America, and Australia, New Zealand, &c.; and a new Set of Plates, comprising Views of Capital Cities, Costumes of various Countries, Illustrations of the Seasons, &c. Adapted throughout with the greatest care to the requirements of modern education.

Edited by E. Hughes, F.R.G.S., Head Master of the Royal Naval Lower School, Greenwich Hospital.

London: Longman, Brown, & Co., Paternoster Row.

HORNSEY'S SPELLING-BOOK, OR PRONOUNCING EXPOSITOR.

New Edition, much improved, in 12mo, price 2s.

HORNSEY'S PRONOUNCING EXPOSITOR, OR NEW SPELLING-BOOK: In Three Parts.

PART I. Comprising the Sounds of the Vowels, Diphthongs, &c. PART II. Consisting of a large Collection of select Words, beginning with Monosyllables of four letters, and continuing progressively to Polysyllables of all lengths inclusive. PART III. Containing Words which are alike or nearly so, in Sound, but different in Spelling and Signification; — Words of different Significations; — and Words that change their accents when they become different Parts of Speech. To which is added an Appendix, containing upwards of Five Hundred Words only accented and explained for the learner's practice in dividing and pronouncing;— Rules for Spelling Derivative Words; Rules for forming the Plural Numbers of Nouns in general; A List of nearly Five Hundred Primitive words, which have the final Consonant doubled in forming their derivatives; The Proper Names of Men and Women; &c.

New Edition, thoroughly revised and greatly improved.

SCHOOL-BOOKS BY THE SAME AUTHOR,

HORNSEY'S CHILD'S MONITOR, 12mo, price 4s.

HORNSEY'S BOOK OF MONOSYLLABLES, 18mo, 1s. 6d.

HORNSEY'S ORTHOGRAPHICAL EXERCISES, 18mo, 1s.

London: Longman, Brown, & Co., Paternoster Row.

LIST OF THOMAS TATE'S SCHOOL-BOOKS.

New and improved Edition, in 12mo, price 1s. 6d.

TREATISE ON THE FIRST PRINCIPLES OF ARITHMETIC, after the Method of Pestalozzi; with numerous Examples, &c. By Thomas Tate, F.R.A.S., late of Kneller Training College.

Also by Thos. Tate, F.R.A.S., New Editions.

EXERCISES ON MECHANICS, &c., 12mo, 2s.; KEY, 3s. 6d.
ALGEBRA MADE EASY ..... 12mo, price 2s.
ELEMENTS OF MECHANISM ..... 12mo, price 3s. 6d.
MECHANICAL PHILOSOPHY ..... 8vo, price 10s. 6d.
ON THE STRENGTH OF MATERIALS ..... 8vo, price 5s. 6d.
GEOMETRY, MENSURATION, LEVELLING, &c. .... 3s. 6d.
FIRST THREE BOOKS OF EUCLID, 12mo, 1s. 6d.; 18mo, 9d.
DIFFERENTIAL AND INTEGRAL CALCULUS ..... 4s. 6d.
DRAWING FOR SCHOOLS ..... Post 4to, price 5s. 6d.
DRAWING FOR LITTLE BOYS AND GIRLS .... price 1s. 6d.
LITTLE PHILOSOPHER; or Chemistry, Mechanics, and Physics of Familiar Things Vol. I., 3s. 6d.; or 3 Pts., 1s. each.
TATE'S LITTLE PHILOSOPHER, Part IV., the Natural History of Familiar Things ..... price 1s.
COURSE OF NATURAL AND EXPERIMENTAL PHILOSOPHY, 2 vols., 5s. 6d.; or in 7 Parts, 9d. each, as follows:—
MECHANICS AND THE STEAM ENGINE .. 18mo, price 9d.
ASTRONOMY AND THE USE OF THE GLOBES .... 18mo, 9d.
LIGHT AND HEAT ..... 18mo, price 9d.
HYDROSTATICS, HYDRAULICS, PNEUMATICS ..... 9d.
ELECTRICITY FOR BEGINNERS ..... 18mo, price 9d.
MAGNETISM, ELECTRO-DYNAMICS, &c. ..... 18mo, 9d.
EXPERIMENTAL CHEMISTRY ..... 18mo, 9d.
PHILOSOPHY OF EDUCATION; or, Principles and Practice of Teaching. Second Edition ..... fcp. 8vo, price 6s. 6d.

London: Longman, Brown, & Co., Paternoster Row.

CHEAPER EDITION OF LOUDON'S GARDENING.

In one vol., 8vo, with many hundred Woodcuts, price 31s. 6d.,

LOUDON'S ENCYCLOPÆDIA OF GARDENING: Comprising the Theory and Practice of Horticulture, Floriculture, Arboriculture, and Landscape Gardening; including all the latest Improvements, &c. A New Edition, corrected and improved by Mrs. Loudon.

This work, which is admitted to be the best work on Gardening, is now brought within the reach of Head Gardeners, Nurserymen, and of those gentlemen who wish to provide their gardeners with a complete work on the Theory and Practice of Gardening.

The work comprises above 1300 closely printed pages, minutely classified in all the divisions of Floriculture, Arboriculture, Kitchen Garden, Landscape Gardening, &c. &c. and is illustrated with above One Thousand Engravings on Wood.

London: Longman, Brown, & Co., Paternoster Row.

Of whom may be had

LOUDON'S ENCYCLOPÆDIA OF AGRICULTURE. Cheaper Edition, price 1l. 11s. 6d.

LUND'S MENSURATION AND GEOMETRY.

Just published, fcp. 8vo, price 3s. 6d. cloth,

ELEMENTS OF GEOMETRY AND MENSURATION, with easy Exercises, designed for Schools and Adult Classes: Part III. Geometry combined with Arithmetic (Mensuration). By the Rev. T. Lund, B.D., formerly Fellow of St. John's College, Cambridge; editor of "Wood's Algebra." ..... In the same Series,

I. GEOMETRY AS A SCIENCE (a short reformed Euclid), 1s. 6d.

II. GEOMETRY AS AN ART ..... Fcp. 8vo, 2s.

Parts I. and II. together, 3s. 6d.; I. to III. together ..... 7s.

"A better introduction to geometry can hardly be imagined; and we are glad to find it is published at so reasonable a price, because it is a work which ought to be used extensively in our national schools and schools of design, and widely circulated among our manufacturing population."—*Athenæum.*

London: Longman, Brown, & Co., Paternoster Row.

NEW EDITION OF NESBIT'S MENSURATION.

A New and Improved Edition, augmented by a Treatise on Levelling, in 12mo, price 6s. bound,

A TREATISE ON PRACTICAL MENSURATION, in Ten Parts; containing—

The most approved Methods of drawing Geometrical Figures.
Mensuration of Superficies.
Land Surveying.
Mensuration of Solids.
The Use of the Carpenter's Rule.
Timber Measure, in which is shown the Method of Measuring and Valuing standing Timber.
Artificers' Works, illustrated by the Dimensions and Contents of a House.
Mensuration of Haystacks Drains, Canals, Marlpits Ponds, Mill-dams, Embankments, Quarries, Coal-heaps and Clay-heaps.
Conic Sections and their Solids.
The most useful Problems in Gauging according to the New Imperial Measures.
Plane Trigonometry, with its application to the Mensuration of Heights and Distances.
Trigonometrical Surveys.
A Dictionary of the Terms used in Architecture.

By A. Nesbit. New Edition, enlarged, and greatly improved. To which is added, a Treatise on Levelling. The whole illustrated by nearly Seven Hundred Practical Examples and nearly Three Hundred Woodcuts.

KEY TO NESBIT'S PRACTICAL MENSURATION containing Solutions to all Questions which are not answered in that work; with Reference to the Problems, Rules, and Notes, by which the Solutions are obtained. New Edition, corrected and greatly improved. 12mo, price 5s. bound.

London: Longman, Brown, & Co., Paternoster Row.

DR. HUNT'S NEW WORK ON VOICE & SPEECH.

Just published, 8vo, price 7s. 6d.,

A MANUAL OF THE PHILOSOPHY OF VOICE AND SPEECH; especially in relation to the English Language and the Art of Public Speaking. By James Hunt, Ph.D., F.S.A., M.R.S.L., Fellow of the Ethnological Society, &c., Author of "A Treatise on the Cure of Stammering," &c.

"For the first time, we really believe, we have an authority, not merely upon impediments and physical obstructions, but upon the voice itself..... An attractive as well as useful work."—*Morning Chronicle.*

"A vast repertory of facts and opinions from the lower animantia to man. These facts, too, are curious and useful."—*Spectator.*

"Learned, and at the same time instructive and amusing, and a work which has no parallel in the English language."—*Observer.*

"This is the most comprehensive, philosophical, and practical book we have met upon a subject deeply interesting to many thousands of the British public. The lucid arrangement cannot be praised too highly."—*News of the World.*

"Care, ability, and research abound. Dr. Hunt explains simply and advises practically. ....A complete text book on the subject."—*John Bull.*

"Most valuable contributions. We hold it to be undeniable that Dr. Hunt is an excellent practical manager of voice and speech."—*Press.*

"The work will interest any one who takes it up."—*Morning Herald.*

"There is not an uninstructive or uninteresting chapter in the volume. Can only be spoken of in terms of praise."—*Illustrated Times.*

"Useful to those who are ambitious of cultivating the voice....A careful and useful work."—*Morning Post.*

"One of the most important works published in this teeming age of literary productions. We venture to predict for it a high rank amongst the best standard works of our country."—*Derby Reporter.*

"A very entertaining and, in many respects, a very useful work. All sorts of readers will find matter here to interest them."—*Literary Gazette.*

London: Longman, Brown, & Co., Paternoster Row.

NEW EDITION OF THE CABINET LAWYER.

The Eighteenth Edition, extended and corrected throughout, with the Statutes and Legal Decisions to Michaelmas Term, 1858 (21 and 22 Victoria); in fcp. 8vo, price 10s. 6d. cloth,

THE CABINET LAWYER: A Popular Digest of the Laws of England, Civil and Criminal; with a Dictionary of Law Terms, and various other useful Additions, brought down to the Year 1859.

The eighteenth edition of the "Cabinet Lawyer" is entirely new; having been recomposed in type throughout, and incorporating the supplement (1857), added since the work was reprinted (Dec., 1856), as well as embodying the statutes, legal decisions, &c., of the last session of Parliament. Many recent alterations both in the laws and their mode of administration are now for the first time popularly explained in the body of this work. In the Dictionary several new terms and additional miscellaneous legal information have been introduced. And a new Appendix comprises the fees and costs in the superior courts of common law, as well as tables of the fees to be taken in the new Courts of Probate and Divorce.

London: Longman, Brown, & Co., Paternoster Row.

PROFESSOR LINDLEY'S INTRODUCTION TO BOTANY, 4th Edition, with Corrections and Additions, now ready, in 2 vols. 8vo, with Six Copper Plates and numerous Wood Engravings. Price 24s. cloth.

London: Longman, Brown, & Co.

HORT'S PANTHEON AND CHRONOLOGY.

A New Edition, in 18mo, with 17 Plates, price 4s. 6d. bound

THE NEW PANTHEON; or, an Introduction to the Mythology of the Ancients. By W. J. Hort. New Edition, with the Oriental and Northern Mythology.

"Superior to all other juvenile mythologies in form and tendency, and decidedly in the pleasure it gives a child."—*Quarterly Review.*

Also, a New Edition, in 18mo, price 4s. bound,

INTRODUCTION TO THE STUDY OF CHRONOLOGY AND ANCIENT HISTORY: With Questions and Answers.

London: Longman, Brown, & Co.

CARPENTER'S SPELLING, EDITED BY M'LEOD.

May now be had, in 12mo, price 1s. 6d.,

CARPENTER'S SPELLING ASSISTANT, in which the Division of the Words into Syllables corresponds with the Pronunciation: With new and more correct Definitions of many of the Words, and many other Additions and Improvements. Edited by Walter M'Leod, F.R.G.S., M.R.C.P., Royal Military Asylum, Chelsea.

The ORIGINAL EDITION OF CARPENTER'S SPELLING, wherein the Words are arranged according to their Principles of Accentuation, with the Author's latest Corrections and Improvements, in 12mo, price 1s. 6d.—may also be had.

London: Longman & Co.; and Whittaker & Co.

New Editions of

APPROVED ELEMENTARY SCHOOL BOOKS,

By Walter M'Leod, F.R.G.S., M.R.C.P.,

Head Master of the Model School and Master of Method in the Royal Military Asylum, Chelsea.

GEOGRAPHY AND ATLASES.

M'LEOD'S GEOGRAPHY OF PALESTINE, or the HOLY LAND, including Phœnicia and Philistia. Eleventh Edition. 12mo, with a coloured Map of Palestine, price 1s. 6d.

SCHOOL-ATLAS OF SCRIPTURE GEOGRAPHY, in 15 full-coloured Maps, with Index. Royal 8vo, price 4s. Illustrative Letterpress to ditto, 3s. The "Scripture Atlas" complete, price 7s. half-bound.

M'LEOD'S NEW EXAMINATION QUESTIONS IN PHYSICAL AND POLITICAL GEOGRAPHY, for Training Colleges, Pupil Teachers, and Candidates for Government Appointments. 12mo, price 1s.

HAND-ATLAS OF GENERAL GEOGRAPHY: Comprising 29 full-coloured Maps. 18mo, 2s. 6d. sewed; or 3s. half-bound.

CLASS-ATLAS OF PHYSICAL GEOGRAPHY: Comprising 20 full-coloured Maps, &c., with Descriptions. 18mo, 2s. 6d. sewed; or 3s. half-bound.

BOWMAN'S Questions on M'Leod's "Physical Atlas," price 1s.

SCHOOL PHYSICAL ATLAS OF GREAT BRITAIN. 18mo, in the press.

ENGLISH SPELLING AND READING BOOKS.

M'LEOD'S MY FIRST SCHOOL-BOOK TO TEACH ME READING AND WRITING. 18mo, price 6d.

MY SECOND SCHOOL-BOOK TO TEACH ME READING AND SPELLING. 18mo, with Woodcuts, price 9d.

READING-LESSONS, for Infant Schools and Junior Classes. On 30 Broadside Sheets, with Woodcuts, price 3s.

FIRST READING-BOOK, for the use of Families and Schools. 18mo, with Woodcuts, price 3d.

SECOND POETICAL READING-BOOK: With Introductory Descriptions, Explanatory Notes, &c. 12mo, 1s. 8d.

M'LEOD'S EDITION OF CARPENTER'S SCHOLAR'S SPELLING ASSISTANT, in which the Division of Words into Syllables corresponds with the Pronunciation. 12mo, 1s. 6d.

ARITHMETICAL SCHOOL BOOKS.

M'LEOD'S MANUAL OF ARITHMETIC: Containing a Graduated Series of 1750 Questions for Elementary Instruction. 18mo, 9d.

MENTAL ARITHMETIC. 2 Parts, 1s. each.

MULTIPLICATION, PENCE, AND OTHER TABLES, 2s. per dozen.

ENGLISH GRAMMATICAL WORKS.

M'LEOD'S EXPLANATORY ENGLISH GRAMMAR for Beginners. 18mo, 9d.—DEFINITIONS for Home Study, 1d.

M'LEOD'S EDITION OF GOLDSMITH'S "DESERTED VILLAGE," with Notes and Rules of Syntax, Parsing, and Analysis for Middle-Class Schools. Adapted for the Oxford Examination Scheme. 12mo, 1s. 6d.

WRITING-BOOKS.

M'LEOD'S GRADUATED SERIES OF NINE COPY-BOOKS. New and improved Editions. Oblong 4to, 3d. each Copy-Book.

London: Longman, Brown, & Co., Paternoster Row.

LOUDON'S ARBORETUM ET FRUTICETUM BRITANNICUM; or, the Trees and Shrubs of Britain, Native and Foreign, delineated and described; with their Propagation, Culture, Management, and Uses. Second improved Edition, 8 vols. 8vo, with nearly 4000 Plates, cloth, (published at 10l.), 5l. 5s.

*** Complete Catalogues may be had, post free, on application.

Henry G. Bohn, York Street, Covent Garden, W.C.

Now ready, in One Vol., 8vo, cloth, 16s., or free by post, 16s. 6d.,

THE PINETUM; being a Synopsis of all the Coniferous Plants at present known, with Descriptions, History, and Synonymes, and comprising nearly one hundred new Kinds. By George Gordon, formerly Superintendent of the Horticultural Garden, Chiswick; assisted by Robert Glendinning, F.H.S.

Henry G. Bohn, York Street, Covent Garden.

NEW GENERAL ATLAS.

On 1st March will be published Part I. of

KEITH JOHNSTON'S

ROYAL ATLAS OF MODERN GEOGRAPHY: Exhibiting, in a Series of entirely Original and Authentic Maps, the Present Condition of Geographical Discovery and Research in the several Countries, Empires, and States of the World. With a special Index to each Map. By Alex Keith Johnston, F.R.S.E., F.G.S., &c., Geographer to the Queen for Scotland; Author of the "Physical Atlas," &c. The work, engraved in the finest style, and printed and coloured with all the advantages of modern artistic skill, will form, when finished, a handsome portable volume, size, folded, 20 inches by 13½ inches. It will be issued in ten Parts, price Half-a-Guinea each.

Part I. Will Contain—MAP and INDEX of FRANCE,
NORTH ITALY. | SOUTH ITALY.
SWITZERLAND. | GREECE.

William Blackwood & Sons, Edinburgh and London.

CARTER'S FLORAL ILLUSTRATIONS.

JAMES CARTER & CO.

BEG to announce the publication of PLATES No. 5 and 6 of their FLORAL ILLUSTRATIONS, which which will be forwarded post free on receipt of 12 stamps for each Plate.

PLATE No. 5 contains a faithful representation of the following :—

GAILLARDIA HYBRIDA GRANDIFORA
ŒNOTHERA BISTORTA VEITCHI
NEW MINATURE STRIPED GOURD
FENZLIA DIANTHIFLORA
LUPINUS HARTWEGI CŒLESTINUS
NOLANA PARADOXA VIOLACEA
DWARF SPOTTED NASTURTION
CARTER'S TOM THUMB NASTURTION

PLATE No 6 contains a faithful represention of the following :—

DWARF GERMAN STOCK
THREE VARIETIES OF GERMAN BALSAMS
MARIGOLD, ORANGE FRENCH
VISCARIA CŒLI ROSA ALBA
LUPINUS NANUS ALBUS
COSMIDIUM BURRIDGI
LOBELIA FORMOSA
VISCARIA DUNNETTI

PLATES Nos. 1 to 4 may also be had on application, price 1*s.* per plate.

JAMES CARTER & CO., Seedsmen, 238, High Holborn, W.C.

CUTHILL'S PAMPHLETS on the POTATO, STRAWBERRY, CUCUMBER, SEAKALE, RHUBARB, &c., 2*s.*; MARKET GARDENING, 1*s.* 6*d.*; MUSHROOM GROWING, 1*s.* 1*d.*; the VINE, 1*s.*; post free. Vegetable Meeting Paper, gratis. A printed account of the New Zealand Runner Bean can be had.

JAMES CUTHILL, Camberwell, London, S.

CHRYSANTHEMUMS.

HOLMES'S TREATISE, with Descriptive Lists, is now ready, and may be had in exchange for one stamp. W. H.'s success as an exhibitor for so many years is some guarantee for its value.—Frampton Park Nursery, Hackney.

THE ILLUSTRATION HORTICOLE, published by AMBROISE VERSCHAFFELT, Nurseryman, Ghent (Belgium). The Second Number (February, 1859) is just out, and contains :—Tydæa Princesse Troubetzkoy, T. grandis, T. sanguinea, Aucuba Himalayca, and Vaccinium serpens.

This beautiful publication, with coloured plates, costs only 14*s.* 6*d.* a year, free to all parts of England, Scotland, and Ireland. A Specimen Number will be sent free on demand.

To be completed in about 10 Parts, 2*s.* 6*d.* each, with numerous Engravings and Coloured Plates,

THE GARDENERS' ASSISTANT; PRACTICAL AND SCIENTIFIC. A Guide to the Formation and Management of the Kitchen, Fruit, and Flower Gardens, and the Cultivation of Conservatory, Greenhouse, and Hot-house Plants. With a copious Calendar of Gardening Operations. By ROBERT THOMPSON.

*** Parts I. to VIII. are now ready.

BLACKIE & SON, Warwick Square, City, London ; and may be had of all Booksellers.

GEORGE MILLS' TREATISE ON THE CULTURE OF THE CUCUMBER, MELON, SEAKALE, AND ASPARAGUS will be sent free by post on the receipt of 3*s.* 6*d.* in postage stamps.

"The details are given with accuracy, and the language used is clear and intelligible to all ; a person ignorant of gardening may grow either Melons or Cucumbers with the assistance of Mr. Mills' book."—*Part of Dr. Lindley's Review.*

GEORGE MILLS, Uxbridge Road, Ealing, Middlesex.

GEORGE MILLS' TREATISE ON THE CULTURE OF THE PINE will be sent free by post on the receipt of 2*s.* 6*d.* in postage stamps.

"There is no mystery here, no preposterous mixtures of all manner of unmentionable substances called a compost ; no crotchety schemes for rendering the building dear or unmanageable ; no ignorant recommendation of operations to which reason, in the first instance, and experience afterwards, are alike opposed. The foundation of the author's success is common sense."—*Part of Dr. Lindley's Review.*

GEORGE MILLS, Uxbridge Road, Ealing, Middlesex.

TO GARDENERS, AGRICULTURISTS, AND OTHERS.—Wishing to encourage the above to form a knowledge of our British Wild Flowers, better known to them as weeds, FRED. Y. BROCAS can offer a limited number of Sets of 700 species, named, for 2*l.* 10*s.*; or 400, 1*l.* Collections named and mounted for 6*s.* per 100 sheets. — Address F. Y. BROCAS, Botanist, 85, St. Martin's Lane, London, W.C.

ORNAMENTAL FOLIAGED PLANTS.

Now Publishing in Monthly Parts, 1*s.* each, royal 8vo, to be completed in about Twenty, each Part containing Three Coloured Plates, and several Wood Engravings,

BEAUTIFUL LEAVED PLANTS; being a Description of the most beautiful ornamental foliaged Plants in cultivation in this country. By E. J. LOWE, Esq., F.R.A.S., &c., assisted by W. HOWARD, F.H.S.

London : GROOMBRIDGE & SONS, 5, Paternoster Row.

Published Monthly, price 6*d.* free by Post,

GOSSIP OF THE GARDEN : A Handbook for the Florest and Suburban Horticulturist. Conducted by E. S. DODWELL and A.S.H. "A plain practical book, by practical men, for plain practical folks. Gives ample information, in language so plain that 'he who runs may read.' One feature of the serial is a part set aside for 'Notes and Queries,' designed to be a 'medium of intercommunication' for all who have a difficulty to solve—and who has not? If one has no difficulties, he has not much knowledge. The whole is summed up by a valuable 'Calendar of operations,' containing directions for the proper management of flowers, vegetables, &c."—*Banffshire Journal.*

"To amateurs especially it will be found valuable."—*Gardeners' Chronicle.*

London : HOULSTON & WRIGHT, Paternoster Row ; Derby : ROWBOTTOM, Iron Gate ; and of all Booksellers, Newsmen, and Nurserymen.

WORKS BY MR. BORLASE CHILDS, F.R.C.S. BY EXAM., Surgeon, Metropolitan Free Hospital ; Surgeon-in-Chief, City Police Force, &c.,

ON THE IMPROVEMENT AND PRESERVATION OF THE FEMALE FIGURE,

URETHRITIS AND ITS CONSEQUENCES; with a short Historical Sketch of Syphilis.

EFFINGHAM WILSON, Royal Exchange, E.C.

LECTURES ON INJURIES INCIDENTAL TO WARFARE.

London : JOHN CHURCHILL, New Burlington Street, W.

MUDIE'S SELECT LIBRARY.—Fresh copies of every recent work of acknowledged merit and general interest in History, Biography, Religion, Philosophy, Travel, and the Higher Class of Fiction, continue to be added to this Library as freely as Subscribers may require them. The present rate of increase exceeds One Hundred Thousand Volumes per annum. Single Subscription, One Guinea per annum. First-class Country Subscription, Two Guineas and upwards, according to the number of Volumes required.

CHARLES EDWARD MUDIE, New Oxford Street, London ; and, Cross Street, Manchester.

THE QUARTERLY REVIEW, No. CCIX., is published THIS DAY.

CONTENTS :

I. THE CORNWALLIS PAPERS.
II. SHAKSPEARE.
III. THE CONSULAR SERVICE.
IV. PIUS VIII. AND GREGORY XVI.
V. PATENTS.
VI. THE SOLDIER'S LODGING, FOOD AND DRESS.
VII. BREAD.
VIII. LIFE AND WRITINGS OF JOHNSON.
IX. REFORM.

JOHN MURRAY, Albemarle Street.

This Day,

THE PEOPLE'S BYRON, PART I., to be published Monthly, and completed in 9 Parts. 8vo, 1*s.* each.

JOHN MURRAY, Albemarle Street.

MURRAY'S EDITIONS FOR THE PEOPLE.

On February 28th, Illustrated with Portraits, Part I. (to be published Monthly, and completed in 10 Parts), 8vo, 1*s.* each.

BOSWELL'S LIFE OF JOHNSON: including the TOUR to the HEBRIDES. With Contributions from Lord Stowell, Sir W. Scott, Disraeli the Elder, Sir James Mackintosh, &c. Edited with Notes by the Right Hon. JOHN WILSON CROKER, LL.D.

The Quarterly Review, January, 1859.—"Mr. Croker's Notes, which combine the gleanings from the numerous other memorials of Johnson, are often quite as valuable as the text. If his Edition were published in Parts, it might find its way to a class who are as yet ignorant of the most entertaining and instructive book in the language."

Croker's Boswell.—"The excellence of Mr. Croker's Notes."—*North American Review.*

Croker's Boswell.—"The notes are brief, judicious, and accurate."—*Athenæum.*

Croker's Boswell.—"This great monument of Johnson's genius and wisdom has never appeared in so compact a shape."—*Guardian.*

Croker's Boswell.—"Posterity will owe much to Mr. Croker for the industry and ability which he has displayed."—*Morning Post.*

Croker's Boswell.—"With the industrious researches and sagacious criticisms of Mr. Croker, we may safely pronounce this as the BEST EDITION of an English book that has appeared in our time."—*Quarterly Review.*

Croker's Boswell.—"The interesting illustrations with which Mr. Croker has enriched Boswell's work."—*Literary Gazette.*

II.

Now Ready, Illustrated with Portrait and Engravings, PART I. (to be continued Monthly, and completed in nine Parts,) 8vo, 1*s.* each.

THE PEOPLE'S BYRON ; THE POETICAL WORKS COMPLETE. Collected and arranged, with Notes by LORD JEFFREY, BISHOP HEBER, PROFESSOR WILSON, MOORE, GIFFORD, CRABBE, LOCKHART, &c.

The Athenæum, May 1858.—"Eight years have yet to run before the Copyright of BYRON'S POEMS expires, *and those who now buy an Edition of Byron's Works published without the sanction of Mr. Murray*, BUY AN IMPERFECT BOOK."

JOHN MURRAY, Albemarle Street, and to be obtained of all Booksellers and News Agents.

SCHOOL HISTORIES OF ENGLAND, GREECE, AND ROME.

Now Ready.—I.

THE STUDENT'S HUME : a HISTORY OF ENGLAND FROM THE INVASION OF JULIUS CÆSAR. By DAVID HUME ; Abridged, incorporating the Researches of Recent Historians, and continued to the present time. Woodcuts. Post 8vo. 7*s.* 6*d.*

This work is designed to supply a long acknowledged want to our School and College Literature—a HISTORY OF ENGLAND in a volume of moderate size for the UPPER and MIDDLE FORMS It is printed to range with DEAN LIDDELL'S HISTORY OF ROME, and DR. WM. SMITH'S HISTORY OF GREECE.

II.—A HISTORY OF GREECE. FROM THE EARLIEST TIMES TO THE ROMAN CONQUEST, with Chapters on the History of Literature and Art. By DR. WM SMITH. 16th Thousand. Woodcuts. Post 8vo. 7*s.* 6*d.* QUESTIONS, 12mo. 2*s.*

"The excellence of the plan on which Dr. Wm. Smith has proceeded, and the scholarlike manner in which he has carried it out, *gives his history of Greece a decided advantage over all others.*"—*Athenæum.*

III.—A HISTORY OF ROME. FROM THE EARLIEST TIMES TO THE ESTABLISHMENT OF THE EMPIRE, with Chapters on the History of Literature and Art. By DEAN LIDDELL. 8th Thousand. Woodcuts. Post 8vo. 7*s.* 6*d.*

"This excellent history of Rome *will supersede every other work on the subject.* The volume conforms with the 'History of Greece,' by Dr. Wm. Smith, in typography, literary method, and illustration."—*John Bull.*

IV.—THE STUDENT'S GIBBON. The HISTORY OF THE DECLINE AND FALL OF THE ROMAN EMPIRE. By EDWARD GIBBON ; Abridged, incorporating the Researches of Recent Scholars. *6th Thousand.* Woodcuts. Post 8vo. 7*s.* 6*d.*

"Dr. Wm. Smith's admirable abridgment of Gibbon's Roman Empire."—*Cambridge Chronicle.*

*** The above Volumes are uniformly bound in BLACK CLOTH, with RED EDGES, to distinguish them from other SCHOOL Histories.

JOHN MURRAY, Albemarle Street.

Now ready, New Edition for 1859.

MR. DOD'S PEERAGE, BARONETAGE, KNIGHTAGE, &c., for 1859 (Nineteenth Year), containing all the recent changes.

WHITTAKER & Co., Ave Maria Lane, London, and all Booksellers.

DRAINAGE OF LAND—TABLES OF COST FOR THE POCKET. Price 1*s.* 6*d.*, in stamps for post. By J. BAILEY DENTON, Engineer to the General Land Drainage and Improvement Company, and Author of "Land Drainage and Drainage Systems."

And will shortly be published by the same writer, price 2*s.* 6*d.*,

HINXWORTH DRAINAGE. — The Experiments Tabulated, showing the relative discharge from uniform Parallel Drainage in Clays, and from Occasional Drainage in Mixed Soils, with a Plan of the whole System adopted and a Statement of Cost.

METCHIM, Parliament Street, Westminster, S. W.

BOOSEY'S SHILLING MUSIC.

	s.	d.
BOOSEY'S 100 EXERCISES, Studies and Extracts from the Works of the great Masters, for the VOLIN ..	1	0
BOOSEY'S 100 DANCES for the VIOLIN..	1	0
BOOSEY'S 100 BALLADS for the VIOLIN	1	0
BOOSEY'S 100 OPERATIC AIRS for the VIOLIN ..	1	0
BOOSEY'S 100 MELODIES for the CONCERTINA ..	1	0
BOOSEY'S 100 SACRED MELODIES for the CONCERTINA	1	6
BOOSEY'S 100 OPERATIC AIRS for the FLUTE ..	1	6
BOOSEY'S 100 DANCES for the FLUTE..	1	0
BOOSEY'S 100 DANCES for the CORNET-A-PISTONS	1	0
BOOSEY'S 100 OPERATIC AIRS for the CORNET-A-PISTONS	1	0

*** The above works contain valuable copyright music, arranged by Pratten, George Case, Moirato Davis, and Thomas Harper. Orders should state BOOSEY'S editions.

BOOSEY & SONS, Musical Library, Holles Street.

FARM WANTED.—A gentleman is desirous of taking on LEASE a FARM of about 200 acres, in the vicinity of Bromley. Beckenham Chiselhurst, or Orpington and the Crays, Kent. A gentleman's residence not required, only a substantial and roomy Farm house ; Farmsteads must be in good order, &c. Shooting would also be wished.—Address, stating rent, nature of soil, and all particulars, to A.S.S., Cecil Street, Strand. W.C.

TO BE LET ON LEASE, for 12 years from Lady Day next, a MARKET GARDEN, consisting of 8 acres of Fruit Ground, five Peach Houses, six Vineries, four Pine Pits, three Strawberry Houses, &c. A 7-Roomed House, Stabling, Sheds, &c. Terms for coming in very moderate, with immediate possession.—Apply to Mr. JOHN THOMSON, Hope Cottage, Ealing, Middlesex.

TO GARDENERS, BEER-HOUSE KEEPERS, AND OTHERS.

TO BE LET, OR THE LEASE TO BE SOLD, together or separate, the ALBANY NURSERY GROUND, with BEER and PRIVATE HOUSE attached, situated near the Old Kent Road. Has been successfully carried on by the proprietor for 26 years. Terms very advantageous.—Apply to Mr. PLANT, New Kent Road, corner of Lion Street, near the Elephant and Castle.

Sales by Auction.

IMPORTANT SALE OF ABOUT 300 CHOICE DOUBLE CAMELLIAS, VARYING FROM 1 TO 7 FEET, AND 300 HANDSOME STANDARD AND DWARF ROSES, &c.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Hally, of Blackheath, to Sell by Auction at the Mart, Bartholomew Lane, on THURSDAY, February 17, at 12 o'Clock, about 300 choice Double Camellias, from 1 to 7 feet, consisting of all the approved kinds, beautifully furnished with bloom buds ; Azalea indica. Also a choice assortment of 300 very handsome Standard and Dwarf Roses ; a fine collection of American Plants, comprising Ghent and other Azaleas, Hybrid Rhododendrons, Kalmias, Magnolias, Andromeda floribunda, &c. ; a few Eugenia Ugni and Otaheite Oranges, with Lilium lancifolium, sorts ; choice Dahlias in dry roots ; Pæonias, Fuchsias, and Verbenas, &c —May be viewed the morning of Sale. Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

ANNUAL SALE.

MESSRS. PROTHEROE AND MORRIS will Sell by Auction at the Mart, Bartholomew Lane, on FRIDAY, February 25, at 12 o'Clock, about 200 fine double CAMELLIAS, from 18 inches to 6 feet, including all the most approved kinds, beautifully furnished with bloom buds ; Azalea indica, a rich assortment of American plants ; 300 choice Standard and Dwarf Roses, including the finest Hybrids, Perpetuals, Chinas, Bourbons, &c., with Lilium lancifolium, sorts, Fuchsias, Verbenas, Dahlias, in dry roots, Pæonias, &c.—May be viewed the morning of Sale ; Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

BRIXTON HILL.

TO GENTLEMEN, NURSERYMEN, BUILDERS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are directed by the Committee of the Metropolitan Industrial Reformatory to Sell by Auction, without reserve, on the premises, Grove House Nursery, Brixton Hill, on MONDAY, February 28, and following day, at 11 o'clock each day, the NURSERY STOCK, consisting of Evergreens and Deciduous Shrubs, &c. ; also about 16,000 Greenhouse Plants, with four newly erected Greenhouses, Pits, and Frames ; about 900 feet 2, 3, and 4-inch Hot-water Pipe, Boilers, Stages, a four-wheeled Van, and sundry effects. May be viewed three days prior to the Sale.—Catalogues may be had on the premises ; of the principal Seedsmen in London ; and of the Auctioneers, American Nursery, Leytonstone, Essex.

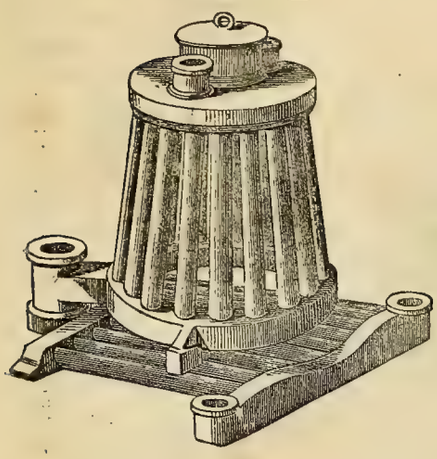
TO NURSERYMEN AND OTHERS.—LAWRENCE STREET AND LAYERTHORPE NURSERIES, AND BRIDGE STREET, YORK.

Important and Extensive Sale of Fruit Trees, Forest Trees, Hardy Plants and Shrubs, Agricultural and Garden Seeds, Shop Fixtures, Pony and Cart, &c.

MESSRS. ACTON AND SON have received Instructions to Sell by Auction, without Reserve, on WEDNESDAY, Feb. 16, and following days, at 10 o'Clock each Day, until the whole is disposed of, on the Premises, Lawrence Street, Layerthorpe, and Bridge Street, as above, occupied by the late Mr. Bainbridge, Nurseryman, the whole of the Extensive and Valuable Nursery Stock, comprising Forest, Coniferous, and other Ornamental Trees ; Evergreens, and Deciduous Shrubs ; Fruit Trees, including Standard and Dwarf Trained Peaches, Nectarines, Apples, Plums, Pears, Cherries, Standard and Dwarf Apples, Pears, &c. ; also a great Variety of Standard and Dwarf Roses ; Stove and Greenhouse Plants, of which there are many New Varieties, and several very Fine Specimens ; together with a large Stock of Bedding Plants, Florist Flowers, Herbaceous and other Hardy Plants, &c. An Extensive Assortment of Garden and Agricultural Seeds.

ORDER OF SALE.—Wednesday and Thursday, the 16th and 17th inst., Fruit Trees, Shrubs, and Seeds, at Lawrence Street Nursery ; Friday and Saturday, the 18th and 19th, the Stove and Greenhouse Plants, Coniferous Plants in Pots, &c., at the Layerthorpe Nursery.

By Her Majesty's Royal Letters Patent.



ORMSON'S
PATENT JOINTLESS TUBULAR BOILER

TESTIMONIALS.

"Sir,—I feel much pleasure in bearing testimony to the efficiency of your Patent Jointless Tubular Boiler which you have erected for Baron de Rothschild, at Gunnersbury Park, and from the number of hothouses and great extent of pipe you have heated from one boiler, I now feel confident it is decidedly the most powerful, economical, and safe boiler yet invented. Having had the working of the Wrought-iron Arch, and Cast-iron Corrugated Arch Boilers in these gardens, I have no hesitation in stating that your boiler is infinitely superior to either of them in every respect.—Yours truly,

"William Forsyth.

"The Gardens, Gunnersbury Park, Acton, Middlesex."

"Sir,—It is with much satisfaction I give my testimony in favour of your admirable Patent Jointless Tubular Boiler, being attached to upwards of 3000 feet of 4-inch pipe, and doing the work of four fires, and consumes little more fuel than was required for one of the fires previous to the adoption of your boiler. We can command any amount of heat, the boiler being so powerful I am confident it would with ease heat as much more. Altogether we have realised much more economy in fuel and attendance than we at first anticipated. In addition to the great power and economy of your boiler it possesses another most important advantage over all other tubular boilers which have come under my notice, in the fact of its being jointless, consequently quite safe from all danger of leakage. On referring to my coal account I find that I now only use one where I formerly used five waggon loads of coal for the arched boilers which you took out.—I am, Sir, yours respectfully, "J. Fraser.

"The Gardens, Luton Hoo, Bedfordshire."

"Mr. Henry Ormson, Sir,—I beg to inform you of my entire satisfaction with your Hot-water Apparatus in general, and your Patent Jointless Tubular Boiler in particular, as fitted up in the newrange of Hothouses you have recently erected for Lord Powerscourt. The Boilers I admire for three excellent reasons; they are simple in construction, effective in working, and I feel assured, from the calculation I have already made, a very great saving of fuel will be the consequence from using these Boilers. You will permit me to add if I had formed a contrary opinion of the merits of these Boilers I should have been candid enough to have told you so, but in justice to you I must distinctly state I consider them a great boon to the horticultural world.—I am, Sir, yours truly, "Alexander Robertson.

"The Gardens, Powerscourt, Ireland."

"Sir,—I have much pleasure in testifying to the excellent working of your Patent Jointless Tubular Boiler; though a small one it does the work of five fires, and is a great saving of fuel and labour.—I am, Sir, yours respectfully,

"Holland House Gardens, Kensington." "J. Scobie.

"Sir,—In regard to your Patent Jointless Tubular Boiler, it answers admirably the purpose for which it was erected. I consider it the most economical and powerful Boiler ever introduced, and am confident it will not fail to give general satisfaction.—I am, yours most respectfully,

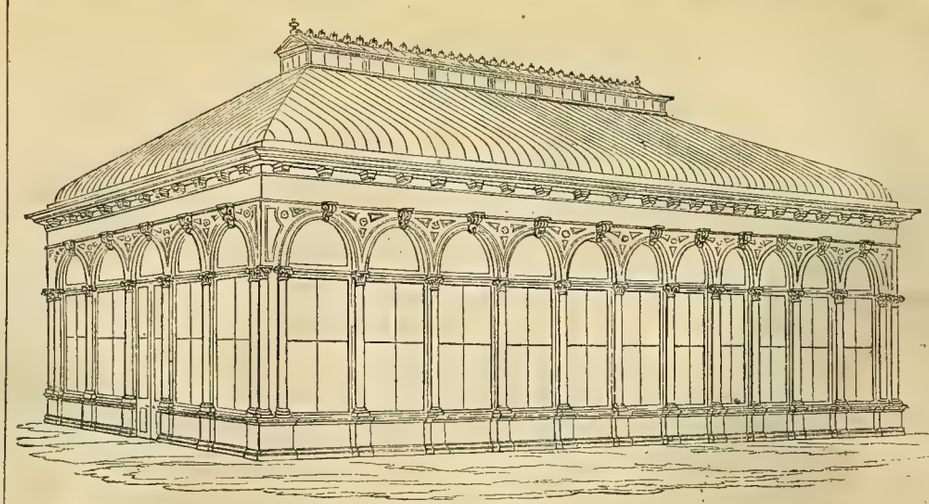
"John Lauder.

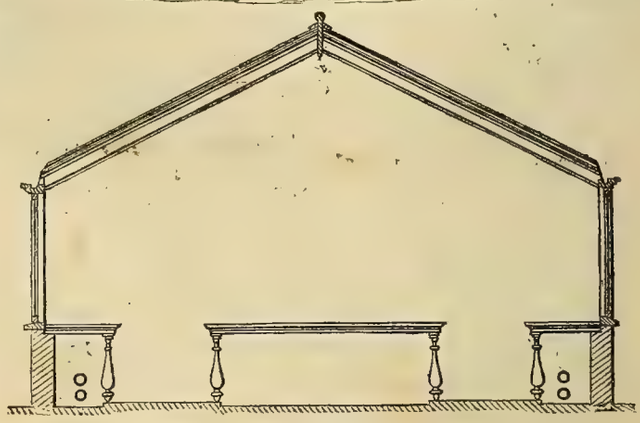
"The Gardens, Witley Court, Worcestershire."

"Sir,—I have much pleasure in testifying to the efficiency of your simple but most powerful Patent Jointless Tubular Boilers. The two small boilers you put up here are doing the work of six fires, with the addition of a range of lofty coach-houses which were afterwards attached. The amount of fuel is little more, and the attention much less, than was required for one fire before these boilers were put up; there is not the least strain on them, and I am confident if required would heat a considerably greater amount of piping. I must also add that the whole of the hot-water apparatus works satisfactory, especially the ventilating boxes you put up in the Fruiting Pine Stove, which I consider a great acquisition, supplying at all seasons a constant stream of pure warm air to the plants, which are in consequence sturdy and in the most robust health.—I am, Sir, yours respectfully, "John Clark.

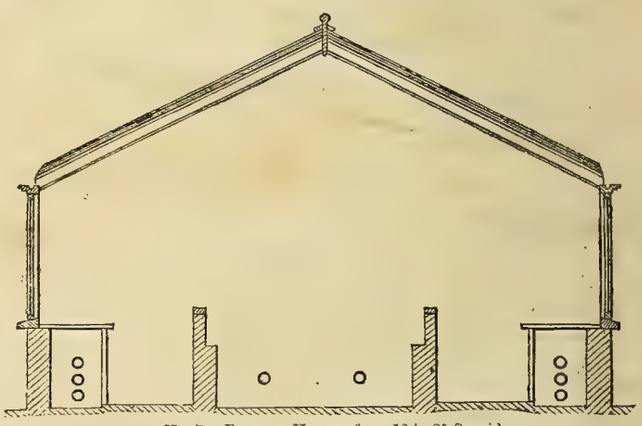
"The Gardens, Cobham Hall, Gravesend, Kent."

Ormson's Patent Jointless Tubular Boilers may be seen in successful operation at Mr. Veitch's, Royal Exotic Nursery, King's Rd., Chelsea.





No. 6.—Greenhouse, from 18 to 20 ft. wide.



No. 7.—Forcing House, from 18 to 20 ft. wide.

HORTICULTURAL BUILDINGS MANUFACTURED BY STEAM POWER MACHINERY

BEST MATERIALS AND LOWEST PRICES.

HENRY ORMSON,

HORTICULTURAL BUILDER & HOT-WATER APPARATUS MANUFACTURER,

STANLEY BRIDGE, KING'S ROAD, CHELSEA, LONDON,

Deeply grateful for the very liberal and kind patronage bestowed upon him since his commencement on his own account, begs most respectfully to inform the Nobility, Gentry, Nurserymen, &c., that it being his determination to spare no pains to merit a continuance of their favours, and that he may be enabled to execute his extensive and increasing orders punctually, and at the lowest possible cost (agreeably with the best Materials and Workmanship), he has erected a most complete set of Steam Power Machines, peculiarly adapted for the purposes of his Trade.

PARTIES DESIRING INFORMATION as to prices, &c., will, by referring to the above sections, or Elevation, receive immediate attention.

PLANS, SPECIFICATIONS, and ESTIMATES for plain and inexpensive practical Structures, and for the most elaborate Architectural Erections, either in Wood or Iron, forwarded on application.

Printed by William Bradbury, of No. 13, Upper Woburn Place, and Frederick Mullett Evans, of No. 20, Queen's Road West, both in the Parish of St. Pancras, in the Co of Middlesex. Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and published by them at the Office, No. 5, Upper Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—Saturday, February 12, 1859.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 8.—1859.] SATURDAY, FEBRUARY 19. {Price Fivepence. Stamped Edition, 6d.

INDEX.

Agardh, death of Bishop	146 a	Guano, prices of	150 a
Agri. Soc. of England	153 b	Highland Society	150 c
— Journal of	153 c	Kale, Cottagers'	146 b
Amoor River	144 b	Labour, prices of	150 b
Barley, black	153 a	Land, transfer of	149 c
Books, noticed	147 b	Manure for Turnips	153 b
Botany of Amoor River	144 b	Meteorology	143 c
Bouquets	148 c	Niger expedition	146 c
Box tree, wonderful	146 b	Orange trees	148 c
Carnations and Picotees, French	146 a	Paper hangings, poisonous	145 c
Cattle, London market	154 a	Rainfall	143 c—146 b
Chrysanthemum Soc., South London	147 a	Rhododendrons	144 c
Corn weights	150 c—151 a	Russian drainage	151 b
Cottages	153 a	Sheep dressing, Long's	153 b
Cottagers' Kale	146 b	— management	153 b
Cotton-cake	154 a	Spergula pilifera	145 b
Doxat's (Mr. A. J.)	147 c	Trade Lists	148 a
Drainage, Russian	151 b	Trees with ailing branches	145 a
Farmers' clubs	153 b	Turnip manure	153 b
Fruit and flower gatherer	144 c	Waste, utilisation of	150 c—152 b
		Weather, the	143 c
		Weight, sales by	150 c—151 a

[In Mr. Thos. Sherman's Advt. of last week, p. 116, for "150 *Bushels of Green Globe Turnips*," read *Green Globe Turnip Seed.*]

HORTICULTURAL SOCIETY OF LONDON.—The next meeting of the Fruit Committee will be held at 12, noon, on TUESDAY, March 1, when Prizes of 20*s.* and 10*s.* will be awarded for the best dishes of Beurré Rance Pears.

N.B. Each dish to contain six fruit, and to be accompanied with a form filled up by the exhibitor. The blank forms for this purpose, and also for other fruits that may be exhibited, can be obtained on application to Mr. Robert Thompson, Horticultural Society's Garden, Chiswick, London, W.

ROYAL BOTANIC SOCIETY, Regent's Park.—The COUNCIL have made arrangements for THREE EXHIBITIONS during the ensuing spring of such new, rare, and generally attractive Plants as come into flower early in the season, such Exhibitions to take place on WEDNESDAYS, the 23d of March, and the 6th and 20th of April.

The Gardens will be open on these occasions only to Fellows of the Society and their Orders, and to Members and Ivory Tickets, subject to the general regulations. The Plants will remain in the Conservatory for two or three days. There will be no admission by purchased Tickets to these Exhibitions.

STOKE NEWINGTON FLORICULTURAL SOCIETY.

Chairman.—Mr. A. Kendall.
Treasurer.—Mr. R. James. | *Secretary.*—Mr. A. Wortley.

Committee.

W. Bragg.	A. Forsyth.	O. Rhodes.
J. Bunningfield.	J. George.	E. Sanderson.
G. Baker.	— Goad.	G. Smith.
J. Cook.	W. Holmes.	— Wakeman.

The above Society will hold its Annual Exhibition at the MANOR ROOMS, Church Street, Stoke Newington, on AUGUST 30, when Prizes will be awarded for DAHLIAS, ASTERS, HOLLYHOCKS, &c.

Further information and Schedules upon application to Arthur Wortley, Hon. Sec., Stoke Newington Common.

STOKE NEWINGTON CHRYSANTHEMUM SOCIETY. Instituted 1846.

Chairman.—E. Sanderson, Esq.
Treasurer.—Mr. R. James. | *Secretary.*—Mr. A. Wortley.

Committee:—

J. Croxford.	W. Holmes.	S. Radley.
R. Cottrell.	J. Haines.	J. Shields.
A. Forsyth.	A. Kendall.	W. H. Towner.
J. George.	R. Mackay.	— Walker.

The Thirteenth Annual Exhibition of the above Society will be held at the Manor Rooms, Church Street, Stoke Newington, on the 2d and 3d Nov., upon which occasion several Five Guinea Silver Cups and Silver Plate will be offered for competition in addition to the prizes of the Society.

Open to All England.

N.B. The especial object of this Society is to promote and encourage the cultivation of Chrysanthemums, to secure as far as practicable fair and open competition, and to discountenance by every available means any attempt at unfair or fraudulent showing; thus at once securing the confidence of the respectable exhibitor and the public.

Stoke Newington Common. Arthur Wortley, Hon. Sec.

BRISTOL, CLIFTON, and WEST OF ENGLAND ZOOLOGICAL SOCIETY.—TWO HORTICULTURAL FETES will be held at the Gardens of this Society at Clifton on THURSDAY, June 2, and THURSDAY, August 25. Exhibitors can obtain a List of Prizes and Regulations on application to the Superintendent at the Gardens. Arrangements will be made with the Railway Companies for Special Trains on the days of Exhibition.

BRIGHTON and SUSSEX FLORICULTURAL AND HORTICULTURAL SOCIETY'S EXHIBITIONS for 1859 are fixed to be held on the following days:—Summer Show, WEDNESDAY and THURSDAY, June 22 and 23; Autumn Show, WEDNESDAY and THURSDAY, Sept. 14 and 15; on the same grand scale as in former years. Schedules will shortly be published, to be obtained of the Secretary, 96, St. James's Street; or of E. Spary, Queen's Graperies, General Superintendent of Exhibition.

Edward Carpenter, Secretary.
Thos. Attree, Esq., Chairman of Committee.
Brighton.—February 19.

HORTICULTURAL VALUATIONS.

MR. ALFRED CHANDLER (of the late firm of Chandler & Sons, Vauxhall), begs to inform his Friends that he is at liberty to undertake the valuation of Collections of Plants, Nursery Stock, Horticultural Buildings, &c.

Mr. A. C. is also open to engagements as Censor at Horticultural Exhibitions, in which capacity he has had long and extensive experience.—28, Priory Road, Wandsworth Road, S.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY (Limited) supply every requisite for the Farm and the Garden.

Registered Offices, Union Road, Plymouth.

SUTTON'S FARM SEED LIST WITH PRICES FOR MARCH AND APRIL will be ready in a few days, and will be sent gratis and post free to Messrs. Sutton's customers.—Royal Berkshire Seed Establishment.

GOOD CLOVER SEEDS.

GENUINE NEW CLOVER SEEDS can be had of Sutton & Sons, Seed Growers, Reading, Berks.

FRESH IMPORTED GERMAN FLOWER SEEDS (post free).

SUTTON AND SONS, Reading, Berks, have just received a choice importation of GERMAN FLOWER SEEDS, a List of which will be sent gratis and post free on application.

FERN CATALOGUE.

ROBERT SIM'S NEW DESCRIPTIVE AND PRICED CATALOGUE, No. 6 (62 pages) of his COLLECTION of BRITISH FERNS, can be had, post free, for 8 stamps. Gratis to all previous purchasers of Ferns.

Nursery, Foot's Cray, Kent, S.E.

GEORGE JACKMAN AND SON'S PRICED and DESCRIPTIVE CATALOGUE of GENERAL NURSERY STOCK for 1858 and 1859 can be had free on application.

Woking Nursery, Woking, Surrey.

GEORGE BAKER begs to inform the Nobility and Public that his DESCRIPTIVE CATALOGUE of AMERICAN PLANTS and GENERAL NURSERY STOCK will be sent free on application.

American Nursery, Windlesham, near Bagshot, Surrey, about 1 mile from Sunningdale Station, South Western Railway.

WILLIAM YOUNG'S DESCRIPTIVE CATALOGUE of new HARDY ORNAMENTAL PLANTS, CONIFERÆ, ROSES, RHODODENDRONS, FOREST TREES, &c. Can be had on application.—Milford Nurseries, Godalming.

KITCHEN GARDEN SEEDS.

JOHN CATTELL begs respectfully to announce that his CATALOGUE of the above may be had free by return of Post. It contains selections of the most approved culinary vegetables in cultivation, nearly the whole of them having been saved under J. C.'s own personal superintendence.—Nursery and Seed Establishment, Westerham, Kent.

NEW DAHLIAS.

JOHN KEYNES'S SELECT CATALOGUE OF DAHLIAS, ROSES, CARNATIONS, PINKS, &c., containing Lists of all the valuable Show Flowers in each class, is now ready and will be sent on application.

Castle Street Nursery, Salisbury.—Feb. 19.

LAING'S MAMMOTH RED CELERY.—The largest and best flavoured Celery known, and will not run to seed until the second year. (See former advertisement.)

Packets, 1*s.* each; large trade do., 3*s.* 6*d.*, per post prepaid. Stamps received in payment.

Youell & Co., Royal Nursery, Great Yarmouth.

RASPBERRIES—Fastolf, Autumn Fruited, Fill-basket, and White, 10*s.* per 100; STRAWBERRIES—British Queen, Elton Pine, and Keens' Seedling, 10*s.* per 1000, 1*s.* 6*d.* per 100; Red, White, and Black CURRANTS, 12*s.* per 100; Large LAURUSTINUS.

Geo. Cornwell, Market Gardener, Barnet, N.

LANCASHIRE SHOW GOOSEBERRIES True.—Selected varieties, the heaviest and finest flavoured from our unrivalled stock, 6*s.* per dozen; Black Currants, 2*s.* per dozen; Red Currants, 3*s.* per dozen; White Currants, 3*s.* per dozen, the finest varieties.—Holland, Dodwell & Bayley, Bradshaw Gardens, Chadderton, Manchester.

YELLOW ROSES.—Madame William, orange yellow; Isabella Gray, golden yellow. Strong plants, fit for immediate forcing, 8*s.* 6*d.* the pair.

A. Paul & Son, Nurseries, Cheshunt, Herts.

NEW ROSES FOR 1859.

JOHN CRANSTON begs to inform his friends that he will be prepared to supply early in April fine plants of all the NEW ROSES of the season, at 5*s.* each, with the usual discount to the Trade. A List of varieties will appear next week.—Nurseries, King's Acre, near Hereford.

NEW CATALOGUE OF FLORIST FLOWERS, &c.

DOWNIE AND LAIRD beg to intimate that their DESCRIPTIVE CATALOGUE of FLORIST FLOWERS, New VEGETABLE and FLOWER SEEDS for 1859, is now Ready, and will be sent Free on application.

17, South Frederick Street, Edinburgh.

DOUBLE ITALIAN TUBEROSES.

JAMES CARTER AND CO. have just received a supply of Extra Strong Flowering Roots of the above which they can offer at 4*s.* per dozen.

James Carter & Co., Seedsmen, 238, High Holborn, W.C.

CHOICE NEW GLADIOLI.

CHARLES ALEXANDER, 30, West Register Street, Edinburgh, has a fine STOCK of the above from France and Holland.—Descriptive Priced Lists free on application.

YOUNG'S SCARLET STOCK SEED, our own saving, 6*d.* to 1*s.* per packet; WHITE INTERMEDIATE STOCK SEED, 1*s.* per packet. Both are perfectly hardy, and should be sown immediately for Autumn flowering.

Carstairs, Florist, 106, George Street, Edinburgh.

MESSRS. J. AND H. BROWN offer the following CHOICE FRUIT TREES:—

Fine standard and dwarf Apricots, Peaches, Nectarines, Plums, Pears, and Cherries, 2*s.* 6*d.* each, or 25*s.* per dozen.
Fine dwarf plants of all the above, grown and trained especially for pot culture, 18*s.* per dozen.
Fine Gooseberries, Currants, and Raspberries, 3*s.* per dozen.
Fig, Medlars, Quinces, Walnuts, and Mulberries, 2*s.* each.
Filberts, new thin-shelled, Red and Cob Nuts, 3*s.* per dozen.
Fine strong Vines from eyes, and layers in pots, 2*s.* 6*d.* to 3*s.* 6*d.* each. [of all kinds.
A large assortment of Ornamental Trees and Evergreen Shrubs

Albion Nursery, Stoke Newington, London.—Feb. 19.

CONIFERÆ.

A. PAUL AND SON have a large stock of the above, very handsome, in fine order for removal, many suited for immediate effect. For particulars see Advertisements in *Gardeners' Chronicle* of November and December last.—Nurseries, Cheshunt, Herts.

TO PLANTERS.—Fine stock of Larch, 1½ to 3 feet; Scotch Firs, 1½ to 2 feet; Beech, 1½ to 4 feet; Elms, 3 to 6 feet; Evergreen Privets, Common Hollies, 1 to 1½ foot; fine Healthy Plants, with all other kinds of Nursery Stock. Samples and price on application to John Scholey, Pontefract Nurseries.

CHARLES DALY AND SON, Coleraine, Ireland, will sell Irish YEWS, 1 to 2 feet, 12*s.* per 100; common LAUREL, 1 to 2 feet, 15*s.* per 1000; 1 year transplanted do., 20*s.* per 1000; 1 year seedling THORNS, 2*s.* 6*d.* per 1000; Portugal LAUREL, 18 inches, 4*s.* per 100; 2 years SPRUCE FIR, 2*s.* per 1000. Free in Liverpool or in Glasgow for cash to Messrs. Hurst & M'Mullen, or with order.

A VERY LARGE STOCK OF

FINE COMMON LAURELS, 1, 2, and 3 feet high, bushy and a good colour. Also very strong transplanted true Evergreen Privet, 3 to 6 feet.—Prices moderate on application to William Wood & Son, Woodlands Nursery, Maresfield, near Uckfield, Sussex.

FRUIT TREES, trained and otherwise, of the finest quality, can be supplied, by Youell & Co., who beg respectfully to refer to their advertisement of last week.

Royal Nursery, Great Yarmouth.

HALF A MILLION ONE-YEAR SEEDLING OAKS (Strong and Stout).

JAMES MELDRUM, Nurseryman, Kendal, Westmoreland, offers the above in quantities to suit purchasers. Price reasonable, on application.

THREE MILLIONS OF TRANSPLANTED QUICKS.

GEORGE CHIVAS, Chester, offers the above to the notice of Planters, which for extent and quality he believes are unequalled in the kingdom. A Sample Bale containing 100 of each five sizes forwarded on receipt of a Post-office Order for 15*s.* Truck loads delivered free at any Railway Station having through communication with Chester.

JOHN CULVERWELL, Taunton, begs to call the attention of Agriculturists to his superior selection of GRASS SEEDS, which for Purity, change of Soil, and Climate, will bear comparison with any house in the kingdom. Prices, terms, and samples forwarded on application.

PAMPAS GRASS (Gynerium Argenteum).—The beauty of this extraordinary plant has this season been fully appreciated. It can be supplied by the dozen, hundred, or thousand, by Charles Noble, Bagshot, Surrey.

HUDSON'S GOLDEN MELON BARLEY.—Selected Samples for Seed of this most valuable variety, superior both for produce and malting quality, may be had of Raynbird & Harvey, of Basingstoke; and 89, Seed Market, Mark Lane, E.C.

GIANT SAINFOIN SEED.—Seed of this excellent and productive Plant may be had of Raynbird & Harvey, Basingstoke, and 89, Seed Market, Mark Lane. Samples and prices on application.

N.B. R. & H. can also supply Common Sainfoin both of English and French growth at market prices.

HENRY'S HYBRID SCOTCH LEEK.

CHARLES ALEXANDER, Seedsman, Edinburgh, offers Seeds of the above unrivalled LEEK at 1*s.* and 2*s.* 6*d.* per packet.

He exhibited three in December last which weighed 9 lbs., and blanched to upwards of 12 inches each.

EARLY WHITE FIELD PEA (NEW EARLY RACEHORSE), comes off early in July in time for Turnips, and is a good cropper. Price 12*s.* 6*d.* per bushel, carriage free.—Sutton & Sons, Seed Growers, Reading.

CUTHILL'S NEW ZEALAND RUNNER BEANS, Post free.

SUTTON AND SONS can supply the true kind of NEW ZEALAND RUNNERS, as obtained through Mr. Cuthill, at 2*s.* 6*d.* and 1*s.* per packet.—Reading, Feb. 19.

THE NEW ZEALAND RUNNER BEAN.

CHARLES TURNER has purchased Mr. Smith's Stock of this remarkable BEAN, which Professor Lindley has pronounced to be identical with the variety named above. In 2*s.* 6*d.* packets, containing 20 Beans. The Trade supplied on the usual terms.—The Royal Nurseries, Slough.

VERY SUPERIOR BEET.

CHARLES SOUTHBY (late Fairbairn) begs to inform those who gave the above a trial last season, that he can now supply 1 oz. free by Post for 1*s.* 3*d.*; ½ oz. ditto 9*d.*—Clapham, London.

HOLCUS SACCHARATUS, or CHINA SUGAR CANE GRASS.—Seed of this lately introduced Fodder plant can be supplied by Nutting and Sons in any quantity. Price on application.

Seed Warehouses, 60, Barbican, London, E.C.

SEED POTATOES.

SUTTON AND SONS, Seed Growers, Reading have a large stock of the early kinds of Potatoes very true and free from disease. Prices, &c., will be sent post free on application.

TO THE TRADE.

EGYPTIAN ASH-TOP KIDNEY POTATOES.—We have fine Select Stock of the above, 160*s.* per ton; likewise strong LARCH, &c., cheap.

Joseph Tremble & Sons, Penrith, Cumberland.

THE TRUE CUSTARD MARROW, a specimen of which was exhibited at the Society's Rooms, March 2, 1858. Price to the trade, per 1000 seeds, upon application.—Edward Harman, Denham, near Uxbridge.

CHEAP AND SELECT NURSERY STOCK, see Advertisement in *Gardeners' Chronicle* of the 12th February, page 114.

LAURELS, fine transplanted, 1½ to 2½ feet, 70*s.* per 1000.

WILLIAM JACKSON & Co., Bedale, Yorkshire.

NURSERY STOCK.

THE Subscribers are disposing of their extensive stock of Seedling and Transplanted Forest Trees, Ornamental Trees, Evergreen and Deciduous Shrubs, Standard and Dwarf-trained Fruit Trees, Gooseberries and Currants, &c., at prices considerably reduced in consequence of dissolving partnership.—Priced Lists may be had on application.

Glasgow, Feb. 19. FOWLER & WRIGHT.

R. LAING, TWICKENHAM NURSERIES, S.W., begs to offer Dwarf-trained Moorpark Apricots, 5*s.* each; Wistaria sinensis (very strong), 18*s.* per doz.; strong Boursault, Ayrshire, and other Climbing Roses, 12*s.* per doz.; Standard and Dwarf Roses of all the leading sorts, 18*s.* and 12*s.* per doz.; Laing's Prolific Red Raspberry, one of the best in cultivation, 12*s.* per 100. The following choice selected SEEDS at 6*d.* per packet:—Delphinium formosum, German Aster, New Double Sunflower, Double Dwarf Mixed Rocket Larkspur, Camellia-flowered Balsam, superior Crimson Candytuft.

TO PLANTERS.

1,000,000 SEEDLING BEECH, Strong, 10 to 18 inch, 5*s.* per 1000. Also in large quantities and the finest health, Larch 1½ to 2 ft., 2 to 3 ft., 3 to 4 ft. Scotch Fir, 4 yrs. old; Spruce Fir, 9 to 18 inches, 15 to 24 inches; Privet, 2 to 3 ft.; Alders, Ash, Beech, Sycamore, &c. Free delivery to Liverpool or Belfast.

Prices moderate, and to be learned on application to GARLIES MITCHELL, Nurseryman, Stranraer, N.B.

GERMAN AND OTHER FLOWER SEEDS.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their NEW PRICED AND DESCRIPTIVE CATALOGUE containing every novelty of proved merit, and all the best of the older kinds, will be published in a few days, and forwarded post free to all previous customers and applicants. Their whole stock of Seeds are from the best Foreign and English sources, and may be relied upon as being genuine and of the finest quality.—Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

PICEA AMABILIS AND CRYPTOMERIA JAPONICA SEED.—1 oz. Cryptomeria, and two seeds of Picea, quite fresh, for 8*s.*—Full particulars on addressing D. M., Post Office, Mov, Ireland.

NEW ROSES now offered for the first time.

GIULIETTA.—Bourbon; vigorous and without thorns; full of panicles White, slightly tinged with carnation. In the way of Souvenir de Malmaison. Price 15 fr.

PERFECTION.—Hybridised non-climbing Bourbon; flower large and very double, form perfect. Beautiful shaded rose. Price 5 fr. IN THE AUTUMN.

ROSA BONHEUR.—Hybrid Perpetual variegated; nearly full, flattened. Amaranth red, largely streaked with white in the centre of each petal. Price 25 fr.

L'ELEGANTE.—Hybrid Perpetual for espalier; produce of a cross between Rose "Gloire des Rosomènes," and a multiflora; semi-double. Cerise red, blooming in large panicles. This Rose will supersede the non-climbing multiflora varieties. Price 15 fr.

Horticultural Establishment of H. LAURENTIUS, Leipsic, Saxony.

CARTER'S EXCELSIOR MELON.—A green-fleshed variety of delicious flavour, netted; fruit averages 4 lbs., requires scarcely any heating, and is very prolific. R. Hogg, Esq., President of the Pomological Society, and Turner and Spencer's "Florist," pronounce this variety to be one of the finest ever tasted. Seeds 1*s.* per packet.—JAMES CARTER & Co., Seedsmen, 238, High Holborn, London, W.C.

DESCARTES ROSE STOCKS.—The best dwarf Rose Stock known is the cultivated ROSE DESCARTES, being proved nine years. Price 12*s.* per 100, with trade allowance. STANDARD MANETTIS, 9*s.* per 100; also fine tall LAURELS, with other EVERGREENS, SHRUBS, &c.—Apply to J. J. FOSTER, Edgeware Nurseries.

THE BEST MELON IN CULTIVATION FOR TABLE, MARKET, OR EXHIBITION.

WILD'S ORION, the winner of four First Prizes at two Shows—Crystal Palace and Regent Street.—Handsome, 4 lbs. to 6 lbs. in weight, thin skin, thick flesh (green), luscious as a melting Peach, fragrant and delicious as a Pine Apple, prolific bearer; six good seeds out of the Prize fruit by post on receipt of 12 penny stamps.

THOMAS WILD, The Primulary, Ipswich.

SUPERB DOUBLE HOLLYHOCKS.

WILLIAM CHATER can now supply fine healthy plants from his Collection, having a large stock ready for immediate planting.

See DESCRIPTIVE CATALOGUE, to be had on application.

Nurseries, Saffron Walden.

MAJOR'S CALCEOLARIA SEED.

MR. HENRY MAJOR, Knosthorpe, near Leeds, begs to announce that he is now sending out the above Seed saved from his unrivalled collection, in packets at 2*s.* 6*d.* each, or three for 5*s.* Post free. If sown this month the plants will bloom about August. Postage Stamps in payment.

LARGE NORWAY SPRUCE, &c.—The subscribers have to offer 500,000 transplanted Norway Spruce of different sizes, from 12 to 24 inches. Also 100,000 GOOSEBERRIES of best Lancashire roots. Prices to the Trade and large buyers on application to

J. MORRISON & SON, Montcoffer Nurseries, near Banff.

TO PLANTERS OF CONIFERS.

YOUELL AND CO. supply 50 species of RARE and HARDY CONIFERS in good plants for 5*l.*, package included and carriage paid to Manchester, Newcastle-on-Tyne, Hull, London, Peterborough, or to any Railway Station within 150 miles of the Nursery. A LIST of the above can be had on application.—Royal Nursery, Great Yarmouth, Norfolk.

CHOICE CONIFERÆ, warranted to move well, a great Bargain.—CEDRUS DEODARA and LIBANI, 6 to 10 feet by 8 feet, 7*s.* 6*d.* to 30*s.*; PINUS EXCELSUS, 6 to 8 feet, 5*s.* to 10*s.* 6*d.*; CRYPTOMERIA, 6 to 10 feet, 5*s.* to 10*s.* 6*d.*; CUPRESSUS MACROCARPA, 5 to 7 feet, 5*s.* to 7*s.* 6*d.*; and most other choice sorts from 2 to 10 ft., equally low. Apply to J. SCOTT, Merriott Nurseries, Crewkerne, Somerset.

HARDY CONIFERÆ FOR SPRING PLANTING.

J. HENCHMAN, Edmonton, London, begs to offer the following CONIFERS, all Seedling Plants, in pots, and in the most robust health:—

Wellingtonia gigantea, 1 foot, in 32-pots, very fine, 10*s.* 6*d.* each; 7 to 8 inches, in 48-pots, 3*l.* per doz.; stout, 2-year seedlings, 30*s.* per doz.

Pinus Pon Pedri, 21*s.* each.

" Buonapartia or Veitchi, 10*s.* 6*d.* each.

" insignis, 15 inches, 15*s.* per doz.

" macrocarpa or Counteri, 6 inches, fine, 18*s.* per doz.

" tuberculatus, stout 2-year seedlings, 18*s.* per doz.

" Benthamiana, 2-year do. 9*s.* per doz.

Cupressus macrocarpus, 18 inches, fine, 6*s.* per doz.

" Macnabbiana, 2 years, 9*s.* per doz.

Taxodium sempervirens, 15 inches, fine, 24*s.* per doz.

FRUITING VINES.

JOHN AND CHARLES LEE beg to offer extra strong short-jointed and well-ripened FRUITING VINES of the following kinds:—

BLACK HAMBURGH	BLACK PRINCE
GOLDEN HAMBURGH	ROYAL MUSCADINE
BLACK FRONTIGNAN	
WHITE FRONTIGNAN	BIDWELL'S SEEDLING
MUSCAT OF ALEXANDRIA	BOWOOD MUSCAT.

Nursery and Seed Establishment, Hammersmith, London.

FRUIT TREES IN POTS.

JOHN AND CHARLES LEE have now the largest and finest stock of FRUIT TREES IN POTS in a bearing state for FORCING AND ORCHARD HOUSES ever offered. They consist of the following kinds, a CATALOGUE of which may be had on application:—

APRICOTS	FIGS	PEARS
PEACHES	PLUMS	APPLES.
NECTARINES	CHERRIES	ALSO,

VINES AND STRAWBERRIES.

Nursery and Seed Establishment, Hammersmith, London.

FRUIT TREES FOR ORCHARD-HOUSES.

HUGH LOW AND CO. have a fine stock of PEACHES in the very best health, grown as bushes and covered with blossom-buds. They are of two sizes; the larger, being from 3 to 4 feet high and as much through, are admirably adapted for planting out in the borders of orchard-houses or for growing in tubs. The second size, about 2 to 2½ feet high, and bushy, are for pot culture. The whole having been transplanted last year will move with abundance of fibrous roots. Prices and lists of sorts on application.

Upper Clapton Nursery, London, N.E.

PELARGONIUMS.

CHARLES TURNER'S stock of the above at the present time is most extensive, including large, French, and Fancies. The plants, which were stopped in autumn, have broken very strong, and are ready for an immediate repotting. This is an excellent time for procuring them, the price being moderate.—The Royal Nurseries, Slough.

NEW KINDS OF VEGETABLES.

CHARLES TURNER can supply seed of the following valuable new varieties:—

Per packet—*s.* *d.*	Per packet—*s.* *d.*
Incomparable Cabbage .. 1 0	Royal Dwarf Pea (Pois nain très hâtif à chassis), per quart 2 6
New Zealand Runner Bean 2 6	
Perennial Spinach .. 1 0	
Pine-apple Short Top Beet 1 0	Turner's Cottagers' Kale 1 0
Powell's Early Tomato .. 1 0	The Frogmore Protecting
Roseberry Brussels Sprouts 1 0	Broccoli 2 6

The above are strongly recommended. A GENERAL DESCRIPTIVE CATALOGUE of SEEDS may be had on application.

The Royal Nurseries, Slough.

TURNER'S COTTAGER'S KALE.—Specimens of this new, hardy, prolific, and delicious Vegetable were exhibited in February last, and were found to possess superior excellence, the Horticultural Society of London awarding it a Certificate of Merit. It was also exhibited at the Great Fruit Show, St. James's Hall, in November last, and again received a Certificate, Professor Lindley pronouncing it to be both "new and invaluable," being unsurpassed for sweetness and tenderness. Sealed packets, 1*s.* each. A list of Agents that can supply it true was published Oct. 16, 1858, in the *Gardeners' Chronicle*.—The Royal Nurseries, Slough.

NEW MELON.

TURNER'S SCARLET GEM MELON.—An early and most prolific variety, and by far the best flavoured of the scarlet-fleshed Melons, having taken Seven First Prizes during the past season at the great exhibitions. It is well netted and handsome.

Mr. Bailey, the very successful fruit grower, of Shardeloes Gardens, Amersham, having grown this variety for two seasons, reports that "it is by far the best Melon he has ever cultivated of either class. Its superior flavour alone entitles it to a first place, besides other good qualities, among which is its easy culture." 2*s.* 6*d.* per packet.—The Royal Nurseries, Slough.

WILD'S UNRIVALLED PRIMULAS.—Upwards of 100 Testimonials received:—

Mrs. Haig, Dundalk, Ireland.

"The Primula seed you sent me last year proved most beautiful."

Mr. J. Parker, Manor Gardens, Worksop.

"Sir,—Please send me two packets of your Primula seed; the last I had from you was superb."

Sealed packets post free to all parts of the world on receipt of 2*s.* 6*d.* in stamps.

THOMAS WILD, The Primulary, Ipswich.

TO GROWERS OF PINE APPLES AND CUCUMBERS.—The above-mentioned goods are in great demand here at present, and commanding high prices, therefore forward "immediately" to

GEORGE TAYLOR,
CHOICE FRUIT AND VEGETABLE SALESMAN,
St. John's Market, Liverpool.

PANSIES (competing varieties), 6*s.* to 9*s.* per doz.
First-Class HOLLYHOCKS, 9*s.* to 12*s.* per doz.

The above plants can be well recommended. Trade price on application.—Apply at Carstairs Nursery, Inverleith Row, Edinburgh.

NEW CHRYSANTHEMUMS.

JOHN SALTER begs to inform the numerous applicants for his NEW CATALOGUE OF CHRYSANTHEMUMS that it will be published at the end of February, in which his splendid Seedlings and other new varieties for 1859 will be fully described, as well as his unrivalled general collection, which is the largest in Europe.—Versailles Nursery, William Street, near Hammersmith Turnpike, W.

NEW ROSE, HYBRID PERPETUAL "LÆLIA."—Colour delicate satin rose, petals very large, perfectly smooth, and well formed; flowers of exquisite shape, large size, and highly scented. JOHN CRANSTON has the pleasure to announce that he will be prepared to supply early in April plants of this superb new Rose. It was exhibited by him in his winning stand of single blooms at the Grand National Rose Show in July last, and was unquestionably the most attractive variety of the Show, and the admiration of all who saw it. Fine healthy plants, 5*s.* each, with the usual discount to the trade.—Nurseries, King's Acre, near Hereford.

CAMELLIAS.

TO BE SOLD, a Greenhouse of CAMELLIAS, in pots, consisting of Double White and other choice varieties. Some of the plants are very large, of 20 years' growth. The low price of 25*l.* will be taken in consequence of the family being about to remove nearer the city. They may be seen by application on the premises.—Mr. S. H. HEATH, Richmond House, Church Street, Hackney. The Lease of the Residence, containing 10 rooms, long garden, and Greenhouses, to be sold, having about 17 years to run, held at a ground rent of 13*l.* 16*s.* per annum.

SEEDS FOR THE FARM.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY, LIMITED, beg to announce that their SPRING LIST OF FARM SEEDS is now ready. The same will be sent free to any address, on application to the Secretary by letter or otherwise, at the Company's Offices, Plymouth.—Feb. 19.

TO THE TRADE.

TO BE SOLD, 200 bushels of GREEN-TOP YELLOW SWEDE SEED, 100 bushels of LIVERPOOL SWEDE Ditto, 60 bushels of DALE'S HYBRID, grown from first-rate stock, warranted to grow well, and free from adulteration. Terms on application.—Address T. A., care of Castle & Lamb, 7, Bull Head Court, Newgate Street, London.

TO THE SEED TRADE.

THOMAS AYRES, JUN., SEEDSMAN and GROWER, Biggleswade, Beds., can supply every kind of Wurzel, Swede, and common Turnip Seeds, on the most reasonable terms for cash.

N.B. Dealer in Culinary and Flower Seeds, Fruit Trees, Shrubs, and Flowering Plants.

THE ALSIKE CLOVER.—This valuable but scarce Clover Seed is included in Messrs. SUTTON'S mixtures of Clover and Grass Seeds for permanent pasture and for alternate husbandry. It can be supplied in limited quantities alone if required. Price fluctuating, to be had on application.

Royal Berks Seed Establishment, Reading.

IMPROVEMENT OF GRASS LANDS

BY SOWING GOOD SEEDS OF THE MOST SUITABLE KINDS.

SUTTON'S RENOVATING GRASS SEEDS for improving old Pastures, Parks, and Meadows. Quantity of seed required, 8 to 12 lbs. per acre. Price 9*d.* per lb. or 80*s.* per cwt., carriage free. Total cost, 6*s.* to 9*s.* per acre. These seeds should now be sown.

Royal Berkshire Seed Establishment, Reading.

SUTTON'S ELVETHAN MANGEL WURZEL, and SELECTED YELLOW GLOBE.—These two sorts of Mangel are still preferred to all others by the principal root-growers throughout the kingdom. SUTTON & SONS have some fine seed of each sort, at very moderate prices. Price Lists may be had post free.—Royal Berkshire Seed Establishment.

DIOSCOREAS—FINE LARGE ROOTS CHEAP.

SUTTON AND SONS, Reading, can supply DIOSCOREA BATATAS, 9 inches long, at 5*s.* per dozen, or 40*s.* per 100. This vegetable is worthy of all that has been said in its favour, and will thrive in almost any soil and situation.

SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

SORGHUM, OR HOLCUS SACCHARATUS.

SUTTON AND SONS, the largest Importers of this Seed, can supply it wholesale and retail, warranted the true kind, and good growing Seed.

Present retail price 2*s.* per lb., or cheaper in large quantities. Instructions on cultivation sent with the Seed.

SUTTON & SONS, Royal Berks Seed Establishment, Reading.

HOLCUS SACCHARATUS, or North China Sugar-Cane.—Pamphlet, "A Visit and a Plant;" the only English authority on the Cultivation of the above. Post free 6*d.* Prices of Seed on application. Samples 6*d.* Four varieties of Holcus remitted free by post on receipt of 10*s.*

CHINESE YAMS, 4*s.* per dozen.

ASPARAGUS plants, 16*s.* per 1000.

JOHN W. CLARKE, Whittlesea, Cambridgeshire.

SEED CORN FROM THE CHALK.

MESSRS. RAYNBIRD AND HARVEY beg to offer to Agriculturists requiring change of SEED Talavera, Red Nursery, and April WHEAT, the best sorts for Spring sowing.

Chevalier, Thanet, Golden Drop, Long-eared Nottingham, American, Hudson's Golden Melon, Banham's Sprat, and other varieties of BARLEY.

Canadian Potato, Hopetoun, Poland, and Tartarian OATS.

Fine CLUSTER BEANS, weighing 68 lbs. per bushel.

Samples and Prices on application.

Address—Basingstoke, and 89, Seed Market, Mark Lane, London, E.C.

SPECIMEN ERICAS AND GREENHOUSE PLANTS.

R. GLENDINNING has to offer to Exhibitors as well as for private decoration a number of beautifully-grown Specimens and Half-Specimens of ERICAS and GREENHOUSE PLANTS in the healthiest possible condition. R. G. respectfully solicits an inspection of the same; but to those who may find it inconvenient names, sizes, and prices will be furnished on application.—Chiswick Nursery, London, W.

GLENNY'S IMPROVED BALSAM. — Whoever sells Seed as mine, or as from my stock, except in my own sealed packets, is simply swindling his customers; not a grain has been parted from in any other way. The superiority now fully established in Europe and America is as much owing to the mode of saving as to the naturally fine stock. Six classes, 37 stamps; mixed 13.

The splendid DAHLIA DUCHESS OF NORTHUMBERLAND.—Strong pot roots, free to any part of the kingdom, 5*s.* It is more in demand than any Dahlia of last year.

G. GLENNY, Horticultural Agent, Fulham.

GERMAN STOCKS, ASTERS, ETC.

DO NOT PURCHASE MORE SEEDS THAN YOU REQUIRE.

JAMES TYNAN begs to offer FLOWER SEEDS of the choicest kinds in packets to suit the wants of purchasers not requiring them to take large quantities in order to obtain the best varieties.

TRUFFAUT'S PÆONY-FLOWERED ASTERS, the finest grown.—20 varieties in separate colours, in packets, 2*d.* each, any number sent; the same mixed in packets, 3*d.* and 6*d.* each.

NEW CHRYSANTHEMUM-FLOWERED ASTERS.—5 varieties in separate colours, 4*d.* each; the same mixed in packets, 6*d.* each.

FINEST GERMAN STOCKS.—24 varieties in separate colours, 2*d.* each; the same mixed in packets, 3*d.* and 6*d.* each.

Finest large-flowering, 20 varieties in separate colours in packets, 2*d.* each; the same mixed in packets, 3*d.* and 6*d.* each.

DOUBLE GERMAN WALLFLOWER.—6 varieties, separate colours, packets, 3*d.* each; the same mixed, packets, 3*d.* and 6*d.* each.

Very fine PHLOX DRUMMONDI.—In pckts. 4*d.* and 6*d.* each.

The choicest CALCEOLARIA, 6*d.* and 1*s.* per packet.

" CINERARIA, 6*d.* and 1*s.* " "

" GLOXINIA, .. 1*s.* " "

" PRIMULA, 6*d.* and 1*s.* " "

Agent for SMITH'S BALSAMS 1*s.* " "

Selections of FLOWER SEEDS sent post free:—

No. 1.—50 packets	12*s.* 6*d.*
No. 2.—25 packets	6 3
No. 3.—12 packets	3 0

Large packets, or by the ounce, at prices equally moderate.

JAMES TYNAN, Importer of Continental Seeds, Seed Warehouse, 68, Great George Street, Liverpool.

TO GARDENERS AND OTHERS.

TO BE SOLD, several Thousand loads of very superior BLACK GARDEN MOULD. This Mould has remained undisturbed for many years. It is very rich, and is particularly adapted for Gardens, Lawns, &c.—Apply to F. G., 1, Wilton Terrace, Wilton Road, Pimlico, S.W.

RHODODENDRONS.

JOHN WATERER'S CATALOGUE OF UNRIVALLED HARDY SCARLET AND OTHER CHOICE RHODENDRONS, as Exhibited by him at the Royal Botanic Gardens, Regent's Park, London, is published, and will be forwarded on application.

☞ This List is recommended as a work of reference, as it contains accurate descriptions of all the esteemed varieties.

The American Nursery, Bagshot, Surrey, near the Sunningdale Station, South Western Railway.

HARDY SCARLET RHODODENDRONS AND AMERICAN PLANTS GENERALLY.

WATERER AND GODFREY'S PRICED and DESCRIPTIVE CATALOGUE of the above beautiful tribe of plants, as exhibited by them in London and Manchester, may now be had on application inclosing one stamp for postage. The Catalogue also furnishes the heights and prices of their unequalled stock of Conifers and Evergreens, &c. Catalogues may also be had of Messrs. J. MAY & Co., Seedsmen, &c., Wellington Street, Strand.

Knap Hill Nursery, Woking, Surrey.

VEGETABLE, FLOWER, AND AGRICULTURAL SEEDS.

WILLIAM BARNES'S CATALOGUE of the above is now ready, and may be obtained postage free, upon application. It will be found to contain every article of known value, among them some that cannot be excelled, the stock of which having been saved specially for himself by private and competent friends, he can recommend with the greatest confidence. Every article is warranted of the purest and most genuine kind, as well as very moderate in price.

Camden Nursery, Camberwell.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Stove, Greenhouse, and Hardy Ferns, Miscellaneous Stove, Greenhouse, and Hardy Plants, Variegated and Ornamental foliaged Plants, Conifers, Roses, Rhododendrons, Indian Azaleas, Gloxinias, Fuchsias, Cactuses, &c., is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

NEW SEEDS FOR 1859.

WM. CUTBUSH AND SON beg respectfully to intimate that their PRICED CATALOGUE OF VEGETABLE AND FLOWER SEEDS, &c., is now ready post free on application. WM. C. AND SON devote particular attention to this department of their business, and most of the choicer kinds of culinary seeds and roots are saved under their own inspection, and they can confidently guarantee the quality of all offered.—Highgate Nurseries, London, N. Established A.D. 1695.

SEEDS FOR 1859.

HARGRAVE'S SELECTIONS OF KITCHEN GARDEN SEEDS are arranged in quantities and sorts suitable for a succession of Vegetables through the whole year. That adapted for a moderate-sized garden contains 10 pints of the choicest kinds of Peas, 6 pints of superior garden Beans, 3 pints of very fine French or Kidney Beans, and a fair assortment of small Seeds too numerous for specifying here. Cash price, ONE GUINEA, package included.

C. W. HARGRAVE, Nurseryman, Florist, Seed Grower, and Importer.—The Nursery, Winchmore Hill, N.

AZALEA INDICA.

J. IVERY AND SON beg respectfully to invite growers of the above named to an inspection of their unrivalled Stock of Young Specimens of all the newest and best varieties, many of which have been exhibited at the Metropolitan Exhibitions. They are clean and healthy, well set with bloom, and moderate in price. Catalogues forwarded post free upon application.—Dorking Nursery, Feb. 19.

CALLICARPA PURPUREA.

JOHN STANDISH, the exhibitor of the above (at St. James's Hall), can supply a few good plants at 7*s.* 6*d.* each. The following passage from Dr. Lindley's leading article in the *Gardeners' Chronicle* for Nov. 20 will give an idea of its beauty:—"Callicarpa purpurea, quite insignificant when in flower, was beautiful in its winter dress of innumerable rich purple berries, about the size of swan shot." It is easily cultivated, and does well in a cold greenhouse or conservatory planted out, where it will produce thousands of bright purple berries resembling glass beads, and remaining on nearly the whole winter.—Bagshot, Feb. 19.

EARLY STRAWBERRIES.—MAY QUEEN: "One of the earliest of all its race, as proved last season at the Chiswick Gardens." Ripe at Egglescliffe, Durham, May 28, 1858. 12*s.* per doz.; 1*l.* per 25; 1*l.* 15*s.* per 50; 3*l.* per 100. Good strong plants.

TRIOMPHE.—"A most abundant bearer, Hudson's Bay breed." Ripe as above, June 3d. 12*s.* per 50; 20*s.* per 100. Good strong plants.

DUC DE MALAKOFF.—"The earliest of the very large varieties, good." 12*s.* per 50; 20*s.* per 100; very strong plants. Nearly every other sort known can be supplied at reasonable prices. Many new interesting and excellent varieties can be recommended, all having been well tried. Early orders will oblige.

WILLIAM J. NICHOLSON, Egglescliffe, Yarm, Yorkshire.

BULBS FOR SPRING PLANTING.

BASS AND BROWN have pleasure in offering as under, all strong and fine roots for flower.

GLADIOLUS.—12 fine Ramosus Hybrids for 10*s.* These grow 2 feet in height, richly marked and striped, and flower from August to the approach of winter; they are best planted without delay to secure their flowering early. 15 choice Gandavensis Hybrids for 15*s.*, which flower from August to October. Gandavensis, per doz., 2*s.* 6*d.*; Floribundus, per doz., 2*s.* 6*d.*

RANUNCULUS.—Fine Border varieties mixed, 4*s.* per 100. Very fine mixed, 10*s.* per 100; Œil Noir, the best black, 7*s.* 6*d.* per dozen. Turbans, of separate colours, see Catalogue. Ranunculi priced 10*s.* per 100 or upwards will be supplied free by post.

ANEMONES.—10 choice varieties of rich colour, six roots of each for clumping, 10*s.* 6*d.*, or three roots of each for 6*s.* Finest Mixed Double Scarlets, 1*s.* 6*d.* per dozen. La Brillante Eclatante, bright single scarlet, 7*s.* 6*d.* per 100, or 1*s.* per doz. Fine new mixed single, 4*s.* per 100.

LILIUMS.—Lancifolium album, flowering roots, 1*s.* each, extra strong, 1*s.* 6*d.* to 2*s.* 6*d.*; Lancifolium rubrum, do., 2*s.* 6*d.* each; extra strong, 5*s.* each; testaceum, very beautiful spikes of pendent yellow flowers, each, 3*s.* 6*d.* Six beautiful varieties, including the above, for 10*s.* Giganteum, a large noble variety, 5*s.* to 10*s.* 6*d.* each.

Tigridia pavonia, 2*s.* 6*d.* per doz., or 18*s.* per 100.
" canariensis, 9*d.* each; cœlestis, 1*s.* each.
Tritonea aurea, fine strong roots, 1*s.* 6*d.* each; 15*s.* per dozen.
Tuberoses, double Italian, 4*s.* per dozen.

Also a great variety of other roots for spring planting, comprising Oxalis, Amaryllis, Cypella, Pancratium, Rigidilla, &c. &c. See No. III. Catalogue.

Goods (20*s.* and upwards) carriage free to all stations in London, &c., see Catalogue, and with orders of 40*s.* and upwards extra roots or plants added gratis.

Post-office Orders payable to BASS & BROWN, or to STEPHEN BROWN. Remittances required from unknown correspondents.

Seed and Nursery Establishment, Sudbury, Suffolk.

FINE HEALTHY ROSES.—
STANDARDS .. .. .. 18*s.* per doz.
DWARFS (on the Manetti) .. 12*s.* " "

As the weather still continues mild and favourable for planting, GEORGE CLARKE begs to state he has still a fine stock of all the leading kinds to offer at the above prices, the selection being left to him. The Plants are all healthy and well rooted, therefore calculated to give the greatest satisfaction. Plants carefully packed for any distance. Carriage of all packages paid to London; and in all orders amounting to 20*s.* plants are added to compensate for distant carriage.

GEORGE CLARKE, The Nursery, Brixton Hill.

THE LARGEST STOCK OF

TEA-SCENTED ROSES in the kingdom.—Upwards of 10,000 DWARF TEA ROSES in pots, fine healthy plants now ready for sending out, consisting of all the best leading kinds, and comprising among others—

750 Mélanie Willermoz	300 Maréchal Bugeaud
500 " Oger (yellow)	300 Madame Bravy
500 Vicomtesse de Cazes (do.)	300 Le Pactôle, yellow
500 Souvenir d'un Ami	300 Niphetos, fine white
500 Safrano	300 Goubault
400 Devoniensis	300 Canari (yellow)
400 Adam	

400 Miss Gray or Isabella Gray, TRUE, yellow Rose, &c.

Plants presented to compensate for carriage.—Address WM. WOOD & SON, Woodlands Nursery, Maresfield, near Uckfield, Sussex.

SPECIMEN TEA-SCENTED ROSES, in 8-inch pots. Strong plants for Exhibition, from 3*s.* 6*d.* to 5*s.* each.

The same kinds and many other leading sorts can be supplied as Half-specimen Plants, in 6-inch pots, at 24*s.* and 30*s.* per doz.

TEA-SCENTED.—Buret, Blanche de Solville, Bougère, Canaris Clara Sylvain, Comte de Paris, David Pradel, Elize Sauvage, Eugénie Desgaches, Général Tartas, Goubault, Jeannie Deans, La Sylphide, Laurette, Le Caméléon, Le Pactôle, Léontine de Laporte, Madame Bravy, Maréchal Bugeaud, Mélanie Willermoz, Mélanie Oger, Nina, Safrano, &c.

The Subscribers will be happy to furnish extra fine strong plants of the above named Roses adapted for Exhibition.

Early orders are respectfully solicited to ensure the strongest plants.—WM. WOOD & SON, Woodlands Nursery, Maresfield, near Uckfield, Sussex.

THE BEST NEW ROSES FOR 1859.

WM. WOOD AND SON will be prepared to send out strong healthy plants in pots of the following new ROSES, about the end of April, which are offered as the best of the varieties to be sent out this season:—

HYBRID PERPETUAL.

Albert de Stella	Impératrice Eugénie
Anna de Diesbach	Joseph Vernet
Anna Alexieff	Lord Elgin
Armide	Le Mont Vésuve
Ardoisé de Lyon	Mathilde de Mondeville
Altesse impériale	Orderic Vital
Beauté de Royghem	Oriflamme de St. Louis
Bouquet de Marie	Princesse Olympie
Comte de Beaufort	Salomon
Comtesse Cecile de Chabrillan	Virginal
Empereur de Maroc	Madame Bruny

BOURBON.

Aline Pierron	Edith de Murat
Comtesse de Barbantanne	Molière
Docteur Berthet	Octavie Fontaine

NOISETTE.

Beauty of Greenmount	Cornélie

TEA-SCENTED.

Enfant de Lyon	Madame Joseph Halphen
Homère	Ophelia
Madame Damaizan	Roi des Pays Bas
" Darru	Socrate
" Falcot	

Good Plants will be supplied at 5*s.* each, with the usual discount to the Trade.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

PLANT THIS MONTH!

CAREY TYSO, FLORIST and SEEDSMAN, Wallingford, Berks, offers healthy flowering roots as under:—

RANUNCULI, 100 splendid named sorts, 40*s.* to .. £4 0*s.* 0*d.*
" 100 fine mixed sorts, 8*s.*, 15*s.* " .. 1 0 0
" 25 choice seedlings, 25*s.* " .. 1 15 0
DOUBLE ANEMONES, 50 fine varieties, 10*s.* 6*d.* to 0 13 0

New TREATISE on RANUNCULI, by post for seven labels.

Do. ANEMONE for four labels.

GERMAN FLOWER SEEDS.—Choice named Asters, Stocks, Balsams, Wallflowers, Zinnias, &c., in 1*s.* and 2*s.* 6*d.* assortments. These can be sent by post. CATALOGUES free for one label.

ASPARAGUS AND SEAKALE.

YOUELL AND CO. having a large Stock of the above growing on the Sea Coast, of the finest quality, beg to offer it at the following prices:—

ASPARAGUS, GIANT, two years .. 2*s.* 6*d.* per 100.
" three years .. .. 3*s.* 6*d.* "
SEA KALE .. .. 6*s.* 0*d.* "
RHUBARB.—Myatt's Victoria, Myatt's Linnæus, Mitchell's Royal Albert, strong roots, 8*s.* per dozen.
Hawke's Champagne Rhubarb, 9*s.* per dozen.
Artichokes, Globe and Pine-apple shaped, 6*s.* per dozen.
Dioscorea Batatas (Chinese Potato), 6*s.* per dozen.

All orders of 2*l.* and upwards are delivered Carriage Free to London, Manchester, Newcastle, and Hull, as well as to any Railway Station within 150 miles of the Nursery.

Royal Nursery, Great Yarmouth, Norfolk.

GRAPE VINES FROM EYES.

JOHN AND CHARLES LEE beg to offer an immense stock of strong well-ripened VINES FROM EYES, of the following kinds:—

Alicant	Hamburgh, Pope's
Barbarossa	" Victoria
Bidwell's Seedling	Hâtif de Jura
Black Cluster	Isabella
Black Constantia	Lady Down's Seedling
Black Prince	Marchioness of Hastings
Blanche Vigne	Muscadine, Royal
Calabrian Raisin	" Parsley leaved
Charlsworth Tokay	Muscat, August
Chasselas Frocklaboulay	" Bowood
Chasselas Musqué	" Cannon Hall
Duzetto	" Hamburgh
Esperione	" Noir Hâtif
Frontignan, black	" of Alexandria
" grizzly	" of Fontainebleau
" white	Pitmaston Cluster white
Hamburgh, black	Raisin des Carmes
" Champion	Syrian
" Dutch	Trebiana
" golden	Trentham Black
" Mill Hill	Tripoli
	West's St. Peter's

Nursery and Seed Establishment, Hammersmith, London.

VERY LARGE ECONOMY IN THE PURCHASE OF SEEDS.

THE ASSORTED COLLECTIONS OFFERED BY

BASS AND BROWN will be found full 25 per cent more value than other collections offered, and for quality of growth and selection of sorts are not to be surpassed. For names of sorts contained in the three largest collections, see Catalogue, sent free on application.

No. 1 Collection.. £3 0*s.* 0*d.* | No. 3 Collections £1 5*s.* 0*d.*
No 2 " .. 2 0 0 | No. 4 " .. 0 15 0

The assortments of Flower Seeds of their own selection also include the novelties of the season and are very select, with reasonable charges.

Goods (20*s.* and upwards) free to all stations in London, &c. See Catalogue.

BASS & BROWN, Seed Growers, Sudbury, Suffolk.

KITCHEN GARDEN SEEDS.

THOMAS GIBBS AND CO., THE SEEDSMEN TO THE "ROYAL AGRICULTURAL SOCIETY OF ENGLAND," beg to announce that they are now prepared to execute orders for their

COLLECTIONS OF KITCHEN GARDEN SEEDS

for either large or small Gardens, containing a proper selection of all the new and most approved varieties.

PACKETS OF FLOWER SEEDS, containing all the new and choice kinds.

Do. GERMAN IMPORTED FLOWER SEEDS, in the original imported Packets.

DESCRIPTIVE PRICED CATALOGUES forwarded free on application. T. G. & Co.'s PRICED LIST OF AGRICULTURAL AND GRASS SEEDS will be ready early in February.

THOMAS GIBBS AND CO.,
Corner HALF-MOON STREET, Piccadilly, London, W.

AGRICULTURAL, FLOWER AND KITCHEN GARDEN SEEDS.

GARAWAY, MAYES, AND CO. invite attention to their Establishment for the sale of all kinds of AGRICULTURAL, FLOWER AND KITCHEN GARDEN SEEDS, their long connection with the trade and the well-known respectability of their house being a sufficient guarantee that all articles supplied by them will be of the very best quality. All seeds are proved by them before sending out, and their stock being large, and purchased from the first houses in the trade, offers great inducement to purchasers.

Their Stock of AGRICULTURAL SEEDS is produced from the best sources, and all are guaranteed by them to be of the best quality.

GRASS SEEDS of all kinds for Lawns or permanent Pasture; and the high testimonials they have received from their customers warrant them in stating that their quality is unsurpassed.—Catalogues on application.

Durdham Down Nurseries, Bristol.—Feb. 19.

VEGETABLE AND AGRICULTURAL SEEDS, &c.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that they are now prepared to execute with new and genuine SEEDS all orders they may be favoured with. Their PRICED and DESCRIPTIVE CATALOGUE, containing all new VEGETABLES proved to be good, and all the best of the older varieties, &c., will be forwarded post free on application.

The following are particularly recommended, all being very superior in quality, and valuable acquisitions to the most select collections:—Beet (Pine Apple Short Top), per oz., 2*s.*; Broccoli, Winter White (Snow's), per oz., 3*s.* 6*d.*; ditto, Penzance White (Mitchinson's), per packet, 1*s.* 6*d.*; Celery, Nonsuch (Ivery's), per packet, 1*s.*; Cottager's Kale, per packet, 1*s.*; Lettuce, Alma Cos (Griffin's), per packet, 1*s.*; ditto, Moor Park Cos, per packet, 1*s.*; Marrow, Custard (Thomson's), per packet, 6*d.*—Paradise Nursery, Seven Sisters and Hornsey Road, Holloway, London, N.

CAMELLIAS AND OTHER CHOICE PLANTS.

LUCOMBE, PINCE, & CO. beg respectfully to announce that the MAGNIFICENT SPECIMENS in their LARGE CAMELLIA HOUSE are now finely in flower, and will continue so for a considerable length of time; and in order to see them to advantage they should be inspected in their early stage as well as in their maturity. The Show House is also exceedingly beautiful, being filled with a very choice and extensive collection of Ornamental Plants.

Great improvements having during the past year been effected in every department of their Nursery, and every novelty deserving notice introduced, their general Nursery Stock is second to none in the kingdom.

CAMELLIA BLOOMS, CHOICE BOUQUETS, and CUT FLOWERS supplied to order on the shortest notice, and carefully packed to travel any distance with perfect safety.

Terms, which are moderate, can be had on application.

Exeter Nursery, Exeter.—Feb. 19.

TO THE TRADE.

THOS. CRIPPS, NURSERYMAN, &c., Tunbridge Wells, Kent, respectfully offers the following fine strong SPANISH CHESNUT PLANTS, 4 feet to 6 feet in height, 40*s.* per 1000; Blush CHINA ROSES, fine strong plants, 15*s.* per 100; Crimson do., very strong, 25*s.* per 100; fine Standard and Half-standard ROSES, 60*s.* per 100; good do., do., 50*s* per 100; Double Yellow PRIMROSE, 20*s.* per 100 or 400 for 3*l.*; PINUS INSIGNIS and P. RADIATA from Seed, 15 inches to 28 inches, 6*l.* per 100; MANETTI STOCKS, 50*s.* per 1000; do. second size, 40*s.* per 1000; IRISH YEWS, 2 feet to 3 feet, 50*s.* per 100; Hardy HEATHS, a fine collection, 25*s.* per 100; large plants, good do., 20*s.* per 100; LARCH FIR, fine stout plants, 2 to 3 feet; LONICERA SHEPHERDI, or new Scarlet-trumpet HONEYSUCKLE, fine strong plants, 4*s.* per dozen; RHODODENDRON MAXIMUM, fine bushy plants, 18 inches to 2 feet, 60*s.* per 100. Orders from unknown correspondents unaccompanied by a remittance will not be noticed.

CHOICE SARDINIAN FLOWER SEEDS.

MESSRS. HOOPER AND CO., seeing that the writer at page 99 of the *Gardeners' Chronicle* has evidently mistaken the meaning of other advertisers with regard to the transference of an agency for the above, and fearing that others of their extensive connection might also be misled, beg to state that they have this season, as for SEVERAL YEARS past, received their usual consignment of Seeds of PICOTEES, CARNATIONS, and other choice and rare Flowers, ripened in Sardinia, from the same unrivalled collection.

H. & Co. therefore hasten to assure their friends that there is no SOLE AGENCY for the choice seeds collected and saved by the justly celebrated "Sardinian Correspondent" in question.

Seeds of the above-named CARNATIONS and PICOTEES both show flowers and perpetuals, white and yellow grounds, in COLLECTIONS OF 12 VARIETIES. (For detailed list see our Catalogue, page 42.) Ditto in mixture each per packet, 1*s.* 6*d.* and 2*s.* 6*d.* The variety of their colours, with their constancy and doubleness, render these such as cannot be excelled.

A GENERAL COLLECTION, consisting of the most beautiful and useful kind of Shrubs, Perennials, Annuals, and Climbers of every description, well assorted, for Greenhouse or Conservatory, in all 50 varieties, for 20*s.* This collection includes all the novelties of merit, and can be recommended with confidence. All Flower Seeds sent free by Post.

HOOPER & CO.'s Comprehensive and Descriptive Priced CATALOGUE of FLOWER and VEGETABLE SEEDS for 1859 forwarded to all parts of the world post free.

Seed Warehouse, Centre Avenue, Covent Garden Market, London, W C.

THE

GARDENERS' ROYAL BENEVOLENT INSTITUTION.

INSTITUTED 1838.

PATRONESS.—Her Most Gracious Majesty the QUEEN. **PATRON.—His Royal Highness the PRINCE CONSORT, K.G.**

LIST OF SUBSCRIBERS.

HER MOST GRACIOUS MAJESTY THE QUEEN, Patroness of the Institution ... ...
HIS ROYAL HIGHNESS THE PRINCE CONSORT, K.G., Patron of the Institution ... ... } £50
HIS GRACE THE LATE DUKE OF DEVONSHIRE, K.G. £137

E. R. CUTLER, Secretary, 14, Tavistock Row, Covent Garden.

	Donat. £ s.	An. Sub. £ s.
Abbott, Isaac, Gr. to H. S. Thornton, Esq		1 1
Acland, Sir Thomas Dyke, Bart., Killerton		2 2
Acton, J., Townsend, Esq. (legacy)	100 0	
Addiscott, W., 6, Leadenhall Street	1 1	1 1
Aiton, John, Gr. to the Earl of Stamford		1 1
Allam, John, East Tisted, Alton, Hants		1 1
Allan, Richard, Gr. to Col. Close		1 1
Amos, J. H., Plaistow Lodge, Bromley		1 1
§§Anderson, A., Esq., Norwood Grove, Norwood	21 0	
Andrews, W., Gardener, Greenwich		1 1
§Angerstein, John, Esq., Woodlands, Charlton	10 10	
§Annesley, Hon. and Rev. C. F., Eydon Hall		2 2
Appleby, Thomas, 32, Church Street, Sheffield		1 1
Arnott, R. A., Gordon Road, Peckham		1 1
Atkins, Robert, Gr. to Viscount Gage		1 1
§Atlee, Richard, Nurseryman, Stockwell	10 10	
Austin & Mc Aslan, Nurserymen, Glasgow		1 1
Ayres, W. P., Gr. to W. Duckworth, Esq.	3 3	1 1
B., Mrs., Easton, near Stamford	21 0	
Bailey, Hy., Gardener, Nuneham Gardens		1 1
Bailey, Henry, Gardener, Upper Clapton		1 1
Baker, George, American Nursery, Bagshot		1 1
Baker, Henry, Gr. to Isaac Harrison, Esq.		1 1
Baldock, William, Gr. to J. Metcalf, Esq.		1 1
Bannon, J., Gardener, Aldenham Abbey		1 1
Baring, Thos., Esq., M.P.	21 0	
Barnes, James, Gr. to Lady Rolle		1 1
Barnes, William, Camden Nursery, Camberwell	10 10	1 1
Barnett, Wm., Gr. to Lord Ebury		1 1
Bartlett, John, Gr. to Dr. Yeo		1 1
Bassett, Peter, Gr. to R. S. Holford, Esq.		1 1
Batley, George, Nurseryman, Rugby	10 10	
Batt, Rutley, & Silverlock, Messrs., Strand	11 11	1 1
Baxendale, J., Esq., Woodside, Whetstone	31 10	
Beale, John, Gr. to Abel Smith, Esq.		1 1
Beaton, Donald, Surbiton, Kingston, Surrey		1 1
Beaufoy, George, Esq., South Lambeth	10 10	
Beck, Henderson, & Child, Messrs., Seedsmen	8 8	2 2
Bedford, the Duke of	10 10	
Bell, C., Gr. to W. B. Beaumont, Esq.		1 1
Bell, W., Gr. to W. Peters, Esq.		1 1
Bennett, Thomas, Gr. to Mrs. Martin		1 1
Benson, P., 19, Park Street, Greenwich	10 10	
Berens, R., Esq., Sidcup, Kent	10 10	
Betham & Blackith, Lower Thames Street		1 1
§Betts, E. L., Esq., Preston Hall, Maidstone	15 15	
Bevis, George, Nurseryman, Coventry		1 1
Binder, Wm., Gr. to the Rev. T. Staniforth		1 1
Bircham & Ward, Messrs., Bungay, Suffolk		1 1
Bishop, George, Esq., Regent's Park	10 10	
Bissett, John, Gr. to the Earl of Sefton		1 1
Blackburn, Joseph, Wormwood Street		1 1
Blackwell, John, Gardener, Walthamstow		1 1
Blackwell, J., Esq., 9, Charles Street		1 1
§Blandy, J. J., Esq., High Grove, Reading	10 10	
§§Bohn, H. G., Esq., Twickenham	42 0	
Bond, George, Gr. to Earl Powis		1 1
Booth & Sons, Messrs. Hamburgh		1 1
Booth, Charles, Gr. to J. W. Buller, Esq.		1 1
§Booth, William B., Esq., 21, Regent Street	15 15	
Boswell, J., 9, Harleyford Street, Kennington	10 10	
Botanical Society of London, The Royal	26 5	
Bradley, Wm., Gr. to Sir M. Peto, Bart., M.P.		1 1
Brampton, J., Esq., Stoke Newington		1 1
§Brande, E. A., Esq., Turnham Green		1 1
Bray, Thomas, Gr. to E. B. Lousada, Esq.		1 1
Brewer, F., Messrs. Henderson's & Co.		1 1
Bridgeman, George, 6, Leadenhall Street	1 1	1 1
Briggs, S., Gracechurch Street		1 1
Bright, Miss, Brande Lodge, Malvern Wells		1 1
§Brown, George, Esq., Kingsley Cottage, Alton	2 2	1 1
Brown, George, Gr., Powis Castle		1 1
Brown, Hay, Gardener, Porkington Hall		1 1
Brown, J., Gr. to Rt. Hon. Sidney Herbert, M.P.		1 1
Brown, W., Gr. to W. J. Dugdale, Esq., M.P.		1 1
Browne, J. G., Seedsman and Florist, Hackney		1 1
Browne, James, Gr. to H. Hall, Esq.		1 1
Bruce, James, Gr. to B. Miller, Esq.		1 1
Bryant, R. M., Esq., Market Street, Bristol		1 1
Buchan, W., Gr. to Lord Bagot		1 1
Bulgen, H., Gr. to R. Wrench, Esq.		1 1
Bulman, S., Gr., Half Moon Lane, Dulwich	10 10	
Bundy, C., Gr. to T. M. Goodlake, Esq.		1 1
Bunney, J. G., Nurseryman, Stratford, Essex		1 1
Burbank, J., Gr. to John Neeld, Esq., M.P.		1 1
Burn, H., Gr. to the Marquis of Ailesbury		1 1
Burn, John, Gr. to the Hon. Douglas Pennant		1 1
Burnett, E., 58, Rawstone Street, Clerkenwell		1 0
Burton, John, Gr. to the Marquis of Salisbury		1 1
Busby, Henry, Gr. to T. L. Hodges, Esq.		1 1
§Busby, Matthew, Harrow Road	10 10	1 1
Butler, John, Esq., Woolwich		1 1
Buxton, John, Gr. to R. Mills, Esq.		1 1
Byvoet, M., Haarlem, Holland		1 1
Caie, John, Gardener, Inverary Castle		1 1
Cain, Henry, Gr. to the Rev. Dr. Spyers		1 1
Callander, John, Gr. to the Duke of Buccleuch		1 1
Cameron, Geo., Gr. to the Duke of Richmond	10 10	
Canning, John, Esq., Finchdean, Horndean		1 1
§Carlisle, The Rt. Hon. the Earl of	21 0	
Carson, S. M., Gr. to W. F. G. Farmer, Esq.	10 10	
Carter & Co., Messrs., Seedsmen, High Holborn		1 1
§Cathcart, Sir John, Bart., Cooper's Hill		1 1
Catleugh, Mrs., Hans Place, Chelsea		1 1
Cattell, John, Nurseryman, Westerham, Kent		1 1
Catton, John, Gr. to J. Adeane, Esq.		1 1
§Chance & Co., Messrs., Glass Works, Birmingham	21 0	
Chandler, Alfred, Nurseryman, Vauxhall		1 1
Chandler, Thomas, Gr. to J. R. Corbett, Esq.		1 1
Charlwood & Cummins, Messrs., Seedsmen		3 3
Charmes, T. G., Seedsman, High Street, Exeter		1 1
Chase, W., Esq., Petersfield, Hants		1 1
Cheney, H. R., Esq., Badger Hall, Shiffnal	10 10	
Cheshire, William, Gr. to C. Longman, Esq.		1 1
§Child, George, Esq., Adelphi Wharf, Strand	13 13	
Chivas, George, Nurseryman, Chester		1 1
Christie, Alex., Gr., Avington, near Winchester		1 1
Christie, W., Agent to Viscount Folkestone		1 1
Clark, John, Gr. to Col. Johnstone, Carnstallock		1 1
Clarke, Bernard, Gr. to J. Lloyd Wynne, Esq.		1 1
Clarke, George, Nurseryman, Streatham		1 1
Clarke, William, Gr. to C. Webb, Esq.		1 1
Cleave, Thomas, Gr. to the Hon. G. Fortescue		1 1
Cleveland, His Grace the Duke of, K. G.	10 10	
Cobb, Fred., Gr. to Lady Mordaunt		1 1
Cock, William, Esq., Chiswick		1 1
Cockburn, George, Gr., Caen Wood, Hampstead		1 1
Coe, David, Gr. to Earl Stanhope		1 1
Cole, J., Birchfield Nursery, Birmingham		1 1
Cole, William, Withington, near Manchester		1 1
Coles, Mrs., Woodcote, Alresford, Hants		1 1
Collins, B., Gr., St. Matthew Place, Brixton		1 1
Collins, John, Gr., Kingston House, Dorchester		1 1
Collinson, J., Gr. to the Marquis of Westminster		1 1
§Cook, James, Esq., Blackheath Park	21 0	
Cooke, George, Gr. to H. R. Cheney Esq.		1 1
Cooks, J., Esq., Rosedale Terrace, Notting Hill		1 1
Cooper, Cornelius, Gr. to C. Packe, Esq.		1 1
Cooper, Robert, Esq., 152, Fleet Street	10 10	
Copeland, W. T., Esq., M.P., New Bond Street	10 10	
Cottage Gardener, Proprietors of	15 15	
Coutts, Miss A. Burdett	10 10	
Cox, John, Gr., Redleaf, Penshurst, Kent		1 1
Coysh, J., Florist, Thurmaston Rd., Leicester		1 1
Crafts, Richard, the Red Lion, Petersfield		1 1
Cragg, William, Gr. to Sir T. Dyke Acland, Bt.		1 1
Cramb, Alexander, Gr. to Earl Ducie		1 1
Crawford, Alexander, Gr. to R. Arabin, Esq.		1 1
§Crossley, A., Esq., 34, Lombard Street	10 10	
§Crossley, Frank, Esq., M.P., 60, Eaton Square	10 10	
Cunningham, David, Gr. to Sir Ralph Howard, Bt.		1 1
§Cunningham, George, & Sons, Liverpool	2 2	1 1
Cunningham, J., Gr. to the Hon. J. J. Carnegie		1 1
Curtis, Thos., Esq., Salway House, Stratford		1 1
Cutbush & Son, Messrs., Nurserymen, Highgate		1 1
Cutbush, William, Nurseryman, Barnet		1 1
Cuthbert, G., Nurseryman, Southgate		1 1
Cuthbert, Richard, Gr. to Mrs. Overend		1 1
§Cutler & Barker, Messrs., King William Street		1 1
Dakin, George, Gr. to Earl Somers		1 1
Dancer, Alexander, Nurseryman, Fulham	12 12	
Dancey, John, Gr. to Miss Milwards		1 1
§Dandy, C.D., Esq., 12, Medina Villas, Dalston	5 5	1 1
Davidson, A., Gr. to the Earl of Bradford		1 1
Davidson, James, Gr., Welford Park, Newbury		1 1
Davidson, W., Randolph Road, Maida Hill		1 1
Davis, T., Gr. to the Rev. A. Hanbury, Colchester		1 1
Dawson, Thos., Gr. to Earl Cowper		1 1
Day, William, Nurseryman, Oxford		1 1
Deacon, Mrs., 4, Portman Square	10 10	1 1
Dean, George, Nurseryman, Croydon		1 1
Dean, William, Florist, Bradford, Yorkshire		1 1
Denby, William, Gr. to Miss Leveson Gower	10 10	
§Denton, J. Bailey, Esq., Stevenage, Herts	10 10	
§Denyer, Edward, Esq., 1, Paragon, Brixton	21 0	1 1
Dew, Benjamin, Market Gardener, Ham		1 1
Dickens, C., Esq., Tavistock House	10 10	
Dickson, James, Sen., Nurseryman, Chester		1 1
Dickson, F. & A. & Sons, Nurserymen, Chester		1 1
§Dilke, C. Wentworth, Esq., 76, Sloane Street	21 0	
Dixon, Mrs., Stansted Park, Emsworth, Hants	10 10	
§Dockar, W., Esq., 38, Broad Street Buildings	10 10	
Dods, George, Cooper's Hill Gardens, Chertsey		1 1
Dodds, John, Bailiff to C. Penruddock, Esq.		1 1
Dodds, Wm., Gr. to Colonel Baker, Salisbury		1 1
Dodemeade, William, Messrs. Henderson & Co.		1 1
§Donald & Son, Nurserymen, Goldworth	14 14	
Dougall, J., Gr. to Viscount Villiers		1 1
Douglas, the Lady Georgina		1 1
Dowdell, Robert, Gr., Bridgend		1 1
Downes, D., Gr. to T. N. Sibeth, Esq.		1 1
Draper, R., Gr. to G. S. Scovell, Esq.		1 1
Draper, George, Gr. to the Bishop of Salisbury		1 1
Drewett, Jas., Gr., the Denbies, Dorking		1 1
Drewett, John, Gr. to H. W. Schneider, Esq.		1 1
Duncan, R., Gr. to J. Malcolm, Esq.		1 1
Duncan, James, Gr. to Joseph Martineau, Esq.		1 1
Duncombe, the Hon. Mrs. Arthur		1 1
Dunn, George, Gr., Rufford Hall, Ormskirk		1 1
Eagles, A., Nurseryman, Highgate		1 1
§Ebury, the Right Hon. Lord	21 0	
Eckford, Henry, Gr. to the Earl of Radnor		1 1
Edgar, William, Esq., Clapham Common	10 10	1 1
Edmonds, C., Gr. to the Duke of Devonshire	1 1	1 1
Edmonds, W., Gr. to Lewis Buck, Esq., M.P.		1 1
§§Edwards, John, Esq., 20, Sharp's Alley, London	10 10	1 1
§Ellis, Wynn, Esq., Ponsbourne Park, Herts		1 1
Elliott, G. M., Gr., Kirby Hall, York		1 1
Elliott, G., Gr. to Sir George Palmer		1 1
Ellwood, Henry, Esq., Norbury Hill, Norwood		1 1
Embleton, C., Gr., Ingleton Street, Brixton		1 1
§§Epps, W. J., Bower Nursery, Maidstone	13 13	
Errington, Robt., Oulton Park, Cheshire		1 1
Eyles, George, the Crystal Palace, Sydenham	10 10	
Falkner, S., Gr., Orphan Working School		1 1
Fancourt, John, at Messrs. Henderson & Co.		1 1
§§Farmer, W. F. G., Esq., Nonsuch Park, Cheam	15 15	1 1
Farquhar, T. N., Esq., Sydenham, Kent	10 10	
Farthing, William, Gr. to Lord Ashburton		1 1
Fenton, James, Messrs. Lee, Hammersmith	10 10	
Field, John, Gr., Half Moon Lane, Dulwich		1 1
Finch, Robert, Gr. to James Bentley, Esq.	10 10	
Finney, S. & Co., Nurserymen, Gateshead		1 1
Fish, Robert, Gr. to Colonel Sowerby		1 1
Fisher, Holmes, & Co., Messrs., Sheffield		1 1
Fisher, J., Gr., Dulwich		1 1
Fitzgerald, John, Gr., Gray's Court		1 1
Fleming, G., Agent to the Duke of Sutherland		1 1
Fleming, John, Gr. to the Duke of Sutherland		1 1
Forbes, G., Esq., Bereleigh House, Petersfield		1 1
Forbes, J., Gr., Woburn Abbey, Bedfordshire		1 1
§Forbes, Sir Charles, Bart., Broom Wood		1 1
Forster, John, Gr. to J. Barber, Esq.		1 1
Forsyth, William, Gr. to Baron Rothschild		1 1
Foster, William, Esq., Emsworth, Hants		1 1
§Fowlie, W., Esq., Hursley, Winchester	1 1	1 1
Fox, William, Gr. to Joseph Sandars, Esq.		1 1
Francis, Edward, Nursery, Hertford		1 1
Francis, Thomas, Esq., Emsworth, Hants		1 1
Fraser, Richardson, & Goad, Messrs., Seedsmen		1 1
Fraser, James, Esq., 25, Westland Row, Dublin		1 1
Fraser, James, The Gardens, Luton Hoo, Beds	10 10	
§Fraser, J. & J., Messrs., Lea Bridge Road	10 10	1 1
Friend, Richard, Gr., Grove Hill, Falmouth		1 1
Frost, Thomas, Gr. to E. L. Betts, Esq.		1 1
§Fuller, F., Esq., Parliament St., Westminster	10 10	
Fuller, John, Gr. to G. S. Bosanquet, Esq.		1 1
Fuller, William, Gr. to G. Forbes, Esq.		1 1
Gadd, Henry, Gr., Wollaton Hall, Notts		1 1
Gadd, John, Castle Gardens, Dorking		1 1
Gaines, Thomas, Nurseryman, Battersea		1 1
§§Garaway, Mayes, & Co., Nurserymen, Bristol	10 10	2 2
Gardeners' Chronicle, Proprietors of	10 10	
Gardiner, W., Gr. to Sir George Phillip, Bart.		1 1
Gardiner, Samuel, Gr., West Place, Herne Hill		1 1
Gibbons, Michael, Messrs. Lee, Hammersmith		1 1
Gibbs, Thos., & Co., Messrs., Seedsmen, Piccadilly		2 2
§Gibbs, B. T. Brandreth, Esq., Half-Moon Street	11 11	
Gibson, J., Bushey Park, Middlesex		1 1
Giffkins, John, Gr. to the Rev. C. F. Annesley		1 1
Gillman, Miss, 8, Grosvenor Place, Cheltenham		1 1
§Glendinning, R., Nurseryman, Turnham Green	17 17	1 1
Glover, James, Gr. to G. Horsley, Esq.		1 1
Godfrey, James, Gr. to Lord Rayleigh		1 1
§Goldsmid, De, the Baron, Regent's Park	10 10	
§Good, J. H., Esq., 21, Upper Hamilton Terrace		1 1
Good, Wm., Gr. to E. Majoribanks, Esq.		1 1
§Gordon, Thomson, & Co., Messrs., Fenchurch St.	17 17	2 2
Gosling, James, Gr. to Mrs. Fisher		1 1
Graham, James, Nurseryman, Chichester		1 1
Gray, George, Esq., Rose Cottage, Bow Road	12 12	
§Gray, James, Danvers Street, Chelsea	14 14	1 1
Gray, William, Esq., Montpelier, Lambeth		1 1
Green, George, Gr. to T. Curtis, Esq.		1 1
Green, J., Gr. to Sir Edmund Antrobus, Bart.		1 1
§§Gregory, William, Esq., Cirencester	14 14	
Grier, John, Waterhead Nursery, Ambleside		1 1
§§Grissell, Thomas, Esq., Norbury Park	21 0	1 1
Gunner, James, Gr. to G. Finch, Esq.		1 1
Gurney, H. E., Esq., 65, Lombard Street		1 1
Gurney, Hudson, Esq., Keswick, Norwich	10 10	
Gurney, Samuel, Esq., 65, Lombard Street		1 1
Guthrie, D., Proprietor of *Scottish Gardener*		1 1
Hackwell, T., Gr. to the Dowager Lady Rodney		1 1
Hakins, Wm., Gr., Carne House, Dorchester		1 1
Hall, Wm., Nurseryman, Enfield		1 1
Halley, John, Nurseryman, Blackheath		1 1
Hamp, E. A., Gr. to J. Thorne, Esq.	10 10	
Hampton, Rd., Gr., Trevethow, near Hayle		1 1
Hanafy, P. J., Messrs. Lee, Hammersmith		1 1
§§§Hanbury, Robert, Esq., Poles, Ware, Herts	47 5	
Hancock, Edward, Gr., Oxford House		1 1
Harbin, George, Esq., Newton House, Yeovil		1 1
§Harcourt, Admiral O. Vernon, Swinton Park	10 10	1 1
§Harcourt, George Granville, Esq., Oxford		2 2
Hardie, William, Gr., Castle Ashby Gardens		1 1
Harding, Thomas, Gr. to Mrs. Kemble		1 1
Hardwick, William, Gr. to T. Morris, Esq.		1 1
Harrington, William, Nurseryman, Dalston	2 2	1 1
Harris, John, Nurseryman, Bloomfield		1 1
Harrison, John, Nurseryman, Darlington		1 1
Haslar, Francis, Gr. to the Rev. W. A. Fitzhugh		1 1
Hawkins, Col. J. P., Minsterworth		1 1
§Hay, Sangster, & Co., Messrs., Seedsmen	14 14	
Hayter, J., "The White Hart," Old Brompton	10 10	
Heale, William, Nurseryman, Calne, Wilts		1 1
§Henderson, Andrew, Wellington Nursery	2 2	1 1
Henderson, E. G., ditto		1 1
Henderson, J. A., Esq., 64, Hamilton Terrace	12 12	2 2
Henderson, John, Gr., Deysbrook		1 1
Henderson, Messrs., & Co., Pine-apple Place	31 10	
§Henderson, Arthur, ditto		1 1
Henderson, M., Gr., Cole Orton Hall		1 1
Henderson, William, Landscape Gardener		1 1
Henderson, W., Oxton Hill Nursery, Birkenhead		1 1
Herod, Thomas, Messrs. Henderson & Co.		1 1
Hervey, William, Esq.	10 10	
Hillhouse, Chas., Esq., Herne Hill, Surrey		1 1

GARDENERS' BENEVOLENT INSTITUTION ADVERTISEMENT CONTINUED.

	Donat. £	s.	An. Sub. £	s.
Hill, Isaac, Gr. to Thos. Grissell, Esq.			1	1
Hill, William, Horticultural Builder, Brixton			1	1
Hobson, Ed., Esq., Stoke Park, Bristol			1	1
Hodding, T., Esq., Delahay Street, Westminster			1	1
Hodge, James, Gr., Wadsley House, Sheffield			1	1
Hogg, Robert, Esq., 61, Winchester Street			1	1
§§Holford, Robert Steiner, Esq., Westonbirt	21	0		
Holland, Henry, Gr., Brent Lodge, Hendon			1	1
Holland, William, Nurseryman, Fulham Road			1	1
§§§Hope, Henry Thomas, Esq., The Deep Dene	31	10		
Horsley, G., Esq., South Lambeth			1	1
Howe, James, Esq., 18, Maida Hill, West			1	1
Huggett, W. T., Gr., to Colonel Harcourt			1	1
Hume, Leonard, Gr. to Rob. Hanbury, Esq.	10	10		
Hurst, Evan, Gr. to S. Holes, Esq.			1	1
Hurst, W., Gr. to J. Batby, Esq., Cheshunt			1	1
§Hurst, W., jun., Esq., 6, Leadenhall Street	10	10	1	1
Hurst, Henry, Esq., ditto	1	1	1	1
§Hurst & M'Mullen, Seedsmen, Leadenhall Street	21	0	2	2
Hutchison, Jas., Gr., Kidbrooke Park			1	1
Hutchison, William, Stratford-on-Avon			1	1
Hutt, Chas., Gr. to Miss Burdett Coutts			1	1
Hutt, James, Gr. to W. H. May, Esq.			1	1
Hutton, Thomas, Esq., Balham Hill, Surrey			1	1
Ingram, J., Royal Gardens, Windsor			1	1
Ingram, John, Gr. to Earl Brownlow			1	1
Ivery, Charles, Gr. to R. Hobson, Esq.			1	1
Ivery, James, Nurseryman, Reigate, Surrey			1	1
Ivery, Thomas, Gr. to F. Perkins, Esq.	10	10		
Ivery, William, Nurseryman, Peckham			1	1
Iveson, John, Gr., Sion House, Isleworth			1	1
Jackman, George, Nurseryman, Woking, Surrey	2	2	1	1
Jackson, Henry, Gr. to G. Beaufoy, Esq.			1	1
Jackson, T. & Son, Nurserymen, Kingston			1	1
Jenkins, T., Gr., Park Place, Dulwich			1	1
Jobson, John, Gr. to J. Winter Scott, Esq.			1	1
§Johnson, G. W., Esq., Winchester			1	1
Johnson, Jas., Nurseryman, Prescot			1	1
§Johnson, W. S., 60, St. Martin's Lane	10	10	1	1
§Johnston, E., Esq., Beaulieu, Middlesex	10	10		
Johnston, Rev. F., Marston, near York			1	1
§Johnstone, Sir J. V. P., Bart., M.P.	5	5	1	1
Jones, Robert, Gr. to W. Cotton, Esq.			1	1
Jones, John, Esq., Irongate Wharf, Southwark			1	1
§Jones, Wm., Esq., Clytha, Raglan			2	2
Jones, Wm., at Messrs. Rollisson, Tooting			1	1
Joy, T., Gr. to Mrs. Colston, Roundaway Pk.			1	1
Judd, Daniel, Gr. to Earl Spencer, Althorp			1	1
Kay, Peter, Nurseryman, Finchley			1	1
Keele, W. G., Gr. to J. Butler, Esq., Woolwich			1	1
Keith, John, Gr. to Mrs. Simpson, Great Marlow			1	1
Kelman, J., Gr. to Admiral Hamilton			1	1
Kemp, B., Gr., Rockbread House, Exeter			1	1
Kent, Henry, Gr., Tyttenhanger, St. Albans			1	1
Ker, Robert, 15, Queen Square, Liverpool			1	1
Kernan, J., Great Russell Street, Covent Garden			1	1
Kerr, William, Stanton, near Bakewell			1	1
Keynes, John, Nurseryman, Salisbury			1	1
Kidd, D., Gr., The Stud House, Hampton Court			1	1
King, T., Gr. to G. Lawrence, Esq., Salisbury			1	1
Kinghorne, F. R., Sheen Nursery, Richmond			1	1
Knight, John, Royal Gardens, Frogmore			1	1
L., Mrs., Balham Hill, Surrey	21	0		
Laing, D. G., Esq., Villiers Street, Strand			1	1
Laing, Samuel, Esq., M.P., Brighton	21	0		
Lake, T., Gr., West Derby, Liverpool			1	1
Lancaster, R., Gr. to Mrs. Upton, Sedburgh			1	1
Lane, J., Gr. to Horsley Palmer, Esq., Fulham			1	1
§Lane & Sons, Messrs., Berkhamstead			1	1
Lawrence, J., Gr. to J. Porson, Esq., Ham			1	1
Lawson, P., & Sons, Edinburgh and London	15	15	1	1
§§Lee, J. & C., Nurserymen, Hammersmith	42	0	2	2
Legge, the Hon. Mrs., Brandeston House			1	1
Legge, The Rev. Mr., Ashstead, near Epsom			1	1
Lessells, J., Gr. to Sir J. Boughey, Bart.			1	1
Liddiard, J., Gr., The Grange, near Uxbridge	10	10		
§§§Lindley, John, Esq., Acton Green	35	15		
Little & Ballantyne, Messrs., Carlisle			1	1
Llewellyn, J. D., Esq., Penttigar, near Swansea			2	2
Lochner, C. P., Esq., Doctors' Commons			1	1
§Loddiges, Conrad, Esq., Hackney	10	10	1	1
§London Manure Company, E. Purser, Esq., Sec.			1	1
Lovelock, D., Gr. to T. W. Gifford, Esq.			1	1
§Low, H., & Co., Messrs., Nurserymen, Clapton	13	13	2	2
Low, Stuart, H., ditto	1	1	1	1
§Loyd, Lewis, Esq., jun., 20, Hyde Park Gardens	10	10		
Lucas, J., Gr., Kimbolton Castle, Kimbolton			1	1
Lucking, W. J., Florist, Paddington			1	1
Lucombe, Pince, & Co., Messrs., Exeter			1	1
§Lyall, George, Esq., jun., Gatton Park, Surrey	10	10		
M'Arthur, Peter, Nurseryman, Edgware Road	1	1	2	2
M'Bey, G., Gr., Studbrooke Holme, Lincoln			1	1
M'Donald, J., at Messrs. Low & Co.'s, Clapton			1	1
M'Ewen, D., Gr. to Col. Wyndham, Sussex			1	1
M'Ewen, G., Esq.			1	1
M'Intosh, Donald, Seedsman, Salisbury			1	1
M'Millan, H., Mr. Cattell's Nursery, Kent			1	1
M'Mullen, W., Esq., jun., 6, Leadenhall Street			1	1
M'Pherson, R., Nurseryman, Plaistow, Essex			1	1
M'Robie, Charles, Gr. to O. Ricardo, Esq., M.P.			1	1
Mackay, J. B., Nurseryman, Totteridge, Herts			1	1
Mackay, James, Gr., Longworth, Ledbury			1	1
Mackintosh, G., Nurseryman, Hammersmith			1	1
Maclaren, John B., Gr. to S. C. Whitbread, Esq.	10	10		
Madgwick, R., The Swan Hotel, Alton, Hants			1	1
Malcolm, John, Esq., Lamorby, Bexley, Kent	10	10		
Mallison, Fred. T., Royal Gardens, Claremont			1	1
Mansfield, The Rt. Hon. the Earl of			1	1
§Marnock, Robert, Esq., Royal Botanic Gardens	5	5	1	1
Marter, Wm., Ottershaw Nursery, Chertsey			1	1
Martin, John, Gr. to Sir P. Pyke			1	1
§§Martineau, J., Esq., Basing Park, Alton	31	10	1	1
Mason, J., Gr., Hill House Gardens, Bristol			1	1
Matthews, Alexander, Nurseryman, Sheffield			1	1
May, Richard, 1, Albert Place, Penge, Kent	10	10		
Maybee, Charles, Esq., Kingsley, Alton, Hants			1	1
§§Mechi, J. J., Esq., Tiptree Hall, Kelvedon	45	5		
Meeking, C., Esq., Wood Lodge, Streatham			1	1
Meldrum, James, Nurseryman, Kendal			1	1
Meller, Walter, Esq.	10	10		
Mennie, A., at Messrs. Donald & Sons, Surrey	10	10		
Mercer, William, Esq.	10	10		
Metcalf, Jacob, Esq., Edgware Road			1	1
Methven, T., Stanwell Nursery, Edinburgh			1	1
Meux, Sir Henry, Bart., M.P., Waltham Cross			2	2
Mileham, James, Gr. to Sir Chas. Taylor, Bart.			1	1
Mills, George, Uxbridge Road, Ealing			1	1
Mills, R., Esq., Court Yard, Eltham, Kent			1	1
Milne, G., Gr. to Sir R. Throckmorton, Bart.			1	1
Milne, Arnott, & Co., Nursery, Vauxhall			2	2
§Milner, E., Esq., Crystal Palace, Sydenham	10	10		
Milroy, Peter, Gr. to J. W. Napier, Esq.			1	1
§Minier, Nash, & Nash, Seedsmen, Strand	26	5		
Mitchell, J., Gr. to Lord Wenlock, Escrick Park			1	1
Mitchell, T., Sumber Gardens, Worksop, Notts			1	1
Moore, Thomas, Botanic Gardens, Chelsea			1	1
Moore, William, New Hall, Salisbury			1	1
Moore, William, Nurseryman, East Dereham			1	1
Mordaunt, Lady, Walton House, Warwick			1	1
Mortlock, John, Esq., Melbourne, Royston	10	10		
Moses, George, Gr., Pepper Hall, Northallerton			1	1
Mountford, William, Gr., Kinmell Park			1	1
Mowl, J., Markhouse Common, Walthamstow			1	1
Moxon, Miss, Leyton, Essex	10	10		
Moxon, Felix, Esq., 27, Throgmorton Street	5	5	1	1
§§Moxon, Thomas, Esq., Leyton, Essex	10	10		
Muirhead, W., Gr. to Lady Charles Wellesley	10	10		
Munro, J., Forester to Marquis of Northampton			1	1
Murdoch, John, Gr., Sandgate Lodge, Sussex			1	1
Murdoch, John, Markham Gardens			1	1
Murray, William, Gr., Ormsby Gardens			1	1
Murrison, James, Gr. to the Duke of Montrose			1	1
Mylam, John, Gr. to G. Reed, Esq., Burnham	10	10		
Nash, Francis, Esq., Pickle Herring Wharf			1	1
Needl, John, Esq., M.P., Chippenham	10	10		
Nethercote, H. O., Esq., Northampton			1	1
§Noble, Cooper, & Bolton, Messrs., Seedsmen	10	10		
§§Norman, George Warde, Esq., Bromley, Kent	21	0	1	1
Norman, Mrs., Carshalton, Surrey			1	1
Norman, George, Esq., ditto			1	1
§Northumberland, His Grace the Duke of	253	6		
Nutting & Sons, Messrs., Seedsmen, Barbican			1	1
Oakes, Ralph, Gr. to W. H. Jones, Esq.			1	1
Odell, Islip, Esq., Upper Clapton			1	1
Ogden, John, Nurseryman, Coventry			1	1
Orchard, George, Gr., to J. Rigby, Esq., Kew			1	1
§Ormson, Henry, Horticultural Builder	17	17	1	1
Orr, William, Nurseryman, Hulme, Manchester			1	1
Osborne & Sons, Messrs., Nurserymen, Fulham			2	2
§Overstone, The Right Hon. Lord	21	0		
Owen, Richard, Leamington			2	2
Page, Joseph, 7, Woodstock St., Oxford St.			1	1
Page, Thos., Gr. to W. Leaf, Esq., Streatham			1	1
Pain, Robert, Nurseryman, Uxbridge			1	1
Palmer, Charles (legacy)	50	0		
Palmer, John, Nurseryman, Annan			1	1
Pamplin, James, Nurseryman, Walthamstow			1	1
Pantling, John G., Gr. to B. Smith, Esq.			1	1
Pape, R., Gr. to Joseph Pease, Esq.			1	1
Parker, John, Messrs. Fisher & Co., Sheffield			1	1
Parker & Williams, Messrs., Paradise Nursery			2	2
Parsons, Anthony, Gr. to W. Blake, Esq.			1	1
§Paul, George, Nurseryman, Cheshunt			1	1
Paul, William, Nurseryman, Cheshunt			1	1
Pawley, W., Bromley	10	10		
Paxton, George, Esq., Rock Hill, Sydenham	10	10		
§Paxton, Sir Joseph, M.P., Sydenham	105	0		
Pearson, J., Nurseryman, Hampstead Road			1	1
Pease, Joseph, Esq.	10	10		
Peel, John, Gr. to H. Bevan, Esq.			1	1
Peers, J. D., Gr. to J. Groom, Esq.			1	1
Perceval, Miss, Bramdean Lodge, Alresford			1	1
Perceval, Miss C., ditto ditto			1	1
Perceval, the Hon. and Rev. C. G.			1	1
Perkins, Thomas, Gr. to S. C. Fletcher, Esq.			1	1
Perry, J., Algerkirk Gardens, Spalding			1	1
Peto, Sir S. Morton, Bart., Kensington	21	0	2	2
Phelps, Jas., Gr. to H. Bright, Esq.			1	1
Phipps & Co., Messrs., Upper Thames Street	11	11		
Pillens, Wm., Gr. to Duke of Northumberland			1	1
§Pince, Robert T., Esq., Exeter			1	1
Pitman, W. F., Esq., Threadneedle Street			1	1
Plymouth, The Seed, Agric. Imp. and Man. Comp., Union Road, Plymouth, W. E. Rendle,			2	2
Pond, James, 6, Elm Place, Bath			1	1
§Pontey, Alexander, Nurseryman, Plymouth	10	10	1	1
Pope, Thos., Gr. to Sir G. Osborne, Bart.			1	1
Pott, R., Esq., Bridge Street, Southwark	10	10		
§Pownall, Henry, Esq., 20, Ladbroke Square	10	10		
Preston, T., Gr., Woodford Hall, Woodford			1	1
Prior, E., Esq., York Terrace, Regent's Park			1	1
Protheroe, J., Roll's Gardens, Chigwell, Essex			1	1
Protheroe & Morris, Messrs., Leytonstone			1	1
Ramsay, Henry, Brooklands Nursery, Chelsea			1	1
Reed, G., Esq., Burnham, near Bridgewater	10	10		
Reed, John L., Messrs. Lee, Hammersmith			1	1
Reeves, J. R., Esq., King's Arms Yard	10	10		
Reith, Alexander, C. Loddiges, Esq., Hackney			1	1
Richardson, W., Esq., Horseldown			1	1
§Ridgway, G. S., Esq., Chiswick	10	10		
§Rivers, T., Nurseryman, Sawbridgeworth	26	5	2	2
Robins, E., Gr. to Colonel Hawkins			1	1
Robins, William, Gr. to W. Beach, Esq.	10	10		
Robinson, F. E., Esq., Old Bank, Oxford			1	1
Robinson, George, Gr. to E. R. Tunno, Esq.			1	1
Robinson, James, Gr., Chiselhurst			1	1
Robinson, Joseph	10	10		
Robson, John, 15, Clifton Terrace, Brighton			1	1
§Rollisson & Sons, Messrs., Nurserymen, Tooting	10	10	2	2
Ronalds, Robert, Nurserymen, Brentford			1	1
§Rosher, E., Esq., St. John's Wood			1	1
Rothschild, Messrs., St. Swithin's Lane	21	0		
§Rothschild, The Baron, M.P.	42	0		
Rothschild, The Baroness, Gunnersbury Park			1	1
§Roupell, Wm., Esq., M.P., Brixton	15	15	1	1
Rowe, F., Gr., Peterborough House, Fulham			1	1
Rowell, W., Gr., Boldon House, West Boldon			1	1
§Rowland, A., Esq., Rosenthal, Lewisham	5	5		
Roy, J., Nurseryman, Aberdeen	10	10		
Rucker, Sigismund, Esq., Wandsworth	31	10		
Russell, Lord John, M.P.	10	10		
Rye, Henry, Gr. to O. S. Onley, Esq.			1	1
Sanders, James, Gr., Ashurst, Dorking			1	1
Sanders, John, Gr. to J. Assheton Smith, Esq.			1	1
Sansom, John, Gr. to the Hon. Mrs. Legge			1	1
Scarboro, William, Gr., Hendon			1	1
Scholey, Wm., Gr., Burnham Hall, Norfolk	10	10		
§Schroeder, J. H., Esq., Brighton	10	10		
Schroeder, Mrs., ditto	10	10		
Scobie, John, Gr., Holland House, Kensington			1	1
Scott, Alexander, Gr. to Sir G. Staunton, Bart.			1	1
Scott, H., Gr., Ponsbourne Park, Hertford			1	1
§Scott, J. R., Esq., Crouch End, Hornsey			1	1
Scott, James, Gr. to R. V. Yates, Esq.			1	1
Sealey, John, Mugland, Nursery, Bristol			1	1
Searle, William, Gr. to T. L. Whitmore, Esq.			1	1
Sefton, the Right Hon. the Earl of	10	10		
Selkirk, John, Gr., Porters, near Barnet			1	1
Shackley, Edward, Gr., Croft Lodge, Ambleside			1	1
Shakshaft, Samuel, 25, Park Street, Islington			1	1
Shanks & Son, Messrs., Arbroath			1	1
Sharland, T., Gr., Gunnersbury House, Acton			1	1
Shepherd, J., Gr., West Dean House, Chichester	10	10		
Sheppard, S., Gr. to T. S. Oudon, Esq.			1	1
Shuard, John, Gr., Herne Hill			1	1
Shilling, S., Nurseryman, North Warnboro'			1	1
Shurvin, J., Gr. to W. Miskin, Esq., Eltham			1	1
Sim, R., Nurseryman, Footscray, Kent			1	1
Simpson, Edward, Gr. to Lord Wrottesley			1	1
Simpson, Geo., Esq., The Old Palace, Richmond			1	1
Simpson, T. B., Esq., Cremorne Gardens			1	1
Skene, John, Gr. to Sir R. G. Gerard, Bart.			1	1
Skinner, George Ure, Esq., Rickmansworth	33	6		
Slade, A. F., Esq., Broad Street	10	10		
Smith, Abel, Esq.	10	10		
Smith, Charles, Gr. to Captain Chawner			1	1
Smith, C., Gardener, Park Place, Dulwich			1	1
Smith, Charles, Gr. to A. Anderson, Esq.			1	1
Smith, George, Gr. to J. Hargreaves, Esq.			1	1
§Smith, W. B., Esq., Gt. George St., Westminster			1	1
Smith, J., Gr. to Lord Tenterden			1	1
Smith, John, Royal Botanical Gardens, Kew			1	1
Smith, John, Gr. to Miss Webb			1	1
Smith, John, Gr. to the Earl of Scarborough			1	1
Smith, Oswald, Esq., Dexley, Kent	10	10		
Smith, Richard, Nurseryman, Worcester	10	10		
Smith, T., Gr. to Hon. and Rev. J. S. Cocks,			1	1
Snow, Seward, Gr. to Earl de Grey, Wrest Park	10	10		
Snow, W., Gr. to Earl de Grey, Putney			1	1
Soden, J., & Co., Nurserymen, Woodstock			1	1
Solomon, L., Fruiterer, Covent Garden	1	1	1	1
South, Sir James, Campden Hill, Kensington			1	1
Sowerby, J. De C., Esq., Royal Bot. Gardens			1	1
Spary, E., Queen's Graperies, Brighton			1	1
Spavy, George, Clumber Park, Worksop			1	1
Speed, Joseph, Gardener, Saffron Walden			1	1
Spencer, James, Esq., Leicester			1	1
§§Spencer, J., Gr. to the Marquis of Lansdowne	10	10		
Spire, Robert, Gr. to W. Taylor, Esq.			1	1
Spivey, Edward, Gr. to J. N. Houblon, Esq.			1	1
Staniforth, Rev. T.	10	10		
Stanley, George, Bexley, Kent	10	10		
Stanley, Wm., Gr. to O. Smith, Esq.			1	1
Stannard, J., Gardener, Priory, Roehampton			1	1
Starkey, J. B., Esq., Spye Park, Chippenham			1	1
Stephens, Charles, Esq., Brixton, Surrey			1	1
Stephenson, Jas., Gr. to Harvey Combe, Esq.			1	1
§Stevens, J. C., Esq., King St., Covent Garden	16	11		
Stewart, Alexander, Loughcrew, Ireland			1	1
Stewart, G., Gr. to Sir J. Pollen, Bart.			1	1
Stone, Mrs., Dulwich			1	1
Streacy, T., Pewter Platter, Norton Folgate			1	1
§Strachan, J. M., Esq., Teddington Grove			1	1
Stuart, William, Esq., 18, Hill St., Berkeley Sq.	10	10		
§Sullivan, Rt. Hon. Laurence, Fulham	10	10		
Sutherland, George, Yorkshire			1	1
Sutherland, His Grace the Duke of, K.G.			1	1
Sutton & Sons, Messrs., Seedsmen, Reading			2	2
Tanqueray, C., Esq., Vine St., Bloomsbury	5	5	1	1
Tanqueray, John S., Esq., ditto			1	1
Tarent, G., Gr., Plumber's Lane, Camberwell			1	1
§Taylor, Thos., Esq., 4, Scott's Yard, Cannon St.	11	11		
Taylor & Son, Messrs., Kensall Green			1	1
Taylor, Adam, Gr. to Weston Wood, Esq.			1	1
Taylor, George, St. John's Market, Liverpool			1	1
Taylor, Wm., Mineral Wells, Streatham, Surrey	1	1	1	1
Thibaut & Keteleer, Messrs., Paris			1	1
Thomas, George, Gr. to J. Baxendale, Esq.			1	1
Thompson, Geo., Gr. to George Lane Fox, Esq.	10	10		
Thomson, David, Leith Walk, Edinburgh			1	1
Thomson, George, Gr. to Mrs. Dixon			1	1
Thomson, Wm., Gr. to the Duke of Buccleuch			1	1
§§Thorne, J., Esq., Mawbey House, Lambeth	11	11		
Tiley, E., Nurseryman, Bath			1	1
Tillery, William, Gr. to the Duke of Portland			1	1
Tillyard, G., Gr. to Rt. Hon. Earl Eversley			1	1
Tobutt, Wm., 5, Priory Cottages, Lambeth			1	1
Todman, James, Nurseryman, Eltham, Kent			1	1
Toogood, C., Gr. to Sir T. F. Lewis, Bart.			1	1
Toward, Andrew, Royal Gardens, Cowes	10	10		
§Travers, J. H., Esq., St. Swithin's Lane, City	10	10		
Trotter, J., Gr. to the Duke of Beaufort			1	1
Truelove, W., Gr., Buckland Court, Dorking			1	1
Truman, Hanbury, & Co., Messrs., Spitalfields	10	10		
§Turner, Charles, Nurseryman, Slough	11	11	1	1
Turrill, John, Hartley Maudit, Alton, Hants			1	1
Turtle, James, Gr. to E. R. Pickering, Esq.			1	1
Tylor, Francis, Esq., Uppingham			1	1
Vuir, James, Gr. to Lady Neville, Dangstein			1	1
Veitch, James, Nursery, Exeter			1	1
§§Veitch, J., jun., Royal Exotic Nursery, Chelsea	47	5	1	1
Veitch, John Gould, ditto ditto			1	1
Vickers, William, Gr. to Viscount Folkestone			1	1
Videon, G., 1, Clarendon Place, Edgeware Road			1	1
Wackrell, Uriah, Gr. to H. Wheeler, Esq.			1	1
Wadey, Michael, Gr. to C. Meeking, Esq.			1	1
Wainwright, John, Gr., Ruston Hall, Kettering			1	1
Ward, E. M., Gr. to C. Kinnersley, Esq.			1	1
Ward, R. C., Seedsman, Bath			1	1
§Warner, C. B., Esq., Stratford, Essex	1	1	1	1
Wartnaby, Wm., Esq., Market Harborough			1	1
Waterer & Godfrey, Messrs., Nurserymen	23	2		
Waterer, John, Nurseryman, Bagshot			1	1
Weaver, Thomas, Gr. to Kevill Davis, Esq.			1	1
Webb, John, Gr. to W. H. Cox, Esq.	10	10		
Webber, M., & Co., Messrs., Covent Garden			1	1
Wedlake, George, Gr. to Mrs. Wade Brown			1	1
§Weeks, J., King's Road, Chelsea	12	12		
Wells, Chas., Gr., Highnam Court, Gloucester			1	1
Wells, George, Gr. to J. Hussey, Esq., Kent			1	1
Wells, Joseph, Shorn, near Gravesend			1	1
Wells, J., Gr. to J. B. Phillipson, Esq.			1	1
Wells, Samuel, Gr., Holme Lacy, Hereford			1	1
§Wheeler, J. C., & Sons, Messrs., Seedsmen			1	1
White, John, Gr., Norman's Court, Stockbridge			1	1
Whiting, J. B., Gr. to H. T. Hope, Esq.			1	1
Wighton, J., Gr. to Lord Stafford, Cossey Hall			1	1
Wilcox, —, Dunham Massey, Altringham			1	1
Wilder, E., Esq.	10	10		
Wilder, Mrs., Belmont House, Havant			1	1
Wilkins, William, Nurseryman, Newport	10	10		
Williamson, Joseph, Gr. to the Earl of Lonsdale			1	1
Wilson, Isaac, Gr. to A. Mortimer, Esq.			1	1
Wilson, R., Esq., Corn Exchange, Sheffield			1	1
Wilson, William, Gr. to Lord Melford			1	1
Winfield, William, Gr., Warwick			1	1
Winston, Rev. B., Harcourt Buildings, Temple			1	1
Wintle, Thomas, Esq., Swanswick Villa, Bath			1	1
Witham, William, Horticultural Builder			1	1
Wood & Ingram, Messrs., Nurserymen	1	1	1	1
Wood, William & Son, Messrs., Nurserymen			1	1
Wood, Western, Esq.	10	10		
Woodbourne, Jas., Esq., Kingsley, Alton, Hants			1	1
§Woodroffe, Charles, Harrow Road	10	10	1	1
Woods, W., Heath Nursery, Leighton Buzzard			1	1
§Woods, Rd., Bedford Nursery, Hampstead Road	26	5	1	1
Woods, John, Gr., Ollerton, Notts			1	1
Woolley, Samuel, Gr. to H. B. Ker, Esq.	10	10		
Wortley, B., at Mr. Barnes', Camden Nursery			1	1
Wortley, Gr. to Mrs. Maubert, Norwood			1	1
Wrench & Sons, Messrs., London Bridge	52	12		
Wright, George, Mitcham Common, Surrey			1	1
X. Z., per Mr. Chandler, Vauxhall	10	10		
Yates, —, Esq., Sale Moor, Manchester			1	1
Yole, Francis, Gr., Plymouth			1	1
Young, Andrew, Tadsworth, Banstead, Surrey			1	1
Young, George, Gr. to Mrs. Stone, Dulwich			1	1
Young, George, Gr. to Lord Braybrooke, Essex			1	1
Young, John, Esq., Elm Cottage, Taunton			1	1

[Those marked thus § have served as Stewards.]

FIRST-CLASS HOLLYHOCKS.

FINE SEEDLINGS FROM

WILLIAM CHATER'S Celebrated and Newest Varieties that will flower well in September at 30s. per 100
ditto ditto ditto 20s. ,, 100
Ground Roots according to colour, also at .. 30s. ,, 100
Seed in 12 separate colours, the Collection .. 10s. 0d.
,, 6 ,, ,, ,, ... 5 0
From varieties such as Pourpre de Tyre, Memnon, White Globe, Hon. Mrs. H. Ashley, Canary, &c., in 12 separate colours, the Collection .. .. 7s. 6d.
Ditto in 6 separate colours, the Collection .. 4 0
Seed from 20 of the best varieties, mixed, per pkt. 5 0
,, 12 ,, ,, ,, 2 6
,, good mixed, also a single variety ,, 1 0
The above can be procured from the Nurseries, Saffron Walden, Essex.

HOLLYHOCK SEED FROM NEW VARIETIES.

J. CHATER AND SON offer the above from 12 new varieties, separate packets, the collection, 3s. 6d.
24 varieties, best older sorts, 3s. 6d.
Best mixed, 20 sorts, 200 seeds, 1s. 6d.
J. C. & SON feel confident the above will give satisfaction, having been saved with great care.
Strong seedling plants, 20s. per 100.
If sown now will flower by September.
Nurseries, Haverhill.

NEW SORTS OF SEEDS, POST FREE.—

	Per packet—s. d.
CUTHILL'S NEW ZEALAND RUNNING BEAN ..	2 6
TURNER'S COTTAGERS' KALE	1 0
SUTTON'S SUPERB WHITE COS LETTUCE	1 0
HOLCUS SACCHARATUS (or Sorghum)	0 6
TRUE ASPARAGUS KALE	0 6

SUTTON & SONS can supply the above, post free, all warranted new and genuine.
Royal Berkshire Seed Establishment, Reading.

COMMON LAURELS.

S. PONSFORD begs to announce to the Trade or other extensive planters that he has a large Stock of the above, from 2 to 5 feet high, bushy, which he is prepared to supply on reasonable terms.
Also a fine Stock of Dwarf-trained PEACHES, NECTARINES, APRICOTS, &c., of the leading varieties. Standard APPLES, PLUMS, &c.
S. P. would also call attention to his Standard and Dwarf ROSES, most of the leading kinds of which he can still supply in fine healthy condition. Prices on application.
CATALOGUES of GENERAL NURSERY STOCK forwarded on receipt of one stamp.
Loughborough Park Nurseries, Brixton, S.

FIVE SILVER CUPS

WERE AWARDED TO

A. PAUL AND SON, NURSERYMEN, Cheshunt, Herts, for five Collections of ROSES at the Grand National Rose Show held in St. James's Hall, London, in July. Also FIVE FIRST PRIZES at the Royal Botanic Society's Shows in May and June last. The sorts which won these prizes are now offered at 18s. to 24s. per dozen for standards, 12s. to 18s. per dozen for dwarfs. A PRICED DESCRIPTIVE CATALOGUE forwarded on application, post free.

THE GREAT VINE AT HAMPTON COURT.

THE SUBSCRIBERS being the holders of the Royal Kitchen Gardens, Hampton Court, are enabled to offer genuine the famous and truly excellent HAMPTON COURT BLACK HAMBURGH GRAPE.
Strong well-ripened plants in 9-inch pots, 42s. and 60s. per doz.
,, ,, fruiting plants in 12-inch pots, 10s. 6d. each.
If purchased in large numbers a considerable reduction will be made in price.—JACKSON & SON, Nurseries, Kingston, S.W.

TANSLEY NURSERY, NEAR MATLOCK.

To GENTLEMEN PLANTING AND THE TRADE.

J. SMITH begs to offer his STOCK OF TREES AND SHRUBS, of various sizes, and in addition to his general stock of the leading kinds, he has this season to offer an Extra Stock of many hundred thousands of fine Larches, Scotch Firs, and Highland Pines; a large quantity of Evergreens, Privets, Mahonia aquifolia, and other plants for planting under cover. Many things are grown in large quantities, and will be sold on advantageous terms to the trade and gentlemen requiring large lots.—Catalogues sent free on application. The Nurseries are on the Mansfield and Nottingham roads, and 2 miles from Matlock Bridge Station on the Midland Railway.

GARDEN SEEDS.

WILLIAM P. LAIRD, NURSERYMAN and SEEDSMAN, Dundee, is now prepared to execute orders for GARDEN AND FLOWER SEEDS. He can particularly recommend his stocks of Cauliflower, true Musselburgh Leek, Dwarf Red Beet, Brussels Sprouts, Broccoli, and Cabbage of sorts, these having been carefully saved by himself and by gardeners specially for him.
Lists of Seeds and Plants sent on application.

WANTED, the ADDRESSES of the Principal Market Gardeners who Grow for Covent Garden Market Choice Vegetables and Fruit, such as

Asparagus	Pine Apples
Cucumbers	Grapes
Mushrooms	New Potatoes
Brussels Sprouts	Seakale, &c.

Address Box P. 5, General Post Office, Liverpool.

EARLIEST WRINKLED PEA.

FAIRHEAD AND SON, SEED GROWERS and MERCHANTS, Lewisham, Kent, beg respectfully to offer their new EXCELSIOR PEA, of robust habit, delicious flavour; much earlier than Napoléon or Eugénie. They can confidently recommend it as the earliest and best Wrinkled Marrow Pea in cultivation. Price on application.

EARLY PEAS.

WAITE'S DANIEL O'ROURKE PEA; the earliest Pea in cultivation.
EARLY NAPOLEON; a Blue Wrinkled Marrow Pea, as early as EMPEROR.
EARLY EUGENE; a White Wrinkled Marrow Pea, as early as EMPEROR.
Prices to be had on application of J. G. WAITE, Seed Establishment, 181, High Holborn, London, W. C.

THE EARLIEST PEA.—DUNNETT'S FIRST EARLY is in every respect superior to "Daniel O'Rourke," being several days earlier, having finer pods, and richer in flavour, height 2½ feet. For an early dish of fine-flavoured Peas we can confidently recommend this; 2s. per quart.
CHAMPION CABBAGE, the earliest and best sort, if sown in succession, may be had fit for table throughout the year, 8d. per ounce, or 1s. post free.
BUTLER & MCCULLOCH, Covent Garden Market, London.

EXCELSIOR MARROW PEA (KNIGHT'S).—This new Pea is a decided improvement on the well-known Ringwood Marrow, being quite as early, greater cropper, longer pod, larger pea, superior flavour, and greener in colour. A great acquisition either for the amateur or the market gardener. 2s. 6d. per quart. Price to the trade upon application To be had of
NUTTING & SONS, Seedsmen, 60, Barbican, London, E.C.

"JEYES'S CONQUEROR PEA;" 3s. 6d. per Quart. —This remarkable Pea was sent out to a few private growers a few years since, and it has established its own reputation so much, that although I have kept on increasing my supply every year, I have always had to deal it out with great caution, lest my regular customers should not be supplied; and long before the season for sowing was over I have been sold out, and had to turn away many scores of customers.
For Testimonials and descriptions see *Gardeners' Chronicle* of Jan 8. The following gentlemen have permitted me to say they consider it the very best Pea in cultivation:—Mr. Mackie, Delapre Abbey, Northampton; Mr. Tanton, Moulton Grange, Northampton; Mr. Judd, Althorp Park, Northampton; Mr. Thos. Watts, Market Gardener, Northampton; Mr. John Moring, Market Gardener, Northampton; and hundreds of others.—It can be had genuine of Messrs. NOBLE & Co., Fleet Street, London; Messrs. FLANAGAN & SON, Mansion House St., London; Messrs. NUTTING & SON, Barbican, London; and all respectable Seed-merchants in the United Kingdom.
'18, Sheep Street, Northampton.

NEW ZEALAND RUNNER BEAN, 1s. per doz.; 7s. 6d. per 100.
AUSTRALIAN do. do., a great acquisition, pods similar to Dwarf Beans, 1s. per 100.
True COTTAGER'S KALE, 1s. per packet.
DAVIS'S INCOMPARABLE NEW BROCCOLI, 1s. per packet.
CUSTARD VEGETABLE MARROW, 6d. per packet.
PAGE'S IMPERIAL ORANGE GLOBE MANGEL. This variety has superseded all others, 8d. per lb.
PAGE'S IMPROVED SUSSEX SWEDE, withstands mildew, ensuring good results from an early plant, 1s. per lb.
PAGE & TOOGOOD, Seed Growers and Merchants, Southampton.

LONG-PODDED RUNNER BEANS, a new and very desirable variety raised by J. Harvey, Esq., Oulton High House. The following is the description he gives of it:—Flowers bright pink, Beans curiously marked, very prolific, and handsome in the pod, far superior to the common Scarlet Runner in flavour, and successive crops will produce till the cold of winter cuts them off. 2s. 6d. per quart.
Lynch's Star of the West Cucumber, true .. 1s. 0d. p. packet
Ayres's Perpetual Black Spine .. .. .. 1 6 ,,
Melville's Treble Curled Garnishing Borecole 1 0 ,,
Price for the above to the Trade on application.
The Plymouth Seed Company, Plymouth.

THE EARLIEST ASH-LEAVED KIDNEY POTATOES.—For the true early short-top Lancashire kind, unsurpassed for forcing and early borders, price 16s. per cwt., apply to JAS. TYNAN, Seedsman, 68, Great George St., Liverpool.

SEED POTATOES from the North of Scotland.—The following varieties, carefully grown by the Subscriber for several years, and recommended for seed:—
FLUKES.
DALMAHOYS.—A variety allied to the Regent, but 3 to 4 weeks earlier in readiness.
PROTESTANTS.—A late White variety; large cropper, and has hitherto escaped disease.
Price of each kind, 12s. per 2-cwt. sack, free to London or Newcastle.
Orders and remittances to be addressed to ALEXANDER SIMPSON, Beauly, Inverness-shire, who refers to the Editor of the *Agricultural Gazette*.

SODEN'S EARLY OXFORD POTATOES.—The Advertisers beg to offer the above in large or small quantities, warranted true, and free from disease; grown by R. WEBB, Calcot. Also,

True Walnut-leaved Kidney	York Regents ditto
Ash-leaved ditto	Imperial Kidney (Webb's)
Fortyfold ditto	Lemon Kidney

And all other kinds worth planting.
Can be seen, and prices had of JOSEPH MAY & Co., Seedsman, 1, Wellington Street, Waterloo Bridge.

POTATOES FOR EARLY PLANTING.

MYATT'S PROLIFIC SEEDLING ASH-LEAF KIDNEY.—For description of this valuable variety, which has again given such universal satisfaction, see Dr. Lindley's report in the *Gardeners' Chronicle* of August 1, 1857, at the Horticultural Society's Garden, wherein it is described as a "better cropper than the old Ash-Leaf, and one of the best early kinds." Price per bushel, 7s. To be had of Mr. J. MYATT, Evesham; or of Mr. J. MYATT, Camberwell. A small quantity of Yellow Globe Mangel Seed saved from large selected roots for stock. The trade on application.

BEST POTATO IN THE WORLD—IMPERIAL KIDNEY.

MR. WEBB, of Calcot, having succeeded in raising a quantity of the above excellent POTATO, begs to offer it to the public as the Best of its Class in every respect. Its quality cannot be surpassed, its yield most abundant, and its size from 2 inches to 9 inches long. Price 16s. per bushel, and no less quantity than 1 bushel disposed of. Also about 3000 true KENTISH COB NUT Trees from 2 to 4 feet high.—Apply to Messrs. JOSH. MAY & Co., 1, Wellington Street, Strand, or to Mr. WEBB, Calcot, near Reading, Berks.

EARLY POTATOES, LEMON KIDNEYS.—Selected Seed of this choice and early variety (*vide* article in "Royal Agricultural Journal," Part I., Vol. xviii.), may now be had on application to the Author's Bailiff, JOHN HELM, Morecombe, near Lancaster, price 2s. 6d. per stone.
N.B. A reserve of seed has been retained from sprouting for the purpose of supplying late orders. Copies of the article (third edition) may be had from the above address, price by post, 1s. 1d.

EXHIBITION OF CAMELLIAS,
VAUXHALL NURSERY, WANDSWORTH ROAD.

MILNE, ARNOTT, & CO.,
(SUCCESSORS TO CHANDLER & SONS),

HAVE much pleasure in announcing that the large Collection of CAMELLIAS for which this Nursery has so long been celebrated, is now coming finely into bloom, and will improve daily, and continue in perfection several weeks. Open to visitors every day except Sunday.

MILNE, ARNOTT, & Co.,
NURSERYMEN, SEEDSMEN, AND FLORISTS, WANDSWORTH ROAD, LONDON, S.

MESSRS. E. G. HENDERSON & SON

RESPECTFULLY ANNOUNCE THAT THEY WILL FORWARD, POST FREE ON APPLICATION, THEIR

NEW CATALOGUE FOR 1859,

which includes many highly valuable descriptive features of the leading NEW FLOWER SEEDS and othe NEW PLANTS for the ensuing season, with a splendid Collection of

GOURDS, VEGETABLE MARROWS, &c.,

IN MESSRS. E. G. HENDERSON AND SON'S possession, from which they are enabled to offer selections of very valuable and ornamental kinds to amateur cultivators, who are wishful to enter upon the cultivation of some of the most singularly-picturesque and remarkable vegetable fruits on record.
Those horticulturists who are at all acquainted with the different sections, are aware of the wonderful proportions, grotesque and beautiful forms, as well as the very beautiful colours which are delineated upon their exterior surfaces—ranging in size from the Mammoth Gourd or Pumpkin, of between 100 or 200 lbs. weight each, of antediluvian-like origin and massive bulk, down to almost every intermediate size and form, as represented in the remarkably beautiful and miniature bright "Orange" and "Golden Drop" varieties, including a most wonderful series of elegant forms and shapes, which appear at the first impression to be the result of some strange mal conformation of vegetable structure, rather than the uniform and constant productions of Nature. As many of these varieties take their names from their individual forms and colours, the undermentioned list will give an accurate conception of their outline; and it only appears requisite to remind those who wish to study the habits of these most remarkable fruits, that the established names of the greatest number of the varieties and species now offered are not to be regarded at the best but as awkward and clumsy imitations of such forms in Nature, but as indicative of productions that are really characterised by an exquisite symmetrical outline, and perfect approach to the forms they are represented to assume. The colours of the fruit are rich, varied, and effective,—from white to rich crimson-orange and scarlet, blended and harmonised with olive-green and bronze, and beautiful bright polished green, barred and richly netted with transverse and geometrical lines and ribs of white, and otherwise rich green ground colour, barred with rich orange. The whole of the preceding colours and tints are again seen unmixed, purely self, each in distinct plants. In their habits of growth, the species differ in their accommodation to gardens of various extent, some of them with a gigantic structure—others with neat limited growth; some of them truly oriental in aspect, vieing in their noble umbrageous foliage with the tropical Ficus, Caladium, &c., admirably adapted for covering large rustic arbours, and summer retreats, or training to any extent, or in any sheltered position, o trellis-work, when furnished with strong supports, to thei climbing habits. The smaller and mediate kinds are amongst the most picturesque objects for front-wall effect in suburban gardens, around window trellis-work, such positions being suited to the most prolific and free-fruiting ones. The smaller golden-fruited Orange and Pear Gourds are amongst the brilliant coloured ones for select villa residences.
The section of Vegetable Marrows is perhaps the most valuable in the tribe, for their fine flavour in pies, soups, &c., some of them most nutritive in their young or medium growth, others when fully matured. The present enumeration includes the finest collection of Marrows ever offered, some of them very productive and delicious in flavour, and have been collected and grown under the personal superintendence of an eminent grower engaged in their cultivation many years. It is pretty well known that the large blossoms of Gourds, &c., are much sought after by bees in search of their rich stores of honey, and hence arises the many intermediate varieties by this mode of impregnation, the wings of these insects being often literally coated over with the fertilising powder or grains, and which, by its admixture of one variety with another, causes some difficulty in retaining the true character of desirable varieties by their own seed. In the kinds now offered many of the seeds have been artificially impregnated and preserved in their quality, and others have been fertilised with desirable kinds to ensure superior varieties. A general collection of the higher-coloured varieties blended with others, having well-matured fruits, would produce an effect that would startle with momentary surprise all who are strangers to these plants; and it is no exaggeration to say, that their rich combination of colours would appear to reflect back the gorgeous tints of an autumnal sunset. It is indeed questionable whether the entire collection of tropical fruits (strictly so called) would bear a comparison, or vie in effect of brilliancy and beauty with those now spoken of. They are, in Nature, the golden reality of what the fabled fruits in the Garden of the Hesperides were in romance. Amongst vegetable fruits, they include some of the most magnificent in size, the most beautiful in colour, and the most remarkable in symmetry yet known in gardens, embodying a diversity of feature, in size and outline, almost as complete as may be imagined to exist between an elephant and a humming-bird.

Wellington Nursery, St. John's Wood, London.

SEEDS RIPENED ON THE CONTINENT.

JAMES CARTER & Co.

HAVING observed their name mentioned in an advertisement in connection with a late correspondent, feel it their duty to state that, preferring to have their Seeds from the Continental growers *direct*, one of the Firm has travelled during the past autumn with that object, *and purposes doing so every season*; the services of the correspondent alluded to are therefore dispensed with. Their Seeds for the present season, having been *personally* selected, are better than any they have hitherto offered.

JAMES CARTER & CO., Seedsmen, 238, High Holborn, London, W.C.

GENUINE KITCHEN GARDEN SEEDS.

JAMES CARTER & CO.

ARE NOW READY TO SUPPLY SEEDS FOR THE VEGETABLE AND FLOWER GARDEN, WHICH WILL BE FOUND, AS USUAL, OF THE BEST QUALITY ONLY.

CARTER'S "ENCYCLOPÆDIC CATALOGUE OF SEEDS,

AND GARDENER'S VADE MECUM."

The Twenty-fourth Annual Issue of the above is now ready, and, in addition to its usual comprehensiveness, has affixed a CALENDAR OF OPERATIONS for each month in the year for the Vegetable and Flower GARDEN, also for the Stove, Conservatory, Greenhouse, Orchid House, Pineries, Vineries, Pits, Frames, &c., forming a complete Gardener's Book of reference, which it is hoped will be found useful alike to the Amateur and professional Gardener. Forwarded free of charge and post paid to all parts of the world upon application.

JAMES CARTER & CO., Seedsmen, 238, High Holborn, London, W.C.

SELECT LIST OF NOVELTIES FROM CATALOGUE 1859.

Carter's Tom Thumb Nasturtion	Lupinus nanus albus	Fenzlia dianthiflora
Lagenaria vittata	Viscaria Dunetti	Gaillardia hybrida grandiflora
Œnothera Drummondi nana	Laxton's Hybrid Pinks	Lobelia formosa
Lupinus Hartwegi cœlestinus	Dwarf spotted Nasturtion	Viscaria cœli rosa alba
Œnothera bistorta Veitchi	Nolana paradoxa violacea	Marigold French Orange.
Cosmidium Burridgi		

J. C. & Co. also wish to call attention to their Splendid Collections of Imported

GERMAN & FRENCH ASTERS, GERMAN STOCKS, BALSAMS, & WALLFLOWERS,

UNIVERSALLY ACKNOWLEDGED TO BE UNSURPASSED.

For a Full Description of the above articles they beg to refer to their CATALOGUE, which will be forwarded gratis and post free on application to

JAMES CARTER & Co., Seedsmen, 238, High Holborn, W.C.

TO GRAPE GROWERS.

BUSBY'S STOCKWOOD GOLDEN HAMBURGH GRAPE.

JAMES VEITCH, JUN.,

BEGS to call attention to this SPLENDID GRAPE, of which he is now supplying VINES at the undermentioned prices:—

	Each.—s.	d.
Fine extra strong Vines, in 12-inch pots, fit for fruiting in 1859 (with well ripened Wood)	30	0
Fine strong do., in 9-inch pots (with good well ripened Canes)	15	0
Fine 1-year old Vines	10	6

☞ *Special and advantageous prices to the Trade, varying with the quantity taken, on application.*

This Grape having been so frequently before the Public, J. V., Jun., deems it unnecessary to speak any further as to its qualities; he is, however, happy to say that he has received the most satisfactory reports from those who have grown and fruited it during the present season, which fully confirm all that has heretofore been said of it.

BUSBY'S GOLDEN HAMBURGH GRAPE.

JAMES VEITCH, JUN., begs to announce that he offers PRIZES of Five Guineas for the Best Three Bunches of the above Grape at the two following Exhibitions:—

June 29 and 30,—London Horticultural Society, at St. James's Hall .. .. £5 5s.
September 7 and 8, at the Crystal Palace 5 5

Royal Exotic Nursery, Chelsea, S.W—February 19.

CHOICE FLOWERS.

BUTLER & McCULLOCH'S SPRING CATALOGUE OF SEEDS,

ARRANGED on a new and original plan, with copious Descriptive and Cultural Notes, and containing many new and rare species and varieties not found in any other Catalogue, now ready and may be had free and post paid on application.

FLOWER, SHRUB, TREE, and VEGETABLE SEEDS, the crop of 1858, saved with the greatest care, by the most eminent growers.

We may also state that the Sardinian correspondent of Messrs. JAMES CARTER & Co., whose Seeds, especially Carnations and Picotees, have given such universal satisfaction, has transferred the Agency from that firm and appointed us his representative in this country. To meet the growing demand for first class flowers, particularly FLORISTS' FLOWERS, we have adopted our usual maxim of charging the lowest possible prices.

A selection of 44 pkts. of beautiful Annual Flower Seeds								7s.	6d.
Ditto	33	ditto		ditto	..	..		5	6
Ditto	21	ditto		ditto	..	..		3	6
A selection of 40 pkts. of beautiful Biennial and Perennial ditto								10	6
Ditto	31	ditto		ditto	..	..		7	6
Ditto	24	ditto		ditto	..	..		5	6

An Assortment of Vegetable Seeds, 20 quarts of Peas, and other Seeds in proportion for 1 year's supply								£3	3s. 0d.
Ditto	ditto	12	quarts of Peas	ditto	..			2	2 0
Ditto	ditto	6	ditto	ditto	..			1	1 0
Ditto	ditto	5	ditto	ditto	..			0	15 0

All Flower Seeds sent post paid, and Vegetable or Vegetable and Flower Seeds amounting to 1*l.* 1*s.* Carriage Paid to any principal Railway Station in England, Wales, and Scotland, or any port on the Irish Coast.

Professor LINDLEY in the *Gardeners' Chronicle* of February 5th, has the following notice of B. & McC.'s Catalogue.

"BUTLER & McCULLOCH'S (Covent Garden) Spring Catalogue of Choice Flower, Shrub, Tree, and Vegetable Seeds. This list fills 84 closely printed 8vo pages, and is remarkably well got up. It appears that the correspondent in Sardinia, who formerly supplied one of the great London houses with seeds raised in that warm part of Europe, has now transferred what he gives to Messrs. BUTLER & McCULLOCH. Let us add, that it yields to no Trade List in the abundance of its materials or the excellence of its arrangements."

BUTLER & McCULLOCH, Covent Garden Market.

CHAMPION OF SCOTLAND PEA.—A new and first-rate sort, declared by all who grew it last year to be the most distinct and best flavoured Pea in cultivation. To be had only at PETER LAWSON & SON'S, the Queen's Seedsmen, &c., who are also prepared to execute orders for all sorts of Garden and Flower Seeds of the finest quality.

27, Great George Street, Westminster.

"JACK OF NEWBURY" SWEDE, ETC.

PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN, &c., 27, Great George Street, Westminster, respectfully request attention to their very genuine Stock of the above excellent Swede; also of the LOTHIAN PURPLE-TOP SWEDE, both of which have been selected with the greatest care. They have also a very fine Stock of the KOHL RABI, or TURNIP-ROOTED CABBAGE, specimens of which were shown at their Stands at Smithfield Club Show. The Kohl Rabi was largely grown last season, and may now be relied on as a substitute for the Turnip and Mangel, where these roots do not succeed, or for filling up blanks where there is a partial failure. Its feeding qualities, hardiness, and weight per acre are equal to the Swede, and all kinds of stock prefer it to other roots.

P. L. & SON have also selected a first-rate Stock of MANGEL WURZEL SEED, which they can confidently recommend. Their natural GRASS SEEDS have been also saved with very great care, and they are ready to supply them separately or in mixture, for laying down Permanent Pastures, Lawns, &c.

P. L. & SON have arranged to deliver Seeds free throughout England and Wales from their London Establishment, for all quantities exceeding 20s. in value.

LISTS OF PRICES of the above and all other Seeds, Plants, &c., may be had on application.

27, Great George Street, Westminster.

ROYAL SOUTH HANTS SEED ESTABLISHMENT.

UNDER THE PATRONAGE OF H.R.H. THE PRINCE CONSORT; THE AGRICULTURAL, HORTICULTURAL SOCIETY OF INDIA, AND THE LEADING AGRICULTURISTS OF THE UNITED KINGDOM.

PAGE AND TOOGOOD can now supply GARDEN AND FARM SEEDS, carriage free; SEED POTATOES, &c. The numerous Prizes gained by their Stocks are convincing proofs of superior quality, and their prices compete with any house in the kingdom. WHOLESALE and RETAIL PRICED CATALOGUES upon application.

Agents for ODAMS' Blood Manure, Superphosphate, &c. Seeds Packed for Exportation to all Parts of the world,

37 and 38, Oxford Street (facing the Railway Terminus); and 58, Above Bar, Southampton.

SUTTON'S GRASS SEEDS AT THE ROYAL FARMS NEAR WINDSOR, AND IN THE ISLE OF WIGHT,

AND AT THE ALDERSHOT CAMPS.

SUTTON'S GRASS SEEDS FOR PERMANENT PASTURE, PARKS, AND LAWNS, are now sown at the Royal Farms at Osborne Palace, the Crysta Palace, Sydenham, the Horticultural Society's Gardens, at the People's Park, Halifax, and on most of the largest Estates in the Kingdom.

Messrs. SUTTON'S Grass Seeds being mixed expressly to suit the soil for which they are required, are never known to fail. Cost of Seeds 50*s.* to 34*s.* per acre, according to the requirements of the land to be laid down.

SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

The Gardeners' Chronicle.

SATURDAY, FEBRUARY 19, 1859.

Now that rain is falling abundantly, and the springs are slightly on the rise, it may be reasonably supposed that the unusually long period in which a deficiency of rain has been experienced in many parts of the kingdom has terminated. We may therefore advert to the extent of the deficiency that has to be made up before the water in the subsoil near London, and other places similarly circumstanced as regards moisture, can regain its average level.

The quantity of rain which fell near London in the past year was less than that in any other year in the present century. The amount in each month was as follows:—

	Ins.		Ins.
January	0.41		
February	1.48	Brought forward ..	10.28
March	0.88	August	1.46
April	2.13	September	1.05
May	2.05	October	1.36
June	0.78	November	0.08
July	2.55	December	1.48
Carried forward ..	10.28	Total for the year ..	15.66

or very little more than 15½ inches; whereas the average amount is very nearly 24 inches.

	Inches.
There was also a deficiency in 1857 of	3.74
To which add, as above, for 1858	8.10
The arrear of rain, up to January 1st, 1859, was	11.84

It remains to be seen whether this deficiency will be made up in one year, or spread over several years, whether slowly, during long periods of almost constantly damp cloudy weather, or rapidly by occasional very heavy falls, with considerable intervals of bright sunny days. The latter mode may occasion some damage in places liable to be flooded; but notwithstanding this it must be considered the best on the whole for crops because they have the benefit of the sun's rays in the intervals to form nutritive secretions, which they can only do

imperfectly in continued moist, hazy, sunless weather.

Although the supply of rain in the past year has been unusually limited in some parts of the kingdom, yet in others it has been abundant, as appears from tables at pp. 22, 24, 98; the annual amounts being as follows:—

	Inches.
Monk Coniston Park, North Lancashire	59.30
Goodamore, Plympton, St. Mary, Devon	49.08
Burraton, Sheepstow, Dartmoor	47.55
Cirencester	25.64
Stoneleigh Abbey, Warwickshire	22.76
Cobham, Surrey	17.87
Chiswick, Middlesex	15.66
Dorward's Hall, Witham	14.70

Between the greatest and least amounts at the above places the difference is upwards of 44 inches; and if returns could annually be obtained from all places in the United Kingdom where registers of the fall of rain are kept, it would probably be found that the average of the whole in this or any other year would not differ greatly from the mean, although in particular localities the quantities may be found very unequal.

Rain is derived from a permanent source, viz., the waters of the globe, and chiefly the ocean, whence it is raised by evaporation occasioned principally by the action of the sun's rays. The air is the vehicle in which it ascends in the state of invisible vapour, and the higher the temperature of the air the more vapour it will carry. Thus, at 66° Fahr., each cubic foot of air will hold in solution fully seven grains of water; but at 45°, little more than half that quantity. It is therefore evident that if air at the former temperature, and completely saturated, be cooled by contact and mixture with colder air, the same quantity of moisture can no longer be maintained. If the warmer and colder portions have each as much moisture as they can carry, and if that at 66° should be cooled down, say to 45°, it must then part with half its load, unless the cold air mixing with the warmer is in a comparatively dry state, and then a portion at least of the superflous moisture will be absorbed.

The vapour of water, or steam, is invisible whilst it retains its gaseous form, and air may be charged with it without its being perceived, except by the test of the hygrometer. Steam is invisible when it first issues from the tube of a boiler, and it is only when it becomes partially condensed that it forms a mist or cloud; and the same is true of the vapour in the air. In that state it may float almost stationary; liable, however, to be wafted by the wind to a great distance, provided its course is one of uniform temperature; but if the air should have to ascend in order to get over the tops of mountains, the clouds or moisture carried along with it into a higher and consequently colder region becomes condensed, and falls in the shape of rain. This accounts for the large amount of rain which usually falls in mountainous districts. The general theory of rain may be expressed in a few words: it is vapour raised by heat and condensed by cold. In fact the Huttonian theory, the one mostly approved, amounts to this. Some, however, attribute a considerable share of the process to electricity.

In some localities the quantity of rain is greatly influenced by the direction of the wind. North and north-east winds are usually the driest in most parts of these islands. The following is the number of days in which the wind blows from the respective quarters on the average of 30 years, near London, comparatively with that of last year.

	North.	N.-East.	East.	S.-East.	South.	S.-West.	West.	N.-West.
Average of 30 years ..	26.9	51.9	38.1	18.1	46.9	95.3	58	29
1858	24	62	65	16	26	99	48	25

It thus appears that the north-east and east winds have been most remarkably prevalent, having blown for no fewer than 127 days; and the circumstance may account sufficiently for the limited fall of rain in the locality.

In consequence of so many wells having become dry, it is well known that the level of the springs are low in an unprecedented degree. Some ditches and ponds are now dry, that at this season of the year are usually brimfull. In many parts the underground water level has sunk far lower than even the deep roots of trees can reach. Many such roots have been almost useless during the last summer owing to their being in a dry subsoil, from which every particle of available moisture has been drained away. This may be inferred from the stunted growths which most old established trees have made in the past season. And, unless rain falls heavily before April, there is but little chance of average growth being made in the ensuing season, for, according to some exeellent experiments made by Mr. DICKINSON with a DALTON gauge, and of which some account was given at p. 747 (1858), it appears that very little rain percolates the soil to the depth of 3 feet in the period between April and September.

Although the ordinary rain-gauges measure the quantity of rain which falls in a given time in the locality in which they may be placed, yet they cannot indicate the rise and fall of the underground water level. The DALTON gauge above mentioned would however give a more approximate estimate of this. It is a cylinder, 3 feet long, inserted in the earth and filled with materials representing soil and subsoil, and so that the quantity of rain passing through can be measured. Now if none should pass that depth between April and September, as is frequently the case, it is evident that if trees are too dry at the commencement of that period, they continue to be so till the end of it; and that being the case, the growth of trees with deep roots must be very limited. Those furnished with a large proportion of surface roots will of course thrive better, because moisture even from occasional showers will reach them.

The underground condition of moisture can be very correctly known by any well that may be open, or otherwise adapted for being measured. In one sunk near London, in the gravelly stratum, the water rose in 1852 to within 2 feet 2 inches of the surface of the ground, and at the commencement of the present year it was as much as 9 feet 1 inch below the surface. The former is the highest, and the latter the lowest that has been observed for 30 years. It has continued to sink as follows during last autumn and winter.

	Ft.	Ins.
August 17, 1858, depth of water from surface ..	8	3
Sept. 9 " " " ..	8	6
" 23 " " " ..	8	8
Oct. 15 " " " ..	8	9
Dec. 13 " " " ..	8	10
Jan. 1, 1859 " " " ..	9	1
" 22 " " " ..	9	1
Feb. 12 " " " ..	8	11¼

From the above it appears the springs were at the lowest ebb in January, and that they have now risen 1¾ inch; but they have to rise 3 or 4 feet before even their average height is attained. It will be curious to observe how many inches of rain must fall on the surface before the subsoil water is raised to the above number of feet. And we would invite our correspondents, keeping rain gauges, and having open wells, to mark the rise of the latter as well as the contents of the former. We would even say that the weekly ascent of water in wells is a better guide to cultivators than the rain gauge itself.

In the meanwhile it is evident that if the usual depth of water is to be restored to wells, that is to say to land, the ensuing months of March and April must be rainy beyond anything known of late years.

AMONG the new countries with which Europe is to become familiarised in consequence of the late treaties with China and Japan is the REGION OF THE AMOOR RIVER. This stream, which rises in the mountains of Daouria, falls into the ocean in the Gulf of Sagalin in 52½° N. lat., after traversing above 2000 miles chiefly in the country of the Manchoor Tartars, and flowing as far south as 47° N. lat. The climate of the country being such as to render it certain that whatever plants it produces will prove hardy in these islands, any authentic account of its vegetation possesses much interest. We therefore avail ourselves of a report upon the subject from Mr. K. MAXIMOVICZ, communicated through M. RUPPRECHT to the Imperial Academy of Sciences of St. Petersburgh, and published in a recent number of its Physico-Mathematical Reports.

Amongst others M. MAXIMOVICZ observed 53 species of trees and shrubs growing in the southern regions and towards the mouths of the Amoor, the characters and appearance of which he studied. A careful examination by the Academican M. RUPPRECHT shows that 22 of these species are hitherto unknown. Of this number two new genera have just been determined, the one a tree 40 feet in height, belonging to the family of Leguminosæ; the other belonging to the family of Schizandraceæ, a climbing shrub with an aromatic bark, which ascends the trees to a height of 25 feet, and which is the first representative of this family in the Russian Flora. M. MAXIMOVICZ also mentions a very remarkable tree, called "Kokhto," with a cork bark.

He also notices a new species of Walnut (*Juglans*), 70 feet in height; a new Hazel (*Corylus*); four new species of Maple (*Acer*); a new Lime, 40 feet high; a shrub called "Kolomikta," which bears excellent fruit; two new species of *Xylosteum*, &c. These different kinds would form a valuable addition to our English gardens. To the family of Araliaceæ, of which the Russian Flora possessed but two representatives, are added three new species, one of which is very remarkable in appearance, being a thorny shrub 20 feet high, resembling a Palm tree in its mode of growth.

One result of the observations of M. MAXIMOVICZ is worthy of attention; namely, that the families which occupy a low place in the system have gained fewer new species than those of a higher order; for example, to the 9 Conifers no new species has been added, and to the 10 Apetalous species only 2, while to the 34 species of Monopetalous and Polypetalous plants, 20 new ones have been added: that is to say, that the last-named tribes have a more limited distribution than the first.

The following memoranda will assist in bringing out the most characteristic features of the Amoor Flora and its affinities. 1. Fourteen species of trees from the Amoor region have already been noticed and brought by M. MIDDENDORFF from the S.W. coast of the sea of Okhotzk, viz., nearly all the Conifers, three Firs, the common and the white Fir of Siberia or *Pichta*, and that of Ayan; the Daourian Larch, the dwarf Cembro, two Junipers, the white Birch, and the two Alders.

2. The Arboreous Flora of the Amoor possesses in common with Russian Daouria, besides the above named trees of Okhotzk, the Oak (*Quercus mongolica*), the Cembro (*Pinus Cembra excelsa*), the Service (*Sorbus aucuparia*), the Aspen (*Populus tremula*), the Buckthorn (*Rhamnus davurica*), and a Leguminous shrub (*Lespedeza juncea*); the Fir of the Okhotzk coast is entirely wanting in Daouria. The Flora of the Amoor therefore bears a closer resemblance to that of Daouria than to that of Okhotzk, since a third of the woody species of the Amoor are also common to Daouria.

3. Some of the Amoor plants extend as far as Pekin, but the number is small, and the Pekin Flora possesses totally different Conifers.

4. Some European plants which are not found in Siberia reappear at the Amoor; for example, one Lime (*Tilia cordata*), the Yew, the Mistleto (*Viscum album*), two species of Elm, besides the genera *Euonymus* (Spindle), *Acer*, *Juglans*, and *Quercus*. This peculiarity of the Daourian territory has been already remarked by M. TURCZANINOV.

5. Some of the Amoor plants surprisingly resemble some of the species of the eastern parts of the United States; a similarity already pointed out in the Japan Flora, and even in that of Daouria. A recent and more thorough examination has hitherto, however, shown unquestionably either a specific difference between the Asiatic plants and their representatives in America, or, where identical, an unbroken line in their geographical distribution. This last statement is we suspect to be taken with some reserve, now that Dr. ASA GRAY has ascertained beyond all question that the Pogonia ophioglossoides and Malaxis liliifolia of the United States occur in Japan, without the slightest difference of structure.

WE have received from Mr. HAYTHORN of Nottingham an instrument for gathering flowers and fruit which hang beyond ordinary reach. It consists of a pair of stout pincers, to which a strong knifeblade is attached, *the pincers holding firmly the object to be gathered*, while the knife cuts it off. Like the old Averuncator and the French Secator, the instrument is fixed at the end of a long light pole, and is worked by a rope and pulley. In lofty conservatories, or Vineries, or where walls are very high the contrivance promises to be useful.

RHODODENDRONS.—No. II.

SUCCESS in Rhododendron culture undoubtedly depends mainly upon the soil in which the plants are grown. Not that other circumstances presently to be noted are unimportant or to be lightly regarded as items in the sum total of success; but a suitable soil being of primary consideration, the remaining conditions must be contingent on that. In general very erroneous opinions prevail as regards soil for Rhododendrons, and plants of analogous constitution and requirements. Possessors of gardens where the soil is naturally unsuitable for them often lament their inability to combat that difficulty. Yet nothing is easier. The materials for a Rhododendron soil, to speak familiarly, lie at every man's door—certainly in the rubbish yard of his garden. Decayed vegetable matter in a highly comminuted state is the great indispensable; and, possessing this, which every one having a garden does in some form or other, the chief difficulty is overcome. Wherever the refuse of a garden has for years been allowed to accumulate is this decaying vegetable matter to be found, which, when mixed with a portion of sand or sandy loam, will grow Rhododendrons to perfection. Perhaps the most familiar form in which such vegetable matter is known is as leaf mould, and when that can be

obtained it is to be preferred to any other. Two parts of this, with one of light loam and one of sand (white if it can be had), will form a compost for Rhododendrons which will leave nothing to be desired. As, however, example is perhaps in the main better than precept, we will describe in detail the process we have often adopted with the best success in forming Rhododendron beds in stiff clayey soils, than which none can hardly be more antagonistic to the well-being of the plant in question. And the same process will of course be equally efficacious whenever soil alone is the chief obstacle to success.

Having marked out the spaces to be planted, supposing, as will often be the case, the locality is a lawn or pasture, the surface soil of which will be more or less loamy, and contain besides a large amount of vegetable matter in the form of roots and herbage, remove and lay this aside several inches in depth. In some cases as much as 6 inches may be thus retained, but the nature of the soil must determine the quantity. Then cast out from the whole area of the bed as much more soil as will, with that reserved from the surface, give a depth of at least 18 inches, and break up the bottom for as much more in depth. Now, having at hand a compost as before described, cut and beat up with the spade the reserved soil, mixing a portion of the former with it, and throw in to form the bottom of the bed. Fill up with the prepared compost to a sufficient depth, that when planted and settled down the surface of the beds shall be below that of the natural soil. This is desirable in order to preserve the whole of the rain falling on the beds. If made higher than the natural level a large portion would run off. The beds should also be as level as possible, that the rain may sink where it falls. Where beds are thus formed in very retentive soils they become in wet seasons mere quagmires, unless precautions are taken to get rid of the accumulated water, and to effect this drains will be necessary: for although the Rhododendron requires a cool and moist subsoil, it will not flourish if its roots are wholly and constantly in stagnant water. True, the plant will luxuriate on the margin of and on islands in lakes with but a foot or so of soil above the water level; but a plant in such a situation has nothing in common with one the roots of which are immersed up to the collar in liquid mud, as a moment's consideration will convince.

Although there are comparatively few situations suitable for a garden at all where the Rhododendron may not with more or less care be successfully grown, yet some situations are necessarily more favourable than others. Even the same garden may afford a wide latitude for choice in this respect, which ought carefully to be considered. Shade and coolness should be secured as much as possible—not that degree of shade which by permanently intercepting sun-light and air would inevitably induce weak and immature growths, to the destruction of the main end in view, flowers—but such grateful and partial shade as would at once temper heat and husband moisture. No shade is so grateful to the Rhododendron as that produced by trees. Yet they should not overhang the plants, but be sufficiently near to shade without actually obstructing light. *G. Lovell, Bagshot.*

In note to last article, second line, *grown* should have been *towered*. (*To be continued.*)

ON TREES WITH AILING BRANCHES.

"Principiis obsta." "A stitch in time saves nine."

I HAVE three inducements to ascend trees, viz. to peep into nests of crows and magpies, to enjoy the scenery far and near, and to inspect the economy of the tree itself. Our trees, like our kingdoms, have their time of misfortune and decay. Still many a downfall of their finest branches might easily be prevented by a little foresight and assistance. On climbing into a tree the expert forester will occasionally perceive at the particular part, where the giant limbs diverge from the trunk, a trivial opening bearing somewhat the appearance of the cleft in a cow's foot. This incipient indication of division is chiefly confined to the magnificent Elms and Beeches which adorn the parks of Great Britain. The opening, sure harbinger of future mischief, cannot be detected by the forester below. Hence the necessity of exerting his climbing acquirements, in order to perceive what is actually going on above him.

The cause of this crack may originate in the weight of the extreme foliage, which, agitated by the winds of summer, is everlastingly counteracting the healing process of Nature, going on at the separating quarter. The limb which exhibits this symptom of separation from the parent trunk may possibly maintain its adherence to it for some length of time; but, if not supported by art, it must ultimately come down with a tremendous crash; leaving the part from which it has been torn, a most unsightly, deep and damaged hole.

In order to prevent this lamentable catastrophe, the forester must positively take time by the forelock. A covering of sheet lead and Roman cement will be utterly useless. He must apply to some neighbouring Vulcan. The swarthy blacksmith will make an auger proportionate to the thickness of the tree; and he will prepare a bolt of sufficient strength, say, in some cases, as thick as your wrist.

Your carpenter will drive this iron bolt through the hole which the auger has made; and he will secure it on the opposite side by a patent nut on the projecting end of it.

The work of safety to the limb is now complete. No raging gales of wind in future will ever injure the once open parts. New wood and new bark will soon be permanently formed, and will gradually roll over them, just where the original wood and bark had separated; and ere long, not a vestige of the late operation will be perceptible.

I have an uncommonly fine Cherry tree growing at the north-east angle of the stables, and about 30 yards distant. During my absence in Guiana, this tree must no doubt have exhibited symptoms of separation, where the bole rises up into two nearly equal parts. But, no attention had been paid to the tree. At last, in the year 1813, the two branches opened with a tremendous yawn, setting apparently all rectification at defiance. However, "*nil mortalibus arduum est.*" I mustered men and planks; and we succeeded in raising the two depressed branches nearly to their original position. We then drove a massive iron bolt through them.

Time and Nature have now fully repaired the disaster. The head and neck of the bolt have disappeared long ago, amid the new wood and bark. The tree sends forth its blossom in undiminished profusion. The fruit arrives at perfect maturity—whilst the Cherry tree itself remains a useful lesson for those who pay attention to their ailing trees. *Charles Waterton, Walton Hall, Feb.* 12.

SPERGULA PILIFERA.

SPERGULA PILIFERA in its style of growth is a neat dwarf hardy perennial tufted alpine plant, forming close compact wiry Grass-like stems, from ¼ to ½ inch in height, at first erect, afterwards decumbent, clothed with closely set green bristle-like leaves—which, by permanent growth and occasional rolling, forms an unbroken level velvet-like surface of the richest conceivable verdure, remaining uninjured in severe drought or intense cold, and assumes the same beautiful verdurous tint during the winter months, as in summer. The seedling plant of this highly interesting object starts into growth with a single unbranched perpendicular radicle or root, and afterwards manifests a remarkable power of extension in its ramifying hair-like roots penetrating to the depth of 1 to 2 feet—a fact quite sufficient to account for its enduring the opposite extremes of severe heat and cold. In addition to its hardiness, under the vicissitudes of an English climate, its value is considerably enhanced in its adaptation to all the varieties of common garden-soil, requiring but a thin firm surface stratum of 1 inch ordinary sifted or broken loam. Maintaining its verdant freshness alike beneath storm and sunshine, it combines every needful feature of adaptation with economy, and an uniform aspect of neatness with the least possible care or attention. Its fertility in bloom during the month of July is equally beautiful, being at that period studded over with myriads of low compact salver-shaped snow-white blossoms, appearing not as in fancy, but in reality, the living picture of an emerald-green velvet carpet, spangled with innumerable silver stars. From the preceding remarks, it will be seen, that the established growth of this plant maintains a dwarf close web of green verdure, and entirely dispenses with the extra toil and expense of mowing; its numerous small brittle flower-scapes being removed by the gentlest movement of a wing or brush over the surface of the lawn, either whilst in bloom or afterwards, and these constitute the only surface-growth, or tokens of its beauty, which require this operation but once a year. For small or medium-sized lawns, terraces, verges, mounds, &c., this remarkably interesting and beautiful little plant offers an object of great interest to every lover of gardening pursuits, and every lady amateur cultivator may superintend and personally manage the slight attentions required to preserve the terrace margins or velvet lawn in the highest condition. The permanent and uniform condition of dense growth, with the penetrative power of its roots, preserves it from all risks of being parched by extreme exposure in sultry weather, and the progressive accumulation of its Moss-like growth gives an elastic pressure to the foot, much softer than the finest Turkey carpet. The seed may be sown either in or out of pots in the usual method observed for fine seeds, with a slight but uniform covering of soil, and placed within either a frame, cool pit, or greenhouse, using the usual precaution of shading the seed-pans from intense sunlight daily for a few hours, until well germinated, after which it may either be replanted in stores of 10 to 50 plants within dishes or large pots, or otherwise planted out in a rather shady border of the open ground for a few weeks, and ultimately transplanted upon the prepared lawn surface in two or three plants, within 1 inch or more of each other, and such little plant groups may be formed at a distance of 6, 9, or 12 inches apart; in such positions the growths will progressively meet and form the rich and beautiful surface now described. It is also admirably adapted for picturesque green tufts and edgings on avenue lines and borders, for grouping the front spaces of massive rock-work, and surfacing partially raised mounds around classic fountains and basins or artistic columns, where Grass is unavailable for mowing, and equally telling for cultivation in larger vases, in alternate effect with the silvery sheen of the beautiful Cerastium tomentosum, on terrace verges, and architectural approaches.

A practical proof of the success of Spergula pilifera for the objects above stated may be seen in the gardens of A. Mongredien, Esq., at Forest Hill, Sydenham, Kent; where a rich and verdant plot or lawn has been established four years by Mr. Summers, th intelligent gardener there, and is now in fine condition. In the same gardens, a considerable space is allotted for further illustration of its perfect adaptation, which may be seen on application. *E. G. Henderson and Son's Catalogue of Flower Seeds, &c.*

ARSENICAL PAPER HANGINGS.

By A. S. TAYLOR, M. D., F. R. S.

A FRIEND whose library walls were covered with an arsenical paper, had suffered for some time from chronic inflammation of the eyes, especially affecting the conjunctivæ of the eyelids. On the discovery that arsenic was contained in the green pigment of this paper in rather large quantity he caused it to be removed during the summer, and to be replaced by another, containing no arsenic. The inflammation from which he had suffered disappeared; but within the last few weeks it has returned. He informed me that he had been dusting some books in a bookcase in this room, and he supposed that the dust which had accumulated for two or three years had affected his eyes, and had caused a return of the inflammation. Some of the dust was carefully removed on the 21st December from the tops of a few books by a feather, and submitted to a chemical analysis. The dust weighed one grain and a half; it had an olive green colour, and, under the microscope, it presented the appearance of fibres with numerous particles of various colours, chiefly of a greyish black. Treated by Reinsch's process, a portion of this dust yielded a deposit of arsenic, and there was therefore clear evidence that some of the arsenical pigment formerly on the wall had found its way through the glass doors of the bookcase, and was deposited in the form of a fine dust on the tops of the books.

On the 23rd December, after having made this chemical examination of the dust from a private dwelling, I procured from the shop of Messrs. Marratt and Short, Opticians, 63, King William Street, London Bridge, a quantity of dust for the purpose of analysis. The walls of this shop are covered with an unglazed arsenical paper, and, as I am informed, they have been so covered for a period of three years. In collecting this dust from the tops of the instrument cases, great care was taken not to touch the walls. The quantity thus collected for examination amounted to about 450 grains. It was nearly black, and, under the microscope it appeared to consist of fibres and sooty particles. It was very light and flocculent. 150 grains of this dust were examined by Reinsch's process, and enough metallic arsenic was obtained from this quantity to coat about 10 square inches of copper foil, in addition to a piece of copper-gauze. From the deposit on the latter, by the application of heat, octahedral crystals of arsenic were readily obtained. The cases had not been dusted for a period of nine months.

The instrument cases are secured by glass doors, and they are lined inside at the back with arsenical paper. A small quantity of dust was removed by a camel's hair pencil from the projecting portions of the thermometers and barometers which are kept there. The quantity thus obtained weighed about eight-tenths of a grain, of which five-tenths were taken for examination. This half grain of dust sufficed to cover with metallic arsenic a square inch of copper gauze, A portion of this, when heated, yielded a large number of well-defined octahedral crystals of arsenious acid.

These facts lead to the inference that the air of a room, of which the walls are covered with an unglazed arsenical paper, is liable to be charged with the fine dust of the poisonous aceto-arsenite of copper. Those who inhabit these rooms are exposed to the risk of breathing this dust. The poison may thus find its way either by the pulmonary membrane into the system, or it may affect the eyes, nose, and throat by local action. That but few cases of actual poisoning under these circumstances have occurred is a fortunate circumstance, but cases involving serious symptoms only would be likely to attract attention. There may have been numerous instances of a disturbance of health depending on this arsenical paper, which, from absence of suspicion, has been referred to other causes. The degree of exposure—the state of health—peculiar susceptibility and the eliminating power of the system may account for the comparative rareness of these cases. The mode in which the pigment is laid on the paper may be such as to prevent in some instances the escape of the fine particles of dust. The fact, however, now demonstrated, that arsenical dust is breathed by those who occupy rooms thus papered, explains the similarity of symptoms observed, justifies the statements made by Dr. Hinds, Dr. Halley, and others, and proves that those who have experimented on this subject with negative results, have not taken the right course to arrive at the truth. These results have to a certain extent misled the public by teaching them to rely on what is now proved to be a false security. If, as a general rule, the quantity of arsenic which can penetrate the body from this source is very small, it is still desirable that arsenic should not be breathed day by day in any proportion, The defenders of this noxious manufacture will hardly go to the length of asserting that this arsenical green, which is a potent poison in the stomach, can exert no injurious effect when taken into the lungs, and yet unless this assumption be made, the inevitable inference is that these papers should not be used for covering the walls of our dwellings. 15, *St. James's Terrace, Regent's Park, December* 26, 1858.

Since the above was written, I have discovered

arsenic in the dust taken from the cornices in a dining-room lined with arsenical paper, as well as in dust removed from the gilt mouldings of picture frames in a hall, the walls of which were covered with arsenical paper. Mr. Gay, of Finsbury Place, sent me a few grains of dust from a room in which he habitually sat, which was lined with green paper. The dust was flocculent, and of a green colour. It contained decided traces of arsenic. He informed me that since his return from a summer residence in the country, he had found his health very indifferent, and had not been able satisfactorily to account for it. He had suffered from colicky pains from time to time, and occasionally they had been very severe. His eyes (the conjunctivæ) were inflamed, and felt uncomfortable. Latterly he had had a severe cough, attended with hoarseness, and almost entire loss of voice.

It is quite true that in numerous cases in which arsenical papers have been used, persons inhabiting such rooms have not suffered or appeared to suffer from any unpleasant symptoms. This, however, is no reason why we should wilfully make an arsenical atmosphere in our sitting and bedrooms. It is not intended that arsenic in any form, in however small a quantity, should be a constituent part of the air we daily breathe, and the fact that we have before us a pleasant green colour affords no compensation for the risk which may be incurred. Sanitary reformers object to an atmosphere containing 1-2000th or even 1-10,000th part of sulphuretted hydrogen gas; but there are numerous instances in which it is breathed with impunity, and although no medical man would advise a person to live in such an atmosphere, yet it is most difficult to produce well-marked cases of illness which can be conclusively assigned to the effects of this gas. We should not knowingly contaminate the air we breathe with any poison, whether in the shape of fine dust, gas, or vapour, and it appears to me that this rule should be most strictly observed with reference to a poison like arsenic.

There are two parties who are reluctant to admit these conclusions:—1st, the arsenical paper manufacturers—and 2d, those who have papered their rooms with arsenical paper-hangings, and who, so far as they know, have not suffered any injurious effects. With respect to the first, let them turn their attention to the manufacture of a green paper free from arsenic; and with regard to the second, it may be said, *quod forsan fieri non debet, factum valet.* If they really can breathe arsenical dust with impunity, they may consider themselves as most fortunately constituted, and rejoice in a state of health which even arsenic received through the lungs cannot disturb. Still it must be remembered all men are not constituted alike. There are many who can live and enjoy comparative health within reach of the effluvia of cesspools and sewers; but the same impunity does not extend to all. It is enough to know that a poisonous material which cannot improve our health, and may really injure it, is present in the air of a sitting or bedroom. The most common sanitary precautions would in such a case justify its removal. *January 7th,* 1859. *Pharmaceutical Journal.*

DEATH OF BISHOP AGARDH.

[EXTRACT OF A LETTER FROM A SWEDISH CORRESPONDENT TO DR. HOOKER.]

I HAVE to announce to you the death of Bishop Agardh, who died early on the 28th of January of this year. He was a singular man, in some respects a first-rate genius, but a very peculiar one. As a youth he studied mathematics, and wrote some dissertations on that subject; then, hearing that botany was a very difficult science, he determined to show the little world of Lund that in a few months he could become an eminent botanist, and he therefore wrote some botanical dissertations. After that he turned his attention to theology, becoming minister of a church at Lund, and writing dissertations also on this subject; and lastly, as a member of Parliament, he was extremely busy with national, economical, and statistical questions, wrote large books on these subjects, and published maps of Sweden, geological reviews, &c. There are probably few subjects of human knowledge on which he has not ventured to write. He was ever genial, with bright, sparkling wit and good humour; but always very, very superficial. In his moral character he was also very singular! With all his faults, with all his mistakes, he was one of those great geniuses of whom so few now remain in the world.

Home Correspondence.

French Carnations and Picotees.—At the Exposition de l'Industrie at Paris in 1855, there was exhibited a collection of these flowers as described by your correspondent "A. R.," "yellow orange and buff grounds, with scarlet, maroon, lavender, and other coloured stripes." Very many of them were entirely new to me, so, the plants being all numbered, I took notes of those which I approved, and in the following spring ordered 50. They cost me at about the rate of 8*d.* each, including carriage; they were all fine plants, and bloomed to the admiration of mere flower-lovers, the amazement of connoisseurs. I have unfortunately now lost them nearly all, but if "A. R." will give me his address, I will gladly forward to him in July a flower and cutting of one of the best. The nurserymen of whom I made my purchase (Dulos et Gautier, Pierrefitte, près Paris) had then no seeds on sale, but if any can be procured from their choice plants, there is every reason to suppose that a fair average of the produce, though not perhaps 80 per cent. would turn out well. I see that they now advertise seed. *C. A. J., Callipers, Rickmansworth.*

Rain in 1858, *in the Gardens at Saltram, Devon.*—

	Ins.		Ins.
January	2.13	Brought forward ..	19.00
February	2.76	August	0.88
March	1.58	September	3.23
April	3.45	October	2.56
May	3.32	November	3.08
June	1.70	December	5.60
July	4.06		
Carried forward ..	19.00	Total inches ..	34.35

John Snow.

Rain in 1858 *at Torhill, Ivybridge, Devon.*—

	Ins		Ins.
January	2.27	Brought forward ..	20.17
February	2.58	August	1.52
March	2.03	September	3.82
April	4.68	October	3.36
May	3.16	November	4.17
June	1.16	December	6.29
July	4.19		
Carried forward ..	20.17	Total inches ..	39.99

John Widdicombe.

Cottagers' Kale.—People may write as they like about this Kale. It is a most excellent vegetable, and when well grown and used in its proper season it is delicious. Mr. Turner has not said, neither has my friend Dr. Lindley said one word too much in its favour. I think hardly enough. I cannot avoid remarking that I think some of the letters respecting it, which have appeared



in your columns, were written rather prematurely, particularly as the writers of them had only one season's experience of the plants. Their season of usefulness had not arrived at the dates of some of them. Their perfection and usefulness can be best appreciated when other greens have vanished from wet, frost, and hardship of weather—then and then only can the real utility of, and benefit to be derived from this Kale be fully known and valued. *J. C. Lyons, Ledestown, Mullingar, Ireland.* [The above representation was engraved from a photograph of a fine plant of this Kale shown the other day to the Horticultural Society in Regent Street. It measured 4 feet in height from the surface of the pot, and was 2 ft. 1 in. in circumference round the stem, sprouts and all. The total number of the latter was 64. This was one of the most perfect specimens of this in all respects excellent winter green that we have yet seen.]

Wonderful Box Tree.—An explanation of this wonder might have been easier had the publication (and its date) been named, in which the extraordinary advertisement appeared. As it is, two interpretations may be offered:—First, that the Box tree is a stupid hoax. M. Bourgeois is a suspicious proper name; it means burgess, citizen. The master of the house is often spoken of as *le bourgeois.* There is no such place as Payers to be found in the Dictionary of the French Post-office, either near Rheims nor anywhere else in France. Payers may be a mis-spelling, or a misprint; but a letter, even pre-paid, might find some difficulty in reaching its intended destination. Secondly, supposing there to be no hoax in the matter, 2000*l.* is evidently intended for 2000 francs, which would reduce the price to 80*l.* sterling. In old-fashioned books and by old-fashioned people the modern francs are still spoken of as livres. "So-and-so has a *rente* of 5000 livres, or an income of 200*l.* sterling a year." But supposing an error of a cypher too much in the 2000*l.* advertised, that will reduce it to 200 francs, or 8*l.* English—no very outrageous price for a really phenomenal specimen. Moreover, fixed prices are less the fashion than they are in England; a man will ask half as much again as he will gladly take; and people ignorant of the true value of the thing will put an exorbitant price on an article to get at its real price, especially for the English market. There are in France many fine specimens of Box, both of the common small-leaved and variegated kinds, and also of the large-leaved species (if it be a species), the Balearic Box, Buxus Balearica, or Buis de Mahon. Last April I found a pair of these in a nursery ground in a small provincial market town on the borders of Flanders. After a rapid journey by railway and wheel carriage, they were planted and staked; they were well watered during the droughts of last summer, and are now prospering vigorously. They are each 6 feet high (and will be higher), full of flower buds, and feathered with branches from the ground to their summit. Though they did not cost me 2000 francs the two, nor even 200, they would fetch money from many a country gentleman as ornaments to his pleasure ground or winter garden. Although the plant is well known to you, I inclose a couple of leaves. *E. S. D.* [The advertisement appeared in the *Daily News;* and must, we suppose, have been paid for. We doubt whether the explanation suggested by our correspondent be the right one.]

Foreign Correspondence.

NIGER EXPEDITION.—[Extracts from letter from Mr. Barter to Sir W. J. Hooker.]

"Encampment near Jeba, River Kworra,
"Central Africa, March 19, 1858.

"Our position here is much the same; we have no chance of moving at present, neither is it Dr. Baikie's intention till assistance arrives. The journey of nearly 300 miles overland to Lagos cannot be attempted in the present weak state of our party. To descend the river by means of canoes is equally perilous. The savage tribes of the Delta for the sake of plunder would be sure to attack us, as they did lately the trading ship on her descent. By advice from Lagos we hear that a steamer is now entering the river to our assistance, but I have fears that the falling waters will prevent her reaching us for some time.

"Lieut. Glover left us for the sea by Lagos, about a month ago. I am sorry to add that much sickness has prevailed. My own health, I am happy to say, as also that of Captain Mackintosh, continues the same, unimpaired. The native Kroomen and interpreters with us have suffered from dysentery, but only one death has taken place among them. These people have behaved very well, but now wish to return to their homes.

"The health of our party has lately kept me from making any distant journeys, but I have made a tolerably complete collection of the arboreal Flora round about us. Nearly all the trees come into flower at this season. Bassia Parkii, with its dense heads of whitish flowers, scented the air with a fragrance like that of Hawthorn. Its fruit is now conspicuous, and promises an abundant harvest of "Shea butter." Inga biglumosa is really a magnificent sight when it bursts forth; its ball-like masses of crimson flowers, hanging on long peduncles, represent a tree decorated with thousands of soldiers' top-knots. Baphia nitida has flowered. I now recognise it as very common, a small tree about 20 feet high, flowering profusely, looking when in blossom very like an ordinary Laburnum. I enclose some of its curiously flattened seeds, which if they do not vegetate signify little. I have abundance of small plants. Leguminosæ are largely represented in the shape of trees; also Combretaceæ, several Sapotaceæ, Tiliaceæ, Sterculiaceæ, Rhamnaceæ, Bignoniaceæ, one Myrtacea, one Araliacea. I think also some true Laurineæ. Loranths are very numerous. I have some dozen species; but they all lose their fine colours in drying, and are difficult to preserve. These form a small portion; with the great bulk (of the Flora) I am entirely unacquainted, and have here no work to assist my conjectures.

"Passing from trees, the excessive drought has prevented much being done with small plants, except in moist places. Fires have swept the high grounds of Grass; all looks black and desolate. We have near us plenty of swamps and small lakes, and among these some good plants are found. In the lakes grow Nymphæa dentata, N. Lotus (?) and a pretty species

with small purple flowers. The latter I believe is not in cultivation at home. A pretty Limnocharis grows in shallow pools with submerged Vallisneria-like leaves. Also a curious Villarsia with floating reniform leaves which bear the yellow fringed flowers in the crenatures of the leaf itself like a proliferous Nymphæa. Potamogeton pusillum is a common plant. A singular Naidea with spiny leaves generally accompanies it. Swamps are not always pleasant spots to botanize in. Few plants can be obtained without wading in water and mud up to the waist. Tall Grasses and Sedges in these places form the head-quarters of snakes and other vermin.

"I have at last ascertained a few particulars about gums. The natives brought us many kinds; but no reliance could be placed on their information. I find Afzelia bracteosa yields a gum resin; a fine white gum, which one of our people, a native of Senegal, states to be the best gum Arabic of commerce there, is yielded by an Acacia bearing white flowers. Another is produced by a species of Sterculia. Of these and many others I have abundant specimens; but I rely only on what are collected by myself.

"Sections of woods from all the trees within reach are already cut, including fine specimens of Borassus æthiopicus; this is a noble, but not elegant Palm, abundant in the interior—its usual height is from 70 to 80 feet, though it sometimes, as on the Island of Patashi, near Boussa, attains even 100 feet. No Palm-like proportions exist in its massive trunk, which, bulging out in the centre, gives the idea of a huge elongated puncheon. The wood, which is extremely hard at the base, is soft and spongy in the thick portions. The fruit, which resembles the Cocoa-nut in appearance, hangs in dense masses, but each husky shell encloses three seeds. Sexes we can determine nothing about as yet. Looking upon these vegetable monarchs as they stand out so nobly in the landscape, enjoying the fierce sunshine of these regions, and so different from all other plants, one almost ceases to regard them as such; our sympathies extend to them as if they were sentient beings capable of the perception and feelings of animal life.

"I have great pleasure in enclosing a small Podostemad, gathered up a small tributary which I ascended one day in the boat. I had traced the river several miles till rocks stayed our further progress. The stream which had forced its way through a deep vent in the hills, falling over rocks covered with trees, all contributed to form a delightful spot, in fine contrast with the usual sterile aspect of these stony hills. While the Kroomen rested I was endeavouring to take some pretty coloured fish, and came on the Podostemad growing on the stones. The trees here were covered with an Orchid not in flower but in habit resembling a Sarcanthus which I have seen. Local circumstances, the shade and moisture of the place, favoured it; for these plants seem almost unknown in the dry parts of the interior. Some new lizards and beautiful whip snakes were gliding over the trunks of old trees.

"Some of the wild fruits round us are deserving of notice. A small shrubby Anona yields a fruit much like an Apricot in flavour. There is also a green mealy fruit, sweet and pleasant, from a small tree with fine pinnate leaves. The best is a large yellow fruit like an Orange, but with a hard shell—its seeds surrounded with a pleasant sub-acid pulp. I have flowering specimens which show it to have no affinity with the Oranges. Two kinds of Zizyphus are common, likewise several other fruits belonging to Rhamnaceæ.

"No rain has fallen for five months. Hot winds and scorching heat have prevailed. Average range of the thermometer at noon, 107°; in the shade of our house out-doors, 132°; at midnight, 84°. Once I had it indicate 145° in the sun; but never so high near the river."

(To be continued.)

Societies.

South Metropolitan Chrysanthemum, *Feb.* 14.—Dr. Bushell in the chair. Nearly 50 new members were elected on this occasion, which increases the Society to upwards of 100 members. The chairman stated that the meeting had been specially convened to hear a short discourse or lecture from Mr. Broome, of the Temple Gardens, as to his mode of cultivating this very favourite London flower. Mr. Broome was then introduced. He commenced by stating that he had not come to lay before his audience a long dry wordy statement, but to show in a practical point of view how Chrysanthemums might be brought to that perfection which has been so admirably exemplified at our late London exhibitions, and directed his advice more to beginners than to those who were better skilled in their culture; he never felt happier than when he was giving his experience to those whom he thought would benefit by it; he could assure them he had only been able to gain it by great perseverance. We ought to state that the lecture was illustrated, and that Mr. Broome here took up an old root of Queen of England and dissected it, showing how varieties are propagated by means of suckers, taking off the best and those of good constitution for his use. He showed how necessary good drainage was to the plant, and pointed out the best kinds of soils, having brought with him specimens of each. He also cautioned all against the too frequent fault of giving too much water when young, thus generating what is technically called "damp," and impressed upon all the necessity that when the pots were getting too full of roots a shift should take place. The next subject he directed attention to was "disbudding," which consisted of taking the centre eye out, thus causing the plant to throw out laterals and branches to an almost incredible extent, after which it should be supplied with a little liquid manure, and allowed plenty of water, keeping it cool during the hot summer months, which prevented the soil caking round the pot, and the plant assuming a ragged and distasteful appearance. "Stopping" or "disbudding" must not be practised after August. Mr. Broome concluded his discourse by requesting all who were desirous of gaining information on the subject to come to him and he would feel great pleasure in giving it; adding that as the time was now approaching for planting, all making purchases would find a list of choice sorts with their colours attached for inspection at the Society's place of meeting in the Lorrimore Road. A short discussion ensued; several questions being put and answered in a practical manner, the lecturer showing that the prevalent idea of growing from the old wood was a mistake, as the heat of a July sun soon occasioned abortion; in illustration of this he instanced Mr. Holland of Hounslow, who kept an old plant, which grew well, "broke" well, until about the middle of July it went off, and there was an end of it, thus indicating that the Chrysanthemum must be propagated by suckers or cuttings only. Mr. Morgan, of Lincoln's Inn Fields, explained his method of growing Pompones as standards, in a manner similar to the Rose; thus treated they have a very handsome appearance, differing very materially from the bushy plants of Mr. Broome. This young Society, we understand, has received the patronage of W. Roupell, Esq., M.P., who has kindly volunteered a Silver Cup for a prize, and which will no doubt be strenuously contended for. We may also intimate that as this lecture was delivered with a view to encourage those who were exhibitors, Mr. Broome, assisted by Mr. Morgan, will, next monthly night (March 14), proceed to show those who have small gardens how they may best decorate them when all else is dreary. After a vote of thanks to the chairman, &c., the meeting separated.

Notices of Books.

Flore des Serres for November 1857 contains original figures of the dark purple-leaved *Acer japonicum*, a charming hardy shrub; *Rhododendron Othello* a fine dark purple sort, bred from R. maximum; *Camellia Princess Frederick William* and *Cup of Beauty*, the two fine varieties introduced by Fortune, and sent into the trade by Glendinning; and the old and half-forgotten *Stapelia orbicularis*, which Mr. Van Houtte has accompanied by some clever writing. There is also a capital woodcut of Gynerium argenteum, and some good useful gardening matter.

Outlines of Physiology (Black, 12mo, pp. 247). This is a lucid explanation of Dr. John Bennett's views of the whole theory of Animal Physiology. Being intended as a text book for the lectures of the author, who is Professor of the Institutes of Medicine in the University of Edinburgh, it is of course a mere outline, details and illustrations being reserved for the lectures themselves. It is, however, minute enough for all general readers, and will doubtless prove acceptable to those who make this important subject a study. The following are the author's views of life, or vitality:—

"With regard to the nature of life itself, two opinions have been held:—1. That life is an independent entity, a vital principle—an idea which has come down to us from the ancients, and is founded on the notion that the union of this principle with the body caused it to live, and its separation to die. 2. That life is the collection of phenomena in organised beings, dependent partly on a certain structure and chemical composition, and partly on the existence of external agencies which stimulate them into action. We do not think it worth while to enter into the long arguments by which both these theories have been supported. It is sufficient to say that the latter is the view which has been adopted by modern physiologists, who believe that the various tissues of an organised body are endowed with various properties, some physical and some vital; that the latter require what are called stimuli to bring them into action; and that a knowledge of the tissues, their properties, their stimuli, and the forces evolved from them, is the true method of arriving at just conclusions concerning life as manifested in health, and as modified by disease."

We cannot but regret to find this fundamental question regarded by Dr. Bennett from the second point of view. To us it appears the height of absurdity, not to say presumption, to refer the vital principle to chemical composition, structure, and external forces, or *cosmica momenta*, as some one calls them. Life is—Life—; and that is all that man can know.

Facts and Fallacies relative to the Main Drainage Scheme of the Metropolis (Stanford) is a pamphlet from the pen of Mr. Francis Fowler, who condemns in the most decided terms the whole scheme of Mr. Thwaites's board. He says that the plan will directly or indirectly cost, not 3,000,000*l.*, but more than 27,000,000*l.*! that it involves the stoppage of the traffic through such streets as Piccadilly, Oxford Street, and the Strand, for even as much as two years!! that the houses in those long lines of way will be shaken to their foundations, and will probably tumble down; and lastly, that the scheme will prove a fearful failure, not at all answering the purpose it is expected to serve, but creating more mischief than it can remove. Engineers alone can pretend to determine the value of this startling announcement.

Knight's English Cyclopædia of Arts and Sciences (4to. Bradbury & Evans) has just begun to appear. Excellent men wrote excellent articles on these subjects, for the Penny Cyclopædia. The best of these are here selected, where necessary revised, and many new articles are introduced, the whole forming a most valuable mass of information upon the following subjects:—Mathematics, Astronomy, Optics, Mathematical, Astronomical, and Optical Instruments, Acoustics, Dynamics, Electricity — Magnetism, Meteorology; Chemistry, Materia Medica, Medicine, Surgery; Fine Arts, Sculpture, Painting, Architecture, &c.; Building and Engineering, Music and Musical Instruments; Navigation and Military Sciences, Rural Economy, Manufactures and Machinery, Philology, Mental Philosophy, Government and Political Economy, Law and Jurisprudence. The Rural Economy is intrusted to the superintendence of Mr. J. C. Morton. The work will appear in 24 monthly numbers, each containing 256 pages in double columns, enriched with woodcuts, at the very small price of 2*s.* 6*d.* each.

The Student's Hume (8vo, Murray, pp. 768, with numerous woodcuts). No school books are comparable for real utility, beautiful execution, and extraordinary cheapness to some of those which issue from Albemarle Street. This book, the Student's Gibbon, Smith's Greece, and Liddell's Rome, of themselves form an excellent historical library, the whole procurable for 30*s.* If we only compare works of this class with the books in use when we were schoolboys, it is difficult to avoid envying the happy race whose studies are so greatly lightened. The volume before us is not altogether Hume; some of the great historian's matter is entirely omitted; a part, especially that relating to the Anglo-Saxon period, has been rewritten; striking errors in fact have been corrected, and the period from the reign of James II. down to the present day has been wholly sketched in by the editor himself. The matter is illustrated by a considerable number of woodcuts engraved from original drawings; among these medals and coins are the most numerous. There is also an excellent Index.

Lund's Geometry and Mensuration (12mo, Longmans, pp. 362) is a clear, concise, well-arranged, and able school book, teaching all that students want to know respecting the measurement of surfaces and solids The diagrams are excellent, and the chapter on land surveying one that every farmer and gardener should make himself master of, as he easily may.

Trade Lists received.—*William Chater's* (Saffron Walden) *List of Double Hollyhocks.* A very extensive collection of these beautiful autumn flowers, with good practical directions for their management.—*C. W. Hargrave's* (Winchmore Hill, N.) *Catalogue of Garden, Agricultural, and Flower Seeds* consists of 20 pages of the more useful seeds required in gardens and farms.—*J. Samuel & Co.'s* (Newry) *Select and Descriptive Catalogue of Vegetable and Flower Seeds* consists o 12 pages of such sorts as are most wanted in country places in Ireland. In 1845 such a catalogue could not have paid. Fourteen years have brought about a marvellous change even in County Down.—*Downie & Laird's* (Edinburgh) *Descriptive Catalogue of Florists' Flowers.* A very large well-arranged catalogue of such plants, with good useful notes. The orthography is remarkably creditable.—*Wheeler & Sons'* (Gloucester) *Little Book or Select Seed List.* One of the most carefully written country catalogues which we have seen. The descriptions are unusually full.—*E. G. Henderson & Son's* (Wellington Road) *Catalogue of Flower and Vegetable Seeds, &c.* Another of those enormous and valuable lists, with very useful and highly instructive notes, forming quite a new feature in Horticulture, and only to be found in the London trade.

Garden Memoranda.

A. J. Doxat's, Esq., Putney Heath.—At few places are Chrysanthemums in pots grown in greater perfection than they are here, Shrimpton, Mr. Doxat's gardener, having been awarded prizes for them at all the great metropolitan exhibitions this year. His plants are remarkable not only for abundance of bloom, but for the large and healthy foliage with which they are furnished quite down to the pots. To ensure this the following points are attended to:—When hot dry weather sets in the plants are well mulched with rotten dung, which prevents the sun's rays from scorching the little rootlets which may be found in multitudes just under the surface of the soil. If these get scorched or burned the plants are almost sure to shed their lower leaves; this is however easily avoided by the mulching just mentioned and frequent waterings, a practice which causes the plants to grow healthily and renders them ornaments to the garden even when out of bloom. Pompones Mr. Shrimpton keeps in shady situations till September; he stops them two or three times during the season, and they are supplied plentifully with water, taking care, if the mould should open or crack round the inside of the pot, to fill up the gap with a little finely sifted soil. If this is not attended to water when

supplied passes off between the soil and the pot, and leaves the middle dry. Another point requiring particular attention is not to allow the plants to get too high before they are stopped; if this is neglected they do not break at the bottom or throw out laterals low enough to induce a handsome bushy habit. Mildew, to which the Chrysanthemum is very subject, is kept down by sprinkling the plants with water and then well powdering them with flowers of sulphur. To be effectual, however, this ought to be done immediately the pest makes its appearance; for if allowed to fairly establish itself it is very difficult to eradicate, and the plants never look so healthy afterwards.

In the flower garden is a greenhouse with a Vinery on either side of it. At present the greenhouse is gay with spring flowering plants. On the back wall is a large Plumbago capensis, planted in a large slate tub; every year this is literally one mass of bloom, forming an elegant background to the stageful of plants in front of it. In the Vineries are raised excellent crops of Grapes, and that by ordinary means skilfully applied. Here are no carrion-made borders, producing gross, ill-ripened, or weakly wood; they consist simply of pure Wimbledon loam mixed with a little well rotted manure laid on a well drained bottom. Thus circumstanced the Vines make no more wood than they are able to ripen thoroughly, and the result is abundance of bunches, not very large, but finely ripened and beautifully coloured. One is a late house, to which no fire-heat is applied except in September, when the weather happens to be cold and wet. This house is ventilated at top and front—in the latter by means of lights swung by their middle on pivots. For many years the crop in this house was ruined by mildew, which Mr. Shrimpton considered was induced by opening the front lights, from which a strong current of air was admitted among the leaves. He therefore tried the effect of keeping them shut always after the fruit had set, and since that time he has never been troubled with that pest.

On the walls of the kitchen garden Peaches, Nectarines, Apricots, and Plums succeed admirably. Figs annually produce an excellent crop, especially the Chestnut, a large and comparatively scarce variety. When Figs were wont to be covered here in winter the result was no crop; but during the last few seasons, when they have received no protection whatever, they have borne well. The situation is, however, naturally somewhat warm and dry.

Calendar of Operations.

(For the ensuing Week.)

PLANT DEPARTMENT.

CONSERVATORY, &c.—Luculias and other ornamental winter flowering plants in beds or borders should be cut back after blooming as freely as may be necessary to keep them close and well furnished, and this should not be deferred so as to permit the energies of the plants to be wasted in the production of useless wood. The small-leaved weaker growing varieties of Citrus are invaluable for winter flowering, and considering that they are plants of easy culture it is surprising that more of them are not grown for this purpose. Get Camellias and Azaleas for early flowering next season started into growth without loss of time. Camellias may be had in bloom early in September by placing them in heat at once so as to get the buds to set early; and when once the plants acquire an early habit of starting into growth they make as fine wood as those grown in summer; but unless plants with prominent wood-buds can be selected, there may be some little difficulty in getting them to make free growth the first season. Let the temperature range about 45° at night, and give air freely on fine days, which will tend to make the permanent specimens in the house break their buds slowly, and will secure strong close growth. Lose no time in repairing the drainage of any specimens which require such attention, and endeavour to secure a healthy vigorous root action, which is of great importance, especially in the case of hard-wooded plants. Shift and tie out Pelargoniums as may be required, and allow them plenty of space after this time, with all the light possible, and a free circulation of air whenever the weather will permit; but avoid cold north-easterly winds, which are very injurious to plants in active growth. Do not allow Calceolarias to suffer for want of pot room, as any check at the present season might throw them prematurely into flower. Cinerarias and other plants in pits or frames will now require frequent shifting and placing at greater distances from each other, in order that air may be permitted to circulate freely among them. Fumigate occasionally to destroy greenfly. Continue to propagate half-hardy plants for autumn flowering in the open ground. Sow tender annuals.

FORCING DEPARTMENT.

PINERIES.—Do not allow young stock in pots to become too much pot-bound before shifting, and see that the balls are in a moist state at the time of potting. Aim at keeping these growing slowly, afford them a thoroughly moist atmosphere, and keep them near the glass in order to secure compact strong plants. Let the temperature range from 60° to 70° with fire heat, allowing it to rise some 10° with the assistance of sunshine, and a gentle circulation of air. Plants swelling their fruit must be afforded a moist temperature of 70° at night. VINERIES.—Attend to the border where the Vines are fairly started, and see that it is protected from the cold by a substantial coat of dry litter. Where fermenting materials are used for warming the border this must also be well covered from the weather, and a gentle fermentation secured by turning it on a sunny forenoon, and adding a rather liberal quantity of fresh materials in a warm state; for unless a steady heat can be maintained the use of fermenting materials is much more likely to be injurious than otherwise. Proceed with thinning the bunches and berries as soon as the crop is sufficiently advanced. Stop laterals, regulate and tie in the shoots, taking care not to leave too many for the space, and keep everything neat and orderly Take every opportunity which the weather may offer of admitting a little fresh air, and maintain a moist atmosphere by frequently sprinkling the paths, &c. Injury is sometimes done to the young tender foliage of Vines by the vapour arising from the evaporating pans when the state of the weather necessitates overheating the pipes, and if there is any danger to be apprehended from this, a board should be suspended over the pans so as to diffuse the heated vapour, and prevent its striking the foliage too much in one place. Examine the leaves in the early house narrowly for red spider, particularly those near the pipes, and if the least vestige of this pest is perceived, wash every affected leaf carefully and at once, using a soft sponge and soapy water. This may appear a tedious plan to those who have not been accustomed to spend much time upon plant washing, &c.; but an active handy man will soon go over a good part of a house, and if the enemy is taken in time it will be easily eradicated by these means. PEACHES.—Where the trees are not so far advanced as blooming, proceed very quietly under the present state of the weather; for it is not desirable to have them in this state until air can be admitted more freely than would be advisable under the most favourable arrangements at present. In houses where the trees are in bloom, a little extra fire-heat should be used, so as to allow of the admission of fresh air whenever the external temperature is not very severe; but this should be effected by small openings near the pipes, so that the air may get warmed before coming into contact with the trees. Maintain a soft humid atmosphere where the fruit is fairly set, syringe the trees lightly after shutting up early on bright afternoons, and proceed gradually with disbudding the trees, and where the fruit is thick a portion should be removed as soon as it is safely set, but then so as to allow for a few falling, to which the Peach is liable until after stoning. See that the trees are properly moist at the root, giving tepid water where it is wanted. STRAWBERRIES.—These are somewhat liable to the attacks of green-fly when the weather necessitates keeping them rather close, and they should be very carefully looked over, and lightly fumigated once or twice if they are found to be at all infested with this pest. Do not exceed 50° at night until the fruit is set, and keep the plants near the glass, giving as much fresh air as can be safely done, and maintain a moist atmosphere except while the plants are in blossom, when every care should be taken to keep it rather dry. CHERRIES.—Guard against sudden changes of temperature until the fruit is stoned; maintain rather a humid atmosphere with a temperature not higher than 60° by fire-heat. MELONS AND CUCUMBERS.—Stop the plants when they have made the second rough leaf; if in dung beds take care not to overline them with rank ill-prepared manure; give air on all favourable opportunities. Water only in the morning. MUSHROOM HOUSE.—Keep this house at about 60° with a humid atmosphere. RHUBARB AND SEAKALE.—Keep up a succession; both may be forwarded with advantage in the Mushroom house.

FLOWER GARDEN AND SHRUBBERIES.

Finish removing shrubs where not already done, as soon as possible, and lose no time in getting alterations involving the relaying or putting down of fresh turf completed, for it is a great saving of after attention and labour to get this kind of work finished before drying winds set in. If not previously done, get pillar Roses trimmed and tied, and where wooden stakes are used for their support get them examined carefully, letting none be left that are not likely to last the season, for it is extremely inconvenient to replace them after the plants have begun to ramble about. It is a good plan to give pillar Roses a liberal supply of manure-water when it can be conveniently obtained, or a dressing of solid manure may answer the same purpose. A stimulus of this kind will be found of great service in inducing vigorous growth and a fine display of flowers.

HARDY FRUIT AND KITCHEN GARDEN.

Prune and nail Peaches, Nectarines, and as soon as this is done if it is intended to apply a covering for the protection of the blossoms, bring it into use at once, to shade them from the exciting influence of the sun. Where the early crops of Peas have been injured by cold or mice, get some planted in turves with which to make good the deficiencies in the lines. The turves should be cut in widths of about 5 inches, and 3 or 4 inches deep, cutting out a shallow channel about 3 inches wide and on the under side in which to place the seed. The turves should then be laid with the green side under in a moderately warm house, planting the Peas and covering them with light soil, where they will soon vegetate. As soon as they are fairly in leaf remove them to a cool place, and gradually prepare them for planting out. Managed in this way the Peas will not sustain the slightest check, and will root through the turf into the soil and grow away freely. See to keeping up a supply of French Beans, and give those bearing in pots a liberal supply of manure-water, and endeavour to keep them in vigorous health, so as to avoid havin them infested with red spider.

COTTAGERS' GARDEN.

Fruit trees, if any, should now be pruned and nailed. Cabbage seed may be sown; the Early York is as good as any for using in a young state, and Vanach for Cabbaging. Early White Broccoli for autumn and winter and Knight's Protecting for spring should be put in now. Triple curled Parsley may be sown as edging. It is not only useful, but ornamental. Pansies in bloom in the open ground may be taken up and put into pots for window decoration. Crocuses may also be treated in the same manner.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,

For the Week ending Feb. 17, 1859, as observed at the Horticultural Gardens.

Feb.	Moon's Age.	Barometer.		Temperature					Wind.	Rain.
				Of the Air.			Of the Earth			
		Max.	Min.	Max.	Min.	Mean	1 foot deep.	2 feet deep.		
Friday 11	8	29.569	29.526	50	41	45.5	46	44½	S.W.	.04
Satur. 12	9	29.747	29.508	51	41	46.0	46	44½	S.W.	.22
Sunday 13	10	29.807	29.747	51	33	42.0	46	45	S.W	.08
Mon. 14	11	29.869	29.566	48	28	38.0	46	45½	S.W	.02
Tues. 15	12	30.089	29.987	50	43	46.5	45	45	S.W.	.06
Wed. 16	13	30.069	30.025	58	40	49.0	46	45	S.W.	.00
Thurs. 17	○	30.184	29.992	56	36	46.0	47	46	S.W.	.01
Average		29.917	29.778	54.8	34.5	44.7	46.0	45.1		.43

Feb. 11—Rain; cloudy and fine; rain at night.
— 12—Heavy rain; showery; cloudy.
— 13—Fine; cloudy; overcast; slight showers.
— 14—Hazy; rain; fine at night; frosty.
— 15—Fine; overcast; fine; rain.
— 16—Overcast; fine throughout.
— 17—Clear and fine; cloudy; slight showers; overcast.
Mean temperature of the week, 6 deg. above the average.

RECORD OF THE WEATHER AT CHISWICK,

During the last 33 years, for the ensuing Week, ending Feb. 26, 1859.

Feb.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 20..	45.0	30.6	37.8	13	0.65 in.	3	4	3	5	1	9	5	3
Mon. 21..	46.1	31.7	38.9	14	0.48	2	7	4	5	—	8	6	1
Tues. 22..	45.7	32.5	39.1	13	0.57	3	5	8	—	2	8	5	2
Wed. 23..	46.9	31.6	39.3	13	0.27	5	5	2	3	—	8	7	3
Thurs. 24..	47.0	33.4	40.2	15	0.51	3	2	3	3	4	8	8	2
Friday 25..	47.6	32.8	40.2	16	0.90	4	2	5	1	4	9	6	2
Satur. 26..	47.1	33.1	40.1	14	0.34	5	2	4	4	1	9	5	3

The highest temperature during the above period occurred on the 26th, 1846,—therm. 60 deg.; and the lowest on the 20th, 1855—therm. 8 deg.

Notices to Correspondents.

BOOKS: *Inquirer.* Mr. Gordon's names are far more trustworthy than Loudon's. The subject of Conifers is better understood now than formerly. You must, however, understand that Mr. Gordon's book will not always bear scientific criticism. Nevertheless it is by far the best, as a catalogue, that we possess.—*G F.* We do not recommend the work you mention. Consult Neill's Fruit, Flower, and Kitchen Gardener, published by Black, of Edinburgh.—*G. Williams.* Prof. Lindley's Descriptive Botany will give you all the information you want. It only costs 1s., and was prepared as a guide to those who do not know how to apply to practice the general facts explained in Introduction to Botany.

BOUQUETS: *Kensington.* Apply to Mr. Hooper, Bouquet Maker, Bradmore, Hammersmith; a man very skilful in this line, and moderate in his charges. He was the bouquet maker to the late Duke of Devonshire, and made that beautiful specimen of the art which was presented to the Queen when her Majesty honoured the Horticultural Society's garden with a public visit in 1855.

GARDENERS: *Effingham.* We regret to say that our inquiries are unsatisfactory as to No. 2; of No. 1 we can learn nothing; the information as to No. 3 is, however, such that we advise you to put yourself into communication with him.

GLASS: *E A F.* We do not think it very material which kind of fluted glass you employ. In our own case we should select the kind with the finest fluting

NAMES OF FRUITS: May we beg our correspondents to send their specimens, *carriage paid*, to our Office, No. 5, Upper Wellington Street, Covent Garden, London: AND TO NO OTHER PLACE WHATEVER.—*R F.* 1, Reinette du Canada; 2, Fearn's Pippin; 3, French Russet; 4, appears to be the yellow Ingestrie. The Pears were decayed.—*R F.* Blenheim Pippin; 2, Bedfordshire Foundling.—*C S.* 1, not known; 2, Minchall Crab.—*T H,* 1, Easter Pippin, or French Crab; 2, very like a Newtown Pippin; 3, Wyken Pippin.—*Westbury.* Your ‖Apple, a small round very sweet Redstreak is not known. Probably a Cider Apple.—*Central Bucks.* Your Apples are very handsome. We believe they are the King of the Pippins; and if so, from your account, it would appear the variety is very old.‖

NAMES OF PLANTS.—We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have or could have undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*B.* 1. Begonia—we believe obliqua, but the flowers are all males; 2. Passiflora racemosa; 3. Epidendrum ciliare; 4. Rivina lævis.—*G G.* Acer creticum.—*X X.* Cratægus crenulata.—*Jerdison.* Probably some Stelis; but the species of that genus cannot be determined by leaves alone. In the new number of Folia Orchidacea there is a complete account of this difficult genus, and you can consult it when your plant flowers.—*W A.* Malva pseudo-lavatera.

ORANGE TREES: *E M D.* Shift the trees at the end of March into light loam, with half its bulk of thoroughly well rotted dung. Give them a gentle bottom heat, and by Midsummer you may turn them out into a sheltered sunny place. But you must soak the balls two or three times in the autumn with warm rain water; and if you can plunge the pots during the first summer in stable litter so much the better.

SPADES: *Reargus.* In heavy land good well made steel forks are far preferable. In such lands spades will soon be disused.

SPERGULA PILIFERA: *P.* We know nothing about this plant beyond what is stated in E. G. Henderson's & Son's Catalogue, an extract from which you will find in another column.

VINES: *St. Dunstan's.* Your Vine is swarming with Acari, very like red spiders, but colourless. Put the plant apart, and give it a good sulphuring as if it had been attacked by red spider. Afterwards syringe it well. If necessary repeat the dose.

THE PATENT

NITROPHOSPHATE OR BLOOD MANURE COMPANY (LIMITED),

CONSISTING OF TENANT FARMERS, OCCUPYING UPWARDS OF 30,000 ACRES OF LAND.

TRUSTEES.

ABEL SMITH, Jun., Esq., Walton House, Ware, Herts. | MAJOR-GENERAL HALL, M.P., Western Colville, Linton, Cambridge
CHARLES DIMSDALE, Esq., Essendon Place, Herts.
EDWARD BALL, Esq., M.P., 8, Belgrave Road, Pimlico | JOHN BRADY, Esq., M.P., Warwick Terrace, Belgrave Sq.

DIRECTORS.

Chairman.—JONAS WEBB, Esq., Babraham, Cambridgeshire.
Deputy-Chairman.—JOHN COLLINS, Esq., Myddleton Square, Pentonville.

EDWARD BELL, Esq., Tottenham, Middlesex | ROBERT LEEDS, Esq., West Lexham, Norfolk.
JOHN CLAYDEN, Esq., Littlebury, Essex | ROBERT MORGAN, Esq., 72, Camden Villas, Camden Town.
RICHARD HUNT, Esq., Stanstead Abbot, Herts. | GEORGE SAVILL, Esq., Ingthorpe, near Stamford.
THOMAS KNIGHT, Esq., Edmonton, Middlesex. | WILLIAM COLLINS, Esq., 105, St. John Street Road.

Bankers—Messrs. BARNETT, HOARE & Co., Lombard Street.
Solicitors—Messrs. KINGSFORD & DORMAN, 20, Essex Street, Strand.
Auditor.—G. W. BROWN, Esq., 28, Parliament Street.
Manager.—Mr. JAMES ODAMS. | *Secretary.*—Mr. C. T. MACADAM.

Offices 109, Fenchurch Street, London.—Manufactory, Plaistow Marshes, Essex.

THE Directors beg to inform their Friends and the Agricultural Public that the following Manures are now ready:—

ODAMS'S BLOOD MANURE FOR CORN AND MANGEL.

ODAMS'S BLOOD MANURE FOR ROOTS.

ODAMS'S SUPERPHOSPHATE OF LIME.

Full particulars may be had at the Company's Offices, or of the local Agents.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

LONDON MANURE COMPANY, removed to 116, Fenchurch Street, E. C. (Established 1840), have the following MANURES ready for delivery:—

CORN MANURE for SPRINGTOP DRESSING
URATE
MANGEL MANURE
SUPERPHOSPHATE OF LIME
BLOOD MANURE
} all of guaranteed quality.

In consequence of the reduction in the price of raw material the London Manure Co. are enabled to lower the price of their Superphosphate of Lime, and to materially improve the Corn Manure and Urate.

The London Manure Co. also supply PERUVIAN GUANO (direct from Messrs. A. Gibbs and Sons), SULPHATE of AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of value. Wholesale dealers supplied.

116, Fenchurch Street, E.C. EDWARD PURSER, Secretary.

SOLUBLE PHOSPHATE OF LIME.

FREDERIC CORNWELL begs to inform his friends and the Agricultural public that he can now supply a "SUPERPHOSPATE of LIME" superior to anything yet produced. Each Bag guaranteed to contain from 20 to 25 per cent. of "Soluble Phosphate of Lime." Price 5*l.* 10*s.* per ton, delivered free to any Railway or Wharf in London. Dealers and the trade supplied. Linseed-cakes, Cotton-cakes, and all descriptions of Artificial Manures at lowest market prices.

Offices, 7, Great St. Helen's, London, E. C.

REDUCTION IN PRICE OF LAWES'S MANURES.

MR. LAWES begs to announce that he has this season reduced the price of the Manures manufactured by him, viz.:—

TURNIP MANURE	from £7 to	£6	6
SUPERPHOSPHATE OF LIME ..	,, 7 to	6	6
MINERAL do. ..	,, 6 to	5	5
BARLEY MANURE..		8	0

Prof. Way and Dr. Voelcker have sampled from a bulk of 5000 to 6000 tons at his factories, and their report and analyses are given in full in Circular to be obtained on application at his office, 1, Adelaide Place, London Bridge, E.C., or of his local Agents.

N.B. Genuine Peruvian Guano direct from Messrs. GIBBS, Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures. American Cotton-seed Cake supplied.

ESTABLISHED 1812.

H. AND T. PROCTOR'S TURNIP MANURE.—Messrs. H. & T. P. draw particular attention to this valuable Manure, which contains all the elements necessary for the full development of the Turnip Crop, so combined, that, from their chemical knowledge and long experience, they feel satisfied is most advantageous to the consumer. It has been very extensively used by most of the eminent Agriculturists of the day, and has attained a high reputation throughout England, Scotland, and Wales, and, they venture to say, is unrivalled for the weight and quality of the Bulbs which it produces. The application of this Manure to the Turnips will be found to benefit considerably the after crops of Barley, Clover, and Wheat.

POTATO, GRASS, BARLEY, CLOVER, AND WHEAT MANURES; also BONE DUST, PERUVIAN GUANO, and SUPERPHOSPHATE of LIME, warranted of the best quality.

Apply to H. & T. PROCTOR, West of England Depôt for Artificial Manures, Cathay, Bristol; or PROCTOR & RYLAND, Birmingham, and Saltney, near Chester.

PREFERENCE STOCK: SIX PER CENT.

THE DIRECTORS OF THE NATIONAL GUARANTEED MANURE COMPANY, LIMITED, are now prepared to issue the remainder of the 20,000*l.* Preference Stock, authorised by resolution of the last General Meeting of Shareholders. This stock bears a preference interest of 6 per cent. per annum, payable half-yearly. The Company is in good working order, and its affairs have been investigated by an independent public accountant. The above sum will be expended in the extension of the Company's trade. The business of 1858 nearly doubled that of 1857, and that of 1859 is expected to double that of 1858. More than one-fourth of the proposed sum was subscribed for at the General Meeting of the Shareholders; the list will therefore be closed in a short time. Parties desirous of subscribing are requested to apply to the Secretary for the necessary forms. By order of the Board.

F. BURBIDGE, Manager.

Offices, 2, Moorgate Street, London.

THE ROYAL AGRICULTURAL SOCIETY'S PRIZE CHURN.—This Churn has taken all the prizes offered by the Royal Agricultural Society from 1850 to 1858 inclusive. Price list and testimonials sent free. Illustrated Catalogue on receipt of six postage stamps

BURGESS & KEY, Patentees and Manufacturers, 95, Newgate Street, London.

AGRICULTURAL MACHINERY.

E. R. AND F. TURNER, Ipswich, manufacture Prize Mills for Crushing Corn, Seed, Malt, &c.; Portable Grinding Mills, Steam Engines fixed and portable from 2 horse-power and upwards; Threshing Machines, Chaff Cutter, Oilcake Breakers, Horse Gears, Saw Tables, &c., all of a superior description and adapted for Home, Colonial, and Foreign use. Illustrated Price Lists sent free on application.

IMPROVED PATENT TURNIP AND MANGEL GRATER, MANUFACTURED BY

JOHN WARNER AND SONS, No. 8, Crescent, Jewin Street, London, E.C.—J. W. & Sons, in introducing their IMPROVED PATENT TURNIP AND MANGEL GRATER to the notice of Agriculturists, beg to state that they have personally tested its capabilities during the last three seasons, and as such feel that they can, with the greatest confidence, recommend it as a machine that will upon trial satisfy the requirements of Feeders of Stock generally; one man or strong lad being able with comparative ease to grate 20 bushels of roots in 10 minutes.—Price of the Machine complete, 4*l.* 10*s.* Carriage paid to any Railway Station in England. To be procured of any Ironmonger or Agricultural Machine Agent in Town or Country, or of the Manufacturers.

WARNER'S IMPROVED LIQUID MANURE OR GENERAL PORTABLE PUMP.



These Pumps are fitted with J. W. & Son's Patent Buckets and Suckers, and cannot clog in action. The barrel is of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure. The legs will fold together, and the whole may be carried on the shoulder to any pond or tank required.

Price of 4½ in. Pump, with legs, 3*l.* 3*s.* If with planished copper barrel and galvanised iron handle, &c., 14*s.* extra. The barrel is 27½ in. long, and the legs are 5 ft. high.

These Pumps are also made without the legs, with strong wrought-iron straps for screwing on to any ordinary water butt or cart, and fitted with 1¼ inch brass union for attaching flexible suction. Price 50*s.*

1¼ inch Gutta Percha Suction Pipe, 1*s.* 11*d.* per foot.

Rubber and Canvas Suction and Delivery Hose, from ¾ inch to 4 inches diameter, in lengths of 60 feet to order. Branch Pipes with Cocks, Union Screws, &c., at reduced prices.

May be obtained of any Ironmonger or Plumber in town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin St., London.

WARNER'S PATENT VIBRATING STANDARD PUMPS.

PATENT CAST-IRON PUMPS, fitted with J. W. & Son's Patent Buckets and Suckers, which cannot clog in action, for Farms, Cottages, and Wells, not exceeding 28 feet.

Diameter of Barrel.	Height.		£	*s.*	*d.*
2½ in.	short 1 ft. 7 in.	Fitted for lead, gutta percha, or cast iron flanged pipe, as required.	1	10	0
2½ ,,	long 3 ,, 3 ,,		1	14	0
3 ,,	ditto 3 ,, 6 ,,		2	8	0
3½ ,,	ditto 3 ,, 6 ,,		2	12	0
4 ,,	ditto 3 ,, 6 ,,		3	3	0
2½ ,,	short, with 15 feet of Lead Pipe attached, ready for fixing		2	14	0
2½ in.	long ditto ditto ditto		2	18	0



The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.

May be obtained of any Ironmonger or Plumber in Town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

LAND DRAINAGE.—Works of Drainage of any extent are executed by the GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY on all descriptions of Property, whether Freehold, Entailed, Mortgaged, Trust, Ecclesiastical, Corporate, or Collegiate.

Repayment may be made by the Landowner as successive portions of the Works are completed, or the actual expenditure, with a Commission thereon, may be charged on the property improved by way of rent charge for any term not exceeding 50 years, the instalments to repay principal and interest being thereby kept down nearly to 5 per cent. per annum.

No investigation of title being required, and the charge not being affected by incumbrances, no legal expenses are incurred.

Works of Irrigation, Enclosing, Wood Grubbing, Road Making, and Farm Buildings are executed in a similar manner.

The Company also assist Landowners in executing any of the improvements by their own agents, and charge the amount expended on the property improved.

Applications to be made to WILLIAM CLIFFORD, the Secretary, at the Offices of the Company, 52, Parliament Street, London.

THE LANDS IMPROVEMENT COMPANY
2, Old Palace Yard, Westminster, S.W.

To Landowners, the Clergy, Solicitors, Estate Agents, Surveyors, &c.—The Company is incorporated by Special Act of Parliament for England, Wales, and Scotland.—Under the Company's Acts Tenants for Life, Trustees, Mortgagees in possession, Incumbents of Livings, Bodies Corporate, certain Lessees, and other landowners are empowered to charge the inheritance with the cost of improvements, whether the money be borrowed from the Company or advanced by the Landowner out of his own funds.

The Company advance money, unlimited in amount, for works of Land Improvement, the Loans and incidental expenses being liquidated by a rentcharge for a specified term of years.

No investigation of Title is required, and the Company being of a strictly commercial character do not intertere with the plans and execution of the works, which are controlled only by the Enclosure Commissioners.

The improvements authorised comprise Drainage, Irrigation, Warping, Embanking, Enclosure, Clearing, Reclaiming, Planting, Erecting and Improving Farm Houses and buildings for Farm purposes, Farm Roads, Jetties, Steam Engines, Water Wheels, Tanks, Pipes, &c.

Owners in fee may effect improvements on their Estates without incurring the expense and personal responsibilities incident to Mortgages, and without regard to the amount of existing incumbrances. Proprietors may apply jointly for the execution of Improvements mutually beneficial, such as a Common Outfall, Roads through the District, Water Power, &c. For further information and for forms of application apply to the Hon. W. NAPIER, Managing Director, 2, Old Palace Yard, Westminster, S.W.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.
Principal—J. C. NESBIT, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

SMITHFIELD CLUB.—Resolved—"That a Committee be appointed to inquire into the practicability of procuring a better and more commodious place for the Smithfield Club to hold their Annual Exhibitions, and to report the result of their inquiries to the next General Meeting."

In accordance with the above resolution, the Committee are prepared to receive communications or proposals by which an increased accommodation may be afforded to the Club.

Communications to be addressed to the Hon. Secretary on or before April 30, 1859.

B. T. BRANDRETH GIBBS, Hon. Secretary.
47, Half Moon Street, Piccadilly, London, W.

N.B.—The present Building at Baker Street affords about 45,000 superficial feet of ground space (exclusive of Committee Room, Entrances, &c.), and about 20,000 feet in the Galleries.

The Agricultural Gazette.

SATURDAY, FEBRUARY 19, 1859.

MEETINGS FOR THE ENSUING WEEK.

WEDNESDAY, Feb. 23—Agri. Society of England .... Noon.

THE Bill for facilitating the transfer of land and for the registration of titles, which was last week read for the first time before the House of Commons, deserves the attention of our readers.

That our present system of conveyancing is a disgrace to a free and commercial people; that by preventing a speedy and safe transfer of land it seriously diminishes the value of landed estates, and renders them undesirable as an investment for money, are facts which have long been admitted, and cannot at the present time be successfully disputed. If any person is still sceptical on this point we would ask him to consider why it is that 3 per cent is deemed satisfactory interest to those who invest in the funds, whilst 4 or 4½ is always expected by those who invest in land? It cannot be said that the funds are more secure, for the contrary is the indisputable fact owing to their constant fluctuations. The true reason we believe to be that a person who invests in the funds can get his money back without delay, whilst an owner of land can do no such thing, inasmuch as whether he seeks to raise money by sale or mortgage his *title* must be investigated, and the history of the land for the last 60 years has to be examined.

The task, however, of introducing a new system of transfer which shall preserve the merits of that now in use, and at the same time avoid its defects, is one beset with difficulty. It is a great mistake to suppose that the present system of conveyancing is altogether bad. It has grown up amongst us little by little, and to a considerable extent it admirably supplies our wants. Its grand defect

however is that it is a clog to rapid transfer, and unnecessarily impedes dealings in land.

This defect the present Government is attempting to cure, and if its attempts are crowned with anything like success, we are convinced that the value of landed estates in this country will rapidly rise. We believe moreover that dealings in land will be so multiplied as amply to compensate the large class of persons by whom land is conveyed, for the loss of some of the work to which they have been accustomed, and on which they rely for subsistence. If any proof of this is wanting, see the effect produced in Ireland by the recent measures which have facilitated the transfer of land there. It is true it is no part of the plan of the present Government to set up an Encumbered Estates Court in this country, for no such court is wanted; but what is proposed is to do away with the necessity of a lengthened investigation of title every time an acre of land has to be sold or mortgaged, to institute a registry of ownership, to confer on the registered owner power to deal with the land of which he is such owner, with the same facility as the registered owner of so much stock or of a share in a ship can at present deal with such stock or share.

We do not propose upon the present occasion to allude to the details of the Bill now before the House. It is necessarily long, and its particular provisions demand more careful consideration than we have yet been able to give to them. But the nature of the change proposed to be made and the benefits which will be conferred on the holders of land if the objects aimed at by the Government are satisfactorily accomplished under the Bill in question, are of more than ordinary interest to our readers, and demand that it should be supported by all who have at heart the welfare of the great landed interests of this country.

THE high price of guano during the past year has produced its natural fruit in an unusual extent and frequency of experiment in the Corn and Turnip field with other fertilisers. From Lincolnshire, from Norfolk, from East Lothian and other counties in Scotland, we have comparisons of guano with nitrate of soda on corn crops, and with various superphosphates and blood manures for root crops.

It has been customary in the north to use Peruvian guano alone, and in very large quantities per acre for the Turnip crop. The experience of the past year will probably lead to a diminished use of it for that purpose. Most of the results recorded of the trials made in the Lothians and elsewhere indicate the superiority of guano when mixed with superphosphate; and in many of them the artificial manures of different makers, BAILEY, TOWNSEND, HODGSON, PATERSON, ODAMS, OVENS, DALL, SEAGRAVE, LAWES, BATCHELOR, SIMPSON, THURTELL, MATTHEWS, CARNE, PACKARD, BROWN, and others exceed in their returns those from the best Peruvian guano. On the whole the Galashiels report declares the results of these experiments to be in favour of phosphatic manures. The reporter for this Club declared, too, that the specific gravity of the Turnips grown from Peruvian guano was below that of those grown from other manure. For the decision of such a curious point as this, however, a larger number of facts ought to be examined than were then under review.

The results of a most interesting series of experiments at Holkham Park farm on nitrate of soda and potash as top-dressings for Wheat, and on various artificial manures in comparison with guano for root crops, extending over a series of years, is given in the current number of the English Agricultural Society's Journal. Of 50 experiments, ranging over the years 1850 to 1858, in which various quantities of the nitrates were applied to Wheat, only one indicated no increase of crop in consequence of the application. The average application seems to have been 1 cwt. per acre, and the average increase of crop 7 or 8 bushels per acre. In 1852 the increase was no less than 13 to 23 bushels per acre, according to the application, which varied from 4 to 10 stones of the nitrates per acre.

The series on the different artificial manures is accompanied by Mr. NESBITT'S analyses of them, from which, to take the last instances, those of 1857, upon the list we find that the "economical" manure contains about ½ lb. of soluble phosphate of lime in a cwt., and THURTELL'S manure contains 11 lbs. in the same quantity; the one produced 8½ tons, and the other 11½ tons of Swedish Turnips per acre.

A general review of this series indicates that the addition, whether of farm-yard manure or guano to the other fertilisers in general greatly increases their efficiency, and that where each manure is used by itself, the results of the guano application stand highest on the list. The differences are however in these cases generally very slight—not more than would occur in different patches of a field that had received a uniform manuring. And on the whole there can be little doubt that the effect of artificial fertilisers on last years' sales of guano—the diminished demand for the latter which has been the consequence of their competition with it—is the legitimate and proper result of their true relative values, and likely therefore to be maintained, or even to increase with increasing skill in the manure manufacture.

As throwing light on the present value of agricultural labour, a subject on which a good deal of discussion has arisen out of the lately published speech of Mr. GREY, of Dilston, we extract the following passages from the current number of the Journal of the Agricultural Society of England. They give the wages paid in different parts of the country to the farm servants—ploughmen and others working in the barn; and are taken from Mr. MORTON'S paper on the Cost of Horse Power.

BEDFORDSHIRE.—"The ploughmen now are paid 2*s*. a day. Of course their wages fluctuate according to the price of provisions. They generally get an advance of 2*s*. per week for four weeks during haymaking, and they are paid 20*s*. a week for a month during the corn harvest; and they have the privilege of working by contract whenever opportunity offers during hay time or harvest. It will not, therefore, be fair at such times to charge the whole of their wages to the cost of horsekeeping." "My horsekeeper's wage is 12*s*. a week; my under ditto and ploughmen from 8*s*. to 10*s*., with double wages for the harvest month."

BERKSHIRE.—"Carters 15*s*. a week (no perquisites). Young men and boys hired by the year, from 5*s*. to 9*s*. a week."

DORSETSHIRE.—"One man and boy are allowed to a team of four horses. The ploughmen's wages are from 8*s*. to 9*s*. per week, with house, garden, fuel, and 20 perches of Potato ground, and 1*s*. for every journey above 6 miles from the farm."

DUBLIN.—"The ploughman's wage is 12*s*. a week, with a free house."

GLOUCESTERSHIRE: *Cirencester.*—"Three of the ploughmen are paid 11*s*. a week, and receive 36*s*. extra for harvest. Two boys get 7*s*. a week, and about 15*s*. extra for harvest work. No beer or extras of any kind beyond the wages. The carters groom, but do not feed their horses: a regular horse feeder is kept, who employs about half his time at this work, and is paid 12*s*. a week, and 32*s*. extra for harvest work."

Thornbury.—"We pay our ploughman 10*s*. a week—more in harvest time."

Frampton.—"The wages of the ploughmen are above the common rate of the neighbourhood: they receive 11*s*. 6*d*. in money, besides beer and extra money in harvest, also a house and garden worth 5*l*. a year."

Didmarton.—"Carters' wages 15*s*. a week, including rent, fuel, beer, and indulgences."

KENT: *Dover.*—"The waggoners have 2s. a week more than the labourers, who are now paid 11*s*. a week. The second man has 1*s*. less than the waggoner, and both have 2*l*. 10*s*. for harvest. The 'all-workers' have 10*s*. per week all the year round. The boys have 7*s*. per week for board, and 6*l*. wages."

KILKENNY.—"Ploughmen get 8*s*. 6*d*. a week."

LINCOLNSHIRE: *Deeping Fen.*—"We are giving our ploughmen 12*s*. per week at the present time, with house and garden free; 20*s*. a week for four weeks in harvest, and 20 bushels of Potatoes. Last year we gave 13*s*. 6*d*., and the year before 13*s*. Taking an average of years, I suppose it would be barely 12*s*."

Grimsby.—"Ploughmen about 12*s*. a week."

NORTHAMPTONSHIRE: *Peterborough.*—"We have no hiring of servants, but our ploughmen are ordinary labourers, taking the ordinary wages—just now 10*s*. per week; when corn is dearer, 12*s*. a week."

NORTHUMBERLAND: *Hexham.*—"The general wage of a full ploughman has been for the last few years 15*s*. or 16*s*. a week, with from 2 to 4 bushels of Wheat, the same of Barley, 80 stones of Potatoes, and a house free and cartage of coals. He is bound to supply a woman worker at 1*s*. a day in summer, 1*s*. 6*d*. in harvest, and 10*d*. in winter. Some men get less and some few more than this: my own wages are 15*s*., with the lesser quantities of corn."

NOTTINGHAM: *Mansfield.*—"Ploughmen's wages 15*s*. to 17*s*. a week, except for a month in harvest, when they have from 25*s*. to 35*s*. per week."

OXFORDSHIRE.—"The wages of the ploughmen are from 12*s*. to 14*s*. a week."

SCOTLAND: *Inverness.*—"The ploughmen are engaged by the year, and the money wages, with allowance of provisions (valued at wholesale prices), amount to 30*l*. per annum, besides a cottage on the farm."

Linlithgow.—"Ploughmen's wages may amount in all to 16*s*. per week, varying from 12*s*. 9*d*. to 14*s*. 3*d*., according to price of grain, namely,—house 2*l*., 1050 lbs. of oatmeal, 10 cwt. of Potatoes, cartage of coals, and food for four weeks in harvest time."

SUSSEX: *Chichester.*—"The wage of the ploughman is usually 1*s*. a week and a house rent free more than the ordinary labourer. For four weeks during harvest they have double wages. Their wages for the year, including rent of house, would amount to 35*l*. *now*."

—— THE sale of grain by weight seems to be gradually gaining ground. The "cental" (100 lbs.) adopted as the unit of all future transactions in the Liverpool corn market, though refused at Leith and one or two other places, is already in use in the most important corn markets of the north of England, and seems to give all the satisfaction which it promised.

One hundred firms have signed a recently published declaration that since the 1st of February they have bought and sold by the cental, and see no reason whatever to doubt that the new system will confer upon the trade and the public the advantages promised from it. They say that "the simplicity of the 'cental' becomes every day more and more evident, and though they observe occasional instances of perplexity among those who are suddenly called upon to use the new weight in lieu of the old one, they are strongly persuaded that few changes of so beneficial a character have ever been made with less real inconvenience, and they are satisfied that all that is required is a little perseverance, when the difficulties attending the introduction of the change will gradually disappear."

—— An interesting paper on the utilisation of waste substances was read at a late meeting of the Society of Arts, from which such extracts have been taken in another column as will be interesting to an agricultural reader. Since its publication in the Journal of the Society of Arts, Mr. SEPTIMUS PIESSE, who formerly contributed to the columns of the *Gardeners' Chronicle* a series of papers on Vegetable Odours, has pointed out the waste of such essences, not in England only but in her tropical colonies, where blossoms in abundance are wasted, and no effort made to save their fragrance, although the ottos procurable from them are really as valuable as gold, weight for weight, in this country. Mr. PIESSE also refers to a "guano," as he calls it, to be found on the banks of the Thames when the tide is down—of which no notice is taken, although for 30*s*. a manure might be had worth 5*l*. However useful this mud might be as a top-dressing for poor soils it is not at all likely that 5*l*. worth of it can be put upon the land for 30*s*. A mud over which the tide flows every six hours is not likely to have retained so much fertilising matter in its substance as is here supposed. It is with greater force that Mr. PIESSE refers to the "waste of so much land now lying agriculturally useless within a short distance of the metropolis. Notwithstanding that an Act of Parliament is necessary for its inhabitants to obtain only 100 superficial feet of space out of the back windows, there are hundreds of acres of waste land near it, of which no use is made. That this land—bearing the familiar names of Putney Heath, Boxmoor, Chobham, Aldershott, &c.,—should not be "utilised," does appear a paradox to the proverbial industry and economy of Great Britain."

—— A letter has been published by Sir J. S. FORBES, Bart., late Hon. Secretary of the Highland Society, on recent differences and discussions, in which temperate expression is given to the dissatisfaction of many of the members; and the re-election of the office-bearers of the Society, the resignation of Mr. LAWSON and of Professor WILSON, the alleged mismanagement of some of the proceedings at the Aberdeen Show and the relations of the directors to the Veterinary College are referred to. The absence of Mr. HENRY STEPHENS'S name from the new list of directors and indeed from all former lists is remarked, and is held to prove that a wider range for selection should be taken, and the application of some fresh minds to the subject might be useful, without interfering with the indispensable condition of having among the 30 directors a considerable number who have some prolonged acquaintance with the business. A list of other subjects demanding the consideration of the Society is given. They include "the arrangements for discussion meetings this season, and the committees on uniformity of weights and measures, old and new style in markets, sale of grain by weight or measure, and, above all, the scheme of fostering agricultural education among farmers' sons by diplomas, for which a supplementary charter was obtained and an imposing board appointed. This interesting scheme requires energetic working to produce full effect. Besides these subjects which have been undertaken, and the researches into meteorological phenomena which the Society promised its aid in organising, but which, with the exception of a small donation, it

has never countenanced, a large section of its members appear to be convinced that the social condition of the farm servants as to their morals, brought out by late statistics, their dwellings, and the facilities for evening education among them, require some special attention. It seems probable that this can be attained only by a standing committee of the directors, who shall devote themselves to that department, thus reviving one of the original and very important objects of the Society now represented only by the benevolent Argyll fund under their charge."

——We have received from Messrs. SUTTON, of Reading, the following illustration of the shameless manner in which worthless seeds are sometimes offered to the trade for purposes of fraud. It is a letter from a French dealer in London, who of course gives his name and address. He says:—

"I have sold this day some India Rape-seed for mixing with Turnip-seed, and enclose a sample. If you will have some at 56s. per quarter, in the docks, you can have it if unsold, to your answer. I have sold some East India Radish seed at 9s. per bushel. If you want some for mixing I shall be very happy to serve you."

ON THE SALE OF CORN BY WEIGHT.

IT has been publicly announced that from the 1st of February grain, meal, and flour has been sold in the markets of Liverpool, Glasgow, and Hull, only by the "cental" of 100 lbs. avoirdupois.

The effect upon these markets may be inferred from inspection of the following summary of weights about to be displaced, in the Liverpool market, by the "cental":—

Wheat has hitherto been sold per ..	.. ..	70 lbs.
Barley " "	.. ..	60 ..
Oats	.. ..	45 "
Indian corn and Beans ..	.. ..	480 ..
Peas	.. ..	504 ..
Flour	196lbs. or	280 ..
Oatmeal and Indian meal, per	196lbs. or	240 ..

A similar (not identical) variety has prevailed in the markets of Glasgow and Hull, and still prevails in all the principal corn-markets of the United Kingdom.

The resulting evil is twofold—multiplicity of methods in the same market, and variety of methods in different markets; but it is most important in the latter aspect.

The main object of trade in corn may be said to be to equalise the price in different localities. Freedom of trade has its value in the facility it affords to the attainment of this object—its value alike to the producer, to the dealer, and to the consumer. The lowest price fairly attainable throughout the kingdom—the price best for all parties—would be an uniform price, or a close approximation to it; and this is just the price towards which every additional facility given to the corn trade helps us nearer, and to the attainment of which the exertions of every corn dealer are constantly (however unconsciously) directed.

To take first the case of the dealer. The method of equalisation is invariable—it is transfer of corn from places in which it is cheap to places in which it is dear. This process has three parts:—1st, discovery of local inequalities of price; 2d, negociation of a transfer; and 3d, transmission of the required quantity of corn. Corn-dealers' profit is payment for performance, or direction, of these processes; and is palpably dependent upon the number and extent of the transactions effected. But both "number" and "extent" are reduced by every difficulty in the way of the transaction itself; and diversity of modes of sale undoubtedly makes more difficult what the corn dealers are especially called upon to do,—to find out where corn can be bought cheapest and sold dearest; and, until these steps are taken, facilities of transmission are practically worthless. The cases of producer and consumer are disposed of with a moment's reflection. The transfer will only take place when its effect will be to reduce in some degree, the average price of the kingdom. So much for the consumers. And it will only take place when its effect will be to raise, in some degree, the price of the particular corn dealt with. So much for the producer.

This evil of diverse measures is not a new one; but it has of late become more apparent and less bearable, and hence is more heard of. It was felt enough in 1834 to induce the House of Commons to appoint a select committee "to inquire into the present practice of selling corn throughout the United Kingdom, with a view to the better regulation thereof." That committee examined many witnesses and reported the existence in the country of a great diversity in the modes of selling corn; that in some districts sales were made only by weight, in others only by measure; and in others by both methods; that great inconveniences resulted: ever-recurring misunderstandings and disputes; markets ignorant of the state of, and disinclined to have dealings with, each other; fraud constantly facilitated; and published quotations of price commonly unintelligible out of their own locality. Nearly five-and-twenty years have elapsed, and, the diversity remaining nearly as it was, the ill effects of it have been largely increased. For, as to transmission, railways have, in the interim, reduced to one-half, or one-third, the effective distance between the markets: and as to communication, the electric telegraph has put them all within speaking distance of each other. It is now almost as bad as if the diversity existed in the same market.

The committee of 1834, seeking an uniform method, halted between weight and measure. They sat in London, and were no doubt made to feel, through the witnesses most readily producible, the bias of the London dealers in favour of their own long-established practice of selling by measure—a practice not adhered to the less firmly, perhaps, for its association with the meruge-monopoly of the London corporation. Otherwise, even then, the invariable use of weight throughout Ireland, and its preference in the markets then serving more than half the population of Great Britain—a proportion probably now exceeding two-thirds—would doubtless have led them to choose weight. They chose neither: but proposed a compromise. This was readily shown to be impracticable: and the House dropped the Report into its waste-paper receptacle.

Three of the principal markets of the kingdom, long accustomed to sale by weight, have now determined to use only one denomination—100 lbs. avoirdupois, which they have named the "cental." It is said by some that this is illegal. Were it so, it might be observed that the law has been equally broken, time out of mind, wherever, in Great Britain, corn has been sold by weight; for the law has precisely the same relation to the Scottish boll (240 lbs.), the Welsh hobbett (168 lbs.), the Birmingham bushel (62 lbs.), and the Liverpool bushel (70, 60, or 45 lbs.) as to the cental (100 lbs.). But, in truth, there is no illegality in selling anything by any number of pounds avoirdupois; though the view of the statute (5 and 6 William IV. c. 63) adopted by some of the Scottish authorities, seems to favour that notion.

Assuming that the new system finds general favour in the corn-trade, when tried, there is apparently but one obstacle to its extension into every market in which sale by weight is or shall be adopted, and that is the want of stamped weights (and to use others is clearly illegal) convenient for making up the cental, or aliquot parts of it in the scale. To use the present weights, 56, 28, 14, 7, and so on, will draw somewhat more largely upon the mental arithmetic of the weigher, than would a set running 50, 25, 10, 5 lbs., and so on. But if, to remove this inconvenience, resort be had to Parliament, those who seek the suggested change will find ample support in the documents of the highest authority on this subject yet laid before either House.

Perhaps it may also "speedily be found necessary to pass an Act of Parliament" such as they have suggested. Meanwhile, the best test of the expediency of "the cental movement" will be found in the progress it makes among those it most concerns. The best course for its friends will obviously be to let it speak for itself. *J. T. Danson in the Journal of the Society of Arts.*

ON THE EFFECTS OF DRAINAGE,

RECORDED AT NABONOVO (IN THE PROVINCE OF NOVGOROD), IN 1856, BY N. JELEZNOV.

IN spite of the immense extent of drained country in Western Europe, and the increasing adoption of this important aid in the improvement of land, stimulated by brilliant economical results, few facts bearing on the theory of drainage have hitherto been published.

We know that the increased fertility of the soil is principally owing to the removal of the superabundant moisture from those beds in which roots can freely spread, and whence they can draw as much nourishment as is required for the support of the plants. But we must not stop here; we must add that the results of this thorough drainage are also extremely important; for by these are explained the improvement of the soil and the advantages of cultivation, resulting in a larger harvest.

Amongst these results may be particularly specified the warming, aeration, and mellowing of the soil, which, with a proper amount of moisture, decompose fertilising substances more rapidly, at the same time rendering them more suitable for the process of nutrition. With regard to the diminution of evaporation, this equally assists in raising the temperature of the superficial strata of the earth: but it only affects the atmosphere when an entire country is intersected by subterranean channels.

On the other hand it cannot be denied that climate must have a considerable influence on the effects of drainage; which although useful everywhere, cannot, for instance be as profitable in the north as in the west of Europe.

Although the north of Germany and especially the Baltic provinces have already furnished us with encouraging facts; yet, since drainage has been but lately introduced amongst us, I hope to be of use to the Russian agricultural public, by turning my attention to some scientific investigations, which may assist in dispelling the doubts which prevent our proprietors attempting the complete drainage of their lands.

Every one knows that one or two years are seldom sufficient to obtain the effects expected from drainage; it is obvious, therefore, that it is impossible in so short a time to solve all questions on the subject: I have however decided on publishing the facts already obtained, in the belief that they are not devoid of interest, and that they will assist in spreading amongst our agriculturists more definite ideas on this branch of rural economy.

It was in 1854 that the first attempts were made in Naronovo on some fields and gardens, at first with stone drains, and afterwards with pipes of baked clay. These essays were made by way of experimenting on the different modes of operation.

Two fields of about equal dimensions, similarly situated, and separated by a deep open ditch, were prepared for the experiments, the results of which I am about to give. In the middle of each field were placed thermometers for observing the temperature of the soil, as described in the physico-mathematical report of the Academy of Sciences for 1855, T. xiii., p. 249; where I also noticed the mechanical composition of the soil, and the position of the experimental fields.

Since the Flax harvest in 1853, the two fields have been cultivated in precisely the same manner. During the fallow season of the following year they received similar dressings of 850 poods* per dessiatine.† The Rye being harvested in September, 1855, the field which we shall call No. 1 was drained. The distance between the drains was from 28 to 37 feet, according to the nature of the soil, the depth being from 4 to 7 feet. From this time an improved system of cultivation was introduced throughout this area.

On the 7th May, 1856, 18 tchetveriks of Oats were sown on No. 1, the drained field; and 19 on No. 2; in all 4 tchetverts‡, 5 tchetveriks, weighing 27 poods, 30 lbs. In this the custom of the country was followed. A few days afterwards each field was divided into three portions, of which one was manured with horn shavings, one with pigeon-dung, and the third, between the two others, was left unmanured.

The Oats sprouted on the 16th May simultaneously in the two portions of the experimental field. During the first period of vegetation it was impossible to remark any difference whatever; but the strip manured with horn shavings was shortly marked by a more luxuriant and darker vegetation. Towards the middle of June, when the weeds appeared, it was easy to perceive that these differed quite as much in their species as in their relative abundance.

The following are the names of these plants which were common to the two fields, arranged according to their abundance or scarcity:—

1. Spergula vulgaris.
2. Rumex acetosella, L.
3. Spergula sativa, maxima, Bonngh.
4. Viola arvensis, L.
5. Leucanthemum vulgare, D.C.
6. Scleranthus annuus, L.
7. Stellaria media, Vill.
8. Prunella vulgaris, L.
9. Achillea millefolium, L.
10. Alchemilla vulgaris, L.
11. Phleum pratense, L.
12. Mentha arvensis, L.

PLANTS ON THE DRAINED FIELD, NOT OBSERVED ON NO. 2.

26. Vicia sativa, L.
27. Odontites rubra, Pers.
28. Campanula patula, L.
29. Bidens tripartita, L.
30. Rumex crispus, L.
31. Potentilla norvegica, L.
32. Potentilla tormentilla, Sibth.

PLANTS ON THE UNDRAINED FIELD, NOT FOUND ON NO. 1.

26. Galeopsis Ladanum, L.
27. Scabiosa arvensis, L.
28. Raphanus Raphanistrum, L.
29. Scutellaria galericulata, L.
30. Sagina procumbens, L.
31. Capsella Bursa-pastoris.
13. Equisetum arvense, L.
14. Polygonum minus, Huds.
15. Plantago major, L.
16. Trifolium pratense, L.
17. Trifolium repens, L.
18. Silene inflata, Smith.
19. Centaurea Cyanus, L.
20. Myosotis intermedia, Link.
21. Cirsium arvense, Scop.
22. Vicia angustifolia, Roth.
23. Apera spica venti, Beauv.
24. Bromus arvensis, L.
25. Anthemis arvensis, L.

33. Potentilla anserina, L.
34. Galeopsis Tetrabit, L.
35. Euphrasia officinalis, L.
36. Ranunculus repens, L.
37. Gnaphalium uliginosum, L.
38. Tussilago Farfara, L.
32. Erysimum cheiranthoides, L.
33. Ranunculus acris, L.
34. Chenopodium album, L.
35. Chenopodium viride, L.
36. Crepis tectorum, L.
37. Erodium cicutarium.

An examination of the vegetation of the two fields will show that the plants in the second list are not numerous: it is also possible that some of these plants ought to be placed in the first list, since, for fear of treading down the Oats, the weeds were only collected along the sides of the fields, and the withered remains examined after the harvest. For this reason I consider the comparative numbers of the seeds of the weeds, separated by winnowing from the Oats, as more important; although I am far from supposing that all these plants produce exactly the same number of seeds—a supposition which must be admitted if the comparison be considered as strictly exact. I think, however, that I am not far from the truth in approximately accepting this supposition for the few plants named below, since those plants which are most numerously represented by their seeds are in fact those which were most abundant in the field. I took several samples of each residuum of the winnowing, and sorted the seeds which they contained; then by counting those of each species, and ascertaining what ratio they bore to 1000, I obtained the following results:—

Names of the plants.	Field No. 1.				Field No. 2.			
	Without manure.	With horn shavings.	With pigeon dung.	Means.	Without manure.	With horn shavings.	With pigeon dung.	Means.
1. Spergula vulgaris ..	370	541	671	594	450	275	461	397
2. Rumex acetosella ..	141	191	41	111	342	450	294	362
3. Spergula sativa ..	211	156	166	178	97	169	192	153
4. Viola arvensis ..	60	30	70	53	40	30	16	35
5. Polygonum minus ..	30	25	21	25	17	17	14	16
6. Silene inflata ..	5	50	21	24	13	24	8	15
7. Centaurea Cyanus ..	12	3	2	5	27	7	11	12
8. Myosotis intermedia	11	2	8	7	14	8	4	9
	1000	1000	1000	1000	1000	1000	1000	1000

The entire residuum of the winnowing, with the exception of a small quantity of sand and a few Oat-seeds, was composed of the seeds of these eight plants. I found, it is true, a few seeds of Vicia, of Clover, and some others, but in such a small quantity that it was

* Pood, about 40 lbs.

† Dessiatine, about 2¾ English acres.

‡ Tchetvert or chetvert is equal to 5.75 English bushels; it contains 8 tchetveriks.

necessary to search for them in the entire mass of the residuum, as they only occasionally occurred amongst the seeds which I selected for examination.

I have no remarks to offer with regard to the five last plants, except that their relative proportions are about the same in both fields. But on a comparison of the three first we arrive at the following conclusions. The two species of Spergula, which prefer, as we know, a dry and mellow soil, prevailed in the drained field to the extent (together) of 0.772, whilst on the undrained field they were only in the proportion of 0.550 to the rest of the seeds of the weeds. The contrary was the case with Rumex acetosella, which prefers a damp soil. Early in the summer, when the Oats were yet young, it formed large red patches in the dampest parts of field No. 2, where its amount was three times (0.363) that on the drained field (0.111).

I ought also to remark that the Myosotis intermedia formed a distinguishing feature of No. 2, where it appeared earlier and in tolerable abundance, whilst it was of rare occurrence on No. 1.

The Oats on No. 2 were much retarded by the quantity of rain which fell; whilst on No. 1 they remained in a flourishing condition, the ground immediately over the drains being throughout covered with the most vigorous vegetation, which must be primarily attributed to its thorough mellowing. At the same time this fact proves that the subsoil, which becomes more or less mixed with the upper mould when the trenches are filled in, does not diminish the fertility of the soil. I have often seen a heap of earth, dug from a considerable depth, become clothed with a gigantic vegetation, which indicates that the subsoil frequently contains many nutritive substances, and that its breaking up plays a considerable part in the development of plants.

Soon after the formation of the grain, the Oats were partially laid. They were cut on the 23d and 24th August, although still rather green, for the weather was too changeable to allow of their remaining until they should be riper, and it was necessary to take advantage of a few fine days.

The results of the harvest are given in the accompanying table:—

Field No. 1; drained.

Divisions of the Field.	Dimension Sagènes □.	Manure.	Number of Sheaves.	Grains.	Straw.	Husks.	Seeds of Weeds.
		Poods.		Pd. lb. zol.	Pd. lb.	Pd. lb.	Lb. zol.
1. Without manure..	271	00.0	230	12 20 37	18 33	2 2	3 16
2. Manured with horn shavings..	451	14.5	450	24 8 55	38 12	5 19	7 76
3. Manured with pigeons' dung..	926	31.0	885	49 17 65	65 13	10 20	9 10
Total	1648	45.5	1565	86 6 61	122 18	18 1	20 6

Field No. 2; not drained.

1. Without manure .	314	00.0	255	12 18 67	17 10	2 18	6 38
2. Manured with horn shavings..	476	15.5	455	21 17 9	35 10	4 22	9 54
3. Manured with pigeons' dung..	953	32.0	785	41 10 27	43 25	9 15	17 89
Total	1743	47.5	1495	75 6 7	96 5	16 15	33 85

If these products be calculated for a dessiatine they will be more comparable. We thus obtain the following table:—

Produce of the two Experimental Fields contained in a Dessiatine.

Divisions of the Field.	Field No. 1, Drained.	No. 2, not Drained.	Difference.	Per-centage. No. 2=100.
	Number of Sheaves.			
1. Without Manure	2037	1959	88	104.5
2. Horn Shavings ..	2395	2294	101	104 4
3. Pigeons' Dung ..	2294	1977	317	116.0
Means.. ..	2242	2073	169	108.3
	Weight of the Grain.			
1.	110 pd. 28 lbs.	95 pd. 14 lbs.	15 pd. 14 lbs.	116.1
2.	128 ,, 37 ,,	108 ,, 1 ,,	20 ,, 33 ,,	119.3
3.	128 ,, 8 ,,	103 ,, 35 ,,	24 ,, 13 ,,	123.4
Means.. ..	122 ,, 23 ,,	102 ,, 17 ,,	20 ,, 6 ,,	119.6
	Weight of the Straw.			
1.	166 pd. 32 lbs.	131 pd. 34 lbs.	34 pd. 88 lbs.	126.3
2.	203 ,, 33 ,,	177 ,, 19 ,,	26 ,, 14 ,,	114.8
3.	169 ,, 13 ,,	109 ,, 24 ,,	59 ,, 29 ,,	154.9
Means.. ..	179 ,, 26 ,,	139 ,, 26 ,,	40 ,, 13 ,,	132.0
	Weight of the Husk.			
1.	18 pd. 6 lbs.	18 pd. 29 lbs.	0 pd. 23 lbs.	96.9
2.	29 ,, 6 ,,	22 ,, 38 ,,	6 ,, 8 ,,	126.1
3.	27 ,, 9 ,,	23 ,, 24 ,,	3 ,, 25 ,,	115.4
Means.. ..	24 ,, 33 ,,	21 ,, 30 ,,	3 ,, 3 ,,	112.8
	Weight of the entire produce.			
1.	295 pd. 26 lbs.	245 pd. 37 lbs.	49 pd. 29 lbs.	122.6
2.	361 ,, 36 ,,	308 ,, 18 ,,	53 ,, 18 ,,	117.3
3.	324 ,, 30 ,,	237 ,, 3 ,,	87 ,, 27 ,,	136.9
Means.. ..	327 ,, 17 ,,	263 ,, 33 ,,	63 ,, 24 ,,	125.6
	Weight of the seeds of the weeds.			
1.	28 lbs. 4 zol.*	48 lbs. 85 zol.	20 lbs. 81 zol.	57.1
2.	41 ,, 44 ,,	48 ,, 21 ,,	6 ,, 73 ,,	85.4
3.	23 ,, 68 ,,	45 ,, 14 ,,	21 ,, 42 ,,	53.3
Means.. .	31 .. 7 ..	47 .. 40 ..	16 .. 33 ..	65 3

An examination of the last table will show, that with the exception of the husk from the non-manured strip (—23 lbs.), the amount of all the products is largest on the drained land, while the contrary is the case with the seeds of the weeds. On the average 25 per cent. of the entire weight of the harvest may be considered as the profits of the drainage; *i.e.*, about the same results as are obtained in other countries. *Translated from the Reports of the Physico-Mathematical Class of the Imperial Academy of Sciences at St. Petersburg.*

THE UTILISATION OF WASTE.

[We extract from Mr. Simmonds's paper on this subject, as reported in the Society of Arts Journal, such extracts as have an agricultural bearing.]

When we perceive in nature how nothing is wasted, but that every substance is reconverted, and again made to do duty in a changed and beautified form, we have at least an example to stimulate us in economically applying the waste materials we make, or that lie around us, ready to be utilised. Some subjects of this kind have already occupied the special attention of the Society, and among others I may allude to those of fish guano by Mr. Horace Green and Mr. Lawes (Journal, vol. ii., p. 87); and the Utilisation of the Sewage of Towns, by Mr. Fothergill Cooke (vol. v., p. 49).

First, as to the *Animal Products*:—The rag-grinder takes the cloth, when thrown aside by the wearer, cuts it into particles, which he forcibly tears asunder, and thus remodels them into raw material, to be again used by the first consumer. A recent visitor to the woollen districts of Yorkshire has discovered that pilot cloth is shoddy; that glossy beavers and silky-looking mohairs are shoddy; that the Petershams so largely exported to the United States are shoddy; that the soft, delicate cloths in which ladies feel so comfortable, and look so graceful, are shoddy; that the "fabric" of Talmas, Raglans, and paletots, and of other garments in which fine gentlemen go to the Derby, or to the Royal Academy Exhibition, or to the evening services in St. Paul's and Westminster Abbey, are shoddy. But there are woollen rags that are not good enough for shoddy, and these are used as manure for the Hops in Kent, so we get shoddy in our beer as well as in our broadcloth. Two-and-a-half lbs. of dry woollen rags, we are told, are equal to 100 lbs. of farmyard manure, or 15 lbs. of liquid blood, when applied to land. There is still some "mill waste" which cannot be worked up again for shoddy, namely, that portion of the wool waste which is so saturated with oil and grease, that the fatty matter is heavier than the wool. This is called "creash," and forms a very valuable manure. A process is now in operation at the Kinghole woollen mills, near Dumfries, by which the hitherto refuse water of the washing houses is made to produce stearine, which forms the basis of composite candles, as well as a cake manure that sells at 40*s.* per ton. This refuse substance, which contains about 71 per cent. of organic matter and 3 per cent. of alkaline salts, is sold for manure. Glue-makers' refuse has long been employed as a fertiliser in the vicinity of tan and glue works, and with good success when applied to any kind of crop, as from its putridity it acts rapidly. It is worth about 36*s.* per ton. Poake, a name among fellmongers for the collected waste arising in the preparation of skins, which consists of lime, oil, and hair, in various proportions, is also bought for manure. The waste shavings in whalebone cutting are employed as a stuffing material by upholsterers, and for filling fire-grates in summer; and all the refuse goes to the farmer for manure, or to the prussiate maker, to be used with other animal substances, woollen waste, rags, hoofs and horns, button-makers' refuse, bone drillings and filings, to form those beautiful salts.

Under the names of glue pieces, spetches, and scrows, the offal or parings of skins and hides and the pelt from furriers, the hoofs and ears of horses, cattle, and sheep, are used by the glue makers. Old leather scraps are even converted into glue. Gelatine is a purer kind of glue, also obtained from waste materials, such as the raspings and trimmings of ivory, the bones, cartilage, and tendons of animals. The clippings of parchment, vellum, gloves, leather, and other kinds of skin and membranes yield size. The French buy up largely our written parchments, and after removing the writing, return them to us in the shape of kid gloves. The shavings of seal and other skins are used for filling tennis and cricket balls. Dog-fish are caught principally for the oil obtained from their livers, a large fish yielding about a barrel of oil. Their dried bodies are sold in Nova Scotia at 2*s.* 6*d.* the hundred, for feeding pigs during the winter from November till May; two fish boiled or roasted are given per day to a good-sized store pig. In New York, from 5000 to 8000 dogs are annually impounded, and those not redeemed are drowned. The carcases are taken to the offal boats, which convey them to Barren Island, where every part of them is turned to some useful account. The fat is melted out; the skins are sold to glovers; and of the bones an excellent compost for fertilising land is made. Bones are certainly a waste product, and are largely used for various purposes. Even the shank bones of the giraffe have recently been imported in some quantity from Southern Africa. Ground bones, and dissolved bones, or superphosphate of lime, are in extensive demand as fertilisers, and superphosphate is also manufactured from coprolites. It is the meanest of the bones that are ground up for phosphates, and made fertilisers of the soil. We imported about 64,000 tons of bones in 1857, valued at 397,000*l.*; and it is estimated that 70,000 tons are collected at home, worth about 435,000*l.* more. Mr. Geo. Torr, one of the largest manufacturers of animal charcoal, &c., in the metropolis, could supply much valuable information on this head.

How seldom is any attempt made to save the blood when animals are slaughered on the farm; in large cities and towns blood is very generally collected and sold to refiners of sugar and other classes of manufacturers. In some of the agricultural districts it is esteemed as a fertiliser. Some people use the blood of cattle largely as food, mixed with meal of one kind or another. When intended for this purpose it is stirred briskly as it flows from the veins, whereby its coagulation is prevented, and it is then stirred into the meal, and boiled or cooked in any other way. The coagulating property of blood renders it of considerable use in clarifying thick mucilaginous liquors. Mr. T. Dixon, one of our members, has supplied me with specimens of the residue after being used in refining sugar, which is sold as manure. Cider is sometimes fined by this method, being simply beat up cold with the blood and put into a barrel. On standing a day the entire coagulation of the blood with the impurities of the cider are found lying at the bottom, in a tough cake, and the liquor above is quite transparent and nearly colourless. The paunches and butchers' offal, liver, boiled horse flesh, &c., are sold as food for dogs and cats. Wholesale horse flesh costs the dealers 1½*d.* to 2*d.* per lb.; we cannot therefore wonder that the cat's meat vendors dole out rather small halfpenny-worths to the owners of Grimalkins, as they have their profit to turn. The commercial products of the horse and other dead carcases, the useful applications of excrementitious and other waste substances, I have described fully in the catalogue of the animal products of the South Kensington Museum; as these are very generally known to the public, and the subject is not inviting for discussion before a general audience, I need not enlarge upon them here. Neat's-foot oil and trotter oil are products obtained in the process of boiling down calf's feet and sheep's feet; the former is used for softening leather and other purposes, the latter principally as a hair oil. Bladders of oxen, pigs, calves, and sheep are prepared for holding lard, tying down bottles and jars, &c. Quantities are imported from North America and the Continent, packed in salt or pickle. Some of the gut forms cases for Bologna sausages, polonies, black puddings, preserved meats, &c., and they constitute the material of that very important substance—gold-beater's skin, the manufacture and use of which are valuable trades in London. Under the misnomer of catgut and catlings, there is a very important application of a waste material in the manufacture of the dried twisted intestines of sheep, for the strings of musical instruments.

All excrementitious deposits are valuable as fertilisers for land, but those of the domesticated animals are of course most largely available. Attention has frequently been directed to the substances wasted in the fisheries and returned to the sea as garbage, and to the detriment of the fisheries. The difficulty has hitherto been the collection and bringing together the refuse to one or more conveniently-situated manufactory.

The preparation of fish guano, that is, the transformation of the carcases and offal of fish into a manure adapted for restoring to cultivated soils their fertility, is a branch of industry which, will in due time assume a remarkable extension. It is confessedly an object of the first importance to find an auxiliary or substitute for guano, which may check the excessive prices that now limit the consumption and which shall afford a provision of artificial manure, when the supply of guano shall fail. Fish, the source of guano, naturally suggests itself. The supply is inexhaustible and almost unlimited. Reduced to its solid parts, it is a valuable concentrated manure, rich in the best fertilisers, ammonia and phosphates, while the gelatine and oil may be collected as merchantable products, which will generally pay the cost of converting the fish into manure, and perhaps leave a profit. It has been ascertained, by multiplied and satisfactory experiments, and confirmed by actual working, that the waste and refuse fish may be thus converted, and the gelatine and oil collected. A new company has recently been formed to manufacture fish guano. The resulting manure is a dry fibrous powder, which retains all the fertilising powers of fish in a form most convenient for transit and distribution, whilst its appearance and sensible properties make adulteration palpable, since every one can judge for himself (by the mere

inspection and smell), of its genuine character. The demand would certainly far exceed the utmost attainable supply, and, at a price moderate as compared with any other manure, it would give a very large profit to the manufacturer. The waste and refuse of a great fishing port will supply the materials cheaply and without much outlay, and as it will be a great gain to a fishing adventure to obtain a certain and constant demand for all this waste and otherwise unsaleable fish, the establishment of manufactories for fish manure will lead to new fisheries where, without such aid, they could not prudently be commenced.

Yarmouth, the chief fishing station in England, with the adjoining coast from Lowestoft to Aldborough, offers every advantage for such a manufacture. It employs nearly 400 boats, from 25 to 60 tons each. They ordinarily afford from 2000 to 3000 tons of broken fish and salt, selling at about 1*l.* 2*s.* per ton, besides the waste of 400 smoking-houses, sold as refuse; and from 500 to 700 tons of herring scales, a substance containing 16 per cent. of nitrogen and a very large proportion of phosphates, and obtainable for 1*l.* 10*s.* per ton. This is independent of the waste from occasional gluts of dog fish and others useless for food, of which no account is taken, yet which are caught in very large quantity, and of which an unlimited supply might be obtained if the fishers could obtain a sale. Last year, so great was the glut of herrings at Lowestoft, that, at one time they were carted by the farmers at 4*s.* 6*d.* per ton. An ample, cheap, and continuous supply would therefore be secured from the first, by simply taking from the fishermen what they will only be too thankful to sell; and the manufacture, which would be in every sense of the word a national benefit, may be carried on with no risk, small outlay, and large profit. It would be a curious investigation to follow out the value of the street sweepings, scavengers' collections, ashes, &c., obtained in this metropolis and other large towns, but the subject would carry me too much into detail, and I have not the figures as to the large sums paid to different districts for the contract or privilege of carting away the waste. The corporation of Antwerp, which used to pay 1000*l.* a year to get rid of the refuse of their city, now receive upwards of 40,000*l.* a year for the sweepings of the streets and the contents of the cesspools, contractors converting the nuisance into powerful guano. At Paris and Milan town guano is manufactured, which has extraordinary powers as a fertiliser.

(To be concluded in our next).

Home Correspondence.

Cottages.—As the plans of cottages and their cost have been considerably discussed lately in your Paper, I enclose the plan of three cottages which I have lately built in Cheshire, and their cost. The chief advantage of the plan is that there are three separate bedrooms, each opening upon the landing. The staircase, which is boxed off, ascends from the house room (instead of from the kitchen, as is usually the case) and thereby the evil of the steam from the kitchen boiler rising up to the bedrooms is avoided. At the back of the houses, and about 20 feet away from them, is a range of low buildings containing a coal-shed and privy for each house; and in the centre of the range is a brick oven, common to the three houses. *T. W. Tatton, Wythenshawe, Northenden, Manchester.* [The following are the details of cost. The plans may be described as follows:—They include, below, a house room, 15 feet 6 inches by 12 feet, and alongside of it a kitchen, 9 feet by 10 feet 2 inches, and a pantry 9 feet by 5 feet separated by a 4-inch partition. The staircase, 2 feet 8 inches wide, stands in one corner of the house room and terminates in a landing, from which you enter the chief bedroom, over the house room, and two other bedrooms, 9 feet by 7 feet 7 inches apiece, separated by a 4-inch partition, over the kitchen and pantry.

Cost of Erecting three Cottages.

	£	s.	d.
Bricks, at 18*s.* per 1000	36	16	6
Flags	16	13	6
Mantel-pieces, &c. ..	6	10	0
Slates	30	4	7
Laths	5	2	0
Hair	2	0	0
Lime	8	14	4
Chimney pots ..	1	16	0
Nails	4	13	4
Timber	34	2	6
Poplar boards ..	6	1	10
Ironmonger	12	4	6
Carried forward ..	164	19	1

	£	s.	d.
Brought forward ..	164	19	1
Bricklayer	56	3	3½
Blacksmith	7	12	4½
Slater	7	3	1
Plumber	29	9	2
Painter	24	2	7
Joiner	32	5	0
Labour, excavating, &c.	4	8	0
Carting materials ..	22	10	0
Total for three cottages ..	£347	12	7

Black Barley.—I am very anxious to obtain a small supply of Black Barley. My inquiries hitherto having proved fruitless, I trust you will allow me to ask through your Paper if any of your readers can inform me where I may meet with a small quantity—a quarter of a peck will suffice. I remember the time of its first being brought into notice, though it met with little favour with the farmer; but from the trials I have made of it I think it possesses qualities which ought not to be overlooked. I had an ear given to me some little time since, which did not contain the average number of grains, which is from 90 to near 100. Mine had 75 grains sound, which I planted out separately, and my yield, though unprotected from birds, exceeded 5½ lbs. of plump heavy seed. Of its malting qualities I can speak most favourably, the yield of saccharine matter being above that of some common malt which I purchased, and the wort had almost the tinge of porter, and would answer well without the customary additions used by brewers to colour their porter, and from its malting so well there is no doubt of its high nutritive properties as good for stock. Its productiveness far exceeds all known Barley, and it is suited to soils on which other Barleys are not grown. The colour alone seems objectionable; I suppose it is grown in China. *T. T., Emsworth, Hants.*

Long's Sheep Dressing.—Your correspondent, who inquires about this composition, will find it excellent in every respect. It completely effects its purpose, without in any way injuring the fleece or the animal. Everybody here speaks of it in the highest terms, and one person, who has tried several kinds of sheep dressings, pronounces it unsurpassed by anything yet produced in that line. *H. H., Spidlington, Lincolnshire.*

Mr. Bond's Paper: Sheep Management.—I am sorry I was not able to attend the Farmers' Club to hear Mr. Bond's paper. I should have felt it necessary to have differed very much from him as regards sheep management and experience: 1st, ewes are not so healthy in yards as in the field, are apt to contract foot rot, and the expense if accounts like mine are kept, charging for every horse, man, woman, and child, would be found enormous bringing home the food and taking out the manure; and, 2dly, it is quite impossible in my opinion a flock of 500 ewes and lambs can be attended for 40*l.* I do hope this will cause some friendly discussion. *T. Beale Browne, Salperton Park, Andoversford.*

Societies.

ROYAL AGRICULTURAL OF ENGLAND.

WEEKLY COUNCIL, *Feb.* 16.—Mr. Raymond Barker, V.P., in the chair. A letter was read from Mr. G. J. Neal, on his mode of cultivating the Turnip crop; and from Mr. W. Rutherford, offering to communicate a plan he had found successful in the management of his Potato crop.

Adjourned to Feb. 23.

Farmers' Clubs.

GALASHIELS: *Report on Experiments with Manures on Turnip Crop*, 1858, *(continued from p.* 106):—

No. VI.—Conducted by Mr. Hobkirk, Langlee.

Manure	Cost.	Weight. Ton	cwt.
Peruvian guano	£2 16*s.*	18	7
Bone-dust	..	15	8½
Dissolved bones	..	19	6
Peruvian guano and bone dust, mixed in equal value	..	21	8½

Remarks.—The Turnips were sown on the 31st May, and pulled and weighed on the 13th of December. Variety—Purple-topped Yellow. The soil is of a light friable nature, and is in a rich manurial condition. Soon after singling, the plot manured with guano assumed a dark healthy appearance, followed by the plot with the mixture of guano and bones. These plots, in the same order, were the first to show symptoms of maturity, and about the middle of September a general mildew affected the whole field, and which resulted in a disease which rotted nearly one-third of the entire crop, and which accounts for the comparative small weights, considering the condition of the soil, the sound bulbs only being weighed.

No. VII.—Conducted by Mr. Elliot, Blackhaugh.

Manures.	Cost.	Weight. Ton	cwt.
Peruvian guano	£2 16*s.* 6*d.*	27	4½
Dissolved bones	..	27	9
Peruvian guano and bone-dust mixed	..	28	4
Townsend	..	30	6
Odams' blood manure	..	27	15
Dissolved bones	1 16 0	26	5

Remarks.—Variety of Turnip—White Globe. They were sown on the 12th of June, and pulled and weighed on the 5th of December. When they were hoed, the lot sown with guano was about five days later than the other lots. The plot sown with Townsend seemed a shade earlier—all the other lots were equal. The field experimented upon is undergoing the second rotation. No farmyard manure has ever been applied, but the soil, which consists of free clay, is in good condition.

No. VIII.—Conducted by Mr. Sanderson, Meigle.

Manures.	Cost.	Weight. Ton	Cwt.
Peruvian guano	£2 2*s.* 0*d.*	17	0
Peruvian guano and dissolved bones mixed		19	12
Peruvian guano and bone-dust mixed	..	17	10
West Indian guano	..	19	10
Chilian do.	..	19	8
Bolivian do.	..	20	5
Towns and manure	..	22	7
Bailey	..	20	12
Hodgson's British guano	..	20	15
Newcastle Blaydon chemical manure	..	13	10
Dissolved bones (Paterson)	..	20	5
Fish manure	..	15	0
Odams' blood manure	..	17	5
Ammoniacal bones (Ovens)	..	17	10
A phosphatic guano (Ovens)	..	18	5

Remarks.—All the lots were sown on the 5th of June, and pulled and weighed on the 3d of December. They were all considerably injured by the Turnip-fly; but the plot sown with Peruvian guano suffered most. With the exception of the plot which was sown with Hodgson's British guano, the plots sown with ammoniacal bones and blood manure took the lead soon after brairding. About the end of August, however, the shaws on these plots assumed a mildewed appearance, and the bulbs seemed to make no further increase in size. The plot sown with British guano exhibited a more vigorous braird, and throughout the season presented more luxuriance in shaws than any of the other lots—so much so, that if both shaws and bulbs had been weighed, it would have yielded the heaviest weight of produce. At the time the Turnips were pulled, the lots sown with dissolved bones and West Indian guano exhibited the greenest and healthiest appearance, and probably would have produced more weight if they had been later in being pulled. The variety of Turnips, Fosterson's hybrid. The soil is open clay, resting on a stiff retentive subsoil, and is rather deficient in organic matter. It is the second crop of Turnips since the field was reclaimed, and no farmyard manure has ever been applied.

No IX.—Conducted by Mr. Wm. Scott, Mossilee.

Manures.	Per acre Cwt.	Cost. *s.*	Weight. Ton	cwt.
Peruvian guano	4	52	24	0
Phosphate do.	4	38	24	0
Chilian do.	4	38	22	5
Bird Island do.	4	16	21	0
Dissolved bones	4	34	19	5
Ammoniacal diss. bones ..	4	38	19	0

Remarks.—The field was old cropped land, of a dry, sharp soil. They were slightly affected with finger-and-toe—the dissolved least. The Turnips were White Globe—sown June 15th, and weighed November 18th.

N.B. Mr. Scott's experiment differs from the others in respect that he applied equal weights of all prices and kinds.

Summary.—Such are the results of the experiments conducted by a few of the members of the club; and although in every case these do not present a perfect correspondence, yet, on the whole, they are characterised by no marked discrepancies. The experiments were conducted as accurately as they could possibly be. The different manures were applied at equal money value and were carefully weighed. Each manure was allotted, in the most of cases, a quarter of an acre. The bulbs—without roots and tops—were carefully weighed upon steelyards, so that whether these experiments may be regarded as having produced negative results or not, there can be no doubt as regards the accurate mode in which they were executed. It will be observed that all the experiments were made on soils to which no farmyard manure had been applied, either in the autumn or spring preceding the Turnip crop, for the purpose of securing a better test of the relative value of the different manures. The soils experimented upon all rest on the greywacke formation, and are of a similar character, but vary in condition. The results generally maintain the superiority of phosphate over ammoniacal manures. In one experiment only, No. 1, does Peruvian guano produce the heaviest weight. This soil experimented upon is newly improved—is rich in vegetable matters, and the result obtained corresponds with the results hitherto produced in this district, that Peruvian guano, as the first application to newly reclaimed soils, is superior to any known manure. Soils which have been under a lengthened course of cropping, and to which Peruvian guano has been frequently applied, such as Nos. 2, 4, 6, and 8, show in the results obtained that *that* manure is inferior to a mixture of Peruvian guano and dissolved bones, as well as to some phosphatic guanos. The weight of bulbs produced from Peruviau guano in experiment No. 8 was less than the weight produced from four distinct phosphatic guanos with which it was tested; but to show the average results obtained from six experiments—

	Ton.	cwt.	qr.
Peruvian guano produced	21	16	3
Peruvian guano mixed with dissolved bones, or bone-dust	25	6	1
Dissolved bones alone (Paterson) ..	24	0	0

Townsend's manure stands at the top of two out of four experiments. Fish manure has proved inferior in all the experiments with one exception. Economical manure, as evidenced by experiment No. 1, has proved very inferior. The quantity applied was 1½ cwt. per acre, being the quantity recommended by its manufacturers The result obtained was a very little more weight of bulbs than a plot yielded where no manure was applied. Hodgson's British guano and Bailey's manure have produced favourable results. On the whole the results of these experiments are in favour of phosphatic manures. There can be no doubt in the statements that Peruvian guano hastens the exhaustion of the soil; for its efficacy is more diminished the more frequently it is applied. While, on the other hand, bones or phosphatic manures not only furnish continuous and regular food for plants, but leave nourishment in the soil for succeeding crops. It is worthy of remark that almost all the experiments show that the Turnips sown with Peruvian guano suffered most from the Turnip fly. This may be ascribed to the infant plant being less vigorous after brairding, from its root being long in coming into contact with so small a quantity of manure. It is obvious that such experiments as these I have now read are essential to test the comparative merits of different manures; for unless the produce is carefully weighed, the most scrutinising eye will fail in drawing correct conclusions. I found, for example, that although the Turnips raised from Peruvian guano were equally as large as those raised from phosphatic manures, yet they were deficient in weight. Let farmers, therefore, carefully test every new manure they apply, and thus they will contribute to their own advantage, as well as to the increasing production of food, an object worthy not only of the ambition of the practical agriculturist, but also of the proudest votary of science.

Reviews.

The Journal of the Royal Agricultural Society of England. Vol. XIX., Part II. J. Murray.

The new number of the Journal contains a detailed account of Norfolk farming—Reports on the Implements, Live-stock, and Cheese exhibited at Chester—a paper on the composition of Cotton-cake—directions for the management of Portable Steam Engines—papers on the cost of Horse Power—on the structure of roots—on Horse-labour in France—on live stock for consumption in the metropolis—on the management of breeding cattle—on liquid manure—and on manures for meadow lands. It is fully up to the mark of previous numbers. There has never been a better reported annual meeting than that of Chester; both the implement department and the live stock show are amply illustrated and recorded; that of cheese too is fully described. Mr. Smith's histories and descriptions of the several breeds of cattle and sheep are particularly interesting. To Mr. Clare Read's account of Norfolk farming there is appended a report of experiments made at Holkham on top-dressings for Wheat, to which we have elsewhere referred. The scientific department of the work is usefully represented by Mr. Henfrey's paper on "roots," and Dr. Voelcker's analyses of Cotton-cake and liquid manure.

And there is the first part of a paper from Messrs. Lawes & Gilbert giving an elaborate report of experiments with different manures on permanent meadow land. Several of the shorter papers are both interesting and useful. Thus we have from Mr. Herbert a report of the meat supplies of London, indicating what proportion of the whole in 1838 and 1858 respectively has been supplied by the different breeds of cattle and sheep. The following is an extract:—

"The first question which we propose to consider is, what are the breeds of beasts and sheep which form the supplies exhibited in London? From a careful analysis of the stock exhibited during the past year, and founded on the most careful observation, we have arrived at the following conclusions:—

Percentage of Beasts shown in the Metropolitan Market in 1858.

Short-horns	33.00
Herefords	9.25
Devons	5.00
Longhorns	1.00
Crosses	16 00
Highlanders	2.00
Polled Scots	4 00
Ayrshire	0.25
Irish crosses	8.00
Welsh runts	1.50
Irish	9.00
Bremen, Tonning, Dutch, and German	9.50
Spanish and Portuguese	1.50
	100.00

"The above table shows that the short-horned breed of beasts now stands at the head of the list of stock for what may be termed general consumption. They have gone on progressing at a wonderful rate since the commencement of the present century, and they are now to be found in almost every county in England as well as in Ireland and Scotland. We may further observe that half-bred beasts, between the Scotch and Short-horns, have considerably increased within the last 20 years; indeed, the breeds, almost generally, have undergone important changes. To show this, we direct attention to the annexed statement of the percentage of the bullock supplies shown in Smithfield Cattle Market in the year 1838:—

	Percentage.
Short-horns	30.00
Herefords	13 00
Devons	11.00
Long-horns	2.50
English crosses	13.00
Highlanders	3.00
Polled cattle	10.00
Ayrshire	6.00
Scotch crosses	1.50
Welsh runts	10.00
	100.00

"The changes in the various breeds, then, in twenty years, have been remarkable. Whilst the Short-horns and crosses have increased, the Herefords, Devons, Long-horns, and polled beasts have declined considerably. The same may be said of Welsh runts; but we find a great increase in Irish crosses, no doubt with the Short-horned breed imported from this country, and the old, or pure native breeds of Irish beasts, which were formerly so much valued for their hides, are now nearly extinct. The decrease in the pure Scotch breeds of cattle grazed and fed in England may be attributed to the increased production of Turnips in Scotland. Previous to the year 1838 the pure Scots were chiefly sent to England for artificial feeding in Norfolk and Suffolk. Since that year the Scotch breeders have fed them themselves, finding the cross with English breeds—Short-horns, and in some instances, Herefords—produce much more weight and an earlier maturity. Even the black polled beasts, by many considered prime Scots, are first crosses from Short-horned bulls.

On Cotton-cake, which is coming into extensive use in the manufacture of all this beef, the following are Dr. Voelcker's conclusions:—

"The principal points of interest, in reference to Cotton-cake, are collected together in the following short summary:—

"1. The best Cotton-cake is richer in oil and albuminous (flesh-forming) compounds than Linseeed-cake, but contains less mucilage and other respiratory constituents.

"2. The mineral portion of Cotton-cake resembles closely in composition that of Linseed and other oil-cakes. Like the ash of all cakes, it is rich in earthy and alkaline phosphates, and well adapted to supply animals with bone-materials.

"3. As far as the indications of chemical analysis can be depended on, the best decorticated Cotton-cake possesses about the same nutritive value as Linseed-cake.

"4. At the present time four distinct kinds of Cotton-cake are offered for sale in the market, namely:—

"1. Thin decorticated Cotton-cake.

"2. Thick decorticated cake.

"3. Common cake made of the whole seed.

"4. Oil-meal (No. 2 reduced to coarse powder).

"5. The thin decorticated cake is a far better and more economic food than the ordinary cake, which is often quite unfit for feeding purposes.

"6. Thick cake scarcely differs in composition from thin cake, but being hard, and 2½ to 3 inches thick, it cannot be crushed by an ordinary oil-cake crusher, and therefore presents inconvenience to the consumer.

"7. Genuine oil-meal is simply thick decorticated cake reduced to a coarse powder, and of course has the same composition as the cake from which it is made.

"8. The composition, and with it the nutritive value, of different samples of Cotton-cake is subject to considerable variation.

"9. Decorticated Cotton-cake and oil-meal, in comparison with other kinds of artificial food, are decidedly cheap feeding materials, and both, no doubt, ere long, will find that favour with the British farmer which a really valuable and cheap article of consumption is certain to command."

Calendar of Operations.

FEBRUARY.

DORSETSHIRE, *Feb.* 14.—It is long since one remembers such continued rain as the past week has given us; of course there has been little opportunity afforded for any out-door work. The lambing season began here early last month, and although it was rather sharp weather at the time, more severe from the exposed nature of the surrounding country, the lambs did well and are getting large and strong. They and the ewes having finished white Turnips, are now on Swedes, with an allowance of hay, going on the meadows and stubbles part of the day. The Dorsets seem disappearing from these parts, and nothing but Downs are to be met with, which answer better. I was glad to see in your last a letter from a Dorsetshire man contradicting the exaggerated statements of the Journal of the Bath and West of England Agricultural Society and *Sherborne Journal*, as to the labourers of this county getting only 7*s.* a week. I take this opportunity of endorsing what he says. As far as regards this district (that of Wareham) the wages are 9*s.* and 8*s.*; besides which, as I mentioned in my last report (in December), the people have advantages in the shape of fuel which they are allowed to cut from the adjacent heath, supplying them all the year round, and Wheat is sold them by the farmers much under the cost price. I may add that the labourers have generally capital gardens, helping to keep their pigs, which few of them are without; for, as the "Wiltshire Farmer" remarks (as copied from the *Times* in your last, on the case of the British Labourer) there is scarce a cottager who does not kill his fat pig (though not weighing so much as 15 score, for they more usually "pork" their pigs about here), and you find the men's wives constantly going up to the "squire's," or the "parson's," to know if they would like to buy some of their hams or other parts of their pigs just killed, and very good the pork is, as I can testify from experience.

ISLE OF ELY, *Feb.* 10.—The winter months are passing rapidly away, and without the ordinary winter weather. Since November we have had no severe frosts, nor have we yet had one cover of snow. The barometer has been low for some time, and we have been threatened with rain, but it has not yet fallen. We have had some few showers, but not enough to exert any material influence upon the springs, which still continue very low; and water remains nearly as scarce as ever. Our fen ditches are all dry, and our drainage mills and engines find no employment, a very unusual circumstance at this season of the year. The fine weather has stimulated our farmers to activity, and many of them are getting very forward with their spring seeding. Beans, Peas, and Barley, have been largely sown. We find the practice of sowing Beans over the plough-beam is prevailing to a far greater extent this year than we have known it for many past seasons. It is a system we highly approve, and on our lands should strongly recommend. A little frost after they are sown, pulverises the soil, and makes it work to a beautiful tilth, and secures as fine a seed-bed as could well be desired. The Wheat plant is looking healthy and promises well. The slight frosts we have, with the occasional showers, tend to keep it in check and prevent its rapid growth. Indeed we have nothing approximating to what we should call "winter proud" this season. Many of our farmers are beginning to cross-plough their fallows designed for Potatoes, Mangel and early spring crops of this kind; and in a week or two, with suitable weather, they will be preparing to roll their Wheats, although we have yet had but little frost to make light and dusty our fen soils. But notwithstanding this, we think they will require to be rolled, as consolidation is an important feature in fen-farming. Store sheep are dearer, but not high even yet, when contrasted with the value of wool and mutton. Store cattle are also selling well. The corn trade manifests but little tendency to improvement, but prices have been slightly advancing. *Fen Reporter.*

Notices to Correspondents.

GRASS: *D W.* Seeds of a mixture of Grasses adapted to your soil might be sown over the field, first harrowing it well, and then brushed and rolled in with every probability of success.

GUTTA PERCHA BOOTS FOR SHEEP: *Cor.* Apply to any agent of the Gutta Percha Company. We have had no experience of them. Perhaps some correspondent who may have tried them will report on them. We should not recommend anything more than an experiment.

HORSESHOE MACHINE: *R.* It is described thus in the *Wolverhampton Chronicle*:—"The bar, after being heated, enters the machine by a feeding apparatus, a piece of the required length is cut off, and, by a stroke from a piece of steel, shaped like the inside of a horseshoe, is bent, and falls upon a die on a wheel beneath, corresponding to one on a cylinder above, and thus acquires by pressure the desired shape, two lateral strikers at the same moment hitting the extremities, or heels, of the shoe, and driving them inwards into the required shape. Thence it passes between another pair of dies, where it is stamped, and by an ingenious arrangement is flattened from the curled shape which the wheel gives it as it falls at the mouth of the machine. The shoes thus made are remarkable for their exactness in shape and in the position of the holes—a most important point with regard to the safety of horses' feet; and they can be produced, when the machine is in proper order, at the rate of 60 per minute, which is more than two men can forge in a day, and the superiority over shoes forged by hand is very striking. As the bar is bent before being pressed in the die, the pressure at the crown is in the direction of the width, and hence the widening is readily effected. The machine is secured by patent in this and in most of the countries of Europe. It has been erected at Wolverhampton, as a central and suitable place of inspection." It is the invention of Mr. Burden of Troy, U.S., a native of Dumblane, N.B.

PICKLING WHEAT: *Alpha.* Soaking the Wheat in nitre will not hinder it from being pulled to pieces by birds as soon as it gets sweet by germination.

POULTRY: *P P.* asks what can be done for fowls when black spots appear on the comb?—Want of vigour of constitution is produced by in-and-in breeding, by bad feeding and housing, &c. The history of the birds must be known before an answer can be given.

RENT: *J H.* We do not know the rent of Grass lands near Edinburgh, but we may nevertheless confidently say that there is no "farming land 100 acres together that pays so high a rent as 9*l.* per acre."

SHEEP: *J M.* Blacklock on Sheep, and Spooner on Sheep, are both good books.

ERRATUM: *Anon.* The word "dining" room in the paragraph on Cottage Building last week should have been printed "living" room.

*** As usual, many communications have been received too late, and others are detained till the necessary inquiries can be made. We must also beg the indulgence of those correspondents the insertion of whose contributions is still delayed.

CHOICE SEEDS.

BUTLER AND MCCULLOCH, while drawing attention to their general SPRING CATALOGUE of SEEDS, which has elicited such high encomiums both from the scientific botanist and amateur cultivator, avail themselves of the present opportunity to select from its pages the following list:—

(6) ABUTILON MARMORATUM, a charming plant, flowering all the year, and especially in winter, producing large, pure, white flowers, veined and marbled with bright rose, foliage silvery haired; the finest of the genus.

(37) ACACIA LONGIFOLIA (magnifica), one of the most splendid Acacias in cultivation, with gorgeous clusters of bright yellow flowers several inches in length; very hardy, rare, and beautiful. Of these graceful and highly ornamental plants our collection embraces no fewer than 17 varieties, all of the most decorative character.

(199) CALLICHROA PEDATA, crimson with white eye; a most beautiful plant, and quite new.

(243) CANNA INDICA SUPERBA, a magnificent plant flowering all the winter; leaves large, fine green. Of this picturesque and most ornamental genus we have a magnificent collection, consisting of 28 kinds, all remarkable both for the beauty of their flowers and foliage.

(279) CASUARINA INDICA, the most singularly picturesque tree of the Australian Flora, with weeping branches jointed like a Bamboo, streaked between the joints, and without leaves; very elegant in a conservatory (seeds rare).

(304) CELOSIA (species nova).—A most elegant plant, producing a multitude of long spikes of feathery blossoms, silvery white shaded with bright rose, retaining its colour perfectly when dried, and therefore admirably adapted for winter bouquets; one of the greatest novelties of the season, flowering out of doors or in pots from July to October. Well worth attention. A dried specimen may be seen.

(434) CYCLAMEN AFRICANUM MACROPHYLLUM.—Fine foliage; flowers large, blush, marked white and rose. Very rare. Bulbs of this may be had in the summer.

(451) DATURA HUMILIS FLORE PLENO.—A magnificent Brugmansia-like plant producing a profusion of deep golden-yellow flowers; very large, double, and sweet-scented. One of the greatest novelties of the season.

(665) HIBISCUS ROSEUS SUPERB.—Flowers large, produced in great abundance.

(677) HIBISCUS THUNBERGI.—Pale yellow, dark eye, free flowering, and pretty.

(956) PAVONIA HASTATA.—A most beautiful little shrub, covered with white flowers, having a rich brown centre; handsome foliage.

(976) PENTAPETES PHŒNICEA.—Bright scarlet; leaves long and serrated, a very handsome plant.

(1001) PHYGELIUS CAPENSIS.—Large red tubular flowers, inside golden yellow, a handsome plant (seeds rare).

(1073) RICINUS ALBIDUS (new), white fruited, stems and leaves silvery and handsome.

(1074) RICINUS SANGUINEUS (new), splendid red fruit, in large bunches, very ornamental, producing a grand effect.

(1093) SALVIA HYBRIDA.—Scarlet, early flowering (new).

(1095) SALVIA SPLENDENS Nova species, scarlet (new).

(1137) SIPHOCAMPYLUS BETULÆFOLIUS.—A handsome plant, with scarlet tubular flowers; suitable for a trellis.

(1144) SOLANUM MELANGERA GRANDISSIMUM (new), striped fruit, weighing from 1 to 4 lbs.

(1149) SOLANUM CAPSICASTRUM.—Miniature Orange tree, covered all winter with a profusion of scarlet fruit; a handsome plant for greenhouse or sitting rooms.

(1161) STATICE HALFORDI, blue; large and handsome, one of the very best for pot culture (seeds rare).

(1165) STATICE PURBERULA.—Purplish violet; a free flowering, extremely ornamental plant of neat habit.

(1170) STATICE BONDUELLI, deep golden yellow; flowers early and profusely, in large rosettes.

(1276) VERONICA ANDERSONI, purple and white, all but hardy; a charming shrub.

(1282) VERONICA MELDENSIS, beautiful rose and white.

(1294) VIRGILIA CAPENSIS, a greenhouse shrub, with drooping racemes of purple and white flowers.

(1331) BIGNONIA GRANDIFLORA, orange and scarlet; flowers large, and in magnificent bunches.

(1335) BIGNONIA RADICANS MULTIFLORA, finer and brighter than radicans; flowers in large panicles producing a splendid effect.

(1354) CUCUMIS PERENNIS.—Very ornamental-foliaged plant, which grows with great rapidity.

(1360) CUCURBITA MELOPEPO CHAPEAU D'EVEQUE.—Orange; of this class of climbers we have a fine collection.

(1370) CYCLANTHERA PEDATA.—Bird-like fruit (new).

(1375) GLYCINE SINENSIS, or WISTARIA.—One of the most valuable climbing trees for out-doors (seeds rare).

(1380) IPOMÆA HYBRIDA MARGINATA.—Large and magnificent; flowers of various colours on the same plant, varying from the richest velvety purple to sky-blue, bordered in the most distinct manner with pure white (new and rare). This and three new varieties of Hederacea grandiflora far surpass the old and deservedly favourite rubro-cærulea for beauty, hardiness, and free flowering; they rank high amongst the novelties of the season, possessing advantages which will render them the grandest ornaments for the greenhouse, conservatory, or for out-door decoration.

(1431) MAURANDYA CRIMSON TINTED PURPLE GRANDIFLORA.—Exquisitely beautiful (new).

(1438) MAURANDYA MAROON GRANDIFLORA.—Superb (new and rare).

(1445) MEDEOLA ASPARAGOIDES, green and white, an elegant plant, flowering in winter, and scented like Orange blossom.

(1457) PASSIFLORA RACEMOSA PRINCEPS, pale scarlet, arranged in racemes, from 14 to 18 inches in length, having a striking and beautiful appearance.

(1468) TACSONIA IGNEA.—This magnificent Passion flower is unequalled for the brillancy and splendour of its scarlet blossoms, far surpassing in this respect any of its class yet known. It flowers most profusely, grows rapidly, and covers a large space in an incredibly short time. It succeeds in a cold greenhouse, and even against a south wall with a little protection in winter (new and rare).

(1469) TACSONIA MOLLISSIMA, rosy pink flowers; remarkable for their long tubes and handsome pink colour.

(1473) TROPÆOLUM FLAMMULUM GRANDIFLORUM, yellow; beautifully streaked with carmine (rare).

(1477) TROPÆOLUM GRACILE, sulphur, spotted with carmine; extremely pretty.

(1479) TROPÆOLUM MINIATUM MACULATUM, superb, striped variety (very rare).

(1488) TROPÆOLUM TRIOMPHE DE GAND FIMBRIATUM, fringed orange scarlet.

(1501) TRYCHOSANTHES COLUBRINA VERA, foliage extremely handsome; singular fruit, resembling a serpent (new and rare).

CARNATIONS and PICOTEES saved from the most choice Collection of English varieties grown on the continent, and which may be expected to produce flowers of the highest merit, sent out in sealed packets as received from our Sardinian correspondent, whose seeds for many years have given such universal satisfaction, and from which varieties of the greatest excellence have been raised.

For prices and further particulars with regard to the above and other novelties, we refer our patrons to the Catalogue itself, which is sent free and post paid on application.

BUTLER & MCCULLOCH, Covent Garden, London.—Feb. 19.

WALTON NURSERY, LIVERPOOL.

TO NOBLEMEN AND GENTLEMEN PLANTING NEW PLEASURE GROUNDS, OR IMPROVING PARKS OR DRIVES, AND TO COMPANIES PLANTING PUBLIC PARKS OR CEMETERIES.

W. SKIRVING begs to offer his Stock of TREES and SHRUBS, of various sizes, adapted either for immediate effect, or for extensive new Plantations, where smaller sizes and less expensive Plants are required.

In addition to his general Stock of the leading kinds of Trees and Shrubs, which is allowed to be the most extensive in England, he has this season to offer, at reduced prices, several acres of well-grown CEDRUS DEODARA, varying from 2 to 10 feet in height.

Also, a very large stock of ARAUCARIA IMBRICATA, from 1 to 10 feet, and of all the best varieties of Hardy Pines, Cedars, Cryptomeria, Cypress, Yew (Irish and Common), Holly (Green and Variegated), Rhododendrons, &c.

WELLINGTONIA GIGANTEA, a fine stock, all from Seed.

Strong transplanted Thorn Quicks for hedge planting, and a most extensive stock of Forest Trees, Underwood, &c., of all ages and sizes, at very moderate prices.

FRUIT TREES, a large collection of all the most approved kinds. CATALOGUES on application.

IGNAME OF CHINA (DIOSCOREA BATATAS)

M. M. PAILLET AND SONS, of Paris, first Growers of the Igname from China, a nutritious root which has been fully appreciated in this country by all those persons who have been able to partake of it in its state of perfection, have decided upon exporting a quantity of it to England at such prices that the English public, as well as amateurs, may be enabled to appreciate its utility and put an end to all the comments that have been made by certain persons incapable of judging its merits. The result of the first crop on a large scale has been most satisfactory (about 30,000 kilos or 60,000 lbs); this alimentary tubercle may be treated in the same manner as the Potato, with the exception that they should be planted more thickly in order to reduce the expense attendant on the gathering in of the crop.

Messrs. PAILLET & SON feel confident that after a fair trial this new Chinese vegetable will be found an agreeable and useful acquisition to the table, and that it will be fully appreciated in England, and increase the number of those vegetables we already possess.

PRICES:—The 100 lbs. weight, 2*l*. Persons desirous of obtaining Choice Roots can have them forwarded in cases of 50 or 100 at the price of 2*l*. 5*s*. or 4*l*. 5*s*. Those wishing to make a plantation more or less considerable can have portions of the Roots fit for planting at the following prices:—One year's growth, per 100, 12*s*.; ditto per 1000, 5*l*. For young bulbs two years' growth, per Quart, 3*s*. 6*d*.; ditto per Gallon, 12*s*. 6*d*.

All orders sent free of carriage to London with case and packing included in the above prices.

All letters enclosing a Money Order, addressed post free to Mons. Philipp, agent of the Messageries Impériales, Regent Circus, Piccadilly, London, will be immediately attended to.

MESSRS. WATERER AND GODFREY respectfully invite the attention of parties engaged in planting to the following list of very desirable plants, all of which may be seen growing in the open quarters of their Nursery, and are in the finest possible condition for transplanting:—

Araucaria imbricata, 9 to 12 inches, 5*l*. per 100; 40*l*. per 1000
" " 1½, 2, 3, 4, 5, 6, and 8 feet high. Our stock of this plant exceeds 100,000
Wellingtonia gigantea, stout handsome plants from seed, 84*s* per dozen; 25*l*. per 100. These are all in the open ground and are believed to be the finest lot of seedling plants in the Trade.
Cedrus Deodara, 1½ to 2 feet, 18*s*. per dozen; 6*l*. per 100
Do. 3, 4, 5, 6, 7, 8, 10 and 12, and 15 feet. Our stock of Deodars at the present moment occupies several acres of land; they have been constantly removed, and with fair usage not one in a thousand would fail. We offer them on very advantageous terms either in large or small quantities
Cedrus atlantica, 4, 5, 6, and 7 feet
Cupressus macrocarpa, magnificent plants, 7, 8, and 10 feet high
" Lawsoniana, stout handsome plants from seed, 18 inches, by the dozen or 100
Abies nobilis, from imported seed, 6*l*. 6*s*. per doz.; 40*l*. per 100
" do. 1, 2, and 3 feet high
" Nordmanniana, a large number of beautiful plants, all from seed, 2, 3, 4, 5, and 6 feet high
" Pinsapo, do. do.
[We believe we are justified in stating our stock of the three last-mentioned Firs offers a selection to be met with in no other Nursery.]
" Douglasi, 6, 7, 10, and 12 feet
" orientalis, 3, 4, 5, and 6 feet
Pinus Benthamiana, stout seedling plants, about 1 foot, 18*s*. per dozen; 5*l*. per 100; 40*l*. per 1000. Unquestionably the finest of all the long-leaved Californian kinds, and well known to be perfectly hardy. It is the most valuable of all for timber.
Juniper, Chinese, 2, 3, 5, 7, 8, and 10 feet high
Irish Upright, 3, 4, 5, 6, 7, and 8 feet The Irish and Chinese Junipers are grown by us to a very large extent
Thuja aurea.—This plant originated in our Nursery, and our stock of it offers a choice of many hundred specimens from 1½, 2, 3, 4, and 5 feet high, and measuring from 2 to 10 and 15 feet in circumference. Nothing can well exceed the beauty of these plants, and certainly are to be met with in no other Nursery
Thuja gigantea, stout seedling plants, 1½ to feet high
" Wareana, 3, 4, 5, 6, 7, and 8 feet
Thujopsis borealis, handsome plants, in quantity, 1½ & 2 ft. high
Taxus, Yew, Common English.—A large quantity, and of all sizes up to 5, 6, and 7 feet
" Irish Yew, 4, 5, 6, 7, and 10 feet. Many thousands of these beautifully formed plants grown to one stem
" Golden Yews in large quantities and of all sizes up to 6, 7, and 8 feet
We also have them worked on the Common and Irish Yew as Standards, with heads from 12 to 15 years' growth
Holly, Variegated, Scottica, laurifolia, &c. We hold probably the largest stock of good sized variegated Hollies in the kingdom, especially of the better kinds of silver and gold striped
Rhododendron ponticum, for cover, stout plants, 1½ to 2½ feet, by the 1000. All the well-known proved hardy late blooming kinds, in any quantity, at from 30*s*., 42*s*., to 84*s*. per dozen
Standard Rhododendrons of all kinds
Azaleas, stout bushy plants, covered with bloom buds, from 18 inches to 2 feet high, and of all colours, 9*s*., 12*s*., 18*s*., and 24*s*. per dozen; 50*s*., 75*s*., to 100*s*. per 100
Hardy Heaths, a first-rate collection, at 35*s*. per 100; 15*l*. p. 1000
Roses, fine Standards, of the most popular kinds, at very low prices.

As well as the above, we are very large holders of the ordinary kinds of Nursery Stock, which may be judged from the fact that the Nursery far exceeds 100 acres in extent of all such things as Laurels, Box, Lilacs, Limes, Purple Beech, and the commoner descriptions of Evergreens and Deciduous Flowering Shrubs. An enormous stock of Fruit and Forest Trees are also grown extensively.

Goods are delivered free to London, Reading, or Reigate. The Nursery is reached in an hour from Waterloo, and conveyances are always to be had at the Woking Station.

CATALOGUES, Priced and Descriptive, will be sent on application, or inclosing one postage stamp, to

WATERER AND GODFREY, Knap Hill, Woking, Surrey.

DOUBLE ITALIAN TUBEROSE ROOTS, 4*s*. per dozen.—The annual importation of the above named beautiful and fragrant Flower has just been received, and large and well selected Bulbs may be obtained, without disappointment, at A. COMBES'S Foreign Warehouse, 18, Pall Mall.

N.B. Printed regulations for treatment sent; also, just arrived, very moist and open Parmesan Cheeses.

100 GOOD PHLOXES FOR 40*s*.

50	Ditto	Ditto	for 25*s*.
25	Ditto	Ditto	for 12*s*. 6*d*.
12	Ditto	Ditto at 6*s*. and 9*s*. per doz.	

The best and newest continental varieties from 12*s*. to 18*s*. per dozen.

CATALOGUES sent free on application, and extra plants presented for distant carriage.

WM. WOOD & SON, having imported all the best and newest PHLOXES from the Continent, will be happy to supply them in collections as stated above, in fine strong plants grown in the open ground.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

TO THE TRADE.

JOHN PALMER, NURSERYMAN, Annan, begs leave to inform his Friends and the Trade generally, that he has on hand the following—all of excellent quality—which he is disposed to offer on very reasonable Terms:—

SEEDLINGS.

4,000,000 1-year Larch	40,000 1-year Laburnum drills
1,000,000 2-year Scotch Fir.	100,000 2 year Weymouth Pine
1,000,000 2-year Spruce	100,000 1-year Pear stocks, drills
200,000 1-year Beech	100,000 1-year Crab stocks, drills
300,000 1-year Alder	100,000 1-year Wild Cherry stocks, drills
300,000 1-year Oak, drills	100,000 1-year Portugal Laurel
100,000 1-year Turkey Oak, drills	200,000 1-year Yew
100,000 1-year Spanish Chestnuts, drills	50,000 1-year bedded American Arbor-vitæ
100,000 1-year Horse Chestnuts, drills	20,000 bedded common Laurel
200,000 2-year Ash, drills	20,000 bedded Portugal Laurel

TRANSPLANTED.

300,000 2-year tr. Larch	100,000 2-year tr. Spruce
100,000 2-year tr. Scotch Fir	400,000 2-year tr. Thorns

Prices to be had on application, and all orders will be promptly and carefully attended to. Carriage will be prepaid to London, Liverpool, Birmingham, Newcastle, Glasgow, and Edinburgh, and the half thereof charged to the buyer.

FOREST AND ORNAMENTAL TREES.

THOMAS IMRIE AND SONS, NURSERYMEN, Ayr, beg to inform their Customers and the Trade generally that they have on hand the following well-grown plants, viz.:—

TRANSPLANTED FOREST TREES.

30,000 Alder, 2 to 4 feet	300,000 Larch, 2 year 2 year, 2½ to 3½ feet
60,000 Ash, 2 to 3½ feet	400,000 Scotch Fir, 1 year 2 year
150,000 Beech, 1½ to 3½ feet	200,000 do. 2 year 2 year
20,000 Elm, 3 to 4 feet	400,000 Spruce Fir, 2 year 2 year, 12 to 18 inches
40,000 Oak, 2½ to 3½ feet	200,000 Privet, 2½ to 3 feet
20,000 Plane, 2 to 3 feet	500,000 Thorns, 2 and 3 year (STRONG)
20,000 Black Italian Poplar, 4 to 8 feet	20,000 Laburnum, 3 to 5 feet
10,000 Lombardy do., 3 to 6 ft.	
400,000 Larch, 2 year 1 year, 12 to 20 inches	

SEEDLINGS.

100,000 Ash, 2 year	500,000 Beech, 2 year (drilled)
1,000,000 Scotch Fir, 2 year	200,000 Oak, 1 year (do.)
1,000,000 Norway Spruce, 2 year	50,000 Laburnum, 1 year
20,000 Portugal Laurel, 1 foot	20,000 Common Bays, 1 to 3 feet
10,000 do. do., 2½ to 4 ft.	

50,000 Rhododendrons, 6 inches to 4 feet, and other Evergreens in great variety.

Dwarf-trained Apples, Pears, Peaches, Nectarines, and Apricots. Rider-trained Peaches, Nectarines, and Apricots.

Gooseberries, Currants, Seakale, Asparagus, &c.

Price Lists on application.

SEEDS FOR THE FARM.

NEW OLIVE-SHAPED YELLOW MANGEL, introduced by us two years ago, has been thoroughly tested and is now recommended with perfect confidence. It is of a remarkably vigorous growth, with finely shaped roots, intermediate in length between the Long and the Globe, and has produced from 5 to 10 tons more per acre than any other variety (see *Gardeners' Chronicle* of Jan. 8):—

SWEDE TURNIP.—All the approved sorts.
YELLOW Do. do. do.
WHITE Do. do. do.

In no description of crop raised on the Farm is a good or a bad one so dependent on the character of the Seed as in that of the Turnip, and from its great liability to degenerate, it requires the most scrupulous care and vigilance to produce Stocks that are every way worthy of confidence. To attain such, we have for several years past been using every known means to keep up or improve the shape, size, and texture of the various kinds; and we believe that what are now offered will give the most perfect satisfaction. All the principal varieties are our own growth, raised from large and fully developed Roots or Bulbs, and in the hope of giving a more vigorous growth to the Stock, the strongest clay soil is always selected for a considerable portion of the Swede and Yellows. This mode of raising Turnip Seed materially increases the expense, but it is a much more satisfactory system than the one usually adopted, viz., sowing random stocks late in the season, after other crops, and taking the seed from mere plants, which in many cases are not even subjected to the process of thinning. Moveover, we guarantee our Seeds free from any of the adulterations so frequently practised to increase profits or cheapen prices, so that a strong healthy "braird" is certain.

PERENNIAL RYE-GRASS.—Finest Ayrshire
Do. do. do. Pacey's, 26*s*. to 32*s*. per bushel
ITALIAN do. Imported
Do. do. Home-grown
NATURAL GRASSES.—All the best varieties

The Stocks of Perennial Rye-grass Seed are the most select growths the country produces, and being all clean and heavy the economy of using such in preference to foul chaffy seed, however cheap, is at once apparent. Our imported Italian is from the usual source, and has always given satisfaction; while the home-grown is the direct produce of imported seed, cultivated under the most favourable circumstances, and more than ordinary pains having been used in dressing the seed; the samples of both are unusually clean and fine. In selecting the Natural Grasses care is taken to have them true to name, fully ripened, and in all respects good clean samples.

ALSIKE CLOVER, and other varieties.
LARGE BROAD-LEAVED SCOTCH TARES.

With every other description of Seed usually required for the farm, PRICED LISTS of which may be had post free on application.

W. DRUMMOND & SONS, Seedsmen, Stirling, N.B.; also at 58, Dawson Street, Dublin.

*** STIRLING is most favourably placed in point of railway accommodation, there being direct and constant traffic to all the principal stations in England and Scotland, and by steamers *via* Glasgow), almost daily to the chief ports in Ireland, thereby ensuring a speedy delivery of goods, all of which, except grain and Tares, we forward carriage paid.

UNEQUALLED NEW CUCUMBER, DR. LIVINGSTONE.—This is one of the finest long hybrid Cucumbers for exhibition purposes that has ever yet been offered to the public; it is a splendid dark sort, length 22 to 26 inches, a very free setter, and an abundant bearer. Price 2*s*. 6*d*. per packet.

QUEEN OF THE WEST MELON, a superb new variety, green flesh, very handsome in appearance, beautifully netted, and excellent in flavour. It obtained several first prizes during the past season. Seeds 2*s*. 6*d*. per packet.

NEW MELON GENERAL HAVELOCK, sent out for the first time last season. It is a green-flesh, very handsome shape, and beautifully netted; a very thick substance, thin skin, of a melting and most delicious flavour, and an abundant bearer. Weight from 3 to 4 lbs.; it gave the greatest satisfaction to all purchasers during the past season. Seeds 1*s*. per packet.

Extra fine mixed HOLLYHOCK SEED, saved from all named varieties, 1*s*. per packet.

Early Emperor CELERY, real, the finest ever yet sent out, 1*s*. per packet.

TILEY'S Solid White Celery, 6*d*. per packet
DELPHINIUM FORMOSUM, 6*d*. per packet.
DIGITALIS, or Fox-glove Seed, 6*d*. per packet.

For further particulars, and list of Cucumbers and Melons, see Advertisement in *Gardeners' Chronicle* of Jan. 29, 1859.

A remittance must accompany every order in cash or penny postage stamps, when the whole or any part, as the case may be, will be immediately sent.

EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Church Yard, Bath.

SEEDS OF FIRST QUALITY.

BASS AND BROWN offer the following from their CATALOGUE, which may be had free on application:—

A FEW NEW AND SELECT VEGETABLE SEEDS.
For descriptions of most of these, see Catalogue.

Peas, per quart.—Standard Bearer, 3*s*. 6*d*.; Cotton's Leviathan, 3*s*. 6*d*.; Dunnett's First Early, 2*s*.; Beck's Gem, 1*s*. 6*d*.; Rising Sun, 1*s*. 6*d*.; Ne Plus Ultra, 1*s*. 6*d*.
Beans, Syon House (the earliest), 1*s*. 3*d*. per quart.
Beet, Atking's Scarlet Melford Hall, 1*s*. per oz.
" Laing's Dark, 6*d*. per oz.
Broccoli, Mitchinson's New Penzance, 6*d*. per packet, 5*s* p. oz.
" Giant, late white, 2*s*. per oz., very fine late sort.
" Ward's Late White, the latest, 2*s*. per oz.
Belgium Brussels Sprouts, imported, 1*s*. per oz.
Cabbage, Furnell's Early Edwardstone, 1*s*. per oz.
Carrot, French Horn, very early, 6*d*. per oz.
Cauliflower, Early Paris, 1*s*. per packet; Lenormand's, 1*s*. 6*d*. per packet.
Celery, Ivery's Nonsuch, 6*d*. per packet; Goodwin's Early York, 1*s*. per oz.
Cottager's Kale, 1*s*. per packet.
Lettuce, Neapolitan, very fine, 1*s*. per oz.
Parsley, extra triple curled, 6*d*. per oz.
Savoy, the Early Ulm, 1*s*. per oz.
Turnip, Polly's Nonsuch, 1*s*. per oz.
Cucumber, each, 1*s*. per packet.—Conqueror of the West, Mill's Jewess, Hunter's Prolific, Sir Colin Campbell, General Canrobert, Gladiator, Glory of Armstadt, Essex Hero, Cheltenham Surprise, Lord Kenyon's Favourite, and many other choice.
Melons, each, 1*s*. per packet.—M'Ewen's Hybrid, Fleming's Trentham Hybrid and Cocoanut-flavoured, Snow's Horticultural Prize, Munro's Crystal Palace, Bromham Hall, and other choice sorts.

COLLECTIONS OF VEGETABLE SEEDS.

These comprise all first-rate sorts. A considerable reduction in price is secured by ordering these collections. For price and quality they are not to be surpassed.

No. 1 Collection	..	..	..	£3 0 0
2 "	..	..	..	2 0 0
3 "	..	..	..	1 5 0
4 "	..	..	..	0 15 0
5 "	..	..	..	0 10 6

The names of sorts contained in Nos. 1, 2, and 3 are given in the Catalogue. If any sorts are not wished for enlarged quantities of the others will be sent instead.

Peas, 15 finest sorts for succession, 1 qt. of each	..	17*s*.	6*d*.
Peas, 10 do. do. 1 qt. of each	..	9	6
Broccoli, a packet of each of 10 finest sorts for succession, 6*s*.; six sorts	..	3	6
Lettuce, a packet of each of six finest sorts ..	..	2	0

FINEST LAWN GRASSES.

In mixture of the best dwarf sorts. These are excellent. Per lb., 1*s*. 3*d*.; or 18*s*. per bushel.
Holcus saccharatus, an abundant cropper for cattle feed, 1*s*. 6*d*. per lb.
The Improved Custard Marrow, 18 seeds, 1*s*.; nine seeds, 6*d*.
Dioscorea Batatas, strong tubers, 9 inches to 1 foot long, 5*s* per dozen; extra large, 10*s*. per dozen.

FLOWER SEEDS—BEST ASSORTMENTS.
(Free by Post.)

Hardy Annuals, 100 very select, including choice novelties, 15*s*.; 50 for 8*s*. 6*d*.; 30 for 5*s*. 6*d*.; 20 for 4*s*.
Half hardy Annuals, including choice novelties, 50 very select, 12*s*. 6*d*.; 30 for 8*s*.; 20 for 6*s*.
Hardy and Half-hardy, including choice novelties, 100 for 20*s*.; 50 for 10*s*. 6*d*.; 30 for 7*s*.; 20 for 5*s*.
Dwarf Hardy Annuals, in large packets, for filling beds on lawns, &c., 20 for 7*s*. 6*d*.; 12 for 5*s*.
Greenhouse Annuals, Greenhouse Perennials, Hardy Biennials and Perennials, &c., in assortments, see Catalogue.
Flower Seeds, cheaper assortments, see Catalogue.

IMPORTED GERMAN SEEDS.

The varieties of German Stocks, Asters, Larkspurs, Wallflowers, &c., are remarkably fine and double, see Catalogue.

SEEDS OF CHOICE FLORISTS' FLOWERS.

These, comprising Calceolaria, Cineraria, Geranium, Fuchsia, Carnation, Piccotee, Hollyhock, and numerous others have been saved from very choice and first-rate collections, and are nearly all of our own saving.

NEW AND VERY SELECT FLOWER SEEDS.

A List of a few of these is given separately, extracted from the body of the Catalogue, with full descriptions. See Catalogue, page 55.

Goods (not under 20*s*.) carriage free to all the Railway Stations in London, &c. See Catalogue.

Post-office Orders payable to BASS & BROWN, or to STEPHEN BROWN. Remittances required from unknown correspondents.

BASS AND BROWN, SEED GROWERS, &c., Sudbury, Suffolk.

RICH BOG AND LOAM.—Gentlemen and Nurserymen will do well to apply early for the above to refresh their American beds. To be had in any quantity upon reasonable terms, by land or water carriage.

ROBERT NEAL, Nurseryman, Wandsworth Common, Surrey.

TO NURSERYMEN and OTHERS.—Those having in their Nurseries a quantity of extra large prolific, clean, good PEAR TREES for Sale, will oblige by giving the lowest price per 100.—Address, stating full particulars, by letter, to R. MARTIN, Fish and Fruit Salesman, Bath.

N.B. Wanted early in the coming fall.

TO NURSERYMEN.

3,000,000 RHODODENDRONS, 2, 3, 4, and 5 years old: small and strong Portugal and Common Laurel, small Red Cedar, Chinese Arbor Vitæ, Berberis, &c.; layers of Erica Alporti, vulgaris, alba carnea, and many other things to be sold very cheap.

For price, apply to JAMES SMITH, Darley Dale Nursery, near Matlock.—Feb. 19.

TO LANDOWNERS.

THE PERMANENT WAY COMPANY having been appointed the sole Licensees for the use of Dr. BOUCHERIE'S Patent Process for Preserving Timber, beg to inform Landowners and others interested in the use of English Timber that a Pamphlet, with full explanations of this cheap and most effectual process, may be had gratis on application to the undersigned. Landowners having Beech, Elm, Fir, or other Timber fit for Railway Sleepers are requested to communicate particulars of quantity, locality, and prices.

WILLIAM HOWDEN, Secretary.

26, Great George Street, Westminster.

FLOUR, Warranted Unadulterated, free to any part of London (not less than 14 lbs.); Whites, for pastry, at per bushel (56 lbs.), 8s.4d.; households, for bread-making, 7s.8d.; seconds, 7s. 0d.; Wheatmeal, for brown bread, 7s. 0d.; best fine and coarse Scotch Oatmeal.—Address, HORSNAIL & CATCHPOOL, Bullford Mill, near Witham, Essex, or 97, Goswell Road, City Road, E.C. Directions for bread making gratis. Terms cash. Bags lent. German yeast. A half sack (140 lbs.), or upwards, free to any railway station within 200 miles.

TO PIC AND POULTRY FEEDERS AND MILLERS.

CHICKEN RICE, 7s. 9d. per cwt., in bags 1½ cwt. each. SCREENED RICE, 10s. per cwt., in bags 1½ cwt. each. RICE MEAL, 6s. 9d. to 8s. 9d. per cwt. RICE for grinding. An allowance per Ton. American Oilcake, per ton only, 10l. 15s. in bags, 11l. 5s. in barrels.—Sold for Cash by W. & R. JUPP, 6, Cross Lane, St. Mary-at-Hill, Eastcheap, E.C.

GENUINE TOBACCO PAPER FOR FUMIGATING.

H. APPLEBY (Foreman to Messrs. Ivery & Son, Nurserymen, Dorking, Surrey), begs to inform his friends and the public that he now offers the above article at a reduced price. Sold in 4-lb. packets, 1s. 3d. per lb. A great reduction to the trade; price on application. For testimonials that will guarantee its quality, see *Gardeners' Chronicle*, Dec. 11, 1858, page 920.

SHEET IRON POTS FOR FUMIGATING, 3s. 6d. each.

N.B. All Orders to be accompanied with a Post-office Order, payable to HENRY APPLEBY, Dorking, Surrey.

GENUINE TOBACCO PAPER.

MESSRS. JACKSON AND SONS' WORKMEN are selling their unequalled TOBACCO PAPER at 4d. per cwt., any less quantity 10d. per lb.—Address BEN BAXTER, Messrs. Jackson & Son, Lady Lane, Leeds.

GENUINE ROLL TOBACCO CLOTH.

WARRANTED EQUAL IN STRENGTH TO TOBACCO.

JOSEPH BAKER, 10, Gough Square, Fleet St. E.C., having dealt upwards of 20 years in the above, can recommend it as the best article for destroying the Fly. 1s. 4d. per lb., over 10 lbs. 1s. Post-office Orders payable Strand Office.

TOBACCO PAPER AND CORD FOR FUMIGATING, in its pure and unmanufactured state, containing only the oil exuding from the Cavendish Tobacco in the process of manufacture, 1 lb. of which is equal to 3 lbs. of that usually offered. The following amongst many other testimonials have been received:—

From Messrs. JAMES VEITCH & SON, *Nurserymen, Exeter.*

"Gentlemen,—We are much pleased with the Tobacco Paper received last week, and should therefore feel obliged by your sending us as soon as possible 56 lbs. of the same sort.—Yours respectfully, (Signed) "JAMES VEITCH & SON."

The above will be forwarded in any quantity at 1s. 6d. per lb. on receipt of Post-office Orders payable to YOUELL & Co., Royal Nursery, Yarmouth, Norfolk, who are appointed Sole Agents for its sale.

BEES.—Strong early SWARMS, in improved Bar Hives, will be obtainable at Mr. LOWE'S Apiary, Broad Oak, Accrington, Securely packed for carriage by rail. Immediate application is desirable.

FOR Effectually Protecting the Bloom of Wal Trees from Spring Frosts use SHAW'S No. 3 TIFFANY DOUBLE STRENGTH. In pieces 18 yards long by 39 inches wide 7s. 6d. each.—JOHN SHAW & Co., Princess Street, Manchester.

TREES COMING INTO BLOOM will be protected from Frosts, Hail, &c., by using HAYTHORN'S HEXAGON AND CHISWICK GARDEN NETS, now used and recommended by all the principal Gardeners; the Nets will also preserve the Fruit from Wasps, Flies, Birds, &c.—For Patterns, Prices, and Testimonials, direct to Mr. HAYTHORN, Nottingham.

TANNED GARDEN NETTING, for preserving Fruit Trees from frost, blight, birds, &c., and as a fence for fowls, &c. One yard wide 1½d., 2 yards 3d., 3 yards 4d., and 4 yards 6d., per yard, in any quantity, may be had at C. WRIGHT'S, 376, Strand, W.C.—A liberal allowance to Nurserymen.

BRITTAIN'S GARDEN NET completely protects Fruit Blossoms from injury by frost, and provides for the circulation of air and admission of light, so essential to healthy growth; 55 inches wide, 5d., 6d., and 7d. a yard; good yard wide TIFFANY, 2½d. do.—Manchester, Feb. 19.

BLOSSOM OF WALL-FRUIT TREES.—Worsted Net, so very generally approved, 7d. per square yard—will last 10 years; plan of fixing it sent free. All kinds of Garden, Fishing, and Sheep Net, made by machinery, very cheap.

GALVANISED WIRE-WORK, less than 2-inch mesh, 16-gauge, 8d. per square yard; mesh 3 inches by 2 inches, for Poultry, 5d. per square yard; for Sheep, 4d. per square yard.

TRANSPARENT SHEETING, near 2 yards wide, 1s. per yard run.

WATERPROOF CAPES, long enough to protect a man from wet while stooping down, 3s. each; Police Capes, 18s. to 24s. per doz.; Tarpaulings for Carts, 12s.; Waggons, 25s.; Sheepskin Coats, 8s. each; Roofing Canvas, 1d. per square foot, 6 feet wide.

R. RICHARDSON, White Horse Factory, Bidborough Street, Judd Street; Office, 99, Euston Road, London.

HORTICULTURAL POTTERIES.

ADJOINING THE STAPLETON ROAD NURSERIES, BRISTOL.

MAULE AND SONS have just completed an extensive enlargement of their Manufactories, which will afford them greater facilities for increasing their supplies of all kinds of GARDEN POTS, VASES, and other ORNAMENTAL POTTERY, suitable both for utility and Horticultural decorations and embellishments.

Horticulturists who have not yet favoured this establishment with their patronage will find every advantage both as regards quality and price.

The first workmen are employed, and the whole of their talents and attention is concentrated in the production of Horticultural Pottery alone, an advantage not to be found in the kingdom besides.

ILLUSTRATED CATALOGUES and LISTS of PRICES sent on application.

Nurserymen and the Trade supplied on advantageous terms.

JAMES PHILLIPS AND CO.'S PRICES of GLASS for the present month.

HORTICULTURAL GLASS, STOCK SIZES, in 100 feet boxes.

	3rds.	4ths.
11 by 9, 12 by 9, 13 by 9, 14 by 9 .. / 12 „ 10, 13 „ 10, 14 „ 10, 15 „ 10 ..	14s. 6d.	12s.6d.
13 „ 11, 14 „ 11, 15 „ 11, 16 „ 11 .. / 14 „ 12, 15 „ 12, 16 „ 12, 17 „ 12 .. / 18 „ 12, 19 „ 12, 16 „ 13, 17 „ 13 .. / 18 „ 13, 19 „ 13, 20 „ 13, 21 „ 13 .. / 16 „ 14, 17 „ 14, 18 „ 14 .. .. / 19 „ 14, 20 „ 14, 21 „ 14	16s. 6d.	14s.0d.

PACKED IN CASES.

200 feet	£2 2 0	16 oz.
300 feet	3 3 0	
200 feet	2 18 0	21 oz.

ORCHARD HOUSE SIZES, As supplied by us to Mr. Rivers.

20 in. by 12 in.		16 oz.	21 oz.
20 in. by 13 in.	Common	14s. 0d. ..	£1 1s.
20 in. by 14 in.	Superior do. ..	16 6 ..	1 5
20 in. by 15 in.	English Glass ..	18 0 ..	1 9

SMALL SQUARES.—Per 100 feet.

6 by 4	6½ by 4½	7 by 5	7½ by 5½ .. 11 6
8 „ 6	8½ „ 6½	9 „ 7	9½ „ 7½ ..
10 „ 8	10½ „ 8½	.. ..	.. .. 12 6

JAMES PHILLIPS AND CO.,

130, Bishopsgate St. Without, London, E.C.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz SHEET GLASS of British Manufacture at prices varying from 2d. to 3d. per square foot for the usual sizes required, many thousands of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES, and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

HORTICULTURAL GLASS—JUNE TARIFF.

THOMAS MILLINGTON'S reduced Tariff of GLASS, &c.

6 by 4, 7 by 5, 8 by 6, 9 by 7 } 16 oz. to the foot, 11s. 6d.
6½ by 4½, 7½ by 5½, 8½ by 6½, 9½ by 7½ } per 100 feet.

In 100 boxes,—4ths quality, 12s. 6d.; 3ds do., 14s. 4d.

10 by 8,	12 by 9,	12½ by 10½,	14½ by 10½, 13 by 11
10½ by 8½,	12½ by 9½,	13 by 10,	15 by 10, 13½ by 11½
11 by 9,	13 by 9,	13½ by 10½,	12 by 11, 14 by 11
11½ by 9½,	12 by 10,	14 by 10,	12½ by 11½ .. ..

20 by 12	per 100 feet	16 oz.	21 oz.
20 by 13	Common ..	16s. ..	24s.
20 by 14	Superior .	18s. ..	27s.
20 by 15			

All Boxes included.

Orchard House sizes as supplied to Mr. Rivers.

Hartley's improved Rough Plate Glass from ⅛ to ⅜ in thickness.

Coloured Glass in great variety, at 9d. and 1s. per foot.

Paints, Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, Lamp Glasses, &c.

87, Bishopsgate Street Without, same side as Eastern Counties Railway.

RATS, RATS TAKEN WITHOUT POISON OR TRAPS BY WHOLESALE.—Ships, Barns, Stables, Granaries, Mills, Warehouses, Farmsteads, Houses, &c., cleared at one sweep. ANY PERSON can by this method clear the entire premises of every RAT, however numerous they may be, in one single night. Printed directions how to entice and secure the whole lot alive, sent free by return of post for Two Shillings by WILLIAM GOODWIN, High Halstow, near Rochester.

TROTMAN'S RUSTIC WORK, a great variety always on view. Thatched Summer Houses, Pagoda-roof Zinc ditto; Yew, Oak, and Swiss Tables, Oak Benches, Yew Seats and Stools, Flower Vases and Baskets, Perambulators, Bath Chairs, &c., ready for delivery, always on view at TROTMAN'S Manufactory, 12, Alfred Terrace, Upper Holloway. Delivered free to any Railway Station.

HENRY J. MORTON AND CO., 2, Basinghall Buildings, Leeds.

GALVANISED IRON WATER CISTERNS

for Cottage Houses, &c., to contain 50 gallons, 25s.; 80 gallons, 30s. each; and 140 gallons, 36s., and fitted with tap, keeping the water perfectly sweet and clean; will not rust or corrode. Cisterns of all sizes.

GALVANISED IRON PUMPS

for Liquid Manure or Domestic Use, 3 inches diameter, 30s. and 32s. 6d. each; Tail Pipe for same at from 10d. per foot.

GALVANISED IRON SWING WATER BARROWS

for Garden or Farm use, containing about 20 gallons, entirely formed of iron, 32s. 6d. each.

"FRIGI DOMO."—Patronised by her Majesty the Queen, the Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence, of Ealing Park, and — Collier, Esq., of Dartford.

PROTECTION FROM COLD WINDS AND MORNING FROSTS.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths. Two yards wide, 1s. 6d. per yard run; four, 3s. per yard. Also, an improved make for Shading Purposes. Three yards wide, 2s. 6d. per yard run.

ELISHA THOMAS ARCHER, whole and sole manufacturer, 7, Trinity Lane, Cannon Street, City, and of all Nurserymen and Seedsmen throughout the kingdom. "It is much cheaper than mats as a covering."

PATENT GUTTA PERCHA SOLES.—IMPORTANT TO GARDENERS.—The Gutta Percha Company have the pleasure to acknowledge the receipt of the following letter from G. GLENNY, Esq., the celebrated Florist:—

"Gentlemen,—I have worn Gutta Percha Soles and Heels these two years, and being so much in a garden as I necessarily am in all weathers, and with the ground in all states, I would on no account be without them. As a matter of economy I would recommend Gardeners to use them, for they may repair the worn part at all times by warming the material at the fire, and pressing it from the thick parts to the worn parts as easily as if it were so much dough. I think it the duty of all persons who must occasionally wet their feet to adopt a material that completely defies damp. Many a gardener would escape colds and rheumatism by the use of Gutta Percha Soles.

"Your obedient servant, G. GLENNY."

Every variety of Gutta Percha articles, such as Mill Bands, Tubing, Soles, Goloshes, Sheet, Pump Buckets, Fire Buckets, Bosses, Union Joints, Flasks, Bottles, Bowls, Chamber Vessels, Toilet Trays, Sponge Bags, Curtain Rings, Galvanic Batteries, Talbotype Trays, &c., manufactured by the Gutta Percha Company, and sold by their wholesale dealers in town or country.—The Gutta Percha Company, Patentees, 18, Wharf Road, City Road, London.

GLAZIERS' DIAMONDS for CUTTING HORTICULTURAL and other GLASS, to be had of the Wholesale Manufacturer, JOHN EDWARDS, 20, Sharp's Alley, West Smithfield, London, E.C. Prices from 10s. to 27s. 6d.

C. STEPHENSON, late STEPHENSON AND SONS, 61, Gracechurch Street, London, Manufacturer of Iron Hurdles, Fencing, &c., Improved Iron and Copper Conical Boilers and Apparatus for Warming Buildings of every description by Hot Water.

Prices and Estimates furnished upon application.

HANDS'S PATENT is the only system to circulate Heat, and for WARMING, FUMIGATING, and VENTILATING Hothouses, Greenhouses, Winter Orchards, &c.; to keep vegetation healthy in a humid atmosphere, and can be applied to any kind or shape of Forcing-houses and Conservatories now existing at trifling cost.—For particulars apply at the Office, 10, Charlotte Street, Fitzroy Square, London; or to Mr. JOHNSON HANDS, Epsom.

VOKINS AND HURD, Seymour House, Jubilee Place, King's Road, Chelsea, BUILDERS OF HOTHOUSES, CONSERVATORIES, GREENHOUSES, PITS, and every description of erections in Glass work, either in Wood or Iron; also Heating the same by hot water on the most approved plans and at the lowest prices consistent with good work. Estimates forwarded.

GREENHOUSES.

HENRY FREEMAN, HOTHOUSE BUILDER and HOT-WATER APPARATUS MANUFACTURER, Triangle, Hackney. Established 20 years. Good substantially built GREENHOUSES, fixed in any part of the kingdom, for cash, 42 ft. long by 13 ft, 90l.; 21 ft by 13 ft., 50l. 12½ ft. by 10 ft., 30l. A first-rate Conservatory, 30 ft. by 16 ft, 130l. A large assortment kept. Estimates for heating, or any branch in wood, iron, or Park Fencing.

GREENHOUSES, ORCHARD HOUSES, AND PITS

OF EVERY DESCRIPTION, MADE BY STEAM MACHINERY, AND HEATED BY HOT WATER ON AN IMPROVED PLAN AT

J. LEWIS'S HORTICULTURAL WORKS, Stamford Hill, Middlesex, established 20 years. These Buildings are warranted of the best materials, and at prices which defy competition. The ventilation is most efficient, and the greatest improvement of the present day. Prices of any size on application. References in all parts of the United Kingdom.

HORTICULTURAL BUILDINGS AND HEATING BY HOT WATER.

JOHN R. PEILL, 17, New Park Street, Southwark, Manufacturer of every description of Buildings for Horticultural purposes, and Inventor of the Improved Conical Boiler for heating the same, is prepared to undertake works of any magnitude, and refers among others to the celebrated range of FORCING HOUSES at HER MAJESTY'S GARDENS, FROGMORE, and at SIR ROBERT PEEL'S, DRAYTON MANOR, constructed under the superintendence of his Manager, MR. JOHN JONES; and also to his BOILERS fixed at the CRYSTAL PALACE, the ROYAL BOTANIC GARDENS, REGENT'S PARK, and KEW, and at several hundreds of the Nobility's seats, Public Establishments, and Manufactories in London and the provinces. J. R. P. also manufactures every description of Iron Roofs, Iron Houses, and Iron Fencing, plain and ornamental. Strong Iron Hurdles for Sheep (6 feet long, 3 feet high, with 5 bars), 4s. 3d. each; ditto for cattle, 4s. 9d. each.

Prices and other particulars forwarded on receipt of one postage stamp.

A GOOD GREENHOUSE FOR SALE, 23 feet 7 inches long, by 9 feet 9 inches wide, inside measure, glazed, span roof, and glass folding doors to front, one glass end, small door at other end with brickwork, stands, and shelves, complete. Price 24l. To be seen temporarily erected, at Mr. AKHURST'S, Eltham, Kent.

HOTHOUSES FOR SALE.

TO BE SOLD CHEAP, two nearly new SPAN-ROOF HOUSES, each 65 feet long by 18 feet wide, price 100l. each; also a handsome OCTAGON CONSERVATORY, 22 feet diameter with glass all round, quite new, price 90l. All these houses are warranted to be of the best materials and workmanship. The reason of their being now Sold is to make room for an extensive alteration and addition to our Workshops and Steam Machinery.—Apply to Messrs. JOHN WEEKS & Co., King's Road, Chelsea, where the whole of the above can be seen, as also a great variety of other Horticultural Erections.

POULTRY HOUSES—SUMMER-HOUSES.—Poultry House, 12 ft. by 4 ft., 6 ft. high in lowest part, 5l.; consisting of roosting-house, 4 ft. by 4 ft.; roofed run, wired in, 8 ft. by 4 ft. of corrugated iron, fitted with nest-boxes, perch. &c.; House without run, 2l. Poultry Wirework, galvanised, 5d. per square yard. Corrugated Iron Summer-house, 10 ft. by 6 ft., price 6l.—a good retreat and play place for children; larger or smaller, on equally moderate terms, Bath House, 5l., for yard or garden. Tool Houses, Sheds, Roofs &c.—R. RICHARDSON, Portable House Builder, White Horse Factory, Bidborough Street, Judd Street; Office, 99, Euston Road, London. Drawings of Poultry Houses, Summer-houses, and Portable Houses free on application.

TO GARDENERS, ETC.

PATENT WATERING ENGINES, PAIL MACHINES, CONSERVATORY PUMPS, and GREENHOUSE SYRINGES, with all the latest improvements, manufactured only by the Patentee,

RICHARD READ, 35, REGENT CIRCUS, PICCADILLY, LONDON.

*** Descriptions sent post free.

THE CHAMPION STEAM PLOUGH can be had by applying at 40, Mark Lane, London. Its recommendation is the valuable work it has done. Orders for this Spring must be sent at once.

Woolston, Bletchley Station.—Feb. 19.

GEORGE SPILL, ST. GEORGE'S STREET, LONDON DOCKS, E., LEAD, OIL, and COLOUR WORKS; WHITE LEAD, TAR, and TURPENTINE MERCHANT; WHITE ZINC, PAINT, COLOURS, and VARNISHES. To meet the desire of purchasers in the country the following colours are prepared ready for use:—Priming Colour, Red and Yellow Paint, Buff Stone, Lead, and Green Colours. Putty, Painter's Tools and Brushes, Refined Coal and Stockholm Tars; Pure Colza, Olive, Sperm, and Nut Oils.

SHAW'S TIFFANY.—The best and cheapest material for Shading Conservatories, Protecting Fruit from Birds and Wasps, &c. Sold in pieces 20 yards long by 38 inches wide. No. 1, best quality, 5s. per piece; second quality, 4s. per piece. Extra strong and thick (see Circular) sent free by post with samples).

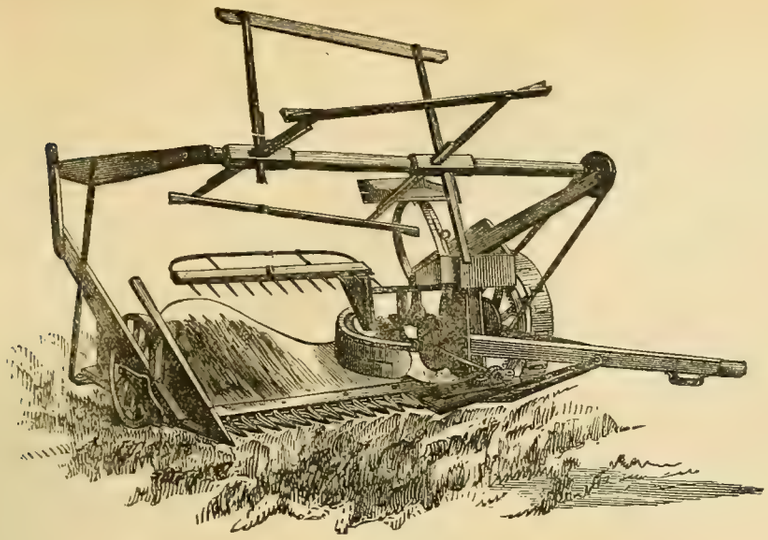
Address JOHN SHAW & Co., Manufacturers and Dealers Princess Street, Manchester.

SHADING.

BROWN'S FLORAL SHADING still maintains its superiority for cheapness and efficiency over all other materials used for a similar purpose, viz., shading plants under glass from the scorching rays of the sun, protecting Wall Fruit Trees when in bloom from frost, and preserving the fruit from the attacks of birds, flies, and wasps. Sold in pieces 20 yards long, 38 inches wide:—

No. 1 per piece .. 4s. 0d. | No. 2 per piece .. 4s. 3d

To be obtained of all the principal Nurserymen and Seedsmen in town and country. Samples sent free on application to the Manufacturer, CHARLES BROWN, Greenheys, Manchester.



B. SAMUELSON,

AGRICULTURAL ENGINEER AND MACHINIST,

WAREHOUSE, 76, CANNON STREET WEST, LONDON,

WORKS AT BANBURY,

INFORMS MERCHANTS, the TRADE, and AGRICULTURISTS, that he has opened the above Warehouses as a depôt for his own manufactures and those of Messrs. Barrett, Clayton, Howard, Hornsby, Nicholson, Richmond, Tuxford, Smith, and all other first-class makers, whose implements he is prepared to offer on makers' terms.

THE BRITANNIA SELF-RAKING REAPING MACHINE,

With side delivery in sheaf, no rakers or gatherers required; and all the most improved Food-preparing Machines of the season, may be inspected at the above depôt.

B. SAMUELSON, 76, Cannon Street West, London; and Britannia Works, Banbury.

GREEN'S PATENT

GRASS CUTTING, COLLECTING, & ROLLING MACHINES.

MANUFACTORY, LEEDS, YORKSHIRE.

Trial at the London Horticultural Society's Gardens, Chiswick, June 5, 1857.

FOUR COMPETITORS.

First trial on level ground; second do. on undulated; third ditto on intricate places around trees, &c., when GREEN'S PATENT was unanimously declared to be the best in each trial by Colonel Challoner, Dr. Lindley, and G. M'Ewen, Esq., the appointed judges.

See the *Gardeners' Chronicle* of May 22, 1858, p. 423, under the heading of "Garden Memoranda."

"LONDON HORTICULTURAL GARDENS, CHISWICK.—The Grass in the Arboretum and elsewhere is in excellent condition; it is kept in order by means of one of GREEN'S 2-feet Mowing Machines, which does its work very satisfactorily, and, compared with the scythe, effects a saving of at least one half."

Extract from London *Times* of June 8, and *Gardeners' Chronicle* of June 12, 1858.

"TRIAL OF MOWING MACHINES.—A considerable number of machines of various sizes having been brought to the ground, it was agreed that the trial should take place between one Hand Machine of each exhibitor, all selected as nearly as possible of uniform size, and worked by themselves, or their men. The ground to be worked was determined by lot, the pieces having been previously selected of as uniform quality as possible. After trials on level ground and round trees the judges, Colonel Challoner and Mr. Edward Easton, delivered the following award:—

Name.	Time.	Square feet cut.	Square feet cut per minute.	Points indicating quality, 60 being perfection.				Price.
				Quality of work.	Construction of machine.	Lightness of draught.	Total.	
GREEN	6min. 35sec.	1600	242	50	50	60	160	£8 10s.
Shanks	6 35	1302	197	45	50	40	135	7 10
Ferrabee	6 35	1503	228	15	45	50	110	6 0
Deane	6 36	1046	158	25	10	60	95	6 8

(Signed) "C. B. CHALLONER, EDWARD EASTON, Judges."

Extract from the "Cottage Gardener" of June 15, 1858.

"The decision was just what was anticipated, all present being satisfied of the manifest superiority of GREEN'S Machine, both in construction, lightness of draught, and superiority of work."

THOMAS GREEN respectfully informs the Nobility, Gentry, Gardeners, Amateurs, and others that upwards of Fifteen Hundred of these Machines were sold during the last two seasons, which were proven to be the best in all cases of competition, and have since been REMODELLED ENTIRELY; the little defects pointed out by the judges last year are now rectified. The Patentee now considers the Machines as near perfection as possible.

THE FOLLOWING IS A LIST OF PRICES:—

Made very strong, suitable for Horse Power, to cut 48 inches, £27; do. 42 inches, £24; do. 36 inches, £21; do. very strong, suitable for a strong Pony, to cut 30 inches, £18; do. do., made lighter, suitable for a small Pony or Donkey, to cut 30 ins., £15. If fitted up with leather traces, hooks, stretcher, &c., which may be attached to the usual harness or chain traces, 7*s.* 6*d.* extra.

Box of requisites for cleaning andsharpening, with instructions for keeping the Machine in order, 5*s.* extra.

Leather Boots, suitable for Horses' feet, to prevent injury to the lawn, will be for a set of four, 24*s.* extra.

HAND MACHINES.

To cut 24 inches, £8 10*s.*, suitable for two men.
To cut 22 inches, £8 0*s.*, suitable for man, or a man and boy.
To cut 20 inches, £7 10*s.*, suitable for man and boy.
To cut 18 inches, £7 0*s.*, suitable for one man.
To cut 16 inches, £6 10*s.*, suitable for one man.
To cut 14 inches, £6 0*s.*, suitable for a stout lad.

Box and requisites for cleaning and sharpening, with instructions for keeping the Machine in order, 5*s.* extra.

The above are Nett Cash prices, delivered at any of the principal Railway Stations in England.

*** The Machines are warranted to give satisfaction, or may be at once returned by the party paying the carriage back to Leeds. The Patentee has spared neither time nor expense in producing the best and cheapest Mowing, Collecting, and Rolling Machines ever brought before the public.

Hundreds of Testimonials (unsolicited) may be seen, and references given with regard to the superiority of the Machines, by applying to the Patentee,

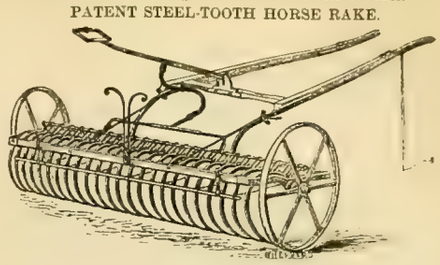
THOMAS GREEN, Smithfield Iron Works, Leeds.

☞ T. G. *will be glad to receive orders for Machines as early as possible; a great difficulty was found last season in supplying the number required.*

HOWARDS' PRIZE IMPLEMENTS, 1859.

JAMES AND FREDK. HOWARD, Britannia Iron Works, Bedford, beg to direct attention to their

PATENT STEEL-TOOTH HORSE RAKE.



For which they received the Three First Prizes last offered by the Royal Agricultural Society of England.

J. & F. HOWARD have discontinued troubling the Public with a long List of Prizes awarded to their Implements, but they would just state that for PLOUGHS, HARROWS, and HORSE RAKES, they have for several years gained every Prize for which they have competed.

PLOUGHS.

P PLOUGH, with two wheels, for light work .. £4 7 6
PP PLOUGH, ,, for general purposes 4 12 6
SKIM COULTER £0 5 6

STEEL BREASTS, 7*s.* and 7*s.* 6*d.* extra.

HARROWS.

A Set of Three 4-Beam HARROWS, with Whippletree, recommended as general Seed Harrows, 9¼ feet wide, marked No. 12 .. .. £3 14

A Set of Three 4-Beam HARROWS, with Whippletree, adapted for 3 Horses, 10 feet wide, marked No. 11 .. 4 4

HORSE RAKES.

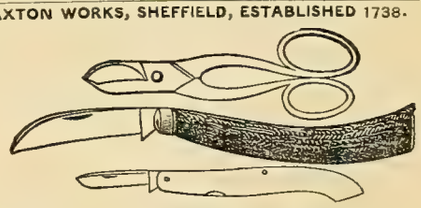
Price of small size RAKE, marked A, with 24 iron teeth, extreme width 7½ feet £7 10 0
Ditto, with Steel Teeth 8 0 0
Price of large size, marked B, with 28 iron teeth, extreme width 8½ feet 8 0 0
Price of large size, marked B, with steel teeth .. £8 10 0
Price of extra large size, marked C, with 24 steel teeth, extreme width, 9½ feet 10 10 0
Price of a Set of 15 Prongs, to be attached to the above when used as Weed Extirpators 1 10 0

Free Delivery to Birmingham, Bristol, Derby, Gloucester, Lincoln, Liverpool, London, Manchester, Norwich, Nottingham, Retford, Wisbeach, and Worcester; or to Dublin, Edinburgh, Glasgow, and other parts at fixed rates.

HOWARDS' NEW CATALOGUE, containing prices and description of their Patent Ploughs, Harrows, Horse Rakes, and other Implements, including Smith's Steam Cultivators, for which they received at Chester the Gold Medal of the Royal Agricultural Society of England, sent free on application to

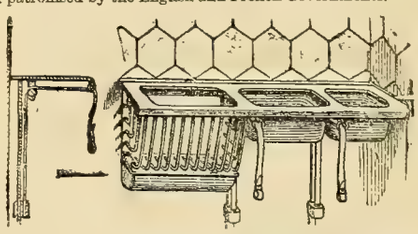
J. & F. HOWARD, Britannia Iron Works, Bedford.

PAXTON WORKS, SHEFFIELD, ESTABLISHED 1738.



SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.—Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

COTTAM'S PATENT INVENTIONS FOR STABLE REQUISITES, awarded a Prize at the Paris Exhibition, and patronised by the English and French Governments.



COTTAM AND COMPANY, of Winsley Street, are the original inventors of the PATENT ENAMELLED MANGER, Water Trough, and Wrought Iron Rack, united to an iron top-plate, and forming one complete and useful fixture, having COTTAM'S patent noiseless halter guide and collar rein attached, which is taken to the back of the manger, and works with ease and freedom up or down the guide-bar.

COTTAM'S NEW PATENT SEED-BOX, an important addition to the above fittings, being simple in construction, light, and durable, promotes cleanliness, and is economical in its results.



COTTAM'S PATENT SADDLE and HARNESS BRACKET combined, can be used with great advantage where space is an object, as it can be turned up out of the way when not in use.

COTTAM'S IMPROVED SURFACE GUTTER, with perforated moveable cover, the use of which prevents accidents, and can be easily cleaned out.

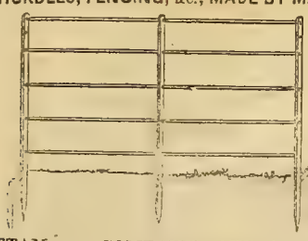
COTTAM'S CAST-IRON SANITARY TRAP, from its improved construction, gives a full water passage, and does not allow any smell to ascend from the drain.

PATENT LOOSE-BOX FITTINGS, and every article for the harness-room and stable, kept in stock, plain, galvanised, and enamelled. Iron gates, fencing, hurdles, &c.

The New Illustrated Catalogue and Estimates, gratis, upon application to COTTAM and COMPANY, 2, Winsley Street, Oxford Street.

N.B. COTTAM & Co. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

IRON HURDLES, FENCING, &c., MADE BY MACHINERY.

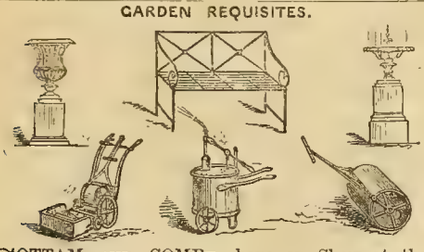


COTTAM AND COMPANY, of Winsley Street, have invented machinery for making Hurdles, &c.; the bars, instead of being pointed by hand in the old fashioned style, are nipped down by the machine, leaving a shoulder so as to more effectually tighten the standards when rivetted. They are made of superior iron only, and will compete in price with those made by hand from cinder or common iron which so frequently break. Iron Fencing, Gates, and Iron Work of all kinds, both Plain and Ornamental, Conservatories, Hot Water Apparatus and Garden Implements.

Illustrated CATALOGUES free on application to COTTAM & COMPANY, Ironfounders, 2, Winsley Street, Oxford Street, W.

N.B. COTTAM & Co. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

GARDEN REQUISITES.



COTTAM AND COMPY. have on Show at their Repository, 2, Winsley Street, Oxford Street, W., a great variety of the following articles for the Garden, &c., at very low prices, viz., Garden Rollers, Garden Engines, Garden Syringes, Mowing Machines, Garden Chairs, both plain and ornamental, superior Garden Tools of all kinds, Garden Vases and Fountains, a large assortment of Horticultural Implements, Ornamental Bronze Iron Tables, Flower Stands, Plant and Flower Bowls, Pot Trainers, Rose Tree Guards, &c.; Temples, Flower Bordering, and every description of Wire Work, both plain and ornamental; Hand-glass Frames, cast and wrought iron Flower Stakes, Garden Arches, &c.; strong Iron Hurdles made by machinery, and best Wire for strained Fencing; Hothouses and Conservatories, &c., made upon the most improved principle, either of iron or iron and wood combined, which can be fixed complete with hot-water apparatus in any part of the kingdom. The New ILLUSTRATED CATALOGUE and Drawing on application to COTTAM & COMPY., 2, Winsley Street, Oxford Street, London, W., opposite the Pantheon.

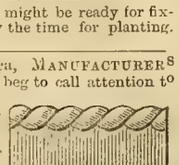
ORNAMENTAL GARDENING.



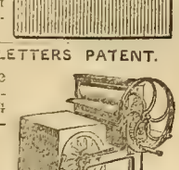
AUSTIN, SEELEY, AND CO. respectfully invite the attention of the nobility and gentry to their large FLOWER BASINS or "PORTE-FLEURS," of which they have now some handsome designs, from 7 to 20 feet diameter.

Any such work ordered IMMEDIATELY might be ready for fixing in March, so as to be well settled by the time for planting. —371 to 375, Euston Road.

LOOMES AND CO., Whittlesea, MANUFACTURERS OF BRICKS, TILES, POTTERY, &c., beg to call attention to their new CABLE PATTERN GARDEN BORDER EDGING, which not only surpasses others in appearance and durability, but is free from the dangerous points and sharp edges of most.—Price, delivered on any Railway at Peterborough, 5d. per yard.



BY HER MAJESTY'S ROYAL LETTERS PATENT.

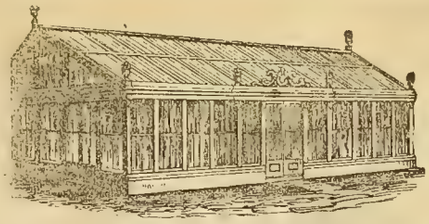


"NO ONE KNOWING the value of your Patent WASHING, WRINGING, and MANGLING MACHINE, would be without one."—*Vide Mrs. Hall.*

THOMAS BRADFORD, Patentee, Manchester.

Descriptive Pamphlet, with Prices, free by post.

HOTHOUSES, CONSERVATORIES, FRAMES & LIGHTS OR PITS, CUCUMBER & MELON BOXES & LIGHTS.



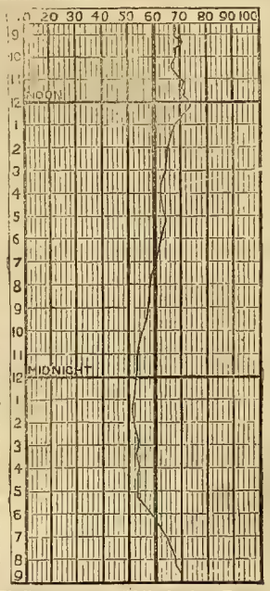
JAMES WATTS, HOTHOUSE BUILDER, 8, Claremont Place, Old Kent Road, London.

Green and Hothouses, 9, 10, 11, 12, 13, and 14 feet wide, any length, from 16 to 100 feet. Frames and Lights for Pits, 6ft. 6in., 7 ft., 7ft. 6 in., 8 ft., and 8 ft. 6 in. wide, any length, from 12 to 100 feet. Upwards of 200 Cucumber and Melon Boxes and Lights, from 4 ft. by 3 to 10 ft. 6 in. by 5 ft. 6 in., kept ready, glazed with stout sheet glass, painted four times, complete, ready for immediate use, all made of best material, packed and sent to all parts of the kingdom.—References may be had to the Nobility, Gentry, and the Trade in most of the counties in England. Horticultural Buildings of every description heated on the most approved and economical principles.

TO HORTICULTURISTS.

GAUNTLETT'S PATENT CHRONOMETRICAL THERMOMETER.

This instrument, which combines an eight-day clock of the best English make showing time, with a newly-patented Thermometer wherein glass and quicksilver are dispensed with, writes down the temperature of the atmosphere on a slip of paper, and when placed in a Hothouse, Forcing House, or Conservatory, &c., supplies a valuable record of the temperature, with all its variations, showing the time when any change took place, and how long such change continued.

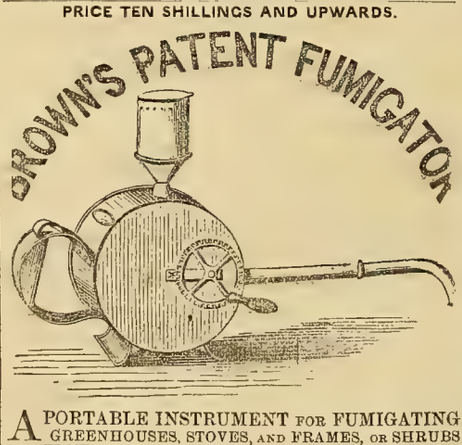


The above slip (reduced in size) exhibits the temperature of the Royal Agricultural Society's show yard at Chester, July 22, 1858, written off by one of these instruments, to which was awarded the Society's SILVER MEDAL.

This is the only instrument that registers temperature continuously and writes it down, and no horticulturist should be without it.

Orders received by W. H. GAUNTLETT, Middlesbro' on-Tees.

PRICE TEN SHILLINGS AND UPWARDS.



A PORTABLE INSTRUMENT FOR FUMIGATING GREENHOUSES, STOVES, AND FRAMES, OR SHRUBS AND FLOWERS, in the open air, without injuring the most delicate plant; delivering the smoke cool, in a dense mass, and effecting a great saving of Tobacco.

Manufactured and supplied to the trade by Messrs. BARBER & GROOM, London; and may be had of all Ironmongers, Seedsmen, and Florists.

Important to every man who keeps



THORLEY'S FOOD FOR CATTLE,

77, NEWGATE STREET, LONDON.

Beware of spurious imitations.

MICROSCOPES.

J. AMADIO'S BOTANICAL MICROSCOPES packed in mahogany case, with three powers, condenser pincers, and two slides, will show the animalculæ in water Price 18s. 6d.—Address JOSEPH AMADIO, 7, Throgmorton Street A large assortment of Achromatic Microscopes.

"It is marvellously cheap, and will do everything which the lover of nature can wish it to accomplish either at home or in the open air."—*The Field*, June 6, 1857.

Just published, an Illustrated Catalogue, containing the names of 1000 Microscopic objects, post free for 4 stamps.

FOR HORTICULTURAL WORKS, GARDENING PURPOSES, ENGINEERS, & MACHINISTS.

VULCANISED INDIA RUBBER.

Washers for Hot-water and Steam Joints	Garden Watering Hose
Elastic Packing and Valves for Steam Engines	Do. fitted with Brass Joints, Taps and Spreaders
Pump Buckets (compound India-rubber)	Wheel Tires (noiseless for Trucks, &c.)
Suction Hose for Pumps	Waterproof Cart, Van, and Waggon Covers
Fire Engine Hose	Mill Bands, much improved for driving all kinds of Machinery
Air Beds, Cushions, & Bolsters	Door Springs, Gas Bags
Water Beds, Pillows, and Feet Warmers	Foot Balls, Cricketting Gloves

N.B. A Stock of the above always on hand, and any modification made to order. Please address all communications to the Manufactory.—JAMES LYNE HANCOCK, Vulcanised India-rubber Works, Goswell Road, London, E.C.

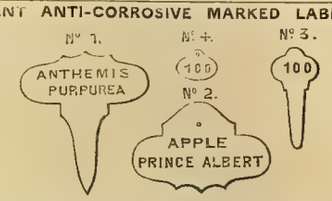
PARKES' STEEL DIGGING FORKS.

BURGESS AND KEY, 95, Newgate Street, London, being the Wholesale and Retail Agents for these celebrated TOOLS have always a large Stock on hand from which their Customers may select what they may require.

ANTHONY'S PATENT AMERICAN CHURN.—The FIRST PRIZE was again awarded to this Churn in Competition with several others at the Chester Meeting of the Royal Agricultural Society; it has obtained the First Prize given by the Society at every Meeting since 1850.

Messrs. BURGESS & KEY, 95, Newgate Street, strongly recommend it as the most perfect Churn now in use. Full particulars sent on application.

PATENT ANTI-CORROSIVE MARKED LABELS.



A. J. BOOT, Lloyd Street, Hulme, Manchester, respectfully calls the attention of the Nobility, Gentry, Nurserymen, and Gardeners to his PATENT ANTI-CORROSIVE MARKED LABELS. The indestructible metal of which they are manufactured, the deep and legibly marked letters, and their neatness of design, render them essential in every well-conducted horticultural building, garden, or orchard, where so much depends upon the preservation of names. The inventor guarantees them to endure for centuries in any climate; neither damp nor heated atmosphere having the slightest effect upon their durability. They need only be cleaned with soap and water to renew their usefulness and neat appearance every year, which qualities will ensure for them a preference to all others now in use. The following descriptions will give an idea of their general utility.

No. 1. Large-tongued Label, 4s. per dozen, suitable for all stove plants, Orchids, greenhouse plants, annual and perennial flowers, and all kinds of bulbous roots.

No. 2. Wall Labels, 4s. per dozen, for all kinds of wall trees, standards, Vines, Roses, Dahlias, Hollyhocks, or for fixing on blocks of wood for orchidaceous plants and all kinds of shrubs or ornamental plants and nursery stock in general.

No. 3. Small-tongued Numbered Label, 6s. per 100, for Polyanthus, Auriculas, Tulips, and all descriptions of florists' flowers

No. 4. Small Numbered Label, 5s. per 100, for numbering every description of choice and tender plants, Rose trees, &c.

MAPPIN'S PRUNING KNIVES IN EVERY VARIETY.

WARRANTED GOOD BY THE MAKERS.



MAPPIN BROTHERS, Queen's Cutlery Works, Sheffield; and 67 and 68, King William Street, London.

MAPPIN'S "SHILLING" RAZORS Shave well for Twelve Months without Grinding.

MAPPIN'S 2s. RAZORS Shave well for Three Years.

MAPPIN'S 3s. RAZORS (suitable for Hard or soft Beards,) Shave well for Ten Years.

MAPPIN'S SUPERIOR TABLE-KNIVES maintain their unrivalled Superiority—handles cannot possibly become loose—the blades are all of the very first quality, being their own Sheffield manufacture.

	Tble. Kns.	Dst. Kns.	Carvers.
Ivory 3⅞ in. Handle, balanced,	20s. p. doz.;	16s. p. doz.;	6s. p. pair
Do. 4 in. do. ..	25s. ,,	18s. ,,	9s. ,,

MAPPIN'S SILVER-PLATED DESSERT KNIVES and FORKS, in Mahogany Cases.

12 Pairs Knives and Forks, Ivory Handles, in Case..		80s.
12	Do. Pearl Handles, do. ..	130s.
12	Do. Silver-Plated Handles, do. ..	80s.

MAPPIN'S ELECTRO-SILVER PLATE.—MAPPIN BROTHERS, Manufacturers by Special Appointment to the Queen, are the only Sheffield makers who supply the consumers in London. Their LONDON SHOW ROOMS, 67 and 68, King William Street, London Bridge, contain by far the largest STOCK of ELECTRO-SILVER PLATE in the World, which is transmitted direct from their Manufactory, Queen's Cutlery Works, Sheffield.

	Fiddle Pattern.	Double Thread.	King's Pattern.
12 Table Forks, best quality	£1 16 0	£2 14 0	£3 0
12 Table Spoons, best quality	1 16 0	2 14 0	3 0
12 Dessert Forks, best quality	1 7 0	2 0 0	2 4
12 Dessert Spoons, best quality	1 7 0	2 0 0	2 4
12 Tea Spoons, best quality	0 16 0	1 4 0	1 7

Messrs. MAPPIN BROTHERS respectfully invite buyers to inspect their unprecedented display, which, for beauty of design, exquisite workmanship, and novelty, stands unrivalled. Their illustrated Catalogue, which is continually receiving addition of New Designs, sent per post on receipt of 12 stamps.—MAPPIN BROTHERS, 67 and 68, King William Street, London Bridge: Manufactory, Queen's Cutlery Works, Sheffield.

AMUSEMENT FOR WINTER EVENINGS is abundantly afforded to all purchasers of one of MECHI'S famous mahogany FOLDING BAGATELLE TABLES. Prices, complete with balls, bridge, cues, and mace, and directions for playing, 6 feet long, 3l. 15s.; 7 feet long., 4l. 15s.; 8 feet long, 5l. 15s.; 8 feet 6 inches long, 8l. 10s.; 9 feet long, 11l. 10s.; 10 feet long, 12l. 10s.; stands for ditto, with adjusting screw legs, 45s. to 70s. The stand is not absolutely necessary for playing the game, although its use facilitates (by ensuring an exact level) the interest of the play.

112, Regent Street, W., and 4, Leadenhall Street, E. C.

By Royal Her Majesty's Letters Patent.

E. DENCH, KING'S ROAD, CHELSEA, & HAMPSTEAD ROAD, Patentee and Sole Manufacturer of PATENT GALVANISED IRON HOTHOUSES AND CONSERVATORIES, has TWO SPAN ROOFED HOUSES left for Sale, a great Bargain Patent Hothouses, every way superior to any other material, at 1s. 3d. per foot super, with excellent heavy good quality Glass. Printed Price List sent on application. Heating by Hot Water with efficiency and economy.

PRIZE MEDAL, PARIS EXHIBITION 1855.

METCALFE, BINGLEY, AND CO.'S New Pattern and Penetrating Tooth Brushes, Penetrating unbleached Hair Brushes, Improved Flesh and Clothes Brushes, and genuine Smyrna Sponges; and every description of Brush, Comb, and Perfumery for the Toilet. The Tooth Brushes search thoroughly between the divisions of the Teeth and clean them most effectually—the hairs never come loose. M., B., and Co. are sole makers of the Oatmeal and Camphor, and Orris Root Soaps—sold in Tablets (bearing their names and address) at 6d. each, of METCALFE'S celebrated Alkaline Tooth Powder, 2s. per box; and of the New Bouquets.—Sole Establishment, 130B and 131, Oxford St., 2d and 3d doors west from Holles St., London.

HANDSOME BRASS AND IRON BEDSTEADS. —HEAL & SON'S Show Rooms contain a large assortment of Brass Bedsteads, suitable both for Home use and for Tropical Climates; handsome Iron Bedsteads with Brass Mountings and elegantly Japanned; Plain Iron Bedsteads for Servants; every description of Wood Bedstead that is manufactured, in Mahogany, Birch, Walnut-tree Woods, Polished Deal and Japanned, all fitted with Bedding and Furniture complete, as well as every description of Bedroom Furniture.

HEAL AND SON'S ILLUSTRATED CATALOGUE, containing Designs and Prices of 100 Bedsteads, as well as of 150 different articles of Bedroom Furniture, sent free by post.—HEAL & SON, Bedstead, Bedding, and Bedroom Furniture Manufacturers, 196, Tottenham Court Road, W.

FENDERS, STOVES, AND FIRE-IRONS.—Buyers of the above are requested, before finally deciding, to visit WILLIAM S. BURTON'S SHOW ROOMS. They contain such an assortment of FENDERS, STOVES, RANGES, FIRE-IRONS, and GENERAL IRONMONGERY as cannot be approached elsewhere, either for variety, novelty, beauty of design, or exquisiteness of workmanship. Bright Stoves, with ormolu ornaments and two sets of bars, 3l. 15s. to 33l. 10s.; Bronzed Fenders, with standards, 7s. to 5l. 12s.; Steel Fenders, 2l. 15s. to 11l.; ditto, with rich ormolu ornaments, 2l. 15s. to 18l.; Fire-Irons, from 2s. 3d. the set to 4l. 4s. The BURTON and all other PATENT STOVES, with radiating hearth-plates.

BEDSTEADS, BATHS, AND LAMPS.—WILLIAM S. BURTON has SIX LARGE SHOW ROOMS devoted exclusively to the SEPARATE DISPLAY of Lamps, Baths, and Metallic Bedsteads. The stock of each is at once the largest, newest, and most varied ever submitted to the public, and marked at prices proportionate with those that have tended to make his establishment the most distinguished in this country.

Bedsteads, from	..	..	12s. 6d.	to £20	0s. each.
Shower Baths, from	..	..	8 0	„ 6 0	„
Lamps (Moderateur), from	..	..	6 0	„ 7 7	„

(All other kinds at the same rate.)

Pure Colza Oil .. .. 4s. 3d. per gallon.

DISH COVERS AND HOT-WATER DISHES.—In every material, in great variety, and of the newest and most recherché patterns. Tin Dish Covers, 7s. 6d. the set of six; Block Tin, 12s. 3d. to 27s. 0d. the set of six; elegant modern patterns, 35s. 6d. to 62s. 6d. the set; Britannia Metal, with or without silver-plated handles, 3l. 11s. 0d. to 6l. 8s. 0d. the set; Sheffield plated, 10l. to 16l. 10s. the set; Block-tin Hot-water Dishes, with wells for gravy, 12s. to 30s.; Britannia Metal, 22s. to 77s.; Electro-plated on Nickel, full size, 11l. 11s.

WILLIAM S. BURTON'S GENERAL FURNISHING IRONMONGERY CATALOGUE may be had gratis, and free by post. It contains upwards of 400 Illustrations of his illimited Stock of Electro and Sheffield Plate, Nickel Silver and Britannia Metal goods, Dish Covers and Hot-water Dishes, Stoves, Fenders, Marble Chimney pieces, Kitchen Ranges, Lamps, Gaseliers, Tea Urns and Kettles, Tea Trays, Clocks, Table Cutlery, Baths and Toilet Ware, Turnery, Iron and Brass Bedsteads, Bedding, Bed Hangings, &c., with Lists of Prices and Plans of the 16 large Show Rooms at 39, Oxford Street; 1, 1a, 2, and 3, Newman Street; and 4, 5, and 6, Perry's Place, London.—Established 1820.

THE FIRST PRODUCTION IN THE WORLD, FOR THE GROWTH AND IMPROVEMENT OF THE HUMAN HAIR, IS

ROWLANDS' MACASSAR OIL, proved beyond question by its successful results for more than half a century past, and when other specifics have failed. The high esteem in which it is universally held, and the numerous testimonials constantly received of its efficacy, afford the best and surest proofs of its merits. It prevents hair from falling off or turning grey, strengthens weak hair, cleanses it from scurf and dandriff, and makes it beautifully soft, pliable, and glossy. In the growth of the beard, whiskers, and mustachios, it is unfailing in its stimulative operation. For children it is especially recommended, as forming the basis of a beautiful head of hair. Price 3s. 6d. and 7s.; Family bottles (equal to four small), 10s. 6d.; and double that size, 21s. CAUTION.—On the wrapper of each bottle are the words, "ROWLANDS' MACASSAR OIL," &c., in white letters, and their signature, "A. ROWLAND & SONS," in red ink.—Sold at 20, Hatton Garden, London, and by Chemists and Perfumers.

DO YOU WANT LUXURIANT HAIR· WHISKERS, &c.?—COUPELLE'S CRINUTRIAR is guaranteed to produce whiskers, moustachios, eyebrows, &c., in two or three weeks with the utmost certainty, strengthen weak hair, prevent its falling off, check greyness in all its stages, and reproduce the hair in baldness, from whatever cause, price 2s. Sold by all chemists in the world; or will be sent post free, on receipt of 24 penny postage stamps, by Miss COUPELLE, 69, Castle Street, Newman Street, Oxford Street, London. A toilet guide sent post free for four penny postage stamps. "It completely restored my hair."—Miss Davis. "My whiskers are now growing freely."—H. Merry, Esq.

PAINS IN THE BACK, Gravel, Lumbago, Rheumatism, Gout, Indigestion, Flatulency, Nervousness, Debility, &c.—Dr. DE ROOS' COMPOUND RENAL PILLS have been long established as a safe and efficacious remedy for the above complaints, discharges of any kind, retention of urine, and diseases of the kidneys, bladder and urinary organs generally, which, if neglected, frequently end in stone in the bladder and a lingering death. For depression of spirits, incapacity for society, study or business, confusion, giddiness, drowsiness, sleep without refreshment, fear, nervousness, and insanity itself, when arising from or combined with urinary diseases, they are unequalled. By their salutary action in correcting the acid and acidity of the stomach, they prevent the formation of stone, and establish the healthy functions of all these organs.—Price 1s. 1½d., 2s. 9d., 4s. 6d., 11s., and 33s. per box, through all Medicine Vendors, or sent free on receipt of the amount in postage stamps, by Dr. DE ROOS, 10, Berners Street, Oxford Street.

WHISKIES (EQUALISATION OF DUTY).—The choicest Scotch and Irish, from 14s. to 18s. per gallon.—OWEN & Co., 77, Lower Thames Street, London, E.C., opposite the Custom House. Shipping and the Trade supplied.

VINEGAR—Patronised by her Majesty's Government.

CONDY'S PATENT PURE CONCENTRATED MALT VINEGAR.—Families, by using this delicious Vinegar, insure purity, and effect a saving of 50 per cent. See Report of Dr. Letheby, City Officer of Health; Dr Hassall of the *Lancet* Commission, and others. Six Quart Sample sent free to any Railway for 3s. 6d.—Sold by the Trade, in bottles, labelled and capsuled; wholesale, 63, King William Street, London Bridge, E.C.

CHUBB'S LOCKS, FIREPROOF SAFES, DOOR LATCHES, CASH AND DEED BOXES. Illustrated Priced Lists sent free.—57, St. Paul's Churchyard, London; 28, Lord Street, Liverpool; 16, Market Street, Manchester; and at Wolverhampton.

KNOW THYSELF.—MARIE COUPELLE continues to give her graphic and interesting delineations of character, discoverable from an examination of the handwriting, in an unique style of description peculiarly her own. All persons desirous of knowing themselves, or any friend in whom they are interested, must send a specimen of the writing, stating the sex and age, and enclosing 13 penny postage stamps, and a directed envelope, to Miss COUPELLE, 69, Castle Street, Oxford Street, London, and they will receive in a few days a minute detail of the talents, tastes, virtues, and failings of the writer, with many other things hitherto unsuspected. All letters are considered strictly confidential.

MUDIE'S SELECT LIBRARY.—Fresh copies of every recent work of acknowledged merit and general interest in History, Biography, Religion, Philosophy, Travel, and the Higher Class of Fiction, continue to be added to this Library as freely as Subscribers may require them. The present rate of increase exceeds One Hundred Thousand Volumes per annum. Single Subscription, One Guinea per annum. First-class Country Subscription, Two Guineas and upwards, according to the number of Volumes required.

CHARLES EDWARD MUDIE, New Oxford Street, London; and Cross Street, Manchester.

SIMS REEVES'S FOUR MOST POPULAR SONGS.—"Phœbe Dearest, by Hatton, 2s. 6d.; "Good Night Beloved," by Balfe, 2s. 6d.; "Who shall be Fairest," by Mori, 2s. 6d.; "Come into the Garden, Maud," by Balfe, 3s. All illustrated with the best portrait of Mr. Sims Reeves that has appeared.

BOOSEY & SONS' Musical Library, 28, Holles Street.

BOOSEY'S CHRISTYS' ALBUM, price 2s. 6d., containing 12 Popular Songs with Chorusses and Piano Forte accompaniment, full music size.

LAURENT'S ALBUM, price 5s., containing 16 sets of Popular Dance Music, and two coloured illustrations, 75 pages, full music size.

THE VERDI ALBUM, price 7s. 6d., containing 25 of VERDI'S best songs in English and Italian, superbly bound.

All postage free from BOOSEY & SONS, Holles Street, London.

DRAINAGE OF LAND—TABLES OF COST FOR THE POCKET. Price 1s. 6d., in stamps for post. By J. BAILEY DENTON, Engineer to the General Land Drainage and Improvement Company, and Author of "Land Drainage and Drainage Systems."

And will shortly be published by the same writer, price 2s. 6d.,

HINXWORTH DRAINAGE. — The Experiments Tabulated, showing the relative discharge from uniform Parallel Drainage in Clays, and from Occasional Drainage in Mixed Soils, with a Plan of the whole System adopted and a Statement of Cost.

METCHIM, Parliament Street, Westminster, S. W.

Now ready, New Edition for 1859.

MR. DOD'S PEERAGE, BARONETAGE, KNIGHTAGE, &c., for 1859 (Nineteenth Year), containing all the recent changes.

WHITTAKER & Co, Ave Maria Lane, London, and all Booksellers.

On March 31 will be ready, Part I., price 1s. sewed, of

ROUTLEDGE'S NEW ILLUSTRATED NATURAL HISTORY. By the Rev. J. G. WOOD, M.A., F.G.S. The Illustrations by Wolf, Harrison Weir, W. Harvey, Coleman, &c.

Each Part will contain 48 pages of Letterpress, and on an average 30 Illustrations. Specimens of the work (gratis) on application.

From the *Sun* of February 9th.

"The want of a comprehensive, and at the same time accurate work on the Natural History of the Animal Kingdom, has long been felt. The taste for natural history becomes developed in an increasing ratio by the extension of our colonies and our commerce. There is scarcely a cottage in the British dominions where the desire to know something about God's creatures in strange lands is not fostered by some present from the emigrant, the soldier, or the sailor of the family. We are therefore glad to see an announcement of a new natural history, which will embrace the most remarkable varieties of the animal kingdom, from the gigantic elephant to the minute manufacturer of the coral reef, and which is intended to instruct both the eye and the imagination of the reader. The graphic pen of the Rev. J. G. WOOD, already so popular for his life-like descriptions of animal life, and his 'Common Objects of the Country Sea-shore,' is a guarantee that this 'Illustrated Natural History,' while securing scientific accuracy, will possess the charm of a vivid delineation of the habits of the creatures described, and render the undertaking as amusing as it will be instructive. We have no doubt that whoever examines the specimen number (which may be seen at any bookseller's) will thank us for drawing attention to this book."

London: ROUTLEDGE, WARNES, & ROUTLEDGE, Farringdon Street.

Now ready, cloth 8vo, 8s.,

ON SYPHILIS. By C. F. MAUNDER, F.R.C.S., Demonstrator of Anatomy at Guy's Hospital, Demonstrator of Operative Surgery in Paris. (A Translation of Ricord's recent Lectures, with a Letter on "External Division', of Stricture, by the Translator.)

London: JOHN CHURCHILL, New Burlington Street, W.

ELECTRICAL INFLUENCE IN HEALTH AND DISEASE.

Just published, price 1s., free by post for thirteen Stamps,

SECOND LIFE: or ELECTRICAL NERVOUS FORCE; a MEDICAL WORK intended for the special perusal of all who are suffering from the various forms of NERVOUS and PHYSICAL DIBILITY and the distressing ulterior consequences to which they lead; with practical Observations on the great Curative power of ELECTRO-GALVANISM in the Treatment of these disorders, by infusing tone and vigour in constitutions relaxed or debilitated from various enervating causes. Illustrated with Cases compiled from the Note-Book of a Registered Medical Practitioner of twenty years' standing.

MANN, 39, Cornhill, and all Booksellers.

CHEAP AND CORRECT PRINTING FOR THE NURSERY AND SEED TRADES.—Send your orders to ROBT. EDM TAYLOR, PRINTER, Sea Coal Lane, Skinner Street, Snow Hill, London, E.C. Estimates forwarded.

CARDS FOR THE MILLION—Wedding, Visiting, and Business.—A Copper-plate elegantly Engraved and 50 best Cards printed for 2s.—Sent post free by ARTHUR GRANGER, Cheap Stationer, &c., 308, High Holborn.

NEXT OF KIN WANTED, and others who have been Advertised for—being exact Copies of Advertisements from the *Times*, *Gazette*, *Law Chronicle*, *Despatch*, *New York Herald*, *Melbourne Argus*, *Sydney Herald*, *Indian Mail*, &c., for the last 20 years, covering many hundreds of Names and Descriptions of persons Entitled to Property of Several Millions Value. This New Book (just out) is sent post free for eight penny stamps.—Direct to FISHER & SON, Publishers, Kingsland, London, N.E.—Sent punctually per return.

TO THE NERVOUS OF BOTH SEXES.—A Retired Clergyman, having been restored to health in a few days, after many years of nervous suffering, is willing to assist others by sending (free), on receiving a stamped envelope, properly addressed, a copy of the prescription used.—Direct, the Rev. E. DOUGLASS, 18, Holland Street, Brixton, London.

FARM WANTED.—A gentleman is desirous of taking on LEASE a FARM of about 200 acres, in the vicinity of Bromley, Beckenham, Chiselhurst, or Orpington and the Crays, Kent. A gentleman's residence not required, only a substantial and roomy Farmhouse; Farmsteads must be in good order, &c. Shooting would also be wished.—Address, stating rent, nature of soil, and all particulars, to A. S. S., 22, Cecil Street, Strand, W.C.

NURSERY GROUND.

TO BE LET, WHITTINGTON NURSERY, Upper Holloway, to be entered upon immediately.—For particulars apply to J. F. MARSON, Esq., Small Pox Hospital; to Mr. BUNNEY, Nurseryman, Stratford, Essex.

YORKSHIRE.

TO BE LET ON LEASE, or by the year, from the 6th April next, or in 1860, two Tithe-free FARMS, containing respectively 351 acres 2 roods 34 perches, and 271 acres, with good houses; the first within 3½ miles of a first-class Railway and Telegraph station, within six hours of London, and eight of Edinburgh; the other 1½ miles from the same station. The greater part of the land is of superior quality, growing large crops of Wheat, Turnips, and Potatoes, for the sale of which Leeds and Wakefield afford excellent markets.—Mr. CARMICHAEL, of Spaldington, Howden, Yorkshire, will show the farms and state the rent and conditions of letting.

TO BE LET, at Michaelmas next, for a term of years, Furnished or Unfurnished, a commodious and prettily situated FAMILY MANSION, containing three Sitting Rooms, and 10 Bedrooms, together with Domestic Offices, Stabling and Coachhouse. Also large walled Garden, Pleasure Grounds, Homestead, Labourers' Cottages, Farm comprising 114 acres in a ring fence, and in a good state of cultivation. The House is situated in the county of Pembroke, South Wales, 3 miles from the sea, where there is good bathing, nearly ¾ of a mile from the village, where there is a Post Office, and through which Carriers pass daily to the market town of Haverfordwest, 6 miles distant, where there is a Railway Station.—For particulars apply to Mr. RICHARD JAMES, High Street, Haverfordwest.

Sales by Auction.

STANDARD AND OTHER ROSES, DAHLIAS, HERBACEOUS PLANTS, ETC.

MR. HASLAM will Sell as above on THURSDAY, February 24th, and March 3d next, at the Auction Mart.

ANNUAL SALE.

MESSRS. PROTHEROE AND MORRIS will Sell by Auction at the Mart, Bartholomew Lane, on FRIDAY, February 25, at 12 o'Clock, about 200 fine double CAMELLIAS, from 18 inches to 6 feet, including all the most approved kinds, beautifully furnished with bloom buds; Azalea indica, a rich assortment of American plants; 300 choice Standard and Dwarf Roses, including the finest Hybrids, Perpetuals, Chinas, Bourbons, &c., with Lilium lancifolium, sorts, Fuchsias, Verbenas, Dahlias, in dry roots, Pæonias, &c.—May be viewed the morning of Sale; Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

BRIXTON HILL.

To GENTLEMEN, NURSERYMEN, BUILDERS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are directed by the Committee of the Metropolitan Industria Reformatory to Sell by Auction, without reserve, on the premises, Grove House Nursery, Brixton Hill, on MONDAY, February 28, and following day, at 11 o'clock each day, the NURSERY STOCK, consisting of Evergreens and Deciduous Shrubs, &c.; also about 16,000 Greenhouse Plants, with four newly erected Greenhouses, Pits, and Frames; about 900 feet 2, 3, and 4-inch Hot-water Pipe, Boilers, Stages, a four-wheeled Van, and sundry effects. May be viewed three days prior to the Sale.—Catalogues may be had on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

EALING COMMON.

To GENTLEMEN, NURSERYMEN, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS have received instructions from George Wood, Esq., to Sell by Auction, without reserve, on the Premises, Rose Nursery, Ealing Common, within three minutes walk of the Ealing Railway Station, on THURSDAY, March 3, at 11 o'clock, the whole of the NURSERY STOCK, including upwards of 1000 specimen Pyramidal and Standard Pears, worked on Quince and other Stocks, large Dwarf-fruiting Apples, Plums, Cherries, &c.; handsome Dwarf-trained Peaches and Nectarines, also about 200 large Fan Yews, Laurels, Box, and other Evergreens; 5000 Standard and Dwarf Roses, and about 400 yards of Sweetbriar, Rose, and other Hedges, &c.; together with two Greenhouses, nine 3-Light Boxes, and sundry effects. May be viewed prior to the Sale.—Catalogues had on the Premises, at the Bell and the Feathers, Ealing; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

MONTHLY POULTRY SALE.

MR. J. C. STEVENS will sell by Auction at his Great Rooms, 38, King Street, Covent Garden, on TUESDAY, 1st March, at 12 o'Clock precisely, 250 Lots POULTRY AND PIGEONS, very choice, including Black, Buff, and Partridge Cochins; Brahmas, Spanish, Dorkings, Hamburghs, Game Bantams, and other varieties, from the yards of the Hon. Mrs. Colvile; R. W. Fryer, Esq.; Rev. G. Gilbert; T. B. Warwick, Esq.; J. Manning, Esq., and other successful exhibitors. The Pigeons include Pouters, Carriers, Tumblers, Barbs, and other varieties, many of which are first-class Birds.—Catalogues by enclosing a stamped directed envelope to MR. J. C. STEVENS, 38, King Street, Covent Garden, W.C.

MEADOW AND PASTURE GRASS SEEDS.

GEORGE GIBBS & Co., Seedsmen, 26, Down Street,

BEG to announce that their mixtures of GRASS SEEDS are now ready for delivery. These mixtures are made up expressly to suit the various soils and the growth of each variety is fully tested previous to being bulked. G. G. & Co. having supplied the Seeds for *Hyde Park, St. James's, and Regent's Park, Kensington Gardens, Kennington Park*, &c., for many years, feel assured no further testimonials are requisite. The Seeds are made up into two different mixtures, as they do not sow well together; 2 bushels of the light and 12 lbs. of the heavy seeds are allowed per acre.

Mr. GIBBS, giving his personal attention to the assorting of these mixtures assures his friends that every care is taken with regard to the proper proportions.

MIXTURES FOR PERMANENT MEADOW & PASTURE (adapted to the different soils) 32s. to 34s. per acre.
MIXTURES FOR IMPROVING & RENOVATING OLD GRASS LAND (8 to 12 lbs. per acre) 1s. per lb.
MIXTURES OF THE FINEST SORTS FOR LAWNS, GRASS PLOTS, BOWLING GREENS, &c, 1s. 3d. per lb.

SELECT STOCKS OF THE UNDERMENTIONED AGRICULTURAL SEEDS SUPPLIED AT THE PRICES STATED FOR THE PRESENT MONTH:—

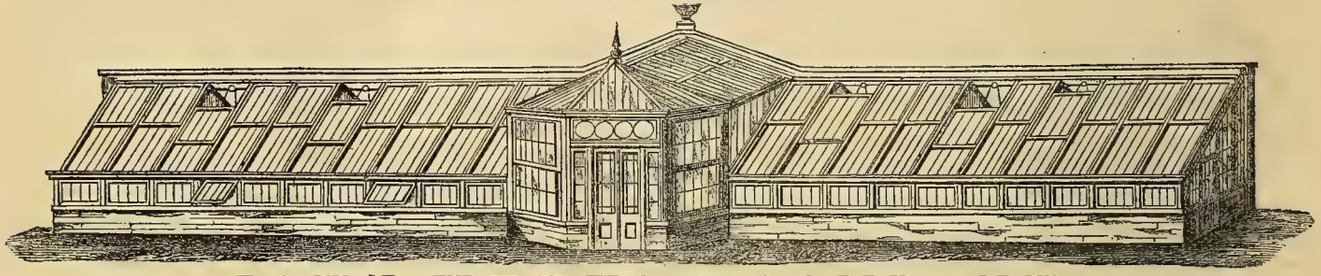
MANGEL WURZEL. Per lb.—s. d.		CARROTS. Per lb.—s. d.		SWEDES. Per lb.—s. d.		RYE-GRASS. Per bushel—s. d.		CLOVERS. Per lb.—s. d.		VARIOUS. Per lb.—s. d.	
Long Red	0 9	White Belgian	1 0	Ashcroft	0 9	Gibbs' Improved Italian	7 0	English Red	9d. to 0 10	Holcus saccharatus	2 0
Elvethan Long Red	0 10	Yellow Belgian	1 3	Skirving's	0 9	Dickenson's Italian	7 0	White Dutch	10d. to 1 0	Lucerne	1 0
Yellow Globe	0 9	Large Altringham	1 6	Matson's	1 0	Fine Imported do.	7 0	Trefoil	4d. to 0 5	Drumhead Cabbage	3 0
Red Globe	0 9	Long Surrey	1 6	Kentish Green Crown	1 0	Common English	6 0	Alsike Hybrid	2 0	Large Cattle Parsnip	1 6
Long Yellow	0 9	James's Scarlet	1 6	Marshall's Purple Top	1 0	Pacey's Perennial	6s. to 7 0	True Cow-grass	1 0	Kohl Rabi	5 0

Full Priced Catalogues sent free on application —Cash or reference required from unknown Correspondents.

GEORGE GIBBS & Co., 26, Down Street, Piccadilly, London, W.

HORTICULTURAL BUILDING & HEATING BY HOT WATER.

BY APPOINTMENT.



JOHN WEEKS & COMPANY,

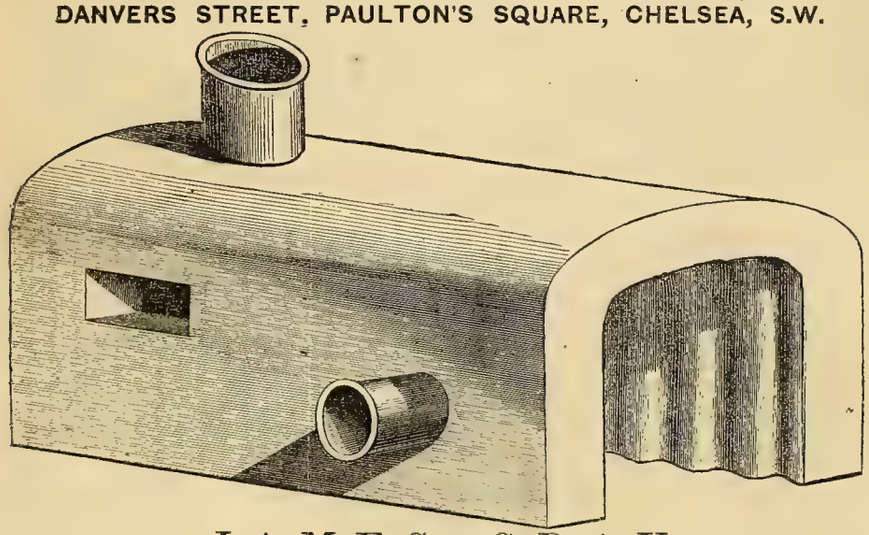
KING'S ROAD, CHELSEA, LONDON.

HORTICULTURAL BUILDERS AND HOT-WATER APPARATUS MANUFACTURERS, ENGINEERS, AND IRON FOUNDERS.

PLANS, ESTIMATES, & ILLUSTRATED CATALOGUES FREE ON APPLICATION.

HORTICULTURAL WORKS,

DANVERS STREET, PAULTON'S SQUARE, CHELSEA, S.W.



JAMES GRAY

RESPECTFULLY begs to inform the nobility, gentry, Nurserymen, Gardeners, and others, that he continues to carry on the business in all its branches at the above old established premises.

CONSERVATORIES, GREENHOUSES, FORCING HOUSES, VINERIES, PITS, &c.,
of every description, erected on the most approved principles.

HEATING BY HOT WATER.

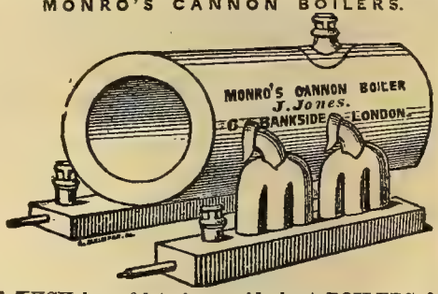
J. G. having specially devoted his attention for many years to this part of the business, is now fully prepared to Heat every description of public and private buildings, viz :—Churches, Mansions, Warehouses, &c., as well as all structures connected with Horticulture, in the most efficient manner. His system is the most simple that can be adopted—which he has found from long experience to be the best—can be constructed at less cost, and is more easily managed than those of a complicated nature which have attracted the notice of the public.

J. G. begs to call attention to his CAST-IRON CORRUGATED ARCH BOILER, which from its simplicity of construction has not the liability to fracture to which those of a more complex design are always subject. They have been extensively used for many years, and have given the greatest satisfaction.

All business is conducted at this establishment on the principle of lowest remunerative profits consistent with best materials and workmanship.

Plans and Estimates furnished on the shortest notice.

MONRO'S CANNON BOILERS.



MUCH has of late been said about BOILERS for Heating by Hot Water, but these Boilers have now proved themselves to be the best at present invented. They are adapted for heating every description of building, and are made of various sizes. The Price of the

24 inch Cast Iron is	£5	10s.	0d. each
24 inch Wrought ditto	6	10	0 ,,
36 inch Cast ditto	8	0	0 ,,
36 inch Wrought ditto	8	10	0 ,,

References to Gentlemen and Nurserymen where these Boilers are now at work. The Cannon Boilers are now kept in stock, and are to be had only of J. JONES, 6, Bankside. Also, every description of Saddle and Cylinder Boilers. Hot Water Pipes and Connections at prices lower than those of any other house in London. Estimates for Hot-water Apparatus erected complete in any part of the country, and an Illustrated Catalogue on application to J. JONES, 6, Bankside, Southwark, London.

HEATING BY HOT WATER ON HAMMOND'S improved principle, for Horticultural Works, Mansions, Churches, Public Buildings, in fact everywhere that heat is required. Also his improved Ventilating Greenhouses, which can be erected at 1s. per foot, and entirely prevent the possibility of scorching the Vines or plants. The Patent Hot-water Register Stove.—Estimates at No. 18, George Street, Portman Square. Workmen sent into the country.

HOT-WATER PIPES at wholesale prices, with Elbows, Syphons, Tee Pipes, and every other connection. Wrought and cast iron Boilers, Saddle, Conical, Cylinder, and Elliptic, from 21s. each. Boilers and Iron Stands to use without brickwork. Valves from 12s. 6d. each. Furnace Doors, Furnace Bars, Supply Cisterns, and Builders' Castings of every description in stock, at Mr. LYNCH WHITE'S Iron Wharf, Upper Ground Street, Blackfriars Bridge, London.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, and FREDERICK MULLETT EVANS, of No. 20, Queen's Road West, both in the Parish of St. Pancras, in the Co of Middlesex, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and published by them at the Office, No. 5, Upper Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—SATURDAY, February 19, 1859.

THE GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 9.—1859.] SATURDAY, FEBRUARY 26. {Price Fivepence. STAMPED EDITION, 6d.

INDEX.

Agri. Soc. of England	176 c	Linnean Soc. Transactions, &c.	171 c
— — Warwick meeting of	173 c	Niger expedition	170 a
— statistics	174 b	Nurserymen's assessments	168 c
Alpacas in Australia	178 b	Paper hangings, arsenical	169 c
Amherstia at Chatsworth	172 a	Pears, new	169 b
Books, noticed	171 c	Pear trees, Fungus on	169 c
Cattle and Cotton-seed cake	174 b	Rainfall at Epping	170 a
Corn sales, "cental"	174 a	Rhododendrons	169 a
Cotton-seed cake	174 b—175 a	Sheep management	175 b
Drainage, arterial	174 a	— foot rot	177 c
Dun's Veterinary Medicines	177 c	Statistics, agri.	174 b
Erysipelas, cure for	170 a	Tendrils, coiling of	169 b
Farm labourers	176 a	Trade Lists	172 a
Forks, Parkes's	176 b	Trees, self renovation in	168 c
Fungus on Pear trees	169 c	— the Gouty-stem	172 a
Grafting Vines	167 c—171 b	Turnips, weights of	176 b
Guano trade	174 a	Veterinary Medicines	177 c
Horticultural Society	170 c	Vine grafting	167 c—171 b
Implement shows and prizes	175 c	Waste, utilisation of	174 b
Labourers, farm	176 a	Weights of Turnips	176 a
Law respecting rating	168 a	Wells, fluctuations in	169 c

HORTICULTURAL SOCIETY OF LONDON.—The next meeting of the Fruit Committee will be held at 21, Regent Street, at 12, noon, on TUESDAY, March 1, when Prizes of 20*s.* and 10*s.* will be awarded for the best dishes of Beurré Rance Pears.

N.B. Each dish to contain six fruit, and to be accompanied with a form filled up by the exhibitor. The blank forms for this purpose, and also for other fruits that may be exhibited, can be obtained on application to Mr. ROBERT THOMPSON, Horticultural Society's Garden, Chiswick, London, W.

N.B. The carriage of packages of Fruit will be paid.

BRITISH POMOLOGICAL SOCIETY, ST. JAMES'S HALL.—The next Meetings, with the Premiums offered thereon, for special subjects, are as follows:—

March 3.—2*l.* 2*s.* and 1*l.* 1*s.*, for the best and second best collection of well-kept Apples and Pears, three fruits of each kind, accompanied by careful descriptions of the manner in which they have been kept. (Open to growers only.)

May 5.—1*l.* 1*s.*, for the best late Seedling Kitchen Apple, to be in dishes of 10 fruit.

Forms, Copies of Rules, Instructions for Packing, or other information, may be obtained upon application to Mr. W. DAVIDSON, Secretary, to whom parcels, &c., should be addressed, at St. James's Hall, 69-71, Regent Street, London, W.; and letters (to avoid delay), at 2, Randolph Road, Maida Hill, London.

THE STOKE NEWINGTON ORIGINAL CHRYSANTHEMUM SOCIETY (instituted 1846) will hold its THIRTEENTH ANNUAL EXHIBITION at the Manor Rooms, on MONDAY and TUESDAY, November 7 and 8, when prizes, including six Silver Cups, will be awarded.

OFFICERS:

JOHN EDWARDS, Esq., F.H.S., *President.*
Mr. HURRELL, *Treasurer.* JOSEPH PAXTON, *Secretary,*

Committee.

Mr. Argent	Mr. Morgan	Mr. Nicholls
,, Bird, F.H.S.	,, Monk	,, Oubridge
,, Broome, F.H.S.	,, Mardon	,, Putnum
,, Collins	,, Merry	,, Peachey
,, Hutt	,, Mountain	,, Scruby
,, Laidlaw	,, M'Elroy	,, Ward.

THE STOKE NEWINGTON ORIGINAL FLORICULTURAL SOCIETY will hold their grand Annual Exhibition of DAHLIAS, HOLLYHOCKS, ASTERS, &c., in the Floral Hall, Hare and Hounds Tavern, Stoke Newington Road, on TUESDAY, August 30, when Prizes will be given to two-thirds of the Exhibitors in each class. A magnificent SILVER CUP will be given for the best stand of 12 Dahlias for Amateurs. Further particulars may be obtained of the

Chairman—Mr. J. H. BIRD, F.H.S., Nurseryman, Stoke Newington
Treasurer—Mr. HURRELL
Secretary—Mr. JOHN NICHOLLS; or of Mr. C. E. ALLEN, at the above Tavern.

BRIGHTON AND SUSSEX FLORICULTURAL AND HORTICULTURAL SOCIETY'S EXHIBITIONS for 1859 are fixed to be held on the following days:—Summer Show, WEDNESDAY and THURSDAY, June 22 and 23; Autumn Show, WEDNESDAY and THURSDAY, Sept. 14 and 15; on the same grand scale as in former years. Schedules will shortly be published, to be obtained of the Secretary, 96, St. James's Street; or of E. SPARY, Queen's Graperies, General Superintendent of Exhibition.

EDWARD CARPENTER, Secretary.
THOS. ATTREE, Esq., Chairman of Committee.

Brighton.—February 26.

HORTICULTURAL SOCIETY OF EDINBURGH.—The Exhibition of HYACINTHS and other SPRING FLOWERS and FRUITS (open to the United Kingdom) will be held in the Music Hall, George Street, on TUESDAY, March 22 next, when a Promenade with Military Music will take place from 1 till 4 o'Clock P.M.

Prize Lists of these, as well as those of the Summer and Winter Exhibitions, may be had at the various Seed and Fruit Shops.

Edinburgh, Feb. 26. ROBERT M. STARK, Sec,

HORTICULTURAL VALUATIONS.

MR. ALFRED CHANDLER (of the late firm of Chandler & Sons, Vauxhall), begs to inform his Friends that he is at liberty to undertake the valuation of Collections of Plants, Nursery Stock, Horticultural Buildings, &c.

Mr. A. C. is also open to engagements as Censor at Horticultural Exhibitions, in which capacity he has had long and extensive experience.—23, Priory Road, Wandsworth Road, S.

RED MATCHLESS CELERY.—Jenkins's Red matchless Celery, the best (for years) in Covent Garden Market, 1*s.* per packet; Shilling's Queen Cabbage, true, 1*s.* per oz.; Invisible White Broccoli, very hardy, 1*s.* per packet; London White Cos Lettuce, 1*s.*; Maunders's Pearly Cauliflower, 1*s.*; true Walcheren Cauliflower, 1*s.* The above post free, with all the best Vegetable and Flower Seeds, a Catalogue of which may be had on application.—JOSEPH MAY & Co., Seedsmen, 1, Wellington Street, Strand, W.C.

SUTTON'S FARM SEED LIST WITH PRICES FOR MARCH AND APRIL will be ready in a few days, and will be sent gratis and post free to Messrs. SUTTON'S customers.—Royal Berkshire Seed Establishment.

GOOD CLOVER SEEDS.

GENUINE NEW CLOVER SEEDS can be had of SUTTON & SONS, Seed Growers, Reading, Berks.

FRESH IMPORTED GERMAN FLOWER SEEDS (post free).

SUTTON AND SONS, Reading, Berks, have just received a choice importation of GERMAN FLOWER SEEDS, a List of which will be sent gratis and post free on application.

WILLIAM YOUNG'S DESCRIPTIVE CATALOGUE OF NEW HARDY ORNAMENTAL PLANTS, CONIFERÆ, ROSES, RHODODENDRONS, FOREST TREES, &c. Can be had on application.—Milford Nurseries, Godalming.

KITCHEN GARDEN SEEDS.

JOHN CATTELL begs respectfully to announce that his CATALOGUE of the above may be had free by return of Post. It contains selections of the most approved culinary vegetables in cultivation, nearly the whole of them having been saved under J. C.'s own personal superintendence.—Nursery and Seed Establishment, Westerham, Kent.

FERN CATALOGUE.

ROBERT SIM'S NEW DESCRIPTIVE AND PRICED CATALOGUE, No. 6 (62 pages) of his COLLECTION of BRITISH AND EXOTIC FERNS, can be had, post free, for 8 stamps. Gratis to all previous purchasers of Ferns.

Nursery, Foot's Cray, Kent, S.E.

GEORGE BAKER begs to inform the Nobility and Public that his DESCRIPTIVE CATALOGUE OF AMERICAN PLANTS AND GENERAL NURSERY STOCK will be sent free on application.

American Nursery, Windlesham, near Bagshot, Surrey, about 1 mile from Sunningdale Station, South Western Railway.

VEGETABLE, FLOWER, AND AGRICULTURAL SEEDS.

THOMAS HARRISON'S PRICED CATALOGUE of the above is now ready, and may be obtained postage free on application.—Horticultural and Agricultural Seed Warehouse, 33, Market Place, Leicester.

CALCEOLARIAS.—A few hundreds of the finest strain of SEEDLING CALCEOLARIAS in England, at 4*s.* per dozen, at B. WHITHAM'S, Clough Nursery, Mottram, near Manchester.

NEW ROSES.

A. PAUL AND SON beg to inform admirers of the Rose that they will have plants of all the NEW ROSES ready for Sale by the middle of April at the lowest advertised prices.—Nurseries, Cheshunt, Herts.

NEW ROSES.—A full collection of the New Roses for 1859 will be in bloom in the Rose houses at Sawbridgeworth, from the middle to the end of March, and young plants at the usual prices (from 3*s.* 6*d.* to 5*s.* each) will then be fit for delivery.—THOS. RIVERS, Nurseries, Sawbridgeworth, Herts.

YELLOW ROSES.—Madame William, orange yellow; Isabella Gray, golden yellow. Strong plants, fit for immediate forcing, 8*s.* 6*d.* the pair.

A. PAUL & SON, Nurseries, Cheshunt, Herts.

SEED POTATOES.

SUTTON AND SONS, SEED GROWERS, Reading have a large stock of the early kinds of Potatoes very true and free from disease. Prices, &c., will be sent post free on application.

EARLY OXFORD POTATOES.

FOR SALE, a quantity of the above at 5*l.* per ton, in large or small quantities.—Apply to Mr. R. RICHARDSON, Cottenham Park, Wimbledon, Surrey.

THE EARLIEST ASH-LEAVED KIDNEY POTATOES.—For the true early short-top Lancashire kind, unsurpassed for forcing and early borders, price 16*s.* per cwt., apply to JAS. TYNAN, Seedsman, 68, Great George St., Liverpool.

DIOSCOREA BATATAS.—Fine roots, 9 to 12 inches long, 5*s.* per dozen; extra size, 10*s.* per dozen.

BASS & BROWN, Seed Growers, &c., Sudbury, Suffolk.

DIOSCOREAS—FINE LARGE ROOTS CHEAP.

SUTTON AND SONS, Reading, can supply DIOSCOREA BATATAS, 9 inches long, at 5*s.* per dozen, or 40*s.* per 100. This vegetable is worthy of all that has been said in its favour, and will thrive in almost any soil and situation.

SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

SORGHUM, OR HOLCUS SACCHARATUS.

SUTTON AND SONS, the largest Importers of this Seed, can supply it wholesale and retail, warranted the true kind, and good growing Seed.

Present retail price 2*s.* per lb., or cheaper in large quantities. Instructions on cultivation sent with the Seed.

SUTTON & SONS, Royal Berks Seed Establishment, Reading.

HOLCUS SACCHARATUS, or CHINA SUGAR CANE GRASS.—Seed of this lately introduced Fodder plant can be supplied by NUTTING and SONS in any quantity. Price on application.

[Seed Warehouses, 60, Barbican, London, E.C.

HOLCUS SACCHARATUS, or North China Sugar-Cane.—Pamphlet, "A Visit and a Plant;" the only English authority on the Cultivation of the above. Post free 6*d.* Prices of Seed on application. Samples 6*d.* Four varieties of Holcus remitted free by post on receipt of 10*s.*

CHINESE YAMS, 4*s.* per dozen.
ASPARAGUS plants, 16*s.* per 1000.

JOHN W. CLARKE, Whittlesea, Cambridgeshire.

HUDSON'S GOLDEN MELON BARLEY.—Selected Samples for Seed of this most valuable variety, superior both for produce and malting quality, may be had of RAYNBIRD & HARVEY, of Basingstoke; and 89, Seed Market Mark Lane, E.C.

THE IMPROVED CUSTARD MARROW.—See drawing of this handsome and productive variety in the *Gardeners' Chronicle* of Jan. 29 and Feb. 12. 12 seeds for 13 postage stamps; 9 seeds for 7 stamps. The trade supplied.

BASS & BROWN, Seed Growers, Sudbury, Suffolk.

GRAYSON'S GIANT ASPARAGUS.—
Fine 2-year roots, 2*s.* 6*d.* per 100; or 21*s.* per 1000.
,, 3-year ,, 3*s.* 6*d.* ,, 100; or 30*s.* ,, ,,
The usual allowance to the trade.

BASS & BROWN, Nurserymen, Sudbury, Suffolk.

NEW ZEALAND RUNNING BEAN.—
Packets of 12 Seeds, for 13 stamps.

BASS & BROWN, Seed Growers, &c., Sudbury, Suffolk.

CUTHILL'S NEW ZEALAND RUNNER BEANS, POST FREE.

SUTTON AND SONS can supply the true kind of NEW ZEALAND RUNNERS, as obtained through Mr. Cuthill, at 2*s.* 6*d.* and 1*s.* per packet.—Reading, Feb. 26.

THE NEW ZEALAND RUNNER BEAN.

CHARLES TURNER has purchased Mr. Smith's Stock of this remarkable BEAN, which Professor Lindley has pronounced to be identical with the variety named above. In 2*s.* 6*d.* packets, containing 20 Beans. The Trade supplied on the usual terms.—The Royal Nurseries, Slough.

NEW DAHLIAS.

JOHN KEYNES'S SELECT CATALOGUE OF DAHLIAS, ROSES, CARNATIONS, PINKS, &c., containing Lists of all the valuable Show Flowers in each class, is now ready and will be sent on application.

Castle Street Nursery, Salisbury.—Feb. 26.

CONIFERÆ.

A. PAUL AND SON have a large stock of the above, very handsome, in fine order for removal, many suited for immediate effect. For particulars see Advertisements in *Gardeners' Chronicle* of November and December last.—Nurseries, Cheshunt, Herts.

CHEAP AND SELECT NURSERY STOCK.—See Advertisement in *Gardeners' Chronicle* of Feb. 12, page 114.

LAURELS, fine transplanted, 1½ to 2½ feet, 70*s.* per 1000.
Do. twice transplanted, 3 to 5 feet, 120*s.* ,,
The above are strong plants of good colour.

WILLIAM JACKSON & Co., Bedale, Yorkshire.

LARGE NORWAY SPRUCE, &c.—The subscribers have to offer 500,000 transplanted Norway Spruce of different sizes, from 12 to 24 inches. Also 100,000 GOOSEBERRIES of best Lancashire roots. Prices to the Trade and large buyers on application to

J. MORRISON & SON, Montcoffer Nurseries, near Banff.

HALF A MILLION ONE-YEAR SEEDLING OAKS (STRONG AND STOUT).

JAMES MELDRUM, NURSERYMAN, Kendal, Westmoreland, offers the above in quantities to suit purchasers. Price reasonable, on application.

A VERY LARGE STOCK OF

FINE COMMON LAURELS, 1, 2, and 3 feet high, bushy and a good colour. Also very strong transplanted true Evergreen Privet, 3 to 6 feet.—Prices moderate on application to WILLIAM WOOD & SON, Woodlands Nursery, Maresfield, near Uckfield, Sussex.

THREE MILLIONS OF TRANSPLANTED QUICKS.

GEORGE CHIVAS, Chester, offers the above to the notice of Planters, which for extent and quality he believes are unequalled in the kingdom. A Sample Bale containing 100 of each five sizes forwarded on receipt of a Post-office Order for 15*s.* Truck loads delivered free at any Railway Station having through communication with Chester.

WILLIAM POWELL, NURSERYMAN, Heath Lane, Hounslow, Middlesex, respectfully informs the Public that he has now on sale a large quantity of CURRANT TREES, Red and Black Naples, cut back every year, at 4*s.* per 100. Other Fruit Trees upon most reasonable terms.—Apply as above. Cash on delivery.

TO PLANTERS.—Fine stock of Larch, 1½ to 3 feet; Scotch Firs, 1½ to 2 feet; Beech, 1½ to 4 feet; Elms, 3 to 6 feet; Evergreen Privets, Common Hollies, 1 to 1½ foot; fine Healthy Plants, with all other kinds of Nursery Stock. Samples and price on application to JOHN SCHOLEY, Pontefract Nurseries.

DOUBLE ITALIAN TUBEROSES.

JAMES CARTER AND CO. have just received a supply of Extra Strong Flowering Roots of the above which they can offer at 4*s.* per dozen.

JAMES CARTER & Co., Seedsmen, 238, High Holborn, W.C.

GIANT SAINFOIN SEED.—Seed of this excellent and productive Plant may be had of RAYNBIRD & HARVEY, Basingstoke, and 89, Seed Market, Mark Lane. Samples and prices on application.

N.B. R. & H. can also supply Common Sainfoin both of English and French growth at market prices.

TO THE TRADE.—LONG RED WURZEL, 28*s.* per cwt.; YELLOW AND ORANGE GLOBE, 30*s.* per cwt.

The above seed is warranted, and saved from the best stocks in the country. Terms Cash.

MAXFIELD HONEY, 71, Bank Street, Maidstone.

ITALIAN RYE-GRASS SEED.—The Seed trade can be supplied with any quantity of ITALIAN RYE-GRASS SEED, at 24*s.* per cwt. cash. Early application should be made to J. DIXON, Seedsman, Kendal.

JOHN CULVERWELL, Taunton, begs to call the attention of Agriculturists to his superior selection of GRASS SEEDS, which for PURITY, change of SOIL, and CLIMATE, will bear comparison with any house in the kingdom. Price terms, and samples forwarded on application.

PAMPAS GRASS (GYNERIUM ARGENTEUM).—The beauty of this extraordinary plant has this season been fully appreciated. It can be supplied by the dozen, hundred, or thousand, by CHARLES NOBLE, Bagshot, Surrey.

EARLIEST WRINKLED PEA.

FAIRHEAD AND SON, SEED GROWERS and MERCHANTS, Lewisham, Kent, beg respectfully to offer their new EXCELSIOR PEA, of robust habit, delicious flavour; much earlier than Napoléon or Eugénie. They can confidently recommend it as the earliest and best Wrinkled Marrow Pea in cultivation. Price on application.

EARLY PEAS.

WAITE'S DANIEL O'ROURKE PEA; the earliest Pea in cultivation.
EARLY NAPOLEON; a Blue Wrinkled Marrow Pea, as early as EMPEROR.
EARLY EUGENE; a White Wrinkled Marrow Pea, as early as EMPEROR.

Prices to be had on application of J. G. WAITE, Seed Establishment, 181, High Holborn, London, W. C.

THE EARLIEST PEA.—DUNNETT'S FIRST EARLY is in every respect superior to "Daniel O'Rourke," being several days earlier, having finer pods, and richer in flavour, height 2½ feet. For an early dish of fine-flavoured Peas we can confidently recommend this; 2s. per quart.

CHAMPION CABBAGE, the earliest and best sort, if sown in succession, may be had fit for table throughout the year, 8d. per ounce, or 1s. post free.

BUTLER & MCCULLOCH, Covent Garden Market, London.



CHAMPION OF SCOTLAND PEA.—A new and first-rate sort, declared by all who grew it last year to be the most distinct and best flavoured Pea in cultivation. To be had only at PETER LAWSON & SON'S, the Queen's Seedsmen, &c., who are also prepared to execute orders for all sorts of Garden and Flower Seeds of the finest quality.

27, Great George Street, Westminster.

NEW ZEALAND RUNNER BEAN, 1s. per doz. 7s. 6d. per 100.
AUSTRALIAN do. do., a great acquisition, pods similar to Dwarf Beans, 1s. per 100.
True COTTAGER'S KALE, 1s. per packet.
DAVIS'S INCOMPARABLE NEW BROCCOLI, 1s. per packet.
CUSTARD VEGETABLE MARROW, 6d. per packet.
PAGE'S IMPERIAL ORANGE GLOBE MANGEL. This variety has superseded all others, 8d. per lb.
PAGE'S IMPROVED SUSSEX SWEDE, withstands mildew, ensuring good results from an early plant, 1s. per lb.
PAGE & TOOGOOD, Seed Growers and Merchants, Southampton.

SEED POTATOES from the North of Scotland.—The following varieties, carefully grown by the Subscriber for several years, and recommended for seed:—
FLUKES.
DALMAHOYS.—A variety allied to the Regent, but 3 to 4 weeks earlier in readiness.
PROTESTANTS.—A late White variety; large cropper, and has hitherto escaped disease.
Price of each kind, 12s. per 2-cwt. sack, free to London or Newcastle.

Orders and remittances to be addressed to ALEXANDER SIMPSON, Beauly, Inverness-shire, who refers to the Editor of the *Agricultural Gazette*.

POTATOES FOR EARLY PLANTING.

MYATT'S PROLIFIC SEEDLING ASH-LEAF KIDNEY.—For description of this valuable variety, which has again given such universal satisfaction, see Dr. Lindley's report in the *Gardeners' Chronicle* of August 1, 1857, at the Horticultural Society's Garden, wherein it is described as a "better cropper than the old Ash-Leaf, and one of the best early kinds." Price per bushel, 7s. To be had of Mr. J. MYATT, Evesham; or of Mr. J. MYATT, Camberwell. A small quantity of Yellow Globe Mangel Seed saved from large selected roots for stock. The trade on application.

CHOICE COLLECTION OF HOLLIES.

YOUELL AND CO. beg to offer the following collection of 20 very handsome and distinct kinds for two guineas (package included), viz., microcarpa, Tarajo, cornuta, dipyrena, Hendersoni, ovata, heterophylla, new silver striped, Donningtonia, Smithiana, opaca, furcata, latispina, platypetala, latifolia, Maderensis, castanæfolia, Sheppardi, Whittingtonia, crassifolia.—Royal Nursery, Great Yarmouth.

SUPERB DOUBLE BALSAMS.

F. AND A. SMITH are now sending out seed of their superb BALSAMS, which are unrivalled for size, form, brilliancy of colour, doubleness of flower, and habit of plant.

In collections of nine separate colours	.. ..	2s. 6d.
,, ,, mixed ,,	.. ..	2 0
,, ,, ,, ,, half quantity		1 0

The above are *genuine only* in our sealed packets, and may be had of most respectable Nurserymen and Seedmen in the United Kingdom.—Dulwich, Surrey, S.

PLANTS IN FLOWER.

F. AND A. SMITH have now in bloom Acacia, Azalea indica, Cinerarias (fine), Cytisus, Dielytra spectabilis, Erica Willmoreana, E. perspicua nana, E. Syndriana, Geraniums, Fairy Roses, Primula sinensis fimbriata, &c.

The above are healthy, strong, and well grown plants, prepared for sending away. Prices on application.

Dulwich, Surrey, S.

THE BEST MELON IN CULTIVATION FOR TABLE, MARKET, OR EXHIBITION.

WILD'S ORION, the winner of four First Prizes at two Shows—Crystal Palace and Regent Street.—Handsome, 4 lbs. to 6 lbs. in weight, thin skin, thick flesh (green), luscious as a melting Peach, fragrant and delicious as a Pine Apple, prolific bearer; six good seeds out of the Prize fruit by post on receipt of 12 penny stamps.

THOMAS WILD, The Primulary, Ipswich.

WILD'S UNRIVALLED PRIMULAS.—Upwards of 100 Testimonials received:—

Mrs. Haig, Dundalk, Ireland.

"The Primula seed you sent me last year proved most beautiful."

Mr. J. Parker, Manor Gardens, Worksop.

"Sir,—Please send me two packets of your Primula seed; the last I had from you was superb."

Sealed packets post free to all parts of the world on receipt of 2s. 6d. in stamps.

THOMAS WILD, The Primulary, Ipswich.

CALLICARPA PURPUREA.

JOHN STANDISH, the exhibitor of the above (at St. James's Hall), can supply a few good plants at 7s. 6d. each. The following passage from Dr. Lindley's leading article in the *Gardeners' Chronicle* for Nov. 20 will give an idea of its beauty:—"Callicarpa purpurea, quite insignificant when in flower, was beautiful in its winter dress of innumerable rich purple berries, about the size of swan shot." It is easily cultivated, and does well in a cold greenhouse or conservatory planted out, where it will produce thousands of bright purple berries resembling glass beads, and remaining on nearly the whole winter.—Bagshot, Feb. 26.

FINE HEALTHY ROSES.—

STANDARDS	.. .. ..	18s. per doz.
DWARFS (on the Manetti)	..	12s. ,, ,,

As the weather still continues mild and favourable for planting, GEORGE CLARKE begs to state he has still a fine stock of all the leading kinds to offer at the above prices, the selection being left to him. The Plants are all healthy and well rooted, therefore calculated to give the greatest satisfaction. Plants carefully packed for any distance. Carriage of all packages paid to London; and in all orders amounting to 20s. plants are added to compensate for distant carriage.

GEORGE CLARKE, The Nursery, Brixton Hill.

NEW ROSES now offered for the first time.
GIULIETTA.—Bourbon; vigorous and without thorns; full of panicles White, slightly tinged with carnation. In the way of Souvenir de Malmaison. Price 15 fr.
PERFECTION.—Hybridised non-climbing Bourbon; flower large and very double, form perfect. Beautiful shaded rose. Price 5 fr. IN THE AUTUMN.
ROSA BONHEUR.—Hybrid Perpetual variegated; nearly full, flattened. Amaranth red, largely streaked with white in the centre of each petal. Price 25 fr.
L'ELEGANTE.—Hybrid Perpetual for espalier; produce of a cross between Rose "Gloire des Rosomènes," and a multiflora; semi-double. Cerise red, blooming in large panicles. This Rose will supersede the non-climbing multiflora varieties. Price 15 fr.
Horticultural Establishment of H. LAURENTIUS, Leipsic, Saxony.

THE LARGEST STOCK OF

TEA-SCENTED ROSES in the kingdom.—Upwards of 10,000 DWARF TEA ROSES in pots, fine healthy plants now ready for sending out, consisting of all the best leading kinds, and comprising among others—

750 Mélanie Willermoz	300 Maréchal Bugeaud
500 ,, Oger (yellow)	300 Madame Bravy
500 Vicomtesse de Cazes (do.)	300 Le Pactôle, yellow
500 Souvenir d'un Ami	300 Niphetos, fine white
500 Safrano	300 Goubault
400 Devoniensis	300 Canari (yellow)
400 Adam	

400 Miss Gray or Isabella Gray, TRUE, yellow Rose, &c.
Plants presented to compensate for carriage.—Address WM. WOOD & SON, Woodlands Nursery, Maresfield, near Uckfield, Sussex.

SPECIMEN TEA-SCENTED ROSES, in 8-inch pots. Strong plants for Exhibition, from 3s. 6d. to 5s. each.
The same kinds and many other leading sorts can be supplied as Half-specimen Plants, in 6-inch pots, at 24s. and 30s. per doz.
TEA-SCENTED.—Buret, Blanche de Solville, Bougère, Canaris Clara Sylvain, Comte de Paris, David Pradel, Elize Sauvage, Eugénie Desgaches, Général Tartas, Goubault, Jeannie Deans, La Sylphide, Laurette, Le Cameléon, Le Pactôle, Léontine de Laporte, Madame Bravy, Maréchal Bugeaud, Mélanie Willermoz, Mélanie Oger, Nina, Safrano, &c.
The Subscribers will be happy to furnish extra fine strong plants of the above named Roses adapted for Exhibition.
Early orders are respectfully solicited to ensure the strongest plants.—WM. WOOD & SON, Woodlands Nursery, Maresfield, near Uckfield, Sussex.

THE BEST NEW ROSES FOR 1859.

WM. WOOD AND SON will be prepared to send out strong healthy plants in pots of the following new ROSES, about the end of April, which are offered as the best of the varieties to be sent out this season:—

HYBRID PERPETUAL.

Albert de Stella	Imperatrice Eugénie
Anna de Diesbach	Joseph Vernet
Anna Alexieff	Lord Elgin
Armide	Le Mont Vésuve
Ardoisé de Lyon	Mathilde de Mondeville
Altesse impériale	Orderic Vital
Beauté de Royghem	Oriflamme de St. Louis
Bouquet de Marie	Princesse Olympie
Comte de Beaufort	Salomon
Comtesse Cecile de Chabrillan	Virginal
Empereur de Maroc	Madame Bruny

BOURBON.

Aline Pierron	Edith de Murat
Comtesse de Barbantanne	Molière
Docteur Berthet	Octavie Fontaine

NOISETTE.

Beauty of Greenmount	Cornélie

TEA-SCENTED.

Enfant de Lyon	Madame Joseph Halphen
Homère	Ophelia
Madame Damaizan	Roi des Pays Bas
,, Darru	Socrate
,, Falcot	

Good Plants will be supplied at 5s. each, with the usual discount to the Trade.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

NEW HYBRID PERPETUAL ROSES FOR 1859.

E. P. FRANCIS offers the following NEW ROSES which he will be prepared to send out on and after the first week in May, at 5s. each. They have been carefully selected from amongst the numerous new French varieties:—

Anna Alexieff	Princess Olympie
Stephanie Beauharnais	Anna de Diesbach
Ambroise Verschaffelt	Beauté de Royghem
Imperatrice Eugénie	Comtesse Cecile de Chabrilland
Albert de Stella	De la Mothe
Virginale	François Arago
Altesse Impériale	L'Oriflamme de St. Louis
Ardoisée de Lyon	Lord Elgin
[These two splendid varieties were awarded the Gold Medal as Seedlings at Lyons]	Madame Bruny
	Orderic Vital
	Salomon
	Reine de la Cité
Comte de Beaufort	François 1st
Docteur Bretonneau	Mignard
Empereur de Maroc	Madame Jenny
Armide	

Hertford Nurseries.

NEW CINERARIAS, FUCHSIAS, VERBENAS, ETC., OF 1858.

WM. RUMLEY AND SONS beg to offer the following superb new CINERARIAS of 1858, at 7s. to 10s. per dozen, or 9d. to 1s. each, according to size, viz.:—Beauty of Stapleford, Excelsior, John Edwards, Lady Gertrude Vaughan, Lady Jane Peel, Lord Eversley, Lavinia, Lord Palmerston, Mrs. Colman, Mrs. Hoyle, Monarch, Viola, &c.
FUCHSIAS, new of 1858, 7s. to 9s. per dozen
Do. good show varieties, 5s. to 6s. per dozen
VERBENAS, new of 1858, 5s. to 6s. per dozen
GERANIUMS, choice show varieties, 4s. to 18s. per dozen
PANSIES, extra fine varieties, 4s. to 6s. per dozen
CHRYSANTHEMUMS and PHLOXES, 4s. to 6s. per dozen
DAHLIAS, pot roots, choice, 3s. to 6s per dozen.
Prepayment or reference required from unknown correspondents
W. RUMLEY & SONS' New DESCRIPTIVE SPRING CATALOGUE of the above for 1859, is now ready and may be had on application.—Gilling, near Richmond, Yorkshire.

THE ALSIKE CLOVER.—This valuable but scarce Clover Seed is included in Messrs. SUTTON'S mixtures of Clover and Grass Seeds for permanent pasture and for alternate husbandry. It can be supplied in limited quantities alone if required. Price fluctuating, to be had on application.
Royal Berks Seed Establishment, Reading.

IMPROVEMENT OF GRASS LANDS

BY SOWING GOOD SEEDS OF THE MOST SUITABLE KINDS.

SUTTON'S RENOVATING GRASS SEEDS for improving old Pastures, Parks, and Meadows. Quantity of seed required, 8 to 12 lbs. per acre. Price 9d. per lb., or 80s. per cwt., carriage free. Total cost, 6s. to 9s. per acre. These seeds should now be sown.
Royal Berkshire Seed Establishment, Reading.

SUTTON'S ELVETHAN MANGEL WURZEL, and SELECTED YELLOW GLOBE.—These two sorts of Mangel are still preferred to all others by the principal root-growers throughout the kingdom. SUTTON & SONS have some fine seed of each sort, at very moderate prices. Price Lists may be had post free.—Royal Berkshire Seed Establishment.

TO THE SEED TRADE.

THOMAS AYRES, JUN., SEEDSMAN and GROWER, Biggleswade, Beds., can supply every kind of Wurzel, Swede, and common Turnip Seeds, on the most reasonable terms for cash.
N.B. Dealer in Culinary and Flower Seeds, Fruit Trees, Shrubs, and Flowering Plants.

VERY SUPERIOR BEET.

CHARLES SOUTHBY (late FAIRBAIRN) begs to inform those who gave the above a trial last season, that he can now supply 1 oz. free by Post for 1s. 3d.; ½ oz. ditto 9d.—Clapham, London.

HENRY'S HYBRID SCOTCH LEEK.

CHARLES ALEXANDER, SEEDSMAN, Edinburgh, offers Seeds of the above unrivalled LEEK at 1s. and 2s. 6d. per packet.
He exhibited three in December last which weighed 9 lbs., and blanched to upwards of 12 inches each.

LAING'S MAMMOTH RED CELERY.—The largest and best flavoured Celery known, and will not run to seed until the second year. (See former advertisement.)
Packets, 1s. each; large trade do., 3s. 6d., per post prepaid. Stamps received in payment.
YOUELL & Co., Royal Nursery, Great Yarmouth.

TURNER'S COTTAGER'S KALE.—Specimens of this new, hardy, prolific, and delicious Vegetable were exhibited in February last, and were found to possess superior excellence, the Horticultural Society of London awarding it a Certificate of Merit. It was also exhibited at the Great Fruit Show, St James's Hall, in November last, and again received a Certificate, Professor Lindley pronouncing it to be both "new and invaluable," being unsurpassed for sweetness and tenderness. Sealed packets, 1s. each. A list of Agents that can supply it true was published Oct. 16, 1858, in the *Gardeners' Chronicle*.—The Royal Nurseries, Slough.

NEW KINDS OF VEGETABLES.

CHARLES TURNER can supply seed of the following valuable new varieties:—

	Per packet—s. d.		Per packet—s. d.
Incomparable Cabbage	1 0	Royal Dwarf Pea (Pois nain très hâtif à chassis), per quart	2 6
New Zealand Runner Bean	2 6		
Perennial Spinach	1 0		
Pine-apple Short Top Beet	1 0	Turner's Cottagers' Kale	1 0
Powell's Early Tomato	1 0	The Frogmore Protecting Broccoli	2 6
Roseberry Brussels Sprouts	1 0		

The above are strongly recommended. A GENERAL DESCRIPTIVE CATALOGUE of SEEDS may be had on application.
The Royal Nurseries, Slough.

NEW MELON.

TURNER'S SCARLET GEM MELON.—An early and most prolific variety, and by far the best flavoured of the scarlet-fleshed Melons, having taken Seven First Prizes during the past season at the great exhibitions. It is well netted and handsome.
Mr. Bailey, the very successful fruit grower, of Shardeloes Gardens, Amersham, having grown this variety for two seasons, reports that "it is by far the best Melon he has ever cultivated of either class. Its superior flavour alone entitles it to a first place, besides other good qualities, among which is its easy culture" 2s. 6d. per packet.—The Royal Nurseries, Slough.

SPECIMEN ERICAS AND GREENHOUSE PLANTS.

R. GLENDINNING has to offer to Exhibitors as well as for private decoration a number of beautifully-grown Specimens and Half-Specimens of ERICAS and GREENHOUSE PLANTS in the healthiest possible condition. R. G. respectfully solicits an inspection of the same; but to those who may find it inconvenient names, sizes, and prices will be furnished on application.—Chiswick Nursery, London, W.

FRUITING VINES.

JOHN AND CHARLES LEE beg to offer extra strong short-jointed and well-ripened FRUITING VINES of the following kinds:—

BLACK HAMBURGH	BLACK PRINCE
GOLDEN HAMBURGH	ROYAL MUSCADINE
BLACK FRONTIGNAN	BIDWELL'S SEEDLING
WHITE FRONTIGNAN	BOWOOD MUSCAT.

Nursery and Seed Establishment, Hammersmith, London.

FRUIT TREES IN POTS.

JOHN AND CHARLES LEE have now the largest and finest stock of FRUIT TREES IN POTS in a bearing state for FORCING AND ORCHARD HOUSES ever offered. They consist of the following kinds, a CATALOGUE of which may be had on application:—

APRICOTS	FIGS	PEARS
PEACHES	PLUMS	APPLES.
NECTARINES	CHERRIES	ALSO,

VINES AND STRAWBERRIES.
Nursery and Seed Establishment, Hammersmith, London.

NURSERY STOCK.

THE Subscribers are disposing of their extensive stock of Seedling and Transplanted Forest Trees, Ornamental Trees, Evergreen and Deciduous Shrubs, Standard and Dwarf-trained Fruit Trees, Gooseberries and Currants, &c., at prices considerably reduced in consequence of dissolving partnership.—Priced Lists may be had on application.
Glasgow, Feb. 26. FOWLER & WRIGHT.

SURPLUS STOCK.

JOHN SHARPE is offering to the Trade, on very reasonable terms, the following SEEDS of his own growing, 1858:—

Carrot, fine large Altringham	Turnip, Skirving's Swede
,, large White Belgian	,, Purple-topt do.
Mangel, Yellow Globe	,, Green Globe
,, Long Giant Red	
Cabbage, Early Enfield	,, Purple-topt Scotch

Prices of not less than sacks and cwts. on application.
Bardney Hall, near Lincoln.

SUPERB DOUBLE HOLLYHOCKS.

WILLIAM CHATER can now supply fine healthy plants from his Collection, having a large stock ready for immediate planting.

See DESCRIPTIVE CATALOGUE, to be had on application.

Nurseries, Saffron Walden.

FIRST-CLASS HOLLYHOCKS.

FINE SEEDLINGS FROM

WILLIAM CHATER'S Celebrated and Newest Varieties that will flower well in September at 30s. per 100

ditto	ditto	ditto	20s.	,, 100
Ground Roots according to colour, also at		..	30s.	,, 100
Seed in 12 separate colours, the Collection		..	10s.	0d
,, 6	,,	,,	.. 5	0

From varieties such as Pourpre de Tyre, Memnon, White Globe, Hon. Mrs. H. Ashley, Canary, &c., in 12 separate colours, the Collection .. .. 7s. 6d.

Ditto in 6 separate colours, the Collection	..	4 0
Seed from 20 of the best varieties, mixed, per pkt.	5	0
,, 12 ,, ,, ,, ,,	2	6
,, good mixed, also a single variety ,,	1	0

The above can be procured from the Nurseries, Saffron Walden, Essex.

HOLLYHOCK SEED FROM NEW VARIETIES.

J. CHATER AND SON offer the above from 12 new varieties, separate packets, the collection, 3s. 6d.

24 varieties, best older sorts, 3s. 6d.

Best mixed, 20 sorts, 200 seeds, 1s. 6d.

J. C. & SON feel confident the above will give satisfaction, having been saved with great care.

Strong seedling plants, 20s. per 100.

If sown now will flower by September.

Nurseries, Haverhill.

NEW HOLLYHOCKS.

A. PAUL AND SON beg to recommend the following NEW HOLLYHOCKS, which have been selected from several thousands of Seedlings. The stock of ordinary kinds is this year greatly extended. The plants are strong, well established, and perfectly healthy:—

	s.	d.
BRISEIS (PAUL).—Purple, silvery edges, flower of good form, spike close	5	0
GENERAL HAVELOCK (PAUL).—Bright, ruby scarlet, colour of "Scarlet King," but a close spike and a round smooth flower of perfect shape	10	6
IN MEMORIAM (PAUL).—Crimson maroon, large, good substance, first-rate flower, good spike	10	6
OSSIAN (PAUL).—Crimson shaded with salmon, remarkable alike for substance, closeness, and symmetry; spike good	10	6
PAINTED LADY (PAUL).—Pink and blush in blotches, a large smooth flower of good substance	5	0
PLUTARCH (PAUL).—Plum colour, of fine shape, and very smooth, guard and spike good	10	6
POURPRE NOIR (PAUL).—Rich purplish maroon, large smooth flower, close spike	7	6
RED ROVER (PAUL).—Dark fiery scarlet, flower large, spike splendid, very effective	7	6
VERITAS (PAUL).—White, lemon base, large full flower, splendid spike	10	6
VESTA (PAUL).—Pure white, petals thick, edges smooth, guard good	7	6
VITRUVIUS (PAUL).—Pink, large flower, of perfect form and good substance	5	0
ZENO (PAUL).—Rich plum colour, with silvery edges, flower large, spike good; new and distinct	5	0

The Collection of 12 varieties is offered for 4l. 4s.; good named sorts, 9s. to 18s. per dozen; very superior ditto, 24s. to 42s. per dozen; Bloomed Seedlings in separate colours, 30s. to 50s. per 100; mixed Seedlings, 10s. to 21s. per 100.

HOLLYHOCK SEED, 1s. to 5s. per packet free by post.

Also a PRICED DESCRIPTIVE CATALOGUE free by post.

Nurseries, Cheshunt, Herts.

GRIEVE'S NEW DOUBLE PETUNIAS.—The universal satisfaction given by the PETUNIAS sent out last spring, raised by Mr. Grieve, Gardener at Culford Hall, near Bury St. Edmund's, induces the advertisers to offer to the public those raised by that persevering hybridiser last summer, which are considered superior to any yet offered; not in the size of the flowers, but in brilliancy of colour, consistence of petal, and regularity in form—all being very double. The following are the names adopted, which may be respectively taken as an approximate description of their colours:—

CRUENTUM, CANDIDUM, PURPURASCENS. } Large flowers, and most appropriate for pot culture.

ATROCOCCINEUM, ROSEUM STRIATUM, ATROROSEUM. } Medium-size flowers and neat habit; probably useful for bedding.

Plants of the above, 5s. each; or 21s. the set of six, to be sent out the first week in April by OSBORN & SONS, Fulham Nursery, London, S. W.

N.B. The usual allowance to the trade.

ORANGE TREES, with fruit on, from 2s. 6d. to 12s. each; Camellias well set with buds, 18s., 21s., and 24s. per dozen; Azaleas full of flower-buds, 18s., 21s., and 24s. per dozen; Standard Roses of the choicest varieties, 1s. 6d. each, 16s. per dozen, or 5l. per 100; Ash-leaved Kidney Potatoes, warranted true, 7s. per bushel, and every other kind Seeds, Plants, and Nursery Stock considerably cheaper than the usual prices.—ROBERT GREEN, 154, Kingsland Road, 55 doors from Shoreditch Church.

100 GOOD PHLOXES FOR 40s.

50	Ditto	Ditto	for 25s.
25	Ditto	Ditto	for 12s. 6d.
12	Ditto	Ditto at 6s. and 9s. per doz.	

The best and newest continental varieties from 12s. to 18s. per dozen.

CATALOGUES sent free on application, and extra plants presented for distant carriage.

WM. WOOD & SON, having imported all the best and newest PHLOXES from the Continent, will be happy to supply them in collections as stated above, in fine strong plants grown in the open ground.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

SEEDLING FOREST TREES.

WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

WM. WOOD AND SON have the following Seedlings to offer of first-rate quality. Prices reasonable on application:—

2 years' Larch Fir	2 years' Beech
1 year Alder	1 year Pinus Laricio
2 and 3 years' Spruce Firs	1 and 2 years' Spanish Chestnuts
1 year Ash	1 year Crabs
2 years' Scotch Firs	1 year Mountain Ash
1 year Pinaster	

TO PLANTERS.

1,000,000 SEEDLING BEECH, Strong, 10 to 18 inch, 5s. per 1000. Also in large quantities and the finest health, Larch 1½ to 2 ft., 2 to 3 ft., 3 to 4 ft. Scotch Fir, 4 yrs. old; Spruce Fir, 9 to 18 inches, 15 to 24 inches; Privet, 2 to 3 ft.; Alders, Ash, Beech, Sycamore, &c. Free delivery to Liverpool or Belfast.

Prices moderate, and to be learned on application to GARLIES MITCHELL, Nurseryman, Stranraer, N.B.

HORTICULTURAL SOCIETY OF LONDON.

SCHEDULES OF PRIZES.

EXHIBITION, MAY 12TH AND 13TH, 1859.

Class.		Prizes offered. 1st	2d.	3d.
I.	Ten Orchids .. .. (Amateurs)	£7	£5	£4
II.	Ten Orchids .. (Nurserymen)	6	4	3
III.	Six Chinese Azaleas .. (Amateurs)	4	3	2
IV.	Eight Chinese Azaleas (Nurserymen)	4	3	2
V.	Three Chinese Azaleas, standards, with at least 30 ins. of clear stem (Amateurs)	4	3	2
VI.	Six Chinese Azaleas, standards, with at least 30 inches of clear stem (Nurserymen)			
VII.	Six Rhododendrons, distinct sorts, in pots .. .. (Amateurs)	3	2	1
VIII.	Eight Rhododendrons, distinct sorts, in pots .. .. (Nurserymen)	3	2	1
IX.	Eight Roses, distinct sorts, in pots, not exceeding 12 inches (Amateurs).	5	4	3
X.	Twelve Roses, distinct sorts, in pots, not exceeding 12 ins. (Nurserymen)	5	4	3
XI.	Six Roses, distinct sorts, in pots of any size	4	3	2
XII.	Eight fine-foliaged Plants. Variegated plants admitted	4	3	2
XIII.	New or extremely rare species of Ornamental Plants not introduced by the Society..	Certificates		
XIV.	Single Specimen of the best Plant introduced within the last ten years, in flower	2		
XV.	Single Specimen of the best plant introduced within the last 10 years, not in flower	2		
XVI.	Miscellaneous	Certificates		
	FRUIT.			
XVII.	The best collection of Fruit (Offered by Wm. Wilson Saunders, Esq., Treasurer of the Society) ..	£5		
XVIII.	Pine Apples, large sorts, not Providence, single specimens	2	1	1
XIX.	Pine Apples, Queens, sgl. specimens	2	1	1
XX.	Grapes, black, three bunches, in baskets	3	2	1
XXI.	Grapes, white, do. do.	3	2	1
XXII.	Cherries, in single dishes ..	2	1	15s.
XXIII.	Strawberries, 2 dishes, distinct sorts	2	1	10s.
XXIV.	Strawberries, single dishes, of British Queen	30s.	20s.	15s.
XXV.	Strawberries, single dishes of any one sort, except British Queen	30s.	20s.	15s.
XXVI.	Miscellaneous	Certificates		
	EXHIBITION, JUNE 29TH AND 30TH, 1859.			
I.	Ten Orchids .. .. (Amateurs)	7	5	4
II.	Twelve Orchids .. (Nurserymen)	7	5	4
III.	Six Orchids .. .. (Amateurs)	4	3	2
IV.	Six Orchids .. (Nurserymen)	3	2	1
V.	Six French Spotted Pelargoniums (Amateurs)	3	2	1
VI.	Eight French Spotted Pelargoniums (Nurserymen)	3	2	1
VII.	Six Fancy Pelargoniums (Amateurs)	3	2	1
VIII.	Eight Fancy Pelargoniums (Nrsmen.)	3	2	1
IX.	Eight Roses, in pots .. (Amateurs)	7	5	4
X.	Twelve Roses, in pots (Nurserymen)	7	5	4
XI.	Six Roses, the best new sorts introduced since the Spring of 1856, in pots .. .. (Nurserymen)	Certificates		
XII.	Ten Exotic Ferns, in pots (Amateurs)	5	4	3
XIII.	Ten Exotic Ferns, in pots (Nrsmen)	4	3	2
XIV.	Three Exotic Ferns, in baskets suspended	2	1	15s.
XV.	Eight Lycopods, in pots	3	2	1
XVI.	Three Lycopods, in baskets suspended	2	1	15s.
XVII.	Eight fine foliaged Plants	4	3	2
XVIII.	Eight variegated plants	4	3	2
XIX.	Single specimen of the most ornamental plant introduced within the last three years in flower	2		
XX.	Do., do., not in flower	2		
XXI.	New or extremely rare species of Ornamental Plants, in flower; not introduced by the Society	Certificates		
XXII.	Twelve Carnations, cut flowers ..	20s.	15s.	
XXIII.	Twelve Picotees, do. ..	20s.	15s.	
XXIV.	Twelve Pinks, do.	20s.	15s.	10s.
	FRUIT.			
XXV.	Fruit and Flowers, baskets in threes for the decoration of the dinner table, offered by C Wentworth Dilke, Esq., V.P., five prizes, viz.—5l., 3l., 2l., and 1l. Beautiful arrangement will be the test of merit in this Exhibition: valuable flowers or fruit are therefore not demanded. Each set must consist of three baskets The prizes will be awarded by a jury of ladies. Patterns of the baskets which must be used may be seen at the Office of the Society.			
XXVI.	Pine Apples, large sorts, not Providence, single specimen	£2	£1	£1
XXVII.	Pine Apples, Queens, or small kinds, single specimen	2	1	1
XXVIII.	Grapes, Black Hamburgh, three bunches, in baskets	3	2	1
XXIX.	Grapes, Muscats, 3 bunches, in bkts.	3	2	1
XXX.	Grapes, Frontignans, 3 bunches, do.	3	2	1
XXXI.	Grapes, Busby's Golden Hamburgh, three bunches in baskets, offered by Mr. Veitch	5	0	0
XXXII.	Grapes, best three bunches of any one variety, except those included in classes 28, 29, 30, 31	3	2	1
XXXIII.	Vines in pots; in pairs	3	2	1
XXXIV.	Melons, Green-fleshed	1	15s.	0
XXXV.	Melons, Scarlet-fleshed	1	15	0
XXXVI.	Peaches, two dishes, distinct sorts, each to contain six fruits	3	2	1
XXXVII.	Peaches, single dishes, in sixes ..	2	1	15s.
XXXVIII.	Nectarines, two dishes, distinct sorts, in sixes	3	2	1
XXXIX.	Nectarines, single dishes, in sixes ..	2	1	15s.
XL.	Cherries, two dishes, distinct sorts..	2	1	1
XLI.	Cherries, black, in single dishes ..	1	1	0
XLII.	Cherries, white, ditto	1	1	0
XLIII.	Plums, two dishes, distinct sorts .	2	1	1
XLIV.	Strawberries, the best collection of sorts, one dish of each	3	2	1
XLV.	Strawberries, single dishes of any one sort	30s.	20s.	15s.
XLVI.	Peaches, Cherries, Pears, Plums, ripe or unripe, in pots, pot of each	4	3	2
XLVII.	Miscellaneous	Certificates		

FIVE SILVER CUPS

WERE AWARDED TO

A. PAUL AND SON, NURSERYMEN, Cheshunt, Herts, for five Collections of ROSES at the Grand National Rose Show held in St. James's Hall, London, in July. Also FIVE FIRST PRIZES at the Royal Botanic Society's Shows in May and June last. The sorts which won these prizes are now offered at 18s. to 24s. per dozen for standards, 12s to 18s. per dozen for dwarfs. A PRICED DESCRIPTIVE CATALOGUE forwarded on application, post free.

THE GREAT VINE AT HAMPTON COURT.

THE SUBSCRIBERS being the holders of the Royal Kitchen Gardens, Hampton Court, are enabled to offer genuine the famous and truly excellent HAMPTON COURT BLACK HAMBURGH GRAPE.

Strong well-ripened plants in 9-inch pots, 42s. and 60s. per doz.

,, ,, fruiting plants in 12-inch pots, 10s. 6d. each.

If purchased in large numbers a considerable reduction will be made in price.—JACKSON & SON, Nurseries, Kingston, S.W.

THE NEW MUSCAT HAMBURGH VINE.

MESSRS. ARTHUR HENDERSON AND CO. have much pleasure in directing the attention of Grape Growers to the new MUSCAT HAMBURGH, plants of which they are now sending out. In consequence of the extraordinary demand for the large three guinea fruiting plants, they are unable to supply any more of this size, but they still have excellent plants at two guineas, suitable for fruiting next spring in pots, and also good plants at one guinea each.

Pine-apple Place, Edgware Road, London. W.

PLANT THIS MONTH!

CAREY TYSO, FLORIST and SEEDSMAN, Wallingford, Berks, offers healthy flowering roots as under:—

RANUNCULI,	100 splendid named sorts, 40s. to ..	£4	0s. 0d.
,,	100 fine mixed sorts, 8s., 15s. ,, ..	1	0 0
,,	25 choice seedlings, 25s. ,, ..	1	15 0
DOUBLE ANEMONES,	50 fine varieties, 10s. 6d. to	0	13 0

New TREATISE on RANUNCULI, by post for seven labels.

Do. ANEMONE for four labels.

GERMAN FLOWER SEEDS.—Choice named Asters, Stocks, Balsams, Wallflowers, Zinnias, &c., in 1s. and 2s. 6d. assortments. These can be sent by post. CATALOGUES free for one label.

HARDY SCARLET RHODODENDRONS AND AMERICAN PLANTS GENERALLY.

WATERER AND GODFREY'S PRICED and DESCRIPTIVE CATALOGUE of the above beautiful tribe of plants, as exhibited by them in London and Manchester, may now be had on application inclosing one stamp for postage. The Catalogue also furnishes the heights and prices of their unequalled stock of Conifers and Evergreens, &c. Catalogues may also be had of Messrs. J. MAY & Co., Seedsmen, &c., Wellington Street, Strand.

Knap Hill Nursery, Woking, Surrey.

RHODODENDRONS.

JOHN WATERER'S CATALOGUE OF UNRIVALLED HARDY SCARLET AND OTHER CHOICE RHODENDRONS, as Exhibited by him at the Royal Botanic Gardens, Regent's Park, London, is published, and will be forwarded on application.

☞ This List is recommended as a work of reference, as it contains accurate descriptions of all the esteemed varieties.

The American Nursery, Bagshot, Surrey, near the Sunningdale Station, South Western Railway.

SEEDS FOR 1859.

HARGRAVE'S SELECTIONS OF KITCHEN GARDEN SEEDS are arranged in quantities and sorts suitable for a succession of Vegetables through the whole year. That adapted for a moderate-sized garden contains 10 pints of the choicest kinds of Peas, 6 pints of superior garden Beans, 3 pints of very fine French or Kidney Beans, and a fair assortment of small Seeds too numerous for specifying here. Cash price, ONE GUINEA, package included.

C. W. HARGRAVE, Nurseryman, Florist, Seed Grower, and Importer.—The Nursery, Winchmore Hill, N.

NEW SEEDS FOR 1859.

WM. CUTBUSH AND SON beg respectfully to intimate that their PRICED CATALOGUE OF VEGETABLE AND FLOWER SEEDS, &c., is now ready post free on application. WM. C. AND SON devote particular attention to this department of their business, and most of the choicer kinds of culinary seeds and roots are saved under their own inspection, and they can confidently guarantee the quality of all offered.—Highgate Nurseries, London, N. Established A.D. 1695.

GARDEN SEEDS.

THOMAS KENNEDY AND CO., NURSERYMEN and SEEDSMEN, Dumfries, N.B., beg respectfully to intimate that they have got to hand their VEGETABLE AND FLOWER SEEDS, and are now prepared to execute orders for the same.

Their DESCRIPTIVE PRICED CATALOGUE FOR 1859, "which is of a most practical character, supplying all the information needed by the purchaser," is now ready and will be sent post free on application.

Free delivery. For particulars see Catalogue.

J. GRIFFIN begs to offer the following choice VEGETABLE and FLOWER SEEDS.

GRIFFIN'S ALMA LETTUCE, the most useful variety in cultivation, very hardy, and valuable for standing the drought of summer, 1s. 6d. per packet.

GRIFFIN'S fine RIDGE CUCUMBER, very hardy and productive, 1s. per packet.

Ivery's NONSUCH RED CELERY, 1s. per packet.

BATH DWARF DARK RED BEET, fine colour, 1s. p. pckt.

DELPHINIUM FORMOSUM, 1s. per packet.

LINUM GRANDIFLORUM RUBRUM (true), 1s. p. packet.

LOBELIA ERINUS SPECIOSA, the best and most effective variety yet raised, forming a close compact style of growth; reproduced true from seed; fine for bedding, 1s. 6d. per packet.

Truffaut's FRENCH ASTER, imported in 20 varieties, separate, 5s. per packet.

Truffaut's FRENCH ASTER, imported in 20 varieties, mixed, 2s. 6d. per packet.

New CHRYSANTHEMUM-FLOWERED ASTER, 1s. p. pkt.

Choice CALCEOLARIA, from the finest varieties, 2s. 6d. per packet.

Choice CINERARIA, from the finest varieties, 2s. 6d. p. pckt.

West on Road, and 2, New Bond Street, Bath

WANTED, the ADDRESSES of the Principal Market Gardeners who Grow for Covent Garden Market Choice Vegetables and Fruit, such as

Asparagus	Pine Apples
Cucumbers	Grapes
Mushrooms	New Potatoes
Brussels Sprouts	Seakale, &c.

Address Box P. 5, General Post Office, Liverpool.

CHOICE CONIFERÆ, warranted to move well, a great Bargain.—CEDRUS DEODARA and LIBANI, 6 to 10 feet by 8 feet, 7s. 6d. to 30s.; PINUS EXCELSUS, 6 to 8 feet, 5s. to 10s. 6d.; CRYPTOMERIA, 6 to 10 feet, 7s. to 10s. 6d.; CUPRESSUS MACROCARPA, 5 to 7 feet, 5s. to 7s. 6d.; and most other choice sorts from 2 to 10 ft., equally low.

Apply to J. SCOTT, Merriott Nurseries, Crewkerne, Somerset.

CHOICE SEEDS.

BUTLER AND McCULLOCH, while drawing attention to their general SPRING CATALOGUE of SEEDS, which has elicited such high encomiums both from the scientific botanist and amateur cultivator, avail themselves of the present opportunity to select from its pages the following list:—

(6) ABUTILON MARMORATUM, a charming plant, flowering all the year, and especially in winter, producing large, pure, white flowers, veined and marbled with bright rose, foliage silvery haired; the finest of the genus.

(37) ACACIA LONGIFOLIA (magnifica), one of the most splendid Acacias in cultivation, with gorgeous clusters of bright yellow flowers several inches in length; very hardy, rare, and beautiful. Of these graceful and highly ornamental plants our collection embraces no fewer than 47 varieties, all of the most decorative character.

(199) CALLICHROA PEDATA, crimson with white eye; a most beautiful plant, and quite new.

(243) CANNA INDICA SUPERBA, a magnificent plant flowering all the winter; leaves large, fine green. Of this picturesque and most ornamental genus we have a magnificent collection, consisting of 28 kinds, all remarkable both for the beauty of their flowers and foliage.

(279) CASUARINA INDICA, the most singularly picturesque tree of the Australian Flora, with weeping branches jointed like a Bamboo, streaked between the joints, and without leaves; very elegant in a conservatory (seeds rare).

(304) CELOSIA (species nova).—A most elegant plant, producing a multitude of long spikes of feathery blossoms, silvery white shaded with bright rose, retaining its colour perfectly when dried, and therefore admirably adapted for winter bouquets; one of the greatest novelties of the season, flowering out of doors or in pots from July to October. Well worth attention. A dried specimen may be seen.

(434) CYCLAMEN AFRICANUM MACROPHYLLUM.—Fine foliage; flowers large, blush, marked white and rose. Very rare. Bulbs of this may be had in the summer.

(451) DATURA HUMILIS FLORE PLENO.—A magnificent Brugmansia-like plant producing a profusion of deep golden-yellow flowers; very large, double, and sweet-scented. One of the greatest novelties of the season.

(665) HIBISCUS ROSEUS SUPERB.—Flowers large, produced in great abundance.

(677) HIBISCUS THUNBERGI.—Pale yellow, dark eye, free flowering, and pretty.

(956) PAVONIA HASTATA.—A most beautiful little shrub, covered with white flowers, having a rich brown centre; handsome foliage.

(976) PENTAPETES PHŒNICEA.—Bright scarlet; leaves long and serrated, a very handsome plant.

(1001) PHYGELIUS CAPENSIS.—Large red tubular flowers, inside golden yellow, a handsome plant (seeds rare).

(1073) RICINUS ALBIDUS (new), white fruited, stems and leaves silvery and handsome.

(1074) RICINUS SANGUINEUS (new), splendid red fruit, in large bunches, very ornamental, producing a grand effect.

(1093) SALVIA HYBRIDA.—Scarlet, early flowering (new).

(1095) SALVIA SPLENDENS Nova species, scarlet (new).

(1137) SIPHOCAMPYLUS BETULÆFOLIUS.—A handsome plant, with scarlet tubular flowers; suitable for a trellis.

(1144) SOLANUM MELANGERA GRANDISSIMUM (new), striped fruit, weighing from 1 to 4 lbs.

(1149) SOLANUM CAPSICASTRUM.—Miniature Orange tree, covered all winter with a profusion of scarlet fruit; a handsome plant for greenhouse or sitting rooms.

(1161) STATICE HALFORDI, blue; large and handsome, one of the very best for pot culture (seeds rare).

(1165) STATICE PURBERULA.—Purplish violet; a free flowering, extremely ornamental plant of neat habit.

(1170) STATICE BONDUELLI, deep golden yellow; flowers early and profusely, in large rosettes.

(1276) VERONICA ANDERSONI, purple and white, all but hardy; a charming shrub.

(1232) VERONICA MELDENSIS, beautiful rose and white.

(1294) VIRGILIA CAPENSIS, a greenhouse shrub, with drooping racemes of purple and white flowers.

(1331) BIGNONIA GRANDIFLORA, orange and scarlet; flowers large, and in magnificent bunches.

(1335) BIGNONIA RADICANS MULTIFLORA, finer and brighter than radicans; flowers in large panicles producing a splendid effect.

(1354) CUCUMIS PERENNIS.—Very ornamental-foliaged plant, which grows with great rapidity.

(1360) CUCURBITA MELOPEPO CHAPEAU D'EVEQUE.—Orange; of this class of climbers we have a fine collection.

(1370) CYCLANTHERA PEDATA.—Bird-like fruit (new).

(1375) GLYCINE SINENSIS, or WISTARIA.—One of the most valuable climbing trees for out-doors (seeds rare).

(1380) IPOMŒA HYBRIDA MARGINATA.—Large and magnificent; flowers of various colours on the same plant, varying from the richest velvety purple to sky-blue, bordered in the most distinct manner with pure white (new and rare). This and three new varieties of Hederacea grandiflora far surpass the old and deservedly favourite rubro-cærulea for beauty, hardiness, and free flowering; they rank high amongst the novelties of the season, possessing advantages which will render them the grandest ornaments for the greenhouse, conservatory, or for out-door decoration.

(1431) MAURANDYA CRIMSON TINTED PURPLE GRANDIFLORA.—Exquisitely beautiful (new).

(1438) MAURANDYA MAROON GRANDIFLORA.—Superb (new and rare).

(1445) MEDEOLA ASPARAGOIDES, green and white, an elegant plant, flowering in winter, and scented like Orange blossom.

(1457) PASSIFLORA RACEMOSA PRINCEPS, pale scarlet, arranged in racemes, from 14 to 18 inches in length, having a striking and beautiful appearance.

(1468) TACSONIA IGNEA.—This magnificent Passion flower is unequalled for the brillancy and splendour of its scarlet blossoms, far surpassing in this respect any of its class yet known. It flowers most profusely, grows rapidly, and covers a large space in an incredibly short time. It succeeds in a cold greenhouse, and even against a south wall with a little protection in winter (new and rare).

(1469) TACSONIA MOLLISSIMA, rosy pink flowers; remarkable for their long tubes and handsome pink colour.

(1473) TROPÆOLUM FLAMMULUM GRANDIFLORUM, yellow; beautifully streaked with carmine (rare).

(1477) TROPÆOLUM GRACILE, sulphur, spotted with carmine; extremely pretty.

(1479) TROPÆOLUM MINIATUM MACULATUM, superb, striped variety (very rare).

(1488) TROPÆOLUM TRIOMPHE DE GAND FIMBRIATUM, fringed orange scarlet.

(1501) TRYCHOSANTHES COLUBRINA VERA, foliage extremely handsome; singular fruit, resembling a serpent (new and rare).

CARNATIONS and PICOTEES saved from the most choice Collection of English varieties grown on the continent, and which may be expected to produce flowers of the highest merit, sent out in sealed packets as received from our Sardinian correspondent, whose seeds for many years have given such universal satisfaction, and from which varieties of the greatest excellence have been raised.

For prices and further particulars with regard to the above and other novelties, we refer our patrons to the Catalogue itself, which is sent free and post paid on application.

BUTLER & M'CULLOCH, Covent Garden, London.—Feb. 26.

FRUIT TREES FOR ORCHARD-HOUSES.

HUGH LOW AND CO. have a fine stock of PEACHES in the very best health, grown as bushes and covered with blossom-buds. They are of two sizes; the larger, being from 3 to 4 feet high and as much through, are admirably adapted for planting out in the borders of orchard houses or for growing in tubs. The second size, about 2 to 2½ feet high, and bushy, are for pot culture. The whole having been transplanted last year will move with abundance of fibrous roots. Prices and lists of sorts on application.

Upper Clapton Nursery, London, N.E.

TANSLEY NURSERY, NEAR MATLOCK.

To GENTLEMEN PLANTING AND THE TRADE.

J. SMITH begs to offer his STOCK OF TREES AND SHRUBS, of various sizes, and in addition to his general stock of the leading kinds, he has this season to offer an Extra Stock of many hundred thousands of fine Larches, Scotch Firs, and Highland Pines; a large quantity of Evergreens, Privets, Mahonia aquifolia, and other plants for planting under cover. Many things are grown in large quantities, and will be sold on advantageous terms to the trade and gentlemen requiring large lots.—Catalogues sent free on application. The Nurseries are on the Mansfield and Nottingham roads, and 2 miles from Matlock Bridge Station on the Midland Railway.

COMMON LAURELS.

S. PONSFORD begs to announce to the Trade or other extensive planters that he has a large Stock of the above, from 2 to 5 feet high, bushy, which he is prepared to supply on reasonable terms.

Also a fine Stock of Dwarf-trained PEACHES, NECTARINES, APRICOTS, &c., of the leading varieties. Standard APPLES, PLUMS, &c.

S. P. would also call attention to his Standard and Dwarf ROSES, most of the leading kinds of which he can still supply in fine healthy condition. Prices on application.

CATALOGUES of GENERAL NURSERY STOCK forwarded on receipt of one stamp.

Loughborough Park Nurseries, Brixton, S.

HARDY CONIFERÆ FOR SPRING PLANTING.

J. HENCHMAN, Edmonton, London, begs to offer the following CONIFERS, all Seedling Plants, in pots, and in the most robust health:—

Wellingtonia gigantea, 1 foot, in 32-pots, very fine, 10*s.* 6*d.* each; 7 to 8 inches, in 48-pots, 3*l.* per doz.; stout, 2-year seedlings, 30*s.* per doz.

Pinus Don Pedri, 21*s.* each.
" Buonapartia or Veitchi, 10*s.* 6*d.* each.
" insignis, 15 inches, 15*s.* per doz.
" macrocarpa or Coulteri, 6 inches, fine, 18*s.* per doz.
" tuberculatus, stout 2-year seedlings, 18*s.* per doz.
" Benthamiana, 2-year do. 9*s.* per doz.

Cupressus macrocarpus, 18 inches, fine, 6*s.* per doz.
" MacNabbiana, 2 years, 9*s.* per doz.

Taxodium sempervirens, 15 inches, fine, 24*s.* per doz.

TO THE TRADE.

THOS. CRIPPS, NURSERYMAN, &C., Tunbridge Wells, Kent, respectfully offers the following fine strong SPANISH CHESNUT PLANTS, 4 feet to 6 feet in height, 40*s.* per 1000; Blush CHINA ROSES, fine strong plants, 15*s.* per 100; Crimson do., very strong, 25*s.* per 100; fine Standard and Half-standard ROSES, 60*s.* per 100; good do., do., 50*s* per 100; Double Yellow PRIMROSE, 20*s.* per 100 or 400 for 3*l.*; PINUS INSIGNIS and P. RADIATA from Seed, 15 inches to 28 inches, 6*l.* per 100; MANETTI STOCKS, 50*s.* per 1000; do. second size, 40*s.* per 1000; IRISH YEWS, 2 feet to 3 feet, 50*s.* per 100; Hardy HEATHS, a fine collection, 25*s.* per 100; large plants, good do., 20*s.* per 100; LARCH FIR, fine stout plants, 2 to 3 feet; LONICERA SHEPHERDI, or new Scarlet-trumpet HONEYSUCKLE, fine strong plants, 4*s.* per dozen; RHODODENDRON MAXIMUM, fine bushy plants, 18 inches to 2 feet, 60*s.* per 100. Orders from unknown correspondents unaccompanied by a remittance will not be noticed.

FRUIT TREES.

YOUELL AND CO., in offering the following, beg to remark that the greatest care has been observed in working only such kinds as possess sterling merit, all of which may be depended upon as correct to name.

	Per doz.—£	s.	d.
Apples, Dwarf Maiden	0	9	0
" " two years cut back	0	12	0
" " trained	1	4	0
Apricots, dwarf trained 1*l.* 16*s.* to	2	2	0
Cherries, standard	0	18	0
" dwarf maiden	0	12	0
" " trained	1	16	0
Currants, Black Naples	0	4	0
" Ogden's black	0	4	0
" long-bunched red Dutch	0	4	0
" short-bunched red Dutch	0	3	0
" large red Grape	0	3	0
" large Cherry red	0	6	0
" Victoria or Raby Castle, very fine large red	0	4	0
" Wilmot's white Grape	0	4	0
" large white Dutch	0	4	0
" Fox's red Grape	0	4	0
" Knight's sweet red	0	6	0
" " large red	0	6	0
Figs, of most approved kinds, 2*s.* 6*d.* each.			
Gooseberries, 100 of the finest varieties by name (including the best of the Lancashire Prize sorts) selected for size and flavour, 30*s.* per 100	0	4	0
Medlars, standards, 2*s.* 6*d.* each.			
Peaches and Nectarines, dwarf trained 1*l.* 16*s.* to	2	2	0
Pears, dwarf maiden	0	9	0
" " trained 24*s.* to	1	10	0
" pyramidal trees, on Quince stocks	0	18	0
Plums, dwarf maiden	0	12	0
" " trained 24*s.* to	1	10	0
Quinces of sorts	0	9	0
Raspberries, Fastolff "true" (as originally sent out by us) per 100	0	10	0
" large white "	0	18	0
" Magnum Bonum "	1	5	0
" Carter's Prolific per doz.	0	6	0
" New monthly fruiting per 100	0	18	0
Strawberries, a collection of all the most approved sorts per 100	0	3	6

Vines from eyes, in pots, fine, according to age, 3*s.* 6*d.* to 5*s.* each.
Filberts of best kinds, 6*s.* per dozen.

ASPARAGUS AND SEAKALE.

YOUELL & Co. having a large stock of the above growing on the Sea Coast, of the finest quality, beg to offer it at the following prices:—

ASPARAGUS, GIANT, two years 2*s.* 6*d.* per 100.
" " three years 3*s.* 6*d.* "
SEA KALE 6*s.* 0*d.* "

RHUBARB.—Myatt's Victoria, Myatt's Linnæus, Mitchell's Royal Albert, strong roots, 8*s.* per dozen.

Hawke's Champagne Rhubarb, 9*s.* per dozen.

Artichokes, Globe and Pine-apple shaped, 6*s.* per dozen.

Dioscorea Batatas (Chinese Potato), 6*s.* per dozen.

All orders of 2*l.* and upwards are delivered Carriage Free to London, Manchester, Newcastle, and Hull, as well as to any Railway Station within 150 miles of the Nursery.

Royal Nursery, Great Yarmouth, Norfolk.

FOREST AND ORNAMENTAL TREES.

THOMAS IMRIE AND SONS, NURSERYMEN, Ayr, beg to inform their Customers and the Trade generally that they have on hand the following well-grown plants, viz.:—

TRANSPLANTED FOREST TREES.

30,000 Alder, 2 to 4 feet	300,000 Larch, 2 year 2 year, 2½ to 3½ feet
60,000 Ash, 2 to 3½ feet	400,000 Scotch Fir, 1 year 2 year
150,000 Beech, 1½ to 3½ feet	200,000 do. 2 year 2 year
20,000 Elm, 3 to 4 feet	400,000 Spruce Fir, 2 year 2 year, 12 to 18 inches
40,000 Oak, 2½ to 3½ feet	200,000 Privet, 2½ to 3 feet
20,000 Plane, 2 to 3 feet	500,000 Thorns, 2 and 3 year (STRONG)
20,000 Black Italian Poplar, 4 to 8 feet	20,000 Laburnum, 3 to 5 feet
10,000 Lombardy do., 3 to 6 ft.	
400,000 Larch, 2 year 1 year, 12 to 20 inches	

SEEDLINGS.

100,000 Ash, 2 year	500,000 Beech, 2 year (drilled)
1,000,000 Scotch Fir, 2 year	200,000 Oak, 1 year (do.)
1,000,000 Norway Spruce, 2 year	50,000 Laburnum, 1 year
20,000 Portugal Laurel, 1 foot	20,000 Common Bays, 1 to 3 feet
10,000 do. do., 2½ to 4 ft.	

50,000 Rhododendrons, 6 inches to 4 feet, and other Evergreens in great variety.

Dwarf-trained Apples, Pears, Peaches, Nectarines, and Apricots. Rider-trained Peaches, Nectarines, and Apricots. Gooseberries, Currants, Seakale, Asparagus, &c.

Price Lists on application.

TO THE TRADE.

JOHN PALMER, NURSERYMAN, Annan, begs leave to inform his Friends and the Trade generally, that he has on hand the following—all of excellent quality—which he is disposed to offer on very reasonable Terms:—

SEEDLINGS.

4,000,000 1-year Larch	40,000 1-year Laburnum drills
1,000,000 2-year Scotch Fir.	100,000 2 year Weymouth Pine
1,000,000 2-year Spruce	100,000 1-year Pear stocks, drills
200,000 1-year Beech	100,000 1-year Crabstocks, drills
300,000 1-year Alder	100,000 1-year Wild Cherry stocks, drills
300,000 1-year Oak, drills	100,000 1-year Portugal Laurel
100,000 1-year Turkey Oak, drills	200,000 1-year Yew
100,000 1-year Spanish Chesnuts, drills	50,000 1-year bedded American Arbor-vitæ
100,000 1-year Horse Chesnuts, drills	20,000 bedded common Laurel
200,000 2-year Ash, drills	20,000 bedded Portugal Laurel

TRANSPLANTED.

300,000 2-year tr. Larch	100,000 2-year tr. Spruce
100,000 2-year tr. Scotch Fir	400,000 2-year tr. Thorns

Prices to be had on application, and all orders will be promptly and carefully attended to. Carriage will be prepaid to London, Liverpool, Birmingham, Newcastle, Glasgow, and Edinburgh, and the half thereof charged to the buyer.

MESSRS. WATERER AND GODFREY respectfully invite the attention of parties engaged in planting to the following list of very desirable plants, all of which may be seen growing in the open quarters of their Nursery, and are in the finest possible condition for transplanting:—

Araucaria imbricata, 9 to 12 inches, 5*l.* per 100; 40*l.* per 1000
" " 1½, 2, 3, 4, 5, 6, and 8 feet high. Our stock of this plant exceeds 100,000

Wellingtonia gigantea, stout handsome plants from seed, 84*s.* per dozen; 25*l.* per 100. These are all in the open ground, and are believed to be the finest lot of seedling plants in the Trade.

Cedrus Deodara, 1½ to 2 feet, 18*s.* per dozen; 6*l.* per 100

Do. 3, 4, 5, 6, 7, 8, 10 and 12, and 15 feet. Our stock of Deodars at the present moment occupies several acres of land; they have been constantly removed, and with fair usage not one in a thousand would fail. We offer them on very advantageous terms either in large or small quantities

Cedrus atlantica, 4, 5, 6, and 7 feet

Cupressus macrocarpa, magnificent plants, 7, 8, and 10 feet high
" Lawsoniana, stout handsome plants from seed, 18 inches, by the dozen or 100

Abies nobilis, from imported seed, 6*l.* 6*s.* per doz.; 40*l.* per 100
" do. 1, 2, and 3 feet high
" Nordmanniana, a large number of beautiful plants, all from seed, 2, 3, 4, 5, and 6 feet high
" Pinsapo, do. do.
[We believe we are justified in stating our stock of the three last-mentioned Firs offers a selection to be met with in no other Nursery.]
" Douglasi, 6, 7, 10, and 12 feet
" orientalis, 3, 4, 5, and 6 feet

Pinus Benthamiana, stout seedling plants, about 1 foot, 18*s.* per dozen; 5*l.* per 100; 40*l.* per 1000. Unquestionably the finest of all the long-leaved Californian kinds, and well known to be perfectly hardy. It is the most valuable of all for timber.

Juniper, Chinese, 2, 3, 5, 7, 8, and 10 feet high
Irish Upright, 3, 4, 5, 6, 7, and 8 feet. The Irish and Chinese Junipers are grown by us to a very large extent

Thuja aurea.—This plant originated in our Nursery, and our stock of it offers a choice of many hundred specimens from 1½, 2, 3, 4, and 5 feet high, and measuring from 2 to 10 and 15 feet in circumference. Nothing can well exceed the beauty of these plants, and certainly are to be met with in no other Nursery

Thuja gigantea, stout seedling plants, 1½ to feet high
" Wareana, 3, 4, 5, 6, 7, and 8 feet

Thujopsis borealis, handsome plants, in quantity, 1½ & 2 ft. high

Taxus, Yew, Common English.—A large quantity, and of all sizes up to 5, 6, and 7 feet
" Irish Yew, 4, 5, 6, 7, and 10 feet. Many thousands of these beautifully formed plants grown to one stem
" Golden Yews in large quantities and of all sizes up to 6, 7, and 8 feet
We also have them worked on the Common and Irish Yew as Standards, with heads from 12 to 15 years' growth

Holly, Variegated, Scottica, laurifolia, &c. We hold probably the largest stock of good sized variegated Hollies in the kingdom, especially of the better kinds of silver and gold striped

Rhododendron ponticum, for cover, stout plants, 1½ to 2½ feet, by the 1000. All the well-known proved hardy late blooming kinds, in any quantity, at from 30*s.*, 42*s.*, to 84*s.* per dozen

Standard Rhododendrons of all kinds

Azaleas, stout bushy plants, covered with bloom buds, from 18 inches to 2 feet high, and of all colours, 9*s.*, 12*s.*, 18*s.*, and 24*s.* per dozen; 50*s.*, 75*s.*, to 100*s.* per 100

Hardy Heaths, a first-rate collection, at 35*s.* per 100; 15*l.* p. 1000

Roses, fine Standards, of the most popular kinds, at very low prices.

As well as the above, we are very large holders of the ordinary kinds of Nursery Stock, which may be judged from the fact that the Nursery far exceeds 100 acres in extent of all such things as Laurels, Box, Lilacs, Limes, Purple Beech, and the commoner descriptions of Evergreens and Deciduous Flowering Shrubs. An enormous stock of Fruit and Forest Trees are also grown extensively.

Goods are delivered free to London, Reading, or Reigate. The Nursery is reached in an hour from Waterloo, and conveyances are always to be had at the Woking Station.

CATALOGUES, Priced and Descriptive, will be sent on application, enclosing one postage stamp, to

WATERER AND GODFREY, Knap Hill, Woking, Surrey.

KITCHEN GARDEN SEEDS.

THOMAS GIBBS AND CO., THE SEEDSMEN TO THE "ROYAL AGRICULTURAL SOCIETY OF ENGLAND," beg to announce that they are now prepared to execute orders for their

COLLECTIONS OF KITCHEN GARDEN SEEDS

for either large or small Gardens, containing a proper selection of all the new and most approved varieties.

PACKETS OF FLOWER SEEDS, containing all the new and choice kinds.

Do. GERMAN IMPORTED FLOWER SEEDS, in the original imported Packets.

DESCRIPTIVE PRICED CATALOGUES forwarded free on application. T. G. & Co.'s PRICED LIST OF AGRICULTURAL AND GRASS SEEDS will be ready early in February.

THOMAS GIBBS AND CO.,

Corner HALF-MOON STREET, Piccadilly, London, W.

GRAPE VINES FROM EYES.

JOHN AND CHARLES LEE beg to offer an immense stock of strong well-ripened VINES FROM EYES, of the following kinds:—

Alicant	Hâtif de Jura
Barbarossa	Isabella
Bidwell's Seedling	Lady Down's Seedling
Black Cluster	Marchioness of Hastings
Black Constantia	,, Parsley leaved
Black Prince	Muscat, August
Blanche Vigne	,, Bowood
Calabrian Raisin	,, Cannon Hall
Charlsworth Tokay	,, Hamburgh
Chasselas Frecklaboulay	,, Noir Hâtif
Chasselas Musqué	,, of Alexandria
Duzetto	,, of Fontainebleau
Esperione	Pitmaston Cluster white
Frontignan, black	Raisin des Carmes
Hamburgh, black	Syrian
,, Dutch	Trebiana
,, golden	Trentham Black
,, Pope's	Tripoli
,, Victoria	West's St. Peter's

Nursery and Seed Establishment, Hammersmith, London.

IGNAME OF CHINA (DIOSCOREA BATATAS)

M. M. PAILLET AND SONS, of Paris, first Growers of the Igname from China, a nutritious root which has been fully appreciated in this country by all those persons who have been able to partake of it in its state of perfection, have decided upon exporting a quantity of it to England at such prices that the English public, as well as amateurs, may be enabled to appreciate its utility and put an end to all the comments that have been made by certain persons incapable of judging its merits. The result of the first crop on a large scale has been most satisfactory (about 30,000 kilos or 60,000 lbs.); this alimentary tubercle may be treated in the same manner as the Potato, with the exception that they should be planted more thickly in order to reduce the expense attendant on the gathering in of the crop.

Messrs. PAILLET & SON feel confident that after a fair trial this new Chinese vegetable will be found an agreeable and useful acquisition to the table, and that it will be fully appreciated in England, and increase the number of those vegetables we already possess.

PRICES:—The 100 lbs. weight, 2*l.* Persons desirous of obtaining Choice Roots can have them forwarded in cases of 50 or 100 at the price of 2*l.* 5*s.* or 4*l.* 10*s.* Those wishing to make a plantation more or less considerable can have portions of the Roots fit for planting at the following prices:—One year's growth, per 100, 12*s.*; ditto per 1000, 5*l.* For young bulbs two years' growth, per Quart, 3*s.* 6*d.*; ditto per Gallon, 12*s.* 6*d.*

All orders sent free of carriage to London with ease and packing included in the above prices. All letters enclosing a Money Order, addressed post free to Mons. T. Phillipps, agent of Messageries Universal Office, 30, Regent Circus, Piccadilly, London, will be immediately attended to.

WALTON NURSERY, LIVERPOOL.

To NOBLEMEN AND GENTLEMEN PLANTING NEW PLEASURE GROUNDS, OR IMPROVING PARKS OR DRIVES, AND TO COMPANIES PLANTING PUBLIC PARKS OR CEMETERIES.

W. SKIRVING begs to offer his Stock of TREES and SHRUBS, of various sizes, adapted either for immediate effect, or for extensive new Plantations, where smaller sizes and less expensive Plants are required.

In addition to his general Stock of the leading kinds of Trees and Shrubs, which is allowed to be the most extensive in England, he has this season to offer, at reduced prices, several acres of well-grown CEDRUS DEODARA, varying from 2 to 10 feet in height.

Also, a very large stock of ARAUCARIA IMBRICATA, from 1 to 10 feet, and of all the best varieties of Hardy Pines, Cedars, Cryptomeria, Cypress, Yew (Irish and Common), Holly (Green and Variegated), Rhododendrons, &c.

WELLINGTONIA GIGANTEA, a fine stock, all from Seed.

Strong transplanted Thorn Quicks for hedge planting, and a most extensive stock of Forest Trees, Underwood, &c., of all ages and sizes, at very moderate prices.

FRUIT TREES. A large collection of all the most approved kinds. CATALOGUES on application.

SEED CORN FROM THE CHALK.

MESSRS. RAYNBIRD AND HARVEY beg to offer to Agriculturists requiring change of SEED Talavera, Red Nursery, and April WHEAT, the best sorts for Spring sowing.

Chevalier, Thanet, Golden Drop, Long-eared Nottingham, American, Hudson's Golden Melon, Banham's Sprat, and other varieties of BARLEY.

Canadian Potato, Hopetoun, Poland, and Tartarian OATS.

Fine CLUSTER BEANS, weighing 68 lbs. per bushel.

Samples and Prices on application.

Address—Basingstoke, and 89, Seed Market, Mark Lane, London, E.C.

JOHN CATTELL respectfully invites the attention of parties requiring very showy HARDY PERENNIALS in large quantities to the following articles, of which J. C. has a large stock in very strong plants.

	P. doz. s.	P. doz. d.	P. 100. s.	P. 100. d.
Delphinium Barlowi	6	0	40	0
Do. Hendersonia (this is by far the best variety for beds; the stems are more flexible than any other, and it throws out side branches all up the stems, whereas formosum and others only flower at the top, and it will produce double the quantity of bloom during the season)	8	0	50	0
Delphinium magnificum (true)	8	0	50	0
,, hybrida flore pleno	8	0	50	0
,, grandiflorum maximum	7	6	50	0
,, formosum	6	0		
Lychnis, Double Scarlet	6	0	40	0
Œnothera macrocarpa	6	0		
Aquilegia Wittmani, fine blue, white centre	6	0		
Wahlenbergia grandiflora, splendid blue, the finest of all Campanulas	7	6	50	0
Fair Maid of France	7	6	50	0
Double Yellow Rockets	4	0	27	6
Lily of the Valley			5	0
Phloxes, extra fine varieties 6*s.*, 9*s.*, 12*s.*, to 40*s.* to	1	8	100	0
,, ,,				

And a very large stock of other hardy Perennial and Alpine Plants equally cheap.

Also very strong Standard and Dwarf Roses, which are supplied as follows:—

Standards, extra fine 15*s.*, 18*s.* to or 100*s.* to	24	0	150	0
,, ,,				
Dwarfs 6*s.*, 9*s.*, 12*s.*, to or 40*s.* to	1	8	100	0
,,				

A remittance or reference from unknown correspondents.

Nursery and Seed Establishment, Westerham, Kent.

MESSRS. E. G. HENDERSON & SON

RESPECTFULLY ANNOUNCE THAT THEY WILL FORWARD, POST FREE, THEIR

NEW SEED CATALOGUE FOR 1859,

IN which the following novelties of the season will be introduced, or noticed, with full descriptions of management, cultivation, and adaptation; and only those that are known to be valuable are recommended for cultivation. Much useful information on the cropping of Gardens, Sowing, &c., is also given for the guidance of cultivators. The following NEW FLOWERS and other SEEDS are offered by E. G. HENDERSON & SON for the first season; full descriptions of which, with treatment, are given in the Catalogue:—

THE ROSY CARMINE GIANT EMPEROR ASTER, 1*s.* 6*d.*
NUTTALLIA PEDATA, var., see Catalogue for the description, 2*s.* 6*d.*
CLIANTHUS DAMPIERI, 2*s.* 6*d.*, 5*s.*, and 10*s.* per packet.
THE LAWTON BLACKBERRY (new American Fruit), 2*s.* 6*d.* each.

SPERGULA PILIFERA,

A perfect substitute for Grass Lawns, &c., in Villa Gardens, without Mowing.

See notice of the above at page 145 of this Paper.

Seed sent free in 6d., 2s. 6d., 5s., and 10s. Packets.

A List of 60 ORNAMENTAL GRASSES, a few of which are adapted for margins to Beds, Borders, &c.

A Descriptive Priced List of that most splendid tribe of Hardy Bulbs, Gladiolus Gandavensis.

The new Vegetable CHÆROPHYLLUM BULBOSUM, and now well-known DIOSCOREA BATATAS (the Chinese Potato or Yam). Seed of the former and sets of the latter per dozen or 100; large tubers for tasting of both, per lb.

A List of 100 Select ORNAMENTAL GOURDS and MARROWS.

NEW FUCHSIAS.

The following FUCHSIAS are the Seedling productions of Edward Banks, Esq., whose previous varieties have given so much satisfaction, and are again offered by E. G. HENDERSON AND SON as varieties of sterling quality and excellence in the special objects of Greenhouse decoration and public competition. LE PROPHETE, an improvement upon Fuchsia WONDERFUL, is an important and desirable acquisition, whilst LA CRINOLINE, CROWN JEWEL, and LITTLE DORRIT are each distinguished by features in outline, or colour, which will render them valuable additions and effective ornaments in the Conservatory and Flower Garden for the ensuing season. Plants will be sent out early, 63*s.* the nine varieties.

MAGIC FLUTE.—Crimson sepals, very elegantly reflexed, and unfolding to view a very finely formed corolla.

LEOLINE.—A remarkably free flowering, short-jointed, and dwarf-habited variety, with bright crimson sepals, which are short, but beautiful in their ample width, and charmingly contrasted with a rich violet blue corolla.

LE PROPHETE.—After the style in bloom of Fuchsia Wonderful, but superior in all respects, having large, well formed crimson sepaled flowers of noble dimensions, and good quality, in the essential features of form, substance, and colour, combined with a profusion of bloom. Large, beautiful, and attractive.

LITTLE DORRIT.—A neat, dwarf dense habit, with blue corolla, and violet-crimson sepals. A most abundant bloomer, and a charming little plant for pot culture, effective either for Greenhouse decoration, or the Flower Garden.

CROWN JEWEL.—The darkest black-violet corolla yet offered, finely contrasted with rich crimson sepals, and combined with a good habit of growth.

LA CRINOLINE.—A large blue corolla of wonderful expansion, with crimson sepals. Beautiful and effective.

ISA CRAIG.—A fine large-flowered variety, with long crimson sepals and similarly formed corolla; of distinct habit and ornamental outline.

STRADELLA.—Scarlet sepals, and finely recurved violet-tinted black corolla, occasionally striped; unique and beautiful.

FLOWER OF FRANCE.—White sepals, with a rich violet-tinted blue corolla; a good bloomer, with a free habit, and striking flower.

Wellington Nursery, St. John's Wood, London.

CHRYSANTHEMUMS—CHRYSANTHEMUMS.

J. H. BIRD, F.H.S., NURSERYMAN, Stoke Newington, the largest grower and most successful exhibitor of the Chrysanthemum in the British Empire, begs to call the attention of the lovers of the above beautiful autumn flower to his matchless collection, the stock of which amounts to upwards of 50,000 plants. Amongst them will be found the following new and rare varieties:—Admirable, Aimée Ferrière, Augustine, Constantine, Louisa, Louis Bonamy, Madame Leo, Norfolk Hero, Progne, Raymond, Beauté de Nord, Dr. Maclean, Queen of England, Pictus, Alfred Salter, Stellaris globosa, Beauty, Themis, Dupont de l'Eure, &c.

J. H. B. can supply strong plants, one dozen for 6*s.*; or five dozen in 30 varieties, containing two of each variety, for 1*l.*; or he can supply 100 plants in 50 varieties, two of each variety, for 1*l.* 10*s.* Also POMPONES in great variety; 50 Pompones in 25 varieties, two of each variety, for 10*s.*; or 100 in 50 varieties, two of each variety for 1*l.* Strong plants of the beautiful new Pompone the Golden Cedo Nulli, 5*s.* each, will be ready in March with the usual allowance to the Trade. Every order will be accompanied by a popular work on the Chrysanthemum.

Post-office Orders payable to J. H. BIRD, Stoke Newington, will be immediately attended to.

UNEQUALLED NEW CUCUMBER, DR. LIVINGSTONE.—This is one of the finest long hybrid Cucumbers for exhibition purposes that has ever yet been offered to the public; it is a splendid black spine, length 22 to 26 inches, a very free setter, and an abundant bearer. Price 2*s.* 6*d.* per packet.

QUEEN OF THE WEST MELON, a superb new variety, green-flesh, very handsome in appearance, beautifully netted, and excellent in flavour. It obtained several first prizes during the past season. Seeds 2*s.* 6*d.* per packet.

NEW MELON GENERAL HAVELOCK, sent out for the first time last season. It is a green-flesh, very handsome shape, and beautifully netted; a very thick substance, thin skin, of a melting and most delicious flavour, and an abundant bearer. Weight from 3 to 4 lbs.; it gave the greatest satisfaction to all purchasers during the past season. Seeds 1*s.* per packet.

Extra fine mixed HOLLYHOCK SEED, saved from all named varieties, 1*s.* per packet.

Early Emperor CELERY, red, the finest ever yet sent out, 1*s.* per packet.

TILEY'S Solid White Celery, 6*d.* per packet.

DELPHINIUM FORMOSUM, 6*d.* per packet.

DIGITALIS, or Fox-glove Seed, 6*d.* per packet.

For further particulars, and list of Cucumbers and Melons, see Advertisement in *Gardeners' Chronicle* of Jan. 29, 1859.

A remittance must accompany every order in cash or penny postage stamps, when the whole or any part, as the case may be, will be immediately sent.

EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Church Yard, Bath.

CHOICE SARDINIAN FLOWER SEEDS.

MESSRS. HOOPER AND CO., seeing that the writer at page 99 of the *Gardeners' Chronicle* has evidently mistaken the meaning of other advertisers with regard to the transference of an agency for the above, and fearing that others of their extensive connection might also be misled, beg to state that they have this season, as for SEVERAL YEARS past, received their usual consignment of Seeds of PICOTEES, CARNATIONS, and other choice and rare Flowers, ripened in Sardinia, from the same unrivalled collection.

H. & Co. therefore hasten to assure their friends that there is no SOLE AGENCY for the choice seeds collected and saved by the justly celebrated "Sardinian Correspondent" in question.

Seeds of the above-named CARNATIONS and PICOTEES both show flowers and perpetuals, white and yellow grounds, in COLLECTIONS OF 12 VARIETIES. (For detailed list see our Catalogue, page 4...) Ditto in mixture each per packet, 1*s.* 6*d.* and 2*s.* 6*d.* The variety of their colours, with their constancy and doubleness, render these such as cannot be excelled.

A GENERAL COLLECTION, consisting of the most beautiful and useful kind of Shrubs, Perennials, Annuals, and Climbers of every description, well assorted, for Greenhouse or Conservatory, in all 50 varieties, for 20*s.* This collection includes all the novelties of merit, and can be recommended with confidence. All Flower Seeds sent free by Post.

HOOPER & Co.'s Comprehensive and Descriptive Priced CATALOGUE of FLOWER and VEGETABLE SEEDS for 1859 forwarded to all parts of the world post free.

Seed Warehouse, Centre Avenue, Covent Garden Market, London, W.C.

"JACK OF NEWBURY" SWEDE, ETC.

PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN, &c., 27, Great George Street, Westminster, respectfully request attention to their very genuine Stock of the above excellent Swede; also of the LOTHIAN PURPLE-TOP SWEDE, both of which have been selected with the greatest care. They have also a very fine Stock of the KOHL RABI, or TURNIP-ROOTED CABBAGE, specimens of which were shown at their Stands at Smithfield Club Show. The Kohl Rabi was largely grown last season, and may now be relied on as a substitute for the Turnip and Mangel, where these roots do not succeed, or for filling up blanks where there is a partial failure. Its feeding qualities, hardiness, and weight per acre are equal to the Swede, and all kinds of stock prefer it to other roots.

P. L. & SON have also selected a first-rate Stock of MANGEL WURZEL SEED, which they can confidently recommend. Their natural GRASS SEEDS have been also saved with very great care, and they are ready to supply them separately or in mixture, for laying down Permanent Pastures, Lawns, &c.

P. L. & SON have arranged to deliver Seeds free throughout England and Wales from their London Establishment, for all quantities exceeding 20*s.* in value.

LISTS OF PRICES of the above and all other Seeds, Plants, &c. may be had on application.

27, Great George Street, Westminster.

AGRICULTURAL, FLOWER AND KITCHEN GARDEN SEEDS.

GARAWAY, MAYES, AND CO. invite attention to their Establishment for the sale of all kinds of AGRICULTURAL, FLOWER AND KITCHEN GARDEN SEEDS, their long connection with the trade and the well-known respectability of their house being a sufficient guarantee that all articles supplied by them will be of the very best quality. All seeds are proved by them before sending out, and their stock being large, and purchased from the first houses in the trade, offers great inducement to purchasers.

Their Stock of AGRICULTURAL SEEDS is produced from the best sources, and all are guaranteed by them to be of the best quality.

GRASS SEEDS of all kinds for Lawns or permanent Pasture; and the high testimonials they have received from their customers warrant them in stating that their quality is unsurpassed.—Catalogues on application.

Durdham Down Nurseries, Bristol.—Feb. 26.

GRASS SEEDS FOR PERMANENT PASTURES & MEADOWS.

THOMAS GIBBS & CO., Corner of Half-Moon St.,

THE SEEDSMEN TO THE "ROYAL AGRICULTURAL SOCIETY OF ENGLAND,"

BEG to inform the Members of the Society and Agriculturists generally that their MIXTURES of GRASS SEEDS for Laying down Land to Permanent Grass are now ready. Each kind of Grass Seed composing these Mixtures is cleaned separately, and the kinds are proportioned to suit different soils.

☞ *Full Directions for Sowing and Management will be sent with the Seeds.*

MIXTURES for PERMANENT MEADOW and PASTURE (*to suit different soils*).
MIXTURES for PARKS, FIELD LAWNS, CEMETERIES, &c.
MIXTURES for IRRIGATION MEADOWS, GAME COVERS, and all other purposes.
RENOVATING MIXTURES for Improving Old Meadows and Pastures (8 to 12lbs. per acre).

MANGEL WURZEL.	RYE-GRASS.		
Yellow Globe, Orange Globe (selected)	Italian (selected, very fine)	Carrots	all sorts
Long Red	Dickinson's	Clovers	,,
Red Globe	Imported Foreign Seed	Swedes	,,
Long Yellow	Common or Annual	Hybrids	,,
Silesian Sugar Beet	Pacey's Perennial	Common Turnips	,,

KITCHEN GARDEN SEEDS in Collections, at £1, £2, and £3 each.

ALL KINDS OF AGRICULTURAL SEEDS.

Price Lists sent free on application. *Reference or Cash required from unknown Correspondents.*

Thomas Gibbs & Co.

CORNER OF
HALF-MOON St.
PICCADILLY, LONDON, W.

MESSRS. R. ROEZL AND CO.'S CATALOGUE OF MEXICAN SEEDS AND PLANTS to be had on application to Messrs. B. A. GRANTOFF & Co., 4, Lime Street Square, London, E.C.

CARTER'S EXCELSIOR MELON.—A green-fleshed variety of delicious flavour, netted; fruit averages 4 lbs., requires scarcely any heating, and is very prolific. R Hogg, Esq., President of the Pomological Society, and Turner and Spencer's "Florist," pronounce this variety to be one of the finest ever tasted. Seeds 1*s.* per packet.—JAMES CARTER & Co., Seedsmen, 238, High Holborn, London, W.C.

TO GROWERS OF PINE APPLES AND CUCUMBERS.—The above-mentioned goods are in great demand here at present, and commanding high prices, therefore forward "immediately" to

GEORGE TAYLOR,
CHOICE FRUIT AND VEGETABLE SALESMAN,
St. John's Market, Liverpool.

DOUBLE ITALIAN TUBEROSE ROOTS, 4*s.* per dozen.—The annual importation of the above named beautiful and fragrant Flower has just been received, and large and well selected Bulbs may be obtained, without disappointment, at A. COBBETT'S Foreign Warehouse, 18, Pall Mall.

N.B. Printed regulations for treatment sent; also, just arrived, very moist and open Parmesan Cheeses

PELARGONIUMS.

CHARLES TURNER'S stock of the above at the present time is most extensive, including large, French, and Fancies. The plants, which were stopped in autumn, have broken very strong, and are ready for an immediate repotting. This is an excellent time for procuring them, the price being moderate.—The Royal Nurseries, Slough.

RASPBERRIES—Fastolf, Autumn Fruited, Fill-basket, and White, 10*s.* per 100; STRAWBERRIES—British Queen, Elton Pine, and Keens' Seedling, 10*s.* per 1000, 1*s.* 6*d.* per 100; Red, White, and Black CURRANTS, 12*s.* per 100; Large LAURUSTINUS.

GEO. CORNWELL, Market Gardener, Barnet, N.

NEW CHRYSANTHEMUMS.

JOHN SALTER begs to inform the numerous applicants for his NEW CATALOGUE OF CHRYSANTHEMUMS that it will be published at the end of February, in which his splendid Seedlings and other new varieties for 1859 will be fully described, as well as his unrivalled general collection, which is the largest in Europe.—Versailles Nursery, William Street, near Hammersmith Turnpike, W.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Stove, Greenhouse, and Hardy Ferns, Miscellaneous Stove, Greenhouse, and Hardy Plants, Variegated and Ornamental foliaged Plants, Conifers, Roses, Rhododendrons, Indian Azaleas, Gloxinias, Fuchsias, Cactuses, &c., is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

GERMAN AND OTHER FLOWER SEEDS, VEGETABLE, AGRICULTURAL SEEDS, ETC.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their new PRICED and DESCRIPTIVE CATALOGUE in which is enumerated every novelty of proved merit, also all the best of the older kinds, is now published, and will be forwarded post free on application. Their whole stock has been selected from the best English and Foreign sources, and every kind is warranted true to name, and of the finest possible quality.—Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

POLYANTHUS SEED.

JAMES WOODS begs respectfully to inform the lovers of that early spring flower, the Polyanthus, that his Seed is saved with more than ordinary care this year, from none but named and good laced flowers, which he can recommend with confidence. Having had testimonials from different parts of the kingdom of many valuable flowers being raised from his seed, it needs no further comment. Price 12*s.* per oz. to the trade, or 1*s.* per packet, sent free on receipt of 13 postage stamps.—JAMES WOODS, Florist, Harwich, Essex.

GEORGE SMITH can supply fine Bushy Plants of the following NEW GERANIUMS of 1857, at 30*s.* per doz. G. S.'s Stock of Show, Fancy, and Spotted varieties is now in splendid condition, and is one of the finest Collections in the immediate vicinity of London.

SHOW KINDS:—Viz, Aurelia, Bellona, Candidate, Etna, Hebe, Imperatrice, Lucifer, Minnie, Queen of Scarlets, Rose Celestial, Pet of the Flock, Rosaline, Richard Benyon, Sprightliness, Sir James Outram, Mazeppa, and Vestal.

G. S. can supply older kinds from 9*s* to 18*s.* per dozen. For descriptions see Catalogue just published, and forwarded in exchange for one postage stamp.

Tollington Nursery, Hornsey Road, Islington, London, N.

AZALEA INDICA.

JIVERY AND SON beg respectfully to invite growers of the above named to an inspection of their unrivalled Stock of Young Specimens of all the newest and best varieties, many of which have been exhibited at the Metropolitan Exhibitions. They are clean and healthy, well set with bloom, and moderate in price. Catalogues forwarded post free upon application.—Dorking Nursery, Feb. 26.

TO PLANTERS OF CONIFERS.

YOUELL AND CO. supply 50 species of RARE and HARDY CONIFERS in good plants for 5*l.*, package included and carriage paid to Manchester, Newcastle-on-Tyne, Hull, London, Peterborough, or to any Railway Station within 150 miles of the Nursery. A LIST of the above can be had on application.—Royal Nursery, Great Yarmouth, Norfolk.

EARLY STRAWBERRIES.—MAY QUEEN: "One of the earliest of all its race, as proved last season at the Chiswick Gardens." Ripe at Egglescliffe, Durham, May 28, 1858. 12*s.* per doz.; 1*l.* per 25; 1*l.* 15*s.* per 50; 3*l.* per 100. Good strong plants.

TRIOMPHE.—"A most abundant bearer, Hudson's Bay breed." Ripe as above, June 3d. 12*s.* per 50; 20*s.* per 100. Good strong plants.

DUC DE MALAKOFF.—"The earliest of the very large varieties, good." 12*s.* per 50; 20*s.* per 100; very strong plants. Nearly every other sort known can be supplied at reasonable prices. Many new interesting and excellent varieties can be recommended, all having been well tried. Early orders will oblige.

WILLIAM J. NICHOLSON, Egglescliffe, Yarm, Yorkshire.

EXHIBITION OF CAMELLIAS,

VAUXHALL NURSERY, WANDSWORTH ROAD.

MILNE, ARNOTT, & CO.,

(SUCCESSORS TO CHANDLER & SONS),

HAVE much pleasure in announcing that the large Collection of CAMELLIAS for which this Nursery has so long been celebrated, is now coming finely into bloom, and will improve daily, and continue in perfection several weeks. Open to visitors every day except Sunday.

MILNE, ARNOTT, & Co.,
NURSERYMEN, SEEDSMEN, AND FLORISTS, WANDSWORTH ROAD, LONDON, S.

ESTABLISHED FULL HALF A CENTURY.

SEEDS! SEEDS!!

LARGE ECONOMY IN THE PURCHASE OF SEEDS.

HAVING upwards of 30 years adopted the practice of testing the character of Vegetables with a careful examination of the new sorts which have from time to time been introduced, it has enabled us to offer such as we have proved of real merit by repeated trials.

BASS & BROWN'S ASSORTED COLLECTIONS OF VEGETABLE SEEDS.

These assorted Collections will be found of full 25 per cent. more value than other collections offered, and for quality of growth and selection of sorts are not to be surpassed. For names of sorts contained in the three largest collections see Catalogue (free on application).

No. 1 Collection contains 20 quarts of Peas, 10 sorts of Broccoli for succession, with all other Vegetables in proportion, of choicest kinds for a large garden	£3	0	0
No. 2 Collection	2	0	0
No. 3 Collection	1	5	0
No. 4 Collection	0	15	0

FLOWER SEEDS.

The following assortments of Flower Seeds also include a large number of valuable novelties and are very select, with reasonable charges:—

HARDY ANNUALS.—100 varieties, 15*s.*; 50 vars., 8*s.* 6*d.*; 30 vars., 5*s.* 6*d.*; 20 vars., 4*s.*

HALF-HARDY ANNUALS.—50 varieties, 12*s.* 6*d.*; 30 vars., 8*s.*; 20 vars., 6*s.*

HARDY AND HALF-HARDY ANNUALS.—100 varieties, 20*s.*; 50 vars., 10*s.* 6*d.*; 30 vars., 7*s.*; 20 vars., 5*s.*

DWARF HARDY ANNUALS FOR FILLING BEDS.—20 varieties, large packets, 7*s.* 6*d.*; 12 vars., 5*s.*

GREENHOUSE ANNUALS.—20 vars., 7*s.* 6*d.*; 12 vars., 5*s.*

*** Greenhouse Perennials, Hardy Biennials and Perennials, &c., in assortments; also Flower Seeds in cheaper assortments. See Catalogue.

IMPORTED GERMAN SEEDS.—The varieties of German Stock, Aster, Larkspur, Wallflower, &c., are remarkably fine and double. See Catalogue.

SEEDS OF CHOICE FLORISTS' FLOWERS.—These, comprising Calceolaria, Cineraria, Geranium, Fuchsia, Hollyhock, Chinese Primula, and many others, have been saved from very choice and first-rate collections, and almost entirely of our own growth.

FLOWER ROOTS FOR SPRING PLANTING.

For these, comprising Gladioli, Ranunculi, Anemones, Liliums, Tigridias, Tritoncas, and numerous others, see end of Seed Catalogue.

CAPE AND OTHER BULBS IN POTS.

These comprise fine varieties of Ixias, Sparaxis, Gladioli, Tropæolums, the superb new Eucharis Amazonica, Tritomas now in flower, Watsonias, Cyclamens, and many others. See Seed Catalogue, page 56.

Goods (20*s.* *and upwards*) *Carriage Free to all the Railway Stations in London, &c. See Catalogue. Post-office Orders payable to* BASS & BROWN, *or to* STEPHEN BROWN. *Remittances required from unknown Correspondents.*

BASS & BROWN, SEED GROWERS, SUDBURY, SUFFOLK.

MEADOW AND PASTURE GRASS SEEDS.

GEORGE GIBBS & Co., Seedsmen, 26, Down Street,

BEG to announce that their mixtures of GRASS SEEDS are now ready for delivery. These mixtures are made up expressly to suit the various soils and the growth of each variety is fully tested previous to being bulked. G. G. & Co. having supplied the Seeds for *Hyde Park, St. James's, and Regent's Park, Kensington Gardens, Kennington Park*, &c., for many years, feel assured no further testimonials are requisite. The Seeds are made up into two different mixtures, as they do not sow well together; 2 bushels of the light and 12 lbs. of the heavy seeds are allowed per acre.

Mr. GIBBS, giving his personal attention to the assorting of these mixtures assures his friends that every care is taken with regard to the proper proportions.

MIXTURES FOR PERMANENT MEADOW & PASTURE (adapted to the different soils) 32s. to 34s. per acre.
MIXTURES FOR IMPROVING & RENOVATING OLD GRASS LAND (8 to 12 lbs. per acre) 1s. per lb.
MIXTURES OF THE FINEST SORTS FOR LAWNS, GRASS PLOTS, BOWLING GREENS, &c, 1s. 3d. per lb.

SELECT STOCKS OF THE UNDERMENTIONED AGRICULTURAL SEEDS SUPPLIED AT THE PRICES STATED FOR THE PRESENT MONTH:—

MANGEL WURZEL. Per lb.—s. d.		CARROTS. Per lb.—s. d.		SWEDES. Per lb.—s. d.		RYE-GRASS. Per bushel—s. d		CLOVERS. Per lb —s. d.		VARIOUS. Per lb.—s. d.	
Long Red	0 9	White Belgian	1 0	Ashcroft	0 9	Gibbs' Improved Italian	7 0	English Red	9d. to 0 10	Holcus saccharatus	2 0
Elvethan Long Red	0 10	Yellow Belgian	1 3	Skirving's	0 9	Dickenson's Italian	7 0	White Dutch	10d. to 1 0	Lucerne	1 0
Yellow Globe	0 9	Large Altringham	1 6	Matson's	1 0	Fine Imported do.	7 0	Trefoil	4d. to 0 5	Drumhead Cabbage	3 0
Red Globe	0 9	Long Surrey	1 6	Kentish Green Crown	1 0	Common English	6 0	Alsike Hybrid	2 0	Large Cattle Parsnip	1 6
Long Yellow	0 9	James's Scarlet	1 6	Marshall's Purple Top	1 0	Pacey's Perennial	6s. to 7 0	True Cow-grass	1 0	Kohl Rabi	5 0

Full Priced Catalogues sent free on application —Cash or reference required from unknown Correspondents.

GEORGE GIBBS & Co., 26, Down Street, Piccadilly, London, W.

CHOICE FLOWERS.

BUTLER & McCULLOCH'S SPRING CATALOGUE OF SEEDS,



ARRANGED on a new and original plan, with copious Descriptive and Cultural Notes and containing many new and rare species and varieties not found in any other Catalogue, now ready and may be had free and post paid on application.

FLOWER, SHRUB, TREE, and VEGETABLE SEEDS, the crop of 1858, saved with the greatest care, by the most eminent growers.

We may also state that the Sardinian correspondent of Messrs. JAMES CARTER & Co., whose Seeds, especially Carnations and Picotees, have given such universal satisfaction, has transferred the Agency from that firm and appointed us his representative in this country. To meet the growing demand for first class flowers, particularly FLORISTS' FLOWERS, we have adopted our usual maxim of charging the lowest possible prices.

Professor LINDLEY in the *Gardeners' Chronicle* of February 5th, has the following notice of B. & McC 's Catalogue.

"BUTLER & MCCULLOCH'S (Covent Garden) Spring Catalogue of Choice Flower, Shrub, Tree, and Vegetable Seeds. This list fills 84 closely printed 8vo pages, and is remarkably well got up. It appears that the correspondent in Sardinia, who formerly supplied one of the great London houses with seeds raised in that warm part of Europe, has now transferred what he saves to Messrs. BUTLER & MCCULLOCH. Let us add, that it yields to no Trade List in the abundance of its materials or the excellence of its arrangements."

A selection of 44 pkts. of beautiful Annual Flower Seeds				7s.	0d.	An Assortment of Vegetable Seeds, 20 quarts of Peas, and other Seeds in proportion for 1 year's supply	£3 3s. 0d.
Ditto	33	ditto	ditto	5	6		
Ditto	21	ditto	ditto	3	6		
A selection of 40 pkts. of beautiful Biennial and Perennial ditto				10	6	Ditto 12 quarts of Peas ditto	2 2 0
Ditto	31	ditto	ditto	7	6	Ditto ditto 6 ditto ditto	1 1 0
Ditto	24	ditto	ditto	5	6	Ditto ditto 5 ditto ditto	0 15 0

All Flower Seeds sent post paid, and Vegetable or Vegetable and Flower Seeds amounting to 1*l*. 1*s*. Carriage Paid to any principal Railway Station in England, Wales, and Scotland, or any port on the Irish Coast.

BUTLER & McCULLOCH, Covent Garden Market.

SELECT LIST OF NOVELTIES FROM CATALOGUE 1859.

Carter's Tom Thumb Nasturtion	Lupinus nanus albus	Fenzlia dianthiflora
Lagenaria vittata	Viscaria Dunetti	Gaillardia hybrida grandiflora
Œnothera Drummondi nana	Laxton's Hybrid Pinks	Lobelia formosa
Lupinus Hartwegi cœlestinus	Dwarf spotted Nasturtion	Viscaria cœli rosa alba
Œnothera bistorta Veitchi	Nolana paradoxa violacea	Marigold French Orange.
Cosmidium Burridgi		

J. C. & Co. also wish to call attention to their Splendid Collections of Imported

ERMAN & FRENCH ASTERS, GERMAN STOCKS, BALSAMS, & WALLFLOWERS,

UNIVERSALLY ACKNOWLEDGED TO BE UNSURPASSED.

For a Full Description of the above articles they beg to refer to their CATALOGUE, which will be forwarded gratis and post free on application to

JAMES CARTER & Co., Seedsmen, 238, High Holborn, W.C.

SEEDS RIPENED ON THE CONTINENT.

JAMES CARTER & Co.

HAVING observed their name mentioned in an advertisement in connection with a late correspondent, feel it their duty to state that, preferring to have their Seeds from the Continental growers *direct*, one of the Firm has elled during the past autumn with that object, *and purposes doing so every season*; the services of the correspondent alluded re therefore dispensed with. Their Seeds for the present season, having been *personally* selected, are better than any they hitherto offered.

JAMES CARTER & CO., Seedsmen, 238, High Holborn, London, W.C.

GENUINE KITCHEN GARDEN SEEDS.

JAMES CARTER & CO.

RE NOW READY TO SUPPLY SEEDS FOR THE VEGETABLE AND FLOWER GARDEN, WHICH WILL BE FOUND, AS USUAL, OF THE BEST QUALITY ONLY.

CARTER'S "ENCYCLOPÆDIC CATALOGUE OF SEEDS,

AND GARDENER'S VADE MECUM."

he Twenty-fourth Annual Issue of the above is now ready, and, in addition to its usual comprehensiveness, has affixed a CALENDAR OF OPERATIONS for each month in the year for the Vegetable and Flower GARDEN, also for the Stove, Co ervatory, Greenhouse, Orchid House, Pineries, Vineries, Pits, Frames, &c., forming a complete Gardener's Book of refer on which it is hoped will be found useful alike to the Amateur and professional Gardener. Forwarded free of charge and po aid to all parts of the world upon application.

JAMES CARTER & CO., Seedsmen, 238, High Holborn, London, W.C.



ROYAL SOUTH HANTS SEED ESTABLISHMENT.

UNDER THE PATRONAGE OF H.R.H. THE PRINCE CONSORT, THE AGRICULTURAL, HORTICULTURAL SOCIETY OF INDIA, AND THE LEADING AGRICULTURISTS OF THE UNITED KINGDOM.

PAGE AND TOOGOOD can now supply GARDEN AND FARM SEEDS, carriage free; SEED POTATOES, &c. The numerous Prizes gained by their Stocks are convincing proofs of superior quality, and their prices compete with any house in the kingdom. WHOLESALE and RETAIL PRICED CATALOGUES upon application.

Agents for ODAMS' Blood Manure, Superphosphate, &c. Seeds Packed for Exportation to all Parts of the world,

37 and 38, Oxford Street (facing the Railway Terminus); and 58, Above Bar, Southampton.

SUTTON'S GRASS SEEDS AT THE ROYAL FARMS NEAR WINDSOR, AND IN THE ISLE OF WIGHT,

AND AT THE



ALDERSHOT CAMPS.

SUTTON'S GRASS SEEDS FOR PERMANENT PASTURE, PARKS, AND LAWNS, are now sown at the Royal Farms at Osborne Palace, the Crystal Palace, Sydenham, the Horticultural Society's Gardens, at the People's Park, Halifax, and on most of the largest Estates in the Kingdom.

Messrs. SUTTON'S Grass Seeds being mixed expressly to suit the soil for which they are required, are never known to fail. Cost of Seeds 50*s*. to 34*s*. per acre, according to the requirements of the land to be laid down.

SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

CAMELLIAS AND OTHER CHOICE PLANTS.

LUCOMBE, PINCE, AND CO. beg respectfully to announce that the MAGNIFICENT SPECIMENS in their LARGE CAMELLIA HOUSE are now finely in flower, and will continue so for a considerable length of time; and in order to see them to advantage they should be inspected in their early stage as well as in their maturity. The Show House is also exceedingly beautiful, being filled with a very choice and extensive collection of Ornamental Plants.

Great improvements having during the past year been effected in every department of their Nursery, and every novelty deserving notice introduced, their general Nursery Stock is second to none in the kingdom.

CAMELLIA BLOOMS, CHOICE BOUQUETS, and CUT FLOWERS supplied to order on the shortest notice, and carefully packed to travel any distance with perfect safety.

Terms, which are moderate, can be had on application.

Exeter Nursery, Exeter.—February 26.

The Gardeners' Chronicle.

SATURDAY, FEBRUARY 26, 1859.

MEETINGS FOR THE FOLLOWING WEEK.

THURSDAY, March 3—Linnean ..... 8 P.M.

WE trust that gardeners will not fail to read with attention Mr. SPARY's excellent account of his experience in VINE GRAFTING, reprinted from the Journal of the Fruit Committee of the Horticultural Society in another column of this week's *Chronicle*. They will there find that the operation of grafting the Vine in which so many fail is as certain of success as grafting an Apple tree, provided it is conducted with intelligence. We are told that a Muscat and Golden Hamburgh, having been put on a Trebbiana stock, grew at such a rate that by the autumn they had each formed shoots of well-ripened wood, the first 18 feet long and the second 14½ feet long, "proving," as Mr. SPARY observes, "the great advantage that may be derived from grafting where Vines are established but a substitution of other sorts is desired." The account given by him of the way in which he proceeded is so clear that any one can imitate it. Nevertheless a word or two of comment will not be inopportune.

What will probably be regarded as most remarkable in Mr. SPARY's experiment is his having grafted his Vine in April when in full and early leaf. At that time he cut down a strong Trebbiana to within 2½ feet of the ground, and then he inserted his scions in the common way of cleft

grafting. But Vines bleed when wounded, and some would have expected that the Trebbiana, instead of feeding the scions, would have exhausted itself by pouring out its own vital fluid. Nothing of the kind however happened. Nor in truth could it have happened. For bleeding in the Vine arises from the stem having become distended with sap which has no outlet; if at that term the sap vessels are wounded out gushes the sap just as blood spirts from a man's arm when a vein is opened. But as soon as leaves appear they empty the system of the Vine of all this superfluous sap—sucking as it were the nursing mother which gives them birth—the distension then ceases, and the cause being withdrawn no more bleeding *can* occur. Cutting down a Vine in full and early leaf is a perfectly safe operation. It is more than safe; it is extremely advantageous; and for this simple reason. At an early period, when all the parts are young, the sap of plants contains the vital principle in the greatest intensity; everything is ready for the formation of new wood; leaves expand with rapidity, the stem lengthens fast, new roots are sprouting from every fibre, and wood is forming rapidly beneath the bark. Then is the time for the grafter to seize. He can never before or after have so favourable a combination of circumstances important to success. The instant a scion is inserted into a Vine in this state a callus begins to form between the alburnum of the stock and scion; it is by that callus that the parts are brought into living union; it is through the callus, and by its aid that vital sap must flow from the stock into the scion. Mr. SPARY found the time demanded for effecting this union to be three weeks, "at the end of which time the Muscat began to grow; and in the first week from that time it grew 4 inches, in the second 12, in the third 24, and in the fourth 36." In four weeks from making a start it grew considerably above 2½ inches a day on an average; and actually made more than 5 inches a day when four weeks old. Just think of that; two lines and a half per hour. Who can compute the hourly increase in weight which attended this hourly elongation? And be it remembered that the vital force of the Trebbiana was not all thrown into the Muscat, but was to a great extent appropriated by the Golden Hamburgh.

This experiment will probably lead to Vine grafting in full and early leaf, as the general rule. There is however another way. It is only necessary to graft on old dormant wood dormant scions having a small piece, say one joint, of two-year-old wood at the base; and to take care that the grafting clay is kept constantly damp until union is effected. By this mode certain success is attainable, but we do not remember having seen it attended with results like Mr. SPARY'S. It has been conjectured by Mr. ANDREW KNIGHT that such was the way in which the Romans grafted their Vines—with them a frequent operation. But CATO's directions for Vine grafting do not, as we think, support this conjecture; he expressly declares indeed that one way of grafting was when the Vine is in full and early leaf; that is to say, in flower. As it may interest some of our readers to see what this ancient writer's directions were, we translate literally such as relate to the Vine. "Grafting the Vine is done either in the spring or else when the flowers appear; the first is the best. Graft the Vine in this way. Cut down the stock; split it in the middle through the pith; then drive in tightly the sharpened scions so that the pith of one fits to the pith of the other. Another way: if the Vine is near another Vine, cut each off slanting when tender, fit their piths together, and tie them with bast." (*Vitis insitio una est per ver, altera est cum uva floret, ea optima est.—Vitem sic inserito. præcidito quam inseres. eam mediam diffindito per medullam. eo surculos præacutos artito. quos inseres, medullam cum medulla conponito. Altera insitio est: Si vitis vitem continget, vitem utrinque teneram præacuito oblique, inter sese medullam cum medulla libro colligato.* Cap. xli. edit. SCHNEIDER.) The Romans had even a third way, a rude sort of inarching, which we need not quote. The above is sufficient to show how common a practice Vine grafting was with the ancient husbandmen.

ARE greenhouses, &c., in nursery gardens rateable to the poor-rate? and, if so, upon what principle? are questions which seem to have puzzled some of our correspondents; and as they present considerations of great interest to a large and important class of our readers, we will attempt to furnish an answer.

Now, without going through the statutes, we may say generally that no one at the present day is liable to the poor-rate who is not "a parson, a vicar, or an occupier of land, houses, tithes impropriate, propriations of tithes, coal mines, or saleable underwood." These classes of occupiers are rateable in respect of their occupation, and in respect of their occupation only. It is obvious how hardly this state of the law presses upon those who, like nursery gardeners, require large and valuable space of land for the exigencies of their trade. The intention of the old Poor-law clearly was that every inhabitant should contribute according to his ability to the necessities of his poorer neighbour. But in 1840 the Legislature itself, baffled and unable to solve the problem of an equally assessed income tax, relieved parish officers from some of the difficulties of their position, and limited the payers of poor-rate, and the property in respect of which it was to be paid, to the classes above-mentioned. Moreover, in the year 1836, Parliament had provided the assessors with a principle of assessment, affirming a principle which, in the case of properties to which it was applicable, had long been recognised in the courts of law. By the 1st section of the Parochial Assessment Act it is enacted that "no rate for the relief of the poor in England or Wales shall be allowed by any justices, or be of any force, which shall not be made upon an estimate of the several hereditaments rated thereunto, that is to say: of the rent which the same might reasonably be expected to let from year to year, free" (*i.e.*, to the landlord) "of all the usual tenant's rates and taxes, and tithe commutation rentcharge (if any), and deducting therefrom the probable average annual cost of the repairs, insurance, and other expenses (if any) necessary to maintain them in a state to command the rent."

Now whether or not greenhouses and similar property are rateable, *per se*, as "houses"—we should say clearly, not—is immaterial. For it is well settled that the word "rent" is used, not according to the strict technical meaning of the term, as defined by the political economists, but in a popular sense, to express the sum which is paid by the occupier to the owner as an equivalent for the advantages of the occupation of the land *as it is*; with all the erections or improvements which may have been built or carried out upon it. Upon this principle it has been often decided that machinery fixed in a house is to be considered in assessing the house; not because it is rateable *as machinery*, but because the house is rendered more valuable to an occupier by the machinery being so fixed in it. So again, to give another familiar instance, the floating piers in the Thames have been held rateable, not as *piers*, but because the first of the barges, of which they are usually constructed, is fastened to the shore; and that part of the shore to which it is fixed is assessed, not at its bare value as mere land, but at the rent at which it would let with the pier affixed to it. In like manner the land occupied by gas-pipes, water-pipes, docks, canals, or manufactories with the machinery in them, although it may be removable at pleasure, is rated not at the bare rent which it would fetch as land, but at its annual value increased by these additions. Nothing can be more evident, therefore, than that the existence of greenhouses in a nursery garden must by law be taken into consideration in estimating the assessment of the occupier.

That mistakes, however, should arise in the application of the principle laid down by the statute need surprise no one. "Rent" and "value" are or have been two of the most fertile sources of controversy among the political economists. Books have been written on these words and their meaning, from the perusal of which practical readers have arisen sadder, although not much wiser men. But in truth these are questions not for theorists, but for men of business. And although, even for them, the application of the statute presents no slight difficulties; as, for example, when they have to rate an isolated mile of railway, gas main, or water pipe, or to fix the rent of a vicarial rentcharge; yet we cannot see that any very serious practical difficulty presents itself in the case of a nursery-garden, with its ranges of greenhouses, hothouses, and forcing pits.

The question proposed is—What would a solvent tenant, desirous of occupying the property for the purposes to which it is adapted, pay as rent, he taking upon himself the burden of the usual tenant's rates and taxes and the payment of the Tithe Commutation rentcharge? This rent being ascertained, a deduction would then have to be made in accordance with the statute, founded on an estimate of the average annual cost of repairs, insurance, and other expenses, if any, of this nature. It is, however, clearly impossible to lay down any general rule by which the rent is to be fixed. It is a question to be determined by practical men acquainted with each locality, and will vary in every case according to the nature and quality of the garden and its accessories, to the position of the place, to the demand for such accommodation, to the prospects of the trade, to the facilities of access, and the thousand and one other circumstances which must enter into such calculations. We will however give one word of warning. In rating property such as that under discussion, viz., land improved by trade fixtures, there is often a tendency in the parish officer, who is anxious to raise the rate, to take the profits of the *particular* tradesman into consideration, and thus in effect to assess his profits. This we need not say is both unjust and unlawful. The profitable character of the trade in its general aspect must of course form an element in the calculation; but not so with the profit of the individual tradesman. Personal skill, knowledge, both scientific and practical, business connection, and many other such matters, are at the source of a tradesman's success, and where one man would make a profit of 100*l.*, another would make 500*l.* with the same advantages of locality and establishment. But the difficulties of those who have to decide the conflicting claims of overseers and occupiers, and to apply the law to the facts, is not a little enhanced by the rivalry of witnesses. It is a spectacle not very edifying to the non-professional bystander, to watch the raging of the conflict between competing valuers, who in support of their theory or their client—(for so they too often appear to consider the party in whose behalf they are summoned)—seem occasionally to forget that they are under the obligation of an oath, and to exchange the caution of the witness for the zeal of the paid advocate. In the midst of all this discord and confusion the perplexed Chairman of Sessions, who had looked to the production of evidence for his information, is compelled to take refuge in his own personal knowledge and experience, or, as a drowning man catches at a straw, seeks support in the opinion of some one of the witnesses upon whose honesty and skill he may in his own private matters have had occasion to rely. This, and not the state of the law, is frequently the cause of the uncertainty of which some of our correspondents have complained.

ON SELF-RENOVATION IN TIMBER TREES.

THERE is a Walnut tree here, the history of which is curious and instructive; and as it tends in some degree to confirm what I have lately stated concerning bark and wood, I beg to say a word or two on the former state and present appearance of the tree. It faces the eastern front of the stables, and is about paces distant from them. More than 80 years ago my father ordered it for execution, as he foresaw that long it would interfere with a favourite Scotch Fir. gun-maker who was standing by at the time, offered price for the bole if it would be allowed to remain upright until it suited his convenience to send a conveyance for its removal. Whereupon, there and then, as the lawyers say, the tree was decapitated just 9 feet from the ground. But the gunsmith never returned to take the tree, not having paid for it.

During the following spring, the still standing bole sent out a single solitary bud, just at the place where the upper parts of the tree had been separated from it by the woodman's axe and saw. As no signs of further vegetation appeared, the bole was pronounced to be dead, saving the part where it had germinated, and the living remnant of the former tree was somewhere about 9 inches in breadth at the top, gradually widening to 2 feet as it approached the ground. From this a the new bud received life and support, to make another tree in times to come. It went prosperously on from year to year, producing vigorous shoots and branches till the year 1810, when, on my return from the West Indies, I took it under my particular care, seeing that it required considerable attention.

Having ordered an adze suitable in size and shape for the work which it had to perform, I began at the top of the bole, just opposite to the new vegetation; and having cut out large pieces of the dead wood, I rough-hewed off what remained, so that the new wood and bark might have an uninterrupted progress over it. When ever I returned from abroad (which was about once in four years) I went adze in hand to the Walnut tree and cut out more of the useless and projecting former wood. The luxuriance of the new tree, rising from one small original bud, was truly astonishing. Its parts soon met at top of the bole closed in and united; and in course of time they became so perfect, that no traces remain to show that a former head had ever been taken off. In the meantime, renovation from above to below proceeded steadily, every year producing a fresh supply of wood and bark. When at home I was perpetually hewing out little pieces of the ancient tree.

For many years a duck, every season, had her nest on the ground inside of the bole. But now the opening parts of the new tree prohibit her access. In 10 or 12 years more, the present deficiency will be entirely made up by the renovating aid of Nature, and when that shall have taken place the tree will measure 8 feet

circumference at 1 foot from the ground. It regularly produces and ripens an abundant crop of nuts when the season is favourable. The whole of the new bark is easily distinguished by its comparatively smooth texture, whilst the original portion, which kept alive and nourished the new bud, is very rough and scaly, bearing evident marks of extreme old age. This year I intend to place a stone in the remaining cavity, with the year of our Lord 1859 cut on it.

The day will come when this stone, and all insects which have taken up their quarters in the bole, will be hermetically sealed, as it were, by the union of the new wood and bark. They will remain imprisoned in their holes, and there they must die, as they can never make their way back again to daylight; nor will ever any daring Scolytus attempt a passage through the new and healthy wood in order to reach the old, which still remains in the centre of the tree; and which old wood will remain there untasted by insects and undisturbed until some hurricane or mandate of a future proprietor shall lay this tree level with the ground on which it now stands in renovated youth and beauty. *Charles Waterton, Walton Hall.*

RHODODENDRONS.—No. III.

A LOCALITY which has an inclination to the north, or approaching that, is highly favourable to the Rhododendron. There the sun lies longer on the Grass, and the sun's rays striking at an acute angle produce a less speedy evaporation than where the surface has a more southern inclination. These conditions tending to preserve, if not to produce a moist and cool atmosphere, should be secured if possible.

There are however numerous localities where shade and moisture need hardly demand consideration, the general climate being naturally all that can be desired. On our S. and S.W. coasts, and in many parts of Scotland, especially on the shores of its nnmerous bays, lochs, and lakes, the excessive moist and comparatively cool climate demand little artificial aid to Rhododendron culture beyond a suitable soil; but in our inland counties, and especially in dry arid soils, any artificial means that will aid in producing coolness and moisture should be attended to.

Supposing a bed of Rhododendrons to have been planted in an artificially prepared soil, and to have succeeded well. They will, after three or four years' growth, have pretty well filled the soil with roots, and mingled their branches into a mass. In this state, if the plants are to be kept in vigour, a thinning out and replanting becomes necessary. The best season for such replanting, and by the way for making new beds also, is perhaps October; but either may successfully be done at any time (weather permitting) from the ripening of the wood in autumn till commencement of growth in the following spring. Perhaps no plant will bear transplanting so well and at such a diversity of season as the Rhododendron. We have seen them taken from the open ground when in full flower and replanted after a long journey without any apparent damage beyond perhaps a few contingencies consequent on the transit. The plants which have yearly been so attractive at the "American Plant Exhibitions" in London are taken from the nurseries and carted to London but a few weeks—many of them only a few days—before they are presented to the public in full flower. Some large specimens which figured conspicuously at a flower show last year were taken up on the previous evening, and conveyed to the place of exhibition in full bloom. After two days' absence they were returned and replanted, and had not the weather been excessively hot and sunny, which caused the flowers to fade somewhat sooner than those of their neighbours, a casual observer would not have suspected their removal.

But to return to our beds. When any show signs of requiring renovation remove the whole of the plants, and throw out the remaining soil, and well fork up the bottom as in making a new bed. With the old soil well broken up mix a portion of new, and replant as in the first instance, using only sufficient plants to fill the beds without crowding. After this they will be found to push with renewed vigour.

And in addition to these periodical renovations yearly top-dressings will be amply repaid. These may consist of leaf-mould, decayed manure from an old Cucumber bed, or even guano, at the rate of 3 or 4 lbs. to the square rod. Such dressings should be applied in early spring and slightly forked in. In very dry situations it will tend greatly to promote the plants if the beds are occasionally well flooded. By making them below the natural surface this can readily be done without wasting any of the water given. If one such flooding can be applied when the flowers are beginning to open, they will, especially if the weather is and has previously been dry, be very much finer and remain for much longer in bloom than they would do without such application.

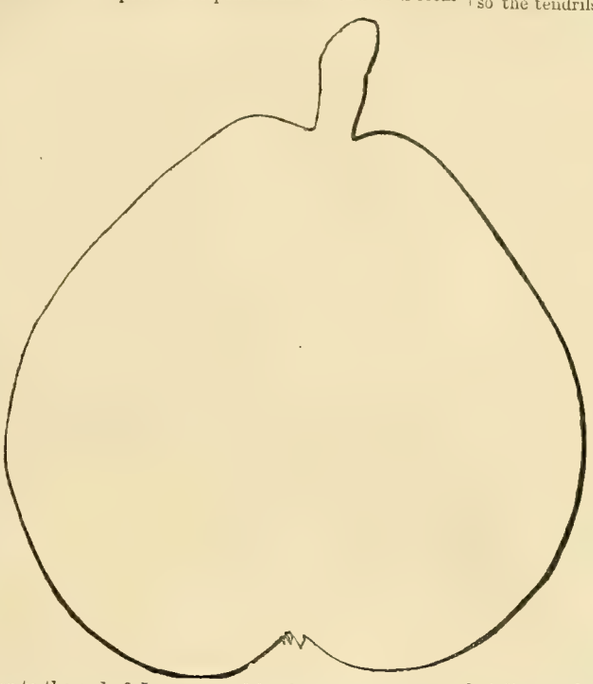
In some localities shelter from prevailing winds during the growth of the plants becomes highly desirable; for the young shoots are very succulent, and easily broken off or damaged, and much injury is frequently experienced from that cause. Our prevailing winds in June, when the Rhododendron is making its yearly growth, are from the south and south-west; but in every garden there are local circumstances which produce or influence certain currents, the remedy for which, like the cause, can only be pointed out on the spot. *G. Lovell, Bagshot.*

(To be continued.)

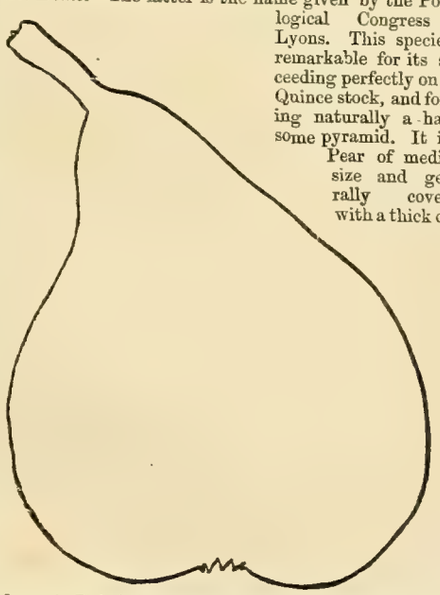
NEW PEARS.

Beurré Gris d'Hiver Nouveau, or *Beurré de Lucon.*—The "Congrès Pomologique," at the meeting at Lyons, September, 1857, fixed on the latter name as its proper appellation for the future.

This is a Pear generally above the medium size, and often very large. Its rind is mostly covered with a dense russet. It succeeds better on the Pear stock than on the Quince, and unless in very warm gardens in the south of England should be planted against a wall with a S. or S.E. aspect. It ripens from the end of December to the end of January, and is when well ripened a Pear of good quality, with a peculiar and rich aroma, melting, and very juicy. It is apt to be what the French call "pierreuse" near the core, or as we say gritty.



Baronne de Mello; Beurré Van Mons; Adèle de St. Denis.—The latter is the name given by the Pomological Congress of Lyons. This species is remarkable for its succeeding perfectly on the Quince stock, and forming naturally a handsome pyramid. It is a Pear of medium size and generally covered with a thick coat of russet. It is not a perfumed or high flavoured sort, but is generally melting and remarkably juicy, for in cutting it the juice often streams down the knife. Its flavour is very agreeable, and so refreshing in warm weather that it is difficult to leave off eating it. It is in season during the whole of October, and sometimes keeps well till the middle of November. No Pear can be more hardy and vigorous in its growth. This variety is not new, for Van Mons sent it out under its second name about 25 years since.



ON THE COILING OF TENDRILS.

As much as 20 years ago, Mohl suggested that the coiling of tendrils "resulted from an irritability excited by contact." In 1850 he remarked that this view has had no particular approval to boast of, yet that nothing better has been put in its place. And in another paragraph of his admirable little treatise on the Vegetable Cell (contributed to Wagner's "Cyclopædia of Physiology"), he briefly says:—"In my opinion, a dull irritability exists in the stems of twining plants and in tendrils." In other words, he suggests that the phenomenon is of the same nature, and owns the same cause (whatever that may be) as the closing of the leaves of the Sensitive plant at the touch, and a variety of similar movements observed in plants. The object of this note is to remark that the correctness of this view may be readily demonstrated.

For the tendrils in several common plants will coil up more or less promptly after being touched, or brought with a slight force into contact with a foreign body, and in some plants the movement of coiling is rapid enough to be directly seen by the eye; indeed, is considerably quicker than is needful for being visible. And, to complete the parallel, as the leaves of the Sensitive plant, and the like, after closing by irritation, resume after a while their ordinary expanded position, so the tendrils in two species of the Cucurbitaceæ, or Squash family, experimented upon, after coiling in consequence of a touch, will uncoil into a straight position in the course of an hour; then they will coil up at a second touch, often more quickly than before; and this may be repeated three or four times in the course of six or seven hours.

My cursory observations have been principally made upon the Bur-Cucumber (Sicyos angulatus). To see the movement well, full-grown and outstretched tendrils, which have not reached any support, should be selected, and a warm day; 77° Fahr. is high enough.

A tendril which was straight, except a slight hook at the tip, on being gently touched once or twice with a piece of wood on the upper side, coiled at the end into 2½-3 turns within a minute and a half. The motion began after an interval of several seconds, and fully half the coiling was quick enough to be very distinctly seen. After a little more than an hour had elapsed, it was found to be straight again. The contact was repeated, timing the result by the second-hand of a watch. The coiling began with four seconds, and made one circle and a quarter in about four seconds.

It had straightened again in an hour and five minutes (perhaps sooner, but it was then observed); and it coiled the third time on being touched rather firmly, but not so quickly as before, viz., 1¼ turns in half a minute.

I have indications of the same movement in the tendrils of the Grape Vine; but a favourable day has not occurred for the experiment since my attention was accidentally directed to the subject.

I have reason to think that the movement is caused by a contraction of the cells on the concave side of the coil, but I have not had an opportunity for making a decisive experiment. *Prof. Asa Gray in the Proceedings of the American Academy of Arts and Sciences, Nov.* 10, 1858.

Home Correspondence.

Fluctuation of the Height of Water in Wells.—I am glad to see that you are calling attention to this subject. In my well here the water now stands at about 160 feet from the surface. I have been obliged to deepen it, and I have made a chamber 10 feet across, where the water now stands, and I have a gauge, so that I can tell exactly what is happening. The well has been dry before, but only for a few days, and the supply has otherwise always been so plentiful that no attempt was made to ascertain the fluctuations until about two months ago, when I caused a gauge to be contrived. During this time, that is for the last two months, the height of the water has continued sensibly the same. When the pump is worked the water sinks gradually, but recovers itself again in a few hours. The well is entirely in chalk. Within the last three years the water has fallen upwards of 30 feet in my well; in the well of a neighbour of mine, also in chalk, whose consumption is considerable, the water has fallen in the same time 62 feet. Wells are dry that have never been known to be so before, and many have been deepened. It was thought by those the best informed on the subject, that the springs (or water in wells) stood at the same height or nearly so, in all the chalk country, and corresponded nearly with the height of water in the pond at Orpington, where the river Cray rises; but this cannot be the case, as while the water in my well has fallen at least 30 feet, and in the other before referred to upwards of 60 feet, there are other wells in the chalk not far distant where the water has only fallen about 10 feet. *J. W. L., High Elms, Farnborough Kent, Feb.* 19.

Arsenical Paper Hangings.—The article in your Paper on arsenical paper hangings has created no small alarm in my mind, and in that of some neighbours, as we have rooms with green papers. Mine were from the first London makers and are very ornamental. We naturally wish to ascertain whether these papers contain the deadly poison mentioned, and hope that some of your chemical readers will favour us, and indeed all your friends, with some easy mode of detecting the evil if it exists in our papers, without sending a piece for examination to a chemist. *L.*

Pear-tree Disease.—I have just had my attention called to a remarkable form of disease in some shoots of a Pear-tree, of which specimens have been transmitted by Sir Charles Lemon, Bart. The whole of the bark, with the exception of the buds, is completely covered

with a hard black crust as if coated with soot. On placing a portion of the latter under the microscope it appears to be a peculiar kind of fungoid excrescence which cannot fail to be injurious to the fruit spurs and branches that are attacked by it, and if not removed by some application will induce sickness and ultimately lead to the death of the tree. The only disease approaching to it that I can find any account of is one described by Downing in his "Fruits and Fruit Trees of America," which he calls the frozen sap blight, and states that it sometimes becomes so serious as to create great alarm amongst the cultivators of fruit. I am anxious to learn whether this new pest has been noticed by any of your correspondents in other parts of the country. *B.* [The fungus is a species of Capnodium very near to, if not identical with, C. elongatum, Berk. and Desm., a common North American species. We shall hope to give some further observations upon it, when we have been able to make a comparative study of the neighbouring species. *M. J. B.*]

Rainfall at Epping in 1857 *and* 1858:—

	1857.	1858.
January	2.63 Ins.	0.13 Ins.
February	0.57	1.02
March	0.21	0.31
April	1.17	1.91
May	0.60	1.86
June	0.60	1.51
July	0.98	2.08
August	2.22	1.55
September	3.59	0.76
October	3.60	1.19
November	1.19	0.14
December	0.06	1.28
Totals	17.42	13.74

The fall last year, as will be seen, was exceedingly small. *H. Doubleday.*

A Cure for Erysipelas.—What is the proper name of the enclosed? It is called by the country people here Fire Grass, and mixed with lard is used as an ointment for the cure of erysipelas, and a perfect cure it is; it ought to be better known. *J. Knight, Lancaster.* [It is Alchemilla arvensis.]

Foreign Correspondence.

Niger Expedition.—(*Continued from page* 147.)

From Mr. Barter to Sir W. J. Hooker.

"Encampment near Ketsa, River Kworra,

"Central Africa, Nupe Country, July 3, 1858.

"At the end of the dry season little could be done in botany here. Most of the small rivers here I have explored as far as they could be ascended in a boat. These yielded but few noveltics, presenting chiefly the vegetation of the large river, often monotonous enough.

"On the 3d of April, having obtained Dr. Baikie's consent, I left the camp in company with Capt. Mackintosh to visit a large confluent about 100 miles down the river. The result of this trip not producing much in botany we pushed onwards to the confluence of the Kworra and the Tshadda, intending to surprise our camp with news from the people there, provisions and goods which we were much in want of, but we found everything in a deplorable state—most of the people dead—the factory burned down, and the depôt of provisions left for the 'Dayspring's' use as she returned all destroyed. We were now in a difficulty. Our journey back against current for nearly 200 miles would be tedious, and ten men were to be fed. Two sick Europeans were to be removed, besides two coloured seamen who were almost starving. We therefore went down to the next factory, 'Onitsha,' taking Mr. Watts, a clerk, and one seaman, intending to take the others upwards on returning. 'Onitsha,' the first factory on the river in the Eboe district, is distant about 100 miles below the confluence. This place was left entirely in charge of native agents, and the result is good. Trade was well conducted. The Rev. J. Taylor (native) had a mission house built, and all looks very promising. The people, although of the fierce race of the Delta, always had behaved well. We procured as many cowries here as our boat would carry, and leaving the two men reached the confluence in 16 days, took up the remaining engineer and seaman, and reached Jeba again after an absence of about seven weeks. The voyage was difficult. The river had fallen very low, so that often during each day we had to drag the boat over extensive shoals. The rains too had set in, so that at night we were continually drenched to the skin; sleeping in wet clothes is dangerous in any climate, but especially here. My companion had fever badly in the boat. I had ague sharply on my return; nevertheless, the engineer got better, but the seaman died of dysentery soon after we returned, probably produced by the exposure.

"During this trip I collected about 120 species of plants and several new fruits. But all suffered much from wet and a crowded boat. I briefly notice a few of the most interesting from 'Onitsha.' This place from its position is moist; wet and dry seasons are not marked as in the countries further up the river. I find this distinctly shown in the vegetation. First comes the dense forest of the Delta, abounding in lofty trees, Oil Palms, Raphia and Calami, Epiphytal Orchids and Ferns, and such plants as delight in a moist climate. This extends about 100 miles by the river. Then another belt which appears to terminate rather abruptly at Idda, 180 miles. This is marked by a diminution of Orchids, Ferns, and large Scitamineæ. Raphia is seldom seen. Calami disappear. The Cocoa Nut cannot be grown beyond this, and the large grey parret with several aquatic river birds is seen no more as we ascend. The Baobab first appears at Edda. The next line is less clearly defined than the last. But at 80 miles the large-fruited Artocarpus ceases, and a Myrtaceous tree thickly lines the river banks, and Fan Palms become common. No large timber trees are now seen. Shea Butter and similar scrubby trees cover both hills and plains.

"From 'Onitsha' I obtained a native species of Mangifera, the fruit smaller than M. indica, nearly globular, leaf less coriaceous and more acuminated; also a fruit called 'Odara,' Pear-shaped, pulp subacid, containing four flattened hard shining seeds. This is a large tree with shining acuminate leaves. I saw clusters of large purple fruit hanging like Dates from a tree with large pinnate leaves; but this was near the King's residence, and I could not procure it. The Rev. J. Taylor pointed it out to me. Fruit of a large twiner called 'Ebbebe' is much sought after by the people when ripe. It is square in shape, size of the fist; each angle is winged; leaves alternate, pubescent, entire. A Rubiaceous plant grows here, said to be very useful in dysentery. It is powerfully astringent; the flowers are small green on fleshy receptacles, which eventually become hard fruit. I think it is allied to Nauclea, the 'miraculous berry' of S. Leone people. Phrynium Danielli is common about Onitsha; the triangular fruit is produced from the root on short peduncles, which scarcely raise it above the deep humus in which these plants delight. When ripe it is of a fine scarlet colour. Seeds large, black, and shining, enveloped in mucilage; it is this which gives the remarkable sweet liquorice taste which, remaining on the palate so long afterwards, causes everything else which is eaten to possess the same flavour. A handsome Combretum grows here in cleared places. It is very dwarf; its scarlet flowers sometimes rise only a foot from the ground; and as they spring from creeping roots, look like Hæmanthus multiflorus, which is a common plant. I have fruit of a larger Sterculia with leaves; the latter are palmate, nearly 3 feet in diameter. In Orchids I got a Polystachya with inconspicuous flowers; a curious Bolbophyllum, a Sarcanthus-looking plant [probably an Angræcum] with fragrant flowers, and some genus I do not recognise. Angræcum distichum is common; also Eulophia guineensis. Others occur on lofty trees, for the most part difficult to obtain, especially in flying visits like mine.

"The 'Bitter Cola,' not at all allied to common Cola of the interior markets, is, I find, a native at Onitsha. I did not see the tree; but one of the chiefs produced nuts, and promised to secure specimens on my return. Bixa Orellana is very common about villages in fruit at this season. Perhaps it has been introduced, but the people do not appear to use it. I was too late for flowers of Napoleona, but have fruit of a species which is eaten. Of a handsome Tabernæmontana I have several young plants, with specimens of flowers and fruit. The latter is like a green-fleshed Melon in aspect, size of 32-pound shot. Much could be done with Ferns here if time permitted. I gathered some Pteridcæ like P. hirsuta; but having reticulated venation; some curious Acrosticha, together with Lastrea, Sitolobium, Nephrolepis, Drynaria, Adiantum, Trichomanes membranaceum, on wet rocks, along with several Lycopodiums, Musci, and Hepaticæ.

"The botany of Nupe since the showers have fallen becomes more interesting. I have not been able to make any extensive journeys since my accident (a poisoned hand), but have picked up among other things seven terrestrial Orchids; one with distinct pseudo-bulbs has flower spikes 3 feet high, and resembles a Zygopetalon, a very good addition to the cultivator. Another, tuberous-rooted and palmate, throws up spikes of purple flowers. The leaves are narrow like those of Bletia, and come up afterwards. This is an ornamental species, but perhaps like other tuberous Orchids may be difficult to cultivate. A large species is now in flower in swamps with branched spikes of yellow flowers 7 feet high; its root a large spongy rhizome. The finest of all is a large Phaius-like plant with small pseudo-bulbs and broad leaves. The spikes rise from 5 to 7 feet, with fine masses of purple flowers. It likes the moist sides of ravines, and is finest in shady places. The others are small plants with curious yellow flowers, but not worth cultivating. Some Gloriosa with dwarf habit is now in flower. It is different from G. superba. The petals are crimson with a yellow stripe up their centre. The native girls wear them on their ears with pretty effect. Tacca sp., perhaps T. involucrata, is common everywhere. A handsome shrub frequenting the margins of swamps has just blossomed. The flowers are 2 inches in diameter, resembling Melastoma in appearance, but not in structure; the leaves have a palmate venation. I have many young plants of this. In the swamps are many novelties—two large Droseras, one with rose-coloured glandular hairs, the other with red ones; both have rose-coloured flowers. A Rubiacea herbaceous with brilliant scarlet flowers. A Menyanthes with yellow blossoms on the leaves. Some beautiful genus like Pinguicula in structure, with fine purple flowers, grows in small pools on the rocks. It has jointed stems; leaves only under water at the base. I find in almost all swampy places a species of Nephrolepis like N. tuberosa, a harsh shining Lastrea, sometimes a Lycopodium of the L. clavatum group, but never any Mosses. Swampy ground is most favourable to the botanist. In such places I always find something new. Such spots yield something more unfortunately, and I cannot resist ague quite so well now as 15 months ago. I find two Ophioglossums here, O. vulgare and lusitanicum; each has quite a little flat tuberous root, but they do not propagate in the ordinary stoloniferous form. On a distant rocky plateau I have found a Fernlike Platyloma hastatum, or rather intermediate with it and P. pteridoidum. I am pleased with this discovery. It may lead to better things in the Fern way which before I was quite despairing of. In the same place grew a tuberous-rooted Oxalis, with simple and divided leaves; also some new Liliaceæ, Aloes, &c.

"Shea Butter harvest is now over. The crop is said to have been light this year. The nuts are allowed to ripen on the trees, and gathered from the ground in the morning by women and children. The pulp surrounding the nuts is rubbed off, generally eaten. As a fruit it resembles an over-ripe Pear; but it is too sweet to be much relished by Europeans. The nut is next dried by exposing it to a slow heat in large clay caldrons with perforated bottoms. This, besides carrying off moisture, causes the nut to shrink in its shell, of which it is divested in the next operation, viz., threshing. This is done on floors, or sometimes it is slightly bruised in large wooden mortars instead. The nut, now free, is next thoroughly pounded with pestle and mortar, then ground between stones; at this stage it looks just like black mud in paste. This mass is washed in cold water, then boiled till the butter rises white and is skimmed from the surface. Shea butter remains hard at a high temperature when well prepared, and does not become rancid with age. It has a slight smoky taste, acquired during its preparation. Some of our people dislike it. We have used it in cooking, and I have often in the boat lived on it and Yams without inconvenience. From specimens tested at home the Shea butter is likely to fetch 5*l.* per ton more than Palm oil. It can be produced here in any quantity, but it is a tree of the interior, and will reach European markets just in proportion as the navigation of this river is extended.

"A missionary teacher has beautifully observed that the Oil Palm is destined to effect an equality of races and banish slavery. As the wants of civilisation extend I cannot help thinking that Bassia is designed to assist in the same cause.

"The climate is now pleasant here. Showers occasionally; sometimes tornadoes make us apprehensive of our tents' stability. These always come from one quarter, viz., north-east. The river commenced rising yesterday. The entire fall here has been only 12 feet, while below the confluence, even when I was down, it measured over 30 feet, proving that the Tshadda pours down the great volume of water during the rains. I have most of my collections in rough boxes, but all must be rearranged when we go down to Fernando Po. Ants are more troublesome than moisture here. Everything on the ground is honeycombed by these pests.

We have been in the river one year to-day; out of this time nine months in our camp. The steamer we expect now weekly, when it is proposed to go down to Fernando Po, and ascend again while the water is high to complete the work contemplated. The mortality in the Dayspring's crew is unfortunately high—just half the number, viz., of eight Europeans four are dead; of four American seamen somewhat coloured, three dead; of two coloured stewards one dead; but of 62 Kroomen natives only three, one of these deaths through accidents. No death has taken place among our own party, six in number; but Mr. Davis has left us, his health not permitting him to stay longer. I trust that in the future vessel few Europeans will be employed. We have abundance of evidence that this is no place for the white. My health is good; I have fits of ague occasionally which readily yield to Quinine. But at this moment I feel as strong as when I left England. I have neither impaired appetite, enlarged spleen, or anything to indicate debility from climate, yet I have worked much harder than I should do in England, and traversed in an open boat in all weathers some thousand miles of river. I do not mention this otherwise than to show that our health has been well cared for, and that we have the fullest confidence in Dr. Baikie.

"Mr. May is away in the Bassa country; Lieut. Glover is coming up the river in the steamer. Dr. Baikie, myself, with Mr. Dalton alone are here. I hope to have time yet for a short trip in the Yomba country for some species of Palm, of which a fine kind of mat is made. *C. Barter.*"

(To be continued).

Societies.

Horticultural: Fruit Committee.—*Jan.* 11. Mr. Edmonds in the chair. The committee having resolved at their Meeting in December last that prizes of 20*s.* and 10*s.* be offered on this occasion for the best Winter Nelis Pears, in dishes of six specimens, to be accompanied with a schedule of particulars relating to the circumstances under which the fruits were produced, and the announcement of their intention having been responded to, the prizes were accordingly awarded. The exhibitors on this occasion were:—Mr. Tillery, gr. to the Duke of Portland, Welbeck; Mr. Harrison, Oatlands Palace Gardens; Mr. A. Ingram, gr. to J. J. Blandy, Esq., High Grove, Reading; Mr. Cox, gr. to W. Wells, Esq., Redleaf; Mr. Shoesmith, gr. to J. Moorman, Esq., Bexhill; Mr. W. Ingram, gr. to the

Duke of Rutland, Belvoir Castle; and Mr. Judd, gr. to Earl Spencer, Althorp Gardens, Northampton.

AWARDS.—First prize to Mr. Cox; second to Mr. A. Ingram.

In Mr. Cox's schedule it was stated that the locality where the fruit exhibited by him was grown is in West Kent, about 40 miles from the sea in a direct line; climate generally humid; exposed to south-west winds, but sheltered from east, north, and south; the soil rich garden earth, 18 inches deep, on a subsoil of yellow clay, inclining to marl, with veins of iron and fine sand, many feet deep; the ground slopes to the south-west, at an angle of about 8°. The fruit was produced on a tree, trained horizontally against a south wall about 12 feet high; the tree, about 30 years old and in good healthy condition, is on the Pear stock; the only pruning it requires is to break off all the breast-wood when in a young state. The fruit exhibited was produced on branches which were grafted up the side of the main stem 12 years ago, and have not failed during the last 10 years to bear a good fair crop. Mr. A. Ingram, the next successful competitor, stated that High Grove, near Reading, is considerably elevated; the soil stiff, inclined to clay; subsoil gravel. The tree, planted in a border sloping a little to the north, is fantrained against a north wall about 13 feet high; but a peculiarity deserving of notice is, that after reaching the top of the wall on the north side, the branches are trained downwards in a perpendicular direction on the south side, and from the portion of branches trained in this aspect the Pears exhibited were gathered on the 19th of October. Mr. Ingram further mentioned that the fruit produced on the south side is always larger than that on the north side, but that the quality of the latter is also good. The tree is old, but healthy and vigorous, and always bears well; it is trained on the spur system. Mr. Tillery's specimens of Winter Nelis were fair-sized and well grown, but being from a west aspect were not equal in richness to those produced from a south wall near London, and nearer the level of the sea than Welbeck, which occupies a high situation in the midland counties. The tree, about 12 years old, was transplanted in 1858; it is on the Pear stock, and is pruned and trained in the ordinary way. The soil, a stiff sandy loam, is on a clay subsoil, but drained; the clay from the drains was burned and put in the bottom of the borders, and some of it was also mixed with the soil in planting; where the burnt clay has been so employed, the transplanted trees thrive well; the ground slopes to the north. Mr. Harrison, Oatlands Palace Gardens, Weybridge, Surrey, near the Thames, reported that the soil is 4 feet deep, with a sandy subsoil; it is early, but the fruit produced is clear, ripening into good colour, and keeping well. The surface is flat. The fruit exhibited was grown on a tree against a wall with a south-east aspect, on an old St. Germain tree, which was grafted with the Winter Nelis about seven years ago; it is trained horizontally, and bears abundantly. The specimens, though good, were not equal to those from the south aspect.

In Mr. Shoesmith's schedule, it was stated that Bexhill, Sussex, is half a mile from the sea, on the south coast; the land gradually slopes towards the south-west. The tree, which is healthy, and about ten years old, is trained horizontally against a south-west wall, about 9 feet high. It was also remarked that the season was late, but with less than an average fall of rain. The fruits exhibited were splendid, well-grown, large specimens of the sort, and finely russeted, but in point of flavour they, like all the others, had to yield the prize to the exhibitions from south aspects. Mr. W. Ingram sent three dishes, respectively from east, west, and south aspect walls. The fruits from the south aspect were not the finest that had been produced upon it, and were found to be too ripe; so that no fair estimate of their quality could be made, comparatively with those from the other aspects. As regards the other two, those from the east were found better than those from the west, later than those from the south, but earlier than those from the west; the lateness of the crop on the latter was supposed to be in consequence of the fruit being rather thin. According to the schedule returned by Mr. Ingram, Belvoir Castle is in the north-midland county Leicestershire, lat. 52° 53′, and 220 feet above the level of the sea. The soil is on the lias clay; the surface slightly inclined to the east. The trees are on the Pear stock; those on the west aspect wall are trained horizontally, the others fan-shaped.

The next schedule returned was from a midland county by Mr. Judd, Althorp Gardens, Northampton. It stated that the gardens occupy an elevated situation on a hill, their surface sloping to the south-south-east. The soil is about 2 feet deep, and consists of garden mould, resting on blue clay, generally with veins of sandstone. The tree which bore the fruit exhibited is against a south-west wall and is healthy. It was originally the Swan's-egg variety; but nine years ago every horizontal branch was grafted with the Winter Nelis, and six years ago it was root-pruned to within 3 feet of the stem; it is pruned by shortening the spurs in summer, and reducing them in winter. Mr. Judd remarked that the fruit has ripened early, in consequence of the hot dry summer.

It may be observed that the range, north and south, within which the above exhibitions were obtained was about 220 miles, from Welbeck the most northern locality, to Bexhill the most southern, yet to the fruit from the latter the prize was not awarded. Again, of the exhibitions, two were from west aspects, two from south-west, one from east, and two from south. It was to those from the south aspect that the prizes were awarded. It therefore appears that as regards the richest flavour, the fruit produced on the south aspect proved superior to those from any other.

Messrs. Webber & Co., Covent Garden, exhibited Winter Nelis Pears, but not for competition. They were remarkably fine, large for the sort, and of excellent flavour. From the schedule accompanying them, it appeared that they were grown at Isleworth, the situation rather humid, and sheltered from the north and north-east. The soil is rich mould, 2 to 3 feet deep, gravelly sand below, and well drained; the surface flat. The tree is on the Quince stock, and is fan-trained against a south wall 11 feet high, or nearly so; it has been nearly 10 years in bearing, is vigorous, and has produced excellent crops during several years. By the same firm, and from the same locality, were exhibited large specimens of Ne Plus Meuris Pears, from a south-west wall. The tree, nearly eight years in bearing, is on the Quince stock, and trained horizontally. It is healthy, and a moderate bearer.

Mr. Evans, gr. to Archdeacon Jones, Brynsteddfod, sent some very fine large specimens of the Glou Morceau Pear. From a carefully filled up schedule it appeared that the locality is on the western coast, near Conway; climate moist, of medium temperature, but variable; 170 feet above the level of the sea, which is in sight, and about 5 miles distant; the situation is much exposed to north-west winds; the soil is a good loam, 2 feet in depth, on rock of argillaceous schist. The walled garden in which the Pears exhibited were grown, is flat, on a hill in the midst of a mountainous district, sloping to the west; outside the garden walls the hill falls chiefly down to the river Conway. The tree is against a brick wall 6 feet high on the garden side, with a stone coping having a narrow projection; the aspect a little to the south of east. It was planted in January, 1840, and is in excellent condition; it is on the Quince stock, and pruned in the ordinary way. The border, 7 feet wide, is kept free from garden crops, except a little winter Spinach. On the same wall are trees of Louise Bonne and Marie Louise, equally flourishing. The trees are allowed to bear from six to 12 dozen each, and have never been known to fail, except once, two or three years back, when a severe spring frost cut off the blossoms. Mr. Tillery also exhibited fair specimens of Glou Morceau, from a west wall; but the flavour was not so good as in the above, from an aspect inclining to south-east. Mr. Culverwell, Thorpe Perrow, Bedale, Yorkshire, sent a dish of Marie Louise Pears, to show their keeping qualities; and he stated that he has ripened off fruit of this variety at different periods since October from the same tree. The specimens were very large and fine, but the quality very inferior. Mr. W. Ingram also exhibited a dish of the Orphelin d'Enghien, or Beurré d'Aremberg Pear, more slender near the stalk than the variety usually is; skin pale and smooth, and when that is the case the fruit, as in the present instance, contains too much acidity. The tree bore a heavy crop. Mr. D. Judd exhibited handsome dishes of Beurré Diel and Glou Morceau Pears. The specimens of the former were not melting; those of the latter were large and well-grown, but not equal in quality to fruits of the same variety produced near London. Mr. Whiting brought for trial a fruit of the Vauquelin Pear, being, it is believed, the first of that sort produced in this country. It was found scarcely second-rate. He also exhibited some well-coloured specimens of Adams' Pearmain, and very fine Sweeny Nonpareil Apples, much larger than that productive variety usually becomes. It is a good keeper, and when most other sorts become flat as regards flavour, this retains its briskness. J. Allnutt, Esq., sent three specimens of the Easter Beurré Pear, for an opinion as to their ripening so early, and not possessing the usual good flavour of the sort. The committee were of opinion that the imperfection and premature ripening of the fruit had most probably arisen from the tree having suffered from dryness at the root. Mr. Gillham, Market Gardener, Mogden Lane, exhibited two Black Jamaica Pine Apples; they were of a regular, handsome form, and showed every appearance of having been grown without check. Mr. Newton, East Lodge, Enfield Chase, sent a Seedling Grape, described as a cross between the Muscat of Alexandria and the Syrian. The berries were middle-sized, oval, yellowish white. It had the flavour of the Syrian, with a slight trace of the Muscat. Mr. Melville, gr. to the Earl of Roseberry, Dalmeney Park, Linlithgowshire, sent two stems of Roseberry Brussels Sprouts. They were raised from a sort which Mr. Melville stated he had cultivated for 20 years; and in order to increase the size of the sprouts, he had crossed the variety with the Early Ulm Savoy, which from its small, compact, dwarf habit was, in all probability, the best of the Savoys he could have employed. The stems were furnished down to the ground; but the sprouts, though larger, were not so fine ribbed as those of the true Brussels Sprouts. The Committee were of opinion that if cooked as greens or Savoys, they proved tender and good, the variety would be an acquisition on account of its productiveness.

A communication was read from Mr. Spary, of Brighton, detailing his mode of grafting Vines. It was intended to have accompanied a bunch of Muscat Grapes, produced by the graft, and exhibited at a previous meeting, but arrived too late. The Grapery in which the Vine is growing was built in the spring of 1855, and planted on the 18th of April with Black Hamburgh and one Trebbiana. After two years' growth they produced an excellent crop; but the owner wishing to have a Muscat substituted for the Trebbiana, Mr. Spary grafted its stem with that sort and the Golden Hamburgh, the wood of the latter being much the smaller in size, in consequence of the scarceness of that sort. He stated that on the 1st of April, 1858, the existing Vine or stock, being at that time in full leaf, was cut off 2 feet 4 inches from the ground, and a cleft made in the top, according to the usual mode of cleft grafting. The Muscat scion was inserted on the east side, and on the west a small graft of the Golden Hamburgh, the former being 3 inches long and having one eye, and the latter 2 inches. The junction was bound over with matting, then covered with grafting wax, and over that was put a coating of grafting clay, and a covering of Moss. Proper attention was paid to syringing twice a day with the other Vines. In this state the grafts remained for three weeks, at the end of which time the Muscat began to grow; and in the first week from that time it grew 4 inches, in the second 12, in the third 24, and in the fourth 36. At this stage it was found requisite to remove the Moss, clay, and wax; and a slack bandage coated with clay and covered with Moss, to retain proper moisture, was substituted; all which were taken off a fortnight later. The fifth week the scion grew 36 inches, the sixth week 30, and the two following weeks 5 feet 9 inches; the whole length of the cane being 18 feet 1 inch. In addition to this growth, it threw out 2 or 3 feet of lateral shoot at the top. The girth of the cane is as follows:—at 1 inch from the graft $3\frac{7}{10}$ inches, in the centre $2\frac{3}{8}$ inches, at the top $1\frac{5}{8}$ inch; the whole of the wood is well ripened. In addition to this extraordinary growth, Mr. Spary stated that the laterals showed fruit as high as the 10th or 12th eye from the graft, but all were taken off except two bunches on the ninth eye, those being left as an experiment.

The cane of the Golden Hamburgh grew with the same rapidity as its neighbour, but in consequence of the smallness of the graft it did not reach the same size, the following being its dimensions:—length 14 feet 6 inches, girth at one inch from the graft $2\frac{1}{16}$ inches, in the centre $1\frac{9}{16}$ inch, at the top $1\frac{1}{4}$ inch, the wood throughout being well ripened. The operation having been very successful, proving that great advantages may be derived from grafting where Vines are established, but a substitution of other sorts is desired, Mr. Spary thought a report of it might be interesting.

Notices of Books.

Flore des Serres for December, 1857, has appeared with original figures of the *Tom Thumb Tropæolum; the Pompon de Tirlemont Larkspur*, a handsome variety of the Siberian; some superb looking varieties of *Dianthus chinensis*, which, as Mr. Van Houtte observes, would have been regarded as Japanese lying wonders had not the Horticultural Society of St. Petersburgh stamped them with authenticity by giving them a gold medal; moreover M. Regel, a name of weight, declares that he saw hundreds of them in flower with a Mr. Heddewig, and guarantees their being all that has been represented. Imagine flowers, 30 on a plant, of the deepest crimson, or crimson streaked with white, and 3 ins. in diameter. We see that Mr. Van Houtte has seed on sale. Another plate represents what is called *Dianthus sinensis laciniatus*, another variety with enormous flowers, one form of which is single, pale, and lilac, the other smaller, the colour of an Opium Poppy but double; both being cut and slashed into numerous long sub-divisions. It is announced that the arrear of the *Flore* for 1858 will be made up by the end of April, after which the numbers will appear with the same regularity as formerly.

Journal of the Linnean Society, Vol. III., No 2, for Feb. 1. The Botanical papers consist of an account of a so-called new Bellevalia from Mt. Ida, a very questionable plant indeed. A valuable enumeration of New Holland Acacias by Dr. Ferdinand Müeller. Contributions to Organographic Botany, by Mr. Dresser, creditable enough as a schoolboy's exercise, but strangely out of place in the Journal of a learned Society. A commencement of a note by Prof. Henfrey on the Morphology of Balsaminaceæ, a curious subject, of which we shall render some account when the remainder of the paper is before us. Also an interesting paper on the vegetation of western tropical Africa by Dr. Welwitch, and a description of three new genera of Australian plants by Dr. Ferd. Müeller. The Zoological division is wholly occupied by two able systematical papers; one by Mr. Walker on the Dipters, and the other by Mr. Smith on the Hymenopters collected by Mr. Wallace on the Aru islands.—Since the above was written a *Supplemental Number* has appeared, entirely occupied by a very valuable account of Indian Mosses, from the pen of Mr. Mitten.

Transactions of the Linnean Society, Vol. XXIII., Part 3. 4to. Of the valuable papers contained in this part none relate to the vegetable kingdom, except an elaborate review of the Sphærias of the Hookerian herbarium by Mr. Frederick Currey, in all respects worthy the high reputation of this distinguished mycologist. Of the Zoological papers, those by Prof. Huxley on the reproduction and morphology of Aphis are of the deepest interest; but they are too technical for

extract, with the exception of the following startling paragraph:—

"Time was when the difficulty of the physiologist lay in understanding reproduction without the sexual process. At the present day, it seems to me that the problem is reversed, and that the question before us is, why is sexual union necessary."

TRADE LISTS RECEIVED.—*W. Hall's* (Enfield) *Catalogue of New and Rare Select Seeds.* A useful little list of things suitable to small gardens, and of very good novelties wanted by everybody.—*Vilmorin-Andrieux & Co.'s* (Quai de la Mégisserie, Paris) *Supplément aux Catalogues.* Excellent descriptive priced lists of flower, tree, and vegetable seeds, forming 24 closely printed quarto pages in double columns. Here is to be found all that is new in France, and among other things seeds of Eugenia Ugni and the Chinese Yam, ripened on the continent, and wanted in this country by experimental growers.

Garden Memoranda.

CHATSWORTH.—We learn that Mr. Foy has at length succeeded in flowering the Amherstia nobilis, not the plant originally introduced by Mr. Gibson, which has been dead some years. The plant at Chatsworth has been there two years, and was 1 foot high when received. At the present time it is 7 feet high, and 10 through, showing several racemes of flowers, one having 13 upon it.

Miscellaneous.

The Gouty-stem Tree.—North-western Australia, participating in the dryness of the climate which characterises the greater portion of this continent, offers in the physiognomy of its landscape few features of peculiarity; although here and there the rivulets of a ravine or the banks of a river may be lined with that gorgeous vegetation, which a combination of heat and moisture generally developes within the topics, yet most of the indigenous trees do not essentially differ from those which we are accustomed to find flourishing in the more southern latitudes of Australia; species of Eucalypti, Acacias, and Melaleucas occasionally intermingled with Casuarinas and proteaceous trees constituting in the north as in the south of Australia the most prominent features of the landscape. There is one striking exception however to this rule. This is the Gouty-stem tree, or the Baobab tree, which has excited therefore the interest of every successive traveller, who has landed on our north-western shores; thence we find scattered notes in reference to this remarkable production of nature in the writings of Capt. P. P. King, Mr. Allan Cunningham, Sir George Grey, Capt. Wickham, and Capt. Stokes. Since however it was reserved to the North Australian expedition, so prudently conducted by Mr. Aug. Gregory, to give the first systematic account of the Australian Baobab, we beg to devote a few lines to its description. We do this with the greater readiness, as the extensive journals and observations, and the beautiful paintings and sketches, which resulted from the Gregorian tropical expedition, are not yet available to the general public. The Gouty-stem tree, although not restricted in its habits to the vicinity of the sea, is seldom found to extend more than 100 miles inland; its range being from Sir George Grey's Glenely river to the western shores of Arnhem's Land. It may possibly also reach the Lower South Alligator river, where, according to Mr. George Winds. Earle, a tree was observed answering to the description of the Baobab. But it evidently is absent in the middle and northern part of Arnhem's Land, there being no record of its existence in Dr. Leichhardt's, journal. The tree delight in sandy clay-plains, or in low and rather barren and stony ridges, forming stems of prodigious thickness, but comparatively of inconsiderable height. Some of these stems frequently assume the character of colossal branches, arising from one root; the circumference of some of the stems, which were measured, was nearly 80 feet. Dr. Mueller has classed it with the African Baobab, or Monkey Bread-tree (Adansonia digitata of Linnæus, for a truthful representation of which we refer our readers to Dr. G. Bennett's wanderings, vol. I. p. 22), to which indeed the Australian species, which is named in honour of the meritorious explorer Adansonia Gregorii, bears perfect resemblance; except when in a state of repose these trees shed their leaves and render thereby the long pendulous fruitstalks, which are characteristic of the African species, conspicuous at a great distance. The winterly appearance of the Adansonias in that state contrasts singularly with the evergreen forest vegetation of Australia. The fruit is smaller in the Australian than n the African kind. It is not Cucumber-shaped, but rather oval and short-stalked, while it is sought for with the same eagerness by the indigenous population and many of the animals of Australia, as the fruit of its prototype in Africa. The acidulous pith of the fruit for which the Dutch boers on the Orange river have called the Adansonia digitata, "Cream of Tartar tree," and the English colonists, "Sour Gourd," is identical in both and may be used as food in cases of emergency. The Australian Baobab, however, is not to be regarded merely as a curiosity; for nature has provided in them a store of aliment, and a reservoir of moisture, gratefully acceptable in the dry tracts which the tree occupies. From the wood, which is singularly soft and which therefore readily yields under the axe of the tired traveller, by pressure a refreshing beverage may be obtained at the season when the sap is rising, and the sheep landed by Mr. Gregory in N. W. Australia greedily devoured the chips of the moist wood. The softness of the stem indicates rapidity of growth, and it seems to be erroneous to ascribe to the Adansonia that longevity for which it has been so famed. Both species are in cultivation at our Botanical Garden. *Polyglot Newsletter of Melbourne.*

Calendar of Operations.

(For the ensuing Week.)

PLANT DEPARTMENT.

CONSERVATORY, &c.—Orange trees in tubs or pots should be carefully examined in order to ascertain whether or not their roots are in a healthy state, and those requiring more room should be shifted at once; but in many instances it may not be possible to afford large specimens a shift. In this case remove as much of the surface soil as can be done without greatly injuring the roots, and replace it with a mixture of good loamy turf, broken bones, decayed cow dung, and sand, and see that the balls of the plants are in a moist healthy condition. Manure water is of great service to Orange trees, and may be applied freely at all seasons, particularly now when they will be starting into growth. It is quite impossible to use the syringe to advantage in many conservatories, and under such circumstances the flowering plants should be removed to one end of the house, and the twiners, &c., given a liberal washing with the engine, which will also greatly assist in keeping the glass, &c., clean. This should be done before the twiners start into growth, as there will be no danger of injuring the tender foliage while in a dormant state. Be satisfied with a rather low temperature for the present, and give air freely on fine days, endeavouring to avoid cold drying currents as much as possible. Attend to keeping up a supply of Roses, Azaleas, and other things requiring to be brought forward in a gentle heat, and persevere in the destruction of insects. Stove plants in active growth will require much attention in order to properly direct their energies and keep them perfectly clear of insects, &c.

FORCING DEPARTMENT.

PINERY.—Succession plants should not be allowed to get too dry at the root, as this would probably throw them prematurely into fruit. In re-potting these, if a plant is found too dry it should be set aside and well watered, so as to get the soil in a moist healthy state before shifting. And where the plants are growing in the open bed the soil should be carefully examined to a sufficient depth, and if it is found to be over dry, water as often as necessary with tepid water to thoroughly moisten the mass, allowing two or three days between each application. Maintain a moist atmosphere, and shut up early in the afternoon, allowing the glass to rise to 80°; but do not exceed 60° at night. VINERIES.—Proceed with thinning the berries whenever the crop is sufficiently advanced to allow of this being done. Stop laterals, tie in young shoots, &c., and keep everything neat and orderly. Maintain a steady night temperature as near 65° as possible; give air freely on fine days, taking care to open all the ventilators a little, and endeavour to avoid cold currents. See that the buds in the late house are not excited by the present mild weather; keep the house cool. Watch narrowly for red spider in the early Vinery and in the forcing houses generally, and should it be detected anywhere lose no time in washing the infested leaves and those around them, using a soft sponge and clean water with a little soap. This may appear a tedious process, but if the enemy is taken in time it will be more easily eradicated by these means than any other. FIGS.—Keep the shoots thin so as to expose the foliage to light and air, and persevere in the use of the syringe to prevent red spider. Give air freely on bright days, shutting early in the afternoon after syringing the house. PEACHES.—Proceed gradually with the disbudding of the early house, and where the fruit is very thick a portion of these should be removed as soon as they are fairly set; but the Peach is liable to drop until after stoning, and this must be borne in mind, and plenty left to allow of a few falling. Maintain a steady heat to Cucumbers of 65° or 70° at night, and allow it to rise 10° or 15° with sun heat. Give air on every favourable opportunity.

FLOWER GARDEN AND SHRUBBERIES.

Bourbon, Tea, and other tender Roses may now be pruned and the beds manured and lightly forked. Roses do not, however, dislike a rather firm soil, and care should be taken not to injure their roots by forking or digging. The best manure for them is well rotted cow dung, which should be applied after carefully loosening the soil, and an inch or two of fresh mould sprinkled over it will obviate any unpleasant appearance it might otherwise present. Gét walks edged, gravel rolled, &c., and everything put in the neatest order. Sow seeds of tender annuals on a gentle hotbed, where they can be freely exposed to air when up, to keep them dwarf and "stocky."

HARDY FRUIT AND KITCHEN GARDEN.

Get pruning and nailing finished with the least possible delay; if any planting still remains to be done let it be completed at once. Do not, as is sometimes done, over-manure the ground about to be planted, for it is a great mistake to induce the production of gross long-jointed wood in any stage of the existence of a fruit tree; wood of this description never gets thoroughly ripened, and in the case of stone fruits, gum, canker, and premature death are sometimes the result, and in the case of Pears anything deserving the name of a crop is never obtained till the gross habit induced by planting in over-rich soils is overcome. Ground intended for fruit trees should first be drained which should be done efficiently, and then trenched to the depth of 2 feet; and if the natural soil is found to be too poor for the health and growth of the trees a sufficient quantity of fresh turfy loam should be added, but rich stimulating manures should not be used, for they are soon exhausted, and the trees are left to depend upon the natural soil for their support, and when treated in this way never give satisfaction. Take advantage of the first fine day with the ground in working order to get in the main crop of Onions. The old practice of sowing broadcast must be given up as being too expensive to clean and thin the crop. Select a piece of deep land in good condition, and if the surface is not naturally firm render it so before sowing by treading or rolling.

COTTAGERS' GARDEN.

Where not already done the main crop of Potatoes should be got in as soon as possible. By planting early and only early kinds, and this on light and not over-rich soil, there will be a good chance of escaping disease. See that a bed is prepared for Onions, which should be sown as mentioned above, and also that every spare bit of ground is manured and turned over.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the Week ending Feb. 24, 1859, as observed at the Horticultural Gardens.

Feb.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Temperature of the Air. Min.	Temperature of the Air. Mean	Temperature of the Earth 1 foot deep.	Temperature of the Earth 2 feet deep.	Wind.	Rain.
Friday 18	15	30.276	30.209	47	27	37.0	48	46	N.W.	.09
Satur. 19	16	30.351	30.238	48	42	45.0	47	45½	N.W.	.02
Sunday 20	17	30.290	30.225	52	26	39.0	46	45	W.	.04
Mon. 21	18	30.303	30.271	58	40	49.0	46½	46	S.W.	.00
Tues. 22	19	30.334	30.282	53	27	40.0	47	46	S.W.	.02
Wed. 23	20	30.581	30.483	49	26	37.5	46	45½	W.	.00
Thurs. 24	((	30.434	30.318	52	25	38.5	45	45	W.	
Average		30.371	30.289	51.3	30.4	40.8	46.7	45.6		.08

Feb. 18—Clear; cold and dry; overcast; slight frost.
— 19—Clear; fine; rain; mild at night.
— 20—Overcast; very fine; overcast.
— 21—Fine; very fine; overcast.
— 22—Overcast; very fine; clear at night; slight frost.
— 23—Frosty; clear; very clear at night; frosty.
— 24—Frosty; very fine; clear at night; frosty
Mean temperature of the week, 2 deg. above the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 33 years, for the ensuing Week, ending March. 5, 1859.

Feb. and March.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 27..	47.7	34.1	40.9	16	0.40 in.	3	5	4	2	6	7	4	2
Mon. 28..	48.3	33.5	41.1	13	0.84	1	7	5	—	2	7	3	8
Tues. 1..	47.2	34.5	40.8	13	0.62	—	7	2	1	5	9	6	3
Wed. 2..	48.6	36.0	42.3	12	0.45	3	5	4	—	3	10	6	2
Thurs. 3..	49.0	32.6	40.8	14	0.28	2	7	3	1	3	9	6	2
Friday 4..	48.8	31.4	40.1	10	0.48	3	10	1	3	3	7	5	1
Satur. 5..	47.9	31.4	39.6	9	0.40	2	8	3	2	4	7	5	2

The highest temperature during the above period occurred on the 28th, 1846,—therm. 64 deg., and the lowest on the 5th, 1855—therm. 13 deg.

Notices to Correspondents.

ALPINE PLANTS: *G C C.* We have referred your letter to the gentleman who furnished the articles to which you refer.

AMERICAN POTATOES: *Lpool.* If you send a sample to the Horticultural Society, 21, Regent Street, they will be tried and reported on without charge. And we see no reason why the condition with which you propose to couple your present should be objected to.

BOOKS: *B Shearn.* Kemp's How to Lay out a Small Garden, to which you may add Loudon's Villa Gardener.

CHÆROPHYLLUM BULBOSUM: *B H.* This is something like a Horn Carrot, but smaller, and the colour of a Parsnep. We have it under trial. You will find a good account of it in E. G. Henderson & Son's great Catalogue, p. 57. It has also been several times noticed in the columns of the *Gardeners' Chronicle.* It is as hardy as a Parsnep.

COCHIN CHINA: *Eager.* We do not advise you to visit this country as a plant collector. It is unhealthy and unsafe, especially now that the French are attacking the country. The latest news is that the troops were suffering much from sickness, that the native government was preparing a resolute defence, and that Bishop Retord had died of starvation.

KIDNEY BEANS: *B & B.* There is no certainty in naming Kidney Beans from their seed alone. As near as we can judge yours is the same as the Haricot Sophie of the French trade.

NAMES OF FRUITS: May we beg our correspondents to send their specimens, *carriage paid,* to our Office, No. 5, Upper Wellington Street, Covent Garden, London: AND TO NO OTHER PLACE WHATEVER.—*Old Sub.* Your Pear seems to be the Ne Plus Meuris. It has perhaps been gathered rather too early; but the cause of unusual grittiness has doubtless been a severe check from cold when the fruit was in a very young state.—*S C B.* Not known; very coarse.—*J W K, Dumfries* We have seen the same variety under the name of Stone Pippin, but this name is applied to several varieties.‖

NAMES OF PLANTS.—We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have or could have undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*G T M.* Epidendrum falcatum *alias* E. Parkinsonianum.—*Melbury.* Oncidium tetrapetalum.—*Camden Town.* The frag ments from S. Leone belong to two or three species of Bolbophyllum which are quite worthless. No. 4 is however Lissochilus roseus, a splendid thing.—*J H L* Garrya elliptica.—*B S A.* It is not possible to name such fragments of Conifers—with no cones. Nos. 2 and 3 seem to be both alike. No 4 is some kind of Abies.—*E N.* Phytolacca icosandra.

NEW ZEALAND RUNNER BEAN: *P ge & Toooood.* Yours is the real kind. Give us the history by all means if you are sure of your facts.

RHUBARB: *John Buckley.* Your specimens are very handsome, rich rose, red quite through, and are evidently derived from "Buck's," the true Rheum undulatum. When cooked they were remarkably delicate and free from stringiness. If new, about which we cannot form an opinion, you might call it the Saltisford crimson Rhubarb, or Buckley's Crimson, if you prefer it.

MISC: *R L.* The list is last year's.

THE PATENT

NITROPHOSPHATE OR BLOOD MANURE COMPANY. (LIMITED),

CONSISTING OF TENANT FARMERS, OCCUPYING UPWARDS OF 30,000 ACRES OF LAND.

TRUSTEES.

ABEL SMITH, Jun., Esq., Walton House, Ware, Herts.
CHARLES DIMSDALE, Esq., Essendon Place, Herts.
EDWARD BALL, Esq., M.P., 8, Belgrave Road, Pimlico
MAJOR-GENERAL HALL, M.P., Western Colville, Linton, Cambridge
JOHN BRADY, Esq., M.P., Warwick Terrace, Belgrave Sq.

DIRECTORS.

Chairman.—JONAS WEBB, Esq., Babraham, Cambridgeshire.
Deputy-Chairman.—JOHN COLLINS, Esq., Myddleton Square, Pentonville.
EDWARD BELL, Esq., Tottenham, Middlesex
JOHN CLAYDEN, Esq., Littlebury, Essex
RICHARD HUNT, Esq., Stanstead Abbot, Herts.
THOMAS KNIGHT, Esq., Edmonton, Middlesex.
ROBERT LEEDS, Esq., West Lexham, Norfolk.
ROBERT MORGAN, Esq., 72, Camden Villas, Camden Town.
GEORGE SAVILL, Esq., Ingthorpe, near Stamford.
WILLIAM COLLINS, Esq., 105, St. John Street Road.
Bankers.—Messrs. BARNETT, HOARE & Co., Lombard Street.
Solicitors.—Messrs. KINGSFORD & DORMAN, 23, Essex Street, Strand.
Auditor.—G. W. BROWN, Esq., 28, Parliament Street.
Manager.—Mr. JAMES ODAMS.
Secretary.—Mr. C. T. MACADAM.

Offices, 109, Fenchurch Street, London.—Manufactory, Plaistow Marshes, Essex.

THE Directors beg to inform their Friends and the Agricultural Public that the following Manures are now ready:—

ODAMS'S BLOOD MANURE FOR CORN AND MANGEL.

ODAMS'S BLOOD MANURE FOR ROOTS.

ODAMS'S SUPERPHOSPHATE OF LIME.

Full particulars may be had at the Company's Offices, or of the local Agents.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

REDUCTION IN PRICE OF LAWES'S MANURES.

MR. LAWES begs to announce that he has this season reduced the price of the Manures manufactured by him, viz.:—

TURNIP MANURE	from £7 to £6	6
SUPERPHOSPHATE OF LIME ..	,, 7 to 6	6
MINERAL do. ..	,, 6 to 5	5
BARLEY MANURE..	8	0

Prof. Way and Dr. Voelcker have sampled from a bulk of 5000 to 6000 tons at his factories, and their report and analyses are given in full in Circular to be obtained on application at his office, 1, Adelaide Place, London Bridge, E.C., or of his local Agents.

N.B. Genuine Peruvian Guano direct from Messrs GIBBS, Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures. American Cotton-seed Cake supplied.

LONDON MANURE COMPANY, removed to 116, Fenchurch Street, E. C. (Established 1840), have the following MANURES ready for delivery:—

CORN MANURE for SPRINGTOP DRESSING
URATE
MANGEL MANURE
SUPERPHOSPHATE OF LIME
BLOOD MANURE
} all of guaranteed quality.

In consequence of the reduction in the price of raw material the London Manure Co. are enabled to lower the price of their Superphosphate of Lime, and to materially improve the Corn Manure and Urate.

The London Manure Co. also supply PERUVIAN GUANO (direct from Messrs. A. Gibbs and Sons), SULPHATE of AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of value. Wholesale dealers supplied.
116, Fenchurch Street E.C. EDWARD PURSER, Secretary.

ESTABLISHED 1812.

H. AND T. PROCTOR'S TURNIP MANURE.—Messrs. H. & T. P. draw particular attention to this valuable Manure, which contains all the elements necessary for the full development of the Turnip Crop, so combined, that, from their chemical knowledge and long experience, they feel satisfied is most advantageous to the consumer. It has been very extensively used by most of the eminent Agriculturists of the day, and has attained a high reputation throughout England, Scotland, and Wales, and, they venture to say, is unrivalled for the weight and quality of the Bulbs which it produces. The application of this Manure to the Turnips will be found to benefit considerably the after crops of Barley, Clover, and Wheat.

POTATO, GRASS, BARLEY, CLOVER, AND WHEAT MANURES; also BONE DUST, PERUVIAN GUANO, and SUPERPHOSPHATE of LIME, warranted of the best quality.

Apply to H. & T. PROCTOR, West of England Depôt for Artificial Manures, Cathay, Bristol; or PROCTOR & RYLAND, Birmingham, and Saltney, near Chester.

SOLUBLE PHOSPHATE OF LIME.

FREDERIC CORNWELL begs to inform his friends and the Agricultural public that he can now supply a "SUPERPHOSPATE of LIME" superior to anything yet produced. Each Bag guaranteed to contain from 20 to 25 per cent. of "Soluble Phosphate of Lime." Price 5*l.* 10*s.* per ton, delivered free to any Railway or Wharf in London. Dealers and the trade supplied. Linseed-cakes, Cotton-cakes, and all descriptions of Artificial Manures at lowest market prices.
Offices, 7, Great St. Helen's, London, E. C.

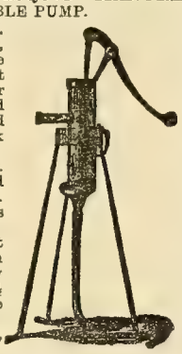
BURNARD, LACK, AND CO.'S CONCENTRATED SUPERPHOSPHATE OF LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.

CONCENTRATED TURNIP MANURE, equal in value to the preceding.

Of these Manures Dr. Voelcker says:—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."

Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to BURNARD, LACK, & Co., Sutton Road, Plymouth.

WARNER'S IMPROVED LIQUID MANURE OR GENERAL PORTABLE PUMP.



These Pumps are fitted with J. W. & SON'S Patent Buckets and Suckers, and cannot clog in action. The barrel is of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure. The legs will fold together, and the whole may be carried on the shoulder to any pond or tank required.

Price of 4½ in. Pump, with legs, 3*l.* 3*s.* If with planished copper barrel and galvanised iron handle, &c., 14*s.* extra. The barrel is 27½ in. long, and the legs are 5 ft. high.

These Pumps are also made without the legs, with strong wrought-iron straps for screwing on to any ordinary water butt or cart, and fitted with 1½ inch brass union for attaching flexible suction. Price 50*s.*

1½ inch Gutta Percha Suction Pipe, 1*s.* 11*d.* per foot.

Rubber and Canvas Suction and Delivery Hose, from ½ inch to 4 inches diameter, in lengths of 60 feet to order. Branch Pipes with Cocks, Union Screws, &c., at reduced prices.

May be obtained of any Ironmonger or Plumber in town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin St., London.

WARNER'S PATENT VIBRATING STANDARD PUMPS.

PATENT CAST-IRON PUMPS, fitted with J. W. & SON'S Patent Buckets and Suckers, which cannot clog in action, for Farms, Cottages, and Wells, not exceeding 28 feet.

Diameter of Barrel.	Height.		£	s.	d.
2₃ in. short	1 ft. 7 in.	Fitted for lead,	1	10	0
2½ ,,	long 3 ,,	gutta percha,	1	14	0
3 ,,	ditto 3 ,,	or cast iron	2	8	0
3½ ,,	ditto 3 ,,	flanged pipe,	2	12	0
4 ,,	ditto 3 ,,	as required.	3	3	0
2½ ,,	short, with 15 feet of Lead Pipe attached, ready for fixing		2	14	0
2½ in. long	ditto ditto	ditto	2	18	0



The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.

May be obtained of any Ironmonger or Plumber in Town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

SHAW'S TIFFANY.—The best and cheapest material for Shading Conservatories, Protecting Fruit from Birds and Wasps, &c. Sold in pieces 20 yards long by 38 inches wide. No. 1, best quality, 5*s.* per piece; second quality, 4*s.* per piece. Extra strong and thick (see Circular sent free by post with samples).

Address JOHN SHAW & Co., Manufacturers and Dealers, Princess Street, Manchester.

"FRIGI DOMO."—Patronised by her Majesty the Queen, the Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence, of Ealing Park, and—Collier, Esq., of Dartford.

PROTECTION FROM COLD WINDS AND MORNING FROSTS.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths. Two yards wide, 1*s.* 6*d.* per yard run; four, 3*s.* per yard. Also, an improved make for Shading Purposes. Three yards wide, 2*s.* 6*d.* per yard run.

ELISHA THOMAS ARCHER, whole and sole manufacturer, 7, Trinity Lane, Cannon Street, City, and of all Nurserymen and Seedsmen throughout the kingdom. "It is much cheaper than mats as a covering."

THORLEY'S FOOD FOR CATTLE.—Every person having an interest in domestic or farm animals should obtain a supply of this celebrated and economical food which will prove invaluable during the approaching season. For keeping horses in good condition, it is unequalled. Pigs fatten with surprising rapidity upon it, and their flesh increases in flavour and value. Cowkeepers will find great advantage in the increased quantity and improved quality of the milk during its use. All animals are benefited by it. A pamphlet on this interesting subject, accompanied by Testimonials from the principal Nobility, Gentry and Agriculturists forwarded on application. In casks containing 448 feeds (measures inclosed), price 50*s.*, carriage paid to any Railway Station in the United Kingdom. Post-office Orders payable to JOSEPH THORLEY, 77, Newgate Street, London.—N.B. The public are cautioned against being imposed upon by worthless imitations.

SIGMA'S BEAN, MANGEL, & CORN PLANTERS (5 Depositors), HOES, &c. The "Multum in Parvo," combining Cultivator, Horse Hoe, Ridge Plough, Subsoiler, Broadshare, and other forms; all expanding. Complete 7*l.* 7*s.* Prospectus sent.—C. POWELL, Hurstgreen, Sussex.

THE ROYAL AGRICULTURAL SOCIETY'S PRIZE CHURN.—This Churn has taken all the prizes offered by the Royal Agricultural Society from 1850 to 1858 inclusive. Price list and testimonials sent free. Illustrated Catalogue on receipt of six postage stamps.
BURGESS & KEY, Patentees and Manufacturers, 95, Newgate Street, London.

TO LANDOWNERS.

THE PERMANENT WAY COMPANY having been appointed the sole Licensees for the use of Dr. BOUCHERIE'S Patent Process for Preserving Timber, beg to inform Landowners and others interested in the use of English Timber that a Pamphlet, with full explanations of this cheap and most effectual process, may be had gratis on application to the undersigned. Landowners having Beech, Elm, Fir, or other Timber fit for Railway Sleepers are requested to communicate particulars of quantity, locality, and prices.
WILLIAM HOWDEN, Secretary.
26, Great George Street, Westminster.

LAND DRAINAGE.—Works of Drainage of any extent are executed by the GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY on all descriptions of Property, whether Freehold, Entailed, Mortgaged, Trust, Ecclesiastical, Corporate, or Collegiate.

Repayment may be made by the Landowner as successive portions of the Works are completed, or the actual expenditure, with a Commission thereon, may be charged on the property improved by way of rent charge for any term not exceeding 50 years, the instalments to repay principal and interest being thereby kept down nearly to 5 per cent. per annum.

No investigation of title being required, and the charge not being affected by incumbrances, no legal expenses are incurred.

Works of Irrigation, Enclosing, Wood Grubbing, Road Making, and Farm Buildings are executed in a similar manner.

The Company also assist Landowners in executing any of the improvements by their own agents, and charge the amount expended on the property improved.

Applications to be made to WILLIAM CLIFFORD, the Secretary, at the Offices of the Company, 52, Parliament Street, London.

AGRICULTURAL EDUCATION.

HIGHLAND AND AGRICULTURAL SOCIETY OF SCOTLAND.—The Board of Examiners, nominated in terms of the Society's Charter, will meet in the Museum Hall, George IV. Bridge, Edinburgh, on April 6 and 7, between the hours of 11 and 4, to Examine Candidates for the Society's AGRICULTURAL DIPLOMA.

Candidates must intimate their Names to the Secretary not later than March 21. JN. HALL MAXWELL, Secretary.
Edinburgh, February 26.

COLLEGE OF AGRICULTURE AND CHEMISTRY AND OF PRACTICAL AND GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.
Principal—J. C. NESBIT, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

The Agricultural Gazette.

SATURDAY, FEBRUARY 26, 1859.

MEETINGS FOR THE ENSUING WEEK.
WEDNESDAY, March 2— Agri. Society of England .. Noon.

—— The local committee at Warwick announce that the sum of 4200*l.* has already been collected in furtherance of the ensuing annual meeting of the Agricultural Society of England. It has been resolved to have no pavilion dinner on the occasion, but there seems no lack of public spirit in all the other arrangements which are in progress.

—— The prize system for ensuring an exhibition of agricultural implements at the meetings of national and provincial agricultural societies has been defended during the past week with considerable ability in the columns of the *Oxford Journal*. Mr. T. D. ACLAND has replied to the strictures of that journal on the abandonment of that system by the Bath and West of England Agricultural Society. He says:—

"It is true we no longer give prizes on the award of selected judges, after trials conducted by those judges; but we have made full provision for the trial of implements at work before the public in the open field. We think that the attention of intelligent farmers having been awakened to mechanical questions, the amount of work done, coal and power consumed, &c., those farmers are now the best judges of the gross result as a whole. . . . The expediency of retaining mechanical trials at the shows of the Royal Agricultural Society is quite another question; although I think even then it is much to be regretted that a system of classified awards, on the principle advocated by Mr. HOWARD and Mr. SHUTTLEWORTH, has not been adopted; it can hardly be maintained that the difference between the ploughs, and other implements of the first class makers, is so great that one ought to stand first, another second, and another third; or can so stand with the general consent of all competent judges, and under all ordinary circumstances. If the first prize is only awarded because in such a field, with such a state of the atmosphere, and with such horses and ploughman, and it must be said with such or such judges, one maker beat

another by half a neck, the judgment might be reversed the next day—and if so, what is it worth? It amounts to proving that the winner is a skilful mechanic, with first-rate workmen; but it does not disprove the same conclusion as to his competitor."

—— In connection with the recent interesting paper on arterial drainage by Mr. J. A. Clarke, read before the London Farmers' Club, it is probable that a deputation to the Premier from that body will be appointed for the purpose of urging upon the Government the appointment of a Commission to visit the principal river valleys, and inquire into the extent and condition of the districts liable to floods and suffering from imperfect drainage, ascertaining from what obstacles this arises, and what measures of relief are possible—what claims have to be satisfied in order that there may be a knowledge of all sorts of the cases to be provided for in a general Act of Parliament on the subject.

—— The "Cental," though almost universally adopted by the corn brokers of Liverpool, is by no means so acceptable to their customers; and a protest on the subject with a large number of signatures has been addressed during the past week to Mr. H.W. Banner, secretary to the association of the Liverpool corn trade. It is signed by "millers, dealers, and others," rather than by "merchants and brokers;" and has evidently travelled far and wide for the signatures thus received. It declares it to be "impossible to displace, without the utmost confusion and inconvenience, the old system of weights and measures, so long used in this town and so generally known throughout this and foreign countries, and that any alteration in this respect cannot be attended with success unless made general throughout the kingdom by Act of Parliament."

This will probably be found the truth; but in what way is an Act of Parliament for this purpose to be obtained, except by local agitation of the kind which the association of the Liverpool corn trade have inaugurated? Parliament will not interfere for the sake of abstract propriety, nor will any Act be passed except for the purpose of obtaining what is declared to be practically a difficulty and a nuisance. There is not a doubt that strong objections will be generally felt to any change, however much for the better, from any long established system, however faulty it may be. But let a leading market on the ground of obvious utility demand this change as Liverpool has done, and Parliament will act; and when once established the new system will very soon have as many supporters as the old, on that very ground of custom which is all on which the old style can be defended. For we cannot admit the force of the objection to the adoption of the cental that "it is impossible to get a test of quality in any other way than by measure." In Liverpool sales are already effected by weight alone, the units being 70, 60, and 45 lbs. for Wheat, Barley, and Oats respectively; and is not a common weight of 100 lbs. for all preferable to these? Elsewhere measures of various kinds prevail—but no one can trust them for the determination of quantity. Measures of the same denomination can be variously filled; and in fact cannot be otherwise than variously filled. If so they are untrustworthy as much for indicating quality as for indicating quantity. Even admitting however that the guarantee of its really weighing so much per bushel is a test of the quality of grain, it is after all the purchase or sale of a given quantity of that grain which is the transaction that takes place, and every person must admit that weight alone is the only unquestionable test of quantity. In the case of other goods quality is determined by as many tests as the purchaser knows how to apply; and the price per unit being thus agreed upon, the *quantity* which is parted with regulates the sum which is received. And just as with any other sort of goods, dealers in corn must be cheated or must cheat by any other rule than this. The purchaser wants a guarantee that he shall receive the *quantity* agreed upon of the article he is buying: its quality he must ascertain as best he may before offering a price:—by the scales alone can he ascertain if the quantity he has bought has been delivered. We have little doubt that corn, like wool and other agricultural produce, will ultimately be sold by weight alone.

—— A question put by Mr. Caird on Friday last in the House of Commons elicited the facts that a proposition to the Peruvian Government to throw open the guano trade had been received with some favour; and that the English Government had made repeated representations, through their representative in Peru, in order to obtain for English agriculturists an ampler supply at a cheaper rate. It appears from Mr. Caird's statement that the price in America is 2*l.* per ton less than here.

—— On Thursday the 24th, Mr. Caird called the attention of the House to the question of Agricultural Statistics. He proposed that the census of 1861 should be made the opportunity of collecting the average of the cultivated crops. He declared that a knowledge of acreage, without that of crop per acre, was more important to an estimate of the national produce than a knowledge of the latter without that of the former—the extent of our crops, as shown in Scottish and Irish returns, varying more than their productiveness from year to year. The resolution moved by him accordingly was "that it would be for the public interest that the Government should ascertain and publish the agricultural statistics of Great Britain, in so far as they relate to the extent of acres under the several crops." He urged that such returns were especially useful now when we were perhaps on the eve of an European war. The resolution was lost on a division in a House of 315 members by a majority of 11.

In the current number of the Journal of the Agricultural Society Dr. Voelcker has published his researches into the composition and nutritive value of the Cotton-seed cake. A letter in another column proves, as other communications already published have proved before it, that information on this subject is much needed. Losses by death from the use of improperly prepared cake have been frequent, and a notable instance of the kind is related elsewhere by Mr. Seaman. When properly prepared from seed which has been deprived of its husk, there is not a more nutritive cake to be had than this new cattle food. Containing 15 per cent. of oil and 40 per cent. of albuminous compounds, it will bear comparison with the best Linseed cake.

But, made as it sometimes is of whole seed, it contains an immense proportion of indigestible woody husks, together with a good deal of equally indigestible cotton fibre, and has in this form proved the death of cattle and sheep to which it has been given in abundance.

The thick "ordinary Cotton-cake made from whole seed" contains about 6 per cent. of oil and 23 per cent. of albuminous compounds, with as much or more of this indigestible woody fibre. A comparison of the two is given by Dr. Voelcker in the following terms:

"1. The proportion of oil in the common cake is very much smaller than in the decorticated cake. The amount of oil is in reality inconsiderable, since most other oilcakes, such as Linseed, Rape, Poppy, and others, contain more fatty matter.

"2. In decorticated Cotton-cake there is a much higher per centage of albuminous compounds.

"3. On the other hand, the proportion of indigestible fibre in ordinary Cotton-cake is far more considerable than in decorticated cake.

"Common Cotton-cake is sold at a lower price than the decorticated cake, but considering the inferior character of the former its lower price offers little inducement to intending purchasers. A ton of the best decorticated cake, I am inclined to think, is worth quite as much as 2 tons of the inferior cake made of the whole seed. I consider the latter dear at the price at which it is sold."

The fact is that some who have used it, and our correspondents among others, have found them dear at any price. It is the thin cake prepared from the seed deprived of its husk, that is the valuable cattle food which many have found it.

THE UTILISATION OF WASTE.

(*Concluded from page* 153).

Vegetable Substances.—Mr. F. B. Houghton has recently patented a process for making paper from any description of woody fibre, which is especially applicable to the manufacture of paper from Flax-straw, or Flax refuse. Flax-straw (shoves) can be procured at 50*s.* a ton, about 2½ tons making 1 ton of paper. Waste Flax (the refuse of the scutching mills, from which no profitable results are obtained) can be procured at a mere nominal price, as it is burnt or thrown away. Now, as our imports of rough or undressed Flax amount to 81,000 tons a-year, and our home growth of Flax is extensive, there being 100,000 acres under culture in Ireland, there is plenty of raw material available. Wheat straw, we know, affords a good pulp for paper, straw-paper, both for writing and printing, being now extensively used in France, in England, and the United States; but the Rice straw, which is plentiful in certain districts, would, I think, give a better pulp, as it is a tougher substance. The Twitch or Couch Grass, which has hitherto been such a troublesome weed to the farmer in clearing his land, is now turned to several useful purposes. In Italy it is used as food for horses and cattle. Colonel Maceroni in his memoirs states that upwards of 40,000*l.* sterling worth of this root is annually sold by the peasants to the inhabitants of the city of Naples. In France it has a medicinal repute under the name of Dogs' Tooth. It has been tried as a material for paper, and is collected in large quantities in the fen districts, and sold to he paper-makers at about 12*s.* a ton instead of being dried and burnt as heretofore. The dry residue of the Beet root, after expressing the juice for sugar, consists chiefly of fibre and mucilage, and amounts to about one-fourth of the weight of the clean roots used. It is greedily purchased by the farmers on the continent, with the skimmings of the boilers, which are found to be a powerful manure. It is also useful as food for cattle. Mixed with other substances it makes very good paper. In France pasteboard is also made from the pulp. This fabrication is carried on to some extent in the commune of Fontaine (Haute Marne), and can be employed, it is said, with advantage in ornaments, tea trays, and other such articles. As the Beet-root sugar now made on the continent amounts to about 200,000 tons, the quantity of residue must be considerable. The residue, too, of the molasses after distillation for alcohol can be converted into excellent potash, the proportion obtained being about one-sixth of the quantity of sugar extracted from the Beet. The pit refuse, or the desiccated ligneous matters of the bark and valonia used in tanning, has been converted into charcoal with some success. Tan or spent bark has also its use in hothouses or bark stoves for forcing plants, and the spent dyewoods are converted into charcoal. The cake or marc of the Olive remaining after the oil is expressed, is used in Sardinia, Italy, and other districts for manure and for cattle food. The poonac or refuse pulp, after pressing Cocoa-nut oil, is also a valuable fertiliser. About 1,200,000 lbs. of Walnut kernels are annually consigned to the oil-press in Cashmere, yielding about half their weight in oil, and the other half in cake, which is much valued as food for cows in winter, when it is usually exchanged for its weight of rough Rice. The various oil-cakes which are prepared here, or imported from abroad, are a utilisation of waste substances of a very important character. They enter into commerce for feeding cattle and for manure. Of these Rape, Linseed, and Cotton-seed cake are the principal, but all the marc or cake from the oil mills, whatever seed is crushed, is useful to some extent. Our imports of oil-cake have largely increased, reaching now 100,000 tons a year! It appears that there is an article manufactured in the neighbourhood of Liverpool, called shude, of the value of 3*l.* per ton, and supplied to many oil crushers to mix with Linseed-cake, to the extent of 30 per cent. and upwards. It is made from the husks of Rice and the refuse of Rice mills. It is perfectly tasteless, and yields no nourishment. Its colour and price make it a favourite article, and in great demand with dishonest crushers to mix with cake. One grinder of shude has sold to oil crushers during the last nine months nearly 2000 tons. The bran or exterior husk of Wheat in the process of grinding and bolting for flour, besides its nutritious properties for feeding, has commercial uses in tanning, in calico printing, for stuffing dolls, filling cushions, &c. Horse Chesnuts, which have hitherto been a waste substance, are now utilised, and by removing the bitter principle, excellent starch, as well as vermicelli and macaroni, are made from them in France. The following is a plan of making flour from Horse Chesnuts. Grind the Horse Chesnuts and mix with the pulp carbonate of soda in the proportion of one or two per cent., and then wash the produce until it is perfectly white; 1 lb. of carbonate of soda will purify 100 lbs. of Horse Chesnuts, and produce 60 lbs. of flour fit for bread, as the salt removes the bitter principle from the nut. In Saxony great care is taken to collect the Horse Chesnuts, which are regarded as a wholesome aliment for sheep, and a specific against the rot, being given to the sheep in autumn, when the green food ceases. The Chesnuts are cut into pieces, and this it is dangerous to omit, as they might otherwise stick in the throat of the animal, and cause its death. Sheep as well as cattle refuse at first to eat this food, but when accustomed to it they seek it with avidity, and even like to eat the prickly husk in which the nut is enveloped."*

Mineral Substances.—Professer Crace Calvert, in a valuable paper (Journal, vol. iii., p. 17), went into the various new or residue products of coal, exclusive of coal gas, such as first the coke, next the liquid portion, which is bought by chemical manufacturers, who obtain from it sulphate of ammonia for agricultural purposes, and sal ammonia for soldering, and which is also used in calico and print works for producing the style of prints called "steam goods." Many hundreds of thousands of gallons of ammoniacal liquor are used in the preparation of ammoniacal alum. To obtain this and other refuse products of coal, aluminus shale comes largely into use, and shale oil is applied as manure. Coal tar (of which about 300,000 tons are made yearly) furnishes a chief ingredient of printers' ink, in the shape of lamp black; it is also made into asphalt for pavements, and mixed with red-hot clay forms a charcoal that acts as a powerful disinfectant; with coal-dust it forms, by pressure, an excellent and compact artificial fuel. Soot, again, is largely collected, and sold by the chimney-sweepers at 6*d.* a bushel for transmission into the country as manure.

Discussion.—Mr. Warriner said the article Seaweed, which had been alluded to, was very abundant upon our coasts, particularly on those of the west of Scotland and Ireland. After a storm from the north-west it was incredible the quantity of Seaweed that was thrown up, and which probably remained until it was carried away by another storm.

Some kinds of Seaweed formed a valuable food for cattle. The article of buttermilk had not been alluded to. In many

* Lasteyrie on Spanish Sheep.

parts of Ireland, owing to the want of proper treatment of that article, a large proportion of the buttery matter was given to the pigs. It should, however, be known, that a very small quantity of bi-carbonate of magnesia put into the milk when warm, or a little of the same substance thrown into the pail before milking, would enable 5 per cent. more of the buttery particles to be obtained. Another article alluded to was bones, in reference to which great extravagance generally prevailed in the domestic circle. Very few families thought it worth while to boil the bones which remained from the joints of meat; they were the perquisite of the cook, and as such found their way to the bone-dealer; but by boiling them a large amount of nutritious food could be obtained, and the bones themselves would still be serviceable as an article of commerce.—Dr. Lankester, F.R.S., said they ought to be careful how they encouraged the notion that Seaweed itself was valuable as a substantive article of diet. It contained the starchy matters in considerable quantity—the heat-giving substances; but it was a mistake to suppose that these gelatinous substances were really nutritious. They could be used as additions to other descriptions of diet; and in that way alone such substances ought to be employed. There was as much error prevalent with regard to the gelatine of bones as to that of Seaweed, for there was no proof that gelatine became part and parcel of the human body. Milk was the great type of all food, and contained all the elements essential to life, but no gelatine was found in it, and the same might be said of the blood. Gelatine might, however, be utalised with valuable results in manufactures; but not, he thought, to any great extent as affording an article of diet. With regard to sewage, it was not until they could separate the fertilising properties at a cost which would enable the farmer to use them profitably, that the utilisation of that substance would be carried out to any great extent. He believed it would never be accomplished under the present aquatic system of sewage that was now adopted in London and the other large towns. —Mr. F. B. Houghton described a process for converting Flax refuse into half-stuff for paper-makers. The Flax refuse is boiled in an alkaline solution at 380° Fahrenheit, and, after being subject to the process for about three hours, is converted into excellent half-stuff, free from all trace of silica. The refuse employed is not merely that of the mills, but includes that. which, having been threshed for the seed, is valueless for the manufacture of linen, and is generally thrown away It appears from Mr. Houghton's statement, that Flax straw and Flax refuse may be purchased for a few shillings per ton, and be reduced into pulp, equal in quality to that produced from the best linen rags, which cannot be purchased under 28*l.* to 30*l.* per ton. The largest boiler he has at present in use is one capable of containing about 3 cwt. of raw material, from which 1¼ cwt. of half-stuff may be produced. The whole operation occupies about four hours. Difficulty was at first experienced in getting rid of the small particles of unreduced matter so constantly seen in ordinary straw paper, but this is an obstacle that Mr. Houghton states that he has entirely overcome.

DEATHS OF CATTLE FROM FEEDING ON IMPURE COTTON AND LINSEED CAKE.

IN this neighbourhood during the last three months there has been a great mortality amongst calves and sheep rom feeding them on impure Cotton and Linseed cake. One gentleman lost six out of 40 fatting shearlings, and the rest of the flock became so much affected that he deemed it prudent to dispose of them at a price much below their value, rather than run the risk of further mortality. When inspecting this flock in November last I found the sheep generally looking very unhealthy; those in which the disorder was most manifest congregated at the corners of the fold with their heads down and backs arched, frequently changing the position of their hind legs, which in some instances were drawn up towards the body, thus plainly indicating abdominal pain. The breathing was much hurried; any movement appeared to increase their sufferings; they staggered in walking, and after going a few yards fell down apparently exhausted. The urine was of a dark colour, approaching to black, and the fæces covered with blood and mucus. I examined the bodies of several of the dead sheep; the stomach and intestines were intensely inflamed, and presented appearances which could only have been produced by some highly irritating agent. The same gentleman shortly afterwards lost three calves which exhibited similar symptoms and presented the like appearances after death. These animals had been fed on Cotton cake. Twenty-two calves belonging to other parties have died apparently from similar causes, but these had been fed on Linseed cake.

I procured portions of each description of cake, and on examining them under a powerful microscope I found the Cotton cake contained a large per centage of fragments of Cotton wool and Cotton husk, quite sufficient to account for the deaths of the animals fed upon it. The Linseed cake also contained a quantity of impure material, consisting partly of seeds which I was unable to identify, but not sufficient in quantity to account for the effects following the use of it, unless the impure matter was of a poisonous character.

The very extensive use to which Cotton and Linseed cakes are applied as articles of food for cattle seemed to me to call for a more complete and scientific investigation than I was myself able to make; I therefore forwarded samples of all the cakes to Dr. Voelcker, the chemist of the Royal Agricultural Society, who, with his usual kindness, forwarded me a very complete and able report of the result of his investigations, which fully confirms my opinion that the deaths of the cattle resulted from the use of them.

I subjoin a copy of the report, and of the Professor's analysis of the Cotton cake, and I trust you will consider the matter of sufficient importance to insert this letter with the report and analysis in your next publication. *Isaac Seaman, North Essex Veterinary Infirmary, Priory House, Saffron Walden.*

COPY OF PROF. VOELCKER'S REPORT, Jan. 18, 1859.—Sir,—I have the pleasure of enclosing a copy of a careful and full analysis of cake No. 1 (Cotton cake), and beg to inform you that I have also examined the two other cakes which you sent to me. As the quantitative determination of the amount of oil and other constituents did not appear to me likely to throw much light on the subject, I have confined my attention to the detection of deleterious ingredients in these two cakes, and may observe at once that I have not been able to detect in either of them any organic or mineral poison, although I have carefully searched for most irritating poisonous substances. However both cakes nevertheless may be prejudicial when eaten in quantity by young stock, for the examination to which I submitted them leads me to the opinion that both are very inferior, old, badly kept, oil-cakes. Both are very hard pressed, and appear to contain more husk than good cake ought to contain. Moreover, the seed from which the cakes are made was evidently quite impure, for notwithstanding the powdery state of both cakes, especially No. 3, I can find in them a good many foreign seeds. The botanical character of these weed seeds I could not make out; all I can say is there is no Mustard in appreciable quantity in either of the cakes, but amongst the weed seeds there may be other poisonous seeds. We have no means to identify most vegetable poisons. Be this as it may, I am inclined to think that the physical condition of cakes No. 2 and 3 is so bad that young animals that partake of them freely will be the sufferers. Both are evidently foreign cakes. Will you kindly inform me under what name and at what price these cakes were sold?

You will perceive that I am of opinion that the cakes No. 2 and 3 may have done the mischief attributed to them, but that in the absence of any positive proof a reasonable doubt may be entertained whether or not this was really the case. I can speak much more decidedly respecting cake No. 1, for I have not the least doubt but that this cake has been the cause of the death of the sheep.

A similar case has been brought under my notice within the last fortnight; a Cotton cake very similar to the one you sent to me has led to the death of a bullock. The *post mortem* examination plainly showed that the enormous quantity of hard and irritating husks in this cake caused an obstruction in the bowels, which brought on inflammation and led to the death of the animal. The case is reported in the *Gardeners' Chronicle* of the 8th inst.

In addition to the full analysis, which proves the inferior character of your Cotton cake, I have made an approximate mechanical analysis, which demonstrates perhaps still more forcibly the cause of the death of the sheep. Experience has shown that the hard husks of Cotton cake are very indigestible, and accumulate in the stomach to hard stone-like masses, which produce virulent inflammation. Cotton wool I think is quite as bad, if not worse than Cotton husk. Now, in your cake there is no less than 67 per cent. of husk and 4 per cent. of cotton wool, and only 29 per cent. of meal. So large a proportion of useless and rather injurious material mixed with only 29 per cent. of nutritious matter must be highly injurious as a feeding material. In the best shelled or decorticated Cotton cake, which alone should be used for feeding purposes, and which is a highly nutritious substance, there is no appreciable quantity of cotton wool, and only about 10 per cent. of husk. Cake like No. 1 is totally unfit for feeding purposes, and I congratulate myself upon having reported several specimens of Cotton cake, similar to the one you sent to me, as too trashy to be given to an animal.—Believe me, Sir, yours faithfully,

J. Seaman, Esq. AUGUSTUS VOELCKER.

Copy.—Composition of sample of Cotton cake marked No. 1, sent by Mr. Seaman, Saffron Walden.

1. CHEMICAL ANALYSIS.

Moisture	15.16
*Oil	6.81
Albuminous compounds	18.37
Gum, mucilage, &c.	23.32
Indigestible woody fibre (pure cellulose)	29.93
Mineral matters ( )	6.41
	100.00
containing nitrogen	2.94

2. MECHANICAL ANALYSIS.

Husk, with a little cotton wool	66.99
Meal	28.98
Cotton wool	4.03
	100.00

Royal Agricultural College, Cirencester, Jan. 18, 1859. AUGUSTUS VOELCKER.

SHEEP MANAGEMENT.

THE following are Mr. Bond's replies to the points raised by our correspondents Mr. Mechi and Mr. Beale Browne.

1. *Cost of Keeping a Hampshire Down Ewe.*—I have read with interest Mr. Mechi's sensible letter on the cost of keeping a Hampshire Down ewe for 12 months, including the keep of her lamb till sold as a stock lamb in June or July. I at once reply. The cheapness of the system which I have pursued, in the feeding and management of ewes, and the suitability of the system to clay-land districts producing much straw and a small proportion of roots, were my principal reasons for introducing the subject to the notice of the members of the Central Farmers' Club. I base my entire success, and consequent profit, upon cheapness of management and the large consumption of inferior food. Upon the stiff retentive soils of the corn-growing districts of the eastern counties of England, straw is viewed as a nuisance rather than as an advantage. Its superabundance creates a difficulty to convert it into manure by a profitable process, and my experience and success in consuming straw largely with ewes, has surpassed my most sanguine expectations. A few years since I had no conception ewes would eat straw so freely, thrive so well, or live at so cheap a cost during many months of the year. Independent of the straw consumed, there is other inferior produce eaten; such as the old coarse Grass in autumn, which has been left upon the pastures fed by cattle; also the Mangel Wurzel tops and Swede tops, after the cartage of the roots, which are usually ploughed in for manure, also the chips from the roots cleaned for cattle and horses, and the stubble fed upon the farm generally. Ewes, with myself, are really scavengers; they are never fat or approaching to it, but they are invariably in good medium condition for stock ewes. The following is a detailed account of the food consumed in 12 months. In September, October, and November, the ewes have the general run of 400 acres of corn stubble land, which affords but little food, as the land is clean and free from weeds. The Wheat stubbles are early broken for autumnal cultivation, and the Bean and Barley stubbles are first "shacked" with pigs for the corn remaining in the fields. The ewes also have the feed of 100 acres of root tops after the cartage of the roots, and the pick of 20 acres of old Grass in rough spots left by cattle upon pasture. It is impossible to estimate such food otherwise than slightly above its marketable value as sold to feed upon the land; the usual charge is 2*s.* 6*d.* per score per week, which I have charged for at 3*s.* per score per week. Thus—

	£	*s.*	*d.*	£	*s.*	*d.*
SEPTEMBER, OCTOBER, AND NOVEMBER.						
13 weeks, at 3*s.* per score per week ..				48	15	0
DECEMBER, JANUARY, AND FEBRUARY.						
200 tons of Mangel Wurzel, at 7*s.* 6*d.* per ton	75	0	0			
The expense of giving 25 tons of straw, and preparing one moiety as chaff, to the ewes, and the diminution in the value of the straw thus consumed (not trodden into manure), from the assimilation of a portion of the straw by the ewe to its own superstructure, at 5*s.* per ton ..	6	5	0			
				81	5	0
MARCH, APRIL, AND MAY.						
Rape-cake, 5 tons, at 6*l.* per ton	30	0	0			
Oilcake or Beanmeal	20	0	0			
Expenses on and diminution in value of 21 tons of straw, at 5*s.* per ton, as above	5	5	0			
3 acres of cow-Cabbage, at 12*l.* per acre ..	36	0	0			
300 tons of Mangel Wurzel, at 7*s.* 6*d.* per ton	112	10	0			
50 acres of Aftermath Grass, at 16*s.* per acre	40	0	0			
				243	15	0
JUNE, JULY, AND AUGUST.						
Expenses on and diminution in value of 10 tons of straw, at 5*s.* per ton, as above ..	2	10	0			
100 tons of Mangel Wurzel, at 7*s.* 6*d.* per ton	37	10	0			
Oilcake, Rape-cake, and Beanmeal.. ..	30	0	0			
92½ acres of Grass, at 1*l.* per acre	92	10	0			
(Rental value 1*l.* 10*s.* per acre per annum.)				162	10	0
Total per annum				£536	5	0

In this last quarter it must be remembered the lambs are weaned in June or July, and the ewes from that time are placed upon inferior keep. The lambs are also sold in July or the first week in August; consequently the ewes are but half the time upon a superior scale of feeding, whilst the lambs are but two-thirds of the time upon the occupation. I will anticipate the objections which may be raised, that the straw consumed should be charged at its marketable value; but to this course I object, as the straw is simply rescued from a comparatively yard littering waste, and converted to a more useful purpose as food; and whilst I allow for the animal's extraction and assimilation of a certain portion of the straw to its own superstructure, I place the straw to the same position to the farm, as if trodden into manure. The straw is but slightly reduced in value for manuring purposes, from passing through the animal for which I have duly allowed. Mr. Mechi objects to my proposition relative to two years' Clover. My remarks were — "I believe the system of lamb breeding and rearing may be advantageously carried out where not even one-tenth of the farm is in pasture. Where no pasture exists, and, if necessary, instead of pursuing the four-course system, why not allow the land with Clover to remain two years instead of one, thereby making a five-course system of it, in preference to four-course shift? and with good folding, which the Clover land would receive after the first year's mowing, and then the second year's feed, it would be in excellent heart or preparation for the following crops, and furnish an abundance of feed and space for the ewes." I have not found it necessary to adopt the five-course shift or the two years in Clover; but when I observe in clay-land districts, low in stamina, such poor preparation for the Wheat crop by twice mowing the Clover and no folding, I think I am justified in recommending a change, especially as that change (where short of pasture) embraces and grants the power to keep breeding ewes and a larger proportion of stock generally, and insures by better preparation increased corn crops per acre, whereby I believe as much corn would be grown on the five-course shift as is now grown upon the four-course shift, with the additional advantage of more green food and an increased return for stock. I can plainly perceive that Mr. Mechi adopts the wiser course in his individual case of adhering to one year Clover; and if the clays of the kingdom were in the high condition of "the Tiptree Hall Farm," my recommendation of two years Clover would be pure nonsense; but with clay farms, in many cases low in stamina, and the occupiers disinclined to increase their fertility by pecuniary outlay, I believe my suggestions worthy of consideration, to increase the number of acres in green crops; to reduce the number of acres in corn; and, whilst necessarily increasing the returns in stock produce, not necessarily reducing the returns in corn produce, as improved preparation in sheep feeding and folding insures increased crops of corn per acre.

2. *Sheep Management.*—Sheep are, undoubtedly,

more liable to contract the foot-rot disease in yards than in open fields; but, by common care, I have never been a sufferer beyond the amount of 5*l.* per annum. It must be understood, the ewes, though yarded at night during the winter months, have, notwithstanding, a free ramble each day upon an adjoining pasture, where they receive their daily allowance of roots. Excepting the greater liability of ewes to the foot-rot disease in yards, from which I have not been a sufferer, it has been my experience that increased comfort to the ewe in a dry bed, warmth, and shelter is more conducive to health and well-doing than exposure during the wet and cold season of the year. Mr. Browne objects to the expense of carting the roots from the field to the homestead, and the manure from the homestead to the fields. No objection could be more reasonable. I would gladly avoid the expense thus incurred; but I am the creature of circumstances, and as a farmer of stiff retentive clay land (not sand or mixed soil), I believe the advantages of the system of double cartage greatly counterbalance the disadvantages. The advantages of the winter-yarding system upon clay farms are as follows:—No exposure of the flock to the extremes of wet and cold. Increased comfort and warmth, and consequently a reduced amount of food is necessary to maintain the animal in health. An increased consumption of inferior food (straw and chaff) and a lessened consumption of the more expensive food (roots), with fewer deaths of ewes and lambs at lambing. Enabled thereby to grow all Mangel Wurzel at 35 tons per acre, instead of Swedes and common Turnips at 25 tons or less per acre. No injurious treading the clay land in the wet weather of winter from stock feeding thereon. Land ploughed early in autumn, when dry, after the removal of the root crop; consequently no injurious treading by horses, and the ploughing less labour by one-third than when the land is ploughed wet, as in the winter season. From ploughing early, the land receives the advantages of the winter's frost. The land well-frosted ensures an excellent and very superior seed-bed for the Barley or other grain, and, consequently, greatly reduced labour is the result in harrowing and rolling for a tilth in the spring. The land ploughed early, and well-frosted, allows of early seeding, which insures a very superior quality of Barley, and usually an increased crop. With such advantages as the foregoing, I am convinced the cost of the cartage of the roots to the homestead upon clay soils is a good investment, and a saving instead of a waste of labour. It must be remembered, in the Eastern counties, upon the clay lands, we grow a large amount of straw, and it is necessary to consume or to manufacture the straw into manure upon the most paying process. I know of no system so profitable for such a purpose as growing heavy crops of Mangel Wurzel, breeding and rearing lambs, and adopting the yard-system throughout the inclement and wet season of the year. I, of course, understand that Mr. Browne advocates the feeding the roots with the ewes upon the land where grown; and if farming land upon which I could advantageously do so, I should certainly adopt that course; but treading the clay lands in the wet weather of winter is most injurious to the soil, and I have observed, after such treading, the crops upon the land trodden have been very inferior for two or three succeeding years. In very unfavourable springs I have even seen a total failure of the Barley crop after such feeding. Relative to the attendance: As the food given to the ewes was calculated at the prime cost, including delivery or preparation of the food, Mr. Browne will at once see that 40*l.* per annum for the supervision of 500 ewes is an adequate amount. I shall be happy to answer any further questions Mr. Browne may desire to ask me, and I shall be pleased to receive any suggestion from Mr. Browne or any gentleman which will lead to better management or increased returns. *Robt. Bond, Kentwell, Long Melford, Feb.* 17.

Home Correspondence.

Farm Labourers.—In a tour through the south-western counties a few years ago, I found matters as respects farm labourers to correspond exactly with what a "Wiltshire Clergyman" and a "Wiltshire Labourer" stated, and not one single case as represented by a "Wiltshire Farmer." I was also very much astonished to find that wages were, in many cases, regulated by the number of children the labourer possessed, and not by his expertness. This is just the way to bring about early and improvident marriages and a bad class of labourers, for there is no encouragement given for attaining a proficiency in the performance of their work. Insufficient food from childhood makes puny and weak adults, both in their mental and physical powers. I do not recollect seeing one powerful well-built labourer, such as can be seen upon every farm in these northern counties. The low wages they receive is as much as their labour is worth, so far as the daily and weekly labour, as our best Lancashire labourers will perform nearly double the quantity of work, and he receives nearly double their wages. An ill-fed man, like an ill-fed horse, cannot do much work. This bad system of low wages and poor keep has now continued so long that it will take two generations to remedy the evil, as a more liberal keep must commence with the child. But first the farmers must be made to see that low wages are an evil. There are no doubt many who do see this; but till the great body of farmers see it, individuals can do little good; indeed, from what I was told, such would be scouted from society and the market dinner. The Jewish law says, "Muzzle not the ox that treadeth out the corn;" but the advocates for low wages of the farm labourers muzzle them in the raising of corn, beef, and mutton, and call themselves Christians. There is nothing so disgraceful to a county as seeing the labourers half fed surrounded with the finest beef, mutton, and bread corn of their raising; for it is impossible for capital to raise these without their help. *W. Rothwell, Rainhill, Prescott.*

Parkes's Steel Digging Forks.—These implements are not in the general use their excellence deserves. It is true that their value is known to our principal agriculturists, but the misfortune is that they are not sufficiently in the hands of allotment tenants and other occupiers of small holdings. Such persons seldom read advertisements, and when they see the articles in the shops of the neighbouring towns they are suspicious of their strength from their lightness, and are terrified at the cost. I have nearly 100 allotment tenants, and I have induced many to be purchasers, and before the end of the year I expect every occupier of half an acre will be provided with one. My method has been to purchase a quantity and lend them to my tenants. They soon found by experience that the slender prongs were tougher than the massive iron ones they had been accustomed to, and although they had to contend with a stubborn stone brash soil, which made the prongs sometimes bend, yet they never broke. Having afterwards deprived them of the use of the steel fork they had to resume the old-fashioned iron tool, once valued but now despised They soon called upon me and begged to purchase the very fork they had used and proved. In all cases I sold the articles, allowing them to pay by instalments, which they did with great punctuality. Being established in this parish I have no doubt of their soon becoming common in the neighbourhood. A labourer's day's work with one of these tools is worth at least 6*d.* more than with the iron forks. Also on account of proximity of the prongs few Potatoes are left in the ground at the time of digging up. I should say that a bushel per chain more are raised which would otherwise have been left and destroyed by the frost of winter. *Southern.*

Societies.

ROYAL AGRICULTURAL OF ENGLAND.

Weekly Council, *Feb.* 23.—Sir Edward Kerrison, Bart., M.P., in the chair.

Mr. Noah West addressed a letter to the Council for improvements stated to have been made by him in the Reaping Machine, and requesting the Society to aid him in carrying them into operation.—Mr. Kitto transmitted a sample of white Wheat brought by him from California, which was referred, with his letter on the same subject, to the Monthly Council on March 2.

Adjourned to March 2.

Farmers' Clubs.

Lockerby: *Weights of Turnips,* as reported in the *North British Agriculturist.*—[The following are the weights of Turnips raised on farms possessed by members of the Lockerby Farmers' Club, in the middle and upper districts of Annandale, and inspected between November 8th and 20th, 1858.]

Names of Farms.	Kinds of Turnips.	No. of acres Scot.	Crop per imperial acre.	Manures per Scotch Acre.				Date of sowing.
				Farm-yard dung.	Peruvian guano	Dissolved bones.	Other Manures.	
			tns. cwt	yards.	cwt.	cwt.		
Hardgrave	Skirving's Purple-top Swede	6½	18 18	25	3	2½	..	May 12
	do. do.	2¼	20 12	..	3	2½	25 bushels bones	May 12
	Curwin's Swede	12¾	18 18	25	2½	..	3¾ cwt. Ich. guano	May 20 to 25
	Grey Sandstone Globe	8	16 13	19	1½	..	do. do.	June 26
	White Globe	21	14 14	19	1¼	..	do. do.	July 14
	Yellow Bullock	5½	15 5	19	1¼	..	do. do.	July 14
Whitecroft	Skirving's Purple-top Swede	7½	19 5	15	1½	2	3 cwt. ground bones	May 22
Dormont	Pomeranian White (resown)	6	15 5	10	1	..	10 bushels bones	June 24
	do. do.	3	17 13	10	1	..	do. do.	June 26
	Dale's Hybrid	10	18 17	..	2	..	do. & ½ cwt. b.dust	June 21 to 23
	Pomeranian White	6	17 4	..	2	..	do. do.	June 19 and 20
Greenhillhead ..	Skirving's Purple-top Swede	8	21 0	30	1½	..	1½ cwt. blood manure	May 20 to 28
Highlaw	Skirving's Purple-top Swede	16	15 11	15	0½	1½	..	May 20
	Pomeranian White	12	14 3	..	0½	2	..	June 1 to 4
	Dale's Hybrid	3	12 11	12	0½	1	..	June 15
Mellantae	Green-top Swede	3	14 2	..	2½	2½	..	May 29
	Skirving's Purple-top Swede	3	15 16	15	1½	1½	..	June 2
	Orkney Yellow	3	13 1	..	2	3	..	June 8
	Green-top White	2	13 6	15	1½	1½	..	June 30
	Pomeranian White	2	18 12	..	2	3	..	June 8
	Curwin's Swede	3	21 13	18	2	..	..	May 1
Dixon's	Skirving's Purple-top Swede	4	16 2	15	2	..	..	May 24 to 30
	Hardy Green	3	22 4	15	2	..	..	do.
	Red Mangel	0½	16 3	18	2½	..	..	May 14
Hillside	Swedes	2½	23 9	28	1	4	..	May 12 and 13
	Yellow (resown)	4	16 10	20	1	3	..	June 16 and 21
	Red-top Yellow	0½	18 13	23	1	2	..	June 8
	Green-top White (resown)	0½	21 15	20	1	3	..	June 21
	Pomeranian White	0½	23 9	23	1	2	..	June 8
	Common	2	16 4	25	1	2	..	June 3 to 5
	Skirving's Purple-top Swede	..	13 3	..	..	9	..	May 13
	do. do.	..	14 1	..	2½	5	..	do.
	do. do.	..	17 1	..	4	..	1½ cwt. vitriol	do.
	do. do.	..	14 1	..	5½	..	..	do.
Kirkburn	Skirving's Purple-top Swede	3	9 5	25	2	..	..	May 18
	Yellow Bullock	3	11 9	25	2	..	..	May 25
	White Globe (resown)	2	16 9	25	2	..	..	June 10
The Manse	Skirving's Purple-top Swede	1½	12 13	16	..	3	3 cwt. blood manure	June 3
	Yellow Bullock	1½	12 4	16	..	3	do. do.	June 15
	White Globe	0½	16 13	16	..	3	do. do.	June 3
	Red Mangel	0½	23 9	20	..	3	do. do.	May 1
Rosebank	Skirving's Purple-top Swede	0½	18 13	12	2	..	8 bush. ground bones	May 28
	Aberdeen Yellow	0½	18 1	12	2	..	do. do.	May 28
	Skirving's Purple-top Yellow	0½	15 5	12	2	..	do. do.	June 9
	do. do.	5	20 12	12	2	..	do. do.	June 7
	Pomeranian White	2	25 14	12	2	..	do. do.	June 16
Kirkton	Skirving's Purple-top Swede	7	17 16	20	2	3	..	May 29 to 31
	do. ,, Yellow	4	18 17	15	1½	2	..	June 5 to 10
	Waite's Eclipse	3	20 16	15	1½	2	..	do.
	Pomeranian White	1	20 16	..	2	3	..	do.
Muirhead	Yellow Bullock	4	17 4	20	..	..	..	May 30
	do. do.	3½	8 18	..	2	..	..	June 15
	do. do.	4	17 0	20	..	..	..	June 10
Gillenbie	Swedes	0¾	10 1	30	2½	..	..	June 3
	Yellow Bullock	8	16 2	25	2½	..	..	June 4 to 14
	Pomeranian White	1½	16 13	25	2½	..	..	June 20
Dalmakedder ..	Green-top Swedes	17	18 11	18	2½	..	..	May 10 to 15
Dinwoodie Mains ..	Skirving's Purple-top Yellow	4	15 5	10	2	..	..	June 12
	Yellow Bullock	16	13 5	12	2	..	..	June 2 to 9
	Pomeranian White	3	11 7	10	2	..	..	June 18
	Hardy Green	2	16 13	10	2	..	..	June 12
Brieryhill	Skirving's Purple-top Swede	3	15 5	15	2	..	..	May 26
	Yellow Bullock	9	18 1	15	2	..	..	May 31
	Dale's Hybrid	3	20 10	15	2	..	..	do.
Fourmerkland ..	Crocksford Hybrid Swede	3	12 11	15	..	..	5 cwt. ground bones	June 1 to 8
	Skirving's Purple-top Swede	7	14 14	16	..	..	do. do.	May 15
	Fordel's Hybrid	4	12 5	15	..	..	do. do.	June 1 to 8
Fishbeck	Laing's Swede	1	13 12	24	1½	..	..	June 1 to 5
	Skirving's Purple-top Swede	9½	16 13	24	1½	..	..	do.
	Yellow Bullock	4	13 17	22	1	..	..	June 13 and 14
Millbank	Green-top White	1	8 12	20	2	..	..	June 24
	Yellow Bullock (resown)	6	7 15	20	2	..	..	July 10
	do. do.	4½	14 14	20	2	..	..	June 24
	Skirving's Purple-top Yellow	4	10 11	..	2	..	20bush. ground bones	June 9 to 11
	Yellow Bullock	5	13 12	..	2	..	do. do.	June 9 to 11
	do. do.	..	12 10	15	2	..	..	June 22 and 23
Lammonbie	Green-top Swede	4	9 6	25	2	..	..	Mar. 25 to June 1
	Skirving's Purple-top Swede	10	11 10	25	2	..	..	do. do.
	Yellow Bullock	7	15 16	..	1½	3	..	June 8 to 10
	White Globe	7	11 13	..	1½	3	..	June 10 to 15
Blindhillbush ..	Skirving's Purple-top Swede	5	17 11	15	3	3	..	May 27 and 28
	Pomeranian White (resown)	1	23 0	15	3	3	..	June 22
	do.	0½	27 13	15	3	3	..	May 25
Shaw	Skirving's Purple-top Swede	4	16 8	15	3	3	..	May 31
	Yellow Bullock	1	20 9	15	2	2	..	June 15
	Scorisbrick Yellow	1	23 18	15	2	2	..	June 15
	Skirving's Purple-top Yellow	2	21 12	15	2	2	..	June 16

Names of Farms.	Kinds of Turnips.	No. of acres Scot.	Crop per imperial acre.	Manures per Scotch Acre. Farm-yard dung.	Peruvian guano	Dissolved bones	Other Manures.	Date of sowing.
Shaw (continued) ..	Yellow Bullock (resown)	0½	12 7	..	2½	2½	..	June 23
	do.	7	20 9	15	2	2	..	June 8 and 9
	do.	1	18 8	15	2	2	..	June 1
	Pomeranian White	1	27 13	..	2½	2½	..	June 16
	do.	3	20 14	..	2½	2½	..	June 5
	do.	1	27 7	15	3	3	..	June 3
	do.	1	19 11	15	3	3	..	June 21
	do. (resown)	1	11 7	25	..	2	2 cwt. Ichaboe guano	Mar. 31 to June 2
Kirkhill	Skirving's Purple-top Swede	2	13 17	25	..	2	2 cwt. do.	June 2
	Yellow Bullock	1	9 9	..	..	3	3 cwt. do.	June 3
	do.	1	8 17	20	..	1½	..	June 8
	do.	3½	11 13	20	..	1½	3 cwt. do.	June 12
	Imperial Purple-top Yellow	4	15 0	20	..	..	..	June 29
	Pomeranian White	4½	15 0	20	..	..	1½ cwt. do.	June 24 and 25
	do.	1	11 13	20	..	1½	3 cwt. do.	June 12
	do.	1½	10 5	20	2	2	..	June 2
Killbrook	Skirving's Purple-top Swede	1½	16 2	17	..	2	..	May 31
	Skirving's Purple-top Yellow	2	9 12	17	..	2	..	June 9
	Scorisbrick Yellow	3	13 5	17	..	2	..	June 4
	Orkney Yellow	3	13 16	..	..	4	1 cwt. Ichaboe guano	June 22
	Pomeranian White	5	13 18	27	..	3	..	June 7
Wamphraygate ..	Skirving's Purple-top Swede	12	17 10	25	..	..	..	June 20 to 25
	Yellow Bullock	2½	13 6	25	..	..	..	June 27
	Skirving's Purple-top Yellow	4	18 12	20	..	3	..	July 1 to 6
	Pomeranian White	0½	13 6	16	..	..	4½ r. bones & 1½ cwt.	May 26
The Manse	Skirving's Purple-top Swede	0½	24 8	16	..	..	do. do. [I. guano	do.
	Yellow Bullock	0½	21 18	16	..	..	do. do.	do.
	Skirving's Purple-top Yellow	5	13 6	24	..	2	1½cwt Ichaboe guano	June 2 to 5
Lochwood Mains ..	Green-top Swede	4	13 0	18	..	2	1½ cwt. do.	June 5 to 7
	Orkney Yellow	4	17 5	18	..	2	1½ cwt. do.	June 10
	Skirving's Purple-top Yellow	4	14 2	18	..	2½	..	July 1 and 2
	Scorisbrick Yellow	4	17 10	18	..	2½	..	do.
	Pomeranian White	4	11 10	23	1½	3	..	May 27
Annanbank	Skirving's Purple-top Swede	6	15 10	..	2	2	..	June 27
	Yellow Bullock	6	12 13	18	1½	3	..	June 25
	do. (resown)	2½	11 6	18	1½	3	..	June 20
	Skirving's Purple-top Yellow	1	14 19	18	1½	3	..	June 15
	Pomeranian White	3	17 5	18	1½	3	..	June 4
	do.	1½	20 7	18	1½	2	..	June 28
	do.	2	18 8	15	1½	3	..	July 10 to 12
Marchbank	Sutton's Purple-top Yellow	4	20 11	36	2	1	1ct.g.b.&1½ct.b.man.	June 15
	do. Green-top do.	1	22 4	36	2	1	do. do.	June 16
	Yellow Bullock	1½	15 16	36	2	1	do. do.	June 26
	Dale's Hybrid	1	13 17	36	2	1	do. do.	June 18
	Pomeranian White	3	20 11	36	2	1	do. do.	June 21
	Lincolnshire Red	1	21 2	36	2	1	do. do.	June 22
	Red Tankard	0½	15 11	36	2	1	do. do.	June 25
	White do.	0½	15 0	36	2	1	do. do.	do.
Stiddrig	Sutton's Purple-top Yellow	3	23 7	18	2	1½	1ct g. b. & 2ct. b. man.	June 10 to 14
	Aberdeen Yellow	1	20 16	18	2	1½	do. do.	do.
	Yellow Tankard	1	20 11	18	2	1½	do. do.	do.
	Skirving's Purple-top Yellow	1	24 8	18	2	1½	de. do.	do.
	Sutton's Imperial	2½	20 0	..	2	..	1 cwt. do. & cwt. do.	June 23 to 27
	Pomeranian White	1½	17 4	..	2	1	1 cwt. blood manure	do.
Tindwalk Parks ..	Skirving's Purple-top Swede	30	21 12	25	2	..	15 bush. rough bones	May 10 to 15
	Purple-top Swede	6	18 3	25	2	..	do. do.	June 9
	Yellow Bullock	6	22 9	25	2	..	do. do.	do.
	Pomeranian White	5	26 10	25	2	..	do. do.	June 7
	Dale's Hybrid	2	19 17	25	2	..	do. do.	June 11
	Lincolnshire Red	4	16 8	25	..	..	do. do.	June 15

Average Weight of each of the last Ten Crops per Imperial Acre.

	1849.	1850.	1851.	1852.	1853.
	T. Cwt.	T. Cwt.	T. Cwt.	T. Cwt.	T. Cwt.
Swedes	21 16	24 9	19 16	23 7	21 19
Yellow	20 10	19 14	17 0	17 7	23 4
Common ..	22 7	25 14	21 1	23 14	27 13

	1854.	1855.	1856.	1857.	1858.
	T. Cwt.	T. Cwt.	T. Cwt.	T. Cwt.	T. Cwt.
Swedes	20 18	24 7	19 4	21 6	17 6
Yellow	18 13	20 17	19 7	16 14	15 10
Common ..	22 0	25 12	23 19	20 2	16 16

Mr. John Halliday, who had weighed and reported on the Turnip crop for several previous years, attended the club meeting to-day, and gave in the preceding table. In all cases he weighed the whole Turnips on each farm where not taken up. His inspection began on the 8th and ended on the 20th November. From Mr. Halliday's verbal report to the club meeting, the following observations on the inspection of the present year were made:—

General Description of the Season and its Effect on the Crop.—The weather of the early part of May being very favourable for preparing the land, a few farmers availed themselves of it, by sowing Swedes before the 15th of that month. And the temperature being favourable for vegetation there was a strong and regular braird able to resist the fly, which became very virulent about the 25th, and although damaged and retarded there were no blanks in the early sowings, which, as in the case of Tinwald Parks, and others show a very decided superiority over the later sowings of Swedes. Between the 20th of May and the middle of June the braird was more destroyed by the ravages of the fly than has been recollected in this district. The appearance of the Turnip plant in Lanarkshire and the Lothians was early in July healthy, regular, and forward compared with this district, and indeed the whole of Dumfriesshire and the Galloways which suffered equally. With moist and growing weather after the middle of June a considerable portion, perhaps between a third and fourth of the whole extent (of course the most severely injured), was sown over again. But those resown have never attained their full size, and thus between these and the irregularity of those not resown the crop, as a whole, is the smallest one we have had for the last 10 years, as appears by the table, though it may be added that the average of the district would not perhaps exhibit so considerable a deficiency compared with previous years as this table does.

Time of Sowing.—As noticed above, the table shows that the Swedes sown from the 10th to the 15th of May are by far the best crop. The yellow about the 8th or 10th of June suffered less from fly, are generally better than those earlier or later. The casualties of this year, however, strengthened the opinion formerly expressed that the sowing of Swedes should commence immediately after the 10th of May, to be followed by yellow whenever a fine tilth can be secured; white sorts can be safely delayed till after the middle of June.

Width of Hoeing.—Though the number of Turnips in the 10 yards seems fewer than usual, this appeared to have arisen more from blanks than regular thin hoeing; and Mr. Halliday stated he considered that this year particularly the thicker hoeing of 8 to 10 inches had materially diminished the weight, as from the extraordinary luxuriance of the shaw in September and October, caused by the moist warm weather, the bulb was completely deprived of air and sunshine, and its enlargement prevented; and he specially remarked that it was a great but common error to hoe thicker the later sown Turnips, which ought, on the contrary, from the greater liability to over-luxuriance in September and October, to be allowed more space. The principle of hoeing them not less than 12 inches was most beneficially exhibited by Mr. Elliot's of Hardgrave great crops, and ought not to be departed from. This, and the keeping the width of the drill never under 27 inches, is, as is proved, more indispensable with our mild and moist autumn (at least, with sufficient manuring) than in the drier eastern side of the island.

Disease.—Mr. Halliday remarked that although finger-and-toe to a greater or less extent was pretty general, he thought that the damage by it was not greater than usual. He said that inquiry and observation confirmed his opinion that the application of lime lessened, if not prevented it, but that it should always be laid on the stubble in the preceding autumn. Mr. Gillespie of Annanbank had for several years remarked that where Turnips with the least degree of disease had been consumed or laid out for cattle on the stubble land the previous year, the crop of Turnip following was invariably much diseased. Decided facts were stated, fully confirmatory of Mr. Gillespie's observations, and this seemed to elucidate in some degree the reason of the beneficial action of lime. Indeed instances were mentioned where Turnips not so diseased, laid on land even two or three years previously, had caused the disease.

Climate and Benefit of Fresh Land.—The large crops on Shaw, above 500 feet, and Stiddrigs, more than 600 feet above sea level, show that in general no depreciating effects arise from elevation, at least up to these heights, and in the latter case, that freshness of land can produce large crops with moderate quantities of manure.

Manure.—It will be noticed from the table that the use of bones, either dissolved or ground in addition to guano, is more general than formerly. This arises from the more prevalent opinion of their future benefit to the land, and also from the increased facility given by the new bone mill at Nethercleuch in the centre of the district.

Seed.—The only additional observation under this head is that the Lincolnshire Red, or Red-topped White, have turned out a failing crop, from their almost invariably being unhealthy, and in place of a large round, growing this year of a small tankard shape.

Mangel Wurzel and Cabbage.—Each year extends the impression that other root crops should be introduced in addition to the Turnip crop—Mangel Wurzel and Cabbage seem the most likely to be tried. The latter in our moist climate seems deserving of a more extended trial than has hitherto been given. Some comparisons of this year show double weight compared with Swedes.

Reviews.

Veterinary Medicines: their Actions and Uses, with a copious Appendix on the Diseases of the Domesticated Animals. By Finlay Dun, V. S. Simpkin, Marshall, & Co.

A second edition of this admirable work has just appeared. It consists of two parts: the first, occupying the larger portion of the volume, is a description of the various medicines, their preparation, use, and effects in veterinary practice; and the second contains short descriptions of animal diseases, their causes, symptoms, and treatment. It is a work as useful to the farmer as to the veterinary practitioner. We give two extracts illustrative respectively of the two sections of the volume.

"*On Draughts or Drenches.*—Drenches are usually extempore preparations. They are occasionally given to horses, especially when a speedy effect is desired, as in colic; are frequently prescribed for dogs; and are almost the only form in which physic is ever given to cattle or sheep. In these ruminants, medicines in the solid state act very tardily and imperfectly, for they get mixed up with the immense bulk of food always found in the rumen, and thus remain unabsorbed often for a long time. Some medicines, too, from prolonged contact with this mass of vegetable matter, probably undergo changes which materially interfere with their action. Medicine in a liquid form, however, comes immediately into intimate contact with a large absorbing surface of mucous membrane, and passes on more speedily towards the second and fourth stomachs. In preparing drenches, care must be taken that the different ingredients are not incompatible, decomposing or injuriously reacting on each other; and further, that their quantity be not too great, as the trouble of administration is thereby much increased. For dogs, 2 to 6 oz., according to the size of the animal, is an average amount; for horses, 1 to 2 pints; for sheep, 4 to 6 ounces; but for cattle it is not so necessary to limit the proportion of fluid. In giving the medicine the head should be slightly raised, which in horses may be conveniently done with the aid of a twitch, the noose of which is placed over the animal's upper jaw within the incisor teeth, and the stick held by an assistant, standing on the left side of the patient. In cattle, the head should always be steadied by an assistant, who holds either the horns or ears; and in dogs, the jaws may be kept sufficiently apart by getting some one to put a loop of tape or string over each jaw, and gently separating them, when the medicine may be readily poured over. In all animals, the nostrils must be left unobstructed, and the tongue loose, or only slightly pressed on by the operator's left thumb. The fluid should always be carefully and slowly given; and if coughing occurs, the operation should be stopped, and the animal set free for a few minutes."

The following are passages from the description of Foot-rot:—

"*Foot-rot in Sheep*, although probably existing from the earliest times, has become more prevalent during the last fifty years, chiefly owing to the greater weight of all varieties of sheep, and to their occupying soft, moist lowland pastures previously unreclaimed, or grazed only by cattle. The horn becomes overgrown, soft, and disposed to crack or tear; it turns inwards upon the sole, or the outer insensible covering of the sole is worn down. Sand and dirt insinuate themselves into the cracks and cavities, and irritation and inflammation of the sensitive laminæ are thus produced, causing swelling, heat, and tenderness of the foot, decided lameness, and the secretion of thin, badly smelling pus. The inflammation sometimes extends to the biflex canal, producing an acrid discharge, and often an unhealthy ulceration, or to the coronary substance, causing irregular growth of faulty horn or sinuses, similar to those of quittor. Although all four feet may be affected, the disease is usually confined to one or both of the fore feet, and occasionally to one digit only. It always leaves the parts weak and prone to a subsequent attack, especially during hard frost or dry hot weather. The same foot or digit frequently suffers at short intervals; whilst the hoofs of those subject to the malady become large and soft, and this altered and weakened structure is transmitted to the progeny. Indeed it is a common observation, that a certain hereditary appearance of the foot predisposes to foot-rot.

"*Causes.*—Foot-rot is liable to be produced in many different ways, and by the most dissimilar causes. It often results from the overgrowth of the hoof, and turning in of the toe, pressing upon and irritating the sensitive laminæ. This is especially apt to occur amongst sheep brought from indifferent upland pastures to rich meadow lands. Hence the notorious prevalence of the disease amongst black-faced Cheviot and Southdown sheep, carried from their native walks into rich arable districts.

On their native grazings the surface of the soil is usually rough and rugged, whilst the Grass is not over-abundant, and the sheep have therefore to stray over considerable distances before they can procure a sufficiency. Under such circumstances, the production and waste of the horn are fairly balanced. When, however, such sheep are transferred to smooth, well rolled, rich lands, or to soft, moist, luxuriant meadows, the abundance of food removes the necessity of much walking; the tear and wear of the hoof is accordingly reduced, the horn shoots out in exuberant quantity, and also becomes of less compact structure; while the sole usually becomes convex, causing much pain and the production of troublesome ulcers. The crust hence becomes liable to laceration, and the sensitive parts of the foot are thus exposed to mechanical irritation, as well as to the injurious influences of cold, heat, and moisture. Again, the overgrown horn and consequent lengthening out of the toe injures the foot in another way. It exposes the sensitive laminæ to unwonted strain, and thus renders them weak and unfit for the secretion of healthy horn. A soft, spongy, and degenerated crust is accordingly produced, which, like that resulting from the constant exposure of the foot to moisture, forms an inadequate protection for the sensitive parts, and permits the insinuation of foreign bodies through its open pores." "Foot-rot occurring in connection with murrain or the vesicular epizootic already noticed is decidedly contagious, but ordinary foot-rot, as above described, is not contagious. The diseased matter from a case of foot-rot is devoid of effect when rubbed into a sound foot, and even when applied to a bare or torn surface has no special action, and produces merely the same effect as the matter of any foul or unhealthy wound, or exposure to cold, filth, and moisture. "In further evidence of the non-contagious character of the desease, it may be remarked, that one foot, or even one digit, is frequently affected without the other feet or digit becoming involved; that sheep with foot-rot may be mixed with perfect impunity amongst a sound flock, provided they be upon good dry pasture, and have their feet properly attended to; that the disease is only produced under conditions which, in themselves, and apart from contagion, are adequate to produce the inflammation of the laminated structures in which foot-rot consists; and, lastly, that the removal of an affected flock to dry, bareish, good pasture, the occasional paring of superfluous horn, and the avoidance of causes which induce irrigation, most certainly arrest the spread foot-rot and could have little influence in staying the progress of a truly infectious disease.

"*Treatment.*—Whenever the first symptoms of lameness are observable, the sheep must be caught, and the feet examined. All filth and dirt must be removed, as well as every loose, ragged, and unsound portion of horn. This is generally effected with a stout pocket-knife, but when the horn is extensively diseased, a fine-pointed drawing-knife is often used in removing, as must be scrupulously done, all portions of horn separated from the laminæ. The subsequent application of tar is of much value in protecting the bared surface from filth and moisture. When the interdigital skin becomes involved, it may be dusted daily with powdered sulphate of zinc or copper, or gently touched with a stick of nitrate of silver. Ulcers on the digital space of the soles or elsewhere should be touched with nitrate of silver, nitric acid, or a little of the old butter of antimony. Where they are tedious and unhealthy a poultice is often useful, and a round of different astringent and caustic applications must be tried until decided amendment supervenes. Frequent changes of the remedies are often of more service than the continuous use of any one, however good. The fungous growths which are often so troublesome in bad cases are best kept down by nitric acid, sulphate of copper, or the gentle application of the red-hot iron, together with constant pressure, which may be applied by rolling the foot tightly up in a linen rag, secured as ingenuity may best suggest. In deeply penetrating sinuses, the carious bone, sloughing cartilage, or other cause of irritation upon which such wounds depend, must be promptly removed, a dependent orifice secured, astringents injected, and every means adopted to preserve cleanliness. The injection of strong caustics, a very common but painful mode of treatment, must only be adopted when other remedies have been tried and failed. To ward off the attacks of flies, which during warm weather are very annoying, the parts should be freely smeared with coal tar, spirits of tar, or naphtha. In all cases of foot-rot, no matter how slight, the appropriate treatment must be promptly and diligently prosecuted, otherwise the case is very apt to pass from bad to worse. The examination of the feet and the suitable dressings should, except in the mildest cases, be performed daily. After the removal of horn or the use of caustics, it is important that the animals should stand for an hour amongst saw-dust, or be driven for a few minutes amongst several inches of quick-lime. The observations already made regarding the causes of the disease, will sufficiently indicate the appropriate means of prevention. The growth of the horn must be kept within moderate limits. Sheep upon soft, moist lands, should have their feet examined every few weeks, and any redundancy of horn removed. They may be driven occasionally along a hard road, which will accelerate the defective wear. Severe over-driving must, however, be avoided, as well as all other causes which induce congestion of the laminæ and injury of their horny covering. Draining very frequently puts a stop to the ravages of foot-rot; for by drying the land it prevents the injurious influence of moisture and cold, and leads, moreover, to the growth of a firmer and better hoof. Liming must also be regarded as a preventive. Like draining, it ameliorates the pasture, and removes especially that soft mossy herbage which is so prone to develop foot-rot." The use of Gutta Percha boots, to which a correspondent lately referred, is not among Mr. Dun's remedies for this disease.

Miscellaneous.

Alpacas in Australia.—Few enterprises of modern times have been marked with more determined energy or greater perseverance under unexampled difficulties than that which Mr. Ledger has at length happily accomplished. Mr. Charles Ledger is an English merchant, established for many years in Tacua, in Peru, the trade in alpaca wool forming a portion of his business; and about six years since he commenced carrying into effect the long cherished idea of introducing into Australia this valuable breed of wool-bearing animals. The difficulties with which he had to contend in carrying out this idea were of the most remarkable character, but after six years of indomitable perseverance, and after undergoing an amount of danger and difficulty to which it has been the lot of few travellers to be subjected, he has succeeded in his object, and the last Australian mail announces the pleasing intelligence of the arrival at Sydney of 280 of these valuable animals. The flock includes sheep of the llama, alpaca, and vicuna breeds, together with some varieties that have been obtained by cross breeding. The animals were, on the departure of the mail, quietly grazing near the city, apparently well contented with the change of climate and scene which they have experienced. The safe arrival at Sydney of the flock of alpacas is a great triumph to Mr. Ledger, and gives an example of intrepidity and prudence which deserves a public acknowledgment. To collect a flock in defiance of a government—to divide it, like Jacob of old, for its bitter security—to conduct it over mountainous regions, exposed to all the vicissitudes of climate, change of feed, the ravages of beasts, and the jealousy and vindictiveness of men, then to embark that flock and convey it over the most distant seas, and finally to conduct it to a new world—to do all this combines a number of feats which, in a more poetic age, would have been the theme of song as well as of history. *Australian and New Zealand Gazette.*

Calendar of Operations.

FEBRUARY.

BERWICKSHIRE MERSE FARM, *Feb* 14.—Up to the present time we have experienced but slightly the seasonable rigour of winter. Weather generally soft, without any heavy fall of rain, has demanded a constant supply of litter for cattle courts, while sheep folded on Turnips have not been incommoded to any serious extent. The Turnip crop has turned out much better than was at one time expected. The feeding quality seems superior, and artificial food is in limited request. That portion of the root crop intended for cattle was stored early and fresh; so with a moderate allowance of Mangels and good Potatoes at less than 40*s.* a ton, the beasts may be fed without much outlay on artificial stuffs, except at reasonable rates. There is a general impression that the number of beasts fattening is below an average, owing to heavy losses on that kind of stock last year. Winter Wheat looks pretty well, but quite the reverse of "winter proud." The experience of late years limits the extent of spring sowing in favour of Barley. Lea ploughing may be said to be completed, and there only remains the Turnip land (where cleared) to be prepared for Barley. A short storm before seed time would be acceptable, to facilitate the necessary carting of dung afield. *J T.*

Notices to Correspondents.

COLTSEED: *Putney.* We have always known it sown in June and July. If sown very early it would run to seed at once.

COUNTY REPORTS: *W R.* The Society has offered 50*l.* for an Essay on the Agriculture of the Channel Islands, to be sent in on March 1, 18 9. The prize in 1853 was offered for an Essay on the Agriculture of Shropshire. The farming of Staffordshire has not yet been described in the Journal.

LAND DRAINAGE: *R K P.* Weale of Holborn publishes a book by Mr. Donald. The chapters on Drainage out of Stephens's Book of the Farm (Blackwood) are published as a separate volume.

MACHINE MAKER: *Old Subscriber.* We cannot name machine makers. On the subject of reaping machines read No. 1 of our Paper this year. There are many good makers of threshing machines. Consult the current number of the Journal of the Agricultural Society for their report on the Chester Show.

NITRATE OF SODA. *J P.* Your question has now reached us for the first time. It is sold under guarantee that it shall be within a certain degree of impurity. We were not aware that the term "refraction" was used, nor are we aware of the meaning attached to it. In analysis nitric acid is neutralised with Barytes water—the solution is evaporated to dryness—redissolved and sulphuric acid added to precipitate the Barytes, which is dried, weighed, and then as sulphate of Barytes furnishes a guide to the quality of the nitric acid, with which the base had united.

PASTURE: *Mira.* Your land promises to bear a good sward without further manuring. We would take a thin crop of Barley, say 1 bushel of seed per acre with the Grass seeds.

SULPHATE OF AMMONIA: *A Correspondent* says: "Agriculturists are not sufficiently acquainted with sulphate of ammonia. Hitherto the comparatively little attention devoted to its valuable properties and effects as applied to land has been owing most probably to its scarcity and high price. Now, however, its manufacture is much extended and greatly on the increase; its price as a consequence has become quite moderate, while the result which attends every fair trial of it as a manure fully sustains its superiority. [You will find reports of experiments with it in Professor Johnston's "Experimental Agriculture."]

WAGES NEAR MANSFIELD.—We have received the following from the person who gave the information on the rate of wages near Mansfield:—"Since I furnished the report on the wages of labourers near Mansfield for the paper on 'horse power,' there has been a general reduction, and we are now giving 12*s.* a week to the labourers and 13*s.* 6*d.* to the ploughmen. Please notice this in your columns to prevent misconception."

SEEDS FOR THE FARM.

NEW OVAL-SHAPED YELLOW MANGEL, introduced by us two years ago, has been thoroughly tested and is now recommended with perfect confidence. It is of a remarkably vigorous growth, with finely shaped roots, intermediate in length between the Long and the Globe, and has produced from 5 to 10 tons more per acre than any other variety (see *Gardeners' Chronicle* of Jan. 8):—

SWEDE TURNIP.—All the approved sorts.
YELLOW Do. do. do.
WHITE Do. do. do.

In no description of crop raised on the Farm is a good or a bad one so dependent on the character of the Seed as in that of the Turnip, and from its great liability to degenerate, it requires the most scrupulous care and vigilance to produce Stocks that are every way worthy of confidence. To attain such, we have for several years past been using every known means to keep up or improve the shape, size, and texture of the various kinds; and we believe that what are now offered will give the most perfect satisfaction. All the principal varieties are our own growth, raised from large and fully developed Roots or Bulbs, and in the hope of giving a more vigorous growth to the Stock, the strongest clay soil is always selected for a considerable portion of the Swede and Yellows. This mode of raising Turnip Seed materially increases the expense, but it is a much more satisfactory system than the one usually adopted, viz., sowing random stocks late in the season, after other crops, and taking the seed from mere plants, which in many cases are not even subjected to the process of thinning. Moreover, we guarantee our Seeds free from any of the adulterations so frequently practised to increase profits or cheapen prices, so that a strong healthy "braird" is certain.

PERENNIAL RYE-GRASS.—Finest Ayrshire
Do. do. do. Pacey's, 26 lbs. to 32 lbs. per bushel
ITALIAN do. Imported
Do. do. Home-grown

NATURAL GRASSES.—All the best varieties

The Stocks of Perennial Rye-grass Seed are the most select growths the country produces, and being all clean and heavy the economy of using such in preference to foul chaffy seed, however cheap, is at once apparent. Our imported Italian is from the usual source, and has always given satisfaction; while the home-grown is the direct produce of imported seed, cultivated under the most favourable circumstances, and more than ordinary pains having been used in dressing the seed; the samples of both are unusually clean and fine. In selecting the Natural Grasses care is taken to have them true to name, fully ripened, and in all respects good clean samples.

ALSIKE CLOVER, and other varieties.
LARGE BROAD-LEAVED SCOTCH TARES.

With every other description of Seed usually required for the farm, PRICED LISTS of which may be had post free on application.

W. DRUMMOND & SONS, Seedsmen, Stirling, N.B.; also at 58, Dawson Street, Dublin.

*** STIRLING is most favourably placed in point of railway accommodation, there being direct and constant traffic to all the principal stations in England and Scotland, and by steamers (*via* Glasgow), almost daily to the chief ports in Ireland, thereby ensuring a speedy delivery of goods, all of which, except grain and Tares, we forward carriage paid.

BEAUTIFUL FLOWERS—12 Packets, each containing 1000 Seeds, 1*s.* Sent post free, 1*s.* 4*d.* Calceolaria, Heliotropium, Hollyhocks to name, Petunias, Verbenas, Fuchsias, Geraniums, and other BEDDING PLANTS, at 2*s.* 6*d.* per dozen. Catalogue on application.

EARLY PROLIFIC POTATOES, at 8*s.* per bushel of 56 lbs.

Dwarf German (10 weeks), STOCKS, as imported, 36 varieties.—each variety 3*d.* per packet.

Globe and Flat Tripoli ONION SEED, 3*s.* per lb., 4*d.* per oz. Warranted new and true.

STRASBURG ONION SEED, 1*d.* per oz.

PARSNIP SEED, 9*d.* per lb.

WM. CULLINGFORD, 1, Edmund Terrace, Ball's Pond, Islington.

RICH BOG AND LOAM.—Gentlemen and Nurserymen will do well to apply early for the above to refresh their American beds. To be had in any quantity upon reasonable terms, by land or water carriage.

ROBERT NEAL, Nurseryman, Wandsworth Common, Surrey.

FLOUR, Warranted Unadulterated, free to any part of London (not less than 14 lbs.); Whites, for pastry, at per bushel (56 lbs.), 8*s.* 4*d.*; households, for bread-making, 7*s.* 8*d.*; seconds, 7*s.* 0*d.*; Wheatmeal, for brown bread, 7*s.* 0*d.*; best fine and coarse Scotch Oatmeal.—Address, HORSNAIL & CATCHPOOL, Bullford Mill, near Witham, Essex, or 97, Goswell Road, City Road, E.C. Directions for bread making gratis. Terms cash. Bags lent. German yeast. A half sack (140 lbs.), or upwards, free to any railway station within 200 miles.

FOR WATERING GARDENS, PLUMBERS, ENGINEERS, MILLS, AND MACHINISTS.

VULCANISED INDIA RUBBER.

Washers for Hot-water and Steam Joints	Garden Watering Hose
Elastic Packing and Valves for Steam Engines	Do. fitted with Brass Joints, Taps and Spreaders
Pump Buckets (compound India-rubber)	Wheel Tires (noiseless for Trucks, &c.)
Suction Hose for Pumps	Waterproof Cart, Van, and Waggon Covers
Fire Engine Hose	Mill Bands, much improved for driving all kinds of Machinery
Air Beds, Cushions, & Bolsters	Door Springs, Gas Bags
Water Beds, Pillows, and Feet Warmers	Foot Balls, Cricketting Gloves

N.B. A Stock of the above always on hand, and any modification made to order. Please address all communications to the Manufactory.

JAMES LYNE HANCOCK,
Vulcanised India-rubber Works, Goswell Road, London, E.C.

PATENT GUTTA PERCHA SOLES.—IMPORTANT TO GARDENERS.—The Gutta Percha Company have the pleasure to acknowledge the receipt of the following letter from G. GLENNY, Esq., the celebrated Florist:—

"420, Strand, London.

"Gentlemen,—I have worn Gutta Percha Soles and Heels these two years, and being so much in a garden as I necessarily am in all weathers, and with the ground in all states, I would on no account be without them. As a matter of economy I would recommend Gardeners to use them, for they may repair the worn part at all times by warming the material at the fire, and pressing it from the thick parts to the worn parts as easily as if it were so much dough. I think it the duty of all persons who must occasionally wet their feet to adopt a material that completely defies damp. Many a gardener would escape colds and rheumatism by the use of Gutta Percha Soles.

"Your obedient servant,
G. GLENNY."

Every variety of Gutta Percha articles, such as Mill Bands, Tubing, Soles, Goloshes, Sheet, Pump Buckets, Fire Buckets, Bosses, Union Joints, Flasks, Bottles, Bowls, Chamber Vessels, Toilet Trays, Sponge Bags, Curtain Rings, Galvanic Batteries, Talbotype Trays, &c., manufactured by the Gutta Percha Company, and sold by their wholesale dealers in town or country.—The Gutta Percha Company, Patentees, 18, Wharf Road, City Road, London.

JAMES PHILLIPS AND CO.'S PRICES of GLASS for the present month.

HORTICULTURAL GLASS, STOCK SIZES, in 100 feet boxes.

3rds.	4ths.
11 by 9, 12 by 9, 13 by 9, 14 by 9 .. 12 ,, 10, 13 ,, 10, 14 ,, 10, 15 ,, 10 ..	14s. 6d.	12s. 6d.
13 ,, 11, 14 ,, 11, 15 ,, 11, 16 ,, 11 .. 14 ,, 12, 15 ,, 12, 16 ,, 12, 17 ,, 12 .. 18 ,, 12, 19 ,, 12, 16 ,, 13, 17 ,, 13 .. 18 ,, 13, 19 ,, 13, 20 ,, 13, 21 ,, 13 .. 16 ,, 14, 17 ,, 14, 18 ,, 14 .. .. 19 ,, 14, 20 ,, 14, 21 .. 14	16s. 6d.	14s. 0d.

PACKED IN CASES.

200 feet .. .. .. £2 2 0 } 16 oz.
300 feet .. .. .. 3 3 0 }
200 feet .. .. .. 2 18 0 21 oz.

ORCHARD HOUSE SIZES, As supplied by us to Mr. Rivers.

		16 oz.	21 oz.
20 in. by 12 in.	Common	14s. 0d. ..	£1 1s.
20 in. by 13 in.	Superior do. ..	16 6 ..	1 5
20 in. by 14 in.	English Glass ..	18 0 ..	1 9
20 in. by 15 in.			

SMALL SQUARES.—Per 100 feet.

6 by 4	6½ by 4½	7 by 5	7½ by 5½ }	11 6
8 ,, 6	8½ ,, 6½	9 ,, 7	9½ ,, 7½ }	
10 ,, 8	10¼ ,, 8½ ..	.. ..	.. ..	12 6

JAMES PHILLIPS AND CO.,

180, Bishopsgate St. Without, London, E.C.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz SHEET GLASS of British Manufacture at prices varying from 2d. to 3d. per square foot for the usual sizes required, many thousands of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES, and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

GLAZIERS' DIAMONDS for CUTTING HORTICULTURAL and other GLASS, to be had of the Wholesale Manufacturer, JOHN EDWARDS, 20, Sharp's Alley, West Smithfield, London, E.C. Prices from 10s. to 27s. 6d.

ANTISEPTIC PAINT.

THE best and cheapest PAINT for PARK FENCING, all outside Wood and Iron Work, is MITCHELL'S ANTISEPTIC MINERAL BLACK PAINT. Sold ready for use, 17s. 6d. per cwt. Used largely now and for many years past by the West India Dock Company, for Fencing, Barges, &c. Recommended to the nobility and gentry, stewards, land agents, &c. A liberal allowance to the trade, &c.

Manufactory, Kennington Lane, Lambeth.

GLASS WAREHOUSE, ESTABLISHED 1750.

THOMAS MILLINGTON'S REDUCED TARIFF.

PACKED IN BOXES OF 100 FEET EACH, "PACKAGES FREE,"

FOR HORTICULTURE, PICTURES, AND DWELLINGS.

Common, 11s. 6d. ; Super, 12s. 6d.

Inches by Inches.	Inches by Inches.	Inches by Inches.	Inches by Inches.	Inches by Inches.	1sts.	2ds.	3ds.	4ths.
6 .. 4	9 .. 7	12 .. 9	13½ .. 10½	13 .. 11				
6½ .. 4½	9½ .. 7½	12½ .. 9½	14 .. 10	13½ .. 11½				
7 .. 5	10 .. 8	13 .. 9	14½ .. 10½	14 .. 11	s. d.	s. d.	s. d.	s. d.
7½ .. 5½	10½ .. 8½	12 .. 10	15 .. 10	15 .. 10	21 6	17 9	14 4	12 6
8 .. 6	11 .. 9	12½ .. 10½	12 .. 11	.. ..				
8½ .. 6½	11½ .. 9½	13 .. 10	12½ .. 11½	.. ..				
11½ .. 11½	14 .. 12	22 .. 12	18 .. 14	24 .. 15				
15 .. 11	14½ .. 12½	15 .. 13	19 .. 14	18 .. 16				
15½ .. 11½	15 .. 12	16 .. 13	20 .. 14	20 .. 16				
16 .. 11	15½ .. 12½	17 .. 13	21 .. 14	22 .. 16				
16½ .. 11½	16 .. 12	18 .. 13	22 .. 14	24 .. 16	24s. 6d., 20s. 0d., 16s. 6d., 14s.			
17 .. 11	16½ .. 12½	20 .. 13	24 .. 14	20 .. 17				
18 .. 11	17 .. 12	23 .. 13	18 .. 15	22 .. 17				
13 .. 12	18 .. 12	16 .. 14	20 .. 15	20 .. 18				
13½ .. 12½	20 .. 12	17 .. 14	22 .. 15	. ..				

ORCHARD HOUSE SIZES,

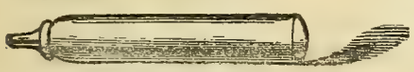
AS SUPPLIED TO MR. RIVERS AND OTHERS.

20 .. 12
20 .. 13
20 .. 14
20 .. 15

16 oz. Common, per 100 feet, 14s.
,, Super ,, 16s. 6d.

If 21 oz. Common, per 100 feet, 21s.
,, Super ,, 25s.

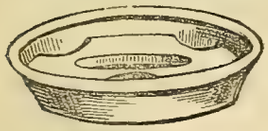
Quotations for English Sheet are not made, as no one in their senses would pay 20 per Cent. more for an article not equal to my thirds quality.



CUCUMBER TUBE.



PASTRY PIN.



HYACINTH DISH.



WASP TRAP.

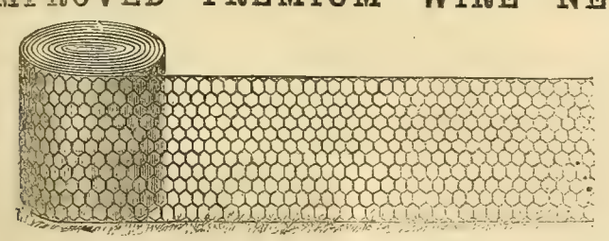


MILK PAN.

LINSEED OIL, PUTTY, GENUINE WHITE LEAD, LINSEED AND BOILED OILS, BRUSHES, &c.

87, Bishopsgate Street Without, London, E.C.

IMPROVED PREMIUM WIRE NETTING.



	Size of mesh.	Mostly used for	Light. Japanned.	Light. Galvanized.	Medium. Japanned.	Medium. Galvanized.	Strong. Japanned.	Strong. Galvanized.
PRICES PER LINEAL YARD, 24 INCHES HIGH:—	2¼ inch	Hares, Dogs, Poultry	3½d.	4½d.	4½d.	5½d.	5d.	6½d.
	2 inch	Game Netting	4d.	5d.	4⅝d.	6d.	5½d.	7d.
	1⅝ inch	Small Rabbits, Hares, &c.	4½d.	5½d.	5¼d.	6½d.	6d.	7½d.
	1½ inch	Smallest Rabbits	6d.	7½d.	7½d.	9d.	9d.	11d.
PRICES PER FOOT SUPERFICIAL:	1¼ inch	Pigeon Houses, Pheasantries, &c.	1½d.	1⅝d.	1⅜d.	2d.	2¼d.	2¾d.
	1⅓ inch	Pigeon Houses, &c.	1⅝d.	2d.	2d.	2½d.	2½d.	3d.
	1 inch	Pheasantries and Small Birds	2d.	2½d.	2¼d.	2⅞d.	2¾d.	3½d.
	⅞ inch	Aviaries, Window Guards, &c.	2¼d.	2½d.	2⅝d.	3¼d.	3¼d.	4d.

Quantities of 100 yards, or upwards, delivered free at nearly all the principal Railway Stations and Shipping Ports in England: also by special estimate to any part of Scotland or Ireland. Any width of Netting under 8 feet made at proportionate prices.

☞ *Every description of Netting warranted to give satisfaction, and if not approved will be exchanged, or may be returned unconditionally.*

J. B. BROWN & CO., 18, CANNON STREET, LONDON, E.C.

HEATING BY HOT WATER ON HAMMOND'S improved principle, for Horticultural Works, Mansions, Churches, Public Buildings, in fact everywhere that heat is required. Also his improved Ventilating Greenhouses, which can be erected at 1s. per foot, and entirely prevent the possibility of scorching the Vines or plants. The Patent Hot-water Register Stove.—Estimates at No. 18, George Street, Portman Square. Workmen sent into the country.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

EDENCH, KING'S ROAD, CHELSEA, & HAMPSTEAD ROAD, Patentee and Sole Manufacturer of PATENT GALVANISED IRON HOTHOUSES AND CONSERVATORIES, has Two SPAN-ROOFED HOUSES left for Sale, a great Bargain. Patent Hothouses, every way superior to any other material, at 1s. 3d. per foot super, with excellent heavy good quality Glass. Printed Price List sent on application. Heating by Hot Water with efficiency and economy.

VOKINS AND HURD, Seymour House, Jubilee Place, King's Road, Chelsea, BUILDERS OF HOTHOUSES, CONSERVATORIES, GREENHOUSES, PITS, and every description of erections in Glass work, either in Wood or Iron; also Heating the same by hot water on the most approved plans and at the lowest prices consistent with good work. Estimates forwarded.

GREENHOUSES, ORCHARD HOUSES, AND PITS OF EVERY DESCRIPTION, MADE BY STEAM MACHINERY, AND HEATED BY HOT WATER ON AN IMPROVED PLAN AT

J. LEWIS'S HORTICULTURAL WORKS, Stamford Hill, Middlesex, established 20 years. These Buildings are warranted of the best materials, and at prices which defy competition. The ventilation is most efficient, and the greatest improvement of the present day. Prices of any size on application. References in all parts of the United Kingdom

GREENHOUSES.

HENRY FREEMAN, HOTHOUSE BUILDER and HOT-WATER APPARATUS MANUFACTURER, Triangle, Hackney, Established 20 years. Good substantially built GREENHOUSES, fixed in any part of the kingdom, for cash, 42 ft. long by 13 ft, 90l.; 21 ft by 13 ft., 50l. 12 ft. by 10 ft., 30l. A first-rate Conservatory, 30 ft. by 16 ft, 130l. A large assortment kept. Estimates for heating, or any branch in wood, iron, or Park Fencing.

IMPROVED HOT-WATER PIPE.—The Horticulturist will find herein an inexpensive instrument of new and very important powers. An atmosphere may be produced at will either perfectly dry, partially damp, or saturated with moisture. A space of 10 inches by 12 inches contains the power of 25 feet of 4-inch pipe and other numerous advantages.

The London Warming and Ventilating Company (Limited), 36, Great George Street, Westminster, S.W.

HORTICULTURAL BUILDINGS AND HEATING BY HOT WATER.

JOHN R. PEILL, 17, New Park Street, Southwark, Manufacturer of every description of Buildings for Horticultural purposes, and Inventor of the Improved Conical Boiler for heating the same, is prepared to undertake works of any magnitude, and refers among others to the celebrated range of FORCING HOUSES at HER MAJESTY'S GARDENS, FROGMORE, and at SIR ROBERT PEEL'S, DRAYTON MANOR, constructed under the superintendence of his Manager, MR. JOHN JONES; and also to his BOILERS fixed at the CRYSTAL PALACE, the ROYAL BOTANIC GARDENS, REGENT'S PARK, and KEW, and at several hundreds of the Nobility's seats, Public Establishments, and Manufactories in London and the provinces. J. R. P. also manufactures every description of Iron Roofs, Iron Houses, and Iron Fencing, plain and ornamental. Strong Iron Hurdles for Sheep (6 feet long, 3 feet high, with 5 bars), 4s. 3d. each; ditto for cattle, 4s. 9d. each.

Prices and other particulars forwarded on receipt of one postage stamp.

HANDS'S PATENT is the only system to circulate Heat, and for WARMING, FUMIGATING, and VENTILATING Hothouses, Greenhouses, Winter Orchards. &c.; to keep vegetation healthy in a humid atmosphere, and can be applied to any kind or shape of Forcing-houses and Conservatories now existing at trifling cost.—For particulars apply at the Office, 10, Charlotte Street, Fitzroy Square, London; or to Mr. JOHNSON HANDS, Epsom.

HOTHOUSES FOR SALE.

TO BE SOLD CHEAP, two nearly new SPAN-ROOF HOUSES, each 65 feet long by 18 feet wide, price 100l. each; also a handsome OCTAGON CONSERVATORY, 22 feet diameter with glass all round, quite new, price 90l. All these houses are warranted to be of the best materials and workmanship. The reason of their being now Sold is to make room for an extensive alteration and addition to our Workshops and Steam Machinery.—Apply to Messrs. JOHN WEEKS & Co., King's Road, Chelsea, where the whole of the above can be seen, as also a great variety of other Horticultural Erections.

200 ONE, TWO, and THREE-LIGHT MELON BOXES and LIGHTS, of the best seasoned materials, ready for immediate use.—JAS. WATTS, Hothouse Builder and Hot-water Apparatus Manufacturer, Old Kent Road, London.

NETTING, BUNTING, SCRIMS AND TIFFANY FOR THE PROTECTION OF FRUIT TREES AND TENDER PLANTS.—These articles are found to be the best protection against Frost, Hail, and Wind, also from Wasps and Insects, and good for Shades of Greenhouses, &c. Patterns forwarded free on application to BENJAMIN EDGINGTON, Marquee, Tent, and Rick Cloth manufacturer, 2, Duke Street, Southwark, London Bridge, S.E. West End Establishment, 32, Charing Cross. Temporary Rooms with boarded floor for dancing.

BRITTAIN'S GARDEN NET completely protects Fruit Blossoms from injury by frost, and provides for the circulation of air and admission of light, so essential to healthy growth; 55 inches wide, 5d., 6d., and 8d. a yard; good SHADING TIFFANY, yard wide, 2½d. do.—Manchester, Feb. 26.

TREES COMING INTO BLOOM will be protected from Frosts, Hail, &c., by using HAYTHORN'S HEXAGON AND CHISWICK GARDEN NETS, now used and recommended by all the principal Gardeners; the Nets will also preserve the Fruit from Wasps, Flies, Birds, &c.—For Patterns, Prices, and Testimonials, direct to Mr. HAYTHORN, Nottingham.

FOR Effectually Protecting the Bloom of Wall Trees from Spring Frosts use SHAW'S No. 3 TIFFANY, DOUBLE STRENGTH. In pieces 18 yards long by 39 inches wide, 7s. 6d. each.—JOHN SHAW & Co., Princess Street, Manchester.

SHADING.

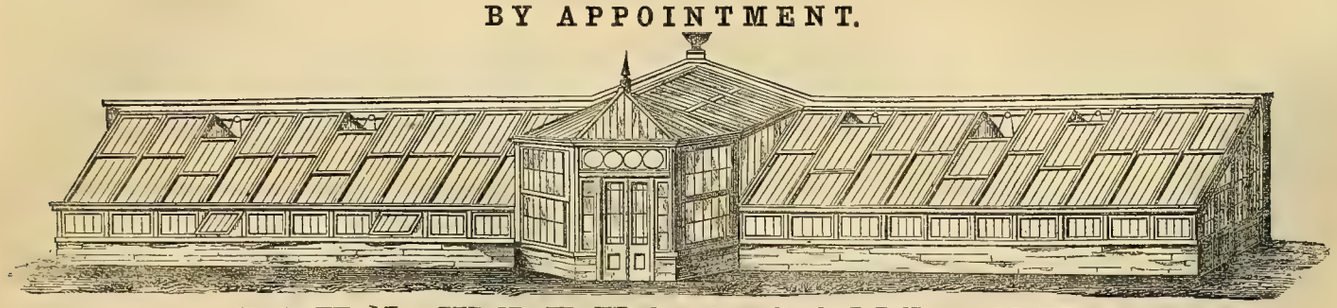
BROWN'S FLORAL SHADING still maintains its superiority for cheapness and efficiency over all other materials used for a similar purpose, viz., shading plants under glass from the scorching rays of the sun, protecting Wall Fruit Trees when in bloom from frost, and preserving the fruit from the attacks of birds, flies, and wasps. Sold in pieces 20 yards long, 38 inches wide:—

No 1 per piece .. 4s. 0d. | No. 2 per piece .. 4s. 3d.

To be obtained of all the principal Nurserymen and Seedsmen in town and country. Samples sent free on application to the Manufacturer, CHARLES BROWN, Greenheys, Manchester.

HORTICULTURAL BUILDING & HEATING BY HOT WATER.

BY APPOINTMENT.



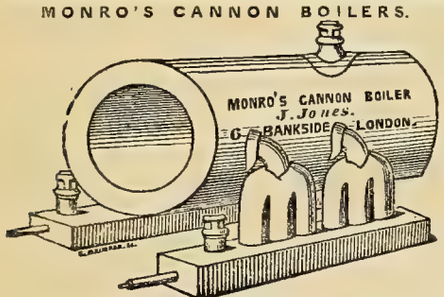
JOHN WEEKS & COMPANY,

KING'S ROAD, CHELSEA, LONDON.

HORTICULTURAL BUILDERS AND HOT-WATER APPARATUS MANUFACTURERS, ENGINEERS, AND IRON FOUNDERS.

PLANS, ESTIMATES, & ILLUSTRATED CATALOGUES FREE ON APPLICATION.

MONRO'S CANNON BOILERS.

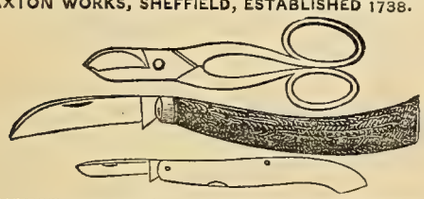


MUCH has of late been said about BOILERS for Heating by Hot Water, but these Boilers have now proved themselves to be the best at present invented. They are adapted for heating every description of building, and are made of various sizes. The Price of the

24 inch Cast Iron is	..	..	.. £5 10s. 0d.	each
24 inch Wrought ditto	..	..	.. 6 10 0	,,
36 inch Cast ditto	..	..	.. 8 0 0	,,
36 inch Wrought ditto	..	..	.. 8 10 0	,,

References to Gentlemen and Nurserymen where these Boilers are now at work. The Cannon Boilers are now kept in stock, and are to be had only of J. JONES, 6, Bankside. Also, every description of Saddle and Cylinder Boilers. Hot Water Pipes and Connections at prices lower than those of any other house in London. Estimates for Hot-water Apparatus erected complete in any part of the country, and an Illustrated Catalogue on application to J. JONES, 6, Bankside, Southwark, London.

PAXTON WORKS, SHEFFIELD, ESTABLISHED 1738.



SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.—Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

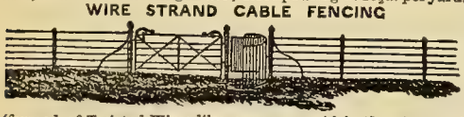
PRICES REDUCED.

H. J. MORTON AND CO., Galvanised Iron Works, 2, Basinghall Buildings, Leeds.

GALVANISED IRON ROOFING

for Farm Buildings and other Roofs; the cheapest, most durable, and neatest Roofing in use; also Spouting at 10½d. per yard.

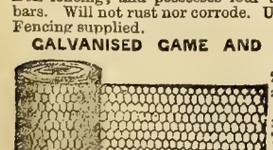
WIRE STRAND CABLE FENCING



(formed of Twisted Wires like a rope or cable), the strongest cheapest, and neatest fence in use, will resist the largest cattle, and will not bend or get out of form by trespassing upon or over. Price, with five lines of the Galvanised Strand, iron main posts, and pronged Standards, 1s. 2½d. per yard.

This fence is far cheaper than posts and rails, or any kind of iron fencing; and possesses four times the strength of solid bars. Will not rust nor corrode. Upwards of 1200 miles of this Fencing supplied.

GALVANISED GAME AND POULTRY NETTING.



Galvanised, 24 ins. wide, 2-inch mesh, 5d., 6d., 7½d., and 10d. per yard.

Galvanised, 24 ins. wide, 3-inch mesh, 4d., 5d., and 7d. per yard. The Netting made any width, and with openings of any size.

GALVANISED IRON CHAIN CAMP STOOLS & CHAIRS, POULTRY FOUNTAINS & FEEDERS, PRONGED DAHLIA RODS AND ROSE STAKES, &c.

Strong CATTLE HURDLES from 2s. per yard.

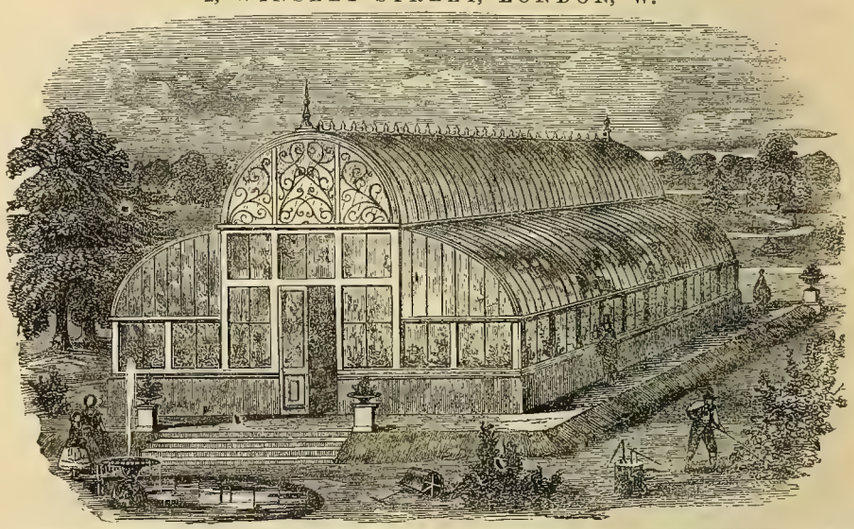
PATENT IMPROVED GAS WORKS

of all sizes for the use of Private Houses, Mansions, Railway Stations, Mills, Collieries, Mines, Villages, &c. Works from 10 to 500 lights estimated for. The works can be entrusted to an ordinary labourer.—Apply to

HENRY J. MORTON & Co. 2, Basinghall Buildings, Leeds.

COTTAM & COMPY., Engineers, Founders, &c.,

2, WINSLEY STREET, LONDON, W.



A SHOW ROOM DEVOTED ENTIRELY TO ARTICLES OF HORTICULTURE.

THE NEW ILLUSTRATED CATALOGUE UPON APPLICATION.

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	,, Syringes	Garden Bordering
Hot-water Apparatus	Ornamental Wire Work	Hurdles	,, Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

Iron Hurdles, Strained Wire Fencing, Game Netting, &c.

Every description of Plain, Ornamental, Cast and Wrought Iron, and Wire Work.

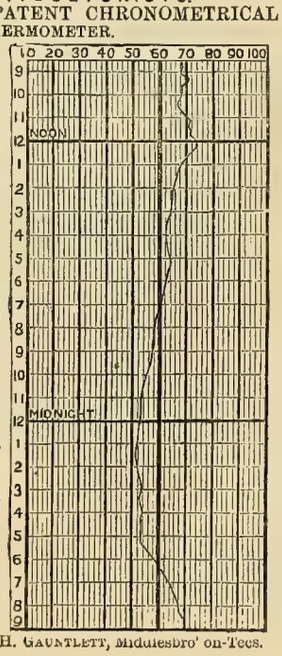
EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

N.B. COTTAM AND COY. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

TO HORTICULTURISTS.

GAUNTLETT'S PATENT CHRONOMETRICAL THERMOMETER.

This instrument, which combines an eight-day clock of the best English make showing time, with a newly-patented Thermometer, wherein glass and quicksilver are dispensed with, writes down the temperature of the atmosphere on a slip of paper, and when placed in a Hothouse, Forcing House, or Conservatory, &c., supplies a valuable record of the temperature, with all its variations, showing the time when any change took place, and how long such change continued.

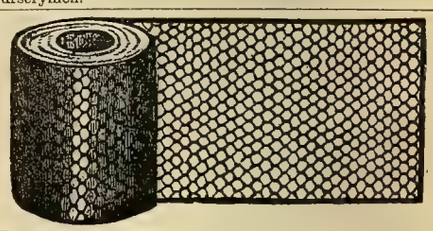


The above slip (reduced in size) exhibits the temperature of the Royal Agricultural Society's show yard at Chester, July 22, 1858, written off by one of these instruments, to which was awarded the Society's SILVER MEDAL.

This is the only instrument that registers temperature continuously and writes it down, and no horticulturist should be without it.

Orders received by W. H. GAUNTLETT, Middlesbro' on-Tees.

TANNED GARDEN NETTING, for preserving Fruit Trees from frost, blight, birds, &c., and as a fence for fowls, &c. One yard wide 1½d., 2 yards 3d., 3 yards 4d., and 4 yards 6d., per yard, in any quantity, may be had at C. WRIGHT'S, 376, Strand, W.C.—A liberal allowance to Nurserymen.



BARNARD, BISHOP, AND BARNARD, Market Place, Norwich, in consequence of improvements in their machinery for the manufacture of the above article, have been enabled to make a great reduction in the prices.

		Galvanised.	Japanned Iron.
2-inch mesh, 24 inches wide	.. ..	5d. per yd.	4d. per yd.
2-inch ,, strong do.	.. ..	6 ,,	4½ ,,
2-inch ,, intermediate, do.	..	7 ,,	5½ ,,
2-inch ,, extra strong, do.	..	9½ ,,	7½ ,,
1⅝-inch ,, 24 inches wide	.. ..	5½ ,,	4½ ,,
1⅝-inch ,, strong, do.	.. ..	6½ ,,	5¼ ,,
1⅝-inch ,, intermediate, do.	..	7½ ,,	6 ,,
1⅝-inch ,, extra strong, do.	..	10 ,,	8 ,,

All the above kinds can be made of any width (under 8 feet at proportionate prices. If the upper half is of a coarser mesh than the lower, it will reduce the prices about one-fifth.

Strong Galvanised Poultry Netting, 8½d. per yard, 3 feet wide Galvanised Sparrow-proof Netting for Pheasantries, 2½d. per square foot. Delivered free of expense in London, Peterborough, Hull, or Newcastle. Manufacturers of Improved Strained Wire Cattle and Deer Fencing, Iron Hurdles, &c.

Illustrated Catalogues and Patterns forwarded by post.

ADDRESS: THE MANAGERS, ST. PANCRAS IRONWORKS.

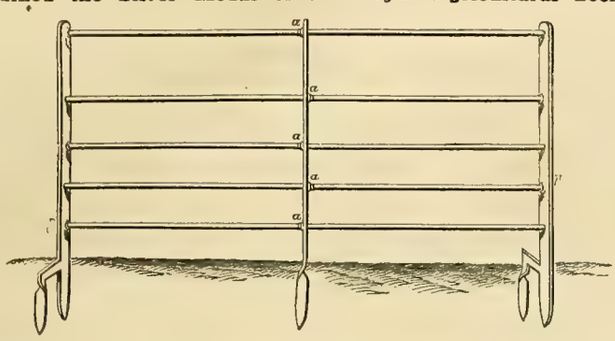
THE ST. PANCRAS IRON WORKS ARE OPPOSITE THE OLD ST. PANCRAS CHURCH,
OLD ST. PANCRAS ROAD, LONDON.

IRON COLLAR BAR HURDLES.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

Obtained the Silver Medal of the Royal Agricultural Society.

ST. PANCRAS IRON WORKS,



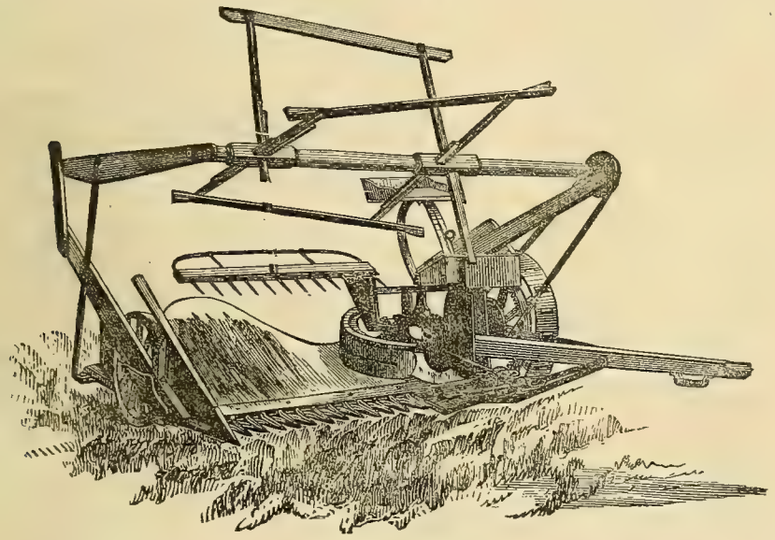
OLD ST. PANCRAS ROAD, LONDON

The improvement by this PATENT consists in the COLLARS on the Bars which, being placed on alternate sides of the centre upright bar, keep it in its position, confine the bars to short bearings, prevent their being strained, and give more than DOUBLE STRENGTH and RIGIDITY to the HURDLE.

PROFESSOR VARNELL'S MANGERS AND STABLE FITTINGS.

B. SAMUELSON,

AGRICULTURAL ENGINEER AND MACHINIST,



WAREHOUSE, 76, CANNON STREET WEST, LONDON,

WORKS AT BANBURY,

INFORMS MERCHANTS, the TRADE, and AGRICULTURISTS, that he has opened the above Warehouses as a depôt for his own manufactures and those of Messrs. Barrett, Clayton, Howard, Hornsby, Nicholson, Richmond, Tuxford, Smith, and all other first-class makers, whose implements he is prepared to offer on makers' terms.

THE BRITANNIA SELF-RAKING REAPING MACHINE,

With side delivery in sheaf, no rakers or gatherers required; and all the most improved Food-preparing Machines of the season, may be inspected at the above depôt.

B. SAMUELSON, 76, Cannon Street West, London; and Britannia Works, Banbury.

THE CHAMPION STEAM PLOUGH can be had by applying at 40, Mark Lane, London. Its recommendation is the valuable work it has done. Orders for this Spring must be sent at once.

Woolston, Bletchley Station.—Feb. 26.

FLOWER POTS, of superior Red Clay, manufactured by the Arley Pottery Company (Limited), equal in appearance to Terra Cotta at the price of the common pots usually sold, say 2*s.* per cast, delivered in London.—Apply to TAYLOR & PEARS, 8, George Yard, Lombard Street, City, E.C.

TROTMAN'S RUSTIC WORK, a great variety always on view. Thatched Summer Houses, Pagoda-roof Zinc ditto; Yew, Oak, and Swiss Tables, Oak Benches, Yew Seats and Stools, Flower Vases and Baskets, Perambulators, Bath Chairs, &c., ready for delivery, always on view at TROTMAN'S Manufactory, 12, Alfred Terrace, Upper Holloway. Delivered free to any Railway Station.

HORTICULTURAL POTTERIES.

ADJOINING THE STAPLETON ROAD NURSERIES, BRISTOL.

MAULE AND SONS have just completed an extensive enlargement of their Manufactories, which will afford them greater facilities for increasing their supplies of all kinds of GARDEN POTS, VASES, and other ORNAMENTAL POTTERY, suitable both for utility and Horticultural decorations and embellishments.

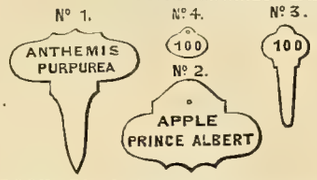
Horticulturists who have not yet favoured this establishment with their patronage will find every advantage both as regards quality and price.

The first workmen are employed, and the whole of their talents and attention is concentrated in the production of Horticultural Pottery alone, an advantage not to be found in the kingdom besides.

ILLUSTRATED CATALOGUES and LISTS of PRICES sent on application.

Nurserymen and the Trade supplied on advantageous terms.

PATENT ANTI-CORROSIVE MARKED LABELS.



A. J. BOOT, Lloyd Street, Hulme, Manchester, respectfully calls the attention of the Nobility, Gentry, Nurserymen, and Gardeners to his PATENT ANTI-CORROSIVE MARKED LABELS. The indestructible metal of which they are manufactured, the deep and legibly marked letters, and their neatness of design, render them essential in every well-conducted horticultural building, garden, or orchard, where so much depends upon the preservation of names. The inventor guarantees them to endure for centuries in any climate; neither damp nor heated atmosphere having the slightest effect upon their durability. They need only be cleaned with soap and water to renew their usefulness and neat appearance every year, which qualities will ensure for them a preference to all others now in use. The following descriptions will give an idea of their general utility.

No. 1. Large-tongued Label, 4*s.* per dozen, suitable for all stove plants, Orchids, greenhouse plants, annual and perennial flowers, and all kinds of bulbous roots.

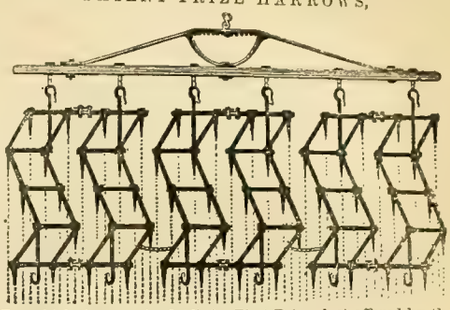
No. 2. Wall Labels, 4*s.* per dozen, for all kinds of wall trees, standards, Vines, Roses, Dahlias, Hollyhocks, or for fixing on blocks of wood for orchidaceous plants and all kinds of shrubs or ornamental plants and nursery stock in general.

No. 3. Small-tongued Numbered Label, 6*s.* per 100, for Polyanthus, Auriculas, Tulips, and all descriptions of florists' flowers.

No. 4. Small Numbered Label, 5*s.* per 100, for numbering every description of choice and tender plants, Rose trees, &c.

HOWARDS' PRIZE IMPLEMENTS, 1859.

JAMES AND FREDK. HOWARD, Britannia Iron Works, Bedford, beg to direct attention to their PATENT PRIZE HARROWS,



For which they received All the First Prizes last offered by the Royal Agricultural Society of England, viz.:—

The First Prize for the Best General Purpose Harrows.
The First Prize for the Best Light Harrows.
The First Prize for the Best Drag Harrows.

J. & F. HOWARD have discontinued troubling the Public with a long List of Prizes awarded to their Implements, but they would just state that for PLOUGHS, HARROWS, and HORSE RAKES, they have for several years gained every Prize for which they have competed.

PLOUGHS.

P PLOUGH, with two wheels, for light work ..	£4 7 6
PP PLOUGH, ,, for general purposes	4 12 6
SKIM COULTER	£0 5 6

STEEL BREASTS, 7*s.* and 7*s.* 6*d.* extra.

HARROWS.

A Set of Three 4-Beam HARROWS, with Whippletree, recommended as general Seed Harrows, 9½ feet wide, marked No. 12	£3 14
A Set of Three 4-Beam HARROWS, with Whippletree, adapted for 3 Horses, 10 feet wide, marked No. 11 ..	4 4

HORSE RAKES.

Price of small size RAKE, marked A, with 24 iron teeth, extreme width 7½ feet	£7 10 0
Ditto, with Steel Teeth	8 0 0
Price of large size, marked B, with 28 iron teeth, extreme width 8½ feet	8 0 0
Price of large size, marked B, with steel teeth ..	£8 10 0
Price of extra large size, marked C, with 24 steel teeth, extreme width, 8½ feet	10 10 0
Price of a Set of 15 Prongs, to be attached to the above when used as Weed Extirpators	1 10 0

Free Delivery to Birmingham, Bristol, Derby, Gloucester, Lincoln, Liverpool, London, Manchester, Norwich, Nottingham, Retford, Wisbeach, and Worcester; or to Dublin, Edinburgh, Glasgow, and other parts at fixed rates.

HOWARDS' NEW CATALOGUE, containing prices and description of their Patent Ploughs, Harrows, Horse Rakes, and other Implements, including Smith's Steam Cultivators, for which they received at Chester the Gold Medal of the Royal Agricultural Society of England, sent free on application to

J. & F. HOWARD, Britannia Iron Works, Bedford.

FERRABEE'S NEW PATENT LAWN-MOWING MACHINES—1859.

MANUFACTURED BY

JAMES FERRABEE AND CO., PHŒNIX IRON WORKS, Stroud, Gloucestershire.—The valuable improvements recently effected in Mowing Machines by J. FERRABEE & Co., and by which their capabilities are more than doubled, are protected by Her Majesty's Royal Letters Patent; and the manufacturers feel every confidence in commending to the attention of those who have either Lawns or Pleasure Grounds these improved Machines, as the most perfect and serviceable which are produced, and at the most moderate prices.

The peculiar features of FERRABEE'S Patent Mowing Machine are the following, viz.:—

1. All the cutting parts and their adjustments are fitted in an independent carriage, which is bolted to the frame of the Machine, and can readily be detached for the purpose of sharpening the edges or for repairs.

2. A duplicate set of cutting parts may be employed, and can be attached with the greatest ease, and are sure to fit the machine accurately.

3. Combined with the curved blade, invented several years since by J. F. & Co., are new methods of fixing it and of adjusting the revolving cylinder to the blade; these adjustments are easier of access and more secure than those formerly in use.

4. To steady the action of the Machine and regulate the length of cut, two methods are adopted; one consists of guide wheels at the side of the machine, and the other of a roller behind the revolving cylinder; either of them can be quickly removed at the pleasure of the workman, whereby he can adapt the Machine to level or uneven ground or to verges.

5. There is a very simple and effective contrivance for sharpening the edges of the revolving cylinder.

6. The large Machines have each a regulating lever, which gives the attendant instant and perfect control over the Machine, enabling him with the greatest ease to raise the cutting part at starting when turning, or to avoid obstacles.

7. Increased strength and durability, greater steadiness in action, and extreme simplicity of management.

The Patent Machines are made of the following sizes, the letters A, B, &c., being used to facilitate reference to the list. The prices include carriage to the principal railway stations in England, and the terms are net cash.

A,	cutting 12 inches wide,	for a boy	£4	10 0
B,	,, 16 ,,	for one man	6	0 0
C,	,, 19 ,,	for a man and a boy ..	6	10 0
D,	,, 22 ,,	,, ,, ..	7	0 0
E,	,, 26 ,,	for two men	8	10 0
F,	,, 22 ,,	for a donkey or a pony	8	0 0
G,	,, 26 ,,	for a pony	9	0 0
H,	,, 24 ,,	for a horse	14	0 0
I.	,, 28 ,,	,, ...	16	0 0
K,	,, 36 ,,	,, ...	18	0 0

Sharpening Apparatus for A, B, C, D, E, F, G, 5*s.* extra.
,, ,, for H, I, K, 10*s.* extra.

The Horse Machines, H, I, K, are fitted with cylinders of large diameter, and have all their parts of strength suitable to horse power.

FERRABEE'S Patent Mowing Machines may be obtained of the principal Ironmongers and Seedsmen in the country, and purchasers should see that "FERRABEE'S Patent" is on every machine.

FOWLER'S PATENT STEAM PLOUGH.

THIS IMPLEMENT OBTAINED
THE FIVE HUNDRED POUNDS PRIZE AT THE ROYAL AGRICULTURAL SOCIETY'S SHOW AT CHESTER, JULY 1858 (AFTER THREE YEARS' COMPETITION),
AND HAS ALSO OBTAINED
THREE HUNDRED AND SEVENTY-FIVE POUNDS AT VARIOUS OTHER AGRICULTURAL SHOWS IN THE UNITED KINGDOM.

THE WINDLASS CAN BE FITTED TO ANY AGRICULTURAL ENGINE.

For further Particulars, Prices, and Catalogues, apply to

JOHN FOWLER, Jun., 28 Cornhill, London, E. C.

TO GARDENERS, ETC.

PATENT WATERING ENGINES, PAIL MACHINES, CONSERVATORY PUMPS, and GREENHOUSE SYRINGES, with all the latest improvements, manufactured only by the Patentee,
RICHARD READ, 35, REGENT CIRCUS, PICCADILLY, LONDON.
*** Descriptions sent post free.

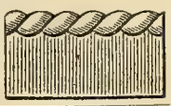
JOHN WARNER AND SONS, Crescent, Jewin Street, London.—GALVANISED IRON TUB GARDEN ENGINE, with WARNER'S Registered Spreader, is strongly recommended, for durability and low price, viz., 2 . 19s., to hold 10 gallons.



Larger sizes in wood or iron, viz., 14 gallons, 24 gallons, and 35 gallons. May be obtained of any Ironmonger or Plumber in town or country, or of the patentees and Manufacturers, as also Machinery of all kinds for raising Water from any depth to any height by Steam, Horse, or Manual Power. Prices sent on application.

Syringes of various constructions and sizes from 9s. upwards. Metallic String from 5d. to 1s. 3d. per lb.

LOOMES AND CO., Whittlesea, MANUFACTURERS OF BRICKS, TILES, POTTERY, &c., beg to call attention to their new CABLE PATTERN GARDEN BORDER EDGING, which not only surpasses others in appearance and durability, but is free from the dangerous points and sharp edges of most.—Price, delivered on any Railway at Peterborough, 5d. per yard.



MAPPIN'S PRUNING KNIVES IN EVERY VARIETY.

WARRANTED GOOD BY THE MAKERS.



MAPPIN BROTHERS, Queen's Cutlery Works, Sheffield; and 67 and 68, King William Street, London.

MAPPIN'S "SHILLING" RAZORS Shave well for Twelve Months without Grinding.

MAPPIN'S 2s. RAZORS Shave well for Three Years.

MAPPIN'S 3s. RAZORS (suitable for Hard or soft Beards,) Shave well for Ten Years.

MAPPIN'S SUPERIOR TABLE-KNIVES maintain their unrivalled Superiority—handles cannot possibly become loose—the blades are all of the very first quality, being their own Sheffield manufacture.

	Tble. Kns.	Dst. Kns.	Carvers.
Ivory 3¼ in. Handle, balanced,	20s. p. doz.;	16s. p. doz.;	6s. p. pair
Do. 4 in. do. ..	25s. ,,	18s. ,,	9s. ,,

MAPPIN'S SILVER-PLATED DESSERT KNIVES and FORKS, in Mahogany Cases.

12 Pairs Knives and Forks,	Ivory Handles, in Case..	80s.
12 Do.	Pearl Handles, do. ..	130s.
12 Do.	Silver-Plated Handles, do. ..	80s.

MAPPIN'S ELECTRO-SILVER PLATE.—MAPPIN BROTHERS, Manufacturers by Special Appointment to the Queen, are the only Sheffield makers who supply the consumers in London. Their LONDON SHOW ROOMS, 67 and 68, King William Street, London Bridge, contain by far the largest STOCK of ELECTRO-SILVER PLATE in the World, which is transmitted direct from their Manufactory, Queen's Cutlery Works, Sheffield.

	Fiddle Pattern.	Double Thread.	King's Pattern.
12 Table Forks, best quality	£1 16 0	£2 14 0	£3 0
12 Table Spoons, best quality	1 16 0	2 14 0	3 0
12 Dessert Forks, best quality	1 7 0	2 0 0	2
12 Dessert Spoons, best quality	1 7 0	2 0 0	2
12 Tea Spoons, best quality	0 16 0	1 4 0	1 7

Messrs. MAPPIN BROTHERS respectfully invite buyers to inspect their unprecedented display, which, for beauty of design, exquisite workmanship, and novelty, stands unrivalled. Their illustrated Catalogue, which is continually receiving addition of New Designs, sent per post on receipt of 12 stamps.—MAPPIN BROTHERS, 67 and 68, King William Street, London Bridge; Manufactory, Queen's Cutlery Works, Sheffield.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

"NO ONE KNOWING the value of your Patent WASHING, WRINGING, and MANGLING MACHINE, would be without one."—*Vide Mrs. Hall.*



THOMAS BRADFORD, Patentee, Manchester.

Descriptive Pamphlet, with Prices by post.

MICROSCOPES.

JOSEPH AMADIO'S Improved Compound MICROSCOPE, 2l. 2s.; Students', 3l. 13s. 6d.

"Both these are from Amadio, of Throgmorton Street, and are excellent of their kind, the more expensive one especially."—*Household Words*, No. 345.

A large Assortment of ACHROMATIC MICROSCOPES.

Just published an ILLUSTRATED CATALOGUE, containing the names of 1000 Microscopic objects, post free, for 4 stamps.

GENUINE TOBACCO PAPER.

MESSRS. JACKSON AND SONS' WORKMEN are selling their unequalled TOBACCO PAPER at 4l per cwt., any less quantity 10d. per lb.—Address BEN BAXTER, Messrs. Jackson & Son, Lady Lane, Leeds.

GENUINE TOBACCO PAPER FOR FUMIGATING.

H. APPLEBY (Foreman to Messrs. Ivery & Son, Nurserymen, Dorking, Surrey), begs to inform his friends and the public that he now offers the above article at a reduced price. Sold in 4-lb. packets, 1s. 3d. per lb. A great reduction to the trade; price on application. For testimonials that will guarantee its quality, see *Gardeners' Chronicle*, Dec. 11, 1858, page 920.

SHEET IRON POTS FOR FUMIGATING, 3s. 6d. each.

N.B. All Orders to be accompanied with a Post-office Order, payable to HENRY APPLEBY, Dorking, Surrey.

DESTRUCTION OF INSECTS.

CAPELL'S COMPOSITION, price 3s. per gallon.—Horticulturists are earnestly invited to make trial of this Composition. It has been extensively used by Gardeners of eminence in the north of England, and found to be more efficacious and economical than any preparation of the kind hitherto brought under the notice of the Public. Red Spider, Scale, Thrip, Mealy Bug, and insects of every description injurious to vegetation are instantly destroyed by it. Carriage free to all parts of England. Manufactured by THOMAS CAPELL, Wortley, near Sheffield, and sold by the following agents:—

J. TURNER, 46, Market Street, Manchester
F. GODWIN, 2, 3, & 4, New Market Hall, Sheffield
JAMES DICKSON & SONS, 102, Eastgate Street, Chester
A. MARTIN & SONS, Junction Street, Hull
JOHN SANDERSON, Grove Place, Worksop
S. HARKER, Wharf Street, Sowerby Bridge
(More Agents required.)

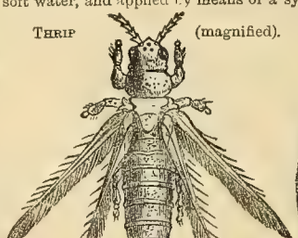
TESTIMONIALS.

"Capell's Composition for the destruction of insects has for some time been in use here; it is most efficient in its operation, and is, I think, very superior to any other application recommended for that purpose.
"S. BREWIN, Cotefield, near Sheffield."

"It gives me much pleasure to certify that the composition made by Mr. Capell for destroying insects answers the purpose most effectually, and is free from any unpleasant smell, a great drawback to many other remedies I have tried
"EDWARD LAW, Gardener, Wortley Hall."

GISHURST COMPOUND, PATENTED.—For preventing and destroying Red Spider, Scale, Mealy Bug, Thrip, and Green and Brown Fly.—See *Gardeners' Chronicle*, Nov. 6, 1858.—To be dissolved ½ or ¼ lb., or less, in a gallon of soft water, and applied by means of a syringe or a soft brush.

THRIP (magnified).



MEALY BUG (magnified).



On Orchids it may be used in a strong lather, applied by a shaving brush, but on tender young Geranium such a solution of 2 oz. to the gallon will be found sufficiently strong.

Sold in boxes at 1s. 6d. and 6s. each, with directions for use, and printed opinions of Mr. Rucker's Gardener, Lady Dorothy Neville's Gardener, Sir William Hooker, Mr. Rivers, Messrs. Francis & Arthur Dickson & Sons of Chester, and Messrs. Dickson & Brown of Manchester.

For Nurserymen the large size is recommended, but where the consumption is not large the compound will be found to keep its strength best in the small boxes.

Nurserymen and Seedsmen supplied by PRICE'S Patent Candle Company (Limited), Belmont, Vauxhall, London, S.

TO PIG AND POULTRY FEEDERS AND MILLERS.

CHICKEN RICE, 7s. 9d. per cwt., in bags 1½ cwt. each. SCREENED RICE, 10s. per cwt., in bags 1½ cwt. each. RICE MEAL, 6s. 9d. to 8s. 9d. per cwt. RICE for grinding. An allowance per Ton. American Oilcake, per ton only, 10l. 15s. in bags, 11l. 5s. in barrels.—Sold for Cash by W. & R. JUPP, 6, Cross Lane, St. Mary-at-Hill, Eastcheap, E.C.

SOMETHING OF CONSEQUENCE TO THOSE WHO DESIRE TO
FEED CAME, POULTRY, HORSES, & OTHER CATTLE
WELL AND CHEAP.

ROBERT PROCTER, Corn Exchange, Brunswick Street, Liverpool, has always on hand a FEEDING MIXTURE, well screened, of the best Oats, Barley, small Galatz Indian Corn, Wheat, Dari, Peas, and Rice, all in equal proportions of 100 centals, at 7s. 6d per cental of 100 lbs, or half cental of 50 lbs at 3s. 9d., including a good and strong calico bag (and no porterage or carriage charged), delivered at any of the Railway Stations or other conveyance at Liverpool. A trial only is invited, and manifest economy shall be the result; or if parties visiting or passing through this town will call at Mr. PROCTOR'S room, No. 3, 16, Goree, near George's Dock, they can see and judge for themselves the bulk, and the advantage and cheapness of the article offered. No damaged corn will, on any consideration, be allowed to pass into the bulk, and R. PROCTER'S experience and connection with the corn trade for upwards of 30 years shall be a guarantee of perfectly good faith.

The payment to be net cash, either by Post-office order, postage stamps, or banker's bill, at the time of or before delivery. The goods shall be sent off on the day of payment. Parties buying 100 centals and over will be allowed a reduction of 2d. per 100 lbs., and 500 centals and upwards a reduction of 3d. per 100 lbs. This Advertisement to hold good as regards price until the 31st March next ensuing.—Liverpool, Feb. 26.

HANDSOME BRASS AND IRON BEDSTEADS.—HEAL & SON'S Show Rooms contain a large assortment of Brass Bedsteads, suitable both for Home use and for Tropical Climates; handsome Iron Bedsteads with Brass Mountings and elegantly Japanned; Plain Iron Bedsteads for Servants; every description of Wood Bedstead that is manufactured, in Mahogany, Birch, Walnut-tree Woods, Polished Deal and Japanned, all fitted with Bedding and Furniture complete, as well as every description of Bedroom Furniture.

HEAL AND SON'S ILLUSTRATED CATALOGUE, containing Designs and Prices of 100 Bedsteads, as well as of 150 different articles of Bedroom Furniture, sent free by post.—HEAL & SON, Bedstead, Bedding, and Bedroom Furniture Manufacturers, 196, Tottenham Court Road, W.

FENDERS, STOVES, AND FIRE-IRONS.—Buyers of the above are requested, before finally deciding, to visit WILLIAM S. BURTON'S SHOW ROOMS. They contain such an assortment of FENDERS, STOVES, RANGES, FIRE-IRONS, and GENERAL IRONMONGERY as cannot be approached elsewhere, either for variety, novelty, beauty of design, or exquisiteness of workmanship. Bright Stoves, with ormolu ornaments and two sets of bars, 3l. 15s. to 33l. 10s.; Bronzed Fenders, with standards, 7s. to 5l. 12s.; Steel Fenders, 2l. 15s. to 11l.; ditto, with rich ormolu ornaments, 2l. 15s. to 18l.; Fire-Irons, from 2s. 3d. the set to 4l. 4s. The BURTON and all other PATENT STOVES, with radiating hearth-plates.

BEDSTEADS, BATHS, AND LAMPS.—WILLIAM S. BURTON has SIX LARGE SHOW ROOMS devoted exclusively to the SEPARATE DISPLAY of Lamps, Baths, and Metallic Bedsteads. The stock of each is at once the largest, newest, and most varied ever submitted to the public, and marked at prices proportionate with those that have tended to make his establishment the most distinguished in this country.

Bedsteads, from	12s. 6d.	to £20	0s. each.
Shower Baths, from	8 0	,, 6 0	,,
Lamps (Moderateur), from ..	6 0	,, 7 7	,,

(All other kinds at the same rate.)

Pure Colza Oil .. .. 4s. 3d. per gallon.

DISH COVERS AND HOT-WATER DISHES.—In every material, in great variety, and of the newest and most recherché patterns. Tin Dish Covers, 7s. 6d. the set of six; Block Tin, 12s. 3d. to 27s. 0d. the set of six; elegant modern patterns, 35s. 6d. to 62s. 6d. the set; Britannia Metal, with or without silver-plated handles, 3l. 11s. 0d. to 6l. 8s. 0d. the set; Sheffield plated, 10l. to 16l. 10s. the set; Block-tin Hot-water Dishes, with wells for gravy, 12s. to 30s.; Britannia Metal, 22s. to 77s.; Electro-plated on Nickel, full size, 11l. 11s.

WILLIAM S. BURTON'S GENERAL FURNISHING IRONMONGERY CATALOGUE may be had gratis, and free by post. It contains upwards of 400 Illustrations of his illimited Stock of Electro and Sheffield Plate, Nickel Silver and Britannia Metal goods, Dish Covers and Hot-water Dishes, Stoves, Fenders, Marble Chimney pieces, Kitchen Ranges, Lamps, Gaseliers, Tea Urns and Kettles, Tea Trays, Clocks, Table Cutlery, Baths and Toilet Ware, Turnery, Iron and Brass Bedsteads, Bedding, Bed Hangings, &c., with Lists of Prices and Plans of the 16 large Show Rooms at 39, Oxford Street; 1, 1A, 2, and 3, Newman Street; and 4, 5, and 6, Perry's Place, London.—Established 1820.

PRIZE MEDAL, PARIS EXHIBITION 1855.

METCALFE, BINGLEY, AND CO.'S New Pattern and Penetrating Tooth Brushes, Penetrating unbleached Hair Brushes, Improved Flesh and Clothes Brushes, and genuine Smyrna Sponges; and every description of Brush, Comb, and Perfumery for the Toilet. The Tooth Brushes search thoroughly between the divisions of the Teeth and clean them most effectually—the hairs never come loose. M., B., and Co. are sole makers of the Oatmeal and Camphor, and Orris Root Soaps—sold in Tablets (bearing their names and address) at 6d. each, of METCALFE'S celebrated Alkaline Tooth Powder, 2s. per box; and of the New Bouquets.—Sole Establishment, 130B and 131, Oxford St., 2d and 3d doors west from Holles St., London.

KNOW THYSELF.—MARIE COUPELLE continues to give her graphic and interesting delineations of character, discoverable from an examination of the handwriting, in an unique style of description peculiarly her own. All persons desirous of knowing themselves, or any friend in whom they are interested, must send a specimen of the writing, stating the sex and age, and enclosing 13 penny postage stamps, and a directed envelope, to Miss COUPELLE, 69, Castle Street, Oxford Street, London, and they will receive in a few days a minute detail of the talents, tastes, virtues, and failings of the writer, with many other things hitherto unsuspected. All letters are considered strictly confidential.

DO YOU WANT LUXURIANT HAIR, WHISKERS, &c.?—COUPELLE'S CRINUTRIAR is guaranteed to produce whiskers, moustachios, eyebrows, &c., in two or three weeks with the utmost certainty, strengthen weak hair, prevent its falling off, check greyness in all its stages, and reproduce the hair in baldness, from whatever cause, price 2s. Sold by all chemists in the world; or will be sent post free, on receipt of 24 penny postage stamps, by Miss COUPELLE, 69, Castle Street, Newman Street, Oxford Street, London. A toilet guide sent post free for four penny postage stamps. "It completely restored my hair."—Miss Davis. "My whiskers are now growing freely."—H. Merry, Esq.

WHITE AND SOUND TEETH are indispensable to personal attraction and to health and longevity by the proper mastication of food. ROWLANDS' ODONTO, or Pearl Dentifrice, compounded of oriental ingredients, is of inestimable value in improving and beautifying the teeth, strengthening the gums, and in rendering the breath sweet and pure. It eradicates tartar from the teeth, removes spots of incipient decay, and polishes and preserves the enamel, to which it imparts a pearl-like whiteness. As the most efficient and fragrant aromatic purifier of the breath, teeth, and gums ever known, ROWLANDS' Odonto has, for a long series of years, occupied a distinguished place at the toilets of the sovereigns and the nobility through Europe; while the general demand for it at once announces the favour in which it is universally held.—Price 2s 9d. per box. CAUTION.—The words "ROWLANDS' Odonto" are on the Label, and "A. ROWLAND & SONS, 20, Hatton Garden," engraved on the Government stamp affixed on each box.—Sold by the Proprietors, and by Chemists and Perfumers.

IMPORTANT INFORMATION.—Mrs. Brown, of Queen Street, Kingsland, was for years severely afflicted with a scorbutic eruption, covering the back of both hands, and spreading up her arms. She was persuaded to try Dr. ROBERTS'S POOR MAN'S FRIEND and PILULÆ ANTI SCROPHULÆ by a friend who had a large wound in her leg which baffled her doctor's skill, but was effectually cured by these medicines. She only took one box of the Pills, and used one pot of the Ointment, which effected a cure to the surprise of her friends, who wish it to be made public for the benefit of her suffering fellow creatures. Dr. ROBERTS'S POOR MAN'S FRIEND and PILULÆ ANTISCROPHULÆ have been proved, by 60 years' experience, successful in the cure of eruptions and wounds of every description. Price 1s. 1½d.; 2s. 9d.; 4s. 6d.; 11s.; and 22s. each.—Sold wholesale by the Proprietors, BEACH & BARNICOTT, at their Dispensary, Bridport, and by the London Houses; and retail by all respectable Medicine Vendors in the United Kingdom and the Colonies.

CHUBB'S LOCKS, FIREPROOF SAFES, DOOR LATCHES, CASH AND DEED BOXES. Illustrated Priced Lists sent free —57, St. Paul's Churchyard, London; 28, Lord Street, Liverpool; 16, Market Street, Manchester; and at Wolverhampton

ALLENS' ILLUSTRATED CATALOGUE OF PATENT PORTMANTEAUS, with four compartments DISPATCH BOXES, WRITING and DRESSING CASES, TRAVELLING BAGS, with square opening; and 500 other articles for travelling. By post for two stamps.
J.W. & T. ALLEN, Manufacturers of PORTABLE BARRACK-ROOM FURNITURE and MILITARY OUTFITTERS.
See separate Catalogue.)—18 and 22, Strand.

SEWELL AND CO.'S FURNISHING DEPARTMENT.
BRUSSELS CARPETS at the old prices, notwithstanding the manufacturers' advanced lists.
A Magnificent Collection of AUBUSSON CARPETS.
An Unrivalled display of French and English CHINTZES, in patterns not to be seen in any other house.
SILK DAMASKS, at very reduced prices, and all the new SILK BORDERS for REPS CURTAINS.—Compton House, Soho.

THE ENGLISH MOIRE ANTIQUE, unrivalled in brilliancy, quality, and effect, 4 guineas the Robe (extra length).
SOIE des FEES, New Evening and Ball Dresses, double skirts, or two flounces to the waist. Exclusively at
SEWELL & Co.'s, Compton House, Frith Street.

GLENFIELD PATENT STARCH
USED IN THE ROYAL LAUNDRY,
And pronounced by HER MAJESTY'S Laundress to be
THE FINEST STARCH SHE EVER USED.
When you ask for Glenfield Patent Starch, see that you get it, as inferior kinds are often substituted. Sold by all Chandlers, Grocers, &c.—WOTHERSPOON & Co., Glasgow and London.

WHISKIES (EQUALISATION OF DUTY). — The choicest Scotch and Irish, from 14s. to 18s. per gallon.—OWEN & Co, 75, Lower Thames Street, London, E.C., opposite the Custom House. Shipping and the Trade supplied

VINEGAR—Patronised by her Majesty's Government.
CONDY'S PATENT PURE CONCENTRATED MALT VINEGAR.— Families, by using this delicious Vinegar, insure purity, and effect a saving of 50 per cent. See Report of Dr. Letheby, City Officer of Health; Dr. Hassall of the *Lancet* Commission, and others. Six Quart Sample sent free to any Railway for 3s. 6d.—Sold by the Trade, in bottles, labelled and capsuled; wholesale, 63, King William Street, London Bridge, E.C.

FRY AND SONS' CHOCOLATES AND COCOAS. —Victoria Chocolate, Bon Bons, Soluble Cocoa, &c., in great variety. These delicious beverages are now sold at very moderate prices, and many of them are highly economical.
FRY'S HOMŒOPATHIC COCOA is an article of unexceptionable quality. FRY'S SOLUBLE COCOA, in Hexagon packets, and FRY'S PEARL COCOA, are strongly recommended.
FRY AND SONS, MANUFACTURERS TO THE QUEEN.
Liebig, the celebrated Chemist, asserts that nitrogen is essential to the healthy action of the bile, and the growth, sustenance, and invigoration of the body. No stronger recommendation of Cocoa and Chocolate can therefore be given than the following statement:—Caffeine and Theine each contain only about 29 per cent., whilst Theobromine (or essence of Cocoa) contains upwards of 35 per cent. of nitrogen

ASTHMA.—DR. LOCOCK'S PULMONIC WAFERS give instant relief and a rapid cure of Asthma, Consumption, Coughs, and all disorders of the Breath and Lungs. They have a pleasant taste. Price 1s. 1½d., 2s. 9d., and 11s. per box. Sold by all druggists.

KEATING'S COUGH LOZENGES.—A Cough or Cold is the original cause of three-fourths of the diseases peculiar to this climate, and the foundation of all Pulmonary Disorders. The most efficacious and agreeable remedy is KEATING'S COUGH LOZENGES, which, taken on the first symptoms, at once alleviates and soothes the respiratory organs, and avoids recourse to more powerful remedies.—Sold in Boxes, 1s. 1½d., and Tins, 2s. 9d. each, by THOMAS KEATING, 79, St. Paul's Churchyard, London. Retail by all druggists.

HOLLOWAY'S OINTMENT AND PILLS.—ATMOSPHERIC CHANGES.—The keen cutting winds succeeding the warm moist weather so long prevailing will have a deleterious effect on the complexion, skin, and nervous systems. Blotches, boils, rheumatism, colds, and sore throats, already surround us, but yield to the early administration of HOLLOWAY'S Pills. On first symptoms presenting themselves these invaluable medicines should be at once resorted to, when each and all, Diptheria included, will either be prevented altogether, or thrown off without damaging the weakest constitution. Erysipelas, blotched face, and hoarseness, depart at once before the cleansing, purifying, preservative powers of these twin remedies which Royalty itself has commended, and whose well-merited praises flow from peer and peasant in every clime.

PAINS IN THE BACK, Gravel, Lumbago, Rheumatism, Gout, Indigestion, Flatulency, Nervousness, Debility, &c.—DR. DE ROOS' COMPOUND RENAL PILLS have been long established as a safe and efficacious remedy for the above complaints, discharges of any kind, retention of urine, and diseases of the kidneys, bladder and urinary organs generally, which, if neglected, frequently end in stone in the bladder and a lingering death. For depression of spirits, incapacity for society, study or business, confusion, giddiness, drowsiness, sleep without refreshment, fear, nervousness, and insanity itself, when arising from or combined with urinary diseases, they are unequalled. By their salutary action in correcting bile and acidity of the stomach, they prevent the formation of stone, and establish the healthy functions of all these organs.—Price 1s. 1½d., 2s. 9d., 4s. 6d., 11s., and 33s. per box, through all Medicine Vendors, or sent free on receipt of the amount in postage stamps, by Dr. DE ROOS, 10, Berners Street, Oxford Street.

CHEAP AND CORRECT PRINTING FOR THE NURSERY AND SEED TRADES.—Send your orders to ROBT. EDM. TAYLOR, PRINTER, Sea Coal Lane, Skinner Street, Snow Hill, London, E.C. Estimates forwarded.

CARDS FOR THE MILLION—Wedding, Visiting, and Business.—A Copper-plate elegantly Engraved and 50 best Cards printed for 2s.—Sent post free by ARTHUR GRANGER, Cheap Stationer, &c., 308, High Holborn.

MUDIE'S SELECT LIBRARY.—Fresh copies of every recent work of acknowledged merit and general interest in History, Biography, Religion, Philosophy, Travel, and the Higher Class of Fiction, continue to be added to this Library as freely as Subscribers may require them. The present rate of increase exceeds One Hundred Thousand Volumes per annum. Single Subscription, One Guinea per annum. First-class Country Subscription, Two Guineas and upwards, according to the number of Volumes required.
CHARLES EDWARD MUDIE, New Oxford Street, London; and Cross Street, Manchester.

This day is published, price 2s. 6d.,
FOLIA ORCHIDACEA, Part VIII. Containing Stelis, Oberonia, Alvisia, Brachionidium, Restrepia, and part of Pleurothallis; and also the views of M. Prilleux concerning the Fruit of the order.
Parts I. to VII., price 2s. 6d. each, may still be had.
JAMES MATTHEWS, 5, Upper Wellington St., Covent Garden, W. C.

Second Edition, revised and enlarged, price 5s. 6d. cloth; free by post, 5s. 10d.,
ORNAMENTAL AND DOMESTIC POULTRY; THEIR HISTORY AND MANAGEMENT.
By the Rev. EDMUND SAUL DIXON, M.A.
J. MATTHEWS, 5, Upper Wellington Street, Covent Garden.

Third Edition, considerably enlarged, price 5s. 6d., free by post, 5s. 10d.,
RURAL CHEMISTRY.
By EDWARD SOLLY, F.R.S., F.L.S., F.G.S.
Honorary Member of the Royal Agricultural Society of England, Professor of Chemistry to the Horticultural Society of London, Lecturer on Chemistry in the Hon. E. I. Co.'s Military Seminary at Addiscombe, &c., &c.
J. MATTHEWS, 5, Upper Wellington St., Covent Garden, London, W.C.

Price 1s. 6d., free by post, 1s. 7d.
LABELS FOR THE HERBARIUM,
CONSISTING OF THE NAMES OF THE
CLASSES, ALLIANCES, ORDERS, AND SUB-ORDERS,
OF
PROFESSOR LINDLEY'S "VEGETABLE KINGDOM."
So printed in large type, that they can be cut out and pasted into THE HERBARIUM.
J. MATTHEWS, 5, Upper Wellington Street, Covent Garden, London, W.C.

In consequence of the new postal arrangements, parties in the country who desire it can have two copies sent by post for one stamp, five for two stamps, or eleven for four, in addition to the cost of the numbers.
Price 3d. each, or 5s. for 25 copies for distribution among Cottage Tenantry, delivered anywhere in London, on a Post-office Order being sent to the Publisher, JAMES MATTHEWS, at the Office of the *Gardeners' Chronicle*.

THE COTTAGER'S CALENDAR OF GARDEN OPERATIONS. By Sir JOSEPH PAXTON, M.P.
Reprinted from the GARDENERS' CHRONICLE. Upwards of 126,000 have already been sold.
CONTENTS:—

African Lilies	Gentianella	Planting
Agapanthus	Gilias	Plums
Anemones	Gooseberries	Polyanthus
Annuals	Grafting	Potatoes
Apples	Green-fly	Pruning
Apricot	Heartsease	Privet [tings
Auriculas	Herbs [nials	Propagation by cut-
Beans	Herbaceous Peren	Pyracantha
Beet	Heliotrope	Radishes
Biennials	Hollyhocks	Ranunculus
Black Fly	Honeysuckle	Raspberries
Books for Cottagers	Horse-radish	Rhubarb
Borage	Hyacinths	Rockets
Borecole	Hydrangeas	Roses
Box Edgings	Hyssop	Rue
Broccoli	Indian Cress	Rustic Vases
Brussels Sprouts	Iris	Sage
Budding	Kidney Beans	Salvias
Bulbs	Lavender	Savoys
Cabbage	Layering	Saxifrage
Cactus	Leeks	Scarlet Runner Beans
Calceolarias	Leptosiphons	Seeds
Californian Annuals	Lettuce	Sea Daisy or Thrift
Campanulas	Lobelias	Sealale
Carnations	London Pride	Select Flowers
Carrots	Lychnis, double	Select Vegetables and Fruit
Cauliflowers	Marigold	Snails and Slugs
Celery	Marjoram	Snowdrops
Cherries	Manures	Spinach
China Asters	Marvel of Peru	Spruce Fir
China Roses	Mesembryanthemums	Spur Pruning
Chrysanthemums, Chinese	Mignonette	Stocks
Chives	Mint	Strawberries
Clarkias	Mustard	Summer Savory
Clematis	Narcissus	Sweet William
Collinsias	Nemophilas	Thorn Hedges
Colewort	Œnothera bifrons	Thyme
Cress	Onions	Tigridia Pavonia
Creepers	Pæonies	Transplanting
Crocus	Parsnip	Tree Lifting
Crown Imperials	Parsley	Tulips
Cucumbers	Peaches	Turnips
Cultivation of flowers in windows	Pea-baulm	Vegetable Cookery
Dahlias	Pears	Venus's Looking Glass
Daisies	Peas	Verbenas
Dog's-tooth Violets	Pelargoniums	Vines
Exhibitions, preparing articles for	Perennials	Virginian Stocks
Felts, as protection for borders	Persian Iris	Wallflowers
Fuchsias	Petunias	Willows
	Phlox	Zinnias
	Pigs	
	Pinks	

J MATTHEWS, 5, Upper Wellington Street, Covent Garden, London, W.C.

On March 31, Part I., price 1s.,
ROUTLEDGE'S NEW ILLUSTRATED NATURAL HISTORY. By the Rev. J. G. WOOD, M.A., F.L.S. In Shilling Monthly Numbers.
"The want of a comprehensive, and at the same time accurate work on the Natural History of the Animal Kingdom has long been felt. We are therefore glad to see an announcement of a new natural history, which will embrace the most remarkable varieties of the animal kingdom, from the gigantic elephant to the minute manufacturer of the coral reef, and which is intended to instruct both the eye and the imagination of the reader. The graphic pen of the Rev. J. G. WOOD, already so popular for his life-like descriptions of animal life, and his 'Common Objects of the Country Sea-shore,' is a guarantee that this 'Illustrated Natural History,' while securing scientific accuracy, will possess the charm of a vivid delineation of the habits of the creatures described, and render the undertaking as amusing as it will be instructive."—*Sun*.
London: ROUTLEDGE, WARNES, & ROUTLEDGE, Farringdon Street

ELECTRICAL INFLUENCE IN HEALTH AND DISEASE.
Just published, price 1s., free by post for thirteen Stamps,
SECOND LIFE: or ELECTRICAL NERVOUS FORCE; a MEDICAL WORK intended for the special perusal of all who are suffering from the various forms of NERVOUS and PHYSICAL DIBILITY and the distressing ulterior consequences to which they lead; with practical Observations on the great Curative power of ELECTRO-GALVANISM in the Treatment of these disorders, by infusing tone and vigour in constitutions relaxed or debilitated from various enervating causes. Illustrated with Cases compiled from the Note-Book of a Registered Medical Practitioner of twenty years' standing.
MANN, 39, Cornhill, and all Booksellers.

PROFESSOR LINDLEY'S INTRODUCTION TO BOTANY, 4th Edition, with Corrections and Additions, now ready, in 2 vols. 8vo, with Six Copper Plates and numerous Wood Engravings. Price 24s. cloth.
London: LONGMAN, BROWN, & Co.

Just published, in 8vo, price 12s. cloth,
AN ESSAY ON CLASSIFICATION
By LOUIS AGASSIZ.
London: LONGMAN, BROWN, & Co., Paternoster Row; and TRÜBNER & Co.

NEW WORK BY MARY HOWITT.
Just published, in Two Vols. post 8vo, with numerous Wood Engravings, price 12s. cloth,
POPULAR HISTORY OF THE UNITED STATES OF AMERICA, from the Discovery of the American Continent to the Present Time. By MARY HOWITT.
London: LONGMAN, BROWN, & Co., Paternoster Row.

CHEAPER EDITION OF LOUDON'S GARDENING.
In one vol., 8vo, with many hundred Woodcuts, price 31s. 6d.,
LOUDON'S ENCYCLOPÆDIA OF GARDENING: Comprising the Theory and Practice of Horticulture, Floriculture, Arboriculture, and Landscape Gardening; including all the latest Improvements, &c. A New Edition, corrected and improved by MRS. LOUDON.
This work, which is admitted to be the best work on Gardening, is now brought within the reach of Head Gardeners, Nurserymen, and of those gentlemen who wish to provide their gardeners with a complete work on the Theory and Practice of Gardening.
The work comprises above 1300 closely printed pages, minutely classified in all the divisions of Floriculture, Arboriculture, Kitchen Garden, Landscape Gardening, &c. &c., and is illustrated with above One Thousand Engravings on Wood.
London: LONGMAN, BROWN, & Co., Paternoster Row.
Of whom may be had
LOUDON'S ENCYCLOPÆDIA OF AGRICULTURE. Cheaper Edition, price 1l. 11s. 6d.

A New Edition, with numerous Woodcuts, Plates, and an engraved Field Book; in 8vo, price 12s. cloth,
NESBIT'S PRACTICAL LAND-SURVEYING, for the use of Schools and Private Students. Tenth Edition, revised and enlarged. To which are added, Plane Trigonometry, with its application to the Mensuration of Inaccessible Heights and Distances; the Method of Surveying by the Theodolite, including Railway Surveying; Railway Engineering, including the Principles and Practice of Levelling, Parliamentary Plan and Section, Methods of Laying-out Railway Curves, Cutting and Embanking Railways, Contents of Cuttings by means of General and Auxiliary Tables, Tunnelling, Viaducts, Super-Elevation of exterior Rail in Curves, &c. By T. BAKER, Land-Surveyor and Civil Engineer.
London: LONGMAN, BROWN, & Co.

GARDEN GROUND.
WANTED to RENT, 1 or 2 acres of GARDEN GROUND in the neighbourhood of London. Near the Thames and without standing crop preferred.—Address, with full particulars, C. P., 29, Percy Street, Tottenham Court Road.

TO NURSERYMEN.
TO BE LET, on advantageous terms, with immediate possession, a piece of FREEHOLD LAND which adjoins a first class Railway Station, a few miles from London, and forms the entrance to a large Building property.—For particulars apply to W. B COOPER, Esq., 3, Verulam Buildings, Gray's Inn, London, W. C.

YORKSHIRE.
TO BE LET ON LEASE, or by the year, from the 6th April next, or in 1860, two Tithe-free FARMS, containing respectively 351 acres 2 roods 34 perches, and 271 acres, with good houses; the first within 3¼ miles of a first-class Railway and Telegraph station, within six hours of London, and eight of Edinburgh; the other 1¾ miles from the same station. The greater part of the land is of superior quality, growing large crops of Wheat, Turnips, and Potatoes, for the sale of which Leeds and Wakefield afford excellent markets.—Mr. CARMICHAEL, of Spaldington, Howden, Yorkshire, will show the farms and state the rent and conditions of letting.

BEES.—Strong early SWARMS, in improved Bar Hives, will be obtainable at Mr. LOWE'S Apiary, Broad Oak, Accrington, Securely packed for carriage by rail. Immediate application is desirable.

MRS. FERGUSSON BLAIR.
PRIZE POULTRY.—Mrs. BLAIR, who has won 216 Prizes in the last two years, will have EGGS to Dispose of at the following prices:—Silver Grey Dorking Eggs, 1l. 1s. a sitting of 13; Grey ditto, 12s. ditto; Dark Brahma Pootra, 1l. 1s. ditto; Light ditto, 1l. 1s. ditto; Buff Cochin, 1l. 1s. ditto; Crève Cœur, 12s. ditto; Old Scotch Grey, 12s. ditto; American Turkeys, 1l. 1s. ditto; Black Norfolk ditto, 15s. do; Rouen Ducks, 15s. ditto; Toulouse Geese, 15s. ditto; also a few Pens of Young Birds of these varieties.—Apply to JAMES M'EWEN, Cottage, Inchmartin, Inchture, N.B.

Sales by Auction.

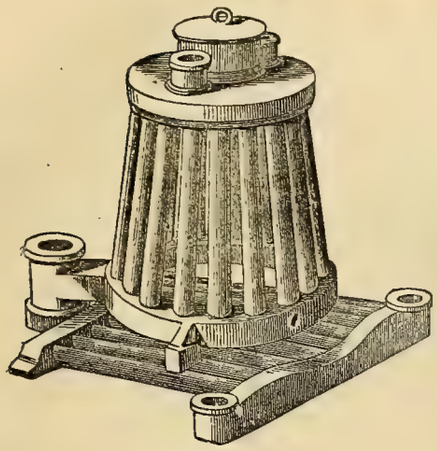
MONTHLY POULTRY SALE.
MR. J. C. STEVENS will sell by Auction at his Great Room, 38, King Street, Covent Garden, on TUESDAY, 1st March, at 12 o'Clock precisely. 250 Lots POULTRY AND PIGEONS, very choice, including Black, Buff, and Partridge Cochins; Brahmas, Spanish, Dorkings, Hamburghs, Game Bantams, and other varieties, from the yards of the Hon. Mrs. Colvile; R. W. Fryer, Esq; Rev. G. Gilbert; T. B Warwick, Esq.; J. Manning, Esq., and other successful exhibitors. The Pigeons include Pouters, Carriers Tumblers Barbs, and other varieties, many of which are first class Birds.—Catalogues by enclosing a stamped directed envelope to Mr. J. C. STEVENS, 38, King Street, Covent Garden, W.C.

STANDARD AND OTHER ROSES, DAHLIAS, HERBACEOUS PLANTS, ETC.
MR. HASLAM will Sell as above on THURSDAY, February 24th, and March 3d next, at the Auction Mart.

CARNATIONS, PICOTEES, PINKS, STANDARD DWARF & CLIMBING ROSES, AMERICAN PLANTS, ETC.
MR. J. WILLMER will Sell as above by Auction, at the Auction Mart, Bartholomew Lane, on THURSDAY, March 3, at 12 o'Clock.—Catalogues at the Mart, and of the Auctioneer, Springfield Nursery, Sunbury, S.W.

TO GENTLEMEN, GARDENERS, BUILDERS, ARCHITECTS, AND OTHERS.
MR. DEBENHAM is instructed by Mr. Rentmore, who is retiring from the business, to Sell on the premises, 74, Borough Road, on TUESDAY, March 15, at 12 o'Clock, the Stock of ARTIFICIAL STONE, including Statues, Vases, Fountains, Sundials, and Stands, and every description of Garden Ornaments and Architectural Embellishments; also the Moulds connected with the business, Stock-in-Trade, and effects.—May be viewed three days prior to the Sale, and Catalogues had on the premises, and of Mr. DEBENHAM, 56, Cheapside, E.C.

By Her Majesty's Royal Letters Patent.



ORMSON'S

PATENT JOINTLESS TUBULAR BOILER.

TESTIMONIALS.

"Sir,—I feel much pleasure in bearing testimony to the efficiency of your Patent Jointless Tubular Boiler which you have erected for Baron de Rothschild, at Gunnersbury Park, and from the number of hothouses and great extent of pipe you have heated from one boiler, I now feel confident it is decidedly the most powerful, economical, and safe boiler yet invented. Having had the working of the Wrought-iron Arch, and Cast-iron Corrugated Arch Boilers in these gardens, I have no hesitation in stating that your boiler is infinitely superior to either of them in every respect.—Yours truly,

"William Forsyth.

"The Gardens, Gunnersbury Park, Acton, Middlesex."

"Sir,—It is with much satisfaction I give my testimony in favour of your admirable Patent Jointless Tubular Boiler, being attached to upwards of 3000 feet of 4-inch pipe, and doing the work of four fires, and consumes little more fuel than was required for one of the fires previous to the adoption of your boiler. We can command any amount of heat, the boiler being so powerful I am confident it would with ease heat as much more. Altogether we have realised much more economy in fuel and attendance than we at first anticipated. In addition to the great power and economy of your boiler it possesses another most important advantage over all other tubular boilers which have come under my notice, in the fact of its being jointless, consequently quite safe from all danger of leakage. On referring to my coal account I find that I now only use one where I formerly used five waggon loads of coal for the arched boilers which you took out.—I am, Sir, yours respectfully, "J. Fraser.

"The Gardens, Luton Hoo, Bedfordshire."

"Mr. Henry Ormson, Sir,—I beg to inform you of my entire satisfaction with your Hot-water Apparatus in general, and your Patent Jointless Tubular Boiler in particular, as fitted up in the newrange of Hothouses you have recently erected for Lord Powerscourt. The Boilers I admire for three excellent reasons; they are simple in construction, effective in working, and I feel assured, from the calculation I have already made, a very great saving of fuel will be the consequence from using these Boilers. You will permit me to add if I had formed a contrary opinion of the merits of these Boilers I should have been candid enough to have told you so, but in justice to you I must distinctly state I consider them a great boon to the horticultural world.—I am, Sir, yours truly, "Alexander Robertson.

"The Gardens, Powerscourt, Ireland."

"Sir,—I have much pleasure in testifying to the excellent working of your Patent Jointless Tubular Boiler; though a small one it does the work of five fires, and is a great saving of fuel and labour.—I am, Sir, yours respectfully,

"Holland House Gardens, Kensington." "J. Scobie.

"Sir,—In regard to your Patent Jointless Tubular Boiler, it answers admirably the purpose for which it was erected. I consider it the most economical and powerful Boiler ever introduced, and am confident it will not fail to give general satisfaction.—I am, yours most respectfully,

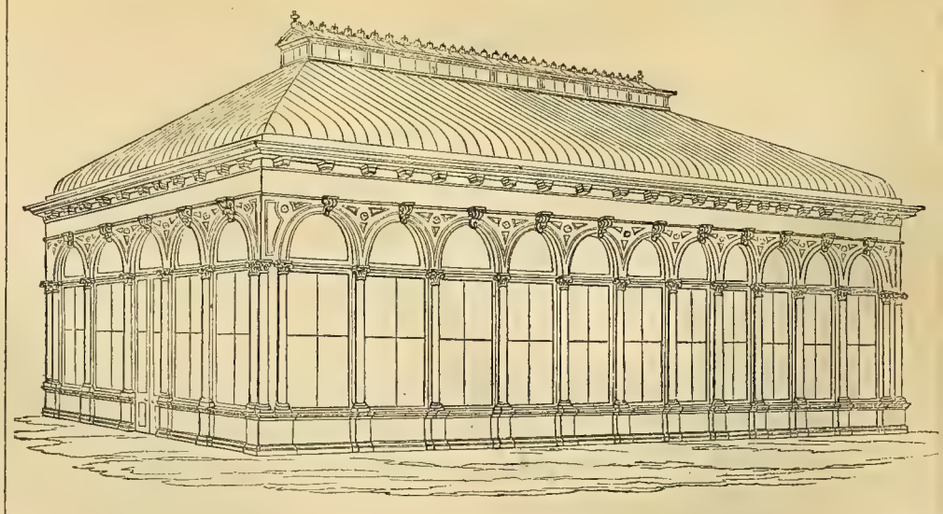
"John Lauder.

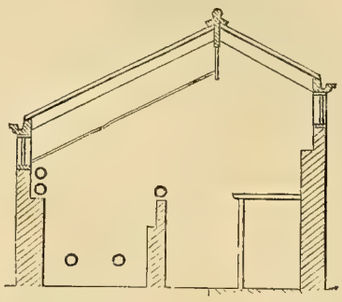
"The Gardens, Witley Court, Worcestershire."

"Sir,—I have much pleasure in testifying to the efficiency of your simple but most powerful Patent Jointless Tubular Boilers. The two small boilers you put up here are doing the work of six fires, with the addition of a range of lofty coach-houses which were afterwards attached. The amount of fuel is little more, and the attention much less, than was required for one fire before these boilers were put up; there is not the least strain on them, and I am confident if required would heat a considerably greater amount of piping. I must also add that the whole of the hot-water apparatus works satisfactory, especially the ventilating boxes you put up in the Fruiting Pine Stove, which I consider a great acquisition, supplying at all seasons a constant stream of pure warm air to the plants, which are in consequence sturdy and in the most robust health.—I am, Sir, yours respectfully, "John Clark.

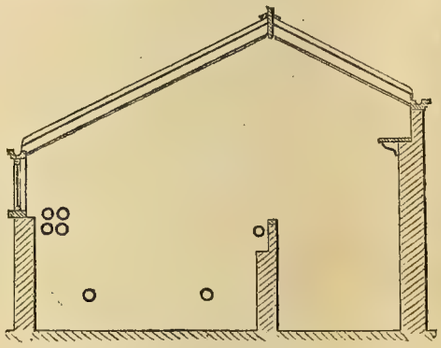
"The Gardens, Cobham Hall, Gravesend, Kent."

Ormson's Patent Jointless Tubular Boilers may be seen in successful operation at Mr Veitch's, Royal Exotic Nursery, King's Rd., Chelsea.

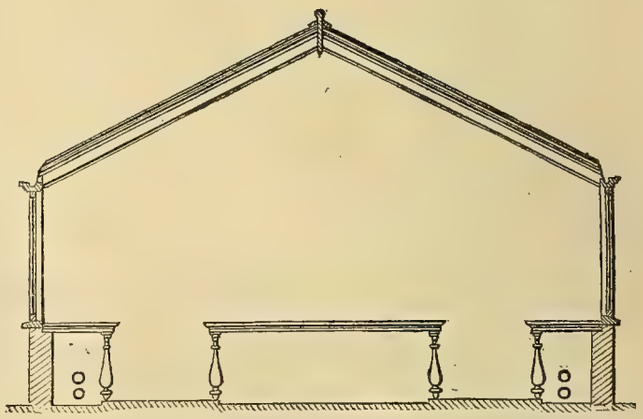




No. 1.—Cucumber and Melon Pit, 10 ft. wide.



No. 2.—Pine Pit, 14 ft. wide.



No. 6.—Greenhouse, from 18 to 20 ft. wide.

HORTICULTURAL BUILDINGS MANUFACTURED BY STEAM POWER MACHINERY

BEST MATERIALS AND LOWEST PRICES.

HENRY ORMSON,

HORTICULTURAL BUILDER & HOT-WATER APPARATUS MANUFACTURER,

STANLEY BRIDGE, KING'S ROAD, CHELSEA, LONDON,

Deeply grateful for the very liberal and kind patronage bestowed upon him begs most respectfully to inform the Nobility, Gentry, Nurserymen, &c., that it being his determination to spare no pains to merit a continuance of their favours, and that he may be enabled to execute his extensive and increasing orders punctually, and at the lowest possible cost (agreeably with the best Materials and Workmanship), he has erected a most complete set of Steam Power Machines, peculiarly adapted for the purposes of his Trade.

PARTIES DESIRING INFORMATION as to prices, &c., will, by referring to the above sections, or Elevation, receive immediate attention.

PLANS, SPECIFICATIONS, and ESTIMATES for plain and inexpensive practical Structures, and for the most elaborate Architectural Erections, either in Wood or Iron, forwarded on application.

Printed by William Bradbury, of No. 13, Upper Woburn Place, and Frederick Mullett Evans, of No. 20, Queen's Road West, both in the Parish of St. Pancras, in the Co of Middlesex, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and published by them at the Office, No. 5, Upper Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—Saturday, February 26, 1859.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 10.—1859.] SATURDAY, MARCH 5. {Price Fivepence. STAMPED EDITION, 6d.

INDEX.

Abutilon insigne	194 a	Labourer, condition of	201 b
Acarus, Orchid	193 a	Labourers' cottages	201 b
Adulteration	201 a	Lois-Weedon	199 c
Agriculture, Journal of	201 c	Monsredien's (Mr.) garden	195 c
Agri. Soc. of England	201 a	Niger expedition	194 a
Ammonia, uses of	198 c	Orchid acarus	193 a
Araucaria imbricata	193 c	Pear, Zephirin Gregoire	193 b
Books, noticed	195 b	Pear tree, Capnodium on	194 a
British Pomological Society	194 b	Poplar, lightning struck	192 c
Capnodium, Pear	194 a	Rhododendrons	193 c
Chadwick's (Mr.) pamphlet	195 b	Roses on Manetti	194 a
Cottages at Withenshaw	200 c	— Isabella Gray	194 a
— labourers'	201 b	Season in Isle of Wight	194 a
Crickets, to kill	196 c	Sheep boots	202 b
Crops, fallow	200 b	— management	202 b
Entomological Society	195 a	— washes	200 a
Grass seeds per acre	202 a	Sperguln pilifera	195 c
Guano, phospho-Peruvian	201 c	Trade Lists	195 c
Highland Society	201 b	Village School, Hitcham	192 c
Horse feeding	197 c	Weather, Plymouth	201 a
Horticultural Society	192 c	Yards, covered	202 a

HORTICULTURAL SOCIETY OF LONDON.—Meetings of the FRUIT COMMITTEE will be held at 3, St. Martin's Place, Trafalgar Square, W.C., at 12 noon, on TUESDAY, April 5; on TUESDAY, May 3; and on TUESDAY, June 7.

The Committee have decided on offering the following Prizes:

AT THE MEETING IN APRIL.

For the best Dish of LATE GRAPES, TWO GUINEAS.
For the second best DO. ONE GUINEA.

Each dish to be accompanied with a Form filled up by the Exhibitor. The blank forms for this and other Fruits that may be Exhibited can be obtained on application to the Secretary of the Committee, Mr. ROBERT THOMPSON, Horticultural Society's Garden, Chiswick, London, W.

N.B. The Carriage of packages of Fruit for the above Meetings will be paid.

HORTICULTURAL SOCIETY.
MEETINGS AT ST. JAMES'S HALL.
May 12 and 13 | June 29 and 30.
December 7, 8 and 9.

The SCHEDULE OF PRIZES for the May and June Meetings will be found on page 168.

ROYAL BOTANIC SOCIETY, REGENT'S PARK.—The THREE EXHIBITIONS during the ensuing Spring will take place on WEDNESDAYS the 23d of March and 6th and 20th of April. In a former Advertisement the 22d of March was incorrectly given.

GRAND YORKSHIRE GALA, FLORAL, AND MUSICAL EXHIBITION, to be held in the Asylum Grounds, Bootham, York, 13th, 14th, and 15th June.

Under distinguished PATRONAGE.

Florists are informed that PRIZES to upwards of 150*l.* will be awarded, and that Schedules are now ready.

By permission of Colonel Lord Frederick Paulet, C.B., the unrivalled Band of the COLDSTREAM GUARDS will perform at a CONCERT to be held in the Festival Concert Room, York, on the evening of the 13th June next, and at the first day's Exhibition.

In addition to the Floral Fête, the second day's Exhibition will include a BRASS BAND CONTEST—1st Prize, 30*l.*; 2d, 15*l.*; 3d, 10*l.*; 4th, 5*l.* Unsuccessful Bands will be allowed 2*l.* each.

Communications to be addressed to the Honorary Secretaries, from whom further particulars can be obtained.

JAS. PRATT, Jun. } Hon. Secretaries.
THOS. SMITH }

Committee Room, 13, New Street, Coney Street, York.

TOWCESTER FLORAL AND HORTICULTURAL SOCIETY.

Patrons.—The Right Hon. the Earl Pomfret.
The Right Hon. the Lord Southampton.

The Annual Exhibition of FLOWERS, PLANTS, FRUIT, AND VEGETABLES will be held on THURSDAY, Sept. 8. Schedules are in preparation on the same liberal scale as last year, and will shortly be issued.

SAMUEL COOPER TITE, Secretary.

BRIGHTON AND SUSSEX FLORICULTURAL AND HORTICULTURAL SOCIETY'S EXHIBITIONS for 1859 are fixed to be held on the following days:—Summer Show, WEDNESDAY and THURSDAY, June 22 and 23; Autumn Show, WEDNESDAY and THURSDAY, Sept. 14 and 15; on the same grand scale as in former years. Schedules will shortly be published, to be obtained of the Secretary, 96, St. James's Street; or of E. SPARY, Queen's Graperies, General Superintendent of Exhibition.

EDWARD CARPENTER, Secretary.
THOS. ATTREE, Esq., Chairman of Committee.
Brighton.—March 5.

EXHIBITION OF HYACINTHS.—A Grand Exhibition of HYACINTHS, &c., will be held during the week commencing March 14, at the Highgate Nurseries, London, N., to an inspection of which WM. CUTBUSH & SON respectfully invite all admirers of these lovely spring flowers. Open each day from 9 o'clock till dusk.

THE IMPROVED CUSTARD MARROW.—See drawing of this handsome and productive variety in the *Gardeners' Chronicle* of Jan. 29 and Feb. 12. 12 seeds for 13 postage stamps; 9 seeds for 7 stamps. The trade supplied.

BASS & BROWN, Seed Growers, Sudbury, Suffolk.

GRAYSON'S GIANT ASPARAGUS.—
Fine 2-year roots, 2*s.* 6*d.* per 100; or 21*s.* per 1000.
,, 3-year ,, 3*s.* 6*d.* ,, 100; or 30*s.* ,, ,,
The usual allowance to the trade.

BASS & BROWN, Nurserymen, Sudbury, Suffolk.

CHOICE DAHLIA SEED.

GEORGE RAWLINGS has a small quantity of SEED carefully saved from the very best varieties, which he begs to offer at 2*s.* 6*d.* per packet, containing 50 seeds.

21, Globe Road, Bethnal Green, N.E.

PRESENT PRICES OF FARM SEEDS.

SUTTON'S FARM SEED LIST is now ready, and may be had post free.

Royal Berkshire Seed Establishment, Reading.

NEW FARM SEEDS.—Purchasers of large quantities of FARM SEEDS will be treated liberally on application to SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

FRESH IMPORTED GERMAN FLOWER SEEDS (post free).

SUTTON AND SONS, Reading, Berks, have just received a choice importation of GERMAN FLOWER SEEDS, a List of which will be sent gratis and post free on application.

NEW DAHLIAS.

JOHN KEYNES'S SELECT CATALOGUE OF DAHLIAS, ROSES, CARNATIONS, PINKS, &c., containing Lists of all the valuable Show Flowers in each class, is now ready and will be sent on application.

Castle Street Nursery, Salisbury.—March 5.

FERN CATALOGUE.

ROBERT SIM'S NEW DESCRIPTIVE AND PRICED CATALOGUE, No. 6 (62 pages) of his COLLECTION of BRITISH AND EXOTIC FERNS, can be had, post free, for 8 stamps. Gratis to all previous purchasers of Ferns.

Nursery, Foot's Cray, Kent, S.E.

GEORGE BAKER begs to inform the Nobility and Public that his DESCRIPTIVE CATALOGUE OF AMERICAN PLANTS AND GENERAL NURSERY STOCK will be sent free on application.

American Nursery, Windlesham, near Bagshot, Surrey, about 1 mile from Sunningdale Station, South Western Railway.

VEGETABLE, FLOWER, AND AGRICULTURAL SEEDS.

THOMAS HARRISON'S PRICED CATALOGUE of the above is now ready, and may be obtained postage free on application.—Horticultural and Agricultural Seed Warehouse, 33, Market Place, Leicester.

NEW CATALOGUE OF FLORIST FLOWERS, &c.

DOWNIE AND LAIRD beg to intimate that their DESCRIPTIVE CATALOGUE of FLORIST FLOWERS, New VEGETABLE and FLOWER SEEDS for 1859, is now Ready, and will be sent free on application.

17, South Frederick Street, Edinburgh.

NEW PLANT CATALOGUE.

CHARLES TURNER'S DESCRIPTIVE CATALOGUE is now ready, containing selections of the popular Flowers of the day, including novelties now offered for the first time.—The Royal Nurseries, Slough.

NEW ROSES.

A. PAUL AND SON beg to inform admirers of the Rose that they will have plants of all the NEW ROSES ready for Sale by the middle of April at the lowest advertised prices.—Nurseries, Cheshunt, Herts.

NEW ROSES.—A full collection of the New Roses for 1859 will be in bloom in the Rose houses at Sawbridgeworth, from the middle to the end of March, and young plants at the usual prices (from 3*s.* 6*d.* to 5*s.* each) will then be fit for delivery.—THOS. RIVERS, Nurseries, Sawbridgeworth, Herts.

YELLOW ROSES.—Madame William, orange yellow; Isabella Gray, golden yellow. Strong plants, fit for immediate forcing, 3*s.* 6*d.* the pair.

A. PAUL & SON, Nurseries, Cheshunt, Herts.

DESCARTES ROSE STOCKS.—The best dwarf Rose Stock known is the cultivated ROSE DESCARTES, being proved nine years. Price 12*s.* per 100, with trade allowance. STANDARD MANETTIS, 9*s.* per 100; also fine tall LAURELS, with other EVERGREENS, SHRUBS, &c.—Apply to J. J. FOSTER, Edgeware Nurseries.

LADY DOWNE'S GRAPE.

JAS. BACKHOUSE AND SON can still supply good Canes of this distinct and excellent Grape at 10*s.* 6*d.* each. As a long-keeping species it is unsurpassed, the bunches hanging in fine condition 6 to 8 months after ripening.

York Nurseries.—March 5.

HENRY'S HYBRID SCOTCH LEEK.

CHARLES ALEXANDER, SEEDSMAN, Edinburgh, offers Seeds of the above unrivalled LEEK at 1*s.* and 2*s.* 6*d.* per packet.

He exhibited three in December last which weighed 9 lbs., and blanched to upwards of 12 inches each.

CABBAGE PLANTS.—Strong Drumheads for Cattle, 3*s.* 6*d.* per 1000; Red Pickle plants, 9*d.* per 100; 6*s.* per 1000; fine Brown Cos Lettuce, 6*s.* per 100; 5*s.* per 1000. Packed and delivered at the Stations free by THOMAS WELLAND, Surrey Gardens, Godalming, Surrey.

VERY SUPERIOR BEET.

CHARLES SOUTHBY (late FAIRBAIRN) begs to inform those who gave the above a trial last season, that he can now supply 1 oz. free by Post for 1*s.* 3*d.*; ½ oz. ditto 9*d.*—Clapham, London.

GIANT SAINFOIN SEED.—Seed of this excellent and productive Plant may be had of RAYNBIRD & HARVEY, Basingstoke, and 89, Seed Market, Mark Lane. Samples and prices on application.

N.B. R. & H. can also supply Common Sainfoin both of English and French growth at market prices.

JOHN CULVERWELL, Taunton, begs to call the attention of Agriculturists to his superior selection of GRASS SEEDS, which for PURITY, change of SOIL, and CLIMATE, will bear comparison with any house in the kingdom. Prices, terms, and samples forwarded on application.

HOLCUS SACCHARATUS, or CHINA SUGAR CANE GRASS.—Seed of this lately introduced Fodder plant can be supplied by NUTTING and SONS in any quantity. Price on application.

Seed Warehouses, 60, Barbican, London, E.C.

THE NEW ZEALAND RUNNER BEAN.—The above BEAN can still be had for 3*s.* per dozen, with printed account. Also MELON, CUCUMBER, CUSTARD MARROW, &c., 1*s.* per packet each.

JAMES CUTHILL, Camberwell, London.

CUTHILL'S NEW ZEALAND RUNNER BEANS, POST FREE.

SUTTON AND SONS can supply the true kind of NEW ZEALAND RUNNERS, as obtained through Mr. Cuthill, at 2*s.* 6*d.* and 1*s.* per packet.—Reading, March 5.

NEW ZEALAND RUNNER BEAN, as noticed by Dr. LINDLEY to be the true sort, 5*s.* 3*d.* per 100 (post free) to the Trade. Cash.—PAGE & TOOGOOD, Seed Growers and Merchants, Southampton.

NEW ZEALAND RUNNING BEAN.—Packets of 12 Seeds, for 14 stamps.

BASS & BROWN, Seed Growers, &c., Sudbury, Suffolk.

DIOSCOREA BATATAS.—Fine roots, 9 to 12 inches long, 5*s.* per dozen; extra size, 10*s.* per dozen.

BASS & BROWN, Seed Growers, &c., Sudbury, Suffolk.

CONIFERÆ.

A. PAUL AND SON have a large stock of the above, very handsome, in fine order for removal, many suited for immediate effect. For particulars see Advertisements in *Gardeners' Chronicle* of November and December last.—Nurseries, Cheshunt, Herts.

LARGE NORWAY SPRUCE, &c.—The subscribers have to offer 500,000 transplanted Norway Spruce of different sizes, from 12 to 24 inches. Also 100,000 GOOSEBERRIES of best Lancashire roots. Prices to the Trade and large buyers on application to

J. MORRISON & SON, Montcoffer Nurseries, near Banff.

HALF A MILLION ONE-YEAR SEEDLING OAKS (STRONG AND STOUT).

JAMES MELDRUM, NURSERYMAN, Kendal, Westmoreland, offers the above in quantities to suit purchasers. Price reasonable, on application.

STRONG LARCH, OAK, AND THORNS.

JAMES HUDDART, NURSERYMAN and SEEDSMAN, Preston, has on hand a quantity of the above, very strong, at reasonable prices. Also a quantity of two-year Seedling OAK and ASH. Prices on application.—March 5.

TO PLANTERS.—Fine stock of Larch, 1½ to 3 feet; Scotch Firs, 1½ to 2 feet; Beech, 1½ to 4 feet: Elms, 3 to 6 feet; Evergreen Privets, Common Hollies, 1 to 1½ foot; fine Healthy Plants, with all other kinds of Nursery Stock. Samples and price on application to JOHN SCHOLEY, Pontefract Nurseries.

SPECIMEN IRISH YEWS.—Handsome specimens of this very Ornamental Tree of all sizes up to 9 feet in great numbers. Price according to number wanted on application.—THOMAS JACKSON & SON, Nurseries, Kingston, S.W.

TWO-YEAR SEEDLING LARCH.

DOWNIE AND LAIRD have a large quantity of the above, very fine. Price on application.

17, Frederick Street, Edinburgh.

TO THE TRADE.

W. H. ROGERS can offer the following, strong.
500,000 SEEDLING SCOTCH, 2 years, 2*s.* per 1000.
300,000 BEDDED ditto, 5*s.* per 1000.
300,000 PINASTERS, 2 years Seedling, 4*s.* per 1000.
300,000 PINUS MARITIMA, ditto, 4*s.* per 1000.
Red Lodge Nursery and American Grounds, Southampton.

WANTED, in the Trade, Frame CUCUMBER SEED.—Price to A. X., *Gardeners' Chronicle* Office.

TRITONEA AUREA.—Fine strong Roots of this free and most beautiful orange flowering bulb, 1*s.* 6*d.* each, or 15*s.* per dozen.

BASS & BROWN, Sudbury, Suffolk.

PICEA AMABILIS AND CRYPTOMERIA JAPONICA SEED.—1 oz. Cryptomeria Seed and two Seeds of Picea amabilis for 5*s.* Full particulars on addressing W. V., Post Office, Moy, Ireland.—This Advertisement is repeated in consequence of an error in stating the price in a former one.

DICKINSON'S ITALIAN RYE-GRASS SEED will be Sold only by himself. The price the present season is 48*s.* per quarter, 7*s.* per bushel for present payment.

New Park, Lymington, Hants.

PAMPAS GRASS (GYNERIUM ARGENTEUM).—The beauty of this extraordinary plant has this season been fully appreciated. It can be supplied by the dozen, hundred, or thousand, by CHARLES NOBLE, Bagshot, Surrey.

TO THE TRADE.—LONG RED WURZEL, 28*s.* per cwt.; YELLOW AND ORANGE GLOBE, 30*s.* per cwt. The above seed is warranted, and saved from the best stocks in the country. Terms Cash.

MAXFIELD HONEY, 71, Bank Street, Maidstone.

TO THE TRADE.

LONG RED MANGEL WURZEL, 26*s.* per cwt., saved from selected bulbs.

VICTORIA MARROW PEAS, 65*s.* per quarter. The above prices are for cash.

MAXFIELD HONEY, 71, Bank Street, Maidstone.

THE ALSIKE CLOVER.—This valuable but scarce Clover Seed is included in Messrs. SUTTON'S mixtures of Clover and Grass Seeds for permanent pasture and for alternate husbandry. It can be supplied alone if required. Price fluctuating, to be had on application.

Royal Berks Seed Establishment, Reading.

TO THE TRADE.

TO BE SOLD, 200 bushels of GREEN-TOP YELLOW SWEDE SEED, 100 bushels of LIVERPOOL SWEDE Ditto, 60 bushels of DALE'S HYBRID, grown from first-rate stock, warranted to grow well, and free from adulteration. Terms on application.—Address A. B., care of Castle & Lamb, 7, Bull Head Court, Newgate Street, London.



BEST POTATO IN THE WORLD—IMPERIAL KIDNEY.

MR. WEBB, of Calcot, having succeeded in raising a quantity of the above excellent POTATO, begs to offer it to the public as the Best of its Class in every respect. Its quality cannot be surpassed, its yield most abundant, and its size from 2 inches to 9 inches long. Price 16*s.* per bushel, and no less quantity than 1 bushel disposed of. Also about 3000 true KENTISH COB NUT Trees from 2 to 4 feet high.—Apply to Messrs. JOSH. MAY & Co., 1, Wellington Street, Strand, or to Mr. WEBB, Calcot, near Reading, Berks.

SEED POTATOES from the North of Scotland.—The following varieties, carefully grown by the Subscriber for several years, and recommended for seed:—

FLUKES.

DALMAHOYS.—A variety allied to the Regent, but 3 to 4 weeks earlier in readiness.

PROTESTANTS.—A late White variety; large cropper, and has hitherto escaped disease.

Price of each kind, 12*s.* per 2-cwt. sack, free to London or Newcastle.

Orders and remittances to be addressed to ALEXANDER SIMPSON, Beauly, Inverness-shire, who refers to the Editor of the *Agricultural Gazette*.

EARLY POTATOES, TRANSPLANTED LARCHES, AND NATIVE SCOTCH FIRS.

STUART AND MEIN have to offer a considerable quantity of Myatt's PROLIFIC ASH-LEAF KIDNEY POTATOES, EARLY ASH-LEAF KIDNEY; true and free from disease. Also fine TRANSPLANTED LARCHES, 3 to 3½ feet; NATIVE SCOTCH FIR, 1½ foot; SPRUCE, 1 foot. Prices will be sent free on application.

Nurserymen, Kelso, Roxburghshire.

THE ALLIANCE POTATO.—Patronised by her Most Gracious Majesty the Queen, the Emperor of the French, and the Nobility of England, Scotland, and Wales. One Peck of these celebrated White Potatoes can be obtained of the grower only, Mr. JAMES COPELAND, Thames Street, Windsor, on receipt of Post-office Order for 7*s.* 6*d.*

500 BUSHELS of FLUKE and WHITE BLOSSOM SEED POTATOES, true, free from disease, and suitable sizes, at 4*s.* the bushel of 80 lbs., samples of which may be had on application to Mr. WM. GROSVENOR, Prospect Nursery, Cheddleton, near Leek, Staffordshire.

A remittance or reference from unknown correspondents.

SEED POTATOES.

JAMES HUDDART, NURSERYMAN and SEEDSMAN, Preston, offers the following varieties:—

Runcorn Short Top	Pink Eye Kemp
Flukes, true	Ash-leaved Kidney, very true
Early Kemp	Preston Early

The last named kind is a Seedling raised by J. H., and was tested last year with "Handsworth Prolific" and other early sorts, and found to be as early and full one-third heavier cropper. A very dry mealy Potato when half size. Prices reasonable on application.

J. H.'s DESCRIPTIVE SEED CATALOGUE may be had (post free) on application.—March 5.

HOLCUS SACCHARATUS, or North China Sugar-Cane.—Pamphlet, "A Visit and a Plant;" the only English authority on the Cultivation of the above. Post free 6*d.* Prices of Seed on application. Samples 6*d.* Four varieties of Holcus remitted free by post on receipt of 10*s.*

CHINESE YAMS, 4*s.* per dozen.

ASPARAGUS plants, 16*s.* per 1000.

JOHN W. CLARKE, Whittlesea, Cambridgeshire.

HANDSOME LARGE FLOWERING SPECIMEN CAMELLIAS, ERICAS, EPACRIS, INDIAN AZALEAS, GENISTAS, Double Chinese Purple and White-fringed PRIMULAS, and FERNS, suitable for the Greenhouse and Conservatory. Will be sold cheap in consequence of getting large for the houses here. List of sorts with prices and sizes on application to JOHN HATHERLY, Scruton, Bedale, Yorkshire. Such an opportunity to purchase specimen plants at a cheap rate seldom offers.

GERMAN AND OTHER FLOWER SEEDS, VEGETABLE, AGRICULTURAL SEEDS, ETC.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their new PRICED and DESCRIPTIVE CATALOGUE in which is enumerated every novelty of proved merit, also all the best of the older kinds, is now published, and will be forwarded post free on application. Their whole stock has been selected from the best English and Foreign sources, and every kind is warranted true to name, and of the finest possible quality.—Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

TO THE SEED TRADE.

WHITE BELGIAN CARROT.
INTERMEDIATE or JAMES'S CARROT.
BROCCOLI.

Ellitson's Mammoth	Tamworth
Snow's Spring White	Giant Late White, very
Adams's Early White	fine heads.

Fine and pure stocks of the above. Prices to the trade on application.—BASS & BROWN, Sudbury, Suffolk.

PRIZE MANGEL WURZEL, SWEDE TURNIPS, ETC.

JAMES GROVE, Great Baddow, Essex, who obtained Prizes at the Chelmsford and Essex Agricultural Shows for nine years in succession, begs to state that his Seeds are grown from selected Roots—not Plants.

Long Red, Red Globe and Yellow Globe	1*s.* 3*d.* per lb.
Purple Top and Skirving's Swedes	0*s.* 9*d.* per pint.

Reference or cash required from unknown correspondents.

MANGEL SEED FROM LARGE BULBS.

SUTTON'S YELLOW GLOBE MANGEL is saved exclusively from fully developed roots, the advantages of which have been proved for several years past.

See the following Letters:—

From the Right Hon. Lord BERWICK, *Cronkhill, Dec.* 22.—"Let me have the same Globe Mangel as last year, which has given me the best crop I ever grew, good both as to bulk of crop, and also in the fineness of roots, and freedom from fangs and irregular growth. When pulled the roots were nearly as clean and as free from fibre as a Globe Turnip, and I had 50 loads per acre or more."

From Mr. GRAY, Bailiff to G. Rawlins, Esq., *Bullington House*—"I believe we had one of the finest lots of Mangels and Swedes in the country. We had not quite enough of your seed of Mangel, and sent elsewhere for some to finish the field, and though sown the same day, and with exactly similar treatment, we had not so much weight by one-third as on the part sown with your seed."

The First Prizes at Birmingham and other shows throughout the kingdom have been taken by Messrs. SUTTON'S customers both for Mangel and for their "Champion" Swede. The price of SUTTON'S Large Yellow Globe Mangel Wurzel is 9*d.* per lb., or cheaper by the cwt.

Priced Lists of other kinds of Mangel, Swedes, Turnips, Grasses, &c., will be sent gratis and post free.

Carriage free to all parts except small parcels.

SUTTON & SONS, Royal Berks Seed Establishment, Reading.

HEDGE PLANTS.—
TREE BOX, 2, 3, 4, 5 and 6 feet.
GREEN HOLLIES, 1, 2, 3 and 4 feet.
EVERGREEN PRIVET, 2 and 3 feet.
TRANSPLANTED QUICK, 2 to 3 feet.
COMMON YEW, 2, 3, 4, and 5 feet.

Also a few thousand fine transplanted LARCH, 3 to 4 feet. Samples and prices on application.

THOMAS JACKSON & SON, Nurseries, Kingston, S.W.

1-year SEEDLING LARCH, fine.

2-year Seedling Larch, fine	1-year Seedling Common Oak, fine
2-year do. Scotch Fir, native	1-year ditto Turkey ditto
2-year do. Spruce, Norway, fine	2-year ditto Red Cedar
3-year ditto ditto	1-year English Yew
2-year ditto White American ditto	1-year transplanted Larch, fine
1-year ditto Red ditto	2-year ditto
1-year ditto Hemlock Spruce	1-year do. Scotch Fir, native, do.
1-year ditto Evergreen Oak	2-year ditto

The Subscribers being extensive holders of the above solicit the particular attention of the Trade. Prices, which are most moderate, may be had on application.

DAVID REID & SON, Nurserymen and Seedsmen, Edinburgh.

TANSLEY NURSERY, NEAR MATLOCK.

To GENTLEMEN PLANTING AND THE TRADE.

J. SMITH begs to offer his STOCK OF TREES AND SHRUBS, of various sizes, and in addition to his general stock of the leading kinds, he has this season to offer an Extra Stock of many hundred thousands of fine Larches, Scotch Firs, and Highland Pines; a large quantity of Evergreens, Privets, Mahonia aquifolia, and other plants for planting under cover. Many things are grown in large quantities, and will be sold on advantageous terms to the trade and gentlemen requiring large lots.—Catalogues sent free on application. The Nurseries are on the Mansfield and Nottingham roads, and 2 miles from Matlock Bridge Station on the Midland Railway.

HARDY CONIFERÆ FOR SPRING PLANTING.

J. HENCHMAN, Edmonton, London, begs to offer the following CONIFERS, all Seedling Plants, in pots, and in the most robust health:—

Wellingtonia gigantea, 1 foot, in 32-pots, very fine, 10*s.* 6*d.* each; 7 to 8 inches, in 48-pots, 3*l.* per doz.; stout, 2-year seedlings, 30*s.* per doz.
Pinus Don Pedri, 21*s.* each.
,, Buonapartia or Veitchi, 10*s.* 6*d.* each.
,, insignis, 15 inches, 15*s.* per doz.
,, macrocarpa or Coulteri, 6 inches, fine, 18*s.* per doz.
,, tuberculatus, stout 2-year seedlings, 18*s.* per doz.
,, Benthamiana, 2-year do. 9*s.* per doz.
Cupressus macrocarpus, 18 inches, fine, 6*s.* per doz.
,, MacNabbiana, 2 years, 9*s.* per doz.
Taxodium sempervirens, 15 inches, fine, 24*s.* per doz.

COMMON LAURELS.

S. PONSFORD begs to announce to the Trade or other extensive planters that he has a large Stock of the above, from 2 to 5 feet high, bushy, which he is prepared to supply on reasonable terms.

Also a fine Stock of Dwarf-trained PEACHES, NECTARINES, APRICOTS, &c., of the leading varieties. Standard APPLES, PLUMS, &c.

S. P. would also call attention to his Standard and Dwarf ROSES, most of the leading kinds of which he can still supply in fine healthy condition. Prices on application.

CATALOGUES of GENERAL NURSERY STOCK forwarded on receipt of one stamp.

Loughborough Park Nurseries, Brixton, S.

TO THE TRADE.

JOHN PALMER, NURSERYMAN, Annan, begs leave to inform his Friends and the Trade generally, that he has on hand the following—all of excellent quality—which he is disposed to offer on very reasonable Terms:—

SEEDLINGS.

4,000,000 1-year Larch	40,000 1-year Laburnum drills
1,000,000 2-year Scotch Fir.	100,000 2 year Weymouth Pine
1,000,000 2-year Spruce	100,000 1-year Pear stocks, drills
200,000 1-year Beech	100,000 1-year Crab stocks, drills
300,000 1-year Alder	100,000 1-year Wild Cherry stocks, drills
300,000 1-year Oak, drills	100,000 1-year Portugal Laurel
100,000 1-year Turkey Oak, drills	200,000 1-year Yew
100,000 1-year Spanish Chestnuts, drills	50,000 1-year bedded American Arbor-vitæ
100,000 1-year Horse Chestnuts, drills	20,000 bedded common Laurel
200,000 2-year Ash, drills	20,000 bedded Portugal Laurel

TRANSPLANTED.

300,000 2-year tr. Larch	100,000 2-year tr. Spruce
100,000 2-year tr. Scotch Fir	400,000 2-year tr. Thorns

Prices to be had on application, and all orders will be promptly and carefully attended to. Carriage will be prepaid to London, Liverpool, Birmingham, Newcastle, Glasgow, and Edinburgh, and the half thereof charged to the buyer.

JOHN CATTELL respectfully invites the attention of parties requiring very showy HARDY PERENNIALS in large quantities to the following articles, of which J. C. has a large stock in very strong plants.

	P. doz.	P. 100.
	s. d.	*s. d.*
Delphinium Barlowi	6 0	40 0
Do. Hendersonia (this is by far the best variety for beds; the stems are more flexible than any other, and it throws out side branches all up the stems, whereas formosum and others only flower at the top, and it will produce double the quantity of bloom during the season)	8 0	50 0
Delphinium magnificum (true)	8 0	50 0
,, hybrida fiore pleno	8 0	50 0
,, grandiflorum maximum	7 6	50 0
,, formosum	6 0	
Lychnis, Double Scarlet	6 0	40 0
Œnothera macrocarpa	6 0	
Aquilegia Whitmani, fine blue, white centre	6 0	
Wahlenbergia grandiflora, splendid blue, the finest of all Campanulas	7 6	50 0
Fair Maid of France	7 6	50 0
Double Yellow Rockets	4 0	27 6
Lily of the Valley		5 0
Phloxes, extra fine varieties	6*s.*, 9*s.*, 12*s.*, to 40*s.* to	18 0 .. 100 0
,, ,,		
And a very large stock of other hardy Perennial and Alpine Plants equally cheap.		
Also very strong Standard and Dwarf Roses, which are supplied as follows:—		
Standards, extra fine	15*s.*, 18*s.* to	24 0
,, ,,	or 100*s.* to	.. 150 0
Dwarfs	6*s.*, 9*s.*, 12*s.*, to	18 0
,,	or 40*s.* to	.. 100 0

A remittance or reference from unknown correspondents.

Nursery and Seed Establishment, Westerham, Kent.

HARDY HERBACEOUS PLANTS.—

	s.	*d.*
100 select and showy varieties	30	0
100 ditto ditto, including new	50	0
Selections, per dozen, 4*s.*, 6*s.*, 9*s.*, 12*s.*, and	18	0
50 fine varieties for rockwork	20	0
or per dozen, 5*s.* to	9	0
Aubrietia Mooreana, fine and early for rockwork, much larger and deeper purple than purpurea, per dozen	9	0
Chelone barbata coccinea (or mexicana splendens) very bright scarlet, per dozen	7	0
Delphinium formosum, large roots, per dozen	7	0
Dianthus albo nigrescens, fine dark, each, 2*s.* 6*d.*; per doz.	24	0
,, patens, very fine double crimson, per dozen	9	0
Fragaria variegata, silver-blotched Strawberry plant, handsome for banks or rocks, per dozen	12	0
Myosotis azoricus, ditto	5	0
Œnothera grandiflora, fine large white, ditto	6	0
,, taraxacifolia, large trailing white, ditto	6	0
,, macrocarpa, large yellow	6	0
Pentstemons, 12 varieties, best selection	9	0
,, 12 fine varieties	6	0
Potentilla King of Crimsons, the finest grown of dwarf habit, flowers 2 to 2½ inches across, each	2	0
,, Negress, rich dark velvet, per dozen	9	0
,, Shylock, rich dark vivid maroon, do.	9	0
,, Sudbury Gem, rich orange yellow, deeply shaded and spotted bright red	12	0
,, fine selections, per dozen, 6*s.* and	9	0
Saxifraga, 12 fine varieties for rock for	7	6
Sedum, 10 ,, ,,	5	0
Stipa pinnata (Feather Grass), per dozen	5	0
Trifolium pentaphyllum, dark variegated foliage, handsome for banks or rock	5	0
Vinca majorifolia elegantissima, silver-margined foliage Periwinkle	12	0
Antirrhinums, fine varieties and well marked, per dozen, 6*s.* and	9	0
Phlox, 50 fine and very superb continental and other varieties	25	0
,, 25 varieties, newest selection	20	0
,, selections, per dozen, 6*s.*, 9*s.*, and	12	0
Helianthemum, or Dwarf Rock Cistus, 24 beautiful named varieties for	15	0

CONIFERÆ.

(These are chiefly in pots, and are all in fine condition.)

50 choice hardy sorts for	100	0
25 ,, ,,	50	0

CATALOGUES supplied free on application.

Goods (20*s.* and upwards) CARRIAGE FREE to all the Railway Stations in London, and all Stations on the Norwich line, *viâ* Colchester; and Plants gratis for extra carriage. Post-office Orders payable to BASS & BROWN, or to STEPHEN BROWN. Remittances required from unknown correspondents.

BASS & BROWN, Seedsmen and Nurserymen, Sudbury, Suffolk.

MESSRS. WATERER AND GODFREY respectfully invite the attention of parties engaged in planting to the following list of very desirable plants, all of which may be seen growing in the open quarters of their Nursery, and are in the finest possible condition for transplanting:—

Araucaria imbricata, 9 to 12 inches, 5*l.* per 100; 40*l.* per 1000
,, ,, 1½, 2, 3, 4, 5, 6, and 8 feet high. Our stock of this plant exceeds 100,000
Wellingtonia gigantea, stout handsome plants from seed, 84*s.* per dozen; 25*l.* per 100. These are all in the open ground, and are believed to be the finest lot of seedling plants in the Trade.
Cedrus Deodara, 1½ to 2 feet, 18*s.* per dozen; 6*l.* per 100
Do. 3, 4, 5, 6, 7, 8, 10 and 12, and 15 feet. Our stock of Deodars at the present moment occupies several acres of land; they have been constantly removed, and with fair usage not one in a thousand would fail. We offer them on very advantageous terms either in large or small quantities
Cedrus atlantica, 4, 5, 6, and 7 feet
Cupressus macrocarpa, magnificent plants, 7, 8, and 10 feet high
,, Lawsoniana, stout handsome plants from seed, 18 inches, by the dozen or 100
Abies nobilis, from imported seed, 6*l.* 6*s.* per doz.; 40*l.* per 100
,, do. 1, 2, and 3 feet high
,, Nordmanniana, a large number of beautiful plants, all from seed, 2, 3, 4, 5, and 6 feet high
,, Pinsapo, do. do.
[We believe we are justified in stating our stock of the three last-mentioned Firs offers a selection to be met with in no other Nursery.]
,, Douglasi, 6, 7, 10, and 12 feet
,, orientalis, 3, 4, 5, and 6 feet
Pinus Benthamiana, stout seedling plants, about 1 foot, 18*s.* per dozen; 5*l.* per 100; 40*l.* per 1000. Unquestionably the finest of all the long-leaved Californian kinds, and well known to be perfectly hardy. It is the most valuable of all for timber.
Juniper, Chinese, 2, 3, 5, 7, 8, and 10 feet high
Irish Upright, 3, 4, 5, 6, 7, and 8 feet The Irish and Chinese Junipers are grown by us to a very large extent
Thuja aurea.—This plant originated in our Nursery, and our stock of it offers a choice of many hundred specimens from 1¼, 2, 3, 4, and 5 feet high, and measuring from 2 to 10 and 15 feet in circumference. Nothing can well exceed the beauty of these plants, and certainly are to be met with in no other Nursery
Thuja gigantea, stout seedling plants, 1½ to feet high
,, Wareana, 3, 4, 5, 6, 7, and 8 feet
Thujopsis borealis, handsome plants, in quantity, 1½ & 2 ft. high
Taxus, Yew, Common English.—A large quantity, and of all sizes up to 5, 6, and 7 feet
,, Irish Yew, 4, 5, 6, 7, and 10 feet. Many thousands of these beautifully formed plants grown to one stem
,, Golden Yews in large quantities and of all sizes up to 6, 7, and 8 feet
We also have them worked on the Common and Irish Yew as Standards, with heads from 12 to 15 years' growth
Holly, Variegated, Scottica, laurifolia, &c. We hold probably the largest stock of good sized variegated Hollies in the kingdom, especially of the better kinds of silver and gold striped
Rhododendron ponticum, for cover, stout plants, 1½ to 2½ feet, by the 1000. All the well-known proved hardy late blooming kinds, in any quantity, at from 30*s.*, 42*s.*, to 84*s.* per dozen
Standard Rhododendrons of all kinds
Azaleas, stout bushy plants, covered with bloom buds, from 18 inches to 2 feet high, and of all colours, 9*s.*, 12*s.*, 18*s.*, and 24*s.* per dozen; 50*s.*, 75*s.*, to 100*s.* per 100
Hardy Heaths, a first-rate collection, at 35*s.* per 100; 15*l.* p. 1000
Roses, fine Standards, of the most popular kinds, at very low prices.

As well as the above, we are very large holders of the ordinary kinds of Nursery Stock, which may be judged from the fact that the Nursery far exceeds 100 acres in extent of all such things as Laurels, Box, Lilacs, Limes, Purple Beech, and the commoner descriptions of Evergreens and Deciduous Flowering Shrubs. An enormous stock of Fruit and Forest Trees are also grown extensively.

Goods are delivered free to London, Reading, or Reigate. The Nursery is reached in an hour from Waterloo, and conveyances are always to be had at the Woking Station.

CATALOGUES, Priced and Descriptive, will be sent on application, enclosing one postage stamp, to

WATERER AND GODFREY, Knap Hill, Woking, Surrey.

SPECIMEN ERICAS AND GREENHOUSE PLANTS.

R. GLENDINNING has to offer to Exhibitors as well as for private decoration a number of beautifully-grown Specimens and Half-Specimens of ERICAS and GREENHOUSE PLANTS in the healthiest possible condition. R. G. respectfully solicits an inspection of the same; but to those who may find it inconvenient names, sizes, and prices will be furnished on application.—Chiswick Nursery, London, W.

TO GROWERS OF PINE APPLES AND CUCUMBERS.—The above-mentioned goods are in great demand here at present, and commanding high prices, therefore forward "immediately" to

GEORGE TAYLOR,
CHOICE FRUIT AND VEGETABLE SALESMAN,
St. John's Market, Liverpool.

STAR NURSERY, SLOUGH.

WM. BRAGG begs to inform the public and Florists generally, that his SPRING CATALOGUE can now be had free on application, containing his choice new Hollyhocks, Pinks, Pansies, Pelargoniums, chaste Scarlet Geraniums (Blazer and Rosa Bonheur), Dahlia Chieftain, yellow Picotees, New Californian Sunflower, so much admired at the Crystal Palace, Botanic Gardens, and other Shows; and choice Flower Seeds from Show varieties only.

S. STAFFORD'S LIST OF PLANTS AND SEEDS for 1859, with Descriptions and Prices, containing Forest, Fruit, and Ornamental Trees, Roses, Herbaceous, Bedding and Greenhouse Plants, is now ready.

CALCEOLARIA AUREA FLORIBUNDA, sent out by him three years since, is still by far the best yellow. In April 4s. per dozen; 30s. per 100.—Nurseries, Hyde, Manchester.

KITCHEN GARDEN SEEDS.

JOHN CATTELL begs respectfully to announce that his CATALOGUE of the above may be had free by return of Post. It contains selections of the most approved culinary vegetables in cultivation, nearly the whole of them having been saved under J. C.'s own personal superintendence.—Nursery and Seed Establishment, Westerham, Kent.

TO THE SEED TRADE.

THOMAS AYRES, JUN., SEEDSMAN and GROWER, Biggleswade, Beds., can supply every kind of Wurzel, Swede, and common Turnip Seeds, on the most reasonable terms for cash.

N.B. Dealer in Culinary and Flower Seeds, Fruit Trees, Shrubs, and Flowering Plants.

HUDSON'S GOLDEN MELON BARLEY.—Selected Samples for Seed of this most valuable variety, superior both for produce and malting quality, may be had of RAYNBIRD & HARVEY, of Basingstoke; and 89, Seed Market Mark Lane, E.C.

HOLLYHOCKS.

WILLIAM PERRY begs to announce that he has fine healthy plants of the above for sale, of all the approved sorts, well hardened and fit for planting out immediately, from 9s., 12s., 18s., 24s., and 30s. per dozen, if the selection is left to W. P. A Descriptive Catalogue can be had on application, also seed saved from the best sorts, 1s., 2s., and 3s. per packet.

Foreman at the Nurseries, Sawbridgeworth, Herts.

HOLLYHOCK SEED FROM NEW VARIETIES.

J. CHATER AND SON offer the above from 12 new varieties, separate packets, the collection, 3s. 6d.
24 varieties, best older sorts, 3s. 6d.
Best mixed, 20 sorts, 200 seeds, 1s. 6d.

J. C. & SON feel confident the above will give satisfaction, having been saved with great care.

Strong seedling plants, 20s. per 100.
If sown now will flower by September.
Nurseries, Haverhill.

SUPERB DOUBLE HOLLYHOCKS.

WILLIAM CHATER can now supply fine healthy plants from his Collection, having a large stock ready for immediate planting.

See DESCRIPTIVE CATALOGUE, to be had on application.
Nurseries, Saffron Walden.

FIRST-CLASS HOLLYHOCKS.

FINE SEEDLINGS FROM

WILLIAM CHATER'S Celebrated and Newest Varieties that will flower well in September at 30s. per 100
ditto ditto ditto 20s. ,, 100
Ground Roots according to colour, also at .. 30s. ,, 100
Seed in 12 separate colours, the Collection .. 10s. 0d.
,, 6 ,, ,, ,, .. 5 0
From varieties such as "Pourpre" de Tyre, Memnon, White Globe, Hon. Mrs. H. Ashley, Canary, &c., in 12 separate colours, the Collection .. .. 7s. 6d.
Ditto in 6 separate colours, the Collection .. 4 0
Seed from 20 of the best varieties, mixed, per pkt. 5 0
,, 12 ,, ,, ,, ,, 2 6
,, good mixed, also a single variety ,, 1 0

The above can be procured from the Nurseries, Saffron Walden, Essex.

NEW HOLLYHOCKS.

A. PAUL AND SON beg to recommend the following NEW HOLLYHOCKS, which have been selected from several thousands of Seedlings. The stock of ordinary kinds is this year greatly extended. The plants are strong, well established, and perfectly healthy:—

	s.	d.
BRISEIS (PAUL).—Purple, silvery edges, flower of good form, spike close	5	0
GENERAL HAVELOCK (PAUL).—Brilliant, ruby scarlet, colour of "Scarlet King," but a close spike and a round smooth flower of perfect shape	10	6
IN MEMORIAM (PAUL).—Crimson maroon, large, good substance, first-rate flower, good spike	10	6
OSSIAN (PAUL).—Crimson shaded with salmon, remarkable alike for substance, closeness, and symmetry; spike good	10	6
PAINTED LADY (PAUL).—Pink and blush in blotches, a large smooth flower of good substance	5	0
PLUTARCH (PAUL).—Plum colour, of fine shape, and very smooth, guard and spike good	10	6
POURPRE NOIR (PAUL).—Rich purplish maroon, large smooth flower, close spike	7	6
RED ROVER (PAUL).—Dark fiery scarlet, flower large, spike splendid, very effective	7	6
VERITAS (PAUL).—White, lemon base, large full flower, splendid spike	10	6
VESTA (PAUL).—Pure white, petals thick, edges smooth, guard good	7	6
VITRUVIUS (PAUL).—Pink, large flower, of perfect form and good substance	5	0
ZENO (PAUL).—Rich plum colour, with silvery edges, flower large, spike good; new and distinct	5	0

The Collection of 12 varieties is offered for 4l. 4s.; good named sorts, 9s. to 18s. per dozen; very superior ditto, 24s. to 42s. per dozen; Bloomed Seedlings in separate colours, 30s. to 50s. per 100; mixed Seedlings, 10s. to 21s. per 100.

HOLLYHOCK SEED, 1s. to 5s. per packet free by post.
Also a PRICED DESCRIPTIVE CATALOGUE free by post.
Nurseries, Cheshunt, Herts.

FIVE SILVER CUPS

WERE AWARDED TO

A. PAUL AND SON, NURSERYMEN, Cheshunt, Herts, for five Collections of ROSES at the Grand National Rose Show held in St. James's Hall, London, in July. Also FIVE FIRST PRIZES at the Royal Botanic Society's Shows in May and June last. The sorts which won these prizes are now offered at 18s. to 24s. per dozen for standards, 12s. to 18s. per dozen for dwarfs. A PRICED DESCRIPTIVE CATALOGUE forwarded on application, post free.

ROSES.—TO THE TRADE.

BIRCHAM AND WARD having a surplus stock of the leading kinds of Perpetuals in fine condition, offer them at the following low prices by the 100 or not less than 50.
Standards, per 100 .. .. .. 3l. to 3l. 10s.
Dwarfs do .. .. 2l. 2s.
Ditto, on their own roots .. .. 2l. 2s.
Carriage paid to London and Peterborough.
HOLLYHOCK SEED of very superior quality by the oz.
Hedenham Rosary, Bungay, Suffolk.—March 5.

FINE HEALTHY ROSES.—
STANDARDS .. .. .. 18s. per doz.
DWARFS (on the Manetti) .. 12s. ,, ,,
As the weather still continues mild and favourable for planting, GEORGE CLARKE begs to state he has still a fine stock of all the leading kinds to offer at the above prices, the selection being left to him. The Plants are all healthy and well rooted, therefore calculated to give the greatest satisfaction. Plants carefully packed for any distance. Carriage of all packages paid to London; and in all orders amounting to 20s. plants are added to compensate for distant carriage.
GEORGE CLARKE, The Nursery, Brixton Hill.

NEW ROSE, HYBRID PERPETUAL "LÆLIA."—Colour delicate satin rose, petals very large, perfectly smooth, and well formed; flowers of exquisite shape, large size, and highly scented. JOHN CRANSTON has the pleasure to announce that he will be prepared to supply early in April plants of this superb new Rose. It was exhibited by him in his winning stand of single blooms at the Grand National Rose Show in July last, and was unquestionably the most attractive variety of the Show, and the admiration of all who saw it. Fine healthy plants, 5s. each, with the usual discount to the trade.—Nurseries, King's Acre, near Hereford,

NEW ROSES.

JOHN CRANSTON will be prepared to supply early in April strong plants of the under-mentioned superb NEW ROSES at 5s. each, with the usual discount to the Trade. Purchasers who may prefer leaving the selection to himself will be supplied upon the following terms:—12 choicest varieties for 2l. 10s.; 24 for 5l.; the set of 32 varieties for 6l. 6s.

Plants of the new varieties presented with each order to compensate for carriage.

TEA-SCENTED.

Enfant de Lyons	Madame Joseph Halphay
Madame Damaisin	Reine des Pays Bas

BOURBON.

Docteur Berthet | Edith de Murat | Octavie Fontaine

HYBRID PERPETUAL.

Altesse Imperial	Joseph Vernet
Ardoisée de Lyon	Le Mont Vésuve
Anna Alexieff	L'Oriflamme de St. Louis
Armide	Mathilde de Mandeville
Ambroise Verschaffelt	Madame Jenny Varin
Anna de Diesbach	Madame Octavie Depeyre
Bouquet de Marie	Mignard
Beauté de Roeyghem	Orderic Vital
Comte de Beaufort	Princesse Olympie
Comtesse Cecile de Chalbrillan	Reine de la Cité
Empereur de Maroc	Solomon
Eugène Alary	Virginal

NOISETTE.—Beauté de Grenuemont.
J. CRANSTON, Nurseries, King's Acre, near Hereford.

FRUITING VINES.

JOHN AND CHARLES LEE beg to offer extra strong short-jointed and well-ripened FRUITING VINES of the following kinds:—

BLACK HAMBURGH	BLACK PRINCE
BLACK FRONTIGNAN	ROYAL MUSCADINE

Nursery and Seed Establishment, Hammersmith, London.

GRAPE VINES FROM EYES.

JOHN AND CHARLES LEE beg to offer an immense stock of strong well-ripened VINES FROM EYES, of the following kinds:—

Alicant	Hâtif de Jura
Barbarossa	Isabella
Bidwell's Seedling	Lady Downe's Seedling
Black Cluster	Marchioness of Hastings
Black Constantia	Muscadine Parsley leaved
Black Prince	Muscat, August
Blanche Vigne	,, Cannon Hall
Calabrian Raisin	,, Hamburgh
Charlsworth Tokay	,, Noir Hâtif
Chasselas Frocklaboulay	,, of Alexandria
Chasselas Musqué	,, of Fontainebleau
Duzetto	Pitmaston Cluster white
Esperione	Raisin des Carmes
Frontignan, black	Syrian
Hamburgh, black	Trebiana
,, Dutch	Trentham Black
,, golden	Tripoli
,, Pope's	West's St. Peter's
,, Mill Hill	

Nursery and Seed Establishment, Hammersmith, London.

CHEAP, SELECT, AND USEFUL NURSERY STOCK.

WM. JACKSON AND CO., of Bedale, Yorkshire, can supply the following of best quality:—

	£	s.	d.
12 Dwarf Growing Hardy Rhododendrons, by name, nice bushy plants, scarlet, crimson, blush, &c. ..	1	0	0
12 Roses, Standards, on good stems, best prize varieties (4l. per 100), select plants..	0	12	0
12 Roses, Dwarfs, budded, best show varieties ..	0	8	0
12 Fancy Thorns, Standards, scarlet, &c. 6s. to	0	9	0
12 Berberis Darwini, very pretty (2s. each)	0	12	0
12 ,, dulcis, fine plants (1s. each)	0	9	0
100 Roses of sorts, Dwarfs, on own roots, including Yellows	1	5	0
100 Evergreen and Flowering Shrubs, two of a sort	2	0	0
100 Laurels, strong, transplanted, 1½ to 2½ feet (70s. per 1000)	0	10	0
100 Laurels, strong, twice transplanted, 3 to 5 feet (120s. per 1000)	0	15	0
100 Silver Tree Box, 3 to 4 feet, strong plants, twice transplanted	3	0	0
100 Yews, thrice transplanted, 4 to 5 feet, dressed to one stem, perfect trees	4	0	0
100 Arbor Vitæ, 3 to 4 feet, grown singly, fine plants	3	0	0
100 Best Evergreen Privet for hedges (25s. per 1000)	0	3	6

Good Box for edging, 2d per yard.
Asparagus, sound, strong, 2 years' old plants, 2s. per 100; 20s. per 1000
Sea Kale, sound, strong, do., 4s. per 100; 35s. per 1000.
do. do. 3 years' old plants, 5s. per 100; 40s. per 1000.
Transplanted Larch 12s. 6d.; Scotch Fir, 10s.; Norway Spruce, 10s. per 1000, can be supplied in large quantities and of first-rate quality.—Further particulars on application.

DOUBLE ITALIAN TUBEROSES.

JAMES CARTER AND CO. have just received a supply of Extra Strong Flowering Roots of the above which they can offer at 4s. per dozen.
JAMES CARTER & Co., Seedsmen, 238, High Holborn, W.C.

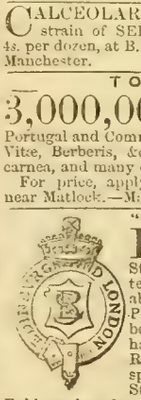
CALCEOLARIAS.—A few hundreds of the finest strain of SEEDLING CALCEOLARIAS in England, at 4s. per dozen, at B. WHITHAM'S, Clough Nursery, Mottram, near Manchester.

TO NURSERYMEN.

3,000,000 RHODODENDRONS, 2, 3, 4, and 5 years old: small and strong Portugal and Common Laurels, small ReUCedar, Chinese Arbor Vitæ, Berberis, &c.; Layers of Erica Alporti, vulgaris, alba carnea, and many other things to be sold very cheap.

For price, apply to JAMES SMITH, Darley Dale Nursery, near Matlock.—March 5.

"JACK OF NEWBURY" SWEDE, ETC.



PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN, &c., 27, Great George Street, Westminster, respectfully request attention to their very genuine Stock of the above excellent Swede; also of the LOTHIAN PURPLE-TOP SWEDE, both of which have been selected with the greatest care. They have also a very fine Stock of the KOHL RABI, or TURNIP-ROOTED CABBAGE, specimens of which were shown at their Stands at Smithfield Club Show. The Kohl Rabi was largely grown last season, and may now be relied on as a substitute for the Turnip and Mangel, where these roots do not succeed, or for filling up blanks where there is a partial failure. Its feeding qualities, hardiness, and weight per acre are equal to the Swede, and all kinds of stock prefer it to other roots.

P. L. & SON have also selected a first-rate Stock of MANGEL WURZEL SEED, which they can confidently recommend. Their natural GRASS SEEDS have been also saved with very great care, and they are ready to supply them separately or in mixture, for laying down Permanent Pastures, Lawns, &c.

P. L. & SON have arranged to deliver Seeds free throughout England and Wales from their London Establishment, for all quantities exceeding 20s. in value.

LISTS OF PRICES of the above and all other Seeds, Plants, &c., may be had on application.

27, Great George Street, Westminster.

FARM SEEDS, GROWTH OF 1858.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY (LIMITED) are prepared to execute orders for all kinds of FARM SEEDS, selected from stocks direct from the growers.

They respectfully invite the attention of Agriculturists to their FARM SEED LIST for 1859, which will be sent free on application to the Secretary.

The two following new sorts of SWEDES can be highly recommended:—

	lb.	qt.	gall.
THE PLYMOUTH IMPROVED			
PURPLE TOP SWEDE	1s. 0d.	1s. 6d.	6s. 0d.
GRANT'S PINE-APPLE SWEDE ..	1 0	1 6	6 0

The following extract taken from the Leading Article in the *Irish Farmers' Gazette* of October 16, 1858, will tend to show the very high character of the two varieties of Swedes here offered:—"We observed several experimental plots of Swedes, &c., amongst which we noticed a new purple-topped variety called the 'Plymouth Swede,' and also a very beautiful green-topped Turnip (Grant's Pine-Apple Swede), the name of which we did not learn. These were sown on June 16, and their shapes were the finest we have seen for a long time. The varieties were new to us, but certainly the specimens grown at Rockview left a very favourable impression on our mind, regarding both their beauty and probable value."

Price to the Trade on application.
Address—PLYMOUTH SEED COMPANY, Plymouth.

SEEDS FOR THE FARM.

NEW OVAL-SHAPED YELLOW MANGEL, introduced by us two years ago, has been thoroughly tested and is now recommended with perfect confidence. It is of a remarkably vigorous growth, with finely shaped roots, intermediate in length between the Long and the Globe, and has produced from 5 to 10 tons more per acre than any other variety (see *Gardeners' Chronicle* of Jan. 8):—

SWEDE TURNIP.—All the approved sorts.
YELLOW Do. do. do.
WHITE Do. do. do.

In no description of crop raised on the Farm is a good or a bad one so dependent on the character of the Seed as in that of the Turnip, and from its great liability to degenerate, it requires the most scrupulous care and vigilance to produce Stocks that are every way worthy of confidence. To attain such, we have for several years past been using every known means to keep up or improve the shape, size, and texture of the various kinds; and we believe that what are now offered will give the most perfect satisfaction. All the principal varieties are our own growth, raised from large and fully developed Roots or Bulbs, and in the hope of giving a more vigorous growth to the Stock, the strongest clay soil is always selected for a considerable portion of the Swede and Yellows. This mode of raising Turnip Seed materially increases the expense, but it is a much more satisfactory system than the one usually adopted, viz., sowing random stocks late in the season, after other crops, and taking the seed from mere plants, which in many cases are not even subjected to the process of thinning. Moreover, we guarantee our Seeds free from any of the adulterations so frequently practised to increase profits or cheapen prices, so that a strong healthy "braird" is certain.

PERENNIAL RYE-GRASS.—Finest Ayrshire
Do. do. do. Pacey's, 26lbs. to 32lbs. per bushel
ITALIAN do. Imported
Do. do. Home-grown

NATURAL GRASSES.—All the best varieties

The Stocks of Perennial Rye-grass Seed are the most select growths the country produces, and being all clean and heavy the economy of using such in preference to foul chaffy seed, however cheap, is at once apparent. Our imported Italian is from the usual source, and has always given satisfaction; while the home-grown is the direct produce of imported seed, cultivated under the most favourable circumstances, and more than ordinary pains having been used in dressing the seed; the samples of both are unusually clean and fine. In selecting the Natural Grasses care is taken to have them true to name, fully ripened, and in all respects good clean samples.

ALSIKE CLOVER, and other varieties.
LARGE BROAD-LEAVED SCOTCH TARES.

With every other description of Seed usually required for the farm, PRICED LISTS of which may be had post free on application.

W. DRUMMOND & SONS, Seedsmen, Stirling, N.B.; also at 58, Dawson Street, Dublin.

*** STIRLING is most favourably placed in point of railway accommodation, there being direct and constant traffic to all the principal stations in England and Scotland, and by steamers (*via* Glasgow), almost daily to the chief ports in Ireland, thereby ensuring a speedy delivery of goods, all of which, except grain and Tares, we forward carriage paid.

GEORGE SMITH can supply fine Bushy Plants of the following NEW GERANIUMS of 1857, at 30*s.* per doz. G. S.'s Stock of Show, Fancy, and Spotted varieties is now in splendid condition, and is one of the finest Collections in the immediate vicinity of London.

SHOW KINDS:—Viz., Aurelia, Bellona, Candidate, Etna, Hebe, Imperatrice, Lucifer, Minnie, Queen of Scarlets, Rose Celestial, Pet of the Flock, Rosaline, Richard Benyon, Sprightliness, Sir James Outram, Mazeppa, and Vestal.

G. S. can supply older kinds from 9*s.* to 18*s.* per dozen. For descriptions see Catalogue just published, and forwarded in exchange for one postage stamp.

Tollington Nursery, Hornsey Road, Islington, London, N.

GRIEVE'S NEW DOUBLE PETUNIAS.—The universal satisfaction given by the PETUNIAS sent out last spring, raised by Mr. Grieve, Gardener at Culford Hall, near Bury St. Edmund's, induces the advertisers to offer to the public those raised by that persevering hybridiser last summer, which are considered superior to any yet offered; not in the size of the flowers, but in brilliancy of colour, consistence of petal, and regularity in form—all being very double. The following are the names adopted, which may be respectively taken as an approximate description of their colours:—

CRUENTUM, CANDIDUM, PURPURASCENS. } Large flowers, and most appropriate for pot culture.

ATROCOCCINEUM, ROSEUM STRIATUM, ATROROSEUM. } Medium-size flowers and neat habit; probably useful for bedding.

Plants of the above, 5*s.* each; or 21*s.* the set of six, to be sent out the first week in April by Osborn & Sons, Fulham Nursery, London, S. W.

N.B. The usual allowance to the trade.

THE BEST MELON IN CULTIVATION FOR TABLE, MARKET, OR EXHIBITION.

WILD'S ORION, the winner of four First Prizes at two Shows—Crystal Palace and Regent Street.—Handsome, 4 lbs. to 6 lbs. in weight, thin skin, thick flesh (green), luscious as a melting Peach, fragrant and delicious as a Pine Apple, prolific bearer; six good seeds out of the Prize fruit by post on receipt of 12 penny stamps.

Wild's Unrivalled Primulas, upwards of 100 Testimonials received.

J. P. Coleman, Esq., *Wolverhampton.*

"From the packet of seed I had of you last spring I have a splendid plant, the colour beautiful bright scarlet, full fimbrated, and within a nicety of being 3 inches in diameter, and has been pronounced perfection itself."

Sealed packets post free to all parts of the world on receipt of 2*s.* 6*d.* in stamps.—Thomas Wild, The Primulary, Ipswich.

UNEQUALLED NEW CUCUMBER, DR. LIVINGSTONE.—This is one of the finest long hybrid Cucumbers for exhibition purposes that has ever yet been offered to the public; it is a splendid black spine, length 22 to 26 inches, a very free setter, and an abundant bearer. Price 2*s.* 6*d.* per packet.

QUEEN OF THE WEST MELON, a superb new variety, green-flesh, very handsome in appearance, beautifully netted, and excellent in flavour. It obtained several first prizes during the past season. Seeds 2*s.* 6*d.* per packet.

NEW MELON GENERAL HAVELOCK, sent out for the first time last season. It is a green-flesh, very handsome shape, and beautifully netted; a very thick substance, thin skin, of a melting and most delicious flavour, and an abundant bearer. Weight from 3 to 4 lbs.; it gave the greatest satisfaction to all purchasers during the past season. Seeds 1*s.* per packet.

Extra fine mixed HOLLYHOCK SEED, saved from all named varieties, 1*s.* per packet.

Early Emperor CELERY, red, the finest ever yet sent out, 1*s.* per packet.

Tiley's Solid White Celery, 6*d.* per packet.

DELPHINIUM FORMOSUM, 6*d.* per packet.

DIGITALIS, or Fox-glove Seed, 6*d.* per packet.

For further particulars, and list of Cucumbers and Melons, see Advertisement in *Gardeners' Chronicle* of Jan. 29, 1859.

A remittance must accompany every order in cash or penny postage stamps, when the whole or any part, as the case may be, will be immediately sent.

EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Church Yard, Bath.

TO THE TRADE.

THOS. CRIPPS, Nurseryman, &c., Tunbridge Wells, Kent, respectfully offers the following fine strong SPANISH CHESNUT PLANTS, 4 feet to 6 feet in height, 40*s.* per 1000; Blush CHINA ROSES, fine strong plants, 15*s.* per 100; Crimson do., very strong, 25*s.* per 100; fine Standard and Half-standard ROSES, 60*s.* per 100; good do., do., 50*s.* per 100; Double Yellow PRIMROSE, 20*s.* per 100 or 400 for 3*l.*; PINUS INSIGNIS and P. RADIATA from Seed, 15 inches to 28 inches, 6*l.* per 100; MANETTI STOCKS, 50*s.* per 1000; do. second size, 40*s.* per 1000; IRISH YEWS, 2 feet to 3 feet, 50*s.* per 100; Hardy HEATHS, a fine collection, 25*s.* per 100; large plants, good do., 20*s.* per 100; LARCH FIR, fine stout plants, 2 to 3 feet; LONICERA SHEPHERDI, or new Scarlet-trumpet HONEYSUCKLE, fine strong plants, 4*s.* per dozen; RHODODENDRON MAXIMUM, fine bushy plants, 18 inches to 2 feet, 60*s.* per 100. Orders from unknown correspondents unaccompanied by a remittance will not be noticed.

HORTICULTURAL VALUATIONS.

MR. ALFRED CHANDLER (of the late firm of Chandler & Sons, Vauxhall), begs to inform his Friends that he is at liberty to undertake the valuation of Collections of Plants, Nursery Stock, Horticultural Buildings, &c.

Mr. A. C. is also open to engagements as Censor at Horticultural Exhibitions, in which capacity he has had long and extensive experience.—28, Priory Road, Wandsworth Road, S.

WANTED, the ADDRESSES of the Principal Market Gardeners who Grow for Covent Garden Market Choice Vegetables and Fruit, such as

Asparagus	Pine Apples
Cucumbers	Grapes
Mushrooms	New Potatoes
Brussels Sprouts	Seakale, &c.

Address Box P. 5, General Post Office, Liverpool.

BEULAH SPA HYDROPATHIC INSTITUTION AND HOTEL COMPANY (Limited), Upper Norwood.

Contract for laying out and improving Pleasure and other Grounds.

Notice is hereby given that the Directors will meet at the above Premises on Monday, March 14, at 2 o'Clock, P.M., to receive Tenders for certain alterations and improvements to be made in the gardens of the above Company, situate at Beulah Spa, and consisting chiefly of draining, making terraces, turfing, and preparing the ground for planting, including the supplying of gravel, turf, peat, and other materials, according to certain plans and specifications to be seen at the Offices of W. Davidson, Esq., 2, Randolph Terrace, Maida Hill, W., or at the residence of Dr. Ritterbandt, Beulah Spa Hotel, S.; of whom copies of the latter may be obtained on and after Monday, March 7. Tenders to be delivered not later than 12 o'Clock on Saturday, March 12, at the Office of George Ogle, Esq., 4, Gt. Winchester Street, City, E. C. The premises also may be seen at any time between the hours of 10 and 4. The Directors do not bind themselves to accept the lowest or any Tender. Persons tendering are requested to be in attendance at the Institution as above at the time before mentioned.

CHOICE SEEDS.

BUTLER & McCULLOCH,

While drawing attention to their general SPRING CATALOGUE of SEEDS, which has elicited such high encomiums both from the scientific botanist and amateur cultivator, avail themselves of the present opportunity to select from its pages the following list:—

(6) ABUTILON MARMORATUM.

A charming plant, flowering all the year, and especially in winter, producing large, pure, white flowers, veined and marbled with bright rose, foliage silvery haired; the finest of the genus.

(37) ACACIA LONGIFOLIA (magnifica).

One of the most splendid Acacias in cultivation, with gorgeous clusters of bright yellow flowers several inches in length; very hardy, rare, and beautiful. Of these graceful and highly ornamental plants our collection embraces no fewer than 47 varieties, all of the most decorative character.

(199) CALLICHROA PEDATA.

Crimson with white eye; a most beautiful plant, and quite new.

(243) CANNA INDICA SUPERBA.

A magnificent plant flowering all the winter; leaves large, fine green. Of this picturesque and most ornamental genus we have a magnificent collection, consisting of 28 kinds, all remarkable both for the beauty of their flowers and foliage.

(279) CASUARINA INDICA.

The most singularly picturesque tree of the Australian Flora, with weeping branches jointed like a Bamboo, streaked between the joints, and without leaves; very elegant in a conservatory (seeds rare).

(304) CELOSIA (species nova).

A most elegant plant, producing a multitude of long spikes of feathery blossoms, silvery white shaded with bright rose, retaining its colour perfectly when dried, and therefore admirably adapted for winter bouquets; one of the greatest novelties of the season, flowering out of doors or in pots from July to October. Well worth attention. A dried specimen may be seen.

(434) CYCLAMEN AFRICANUM MACROPHYLLUM.

Fine foliage; flowers large, blush, marked white and rose. Very rare. Bulbs of this may be had in the summer.

(451) DATURA HUMILIS FLORE PLENO.

A magnificent Brugmansia-like plant producing a profusion of deep golden-yellow flowers; very large, double, and sweet-scented. One of the greatest novelties of the season.

(665) HIBISCUS ROSEUS SUPERB.

Flowers large, produced in great abundance.

(677) HIBISCUS THUNBERGI.

Pale yellow, dark eye, free flowering, and pretty.

(956) PAVONIA HASTATA.

A most beautiful little shrub, covered with white flowers, having a rich brown centre; handsome foliage.

(976) PENTAPETES PHŒNICEA.

Bright scarlet; leaves long and serrated, a very handsome plant.

(1001) PHYGELIUS CAPENSIS.

Large red tubular flowers, inside golden yellow, a handsome plant (seeds rare).

(1073) RICINUS ALBIDUS.

(New), white fruited, stems and leaves silvery and handsome.

(1074) RICINUS SANGUINEUS.

(New), splendid red fruit, in large bunches, very ornamental, producing a grand effect.

(1093) SALVIA HYBRIDA.

Scarlet, early flowering (new).

(1095) SALVIA SPLENDENS Nova.

Species, scarlet (new).

(1137) SIPHOCAMPYLUS BETULÆFOLIUS.

A handsome plant, with scarlet tubular flowers; suitable for a trellis.

(1144) SOLANUM MELANGERA GRANDISSIMUM.

(New), striped fruit, weighing from 1 to 4 lbs.

(1149) SOLANUM CAPSICASTRUM.

Miniature Orange tree, covered all winter with a profusion of scarlet fruit; a handsome plant for greenhouse or sitting rooms.

(1161) STATICE HALFORDI.

Blue; large and handsome, one of the very best for pot culture (seeds rare).

(1165) STATICE PURBERULA.

Purplish violet; a free flowering, extremely ornamental plant of neat habit.

(1170) STATICE BONDUELLI.

Deep golden yellow; flowers early and profusely, in large rosettes.

(1276) VERONICA ANDERSONI.

Purple and white, all but hardy; a charming shrub.

(1282) VERONICA MELDENSIS.

Beautiful rose and white.

(1294) VIRGILIA CAPENSIS.

A greenhouse shrub, with drooping racemes of purple and white flowers.

(1331) BIGNONIA GRANDIFLORA.

Orange and scarlet; flowers large, and in magnificent bunches.

(1335) BIGNONIA RADICANS MULTIFLORA.

Finer and brighter than radicans; flowers in large panicles producing a splendid effect.

(1354) CUCUMIS PERENNIS.

Very ornamental-foliaged plant, which grows with great rapidity.

(1360) CUCURBITA MELOPEPO CHAPEAU D'EVEQUE.

Orange; of this class of climbers we have a fine collection.

(1370) CYCLANTHERA PEDATA.

Bird-like fruit (new).

(1375) GLYCINE SINENSIS, or WISTARIA.

One of the most valuable climbing trees for out-doors (seeds rare).

(1380) IPOMŒA HYBRIDA MARGINATA.

Large and magnificent; flowers of various colours on the same plant, varying from the richest velvety purple to sky-blue, bordered in the most distinct manner with pure white (new and rare). This and three new varieties of Hederacea grandiflora far surpass the old and deservedly favourite rubro-cærulea for beauty, hardiness, and free flowering; they rank high amongst the novelties of the season, possessing advantages which will render them the grandest ornaments for the greenhouse, conservatory, or for out-door decoration.

(1431) MAURANDYA CRIMSON TINTED PURPLE GRANDIFLORA.

Exquisitely beautiful (new).

(1438) MAURANDYA MAROON GRANDIFLORA.

Superb (new and rare).

(1445) MEDEOLA ASPARAGOIDES.

Green and white, an elegant plant, flowering in winter, and scented like Orange blossom.

(1457) PASSIFLORA RACEMOSA PRINCEPS.

Pale scarlet, arranged in racemes, from 14 to 18 inches in length, having a striking and beautiful appearance.

BUTLER AND McCULLOCH'S ADVT.—*Continued.*

(1468) TACSONIA IGNEA.

This magnificent Passion flower is unequalled for the brilliancy and splendour of its scarlet blossoms, far surpassing in this respect any of its class yet known. It flowers most profusely, grows rapidly, and covers a large space in an incredibly short time. It succeeds in a cold greenhouse, and even against a south wall with a little protection in winter (new and rare).

1469) TACSONIA MOLLISSIMA

Rosy pink flowers; remarkable for their long tubes and handsome pink colour.

(1473) TROPÆOLUM FLAMMULUM GRANDIFLORUM.

Yellow; beautifully streaked with carmine (rare).

(1477) TROPÆOLUM GRACILE.

Sulphur, spotted with carmine; extremely pretty.

(1479) TROPÆOLUM MINIATUM MACULATUM.

Superb, striped variety (very rare).

(1488) TROPÆOLUM TRIOMPHE DE GAND FIMBRIATUM.

Fringed orange scarlet.

(1501) TRYCHOSANTHES COLUBRINA VERA.

Foliage extremely handsome; singular fruit, resembling a serpent (new and rare).

CARNATIONS and PICOTEES saved from the most choice Collection of English varieties grown on the continent, and which may be expected to produce flowers of the highest merit, sent out in sealed packets as received from our Sardinian correspondent, whose seeds for many years have given such universal satisfaction, and from which varieties of the greatest excellence have been raised.

For prices and further particulars with regard to the above and other novelties, we refer our patrons to the Catalogue itself, which is sent free and post paid on application.

BUTLER & M'CULLOCH, Covent Garden, London.—March 5.

RICH BOG AND LOAM.—Gentlemen and Nurserymen will do well to apply early for the above to refresh their American beds. To be had in any quantity upon reasonable terms, by land or water carriage.

Robert Neal, Nurseryman, Wandsworth Common, Surrey.

FLOUR, Warranted Unadulterated, free to any part of London (not less than 14 lbs.); Whites, for pastry, at per bushel (56 lbs.), 8*s.* 4*d.*; households, for bread-making, 7*s.* 8*d.*; seconds, 7*s.* 0*d.*; Wheatmeal, for brown bread, 7*s.* 0*d.*; best fine and coarse Scotch Oatmeal.—Address, Hornsnail & Catchpool, Bullford Mill, near Witham, Essex, or 97, Goswell Road, City Road, E.C. Directions for bread making gratis. Terms, cash. Bags lent. German yeast. A half sack (140 lbs.), or upwards, free to any railway station within 200 miles.

TO PIG AND POULTRY FEEDERS AND MILLERS.

CHICKEN RICE, 7*s.* 9*d.* per cwt., in bags 1¾ cwt. each. SCREENED RICE, 10*s.* per cwt., in bags 1¾ cwt. each. RICE MEAL, 6*s.* 6*d.* to 8*s.* 6*d.* per cwt. RICE for grinding. An allowance per Ton. American Oilcake, in barrels and bags, per ton only. Locust Beans, per ton.—Sold for Cash only by W. & R. Jupp, 6, Cross Lane, St. Mary-at-Hill, Eastcheap.

TANNED GARDEN NETTING, for preserving Fruit Trees from frost, blight, birds, &c., and as a fence for fowls, &c. One yard wide 1½*d.*, 2 yards 3*d.*, 3 yards 4½*d.*, and 4 yards 6*d.*, per yard, in any quantity, may be had at C. Wright's, 376, Strand, W.C.—A liberal allowance to Nurserymen.

BRITTAIN'S GARDEN NET completely protects Fruit Blossoms from injury by frost, and provides for the circulation of air and admission of light, so essential to healthy growth; 55 inches wide, 5*d.*, 6*d.*, and 8*d.* a yard; good SHADING TIFFANY, yard wide, 2½*d.* do.—Manchester, Feb. 26.

SHAW'S TIFFANY.—The best and cheapest material for Shading Conservatories, Protecting Fruit from Birds and Wasps, &c. Sold in pieces 20 yards long by 38 inches wide. No. 1, best quality, 5*s.* per piece; second quality, 4*s.* per piece. Extra strong and thick (see Circular sent free by post with samples).

Address John Shaw & Co., Manufacturers and Dealers, Princess Street, Manchester.

SHADING.

BROWN'S FLORAL SHADING still maintains its superiority for cheapness and efficiency over all other materials used for a similar purpose, viz., shading plants under glass from the scorching rays of the sun, protecting Wall Fruit Trees when in bloom from frost, and preserving the fruit from the attacks of birds, flies, and wasps. Sold in pieces 20 yards long, 38 inches wide:—

No. 1 per piece .. 4*s.* 0*d.* | No. 2 per piece .. 4*s.* 3*d.*

To be obtained of all the principal Nurserymen and Seedsmen in town and country. Samples sent free on application to the Manufacturer, Charles Brown, Greenheys, Manchester.

"FRIGI DOMO." — Patronised by her Majesty the Queen, the Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence, of Ealing Park, and — Collier, Esq., of Dartford.

PROTECTION FROM COLD WINDS AND MORNING FROSTS.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths. Two yards wide, 1*s.* 6*d.* per yard run; four, 3*s.* per yard. Also, an improved make for Shading Purposes. Three yards wide, 2*s.* 6*d.* per yard run.

Elisha Thomas Archer, whole and sole manufacturer, 7, Trinity Lane, Cannon Street, City, and of all Nurserymen and Seedsmen throughout the kingdom. "It is much cheaper than mats as a covering."

PATENT GUTTA PERCHA SOLES.—Important to Gardeners.—The Gutta Percha Company have the pleasure to acknowledge the receipt of the following letter from G. Glenny, Esq., the celebrated Florist:—

"420, Strand, London.

"Gentlemen,—I have worn Gutta Percha Soles and Heels these two years, and being so much in a garden as I necessarily am in all weathers, and with the ground in all states, I would on no account be without them. As a matter of economy I would recommend Gardeners to use them, for they may repair the worn part at all times by warming the material at the fire, and pressing it from the thick parts to the worn parts as easily as if it were so much dough. I think it the duty of all persons who must occasionally wet their feet to adopt a material that completely defies damp. Many a gardener would escape colds and rheumatism by the use of Gutta Percha Soles.

"Your obedient servant, G. Glenny."

Every variety of Gutta Percha articles, such as Mill Bands, Tubing, Soles, Goloshes, Sheet, Pump Buckets, Fire Buckets, Bosses, Union Joints, Flasks, Bottles, Bowls, Chamber Vessels, Toilet Trays, Sponge Bags, Curtain Rings, Galvanic Batteries, Talbotype Trays, &c., manufactured by the Gutta Percha Company, and sold by their wholesale dealers in town or country.—The Gutta Percha Company, Patentees, 18, Wharf Road, City Road, London.

GREENHOUSES, ORCHARD HOUSES, AND PITS

OF EVERY DESCRIPTION, MADE BY STEAM MACHINERY, AND HEATED BY HOT WATER ON AN IMPROVED PLAN AT

J. LEWIS'S HORTICULTURAL WORKS, Stamford Hill, Middlesex, established 20 years. These Buildings are warranted of the best materials, and at prices which defy competition. The ventilation is most efficient, and the greatest improvement of the present day. Prices of any size on application. References in all parts of the United Kingdom.

GREENHOUSES.

HENRY FREEMAN, HOTHOUSE BUILDER and HOT-WATER APPARATUS MANUFACTURER, Triangle, Hackney, Established 20 years. Good substantially built GREENHOUSES, fixed in any part of the kingdom, for cash, 42 ft. long by 13 ft., 90*l.*; 21 ft. by 13 ft., 50*l.* 124 ft. by 10 ft., 30*l.* A first-rate Conservatory, 30 ft. by 16 ft. 130*l.* A large assortment kept. Estimates for heating, or any branch in wood, iron, or Park Fencing.

IMPROVED HOT-WATER PIPE.—The Horticulturist will find herein an inexpensive instrument of new and very important powers. An atmosphere may be produced at will either perfectly dry, partially damp, or saturated with moisture. A space of 10 inches by 12 inches contains the power of 25 feet of 4-inch pipe and other numerous advantages. The London Warming and Ventilating Company (Limited), 36, Great George Street, Westminster, S.W.

C. STEPHENSON, late STEPHENSON AND SONS, 61, Gracechurch Street, London, Manufacturer of Iron Hurdles, Fencing, &c., Improved Iron and Copper Conical Boilers and Apparatus for Warming Buildings of every description by Hot Water.

Prices and Estimates furnished upon application.

HEATING BY HOT WATER ON HAMMOND'S improved principle, for Horticultural Works, Mansions, Churches, Public Buildings, in fact everywhere that heat is required. Also his improved Ventilating Greenhouses, which can be erected at 1*s.* per foot, and entirely prevent the possibility of scorching the Vines or plants. The Patent Hot-water Register Stove.—Estimates at No. 18, George Street, Portman Square. Workmen sent into the country.

YOKINS AND HURD, Seymour House, Jubilee Place, King's Road, Chelsea, BUILDERS OF HOTHOUSES, CONSERVATORIES, GREENHOUSES, PITS, and every description of erections in Glass work, either in Wood or Iron; also Heating the same by hot water on the most approved plans and at the lowest prices consistent with good work. Estimates forwarded.

HANDS'S PATENT is the only system to circulate Heat, and for WARMING, FUMIGATING, and VENTILATING Hothouses, Greenhouses, Winter Orchards, &c.; to keep vegetation healthy in a humid atmosphere, and can be applied to any kind or shape of Forcing-houses and Conservatories now existing at trifling cost.—For particulars apply at the Office, 10, Charlotte Street, Fitzroy Square, London; or to Mr. JOHNSON HANDS, Epsom.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

E. DENCH, KING'S ROAD, CHELSEA, & HAMPSTEAD ROAD, Patentee and Sole Manufacturer of PATENT GALVANISED IRON HOTHOUSES AND CONSERVATORIES, has Two SPAN-ROOFED HOUSES left for Sale, a great Bargain. Patent Hothouses, every way superior to any other material, at 1*s.* 3*d.* per foot super, with excellent heavy good quality Glass. Printed Price List sent on application. Heating by Hot Water with efficiency and economy.

HOTHOUSES FOR SALE.

TO BE SOLD CHEAP, two nearly new SPAN-ROOF HOUSES, each 65 feet long by 18 feet wide, price 100*l.* each; also a handsome OCTAGON CONSERVATORY, 22 feet diameter with glass all round, quite new, price 90*l.* All these houses are warranted to be of the best materials and workmanship. The reason of their being now Sold is to make room for an extensive alteration and addition to our Workshops and Steam Machinery.—Apply to Messrs. JOHN WEEKS & Co., King's Road, Chelsea, where the whole of the above can be seen, as also a great variety of other Horticultural Erections.

HORTICULTURAL BUILDINGS AND HEATING BY HOT WATER.

JOHN R. PEILL, 17, New Park Street, Southwark, Manufacturer of every description of Buildings for Horticultural purposes, and Inventor of the Improved Conical Boiler for heating the same, is prepared to undertake works of any magnitude, and refers among others to the celebrated range of FORCING HOUSES at HER MAJESTY'S GARDENS, FROGMORE, and at SIR ROBERT PEEL'S, DRAYTON MANOR, constructed under the superintendence of his Manager, MR. JOHN JONES; and also to his BOILERS fixed at the CRYSTAL PALACE, the ROYAL BOTANIC GARDENS, REGENT'S PARK, and KEW, and at several hundreds of the Nobility's seats, Public Establishments, and Manufactories in London and the provinces. J. R. P. also manufactures every description of Iron Roofs, Iron Houses, and Iron Fencing, plain and ornamental. Strong Iron Hurdles for Sheep (6 feet long, 3 feet high, with 5 bars), 4*s.* 3*d.* each; ditto for cattle, 4*s.* 9*d.* each.

Prices and other particulars forwarded on receipt of one postage stamp.

POULTRY HOUSES—SUMMER-HOUSES.—Poultry House, 12 ft. by 4 ft., 6 ft. high in lowest part, 5*l.*; consisting of roosting-house, 4 ft. by 4 ft.; roofed run, wired in, 8 ft. by 4 ft. of corrugated iron, fitted with nest-boxes, perch, &c.; House without run, 2*l.* Poultry Wirework, galvanised, 5*d.* per square yard. Corrugated Iron Summer-house, 10 ft. by 6 ft., price 6*l.*—a good retreat and play place for children; larger or smaller, on equally moderate terms, Bath House, 5*l.*, for yard or garden. Tool Houses, Sheds, Roofs &c.—R. RICHARDSON, Portable House Builder, White Horse Factory, Bidborough Street, Judd Street; Office, 99, Euston Road, London. Drawings of Poultry Houses, Summer-houses, and Portable Houses free on application.

IMPROVED PATENT TURNIP AND MANGEL GRATER,

MANUFACTURED BY

JOHN WARNER AND SONS, No. 8, Crescent, Jewin Street, London, E.C.—J. W. & SONS, in introducing their IMPROVED PATENT TURNIP AND MANGEL GRATER to the notice of Agriculturists, beg to state that they have personally tested its capabilities during the last three seasons, and as such feel that they can, with the greatest confidence, recommend it as a machine that will upon trial, satisfy the requirements of Feeders of Stock generally; one man or strong lad being able with comparative ease to grate 20 bushels of roots in 10 minutes.—Price of the Machine complete, 4*l.* 10*s.* Carriage paid to any Railway Station in England. To be procured of any Ironmonger or Agricultural Machine Agent in Town or Country, or of the Manufacturers.

GEORGE SPILL, ST. GEORGE'S STREET, LONDON DOCKS, E., LEAD, OIL, and COLOUR WORKS; WHITE LEAD, TAR, and TURPENTINE MERCHANT; WHITE ZINC, PAINT, COLOURS, and VARNISHES. To meet the desire of purchasers in the country the following colours are prepared ready for use:—Priming Colour, Red and Yellow Paint, Buff Stone, Lead, and Green Colours. Putty, Painter's Tools and Brushes, Refined Coal and Stockholm Tars; Pure Colza, Olive, Sperm, and Nut Oils.

TO GARDENERS, ETC.

PATENT WATERING ENGINES, PAIL MACHINES, CONSERVATORY PUMPS, and GREENHOUSE SYRINGES, with all the latest improvements, manufactured only by the Patentee,

RICHARD READ, 35, REGENT CIRCUS, PICCADILLY, LONDON.

*** Descriptions sent post free.

FOR WATERING GARDENS, PLUMBERS, ENGINEERS, MILLS, AND MACHINISTS.

VULCANISED INDIA RUBBER.

- Washers for Hot-water and Steam Joints
- Elastic Packing and Valves for Steam Engines
- Pump Buckets (compound India-rubber)
- Suction Hose for Pumps
- Fire Engine Hose
- Air Beds, Cushions, & Bolsters
- Water Beds, Pillows, and Feet Warmers
- Garden Watering Hose
- Do. fitted with Brass Joints, Taps and Spreaders
- Wheel Tires (noiseless for Trucks, &c.)
- Waterproof Cart, Van, and Waggon Covers
- Mill Bands, much improved for driving all kinds of Machinery
- Door Springs, Gas Bags
- Foot Balls, Cricketting Gloves

N.B. A Stock of the above always on hand, and any modification made to order. Please address all communications to the Manufactory.

JAMES LYNE HANCOCK,
Vulcanised India-rubber Works, Goswell Road, London, E.C.

WARNER'S SWING WATER-BARROW (TO HOLD FORTY GALLONS) MOUNTED ON WHEELS 20 INCHES HIGH. Will save much of the Gardener's time and labour. May be obtained of any Ironmonger for 3*l.* 3*s.*



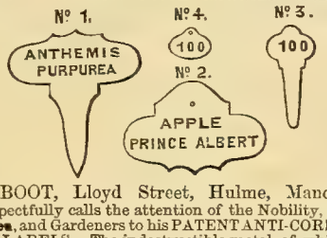
BRASS SYRINGES, 9*s.* to 18*s.*

Also a great variety of effective Machines for Hydraulic purposes, and to supply Gardens, Hothouses, Cottages, Farms, Mansions, or Boards of Health, with every requisite connected with the conveyance and distribution of Liquids.

Fountains suitable for Conservatories, Lawns, &c.

JOHN WARNER & SONS, 8, Crescent, Jewin Street, London.

PATENT ANTI-CORROSIVE MARKED LABELS.



A. J. BOOT, Lloyd Street, Hulme, Manchester, respectfully calls the attention of the Nobility, Gentry, Nurserymen, and Gardeners to his PATENT ANTI-CORROSIVE MARKED LABELS. The indestructible metal of which they are manufactured, the deep and legibly marked letters, and their neatness of design, render them essential in every well-conducted horticultural building, garden, or orchard, where so much depends upon the preservation of names. The inventor guarantees them to endure for centuries in any climate; neither damp nor heated atmosphere having the slightest effect upon their durability. They need only be cleaned with soap and water to renew their usefulness and neat appearance every year, which qualities will ensure for them a preference to all others now in use. The following descriptions will give an idea of their general utility.

No. 1. Large-tongued Label, 4*s.* per dozen, suitable for all stove plants, Orchids, greenhouse plants, annual and perennial flowers, and all kinds of bulbous roots.

No. 2. Wall Labels, 4*s.* per dozen, for all kinds of wall trees, standards, Vines, Roses, Dahlias, Hollyhocks, or for fixing on blocks of wood for orchidaceous plants and all kinds of shrubs or ornamental plants and nursery stock in general.

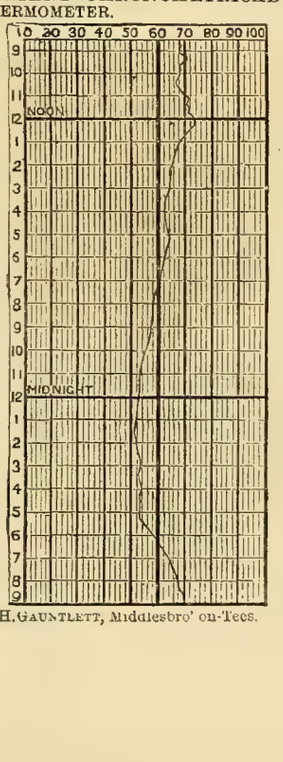
No. 3. Small-tongued Numbered Label, 6*s.* per 100, for Polyanthus, Auriculas, Tulips, and all descriptions of florists' flowers.

No. 4. Small Numbered Label, 5*s.* per 100, for numbering every description of choice and tender plants, Rose trees, &c.

TO HORTICULTURISTS.

GAUNTLETT'S PATENT CHRONOMETRICAL THERMOMETER.

This instrument, which combines an eight-day clock of the best English make showing time, with a newly-patented Thermometer, wherein glass and quicksilver are dispensed with, writes down the temperature of the atmosphere on a slip of paper, and when placed in a Hothouse, Forcing House, or Conservatory, &c., supplies a valuable record of the temperature, with all its variations, showing the time when any change took place, and how long such change continued.



The above slip (reduced in size) exhibits the temperature of the Royal Agricultural Society's show yard at Chester, July 22, 1858, written off by one of these instruments, to which was awarded the Society's SILVER MEDAL.

This is the only instrument that registers temperature continuously and writes it down, and no horticulturist should be without it.

Orders received by W. H. GAUNTLETT, Middlesbro'-on-Tees.

GENUINE ROLL TOBACCO CLOTH.

WARRANTED EQUAL IN STRENGTH TO TOBACCO.

JOSEPH BAKER, 10, Gough Square, Fleet St. E.C., having dealt upwards of 20 years in the above, can recommend it as the best article for destroying the Fly. 1*s.* 3*d.* per lb., over 10 lbs. 1*s.* Post-office Orders payable Strand Office.

GENUINE TOBACCO PAPER.

MESSRS. JACKSON AND SONS' WORKMEN are selling their unequalled TOBACCO PAPER at 4*l.* per cwt., any less quantity 10*d.* per lb.—Address BEN BAXTER, Messrs. Jackson & Son, Lady Lane, Leeds.

GENUINE TOBACCO PAPER FOR FUMIGATING.

H. APPLEBY (Foreman to Messrs. Ivery & Son, Nurserymen, Dorking, Surrey), takes this opportunity of informing his Patrons and the Public that he is now offering the above at a very considerably reduced price. It is now sold in packets of 4 lbs. each, at 1*s.* 3*d.* per lb. A liberal Discount allowed to the Trade. The following Testimonials amongst many others will guarantee its quality:—

"Maresfield, Sussex, Feb. 17, 1858.

"SIR,—It gives us much pleasure to inform you that the Tobacco Paper with which you supplied us has answered admirably. We have not the slightest hesitation in stating that 1 lb. of the Paper we had from you will render more service than 3 lbs. of the paper we have been in the habit of purchasing elsewhere. You will please send us a further supply of 28 lbs. at your convenience.

"WOOD & SON, Nurserymen, Maresfield, Sussex."

"Royal Berkshire Seed Establishment, Reading,
"Dec. 6, 1858.

"SIR,—Our propagator has tried your Tobacco Paper thoroughly, and considers it very good. It is also very convenient to the Public to receive it in 4-lb. packets as you make it up. We should therefore be glad of 1 cwt. for present sale in 4-lb. packets, and will let you know when more is required,

"SUTTON & SONS,
"Nurserymen and Seedsmen, Reading, Berks."

H. APPLEBY'S SHEET IRON FUMIGATING POT, which will be a great saving of Flower Pots, as they are apt to break. The undermentioned Testimonial will guarantee its usefulness.

"The Gardens, Oxton House, near Exeter, Dec. 11, 1858.

"Sir,—I am perfectly satisfied with the little Fumigating Pot, and can strongly recommend it in preference to flower pots, as it is a great saving and much easier managed.

"A. AYSON, Gardener to Major-General Studd, Oxton House, Exeter, Devon."

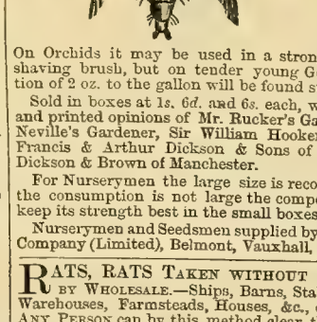
Price, 3*s.* 6*d.* each.

N.B.—All Orders to be accompanied with a Post-office Order, payable to HENRY APPLEBY, Dorking, Surrey.

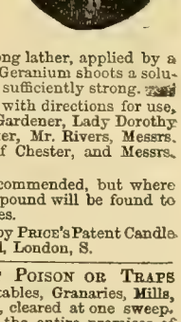
PAGE'S BLIGHT COMPOSITION (4*s.* per gallon, sufficiently strong to make four fit for use) has stood the test of eight years public trial, and its great success has led to numerous imitations. Dr. Lindley, in his leading article of October 25, 1856, reported 182 cases in its favour, sufficient to convince the most sceptical. Seeds packed for exportation to all parts of the world.—PAGE & TOOGOOD, Royal South Hants Seed Establishment, Southampton.

GISHURST COMPOUND, PATENTED.—For preventing and destroying Red Spider, Scale, Mealy Bug, Thrip, and Green and Brown Fly.—See *Gardeners' Chronicle*, Nov. 6, 1858.—To be dissolved ½ or ¼ lb., or less, in a gallon of soft water, and applied by means of a syringe or a soft brush.

THRIP (magnified).



MEALY BUG (magnified).



On Orchids it may be used in a strong lather, applied by a shaving brush, but on tender young Geranium shoots a solution of 2 oz. to the gallon will be found sufficiently strong.

Sold in boxes at 1*s.* 6*d.* and 6*s.* each, with directions for use, and printed opinions of Mr. Rucker's Gardener, Lady Dorothy Neville's Gardener, Sir William Hooker, Mr. Rivers, Messrs. Francis & Arthur Dickson & Sons of Chester, and Messrs. Dickson & Brown of Manchester.

For Nurserymen the large size is recommended, but where the consumption is not large the compound will be found to keep its strength best in the small boxes.

Nurserymen and Seedsmen supplied by PRICE'S Patent Candle Company (Limited), Belmont, Vauxhall, London, S.

RATS, RATS TAKEN WITHOUT POISON OR TRAPS BY WHOLESALE.—Ships, Barns, Stables, Granaries, Mills, Warehouses, Farmsteads, Houses, &c., cleared at one sweep. ANY PERSON can by this method clear the entire premises of every RAT, however numerous they may be, in one single night. Printed directions how to entice and secure the whole lot alive, sent free by return of post for Two Shillings by WILLIAM GOODWIN, High Halstow, near Rochester.

MICROSCOPES.

J. AMADIO'S BOTANICAL MICROSCOPES packed in mahogany case, with three powers, condenser pincers, and two slides, will show the animalculæ in water Price 18*s.* 6*d.*—Address JOSEPH AMADIO, 7, Throgmorton Street. A large assortment of Achromatic Microscopes.

"It is marvellously cheap, and will do everything which the lover of nature can wish it to accomplish either at home or in the open air."—*The Field*, June 6, 1857.

Just published, an Illustrated Catalogue, containing the names of 1000 Microscopic objects, post free for 4 stamps.

SMALL GAS APPARATUS, FREE FROM NUISANCE.

THE PATENT NATIONAL COAL-GAS APPARATUS, for private Residences, Farm Buildings, Churches, Chapels, Workshops, Railway Stations, and other places not hitherto lighted with Gas. It is durable, economical, and compact, and supplies the desideratum of cleanliness in the production of a Gas of better quality and purity, and at less cost, than is ordinarily obtained from Public Works. By an entirely new and peculiar process it is easily worked by a boy or inexperienced servant. The cost of Gas, including labour, wear and tear, and interest of capital, is less than one-fourth that of candles or oil. It can be fixed and completed in working order in a few days.—Further particulars, prices, testimonials, &c., on application to the Proprietors and Manufacturers, J. T. B. PORTER & Co., Lincoln.

GRASS SEEDS FOR PERMANENT PASTURES & MEADOWS.

THOMAS GIBBS & CO., Corner of Half-Moon St.,

THE SEEDSMEN TO THE "ROYAL AGRICULTURAL SOCIETY OF ENGLAND,"

BEG to inform the Members of the Society and Agriculturists generally that their MIXTURES of GRASS SEEDS for Laying down Land to Permanent Grass are now ready. Each kind of Grass Seed composing these Mixtures is cleaned separately, and the kinds are proportioned to suit different soils.

☞ *Full Directions for Sowing and Management will be sent with the Seeds.*

MIXTURES for PERMANENT MEADOW and PASTURE (*to suit different soils*).
MIXTURES for PARKS, FIELD LAWNS, CEMETERIES, &c.
MIXTURES for IRRIGATION MEADOWS, GAME COVERS, and all other purposes.
RENOVATING MIXTURES for Improving Old Meadows and Pastures (8 to 12 lbs. per acre).

MANGEL WURZEL.	RYE-GRASS.		
Yellow Globe, Orange Globe (selected)	Italian (selected, very fine)	Carrots	all sorts
Long Red	Dickinson's	Clovers	,,
Red Globe	Imported Foreign Seed	Swedes	,,
Long Yellow	Common or Annual	Hybrids	,,
Silesian Sugar Beet	Pacey's Perennial	Common Turnips	,,

KITCHEN GARDEN SEEDS in Collections, at £1, £2, and £3 each.

ALL KINDS OF AGRICULTURAL SEEDS.

Price Lists sent free on application. *Reference or Cash required from unknown Correspondents.*

Thomas Gibbs & Co.

CORNER OF
HALF-MOON St.
PICCADILLY, LONDON, W.

RHODODENDRONS.

JOHN WATERER'S CATALOGUE OF UNRIVALLED HARDY SCARLET AND OTHER CHOICE RHODENDRONS, as Exhibited by him at the Royal Botanic Gardens, Regent's Park, London, is published, and will be forwarded on application.

☞ This List is recommended as a work of reference, as it contains accurate descriptions of all the esteemed varieties.

The American Nursery, Bagshot, Surrey, near the Sunningdale Station, South Western Railway.

HARDY SCARLET RHODODENDRONS AND AMERICAN PLANTS GENERALLY.

WATERER AND GODFREY'S PRICED and DESCRIPTIVE CATALOGUE of the above beautiful tribe of plants, as exhibited by them in London and Manchester, may now be had on application inclosing one stamp for postage. The Catalogue also furnishes the heights and prices of their unequalled stock of Conifers and Evergreens, &c. Catalogues may also be had of Messrs. J. May & Co., Seedsmen, &c., Wellington Street, Strand.

Knap Hill Nursery, Woking, Surrey.

NEW SEEDS FOR 1859.

WM. CUTBUSH AND SON beg respectfully to intimate that their PRICED CATALOGUE OF VEGETABLE AND FLOWER SEEDS, &c., is now ready post free on application. Wm. C. AND SON devote particular attention to this department of their business, and most of the choicer kinds of culinary seeds and roots are saved under their own inspection, and they can confidently guarantee the quality of all offered.—Highgate Nurseries, London, N. Established A.D. 1695.

AZALEA INDICA.

J. IVERY AND SON beg respectfully to invite growers of the above named to an inspection of their unrivalled Stock of Young Specimens of all the newest and best varieties, many of which have been exhibited at the Metropolitan Exhibitions. They are clean and healthy, well set with bloom, and moderate in price. Catalogues forwarded post free upon application.—Dorking Nursery, March 5.

POLYANTHUS SEED.

JAMES WOODS begs respectfully to inform the lovers of that early spring flower, the Polyanthus, that his Seed is saved with more than ordinary care this year, from none but named and good laced flowers, which he can recommend with confidence. Having had testimonials from different parts of the kingdom of many valuable flowers being raised from his seed, it needs no further comment. Price 12*s.* per oz. to the trade, or 1*s.* per packet, sent free on receipt of 13 postage stamps.—James Woods, Florist, Harwich, Essex.

DOUBLE ITALIAN TUBEROSE ROOTS, 4*s.* per dozen.—The annual importation of the above named beautiful and fragrant Flower has just been received, and large and well selected Bulbs may be obtained, without disappointment, at A. Cobbett's Foreign Warehouse, 18, Pall Mall.

N.B. Printed regulations for treatment sent; also, just arrived, very moist and open Parmesan Cheeses

THE GREAT VINE AT HAMPTON COURT.

THE SUBSCRIBERS being the holders of the Royal Kitchen Gardens, Hampton Court, are enabled to offer genuine the famous and truly excellent HAMPTON COURT BLACK HAMBURGH GRAPE.

Strong well-ripened plants in 9-inch pots, 42*s.* and 60*s.* per doz.
,, ,, fruiting plants in 12-inch pots, 10*s.* 6*d.* each.

If purchased in large numbers a considerable reduction will be made in price.—Jackson & Son, Nurseries, Kingston, S.W.

100 GOOD PHLOXES FOR 40*s.*
50 Ditto Ditto for 25*s.*
25 Ditto Ditto for 12*s.* 6*d.*
12 Ditto Ditto at 6*s.* and 9*s.* per doz.

The best and newest continental varieties from 12*s.* to 18*s.* per dozen.

CATALOGUES sent free on application, and extra plants presented for distant carriage.

Wm. Wood & Son, having imported all the best and newest PHLOXES from the Continent, will be happy to supply them in collections as stated above, in fine strong plants grown in the open ground.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

PETUNIAS, SPLENDID NEW DOUBLE SORTS OF 1859.

J. SCOTT, Merriott Nurseries, Crewkerne, Somerset, begs to offer 30 sorts, many of them 5 inches across, some like large flowers of Gardenia Fortuni; one very like Laronne Prevost Rose, many flaked and striped like large Carnations, and altogether the most beautiful and unique collection ever offered in this or any other country. Strong plants 2*s.* 6*d.* each; or the 30 sorts 63*s.* One set added for every three ordered by the trade.

J. S.'s DESCRIPTIVE CATALOGUE of the above and other cheap BEDDING PLANTS will be ready about the middle of March, and will be sent to all applications, inclosing two stamps; and to former purchasers gratis.

N.B. PETUNIA MAGNA COCCINEA, a splendid single (5 inches diameter) is offered at 3*s.* 6*d.* per dozen for bedding, and J. Scott's new single striped ALCEMENE, 5 inches across, at 30*s.* per dozen, or 3*s.* 6*d.* each.

CUCUMBERS of the following sorts, packet of 12 seeds in each, 6*d.*:—Lord Kenyon, General Canrobert, Sion House, Sir Colin Campbell, Manchester Improved, Kelly's Defiance, Improved Sion House.

Asparagus Plants, 2 years, 1*s.* 6*d* per 100.
Larch, 3 to 4 ft. 3*s.* per 100.
,, 4 to 5 ft. 4*s.* ,,
Beech, 3 to 4 ft. 4*s.* ,,
Elms, 6 to 8 ft. 5*s.* ,,
Spruce Fir, 2 ft. 4*s.* ,,
Scotch ,, 2½ to 3 ft. 5*s.* pr. 100.
Standard Roses, Mixed, good sorts, 50*s.* per 100.
Dwarf Roses in pots, named, 6*s.* per doz.
Dwarf Trained Peaches and Nectarines, 3*s.* 6*d.* each.

Walter Bird, Atherstone Nursery.

AZALEA INDICA.—

	s.	*d.*
25 choice varieties, very strong, and well established for fine bloom	45	0
12 choice ditto	24	0
25 choice ditto ditto, including new varieties	65	0
12 choice ditto ditto	36	0
Fine flowering plants, selections, per doz., 18*s.*, 24*s.*, and	30	0

Carriage free for orders of 20*s.* and upwards to all Stations in London, &c. See CATALOGUE.

Bass & Brown, Seedsmen and Nurserymen, Sudbury, Suffolk.

FRUIT TREES IN POTS.

JOHN AND CHARLES LEE have now the largest and finest stock of FRUIT TREES IN POTS in a bearing state for FORCING AND ORCHARD HOUSES ever offered. They consist of the following kinds, a CATALOGUE of which may be had on application:—

APRICOTS	FIGS	PEARS
PEACHES	PLUMS	APPLES.
NECTARINES	CHERRIES	Also,

VINES AND STRAWBERRIES.

Nursery and Seed Establishment, Hammersmith, London.

SUPERB DOUBLE BALSAMS.

F. AND A. SMITH are now sending out seed of their superb BALSAMS, which are unrivalled for size, form, brillancy of colour, doubleness of flower, and habit of plant.

In collections of nine separate colours .. .. 2*s.* 6*d.*
,, ,, mixed ,, ... 2 0
,, ,, ,, ,, half quantity 1 0

The above are *genuine only* in our sealed packets, and may be had of most respectable Nurserymen and Seedmen in the United Kingdom.—Dulwich, Surrey, S.

PLANTS IN FLOWER.

F. AND A. SMITH have now in bloom Acacia, Azalea indica, Cinerarias (fine), Cytisus, Dielytra spectabilis, Erica Willmoreana, E. perspicua nana, E. Syndriana, Geraniums, Fairy Roses, Primula sinensis fimbriata, &c.

The above are healthy, strong, and well grown plants, prepared for sending away. Prices on application.

Dulwich, Surrey, S.

GERMAN FLOWER SEEDS.—

		s.	*d.*
24 varieties imported German Aster		6*s.*	0*d.*
9 ,,	Ranunculus Aster	2	6
12 ,,	French, or Pæony-flowered	3	0
12 ,,	German Stocks	3	0
8 ,,	large-flowered ditto	2	0
6 ,,	dwarf-flowered ditto	1	6
6 ,,	Camellia Balsams	2	0
10 ,,	German Wallflowers	3	6
8 ,,	Phlox Drummondi	2	6
8 ,,	Hyacinth-flowered Larkspurs	1	6
6 ,,	Zinnia elegans	1	6

The above sent free by post in the original packets as received from Mr. Ernest Benary, of Erfurt, Prussia, whose Seeds J. M. has had for the last 16 years; they will be found of the very best quality, and not to be surpassed.

Joseph May & Co., Seedsmen, &c., 1, Wellington Street, Strand, Waterloo Bridge.

EXHIBITION OF CAMELLIAS,

VAUXHALL NURSERY, WANDSWORTH ROAD.

MILNE, ARNOTT, & CO.,

(SUCCESSORS TO CHANDLER & SONS),

HAVE much pleasure in announcing that the large Collection of CAMELLIAS for which this Nursery has so long been celebrated, is now coming finely into bloom, and will improve daily, and continue in perfection several weeks. Open to visitors every day except Sunday.

MILNE, ARNOTT, & Co.,

NURSERYMEN, SEEDSMEN, AND FLORISTS, WANDSWORTH ROAD, LONDON, S.

CHOICE FLOWERS.

BUTLER & McCULLOCH'S SPRING CATALOGUE OF SEEDS,



ARRANGED on a new and original plan, with copious Descriptive and Cultural Notes, and containing many new and rare species and varieties not found in any other Catalogue, now ready and may be had free and post paid on application.

FLOWER, SHRUB, TREE, and VEGETABLE SEEDS, the crop of 1858, saved with the greatest care, by the most eminent growers.

We may also state that the Sardinian correspondent of Messrs. James Carter & Co., whose Seeds, especially Carnations and Picotees, have given such universal satisfaction, has transferred the Agency from that firm and appointed us his representative in this country. To meet the growing demand for first class flowers, particularly FLORISTS' FLOWERS, we have adopted our usual maxim of charging the lowest possible prices.

Professor Lindley in the *Gardeners' Chronicle* of February 5th, has the following notice of B. & McC.'s Catalogue.

"Butler & McCulloch's (Covent Garden) Spring Catalogue of Choice Flower, Shrub, Tree, and Vegetable Seeds. This list fills 84 closely printed 8vo pages, and is remarkably well got up. It appears that the correspondent in Sardinia, who formerly supplied one of the great London houses with seeds raised in that warm part of Europe, has now transferred what he saves to Messrs. Butler & McCulloch. Let us add, that it yields to no Trade List in the abundance of its materials or the excellence of its arrangements."

				s.	*d.*
A selection of 44 pkts. of beautiful Annual Flower Seeds				7*s.*	6*d.*
Ditto 33	ditto	ditto	.. ..	5	6
Ditto 21	ditto	ditto	.. ..	3	6
A selection of 40 pkts. of beautiful Biennial and Perennial ditto				10	6
Ditto 31	ditto	ditto	.. ..	7	6
Ditto 24	ditto	ditto	.. ..	5	6

					£	*s.*	*d.*
An Assortment of Vegetable Seeds, 20 quarts of Peas, and other Seeds in proportion for 1 year's supply					3	3*s.*	0*d.*
Ditto	ditto	12 quarts of Peas	ditto	..	2	2	0
Ditto	ditto	6	ditto	ditto ..	1	1	0
Ditto	ditto	5	ditto	ditto ..	0	15	0

All Flower Seeds sent post paid, and Vegetable or Vegetable and Flower Seeds amounting to 1*l.* 1*s.* Carriage Paid to any principal Railway Station in England, Wales, and Scotland, or any port on the Irish Coast.

BUTLER & McCULLOCH, Covent Garden Market,

SORGHUM, or HOLCUS SACCHARATUS.

CARRIAGE FREE TO ALL PARTS.

SUTTON & SONS,

THE largest Importers of this Seed, can supply it wholesale and retail, warranted the true kind, and good growing seed. 8 lbs. per acre is sufficient.

Present retail price, 2s. per lb., or cheaper in large quantities.

On the Continent the price is rapidly rising.

☞ *Instructions on Cultivation sent with the Seed.*

SUTTON & SONS, Royal Berks Seed Establishment, Reading.

SELECT LIST OF NOVELTIES FROM CATALOGUE 1859.

Carter's Tom Thumb Nasturtion	Lupinus nanus albus	Fenzlia dianthiflora
Lagenaria vittata	Viscaria Dunetti	Gaillardia hybrida grandiflora
Œnothera Drummondi nana	Laxton's Hybrid Pinks	Lobelia formosa
Lupinus Hartwegi cœlestinus	Dwarf spotted Nasturtion	Viscaria cœli rosa alba
Œnothera bistorta Veitchi	Nolana paradoxa violacea	Marigold French Orange.
Cosmidium Burridgi		

J. C. & Co. also wish to call attention to their Splendid Collections of Imported

GERMAN & FRENCH ASTERS, GERMAN STOCKS, BALSAMS, & WALLFLOWERS,

UNIVERSALLY ACKNOWLEDGED TO BE UNSURPASSED.

For a Full Description of the above articles they beg to refer to their CATALOGUE, which will be forwarded gratis and post free on application to

JAMES CARTER & Co., Seedsmen, 238, High Holborn. W.C.

SEEDS RIPENED ON THE CONTINENT.

JAMES CARTER & Co.

HAVING observed their name mentioned in an advertisement in connection with a late correspondent, feel it their duty to state that, preferring to have their Seeds from the Continental growers *direct*, one of the Firm has travelled during the past autumn with that object, *and purposes doing so every season*; the services of the correspondent alluded to are therefore dispensed with. Their Seeds for the present season, having been *personally* selected, are better than any they have hitherto offered.

JAMES CARTER & CO., Seedsmen, 238, High Holborn, London, W.C.

GENUINE KITCHEN GARDEN SEEDS.

JAMES CARTER & CO.

ARE NOW READY TO SUPPLY SEEDS FOR THE VEGETABLE AND FLOWER GARDEN, WHICH WILL BE FOUND, AS USUAL, OF THE BEST QUALITY ONLY.

CARTER'S "ENCYCLOPÆDIC CATALOGUE OF SEEDS,

AND GARDENER'S VADE MECUM."

The Twenty-fourth Annual Issue of the above is now ready, and, in addition to its usual comprehensiveness, has affixed a CALENDAR OF OPERATIONS for each month in the year for the Vegetable and Flower GARDEN, also for the Stove, Conservatory, Greenhouse, Orchid House, Pineries, Vineries, Pits, Frames, &c., forming a complete Gardener's Book of reference, which it is hoped will be found useful alike to the Amateur and professional Gardener. Forwarded free of charge and post paid to all parts of the world upon application.

JAMES CARTER & CO., Seedsmen, 238, High Holborn, London, W.C.

MESSRS. E. G. HENDERSON & SON

RESPECTFULLY ANNOUNCE THAT THEY WILL FORWARD, POST FREE, THEIR

NEW SEED CATALOGUE FOR 1859,

IN which the following novelties of the season will be introduced, or noticed, with full descriptions of management, cultivation, and adaptation; and only those that are known to be valuable are recommended for cultivation. Much useful information on the cropping of Gardens, Sowing, &c., is also given for the guidance of cultivators. The following NEW FLOWERS and other SEEDS are offered by E. G. HENDERSON & SON for the first season; full descriptions of which, with treatment, are given in the Catalogue:—

THE ROSY CARMINE GIANT EMPEROR ASTER, 1s. 6d.	CLIANTHUS DAMPIERI, 2s. 6d., 5s., and 10s. per packet.
NUTTALLIA PEDATA, var., see Catalogue for the description, 2s. 6d.	THE LAWTON BLACKBERRY (new American Fruit), 2s. 6d. each.

SPERGULA PILIFERA,

A perfect substitute for Grass Lawns, &c., in Villa Gardens, without Mowing.

See notice of the above at page 145 of this Paper.

Seed sent free in 6d., 2s. 6d., 5s., and 10s. Packets.

A List of 60 ORNAMENTAL GRASSES, a few of which are adapted for margins to Beds, Borders, &c.

A Descriptive Priced List of that most splendid tribe of Hardy Bulbs, Gladiolus Gandavensis.

The new Vegetable CHÆROPHYLLUM BULBOSUM, and now well-known DIOSCOREA BATATAS (the Chinese Potato or Yam). Seed of the former and sets of the latter per dozen or 100; large tubers for tasting of both, per lb.

A List of 100 Select ORNAMENTAL GOURDS and MARROWS.

New Dwarf Amaranth Crimson Bedding Dahlia—"GLOIRE DE FRANCE."

A very dwarf, robust, and branching variety, about 1½ foot in height, raised by Mr Anceau, gardener at the Chateau de Misy, France—its conspicuously beautiful and large purple amaranth crimson flowers, of model form and permanent colour, are borne on remarkably firm foot stalks above the growth, and are richly effective as they rise clear above the ample foliage beneath them. Its low and yet vigorous habit, rich petal tints, chaste outline, and admirable contrast with opposite colours, are features which recommend it for all the general objects of flower garden decoration or pot culture, and it is specially valuable as the dwarfest variety in its colour, uniting a good habit with finely shaped flowers. Those who are acquainted with the dwarf Dahlia *Prince Arthur* in its neat robust character of growth will in "GLOIRE DE FRANCE" recognise a much superior variety in form, colour, and effect.

A good dried specimen of the plant is preserved at the Wellington Nursery, in which may be seen its natural dimensions.

NEW WHITE BEDDING DAHLIA.

The best bedding white Dahlia for habit, bloom, and effect, will be found in the "WHITE UNIQUE."—See the Catalogue, p. 82.

Wellington Nursery, St John's Wood, London.

EARLY PEAS.

WAITE'S DANIEL O'ROURKE PEA; the earliest Pea in cultivation

EARLY NAPOLEON; a Blue Wrinkled Marrow Pea, as early as EMPEROR.

EARLY EUGENE; a White Wrinkled Marrow Pea, as early as EMPEROR.

Prices to be had on application of J. G. WAITE, Seed Establishment, 181, High Holborn, London, W. C.

EXCELSIOR MARROW PEA (KNIGHT'S).—This new Pea is a decided improvement on the well-known Ringwood Marrow, being quite as early, greater cropper, longer pod, larger pea, superior flavour, and greener in colour. A great acquisition either for the amateur or the market gardener. 2s. 6d. per quart. Price to the trade upon application. To be had of NUTTING & SONS, Seedsmen, 60, Barbican, London, E.C.

THE EARLIEST PEA.—DUNNETT'S FIRST EARLY is in every respect superior to "Daniel O'Rourke," being several days earlier, having finer pods, and richer in flavour, height 2½ feet. For an early dish of fine-flavoured Peas we can confidently recommend this; 2s. per quart.

CHAMPION CABBAGE, the earliest and best sort, if sown in succession, may be had fit for table throughout the year, 8d. per ounce, or 1s. post free.

BUTLER & MCCULLOCH, Covent Garden Market, London.

CHAMPION OF SCOTLAND PEA.—A new and first-rate sort, declared by all who grew it last year to be the most distinct and best flavoured Pea in cultivation. To be had only at PETER LAWSON & SON'S, the Queen's Seedsmen, &c., who are also prepared to execute orders for all sorts of Garden and Flower Seeds of the finest quality.

27, Great George Street, Westminster.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Stove, Greenhouse, and Hardy Ferns, Miscellaneous Stove, Greenhouse, and Hardy Plants, Variegated and Ornamental foliaged Plants, Conifers, Roses, Rhododendrons, Indian Azaleas, Gloxinias, Fuchsias, Cactuses, &c., is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

CALLICARPA PURPUREA.

JOHN STANDISH, the exhibitor of the above (at St. James's Hall), can supply a few good plants at 7s. 6d. each. The following passage from Dr. Lindley's leading article in the *Gardeners' Chronicle* for Nov. 20 will give an idea of its beauty:—"Callicarpa purpurea, quite insignificant when in flower, was beautiful in its winter dress of innumerable rich purple berries, about the size of swan shot." It is easily cultivated, and does well in a cold greenhouse or conservatory planted out, where it will produce thousands of bright purple berries resembling glass beads, and remaining on nearly the whole winter.—Bagshot, March 5.

ROYAL SOUTH HANTS SEED ESTABLISHMENT.

UNDER THE PATRONAGE OF H.R.H. THE PRINCE CONSORT, THE AGRICULTURAL, HORTICULTURAL SOCIETY OF INDIA, AND THE LEADING AGRICULTURISTS OF THE UNITED KINGDOM.

PAGE AND TOOGOOD can now supply GARDEN AND FARM SEEDS, carriage free; SEED POTATOES, &c. The numerous Prizes gained by their Stocks are convincing proofs of superior quality, and their prices compete with any house in the kingdom. WHOLESALE and RETAIL PRICED CATALOGUES upon application.

Agents for ODAMS's Blood Manure, Superphosphate, &c. Seeds Packed for Exportation to all Parts of the world,

37 and 38, Oxford Street (facing the Railway Terminus); and 58, Above Bar, Southampton.

THE ADVANTAGES OF CASH PURCHASES.

ROYAL BERKSHIRE SEED ESTABLISHMENT.

SUTTON AND SONS, SEED GROWERS, Reading, desiring to encourage the practice of purchasing AGRICULTURAL SEEDS for cash payment, afford the full benefit to which such purchasers are entitled.

Applications for cash terms, stating quantities required, will be liberally responded to. GOODS DELIVERED CARRIAGE FREE.

The Gardeners' Chronicle.

SATURDAY, MARCH 5, 1859.

MEETINGS FOR THE FOLLOWING WEEK.

MONDAY, March 7—Entomological ..... 8 P.M.

THE season for preparing dressed gardens is at hand, and attempts are about to be made everywhere to obtain brilliant effects by a skilful arrangement of flower-beds. At Trentham and Chatsworth and Shrubland, and in a hundred other great places, the gardeners are taxing their ingenuity to provide the materials that are demanded by what is called the harmony of colours. Nor is it there alone that such decoration is soon to be attempted. In the thousands of smaller gardens, which render the country places of England so brilliant, similar efforts will be made. This, therefore, is the season in which some discussion of the circumstances that most conduce to success may be expected to be useful.

With us, ever since the appearance of CHEVREUIL's ingenious book, the grand object has been to work upon the rules laid down by that philosopher. His tones and tints, harmonious combinations, binary assortments, and ternary assortments, scales, complementaries, and simultaneous contrasts, have been the anxious study of many a puzzled gardener. And no small vexation has been experienced when infinite pains have ended in vexation of spirit. Not that the views of CHEVREUIL have been unproductive of substantial good.

On the contrary, they have drawn attention to the fact that what old-fashioned people call higgledy-piggledy is inconsistent with good taste in decorated ground, and that methodical arrangement is the foundation of all beauty. The fault of CHEVREUIL is that he has a theory, to which everything must be adapted, whether the materials at command be suitable or not. By placing wafers or pieces of linen of various colours side by side he obtained, or thought he obtained, certain results, out of which he constructed his theory of colour. But he forgot that appearances produced by the uniform action of certain colours placed side by side in contact upon a plane surface, such as a piece of silk, must have little in common with the irregular effect of similar colours forming an uneven surface and not in contact, as in flower beds, and hence the failure of attempts to carry out his views. Plants will not submit sufficiently to the demands of the colourist working up to CHEVREUIL's theory. The necessary colours do not exist, or at least coexist; and when success has resulted, as it often has, from the combinations of colour in modern flower gardens, it has been owing to something wholly independent of CHEVREUIL's supposed laws. Beautiful arrangements of colour depend upon taste and not upon arbitrary theory. This has been excellently pointed out by Sir GARDNER WILKINSON.*

"It is not by forming a theory on some fanciful basis, that a *perception* of the harmony of colours is to be acquired. Like a correct ear for music, it is a natural gift. Theory will not form it, as theory will not enable any one to detect a false note. The power depends on the perceptive faculty; and unless any one possess this, he will vainly attempt to lay down rules for the guidance of others. Yet we find that some have based their notions of the proper arrangement of colour *solely* on theory; and others, who might have had a proper feeling for it through their own perceptive faculty, or from the study of good models, have occasionally allowed themselves to be led astray by some plausible assertions, founded upon a fanciful basis, and supported by false *reasoning*.

"The same hasty attempts have been made to lay down rules for colour as for form and proportion. These are all dependent on the perceptive faculties: and it is certainly not by *beginning with a theory* that any of the three can be taught. The Italians have a remarkable perception of true proportion, but they did not learn it from a theory, nor do they teach it by rules; and how would it be possible to define every variety of form and make them all amenable to rules? When we hear a false note, it is not to a theory that we have recourse in order to prove it; and we can no more help seeing a discord (if we have a true *perception* of colour) than we can help being struck by a discord in music. If the ear is correct, it will detect the latter; if the eye is so, it will perceive the former. Neither the eye nor the ear can do otherwise. Theory will not supply the place of those organs; and it would be as hopeless to attempt to teach the ear to discriminate between sounds, or the nose to distinguish scents, by rule, as to substitute theory for the perceptive faculty in judging of colour."

It is impossible not to feel the justice of these remarks, the force of which will be most especially appreciated by those who have attempted to form flower beds in strict conformity to CHEVREUIL's theory. In another place we have the practical objections to *all* theories of colour still more forcibly pointed out.

"From facts and actual experience we may obtain something positive and useful; from theory nothing can be expected, so long as the subject itself is not thoroughly understood, except the most vague and contradictory conclusions. We have constant proofs of this. One lays down as an axiom, that as light is composed of the three primaries, those colours, when used in the proportion necessary to form white light 'neutralise' each other, and should *therefore* be so employed for decorative purposes. But if when so put together they really did *neutralise* each other, they would then be deprived of their real effect, and we should counteract the very object we had in view. To *ornament* with colour and *neutralise* the colour is a contradiction. But it is supposed to accord with a *theory*. Fortunately, however, the three primaries placed in juxtaposition do accord admirably without undergoing this metamorphosis; and it has been found necessary to employ artificial means to obtain any approach (and that too a very *imperfect* one) to the white light they compose, by whirling round before the eye the object on which those three colours have been painted. But besides that the effect consists only of an *approximation* to white, it has no bearing on the question of the effect of colour in ornamentation, which is (fortunately) never whirled round before the eye; and so far from desiring to give to the eye the impression of white, or of colourless light, in placing before it those three colours, our object is directly the reverse; we want to *ornament* with colours, not to *deceive* with colours, nor to place them so that they may 'disappear' or be confounded. And as blue and red in juxtaposition borrow from each other, and assume a purple hue when seen at a short distance, it is found expedient to introduce with them a certain quantity of yellow, or sometimes a small yellow or white line of separation, to keep the two colours *distinct*. The object is to present each colour as it is, and to give it its own power, that red should appear red, and the same with the rest; care being taken at the same time that the whole combination of various hues shall be in harmony, by being properly balanced throughout the composition. It would be a strange recommendation for a piece of music so to have the notes put together that they should 'neutralise' each other, and that 'the constituent' sounds should, like the colours, 'disappear.' Such a theory of sound would be novel; the practice far from entertaining." We heartily commend these common sense remarks to the consideration of the gardening world.

Then it has been said that the arrangements of colour to be found in Nature are unerring guides in its arrangement artificially. So, as we tread upon green, which forms the natural foundation and larger part of all landscapes, we ought to make green the basis of artificial compositions. This notion is happily disposed of by Sir G. WILKINSON:—

"So far, indeed, from adopting the quantities and arrangements of colours in Nature for that purpose, we should generally deviate widely from them; and who could think of using in decoration the same quantity of green with which she covers the large expanse of a landscape, or of introducing in any one part of a building the mass of green we see in a single tree? It is *reposing* to the eye to look upon the great quantity of green in Nature, and there is no other colour on which the eye can dwell continually without fatigue; but in ornamenting with colours we do not seek the same repose which is there required; we seek rather a contrary effect, as in music we are not satisfied with the *melody* of natural sounds, but delight in that *harmony* which is as artificial as the combination of positive colours for decorative purposes. Nor is it our object to have a *repetition* of the least fatiguing colour, or of the least effective piece of music; however soothing green and natural melody may be."

And again—

"Some there are who maintain that because in Nature certain two colours are found in juxtaposition, they must necessarily be concords; and cite those in various flowers to support their argument; but they forget that besides the petals and the leaves, their eye sees at the same time the yellow anthers, the brown stalk, or other coloured objects, even when the flower is plucked, and many more when it is viewed in the bed where it grows. The light and shade, and sometimes the semi-transparency of the petals, also give to the hues in flowers a somewhat different effect from what they would have as flat colours. But whatever may be the *cause* of the difference, there is no doubt of the fact, and this is all that is necessary for us to notice in considering the agreement or disagreement of the colours. If, too, in the great variety of combinations presented to us by Nature, there *must necessarily* be perfect harmony; and if Nature is expected always to supply us with concords, we shall have no choice left but to receive the *most opposite* combinations with equal favour. The same acceptation of the colours of Nature as *necessary concords* must on these conditions be extended to sounds; and we must at least allow her the credit of giving them to the notes of birds, and the voices of other animals; yet every one will admit that the sounds uttered by a parrot and a pig, though quite natural, are far from agreeable. So too with flowers; and as some are most beautiful and harmonious in their colours, others are discordant; and few persons will go so far as to maintain that all Nature's works are equally pleasing, or that the figures of all animals being beautiful, we are to admire the hippopotamus, or other hideous creatures, as well as the most graceful. It might be as reasonable to maintain that every odour in Nature is agreeable, as that every combination of colour in Nature is so."

Let us hope that these remarks by one who has spent his life in the study of high art, in many countries, under many aspects, and whose views are universally received with respect, will teach us that time and talent may be better employed than in forlorn attempts to carry out in practical gardening the speculations of even philosophers as eminent as M. CHEVREUIL. We hope soon to return to this subject.

* *On Colour, and on the necessity for a general diffusion of taste among all classes. With remarks on laying-out dressed or geometrical gardens.* By Sir J. GARDNER WILKINSON, F.R.S. 8vo MURRAY; a work of the highest interest, which should be carefully studied by all who desire to know what the true principles of art really are.

IT is to be hoped that those who are interested in VILLAGE SCHOOLS will continue to study the progress made by that at Hitcham, under the care of the Rev. Prof. HENSLOW, to which we have so often alluded on previous occasions. In the report before us for 1858 we find the following description of it by the Government Inspector:—

"A very nice village school of intelligent and cheerful children. Reading *good, i.e.*, expressive as well as correct. Religious instruction good. Writing fair. Arithmetic pretty fair. Needlework fair. Extra subjects very fair, and among them Botany excellent, this last being most thoroughly yet simply taught, and by such a system that there can be no Cram. As far as a child goes it must *know* what it does. The good moral effect of this study on the minds of the children is very apparent."

From the report itself we learn that the general improvement in attendance during the preceding year was shown by the names of 44 children being on the list for the Government capitation grant. The number of prizes awarded for good conduct and proficiency spoke very favourably of the increasing attention paid to school duties. In short the report ought to satisfy both employers and labourers that village schools thus conducted afford advantages which many far more expensive establishments do not possess.

"Experience," says Prof. HENSLOW, "has convinced me that a vast deal more might be done for the benefit of the rising population, if both employers and labourers had the education of their children more thoroughly at heart. Some children after having left the school are anxious to attend the botanical exercise and lecture given every Monday, when much general information is also imparted on various subjects. The quarter of a day's wages for those children who are occasionally employed in stone picking, weeding, dropping, &c., does not amount to 2*d.*; and therefore the loss of their services (for perhaps six or eight times during the year) cannot be of real importance to their employers." Surely all kind and considerate masters will cheerfully afford such children the opportunity of gratifying their desire for information, as well as for securing the little holiday privileges with which diligence and perseverance is now and then rewarded. The feeblest sentiment of Christian charity would surely prompt to thus much at least. And it is no small proof of the value of these small schools that even the most ignorant of little farmers are renouncing their prejudices against them and withdrawing their hostility.

We observe the name of a boy, MAURICE GARROD, as standing third among the children who gained botanical prizes, hitherto, we believe, confined to girls. This little fellow, if otherwise fit, should be made into a gardener.

THE Horticultural Society's Council having decided upon making the Chiswick Garden in future exclusively experimental, a circular letter has been extensively distributed among the trade, inviting co-operation, by the transmission for comparative trial of every kind of new, or supposed new, vegetable. The Fruit and Vegetable Committee has undertaken to examine and report upon the result of such trials, and some important evidence will probably be obtained on subjects deeply interesting to cultivators. We understand that a considerable number of varieties has been already received at Chiswick from the principal growers; and we cannot doubt that after this announcement all who have confidence in the sorts of vegetables they recommend will hasten to avail themselves of so excellent an opportunity of laying their real merits before the public.

EXAMPLE IN

A POPLAR TREE OF WHAT NATURE WILL EFFECT WHEN ASSISTED BY ART.

ON the 10th of August, 1842, the lightning struck our Lombardy Poplar tree, not far from the house, with a crash as though the house itself had fallen in ruins. This tree, at 18 feet from the ground, branches out into three principal leaders. The one which faces the west received the full force of the thunderstorm, and it exhibited an excavation of 26 feet in length, and at one part of 22 inches in breadth. Independent of this sad stroke at the western side of the tree, its bole to the north was struck at the same time, and

denuded of its bark to the extent of 6 feet by 14 inches. Some idea may be formed of the vast injury which this tree received when the reader learns that I picked up fragments of its wood full 50 yards from the spot where it stands.

After a close inspection of the lacerated parts I conjectured that there was still enough of solid wood remaining to resist the violence of the wintry wind. Having cut out all the shattered parts, assisted by the gamekeeper, I placed a series of thick Elland slates on a solid bed of mortar, quite up to where the tree takes its three leaders: thus forming a hard and permanent covering of 18 feet in extent. At the edges of the slates we applied Roman cement nicely sloped off; so that the future wood and bark might have an easy passage over them, at each returning season for increase of growth. Thus, all being rendered safe from wind and rain we ceased our work, and left the tree to Nature's healing care. She has not disappointed us, Yesterday I got up into the tree and I inspected minutely the injured parts throughout their whole extent. Their condition was prosperous in every point of view. The new wood and bark have rolled over the slates to a close or joining within 11 inches, binding the slates down in an everlasting prison.

A Spanish proverb says: "Thou art welcome, evil, if thou comest alone." But, in this instance, our poor Poplar could not have such a consolation; for another thunder-storm broke over it, and the lightning struck it on the northern side, riving off the bark for a space of 33 feet in length, and at places of 15 inches in width. Singular to tell, no apparent injury was inflicted on the wood itself. The bark alone had suffered, so that a new supply of slates and mortar was not required. This victim to the lightning's fearful rage is now in health and vigour, whilst its summer foliage is of as rich a hue as that of its surrounding neighbours. Should future tempests spare it the tree will be quite right again in a few years more; and its bole will be as beautiful as I remember it in times long gone by. The day may come when this Lombardy Poplar's history shall be forgotten. Then, should it be felled to serve domestic purposes, woe to the carpenter's axe and saw! They will have hard work when they shall have penetrated into the interior of the tree.

From this brief account, the admirer of trees may learn that it may be in his power to do wonders with them in their hour of accident, provided that he goes the right way to work, and lets Dame Nature have her own wise course. A lofty and majestic tree is a jewel of inestimable beauty on a villa's lawn; and is worthy of the owner's utmost care. *Charles Waterton, Walton Hall, Feb.* 26.

ENTOMOLOGY.—THE ORCHID ACARUS.

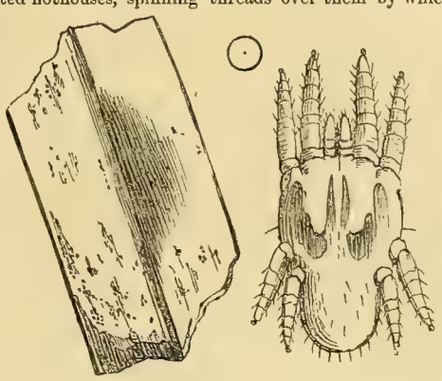
Although the naturalist perhaps more than any one else may and must be constrained to adopt the statement made in the Mosaic account of the Creation that everything proceeding from the hands of the Creator is very good, each as a whole as well as in its various parts being the best fitted, as a piece of mechanism, for the fulfilment of its respective duties in the world, yet the human mind perpetually adopts the idea, which at first sight seems antagonistic to the former—That one animal or plant is inferior to another, man himself being regarded as the most perfect of all created beings. Various are the principles which have been supposed to warrant such assumptions of superiority or to indicate inferiority. A more minute size, a greater number of organs of locomotion, or the power of reproducing offspring in increased numbers have all been looked upon as evidences of degradation by some writers, whereas each of these characteristics ought rather, if the individual be alone considered, to be regarded as exhibiting a more refined and higher degree of design and workmanship.

There are, both in the vegetable and animal world, great numbers of objects to which this idea of degradation is especially attached, and which, notwithstanding their wonderful amount of development, are considered by the generality of persons as simply and spontaneously produced from the objects on which they are found. There is indeed in more respects than one a great analogy between the vegetable moulds and such minute annulose animals as aphides, cocci, and mites, which infest plants often to such an extraordinary degree as to lead to the conclusion that they must have been produced, not in the ordinary mode of development from parents organised like themselves, but in a spontaneous manner from the objects on which they subsist. But nothing can be more gratuitous than such opinions, since the analogy afforded by larger species of Annulosa fully bears out the fact that under favourable circumstances a particular species may be developed to an unprecedented extent. For instance, last autumn witnessed the development of thousands of caterpillars of the gigantic Death's Head Moth, generally so rare, and it has come to our knowledge that an avenue of Lime trees, generally so free from insects, has been nearly destroyed by a moth, otherwise not an abundant species.

Just in the same manner have we recently been made acquainted with a very minute species of mite which has been found in vast numbers upon Orchid plants in hothouses, and which is not improbably often the cause of their destruction.

The Acarus in question is scarcely larger than a grain of sand, and requires to be examined with a lens before its limbs can be seen. It is somewhat square in the front part of its body, the hinder portion being narrowed and rounded; it is sparingly clothed with minute bristles, and is of a pale whitish buff colour, with two patches in the middle of the back of a fleshy hue. The legs are eight in number, short and thick, the two fore pairs directed forwards and the two hind pairs backwards; they are terminated by a minute fleshy lobe. The mouth consists of a very fine point defended by two short three-jointed palpi. The size of the insect is indicated by the minute dot within a circle in the accompanying woodcut, in which is also represented a portion of an Orchid leaf having part of the surface destroyed, together with numbers of dark lines and dots evidently produced by the punctures of the insects, the wounds running together when they are in proximity to each other.

The insect belongs to the genus Tetranychus of Léon Dufour, formed for the reception of various species which are parasitic upon different plants, such as the T. telarium, which lives upon plants in ill-ventilated hothouses, spinning threads over them by which



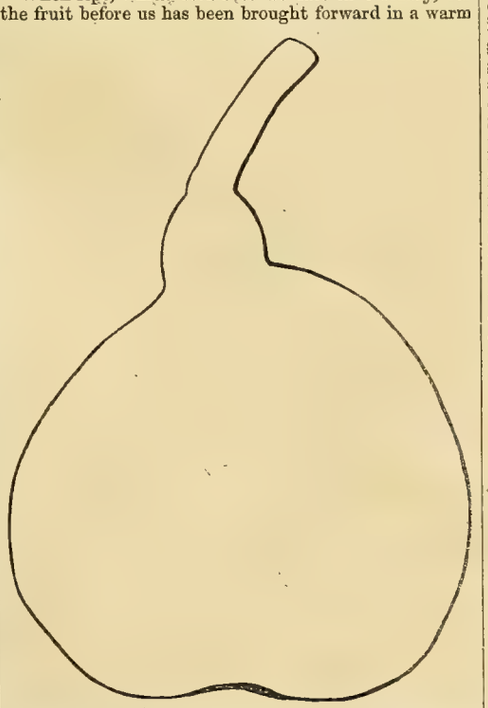
their circulation is injured; the T. tiliarium, another web-spinning species found on the Lime trees, often to such an extent that the webs are to be seen at a distance from the trees. Other species are known from the names of the plants they infest, as the T. Ulmi, T. Urticæ, &c.

I do not know whether fumigation with tobacco smoke is sufficiently powerful to destroy this Acarus without injuring the Orchid plants which it has attacked, but I may perhaps be allowed to mention the great advantage which I have derived from the use of the benzoic fluid in the destruction of insects which attack our entomological collections. A few drops of this fluid in an infected drawer will kill the Anthreni and their larvæ in a few minutes, and it would probably be equally destructive to the Acari. Whether the vapour of the spirit would be injurious to the plant has to be determined by experiment. *J. O. W.*

THE ZEPHIRIN GRÉGOIRE PEAR.

For a knowledge of this most excellent Pear we are indebted to Mr. De Jonghe, of Brussels, who informs us that the tree is perfect in form and a great bearer. The annexed outline represents very exactly the appearance of the specimens before us; but is we presume smaller than the average, all the best fruit having been blown down by a storm last July.

When ripe, which seems to be late in January, for the fruit before us has been brought forward in a warm



room, this Pear has a fine thin pale yellow green skin slightly enriched by a golden russet here and there. Its flesh is perfectly melting, without grittiness, as sweet and vinous as a Brown Beurré. All our specimens have a large hump between the Pear and its thick strong stalk, by which, if it were a constant character the fruit would be easily identified. We also observe pretty generally a slight furrow or two running from the shallow eye down to the stalk. But specimens are quite as often without those marks, as is seen by the following remark by Mr. Rivers.

Upon this point he observes:—"Last autumn about six out of 12 were gouty; in 1857, when my outline was taken, they were nearly all slender stalked. I have had this sort I think about 10 years; it has always been of high excellence till the past autumn, when it ripened in November and was pasty and worthless. Why, it is impossible to say, for they were nicely ripened."

RHODODENDRONS—No. IV.

There are many situations where the soil being naturally of an open sandy nature requires only, as far as material is concerned, the addition of sufficient vegetable matter to render it suitable for Rhododendron culture. Such is in great part the case with the Bagshot Nurseries, whence are distributed vast numbers of this plant to all parts of the world.*

But it must not be supposed that the mere breaking up the surface of such soil, and mixing with it a portion of the necessary ingredients is all that is required to ensure success; on the contrary, considerable labour is called for, and no good results can be obtained without thorough trenching. It often happens, in fact it is generally the case, that the surface soil rests upon a hard stone-like stratum technically termed a "pan," and unless this is well broken through all that may be done at the surface is so much labour thrown away; if that is allowed to remain unbroken, wet in winter and drought in summer will neutralise the best endeavours and intentions. In breaking up large areas of such ground the "pan" is generally cast to the surface where the action of the weather soon decomposes it, but in limited operations, as in forming a bed or two for Rhododendrons, it is well to remove it altogether. We have occasionally witnessed the most annoying results in gardens from imperfectly breaking up this pan, or leaving it altogether untouched when the soil was being prepared, and it cannot be urged too strongly on all who may have to deal with such, to be certain that this is effectually done. The labour required at first is comparatively small, but to be obliged to do it after a garden or a bed is finished, involves much trouble and vexation.

The soil in question is in its natural and unreclaimed state almost invariably covered with Heather, beneath which is a layer, more or less thick, of decayed spontaneous vegetation. This is an invaluable ingredient in a soil for Rhododendrons, as well as in that for all plants of like requirements. Thus the surface soil from a "common," where Heather abounds, thrown into a heap and allowed to lie for a year or two, with an occasional chopping and turning, gives a fine compost for our purpose.

We have before strongly insisted on moisture as an indispensable in Rhododendron culture: the effect of a deficiency of this at the root is to produce a complete stagnation in the whole economy of the plant so deprived. The matured stems and branches of a Rhododendron are very hard and woody, and when robbed of their necessary moisture do not readily regain a healthy condition even when the requirements are again supplied. The results of this may often be seen in plants with long bare branches hardly in a vegetative condition, and having at the base a group of young and comparatively vigorous shoots. In general such plants are speedily renovated by cutting away all bare unsightly portions, and giving every encouragement to the young and promising ones. Such plants being generally strong at root, will with proper care rapidly regain a healthy blooming condition. But here a few precautions are necessary. The instructions given of course refer only to the commoner kinds generally, or to seedling plants, or in a word to such as are on their own roots. For it often happens that a grafted plant becomes from bad management or neglect in a stagnant condition when the stock, naturally endeavouring to obtain supremacy, throws up vigorous shoots. Here a totally opposite course of treatment from that just described becomes obviously necessary. But this with other relative matters will be fully discussed by and bye when we come to treat of propagation. *G. Lovell, Bagshot.*

(*To be continued.*)

Home Correspondence.

Araucaria imbricata.—It is a singular fact that this tree can hardly be made to grow at Cambridge. The cause of this is not apparent. It may be the presence of chalk in the gravelly soil. In the Botanical Garden and also in the walks of St. John's College the young shoots grow tolerably for a time, but towards the autumn become diseased. A quantity of white resinous matter exudes from the base of the young leaves, in such abundance as sometimes to quite surround the shoot. But even when not so plentiful it has the effect of killing the young shoots, or rather shows the existence of the disease which kills it. The end of the shoot ultimately falls off, and attempts are often made to supply its place by new buds from the axils of the

* Comparatively small portions of these extensive nurseries are however reclaimed bog, rich natural deposits of vegetable matter. In this the Rhododendron grows more than ordinarily luxuriant. Where such can be found is *par excellence* the situation for an American garden.

uppermost healthy leaves. These buds usually go through the same course, and so on until the plant is utterly ruined. *C. C. Babington.*

Mildness of the Weather in the Undercliff of the Isle of Wight.—As a set-off to your Devonshire correspondent's list of plants in bloom, I beg to state that all the plants he mentions may be found in flower on the Undercliff here, and hundreds more. Not a single bedding plant of equal hardiness with the Heliotrope has been destroyed by frost up to the present time. Geraniums Skeltoni, Boule de Neige, Flower of the Day, and Mountain of Light; Heliotropes; and some of the light blooming varieties of Fuchsias are looking somewhat sickly and disordered, owing to the wind and rain. But I imagine that they are better here than the same varieties are in the wet and windy county of Devon. Camellias and Indian Azaleas grow and bloom as well here in the open air as it is possible for them to do in a house. To-day I cut a most glorious bloom of Magnolia grandiflora from a nice specimen plant (full 10 feet high and 8 feet through), and which has produced a constant succession of blooms since last May up to the 1st of last month, a circumstance not usual I believe in any other part of the kingdom. *T. Gelt, St. Lawrence.*

Abutilon insigne.—Can any of your correspondents inform me how to keep the buds of this invaluable winter flowering plant from falling off. Last year I kept my plant in a greenhouse; it had 22 buds upon it, only three of which expanded. This year I have a plant in my stove with 30 buds upon it, and they are falling off just as they did last season in the greenhouse. I may just add that I have inquired of some of my friends who grow the plant, and they all make the same complaint. I should feel extremely obliged by any one who may have flowered it successfully giving me a hint how to do likewise. I am confident that it is a plant which only wants to be seen in flower to be appreciated. *B. F., Manchester.*

Roses on the Manetti Stock.—I quite agree with your correspondent "J. M." that the Manetti is unequalled as a stock for Dwarf Roses, adapting itself to the heaviest clay and the lightest loams, by sending out an enormous quantity of fibres. If worked on stems I believe it to be entirely worthless; it does not increase in size, the bark seems to contract, and the head dies a death of starvation. I much prefer grafted to budded plants, as they can be worked very low, and will make strong flowering plants in three or four months. Nearly all my plants for forcing this season were grafted in November 1858, turned out into beds in April, and they made a fine display through the summer. They were taken up the first week in October and potted for forcing, and many of them are now showing bloom. I have now upwards of 300 grafted last November, placed in bottom-heat, and kept dark till united, all of which will form fine strong flowering heads for planting in beds this season. *J. Sheppard, Woolverstone Park.*

Isabella Gray Rose.—I got a very small plant of this last March; it was on its own roots. It bloomed in the open air once, but did not open well; the tree is now covered with flower buds. It is in the north end of a cool greenhouse, and has not been forced in any way. *Cork.*

Capnodium elongatum.—As this appears to be a disease of the Pear tree hitherto unknown in England, a few particulars respecting its first appearance, &c., may not prove uninteresting. It was first noticed here about the middle of last September, on the upper sides of the leaves of an Autumn Bergamot, and although the leaves were literally covered with it, not a speck was to be seen on the fruit, which was large and handsome. Little notice was taken of the mischief then, as we thought it to have been caused by some insect, and that when the leaves fell from the tree we should get rid of it. Such however was not the case; after all the leaves had fallen the evil was found to have firmly attached itself to the young wood, and was growing fast; and it has continued to do so up to a very recent period, the spurs and young shoots being almost black. Now, however, it seems to have experienced a check, and is in some places dropping off, but whether this is attributable to the fact of the disease having reached perfection and dying, or to a renewed flow of the sap and consequent expansion of the bark, I am entirely unable to say. It is a curious fact that it affects the young wood only, for even where a young shoot comes in contact with a main branch, or the base of an old spur, little or none is to be found on the old wood, even at the point of actual contact. I am not inclined to think that it arises from ill health of the tree, as the latter is vigorous, and fast coming into bloom; but that it is an entirely extraneous disease, and so far not to be attributable to any local cause whatever. How far we are justified in thinking it will disappear time alone must decide. *Francis Symons, Carclew, March* 1.

Foreign Correspondence.

Niger Expedition.—(*Continued from page* 170.)

From Mr. Barter to Sir W. J. Hooker.

"Jeba, River Kworra, Nupe,
"Central Africa, Aug. 13, 1858.

"The river has not risen so early as we expected. After some partial rises the water fell again to its lowest. The permanent rise appears to have commenced about seven days ago. The water has risen about 2 feet since. This indicates the river to be full only for a very brief season. The rain, which at first fell plentifully, ceased about six weeks ago. It has been very hot since, and small plants have become scorched up. Rain fell again yesterday. An interval of fine weather is said to occur during the rainy season; but this year has been drier than usual. Crops have suffered, more especially Yam plantations. I have been disappointed in obtaining flowers of many annuals from the same cause. In some of my recent journeys I have met with two interesting plants, viz., a species of Aristolochia and some Cycad. I am not aware if the first has been met with in Africa. The plant is a moderate sized twiner with cordate leaves 3 inches by 5. The flowers, which are rather small and nearly black, are produced on racemes 6 inches in length. Each flower is on an axis formed by a leaf-like bract about ½ inch in breadth. The fruit is Pear-shaped and about an inch in diameter. I do not know to what genus the Cycad belongs. The stem is a globular mass a foot in diameter, and scarcely rises above the ground. Fronds 5 feet long, pinnæ from 4 to 6 inches in length by ½ inch in breadth entire, with the exception of six or eight sharp depressed spines on the margin. The sexes are on different plants—male cones nearly a foot long and 1½ inch in diameter; female rather shorter and about 4 inches in diameter. Seeds size of Chesnuts, red when ripe.* I have taken up living plants of both sexes. It occurs in a hot valley about 400 feet above the river, and a few miles from it, in an uninhabited part of the Yomba country, latitude 9° 8 north. Some Aloes, Euphorbias, and a species of Crassula grow on the rocks in the same locality. As has been mentioned, this part of the country is not inhabited. Herds of antelopes and deer are often seen. Leopards, hyenas, and a species of civet cat lurk in the deep ravines. Dr. Baikie has just procured a specimen of an elephant from the same part. I had frequently seen traces of this huge animal; but never a living specimen. The immense size of the ear in the African species is remarkable, measuring as it does between 4 and 5 feet across. In the same districts I yesterday came upon some indications of the work of former inhabitants such as I had not seen before in Africa, viz., a stone wall stretching over hill and plain for many miles. This wall had evidently been built for defensive purposes. It is formed like the dykes in Scotland, of large unhewn stones, with a coarse kind of cement on the top. Remains of several towns exist inside of this enclosure. Near one of them great slaughter has at some period taken place. Skeletons of human beings lay thickly, sometimes in a heap, as if several had perished together, small bones being intermingled, evincing that a massacre irrespective of age had taken place. Isolated skeletons extended over a wide area. In one direction lay those of several females with small bones, no doubt mothers endeavouring to escape to the rocks overtaken and butchered by fiends in pursuit. *C. Barter.*"

(*To be continued.*)

* Living plants of this Cycad have been received at Kew. *W. J. H.*

Societies.

British Pomological: *Feb.* 3.—Mr. Hogg in the chair. Six new members were elected. Mr. Davidson gave notice that his business engagements deprived him of the power of giving to the service of the Society so much time as it required; and that he desired to resign his office of Secretary. It was therefore moved, "That the resignation be accepted from the end of the present financial year." The Secretary reported that he had forwarded to J. G. Graham, Esq., of Cranford, some examples of diseased Apples, which he had received from Mr. Swinerd, gr. to J. Swinford, Esq., of Minster Abbey, Isle of Thanet, Kent, as they exactly resembled many specimens which had, during the past autumn, come before the Society, and he considered it desirable that they should be scientifically examined. Apples diseased in the manner referred to had generally been found, on tasting, to be much softer in texture and less sugary than sound fruit.

"On my first examination of the Apples sent me from Mr. Swinerd, consisting of Margil, Summer Nonpareil, Winter Nonpareil, Spanish Pearmain, Byson Wood, and Golden Drop—all affected in the same manner with indented discoloured spots—I was of opinion that the injury was caused by the presence of the mycelium of some mildew, which was not fully developed, and the rind of the fruit in too sound and tough a state to admit the fructifying stems of the mildew to penetrate through it. In order to ascertain this point I adopted the same method which I applied when I first observed Tomatoes to be spotted, like diseased Potatoes—viz., to thrust my finger-nail through the skin, and thus allow the mildew, if it were there, to come out. As I anticipated, in 24 hours the same species as that which was destroying the Potato (Botrytis infestans), was visible on that part of the Tomato in full fructification. With regard to the Apples the process was slower; and, as they were very dry, no mildew appeared until I put them in a damp place, soon after which two species sprung up—viz., Mucor mucedo, and Aspergillus glaucus, both very common moulds. The first is of a gelatinous colour; the latter is at first white, then grey, and lastly, dirty green. I ought also to state, that when I first received the Apples, I carefully examined the tissue beneath the spots, under the microscope, and found the mycelium of the mildew traversing the cells in all directions; and, as is usual in all such cases, the parts thus infested had become brown, being in fact killed by it; some suppose by feeding on and exhausting their proper juices. I am also of opinion that the threads of these mildews are very short-lived, and, dying amongst the cells, communicate decay to them. I should also mention that at the time I made the incision in the spots, I also picked out small portions of the Apples where there were no spots; and on these parts no mildew whatever has appeared up to the present time. I can, therefore, but draw the conclusion that the spots are caused by the mycelium or spawn of the mildew above mentioned. It may, however, be objected that as these mildews are not developed until decay sets in, they may not be the primary cause of the disease, but an aftergrowth upon diseased tissue; but a careful investigation of the habits of these minute plants will afford the most convincing evidence of their mycelium establishing itself upon various matrices while in at least an apparently healthy condition, and in a great measure reducing them to a state of decomposition long before the perfect plants bearing the reproductive spores make their appearance. These two mildews are found on some animal and most vegetable substances which contain either gum, sugar, starch, gluten, &c. The Aspergillus is the well-known cheese mould, the glory of Stilton; pleasant, but I believe not wholesome, having a tendency to produce tightness on the chest. The gelatinous mass called the 'vinegar fungus,' has been also described by high authorities as the mycelium of this mould, but most erroneously. This mass is, in fact, only the matrix (as an Apple or piece of cheese might be), on which the true mycelium creeps in fine threads, from which in due time the perfect plants arise in a dense tuft of upright stems, surmounted by heads formed of chains of spores, sometimes in the shape of a broom, at others quite round."

Of fruit exhibited for premiums, in which quality was desired as well as distinctness of kind, many of the dishes were so much below mediocrity, that it became a question if the general merit of the collections sufficiently warranted the award of the premiums. With regard, therefore, to all future exhibitions of fruits for premiums, excepting those cases in which collections are desired, regardless of quality, for the purposes of comparison and classification; it was resolved: "That when quality is the point intended to be rewarded, the premiums will be withheld, if one-third of the fruit be considered of decidedly inferior merit."

For premiums of two guineas and one guinea, for the best and second best collections of six varieties of Late Dessert Pears, three collections were exhibited. J. Moorman, Esq., sent from his garden at Eexhill, Sussex, situate half a mile from the sea, much exposed to south-west gales—soil, light loam, 3 feet deep, over undrained clay—the following kinds from healthy young trees, on Pear stocks, growing against a south-west wall:—Winter Nelis, large and well grown, very juicy and melting, sweet and generally excellent in flavour; Knight's Monarch, juicy, melting, rich, and aromatic, but somewhat depreciated by too early gathering; and Old Colmar, very sugary, promising to be delicious, but scarcely ripe. Also, from his garden in Portland Place, Clapham Road; ground, flat and sheltered; soil, strong rich mould, over undrained gravel, the following kinds:—Jean de Witte, from a south-west wall; large for the kind and in excellent condition, very juicy, melting, sweet, and fine flavoured. Beurré d'Aremberg, from an espalier; melting, but small and bitter in flavour; and Ne Plus Meuris, from espalier: melting, but only moderately juicy, and not high flavoured. The first premium was awarded to this collection. Mr. Cox, gr. to W. Wells, Esq., Redleaf, Penshurst, Kent, sent a collection from a garden exposed to south-west; climate damp, soil 20 inches of rich garden mould, over yellow marly clay containing veins of fine ferruginous sand, damp, but drained. The fruit of all the kinds were large, healthy, and good in appearance and colour; they were as follows:—Winter Nelis, from south wall, juicy, melting, and excellent; Easter Beurré, from south wall, half melting, but mealy; Chaumontel, from west wall, over ripe, and bitter; Passe Colmar, from south wall; juicy, but thin and watery in flavour, deficient in sugar; scarcely ripe; Old Colmar, from west wall; past, appeared to have been good and melting, but not juicy; Vicar of Winkfield, under the name of Léon le Clerc, from a standard; juicy, but not at all melting, though over ripe. This collection excited the discussion mentioned above. Though not fine in quality, it was allowed the benefit of the existing regulations, and was awarded the second premium. Mr. Wighton, gr. to Lord Stafford, Cossey Hall, Norfolk, sent Knight's Monarch, from wall and espalier, very juicy and rich flavoured, but shrivelled from having been gathered prematurely. Winter Crassane, not juicy; Easter Beurré, large, but flavourless; Beurré Rance, unripe, but sweet and promising; Susette de Bavay, half-melting, but harsh in flavour; also, a variety called Winter Bergamot, small and juicy, but of no particular merit; reported to be common amongst market-gardeners, but not recognised by the members present; and a variety without name, which had every appearance of being Swan's Egg, although so much out of season. Of other Pears sent for examination, the following were the most interesting:—Beurré Rance, by H. Webb, Esq., Reigate, from a standard, on loamy soil, over fullers' earth; fruit medium-sized for the variety, melting, juicy, very sweet, and high-flavoured. Easter Beurré, by Mr. Brown,

gr. at Bentworth Rectory, Alton, Hants, from a south-east wall; soil strong loam, over tenacious clay. The fruit was very fine in appearance, half-melting, but not high-flavoured. Mr. Brown attributed this to his not having thinned the fruit to the same extent as he had usually done—mentioning that, in the previous season, they were very excellent, and lasted in use from the end of December to the first week in May. Josephine de Malines, by Mr. Rivers, from a pyramid on Quince stock; medium-sized, very juicy, melting, rich, delicious, and aromatic.

Grapes.—Mr. Thomson, Dalkeith Palace, sent a dish of Lady Downe's Seedling, a variety not much known, but considered by the meeting to be worthy of more extended cultivation. It is evidently of the St. Peter's section. Bunch about 8 inches long, shouldered; appears to be a very free setter, and to require much thinning; berry medium sized, nearly round; skin moderately thick; flesh very juicy, sweet, and vinous. Mr. Thomson reported that the bunch sent which did not exhibit the slightest appearance of long keeping, by loss of bloom, or shrivelling in either berry or stalk, "was ripe in August last," and adds that "he finds no Grape hang so long and combine so many good qualities." Messrs. Webber & Co., of Covent Garden, exhibited good samples of retarded Black Hamburgh, which had been ripe since September last; the berries were still plump, although their stalks gave evidence of the long time they had been kept.

Seedling Apples.—Mr. Wolsey, of St. Andrew's, Guernsey, again sent specimens of his Seedling, regretting that, as the last of the crop, they were poor examples. Though past its best, it was considered to have maintained the opinion formerly expressed regarding it; its general character approaching that of the Golden Harvey. Mr. Wolsey reports that the original tree is 20 years old, moderate in habit of growth, shape of head rather globose, and thinks it will prove a good dwarf prolific kind for small gardens. Mr. Oxley, gr. to Miss Sitwell, Spondon, near Derby, sent a seedling called Pretty Apple, apparently possessing the properties of a good late kitchen Apple, being large, small-cored, and acid. Reported also to be a great bearer, of healthy constitution, and compact habit. On being baked without sugar, they were found to be pale brown in colour; tender, but not breaking into pulp; not syrupy; sweetish subacid in taste. The fruit, however, had been gathered before it was ripe, as stated by the sender, and was not in condition. Mr. Annandale, gr. to J. R. S. Carnegie, Esq., Seaton House, Forfar, sent a seedling, raised by Mr. John Gowans, market gardener, Arbroath. This was considered a very fine and promising late kitchen Apple. Sound, acid, and heavy, much resembling Minchall Crab.

Of other *Apples*, Dr. Davies brought Flanders Pippin, or Mère de Ménage, considered in Worcestershire the best of all for culinary purposes. Also a sort very nearly resembling it in appearance, but more rubicund and solid, and reported to be more upright in habit, called Scarlet Flanders, and De Neige, under the name of Porter, by which he received it from America. Mr. Curtis, of Ashburton, Devon, sent Grise, or Pomme Grise, under the name of Cinnamon Russet. Mr. Wolsey again sent Pomme de Cire, still apparently in excellent condition, but when boiled, found to have lost much of its briskness of flavour, tending to prove that its season is past. Gros Limon, or Græs Limon, when baked, pale-fleshed, not pulpy, but tender, sweet, and very syrupy; and Maigre Limon, recognised as one of the most favourite varieties for roasting, or using as a Beaufin, in Worcestershire, where it is known as Oaken Peg.

Entomological: *Feb.* 7.—The President in the chair. Amongst the donations to the library were Mr. Baly's monograph of the family Hispidæ published by the trustees of the British Museum, and the accentuated list of British Lepidopterous insects published by the Entomological Societies of Oxford and Cambridge. The President nominated Messrs. F. Smith, Stainton, and G. R. Waterhouse, to act as Vice-Presidents during the ensuing year. A fresh importation of beautiful insects from Amboyna, collected by Mr. Wallace, was exhibited by Mr. S. Stevens, including specimens of the Eucheirus longimanus. Mr. Bates also had recently forwarded a fresh collection from Ega, on the river Amazon, remarkable for the number of Microlepidoptera which it contained. Amongst them were also the nests of several Hymenopterous insects belonging to the family of Fossores, but differing from the ordinary manner of nidification adopted by those insects. One of these, a new species of Larrada, forms an external nest of the scrapings of the woolly texture of certain plants, having the appearance of German tinder or sponge; whilst another species, Sphex Lanierii Guerin, forms a cottony tunnel in a curled-up leaf. Mr. Janson made some remarks on Symbiotes latus, a small British beetle. Mr. A. White read a letter received by him from Mr. Tremen, giving an account of his Entomological researches at the Cape of Good Hope. Mr. Tomkins exhibited three new British species of Psyche. A beautiful series of plates preparing for publication, representing the transformations of various British Lepidopterous insects, was exhibited by Mr. Logan. Mr. Westwood exhibited a nearly full-grown caterpillar of the Angle Shades Moth, which had been found feeding on the Southernwood, also a number of bookworms, being the larvæ of a species of Anobium. Mr. G. R. Waterhouse read a series of notes on the British species of the genus Heterocerus.

Notices of Books.

Mr. Edwin Chadwick has published a pamphlet (Knight & Co.) on the *Chief Methods of Preparation for Legislation, especially as applicable to the Reform in Parliament.* It is a very able paper, which all should read who are interested in the subject. The following remarks by Sir James Stephen so perfectly describe Mr. Chadwick's argument that we prefer borrowing them to offering any of our own.

"I attach the utmost importance to the moral, the philosophical, and the political questions which he has brought under your review. As a moralist he has denounced one of the most common and culpable, and yet most unheeded, of the sins which prevail amongst us—I mean the sin of falsely pretended knowledge—the sin, that is, of spontaneously undertaking highly responsible duties without the knowledge requisite for the efficient discharge of them. As a philosophical inquirer he has proposed or suggested the question—Why is it that the progress of social science is so slow and imperfect among us, while the progress of physical science is so rapid and effectual? and has answered it by observing that, while they who teach us the laws of the material world never advance to any inference until after the most exhaustive scrutiny into the premises from which it is drawn, they who address us respecting the wellbeing of the commonwealth are continually arriving at practical conclusions under an almost incredible ignorance of the grounds from which alone they could be safely deduced. As a politician also, Mr. Chadwick has laid before us various suggestions, on which, with your leave, I would throw out the following remarks:—Constitutional liberty is doubtless an inestimable advantage, and so it ought to be, for the price we pay for it is incalculable. Such liberty is usually defined as consisting in the subordination of the Legislature and of the Executive Government to public opinion. But what is 'public opinion?' When, and where, and by whom, and in what manner, is it to be discovered and ascertained? and how is it to be distinguished from all spurious imitations? Of the many *idola tribûs* there is none whose shrine is so difficult of access or whose oracles are so ambiguous and so readily confounded with other and meaner voices. The hierophants of this mysterious power can only tell us that public opinion is not the transient impression, but the deliberate judgment, of the great majority of the people on such questions, and on such questions only, as immediately affect the people themselves. On all such subjects, they add, the judgments of Demos must be authoritative and conclusive, or there is no constitutional liberty amongst us."

Sir James Stephen then proceeds to show the extreme absurdity that is involved in the judgments of Demos (the public), how blindly he is led by men blinder than himself, how he swaggers and talks, and foretells and claims for himself the power of judging of every conceivable subject, *in posse* or *in esse*, whether he knows anything about it, which is seldom, or not, which is usual. The process of making Acts of Parliament is not less happily shown up. After describing the way in which the most difficult subjects of legislation are in the first instance "sent upstairs" to a Parliamentary committee for an investigation "necessarily hurried, unsatisfactory, and inconclusive," Sir James Stephen thus proceeds:—

"It is not, however, every Government bill which thus goes upstairs. More often it passes at once from the office of the Minister to the table of the House of Commons, having imprinted on its back the names of the two members by whom it is sportively said to have been prepared. It would be superfluous to speak of the process which follows: of the explanatory statements of its official patron—of the pruning knife rashly applied to it in committee by one critic—of the foreign grafts no less rashly inserted into it by another—of the dislocation perpetrated by the ignorance of a third, or of the compromises wrung from its patron by the party spirit of a fourth; nor how often the royal assent at length sends it forth into the wide world to bring forth such fruits as might seem to be borne in mockery of the glowing prediction which celebrated its first appearance as a parliamentary nursling."

The object of Mr. Chadwick's paper is to show how such a strange process may be amended.

The Rose, its Cultivation, Properties and Management, by Geo. Glenny, is a sixpenny pamphlet (Houlston & Wright) giving practical instructions on a popular subject, and seems to be very well done. The author wisely refrains from introducing debateable questions.

Folia Orchidacea, Part VIII. (Matthews, 5, Upper Wellington Street) has appeared with five genera and the commencement of a sixth. To what extent the knowledge of Orchids has extended may be judged from the following comparison of species before Botanists in 1830 and 1858.

	1830.	1858.
Stelis	9 ...	... 135
Oberonia	13 ...	... 52
Restrepia ...	1 ...	... 9

A most useful new *Geological Map of England and Wales* has been published by Mr. Stanford, prepared under the able direction of Prof. Ramsay. It represents with considerable minuteness all the more important kinds of soil in the English and Welsh counties, various colours being used to distinguish the clays, marls, chalks, sands, &c. &c., as is usual in geological representations. There are also excellent sectional views, showing how strata lie with respect to each other. Without meaning in any degree to disparage the many good maps of the kind already before the public, it would be unjust not to say that this is, in our judgment, the best. To all persons engaged in the cultivation of land it is invaluable, and its very moderate price places it within the reach of most people.

Of *Boswell's Life of Johnson*, edited by Croker, a beautiful edition has begun to be issued by Mr. Murray, to be completed in 10 monthly numbers, at the low price of a shilling each. The first number contains 96 pages of large 8vo in double columns, and has six well executed portraits of the great writer, taken at different periods of his life.

Trade Lists Received.—*Vilmorin-Andrieux & Co.* (Paris) *Catalogue des graines de plantes d'orangerie et de serre.* A highly interesting list of seeds of greenhouse and stove plants, among which are many capital things, such as Canavalia rosea, Solanum volubile, Ipomœa turbinata, Hibiscus radiatus, Bignonia ensiformis, &c.—*Parker & Williams's Select Catalogue of Flower, Vegetable, and Agricultural Seeds*, fills 52 pages 8vo, the flower seeds being briefly described in columns, by means of contractions, such as hhb., sps., spb., hhpb., hha., &c., the meaning of which precedes the list itself.

Garden Memoranda.

A. Mongredien's, Esq., Forest Hill, Sydenham.—The gardens attached to this prettily situated suburban residence, though not extensive, are nevertheless in many respects extremely interesting. To Mr. Mongredien belongs the merit of having first pointed out that Spergula pilifera (of which a full account was given at p. 145) was capable of forming an excellent substitute for Grass in the formation of lawns. A piece of ground planted here four years ago with this pretty little Moss-like Alpine is now, and has been for these three years past closely covered with a carpet of the richest green—soft and elastic to the tread, and forming a turf equal to that of the finest Grass, for which at first sight it might easily be mistaken. Over Grass it however possesses many advantages; in the first place it requires no mowing, and it is reported to withstand the effects of long continued drought better than any Grass, remaining comparatively green when the latter has been burnt up. Another point in its favour is its evenness of surface, provided the ground laid down with it has been made so in the first instance—a matter of great importance—for as the plant itself never grows more than a ¼ or ½ an inch in height any inequalities or other defects of formation are ever afterwards perceptible. After planting the only care that it requires is sweeping and rolling. If left undisturbed it would be one mass of white flowers in July; but as most people prefer a lawn perfectly green to one covered with blossoms, the latter should be removed by frequent sweepings with a fine besom. A birch broom is too rough for it. In forming a lawn with this plant, Mr. Mongredien's gardener, Mr. Summers, recommends the seeds, which are very small, to be sown behind a north wall, and when up to be transplanted where required, placing the plants regularly over the surface, at say 6 inches apart. On strong clay it sometimes assumes a yellow hue; but this has been found to be easily converted into a beautiful green by watering with weak liquid manure. Unforeseen disadvantages may yet arise however in connection with the employment of this as a lawn plant; but at present judging from the little experiment that has been made with it it certainly promises to answer perfectly, and in an economical point of view, seeing that mowing may be dispensed with, it cannot fail to be highly appreciated. A trial of it on a more extensive scale is now being carried out, the result of which we hope to be enabled to report hereafter. The gardens here, except where the glasshouses are, viz., on the top of the hill, slope abruptly to the north, and it is on this aspect that the plant has been tried.

Among glass houses is an orchard house filled with beautiful little fruit trees in pots now in full blossom, with the exception of the Apricot Peach on which fruit is already fairly set. All are in 12-inch pots, not placed on beds of rich soil into which the roots are allowed to pass, but set on wooden stages or shelves and liberally fed with liquid manure. Thus managed they bear abundantly, each Peach and Nectarine having on it from 60 to 70 fruit, and one had as many as 80 on one tree. The fruit too, tasted in comparison with that from walls, proved the better flavoured of the two. Plums bear most abundantly, as do also Pears. The French plan of inserting fruit buds on barren spurs or naked branches has been largely practised here both in and out of doors, but with what result has yet to be proved, the work being only just completed. It may be mentioned that although this house is furnished with a hot-water apparatus, yet it is not used except in very severe winters. It has therefore not been required this season. The pots are mulched with old cloth waste, which costs 3*s.* 6*d.* per sack. It has a clean and neat appearance, keeps the soil from drying too rapidly, and from being washed into holes by repeated waterings. Among the pots in which the trees are growing are placed bedding plants, of which large quantities are required here in summer.

At the end of the house just described is a warm compartment filled with Vines in pots placed on tan. These are grown from eyes one year and fruited the next. They are trained to upright stakes, and are not at present higher than about 4 feet. Among the Vines are grown Cucumbers, consisting of a very prolific variety named "amateur." Of this a plant was shown at the Crystal Palace last year with 33 fruit on it.

Of other houses there are two Vineries, a Fern house and mixed stove, and a large New Holland house 60 feet in length, These contained, especially among Ferns, some beautiful examples of skilful cultivation.

We must not omit to mention that of Prunus sinensis we noticed a charming little plant loaded with large double pure white Cherry-like blossoms. This forces quite as well as Deutzia gracilis itself, and is certainly handsomer.

Out of doors, on the northern exposure already alluded to, many plants succeed here which elsewhere require protection. Among these are Leptospermum lanuginosum. This flowers and fruits abundantly. During severe winters the tips of the young shoots get partially injured; but in seasons like the present nothing of the kind happens to it. Grevillea rosmarinifolia is a fine bush, and blooms freely; Indigofera decora dies down yearly like a Fuchsia, but pushes again in spring, and keeps in flower from June till October; Glyptostrobus heterophyllus has proved quite hardy here and borne cones; it grows very slowly. Euonymus marginatus grows freely in summer, but the unripe wood gets killed by frost; Lardizabala biternata progresses slowly against a wall, and flowers, but not abundantly; Panax horrida appears to be quite hardy, and flowers annually. Of Eurybia Gunniana we noticed a fine bush full of flower buds, which when open look like so many white Daisies. This is an interesting New Holland shrub, and if quite hardy must prove an acquisition. Here it stands the winter without protection, but we have not heard of its doing so elsewhere, except in the West of England.

From Skimmia japonica a fine crop of handsome crimson berries has just been gathered for seeds. This is one of the most useful of comparatively new evergreen flowering shrubs.

At the lower end of the flower garden, and immediately in front of the drawing room windows, which open on to it, is an extremely pretty rockwork, on which are cultivated a fine collection of British Mosses, Ferns, Alpine, and other flowering plants; the latter to give variety and gaiety in summer.

Near the base of the highest part of this rockwork on a detached elevated portion a bog has been formed, through which flows a stream of water that falls into an aquarium over a small cascade. In the moist hollows and elevated parts of this bog, Hypnum scorpioides, H. aduncum, H. molluscum and stellatum, Racomitrium canescens, Dicranum squarrosum, and Lycopodium Selago were conspicuous. The surplus water from the aquarium flows through a rocky valley, the sides of which will soon be gay with Golden Saxifrage and Forget-me-not. At the termination of this valley the stream enters a second bog, through which it flows by a circuitous course to a third bog of smaller dimensions, and thence by forming a little cascade enters a fourth bog. This accomplished it sinks among pebbles and disappears. In and near these miniature bogs may be found such plants as Aulacomnion palustre, A. androgynum, Bartramia fontana, Racomitrium aciculare, R. fasciculare, Omalia trichomanoides, Neckera crispa, N. complanata, Bryum pseudo-triquetrum, B. julaceum, Tetraphis pellucida, Hypnum filicinum, H. rivulare, and H. ruscifolium, &c.; also Drosera anglica and rotundifolia, Anagallis tenella, Hypericum elodes, and Narthecium ossifragum, &c. Here also may be observed a species of Marchantia, which was gathered on the Alps by Mr. Mongredien, whose taste and liberality have enriched this place with many curious and useful plants. On the highest positions next the flower garden stand Yucca gloriosa and Gynerium argenteum, also some Conifers. On banks and sides of little ravines were Azalea procumbens, Dryas octopetala, and Linnæa borealis, as fresh and healthful as if rambling among Heath in its native dells. Goodyera repens and Pyrola secunda were both growing freely. Altogether this must be regarded as one of the most interesting little spots in the neighbourhood of London.

Calendar of Operations.

(For the ensuing Week.)

PLANT DEPARTMENT.

Conservatory, &c.—At this season watering should be conducted with considerable care, more especially in the case of recently potted plants, which must not be overdosed. Keep them close, and when the weather is favourable syringe frequently, so as to maintain a rather moist atmosphere; but until the growth of the plants shall have indicated that they have taken to the fresh soil apply water very sparingly at the root. Luculias in pots should be encouraged to make free growth, in order to get the wood well ripened and the plants in flower before those planted in the conservatory border, for it is desirable to prolong the blooming season of this charming shrub as much as possible. Stove.—Some of the Orchids may probably require shading; at all events see that material for the purpose is ready for use, but do without it as long as possible, and with a little care in removing plants likely to be injured to shady positions, it will not be necessary, at least in most cases, to apply it just yet. An increase of night temperature of stoves may now be allowed, more especially if the weather should prove bright, but this should be obtained not by the use of an extra quantity of coal but by shutting up early in the afternoon. Maintain a moist atmosphere, and give no quarter to insects of any kind. Auriculas in pits or frames will now be showing their buds; give them abundance of air during the day. Pot Tuberoses, and expose freely during fine weather autumn sown flowers, such as Mignonette and Stocks; Neapolitan Violets in frames may be forwarded by being closed early in the afternoon and in pots by keeping them in a temperature of 55°. Examine buds of forced Roses for caterpillars, and fumigate occasionally for green fly.

FORCING DEPARTMENT.

Pineries.—Young plants growing in open beds that have been some time planted will be benefited by having the soil loosened up as deeply as can be done without injuring the roots, giving it a liberal soaking of tepid water if it be found to be too dry. The water should be applied by means of a rose-pot, and not so fast as to flood the surface, for if this is done the soil will be rendered almost as close as before forking up; indeed, careless watering is the great cause of the surface of the soil becoming close and hard, and should be carefully avoided. Endeavour to afford these a nice regular bottom-heat, with a thoroughly moist atmosphere, and keep them growing as freely as may be consistent with keeping them dwarf and stocky. Have a constant eye to maintaining a succession of fruit, or securing a supply at the season when it may be most wanted, and let the treatment of the plants be regulated in time by your circumstances; for this is a matter which demands considerable forethought, and which can be successfully managed only by careful observation and attention. Vineries.—Take advantage of favourable opportunities to admit fresh air as freely can be done with safety, and be satisfied with as low a temperature from fire-heat as may be considered safe under the state of the Vines, but shut up early on sunny days, allowing the glass to rise considerably. This will to some extent economise fuel, and will be much more congenial to the Vines than much fire-heat. Except where the Vines are in flower keep the atmosphere moist, but the foliage should always be allowed to become perfectly dry in course of the day. Peaches.—Where the trees are in bloom admit air freely whenever the weather is mild, and keep the atmosphere rather dry, maintaining a steady night temperature of about 50°. Trees on which the fruit is fairly set should be afforded a moist temperature, syringing them liberally in the afternoon to prevent red spider, and keeping the border in a healthy state as to moisture, &c., to secure a vigorous root action. Cucumbers.—These may now be kept at from 65° to 70° by night, and 70° to 80° by day, with a steady bottom-heat of about 85°, which, combined with a thoroughly moist atmosphere, will induce free growth. Keep the shoots thin near the glass, and attend to stopping, &c., as may be necessary. Attend carefully to the early Melon plants, and regulate the temperature according to the state of the plants and the amount of sunshine, taking care not to get the Vines weak and long-jointed through a high close temperature, for a fair crop of fruit need hardly be expected unless the Vines are kept strong and short-jointed. Do not omit putting in seeds of the favourite summer kinds.

FLOWER GARDEN AND SHRUBBERIES.

If any alterations or planting still remain unfinished, every available hand should be concentrated on that work, so as to get it completed as soon as possible. Planting done after this time will require much attention in watering, and that at the very busiest season of the year, especially if large plants are removed, and it is too common a practice to put off such work to the last. Look over beds planted with bulbs, and where necessary stir the surface, so as to keep the soil open and friable, and also to give it a fresh appearance. See to the propagation of Dahlias and Hollyhocks; the latter when planted skilfully produce an excellent effect, and therefore especial attention should be paid to having a good supply of them. Cuttings slipped off the old plants with a heel, planted in very sandy soil, and afforded a gentle bottom-heat, keeping the leaves as cool as possible, will be found to root perhaps more freely at this than at any other season. Get Calceolarias hardened off by removing them to a cold frame and exposing them freely to air, preparatory to planting them in turf pits to make room under glass for more tender things.

HARDY FRUIT AND KITCHEN GARDEN.

While favourable weather continues push forward all operations requiring attention here with the least possible delay. See to keeping up a succession of Peas and Beans, also plant out Lettuce on a rich warm piece of ground, and provide a succession of Radishes and other small salads. Manure and dress Asparagus beds. Get Cauliflower plants raised under glass hardened off, and pay every attention to those under hand-glasses in order to forward them as much as possible. Spinach, Early Horn Carrots, and Stone Turnips should be sown at once on a warm rich border, if not yet done; also Leeks, Brussels Sprouts, Savoys, German Greens, Snow's and early sprouting Broccoli, and the main crop of Potatoes should be planted without delay.

COTTAGERS' GARDEN.

Bush fruit, such as Gooseberries and Currants, should now be pruned; also get the ground amongst them manured and lightly dug, but in doing that take care not to injure the roots. See that early Peas, such as Sangster's No. 1, are not injured by mice or birds. Where they are above ground draw the soil to their stems, raising it on the windy side sufficiently to make a kind of shelter for the plants. Plant Fairbeard's Champion of England for succession, and if a few of Fairbeard's Surprise are planted at the same time, they will come in about a week earlier than the Champion. Small patches of annuals may now be sown, and herbaceous perennials, if any, should be divided and replanted.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the Week ending Mar. 3, 1859, as observed at the Horticultural Gardens.

Feb. and March.	Month's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Min.	Mean	Temperature of the Earth 1 foot deep.	2 feet deep.	Wind.	Rain.
Friday 25	22	30.314	30.182	52	25	38.5	45	45	W.	.09
Satur. 26	23	29.923	29.616	50	40	45.0	45	44½	S.W	.06
Sunday 27	24	30.173	29.944	51	23	37.0	45	45	N.W.	.00
Mon. 28	25	30.272	30.180	52	39	45.5	44½	45	S.W.	.00
Tues. 1	26	30.265	30.225	54	27	40.5	45½	44½	W.	.00
Wed. 2	27	30.299	30.074	55	41	48.0	46	45	S.W.	.00
Thurs. 3	28	30.188	30.126	59	48	53.5	46½	46	W.	.00
Average		30.192	30.049	53.3	34.7	44.0	45.1	44.8		.06

Feb. 25—Frosty; clear; fine; slight frost.
— 26—Foggy; cloudy; boisterous with rain.
— 27—Low clouds; fine; cloudy; clear at night.
— 28—Frosty; very fine; quite cloudless; fine at night.
March 1—Fine throughout; slight frost at night.
— 2—Rather foggy; very fine throughout.
— 3—Exceedingly fine; overcast at night.
Mean temperature of the week, 3 deg. above the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 33 years, for the ensuing Week, ending March 12, 1859.

March.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 6..	47.9	31.6	39.7	11	0.26 in.	2	9	3	1	2	5	5	6
Mon. 7..	48.9	32.1	40.5	11	0.11	4	6	4	1	4	8	4	2
Tues. 8..	49.4	32.0	40.7	11	0.17	3	7	3	1	5	5	3	6
Wed. 9..	50.1	32.0	41.1	9	0.37	3	4	3	2	4	8	4	5
Thurs. 10	49.8	31.5	40.7	12	0.69	4	4	1	4	3	8	3	6
Friday 11..	49.3	31.7	40.5	11	0.33	1	5	3	5	3	11	3	2
Satur. 12..	50.5	32.0	41.2	14	0.24	5	4	3	3	3	9	5	1

The highest temperature during the above period occurred on the 9th, 1826—therm. 68 deg., and the lowest on the 10th, 1847—therm. 7 deg.

Notices to Correspondents.

Beans: *J Larkins.* Your Beans have no resemblance to those advertised by Mr. Cuthill.†

Crickets: *Sub.* Trap them by means of wide-mouthed pickle bottles baited with a little treacle and water; the bottles being so sunk or placed that the crickets can get into them. Penny's paste has also been used for destroying them with complete success. See p. 154 of our volume for 1856.†

French Carnations and Picotees: *A R* is much obliged to "C. A. J." for his offer of a plant and blooms of the Carnations and Picotees, about which he inquired, but will not trouble him, as he has a dozen plants for blooming this season. His object in asking for the information was that he might judge whether it was worth his while to sow another batch this spring before he had seen blooms.

Glass: *R H.* You cannot cultivate plants under "opaque' glass. But you may preserve them by its aid. Hartley's rough plate is the most suitable to plants under all circumstances.

Grapes: *Hortus.* The varieties you mention are tall disinct sorts.—*W W.* The Golden Hamburgh is an excellent kind; but of its suitability for market purposes we have as yet no experience. It is only just getting into general cultivation.†

Names of Plants.—We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have or could have undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*H D S.* The plant called Allheal is Valeriana officinalis; Tutsan, which has the same meaning (*sainer tout*) is Hypericum Androsæmum. Your leaf certainly does not belong to the second, and we think not to the first; it looks like a piece of *mâche* or Lamb's Lettuce, Valerianella olitoria.—*J L.* Vaccinium ovatum. Loudon's Arboretum et Fruticetum will be much the more useful of the two.—*W Campbell.* Pinus Parryana and Abies amabilis; both fine things.—*S W.* 1, Garrya elliptica; 2, Helleborus olympicus; 3, Rhodora canadensis; 4, Viburnum cotinifolium.—*Silverton.* Certainly not Fremontia californica, nor anything like it.

Orchard Houses: *X Y Z.* Fumigation properly managed will do no harm to fruit trees in flower. But we have no experience with tobacco, the utility and cheapness of which may be questioned when "returns" can be bought for about 5*s.* per lb.

Palace of the People: *Mayfair.* We have already, p. 97, given a description of this new undertaking, which, coming as it does from a gentleman perfectly well acquainted with the subject, may doubtless be implicitly relied on. Owen Jones's design for the proposed building is on view at Colnaghi's, and we think that when you have seen it you will with us regard it as a work of art of admirable beauty.

Plum Trees: *J O B.* You cannot grow Plums without spurs, although by more cutting than stone-fruit trees will well bear you may have the spurs on comparatively young wood. What is called the rod system of growing Vines is not at all applicable to the Plum tree. Properly speaking the Vine has no spurs. Its young shoots may proceed from buds on the last year's shoot, or from a latent eye in an old part of the stem; and in either case the shoots may bear, besides leaves, either fruit or tendrils; but such production is immediately from the young growing shoot, whether the latter spring from wood of the last season or from much older. The blossom buds of the Plum, on the contrary, are formed visibly in the previous season, and not on the current year's shoot.‖

Vases: *Sub.* You may put round their edges such plants as blue Lobelias; some of the newer smaller growing dark red and orange Nasturtiums and Tropæolums; Abronia umbellata, Anagallis, Convolvulus major and minor, Heliotropium Voltaireanum, Petunias, and Lophospermums. Brown's Fumigator will answer your purpose.†

Vine Growing: *M J B.* There is a small work on the cultivation of Vines suitable to the labouring classes, called "Hoare on the Vine," published by Longmans. Another excellent treatise, but of higher aim, is "Sanders on Vine growing," published at 28, Henrietta Street, Covent Garden.

Misc.: *W N P.* No honest man can sanction such proceedings. If you take the advice that has been given you we shall expect to hear that you are lodged in York Castle.—*John.* We never purchase back Numbers. Yours would be of very little value as they are not consecutive.

THE PATENT

NITROPHOSPHATE OR BLOOD MANURE COMPANY (LIMITED),

CONSISTING OF TENANT FARMERS, OCCUPYING UPWARDS OF 30,000 ACRES OF LAND.

TRUSTEES.

Abel Smith, Jun., Esq., Walton House, Ware, Herts. | Major-General Hall, M.P., Western Colville, Linton, Cambridge
Charles Dimsdale, Esq., Essendon Place, Herts.
Edward Ball, Esq., M.P., 8, Belgrave Road, Pimlico | John Brady, Esq., M.P., Warwick Terrace, Belgrave Sq.

DIRECTORS.

Chairman.—Jonas Webb, Esq., Babraham, Cambridgeshire.
Deputy-Chairman.—John Collins, Esq., Myddleton Square, Pentonville.
Edward Bell, Esq., Tottenham, Middlesex | Robert Leeds, Esq., West Lexham, Norfolk.
John Clayden, Esq., Littlebury, Essex | Robert Morgan, Esq., 72, Camden Villas, Camden Town.
Richard Hunt, Esq., Stanstead Abbot, Herts. | George Savill, Esq., Ingthorpe, near Stamford.
Thomas Knight, Esq., Edmonton, Middlesex. | William Collins, Esq., 105, St. John Street Road.
Bankers.—Messrs. Barnett, Hoare & Co., Lombard Street.
Solicitors.—Messrs. Kingsford & Dorman, 23, Essex Street, Strand.
Auditor.—G. W. Brown, Esq., 28, Parliament Street.
Manager.—Mr. James Odams. | *Secretary.*—Mr. C. T. Macadam.

Offices 109, Fenchurch Street, London.—Manufactory, Plaistow Marshes, Essex.

The Directors beg to inform their Friends and the Agricultural Public that the following Manures are now ready:—

ODAMS'S BLOOD MANURE FOR CORN AND MANGEL.

ODAMS'S BLOOD MANURE FOR ROOTS.

ODAMS'S SUPERPHOSPHATE OF LIME.

Full particulars may be had at the Company's Offices, or of the local Agents.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. Nesbit, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

LONDON MANURE COMPANY, removed to 116, Fenchurch Street, E. C. (Established 1840), have the following MANURES ready for delivery:—

CORN MANURE for SPRINGTOP DRESSING
URATE
MANGEL MANURE
SUPERPHOSPHATE OF LIME
BLOOD MANURE
} all of guaranteed quality.

In consequence of the reduction in the price of raw material the London Manure Co. are enabled to lower the price of their Superphosphate of Lime, and to materially improve the Corn Manure and Urate.

The London Manure Co. also supply PERUVIAN GUANO (direct from Messrs. A. Gibbs and Sons), SULPHATE of AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of value. Wholesale dealers supplied.

116, Fenchurch Street E.C. Edward Purser, Secretary.

SOLUBLE PHOSPHATE OF LIME.

FREDERIC CORNWELL begs to inform his friends and the Agricultural public that he can now supply a "SUPERPHOSPHATE of LIME" superior to anything yet produced. Each Bag guaranteed to contain from 20 to 25 per cent. of "Soluble Phosphate of Lime." Price 5*l.* 10*s.* per ton, delivered free to any Railway or Wharf in London. Dealers and the trade supplied. Linseed-cakes, Cotton-cakes, and all descriptions of Artificial Manures at lowest market prices.

Offices, 7, Great St. Helen's, London, E. C.

REDUCTION IN PRICE OF LAWES'S MANURES.

MR. LAWES begs to announce that he has this season reduced the price of the Manures manufactured by him, viz.:—

TURNIP MANURE	from £7 to	£6	6
SUPERPHOSPHATE OF LIME ..	,, 7 to	6	6
MINERAL do. ..	,, 6 to	5	5
BARLEY MANURE..		8	0

Prof. Way and Dr. Voelcker have sampled from a bulk of 5000 to 6000 tons at his factories, and their report and analyses are given in full in Circular to be obtained on application at his office, 1, Adelaide Place, London Bridge, E.C., or of his local Agents.

N.B. Genuine Peruvian Guano direct from Messrs. Gibbs, Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures. American Cotton-seed Cake supplied.

SUCCESS OF THE NEW GUANO; Imported under Lease from the Crown.—Though the experiments with KOORIA MOORIA GUANO were made late in the season, and under adverse circumstances, the successful results obtained confirm beyond doubt Professor Voelcker's report—(in No. 41, Part I., vol. xix., Royal Agricultural Society's Journal)—that Ammoniacal manures, applied to Turnips in the experimental field, kept back at first the crop, and had no beneficial effect either alone or in conjunction with phosphates.

The Kooria Mooria Guano is essentially a phosphatic manure, containing sufficient ammonia for roots, and, with a mixture of one-fourth of ammoniacal guano, cannot be excelled for either top-dressing or grain crops. It is a natural deposit, and will be delivered as imported, free from risk of adulteration. Deeply impressed with the necessity of encouraging the import of this valuable manure, her Majesty's Government has given such increased facilities for shipment, that arrangements have been made for a considerable supply. Purchasers can be supplied with suitable quantities from cargoes now on sale, containing from 45 to 66 per cent. phosphates. Present prices, 4*l.* 10*s.* to 6*l.* 10*s.* per ton, on applying to Joseph Hindson, Broker (one of the Lessees under the Crown), 20, North John St., Liverpool. Government Lessees: Ord, Hindson, & Hayes.

"Greystoke, Cumberland, Dec. 16, 1858.

"Dear Sirs,—I beg to inform you that I applied the Kooria Mooria Guano I had from you for Turnips, on land of a loamy character, incumbent on a stiff clay subsoil, and recently drained. On each side of the plot sown with Kooria Mooria Guano were Turnips manured with best Peruvian Guano. The quantities applied of each sort were of equal weight for weight per acre. The crop—a very good one throughout—is now being eaten off with sheep. Very little perceptible difference can be discovered, but if anything that difference is in favour of the Turnips sown with Kooria Mooria Guano.

(Signed) "John Barker."

"Messrs. J. & J. Graham, Guano Merchants, Penrith."

A Pamphlet, "Hints on Guano," containing a large number of reports from well-known agriculturists, and analysis of the cargoes here, may be had of the Broker, at the above address.

ESTABLISHED 1812.

H. AND T. PROCTOR'S TURNIP MANURE.—Messrs. H. & T. P. draw particular attention to this valuable Manure, which contains all the elements necessary for the full development of the Turnip Crop, so combined, that, from their chemical knowledge and long experience, they feel satisfied is most advantageous to the consumer. It has been very extensively used by most of the eminent Agriculturists of the day, and has attained a high reputation throughout England, Scotland, and Wales, and, they venture to say, is unrivalled for the weight and quality of the Bulbs which it produces. The application of this Manure to the Turnips will be found to benefit considerably the after crops of Barley, Clover, and Wheat.

POTATO, GRASS, BARLEY, CLOVER, AND WHEAT MANURES; also BONE DUST, PERUVIAN GUANO, and SUPERPHOSPHATE of LIME, warranted of the best quality.

Apply to H. & T. Proctor, West of England Depôt for Artificial Manures, Cathay, Bristol; or Proctor & Ryland, Birmingham, and Saltney, near Chester.

SIGMA'S BEAN, MANGEL, & CORN PLANTERS (5 Depositors), HOES, &c. The "Multum in Parvo," combining Cultivator, Horse Hoe, Ridge Plough, Subsoiler, Broadshare, and other forms; all expanding. Complete 7*l.* 7*s.* Prospectus sent.—C. Powell, Hurstgreen, Sussex.

TO LANDOWNERS.

THE PERMANENT WAY COMPANY having been appointed the sole Licensees for the use of Dr. Boucherie's Patent Process for Preserving Timber, beg to inform Landowners and others interested in the use of English Timber that a Pamphlet, with full explanations of this cheap and most effectual process, may be had gratis on application to the undersigned. Landowners having Beech, Elm, Fir, or other Timber fit for Railway Sleepers are requested to communicate particulars of quantity, locality, and prices.

William Howden, Secretary.

26, Great George Street, Westminster.

LAND DRAINAGE.—Works of Drainage of any extent are executed by the GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY on all descriptions of Property, whether Freehold, Entailed, Mortgaged, Trust, Ecclesiastical, Corporate, or Collegiate.

Repayment may be made by the Landowner as successive portions of the Works are completed, or the actual expenditure, with a Commission thereon, may be charged on the property improved by way of rent charge for any term not exceeding 50 years, the instalments to repay principal and interest being thereby kept down nearly to 5 per cent. per annum.

No investigation of title being required, and the charge not being affected by incumbrances, no legal expenses are incurred.

Works of Irrigation, Enclosing, Wood Grubbing, Road Making, and Farm Buildings are executed in a similar manner.

The Company also assist Landowners in executing any of the improvements by their own agents, and charge the amount expended on the property improved.

Applications to be made to William Clifford, the Secretary, at the Offices of the Company, 52, Parliament Street, London.

THE LANDS IMPROVEMENT COMPANY
2, Old Palace Yard, Westminster, S.W.

To Landowners, the Clergy, Solicitors, Estate Agents, Surveyors, &c.—The Company is incorporated by Special Act of Parliament for England, Wales, and Scotland.—Under the Company's Acts Tenants for Life, Trustees, Mortgagees in possession, Incumbents of Livings, Bodies Corporate, certain Lessees, and other landowners are empowered to charge the inheritance with the cost of improvements, whether the money be borrowed from the Company or advanced by the Landowner out of his own funds.

The Company advance money, unlimited in amount, for works of Land Improvement, the Loans and incidental expenses being liquidated by a rentcharge for a specified term of years.

No investigation of Title is required, and the Company being of a strictly commercial character do not interfere with the plans and execution of the works, which are controlled only by the Enclosure Commissioners.

The improvements authorised comprise Drainage, Irrigation, Warping, Embanking, Enclosure, Clearing, Reclaiming, Planting, Erecting and Improving Farm Houses and buildings for Farm purposes, Farm Roads, Jetties, Steam Engines, Water Wheels, Tanks, Pipes, &c.

Owners in fee may effect improvements on their Estates without incurring the expense and personal responsibilities incident to Mortgages, and without regard to the amount of existing incumbrances. Proprietors may apply jointly for the execution of Improvements mutually beneficial, such as a Common Outfall, Roads through the District, Water Power, &c. For further information and for forms of application apply to the Hon. W. Napier, Managing Director, 2, Old Palace Yard, Westminster, S.W.

THE ROYAL AGRICULTURAL SOCIETY'S PRIZE CHURN.—This Churn has taken all the prizes offered by the Royal Agricultural Society from 1850 to 1858 inclusive. Price list and testimonials sent free. Illustrated Catalogue on receipt of six postage stamps.

Burgess & Key, Patentees and Manufacturers, 95, Newgate Street, London.

GLASGOW AGRICULTURAL SOCIETY.

President.—Robert Dalglish, Esq., of Kilmardinny, M.P.

Vice-Presidents.

Patrick Graham Barns, Esq., of Limekilns.
Alexander Baillie Cochrane, Esq., of Lamington.

Chairman of Directors.—John Gordon, Esq., of Aikenhead.

SUMMER SHOW.—The Society's Seventh Annual Exhibition of CATTLE—including Ayshire, Short-Horn, West Highland, Polled Angus or Aberdeen, and Galloway Breeds; HORSES; SHEEP, including Leicester, South Down, Cheviot, and Black-faced Breeds; SWINE, POULTRY, DAIRY PRODUCE, and IMPLEMENTS and MACHINES—will be held on June 6, 7, and 8.

Premium Lists and Schedules of Entry will be obtained from the Secretary on application.

Competition, except for Implements, &c., is restricted to Members only, but Membership is open to Applicants from all parts of the country. *Terms of Membership.*—Ordinary: Entry Money, 10*s.*; and Annual Subscription, 5*s.* Life: Tenant Farmers, 3*l.*; all others, 5*l.* Members who have not yet paid their Subscriptions for 1859 are requested to do so to the Secretary without delay.—By order of the Directors,

Rob. M'Cowan, Secretary, 7, Gordon Street, Glasgow.

Glasgow, March 5.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.

Principal—J. C. Nesbit, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

The Agricultural Gazette.

SATURDAY, MARCH 5, 1859.

MEETINGS FOR THE ENSUING WEEK.

Monday, March 7—Central Farmers' Club. .... 6 P.M.
Wednesday, — 9—Agri. Society of England .. Noon.

The possibility of an economical displacement of horse power by that of steam depends on several things: not only on the provision of an implement by which steam power can be conveniently and without waste applied to the cultivation of the land, nor only on the possibility by such a machine of working the land more cheaply than is done by horse and man. Steam power would ultimately have been introduced into English agriculture for the work of cultivation even though the steam plough prizes of the national societies had never been awarded. It would have been economical to have employed steam power in cultivation, even though the steam drawn plough had not proved a cheaper tool than that drawn by animals. The fact is that employment for our horses on the farm is more unequally distributed over the seasons than even that for men. And just as the reaping machine, even though the harvest by its help had been none the cheaper than without it, would, by lessening the demand for human labour at its busiest time have proved an immense advantage to the farmer, so the steam plough by taking the work of horses in the laborious autumn and spring times of cultivation, thus diminishing the number needing to be kept throughout the year, would have been an economical assistance to the farmer, even though the fields during those busy seasons should be ploughed by it at a little greater cost than usual. Nevertheless, and notwithstanding the other advantages which can be enumerated on the side of steam—deeper and more thorough tillage, economy of time, and improvement in labourers—it is well to consider what the actual cost of cultivation by horse power is, in order that our mechanics and steam ploughmen may know the limit below which the cost of their work must be reduced, in order to the completeness of the victory which they already have achieved.

It has therefore not been without good reason that the Cost of Horse Power has been made the subject of an elaborate paper in the current number of the English Agricultural Journal—in which an attempt is made by comparison of a great number of methods of stable management, and by collation of the experience of a great many agriculturists, to ascertain the cost by horse power of a hundredweight of draught at a given rate of movement.

The cases enumerated are, some of them, taken from our standard works on agriculture, some from published discussions before Farmers' Clubs, some from past volumes of the Journal, and others ascertained by correspondence with those who actually adopt them. They include 21 different modes of summer feeding, 12 of feeding during the autumn seed time, 68 of winter feeding, and 14 of feeding during the spring seed time. The differences of

cost in the weekly food according to the modes of feeding specified are very considerable:—"More than 100 per cent. in the cost of summer feeding, which averages 8*s.* a week and varies from 5*s.* to 11*s.*: 70 or 80 per cent. in the cases given of autumn feeding, which costs on the average about 9*s.* 6*d.*, and varies from 7*s.* 6*d.* to 12*s.*; more than 100 per cent. in the cost of winter feeding, which averages about 6*s.* 4*d.*, varying from 4*s.* 9*d.* to 12*s.*; and 30 per cent. in the cost of spring feeding, which averages nearly 10*s.* a week, varying from 7*s.* 6*d.* to 12*s.*

It is found that the average cost per week of keeping a horse throughout the year, according to the cases here described, and putting the summer season down as lasting 18 weeks, the autumn six weeks, the spring 12 weeks, and the winter 16 weeks, amounts to about 8*s.* weekly. The annual cost in some of the cases named is, however, brought out more accurately in another table, where the average annual cost of 35 selected instances comes out as equal to 21*l.* 15*s.*, being about 8*s.* 4*d.* weekly throughout the year."

The cost of feeding the horses is however only part of the cost of cultivating by horse-power. To it there must be added the cost of maintaining the value of the horses, of maintaining their health, and besides the farrier's bill, that of the blacksmith and saddler, before even the personal expenses of the horses, so to speak, are ascertained. The annual cost of implements and of horsemen has then to be added, and the number of horses employed being known the means of ascertaining the cost of horse-power per annum on the farm are provided. In the first item, however, the experience of different farmers varies exceedingly. The mere food of the horse varies from 16*l.* 6*s.* per annum to upwards of 30*l.* per annum—the average, as we have said, being about 21*l.* 15*s.* each. The cost of extras, including that of keeping the horse stock "good," and the payment of saddler, blacksmith's, and farrier's bills is generally 5*l.* 10*s.* per annum. The wages of the horsemen varies exceedingly in different districts, as was shown the other week. And the upshot is given in the following figures, where the total cost per annum is compared with the acreage cultivated, so as to bring out the expense of horse-power per acre of the arable land:—

No.	Total Cost of Horse Labour.	Acreage. Pasture.	Acreage. Arable.	Acreage. Fallow Crops.	Acreage. Grain Crops.	Acreage. Clover, &c.	Acreage. Pulse, &c.	Cost of Horse Power per Acre of Arable Land.
	£. s.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	£. s. d.
1	873 0	...	660	110	330	110	100	1 6 6
2	902 0	400	560	120	280	140	...	1 5 5*
3	471 5	43	400	91	182	85	43	1 3 6
4	441 0	110	310	78	155	57	20	1 3 6*
5	256 16	41	123	32	54	37	5	1 5 0*
6	300 10	400	200	50	100	50	...	1 2 0
7	290 19	100	200	50	100	50	...	1 2 0
8	438 12	100	330	77	175	68	10	1 3 6
9	846 12	120	250	63	125	42	20	1 3 6
10	468 12	...	300	75	150	75	...	1 2 0
11	561 11	400	340	90	150	45	65	1 3 6*
12	608 18	274	400	120	185	80	15	1 10 6*
13	566 0	400	408	60	174	174	...	1 7 9*
14	1151 9	120	900	295	450	150	65	1 5 9
15	749 15	75	500	120	240	140	...	1 10 0
16	496 0	...	600	150	300	60	10	1 8 4
17	443 16	...	240	50	150	50	...	1 17 0
18	993 12	...	300	100	150	50	...	1 9 0
19	981 16	...	600	150	300	150	20	1 1 0
20	1131 10	...	675	200	340	200	20	1 13 6
21	881 10	...	240	60	120	30	30	1 11 9

The differences apparent here in the cost of horse-power per acre may be accounted for in some degree by differences in stable management, in some degree by variety, in the character of the soil in the several instances, but most of all by greater or less economy in the number of horses used in drawing the implements employed.

But we have not in these figures any sufficient means of comparing horse and steam-power together. In order to do this we must ascertain what is the whole amount of draught per annum effected by the horses, and so arrive at the cost per cwt. of draught. As the author of this paper says: "If you can enumerate all the operations on your farm, together with the draught incurred in accomplishing them, then you can easily convert the whole into weight lifted through a certain space in a certain time. If you can record the cost of horse food, of extras, of ploughmen, and of keeping up live and dead stock, then against the work done you can place the exact cost of doing it; and the comparison leads, as in the two cases worked out above, to the cost of horse-power 'per cwt. of draught, at a given rate of movement.'"

This accordingly has been done in one or two cases, and the following passage taken from the essay describes the process:—

"The common definition of horse-power is the ability to lift 33,000 lbs. 1 ft. high per minute. This is perfectly consistent with the results of such experiments on the draught of ploughs as have been published. Thus, when two horses pull a plough along at the rate of 2½ miles in an hour, and the tension on the draught chain is equal to a lift of 300 lbs.—no uncommon case—they do in effect lift that 300 lbs. 220 ft. per minute, that being the sixtieth part of 2½ miles; and this is equivalent to a lift of 66,000 lbs., or just the 33,000 lbs. apiece, 1 ft. high per minute, which is the ordinary mechanical expression of one-horse power. This power, however, is not continuously exerted. The plough, though drawn at the rate of 2½ miles per hour, is not drawn 25 miles in a day of 10 hours; it is not often drawn much more than 10 miles in that time, in consequence of loss of time on headlands, &c. In fact, the plough is drawn barely 10 miles in turning over 1 acre in furrow-slices 10 inches wide. In this lies one great difference between animal and steam-power, namely, the persistence of the latter, if only methods of continuously employing it can be devised. The really effective work of a horse per diem thus does not much exceed one-half of that calculated from its work per minute; and its annual performance must be often still further reduced below the theoretical standard by the occurrence of days when it remains idle in the stable.

"In some of the instances described above, I have received such a detailed account of the work done upon the farms, as enables me to estimate with some confidence the total annual draught accomplished during its cultivation. The following, for instance, were the details of cultivation on my father's farm, at Whitfield. On 120 acres of it Wheat was annually grown; the cultivation of this consisted of one ploughing, three harrowings, one drilling, one rolling, the carting of the produce (2 tons per acre) three-quarters of a mile to the homestead, and the carting of some 100 tons of grain perhaps six miles to market. On 60 acres of root-crops there were one deep ploughing, and probably two shallower ploughings, three 'cultivatings,' probably 10 harrowings, two rollings, twice ribbing when covering the manure, one drilling, three horse-hoeings, the carting of 15 tons of dung per acre to the land, and the carting of 25 tons of produce from the land three quarters of a mile. On 30 acres of Clover there was one rolling, and the carting of 15 tons of green food per acre from 10 acres, and the carting of 20 tons of hay off 10 acres three quarters of a mile. On 30 acres of Beans there were two ploughings, two 'cultivatings,' four harrowings, one drilling, two horse-hoeings, 10 tons of dung per acre carried three quarters of a mile, 2½ tons per acre of produce carried home three quarters of a mile. I have the number of miles walked per acre in performing every operation, and I can from experience and experiment pretty nearly estimate the draught in every case. In the case of produce and manure carried I add the weight of the cart going and returning, which just doubles the quantity of cartage; and 10 per cent. is charged upon the weight for draught, this being what seems to me fair, on comparing Mr. Brunel's experiments on this subject with the ordinary character of cartage on the farm.* It is plain that in all these particulars I have the complete history of the labour of cultivating and carrying the crops of the farm, which accordingly is given in the following table:—

HORSE LABOUR ON WHITFIELD FARM.

Crops.	Acreage.	Ploughed. Deep.	Ploughed. Ordinary.	Cultivated.	Harrowed.	Rolled.	Ribbed.	Drilled.	Horsehoed.	Dung carted. Tons.	Dung carted. Miles.	Produce carted. Tons.	Produce carted. Miles.	Equal to carting 1 mile.
		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres	Acres.	Tons.	Miles.	Tons.	Miles.	Tons.
Roots	60	60	120	180	600	120	120	60	180	900	¾	1500	¾	1800
Corn	120	..	120	..	480	120	..	120	..	..	..	240 1·0	¾ 6	780
Clover	..	..	..	..	..	30	..	..	..	..	..	150	¾	127½
Beans	30	..	60	60	120	..	..	30	120	300	¾	75	¾	261¼
Total	60	300		240	1200	270	120	210	300	..	..	..	..	2989
Multiply by the miles walked per acre	8	10		3	1½	2	3	2	3	Add for weight of carts				2989
Miles walked	480	3000		720	1600	540	360	420	900					5978
Multiply by the draught in cwts.	5	3½		4	3	2	3	3	1½	10 per cent. on which is				
Cwts. of draught ..	2200	10,500		2880	4800	1080	1080	1260	1350	11,956 cwts. drawn 1 mile				

"These figures represent the cwts. drawn (= lifted) 1 mile in the several operations; and, adding them together, we have the annual labour of the farm, which amounted, in the case before us, to 37,107 cwt. drawn (= lifted) one mile per annum. For the words 'per annum' we may substitute 300 days of 9 hours each, and the work done will be found on calculation to have been equal to the lift of 135,450 lbs., 1 foot high per minute during all that time; which, as seven horses were employed, was 16,492 lbs. apiece, or about one-half the theoretical quantity—a very high average, however, as will appear from what I have already said. In order to ascertain the cost of horse-power in this case, we must assume a rate of movement natural to the draught animal—say 2½ miles per hour. The work done was 37,106 cwt. drawn (= lifted) 1 mile in 2700 hours: this is equivalent to 14,842 cwt. drawn 2½ miles in 2700 hours, or 5½ cwt. drawn that distance every hour. But the cost of horse labour on this farm was 331*l.* 10*s.* per annum, or 2*s.* 10*d.* per hour—that then was the cost of drawing (= lifting) 5½ cwt. 2½ miles in that time. Horse-power on Whitfield farm thus cost as nearly as possible 6*d.* per cwt. drawn 2½ miles at that rate of movement. If the ploughing of an acre was equal to lifting 3 cwt. 10 miles, then by horse-power it was done for 6*s.*; if it was equal to lifting 5 cwt. 8 miles (I name fewer miles, because the greater draught implies greater depth of ploughing, and deeper ploughing involves a wider furrow-slice), then it cost 8*s.* per acre. And these are the figures with which an engineer would have to compare the performance of his engine."

Other instances are similarly investigated and the results come singularly near in their agreement with one another. The annual cost of horse-power on a farm varies from 5¼*d.* to 6¾*d.* per cwt. drawn 2½ miles. The author of the article concludes as follows with a comparison between horse and steam-power employed in cultivation:—

"Whether under the most economical and productive management of the horses of the farm the cost of the ploughing done by them at Chester would not have been less than that at which, according to the 'Report,' it was accomplished by Mr. Fowler's steam plough may be questioned. I am inclined to think it would. A nice comparison of the two, to determine a difference of this kind, is, however, quite beside the agricultural bearings of the subject. Mr. Baker, of Writtle, expresses his belief that even threshing can be done as cheaply by horse-power as by locomotive steam engines; but that does not hinder him from employing the latter in order to the speedy accomplishment of the work, and the setting free his horses for other employment. The superiority of steam power for such purposes is so great that no one now is curious to inquire into the question of exact comparative expense. And so it will be with steam power applied to cultivation. It will be applicable at the overcrowded seasons of horse labour. A much smaller number of horses kept throughout the year will suffice for the annual work of the farm when a portion of the labour of the spring and autumn months can be thus taken from them. And a direct advantage of this kind, added to the indirect advantages of the deeper and more thorough tillage which steam power can effect, will ensure its ultimate adoption, 'altogether irrespectively of narrow differences of cost per acre.'"

THE USE AND PURPOSES OF AMMONIA IN VEGETABLE ECONOMY.

NOTWITHSTANDING the importance assigned to nitrogen in agricultural chemistry in the present day, there are occasional indications observable among our leading authorities of something like an incipient dissatisfaction with the nitrogenous theory—I mean the universally received views of the part borne by nitrogen in the economy of plants, derived, I suppose, from observation of the indisputable use and necessity of ammonia in vegetable nutrition. Hence it seems to have come to be assumed that nitrogen is the one indispensable element of ammoniacal manures on which their intrinsic value depends; and to such an extent has this idea occupied the ground of scientific discussion that the terms, ammoniacal manures and nitrogenous manures, have come to be almost used as convertible terms. But these views are found to be attended with certain awkward and untractable anomalies, and the facts of Nature refuse to accommodate themselves to the preconceived opinions of men. One of our eminent agricultural authorities—the late Mr. Pusey, I think—expressed on one occasion in this journal the conclusion

* The instances marked with an *asterisk* are those of pasture farms as well as arable. From 3*s.* to 4*s.* 6*d.* per acre for horse labour on the pasture should be deducted on this account; and the remainder, spread over the arable land of the farm, will give figures more correct. For example, Mr. Baker, of Woburn (No. 2), whose pasture land costs him 4*s.* 6*d.* an acre for horse labour, would thus have the figures 25*s.* 5*d.* reduced to 32*s.*

* He found that the draught on a dry good road was 3 per cent. of the weight; on a wet good road it was 4 per cent; on hard, compact loam it was 5½ per cent.; on ordinary byeroads it was 10½ per cent,; on a newly-gravelled turnpike-road it was 14½ per cent.; and on a loose sandy road it was more than one-fifth, or 20 per cent. of the weight.

his observation led him to in these words "Wheat is a great waster of ammonia." The proposition, no doubt, was a consistent and legitimate consequence of his views as an advocate of the nitrogenous theory; for it expressed the only conclusion he could draw from the fact, that the Wheat refused to account for all the nitrogen it had somehow made away with; but it sounded strangely impugnatory of the wisdom of the divine arrangements, as if Nature, which does nothing in vain, had constituted Wheat, or any other plant, with a strong avidity for ammonia for the useless purpose of wasting it or of taking it in, only to decompose and give out again. More lately Mr. Lawes and his coadjutors in the same field of agricultural science have come forward, and by a precise and philosophical deduction from carefully conducted experiments have helped to confirm and extend the anomalous and inexplicable circumstances connected with the nitrogenous theory; for they tell us, as the result of their experiments, that while some plants failed to account for more than a small portion of the nitrogen that had been consumed, or otherwise disposed of, there were others which returned (in their composition I presume) more nitrogen than had been supplied to them. Facts like these cannot be otherwise than perplexing and inexplicable on the prevailing views of the part borne by nitrogen in vegetable economy; but they are quite in accordance with, and might be legitimately deduced from the opinions I have on several occasions expressed in the *Gardeners' Chronicle and Agricultural Gazette* * on the use and purposes of ammonia in vegetable economy, the purport of which was to prove that the appetence or avidity for ammonia, characteristic of vegetable life, is due, not to the nitrogen so much, as to the hydrogen of the ammonia, which all plants require to form, in conjunction with carbon, the substance of their physical structure—in other words, to form vegetable fibre, or hydro-carbonaceous matter, which is the basis of every part of the vegetable structure, root, stem, leaves, flower, fruit, seeds, and their envelopes of every form or variety; while nitrogen is only a variable and partial element in plants, not entering at all into the chemical composition of vegetable fibre, and scarcely found in some vegetable substances, and more abundant in others; dependent entirely on the idiosyncrasy, so to speak, or physical peculiarities of each class or kind of plants, as bestowed on them by Nature for special purposes. Hence the requirements of plants for nitrogen will be as various as their physical peculiarities, and will be indicated and measured by the amount of nitrogen found in the composition of their substance and products, while all will exhibit pretty nearly an equal avidity or capacity for ammonia; and hence this discrepancy between the universal capacity of plants for ammonia, and their partial, and, generally speaking, very limited requirements of nitrogen, the first showing that there is something in ammonia they cannot do without, and the other that that something is not nitrogen.

It appears to me that nothing more is necessary to arrive at a satisfactory solution of the anomalous circumstances adverted to by Mr. Lawes, and at just views of the *primary* use and purpose of ammonia in vegetable economy, than to compare the chemical constituents of plants with the acknowledged sources or materials of vegetable ailment. These, with phosphorous and mineral substances, are water, carbonic acid, and ammonia, and humic acid containing the four elements of the two latter substances. The following are a few of the most common and abundant substances in plants, with the proportions in which the elements of carbonic acid and ammonia are found in them:—

	Oxygen.	Carbon.	Hydrogen.	Nitrogen.
Lignin, or vegetable fibre	42·25	52.00	5.75	00.00
Starch	49.68	43.55	6.77	00.00
Gum	50.84	42.23	6.93	00.00
Sugar	50.63	42.57	6.90	00.00
Wax	5.48	82.19	12.33	00.00
Gluten, or vegetable albumen ..	25.13	53.40	6 80	14.67

The first conclusion to be drawn from the above is, that plants require no nitrogen for the formation of vegetable fibre, the substance or basis of their common structure. This then is a very extensive reason, embracing by far the largest portion of vegetable matter, why plants, generally speaking, must fail to return or account for the nitrogen which has disappeared in their consumption of ammonia, and it is irrespective of a large and abounding class of vegetable products, as starch, gum, sugar, wax, oils, &c., which have not a particle of nitrogen in their composition, and therefore do not require it for their production. The next conclusion is suggested by the regular occurrence in certain proportions of hydrogen in all vegetable substances, not excluding gluten itself, the chief storehouse of nitrogen in the vegetable world; and it seems to point out very clearly what use is primarily made of ammonia by plants. When an eminent agriculturist made the observation before adverted to, that Wheat is a great waster of ammonia, was there really any waste of it? A great deal of nitrogen had certainly disappeared, but had the hydro-carbonaceous matter of the entire plant contained in the vegetable fibre, the starch and gluten itself, been estimated, instead of the partial amount of nitrogen in the latter substance, it must have been apparent that the Wheat had made a very good use of the ammonia, though in a different direction from what his mind had been contemplating.

There is a somewhat remarkable circumstance connected with the chemical constitution of vegetable substances, which deserves the attention of those who consider the production of vegetable fibre, sugar, &c., as a chemical combination of carbon and water; from the circumstance of oxygen and hydrogen existing in those substances, in the same, or nearly the same proportions, as in water. I think this view may be disproved by other arguments; but the point to which I now advert is, that a more steady and intimate relation subsists between the proportions of carbon and hydrogen, than between those of any other two constituents of vegetable substances. This will be seen by referring to the above list; and is more particularly exemplified in the case of wax, oils, resin, &c., in which, while the proportion of carbon rises to nearly double of what it is in sugar, starch, and gum, the hydrogen rises along with it in nearly the same proportion, and an equivalent amount of oxygen is displaced. Again, in gluten it will be seen that while the carbon and hydrogen exist in proportions not materially different from what they do in vegetable fibre, the nitrogen is interposed at the expense of the oxygen. Now setting aside the consideration that we have no proof, that plants chemically decompose water, and that they appear merely to absorb it in its natural state, as the solvent and vehicle of those alimentary particles from which their substance and products are formed, should we not expect if vegetable fibre, sugar, &c., be really produced from a chemical combination of water and carbon, that there should be as close and constant a relation between the proportions of oxygen and hydrogen in all other substances of vegetable origin, as in these? Should not the type of relationship in vegetable substances be hydro-oxygenous rather than hydro-carbonaceous, as we see that it is. Or, to avoid this difficulty, must we resort to the still more untenable position, that though vegetable fibre, sugar, &c. are formed by a chemical combination of carbon and water, other vegetable substances are formed in some other way? The hydro-carbonaceous relation, for such it really is, which is characteristic of substances having a vegetable origin, when taken in connection with the admitted requirements of plants for carbonic acid and ammonia, presents a much more natural and satisfactory explanation of the sources and manner of their production, in agreement with their chemical constitution and with known facts in vegetable physiology. In the two substances just mentioned we have the four elements, which enter into the composition of vegetable substances. Two of them, carbon and hydrogen, are universally necessary, and are found combined in proportions varying from 11 to 20 parts of hydrogen to 100 of carbon in different substances. Of the other two, oxygen appears to be universally present in vegetable substances, but in strongly unequal qualities, varying from nearly 12 parts of oxygen to 10 of carbon in sugar, down to one part of oxygen to 14 of carbon in wax. Nitrogen, though stored up in considerable quantities in particular parts of various plants, forms a component part of comparatively few vegetable substances, the chief being gluten, and something very nearly the same, frequently termed in chemical analysis as vegeto-animal matter: in gluten, nitrogen stands in the proportion of about 27 parts to 100 of carbon. If one might draw a distinction between the relative places and functions of these constituent elements, the two former, carbon and hydrogen, might be regarded as the fundamental or constructive elements of vegetable matter, and the two latter, oxygen and nitrogen, as their modifying elements; the diversified qualities of vegetable substances appearing mostly to depend on the extensively varying proportions in which these two elements enter into their composition, and little on variations in the proportions of carbon and hydrogen, which, as we have seen, are limited to a very small range. When carbonic acid and ammonia are presented to plants in conjunction with water, and the presence in the soil of mineral and other substances suited to their nature and requirements, the latter are in a condition to decompose them, and by a new arrangement of their component elements, to convert them into the materials of their own substance and structure, and of the various products, which an all-wise and beneficent Creator has conferred on them the power of elaborating. But they can only do this by combining these elements in certain definite proportions; and both carbonic acid and ammonia contain more oxygen and nitrogen than the requirements of plants, generally speaking, render needful; consequently, while they make use of the entire carbon and hydrogen which these substances contain, there is much of the oxygen of the carbonic acid and of the nitrogen of the ammonia which they cannot usefully appropriate; they therefore reject or give out the excess of these elements, which mix with and form component parts of the atmosphere. This is consistent with what has long been known respecting plants giving out oxygen; and the experiments and researches of M. Ville, commented on at page 739 (December, 1851), of the *Gardeners' Chronicle*, establish the fact that plants also respire or give out nitrogen.

Gluten, or vegeto-animal matter, represents the most common form or combination in which nitrogen occurs in plants; and it exists in them in very variable quantities and in partial states; perhaps entirely wanting in some, in others a mere trace of it, and in others again more or less abundant: not generally found diffused through every part of a plant, but concentrated or stored up in some particular parts or products, as in the seeds of Wheat, Peas, Beans, Lentils, Acorns, Chesnuts, &c., in various fruits, and sometimes in the leaves of plants, as Cabbage, Cress, &c.; and it mostly occurs in those plants and their products which constitute the food of man and animals, showing its obvious use and intention. From the partial existence then of nitrogen in plants and vegetable products, and, speaking generally, the very limited capacity they have of appropriating it, it is only to be expected that plants should ordinarily fail to return the amount of nitrogen supplied to them either through the medium of ammonia or in any other form; at the same time, this is not inconsistent with the supposition, that there are plants exceptionally endowed with an unusual capacity for appropriating nitrogen; and in these cases a greater amount of it may be retained in their composition than can be readily accounted for by special experiments, as seems to have been the result in Mr. Lawes's investigations.

The subject is one, not of merely speculative interest, but of practical importance. I believe considerable sums of money have at times been expended and thrown away from erroneous views of the primary use of ammonia in vegetable economy, proceeding on the supposition, that nitrogen is the only or special element in it that renders it useful to plants; hence nitrate of soda, and perhaps other merely nitrogenous substances, have been often applied in agriculture at considerable expense, where at best they must have been useless, if not hurtful. *J. H. H.*

* *Gardeners' Chronicle*, 10th January, 1852; *Agricultural Gazette*, 7th January, 1854; *Agricultural Gazette*, 4th March, 1854; *Agricultural Gazette*, 1st April, 1854; *Gardeners' Chronicle*, 20th September, 1856.

LOIS-WEEDON.

It surely was no unreasonable expectation that some of those who have followed in the footsteps of the Rev. Mr. Smith should have availed themselves of the invitation in the leading article of this Journal of the 25th December last to give to the public the results of their experiments. The desire to afford information, and to promote agricultural improvement which equally with the search after truth animate inquirers in general, and which we are little disposed to deny to those who would dive into the Lois-Weedon well, might be supposed to render such an expectation realisable. But alas unto this day this expectation has been a hope alone. From whence does this dark silence arise? Is it apathy? Is the plan viewed with cold indifference, and does it share in that neglect—the common lot of all pioneers—that made Columbus a wandering beggar from court to court, and went nigh to lose to him America? Why, the force of steam was ascertained nearly 150 years before it was practically applied? Or has enthusiasm dashed, blundered, failed, and shamed to make its failure known? Is the system impracticable to all but Mr. Smith, and must wait its further development till we build a monument to his fame?

A plan which in availing itself of natural means of fertilisation to those plants, to which they are all sufficient, leaves all others, all the artificial resources of the farm, to those which absolutely require them, which does away with the anomaly of applying one rule, that of the benefit of fallow, to one description of crop and denying it to another.

If we have to deplore the dearth of intelligence from England and Scotland, we can scarcely be surprised that poor Ireland is deficient. Our periodicals give us hardly any intimation of experiments on this system. Some experiments have been made at Glasnevin under the National Board of Education, but of which I have seen no account. A very brilliant attempt was made; but very soon, too soon I think, abandoned by Mr. Callwell, of Belvidere, in the county of Down, and I learn from him, that from his suggestion, another has been made in the county of Kildare, which was also abortive.

Mr. Callwell appears to have gone to work with great spirit, and certainly took a right step at starting by a previous visit to Lois-Weedon. His first experiment, in 1854, is recorded in the Journal of the Chemico-Agricultural Society of Ulster, and is thus stated—

Cost of 14 *acres* 0 *rood* 36 *perches of Drilled Wheat.*

	£	s.	d.
4½ cwt. Wheat sown, finished Nov. 19, 1853	3	2	3
Marking out, 16s.; drilling, 1*l.* 7s. 6*d.*	2	5	6
Rolling, 6s.; covering with rakes, 8s.	0	14	0
Digging one spade deep, 14s. per half acre	9	19	2
Forking, 10s. per acre, March 31, 1854	7	0	0
Forking and weeding between drills of Wheat ..	6	15	6
Horse-hoeing between drills, May 6	0	5	2
Scarifying the fallowed intervals, June 10	1	16	0
Breaking clods, May 8	0	10	6
Hand wheeling and wheeling off weeds	14	12	7
All cost previous to reaping	46	18	8
Scarifying the fallowed intervals after stooks were removed, 2d till 14th October	3	16	0
Forking and taking off stones and weeds from fallowed intervals, to have all clean and fine for drilling	7	13	0
Interest on cost of implements	1	12	0
All cost one year	59	19	8

Leaving ground well prepared for drilling.

Produce bad, only 5 tons 17 cwt. on the 14 acres; Wheat bad quality, heads 1 inch longer than same Wheat broadcast on Potato ground, stooked as thick on ground as broadcast, but being worked too late among, roots were loosened; half of heads consequently did not fill, the pickles of those that did fill were very

large. Crop left 1*l.* 2*s.* for rent per statute acre, straw left for harvesting and threshing expenses.

Mr. Callwell ascribes the defective crop to the late working of the soil and consequent loosening of the roots. The late sowing not finished till the 19th of November, by inducing a spring tillering, must also have been injurious, as Mr. Callwell seems to have been also aware of. The deep spring forking commenced immediately after the finishing of the deep digging we must think was uncalled for and injurious, and although not stated to have been a deep working, yet it apparently was so from the price charged for it, 10*s.* an acre. Miserable as the crop certainly was it appears an undue depreciation of its value to state the net profit for rent at 1*l.* 2*s.* an acre, for some of the expenses charged against it do not appear to belong to it; 11*l.* 9*s.* appears against it as for labour on the ground after harvesting; the working of the intervals ought not certainly to be charged against the existing crop; as it is a preparation of the soil for the succeeding crop, the expense for forking ought not to have been incurred. Again, in all fairness, none of the preparatory expenses necessary for bringing the ground into a fit state for a novel course ought to be charged as annual expenditure, but rather as so much capital invested. If all such deductions from the expenses charged to the crop be made it will bring it to a somewhat more paying one. And again as the crop stooked as thick on the ground as the broadcast crop on the Potato land, unless from unfortunate circumstances some of which may not have been apparent, it ought to have yielded as well as the broadcast crop. *J. M. G., Granard.*

SHEEP-WASHES.

A case of considerable agricultural interest has been tried at Newcastle during the week in which Mr. Black, a large farmer at New Heaton, Northumberland, sued Mr. Elliott, of whom he had purchased a sheep-wash, for damages, on the ground that it had poisoned his sheep. On the 7th of August last the plaintiff being at Berwick ordered sufficient of this sheep-wash to wash 700 sheep. The wash was sold in powders, and the defendant's shopman told him he would require 14 of these powders—one powder being sufficient for 50 sheep. The plaintiff ordered 15 powders, and they went to his Burton farm. The direction on the powders was that each powder was to be mixed with 3 or 4 gallons of boiling water, and that then this mixture, with 4 lbs. of soft soap, was to be diluted with 45 gallons of cold water, and this would make a wash for 50 sheep, in which they were to be dipped. The directions were implicitly followed, and on a Saturday in July last 869 sheep were dipped in this wash—60 of them being dipped in it much diluted, as they had been washed before. On the Sunday one of these sheep died. On the Monday several more died, and many were seen to be ill—foaming at the mouth and shaking their heads, and lying down. On the Tuesday a great number died; more still on the Wednesday, until, in the course of a few days, 850 of the sheep had died, 19 only surviving, and these 19 were part of the 60 which had been dipped in the very diluted mixture. It was also found that the hands and arms of the shepherds which had been in the liquor became sore, and mortified and sloughed, and they were ill for some time. It was suggested that the sheep had been allowed to eat the herbage on which they stood after they were washed, and that a shower of rain had washed off them much of the waste and saturated the herbage of the field where they were placed, and thus poisoned them. In answer to this it was proved that seven sheep in one of the fields, which had not been dipped, had nothing amiss with them. On the sheep all dying in this manner, Mr. Black had one of the powders analysed, and it was admitted that it contained 1½ lb. of arsenic, 1½ lb. of soda ash, and 2 oz. of sulphur, each powder weighing 2 lbs. 10 oz. The sheep were dissected and found to have been poisoned. They were all much swollen and black. The plaintiff then saw the defendant, who went over to his farm. The defendant then said it was a bad job, that his powders had never poisoned any sheep before, and he knew he was responsible. The defendant then sold the skins of the sheep to a skinner for 2*s.* each, and the carcases were buried. The plaintiff claimed 1737*l.* as the value of his sheep. It was proved that the sheep, on dissection, exhibited traces of arsenic in their intestines, and as much as six grains was found in a sheep, which was quite sufficient to account for the death. The quantity of arsenic in each powder sold by the defendant for the washing of each sheep amounted to 195 grains. The poison of arsenic was dangerous and capricious. It would sometimes poison, and sometimes not. It might be used with impunity, but never without risk.

For the defendant it was proved that the powder had been used by farmers for 10 years with impunity. He had sold in the last three years as much as 500 powders a year, which was sufficient for 25,000 sheep each year, and had sold powders on an average for 20,000 sheep a year during the last 10 years, and had never heard of a case of death from its administration. Several farmers were called to prove that they had used the powders with impunity for washing their sheep, and on the same day as the plaintiff, so that atmospheric influences could not affect the case. It was suggested that the real reason of the wash poisoning the sheep was the hasty manner in which they had been dipped, preventing the liquor being properly squeezed and pressed out of their fleeces. Upwards of 7800 sheep had been dipped in 12 hours, which was at the rate of 75 an hour, or five in every four minutes. This might have caused the poison to be more absorbed than it ought to have been, by being left in their fleece. In addition to that, on dissecting some of the sheep poison was actually found in the food in their stomachs, and must have been taken in at the month. It was suggested that this had arisen from the sheep when in a wet state being placed in the pastures, and the droppings from their fleeces had poisoned the herbage which they had eaten. To substantiate this theory two sods had been cut in a field in which the sheep had pastured, the herbage of which was found to contain soluble arsenic. Two sods cut in the adjoining field, in which none of the sheep had been placed, contained none. It was suggested that sheep would not eat this poisoned herbage; but since Saturday, when this was suggested, the experiment had been tried, and some sheep had nibbled and eaten some Grass so poisoned. A number of witnesses were called, scientific and others, who proved these various facts.

The jury found a verdict for the plaintiff—Damages 1400*l.*

FALLOW CROPS.

The rapid improvement in the practice of agriculture tends not only to increase the produce but at the same time to diminish the expense of cultivation. The cultivation of the Turnip and other roots as fodder plants have effected this more than that of any other class of plants which the farmer grows.

The system which we adopt has been in practice for many years in various parts of the kingdom, so that it is no new fancy, nor do we present it as a perfect system, for we have found that as our observation and knowledge of Nature increases we become more and more convinced of our own ignorance of the operations of Nature under all the circumstances in which the vegetable world is placed.

Before we enter upon the mode of cultivating the Turnip crop it may be well first to inquire into the nature and habits of the plant itself—the nature and kind of its roots—of its leaves and its bulbs; a knowledge of these may lead us to the kind of cultivation which is best fitted for the healthy development of the perfect plant as well as to the kind of soil in which they grow to the greatest perfection.

The bulb of the Turnip terminates in the roots which spread from its sides all around. The fine silky perfect roots spread out over a great horizontal extent in search of nourishment, and the roots and the whole plant increase in luxuriant growth according to the extent of the nourishment received, but when the plants are close together on the ground their roots cannot extend far, and they intermingle with the roots of their nearest neighbours and are therefore limited in their extent. The fine fibrous roots drink in the nourishment, and the greater the field they have to feed in the greater will be the luxuriance of the plant. But the roots extend in depth as well as horizontally, and the depth to which they go is regulated by the depth to which the soil is cultivated.

The growth of the leaves depends on the growth and extent of the roots, and these on the extent of the field on which they have to pasture, and the quantity and extent of the roots are regulated by the magnitude of the leaves—by the number of square inches of their surface, these two organs working together give to the bulb its weight and magnitude. The dark green colour and luxuriant appearance of the leaves show the thriving condition of the plant, and if we examine the roots by throwing open the soil we shall find the silken fibrous roots forming a net-work occupying the soil over the whole space allotted to it, and to the depth of from 2 to 5 feet, if the soil is drained to that depth.

The size and substance of the leaves of plants is said to indicate the amount of nourishment which they receive from the atmosphere. The broad rounded thick fleshy leaves of the Cabbage, the Turnip, and the Mangel plants receive a greater portion of nourishment from the atmosphere than the narrow thin leaves of the cereal plants; besides, their large broad fleshy leaves cover the whole surface of the ground (even although the plants are from 27 to 36 inches apart), and thus exclude the air from the soil and the immense mass of fine roots interlacing the whole of the active soil leaves the land in a most excellent state of culture for the succeeding crop of Wheat. When a large surface of leaves is developed we reckon on our crop being secured, and that they will now go on of themselves, so that our principal attention is to get all the young plants to start into existence with speed and regularity, and to spread out the greatest surface of leaves.

In preparing the land for the root crop, if there be any Couch in it after the crop of Wheat has been removed, we either cultivate the whole field, harrow and rake the Couch together and burn it, or if there be only small patches of Couch it is dug out with the fork; we then cart out from 15 to 18 cart loads of manure per acre, and spread it over the surface and plough it in to the depth of 7 or 8 inches, and in this way we use up all the manure we have. The land which has not been manured before ploughing it the first time is manured before ploughing it the second time, or put into drills when the land is being sown to Turnip.

In the spring, as early as the weather will permit, the surface is first harrowed to smooth the surface, and the land which was not dunged has now manure carted and spread over it, and the land is ploughed across, and in this state it remains till the seed time, when it is cultivated, harrowed, and well pulverised, preparing it for planting; but the land which was manured before being ploughed in the autumn is cultivated in the spring instead of ploughing it. This is first done across the way it was ploughed, and it is then harrowed and cultivated a second time across the first, and in this state it remains till the time of sowing.

When the land has been properly pulverised we proceed in this way: two ploughs with a pair of horses in each make from eight to ten drills, one plough first goes a "bout," making one open furrow, and then the ploughs go up on the right-hand side of this open furrow, making each a rib or drill 27 inches wide, and they return down the other side of the first furrow, and so proceed, having the ploughed land on the left hand instead of it being on the right hand as in common ploughing, and when there are from eight to ten of these drills made the carts follow with the manure, the horse going down one of the furrows and the wheels in the two on either side of it. The manure is dropped, and when it is spread the ploughs make new furrows going up the hill, and as they come down the hill they cover the manure in the first furrow on the outside of the field; in this way the ploughs make fresh furrows, going up the hill on one side, and in returning down the hill they cover the manure on the other side, forming a drill with manure in the centre of it. The carting and spreading of the manure is thus performed; the manure has been carted to a heap in the field during winter, or when the land was too hard to plough or cultivate, and the dung heap has been turned over 10 or 14 days previous to its being carted. Three carts are generally employed to take the manure from the heap to the field, and three men fill the carts; one cart is at the dung heap being filled, one is on the road with a load, the other is being emptied and returning, so that two boys or women are with the carts, and as a loaded cart comes into the field the horse is put into the middle of the three drills which are to receive the manure; the man who empties the cart takes out the back door, and with the muck drag in his hand orders the boy to move the horse down the drill, and as he moves along the man is constantly pulling out the manure in a continuous stream till the cart is emptied, and from practice he can deliver at the rate of either 10, 15, 20, 25, or 30 loads per acre. To do this he must know the length of the drills in an acre, and then dividing the length by the number of loads to be put on the acre he can in a short time get at the thickness required by the number of yards in length which the load has to manure. As the manure is being dropped in the drills one man parts the dung from the middle row equally amongst the three, and there follow at his heels a woman or boy in each of the rows, each with a fork spreading the manure equally in the bottom of the furrow so as to be ready for the return of the ploughs to cover it. Three men will fill 100 cartloads in 10 hours, and three one-horse carts and two ploughs will finish 10 acres in a day, drilling up the land, carting 300 loads of manure, spreading it, and covering it by the strength of seven horses, seven men, two boys, and three women. The number of horses required to deliver the manure depends on the quantity of loads per acre and the distance of the field from the dunghill; three horses will do this work where the distance is not above 200 yards, but when the distance is greater more carts and boys to drive them are requisite. As the ploughs cover the manure a boy with a one-horse Turnip drill follows sowing the seed in two rows at a time, and as he can do double the work which is prepared for him, he takes the horse from the Turnip drill and puts him to a common roller and rolls the drills he has sown, so that the field of 10 acres is finished in three days. *J. M.*

(To be continued.)

Home Correspondence.

Cottages at Withenshaw (see p. 153).—Their cost being 347*l.* 12*s.* 7*d.* besides the value of the land on which they were built, the rent could not be calculated at less than 6*l.* 10*s.* each, at 5 per cent.; therefore the questions arise—Can the tenant of the farm be responsible to his landlord for so high a rate? Can the labourer afford such a rent? And lastly,—Cannot better accommodation be provided for a less sum? On looking over the details of cost, it appears that two or three items are higher than they need be; for instance, slates are charged 30*l.* 4*s.* 7*d.* If Welsh slates had been used, probably they might have been had for a third of that amount; Welsh slates cost very little to put on a building, so that instead of paying a slater 7*l.* 12*s.* 4½*d.*, I should think 30*s.* would have been sufficient. Again 29*l.* 9*s.* 2*d.* seems a heavy charge for plumber, unless much lead was used behind chimneys, &c., as glass is now very cheap; painting, 24*l.* 2*s.* 7*d.* is too much for three cottages—5*l.* worth of good paint would preserve all necessary wood-work of three cottages for several years. Flags also seem to be a great expense. When we consider the low price of excellent timber, bricks, nails, and other building materials, we ought to get three cottages built of the dimensions specified for less than 100*l.* each, and I must think there is yet room for improved plans and estimates to meet the increasing exigency arising from overcrowding and inadequate house accommodation. From what I have seen of plans of cottages, I have always been struck with a want of simplicity of design; there is too much straining after architectural beauty; nevert' eless

plainness of appearance is not necessarily ugliness; it is certain that every additional corner or projection not required increases the cost beyond the worth of the novelty or irregularity. If cottages are built in pairs, so as to have the two series of chimney shafts carried up together, lessen the price, I may say that the two chimneys from the lower rooms, and from a bedroom of each house, will cost less than two chimneys would do if separately built to each house. Another advantage of building cottages in pairs is, that a back kitchen and small chamber over may be run up behind the main building under one roof, at right angles to it, as if it was a lean-to for each house. This back kitchen may be extended for the purposes of a pantry or coalshed if the extent of ground will permit. Though I say cottages may be erected in pairs, it is obvious that three or more pairs of cottages may be joined continuously, a common passage being frequently provided either at the end of the series or somewhere between the cottages. I know of several houses being built with many conveniences and large enough for a labourer's family, the total cost of which, including land, has been less than 100*l.* each, and they are in every respect preferable to the old low unwholesome dwellings of the poor, as they are also superior to the cheap contract work of speculators. *J. W., Peterborough.*

Plymouth Weather.—While we see such general complaints of drought throughout the country, Plymouth has maintained its old reputation.* Accordingly, wind E., W., N., or S., we have hardly had a rainless day since November, though the barometer has been often above 30 in., and has once reached 30.75. The thermometer has generally ranged between 40° and 50°, and the rain so continuous as to have hindered the progress of the Tavistock Railway. Wet as our winters are, they are rarely so very mild. November was finer than usual here, with a good share of sunshine and a few days' frost, but not two entire days of it in succession. *Jno. Prideaux.*

Adulteration.—Much has lately been written and said respecting the adulteration of manures, oilcakes, seeds, &c. in fact of nearly every description of agricultural materials, and perhaps in some cases with good grounds for it, but at the same time farmers have in a great measure to blame themselves for it, by their constantly bartering for lower prices; for instance, a dealer makes an offer of a first class article of one of these materials, price of course in proportion to the quality, and is immediately told by the party to whom the offer is made, that he can buy it at less money without at all looking at the difference of quality, and the upshot is, that the dealer is compelled to sell at a loss, or what is more often the case sends an inferior article, which a little liberality on the part of the purchaser would have rendered unnecessary, and till buyers consider quality rather than a trifling higher price, we may expect to hear of these complaints being made. *A. C., Rutlandshire.*

* The heading of an ancient Plymouth Almanack.
"The South wind always brings wet weather,
The North wind, wet and cold together;
The West wind surely blows us rain,
The East wind brings it back again.
If in red the sun doth set,
The next day will be mostly wet;
But if the sun doth set in grey,
The next will be a rainy day."

Societies.

ROYAL AGRICULTURAL OF ENGLAND.

Monthly Council, *March* 2.—The Duke of Marlborough, President, in the Chair.

Finances.—Mr. Raymond Barker, Chairman of the Finance Committee, presented the monthly report on the accounts; from which it appeared that the current cash-balance in the hands of the bankers was 2571*l.*

Governors' Privileges.—On the motion of Mr. Raymond Barker, seconded by Mr. Milward, it was referred to the Finance Committee to consider, and report upon at the next Monthly Council, the most suitable means by which Governors of the Society may in future have the privilege, on a certain payment, of continued ingress and egress into and out of the Show-yard at the Country Meeting.

Veterinary Inspection.—On the motion of Mr. Pain, seconded by Mr. Torr, Professor Spooner, Principal of the Royal Veterinary College, was unanimously requested to accept the appointment of Joint-Veterinary-Inspector, with Professor Simonds, at the annual country meetings of the Society.

Warwick Meeting.—Lord Leigh, Vice-Chairman of the General Warwick Committee, reported the recommendation of the Committee, that the Council should accept the offer of the Local Committee at Warwick to defray the expenses connected with the exhibition of cheese. His lordship also reported that the ground for the site for the show-yard had been drained and levelled at the expense of the authorities at Warwick, and was now in a suitable state for the operations of the Society's contractor.—The Local Committee addressed a letter to the Council, containing a resolution, "not to have a dinner at the Warwick Meeting." Mr. Fisher Hobbs intimated that he should have a proposal to submit to the Council at the next Monthly Meeting, in reference to new arrangements by which he considered that a dinner might advantageously be given. Additional Prizes for Short-horned, Hereford, and Devon cattle were included by the Council in the Live Stock Prize Sheet for the Warwick Meeting, which was then considered to be finally settled, and its publication ordered to be made in the usual manner.

Country Meetings.—Mr. Raymond Barker, Chairman of the Country Meeting's Queries Committee, laid on the table a proof of the amended and more commodious form in which the schedule of queries should in future be arranged. He also suggested seven of the principal towns in the district for 1860, comprising the counties of Kent and Surrey, with the authorities of which the Secretary should enter into communication in reference to the place of the country meetings of next year.

Member of Council.—On the motion of Mr. Hudson, of Castleacre, seconded by Mr. Wren Hoskyns, Lord Leigh was unanimously elected one of the Members of the Council, in the place of Sir A. K. Macdonald, Bart.

Californian Wheat.—Sir Edward Kerrison, Bart., M.P., offered to undertake the trial of the white Californian Wheat placed at the disposal of the Council by Mr. Kitto, who stated that he had himself grown of that Wheat "a hundred bushels to the acre."

The Council then adjourned (for a fortnight) to Wednesday, March 16.

Highland Society: *Feb.* 16.—At the adjourned general meeting of this Society, among other topics, that of cottage building and improvement came under review, and the following remarks were made by the Right Hon. Mr. Nisbet Hamilton. He said:—

While in England the people were advancing in the right direction by inquiring into the condition and inspecting the cottages of the poorer classes in the agricultural districts, he was sorry to say that from his own observations he not only found that in Scotland there was a great deal too little interest bestowed on the social condition of the labouring poor, but also he regretted to add, a want of desire on the part of the labouring poor themselves to inhabit those cottages which many landed proprietors were willing to place at their disposal. He found from his own observation in England that the larger the occupier was—say those farmers occupying from 1000 to 2000 acres of land—the more satisfactory was the accommodation for the labourers, and the more contented were these classes themselves, than was the case when they were in the service and under the rule of smaller occupiers. This was the case in England; and he attributed it very much to the interest which the wives and daughters of the farmers took in the condition of the labouring classes on the farm, for unless they could train up the female portion of these classes to habits of industry and cleanliness it was in vain to expect that any improvement could be made in the condition of the agricultural labourer, seeing that it was entirely upon the female portion of society that the comforts of the labourers' cottages depended. He thought it would be well that the attention of the Directors were directed to the subject, with the special view of considering whether any means could be adopted, emanating from such a body as the Highland Society, for impressing upon the owners and occupiers of land the necessity of greater attention being paid to the social condition of the labouring classes of this country.

Mr. Hope, of Luffness, said that as a near neighbour of the right hon. gentleman, and as he did not altogether agree with what he said, he felt himself bound to make a few observations.

He quite concurred with him that his endeavours had not been adequately responded to in the matter of cottage competition. The right hon. gentleman had been most liberal in offering premiums, but they had elicited no competition worth speaking of. While he believed with him in the desirability of extending the interest which was taken in it, he at the same time thought that he had underrated the interest which had already been shown in the matter, and the efforts which had hitherto been made in Scotland in this direction. Mr. Hamilton had instituted a comparison between this country and England, and between the modes of proceeding on the part of proprietors in the two countries. Now, one of the greatest points which was looked to in England was the question of parochial relief, and among the encouragements held out for exertions to improve the condition of these classes in England was the keeping of ablebodied labourers from requiring to receive parochial relief. Such a contingency could never arise in Scotland, because we did not recognise the right of such a class of persons to go upon the poor-roll; and therefore it was not fair to take the two classes in the different countries as standing in the same position in regard to remuneration and other matters. The modes of hiring in the two countries were also different; and he thought that the practice of six months' hiring in Scotland was less favourable to the comfort of the labourers than the continuous hiring of England, the effect of the present system being, that in Scotland labourers seldom remained longer than six months in one place. These circumstances required all to be taken into consideration; and they did not admit of an exact comparison between England and this country, and certainly did not justify any observations on the other side of the border, to the extent of decrying the interest and the exertions taken in behalf of the labouring population of Scotland. At the same time he admitted there were a good many shortcomings on the part of Scottish proprietors and occupiers of land, and he trusted more would yet be done in this direction, and he for one was quite willing to second any such endeavours to the utmost of his power.

Mr. Nisbet Hamilton explained that he had not wished to institute a comparison between England and Scotland in regard to the mode of hiring or anything else.

All that he had wished to do was to state the condition of the people; and he was persuaded that he was right in saying, that in districts where wages were not higher than in this country the condition of the labouring agricultural poor was certainly better, and he had instanced this more especially by cases where the occupiers were men of large capital, and where the comfort of the labourers was attended to by the female portion of the farmer's family. He stated it as a broad fact that in certain districts of England, where formerly the people were much neglected, there was now much being done on the part of proprietors, and particularly of occupiers of land, to raise the condition of the agricultural labourers; and he only wished to draw the attention of a meeting like the present to the fact that, while on the one hand the members of the Highland Society had been forward in introducing improvements into agriculture, they should, on the other hand, also use their utmost endeavours to raise and improve the condition of the labouring poor.

Mr. Gulland, Newton-of-Wemyss,

Rose as a tenant-farmer, in consequence of what had fallen from the right hon. gentleman (Mr. Nisbet) with regard to cottages and the condition of the labourers. The cottages, in his opinion, ought to be built by the landlord, and he had no doubt that the tenants would be willing to pay a reasonable percentage for them. With regard to the social condition of the labourers, with the present great competition for land landlords looked for the highest rent without any reference to the social condition of rural labourers, and in short, he (Mr. Gulland) thought that there was a great deal of nonsense talked on this subject.

Reviews.

The Journal of Agriculture. No. 64. March, 1859. Blackwood & Sons.

This Number contains an interesting paper on English and French Agriculture—a review of works connected with the Rural Labourer—a chapter on the Cultivation of the Leech!—Notes by Mr. Scott Burn on Novelties in Agricultural Mechanism—and an unusually interesting section of the "Farmers' Note-book," in which occasional paragraphs on points of agricultural interest are collected. If this portion of the Journal could be extended it would do much to relieve the somewhat heavy character which its contents generally possess. The Transactions of the Highland Society, published in this volume, are chiefly connected with reports and lectures on artificial manures, and with certain official proposals connected with the future management of the Society's shows. We extract from the Farmers' Note-book the following paragraphs:—

On Feeding Farm Horses.—"Perhaps one of the greatest improvements in the feeding of horses is the bruising of Oats; they should not be crushed or broken into meal, but only bruised. One of the most conclusive experiments we have on this subject is that which was performed by the London Omnibus Company. So much importance did the members of the Société Imperiale et Centrale d' Agriculture attach to this experiment, that they dispatched M. Renault, the director of the veterinary school at Alford, to London, to report on the method adopted by the Company. M. Renault's report is now before us, from which we extract the following particulars. The Company posseses nearly 6000 horses, the one-half of which were confined to one kind of feeding—viz. that of bruised Oats and cut hay and straw, and the other half to whole Oats and hay. The ration allowed per day to each horse, according to the one system, was—

Bruised Oats	16 lbs.
Cut hay	7½ ,,
Cut straw	2½ ,,
	26 lbs.

The quantity allowed according to the old system was—

Unbruised Oats	19 lbs.
Uncut hay	13 ,,
	32 lbs.

There is thus a saving of 6 lbs. on the feeding of each horse; and this saving is not merely in the quantity, but in the value of the articles employed; for we have straw in the former case substituted for hay in the latter. The advantage of the one kind of feeding over the other is far more apparent when we reduce both to the money value. The saving by using the bruised Oats and cut hay is estimated at about 2½*d.* per day for each horse, which is equal to 62*l.* 10*s.* per day for the 6000 horses. And this saving was accomplished without any sacrifice whatever; for all the coachmen, and those having charge of the horses, agreed that the difference, if any, in the condition of the horses, was in favour of those fed on the bruised Oats and cut hay and straw. M. Renault gives also the result of an experiment by Mr. Etherington, one of the most extensive coach hirers in London. He selected two horses which ran in the same carriage. To the one he gave about 17.8 lbs. per day of unbruised Oats—to the other about 14.3 lbs. of bruised Oats. This experiment was continued for a month, when tkere was little apparent difference in the horses, that little being in favour of the one getting the bruised Oats. The experiment was then reversed: the horse getting the bruised Oats was allowed the same quantity of whole Oats as the other got; and this latter got the same quantity of bruised Oats as its neighbour was getting in the previous month. Any slight difference in the condition of the horses after a month's trial was in favour of the bruised Oats. M. Borie, in the 'Journal d' Agriculture Pratique,' also mentions two cases in which the system of bruised Oats and cut hay has been adopted in France. The waggon-horses, employed for 14 hours per day in the carting traffic of one of the railways in France, used to get 26 lbs. of Oats (whole), 13 lbs. of hay in bunches, 2.2 lbs. of bran, and 15 lbs. of straw—the hay and straw uncut. Now they get 15 lbs. bruised Oats, about 9 lbs. of cut hay, 9 lbs. of bruised Barley, and 15 lbs. of whole straw. So the omnibus horses in the employ of the same railway company, which run about six hours per day, used to get about 20 lbs. of unbruised Oats, 11 lbs. of hay in bunches, 2.2 lbs. of bran, and 13 lbs. of straw. Now they get 11 lbs. of bruised Oats, 6½ lbs. of cut hay, 6½ lbs. of bruised Barley, and 13 lbs. of uncut straw. We could multiply instances on this important subject, but those which we have adduced are, we think, sufficient to show the great advantage of bruising Oats and cutting straw or hay for horses, whether they are employed on the farm or for carting purposes, or for riding and post work in coaches and omnibuses. Many farmers, we have no doubt, have had vague ideas of the profit of feeding on bruised Oats; but we trust that the experiments above detailed have brought before their minds the advantage in a more realisable form, and will induce many to try a system which will produce such a saving at a time when all economy is necessary in farming operations."

Phospho-Peruvian Guano.—"What is it? is a question

that is now often put, as experiment after experiment is published, showing results in its favour. Is it a natural guano or an artificial manure? To enable us to answer this question, we are indebted for the information to Dr. Cameron's small work on the 'Chemistry of Agriculture.' 'The base of this valuable manure,' says Dr. Cameron, "is what has been termed a pyroguanite, found on the surface of a group of trap-rock islets within the tropics.' It occurs as a dense, hard substance, in masses arranged in concentric layers, and consisting principally of a phosphate of lime, containing one equivalent less of base than is found in the phosphate of lime existing in bones, or in other varieties of guano. Hence the facility with which the importers have been able, with a small quantity of sulphuric acid, to convert the phosphate of lime into a soluble super-salt.

"The excellence of Phospho-Peruvian guano, as an artificial manure, will be obvious, if compared with inferior phosphatic guanos and other manures made from bones, coprolites, apatite, &c. For every 10 per cent. of soluble phosphates in these there are found at least 30 per cent. of hydrated sulphate of lime; whilst a considerable quantity of water and other materials of little or no value as fertilisers are necessarily added in the process of manufacture. To obtain from any of these materials an amount of soluble phosphate of lime equal to that yielded by the Phospho-Peruvian guano, nearly 20 per cent. there would be produced about 70 per cent. of hydrated sulphate of lime, in contrast with only 25 per cent. in the other case. Phospho-Peruvian guano is said to contain, in its natural state, from 30 to 35 per cent. of anhydrous phosphoric acid, in combination with from 30 to 40 per cent. lime, magnesia, potash, soda, and ammonia. This is nearly double the quantity of phosphoric acid found in bones and other substances, from which the superphosphates usually sold are prepared.

"Phospho-Peruvian guano is a guano found in some of the West India islands, very rich in phosphoric acid, which is found in it, in a state more available for the use of the plants than it is in bones and other phosphatic manures. When brought to this country, it is subjected to a chemical process with sulphuric acid, after which it is sold as Phospho-Peruvian guano. Professor Voelcker has a very high opinion of it: he says—'Phospho-Peruvian guano being much richer in phosphates, and not containing so much ammonia as to cause too luxuriant a development of leaves at the expense of the bulb, is much superior to Peruvian guano as a manure for Turnips, Swedes, Mangels, and Potatoes; and I have indeed no hesitation in expressing the opinion that for root crops the manure which I analysed is by far the most valuable fertiliser, whether natural or artificial, which as yet has been offered to the public.' It is said 'to sustain, in just proportions, all the ingredients requisite for the rapid and healthy development of all our cultivated plants.'"

Sutton's Farm Seed List for 1859 (Sutton & Sons, Reading), contains a good deal of useful information on Grass land management, the cultivation of Holcus saccharatus and Chinese Yam, in addition to the prices of seeds and instructions for sowing. We extract the paragraph giving the quantities of seed sown per acre:—

"The quantity of seed sown per acre varies greatly in different localities, but the following table may be a guide to gentlemen ordering seeds. If guano is drilled with it the quantity of seed must be increased, as some will probably be destroyed by the guano.

	Per acre.
Swedish Turnips	2 to 3 lbs.
Early Large Turnip	2 to 3 lbs.
Stubble Turnip	3 to 4 lbs.
Rape	4 lbs.
Mustard	18 to 24 lbs.
Mangel Wurzel	4 to 6 lbs.
Carrot	6 to 8 lbs.
Parsnep	6 lbs.
Cow Cabbage (to transplant)	1 lb.
Kohl Rabi ditto	1 lb.
Ditto; drilled	4 lbs.
Trifolium incarnatum	24 lbs.
Lucerne	16 to 20 lbs.
Furze; for feed or cover	12 lbs.
Chicory	4 lbs.
Rye	2½ bushels.
Italian Rye-grass	3 bushels.
Vetches	2 bushels.
Buck Wheat	3 to 4 pecks.
Sainfoin; common	4 bushels.
,, giant	5 bushels.
Linseed; for Flax	2½ bushels.
,, for seed	3 to 4 pecks.
Beet	6 to 8 lbs.

Miscellaneous.

Covered Yards.—Covered yards are cheaper than the ordinary homesteads, and can be effected completely for 5*l.* to 7*l.* per acre, a profitable investment at 5 per cent. for the tenant. As this system of homesteads is rapidly growing, and as I know it to the best and cheapest, I have asked Messrs. Beadel and Sons and Chancellor, of Chelmsford, Essex, to send me a list of those which they have erected, and their cost. Had the system existed when I commenced farming, I should have preferred it to my detached buildings. Dr. Voelcker's valuable experiments show us that our manure does not suffer by exposure to air, but its washing by rains carries away its most valuable properties. Ever since I commenced farming, I have never lost any portion of my manure from such a cause: hence the improved fertility of my soil. I annex Mr. Chancellor's letter:—

"Chelmsford, October 8, 1858.

"Dear Sir,—I enclose you a schedule of all the covered homesteads I have erected since about 1850. The cost of the various 'costs' are accurate, but I am not able to fill in all the acreages. In some instances, as in Park Hall, Ongar, the covered homestead is an addendum to the other farm buildings and therefore could not be taken as a fair criterion of the proper cost of a homestead per acre: but I think you may very fairly assume that the cost on an average would be from 5*l.* to 6*l.* per acre. Of course, much depends upon locality, price of bricks, timber, slates, stone, &c. I have made numerous calculations upon this subject, as you may imagine, and I have invariably found that the covered homestead does not cost more than the usual mode of erecting farmeries; and, if you take into consideration the number of stock, the price of a covered yard is less per head than the open yards and bullock houses in the old system.—I remain, yours faithfully.

"Fred. Chancellor."

"I. J. Mechi, Esq., 4, Leadenhall Street, London."

Locality.	Acreage of Farm.	Owners.	Cost	Remarks.
Fingrith Hall, Blackmore, Essex	Abt. 500	Messrs. Smith, Payne & Smith	£900	There are other buildings.
Bloomfield Lodge, Chelmsford, Essex	25	James Beadel, Esq.	250	This was built principally for fattening bullocks;
Frowicke Farm, St. Osyth, Essex	293	Thomas Alexander, Esq.	350	there are other buildings besides.
Hormead Farm, near Buntingford, Herts		J. W. Higgins, Esq.	1100	The cost is exclusive of some old buildings;
Lobb Farm, Tetsworth, Oxon		Trustees of Sir Charles Flower, Bart.	700	there are other farm buildings.
Stevens's Farm, Chignal St. James, Essex	360	William Crush, Esq.	2000	There is a 10-horse power fixed steam engine,
Gilston Park, Herts	Abt. 500	John Hodgson, Esq.	3000	which works all the machinery.
Park Hall, Ongar, Essex		Capel Cure, Esq.	500	
Grafham, Hunts	400	Lady O. B. Sparrow	1700	A portable steam-engine and fixed machinery.
Hall's Farm, Bury, Hunts	500	Lady O. B. Sparrow	1900	Fixed steam engine and machinery.
Little Bardfield, Essex	Abt. 400	John Cutts, Esq.	1800	
Berwick Hall, White Colne, Essex	Abt. 300	Rev. W. E. Hume	900	Portable steam-engine and machinery.
Elmington, near Oundle, Northamptonshire		Corpus Christi College, Cambridge	1150	Fixed steam-engine and machinery.
Hinton Farm, near Twyford, Berks		T. C. Garth, Esq.	Abt. 1600	Portable steam-engine and machinery.
Brailes House, near Shipton-on-Stour, Shropshire		H. J. Sheldon, Esq.		Fixed steam-engine with fixed machinery.
Haines Hill, near Twyford, Berks	Abt. 500	T. C. Garth, Esq.	1600	
Rivenhall, Essex	Abt. 150	Mr. W. Porter	1200	Portable steam-engine and machinery; there
Edwards' Farm, Eye, near Peterboro', Northamptonshire	About 10	E. S. Knipe, Esq.	1220	are also other buildings.
		H. E. Gurney, Esq.	3000	Portable steam-engine and machinery.
	Abt. 400	H. Shingley, Esq.	2300	This is a small homestead for the accommoda-
The Rectory, Debden, Essex	About 60	Rev. H. Hodgson	700	tion of the mill horses, a few acres of land, &c.
The Mill, Wakes Colne, Essex	About 10		360	
Ham Farm, Nutfield, Surrey	Abt. 400			

"Fred. Chancellor, Architect, Chelmsford, Oct. 8, 1858."

Mechi's How to Farm Profitably.

Notices to Correspondents.

Gutta Percha Boots for Sheep: *L J P* says, in answer to our correspondent on this subject, "I beg to state from *my* experience they did not answer, as in very tenacious, stiff soil, I found the sheep left their shoes sticking in the mud; and if their feet were very bad, a good part of the hoof as well. If there could be any plan of fastening the shoe to the leg so as to keep the shoes on, they might be useful; but it was beyond my ingenuity to discover anything that would answer this purpose, though I tried."

Plantations: *Portugal.* Cattle and sheep having the run of plantations where Laurel, Yew, and Box abound, are likely to suffer.

Rollers: *Old Reader.* The heaviest roller you can get, smooth, and in three divisions, is the best. Will, however, any of our readers state from their experience the best roller as to weight, &c., for rolling park Grass.

Sheep Management: *Mr. Beale Browne* thus answers Mr. Bond (see p. 175). "I well know the Kentwell land; some is not so heavy as mine. I have now fed off 20 acres of heavy drained land, as adhesive as birdlime; but by lightly ploughing directly after the sheep, the frosts we may expect, or drying winds, will make it work. I have carted roots, and know the heavy expense, when men, horses, cutting roads, and wear and tear are considered. I have not seen the Kentwell flock since two years last autumn. I then impressed upon Mr. Bond the increased profit of keeping less sheep, and keeping them better. They were in very low condition. Mangels and straw would not be likely to improve them, without oilcake or corn. Mangel is good for milking, and any animal in the spring; but we find it cold, bad winter food. Nearly all young farmers are apt to overstock, and nothing is more ruinous. We should not keep more things than we can keep well. I reduced my flock of ewes 80 this year, and by so doing have been enabled to keep them better. I am convinced I shall have as many lambs; they are coming stronger, and I shall cut as much if not more wool than if I had kept the same as last year. With regard to the 40*l.* for attendance, I have spoken to many practical men, and they all agree with me, if kept in yards in winter, and hurdled on Clover and Vetches in summer, it could not be done economically for double the money. I can only say, *if* they were attended for that sum, it would pay a hundred per cent. to double the attendance."

NEW BOOKS OF TRAVELS.

1.

E. T. COLEMAN.

SCENES FROM THE SNOW FIELDS. By E. T. Coleman. With 12 plates, comprising 16 subjects, lithographed and printed in colours, by Vincent Brooks, from Sketches made on the spot in the years 1855, 1856, 1857, and 1858, by the Author.....Imperial folio, 63*s.*

2.

JOHN FRANCIS MAGUIRE.

ROME, ITS RULER AND ITS INSTITUTIONS. By John Francis Maguire, M.P. Second Edition, corrected and improved; with copious Additions, comprising new chapters on the Cardinals, the Inquisition, the Campagna, a Walk through a Roman Madhouse, a visit to San Spirito with the Pope, the Roman Deaf and Dumb Pupils, Sketches of Schools and Asylums, Material Progress and Finance, the Jew boy Mortara, the Distribution of Prizes in the Propaganda, &c. Post 8vo, with new Portrait. [Nearly ready.

3.

JAMES CAIRD, M.P.

PRAIRIE FARMING IN AMERICA: With Notes by the way on Canada and the United States, in the Autumn of 1858. By James Caird, M.P., Author of "English Agriculture," "Letters on the Corn Crops," "High Farming," &c. Fcp 8vo. [Just ready.

4.

PAUL KANE.

WANDERINGS OF AN ARTIST among the INDIANS OF NORTH AMERICA; from Canada to Vancouver's Island and Oregon, through the Hudson's Bay Company's Territory, and back again. By Paul Kane. With 21 Illustrations.....8vo, 21*s.*

Illustrations in Chromo-Lithography.

1. Portrait of a half-bred Cree Girl
2. Flat-head Woman and Child
3. Portrait of Man ce-Muckt
4. Portrait of Kee-akee-ka-saa-ka-wow with Pipe stem
5. Group of Six Indian Chiefs
6. Medicine Pipe-stem Dance
7. Portrait of an Esquimaux
8. White Mud Portage.

List of the Wood Engravings.

1. Encampment amongst the Islands of Lake Huron
2. Portrait of Aw-bon-waish-kum
3. Indian Pipe
4. Spearing by Torchlight on Fox River
5. View at Red River Settlement
6. Group of Buffaloes
7. Jasper's House, Rocky Mountains
8. Portrait of Ca-sa-no
9. Burial Place on the Cow Itz River
10. Portrait of Cul-chil-lum with Medicine Cap
11. Chimney Rock—Colombia River
12. Winter Travelling Dog-sleds
13. Horse Race

5.

B. MOLLHAUSEN.

A JOURNEY FROM THE MISSISSIPPI TO THE COASTS OF THE PACIFIC, with a United States Government Expedition. By B. Mollhausen, Topographical Draughtsman and Naturalist to the Expedition. With an Introduction by Baron Humboldt. Translated by Mrs. Sinnett. With Map and 23 Illustrations..... 2 vols. 8vo, 30*s.*

6.

THOMAS FORESTER.

RAMBLES IN THE ISLANDS OF CORSICA AND SARDINIA: With Notices of their History, Antiquities, and present Condition. By Thomas Forester, Author of "Norway in 1848-1849," &c. With 39 Wood Engravings, and 8 Illustrations in Colours and Tints, from Sketches made during the Tour by Lieut.-Col. Biddulph, Royal Artillery; and a coloured Map..... Imperial 8vo, 28*s.*

"Mr. Forester's book is in all respects new; the brilliant lithographs bring new landscapes before our eyes, and new glimpses are opened by each of the numerous little pencillings which break, like bright islands, the broad flow of the narrative...A volume of travel so original and varied as Mr. Forester's is a rarity in our day."—*Leader.*

7.

THE ABBÉ DOMENECH.

MISSIONARY ADVENTURES IN TEXAS AND MEXICO: a Personal Narrative of Six Years' Sojourn in these Regions. By the Abbé Domenech. Translated under the Author's superintendence. With Map.....8vo, 10*s.* 6*d.*

"Adventures are to be found in the Abbé Domenech's volume of every description; encounters with panthers, serpents, Indians; night journeys through forests surrounded by mewing animals with glaring eyeballs, and ending in sudden and unexpected plunges up to the knees in water in a lake formed by the rains, while a terrific storm breaks overhead, and a thunderbolt fires the adjacent bushes. On one occasion the author performed a desperate ride on the back of a mustang, or untamed horse of the prairies; at another he shared in a steam-boat race on the Hudson, which a passenger, either over zealous for the honour of his vessel, or alarmed at the danger he was in, brought to an abrupt termination by firing at the rival helmsman, and frightfully wounding him. The collections of facts in natural history are not less remarkable.... As a lively representation of missionary life in a newly-settled country, this work is both interesting and amusing."

Economist.

8.

M. DE QUATREFAGES.

RAMBLES OF A NATURALIST ON THE COASTS OF FRANCE, SPAIN, AND SICILY. By A. De Quatrefages, Member of the Institute, Professor of Ethnology in the Museum of Natural History, Jardin des Plantes, Paris, &c. Translated, with the Author's sanction and co-operation, by E. C. Otte..... 2 vols., post 8vo, 15*s.*

"M. de Quatrefages is well and honourably known to all naturalists in Europe as a diligent worker, a successful investigator, and an agreeable writer. As a pleasant addition to our scientific literature, and as a book of travels far more informing and suggestive than nine out of every ten published, his 'Rambles of a Naturalist' deserve the careful translation they have received; as they bring together in an accessible shape much that is valuable to naturalists which was scattered through memoirs and monographs within the reach of few. The work will be read with pleasure for the sake of its enthusiasm, its sketches of the various coasts and their inhabitants, and its revelations of the marvels of organisation."—*Leader.*

London: LONGMAN, BROWN, AND

PROFESSOR LINDLEY'S INTRODUCTION TO BOTANY, 4th Edition, with Corrections and Additions, now ready, in 2 vols. 8vo, with Six Copper Plates and numerous Wood Engravings. Price 24s. cloth.

London: LONGMAN, BROWN, & Co.

CHEAPER EDITION OF LOUDON'S GARDENING.

In one vol., 8vo, with many hundred Woodcuts, price 31s. 6d.,

LOUDON'S ENCYCLOPÆDIA OF GARDENING: Comprising the Theory and Practice of Horticulture, Floriculture, Arboriculture, and Landscape Gardening; including all the latest Improvements, &c. A New Edition, corrected and improved by Mrs. LOUDON.

This work, which is admitted to be the best work on Gardening, is now brought within the reach of Head Gardeners, Nurserymen, and of those gentlemen who wish to provide their gardeners with a complete work on the Theory and Practice of Gardening.

The work comprises above 1300 closely printed pages, minutely classified in all the divisions of Floriculture, Arboriculture, Kitchen Garden, Landscape Gardening, &c. &c., and is illustrated with above One Thousand Engravings on Wood.

London: LONGMAN, BROWN, & Co., Paternoster Row.

Of whom may be had

LOUDON'S ENCYCLOPÆDIA OF AGRICULTURE. Cheaper Edition, price 1l. 11s. 6d.

ACTON'S MODERN COOKERY-BOOK, price 7s. 6d. Newly revised and enlarged Edition, copiously illustrated.

"The best book of its class yet produced."—*Illustrated News.*

London: LONGMAN & Co.

HISTORICAL AND BIOGRAPHICAL WORKS.

I.
HISTORY OF THE KNIGHTS OF MALTA; or the Order of the Hospital of St. John of Jerusalem. By Major WHITWORTH PORTER, Royal Engineers. With 5 Illustrations .....2 vols. 8vo, 24s.

II.
CAPTAIN BRIALMONT'S LIFE OF THE DUKE OF WELLINGTON. Translated from the French, with Illustrations and Additions, by the Rev. G. R. GLEIG, M.A. Maps, Plans of Battles, and Portraits..Vols. I. and II. 8vo, 30s.

III.
BARON BUNSEN'S WORK ON ANCIENT EGYPT—Egypt's Place in Universal History: an Historical Investigation. Translated by C. H. COTTRELL, M.A. Vol. III., with 7 Illustrations..... 8vo, 25s.

IV.
MARYANNE SCHIMMELPENNINCK'S SELECT MEMOIRS OF PORT ROYAL, &c. Fifth Edition, carefully revised. .....3 vols. post 8vo, 21s.

V.
THE LIFE OF MARY ANNE SCHIMMELPENNINCK, Author of "Select Memoirs of Port Royal." Edited by her relation, C. C. HANKIN. New Edition, complete in One Volume; with Portrait. .....Post 8vo, 10s. 6d.

VI.
AGNES STRICKLAND'S LIVES OF THE QUEENS OF ENGLAND, dedicated to QUEEN VICTORIA. New Edition, thoroughly revised; with Portraits.

VII.
REV. G. R. GLEIG'S ESSAYS, Biographical, Historical, and Miscellaneous. Contributed chiefly to the "Edinburgh" and "Quarterly Reviews." .....2 vols. 8vo, 21s.

VIII.
MR. HENRY ROGERS'S ESSAYS selected from Contributions to the "Edinburgh Review." Second Edition, with Additions .....3 vols. fcp. 8vo, 21s.

IX.
BIOGRAPHICAL AND CRITICAL ESSAYS, reprinted from Reviews, with Additions and Corrections. By A. HAYWARD, Esq., Q.C. .....2 vols. 8vo, 24s.

X.
SIR JAMES STEPHEN'S ESSAYS IN ECCLESIASTICAL BIOGRAPHY; from the "Edinburgh Review." Third Edition, with copious Additions..2 vols. 8vo, 24s.

XI.
LIFE OF MICHAEL ANGELO BUONARROTI. By JOHN S. HARFORD, D.C.L., F.R.S. Second Edition thoroughly revised; with 20 Copperplates ....2 vols. 8vo, 25s

XII.
MEMOIRS OF ADMIRAL PARRY, the Arctic Navigator. By his Son, the Rev. E. PARRY, M.A. Fifth Edition; with Portrait and coloured Chart. Fcp. 8vo, 5s

XIII.
MEMOIR OF CAPTAIN BATE, R.N. By the Rev. JOHN BAILLIE, Author of "Memoirs of Hewitson," &c. Second Edition; with Portrait.....Fcp. 8vo, 5s.

XIV.
MEMOIR OF THOMAS UWINS, R.A. By Mrs. UWINS. With his Letters from Italy; and his Correspondence with distinguished persons.... 2 vols. post 8vo, 18s.

LONDON: LONGMAN, BROWN, AND CO.

In Shilling Monthly Numbers,

ROUTLEDGE'S NEW ILLUSTRATED NATURAL HISTORY. By the Rev. J. G. WOOD, M.A., F.L.S., and Illustrated by Wolf, Harrison, Weir, Harvey, Coleman, &c.

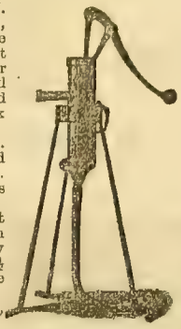
The First No., with 30 Illustrations, on March 31.

"The want of a comprehensive, and at the same time accurate work on the Natural History of the Animal Kingdom has long been felt. The taste for Natural History becomes developed in an increasing ratio by the extension of our colonies and our commerce. We are therefore glad to see an announcement of a new Natural History, which will embrace the most remarkable varieties of the animal kingdom, from the gigantic elephant to the minute manufacturer of the coral reef, and which is intended to instruct both the eye and the imagination of the reader. The graphic pen of the Rev. J. G. WOOD, already so popular for his life-like descriptions of animal life, and his 'Common Objects of the Country and Sea-shore,' is a guarantee that this 'Illustrated Natural History,' while securing scientific accuracy, will possess the charm of a vivid delineation of the habits of the creatures described, and render the undertaking as amusing as it will be instructive."—*Sun.*

Specimen pages forwarded (gratis) on application.

London: ROUTLEDGE, WARNES, & ROUTLEDGE, Farringdon Street.

WARNER'S IMPROVED LIQUID MANURE OR GENERAL PORTABLE PUMP.



These Pumps are fitted with J. W. & Son's Patent Buckets and Suckers, and cannot clog in action. The barrel is of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure. The legs will fold together, and the whole may be carried on the shoulder to any pond or tank required.

Price of 4½ in. Pump, with legs, 3l. 3s. If with planished copper barrel and galvanised iron handle, &c., 14s. extra. The barrel is 27½ in. long, and the legs are 5 ft. high.

These Pumps are also made without the legs, with strong wrought-iron straps for screwing on to any ordinary water butt or cart, and fitted with 1½ inch brass union for attaching flexible suction. Price 50s.

1¾ inch Gutta Percha Suction Pipe, 1s. 11d. per foot.

Rubber and Canvas Suction and Delivery Hose, from ½ inch to 4 inches diameter, in lengths of 60 feet to order. Branch Pipes with Cocks, Union Screws, &c., at reduced prices.

May be obtained of any Ironmonger or Plumber in town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin St., London.

WARNER'S PATENT VIBRATING STANDARD PUMPS.

PATENT CAST-IRON PUMPS, fitted with J. W. & Son's Patent Buckets and Suckers, which cannot clog in action, for Farms, Cottages, and Wells, not exceeding 28 feet.

Diameter of Barrel.	Height.		£ s. d.
2½ in.	short	1 ft. 7 in.	Fitted for lead, gutta percha, or cast iron flanged pipe, as required. 1 10 0
2¼ ,,	long	3 ,, 3 ,,	1 14 0
3 ,,	ditto	3 ,, 6 ,,	2 8 0
3½ ,,	ditto	3 ,, 6 ,,	2 12 0
4 ,,	ditto	3 ,, 6 ,,	3 8 0
2½ ,,	short, with 15 feet of Lead Pipe attached, ready for fixing		2 14 0
2½ in.	long	ditto ditto ditto	2 18 0



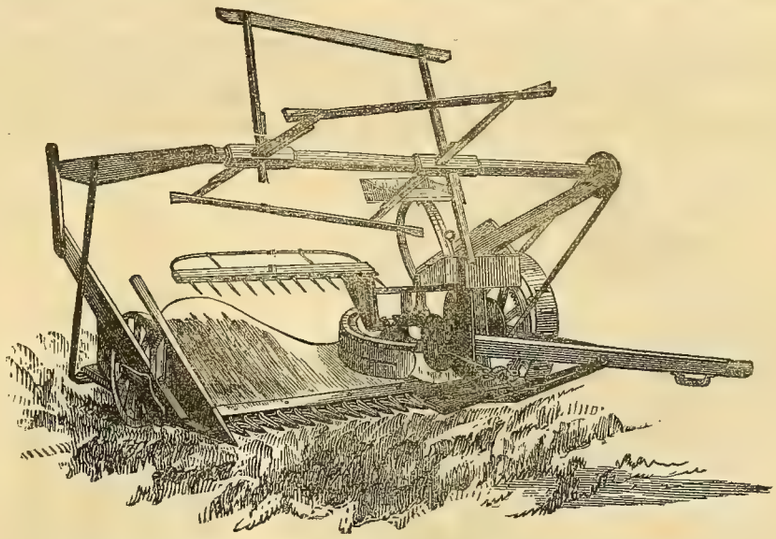
The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.

May be obtained of any Ironmonger or Plumber in Town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

B. SAMUELSON,

AGRICULTURAL ENGINEER AND MACHINIST,



WAREHOUSE, 76, CANNON STREET WEST, LONDON,

WORKS AT BANBURY,

INFORMS MERCHANTS, the TRADE, and AGRICULTURISTS, that he has opened the above Warehouses as a depôt for his own manufactures and those of Messrs. Barrett, Clayton, Howard, Hornsby, Nicholson, Richmond, Tuxford, Smith, and all other first-class makers, whose implements he is prepared to offer on makers' terms.

THE BRITANNIA SELF-RAKING REAPING MACHINE,

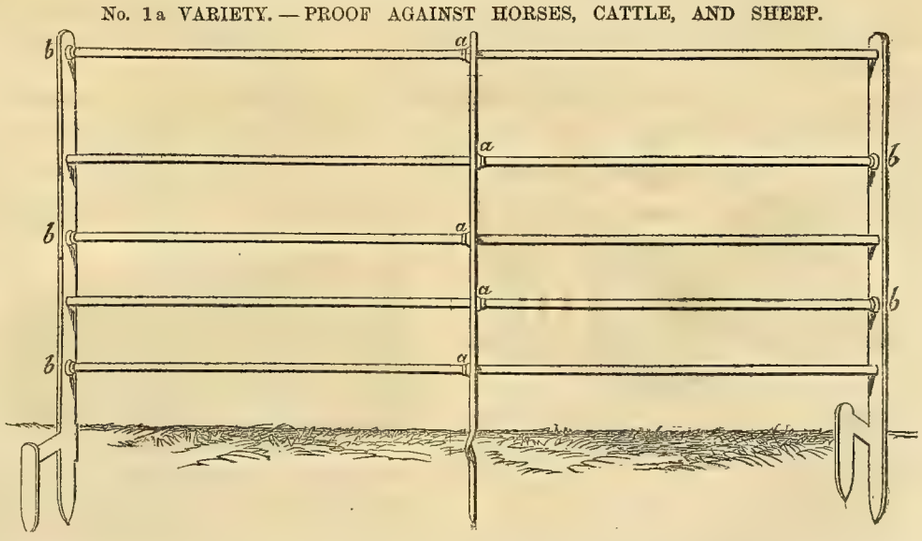
With side delivery in sheaf, no rakers or gatherers required; and all the most improved Food-preparing Machines of the season, may be inspected at the above depôt.

B. SAMUELSON, 76, Cannon Street West, London; and Britannia Works, Banbury.

GREENING & COMPANY'S PATENT WIRE FENCES.

Patronised by His Royal Highness the PRINCE CONSORT.

No. 1a VARIETY.—PROOF AGAINST HORSES, CATTLE, AND SHEEP.



SPECIFICATION.—No 1a Variety, 3 feet 9 inches high, 6 horizontal bars of stout fencing wire, strengthened and supported by vertical bars, at distances of 5 inches. **ONE SHILLING per Lineal Yard.**

Particulars of the above and other Iron and Wire Fences for Parks, Farms, Gardens, Game Preserves, Poultry Courts, &c., in the Catalogue, sent post free on application to

GREENING & COMPANY, Victoria Iron and Wire Works, 81, Oxford St., Manchester.

HORTICULTURAL BUILDING & HEATING BY HOT WATER.

BY APPOINTMENT.



JOHN WEEKS & COMPANY,

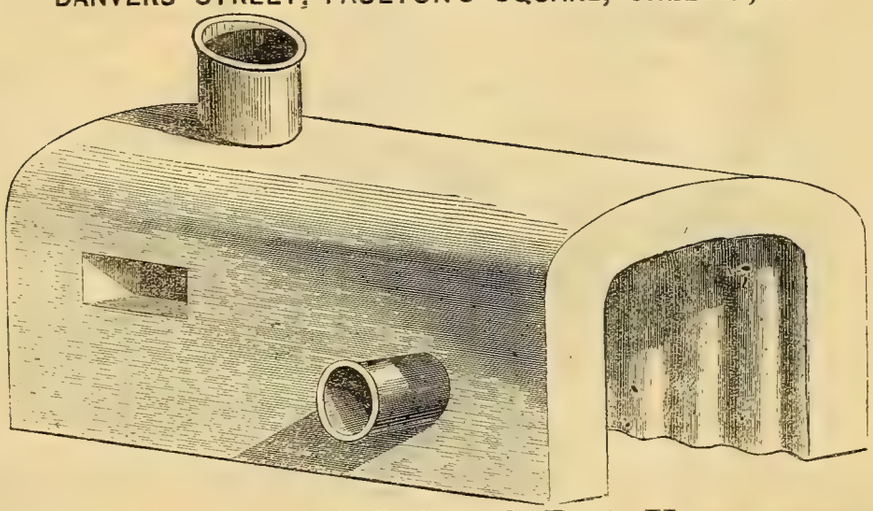
KING'S ROAD, CHELSEA, LONDON.

HORTICULTURAL BUILDERS AND HOT-WATER APPARATUS MANUFACTURERS, ENGINEERS, AND IRON FOUNDERS.

PLANS, ESTIMATES, & ILLUSTRATED CATALOGUES FREE ON APPLICATION.

HORTICULTURAL WORKS,

DANVERS STREET, PAULTON'S SQUARE, CHELSEA, S.W.



JAMES GRAY

RESPECTFULLY begs to inform the nobility, gentry, Nurserymen, Gardeners, and others, that he continues to carry on the business in all its branches at the above old established premises.

CONSERVATORIES, GREENHOUSES, FORCING HOUSES, VINERIES, PITS, &c.,
of every description, erected on the most approved principles.

HEATING BY HOT WATER.

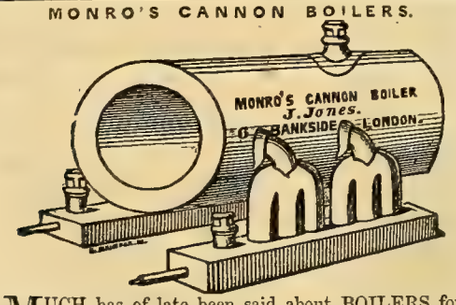
J. G. having specially devoted his attention for many years to this part of the business, is now fully prepared to Heat every description of public and private buildings, viz :—Churches, Mansions, Warehouses, &c., as well as all structures connected with Horticulture, in the most efficient manner. His system is the most simple that can be adopted—which he has found from long experience to be the best—can be constructed at less cost, and is more easily managed than those of a complicated nature which have attracted the notice of the public.

J. G. begs to call attention to his CAST-IRON CORRUGATED ARCH BOILER, which from its simplicity of construction has not the liability to fracture to which those of a more complex design are always subject. They have been extensively used for many years, and have given the greatest satisfaction.

All business is conducted at this establishment on the principle of lowest remunerative profits consistent with best materials and workmanship.

Plans and Estimates furnished on the shortest notice.

MONRO'S CANNON BOILERS.



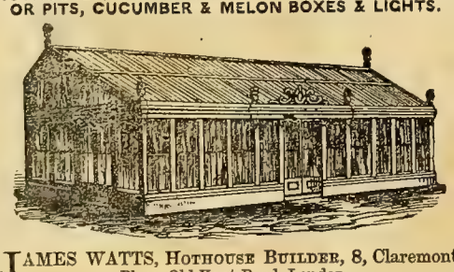
MUCH has of late been said about BOILERS for Heating by Hot Water, but these Boilers have now proved themselves to be the best at present invented. They are adapted for heating every description of building, and are made of various sizes. The Price of the

24-inch Cast Iron is	..	..	.. £5	10s. 0d. each
24-inch Wrought ditto	..	..	.. 6	10 0 ,,
36-inch Cast ditto ..	..	..	.. 8	0 0 ,,
36-inch Wrought ditto	..	..	.. 8	10 0 ,,

References to Gentlemen and Nurserymen where these Boilers are now at work. The Cannon Boilers are now kept in stock, and are to be had only of J. JONES, 6, Bankside. Also, every description of Saddle and Cylinder Boilers. Hot Water Pipes and Connections at prices lower than those of any other house in London. Estimates for Hot-water Apparatus erected complete in any part of the country, and an Illustrated Catalogue on application to J. JONES, 6, Bankside, Southwark, London.

FLOWER POTS, of superior Red Clay, manufactured by the Arley Pottery Company (Limited), equal in appearance to Terra Cotta at the price of the common pots usually sold, say 2s. per cast, delivered in London.—Apply to TAYLOR & PEARS, 8, George Yard, Lombard Street, City, E.C.

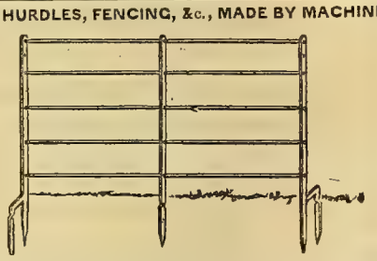
HOTHOUSES, CONSERVATORIES, FRAMES & LIGHTS OR PITS, CUCUMBER & MELON BOXES & LIGHTS.



JAMES WATTS, HOTHOUSE BUILDER, 8, Claremont Place, Old Kent Road, London.

Green and Hothouses, 9, 10, 11, 12, 13, and 14 feet wide, any length, from 16 to 100 feet. Frames and Lights for Pits, 6ft. 6in., 7 ft., 7 ft. 6 in., 8 ft., and 8 ft. 6 in. wide, any length, from 1½ to 100 feet. Upwards of 200 Cucumber and Melon Boxes and Lights, from 4 ft. by 3 to 10 ft. 6 in. by 5 ft. 6 in., kept ready, glazed with stout sheet glass, painted four times, complete, ready for immediate use, all made of best material, packed and sent to all parts of the kingdom.—References may be had to the Nobility, Gentry, and the Trade in most of the counties in England. Horticultural Buildings of every description heated on the most approved and economical principles.

IRON HURDLES, FENCING, &c., MADE BY MACHINERY.

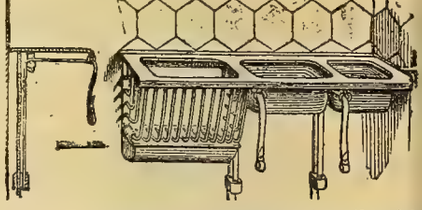


COTTAM AND COMPANY, of Winsley Street, have invented machinery for making Hurdles, &c.; the bars, instead of being pointed by hand in the old fashioned style, are nipped down by the machine, leaving a shoulder so as to more effectually tighten the standards when rivetted. They are made of superior iron only, and will compete in price with those made by hand from cinder or common iron which so frequently break. Iron Fencing, Gates, and Iron Work of all kinds, both Plain and Ornamental, Conservatories, Hot Water Apparatus and Garden Implements.

Illustrated CATALOGUES free on application to COTTAM & COMPANY, Ironfounders, 2, Winsley Street, Oxford Street, W.

N.B. COTTAM & Co. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

COTTAM'S PATENT INVENTIONS FOR STABLE REQUISITES, awarded a Prize at the Paris Exhibition, and patronised by the English and French Governments.



COTTAM AND COMPANY, of Winsley Street, are the original inventors of the PATENT ENAMELLED MANGER, Water Trough, and Wrought Iron Rack, united to an iron top-plate and forming one complete and useful fixture, having COTTAM'S patent noiseless halter guide and collar rein attached, which is taken to the back of the manger, and works with ease and freedom up or down the guide-bar.

COTTAM'S NEW PATENT SEED-BOX, an important addition to the above fittings, being simple in construction, light, and durable, promotes cleanliness, and is economical in its results.



COTTAM'S PATENT SADDLE and HARNESS BRACKET combined, can be used with great advantage where space is an object, as it can be turned up out of the way when not in use.

COTTAM'S IMPROVED SURFACE GUTTER, with perforated moveable cover, the use of which prevents accidents, and can be easily cleaned out.

COTTAM'S CAST-IRON SANITARY TRAP, from its improved construction, gives a full water passage, and does not allow any smell to ascend from the drain.

PATENT LOOSE-BOX FITTINGS, and every article for the harness-room and stable, kept in stock, plain, galvanised, and enamelled. Iron gates, fencing, hurdles, &c.

The New Illustrated Catalogue and Estimates, gratis, upon application to COTTAM and COMPANY, 2, Winsley Street, Oxford Street.

N.B. COTTAM & Co. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

JAMES PHILLIPS AND CO.'S PRICES of GLASS for the present month.

HORTICULTURAL GLASS, STOCK SIZES, in 100 feet boxes.

	3rds.	4ths.
11 by 9, 12 by 9, 13 by 9, 14 by 9 .. / 12 „ 10, 13 „ 10, 14 „ 10, 15 „ 10 ..	14s. 6d.	12s. 6d.
13 „ 11, 14 „ 11, 15 „ 11, 16 „ 11 .. / 14 „ 12, 15 „ 12, 16 „ 12, 17 „ 12 .. / 18 „ 12, 19 „ 12, 16 „ 13, 17 „ 13 .. / 18 „ 13, 19 „ 13, 20 „ 13, 21 „ 13 .. / 16 „ 14, 17 „ 14, 18 „ 14 .. .. / 19 „ 14, 20 „ 14, 21 „ 14	16s. 6d.	14s. 0d.

PACKED IN CASES.

200 feet .. .. .. £2 2 0 / 300 feet 3 3 0	16 oz.
200 feet 2 18 0	21 oz.

ORCHARD HOUSE SIZES,
As supplied by us to Mr. Rivers.

20 in. by 12 in.		16 oz.	21 oz.
20 in. by 13 in.	Common	14s. 0d. ..	£1 1s.
20 in. by 14 in.	Superior do. ..	16 6 ..	1 5
20 in. by 15 in.	English Glass ..	18 0 ..	1 9

SMALL SQUARES.—Per 100 feet.

6 by 4	6½ by 4½	7 by 5	7½ by 5½	11 6
8 „ 6	8½ „ 6½	9 „ 7	9½ „ 7½	
10 „ 8	10½ „ 8½ ..	.. ..	.. ..	12 6

JAMES PHILLIPS AND CO.,
130, Bishopsgate St. Without, London, E.C.

FOR Effectually Protecting the Bloom of Wall Trees from Spring Frosts use SHAW'S No. 3 TIFFANY, DOUBLE STRENGTH. In pieces 18 yards long by 39 inches wide, 7s. 6d. each.—JOHN SHAW & Co., Princess Street, Manchester.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

HETLEY AND CO. are supplying 16-oz. Sheet Glass of British Manufacture, packed in boxes, containing 100 square feet each, at the following REDUCED PRICES for cash. A reduction made on 1000 feet.

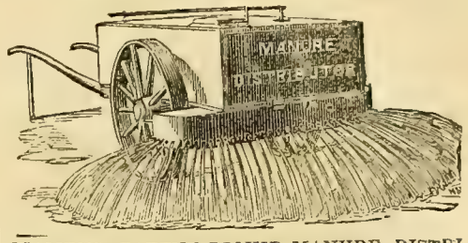
Sizes.—Inches.	Inches.	Per foot.	Per 10 feet.
	Under 6 by 4	at 1¼d. is	£0 12 6
From 6 by 4 „	7 „ 5 „	2d. „	0 16 8
„ 7 „ 5 „	8 „ 6 „	2¼d. „	0 18 9
„ 8 „ 6 „	10 „ 8 „	2½d. „	1 0 10
„ 10 „ 8 „	12 „ 9 „	2¾d. „	1 2 11

Larger sizes, not exceeding 40 inches long.
16 oz. from 3d. to 3½d. per square foot, according to size.
21 oz. „ 3¾d. to 5d. „ „ „
26 oz. „ 3¾d. to 7½d. „ „ „

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS, for Horticultural purposes, at reduced prices, by the 100 square feet.
GLASS TILES AND SLATES made to any size or pattern, either in Sheet or Rough Plate Glass.
Propagating Glasses, Beehive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in Glass.
PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.
GLASS SHADES, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the excise duty, reduced one-half. List of Prices and Estimates forwarded on application to
JAMES HETLEY & Co., 35, Soho Square, London.

THE CHAMPION STEAM PLOUGH can be had by applying at 40, Mark Lane, London. Its recommendation is the valuable work it has done. Orders for this Spring must be sent at once.
Woolston, Bletchley Station.—March 5.

LIQUID MANURE.



JAMES'S PATENT LIQUID MANURE DISTRIBUTOR OR WATER-CART, warranted not to choke up or otherwise get out of order. It is thoroughly adapted for Drill Crops, or Pasture Land, or for Watering Streets; has been awarded SIX FIRST PRIZES. Full Particulars and Testimonials may be obtained of the Patentee, ISAAC JAMES, Tivoli Waggon Works, Cheltenham.—Improved LIQUID MANURE PUMPS supplied.

Important to every man who keeps



THORLEY'S FOOD FOR CATTLE,
77, NEWGATE STREET, LONDON.
Beware of spurious imitations.

FERRABEE'S NEW PATENT MOWING MACHINES

MANUFACTURED BY

JAMES FERRABEE AND CO., PHŒNIX IRON WORKS, Stroud.—These improved Machines admit of the use of duplicate sets of cutting parts, can be accurately sharpened by an ordinary workman, are adapted to level and uneven ground and to verges, and their management is much simplified.

In the following List the Letters A, B, &c., are used to facilitate reference, and the distinguishing letter of the Machine required should be given in sending an order.

The prices include carriage to to the principal railway stations in England, terms net cash.

A, cutting 12 inches wide,	for a boy	£4	10 0
B, „ 16 „	for one man	6	0 0
C, „ 19 „	for a man and a boy ..	6	10 0
D, „ 22 „	„ „ ..	7	0 0
E, „ 26 „	for two men	8	10 0
F, „ 22 „	for a donkey or a pony	8	0 0
G, „ 26 „	for a pony	9	0 0

Sharpening Apparatus for any of the above, 5s. extra.

H, cutting 24 inches wide,	for a horse	14	0 0
I. „ 28 „	„	16	0 0
K, „ 36 „	„	18	0 0

Sharpening Apparatus, 10s. extra each.

The Horse Machines H, I, K, have cylinders of large diameter and in their entire construction possess the strength and capacity necessary for horse-power, and the heaviest work of a pleasure ground.

MAPPIN'S PRUNING KNIVES IN EVERY VARIETY.
WARRANTED GOOD BY THE MAKERS.



MAPPIN BROTHERS, Queen's Cutlery Works, Sheffield; and 67 and 68, King William Street, London.

MAPPIN'S "SHILLING" RAZORS Shave well for Twelve Months without Grinding.

MAPPIN'S 2s. RAZORS Shave well for Three Years.

MAPPIN'S 3s. RAZORS (suitable for Hard or soft Beards,) Shave well for Ten Years.

MAPPIN'S SUPERIOR TABLE-KNIVES maintain their unrivalled Superiority—handles cannot possibly become loose—the blades are all of the very first quality, being their own Sheffield manufacture.

	Tble. Kns.	Dst. Kns.	Carvers.
Ivory 3⅞ in. Handle, balanced,	20s. p. doz.;	16s. p. doz.;	6s. p. pair
Do. 4 in. do. ..	25s. „	18s. „	9s. „

MAPPIN'S SILVER-PLATED DESSERT KNIVES and FORKS, in Mahogany Cases.

12 Pairs Knives and Forks,	Ivory Handles, in Case ..	80s.
12	Do. Pearl Handles, do. ..	130s.
12	Do. Silver-Plated Handles, do. ..	80s.

MAPPIN'S ELECTRO-SILVER PLATE.—MAPPIN BROTHERS, Manufacturers by Special Appointment to the Queen, are the only Sheffield makers who supply the consumers in London. Their LONDON SHOW ROOMS, 67 and 68, King William Street, London Bridge, contain by far the largest STOCK of ELECTRO-SILVER PLATE in the World, which is transmitted direct from their Manufactory, Queen's Cutlery Works, Sheffield.

	Fiddle Pattern.	Double Thread.	King's Pattern.
12 Table Forks, best quality	£1 16 0	£2 14 0	£3 0
12 Table Spoons, best quality	1 16 0	2 14 0	3 0
12 Dessert Forks, best quality	1 7 0	2 0 0	2
12 Dessert Spoons, best quality	1 7 0	2 0 0	2
12 Tea Spoons, best quality	0 16 0	1 4 0	1 7

Messrs. MAPPIN BROTHERS respectfully invite buyers to inspect their unprecedented display, which, for beauty of design, exquisite workmanship, and novelty, stands unrivalled. Their illustrated Catalogue, which is continually receiving addition of New Designs, sent per post on receipt of 12 stamps.—MAPPIN BROTHERS, 67 and 68, King William Street, London Bridge; Manufactory, Queen's Cutlery Works, Sheffield.

GLASS WAREHOUSE, ESTABLISHED 1750.

THOMAS MILLINGTON'S REDUCED TARIFF.

PACKED IN BOXES OF 100 FEET EACH, "PACKAGES FREE,"

FOR HORTICULTURE, PICTURES, AND DWELLINGS.

Common, 11s. 6d.; Super, 12s. 6d.

Inches by Inches.	Inches by Inches.	Inches by Inches.	Inches by Inches.	Inches by Inches.	1sts.	2ds.	3ds.	4ths.
6 .. 4	9 .. 7	12 .. 9	13½ .. 10½	13 .. 11	s. d.	s. d.	s. d.	s. d.
6½ .. 4½	9½ .. 7½	12½ .. 9½	14 .. 10	13½ .. 11½				
7 .. 5	10 .. 8	13 .. 9	14½ .. 10½	14 .. 11				
7½ .. 5½	10½ .. 8½	12 .. 10	15 .. 10	15 .. 10	21 6	17 9	14 4	12 6
8 .. 6	11 .. 9	12¼ .. 10½	12 .. 11	.. ..				
8½ .. 6½	11½ .. 9½	13 .. 10	12½ .. 11½	.. ..				

14½ .. 11½	14 .. 12	22 .. 12	18 .. 14	24 .. 15	24s. 6d., 20s. 0d., 16s. 6d., 14s.
15 .. 11	14½ .. 12½	15 .. 13	19 .. 14	18 .. 16	
15½ .. 11½	15 .. 12	16 .. 13	20 .. 14	20 .. 16	
16 .. 11	15½ .. 12½	17 .. 13	21 .. 14	22 .. 16	
16½ .. 11½	16 .. 12	18 .. 13	22 .. 14	24 .. 16	
17 .. 11	16½ .. 12½	20 .. 13	24 .. 14	20 .. 17	
18 .. 11	17 .. 12	23 .. 13	18 .. 15	22 .. 17	
13 .. 12	18 .. 12	16 .. 14	20 .. 15	20 .. 18	
13½ .. 12½	20 .. 12	17 .. 14	22 .. 15	.. ..	

ORCHARD HOUSE SIZES,
AS SUPPLIED TO MR. RIVERS AND OTHERS.

20 .. 12 / 20 .. 13 / 20 .. 14 / 20 .. 15	16 oz. Common, per 100 feet, 14s.	If 21 oz. Common, per 100 feet, 21s.
	„ Super „ 16s. 6d.	„ Super „ 25s.

LINSEED OIL, PUTTY, GENUINE WHITE LEAD, LINSEED AND BOILED OILS, BRUSHES, &c.

87, Bishopsgate Street Without, London, E. C.

PATENT LAWN MOWING AND ROLLING MACHINES.

SAMUELSON'S LAWN MOWING MACHINES,

WITH BOYD'S PATENT IMPROVEMENTS.

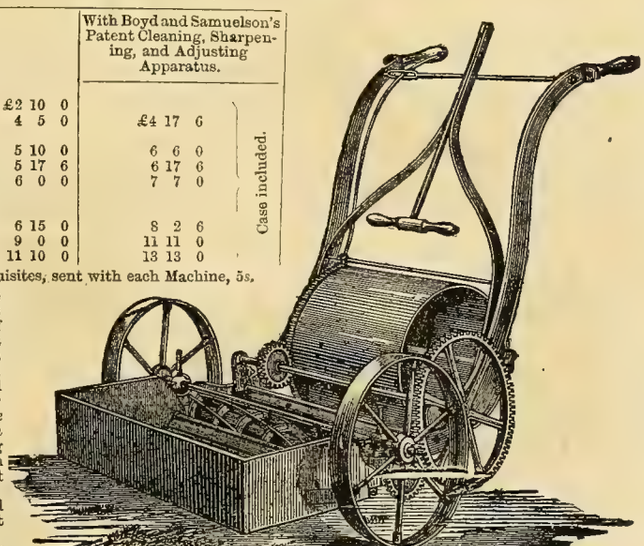
"Doing the work of five or six men."—The Times, Sept. 20, 1858.

PRICES:—

		With Boyd and Samuelson's Patent Cleaning, Sharpening, and Adjusting Apparatus.
9 inches wide, for very narrow borders, without registered wheels	£2 10 0	£4 17 6
12 inches wide	4 5 0	
16 inches wide, with registered arrangement (for one man)	5 10 0	6 6 0
19 inches wide, ditto (for one man) ..	5 17 6	6 17 6
22 inches wide, ditto (for man and boy)	6 0 0	7 7 0
22 inches wide, ditto for ditto, and also fitted with draught links for a pony and a man to work it	6 15 0	8 2 6
25 inches wide, ditto	9 0 0	11 11 0
30 inches wide, ditto (for man and pony)	11 10 0	13 13 0

Case included.

Box of Tools, Oil Can, and other requisites, sent with each Machine, 5s.



Some thousands of these Machines are now in successful operation on the Lawns of Royalty, the Nobility, and Gentry of the United Kingdom and the Continent of Europe, and are pronounced SUPERIOR to *any other* for lightness of draught, efficiency, and durability. The demand for them is *yearly increasing—the number supplied by* Mr. SAMUELSON *during the years* 1856, 1857, *and* 1858 *being more than* 100. Testimonials are continually being received from gentlemen having them in daily use, who speak in the highest terms of their efficiency.

These are the only Machines that will cut wet as well as dry Grass without clogging the knives.

Orders for 1859 should be sent at once to insure certain delivery and to prevent disappointment.

Copies of Testimonials will be forwarded post free on application to

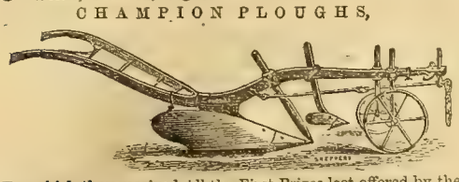
B. SAMUELSON, 76, Cannon Street West, City, London;
to the Manufactory, Britannia Works, Banbury, Oxon;

or to MESSRS. DEANE AND CO., London Bridge; or any respectable Ironmonger or Seedsman in the Kingdom.

HOWARDS' PRIZE IMPLEMENTS, 1859.

JAMES AND FREDK. HOWARD, Britannia Iron Works, Bedford, beg to direct attention to their

CHAMPION PLOUGHS,



For which they received All the First Prizes last offered by the Royal Agricultural Society of England, viz. :—

The First Prize for the best Plough for general purposes.
The First Prize for the best Plough for light land.
The First Prize for the best Plough for heavy land.

The only Prize ever offered by the Society for the best Double Breast or Ridging Plough was also awarded to J. & F. HOWARD.

J. & F. HOWARD have discontinued troubling the Public with a long List of Prizes awarded to their Implements, but they would just state that for PLOUGHS, HARROWS, and HORSE RAKES, they have for several years gained every Prize for which they have competed.

PLOUGHS.

P PLOUGH, with two wheels, for light work ..	£4	7	6
PP PLOUGH, ,, for general purposes	4	12	6
SKIM COULTER	0	5	6

STEEL BREASTS, 7s. and 7s. 6d. extra.

HARROWS.

A Set of Three 4-Beam HARROWS, with Whippletree, recommended as general Seed Harrows, 9½ feet wide, marked No. 12	3	14	0
A Set of Three 4-Beam HARROWS, with Whippletree, adapted for 3 Horses, 10 ft. wide, marked No. 11	4	4	0

HORSE RAKES.

Price of small size RAKE, marked A, with 24 iron teeth, extreme width 7½ feet	7	10	0
Ditto, with Steel Teeth	8	0	0
Price of large size, marked B, with 28 iron teeth, extreme width 8½ feet	8	0	0
Price of large size, marked B, with steel teeth ..	8	10	0
Price of extra large size, marked C, with 24 steel teeth; extreme width, 8½ feet	10	10	0
Price of a Set of 15 Prongs, to be attached to the above when used as Weed Extirpators	1	10	0

Free Delivery to Birmingham, Bristol, Derby, Gloucester, Lincoln, Liverpool, London, Manchester, Norwich, Nottingham, Retford, Wisbeach, and Worcester; or to Dublin, Edinburgh, Glasgow, and other parts at fixed rates.

HOWARDS' NEW CATALOGUE, containing prices and description of their Patent Ploughs, Harrows, Horse Rakes, and other Implements, including Smith's Steam Cultivators, for which they received at Chester the Gold Medal of the Royal Agricultural Society of England, sent free on application to

J. & F. HOWARD, Britannia Iron Works, Bedford.

BLOSSOM OF WALL FRUIT TREES most effectually protected by Worsted Net, which is very generally approved, and will last 10 years. All kinds of Garden, Fishing, Sheep and Rabbit Nets. The tanned Fish Nets 6s. 3d. per 100 yards. Samples and plan of fixing the Worsted Net sent free.—R. RICHARDSON, White Horse Factory, Bidborough Street, Judd Street; and office, 99, Euston Road, London.

GARDNER'S £2 2s. DINNER SERVICES complete, best quality; a large selection of patterns of the most choice description. Breakfast, Dessert, and Tea Services in the best taste at the lowest possible prices. Table Glass of brilliant quality and finish. Excellent Cut Wines, 3s. 6d. per dozen. Engravings free by post.
GARDNERS', 63, Strand, adjoining Coutts's Bank.

HANDSOME BRASS AND IRON BEDSTEADS.—HEAL & SON'S Show Rooms contain a large assortment of Brass Bedsteads, suitable both for Home use and for Tropical Climates; handsome Iron Bedsteads with Brass Mountings and elegantly Japanned; Plain Iron Bedsteads for Servants; every description of Wood Bedstead that is manufactured, in Mahogany, Birch, Walnut-tree Woods, Polished Deal and Japanned, all fitted with Bedding and Furniture complete, as well as every description of Bedroom Furniture.

HEAL AND SON'S ILLUSTRATED CATALOGUE, containing Designs and Prices of 100 Bedsteads, as well as of 150 different articles of Bedroom Furniture, sent free by post.—HEAL & SON, Bedstead, Bedding, and Bedroom Furniture Manufacturers, 196, Tottenham Court Road, W.

FENDERS, STOVES, AND FIRE-IRONS.—Buyers of the above are requested, before finally deciding, to visit WILLIAM S. BURTON'S SHOW ROOMS. They contain such an assortment of FENDERS, STOVES, RANGES, FIRE-IRONS, and GENERAL IRONMONGERY as cannot be approached elsewhere, either for variety, novelty, beauty of design, or exquisiteness of workmanship. Bright Stoves, with ormolu ornaments and two sets of bars, 3l. 15s. to 33l. 10s.; Bronzed Fenders, with standards, 7s. to 5l. 12s.; Steel Fenders, 2l. 15s. to 11l.; ditto, with rich ormolu ornaments, 2l. 15s. to 18l.; Fire-Irons, from 2s. 3d. the set to 4l. 4s. The BURTON and all other PATENT STOVES, with radiating hearth-plates.

BEDSTEADS, BATHS, AND LAMPS.—WILLIAM S. BURTON has SIX LARGE SHOW ROOMS devoted exclusively to the SEPARATE DISPLAY of Lamps, Baths, and Metallic Bedsteads. The stock of each is at once the largest, newest, and most varied ever submitted to the public, and marked at prices proportionate with those that have tended to make his establishment the most distinguished in this country.

Bedsteads, from	12s. 6d.	to £20	0s. each.
Shower Baths, from	8 0	,, 6 0	,,
Lamps (Moderateur), from ..	6 0	,, 7 7	,,

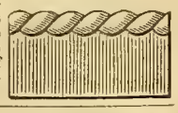
(All other kinds at the same rate.)

Pure Colza Oil .. .. 4s. 3d. per gallon.

DISH COVERS AND HOT-WATER DISHES.—In every material, in great variety, and of the newest and most recherché patterns. Tin Dish Covers, 7s. 6d. the set of six; Block Tin, 12s. 3d. to 27s. 0d. the set of six; elegant modern patterns, 35s. 6d. to 62s. 6d. the set; Britannia Metal, with or without silver-plated handles, 3l. 11s. 0d. to 6l. 3s. 0d. the set; Sheffield plated, 10l. to 16l. 10s. the set; Block-tin Hot-water Dishes, with wells for gravy, 12s. to 30s.; Britannia Metal, 22s. to 77s.; Electro-plated on Nickel, full size, 11l. 11s.

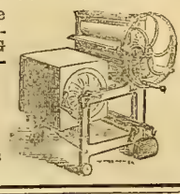
WILLIAM S. BURTON'S GENERAL FURNISHING IRONMONGERY CATALOGUE may be had gratis, and free by post. It contains upwards of 400 Illustrations of his illimited Stock of Electro and Sheffield Plate, Nickel Silver and Britannia Metal goods, Dish Covers and Hot-water Dishes, Stoves, Fenders, Marble Chimney-pieces, Kitchen Ranges, Lamps, Gaseliers, Tea Urns and Kettles, Tea Trays, Clocks, Table Cutlery, Baths and Toilet Ware, Turnery, Iron and Brass Bedsteads, Bedding, Bed Hangings, &c., with Lists of Prices and Plans of the 16 large Show Rooms at 39, Oxford Street; 1, 1a, 2, and 3, Newman Street; and 4, 5, and 6, Perry's Place, London.—Established 1820.

LOOMES AND CO., Whittlesea, MANUFACTURERS OF BRICKS, TILES, POTTERY, &c., beg to call attention to their new CABLE PATTERN GARDEN BORDER EDGING, which not only surpasses others in appearance and durability, but is free from the dangerous points and sharp edges of most.—Price, delivered on any Railway at Peterborough, 5d. per yard.



BY HER MAJESTY'S ROYAL LETTERS PATENT.

NO ONE KNOWING the value of your Patent WASHING, WRINGING, and MANGLING MACHINE, would be without one."—*Vide Mrs. Hall.*

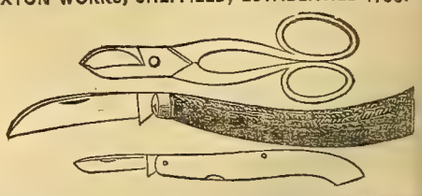


THOMAS BRADFORD, Patentee, Manchester.

Descriptive Pamphlet, with Prices by post.

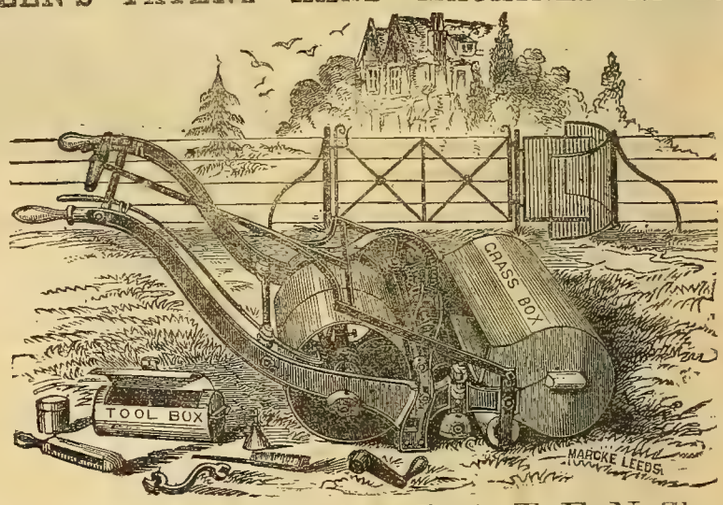
GLAZIERS' DIAMONDS for CUTTING HORTICULTURAL and other GLASS, to be had of the Wholesale Manufacturer, JOHN EDWARDS, 20, Sharp's Alley, West Smithfield, London, E.C. Prices from 10s. to 27s. 6d.

PAXTON WORKS, SHEFFIELD, ESTABLISHED 1738.



SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.—Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

GREEN'S PATENT HAND MACHINES for 1859.



GREEN'S PATENT

GRASS CUTTING, COLLECTING, & ROLLING MACHINES.

MANUFACTORY, LEEDS, YORKSHIRE.

Trial at the London Horticultural Society's Gardens, Chiswick, June 5, 1857

FOUR COMPETITORS.

First trial on level ground; second do. on undulated; third ditto on intricate places around trees, &c., when GREEN'S PATENT was unanimously declared to be the best in each trial by Colonel Challoner, Dr. Lindley and G. M'Ewen, Esq., the appointed judges.

See the *Gardeners' Chronicle* of May 22, 1858, p. 423, under the heading of "Garden Memoranda."

"LONDON HORTICULTURAL GARDENS, CHISWICK.—The Grass in the Arboretum and elsewhere is in excellent condition; it i kept in order by means of one of GREEN'S 2-feet Mowing Machines, which does its work very satisfactorily, and, compare with the scythe, effects a saving of at least one half."

Extract from London *Times* of June 8, and *Gardeners' Chronicle* of June 12, 1858.

"TRIAL OF MOWING MACHINES.—A considerable number of machines of various sizes having been brought to the ground it was agreed that the trial should take place between one Hand Machine of each exhibitor, all selected as nearly a possible of uniform size, and worked by themselves, or their men. The ground to be worked was determined by lot, th pieces having been previously selected of as uniform quality as possible. After trials on level ground and round trees th judges, Colonel Challoner and Mr. Edward Easton, delivered the following award :—

Name.	Time.	Square feet cut.	Square feet cut per minute.	Points indicating quality, 60 being perfection. Quality of work.	Construction of machine.	Lightness of draught.	Total.	Price.
GREEN	6min. 35sec.	1600	242	50	50	60	160	£8 10s.
Shanks	6 35	1302	197	45	50	40	135	7 10
Ferrabee	6 35	1503	228	15	45	50	110	6 0
Deane	6 36	1046	158	25	10	60	95	6 8

(Signed) "C. B. CHALLONER, EDWARD EASTON, Judges."

Extract from the "Cottage Gardener" of June 15, 1858.

"The decision was just what was anticipated, all present being satisfied of the manifest superiority of GREEN'S Machin both in construction, lightness of draught, and superiority of work."

THOMAS GREEN respectfully informs the Nobility, Gentry, Gardeners, Amateurs, and others that upwards of S Hundred of these Machines were sold in 1857, and to show the increasing demand, above 900 were sold the last season. Th have proved to be the best in all cases of competition, are entirely remodelled, and all the little defects pointed out by t judges last year are now rectified. The Patentee now considers the Machines as near perfection as possible; although the Machin have been so much improved at a great additional cost, no extra charge will be made except for a neat Guard, which is plac over the wheels to keep them clean, prevent breakage and accident, which will be 5s. extra to parties requiring them.

THE FOLLOWING IS A LIST OF PRICES :—

Made very strong, suitable for Horse Power, to cut 48 inches, £27; do. 42 inches, £24; do. 36 inches, £21; do., suitab for a strong Pony, to cut 30 inches, £18; do. do., made lighter, suitable for a small Pony or Donkey, to cut 30 ins., £ If fitted up with leather traces, hooks, stretcher, &c., which may be attached to the usual harness or chain traces, 7s. 6d. extr

Box of requisites for cleaning and sharpening, with instructions for keeping the Machine in order, 7s. 6d. extra.

Leather Boots, suitable for Horses' feet, to prevent injury to the lawn, will be for a set of four, 24s. extra.

HAND MACHINES.

To cut 24 inches, £8 10s., suitable for two men.
Do. do., made suitable for a donkey, 20s. extra.
To cut 22 inches, £8 0s., suitable for man, or a man and boy.
To cut 20 inches, £7 10s., suitable for man and boy.
To cut 18 inches, £7 0s., suitable for one man.
To cut 16 inches, £6 10s., suitable for one man.
To cut 14 inches, £6 0s., suitable for a stout lad.

Box and requisites for cleaning and sharpening, with instructions for keeping the Machine in order, 5s. extra.

The above are Nett Cash prices, delivered at any of the principal Railway Stations in England.

*** The Machines are warranted to give satisfaction, or may be at once returned by the party paying the carriage back Leeds. The Patentee has spared neither time nor expense in producing the best and cheapest Mowing, Collecting, and Rolli Machines ever brought before the public.

Hundreds of Testimonials (unsolicited) may be seen, and references given with regard to the superiority of the Machines, applying to the Patentee,

THOMAS GREEN, Smithfield Iron Works, Leeds;

OR 2, VICTORIA STREET, BOTTOM OF HOLBORN HILL.

☞ T. G. *will be glad to receive orders for Machines as early as possible; a great difficulty was fou last season in supplying the number required.*

N.B. Parties desirous of having their Machines repaired may send them to either the London or Leeds Establishmen where they will have the best attention.

HENRY J. MORTON AND CO.,
2, Basinghall Buildings, Leeds.
GALVANISED IRON WATER CISTERNS
for Cottage Houses, &c., to contain 50 gallons, 25s.; 80 gallons, 30s. each; and 140 gallons, 36s., and fitted with tap, keeping the water perfectly sweet and clean; will not rust or corrode. Cisterns of all sizes.
GALVANISED IRON PUMPS
for Liquid Manure or Domestic Use, 3 inches diameter, 30s. and 32s. 6d. each; Tail Pipe for same at from 10d. per foot.
GALVANISED IRON SWING WATER BARROWS
for Garden or Farm use, containing about 20 gallons, entirely formed of iron, 32s. 6d. each.

PARKES' STEEL DIGGING FORKS.
BURGESS AND KEY, 95, Newgate Street, London, being the Wholesale and Retail Agents for these celebrated TOOLS have always a large Stock on hand from which their Customers may select what they may require.
ANTHONY'S PATENT AMERICAN CHURN.—The FIRST PRIZE was again awarded to this Churn in Competition with several others at the Chester Meeting of the Royal Agricultural Society; it has obtained the First Prize given by the Society at every Meeting since 1850.
Messrs. BURGESS & KEY, 95, Newgate Street, strongly recommend it as the most perfect Churn now in use. Full particulars sent on application.

PATRONISED BY
HER MAJESTY QUEEN VICTORIA, HIS MAJESTY THE EMPEROR OF THE FRENCH, AND HIS ROYAL HIGHNESS THE PRINCE OF PRUSSIA.
BY ROYAL LETTERS PATENT.

SHANKS'S PATENT MOWING, ROLLING, COLLECTING, AND DELIVERING MACHINE FOR 1859.

THE ONLY COMPLETE MACHINE FOR HORSE OR PONY POWER.

A. SHANKS AND SON have much pleasure in intimating to the Nobility, Gentry, and Gardeners that they have this season made some most valuable improvements in their HORSE POWER PATENT MOWING AND ROLLING MACHINE for Lawns, Bowling Greens, Grass Walks, Verges, &c. The Improvements consist of—

1.—The Cutter is strengthened, and so constructed that in Mowing the closest and finest Turf there is not the smallest appearance of ribbing.

2.—The Drums are loose on the Shaft, and are made Self-acting by means of two Spiral Springs, so that in turning the Machine will mow as well as when going in a straight line.

3.—From the position of the two Front Pulleys the Machine will mow on the most uneven Lawn, and the Cutter or Plate at the same time is prevented from injuring the Turf. There are no Rollers or anything else to obstruct the Grass in front of the Cutter of the Machine when mowing.

4.—No Machine can turn quicker or more easily than this Machine. The two Front Pulleys swivel, and the Drums on the Shaft are loose, and yet kept in gear by the Patent Spiral Springs, so that the Machine will turn into the most intricate windings of the Flower Garden amongst Trees or Flower Beds, with perfect ease, and without the smallest chance of injuring the shrubs or flowers.

5.—The method of adjusting the cut has been much simplified and improved—so improved that the power of raising or lowering the Machine is applied to both sides of the Machine at once by simply turning a handle. This prevents the possibility of one side of the Machine cutting lower than the other. The Machine may be adjusted to the required cut or raised to the necessary extent for crossing Gravel Walks, &c., in less than a minute.

6.—The Wheels are all protected by Guards, which entirely prevent any particles of Cut Grass or Shrubs, Flowers, &c., from getting into contact with the teeth. A Cast Steel Scraper is introduced to keep the Drums clear of small stones or rubbish in crossing Gravel Walks, &c. The whole Machine is nicely balanced as regards equality of weight in the front and back, and consequently is exceedingly steady in working. Cast steel is used for the Shaft of the Cutter, which makes the Cutter work easier and last much longer. Brass Bushes are used for the Cutter and Driving Shafts, and the Handles or Shafts are made of Malleable Iron, rendering them not nearly so liable to break as the usual cast iron ones.

7.—A Tool-box is fixed to each machine, so that the necessary Nut Keys, Handles, Oil, &c., are at once in readiness when required. This Tool-box is exceedingly convenient.

8.—One of the most valuable of the Patent Improvements A. S. & SON have effected this season in their Machine is in the method of emptying the Grass-box. The want of a speedy and efficient method for this purpose has been much felt for many years past. In the spring, more especially when the Grass springs up rapidly, nothing is more annoying in working a Mowing Machine than the stopping and almost constant travel from the handles to the box, and *vice versâ*, for the purpose of emptying the Grass. A great deal of time is thus lost, independent of the hard work to the man, not only in walking some hundreds of times the length of the Machine in a day, but more especially in the stooping posture which he has so often to endure. Many a Gardener can testify to this. THIS GREAT WANT IN ALL MOWING MACHINES, WHETHER PAST OR PRESENT, IS COMPLETELY OBVIATED IN SHANKS'S PATENT MOWING, ROLLING, COLLECTING AND DELIVERING MACHINE FOR 1859. The improvement consists in the introduction of a simple and efficient apparatus for emptying the box without the man being under the necessity of either leaving the handles or stopping the machine. So effective and complete is this valuable improvement, that the box, if it were possible to fill it, could be emptied at the rate of 60 times a minute, without any undue strain being put on the apparatus. The immense advantages of this invention must be at once apparent to the practical Gardener. It will enable the Machine to do at least a third more work, while the labour and annoyance in working it, as compared with ordinary Machines, is three-fourths lessened. If a Lawn, which formerly took a Machine nine hours to mow can now be done in six hours, with three-fourths less labour to the man who works the Machine, nothing further is necessary to establish the utility and worth of the invention.

The whole Machines are constructed of the best material—the working parts are fitted with the greatest care and nicety—valuable self-acting Machines for Planing, Slotting, Shaping, Screwing, Turning, &c., being constantly used for this purpose. The Machines are consequently exceedingly durable, are easily sharpened, while the execution of the work is unsurpassed. A common labourer can easily manage and work the Machine.

PRICES.

No. 1. (*a*) 48-inch Machine (usually drawn by a horse)	The Horse and Pony Machines are made very strong.	£27 0 0
,, 1.—42-inch Machine (usually drawn by a horse)		24 0 0
,, 2.—36-inch do. (usually drawn by a horse or pony) ..		20 10 0
,, 3.—30-inch do. (usually drawn by a pony)		17 10 0
,, 4.—25-inch do. (usually drawn by a pony or donkey)..		13 10 0
,, 5.—25-inch do. (made light for a small pony or donkey)		9 10 0

Tool-box, with Sharpening Apparatus, 10s. extra.——Boots for Horses' feet, to prevent injury to Soft Lawns, 25s. a set.

Machines Nos. 1 (*a*), 1, 2, 3, and 4 have the Patent Delivering Apparatus attached. No. 5 can either be had with or without this improvement; if with it, 30s. extra.

A. SHANKS & SON have also introduced into their Patent Hand Mowing and Rolling Machine most of the Improvements which they have introduced into the Horse and Pony sizes. No Machine can do better for small Lawns, Flower Gardens, Bowling Greens, Verges, &c. than this one. The Machine is fitted with the loose Rollers and Patent Spiral Springs of the larger sizes: the two small Rollers in front swivel, so that it can be turned in a few square feet of ground. The Cutter is strengthened, the Shaft of which is also made of Cast Steel; the Wheels are protected by a Guard, the two small front Swivel Pulleys are so constructed that they may in an instant be placed in the centre when mowing a Verge; the Machine will cut when turning, the same advantages of perfect uniformity of adjustment, of ability to mow on the most uneven Lawns, and of the advantages and convenience of having a Tool-box ever in readiness, all as explained in Improvements, 3, 5, and 7, in the Horse and Pony sizes, apply with equal force to the New Hand Machine. The Machines are strongly made, are fitted with the same care and precision as the larger sizes, so simple in construction that a labourer can work them, and are quite free from all superfluous and useless gear which has only novelty, not improvement, as a recommendation. These Machines are peculiarly well fitted for turning and cutting amongst Flower Beds, Verges, Bowling Greens, and for small Lawns. The Patent Improvements effected on these Machines for this season render them complete in every part. The draught is greatly lessened, and the execution of the work is unsurpassed.

PRICES OF MACHINES FOR DRAWING OR PUSHING—SEPARATELY OR TOGETHER.

No. 6.—22-inch Machine	£7 17 6	No. 8.—16-inch Machine	£6 10 0
,, 7.—19-inch do.	7 5 0	,, 9.—13-inch do.	5 15 0

PRICES OF MACHINES FOR PULLING ONLY.

No. 10.—22-inch Machine	£7 0 0	No. 12.—16-inch Machine	£6 0 0
No. 11.—19-inch do.	6 10 0	No. 13.—13-inch do.	5 10 0

Extra Cutters, charged at very moderate prices, are sent along with each Machine, if specially ordered.

N.B. The 22-inch Machine is worked by a man and boy; the 19-inch and 16-inch sizes by one man; the 13-inch size by one boy. Tool-box, with sharpening Apparatus, 5s. extra.

The above are Nett Cash prices, and include delivery to any of the principal Railway Stations in England or Scotland. Plain and simple Directions for use are sent along with each Machine.

The Patentees have the greatest confidence in recommending their Patent Mowing, Rolling, Collecting and Delivering Machine, for Horse and Pony Power, and their Patent Mowing and Rolling Machine for Hand Power, as the cheapest, the most efficient, and the best Machines ever brought before the public. Neither time nor expense have been spared in bringing out a Machine in every way complete. Every Lawn should have at least one of these Machines.

SHANKS'S Mowing and Rolling Machine is in operation in her Majesty's gardens at Kew, Windsor, Buckingham Palace, Osborne, and Balmoral; in the gardens of his Majesty Napoleon III., Emperor of the French; in the gardens of his Royal Highness the Prince of Prussia; and in many other places throughout the Continent, as well as in the United States and British America; in many of the gardens of the principal nobility, and in hundreds of other gardens in the kingdom, where its merits have been fully proved, and its success so fully established that to publish testimonials would be quite superfluous.

The Machines are warranted to give ample satisfaction; failing this (which is barely possible), the Machines may be returned to Arbroath Carriage Paid. Nearly 800 Machines were sent out last season.

ALEXANDER SHANKS & SON, Patentees and Sole Manufacturers of Improved Mowing, Rolling, Collecting and Delivering Machines for Lawns, &c.; Agricultural and Horticultural Implement and Machine Makers; Hot-water Apparatus Manufacturers; Brass and Iron Founders, &c.—Dens Iron Works, Arbroath, Forfarshire.

N.B. To prevent disappointment in delivery early Orders are requested.

PRIZE MEDAL, PARIS EXHIBITION 1855.
METCALFE, BINGLEY, AND CO.'S New Pattern and Penetrating Tooth Brushes, Penetrating unbleached Hair Brushes, Improved Flesh and Clothes Brushes, and genuine Smyrna Sponges; and every description of Brush, Comb, and Perfumery for the Toilet. The Tooth Brushes search thoroughly between the divisions of the Teeth and clean them most effectually—the hairs never come loose. M., B., and Co. are sole makers of the Oatmeal and Camphor, and Orris Root Soaps—sold in Tablets (bearing their names and address) at 6d. each, of METCALFE'S celebrated Alkaline Tooth Powder, 2s. per box; and of the New Bouquets.—Sole Establishment, 130B and 131, Oxford St., 2d and 3d doors west from Holles St., London.

IMPORTANT INFORMATION.—Mrs. Brown, of Queen Street, Kingsland, was for years severely afflicted with a scorbutic eruption, covering the back of both hands, and spreading up her arms. She was persuaded to try Dr. ROBERTS'S POOR MAN'S FRIEND and PILULÆ ANTISCROPHULÆ by a friend who had a large wound in her leg which baffled her doctor's skill, but was effectually cured by these medicines. She only took one box of the Pills, and used one pot of the Ointment, which effected a cure to the surprise of her friends, who wish it to be made public for the benefit of her suffering fellow creatures. Dr. ROBERTS'S POOR MAN'S FRIEND and PILULÆ ANTISCROPHULÆ have been proved, by 60 years' experience, successful in the cure of eruptions and wounds of every description. Price 1s. 1½d.; 2s. 9d.; 4s. 6d.; 11s.; and 22s. each.—Sold wholesale by the Proprietors, BEACH & BARNICOTT, at their Dispensary, Bridport, and by the London Houses; and retail by all respectable Medicine Vendors in the United Kingdom and the Colonies.

KEATING'S COD LIVER OIL FOR THE MILLION. Light Brown, as imported, possessing medicinal qualities equal to any yet introduced, while it is offered at one-third the price, that it may be within the reach of all classes.—Sold at 79, St. Paul's Churchyard. Pints, 1s. 8d., Quarts 3s., imperial measure.
TESTIMONIAL FROM DR. URE.
"Having examined a sample of Cod Liver Oil, submitted to me by Mr. KEATING, of St. Paul's Churchyard, I find it of excellent quality, possessing the usual properties of the Oil, and well adapted for medicinal use. (Signed)
"London, Jan. 29, 1855." "ANDREW URE, M.D., F.R.S."

PAINS IN THE BACK, Gravel, Lumbago, Rheumatism, Gout, Indigestion, Flatulency, Nervousness, Debility, &c.—Dr. DE ROOS' COMPOUND RENAL PILLS have been long established as a safe and efficacious remedy for the above complaints, discharges of any kind, retention of urine, and diseases of the kidneys, bladder and urinary organs generally, which, if neglected, frequently end in stone in the bladder and a lingering death. For depression of spirits, incapacity for society, study or business, confusion, giddiness, drowsiness, sleep without refreshment, fear, nervousness, and insanity itself, when arising from or combined with urinary diseases, they are unequalled. By their salutary action in correcting bile and acidity of the stomach, they prevent the formation of stone, and establish the healthy functions of all these organs.—Price 1s. 1½d., 2s. 9d., 4s. 6d., 11s., and 33s. per box, through all Medicine Vendors, or sent free on receipt of the amount in postage stamps, by Dr. DE ROOS, 10, Berners Street, Oxford Street.

HOLLOWAY'S OINTMENT AND PILLS.—These remedies are unequalled in their astonishing effects in all painful and serious cases of ulceration, being as penetrating as powerful, exercising a wonderful influence over the diseased system, but one established fact is worth a thousand theories. "Chas. Croft, of Chepstow, was afflicted with an abscess in the side, baffling all medical skill. Despairing of relief, he was persuaded to use HOLLOWAY'S Ointment and Pills. He did so, and in a short time the healing process commenced, and the perfect cure rapidly followed." No abscess would form near the surface of the body if, on the first appearance of pain, swelling, and redness, HOLLOWAY'S Ointment were well rubbed in, and his purifying Pills freely taken.

LAND WANTED on a Lease of not less than 21 years, from 3 to 4 acres of GROUND for Nursery purposes. It must be on one of the principal lines of road, or near to a Railway Station, and not more than 8 miles from town. The North or North Eastern district would be preferred.—Address, stating terms and particulars, Mr. WILLIAM ARCHBOLD, Agent, 129, Great College Street, Camden Town, N.W.

Sales by Auction.

STANDARD AND OTHER ROSES, DAHLIAS, HERBACEOUS PLANTS, ETC.
MR. HASLAM will Sell as above on TUESDAY, March 8, & THURSDAY, March 17, at the Auction Mart.

CARNATIONS, PICOTEES, PINKS, STANDARD DWARF & CLIMBING ROSES, AMERICAN PLANTS, ETC.
MR. J. WILLMER will Sell as above by Auction, at the Auction Mart, Bartholomew Lane, on THURSDAY, March 10, at 12 o'Clock.—Catalogues at the Mart; and of the Auctioneer, Springfield Nursery, Sunbury, S.W.

FRUIT AND ROSE TREES, HOLLYHOCKS, ETC.
MR. J. C. STEVENS will Sell by Auction at his Great Room, 38, King Street, Covent Garden, on FRIDAY, March 18, at half-past 12 precisely, a large quantity of STANDARD and DWARF ROSES, including H. Perpetuals, Moss, Bourbons, Yellow, and Creeping, &c.; Fruit Trees, including Peach and Nectarine Trees, for Fruit Conservatories and Pots; Standard Lee's Perpetual; Fig Trees, 12 feet, 9 feet, and 6 feet high. 1000 Hollyhocks of good sorts and other Plants.—May be viewed on the morning of Sale and Catalogues had.

TO GENTLEMEN, FLORISTS, AND OTHERS.
MESSRS. PROTHEROE AND MORRIS will Sell by Auction at the Mart, Bartholomew Lane, on FRIDAY, March 11, at 12 o'Clock, a first-class Collection of Carnations, Piccotees, and Pinks; about 300 choice Standard and Dwarf Roses, consisting of the most approved kinds; choice Fruit Trees, Double Camellias, Azalea indica, and other Plants in bloom, selected American Plants, Pæonias, Verbenas, Fuchsias, Dahlias in dry roots, &c.—May be viewed the morning of Sale. Catalogues to be had at the Mart, and of the Auctioneers, American Nursery, Leytonstone.

TO GENTLEMEN, GARDENERS, BUILDERS, ARCHITECTS, AND OTHERS.
MR. DEBENHAM is instructed by Mr. Rentmore, who is retiring from the business, to Sell on the premises, 74, Borough Road, on TUESDAY, March 15, at 12 o'Clock, the Stock of ARTIFICIAL STONE, including Statues, Vases, Fountains, Sundials, and Stands, and every description of Garden Ornaments and Architectural Embellishments; also the Moulds connected with the business, Stock-in-Trade, and effects.—May be viewed three days prior to the Sale, and Catalogues had on the premises and of Mr. DEBENHAM, 80, Cheapside, E.C.

MEADOW AND PASTURE GRASS SEEDS.

GEORGE GIBBS & Co., Seedsmen, 26, Down Street,

BEG to announce that their mixtures of GRASS SEEDS are now ready for delivery. These mixtures are made up expressly to suit the various soils and the growth of each variety is fully tested previous to being bulked. G. G. & Co. having supplied the Seeds for *Hyde Park, St. James's, and Regent's Park, Kensington Gardens, Kennington Park*, &c., for many years, feel assured no further testimonials are requisite. The Seeds are made up into two different mixtures, as they do not sow well together; 2 bushels of the light and 12 lbs. of the heavy seeds are allowed per acre.

Mr. GIBBS, giving his personal attention to the assorting of these mixtures assures his friends that every care is taken with regard to the proper proportions.

MIXTURES FOR PERMANENT MEADOW & PASTURE (adapted to the different soils) 32s. to 34s. per acre.
MIXTURES FOR IMPROVING & RENOVATING OLD GRASS LAND (8 to 12 lbs. per acre) 1s. per lb.
MIXTURES OF THE FINEST SORTS FOR LAWNS, GRASS PLOTS, BOWLING GREENS, &c, 1s. 3d. per lb.

SELECT STOCKS OF THE UNDERMENTIONED AGRICULTURAL SEEDS SUPPLIED AT THE PRICES STATED FOR THE PRESENT MONTH:—

MANGEL WURZEL. Per lb.—s. d.		CARROTS. Per lb.—s. d.		SWEDES. Per lb.—s. d.		RYE-GRASS. Per bushel—s. d.		CLOVERS. Per lb.—s. d.		VARIOUS. Per lb.—s. d.	
Long Red	0 9	White Belgian	1 0	Ashcroft	0 9	Gibbs' Improved Italian	7 0	English Red	9d. to 0 10	Holcus saccharatus	2 0
Elvethan Long Red	0 10	Yellow Belgian	1 3	Skirving's	0 9	Dickenson's Italian	7 0	White Dutch	10d. to 1 0	Lucerne	1 0
Yellow Globe	0 9	Large Altringham	1 6	Matson's	1 0	Fine Imported do.	7 0	Trefoil	4d. to 0 5	Drumhead Cabbage	3 0
Red Globe	0 9	Long Surrey	1 6	Kentish Green Crown	1 0	Common English	6 0	Alsike Hybrid	2 0	Large Cattle Parsnip	1 6
Long Yellow	0 9	James's Scarlet	1 6	Marshall's Purple Top	1 0	Pacey's Perennial	6s. to 7 0	True Cow-grass	1 0	Kohl Rabi	5 0

Full Priced Catalogues sent free on application —Cash or reference required from unknown Correspondents.

GEORGE GIBBS & Co., 26, Down Street, Piccadilly, London, W.

EARLY STRAWBERRIES.—MAY QUEEN: "One of the earliest of all its race, as proved last season at the Chiswick Gardens." Ripe at Egglescliffe, Durham, May 28, 1858. 12s. per doz.; 1l. per 25; 1l. 15s. per 50; 3l. per 100. Good strong plants.

TRIOMPHE.—"A most abundant bearer, Hudson's Bay breed." Ripe as above, June 3d. 12s. per 50; 20s. per 100. Good strong plants.

DUC DE MALAKOFF.—"The earliest of the very large varieties, good." 12s. per 50; 20s. per 100; very strong plants. Nearly every other sort known can be supplied at reasonable prices. Many new interesting and excellent varieties can be recommended, all having been well tried. Early orders will oblige.

WILLIAM J. NICHOLSON, Egglescliffe, Yarm, Yorkshire.

SEED CORN FROM THE CHALK.

MESSRS. RAYNBIRD AND HARVEY beg to offer to Agriculturists requiring change of SEED Talavera, Red Nursery, and April WHEAT, the best sorts for Spring sowing.

Chevalier, Thanet, Golden Drop, Long-eared Nottingham, American, Hudson's Golden Melon, Banham's Sprat, and other varieties of BARLEY.

Canadian Potato, Hopstoun, Poland, and Tartarian OATS.

Fine CLUSTER BEANS, weighing 68 lbs. per bushel.

Samples and Prices on application.

Address—Basingstoke, and 89, Seed Market, Mark Lane, London, E.C.

VERY LARGE ECONOMY IN THE PURCHASE OF SEEDS.

THE ASSORTED COLLECTIONS OFFERED BY

BASS AND BROWN will be found full 25 per cent. more value than other collections offered, and for quality of growth and selection of sorts are not to be surpassed. For names of sorts contained in the three largest collections, see Catalogue, sent free on application.

No. 1 Collection .. £3 0s. 0d. | No. 3 Collection £1 5s. 0d.
No. 2 ,, .. 2 0 0 | No. 4 ,, .. 0 15 0

The assortments of Flower Seeds of their own selection also include the novelties of the season and are very select, with reasonable charges.

Goods (20s. and upwards) free to all stations in London, &c. See Catalogue.

BASS & BROWN, Seed Growers, Sudbury, Suffolk.

THE ROYAL BERKSHIRE

SEED ESTABLISHMENT, READING,

(Under the Patronage of Her Most Gracious Majesty the Queen, his Royal Highness the Prince Consort, and the leading Members of the Royal Agricultural Society of England),

FOR SUPPLYING

SUTTON'S HOME GROWN SEEDS TO ALL PARTS OF THE UNITED KINGDOM.

CARRIAGE FREE (WITH FEW EXCEPTIONS).

SEEDS grown in Berkshire and the Home Counties having obtained great celebrity, SUTTON AND SONS have annually increased their Stocks of Seeds to meet the increasing demand. The undermentioned articles are of superior quality, being all genuine Home-grown Seeds. Agriculturists residing in the most remote parts of the kingdom can now be supplied with Seeds direct from the Growers, which will be found the most effectual means of preventing disappointment.

A Priced List may be had post free.

HOLCUS SACCHARATUS
ITALIAN RYE-GRASS SEED
PERENNIAL RYE-GRASS
MANGEL WURZEL
CARROT OF SORTS

FURZE OR GORSE
CATTLE PARSNIP SEED
GARDEN SEEDS & FLOWER SEEDS
COW CABBAGE
FLAX OR LINSEED

SWEDISH TURNIP SEEDS
YELLOW SCOTCH TURNIPS
HYBRID AND OTHER TURNIPS
KOHL RABI & LUCERNE
ALSIKE HYBRID CLOVER

PERENNIAL WHITE CLOVER
COMMON WHITE CLOVER
PERENNIAL RED CLOVER
COMMON RED CLOVER
YELLOW TREFOIL

SUTTON'S PERMANENT GRASS SEEDS.

GENTLEMEN intending to lay down Land to Permanent Pasture, or for one or two years' lay, are recommended to communicate with us, stating the nature of the soil and situation, that we may advise as to sorts of Grass Seeds most suitable. The Alsike, the Perennial White, and Perennial Red Clover are included in all our mixtures, together with such of the undermentioned as are best adapted to the land to be laid down.

Achillea millefolium (Yarrow)
Agrostis stolonifera (Creeping Bent)
Anthoxanthum odoratum (Sweet Vernal)
Alopecurus pratensis (Meadow Foxtail)
Avena flavescens (yellow Oat Grass)
Agrostis vulgaris (common Bent Grass)
Cynosurus cristatus (Crested Dogstail)
Dactylis glomerata (round-headed Cocksfoot)
Festuca duriuscula (hard Fescue)
Festuca loliacea (Darnel Fescue)
Festuca ovina (Sheep's Fescue)
Festuca rubra (red Fescue)
Festuca pratensis (Meadow Fescue)
Festuca elatior (Tall Fescue)
Festuca heterophylla (various-leaved)
Festuca tenuifolia (fine-leaved Fescue)
Glyceria aquatica (water-sweet Grass)
Holcus avenaceus (tall Oat like Grass)
Lolium perenne (Perennial Rye-grass)
Lolium perenne sempervirens
Lolium perenne Paceyanum
Lolium perenne Stickneyanum
Lolium perenne tenue
Lolium italicum (Italian Rye-grass)
Lotus corniculatus (Bird's-foot Trefoil)
Medicago lupulina (black Medick Grass)
Phleum pratense (Timothy)
Poa nemoralis (wood Meadow Grass)
Poa pratensis (smooth Meadow Grass)
Poa trivialis (rough Meadow Grass)
Poa fertilis (fertile Meadow Grass)
Poa sempervirens (evergreen)
Trifolium minus (red Suckling) [Clover)
Trifolium pratense perenne (Perennial red
Trifolium repens (white Clover), best
Trifolium hybridum (Alsike Clover)

The above may be purchased separately at moderate prices as see List. The best of them are included in the undermentioned mixtures.

Mixtures for laying down Land to Permanent Meadow or Pasture.

The sorts contained in these Mixtures are grown in different localities, and gathered separately, by the hand, expressly for this purpose, by which means all noxious weeds are excluded; they consist of the most nutritive kinds of Fescues, Poas, Sweet Vernal, Perennial Clovers, Loliums, &c., and each sort being kept separate, they are subsequently mixed in such sorts and proportions as are most suitable to the soil to be laid down. 28s. to 34s. per acre, according to the sorts which the soil may require.

Mixtures for Reclaimed Marshes and Heath Lands.

Many acres of land of this description have been successfully laid down to Permanent Pasture by us, with seeds which we have found invariably to thrive on such soil; and the cost for this purpose will be but 20s. to 24s. per acre.

Mixtures for laying down Chalky or Gravelly Uplands and Sheep Downs.

For this purpose Grass Seeds are annually collected from dry and hilly districts, where they are found growing spontaneously; and after many years' experience, we can confidently assure our friends that a good and permanent Sward may be obtained on any upland, from the kinds of Grasses we supply.

Mixtures for Laying down Water Meadows.

In this department also we have been very successful, many customers having expressed their great gratification at the effect of these Seeds. Cost of seeds now reduced to 24s. per acre.

Mixtures to Lay down New Park Lawns.

For this purpose all coarse growing kinds are carefully excluded, and the sward will at all seasons present a luxuriant verdure so desirable in Parks contiguous to the Mansion.

Clover and Grasses for Alternate Husbandry.

Mixtures for one or two years' Lay, at 16s. or 18s. per acre

Renovating Mixture for Improving Old Pastures (6s. to 9s. per acre).

Many old Upland Pastures, Parks, and Meadows, are nearly destitute of Clovers, and the finer and more nutritious sorts of Grasses, in which case we are in the practice of furnishing such sorts only as are wanting. If these seeds are sown early in the Season, the improvement in the pasture will be very considerable and at a small expense. Quantity of seed required, 8 to 12 lbs per acre. Price reduced to 9d. per pound, or 80s. by the cwt.

Fine Grass Lawns in Flower Gardens, &c.

The great expense of cutting and carting turves from a distance may be avoided and a superior turf produced in a few months, by sowing Sutton's Lawn Grass Seeds, which consist solely of the finest and shortest growing kinds, perfectly free from moss and other weeds. Price 2s. 6d. per gallon, 20s. per bushel, or 1s. per lb.

N.B. THE ALSIKE CLOVER IS INCLUDED IN MESSRS. SUTTON'S MIXTURES.

For extra large quantities especial contracts may be made at reduced prices.—CARRIAGE FREE TO ALL PARTS.

SUTTON AND SONS, SEED GROWERS, READING, BERKS.

Editorial Communications should be addressed to "The Editor"—Advertisements and Business Letters to "The Publisher"—at the Office, 5, Upper Wellington Street, Covent Garden, London, W.C.
Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, and FREDERICK MULLETT EVANS, of No. 20, Queen's Road West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and published by them at the Office, No. 5, Upper Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—SATURDAY, March 5, 1859.

THE GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 11.—1859.] SATURDAY, MARCH 12. {Price Fivepence. Stamped Edition, 6*d*.

INDEX.

Acarus, Orchid	216 *a*	Hollyhocks	217 *a*
Agriculture, Theory of	222 *c*	Horticultural Society	218 *c*
Analysis of milk, &c.	222 *a*	Labourers, food of	222 *a*
Anæsthetic, new local	220 *a*	Lardner's Chemistry	219 *b*
Ants, cure for	218 *a*	Lois Weedon farming	224 *c*
Astrapæa Wallichii	220 *a*	London Farmers' Club	223 *c*
Avenues	220 *c*	Niger expedition	218 *b*
Books, noticed	219 *c*	Orchid acarus	216 *a*
Botany, Australian	220 *a*	Pear Delices d'Hardenpont d'Angers	217 *b*
Colours, arrangement of	216 *b*	Plant sales	218 *a*
Correa, monstrous	216 *b*	Ploughing, steam	225 *b*
Cotton, Canadian	223 *b*	Rhododendrons	216 *c*
Dioscorea Batatas	218 *a*	Sheep management	223 *a*
Fallows, autumn	225 *c*	Short-horns, Oxford	225 *a*
Farming, Dorsetshire	224 *a*	Society of Arts, Scottish	225 *b*
— Lois-Weedon	224 *c*	Soils, remarks on	223 *b*
Food, labourers'	222 *a*	Stock farming	222 *b*
Game	222 *b*	Trade lists	218 *a*
Garden expenses	218 *b*	Trees in Walls	217 *b*
Gas lime v. ants	218 *a*	Vines, grafting	217 *c*
Grafting Vines	217 *c*	Walls, trees in	217 *b*
Hedgerows	222 *b*	Wellingtonias, size of	218 *b*
Hexham Farmers' Club	223 *c*		

HORTICULTURAL SOCIETY OF LONDON.—DISTRIBUTION OF SEEDS.

The Seeds annually provided for distribution being now ready, Fellows of the Society who have not received them can obtain them upon application at the Society's Office, 8, St. Martin's Place, Trafalgar Square, W.C.

HORTICULTURAL SOCIETY OF LONDON.—Notice is hereby given that the business of the Society will be carried on in future at No. 8, St. Martin's Place, Trafalgar Square, W.C.

TUNBRIDGE WELLS HORTICULTURAL FETE FOR 1859.—Under the patronage of the Marquis Camden, The Earl of Abergavenny, The Earl De la Warr, The Lord De L'Isle, The Lord Viscount Hardinge.

This Fete is fixed to take place on FRIDAY, JUNE 24

A Schedule of Prizes, and other particulars, will be shortly announced.

8, Parade, Tunbridge Wells. E. F. Loof, Hon. Sec.

EXHIBITION OF HYACINTHS.—A Grand Exhibition of HYACINTHS, &c., will be held during the week commencing March 14, at the Highgate Nurseries, London, N., to an inspection of which Wm. Cutbush & Son respectfully invite all admirers of these lovely spring flowers. Open each day from 9 o'clock till dusk.

CARNATIONS AND PICCOTEES.

CHARLES TURNER'S plants of the above are unusually fine this season, and are now ready for sending in small pots. The collection is most extensive. See Catalogue, which may be had on application.—Royal Nurseries, Slough.

YELLOW ROSES.—Madame William, orange yellow; Isabella Gray, golden yellow. Strong plants, fit for immediate forcing, 8*s*. 6*d*. the pair.

A. Paul & Son, Nurseries, Cheshunt, Herts.

LADY DOWNE'S GRAPE.

JAS. BACKHOUSE and SON can still supply good Canes of this distinct and excellent Grape at 10*s*. 6*d*. each. As a long-keeping species it is unsurpassed, the bunches hanging in fine condition 6 to 8 months after ripening.

York Nurseries.—March 12.

CALCEOLARIAS.—A few hundreds of the finest strain of SEEDLING CALCEOLARIAS in England, at 4*s*. per dozen, at B. Whitham's, Clough Nursery, Mottram, near Manchester.

DIOSCOREA BATATAS.—Fine roots, 9 to 12 inches long, 5*s*. per dozen; extra size, 10*s*. per dozen.

Bass & Brown, Seed Growers, &c., Sudbury, Suffolk.

SEED POTATOES.

SODEN'S OXFORD EARLY		ASH-LEAVED KIDNEY	
		WALNUT-LEAVED ditto	
SHAW	ditto 2d	FLUKE KIDNEY	
REGENTS	ditto 3d	RED ASH-LEAF	ditto

and all kinds worth cultivating. The above sorts can be particularly recommended as good croppers, and free from disease.

A good supply of SHILLING'S QUEEN CABBAGE, the best in cultivation

Joseph May & Co., 1, Wellington Street, Strand, W.C.

THE ALLIANCE POTATO.—Patronised by her Most Gracious Majesty the Queen, the Emperor of the French, and the Nobility of England, Scotland, and Wales. One Peck of these celebrated White Potatoes can be obtained of the grower only, Mr. James Copeland, Thames Street, Windsor, on receipt of Post-office Order for 7*s*. 6*d*.

500 BUSHELS of FLUKE and WHITE BLOSSOM SEED POTATOES, true, free from disease, and suitable sizes, at 4*s*. the bushel of 80 lbs., samples of which may be had on application to Mr. Wm. Grosvenor, Prospect Nursery, Cheddleton, near Leek, Staffordshire.

A remittance or reference from unknown correspondents.

HUDSON'S GOLDEN MELON BARLEY.—Selected Samples for Seed of this most valuable variety, superior both for produce and malting quality, may be had of Raynbird & Harvey, of Basingstoke; and 89, Seed Market, Mark Lane, E.C.

HOLCUS SACCHARATUS, or CHINA SUGAR CANE GRASS.—Seed of this lately introduced Fodder plant can be supplied by Nutting and Sons in any quantity. Price on application.

Seed Warehouses, 60, Barbican, London, E.C.

HOLCUS SACCHARATUS, or North China Sugar-Cane.—Pamphlet, "A Visit and a Plant;" the only English authority on the Cultivation of the above. Post free 6*d*. Prices of Seed on application. Samples 6*d*. Four varieties of Holcus remitted free by post on receipt of 10*s*.

CHINESE YAMS, 4*s*. per dozen.

ASPARAGUS plants, 16*s*. per 1000.

John W. Clarke, Whittlesea, Cambridgeshire.

PRESENT PRICES OF FARM SEEDS.

SUTTON'S FARM SEED LIST is now ready, and may be had post free.

Royal Berkshire Seed Establishment, Reading.

NEW FARM SEEDS.—Purchasers of large quantities of FARM SEEDS will be treated liberally on application to Sutton & Sons, Royal Berkshire Seed Establishment, Reading.

NEW PLANT CATALOGUE.

CHARLES TURNER'S DESCRIPTIVE CATALOGUE is now ready, containing selections of the popular Flowers of the day, including novelties now offered for the first time.—The Royal Nurseries, Slough.

FERN CATALOGUE.

ROBERT SIM'S NEW DESCRIPTIVE AND PRICED CATALOGUE, No. 6 (62 pages) of his COLLECTION of BRITISH and EXOTIC FERNS, can be had, post free, for 8 stamps. Gratis to all previous purchasers of Ferns.

Nursery, Foot's Cray, Kent, S.E.

GEORGE BAKER begs to inform the Nobility and Public that his DESCRIPTIVE CATALOGUE of AMERICAN PLANTS and GENERAL NURSERY STOCK will be sent free on application.

American Nursery, Windlesham, near Bagshot, Surrey, about 1 mile from Sunningdale Station, South Western Railway.

KITCHEN GARDEN SEEDS.

JOHN CATTELL begs respectfully to announce that his CATALOGUE of the above may be had free by return of Post. It contains selections of the most approved culinary vegetables in cultivation, nearly the whole of them having been saved under J. C.'s own personal superintendence.—Nursery and Seed Establishment, Westerham, Kent.

NEW DAHLIAS.

JOHN KEYNES'S SELECT CATALOGUE OF DAHLIAS, ROSES, CARNATIONS, PINKS, &c., containing Lists of all the valuable Show Flowers in each class, is now ready and will be sent on application.

Castle Street Nursery, Salisbury.—March 12.

NEW CATALOGUE OF FLORIST FLOWERS, &c.

DOWNIE and LAIRD beg to intimate that their DESCRIPTIVE CATALOGUE of FLORIST FLOWERS, New VEGETABLE and FLOWER SEEDS for 1859, is now Ready, and will be sent free on application.

17, South Frederick Street, Edinburgh.

STRAWBERRY PLANTS can now be supplied of every kind worth growing, warranted to produce a good crop this year. They are transplanted plants, and will be sent with a ball of earth to each. Price 10*s*. per 100, or in less quantities 2*s*. per dozen.—Apply to R. S. Yates, St. Ann's, Manchester.

STRAWBERRY PLANTS, Sale for this Month only.—Very fine strong Plants of the three early sorts advertised last month can still be supplied with 100 other varieties. The price according to sorts and numbers required.—Apply to the Grower, William James Nicholson, Egglescliffe, near Yarm, Yorkshire.

FRUITING VINES.

JOHN and CHARLES LEE beg to offer extra strong short-jointed and well-ripened FRUITING VINES of the following kinds:—

BLACK HAMBURGH	BLACK PRINCE
BLACK FRONTIGNAN	ROYAL MUSCADINE

Nursery and Seed Establishment, Hammersmith, London.

THE GREAT VINE AT HAMPTON COURT.

THE SUBSCRIBERS being the holders of the Royal Kitchen Gardens, Hampton Court, are enabled to offer genuine the famous and truly excellent HAMPTON COURT BLACK HAMBURGH GRAPE.

Strong well-ripened plants in 9-inch pots, 42*s*. and 60*s*. per doz.
,, ,, fruiting plants in 12-inch pots, 10*s*. 6*d*. each.

If purchased in large numbers a considerable reduction will be made in price.—Jackson & Son, Nurseries, Kingston, S.W.

THE IMPROVED CUSTARD MARROW.—See drawing of this handsome and productive variety in the *Gardeners' Chronicle* of Jan. 29 and Feb. 12. 12 seeds for 13 postage stamps; 9 seeds for 7 stamps. The trade supplied.

Bass & Brown, Seed Growers, Sudbury, Suffolk.

GRAYSON'S GIANT ASPARAGUS.—
Fine 2-year roots, 2*s*. 6*d*. per 100; or 21*s*. per 1000.
,, 3-year ,, 3*s*. 6*d*. ,, 100; or 30*s*. ,, ,,
The usual allowance to the trade.

Bass & Brown, Nurserymen, Sudbury, Suffolk.

HENRY'S HYBRID SCOTCH LEEK.

CHARLES ALEXANDER, Seedsman, Edinburgh, offers Seeds of the above unrivalled LEEK at 1*s*. and 2*s*. 6*d*. per packet.

He exhibited three in December last which weighed 9 lbs., and blanched to upwards of 12 inches each.

LAING'S MAMMOTH RED CELERY.—The largest and best flavoured Celery known, and will not run to seed until the second year. (See former advertisement.)

Packets, 1*s*. each; large trade do., 3*s*. 6*d*., per post prepaid. Stamps received in payment.

Youell & Co., Royal Nursery, Great Yarmouth.

SPERGULA PILIFERA.—An established plant of the above that will blossom during the coming summer, and prove itself a perfect substitute for Grass Lawns without mowing, sent post free on receipt of 2*s*. 6*d*. or 30 stamps.—Address John Summers, Gardener, Forest Hill, Sydenham.

DOUBLE ITALIAN TUBEROSE ROOTS, 4*s*. per dozen.—The annual importation of the above named beautiful and fragrant Flower has just been received, and large and well selected Bulbs may be obtained, without disappointment, at A. Corbett's Foreign Warehouse, 18, Pall Mall.

N.B. Printed regulations for treatment sent; also, just arrived, very moist and open Parmesan Cheeses.

NEW ZEALAND RUNNING BEAN.—Packets of 12 Seeds, for 14 stamps.

Bass & Brown, Seed Growers, &c., Sudbury, Suffolk.

NEW ZEALAND RUNNER BEAN, as noticed by Dr. Lindley to be the true sort, 5*s*. 8*d*. per 100 (post free) to the Trade. Cash.—Page & Toogood, Seed Growers and Merchants, Southampton.

TRITONEA AUREA.—Fine strong Roots of this free and most beautiful orange flowering bulb, 1*s*. 6*d*. each, or 15*s*. per dozen.

Bass & Brown, Sudbury, Suffolk.

CHEAP, SELECT, AND USEFUL NURSERY STOCK.

WM. JACKSON and CO., of Bedale, Yorkshire, beg to call attention to their advertisement in the *Gardeners' Chronicle* of March 5, page 187.

HANDSOME LARGE SPECIMEN GREENHOUSE PLANTS.—See Advertisement in *Gardeners' Chronicle*, March 5, page 186.

CONIFERÆ.

A. PAUL and SON have a large stock of the above, very handsome, in fine order for removal, many suited for immediate effect. For particulars see Advertisements in *Gardeners' Chronicle* of November and December last.—Nurseries, Cheshunt, Herts.

HALF A MILLION ONE-YEAR SEEDLING OAKS (Strong and Stout).

JAMES MELDRUM, Nurseryman, Kendal, Westmoreland, offers the above in quantities to suit purchasers. Price reasonable, on application.

SPECIMEN IRISH YEWS.—Handsome specimens of this very Ornamental Tree of all sizes up to 9 feet in great numbers. Price according to number wanted on application.—Thomas Jackson & Son, Nurseries, Kingston, S.W.

TO THE TRADE.—Strong Transplanted Ash, Acacia, Mountain Ash, Alder, Birch, Wych and other Elms, Hornbeam, Hazels, Limes, Maples, Poplars of sorts, Sycamore, Huntingdon Willows—3, 4, 5, and 6 feet. On grounds that must be cleared, and will be sold cheap. Prices on application.

James Dickson & Sons, the Newton Nurseries, near Chester.

STRONG LARCH, OAK, AND THORNS.

JAMES HUDDART, Nurseryman and Seedsman, Preston, has on hand a quantity of the above, very strong, at reasonable prices. Also a quantity of two-year Seedling OAK and ASH. Prices on application.—March 12.

TO NURSERYMEN AND CONTRACTORS FOR NEW GROUND WORK.

BOX EDGING FOR SALE in large or small quantities.—800 yards of very good BOX EDGING at 6*d*. per yard, each yard will plant 5 yards of new edging; delivered at Rugby or Ullesthorpe Stations.—Apply, post paid, to Mr. West, Newnham Paddox, Lutterworth. Leicestershire.

100 Strong, healthy, SUCCESSION PINE APPLE PLANTS to be sold; about a third of the quantity showing fruit.—Apply to M. P., Mr. Laking, 26, Half Moon Street, Piccadilly.

TO THE SEED TRADE.

THOMAS AYRES, Jun., Seedsman and Grower, Biggleswade, Beds., can supply every kind of Wurzel, Swede, and common Turnip Seeds, on the most reasonable terms for cash.

N.B. Dealer in Culinary and Flower Seeds, Fruit Trees, Shrubs, and Flowering Plants.

DICKINSON'S ITALIAN RYE-GRASS SEED will be Sold only by himself. The price the present season is 48*s*. per quarter, 7*s*. per bushel for present payment.

New Park, Lymington, Hants.

ITALIAN RYE-GRASS SEED.—Buyers of this Seed will please write for samples, present price 24*s*. per cwt., to J. Dixon, Seedsman, Kendal.

GRASS CROPS.—All descriptions of Grass Land should be dressed with Manure not later than the end of March. CUERO GUANO for this crop, and also for spring corn, is now ready for delivery, price 7*l*. 10*s*. per ton for Grass, and 8*l*. 8*s*. for Corn.—Manufacturers and Patentees, John Chisholme, Son, & Co., 33, Mark Lane, E.C.

PAMPAS GRASS (Gynerium Argenteum).—The beauty of this extraordinary plant has this season been fully appreciated. It can be supplied by the dozen, hundred, or thousand, by Charles Noble, Bagshot, Surrey.

JOHN CULVERWELL, Taunton, begs to call the attention of Agriculturists to his superior selection of GRASS SEEDS, which for Purity, change of Soil, and Climate, will bear comparison with any house in the kingdom. Prices, terms, and samples forwarded on application.

GIANT SAINFOIN SEED.—Seed of this excellent and productive Plant may be had of Raynbird & Harvey, Basingstoke, and 89, Seed Market, Mark Lane. Samples and prices on application.

N.B. R. & H. can also supply Common Sainfoin both of English and French growth at market prices.

THE ALSIKE CLOVER.—This valuable but scarce Clover Seed is included in Messrs. Sutton's mixtures of Clover and Grass Seeds for permanent pasture and for alternate husbandry. It can be supplied alone if required. Price fluctuating, to be had on application.

Royal Berks Seed Establishment, Reading.

TO THE TRADE.

TO BE SOLD, 200 bushels of GREEN-TOP YELLOW SWEDE SEED, 100 bushels of LIVERPOOL SWEDE Ditto, 60 bushels of DALE'S HYBRID, growing from first-rate stock, warranted to grow well, and free from disease. Terms on application.—Address A. B., care of Messrs. Lamb, 7, Bull Head Court, Newgate Street.

ROYAL BOTANIC SOCIETY OF LONDON,
REGENT'S PARK.

SPRING EXHIBITIONS.—In the large Nursery Establishments in the neighbourhood of London and elsewhere, many new and valuable plants are cultivated which come into bloom during the months of March and April, too early in the season for Exhibition at the ordinary Metropolitan Flower Shows. In order to supply an opportunity for displaying to advantage Spring Flowers of this description, the Council of the Royal Botanic Society have resolved to invite Nurserymen and other cultivators to contribute for competition small collections of such plants, to be arranged for that purpose in the Conservatory

REGULATIONS.—Persons intending to compete on these occasions are required to inform Mr. MARNOCK, by letter, addressed to him at the Garden, not later than the Saturday preceding each of the days of Exhibition, and to state the probable amount of space, in square feet, that their plants will require.

All plants, whether for competition or not, must be staged before 10 o'clock, A.M., on the day of Exhibition, at which hour the Exhibitors will be required to leave the Conservatory (while the Judges are engaged in making the Awards). At 1 o'clock the Awards will be declared, when the Fellows and their friends will be admitted.

Plants contributed for competition are not to be removed before 6 o'clock on the same evening, but they may be left for several days, at the option of the owner.

Should any of the collections comprise individual objects of special merit, the Judges will have the power to select and mark their approval of such plants by extra Medals.

All plants contributed must be accompanied by their names, if known, and the country from whence they have been received.

SCHEDULE OF PRIZES.

	Silver Medal.	Small Silver Medal.	Bronze Medal.	Certificate.
WEDNESDAY, March 23, 1859.				
New plants, either species or varieties, and whether in bloom or not	..	S. S.	B.	C.
12 Miscellaneous plants, 6 at least of the 12 plants must be in bloom	S.	S. S.	B.	C.
6 Azaleas, in pots not larger than 11 ins. across	..	S. S.	B.	C.
12 Narcissus Polyanthus	..	S. S.	B.	C.
12 Hyacinths	..	S. S.	B.	C.
WEDNESDAY, April 6, 1859.				
New plants, either species or varieties, and whether in bloom or not	..	S. S.	B.	C.
12 Miscellaneous plants, 6 at least of the 12 plants must be in bloom	S.	S. S	B.	C.
6 Cinerarias	..	S. S.	B.	C.
6 Roses, in pots not larger than 8 inches across	..	S. S.	B.	C.
12 Primula chinensis	..	S. S.	B.	C.
WEDNESDAY, April 20, 1859.				
New plants, either species or varieties, and whether in bloom or not	..	S. S.	B.	C.
12 Miscellaneous plants, 6 at least of the 12 plants must be in bloom	S.	S. S	B.	C.
6 Azaleas, in pots not larger than 11 ins. across	..	S. S.	B.	C.
12 Auriculas	..	S. S.	B.	C.
6 Pelargoniums, in bloom, any kind	..	S. S.	B.	C.

By Order of the Council,
J. DE C. SOWERBY, Secretary.

NATIONAL FLORICULTURAL SOCIETY.—
21, REGENT STREET, LONDON.

At a special General Meeting of Members held on Thursday, March 3, 1859, RICHARD STAINS, Esq., Treasurer, in the Chair. On the motion of Mr. Arthur Henderson, seconded by Mr. John Salter, it was unanimously agreed:—

"That the Royal Botanic Society of London having announced their intention to hold extra meetings for the purpose of awarding Prizes to Seedling Plants, both species and varieties—the sole object for which the National Floricultural Society was established: this meeting is of opinion that as there no longer exists a necessity for its continuance, it be now dissolved, and that the Treasurer be empowered to collect the arrears of subscription and discharge the liabilities of the Society." RICHARD DEAN, Secretary.

BATH AND WEST OF ENGLAND SOCIETY
FOR THE ENCOURAGEMENT OF AGRICULTURE, ARTS, MANUFACTURES, AND COMMERCE.—An Exhibition of FLOWERS, FLOWERING, and ORNAMENTAL PLANTS, FRUIT, and VEGETABLES, will take place on June 1, 2, and 3, in connexion with the General Exhibition of the above Society, on the occasion of their North Devon Meeting at Barnstaple, when the following Prizes will be offered:—

		1st.	2d
I.—1.	For the best collection of not less than 20 Stove or Greenhouse Plants (Nurserymen)	£3	
2.	Do. do. .. .. (Amateurs)	2	£1
II.—1.	For the best collection of not less than 12 Rhododendrons and Chinese Azaleas (Nurserymen)	3	—
2.	For the best collection of not less than 8 do. .. .. .. (Amateurs)	2	1
III.—1.	For the best collection of not less than 8 Roses in pots .. .. (Nurserymen)	3	—
IV.—1.	For the best collection of not less than 20 Variegated Plants, or plants remarkable for their fine foliage (Nurserymen)	3	—
V.—1.	For the best collection of not less than 20 Ferns of any kind .. (Amateurs)	2	1
VI.—1.	For the best ornamental basket of Flowers, or of Flowers and Foliage .. (Amateurs)	2	1
VII.—1.	For the best group of specimens of Coniferæ, preference being given to newly introduced kinds .. .. (Nurserymen)	5	—
VIII.—1.	For the best specimen of any newly introduced or extremely rare genus of Ornamental Plant, or object of special merit in the exhibition .. (Nurserymen)	1	—

In addition to the above, prizes to the amount of 10*l.* will be offered for Fruit and Vegetables. A portion of the Society's ground will be set apart for the present exhibition, and space will be allotted either in a marquee or the promenade, at the discretion of the managing committee, to Nurserymen who may wish to arrange and exhibit their collections in distinct sections, irrespective of competition for prizes. Space will also be allotted for the display of Garden Decorations and works of Ornamental Art associated with Horticulture.

Plants intended for the Exhibition will (on being consigned to the Horticultural Committee) have free transit over the line of railway from Exeter to Barnstaple.

Application for space to be made to the undersigned before May 1 next.

All articles for exhibition must be staged by the evening of Tuesday, May 31, and are not to be removed earlier than the morning of Saturday, June 4.

(Signed) GEORGE BROWN,
Barnstaple. Hon. Sec. Local Committee.

HENRY MAY begs to offer the following, in fine stout plants, as under:—

	s.	d.
Calceolaria aurea floribunda, 2s. 6d. per doz.; per 100 ..	16	0
,, Phillipsii, deep crimson, 2s. 6d. per doz.; per 100	16	0
,, Stewartii, bright yellow, 2s. 6d. per doz.; per 100	16	0
,, Prince of Orange, 2s. 6d. per doz.; per 100 ..	16	0
,, Yellow do., fine yellow, 2s. 6d. per doz.; per 100	16	0
12 fine sorts of Fuchsias of 1858, per doz...	6	0
12 ,, ,, 1857, ,, ...	4	0
12 ,, Verbenas, of 1858 ,, ...	6	0
12 ,, ,, 1857 ,, ...	4	0
12 fine named Phloxes, 6s.; 50 fine named Phloxes ..	20	0
12 fine Scarlet Geraniums, 2s. 6d.; 50 do. do.	8	0
12 double Purple Senecio, 2s. 6d.; 50 do, ...	8	0
12 Salvia patens, 6s.; 12 Salvia fulgens	3	0
12 fine sorts Antirrhinums, 3s.; 50 do.	10	0
12 fine named Hollyhocks	6	0

Hollyhock Seed from finest named sorts, 1s. per packet.
Antirrhinum do. do. do. 1s. per packet.
Address HENRY MAY, the Hope Nurseries, near Bedale, Yorksh.

GRIEVE'S NEW DOUBLE PETUNIAS.—The universal satisfaction given by the PETUNIAS sent out last spring, raised by Mr. Grieve, Gardener at Culford Hall, near Bury St. Edmund's, induces the advertisers to offer to the public those raised by that persevering hybridiser last summer, which are considered superior to any yet offered; not in the size of the flowers, but in brilliancy of colour, consistence of petal, and regularity in form—all being very double. The following are the names adopted, which may be respectively taken as an approximate description of their colours:—

CRUENTUM, CANDIDUM, PURPURASCENS. } Large flowers, and most appropriate for pot culture.
ATROCOCCINEUM, ROSEUM STRIATUM, ATRORUSEUM. } Medium-size flowers and neat habit; probably useful for bedding.

Plants of the above, 5s. each; or 21s. the set of six, to be sent out the first week in April by OSBORN & SONS, Fulham Nursery, London, S. W.

N.B. The usual allowance to the trade.

SELECT LIST OF NOVELTIES FROM CATALOGUE 1859.

Carter's Tom Thumb Nasturtion
Lagenaria vittata
Œnothera Drummondi nana
Lupinus Hartwegi cœlestinus
Œnothera bistorta Veitchi
Cosmidium Burridgi
Lupinus nanus albus
Viscaria Dunetti
Laxton's Hybrid Pinks
Dwarf spotted Nasturtion
Nolana paradoxa violacea
Fenzlia dianthiflora
Gaillardia hybrida grandiflora
Lobelia formosa
Viscaria cœli rosa alba
Marigold French Orange.

J. C. & Co. also wish to call attention to their Splendid Collections of Imported
GERMAN & FRENCH ASTERS, GERMAN STOCKS, BALSAMS, & WALLFLOWERS,
UNIVERSALLY ACKNOWLEDGED TO BE UNSURPASSED.

For a Full Description of the above articles they beg to refer to their CATALOGUE, which will be forwarded gratis and post free on application to

JAMES CARTER & Co., Seedsmen, 238, High Holborn. W.C.

SEEDS RIPENED ON THE CONTINENT.

JAMES CARTER & Co.

HAVING observed their name mentioned in an advertisement in connection with a late correspondent, feel it their duty to state that, preferring to have their Seeds from the Continental growers *direct*, one of the Firm has travelled during the past autumn with that object, *and purposes doing so every season*; the services of the correspondent alluded to are therefore dispensed with. Their Seeds for the present season, having been *personally* selected, are better than any they have hitherto offered.

JAMES CARTER & CO., Seedsmen, 238, High Holborn, London, W.C.

GENUINE KITCHEN GARDEN SEEDS.

JAMES CARTER & CO.

ARE NOW READY TO SUPPLY SEEDS FOR THE VEGETABLE AND FLOWER GARDEN, WHICH WILL BE FOUND, AS USUAL, OF THE BEST QUALITY ONLY.

CARTER'S "ENCYCLOPÆDIC CATALOGUE OF SEEDS,
AND GARDENER'S VADE MECUM."

The Twenty-fourth Annual Issue of the above is now ready, and, in addition to its usual comprehensiveness, has affixed a CALENDAR OF OPERATIONS for each month in the year for the Vegetable and Flower GARDEN, also for the Stove, Conservatory, Greenhouse, Orchid House, Pineries, Vineries, Pits, Frames, &c., forming a complete Gardener's Book of reference, which it is hoped will be found useful alike to the Amateur and professional Gardener. Forwarded free of charge and post paid to all parts of the world upon application.

JAMES CARTER & CO., Seedsmen, 238, High Holborn, London, W.C.

ESTABLISHED FULL HALF A CENTURY.

SEEDS! SEEDS!!
LARGE ECONOMY IN THE PURCHASE OF SEEDS.

HAVING upwards of 30 years adopted the practice of testing the character of Vegetables with a careful examination of the new sorts which have from time to time been introduced, it has enabled us to offer such as we have proved of real merit by repeated trials.

BASS & BROWN'S ASSORTED COLLECTIONS OF VEGETABLE SEEDS.

These assorted Collections will be found of full 25 per cent. more value than other collections offered, and for quality of growth and selection of sorts are not to be surpassed. For names of sorts contained in the three largest collections see Catalogue (free on application).

No. 1 Collection contains 20 quarts of Peas, 10 sorts of Broccoli for succession, with all other Vegetables in proportion, of choicest kinds for a large garden .. £3 0 0
No. 2 Collection 2 0 0
No. 3 Collection 1 5 0
No. 4 Collection 0 15 0

FLOWER SEEDS.

The following assortments of Flower Seeds also include a large number of valuable novelties and are very select, with reasonable charges:—

HARDY ANNUALS.—100 varieties, 15s.; 50 vars., 8s. 6d.; 30 vars., 5s. 6d.; 20 vars., 4s.
HALF-HARDY ANNUALS.—50 varieties, 12s. 6d.; 30 vars., 8s.; 20 vars., 6s.
HARDY AND HALF-HARDY ANNUALS.—100 varieties, 20s.; 50 vars., 10s. 6d.; 30 vars., 7s.; 20 vars., 5s.
DWARF HARDY ANNUALS FOR FILLING BEDS.—20 varieties, large packets, 7s. 6d.; 12 vars., 5s.
GREENHOUSE ANNUALS.—20 vars., 7s. 6d.; 12 vars., 5s.
*** Greenhouse Perennials, Hardy Biennials and Perennials, &c., in assortments; also Flower Seeds in cheaper assortments. See Catalogue.
IMPORTED GERMAN SEEDS.—The varieties of German Stock, Aster, Larkspur, Wallflower, &c., are remarkably fine and double. See Catalogue.
SEEDS OF CHOICE FLORISTS' FLOWERS.—These, comprising Calceolaria, Cineraria, Geranium, Fuchsia, Hollyhock, Chinese Primula, and many others, have been saved from very choice and first-rate collections, and almost entirely of our own growth.

FLOWER ROOTS FOR SPRING PLANTING.

For these, comprising Gladioli, Ranunculi, Anemones, Liliums, Tigridias, Tritonias, and numerous others, see end of Seed Catalogue.

CAPE AND OTHER BULBS IN POTS.

These comprise fine varieties of Ixias, Sparaxis, Gladioli, Tropæolums, the superb new Eucharis Amazonica, Tritomas now in flower, Watsonias, Cyclamens, and many others. See Seed Catalogue, page 56.

Goods (20s. and upwards) Carriage Free to all the Railway Stations in London, &c. See Catalogue.

Post-office Orders payable to BASS & BROWN, *or to* STEPHEN BROWN. *Remittances required from unknown Correspondents.*

BASS & BROWN, SEED GROWERS, SUDBURY, SUFFOLK.

SELECT
CULTIVATED GRASSES FOR PERMANENT PASTURE, &c.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY
(LIMITED),

BEG TO ANNOUNCE THAT THEIR MIXTURES OF GRASS SEEDS ARE NOW READY FOR DELIVERY.

THE MIXED GRASSES FOR **PERMANENT PASTURE** are selected according to the best tables, and the various sorts are all carefully saved and free from noxious weeds. The selections will contain several species of Festucas, Loliums, Poas, and Trifoliums in such quantities as will best suit the soil for which the selection is intended. Two bushels of light seed and 12 lbs. of heavy seed per acre, the quantity usually sent, will be found sufficient for most soils.

For **LAWNS or ORNAMENTAL PARKS** it is desirable to have a predominance of EVERGREEN GRASSES. All the coarser kinds are therefore entirely excluded from this Mixture, so that the sward shall present a luxuriant and handsome appearance.

MIXTURES for PERMANENT MEADOW and PASTURE ... ... **30s. to 34s. per acre.**
MIXTURES for RENOVATING ... ... **10d. per lb.**
MIXTURES for LAWNS and ORNAMENTAL PARKS ... ... **1s. 3d. per lb.**

☞ *For large quantities special contracts may be made at reduced prices.*

The following **AGRICULTURAL SEEDS,** saved from selected stocks, can be supplied at the prices quoted during the current month:—

SWEDES. Per lb.—s. d.		MANGELS. Per lb.—s. d.	
Plymouth Improved	1 0	Fisher Hobbs (saved by W. Fisher Hobbs, Esq.)	2 0
Marshall's	1 0	Morton's Yellow Globe	1 6
Skirving's	0 9	Elvetham Long Red	1 0
Grant's Pine Apple	1 0	Long Red	0 9
Matson's	1 0	Yellow Globe	0 9

CARROT. Per lb.—s. d.	
White Belgian	1 0
Yellow Belgian	1 6
Long Surrey	1 6
Large Altringham	1 6
Long Orange	1 6

RYE-GRASS. Per bushel.—s. d.	
Improved Italian Rye	8 0
Fine imported ditto	7 0
Common English	6 6
Evergreen Rye, or Devon Eaver	7 0
Pacey's	6 6

CLOVERS. Per lb.	
English Red	9d. and 10d.
Somersetshire Cow Grass, 10d. and 1s.	
White Dutch	1s. 0d.
Trefoil	0 5
Lucerne	1 0

MISCELLANEOUS. Per lb.—s. d.	
Large Scotch Drumhead Cabbage	3 0
Swedenburg Cabbage	3 0
Dwarf Flatpole	3 0
Kohl Rabi, green & purple	5 0
Holcus saccharatus	2 0

FREIGHT AND CARRIAGE.

All Orders for Seeds above 1*l.* will be delivered free of charge to any Railway Station between Plymouth and Paddington. All Orders above 2*l.* free to any Station on the Broad Gauge Railways, or to Cork, Dublin, and Liverpool by Steamers; and to Guernsey and Jersey by Traders. All Orders above 5*l.* will be delivered free of carriage to any Railway Station in England and Wales; and to any Steam Port in England, Wales, Scotland, Ireland, Guernsey, or Jersey.

PRICE CURRENTS and DESCRIPTIVE CATALOGUES sent post free on application.

ADDRESS—PLYMOUTH SEED COMPANY, PLYMOUTH.

CALLICARPA PURPUREA.

JOHN STANDISH, the exhibitor of the above (at St. James's Hall), can supply a few good plants at 7*s.* 6*d.* each. The following passage from Dr. Lindley's leading article in the *Gardeners' Chronicle* for Nov. 20 will give an idea of its beauty:—"Callicarpa purpurea, quite insignificant when in flower, was beautiful in its winter dress of innumerable rich purple berries, about the size of swan shot." It is easily cultivated, and does well in a cold greenhouse or conservatory planted out, where it will produce thousands of bright purple berries resembling glass beads, and remaining on nearly the whole winter.—Bagshot, March 5.

CHRYSANTHEMUMS—CHRYSANTHEMUMS.

J. H. BIRD, F.H.S., NURSERYMAN, Stoke Newington, the largest grower and most successful exhibitor of the Chrysanthemum in the British Empire, begs to call the attention of the lovers of the above beautiful autumn flower to his matchless collection, the stock of which amounts to upwards of 50,000 plants. Amongst them will be found the following new and rare varieties:—Admirable, Aimée Ferrière, Augustine, Constantine, Louisa, Louis Bonamy, Madame Leo, Norfolk Hero, Progne, Raymond, Beauté de Nord, Dr. Maclean, Queen of England, Plutus, Alfred Salter, Stellaris globosa, Beauty, Themis, Dupont de l'Eure, &c.

J. H. B. can supply strong plants, one dozen for 6*s.*; or five dozen in 30 varieties, containing two of each variety, for 1*l.*; or he can supply 100 plants in 50 varieties, two of each variety, for 1*l.* 10*s.* Also POMPONES in great variety; 50 Pompones in 25 varieties, two of each variety, for 10*s.*; or 100 in 50 varieties, two of each variety for 1*l.* Strong plants of the beautiful new Pompone the Golden Cedo Nulli, 5*s.* each, will be ready in March with the usual allowance to the Trade. Every order will be accompanied by a popular work on the Chrysanthemum.

Post-office Orders payable to J. H. BIRD, Stoke Newington, will be immediately attended to.

PLOCOSTEMMA LASIANTHUM (BLUME). — Amidst the prevalent scarcity of novelties of sterling merit, it is with pleasure the Subscribers invite attention to the above-named plant. It belongs to a new genus closely allied to Hoya; and the present species was received in 1857 from Mr. HUGH LOW, Jun., by whom it was discovered on the north-western side of the Island of Borneo. The plant, which is not a climber, presents a noble appearance, having exceedingly handsome foliage; and it possesses a very great recommendation in being a most profuse bloomer, the clusters of flowers being produced in great numbers. The flowers are of waxy consistence, like Hoya—colour, orange; the petals reflex until they become quite perpendicular, and rest on the flower-stalk; the lower part of the petals is entirely covered with a snow-white velvety pubescence, giving them an unusually beautiful appearance. The flowers are fragrant, and 14 have expanded in one cluster on a newly imported plant, which was submitted to the inspection of Sir W. J. Hooker, of Kew, by whom it is figured and described in the November number of the "Botanical Magazine." It is also figured in the "Florist." Plants in May, price 63*s.* each. Usual discount to the Trade.

HUGH LOW & Co., Clapton Nursery, London, N.E.

CRIMSON PERFECTION RHUBARB.

ROBERT SALT begs leave to inform the gentry, Nurserymen, Gardeners, &c, that he has now ready for sale a quantity of this valuable variety of RHUBARB, and considers that the great notoriety it has attained from those who have honoured him with their orders is a sufficient guarantee as to its qualities. See *Gardeners' Chronicle*, June 11, 1853:—"Very good, and a most beautiful crimson; compared with others, it is remarkable for the small amount of acidity it contains."—*Ed.* Price 17*s.*; old roots, 9*s* per dozen; 2 year-old do,, 15*s.* per dozen; 3 year-old, 24*s.* per doz.

Orders addressed to ROBERT SALT, Longton, Staffordshire; Messrs. HURST & M'MULLEN, 6, Leadenhall Street, London; Messrs. BURGESS & KENT, Penkhull, Staffordshire; Messrs. FRANCIS & ARTHUR DICKSON, Eastgate Street, Chester; Messrs. JAMES DICKSON & Co., Chester; Mr. CHARLES TURNER, Royal Nursery, Slough, will have immediate attention. A remittance from unknown correspondents. The usual discount to the Trade.—Longton, March 12.

AMERICAN PLANTS, ETC.

MESSRS. J. AND H. BROWN will forward any of the following to any part of the kingdom:—

	s.	d.
Andromeda floribunda, strong plants, per doz.	18	0
25 Azaleas, new hardy Belgian varieties, one of a sort by name, on their own roots, well set	20	0
25 Azaleas, American varieties, ditto ditto	15	0
Hardy Heaths, Ledums, and Kalmias, per doz.	6	0
25 Hardy American Plants, one of a sort by name	10	6
12 Rhododendrons, including scarlet, white, and rose	12	0
Fine hardy scarlet Rhododendrons, 1 to 2 feet, per doz.	12	0
Fine hardy white Rhododendrons, per doz.	10	0
6 fine hardy Magnolias, one of a sort	10	0
50 dwarf Roses on their own roots, in variety	15	0
Standard and half-stnd. Roses, superb sorts, per doz. 12*s.* to 15*s.*		
Climbing Roses, fine sorts, strong plants, per doz.	6	0
Greenhouse Azaleas, including best new sorts, per doz. 9*s.* to 12*s.*		
12 Camellias, well set, first-rate sorts	30	0
50 choice Greenhouse Plants, one of a sort	40	0
Orchidæa, beautiful species, good plants, per doz.	40	0
24 choice Ericas, one of a sort, in small pots	16	0

Choice Fruit Trees of all kinds, see List.

Albion Nursery, Stoke Newington, London.—March 12.

FOR THE FLOWER AND KITCHEN GARDENS.

GUERO GUANO.—The great demand for this article for Flower and Kitchen Gardens has induced the Manufacturers to put it up in small packages to meet the convenience of those having small gardens. It has no disagreeable smell. Price 1*s.* and 2*s.* 6*d.* per tin; to be had of all Seedsmen, and of the Patentees, Messrs. J. CHISHOLME, SON, & Co., 38, Mark Lane, E.C.

WILLIAM DENYER, SEEDSMAN and FLORIST, 82, Gracechurch Street, London, E.C., near the Spread Eagle, offers GERMAN SEEDS in collections, from the best Continental Growers. These have always given great satisfaction, and can with confidence be recommended as being of superior quality

	s.	d.
Truffaut's New French Double Asters, or Reine Marguerite, an assortment of 12 of the finest varieties	3	0
Asters, new Pyramidal Bouquet, double German, quilled, 12 new varieties	3	0
Asters, New Double Crown, 6 varieties.—These produce large conical flowers, with white centre, beautifully reflexed, brilliant colours, very pretty for bouquets; as cut flowers they keep a long time in bloom	2	6
Asters New Chrysanthemum-flowered, double dwarf Pæony, or Perfection, 6 new and distinct varieties	2	6
Asters, Ranunculus or Pompone, 6 distinct colours.—These are very double, fine in form, dwarf of growth, the petals are imbricated and lie on a circle of green leaves, which produce a pretty effect	2	0
Asters, New Giant, or Emperor, fine pyramidal form, colour light blue, per paper	1	0
Convolvulus major, 6 splendid bright colours	1	6
Helichrysum, or Everlasting flowers, 8 distinct colours	2	6
Larkspur, very double, Hyacinth-flowering, 6 sorts	1	6
Phlox Drummondi, brilliant colours, 6 varieties	2	0
Portulaccas, 6 bright colours	2	0
New large-flowering Dwarf Ten Week Stock.—The flowers of this variety are very large and double, brilliant colours, 8 varieties, 2*s.*; 12 ditto	3	0
Stocks: Cheiranthus annuus nanus, a new dwarf or miniature Ten Week Stock, growing only 4 inches high, 6 brilliant colours, very double	2	0
Ditto Emperor, or Perpetual, 12 varieties, splendid.—These are quite new, and different to any other Stock, being very double and of large growth, lasting and flowering for several years, 4*s.*; 6 ditto	2	0
Dicto Cocardeau or Three Winter Stock, large flowering, 6 splendid colours	2	0
Tagetes, new double dwarf French Marigold, 10 new and beautiful varieties	3	0
Wallflowers, splendid double Gigantic, 12 varieties	4	0
„ 6 Gigantic double varieties, bright and singular colours	2	0
Zinnia elegans, 6 best and brightest colours, 1*s.* 6*d.*; 12 ditto	3	0

SHRUBBY CALCEOLARIAS.

JOHN COLE begs respectfully to inform the lovers of these useful flowers that he intends sending out his Matchless Seedlings of 1858 himself. They are considered by many persons to be superior to any he has hitherto raised. Amongst them are some fine Bedding varieties.

CATALOGUES will be shortly ready, and sent (post free) to all applicants.—Keyfield Nursery, St. Albans, Herts.

PETUNIAS, SPLENDID NEW DOUBLE SORTS OF 1859.

J. SCOTT, MERRIOTT NURSERIES, Crewkerne, Somerset, begs to offer 30 sorts, many of them 5 inches across, some like large flowers of Gardenia Fortuni; one very like Baronne Prevost Rose, many flaked and striped like large Carnations, and altogether the most beautiful and unique collection ever offered in this or any other country. Strong plants 2*s.* 6*d.* each; or the 30 sorts 63*s.* One set added for every three ordered by the trade.

J. S.'s DESCRIPTIVE CATALOGUE of the above and other cheap BEDDING PLANTS will be ready about the middle of March, and will be sent to all applications, inclosing two stamps; and to former purchasers gratis.

N.B. PETUNIA MAGNA COCCINEA, a splendid single (5 inches diameter) is offered at 3*s.* 6*d.* per dozen for bedding, and J. Scott's new single striped ALCEMENE, 5 inches across, at 30*s.* per dozen, or 3*s.* 6*d.* each.

"JEYES'S CONQUEROR PEA;" 3*s.* 6*d.* per Quart. —This remarkable Pea was sent out to a few private growers a few years since, and it has established its own reputation so much, that although I have kept on increasing my supply every year, I have always had to deal it out with great caution, lest my regular customers should not be supplied; and long before the season for sowing was over I have been sold out, and had to turn away many scores of customers.

For Testimonials and descriptions see *Gardeners' Chronicle* of Jan 8. The following gentlemen have permitted me to say they consider it the very best Pea in cultivation:—Mr. Mackie, Delapre Abbey, Northampton; Mr. Tanton, Moulton Grange, Northampton; Mr. Judd, Althorp Park, Northampton; Mr. Thos. Watts, Market Gardener, Northampton; Mr. John Moring, Market Gardener, Northampton; and hundreds of others.—It can be had genuine of Messrs. NOBLE & Co., Fleet Street, London; Messrs. FLANAGAN & SON, Mansion House St., London; Messrs. NUTTING & SON, Barbican, London; and all respectable Seed-merchants in the United Kingdom.

18, Sheep Street, Northampton.

UNEQUALLED NEW CUCUMBER, DR. LIVINGSTONE.—This is one of the finest long hybrid Cucumbers for exhibition purposes that has ever yet been offered to the public; it is a splendid black spine, length 22 to 26 inches, a very free setter, and an abundant bearer. Price 2*s.* 6*d.* per packet.

QUEEN OF THE WEST MELON, a superb new variety, green-flesh, very handsome in appearance, beautifully netted, and excellent in flavour. It obtained several first prizes during the past season. Seeds 2*s.* 6*d.* per packet.

NEW MELON GENERAL HAVELOCK, sent out for the first time last season. It is a green-flesh, very handsome shape, and beautifully netted; a very thick substance, thin skin, of a melting and most delicious flavour, and an abundant bearer. Weight from 3 to 4 lbs.; it gave the greatest satisfaction to all purchasers during the past season. Seeds 1*s.* per packet.

Extra fine mixed HOLLYHOCK SEED, saved from all named varieties, 1*s.* per packet.

Early Emperor CELERY, red, the finest ever yet sent out, 1*s.* per packet.

TILEY'S Solid White Celery, 6*d.* per packet.
DELPHINIUM FORMOSUM, 6*d.* per packet.
DIGITALIS, or Fox-glove Seed, 6*d.* per packet.

For further particulars, and list of Cucumbers and Melons, see Advertisement in *Gardeners' Chronicle* of Jan. 29, 1859.

A remittance must accompany every order in cash or penny postage stamps, when the whole or any part, as the case may be, will be immediately sent.

EDWARD TILEY, NURSERYMAN, SEEDSMAN, and FLORIST, 14, Abbey Church Yard, Bath.

HARDY SCARLET RHODODENDRONS AND AMERICAN PLANTS GENERALLY.

WATERER AND GODFREY'S PRICED and DESCRIPTIVE CATALOGUE of the above beautiful tribe of plants, as exhibited by them in London and Manchester, may now be had on application inclosing one stamp for postage. The Catalogue also furnishes the heights and prices of their unequalled stock of Conifers and Evergreens, &c. Catalogues may also be had of Messrs. J. MAY & Co., Seedsmen, &c., Wellington Street, Strand.

Knap Hill Nursery, Woking, Surrey.

RHODODENDRONS.

JOHN WATERER'S CATALOGUE OF UNRIVALLED HARDY SCARLET AND OTHER CHOICE RHODENDRONS, as Exhibited by him at the Royal Botanic Gardens, Regent's Park, London, is published, and will be forwarded on application.

☞ This List is recommended as a work of reference, as it contains accurate descriptions of all the esteemed varieties.

The American Nursery, Bagshot, Surrey, near the Sunningdale Station, South Western Railway.

STAR NURSERY, SLOUGH.

WM. BRAGG begs to inform the public and Florists generally, that his SPRING CATALOGUE can now be had free on application, containing his choice new Hollyhocks, Pinks, Pansies, Pelargoniums, chaste Scarlet Geraniums (Blazer and Rosa Bonheur), Dahlia Chieftain, yellow Piccotees, New Californian Sunflower, so much admired at the Crystal Palace, Botanic Gardens, and other Shows; and choice Flower Seeds from Show varieties only.

SURPLUS STOCK.

JOHN SHARPE is offering to the Trade, on very reasonable terms, the following SEEDS of his own growing, 1858:—

Carrot, fine large Altringham	Turnip, Skirving's Swede
,, large White Belgian	,, Purple-topt do.
Mangel, Yellow Globe	,, Green Globe
,, Long Giant Red	,, Purple-topt Scotch
Cabbage, Early Enfield	

Prices of not less than sacks and cwts. on application.

Bardney Hall, near Lincoln.

PRIMULAS, MELONS, AND CUCUMBERS.—Upwards of 100 Testimonials received.

POWELL WILLIAMS, Esq., *Guernsey*.

"I feel much pleasure in being able to speak in very high terms of the Primula Seed you sent me; certainly I never saw anything to equal the blossoms."

Wild's unrivalled Primulas, per packet	..	2s. 6d.
Wild's celebrated Cucumber ,,	..	1 0
Wild's Orion Melon ,,	..	1 0

Free by post to all parts of the world.

THOMAS WILD, The Primulary, Ipswich.

HORTICULTURAL VALUATIONS.

MR. ALFRED CHANDLER (of the late firm of Chandler & Sons, Vauxhall), begs to inform his Friends that he is at liberty to undertake the valuation of Collections of Plants, Nursery Stock, Horticultural Buildings, &c.

Mr. A. C. is also open to engagements as Censor at Horticultural Exhibitions, in which capacity he has had long and extensive experience.—28, Priory Road, Wandsworth Road, S.

SEEDS AND PLANTS SENT FREE TO LONDON.

LOUIS VAN HOUTTE,

NURSERYMAN and SEEDSMAN, Ghent (Belgium),

BEGS TO ADVERSISE THAT HIS

NEW CATALOGUES, PRICE LISTS, Nos. 70, 71, 72, 73, 74, and 76,

ARE TO BE HAD AT HIS AGENT'S OFFICE IN LONDON,

MR. R. SILBERRAD, 5, Harp Lane, Great Tower Street.

CAMELLIAS, RHODODENDRONS, AZALEAS, ROSES, PERENNIALS, NEW SHRUBS, HOTHOUSE AND GREENHOUSE PLANTS of every description, Seeds, &c.

EXTRACT FROM No. 76.

Arisæma ringens (see Van Houtte's "Flore"), very curious aroideous plant, fit for the Orchideous house till the flower is past, 10s. 6d.

Ataccia cristata (see Van Houtte's "Flore"), one of the most extraordinary flowering plants, fit for the Orchideous house, 21s.

Barbacenias ("Flore"), hybrids in all shades; per doz., 10s. 6d.

Begonias, the best new kinds, at very moderate prices; and Rex (see Van Houtte's "Flore"), at 1s. each, or 8s. per doz. 12 different Begonias for 8s.

Caladium (see Van Houtte's "Flore"), the new pointed leaves: C. albo-punctatissimum, 20s.; C. argyrospilum, 12s.; C. bicolor picturatum, 1s. 6d.; C. Brongniarti, 12s.; C. Chantini, 20s.; C. Neumanni, 12s.; C. Verschaffelti, 8s.

Clivia cyrtanthiflora (see Imantophyllum).

Cyanophyllum magnificum, 8s.

Dracænopsis indivisa, 16s. to 200s.

Eucharis amazonica ("Flore"), 2s. 6d.; E. grandiflora, 2s. 6d.

Gesneria cinnabarina ("Flore"), 1s., or 7s. 6d. per doz.
,, Van Houttei, 1s. 6d., or 16s. per doz.
,, Leichlini, 4s., quite new, rosy outside, lemon inside.
,, zebrina splendens, 1s. or 7s. 6d. per doz.; Gesnerias in best mixture, 7s. 6d. per doz.

Gloriosa Planti (see Methonica in the "Flore"), 6s. per doz., flowering beautifully in pots (outside) in the summer.

Imantophyllum cyrtanthiflorum, Lindl., first prize at the Ghent exhibition, last Saturday (5th March) as the finest of the plants gained this year by seed.—LOUIS VAN HOUTTE has lately sent the plant in flower to Dr. Lindley's inspection. It is a magnificent mule obtained from Imantophyllum miniatum and I. Aitoni (Clivia nobilis), splendid long leaves, large heads of flowers, like those of a large-flowering Cyrtanthus, shape of the most beautiful Blandfordias, fine colour. Very strong plants at 80s. each. Sent out only now for the first time. Will soon appear in VAN HOUTTE'S "Flore."—I. miniatum (see "Flore"), 20s. to 80s.

Luculia, quite new species, 1s. each, 8s. per doz.; good sized plants.

Maranta Warscewiczi (Calathea), 4s. to 7s. 6d.

Musa zebrina ("Flore"), black-spotted leaves, 10s. 6d.

Pandanus reflexus, 8s. to 240s.

Philodendrons. — Decorative plants for Orchideous house. Great collection.

Rhopalas,—Great assortment. Splendid decorative plants.

Theophrasta imperialis, ditto, 80s. to 320s.

Achimenes.—A collection of 50 kinds for 21s.

Bromeliaceous plants.

Ferns and Lycopods.—One of the most extensive collections of Europe. Good sizes, moderate prices. (See Van Houtte's Price List No. 76, page 13.)

Gloxinias in great variety.

Orchids and Palms.

Greenhouse plants.

Michauxia campanuloïdes, scarce Syrian plant, flowers along the stem like Passionflowers, 1s. to 8s. per dozen.

Musschia Wollastoni (see Illustration), a tall, splendid, Campanulaceous plant from the Canary Islands; the flowers are disposed just as in the Lilium pyramidale, 4s.

Primula erosa ("Flore"), a very fine kind, 6d. each, 5s. per doz.

Azaleas, hardy kinds, double flowers, 12 varieties for 40s., including A. Van Houttei, the finest in existence

Azalea Van Houttei flore pleno (will appear shortly in the "Flore"), large bouquets of double flowers, red and yellow mixed; the largest and finest flower in existence; as hardy as an Azalea pontica; 12s., if taken alone.

Azalea Diamond (Van Houtte), pure white flowers with a large carmine spot (not quite hardy here, but beautiful in the greenhouse). Grafts with 3 to 4 branches, 8s. Grafts with 6 to 10 branches, 12s.

Azalea indica Alexander II. (Van Houtte), 2s. 6d. to 20s.—A gem for form, size, colour and spots. The petals delicately curled. A true beauty!—Hermine (Van Houtte), snow white, full flower, striped with carmine; fine, 2s. 6d. to 4s. Petuniæflora, extremely fine form, and delicate shaded pink colour; strong plants, flower buds, 3s. 6d. to 7s. Roi Leopold, extra large clear salmon, first rate, with flower buds, 3s. 6d. Salmonea albo-cincta; delicate salmon with a white margin, fine form, 4s. to 8s. Umbellata alba will appear shortly in the "Flore;" from Sardinia, a quite new form in the tribe; the flowers are single, pure white, but they are divided in nine segments as regular and round as a crown; 4s. to 8s.

Vervaene's Seedlings.—Azalea indica Belle Jeannette, Etendard de Flandre, Géante, Gloire de Belgique, Gloire de Ledeberg, Papilionacea, Pelargoniæflora and Rubens, the set of eight, full of flower buds, for 60s.

Camellias.—Very extensive collection. (See Price List No. 72.)

Dianthus sinensis giganteus (see the "Flore,") five seeds, 4s.
,, ,, Heddewigi ,, ,, five ,, 4s.
N.B. Each flower of these Chinese Pinks is 5 inches across. The "Flore des Serres" has published a figure of them; but a double size plate is in hand, and will appear shortly.

Flemish Carnation seed, 100 seeds for 2s. 6d.
Bohemian Piccotees 100 ,, ,, 2s.
Fancy ,, 100 ,, ,, 1s. 6d.
Perpetual ,, 100 ,, ,, 1s. 6d.

French Spotted Geraniums (see Price List No. 76, pp. 41, 42, and 43).

VAN HOUTTE'S 6 new Petunias; price, the set for 16s.

New Continental Petunias of various growers, 20 vars. for 16s.

Continental Rhododendrons and others (see Price List No. 72, pp. 30 to 38).

Roses.—One of the most extensive collections in the world (see Price Lists Nos. 63, 67, and 72).

New Herbaceous Tropæolums, the set of 12 varieties for 7s. 6d.

New French Verbenas, 12 varieties, 4s.; 25, 8s.

New Perennials:—Chelidonium japonicum, 1s. 6d.; Convallaria multiflora, fol. albo marg., 4s.; new splendid double Delphinium Pompon de Tirlemont (lately figured in the "Flore des Serres," and sold for the first time), 4s.; Epimedium Ikariso, a new Japan kind, with leaves as thick as Holly (the mother plant is in bud), 16s.; Thalictrum anemonæfolium flore pleno ("Flore"), a very scarce Pennsylvanian gem, 2s. 6d.

New Weigelas:— W. amabilis Groenewegenii; W. rosea Desboisii; W. amabilis alba. Price, each, 8s.; the set of three, 20s.

The Japan Black-leaved Maple, Acer polymorphum foliis nigr. (see the "Flore des Serres"), 8s. to 20s.

Æsculus californica (lately figured), 1s. 6d.

Glycine magnifica, extra strong climbing plant, 1s. each; per dozen, 5s.

Large pyramidal variegated Hollies (in pots), 5s.

Quercus nigra, 4s. to 20s.

New and fine forms of the common Locust Tree (Robinia pseud-Acacia), var. coluteoides, fastigiata, glaucescens, patula, revoluta. The set of five for 12s.

Vitis Sieboldi and Thunbergi; two hardy Japan novelties, with fine foliage; the two for 5s.

Pinus paroliniana, quite hardy (2 years' seedlings), 8s. per doz.
,, radiata paroliniana, very strong two-years' seedlings, 10s. the dozen.

Pinus Strobus tabulæformis; table-formed, dwarf plant, for groups in Grass plots, as hardy as the common Weymouth.

THE "FLORE DES SERRES ET DES JARDINS DE L'EUROPE,"

EDITED BY LOUIS VAN HOUTTE, IS PUBLISHED SINCE 1845.

Twelve volumes of twelve numbers each have been issued, containing together 1289 finely coloured plates, and 2356 miscellaneous matters, numerous woodcuts, &c. The price of the whole work is 18*l.* 8s. (without any discount, but free to London). The subscription price for 12 numbers or one volume is 1*l.* 12s. The first number of Vol. XIII is now in the press; no single numbers are sold; sent free by post.

All LOUIS VAN HOUTTE'S goods (plants and seeds) will be delivered out of the Custom House in London, without any expense whatever for the buyer; but *per contra*, 5s. will be charged for each package.

☞ Persons unknown to LOUIS VAN HOUTTE are respectfully requested to add to their orders a cheque on London for the amount (at Mr. R. SILBERRAD'S order), or reference in London.

All letters must be prepaid 4*d.* (an unpaid letter is taxed twice as much).

Agent in London: Mr. R. SILBERRAD, 5, Harp Lane, Great Tower Street,

But all letters containing orders must be directly sent to LOUIS VAN HOUTTE, Ghent, Belgium.

THE NEW MUSCAT HAMBURGH VINE.

MESSRS. ARTHUR HENDERSON AND Co. have much pleasure in directing the attention of Grape Growers to the new MUSCAT HAMBURGH, plants of which they are now sending out. In consequence of the extraordinary demand for the large three-guinea fruiting plants, they are unable to supply any more of this size, but they still have excellent plants at two guineas, suitable for fruiting next spring in pots, and also good plants at one guinea each.

Pine-apple Place, Edgware Road, London, W.

CELOSIA AUREA, VAR. PYRAMIDALIS.

DICKSONS AND CO., NURSERYMEN and SEEDSMEN, Waterloo Place, Edinburgh, have now a limited supply of the above rare and beautiful Annual. Packets 5s. each, sent free by post on receipt either of a Post-office Order, or postage stamps from unknown correspondents. See description in *Gardeners' Chronicle* of December 25, 1858.

D. & Co. have still on hand a few Plants in pots of LADY DOWN'S SEEDLING VINE at 10s. 6d. each.

Waterloo Place, Edinburgh.—March 12.

100 GOOD PHLOXES FOR 40s.

50	Ditto	Ditto	for 25s.
25	Ditto	Ditto	for 12s. 6d.
12	Ditto	Ditto at 6s. and 9s. per doz.	

The best and newest continental varieties from 12s. to 18s. per dozen.

CATALOGUES sent free on application, and extra plants presented for distant carriage.

WM. WOOD & SON, having imported all the best and newest PHLOXES from the Continent, will be happy to supply them in collections as stated above, in fine strong plants grown in the open ground.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

SUPERB DOUBLE BALSAMS.

F. AND A. SMITH are now sending out seed of their superb BALSAMS, which are unrivalled for size, form, brilliancy of colour, doubleness of flower, and habit of plant.

In collections of nine separate colours	.. ..	2s. 6d.
,, ,, mixed ,,	.. ..	2 0
,, ,, ,, ,, half quantity		1 0

The above are *genuine only* in our sealed packets, and may be had of most respectable Nurserymen and Seedmen in the United Kingdom.—Dulwich, Surrey, S.

PLANTS IN FLOWER.

F. AND A. SMITH have now in bloom Acacia, Azalea indica, Cinerarias (fine), Cytisus, Erica ventricosa coccinea minor; E. Cavendishi, E. hybrida, E. propendens, E. perspicua nana, E. Syndriana, Geraniums, Fairy Roses, Primula sinensis fimbriata, &c.

The above are healthy, strong, and well grown plants, prepared for sending away. Prices on application.

Dulwich, Surrey, S.

HOLLYHOCKS.

WILLIAM PERRY begs to announce that he has fine healthy plants of the above for sale, of all the approved sorts, well hardened and fit for planting out immediately, from 9s., 12s., 18s., 24s., and 30s. per dozen, if the selection is left to W. P. A Descriptive Catalogue can be had on application, also seed saved from the best sorts, 1s., 2s., and 3s. per packet.

Foreman at the Nurseries, Sawbridgeworth, Herts.

HOLLYHOCK SEED FROM NEW VARIETIES.

J. CHATER AND SON offer the above from 12 new varieties, separate packets, the collection, 3s. 6d.

24 varieties, best older sorts, 3s. 6d.

Best mixed, 20 sorts, 200 seeds, 1s. 6d.

J. C. & SON feel confident the above will give satisfaction, having been saved with great care.

Strong seedling plants, 20s. per 100.

If sown now will flower by September.

Nurseries, Haverhill.

SUPERB DOUBLE HOLLYHOCKS.

WILLIAM CHATER can now supply fine healthy plants from his Collection, having a large stock ready for immediate planting.

See DESCRIPTIVE CATALOGUE, to be had on application.

Nurseries, Saffron Walden.

FIRST-CLASS HOLLYHOCKS.

FINE SEEDLINGS FROM

WILLIAM CHATER'S Celebrated and Newest Varieties that will flower well in September at 30s. per 100

ditto	ditto	ditto	20s. ,, 100
Ground Roots according to colour, also at		..	30s. ,, 100
Seed in 12 separate colours, the Collection		..	10s. 0d.
,, 6 ,, ,, ,,		..	5 0

From varieties such as Pourpre de Tyre, Memnon, White Globe, Hon. Mrs. H. Ashley, Canary, &c., in 12 separate colours, the Collection .. .. 7s. 6d.

Ditto in 6 separate colours, the Collection	..	4 0
Seed from 20 of the best varieties, mixed, per pkt.		5 0
,, 12 ,, ,, ,, ,,		2 6
,, good mixed, also a single variety ,,		1 0

The above can be procured from the Nurseries, Saffron Walden, Essex.

NEW HOLLYHOCKS.

A. PAUL AND SON beg to recommend the following NEW HOLLYHOCKS, which have been selected from several thousands of Seedlings. The stock of ordinary kinds is this year greatly extended. The plants are strong, well established, and perfectly healthy:—

	s.	d.
BRISEIS (PAUL).—Purple, silvery edges, flower of good form, spike close	5	0
GENERAL HAVELOCK (PAUL).—Bright, ruby scarlet, colour of "Scarlet King," but a close spike and a round smooth flower of perfect shape	10	6
IN MEMORIAM (PAUL).—Crimson maroon, large, good substance, first-rate flower, good spike	10	6
OSSIAN (PAUL).—Crimson shaded with salmon, remarkable alike for substance, closeness, and symmetry; spike good	10	6
PAINTED LADY (PAUL).—Pink and blush in blotches, a large smooth flower of good substance	5	0
PLUTARCH (PAUL).—Plum colour, of fine shape, and very smooth, guard and spike good	10	6
POURPRE NOIR (PAUL).—Rich purplish maroon, large smooth flower, close spike	7	6
RED ROVER (PAUL).—Dark fiery scarlet, flower large, spike splendid, very effective	7	6
VERITAS (PAUL).—White, lemon base, large full flower, splendid spike	10	6
VESTA (PAUL).—Pure white, petals thick, edges smooth, guard good	7	6
VITRUVIUS (PAUL).—Pink, large flower, of perfect form and good substance	5	0
ZENO (PAUL).—Rich plum colour, with silvery edges, flower large, spike good; new and distinct	5	0

The Collection of 12 varieties is offered for 4*l.* 4s.; good named sorts, 9s. to 18s. per dozen; very superior ditto, 24s. to 42s. per dozen; Bloomed Seedlings in separate colours, 30s. to 50s. per 100; mixed Seedlings, 10s. to 21s. per 100.

HOLLYHOCK SEED, 1s. to 5s. per packet free by post.

Also a PRICED DESCRIPTIVE CATALOGUE free by post.

Nurseries, Cheshunt, Herts.

GERMAN AND OTHER FLOWER SEEDS, VEGETABLE, AGRICULTURAL SEEDS, ETC.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their new PRICED and DESCRIPTIVE CATALOGUE in which is enumerated every novelty of proved merit, also all the best of the older kinds, is now published, and will be forwarded post free on application. Their whole stock has been selected from the best English and Foreign sources, and every kind is warranted true to name, and of the finest possible quality.—Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

HEDGE PLANTS.—

TREE BOX, 2, 3, 4, 5 and 6 feet.
GREEN HOLLIES, 1, 2, 3 and 4 feet.
EVERGREEN PRIVET, 2 and 3 feet.
TRANSPLANTED QUICK, 2 to 3 feet.
COMMON YEW, 2, 3, 4, and 5 feet.

Also a few thousand fine transplanted LARCH, 3 to 4 feet. Samples and prices on application.

THOMAS JACKSON & SON, Nurserics, Kingston, S.W.

1-year SEEDLING LARCH, fine.

2-year Seedling Larch, fine	1-year Seedling Common Oak, fine
2-year do. Scotch Fir, native	
2-year do. Spruce, Norway, fine	1-year ditto Turkey ditto
3-year ditto ditto	2-year ditto Red Cedar
2-year ditto White American	1-year English Yew
ditto	1-year transplanted Larch, fine
1-year ditto Red ditto	2-year ditto
1-year ditto Hemlock Spruce	1-year do. Scotch Fir, native, do.
1-year ditto Evergreen Oak	2-year ditto

The Subscribers being extensive holders of the above solicit the particular attention of the Trade. Prices, which are most moderate, may be had on application.

DAVID REID & SON, Nurserymen and Seedsmen, Edinburgh.

HARDY CONIFERÆ FOR SPRING PLANTING.

J. HENCHMAN, Edmonton, London, begs to offer the following CONIFERS, all Seedling Plants, in pots, and in the most robust health:—

Wellingtonia gigantea, 1 foot, in 32-pots, very fine, 10*s.* 6*d.* each; 7 to 8 inches, in 48-pots, 3*l.* per doz.; stout, 2-year seedlings, 30*s.* per doz.
Pinus Don Pedri, 21*s.* each.
,, Buonapartia or Veitchi, 10*s.* 6*d.* each.
,, insignis, 15 inches, 15*s.* per doz.
,, macrocarpa or Coulteri, 6 inches, fine, 18*s.* per doz.
,, tuberculatus, stout 2-year seedlings, 18*s.* per doz.
,, Benthamiana, 2-year do. 9*s.* per doz.
Cupressus macrocarpus, 18 inches, fine, 6*s.* per doz.
,, MacNabbiana, 2 years, 9*s.* per doz.
Taxodium sempervirens, 15 inches, fine, 24*s.* per doz.

MESSRS. WATERER AND GODFREY respectfully invite the attention of parties engaged in planting to the following list of very desirable plants, all of which may be seen growing in the open quarters of their Nursery, and are in the finest possible condition for transplanting:—

Araucaria imbricata, 9 to 12 inches, 5*l.* per 100; 40*l.* per 1000
,, ,, 1½, 2, 3, 4, 5, 6, and 8 feet high. Our stock of this plant exceeds 100,000
Wellingtonia gigantea, stout handsome plants from seed, 84*s.* per dozen; 25*l.* per 100. These are all in the open ground, and are believed to be the finest lot of seedling plants in the Trade.
Cedrus Deodara, 1½ to 2 feet, 18*s.* per dozen; 6*l.* per 100
Do. 3, 4, 5, 6, 7, 8, 10 and 12, and 15 feet. Our stock of Deodars at the present moment occupies several acres of land; they have been constantly removed, and with fair usage not one in a thousand would fail. We offer them on very advantageous terms either in large or small quantities
Cedrus atlantica, 4, 5, 6, and 7 feet
Cupressus macrocarpa, magnificent plants, 7, 8, and 10 feet high
,, Lawsoniana, stout handsome plants from seed, 18 inches, by the dozen or 100
Abies nobilis, from imported seed, 6*l.* 6*s.* per doz.; 40*l.* per 100
,, do. 1, 2, and 3 feet high
,, Nordmanniana, a large number of beautiful plants, all from seed, 2, 3, 4, 5, and 6 feet high
,, Pinsapo, do. do.
[We believe we are justified in stating our stock of the three last-mentioned Firs offers a selection to be met with in no other Nursery.]
,, Douglasi, 6, 7, 10, and 12 feet
,, orientalis, 3, 4, 5, and 6 feet
Pinus Benthamiana, stout seedling plants, about 1 foot, 18*s.* per dozen; 5*l.* per 100; 40*l.* per 1000. Unquestionably the finest of all the long-leaved Californian kinds, and well known to be perfectly hardy. It is the most valuable of all for timber.
Juniper, Chinese, 2, 3, 5, 7, 8, and 10 feet high
Irish Upright, 3, 4, 5, 6, 7, and 8 feet. The Irish and Chinese Junipers are grown by us to a very large extent
Thuja aurea.—This plant originated in our Nursery, and our stock of it offers a choice of many hundred specimens from 1½, 2, 3, 4, and 5 feet high, and measuring from 2 to 10 and 15 feet in circumference. Nothing can well exceed the beauty of these plants, and certainly are to be met with in no other Nursery
Thuja gigantea, stout seedling plants, 1½ to 2 feet high
,, Wareana, 3, 4, 5, 6, 7, and 8 feet
Thujopsis borealis, handsome plants, in quantity, 1½ & 2 ft. high
Taxus, Yew, Common English.—A large quantity, and of all sizes up to 5, 6, and 7 feet
,, Irish Yew, 4, 5, 6, 7, and 10 feet. Many thousands of these beautifully formed plants grown to one stem
,, Golden Yews in large quantities and of all sizes up to 6, 7, and 8 feet
We also have them worked on the Common and Irish Yew as Standards, with heads from 12 to 15 years' growth
Holly, Variegated, Scottica, laurifolia, &c. We hold probably the largest stock of good sized variegated Hollies in the kingdom, especially of the better kinds of silver and gold striped
Rhododendron ponticum, for cover, stout plants, 1½ to 2½ feet, by the 1000. All the well-known proved hardy late blooming kinds, in any quantity, at from 30*s.*, 42*s.*, to 84*s.* per dozen
Standard Rhododendrons of all kinds
Azaleas, stout bushy plants, covered with bloom buds, from 18 inches to 2 feet high, and of all colours, 9*s.*, 12*s.*, 18*s.*, and 24*s.* per dozen; 50*s.*, 75*s.*, to 100*s.* per 100
Hardy Heaths, a first-rate collection, at 35*s.* per 100; 15*l.* p. 1000
Roses, fine Standards, of the most popular kinds, at very low prices.

As well as the above, we are very large holders of the ordinary kinds of Nursery Stock, which may be judged from the fact that the Nursery far exceeds 100 acres in extent of all such things as Laurels, Box, Lilacs, Limes, Purple Beech, and the commoner descriptions of Evergreens and Deciduous Flowering Shrubs. An enormous stock of Fruit and Forest Trees are also grown extensively.

Goods are delivered free to London, Reading, or Reigate. The Nursery is reached in an hour from Waterloo, and conveyances are always to be had at the Woking Station.

CATALOGUES, Priced and Descriptive, will be sent on application, enclosing one postage stamp, to

WATERER AND GODFREY, Knap Hill, Woking, Surrey.

FRUIT TREES IN POTS.

JOHN AND CHARLES LEE have now the largest and finest stock of FRUIT TREES IN POTS in a bearing state for FORCING AND ORCHARD HOUSES ever offered. They consist of the following kinds, a CATALOGUE of which may be had on application:—

APRICOTS	FIGS	PEARS
PEACHES	PLUMS	APPLES.
NECTARINES	CHERRIES	ALSO,

VINES AND STRAWBERRIES.

Nursery and Seed Establishment, Hammersmith, London.

GRAPE VINES FROM EYES.

JOHN AND CHARLES LEE beg to offer an immense stock of strong well-ripened VINES FROM EYES, of the following kinds:—

Alicant	Hâtif de Jura
Barbarossa	Isabella
Bidwell's Seedling	Marchioness of Hastings
Black Cluster	Muscadine Parsley leaved
Black Constantia	Muscat, August
Black Prince	,, Cannon Hall
Blanche Vigne	,, Hamburgh
Calabrian Raisin	,, Noir Hâtif
Charlsworth Tokay	,, of Alexandria
Chasselas Frocklaboulay	,, of Fontainebleau
Chasselas Musqué	Pitmaston Cluster white
Duzetto	Raisin des Carmes
Esperione	Syrian
Frontignan, black	Trebiana
Hamburgh, Dutch	Trentham Black
,, golden	Tripoli
,, Pope's	West's St. Peter's
,, Mill Hill	

Nursery and Seed Establishment, Hammersmith, London.

NEW PLANTS.—1859.

HUGH LOW AND CO. respectfully invite attention to the annexed LIST of novelties, orders for which they will be very happy to receive:—

NEW GLOXINIAS.

HUGH LOW & Co. have selected the undernamed varieties from a large number of plants raised by themselves from seed (ar fully and judiciously hybridised, and having flowered them for two seasons, and compared them with the varieties previously in cultivation, H. L. & Co. can with confidence recommend the selection to the notice of their friends as comprising really distinct kinds, worthy of a place in the most select collection of this much admired and easily cultivated flower. Plants in April. Price, 3*s.* 6*d.* each.

ERECT-FLOWERING VARIETIES.

Atroviolacea, very dark violet purple, base of the tube beautifully spotted on a pure white ground.
Bridesmaid, white tube, shaded rose border, lips spotted with white
Lineata superba, rosy carmine tube, towards the lips alternate bands of white and rose.
Perfection, clear white throat, dark blue belt, lips deep violet purple.
Princess Alice, clear white tube, bright rose belt, edges very pale rose.
Princess of Prussia Improved, throat and belt very much brighter crimson than in the old variety.

DROOPING-FLOWERED VARIETIES.

Attraction, base of tube white, finely spotted, lips rosy crimson, outer edge pure white.
Beauty, white tube, inside carmine lake, broad white belt, flowers very large
Meteor, bright crimson with violet throat, carmine blotch on the lip.

NEW ROSES OF 1859.

HYBRID PERPETUAL.	HYBRID PERPETUAL.
Altesse impériale	Virginale
Ardoisé de Lyon	Beauté de Rœyghem
Comte de Beaufort	BOURBON.
Bouquet de Marie	Docteur Berthet
Empereur de Maroc	Madame Marchal
Salomon	Octavie Fontaine
Oriflamme de St. Louis	TEA-SCENTED.
Reine de la Cité	Madame Damaizan
Ambroise Verschaffelt	Madame Darru
Orderic Vital	Reine des Pays Bas
Anna de Diesbach	

Plants 5*s.* each.

NEW VERBENAS.

The entire stock of these nine varieties is in the possession of H. L. & Co., and they can with the greatest confidence recommend them to their friends as distinct and first-class flowers.
Bellona, bright cerise, dark centre, good form, very distinct.
Flora, lilac, white eye, large truss, fine form.
Lady Cotton Sheppard, bright rosy purple, white eye, large truss, very distinct.
Mars, bright red, extra large truss, fine form and free flowerer.
Miss Emily Hanmer, ruby, white eye, immense truss, extra fine form, the best of its class.
Mrs. Fowke, rosy purple, fine white eye, extra large truss, fine form, very free.
Mrs. Leslie, bright rose, very large white eye, large truss, and splendid form.
Rubens, ruby red, white centre, good form, very distinct and free bloomer.

VERBENA SNOWFLAKE.—The best white Verbena ever offered for bedding purposes. With a flower equal to Mrs. Holford, it produces a much larger number of trusses on the same space of ground. This variety has been grown in company with the other white kinds at present in cultivation, and has been found to be more effective than any of them. In order that it may be extensively planted the first season, H. L. & Co., have decided on offering it at a cheap rate.

Single plants, 2*s.* 6*d.*; per doz., 18*s.*; per 100, 100*s.* In April.

New Verbenas received from M. Boucharlat of Lyons:—

Abondance	Madame Denis Blain	Mons. Denis Blain
Bleu magnifique	Madame Hardy	Monsieur Hardy
Felix Roland	Madame Hoste	Reine Blanche
Gloire de Monplaisir	Madame Large	Souvenir de M.
Kossuth	Manteau d'Evêque	Seringe

Plants 1*s.* 6*d.* each, now ready.

New Verbenas received from M. Rougier-Chauvière, of Paris. These and the preceding collection include the finest varieties offered this season on the Continent.

Baccarat	Gitana	Marie Rougier
Cendrillon	Ivanhoe	Ne Plus Ultra
Cerise | Clara	La Magicienne	Primulæflora
Fatima	Leandre	Rosalinda
Figaro	Lucrece	Rosamond

Plants now ready, 1*s.* 6*d.* each.

LOBELIA TRIGONICAULIS, a new species from Moreton Bay, figured and described by Sir Wm. J. Hooker. A beautiful dense-growing variety, each plant covering a space of ground 12 to 18 inches in diameter, with its ample bright green foliage (in the way of Verbena Maonetti) and large light blue flowers with fine white eye. It will be much in demand for bedding purposes. For further description see "Cottage Gardener." Plants in April, price 2*s.* 6*d.* each, or 21*s.* per dozen.

Usual discount to the Trade on all the above-named plants.
Bedding Plants of older date in large quantities at low prices.

Clapton Nursery, London, N.E.—March 12.

FIVE SILVER CUPS

WERE AWARDED TO

A. PAUL AND SON, NURSERYMEN, Cheshunt, Herts, for five Collections of ROSES at the Grand National Rose Show held in St. James's Hall, London, in July. Also FIVE FIRST PRIZES at the Royal Botanic Society's Shows in May and June last. The sorts which won these prizes are now offered at 18*s.* to 24*s.* per dozen for standards, 12*s.* to 18*s.* per dozen for dwarfs. A PRICED DESCRIPTIVE CATALOGUE forwarded on application, post free.

FINE HEALTHY ROSES.—

STANDARDS .. .. .. 18*s.* per doz.
DWARFS (on the Manetti) .. 12*s.* ,, ,,

As the weather still continues mild and favourable for planting, GEORGE CLARKE begs to state he has still a fine stock of all the leading kinds to offer at the above prices, the selection being left to him. The Plants are all healthy and well rooted, therefore calculated to give the greatest satisfaction. Plants carefully packed for any distance. Carriage of all packages paid to London; and in all orders amounting to 20*s.* plants are added to compensate for distant carriage.

GEORGE CLARKE, The Nursery, Brixton Hill.

ROSES.—TO THE TRADE.

BIRCHAM AND WARD having a surplus stock of the leading kinds of Perpetuals in fine condition, offer them at the following low prices by the 100 or not less than 50.

Standards, per 100 .. .. .. 3*l.* to 3*l.* 10*s.*
Dwarfs do .. .. 2*l.* 2*s.*
Ditto, on their own roots .. .. 2*l.* 2*s.*

Carriage paid to London and Peterborough.

HOLLYHOCK SEED of very superior quality by the oz.

Hedenham Rosary, Bungay, Suffolk.—March 5.

NEW ROSE, HYBRID PERPETUAL "LÆLIA."

—Colour delicate satin rose, petals very large, perfectly smooth, and well formed; flowers of exquisite shape, large size, and highly scented. JOHN CRANSTON has the pleasure to announce that he will be prepared to supply early in April plants of this superb new Rose. It was exhibited by him in his winning stand of single blooms at the Grand National Rose Show in July last, and was unquestionably the most attractive variety of the Show, and the admiration of all who saw it. Fine healthy plants, 5*s.* each, with the usual discount to the trade.—Nurseries, King's Acre, near Hereford,

NEW HYBRID PERPETUAL ROSES FOR 1859.

E. P. FRANCIS offers the following NEW ROSES which he will be prepared to send out on and after the first week in May, at 5*s.* each. They have been carefully selected from amongst the numerous new French varieties:—

Anna Alexieff	Princess Olympic
Stephanie Beaubarnais	Anna de Diesbach
Ambroise Verschaffelt	Beauté de Royghem
Imperatrice Eugénie	Comtesse Cecile de Chabrilland
Albert de Stolla	De la Mothe
Virginale	François Arago
Altesse Impériale | Ardoisée de Lyon	L'Oriflamme de St. Louis
[These two splendid varieties were awarded the Gold Medal as Seedlings at Lyons.]	Lord Elgin
	Madame Bruny
	Orderic Vital
	Salomon
Comte de Beaufort	Reine de la Cité
Docteur Bretonneau	François 1st
Empereur de Maroc	Mignard
Armide	Madame Jenny

Hertford Nurseries.

NEW ROSES.

JOHN CRANSTON will be prepared to supply early in April strong plants of the under-mentioned superb NEW ROSES at 5*s.* each, with the usual discount to the Trade. Purchasers who may prefer leaving the selection to himself will be supplied upon the following terms:—12 choicest varieties for 2*l.* 10*s.*; 24 for 5*l.*; the set of 32 varieties for 6*l.* 6*s.*

Plants of the new varieties presented with each order to compensate for carriage.

TEA-SCENTED.

Enfant de Lyons | Madame Joseph Halphay
Madame Damaisin | Reine des Pays Bas

BOURBON.

Docteur Berthet | Edith de Murat | Octavie Fontaine

HYBRID PERPETUAL.

Altesse Imperial	Joseph Vernet
Ardoisée de Lyon	Le Mont Vésuve
Anna Alexieff	L'Oriflamme de St. Louis
Armide	Mathilde de Mandeville
Ambroise Verschaffelt	Madame Jenny Varin
Anna de Diesbach	Madame Octavie Depeyre
Bouquet de Marie	Mignard
Beauté de Rœyghem	Orderic Vital
Comte de Beaufort	Princesse Olympie
Comtesse Cecile de Chalbrillan	Reine de la Cité
Empereur de Maroc	Solomon
Eugène Alary	Virginal

NOISETTE.—Beauté de Grennemont.

J. CRANSTON, Nurseries, King's Acre, near Hereford.

ASPARAGUS AND SEAKALE.

YOUELL AND CO. having a large Stock of the above growing on the Sea Coast, of the finest quality, beg to offer it at the following prices:—

ASPARAGUS, GIANT, two years .. 2*s.* 6*d.* per 100.
,, ,, three years .. .. 3*s.* 6*d.* ,,
SEA KALE .. .. 6*s.* 0*d.* ,,
RHUBARB.—Myatt's Victoria, Myatt's Linnæus, Mitchell's Royal Albert, strong roots, 8*s.* per dozen.
Hawke's Champagne Rhubarb, 9*s.* per dozen.
Artichokes, Globe and Pine-apple shaped, 6*s.* per dozen.
Dioscorea Batatas (Chinese Potato), 6*s.* per dozen.

All orders of 2*l.* and upwards are delivered Carriage Free to London, Manchester, Newcastle, and Hull, as well as to any Railway Station within 150 miles of the Nursery.

Royal Nursery, Great Yarmouth, Norfolk.

JUST ARRIVED, a great quantity of double flowering CAMELLIAS, in pots, well set with flower buds, 18*s.*, 21*s.*, and 24*s.* per dozen; Azaleas in pots, full of flower buds, showing colour, 12*s.*, 18*s.*, 21*s.*, and 24*s.* per dozen, and every other kind of Greenhouse Plant, Nursery Stock, &c.—ROBT. GREEN, 154, Kingsland Road, 55 doors from Shoreditch Church.

FINE CARNATIONS AND PICCOTEES.—Very fine Plants of the above, or pair in a pot, and which may be sent either in or out of pots at the option of the purchaser, being thoroughly well rooted, may now be had at 1*s.* 6*d.* per pair, or 12 pairs for 15*s.* They consist of good show flowers. Amongst others may be named—Rachel, Squire Trew, Lord Belper, Poor Tom, Princess Royal, Admiral Curzon, Lord Ranclife, Flambeau, Major Teesdale, Duncan, John Gair, Sarah Payne, Eugenia, Sultana, Prince Albert, Amy Robsart, Robin Hood, Mrs. May, Mrs. Aitken, Mrs. Gair, &c. &c.—Address WOOD & INGRAM, Huntingdon.

REIGATE SILVER SAND, best quality for Florists 16*s.* per ton; less quantities, 1*s.* 6*d.* per bushel; delivered to any London Wharf or Railway. Peat, Loam, and Leaf-Mould in large or small quantities. Sacks for Sand, 1*s.* 9*d.* each; or on hire, 6*d.* each; five hold a ton.—JOHN KENNARD, Purveyor to her Majesty, Swan Place, Old Kent Road London, S.E.

GRASS SEEDS FOR PERMANENT PASTURES & MEADOWS.

THOMAS GIBBS & CO., Corner of Half-Moon St.,

THE SEEDSMEN TO THE "ROYAL AGRICULTURAL SOCIETY OF ENGLAND,"

BEG to inform the Members of the Society and Agriculturists generally that their MIXTURES of GRASS SEEDS for Laying down Land to Permanent Grass are now ready. Each kind of Grass Seed composing these Mixtures is cleaned separately, and the kinds are proportioned to suit different soils.

☞ *Full Directions for Sowing and Management will be sent with the Seeds.*

MIXTURES for PERMANENT MEADOW and PASTURE (*to suit different soils*).
MIXTURES for PARKS, FIELD LAWNS, CEMETERIES, &c.
MIXTURES for IRRIGATION MEADOWS, GAME COVERS, and all other purposes.
RENOVATING MIXTURES for Improving Old Meadows and Pastures (8 to 12 lbs. per acre).

MANGEL WURZEL.	RYE-GRASS.		
Yellow Globe, Orange Globe (selected)	Italian (selected, very fine)	Carrots	all sorts
Long Red	Dickinson's	Clovers	,,
Red Globe	Imported Foreign Seed	Swedes	,,
Long Yellow	Common or Annual	Hybrids	,,
Silesian Sugar Beet	Pacey's Perennial	Common Turnips	,,

KITCHEN GARDEN SEEDS in Collections, at £1, £2, and £3 each.

ALL KINDS OF AGRICULTURAL SEEDS.

Price Lists sent free on application. Reference or Cash required from unknown Correspondents.

Thomas Gibbs & Co.
CORNER OF
HALF-MOON St.
PICCADILLY, LONDON, W.

SUTTON'S GRASS SEEDS AT THE ROYAL FARMS NEAR WINDSOR, AND IN THE ISLE OF WIGHT.

SUTTON'S GRASS SEEDS

FOR PERMANENT PASTURE, PARKS, AND LAWNS,

ARE NOW SOWN AT THE ROYAL FARMS, AT OSBORNE PALACE, THE ALDERSHOTT CAMP, THE CRYSTAL PALACE SYDENHAM, THE HORTICULTURAL SOCIETY'S GARDENS, THE PEOPLE'S PARK, HALIFAX, AND ON MOST OF THE LARGEST ESTATES IN THE KINGDOM.

These Grass Seeds being mixed expressly to suit the soil for which they are required, are never known to fail.

SUTTON & SONS having for many years paid especial attention to the Laying down Land to Permanent Pastures, they are well acquainted with the various soils of most parts of the United Kingdom, and the Natural Grasses suitable for each locality.

The following Sorts may be had separate or mixed, at lowest Market Prices:—

Alopecurus pratensis	Festuca duriuscula	Festuca tenuifolia	Lolium italicum	Poa pratensis	Phleum pratense major
Anthoxanthum odoratum	,, elatior	,, hordeformis	,, perenne tênue	,, trivialis	,, ,, minor
Agrostis stolonifera	,, gigantea	Glyceria fluitans	,, ,, Paceyanum	,, nemoralis	Petroselinum sativum
Avena flavescens	,, heterophylla	,, aquatica	,, ,, sempervirens	,, angustifolius	Trifolium repens
Achillea millefolium	,, pratensis	Holcus lanatus	Lotus corniculatus major	,, fertilis	,, pratense perenne
Cynosurus cristatus	,, ovina	,, avenaceus	Medicago Lupulina	,, sempervirens	,, minus
Dactylis glomerata	,, rubra				,, hybridum

ALSIKE and other CLOVER, and all the most suitable of the above are contained in our Mixtures. Cost of the best Mixtures for Permanent Pasture, **30s. to 34s. per acre,** according to the sorts required for the land.

Fine LAWN GRASS SEEDS for making New or Improving Old Garden Lawns,

Price 1s. per lb., 2s. 6d. per gallon, or 20s. per bushel.

Improvement of Grass Lands by Sowing Good Seeds of the most Suitable Kinds.

SUTTON'S RENOVATING GRASS SEEDS (6s. to 9s. per Acre)

Consist of the finest GRASSES and PERENNIAL CLOVERS, producing great improvement in the Pasture, and at a small expense. Quantity of Seed required, 8 to 12 lbs. per acre. Price reduced to **9d. per lb., or 30s. per cwt.** Sow in March and April.

☞ Having greatly reduced the price of our **RENOVATING MIXTURE**, we doubt not that our liberal terms will encourage the more extensive use of the same. Our Grass Seeds have for many years been allowed to be the best, and now we may add that they are the cheapest. Meadows and Upland Pastures may be increased in value 50 per cent. by sowing these Seeds. **Grass Seeds for Laying down Permanent Pasture, 30s. to 34s. per acre.** Seeds Carriage Free to all parts, except small parcels. Catalogues post free.

SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

THE EARLIEST PEA.—DUNNETT'S FIRST EARLY is in every respect superior to "Daniel O'Rourke," being several days earlier, having finer pods, and richer in flavour, height 2½ feet. For an early dish of fine-flavoured Peas we can confidently recommend this; 2s. per quart.

CHAMPION CABBAGE, the earliest and best sort, if sown in succession, may be had fit for table throughout the year, 3d. per ounce, or 1s. post free.

BUTLER & MCCULLOCH, Covent Garden Market, London.

CHAMPION OF SCOTLAND PEA.—A new and first-rate sort, declared by all who grew it last year to be the most distinct and best flavoured Pea in cultivation. To be had only at PETER LAWSON & SON'S, the Queen's Seedsmen, &c., who are also prepared to execute orders for all sorts of Garden and Flower Seeds of the finest quality.

27, Great George Street, Westminster.

EARLY PEAS.

WAITE'S DANIEL O'ROURKE PEA; the earliest Pea in cultivation.

EARLY NAPOLEON; a Blue Wrinkled Marrow Pea, as early as EMPEROR.

EARLY EUGENE; a White Wrinkled Marrow Pea, as early as EMPEROR.

Prices to be had on application of J. G. WAITE, Seed Establishment, 181, High Holborn, London, W. C.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Stove, Greenhouse, and Hardy Ferns, Miscellaneous Stove, Greenhouse, and Hardy Plants, Variegated and Ornamental foliaged Plants, Conifers, Roses, Rhododendrons, Indian Azaleas, Gloxinias, Fuchsias, Cactuses, &c., is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

MESSRS. E. G. HENDERSON & SON

RESPECTFULLY ANNOUNCE THAT THEY WILL FORWARD, POST FREE, THEIR

NEW SEED CATALOGUE FOR 1859,

IN which the following novelties of the season will be introduced, or noticed, with full descriptions of management, cultivation, and adaptation; and only those that are known to be valuable are recommended for cultivation. Much useful information on the cropping of Gardens, Sowing, &c., is also given for the guidance of cultivators. The following NEW FLOWERS and other SEEDS are offered by E. G. HENDERSON & SON for the first season; full descriptions of which, with treatment, are given in the Catalogue:—

THE ROSY CARMINE GIANT EMPEROR ASTER, 1s. 6d.
NUTTALLIA PEDATA, var., see Catalogue for the description, 2s. 6d.
CLIANTHUS DAMPIERI, 2s. 6d., 5s., and 10s. per packet.
THE LAWTON BLACKBERRY (new American Fruit), 2s. 6d. each.

SPERGULA PILIFERA,

A perfect substitute for Grass Lawns, &c., in Villa Gardens, without Mowing.

See notice of the above at page 145 of this Paper.

Seed sent free in 6d., 2s. 6d., 5s., and 10s. Packets.

NEW FLOWER SEEDS FOR 1859.

Price per packet is given in the Catalogue. An assortment of twelve varieties for 6s. from the following novelties.

Acroclinium roseum album	Ipomœa hederacea superba lilacina	Pharbites (Convolvulus) hybrida marginata
Celosia pyramidalis	,, atropurpurea	Portulacca caryophylloides
Chrysanthemum Burridgeanum	Lupinus Hartwegi cœlestinus	Œnothera bistorta Veitchi
,, venustum	Myosotis azurea grandiflora (Large-flowered Forget-me-Not)	,, Drummondi nana
Datura humilis (flava pleno)	New Double Orange French Marigold	Viscaria cœli rosa alba
Dianthus hybridus corymbosis flore pleno	Nasturtium Tom Thumb (dwarf)	,, Dunnetti
Gillardia hybrida grandiflora	Nasturtium Brilliant (not Lobbi Brilliant)	Silene rubella alba
Fenzlia dianthæflora		Solanum capsicastrum
Nolana paradoxa violacea		

Wellington Nursery, St. John's Wood, London.

MEADOW AND PASTURE GRASS SEEDS.

GEORGE GIBBS & Co., Seedsmen, 26, Down Street,

BEG to announce that their mixtures of GRASS SEEDS are now ready for delivery. These mixtures are made up expressly to suit the various soils and the growth of each variety is fully tested previous to being bulked. G. G. & Co. having supplied the Seeds for *Hyde Park, St. James's, and Regent's Park, Kensington Gardens, Kennington Park*, &c., for many years, feel assured no further testimonials are requisite. The Seeds are made up into two different mixtures, as they do not sow well together; 2 bushels of the light and 12 lbs. of the heavy seeds are allowed per acre.

Mr. GIBBS, giving his personal attention to the assorting of these mixtures assures his friends that every care is taken with regard to the proper proportions.

MIXTURES FOR PERMANENT MEADOW & PASTURE (adapted to the different soils) 32s. to 34s. per acre.
MIXTURES FOR IMPROVING & RENOVATING OLD GRASS LAND (8 to 12 lbs. per acre) 1s. per lb.
MIXTURES OF THE FINEST SORTS FOR LAWNS, GRASS PLOTS, BOWLING GREENS, &c, 1s. 3d. per lb.

SELECT STOCKS OF THE UNDERMENTIONED AGRICULTURAL SEEDS SUPPLIED AT THE PRICES STATED FOR THE PRESENT MONTH:—

MANGEL WURZEL.	Per lb.—s. d.	CARROTS.	Per lb.—s. d.	SWEDES.	Per lb.—s. d.	RYE-GRASS.	Per bushel—s. d.	CLOVERS.	Per lb.—s. d.	VARIOUS.	Per lb.—s. d.
Long Red	0 9	White Belgian	1 0	Ashcroft	0 9	Gibbs' Improved Italian	7 0	English Red	9d. to 0 10	Holcus saccharatus	2 0
Elvethan Long Red	0 10	Yellow Belgian	1 3	Skirving's	0 9	Dickenson's Italian	7 0	White Dutch	10d. to 1 0	Lucerne	1 0
Yellow Globe	0 9	Large Altringham	1 6	Matson's	1 0	Fine Imported do.	7 0	Trefoil	4d. to 0 5	Drumhead Cabbage	3 0
Red Globe	0 9	Long Surrey	1 6	Kentish Green Crown	1 0	Common English	6 0	Alsike Hybrid	2 0	Large Cattle Parsnip	1 6
Long Yellow	0 9	James's Scarlet	1 6	Marshall's Purple Top	1 0	Pacey's Perennial	6s. to 7 0	True Cow-grass	1 0	Kohl Rabi	5 0

Full Priced Catalogues sent free on application.—Cash or reference required from unknown Correspondents.

GEORGE GIBBS & Co., 26, Down Street, Piccadilly, London, W.

VEITCH'S PERFECTION PEA.

MESSRS. VEITCH & SON

BEG to call the attention of Gardeners and Amateurs in Vegetables to the above most excellent Pea, which has been highly approved by all who have hitherto grown it, and respecting which *favourable notices* have on several occasions appeared in the *Gardeners' Chronicle*, and other papers. It is a large Wrinkled Marrow, average height 2½ to 3 feet, immense cropper and delicious flavour. A limited quantity can be supplied for this season's growth, at 2*s.* 6*d.* per quart. Messrs. V. & Son intending to grow it in quantity for next season's sale, are desirous that as many parties as possible shall have the opportunity of proving its merits.

TO THE TRADE.

VEITCH'S PERFECTION PEA.

This PEA having been *so favourably* noticed on several occasions in the *Gardeners' Chronicle*, and being so *highly approved* by all those who have already proved it, Messrs. VEITCH & SON have made arrangements for *growing it in quantity* this season and offering it wholesale *next autumn*. That all parties who so desire it may be acquainted with the merits and character of this variety Messrs. V. & S. will be happy to spare a quart or two for trial to any of the Trade who may wish to have it, at the retail price, 2*s.* 6*d.* per quart.

ROYAL EXOTIC NURSERIES, EXETER & CHELSEA, March 1859.

EXHIBITION OF CAMELLIAS,

VAUXHALL NURSERY, WANDSWORTH ROAD.

MILNE, ARNOTT, & CO.,

(SUCCESSORS TO CHANDLER & SONS),

HAVE much pleasure in announcing that the large Collection of CAMELLIAS for which this Nursery has so long been celebrated, is now coming finely into bloom, and will improve daily, and continue in perfection several weeks. Open to visitors every day except Sunday.

MILNE, ARNOTT, & Co.,
NURSERYMEN, SEEDSMEN, AND FLORISTS, WANDSWORTH ROAD, LONDON, S.

CHOICE FLOWERS.

BUTLER & McCULLOCH'S SPRING CATALOGUE OF SEEDS,

ARRANGED on a new and original plan, with copious Descriptive and Cultural Notes, and containing many new and rare species and varieties not found in any other Catalogue, now ready and may be had free and post paid on application.

FLOWER, SHRUB, TREE, and VEGETABLE SEEDS, the crop of 1858, saved with the greatest care, by the most eminent growers.

We may also state that the Sardinian correspondent of Messrs. JAMES CARTER & Co., whose Seeds, especially Carnations and Picotees, have given such universal satisfaction, has transferred the Agency from that firm and appointed us his representative in this country. To meet the growing demand for first class flowers, particularly FLORISTS' FLOWERS, we have adopted our usual maxim of charging the lowest possible prices.

Professor LINDLEY in the *Gardeners' Chronicle* of February 5th, has the following notice of B. & McC.'s Catalogue.

"BUTLER & McCULLOCH'S (Covent Garden) Spring Catalogue of Choice Flower, Shrub, Tree, and Vegetable Seeds. This list fills 84 closely printed 8vo pages, and is remarkably well got up. It appears that the correspondent in Sardinia, who formerly supplied one of the great London houses with seeds raised in that warm part of Europe, has now transferred what he saves to Messrs. BUTLER & McCULLOCH. Let us add, that it yields to no Trade List in the abundance of its materials or the excellence of its arrangements."

A selection of 44 pkts. of beautiful Annual Flower Seeds							7*s.* 6*d.*	An Assortment of Vegetable Seeds, 20 quarts of Peas, and other Seeds in proportion for 1 year's supply			£3 3*s.* 0*d.*
Ditto	33	ditto	ditto				5 6	Ditto	ditto	12 quarts of Peas	ditto 2 2 0
Ditto	21	ditto	ditto				3 6	Ditto	ditto	6	ditto ditto 1 1 0
A selection of 40 pkts. of beautiful Biennial and Perennial ditto							10 6	Ditto	ditto	5	ditto ditto 0 15 0
Ditto	31	ditto	ditto				7 6				
Ditto	24	ditto	ditto				5 6				

All Flower Seeds sent post paid, and Vegetable or Vegetable and Flower Seeds amounting to 1*l.* 1*s.* Carriage Paid to any principal Railway Station in England, Wales, and Scotland, or any port on the Irish Coast.

BUTLER & McCULLOCH, Covent Garden Market.

SPECIMEN ERICAS AND GREENHOUSE PLANTS.

R. GLENDINNING has to offer to Exhibitors as well as for private decoration a number of beautifully-grown Specimens and Half-Specimens of ERICAS and GREENHOUSE PLANTS in the healthiest possible condition. R. G. respectfully solicits an inspection of the same; but to those who may find it inconvenient names, sizes, and prices will be furnished on application.—Chiswick Nursery, London, W.

NEW SEEDS FOR 1859.

WM. CUTBUSH AND SON beg respectfully to intimate that their PRICED CATALOGUE OF VEGETABLE AND FLOWER SEEDS, &c., is now ready post free on application. WM. C. AND SON devote particular attention to this department of their business, and most of the choicer kinds of culinary seeds and roots are saved under their own inspection, and they can confidently guarantee the quality of all offered.—Highgate Nurseries, London, N. Established A.D. 1695.

AZALEA INDICA.

J. IVERY AND SON beg respectfully to invite growers of the above named to an inspection of their unrivalled Stock of Young Specimens of all the newest and best varieties, many of which have been exhibited at the Metropolitan Exhibitions. They are clean and healthy, well set with bloom, and moderate in price. Catalogues forwarded post free upon application.—Dorking Nursery, March 12.

FLORISTS' FLOWERS, SEEDS, ETC.

CAREY TYSO, FLORIST, &c., Wallingford, Berks, can still supply of the best quality:—

	£ *s.* *d.*
*RANUNCULUSES, 50 superb sorts	1 0 0
*Ditto, 50 mixed	5*s.* to 0 10 0
*DOUBLE ANEMONES, 50 fine sorts	0 10 6
CARNATIONS and PICOTEES, 12 pairs	1 0 0
PINKS, 12 pairs	7*s.* 6*d.* to 0 15 0
*PANSIES, 12 plants	4*s.* to 0 12 0

*Imported GERMAN ASTERS, BALSAMS, STOCKS, LARKSPURS, WALLFLOWERS, ZINNIAS, &c., 1*s.* and 2*s.* 6*d.* per assortment.

C. TYSO'S FLORAL CATALOGUES FOR 1859 may be had for one label.

*These articles can be forwarded by post.

THE ADVANTAGES OF CASH PURCHASES.

ROYAL BERKSHIRE SEED ESTABLISHMENT.

SUTTON AND SONS, SEED GROWERS, Reading, desiring to encourage the practice of purchasing AGRICULTURAL SEEDS for cash payment, afford the full benefit to which such purchasers are entitled.

Applications for cash terms, stating quantities required, will be liberally responded to. GOODS DELIVERED CARRIAGE FREE.

ROYAL SOUTH HANTS SEED ESTABLISHMENT.

UNDER THE PATRONAGE OF H.R.H. THE PRINCE CONSORT, THE AGRICULTURAL, HORTICULTURAL SOCIETY OF INDIA, AND THE LEADING AGRICULTURISTS OF THE UNITED KINGDOM.

PAGE AND TOOGOOD can now supply GARDEN AND FARM SEEDS, carriage free; SEED POTATOES, &c. The numerous Prizes gained by their Stocks are convincing proofs of superior quality, and their prices compete with any house in the kingdom. WHOLESALE and RETAIL PRICED CATALOGUES upon application.

Agents for ODAMS's Blood Manure, Superphosphate, &c. Seeds Packed for Exportation to all Parts of the world,

37 and 38, Oxford Street (facing the Railway Terminus); and 58, Above Bar, Southampton.

The Gardeners' Chronicle.

SATURDAY, MARCH 12, 1859.

MEETINGS FOR THE FOLLOWING WEEK.

THURSDAY, March 17—Linnean ..... 8 P.M.

No greater enemy has attacked our hothouses of late years than that alarming DISEASE which has shown itself AMONG ORCHIDS. Plants of great value have by degrees, although under very careful management, become disfigured by lines or blotches of a black colour, caused by the destruction of a portion of their tissue; these dark spaces run together, and so injure the constitution of the plants affected that roots will no longer form, and the attack ends frequently in death. Various

causes have been assigned for the appearances in question. Excessive dryness, excessive wet, want of air, admission of cold air, too high a temperature, too low a temperature—all these have, by one person or another, been supposed to produce the injury. And now we have an entirely new explanation.

In our last Number our learned correspondent "J. O. W." described an Acarus-like insect, which had been detected in large quantities on the diseased Orchids of a celebrated collection in the West of England, by Mr. Dominy, the intelligent foreman in the nursery of Messrs. Veitch, of Exeter. To the naked eye it is almost invisible, except when several are collected together, but its white cast-off skins are more conspicuous. It is however, as Mr. Parfitt, of St. Leonard's, near Exeter, mentions in a letter, most common on the healthy part of leaves, the insect appearing not to like the places it has killed, but continually shifting its quarters as the points it attacks begin to decay. The creature is in reality a minute kind of red spider, and is supposed to have been imported with Indian Orchids. Like red spider it will no doubt be easily removed by sulphur applications, or by other means. Indeed Mr. Dominy believes that he has already found it possible to destroy it without sulphur, by the use of the following composition:—"To each gallon of soft water add three small tablespoonsfull of turpentine, 8 oz. soft soap, and 2 oz. tobacco; let the mixture soak for 24 hours in a warm house, then mix well together and strain through a fine sieve or coarse cloth; the mixture will then be fit for use. It must be kept covered to prevent evaporation, and used at the same temperature as that of the air in which the plants grow; the latter must not be kept in the composition longer than can be helped, say half a second. After dipping allow the composition to remain on for a day or two, then sponge the plants with clean warm water, and keep the house moist and at a tolerably low temperature, but not so low as to engender cold damp. Steaming the plants a little nights and mornings may also be recommended, provided the weather is not dull. Admit a prudent supply of top and side air on fine days, but be careful to avoid cold currents." Thus it would appear that the hour in which the presence of the enemy among us is known is also the hour in which his doom is sealed.

We all know that the red spider can thrive only in a dry atmosphere, and that its presence in hothouses arises from the air not being kept sufficiently moist. We never, for instance, see it in a damp warm Vinery, although in dry ones in autumn it is common enough. So it seems to be with this Acarus: the greatest mischief is done by it when the air is driest. There is for example a Dendrobium Farmeri suspended in the house of a collector of our acquaintance, which is perfectly healthy, although the Acarus-disease is unfortunately too rife among the other plants in the same house. Now this Dendrobium is suspended next an end wall, which is comparatively cool and moist.

The term Acarus-disease has just been used. Let us explain why. Although there seems to be no doubt that the Acarus is in some way connected with one form of disease, it by no means follows that it is always the cause of the deadly spots which Orchid growers so justly dread. On the contrary, while we find on an infested Stanhopea now before us lines of spots which, viewed against the light, are semi-transparent with a dead brown central point, yet in a diseased Cymbidium nothing is to be seen except a brown circular disk commencing in the central tissue of the leaf, and gradually advancing outwards till it reaches the skin, when it spreads rapidly all round its own circumference, unattended from the beginning by any transparent border. Can these appearances arise out of the same cause? Is it not more probable that they have two distinct origins? That the transparent spot belongs to the Acarus, and the opaque one to something else? At present there is no evidence upon the subject, and therefore we merely suggest the possibility of the two appearances having no connection with each other. And this is a point of very great importance, because if it is believed that the Orchid disease is caused by Acari, and their destruction be all that is aimed at, great disappointment will be felt when it is discovered that Orchids continue to be diseased, although Acarus and all his family are extinguished. For ourselves we strongly incline to the belief that no composition or application whatever will prevent the disease unless the plants are kept in thoroughly high condition by attention to their general health. We could point indeed to places where it would be absurd to lay the blame of illness upon Acari, there being most unmistakeable signs of general neglect, which is quite sufficient to destroy plants without the assistance of this new discovery.

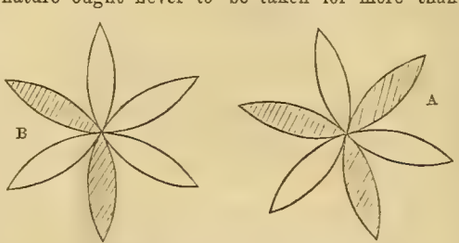
Among the irregular deviations from their ordinary form, to which flowers are subject, that of which we here give a sketch is not the least interesting. A seedling Correa, raised by Mr. Van Houtte, to whom we owe the sketch and a dried flower, produces exclusively such blossoms as are here represented; that is to say, instead of forming a tube with four small teeth at the end, the flowers



divide into four spreading narrow petals. At the same time the stamens lose their regular alternation and opposition to the petals, and are reduced in number from eight to six or even five. We do not recollect an analogous case, although it was only to be anticipated in a genus whose quasi-monopetalous corollas are really formed by the adhesion, not strict organic union, of petals. The Correa itself seems to be some form of Correa speciosa.

The opinions of Sir Gardner Wilkinson upon the subject of Colour as a decoration in horticulture will doubtless comfort many an honest soul who has puzzled himself with the doctrine of complementaries. That the learned author is right there is no doubt in our own minds. Were he not it would be time to show that even if Chevreuil's maxims were true they cannot be applied in gardens. The truth is that plants do not furnish the means of carrying out his views; either the requisite colours to form Chevreuil's harmonious combinations do not co-exist, or the plants in which they occur are so different in their manner of growth as to render it impossible to use them for purposes of contrast; their flowers are not on the same plane, or they are so mixed with green as to lose the quality belonging to the coloured parts, or some close up while others expand, and many again have one colour on the upper side and quite another on the lower, so that the effect is changed at every instant by the mere action of wind. All this is notorious to gardeners, although we fear not so certain in the minds of their employers, who sometimes demand impossibilities, and blame their gardeners for not performing them.

It is very well for an amateur or a landscape gardener to draw a pattern on paper, and to mix up reds, and blues, and yellows, and greens, and all the other colours of the palette, so as to form a gaudy picture. But it is not very well to require a gardener to execute such a work. It is the merest ignorance of practical matters to propose it. Designs of such a nature ought never to be taken for more than



they are worth—that is to say, as suggestions by men of taste as to the general way in which good effects may be obtained. The consequence of attempting to follow blindly such directions may be seen anywhere in autumn, in the form of ragged flower beds, broken "ribbands," and continuous lines in which there is no continuity. Even Sir Gardner Wilkinson appears not to appreciate sufficiently the difficulties of such an operation, for in some coloured designs for flower gardens introduced into his interesting volume he demands colours, especially blues and purples, which cannot be found among "bedding out" plants. In this he seems to have been misled by some incompetent adviser, if we are to judge from a list of plants to be used for colour, appended to the chapter on dressed gardens. Take for instance Salvia patens, a beautiful thing, no doubt, but whose flowers are extremely fugitive; or the different kinds of Anagallis, closing their blossoms under every passing cloud; or Gentiana Pneumonanthe, not a very cultivable species, with flowers more often shut than open; or Scabiosa Gramuntia, hopelessly shabby; or the Gilias, whose green cannot be concealed; or Helianthemums, the blossoms of a morning; or, to cease such an enumeration, Martynia diandra, a tender stove plant, to be broken by every wind or nipped by every chilly night.

General principles are evidently all that a gardener should be required to observe; and he should be only expected to keep as near them as the materials at his command will permit. If those who direct his operations insist upon a strict adherence to the patterns they furnish, they should be called upon to name the plants by which each effect is to be obtained—and to assume all the responsibility that will attach to the failure which must attend their plans. Among the general principles here alluded to attention to symmetry, or as Sir Gardner prefers to call it, "symmetricality," is all important. It is the easiest of execution, is the most certain in its effects, and has a permanent beauty which remains when the gay summer colours are gone. Correspondence and contrast are its great features; correspondence in form and position, contrast in colour. How symmetrical arrangements of colour are to be worked out the pages of a newspaper cannot show. This however may be stated, that whereas in geometrical gardens skilfully designed every part is made to answer to some other part in form and magnitude, so in introducing colour every red, yellow, or blue, should answer to some similar red, yellow, or blue in some other part of the design placed in correspondence within the range of the eye. Perhaps this may be sufficiently illustrated by the comparison of a couple of six-pointed stars, of which one is symmetrically coloured, and the other the reverse. (The shaded parts represent dark colours, the unshaded light colours.)

Here A is symmetrically arranged and B is the contrary. It would be difficult to spoil the effect of A; it would be impossible to render B endurable. It is to symmetrical arrangement indeed that what are called Box gardens chiefly owe their beauty, of which a specimen is given by Sir Gardner in his work now referred to:—

"If," he observes, "some object to Box because it harbours insects, this grievance is not beyond all remedy, and the trouble it gives is compensated for by the appearance of the Box itself. Indeed a portion of the dressed garden, with patterns laid out entirely in Box, is by no means unworthy of commendation, like that beautiful one attached to the Kasr (or Al Casr) at Seville; where (though in its present condition it is said to be the work of a Frenchman) I think we may trace some patterns taken from Arabic sentences entirely formed of clipt Box. They have a very pleasing effect; and a valuable hint may be obtained from this kind of evergreen design for winter beds. Each main compartment is marked off by a higher and thicker hedge, or barrier, of the same, or of some other evergreen plant, and within it are the beds formed of patterns and small paths of gravel. Such designs in Box might with advantage form one portion of a large dressed garden, distinct from the other geometrical beds; and it is not forbidden to unite some low Box patterns with these last, though they generally look far better by themselves, and the flower beds may be satisfied with having their edgings of Box. Sometimes the Box patterns may be laid out in some other part of the garden; or even in the level turf, being surrounded and marked out by small gravel walks; or they may form a small independent *parterre* by themselves."

All these are matters deserving the consideration of the lovers of decorated gardens, and we trust that Sir Gardner Wilkinson's precepts will find disciples everywhere.

RHODODENDRONS.—No. V.

But here something may be said of pruning. No plant ordinarily cultivated will bear the knife better than the Rhododendron. It matters not how old the stems are, they may be cut with perfect certainty of obtaining a plentiful supply of rapid-growing shoots, and when plants get old, bare, and straggling, with the natural concomitants—a paucity of and poorness in the flowers—no more speedy means of renovation can be adopted than by cutting them well back. As a safe rule, however, never cut back and transplant at the same time, or in the same year; and moreover, if the plants you propose to prune are of any value, be sure

they are well established before you use the knife to any extent; but to such as are well rooted cut as hard as you please. Of course, as before hinted, discrimination must be exercised in determining the nature of the plants to be operated on—whether on their own roots or not. A few years since we saw some large masses of common Rhododendrons 12 or 15 feet high, which having much overgrown the positions intended for them, it was necessary to reduce. A gentleman well acquainted with the growth and habits of the plant recommended the radical measure of cutting back to within a few feet more or less of the ground. This was done with astonishing results. In two years after cutting, in place of huge straggling plants were vigorous healthy masses of foliage and flower. And the same results may be obtained by anybody under like conditions.

The best season for pruning the Rhododendron, as indeed it is for all evergreens, is in spring so soon as vegetation becomes active. But if, as will generally be the case, it is desirable to preserve the flowers, cut immediately they are faded; growth is made early, and by taking advantage of that a season's wood is gained. If pruning is effected late in summer, Nature in endeavouring to repair the damage will certainly induce new growths; but they must necessarily be, on the arrival of winter, feeble and immature, a prey to all the contingencies of the season. By allowing the flowers to be produced before pruning, and yet performing the operation soon enough to secure the full amount of the current year's growth, one season's bloom only will be lost, a good share of flower will reward you in the second year, *i. e.*, supposing the plants to be in an ordinary open situation; if under trees in a thick wood these results will not be so speedily attained.

In a late number of the *Gardeners' Chronicle* a correspondent asked if Rhododendrons, the flowers of which were picked off now, would flower in the autumn of 1860, adding that he had been assured such would be the case, but required confirmation. We advise him to try no such experiments; the result must be an absence of flowers this year without attaining his object in 1860. The blossoms will be produced in their natural season then, probably however more abundant and finer than usual, in consequence of the strength of the plants being husbanded from having none to support in the present one. Such advice could only be given at mere conjecture, and without for a moment considering the nature of the plant in question. Rhododendron flowers are often naturally, or rather unnaturally, produced in autumn; but they are generally more or less deformed or immature then, and they are usually abundant when the weather is more than ordinarily moist and warm at that season. And as such are invariably produced at the expense of the ensuing summer's blossom they are by no means to be desired then.

Whenever time and labour will allow, the seed-vessels should be picked off as soon as the flowers fade. The vigour of the plants is much preserved by the practice, and the blossoms in the ensuing year finer and more abundant than when the seeds are allowed to ripen on the branches. They should be removed with caution or many shoots will be destroyed. If children are employed to do this, they should be carefully instructed or much damage will result from more of each branch being taken off than is necessary, carrying with it many nascent shoots. *G. Lovell, Bagshot.*

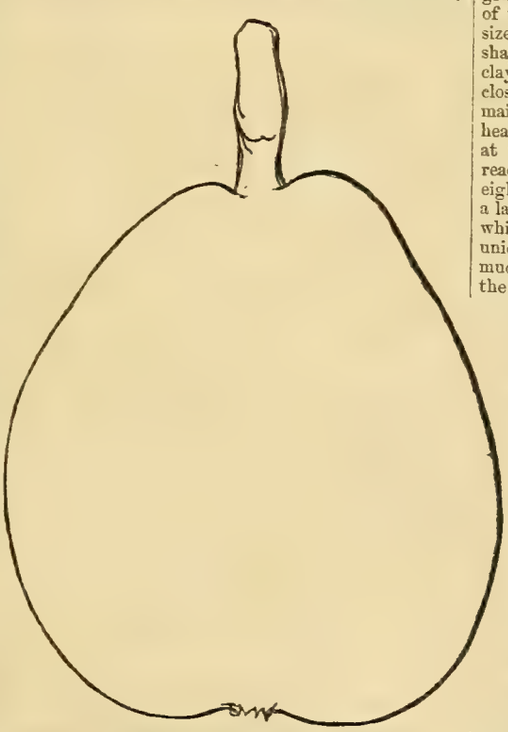
(To be continued.)

HOLLYHOCKS.

They require good old garden soil well trenched over to the depth of 2 feet, with plenty of thoroughly decomposed manure, such as old Cucumber beds, or night soil mixed with the earth. If the subsoil is wet they will thrive remarkably well in the summer, but in the winter wet is very injurious to them, when old plants are allowed to remain; to prevent which I remove the mould round the neck of the plant, and fill up with white sand, about 6 inches round the stem, level with the surface; it is simply to preserve them from wet and insects, from which, in the winter, they are apt to suffer very much, if not killed. I strongly advise young plants being planted every year, as you would Dahlias, to secure fine flowers. They may be propagated by single eyes in July and August, also by cuttings in the spring, placed on a slight bottom heat. Plants raised in the summer are best preserved by repotting them in October into large pots—the larger the better, in light rich sandy earth, and placed in a cold frame or greenhouse, giving plenty of air on all favourable occasions; they will then grow during the winter. In March or April turn them out into the open ground, and they will bloom as fine and as early as if planted in the autumn. Plants even put out in May will flower the same year. Plant them not less than 4 feet from row to row, and 3 feet apart in the row. If grouped in beds, not nearer than 3 feet each way. They will grow well in the shade of distant trees, but by no means must the roots interfere. In May or June, when the spikes are grown a foot high, thin them out according to the strength of the plant; if well established, and very strong, leave four spikes; if weak, two or three; when they are required for exhibition, only one must be left. The following observations on exhibiting perhaps may not be out of place here, and as I believe the best way of showing the Hollyhocks is in spikes, I give my opinion of what I consider the standard of a perfect spike. In judging, the first point I notice is the individual flower on the spike, the perfection of which consists in the petals being of thick substance, the edges smooth and even. The florets occupying the centre must be full and compact, closely arranged, rising in the middle to a half globular form, with a stiff guard petal extending about half an inch, or in proportion to the size of the centre ball, so that the different parts of the flower present a uniform appearance. Second—the arrangements of the flowers on the spike should be regular, not crowded together into a confused mass; nor loosely hanging with open spaces between each flower, but so disposed that the shape of each may be distinctly seen, and fully blown, the uppermost covering the top: nothing can add more to its beauty than a few small green leaves between the flowers, which give it an elegant and graceful appearance. The third point is colour—the brightest, strongest, and most distinct stand first, but it is desirable to obtain all imaginable shades. Stake them before they get too high, and secure them well by tying, and they will grow erect. The most robust grower does not require a stake higher than 4 feet from the ground, If the weather is dry at this season of the year, they may be watered with a solution of guano, or any other liquid manure, poured carefully round the roots, avoiding to pour it on or too near the stem. To grow the flowers fine, cut off the lateral shoots, thin the flower buds, if crowded together, and take off the top of the spike, according to the height desired, paying attention to the usual height and habit of the plant. Observe, by topping it, you may increase the size of the flower, but at the same time shorten its duration of flowering, and perhaps disfigure its appearance. *Chater's List of Hollyhocks grown for sale in his Nursery, Saffron Walden.*

NEW PEARS.

Delices d'Hardenpont d'Angers.—This is a hardy, good melting Pear, which ripens in November and lasts sometimes till far in December. It succeeds remarkably



well on the Quince stock, and forms naturally and with but little pruning a very handsome pyramid.

A SINGULAR INSTANCE OF ARBOREOUS VIGOUR.

Trees in walls are always rude intruders, having no business there. Seeds of trees floating down the torrent, or driven by the wind, will enter crevices of walls, and there take root with scanty means of nourishment. And if the superincumbent pressure of the stones be too strong for the new tenant to lift them up, it will gradually elbow itself out at the junction of the stones, and there in time form an excrescence on the face of the wall, holding the stones in its firm embrace. Dyer, the poet, must have witnessed this at Grongar Hill, when he described the Ivy supporting the wall.

"There both a safety from the wind,
In mutual dependence find."

But we have here a phenomenon still more striking. It is of a Nut tree supporting a large millstone. About a century ago our watermill of ancient days was destroyed to make way for supposed improvements; and nothing now remains to show the spot where once it stood, save a huge millstone. For years it lay flat on the ground amongst surrounding Cherry trees, till in the autumn of 1811, some animal, possibly a squirrel, deposited a few nuts at the bottom of the hole in the centre of the millstone. During the following spring one of these nuts began to germinate, and then raised its puny head out at the hole in the stone. One day I observed to a naval officer who was standing by, that the diminutive plant before us, if it lived and had good luck, would, in time, lift the millstone from the ground where it lay, and then support it. He doubted this. But time has shown that he was wrong in his surmise.

The young Nut plant improved in health and strength till it entirely filled the cavity of the stone; so that, to the inspecting eye, the wood and stone seemed to form a compact body. It now began to lift the stone. Year after year this massive millstone rose a trifle from earth to sky, and whilst I am writing this, it is now nearly 9 inches in mid air. The Nuts are excellent, and always full grown; whilst the tree itself which bears them sets tempests at defiance; and, notwithstanding its gigantic burden, is never seen even to totter when "the stormy winds do blow."

It goes by the name of old Mr. Bull with the national debt round his neck. Facetious appellation! Nevertheless it seems to offer a lesson to the speculative politician, that this millstone must ultimately be smashed by the hand of man, or the tree itself must die of strangulation. *Charles Waterton, Walton Hall, March 5.*

Home Correspondence.

Grafting Vines.—Having read Mr. Spary's remarks on grafting upon new wood, I venture to deseribe a somewhat similar operation, except that it was old wood I worked upon instead of new. In January, 1854, a strong plant of West's St. Peter, the only stock that could be spared in an early Vinery, was headed back to within a foot of the front upright sash. At a foot below a strong shoot of the previous year had been left. This was cut back to within 2 inches of the stock; a piece of bark with a small portion of wood was cut clean from the side as in whip grafting, with this difference, that a cut was made on the reverse side much shorter, leaving the top a tapering wedge to receive the grafts, the tongue being cut to fit over the top instead of the side as in whip grafting. This is, I believe, called saddle grafting. A strong shoot of the previous year's growth of the Golden Hamburgh was chosen, and of the same size as the stock, leaving only one eye. This was shaped to fit the stock, the usual method of tying, claying, &c., being resorted to. The house was kept close through January, when sufficient warmth was maintained to keep out frost, gradually increasing the heat through February up to the beginning of March, at which time all the Vines, except the graft, were ready to open their buds. The bud on the graft was eight days before it began to push. In the meantime a large quantity of sap had exuded from the old stump, which had been left a foot long above the union to save the newly-cut parts from too much moisture by the flooding of the sap, while the healing process was going on. As soon as the buds began to grow the bleeding ceased, the growth was most vigorous, and two eyes close to the base broke directly after forming, and contended strongly with the leading shoot for the mastery of growth; another subdivision ensued, and these last two main shoots broke two eyes each at the bottom, and were stopped at the termination of the bottom light. The vigour still increased, and the lateral shoots were equal in size to many of the side branches on ordinary Vines, and fruited the following season. The growth indeed was the most extraordinary from a single eye I had ever seen, covering completely two lights, part of two others, as well as the greater part of the end section. As soon as the growth subsided in autumn foreshortening and thinning were commenced, which would in ordinary cases have been carried on with the growth, but the fear of breaking all the fruiting eyes on the principal shoots induced me to forego the stopping and thinning until the unusual vigour had subsided. At the winter pruning an immense quantity of wood was cut out; the eyes which were thoroughly matured and fit for propagation amounting to some hundreds. Nearly two-thirds of the principal shoots were cut out, the side ones or laterals were spurred into one and two eyes. In 1855 forcing began at the same time as the previous year, but very steadily, allowing plenty of time for the eyes to break; they all broke well, and showed 32 bunches of Grapes. These were reduced to 16, which were large and ripened well, and from this crop were taken the three bunches that were shown at the Horticultural Society's Exhibition in July, 1855, and awarded the large Silver Medal. *M. Busby, F.H.S.*—A Muscat planted in a late house was grafted here with a Black Hamburgh. The operation was not done when the Vine was in full leaf, as Mr. Spary's was, but it was cut down when just breaking the second week in March, 1857. It grew remarkably fast, for it reached the top of the house (25 feet) the first season, and was stopped in its career by closing the top lights, which cut the ends off. It was shortened back to six eyes, when again last season it reached the top of the house, where it was stopped—but this time with the finger and thumb. It was grafted on the cleft or wedge system, in three different places, viz., the leader and two laterals. The three canes appear to have grown very regularly, there being but little difference in the size of any of them. The grafts were taken off in November and kept moist by inserting the ends into the damp soil of the house. All was clayed and mossed in the usual way, and from what I can glean, it bled but very little. The callus formed quickly, and in a little time was scarcely perceptible. *Thos. Smith, Gardener, Great Brickhill Manor, Fenny Stratford, Bucks.*

Gas Lime for destroying Ants in Meadows and Lawns.—I have been using this and find it a very good remedy for these pests of our meadows. We have sometimes 20 or 30 hills in the space of a perch of ground, making it nearly impossible to mow; and nothing will eat the coarse Grass that grows on them. My plan is as follows: during cold weather, when the ants are dormant, I take a spade and cut round the outside of the little hills, push the spade under them a little way, raise them up and turn them over; this exposes the greater part of the ants. Then with the point of the spade I remove the crumbs from the bottom of the hole, taking care to get as many of the ants as possible, and scatter them on the surface. I then pare off a little of the under part of the turf and scatter it about; and if the weather is cold or wet, the first night will destroy the enemy. There will still be a few left in the runs; to destroy these make a hole with a crowbar in the middle of each nest about a foot deep, moving it round so as to make the hole as wide as possible; then fill up with strong gas-lime, using half a spadeful to each nest, place the turf in its original position, and stamp it down firmly to its proper level. All the ants that come in contact with the gas-lime will be killed, and the remainder will forsake the nest. I can warrant that they will not work any more in their old nest with a spadeful of strong gas-lime bottled up in the middle of it. It is necessary that the turf should be left 2 or 3 inches thick, otherwise it will be burned through by the lime below. This plan is not very expensive, as the lime can be procured at 1*s.* per ton, and a man will destroy a great many in a day. *George Peden, Pavilion Gardens, Folkestone.*

Plant Sales.—During the season now nearly at a close, my attention has been called to various sales by auction of nursery stock in the neighbourhood of London, and on comparing the sale catalogue with what I have known to be the stock on the place (that being supposed to be the object of sale), I have found large quantities of plants and trees which had never been seen on the premises till then; but which had been brought in by the auctioneers just previous to the day or days of sale, either to swell the pages of the catalogue, or to relieve themselves of portions of their own surplus stock. Now, the grievance (as it appears to me) is this. An unreserved sale by auction is announced; buyers attend in the belief that the lots will be sold for what they will fetch, instead of which there is a certain price reserved for the best things, and if the bidding does not reach so high they are "bought in." So much for one side of the grievance. On the other hand (and this is by far the worst feature), tradesmen carrying on business in the immediate neighbourhood of these sales, and who trade in a straightforward manner, are annoyed by the pouring in of stock, similar to that which they may be selling at a fair remunerative price. Now I admit that any one who has goods to dispose of has a perfect right to make the most of them in a fair and honest way; but the above I consider is not fair or honourable, but making money (to sum the matter up in a few words) under false pretences. I hope that the subject may be taken up by abler hands, and be fairly discussed. *Fair Play.* [We print this, but cannot allow it to become a subject of discussion. It is no business of ours to meddle with honest tradesmen and their way of carrying on their business.]

Dioscorea Batatas.—Having 12 months ago been favoured with a few cuttings or sets of this vegetable I promised to give a true report as to the produce or result. I planted bits 1½ inch long in small pots and put them in my greenhouse; they all grew well. I turned a few out of the pots into deep mould in my garden, but the majority (the 1st of June) to some rows of Carrots and Parsneps in my tillage field, being a fine sandy good loam on sandy bottom. They went on rightly, but finding rabbits ate them down I put spare wire netting over them, pegged down the runners at some joints, but never found any of them root. Having an open winter (though occasional night-frosts of some 26°), I never took them up till the 1st of March. I found decay of the stalk of from 1 to 4 inches downwards, but all the rest sound and good. I was disappointed with the size when I first got the sets and I am also disappointed in the produce. This Yam never can be worth growing in this country, for it should have deep good soil, yet it only produces one tuber to a plant, and if ever so large would give great trouble and expense to dig up any quantity, the thick end 10 to 12 inches below the top requiring careful digging. On the back of this sheet I give the natural size of what I took up; also of Parsneps in the same rows. There can be no question as to the value of the two relatively. I had hoped better things when I read of this root nearly two years ago, but truth should be told and care taken not to mislead. *Frs. Wailes, Husthwaite, near Easingwold.* [No one has ever pretended to compare the produce of Chinese Yams with Parsneps; or to recommend the former for field cultivation. The specimens obtained by our correspondent were not such as good gardeners raise, as was to be expected from his greenhouse management assisted by rabbits.]

Trade Catalogues.—Allow me to suggest that it would be a service both to amateurs and also to a considerable proportion of the gardening profession if nurserymen—the leading ones more particularly—would divide their stove plants into two sections—the tender and the cool or intermediate kinds. There are many who have no opportunity of ascertaining the hardiness of the various stove plants offered for sale, except by personal experience; and by adopting the plan I mention a useful guide would be afforded to buyers, who could then purchase what would suit their structures only, and not what they would in all probability fail to manage. The Messrs. Henderson employ an asterisk to distinguish hardy greenhouse plants from others; this might with equal advantage be extended to stove plants; it would save a deal of disappointment and vexation without materially affecting the seller's returns. *J. M., Hawkchurch, near Axminster, Devon.*

The Canadian Cotton, to which "J. M." calls attention in *Gardeners' Chronicle* for Jan. 1, is the seed down of Milk weed or Silk weed, Asclepias Cornuti, very nice-looking Cotton indeed; but, for sufficient reason, it cannot be spun. *G.*

Garden Expenses.—The discussion which took place on this subject in your columns last spring induced me to keep a record of the expenses of the different departments under my charge, and also of the market value of the produce of such departments as are expected to yield a return for the labour expended on them, and the following is the result. Subjoined is a tabular statement of the total expenditure for the year ending December, 1858, and also the return for eight months, viz., from May to December:—

Expenditure.	£	s.	d.
Ornamental department	150	17	1½
Vegetable department	21	19	3
Fruit department	22	8	4½
Coals	9	0	4
Holidays and sickness	4	15	2
House	39	10	5
Fences on farm	21	2	11
Woods	8	15	2
Additional farm work	6	0	0
Total	284	8	9
Returns.	£	s.	d.
Grapes	33	10	0
Orchard-house fruit	8	6	0
Wall fruit	12	5	4
Vegetables, small fruit, &c.	56	3	6
Wood	31	13	6
Total	146	18	4

The kitchen garden is 2 acres in extent, enclosed with a wall; there are two Vineries (span-roofed), 25 feet by 15 feet; one of them is in full bearing order, the other was built in 1857, the crop in it last year was consequently small (one bunch to a rod). There is an orchard-house, 46 feet in length by 12 feet in width, in which Peaches and Nectarines chiefly are grown. The ornamental department includes greenhouse, flower garden, shrubberies, walks, borders, and drives, &c. *J. D., Fife, N. B.*

Wellingtonia gigantea.—The following tabular statement I have compiled from your columns; it will doubtless be interesting to your readers:—

Locality.	Height.	Breadth.	Girth of stem.
	Ft. ins.	Ft ins.	Ft. ins.
Veitch's Nursery, Exeter	9 6	6 0	1 3
Ditto	8 9	6 6	1 7
Uffculme Vicarage, Devon	7 10	6 0	1 4
Tortworth Court	7 9	6 1	1 0
Hillersdon House, Devon	7 8	7 0	1 0
Congleton, Cheshire	7 6	6 0	1. 0
Waterer's Nursery, Bagshot	7 5	5 10	
Fairlawn Park, Tunbridge	7 0	6 5	1 3½
Acton Green, Middlesex	6 9	4 9	1 0
Basing Park	5 10½	5 2	
Backhouse's Nursery, York	5 9	5 0	

Perhaps in the ensuing autumn the owners of the above trees would kindly furnish their dimensions at that time, so that a comparison may be made of their relative growth. The above measurements were made last September. *W. C. G.*

Foreign Correspondence.

Niger Expedition.—(*Concluded from page* 194.)

From Mr. Barter to Sir W. J. Hooker.

"Jeba, River Kworra, Nupe,
"Central Africa, Sept. 18, 1858.

"A messenger having just arrived from Lagos, and who returns to-morrow, enables me to send a few brief lines. Lieut. Glover informs us that the 'Rainbow' has been reported at Lisbon, and that she would not call at Lagos. He was therefore about leaving to proceed to Fernando Po, meet her there, and bring her up the river. As a journey overland takes about 20 days, and presuming the 'Rainbow' to be at Fernando Po on Lieut. Glover's arrival, we may, in the ordinary course of things, expect the steamer to be here in about six or ten days hence. The river has risen already about 10 feet, and will soon be at its highest point. Therefore there is not much time to be lost. We learn from the coast that the 'Sunbeam' entered the river, but soon stuck fast, and that her Kroomen, afraid of the natives, seized the boats and deserted the ship. How this could have happened we cannot tell, unless all the Europeans were sick. Our people here, Kroomen especially, are very anxious to be home, from which they have been kept much longer than was originally intended; but we have had little cause to complain of them. Soon after we came on shore here the Kroomen one morning were all in a state of mutiny. A moment's hesitation would have been fatal. Most of them were dancing about with drawn knives. Lieut. Glover seized the ringleader by the throat, a powerful man; three of us could not put him in irons. Yet out of eight people forming the remainder of the ship's crew, only one, the master, assisted us in the struggle. They looked on with affected indifference. With such people I often wonder we have gone on so well. Strict discipline has been maintained since, and each trifling offence has been followed by punishment. The routine of our life is not so monotonous as may be supposed; we rise at daybreak, I generally make some short botanical trip till 9 or 10 o'clock, or we breakfast together at 8 o'clock, I lay out or shift my plants, write, or superintend some job at which the people are kept employed out of doors; for occupation is undoubtedly the best plan to keep people from getting discontented. By the middle of the day we have a Babel of tongues in the camp, some as visitors; but chiefly people bringing provisions for sale, the greater part women, who are the traders in Africa. We dine at 3 o'clock, afterwards I ride on horseback till sunset, or accompany Dr. Baikie in the boat to visit some of the little towns on the river near us. Here, seated under a Locust, Baobab, or Tamarind tree, surrounded by romping groups of little naked children who generally manage to pick our pockets of beads and cowries, we chat to the people either of our own country (a subject they never tire of listening to) or hear all the gossip of the house. Nupe politics are trade and scandal—the latter as much a subject of conversation and agreeable comment in Central Africa as at home. The boys and girls delight to spend their evenings and sometimes half the night in dancing to the rude music of a wooden drum, or they vary their amusement when tired by singing songs. One does this extempore; all the others joining in the chorus at the end of the verse. They are quick in putting in this form any passing incidents of the moment. By the soft tropical moonlight coming through the trees, we thread our steps among groups of little forms asleep in each other's arms on the ground; thus many of them pass the night in this warm climate. Coming home at night anywhere near the river or in low grounds a beautiful scene presents itself. The sky, though spangled with stars of great brilliancy in this climate, is rivalled by the myriads of fire-flies, which dart their scintillating light over every object. On the coast I never saw them either so numerous or so large. The jarring of the Cicadas, which seem to render the very soil tremulous, is perhaps unpleasant, but one becomes so accustomed to it that I almost fancy I could not sleep in stillness. I am constantly picking up some new plants, but have nothing especially worth noticing. I am arranging my whole collection, and in my next may give a summary of the species collected, which I hope to be about 2000. Insects are troublesome; but not moisture, although it rains now nearly every day; the climate is agreeable; sky clouded till noon, after which the thermometer seldom rises above 90° in the shade. Much less rain has fallen this season than last. We find the swamp betwixt our camp and the river, through which we waded among Nymphæas nearly to the waist last year, is this season quite dry. We have now been long detained at Nupe, and it appears that Mr. Laird's directions have not been carried out in reference to the 'Sunbeam.' She was to ascend the river as far as Abo, to which place he, on referring to Beecroft's Journal, believed she would find a practicable channel; from thence a large launch which the steamer carried was to be fitted out and ascend to our assistance. So much for good intentions. The practicability of the plan was another matter. In my boat voyage to Onitsha in April I found the greatest difficulty in passing many broad parts of the river; was frequently aground, and in making the ascent with a loaded boat we had constantly to get out and drag the boat sometimes half a mile together over the shoals. This was where the river was confined in one channel; below Abo, where it branches off into many, I scarcely think a ship drawing 9 feet of water could ascend, this not being a tidal river. I am happy to say my health is still good, a little ague sometimes excepted. Dr. Baikie is also well and strong. Mr. May has been very ill, but is now better. The remainder have tolerable health. I may add that the 'Shea Butter' tree yields a substance so much like Gutta Percha that I am induced to collect some, which I will send for testing. *C. Barter.*"

Societies.

Horticultural: Fruit Committee. *Feb.* 1.—The Rev. L. Vernon Harcourt in the chair. The Committee at their meeting, December 7th, 1858, having resolved that prizes of 20*s.* and 10*s.* be offered on this occasion for the best Easter Beurré Pears, in dishes of six specimens, to be accompanied with a schedule of particulars respecting the circumstances under which the fruits were produced, the announcement of their intention was responded to by nine exhibitors. The first prize was awarded to Mr. Cox, gr. to W. Wells, Esq., Redleaf, Kent; and the second to Mr. Hall, gr. to T. Lucas, Esq., Lower Grove House, Roehampton. The specimens exhibited by Mr. Cox were grown, as stated in his schedule, in the southern Weald of Kent, the locality being about 40 miles from the sea, and exposed to the south-west. The soil is rich garden mould, 2 feet deep, resting on a bed of yellow clay, with veins of sand, impregnated with iron; the surface slopes to the south, at an angle of 8° or 10°. The tree, about 30 years old, is on the Pear stock, and in healthy condition; it was grafted up the sides of the main stem with the Easter Beurré, and is trained horizontally against a south wall, 12 feet high; the mode

of pruning does not differ from that of ordinary horizontal training, with the exception that all the foreright shoots are broken clean out when very young. Mr. Cox further remarks that the autumns in that part of Kent are very mild and moist, the winters not very severe, but the springs cold, harsh, and drying. In Mr. Hall's schedule it was stated that the specimens exhibited by him were grown in Rochampton, on the south side of the Thames, on a light sandy soil 1½ foot deep, with gravelly subsoil; the surface a little inclined to the north. The tree, about 14 years old, and very healthy, is on the Pear stock, and trained against a west wall about 14 feet high. The border is top-dressed every year with vegetable refuse, and receives large quantities of water in the growing season. Under these circumstances the fruit proved next in point of quality to that exhibited by Mr. Cox. Mr. Evans, gr. to Archdeacon Jones, sent fruit aromatic in flavour, but with flesh not so smooth, buttery, and rich as that of the specimens which obtained the awards. Mr. Tucker, gr. to J. Moorman, Esq., stated in his schedule that his situation is sheltered and level; the soil strong mould 3 feet deep, on a gravelly subsoil. The tree is a half standard, in healthy condition, on the Pear stock, and about 15 years old. It is trained downward in the form of an umbrella. As a standard production the fruit was very good. Specimens exhibited by Mr. Masterson, Warwick, were also grown on a standard. The surface of the ground was said to be hilly, the soil light and sandy; the tree young, and allowed to grow without pruning. The fruit, however, was not equal in appearance and quality to that grown on a standard near London. Mr. Catt, gr. to Colonel Cavendish, St. Lawrence House, near Welwyn, Herts. stated in his schedule that the garden is situated on an exposed table-land; the soil, a strong loam, is 18 inches deep, cool, and moist; the subsoil clay on chalk. The tree, 12 years old, healthy, and extends 12 feet by 18 feet on a south wall, against which it is fan-trained; it is pruned at midsummer and in autumn. Although grown in a south aspect, the fruit was not equal in quality to that from a standard, in deep soil, on a gravelly subsoil, near Clapham, on the south side of the Thames. In the schedule returned by Mr. Clark, gr. to Earl Darnley, Cobham Hall, near Gravesend, Kent, it was stated that the surface of the ground is undulating; the soil a strong loam on the chalk. The fruit was produced by a large old tree, not very vigorous, on an east aspect wall; and was gathered in the first week of October. This exhibition consisted of fair specimens as regards size and appearance; the fruit, having been grown against an east wall, was, however, much inferior as regards quality to that produced, also in Kent, but against a south wall. In Mr. Judd's schedule, it was stated that Althorp Gardens, Northampton, are on the side of a hill sloping to the south-east, and tolerably well sheltered from the north. The garden soil is about 2 feet deep, resting upon blue clay, a portion of which has been burnt for top-dressing. The tree which bore the fruit exhibited was reported to be healthy, upwards of 20 years old, and eight years ago it was root-pruned; it is trained against a wall 16 feet high, with a south-east aspect; the shoots are shortened in summer, and pruned back to short spurs in winter. The season being dry and hot, the fruit ripened earlier than usual. The specimens were well grown, and next in quality to those which gained the second prize. It may be remarked that the wall against which the fruit was produced is 16 feet high, which is considerably above the usual height of garden walls, and doubtless an advantageous circumstance. If the aspect had been full south, instead of south-east, it is probable this exhibition would have obtained one of the awards. Mr. J. Douglas stated that the garden at Babworth Hall, Retford, Nottinghamshire, has a south exposure; the surface of the locality undulating; the soil light, dry, and early; subsoil gravel or red sand; but the soil of the borders, in which the trees that produced the fruit exhibited are growing, one on a south and the other on a west aspect wall, is mixed with strong soil to the depth of 2½ feet, and the bottom concreted. The trees are about 30 years old, healthy, and make little wood, but bear well; the diameter of the stock is said to be very small in proportion to that of the trees; and this, Mr. Douglas thinks, may in some measure account for the latter making little wood: it was not stated whether the stock is Pear or Quince. The trees are about 12 feet high, trained horizontally and closely pruned. It is remarked that in the autumn of 1857 the borders were flooded from a heavy fall of rain, and that although 1858 was a hot dry season, yet the fruit ripened about the same time as in ordinary seasons. The specimens of Easter Beurré Pears exhibited from the south wall were considerably larger than those from the west wall; and it was stated that the largest from the former aspect could not be sent in consequence of being too ripe. As regards flavour, the smaller fruit from the west aspect wall were nearly as good as those grown to a larger size against the south wall. It may be observed that the above is the first exhibition of Pears brought before the Committee from a concreted border; but the quality of the fruit was much inferior to that of the same variety produced under ordinary circumstances 150 miles farther south, near London. J. Allnutt, Esq., again sent, from his garden at Clapham Common, a dish of Easter Beurré Pears, for the opinion of the Committee. This was given to the same effect as before, which was, that the trees had most probably suffered from dryness at the root. The Pears were very mealy and had no flavour. It was remarked by the Committee that on the whole, the Easter Beurré Pears, notwithstanding the heat and great amount of sunshine experienced last summer, were not so buttery and rich as they have usually proved in former tolerably good seasons. Mr. Melville, gr. to the Earl of Roseberry, Dalmeney Park, near Edinburgh, sent a specimen of the Chou de Milan, crossed with the Brussels Sprouts; also a white variety of the latter, and some Roseberry Brussels Sprouts, and a variety obtained from crossing the latter with the New Dwarf Ulm Savoy. The Roseberry Brussels Sprouts were very good; but the crossing did not appear to have improved them. The white variety was curious, some of the leaves being entirely destitute of any green colouring matter, and others prettily variegated. Mr. Turner, Royal Nurseries, Slough, exhibited a plant of Cottagers' Kale, growing in a pot, a representation of which was given in our columns last week; the stem was 4 feet in height, and abundantly furnished, from base to top, with sprouts of a very fresh appearance. This variety, from its hardiness, is well adapted for withstanding severe winters. H. O. Carré, Esq., Val Nord, Guernsey, communicated the results of some experiments which he had made, with regard to improving the flavour of various kinds of Pears, by heat and light under glass. Last autumn he placed on a broad shelf in the warmest part of a greenhouse, near the glass at top, various kinds of Pears, as soon as they were gathered from the trees out-of-doors; and likewise some near the front sashes; the fruit was thus exposed to heat and sunlight, and the improvement in flavour, as regards some varieties, was most remarkable: the following kinds were more especially improved:—Louise Bonne (of Jersey), Beurré d' Amanlis, Eyewood, Glou Morceau, Winter Nelis, Gansel's Bergamot. The Louise Bonne (of Jersey) was growing in a shaded situation, and the fruit, in consequence, was pale and comparatively watery in quality, but placed as above, it became of excellent flavour, although a little shrivelled from the loss of superabundant watery juice. The Winter Nelis, Mr. Carré stated, was improved to a very great degree. He intends to prosecute his experiments; and from his success last season, he is led to believe that in many parts of England, where Pears do not ripen well, they may be rendered much more melting and sugary by adopting the plan of exposing them to light and heat, when gathered, than if kept in the ordinary way. The Committee were of opinion that, as the subject was of great importance, Mr. Carré's plan should be made known, and recommended for trial in this country.

A letter was read from C. Strickland, Esq., in which he expressed his intention of trying at home the qualities of such kinds of Kitchen Apples as he can collect in Yorkshire, and of sending specimens of each, with an account of where they grow, &c., and his remarks as to their quality, to the Committee; he hoped that others of the Committee would do the same in different parts of England. "There is," he observes, "a practical difficulty in the London Committee alone dealing with so extensive a subject as that of Kitchen Apples, but the difficulty will be got over, and the expense much lessened, if the members of the Committee individually will pay attention to it, and furnish the Committee with the results." The Committee commend Mr. Strickland's suggestion to the notice of their fellow members resident in the country.

Notices of Books.

Lardner's Chemistry for Schools (8vo, Walton and Maberly, pp. 243, 3*s.* 6*d.*) is an extremely well compiled volume, amply illustrated with good woodcuts. It forms an excellent successor to the same learned author's "Natural Philosophy for Schools." To teachers it is peculiarly valuable on account of the convenient form in which the table of contents is arranged. Three and sixpence cannot be better expended than in the purchase of it. Although works of this nature do not readily afford readable extracts, yet we pick out a paragraph or two concerning wine as a fair example of the manner in which Dr. Lardner treats his subject.

"Wine is the fermented juice of the Grape. This juice when first expressed has a saccharine savour, which it soon loses, becoming acid and alcoholic.

"All sorts of Grape are not equally suited for the production of wine. The Chasselas Grape of Fontainebleau, so delicious an article of dessert, is quite incapable of yielding potable wine. Grapes, fit for the production of wine, should be ripened in a position which will insure to them a warm, constant, and regular temperature. The soil should have a mixed character, partly silicious and partly argillaceous. Old Vines, cæteris paribus, give better wine than younger ones.

"Many constituents are involved in the composition of the Grape, all of which affect directly or indirectly the quality of the wine it produces. These are principally water, glucose or Grape sugar, pectic acid, tannin, albumen, a peculiar ferment which produces the spontaneous alcholic fermentation of the glucose; several nitrogenous compounds soluble in water, alcohol, essential oils, colouring compounds blue, red, and yellow; which being differently durable cause the colour of the wine to vary with time from violet to red orange and tawny yellow; fatty compounds, one of which forms œnanthic ether, which imparts to the wine its peculiar *bouquet*; pectates and pectinates of lime, soda and potash; tartrates and paratartrates of potash, lime and alumina; chlorides of potassium and sodium, phosphate of lime, oxide of iron and silica.

"The quality of wine depends much on the condition under which the vintage takes place. The fruit should be fully ripe, the weather dry and cloudless. The Grapes collected in baskets are transferred to barrels or troughs, in which they are first pressed by rakes, or trodden by men's feet, but this must not be done subject to a high temperature, since in that case premature fermentation would ensue.

"If it be desired to make white wine, the pulp is immediately submitted to the wine press. If, on the contrary, red wine be desired, the pulp is left to itself for several days, so that fermentation may commence, and that the liquor may dissolve the colouring matter and tannin contained in the skin and stalks. In the fabrication of wines of the finer sorts the Grapes are picked and the coarser parts of the stalks removed, especially in seasons when the bunches are less rich in fruit. The troughs in which the first fermentation takes place are left open for the free escape of the carbonic acid. The duration of this process varies with the temperature of the weather and the nature of the Grape. It is considered to be terminated when the evolution of gas ceases, and when the wine has acquired a suitable colour. In the ordinary wines its duration varies from three to eight days, but it sometimes continues from four to six weeks.

"When the fermentation has ceased the clear liquor is discharged by a cock provided for the purpose, and the marc mixed with a small quantity of water is again submitted to the press, by which a weak wine is obtained which easily sours.

"The wine is then transferred into barrels, which, for a certain time, are left open to allow the escape of the carbonic acid evolved in the process of fermentation, which has not as yet altogether ceased. When it has ceased the wine is again drawn off, and towards the months of March and April it undergoes the process of *clearing*, which is effected by the white of egg, ox's blood, or gelatine. These substances enter into combination with the tannin, with part of the colouring matter, and in their coagulation carry away the matters which, being held in suspension, render the wine turbid.

"*Sparkling wines*, such as champagne, are prepared from the Black Grapes of the best quality, the juice of which is sweeter than that of the White Grape. The fruit collected in warm weather is carefully transferred to the wine-press, where, by a gentle pressure, the first portions of juice are extracted without tearing or bruising the skin or stalks, which would impart a colour to the liquor. This gives wine of the first quality. The marc is then submitted to a more severe pressure, giving a juice by which a pinkish-coloured wine is obtained of less esteemed quality. A third or fourth repetition of this process gives inferior wines, which are usually mixed with common red wines to flavour them.

"The liquors thus produced are then left to a tumultuous fermentation in large barrels, where they disembarrass themselves of a great quantity of their ferment, which collects in froth at the surface. After about 24 hours the liquor is drawn off into other barrels, which are nearly filled and imperfectly closed, so as to leave openings for the escape of the carbonic acid which still continues to be evolved. A month later the liquor is drawn off and cleared. The same process is again twice repeated, at intervals of a month, until, at length, the wine is bottled, in which process from three to five per cent. of sugar-candy, dissolved in its own weight of water, is added to it. The bottles are corked and wired with the greatest care, and laid in rows upon their sides. A part of the sugar-candy undergoes alcoholic fermentation under the influence of the ferment which still exists in the wine; but the carbonic acid evolved in this process not having any means of escape remains in solution in the liquor, and the unfermented part of the sugar-candy imparts to the wine its characteristic sweetness. When the bottles are uncorked the carbonic acid, which is thus dissolved in the wine, being released from the confining pressure, escapes, rising in bubbles through the liquor, and producing the sparkling and foaming effects which are familiar to champagne drinkers."

Two points are, however, open to remark. The first is, that there is no index; for we cannot accept the table of contents, excellent as it is, as a satisfactory substitute. The other relates to some errors which will require correction in another edition; for example, Copal is not obtained from a plant called *Hymen*, but from Hymenæa. The name Siphonia Cahuca, for the tree which yields Caoutchouc in S. America, should be altered to S. elastica, the first name, though not incorrect, being quite obsolete; nor does Siphonia grow in Java, or any other part of Asia, as stated; the Caoutchouc of the Malay Archipelago being derived from a totally different tree. Finally, the Larch tree is a Larix, not a Laryx. These are small matters, but they are important to young people.

Le Jardin Fruitier du Muséum. We have before us Nos. 18 to 21, both inclusive, of this handsome work, exclusively occupied by figures and descriptions of Pears. Among the more interesting are the Poire de Pentecôte, with its aliases carefully worked out; the Duchesse d'Angoulême, once called Poire des Eparonnais; the Goulu Morceau, or as we call it, apparently improperly, Glou Morceau, originally brought out in 1759, but long overlooked notwithstanding its rare merit; Poire Tonneau, a stewing kind, we believe unknown in England; Van Mons Léon Leclere, very different from

and far better than the other Léon Leclerc, being indeed of excellent quality; P. Williams, our Williams's Bonchrétien, with more colour than it has in England; and some others of less importance. We may observe that the specimens from which M. Riocreux prepares his beautiful drawings, are in almost every case much smaller than we are accustomed to see in this country.

Trade Lists.—*Avoux et Crozy* (Rue d'Ossaris, 36, Lyons) offer for sale 12 "new" varieties of Tropæolum Lobbianum, 2 of Nierembergia, 16 of Tree Pinks, and 12 of Petunia.—*S. Stafford's* (Hyde, near Manchester), *Catalogue of Forest, Fruit, and Ornamental Trees, &c.* A considerable collection enumerated in 56 closely printed 8vo pages. It is very full of useful practical information.—*Keynes's* (Salisbury) *Catalogue of show and fancy Dahlias, Roses, Carnations, &c.* A florists' list, worthy of the reputation of this well-known grower.—Of *C. Turner's* (Slough) *Catalogue of Florists' Flowers*, we may make the same remark, adding, however, that it is very much more extensive than that of Mr. Keynes.—*John Salter* (Hammersmith) *a Descriptive Catalogue of English and Foreign Novelties, &c.* This is a very extensive list of Dahlias, Pæonies, Phloxes, Fuchsias, Chrysanthemums, Irises, Daisies, Heliotropes, Antirrhinums, &c., with short descriptions of all the new ones. Above 11 columns are occupied by Chrysanthemums alone.—*The Plymouth Seed Company* has issued a Priced Catalogue of Seeds for the Farm, Manure, Tools, &c.

Of singular importance is the new *Catalogue des plantes exotiques, nouvelles, et rares*, cultivated by Mr. Linden of the Royal Zoological and Horticultural Society of Brussels. The skill and enterprise of this indefatigable naturalist have long since placed him among the very highest of those plant *merchants* to whose efforts our gardens have of late become so deeply indebted; and the list now before us completely justifies the European reputation which our estimable correspondent has most deservedly obtained. The list commences by a description of thirteen new stove and greenhouse plants, of great beauty, now offered for the first time, among which Beloperone violacea, Cuphea ocymoides, Centradenia grandifolia, Arachnotrix rosea, Lindenia rivalis, and three superb Begonias called amabilis, argentea, and Victoria, are represented by coloured figures, themselves examples of artistic skill. There are also seven new fine foliaged plants, all from tropical or temperate America. Twenty entirely new and highly decorative plants in one season are in themselves evidence of the vigour with which Mr. Linden prosecutes his system of importation from distant countries. Of plants more or less known the catalogue contains, of fine foliaged species, 164; of variegated plants, 96; of flowering stove plants, 620; of tropical "fruit" trees, 105 (but this does not always mean edible fruit); of exotic useful, including medical plants, about 150, among which are many of great rarity; of Araliads, between 30 and 40; nearly 50 Bromeliads; of Ferns and Lycopods, 343, of which 37 are Tree Ferns, and above 60 quite new, and for the most part extremely handsome. Moreover there are nearly 600 Orchids, some of which are very rare, and we believe quite unknown in this country. We observe an announcement by Mr. Linden that he has now withdrawn his collectors from tropical America, and is receiving consignments from Cochinchina, Celebes, and Mindanão.

Miscellaneous.

A new Local Anæsthetic.—M. A. Claisse, of St Valérien (says the "Gazette Medicale") has been in the habit of using a local anæsthetic, which allows him to draw teeth, open abscesses, and perform other minor operations without the patient's feeling the slightest pain; it is as follows:—Fill a small flask one-third full of powdered camphor, and fill it up with sulphuric ether. With a sponge dipped in this solution, the gum or the part where the bistoury is to be used, is gently rubbed for about one minute previous to the operation. *Pharmaceutical Journal.*

S. Australian Botany.—Dr. Mueller, the gifted and enthusiastic botanist, is about to transfer to the Botanical Gardens, adjacent to this city, his extensive and valuable collections, which comprise one of the most important series of Australian plants anywhere in existence, which will probably be consulted centuries hereafter, and which amounts to about 6000 well marked species, in very numerous varieties, and embraces also an herbarium of miscellaneous plants from all parts of the globe, enhanced in value by many authentic specimens from the hands of celebrated botanical authors; the whole forming an accumulation of about 45,000 equally well-preserved and arranged specimens, and exhibiting, in about 15,000 species, nearly one-sixth of the hitherto revealed vegetation of the world. *Polyglot Newsletter of Melbourne.*

Astrapœa Wallichii.—But the most magnificent objects were the fine trees of Astrapæa Wallichii, or viscosa. The name of this Malagasy plant was derived from the word for lightning, on account of the brilliancy of its flowers; and Sir Joseph Paxton and Dr. Lindley have thus spoken of A. Wallichii:—"One of the finest plants ever introduced. And when loaded with its magnificent flowers, we think nothing can exceed its grandeur." I had seen a good-sized plant growing freely at Mauritius, but here it was in its native home, luxuriating on the banks of the stream, its trunk a foot in diameter, its broad-leaved branches stretching over the water, and its large, pink, globular, composite flowers, 3 or 4 inches in diameter, suspended at the end of a fine down-covered stalk, 9 inches or a foot in length. These hanging by hundreds along the course of the stream surpassed anything of the kind I had seen, or could possibly have imagined. I frequently met with the Astrapæa afterward, but always growing near the water, and its branches frequently stretching over the lake or river.—*Ellis's Madagascar.*

Calendar of Operations.

(*For the ensuing Week.*)

—✦—

PLANT DEPARTMENT.

Conservatory, &c.—Young plants of Allamandas, Clerodendrons, Torenias, &c., and many other things, if encouraged with a brisk bottom heat and other favourable circumstances, will form nice sized specimens in a few months, and large masses of Statices, than which few plants are more useful, will, under kind treatment, be obtained in a short time. Those also who possess Impatiens Jerdoniæ should encourage it by every possible means to make wood and propagate it as quickly and freely as possible, for it is just the plant that is wanted for autumn decoration. The pretty dwarf variety of Heliotropium Voltaireanum, although too delicate for the flower garden, will be found useful for blooming under glass where sweet-scented flowers are in request. In fact, where the stock in hand is deficient not a day should be lost in making every possible effort to provide considerably more than is likely to be wanted, so as to be prepared against any accident or extra demand, should such occur. Push on Camellias that have fairly started their buds with a warm moist atmosphere and plenty of weak manure water. Also get a portion of the Epacrises into a gentle heat as soon as they have sufficiently recruited their energies after flowering, By starting them into growth about this time, and getting their wood ripened early, they will be in full blossom in November, at which season their flowers retain their beauty much longer than after the sun becomes powerful in spring. Proceed as diligently as possible with the repotting of such of the hard-wooded greenhouse plants as require it, so as to afford them every chance to make a vigorous growth. Be careful, however, before potting to have the ball in a nice moist state, and avoid giving large shifts to weakly growers.

FORCING DEPARTMENT.

Pineries.—Attend carefully to the bottom-heat, particularly where this is produced by fermenting materials, as tan, &c., and see that it is not allowed to rise too high, which it is exceedingly apt to do after fresh materials have been added, either during bright weather, or where there are pipes under the bed. Where much fire-heat is used it requires some practice and attention to be able to keep the soil in a proper state as regards moisture, but this must be effected at any expense of attention if success is to be insured. Maintain a thoroughly moist atmosphere, but do not push young stock too fast until we may be favoured with more sunshine, when if all is right at the roots there will be no danger of drawing the plants, as might be the case in the present state of the weather. Avoid allowing water to lodge in the hearts of plants showing fruit, and spare the flowers of those in bloom with the syringe. Pot off or plant out suckers as they can be obtained sufficiently strong, and attend to keeping up a regular succession of plants, which is the surest way of providing for a succession of fruit. Vineries.—See that the houses in which the Vines have not yet started are properly cleaned, the Vines painted with the usual composition of soft soap, sulphur, &c., and everything put into proper working order; also get the rods bent in time to induce the buds to push regularly. Attend to disbudding and stopping, &c., as may be necessary in the succession houses, and see that the inside borders are kept properly moist, giving tepid manure-water as may be necessary to effect this, and do not be afraid of giving too much of this to Vines in pots.

FLOWER GARDEN AND SHRUBBERIES.

Look over all recently transplanted shrubs and trees, for the purpose of ascertaining whether they are securely staked, for if these are allowed to roll about with the wind the tender roots are often broken off, and the plants are consequently deprived of their only means of obtaining nourishment. Also get the walks edged and otherwise put into proper repair. Attend carefully to the stock of bedding plants, and get rooted cuttings potted off as soon as they are fit, and encourage them with a gentle bottom-heat and careful management to make quick growth, for after this season there is no time to be lost with young stock. Calceolarias, if well established, may soon be planted out in a turf pit on poor sandy soil where they can be protected from frost or cold winds, but they must be prepared for this by previously inuring them to full exposure to sun and air, &c., whenever the weather will permit. Their place under glass can be profitably occupied with recently potted off stuff, and with ordinary care they will do better planted out than stunted in small pots.

HARDY FRUIT AND KITCHEN GARDEN.

Cauliflowers and Lettuces that have been wintered under glass may soon be planted out, selecting a sheltered deep rich piece of ground. It is a very good practice in planting out things that are at all tender at this uncertain season to throw up the ground in good strong ridges, running east and west, planting on the south side of the ridge. The plants are thus sheltered from the north winds and fully exposed to the sun. Peas, &c., that have been raised under glass if properly inured to the weather should be planted out at once, giving them the most favourable situation at command, and it is a very good practice to shelter them for some time after planting out, by placing some branches of Spruce Fir or any other suitable evergreen along the rows, so as to break the wind, &c. Take advantage of dry days to stir the surface of the ground among growing crops, and to prevent weeds from making their appearance.

COTTAGERS' GARDEN.

Follow up sowing the necessary crops, as in the kitchen garden portion of the Calendar, Carrots and Onions on trenched ground, the manure in the bottom. Sow a little Celery on a warm slope; throw small sifted ashes over the surface to prevent the depredations of slugs, and cover up with litter. Celery seed must be kept constantly damp, and the bed should be very rich. Potato planting should be proceeded with, both with the early kinds and the late, although it has been too much the practice to set the late kinds in May and even June; the consequence of which is that the "seed" is never ripened as it ought to be. The cottager should now sow a few hardy annual seeds; plant out his Carnation layers, finish planting the Ranunculus, and attend to his flower beds, if any, generally.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the Week ending Mar. 10, 1859, as observed at the Horticultural Gardens.

March.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Temperature of the Air. Min.	Temperature of the Air. Mean	Temperature of the Earth 1 foot deep.	Temperature of the Earth 2 feet deep.	Wind.	Rain.
Friday 4	●	30.226	30.201	62	49	55.5	48	46	S.W.	.00
Satur. 5	1	30.296	30.234	62	40	51.0	50	47¼	W.	.00
Sunday 6	2	30.260	30.092	59	45	52.0	50	48	W.	.00
Mon. 7	3	29.823	29.652	63	38	50.5	51	48½	S.W.	.06
Tues. 8	4	30.015	29.615	49	30	39.5	48	47½	W.	.02
Wed. 9	5	30.409	30.299	47	21	34 0	47	47	N.	.00
Thurs. 10	6	30.392	30 194	52	24	38.0	46½	46	S.	.00
Average		30.203	30.041	56.3	35 3	45.8	48.6	47.2		.08

March 4—Uniformly overcast; very fine; overcast and mild.
— 5—Overcast; very fine; clear and fine at night.
— 6—Fine; very fine; overcast.
— 7—Overcast, very fine; rain at night.
— 8—Boisterous; slight showers; clear at night.
— 9—Clear; cold with excessively dry air; severe frost at night.
— 10—Frosty; clear and fine; frosty at night.
Mean temperature of the week, 5½ deg. above the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 33 years, for the ensuing Week, ending March 19, 1859.

March.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 13..	50.6	34.5	42 5	12	0.35 in.	3	4	5	1	6	9	3	2
Mon. 14..	51.3	35.0	43.1	15	0.70		5	4		5	13	4	2
Tues. 15..	51.0	34 5	42.7	16	0.37	3	7	4	1	3	7	6	2
Wed. 16..	51.6	34.5	43.1	12	0.68		8	5		4	9	5	2
Thurs. 17 .	50.0	33.3	41.6	14	0.36	4	6	4	1	4	6	6	3
Friday 18..	50.3	33.9	42.1	8	0.24	3	8	2	2	2	5	9	2
Satur. 19..	51.2	34.1	42.6	10	0.33	3	4	6	1	2	9	6	2

The highest temperature during the above period occurred on the 19th, 1836—therm. 69 deg., and the lowest on the 13th, 1845—therm. 13 deg.

Notices to Correspondents.

Avenues: *Ballymena.* The longer an avenue the wider it should be, and *vice versâ*. Thus the avenue or Long Walk at Windsor would have looked better had the inner row of trees been transferred to the outside of the present second row. Something, however, depends on the kind of tree used. Thus Oaks may be planted nearer than Elms or Limes. In your case it may answer perhaps to plant the trees 12 feet outside the edge of the road, so as to leave room for a path between the road and the trees.

Bedding Plants: *T T, Bocking*, will feel obliged by some of our correspondents informing him how the Scarlet-flowered, Variegated Ivy-leaf Geranium, and Leptodactylon californicum, have answered as bedding plants. He adds that the latter in particular was much recommended for that purpose last year. With him it was a failure. The former also did badly; it seemed to be of very slow growth.

Books: *H L A.* There is no more general book than Loudon's Encyclopædia of Gardening, which treats of all manner of things. There is no such work as Glasse's Gardening Book; the memoranda with a similar heading appearing now and then in our columns are extracts from MSS. in the possession of a correspondent, as was stated in the original notice, to which we beg to refer you.

Cats: *A Constant Sub.* laments his hard fate to have his flower-beds frequented by these animals, and he asks for the advice of any kind soul who knows how to keep them off. It is certainly not true that cats dislike Valerian; on the contrary, they bear it a strong and peculiar affection.

Chinese Primrose: *H S.* It is extremely curious. If the flowers are constant the plant should be preserved. We shall next week have something to say about it.

Heating: *P G F.* Flues are very much more useful than is by many supposed, provided they are well managed; and they cost little. They are, or were lately, in constant use in the forcing-houses at Chatsworth.

Ice: *Amateur.* Snow rammed hard will answer the purpose, but on no account add salt to it until just before you are about to use it.

Names of Plants.—We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have or could have undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*G B S.* You should not expect mere leaves to be named. No. 1 seems to be Corynocarpus lævigatus; 2 is probably some sort of Isopogon.—*Q C.* The pearly seed belongs to Coix Lachryma, a kind of Grass; the red seed comes from some Leguminous plant. They must be raised in a hotbed and cultivated in a stove.—*A B.* Celsia arctica.—*Sub.* Cornus Mas.

Onions: *Querist.* Nothing will prevent either these or other plants from pushing when warm springs like the present prevail. Our own Cottagers' Kale is beginning to show flowers. The richer the ground the faster all such things grow.

Oranges: *G K.* Graft your seedling stocks by all means.†

Vine Grafting: *J O.* If you will again read Mr. Spary's account, with attention, you will see that his scion had not broken, although the stock had. If your scion is in full growth it will take nevertheless; but the operation of properly uniting them demands a good deal of skill and practice.

THE PATENT

NITROPHOSPHATE OR BLOOD MANURE COMPANY (Limited),

CONSISTING OF TENANT FARMERS, OCCUPYING UPWARDS OF 30,000 ACRES OF LAND.

TRUSTEES.

Abel Smith, Jun., Esq., Walton House, Ware, Herts.
Charles Dimsdale, Esq., Essendon Place, Herts.
Edward Ball, Esq., M.P., 8, Belgrave Road, Pimlico
Major-General Hall, M.P., Western Colville, Linton, Cambridge
John Brady, Esq., M.P., Warwick Terrace, Belgrave Sq.

DIRECTORS.

Chairman.—Jonas Webb, Esq., Babraham, Cambridgeshire.
Deputy-Chairman.—John Collins, Esq., Myddleton Square, Pentonville.
Edward Bell, Esq., Tottenham, Middlesex
John Clayden, Esq., Littlebury, Essex
Richard Hunt, Esq., Stanstead Abbot, Herts.
Thomas Knight, Esq., Edmonton. Middlesex.
Robert Leeds, Esq., West Lexham, Norfolk.
Robert Morgan, Esq., 72, Camden Villas, Camden Town.
George Savill, Esq., Ingthorpe, near Stamford.
William Collins, Esq., 105, St. John Street Road.

Bankers.—Messrs. Barnett, Hoare & Co., Lombard Street.
Solicitors.—Messrs. Kingsford & Dorman, 23, Essex Street, Strand.
Auditor.—G. W. Brown, Esq., 28, Parliament Street.
Manager.—Mr. James Odams. *Secretary.*—Mr. C. T. Macadam.

Offices, 109, Fenchurch Street, London.—Manufactory, Plaistow Marshes, Essex.

The Directors beg to inform their Friends and the Agricultural Public that the following Manures are now ready:—

ODAMS'S BLOOD MANURE FOR CORN AND MANGEL.

ODAMS'S BLOOD MANURE FOR ROOTS.

ODAMS'S SUPERPHOSPHATE OF LIME.

Full particulars may be had at the Company's Offices, or of the local Agents.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. Nesbit, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

LONDON MANURE COMPANY, removed to 116 Fenchurch Street, E. C. (Established 1840), have the following MANURES ready for delivery:—

CORN MANURE for SPRINGTOP DRESSING
URATE
MANGEL MANURE
SUPERPHOSPHATE OF LIME
BLOOD MANURE
} all of guaranteed quality.

In consequence of the reduction in the price of raw material the London Manure Co. are enabled to lower the price of their Superphosphate of Lime, and to materially improve the Corn Manure and Urate.

The London Manure Co. also supply PERUVIAN GUANO (direct from Messrs. A. Gibbs and Sons), SULPHATE of AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of value. Wholesale dealers supplied.

116, Fenchurch Street E.C. Edward Purser, Secretary.

REDUCTION IN PRICE OF LAWES'S MANURES.

MR. LAWES begs to announce that he has this season reduced the price of the Manures manufactured by him, viz.:—

TURNIP MANURE	from £7 to	£6	6
SUPERPHOSPHATE OF LIME ..	,, 7 to	6	6
MINERAL do. ..	,, 6 to	5	5
BARLEY MANURE..	..	8	0

Prof. Way and Dr. Voelcker have sampled from a bulk of 5000 to 6000 tons at his factories, and their report and analyses are given in full in Circular to be obtained on application at his office, 1, Adelaide Place, London Bridge, E.C., or of his local Agents.

N.B. Genuine Peruvian Guano direct from Messrs. Gibbs, Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures. American Cotton-seed Cake supplied.

BURNARD, LACK, AND CO.'S CONCENTRATED SUPERPHOSPHATE OF LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.

CONCENTRATED TURNIP MANURE, equal in value to the preceding.

Of these Manures Dr. Voelcker says:—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."

Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to Burnard, Lack, & Co., Sutton Road, Plymouth.

SOLUBLE PHOSPHATE OF LIME.

FREDERIC CORNWELL begs to inform his friends and the Agricultural public that he can now supply a "SUPERPHOSPHATE of LIME" superior to anything yet produced. Each Bag guaranteed to contain from 20 to 25 per cent. of "Soluble Phosphate of Lime." Price 5*l.* 10*s.* per ton, delivered free to any Railway or Wharf in London. Dealers and the trade supplied. Linseed-cakes, Cotton-cakes, and all descriptions of Artificial Manures at lowest market prices.

Offices, 7, Great St. Helen's, London, E. C.

ESTABLISHED 1812.

H. AND T. PROCTOR'S TURNIP MANURE.—Messrs. H. & T. P. draw particular attention to this valuable Manure, which contains all the elements necessary for the full development of the Turnip Crop, so combined, that, from their chemical knowledge and long experience, they feel satisfied is most advantageous to the consumer. It has been very extensively used by most of the eminent Agriculturists of the day, and has attained a high reputation throughout England, Scotland, and Wales, and, they venture to say, is unrivalled for the weight and quality of the Bulbs which it produces. The application of this Manure to the Turnips will be found to benefit considerably the after crops of Barley, Clover, and Wheat.

POTATO, GRASS, BARLEY, CLOVER, AND WHEAT MANURES; also BONE DUST, PERUVIAN GUANO, and SUPERPHOSPHATE of LIME, warranted of the best quality.

Apply to H. & T. Proctor, West of England Depôt for Artificial Manures, Cathay, Bristol; or Proctor & Ryland, Birmingham, and Saltney, near Chester.

SUCCESS OF THE NEW GUANO; Imported under Lease from the Crown.—Though the experiments with KOORIA MOORIA GUANO were made late in the season, and under adverse circumstances, the successful results obtained confirm beyond doubt Professor Voelcker's report—(in No. 41, Part I., vol. xix., Royal Agricultural Society's Journal)—that Ammoniacal manures, applied to Turnips in the experimental field, kept back at first the crop, and had no beneficial effect either alone or in conjunction with phosphates.

The Kooria Mooria Guano is essentially a phosphatic manure, containing sufficient ammonia for roots, and, with a mixture of one-fourth of ammoniacal guano, cannot be excelled for either top-dressing or grain crops. It is a natural deposit, and will be delivered as imported, free from risk of adulteration. Deeply impressed with the necessity of encouraging the import of this valuable manure, her Majesty's Government has given such increased facilities for shipment, that arrangements have been made for a considerable supply. Purchasers can be supplied with suitable quantities from cargoes now on sale, containing from 45 to 66 per cent. phosphates. Present prices, 4*l.* 10*s.* to 6*l.* 10*s.* per ton, on applying to Joseph Hindson Broker (one of the Lessees under the Crown), 20, North John St., Liverpool. Government Lessees: Ord, Hindson, & Hayes.

"Greystoke, Cumberland, Dec. 16, 1858.

"Dear Sirs,—I beg to inform you that I applied the Kooria Mooria Guano I had from you for Turnips, on land of a loamy character, incumbent on a stiff clay subsoil, and recently drained. On each side of the plot sown with Kooria Mooria Guano were Turnips manured with best Peruvian Guano. The quantities applied of each sort were of equal weight for weight per acre. The crop—a very good one throughout—is now being eaten off with sheep. Very little perceptible difference can be discovered, but if anything that difference is in favour of the Turnips sown with Kooria Mooria Guano.

(Signed) "John Barker."

"Messrs. J. & J. Graham, Guano Merchants, Penrith."

A Pamphlet, "Hints on Guano," containing a large number of reports from well-known agriculturists, and analysis of the cargoes here, may be had of the Broker, at the above address.

THE NATIONAL FLAX COMPANY (Limited).—Capital 200,000*l.*, in shares of 1*l.* each. 5*s.* to be paid on application.

Directors.

President—Sir John Dorat, Vice-President R.S.L.
John Beddoe, Esq., Lickhill, near Stourport, Worcestershire.
J. T. Croft, Esq., 15, Regent Street, S.W.
Lieut.-Col. G. E. Dering, 47, York Street, Portman Square, W.
Frederick Hamilton, Esq., 32, Gloucester Place.
T. E. Marsland, Esq., 2, Pall Mall, S.W.
Wallace Pedder, Esq., Wadhurst, Sussex.
George Thornton, Esq., C.E., F.G.S., &c.

Bankers—Messrs. Heywood, Kennards, and Co.
Secretary—Mr. James M. Haldon, F.R.G.S.
Offices: 193, Gresham House, London, E.C.

The imports of foreign Flax fibre having declined to a most serious extent, and the cultivation of the plant decreased at home, a great necessity has arisen for laying the foundation of a system whereby a sufficient supply of raw material may be secured to meet the requirements of a great staple industry of the country, known as the Flax and Linen trade.

It has therefore been determined to form the National Flax Company (Limited), whereby such a system may be initiated.

This will be effected by the introduction of mechanical improvements, whereby a continuous and easy, as well as profitable, preparation of the fibre from the plant can be effected.

Such preparation will be carried on in establishments to be called retteries, and to be erected in suitable localities, where the Flax crop, in its entirety or otherwise, will be purchased from the grower.

By thus creating a market within easy reach of the farmer, and proving to him practically that he can easily produce a good paying crop, needing no further trouble in its preparation, and for which he may regularly receive ready money at harvest time, when the demands on him for labour cost are large, it is considered that a very extensive growth of Flax will be gradually introduced throughout the country generally.

A more perfect cultivation of this plant will also be induced, whereby many existing prejudices in respect to the supposed exhaustive properties of Flax will be removed, and the grower convinced that it is really one of value in districts suitable to it and in fair rotation. It will also be found that land capable of producing any kind of grain is equally available for Flax, and that there is no better preparation for a Wheat crop to follow.

The Company have secured the patents, plans, and services of Mr. G. A. Cator, who has devoted a large sum of money and many years in bringing the matter to its present effective condition.

By a reference to the detailed prospectus, which may be had on application, it will be clearly seen that, with the outlay proposed, a very large dividend may be calculated on with perfect safety, showing that this Company presents unusual features of promise to parties seeking investment in substantial and well-considered enterprises.

THE ROYAL AGRICULTURAL SOCIETY'S PRIZE CHURN.—This Churn has taken all the prizes offered by the Royal Agricultural Society from 1850 to 1858 inclusive. Price list and testimonials sent free. Illustrated Catalogue on receipt of six postage stamps.

Burgess & Key, Patentees and Manufacturers, 95, Newgat Street, London.

MR. SMITH will SMASH UP a piece of his Clay Land, Wheat Stubble, about the end of this month. Gentlemen who may be desirous may then see his Apparatus at work.—A Card, stating the day, may be had by applying to him at Woolston; or to Messrs. Howard, of Bedford.

PATENT GUTTA PERCHA SOLES.—Important to Gardeners.—The Gutta Percha Company have the pleasure to acknowledge the receipt of the following letter from G. Glenny, Esq., the celebrated Florist:—

"420, Strand, London.

"Gentlemen,—I have worn Gutta Percha Soles and Heels these two years, and being so much in a garden as I necessarily am in all weathers, and with the ground in all states, I would on no account be without them. As a matter of economy I would recommend Gardeners to use them, for they may repair the worn part at all times by warming the material at the fire, and pressing it from the thick parts to the worn parts as easily as if it were so much dough. I think it the duty of all persons who must occasionally wet their feet to adopt a material that completely defies damp. Many a gardener would escape colds and rheumatism by the use of Gutta Percha Soles.

"Your obedient servant, G. Glenny."

Every variety of Gutta Percha articles, such as Mill Bands, Tubing, Soles, Goloshes, Sheet, Pump Buckets, Fire Buckets, Bosses, Union Joints, Flasks, Bottles, Bowls, Chamber Vessels, Toilet Trays, Sponge Bags, Curtain Rings, Galvanic Batteries, Talbotype Trays, &c., manufactured by the Gutta Percha Company, and sold by their wholesale dealers in town or country.—The Gutta Percha Company Patentees, Wharf Road, City Road, London.

TO LANDOWNERS.

THE PERMANENT WAY COMPANY having been appointed the sole Licensees for the use of Dr. Boucherie's Patent Process for Preserving Timber, beg to inform Landowners and others interested in the use of English Timber that a Pamphlet, with full explanations of this cheap and most effectual process, may be had gratis on application to the undersigned. Landowners having Beech, Elm, Fir, or other Timber fit for Railway Sleepers are requested to communicate particulars of quantity, locality, and prices.

William Howden, Secretary.

26, Great George Street, Westminster.

LAND DRAINAGE.—Works of Drainage of any extent are executed by the GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY on all descriptions of Property, whether Freehold, Entailed, Mortgaged, Trust, Ecclesiastical, Corporate, or Collegiate.

Repayment may be made by the Landowner as successive portions of the Works are completed, or the actual expenditure, with a Commission thereon, may be charged on the property improved by way of rent charge for any term not exceeding 50 years, the instalments to repay principal and interest being thereby kept down nearly to 5 per cent. per annum.

No investigation of title being required, and the charge not being affected by incumbrances, no legal expenses are incurred.

Works of Irrigation, Enclosing, Wood Grubbing, Road Making, and Farm Buildings are executed in a similar manner.

The Company also assist Landowners in executing any of the improvements by their own agents, and charge the amount expended on the property improved.

Applications to be made to William Clifford, the Secretary, at the Offices of the Company, 52, Parliament Street, London.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.

Principal—J. C. Nesbit, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

The Agricultural Gazette.

SATURDAY, MARCH 12, 1859.

MEETINGS FOR THE ENSUING WEEK.

Wednesday, March 16—Agri. Society of England.. Noon.

In a previous notice of the food department of the Kensington Museum, we compared the composition of Wheat, Maize, and Rice, with that of Peas, Lentils, and Beans, and pointed out their great differences in the amount of flesh-forming ingredients in favour of Pulse. We now proceed to examine the composition of Potatoes, the common food of the majority of our English labourers and the constant meal of the Irish poor, comparing it with that of Oats, so highly valued as food by the Scotch and by the English bordering on Scotland. The following is

A Table of the per centage Composition of Oats.

Water	13.6		Water	13.6
Flesh formers ..	17.0		Flesh formers ..	17.0
Starch	39.7	or	Heat givers ..	66.4
Sugar	5.4		Mineral matter ..	3.0
Gum	3.0			100.0
Fat	5.7			
Fibre	12.6			
Mineral matter ..	3.0			
	100.0			

Now let us compare these results with those that have been obtained in the analysis of the Potato. The following is

A Table of the per centage Composition of Potatoes.

Water	75.2		Water	75.2
Flesh formers ..	1.4		Flesh formers ..	1.4
Starch	15.5	or	Heat givers ..	22.5
Dextrine	0.4		Mineral matters ..	0.9
Sugar	3.2			100.0
Fat	0.2			
Fibre	3.2			
Ashes	0.9			
	100.0			

The per centage of water in Oats, Wheat, Maize, Rice, Peas, Lentils, and Beans varies from

13.6 to 14.8; while Potatoes contain *four times* as much, or 75.2 per cent.

Again, the flesh-forming matter in Peas is 23.4 per cent.; in Oats, 17.0; in Potatoes, only 1.4 per cent. Now, as these flesh-forming matters are the real muscle-making portion of the food, we may see at a glance how unlikely are Potatoes to build up a strong constitution; and if we look at the past and present history of the consumption of Peas, Oats, and Potatoes as human food, we can at once explain how little the poor of many large districts of England and Ireland have profited from agricultural improvement. Time was when in the midland counties of England, especially on the stiff marls of the old and new red sandstones and the lias, some lighter soil capable of growing boiling Peas was a desideratum on every good farm, and a farm increased in value in proportion to the amount of "Siddow land" it possessed; this term being applied to the land producing boiling Peas as well as to the Peas themselves. Thus see Webster's Dictionary:—

"Siddow; such as boil freely—applied to Peas."

This desire for land that would grow boiling Peas has now passed away. No one in taking a farm makes his calculations dependent upon Siddow land, for since the introduction of the Potato Peas as food have been but little used. The fine hearty muscle-making Peas pudding of our youth is no longer the staple food of the English farm labourer, and as we are old enough to remember its value, so, too, can we discern the evils in the system which has replaced it. But before contrasting the two let us review the use of Oats and Potatoes as common food.

The meal of Oats is a very general article of every-day food in Scotland and in the border counties. Its general use has not at any period extended far beyond. It is used a little in Lancashire and Cheshire, yet not so much as formerly, the spread of the Potato having superseded it, just as in the midland counties it has gradually caused the discontinuance of the growth of Peas; while in Ireland, as everybody knows, it has come so much to be relied upon that a failure of this crop causes the starvation of thousands of people.

What, now, have been the results of this general substitution of the Potato crop? The labourers of midland, western, and south-western England, are not such powerful men as those of the border counties and the north; and there cannot be a doubt that this is owing to their food. The northman gets higher wages, and he is worth the difference. No wonder he is muscular, for in his Oatmeal he takes the very essence of muscle. The use of the Potato is indeed spreading with him, but fortunately he has a liking for buttermilk with it, which no midland county labourer will touch, prefering the mere stimulant of beer; and as will be seen from the following analysis of milk, he gets in milk and cheese, after the butter is removed, a wholesome percentage of nitrogenous or muscle-making matter.

Analysis of Milk and Skim Milk Cheese from Sibson's Agricultural Chemistry.

	Cow's Milk.	Skim Milk Cheese.
Water	87.02	44
Curd or cheesy matter (muscle forming)	4.48	45
Butter	3.13	6
Sugar	4.77	..
Ash (bone material)	.60	5
	100.00	100

Are we not right in concluding from this that the labourer in the midland counties is mistaken in wholly renouncing Peas, a muscle-making food, for Potatoes which consist almost entirely of water and starch, whilst the northern labourer still keeps to a muscle-making diet in Oatmeal and buttermilk, neither of which is used by thes outhron? Were there no other cause this is sufficient to explain the difference in the price of their labour.

And the character of the food by which the labouring population is sustained affects their moral as well as their physical development. A man who lives on a quantity of inferior food feels a craving for some stimulant beyond it, which others do not need; and is too often the prey of the beer-house, while his family become its victims.

Agriculturists are becoming acquainted with the principles upon which the greatest development of muscle can be brought about in the inferior animals. Let them remember that the constitution of their labourers is upheld by the same laws of animal development, lest ill fed, and consequently inferior and ill paid, at a comparatively early age the poor man is brought as a pauper to the union, there to be fed upon better food than he could get when able to work, because it is found to be cheaper. For if it be understood—and here again we quote the tables from the Kensington Museum—that "an adult labouring man must have *five ounces* of flesh-formers supplied daily to restore the waste of the organic parts of his body," it becomes a serious inquiry how he can get the things to yield it and their comparative cost. Now to yield this 5 oz. it takes as follows:—

	lbs.	oz.		s.	d.
Wheat flour ..	.. 2	1	average cost ..	0	4½
Oatmeal ..	.. 1	13	,, ,, ..	0	4½
Rice	.. 4	13	,, ,, ..	1	2
Peas (dry) ..	.. 1	5	,, ,, ..	0	2¾
Potatoes ..	.. 20	13	,, ,, ..	0	7

From these quotations we need not wonder that the labourer on Oatmeal porridge and the poor on a diet of Peas-pudding or Peas-soup should be more hale and hearty than the Potato feeder; and it surely only requires all the facts to be known through the medium of cheap books—of which by the way a good museum is the most readable—to discountenance a too great reliance upon a watery root because we can grow quantity when we see the deplorable results of not inquiring into quality.

——The above remarks, then, indicate a few of the lessons which may be gathered by the visitor of the Kensington Museum. His power to do so, and his thanks accordingly, are in the first place due to Dr. Lyon Playfair, C.B., by whom the arrangement and direct presentation to the eye of all these facts was designed and carried out; and next, as stated in our previous article, to Dr. Lankester, the present curator of this department, under whom it is increasing in interest and value.

The injurious effect of game and hedgerow timber on the produce of a farm—incapable as we believe it to be of accurate valuation—has been the subject of much discussion latterly before the Dorsetshire Farmers' Clubs.

In another column will be found a temperate and sensible statement on the former subject by a Dorsetshire correspondent; and on the latter we quote a single fact from a paper read by Mr. Jackson to the Winfrith Club. He says—

"We measured the distance injured by one Ash tree. To the best of my recollection the damage extended 25 yards from the trunk. A friend, on hearing the topic for this evening's discussion, was kind enough to measure the damage caused by three trees on his farm during the last harvest, and found that one Oak, girthing 68 inches, injured the crop from 13 to 14 yards from the trunk—probable age of tree from 160 to 180 years, value from 40*s.* to 50*s.*; one Elm, age and value much the same, injuring the crop 15 yards from the trunk; one small Ash, value from 12*s.* to 15*s.*, extent of damage about the same as the Oak. The crop was Barley, something like 5 quarters to the acre, but not more than one-third of this under the trees; and thus by putting the value of damage at only 4*s.* per tree for 100 years, and saying nothing of the first 50 or 60, it would amount to 20*l.*, and the value of the trees not more than 50*s.*, making a loss of 17*l.* 10*s.* for each tree.."

This is no doubt an extreme illustration of the evil complained of; and while advocating with Mr. Jackson the fall of such trees as are a curse and not a blessing, we cordially join him in his exclamation: "God forbid that I should wish to see this beautiful world of ours stripped of all its splendour; but I would say to those who have the power, plant more of your hills and dales, heath and waste land by the road side, which are not calculated for growing corn." It is there that the shelter thus obtained is an unmixed advantage—that the land so employed is turned to the greatest use—and that more useful crops are benefitted without any mixture of injury.

Mr. Bond's recent paper on stock farming, and especially that part relating to the cost of sheep management, continues to excite some discussion. A Suffolk farmer in the columns of an agricultural contemporary refers to the value of the Mangel Wurzel crop as a great and cheap resource for the maintenance of a flock as well as of a herd, in which we quite agree with him; and to the extraordinary cheapness with which in his locality it has been harvested, exceeding anything we could have imagined possible. In his own neighbourhood he states instances where "26 acres, averaging 30 tons per acre, had been stripped, pulled, and filled into carts for 3*s.* 4½*d.* per acre;" and referring to Mr. Browne's letter on the subject (see page 153), he advises him to compare this "fact" with the cost of his own management, and he will then "discontinue the use of italics in writing his '*ifs*' regarding the cost of maintaining sheep."

Now, having grown 40 or 50 acres of Mangel Wurzel and Swedes for many years, and by liberal management reaching 20 tons per acre of the latter and more than 30 acres of the former as an average crop, and having long been accustomed to contract work on the farm, especially in connection with the harvesting of this crop, we cannot but doubt the possibility of the work of pulling and filling so heavy a crop being done for the price stated, "the men earning 7½*d.* a day over day wages."

The following is a detailed statement of our own experience on this point during a single season, when 29 acres of Mangels and 11 acres of Swedes had to be carted off:—

The following is an account of the hands employed by the contractor in lifting 40 acres of Mangel and Swedes, and the time they took to do this work, and the tons of roots placed in the store. Having a weighing machine we weighed several cartloads every day; the cart had wings, but the cart without the wings measured just a cubic yard; the ground was dry, and the work was either on level ground or on a gradual descent, so that the cartload weighed 22, 23, and 24 cwt., including the earth left about the roots after they were cut off, which might be 2, 3, or 4 cwt. each cart. We therefore took every cartload at a ton.

The Time and Hands by the Contractors in Harvesting 30 Acres Mangel and 10 Acres of Swedes.

1850		Men pulling.	Women and Boys cutting Roots.	Filling the Carts. Men.	Filling the Carts. Women and Boys.	Acres.
Oct. 17	Taking up Mangel, No. 6 field	5	10	1	9	11
18	,, ,, No. 6 ,,	5	10	1	9	
19	,, ,, No. 10 ,,	5	10	1	9	10
21	,, ,, No. 10 ,,	5	10	1	9	
22	,, ,, No. 2 ,,	5	10	1	9	5
23	,, Swedes, No. 2 ,,	5	10	1	9	14
	,, ,, No. 22 ,,					
24	,, ,, No. 24 ,,	5	10	1	9	
	Including 5 men cutting.	40	70	7	63	

The contract was for 29 acres of Mangel at 6*s.* 6*d.* per acre	£9	8	6
Ditto ditto 11 acres of Swedes at 5*s.* 6*d.* ..	3	0	6
Total	£12	9	0

The Wages earned by the Contractors and paid by them to the Hands they employed.

47 days of a man at 2*s.* a day	£4	14	0
70 days of a woman at 10*d.* per day	2	18	4
63 days of boys and girls at 9*d.* per day	2	7	3
Total	£9	19	7

Leaving 2*l.* 9*s.* 5*d.* to be divided amongst the contractors more than their daily wages of 2*s.*

The Expense of Hawling the Roots to the Store.

No. 6.	2 days of 4½	horse,	9	hours each,	306	tons from	11 a.
,, 10.	1¼ day of 5	,,	7½	,, ,,	242	,, ,,	10
,, 2.	1½ day of 5	,,	7½	,, ,,	190	,, ,,	8
Nos. 22 and 24.	2 days of 6	,,	12	,, ,,	192	,, ,,	11
	36 days 1 horse				930		46

930 loads or tons carted by 36 days of 1 horse, is 26 loads per day.

The Expense of Carting 930 tons off 40 acres of Mangels and Swedes.

36 days of a horse and cart, at 3*s.* per day	£5	8	0
7 days of a man to back and tip the carts in the stores, at 2*s.*	0	14	0
7 days of 2½ boys=17½ days, at 8*d.*	0	11	8
Or at the rate of 3*s.* 4*d.* per acre ..	£6	13	8

The Expence of Storing the Loads and Thatching them.

3 men 7 days, 21 days of a man, at 2*s.* per day ..	£2	2	0
2 boys and 2 women, 7 days each, 25 days, at 10*d.*..	1	3	4
Or 1*s.* 7½*d.* per acre	£3	5	4

So that the total expense of harvesting our root crop of 40 acres in 1850 was for pulling, &c. &c.	£12	9	0	or 6*s.* 3*d.*	per acre.
For carting 930 tons home ..	6	13	8	or 3 4	,,
For storing them	3	5	4	or 1 7½	,,
The expense of harvesting 40 acres of roots ..	£22	8	0	or 11 2½	,,

THE THEORY OF AGRICULTURE.

[The following is the first of a series of letters on Agricultural Theory and Practice addressed through Gerard Ralston, Esq., by Dr. Evan Pugh, Harpenden, St. Alban's, to the farmers of the middle States (U. S.), in answer to American inquiries on agricultural subjects.]

The whole subject may be embraced under the following heads:—

1st. The different capabilities of different soils to produce crops, and the difference in the effect of manures, chemical salts, &c., upon them for the production of the same and different crops.

2d. The effect produced by different kinds of manure and their value compared with barnyard manure and with lime.

3rd. The best means of raising crops so as to insure the greatest profit.

4th. The bearings of science upon agriculture, and the advantages the latter has derived and may be expected to derive from the former.

5th. Agricultural colleges and high schools, and what should constitute the legitimate subjects of education in them.

I shall endeavour to make each letter, as far as possible, complete in itself, and to embrace one of the subjects suggested by each of these headings.

In reflecting upon the first it will appear evident that in order fully to estimate the soil's capabilities to produce a given crop, we must know all the conditions upon which that crop is dependent, and also know what relation the soil's capabilities bear to those conditions

under the climatic circumstances to which both soil and crop must be exposed during the growth of the latter.

If the conditions were known the scientific agriculturist could calculate the value of an anticipated crop before it was grown, with as much accuracy as the astronomer can calculate the time of rising, setting, southing &c. of any of the heavenly bodies. But agricultural science has not yet been reduced to that degree of mathematical exactness, which is attained in that science which treats of the motions of stars and planets. We do not as yet know all the conditions requisite for the growth of maximum crops, nor are we able always to fulfil those conditions so far as we do know them, nor are we able to predict the different climatic circumstances to which a crop will be exposed, nor can we measure the exact effect of these circumstances upon the crop after they have transpired. Indeed when we come to sum up our knowledge upon the subject of agricultural science and to compare it with what we do not know, or with what is known in the exact sciences, we are surprised at our own profound ignorance. This ignorance is the result of the difficulty of our subject.

There is scarcely a single effect in the whole range of observed phenomena that is the result of the operation, a more complicated series of causes than is that effect which is manifested in the production of a maximum amount of agricultural produce. Many of the causes, as the temperature, rain-fall, state of the wind, intensity of light, &c., are entirely beyond our control. The most we can do with regard to them is to study their effect and the times of their activity, and then seek to so modify other conditions, as times of sowing, harvesting, &c., as to secure a maximum benefit. Other causes, as the chemical and physical state of the soil, and its relations to different plants, are much more within the control of man; and hence these become the legitimate object of the farmer's study and activity. But it is only when he looks at his subject in the light of science, and avails himself of its teachings, that he is enabled to avoid the most erroneous conclusions and to explain the most mysterious paradoxes. He will find that a given quantity of manure, chemical salt or guano will produce a certain effect, but double the quantity will not double the effect—that which for a few years has been beneficial he will find to lose its virtue after successive applications—that certain manurial agents that pay well upon poor land don't remunerate upon rich land.

All these things are perfectly clear if viewed in the light of science and philosophy. No effect which is the result of a plurality of causes will vary in the direct ratio of the variation of any particular one, or part of those causes. To be less abstract let us take a familiar illustration. Suppose the annual increase of a man's wealth to depend—(1) upon his personal expenditure; (2) upon the expenditure of his family; (3) upon the amount of his labours; (4) upon the value received for the product of that labour; (5) upon the raw material, to the making up of which that labour is devoted.

Now here are five causes operating upon the increase of wealth to which we have alluded; that increase is dependent upon all of them; when any one of them varies it varies, but it does not vary in the same ratio as any one of them. When any one of them is quartered, or halved, or doubled, or trebled, it is not necessarily quartered, halved, doubled, or trebled. Several of them may vary, and yet the increase of wealth may not vary. Raw material may be doubled, the price received for a given quantity of labour may remain the same, but the amount of labour may be so increased, or the amount of personal or family expenditure may be so diminished that the annual increment will remain constant. There may be such a connection between the causes that when the first varies the second varies, and when the second varies the third varies, &c., so that we cannot tell from the variation of any particular cause what will be the final result. I trust this is plain for the simple case I have chosen. Now, we have just such operating causes, and just such complicated relations between them, throughout the whole range of physical cause and effect in the world.

It is most particularly so in agriculture; here the great object to be attained is the maximum crop at a minimum expense. This maximum crop is the effect, the causes of which we wish to control—it is the accumulating wealth yielded by the soil; the causes producing it are not so simple as are those which yield the increment of wealth in the case above, but it should ever be borne in mind that there are causes operating to produce it, and that these are no less definite in the one case than in the other, and it is the work of the scientific agriculturist to develope the knowledge of those causes and trace out their relations to their effects. From the nature, then, of cause and effect, we cannot expect a double quantity of a particular manure to produce a double effect on the crop, and when men say a crop will be proportional to the quantity of any one substance in the soil, or that is added to it in manure, they assert things not necessarily true; indeed the truth of which is highly problematical. The terms proportion and proportional have definite mathematical meanings; but they are too often used in agricultural works when speaking about the relations between crops and the soil's capabilities in a slovenly manner, which either robs them of their exactness or expresses an untruth.

When the attention of chemists was first directed to this subject, many sanguine hopes were entertained with regard to what chemistry was about to do for agriculture. It is to be regretted that all these hopes have not been realised. No sooner was it ascertained that the organic part of plants could be obtained from atmospheric sources, and that the ash was derived from the soil, than an idea was propounded that since the atmospheric sources were abundant, the soil constituents found in the ash were, if added in sufficient quantity to the soil, amply sufficient to maintain the soil in a proper condition for agricultural purposes.

It was supposed that chemical analysis was competent to measure the value of the productive powers of the soil, and that this value was expressed by the ratio of the ash constituents in the entire soil to those of a single crop. Thus in 100 bushels of Wheat and its equivalent of straw we have:—

	Grain.	Straw.	Total.
Potash	30.00	66.00	96.00
Soda	1.29	3.00	4.29
Lime	3.50	31.30	35.00
Magnesia	11.5	13.00	24.50
Iron	0.79	3.98	1.69
Chlorine	0.09	1.10	1.19
Sulphuric acid	.33	16.00	16.33
Phosphoric acid	50.00	25.00	75.00
Silica	2.5	340.50	343.00
	100.00	500.00	600.00

And hence in removing this much Wheat from the land we remove in grain and straw 96 lbs. of potash, 4.29 lbs. of soda, &c. Nothing was more natural than the suggestion that if these substances were removed by the crop, they must be supplied by manures. The only preliminary question raised was with regard to how much of these several constituents was already present in the soil. And here an appeal was made to the analytical processes of the chemist with a hope of solving the point in question. The following analyses of two barren soils, and one fertile one, will exhibit an attempted solution. The amount in pounds of the several constituents given is that of an acre taken to the depth of 6 inches:—

	Barren Soils.		Fertile soil.
	Sandy.	Peaty.	
Potash	Traces.	200,000	3,420,000
Soda	,,		1,340,000
Lime	20,000	1,100,000	2,780,000
Magnesia	20,000	160,000	1,500,000
Iron	1,200,000	240,000	9,420,000
Chlorine	Traces.	Traces.	20,000
Sulphuric acid	,,	,,	200,000
Phosphoric acid	,,	,,	280,000
Silicic acid	194,000,000	8,000,000	150,000,000
Alumina	600,000	1,260,000	11,080,000
Organic matter	,,	180,880,000	12,640,000
Water	,,		8,820,000

At first sight, on comparison of these three analyses with the ash analysis preceding them, nothing seems more clear than the explanation of the cause of barrenness which the analysis affords. While the fertile soil contains over three million lbs. of potash, 280,000 lbs. of phosphoric acid, over one million lbs. of soda, &c., all of which are required by the plant, as shown by analysis, the barren soils contain only traces of these indispensable constituents. Founded on such considerations as are here suggested, in the earlier days of modern agricultural chemistry the most exaggerated notions were formed of what chemical analysis was competent to do. Quack analysts in England, America, and Germany were offering to make soil analyses at prices which would scarcely remunerate a laboratory servant for keeping the floor of the laboratory swept, while a chemist would make a good analysis. Indeed in works written upon the subject, farmers were advised to make their own analyses. An iron spoon might be substituted for a platinum dish, and earthen bowls would serve the purpose of glass beakers, &c. Such advice was not less absurd than that of advising men to perform their own surgical operations—to set their own broken bones and amputate their own mortified limbs, to substitute a broad axe for the scalpel to divide the flesh, and to use a cross-cut-saw to cut off the bone instead of the surgeon's instrument.

No chemist, whose opinion is worth the paper on which it was written, would now pretend to say that his processes are sufficiently delicate to measure those small differences in the amount of nutritive constituent in the soil, which may constitute the difference between a fertile and a barren one. Soil analyses are valuable as affording material from which the student may derive tangible notions about the relation of plants and their ash constituents to soils, and when carefully made may often, when taken in connection with the physical circumstances, as geological position, state of drainage, &c., enable the scientific man to make suggestions with regard to what the soil wants for particular crops. But even then before we can know the value of these suggestions we must appeal to agricultural practice.

Let us examine the meaning of the figures in the preceding analysis. Nothing is easier than to misunderstand a physical fact expressed in figures, especially when they do not express all the circumstances of that fact, as is the case in the present instance.

The 20,000 lbs. of lime in the barren soil is a quantity so small that its estimation reaches the utmost limits of chemical analysis, and no analyst could be positively certain that it should not be 15,000 or 25,000 instead of 20,000. And we might quote two analyses of the same soil made by the highest authorities in which differences equal to the whole quantity of substance found by one of them would occur. Had the lime been present in a very little less quantity it must have been given as traces, that is, too small to determine. Or, conversely, the quantity of substances given as traces may amount to 10,000 or 15,000 lbs. per acre. Now if we propound the question "When a soil is barren for want of substances of which it already has 10,000 to 15,000 lbs. per acre, how much of those substances must be added in manure to make it fertile?" we get a result most disheartening to the farmer. If 10,000 lbs. of a valuable constituent like potash produce almost no crop, how many hundred thousand would be required to produce a good crop? Such a question were well calculated to make an English farmer go to Australia, or a farmer of the Atlantic States go to the alluvial soils of the Mississippi valley and leave his barren soil in despair. Or if we observe the difference between the barren and the fertile soils the case is no less desponding. If we add 3 millions of lbs. to the sandy soil, it will still have less of potash than the fertile soil. To bring the two to the same chemical state would be practically impossible. But let us next see what agricultural practice teaches. It teaches, as every farmer knows, that a few hundredweights per acre of these valuable constituents, as applied in guano for instance, are sufficient to raise barren land to a high state of fertility.

Again, if we look at the apparent capabilities of the fertile soil, we will find them immensely over-rated as expressed by the figures in the analysis. A simple calculation shows that if Wheat were grown in succession, year after year, and all the grain and straw removed from the land, there would be potash in the fertile soil above sufficient to produce 114,000 bushels of Wheat; of soda for 1,038,000 bu.; of lime, 797,000; of magnesia, 139,000; of iron, 11,920,000; of chlorine, 2000 bu.; of sulphuric acid, 603,000; of phosphoric acid, 5000 bu.; of silicic acid, 6,000,000.

Or if we suppose the land to produce 25 bushels per annum the potash would last for 4560 years, the soda for 41,520, the lime for 32,000, the magnesia for 5160, the phosphoric acid for 200, and the silicic acid for 240,000 years, and when these immense periods were gone through with on the soil, the subsoil would if brought up supply a similar set of figures.

But agricultural practice teaches that most productive soils may, by a few years cropping without manure, be reduced very much below that maximum which constitutes good farming.

Again, science would teach that all the several ash constituents were of equal importance, as in a physiological point of view they really are, since the plant cannot grow without all of them are present in an available form; but agricultural practice has affixed very different degrees of importance to different ash constituents, as indicated by their commercial value, as we shall see when speaking of manures.

We may well pause here and ask why is this discrepancy between the teachings of science and the results of agricultural practice? It is undoubtedly due to the fact that science has attempted to solve a question upon data which did not embrace all the conditions upon which the result desired was dependent. Agricultural practice, like the planet Uranus, has not followed the course laid out for it in the tables of science, because those tables have failed to recognise the perturbations produced by some Neptune yet undiscovered beyond. And as the mathematician, confident of the truth of Newton's and Kepler's laws, and of the correctness of his mathematical analysis, might doubt the correctness of the astronomer's observations, so the facts to which we have just alluded are well calculated to create mutual distrust between the purely scientific man and the agriculturist. It is only by embracing a knowledge of both agricultural practice and what science teaches that these anomalies can be explained.

If in agricultural practice we fail to get from the soil those immense quantities of substances which chemistry most assuredly informs us are in the soil, it is simply because they are not present in a state assimilated by plants. A mass of granite rocks and gravel upon which only Lichens can struggle for existence may have the same chemical composition as the most productive soil. A barren peat bog or an unproductive swamp may be far richer in the nutritious constituents of cultivated plants than the cultivated fields that yield the most luxuriant crops. A soil that yields an excellent crop in a dry season may be very unproductive in a wet one, and the converse. In these cases barrenness with an abundance of chemical elements present is easily explicable, but such is not always the case. In some cases we find a substance present in the soil which cannot be assimilated, and yet we cannot tell why it should not be so. To some such point my own efforts have been specially devoted for the last two years. It is only by studying the whole character of the soil in relation to the crops that are to be grown upon it that we can form rational conclusions with regard to its capabilities. Its physical character is no less important than its chemical composition. The farmer must have it properly drained, ploughed, harrowed, subsoiled, &c. Liming, chalking, and marling exert important influence upon its physical constitution. In some cases the use of artificial manures can accomplish the same purpose as these efforts to improve the physical condition; in which case it will simply be a question of expense which to do, use the manure or change the physical condition. The most favourable alternative will vary for different localities, dependent upon the price of labour, of land, and of manure. The principles of this variation should be understood by the farmer that he may know how to adapt them to his own peculiar circumstances. As

an example, here 20 miles north of London land costs 300 dols. per acre. It rents for 10 dols. per acre. Labour costs only 9 dols. per month without board. Manure, chemical salts, &c., are not dear compared with the price of land. Now if this cheap labour, when employed liberally, will but give a slight increase in the products of this dear land, or if the same can be done by artificial manure it is best to get the increase. But in America, where land is cheap and labour and artificial manures dear, an increase of crops would often best be obtained by using more of the cheap land, than to employ an excess of the dear labour.

We must learn from scientific experiments accurately made, and without regard to price, how to produce maximum crops; then in practice it will be a matter of simple calculation with regard to the price of labour, land, and manure how near this maximum it will be profitable to go. The immense capital invested in agricultural implements, in manures, and in labour in order to increase the crop in England, would be most ruinous if followed in America. In this respect England bears some such relation to America as do the productive farms near to large cities in America to those at a great distance from market. When the farmer is at a great distance from market, or, what is the same thing, when the produce of his land is very low in price he must rely more upon the natural resources of the soil. The exact value of these resources is as yet by no means ascertained even for such soils as have been studied most attentively, much less for those of which we know nothing about except a few loose generalities which can have no practicalble bearings. On a great many questions, such as those of the power of soils to condense ammonia from the air; their power to form nitric acid or ammonia from the nitrogen of the air, and oxygen or hydrogen; the influence of ozone in promoting the combinations of nitrogen and oxygen; the formation of nitrogenous products from the nitrogen gas of the air; and the nascent hydrogen of decomposing vegetable matter and the evolution of free nitrogen from decomposing nitrogenous vegetable matters—all these questions are of the very highest importance in agricultural practice, and yet not one of them is satisfactorily settled. It is true certain opinions have gone abroad in our text books upon these questions, but if we follow up the opinions to the original experiments upon which they were founded, we find them totally inadequate to meet the questions they are supposed to solve.

When they are solved we will be better prepared to discuss the soil's natural resources. It was in view of them and others that it was remarked at the commencement of this letter, that in the whole range of observed phenomena, there was scarcely a single effect which was the result of a more complicated series of causes than that exhibited in a maximum crop of agricultural produce.

IMPEDIMENTS TO AGRICULTURAL IMPROVEMENT IN DORSETSHIRE.—No. II.

Game.—In continuation of the article with this heading, which appeared at page 127, we proceed to direct attention to the great source of annoyance and loss consequent on the preservation of rabbits and hares. Where they are preserved in large numbers, as is too often the case, they prove to be a sure veto to agricultural progress, therefore any sane person will not require long or powerful arguments to demonstrate that all landlords who preserve them have no desire to see the land well farmed or that they are gentlemen who have little knowledge of the great injury done by these little animals. It is often one of those vexatious losses which fall on the occupier without any adequate return through the want of experience on the part of the proprietor. But from whatever cause it arises it leaves a rankling sore for which there is no remedy but the removal of the nuisance.

It is a well known physiological fact that the growth of plants is increased or diminished in proportion to the spread of leaf. With the increase of foliage comes an increase in the number of stomata through which the carbonic acid and probably small quantities of nitric acid and ammonia are imbibed from the atmosphere. The former by a wise providence is collected in the plant in quantity proportioned to the wants of the plant and to the power of the plant to assimilate it. In fact, the plant forms a natural laboratory which, if left to itself, would fulfil the wise design of its author. But if a part of that plant is eaten by some animal the laboratory is lessened, there is less matter received into it, and less matter undergoing chemical change. It receives a severe check through being lessened, and it is longer in performing its functions; its means are diminished, and it produces not only less fruit but of an inferior description, through the loss of that time which is the most favourable for the ripening of seeds. This applies to all cereals and to all plants that are cultivated for their seed; but does not the first part apply to all descriptions of plants? If we take the Turnip, we find from experience that this plant, if eaten off when fit to hoe, produces afterwards a luxuriant green that deceives the inexperienced eye. It has a more vigorous head in the autumn than its neighbours, has more vitality through being checked in its early growth, but what of the bulb? If its neighbours are 3 lbs. each, shall we not find this bulb about 2 lbs.? Again in the natural Grasses what do we experience? Do we not charge much higher for the keep of a horse than a cow, because the former bites much closer than the latter? and does not a rabbit or a hare bite closer than any of our domesticated animals. It may be said that eight or 12 rabbits or hares consume as much as one sheep, but where is the comparison all things considered? See the close bite of rabbits and hares, the poisonous droppings, the dislike of other animals to feed after them, the culling of the sweetest and most nutritious herbage, the consumption of the very food left for times of scarcity, the destruction of the Clover plant, the rotting of the Turnips after their bite, the later harvest, the diminished yield, the inferior grain, all these are objections to the comparison drawn by gentlemen between sheep and those wild animals that are running over and injuring every crop on the farm. After this who can say what it costs to keep rabbits and hares?

The Adulteration of Manures and the deception practised on the farmers by the manufacturers is another impediment to agricultural improvement. It requires an extensive knowledge of what is going on in the commercial world, and in the manure market in particular, to give anything like a finished picture of the varieties of manures that are now sold under the same name. We have neither time or space for it, and shall therefore confine our remarks to superphosphates, nitrophosphates, and guano, on each of which we shall say little.

The great increase in soluble phosphate which is this year found in superphosphate of lime is a new feature in the manufacture of this manure, and may be accounted for in two ways, first through the soluble phosphate being made from mineral phosphate, and second from the closer union of science with practice. Science has long ago shown us that the phosphates must be made soluble previous to their being taken up by the plant, and that it is not wasted through being soluble, as it combines with lime or some other base, and forms a precipitate phosphate as soon as it is applied to the soil. The more extended use of analysis as a means to find the composition of manures has also led farmers to discover the superiority of those superphosphates that contain the greatest per centage of soluble phosphate, and the results is that they are supplied with what they require. The best superphosphates sold in this county last year contained on an average about 16 per cent. of soluble phosphate—this year they will average about 22 per cent.

The materials of which superphosphates have been and are still made is an impediment through the farmers being misled by some of the manufacturers, and through the former not taking the precaution to have them analysed and reported on by able chemists. When the soluble phosphate was first made from mineral phosphate there ought to have been added a greater quantity of phosphate to supply the deficiency which must have followed the new mode of manufacturing this article. If the soluble phosphate is made from mineral phosphate, there generally remains 7 or 8 per cent. of this substance in the shape of insoluble phosphate, and which, as Dr. Voelcker has remarked, is as worthless as sand. Now this, as we have said, must have impeded the progress of agricultural improvement for the application of a superphosphate made from bones, as the purchasers were led to believe these were, would have added with the usual dressing as much more bone phosphate to the acre as would be derived from ½ cwt. of bones. The loss of ½ cwt. of bones to the acre is a serious matter, and would be supplied in some other form or by an additional quantity of superphosphate were not the farmers deceived as to the materials of which it was made.

Nitrophosphates are generally superphosphates, to which is added nitrogen in some form in which it will, or is supposed, to benefit the plant. If it is thought necessary to supply the plant with more nitrogen than is found in common superphosphates, we use a small quantity of Peruvian guano along with it in preference to paying the manufacturer for making nitrophosphate.

Guano is another manure that is often found to be of little benefit to the crops to which it is applied. This applies especially to those phosphatic guanos which are highly spoken of in this county as being a valuable mixture for the Turnip in the proportion of 1 cwt. of guano to 2 cwt. of superphosphate, which contains a high percentage of soluble phosphate. It especially prolongs the growth of the plant in the autumn. It is the fault of those who buy these manures if they are deceived whilst they have Dr. Voelcker and other able chemists who can not only show them the composition of these guanos, but show them in what state the phosphates are, whether they are mineralised and of no value, or in that valuable state in which they are found in all real guanos.

Small Farms.—Much may be said against small farms, but they are stepping stones to industrious and saving men that are deserving to stand in a higher sphere of life. Farms of 100 acres and less are often occupied by men of this class, therefore we shall find that their education is not better than we could wish to find in our common farm labourer. We scarcely know that these farms are comparatively any impediment to progress, although they are managed in an antiquated style that would probably represent pretty accurately the farming of the beginning of this century. Where these small farms are numerous we are sorry to find that the labourers are not so regularly employed. They are oftener thrown on their own resources, which cause some dissatisfaction and much independence. In such places they have generally other work to fall back on, when not wanted by their petty masters, which results in the want of that fidelity, industry, and honestry of purpose that we find in the well housed, well fed, and regularly employed farm labourer.

The small Grass farm is not so much the object of our attack, but we cannot help noticing as we travel through the county, how deplorably those tenants are behind the times that cultivate small arable farms. These occupiers generally begin with insignificant capital. They are ambitious to become farmers without the means of buying live stock, to cultivate and manure the land. It must again be seen by all that it is next to impossible for them to buy those implements with which labour is now so much cheapened. They would never receive the interest for the capital so employed, did they possess the means of doing it. On these farms they are dependent on some neighbour for a drill, and consequently rarely get in the seed in favourable weather, through its being used by the owner at such times. They have no Bentall's broadshare, or Coleman's cultivator, they have no horsehoe or horserake, no heavy or light rollers or clod-crushers. In fact they cannot, even if they possess the knowledge, cultivate the land properly or profitably, and it is to the interest of landlords, tenants, and labourers, that all arable farms should be at least 200 acres.

We have labourers around us of all shades, from the honest, industrious, intelligent and painstaking man, to the unprincipled, ignorant, and prejudiced being, who curses all progress, and whose failing it is to do all he can to thwart the views of the farmer who is unfortunate enough to employ him. It is not education alone that is going to alter this latter class of men, there must be a great revolution in the homes of the labourers. The old cottages have been greatly improved, and new cottages have been constructed on the best principles, but we have still the old habits, the old likes and dislikes. We have not given them in those homes any source of amusement or entertainment that would perhaps remove the present tendency to evil speaking, and hostility of feeling to their superiors. In our villages we want schoolmasters, and not schoolmistresses, for the boys; we want night schools for those lads that are in the fields during the day, and a reading room for those that are still more advanced. All this may be attended to by the schoolmasters under the eyes of the clergymen. Give every advantage to the labouring poor by enabling them to help themselves, and let no pains be spared to cultivate a relish for intellectual enjoyments, which will perhaps keep them from the beer shop and make them industrious and prudent, and give them a distaste for those vices which now cause them so much unhappiness. This, with other things that would follow in its train, would slowly but surely remove that ignorance and prejudice of the labourer, which causes so much trouble, and is such a great hurt to the employer. *G. S.*

LOIS-WEEDON.

When Mr. Callwell announced, in the Journal which contained the balance-sheet of his experiment of 14 acres on Lois-Weedon Wheat tillage, that he was prepared to repeat it on 29 acres, our satisfaction was very high indeed, for we fully expected from the known skill, science, and spirit of Mr. Callwell a magnificent display of practical exposition in Ireland of Mr. Smith's system, at least as to Wheat sowing. That we have been disappointed, and I might almost say incomprehensibly so, is a fact, and it is with much regret we have learned that after 1856 he gave up the scheme altogether, in the persuasion that the northern harvests were too late to get the land, on a large scale, sown in time, and from his inability to keep the land free from weeds; and this regret is much increased by a consideration of the very serious loss he must have sustained by failure in an experiment on so large a scale. He however expresses his conviction that it would succeed where the whole system was properly carried out, and that it should do so in Ireland, but that weeds and late sowing beat him out. He also expresses much admiration of Mr. Smith's beautiful crops, and his delight with all he saw at Lois-Weedon, where not a weed was to be seen, and that he returned from his visit there with a determination to try the plan for some years. The experiment of 14 acres was followed by that of 29 acres, which was succeeded by one of 5¾ acres, and then the attempt was abandoned.

The 29 acres of Wheat appears to have succeeded in part a broadcast Wheat crop after manured Potatoes; the ground was ploughed, grubbed, and cleaned before sowing; only the first sown was a fair crop, as most of it was not got in till November. Mr. Callwell supposes one cause of failure was this late sowing; another cause his not being able to get the Chickweed and other annual weeds pulled before the Wheat came into ear. "It would take an army of weeders," he says, "to get all the weeding done in time on a large scale;" and he complains of difficulty in getting women to weed where they are only engaged for a time that they know will not be long. And all the 29 acres, except the 5¾ of the following year's tillage, appears to have been given up to its fate in despair.

I now come to these 5¾ acres, the crop of 1855–6. It was sown on the 14th September, 1855, with 8 stone of seed; digging of fallowed intervals finished on the 3d of December; forking the intervals (lying exposed to the frost from the time of digging in December)

finished on the 6th of March; rolled on the 15th of March; hand-hoeing between the rows of Wheat, end of April; grubbing and scuffling the intervals as often as required by horse work till the Wheat was 18 inches high, it could not be done afterwards; moulding it on the 14th of June with double mould board; hand weeding going on till now as required. Though at this time left without a weed, the intervals, on the Wheat being cut on the 25th of August, were one entire mass of Chickweed and Coltsfoot (?), in fact quite a hedge in the well cultivated 3-feet intervals.

The produce of the entire 5¾ acres was only 2 tons, sold on the 8th of September, 1856. The straw was smothered by Chickweed, nearly 2 feet high, so no wonder, says Mr. Callwell, the produce was bad. On this 5¾ acre field all was carried out correctly, and it had been under the Lois-Weedon system from 1853. Mr. Callwell gave up the system after this, the expense of weeding eating up the produce.

After the crop was cut he always scarified the intervals with Coleman's grubber, fitted with broad shares, which completely cut up the intervals from stubble to stubble; afterwards this was all forked over by the five-prong steel forks, all weeds gathered and taken off, and immediately sown, if not too dry.

I am sure the English farmer will not be deterred from the Lois-Weedon system by those causes which have discouraged Mr. Callwell, and the more so as the weeds have driven him from row culture as well as from Lois-Weedon; for having abandoned this latter he tried his hand on the former, and in September, 1856, he sowed an acre of Wheat with 28 lbs. of seed drilled in rows 1 foot apart; and in November one acre with 112 lbs. of seed in broadcast, alongside each other after a crop of Potatoes was dug out. The difference in cost of seed paid the hoeing of the drilled crop, which operation the broadcast did not require. When threshed out in September, 1857, the drilled crop gave 17½ cwt., and the broadcast 21 cwt. "Since then I have always sown broadcast," remarks Mr. Callwell.

An experiment on Lois-Weedon Wheat tillage was made for two seasons in Kildare, a dry south-eastern county, but was a total failure from late sowing, accumulation of weeds, and from being altogether conducted without regard to the principles or practice on which success must depend.

Such have been our attempts at Lois-Weedon practice in Ireland. It remains to be seen whether the National Board of Education has been more successful. There is however a Portuguese proverb which gives us some encouragment, "Blundering we learn not to blunder." And failing we may learn not to fail.

The difficulty of weeds bears strongly on an observation I made some time ago, that from the dirty state of our land and the moisture of our climate fostering weeds, it would be advisable to precede the introduction of Lois-Weedon Wheat growing by a well-cleaned fallow crop, this being followed by a spring sown grain crop in Lois-Weedon fashion. If convenient, Barley might be best, as being a shorter time in the ground than Oats. *J. M. G., Granard.*

Home Correspondence.

Sheep Management.—Having been a reader of your Paper for many years, I write now to ask for information of Robert Bond, Kentwell, Long Melford. He says he bases his entire success and consequent profit upon cheap management, and large consumption of inferior food. He next tells us his ewes eat straw freely, thrive well, and live at so cheap a cost. We north country people have no experience of using straw in feeding our ewes, and if Mr. Bond would favour your readers with a detailed plan how he manages this part of the business, because he only states the results not the practical application of his system, he would interest a numerous portion of your readers, and confer a lasting benefit on the agricultural world. At the present period when our countrymen are combining wealth, science, and numbers to obtain increased supplies of raw materials, such as cotton, Flax, wool, &c. every improvement that can be made use of, especially at home, is desirable, nay necessary. What is paying the farmer so well as his mutton and wool? Your readers will fully value all details of practical real improvements, especially in the production of flesh and fibre. Our commercial national character, the superiority of our own fibres, the demand caused by our superior mechanism, the cheap and beautiful fabrics produced, the magnitude of our shipping interest, and the world-wide love for our varied productions call loudly for the greatest extension of sheep keeping and breeding, and any system that can profitably and cheaply increase them ought to be published in every paper and practised by every true Conservative of the British empire. I, along with many other of your regular readers will look into the ensuing numbers of your Paper for the needful details, and if given in such a manner as we can understand and practise, we shall feel indebted both to you and also to Mr. Bond. *Thomas Baines, Stock House, near Bingley, Yorkshire, March 5.*

The Oxford Tribe of Short-horns.—In Mr. Smith's very valuable report on the exhibition of live stock at Chester, there is an omission which I am sure is unintentional on his part. In the account which he gives of the Short-horns of the late Mr. Bates, although he names all the other tribes, he does not mention the "Oxfords." After using "Belvidere" Mr. Bates never crossed his Duchess cows with any bulls except the Oxfords. This plainly shows the high estimation in which he held them. At his sale in 1850 the Oxfords averaged more than any other of his tribes except the Duchesses. At the Tortworth sale in 1853 five Oxfords sold for 1191*l.* 15*s.*; at the Hendon sale in 1855 one Oxford cow sold for 500, another for 480, and a bull calf for 200 guineas. These prices sufficiently distinguish them; but in addition to this they have been honourably placed at the meetings of the Royal Agricultural Society of England. At the first meeting at Oxford Mr. Bates took the first prize with a cow of this tribe, and at the last meeting at Chester the first prize was taken by an "Oxford" bull. I think you will allow that I have shown cause why they should not be silently passed over in any account of the Short-horns bred by the late Mr. Bates. I am sorry to say very few of them are left in England. The Duke of Devonshire and Mr. A. Maynard are, I believe, the only persons who possess any females of this breed. Mr. Maynard purchased Oxford 9th at the Kirkleavington sale. The Duke of Devonshire purchased Oxford 15th (sister to the two cows sold at Hendon) at the Tortworth sale. His Grace has three bulls and three females from Oxford 15th, and her daughter. Capt. Gunter has some bulls from Oxford 11th, and Lord Feversham's bull is from the same cow. *Kirkleavington.*

Societies.

Royal Scottish Society of Arts.—At a late meeting of this Society an exposition was given of the different modes of application of steam-power to tillage purposes, by John Wilson, F.R.S.E., Professor of Agiculture in the University of Edinburgh, copiously illustrated by diagrams and models.

Professor Wilson accepted steam power as an accomplished fact. He showed the form of the ancient Egyptian ploughs; of the ploughs in use at Nineveh, which were similar to those now in use in Hindostan. He also mentioned that the ploughs at present in use in the South of France were similar to those which are described by Virgil in his Georgics. Steam ploughs, he went on to state, are not of recent invention. Twelve or 14 years ago a model of one of Mr. Heathcote's was exhibited at the Agricultural Show in Dumfries. In England Lord Willoughby, and in Scotland the Marquis of Tweeddale, had done much to introduce steam ploughs into agriculture. The first in order of merit was that of Mr. Fowler. This was worked by the principle of traction—that is, by an anchoring apparatus at one side of the field, and the engine at the other. A steel wire rope was applied to the plough or rather gang of ploughs—the one travelling upwards and the other downwards—and was balanced by the weight of the man who changed his seat at the end of the furrow. The saving it effected was from 25 to 80 per cent. as compared with horse labour. The next machine he described was that of Mr. Smith. This machine does not only plough, it cultivates. It rips up the sod in two ways, longitudinally and transversely. The cost was about the same as Mr. Fowler's, and the saving it effected was about the same. The next two in the series were those of Ricketts and Romain, the last a Canadian invention. They were both modifications of Usher's, and consisted of a locomotive engine with various inventions for decreasing the weight on the wheels, and distributing it more equally over the surface; and the ploughing apparatus consisting of revolving cutters. The working expense of each was about 30*s.* per acre. The last machine he alluded to was that of Mr. Halkett, a gentleman in Kensington. This consisted of a perfect railway—60 feet between the rails—laid down over the fields, and on this railway was worked a couple of engines, The connecting shaft carried a plough, a sub-soil plough, a watering apparatus, a series of hoes, and lastly, a platform on which a number of people might sit planting or performing other operations with ease. In short, this machine performed all the functions of market gardening simultaneously. The learned professor concluded as follows:—"In this brief and imperfect sketch of the different modes of application of steam-power to tillage purposes, which I believe myself is destined to be the most important of all the advances which have from time to time aided in revolutionising the agriculture of our country, I have not attempted to draw any comparison between the two principal modes of applying the power of steam—that of the stationary traction engine and the locomotive rotary. Each has its strong and its weak points—the power absorbed by the traction in the one is equally absorbed by the locomotion on the other—and although the stationary engine diminishes largely the pressure on the cultivated soil, the locomotive engine completes in one operation the work which the other requires to pass over the ground twice at least to effect. Between the plough and the spade—ploughing and cultivating—there is an important difference; and here it is that we ask steam to come to our assistance. What we want is not ploughing so much as cultivation—that process which the farmer by necessity performs in three, four, or five acts, not nearly so efficiently as the gardener accomplishes in one. The plough does not cultivate; other implements are required—the roller, scarifier, harrows—to complete the work. . . . Let us then ask our engineers to give up all ideas of effecting the ill-assorted union between them and the plough, and keep their attention fixed rather on the construction of a machine that shall complete its work in one operation—that shall, in fact, combine the power of steam with the capacity and finish of the spade."

Farmers' Clubs.

London: *March 7.*—Mr. Bond, of Suffolk, read a paper on *Agricultural Education* in its broadest sense, as including the whole of a young man's antecedents previous to an agricultural life. We can but give a *resumé* of his remarks this week. He referred to agriculture as a purely imitative art as compared with agriculture a science:—

"The British yeoman has been always noted for that sound common sense which, though no science, is fairly worth them all—a common sense which could neither be won by a fallacy nor be deluded by a delusive theory. Profit has justly been his badge of discipleship; but it is necessary now to combine, in the same person, common sense with agricultural science; I advocate a thorough proficiency in the sciences because I believe such knowledge is necessary to prevent mistaken outlays and wrong applications; to insure the placing of the right manure in the right place, the giving the right food to the right animal, and the doing the right thing in the right way; to lessen the cost of production and to increase the annual returns; to win more fully the prize we all have in view, viz., money or money's worth."

On the acquirement of right principles in addition to mere knowledge, Mr. Bond eloquently says:—

"I am a great advocate for the culture of the heart as well as the culture of the head; no man is truly a man without it; and it is especially the duty of parents early to implant, to foster, and to uphold sound Christian principle; to culture in acts of reverence, in feelings of love and affection, and in deeds of unselfish kindness; to insist on obedience and truthfulness. And it has been my observation that without this Christian security the most successful secular life is at best but a mistake, and the most hopeful intellectual attainments a comparative abortion. There must be the ballast of sound principle, of right feeling, and right doing, as well as the sail or the steam-power of ability."

He then referred to the deficiencies of local schools, to the importance of a thorough grounding in the English language, in writing and arithmetic, in history and geography. He urged the importance of agricultural examinations; and especially of continued intellectual discipline after leaving school.

"More than half the young men destined for agriculture in England actually waste, and worse than waste, the first four or five years of their freedom from scholastic restraint. Theirs is a thorough desultory life; they throw up all intellectual culture, and they have no intellectual standard of attainment to which to strive to attain. They probably assist in the farm management; but as they have no responsibility, the farm occupies but little of their thoughts; as they feel but little interest, they observe but little; and the rat-hunt, the cricket-match, the run with the harriers or fox-hounds, the quadrille-party, the shooting exploit, with other amusements, combined with a profusion of tobacco, are their real employments—their true business of thought and occupation."

Mr. Bond concluded a most interesting and valuable paper, to which we shall next week refer at greater length, as follows:—

"I lay especial stress upon habits. I look to education to teach a man to use his brains, his eyes, and his ears, to show he has a head upon his shoulders, and to ensure that he does not pass through life half asleep; but I look to habits and discipline to effect much also. If any young man thinks he will succeed in the daily life of agriculture by informing his mind alone, he will find himself mistaken. For success there must be habits of industry and of prudence, of early rising, of thinking nothing of trouble in business. Most thoroughly do I recommend the habit of correct accounts, and of noting down passing business events. I strongly urge that interest and advantage be studied, and not inclination and pleasure—habits of self-denial, and not habits of self-indulgence. Settle it down as a fact that you can do anything if you try, and cultivate the habit of perseverance. Men succeed by sticking. Cultivate the habits of cheerfulness—of a frank, open-hearted, manly manner, combined with politeness. I strongly recommend young men also the habit of manual labour, sufficient to understand what labour really is, and to acquire a practical knowledge of the different operations of the farm. I call that success which is earned by industry, ability, tact, and perseverance; and I had rather have the chances of many a man without a sixpence in the world, possessing these qualifications, than I would the chances of another reared to nonentity and in habits of extravagance, though possessing thousands of pounds. Who has a farm to let, and does not search for the best tenant? The world, from self-interested motives, will befriend the competent, while it throws men of incapacity to the dogs. And who does not know that there are more good situations in life than men qualified to fill them, and more good opportunities than men qualified to embrace them?"

Hexham: *Autumn Cleaning of Fallows.*—Mr. Loraine said the usual plan of commencing to clean the and in this county, is as soon as the harvest is over and a certain quantity of loose work done by the horses, to plough the land with as deep a hold and as broad a furrow as a pair of strong horses can pull—indeed, some farmers even put in three horses for that purpose. The effect of this is to turn over a furrow slice from 8 inches to 10 or 12 wide, and from 6 to 8 deep; consequently, whatever was on the surface becomes buried to a considerable depth below, and most of the annual seeds thus placed are beyond the action of the sun and air, and thereby prevented from vegetating the same year in which they were ripened and shed. The roots of the Couch-grass and other weeds are also buried, and thus irregularly intermixed with the soil at a considerable depth. All this is generally completed before Christmas. In the spring, as soon as the sowing of the Barley and Oat crops is completed, the fallow is again ploughed across, whereby part of the roots besides a quantity of annual seeds are brought to the surface, and the other part becomes more intermixed with the soil. Next follows harrowing, picking, rolling, and scarifying, to get the weeds out; and after the surface when carefully picked appears quite clean, still the next ploughing or scarifying brings up more weeds, or what is called dirt, and thus it has to be gone over several times. And, in fact, with all the pains and care that a good farmer, with good men, women, horses, and implements can take, he seldom can get his land as clean as he could

wish, some dirt being always buried too deep to get out, and the annual seeds thoroughly intermixed in it. What, I will now ask, are the advantages or disadvantages attending this plan? The advantages or supposed advantages are, I believe, usually considered to consist of causing the stubble and part of the weeds to rot, by being turned down to the depth mentioned; of causing the land to work free and mellow in the spring, by admitting the frost and air deeply into it during the winter; of enabling you to drag out the quickings whole in the spring, the same not having been cut or separated into small pieces by shallower ploughing; and lastly, it is supposed to invigorate the land, and enable it to grow good crops. These are the supposed advantages. And now let us look to the other side of the question, namely, the disadvantages. They appear to consist of burying weeds and seeds deeper than they need to be, thereby causing great difficulty, and more trouble and expenses than necessary, in endeavouring to get them out the following spring, without being able to do so perfectly, and of causing an extra quantity of work at a time of the year when there is so much to be done of one sort or another that the farmer hardly knows how to get it done fast enough, if at all. Having said thus much upon the old plan, I will now describe to you another mode of going to work to produce the same result. I mean cleaning, or taking the face off the stubbles or fallows in the autumn. To refer back to the plan of cleaning the face off the stubbles:—This is to be done by dragging a cultivator, or any other convenient implement for the purpose, along the surface of the field, at a depth of not more than 3 or 4 inches, so as just to get under the roots of the Couch-grass, and most of the other weeds; after that, to harrow it well with a pair of strong harrows, next the chain harrows, and then to gather and lead off the field all the stubble and weeds, and to put them either into the folds, or into a heap, in some convenient place, for the purpose of mixing with lime, at a future period, for dressing Grass land. By this process, all the annual seeds get covered with soil, and are kept within such a distance of the surface as would in all probability cause them to vegetate the same year; and at the next ploughing or stirring be entirely destroyed; the Couch-grass, and their weeds having a very much smaller quantity of soil mixed with them, are easier and more perfectly cleared off than when buried to a greater depth, and, indeed, in a favourable season for the operation can be quite eradicated; and thus the work of the farm is materially advanced, and the expense of the spring and summer diminished. Whether this plan could or could not be generally adopted in this county I will now proceed to notice, as well as some objections that could be started to it; and first, as to the objections, one of which would probably be, that by employing the men and horses in executing this work, and in taking off such a quantity of stuff as would sometimes come off the stubbles, you would not be able to give the land a deep ploughing in sufficient time to have the advantage of the winter frosts, and in consequence it would not work so well in the spring. To this I would answer that I believe in many seasons both operations might be accomplished, but not in all. That on some lands the action of the frost in winter is not necessary to enable it to be well worked in the spring, and in many instances the importance of it is very much over-rated. On such land it is of far more consequence to get rid of all bad weeds in the easiest, most efficient, and cheapest way possible. On other lands again, such as cold, stiff, wet clays that could not be reduced at all without being exposed to the frosts of winter, this plan would not apply, unless you could both clean the face off in the way described first and give it a deep ploughing in good time afterwards. Some farmers I know consider that a good deep ploughing in the autumn on free land does away with the necessity of any more ploughings in the spring, trusting to the use of the grubber only to work the land with and clean the dirt out afterwards. I would however reverse this order of things, and use the cultivator or grubber shallow first, so as to get all weeds off, and then deep ploughing and harrowing afterwards. And no implement, I believe, has as yet been discovered so efficient as a good and well-made plough in the hands of a skilful ploughman for stirring and working land as it ought to be. It happened to me, a few years ago, when dining with a party of farmers in the county of Durham, to make the remark that every shovel of muck we could raise was another Turnip, when one of the party, an old experienced farmer, said, "It is far more; sir, it is at least three." Now, be it one or more, it only shows of how much consequence it is to raise as much manure as possible. The plan of taking the face off your stubbles, and leading them into the folds, would materially add to your manure heaps, and as such it recommends itself to your notice. And, if a shovel of muck gives you another Turnip, is it not very easy to suppose that a bunch of Quickens or a shovelful of weeds takes one away, or perhaps several? At any rate to come to this fact we will suppose a field so exhausted and foul with weeds, that no farmer could sow the ordinary quantity of seed of either Wheat, Barley, or Oats upon it, with any certainty of the new crop yielding it back again, and most of us have seen some land in this state. If such land were only half as foul as I am supposing, we should then look for half a crop; three-fourths as bad, for three-quarters of a crop, and so on, showing that every quantity of weeds diminished the crop, until we come to show, in theory, at least, though not perhaps visible to the eye, that every single weed diminished the crop, even to one head of corn, or that one not filled so well as every weed on the land diminishes the quantity of corn grown, and that every shovelful of muck increases it, is it not desirable and of the greatest possible consequence to the farmer to reduce the former and enlarge the latter? In olden times the corn was cut so high, and heaped in such a careless manner, that there was food left in the fields sufficient to keep the pigs, geese, and young cattle for several days, if not weeks. But now they are mown so close and raked so clean that there is hardly anything left for a mouse to live upon for a couple of days, much less for the geese, pigs, and cattle which, as I have before said, used to get good pickings for a long time; therefore, no delay on this account need take place in commencing the work; indeed, when the last stook is being brought out, the cultivator might go in, if you could spare the men and horses at the time for the purpose. It is true that the present expense and difficulty of accomplishing this task are glaringly present to the farmer's eye, and the prospective advantage more remote; but so is almost every step in the management of land. The ordinary manure that is annually bred and used on a farm takes some time to prepare, use, and return its profits, but it invariably does come back with profit and advantage to the farmer; and the compact heap which takes more expense and longer time in collecting and making fit for use, will also as certainly return with advantage and profit if properly managed. It is only a question of time and patience. I will now venture to state that if you do attempt to adopt this plan you should do so as to the whole and not as to a part only—that is to say, that the enlargement of your manure heaps should be particularly attended to, and that you should not be satisfied with merely having the face taken off the stubbles, and the weeds and straw either burned or couped into some quarry hole to get rid of them; but that you should have them carefully carried out of the field and made into real good dung by proper care and attention.

Calendar of Operations.

MARCH.

Isle of Ely, *March* 10.—March has again appeared, and brought with it its "many weathers;" its blowing gales and its clouds of dust. The first few days resembled April rather than March, and we were almost induced to believe that the cold weather was all "past and gone," and spring with all its glories was fully come. But the last few days have quite undeceived us, and we have had March in all its genuineness. Cold winds and storms have prevailed, but we have had no really winter weather, and we are beginning to think that the present will indeed be a winter without frost and snow, its usual characteristics. Vegetation is very forward, and with severely cold weather would be seriously injured, but with a continuance of seasonable weather we may expect a forward Grass season. On all our warm and early growing Grass lands the pastures are very luxuriant, and present all the verdure and beauty we usually witness in May. This is now exerting an influence upon the value of stock, especially of sheep, which are advancing in price every week with an increasing and more active demand. Beef and mutton are also realising high prices with rather limited supplies. Pork, which has been very low, is slightly advancing. On all our gravelly lands the Wheat plant is looking remarkably strong and vigorous, but on some of the lighter black soils it is much weaker, and is evidently suffering for want of more moisture. The weather continues unusually dry, and springs keep very low. Indeed we have scarcely had sufficient rain to affect the springs since October 1857. The shortness of water was severely felt at Chatteris, if we are rightly informed, on the 8th inst., when a fearful fire raged, rendering some 16 families houseless and homeless. Oat seeding is progressing favourably, and most of our farmers are now putting them in on their Fen soils, a practice which has gained favour very much during the last few years. May, not March, was considered the proper time for sowing on fen lands, but the opinion of the whole body of fen farmers has undergone a change on this subject. Several, we have observed, are putting in their Oats with the water-drill and artificial manures. Bean seeding is over, but the lands sown require rain. The corn trade if possible has been more dull and depressed, and prices have slightly given way. The condition of Wheat must now be greatly improved, which may possibly lead to a more extended inquiry ere long. *Your Fen Reporter.*

Notices to Correspondents.

Foul Land: *O C J.* There has been no better season than the past few weeks for clearing land. It must be ploughed or ribbed with the plough, harrowed down, raked, and hand weeded, worked with the scarifier, harrowed, raked, weeded, and burned; again ploughed, harrowed, and weeded, and the process must be repeated until the land is clean. If in addition to being foul it is also poor you had better get a crop of Turnips or Rape by dint of superphosphate or guano, along with such a supply of farm manure as you may have, and feed them on the ground with sheep, putting off the seeding for pasture till next year.

Poultry: *Fancier.* A valuable and numerous set of prizes are offered for competition at the annual meeting of the Bath and West of England Society, at Barnstaple, 1st, 2d, and 3d June. Entries close on 1st May.

Salt and Lime: *G S.* It is a very good dressing for Potatoes. You can harrow into the land a broadcast of 20 or 30 bushels of lime with which 2 or 3 cwt. of common salt have been lying mixed for a month or two, before planting the Potatoes.

Treacle: *Neston.* Treacle is selling wholesale in Liverpool at about 1½*d.* per lb. Have any of our readers tried how it answers for feeding cattle?

Wood Lice: *Ellesmere.* Can any of our readers give advice in the following case? A milk house is infested with these, and there are swarms of them to be seen on the walls in the yard. The poor toad on the floor can only look at them with a longing eye. He has cleared pits and frames of them many times, and has no doubt done his best in the milk-house. Wanted some wholesale way of destroying them.

Misc: *L J P.* It is suggested that sowing a little red lead with the Peas in the rows will not only effectually preserve the Peas, but destroy the mice—the same with Beans. "L. J. P." has tried it many years and never found it fail; the cost is very trifling.

FARM SEEDS, GROWTH OF 1858.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY (Limited) are prepared to execute orders for all kinds of FARM SEEDS, selected from stocks direct from the growers.

They respectfully invite the attention of Agriculturists to their FARM SEED LIST for 1859, which will be sent free on application to the Secretary.

The two following new sorts of SWEDES can be highly recommended:—

	lb.	qt.	gall.
THE PLYMOUTH IMPROVED			
PURPLE TOP SWEDE	1s. 0d.	1s. 6d.	6s. 0d.
GRANT'S PINE-APPLE SWEDE	1 0	1 6	6 0

The following extract taken from the Leading Article in the *Irish Farmers' Gazette* of October 16, 1858, will tend to show the very high character of the two varieties of Swedes here offered:—"We observed several experimental plots of Swedes, &c., amongst which we noticed a new purple-topped variety called the 'Plymouth Swede,' and also a very beautiful green-topped Turnip (Grant's Pine-Apple Swede), the name of which we did not learn. These were sown on June 16, and their shapes were the finest we have seen for a long time. The varieties were new to us, but certainly the specimens grown at Rockview left a very favourable impression on our mind, regarding both their beauty and probable value."

Price to the Trade on application.

Address—Plymouth Seed Company, Plymouth.

FARM SEEDS.

THOMAS KENNEDY AND CO., Dumfries, N.B., having completed their Stock of FARM SEEDS, are now prepared to execute orders for the same.

The special attention of Agriculturists is directed to their MIXTURES for Laying down Land to PERMANENT GRASS, which they are glad to say continue to give every satisfaction. Interesting notices of the leading varieties of Grasses comprising these Mixtures will be found in their PRICED LIST OF FARM SEEDS FOR 1859 (now ready), which will be sent free on application to any address.

The following named TURNIP SEEDS, the produce of carefully selected stocks, are offered at the prices quoted:—

SWEDES, the leading varieties	8*d.* per lb.
YELLOWS, the leading varieties	8*d.* ,,
WHITES, the leading varieties	8*d.* ,,

Seeds delivered Free of Carriage to the chief Railway Stations in England and Scotland, and to the principal Steam Ports in Ireland.

SEEDS FOR THE FARM.

NEW OVAL-SHAPED YELLOW MANGEL, introduced by us two years ago, has been thoroughly tested and is now recommended with perfect confidence. It is of a remarkably vigorous growth, with finely shaped roots, intermediate in length between the Long and the Globe, and has produced from 5 to 10 tons more per acre than any other variety (see *Gardeners' Chronicle* of Jan. 8):—

SWEDE TURNIP.—All the approved sorts.		
YELLOW	Do.	do. do.
WHITE	Do.	do. do.

In no description of crop raised on the Farm is a good or a bad one so dependent on the character of the Seed as in that of the Turnip, and from its great liability to degenerate, it requires the most scrupulous care and vigilance to produce Stocks that are every way worthy of confidence. To attain such, we have for several years past been using every known means to keep up or improve the shape, size, and texture of the various kinds; and we believe that what are now offered will give the most perfect satisfaction. All the principal varieties are our own growth, raised from large and fully developed Roots or Bulbs, and in the hope of giving a more vigorous growth to the Stock, the strongest clay soil is always selected for a considerable portion of the Swede and Yellows. This mode of raising Turnip Seed materially increases the expense, but it is a much more satisfactory system than the one usually adopted, viz., sowing random stocks late in the season, after other crops, and taking the seed from mere plants, which in many cases are not even subjected to the process of thinning. Moreover, we guarantee our Seeds free from any of the adulterations so frequently practised to increase profits or cheapen prices, so that a strong healthy "braird" is certain.

PERENNIAL RYE-GRASS.—Finest Ayrshire		
Do.	do.	do. Pacey's, 26lbs. to 32lbs. per bushel
ITALIAN	do.	Imported
Do.	do.	Home-grown

NATURAL GRASSES.—All the best varieties

The Stocks of Perennial Rye-grass Seed are the most select growths the country produces, and being all clean and heavy the economy of using such in preference to foul chaffy seed, however cheap, is at once apparent. Our imported Italian is from the usual source, and has always given satisfaction; while the home-grown is the direct produce of imported seed, cultivated under the most favourable circumstances, and more than ordinary pains having been used in dressing the seed; the samples of both are unusually clean and fine. In selecting the Natural Grasses care is taken to have them true to name, fully ripened, and in all respects good clean samples.

ALSIKE CLOVER, and other varieties.

LARGE BROAD-LEAVED SCOTCH TARES.

With every other description of Seed usually required for the farm, PRICED LISTS of which may be had post free on application.

W. Drummond & Sons, Seedsmen, Stirling, N.B.; also at 58, Dawson Street, Dublin.

*** Stirling is most favourably placed in point of railway accommodation, there being direct and constant traffic to all the principal stations in England and Scotland, and by steamers (*via* Glasgow), almost daily to the chief ports in Ireland, thereby insuring a speedy delivery of goods, all of which except grain and tares, we forward carriage paid.

MANGEL SEED FROM LARGE BULBS.

SUTTON'S YELLOW GLOBE MANGEL is saved exclusively from fully developed roots, the advantages of which have been proved for several years past.

See the following Letters:—

From the Right Hon. Lord Berwick, *Cronkhill, Dec.* 22.—"Let me have the same Globe Mangel as last year, which has given me the best crop I ever grew, good both as to bulk of crop, and also in the fineness of roots, and freedom from fangs and irregular growth. When pulled the roots were nearly as clean and as free from fibre as a Globe Turnip, and I had 50 loads per acre or more."

From Mr. Gray, Bailiff to G. Rawlins, Esq., *Bullington House* —"I believe we had one of the finest lots of Mangels and Swedes in the country. We had not quite enough of your seed of Mangel, and sent elsewhere for some to finish the field, and though sown the same day, and with exactly similar treatment, we had not so much weight by one-third as on the part sown with your seed."

The First Prizes at Birmingham and other shows throughout the kingdom have been taken by Messrs. Sutton's customers both for Mangel and for their "Champion" Swede. The price of Sutton's Large Yellow Globe Mangel Wurzel is 9*d.* per lb., or cheaper by the cwt.

Priced Lists of other kinds of Mangel, Swedes, Turnips, Grasses, &c., will be sent gratis and post free.

Carriage free to all parts except small parcels.

Sutton & Sons, Royal Berks Seed Establishment, Reading.

TO THE SEED TRADE.

WHITE BELGIAN CARROT.
INTERMEDIATE or JAMES'S CARROT.
BROCCOLI.

Ellitson's Mammoth	Tamworth
Snow's Spring White	Giant Late White, very fine heads.
Adams's Early White	

Fine and pure stocks of the above. Prices to the trade on application.—Bass & Brown, Sudbury, Suffolk.

PRIZE MANGEL WURZEL, SWEDE TURNIPS, ETC.

JAMES GROVE, Great Baddow, Essex, who obtained Prizes at the Chelmsford and Essex Agricultural Shows for nine years in succession, begs to state that his Seeds are grown from selected Roots—not Plants.

Long Red, Red Globe and Yellow Globe 1*s.* 3*d.* per lb.
Purple Top and Skirving's Swedes .. 0*s.* 9*d.* per pint.

Reference or cash required from unknown correspondents.

"JACK OF NEWBURY" SWEDE, ETC.

PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN, &c., 27, Great George Street, Westminster, respectfully request attention to their very genuine Stock of the above excellent Swede; also of the LOTHIAN PURPLE-TOP SWEDE, both of which have been selected with the greatest care. They have also a very fine Stock of the KOHL RABI, or TURNIP-ROOTED CABBAGE, specimens of which were shown at their Stands at Smithfield Club Show. The Kohl Rabi was largely grown last season, and may now be relied on as a substitute for the Turnip and Mangel, where these roots do not succeed, or for filling up blanks where there is a partial failure. Its feeding qualities, hardiness, and weight per acre are equal to the Swede, and all kinds of stock prefer it to other roots.

P. L. & Son have also selected a first-rate Stock of MANGEL WURZEL SEED, which they can confidently recommend. Their natural GRASS SEEDS have been also saved with very great care, and they are ready to supply them separately or in mixture, for laying down Permanent Pastures, Lawns, &c.

P. L. & Son have arranged to deliver Seeds free throughout England and Wales from their London Establishment, for all quantities exceeding 20*s.* in value.

LISTS OF PRICES of the above and all other Seeds, Plants, &c., may be had on application.

27, Great George Street, Westminster.

SEED CORN FROM THE CHALK.

MESSRS. RAYNBIRD AND HARVEY beg to offer to Agriculturists requiring change of SEED Talavera Red Nursery, and April WHEAT, the best sorts for Spring sowing.

Chevalier, Thanet, Golden Drop, Long-eared Nottingham, American, Hudson's Golden Melon, Banham's Sprat, and other varieties of BARLEY.

Canadian Potato, Hopetoun, Poland, and Tartarian OATS.
Fine CLUSTER BEANS, weighing 68 lbs. per bushel.
Samples and Prices on application.
Address—Basingstoke, and 89, Seed Market, Mark Lane, London, E.C.

TO THE TRADE.

THOS. CRIPPS, NURSERYMAN, &c., Tunbridge Wells, Kent, respectfully offers the following fine strong SPANISH CHESNUT PLANTS, 4 feet to 6 feet in height, 40*s.* per 1000; Blush CHINA ROSES, fine strong plants, 15*s.* per 100; Crimson do., very strong, 25*s.* per 100; fine Standard and Half-standard ROSES, 60*s.* per 100; good do., do., 50*s* per 100; Double Yellow PRIMROSE, 20*s.* per 100 or 400 for 3*l.*; PINUS INSIGNIS and P. RADIATA from Seed, 15 inches to 28 inches, 6*l.* per 100; MANETTI STOCKS, 50*s.* per 1000; do. second size, 40*s.* per 1000; IRISH YEWS, 2 feet to 3 feet, 50*s.* per 100; Hardy HEATHS, a fine collection, 25*s.* per 100: large plants, good do., 20*s.* per 100; LARCH FIR, fine stout plants, 2 to 3 feet; LONICERA SHEPHERDI, or new Scarlet-trumpet HONEYSUCKLE, fine strong plants, 4*s.* per dozen; RHODODENDRON MAXIMUM, fine bushy plants, 18 inches to 2 feet, 60*s.* per 100. Orders from unknown correspondents unaccompanied by a remittance will not be noticed.

EARLY POTATOES, TRANSPLANTED LARCHES, AND NATIVE SCOTCH FIRS.

STUART AND MEIN have to offer a considerable quantity of Myatt's PROLIFIC ASH-LEAF KIDNEY POTATOES, EARLY ASH-LEAF KIDNEY; true and free from disease. Also fine TRANSPLANTED LARCHES, 3 to 3½ feet; NATIVE SCOTCH FIR, 1½ foot; SPRUCE, 1 foot. Prices will be sent free on application.

Nurserymen, Kelso, Roxburghshire.

SEED POTATOES.

JAMES HUDDART, NURSERYMAN and SEEDSMAN, Preston, offers the following varieties:—

Runcorn Short Top	Pink Eye Kemp
Flukes, true	Ash-leaved Kidney, very true
Early Kemp	Preston Early

The last named kind is a Seedling raised by J. H., and was tested last year with "Handsworth Prolific" and other early sorts, and found to be as early and full one-third heavier cropper. A very dry mealy Potato when half size. Prices reasonable on application.

J. H.'s DESCRIPTIVE SEED CATALOGUE may be had post free) on application.—March 12.

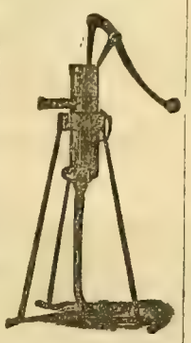
TO PIG AND POULTRY FEEDERS AND MILLERS.

CHICKEN RICE, 7*s.* 9*d.* per cwt., in bags 1¾ cwt. each. SCREENED RICE, 10*s.* per cwt., in bags 1¾ cwt. each. RICE MEAL, 6*s.* 6*d.* to 8*s.* 6*d.* per cwt. RICE for grinding. An allowance per Ton. American Oilcake, in barrels and bags, per ton only. Locust Beans, per ton.—Sold for Cash only by W. & R. Jupp, 6, Cross Lane, St. Mary-at-Hill, Eastcheap.

TO HORSE PROPRIETORS.—If you wish to have your Horse in high condition with a small allowance of corn use our CONCENTRATED DRAY and AGRICULTURAL HORSE MEAL, manufactured according to the most recent researches in the study of physiology. Forwarded carriage paid to any railway station, in cwt. at 30*s.*, and 15*s.* per half cwt. on receipt of Post-office Order, payable to Kemp & Skey, Lime Mills, Louth, Lincolnshire.

THORLEY'S FOOD FOR CATTLE.—Every person having an interest in domestic or farm animals should obtain a supply of this celebrated and economical food which will prove invaluable during the approaching season. For keeping horses in good condition, it is unequalled. Pigs fatten with surprising rapidity upon it, and their flesh increases in flavour and value, Cowkeepers will find great advantage in the increased quantity and improved quality of the milk during its use. All animals are benefited by it. A pamphlet on this interesting subject, accompanied by Testimonials from the Principal Nobility, Gentry and Agriculturists forwarded on application, In casks containing 448 feeds (measures inclosed), price 50*s.*, carriage paid to any Railway Station in the United Kingdom. Post-office Orders payable to Joseph Thorley, Newgate Street, London.—N.B. The public are cautioned against being imposed upon by worthless imitations.

WARNER'S IMPROVED LIQUID MANURE OR GENERAL PORTABLE PUMP.



These Pumps are fitted with J. W. & Son's Patent Buckets and Suckers, and cannot clog in action. The barrel is of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure. The legs will fold together, and the whole may be carried on the shoulder to any pond or tank required.

Price of 4½ in. Pump, with legs, 3*l.* 3*s.* If with planished copper barrel and galvanised iron handle, &c., 14*s.* extra. The barrel is 27½ in. long, and the legs are 5 ft. high.

These Pumps are also made without the legs, with strong wrought-iron straps for screwing on to any ordinary water butt or cart, and fitted with 1½ inch brass union for attaching flexible suction. Price 50*s.*

1¾ inch Gutta Percha Suction Pipe, 1*s.* 11*d.* per foot.

Rubber and Canvas Suction and Delivery Hose, from ½ inch to 4 inches diameter, in lengths of 60 feet to order. Branch Pipes with Cocks, Union Screws, &c., at reduced prices.

May be obtained of any Ironmonger or Plumber in town or country, at the above prices, or of the Patentees and Manufacturers, John Warner & Sons, 8, Crescent, Jewin St., London.

WARNER'S PATENT VIBRATING STANDARD PUMPS.

PATENT CAST-IRON PUMPS, fitted with J. W. & Son's Patent Buckets and Suckers, which cannot clog in action, for Farms, Cottages, and Wells, not exceeding 28 feet.

Diameter of Barrel.	Height.		£ *s.* *d.*
2½ in. short	1 ft. 7 in.	Fitted for lead, gutta percha, or cast iron flanged pipe, as required.	1 10 0
2¼ ,, long	3 ,, 3 ,,		1 14 0
3 ,, ditto	3 ,, 6 ,,		2 8 0
3½ ,, ditto	3 ,, 6 ,,		2 12 0
4 ,, ditto	3 ,, 6 ,,		3 3 0
2½ ,, short, with 15 feet of Lead Pipe attached, ready for fixing			2 14 0
2½ in. long	ditto	ditto ditto	2 18 0

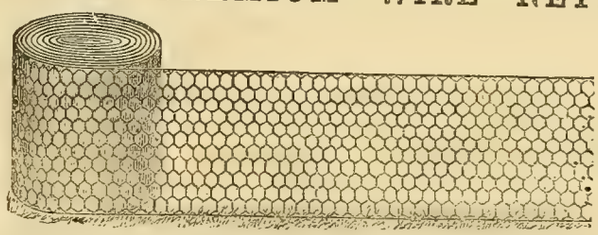


The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.

May be obtained of any Ironmonger or Plumber in Town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

IMPROVED PREMIUM WIRE NETTING.



PRICES PER LINEAL YARD, 24 INCHES HIGH:—

Size of mesh.	Mostly used for	Light.		Medium.		Strong.		Extra strong.	
		Japanned.	Galvanized.	Japanned.	Galvanized.	Japanned.	Galvanized.	Japanned.	Galvanized.
2¼ inch	Hares, Dogs, Poultry	3½*d.*	4½*d.*	4½*d.*	5½*d.*	5*d.*	6½*d.*	6*d.*	8*d.*
2 inch	Game Netting	4*d.*	5*d.*	4¾*d.*	6*d.*	5½*d.*	7*d.*	7½*d.*	9½*d.*
1⅝ inch	Small Rabbits, Hares, &c.	4½*d.*	5½*d.*	5¼*d.*	6½*d.*	6*d.*	7½*d.*	8*d.*	10*d.*
1½ inch	Smallest Rabbits	6*d.*	7½*d.*	7½*d.*	9*d.*	9*d.*	11*d.*	11*d.*	13*d.*

PRICES PER FOOT SUPERFICIAL:—

Size of mesh.	Mostly used for	Light.		Medium.		Strong.		Extra strong.	
		Japanned.	Galvanized.	Japanned.	Galvanized.	Japanned.	Galvanized.	Japanned.	Galvanized.
1¼ inch	Pigeon Houses, Pheasantries, &c.	1½*d.*	1¾*d.*	1¾*d.*	2*d.*	2¼*d.*	2¾*d.*	2¾*d.*	3½*d.*
1⅛ inch	Pigeon Houses, &c.	1⅜*d.*	2*d.*	2*d.*	2½*d.*	2½*d.*	3*d.*	3*d.*	3½*d.*
1 inch	Pheasantries and Small Birds	2*d.*	2¼*d.*	2¼*d.*	2¾*d.*	2¾*d.*	3½*d.*	3½*d.*	4*d.*
⅞ inch	Aviaries, Window Guards, &c.	2¼*d.*	2½*d.*	2⅝*d.*	3¼*d.*	3¾*d.*	4*d.*	4*d.*	5*d.*

Quantities of 100 yards, or upwards, delivered free at nearly all the principal Railway Stations and Shipping Ports in England; also by special estimate to any port of Scotland or Ireland. Any width of Netting under 8 feet made at proportionate prices. Best Improved HAND-MADE HEXAGON MESH NETTING, from ½*d.* to 1½*d.* per yard extra on the above price for 24 inches high.

☞ *Every description of Netting warranted to give satisfaction, and if not approved will be exchanged, or may be returned unconditionally.*

J. B. BROWN & CO., 18, CANNON STREET, LONDON, E.C.

ADDRESS: THE MANAGERS, ST. PANCRAS IRONWORKS.

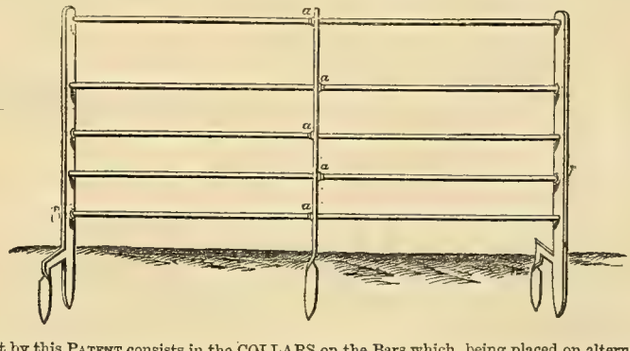
THE ST. PANCRAS IRON WORKS ARE OPPOSITE THE OLD ST. PANCRAS CHURCH,
OLD ST. PANCRAS ROAD, LONDON.

IRON COLLAR BAR HURDLES.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

Obtained the Silver Medal of the Royal Agricultural Society.

ST. PANCRAS IRON WORKS,



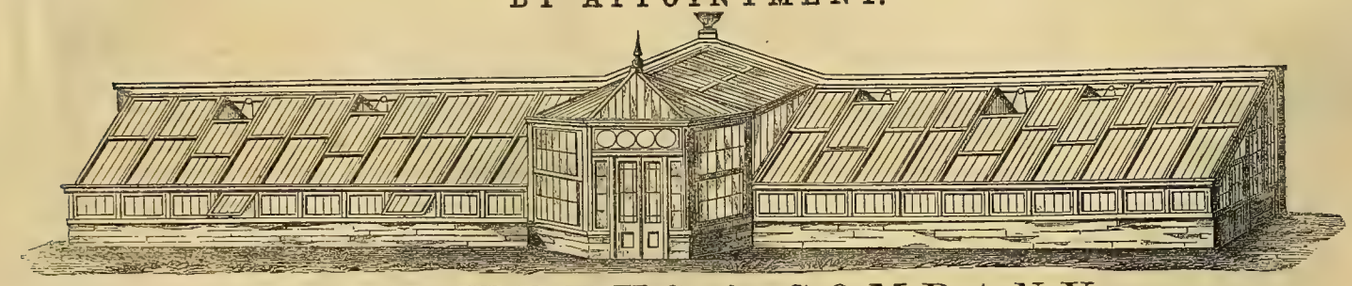
OLD ST. PANCRAS ROAD, LONDON

The improvement by this PATENT consists in the COLLARS on the Bars which, being placed on alternate sides of the centre upright bar, keep it in its position, confine the bars to short bearings, prevent their being strained, and give more than DOUBLE STRENGTH and RIGIDITY to the HURDLE.

PROFESSOR VARNELL'S MANGERS AND STABLE FITTINGS.

HORTICULTURAL BUILDING & HEATING BY HOT WATER.

BY APPOINTMENT.



JOHN WEEKS & COMPANY,

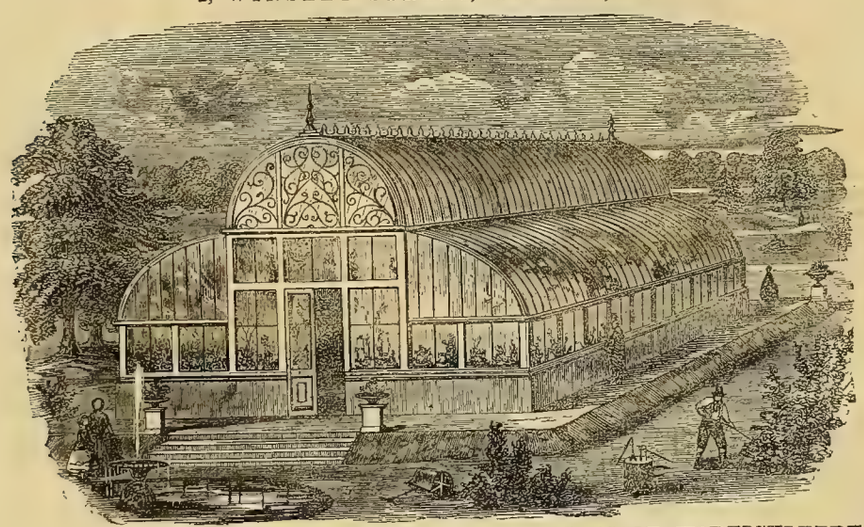
KING'S ROAD, CHELSEA, LONDON.

HORTICULTURAL BUILDERS AND HOT-WATER APPARATUS MANUFACTURERS, ENGINEERS, AND IRON FOUNDERS.

PLANS, ESTIMATES, & ILLUSTRATED CATALOGUES FREE ON APPLICATION.

COTTAM & COMPY., Engineers, Founders, &c.,

2, WINSLEY STREET, LONDON, W.



A SHOW ROOM DEVOTED ENTIRELY TO ARTICLES OF HORTICULTURE.
THE NEW ILLUSTRATED CATALOGUE UPON APPLICATION.

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	,, Syringes	Garden Bordering
Hot-water Apparatus	Ornamental Wire Work	Hurdles	,, Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

Iron Hurdles, Strained Wire Fencing, Game Netting, &c.

Every description of Plain, Ornamental, Cast and Wrought Iron, and Wire Work.

EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

" N.B. COTTAM AND COY. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

GLASS WAREHOUSE, ESTABLISHED 1750.

THOMAS MILLINGTON'S REDUCED TARIFF.

PACKED IN BOXES OF 100 FEET EACH, "PACKAGES FREE,"

FOR HORTICULTURE, PICTURES, AND DWELLINGS.

Common, 11*s.* 6*d.* ; Super, 12*s.* 6*d.*

Inches by Inches.	Inches by Inches.	Inches by Inches.	Inches by Inches.	Inches by Inches.	1sts.	2ds.	3ds.	4ths.
6 .. 4	9 .. 7	12 .. 9	13½ .. 10½	13 .. 11				
6½ .. 4½	9½ .. 7½	12½ .. 9½	14 .. 10	13½ .. 11½				
7 .. 5	10 .. 8	13 .. 9	14½ .. 10½	14 .. 11	*s. d.*	*s. d.*	*s. d.*	*s. d.*
7½ .. 5½	10½ .. 8½	12 .. 10	15 ..)	15 .. 10	21 6	17 9	14 4	12 6
8 .. 6	11 .. 9	12½ .. 10½	12 .. 11	.. ..				
8½ .. 6½	11½ .. 9½	13 .. 10	12½ .. 11½	.. ..				

14½ .. 11½	14 .. 12	22 .. 12	18 .. 14	24 .. 15	
15 .. 11	14½ .. 12½	15 .. 13	19 .. 14	18 .. 16	
15½ .. 11½	15 .. 12	16 .. 13	20 .. 14	20 .. 16	
16 .. 11	15½ .. 12½	17 .. 13	21 .. 14	22 .. 16	
16½ .. 11½	16 .. 12	18 .. 13	22 .. 14	24 .. 16	24*s.* 6*d.*, 20*s.* 0*d.*, 16*s.* 6*d.*, 14*s.*
17 .. 11	16½ .. 12½	20 .. 13	24 .. 14	20 .. 17	
18 .. 11	17 .. 12	23 .. 13	18 .. 15	22 .. 17	
13 .. 12	18 .. 12	16 .. 14	20 .. 15	20 .. 18	
18½ .. 12½	20 .. 12	17 .. 14	22 .. 15	. ..	

ORCHARD HOUSE SIZES,

AS SUPPLIED TO MR. RIVERS AND OTHERS.

20 .. 12 20 .. 13 20 .. 14 20 .. 15	16 oz. Common, per 100 feet, 14*s.* ,, Super ,, 16*s.* 6*d.*	If 21 oz. Common, per 100 feet, 21*s.* ,, Super ,, 25*s.*

LINSEED OIL, PUTTY, GENUINE WHITE LEAD, LINSEED AND BOILED OILS, BRUSHES, &c.

87, Bishopsgate Street Without, London, E. C.

JAMES PHILLIPS AND CO.'S PRICES of GLASS

for the present month.

HORTICULTURAL GLASS, Stock Sizes, in 100 feet boxes.

	3rds.	4ths.
11 by 9, 12 by 9, 13 by 9, 14 by 9 .. / 12 ,, 10, 13 ,, 10, 14 ,, 10, 15 ,, 10 .. / 13 ,, 11, 14 ,, 11, 15 ,, 11, 16 ,, 11 ..	14*s.* 6*d.*	12*s.* 6*d.*
14 ,, 12, 15 ,, 12, 16 ,, 12, 17 ,, 12 .. / 18 ,, 12, 19 ,, 12, 16 ,, 13, 17 ,, 13 .. / 18 ,, 13, 19 ,, 13, 20 ,, 13, 21 ,, 13 .. / 16 ,, 14, 17 ,, 14, 18 ,, 14 .. .. / 19 ,, 14, 20 ,, 14, 21 ,, 14	16*s.* 6*d.*	14*s.* 0*d.*

PACKED IN CASES.

200 feet	£2 2 0	16 oz.
300 feet	3 3 0	
200 feet	2 18 0	21 oz.

ORCHARD HOUSE SIZES,

As supplied by us to Mr. Rivers.

		16 oz.	21 oz.
20 in. by 12 in. / 20 in. by 13 in. / 20 in. by 14 in. / 20 in. by 15 in.	Common	14*s.* 0*d.* ..	£1 1*s.*
	Superior do. ..	16 6 ..	1 5
	English Glass ..	18 0 ..	1 9

SMALL SQUARES.—Per 100 feet.

6 by 4	6½ by 4½	7 by 5	7½ by 5½	11 6
8 ,, 6	8½ ,, 6½	9 ,, 7	9½ ,, 7½	
10 ,, 8	10½ ,, 8½ ..	.. ..	.. ..	12 6

JAMES PHILLIPS AND CO.,

180, Bishopsgate St. Without, London, E.C.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz SHEET GLASS of British Manufacture at prices varying from 2*d.* to 3*d.* per square foot for the usual sizes required, many thousands of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES, and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

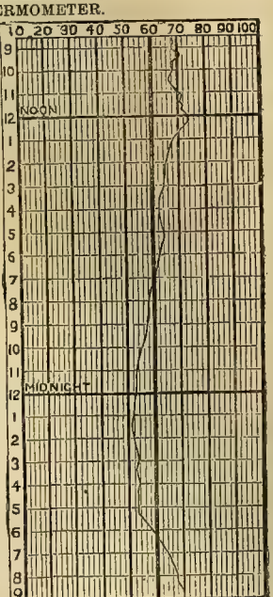
GLAZIERS' DIAMONDS for CUTTING HORTICULTURAL and other GLASS, to be had of the Wholesale Manufacturer, JOHN EDWARDS, 20, Sharp's Alley, West Smithfield, London, E.C. Prices from 10*s.* to 27*s.* 6*d.*

200 ONE, TWO, and THREE-LIGHT MELON BOXES and LIGHTS, of the best seasoned materials, ready for immediate use.—JAS. WATTS, Hothouse Builder and Hot-water Apparatus Manufacturer, Old Kent Road, London.

TO HORTICULTURISTS.

GAUNTLETT'S PATENT CHRONOMETRICAL THERMOMETER.

This instrument, which combines an eight-day clock of the best English make showing time, with a newly-patented Thermometer, wherein glass and quicksilver are dispensed with, writes down the temperature of the atmosphere on a slip of paper, and when placed in a Hothouse, Forcing House, or Conservatory, &c., supplies a valuable record of the temperature, with all its variations, showing the time when any change took place, and how long such change continued.

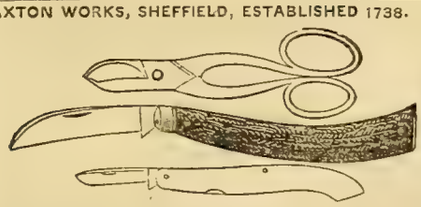


The above slip (reduced in size) exhibits the temperature of the Royal Agricultural Society's show yard at Chester, July 22, 1858, written off by one of these instruments, to which was awarded the Society's SILVER MEDAL.

This is the only instrument that registers temperature continuously and writes it down, and no horticulturist should be without it.

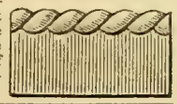
Orders received by W. H. GAUNTLETT, Middlesbro' on-Tees.

PAXTON WORKS, SHEFFIELD, ESTABLISHED 1738.



SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.—Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

LOOMES AND CO., Whittlesea, MANUFACTURERS OF BRICKS, TILES, POTTERY, &c., beg to call attention to their new CABLE PATTERN GARDEN BORDER EDGING, which not only surpasses others in appearance and durability, but is free from the dangerous points and sharp edges of most.—Price, delivered on any Railway at Peterborough, 5*d.* per yard.



TO GARDENERS, ETC.

PATENT WATERING ENGINES, PAIL MACHINES, CONSERVATORY PUMPS, and GREENHOUSE SYRINGES, with all the latest improvements, manufactured only by the Patentee,

RICHARD READ, 35, REGENT CIRCUS, PICCADILLY, LONDON.

*** Descriptions sent post free.

PATENT LAWN MOWING AND ROLLING MACHINES.

SAMUELSON'S LAWN MOWING MACHINES,

WITH BOYD'S PATENT IMPROVEMENTS.

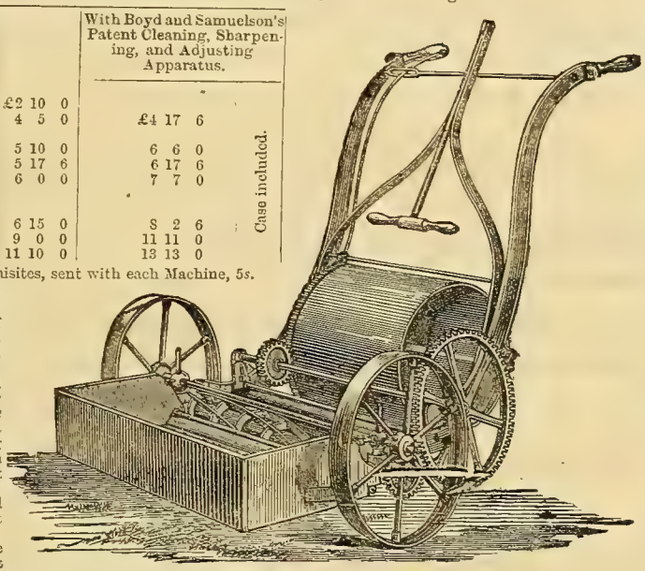
"Doing the work of five or six men."—The Times, Sept. 20, 1858.

The following PRICES include the Carriage to any Railway Station in England:—

		With Boyd and Samuelson's Patent Cleaning, Sharpening, and Adjusting Apparatus.
9 inches wide, for very narrow borders, without registered wheels	£2 10 0	
12 inches wide	4 5 0	£4 17 6
16 inches wide, with registered arrangement (for one man)	5 10 0	6 6 0
19 inches wide, ditto (for one man) ..	5 17 6	6 17 6
22 inches wide, ditto (for man and boy)	6 0 0	7 7 0
22 inches wide, ditto for ditto, and also fitted with draught links for a pony and a man to work it	6 15 0	8 2 6
25 inches wide, ditto	9 0 0	11 11 0
30 inches wide, ditto (for man and pony)	11 10 0	13 13 0

Case included.

Box of Tools, Oil Can, and other requisites, sent with each Machine, 5*s.*



Some thousands of these Machines are now in successful operation on the Lawns of Royalty, the Nobility, and Gentry of the United Kingdom and the Continent of Europe, and are pronounced SUPERIOR to *any other* for lightness of draught, efficiency, and durability. The demand for them is *yearly increasing—the number supplied by* Mr. SAMUELSON *during the years* 1856, 1857, *and* 1858 *being more than* 2100. Testimonials are continually being received from gentlemen having them in daily use, who speak in the highest terms of their efficiency.

These are the only Machines that will cut wet as well as dry Grass without clogging the knives.

Orders for 1859 should be sent at once to insure certain delivery and to prevent disappointment.

Copies of Testimonials will be forwarded post free on application to

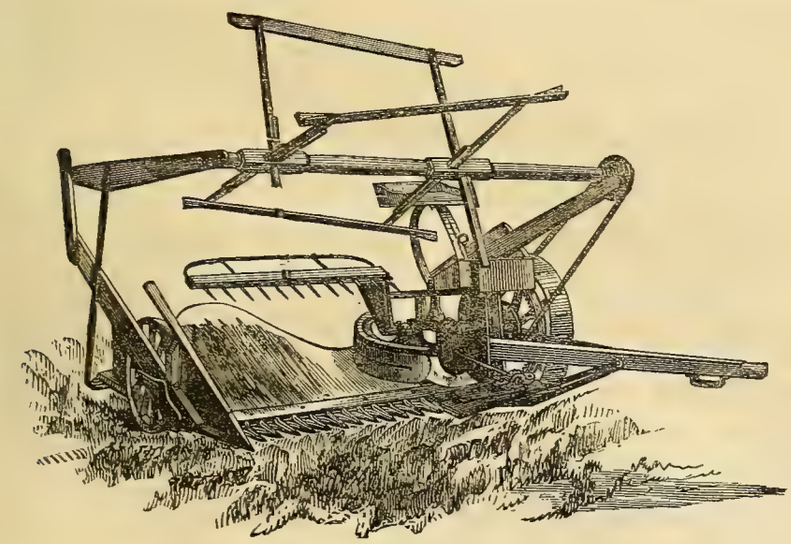
B. SAMUELSON, 76, Cannon Street West, City, London;

to the Manufactory, Britannia Works, Banbury, Oxon;

or to MESSRS. DEANE AND CO., London Bridge; or any respectable Ironmonger or Seedsman in the Kingdom

B. SAMUELSON,

AGRICULTURAL ENGINEER AND MACHINIST,



WAREHOUSE, 76, CANNON STREET WEST, LONDON,

WORKS AT BANBURY,

INFORMS MERCHANTS, the TRADE, and AGRICULTURISTS, that he has opened the above Warehouses as a depôt for his own manufactures and those of Messrs. Barrett, Clayton, Howard, Hornsby, Nicholson, Richmond, Tuxford, Smith, and all other first-class makers, whose implements he is prepared to offer on makers' terms.

THE BRITANNIA SELF-RAKING REAPING MACHINE,

With side delivery in sheaf, no rakers or gatherers required; and all the most improved Spring Implements for the season, may be inspected at the above depôt.

B. SAMUELSON, 76, Cannon Street West, London; and Britannia Works, Banbury.

GREEN'S PATENT LAWN MOWERS have proved to be the best by the appointed judges in all cases of competition. Full illustrations, with particulars of improvements for the present season, will appear in this Paper next week.

THOMAS GREEN, Patentee and sole Manufacturer, Smithfield Iron Works, Leeds, Yorkshire; and 2, Victoria Street, Bottom of Holborn, London. Repairs done at either of the establishments, where every information may be obtained.

FERRABEE'S NEW PATENT MOWING MACHINES

MANUFACTURED BY

JAMES FERRABEE AND CO., PHŒNIX IRON WORKS, Stroud.—These improved Machines admit of the use of duplicate sets of cutting parts, can be accurately sharpened by an ordinary workman, are adapted to level and uneven ground and to verges, and their management is much simplified.

In the following List the Letters A, B, &c., are used to facilitate reference, and the distinguishing letter of the Machine required should be given in sending an order.

The prices include carriage to to the principal railway stations in England, terms net cash.

A,	cutting 12 inches wide,	for a boy	..	£4 10 0
B,	,, 16 ,,	for one man ..	..	6 0 0
C,	,, 19 ,,	for a man and a boy ..		6 10 0
D,	,, 22 ,,	,, ,,	..	7 0 0
E,	,, 26 ,,	for two men ..	..	8 10 0
F,	,, 22 ,,	for a donkey or a pony		8 0 0
G,	,, 26 ,,	for a pony ..	..	9 0 0

Sharpening Apparatus for any of the above, 5*s.* extra.

H,	cutting 24 inches wide,	for a horse ..	..	14 0 0
I,	,, 28 ,,	,, ..	..	16 0 0
K,	,, 36 ,,	,, ..	..	18 0 0

Sharpening Apparatus, 10*s.* extra each.

The Horse Machines H, I, K, have cylinders of large diameter and in their entire construction possess the strength and capacity necessary for horse-power, and the heaviest work of a pleasure ground.

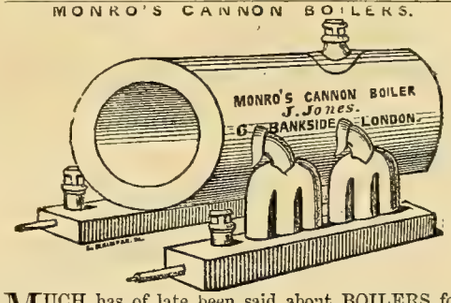
JOHN WARNER AND SONS, Crescent, Jewin Street, London.—GALVANISED IRON TUB GARDEN ENGINE, with WARNER'S Registered Spreader, is strongly recommended, for durability and low price, viz., 2*l.* 19*s.*, to hold 10 gallons.



Larger sizes in wood or iron, viz., 14 gallons, 24 gallons, and 35 gallons. May be obtained of any Ironmonger or Plumber in town or country, or of the patentees and Manufacturers, as also Machinery of all kinds for raising Water from any depth to any height by Steam, Horse, or Manual Power. Prices sent on application.

Syringes of various constructions and sizes from 9*s.* upwards. Metallic String from 5*d.* to 1*s.* 3*d.* per lb.

MONRO'S CANNON BOILERS.



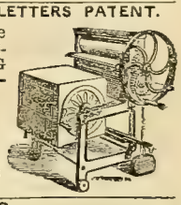
MUCH has of late been said about BOILERS for Heating by Hot Water, but these Boilers have now proved themselves to be the best at present invented. They are adapted for heating every description of building, and are made of various sizes. The Price of the

24-inch Cast Iron is	..	£5 10*s.* 0*d.* each
24-inch Wrought ditto	..	6 10 0 ,,
36-inch Cast ditto	..	8 0 0 ,,
36-inch Wrought ditto	..	8 10 0 ,,

References to Gentlemen and Nurserymen where these Boilers are now at work. The Cannon Boilers are now kept in stock, and are to be had only of J. JONES, 6, Bankside. Also, every description of Saddle and Cylinder Boilers. Hot Water Pipes and Connections at prices lower than those of any other house in London. Estimates for Hot-water Apparatus erected complete in any part of the country, and an Illustrated Catalogue on application to J. JONES, 6, Bankside, Southwark, London.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

NO ONE KNOWING the value of your Patent WASHING, WRINGING, and MANGLING MACHINE, would be without one."—*Vide Mrs. Hall.*



THOMAS BRADFORD, Patentee, Manchester.

Descriptive Pamphlet, with Prices by post.

SHADING.

BROWN'S FLORAL SHADING still maintains its superiority for cheapness and efficiency over all other materials used for a similar purpose, viz., shading plants under glass from the scorching rays of the sun, protecting Wall Fruit Trees when in bloom from frost, and preserving the fruit from the attacks of birds, flies, and wasps. Sold in pieces 20 yards long, 38 inches wide:—

No. 1 per piece .. 4*s.* 0*d.* | No. 2 per piece .. 4*s.* 3*d.*
No. 3 .. .. 7*s.* 0*d.*

To be obtained of all the principal Nurserymen and Seedsmen in town and country. Samples sent free on application to the Manufacturer, CHARLES BROWN, Greenheys, Manchester.

GREENHOUSES.

HENRY FREEMAN, HOTHOUSE BUILDER and HOT-WATER APPARATUS MANUFACTURER, Triangle, Hackney, Established 20 years. Good substantially built GREENHOUSES, fixed in any part of the kingdom, for cash, 42 ft. long by 13 ft, 90*l.*; 21 ft by 13 ft., 50*l.* 12¼ ft. by 10 ft., 30*l.* A first-rate Conservatory, 30 ft. by 16 ft, 130*l.* A large assortment kept. Estimates for heating, or any branch in wood, iron, or Park Fencing.

GREENHOUSES, ORCHARD HOUSES, AND PITS OF EVERY DESCRIPTION, MADE BY STEAM MACHINERY, AND HEATED BY HOT WATER ON AN IMPROVED PLAN AT

J. LEWIS'S HORTICULTURAL WORKS, Stamford Hill, Middlesex, established 20 years. These Buildings are warranted of the best materials, and at prices which defy competition. The ventilation is most efficient, and the greatest improvement of the present day. Prices of any size on application. References in all parts of the United Kingdom.

HOTHOUSES FOR SALE.

TO BE SOLD CHEAP, two nearly new SPAN-ROOF HOUSES, each 65 feet long by 18 feet wide, price 100*l.* each; also a handsome OCTAGON CONSERVATORY, 22 feet diameter with glass all round, quite new, price 90*l.* All these houses are warranted to be of the best materials and workmanship. The reason of their being now Sold is to make room for an extensive alteration and addition to our Workshops and Steam Machinery.—Apply to Messrs. JOHN WEEKS & Co., King's Road, Chelsea, where the whole of the above can be seen, as also a great variety of other Horticultural Erections.

YOKINS AND HURD, Seymour House, Jubilee Place, King's Road, Chelsea, BUILDERS OF HOTHOUSES, CONSERVATORIES, GREENHOUSES, PITS, and every description of erections in Glass work, either in Wood or Iron; also Heating the same by hot water on the most approved plans and at the lowest prices consistent with good work. Estimates forwarded.

HEATING BY HOT WATER ON HAMMOND'S improved principle, for Horticultural Works, Mansions, Churches, Public Buildings, in fact everywhere that heat is required. Also his improved Ventilating Greenhouses, which can be erected at 1*s.* per foot, and entirely prevent the possibility of scorching the Vines or plants. The Patent Hot-water Register Stove.—Estimates at No. 18, George Street, Portman Square. Workmen sent into the country.

IMPROVED HOT-WATER PIPE.—The Horticulturist will find herein an inexpensive instrument of new and very important powers. An atmosphere may be produced at will either perfectly dry, partially damp, or saturated with moisture. A space of 10 inches by 12 inches contains the power of 25 feet of 4-inch pipe and other numerous advantages.

The London Warming and Ventilating Company (Limited), 6, Great George Street, Westminster, S.W.

HORTICULTURAL BUILDINGS AND HEATING BY HOT WATER.

JOHN R. PEILL, 17, New Park Street, Southwark, Manufacturer of every description of Buildings for Horticultural purposes, and Inventor of the Improved Conical Boiler for heating the same, is prepared to undertake works of any magnitude, and refers among others to the celebrated range of FORCING HOUSES at HER MAJESTY'S GARDENS, FROGMORE, and at SIR ROBERT PEEL'S, DRAYTON MANOR, constructed under the superintendence of his Manager, MR. JOHN JONES; and also to his BOILERS fixed at the CRYSTAL PALACE, the ROYAL BOTANIC GARDENS, REGENT'S PARK, and KEW, and at several hundreds of the Nobility's seats, Public Establishments, and Manufactories in London and the provinces. J. R. P. also manufactures every description of Iron Roofs, Iron Houses, and Iron Fencing, plain and ornamental. Strong Iron Hurdles for Sheep (6 feet long, 3 feet high, with 5 bars), 4*s.* 3*d.* each; ditto for cattle, 4*s.* 9*d.* each.

Prices and other particulars forwarded on receipt of one postage stamp.

HANDS'S PATENT is the only system to circulate Heat, and for WARMING, FUMIGATING, and VENTILATING Hothouses, Greenhouses, Winter Orchards, &c.; to keep vegetation healthy in a humid atmosphere, and can be applied to any kind or shape of Forcing-houses and Conservatories now existing at trifling cost.—For particulars apply at the Office, 10, Charlotte Street, Fitzroy Square, London; or to Mr. JOHNSON HANDS, Epsom.

FOR Effectually Protecting the Bloom of Wall Trees from Spring Frosts use SHAW'S No. 3 TIFFANY, DOUBLE STRENGTH. In pieces 18 yards long by 39 inches wide, 7*s.* 6*d.* each.—JOHN SHAW & Co., Princess Street, Manchester.

BRITTAIN'S GARDEN NET completely protects Fruit Blossoms from injury by frost, and provides for the circulation of air and admission of light, so essential to healthy growth; 55 inches wide, 5*d.*, 6*d.*, and 8*d.* a yard; good SHADING TIFFANY, yard wide, 2½*d.* do.—Manchester, Mar. 12.

TANNED GARDEN NETTING, for preserving Fruit Trees from frost, blight, birds, &c., and as a fence for fowls, &c. One yard wide 1½*d.*, 2 yards 3*d.*, 3 yards 4½*d.*, and 4 yards 6*d.*, per yard, in any quantity, may be had at C. WRIGHT'S, 376, Strand, W.C.—A liberal allowance to Nurserymen.

NETTING, BUNTING, SCRIMS AND TIFFANY FOR THE PROTECTION OF FRUIT TREES AND TENDER PLANTS.—These articles are found to be the best protection against Frost, Hail, and Wind, also from Wasps and Insects, and good for Shades of Greenhouses, &c. Patterns forwarded free on application to BENJAMIN EDGINGTON, Marquee, Tent, and Rick Cloth manufacturer, 2, Duke Street, Southwark, London Bridge, S.E. West End Establishment, 32, Charing Cross. Temporary Rooms with boarded floor for dancing.

PEOPLE'S EDITIONS

OF

MOORE'S POETICAL WORKS, OF MOORE'S IRISH MELODIES WITH THE MUSIC,

OF

SYDNEY SMITH'S WORKS, AND OF LORD MACAULAY'S ESSAYS.

PEOPLE'S EDITION OF THOMAS MOORE'S POETICAL WORKS.

On Thursday, the 31st inst. will be published, PART I., *in square crown 8vo, price* 1*s.* (*to be continued Monthly*),

THOMAS MOORE'S POETICAL WORKS.

AN ENTIRELY NEW EDITION,

INCLUDING THE

AUTHOR'S AUTOBIOGRAPHICAL PREFACES, NOTES, AND OTHER COPYRIGHT ADDITIONS.

TO BE COMPLETED IN TEN PARTS, PRICE ONE SHILLING EACH.

☞ PART I., with which will be given a PORTRAIT of the AUTHOR, engraved on Steel, will contain the whole of LALLA ROOKH complete for 1*s.*

PEOPLE'S EDITION, and only COMPLETE EDITION of MOORE'S IRISH MELODIES,

THE MUSIC PRINTED WITH THE WORDS.

In course of publication, and to be completed in Ten Numbers, price 1*s. each,*

MOORE'S IRISH MELODIES,

WITH SYMPHONIES AND ACCOMPANIMENTS FOR THE PIANOFORTE.

PEOPLE'S EDITION, IN SMALL QUARTO.

☞ Nos. I. to VI. now ready, comprise Seventy-four Melodies, Music and Words. No other Complete Edition can be published.

PEOPLE'S EDITION OF THE REV. SYDNEY SMITH'S WORKS.

Now ready, PARTS I., II., and III., *in crown 8vo, price* 1*s. each* (*to be continued Monthly*),

REV. SYDNEY SMITH'S MISCELLANEOUS WORKS;

INCLUDING HIS CONTRIBUTIONS TO THE EDINBURGH REVIEW.

People's Edition, uniform with the People's Edition of Lord MACAULAY'S Essays; to be completed in Seven Monthly Parts, price 1*s.* each.

PEOPLE'S EDITION OF LORD MACAULAY'S ESSAYS.

Complete in Two Vols., crown 8vo, price 8*s. cloth,*

LORD MACAULAY'S CRITICAL AND HISTORICAL ESSAYS

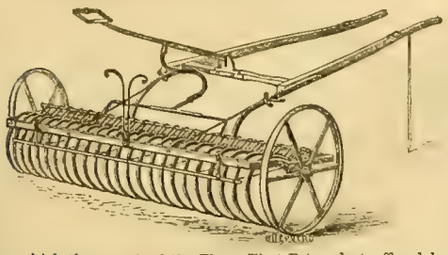
CONTRIBUTED TO THE EDINBURGH REVIEW.

People's Edition, uniform with the People's Edition (in course of publication) of the Rev. SYDNEY SMITH'S Works. To be had also in Seven Parts, price 1*s.* each.

London: LONGMAN, BROWN, & CO., Paternoster Row.

HOWARDS' PRIZE IMPLEMENTS, 1859.

JAMES AND FREDK. HOWARD, Britannia Iron Works, Bedford, beg to direct attention to their PATENT STEEL-TOOTH HORSE RAKE.



For which they received the Three First Prizes last offered by the Royal Agricultural Society of England.

J. & F. HOWARD have discontinued troubling the Public with a long List of Prizes awarded to their Implements, but they would just state that for PLOUGHS, HARROWS, and HORSE RAKES, they have for several years gained every Prize for which they have competed.

PLOUGHS.

P PLOUGH, with two wheels, for light work ..	£4	7	6
PP PLOUGH, ,, for general purposes	4	12	6
SKIM COULTER	0	5	6

STEEL BREASTS, 7s. and 7s. 6d. extra.

HARROWS.

A Set of Three 4-Beam HARROWS, with Whippletree, recommended as general Seed Harrows, 9¼ feet wide, marked No. 12	3	14	0
A Set of Three 4-Beam HARROWS, with Whippletree, adapted for 3 Horses, 10 ft. wide, marked No. 11	4	4	0

HORSE RAKES.

Price of small size RAKE, marked A, with 24 iron teeth, extreme width 7½ feet	7	10	0
Ditto, with Steel Teeth	8	0	0
Price of large size, marked B, with 28 iron teeth, extreme width 8½ feet	8	0	0
Price of large size, marked B, with steel teeth ..	8	10	0
Price of extra large size, marked C, with 24 steel teeth, extreme width, 8½ feet	10	10	0
Price of a Set of 15 Prongs, to be attached to the above when used as Weed Extirpators	1	10	0

Free Delivery to Birmingham, Bristol, Derby, Gloucester, Lincoln, Liverpool, London, Manchester, Norwich, Nottingham, Retford, Wisbeach, and Worcester; or to Dublin, Edinburgh, Glasgow, and other parts at fixed rates.

HOWARDS' NEW CATALOGUE, containing prices and description of their Patent Ploughs, Harrows, Horse Rakes, and other Implements, including Smith's Steam Cultivators, for which they received at Chester the Gold Medal of the Royal Agricultural Society of England, sent free on application to J. & F. HOWARD, Britannia Iron Works, Bedford.

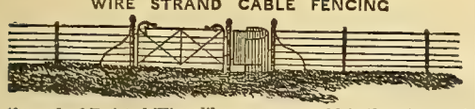
PRICES REDUCED.

H. J. MORTON AND CO., Galvanised Iron Works, 2, Basinghall Buildings, Leeds.

GALVANISED IRON ROOFING

for Farm Buildings and other Roofs; the cheapest, most durable, and neatest Roofing in use; also Spouting at 10½d. per yard.

WIRE STRAND CABLE FENCING



(formed of Twisted Wires like a rope or cable), the strongest cheapest, and neatest fence in use, will resist the largest cattle, and will not bend or get out of form by trespassing upon or over. Price, with five lines of the Galvanised Strand, iron main posts, and pronged Standards, 1s. 2½d. per yard.

This fence is far cheaper than posts and rails, or any kind of iron fencing; and possesses four times the strength of solid bars. Will not rust nor corrode. Upwards of 1200 miles of this Fencing supplied.

GALVANISED GAME AND POULTRY NETTING.



Galvanised, 24 ins. wide, 2-inch mesh, 5d., 6d., 7½d., and 10d. per yard.

Galvanised, 24 ins. wide, 3-inch mesh, 4d., 5d., and 7d. per yard. The Netting made any width, and with openings of any size.

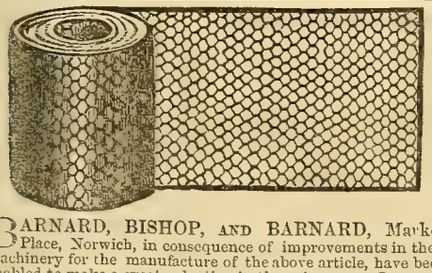
GALVANISED IRON CHAIN CAMP STOOLS & CHAIRS, POULTRY FOUNTAINS & FEEDERS, PRONGED DAHLIA RODS AND ROSE STAKES, &c.

Strong CATTLE HURDLES from 2s. per yard.

PATENT IMPROVED GAS WORKS

of all sizes for the use of Private Houses, Mansions, Railway Stations, Mills, Collieries, Mines, Villages, &c. Works from 10 to 500 lights estimated for. The works can be entrusted to an ordinary labourer.—Apply to

HENRY J. MORTON & Co. 2, Basinghall Buildings, Leeds.



BARNARD, BISHOP, AND BARNARD, Market Place, Norwich, in consequence of improvements in their machinery for the manufacture of the above article, have been enabled to make a great reduction in the prices.

		Galvanised.	Japanned Iron.
2-inch mesh, 24 inches wide	5d. per yd.	4d. per yd.	
2-inch ,, strong do.	6 ,,	4⅔ ,,	
2-inch ,, intermediate, do.	7 ,,	5½ ,,	
2-inch ,, extra strong, do. ..	9½ ,,	7½ ,,	
1⅝-inch ,, 24 inches wide	5½ ,,	4½ ,,	
1⅝-inch ,, strong, do.	6½ ,,	5¼ ,,	
1⅝-inch ,, intermediate, do. ..	7½ ,,	6 ,,	
1⅝-inch ,, extra strong, do. ..	10 ,,	8 ,,	

All the above kinds can be made of any width (under 8 feet at proportionate prices. If the upper half is of a coarser mesh than the lower, it will reduce the prices about one-fifth.

Strong Galvanised Poultry Netting, 8½d. per yard, 3 feet wide Galvanised Sparrow-proof Netting for Pheasantries, 2½d. per square foot. Delivered free of expense in London, Peterborough, Hull, or Newcastle. Manufacturers of Improved Strained Wire Cattle and Deer Fencing, Iron Hurdles, &c.

Illustrated Catalogues and Patterns forwarded by post.

MAPPIN'S PRUNING KNIVES IN EVERY VARIETY.

WARRANTED GOOD BY THE MAKERS.



MAPPIN BROTHERS, Queen's Cutlery Works, Sheffield; and 67 and 68, King William Street, London.

MAPPIN'S "SHILLING" RAZORS Shave well for Twelve Months without Grinding.

MAPPIN'S 2s. RAZORS Shave well for Three Years.

MAPPIN'S 3s. RAZORS (suitable for Hard or soft Beards,) Shave well for Ten Years.

MAPPIN'S SUPERIOR TABLE-KNIVES maintain their unrivalled Superiority—handles cannot possibly become loose—the blades are all of the very first quality, being their own Sheffield manufacture.

	Tble. Kns.	Dst. Kns.	Carvers.
Ivory 3⅞ in. Handle, balanced, 20s. p. doz. ; 16s. p. doz. ;	6s. p. pair		
Do. 4 in. do. ..	25s. ,,	18s. ,,	9s. ,,

MAPPIN'S SILVER-PLATED DESSERT KNIVES and FORKS, in Mahogany Cases.

12 Pairs Knives and Forks, Ivory Handles, in Case..	80s.	
12 Do. Pearl Handles, do. ..	130s.	
12 Do. Silver-Plated Handles, do. ..	80s.	

MAPPIN'S ELECTRO-SILVER PLATE.—MAPPIN BROTHERS, Manufacturers by Special Appointment to the Queen, are the only Sheffield makers who supply the consumers in London. Their LONDON SHOW ROOMS, 67 and 68, King William Street, London Bridge, contain by far the largest STOCK of ELECTRO-SILVER PLATE in the World, which is transmitted direct from their Manufactory, Queen's Cutlery Works, Sheffield.

	Fiddle Pattern.	Double Thread.	King's Pattern.
12 Table Forks, best quality	£1 16 0	£2 14 0	£3 0
12 Table Spoons, best quality	1 16 0	2 14 0	3 0
12 Dessert Forks, best quality	1 7 0	2 0 0	2
12 Dessert Spoons, best quality	1 7 0	2 0 0	2
12 Tea Spoons, best quality	0 16 0	1 4 0	1 7

Messrs. MAPPIN BROTHERS respectfully invite buyers to inspect their unprecedented display, which, for beauty of design, exquisite workmanship, and novelty, stands unrivalled. Their illustrated Catalogue, which is continually receiving addition of New Designs, sent per post on receipt of 12 stamps.—MAPPIN BROTHERS, 67 and 68, King William Street, London Bridge; Manufactory, Queen's Cutlery Works, Sheffield

GENUINE TOBACCO PAPER FOR FUMIGATING.

H. APPLEBY (Foreman to Messrs. Ivery & Son, Surrey), takes this opportunity of informing his patrons and the public that he is now offering the above at a very considerably reduced price. It is now sold in packets of 4 lbs. each, at 1s. 3d. per lb. A liberal discount allowed to the Trade. For testimonials that will guarantee its quality, see *Gardeners' Chronicle*, March 5, p. 189.

Sheet Iron Pots for fumigating, 3s. 6d. each.

N.B. All orders to be accompanied with a Post-office Order, payable to HENRY APPLEBY, Dorking, Surrey.

GENUINE TOBACCO PAPER.—Parties fumigating can be supplied with the best Genuine Tobacco Paper at 4l. per cwt.; any less than 56 lbs., 10d. per lb.—BEN BAXTER, Messrs. Jackson & Sons, Lady Lane, Leeds.

TOBACCO PAPER OR CLOTH.—TO NURSERYMEN, &c.

GENUINE TOBACCO PAPER OR CLOTH at 10d. per lb. to be had of G. DARLINGTON, Tobacco Cutter, 16, Wellington Place, Warner Place, Hackney Road, London.—All orders to be accompanied with a Post-office Order, payable to GEORGE DARLINGTON, Hackney Road, London.

GENUINE ROLL TOBACCO CLOTH.

WARRANTED EQUAL IN STRENGTH TO TOBACCO.

JOSEPH BAKER, 10, Gough Square, Fleet St. E.C., having dealt upwards of 20 years in the above, can recommend it as the best article for destroying the Fly. 1s. 4d. per lb., over 10 lbs. 1s. Post-office Orders payable Strand Office.

POULTRY—DOGS—PLANTS can be kept free from Insects of every description by using the PERSIAN INSECT DESTROYING POWDER, unrivalled in killing Fleas, Flies, Beetles, and every species of Insect—harmless to animal life. Sold in packets 1s. and 2s. 6d. A shilling packet sent free by post for 14 stamps.—THOMAS KEATING, Chemist, 79, St. Paul's Churchyard, London, E.C.

THE "TIMES" IMPROVED COMPOSITION for Grafting and Protecting the damaged parts of Trees. Vastly superior to that generally used. Warranted to keep any number of years. Prepared in 15 minutes; easily applied not liable to injury from the air, frost, or sun; and of unrivalled efficacy in promoting the growth of the scion. Made at the small cost of 4d. per lb. A very small quantity suffices for grafting. Strongly recommended to all Gardeners by Mr. R. Scott, late Head Gardener to the Hon. R. Cursons, Parham. A Recipe forwarded for 30 postage stamps, addressed REV. F. G. SHARP, Pulborough, Petworth, Sussex.

N.B.—Recipes have already been purchased by parties residing in England and Scotland.

GISHURST COMPOUND, PATENTED.—For preventing and destroying Red Spider, Scale, Mealy Bug, Thrip, and Green and Brown Fly.—See *Gardeners' Chronicle*, Nov. 6, 1858.—To be dissolved ½ or ¼ lb., or less, in a gallon of soft water, and applied by means of a syringe or a soft brush.

THRIP (magnified).



MEALY BUG (magnified).



On Orchids it may be used in a strong lather, applied by a shaving brush, but on tender young Geranium shoots a solution of 2 oz. to the gallon will be found sufficiently strong.

Sold in boxes at 1s. 6d. and 6s. each, with directions for use, and printed opinions of Mr. Rucker's Gardener, Lady Dorothy Neville's Gardener, Sir William Hooker, Mr. Rivers, Messrs. Francis & Arthur Dickson & Sons of Chester, and Messrs Dickson & Brown of Manchester.

For Nurserymen the large size is recommended, but where the consumption is not large the compound will be found to keep its strength best in the small boxes.

Nurserymen and Seedsmen supplied by PRICE'S Patent Candle Company (Limited), Belmont, Vauxhall, London. S.

RATS, RATS TAKEN WITHOUT POISON OR TRAPS BY WHOLESALE.—Ships, Barns, Stables, Granaries, Mills, Warehouses, Farmsteads, Houses, &c., cleared at one sweep. ANY PERSON can by this method clear the entire premises of every RAT, however numerous they may be, in one single night. Printed directions how to entice and secure the whole lot alive, sent free by return of post for Two Shillings by WILLIAM GOODWIN, High Halstow, near Rochester.

TO NURSERYMEN, MARKET GARDENERS AND OTHERS.

TO BE DISPOSED OF, with immediate possession (the present proprietor retiring from business), that lucrative NURSERY and MARKET GARDEN BUSINESS, with first class Wholesale and Retail Trade, established upwards of 50 years in the most desirable and prominent part of the Bath Market, together with the whole Stock in Trade, Horticultural Buildings (consisting of upwards of 2000 feet of glass), comfortable good and healthy Dwelling House, Sheds, Outhouses, and every convenience suitable for the trade. The land is situated within a mile from the Bath Market on the road between Bath and Bristol, and is free from all Borough and City rates. The whole of the Land is in a perfect state of cultivation, and would be a most desirable investment for any party wishing to enter into the line of business. The whole of the stock to be taken at a valuation.—For further particulars apply to Mr. JAMES SHACKELL, Tiverton, Bath, or at 69, 70, and 80, Market, Bath.

TO BE SOLD, an old established NURSERY and SEED BUSINESS, in the Midland Counties, in a good Market Town, and immediately contiguous to a first-class Railway Station. The STOCK at present is low, but good, and may be taken to at valuation or by private treaty. Is parted with solely on account of the death of the late proprietor.—Apply to Messrs. NOBLE, COOPER, & Co., 152, Fleet Street; or Messrs. Low & Co., 7, Upper Clapton, London.

Sales by Auction.

POULTRY SALE (EXTRA.)

MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on TUESDAY, March 15, at 12 o'Clock precisely, Poultry and Pigeons of excellent quality, including many prize birds of Dorkings, Spanish, Cochins, Brahmas, Game, Hamburghs, Polands, &c., from breeders of First-class stock; and a capital lot of Pigeons, the entire stock of a gentleman relinquishing the fancy, including many very choice prize birds of all the varieties.—Catalogues by enclosing a stamped directed envelope to Mr J. C. STEVENS, 38, King Street, Covent Garden, London, W.C.

SEEDS AND PINE CONES FROM VANCOUVER'S ISLAND, FRASER RIVER, AND CALIFORNIA.

MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on WEDNESDAY, March 16, at half-past 12 precisely, a valuable and important consignment of PINE CONES AND SEEDS in capital condition, including Thuja gigantea, Abies Menziesi, Williamsoni (?), and Douglasi; Pinus Benthamiana, Jeffreyi Sabiniana, and tuberculata; Cupressus Lawsoniana and MacNabiana, and Wellingtonia gigantea. Also an importation of Araucaria imbricata Seed.—May be viewed on the morning of sale, and Catalogues had.

FRUIT AND ROSE TREES, HOLLYHOCKS, ETC.

MR. J. C. STEVENS will Sell by Auction at his Great Room, 38, King Street, Covent Garden, on FRIDAY, March 18, at half-past 12 precisely, a large quantity of STANDARD and DWARF ROSES, including H. Perpetuals, Moss, Bourbons, Yellow, and Creeping, &c.; Fruit Trees, including Peach and Nectarine Trees, for Fruit Conservatories and Pots; Standard Lee's Perpetual; Fig Trees, 12 feet, 9 feet, and 6 feet high. 1000 Hollyhocks of good sorts and other Plants.—May be viewed on the morning of Sale and Catalogues had.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will Sell by Auction at the Mart, Bartholemew Lane, on FRIDAY, March 18, at 12 o'Clock, a first-class Collection of Carnations, Piccotees, and Pinks; about 300 choice Standard and Dwarf Roses, consisting of the most approved kinds; choice Fruit Trees, Double Camellias, Azalea indica, and other Plants in bloom, selected American Plants, Pæonias, Verbenas, Fuchsias, Dahlias in dry roots, &c.—May be viewed the morning of Sale. Catalogues to be had at the Mart, and of the Auctioneers, American Nursery, Leytonstone.

TO GENTLEMEN, GARDENERS, BUILDERS, ARCHITECTS, AND OTHERS.

MR. DEBENHAM is instructed by Mr. Rentmore, who is retiring from the business, to Sell on the premises, 74, Borough Road, on TUESDAY, March 15, at 12 o'Clock, the Stock of ARTIFICIAL STONE, including Statues, Vases, Fountains, Sundials, and Stands, and every description of Garden Ornaments and Architectural Embellishments; also the Moulds connected with the business, Stock-in-Trade, and effects.—May be viewed three days prior to the Sale, and Catalogues had on the premises and of Mr. DEBENHAM, 80, Cheapside, E.C.

PERDISWELL HALL, NEAR WORCESTER.

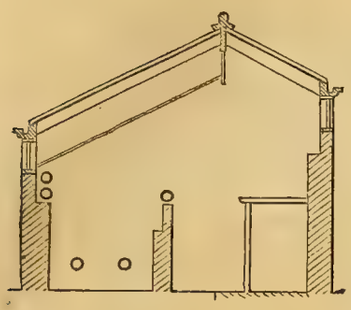
IMPORTANT SALE OF PLANTS.

MR. BENTLEY will Sell by Auction, at Perdiswell Hall, near Worcester, on WEDNESDAY, March 23, at 11 o'Clock, by direction of the Executors of the late Sir Offley Penbury Wakeman, Bart., a splendid Collection of Orchids, in fine health; Apricot, Peach, Nectarine, Plum, Cherry, and Vine Trees, in pots; specimen Stove and Greenhouse Plants, including Azaleas, Heaths, Camellias, &c.; healthy Ferns, about 200 Cinerarias, fine blooming plants; a number of very healthy Fruiting and Succession Pine Plants; Bedding Plants, including fine specimens of Mountain of Light Geranium, &c. &c.; an Excellent Forcing House, 40 ft. by 16 ft., in 4 divisions, heated by hot water; three Brick Pits; six, two, and one-light Cucumber Frames and Lights; a quantity of seed Potatoes, &c.—Catalogues may be had one week prior to the sale at the offices of Mr. MARTIN CURTLER, Solicitor, Sansome Place, or the Auctioneer, Foregate Street, Worcester.

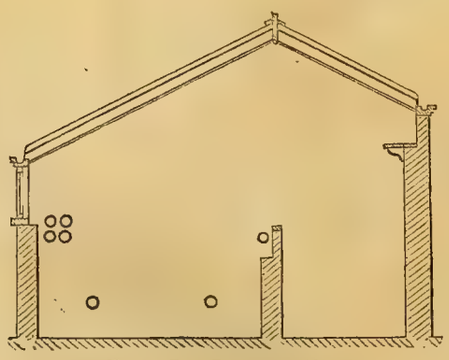
DOWNSIDE FARM, COBHAM PARK, SURREY.

VERY IMPORTANT SALE OF FIRST-CLASS SHORTHORNS.

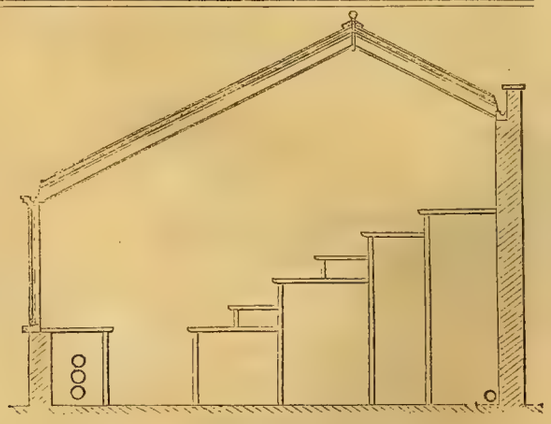
MR. STRAFFORD has received instructions to announce for Sale by Auction, without reserve, on WEDNESDAY, March 23, the entire herd of first-class SHORTHORNED CATTLE, the property of the late Harvey Combe, Esq., of Cobham Park, Surrey, consisting of about 70 Head of Bulls, Cows, and Heifers, which have been bred from the choicest blood that could be procured, no expense having been spared in the original selection of animals of the highest breeding and character. The Cows and Heifers are principally in calf to Marmaduke (14897), for which 500 guineas were given at the Bushey Grove Sale in 1857, and the produce of this animal already dropped fully justify that outlay. This splendid Herd will be offered in its ordinary condition, and are only to be sold in consequence of the decease of their lamented owner.—Catalogues, with pedigrees, may be had on application to Mr. STRAFFORD, 13, Euston Square, London; or of Mr. E. KIRBELL, at the Downside Farm, Cobham, Surrey.



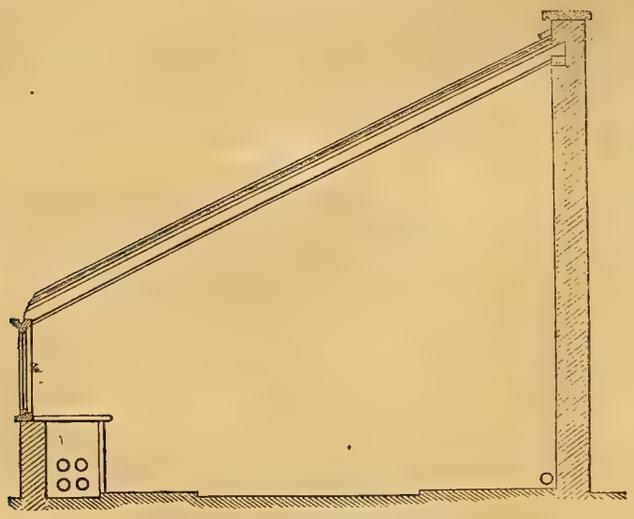
No. 1.—Cucumber and Melon Pit, 10 ft. wide.



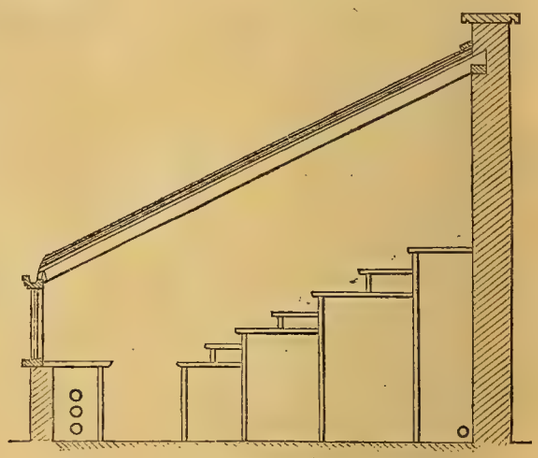
No. 2.—Pine Pit, 14 ft. wide.



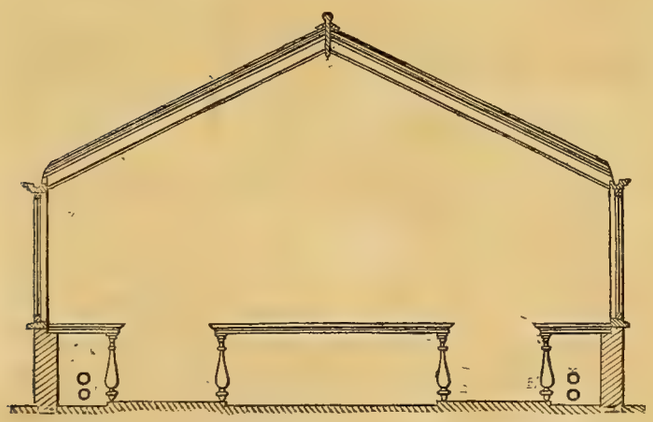
No. 3.—Greenhouse, from 14 to 18 feet wide.



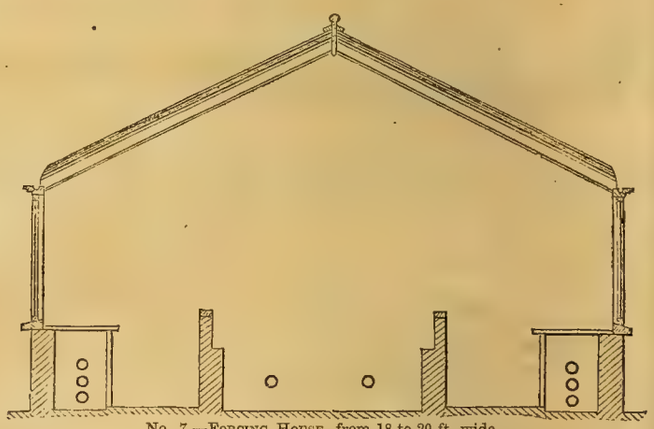
No. 4.—Vinery, from 15 to 18 ft. wide.



No. 9.—Greenhouse, from 12 to 20 ft. wide.



No. 6.—Greenhouse, from 18 to 20 ft. wide.



No. 7.—Forcing House, from 18 to 20 ft. wide.

HORTICULTURAL BUILDINGS MANUFACTURED BY STEAM POWER MACHINERY.

BEST MATERIALS AND LOWEST PRICES.

HENRY ORMSON,

HORTICULTURAL BUILDER & HOT-WATER APPARATUS MANUFACTURER,

STANLEY BRIDGE, KING'S ROAD, CHELSEA, LONDON,

Deeply grateful for the very liberal and kind patronage bestowed upon him, begs most respectfully to inform the Nobility, Gentry, Nurserymen, &c. that it being his determination to spare no pains to merit a continuance of their favours, and that he may be enabled to execute his extensive and increasing orders punctually, and at the lowest possible cost (agreeably with the best Materials and Workmanship), he has erected a most complete set o Steam Power Machines, peculiarly adapted for the purposes of his Trade.

PARTIES DESIRING INFORMATION as to prices, &c., will, by referring to the above sections, receive immediate attention.

PLANS, SPECIFICATIONS, and ESTIMATES for plain and inexpensive practical Structures, and for the most elaborate Architectural Erections, either in Wood or Iron, forwarded on application.

N.B. Ormson's Patent Jointless Tubular Boilers may be seen in successful operation at Mr. Veitch's, Royal Exotic Nursery, King's Road, Chelsea, and on view and for sale at

THE MANUFACTORY.

Editorial Communications should be addressed to "The Editor"—Advertisements and Business Letters to "The Publisher"—at the Office, 5, Upper Wellington Street, Covent Garden, London, W.C.
Printed by William Bradbury, of No. 13, Upper Woburn Place, and Frederick Mullett Evans, of No. 20, Queen's Road West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard St. Precinct of Whitefriars, City of London, and published by them at the Office, No. 5, Upper Wellington St., Parish of St. Paul's Covent Garden, in the said Co.—Saturday, March 12, 1859.

THE GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 12.—1859.] SATURDAY, MARCH 19. {Price Fivepence. Stamped Edition, 6d.

INDEX.

Abutilon insigne	242 b	Labourers' wages	248 a
Agri. Soc. of England	248 b	Law decisions	246 b
Allotments, Hitcham	247 c	Lælia præstans	240 c
Barley sowing	248 a	Leek, new	242 a
Bennett on Nutrition, rev.	243 a	London Farmers' Club	248 b
Cattle, short-horned	246 c	Hibiscus radiatus	240 c
Cattle food, Thorley's	246 b	Hort Society's Garden, superintendent for	240 c
Cats	242 b	Hyacinths, Cutbush's	243 c
Chrysanthemum Society	242 c	Hitcham allotments	247 c
Coniferous seeds, sale of	244 a	Œnotheras	244 c
Deer and tree barking	242 a	Orange flower distillation	241 b
Dodder, Flax	242 a	Plants, new	240 c
Dry rot	244 c	Primula, green	244 c
Dublin Agri. Society	246 c	Puff-balls as food	242 b
Education, agricultural	248 b	Rose distillation	241 b
Elm, Chichester	242 a	Seed adulteration	246 a
Farming, Prairie	249 a	Steam culture	246 c
Fish	242 c	Straw, waste	247 a
Food, Puff balls as	242 b	Thermometers, cheap	242 a
France, garden produce from	239 c	Tobacco, substitute for	244 a
Fruit Garden, Rivers's, rev.	240 a	Trade lists	243 b
Fruit trees, hide-bound	242 b	Tree barking and deer	242 a
Garden plans	240 a	Tropæolums, hybrid	242 a
Gas heating	242 b	Vines, to graft	242 c
Gladioli, to hybridise	242 a	Weinmann, death of	244 a
Grafting Vines	242 c		

HORTICULTURAL SOCIETY OF LONDON.—Notice is hereby given that the business of the Society will be carried on in future at No. 8, St. Martin's Place, Trafalgar Square, W.C.

HORTICULTURAL SOCIETY OF LONDON.—DISTRIBUTION OF SEEDS.

The Seeds annually provided for distribution being now ready, Fellows of the Society who have not received them can obtain them upon application at the Society's Office, 8, St. Martin's Place, Trafalgar Square, W.C.

HORTICULTURAL SOCIETY OF LONDON. FIRST BALLOT FOR PLANTS.

Notice is hereby given that the first ballot for Plants is about to take place at the Society's Offices, 8, St. Martin's Place, Trafalgar Square, W.C., on which occasion the Fellows of the Society can draw for 70 Pinus Don Pedri; 100 Seedling Ferns from Borneo; 100 Cupressus Lawsoniana; 100 Cupressus Macnabiana; 40 Berberis, from Pichincha, Peru; 30 Hesperomeles, from Quito; 20 Rhododendron Dalhousianum; 50 Clematis microphylla, var. leptophylla; 100 Bambusa gracilis; 100 Eriobotrya japonica; 20 Chamæcyparis thurifera; 40 Pinus longifolia; 80 Pinus excelsa; 80 Cupressus torulosa; 80 Berberis dulcis; 40 Jasminum nudiflorum; 50 Prostanthera nivea; 40 Helleborus Olympicus; 70 Gynerium argenteum; 50 Spiræa callosa; 50 Florentine Camellias; 40 Forsythia viridissima; 10 Chamærops palmetto; 20, Acacia longifolia.

Fellows must send in their names at the latest two clear days before each Ballot; they need not attend personally; but will be informed of the result after the Lottery shall have been drawn. Lists of the plants to be ballotted for can be had on application at the Office, 8, St. Martin's Place, Trafalgar Square, W.C. Fellows paying four guineas a year have two chances at each Ballot. Fellows paying two guineas a year have one chance at each Ballot.

The day of ballot will be announced next week.

ROYAL BOTANIC SOCIETY OF LONDON, Regent's Park.—SPRING EXHIBITIONS of PLANTS and FLOWERS for competition, on WEDNESDAYS, March 23, April 6, and April 20.

The Regulations for admission to the Gardens on these days are the same as on ordinary week days, but the Conservatory will necessarily be closed for the arrangement of the Plants, &c., until 1 o'clock. J. De C. Sowerby, Secretary.

ROYAL BOTANIC SOCIETY, Regent's Park.—THE EXHIBITIONS OF PLANTS, FLOWERS, AND FRUIT this season will take place on WEDNESDAYS, May 25, June 15, and July 6. Tickets of Admission are now being issued, and can be obtained at the Gardens only by orders from Fellows or Members of the Society, price, on or before Saturday, May 14, 4s.; after that day, 5s.; or on the days of Exhibition, 7s. 6d. each.

EXHIBITION OF HYACINTHS.

WM. CUTBUSH and SON have much pleasure in announcing that from the great success which has attended their GRAND EXHIBITION, and the Blooms being still in perfection, they are induced to keep it Open till the 26th inst. Admission from 9 till 6—Free.

NEW ROSES.

A. PAUL and SON beg to inform admirers of the Rose that they will have plants of all the NEW ROSES ready for Sale by the middle of April at the lowest advertised prices.—Nurseries, Cheshunt, Herts.

YELLOW ROSES.—Madame William, orange yellow; Isabella Gray, golden yellow. Strong plants, fit for immediate forcing, 8s. 6d. the pair.

A. Paul & Son, Nurseries, Cheshunt, Herts.

THE NEW PELARGONIUM "THE BRIDE" (Beck's).—Splendid plants of this beautiful new variety are now being sent out at 21s. each. Usual trade discount.

John Dobson & Son, Woodlands Nursery, Isleworth.

CHOICE PANSIES.

HART and NICKLIN, Florists, &c., Guildford, offer a dozen choice named Pansies for 6s., or 50 plants for 1l., strong and healthy. Also fine HOLLYHOCK SEED, saved from extra varieties, 100 Seeds for 1s.

Border PANSIES, PINKS, ROCKET, PHLOX, &c., 3s. p. doz.

STRAWBERRY PLANTS, Sale for this Month only.—Very fine strong Plants of the three early sorts advertised last month can still be supplied with 100 other varieties. The price according to sorts and numbers required. —Apply to the Grower, William James Nicholson, Egglescliffe, near Yarm, Yorkshire.

STRAWBERRY PLANTS can now be supplied of every kind worth growing, warranted to produce a good crop this year. They are transplanted plants, and will be sent with a ball of earth to each. Price 10s. per 100, or in less quantities 2s. per dozen.—R. S. Yates, St. Ann's, Manchester.

NEW FARM SEEDS.—Purchasers of large quantities of FARM SEEDS will be treated liberally on application to Sutton & Sons, Royal Berkshire Seed Establishment, Reading.

FERN CATALOGUE.

ROBERT SIM'S NEW DESCRIPTIVE AND PRICED CATALOGUE, No. 6 (62 pages) of his COLLECTION of BRITISH and EXOTIC FERNS, can be had, post free, for 8 stamps. Gratis to all previous purchasers of Ferns.

Nursery, Foot's Cray, Kent, S.E.

GEORGE BAKER begs to inform the Nobility and Public that his DESCRIPTIVE CATALOGUE of AMERICAN PLANTS and GENERAL NURSERY STOCK will be sent free on application.

American Nursery, Windlesham, near Bagshot, Surrey, about 1 mile from Sunningdale Station, South Western Railway.

NEW DAHLIAS.

JOHN KEYNES'S SELECT CATALOGUE OF DAHLIAS, ROSES, CARNATIONS, PINKS, &c., containing Lists of all the valuable Show Flowers in each class, is now ready and will be sent on application.

Castle Street Nursery, Salisbury.—March 19.

NEW CATALOGUE OF FLORIST FLOWERS, &c.

DOWNIE and LAIRD beg to intimate that their DESCRIPTIVE CATALOGUE of FLORIST FLOWERS, New VEGETABLE and FLOWER SEEDS for 1859, is now Ready, and will be sent free on application.

17, South Frederick Street, Edinburgh.

R. M. STARK begs to intimate that his CATALOGUES OF GARDEN, FARM, AND FLOWER SEEDS, FLORISTS' FLOWERS AND BEDDING PLANTS, FERNS, &c., are now ready, and may be had on application,

Some Seeds of rare Flower Seeds to offer to the trade.

Edinburgh: 31, Castle Street; and Edgehill, Dean.—March 19.

CHOICE SEEDS.

J. DOBSON and SON'S LIST comprises all the leading sorts of VEGETABLE, FLOWER, and AGRICULTURAL Seeds, which will be sent post free on application.

Woodlands Nursery, Isleworth, W., and High St., Hounslow, W.

SPLENDID IMPORTED SEEDS.

JOHN DOBSON and SON'S LISTS free on application.

Woodlands Nursery, Isleworth, and High Street, Hounslow.

STAR NURSERY, SLOUGH.

WM. BRAGG begs to inform the public and Florists generally, that his SPRING CATALOGUE can now be had free on application, containing his choice new Hollyhocks, Pinks, Pansies, Pelargoniums, chaste Scarlet Geraniums (Blazer and Rosa Bonheur), Dahlia Chieftain, yellow Picotees, New Californian Sunflower, so much admired at the Crystal Palace, Botanic Gardens, and other Shows; and choice Flower Seeds from Show varieties only.

NEW ZEALAND RUNNING BEAN.—Packets of 12 Seeds, for 14 stamps.

Bass & Brown, Seed Growers, &c., Sudbury, Suffolk.

NEW ZEALAND RUNNER BEAN, as noticed by Dr. Lindley to be the true sort, 5s. 8d. per 100 (post free) to the Trade. Cash.—Page & Toogood, Seed Growers and Merchants, Southampton.

TRITONIA AUREA.—Fine strong Roots of this free and most beautiful orange flowering bulb, 1s. 6d. each, or 15s. per dozen.

Bass & Brown, Sudbury, Suffolk.

TROPÆOLUM CANARIENSIS.

FAIRHEAD and SON, Seed Growers and Merchants, Lewisham, Kent, have for sale several lbs. of the above of home growth. Price on application.

GERANIUMS! GERANIUMS!

JOHN DOBSON and SONS have a very fine healthy stock of the above which they can supply at moderate prices. CATALOGUES forwarded free on application.

Woodlands Nursery, Isleworth.

CHOICE GERANIUMS.

JAMES HOLDER can supply the above (including French, Fancy, and Show varieties), at 15s. per dozen. List of names forwarded on application.

N.B. The Trade supplied on liberal terms.

Crown Nursery, Reading, Berks.

500 BUSHELS of FLUKE and WHITE BLOSSOM SEED POTATOES, true, free from disease, and suitable sizes, at 3s. 4d. the bushel of 80 lbs., samples of which may be had on application to Mr. Wm. Grosvenor, Prospect Nursery, Cheddleton, near Leek, Staffordshire.

A remittance or reference from unknown correspondents.

SEED POTATOES.

SODEN'S OXFORD EARLY		ASH-LEAVED KIDNEY	
SHAW	ditto	2d	WALNUT-LEAVED ditto
REGENTS	ditto	3d	FLUKE KIDNEY
			RED ASH-LEAF ditto

and all kinds worth cultivating. The above sorts can be particularly recommended as good croppers, and free from disease.

A good supply of SHILLING'S QUEEN CABBAGE, the best in cultivation

Joseph May & Co., 1, Wellington Street, Strand, W.C.

THE ALLIANCE POTATO.—Patronised by her Most Gracious Majesty the Queen, the Emperor of the French, and the Nobility of England, Scotland, and Wales. One Peck of these celebrated White Potatoes can be obtained of the grower only, Mr. James Copeland, Thames Street, Windsor, on receipt of Post-office Order for 7s. 6d.

HENRY'S HYBRID SCOTCH LEEK.

CHARLES ALEXANDER, Seedsman, Edinburgh, offers Seeds of the above unrivalled LEEK at 1s. and 2s. 6d. per packet.

He exhibited three in December last which weighed 9 lbs., and blanched to upwards of 12 inches each.

CHEAP, SELECT, AND USEFUL NURSERY STOCK.

WM. JACKSON and CO., of Bedale, Yorkshire, beg to call attention to their advertisement in the *Gardeners' Chronicle* of March 5, page 187.

HANDSOME LARGE SPECIMEN GREENHOUSE PLANTS.—See Advertisement in *Gardeners' Chronicle*, March 5, page 186.

Wm. Jackson & Co., Bedale, Yorkshire.

CONIFERÆ.

A. PAUL and SON have a large stock of the above, very handsome, in fine order for removal, many suited for immediate effect. For particulars see Advertisements in *Gardeners' Chronicle* of November and December last.—Nurseries, Cheshunt, Herts.

SPECIMEN IRISH YEWS.—Handsome specimens of this very Ornamental Tree of all sizes up to 9 feet in great numbers. Price according to number wanted on application.—Thomas Jackson & Son, Nurseries, Kingston, S.W.

100 Strong, healthy, SUCCESSION PINE APPLE PLANTS to be sold; about a third of the quantity showing fruit.—Apply to M. P., Mr. Laking, 26, Half Moon Street, Piccadilly.

GUERNSEY PIPPIN.—A Seedling Dessert Apple, "possessing considerable merit." See Report of British Pomological Society, Dec. 16, 1858.

Three grafts post free for 18 penny stamps.

G. Wolsey, St. Andrew's, Guernsey.

ORANGE TREES, just arrived, well set with Fruit, from 2s. 6d. to 12s. each; double-flowering Camellias, well set with bloom buds, 18s., 21s., and 24s. per dozen; Azaleas, full of bloom buds, 12s., 18s., 21s., and 24s. per dozen, and every other kind of Greenhouse Plant and Nursery Stock, &c.—Robt. Green, 154, Kingsland Road, 55 doors from Shoreditch Church.

LAING'S MAMMOTH RED CELERY.—The largest and best flavoured Celery known, and will not run to seed until the second year. (See former advertisement.)

Packets, 1s. each; large trade do., 3s. 6d., per post prepaid. Stamps received in payment.

Youell & Co., Royal Nursery, Great Yarmouth.

CABBAGE PLANTS.—Strong Drumheads, 3s. 6d. per 1000; Early Garden Sorts, 3s. 9d. per 1000; Red Picklers, 6s.; fine Brown Cos Lettuce, 5s. per 1000; Cauliflowers, 3s. per 100. By Thomas Welland, Surrey Gardens, Godalming, Surrey, packed and sent to the stations free.

LARGE GREEN-TOP WHITE BELGIAN CARROT.—Fine new Seed, raised from fresh-imported stock, can be supplied at 1s. per lb., or cheaper in large quantities, by

Sutton & Sons, Seed Growers, Reading.

THE IMPROVED CUSTARD MARROW.—See drawing of this handsome and productive variety in the *Gardeners' Chronicle* of Jan. 29 and Feb. 12. 12 seeds for 13 postage stamps; 9 seeds for 7 stamps. The trade supplied.

Bass & Brown, Seed Growers, Sudbury, Suffolk.

GRAYSON'S GIANT ASPARAGUS.—Fine 2-year roots, 2s. 6d. per 100; or 21s. per 1000.
" 3-year " 3s. 6d. " 100; or 30s. " "
The usual allowance to the Trade.

Bass & Brown, Nurserymen, Sudbury, Suffolk.

DIOSCOREA BATATAS.—Fine roots, 9 to 12 inches long, 5s. per dozen; extra size, 10s. per dozen.

Bass & Brown, Seed Growers, &c., Sudbury, Suffolk.

HOLCUS SACCHARATUS, or CHINA SUGAR CANE GRASS.—Seed of this lately introduced Fodder plant can be supplied by Nutting and Sons in any quantity. Price on application.—Seed Warehouses, 60, Barbican, London.

SPERGULA PILIFERA.—An established plant of the above that will blossom during the coming summer, and prove itself a perfect substitute for Grass Lawns without mowing, sent post free on receipt of 2s. 6d. or 30 stamps.—Address John Summers, Gardener, Forest Hill, Sydenham.

GRASS CROPS.—All descriptions of Grass Land should be dressed with Manure not later than the end of March. CUERO GUANO for this crop, and also for spring corn, is now ready for delivery, price 7l. 10s. per ton for Grass, and 8l. 8s. for Corn.—Manufacturers and Patentees, John Chisholme, Son, & Co., 33, Mark Lane, E.C.

ITALIAN RYE-GRASS SEED.—Buyers of this Seed will please write for samples, present price 24s. per cwt., to J. Dixon, Seedsman, Kendal.

DICKINSON'S ITALIAN RYE-GRASS SEED will be Sold only by himself. The price the present season is 48s. per quarter, 7s. per bushel for present payment.

New Park, Lymington, Hants.

PAMPAS GRASS (Gynerium Argenteum).—The beauty of this extraordinary plant has this season been fully appreciated. It can be supplied by the dozen, hundred, or thousand, by Charles Noble, Bagshot, Surrey.

JOHN CULVERWELL, Taunton, begs to call the attention of Agriculturists to his superior selection of GRASS SEEDS, which for Purity, change of Soil, and Climate, will bear comparison with any house in the kingdom. Prices, terms, and samples forwarded on application.

GIANT SAINFOIN SEED.—Seed of this excellent and productive Plant may be had of Raynbird & Harvey, Basingstoke, and 89, Seed Market, Mark Lane. Samples and prices on application.

N.B. R. & H. can also supply Common Sainfoin both of English and French growth at market prices.

THE ALSIKE CLOVER.—This valuable but scarce Clover Seed is included in Messrs. Sutton's mixtures of Clover and Grass Seeds for permanent pasture and for alternate husbandry. It can be supplied alone if required, price fluctuating, to be had on application.

Royal Berks Seed Establishment, Reading.



EARLY PEAS.

WAITE'S DANIEL O'ROURKE PEA; the earliest Pea in cultivation.
EARLY NAPOLEON; a Blue Wrinkled Marrow Pea, as early as EMPEROR.
EARLY EUGENE; a White Wrinkled Marrow Pea, as early as EMPEROR.
Prices to be had on application of J. G. Waite, Seed Establishment, 181, High Holborn, London, W. C.

CHAMPION OF SCOTLAND PEA.—A new and first-rate sort, declared by all who grew it last year to be the most distinct and best flavoured Pea in cultivation. To be had only at Peter Lawson & Son's, the Queen's Seedsmen, &c., who are also prepared to execute orders for all sorts of Garden and Flower Seeds of the finest quality.
27, Great George Street, Westminster.

THE EARLIEST PEA.—DUNNETT'S FIRST EARLY is in every respect superior to "Daniel O'Rourke," being several days earlier, having finer pods, and richer in flavour, height 2½ feet. For an early dish of fine-flavoured Peas we can confidently recommend this; 2s. per quart.
CHAMPION CABBAGE, the earliest and best sort, if sown in succession, may be had fit for table throughout the year, 8d. per ounce, or 1s. post free.
Butler & McCulloch, Covent Garden Market, London.

EXCELSIOR MARROW PEA (Knight's).—This new Pea is a decided improvement on the well-known Ringwood Marrow, being quite as early, greater cropper, longer pod, larger pea, superior flavour, and greener in colour. A great acquisition either for the amateur or the market gardener. 2s. 6d. per quart. Price to the trade upon application. To be had of Nutting & Sons, Seedsmen, 60, Barbican, London, E.C.

NEW PEA, "COMET."—The above is a white Pea of the early frame kind, growing about 4 feet high, an abundant bearer, large in size, of first-rate flavour, and can be confidently recommended for a general crop.
The Undersigned having had full opportunities for testing the various qualities of this really useful Pea, feels confident that one trial will establish its character among growers as a first-class Pea. He therefore has much pleasure in offering it to the public at the following rates (bag included):—
Per quart, 3s. | Per gallon, 10s. | Per peck, 15s.
Post-office Order payable at Godalming requested from unknown correspondents.
Wm. Young, Milford Nurseries, near Godalming.

SEED POTATOES.

JAMES HUDDART, Nurseryman and Seedsman, Preston, offers the following varieties:—

Runcorn Short Top	Pink Eye Kemp
Flukes, true	Ash-leaved Kidney, very true
Early Kemp	Preston Early

The last named kind is a Seedling raised by J. H., and was tested last year with "Handsworth Prolific" and other early sorts, and found to be as early and full one-third heavier cropper. A very dry mealy Potato when half size. Prices reasonable on application.
J. H.'s DESCRIPTIVE SEED CATALOGUE may be had post free) on application.—March 19.

SHRUBBY CALCEOLARIAS.

JOHN COLE begs respectfully to inform the lovers of these useful flowers that he intends sending out his Matchless Seedlings of 1858 himself. They are considered by many persons to be superior to any he has hitherto raised. Amongst them are some fine Bedding varieties.
CATALOGUES will be shortly ready, and sent (post free) to all applicants.—Keyfield Nursery, St. Albans, Herts.

PETUNIAS, SPLENDID NEW DOUBLE SORTS OF 1859.

J. SCOTT, Merriott Nurseries, Crewkerne, Somerset, begs to offer 30 sorts, many of them 5 inches across, some like large flowers of Gardenia Fortuni; one very like Baronne Prevost Rose, many flaked and striped like large Carnations, and altogether the most beautiful and unique collection ever offered in this or any other country. Strong plants 2s. 6d. each; or the 30 sorts 63s. The usual allowance to the Trade.
J. S.'s DESCRIPTIVE CATALOGUE of the above and other cheap BEDDING PLANTS will be ready about the middle of March, and will be sent to all applications, inclosing two stamps; and to former purchasers gratis.
N.B. PETUNIA MAGNA COCCINEA, a splendid single (5 inches diameter) is offered at 3s. 6d. per dozen for bedding, and J. Scott's new single striped ALCEMENE, 5 inches across, at 30s. per dozen, or 3s. 6d. each.

GRIEVE'S NEW DOUBLE PETUNIAS.—The universal satisfaction given by the PETUNIAS sent out last spring, raised by Mr. Grieve, Gardener at Culford Hall, near Bury St. Edmund's, induces the advertisers to offer to the public those raised by that persevering hybridiser last summer, which are considered superior to any yet offered; not in the size of the flowers, but in brilliancy of colour, consistence of petal, and regularity in form—all being very double. The following are the names adopted, which may be respectively taken as an approximate description of their colours:—

CRUENTUM, CANDIDUM, PURPURASCENS. } Large flowers, and most appropriate for pot culture.
ATRO-COCCINEUM, ROSEUM STRIATUM, ATRO-ROSEUM. } Medium-size flowers and neat habit; probably useful for bedding.

Plants of the above, 5s. each; or 21s. the set of six, to be sent out the first week in April by Osborn & Sons, Fulham Nursery, London, S. W.
N.B. The usual allowance to the Trade.

NEW DOUBLE PETUNIAS.

C. W. HARGRAVE begs respectfully to announce that he will shortly be prepared with stock of the New Double Petunias advertised by him in the *Gardeners' Chronicle* of September 25, 1858.
They constitute a unique collection in themselves, being of extra fine form, firm substance, rich and decided in colour, very fragrant, and of first-rate habit, having good guard petals, with fine centres well filled, and in fact are superior to the Continental or other varieties hitherto sent out. Their nomenclature is as follows:—
KING OF CRIMSONS.—Bright crimson, brighter than its parent "Crimson King." The varieties previously introduced as crimson have all proved themselves to be only purple.
ROSEA ALBA.—Rose clearly mottled with white
ALBA MAGNIFLORA.—Beautiful form, very fragrant.
CRIMSON GEM.—Bright crimson, with white centre.
PURPLE KING.—Large flower, well formed.
ROSETTE.—Crimson, very double, dwarf habit.
Plants of any of the above 5s. each, or the set of six 25s.
It is requested that the Trade forward their commands at their earliest convenience, as all orders will be executed in the rotation in which they are received.
C. W. Hargrave, The Nursery, Winchmore Hill, N.

SEEDLING FUCHSIAS.

GEORGE WHEELER, Nurseryman, &c., Warminster, Wilts respectfully announces that strong plants of his SEEDLING FUCHSIAS will be ready to be sent out on and after the 20th of April.
SIR COLIN CAMPBELL.—The most beautiful double Fuchsia ever offered. Flower very large; tube and sepals dark scarlet. Corolla very prominent, large, full, and regular, and of a beautiful purple colour; a fine variety for exhibition, possessing the desirable property of holding its blooms much longer than other varieties; its large blooms makes it a very conspicuous and effective plant in a collection. Price 10s. 6d. each. Sir Colin was shown in full bloom at the Trowbridge Horticultural Exhibition the 18th August, at Bath on the 25th, Salisbury, 30th; at the National, in London, on the 2d September; and at Devizes on the 3d; at all which places it obtained Prizes or Certificates.
WILTSHIRE LASS.—Tube and sepals clear waxy white, corolla rich dark puce; an improvement on the Maid of Kent, the flower being larger, of good habit, a free bloomer, and a good grower. Price 5s. each. The usual discount to the Trade.
G. Wheeler will be enabled to send out with the above the six new Fuchsias offered by Mr G. Smith, of Tollington Nursery.
G. Wheeler has on hand a large quantity of RHODODENDRONS from 9 inches to 2 feet, at very moderate prices.

TO GROWERS OF PINE APPLES AND CUCUMBERS.—The above-mentioned goods are in great demand here at present, and commanding high prices, therefore forward "immediately" to
GEORGE TAYLOR,
Choice Fruit and Vegetable Salesman,
St. John's Market, Liverpool.

CHRYSANTHEMUMS—CHRYSANTHEMUMS.

J. H. BIRD, F.H.S., Nurseryman, Stoke Newington, the largest grower and most successful exhibitor of the Chrysanthemum in the British Empire, begs to call the attention of the lovers of the above beautiful autumn flower to his matchless collection, the stock of which amounts to upwards of 50,000 plants.
J. H. B. can supply strong plants, one dozen for 6s.; or five dozen in 30 varieties, containing two of each variety, for 1l.; or he can supply 100 plants in 50 varieties, two of each variety, for 1l. 10s. Also POMPONES in great variety: 50 Pompones in 25 varieties, two of each variety, for 10s.; or 100 in 50 varieties, two of each variety for 1l. Strong plants of the beautiful new Pompone the Golden Cedo Nulli, 5s. each, are now ready, with the usual allowance to the Trade. Every order will be accompanied by a popular work on the Chrysanthemum.
Post-office Orders payable to J. H. Bird, Stoke Newington, will be immediately attended to. Catalogues on application.

SEEDS AND PLANTS SENT FREE TO LONDON.

LOUIS VAN HOUTTE,
NURSERYMAN and SEEDSMAN, Ghent (Belgium),
BEGS TO ADVERTISE THAT HIS
NEW CATALOGUES, PRICE LISTS, Nos. 70, 71, 72, 73, 74, and 76,
ARE TO BE HAD AT HIS AGENT'S OFFICE IN LONDON,
MR. R. SILBERRAD, 5, Harp Lane, Great Tower Street.

CAMELLIAS, RHODODENDRONS, AZALEAS, ROSES, PERENNIALS, NEW SHRUBS, HOTHOUSE AND GREENHOUSE PLANTS of every description, Seeds, &c.

Extract from No. 76.

Arisæma ringens (see Van Houtte's "Flore"), very curious aroideous plant, fit for the Orchideous house till the flower is past, 10s. 6d.
Ataccia cristata (see Van Houtte's "Flore"), one of the most extraordinary flowering plants, fit for the Orchideous house, 21s.
Barbacenias ("Flore"), hybrids in all shades; per doz., 10s. 6d.
Begonias, the best new kinds, at very moderate prices; and Rex (see Van Houtte's "Flore"), at 1s. each, or 8s. per doz. 12 different Begonias for 8s.
Caladium (see Van Houtte's "Flore"), the new painted leaves: C. albo-punctatissimum, 20s.; C. argyrospilum, 12s.; C bicolor picturatum, 1s. 6d.; C. Brongniarti, 12s.; C. Chantini, 20s.; C. Neumanni, 12s.; C. Verschaffelti, 8s.
Clivia cyrtanthiflora (see Imantophyllum).
Cyanophyllum magnificum, 8s.
Dracænopsis indivisa, 16s. to 200s.
Eucharis amazonica ("Flore"), 2s. 6d.; E. grandiflora, 2s. 6d.
Gesneria cinnabarina ("Flore"), 1s., or 7s. 6d. per doz.
" Van Houttei, 1s 6d., or 10s. per doz.
" Leichlini, 4s., quite new, rosy outside, lemon inside.
" zebrina splendens, 1s. or 7s. 6d. per doz.; Gesnerias in best mixture, 7s. 6d. per doz.
Gloriosa Planti (see Methonica in the "Flore"), 6s. per doz., flowering beautifully in pots (outside) in the summer.
Imantophyllum cyrtanthiflorum, Lindl., first prize at the Ghent exhibition, last Saturday (5th March) as the finest of the plants gained this year by seed.—Louis Van Houtte has lately sent the plant in flower to Dr. Lindley's inspection. It is a magnificent mule obtained from Imantophyllum miniatum and I. Aitoni (Clivia nobilis), splendid long leaves, large heads of flowers, like those of a large-flowering Cyrtanthus, shape of the most beautiful Blandfordias, fine colour. Very strong plants at 80s. each. Sent out only now for the first time. Will soon appear in Van Houtte's "Flore."—I. miniatum (see "Flore"), 20s. to 30s.
Luculia, quite new species, 1s. each, 8s. per doz.; good sized plants.
Maranta Warscewiczi (Calathea), 4s. to 7s. 6d.
Musa zebrina ("Flore"), black-spotted leaves, 10s. 6d.
Pandanus reflexus, 3s. to 240s.
Philodendrons. — Decorative plants for Orchideous house. Great collection.
Rhopalas,—Great assortment. Splendid decorative plants.
Theophrasta imperialis, ditto, 80s. to 320s.
Achimenes.—A collection of 50 kinds for 21s.
Bromeliaceous plants.
Ferns and Lycopods.—One of the most extensive collections of Europe. Good sizes, moderate prices. (See Van Houtte's Price List No. 76, page 13.)
Gloxinias in great variety.
Orchids and Palms.
Greenhouse plants.
Michauxia campanuloïdes, scarce Syrian plant, flowers along the stem like Passionflowers, 1s. to 3s. per dozen.
Musschia Wollastoni (see Illustration), a tall, splendid, Campanulaceous plant from the Canary Islands; the flowers are disposed just as in the Lilium pyramidale, 4s.
Primula crosa ("Flore"), a very fine kind, 6d. each, 5s. per doz.
Azaleas, hardy kinds, double flowers, 12 varieties for 40s., including A. Van Houttei, the finest in existence
Azalea Van Houttei flore pleno (will appear shortly in the "Flore"), large bouquets of double flowers, red and yellow mixed; the largest and finest flower in existence; as hardy as an Azalea pontica; 12s., if taken alone.
Azalea Diamond (Van Houtte), pure white flowers with a large carmine spot (not quite hardy here, but beautiful in the greenhouse). Grafts with 3 to 4 branches, 8s. Grafts with 6 to 10 branches, 12s.
Azalea indica Alexander II. (Van Houtte), 2s. 6d. to 20s.—A gem for form, size, colour and spots. The petals delicately curled. A true beauty!—Hermine (Van Houtte), snow white, full flower, striped with carmine; fine, 2s. 6d. to 4s. Petuniæflora, extremely fine form, and delicate shaded pink colour; strong plants, flower buds, 3s. 6d. to 7s. Roi Leopold, extra large clear salmon, first rate, with flower buds, 3s. 6d. Salmonea albo-cincta; delicate salmon with a white margin, fine form, 4s. to 8s. Umbellata alba will appear shortly in the "Flore;" from Sardinia, a quite new form in the tribe; the flowers are single, pure white, but they are divided in nine segments as regular and round as a crown; 4s. to 8s.
Vervaene's Seedlings.—Azalea indica Belle Jeannette, Etendard de Flandre, Géante, Gloire de Belgique, Gloire de Ledeberg, Papilionacea, Pelargoniæflora and Rubens, the set of eight, full of flower buds, for 60s.
Camellias.—Very extensive collection. (See Price List No. 72.)
Dianthus sinensis giganteus (see the "Flore,") five seeds, 4s.
" " Heddewigi " " five " 4s.
N.B. Each flower of these Chinese Pinks is 5 inches across. The "Flore des Serres" has published a figure of them; but a double size plate is in hand, and will appear shortly.
Flemish Carnation seed, 100 seeds for 2s. 6d.
Bohemian Piccotees 100 " " 2s.
Fancy " 100 " " 1s. 6d.
Perpetual " 100 " " 1s. 6d.
French Spotted Geraniums (see Price List No. 76, pp. 41, 42, and 43).
Van Houtte's 6 new Petunias; price, the set for 16s.
New Continental Petunias of various growers, 20 vars. for 16s.
Continental Rhododendrons and others (see Price List No. 72, pp 30 to 38).
Roses.—One of the most extensive collections in the world (see Price Lists Nos. 63, 67, and 72).
Roses of 1859.—Winter Grafts, 30 novelties of the season, (all hybrid remontants) raised by the following growers:—Avoux & Crozy, Baudry, Beluze, Damaisin, Duchez, Guillot fils, Guillot père, Guinoisseau, Lacharme, Lartay, Marcot, Margottin, Oger, Pradel, Robert and Touvais.—Price for 30 Novelties, 3l. 10s. Ile Bourbons (1859) winter grafts for 7s. 6d.
New Herbaceous Tropæolums, the set of 12 varieties for 7s. 6d.
New French Verbenas, 12 varieties, 4s.; 25, 8s.
New Perennials:—Chelidonium japonicum, 1s. 6d.; Convallaria multiflora, fol. albo marg., 4s.; new splendid double Delphinium Pompon de Tirlemont (lately figured in the "Flore des Serres," and sold for the first time), 4s.; Epimedium Ikariso, a new Japan kind, with leaves as thick as Holly (the mother plant is in bud), 16s.; Thalictrum anemonæfolium flore pleno ("Flore"), a very scarce Pennsylvanian gem, 2s. 6d.
New Weigelas:—W. amabilis Groenewegenii; W. rosea Desboisii; W. amabilis alba. Price, each, 8s.; the set of three, 20s.
The Japan Black-leaved Maple, Acer polymorphum foliis nigr. (see the "Flore des Serres"), 8s. to 20s.
Æsculuscalifornica (lately figured). 1s. 6d.
Glycine magnifica, extra strong climbing plant, 1s. each; per dozen, 5s.
Large pyramidal variegated Hollies (in pots), 5s.
Quercus nigra, 4s. to 20s.
New and fine forms of the common Locust Tree (Robinia pseud-Acacia), var. coluteoides, fastigiata, glaucescens, patula, revoluta. The set of five for 12s.
Vitis Sieboldi and Thunbergi; two hardy Japan novelties, with fine foliage; the two for 5s.
Pinus paroliniana, quite hardy (2 years' seedlings), 8s. per doz.
" radiata paroliniana, very strong two-years' seedlings, 10s. the dozen.
Pinus Strobus tabulæformis; table-formed, dwarf plant, for groups in Grass plots, as hardy as the common Weymouth.

All Louis van Houtte's goods (plants and seeds) will be delivered out of the Custom House in London, without any expense whatever for the buyer; but *per contra*, 5s. will be charged for each package.
☞ Persons unknown to Louis van Houtte are respectfully requested to add to their orders a cheque on London for the amount (at Mr. R. Silberrad's order), or reference in London.
All letters must be prepaid 4d. (an unpaid letter is taxed twice as much).

THE "FLORE DES SERRES ET DES JARDINS DE L'EUROPE,"
EDITED BY LOUIS VAN HOUTTE, IS PUBLISHED SINCE 1845.

Twelve volumes of twelve numbers each have been issued, containing together 1289 finely coloured plates, and 2356 miscellaneous matters, numerous woodcuts, &c. The price of the whole work is 18l. 8s. (without any discount, but free to London). The subscription price for 12 numbers or one volume is 1l. 12s. The first number of Vol. XIII is now in the press; no single numbers are sold; sent free by post

Agent in London: Mr. R. SILBERRAD, 5, Harp Lane, Great Tower Street,
But all letters containing orders must be directly sent to Louis Van Houtte, Ghent, Belgium.

VEITCH'S PERFECTION PEA.

MESSRS. VEITCH & SON

BEG to call the attention of Gardeners and Amateurs in Vegetables to the above most excellent Pea, which has been highly approved by all who have hitherto grown it, and respecting which *favourable notices* have on several occasions appeared in the *Gardeners' Chronicle*, and other papers. It is a large Wrinkled Marrow, average height 2½ to 3 feet, immense cropper and delicious flavour. A limited quantity can be supplied for this season's growth, at 2*s.* 6*d.* per quart. Messrs. V. & Son intending to grow it in quantity for next season's sale, are desirous that as many parties as possible shall have the opportunity of proving its merits.

TO THE TRADE.

VEITCH'S PERFECTION PEA.

This PEA having been so *favourably* noticed on several occasions in the *Gardeners' Chronicle*, and being so *highly approved* by all those who have already proved it, Messrs. Veitch & Son have made arrangements for *growing it in quantity* this season and offering it wholesale *next autumn*. That all parties who so desire it may be acquainted with the merits and character of this variety Messrs V. & S. will be happy to spare a quart or two for trial to any of the Trade who may wish to have it, at the retail price, 2*s.* 6*d.* per quart.

ROYAL EXOTIC NURSERIES, EXETER & CHELSEA, March 1859.

EXHIBITION OF CAMELLIAS,

VAUXHALL NURSERY, WANDSWORTH ROAD.

MILNE, ARNOTT, & CO.,

(SUCCESSORS TO CHANDLER & SONS),

HAVE much pleasure in announcing that the large Collection of CAMELLIAS for which this Nursery has so long been celebrated is now coming finely into bloom, and will improve daily, and continue in perfection several weeks. Open to visitors every day except Sunday.

MILNE, ARNOTT, & Co.,

NURSERYMEN, SEEDSMEN, AND FLORISTS, WANDSWORTH ROAD, LONDON, S.

HOLLYHOCKS.

WILLIAM PERRY begs to announce that he has fine healthy plants of the above for sale, of all the approved sorts, well hardened and fit for planting out immediately, from 9*s.*, 12*s.*, 18*s.*, 24*s.*, and 30*s.* per dozen, if the selection is left to W. P. A Descriptive Catalogue can be had on application, also seed saved from the best sorts, 1*s.*, 2*s.*, and 3*s.* per packet.

Foreman at the Nurseries, Sawbridgeworth, Herts.

HOLLYHOCK SEED FROM NEW VARIETIES.

J. CHATER AND SON offer the above from 12 new varieties, separate packets, the collection, 3*s.* 6*d.*

24 varieties, best older sorts, 3*s.* 6*d.*

Best mixed, 20 sorts, 200 seeds, 1*s.* 6*d.*

J. C. & Son feel confident the above will give satisfaction, having been saved with great care.

Strong seedling plants, 20*s.* per 100.

If sown now will flower by September.

Nurseries, Haverhill.

FIRST-CLASS HOLLYHOCKS.

FINE SEEDLINGS FROM

WILLIAM CHATER'S Celebrated and Newest Varieties that will flower well in September at 30*s.* per 100

ditto	ditto	ditto	20*s.* ,, 100
Ground Roots according to colour, also at		..	30*s.* ,, 100
Seed in 12 separate colours, the Collection		..	10*s.* 0*d.*
,, 6	,,	,,	5 0

From varieties such as Pourpre de Tyre, Memnon, White Globe, Hon. Mrs. H. Ashley, Canary, &c., in 12 separate colours, the Collection .. .. 7*s.* 6*d.*

Ditto in 6 separate colours, the Collection .. 4 0

Seed from 20 of the best varieties, mixed, per pkt. 5 0

,, 12 ,, ,, ,, 2 6

,, good mixed, also a single variety ,, 1 0

The above can be procured from the Nurseries, Saffron Walden, Essex.

NEW HOLLYHOCKS.

A. PAUL AND SON beg to recommend the following NEW HOLLYHOCKS, which have been selected from several thousands of Seedlings. The stock of ordinary kinds is this year greatly extended. The plants are strong, well established, and perfectly healthy:—

	s.	*d.*
BRISEIS (Paul).—Purple, silvery edges, flower of good form, spike close	5	0
GENERAL HAVELOCK (Paul).—Bright, ruby scarlet, colour of "Scarlet King," but a close spike and a round smooth flower of perfect shape	10	6
IN MEMORIAM (Paul).—Crimson maroon, large, good substance, first-rate flower, good spike	10	6
OSSIAN (Paul).—Crimson shaded with salmon, remarkable alike for substance, closeness, and symmetry; spike good	10	6
PAINTED LADY (Paul).—Pink and blush in blotches, a large smooth flower of good substance	5	0
PLUTARCH (Paul).—Plum colour, of fine shape, and very smooth, guard and spike good	10	6
POURPRE NOIR (Paul).—Rich purplish maroon, large smooth flower, close spike	7	6
RED ROVER (Paul).—Dark fiery scarlet, flower large, spike splendid, very effective	7	6
VERITAS (Paul).—White, lemon base, large full flower, splendid spike	10	6
VESTA (Paul).—Pure white, petals thick, edges smooth, guard good	7	6
VITRUVIUS (Paul).—Pink, large flower, of perfect form and good substance	5	0
ZENO (Paul).—Rich plum colour, with silvery edges, flower large, spike good; new and distinct	5	0

The Collection of 12 varieties is offered for 4*l.* 4*s.*; good named sorts, 9*s.* to 18*s.* per dozen; very superior ditto, 24*s.* to 42*s.* per dozen; Bloomed Seedlings in separate colours, 30*s.* to 50*s.* per 100; mixed Seedlings, 10*s.* to 21*s.* per 100.

HOLLYHOCK SEED, 1*s.* to 5*s.* per packet free by post.

Also a PRICED DESCRIPTIVE CATALOGUE free by post.

Nurseries, Cheshunt, Herts.

SUPERB DOUBLE HOLLYHOCKS.

WILLIAM CHATER can now supply fine healthy plants from his Collection, having a large stock ready for immediate planting.

See DESCRIPTIVE CATALOGUE, to be had on application.

Nurseries, Saffron Walden.

FRUIT TREES IN POTS.

JOHN AND CHARLES LEE have now the largest and finest stock of FRUIT TREES IN POTS in a bearing state for FORCING AND ORCHARD HOUSES ever offered. They consist of the following kinds, a CATALOGUE of which may be had on application:—

APRICOTS	FIGS	PEARS
PEACHES	PLUMS	APPLES,
NECTARINES	CHERRIES	Also,

VINES AND STRAWBERRIES.

Nursery and Seed Establishment, Hammersmith, London.

GRAPE VINES FROM EYES.

JOHN AND CHARLES LEE beg to offer an immense stock of strong well-ripened VINES FROM EYES, of the following kinds:—

Alicaut	Hâtif de Jura
Barbarossa	Isabella
Bidwell's Seedling	Marchioness of Hastings
Black Cluster	Muscadine Parsley leaved
Black Constantia	Muscat, August
Black Prince	,, Cannon Hall
Blanche Vigne	,, Hamburgh
Calabrian Raisin	,, Noir Hâtif
Charlsworth Tokay	,, of Alexandria
Chasselas Frocklaboulay	,, of Fontainebleau
Chasselas Musqué	Pitmaston Cluster white
Duzetto	Raisin des Carmes
Esperione	Trebiana
Frontignan, black	Trentham Black
Hamburgh, Dutch	Tripoli
,, golden	West's St. Peter's

Nursery and Seed Establishment, Hammersmith, London.

NORTH AMERICAN FERNS.

R. M. STARK having recently imported a supply of the following interesting FERNS, offers them to the Trade at the prices annexed:—

	Per doz.—*s.*	*d.*
Adiantum pedatum ..	12	0
Asplenium fontanum ..	18	0
,, Michauxi ..	18	0
Botrychium simplex ..	20	0
,, fumariodes	20	0
Dicksonia punctiloba ..	12	0
Lastrea marginata ..	12	0
Onoclea sensibilis ..	30	0
Dodecatheon elegans per 100	25	0
Primula ciliata purpurea, per doz.	4	0

	Per doz.—*s.*	*d.*
Osmunda spectabilis ..	30	0
,, cinnamomea ..	30	0
,, interrupta ..	30	0
Polystichum acrostichoides	24	0
Woodsia hyperborea ..	24	0
,, obtusa	30	0
Ranunculus cortusifolius	9	0
Tritoma Burcheli ..	18	0
,, Rooperi, each ..	3	6
Trillium grandiflorum ..	9	0

A large assortment of British and Exotic species, of which PRICED CATALOGUES may be had on application.

Edinburgh, Edgehill Nursery.—March 19.

TO THE TRADE.

THOS. CRIPPS, NURSERYMAN, &C., Tunbridge Wells, Kent, respectfully offers the following fine strong SPANISH CHESNUT PLANTS, 4 feet to 6 feet in height, 40*s.* per 1000; Blush CHINA ROSES, fine strong plants, 15*s.* per 100; Crimson do., very strong, 25*s.* per 100; fine Standard and Half-standard ROSES, 60*s.* per 100; good do., do., 50*s* per 100; Double Yellow PRIMROSE. 20*s.* per 100 or 400 for 3*l.*; PINUS INSIGNIS and P. RADIATA from Seed, 15 inches to 28 inches, 6*l.* per 100; MANETTI STOCKS, 50*s.* per 1000; do. second size, 40*s.* per 1000; IRISH YEWS, 2 feet to 3 feet, 50*s.* per 100; Hardy HEATHS, a fine collection, 25*s.* per 100; large plants, good do., 20*s.* per 100; LARCH FIR, fine stout plants, 2 to 3 feet; LONICERA SHEPHERDI, or new Scarlet-trumpet HONEYSUCKLE, fine strong plants, 4*s.* per dozen; RHODODENDRON MAXIMUM, fine bushy plants, 18 inches to 2 feet, 60*s.* per 100. Orders from unknown correspondents unaccompanied by a remittance will not be noticed.

FIVE SILVER CUPS

WERE AWARDED TO

A. PAUL AND SON, NURSERYMEN, Cheshunt, Herts, for five Collections of ROSES at the Grand National Rose Show held in St. James's Hall, London, in July. Also FIVE FIRST PRIZES at the Royal Botanic Society's Shows in May and June last. The sorts which won these prizes are now offered at 18*s.* to 24*s.* per dozen for standards, 12*s.* to 18*s.* per dozen for dwarfs. A PRICED DESCRIPTIVE CATALOGUE forwarded on application, post free.

FINE HEALTHY ROSES.—

STANDARDS	..	..	18*s.* per doz.
DWARFS (on the Manetti)		..	12*s.* ,, ,,

As the weather still continues mild and favourable for planting, GEORGE CLARKE begs to state he has still a fine stock of all the leading kinds to offer at the above prices, the selection being left to him. The Plants are all healthy and well rooted, therefore calculated to give the greatest satisfaction. Plants carefully packed for any distance. Carriage of all packages paid to London; and in all orders amounting to 20*s.* plants are added to compensate for distant carriage.

GEORGE CLARKE, The Nursery, Brixton Hill.

ROSES.—TO THE TRADE.

BIRCHAM AND WARD having a surplus stock of the leading kinds of Perpetuals in fine condition, offer them at the following low prices by the 100 or not less than 50.

Standards, per 100	3*l.* to 3*l.* 10*s.*
Dwarfs do	2*l.* 2*s.*
Ditto, on their own roots ..	2*l.* 2*s.*

Carriage paid to London and Peterborough.

HOLLYHOCK SEED of very superior quality by the oz.

Hedenham Rosary, Bungay, Suffolk.—March 19.

NEW ROSE, HYBRID PERPETUAL "LÆLIA."—Colour delicate satin rose, petals very large, perfectly smooth, and well formed; flowers of exquisite shape, large size, and highly scented. JOHN CRANSTON has the pleasure to announce that he will be prepared to supply early in April plants of this superb new Rose. It was exhibited by him in his winning stand of single blooms at the Grand National Rose Show in July last, and was unquestionably the most attractive variety of the Show, and the admiration of all who saw it. Fine healthy plants, 5*s.* each, with the usual discount to the trade.—Nurseries, King's Acre, near Hereford,

THE LARGEST STOCK OF

TEA-SCENTED ROSES in the kingdom.—Upwards of 10,000 DWARF TEA ROSES in pots, fine healthy plants now ready for sending out, consisting of all the best leading kinds, and comprising among others—

750 Mélanie Willermoz	300 Maréchal Bugeaud
500 ,, Oger (yellow)	300 Madame Eravy
500 Vicomtesse de Cazes (do.)	300 Le Pactôle, yellow
500 Souvenir d'un Ami	300 Niphetos, fine white
500 Safrano	300 Goubault
400 Adam	300 Canari (yellow)

400 Miss Gray or Isabella Gray, TRUE, yellow Rose, &c.

Plants presented to compensate for carriage.—Address WM. WOOD & SON, Woodlands Nursery, Maresfield, near Uckfield, Sussex.

THE BEST NEW ROSES FOR 1859.

WM. WOOD AND SON will be prepared to send out strong healthy plants in pots of the following new ROSES, about the end of April, which are offered as the best of the varieties to be sent out this season:—

HYBRID PERPETUAL.

Albert de Stella	Joseph Vernet
Anna de Diesbach	Lord Elgin
Anna Alexieff	Le Mont Vésuve
Armide	Mathilde de Mondeville
Ardoisé de Lyon	Orderic Vital
Altesse impériale	Oriflamme de St. Louis
Beauté de Rœyghem	Princesse Olympie
Bouquet de Marie	Salomon
Comte de Beaufort	Virginal
Comtesse Cecile de Chabrillan	Madame Bruny
Empereur de Maroc	

BOURBON.

Aline Pierron	Edith de Murat
Comtesse de Barbantanne	Molière
Docteur Berthet	Octavie Fontaine

NOISETTE—Cornélie.

TEA-SCENTED.

Homère	Ophelia
Madame Damaizan	Roi des Pays Bas
Madame Joseph Halphen	Socrate

Good Plants will be supplied at 5*s.* each, with the usual discount to the Trade. Catalogues on application.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

NEW ROSES.

JOHN CRANSTON will be prepared to supply early in April strong plants of the under-mentioned superb NEW ROSES at 5*s.* each, with the usual discount to the Trade. Purchasers who may prefer leaving the selection to himself will be supplied upon the following terms:—12 choice varieties for 2*l.* 10*s.*; 24 for 5*l.*; the set of 32 varieties for 6*l.* 6*s.*

Plants of the new varieties presented with each order to compensate for carriage.

TEA-SCENTED.

Enfant de Lyons	Madame Joseph Halphay
Madame Damaisin	Reine des Pays Bas

BOURBON.

Docteur Berthet | Edith de Murat | Octavie Fontaine

HYBRID PERPETUAL.

Altesse Imperial	Joseph Vernet
Ardoisée de Lyon	Le Mont Vésuve
Anna Alexieff	L'Oriflamme de St. Louis
Armide	Mathilde de Mandeville
Ambroise Verschaffelt	Madame Jenry Varin
Anna de Diesbach	Madame Octavie Depeyre
Bouquet de Marie	Mignard
Beauté de Rœyghem	Orderic Vital
Comte de Beaufort	Princesse Olympie
Comtesse Cecile de Chalbrillan	Reine de la Cité
Empereur de Maroc	Solomon
Eugène Alary	Virginal

NOISETTE.—Beauté de Greunemont.

J. CRANSTON, Nurseries, King's Acre, near Hereford.

NEW FUCHSIAS, VERBENAS, &c., OF 1858.

WM. RUMLEY AND SONS beg to offer fine Plants of the following splendid new FUCHSIAS of 1858 at 6*s.* to 9*s.* per dozen, or 8*d.* to 1*s.* each, according to size, viz., Beatrice, British Sailor, Estelle, Excelsior, Guiding Star, Governor-General, General Havelock, Kitty Tyrrell, Masaniello, Princess of Prussia, Prima Donna, Princess Alice, Prince Frederick William of Prussia, Queen of the Sea, Rose of Castille, Sultan, &c. Orders forwarded immediately on receipt of a Post-office Order or reference.

WM. RUMLEY & SONS' new Descriptive SPRING CATALOGUE of new Fuchsias, Verbenas, Geraniums, Cinerarias, Petunias, Dahlias, Pansies, Chrysanthemums, Calceolarias, Bedding Plants, &c., at very reduced prices, may be had on application.

Gilling, near Richmond, Yorkshire.

TO THE SEED TRADE.

WHITE BELGIAN CARROT.
INTERMEDIATE or JAMES'S CARROT.
BROCCOLI.

Ellitson's Mammoth	Tamworth
Snow's Spring White	Giant Late White, very
Adams's Early White	fine heads.

Fine and pure stocks of the above. Prices to the trade on application.—BASS & BROWN, Sudbury, Suffolk.

FARM SEEDS, GROWTH OF 1858.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY (LIMITED) are prepared to execute orders for all kinds of FARM SEEDS, selected from stocks direct from the growers.

They respectfully invite the attention of Agriculturists to their FARM SEED LIST for 1859, which will be sent free on application to the Secretary.

The two following new sorts of SWEDES can be highly recommended:—

	lb.	qt.	gall.
THE PLYMOUTH IMPROVED PURPLE TOP SWEDE	1s. 0d.	1s. 6d.	6s. 0d.
GRANT'S PINE-APPLE SWEDE ..	1 0	1 6	6 0

The following extract taken from the Leading Article in the *Irish Farmers' Gazette* of October 16, 1858, will tend to show the very high character of the two varieties of Swedes here offered:—"We observed several experimental plots of Swedes, &c., amongst which we noticed a new purple-topped variety called the 'Plymouth Swede,' and also a very beautiful green-topped Turnip (Grant's Pine-Apple Swede), the name of which we did not learn. These were sown on June 16, and their shapes were the finest we have seen for a long time. The varieties were new to us, but certainly the specimens grown at Rockview left a very favourable impression on our mind, regarding both their beauty and probable value."

Price to the Trade on application.
Address—PLYMOUTH SEED COMPANY, Plymouth.

FARM SEEDS.

THOMAS KENNEDY AND CO., Dumfries, N.B., having completed their Stock of FARM SEEDS, are now prepared to execute orders for the same.

The special attention of Agriculturists is directed to their MIXTURES for Laying down Land to PERMANENT GRASS, which they are glad to say continue to give every satisfaction. Interesting notices of the leading varieties of Grasses comprising these Mixtures will be found in their PRICED LIST OF FARM SEEDS FOR 1859 (now ready), which will be sent free on application to any address.

The following named TURNIP SEEDS, the produce of carefully selected stocks, are offered at the prices quoted:—

SWEDES, the leading varieties .. .. .. 8*d.* per lb.
YELLOWS, the leading varieties .. .. 8*d.* „
WHITES, the leading varieties .. .. .. 8*d.* „

Seeds delivered Free of Carriage to the chief Railway Stations in England and Scotland, and to the principal Steam Port in Ireland.

MEADOW AND PASTURE GRASS SEED.—The great difficulty experienced by many Gentlemen and Farmers when about to lay down Land, is the selection of the proper Seeds, having no reliable practical guide as to quantity or kind. JAMES TYNAN is enabled to offer the benefit of such a guide. Speke Estate having become celebrated for its excellent practical Farming and high cultivation, has been for many years under the able management of Mr. M'Farlane. In a conversation the Advertiser had with that gentleman a few weeks ago he said:—"The great fertility of this estate I believe to be owing in a great measure to the attention I have paid to the selection of the Grass Seeds, and which I do not think I can improve. Were I to state the yield of the crops of Wheat and Barley I have obtained after these Grasses last year it would be deemed fabulous by many."

JAMES TYNAN having received orders to supply Seeds to some of the Farms on this estate, offers to send the same to gentlemen upon their giving the number of statute acres to be sown.

Selected GRASS SEEDS for LAWNS.
JAMES TYNAN, Seed Warehouse, 63, Gt. George Street, Liverpool

SEEDS FOR THE FARM.

NEW OVAL-SHAPED YELLOW MANGEL, introduced by us two years ago, has been thoroughly tested and is now recommended with perfect confidence. It is of a remarkably vigorous growth, with finely shaped roots, intermediate in length between the Long and the Globe, and has produced from 5 to 10 tons more per acre than any other variety (see *Gardeners' Chronicle* of Jan. 8):—

SWEDE TURNIP.—All the approved sorts.
YELLOW Do. do. do.
WHITE Do. do. do.

In no description of crop raised on the Farm is a good or a bad one so dependent on the character of the Seed as in that of the Turnip, and from its great liability to degenerate, it requires the most scrupulous care and vigilance to produce Stocks that are every way worthy of confidence. To attain such, we have for several years past been using every known means to keep up or improve the shape, size, and texture of the various kinds; and we believe that what are now offered will give the most perfect satisfaction. All the principal varieties are our own growth, raised from large and fully developed Roots or Bulbs, and in the hope of giving a more vigorous growth to the Stock, the strongest clay soil is always selected for a considerable portion of the Swede and Yellows. This mode of raising Turnip Seed materially increases the expense, but it is a much more satisfactory system than the one usually adopted, viz., sowing random stocks late in the season, after other crops, and taking the seed from mere plants, which in many cases are not even subjected to the process of thinning. Moreover, we guarantee our Seeds free from any of the adulterations so frequently practised to increase profits or cheapen prices, so that a strong healthy "braird" is certain.

PERENNIAL RYE-GRASS.—Finest Ayrshire
Do. do. do. Pacey's, 26lbs. to 32lbs. per bushel
ITALIAN do. Imported
Do. do. Home-grown
NATURAL GRASSES.—All the best varieties

The Stocks of Perennial Rye-grass Seed are the most select growths the country produces, and being all clean and heavy the economy of using such in preference to foul chaffy seed, however cheap, is at once apparent. Our imported Italian is from the usual source, and has always given satisfaction; while the home-grown is the direct produce of imported seed, cultivated under the most favourable circumstances, and more than ordinary pains having been used in dressing the seed; the samples of both are unusually clean and fine. In selecting the Natural Grasses care is taken to have them true to name, fully ripened, and in all respects good clean samples.

ALSIKE CLOVER, and other varieties.
LARGE BROAD-LEAVED SCOTCH TARES.

With every other description of Seed usually required for the farm, PRICED LISTS of which may be had post free on application.

W. DRUMMOND & SONS, Seedsmen, Stirling, N.B.; also at 58, Dawson Street, Dublin.

*** STIRLING is most favourably placed in point of railway accommodation, there being direct and constant traffic to all the principal stations in England and Scotland, and by steamers (*viâ* Glasgow), almost daily to the chief ports in Ireland, thereby insuring a speedy delivery of goods, all of which except grain and Tares, we forward carriage paid.

HARDY HERBACEOUS PLANTS.—

	s.	d.
100 select and showy varieties	30	0
100 ditto ditto, including new	50	0
Selections, per dozen, 4s., 6s., 9s., 12s., and	18	0
50 fine varieties for rockwork	20	0
or per dozen, 5s. to	9	0
Aubrietia Mooreana, fine and early for rockwork, much larger and deeper purple than purpurea, per dozen ..	9	0
Chelone barbata coccinea (or mexicana splendens) very bright scarlet, per dozen	7	0
Delphinium formosum, large roots, per dozen	7	0
Dianthus albo nigrescens, fine dark, each, 2s. 6d.; per doz.	24	0
„ patens, very fine double crimson, per dozen ..	9	0
Fragaria variegata, silver-blotched Strawberry plant, handsome for banks or rocks, per dozen	12	0
Myosotis azoricus, ditto	5	0
Œnothera grandiflora, fine large white, ditto	6	0
„ taraxacifolia, large trailing white, ditto ..	6	0
„ macrocarpa, large yellow	6	0
Pentstemons, 12 varieties, best selection	9	0
„ 12 fine varieties	6	0
Potentilla King of Crimsons, the finest grown of dwarf habit, flowers 2 to 2½ inches across, each	2	0
„ Negress, rich dark velvet, per dozen	9	0
„ Shylock, rich dark vivid maroon, do.	9	0
„ Sudbury Gem, rich orange yellow, deeply shaded and spotted bright red	12	0
„ fine selections, per dozen, 6s. and	9	0
Saxifraga, 12 fine varieties for rock for	7	6
Sedum, 10 „ „	5	0
Stipa pinnata (Feather Grass), per dozen	5	0
Trifolium pentaphyllum, dark variegated foliage, handsome for banks or rock	5	0
Vinca majorifolia elegantissima, silver-margined foliage Periwinkle	12	0
Antirrhinums, fine varieties and well marked, per dozen, 6s. and	9	0
Phlox, 50 fine and very superb continental and other varieties	25	0
„ 25 varieties, newest selection	20	0
„ selections, per dozen, 6s., 9s., and	12	0
Helianthemum, or Dwarf Rock Cistus, 24 beautiful named varieties for	15	0

CONIFERÆ.
(These are chiefly in pots, and are all in fine condition.)

50 choice hardy sorts for	100	0
25 „ „ „	50	0

CATALOGUES supplied free on application.

Goods (20s. and upwards) CARRIAGE FREE to all the Railway Stations in London, and all Stations on the Norwich line, *viâ* Colchester; and Plants gratis for extra carriage. Post-office Orders payable to BASS & BROWN, or to STEPHEN BROWN. Remittances required from unknown correspondents.
BASS & BROWN, Seedsmen and Nurserymen, Sudbury, Suffolk.

MESSRS. WATERER AND GODFREY respectfully invite the attention of parties engaged in planting to the following list of very desirable plants, all of which may be seen growing in the open quarters of their Nursery, and are in the finest possible condition for transplanting:—

Araucaria imbricata, 9 to 12 inches, 5*l.* per 100; 40*l.* per 1000
„ „ 1½, 2, 3, 4, 5, 6, and 8 feet high. Our stock of this plant exceeds 100,000
Wellingtonia gigantea, stout handsome plants from seed, 84*s.* per dozen; 25*l.* per 100. These are all in the open ground, and are believed to be the finest lot of seedling plants in the Trade.
Cedrus Deodara, 1½ to 2 feet, 18*s.* per dozen; 6*l.* per 100
Do. 3, 4, 5, 6, 7, 8, 10 and 12, and 15 feet. Our stock of Deodars at the present moment occupies several acres of land; they have been constantly removed, and with fair usage not one in a thousand would fail. We offer them on very advantageous terms either in large or small quantities
Cedrus atlantica, 4, 5, 6, and 7 feet
Cupressus macrocarpa, magnificent plants, 7, 8, and 10 feet high
„ Lawsoniana, stout handsome plants from seed, 18 inches, by the dozen or 100
Abies nobilis, from imported seed, 6*l.* 6*s.* per doz.; 40*l.* per 100
„ do. 1, 2, and 3 feet high
„ Nordmanniana, a large number of beautiful plants, all from seed, 2, 3, 4, 5, and 6 feet high
„ Pinsapo, do. do.
[We believe we are justified in stating our stock of the three last-mentioned Firs offers a selection to be met with in no other Nursery.]
„ Douglasi, 6, 7, 10, and 12 feet
„ orientalis, 3, 4, 5, and 6 feet
Pinus Benthamiana, stout seedling plants, about 1 foot, 18*s.* per dozen; 5*l.* per 100; 40*l.* per 1000. Unquestionably the finest of all the long-leaved Californian kinds, and well known to be perfectly hardy. It is the most valuable of all for timber.
Juniper, Chinese, 2, 3, 5, 7, 8, and 10 feet high
Irish Upright, 3, 4, 5, 6, 7, and 8 feet The Irish and Chinese Junipers are grown by us to a very large extent
Thuja aurea.—This plant originated in our Nursery, and our stock of it offers a choice of many hundred specimens from 1½, 2, 3, 4, and 5 feet high, and measuring from 2 to 10 and 15 feet in circumference. Nothing can well exceed the beauty of these plants, and certainly are to be met with in no other Nursery
Thuja gigantea, stout seedling plants, 1½ to 2 feet high
„ Wareana, 3, 4, 5, 6, 7, and 8 feet
Thujopsis borealis, handsome plants, in quantity, 1½ & 2 ft. high
Taxus, Yew, Common English.—A large quantity, and of all sizes up to 5, 6, and 7 feet
„ Irish Yew, 4, 5, 6, 7, and 10 feet. Many thousands of these beautifully formed plants grown to one stem
„ Golden Yews in large quantities and of all sizes up to 6, 7, and 8 feet
We also have them worked on the Common and Irish Yew as Standards, with heads from 12 to 15 years' growth
Holly, Variegated, Scottica, laurifolia, &c. We hold probably the largest stock of good sized variegated Hollies in the kingdom, especially of the better kinds of silver and gold striped
Rhododendron ponticum, for cover, stout plants, 1½ to 2½ feet, by the 1000. All the well-known proved hardy late blooming kinds, in any quantity, at from 30*s.*, 42*s.*, to 84*s.* per dozen
Standard Rhododendrons of all kinds
Azaleas, stout bushy plants, covered with bloom buds, from 18 inches to 2 feet high, and of all colours, 9*s.*, 12*s.*, 18*s.*, and 24*s.* per dozen; 50*s.*, 75*s.*, to 100*s.* per 100
Hardy Heaths, a first-rate collection, at 35*s.* per 100; 15*l.* p. 1000
Roses, fine Standards, of the most popular kinds, at very low prices.

As well as the above, we are very large holders of the ordinary kinds of Nursery Stock, which may be judged from the fact that the Nursery far exceeds 100 acres in extent of all such things as Laurels, Box, Lilacs, Limes, Purple Beech, and the commoner descriptions of Evergreens and Deciduous Flowering Shrubs. An enormous stock of Fruit and Forest Trees are also grown extensively.

Goods are delivered free to London, Reading, or Reigate. The Nursery is reached in an hour from Waterloo, and conveyances are always to be had at the Woking Station.

CATALOGUES, Priced and Descriptive, will be sent on application, enclosing one postage stamp, to
WATERER AND GODFREY, Knap Hill, Woking, Surrey.

HARDY CONIFERÆ FOR SPRING PLANTING.

JHENCHMAN, Edmouton, London, begs to offer the following CONIFERS, all Seedling Plants, in pots, and in the most robust health:—

Wellingtonia gigantea, 1 foot, in 32-pots, very fine, 10*s.* 6*d.* each; 7 to 8 inches, in 48-pots, 3*l.* per doz.; stout, 2-year seedlings, 30*s.* per doz.
Pinus Don Pedri, 21*s.* each.
„ Buonapartia or Veitchi, 10*s.* 6*d.* each.
„ insignis, 15 inches, 15*s.* per doz.
„ macrocarpa or Coulteri, 6 inches, fine, 18*s.* per doz.
„ tuberculata, stout 2-year seedlings, 18*s.* per doz.
„ Benthamiana, 2-year do. 9*s.* per doz.
Cupressus macrocarpa, 18 inches, fine, 6*s.* per doz.
„ MacNabbiana, 2 years, 9*s.* per doz.
Taxodium sempervirens, 15 inches, fine, 24*s.* per doz.

TO NOBLEMEN, GENTLEMEN, PUBLIC COMPANIES, AND OTHERS ENGAGED IN PLANTING.

JOHN WATERER having a very great quantity of the undernamed desirable PLANTS in excellent condition (from frequent removal) for transplanting, offers them at a very reduced scale of charges.

*** Intending Planters having the object of immediate effect in view are respectfully informed that in selecting specimens for such purposes they would find a visit of inspection amply repaid, it being our determination to treat on the most liberal terms.

The Nursery is easily reached, being a short distance from Sunningdale Station, South-Western Railway (Reading Branch), where excellent conveyances meet all trains.

Wellingtonia gigantea, handsome plants, about 1 foot, 15*l.* per 100; 1 to 1½ foot, 5*s.* each or 20*l.* per 100; 1½ to 2 feet, 10*s.* 6*d.* to 21*s.* each; larger, up to 5 and 7 feet
Araucaria imbricata, 2 to 3 feet, 10*s.* 6*d.* each; 3 to 4 feet, 21*s.* to 31*s.* 6*d.* each; large beautiful specimens, up to 9 feet
Thuja aurea, good plants, 10*l.* per 100; about 15 inches, very globular handsome plants, 42*s.* per dozen, or 15*l.* per 100; 1½ to 2 feet, 5*s.* to 7*s.* 6*d.* each, or 20*l.* per 100; larger, 2 to 3, and 4 to 5 feet
Thuja gigantea, 1 to 1½ foot, 5*s.* to 7*s.* 6*d.* each; 1½ to 2 feet, 10*s.* 6*d.* each; 2 to 3 feet, 21*s.* each; large handsome plants, 3 to 4, and 5 to 8 feet
Thuja chilensis, 2 to 3 feet, 3*s.* 6*d.* each; 3 to 4 and 5 feet, 5*s.* to 7*s.* 6*d.* each
Cedrus Deodara, 3 to 4 feet, 5*s.* each, or 20*l.* per 100; 4 to 5 to 6 feet, 7*s.* 6*d.* to 10*s.* 6*d.* each; 6 to 8, 10, and 12 to 18 feet
Cedrus Libani, 4 to 5 feet, 5*s.* to 7*s.* 6*d.* each; 5 to 6, 7, and 8 to 10 feet
Cupressus macrocarpa, 2 to 3 feet, 30*s.* per dozen; 3 to 4 feet, 3*s.* 6*d.* each; 4 to 5 feet, 5*s.* each
Cryptomeria japonica, 4 to 6 feet, 5*s.*; 20*l.* per 100; 6 to 8, 10 to 15 feet
Cryptomeria japonica viridis, 3 to 4 feet, 5*s.* each; 4 to 6 feet, 7*s.* 6*d.* each
Juniperus hibernica, 2 to 3 feet, 24*s.* per dozen, or 7*l.* 10*s.* per 100; 3 to 4 feet, 42*s.* per dozen, or 12*l.* 10*s.* per 100; 4 to 6, 8 to 10 feet
Juniperus chinensis, 3 to 4 feet, 5*s.* each; 4 to 5 feet, 7*s.* 6*d.* each; larger, 5 to 7 and 8 feet
Juniperus virginiana (Red Cedar), 2 to 3 feet, 5*l.* per 100
Thujopsis borealis, about 1½ foot, 42*s.* per dozen, or 15*l.* per 100; larger, 2 to 3 feet
Cephalotaxus Fortuni, 1 to 2 feet, 5*s.* to 7*s.* 6*d.* each; larger, 2 to 3, and 4 feet
Taxus hibernica, 2 to 3 feet, 24*s.* per dozen, or 7*l.* 10*s.* per 100; 3 to 4 feet, 3*s.* 6*d.* each; 4 to 5 feet, 5*s.*; larger, 5 to 10 feet, all trained to a single stem
FitzRoya patagonica, 3 to 4 ft., 42*s.* per doz.; 4 to 5 ft., 5*s.* each
Pinus Beardsleyana, 1 to 1½ foot, 5*s.* each; 2 to 3 feet
„ Benthamiana, 3 to 4 feet, 7*s.* 6*d.* each
„ canadensis, 4 to 6 feet, 3*s.* 6*d.* each
„ Cembra, 2 to 3 feet, 3*s.* 6*d.* each; 3 to 4 feet, 5*s.* each; large, 4 to 6 and 8 feet
„ Craigiana (new, 1 to 1½ foot, 3*s.* 6*d.* each; 1½ to 2 feet, 5*s.*
„ Douglasi, 1 to 1½ foot, 30*s.* per dozen, or 10*l.* per 100; 2 to 3 feet, 42*s.* per dozen, or 15*l.* per 100; 3 to 5 feet, 5*s.* each; 5 to 6, and 8 to 15 feet
„ excelsa, 1½ to 2 feet, 12*s.* per dozen, or 50*s.* per 100
„ insignis, 1½ to 2feet, 10*l.* per 100; 2 to 3 feet, 3*s.* 6*d.*, or 15*l.* per 100; 3 to 4 feet, 5*s.*, or 20*l.* per 100; 4 to 6 feet, very fine
„ Jefferyana, 1 to 1½ foot, 5*s.* each; 1½ to 2 feet, 7*s.* 6*d.* (A new species allied to Benthamiana but more distinct, and reported to be the most handsome and valuable of the long-leaved Californian Conifers.)
„ Lambertiana, 2 to 3 feet, 7*s.* 6*d.* each; 3*l.* 10*s.* per dozen; large, 3 to 4 and 5 to 12 feet
„ Nordmanniana, small plants, 15*l.* per 100; about 1 foot, 10*s.* 6*d.* each; 1 to 1½ ft, 21*s.* each; 1½ to 2 ft., 42*s.* each; 2 to 3 feet, 63*s.* to84*s.* each; 3 to 4 and 5 feet, perfect specimens
„ Pinsapo, 1 to 1½ foot, 5*s.* each; 1½ to 2 feet, 7*s.* 6*d.* each; large, 2 to 4, 6 to 8 feet
„ ponderosa, 1½ to 2 feet, 5*s.* each
„ Sabiniana, 3 to 4 feet, 5*s.* each
„ taxifolia (Jeffery), 1½ to 2 feet, 10*s.* each
(With the single exception of Pinus Lambertiana, the whole of the above are Seedlings.)
ROSES.—Select Perpetual and Bourbon, do. varieties, Standards, 4*l.* 4*s.* per 100; do. Dwarfs, 2*l.* 10*s.* per 100
RHODODENDRONS, of all the superior kinds of scarlet, crimson, rose, white, &c., such as are annually displayed by us at the Great Exhibition of American Plants at the Royal Botanic Gardens, Regent's Park, London, in good plants, 42*s.* to 63*s.* per dozen
„ Fine varieties, for extensive planting, 24*s.* to 30*s.* per doz.
„ Catawbiense and mixed Hybrids, good plants, 1½ to 2 feet, 7*l.* 10*s.* per 100
„ Standards of the superior crimson varieties, good plants, 42*s.* to 63*s.*, to 105*s.* each
„ ponticum (the only evergreen that entirely escapes the ravages of hares and rabbits), good plants, fit for immediate planting into woods for cover, 7*l.* 10*s.* per 1000; extra strong, 21*s.* to 25*s.* and 30*s.* per 100
„ Dwarf-growing varieties, 4*l.* 4*s.* to 5*l.* per 100
AZALEAS, good common kinds, consisting of scarlet, pink yellow, &c., and for extensive planting, in good plants, 50*s.* per 100
„ superior, 12*s.*, 18*s.*, to 24*s.* per doz., or 3*l.* to 7*l.* 10*s.* p. 100
„ Standard, in fine sorts, 42*s.* each
KALMIA LATIFOLIA, 1 to 1½ foot, covered with bloom buds, 5*l.* per 100; larger, 18*s.* to 30*s.* per dozen
„ MYRTIFOLIA, fine plants, 30*s.* to 60*s.* per dozen (a superior kind to latifolia).
HARDY HEATHS.—A collection of 25 distinct kinds, 30*s.* per 100, or 12*l.* 10*s.* per 1000
Transplanted FOREST TREES, of which about 100,000 of each are in hand. We shall have great pleasure in forwarding samples on application.

Ash, 2 to 3 and 4 feet	Beech, 2 to 3 feet
Hazel, 2 to 3, and 4 to 5 feet	Birch, 2 to 3 and 4 feet
Chesnut, Spanish, 2 to 3, and 4 to 6 feet	Larch, 2 to 3 and 4 feet
	Scotch, 1½ to 2 feet

A large quantity of bushy COMMON LAURELS, 2 to 3, & 4 ft.
Also the commoner kinds of Evergreens, such as HOLLIES, of kinds: BAYS, ARBUTUS, PHILLYREA, AUCUBA, PORTUGAL LAURELS, &c.
CATALOGUES containing descriptions of everything relating to Rhododendrons and Conifers forwarded on application to
JOHN WATERER, American Nursery, Bagshot, Surrey.

HENDON PARK NURSERIES, HENDON, N.W.

SEED LIST, 1859.—A choice selection of the newest and best varieties of PEAS, BEANS, POTATOES, and all Kitchen Garden produce. The best Seeds for the Flower Garden. Forwarded on application.—Edward Shenton.

HENDON PARK NURSERIES, HENDON, N.W.

DESCRIPTIVE CATALOGUE OF NEW DAHLIAS, HOLLYHOCKS, PELARGONIUMS, BEDDING AND BORDER PLANTS, and the leading New Flowers of the season 1859. Forwarded on application.
Edward Shenton.

WILD'S UNRIVALLED PRIMULAS.
Upwards of 100 Testimonials received
Mr. Wm. Lipson, *Gardener, Edgbaston, near Birmingham.*
"The Primula Seed you sent I am happy to say proved first-rate: many of the blooms are 3 inches diameter, and quite semidouble."
Post free to all parts of the world on receipt of 2s. 6d. stamps.
Thomas Wild, The Primulary, Ipswich.

DOUBLE ITALIAN TUBEROSE ROOTS, 4s. per dozen.—The annual importation of the above named beautiful and fragrant Flower has just been received, and large and well selected Bulbs may be obtained, without dis appointment, at A. Corbett's Foreign Warehouse, 18, Pall Mall.
N.B. Printed regulations for treatment sent; also, just arrived, very moist and open Parmesan Cheeses

SUPERB DOUBLE BALSAMS.

F. AND A. SMITH are now sending out seed of their superb BALSAMS, which are unrivalled for size, form, brilliancy of colour, doubleness of flower, and habit of plant.

In collections of nine separate colours	2s.	6d.
,, ,, mixed ,, ...	2	0
,, ,, ,, ,, half quantity	1	0

The above are *genuine only* in our sealed packets, and may be had of most respectable Nurserymen and Seedmen in the United Kingdom.—Dulwich, Surrey, S.

PLANTS IN FLOWER.

F. AND A. SMITH have now in bloom Acacia, Azalea indica, Cinerarias (fine), Cytisus, Erica ventricosa coccinea minor: E. Cavendishi, E. hybrida, E. propendens, E. perspicua nana, E. Syndriana, Geraniums, Fairy Roses, Primula sinensis fimbriata, &c.
The above are healthy, strong, and well grown plants, prepared for sending away. Prices on application.
Dulwich, Surrey, S.

AZALEA INDICA.

J. IVERY AND SON beg respectfully to invite growers of the above named to an inspection of their unrivalled Stock of Young Specimens of all the newest and best varieties, many of which have been exhibited at the Metropolitan Exhibitions. They are clean and healthy, well set with bloom, and moderate in price. Catalogues forwarded post free upon application.—Dorking Nursery, March 19.

AZALEA INDICA.—	s.	d.
25 choice varieties, very strong, and well established for fine bloom..	45	0
12 choice ditto ditto	24	0
25 choice ditto ditto, including new varieties	65	0
12 choice ditto ditto ditto	36	0
Fine flowering plants, selections, per doz., 18s., 24s., and	30	0

Carriage free for orders of 20s. and upwards to all Stations in London, &c. See CATALOGUE.
Bass & Brown, Seedsmen and Nurserymen, Sudbury, Suffolk.

HENRY MAY begs to offer the following, in fine stout plants, as under:—

	s.	d.
Calceolaria aurea floribunda, 2s. 6d. per doz.; per 100 ..	16	0
,, Phillipsii, deep crimson. 2s. 6d. per doz ; per 100	16	0
,, Stewartii, bright yellow, 2s. 6d. per doz.; per 100	16	0
,, Prince of Orange. 2s. 6d. per doz.; per 100 ..	16	0
,, Yellow do., fine yellow. 2s. 6d. per doz.; per 100	16	0
12 fine sorts of Fuchsias of 1858, per doz..	6	0
12 ,, ,, 1857, ,, ...	4	0
12 ,, Verbenas, of 1858 ,, ...	6	0
12 ,, ,, 1857 ,, ...	4	0
12 fine named Phloxes, 6s.; 50 fine named Phloxes ..	20	0
12 fine Scarlet Geraniums, 2s. 6d.; 50 do. do.	8	0
12 double Purple Senecio, 2s. 6d.; 50 do.	8	0
12 Salvia patens, 6s.; 12 Salvia fulgens	3	0
12 fine sorts Antirrhinums, 3s.; 50 do.	10	0
12 fine named Hollyhocks	6	0

Hollyhock Seed from finest named sorts, 1s. per packet.
Antirrhinum do. do. do. 1s. per packet.
Address Henry May, the Hope Nurseries, near Bedale, Yorksh.

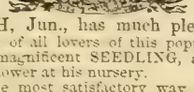
CRIMSON PERFECTION RHUBARB.

ROBERT SALT begs leave to inform the gentry, Nurserymen, Gardeners, &c., that he has now ready for sale a quantity of this valuable variety of RHUBARB, and considers that the great notoriety it has attained from those who have honoured him with their orders is a sufficient guarantee as to its qualities. See *Gardeners' Chronicle*, June 11, 1853:—"Very good, and a most beautiful crimson; compared with others, it is remarkable for the small amount of acidity it contains."—*Ed.* Price 17s.; old roots, 9s per dozen: 2 year-old do,. 15s. per dozen; 3 year-old, 24s. per doz.
Orders addressed to Robert Salt, Longton, Staffordshire; Messrs. Hurst & M'Mullen, 6, Leadenhall Street, London; Messrs. Burgess & Kent, Penkhull, Staffordshire: Messrs. Francis & Arthur Dickson, Eastgate Street, Chester; Messrs. James Dickson & Co., Chester; Mr. Charles Turner, Royal Nursery, Slough, will have immediate attention. A remittance from unknown correspondents. The usual discount to the Trade.—Longton, March 19.

CARNATIONS AND PICOTEES.

YOUELL AND CO.'S COLLECTION of the above deservedly favourites is probably the most extensive in the Trade, and having for a series of years paid special attention to their cultivation, introducing the best of the newest varieties, they are enabled to offer them at the following prices of fine, strong, well rooted plants.
CARNATIONS, finest first class show varieties by name, 18s. and 24s. per dozen pairs.
PICOTEES, finest first class show varieties by name, 18s. and 24s. per dozen pairs.
Ditto, on yellow grounds, 20s. and 30s. per dozen pairs.
Finest mixed BORDER CARNATIONS & PICOTEES, 9s. ditto
True old CLOVE CARNATION, 12s. per dozen pairs.
Scarlet ditto ditto, 18s. ditto
TREE CARNATIONS, flowering summer and winter.—We have now to offer a very choice collection of this beautiful class at 12s. per dozen. [pairs.
PINKS.—The finest first class show Pinks, by name, 9s. per doz. Fine mixed border PINKS, 6s. per dozen pairs.
HOLLYHOCKS.—Our extensive stock of these, comprising the finest named varieties, is this season very strong and healthy and well established in pots, price of which is 9s. to 12s. per dozen.
NEW PHLOXES.—An extensive and select collection of the above beautiful showy tribe of Herbaceous Plants, comprising the fine and newly introduced varieties from the Continent. May be obtained at 10s. per dozen, package included.
☞ All orders of 2l. and upwards are delivered Carriage Free to London, Manchester, Liverpool, Peterborough, Hull, and Newcastle, as well as to any Railway Station within 150 miles of the Nursery.
Youell & Co., Royal Nursery, Great Yarmouth, Norfolk.

SPLENDID NEW SEEDLING CAMELLIA "COUNTESS OF DERBY."



JAS. VEITCH, Jun., has much pleasure in calling the attention of all lovers of this popular flower to the above new and magnificent SEEDLING, a fine specimen of which is now in flower at his nursery.
Feeling that the most satisfactory way of bringing a new plant under public notice is to afford all persons an opportunity of inspecting and personally judging of its merits, J. V., Jun., will be happy to show it to all who may favour him with a visit.—Royal Exotic Nurseries, Chelsea, March 19.



ROYAL SOUTH HANTS SEED ESTABLISHMENT.

Under the Patronage of H.R.H. the Prince Consort, The Agricultural, Horticultural Society of India, and the leading Agriculturists of the United Kingdom.

PAGE AND TOOGOOD can now supply GARDEN AND FARM SEEDS, carriage free; SEED POTATOES, &c. The numerous Prizes gained by their Stocks are convincing proofs of superior quality, and their prices compete with any house in the kingdom. WHOLESALE and RETAIL PRICED CATALOGUES upon application.
Agents for Odams's Blood Manure, Superphosphate, &c. Seeds Packed for Exportation to all Parts of the world,
37 and 38, Oxford Street (facing the Railway Terminus); and 58, Above Bar, Southampton.

CALLICARPA PURPUREA.

JOHN STANDISH, the exhibitor of the above (at St. James's Hall), can supply a few good plants at 7s. 6d. each. The following passage from Dr. Lindley's leading article in the *Gardeners' Chronicle* for Nov. 20 will give an idea of its beauty:—"Callicarpa purpurea, quite insignificant when in flower, was beautiful in its winter dress of innumerable rich purple berries, about the size of swan shot." It is easily cultivated, and does well in a cold greenhouse or conservatory planted out, where it will produce thousands of bright purple berries resembling glass beads, and remaining on nearly the whole winter.—Bagshot, March 19.

J. GRIFFIN begs to offer the following choice VEGETABLE and FLOWER SEEDS.
Griffin's ALMA LETTUCE, the most useful variety in cultivation, very hardy, and valuable for standing the drought of summer. 1s. 6d. per packet.
Griffin's fine RIDGE CUCUMBER, very hardy and productive, 1s. per packet.
Ivery's NONSUCH RED CELERY, 1s. per packet.
BATH DWARF DARK RED BEET, fine colour, 1s. p. pckt.
DELPHINIUM FORMOSUM, 1s. per packet.
LINUM GRANDIFLORUM RUBRUM (true), 1s. p. packet.
LOBELIA ERINUS SPECIOSA, the best and most effective variety yet raised, forming a close compact style of growth; reproduced true from seed; fine for bedding, 1s. 6d. per packet.
Truffaut's FRENCH ASTER, imported in 20 varieties, separate, 5s. per packet.
Truffaut's FRENCH ASTER, imported in 20 varieties, mixed, 2s. 6d. per packet.
New CHRYSANTHEMUM-FLOWERED ASTER, 1s. p. pkt.
Choice CALCEOLARIA, from the finest varieties, 2s. 6d. per packet.
Choice CINERARIA, from the finest varieties, 2s. 6d. p. pckt.
Weston Road, and 2, New Bond Street, Bath.

HEDGE PLANTS.—
TREE BOX, 2, 3, 4, 5 and 6 feet.
GREEN HOLLIES, 1, 2, 3 and 4 feet.
EVERGREEN PRIVET, 2 and 3 feet.
TRANSPLANTED QUICK, 2 to 3 feet.
COMMON YEW, 2, 3, 4, and 5 feet.
Also a few thousand fine transplanted LARCH, 3 to 4 feet. Samples and prices on application.
Thomas Jackson & Son, Nurseries, Kingston, S.W.

ROY AND BELCHER, Ferry Hill Nurseries, Aberdeen, have the undermentioned Seedling and Transplanted FOREST TREES to offer, hardy and well grown:—
LARCH FIR: 2-year seedlings, 2s. 6d. per 1000; or 10l. per 100,000.
,, transplanted, 2 to 2½ feet, 12s. 6d. per 1000.
SCOTCH FIR: 2-year seedlings, 1s. 4d. per 1000; or 5l. per 100,000.
,, ,, 1-year transplanted, fine roots, 2s. 3d. per 1000; or 10l. per 100,000.
,, ,, 12 to 20 inches, 5s. per 1000; or 4l. for 20,000.
SPRUCE FIR: 2-year seedlings, 1s. 3d. per 1000.
SPANISH CHESNUT: 1-year seedling, fine, 6s. 6d. per 1000.

1-year SEEDLING LARCH, fine

2-year Seedling Larch, fine	1-year Seedling Common Oak, fine
2-year do. Scotch Fir, native	2-year do. Spruce, Norway, fine
2-year ditto Turkey ditto	3-year ditto ditto
2-year ditto Red Cedar	2-year ditto White American ditto
2-year ditto English Yew	1-year ditto Red ditto
1-year transplanted Larch, fine	1-year ditto Hemlock Spruce
2-year ditto	1-year ditto Evergreen Oak
1-year do. Scotch Fir, native, do.	2-year ditto

The Subscribers being extensive holders of the above solicit the particular attention of the Trade. Prices, which are most moderate, may be had on application.
David Reid & Son, Nurserymen and Seedsmen, Edinburgh.

NEW PLANTS introduced by the establishment of Mr. Linden, in the Royal Zoological and Horticultural Garden, Brussels, and ready for sale on the 1st May next. Free to London.

Arachnothrix rosea ..	12s. 6d.	Begonia argentea	21s. 0d.
Begonia amabilis ..	21 0	,, Victoria	21 0

Orders for the two last Begonias have to be directed to Mr. J. Veitch.

Beloperone violacea ..	5s. 0d.	Monochætum sericeum	5s. 0d.
Centradenia grandifolia	12 0	Musa glauca	5 0
Cuphea cœmoides ..	5 0	Mutisia Clematis ..	21 0
Lindenia rivalis ..	5 0	Philodendron fenestratum ..	21 0
Maranta Porteana ..	21 0		

One plant over if three are ordered.

DECORATIVE PLANTS.

Creseentia regalis.. ..	42s.	Oreopanax peltatum ..	42s
Curatella imperialis ..	63	Rhopala australis.. ..	42
Gomphia Theophrasta ..	42	,, glaucophylla ..	42
Jacquinia smaragdina ..	21		

And above 60 quite new FERNS of the finest genera.
Mr. Linden's DESCRIPTIVE CATALOGUE, just published, contains also extensive lists of Orchids, Ferns, Bromeliads, Tropical Fruit Trees, Medical and useful Plants, fine foliaged and variegated Plants, Palms, rare Stove and Greenhouse Plants, &c., and may be had on application at his agent's office in London,
Mr. R. Silberrad, 5, Harp Lane, Great Tower Street.

THE GREAT VINE AT HAMPTON COURT.

THE SUBSCRIBERS being the holders of the Royal Kitchen Gardens, Hampton Court, are enabled to offer genuine the famous and truly excellent HAMPTON COURT BLACK HAMBURGH GRAPE.
Strong well-ripened plants in 9-inch pots, 42s. and 60s. per doz.
,, ,, fruiting plants in 12-inch pots, 10s. 6d. each.
If purchased in large numbers a considerable reduction will be made in price.—Jackson & Son, Nurseries, Kingston, S.W.

LADY DOWNE'S GRAPE.

JAS. BACKHOUSE AND SON can still supply good Canes of this distinct and excellent Grape at 10s. 6d. each. As a long-keeping species it is unsurpassed, the bunches hanging in fine condition 6 to 8 months after ripening.
York Nurseries.—March 19.

RHODODENDRONS.

JOHN WATERER'S CATALOGUE OF UNRIVALLED HARDY SCARLET AND OTHER CHOICE RHODENDRONS, as Exhibited by him at the Royal Bot. and Gardens, Regent's Park, London, is published, and will be forwarded on application.
☞ This List is recommended as a work of reference, as it contains accurate descriptions of all the esteemed varieties.
The American Nursery, Bagshot, Surrey, near the Sunningdale Station, South Western Railway.

HARDY SCARLET RHODODENDRONS AND AMERICAN PLANTS GENERALLY.

WATERER AND GODFREY'S PRICED and DESCRIPTIVE CATALOGUE of the above beautiful tribe of plants, as exhibited by them in London and Manchester, may now be had on application inclosing one stamp for postage. The Catalogue also furnishes the heights and prices of their unequalled stock of Conifers and Evergreens, &c. Catalogues may also be had of Messrs. J. May & Co., Seedsmen, &c., Wellington Street, Strand.
Knap Hill Nursery, Woking, Surrey.

NEW SEEDS FOR 1859.

WM. CUTBUSH AND SON beg respectfully to intimate that their PRICED CATALOGUE OF VEGETABLE AND FLOWER SEEDS, &c., is now ready post free on application. Wm. C. and Son devote particular attention to this department of their business, and most of the choicer kinds of culinary seeds and roots are saved under their own inspection, and they can confidently guarantee the quality of all offered.—Highgate Nurseries, London, N. Established A.D. 1695.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Stove, Greenhouse, and Hardy Ferns, Miscellaneous Stove, Greenhouse, and Hardy Plants, Variegated and Ornamental foliaged Plants, Conifers, Roses, Rhododendrons, Indian Azaleas, Gloxinias, Fuchsias, Cactuses, &c., is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

FINE CARNATIONS AND PICCOTEES.—Very fine Plants of the above, or pair in a pot, and which may be sent either in or out of pots at the option of the purchaser, being thoroughly well rooted, may now be had at 1s. 6d. per pair, or 12 pairs for 15s. They consist of good show flowers. Amongst others may be named—Rachel, Squire Trew, Lord Belper, Poor Tom, Princess Royal, Admiral Curzon, Lord Ranciffe, Flambeau, Major Teesdale, Duncan, John Gair, Sarah Payne, Eugenia, Sultana, Prince Albert, Amy Robsart, Robin Hood, Mrs. May, Mrs. Aitken, Mrs. Gair, &c. &c.—Address Wood & Ingram, Huntingdon.

CELOSIA AUREA, Var. PYRAMIDALIS.

DICKSONS AND CO., Nurserymen and Seedsmen, Waterloo Place, Edinburgh, have now a limited supply of the above rare and beautiful Annual. Packets 5s. each, sent free by post on receipt either of a Post office Order, or postage stamps from unknown correspondents. See description in *Gardeners' Chronicle* of December 25, 1858.
D. & Co. have still on hand a few Plants in pots of LADY DOWNE'S SEEDLING VINE at 10s. 6d. each.
Waterloo Place, Edinburgh.—March 19.

TO NURSERYMEN.

3,000,000 RHODODENDRONS, 2, 3, 4, and 5 years old: small and strong Portugal and Common Laurels, small Red Cedar, Chinese Arbor Vitæ, Berberis, &c.; Layers of Erica Alporti, vulgaris, alba carnea, and many other things to be sold very cheap.
For price, apply to James Smith, Darley Dale Nursery, near Matlock.—March 19.

DOUBLE INTERMEDIATE STOCKS.

J. WOOD AND SONS, Old Kent Road, beg to inform the Trade and others that they have a surplus stock of the above, in 60-pots ready for repotting or bedding. Price moderate.

TURNIP SEED.

YELLOW SCARISBRICK AND ALTRINGHAM, crop 1858, selected stocks, price 30s. per bushel; also a quantity of POMERANIAN WHITE GLOBE, and SKIRVING'S IMPROVED PURPLE-TOP SWEDE SEED, at lowest prices.
James Fairhead & Son, Seed Growers and Merchants, Lewisham, Kent.

TO THE SEED TRADE.

THOMAS AYRES, Jun., Seedsman and Grower, Biggleswade, Beds., can supply every kind of Wurzel, Swede, and common Turnip Seeds, on the most reasonable terms for cash.
N.B. Dealer in Culinary and Flower Seeds, Fruit Trees, Shrubs, and Flowering Plants.

HUDSON'S GOLDEN MELON BARLEY.—Selected Samples for Seed of this most valuable variety, superior both for produce and malting quality, may be had of Raynbird & Harvey, of Basingstoke; and 89, Seed Market, Mark Lane, E.C.

SEED CORN FROM THE CHALK.

MESSRS. RAYNBIRD AND HARVEY beg to offer to Agriculturists requiring change of SEED Talavera, Red Nursery, and April WHEAT, the best sorts for Spring sowing.
Chevalier, Thanet, Golden Drop, Long-eared Nottingham, American, Hudson's Golden Melon, Banham's Sprat, and other varieties of BARLEY.
Canadian Potato, Hopetoun, Poland, and Tartarian OATS.
Fine CLUSTER BEANS, weighing 68 lbs. per bushel.
Samples and Prices on application.
Address—Basingstoke, and 89, Seed Market, Mark Lane, London, E.C.

RICH BOG AND LOAM.—Gentlemen and Nurserymen will do well to apply early for the above to refresh their American beds. To be had in any quantity upon reasonable terms, by land or water carriage.
Robert Neal, Nurseryman, Wandsworth Common, Surrey.

GRASS SEEDS FOR PERMANENT PASTURES & MEADOWS.

THOMAS GIBBS & CO., Corner of Half-Moon St.,

THE SEEDSMEN TO THE "ROYAL AGRICULTURAL SOCIETY OF ENGLAND,"

BEG to inform the Members of the Society and Agriculturists generally that their MIXTURES of GRASS SEEDS for Laying down Land to Permanent Grass are now ready. Each kind of Grass Seed composing these Mixtures is cleaned separately, and the kinds are proportioned to suit different soils.

☞ *Full Directions for Sowing and Management will be sent with the Seeds.*

MIXTURES for PERMANENT MEADOW and PASTURE (*to suit different soils*).
MIXTURES for PARKS, FIELD LAWNS, CEMETERIES, &c.
MIXTURES for IRRIGATION MEADOWS, GAME COVERS, and all other purposes.
RENOVATING MIXTURES for Improving Old Meadows and Pastures (8 to 12 lbs. per acre).

MANGEL WURZEL.	RYE-GRASS.		
Yellow Globe, Orange Globe (selected)	Italian (selected, very fine)	Carrots	all sorts
Long Red	Dickinson's	Clovers	,,
Red Globe	Imported Foreign Seed	Swedes	,,
Long Yellow	Common or Annual	Hybrids	,,
Silesian Sugar Beet	Pacey's Perennial	Common Turnips	,,

KITCHEN GARDEN SEEDS in Collections, at £1, £2, and £3 each.

ALL KINDS OF AGRICULTURAL SEEDS.

Price Lists sent free on application. Reference or Cash required from unknown Correspondents.

Thomas Gibbs & Co.

CORNER OF
HALF-MOON St.
PICCADILLY, LONDON, W.

SELECT

CULTIVATED GRASSES FOR PERMANENT PASTURE, &c.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY (LIMITED),

BEG TO ANNOUNCE THAT THEIR MIXTURES OF GRASS SEEDS ARE NOW READY FOR DELIVERY.

THE MIXED GRASSES FOR **PERMANENT PASTURE** are selected according to the best tables, and the various sorts are all carefully saved and free from noxious weeds. The selections will contain several species of Festucas, Loliums, Poas, and Trifoliums in such quantities as will best suit the soil for which the selection is intended. Two bushels of light seed and 12 lbs. of heavy seed per acre, the quantity usually sent, will be found sufficient for most soils.

For **LAWNS or ORNAMENTAL PARKS** it is desirable to have a predominance of EVERGREEN GRASSES. All the coarser kinds are therefore entirely excluded from this Mixture, so that the sward shall present a luxuriant and handsome appearance.

MIXTURES for PERMANENT MEADOW and PASTURE ... ... **30s. to 34s. per acre.**
MIXTURES for RENOVATING ... ... **10d. per lb.**
MIXTURES for LAWNS and ORNAMENTAL PARKS ... ... **1s. 3d. per lb.**

☞ *For large quantities special contracts may be made at reduced prices.*

The following **AGRICULTURAL SEEDS**, saved from selected stocks, can be supplied at the prices quoted during the current month:—

SWEDES. Per lb.—s. d.		MANGELS. Per lb.—s. d.		CARROT. Per lb.—s. d.		RYE-GRASS. Per bushel.—s. d.		CLOVERS. Per lb.		MISCELLANEOUS. Per lb.—s. d.	
Plymouth Improved	1 0	Fisher Hobbs (saved by W. Fisher Hobbs, Esq.)	2 0	White Belgian	1 0	Improved Italian Rye	8 0	English Red .. 9d. and 10d.		Large Scotch Drumhead Cabbage	3 0
Marshall's	1 0	Morton's Yellow Globe	1 6	Yellow Belgian	1 6	Fine imported ditto	7 0	Somersetshire Cow Grass, 10d. and 1s.		Swedenburg Cabbage	3 0
Skirving's	0 9	Elvetham Long Red	1 0	Long Surrey	1 6	Common English	6 6	White Dutch .. 1s. 0d.		Dwarf Flatpole	3 0
Grant's Pine Apple	1 0	Long Red	0 9	Large Altringham	1 6	Evergreen Rye, or Devon Eaver	7 0	Trefoil	0 5	Kohl Rabi, green & purple	5 0
Matson's	1 0	Yellow Globe	0 9	Long Orange	1 6	Pacey's	6 6	Lucerne	1 0	Holcus saccharatus	2 0

FREIGHT AND CARRIAGE.

All Orders for Seeds above 1*l.* will be delivered free of charge to any Railway Station between Plymouth and Paddington. All Orders above 2*l.* free to any Station on the Broad Gauge Railways, or to Cork, Dublin, and Liverpool by Steamers; and to Guernsey and Jersey by Traders. All Orders above 5*l.* will be delivered free of carriage to any Railway Station in England and Wales; and to any Steam Port in England, Wales, Scotland, Ireland, Guernsey, or Jersey.

PRICE CURRENTS and DESCRIPTIVE CATALOGUES sent post free on application.

ADDRESS—PLYMOUTH SEED COMPANY, PLYMOUTH.

CHOICE FLOWERS.

BUTLER & McCULLOCH'S SPRING CATALOGUE OF SEEDS,



ARRANGED on a new and original plan, with copious Descriptive and Cultural Notes, and containing many new and rare species and varieties not found in any other Catalogue, now ready and may be had free and post paid on application.

FLOWER, SHRUB, TREE, and VEGETABLE SEEDS, the crop of 1858, saved with the greatest care, by the most eminent growers.

We may also state that the Sardinian correspondent of Messrs. JAMES CARTER & Co., whose Seeds, especially Carnations and Picotees, have given such universal satisfaction, has transferred the Agency from that firm and appointed us his representative in this country. To meet the growing demand for first class flowers, particularly FLORISTS' FLOWERS, we have adopted our usual maxim of charging the lowest possible prices.

Professor LINDLEY in the *Gardeners' Chronicle* of February 5th, has the following notice of B. & McC.'s Catalogue.

"BUTLER & McCULLOCH'S (Covent Garden) Spring Catalogue of Choice Flower, Shrub, Tree, and Vegetable Seeds. This list fills 84 closely printed 8vo pages, and is remarkably well got up. It appears that the correspondent in Sardinia, who formerly supplied one of the great London houses with seeds raised in that warm part of Europe, has now transferred what he saves to Messrs. BUTLER & McCULLOCH. Let us add, that it yields to no Trade List in the abundance of its materials or the excellence of its arrangements."

A selection of 44 pkts. of beautiful Annual Flower Seeds				7s. 0d.	An Assortment of Vegetable Seeds, 20 quarts of Peas, and other Seeds in proportion for 1 year's supply		£3 3s. 0d.
Ditto	33	ditto	ditto	5 6	Ditto	ditto 12 quarts of Peas	2 2 0
Ditto	21	ditto	ditto	3 6	Ditto	ditto 6 ditto ditto	1 1 0
A selection of 40 pkts. of beautiful Biennial and Perennial ditto				10 6	Ditto	ditto 5 ditto ditto	0 15 0
Ditto	31	ditto	ditto	7 6			
Ditto	24	ditto	ditto	5 6			

All Flower Seeds sent post paid, and Vegetable or Vegetable and Flower Seeds amounting to 1*l.* 1s. Carriage Paid to any principal Railway Station in England, Wales, and Scotland, or any port on the Irish Coast.

BUTLER & McCULLOCH, Covent Garden Market.

GERMAN AND OTHER FLOWER SEEDS, VEGETABLE, AGRICULTURAL SEEDS, ETC.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their new PRICED and DESCRIPTIVE CATALOGUE in which is enumerated every novelty of proved merit, also all the best of the older kinds, is now published, and will be forwarded post free on application. Their whole stock has been selected from the best English and Foreign sources, and every kind is warranted true to name, and of the finest possible quality.—Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

PREMIUM GOLD MEDAL FOR SCOTCH-GROWN SEEDS

AT THE GREAT AGRICULTURAL COMPETITION AT PARIS, 1856.

R. T. MACKINTOSH, SEEDSMAN and NURSERYMAN, Edinburgh, begs to intimate that his PRICED LIST OF AGRICULTURAL SEEDS is now ready, and may be had post free on application. R. T. M. would particularly call attention to his Scotch-grown EVERGREEN RYE-GRASS for pasture, also his TURNIP SEEDS, which for purity and excellence of quality cannot be surpassed. R. T. M's. Priced Lists may be had in London of Messrs. J. B. BROWN & Co., 36, Cannon Street, City, who will receive orders for R. T. M's. Seeds.

Victoria Street, George IV. Bridge, Edinburgh.

IMPORTANT TO FARMERS.
TURNIP AND MANGEL WURZEL SEEDS.

WM. JACKSON AND CO., NURSERYMEN, SEED GROWERS, and MERCHANTS, Bedale, Yorkshire, beg to inform Agriculturists that their DESCRIPTIVE CATALOGUES for this season, with prices very moderate, are now ready, and will be forwarded on application. Farming extensively themselves they have the great advantage of proving all the kinds of Turnips and Mangels; they therefore offer only the varieties which they have found to be the best, and which are also approved of by some of the most celebrated farmers of the present day.

Nearly all the Seeds are W. J. & Co.'s own growing from selected transplanted perfect roots, and the quality of the Seeds having been tested in their hothouses this spring, they can recommend all of them with confidence. Early applications are necessary to secure a supply.

MEADOW AND PASTURE GRASS SEEDS.

GEORGE GIBBS & Co., Seedsmen, 26, Down Street,

BEG to announce that their mixtures of GRASS SEEDS are now ready for delivery. These mixtures are made up expressly to suit the various soils and the growth of each variety is fully tested previous to being bulked. G. G. & Co. having supplied the Seeds for *Hyde Park, St. James's, and Regent's Park, Kensington Gardens, Kensington Park*, &c., for many years, feel assured no further testimonials are requisite. The Seeds are made up into two different mixtures, as they do not sow well together; 2 bushels of the light and 12 lbs. of the heavy seeds are allowed per acre.

Mr. GIBBS, giving his personal attention to the assorting of these mixtures assures his friends that every care is taken with regard to the proper proportions.

MIXTURES FOR PERMANENT MEADOW & PASTURE (adapted to the different soils) 32s. to 34s. per acre.
MIXTURES FOR IMPROVING & RENOVATING OLD GRASS LAND (8 to 12 lbs. per acre) 1s. per lb.
MIXTURES OF THE FINEST SORTS FOR LAWNS, GRASS PLOTS, BOWLING GREENS, &c, 1s. 3d. per lb.

SELECT STOCKS OF THE UNDERMENTIONED AGRICULTURAL SEEDS SUPPLIED AT THE PRICES STATED FOR THE PRESENT MONTH:—

MANGEL WURZEL. Per lb.—s. d.		CARROTS. Per lb.—s. d.		SWEDES. Per lb.—s. d.		RYE-GRASS. Per bushel—s. d.		CLOVERS. Per lb.—s. d.		VARIOUS. Per lb.—s. d.	
Long Red	0 9	White Belgian	1 0	Ashcroft	0 9	Gibbs' Improved Italian	7 0	English Red	9d. to 0 10	Holcus saccharatus	2 0
Elvethan Long Red	0 10	Yellow Belgian	1 3	Skirving's	0 9	Dickenson's Italian	7 0	White Dutch	1s. to 1 0	Lucerne	1 0
Yellow Globe	0 9	Large Altringham	1 6	Matson's	1 0	Fine Imported Ib.	7 0	Trefoil	4d. to 0 5	Drumhead Cabbage	3 0
Red Globe	0 9	Long Surrey	1 6	Scotish Green Crown	1 0	Common English	6 0	Alsike Hybrid	2 6	Large Cattle Parsnip	1 6
Long Yellow	0 9	James's Scarlet	1 6	Marshall's Purple Top	1 0	Parsey's Perennial	6s. to 7 0	True Cow-grass	1 0	Kohl Rabi	5 0

Full Priced Catalogues sent free on application —Cash or reference required from unknown Correspondents.

GEORGE GIBBS & Co., 26, Down Street, Piccadilly, London, W.

SUTTON'S GRASS SEEDS AT THE ROYAL FARMS NEAR WINDSOR, AND IN THE ISLE OF WIGHT.

SUTTON'S GRASS SEEDS

FOR PERMANENT PASTURE, PARKS, AND LAWNS,

ARE NOW SOWN AT THE ROYAL FARMS, AT OSBORNE PALACE, THE ALDERSHOTT CAMP, THE CRYSTAL PALACE SYDENHAM, THE HORTICULTURAL SOCIETY'S GARDENS, THE PEOPLE'S PARK, HALIFAX, AND ON MOST OF THE LARGEST ESTATES IN THE KINGDOM.

These Grass Seeds being mixed expressly to suit the soil for which they are required, are never known to fail

SUTTON & SONS having for many years paid especial attention to the Laying down Land to Permanent Pastures, they are well acquainted with the various soils of most parts of the United Kingdom, and the Natural Grasses suitable for each locality.

The following Sorts may be had separate or mixed, at lowest Market Prices:—

Alopecurus pratensis	Festuca duriuscula	Festuca tenuifolia	Lolium italicum	Poa pratensis	Phleum pratense major
Anthoxanthum odoratum	,, elatior	,, hordeiformis	,, perenne tenue	,, trivialis	,, ,, minor
Agrostis stolonifera	,, gigantea	Glyceria fluitans	,, ,, Paceyanum	,, nemoralis	Petroselinum sativum
Avena flavescens	,, heterophylla	,, aquatica	,, ,, sempervirens	,, angustifolius	Trifolium repens
Achillea millefolium	,, pratensis	Holcus lanatus	Lotus corniculatus major	,, fertalis	,, pratense perenne
Cynosurus cristatus	,, ovina	,, avenaceus	Medicago Lupulina	,, sempervirens	,, minus
Dactylis glomerata	,, rubra				,, hybridum

ALSIKE and other CLOVER, and all the most suitable of the above are contained in our Mixtures. Cost of the best Mixtures for Permanent Pasture, **30s. to 34s. per acre,** according to the sorts required for the land.

Fine LAWN GRASS SEEDS for making New or Improving Old Garden Lawns,

Price 1s. per lb., 2s. 6d. per gallon, or 20s. per bushel.

Improvement of Grass Lands by Sowing Good Seeds of the most Suitable Kinds.

SUTTON'S RENOVATING GRASS SEEDS (6s. to 9s. per Acre)

Consist of the finest GRASSES and PERENNIAL CLOVERS, producing great improvement in the Pasture, and at a small expense. Quantity of Seed required, 8 to 12 lbs. per acre. Price reduced to **9d. per lb., or 30s. per cwt.** Sow in March and April.

☞ Having greatly reduced the price of our **RENOVATING MIXTURES**, we doubt not that our liberal terms will encourage the more extensive use of the same. Our Grass Seeds have for many years been allowed to be the best, and now we may add that they are the cheapest. Meadows and Upland Pastures may be increased in value 50 per cent. by sowing these Seeds. **Grass Seeds for Laying down Permanent Pasture, 30s. to 34s. per acre.** Seeds Carriage Free to all parts, except small parcels. Catalogues post free.

SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

PRIZE MANGEL WURZEL, SWEDE TURNIPS, ETC

JAMES GROVE, Great Baddow, Essex, who obtained Prizes at the Chelmsford and Essex Agricultural Shows for nine years in succession, begs to state that his Seeds are grown from selected Roots—not Plants.

Long Red, Red Globe and Yellow Globe 1s. 3d. per lb.
Purple Top and Skirving's Swedes .. 0s. 9d. per pint.

Reference or cash required from unknown correspondents.

MANGEL SEED FROM LARGE BULBS.

SUTTON'S YELLOW GLOBE MANGEL is saved exclusively from fully developed roots, the advantages of which have been proved for several years past.

See the following Letters:—

From the Right Hon. Lord BERWICK, *Crankhill, Dec.* 22.—"Let me have the same Globe Mangel as last year, which has given me the best crop I ever grew, good both as to bulk of crop, and also in the fineness of roots, and freedom from fangs and irregular growth When pulled the roots were nearly as clean and as free from fibre as a Globe Turnip, and I had 50 loads per acre or more."

From Mr. GRAY, Bailiff to G. Rawlins, Esq., *Bullington House.*—"I believe we had one of the finest lots of Mangels and Swedes in the country. We had not quite enough of your seed of Mangel, and sent elsewhere for some to finish the field, and though sown the same day, and with exactly similar treatment, we had not so much weight by one-third as on the part sown with your seed."

The First Prizes at Birmingham and other shows throughout the kingdom have been taken by Messrs. SUTTON'S customers both for Mangel and for their "Champion" Swede. The price of SUTTON'S Large Yellow Globe Mangel Wurzel is 9d. per lb., or cheaper by the cwt.

Priced Lists of other kinds of Mangel, Swedes, Turnips, Grasses, &c., will be sent gratis and post free.

Carriage free to all parts except small parcels.

SUTTON & SONS, Royal Berks Seed Establishment, Reading.

TO THE TRADE.

TO BE SOLD, 200 bushels of GREEN-TOP YELLOW SWEDE SEED, 100 bushels of LIVERPOOL SWEDE Ditto, 60 bushels of DALE'S HYBRID, grown from first-rate stock, warranted to grow well, and free from adulteration. Terms on application—Address A. B., care Castle and Lamb, 7, Bull Head Court, Newgate Street, London.

"JACK OF NEWBURY" SWEDE, ETC.

PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN, &c., 27, Great George Street, Westminster, respectfully request attention to their very genuine Stock of the above excellent Swede: also of the LOTHIAN PURPLE-TOP SWEDE, both of which have been selected with the greatest care. They have also a very fine Stock of the KOHL RABI, or TURNIP-ROOTED CABBAGE, specimens of which were shown at their Stands at Smithfield Club Show. The Kohl Rabi was largely grown last season, and may now be relied on as a substitute for the Turnip and Mangel, where these roots do not succeed, or for filling up blanks where there is a partial failure. Its feeding qualities, hardiness, and weight per acre are equal to the Swede, and all kinds of stock prefer it to other roots.

P. L. & SON have also selected a first-rate Stock of MANGEL WURZEL SEED, which they can confidently recommend. Their natural GRASS SEEDS have been also saved with very great care, and they are ready to supply them separately or in mixture, for laying down Permanent Pastures, Lawns, &c.

P. L. & SON have arranged to deliver Seeds free throughout England and Wales from their London Establishment, for all quantities exceeding 20s. in value.

LISTS OF PRICES of the above and all other Seeds, Plants, &c., may be had on application.

27, Great George Street, Westminster.

TO THE TRADE.

LONG RED MANGEL WURZEL, 26s. per cwt., saved from selected bulbs.

VICTORIA MARROW PEAS, 65s. per quarter. The above prices are for cash.

MAXFIELD HONEY, 71, Bank Street, Maidstone.

The Gardeners' Chronicle.

SATURDAY, MARCH 19, 1859.

THAT the LONDON MARKET for fruit and vegetables has now become largely supplied with French produce is well known, a fact which concerns English growers in no small degree. For the warm and early springs of the southern provinces of that country naturally offer advantages without cost which it is impossible for us to gain without expensive artificial means. France and England are therefore so placed that all the advantage is on the side of France, except the cost of sending produce to market, which railways have reduced so low that it has ceased to be important for such high-priced articles as forced vegetables. While we about London are shivering in the months of February and March, piling up fuel on the fires of our hothouses, and whelming long litter over the out-of-door crops, our friends at Marseilles have the climate of a mild English April, and at Bor-

deaux, Tarascon, and similar places are in the enjoyment of the warmth of our May. As for Algiers, now also feeding our markets through the steam-boats, January there is like our early May, February represents the end of that month, and as for March, our worst month, it is as good at Algiers as the June of London.

The commercial arrangements for the importation of French garden produce have hitherto indeed been rather slow, as all such branches of small trade must necessarily be, especially where perishable goods are the subject of traffic. But they are increasing fast, and there is no doubt that we shall be some day driven out of our own markets for all forced articles that will bear carriage. The French are quite alive to this, and their journals are pointing out what crops will pay in the south for sale in the north. Nor is this a danger which threatens English cultivators alone. Paris will feel it like ourselves, and the time cannot be distant when the little market gardeners there will cease to find their spring trade remunerative in the face of the supplies certain to pour in from Lyons, Marseilles, Avignon, Bordeaux, and other great seats of intelligent industry.

The French Asparagus, Salads, Apricots, Cherries, Artichokes, Tomatoes, and similar articles that already feed Covent Garden are merely the heralds of what is coming. In the department of Gers, a district due west of Toulouse, preparations are making for a trade with the north; and a few details, explaining the seasons of out-of-door crops, published by M. Dumas, the superintendent of the model farm (*Farme-école*) of Bazin in that country, show plainly enough what may be expected from Gers alone. In the first place, at the end of March or beginning of April, winter Cabbages, Lettuces, and the great market Cos Lettuce can already be furnished in abundance; and these articles can only be had in Paris when forced, in consequence of which they fetch a higher price. From the end of May Carrots, both short and long, are to be had in enormous quantity. Early Melons are ready by the 18th or 20th May at the latest; were a steady demand established they might be had in thousands. By June Tomatoes are ripe; in the beginning of August Brinjals (*Aubergines*) are ready; this excellent tropical vegetable it is true finds no favour here, because our ill-taught cooks can make nothing of it; but it serves to show what sort of climate is within railway reach from London.

We do not pretend to offer market gardeners advice on this subject. They are shrewd enough to watch their own interests. It is enough to furnish them with intelligence about what is going on beyond their sphere of observation. We may however add that the foreign difficulty cannot be met by shifting the scene of cultivation, for although mild places may be found, or we should rather say have been found, in the south-west of England and in Ireland, yet it is to be feared that the want of sunshine will be fatal to attempts at rivalling the produce yielded by the warm soil and bright skies on the south.

Mr. Rivers says that it is 20 years since he communicated to the Horticultural Society his ideas about Root-pruning Pear Trees. Certainly it is a long time ago; but we remember it well. Especially do we recollect the reception his new idea met with; how it was poohpoohed by some of the "great guns" of the day, and ridiculed by some of the "little" ones; how amateurs, whose common sense was their chief horticultural stock in trade, caught eagerly at the idea; and how the really intelligent gardeners, seeing the sound foundation on which Mr. Rivers's proposal rested, immediately proceeded to test his representations experimentally. Like ground temperature and atmospheric moisture it was treated as the crotchet of an enthusiast, and by the ignorant handed over to the limbo of useless ideas; but like ground temperature and a damp atmosphere it has borne all the tests which experiment has been able to apply, and now stands securely among the fundamental maxims of rational horticulture.

And see to what root-pruning and the increase of ground temperature have led; to what priceless results in the cold clay lands of England, to what a revolution in the very framework of a garden every where. Only 20 years ago half the gardening world believed that walls were so indispensable to fruit growing that no good table Pears could be had without them unless men were contented with Jargonelles, and Swan's Eggs, and Autumn Bergamots, and rugged Chaumontels. Not to have tall walls was to consent to a heavy annual tax in the shape of a fruiterer's bill. So, gardens were surrounded with screens of brickwork to the exclusion of the sun and wind, without which crops of the highest excellence are unattainable anywhere. How greatly this is changed may be seen by any one who will stroll into the well-kept garden of an amateur of the present day. The magnates of the land indeed have not pulled down their walls, but the middle class thinks twice before it builds them, beyond what the exigencies of our northern climate imperatively demand for the natives of sunnier days than our own.

When such fruit trees as the Pear are trained to walls they are forced into bearing by cramping their branches. When the roots are cramped the same effect is obtained without the aid of walls. All that a wall can do beyond thus operating on the branches is to give a better climate; but a better climate is gained to little or no useful extent unless the wall faces the south, or looks southerly; and walls of that kind are wanted for tender fruits, to the necessary exclusion of the hardy Pear tree. Moreover closely clipped fences do just as well—or better than walls, except for Peaches and Nectarines. It is no wonder then that the system of so cultivating fruit trees like the Pear as to render walls unnecessary should be studied with such eagerness as to have already carried Mr. Rivers's little book of instructions into the eighth edition*, which is now before us, and which we again most strongly recommend to all who take a personal interest in the management of their garden. In great places indeed, where everything is on a costly plan, it may not be required; but even in such establishments as those it may be found to give advice or offer suggestions that the most experienced gardener will turn to his advantage, provided he is not eaten up alive by prejudice.

One of the devices which Mr. Rivers recommends is the employment of *half* Pyramid Pear trees—we say Pears, Apples, Plums, and Apricots—well root-pruned and planted against any sort of close fence in a warm aspect. Nails and shreds and all the misery of hammering at a dead wall in frosty weather, wasting health, time, and materials, are saved. "This method offers a strong contrast to espaliers on Pear stocks, planted in the usual manner, 24 feet apart, and trained horizontally; nearly five trees for one will give so many additional chances to the Pear cultivator; the single tree may fail, or its fruit may become imperfect, owing to an adverse season; but out of his five trees, he will, in every season, stand a good chance of having *some* good Pears. A few words will suffice for their management; summer pinching and root-pruning or biennial removal—like Dr. Sangrado's bleeding and warm water—will do all."

We can hardly, as yet, appreciate the advantage of growing fruit trees thus: but we venture to predict that, in a few years, it will have become the universal practice, except in the case of the Peach and Nectarine. Should any one who reads these remarks desire to judge for himself of what may be done in the manner proposed, let him take some common young espalier, and moderately root-prune it in the beginning of next August; in the winter let him cut away all the wood from one side, and then transplant it to the face of a fence, or a wall if he happens to have one, leaving the tree unpruned, unless the shoots are long and wiry, when they must be shortened. Provided he afterwards manages well he will find himself in a year or two in possession of a fruit *bush*, bearing abundantly without trouble, and with fruit by no means inferior in flavour to what his previous practice had procured, or probably better; it may not be so large, but that will depend upon the amount of thinning. "In some few favoured districts, fruit trees without any extra care in planting and after management, will bear good crops, and remain healthy for many years. It is not so in gardens with unfavourable soils; and they are greatly in the majority. It is to those possessing such, and more particularly to the possessors of small gardens, that the directions here given may prove of value. The object constantly had in view is to make fruit trees healthy and fruitful by keeping their roots near the surface. The root-pruning and biennial removal so earnestly recommended are the proper means to bring about these results, as they place the roots within the influence of the sun and air. *The ground over the roots of garden trees as generally cultivated is dug once or twice a year, so that every surface-fibre is destroyed and the larger roots driven downwards; they, consequently, imbibe crude watery sap, which leads to much apparent luxuriance in the trees.* This in the end is fatal to their well-doing, for the vigorous shoots made annually are seldom or never ripened sufficiently to form blossom-buds. Canker then comes on, and although the trees do not die they rarely give fruit, and in a few years become victims of bad culture, existing in a sort of living death." The effects of such a system, or at least of a system that in time must necessarily grow out of Mr. Rivers's maxims, will not as yet be felt; for time and experience, and the many mistakes that follow in the train of all experimental gardening, can alone reduce it to a course of routine. In the meanwhile, for the guidance of those who wish to move forwards, we extract his own account of what put him upon the road he now so strongly recommends to others because he finds it so successful with himself.

"I strongly advocate the culture of pyramid fruit trees. This is no new idea with me. I have paid many visits to the continental gardens during the greater portion of my active life of business, and have always admired their pyramidal trees when well managed, and I have for many years cultivated them for my amusement; but, owing to a seeming prejudice against them among some English gardeners, I was for some time deterred from recommending them, for I thought that men older than myself must know better; and when I heard some of our market-gardeners and large fruit-growers in the neighbourhood of London scoff at Pears grafted on the Quince stock, as giving fruit of very inferior flavour, I concluded, like an Englishman, that the foreigners were very ignorant, and very far behind us in the culture of fruit trees. It was only by repeated visits to foreign gardens that this prejudice was dispelled; and when I saw the beautiful Pear trees in the Jardin des Plantes at Paris, under the management of Monsieur Cappe, alluded to in *Gardeners' Chronicle*, No. 28, 1847, I felt convinced that we are very far behind our neighbours in the management of fruit trees adapted to the open borders of our gardens. I have, therefore, endeavoured to make the culture of pyramidal trees easy to the uninitiated; and having profited largely by experience in attending to it with my own hands, I trust that my readers will benefit by the result."

* "The Miniature Fruit Garden; or the Culture of Pyramidal and Bush Fruit Trees; with Instructions for Root-Pruning, &c." By Thomas Rivers, of the Nurseries, Sawbridgeworth, Herts. Eighth Edition. London: Longman, Brown, Green, & Longmans.

It is rumoured that measures are in contemplation by the Council of the Horticultural Society for immediately appointing a superintendent to manage the Garden at Chiswick as a strictly experimental establishment, and to take charge of the Exhibitions in London. We presume that some official notice of this may be expected in a few days.

New Plants.

214. Hibiscus radiatus: flore purpureo.

The *Hibiscus radiatus*, of which the ordinary state is to have sulphur-coloured petals, was first described and figured by Cavanilles in 1780, from plants of which the seeds were sent by Sir Joseph Banks to that distinguished Spanish botanist; but Cavanilles does not state from what country they were received, or where a native. Willdenow gives no locality. Aiton, in the second edition of "Hortus Kewensis," speaks of it as an East Indian species; but Roxburgh seems only to have known it in gardens, observing, "Native place unknown. Common in gardens about Calcutta, where it blossoms during the cold season." Wight and Arnott also, in their "Flora of the Peninsula of India," give no locality, quoting Roxburgh's statement on this subject, and adding, "In Dr. Arnott's herbarium is a specimen from Jamaica." So that some have been led to suppose it was a West Indian plant; and certain it is we have received specimens from Jamaica, but without any special locality; and of late Mr. Wilson, the intelligent superintendent of the late Botanic Garden at Bath in that island (I say *late*, an awful flood having recently overwhelmed the garden with an avalanche of stones), has sent to us seeds of three varieties, all beautiful, and all distinguished by the colour of the flowers. One is the sulphur-coloured flower above alluded to; the second is the one we figure here, of a fine rose purple; and a third is a full blood purple; but in each of these two last-mentioned kinds the base of the petals is of a still deeper purple tinge, forming an eye-like spot to the centre of the entire flower. The three sorts blossom copiously in the stove, and bear a succession of flowers in the summer months. We are still in ignorance as to whether this species is aboriginal in Jamaica. Certain it is that we do not find it anywhere recorded as a native of the West Indian Islands, nor even noticed in any of the Floras of that quarter of the globe.—*Bot. Mag. t.* 5098. [A beautiful figure of a beautiful shrub.]

215. Lælia præstans. *Rchb. f.*

This superb plant has just blossomed with Mr. Day, of Tottenham. A flower now before us is of one deep rose, with the exception of the trumpet-shaped lip, which is rich brilliant purple. It measures 4 inches from tip to tip of its petals. Mr. Day states that having been open for a fortnight it has very much faded; what then must it have been when fresh? It was purchased

at one of Stevens's sales among some Cattleya marginata imported from Brazil.

Prof. Reichenbach first described it in the Berlin *Allgemeine Gartenzeitung* for Oct. 11, 1847.

PLANS FOR VILLA AND SUBURBAN GARDENS.

PREFATORY.—There are frequent inquiries in the *Gardeners' Chronicle* for garden plans, the inquirers being for the most part owners or occupiers of grounds of limited extent, who do not contemplate any very elaborate arrangements. To such will this series be more especially addressed.

The plans will be all original, and chiefly, if not wholly, selected or adapted from such as have been designed by me and executed under my direction in various parts of the country; for although a design prepared expressly for any given locality can rarely be adopted wholly in another, any arrangement that has been found suitable in one situation will always be usefully and practically suggestive in a similar one.

PLATE 1.—The grounds for which this design was prepared form a narrow strip bounded on each side by others of a similar character; at one end by a public road, and on the other by a deep cutting of the South-Western Railway. The residence fronts the road; the surface about it is perfectly flat, and there are no views beyond the grounds to be taken into consideration. The principal apartments and offices may be thus referred to. The entrance door is at 1, 2 the drawing-room, 3 a small conservatory opening into the dining-room 4. At 5 is a range of plant houses, 6 is the kitchen court, 7 the stables, and 8 the stable-yard. The kitchen garden is at 9, extending back to the railway cutting. The residence has no private window open to the carriage ring; a valuable, but unfortunately, rare arrangement in a house of this kind.

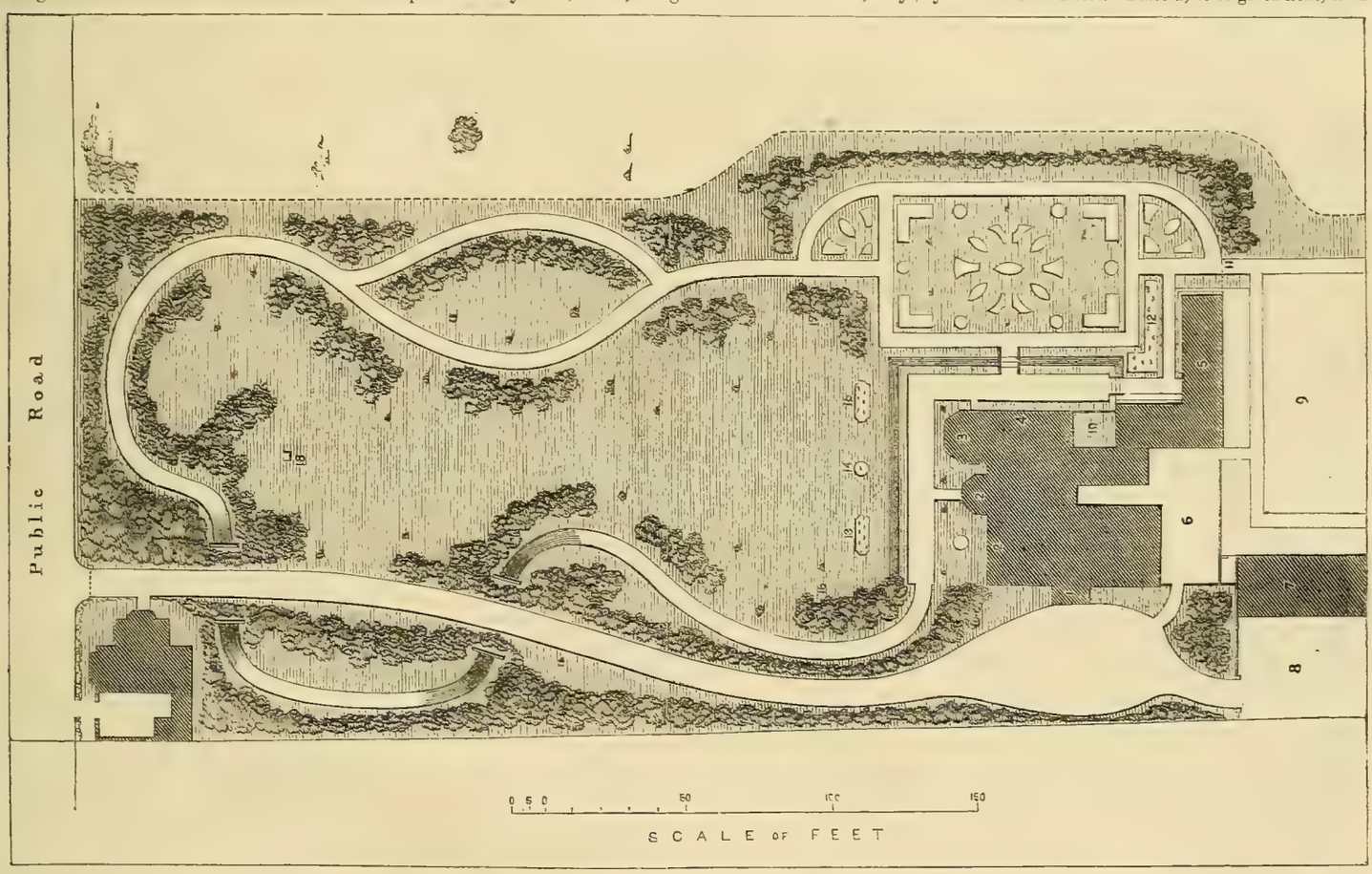
When I made my preliminary visit to the place the residence, stables, and plant-houses were built, the entrance gate erected, and the carriage road formed in a direct line parallel with the front door. In that situation it of course seriously interfered with the arrangement of the lawn in front of the drawing-room windows. I therefore obtained permission to alter the line near the house as much as the confined space would allow. By careful management the road is now effectually screened from the front windows, and the garden in their immediate neighbourhood rendered, as should always be the case, private and isolated from the approach, especially as in this instance, where no back road could be obtained.

The house is surrounded by a broad gravel walk upon a terrace about 2 feet 6 inches high. Stone steps lead down to the flower garden, and also to the plant houses. Passing round the end of these is a walk to the kitchen garden under an archway 11 covered with Roses. It is intended ultimately to connect this walk with the railway bank, which, being of considerable extent, very irregular in surface, and clothed with characteristic vegetation, is susceptible of forming a very picturesque and pleasing addition to the garden.

At the end of the terrace nearest the approach road the walk gradually slopes away, the difference of level being hidden by shrubs. The main walk, it will be observed, is represented as passing twice beneath the carriage road. As the latter very much interferes with the privacy of the garden, I suggested that arrangement to increase the apparent extent of the place, as well as to make it more private in reality. As the peculiar character of the locality and facilities for drainage left nothing to fear from an accumulation of water, the expedient recommended itself the more readily. The bank on either side of the walk through the cutting afforded an admirable situation for root and rockwork. As such interludes in a garden should as a rule always be isolated from the general scenery, no better position could possibly be suggested.

The plant houses having a brick basement about 3 feet high, a narrow border runs along the front and one end for creepers. The space between the walk at the angle of the flower garden, and the one in front of the plant houses, is filled by a bed of low evergreens (12). The recess (10) having windows looking upon the garden which it was desirable to conceal, is screened by a trellis covered with creepers.

The flower garden or parterre is partly surrounded by an arcade of Roses. Plate 2, to be given next, is an



enlarged plan of that part of the grounds, to which a description is appended. On the lawn in front of the house, beds, 13, 14, and 15, are dwarf American plants, and others requiring similar soil; 16 and 17 are hybrid Rhododendrons. The specimen plants are chiefly Conifers. Among them are Abies Pinsapo, cephalonica, and Menziesii, all compact, neat growing species, suitable for the lawns of small gardens, the first named especially. There are also two Araucarias, and of course a Deodar, a Chinese Juniper, Libocedrus chilensis, and two or three Rhododendrons.*

At 18 is a site for a vase or similar ornament of good design. If a vase, not for flowers; but to be seen in its own pure outline against the back ground of evergreens.

It was the wish of the proprietor that a strip of paddock should be preserved the whole length of the grounds. No walk passes round it; but its surface is blended with that of the garden as seen from various points of view, to give as much apparent extent as possible. For local reasons, however, it is closed from the garden immediately opposite the house.

At the entrance-gate a lodge is proposed as a residence for the gardener. The gate being at a considerable distance from the house in some degree justifies that appendage in such limited grounds. *George Lovell, Landscape Gardener, Bagshot.*

(To be continued occasionally.)

* As a constant repetition of the names of the principal shrubs and trees employed in each of the plans would be tedious and in a great measure useless, I propose to give at the end of the present series classified lists, from which selections may be made for particular purposes.

PRESERVATION AND DISTILLATION OF ROSES AND ORANGE FLOWERS.

By M. STANISLAUS MARTIN.

THE ancient Greeks and Romans, surfeited with the excesses of the table, had recourse to perfumes to stimulate their blunted senses. At Rome, the odour of the Rose was in such request, that Lucullus expended fabulous sums, in order to be able to have it at all seasons. During the past century, the odour of Orange flowers was so much in vogue, that the cultivation of Louis the Fourteenth's Orange trees was a source of considerable expense, for the great king would have one of these favourite shrubs in each of his apartments. In our days too, Fashion, that despotic and capricious queen, who, as Montaigne says, twists and turns the understanding of the French, also demands perfumes. The poor will have them, as well as the rich: and their consumption is such, that the perfumers of large cities, particularly those of Paris, monopolise all the sweet flowers which are brought to market, and leave none to supply the wants of pharmacy; the consequence is, that the commercial value of such flowers almost always attains to a very high price. Roses are sold for from 50 to 60 francs the hundredweight; the same quantity of Orange flowers brings from 250 to 300 francs; so that the pharmaciens are obliged to purchase in the south of France distilled waters, which never possess the sweetness of perfume presented by those manufactured in Paris.

I am certain that this inconvenience may be obviated. Five years of trial and experiment have proved to me that provincial pharmaciens may preserve odoriferous flowers for several years, or send them from one part of France to another, without their losing their perfume. The preservative agent is sea-salt, that *corpus divinum* of Homer and Plato.

The Hebrews were acquainted with the antiseptic properties of common salt; they employed it in the preservation of their meats. This substance likewise played an important part in the sacrifices of paganism; it was thrown on the flesh of the victims, to retard their putrefaction.

In the Middle Ages, the alchemists said, *cum sole et sale omnia fiunt.* It was surely this thought that suggested to Wilhelmbulkels the idea of making use of chloride of sodium in the curing of fish. The plan succeeded so well with him that Charles the Fifth, being in the Low Countries, went to Bier-Vliet to see the tomb of the humble fisherman, wishing thereby to honour the memory of one who had rendered so great a service to his country.

The use of kitchen salt has already been applied to the preservation of medicinal plants. Trouvain in his "Apothicaire Charitable," Baumé, Morlot, Lemery, Guibourt, and several other pharmacologists, speak of it—only the directions have been forgotten. However it would be rendering an immense benefit to revive the plan, particularly as the mode of operating is very simple. It is sufficient to arrange the Rose leaves or Orange flowers in vessels of stone ware or glass, interposing a stratum of salt between each layer of flowers until the vessel is quite full. Care must be taken to choose the driest flowers, and to avoid bruising them;

otherwise they would ferment, and the water obtained from them would acidify and would in time acquire a smell of valerianic acid, as M. Omar Dabat has observed.

Waters obtained from salted vegetable matters have an aroma as strong and as sweet as those distilled from plants gathered only a few hours previously; that from the Rose appears to acquire even greater strength. I have kept petals of the Rose for two years; the distilled water yielded by them resembling the Indian attar, or the Athenian essence of Roses spoken of by the Jesuit Rapin.

Salt, which has served for the preservation of undried plants, may be used for fresh distillations; it is sufficient to subject the decoction to strong expression, to evaporate the fluid to a suitable consistence, and to allow it to crystallise by rest. *Pharmaceutical Journal.*

Home Correspondence.

Bark of Trees and Deer.—Can you tell me what makes the bark of the Beech distasteful to deer? A large quantity of timber, felled during the winter, is lying in the park here; and both red and fallow deer have fed zealously on the bark—that is, on some of it. The bark of the Oak, as one would expect, was not approved of. Of that of the Spanish Chesnut the deer nibbled only a little of the smoothest portions. Elm and Lime bark they liked pretty well; but from the Ash trunks they gnawed off a perfect feast. Even the roughest bark is entirely stript from these last wherever the deer could get at it. Meanwhile the Beech stems are all but untouched. Here and there, indeed, there is a toothmark or two; but made, I fancy, by some buck of an enterprising and inquiring turn of mind just by way of experiment. It cannot be tannin that makes this kind of bark disagreeable to the deer, because Elm bark (after Oak) abounds most in that ingredient, if I am not mistaken; and Elm bark they eat. What then is the reason? Another thing that surprises me is that the bark of the Spanish Chesnut is so little gnawed, for in the forest of Marly-le-Roi, near Paris, I have seen many young Chesnuts with several feet of their trunks stript of bark by the deer. *H. J. Moule, Wentworth-Woodhouse, March* 12.

Cheap Thermometers.—Some time ago you called the attention of gardeners to a new form of thermometer, which it was then thought would supersede the ordinary kinds for garden purposes. I tried two of these thermometers, and I found them so very incorrect (probably in consequence of being made of metal) that they were wholly useless. The common kinds of garden thermometers are so carelessly made that they are not much better, no two of them agreeing at all temperatures, therefore to purchase such as can be depended upon amounts to rather a serious sum in gardens where a dozen or more are required. This instrument is so indispensable, and the want of a cheap and correct one is so much felt by gardeners, that I am sure it would pay any philosophical instrument maker to manufacture such an article. For pits and frames the scale need not have a great range—say from 20° to 120°—and a length of 9 or 10 inches would allow the degrees or divisions to be set wider apart than they usually are, so that the temperature might be accurately and readily read by candle-light. As no ornamental work is wanted, I should think that such thermometers might be profitably sold at 2*s.* 6*d.* each. *J. B. W.*

Chichester Elm.—As encouragement to plant and properly prune this sort of tree, I have to state that in the year 1834, I planted one of them the size of a walking stick; but for alteration of a road I was obliged to cut it down this winter. It measured 72 feet long, had 41 cubic feet in it, and the timber on the saw pit proves of excellent quality. *W. Mason, Necton, Norfolk.*

Hybridising Gladioli, &c.—I shall very soon have Gladiolus namaquensis in bloom. As it is not common, I should be glad to know whether by any possibility I could preserve the pollen (and for how long) for the purpose of hybridising the later varieties of Gladioli. Would it cross with Ixia, Tritonia, or Sparaxis? [Possibly.] There is a difficulty in keeping Pelargoniums in bloom for any length of time. It is recommended to exclude flies and bees from the house, but this is almost impossible. Would it not be equally effectual to cut off the top of the pistil? [Probably.] *A. R., Bromley.* [There is no means of keeping pollen alive, except putting it in a dry place. Under such circumstances it will sometimes keep for a few weeks.]

Hybrid Tropæolums.—In your 33d Number of last year's volume, Mr. Pettigrew says of the new climbing Tropæolums, "we are trying several varieties as out-door plants, and shall cross them with the old Canary Creeper." Are we to understand from this that the varieties of T. Lobbianum at present known are unsuited to out-door culture? The seed lists describe them as half hardy; and, on their authority, I am depending upon some of the Tropæolums for open air climbers. *H. W. E.*

New Leek.—I observe in your advertising columns mention made of a Hybrid Leek. I am a large consumer of this vegetable, as are also most of my friends and relations. We are all anxious to know something of the history of this new variety—as for instance what its parents were, male and female? Will the raiser therefore kindly give us this information? *Taffy.*

Flax Seed.—Can you oblige me by naming the enclosed seed? I have not seen the plant from which it was gathered; but it was grown in a field of Flax, from which it was separated, and the produce is nearly 70 bushels. My friend, who gave me the sample, is wishful to know its properties, and if likely to be of any value. He says that the plant is of dwarf habit, and the ends of the shoots twine round the stems of the Flax; the seed is produced in small round pods. I think myself that it must be some variety of "Dodder." Is the seed of this plant of any value? *C.* [You are right. It is the seed of the Flax Dodder, and a pleasant neighbour you have gained! If you soak the seed in water you will be able to pick out the young viper-like embryo, which lies coiled up ready to dart into life at the earliest opportunity. The seeds are of no known use; formerly they were thought to be purgative. We advise you to kill them.]

Fruit Tree Blight.—I have been troubled with a kind of blight for several years; it seems to attack all sorts of trees, Peaches, Apricots, Plums, Pears, and Apples without distinction. I first observed it on the Apricot, the leaves of which assumed an appearance as if struck by a shower of red hot hail. I paid little attention to it the first year thinking it some weather accident of only a year's duration, but the following season most of the fruit spurs died; the young wood was sickly and very weak, some of it not thicker than thread, and none of it 3 inches in length; the consequence was I could get no fruit. I examined the old wood and found about the place where the tree had been grafted a rather thick dead bark, which I removed, and continued the process up the thick branches. The following season the trees on which I had practised assumed a healthier appearance. I renewed the processes, and with still more success; and at this period the trees, which were most peeled of the outer hard dead bark, have the largest amount of blossom on them, the latter being also stronger and healthier than where the bark was not so much cleaned off. This season I am going over all the trees in the garden, the standard as well as the wall trees, and in doing so I find many of them as if they were tied up in a piece of hard, dry matting. On removing this I find the inner bark marked with indentations in many places. I can compare it with nothing else than the effects of small-pox. It strikes me that the disease I am describing is very like Capnodium elongatum, and, if so, I would advise the writer of the article on that subject to watch his trees, see if the fruit spurs begin to die, the young wood gets weak and often dead at the points, and the trees showing symptoms of giving up bearing fruit. If so, he had better follow my example. I may mention the case of a Jargonelle, which I acted upon in the way described last winter; on looking over it I saw that the bark had burst longitudinally in various places up the main stem, it being a horizontally-trained tree. This was no doubt owing to the free communication from the root upwards, which hitherto had been retarded. The fruit on it was of an extra size and quality for the Jargonelle. *Peter Loney, Gardener at Fingask Castle, by Errol, Perthshire, N.B.*

Abutilon insigne.—I have bloomed this in a stove. I planted out a good strong plant of it in a bed of fibrous loam and leaf-mould last spring. It is now 10 feet high, and would have been much higher had it not been cut back, and it covers a space of 12 feet wide. It is trained near the glass. It began to bloom in September, and there have never been less than 50 large flowers open on it every day. This day I counted no fewer than 60, and there is a large quantity of seed pods on it. The leaves are very handsome, some of them as much as a foot long, and nearly as much in width. It has been well supplied with rain water, and has occasionally received a good soaking of weak liquid manure. This treatment suits it admirably. It likes plenty of good soil, plenty of space and light, with free application of rain water. When grown freely red spider does not attack it nearly so much as it would a starved plant. *W. Haward, Gr. to W. P. Milner, Esq., Dykes Hall, Wadsley, near Sheffield.*

Cats.—Your correspondent can only get rid of these by destroying them; an iron spring vermin trap, such as gamekeepers use for rabbits, is the best remedy. A hole should be cut in the ground the size of the trap, so that it may lie somewhat under the level of the surface soil; lay three or four thin leaves, such as those of Dock, over the plate and jaws of the trap, and sprinkle some fine mould over all so as to keep the whole out of sight. If this can be placed in their runs so much the better; if not, a small bird or the fresh paunch of a rabbit hung upon a stick about 2 feet above the trap will answer the purpose of a bait. It is however not fair, I may add, to use Valerian, as it affords a decoy for pet cats of the neighbourhood. *Oudeis.*

Puff-balls as Food.—The following extract is from the Rev. S. W. King's "Alpine Tour," and may be acceptable to some of your readers as a culinary wrinkle:—"Few persons are aware what a good delicately-flavoured, as well as wholesome dish, they neglect in the common Puff-ball. The large ones, taken in the fresh growing state and cut into slices and fried, as Badham recommends ('Esculent Funguses of England'), in egg and bread-crumbs, have the flavour of a rich, light omelette. It is most digestible food, and the timid need have no apprehension whatever as to its being the right kind or not, as all the fungi of the Lycoperdon class, which are of a spherical form and have no stalk, are perfectly innocuous."

Gas Heating.—Last spring I had a very small greenhouse built at the upper part of the house—where a stove was not admissible—I was therefore obliged to employ gas, and after several alterations, have now an apparatus which answers so well that I think some of your readers may be glad to know of it. It consists of a galvanised iron rectangular trough, 7 feet long, 14 inches wide, and 10 inches deep; 4½ inches from the bottom is a diaphragm, or false bottom; the space between the two is filled with water through which runs a 2-inch copper pipe forming the chimney to a gas burner. The space above is filled with wet sand, and forms an admirable hotbed or forcing place for seeds, cuttings, &c. A single fishtail burner (turned up about two-thirds in mild weather) is sufficient to keep the water at about 110° or rather higher, and a thermometer kept plunged about 2 inches into the sand stands pretty steadily at 80° The burner is inside the greenhouse, and I have found no injury to occur from the occasional slight escape of gas or fumes, but it might be easily contrived so as to be on the outside. *P. W. Jacob, Guildford.*

Grafting Vines.—I am glad to see attention directed to this subject. It is not only desirable where a substitution of sorts is wished for, but also for growing the weaker sorts on such stocks as the Syrian. We should then have Frontignan and other small Grapes with bunches and berries as large as Hamburghs. I believe that the time will come when grafted Vines will be as much in request as worked fruit trees of other kinds, and if the sorts are properly chosen who can overrate its importance? *J. Sheppard, Woolverstone Park.*

Fish.—Would it not be desirable to endeavour to propagate fish in tanks or docks near the sea, or by rivers, including varieties from America, Canada, the Cape, and other places at present unknown in this country, except in books or museums; and to bring various kinds to this country packed in ice or salted, and preserved by other processes now in use? At Hastings and many parts of the coast, fish has been extremely scarce lately; and as the limited liability system gives opportunities for opening new sources of occupation, the rearing fish in nurseries in this country, and the obtaining new varieties as articles of food and as a source of commerce, would appear desirable, fish being esteemed healthy and palatable food. *G. W.*

Societies.

South Metropolitan Chrysanthemum.—A second general meeting of this Society was held on Monday evening last, March 14, Mr. Mills in the chair. Mr. Morgan, gardener, Lincoln's Inn Fields, introduced the subject of discussion. He said that to show that he was not unmindful of the welfare of working men, he begged to give them a little information concerning the growth of the Chrysanthemum as a standard. He stated that the idea originated with him of having a quantity planted out for the purpose of taking up to pot, and that his attention was directed to a plant of Cedo Nulli which had a fine large head upon a single stem, somewhat about 17 or 18 inches high. He took it up, potted it, and the shoots being tied down it formed a very compact top, producing about 60 or 70 good blooms. This took place in August. Believing that he could materially improve upon this in the following November he took off a lot of cuttings, taking the eyes carefully out, and potted them singly in a cold frame until April. He then prepared a piece of ground by dressing fully two spades deep, supplying a quantity of stone and brick rubbish to the bottom, and covering the whole over to the depth of 2 feet—the compost used being a mixture of loam, road sweepings, and a small quantity of sand; then planting out 2 feet asunder. As they grew he took the eyes out as soon as they appeared, letting the leaves remain upon the stem from the very bottom, watering the foliage generally twice every day, and the roots as often as in his opinion they required it. By the middle of June they were nearly 3 feet high, and the nature of the plant being to branch off at a certain height, care must be taken to secure eyes sufficient to send out shoots to form the head before it does so. He informed the meeting that he left from five to six of the above, then carefully taking off the top of his plant, the shoots soon made their appearance, and when about 5 or 6 inches long were stopped; and that he then commenced forming the head by placing a little bast matting round the stem, bringing down the shoots. This process was practised—namely, stopping and tying—till the end of July, when he began to study the best means of getting them into pots. He took his spade, cut straight down about half-way round the plant a little less than the size of the pot intended for its reception, keeping it well watered. In about nine or ten days after he cut round the part remaining, taking it up, carefully potting, and abstaining from injuring the roots. It was kept in the shade for a few days, when judging that it was going on well, he took off all the foliage from the stem, and removed it to a brighter aspect, still regularly watering and attending, and watching, and supplying liquid manure twice a day. By management such as this he had plants 3 feet high, with heads perfectly flat 5 feet in circumference, with 50 shoots full of buds, and handsome green foliage. He then gave a list of some of the best sorts for growing as standards, among which may be mentioned Cedo Nulli, Modèle, Bob, Mustapha, Helène, Drin Drin, General Canrobert, Duruffiet, and Argentine.

After some remarks from Mr. Broome Mr. Taylor in moving a vote of thanks observed that he had a true love for the Chrysanthemum, not because it had of late become so popular, but because it was best adapted for town culture and no doubt kept many a man more at home amongst his family, and tended in some degree to that moral improvement which it is desirable to attain.

Mr. Andrews presented the society with some very

prettily executed coloured drawings of the principal varieties, framed and glazed, and intimated his intention of giving still more to decorate the rooms of the Society.

In conclusion it may be remarked that the success in the formation of this Society has been the means of establishing others in Peckham, Mile End, and North London. An interesting paper was read by the chairman (through the kindness of Mr. Broome) furnished by Mr Wiggins, gardener to Mr. Beck, of Isleworth. From this the following are extracts:—

December.—Take the strongest cuttings from healthy plants, extract all bottom eyes and foliage; place each cutting in a 3-inch pot, the compost to consist of rich loam and silver sand. Plunge the pots in a cold frame filled with ashes and decayed leaves; keep them in this state till they are well rooted.

January.—Plants in the same state.

February.—Remove out of 3-inch pots to 48 size. Add to the compost pounded oyster shells. Water moderately, and place them in the frame as before.

March.—Plants in the same state as previous month. Stop or rather extract the crown at the height of from 5 to 6 inches, leaving 3 inches clear stem.

April.—Repot into 32-sized pots. Compost composed of rich loam and rotten dry cowdung, silver sand, and pounded oyster shells. Water occasionally with weak liquid manure. Except in very cold weather, keep the plants well exposed to the air and sun. Stop the laterals sufficiently grown, say to 3 or 4 inches as in March.

May.—All well started plants with 7 or 8 of the best eyes should be selected from each break and the remainder taken off. Continue watering with weak liquid manure and pegging the shoots down regularly all round the pot.

June.—Shift into small 24-sized pots; compost as before. Shoots grown from 3 to 4 inches stop again; keep pegging down. Before stopping plunge the pots in a sheltered place in the garden three parts down. Syringe night and morning all over the foliage.

July.—Shift plants into 16-sized pots, being the last change. Compost a little stronger by adding more decayed cowdung. Stop for the last time at the end of the month. Bestow great attention to pegging each shoot regularly to fill up all vacant places; let the shoots that are pegged down be clear of mould in case they strike root.

August.—Liquid manure to be made of equal portions of rabbit, sheep, and cow dung with a little soot; half a bushel of this mixture to 40 gallons of soft water. Give plain water once a day, and this liquid twice a day, night and morning. Use the syringe freely, and if green fly shows itself, use tobacco water when sprinkling the foliage.

September.—Attend strictly to pegging out the branches where they are required to fill up. Keep the circular form as true as possible. Strictly attend to watering and syringing.

October.—The plants are now at their full growth, and should be 5 feet across, buds the size of a Pea. If weather cold and indicating frost, take them out of open borders, and put them under glass or some temporary covering. Damp the ground or house where they are, to create moisture. Syringe under the foliage as well as the top. A little tobacco water may be used occasionally, buds showing colour at the end of the month.

November.—Tie all plants at the beginning of this month into the form intended for exhibition at least a fortnight before wanted, to allow the blooms to assume their proper position. By thus growing, plants should be produced with from 1000 to 1500 blooms, 4 to 5 feet across, 15 inches high, with good foliage.

After a vote of thanks to the chairman and others the meeting separated.

Notices of Books.

Nutrition in Health and Disease, by J. H. Bennett, M.D. Churchill. After introducing his subject by a brief but lucid amount of the manner in which the body is nourished in a state of perfect health, the author enters at length upon the causes which produce functional derangement, whether connected with deficient vital power, acute disease, insufficient or excessive supply of food, the abuse of spirituous beverages or other circumstances. To us it appears that in all his practical remarks the author shows much good sense, by no means lending himself to the overstrained theories or gratuitous hypotheses with which the world is beset, but showing, on plain intelligible grounds, how far such views may be adopted if they happen to have any foundation at all. Teetotallers and vegetarians would especially do well to consult Dr. James Bennett's pages.

"The mode," he remarks, "in which alcoholic beverages, taken in excess, impair digestion and nutrition may be easily traced and demonstrated. As we have seen, alcoholic stimulants, in the shape of beer, wine, spirits, &c., may be ingested in moderation with positive advantage, especially in northern and temperate latitudes, by the healthy members of the community. By their stimulating influence on the nervous system of the stomach and intestines, they increase and promote the powers of digestion; and by the presence in the blood of the hydro-carbon of the alcohol, elements for heat-generation are provided without the necessity of loading the stomach with as much hydro-carbonaceous food as would otherwise be required. Moreover, the stimulus afforded to the general nervous system satisfies a craving for nervous stimulation, which all mankind exhibits at the adult period of life, and which may really be considered an instinct. In northern latitudes this instinct is gratified by the alcoholic, stimulating beverages in general use; whilst in tropical climates, where their heat-generating properties are not required, the craving is satisfied by the non-alcoholic stimulants, coffee, tea, mathé, tobacco, opium, &c. The fact is singular, but undeniable. There is scarcely a race or tribe under the sun that does not resort instinctively to some nervous stimulant, whereas the animal creation show no such taste—no such instinct. The cause is probably to be sought for in the much greater use made by man than by brutes of the nervous centres, and in the consequent greater exhaustion of nervous force. There can be no doubt that these agents, when taken in moderation, have the power of repairing the nervous energies, and we thus find that, throughout the world, the abstinence from one is made up by the use of another. In our own climate, for instance, those who abstain entirely from alcoholic beverages all but invariably fall back with avidity on coffee and tea, which supply them with the nervous stimulant they require. When alcoholic beverages are taken in excess by healthy persons, and often when they are taken in moderation by persons suffering from disease or from disturbance of the digestive organs, the stimulating effect produced on the stomach is injurious, and the function of digestion is, consequently, improperly performed. The result is the generation of imperfectly elaborated chyle, unfit for the purposes of organic reconstruction."

And again, "In regulating the dietary of those who are suffering from defective digestion and defective nutrition in a confirmed and chronic stage, the question of the advantage or disadvantage of alcoholic beverages occupies a prominent position, and requires careful elucidation. The debility and languor which usually exist in such cases as a painful reality, and which are the immediate result of the defective elaboration of nutritive elements, are, *for the time*, remedied by alcoholic stimulants. Wine, malt liquors, brandy, &c., stimulate the nervous system of the weak or dyspeptic patient, and give for a short period artificial strength. He who could neither think nor act, whose brain was clouded, and whose muscles were powerless, recovers under their influence, temporarily, the deficient mental and bodily energy. No materials, however, for the repair of wasted tissue have been afforded—or, at least, none which the economy can or will use—and once the influence of the nervous stimulation has been exhausted, a collapse generally follows, and the debility and languor are greater than ever. This is a law of nature; all artificial stimulation is followed by a proportionate exhaustion of the function stimulated. Under the influence of the excitation of the brain which accompanies the delirium of fever, the wasted patient summons to his aid muscular power sufficient to try the strength of half a dozen persons. But when the fever and delirium have subsided, collapse follows; he can then scarcely raise his hand from the bed, and a child could hold him. Such strength, however, as that which alcoholic beverages give to the weakened dyspeptic is a mere delusion, which does harm in many ways. On the one hand, it exhausts the remaining vital power of the organisation, without any commensurate advantage; on the other, it deceives both the patient and his medical adviser—the patient, by endowing him for a time with powers which he has not in reality, thus masking his real condition; the physician, by persuading him that he has really given strength, when he has only stimulated the nervous system. In a word, if the patient is exhausted, weak, debilitated, unable to go through the duties of life, it is much better that this, the real state of the economy, should be recognised and accepted, and its causes struggled with conscientiously and scientifically, than that his condition should be obscured by any kind of alcoholic stimulant."

Speaking of the proper supply of food we find the following excellent advice, far too unfrequently taken: "With very many persons it is a matter of creed that from early morn until late at night food should be taken every three or four hours, lest the stomach should remain empty, a state which is supposed to be attended with absolute danger to the organisation. Such fears, I need scarcely say, are perfectly groundless. The stomach is a mere instrument, an organic cooking apparatus, the office of which is to dissolve the food introduced into the system, and to prepare it, by the processes we have described, for tho subsequent digestive stages. During the time it is so engaged, it labours very actively, secreting the gastric juice, and vigorously and incessantly contracting on the food it contains. Once, however, stomachal digestion is completed, and the chyme has passed the pylorus, as we have seen, all secretion ceases, the stomach closes on itself, and a period of perfect rest and quiescence ensues, which lasts until food is again introduced, when the 'hard labour' stage again begins. Thus the object of the stomach-labour is merely to prepare the alimentary materials required by the economy at large. If these materials have been elaborated in sufficient quantity and in sufficient perfection to satisfy the wants of the system, the object is attained, the stomach has done its duty, fulfilled its mission, and until the materials it has elaborated have been consumed, or thereabouts, it has no function to perform, and is better empty than full. If left empty for a time it rests, has leisure to recover its nervous, muscular, and organic power; to prepare itself, in a word, for the labours which the next meal will entail upon it. When, on the contrary, it is immediately refilled, its powers are again and again taxed, and unless they are equal to the labour imposed upon them they flag, the gastric secretions become depraved, and digestion and nutrition are defective."

It is much to be regretted that a book of so much merit should have no index. Its absence has prevented our finding a paragraph or two which we had intended to add to the previous extracts.

Trade Lists Received.—*Edward Shenton's* (Hendon Park) *General Catalogue of Plants, Trees, &c.* This is in reality a list of a considerable collection of florists' flowers and bedding out plants. Of trees there is no catalogue whatever; all that is said about them is that Mr. Shenton has for sale "an extensive stock" of fruit trees.—*Dodwell and Bayly* (Chadderton, near Manchester), *a Descriptive Catalogue* of florists' flowers, bedding out plants, &c. This collection is stated to have been carefully weeded of inferior varieties; and nevertheless occupies 32 closely and carefully printed pages.—*Barba* (Chauré à Vitry le Français) *Plantes nouvelles et arbustes de pleine terre, serre froide, et serre chaude.* A good example of the kind of stock kept in a considerable country nursery in the north-east of France. Although for the most part occupied with descriptive lists of Gloxinias, Pelargoniums, Pinks, Roses, &c., it also includes a certain quantity of stove and greenhouse plants as well as hardy trees and shrubs. Among them we notice some plants with names unknown to us, such as Clematis fulva and glandulosa, Erythrina Belangeri, Edgworthia Carthacea, a "new species" of Statice from the Crimea, the Bignonias atropurpurea and Thunbergii, called hardy shrubs, and several other plants. There is also a new Currant called the Gloire des Sablons, apparently in the way of the old Champagne.—*Van Houtte* (Ghent) *Plantes de Serre et de Pleine terre.* The list of hothouse, greenhouse, and hardy plants this year for sale in the celebrated establishment at Ghent. Everything in the continental trade, most worth growing, is to be found here, with the price, and, which is of no small importance, with we believe the names correctly applied. This Catalogue (No. 76) fills 52 closely printed pages, and after all is in some measure only a supplement to previous catalogues.

Garden Memoranda.

Messrs. Cutbush & Son's Nursery, Highgate.—A magnificent exhibition of Hyacinths has been held here during the past week, and we observe by an advertisement in another column that it is still to remain open for another week. This nursery, it is well known, has of late years become celebrated not only for the quantity of its Hyacinths, but also for the excellence of their culture, and this season it may be remarked they are in no way inferior to their predecessors. Indeed such a display of these charming spring flowers as is at present to be found here is worth going miles to see. Upwards of 400 varieties of all shades of colours—reds, blues, whites, and yellows—are effectively arranged in a lean-to show house 100 feet in length and 16 feet in width. The roof of this is covered inside with Shaw's Tiffany, and the front sashes, and right and left of the footpath, with green baize, which serves to set off the whole to much advantage. About 300 on a flat table some 60 feet in length have had their pots covered with Moss, from among which the flower spikes issue with excellent effect. Among these are some of the largest and best sorts at present in cultivation, together with the more striking new kinds, some of which appear to be improvements, both in size and colour, on those with which we are already acquainted. The remainder of this fine collection was placed in a line at the back of the stage, supported by Azaleas, Camellias, Cinerarias, early Pelargoniums, forced Roses, Mignonette, and other early blooming plants, which formed an attractive and excellent background. Of Hyacinths the following is a list of such sorts as appeared most worthy of notice:—

Double Red.—Czar Nicholas, late, pale rose, bells large, spike good; Duke of Wellington, very fine pale rose, bells large and beautifully arranged—often on two spikes, excellent; Jenny Lind, new fine red, bells large, spike good: Lieut. Waghorn, new deep red, bells large, distinct; Milton, deep red, bells large, spike good, excellent; Napoleon III., new dark crimson, spike good, bells semi-double; Princess Royal, new fine red, bells and spike good; Susannah Maria, beautiful salmon rose, bells and spike excellent,

Double White.—Comtesse Van Holland, fine blush, bells and spike good; Don Gratuit, pure white, spike good, bells medium sized; Prince of Waterloo, pure white, spike medium sized, but bells large; Tour d'Auvergne, fine white, bells large, spike good, one of the very best.

Double Blue.—Blocksberg, marbled, bells and spike very large; Comte de St. Priest, light blue, bells good, spike large; Laurens Koster, bright indigo blue, bells and spike both very large and finely formed, one of the best of the older kinds; Madame Marmont, azure blue, bells very large, spike moderately so; colour good; Prince Frederick, fine porcelain blue, bells and spike large; Prince von Saxe Weimar, fine dark blue, bells good, spike unusually long; Sir Colin Campbell, new shaded porcelain blue, bells and spike both fine; Sir John Franklin, marbled blue, bells and spike very large. An excellent sort.

Double Black.—In this limited class the best is perhaps Othello, a very dark kind with fine large bells but small spike.

Single Red.—Amy, very bright and beautifully formed, bells and spike large; Aurora rutilans, fine new dark, bells and spike good; Cavaignac, salmon, spike and bells very large, the latter striped with rose; Circe, carmine shaded with salmon, spike very large; Cosmos, new pale pink, bells and spike large and well formed; Diebitz Sabalskansky, bright red, spike good, bells moderate sized; Florence Nightingale, deep pink shaded with orange, spike and bells large; Lady Sale, dark red, bells and spike good; Madame du Lac, rosy pink, bells good, spike large; Madame Hodgson, pale pink, bells and spike finely formed; Mdlle. Rachel, fine-

deep red; M. Feasch, fine pale pink striped with crimson, bells and spike good; Norma, beautiful waxy pink, bells and spike very large, one of the very best; Queen Victoria, pale pink striped with red, bells and spike large; Robert Steiger, deep crimson, very fine; Solfaterre, orange scarlet, bells and spike very large.

Single Lilac.—Dandy, dark, good bells and spike; Honneur d'Overeen, fine reddish lilac, bells and spike large; Prince of Wales, purplish lilac, new and good.

Single White.—Cloche magnifique, pure white, large bells and fine spike; Elfrida, large and fine; Grandeur à Merveille, pale blush, bells and spike large and good; Grande Vedette, one of the very best old kinds; La Baleine, deep blush, fine form; Lady Franklin, beautiful blush, a good comparatively new kind; Lamartine, pale blush, striped with pink, bells large, spike good; Lord Granville, creamy white, excellent; Madame Van der Hoop, pure white, bells and spike very large; Miss Burdett Coutts, pure white, large bells, and immense spike; Mont Blanc, beautiful clear white, large bells and spike; tubiflora, beautiful blush, large bells and spike; Victoria Regina, very fine pure white, large waxy bells, and fine spike.

Single Blue.—Argus, dark blue, with white centre; Baron Van Tuyll, porcelain, large bells, extra fine spike; Charles Dickens, pale blue, large bells, very fine spike; Couronne de Celle, pale blue, large bells, and immense spike; Grand Lilas, delicate azure blue, one of the most beautiful of Hyacinths; Grande Vedette, bells the largest of any Hyacinth; Orondates, fine porcelain blue, large bells and very fine spike; Porcelain Sceptre, fine pale blue, moderate bells, very fine spike.

Single Black.—General Havelock, very dark, large bells and immense spikes; remarkably vigorous grower. Messrs. Cutbush exhibited this last spring, with a spike 9 inches long and 10 inches in circumference, bearing upwards of 180 bells; Prince Albert, deep purple, changing to black, large bells, and fine spike.

Single Yellow.—Anna Carolina, clear yellow, good bells and spike; Heroine, fine pale yellow, good bells and moderate spike, perhaps the best of all yellows.

We recommend all lovers of sweet flowers to visit this exhibition speedily.

Miscellaneous.

Death of Weinmann.—We observe in the *Botanische Zeitung* the announcement of the death of J. A. Weinmann in his 76th year. In the early part of the century he had charge of the Russian garden of Dorpat; but in 1813 he was appointed to that of Pawlowsk, near St. Petersburgh, where he died. Several species of plants have been named after him; but the genus Weinmannia was so called after Wilhelm Weinmann, quite another person.

Sale of Seeds and Cones of Coniferous Plants.—A small consignment of these from Vancouver's Island, Fraser River, and California, was sold on Wednesday last by Mr. Stevens, and realised the following remarkable prices, viz.:—Wellingtonia gigantea, a small packet, 13*l.* 13*s.*; ditto of 1857, 5*l.* 10*s.*; Abies Williamsoni of Newberry, small boxes of cones, 5*l.* 5*s.* per box; Thuja gigantea, small boxes of seed, from 2*l.* 10*s.* to 3*l.* 3*s.* per lot; an Abies supposed to be amabilis, from 3*l.* to 3*l.* 15*s.*; Abies Menziesi, small boxes of seed, from 1*l.* 2*s.* to 1*l.* 3*s.* per lot; A. Douglasi, from 2*l.* 2*s.* to 2*l.* 10*s.* per lot; Pinus tuberculata, 10 cones, from 1*l.* 1*s.* to 1*l.* 4*s.* per lot; Pinus Jeffreyi, one small box of seed, 3*l.* 3*s.*; Cupressus Lawsoniana, little boxes, 3*l.* 3*s.* to 3*l.* 10*s.* each; and C. Macnabiana, one box, 1*l.* 12*s.* A consignment of Araucaria imbricata seeds from another source, which had been packed closely in tin boxes, were found upon examination to be apparently quite dead. For these, although they were put up for sale, there were therefore of course no buyers. Ninety-four lots produced upwards of 200*l.*

Substitute for Tobacco.—The Jamaica papers speak loudly of the excellence of Allspice or Pimento as a smoking material far superior to Tobacco in every respect. Any person, says a correspondent of the *Colonial Standard*, who knows anything of the fragrance of a Pimento walk when in full blow may form some idea of it by a pipe charged and lighted with the dried berry, simply crushed in coarse bits. Another says that it cannot be well smoked in short pipes, but with the long Cherry stick of a meerschaum he experienced "a treat beyond anything he had known in the use of Tobacco." The same writer adds that already the coolies and native labourers are bringing Pimento into use in the place of Tobacco; and he can see no reason not to prefer it.

Calendar of Operations.

(*For the ensuing Week.*)

PLANT DEPARTMENT.

Conservatory, &c.—Many houses of this description are very unfit places for Heaths, being generally too lofty and kept too warm for them; some of the winter flowering varieties are however very ornamental and should be largely employed in their decoration, during the spring months. As soon as they have done flowering let them be pruned back and give them a liberal shift when they start into growth, using good fibry peat for the purpose, and if they are well attended to during the growing season they will overcome any injury they may sustain through occupying an unsuitable position while in bloom. Azaleas, Camellias Roses, early-flowering New Holland plants, and forced bulbs will keep show houses gay for some time yet. Let all plants be placed in the best possible position as regards effect, and aim at maintaining a pleasing uniformity of arrangement and displaying the colours to the greatest advantage. Pick off decaying flowers and leaves, and endeavour to continually replace shabby plants with others in full beauty. Sprinkle the surface of the beds frequently so as to assist in keeping the atmosphere moist, and also see that the subsoil is kept in a uniformly moist condition. Watch for insects and attack them as soon as they are perceived, which is the only way of preventing them from doing mischief. Stove.—Proceed with the repotting of such plants as require it, and give all necessary attention to those in active growth. To secure strong short-jointed wood keep up a vigorous root action, and let the plants occupy a place as close to the glass as possible. Specimens started early may require rearrangement. Ixoras, Clerodendrons, and Allamandas that have become well rooted will be greatly benefited by a careful supply of manure-water; but see that it is given in a tepid state, and not over strong. Look sharply after mealy bug and thrips, for if these are allowed to establish themselves at this season they will furnish plenty of work for leisure hours during the summer.

FORCING DEPARTMENT.

Pineries.—Attend carefully to the bottom-heat, particularly where this is produced by fermenting materials, as tan, &c., and see that it is not allowed to rise too high, which it is exceedingly apt to do after fresh materials have been added, either during bright weather, or where there are pipes under the bed. Where much fire heat is used it requires some practice and attention to be able to keep the soil in a proper state as regards moisture, but this must be effected at any expense of attention if success is to be insured. Maintain a thoroughly moist atmosphere, but do not push young stock too fast until we may be favoured with more sunshine, when if all is right at the roots there will be no danger of drawing the plants, as would be the case in the present state of the weather. Avoid allowing water to lodge in the hearts of plants showing fruit, and spare the flowers of those in bloom with the syringe. Pot off or plant out suckers as they can be obtained sufficiently strong, and attend to keeping up a regular succession of plants, which is the surest way of providing for a succession of fruit. Vineries.—See that the houses in which the Vines are not yet started are properly cleansed, the Vines painted with the usual composition of soft soap, sulphur, &c., and everything put into proper working order; also get the rods bent in time to induce the buds to push regularly. Attend to disbudding and stopping, &c., as may be necessary in the succession houses, and see that the inside borders are kept properly moist, giving tepid manure-water as may be necessary to effect this, and do not be afraid of giving too much of it to Vines in pots.

FLOWER GARDEN AND SHRUBBERIES.

With bright sunshine and drying winds it may soon require the utmost care to save recently transplanted evergreens of large size, and no mere surface watering will be of any service. The ground about the roots as well as the ball should be thoroughly soaked. After applying water and allowing the surface to become moderately firm stir it slightly with a blunt fork, which will prevent its cracking, and will also allow the free action of the sun and air to warm the soil and encourage the production of roots. Surface dress with fine soil, and water newly laid turf wherever it is observed to be suffering from the effects of the weather. Take advantage of the present state of the ground to stir the surface soil of shrubbery and herb borders, to prevent the growth of weeds, and give the whole a fresh and clean appearance. Do not neglect to put in plenty of Mignonette, and if not already done hardy annuals should be sown without further loss of time, except in cases where they are not wanted to bloom before autumn.

HARDY FRUIT AND KITCHEN GARDEN.

Get in the main crop of Carrots the first fine day when the ground is in good working order. Blanch Seakale in the open ground by placing inverted flower-pots over the crowns and covering these with light soil or any material which will effectually exclude light. Prick out on a slight hotbed Cauliflower plants raised in heat. The gentle bottom-heat will greatly assist in pushing them along without their being weakly and drawn, as is the case when they are grown under glass. Also prick out Celery on a gentle bottom heat, and protect it with a frame or hand-glasses till it has become well established, and sow seed for the main crop. Attend to providing succession crops of Spinach, and keep the surface soil regularly stirred among growing crops; also do not forget small salad, as Radishes, &c., and sow sweet herbs for transplanting.

COTTAGERS' GARDENS.

In all neatly kept small gardens the usual spring work should be by this time completed. Seeds of some the more showy annuals should soon be sown for autumn blooming. Herbaceous plants may be divided and replanted; many of the strong growing ones might be taken up and divided every year; but almost all Alpines suffer from this treatment. They should therefore, be left undisturbed. Plants in frames, if any, will now require attention. Give air freely; but shut up early, in order that a genial temperature may be kept up during the night without fire-heat. Pelargoniums, if any, should occasionally receive a gentle shower over head from a fine-rosed watering pot. Little attentions of that kind keep them clean and healthy.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.
For the Week ending Mar. 17, 1859, as observed at the Horticultural Gardens.

March.	Moon's Age.	Barometer. Max	Barometer. Min	Temperature of the Air. Max.	Temperature of the Air. Min.	Temperature of the Air. Mean	Temperature of the Earth. 1 foot deep	Temperature of the Earth. 2 feet deep.	Wind.	Rain.
Friday 11	6	29.960	29.709	54	47	50.5	46½	46	S.W.	.05
Satur. 12	)	29.702	29.634	57	49	53.0	48	46	S.W.	.01
Sunday 13	8	29.673	29.598	55	48	51.5	49½	47	S.W.	.14
Mon. 14	9	29.630	29.248	53	45	49.0	50½	48	S.W	.15
Tues. 15	10	29.683	29.170	54	37	45.5	50	48	W.	.00
Wed. 16	11	29.914	29.880	53	44	48.5	49	48	S.W.	.00
Thurs. 17	12	29.760	29.510	53	31	42.0	49	48	S.W.	.06
Average		29.760	29.524	54.1	43.0	48.5	48.9	47.3		.41

March 11—Cloudy; rain at night.
— 12—Rain; densely clouded; boisterous.
— 13—Rain: showery; boisterous.
— 14—Rain; fine at night.
— 15—Boisterous throughout.
— 16—Overcast; cloudy; drying wind; overcast.
— 17—Overcast; boisterous; rain at night.
Mean temperature of the week, 6¾ deg. above the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 33 years, for the ensuing Week, ending March 26, 1859.

March.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 20..	52.0	33.9	42.9	12	0.36 in.	3	4	6	1	2	8	5	2
Mon. 21..	51.5	33.6	42.6	14	0.21	7	3	2	4	3	7	6	1
Tues. 22..	50.6	35.0	42.8	16	0.44	5	3	4	2	4	8	5	2
Wed. 23..	50.3	33.8	42.1	14	0.60	6	6	2	1	1	10	4	3
Thurs. 24..	50.0	31.4	40.7	10	0.11	4	5	4	1	3	4	7	5
Friday 25..	50.1	31.9	41.0	12	0.50	3	10	4	—	2	4	7	3
Satur. 26	51.6	32.1	41.8	12	0.17	—	6	4	2	5	5	5	6

The highest temperature during the above period occurred on the 20th, 1856, and 24th, 1858—therm. 69 deg.; and the lowest on the 25th, 1850—therm. 14 deg.

Notices to Correspondents.

African Oak: *A H C.* To grow this for timber you must have a hothouse as high as Westminster Abbey, heated on an average to 75°. Will that pay?

Broccoli: *W M.*—Of the specimens sent us two were white, compact, and excellent. The third was past its best. They very much resembled the sort called Knight's Protecting.

Dry Rot: *W W S.* We believe that if the surface of the board attacked by dry rot is well washed with corrosive sublimate dissolved in spirit, methylated if you can get it, the mischief will be stopped—unless it has penetrated too deep—for which there is no remedy.

Flower Pots: *Messrs Taylor & Pears.* Your garden pots are excellently manufactured, and deserve to be generally known to those who wish for an article better than the rude and cheap ware employed for the rough purposes of gardening.

Glass: *R H.* It is not the interception to light that is required in gardening. Quite the contrary. It is its diffusion which is wanted; and that is effected by contrivances such as Hartley uses. His 16 oz. is the cheapest, and quite good enough. As to shades in bright weather, it will depend upon yourself whether you want them or not. No—if ventilation is sufficient; yes—if that is not fully provided. Of course these remarks are general. They do not apply to Fern houses, which always demand shade; nor to propagating pits or houses; or places where it is necessary to keep the air close and damp, and where occasional shades must be provided use what kind of glass you will.

Landlord and Tenant: *T E W.* You must give six months' notice to quit. Your inquiry is too vague. *What* is it you want to know?

Monstrous Primula: *H S.* We find some very curious instances of ovarian malformation in addition to the change of colour in the corolla and stamens, which have become fleshy and of an intense green colour. The ovary itself is expanding into a leaf-like dome, and the placenta is not only elevated upon a long purple shaft, but is covered with distorted hairy rudiments of leaves bearing ovules on the edge. It is to be hoped that the plant will be preserved, for it throws great light upon some of the more obscure points of Vegetable Comparative Anatomy. Collodion has been recommended as a coating for the bottom end of soft-wooded cuttings, but there are no good experiments on the subject. Such as have been reported were not conducted in a satisfactory manner, and need repetition and verification. We have always anticipated substantial advantage from its judicious employment.

Names of Fruits: May we beg of our correspondents to send their specimens, *carriage paid*, to our Office, No. 5, Upper Wellington Street, Covent Garden, London: and to no other place whatever.—*J T.* The small flat Apple is Christie's Pippin. A very good dessert sort; but in some sorts the tree is very apt to canker.‖

Names of Plants.—We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have or could have undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*Gloucester.* We shall take an early opportunity of proving that there is no sufficient scientific reason for making Wellingtonia a Sequoia. The matter does not press.—*A Z.* It is not in the least like the Litchi leaf. It may belong to some Diospyros.—*G N.* Clematis cirrhosa, the Majorca Clematis.—*Davy.* 1, Asplenium rhizophyllum; 2, Hemionitis palmata; 3, Hardenbergia digitata; 4, Hebeclinium ianthinum.—*O P.* The fragments you have sent do not appear to be either Cupressus Lambertiana or macrocarpa.

Newspaper: The change has been forced on us by the Post Office authorities. The date will show the order of the pages.

Œnotheras: *Ireland.* The only prostrate hardy Œnotheras worth growing are triloba and macrocarpa, yellow; acaulis, tetraptera, speciosa, and cæspitosa, white. All will grow better in peat than in common soil. They are perfectly hardy, and their seeds, if good, come up speedily in the same soil. There is no more difficulty in raising them, if good, than in raising Mignonette.

Rhododendrons: *Dido.* R. davuricum may be propagated by cuttings of the young shoots taken off while in a growing state, by layers, and by seeds. The Amaryllis you name will bloom freely enough provided the bulbs are well ripened and are allowed a proper season of rest. Much also depends upon taking care to keep the foliage healthy till it naturally dies down.‡

Vases: *R N B.* The most effective plants for these are Scarlet Geraniums, intermixed with shrubby Calceolarias, Fuchsias, Petunias, &c. These might be edged round with such trailing plants as were mentioned in p. 196 of our present year's volume.‡

Virgil's Plants: *Caius.* We will endeavour to give you next week the reasons assigned by Du Molin for his new identification of Ligustrum and Vaccinium.

Misc.: *A Beauregard.* The names you send are wholly unknown in both gardening and botany. Travellers should in these days, when information is so easily procurable, know better than to puzzle their readers with such words. The Plantain tree, if by that you mean Musa, has never been grafted at all, that we know of. As to its taking upon any trees in this country, the thing is impossible.

THE PATENT

NITROPHOSPHATE OR BLOOD MANURE COMPANY (Limited),

CONSISTING OF TENANT FARMERS, OCCUPYING UPWARDS OF 30,000 ACRES OF LAND.

TRUSTEES.

Abel Smith, Jun., Esq., Walton House, Ware, Herts.
Charles Dimsdale, Esq., Essendon Place, Herts.
Edward Ball, Esq., M.P., S, Belgrave Road, Pimlico
Major-General Hall, M.P., Western Colville, Linton, Cambridge
John Brady, Esq., M.P., Warwick Terrace, Belgrave Sq.

DIRECTORS.

Chairman.—Jonas Webb, Esq., Babraham, Cambridgeshire.
Deputy-Chairman.—John Collins, Esq., Myddleton Square, Pentonville.
Edward Bell, Esq., Tottenham, Middlesex
John Clayden, Esq., Littlebury, Essex
Richard Hunt, Esq., Stanstead Abbot, Herts.
Thomas Knight, Esq., Edmonton, Middlesex.
Robert Leeds, Esq., West Lexham, Norfolk.
Robert Morgan, Esq., 72, Camden Villas, Camden Town.
George Savill, Esq., Ingthorpe, near Stamford.
William Collins, Esq., 105, St. John Street Road.
Bankers.—Messrs. Barnett, Hoare & Co., Lombard Street.
Solicitors.—Messrs. Kingsford & Dorman, 23, Essex Street, Strand.
Auditor.—G. W. Brown, Esq, 28, Parliament Street.
Manager.—Mr. James Odams. *Secretary.*—Mr. C. T. Macadam.

Offices, 109, Fenchurch Street, London.—Manufactory, Plaistow Marshes, Essex.

The Directors beg to inform their Friends and the Agricultural Public that the following Manures are now ready:—

ODAMS'S BLOOD MANURE FOR CORN AND MANGEL.

ODAMS'S BLOOD MANURE FOR ROOTS.

ODAMS'S SUPERPHOSPHATE OF LIME.

Full particulars may be had at the Company's Offices, or of the local Agents.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. Nesbit, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

SOLUBLE PHOSPHATE OF LIME.

FREDERIC CORNWELL begs to inform his friends and the Agricultural public that he can now supply a "SUPERPHOSPHATE of LIME" superior to anything yet produced. Each Bag guaranteed to contain from 20 to 25 per cent. of "Soluble Phosphate of Lime." Price 5*l.* 10*s.* per ton, delivered free to any Railway or Wharf in London. Dealers and the trade supplied. Linseed-cakes, Cotton-cakes, and all descriptions of Artificial Manures at lowest market prices.

Offices, 7, Great St. Helen's, London, E. C.

LONDON MANURE COMPANY, removed to 116, Fenchurch Street, E. C. (Established 1840), have the following MANURES ready for delivery:—

CORN MANURE for SPRINGTOP DRESSING
URATE
MANGEL MANURE
SUPERPHOSPHATE OF LIME
BLOOD MANURE
} all of guaranteed quality.

In consequence of the reduction in the price of raw material the London Manure Co. are enabled to lower the price of their Superphosphate of Lime, and to materially improve the Corn Manure and Urate.

The London Manure Co. also supply PERUVIAN GUANO (direct from Messrs. A. Gibbs and Sons), SULPHATE of AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of value. Wholesale dealers supplied.

116, Fenchurch Street E C. Edward Purser, Secretary.

REDUCTION IN PRICE OF LAWES'S MANURES.

MR. LAWES begs to announce that he has this season reduced the price of the Manures manufactured by him, viz.:—

TURNIP MANURE	from £7 to	£6	6
SUPERPHOSPHATE OF LIME ..	,, 7 to	6	6
MINERAL do. ..	,, 6 to	5	5
BARLEY MANURE..	..	S	0

Prof. Way and Dr. Voelcker have sampled from a bulk of 5000 to 6000 tons at his factories, and their report and analyses are given in full in Circular to be obtained on application at his office, 1, Adelaide Place, London Bridge, E.C., or of his local Agents.

N.B. Genuine Peruvian Guano direct from Messrs Gibbs, Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures. American Cotton-seed Cake supplied.

BURNARD, LACK, and CO.'S CONCENTRATED SUPERPHOSPHATE OF LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.

CONCENTRATED TURNIP MANURE, equal in value to the preceding.

Of these Manures Dr. Voelcker says:—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."

Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to Burnard, Lack, & Co., Sutton Road, Plymouth.

ESTABLISHED 1812.

H. and T. PROCTOR'S TURNIP MANURE.—Messrs. H. & T. P. draw particular attention to this valuable Manure, which contains all the elements necessary for the full development of the Turnip Crop, so combined, that, from their chemical knowledge and long experience, they feel satisfied is most advantageous to the consumer. It has been very extensively used by most of the eminent Agriculturists of the day, and has attained a high reputation throughout England, Scotland, and Wales, and, they venture to say, is unrivalled for the weight and quality of the Bulbs which it produces. The application of this Manure to the Turnips will be found to benefit considerably the after crops of Barley, Clover, and Wheat.

POTATO, GRASS, BARLEY, CLOVER, AND WHEAT MANURES; also BONE DUST, PERUVIAN GUANO, and SUPERPHOSPHATE of LIME, warranted of the best quality.

Apply to H. & T. Proctor, West of England Depôt for Artificial Manures, Cathay, Bristol; or Proctor & Ryland, Birmingham, and Saltney, near Chester.

SUCCESS OF THE NEW GUANO; Imported under Lease from the Crown.—Though the experiments with KOORIA MOORIA GUANO were made late in the season, and under adverse circumstances, the successful results obtained confirm beyond doubt Professor Voelcker's report—(in No. 41, Part I., vol. xix., Royal Agricultural Society's Journal)—that Ammoniacal manures, applied to Turnips in the experimental field, kept back at first the crop, and had no beneficial effect either alone or in conjunction with phosphates.

The Kooria Mooria Guano is essentially a phosphatic manure, containing sufficient ammonia for roots, and, with a mixture of one-fourth of ammoniacal guano, cannot be excelled for either top-dressing or grain crops. It is a natural deposit, and will be delivered as imported, free from risk of adulteration. Deeply impressed with the necessity of encouraging the import of this valuable manure, her Majesty's Government has given such increased facilities for shipment, that arrangements have been made for a considerable supply. Purchasers can be supplied with suitable quantities from cargoes now on sale, containing from 45 to 66 per cent. phosphates. Present prices, 4*l.* 10*s.* to 6*l.* 10*s.* per ton, on applying to Joseph Hindson, Broker (one of the Lessees under the Crown), 20, North John St., Liverpool. Government Lessees: Ord, Hindson, & Hayes.

"Greystoke, Cumberland, Dec. 16, 1858.

"Dear Sirs,—I beg to inform you that I applied the Kooria Mooria Guano I had from you for Turnips, on land of a loamy character, incumbent on a stiff clay subsoil, and recently drained. On each side of the plot sown with Kooria Mooria Guano were Turnips manured with best Peruvian Guano. The quantities applied of each sort were of equal weight for weight per acre. The crop—a very good one throughout—is now being eaten off with sheep. Very little perceptible difference can be discovered, but if anything that difference is in favour of the Turnips sown with Kooria Mooria Guano.

(Signed) "John Barker."

"Messrs. J. & J. Graham, Guano Merchants, Penrith."

A Pamphlet, "Hints on Guano," containing a large number of reports from well-known agriculturists, and analysis of the cargoes here, may be had of the Broker, at the above address.

TO LANDOWNERS.

THE PERMANENT WAY COMPANY having been appointed the sole Licensees for the use of Dr. Boucherie's Patent Process for Preserving Timber, beg to inform Landowners and others interested in the use of English Timber that a Pamphlet, with full explanations of this cheap and most effectual process, may be had gratis on application to the undersigned. Landowners having Beech, Elm, Fir, or other Timber fit for Railway Sleepers are requested to communicate particulars of quantity, locality, and prices.

William Howden, Secretary.

26, Great George Street, Westminster.

SIGMA'S BEAN, MANGEL, & CORN PLANTERS (5 Depositors), HOES, &c. The "Multum in Parvo," combining Cultivator, Horse Hoe, Ridge Plough, Subsoiler, Broadshare, and other forms; all expanding. Complete 7*l.* 7*s.* Prospectus sent.—C. Powell, Hurstgreen, Sussex.

IMPROVED PATENT TURNIP AND MANGEL GRATER, MANUFACTURED BY

JOHN WARNER and SONS, No. 8, Crescent, Jewin Street, London, E.C.—J. W. & Sons, in introducing their IMPROVED PATENT TURNIP and MANGEL GRATER to the notice of Agriculturists, beg to state that they have personally tested its capabilities during the last three seasons, and as such feel that they can, with the greatest confidence, recommend it as a machine that will upon trial, satisfy the requirements of Feeders of Stock generally; one man or strong lad being able with comparative ease to grate 20 bushels of roots in 10 minutes.—Price of the Machine complete, 4*l.* 10*s.* Carriage paid to any Railway Station in England. To be procured of any Ironmonger or Agricultural Machine Agent in Town or Country, or of the Manufacturers.

"FRIGI DOMO."—Patronised by her Majesty the Queen, the Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, and — Collier, Esq., of Dartford.

PROTECTION from COLD WINDS and MORNING FROSTS.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths. Two yards wide, 1*s.* 6*d.* per yard run; four, 3*s.* per yard. Also, an improved make for Shading Purposes. Three yards wide, 2*s.* 6*d.* per yard run.

Elisha Thomas Archer, whole and sole manufacturer, 7, Trinity Lane, Cannon Street, City, and of all Nurserymen and Seedsmen throughout the kingdom. "It is much cheaper than mats as a covering."

MR. SMITH will SMASH UP a piece of his Clay Land, Wheat Stubble, about the end of this month. Gentlemen who may be desirous may then see his Apparatus at work.—A Card, stating the day, may be had by applying to him at Woolston; or to Messrs. Howard, of Bedford.

THE LANDS IMPROVEMENT COMPANY

2, Old Palace Yard, Westminster, S.W.

To Landowners, the Clergy, Solicitors, Estate Agents, Surveyors, &c.—The Company is incorporated by Special Act of Parliament for England, Wales, and Scotland.—Under the Company's Acts Tenants for Life, Trustees, Mortgagees in possession, Incumbents of Livings, Bodies Corporate, certain Lessees, and other landowners are empowered to charge the inheritance with the cost of improvements, whether the money be borrowed from the Company or advanced by the Landowner out of his own funds.

The Company advance money, unlimited in amount, for works of Land Improvement, the Loans and incidental expenses being liquidated by a rentcharge for a specified term of years.

No investigation of Title is required, and the Company being of a strictly commercial character do not interfere with the plans and execution of the works, which are controlled only by the Enclosure Commissioners.

The improvements authorised comprise Drainage, Irrigation, Warping, Embanking, Enclosure, Clearing, Reclaiming, Planting, Erecting and Improving Farm Houses and buildings for Farm purposes, Farm Roads, Jetties, Steam Engines, Water Wheels, Tanks, Pipes, &c.

Owners in fee may effect improvements on their Estates without incurring the expense and personal responsibilities incident to Mortgages, and without regard to the amount of existing incumbrances. Proprietors may apply jointly for the execution of Improvements mutually beneficial, such as a Common Outfall, Roads through the District, Water Power, &c. For further information and for forms of application apply to the Hon. W. Napier, Managing Director, 2, Old Palace Yard, Westminster S.W.

FARM BUILDINGS.

LOANS MAY BE OBTAINED UNDER THE GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY'S ACT, for the full amount required by the owners of Settled Estates, Incumbents, Trustees, Bodies Corporate, &c., for the erection of Farm Houses, Farm Buildings, and Labourers' Cottages, designed by their own agents and sanctioned by the Inclosure Commissioners. The Loans are repaid by a rent-charge on the estate for any term the landowner may fix, not exceeding 31 years.

No investigation of title being required, and the charge not being affected by incumbrances, no legal expenses are incurred.

The Company furnish Designs of every description, and undertake the entire responsibility of the works wherever desired by Landowners. No profit however is taken by the Company on any works they execute, the actual expenditure only, approved by the Inclosure Commissioners, with a Commission thereon, being charged in all cases. Applications to be addressed to William Clifford, the Secretary, at the Offices of the Company, 52, Parliament Street, London.

HIGHLAND AND AGRICULTURAL SOCIETY.

AGRICULTURAL EDUCATION.

The EXAMINATION for the SOCIETY'S AGRICULTURAL DIPLOMA takes place in the Museum, April 6 and 7. The names of Candidates must be intimated by the 25th inst.

Edinburgh, March 19. Jno Hall Maxwell, Sec.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.

Principal—J. C. Nesbit, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.

Patron—His Royal Highness the Prince Consort.
President of Council—Earl Bathurst.
Principal—Rev. J. S. Haygarth, M.A.

PROFESSORS, &c.

Chemistry—J. A. C. Voelcker, Ph.D., F.C.S. (Consulting Chemist to the Royal Agricultural Society of England).
Zoology, Geology, and Botany—Jas. Buckman, F.G.S., F.L.S.
Veterinary Medicine and Surgery—G. T. Brown, M.R.C.V.S.
Surveying, Civil Engineering, and Mathematics—J. M. Grindrod, C.E.
Practical Agriculture—J. Coleman.
Assistant to Chemical Professor—A. Sibson.

Students are admitted after the Summer and Winter Vacations, also in April and October.

Fees for Boarders:—Under 16 years of age, 55 guineas per annum; between 16 and 18, 70 guineas; above 18, 80 guineas. The fee for Out-students is 40*l.* per annum.

Prospectuses and information can be had on application to the Principal.

The Agricultural Gazette.

SATURDAY, MARCH 19, 1859.

MEETINGS FOR THE ENSUING WEEK.

Wednesday, March 23—Agri. Society of England.. Noon.

That "honesty is the best policy" has become so proverbial that we wonder the maxim is not always acted on as a rule of business. One is however reminded that every trade has its tricks comprehended, perhaps, under the apprenticeship phrase of "art and mystery," which the master covenants to teach his pupils. Among the "mysteries" of the seed trade must be named the process of adulterating the genuine sample with dead or cheaper seeds, undistinguishable from it by the eye.

A letter which we published the other day from one who appears to have devoted himself to this particular branch of the profession seems to leave no room for doubt that Indian Rape seed and Radish seed, &c., are to be had in the market for 8*s.* and 9*s.* a bushel for mixing with genuine Turnip and other seeds worth 9*d.* and 1*s.* per lb.

In this accordingly the English farmer has sufficient proof of his liability to all sorts of filth in his Turnip seed. Let him remember too that he usually has to sow so much more seed than is

cessary "to secure a plant from the ravages of the fly," and he has often to repeat this process more than once. He thus becomes the victim of extensive and wholesale robbery. There cannot be a doubt that with genuine well saved seed, half the quantity usually sown would be enough to provide both for casualties and for a crop.

But what is this Indian Rape seed above referred to? We have by us at the present moment a sample, in which we recognise besides, it may be, more than one sort of the genus *Brassica*, to which belongs the Rape, several sorts of the genus *Sinapis*, to which are referred the Mustards; and amongst them are—

1st. *Sinapis arvensis*, Charlock, thus characterised by Mr. Bentham:—"A native probably of Southern Europe, but now one of the most abundant weeds of cultivation throughout Europe and Russian Asia, and but too common all over Britain."

2d. *Sinapis nigra*—Black Mustard, by the same author mentioned as follows:—"In waste and cultivated places, in central and southern Europe and central Asia, scattered over England, and more rarely in Scotland, but probably introduced only into Britain from or with cultivation." Contrast this again with the following:—

Brassica campestris (*B. rapa*) Colza or Rape-seed:—"On borders of fields and waste places throughout Europe and Russian Asia."

Here then our sample consists as nearly as may be of Rape and Mustard (two or three sorts) in equal proportions, which are among the commoner weeds of foreign and especially of Russian Flax seed: and what if our home supply of Charlock and Black Mustard seed, the filth of our own dirty farmer's crops, and for which he finds a sale at from 3*s.* to 4*s.* a bushel, be insufficient for the market, and the system of adulteration be so universal that English farmers pay for the like dirt from foreigners at the rate of from 1*d.* to 1*s.* a lb. Free trade with a vengeance!—and we frankly confess our suspicion of its activity and extent.

However, we must not suppose that all this ill-directed energy is employed in seed-mixing; it finds its way into the cake trade also. The pungent Mustard cake, both of Rape and Linseed, which has proved so disastrous to cattle, inducing inflammation and other disorders, is found to contain more than the so-called accidental supply of the Mustard that belongs even to most careless cultivation of the crop. But whether the farmer buys it in seed for his crop or in food for his cattle, he becomes the victim. And as it is our desire to guard him against such evils, we would seriously recommend all seed buyers to deal only with seedsmen of repute, and to ensure even with them that honesty shall be the best policy by tendering a fair price for their goods. For they may, however well intentioned, have to buy the cheaper article "to meet the wishes of the customer," and content themselves with not warranting it good, for "what can you expect for the price?" If a buyer wilfully sows weeds, and pays for the seed to do it, there is no law to prevent him; but should he wish to avoid it, a mere chewing of a few suspected seeds will detect Mustard if present by its pungency.

Let us again beg our readers to send us samples of their seeds for examination. We shall be glad to receive samples of "India Rape," for experiments upon it, which may result usefully.

We may in this place direct attention to another matter connected with seed adulteration which is especially applicable to Turnip seed, namely, the practice of mixing old seeds with new. To quote from the seed list of a firm of acknowledged reputation:—

"So common is the practice of mixing old or dead seeds with good seeds for sale, that we who conscientiously abstain from conforming to this custom experience occasionally considerable inconvenience when we have to compete with seedsmen who are not so scrupulous. The Editor of the *Gardeners' Chronicle and Agricultural Gazette* took some pains recently to expose this system, but it is probable that the disgraceful transactions described in that publication appeared almost incredible."

We take these remarks to prove that our strictures upon seed adulteration have not been made without foundation. After extensive experiments we can declare as their result that—

Turnip seed of one year old will only germinate about	50 per cent.
Turnip seed of two years old about	30 "
Turnip seed of four years about	15 "
Turnip seed of eight years old	5 "

On this principle 2 lbs., 3 lbs., 6 lbs., 20 lbs. of the seed of successive past seasons are each now equal in germinating powers to only 1 lb. of good seed. No differences in price which anywhere prevail between good and bad are sufficient to equalise these enormous differences. Besides, in the case of old seed it is not merely of the want of germinating power that we have to complain; those that do grow are mostly of a weakly constitution, and thus in a mixed crop we shall have that irregularity which is sure to result in a return not only bad in quality but deficient in quantity.

—— An action for damages lately raised by Mr. Lowe, of Comberford, near Tamworth, against the London and N.W. Railway, for destruction of crops and fences by fire, terminating in a verdict for the plaintiff for all he claimed, is one more added to many recent just decisions which fence about the property of the farmer.

If he buy a lot of cattle apparently sound, under warrantry, and they prove distempered he can recover not only the value given for them but the value of all other stock lost by infection from them. If he buy for seed-grain of superior value a sample which proves to be of another kind he can recover not merely the difference in value of the article he supposed that he had bought, but the difference in value of the crop which would have been produced. If he lose by another's fault a growing crop of young Clover, he can recover not merely his lost labour and seed but the probable value of the crop which he would have had when it should be ripe.*

On all these questions decisions have already been obtained, and we cannot doubt that the seller of adulterated seed or of adulterated manure will, when his case comes before a jury, be no better off than the defendant in any of the other cases. He will have to pay, not merely to repay. It will be not merely a refunding of the sum which he had received as for Turnip seed or guano beyond the value of the article actually delivered—but a payment of damages for the loss of crop incurred by using dead or different seed, or applying a worthless fertiliser.

—— Another action is likely soon to come on, in which it is sought to prove that a chemist and druggist who is charged with the offence has been selling another manufactured food as Thorley's cattle food. At the preliminary examination before the magistrate Dr. Hassall proved that the food supplied consisted of three or at the most four ingredients—Oatmeal, Linseed-meal, and coarsely cut Beans and Peas. In cross-examination he stated that Thorley's food contained Oatmeal, Linseed-meal, and cut Beans and Peas, having however previously stated that there were not less than eight ingredients in it, some of them bitters and aromatics; so that this food is not merely an article of nourishment, but acts as a tonic stimulant. "There is a great difference," according to Dr. Hassall, "between the two articles, not only as regards their composition, but also in their preparation. The spurious article is exceedingly coarse, while Thorley's food is reduced to fine powder." We refer to this trial, not that Mr. Thorley may have the advantage of the advertisement which it gives of his manufactured cattle food, but because every tittle of evidence upon the real composition of these costly foods ought to be made known to every man, as Mr. Thorley says, who keeps "a horse, a cow, a sheep, or a pig." We recommend our readers to try "Oatmeal and Linseed-meal, and cut Beans and Peas," and mix them for themselves, and if their cattle want a "tonic stimulant" let them consult their veterinary surgeon how best to medicate the cattle food thus home made. They will find it a wonderful saving to their pockets.

—— Certain resolutions have been suggested, we cannot yet say adopted, as the ground-work of a petition to the Government and Parliament for an increased grant of 10,000*l.* to the Royal Dublin Society. Whether the publication of any prospects of the kind thus held out be the best method conceivable of urging the members of that Society and those interested in Irish agriculture, to the efforts which seem necessary to enable the Dublin Society efficiently to work out its agricultural aims and objects, is easily determined. We cordially hope that neither English nor Irish agricultural improvement will ever or in any degree be made to hinge, as that of France appears to do, on the amount of Government grants in its behalf.

There is no agricultural or any other improvement worth having excepting what is excited by a real interest in the matter felt by the persons whose improvement is desired. Let a community spurred on by public-spirited members of their own body unite for mutual improvement, and prove their interest in it by bearing each his share of the cost incurred, and improvement is certain to ensue. Let 10,000*l.* or more be annually supplied from some external source, and it will merely afford an occasional spectacle which cannot ensure its object, but is fruitful of good or not according to other circumstances. If the Dublin Society claim additional funds on the ground of any resemblance to the British Museum or the National Gallery or other national institution, we no special right either to advocate or criticise their petition, but if they base it on the need of an increased effort after agricultural improvement, then we must declare our only hope of seeing that to rest on the efforts of agriculturists themselves, or of societies supported and directed by the farmers of the country.

—— We called attention some weeks ago to the evidence which recent sales of short-horns gave of the continued high market price of well-bred stock. Within the last fortnight Mr. Spraggon's herd at Nafferton, near Stocksfield, Northumberland, and Mr. Troutbeck's at Blencow, near Penrith, have been brought to the hammer. In the former case 47 lots of cows, heifers, bulls, and calves realised 1144*l.*, or only 24*l.* 7*s.* apiece—the highest prices being between 40 and 50 guineas. In the latter 21 cows, heifers, and calves fetched 1513*l.*, or 72*l.* apiece, and five bulls realised 224*l.*, or 45*l.* apiece: a two-year old heifer, Prim Gwynne, fetched 150 guineas; another of the same tribe, Priscilla Gwynne, fetched 125 guineas; others of the same tribe fetched very high prices. We have now to remind our readers of the sale on Wednesday next near Cobham of the late Mr. Harvey Combe's first-class herd, which is to be sold by Mr. Strafford, of Euston Square,

—— Probably the majority of agriculturists look with a sort of quiet incredulity upon the revolution which steam power in the field threatens to effect within their business. There are many however who foreseeing it are already confidently adapting their proceedings to the sure and certain future. Steam ploughs are already at work on many a farm in many a county of England. And those interested in the several forms in which steam culture has already appeared are contending at other meetings, beside those of our great national societies. Fowler and Smith and Ricketts and Bray have had a recent competition at Teddesley, Lord Hatherton's seat, and of course no occasion of asserting their individual merits is lost by any of them. Great good is done by those who offer opportunities of examining the rival schemes in operation side by side, but we believe none of them will be adopted before an examination of its merits under more ordinary circumstances, and we purpose next week to give the first of a series of pictures of the steam-cultivated farms in this country, on one or other of which almost all the plans now before the public has been adopted. Meanwhile, let us remember there are some plans in addition to those of Romaine and Fowler, Ricketts, Williams, Boydell, and Smith, which cannot go from place

* The fire from the engine burned the fence and the cut Barley, and destroyed the young Clover among it. The fire-office repaid the tenant for the Barley, but not being liable for growing crops did not pay him for the Clover, and the question between him and the railway company hinged on the mode of valuing the young crop. "It was arranged that the point to be contested should be confined to the principle on which the value of the Clover-seeds had been estimated. For the plaintiff, Mr. Ingle, the surveyor, was called, who said that he considered the proper mode of estimating the plaintiff's loss was the probable value of the crop when it would be ripe, and this he valued at £5 an acre. The witness was subjected to a rigid cross-examination by Mr. Cleather, in order to show that the value of the seed and labour was the true measure of the loss. The plaintiff was then called, and supported Mr. Ingle's view of the case, and said, on cross-examination, that he had, as an experiment, sown the land again with Rye-grass, but, being sown out of season, in all probability it would be a failure; yet, at any rate, he thought that any benefit which might be derived from it after paying for the seed and labour would be counterbalanced by the deficiency in the yield of next year's Wheat, by reason of the loss of the Clover root, so valuable as a manure for the Wheat crop. Mr. Cleather addressed the jury on behalf of the defendants, and contended that the true measure of damage was what an in-coming tenant would have to pay to Mr. Lowe, provided his tenancy had expired on the day the fire occurred. That to look forward to what the crops would be in the ensuing summer was importing into the estimate an element of too uncertain a character to be relied upon. The directors were unwilling at once to pay any exorbitant claim parties might make against them, as they were trustees for the shareholders. The claim for the destruction of the fence he did not object to; and as it was from principle the company resisted this claim, he hoped the jury would give the case that consideration which, as men familiar with agricultural pursuits, they would be especially qualified to do. Mr. Motteram urged that the mode suggested by the defendants was fallacious, as Mr. Lowe's tenancy could not be considered in the way suggested. If he were really an off-going tenant, he would have no rent and payments to make in respect to the land given up, which in this case, with the seeds and labour, was shown to be within a trifle (taking even the defendants' view as correct) of the amount claimed. The mode suggested for estimating the claim was ingenious but unsound; it put the plaintiff in the position of an off-going tenant with a liability to a twelvemonth's rent and payments for the land, whilst it put the defendants in the position of an in-coming tenant, with possession of the land, with no rent or payments to make in respect of it for the next twelve months. The defendants called no witnesses, and his Honour summed up the case very carefully to the jury, intimating that he did not agree in the mode of calculation suggested by the defendants, but left the whole matter in the hands of the jury, who (he said) were peculiarly well qualified to deal with a case of that description. The jury, after retiring to consider the case, returned a verdict for the plaintiff for 48*l.* 16*s.*, the amount claimed; the foreman intimating that the jury considered the claim to be a moderate one."—*Midland Counties' Herald.*

to place in competition with all comers. Halkett's guideway-cultivation is one of them, Burcham's method is another; and Mr. Thorold's (of Norwich) "universal" application of steam power, vouched by a number of first-class names in the agriculture of his country, though still unpublished, is a third.

WHY DO WE WASTE OUR STRAW?

This is a vital question for agriculture. For many years I have been gradually more and more convinced that straw has a considerable value for feeding purposes, for which alone it should be used, in order to extract from it the largest profit. It is true that, when I have propounded this notion in the presence of practical farmers, their shouts of laughter have testified to their disbelief; and I have smiled at their prejudice and miscalculation, in conscious conviction that they would gradually have to surrender at discretion. The quantity of Wheat straw removed from an acre of well-farmed clay, where the average is 5 qrs. per acre, would be 2 tons per acre. Science has shown us that, ploughed in and considered as manure, its worth is but 9*s.* 4*d.* per ton; while, used as food, it will, if properly prepared, realise a value of 40*s.* per ton. Now what farmer would knowingly throw away 2*l.* to 3*l.* per acre, in so economic a business as farming? and yet this is literally being done over millions of acres. If it be denied that straw has a greater value as food than as manure, it would, by parity of reasoning, be desirable to compare the manurial and feeding values of oilcake, Barley, Beans, Peas, hay, and roots.

Whilst my farming friends ridicule my dislike to ploughing in straw, they would stand aghast at my proposing to them to plough in their Barley meal, Linseed cake, or other feeding material. But I can see no difference: the folly or error is in each case equal, and the loss comparatively as great. Whence does this singular disbelief arise? Simply because the straw, in an unprepared condition, is not in an available condition as food. I purpose to give a practical illustration of this question, by a statement of my own proceedings; but every one who would understand the question in its most comprehensive view should study Mr. Horsfall's admirable papers on dairy management in the Society's Journal. The whole feeding question may be considered as greatly developed by those papers. The question of converting both our straw and our roots more advantageously than we now do is a true breeches-pocket question for the British farmer; nor are the public less interested in the more abundant supply of meat, which would naturally follow the more economic use of our straw and roots. The general appearance of thriving animals is unmistakeable. If, after feeding, they lie down contentedly, free from restlessness, all goes on well. Such is the case with my 10 young shorthorn bullocks, of Irish breed, about 30 months old, which were bought in at 9*l.* each.

They consume daily—	£	s.	d.
216 gallons cut Wheat straw			
6 do. Rape-cake	0	2	6
3 do. malt-combs	0	0	4½
5 do. bran	0	0	5
Moistened by 20 gallons of hot water. Bean straw requires twice the quantity			
300 lbs. of Mangel Wurzel	0	1	4

In round numbers they cost at the rate of 3*s.* 6*d.* per week, independent of the Wheat straw. If I valued the Wheat straw at 40*s.* per ton, it would add 2*s.* 6*d.* to their weekly cost. The roots I value at 10*s.* per ton. The animals are in a fattening and growing condition, and evidently are advancing remuneratively. This we can judge of by their appearance, as I have not, like Mr. Horsfall, a weighing machine for cattle. Nothing tests the value or force of food so soon as milking cows. I strictly adhere to Mr. Horsfall's proportions of food for mine; and the result is an ample supply of milk, and an increase in condition.

The food for each cow is as follows: daily, 20 lbs. straw chaff, 8 lbs. hay, 5 lbs. Rape-cake, 2 lbs. Bean meal, ¾ lb. bran, ¾ lb. malt combs, 35 lbs. Mangel or Swedes. Cost, without straw, 7*s.* 7*d.* per week.

The whole question may be said to hinge upon the condition in which the food is administered. It must be moist and warm; and the animals must have proper warmth and shelter. As a general rule, this is not the case throughout the kingdom: hence much food is wasted or misapplied. Were I to give my bullocks the same quantity of cut straw in a dry state, they would not eat one-half of it; and, besides, they would be restless and dissatisfied. This I know from experience. I will now describe my mode of preparation, and then calculate the cost. I do not use the ordinary close steaming apparatus, but a number of cast-iron pans, or coppers, each capable of containing 250 gallons. These are set in brick-work, with a 4-inch space around them, each space connected with the adjoining one by a 6-inch earthen pipe. Into these spaces, and around these coppers, circulates a portion of the waste steam from the engine, after having passed through the cylinder.

I should state that a close vessel of water, connected with the supply tank, is kept in a nearly boiling state by the waste steam before it passes around the coppers and a vertical 4-inch pipe takes away the steam after it has passed around the coppers; so that so long as the steam engine is at work, the steam flows around the coppers, after heating the close vessel of water, and then passes into the atmosphere. The coppers are all sunk into the earth, so as to stand level with the floor. By this means, when an extra supply of food is required it may be piled up in a mound, and kept hot for two or three days. The straw chaff, cut fine and sifted, is thrown dry into the copper, 27 gallons at a time, and then the proportion of malt-combs, bran, and Rape-cake strewed over it; then a pail of hot water (drawn from the hot-water vessel close at hand) is thrown over it, and it is all incorporated by mixing with a steel fork, and well trodden down; then another 27 gallons of chaff, with the other materials and hot water; another mixing and another treading down, until the copper is full and solid; and if extra quantities are required, it may be continued in the same way above and around the coppers, but it must be moist and solid (if too wet the animals will not eat it). The larger the mass, the longer it remains hot. Practically, we find we can in winter manage if our engine only goes twice a week; but as a general rule we work it for grinding, irrigating, threshing, &c., more often than that. The mass of subterranean brick-work absorbs the heat from the waste steam, and holds it for several days. The heat so obtained costs you nothing, for it would be wasted in the atmosphere. I think the time will come when farmers will turn it to several useful purposes. Animals will eat Rape-cake abundantly when so mixed and dissolved, but not when dry. This is an admirable food for all sorts of farm animals, and it should be administered, more or less, through the whole year. I should say that our roots are cut either by a Gardner or a Bentall, and mixed in the manger with the warm steamed chaff. There will be no blowing, griping, or scouring with food so prepared, and the animals eat it as hot as they can bear it. In my earlier career I reared first 40 and then 50 calves, and sold them as fat bullocks, so treated, never having been off the boarded floors for 2½ years, and never having had straw under them. The 10 bullocks I am now feeding are on sparred floors. The cost of cutting a ton of straw into chaff, ¼ inch long, may be taken at 3*s.* to 4*s.* The trials of chaff-cutters, as reported by the judges in the Royal Agricultural Society's Journal, show that 112 lbs. or more of hay could be cut in three minutes by steam power. It would be well, however, to double that time or cost, because we know on such occasions that everything is in "competing order," which could not be expected on a farm. Therefore, 2*s.* a ton for hay, or 4*s.* per ton for straw, would be a liberal cutting-up allowance by steam power.

If we are to consume all our Bean, Barley, Wheat, and Oat straw, we must keep our animals on sparred floors, or on burned clay, and we must invest more capital in animals, and shall make much more meat per acre. If a ton of straw will make 40 lbs. of meat, and if 2 tons of straw are grown per acre on our cereal and Pulse crops, it would be four score of meat per acre over the whole of the cereals and Pulse.

Oh! but where is your manure to come from, if you eat your straw? Why your animal, by this mode of feeding, consumes 560lbs. of Rape-cake with every ton of straw. This is better than littering the yards by cart-loads in wet weather, to sop up the water, and save some of the liquid manure which would otherwise be washed away by rain from untroughed roofs. But what feeding property is their straw? A good deal of hilarity was excited at our London Farmers' Club the other day by my stating that every 100 lbs. of Wheat straw contained the equivalent of 15 lbs. of oil. Since then I find I have understated the case, and that really each 100 lbs. of straw contains—see Morton's admirable Cyclopædia, vol. ii, page 1153 (Voelcker's analysis)—72 per cent.! of muscle, fat, and heat-producing substances, of which 27 per cent. are soluble in potash, and 35 per cent. insoluble. The soluble fattening substances are equal to 18½ lbs. of oil in each 100 lbs. of straw. In conclusion, I would recommend every feeder of stock to study Mr. Horsfall's papers in vol. xvii. page 260, and vol. xviii. page 150 of the Royal Agricultural Society's Journal. They will enlighten his mind, dispel his prejudices, and increase his profit. If by his system of feeding 14 lbs. per week of meat and 3 lbs. of internal fat can be gained by each full-sized animal (and I am sure this can be done as an average), I know of no other system which will exceed it in result, or equal it in economy. The consumption of straw, in the way here suggested, would produce a very great increase of meat, manure, and corn. If supplies of this warm food were conveyed to sheep in our fields in cold and miserable weather, many losses would be avoided, and our Turnips would make more mutton. In order to provoke a discussion and examination of this subject, I send this communication to several papers, and shall probably enlarge upon it in some future papers. *J. J. Mechi, Tiptree Hall, Kelvedon, Essex, Feb.* 28.

By Mr. Horsfall's mode of feeding you may get the manure without cost, and a handsome price for your straw and roots. The following facts, deduced from Mr. Horsfall's paper, will show that 1000 lbs. of Swedish Turnips or 100 lbs. dry are worth 1*s.* 9¾*d.* as manure, whilst

100 lbs. of hay are worth	1s.	2¼d.	
100 lbs. of straw	0	5	
100 lbs. of Bean meal	2	6	
100 lbs. of oilcake	3	1¾	
100 lbs. of Indian meal	1	1¾	
100 lbs. of Locust Beans	0	5	

Here is an instructive and interesting comparison with a vengeance! A ton of Swedish Turnips are worth as manure 4*s.* per ton, or nearly half the manurial value of a ton of straw or Locust Beans. Oilcake or Rape-cake is worth, as manure, 3*l.* 3*s.* per ton.

HITCHAM ALLOTMENT REPORTS FOR 1858.

[We extract by permission a portion of Prof. Henslow's Report to his parishioners on the Hitcham allotments.]

Allotment Report.—The Judges who inspected the allotments did not consider it necessary to add anything to the favourable report they made of them in 1857. But to stand still at what may have been already achieved, should not be our aim! We must be resolved on making progress! I will tell you why. Last year I had to report our decided success at the "Hatcher sweepstakes," over the comparative novices at the Bromborough-Pool Works. This year they have almost as decidedly triumphed over us in regard to our favourite produce the Potato. It is clear they must have attended to the directions of the London judges. Their tact and diligence has been rewarded by well-merited success. These town manufacturers have wits sharpened by education, and are awake to the importance of attending to what they may be told by qualified teachers. This is not always the case in country parishes. There is no other reason (I believe) why agricultural labourers, who have so much practical experience in cultivation, should be overtaken and surpassed by persons whose daily occupations have nothing to do with digging, sowing, weeding, &c. Let us try whether we can recover our lost ground by improved attention to the means by which not merely a large amount, but produce of superior quality may be secured. By carefully thinking over what the judges have told us, and by comparing our home methods with those of our distant rivals we shall not fail to improve.

In all agricultural pursuits it is becoming hopeless for ill-instructed and prejudiced persons to maintain their ground against those who possess superior information and keep pace with the continued improvements that are going on. I learn this from the best agricultural journals which record the opinions of practical men, who are constantly calling for an improved education and a higher amount of instruction among our agricultural labourers. In our allotments, let us pay increased attention to two very plain but most important points. First, perfect cleanliness from weeds; secondly, the application of approved manures for particular crops, to be applied in approved quantities for each. Mere hap-hazard proceedings are unlikely to secure success. In Onions we have succeeded better than with Potatoes, having carried off the first prize from a new opponent at Tortworth who is acknowledged to be a most successful cultivators of this crop. Although we have obtained all the prizes for Carrots, we have nothing to boast of here, since our opponents were not prepared on the day appointed for showing this produce. In future, it will be better to send the samples to London rather later in the season; for it seems that Carrots are not generally ready so soon in the West of England as with us. We have no desire to carry off prizes without full and fair competition.

I propose in future to keep an account of the allotment culture according to the plan I adopt with my botanical class. It is an excellent way of determining the relative merits of competitors at all kinds of examinations. A certain number of marks (as a full complement) being allowed for each description of produce, a certain number of these will be awarded in proportion to the degree of merit noticed in each case. The whole amount will determine the relative position of the competitors. Some such scale of marks as the following should be adopted. Suppose an allotment is cultivated as the judges have directed, in three equal portions—

	Marks.
One-third Wheat or other grain, highest number	10
One-third Potatoes ditto	10
One-third subdivided into spaces, not less than a certain number of feet square, for any one crop; respect will be paid to variety and succession of cropping, allowing 5 marks at most to each crop of Cabbages (and other leaf crops), Beans (and other Pulse crops), Onions (and other bulb crops), Carrots (and other root crops), Gourds (and other miscellaneous crops).	

In determining the marks for these crops notice will be taken of any foulness from weeds. Negative marks will be deducted according to the kind of weeds allowed to take possession of the ground. For instance—

	Bad Marks.
Brambles (which ought long since to have disappeared from the allotments), Horsetail, Coltsfoot, and other creeping perennials	1 to 4
All other perennials and annuals	1 to 3
Unclean paths	1 to 4

Prizes awarded for allotment cultivation at the Hitcham Horticultural Show on the 15th of September, 1858:—

1st Prize,	No. 44.	G. Gardener	4th Prize,	No. 107.	Th. Levett
1 ,, ,,	1.	Jos. Knock (son. Jos. W. R.)	5 ,, ,,	78.	Wm. Levett
			6 ,, ,,	106.	Wm. Baker
3 ,, ,,	49.	Jas. Knock (W.R.)	7 ,, ,,	108.	Wm. Stiff
			8 ,, ,,	104.	Is. Procter

The next 12 are classed, and highly commended.

No. 47. Maurice Taylor	No. 69. Rob. Dickerson
3. Wm. Bull	62. Fred. Rosier
8. Jno. Steff (C. G.)	61. Geo Gooch (son Rob.)
30. Rob. Gosling	110. Rob. Barton
40. Dan. Reynolds	109. Ed. Sewell
130. Rob. Baker	116. Jno. Squirrell

Four allotments were foul, and all the rest creditable. The four allottees who had neglected their allotments were reminded that the rules require that all who persevere in cultivating them in a discreditable manner are liable to forfeit their tenure, that others desirous of having allotments may make better use of them.

At the Show Meeting of the Hadleigh Agricultural Association, a few samples of produce were forwarded

by some of our allottees on the understanding they might compete for the labourers' prizes. But it was decided that only labourers in the employ of subscribers to the Association were entitled to do so. The judges, however, did award two prizes as follows:—

No. 104, Isaac Procter, First Prize for Basket of Vegetables.

No. 33. John Bull, Second Prize for Potatoes.

Report of the Judges for the Hatcher Sweepstakes: *Battersea, Sept.* 14th, 1858.—Last year we had the pleasure of acting as judges between the Horticultural Societies of Hitcham and Bromborough Pool Works. This year we have been invited to perform the same duties, allottees under the Right Hon. the Earl of Ducie entering into the competition. The samples sent us for adjudication were,—3 samples of Onions from Earl Ducie's allottees, 8 samples of Onions from Hitcham, 5 samples of Carrots from ditto, 10 samples of Potatoes from ditto, 3 samples of Onions from Bromborough Pool, 9 samples of Potatoes from ditto. After a careful consideration of the samples, and of the quality as well as quantity of the crop, we submit the following award:—

Onions.—1st prize, No. 44, George Gardner, Hitcham exhibitor—quality especially good, yield large: 2d, No. 131, John Davis, allottee under the Earl of Ducie—quality excellent, yield good; 3d, No. 124, W. Halls, Hitcham exhibitor; 4th, No. 188, T. Burford, allottee under the Earl of Ducie; 5th, No. 3, Mr. Hatcher, Bromborough Pool. In this class some of the samples not obtaining prizes were very superior in yield but not of equal merit in point of quality.

Carrots.—1st prize, No. 74, Jas. Knock (s. Jas.), Hitcham (the Orange)—the quality of this sample is very superior; 2d, No. 49, Jas. Knock (B. M.), Hitcham—The yield of this sample large; 3d, No. 48. Wm. Gosling, Hitcham; 4th, No. 41, Jas. Gosling, ditto; 5th, No. 1, Jos. Knock, ditto. Last year we received five samples of Onions and only awarded two prizes. We find that in a case of this kind we are at liberty to adjudicate the whole number of prizes given to the class. Accordingly this year we have endeavoured to range the only five samples of Carrots sent for competition in the order of their merit.

Potatoes.—1st prize, No. 1, R. Langley, Bromborough Pool; 2d, No. 26, P. King, ditto; 3d, No. 7, E. Crossley, ditto; 4th, No. 78, W. Levett, Hitcham; 5th, No. 11, J. Ball, Bromborough Pool. Last year we had occasion to remark on the superiority of the Hitcham samples of Potatoes over the Bromborough Pool ones, and our inability to award the latter a prize. This year we have the pleasure of congratulating the Bromborough Pool exhibitors on the great improvement in their Potato samples. We think we may fairly say in conclusion, of all the samples submitted to us, that they are good and superior of their kind, and show careful cultivation. *Henry Ramsey, Manager of Mr. Jas. Veitch's Nursery, Brooklands, Battersea, Surrey. James Steel, Market Gardener, Battersea.*

[We omit an appendix giving a detailed account of the several experimental plots in Cheshire, Gloucestershire, and Essex respectively. It is this detailed superintendance, nevertheless, and the interest shown by influential persons in the proceedings of the allotment tenantry on which their success especially depends.]

Home Correspondence.

Barley Sowing in South Essex.—Thinking perhaps that some of your readers might like to know how we are getting on in South Essex, I beg leave to tell them that I have finished sowing Barley. My first was drilled at 11 inches apart, with 5 pecks of seed an acre, in November; it has been horse-hoed and looks promising. My second was drilled Jan. 10, part looking well, part thinned from grubs, quantity of seed 6 pecks an acre, at 11 inches from row to row; is ready for the horse-hoe. My final sowing was on March 2, with 6 pecks of seed at 11 inches—the distance I drill all my corn, so that once setting the drill and horse-hoe does for the season. I have hand-hoed one piece of Wheat this season, as I was busy with the horses putting in Potatoes; but I promise you that it shall be the last time, as it is folly for a man to fancy he can do it by hand as well as by horse-hoe at one-fourth the cost. In conclusion I must repeat that excellent farmer Hewitt Davis's saying, that I think the farmers generally in the southern counties lose quarters an acre by not sowing their Barley early enough, besides the difference between malting and grinding. *Charles Bates.*

The Case of the British Labourer; Northumbrian Wages.—The papers that have appeared in your *Gazette* concerning the wages of agricultural labourers in different counties, since the statement of Mr. Grey of Dilston (page 59), supposing them to be accurate, which there is no reason to doubt, inasmuch as they undesignedly corroborate each other, show clearly how fallacious that statement must be, and how mistaken his belief in the high wages of his district; for he not only omitted to explain at his Farmers' Club, where the omission was consistent, but also in his letter to the *Times* (page 102), where it was inexcusable, that his 16*s.* a week with the food, free cottage and other advantages, included an obligation on the part of the labourer to provide a "bondager" at his own expense, or to pay her out of his earnings, as they do in Scotland; an obligation that appears to reduce the gross wages below the net amount that remains to this Scottish labourer when his "bondager" has been paid. Now that amount was stated by a "Labourer" (page 81) to be in money and in money's worth, about 10*s.* 6*d.* a week, besides a cottage rent free; an amount to which I cannot raise the Dilston wages though I take them at 16*s.* a week, and charge nothing for a cottage. Now, as the verification of the real amount of the Northumbrian wages is essential to the subject of this paper, it is incumbent on somebody who is acquainted with the fact to tell us what it is, or to convert his gross emoluments into net money. That Mr. Grey was totally wrong in attributing the supposed high earnings of his Dilston labourers to their superior energies, must be taken to be proved already, because he makes them to earn more, and fare much better than the labourers of the Scottish lowlands, who are perhaps the most enormously energetic, enduring, and indomitable people of that class in the whole world. The cheapness of fuel in Northumberland is of course a vast addition to the labourer's comfort, but it is an advantage which is wholly due to local circumstances, has nothing to do with his own earnings, and does not come out of the farmer's pocket. I am extremely sorry that I should be compelled to write uncourteously towards Mr. Grey, but my language is the least uncourteous that I can find in which to defend the truth in a most important matter from his carelessness or misrepresentations. *N.*

[N. appears to forget that the hind receives wages for his bondager's labour, viz., 1*s.* 6*d.* a day in harvest time, 1*s.* in summer, and 10*d.* in winter. Of course her support is nevertheless often a loss to him, but it is rather as a nuisance than as a loss that the bondager system is objected to. Let us add that our correspondent had better exhaust whatever other means he may possess of answering Mr. Grey before he ventures on charges of carelessness or misrepresentation.]

Societies.

ROYAL AGRICULTURAL OF ENGLAND.

Weekly Council: *March* 16.—The Hon. W. G. Cavendish, M.P. in the chair. Communications were read from Mr. Thomas Crisp, Baron Nathusius, and the Count de Gourcy, on the advantages of cultivating the Lupines, especially the yellow-flowered variety, on the blowing sands respectively of Suffolk, Prussia, and the north of France, as food for sheep.

The Council referred these communications to the consideration of the Journal Committee. Adjourned to March 23.

Farmers' Clubs.

London: *Agricultural Education.*—The following is a somewhat fuller report of Mr. Bond's paper on this subject than we were able to give last week.

The altered Nature of the Business:—

In this age of change, progress, and improvement, no change has been more marked and decided than the altered position of our British agriculture within the past 50 years. Not half a century since, and the agricultural art was comparatively pure empiricism; it was practice without science, practice without the light of reason; and the standard of agricultural intellectual attainment was necessarily low and meagre. Agriculture, as a purely imitative art, required no depth of knowledge even in its best qualified professors. There was nothing in a simple course of routine to tax the mental powers. But within the present century how marked the change! We have now the widest field and the most extended scope for intellectual exertion; we have now the whole of Nature's laws opened up for our investigation and research. There is scarce a science but bears directly or indirectly upon the art by which we live; and for a rational fulfilment and a thorough comprehension of agricultural practice, I know of no business or profession at the present day requiring a deeper knowledge or a higher degree of intellectual attainment. Agriculture is no longer a mere blind question of ploughing and sowing; but agriculturists now require to understand the object, reason, and result of every mechanical operation. They require to know why ploughing benefits the land; why draining answers; what the plant derives from the soil, what from the air; why one manure as applied to the soil answers, why another fails to answer; how light and heat affect the plant; how they influence the crop; why the animal thrives well upon one kind of food and not upon another—to say nothing of the structure of the plant, the anatomy of the animal, the construction of machinery, and many other subjects requiring the greatest mental application to qualify any man to comprehend the intricacies of Nature's laws and the complications of Nature's operations, which it is the farmer's greatest success to subscribe to, to foster, and promote. Are the youths and young men of the rising generation so educated upon the best principles of instruction that they are thereby best fitted to cope with their future position?

Education for this Business:—

I have informed myself, by an extensive correspondence, upon the course of agricultural study generally pursued throughout the kingdom. In the colleges, such as Cirencester, Kensington, and Queenwood, the whole course of study is enlightened, suitable, and satisfactory. In the local schools, generally, the sciences are much neglected; in more than one-half of the prospectuses received from such schools the sciences are not even mentioned, and in many, where alluded to, it is in a foot-note, to state—"taught if required." Now, it is not the fault of the schoolmaster that this is the case: it is for us, as agriculturists, to make up our minds, to have clear views upon this point, and to express our wishes. It is for us to say whether these things ought thus to be. I observe there is the same dunning at Latin and Greek as when I was a schoolboy, and I dare say there is the same plausible reason given for the continuance of the system, viz., discipline. Now there is no one a greater advocate for mental discipline than myself, but why the dead languages are so infinitely superior in their influence I cannot conceive. To me it appears such studies may make boys word-searching mental-memory machines; but what is there to excite the observation, to induce inquiry, to lead to reflection and real thought? Now, where the dead languages so essentially fail, the sciences so eminently succeed. The sciences dwell upon subjects of real utility—subjects which meet us at every turn; and such subjects of every-day life are ever suggesting consideration and research. They constantly interest the boy, and teach him to use both his perceptive and reflective faculties. The boy sees a plant, and contemplates its construction; he thinks over the process of vegetation, the works of the roots and rootlets, the ascension of the sap, the functions of the leaves, and the whole busy process of accelerated nature most actively working to manufacture food for man. He sees a steam-engine, and at once examines its manufacture; he understands its mechanism, and contemplates the possibility of some mechanical improvement. All nature and art, to a mind scientifically cultured, are vast fields of interest, of observation, and thought. Surely, then, for those destined for agriculture, a study of the sciences is the course to pursue, to manufacture thinking boys and intelligent thinking men. Give the boy an early bent to understand the why-and-because of all around him; you thus place before him a deep mine of wealth, which it is discipline indeed to comprehend, and a study throughout life fully to acquire; he never lacks a subject for intelligent thought, and you culture the mind by a gradual process to make constant efforts; the knowledge and facts acquired, all bearing upon agriculture, are literally power—power to apply in the manufacture of meat, and the manufacture of corn; and you cultivate at the same time that indispensable guide in all the business transactions of life, viz, a thoroughly well balanced judgment. Upon the scholastic studies generally, I would observe, it is highly desirable every boy should be able to read clearly and fluently, without hesitation and stammering; it is equally desirable he should be taught to write a good plain legible hand, apart from all curvilinear flourishes, rectangular excrescences, and the complete ambiguity which characterises the writing of the present day. Let each boy, too, be especially well grounded in arithmetic; by some means implant a taste for figures, for the system of good and correct accounts in every matter of business is one of the grand secrets of success in life. Of course there are grammar, spelling, and history to be learned; but I am convinced upon these subjects there is much time wasted. A knowledge of geography is, of course, desirable; also a knowledge of mathematics. I believe the plans of theme-writing and of close verbal questioning, upon every study, are most desirable, as ensuring a thorough grounding, which is the basis of accuracy, self-reliance, and after self-development. To me it appears, too, most desirable that the parent, if competent, should regularly and carefully examine his son, and thereby note his progress; but for general, everyday, local schools to be useful, we require reform. We require a public board of agricultural examiners, who shall duly examine each candidate, in the first instance, at 16 years of age, in all that constitutes a sound agricultural education; we should thereby introduce competition and a standard of merit, and the most meritorious, painstaking, competent master would have the largest proportionate number of successful boys.

Life after School:—

Further: upon a youth leaving school, the necessity is obvious for continued intellectual discipline; and how requisite it is for a young man to have continually some intellectual object of attainment before him! I note the present system: a boy leaves school at 16 years of age; he throws up his hat, and concludes his education finished, when, in reality, it is but just commencing. More than half the young men destined for agriculture in England actually waste, and worse than waste, the first four or five years of their freedom from scholastic restraint. Theirs is a thorough desultory life; they throw up all intellectual culture, and they have no intellectual standard of attainment to which to strive to attain. They probably assist in the farm-management; but as they have no responsibility, the farm occupies but little of their thoughts; as they feel but little interest, they observe but little; and the rat-hunt, the cricket-match, the run with the harriers or fox-hounds, the quadrille-party, the shooting exploit, with other amusements, combined with a profusion of Tobacco, are their real employments—their true business of thought and occupation. How are the evenings spent? Often in a desultory, do-nothing industry, or in card-playing and smoking—in colouring a clay or an idolised meerschaum—or, if in literature, in perusing some trashy love-tale novel, in studying "Blaine's Encyclopædia of Rural Sports," or in reading the last number of the "London Journal." I speak from facts, from my own observation; and only in ridicule, I fear, can it be said that such training will create promising candidates for future agricultural honours! This is not a desirable course of discipline: reared in a desultory manner to sport and to spend, to study their own pleasure and indulgence rather than their interest and advantage, it will be no matter of wonder or surprise if pleasure is their chief engrossment in after-life, and if business, at the comencement of their career of responsibility, finds them deficient in knowledge and judgment. I have seen young men make grand mistakes upon their first start in life, from absolute incompetency—especially upon clay farms; and I agree with the observation of an old friend of mine, that it would well answer the purpose of many a young man, upon commencing business, to pay an elder to superintend and direct him in his management and supervision for the first two or three years. I am in no way averse to a reasonable amount of sport and amusement; I have had my share, and that a large one, of hunting, coursing, shooting, and the like, and I believe too without detriment; but let it be the condition that whilst sport is sport in reality and in earnest—whilst a young man rides across country with courage and judgment, and sports as a sportsman—that business and study are equally pursued with the same spirit of indomitable energy and perseverance. We hear a great deal too much now-a-days of the old tale that "All work and no play makes Jack a dull boy." The truth is that more work and less play would make Jack a bright boy, a business youth, and a thriving, successful man. I am for pleasure in reason, but for business in earnest; and in every case I desire to put aside the dreary, indolent, listless nonentity spirit which characterises young men, both in their intellectual improvement and in their business attainments and attention. I want to see young men fresh from school, not only breathing, but really living—living for an object—living for an end, and actually using the means to attain that end. I want diligence, and not a passive indifference, to govern their conduct. I want them to feel that time is a talent not to be wasted and squandered, but a talent to be used and improved; that they have much to do, and but little time to do it in. Life is a race, and I know well that the idle brain is, most surely, the devil's best workshop.

Agricultural Examinations:—

What, then is to be done? As every agricultural society in England looks to the Royal Agricultural Society as its agricultural father, it is for us to take steps to induce our parent to act for the better education of her agricultural children. I believe farmers' clubs generally, and every agricultural society throughout the kingdom, would gladly combine to facilitate such a movement; and I know of no course so effectual as the establishment of a public board of Agricultural Examiners. I strongly recommend two examinations: one for junior candidates not exceeding 16 years of age (as before alluded to), and one for senior candidates not exceeding 21 years of age. I would certainly throw the examinations open to all candidates, as the only object would be to excite competition, and to grant an agricultural diploma to those competitors having attained to the necessary standard of intellectual acquirement. It could be a matter of no moment whether the knowledge of the senior candidates was attained by study in the privacy of their own houses, or by attending a course of agricultural lectures. It would be for the board of examiners to recommend the best works extant upon the various subjects and sciences for examination in the senior class; and it is highly necessary so to act as to ensure general competition. The standard of merit may not be set too high. Even the young man missing his mark and losing his diploma would in reality be a gainer—and a very great gainer, notwithstanding—from the habits of study and of mental discipline to which he had cultured himself in his attempts to secure the distinction of the diploma. I am well aware that such a board of examiners would have been of essential service to me; for though I continued to study chemistry, geology, and some other sciences, after leaving school, without the slightest incitation from those around me, yet I feel that the fact of a public examination would have been a sufficient inducement for me to have worked with redoubled diligence, preventing a foolish waste of time, training me in habits of mental and physical industry, and resulting in redoubled success. I do not think the middle-class Oxford University examinations meet our requirements; the whole matter will be far better in our own hands; the whole scheme may be self-supporting. We must carefully avoid the error into which the Highland and Agricultural Society of Scotland has fallen. That society required candidates to attend, for a period of two years, classes in five or six of the different sciences prior to examination. Such a requirement, of course, nullified the general usefulness of the scheme. The mistake is now rectified. In England or Scotland it must take a time for the

competition to be great, or for the attendance to be large at the examinations, from the simple fact that the education of young men has been grossly neglected, especially after leaving school; and it must take a time to rear any number of young men, intellectually cultured and qualified to come forward for examination, or to compete for the honours of the certificate or diploma. It is my conviction that in carrying out the system of agricultural educational examinations lies hid the Royal Agricultural Society's most successful operations and her proudest triumphs.

Entering on Business :—

I recommend every young man to take the judgment of an experienced friend upon every point upon entering business, not only in the hire of the farm, but also in the purchase of the necessary stock and implements. In the management of the farm do everything well and at the cheapest cost, and don't be afraid to calculate the cost to produce a crop, or the cost to rear or fatten an animal. I am sure we look at a farm too much in the mass, instead of calculating the items. Scrutiny leads to judicious and profitable outlay. Cultivate a thorough judgment of stock, for purchases 10 per cent. too dear and sales 10 per cent. too cheap are serious mistakes, and tell heavily against success in life. Young men must know by observation what constitutes a day's work: horses are expensive machinery, and if horses are kept well and worked 20 per cent. daily below par, whereby 20 per cent of horse muscle is necessarily kept beyond the actual requirements of the farm, I say these again are serious losses. The manual labour, too, of a farm is necessarily a heavy outlay, and a master receiving 20 per cent. minus his due in labour is in an unfavourable position. Young masters must learn what constitutes a fair day's work for a fair day's wages, and see too that they get it. Also, in task work, a young man may be much imposed upon by paying a heavy percentage beyond the value of the work performed. Both horses and men demand serious attention and consideration, with good supervision and direction. The work of the farm should always be forward, that it may be performed at the proper time and season. Not to make hay when the sun shines is a mistaken economy. A man always just behind-hand is not likely to overtake success. I most strongly recommend every young man annually to draw out a correct valuation of the live and dead stock, and of the covenants of the farm. I do it each year at October, and at the same time I draw out an actual balance-sheet of the annual returns and expenditure; and I urge upon every young man the necessity of doing the same. The more we are men of figures the more shall we be men of sound judgment, of deep research, and correct practice. Groping on in the dark has been the ruin of many a man. It is investigation which prevents a continuance in losses; and it is always wise to know the worst, and meet our difficulties, not by avoiding them, but by research, by action, and as men. I feel it to be absolutely essential for every young farmer to study the agricultural literature of the day. The Royal Agricultural Society's Journal must be carefully read, also the "Farmer's Magazine;" and it is highly important weekly to peruse the *Mark Lane Express* or *Bell's Weekly Messenger*, or some other good agricultural paper, that young men may keep pace with the practical and intellectual progress of the age. Again, the Royal Agricultural Society's shows, and the other important and local agricultural exhibitions, are excellent opportunities for comparison, information, and improvement. To see other than home systems of farming is decidedly necessary to prevent local prejudices and those narrow notions which grow up under the shade of one's own barn doors.

Reviews.

Prairie Farming in America. With Notes by the Way on Canada and the United States. By James Caird, M.P. (Longmans,) p. 128.

A book that you may read in two or three hours, during which however you are carried at express speed over thousands of miles, beside a chatty, intelligent, and cheerful guide, who takes care you shall lose nothing which so hurried a journey enables you to see or know. You cross the Atlantic in a first-class steamer, traverse the States of New York and Vermont by railway, and on the other side of the St. Lawrence again take the line to Montreal and Ottawa, and La Chine, Toronto, and Niagara—talking by the way of scenery and land and crops, of hotel charges, of the timber trade, Canadian settlers, and American manners. Having reached the Great Fall you rest or wander leisurely amid its wonders. Take the following as a flying illustration of the powers of description which our guide possesses:—"Standing by the river side above the falls, looking upwards therefore at the rapids, you see nothing whatever between the horizon and yourselves but the great river running and leaping down miles broad, apparently, though that is an illusion; but there it comes just as if we had got to the edge of the world and saw the sea come leaping down the gap."

Of course notwithstanding the excitements of such a scene you cannot in such company avoid a conversation on the farming of the neighbourhood. "The man to whom you speak is from Aberdeenshire, and had been 30 years here. 'Oh, man,' said he, 'they're meeserable farmers. It would break your heart to see how they just scart the grun'. It's no very guid ony way, but they dinna gie't a chance.'"

However it is not for Niagara nor especially for instruction in the farming of that neighbourhood that Mr. Caird has brought you across the Atlantic. Returning by railway to Hamilton, you continue your journey through Canada West, leaving it at Detroit, where you again cross the St. Lawrence, entering the State of Michigan, crossing it by 280 miles of dusty country—no passengers however annoyed with dust, for "A thick canvass cover is stretched on a frame along the bottom of the whole train, covering the wheels and all the open space between the carriage and the rail, so that the dust as it rises is carried off and out at the end of the train in a constant stream."

At length you reach the first limit of the Great Prairie Country, towards which you have all this time been hurrying, and for the agricultural examination of which you have made this journey. You arrive at Chicago, "the new capital of 'that Western World,' as Washington described it, which Penn prophesied would yet make a glorious country. The valley of the Mississippi above Cairo, comprising on its eastern bank Illinois and Wisconsin, and on the west Missouri, Iowa, and Minnesota, embraces probably the greatest tract of fertile land on the surface of the globe. In total extent it exceeds England and France together, with the kingdom of the Two Sicilies thrown into the bargain—it is more than equal to Prussia and the whole Austrian empire—even Spain and Turkey combined would require the territory of the Ionian Islands to place them on a par with it. And this vast territory is not only intersected by numerous lines of railroad, which give it direct access to Montreal, New York, and Philadelphia, but on the north, by means of the lakes and the St. Lawrence, and on the south by the Mississippi River, it possesses a continuous water communication with the Atlantic. Nothing can illustrate more forcibly the vast natural abundance and resources of this splendid country than the history of the grain-trade of Chicago. An Indian village in 1820, this place has become a great city with upwards of 120,000 people, with wharfs and granaries for miles along the river canal which opens into Lake Michigan, and with streets, public buildings, churches, and private dwellings that may vie with those of London itself. The stores on the principal streets are equal in size and architectural elegance to the new row of fine buildings which leads from Cannon Street into St. Paul's Churchyard. There are numerous stands for hackney-coaches, and various lines of omnibuses ply along the streets. And Chicago is actually the centre of more miles of railway, completed and in operation, than London. Yet it is only 20 years since the first shipment of some 40 bags of Wheat was made from it. In 1837 its exports amounted to about 100 bushels of grain, in 1847 they had reached 2,243,000 bushels, and in 1857 upwards of 18,000,000 bushels. Chicago and all its wealth are in fact a property created by the profits arising in the mere transference from hand to hand of the surplus produce of but a small part of this wonderful country. Looking to Illinois alone, of which Chicago is the commercial capital and outlet, this surplus, great though it is, is capable of being increased tenfold, as only one-tenth of the fertile lands of this State are believed to be yet brought under cultivation."

It is the character of these fertile lands which you have come so far to ascertain. Accordingly before examining particular localities in the State you seek a bird's-eye view, as it were, of the country first, and therefore with Mr. Caird you "traverse the entire State on the line of the Illinois Central Railway, from north-east to south, and from south to north-west, a total distance of about 700 miles. The State of Illinois extends from 37° to 42° 30′ north latitude, being thus nearly the same length as England, but further south, and on the same parallel with Spain and Italy."

Having accomplished this first object, and received "a general impression of the main features of the country, and an idea of an almost endless extent of fertile soil," Mr. Caird spends a month in making a more minute and detailed examination of farming on the Prairies, and asks the reader to accompany him in his ride before giving the figures and conclusions at which he finally arrived. He says, "the railway shall transport us from point to point on the route, and a very light waggon or carriage invariably drawn by a 'span' (as they are called here) or pair of light active horses, of great spirit and endurance, shall convey us hither and thither over the country in our inspection of the Prairie farms." We cannot give much of the note-book of this Prairie journey. For full details the reader must purchase the little work of which they are the principal feature. Let us however select one or two items of intelligence gleaned at some of the places visited:—

"— Some corn fields are of uncommon magnitude: one vast sweep of 2200 acres was all in new-sown Wheat, a sparkling sheet of verdure in the morning sun. The towns, most of which are not four years old, are growing rapidly."

"— There is a plan of going 'shares,' in which a prudent Scotch farm labourer meets with great success. He has a farm given him to cultivate, fenced and broken up, and seeded; he performs the rest of the labour and carries on the farm, and pays his rent by delivering at the nearest station the half of the crop. This is an arrangement by which a steady man is sure to succeed, and the owner of the land is also well paid."

"— The pioneer of the settlement thus told me his story. He came here four years ago, and was so much pleased with the land and situation, that he advised his neighbours in the State of New York to follow his example. He purchased 2500 acres of as fine prairie as can be desired. The first two years everything was successful. He grew more than 30 bushels of Wheat an acre on the newly broken land, and sold it for 5*s.* a bushel. He was thus tempted to lay out the money as fast as he made it, in enclosing and breaking more. The autumn before last he sowed 800 acres with Wheat; 600 of it was killed by frost, the snow that winter being so light as not to cover it. He ploughed this up and sowed with spring Wheat, which succeeded admirably. Last autumn he laid down 600 acres with Wheat, but was somewhat late and out of season in getting it sown. The spring proved unprecedentedly wet, the Wheat was late in maturing, extreme hot weather set in, and his Wheat, which till then looked well, was in one week rendered nearly worthless. The long-continued rains in spring had given them no season for Oats, and Indian Corn had for the same cause been planted out of season, with the land in an unfavourable state, and the breadth very limited. This crop, which should be in the ground early in May, could not this year be planted till towards the end of June. Fortunately they had not had early frosts, so that there would be a fair yield. There had been no such unfavourable season for 17 years in Illinois, and he knew that the farmers who had recently settled in the country, and who had had only last year's experience, were much disheartened. But personally he felt no apprehension, as he had the utmost confidence in the natural fertility of the soil, which he did not believe could be exhausted."

"— Of the cattle common to the country there were several specimens exhibited, of enormous size. One red and white ox with wide upturned horns, four and a half years old, measured 2700 lbs. weight. He handled well, though very strong in the bone and limbs. Another of 2000 lbs. gross weight was reckoned on the spot worth only 14*l.* at the current price of beef, viz., about 2*d.* a lb. dead weight."

"— One man here had entered to an 80 acre lot last spring, had built his house, broken about 10 acres and sowed it with Wheat, and had his little crop of 'sod' corn gathered and stacked out of harm's way, close to his dwelling. The first care of an American settler on the prairie is to provide for the first winter. If he starts in May he ploughs a few acres up, and very commonly plants the Indian Corn on it by making a slit with his axe on the tough upturned sod, into which he drops the seed. Rude though this preparation appears, it is generally followed by a crop, sometimes a very good one. Having thus started his 'sod' corn, he constructs his house, and spends the rest of the summer in 'breaking' the prairie in preparation for a Wheat crop, and in cutting and making some prairie hay for the winter provender of his live stock. He also plants a few culinary vegetables and Potatoes. In the end of August he sows his Wheat, and when that is completed he harvests his 'sod' corn. This keeps him out of the market the very first winter, as it is often made to suffice for the food both of the family and the live stock. 'Hog and Hominy' is not infrequently the only food that the settler has to set before his guest during the first year of his possession. And though homely it is wholesome. When the crop of Indian Corn is secured, there is time to begin making fences. The neighbours have a mutual interest in this and assist each other. The fences are made of posts and sawn Pine timber; the posts of Cedar, 7 feet long, cost 3*d.* each, and both posts and rails are prepared in the forest, so that the settler buys them ready for his purpose, at either the nearest railway station or grove of timber, whichever happens to be most convenient. The holes for the posts are not dug out as with us, but are bored with an auger made for the purpose, and the work of fencing thus goes on with much neatness and regularity, and the fences, being all made in the same manner and with timber of the same dimensions, are very uniform and substantial. At this settlement we found the owner with four of his neighbours all busy in the work of fencing, one boring, one driving in the posts, and the others sorting and nailing on the rails."

"— The first man we called on was a dairy farmer from the Eastern States, an intelligent practical man, who thoroughly understood his business. He has had the same ill luck in his crop as other people, but knows that risk of seasons is one of those risks which farmers in all countries must more or less reckon upon. He has a dairy stock of 38 cows, and makes the milk into cheese. He can sell his cheese on the spot at 42*s.* a cwt., which is not far short of the average price realised by dairy farmers in Scotland, where the *rent* is higher than the price of land in Illinois. He finds the natural Prairie Grass very productive of milk till the month of September. His cows yield him 2 lbs. of cheese each, daily, during the period of good Grass; and they can be foddered very cheaply during the winter on prairie hay. He expects to improve his stock and returns materially, as he goes on, by providing succulent food for the autumn and spring."

Towards the end of Mr. Caird's little work he sums up the prospects of intending settlers on the Prairie—speaks of soil and climate, of crops and maintenance and profits. "The Illinois Central Railway Company have still 1,300,000 acres of land to sell. It is situated along their line of railway, chiefly within 5 miles on either side, and affords every variety of soil, climate, and situation to be found in the State of Illinois. They offer their lands at prices which, considering situation, quality, and terms of payment, are the cheapest I met with in America. Every facility for the transport of produce to market is at the command of a settler on their lands. At every 9 or 10 miles there is a station, with an electric telegraph, where the latest news of the markets may be learned; while there is usually a store at the station for the purchase of produce, and the sale of necessaries. Their terms of payment for the land are either cash with a discount of 20 per cent. in the price, or a long credit with a moderate rate of interest for America. So confident do they feel in the increasing value of their land, that they readily leave the entire price of it as a mortgage to be repaid by annual instalments out of the produce of the land itself. Purchasers from them obtain the further important advantage of exemption from all State taxes until the whole instalments of the price have been paid off, and this usually extends over the first seven years. It is an advantage of very great value, which can be obtained nowhere else."

The following is the position of a purchaser of half a square mile of land from this Company:—"He enters

into a contract with this Company for the purchase of 320 acres of their land, at the price of 50*s.* an acre. He pays two years' advance interest upon this, but he pays nothing further for two years. His first instalment, one-fifth of the price, then becomes payable, and each year thereafter, till all is paid, another fifth. His account will stand thus:—

Two years advance interest on price of land at 7 per cent.	£112
Contract price of fencing 100 acres, breaking it, sowing with Wheat, reaping and threshing, and for building a house, stable and shed	300
Price of horses, implements, and harness	110
	£522
Value of first crop	350
	£172
Second year: contract for fencing another 100 acres, sowing it with Wheat, reaping and thrashing ..	150
Wages paid and horse keep for cultivating 100 acres of Indian Corn	150
	£472

His 200 acres of corn crop will now yield him from 600*l.* to 700*l.*, thus more than recompensing his outlay, and leaving plenty in hand to pay his first instalment, and to proceed with the vigorous cultivation of the land. The same sum which would be needed to start one son as a farmer of another man's high-rented land in England, would thus start three sons as the owners of farms, fenced, stocked, and under crop, on the fine prairie soils of Illinois."

We must not this week occupy our columns longer with the farming of America. We cordially recommend Mr. Caird's little volume on it to our readers. They will find its 128 pages full of interesting matter which will, we are persuaded, make their author's name known where even letters to the *Times* have not been read.

To the book there is attached a useful map of the country.

Calendar of Operations.

MARCH.

Border of the Fens: *March* 16.—The spring seeding goes on rapidly and satisfactorily, many pieces of Barley have sprung up, and as the ploughs have not been interrupted during the winter, but little remains to be done preparatory to the fallow crop. Tares are very forward, and all descriptions of spring feed are ready for ewes and lambs and look as if they would be fit to cut for fodder much earlier than usual. Clover and Rye grass being generally a good plant. We have already begun to roll the Wheat with Cambridge's implement, which in light land works admirably. Some persons have commenced hoeing, but excepting where wireworms or slugs are busy it would be as well delayed a week or two until the weeds make their appearance. Wheat seems to be well established and a very level plant, here and there is a thick bunchy bit which might at once be improved by gently driving a few sheep over to eat the rankest of it down a little; but the uniform appearance of Wheat may be owing to the greater prevalence of thin seeding, as we frequently hear of less than 2 bushels being sown to the acre, and where the land is clear in good heart, well drained, and sown early 6 or 7 pecks yield better crops than 9 or 10 to the acre. It is still however deemed advisable to put nearly 4 bushels of Oats into the acre, as a thick plant is held to be necessary to obtain a full produce; it is certain that a thin plant of Oats will not insure a heavy yield unless a wet season superadds other favourable conditions. The fall of lambs is well spoken of; we observe that those farmers who purchased their tups early in September have been fortunate in the weather of February, the practice with many having been to have no lambs before March 1st, but those produced two or three weeks earlier have got a rare start and with good after-treatment will doubtless be sooner ready for the market and worth more for all purposes than those dropped at a later period. There have been many complaints heard of diseased stock, and in some instances considerable loss has been sustained; the best safeguard that we can learn is to take care of young stock, by giving shelter soon enough in winter, and not overdoing a breeding flock, for if fat there is great risk and almost certain loss in yeaning will ensue The failure in the Turnip crop of last year is now felt in the diminished number of fat sheep brought to market, and the consequent high price of mutton. Beasts will pay for feeding this year, the cost of cake being not extravagantly high, and price of beef keeping steady at 7*s.* 6*d.* to 8*s.* per stone. The price of corn will hardly bear touching upon; those persons who shared in the great yield which some farmers realised last year do not grumble, but where the Wheats were thin or deficient, a sorry tale is heard; more so with Beans and Peas, as some farmers obtained nothing at all, others sold their 2 or 3 sacks an acre at prices varying between 50*s.* and 60*s.* per quarter for Peas and from 40*s.* to 46*s.* for Beans, a few only getting so many as 3 or 4 quarters per acre. *Nil desperandum!* Peas and Beans are again sown with as sanguine hopes as if nothing had happened. Labourers have not been fully employed this winter, and in some poor villages we have heard lamentable accounts of parish management, which is the worst feature of "bad times," or (as some would read) of want of capital, of farms too big or too little, of bad management, or some other of the thousand ills "that flesh is heir to." It is an old and a disreputable feature in some districts to systematically lessen the number of labourers in winter, as well as to diminish the rate of wages. This practice too often severs the bond which should unite a man with those who serve him, or rather prevents any bond of friendship at all, for what but regular employment can produce regular habits and good feeling, and when do we find interrupted labour conducive to civility and sobriety, and what better opportunity of benevolence and kindness is there than to give employment during the dark and desolate days of winter? *J. W., Peterborough.*

Notices to Correspondents.

'An Impossible Case:" *An Irish Farmer.* Have the goodness to say what you mean. We do not know what you refer to.

Books on the Diseases of Sheep: *Orig. Sub.* Spooner or Youatt. The former is the more recent and smaller work; the latter is the older and fuller work—originally published by the Society for the Diffusion of Useful Knowledge.

Overhanging Trees: *W P* must not act on any but safe legal advice in the matter. Our opinion is that they are a nuisance, and he can insist on their being lopped; but he must consult his legal adviser.

Superphosphate of Lime: *Constant Reader.* Mix 4 cwt. of it in a compost with one or more cartloads of earth, and spread it broadcast over the meadow land as soon as possible.

Just published, a New Edition, in 16mo, with the Original Designs by George Cruikshank, price 5*s.* 6*d.* cloth,

TALPA; or, THE CHRONICLES OF A CLAY FARM. By Chandos Wren Hoskyns, Esq., Author of "Inquiry into the History of Agriculture," &c. The Fourth Edition.

"Mr. Hoskyns is evidently a man of science, as well as a practical agriculturist; and has judiciously clothed his very serious truths in a garb of simple language laced with rich humour."—*Morning Advertiser.*

London: Longman, Brown, & Co., Paternoster Row.

TO FARMERS & PERSONS DESIRING TO EMIGRATE.

Just published, in 16mo, price 3*s.* 6*d.* free by post,

PRAIRIE FARMING IN AMERICA: With Notes by the Way on Canada and the United States. By James Caird, M.P., Author of "English Agriculture," "High Farming," &c.

London: Longman, Brown, & Co., Paternoster Row.

LADY-DAY VALUATIONS.

Now ready, Seventh Edition, in 8vo, price 10*s.* 6*d.* cloth,

BAYLDON'S ART OF VALUING RENTS and TILLAGES, and Claims of Tenants upon Quitting Farms at both Michaelmas and Lady-Day, as revised by Mr. Donaldson. Seventh Edition, enlarged and adapted to the present time: With the Principles and Mode of Valuing Land and other Property for Parochial Assessment and Enfranchisement of Copyholds, under the recent Acts. By Robert Baker, Land-Agent and Valuer, Writtle, Essex.

London: Longman, Brown, & Co, Paternoster Row.

MR. LOCKHART MORTON'S WORK ON THE MANAGEMENT AND IMPROVEMENT OF LANDED PROPERTY.

Just published, in One Volume, royal 8vo, illustrated with 25 Lithographic Engravings, price 31*s.* 6*d.* cloth,

THE RESOURCES OF ESTATES: A Treatise on the Agricultural Improvement and General Management of Landed Property. By John Lockhart Morton, Civil and Agricultural Engineer; Author of Thirteen Highland and Agricultural Society Prize Essays.

Contents.

1. How to make the most of Landed Property
2. The Education of Landed Proprietors and Tenant Farmers in Rural Affairs
3. The Soil: Its Nature, and the Treatment it should receive
4. Land Agents
5. Sizes of Farms; and the Capabilities Selection, and Treatment of Tenants
6. Small Holdings
7. Farm Leases
8. Proprietors, resident and non-resident
9. The Law of Entail
10. The Game Laws
11. Building Fixtures
12. Payment of Rent in Kind
13. Valuation of Landed Property
14. Inspection of and Reporting on Landed Estates
15. The Sub-division of Farms
16. Live Hedges
17. Growing Woods
18. Clay Land Farming
19. Calcareous Applications
20. Farm Buildings
21. The Preservation of Timber
22. Home Farms
23. Let Farms
24. Drainage of Land
25. Forage and Root Crops
26. Compost Manures
27. Roads, and Water Supply

Description of the Plates and Index.

Critical Opinions.

"Contains a vast mass of advice for the intending improver of landed property."—*Spectator.*

"There is so much that is practical on every detail, that the builder of any farmhouse or farmstead cannot do better than make himself master of the book."—*Building News.*

"A standard volume on agricultural improvement and the general management of landed property, which will be eagerly sought for and highly esteemed by landowners and farmers."—*Morning Post.*

"Will be found a cyclopædia of ready reference, of great value, and of safe authority in everything relating to the improvement of landed property and the development of its resources." — *Irish Farmers' Gazette.*

"Discusses in full detail the subject of agricultural education both for the land-owner, the land-agent, and the farmer. .. Mr. Morton's work is remarkably full in its illustrations of farm buildings."—*Gardeners' Chronicle.*

London: Longman, Brown, & Co., Paternoster Row.

New Editions of

CECIL'S WORKS ON BREEDING HORSES AND ON GETTING HORSES INTO CONDITION.

Second Edition in fcap. 8vo, with Plate, price 5*s.*,

STABLE PRACTICE; or, Hints on Training for the Turf, the Chase, and the Road: with Observations addressed to all who are concerned in Racing, Steeplechasing, and Fox Hunting. By Cecil.

By the same Author, also Second Edition,

THE STUD FARM; or, Hints on Breeding, price 5*s.*

RECORDS OF THE CHASE, a Book of Sporting Anecdotes; with two Plates, price 7*s.* 6*d.*

London: Longman, Brown, & Co., Paternoster Row.

Now ready, in Two Vols. 8vo, with a Map, 11 Illustrations in Chromo-lithography, and 12 Wood Engravings, price 30*s.*,

MÖLLHAUSEN'S DIARY OF A JOURNEY FROM THE MISSISSIPPI TO THE COASTS OF THE PACIFIC. Translated by Mrs. Percy Sinnett.

"The two volumes are crowded with picturesque sketches; and the descriptions are made still more attractive by a large number of beautiful illustrations Taken altogether, there are few more interesting books of travel than Mr Mollhausen's 'Diary.' The whole of his fresh and animated descriptions of wild nature in all the manifold variety of her forms, as well as of the curious mode of life of the native Indian tribes, evince such a deep sensibility and such a keen sense of beauty as is seldom met with in books of this kind."

Spectator.

London: Longman, Brown, & Co., Paternoster Row.

COMPLETION OF

DE LA RIVE'S WORK ON ELECTRICITY.

In 3 Vols. 8vo, with numerous Woodcuts, price 3*l.* 13*s.* cloth,

A TREATISE ON ELECTRICITY, in Theory and Practice. By A. de la Rive, late Professer in the Academy of Geneva. Translated for the Author by C. V. Walker, F.R.S.

"The work now completed furnishes us with a very complete view of electrical science. The researches of electricians in all parts of the world are brought together and subjected to cautious examination. Thus the student is enabled to pursue his studies with the least possible loss of time, and under the guidance of a high-class master This treatise may be regarded as a mark and a record; all that has been done is faithfully and clearly narrated, and learning from it the extent to which experiment has been carried, we are enabled to advance without the fear of walking over already trodden ground. We must not dismiss this work without a word of praise for the translator. From his thoroughly practical acquaintance with electricity, Mr. Walker has been enabled to render Prof de la Rive's work with great exactness; and thus to give us in the English language one of the best text books of electricity to be found in Europe." *Athenæum.*

London: Longman, Brown, & Co., Paternoster Row.

TO GARDENERS.

"There is no more general book than 'Loudon's Encyclopædia of Gardening,' which treats of all manner of things."—*Gardeners' Chronicle*, March 12, 1859.

"No book on Practical Gardening has yet superseded 'Loudon's Encyclopædia of Gardening.'"—*Gardeners' Chronicle*, Feb. 12, 1859.

LOUDON'S ENCYCLOPÆDIA OF GARDENING: Comprising the Theory and Practice of Horticulture, Floriculture, Arboriculture, and Landscape Gardening; including all the latest Improvements. New Edition, corrected and improved by Mrs. Loudon. A cheaper Edition of the above work, price 31*s.* 6*d.*, is now ready.

London: Longman, Brown, & Co., Paternoster Row.

Of whom may be had a Cheaper Edition of

LOUDON'S ENCYCLOPÆDIA OF AGRICULTURE, uniform with the above in size and price.

Cheaper Edition of William Howitt's Two Series of

VISITS TO REMARKABLE PLACES.

In Two Vols., square crown 8vo, with upwards of 80 highly-finished Wood Engravings, price 25*s.* cloth,

VISITS TO REMARKABLE PLACES: Old Halls, Battle Fields, and Scenes illustrative of Striking Passages in English History and Poetry. By William Howitt. The Second Edition.

London: Longman, Brown, & Co., Paternoster Row.

In Volumes for the Pocket, price 5*s.* each. With 36 Wood Engravings, from Designs by Smirke, Howard, and other Artists in 6 vols. fcp. 8vo, price 5*s.* each.

BOWDLER'S FAMILY SHAKSPEARE; In which nothing is added to the Original Text; but those Words and Expressions are omitted which cannot with propriety be read aloud in a Family. A New Edition.

*** Also a LIBRARY EDITION, with the same Illustrations, complete in One Volume, 8vo, price One Guinea.

London: Longman, Brown, & Co., Paternoster Row.

On Thursday, the 31st inst., will be published,

MOORE'S LALLA ROOKH, Copyright Edition, complete for ONE SHILLING, with Portrait of the Author, being the First Part of the People's Edition of "Thomas Moore's Poetical Works," including the Author's Autobiographical Prefaces, Notes, and other last Additions, to be completed in Ten Parts, monthly, price 1*s.* each.

London: Longman, Brown, & Co., Paternoster Row.

THOMAS MOORE'S POETICAL WORKS.

PEOPLE'S EDITION OF MOORE'S POETICAL WORKS, in 10 Monthly Parts, price 1*s.* each. Part I. price 1*s.*, on the 31st inst.

PEOPLE'S EDITION OF MOORE'S IRISH MELODIES, Music and Words, in 10 Numbers, price 1*s.* each.

Nos. I. to VIII., price 1*s.* each, are now ready. Caution:—No other complete Edition can be published.

MOORE'S SACRED SONGS, and SONGS from Scripture. Music and Words. Imp. 8vo, 16*s.* cloth; or handsomely half-bound, 26*s.*

MOORE'S NATIONAL AIRS, and other Songs, Music and Words. Imp. 8vo, 31*s.* 6*d.* cloth; or handsomely half-bound, 42*s.*

MOORE'S IRISH MELODIES, Music and Words. Complete in One Volume, Imp. 8vo, 31*s.* 6*d.* cloth; or handsomely half-bound, 42*s.*

HARMONISED AIRS from MOORE'S IRISH MELODIES; Music for 2, 3, or 4 Voices, and Words. Imp. 8vo, 15*s.* cloth; or handsomely half-bound, 25*s.*

POETRY AND PICTURES FROM THOMAS MOORE: Selections of the most popular and admired of Moore's Poems, copiously illustrated with highly-finished Woodcuts. Fcp. 4to, 21*s.* boards; or bound in morocco, 42*s.*

MOORE'S POETICAL WORKS. Library Edition; with Portrait and Vignette. Medium 8vo, 21*s.* cloth; or in morocco, 42*s.*

MOORE'S POETICAL WORKS: Traveller's Edition, from Ruby Type; with Portrait. Crown 8vo, 12*s.* 6*d.* cloth or in morocco, 21*s.*

MOORE'S POETICAL WORKS: Cabinet Edition, with Portrait and 19 Vignettes. 10 vols., fcp. 8vo, 35*s.*

MOORE'S IRISH MELODIES: With 13 highly-finished Plates from Original Designs by eminent Artists. Square crown 8vo, 21*s.* cloth; or in morocco, 31*s.* 6*d.*

MOORE'S IRISH MELODIES: Illustrated by D. Maclise, R.A. Super-royal 8vo, 31*s.* 6*d.* boards; or in morocco, 52*s.* 6*d.*

MOORE'S IRISH MELODIES: With the Preface and Notes, and a Vignette. 16mo, 5*s.* cloth; or in morocco, 12*s.* 6*d.*

MOORE'S IRISH MELODIES, from Ruby Type; with the Preface and Notes, and a Portrait. 32mo, price 1*s.* cloth.

MOORE'S SONGS, BALLADS, AND SACRED SONGS; with the Notes and a Vignette. 16mo, 5*s.* cloth; or in morocco, 12*s.* 6*d.*

MOORE'S SONGS, BALLADS, AND SACRED SONGS, from Ruby Type; with the Notes and a Vignette. 32mo, 2*s.* 6*d.* cloth, gilt edges.

MOORE'S LALLA ROOKH: With 13 highly-finished Steel Plates from Designs by Corbould, Meadows, and Stephanoff. Square crown 8vo, 15*s.* cloth; or in morocco, 28*s.*

MOORE'S LALLA ROOKH: With the Preface and Notes, and a Vignette. 16mo, 5*s.* cloth; or in morocco, 12*s.* 6*d.*

MOORE'S LALLA ROOKH, from Ruby Type; with the Preface and Notes, and a Frontispiece. 32mo, price 1*s.* cloth.

MOORE'S EPICUREAN: With the Notes and a Vignette. 16mo, 5*s.* cloth; or in morocco, 12*s.* 6*d.*

London: Longman, Brown, & Co., Paternoster Row.

ACTON'S MODERN COOKERY-BOOK, price 7*s.* 6*d.* Newly revised and enlarged Edition, copiously illustrated.

"The best book of its class yet produced."—*Illustrated News.*

London: Longman, Brown, & Co., Paternoster Row.

DR. THOMAS BULL'S TWO MANUALS FOR MOTHERS.

New Edition, revised and enlarged, in fcp. 8vo, price 5*s.*,

THE MATERNAL MANAGEMENT OF CHILDREN IN HEALTH AND DISEASE. By Thomas Bull, M.D.

By the same Author, New Edition, fcp. 8vo, price 5*s.*,

HINTS TO MOTHERS FOR THE MANAGEMENT OF THEIR HEALTH DURING PREGNANCY AND IN THE LYING-IN ROOM: with Hints on Nursing, &c.

London: Longman, Brown, & Co., Paternoster Row.

One Volume, 8vo, with Woodcuts, price 60*s.* cloth; or 3*l.* 5*s.* half-bound in Russia, with flexible back,

BRANDE'S DICTIONARY OF SCIENCE, LITERATURE AND ART. Third Edition, corrected: with a supplement, containing many Additions, with the chief Scientific Terms, Processes, and Improvements that have come to general use since the publication of the Second Edition.

"Professor Brande's valuable Dictionary has reached a third edition; and is rendered still more valuable by a supplement, which extends the original 1343 pages to nearly a hundred more, in which some of the latest discoveries are very fully treated of. We may cite, for instance, the accounts given of the screw propelling power and the tubular bridges."—*Examiner.*

London: LONGMAN, BROWN, & Co, Paternoster Row

COMPLETION OF
VAN DER HOEVEN'S HANDBOOK OF ZOOLOGY.

Just published, in 8vo, with 9 plates of Figures, price 30*s.* cloth,

HANDBOOK OF ZOOLOGY. By J. VAN DER HOEVEN, M.D., Professor of Zoology in the University of Leyden. Translated from the second Dutch edition (with additional references by the author) by the Rev. W. CLARK, M.D., F.R.S., &c., late Fellow of Trinity College, and Professor of Anatomy in the University of Cambridge. Vol. II. Vertebrate or back-boned Animals, comprising Mammalia, Birds, Reptiles, and Fishes, and completing the work.—Vol. I. Invertebrate Animals, with 15 Plates and Figures, may also be had, price 30*s.*

"Every page abounds in important, anatomical, physiological, and systematical observations, which place the student in possession of all the more important facts embraced in this division of the animal kingdom. The preface contains critical remarks upon the opinions of writers who have appeared since the first volume went to press. A more complete or well-arranged general account of the various Zoological classes we are not likely to see; and we heartily congratulate Dr Clark upon so successful a termination of his double labour of translator and editor."—*Gardeners' Chronicle.*

"The whole work is characterised specially by the large amount of anatomical information it contains, differing in this respect from most other zoological works. Students of Comparative Anatomy and Physiology, and persons who specially study Zoology, will find in the learned work of the Leyden Professor a standard authoritative work of reference. The Professor of Anatomy in the University of Cambridge has performed his office of translator with great care and ability."—*Medical Times and Gazette.*

London: LONGMAN, BROWN, & Co., Paternoster Row.

HORTICULTURAL VALUATIONS.

MR. ALFRED CHANDLER (of the late firm of Chandler & Sons, Vauxhall), begs to inform his Friends that he is at liberty to undertake the valuation of Collections of Plants, Nursery Stock, Horticultural Buildings, &c.

Mr. A. C. is also open to engagements as Censor at Horticultural Exhibitions, in which capacity he has had long and extensive experience.—28, Priory Road, Wandsworth Road, S.

LAND WANTED on a LEASE of not less than 21 years, from 3 to 4 acres of GROUND for Nursery purposes. It must be on one of the principal lines of road, or near to a Railway Station, and not more than 8 miles from town. The North or North Eastern district would be preferred.—Address, stating terms and particulars, Mr. WILLIAM REDBOLD, Agent, 129, Great College Street, Camden Town, N.W.

NEW ROAD, RICHMOND, NEAR THE ROYAL BOTANIC GARDENS, KEW.

To FLORISTS, MARKET GARDENERS, OR NURSERYMEN.

TO BE LET, with immediate possession, 6½ acres of excellent Garden Fruit Land, cropped and stocked; together with an eight-roomed Cottage attached. The present tenant can be treated with for the same. Particulars may be obtained by application to Mr. ATWOOD, Land Agent, Mortlake.

BRISTOL NURSERY GROUNDS, KEMP TOWN, BRIGHTON.

TO BE LET, the above Grounds for occupation from Lady-day next. Any person desirous of treating for the same may obtain particulars and permission to view the Grounds on application to Mr. R. W. LUCAS, 20, Great Marlborough Street, London, W.

TO NURSERYMEN, GARDENERS, ETC.

TO BE LET OR SOLD, the NURSERY GROUNDS, GREENHOUSES, VINERIES, CONSERVATORIES, FRAMES, PITS, and PREMISES, situate at Layerthorpe, York. These valuable Nursery Grounds, in which a comfortable House is erected, were formerly carried on by the late Mr. JAS. EDWARD, and since by the late Firm of Messrs. RAINBRIDGE & HEWISON.—Apply to Messrs. J. & H. RICHARDSON and GOLD, Solicitors, Blake Street, York.

TO BE SOLD, an old established NURSERY and SEED BUSINESS, in the Midland Counties, in a good Market Town, and immediately contiguous to a first-class Railway Station. The STOCK at present is low, but good, and may be taken to at valuation or by private treaty. Is parted with solely on account of the death of the late proprietor.—Apply to Messrs. NOBLE, COOPER, & Co., 152, Fleet Street; or Messrs. LOW & Co., 7, Upper Clapton, London.

TO NURSERYMEN, MARKET GARDENERS, AND OTHERS.

TO BE DISPOSED OF, with immediate possession (the present proprietor retiring from business), that lucrative NURSERY and MARKET GARDEN BUSINESS, with first class Wholesale and Retail Trade, established upwards of 50 years in the most desirable and prominent part of the Bath Market, together with the whole Stock in Trade, Horticultural Buildings (consisting of upwards of 2000 feet of glass), comfortable good and healthy Dwelling House, Sheds, Outhouses, and every convenience suitable for the trade. The land is situated within a mile from the Bath Market on the road between Bath and Bristol, and is free from all Borough and City rates. The whole of the Land is in a perfect state of cultivation, and would be a most desirable investment for any party wishing to enter into the line of business. The whole of the Stock to be taken at a valuation.—For further particulars apply to Mr. JAMES SHACKELL, Twerton, Bath, or at 69, 70, and 80, Market, Bath.

SHADING.

BROWN'S FLORAL SHADING still maintains its superiority for cheapness and efficiency over all other materials used for a similar purpose, viz., shading plants under glass from the scorching rays of the sun, protecting Wall Fruit Trees when in bloom from frost, and preserving the fruit from the attacks of birds, flies, and wasps. Sold in pieces 20 yards long, 38 inches wide:—

No. 1 per piece .. 4*s.* 0*d.* | No. 2 per piece .. 4*s.* 3*d.*
No. 3, extra stout, 18 yards long, by 39 inches wide, 7*s.* per piece.

To be obtained of all the principal Nurserymen and Seedsmen in town and country. Samples sent free on application to the Manufacturer, CHARLES BROWN, Greenheys, Manchester.

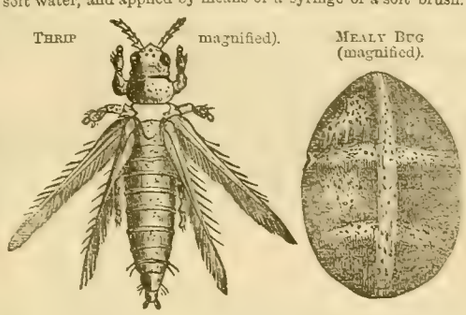
TO HORSE PROPRIETORS.—If you wish to have your Horse in high condition with a small allowance of corn use our CONCENTRATED DRAY and AGRICULTURAL HORSE MEAL, manufactured according to the most recent researches in the study of physiology. Forwarded carriage paid to any railway station, in cwt. at 30*s.*, and 15*s.* per half cwt. on receipt of Post-office Order, payable to KEMP & SKEY, The Mills, Louth, Lincolnshire.

Important to every man who keeps



THORLEY'S FOOD FOR CATTLE,
77, NEWGATE STREET, LONDON.
Beware of spurious imitations.

GISHURST COMPOUND, PATENTED.—For preventing and destroying Red Spider, Scale, Mealy Bug, Thrip, and Green and Brown Fly.—See *Gardeners' Chronicle*, Nov. 6, 1858.—To be dissolved ½ or ¼ lb., or less, in a gallon of soft water, and applied by means of a syringe or a soft brush.



On Orchids it may be used in a strong lather, applied by a shaving brush, but on tender young Geranium shoots a solution of 2 oz. to the gallon will be found sufficiently strong.

Sold in boxes at 1*s.* 6*d.* and 6*s.* each, with directions for use, and printed opinions of Mr. Rucker's Gardener, Lady Dorothy Neville's Gardener, Sir William Hooker, Mr. Rivers, Messrs. Francis & Arthur Dickson & Sons of Chester, and Messrs. Dickson & Brown of Manchester.

For Nurserymen the large size is recommended, but where the consumption is not large the compound will be found to keep its strength best in the small boxes.

Nurserymen and Seedsmen supplied by PRICE'S Patent Candle Company Limited), Belmont, Vauxhall, London, S.

POULTRY—DOGS—PLANTS can be kept free from Insects of every description by using the PERSIAN INSECT DESTROYING POWDER, unrivalled in killing Fleas, Flies, Beetles, and every species of Insect—harmless to animal life. Sold in packets 1*s.* and 2*s.* 6*d.* A shilling packet sent free by post for 14 stamps.—THOMAS KEATING, Chemist, 79, St. Paul's Churchyard, London, E.C.

PAGE'S BLIGHT COMPOSITION (4*s.* per gallon, sufficiently strong to make four fit for use) has stood the test of eight years public trial, and its great success has led to numerous imitations. Dr. Lindley, in his leading article of October 25, 1856, reported 182 cases in its favour, sufficient to convince the most sceptical. Seeds packed for exportation to all parts of the world.—PAGE & TOOGOOD, Royal South Hants Seed Establishment, Southampton.

GENUINE ROLL TOBACCO CLOTH.
WARRANTED EQUAL IN STRENGTH TO TOBACCO.

JOSEPH BAKER, 10, Gough Square, Fleet St. E.C., having dealt upwards of 20 years in the above, can recommend it as the best article for destroying the Fly. 1*s.* 4*d.* per lb., over 10 lbs. 1*s.* Post-office Orders payable Strand Office.

TOBACCO PAPER OR CLOTH.—To NURSERYMEN, &c.

GENUINE TOBACCO PAPER OR CLOTH at 10*d.* per lb. to be had of G. DARLINGTON, Tobacco Cutter, 16, Wellington Place, Warner Place, Hackney Road, London.—All orders to be accompanied with a Post-office Order, payable to GEORGE DARLINGTON, Hackney Road, London.

GENUINE TOBACCO PAPER.—Parties fumigating can be supplied with the best Genuine Tobacco Paper at 4*l.* per cwt.; any less than 56 lbs., 10*d.* per lb.—BEN BAXTER, Messrs. Jackson & Sons, Lady Lane, Leeds.

GENUINE TOBACCO PAPER FOR FUMIGATING.

H. APPLEBY (Foreman to Messrs. Ivery & Son, Surrey), takes this opportunity of informing his patrons and the public that he is now offering the above at a very considerably reduced price. It is now sold in packets of 4 lbs. each, at 1*s.* 3*d.* per lb. A liberal discount allowed to the Trade. For testimonials that will guarantee its quality, see *Gardeners' Chronicle*, March 5, p. 189.

Sheet Iron Pots for fumigating, 3*s.* 6*d.* each.

N.B. All orders to be accompanied with a Post-office Order, payable to HENRY APPLEBY, Dorking, Surrey.

BRITTAIN'S GARDEN NET completely protects Fruit Blossoms from injury by frost, and provides for the circulation of air and admission of light, so essential to healthy growth; 55 inches wide, 5*d.*, 6*d.*, and 8*d.* a yard; good SHADING TIFFANY, yard wide, 2½*d.* do.—Manchester, Mar. 19.

HORTICULTURAL BUILDINGS AND HEATING BY HOT WATER.

JOHN R. PEILL, 17, New Park Street, Southwark, Manufacturer of every description of Buildings for Horticultural purposes, and Inventor of the Improved Conical Boiler for heating the same, is prepared to undertake works of any magnitude, and refers among others to the celebrated range of FORCING HOUSES at HER MAJESTY'S GARDENS, FROGMORE, and at SIR ROBERT PEEL'S, DRAYTON MANOR, constructed under the superintendence of his Manager, MR. JOHN JONES; and also to his BOILERS fixed at the CRYSTAL PALACE, the ROYAL BOTANIC GARDENS, REGENT'S PARK, and KEW, and at several hundreds of the Nobility's seats, Public Establishments, and Manufactories in London and the provinces. J. R. P. also manufactures every description of Iron Roofs, Iron Houses, and Iron Fencing, plain and ornamental. Strong Iron Hurdles for Sheep (6 feet long, 3 feet high, with 5 bars), 4*s.* 3*d.* each; ditto for cattle, 4*s.* 9*d.* each.

Prices and other particulars forwarded on receipt of one postage stamp.

JAMES PHILLIPS AND CO.'S PRICES of GLASS for the present month.

HORTICULTURAL GLASS, Stock Sizes, in 100 feet boxes.

	3rds.	4ths.
11 by 9, 12 by 9, 13 by 9, 14 by 9 .. / 12 „ 10, 13 „ 10, 14 „ 10, 15 „ 10 .. / 13 „ 11, 14 „ 11, 15 „ 11, 16 „ 11 ..	14*s.* 6*d.*	12*s.* 6*d.*
14 „ 12, 15 „ 12, 16 „ 12, 17 „ 12 .. / 18 „ 12, 19 „ 12, 16 „ 13, 17 „ 13 .. / 18 „ 13, 19 „ 13, 20 „ 13, 21 „ 13 .. / 16 „ 14, 17 „ 14, 18 „ 14 .. .. / 19 „ 14, 20 „ 14, 21 „ 14	15*s.* 6*d.*	14*s.* 0*d.*

PACKED IN CASES.

200 feet	£2 2 0	16 oz.
300 feet	3 3 0	
200 feet	2 18 0	21 oz.

ORCHARD HOUSE SIZES,
As supplied by us to Mr. Rivers.

		16 oz.	21 oz.
20 in. by 12 in. / 20 in. by 13 in.	Common	14*s.* 0*d.* ..	£1 1*s.*
20 in. by 14 in. / 20 in. by 15 in.	Superior do. ..	16 6 ..	1 5
	English Glass ..	18 0 ..	1 9

SMALL SQUARES.—Per 100 feet.

6 by 4	6½ by 4½	7 by 5	7½ by 5½	11 6
8 „ 6	8¼ „ 6½	9 „ 7	9½ „ 7½	
10 „ 8	10½ „ 8½ ..	..	.. ..	12 6

JAMES PHILLIPS AND CO.,
130, Bishopsgate St. Without, London, E.C.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz SHEET GLASS of British Manufacture at prices varying from 2*d.* to 3*d.* per square foot for the usual sizes required, many thousands of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES, and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

HORTICULTURAL GLASS—JUNE TARIFF.

THOMAS MILLINGTON'S reduced Tariff of GLASS, &c.

6 by 4, 7 by 5, 8 by 6, 9 by 7 / 6½ by 4½, 7½ by 5½, 8½ by 6½, 9½ by 7½ } 16 oz. to the foot, 11*s.* 6*d.* per 100 feet.

In 100 boxes,—4ths quality, 12*s.* 6*d.*; 3ds do., 14*s.* 4*d.*

10 by 8, 12 by 9, 12½ by 10½, 14½ by 10½, 13 by 11
10½ by 8¼, 12½ by 9½, 13 by 10, 15 by 10, 13½ by 11¼
11 by 9, 13 by 9, 13½ by 10½, 12 by 11, 14 by 11
11½ by 9½, 12 by 10, 14 by 10, 12½ by 11½ .. ..

20 by 12 / 20 by 13 / 20 by 14 / 20 by 15	per 100 feet	16 oz.	21 oz.
	Common ..	16*s.* ..	24*s.*
	Superior .	18*s.* ..	27*s.*

All Boxes included.

Orchard House sizes as supplied to Mr. Rivers.

Hartley's improved Rough Plate Glass from ¼ to ⅜ in thickness.

Coloured Glass in great variety, at 9*d.* and 1*s.* per foot.

Paints, Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, Lamp Glasses, &c.

87, Bishopsgate Street Without, same side as Eastern Counties Railway.

GLAZIERS' DIAMONDS for CUTTING HORTICULTURAL and other GLASS, to be had of the Wholesale Manufacturer, JOHN EDWARDS, 20, Sharp's Alley, West Smithfield, London, E.C. Prices from 10*s.* to 27*s.* 6*d.*

C. STEPHENSON, late STEPHENSON AND SONS, 61, Gracechurch Street, London, Manufacturer of Iron Hurdles, Fencing, &c., Improved Iron and Copper Conical Boilers and Apparatus for Warming Buildings of every description by Hot Water.

Prices and Estimates furnished upon application.

VOKINS AND HURD, Seymour House, Jubilee Place, King's Road, Chelsea, BUILDERS OF HOTHOUSES, CONSERVATORIES, GREENHOUSES, PITS, and every description of erections in Glass work, either in Wood or Iron; also Heating the same by hot water on the most approved plans and at the lowest prices consistent with good work. Estimates forwarded.

HANDS'S PATENT is the only system to circulate Heat, and for WARMING, FUMIGATING, and VENTILATING Hothouses, Greenhouses, Winter Orchards, &c.; to keep vegetation healthy in a humid atmosphere, and can be applied to any kind or shape of Forcing-houses and Conservatories now existing at trifling cost.—For particulars apply at the Office, 10, Charlotte Street, Fitzroy Square, London; or to Mr. JOHNSON HANDS, Epsom.

IMPROVED HOT-WATER PIPE.—The Horticulturist will find herein an inexpensive instrument of new and very important powers. An atmosphere may be produced at will either perfectly dry, partially damp, or saturated with moisture. A space of 10 inches by 12 inches contains the power of 25 feet of 4-inch pipe and other numerous advantages.

The London Warming and Ventilating Company (Limited), 6, Great George Street, Westminster, S.W.

GREENHOUSES.

HENRY FREEMAN, HOTHOUSE BUILDER and HOT-WATER APPARATUS MANUFACTURER, Triangle, Hackney. Established 20 years. Good substantially built GREENHOUSES, fixed in any part of the kingdom, for cash, 42 ft. long by 13 ft, 90*l.*; 21 ft by 13 ft., 50*l.* 12 ft. by 10 ft., 30*l.* A first-rate Conservatory, 30 ft. by 16 ft, 130*l.* A large assortment kept. Estimates for heating, or any branch in wood, iron, or Park Fencing.

GREENHOUSES, ORCHARD HOUSES, AND PITS OF EVERY DESCRIPTION, MADE BY STEAM MACHINERY, AND HEATED BY HOT WATER ON AN IMPROVED PLAN AT

J. LEWIS'S HORTICULTURAL WORKS, Stamford Hill, Middlesex, established 20 years. These Buildings are warranted of the best materials, and at prices which defy competition. The ventilation is most efficient, and the greatest improvement of the present day. Prices of any size on application. References in all parts of the United Kingdom.

HOTHOUSES FOR SALE.

TO BE SOLD CHEAP, two nearly new SPAN-ROOF HOUSES, each 65 feet long by 18 feet wide, price 100*l.* each; also a handsome OCTAGON CONSERVATORY, 22 feet diameter with glass all round, quite new, price 90*l.* All these houses are warranted to be of the best materials and workmanship. The reason of their being now Sold is to make room for an extensive alteration and addition to our Workshops and Steam Machinery.—Apply to Messrs. JOHN WEEKS & Co., King's Road, Chelsea, where the whole of the above can be seen, as also a great variety of other Horticultural Erections.

ANTISEPTIC PAINT.

THE best and cheapest PAINT for PARK FENCING, all outside Wood and Iron Work, is MITCHELL'S ANTISEPTIC MINERAL BLACK PAINT. Sold ready for use, 17*s.* 6*d.* per cwt. Used largely now and for many years past by the West India Dock Company, for Fencing, Barges, &c. Recommended to the nobility and gentry, stewards, land agents, &c. A liberal allowance to the trade, &c.

Manufactory, Kennington Lane, Lambeth.

HORTICULTURAL BUILDING & HEATING BY HOT WATER.

BY APPOINTMENT.



JOHN WEEKS & COMPANY,

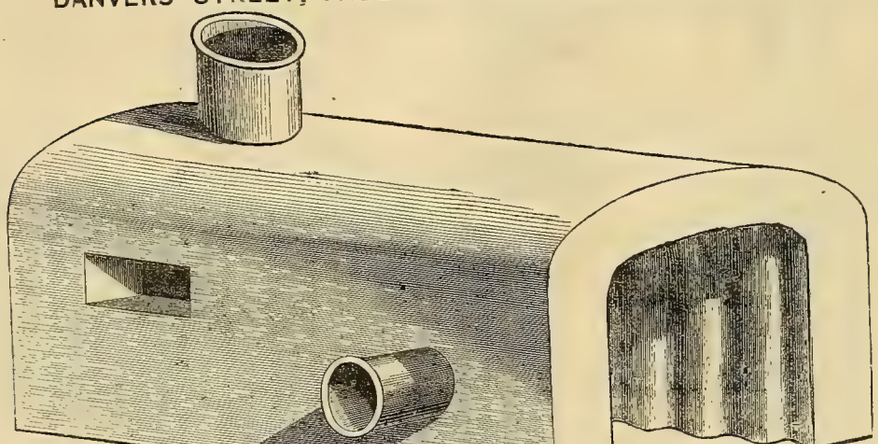
KING'S ROAD, CHELSEA, LONDON.

HORTICULTURAL BUILDERS AND HOT-WATER APPARATUS MANUFACTURERS, ENGINEERS, AND IRON FOUNDERS.

PLANS, ESTIMATES, & ILLUSTRATED CATALOGUES FREE ON APPLICATION.

HORTICULTURAL WORKS,

DANVERS STREET, PAULTON'S SQUARE, CHELSEA, S.W.



JAMES GRAY

RESPECTFULLY begs to inform the nobility, gentry, Nurserymen, Gardeners, and others, that he continues to carry on the business in all its branches at the above old established premises.

CONSERVATORIES, GREENHOUSES, FORCING HOUSES, VINERIES, PITS, &c.,

of every description, erected on the most approved principles.

HEATING BY HOT WATER.

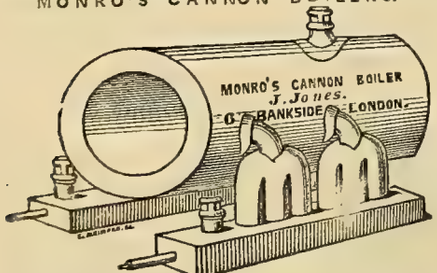
J. G. having specially devoted his attention for many years to this part of the business, is now fully prepared to Heat every description of public and private buildings, viz :—Churches, Mansions, Warehouses, &c., as well as all structures connected with Horticulture, in the most efficient manner. His system is the most simple that can be adopted—which he has found from long experience to be the best—can be constructed at less cost, and is more easily managed than those of a complicated nature which have attracted the notice of the public.

J. G. begs to call attention to his CAST-IRON CORRUGATED ARCH BOILER, which from its simplicity of construction has not the liability to fracture to which those of a more complex design are always subject. They have been extensively used for many years, and have given the greatest satisfaction.

All business is conducted at this establishment on the principle of lowest remunerative profits consistent with best materials and workmanship.

Plans and Estimates furnished on the shortest notice.

MONRO'S CANNON BOILERS.



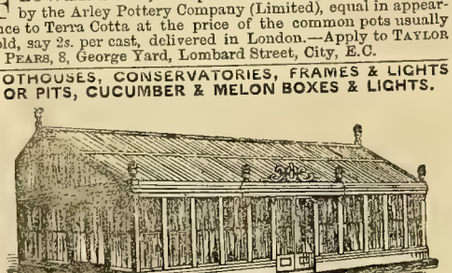
MUCH has of late been said about BOILERS for Heating by Hot Water, but these Boilers have now proved themselves to be the best at present invented. They are adapted for heating every description of building, and are made of various sizes. The Price of the

24-inch Cast Iron is	.. .. ..	£5 10s. 0d. each
24-inch Wrought ditto	.. .. ..	6 10 0 ,,
36-inch Cast ditto	.. .. ..	8 0 0 ,,
36-inch Wrought ditto	.. .. ..	8 10 0 ,,

References to Gentlemen and Nurserymen where these Boilers are now at work. The Cannon Boilers are now kept in stock, and are to be had only of J. JONES, 6, Bankside. Also, every description of Saddle and Cylinder Boilers. Hot Water Pipes and Connections at prices lower than those of any other house in London. Estimates for Hot-water Apparatus erected complete in any part of the country, and an Illustrated Catalogue on application to J. JONES, 6, Bankside, Southwark, London.

FLOWER POTS, of superior Red Clay, manufactured by the Arley Pottery Company (Limited), equal in appearance to Terra Cotta at the price of the common pots usually sold, say 2s. per cast, delivered in London.—Apply to TAYLOR & PEARS, 8, George Yard, Lombard Street, City, E.C.

HOTHOUSES, CONSERVATORIES, FRAMES & LIGHTS OR PITS, CUCUMBER & MELON BOXES & LIGHTS.

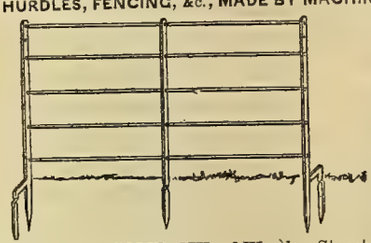


JAMES WATTS, HOTHOUSE BUILDER, 8, Claremont Place, Old Kent Road, London.

Green and Hothouses, 9, 10, 11, 12, 13, and 14 feet wide, any length, from 16 to 100 feet. Frames and Lights for Pits, 6ft. 6in., 7 ft., 7 ft. 6 in., 8 ft., and 8 ft. 6 in. wide, any length, from 1·2 to 100 feet. Upwards of 200 Cucumber and Melon Boxes and Lights, from 4 ft. by 3 to 10 ft. 6 in. by 5 ft. 6 in., kept ready, glazed with stout sheet glass, painted four times, complete, ready for immediate use, all made of best material, packed and sent to all parts of the kingdom.—References may be had to the Nobility, Gentry, and the Trade in most of the counties in England. Horticultural Buildings of every description heated on the most approved and economical principles.

TANNED GARDEN NETTING, for preserving Fruit Trees from frost, blight, birds, &c., and as a fence for fowls, &c. One yard wide 1½d., 2 yards 3d., 3 yards 4½d., and 4 yards 6d., per yard, in any quantity, may be had at C. WRIGHT'S, 376, Strand, W.C.—A liberal allowance to Nurserymen.

IRON HURDLES, FENCING, &c., MADE BY MACHINERY.

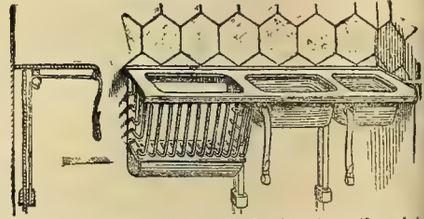


COTTAM AND COMPANY, of Winsley Street, have invented machinery for making Hurdles, &c.; the bars instead of being pointed by hand in the old fashioned style are nipped down by the machine, leaving a shoulder so as to more effectually tighten the standards when rivetted. They are made of superior iron only, and will compete in price with those made by hand from cinder or common iron which so frequently break. Iron Fencing, Gates, and Iron Work of all kinds, both Plain and Ornamental, Conservatories, Hot Water Apparatus and Garden Implements.

Illustrated CATALOGUES free on application to COTTAM & COMPANY, Ironfounders, 2, Winsley Street, Oxford Street, W.

N.B. COTTAM & Co. beg to make it known that there is no longer an entrance to their establishment from Oxford Street but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

COTTAM'S PATENT INVENTIONS FOR STABLE REQUISITES, awarded a Prize at the Paris Exhibition and patronised by the English and French Governments.



COTTAM AND COMPANY, of Winsley Street, are the original inventors of the PATENT ENAMELLED MANGER, Water Trough, and Wrought Iron Rack, united to an iron top-plate and forming one complete and useful fixture, having COTTAM'S patent noiseless halter guide and collar rein attached, which is taken to the back of the manger, and works with ease and freedom up or down the guide-bar.

COTTAM'S NEW PATENT SEED-BOX, an important addition to the above fittings, being simple in construction, light, and durable, promotes cleanliness, and is economical in its result.



COTTAM'S PATENT SADDLE and HARNESS BRACKET combined, can be used with great advantage where space is an object, as it can be turned up out of the way when not in use.

COTTAM'S IMPROVED SURFACE GUTTER, with perforated moveable cover, the use of which prevents accidents, and can be easily cleaned out.

COTTAM'S CAST-IRON SANITARY TRAP, from its improved construction, gives a full water passage, and does not allow any smell to ascend from the drain.

PATENT LOOSE-BOX FITTINGS, and every article for harness-room and stable, kept in stock, plain, galvanised, and enamelled. Iron gates, fencing, hurdles, &c.

The New Illustrated Catalogue and Estimates, gratis, upon application to COTTAM and COMPANY, 2, Winsley Street, Oxford Street.

N.B. COTTAM & Co. beg to make it known that there is no longer an entrance to their establishment from Oxford Street but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

WARNER'S IMPROVED LIQUID MANURE OR GENERAL PORTABLE PUMP.



These Pumps are fitted with J. W. & Son's Patent Buckets and Suckers, and cannot clog in action. The barrel is of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure. The legs will fold together, and the whole may be carried on the shoulder to any pond or tank required.

Price of 4½ in. Pump, with legs, 3*l.* 3*s.* If with planished copper barrel and galvanised iron handle, &c., 14*s.* extra. The barrel is 27½ in. long, and the legs are 5 ft. high.

These Pumps are also made without the legs, with strong wrought-iron straps for screwing on to any ordinary water butt or cart, and fitted with 1½ inch brass union for attaching flexible suction. Price 50*s.*

1½ inch Gutta Percha Suction Pipe, 1*s.* 11*d.* per foot.

Rubber and Canvas Suction and Delivery Hose, from ½ inch to 4 inches diameter, in lengths of 60 feet to order. Branch Pipes with Cocks, Union Screws, &c., at reduced prices.

May be obtained of any Ironmonger or Plumber in town or country, at the above prices, or of the Patentees and Manufacturers, John Warner & Sons, 8, Crescent, Jewin St., London.

WARNER'S PATENT VIBRATING STANDARD PUMPS.

PATENT CAST-IRON PUMPS, fitted with J. W. & Son's Patent Buckets and Suckers, which cannot clog in action, for Farms, Cottages, and Wells, not exceeding 28 feet.

Diameter of Barrel.	Height.		£	s.	d.
2½ in.	short	1 ft. 7 in.	1	10	0
2½ ,,	long	3 ,, 8 ,,	1	14	0
3 ,,	ditto	3 ,, 6 ,,	2	8	0
3½ ,,	ditto	3 ,, 6 ,,	2	12	0
4 ,,	ditto	3 ,, 6 ,,	3	3	0

Fitted for lead, gutta percha, or cast iron flanged pipe, as required.

2½ ,, short, with 15 feet of Lead Pipe attached, ready for fixing 2 14 0

2½ in. long ditto ditto ditto 2 18 0



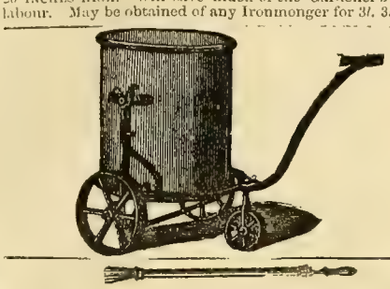
The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.

May be obtained of any Ironmonger or Plumber in Town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

WARNER'S SWING WATER-BARROW

(To Hold Forty Gallons) Mounted on Wheels 20 inches high. Will save much of the Gardener's time and labour. May be obtained of any Ironmonger for 3*l.* 3*s.*



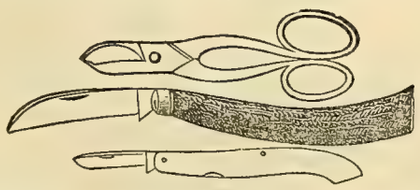
BRASS SYRINGES, 9*s.* to 18*s.*

Also a great variety of effective Machines for Hydraulic purposes, and to supply Gardens, Hothouses, Cottages, Farms, Mansions, or Boards of Health, with every requisite connected with the conveyance and distribution of Liquids.

Fountains suitable for Conservatories, Lawns, &c.

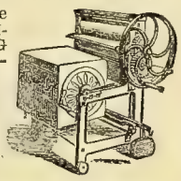
John Warner & Sons, 8, Crescent, Jewin Street, London.

PAXTON WORKS, SHEFFIELD, ESTABLISHED 1738.



SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.—Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

BY HER MAJESTY'S ROYAL LETTERS PATENT.



"NO ONE KNOWING the value of your Patent WASHING, WRINGING, and MANGLING MACHINE, would be without one."—*Vide Mrs. Hall.*

Thomas Bradford, Patentee, Manchester.

Descriptive Pamphlet, with Prices free by post.

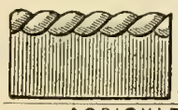
TO GARDENERS, ETC.

PATENT WATERING ENGINES, PAIL MACHINES, CONSERVATORY PUMPS, and GREENHOUSE SYRINGES, with all the latest improvements, manufactured only by the Patentee,

RICHARD READ, 35, Regent Circus, Piccadilly, London.

*** Descriptions sent post free.

LOOMES AND CO., Whittlesea, Manufacturers of Bricks, Tiles, Pottery, &c., beg to call attention to their new CABLE PATTERN GARDEN BORDER EDGING, which not only surpasses others in appearance and durability, but is free from the dangerous points and sharp edges of most.—Price, delivered on any Railway at Peterborough, 5*d.* per yard.

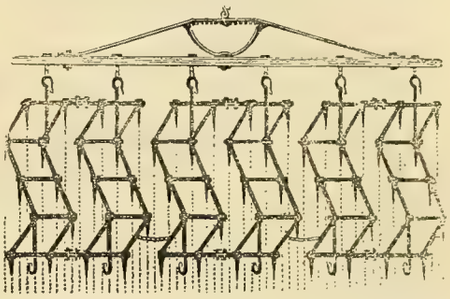


AGRICULTURAL MACHINERY.

E. R. AND F. TURNER, Ipswich, manufacture Prize Mills for Crushing Corn, Seed, Malt, &c.; Portable Grinding Mills, Steam Engines fixed and portable from 2 horse-power and upwards; Threshing Machines, Chaff Cutter, Oilcake Breakers, Horse Gears, Saw Tables, &c., all of a superior description and adapted for Home, Colonial, and Foreign use. Illustrated Price Lists sent free on application.

HOWARDS' PRIZE IMPLEMENTS, 1859.

JAMES AND FREDK. HOWARD, Britannia Iron Works, Bedford, beg to direct attention to their PATENT PR[Z]E HARROWS,



For which they received All the First Prizes last offered by the Royal Agricultural Society of England, viz.:—

The First Prize for the Best General Purpose Harrows.
The First Prize for the Best Light Harrows.
The First Prize for the Best Drag Harrows.

J. & F. Howard have discontinued troubling the Public with a long List of Prizes awarded to their Implements, but they would just state that for PLOUGHS, HARROWS, and HORSE RAKES, they have for several years gained every Prize for which they have competed.

PLOUGHS.

P PLOUGH, with two wheels, for light work ..	£4	7	6
PP PLOUGH, ,, for general purposes	4	12	6
SKIM COULTER	0	5	6

STEEL BREASTS, 7*s.* and 7*s.* 6*d.* extra.

HARROWS.

A Set of Three 4-Beam HARROWS, with Whippletree, recommended as general Seed Harrows, 9¼ feet wide, marked No. 12	3	14	0
A Set of Three 4-Beam HARROWS, with Whippletree, adapted for 3 Horses, 10 ft. wide, marked No. 11	4	4	0

HORSE RAKES.

Price of small size RAKE, marked A, with 24 iron teeth, extreme width 7½ feet	7	10	0
Ditto, with Steel Teeth	8	0	0
Price of large size, marked B, with 28 iron teeth, extreme width 8½ feet	8	0	0
Price of large size, marked B, with steel teeth ..	8	10	0
Price of extra large size, marked C, with 24 steel teeth, extreme width, 8½ feet	10	10	0
Price of a Set of 15 Prongs, to be attached to the above when used as Weed Extirpators	1	10	0

Free Delivery to Birmingham, Bristol, Derby, Gloucester, Lincoln, Liverpool, London, Manchester, Norwich, Nottingham, Retford, Wisbeach, and Worcester; or to Dublin, Edinburgh, Glasgow, and other parts at fixed rates.

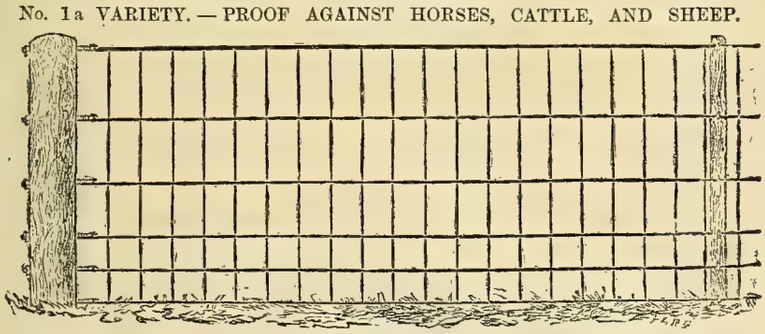
Howards' NEW CATALOGUE, containing prices and description of their Patent Ploughs, Harrows, Horse Rakes, and other Implements, including Smith's Steam Cultivators, for which they received at Chester the Gold Medal of the Royal Agricultural Society of England, sent free on application to

J. & F. Howard, Britannia Iron Works, Bedford.

GREENING & COMPANY'S PATENT WIRE FENCES.

Patronised by His Royal Highness the PRINCE CONSORT.

No. 1a VARIETY.—PROOF AGAINST HORSES, CATTLE, AND SHEEP.



Specification.—No 1a Variety, 3 feet 9 inches high, 6 horizontal bars of stout fencing wire, strengthened and supported by vertical bars, at distances of 5 inches. **ONE SHILLING per Lineal Yard.**

Particulars of the above and other Iron and Wire Fences for Parks, Farms, Gardens, Game Preserves, Poultry Courts, &c., in the Catalogue, sent post free on application to

GREENING & COMPANY, Victoria Iron and Wire Works, 81, Oxford St., Manchester.

CARSON'S
ORIGINAL ANTI-CORROSION PAINT,

PATRONISED BY

The British Government,	Hon. East India Company,	Railway and Canal Companies,
The French Government,	Most of the Nobility and Gentry,	The Principal Collieries,
The Russian Government,	New River Company,	Mill Owners,
H.R.H. the Prince Consort,	The Dock Companies,	Iron Masters, &c. &c.

The ANTI-CORROSION PAINT is now used extensively for all kinds of OUT-DOOR WORK,

Such as Iron, Wood, Stone, Brick, Compo, Cement, &c., and has been proved, after a practical test of 70 years, to surpass any other Paint. It is much lower in Price, and lasts twice as long as the best White Lead, and can be easily applied by any Labourer, being sent in various Colours, requiring simply to be mixed (no grinding is needed). The Anti-Corrosion is a powder, and will keep any length of time.

COLOURS:—

White Stone	34*s.* per cwt.		
Light do.	32*s.* ,,	Light and Dark Lead	28*s.* per cwt.
Drab or Portland		Light and Dark Chocolate	
Bath do.		Bright Red	
Light and Dark Yellow do.		Dark do. (or Brick Colour)	
		Black	
Copper.. .. .. .. : ..	30*s.* ,,	Invisible Green..	42*s.* ,,
Light and Dark Oak		Bright and Deep Green	50*s.* ,,
		Blue (for Carts and Waggons)	50*s.* ,,

OIL, TURPENTINE, AND BRUSHES,

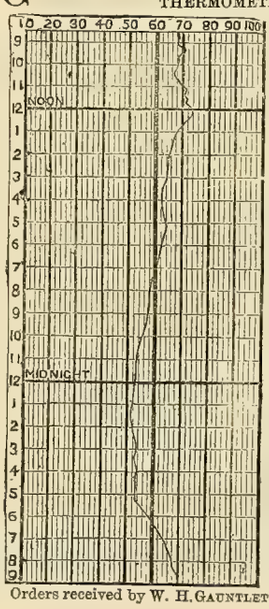
A Copy of Testimonials (700), will be sent upon application to

WALTER CARSON & SONS, (Successors to the Inventors), 9, Great Winchester Street (near the Royal Exchange), London, E.C.

NO AGENTS THROUGHOUT THE UNITED KINGDOM.

TO HORTICULTURISTS.

GAUNTLETT'S PATENT CHRONOMETRICAL THERMOMETER.



This instrument, which combines an eight-day clock of the best English make showing time, with a newly-patented Thermometer, wherein glass and quicksilver are dispensed with, writes down the temperature of the atmosphere on a slip of paper, and when placed in a Hothouse, Forcing House, or Conservatory, &c., supplies a valuable record of the temperature, with all its variations, showing the time when any change took place, and how long such change continued.

The above slip (reduced in size) exhibits the temperature of the Royal Agricultural Society's show yard at Chester, July 22, 1858, written off by one of these instruments, to which was awarded the Society's Silver Medal.

This is the only instrument that registers temperature continuously and writes it down, and no horticulturist should be without it.

Orders received by W. H. Gauntlett, Middlesbro' on-Tees.

FERRABEE'S NEW PATENT MOWING MACHINES



MANUFACTURED BY

JAMES FERRABEE AND CO., PHŒNIX IRON WORKS, Stroud.—These improved Machines admit of the use of duplicate sets of cutting parts, can be accurately sharpened by an ordinary workman, are adapted to level and uneven ground and to verges, and their management is much simplified.

In the following List the Letters A, B, &c., are used to facilitate reference, and the distinguishing letter of the Machine required should be given in sending an order.

The prices include carriage to the principal railway stations in England, terms net cash.

A, cutting 12 inches wide,	for a boy	..	..	£4	10	0
B, ,, 16 ,,	for one man	..	..	6	0	0
C, ,, 19 ,,	for a man and a boy	..	..	6	10	0
D, ,, 22 ,,	,,	,,	..	7	0	0
E, ,, 26 ,,	for two men	..	..	8	10	0
F, ,, 22 ,,	for a donkey or a pony			8	0	0
G, ,, 26 ,,	for a pony	..	..	9	0	0

Sharpening Apparatus for any of the above, 5*s.* extra.

H, cutting 24 inches wide,	for a horse	..	..	14	0	0
I. ,, 28 ,,	,,	..	..	16	0	0
K, ,, 36 ,,	,,	..	..	18	0	0

Sharpening Apparatus, 10*s.* extra each.

The Horse Machines H, I, K, have cylinders of large diameter and in their entire construction possess the strength and capacity necessary for horse-power, and the heaviest work of a pleasure ground.

MAPPIN'S PRUNING KNIVES IN EVERY VARIETY.

WARRANTED GOOD BY THE MAKERS.



MAPPIN BROTHERS, Queen's Cutlery Works, Sheffield; and 67 and 68, King William Street, London.

MAPPIN'S "SHILLING" RAZORS Shave well for Twelve Months without Grinding.

MAPPIN'S 2*s.* RAZORS Shave well for Three Years.

MAPPIN'S 3*s.* RAZORS (suitable for Hard or soft Beards,) Shave well for Ten Years.

MAPPIN'S SUPERIOR TABLE-KNIVES maintain their unrivalled Superiority—handles cannot possibly become loose—the blades are all of the very first quality, being their own Sheffield manufacture.

	Tble. Kns.	Dst. Kns.	Carvers.
Ivory 3⅝ in. Handle, balanced,	20*s.* p. doz.;	16*s.* p. doz.;	6*s.* p. pair
Do. 4 in. do. ..	25*s.* ,,	18*s.* ,,	9*s.* ,,

MAPPIN'S SILVER-PLATED DESSERT KNIVES and FORKS, in Mahogany Cases.

12 Pairs Knives and Forks,	Ivory Handles, in Case..	80*s.*
12 Do.	Pearl Handles, do. ..	130*s.*
12 Do.	Silver-Plated Handles, do. ..	80*s.*

MAPPIN'S ELECTRO-SILVER PLATE.—MAPPIN BROTHERS, Manufacturers by Special Appointment to the Queen, are the only Sheffield makers who supply the consumers in London. Their LONDON SHOW ROOMS, 67 and 68, King William Street, London Bridge, contain by far the largest STOCK of ELECTRO-SILVER PLATE in the World, which is transmitted direct from their Manufactory, Queen's Cutlery Works, Sheffield.

	Fiddle Pattern.	Double Thread.	King's Pattern.
12 Table Forks, best quality	£1 16 0	£2 14 0	£3 0
12 Table Spoons, best quality	1 16 0	2 14 0	3 0
12 Dessert Forks, best quality	1 7 0	2 0 0	2 4
12 Dessert Spoons, best quality	1 7 0	2 0 0	2 4
12 Tea Spoons, best quality	0 16 0	1 4 0	1 7

Messrs. MAPPIN BROTHERS respectfully invite buyers to inspect their unprecedented display, which, for beauty of design, exquisite workmanship, and novelty, stands unrivalled. Their illustrated Catalogue, which is continually receiving addition of New Designs, sent per post on receipt of 12 stamps.—MAPPIN BROTHERS, 67 and 68, King William Street, London Bridge; Manufactory, Queen's Cutlery Works, Sheffield

TANNED NETTING, AT REDUCED PRICES.—200 square yards, 12*s.*; 500 yards, 25*s.*; 1000 yards, 47*s.*

SCRIM CANVASS for Wall Fruit, 50 yards, 16*s.*; 100 yards, 30*s.* Be particular to address in full, FREDERICK EDGINGTON, Thomas Street, Old Kent Road, London, S.E.

FOR WATERING GARDENS, PLUMBERS, ENGINEERS, MILLS, AND MACHINISTS.

VULCANISED INDIA RUBBER.

- Washers for Hot-water and Steam Joints
- Elastic Packing and Valves for Steam Engines
- Pump Buckets (compound India-rubber)
- Suction Hose for Pumps
- Fire Engine Hose
- Air Beds, Cushions, & Bolsters
- Water Beds, Pillows, and Feet Warmers
- Garden Watering Hose
- Do. fitted with Brass Joints, Taps and Spreaders
- Wheel Tires (noiseless for Trucks, &c.)
- Waterproof Cart, Van, and Waggon Covers
- Mill Bands, much improved for driving all kinds of Machinery
- Door Springs, Gas Bags
- Foot Balls, Cricketting Gloves

N.B. A Stock of the above always on hand, and any modification made to order. Please address all communications to the Manufactory.

JAMES LYNE HANCOCK,
Vulcanised India-rubber Works, Goswell Road, London, E.C.

PATENT GUTTA PERCHA SOLES.—IMPORTANT TO GARDENERS.—The Gutta Percha Company have the pleasure to acknowledge the receipt of the following letter from G. GLENNY, Esq., the celebrated Florist:—

"420, Strand, London.

"Gentlemen,—I have worn Gutta Percha Soles and Heels these two years, and being so much in a garden as I necessarily am in all weathers, and with the ground in all states, I would on no account be without them. As a matter of economy I would recommend Gardeners to use them, for they may repair the worn part at all times by warming the material at the fire, and pressing it from the thick parts to the worn parts as easily as if it were so much dough. I think it the duty of all persons who must occasionally wet their feet to adopt a material that completely defies damp. Many a gardener would escape colds and rheumatism by the use of Gutta Percha Soles.

"Your obedient servant, G. GLENNY."

Every variety of Gutta Percha articles, such as Mill Bands, Tubing, Soles, Goloshes, Sheet, Pump Buckets, Fire Buckets, Bosses, Union Joints, Flasks, Bottles, Bowls, Chamber Vessels, Toilet Trays, Sponge Bags, Curtain Rings, Galvanic Batteries, Talbotype Trays, &c., manufactured by the Gutta Percha Company, and sold by their wholesale dealers in town or country.—The Gutta Percha Company, Patentees, 18, Wharf Road, City Road, London.

HENRY J. MORTON AND CO., 2, Basinghall Buildings, Leeds.

CALVANISED IRON WATER CISTERNS

for Cottage Houses, &c., to contain 50 gallons, 25*s.*; 80 gallons, 30*s.* each; and 140 gallons, 36*s.*, and fitted with tap, keeping the water perfectly sweet and clean; will not rust or corrode. Cisterns of all sizes.

CALVANISED IRON PUMPS

for Liquid Manure or Domestic Use, 3 inches diameter, 30*s.* and 32*s.* 6*d.* each; Tail Pipe for same at from 10*d.* per foot.

CALVANISED IRON SWING WATER BARROWS

for Garden or Farm use, containing about 20 gallons, entirely formed of iron, 32*s.* 6*d.* each.

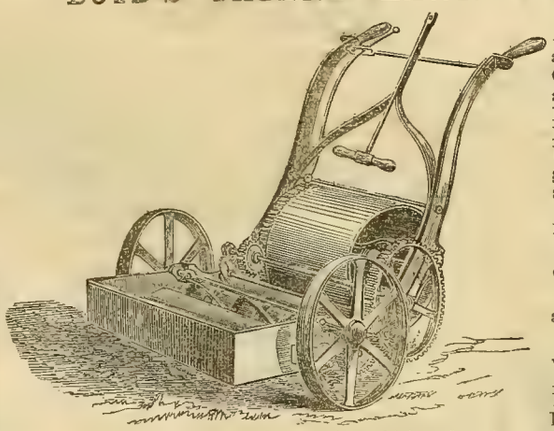
PARKES' STEEL DIGGING FORKS.

BURGESS AND KEY, 95, Newgate Street, London, being the Wholesale and Retail Agents for these celebrated TOOLS have always a large Stock on hand from which their Customers may select what they may require.

ANTHONY'S PATENT AMERICAN CHURN.—The FIRST PRIZE was again awarded to this Churn in Competition with several others at the Chester Meeting of the Royal Agricultural Society; it has obtained the First Prize given by the Society at every Meeting since 1850.

Messrs. BURGESS & KEY, 95, Newgate Street, strongly recommend it as the most perfect Churn now in use. Full particulars sent on application.

BOYD'S PATENT LAWN MOWING MACHINES



ARE the only Lawn Mowers that have a Self-Cleansing and Sharpening Apparatus attached to the Cutters, and that will cut wet Grass without clogging the Knives. They are already in successful operation at the Royal Palaces, and on the lawns of hundreds of the Nobility and Gentry. They are pronounced by all practical men as perfection, and are guaranteed for efficiency, excellence, economy, and durability.

"Doing the work of five or six men in a single hour."—*Times*, Sept. 20, 1858.

Price Lists and Testimonials free on application to—

W. DRAY & Co.,

at their new Agricultural Implement Warehouses, Adelaide Place, London Bridge,

where also may be had every description of Agricultural, Horticultural, and Gardening Implement; as also DRAY'S CELEBRATED REAPERS, which are now being manufactured or the forthcoming season, and respecting which early orders are solicited.

Patronised by Her Majesty Queen Victoria, His Majesty the Emperor of the French, and His Royal Highness the Prince of Prussia.

SHANKS'S PATENT

MOWING, ROLLING, COLLECTING, AND DELIVERING MACHINE FOR 1859.

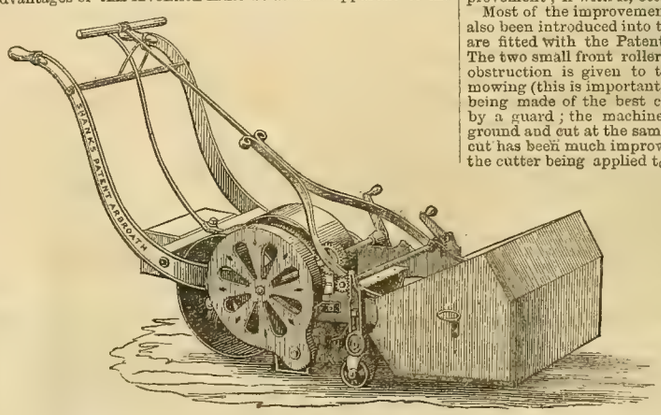
THE ONLY COMPLETE MACHINE FOR HORSE OR PONY POWER.

AMONGST other valuable improvements A. SHANKS & SON have this season made in their PATENT HORSE and PONY MACHINES, as fully described in the "*Gardeners Chronicle*" of March 5, page 207, the method of emptying the Grass Box is not the least important. The want of a speedy and efficient method for this purpose has been much felt for many years past. In the spring more especially, when the Grass springs up rapidly, nothing is more annoying in working a Mowing Machine than the stopping and almost constant travel from the handles to the box, and *vice versâ*, for the purpose of emptying the Grass. A great deal of time is thus lost, independent of the hard work to the man, not only in walking some hundreds of times the length of the Machine in a day, but more especially in the stooping posture which he has so often to endure. Many a Gardener can testify to this. This great want in all Mowing Machines whether past or present is completely obviated in SHANKS'S PATENT MOWING, ROLLING, COLLECTING, AND DELIVERING MACHINE FOR 1859. The improvement consists in the introduction of a simple and efficient apparatus for emptying the Box, without the man being under the necessity of either leaving the handles or stopping the machine. So effective and complete is the valuable improvement that the Box, if it were possible to fill it, could be emptied at the rate of 60 times a minute, without any undue strain being put on the apparatus. The immense advantages of this invention must be at once apparent to the practical Gardener. It will enable the Machine to do at least a third more work, while the labour and annoyance in working it, as compared with ordinary Machines, is three-fourths lessened. If a lawn which formerly took a Machine nine hours to mow, can now be done in six hours, with three-fourths less labour to the man who works the Machine, nothing further is necessary to establish the utility and worth of the invention.

No Machine will turn quicker or work better than this improved Machine; great strength in construction and superiority in workmanship render it exceedingly durable; every conceivable convenience and improvement tending to make the Machine in every way complete for level as well as uneven lawns, has been introduced at the sacrifice of much time and expense, and the Patentees have great pleasure in seeing their efforts so far successful as to enable them with all confidence to offer to the world the cheapest and the most complete MOWING, ROLLING, COLLECTING, AND DELIVERING MACHINE extant at the following prices.

No. 1 a, 48-inch Machine, 27*l.*; No. 1, 42-inch do., 24*l.*; No. 2, 36-inch do., 20*l.* 10*s.*; No. 3, 30-inch do., 17*l.* 10*s.*; No. 4, 25-inch do., 13*l.* 10*s.*; No. 5, 25-inch do., 9*l.* 10*s.* Tool Box with Sharpening Apparatus, 10*s.* extra. Boots for Horses' feet to prevent injury to soft lawns, 25*s.* a set. Machines Nos. 1 a, 1, 2, 3, and 4, have the Patent Delivery Apparatus attached. No. 5 can be had either with or without this improvement; if with it, 30*s.* extra.

Most of the improvements of the Horse and Pony sizes have also been introduced into the new Hand Machine. The rollers are fitted with the Patent Spiral Springs of the larger sizes. The two small front rollers swivel, and are so placed that no obstruction is given to the Grass in front of the cutter in mowing (this is important). The cutting parts are very strong, being made of the best cast steel. The wheels are protected by a guard; the machine will turn in a few square feet of ground and cut at the same time; the method of adjusting the cut has been much improved, the power of raising or lowering the cutter being applied to both sides of the Machine at once, thus preventing the possibility of one side cutting lower than the other. A Tool Box is fitted to each machine and is of great convenience. The machines will mow on the most uneven lawns without injury to the turf; they are strongly made, are fitted with the same care and precision of the larger sizes, so simple in construction that a labourer can work them, and are quite free from all superfluous and useless gear, which has only novelty, not improvement, as a recommendation. These Machines are peculiarly well-fitted for turning and cutting amongst Flower Beds, Verges, Bowling Greens, and for small Lawns. The Patent Improvements for this season render them complete in every part. The draught is greatly lessened, and the execution of the work is unsurpassed.



Prices of Machines for Pushing or Pulling, separately or together:—				For Pulling only—			
No. 6, 22-inch Machine	£7	17	6	No. 10, 22-inch Machine	£7	0	0
No. 7, 19-inch ditto	7	5	0	No. 11, 19-inch ditto	6	10	0
No. 8, 16-inch ditto	6	10	0	No. 12, 16-inch ditto	6	0	0
No. 9, 13-inch ditto	5	15	0	No. 13, 13-inch ditto	5	10	0
				Tool Box, with sharpening apparatus, 5*s.* extra.			

The above are not cash prices, and include delivery to any of the principal Railway Stations in England or Scotland. The Machines are warranted to give ample satisfaction; failing this (which is barely possible) they may be at once returned.

FURTHER PARTICULARS MAY BE HAD ON APPLICATION.

ALEXANDER SHANKS & SON, Patentees and Sole Manufacturers, Dens Iron Works Arbroath, Forfarshire.

N.B. To prevent disappointment in delivery early Orders are particularly requested.

FOWLER'S PATENT STEAM PLOUGH.

THIS IMPLEMENT OBTAINED
THE FIVE HUNDRED POUNDS PRIZE AT THE ROYAL AGRICULTURAL SOCIETY'S SHOW AT CHESTER, JULY 1858 (AFTER THREE YEARS' COMPETITION),
AND HAS ALSO OBTAINED
THREE HUNDRED AND SEVENTY-FIVE POUNDS AT VARIOUS OTHER AGRICULTURAL SHOWS IN THE UNITED KINGDOM.

THE WINDLASS CAN BE FITTED TO ANY AGRICULTURAL ENGINE.

For further Particulars, Prices, and Catalogues, apply to

JOHN FOWLER, Jun., 28, Cornhill, London, E. C.

PATENT LAWN MOWING AND ROLLING MACHINES.

SAMUELSON'S LAWN MOWING MACHINES,

WITH BOYD'S PATENT IMPROVEMENTS.

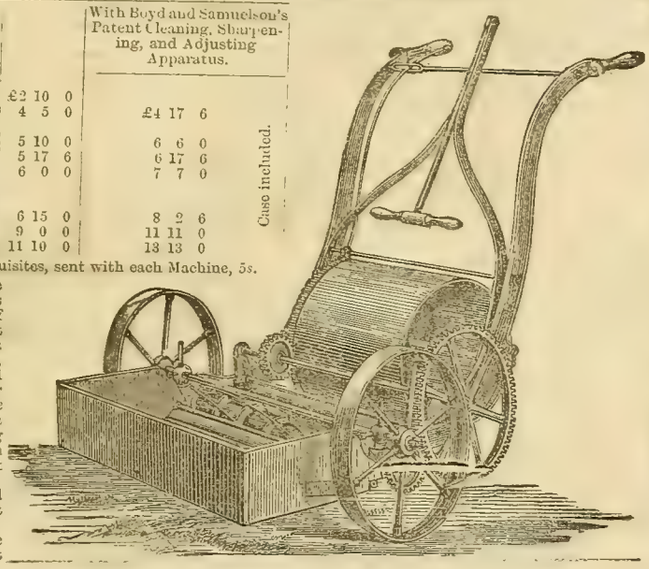
"Doing the work of five or six men."—The Times, Sept. 20, 1858.

The following PRICES include the Carriage to any Railway Station in England:—

		With Boyd and Samuelson's Patent Cleaning, Sharpening, and Adjusting Apparatus.
9 inches wide, for very narrow borders, without registered wheels	£2 10 0	
12 inches wide	4 5 0	£4 17 6
16 inches wide, with registered arrangement (for one man)	5 10 0	6 6 0
19 inches wide, ditto (for one man) ..	5 17 6	6 17 6
22 inches wide, ditto (for man and boy)	6 0 0	7 7 0
22 inches wide, ditto for ditto, and also fitted with draught links for a pony and a man to work it	6 15 0	8 2 6
25 inches wide, ditto	9 0 0	11 11 0
30 inches wide, ditto (for man and pony)	11 10 0	13 13 0

Case included.

Box of Tools, Oil Can, and other requisites, sent with each Machine, 5*s*.



Some thousands of these Machines are now in successful operation on the Lawns of Royalty, the Nobility, and Gentry of the United Kingdom and the Continent of Europe, and are pronounced SUPERIOR to *any other* for lightness of draught, efficiency, and durability. The demand for them is *yearly increasing—the number supplied by* Mr. SAMUELSON *during the years* 1856, 1857, *and* 1858 *being more than* 2100. Testimonials are continually being received from gentlemen having them in daily use, who speak in the highest terms of their efficiency.

These are the only Machines that will cut wet as well as dry Grass without clogging the knives.

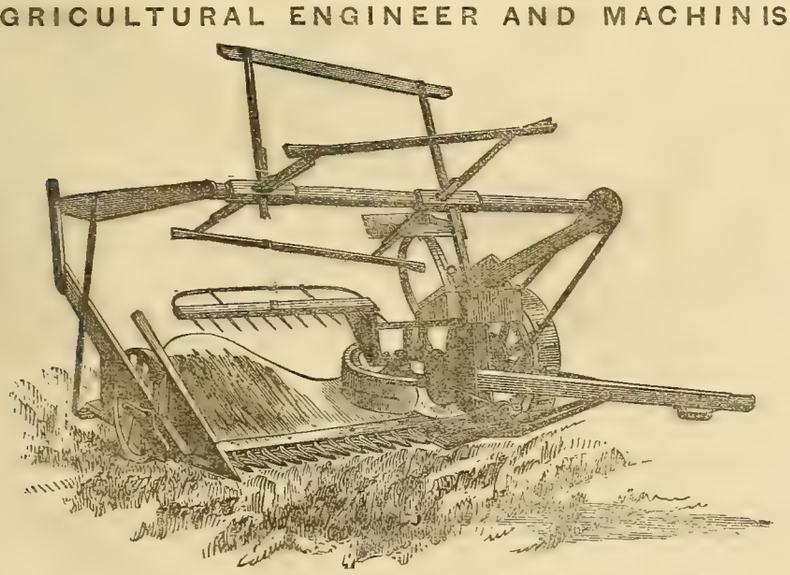
Orders for 1859 should be sent at once to insure certain delivery and to prevent disappointment.

Copies of Testimonials will be forwarded post free on application to

B. SAMUELSON, 76, Cannon Street West, City, London;
to the Manufactory, Britannia Works, Banbury, Oxon;
or to MESSRS. DEANE AND CO., London Bridge; or any respectable Ironmonger or Seedsman in the Kingdom

B. SAMUELSON,

AGRICULTURAL ENGINEER AND MACHINIST,



WAREHOUSE, 76, CANNON STREET WEST, LONDON,
WORKS AT BANBURY,

INFORMS MERCHANTS, the TRADE, and AGRICULTURISTS, that he has opened the above Warehouses as a depôt for his own manufactures and those of Messrs. Barrett, Clayton, Howard, Hornsby, Nicholson, Richmond, Tuxford, Smith, and all other first-class makers, whose implements he is prepared to offer on makers' terms.

THE BRITANNIA SELF-RAKING REAPING MACHINE,

With side delivery in sheaf, no rakers or gatherers required; and all the most improved Spring Implements for the season, may be inspected at the above depôt.

B. SAMUELSON, 76, Cannon Street West, London; and Britannia Works, Banbury.

FOR Effectually Protecting the Bloom of Wall Trees from Spring Frosts use SHAW'S No 3 TIFFANY, DOUBLE STRENGTH. In pieces 18 yards long by 36 inches wide, 7*s*. 6*d*. each.—JOHN SHAW & Co., Princess Street, Manchester.

SHAW'S TIFFANY.—The best and cheapest material for Shading Conservatories, Protecting Fruit from Birds and Wasps, &c. Sold in pieces 20 yards long by 38 inches wide. No. 1, best quality, 5*s*. per piece; second quality, 4*s*. per piece. Extra strong and thick (see Circular sent free by post with samples).

Address JOHN SHAW & Co., Manufacturers and Dealers, Princess Street, Manchester.

MICROSCOPES.

J. AMADIO'S BOTANICAL MICROSCOPES, packed in mahogany case, with three powers, condenser, pincers, and two slides, will show the animalcule in water. Price 18*s*. 6*d*.—Address JOSEPH AMADIO, 7, Throgmorton Street. A large assortment of Achromatic Microscopes.

"It is marvellously cheap, and will do everything which the lover of nature can wish it to accomplish either at home or in the open air."—*The Field*, June 6, 1857.

Just published, an Illustrated Catalogue, containing the names of 1000 Microscopic objects, post free for 4 stamps.

GEORGE SPILL, ST. GEORGE'S STREET, LONDON DOCKS, E., LEAD, OIL, and COLOUR WORKS; WHITE LEAD, TAR, and TURPENTINE MERCHANT; WHITE ZINC, PAINT, COLOURS, and VARNISHES. To meet the desire of purchasers in the country the following colours are prepared ready for use:—Priming Colour, Red and Yellow Paint, Buff Stone, Lead, and Green Colours. Putty, Painter's Tools and Brushes, Refined Coal and Stockholm Tars; Pure Colza, Olive, Sperm, and Nut Oils.

Sales by Auction.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will Sell by Auction at the Mart, Bartholomew Lane, on FRIDAY, March 25, at 12 o'clock, a first-class Collection of Carnations, Piccotees, and Pinks; about 300 choice Standard and Dwarf Roses, consisting of the most approved kinds; choice Fruit Trees, Azalea indica, Camellias, and other Plants in bloom, selected American Plants, Pæonias, Verbenas, Fuchsias, Dahlias in dry roots, &c.—May be viewed the morning of Sale. Catalogues to be had at the Mart, and of the Auctioneers, American Nursery, Leytonstone.

BLACKHEATH PARK.

11,000 GREENHOUSE PLANTS, 250 AMERICAN AND OTHER SHRUBS, STACK OF PRIME MEADOW HAY, DONKEY, CART AND HARNESS, WATER CART, GARDEN ROLLERS, FRAMES, HAND LIGHTS, TOOLS, PUNT AND CANOE, MANURE, TWO ALDERNEY HEIFERS, AND MISCELLANEOUS EFFECTS.

MR. KIRKMAN is favoured with instructions from James Cook, Esq., whose lease has expired, to Sell by Auction, on the Premises, Brooklands, Blackheath Park, on TUESDAY, March 22, at 12 for 1 o'Clock precisely, about 11,000 Greenhouse, American, and other Plants, comprising 200 Fancy Geraniums, 250 Rhododendrons, Kalmias, Azaleas, Hydrangeas, 10,000 Tom Thumb, Variegated, and other Geraniums, Calceolarias, Verbenas, and Plants for bedding, 3000 Cauliflower, Lettuce, and Cabbage Plants, and about 250 hardy American Shrubs, Stack of prime Meadow Hay (about 10 loads), Donkey, Cart and Harness, Water Cart, three Garden Rollers, 2-light and a 1-light Frame, Hand Lights, Tools, Wheelbarrows, Punt and Canoe, two well-bred Heifers, and Miscellaneous Effects.—May be viewed the Saturday and Monday previous to Sale, and Catalogues obtained of Mr. BRIGDEN, Arcade, London Bridge Station; and of Mr. KIRKMAN, Auctioneer, Valuer, Surveyor, and Estate Agent, opposite the Railway Station, Blackheath, and 8, Clement's Lane, E.C.

DOWNSIDE FARM, COBHAM PARK, SURREY.

VERY IMPORTANT SALE OF FIRST-CLASS SHORT-HORNS.

MR. STRAFFORD has received instructions to announce for Sale by Auction, without reserve, on WEDNESDAY, March 23, the entire herd of first-class SHORT-HORNED CATTLE, the property of the late Harvey Combe, Esq., of Cobham Park, Surrey, consisting of about 70 Head of Bulls, Cows, and Heifers, which have been bred from the choicest blood that could be procured, no expense having been spared in the original selection of animals of the highest breeding and character. The Cows and Heifers are principally in calf to Marmaduke (14897), for which 500 guineas were given at the Bushey Grove Sale in 1857, and the produce of this animal already dropped fully justify that outlay. This splendid Herd will be offered in its ordinary condition, and is only to be sold in consequence of the decease of its lamented owner.—Catalogues, with pedigrees, may be had on application to Mr. STRAFFORD, 13, Euston Square, London; or of Mr. E. KIRBELL, at the Downside Farm, Cobham, Surrey

PERDISWELL HALL, NEAR WORCESTER.

IMPORTANT SALE OF PLANTS.

MR. BENTLEY will Sell by Auction, at Perdiswell Hall, near Worcester, on WEDNESDAY and THURSDAY, the 23d and 24th days of March, commencing each day at 11 o'Clock, by direction of the Executors of the late Sir Offley Penbury Wakeman, Bart., a splendid Collection of Orchids, in fine health; Apricot, Peach, Nectarine, Plum, Cherry, and Vine Trees, in pots; specimen Stove and Greenhouse Plants, including Azaleas, Heaths, Camellias, &c.; healthy Ferns, about 200 Cinerarias, fine blooming plants; a number of very healthy Fruiting and Succession Pine Plants; Bedding Plants, including fine specimens of Mountain of Light Geranium, &c. &c.; an Excellent Forcing House, 40 ft. by 16 ft., in 4 divisions, heated by hot water; three Brick Pits; six, two, and one-light Cucumber Frames and Lights; a quantity of seed Potatoes, &c.—Catalogues may be had one week prior to the sale at the offices of Mr. MARTIN CURTLER, Solicitor, Sansome Place, or the Auctioneer, Foregate Street, Worcester.

SURBITON.

TO GENTLEMEN, NURSERYMEN, BUILDERS, AND OTHERS.

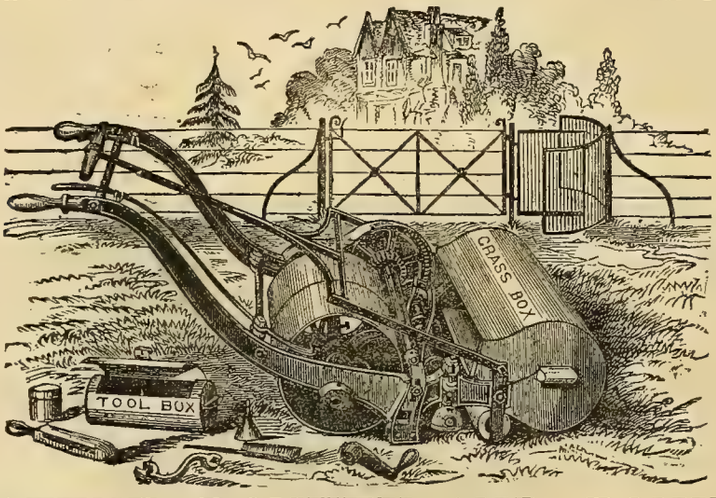
MR. J. WILLMER begs to announce that he is instructed to Sell by Auction, on the premises, Woodside Nursery, adjoining Surbiton Hill, on the Ewell Road, on THURSDAY, March 24, at 11 o'Clock, the whole of the NURSERY STOCK, which comprises many choice and valuable specimen Plants, with a variety of EVERGREENS and SHRUBS, comprising:—Common Laurels, from 4 ft. to 6 ft.; Portugal ditto, 2 ft. to 4 ft.; Aucuba, 2 ft.; Phillyrea, 2 ft.; Bays, 2 ft.; Box, 2 ft. to 4 ft.; Rhododendrons, of sorts, 2 ft. to 3 ft.; Kalmia latifolia, 2 ft.; Berberis aquifolia, 1 ft. to 2 ft.; Arbor-vitæ, 2 ft. to 4 ft.; Taxus fastigiata, or Irish Yew; Pinus of sorts; Spruce Fir, 4 ft. to 6 ft.; Weymouth Pine, 6 ft. to 8 ft.; Abis canadensis, 4 ft. to 6 ft.; Yews, 4 ft.; Cedrus Deodara, 6 ft.; Taxodiums sempervirens, 6 ft.; Green Hollies, 2 ft. to 6 ft.; Red Cedar, 3 ft.; Evergreen Oak, 3 ft. to 4 ft.; Cotoneaster microphylla; Acacia, 6 to 8 ft.; Birch, 8 to 12 ft.; Laburnum, 6 ft. to 8 ft.; &c.—May be viewed three days prior to the Sale, and Catalogues had of Mr. BROWN, Surbiton Pottery; and of the Auctioneer, Springfield Nursery, Sunbury, S.W.

GREEN'S PATENT GRASS CUTTING, COLLECTING, & ROLLING MACHINES FOR 1859.

GREEN'S PATENT HAND MACHINE.

LIST OF PRICES.

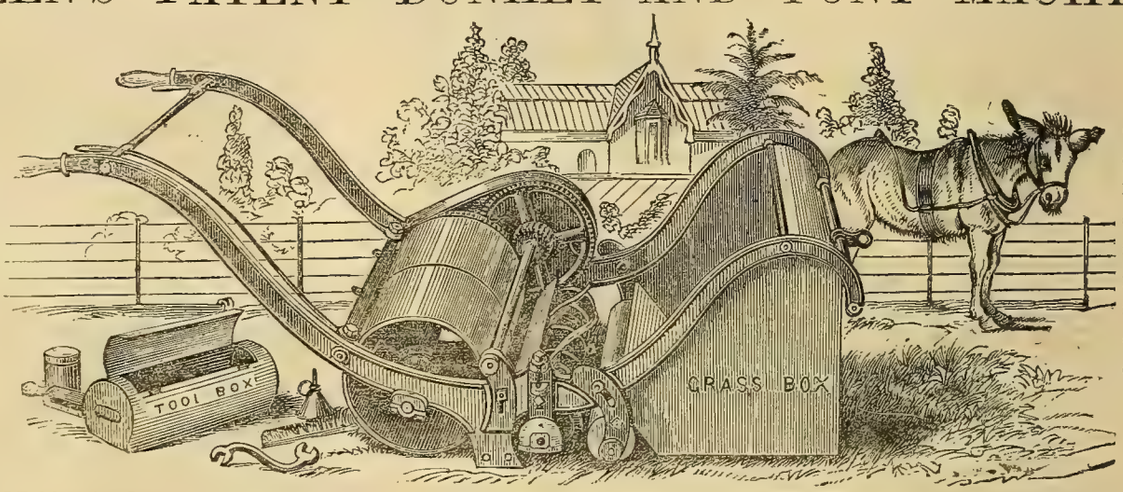
To cut 14 inches, 6*l.*; 16 in. 6*l.* 10*s.*; 18 in. 7*l.*—for one person. To cut 20 inches 7*l.* 10*s.*; 22 in. 8*l.*; 24 in. 8*l.* 10*s.*—for two persons. If with



Box and Tools for sharpening and keeping the Machine in order, 5*s.* extra; with Guard for preventing accidents and keeping the wheels clean, 5*s.* extra.

GREEN'S PATENT DONKEY AND PONY MACHINE,

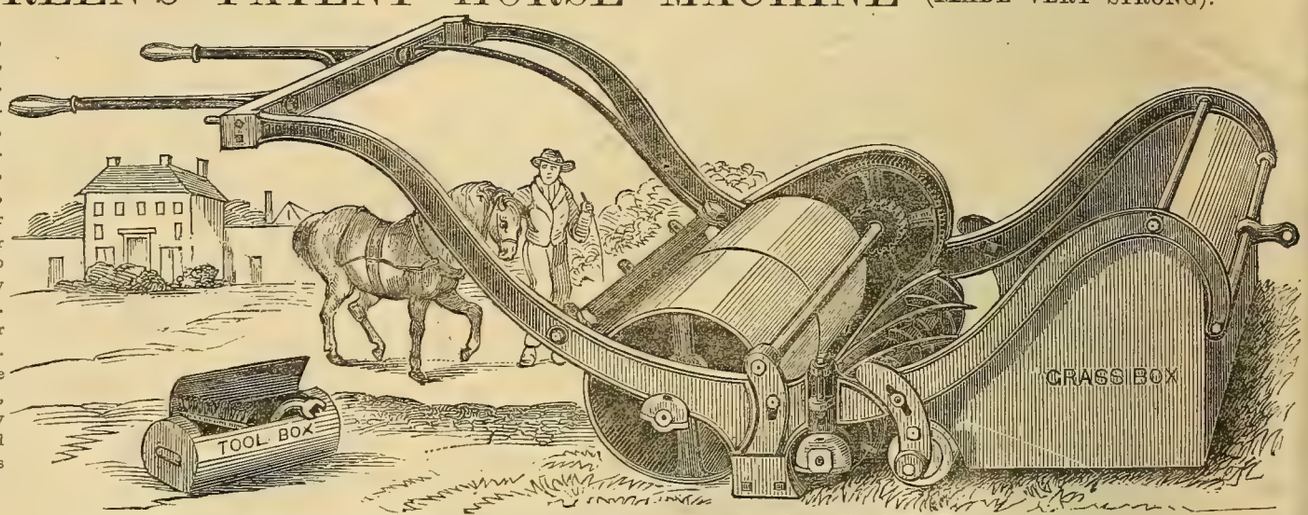
Suitable for a Donkey, to cut 24 inches, 10*l.*; 26 in., 11*l.* For a Pony, 30 in., 15*l.*; box, tools, &c., 6*s.* 6*d.* extra. Leather traces, stretcher, &c., suitable to attach to



common harness or chain traces, 7*s.* 6*d.* Leather boots, suitable for donkey's feet, 16*s.*; do. for a pony, 20*s.* per set of four. Guard for covering wheels, 5*s.* extra.

GREEN'S PATENT HORSE MACHINE (MADE VERY STRONG).

To cut 30 ins., 18*l.*; 36 ins., 21*l.*; 42 ins., 24*l.*; 48 ins., 27*l.* Box of tools, 7*s.* 6*d.* extra. Leather traces, stretcher, &c., 10*s.* Boots per set of four for Horses' feet, to prevent injury to lawns, 24*s.* Guard for wheels, 5*s.* ex.—The above are Net cash prices, delivered at any of the principal Rlway. Stations in England.



TRIAL at the London Horticultural Society's Gardens, Chiswick, June 5, 1857. Four competitors.

First trial on level ground, second do. on undulated, third do. on intricate places around trees, &c., when GREEN'S PATENT was unanimously declared to be the best in each trial by Colone Challoner, Dr. Lindley, and G. M'Ewen, Esq., the appointed Judges.

See the *Gardeners' Chronicle* of May 22, 1858, p. 423, under the heading of "Garden Memoranda."

"LONDON HORTICULTURAL GARDENS, CHISWICK.—The Grass in the Arboretum and elsewhere is in excellent condition; it is kept in order by means of one of GREEN'S 2-feet Mowing Machines, which does its work very satisfactorily, and, compared with the scythe, effects a saving of at least one-half."

Extract from London *Times* of June 8, and *Gardeners' Chronicle* of June 12, 1858.

"TRIAL OF MOWING MACHINES.—A considerable number of various sizes having been brought to the ground it was agreed that the trial should take place between One Hand Machine of each exhibitor, as nearly as possible of uniform size and worked by themselves, or their men. The ground to be worked was determined by lot, the pieces having been previously selected of as uniform quality as possible. After trials on level ground and round trees, the Judges, Colonel Challoner and Mr. Edward Easton, declared GREEN'S Patent to be the best.

(Signed) "C. B. CHALLONER, EDWARD EASTON, Judges."

THOS. GREEN respectfully informs the Nobility, Gentry, Gardeners, Amateurs, and others, that upwards of Six Hundred of these Machines were sold in 1857, and to show the increasing demand, above Nine Hundred were sold last season—they have proven to be the best in all cases of competition, are entirely remodelled, and all the little defects pointed out by the Judges last Year, are now rectified. The Patentee now considers the Machines as near perfection as possible. Although the Machines have been so much improved, at a great additional cost, no extra charge will be made, excepting for a neat Guard, which is placed over the wheels to keep them clean, and to prevent breakage or accidents, which will be 5*s.* extra to parties requiring them.

☞ The Machines are warranted to give satisfaction, or may be at once returned by the party paying the carriage back to Leeds. The Patentee has spared neither time nor expense in producing the best and cheapest Mowing, Collecting, and Rolling Machines ever brought before the public. Hundreds of Testimonials (unsolicited) may be seen, and references given with regard to the superiority of the machines, by applying to the Patentee,

THOMAS GREEN, Smithfield Iron Works, Leeds; or, No. 2, Victoria Street, bottom of Holborn, London.

☞ *T. G. will be glad to receive orders for Machines as early as possible, as a great difficulty was found last season in supplying the number required.*

N.B. Parties desirous of having their Machines repaired may forward them to either the London or Leeds establishment, where they will have the best attention.

Printed by WILLIAM BRADBURY, of 13, Upper Woburn Place, and FREDERICK MULLETT EVANS, of No. 20, Queen's Road West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard St. Precinct of Whitefriars, City of London, and published by them at the Office, No. 5, Upper Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—SATURDAY, March 19, 1859.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 13.—1859.] SATURDAY, MARCH 26. {Price Fivepence. STAMPED EDITION, 6d.

INDEX.

Acarus, Orchid	266 a	Horticultural Society's house	263 a
Agri. Soc. of England	272 c	Linnean Society	266 b
Anobium, Herbarium	268 c	Manchester Agri. Soc.	273 a
Avenues, to form	265 b	Manure, liquid	271 a
Bath Agri. Society	272 a	Mushrooms	266 b
Books, noticed	267 a	Nephrodium molle	265 c
Buphane toxicaria	268 c	Oat hay	272 c
Camellias at Bank Grove	267 c	Orchid acarus	266 a
Cape Flora	264 c	Pea, Egyptian	266 b
Cattle feeding, fastest	274 a	Pear, Beurré Superfin	265 b
Cottages, cost of	272 c	Plants, winter	265 c
Crops, fallow	271 b	— geographical distribution of	266 b
Davallia canariensis	266 a	Ploughs, wheel	272 b
Drain tile, new	270 c	Rhododendrons	264 c
Farm, prize dairy	273 a	Royal Bot. Society	267 a
Farming, Prairie	273 b	Seed adulteration	272 c
Floras, colonial	268 a	Selaginellas	266 a
Floras, Harvey's Cape	264 c	Short horns sale of	270 b
Frankincense	268 c	Steam culture, Smith's	269 c
Fuchsia, hybrid	266 b	Ventilation	263 c
Garden expenses	265 c	Vinery, Curate's	264 a
Heating, &c., Hands on	263 c	Violets, change in	266 a
Hedgerow timber	272 a	Wages, labourers'	271 c
Hexham Farmers' Club	273 a	Walnut trees and cattle	266 a
Honeydew	268 c	Winter flowers	265 c
Horse power	270 c	Woodlice, to kill	274 a
— keeping	272 b		

HORTICULTURAL SOCIETY OF LONDON.—Notice is hereby given that the business of the Society will be carried on in future at No. 8, St. Martin's Place, Trafalgar Square, W.C.

HORTICULTURAL SOCIETY OF LONDON.—The next Meeting of the Fruit Committee will be held at 8, St. Martin's Place, Trafalgar Square, W.C., on Tuesday, April 5, at 12 noon; on which occasion the following prizes are offered:—

For the best dish of LATE GRAPES, Two Guineas.
For the second best do., One Guinea.

Each dish to be accompanied by a form filled up by the Exhibitor. The blank forms for this and other fruits that may be exhibited, can be obtained on application to Secretary to the Committee, Mr. ROBERT THOMPSON, Horticultural Society's Garden, Chiswick, London, W.

N.B.—The Carriage of packages of Fruit will be paid.

HORTICULTURAL SOCIETY OF LONDON,
8, ST. MARTIN'S PLACE, W.C.

Notice is hereby given that a MEETING will take place on FRIDAY, April 8, at half-past 10 A.M. The only business that will be transacted is the election of Fellows.

HORTICULTURAL SOCIETY OF LONDON,
8, ST. MARTIN'S PLACE, W.C.

Notice is hereby given that the FIRST BALLOT for PLANTS will take place on April 15, at 11 A.M., in presence of the Council. All Fellows can take part in it, by merely sending in their names to the Secretary; but the arrangements to be made render it absolutely necessary that such names be received two clear days before the day of Ballot.

HORTICULTURAL SOCIETY OF LONDON.—DISTRIBUTION OF SEEDS.

The Seeds annually provided for distribution being now ready, Fellows of the Society who have not received them can obtain them upon application at the Society's Office, 8, St. Martin's Place, Trafalgar Square, W.C.

LAING'S MAMMOTH RED CELERY.—The largest and best flavoured Celery known, and will not run to seed until the second year. (See former advertisement.)

Packets, 1s. each; large trade do., 3s. 6d., per post prepaid. Stamps received in payment.

YOUELL & Co., Royal Nursery, Great Yarmouth.

HENRY'S HYBRID SCOTCH LEEK.

CHARLES ALEXANDER, SEEDSMAN, Edinburgh, offers Seeds of the above unrivalled LEEK at 1s. and 2s. 6d. per packet.

He exhibited three in December last which weighed 9 lbs., and blanched to upwards of 12 inches each.

THE ALLIANCE POTATO.—Patronised by her Most Gracious Majesty the Queen, the Emperor of the French, and the Nobility of England, Scotland, and Wales. One Peck of these celebrated White Potatoes can be obtained of the grower only, Mr. JAMES COPELAND, Thames Street, Windsor, on receipt of Post-office Order for 7s. 6d.

500 BUSHELS of FLUKE and WHITE BLOSSOM SEED POTATOES, true, free from disease, and suitable sizes, at 3s. 4d. the bushel of 80 lbs., samples of which may be had on application to Mr. WM. GROSVENOR, Prospect Nursery, Cheddleton, near Leek, Staffordshire.

A remittance or reference from unknow[n] correspondents.

CHINESE POTATOES (DIOSCOREA BATATAS) for planting the ensuing month. Large sets of full-sized, well-matured tubers, some of them weighing 2½ lbs., grown in this country, 2s. 6d. per dozen.—Apply, LEMON, Sandbach, Cheshire.

DIOSCOREA BATATAS.—Large Roots per lb.—Apply to HOOPER & Co., Covent Garden

DIOSCOREA BATATAS.—Fine roots, 9 to 12 long, 5s. per doz[en]; extra size, 10s. per dozen. Bass & BROWN, Seed [Gro]wers, &c., Sudbury, Suffolk.

DIOSCOREAS—FINE [LA]RGE ROOTS CHEAP.

SUTTON AND SONS, Seedsmen to the King, can supply DIOSCOREA BATATAS, 9 inches long, at 5s. per dozen, or 40s. per 100. This vegetable is worthy of all that has been said in its favour, and will thrive in almost any soil and situation. SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

SORGHUM, OR HOLCUS SACCHARATUS.

SUTTON AND SONS, Importers of this Seed, can supply it wholesale and retail, warranted the true kind, and good growing Seed. 8 lbs. per acre sufficient.

Present retail price 2s. per lb., or cheaper in large quantities. Instructions on cultivation sent with the Seed.

SUTTON & SONS, Royal Berks Seed Establishment, Reading.

FERN CATALOGUE.

ROBERT SIM'S NEW DESCRIPTIVE AND PRICED CATALOGUE, No. 6 (62 pages) of his COLLECTION of BRITISH AND EXOTIC FERNS, can be had, post free, for 8 stamps. Gratis to all previous purchasers of Ferns. Nursery, Foot's Cray, Kent, S.E.

GEORGE BAKER begs to inform the Nobility and Public that his DESCRIPTIVE CATALOGUE OF AMERICAN PLANTS AND GENERAL NURSERY STOCK will be sent free on application.

American Nursery, Windlesham, near Bagshot, Surrey, about 1 mile from Sunningdale Station, South Western Railway.

NEW DAHLIAS.

JOHN KEYNES'S SELECT CATALOGUE OF DAHLIAS, ROSES, CARNATIONS, PINKS, &c., containing Lists of all the valuable Show Flowers in each class, is now ready and will be sent on application.

Castle Street Nursery, Salisbury.—March 26.

NEW CATALOGUE OF FLORIST FLOWERS, &c.

DOWNIE AND LAIRD beg to intimate that their DESCRIPTIVE CATALOGUE of FLORIST FLOWERS, New VEGETABLE and FLOWER SEEDS for 1859, is now Ready, and will be sent free on application.

17, South Frederick Street, Edinburgh.

HENDON PARK NURSERIES, HENDON, N.W.

SEED LIST, 1859.—A choice selection of the newest and best varieties of PEAS, BEANS, POTATOES, and all Kitchen Garden produce. The best Seeds for the Flower Garden. Forwarded on application.—EDWARD SHENTON.

HENDON PARK NURSERIES, HENDON, N.W.

DESCRIPTIVE CATALOGUE OF NEW DAHLIAS, HOLLYHOCKS, PELARGONIUMS, BEDDING AND BORDER PLANTS, and the leading New Flowers of the season 1859. Forwarded on application.

EDWARD SHENTON.

BELGIAN DAISIES.—In the finest variety, 4s. per dozen.—DODWELL & BAYLEY, Bradshaw Gardens, Chadderton, Manchester.

CHOICE GERANIUMS.

JAMES HOLDER can supply the above (including French, Fancy, and Show varieties), at 15s. per dozen. List of names forwarded on application.

N.B. The Trade supplied on liberal terms.
Crown Nursery, Reading, Berks.

GERANIUMS! GERANIUMS!

JOHN DOBSON AND SONS have a very fine healthy stock of the above which they can supply at moderate prices. CATALOGUES forwarded free on application.
Woodlands Nursery, Isleworth.

CHOICE SHOW GERANIUMS.—From 100 and upwards of the leading kinds, good Blooming Plants, in 48-size pots, at 8s. per dozen. Warranted true to name. To be had of B. WHITHAM, Clough Nursery, Mottram, nr. Manchester.

CHOICE SEEDS.

J. DOBSON AND SONS' LIST comprises all the leading sorts of VEGETABLE, FLOWER, AND AGRICULTURAL Seeds, which will be sent post free on application. Woodlands Nursery, Isleworth, W., and High St., Hounslow, W.

NEW ROSES.

A. PAUL AND SON beg to inform admirers of the Rose that they will have plants of all the NEW ROSES ready for Sale by the middle of April at the lowest advertised prices.—Nurseries, Cheshunt, Herts.

PANSIES.—The best and most distinct kinds, extra fine show varieties, 6s. per dozen.—DODWELL & BAYLEY, Bradshaw Gardens, Chadderton, Manchester.

CHOICE PANSIES.

HART AND NICKLIN, FLORISTS, &c., Guildford, offer a dozen choice named Pansies for 6s., or 50 plants for 1l., strong and healthy. Also fine HOLLYHOCK SEED, saved from extra varieties, 100 Seeds for 1s.

Border PANSIES, PINKS, ROCKET, PHLOX, &c., 3s. p. doz.

TRENTHAM BLUE BEDDING PANSY.—Strong bushy plants that will give a mass of flower this spring.

ALYSSUM SAXATILE (THE YELLOW ALYSSUM).—Good plants to bloom this spring. Price on application.

WILLIAM DEAN, Bradford Nursery, Yorkshire.

CARNATIONS.—Twenty-five pairs strong, well rooted, and extra fine show varieties, named 1l., packing and hamper included.—DODWELL & BAYLEY, Bradshaw Gardens, Chadderton, Manchester.

PICOTEES.—Twenty-five pairs strong, well-rooted plants, and extra fine show varieties, named, 1l., packing and hamper included.—DODWELL & BAYLEY, Bradshaw Gardens, Chadderton, Manchester.

PINKS.—Twenty-five pairs fine named kinds, in strong healthy plants, 10s., packing and hamper included.—DODWELL & BAYLEY, Bradshaw Gardens, Chadderton, Manchester.

BEST SHOW CARNATIONS, PICOTEES, PINKS, &c.

CHARLES SCHOFIELD has a fine healthy stock of the above for sale at 6s., 12s., and 20s. per dozen pairs. Also PANSIES, DAHLIAS, VERBENAS, FUCHSIAS, &c. CATALOGUES now ready, sent free on application.—Knowsthorpe, near Leeds, Yorkshire.

GAYSON'S GIANT ASPARAGUS.—
[Fi]ne 2-year roots, 2s. 6d. per 100; or 21s. per 1000.
" 3-year " 3s. 6d. " 100; or 30s. " "
The usual allowance to the Trade.
Bass & BROWN, Nurserymen, Sudbury, Suffolk.

THE IMPROVED CUSTARD MARROW.—See drawing of this handsome and productive variety in the *Gardeners' Chronicle* of Jan. 29 and Feb. 12. 12 seeds for 13 postage stamps; 9 seeds for 7 stamps. The trade supplied,
Bass & BROWN, Seed Growers, Sudbury, Suffolk.

CUTHILL'S NEW ZEALAND RUNNER BEANS, POST FREE.

SUTTON AND SONS can supply the true kind of NEW ZEALAND RUNNERS, as obtained through Mr Cuthill, at 2s. 6d. and 1s. per packet.—Reading, March 26.

NEW ZEALAND RUNNER BEAN.—Price 2s. per quart.—JAS. CARTER & Co., Seedsmen, 238, High Holborn, London, W. C.

NEW ZEALAND RUNNING BEAN.—Packets of 12 Seeds, for 14 stamps.

BASS & BROWN, Seed Growers, &c., Sudbury, Suffolk.

LARGE GREEN-TOP WHITE BELGIAN CARROT.—Fine new Seed, raised from fresh-imported stock, can be supplied at 1s. per lb., or cheaper in large quantities, by SUTTON & SONS, Seed Growers, Reading.

NEW FARM SEEDS.—Purchasers of large quantities of FARM SEEDS will be treated liberally on application to SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

GOOD CLOVER SEEDS.

GENUINE NEW CLOVER SEEDS can be had of SUTTON & SONS, Seed Growers, Reading, Berks.

THE ALSIKE CLOVER.—This valuable but scarce Clover Seed is included in Messrs. SUTTON'S mixtures of Clover and Grass Seeds for permanent pasture and for alternate husbandry. It can be supplied alone if required. Price fluctuating, to be had on application.

Royal Berks Seed Establishment, Reading.

SPERGULA PILIFERA.—An established plant of the above that will blossom during the coming summer, and prove itself a perfect substitute for Grass Lawns without mowing, sent post free on receipt of 2s. 6d. or 30 stamps.—Address JOHN SUMMERS, Gardener, Forest Hill, Sydenham.

ITALIAN RYE-GRASS SEED.—Buyers of this Seed will please write for samples, present price very cheap, to J. DIXON, Seedsman, Kendal.

PAMPAS GRASS (GYNERIUM ARGENTEUM).—The beauty of this extraordinary plant has this season been fully appreciated. It can be supplied by the dozen, hundred, or thousand, by CHARLES NOBLE, Bagshot, Surrey.

JOHN CULVERWELL, Taunton, begs to call the attention of Agriculturists to his superior selection of GRASS SEEDS, which for PURITY, change of SOIL, and CLIMATE, will bear comparison with any house in the kingdom. Prices, terms, and samples forwarded on application.

GIANT SAINFOIN SEED.—Seed of this excellent and productive Plant may be had of RAYNBIRD & HARVEY, Basingstoke, and 89, Seed Market, Mark Lane. Samples and prices on application.

N.B. R. & H. can also supply Common Sainfoin both of English and French growth at market prices.

TROPÆOLUM CANARIENSE.

FAIRHEAD AND SON, SEED GROWERS and MERCHANTS, Lewisham, Kent, have for sale several lbs. of the above of home growth. Price on application.

CHEAP, SELECT, AND USEFUL NURSERY STOCK.

WM. JACKSON AND CO., of Bedale, Yorkshire, beg to call attention to their advertisement in the *Gardeners' Chronicle* of March 5, page 187.

HANDSOME LARGE SPECIMEN GREENHOUSE PLANTS.—See Advertisement in *Gardeners' Chronicle*, March 5, page 186.

WM. JACKSON & Co., Bedale, Yorkshire.

CONIFERÆ.

A. PAUL AND SON have a large stock of the above, very handsome, in fine order for removal, many suited for immediate effect. For particulars see Advertisements in *Gardeners' Chronicle* of November and December last.—Nurseries, Cheshunt, Herts.

HERBACEOUS AND ALPINE PLANTS.

W. HOLCROFT, Upholland, Wigan, begs to offer selections of these beautiful plants, at the following moderate rates:—

100 very superior kinds	£1 15 0	100 showy kinds	£1 5 0
50 "	0 18 0	50 "	0 13 0

All the choice and rare kinds at moderate prices.

SEEDLING QUICKS.

WANTED, 500,000 Quicks, 1-year Seedlings, good plants.—Price and samples to be sent to
B. WHITHAM, Clough Nursery, Mottram, near Manchester.

BLOOD ORANGE.

WANTED, a fine healthy specimen of the TRUE BLOOD ORANGE.—Any person having such an one to dispose of is requested to forward particulars, stating size, price, &c., to Mr. JAMES VEITCH, jun., Royal Exotic Nursery, Chelsea, S.W.

PHLOXES.—The best and most distinct kinds, strong plants, well established, 8s. per dozen.—DODWELL & BAYLEY, Bradshaw Gardens, Chadderton, Manchester.

THE NEW PELARGONIUM "THE BRIDE" (BECK).—Splendid plants of this beautiful new variety are now being sent out at 21s. each. Blooms sent free on receipt of three stamps.

JOHN DOBSON & SONS, Woodlands Nursery, Isleworth, W.

STRAWBERRY PLANTS can now be supplied of every kind worth growing, warranted to produce a good crop this year. They are transplanted plants, and will be sent with a ball of earth to each. Price 10s. per 100, or in less quantities 2s. per dozen.—R. S. YATES, St. Ann's, Manchester.

STRAWBERRY PLANTS, SALE FOR THIS MONTH ONLY.—Very fine strong Plants of the three early sorts advertised last month can still be supplied with 100 other varieties. The price according to sorts and numbers required.—Apply to the Grower, WILLIAM JAMES NICHOLSON, Eggborough, near Yarm, Yorkshire.

GARDENERS' CHRONICLE NEWSPAPER PENNY

ROYAL BOTANIC SOCIETY OF LONDON.—SPRING EXHIBITION, MARCH 23.

REPORT OF THE JUDGES.

NEW PLANTS.—FIRST PRIZE: Messrs. Jackson & Son, of Kingston, for Dendrobium Falconeri obtusum, a beautiful variety with richly-marked flowers. SECOND PRIZES: Messrs. A. Henderson & Co., Pine-apple Nursery, Edgware Road, for Gastrolobium ovalifolium, a highly-promising greenhouse shrub with crimson blossoms in terminal heads; Messrs. E. G. Henderson & Son, Wellington Road, for Caladium argyrites, a small and very distinct stove species with variegated heart-shaped leaves elegantly blotched and speckled with pure white. CERTIFICATES: Mr. Glendinning, of Chiswick, for Prunus triloba and the Rose-flowered Peach, two gay hardy shrubs, the former with compactly semi-double flowers of a delicate rose, the latter with large showy loosely-double flowers of a deep rose colour. Messrs. A. Henderson & Co., for Chamæcyparis thuriifera, a fine hardy Conifer. Messrs. E. G. Henderson & Son, for Grevillea elegans, a greenhouse shrub of free growth, with neat oval leaves, and distinct-looking red flowers tipped with pale yellow; Bossiæa paucifolia, a greenhouse shrub of neat habit, with small foliage and bright orange and crimson flowers; Daviesia umbellata, a compact greenhouse shrub, with small lance-shaped leaves, and dense clusters of yellow flowers; Begonia picturata, one of the dwarf variegated section, the leaves silvery between the pale-coloured veins which lie within narrow stripes of dark green, the whole suffused with red, and sanguineous behind; Begonia Miranda, with leaves of a silvery yellowish-green, the border and centre dark olive-green, and marked behind with red as in B. Griffithii. Messrs. Jackson & Son for the curious and rare stove Ataccia cristata. Messrs. Ivery & Son, of Dorking, for a seedling Azalea indica named tricolor, a variety with large flowers of average form, much striped and blotched with light red.—Messrs. Ivery & Son also exhibited striata flore-pleno, a variety with indifferent double striped flowers, and Bouquet de Flore, with small rose-coloured flowers. Messrs. E. G. Henderson also showed Stypandra frutescens, a neat shrub with grassy equitant leaves and Dianella-like blue flowers; Grevillea pteriscifolia, forming an entangled mass of slender repeatedly trichotomously-forked leaves, and bearing bunches of small white flowers; Begonia picturata argentea, lighter coloured and less showy than the above B. picturata; Solanum luteo-spinum, a curious plant with stout yellow spines from the ribs of the sinuated leaves; Carduus apus, a whitish elegant spiny-leaved plant in the way of C. Cassabonæ; the neat dwarf sweet-scented, free-blooming Gardenia citriodora; Cassia scinifolia with light pinnate leaves and yellow flowers; the showy Correa cardinalis; Anopterus glandulosus, a good conservatory plant; and Rhododendron camelliæflorum, a distinct but not showy white-flowered Indian species. Mr. Glendinning produced, in addition to his before-named plants, the Carnation-flowered Peach, an ornamental semi-double kind, with the flowers delicate rose-colour.

12 MISCELLANEOUS PLANTS.—FIRST PRIZE: Messrs. J. & J. Fraser, Lea Bridge, Essex, for 12 well-bloomed hard-wooded plants consisting of Boronias, Epacrises, Azaleas, Eriostemons, &c. SECOND PRIZE: Messrs. A. Henderson & Co. who had a tall plant of the very elegant Jacaranda filicifolia, the Yucca-like Draccæna indivisa, Rhopala corcovadensis, the yellow-blotched leaved hardy Farfugium grande, Clematis azurea grandiflora, &c. THIRD PRIZE: Messrs. E. G. Henderson & Son, who had a nice selection of plants smaller than the foregoing, including Cyanophyllum magnificum, Imantophyllum miniatum, Rhopala corcovadensis, and R. Jonghei, the Princess Frederick William of Prussia Camellia, a compact striped kind, and Jenny Lind Camellia, with finely-formed blush-white flowers, faintly striped.

12 POLYANTHUS NARCISSUS.—FIRST PRIZE: Messrs. W. Cutbush & Son, Highgate, in whose group the well-known Soleil d'Or, Grand Monarque, and gloriosa were conspicuous. SECOND PRIZE: Messrs. A. Henderson & Co.

12 HYACINTHS.—FIRST PRIZE: Messrs. W. Cutbush & Son, whose plants were remarkable for vigour and beauty; among them the following were very attractive:—Elfrida, single white, large bells; Solfaterre, very bright single red; Cosmos, single rosy pink, with pale edges; Florence Nightingale, dense single, deep blush; Prince of Wales, a novel and peculiar dull single rosy lilac; General Havelock, single dark purple; Madame du Lac, single, rose pink. SECOND PRIZE: Messrs. A. Henderson & Co., whose collection, nicely grown, contained two very beautiful sorts—Argus, single deep blue, with bright blue tube and white eye; and Admiral de Coligny, single blue, with very large bells. THIRD PRIZE: Mr. G. M'Intosh, Hammersmith, whose collection, also well grown, was hardly inferior to the last.

MISCELLANEOUS.—Under this head the following awards were made:—SMALL SILVER MEDAL: Messrs. E. G. Henderson, for a large group consisting of Hyacinths, Seedling Amaryllids, and Cyclamens, the latter comprising a series of varied and beautiful forms of C. persicum, among which persicum rubrum the deepest purple-red, persicum sanguineum pale rose, and persicum marginatum blush, all with the usual spotting, but of different shades, and persicum delicatum, almost without colour, were distinct and pretty; many other handsome and distinct kinds were unnamed. Mr. Turner, Slough, for six well-grown Cinerarias, of choice quality. Messrs. A. Henderson & Co., for a fine collection of 36 Hyacinths, among which, of a distinct class corresponding in their large simple bells with Elfrida and Admiral de Coligny, previously mentioned, were Couronne de Belle, pale blue, and tubiflora, blush. CERTIFICATES: Mr. Todman, gardener to R. Hudson, Esq., Clapham, for Seedling Azalea Dr. Livingstone, a large finely-shaped flower, of good substance, bright lively rose colour. Mr. Turner, for Seedling Cineraria Queen Victoria, large and of good properties, rosy-crimson, with a white ring around the purplish disk. Mr. Holland, gardener to R. W. Peak, Esq., Spring Grove, Hounslow, for Seedling Cineraria Hilax, of average properties, white tipped with rosy-purple, remarkable for the dark purple almost black permanent well-defined disk. Mr. Turner, for Seedling Auricula Exhibitor, a grey-edged variety of more than average properties; and also for Seedling variegated Pelargonium Jane, which had white-bordered leaves, and light bright scarlet bold flowers in good trusses. Mr. G. McIntosh, for a group of 30 Hyacinths. Mr. Bragg, Slough, for a stand of 24 Pansies. Messrs. F. & A. Smith, Dulwich, for Seedling Pelargonium floribundum, of which three plants were shown, proving it to be a free blooming good habited forcing variety of the rose-coloured class; and also for six Cinerarias, small plants, among which one called Acme of Perfection, a seedling, was a very prettily formed white tipped with purple, and of good quality. They had in addition a large gay collection of mixed Seedling Cinerarias, among which conspicua, a large crimson with white ring; and Goliath, large white tipped with rosy crimson, were particularly striking as market flowers.—In this Class Messrs. E. G. Henderson & Son also exhibited small plants of three prettily variegated bedding Pelargoniums, which require to be further advanced; and plants of five American and Italian Camellias, among which the crimson Mathotiana was the most striking. Mr. Turner also had several Seedling Cinerarias, which though showy were not considered of sufficient merit to receive awards; together with six Auriculas, of which the best was Dickson's Duke of Wellington; and a variegated Pelargonium, called Flower of Spring, an attractive-looking kind on account of the large size of its well formed cerise flowers, but considered not sufficiently established for adjudication.

(Signed)
S. M. CABOT, THOMAS MOORE, A. PARSONS, Censors.

COLCHESTER AND EAST ESSEX HORTICULTURAL SOCIETY.

Exhibitions for 1859: WEDNESDAY, May 18; WEDNESDAY, June 29; WEDNESDAY, September 7.

* At the Exhibition in June a piece of Plate, value 10*l.* 10*s.*, will be offered by the Members for the Borough for the best collection of CUT ROSES. None but those whose names are entered as Subscribers of 5*s.* and upwards on or before the 31st inst. can compete.

For particulars of the above, and other Extra Prizes, see Prize Lists, which may be obtained of the Secretary, 97, High Street, Colchester.

N.B. This Advertisement will not be repeated.

BATH AND WEST OF ENGLAND SOCIETY

FOR THE ENCOURAGEMENT OF AGRICULTURE, ARTS, MANUFACTURES, AND COMMERCE.—An Exhibition of FLOWERS, FLOWERING, and ORNAMENTAL PLANTS, FRUIT, and VEGETABLES, will take place on June 1, 2, and 3, in connexion with the General Exhibition of the above Society, on the occasion of their North Devon Meeting at Barnstaple, when the following Prizes will be offered:—

		1st.	2d.
I.—1.	For the best collection of not less than 20 Stove or Greenhouse Plants (Nurserymen)	£3	—
2.	Do. do. .. .. (Amateurs)	2	£1
II.—1.	For the best collection of not less than 12 Rhododendrons and Chinese Azaleas (Nurserymen)	3	—
2.	For the best collection of not less than 8 do. .. .. .. (Amateurs)	2	1
III.—1.	For the best collection of not less than 8 Roses in pots .. .. (Nurserymen)	3	—
IV.—1.	For the best collection of not less than 20 Variegated Plants, or plants remarkable for their fine foliage (Nurserymen)	3	—
V.—1.	For the best collection of not less than 20 Ferns of any kind .. (Amateurs)	2	1
VI.—1.	For the best ornamental basket of Flowers, or of Flowers and Foliage .. (Amateurs)	2	1
VII.—1.	For the best group of specimens of Coniferæ, preference being given to newly introduced kinds .. .. (Nurserymen)	5	—
VIII.—1.	For the best specimen of any newly introduced or extremely rare genus of Ornamental Plant, or object of special merit in the exhibition .. (Nurserymen)	1	—

In addition to the above, prizes to the amount of 10*l.* will be offered for Fruit and Vegetables. A portion of the Society's ground will be set apart for the present exhibition, and space will be allotted either in a marquee or the promenade, at the discretion of the managing committee, to Nurserymen who may wish to arrange and exhibit their collections in distinct sections, irrespective of competition for prizes. Space will also be allotted for the display of Garden Decorations and works of Ornamental Art associated with Horticulture.

Plants intended for the Exhibition will (on being consigned to the Horticultural Committee) have free transit over the line of railway from Exeter to Barnstaple.

Application for space to be made to the undersigned before May 1 next.

All articles for exhibition must be staged by the evening of Tuesday, May 31, and are not to be removed earlier than the morning of Saturday, June 4.

(Signed) GEORGE BROWN,
Barnstaple. Hon. Sec. Local Committee.

HOLLYHOCKS.

WILLIAM PERRY begs to announce that he has fine healthy plants of the above for sale, of all the approved sorts, well hardened and fit for planting out immediately, from 9*s.*, 12*s.*, 18*s.*, 24*s.*, and 30*s.* per dozen, if the selection is left to W. P. A Descriptive Catalogue can be had on application, also seed saved from the best sorts, 1*s.*, 2*s.*, and 3*s.* per packet.

Foreman at the Nurseries, Sawbridgeworth, Herts.

SUPERB DOUBLE HOLLYHOCKS.

WILLIAM CHATER can now supply fine healthy plants from his Collection, having a large stock ready for immediate planting.

See DESCRIPTIVE CATALOGUE, to be had on application.
Nurseries, Saffron Walden.

FIRST-CLASS HOLLYHOCKS.

FINE SEEDLINGS FROM

WILLIAM CHATER'S Celebrated and Newest Varieties that will flower well in September at 30*s.* per 100
ditto ditto ditto 20*s.* ,, 100
Ground Roots according to colour, also at .. 30*s.* ,, 100
Seed in 12 separate colours, the Collection .. 10*s.* 0*d.*
,, 6 ,, ,, ,, ... 5 0

From varieties such as Pourpre de Tyre, Memnon, White Globe, Hon. Mrs. H. Ashley, Canary, &c., in 12 separate colours, the Collection .. .. 7*s.* 6*d.*
Ditto in 6 separate colours, the Collection .. 4 0
Seed from 20 of the best varieties, mixed, per pkt. 5 0
,, 12 ,, ,, ,, ,, 2 6
,, good mixed, also a single variety ,, 1 0

The above can be procured from the Nurseries, Saffron Walden, Essex.

NEW HOLLYHOCKS.

A. PAUL AND SON beg to recommend the following NEW HOLLYHOCKS, which have been selected from several thousands of Seedlings. The stock of ordinary kinds is this year greatly extended. The plants are strong, well established, and perfectly healthy:—

	s.	*d.*
BRISEIS (PAUL).—Purple, silvery edges, flower of good form, spike close	5	0
GENERAL HAVELOCK (PAUL).—Bright, ruby scarlet, colour of "Scarlet King," but a close spike and a round smooth flower of perfect shape	10	6
IN MEMORIAM (PAUL).—Crimson maroon, large, good substance, first-rate flower, good spike	10	6
OSSIAN (PAUL).—Crimson shaded with salmon, remarkable alike for substance, closeness, and symmetry; spike good	10	6
PAINTED LADY (PAUL).—Pink and blush in blotches, a large smooth flower of good substance	5	0
PLUTARCH (PAUL).—Plum colour, of fine shape, and very smooth, guard and spike good	10	6
POURPRE NOIR (PAUL).—Rich purplish maroon, large smooth flower, close spike	7	6
RED ROVER (PAUL).—Dark fiery scarlet, flower large, spike splendid, very effective	7	6
VERITAS (PAUL).—White, lemon base, large full flower, splendid spike	10	6
VESTA (PAUL).—Pure white, petals thick, edges smooth, guard good	7	6
VITRUVIUS (PAUL).—Pink, large flower, of perfect form and good substance	5	0
ZENO (PAUL).—Rich plum colour, with silvery edges, flower large, spike good; new and distinct	5	0

The Collection of 12 varieties is offered for 4*l.* 4*s.*; good named sorts, 9*s.* to 18*s.* per dozen; very superior ditto, 24*s.* to 42*s.* per dozen; Bloomed Seedlings in separate colours, 30*s.* 50*s.* per 100; mixed Seedlings, 10*s.* to 21*s.* per 100.

HOLLYHOCK SEED, 1*s.* to 5*s.* per packet free by post.

Also a PRICED DESCRIPTIVE CATALOGUE free by post.

Nurseries, Cheshunt, Herts.

THE BEST NEW ROSES FOR 1859.

WM. WOOD AND SON will be prepared to send out strong healthy plants in pots of the following new ROSES the first week of April, which are offered as the best of the varieties to be sent out this season:—

HYBRID PERPETUAL.

Albert de Stella	Joseph Vernet
Anna de Diesbach	Lord Elgin
Anna Alexieff	Le Mont Vésuve
Armide	Mathilde de Mondeville
Ardoisé de Lyon	Orderic Vital
Altesse impériale	Oriflamme de St. Louis
Beauté de Royghem	Princesse Olympie
Bouquet de Marie	Salomon
Comte de Beaufort	Virginal
Comtesse Cecile de Chabrillan	Madame Bruny
Empereur de Maroc	

BOURBON.

Aline Pierron	Edith de Murat
Comtesse de Barbantanne	Molière
Docteur Berthet	Octavie Fontaine

NOISETTE—Cornélie.

TEA-SCENTED.

Homère	Ophelia
Madame Damaizan	Roi des Pays Bas
Madame Joseph Halphen	Socrate

Good Plants will be supplied at 5*s.* each, with the usual discount to the Trade. Descriptive Catalogues on application.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

THE LARGEST STOCK OF

TEA-SCENTED ROSES in the kingdom.—Upwards of 10,000 DWARF TEA ROSES in pots, fine healthy plants now ready for sending out, consisting of all the best leading kinds, and comprising among others—

750 Mélanie Willermoz	300 Maréchal Bugeaud
500 ,, Oger (yellow)	300 Madame Bravy
500 Vicomtesse de Cazes (do.)	300 Le Pactôle, yellow
500 Souvenir d'un Ami	300 Niphetos, fine white
500 Saffrano	300 Goubault
400 Adam	300 Canari (yellow)

400 Miss Gray or Isabella Gray, TRUE, yellow Rose, &c.

Plants presented to compensate for carriage.—Address WM. WOOD & SON, Woodlands Nursery, Maresfield, near Uckfield, Sussex.

ROSES.—TO THE TRADE.

BIRCHAM AND WARD having a surplus stock of the leading kinds of Perpetuals in fine condition, offer them at the following low prices by the 100 or not less than 50.

Standards, per 100 .. .. .. 3*l.* to 3*l.* 10*s.*
Dwarfs do .. .. 2*l.* 2*s.*
Ditto, on their own roots .. .. 2*l.* 2*s.*

Carriage paid to London and Peterborough.

HOLLYHOCK SEED of very superior quality by the oz.

Hedenham Rosary, Bungay, Suffolk.—March 19.

FINE HEALTHY ROSES.—

STANDARDS .. .. .. 18*s.* per doz.
DWARFS (on the Manetti) .. 12*s.* ,, ,,

As the weather still continues mild and favourable for planting, GEORGE CLARKE begs to state he has still a fine stock of all the leading kinds to offer at the above prices, the selection being left to him. The Plants are all healthy and well rooted, therefore calculated to give the greatest satisfaction. Plants carefully packed for any distance. Carriage of all packages paid to London; and in all orders amounting to 20*s.* plants are added to compensate for distant carriage.

GEORGE CLARKE, The Nursery, Brixton Hill.

NEW ROSE, HYBRID PERPETUAL "LÆLIA."

—Colour delicate satin rose, petals very large, perfectly smooth, and well formed; flowers of exquisite shape, large size, and highly scented. JOHN CRANSTON has the pleasure to announce that he will be prepared to supply early in April plants of this superb new Rose. It was exhibited by him in his winning stand of single blooms at the Grand National Rose Show in July last, and was unquestionably the most attractive variety of the Show, and the admiration of all who saw it. Fine healthy plants, 5*s.* each, with the usual discount to the Trade.—Nurseries, King's Acre, near Hereford.

NEW HYBRID PERPETUAL ROSES FOR 1859.

E. P. FRANCIS offers the following NEW ROSES which he will be prepared to send out on and after the first week in May, at 5*s.* each. They have been carefully selected from amongst the numerous new French varieties:—

Anna Alexieff	Princess Olympie
Stephanie Beauharnais	Anna de Diesbach
Ambroise Verschaffelt	Beauté de Royghem
Imperatrice Eugénie	Comtesse Cecile de Chabrillan
Albert de Stella	De la Mothe
Virginale	François Arago
Altesse Impériale }	L'Oriflamme de St. Louis
Ardoisée de Lyon }	Lord Elgin
[These two splendid varieties were awarded the Gold Medal as Seedlings at Lyons.]	Madame Bruny
	Orderic Vital
	Salomon
Comte de Beaufort	Reine de la Cité
Docteur Bretonneau	François 1st
Empereur de Maroc	Mignard
Armide	Madame Jenny

Hertford Nurseries.

THE BEST DWARF GERMAN ASTER SEED

EVER YET OFFERED TO THE PUBLIC.

SAVED FROM FLOWERS THAT HAVE OBTAINED FIRST PRIZES FOR MANY YEARS PAST AT VARIOUS EXHIBITIONS.

EDWARD TILEY begs to inform the lovers of the above beautiful flower, that he has just purchased the entire stock of Seed, which has been selected from the finest flowers as to shape, colour, and dwarfness of growth. They were inspected by many good judges while in bloom last season, who said they had never seen the Aster brought to such perfection before, and with such a dwarf habit. Seeds 1*s.* 6*d.* per packet, or two packets for 2*s.* 6*d.*

Extra fine mixed Hollyhock seed saved from the newest and best varieties, 1*s.* per packet. [packet.

Antirrhinum seed, saved from spotted and striped sorts, 6*d.* per

Sweet William seed, saved from 24 distinct varieties, the major part of which always flower double, 6*d.* per packet.

Delphinium formosum seed, extra fine, 6*d.* per packet.

The Improved Bath Cos Lettuce seed, saved from the finest stock ever grown in the west of England; it is very crisp and not at all liable to run, 1*s.* 6*d.* per packet.

A small quantity of seed of the Dwarf Incomparable Cabbage. This is a superb variety for windy or cold situations; it will stand the severest winter and will form good hearts much earlier than any other variety; it is very tender and soft when cooked, not having any large coarse ribs. If the seed be sown at several different times no person need be without good young Cabbage all the year. 1*s.* 6*d.* per packet. A packet of the Improved Coss Lettuce and packet of the Dwarf Incomparable Cabbage, 2*s.* 6*d.*

Digitalis or Foxglove seed, saved from the finest collection ever yet seen; the flowers come to an immense size, and are as handsome if not handsomer than the Gloxinias, 1*s.* per pkt.

EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Church Yard, Bath.

A remittance must accompany all orders either in cash or penny postage stamps.

HOLLYHOCKS.

H. STROUD begs to announce that he has a fine stock of unblo0med Seedlings saved from choice double flowers, which he can supply at 3*s.* dozen, 1*l.* per 100. Usual allowance to the Trade.—Queen's Road Nursery, Peckham, S.E.

GRIEVE'S NEW DOUBLE PETUNIAS.—The universal satisfaction given by the PETUNIAS sent out last spring, raised by Mr. Grieve, Gardener at Culford Hall, near Bury St. Edmund's, induces the advertisers to offer to the public those raised by that persevering hybridiser last summer, which are considered superior to any yet offered; not in the size of the flowers, but in brilliancy of colour, consistence of petal, and regularity in form—all being very double. The following are the names adopted, which may be respectively taken as an approximate description of their colours:—

CRUENTA, CANDIDA, PURPURASCENS. } Large flowers, and most appropriate for pot culture.

ATROCOCCINEA, ROSEA STRIATA, ATROROSEA. } Medium-size flowers and neat habit; probably useful for bedding.

Plants of the above, 5*s.* each; or 21*s.* the set of six, to be sent out the first week in April by Osborn & Sons, Fulham Nursery, London, S. W.

N.B. The usual allowance to the Trade.

NEW DOUBLE PETUNIAS.

C. W. HARGRAVE begs respectfully to announce that he will shortly be prepared with STOCK of the NEW DOUBLE PETUNIAS advertised by him in the *Gardeners' Chronicle* of September 25, 1858.

They constitute a unique collection in themselves, being of exquisite form, firm substance, rich and decided in colour, very fragrant, and of first-rate habit, having good guard petals, with the centres well filled, and in fact are superior to the Continental or other varieties hitherto sent out. Their nomenclature is as follows:—

ROSETTE.—Crimson, very double, dwarf habit.
ROSEA ALBA.—Rose clearly mottled with white.
PURPLE KING.—Large flower, well formed.
CRIMSON GEM.—Bright crimson, with white centre.
ALBA MAGNIFLORA.—Beautiful form, very fragrant.
KING OF CRIMSONS.—Bright crimson, brighter than its parent "Crimson King." The varieties previously introduced as crimson have all proved themselves to be only purple.

Plants of any of the above 5*s.* each, or the set of six 25*s.*

It is requested that the Trade forward their commands at their earliest convenience, as all orders will be executed in the rotation in which they are received.

C. W. HARGRAVE, The Nursery, Winchmore Hill, N.

NEW FUCHSIA "LORD CLYDE" (Youell's).—It is with much pleasure and satisfaction that we have the opportunity of offering for the present season the above truly novel and probably the most beautiful Fuchsia that has yet been introduced. The tube and sepals (which are of great substance) are of rich glossy scarlet, the latter most perfectly reflexed, exhibiting a large well-folded corolla of rosy pink, distinctly flaked, with broad stripes of bright violet purple. The habit of the plant and the profuseness of its blooming properties are all that can be desired. It flowered for the first time in 1857, and proved again in 1858, and has maintained its character in every respect. Strong plants will be ready for sending out on and after the 27th of April, at 10*s.* 6*d.* per plant. (Per post free, if required.)

Correct Coloured Engravings, by Mr. Andrews, will be forwarded to any address on receipt of six postage stamps.

Youell & Co's Royal Nursery, Great Yarmouth.—March 26.

CARNATIONS AND PICOTEES.

YOUELL AND CO.'S COLLECTION of the above deservedly favourites is probably the most extensive in the Trade, and having for a series of years paid special attention to their cultivation, introducing the best of the newest varieties, they are enabled to offer them at the following prices or fine, strong, well rooted plants.

CARNATIONS, finest first class show varieties by name, 18*s.* and 24*s.* per dozen pairs.

PICOTEES, finest first class show varieties by name, 18*s.* and 24*s.* per dozen pairs.

Ditto, on yellow grounds, 20*s.* and 30*s.* per dozen pairs.

Finest mixed BORDER CARNATIONS & PICOTEES, 9*s.* ditto

True old CLOVE CARNATION, 12*s.* per dozen pairs.

Scarlet ditto ditto, 18*s.* ditto

NEW CARNATION "EXTRAVAGANZA."—We have much pleasure in calling attention to the above new and singularly beautiful and striking variety. The habit of the plant is strong and vigorous, and as hardy as the Clove Carnation. The flowers are of a shining or glossy puce colour, regularly striped with bands of intense vivid scarlet, highly perfumed, and the individual flowers are free from bursting. It is the most distinct and attractive variety that has yet been offered, and is admirably adapted for either pots or bedding. Price 3*s.* 6*d.* per pair, or 36*s.* per dozen pairs.

PINKS.—The finest first class show Pinks, by name, 9*s.* per doz.

Fine mixed border PINKS, 6*s.* per dozen pairs. [pairs.

HOLLYHOCKS.—Our extensive stock of these, comprising the finest named varieties, is this season very strong and healthy and well established in pots, price of which is 9*s.* to 12*s.* per dozen.

NEW PHLOXES.—An extensive and select collection of the above beautiful showy tribe of Herbaceous Plants, comprising the fine and newly introduced varieties from the Continent. May be obtained at 10*s.* per dozen, package included.

PANSIES.—Finest first-class show varieties, by name, 9*s.* per dozen.

CHRYSANTHEMUMS.—The handsomest of the new large flowering and Pompone kinds, 6*s.* per dozen.

DAISIES.—18 selected, of the best new Belgian vars. for 9*s.*

LOBELIAS.—Finest scarlet, adapted for forming magnificent groups, viz.:—Feu du Roi, splendens major, Victoria, fulgens superba, fulgens multiflora. L. St. Clare, 9*s.* per doz.; Blue do. Milleri; violacea, 9*s.* per doz.; Red Leopold, 6*s.* per doz.

OXALIS FLORIBUNDA AND ROSEA.—Quite hardy, producing a fine bed of rich rose colour, 6*s.* per dozen.

ŒNOTHERA MACROCARPA.—Large yellow, 6*s.* per dozen.
" TARAXACIFOLIA.—Large white, 6*s.* "

DELPHINIUM FORMOSUM.—Finest blue, 3*s.* per dozen; 16*s.* per 100.
" MOOREANUM.—Dark purple, 4*s.* per dozen; 25*s.* per 100

LINUM FLAVUM, 6*s.* per dozen.

TRITOME MEDIA.—A handsome winter and spring-flowering hardy herbaceous plant, producing large spikes of scarlet-yellow flowers, 9*s.* per dozen.

PENTSTEMONS.—A fine assortment, 6*s.* per dozen.

GAZANIA RIGENS.—Large orange yellow, with dark centre, 6*s.* per dozen.

STATICE MARITIMA ROSEA AND PSEUDO-ARMERIA.—Strong plants of these two beautiful and hardy species, producing throughout the year a profusion of lake-coloured flowers, 4*s.* per dozen.

DIELYTRA SPECTABILIS, fine strong plants, 6*s.* per dozen.

BERBERIS DARWINI, flowering plants, 6*s.* per dozen.

PRIMROSE, double yellow, 4*s.* per dozen.

HERBACEOUS PLANTS.—A choice collection of all the most showy kinds, 6*s.* per dozen; 40*s.* per 100.

☞ All orders of 2*l.* and upwards are delivered Carriage Free to London, Manchester, Liverpool, Peterborough, Hull, and Newcastle, as well as to any Railway Station within 150 miles of the Nursery.

Youell & Co., Royal Nursery, Great Yarmouth, Norfolk.

AMERICAN PLANTS, &c., offered by Messrs. J. & H. Brown.—

25 AZALEAS, New Hardy Belgian varieties, one of a sort, 20*s.*

25 AZALEAS, American varieties, one of a sort, 15*s.*

12 RHODODENDRONS, including Scarlet, White & Rose, 10*s.*

Fine Hardy Scarlet RHODODENDRONS, 1 to 2 feet, per dozen, 12*s.*

ANDROMEDA FLORIBUNDA, strong plants, per doz. 18*s.*

Albion Nursery, Stoke Newington, London.—March 26.

CORNISH BROCCOLIS.

MITCHINSON AND CO., Seed Merchants, Truro, Cornwall, beg to invite attention at this period (the season for sowing), to their superior BROCCOLI SEED, at 1*s.* 6*d.* per packet, or 4 packets for 4*s.* postage free;—

1. Mitchinson's Penzance or Early White Cornish.
2. Thomas's Penzance Dwarf Early ditto.
3. Waters's Penryn or Early Falmouth Market.
4. The Truro extra fine Late White.

These will give a succession from January to May.

1-year SEEDLING LARCH, fine.

2-year Seedling Larch, fine	1-year Seedling Common Oak, fine
2-year do. Scotch Fir, native	1-year ditto Turkey ditto
2-year do. Spruce, Norway, fine	2-year ditto Red Cedar
3-year ditto ditto	1-year English Yew
2-year ditto White American ditto	1-year transplanted Larch, fine
1-year ditto Red ditto	2-year ditto
1-year ditto Hemlock Spruce	1-year do. Scotch Fir, native, do.
1-year ditto Evergreen Oak	2-year ditto

The Subscribers being extensive holders of the above solicit the particular attention of the Trade. Prices, which are most moderate, may be had on application.

David Reid & Son, Nurserymen and Seedsmen, Edinburgh.

GRAPE VINES FROM EYES.

JOHN AND CHARLES LEE beg to offer an immense stock of strong well-ripened VINES FROM EYES, of the following kinds:—

Alicant	Hâtif de Jura
Barbarossa	Isabella
Bidwell's Seedling	Marchioness of Hastings
Black Cluster	Muscadine Parsley leaved
Black Constantia	Muscat, August
Black Prince	" Cannon Hall
Blanche Vigne	" Hamburgh
Calabrian Raisin	" Noir Hâtif
Charlsworth Tokay	" of Alexandria
Chasselas Frocklaboulay	" of Fontainebleau
Chasselas Musqué	Pitmaston Cluster white
Duzetto	Raisin des Carmes
Esperione	Trebiana
Frontignan, black	Trentham Black
Hamburgh, Dutch	Tripoli
" golden	West's St. Peter's

Nursery and Seed Establishment, Hammersmith, London.

NEW VERBENAS, RAISED BY MR. ELPHINSTONE.

1. PICTURATA.—Crimson, large, and fine truss, conspicuous white round eye.
2. COMTE DE MONTALEMBERT.—Light lilac, very large flower of extra substance, with large white eye.
3. ANNIE.—Light rose, large white eye, a very desirable colour and good substance.
4. BOUQUET DE LA REINE.—Peach, large white eye, fine shape, and extra substance, quite a new colour.
5. MAGNUM BONUM.—Bright crimson, fine yellow eye, large flower and a very striking variety.
6. GRANDIFLORA PURPUREA.—Violet purple, large truss, fine white eye.

Plants ready for sending out second week in April.

D. BROWNE has great pleasure in introducing the above Six New VERBENAS, as being a decided improvement on any hitherto produced in form, colour, and extra substance, with fine strong habits so desirable for bedding purposes.

The Stock being limited, early orders are respectfully solicited so that the best Plants may be selected and reserved.

The collection of Six Varieties, package included, 20*s.*, or 3*s.* 6*d.* each, sent free of carriage.

Horticultural Grounds, Sprowston; Seed Establishment, 41, London Street, Norwich. The Trade supplied on the usual terms.

SEED POTATOES.

JAMES HUDDART, Nurseryman and Seedsman, Preston, offers the following varieties:—

Runcorn Short Top	Pink Eye Kemp
Flukes, true	Ash-leaved Kidney, very true
Early Kemp	Preston Early

The last named kind is a Seedling raised by J. H., and was tested last year with "Handsworth Prolific" and other early sorts, and found to be as early and full one-third heavier cropper. A very dry mealy Potato when half size. Prices reasonable on application.

J. H.'s DESCRIPTIVE SEED CATALOGUE may be had post free) on application.—March 26.

THE EARLIEST PEA.—DUNNETT'S FIRST EARLY is in every respect superior to "Daniel O'Rourke," being several days earlier, having finer pods, and richer in flavour, height 2½ feet. For an early dish of fine-flavoured Peas we can confidently recommend this; 2*s.* per quart.

CHAMPION CABBAGE, the earliest and best sort, if sown in succession, may be had fit for table throughout the year, 8*d.* per ounce, or 1*s.* post free.

Butler & McCulloch, Covent Garden Market, London.

CALLICARPA PURPUREA.

JOHN STANDISH, the exhibitor of the above (at St. James's Hall), can supply a few good plants at 7*s.* 6*d.* each. The following passage from Dr. Lindley's leading article in the *Gardeners' Chronicle* for Nov. 20 will give an idea of its beauty:—"Callicarpa purpurea, quite insignificant when in flower, was beautiful in its winter dress of innumerable rich purple berries, about the size of swan shot." It is easily cultivated, and does well in a cold greenhouse or conservatory planted out, where it will produce thousands of bright purple berries resembling glass beads, and remaining on nearly the whole winter.—Bagshot, March 26.

NEW CHRYSANTHEMUMS.

JOHN SALTER begs to announce that his SPRING CATALOGUE is now published, in which his splendid SEEDLINGS and other new CHRYSANTHEMUMS of 1859 are fully described, as well as the unrivalled general collection, which is the largest in Europe.—Strong plants of "Golden Queen of England," "Prince Albert," and every other variety, will be ready in April.—Versailles Nursery, William Street, near Hammersmith Turnpike, W.

HOLCUS SACCHARATUS, or North China Sugar-Cane.—Pamphlet, "A Visit and a Plant;" the only English authority on the Cultivation of the above. Post free 6*d.* Prices of Seed on application. Samples 6*d.* Four varieties of Holcus remitted free by post on receipt of 10*s.*

CHINESE YAMS, 4*s.* per dozen.

ASPARAGUS plants, 16*s.* per 1000.

John W. Clarke, Whittlesea, Cambridgeshire.

MEADOW AND PASTURE GRASS SEED.—The great difficulty experienced by many Gentlemen and Farmers when about to lay down Land, is the selection of the proper Seeds, having no reliable practical guide as to quantity or kind. JAMES TYNAN is enabled to offer the benefit of such a guide. Speke Estate having become celebrated for its excellent practical Farming and high cultivation, has been for many years under the able management of Mr. M'Farlane. In a conversation the Advertiser had with that gentleman a few weeks ago he said:—"The great fertility of this estate I believe to be owing in a great measure to the attention I have paid to the selection of the Grass Seeds, and which I do not think I can improve. Were I to state the yield of the crops of Wheat and Barley I have obtained after these Grasses last year it would be deemed fabulous by many."

James Tynan having received orders to supply Seeds to some of the Farms on this estate, offers to send the same to gentlemen upon their giving the number of statute acres to be sown.

Selected GRASS SEEDS for LAWNS.

James Tynan, Seed Warehouse, 68, Gt. George Street, Liverpool.

PLOCOSTEMMA LASIANTHUM (Blume).—Amidst the prevalent scarcity of novelties of sterling merit, it is with pleasure the Subscribers invite attention to the above-named plant. It belongs to a new genus closely allied to Hoya; and the present species was received in 1857 from Mr. Hugh Low, Jun., by whom it was discovered on the north-western side of the Island of Borneo. The plant, which is not a climber, presents a noble appearance, having exceedingly handsome foliage; and it possesses a very great recommendation in being a most profuse bloomer, the clusters of flowers being produced in great numbers. The flowers are of waxy consistence, like Hoya—colour, orange; the petals reflex until they become quite perpendicular, and rest on the flower-stalk; the lower part of the petals is entirely covered with a snow-white velvety pubescence, giving them an unusually beautiful appearance. The flowers are fragrant, and 14 have expanded in one cluster on a newly imported plant, which was submitted to the inspection of Sir W. J. Hooker, of Kew, by whom it is figured and described in the November number of the "Botanical Magazine." It is also figured in the "Florist." Plants in May, price 63*s.* each. Usual discount to the Trade.

Hugh Low & Co., Clapton Nursery, London, N.E.

TO THE TRADE.

THOS. CRIPPS, Nurseryman, &c., Tunbridge Wells, Kent, respectfully offers the following fine strong SPANISH CHESNUT PLANTS, 4 feet to 6 feet in height, 40*s.* per 1000; Blush CHINA ROSES, fine strong plants, 15*s.* per 100; Crimson do., very strong, 25*s.* per 100; fine Standard and Half-standard ROSES, 60*s.* per 100; good do., do., 50*s* per 100; Double Yellow PRIMROSE, 20*s.* per 100 or 400 for 3*l.*; PINUS INSIGNIS and P. RADIATA from Seed, 15 inches to 28 inches, 6*d.* per 100; MANETTI STOCKS, 50*s.* per 1000; do. second size, 40*s.* per 1000; IRISH YEWS, 2 feet to 3 feet, 50*s.* per 100; Hardy HEATHS, a fine collection, 25*s.* per 100; large plants, good do., 20*s.* per 100; LARCH FIR, fine stout plants, 2 to 3 feet; LONICERA SHEPHERDI, or new Scarlet-trumpet HONEYSUCKLE, fine strong plants, 4*s.* per dozen; RHODODENDRON MAXIMUM, fine bushy plants, 18 inches to 2 feet, 60*s.* per 100. Orders from unknown correspondents unaccompanied by a remittance will not be noticed.

MESSRS. E. G. HENDERSON & SON

RESPECTFULLY ANNOUNCE THAT THEY WILL FORWARD, POST FREE, THEIR

NEW SEED CATALOGUE FOR 1859.

MESSRS. E. G. HENDERSON AND SON also beg to draw attention to their collection of ALPINE PLANT SEEDS, gathered in the Alps of Switzerland under the superintendence of the Curator of the Botanic Gardens of Zurich. The Collection of 50 species for 10*s.* contains among others the following rare plants, of which single plants alone would cost from 1*s.* to 1*s.* 6*d.* and 2*s.* 6*d.* each.

Aretia glacialis	Gentiana punctata	Pulsatilla alpina sulphurea	Primula latifolia
Geum montanum	" cruciata	" vernalis	Trollius altiacus
" reptans	" nivalis	Pedicularis versicolor	Dianthus alpinus
Campanula barbata	" purpurea	Azalea procumbens	Silene saxatilis
" pulcherrima	Dentaria digitata	Thlaspi rotundifolia	Erigeron alpinum
" petiolata	Glossocoma clematidæa		

Collection of 50 species, 10*s.* 6*d.*; 25 species, 5*s.*; 12 species, 2*s.* 6*d.*

SPERGULA PILIFERA,

A perfect substitute for Grass Lawns, &c., in Villa Gardens, without Mowing.

Seed Packets post free, 6d., 2s. 6d., 5s., and 10s. each.

See notice of the above at page 145 *of this Paper.*

THE NEW ZEALAND RUNNING BEAN

is now offered at 2*s.* the quart.

Wellington Nursery, St. John's Wood, London.

NEW SEEDS FOR 1859.

WM. CUTBUSH AND SON beg respectfully to intimate that their PRICED CATALOGUE OF VEGETABLE AND FLOWER SEEDS, &c., is now ready post free on application. WM. C. AND SON devote particular attention to this department of their business, and most of the choicer kinds of culinary seeds and roots are saved under their own inspection, and they can confidently guarantee the quality of all offered.—Highgate Nurseries, London, N. Established A.D. 1695.

RHODODENDRONS.

JOHN WATERER'S CATALOGUE OF UNRIVALLED HARDY SCARLET AND OTHER CHOICE RHODENDRONS, as Exhibited by him at the Royal Botanic Gardens, Regent's Park, London, is published, and will be forwarded on application.

☞ This List is recommended as a work of reference, as it contains accurate descriptions of all the esteemed varieties.

The American Nursery, Bagshot, Surrey, near the Sunningdale Station, South Western Railway.

HARDY SCARLET RHODODENDRONS AND AMERICAN PLANTS GENERALLY.

WATERER AND GODFREY'S PRICED and DESCRIPTIVE CATALOGUE of the above beautiful tribe of plants, as exhibited by them in London and Manchester, may now be had on application inclosing one stamp for postage. The Catalogue also furnishes the heights and prices of their unequalled stock of Conifers and Evergreens, &c. Catalogues may also be had of Messrs. J. MAY & Co., Seedsmen, &c., Wellington Street, Strand.

Knap Hill Nursery, Woking, Surrey.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Stove, Greenhouse, and Hardy Ferns, Miscellaneous Stove, Greenhouse, and Hardy Plants, Variegated and Ornamental foliaged Plants, Conifers, Roses, Rhododendrons, Indian Azaleas, Gloxinias, Fuchsias, Cactuses, &c., is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

GERMAN AND OTHER FLOWER SEEDS, VEGETABLE, AGRICULTURAL SEEDS, ETC.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their new PRICED and DESCRIPTIVE CATALOGUE in which is enumerated every novelty of proved merit, also all the best of the older kinds, is now published, and will be forwarded post free on application. Their whole stock has been selected from the best English and Foreign sources, and every kind is warranted true to name, and of the finest possible quality.—Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

A DESCRIPTIVE AND PRICED CATALOGUE of first-class GERANIUMS, Show, Fancy, English, and French Spotted kinds. A List of the best FUCHSIAS grown, including some superb Seedlings. In VERBENAS the List contains all the novelties of the season. A fine collection of DAHLIAS, including all the leading new varieties of both Show and Fancy kinds. Also a fine assortment of PETUNIAS. The above Lists forwarded in exchange for one postage stamp.

GEORGE SMITH, Tollington Nursery, Hornsey Road, Islington, London.

SHRUBBY CALCEOLARIAS.

JOHN COLE begs respectfully to inform the lovers of these useful flowers that he intends sending out his Matchless Seedlings of 1858 himself. They are considered by many persons to be superior to any he has hitherto raised. Amongst them are some fine Bedding varieties.

CATALOGUES will be shortly ready, and sent (post free) to all applicants.—Keyfield Nursery, St. Albans, Herts.

750 BEDDING PLANTS for 7*l.* including basket and packing, or one half for 3*l.* 15*s.*

20 Anagallis, 2 sorts	25 Lobelias, 6 sorts
12 Ageratum, 3 sorts	50 Hollyhocks, Seedlings
50 Calceolaria, 6 sorts	12 Koniga
12 Celsia, 2 sorts	12 Nierembergia
50 Chrysanthemums, 50 sorts	12 Œnotheria riparia
12 Cupheas, 3 sorts	50 Petunia single, 25 sorts
50 Dahlias, 50 sorts	50 do. double, 25 sorts
50 Fuchsias, 50 sorts	20 Salvias, 6 sorts
50 Geraniums, Scarlets &c., 50 sorts	12 Senecio, double purple
50 do. Variegated, 12 sorts	20 Tropœolum, 6 sorts
20 Heliotropes, 12 sorts	12 Variegated Mint
	100 Verbena, 100 sorts

Apply to J. SCOTT, Merriott Nurseries, Crewkerne, Somerset. Post-Office Order on Crewkerne, or crossed cheques from unknown Correspondents. Catalogues on application, for two stamps.

SPECIMEN PLANTS.—The following fine grown Specimen Plants are particularly recommended to the notice of Exhibitors or Gentlemen requiring fine Plants for Conservatories.

	s.	*d.*
Acacia grandis, abundantly loaded with flower buds, 4 feet in height	10	6
,, hispidissima, do., do., 4 feet	10	6
,, verticillata, fine specimens now in flower, 3 feet	7	6
,, smaller, 2 feet	5	0
Æchinia fulgens longifolia, strong plants with 5 crowns	10	6
Araucaria Cunninghamii, a magnificen fine formed plant, and very handsome for a conservatory, height 4 feet by 2½ feet through	105	0
Cephalotaxus Fortunii (male), a very handsome spreading specimen, height 3 feet	21	0
Eriostemon buxifolium, a bushy specimen loaded with flower buds, height 2 feet	15	0
Franciscea eximia, a strong plant, height 2 feet by 1½ foot diameter	10	6
Hoya carnosa, specimens on iron dome trellis trained, very close, 3 feet height by 1½ foot diameter, with great abundance of flower-buds	7	6
Maranta sanguinea, very strong plants with 7 crowns each	10	6
Metrosideros myrtifolia, beautiful specimens, 2½ feet high by 1½ foot diameter	10	6
Myrtus bullata, full of bud and will be covered with white sweet-scented flowers, height 2½ ft. by 1½ ft. dia.	10	6
Podocarpus andina, a fine specimen 4 feet high	50	0
,, antarctica, 2 feet high	42	0
Polygala grandiflora, a fine plant 4 feet high in flower	7	6
,, oppositifolia, do. 4 feet	7	6
Rhynchospermum Jasminoides, trained to a dome trellis, 5 feet high, growing very dense, the plant being covered with bud, and about to open with its delightfully fragrant white flowers—a very beautiful plant	30	0
Rhopala corcovadensis, very handsome and noble specimens, 2½ feet high	30	0

With several others, of which a list will be sent on application. If several of the above are purchased at once, a liberal reduction will be made. Goods (20*s.* and upwards) carriage free to all stations in London, &c. &c., as see Catalogue.

BASS AND BROWN,
SEED AND NURSERY ESTABLISHMENT, Sudbury, Suffolk.

NEW PLANTS introduced by the establishment of Mr. LINDEN, in the Royal Zoological and Horticultural Garden, Brussels, and ready for sale on the 1st May next. Free to London.

Arachnothrix rosea	12*s.* 6*d.*	Begonia argentea	21*s.* 0*d.*
Begonia amabilis	21 0	,, Victoria	21 0

Orders for the two last Begonias have to be directed to Mr. J. Veitch.

Beloperone violacea	8*s.* 0*d.*	Monochætum sericeum	8*s.* 0*d.*
Centradenia grandifolia	12 0	Musa glauca	8 0
Cuphea ocymoides	8 0	Mutisia Clematis	21 0
Lindenia rivalis	8 0	Philodendron fenestratum	21 0
Maranta Porteana	21 0		

One plant over if three are ordered.

DECORATIVE PLANTS.

Crescentia regalis	42*s.*	Oreopanax peltatum	42*s.*
Curatella imperialis	63	Rhopala australis	42
Gomphia Theophrasta	42	,, glaucophylla	42
Jacquinia smaragdina	21		

And above 60 quite new FERNS of the finest genera.

Mr. LINDEN'S DESCRIPTIVE CATALOGUE, just published, contains also extensive lists of Orchids, Ferns, Bromeliads, Tropical Fruit Trees, Medical and useful Plants, fine foliaged and variegated Plants, Palms, rare Stove and Greenhouse Plants, &c., and may be had on application at his agent's office in London,

Mr. R. SILBERRAD, 5, Harp Lane, Great Tower Street.

FRUIT TREES IN POTS.

JOHN AND CHARLES LEE have now the largest and finest stock of FRUIT TREES IN POTS in a bearing state for FORCING AND ORCHARD HOUSES ever offered. They consist of the following kinds, a CATALOGUE of which may be had on application:—

APRICOTS	FIGS	PEARS
PEACHES	PLUMS	APPLES,
NECTARINES	CHERRIES	ALSO,

VINES AND STRAWBERRIES.

Nursery and Seed Establishment, Hammersmith, London.

CHRYSANTHEMUMS—CHRYSANTHEMUMS.

J. H. BIRD, F.H.S., NURSERYMAN, Stoke Newington, the largest grower and most successful exhibitor of the Chrysanthemum in the British Empire, begs to call the attention of the lovers of the above beautiful autumn flower to his matchless collection, the stock of which amounts to upwards of 50,000 plants.

J. H. B. can supply strong plants, one dozen for 6*s.*; or five dozen in 30 varieties, containing two of each variety, for 1*l.*; or he can supply 100 plants in 50 varieties, two of each variety, for 1*l.* 10*s.* Also POMPONES in great variety; 50 Pompones in 25 varieties, two of each variety, for 10*s.*; or 100 in 50 varieties, two of each variety for 1*l.* Strong plants of the beautiful new Pompone the Golden Cedo Nulli, 5*s.* each, are now ready, with the usual allowance to the Trade. Every order will be accompanied by a popular work on the Chrysanthemum.

Post-office Orders payable to J. H. BIRD, Stoke Newington, will be immediately attended to. Catalogues on application.

SEEDS AND PLANTS SENT FREE TO LONDON.

LOUIS VAN HOUTTE,

NURSERYMAN and SEEDSMAN, Ghent (Belgium),

BEGS TO ADVERTISE THAT HIS

NEW CATALOGUES, PRICE LISTS, Nos. 70, 71, 72, 73, 74, and 76,

ARE TO BE HAD AT HIS AGENT'S OFFICE IN LONDON,

MR. R. SILBERRAD, 5, Harp Lane, Great Tower Street.

CAMELLIAS, RHODODENDRONS, AZALEAS, ROSES, PERENNIALS, NEW SHRUBS, HOTHOUSE AND GREENHOUSE PLANTS of every description, Seeds, &c.

EXTRACT FROM No. 76.

Arisæma ringens (see Van Houtte's "Flore"), very curious aroideous plant, fit for the Orchideous house till the flower is past, 10*s.* 6*d.*

Ataccia cristata (see Van Houtte's "Flore"), one of the most extraordinary flowering plants, fit for the Orchideous house, 21*s.*

Barbacenias ("Flore"), hybrids in all shades; per doz., 10*s.* 6*d.*

Begonias, the best new kinds, at very moderate prices; and Rex (see Van Houtte's "Flore"), at 1*s.* each, or 8*s.* per doz. 12 different Begonias for 8*s.*

Caladium (see Van Houtte's "Flore"), the new painted leaves: C. argyrospilum, 12*s.*; C bicolor picturatum, 1*s.* 6*d.*; C. Brongniarti, 12*s.*; C. Chantini, 20*s.*; C. Neumanni, 12*s.*; C. Verschaffelti, 8*s.*

Clivia cyrtanthiflora (see Imantophyllum).

Cyanophyllum magnificum, 8*s.*

Dracænopsis indivisa, 16*s.* to 200*s.*

Eucharis amazonica ("Flore"), 2*s.* 6*d.*; E. grandiflora, 2*s.* 6*d.*

Gesneria cinnabarina ("Flore"), 1*s.*, or 7*s.* 6*d.* per doz.
,, Van Houttei, 1*s.* 6*d.*, or 16*s.* per doz.
,, Leichlini, 4*s.*, quite new, rosy outside, lemon inside.
,, zebrina splendens, 1*s.* or 7*s.* 6*d.* per doz.; Gesnerias in best mixture, 7*s.* 6*d.* per doz.

Gloriosa Planti (see Methonica in the "Flore"), 6*s.* per doz., flowering beautifully in pots (outside) in the summer.

Imantophyllum cyrtanthiflorum, Lindl., first prize at the Ghent exhibition, last Saturday (5th March) as the finest of the plants gained this year by seed.—LOUIS VAN HOUTTE has lately sent the plant in flower to Dr. Lindley's inspection. It is a magnificent mule obtained from Imantophyllum miniatum and I. Aitoni (Clivia nobilis), splendid long leaves, large heads of flowers, like those of a large-flowering Cyrtanthus, shape of the most beautiful Blandfordias, fine colour. Very strong plants at 80*s.* each. Sent out only now for the first time. Will soon appear in VAN HOUTTE'S "Flore."—I. miniatum (see "Flore"), 20*s.* to 80*s.*

Luculia, quite new species, 1*s.* each, 8*s.* per doz.; good sized plants.

Maranta Warscewiczi (Calathea), 4*s.* to 7*s.* 6*d.*

Musa zebrina ("Flore"), black-spotted leaves, 10*s.* 6*d.*

Pandanus reflexus, 8*s.* to 240*s.*

Philodendrons. — Decorative plants for Orchideous house. Great collection.

Rhopalas,—Great assortment. Splendid decorative plants.

Theophrasta imperialis, ditto, 80*s.* to 320*s.*

Achimenes.—A collection of 50 kinds for 21*s.*

Bromeliaceous plants.

Ferns and Lycopods.—One of the most extensive collections of Europe. Good sizes, moderate prices. (See Van Houtte's Price List No. 76, page 13.)

Gloxinias in great variety.

Orchids and Palms.

Greenhouse plants.

Michauxia campanuloïdes, scarce Syrian plant, flowers along the stem like Passionflowers, 1*s.* to 8*s.* per dozen.

Musschia Wollastoni (see Illustration), a tall, splendid, Campanulaceous plant from the Canary Islands; the flowers are disposed just as in the Lilium pyramidale, 4*s.*

Primula erosa ("Flore"), a very fine kind, 6*d.* each, 5*s.* per doz.

Azaleas, hardy kinds, double flowers, 12 varieties for 40*s.*, including A. Van Houttei, the finest in existence.

Azalea Van Houttei flore pleno (will appear shortly in the "Flore"), large bouquets of double flowers, red and yellow mixed; the largest and finest flower in existence; as hardy as an Azalea pontica; 12*s.*, if taken alone.

Azalea Diamond (Van Houtte), pure white flowers with a large carmine spot (not quite hardy here, but beautiful in the greenhouse). Grafts with 3 to 4 branches, 8*s.* Grafts with 6 to 10 branches, 12*s.*

Azalea indica Alexander II. (Van Houtte), 2*s.* 6*d.* to 20*s.*—A gem for form, size, colour and spots. The petals delicately curled. A true beauty!—Hermine (Van Houtte), snow white, full flower, striped with carmine; fine, 2*s.* 6*d.* to 4*s.* Petuniæflora, extremely fine form, and delicate shaded pink colour; strong plants, flower buds, 3*s.* 6*d.* to 7*s.* Roi Leopold, extra large clear salmon, first rate, with flower buds, 3*s.* 6*d.* Salmonea albo-cincta; delicate salmon with a white margin, fine form, 4*s.* to 8*s.* Umbellata alba will appear shortly in the "Flore;" from Sardinia, a quite new form in the tribe; the flowers are single, pure white, but they are divided in nine segments as regular and round as a crown; 4*s.* to 8*s.*

Vervaene's Seedlings.—Azalea indica Belle Jeannette, Etendard de Flandre, Géante, Gloire de Belgique, Gloire de Ledeberg, Papilionacea, Pelargoniæflora and Rubens, the set of eight, in flower buds, for 60*s.*

Camellias.—Very extensive collection. (See Price List No. 72.)

Flemish Carnation seed, 100 seeds for 2*s.* 6*d.*

Bohemian Piccotees	100	,,	2*s.*
Fancy ,,	100	,,	1*s.* 6*d.*
Perpetual ,,	100	,,	1*s.* 6*d.*

French Spotted Geraniums (see Price List No. 76, pp. 41, 42, & 43).

VAN HOUTTE'S 6 new Petunias; price, the set for 16*s.*

New Continental Petunias of various growers, 20 vars. for 16*s.*

Continental Rhododendrons and others (see Price List No. 72, pp. 30 to 38).

Roses.—One of the most extensive collections in the world (see Price Lists Nos. 63, 67, and 72).

Roses of 1859.—Winter Grafts, 30 novelties of the season, (all hybrid remontants) raised by the following growers:—Avoux & Crozy, Baudry, Beluze, Damaisin, Duchez, Guillot fils, Guillot père, Guinoisseau, Lacharme, Lartay, Marcot, Margottin, Oger, Pradel, Robert and Touvais.—Price for 30 Novelties, 3*l.* 10*s.* Ile Bourbons (1859) winter grafts for 7*s.* 6*d.*

New Herbaceous Tropæolums, the set of 12 varieties for 7*s.* 6*d.*

New French Verbenas, 12 varieties, 4*s.*; 25, 8*s.*

New Perennials:—Chelidonium japonicum, 1*s.* 6*d.*; Convallaria multiflora, fol. albo marg., 4*s.*; new splendid double Delphinium Pompon de Tirlemont (lately figured in the "Flore des Serres," and sold for the first time), 4*s.*; Epimedium Ikariso, a new Japan kind, with leaves as thick as Holly (the mother plant is in bud), 16*s.*; Thalictrum anemonæfolium flore pleno ("Flore"), a very scarce Pennsylvanian gem, 2*s.* 6*d.*

New Weigelas: — W. amabilis Groenewegenii; W. rosea Desboisii; W. amabilis alba. Price, each, 8*s.*; the set of three, 20*s.*

The Japan Black-leaved Maple, Acer polymorphum foliis nigr. (see the "Flore des Serres"), 8*s.* to 20*s.*

Æsculus californica (lately figured), 1*s.* 6*d.*

Glycine magnifica, extra strong climbing plant, 1*s.* each; per dozen, 5*s.*

Large pyramidal variegated Hollies (in pots), 5*s.*

Quercus nigra, 4*s.* to 20*s.*

New and fine forms of the common Locust Tree (Robinia pseud-Acacia), var. coluteoides, fastigiata, glaucescens, patula, revoluta. The set of five for 12*s.*

Vitis Sieboldi and Thunbergi; two hardy Japan novelties, with fine foliage; the two for 5*s.*

Pinus paroliniana, quite hardy (2 years' seedlings), 8*s.* per doz.
,, radiata paroliniana, very strong two-years' seedlings, 10*s.* the dozen.

Pinus Strobus tabulæformis; table-formed, dwarf plant, for groups in Grass plots, as hardy as the common Weymouth. Price, pretty bushes, 4*s.*; the dozen, 42*s.*

All LOUIS VAN HOUTTE'S goods (plants and seeds) will be delivered out of the Custom House in London, without any expense whatever for the buyer; but *per contra*, 5*s.* will be charged for each package.

☞ Persons unknown to LOUIS VAN HOUTTE are respectfully requested to add to their orders a cheque on London for the amount (at Mr. R. SILBERRAD'S order), or reference in London.

All letters must be prepaid 4*d.* (an unpaid letter is taxed twice as much).

THE "FLORE DES SERRES ET DES JARDINS DE L'EUROPE,"

EDITED BY LOUIS VAN HOUTTE, IS PUBLISHED SINCE 1845.

Twelve volumes of twelve numbers each have been issued, containing together 1289 finely coloured plates, and 2356 miscellaneous matters, numerous woodcuts, &c. The price of the whole work is 18*l.* 8*s.* (without any discount, but free to London). The subscription price for 12 numbers or one volume is 1*l.* 12*s.* The first number of Vol. XIII is now in the press; no single numbers are sold; sent free by post.

Agent in London: Mr. R. SILBERRAD, 5, Harp Lane, Great Tower Street,

But all letters containing orders must be directly sent to LOUIS VAN HOUTTE, Ghent, Belgium.

NEW BEAUTIFUL AND RARE PLANTS

OFFERED FOR SALE FOR THE FIRST TIME BY

MESSRS. WILLIAM ROLLISSON & SONS,

THE NURSERIES, TOOTING, LONDON.

SPOTTED NEW PELARGONIUMS.

It affords us much pleasure to announce the annexed collection of spotted Pelargoniums, the beauty, novelty, and merit of each being such as must give entire satisfaction. They have been obtained by carefully hybridising the attractive French kinds with the best varieties of the most eminent English raisers; so that, while possessing the rich and varied colours of the French sorts, combined with their immensely free-flowering character, they partake of the excellent shape and substance of the English varieties. They have also the advantage of having the spots more clear and purely defined than is usually the case with the French sorts.

Purchasers of plants can have coloured plates by ANDREWS, *on application.*

	s.	d.
AGLAIA.—Crimson upper petals surrounded with bright red, and broadly margined with French white; under petals very clear. French white with bright cherry spots, a pleasing variety	21	0
ASTARTE.—Upper petals maroon, clearly margined with French white; under petals white, clearly and deeply spotted with dark crimson: a novel and pleasing variety	21	0
EUNICE.—Rich crimson upper petals, edged with bright red; under petals fiery salmon, shading off to rose, and richly blotched with deep crimson, a very rich and fine flower	21	0
FANTY.—Upper petals deep maroon, surrounded with bright red, and very broadly belted with white; under petals white, with bright crimson spots; this is a magnificent flower, of great substance, good form, and peculiar silvery texture	21	0
HERSILIA.—Upper petals dark crimson, margined with pink; under petals pink, heavily blotched with dark crimson	21	0
IRENE.—Upper petals rich maroon surrounded with bright red, and margined with salmony pink; under petals light salmon, deeply blotched with dark crimson; immense truss	21	0
JUANITA.—Maroon upper petals, broadly and distinctly margined with rose; under petals very heavily blotched with rich maroon, and edged with rose: a striking variety, all the petals being nearly alike	21	0
JULIA.—Upper petals spotted with deep crimson, and surrounded with a belt of very bright red, broadly margined with French white; under petals delicate blush, spotted with rosy purple; a pretty, silvery, clear, and pleasing flower	21	0
LAMPETIA.—Upper petals crimson, surrounded with bright red, and edged with pink, under petals bright pink with clean crimson spot, light centre: a bold and noble flower	21	0
LOTTIE.—Upper petals dark crimson, surrounded with rosy scarlet, and margined with pink; lower petals rich rosy scarlet, margined with pink, and heavily blotched with dark crimson: this is a superbly rich variety, blossoms of great substance, and splendid forms; the best spotted Geranium yet offered	21	0
LUCY.—Mulberry upper petals, margined with purplish crimson; under petals red, beautifully shaded with violet, and deeply blotched with maroon; superb	21	0
MELPOMENE.—An extraordinary Geranium of quite a new colour, upper petals deep purple maroon, edged with rosy violet: under petals peculiar and striking rosy purple, cleanly spotted with deep crimson	21	0
MENESTHO.—Dark velvety crimson blotch on the upper petals surrounded with fiery scarlet, and edged with rose; under petals bright salmony red, with small clean crimson spots; good form	21	0
METIS.—Upper petals deep crimson, surrounded with bright red, and edged with pink; under petals rose, distinctly spotted with bright red; large trusses	21	0
PARTHENOPE.—Rich maroon upper petals surrounded with fiery crimson, and belted with salmon; under petals salmon, with rich heavy maroon blotch	21	0
SALACIA.—Upper petals very rich maroon, margined with peach colour; under petals heavily blotched with rich maroon, surrounded with bright red, and margined with peach	21	0
SISERA.—Black velvety blotch on the upper petals, surrounded with rosy carmine; under petals rosy carmine, with very large black spots	21	0
TETHYS.—Upper petals deep crimson, distinctly, regularly, and broadly margined with salmony pink; under petals blush with crimson spot: a clean, smooth, and constant flower	21	0
THEODOSIA.—Deep crimson upper petals, with broad belt of fiery scarlet; under petals fiery scarlet, heavily blotched with deep crimson	21	0
VICTORIA.—Purplish maroon top petals, surrounded with violet crimson, and broadly margined with pure white; lower petals pure white, with even and distinct spot of violet crimson: very large truss	21	0
SHOW PELARGONIUMS (New Varieties).		
ALCYONE.—Upper petals deep crimson, margined with white; under petals French white, good substance, very clean, and fine	15	0
BELLONA.—Deep crimson upper petals, margined with scarlet; under bright scarlet, violet at the base, white centre: a very handsome variety	15	0
ERATO.—Dark maroon upper petals, margined with rose, under petals bright rose	15	0
HYRIA.—Upper petals deep crimson edged with white, pure white under petals; of the most perfect form, and one of the best Geraniums ever offered	21	0
IPHIS.—Upper petals blotched with maroon, surrounded with salmon, and edged with pink; under petals soft blush, very clean and pretty	15	0
LUTETIA.—Deep crimson upper petals with dark blotch; under petals very bright crimson, shaded with violet to the centre	15	0
MELAMPAS.—Upper petals French white shaded with violet, with dense purplish maroon blotch; under petals French white	15	0
SALMACIS.—Upper petals rich maroon, surrounded with a vivid fiery crimson; under petals bright orangey salmon; white centre, beautiful form, very distinct and fine	15	0
FANCY PELARGONIUMS (New Varieties).		
AGNES.—Upper petals rich plum; under petals bright and shaded with violet, pure white throat, all the petals distinctly and evenly margined with white; rich and fine	15	0
CLYMENE.—Upper petals violet crimson, with broad margin of pure white; under petals pure white, with pretty and even marking of light rose: distinct and good	15	0
FANCY PELARGONIUMS (New Varieties).		
LATONA.—Upper petals beautiful soft silvery rose; lower petals similar in colour; pure white centre: a pleasing variety	15	0
MEROPE.—Upper petals bright rosy carmine, shaded with violet; lower petals deep rose, light centre: a fine bold flower	15	0
PENELOPE.—Upper petals mulberry, shaded with violet, and edged with white; lower petals violet crimson, margined with white, centre white, smooth, and good form	15	0
SABINA.—Upper petals bright pink, shaded with violet, and cleanly margined with white; under petals bright pink shaded with violet, and edged with white, centre white	15	0
NEW GERANIUMS (Zonale).		
AGATHA.—Dazzling scarlet, white centre; fine large compact truss, horse-shoe marked foliage	5	0
CHIONE.—Bright fresh colour, white centre; large flower, handsome horse-shoe marked foliage	5	0
CLARISSA.—Light scarlet, white centre; fine large compact truss, horse-shoe marked foliage	5	0
LEONIE.—Reddish salmon, large flower, handsome horse-shoe marked foliage	5	0

DOUBLE-FLOWERED NEW PETUNIAS.

The undermentioned Petunias, of which we have purchased the entire stock from a celebrated raiser in France, we have proved to be good and desirable; they are quite different and distinct to the many varieties sent out last season.

	s.	d.
ANTIOPE.—Purple, shaded with crimson: a compact good flower	3	6
COUNTESS.—Bluish purple: a fine bold double flower	3	6
FANTY.—French white, shaded with rosy lilac, very distinct, and a good compact flower	3	6
IDOTHEA.—Purplish lilac: this variety is prettily mottled, very attractive and good	3	6
LATONA.—Deep violet purple, striped with white	3	6
LOTTIE.—Beautiful rosy pink, mottled with French white, and deeply pencilled with red: an exceedingly handsome and attractive variety	5	0
MANDARIN.—Purplish lilac, shaded with deep rose, and striped with white	3	6
SYLVIA.—Lilac, shaded with rosy purple	3	6
PETUNIA ATHAMAS.—Very bright red, regularly striped with white; the most constant and best striped single variety yet offered	3	6

VERBENAS.

JOLE.—Beautiful rose, shaded with purple, rich velvety crimson centre, and very large white eye; good habit	3	6	
ARACHNE.—Fine rich bright crimson, dark velvety centre, lemon eye, good compact habit	3	6	

VARIEGATED NEW BEGONIAS.

GRANDIS	15s.	ROLLISSONII	15s.
ISIS	15s.	URANIA	15s.
NEBULOSA	15s.	VIRGINIA	15s.

It affords us pleasure to announce that we shall be prepared to supply on and after the first week in May the above beautiful collection of Variegated Begonias, which we have had the good fortune to raise from the two handsome species previously sent out by us, viz., "Splendida" and "Rex." The varieties now offered much surpass the beauty of either parent, from the fact of the character of one being so distinctly blended in the other, and yet they are totally dissimilar; the markings on the foliage being very diversified, the colours of the markings varying from white to crimson, and having intermediate shades of red, purple, olive green, and other tints, so blended as to be quite difficult to describe. Some of the varieties have the leaves prettily blotched and spotted with white, added to which their entire surface is covered with bright crimson hairs, which impart to the plants a distinctive and remarkable appearance. One interesting feature of these hybrids is the peculiar hirsute footstalks, which vary in the different varieties, from white to the most beautiful and brilliant crimson. The blossoms are delightfully fragrant, of a soft pink colour, but individually much larger than in most of the other kinds of this family.

It may confidently be said of these Begonias that they will rank foremost among variegated foliaged plants. We succeeded in raising upwards of twenty kinds, but have selected the six now offered as the most handsome, distinct, and desirable.

ACACIA ONOIDEA.

A pretty free-flowering species from South Australia, much resembling *A. venticillata* in foliage, but this plant produces its yellow ovate heads of blossom in the greatest abundance, and on plants when only an inch or two high, 7*s.* 6*d.*

MECONOPSIS SIMPLICIFOLIA.

This is one of the most remarkable and handsome of the many gorgeous plants yet introduced from the Himalaya; the blossoms are of the most beautiful indigo blue, with conspicuous yellow anthers: the foliage is very pretty, being thickly covered with bright golden hairs, 31*s.* 6*d.*

VERBASCUM MULTIFLORUM.

This is a showy herbaceous species imported from the Crimea, flowers golden yellow, free growth, 5*s.*

CAMELLIA PEARL.

A really charming variety; the blossoms are of snowy whiteness, exquisite form, petals of great substance, and beautifully imbricated; a perfect gem, 21*s.*

PIMELEA ELEGANS.

An extremely pretty species introduced from New South Wales. The blossoms are pure white, with very large and conspicuous yellow anthers, which give to the plant a striking appearance. It will be very useful for exhibition purposes, for both the habit and foliage is good, which are most desirable characteristics; the blossoms are also produced in great profusion. This plant will be a companion, and become quite as great a favourite, as P. spectabilis, Hendersoni, and Nieppergiana. As some proof of its merits we may mention that it was awarded a Silver Medal, as a new plant of the first class, when exhibited at the Gardens of the Royal Botanic Society. 21*s.*

MESSRS. ROLLISSON AND SONS' ADVT.—*Continued.*

ŒOLANTHUS LIVINGSTONI.

An interesting plant, belonging to the family of Labiatæ. We have succeeded in raising it from seed collected in Eastern Africa by Dr. Livingstone. The blossoms are of a chocolate colour, produced freely in terminal spikes; in habit somewhat resembling Angelonia grandiflora. It is not remarkable for beauty, but extremely interesting, being the first plant that was flowered in this country from the seeds collected by the above explorer. 10*s.* 6*d.*

NEW PINUS.

The undermentioned, collected by M. Roezl, can now be supplied in 1-year Seedlings, in 12 different species, at 60*s.* per dozen:—

Cedrus	Magnifica	Resinosa
Comonforti	Nesselrodiana	Soulangeana
Don Pedro	Papeleni	Spinosa
Elegans	Paxtoni	Veitchi
Grandis	Popocatepetli	Vilmoriniana
Josti	Rafaelina	Zitenari
Lerdoi		

The usual Discount to the Trade.

A GENERAL CATALOGUE OF PLANTS will be issued shortly.

SEEDLING FUCHSIAS.

GEORGE WHEELER, Nurseryman, &c., Warminster, Wilts, respectfully announces that strong plants of his SEEDLING FUCHSIAS will be ready to be sent out on and after the 20th of April.

SIR COLIN CAMPBELL.—The most beautiful double Fuchsia ever offered. Flower very large; tube and sepals dark scarlet. Corolla very prominent, large, full, and regular, and of a beautiful purple colour; a fine variety for exhibition, possessing the desirable property of holding its blooms much longer than other varieties; its large blooms makes it a very conspicuous and effective plant in a collection. Price 10*s.* 6*d.* each. Sir Colin was shown in full bloom at the Trowbridge Horticultural Exhibition the 18th August, at Bath on the 25th, Salisbury, 30th; at the National, in London, on the 2d September; and at Devizes on the 3d; at all which places it obtained Prizes or Certificates.

WILTSHIRE LASS.—Tube and sepals clear waxy white, corolla rich dark puce; an improvement on the Maid of Kent, the flower being larger, of good habit, a free bloomer, and a good grower. Price 5*s.* each. The usual discount to the Trade.

G. WHEELER will be enabled to send out with the above the six new Fuchsias offered by Mr. G. Smith, of Tollington Nursery.

G. WHEELER has on hand a large quantity of RHODODENDRONS from 9 inches to 2 feet, at very moderate prices.

STAR NURSERY, SLOUGH.

WILLIAM BRAGG begs to offer the following novelties, selected from his Catalogue:—

HOLLYHOCKS, new varieties. A fine stock of healthy Plants now ready for delivery.

Mr. Roake (Bragg).—Pale yellow, fine large smooth close flower, exquisite form, producing a splendid spike. Received first-class Certificate at the National Floricultural Society. 15*s.*

Major Domo (Bragg).—Pink, very large close flower, good form and substance, fine spike. Received first-class Certificate at the National Floricultural Society. 15*s.*

Sir William Jolliffe (Bragg).—Claret, large smooth close flower, first-rate form, splendid spike, entirely distinct. 10*s.* 6*d.*

Flower of the Flock (Bragg).—Primrose, large smooth flower, perfect shape, fine spike, the best of its class, extra fine. 10*s.* 6*d.*

Miss Roake (Bragg).—Beautiful blush with chocolate base, large smooth close flower, producing a handsome spike, extra fine. 10*s.* 6*d.*

Dr. Livingstone (Bragg).—Dark purple, large and good show flower, producing a splendid spike, very fine. 10*s.* 6*d.*

Mrs. Roake (Bragg).—Beautiful blush, large smooth close flower, fine form, producing a handsome spike, extra fine. 10*s.* 6*d.*

Disraeli (Bragg).—Crimson maroon, fine large close flower, good spike, first-rate form, extra fine. 10*s.* 6*d.*

Colonel Howard Vyse (Bragg).—Crimson, very smooth close flower, large and fine spike, one of the best. 10*s.* 6*d.*

Village Gem (Bragg).—Apricot, fine close flower, fine spike, perfect form, very fine. 7*s.* 6*d.*

Alliance (Bragg).—Beautiful fawn, fine shape, very close flower, and producing a splendid spike. 7*s.* 6*d.*

Rosa Bonheur (Bragg).—Rose, fine large bold flower, splendid spike. 7*s.* 6*d.*

Master Goldney (Bragg).—Deep rose, fine large show flower, bold spike, very fine. 7*s.* 6*d.*

Bonny Lass (Bragg).—Pink, fine close and full flower, good spike, and first-rate form. 7*s.* 6*d.*

A liberal allowance will be made if the set is taken.

PINKS.—New varieties, per pair.

Crystal Palace (Bragg).—Rosy purple, large, thick, full flower; first class Certificate at Bishopstoke and National Floricultural Society. 5*s.*

Purple King (Bragg).—Dark purple, large full flower, with large white petal: received a first-class Certificate at Staines and Aylesbury. 5*s.*

Blink Bonny (Bragg).—Rose, large and full. 3*s.* 6*d.*

Helen (Bragg).—Rose, fine, large, wide petal, large and full flower. 3*s.* 6*d.*

PELARGONIUM.

Chaste (Bragg).—Pure white, with very neat dark blotch, fine quality, good growth, and fit for exhibition. 15*s.*

SCARLET AND HORSE-SHOE GERANIUMS, new varieties.—Each.

Rosa Bonheur (Bragg).—First-class Certificate at the National Floricultural Society; close habit, and compact, truss large and full, colour bright cerise scarlet with white eye, foliage bold, handsome, and slightly horse-shoe marked. 5*s.*

Blazer (Bragg).—Certificate at the National Floricultural Society; habit very first-rate, truss full size, form about average, colour bright scarlet, foliage neat and short foot stalks, flower stalks erect and of deep crimson colour; a first-rate bedding variety, and peculiarly short-jointed; also received a Certificate at the Crystal Palace Exhibition, and shown in the First Collection at the Royal Botanic Gardens, Regent's Park. Strong plants are now ready. 5*s.*

DAHLIAS, per plant.

Chieftain (Bent).—Bright light orange, full size, very fine form, with compact, close, high centre, very constant; blooms may always be depended on; received Certificates at the Grand National Dahlia Exhibition and at Slough, being the only two places exhibited at, having purchased the stock late in the season, 3 to 4 feet. Price 10*s.* 6*d.*

CHOICE HOLLYHOCK SEED, 1*s.* 6*d.*, 2*s.* 6*d.*, and 5*s.* per packet, the best ever sent out. Also

PINK, PANSY, DAHLIA, ASTER, PHLOX, and other choice flower seeds, from 1*s.* to 5*s.* per packet; all from show varieties.

W. BRAGG will send out in packets of seed, from 1*s.* to 5*s.* (plants in May), new full-blooming CALIFORNIA SUNFLOWER, so much admired at the Crystal Palace, St. James's Hall, and other Shows; also spoken so highly of in the *Gardeners' Chronicle*, and other papers. Colour, deep orange yellow, very large and double, fine dwarf habit, and an abundant bloomer from July to November; first-rate for borders. Height, 3 to 4 feet.

GRASS SEEDS FOR PERMANENT PASTURES & MEADOWS.

THOMAS GIBBS & CO., Corner of Half-Moon St.,

THE SEEDSMEN TO THE "ROYAL AGRICULTURAL SOCIETY OF ENGLAND,"

BEG to inform the Members of the Society and Agriculturists generally that their MIXTURES of GRASS SEEDS for Laying down Land to Permanent Grass are now ready. Each kind of Grass Seed composing these Mixtures is cleaned separately, and the kinds are proportioned to suit different soils.

☞ *Full Directions for Sowing and Management will be sent with the Seeds.*

MIXTURES for PERMANENT MEADOW and PASTURE (*to suit different soils*).
MIXTURES for PARKS, FIELD LAWNS, CEMETERIES, &c.
MIXTURES for IRRIGATION MEADOWS, GAME COVERS, and all other purposes.
RENOVATING MIXTURES for Improving Old Meadows and Pastures (8 to 12 lbs. per acre).

MANGEL WURZEL.	RYE-GRASS.				
Yellow Globe, Orange Globe (selected)	Italian (selected, very fine)		Carrots	all sorts
Long Red	Dickinson's		Clovers	,,
Red Globe	Imported Foreign Seed		Swedes	,,
Long Yellow	Common or Annual		Hybrids	,,
Silesian Sugar Beet	Pacey's Perennial		Common Turnips	,,

KITCHEN GARDEN SEEDS in Collections, at £1, £2, and £3 each.

ALL KINDS OF AGRICULTURAL SEEDS.

Price Lists sent free on application. *Reference or Cash required from unknown Correspondents.*

CORNER OF
HALF-MOON St.
PICCADILLY, LONDON, W.

JOSEPH MAY AND CO. beg to offer the following:—
JENKINS'S RED MATCHLESS CELERY, the best for years in Covent Garden Market, per packet, 1s.
SHILLING'S QUEEN CABBAGE (the very best out), true, per oz., 1s.
INVISIBLE WHITE BROCCOLI, very hardy, 1s.
COTTAGERS' KALE (Turner's), 1s.
NEW HEADING (Turner's), an excellent kind, 6d.
BRUSSELS SPROUTS, 6d.
LONDON WHITE COS LETTUCE, 1s.
MAUNDER'S PEARLY CAULIFLOWER, 1s.
TRUE WALCHEREN ditto, 1s.
The above sent post free. CATALOGUE of VEGETABLE and FLOWER SEEDS forwarded on application.—Wellington Street, Strand, W.C.

ROYAL SOUTH HANTS SEED ESTABLISHMENT.
UNDER THE PATRONAGE OF H.R.H. THE PRINCE CONSORT, THE AGRICULTURAL, HORTICULTURAL SOCIETY OF INDIA, AND THE LEADING AGRICULTURISTS OF THE UNITED KINGDOM.

PAGE AND TOOGOOD can now supply GARDEN AND FARM SEEDS, carriage free; SEED POTATOES, &c. The numerous Prizes gained by their Stocks are convincing proofs of superior quality, and their prices compete with any house in the kingdom. WHOLESALE and RETAIL PRICED CATALOGUES upon application.
Agents for ODAMS's Blood Manure, Superphosphate, &c.
Seeds Packed for Exportation to all Parts of the world,
37 and 38, Oxford Street (facing the Railway Terminus); and 58, Above Bar, Southampton.

BEAUTIFUL NEW BEGONIAS
"QUEEN VICTORIA" AND "ARGENTEA."

MONS. J. LINDEN takes this means of informing all lovers of new and beautiful plants that he has placed in the hands of Mr. J. Veitch, jun., Royal Exotic Nurseries, Chelsea, a portion of the Stock of the above novelties for distribution in Great Britain, and requests that all orders may be addressed direct to that gentleman.—Brussels, March.

JAS. VEITCH, JUN., has much pleasure in announcing that he is now taking orders for the above plants which will be ready for delivery on and after the 1st May next, and in the mean time he will be happy to show them to any person who may do him the favour of visiting his Nursery.
J. V., jun., will also be able to supply any of the other new and beautiful plants offered in M. LINDEN's Catalogue.
Royal Exotic Nurseries, Chelsea.—March 26.

ASPARAGUS AND SEAKALE.

YOUELL AND CO. having a large Stock of the above growing on the Sea Coast, of the finest quality, beg to offer it at the following prices:—
ASPARAGUS, GIANT, two years .. 2s. 6d. per 100.
,, ,, three years .. .. 3s. 6d. ,,
SEA KALE .. .. 6s. 0d. ,,
Royal Nursery, Great Yarmouth Norfolk.

SUPERB DOUBLE BALSAMS.

F. AND A. SMITH are now sending out seed of their superb BALSAMS, which are unrivalled for size, form, brilliancy of colour, doubleness of flower, and habit of plant.
In collections of nine separate colours .. .. 2s. 6d.
,, ,, mixed ,, ... 2 0
,, ,, ,, ,, half quantity 1 0
The above are *genuine only* in our sealed packets, and may be had of most respectable Nurserymen and Seedmen in the United Kingdom.—Dulwich, Surrey, S.

PLANTS IN FLOWER.

F. AND A. SMITH have now in bloom Acacia, Azalea indica, Cinerarias (fine), Cytisus, Erica ventricosa coccinea minor; E. Cavendishi, E. hybrida, E. propendens, E. perspicua nana, E. Syndriana, Geraniums, Fairy Roses, Primula sinensis fimbriata, &c.
The above are healthy, strong, and well grown plants, prepared for sending away. Prices on application.
Dulwich, Surrey, S.

HARDY CONIFERÆ FOR SPRING PLANTING.

J. HENCHMAN, Edmonton, London, begs to offer the following CONIFERS, all Seedling Plants, in pots, and in the most robust health:—
Wellingtonia gigantea, 1 foot, in 32-pots, very fine, 10s. 6d each; 7 to 8 inches, in 43-pots, 3l. per doz.; stout, 2-year seedlings, 30s. per doz.
Pinus Don Pedri, 21s. each.
,, Buonapartia or Veitchi, 10s. 6d. each.
,, insignis, 15 inches, 15s. per doz.
,, macrocarpa or Coulteri, 6 inches, fine, 18s. per doz.
,, tuberculata, stout 2-year seedlings, 18s. per doz.
,, Benthamiana, 2-year do. 9s. per doz.
Cupressus macrocarpa, 18 inches, fine, 6s. per doz.
,, MacNabbiana, 2 years, 9s. per doz.
Taxodium sempervirens, 15 inches, fine, 24s. per doz.

AZALEA INDICA.

J. IVERY AND SON beg respectfully to invite growers of the above named to an inspection of their unrivalled Stock of Young Specimens of all the newest and best varieties, many of which have been exhibited at the Metropolitan Exhibitions. They are clean and healthy, well set with bloom, and moderate in price. Catalogues forwarded post free upon application.—Dorking Nursery, March 19.

DOUBLE ITALIAN TUBEROSE ROOTS, 4s. per dozen.—The annual importation of the above named beautiful and fragrant Flower has just been received, and large and well selected Bulbs may be obtained, without dis appointment, at A. COBBETT's Foreign Warehouse, 18, Pall Mall.
N.B. Printed regulations for treatment sent; also, just arrived, very moist and open Parmesan Cheeses.

CHOICE COLLECTION OF HOLLIES.

YOUELL AND CO. beg to offer the following collection of 20 very handsome and distinct kinds for two guineas (package included), viz., microcarpa, Tarajo, cornuta, dipyrena, Hendersoni, ovata, heterophylla, new silver striped, Donningtonia, Smithiana, opaca, furcata, latispina, platypetala, latifolia, Maderensis, castanæfolia, Sheppardi, Whittingtonia, crassifolia.—Royal Nursery, Great Yarmouth.

WILD'S UNRIVALLED PRIMULAS, upwards of 100 Testimonials received.—Mr. S. C. Wakefield, Gardener to the Viscountess Forbes, Castleforbes, Co. Longford, Ireland:—"I am directed by Lady Forbes to send to you again for Primula seed, as I am happy to say the last were indeed very fine and greatly admired by all who saw them." Post free to all parts of the world on receipt of 2s. 6d. in stamps.—THOS. WILD, The Primulary, Ipswich.

JAMES CARTER & CO., SEEDSMEN,

238, HIGH HOLBORN, W.C.,

BEG to call attention to the 24th Annual Issue of their ENCYCLOPÆDIC CATALOGUE and GARDENERS' VADE MECUM, containing upwards of 2000 species and varieties of Flower Seeds, every requisite for the Farm and Kitchen Garden, and a comprehensive Calendar of Operations for each month throughout the year. J. C. & Co. beg to recommend the following selection:—

				1s.	6d.
No. 2	Collection of 12 extra fine varieties of Quilled German Asters				
,, 6	,, 12 superb ,,	New Perfection	,,	2	6
,, 13	,, 5 beautiful ,,	Dwarf Perfection	,,	2	6
,, 18	,, 16 selected ,,	Dwarf German Stocks		2	6
,, 32	,, 10 splendid ,,	Imperial	,,	2	6
,, 39	,, 12 newest ,,	Camellia-flowered Balsam		3	0
,, 40	,, 8 finest ,,	Rose-flowered	,,	2	0
	Unequalled Collections of Carnations and Picotees, 6 vars., 3s. 6d.				
,, 47	Collection of 12 extra fine varieties of Dwarf Rocket Larkspur			2	6
,, 53	,, 12 beautiful ,,	Phlox Drummondi		3	6
,, 56	,, 12 newest ,,	Salpiglossis		3	0
,, 60	,, 12 superb ,,	Wallflowers		2	6
,, 62	,, 12 splendid ,,	Zinnia elegans		3	6

No.	Per packet.—s. d.
64.	Abronia umbellata 0 6
83.	Acacia suaveolens 1 0
89.	Achimenes 1 0
114.	Alonsoa Warscewiczi 0 4
136.	Anagallis grandiflora cœrulea .. 0 6
135.	Anagallis coccinea 0 6
166.	Antirrhinum, splendid, mixed 0 6
190.	Aquilegia Witmanni, fine .. 0 6
195.	Araucaria imbricata 1 0
197.	Arctotis breviscapa 0 6
229.	Azalea indica, choice 1 0
232.	Bambusa spinosa, rare 0 6
264.	Brachycome iberidifolium .. 0 6
277.	Butea superba, stove, rare .. 2 6
291.	Calceolaria, mixed 1 0
292.	Calceolaria, finest spotted .. 1 0
310.	Calliopsis Burridgi 0 6
317.	Camellia japonica 1 0
345.	Campanula Vidalli 0 6
355.	Canna Warscewiczi 0 4
418.	Chamærops humilis 0 6
429.	Chloris radiata 0 6
432.	Chorozema Hendersoni.. .. 0 6
434.	Chorozema Lawrenciana .. 0 6
440.	Chrysanthemum indicum .. 1 0
441.	,, indicum nanum 1 0
444.	Cineraria, finest mixed.. .. 1 0
466.	Clarkia pulchella marginata .. 0 6
547.	Cryptomeria Lobbi 1 0
575.	Dahlia, finest double 1 0
—	Datura humilis fl. pl. 0 6
590.	Datura Wrighti 1 0
601.	Delphinium magnificum .. 1 0
648.	Dianthus Veitchi, fine 1 0
650.	Didymocarpus polyanthus .. 1 0
—	Erica, finest variety, 12 species 5 0
743.	Erythrina Hendersoni 1 0
772.	Fillices, finest mixed 1 0
773.	Fenzlia dianthiflora 1 0
779.	Fuchsia, finest mixed 1 0
785.	Gaillardia hybrida grandiflora.. 0 6
805.	Gazania rigens 0 6
823.	Gesneria, mixed 1 0
834.	Gloxinia, finest mixed 1 0
835.	Gloxinia erecta 1 0
860.	Gymnogramma ochracea .. 1 0
861.	,, tartarea .. 1 0
903.	Hibiscus Cameroni 0 6
917.	Hoya carnosa 1 0

No.	Per packet.—s. d.
918.	Humea elegans 0 6
926.	Hypocalyptus obcordatus .. 1 0
947.	Ipomœa hederacea superba .. 0 6
948.	Ipomœa hederacea superba lilacina 1 0
949.	,, ,, atroviolacea 1 0
962	,, rubro-cœrulea .. 1 0
998.	Kennedya longiracemosa .. 0 6
1032.	Leptosiphon arvense 0 6
1046.	Lilium colchicum 1 0
1048.	,, speciosum 1 0
1067.	Linum kermesinum 0 6
1091.	,, narbonense 0 6
1092.	Lobelia Erinus speciosa.. .. 1 0
1093.	,, formosa 1 0
1122.	Lupinus Hartwegii cœlestinus, new 0 6
1133.	,, nanus albus novus, new 0 6
1171.	Marianthus cœruleo-punctatus 0 6
1181.	Maurandya Barclayana kermesina 0 6
1204.	Mimulus pl. sp. et var... .. 0 6
1217.	Myosotis azorica 0 6
1222.	Nelumbium speciosum.. .. 1 0
1223.	,, ,, album.. 1 0
1242.	Nierembergia gracilis 1 0
1246.	Nolana paradoxa violacea .. 1 0
1262.	Œnothera bistorta Veitchi .. 1 0
1265.	,, Drummondi nana.. 1 0
1293.	Oxalis corniculata fol. var. .. 1 0
1296.	,, tropæoloides 1 0
1315.	Passiflora cinnabarina 1 0
1320.	Paulownia imperialis 0 6
1331.	Pentstemon Hartwegi atro-cœruleum 0 6
1332.	,, coccineum 0 6
1333.	,, purpureum 0 6
1332.	,, Murrayanum 1 0
1353.	Petunia viridicincta 0 6
1366.	Phlox Drummondi elegans nova 0 6
1372.	,, zinnabarina 1 0
1377.	Physalis edulis 0 6
1389.	Pleroma elegans 1 0
1396.	Poinciana regia, rare 1 0
1407.	Portulacca Thellusoni caryophylloides 0 6
1432.	Primula sinensis fimbriata .. 1 0
—	,, ,, Village Maid, fine 2 6
1452.	Quisqualis glabra 2 6

No.	Per packet.—s. d.
1457.	Rhodanthe Manglesi 0 6
1467.	Roellia ciliata 0 6
1474.	Salpiglossis sinuata atrococcinea nova 0 6
1490.	Salvia patens 1 0
1490.	,, splendens 0 6
1505.	Saponaria calabrica rosea, new 1 0
1519.	Schizopetalon Walkeri 0 6
1562.	Solanum Balbisi 0 6
1565.	,, jasminoides 0 6
1579.	Spiræa callosa 0 6
1589.	Statice Bonduelli 0 4
1594.	,, Fortuni 0 4
1607.	Strelitzia angusta 2 6
1614.	Swainsonia Greyana 0 6
1615.	,, lessertiæfolia 0 6
1618.	Tacsonia iguea 1 0
1642.	Trichodesma zeylanicum .. 0 6
1644.	Trichosanthes colubrina .. 0 6
1646.	Tritoma Uvaria 0 6
1653.	Tropæolum Lobbianum Géant des Batailles.. 1 0
1654.	Do. do. glabrum variegatum 1 0
1658.	Do. do. Schultzi 1 0
1661.	Do. do. Triomphe de Gand.. 1 0
1662.	Do. do. Victoria Regina .. 1 0
16 7.	Do. speciosum 1 0
1688.	Verbena hybrida, mixed .. 1 0
1699.	Victoria Regia 5 0
1708.	Viscaria cœli rosea alba.. .. 0 6
1711.	,, oculata Dunnetti .. 0 6
1720.	Zauschneria californica.. .. 0 6
1737.	Aster Emperor, new 1 0
1740.	,, La Superbe 1 0
1771.	Carnation, double, finest mixed 2 6
1772.	,, perpetual do. do. 2 6
1775.	Chrysanthemum tricolor Burridgi 0 6
1776.	,, beautiful . 0
1828.	Heartsease, extra fine 1 0
1830.	Hollyhock, prize mixed .. 1 0
1850.	Larkspur tricolor elegans .. 0 6
1864.	Marigold, French, new orange 1 0
1890.	Nasturtion, dwarf spotted .. 0 6
1891.	,, Tom Thumb .. 1 0
1907.	Picotee, finest double .. . 2 6
1909.	Polyanthus, extra fine.. .. 1 0
1910.	,, new large yellow 1 0
1909.	Virginian Stock, new rose .. 0 6

J. C. & Co. beg to state that in ordering from the above the numbers in margin will be sufficient.

Catalogues forwarded post free upon application.

JAMES CARTER & CO., Seedsmen, 238, High Holborn, W.C.

MEADOW AND PASTURE GRASS SEEDS.

GEORGE GIBBS & Co., Seedsmen, 26, Down Street,

BEG to announce that their mixtures of GRASS SEEDS are now ready for delivery. These mixtures are made up expressly to suit the various soils and the growth of each variety is fully tested previous to being bulked. G. G. & Co. having supplied the Seeds for *Hyde Park, St. James's, and Regent's Park, Kensington Gardens, Kennington Park*, &c., for many years, feel assured no further testimonials are requisite. The Seeds are made up into two different mixtures, as they do not sow well together; 2 bushels of the light and 12 lbs. of the heavy seeds are allowed per acre.

Mr. GIBBS, giving his personal attention to the assorting of these mixtures assures his friends that every care is taken with regard to the proper proportions.

MIXTURES FOR PERMANENT MEADOW & PASTURE (adapted to the different soils) 32s. to 34s. per acre.
MIXTURES FOR IMPROVING & RENOVATING OLD GRASS LAND (8 to 12 lbs. per acre) 1s. per lb.
MIXTURES OF THE FINEST SORTS FOR LAWNS, GRASS PLOTS, BOWLING GREENS, &c., 1s. 3d. per lb.

SELECT STOCKS OF THE UNDERMENTIONED AGRICULTURAL SEEDS SUPPLIED AT THE PRICES STATED FOR THE PRESENT MONTH:—

MANGEL WURZEL. Per lb.—s. d.		CARROTS. Per lb.—s. d.		SWEDES. Per lb.—s. d.		RYE-GRASS. Per bushel—s. d.		CLOVERS. Per lb.—s. d.		VARIOUS. Per lb.—s. d.	
Long Red	0 9	White Belgian	1 0	Ashcroft	0 9	Gibbs' Improved Italian	7 0	English Red	9d. to 0 10	Holcus saccharatus	2 0
Elvethan Long Red	0 10	Yellow Belgian	1 3	Skirving's	0 9	Dickenson's Italian	7 0	White Dutch	10d. to 1 0	Lucerne	1 0
Yellow Globe	0 9	Large Altringham	1 6	Matson's	1 0	Fine Imported do.	7 0	Trefoil	4d. to 0 5	Drumhead Cabbage	3 0
Red Globe	0 9	Long Surrey	1 6	Kentish Green Crown	1 0	Common English	6 0	Alsike Hybrid	2 6	Large Cattle Parsnip	1 6
Long Yellow	0 9	James's Scarlet	1 6	Marshall's Purple Top	1 0	Pacey's Perennial	6s. to 7 0	True Cow-grass	1 0	Kohl Rabi	5 0

Full Priced Catalogues sent fr ee on application.—Cash or reference required from unknown Correspondents.

GEORGE GIBBS & Co., 26, Down Street, Piccadilly, London, W.

SUTTON'S GRASS SEEDS AT THE ROYAL FARMS NEAR WINDSOR, AND IN THE ISLE OF WIGHT.

SUTTON'S GRASS SEEDS

FOR PERMANENT PASTURE, PARKS, AND LAWNS,

ARE NOW SOWN AT THE ROYAL FARMS, AT OSBORNE PALACE, THE ALDERSHOTT CAMP, THE CRYSTAL PALACE SYDENHAM, THE HORTICULTURAL SOCIETY'S GARDENS, THE PEOPLE'S PARK, HALIFAX, AND ON MOST OF THE LARGEST ESTATES IN THE KINGDOM.

These Grass Seeds being mixed expressly to suit the soil for which they are required, are never known to fail.

SUTTON & SONS having for many years paid especial attention to the Laying down Land to Permanent Pastures, they are well acquainted with the various soils of most parts of the United Kingdom, and the Natural Grasses suitable for each locality.

The following Sorts may be had separate or mixed, at lowest Market Prices:—

Alopecurus pratensis	Festuca duriuscula	Festuca tenuifolia	Lolium italicum	Poa pratensis	Phleum pratense major
Anthoxanthum odoratum	,, elatior	,, hordeformis	,, perenne tenue	,, trivialis	,, ,, minor
Agrostis stolonifera	,, gigantea	Glyceria fluitans	,, ,, Paceyanum	,, nemoralis	Petroselinum sativum
Avena flavescens	,, heterophylla	,, aquatica	,, ,, sempervirens	,, angustifolius	Trifolium repens
Achillea millefolium	,, pratensis	Holcus lanatus	Lotus corniculatus major	,, fertilis	,, pratense perenne
Cynosurus cristatus	,, ovina	,, avenaceus	Medicago Lupulina	,, sempervirens	,, minus
Dactylis glomerata	,, rubra				,, hybridum

ALSIKE and other CLOVER, and all the most suitable of the above are contained in our Mixtures. Cost of the best Mixtures for Permanent Pasture, **30s. to 34s. per acre**, according to the sorts required for the land.

Fine LAWN GRASS SEEDS for making New or Improving Old Garden Lawns,

Price 1s. per lb., 2s. 6d. per gallon, or 20s. per bushel.

Improvement of Grass Lands by Sowing Good Seeds of the most Suitable Kinds.

SUTTON'S RENOVATING GRASS SEEDS (6s. to 9s. per Acre)

Consist of the finest GRASSES and PERENNIAL CLOVERS, producing great improvement in the Pasture, and at a small expense. Quantity of Seed required 8 to 12 lbs. per acre. Price reduced to **9d. per lb., or 80s. per cwt.** Sow in March and April.

☞ Having greatly reduced the price of our **RENOVATING MIXTURE**, we doubt not that our liberal terms will encourage the more extensive use of the same. Our Grass Seeds have for many years been allowed to be the best, and now we may add that they are the cheapest. Meadows and Upland Pastures may be increased in value 50 per cent. by sowing these Seeds. **Grass Seeds for Laying down Permanent Pasture, 30s. to 34s. per acre.** Seeds Carriage Free to all parts, except small parcels. Catalogues post free.

SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

CHOICE FLOWERS.

BUTLER & McCULLOCH'S SPRING CATALOGUE OF SEEDS,

ARRANGED on a new and original plan, with copious Descriptive and Cultural Notes, and containing many new and rare species and varieties not found in any other Catalogue, now ready and may be had free and post paid on application.

FLOWER, SHRUB, TREE, and VEGETABLE SEEDS, the crop of 1858, saved with the greatest care, by the most eminent growers.

We may also state that the Sardinian correspondent of Messrs. JAMES CARTER & Co., whose Seeds, especially Carnations and Picotees, have given such universal satisfaction, has transferred the Agency from that firm and appointed us his representative in this country. To meet the growing demand for first class flowers, particularly FLORISTS' FLOWERS, we have adopted our usual maxim of charging the lowest possible prices.

Professor LINDLEY in the *Gardeners' Chronicle* of February 5th, has the following notice of B. & McC.'s Catalogue.

"BUTLER & McCULLOCH'S (Covent Garden) Spring Catalogue of Choice Flower, Shrub, Tree, and Vegetable Seeds. This list fills 84 closely printed 8vo pages, and is remarkably well got up. It appears that the correspondent in Sardinia, who formerly supplied one of the great London houses with seeds raised in that warm part of Europe, has now transferred what he saves to Messrs. BUTLER & McCULLOCH. Let us add, that it yields to no Trade List in the abundance of its materials or the excellence of its arrangements."

A selection of 44 pkts. of beautiful Annual Flower Seeds			7s. 6d.	An Assortment of Vegetable Seeds, 20 quarts of Peas, and other Seeds in proportion for 1 year's supply		£3	3s. 0d
Ditto	33	ditto	ditto	5 6	Ditto	ditto 12 quarts of Peas	ditto	2 2 0
Ditto	21	ditto	ditto	3 6	Ditto	ditto 6	ditto	1 1 0
A selection of 40 pkts. of beautiful Biennial and Perennial ditto				10 6	Ditto	ditto 5	ditto	0 15 0
Ditto	31	ditto	ditto	7 6				
Ditto	24	ditto	ditto	5 6				

All Flower Seeds sent post paid, and Vegetable or Vegetable and Flower Seeds amounting to 1*l.* 1*s.* Carriage Paid to any principal Railway Station in England, Wales, and Scotland, or any port on the Irish Coast.

BUTLER & McCULLOCH, Covent Garden Market

THE NEW MUSCAT HAMBURGH VINE.

MESSRS. ARTHUR HENDERSON AND Co. have much pleasure in directing the attention of Grape Growers to the new MUSCAT HAMBURGH, plants of which they are now sending out. In consequence of the extraordinary demand for the large three guinea fruiting plants, they are unable to supply any more of this size, but they still have excellent plants at two guineas, suitable for fruiting next spring in pots, and also good plants at one guinea each.

Fine-apple Place, Edgware Road, London, W.

THE GREAT VINE AT HAMPTON COURT.

THE SUBSCRIBERS being the holders of the Royal Kitchen Gardens, Hampton Court, are enabled to offer genuine the famous and truly excellent HAMPTON COURT BLACK HAMBURGH GRAPE.

Strong well-ripened plants in 9-inch pots, 42*s.* and 60*s.* per doz.
,, ,, fruiting plants in 12-inch pots, 10*s.* 6*d.* each.

If purchased in large numbers a considerable reduction will be made in price.—JACKSON & SON, Nurseries, Kingston, S.W.

The Gardeners' Chronicle.

SATURDAY, MARCH 26, 1859.

MEETINGS FOR THE FOLLOWING WEEK.

WEDNESDAY, March 30—Microscopical..... 8 P.M.

WE have received from Mr. HANDS, of Epsom, his account of a "New and improved system of heating, ventilating, and fumigating horticultural buildings of every description, such as conservatories, greenhouses, hothouses, forcing-houses, Cucumber and Heath-houses, Pineries, Vineries, and aquariums." With the numerous methods of ascertained excellence now in use for heating

garden buildings we may well be content—at least for the present; nor indeed is there much chance of any real improvement taking place in this description of horticultural requisites until some more satisfactory and innoxious way than we at present possess of employing gas shall have been hit upon. But to ventilating contrivances every gardener is eagerly looking: for it is certain that half the evil consequences attendant upon cultivation under glass are referable to the absence, or inefficiency, of the modes employed for keeping air in active motion and incessantly exchanging the deteriorated atmosphere of a forcing-house for fresh supplies suited to the wants of plants.

Were the many active-minded men who occupy themselves with discovering new forms of boilers, having no merit except that of ingenuity, to turn their attention to ventilation, which is bad, instead of heating, which is good, the gardener would be relieved from the last great impediment to maintaining plants within a glass enclosure in the same robust health as they enjoy under natural circumstances. This is the one great object still to secure. Here is the point in which all talent and energy should be concentrated. It is true that ventilation is improved, that by means of subterranean flues, or pierced openings in contact with heated surfaces (such as Ormson's chambers), a great deal has been done. Perhaps, indeed, in fitting up a new forcing house the latter may be sufficient. But we want other efficient plans applicable to all sorts of existing buildings, and they are what we have not yet acquired, or if they exist, they are unknown to the public.

It was, therefore, with no small interest that we turned over the pages of Mr. Hands's "new and improved system of heating and ventilating," &c., to be effected by certain patent "Utile" furnaces and flues, the fire in which "causes a sufficient supply of humid atmosphere for the purposes of vegetation so as to avoid the necessity of watering." Fine words and captivating to the mind of a gardener! The treatise is introduced by elevations and sectional views of a greenhouse, a conservatory, a forcing-house, a Vinery or Peach-house, and sundry forcing pits, to all which Mr. Hands's "system" is applicable. Our surprise then may be easily imagined, when upon turning to the letter-press accompanying the plans we discovered that "the new and improved system" is a system of Kiln drying! Messrs. Baker of Cheam, Faulenbach of Cologne, Hurley of Farnham, eulogise its kiln-drying powers, and Mr. Clayton says it is a capital contrivance for drying bricks. The *Builder* approves of its economy in consuming smoke, and others follow its lead. That being all, absolutely all, that Mr. Hands says of his "new and improved system," we are driven to the conclusion that in his opinion the perfection of gardening consists in rendering air fit to cure Hops, or malt, or to dry Mr. Clayton's bricks and tiles. But how, "upon this principle," as Mr. Hands remarks, there is to be a sufficient supply of *humid* atmosphere, it is difficult to comprehend, unless indeed the ingenious inventor uses the word *humid* in the sense of *parched*, as happened to a very worthy and really good gardener, who informed his master that he always called the bottom of a thing its apex!

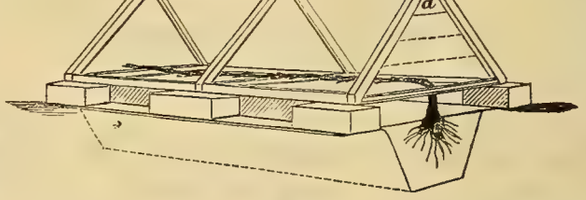
Such is Mr. Hands's new invention, upon his own showing, and it cannot be denied that it is perfectly "new" in Horticulture.

The Curate's Vinery! What may that mean? We had been asked the question two or three times but could give no answer. A guess might indeed have been hazarded; but guessing is the province of children or of those whose minds have never expanded beyond the narrow bounds of childishness. At last the explanation has been found in Mr. Rivers's little book mentioned last week, and with his permission we lay it at once before our readers.

"The annexed figure will convey a correct idea of its shape and make. To form a Vinery of this description, some dry place in the garden must be selected; if not naturally so, it must be well drained. A dry gravelly or sandy border, gently sloping to the south or south-west, will be found a favourable site; a flat surface will however do well if fully exposed to the sun.

"When the site is determined on, a trench should be dug 2 feet wide on the surface and 15 inches deep, sloping on each side to the bottom, which should be 6 inches wide; the bottom must be paved with tiles, placed lengthwise, and the sides lined with the slates called Duchesses, also placed lengthwise.

"On each side of this trench, on the surface of the soil, a row of bricks must be placed 2 inches apart end to end, leaving spaces between each brick 2 inches wide—these are for ventilation. On these two rows of bricks the roof is to be placed, which would be a ridge of the following dimensions:—2 feet 6 inches wide at bottom, and 15 inches deep from the centre to the apex. It should be made in lengths of 7 feet, two of which, placed end to end, form one Vinery 14 feet long. Each length should be glazed with four pieces of glass; and as each sloping side of the ridge is 20 inches deep, four pieces of glass, about 20 inches square, for each side will be required. The two outer ends must be closed with board: at one end a notch should be cut in the board to admit the stem of the Vine, which should be planted outside, so that its stem is on a level with the surface of the soil outside; the soil the Vine is planted in should be well stirred, 2 feet deep, over a space 6 feet square, and enriched with rotten manure, and what are called 1-inch bones or 'bone dust.' The Vine, when planted, should be introduced and suffered to grow, as in a common Vinery, till it reaches the end. Pruning on the spur system is the only method to be followed. To support the Vine in the centre, pieces of slight iron rod should be placed across the furrow, 2 feet apart, resting on the surface outside; to these the stem of the Vine should be fastened, so as to be under the centre of the roof. The bunches of Grapes will thus hang in the centre of the furrow, and, owing to the radiation of heat from the slates and tiles, they will ripen well. I need scarcely mention that in pruning, either in winter or summer, the two lengths of ridge forming the roof must be taken off and replaced when the operation is finished. Owing to the moisture from the soil, red spider but rarely makes its appearance; but it will be a sure preventive if flowers of sulphur are kept thickly sprinkled on the slates and tiles during the months of June and July. It is not only for Vines that these, strictly called ridge-and-furrow, Vineries are adapted—Pears on the Quince stock, and Peaches and Nectarines, all cultivated as closely pruned pyramids, may be grown in them; the



latter would require to be lifted annually in November, to keep down excessive vigour. A 7-feet length, closed at one end, should be appropriated to one tree, the open end towards the root.

"Their cost for carpentry, as given by my village builder, is 6*s.* 6*d.* for each 7-feet length; glass, about 4*s.* So that a Vinery for one Vine will cost, including slates and bricks, about 25*s.*

"There are several garden purposes to which these simple structures may be applied. I fill my trench half full of rich mould early in November, and plant in it Endive and Cabbage Lettuces for winter and early spring Salads.

"In gardens where these glazed ridge-roofs are not wanted for Vines or fruit-tree culture, they will be found most useful. They may be placed on any warm border on the surface of the soil, and early Peas, French Beans, and many other early vegetables requiring protection from spring frosts, be grown under them with advantage. In all cases they should be placed on bricks, with spaces between them. Ventilation is then secured; and even Cauliflower plants in winter will do well without the constant attention to 'giving air,' so necessary in the old garden frame culture. In gardens that are confined and very warm, it may be necessary to have the ends not quite closed up, but a small opening left at the top, at *a* in the figure, just under the ridge, to let out the heated air. My Vinery stands in a very exposed place, and has not required it."

We may possibly be informed that a contrivance like this belongs to the cheap and rickety class; that it is only a plaything where people are their own gardeners, and that there is nothing which it can do that a rough greenhouse will not do much better. Very likely. But with half the world their garden is a plaything; it is a place of amusement, not profit, and wo! to the man who is so ill advised as to imagine it anything else, unless indeed he is a market gardener. Half the pleasure of a garden consists in small experiments, little dodges, and pretty novelties, or what promise to be so. The true lovers of their gardens don't weigh the cost of a thing so much as the amusement that can be got out of it. They disregard the question of equivalents, and look only to results. The question they ask themselves is, "Can I afford it?" just as those who take an opera-box ask their pocket whether it can afford that.

There are hundreds of garden lovers who can't afford a Vinery, but who would like to try their hands at growing a few bunches of Grapes. Are they to be deterred because some garden grandee poohpoohs their little glazed ditch? Now, according to Mr. Rivers's statement, the thing may be done for five-and-twenty shillings? And then to how many purposes may such a little seven-foot span be applied when the owner is tired of his Vine experiment. Mr. Rivers mentions some; but there are many more. Bringing forward a row of Strawberries, for instance, or a line of Asparagus, or spring Onions or Radishes, or sheltering small matters in winter such as Endive or Winter Spinach, or Lamb's Lettuce. For all such purposes the glass roof, taken off its Vine trench, will be found very far better than handglasses or cloches, or such devices. For ourselves we have already set a carpenter to work up some old materials.

Since the above was in type we have received the following communication on the subject from Sigma himself:—

"It was the intention when the Curate's Vinery was first designed to introduce a plan for growing Grapes and other fruit under glass cheaply and on a large scale, but other things prevented this being carried into execution. I am glad to see Mr. Rivers has brought it before the public. The system combines sunlight, great heat, perfect ventilation, and moisture—which rises through the brick floor. These we might reasonably presume would insure fruit well coloured and thoroughly ripened, with health in the foliage; and the continued flow of air would prevent scorching. Probably it might be advisable to shut the side of the light exposed to cold winds, and if shut altogether at night, the heat absorbed by the earth during the day might be retained, and the moisture would then condense on the leaves and glass. By making the furrow wider two Vines might be grown, when the structure would be even more economical in proportion, and the ventilation might be arranged accordingly. The estimate given by Mr. Rivers for a Vinery, 14 feet by 2½, for one Vine is 26*s.* There are various ways of carrying out a similar plan even more economical than the one he describes; and if instead of a furrow in the earth, a trench be dug 1 foot deep on each side of a Vinery, suitable for two Vines, and the earth be thrown up so as to form the sides of a furrow on the surface, the Grapes would then be raised 2 feet from the bottom of the trench, in which the operator might walk when thinning."

We are happy to announce that Dr. Harvey is preparing a "*Thesaurus Capensis*," on the plan of Hooker's *Icones Plantarum*, but confined to Cape plants; 16 plates have been already drawn out of 25, which will form the first number, four numbers, 100 plates, forming a volume. The first number will have a large percentage of new species, and two remarkable new genera. It is, however, our learned friend's intention to figure old as well as new things; anything in fact that will be useful to Cape botanophilists. Dr. Harvey's Cape Flora, formerly announced, has already gone to press.

RHODODENDRONS.—No. VI.

Any seed, however, required for sowing, must be allowed to ripen before gathering; this may be known by the capsules assuming a warm brown tint. And in the case of any choice kind, or of such as may have been hybridised, occasional examination will be necessary to secure it before any is lost by the sudden expansion of the capsules; the action being generally accompanied by the dispersion of a large portion of the seed. After gathering, place the capsules in coarse brown paper bags, and store in a cool dry place until sowing time. If you have a large quantity of seed of ordinary kinds, the most ready means of preparing it for sowing is to crush the capsules with a rolling-pin, and separate the seeds from the chaff by a fine sieve. A small portion will doubtless be destroyed by crushing, but that will be of little consequence in a large amount, and the expedition of the process will more than compensate the loss. But if the seeds are small in quantity and choice in kind, careful separation by the hand is the more desirable mode. Where there are a large number of plants to collect from much seed may be gathered in spring, as the seed-vessels remaining upright after

opening, have not dispersed the whole of their contents then. A day or two since I saw a large packet recently collected, and at the time of writing this (March 1) the plants in front of my house have I see much good seed remaining on them.

Spring is the season for sowing, but the time must be determined by the means adopted for raising the plants, whether in the open ground, in a cold frame, or in heat. Provided the necessary conditions are given, they may be successfully raised in either; the result to be obtained being merely a question of time. The employment of heat, however, in the infancy of the plants, with a careful attention to all necessary contingents and details, will most speedily produce the wished-for results—seedling blooming plants, or vigorous stocks for the purposes of grafting, as the case may be. But it may be as well to hint here, as a warning and a caution to the amateur and the inexperienced, that in proportion to the complication of the means employed, so is care and skill necessary to insure the full benefit of them. And this is equally true of every other series of operations in which care and forethought are necessary elements to success.

If then the assistance of heat can be obtained, sow in February or March; if in a cold frame or the open ground, in April or early in May. Wide shallow pans or boxes about 4 inches deep, and of a length and width to admit of their being readily moved about, are best to sow in; 3 feet long by 1 foot wide is a convenient size. Nearly fill them with suitable soil thus: sift a portion through a coarse (three-quarter or inch mesh) sieve, place the rough fibrous portions that remain behind, as drainage. Then pass the sifted soil through a finer mesh, placing the rough pieces upon those already put in, repeating the operation with a still finer sieve, filling the box with the coarser pieces to within an inch or so, press firm, and over all put a layer of the fine soil containing a larger proportion of sand; make this firm and smooth, place the boxes on a level surface and give a thorough watering from a pot with a fine rose. A mere sprinkling on the surface is of no use; the whole must be thoroughly wetted. When the superfluous water has drained away a little more soil may be added to receive the seeds, previously making it perfectly level. After sowing, the seeds should be fixed rather than covered with a dust of soil. This is best applied by holding over them a fine sieve containing a little of the compost and gently tapping the side. No water is required then. The soil below being thoroughly moistened, the surface will absorb sufficient by capillary attraction, and which indeed it will continue to do during the germination of the seeds and earliest infancy of the plants, if shading be properly attended to and a sufficiently moist atmosphere supplied. During the earliest stages of the plants, indeed, water could hardly be given directly from a watering pot without considerable derangement and damage, and the same may be said of all very fine seeds.

The boxes are now to be placed in a house or pit having a gentle heat and moist atmosphere, and carefully screened from the sun's rays. Under these conditions germination will rapidly ensue, and then great attention will be necessary to prevent the young plants from damping off; and, subsequently, in hardening them to bear the transition to a cold frame. This last must be effected by very gradually subjecting them to a free circulation of, and a drier air. Some cultivators prick off the seedlings immediately they can be said to have assumed the form of a plant, and establish them in heat; but this practice requires an amount of manual dexterity and refinement of cultural skill which could only be successfully performed by the thoroughly initiated: a novice would be more likely to fail than succeed in attempting it.

Waiving this, then, we will suppose the plants to have been carefully and successfully removed to a cold frame. If sown in February they will be ready to prick out in May. Presuming them to be so, place in some two or three light garden frames, with a northern aspect, 6 or 8 inches of proper compost—well pulverised leaf mould should predominate in this—and in it prick out the young plants 2 inches apart. Keep close till well established, and gradually harden off to bear full exposure; pay proper attention to moisture during the summer. In winter they will only require protection during rough or severe weather. In the following April they may be bedded out in the open ground, previously however being well inured to exposure. Under ordinary good treatment many of the plants will flower at four years old; with the best management by experienced hands they frequently reach that state in three years. We have known instances of seedlings attaining a height of 6 inches the first year.

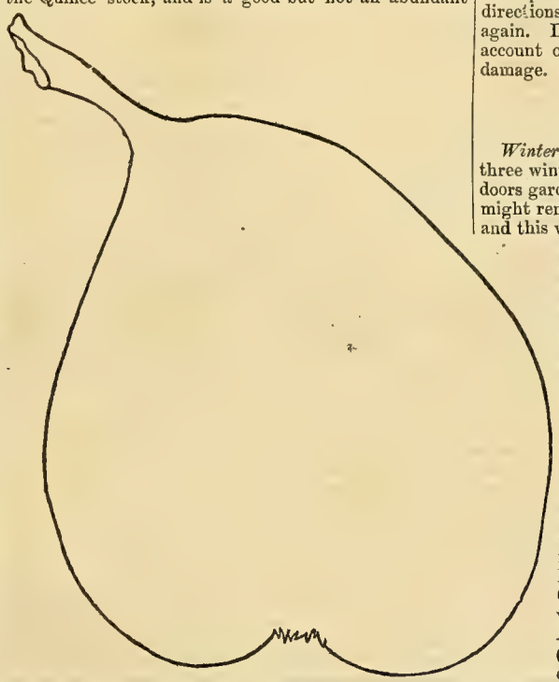
When the seedlings are raised in a cold frame they will of course in their early stage be considerably behind those having the advantage of heat. Such may be hardened off and retained in the pans or boxes till the following spring, and then pricked off in frames and treated as above described. In fact this is sometimes adopted with those raised in heat, but the practice is not to be recommended. Independent of the loss of time, the young plants become crowded and matted at root; and, in consequence, are much checked and injured in being removed from the seed pans. That course which occasions the least obstruction to their growth, and on the other hand mostly accelerates their natural progress, is the one to adopt as likely sooner to realise the end in view.

That seedling Rhododendrons can successfully be raised in the open air every one who has examined a wood where there are large plants of some years' standing can verify. Moisture and shade are the great indispensables. And wherever these conditions are present in combination, seeds being scattered, young plants will spring up. We have seen them in thousands on bare sandstone blocks, shaded by vegetation near waterfalls, where the air is always moist, and on the surface of gravel walks in woods where the sun never shines, they often abound. The conditions which in such situations are presented, and which are as indispensable to the vegetation of our ordinary Rhododendrons in their natural habitats as under artificial culture, are equally so to their famous relatives of Sikkim-Himalaya, as is shown by the following passage from Dr. Hooker's valuable article in Vol. 7 of the Journal of the Horticultural Society, an article by the bye which every one who cares for the cultivation of Rhododendrons at all, especially the Sikkim Rhododendrons, should study. "In Dr. Campbell's garden at Darjiling," says the learned author, "there is a perpendicular bank 15 feet high, exposed to the west and partly sheltered from the south-west by the house. R. Dalhousiæ has annually appeared on this, the seeds being imported by winds or birds from the neighbouring forest. The seedlings, however, perished till within the last two years, since which time abundance of Lycopodium clavatum and a Selaginella, with Marchantia, retain so constant a supply of moisture that the plants now flourish and flower in perfection." *G. Lovell, Bagshot.*

(To be continued.)

NEW PEARS.

Beurré Superfin.—Scarcely any Pear of recent introduction equals this very fine variety. When ripened with a full exposure to the sun, its skin is generally covered with russet tinted on its sunny side with a dull red. It generally precedes the Marie Louise in ripening, and is perfectly melting with a peculiar and delicious aroma. It succeeds perfectly on the Quince stock, and is a good but not an abundant



bearer while young. In the northern and eastern counties it is quite hardy, and does not seem to require a wall. Like the Marie Louise and Winter Nelis this fine Pear is indispensable in even small collections.

ON FORMING AVENUES.

I prize an avenue. It is the noblest arboreous ornament in an ornamented English Park. They say a straight one is most orthodox; but, to me, an avenue of serpentine appearance has more attractions, and I prefer it to the other.

In our part of Yorkshire, an avenue has been the chosen resort of multitudes of rooks (those indefatigable destroyers of the wireworm) as a roosting place time out of mind. It is that at Nostell Priory. These birds assemble there in order to enjoy a safe and undisturbed repose, from mid-October to the 12th of March, without the intermission of one single solitary night.

He who can afford to possess an avenue ought not to grudge a few extra sovereigns in the formation of it, nor a trifling expense in taking care of it afterwards. Before he begins to plant the majestic ornament for his grounds, he would do well to call up his trusty housekeeper, and address her nearly as follows:—"Pray, good Mrs. Brushwell, tell me, how do you contrive to keep our house in such Apple-pie order?" Methinks I hear her say, "This, dear sir, has been my plan. I have managed by hook or by crook to annihilate every Hanoverian rat which had possession of the premises—I have suffocated every bug in the bedrooms—and by the help of our tom-cat, I have succeeded in throttling every mouse from the attics to the lowest cellar." Incomparable housekeeper!

Now, in preparing for an avenue, let us have an eye on the exertions of this thrifty dame. Let us, in a word, guard our newly planted trees against the encroachments of cattle, rabbits, hares, and sheep. Not that I would advocate a persecution of these useful animals. No, by no means. I would merely prevent their coming in contact with the trees by a durable, cheap, and effectual mode of fencing; and also by keeping a sharp look-out in case of accidents: for we must not imitate one Ocnus, of ancient days, a lazy old rascal who was condemned by the gods to twist hay-ropes in hell. There was an ass standing by, which ate the ropes as fast as they were made, and the man was too indolent to drive it away.

With these hints and suggestions in mind, let us proceed to the formation of the avenue.

Drainage, effectual drainage is the first thing to be attended to; then the requisite soil; then the choice of trees; and lastly, a word or two on the atmosphere. Where drainage is wanting your young trees will soon begin to show a corrugated and unhealthy bark; and their leaves will appear as though they had caught the yellow fever. You might as well expect to have a hot mutton chop from a panfull of ice as to see healthy trees where drainage is neglected. There ought to be no stagnant water within 5 feet of the surface. In an avenue which I planted with my own hand, some 50 years ago, all went on surprisingly well, till about 14 years from the date of this, one of the trees fell sick, and continued in an unhealthy state. At last, suspecting where the mischief lay, I probed the roots, and found water at them. It was an English Elm, and of course it could bear a considerable and extra accumulation of soil at the foot of the bole. So I ordered forty cartloads of earth to be put on the surface. This did the business most effectually. The half-starved roots soon felt the consolation—and soon they took an upward direction. I had cut off all the branches from the tree in the preceding autumn to within 2 feet of the stem. In due time a happy change took place, new and vigorous shoots struck out in all directions; and now the once declining tree is itself again. Drainage in this instance was impracticable, on account of the Barnsley Canal, which had done the damage. *Charles Waterton, Walton Hall.*

(To be continued).

Home Correspondence.

Winter flowers.—We are apt to consider the three winter months as dull and dreary in the out-of-doors garden. But I believe with very little trouble we might render them gay with flowers in most winters, and this without glass or fire-heat; and thus the poor man's garden might become to him a source of pleasure, and that at little expense. A good selection of plants, and a knowledge as to soil and situation required for each, would be all that would be necessary. I add a list of the flowers I have gathered from the open ground since 1st of January to the present time, and many others will be in flower in a week. Others I have had in bloom when living in the north of London. Owing to its wetness, this has not been a very favourable winter here for flowers. The following is the list alluded to:—Winter Aconite, Christmas Rose, Green Hellebore, Snowdrops, two sorts; Scilla siberica, Arbutus, Garrya, Laurustinus, Crocus of various colours, Rhododendrons, Andromeda floribunda, Rhodora canadensis, common China Rose, Cornelian Cherry, Primulas, eight sorts; Cynoglossum omphaloides, Polyanthus of various kinds, Double Daisy, Oxlips, Cowslips, Aubrietia purpurea, Arabis alpina, Geum (scarlet) from seed, Hyacinths of various colours, Grape do., Jonquil, Narcissus, various Periwinkles, Violets of different kinds, Crocus sativus, various plants of Wallflower, Orobus vernus, Adonis vernalis, white and blue Forget-me-Not, Hepaticas, Dogs'-tooth Violets, Ribes, Pear, Peach, Nectarine, Apricot, Almond, two sorts of Dielytra, pink Saxifrage, Anemone apennina, Do. coronaria, Doronicum, Auricula, Corchorus japonica, Pyrus do., two colours; Jasminum nudiflorum, Forsythia viridissima, Coronilla, Veronica Andersoni and Lindleyi, Areopogon (water), Ceanothus americanus, Cerinthe aspera, three kinds of Berberis, Helonias bullata, Oxalis (Wood Sorrel), Heath, four sorts of Pulmonarias. *M. M., Maes y dderwen, Swansea, March* 22.

Nephrodium molle v. *corymbiferum.*—Mr. Sim wisely put purchasers on their guard by expressing a hope merely that this lovely variety would prove as hardy as the species. If that hope had not been realised what a disappointment it would have been, for in a collection of the most striking frilled and crested Ferns it stands quite alone in its distinctness and delicate verdure. I planted one in the centre of a Wardian case last July in a room facing north, and it grew as freely as molle itself. During great part of the winter there has been no fire in the room, and corymbiferum dropped its fronds and became deciduous. It is now (March 16) throwing up again quite strong, and in five or six weeks I expect to see its fine Cockscomb-like frills well developed. True, we have had no weather to make the test a severe one, but we may surely class it with the hardy greenhouse Ferns. *Shirley Hibberd.*

Garden Expenses.—Your correspondent "J. D." (see p. 218) has favoured us with a Dr. and Cr. account of the different departments of the garden under his charge; to many it must be the reverse of satisfactory, and ought, I think, to be more fully explained. Let

me ask, for instance, how much of the 21*l.* 19*s.* 3*d.* (the outlay per annum on 2 acres of kitchen garden) he spends in labour, in manure, and in seeds, and what wages he pays his men? But as the expenditure is so are the returns. Many will doubtless agree with me when I say that the statement in question is calculated to damp the enthusiasm of persons about building orchard houses when they find that the full value of fruit grown in a house 46 feet long by 12 wide is only 8*l.* 6*s.* per annum; as also of those about building walls to find that 500 yards will grow only 12*l.* 3*s.* 4*d.* worth of fruit, and that their enclosed garden of 2 acres will only yield 56*l.* 3*s.* 6*d.* per annum. I think if the whole sum of 21*l.* 19*s.* 3*d.* had been spent in manure, and a still larger sum in labour, the returns would have been comparatively greater. I am fully convinced of the possibility of making the kitchen and fruit garden remunerative, and for that purpose I would be glad to see the whole items brought fully forward, so that "every herring might hang by its own tail." *A. M. V., Woodlands, Blackheath.*

Orchid Acarus.—My attention was some time ago directed by a gentleman of this town to the very peculiar disease so often noticed in Orchids, and which had made sad inroads upon his very beautiful collection. I carefully examined many of the diseased leaves under a very fair microscope, but constantly failed in detecting anything that would direct us to the nature of the complaint. Noticing your article last week upon the subject I again examined some of his sadly marred patients under the microscope, and after close examination of a leaf, which, to the eye, appeared beautifully clean, I discovered four of the very singular acari you so faithfully describe, and at once saw the reason why I had before failed in detecting them, and why the sponge and syringe had been so ineffectual in dislodging them. The sharpened head and fore part of the body appeared to be buried beneath the cuticle, where it was firmly held by the four front legs, which were admirably adapted for the purpose, terminating in what appeared to me to be a bunch of hooked bristles, rather than the fleshy lobe as described by you. The four hinder legs were also firmly attached and nearly hidden under the body; hence from the minuteness and partial transparency of the skin it was hardly distinguishable from the little beads of hardened exudations which I found pretty freely scattered over the leaf, and which probably may have flowed from the more recent punctures of the cuticle. I further noticed occasional cells of the cuticle darkened in colour but confined to one cell alone; and then again a mass of cells of every grade of brown, as though destroyed by some caustic application in the various stages of the disease; leading me to suppose that the puncture of the insect was the first cause, and decay ensued from some peculiar property of the wound. The similarity of the insect to the Sarcoptes Scabiei, or itch insect, in some respects, and various others of the Acarus tribe, much struck me—both formed for burrowing and clinging closely to the skin—which I found to my cost, being unable to remove it in the usual way with a bristle, but was compelled to almost scrape it off with a fine needle, thereby much damaging my specimen. If these minute enemies be the cause of the disease, I have no doubt many washes such as you mention will destroy them; but I much question whether fumigation, syringe, or sponge will touch them, lying, as they evidently do, half buried beneath the fleshy cuticle of the leaf. I therefore send you these remarks, thinking that they may tend to direct the attention of others to the subject. *J. H., Trowbridge, Wilts.*

Walnut Trees.—I shall be obliged to any of your correspondents who will inform me whether the Walnut is liable to have its bark stripped or its leaves and young shoots browsed upon by sheep, horses, or cattle. I think it not improbable that the taste of its sap would be so unpalatable as to protect the tree, when planted in pastures, without any necessity for tree guards or for surrounding the stems with Brambles. But before I expose trees to such dangers unprotected, I should be thankful for any experience that may be kindly communicated. *Diss.*

Change of Colour in Violets.—Can any of your correspondents inform me why sweet scented purple Violets turn white? I have many patches in my garden, which 2 or 3 years ago produced nothing but purple flowers, but they have gradually changed, and now the blooms are almost entirely white! I should be glad to know of any treatment which would prevent this change. *Otterwell, March* 22.

Davallia canariensis.—An old plant of this has stood out the whole of the winter in my garden. It was hard frozen in November, has been as dry as dust for weeks together, and only four out of about 25 fronds have changed colour. It is now growing beautifully. It will do for the hardy Fernery in places well sheltered, but comes much finer under glass, if the "hare's foot" is allowed to ramble and clutch the outside of the pot. D. pentaphylla, P. dissecta, and P. decora are first-rate for Wardian cases and for suspending. I grow pentaphylla in a Cork basket, and the rhizome is as handsome as the foliage. *Shirley Hibberd, Stamford Hill.*

Selaginellas.—I have had stolonifera, Martensii, formosa, Galeotti, cæsia, apoda, denticulata, and Willdenovii in Pascall's cutting pots under bell glasses in the hall, which is not heated, all the winter. They are dust dry, and have not had water since October last, and air only some half dozen times, to prevent damping by inclosed vapour. They are all in beautiful condition except Galeotti, which has gone altogether, and Martensii, which looks poor about the base of the fronds. Denticulata forms a beautiful tuft of green if planted in chopped Sphagnum in a shallow pan kept immersed in water, and is a capital ornament for the summit of a rockwork in an aquarium. For surfacing a Wardian case nothing beats apoda and cæsia (uncinata). The latter is the hardiest of all the blue-tinted Selaginellas; but its bright metallic lustre is beaten by africana and lævigata, which require heat and careful treatment. *Shirley Hibberd.*

Egyptian Pea.—I enclose some Peas which I have recently received from the person who advertises them as the Egyptian Pea. I shall be much gratified by some experienced correspondent saying what this Pea really is. It appears to me to be the old dwarf Branching Marrow Pea. *Pisum.* [The Pea called the Mummy has been *proved* to be the common dwarf Branching Marrow, and this appears to be the same.]

Mushrooms.—During the present month (March) these have been gathered in considerable quantity and of excellent quality in the meadows and pastures of Hurstpierpoint, Sussex, and its neighbourhood—a circumstance of unusual occurrence, and strikingly illustrative of the mildness and humidity of the present season. *J. Miles, Hurstpierpoint, Sussex.*

Hybrid Fuchsia.—I beg to forward flowers of a seedling raised from serratifolia, crossed by old corymbiflora. It seems to me to be well worth attention, as it has been in bloom since the end of September and the flowers have been much larger and finer in colour than those now inclosed. It is of a fine dwarf bushy habit. My plant is about from 20 to 24 inches high, and as much through; it was planted out in the summer, and did not bloom till September. The flowers sent are the last the plant has on it at present; about Christmas it had at least a dozen flowers open on each shoot. *X. Y. Z., Abergavenny,* [The blooms sent are very handsome indeed; they greatly resemble both in size and colour those of serratifolia.]

Societies.

Linnean, *Feb.* 3.—Prof. Bell, President, in the chair. Dr. W. Eatwell was elected a Fellow. The following papers were read:—1. A memoir "On Henriquezia of Spence, a genus of Bignoniaceæ," by G. Bentham, Esq., V.P. Henriquezia is one of the many interesting new genera found by Mr. Spence, in northern Brazil and Venezuela. The originally discovered species was published some years since by Mr. Bentham in Hooker's Journal of Botany, but more perfect materials now enabled him to complete the characters of the genus. Among the botanical peculiarities of these plants it was stated that the ovary was inferior, the stamens were five in number, perfect, and nearly equal, and the leaves which are large and entire were furnished with stipules. It nevertheless undoubtedly belonged, the author stated, to the family of Bignoniaceæ, having a near affinity with Platycarpum of Humboldt and Bonpland. The genus was dedicated by Mr. Spence to Senhor Henriquez Antonÿ, a native of Leghorn, who for more than 30 years had been settled at the Barra de Rio Negro, where he has constantly rendered every assistance to scientific and other travellers. The four species described on this occasion are stated to be trees of considerable size and of great beauty, the flowers being disposed in large terminal panicles. Admirable drawings of three of the species by Mr. Fitch accompanied the paper. 2. A continuation of Mr. Bentham's "Notes on British Botany," being the section relating to Geographical Distribution. The greater portion of the British Flora, the author observed, appeared to have been originally derived from the continent of Europe. All that he has read and observed, he goes on to remark, has induced him to lean towards the opinion of an original centre for each species, from whence it has spread (or in some instances may still spread) in every direction with great rapidity where no obstacles have been opposed to the wonderful powers of propagation with which plants are endowed, but constantly checked in its progress by insurmountable barriers, by adverse soils and climates, by preoccupation of the soil, and other causes more or less known to us; or repelled in advances already made by terrestrial or meteorological convulsions, by gradual changes in the conditions of soil or climate, by the invasion of hardy species powerful enough to stifle it, or even by the effects of human agency. Taking this view of the question, and considering that the space over which a species extends in Britain is generally but a very small portion of its whole area, in few cases more than one-sixth, and in that of more than half the species not one-sixtieth—that owing to our position at one end of the old continent the British portion lies at one extremity, whether western, northern, or southern of that specific area, the conclusion seemed inevitable that very few species can have had their original centre of creation in or near Britain, and that the great majority have probably spread from a very considerable distance. But the approximate determination of what may be supposed to have been the original centre of any given species, is often, the author acknowledged, a very difficult problem. Comparative abundance and luxuriance of individuals be maintained to be no criterion. "There is," he observed, "no part of the original area of the Cynara cardunculus, even in northern Africa, where it occupies anything like the extent of territory, to the exclusion of so many other plants, as it is said to do in the Pampas of Buenos Ayres, where it is known to be of recent introduction. Nor is a central position with reference to the general area at all decisive as to the original centre, although both of the above circumstances must be taken into consideration. A more important element in the argument is the observation of the country where the species accommodates itself to the greatest variety of soils and exposures, where it sports into the greatest number of more or less permanent varieties or races, passing the most gradually the one into another, or where any peculiarities in the localities it affects are indicative of ancient occupancy of the country, independently of such historic evidences as the meagre records left by ancient botanists may afford." After observing that his object was not to enter into precise details respecting the areas occupied by the British species, the author proceeded:—"Hewett Watson refers the plants of Great Britain to six types of distribution, the Highland, the Scottish, the British, the English, the Atlantic, and the German, an excellent arrangement in so far as they are considered with reference to the stations they occupy in Britain. The investigation of these general areas will also in the majority of instances produce results corroborative of these types, but in others will more or less modify them; and the British portion of the specific areas, being as already observed so small, the names of these types become inappropriate when considered generally. With reference to the general Europæo-Asiatic Flora, to that portion of it at least which extends more or less into Britain, it has appeared to me to be more convenient to distribute our indigenous species into five types or classes, which would be slightly but not much modified, were the whole European Flora to be the subject of consideration without special reference to Britain; for there are but few of the great European types of which we have not some outlying representative. I have accordingly arranged the 1285 species comprised in my 'Handbook' under the following heads:—Adventitious Flora: Escapes from cultivation—from America, 4, from Southern or Eastern Europe, 47 = 51; Introduced plants—from America (perhaps 5?), 2; from South Central or Eastern Europe, 6; from the adjoining continent (near 70?), 39 = 47; weeds of cultivation (near 100?) 61; total, 159. Indigenous Flora: Northern—Arctic plants, 11; Northern and Alpine, 81; Northern and Central, 76 = 168; General Europæo-Asiatic—Reaching the Arctic circle, 225; short of the Arctic circle, 250; European only 65 = 540; Central—Europæo-Asiatic, 204; European, 47 = 251; Southern and Western, 76; Western, 47; Maritime plants not included above 44; total 1126. If the maritime plants were distributed into the other classes, 37 of them might be added to the general Europæo-Asiatic Flora, and 7 to the Western Flora, raising the former to 577, the latter to 51." These classes or subdivisions were however pointed out to be by no means clearly defined or absolutely distinct. The peculiar features of these several groups were then explained at great length; and the author proceeded: "It may be objected that all such speculations are worthless when derived from the consideration of plants alone, without a better acquaintance with the details of zoology and geology than I possess. But the physical history of the changes which the surface of our globe has undergone, can only be drawn up from circumstantial evidence collected from all branches of natural science. In so vast and varied a field no general theorist can personally verify the whole of the facts and propositions of details submitted to him; he must rely more or less on the observations and critical compilations of others. If every botanist who thoroughly investigates the flora of any country would carefully compare it with that of other regions more or less connected with it; if he would in the case of each species search out the direction and extent of its range, and note down any general propositions which such research may have suggested, irrespective of foregone conclusions derived from the speculations of others in sciences in which the observer is himself but little grounded; if entomologists, malacologists, ornithologists, and other zoologists would each follow the same course for the faunas of particular countries; if the numerous body of aspiring geologists were to devote more attention to the close comparison of the geology of analogous regions than to the building up general theories based on the study of a mere speck on the surface of the globe; it would then be for those gifted general naturalists, who, previously well grounded in the details of some branch of the science, but with minds capable of embracing its whole sphere, have carried their observant eye to distant parts of the globe, and successfully combined and methodised the results of their extended and varied experience—it would be for our Lyells, and Darwins, and Hookers to study and compare the conclusions thus independently formed by the investigators of different branches, to detect the fallacies which may have led us astray, to reject all theories founded upon the study of one class only of natural objects, and not confirmed by that of others, and to consider as proved those only in favour of which concurrent testimony can be extracted from all." The portion of the memoir read on this occasion included some observations of detail as to the reasons which led the author to adopt or reject various modern distinctions proposed in the case of particular genera and species. 3. "Notes on Simethis bicolor," by the Rev. J. H. Austen. Mr. Austen stated that the plant grows in a plantation, occupying an area of not more than 20 or 30 paces in diameter. The exact locality being the only known station for the plant in England is kept comparatively

secret for obvious reasons, but has been known to the writer since 1843. He does not agree in the opinion which had been expressed, that it was "perhaps introduced with the trees from France;" but thinks it far more probable that its origin may be attributed to the smugglers. It is no stretch of the imagination to conceive that a case of wine had been opened here (it was a common practice with them to regale themselves at a little distance inland), and that the bottles may have been packed in the Grassy leaves of the Simethis, amongst which was ripened seed, which so became scattered about. Its restricted area seemed to agree with this idea.

Feb. 17.—Prof. Bell, President, in the chair. H. W. Elphinstone, Esq., C. W. Harrison, Esq., and Dr. E. Percival Wright, were elected Fellows. The following papers were read:—1. A memoir "On the Structure of the Integuments of Crocodilia," by Prof. Huxley. 2. "On the Anatomical characters of Compound Tunicata;" and 3, "On the Anatomical characters of an Australian species of the genus Perophora," both by J. D. M'Donald, Esq. 4. "Catalogue of the Heterocerous Lepidoptera collected at Singapore by Mr. A. R. Wallace, with descriptions of the new species," by F. Walker, Esq.

Royal Botanic, Regent's Park: *March* 23.—This was the first of three spring meetings which this Society has determined on holding during this month and next, for the purpose of affording an opportunity of showing to its Fellows plants the flowering of which might be over before the summer exhibitions take place. On the present occasion Hyacinths formed a conspicuous feature. They were furnished by Messrs. Cutbush, Henderson, and Macintosh. Stove and Greenhouse plants were contributed by Messrs. Fraser and others, and a pretty collection of Cyclamens came from Messrs. E. G. Henderson. Cinerarias were sent as usual in beautiful condition from the Royal Nursery, Slough, by Mr. Turner; they consisted of Brilliant, bellissima, Mrs. Hoyle, purpurea, Mrs. Livingstone, and optima. Of Seedling Cinerarias there were several. The best were perhaps Acme of Perfection (Smith), white, tipped with crimson; Queen Victoria (Turner), a very bright coloured kind; and Hilax (Hylas?) (Holland) white and crimson. Of Crimson Selfs the best were Brilliant and Lord Clyde. From Messrs. Ivery, of Dorking, came a prettily striped Azalea, and we noticed a good rosy coloured sort from the neighbourhood of Clapham. A collection was shown of Auriculas by Mr. Turner, and Mr. Bragg had some pretty Pansy blooms. Of Camellias a few were shown; but with the exception of Princess Frederick William, they were not in good condition. Prunus trilobata, and some double-blossomed Chinese Peaches from Mr. Glendinning were greatly admired, more particularly the Camellia-flowered Peach, which all admitted was extremely handsome. A charming variegated Geranium, named Jane, was shown by Mr. Turner; and a new Pelargonium, said to be well adapted for forcing, came from Mr. Smith. Gastrolobium ovalifolium was shown by Messrs. Henderson, of Pine-apple Place.

Notices of Books.

Flora of Tasmania. Part 8. 4to, Reeve. Dr. Hooker's admirable account of the plants of Van Diemen's Land is drawing to a close. The letterpress of the number just out completes the Mosses by Mr. Wilson, and begins Hepaticæ by Mr. Mitten. The plates are wholly confined to Sedges and Grasses, among the latter of which is the celebrated Australian Kangaroo Grass, Anthistiria australis.

Lectures on the History of England. Lecture First. (Longmans, price 1*s.*) This is quite a novelty in the instruction of the labouring class. It is really a very good, simple narrative by Mr. William Longman of the more striking events in English history from the earliest period to the death of King John. Of course it includes only such subjects as speak to the imagination, and can be easily remembered by illiterate people. And in that consists its great merit. It may, indeed, be compared to some of the old chronicles, written doubtless for ears not better informed than those of Hertfordshire labourers. There is an excellent coloured map illustrating the early history of England, and some very good woodcuts of interesting objects. And all this for a shilling! The history of Mr. Longman's experiments is told in an account of the proceedings of the Chorleywood (a little place near Watford) Association. Our readers will thank us for giving it without curtailment:—

"The Chorleywood Association for promoting provident and industrious habits among the labouring classes was established in 1855.—The original object was only to provide allotment gardens for the labourers, but it was thought desirable to make this beginning a foundation for other objects. An Association was therefore formed, of which those who had allotment gardens became members; and those who subscribed to the Association also became members.—It was thought that by thus binding the various classes together, union and good feeling would be promoted, and that a machinery for carrying out other objects would also be ready; and so it has proved.—The next step was the giving of prizes for the best grown vegetables and the best cultivated gardens. It was then thought that it would promote good feeling and mutual confidence if all the members of the Association, both gentry and labourers, met together once a year at supper, after the distribution of prizes for the gardens. Labourers' wives were admitted, as it was thought unfair that they should be left out. This experiment succeeded very well.—The next object was this. Employment for the minds of the labouring classes, as well as for their bodies, was considered a necessary object of such an Association. It was therefore determined to give monthly lectures during the evenings of the winter season. These have been well attended. The population of the district is under 1000, but it is very widely distributed, the distance from one end to the other being about three miles. Yet we have frequently had above 200 persons attending these lectures. When the lectures were found to succeed it was thought that an attempt might be made to induce those attending the lectures to write reports of what they heard. Prizes were therefore given. At first these prizes were given in money, but they are now given in books. These reports have been better than could have been expected. There have been as many as 20 reports of some of the lectures, which shows an effort on the part of the people to accomplish this object. It must not be concealed that a considerable proportion of the reports are by children and girls, but yet there are many reports sent in by men, and latterly the men sending reports have increased in number.—The following is a statement of the numbers of the different classes who have sent in reports:—9 men, 7 women, 5 schoolboys, 12 school girls.—The length of the reports has varied from six or eight folio pages to a page of note paper. Among the reporters are some grown men who have only lately learned to read and write.—Among the additional objects intended to be carried out are:—1st, A rent fund; 2d, A savings bank; 3d, A summer show of flowers in pots and nosegays, with a tea-gathering in the evening.—Since the announcement that those labourers who had no allotment gardens might become members on payment of 3*s.* a year, several new members have joined the Association.—To sum up the objects of the Association, they are:—The promotion of good will and mutual confidence between rich and poor.—Employment for mind and body when work is done.—Regularity of conduct and saving habits.—Means to enable the poor to communicate to the rich the difficulties under which they labour, and their own ideas of the best way of helping them.—Manly independence and self-respect combined with respect for those in a higher station.—It is possible that, with a view to provide healthy amusement and recreation for summer evenings, means may be found to encourage cricket and other manly games.—Further information may be obtained of Rev. A. Scrivenor, Incumbent of Chorleywood, and Manager of the Association."

The Midland Counties Almanac for 1859 (Simpkin) reached us late, and has laid before us unnoticed. We find it to be an assemblage of proverbs, weather predictions, monthly notices, notes on rural and household matters, tables for farmers and gardeners combined with an almanac and a pretty extensive calendar of work to be done in each month. Although we may not endorse all the statements to be found in the pages of this book, we may say that 6*d.* cannot be ill laid out in the purchase of it.

The Husbandman's Practical Encyclopædia [*Encyclopédie pratique de l'Agriculture.* Firmin Didot. Paris; Williams & Norgate, London, 8vo, Vol. I.]. We have received the first volume of the work bearing the above title, which is to be followed at short intervals by 14 more. It consists of 879 pages in double columns, with good wood engravings. The editorship is entrusted to Professor Moll, who is assisted by a staff of writers among whom we recognise such good names as those of Magne, Alibert, Naudin, Millet, Du Breuil, Duchartre, Hardy, Guérin-Méneville, Peligot, Boussingault, and L. Vilmorin, each of whom has communicated one or more articles to this 1st volume, which extends as far as Amidor. It is therefore to be presumed that the work, like the *Maison rustique*, will become useful in this country as a reference when questions arise concerning French husbandry. We must, however, remark that such articles as that on Amelanchier, which occupies a couple of pages, have no obvious relation to practical cultivation; besides which the writer of the article mentions a Sorbus-leaved species, which is quite imaginary. So again Alströmeria, a race of plants belonging to the rarities of gardening, should surely have here found no place; at least if such articles are to be inserted hundreds of others should also come in, the effect of which must be to extend the work to 50 volumes instead of 15. We venture to recommend Prof. Moll to reconsider this part of his plan.

Ten Thousand Wonderful Things (Ward & Lock, 12mo). Under this name has appeared a small 8vo. volume of 332 pages, literally crammed with woodcuts, representing all manner of curious customs, things, scenes, and places. Unlike such books as *Wanley's Wonders of the Little World*, a farrago now happily forgotten, this is really a collection of interesting accounts of events that have happened and of objects that do still or have formerly existed. It is intended by Mr. King, who has put the matter together, as a book for young people, "to amuse by the eccentric, to startle by the unexpected, and to astonish by the marvellous." In effecting this object he has been remarkably successful, and let us add that we have not fallen upon a single point that can be considered at all objectionable by even the most fastidious reader.

Garden Memoranda.

Bank Grove, near Kingston-on-Thames, the Residence of W. Byam Martin, Esq.—The magnificent specimens of Camellias for which this place has long been celebrated are now literally loaded with blossoms of the largest and finest possible description, producing a display much more easy to conceive than describe. In one of the houses situated in the flower garden the bank of blooms of all shades from deep crimson to the purest white which presents itself is certainly striking in the extreme. Here we observed splendid trees of Hallyi, a crimson kind of beautiful shape; Madonna, Pratti, Teutoniana, a delicate pink, of equally fine form and fully as large as imbricata; Duchess of Northumberland, a charming white striped with pink; Sarah Frost, Lowei, Marchioness of Exeter, large and fine; Storeyi, a variety remarkable for its symmetry; candidissima, and noble examples of fimbriata and old Double White. But in addition to the beautiful trees just named, and multitudes more which occupy the centre portion of this house, others are trained on the back wall with excellent effect. Among the latter were Monarch and imbricata, both producing blooms of unusual size and beauty. The trees here are kept closely tied in so as to completely cover the trellis and wall with foliage of the richest green, which serves to set off the flowers which issue from amongst it to excellent advantage.

The immense plant of reticulata, which of itself fills a whole house, and may justly be considered the glory of the place, keeps increasing in size every year. It now measures 15 feet in height and 16 feet in diameter, and has on it many thousands of blooms, which in about 8 or 10 days more, if the weather keeps favourable, may be expected to be in perfection. When we state that upwards of 3000 flower buds have already been removed from this fine tree in order to prevent it from over-flowering itself, some idea may be formed of the kind of display it will make when in full beauty. It is evidently in the most robust health, and judging from the few blooms it had open on it on Monday last, there can be no doubt that they will be even larger and finer this year than ever they have been before. Altheæflora covered a space on the back wall of this house measuring 18 feet in height, and 8 or 9 feet in breadth. This is growing in a slate box, and although occupying only a limited space as to root room, it blooms most profusely.

The back wall of a large Azalea-house is also clothed with Camellias, all of which are at present in full bloom. Among them were Beali, Donkelaari, fimbriata, and Chandleri.

A lean-to conservatory attached to the mansion is also filled with Camellias all planted out. This house is 95 feet in length, and contains some admirable trees, among which Woodsi, Alberti, fimbriata, elegans, imbricata, Monarch, candidissima, and Beali were conspicuous. Some of these measured from 12 to 14 feet in height and were truly magnificent. The front shelf was gay with Azaleas, the yellow Coronilla glauca, Mandarin Oranges in fruit, Deutzia gracilis, than which few plants are more ornamental at this season; Cinerarias, Roses, and Chinese Primulas.

On the lawn are some fine Cedars of Lebanon and other Conifers. Pinus macrocarpa, a noble tree, measures 30 feet in height; P. insignis, a fine plant, between 30 and 40 feet; a beautiful Deodar, 30 feet; Abies Pinsapo, finely formed, 15 feet; Cupressus Lambertiana, 25 feet; Juniperus chinensis, 18 feet; together with Cryptomeria japonica, Cupressus funebris, and Taxodium sempervirens, all of equal beauty. In addition to the above we also observed nice thriving specimens of Cupressus Lawsoniana and Thuja gigantea.

In the American garden dotted here and there among clumps of Azaleas and Rododendrons were fine plants of Cephalotaxus Fortuni and pedunculata, Wellingtonia gigantea 5 feet 8 inches in height, Thuja aurea, and Berberis Darwinii, the latter 7 feet in height and covered with flowers.

A Rose Garden of considerable extent has been formed here. It contains some beautiful trees, which when in bloom must be very handsome. Many of the pyramids are 10 and 12 feet in height, and the beds are occupied with standards and dwarfs.

The glass structures are of the best possible description. In the earliest Vinery, which contains a fine crop, the bunches have just been thinned. A late house is just being started. In the earliest Peach-house the fruit is set and plentiful, and other houses are equally promising.

A Cucumber-pit in the kitchen garden was full of fine fruit, and, indeed, has been so for some time past. On a shelf on the back wall were French Beans. Other houses were occupied with Scarlet and Variegated Geraniums employed in the decoration of the flower garden in summer. Among the former were plants of immense size.

On walls out of doors there is at present every prospect of plenty of fruit of all kinds. Some Plum trees which were over-luxuriant and bore little or no fruit, were root-pruned in October 1857, and had their roots at the same time brought nearer the surface. Since that has been done their growth has been more moderate, and this year they gave indication of producing an abundant crop. The system of root-pruning and bringing the roots nearer the surface has also been largely carried out in regard to other trees, both standards and on walls, and the result in every case has been highly satisfactory. Instead of their

making unfruitful wood 5 and 6 feet in length in a season, as they were wont to do, it is now of moderate strength, well ripened and covered with fruit buds. The only attention they received after the operation were occasional syringings in the evenings of hot dry days. This helped to prevent their experiencing any temporary inconvenience from the check.

Let us add that the excellent condition which everything exhibited was highly creditable to the gardener, Mr. Blair. The Grass had all been mown once and some of it twice; the walks were neatly rolled, and there was not a weed to be seen.

Miscellaneous.

The House of the Horticultural Society, No. 21 Regent Street, so long celebrated as the focus of Horticulture in this country, was sold on Wednesday for 2960*l.*, subject to a ground rent of 160*l.* a year.

Colonial Floras.—In another column we give insertion to an able article from the *Gardeners' Chronicle* on the subject of "Colonial Floras," which is well worthy of attentive consideration. We concur with the *Chronicle* in thinking that the usefulness of the different local floras referred to will be very much impaired by the want of a systematic plan of arrangement to which all should adhere. So far as possible, one size, one type, one method of classification should be adopted, and when the flora of each colony is completed, a local index might be prepared, to be afterwards merged in a general index of all Great Britain's Eastern dependencies. The advantages of such a plan would be very great. It would simplify such inquiries as are frequently made of the *Chronicle* and other scientific journals; it would help to fix the nomenclature of plants; it would determine their affinities, exhibit the actual state of our botanical resources, and give a great impulse to the promulgation of the natural sciences. We are glad to learn that Hooker and Thomson contemplate resuming their valuable work, the Flora Indica, which began so well, and which appears to be a grand desideratum. Let our Indian naturalists assist them upon some uniform plan, and the result will be very valuable. It would be impossible to secure uniformity of arrangement unless the work were undertaken under the auspices of the British Government, and it might be reasonably expected that as they have founded observatories at Hobart Town, Madras, Bombay, Ootacamund, and other places for meteorological purposes, with what may be termed a centre at Greenwich, so they would encourage botanical researches on an uniform system in all the various colonies and dependencies—the centre of which would naturally be the Royal Garden at Kew. The scientific agency would generally be found; indeed in India it already exists in many places, as at Saharunpore, Dapooree, &c., but many men able and willing to give their assistance are deterred by the expense which they could not themselves afford, and which without Government aid they might see no prospect of having reimbursed. In the mean time let the botanists of India make a beginning, adopting the systematic classification in Dr. Hooker's various works, as is being done by Mr. Thwaites of the Peradenia Gardens, Ceylon, in his "Enumeratio Plantarum Zeylaniæ." It is also absolutely required that an uniform system of orthography in regard to vernacular names should be adopted. Any one consulting for instance the catalogue of the Madras Exhibition will find the native names of products differently spelt by almost every local committee. The *Chronicle* draws a melancholy picture of the India House repositories. It grieves one to think how many valuable collections that have cost unwearied labours and often much expenditure of money have been consigned to the cellars in Leadenhall Street, where they have been allowed to rot and moulder without the slightest effort to preserve them. This fate however, has not been confined to the contributions to the East India House Museum. We hope for better things now, not only from the present head of the Indian Council, but from the whole Government, either under its present or any other Premier. The Cabinets of Lord Palmerston and Lord Derby have both contained so many men of literary and scientific note that assistance in the advancement of the natural sciences may always be confidently looked for. It is especially to be hoped that Lord Stanley will be more disposed than the Court of Directors to patronise English scientific men. And we counsel the botanists of India to take the initiative in the preparation of Floras of their respective Presidencies, following the same plan, printing with the same type, and on the same size of paper, and thus paving the way for a general enumeration of the plants of all British Colonies and ultimately of the world.—*Madras Spectator.*

Calendar of Operations.

(*For the ensuing Week.*)

—✦—

PLANT DEPARTMENT.

Conservatory, &c.—The occasional bright sunshine and cold drying winds which have recently prevailed will soon, unless means are used to counteract their effects, destroy the beauty of some of the finest specimens of plants in this house, particularly if their blooming has been forwarded in a close moist atmosphere, and, although it is yet too early to bring shading into general use it will be difficult without its assistance to preserve blossoms in perfection during such weather as we may now very soon expect. Blinds must therefore be resorted to; but they should be arranged so as to be easily drawn up or let down. Whatever material is used, therefore, should be light and strong; what is wanted is merely to break the force of the sun's rays without darkening the house. A nice light open canvas forms the best shading. A close net is superior in some respects; but is objectionable in the case of lofty houses. It may soon be necessary to admit air freely to keep down the temperature; but in doing this avoid, as far as possible, allowing cold currents of air to blow over the plants.

FORCING DEPARTMENT.

Pineries.—Look over young growing stock, occasionally examining and repotting such as is found to be in want of more pot room. The temperature may be slightly advanced as the amount of light increases, but this is a matter in which the state of the plants will be the best guide. Aim at securing strong dwarf plants, with a free habit of growth; and if this is obtained, it is immaterial whether the night temperature is 60° or 70°, and very much will depend upon circumstances as to which will be proper. Plants that may be unhealthy and in an unkind state, if kept near the glass, will be benefited by a considerably higher temperature than would be suitable for others in a free state of growth. These are circumstances, however, which can be properly judged of only by those in care of the plants, but they are easily understood by a little careful observation. Use every means to induce a vigorous root action, and if this is obtained free strong growth will result with otherwise ordinary care only.

Vineries.—See that Vines starting into growth are tied up in their places before the shoots get so long as to be liable to be broken off in the operation. Syringe frequently until the leaves begin to unfold; but use the syringe sparingly after that is the case, and only on the afternoons of bright days. Where the buds do not promise to break regularly bend the Vines so as to place those that are backward in the most likely position to catch the sap, and this should be done directly any indications of their breaking regularly are observed. If any of the bunches in houses where the berries are stoned look as if they would be improved by a few more berries being cut out, let this be done at once.

FLOWER GARDEN AND SHRUBBERIES.

If not done previously, the herbaceous ground should now be well cleaned and neatly raked over. Fill up vacancies either from the reserve garden or by sowing annuals in the intermediate spaces. Many plants, as for instance Phloxes, Asters, &c., throw up too many flowering shoots; where such is the case thin them out at once, so as to obtain not only fine heads of bloom but increased strength in the remaining shoots, to enable them to need less assistance from stakes. Hollyhocks for late blooming may still be planted, as it is best where they are grown extensively to plant at two or three times to ensure a succession of bloom. These showy plants are very suitable for long lines, parallel with straight walks, walls, &c., where they produce a grand effect. One of the principal points in pleasure ground scenery is the beauty of turf, which should be kept at all times closely mown, if perfection in keeping is aimed at; but more particularly at this season, when by frequent mowings, cutting the Grass as low as possible, the foundation of a close-bottomed turf will be laid for the season. On poor sandy or rocky soils the verdure must be maintained by occasional waterings with weak liquid manure.

HARDY FRUIT AND KITCHEN GARDEN.

See that recently transplanted trees are not suffering for want of water, a circumstance, which, however, will hardly happen except on dry porous soils, and in such cases the ground should be mulched with decayed leaves to preserve it in a uniformly moist state. Attend carefully to the preservation of blossoms of fruit trees. Where nothing better or more convenient can be obtained, Yew or Spruce branches will be of service, provided they are so fixed as not to be liable to be blown against the blossoms. Remove the covering as frequently as may be convenient on fine days, so as to fully expose the trees to sun and air. Get a supply of Tobacco water in readiness with which to attack green fly immediately it makes its appearance on Peach trees. Sow Broccoli in beds of light rich soil in an open situation for the main crop, and Cabbages, Cauliflowers, &c., in succession. Attend also to sowing small breadths of Turnips about once a fortnight, so as to secure having a regular supply in a fit state for use. Put in a small breadth of some early French Bean on a warm dry sheltered border, and plant a quantity in small pots to be raised in a cold frame and planted out as soon as all danger of frost is over. Use the hoe freely among growing crops to destroy weeds, and keep the surface soil loose and friable.

COTTAGERS' GARDENS.

Where a Tulip bed exists, as is not unfrequently the case in small suburban gardens, let the surface soil now receive a gentle stirring, and in the case of hail, which does serious injury to the leaves, mats or some other kind of covering should constantly be kept ready to throw over them. Continue to plant and propagate (if necessary) herbaceous plants. Make beds for Pansies, Dahlias should now be potted, and if possible started on a slight hotbed made up of dung and leaves. This kind of bed will be found useful for propagating Fuchsias, Geraniums, and indeed all kinds of half hardy summer flowering plants, too tender for standing out all winter. Carnations in pots, if any, should now receive attention—some of them may require a shift. For Chrysanthemums see our Paper of last week.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.
For the Week ending Mar. 24, 1859, as observed at the Horticultural Gardens.

March.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Min.	Mean	Temperature of the Earth 1 foot deep.	2 feet deep.	Wind.	Rain.
Friday 18	○	29.833	29.614	53	28	40.5	48½	48	W.	.03
Satur. 19	15	30.301	30.166	53	26	39.5	48	47½	N.	.00
Sunday 20	16	30.328	30.069	54	41	47.5	48	47	S.W.	.19
Mon. 21	17	30.002	29.864	48	31	39.5	49	47	N.	.07
Tues. 22	18	30.258	30.217	47	30	38.5	48	47½	N.	.00
Wed. 23	19	30.276	30.020	51	43	47.0	48	47	N.W.	.00
Thurs. 24	20	30.016	29.991	53	45	49.0	48	47	N.W.	.00
Average		30.145	29.901	51.3	34.8	43.1	48.2	47.3		.29

March 18—Clear; fine; very fine; slight frost.
— 19—Clear; very fine throughout; frosty.
— 20—Fine; very fine; rain at night.
— 21—Rain; showery; very clear at night.
— 22—Clear; fine; overcast and cold.
— 23—Fine; overcast.
— 24—Uniformly overcast; cloudy; densely overcast.
Mean temperature of the week, 1 deg. above the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 33 years, for the ensuing Week, ending April 2, 1859.

March and April.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 27..	53.6	33.6	43.6	10	0.37 in.	2	6	3	2	3	6	10	1
Mon. 28..	52.9	33.4	43.1	12	0.68	4	6	0	2	2	3	7	3
Tues. 29..	53.6	33.0	44.3	9	0.33	1	4	8	3	2	2	5	3
Wed. 30..	53.9	34.4	44.2	13	0.50	3	5	5	1	5	8	3	3
Thurs. 31..	55.1	34.8	45.0	14	0.30	2	7	2	3	7	4	5	3
Friday 1..	55.0	34.4	44.7	17	0.76	3	7	3	3	4	8	1	4
Satur. 2..	55.7	36.2	45.9	16	1.19	4	4	4	3	4	8	3	3

The highest temperature during the above period occurred on the 27th, 1836, and 2d 1848—therm. 75 deg.; and the lowest on the 30th, 1856—therm. 15 deg.

Notices to Correspondents.

Benzine Collas. Have any of your correspondents tried the effect of this fluid, or of Copland's Borneote of Petroline, for the destruction of the larvæ of the Anobium which infests herbariums? All that is necessary is to enclose a lot of the sheets from the herbarium in a *close* box with a few drops of the fluid sprinkled over them. The spirit is colourless, and the insects will be killed in a few minutes. *J. O. W.*

Botanical Society of Nottingham: *J D.* We know nothing about the person or persons sending out pills under this name. We advise you to take care. It is we presume some trade speculation.

Buphane Toxicaria: *L D.* The scape comes before the leaves and bears from 100 to 250 flowers, which form pink stars with 6 narrow divisions shorter than the 6 stamens. The flower stalks are clubshaped and bear at the summit a triangular ovary. The coats of the bulb are brown. The leaves are glaucous, both blunt and acute, and either wavy or straight. There is a figure and full account of it in the 7th vol. of the Botanical Register, where it is called Brunsvigia toxicaria.

Frankincense: *H.* The drug used by the ancients, when burnt, for perfuming the air, was the gum resin of Boswellia serrata, a tree inhabiting the mountains of Coromandel. This is Olibanum, the Λιβανος of the Greeks. Common Frankincense, or Thus, is a resin naturally discharged by the Spruce Fir in Switzerland. The common Frankincense of the London shops is said to be nothing more than concrete American Turpentine,

French Advertisement: *M A S.* Apply to the Librairie Agricole de la Maison rustique, Rue Jacob, No. 26, Paris. You will gain the information there *if anywhere.* But France is not an advertising country like England.

Glass: *R H.* The thickness of Hartley's rough plate is unimportant; except that the thicker it is the heavier, a serious matter where iron frames (very bad things by the way) are employed. We said that rough plate secured the diffusion and prevented the concentration of light, which is not open to exactly the interpretation you have given.

Hedges: *T.A.M.* We do not advise you to cut your young Laurustinus hedge hard in. Carefully hand-prune it in April, cutting out very strong pieces and leaving all the healthy young twigs. Of course the side of each Laurustinus, where the plants touch, *will* die. You must therefore be satisfied with preserving a good healthy surface.

Honey Dew: *Old Sub.* This is a natural secretion of sugar caused by peculiar atmospheric conditions; such perhaps as a sudden absorption of water with greater rapidity than it can be parted with by insensible perspiration. We do not believe that it is caused, to any extent, by Aphides although such insects do discharge a sweet fluid—which may be regarded as a sort of boney dew. But they frequently accompany it feeding on the secreted sugar.

Insects: *L B N.* The small mass of objects on the Rose twigs is the spiral group of eggs of the lackey moth, Bombyx lanestris, the young from which would have been hatched in May and devoured the foliage of your tree.—*A J.* The fluid alluded to is benzine collas. It is much used for cleaning kid gloves, and is sold at 114, Great Russell Street, London, W.C.; at York, by Raimes & Co.; and at Manchester, by Woolley. We believe Copland's borneote of petroline is equally efficacious and rather cheaper. *W.*

Names of Plants.—We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have or could have undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*A Gold spangled blue paper box*, without note, has reached us. It contains a single flower of what seems to be Dendrobium cucullatum.—*J S P.* It is some Peziza, but not the P. reticulata of Greville.—*H Rose.* Hardenbergia monophylla.—*G P.* 1, Vinca major; 2, the remains of Galanthus plicatus; 3, Borago laxiflora; 4, Nuttallia cerasoides.—*Sub, Reading.* Saxifraga oppositifolia.—*Sub.* Forsythia viridissima.—*Hill Street.* Photinia glabra.—*A Young Gardener.* Carissa Carandas.—*I despair.* Canthium spinosum.—*J N.* 1, Dendrobium aureum; 2, Epidendrum ciliare; 3, Asplenium formosum; 4, a bit of some Elaphoglossum.—*A Lady.* The Arbre à perruque is the common Venetian Sumach: Rhus Cotinus.—*G.* The common Cornus mascula.—*A Y.* Your Fern is a variety of Cystopteris fragilis, called sempervirens, a native of Madeira, and probably not quite hardy. Send the other when in flower.

Spergula pilifera: *W M.* This little plant is a native of the Alps of Corsica, whence we have dried specimens.

Stove Plants: *H P C.* Sweet's Hothouse and Greenhouse Cultivator is most like what you want. Information may be also gathered from Paxton's Botanical Dictionary. Both Psychotria and Sesbania are stove genera.

Vine Leaves: *G P.* The little green excrescences of which you complain do no harm. They however indicate that your house is very close and damp, and not sufficiently ventilated.

Misc.: *L A B.* The alteration has been forced on us by the Post Office.

THE PATENT

NITROPHOSPHATE OR BLOOD MANURE COMPANY (Limited),

CONSISTING OF TENANT FARMERS, OCCUPYING UPWARDS OF 30,000 ACRES OF LAND.

TRUSTEES.

Abel Smith, Jun., Esq., Walton House, Ware, Herts. | Major-General Hall, M.P., Western Colville, Linton, Cambridge
Charles Dimsdale, Esq., Essendon Place, Herts. | John Brady, Esq., M.P., Warwick Terrace, Belgrave Sq.
Edward Ball, Esq., M.P., 8, Belgrave Road, Pimlico

DIRECTORS.

Chairman.—Jonas Webb, Esq., Babraham, Cambridgeshire.
Deputy-Chairman.—John Collins, Esq., Myddleton Square, Pentonville.

Edward Bell, Esq., Tottenham, Middlesex | Robert Leeds, Esq., West Lexham, Norfolk.
John Clayden, Esq., Littlebury, Essex | Robert Morgan, Esq., 72, Camden Villas, Camden Town.
Richard Hunt, Esq., Stanstead Abbot, Herts. | George Savill, Esq., Ingthorpe, near Stamford.
Thomas Knight, Esq., Edmonton, Middlesex. | William Collins, Esq., 105, St. John Street Road.

Bankers.—Messrs. Barnett, Hoare & Co., Lombard Street.
Solicitors.—Messrs. Kingsford & Dorman, 23, Essex Street, Strand.
Auditor.—G. W. Brown, Esq., 28, Parliament Street.
Manager.—Mr. James Odams. | *Secretary.*—Mr. C. T. Macadam.

Offices, 109, Fenchurch Street, London.—Manufactory, Plaistow Marshes, Essex.

The Directors beg to inform their Friends and the Agricultural Public that the following Manures are now ready:—

ODAMS'S BLOOD MANURE FOR CORN AND MANGEL.

ODAMS'S BLOOD MANURE FOR ROOTS.

ODAMS'S SUPERPHOSPHATE OF LIME.

Full particulars may be had at the Company's Offices, or of the local Agents.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. Nesbit, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

LONDON MANURE COMPANY, removed to 116, Fenchurch Street, E. C. (Established 1840), have the following MANURES ready for delivery:—

CORN MANURE for SPRINGTOP DRESSING
URATE
MANGEL MANURE
SUPERPHOSPHATE OF LIME
BLOOD MANURE
} all of guaranteed quality.

In consequence of the reduction in the price of raw material the London Manure Co. are enabled to lower the price of their Superphosphate of Lime, and to materially improve the Corn Manure and Urate.

The London Manure Co. also supply PERUVIAN GUANO (direct from Messrs. A. Gibbs and Sons), SULPHATE of AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of value. Wholesale dealers supplied.
116, Fenchurch Street E.C. Edward Purser, Secretary.

REDUCTION IN PRICE OF LAWES'S MANURES.

MR. LAWES begs to announce that he has this season reduced the price of the Manures manufactured by him, viz.:—

TURNIP MANURE	from £7	to £6	6
SUPERPHOSPHATE OF LIME ..	,, 7	to 6	6
MINERAL do. ..	,, 6	to 5	5
BARLEY MANURE..	.. 8	0	

Prof. Way and Dr. Voelcker have sampled from a bulk of 5000 to 6000 tons at his factories, and their report and analyses are given in full in Circular to be obtained on application at his office, 1, Adelaide Place, London Bridge, E.C., or of his local Agents.

N.B. Genuine Peruvian Guano direct from Messrs Gibbs, Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures. American Cotton-seed Cake supplied.

SOLUBLE PHOSPHATE OF LIME.

FREDERIC CORNWELL begs to inform his friends and the Agricultural public that he can now supply a "SUPERPHOSPHATE of LIME" superior to anything yet produced. Each Bag guaranteed to contain from 20 to 25 per cent. of "Soluble Phosphate of Lime." Price 5*l.* 10*s.* per ton, delivered free to any Railway or Wharf in London. Dealers and the trade supplied. Linseed-cakes, Cotton-cakes, and all descriptions of Artificial Manures at lowest market prices.
Offices, 7, Great St. Helen's, London, E. C.

BURNARD, LACK, and CO.'S CONCENTRATED SUPERPHOSPHATE OF LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.

CONCENTRATED TURNIP MANURE, equal in value to the preceding.

Of these Manures Dr. Voelcker says:—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."

Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to Burnard, Lack, & Co., Sutton Road, Plymouth.

ESTABLISHED 1812.

H. and T. PROCTOR'S TURNIP MANURE.—Messrs. H. & T. P. draw particular attention to this valuable Manure, which contains all the elements necessary for the full development of the Turnip Crop, so combined, that, from their chemical knowledge and long experience, they feel satisfied is most advantageous to the consumer. It has been very extensively used by most of the eminent Agriculturists of the day, and has attained a high reputation throughout England, Scotland, and Wales, and, they venture to say, is unrivalled for the weight and quality of the Bulbs which it produces. The application of this Manure to the Turnips will be found to benefit considerably the after crops of Barley, Clover, and Wheat.

POTATO, GRASS, BARLEY, CLOVER, AND WHEAT MANURES; also BONE DUST, PERUVIAN GUANO, and SUPERPHOSPHATE of LIME, warranted of the best quality.

Apply to H. & T. Proctor, West of England Depôt for Artificial Manures, Cathay, Bristol; or Proctor & Ryland, Birmingham, and Saltney, near Chester.

GRASS CROPS.—All descriptions of Grass Land should be dressed with Manure not later than the end of March. CUERO GUANO for this crop, and also for spring corn, is now ready for delivery, price 7*l.* 10*s.* per ton for Grass, and 8*l.* 8*s.* for Corn.—Manufacturers and Patentees, John Chisholme, Son, & Co., 33, Mark Lane, E.C.

SUCCESS OF THE NEW GUANO; Imported under Lease from the Crown.—Though the experiments with KOORIA MOORIA GUANO were made late in the season, and under adverse circumstances, the successful results obtained confirm beyond doubt Professor Voelcker's report—(in No. 41, Part I., vol. xix., Royal Agricultural Society's Journal)—that Ammoniacal manures, applied to Turnips in the experimental field, kept back at first the crop, and had no beneficial effect either alone or in conjunction with phosphates.

The Kooria Mooria Guano is essentially a phosphatic manure, containing sufficient ammonia for roots, and, with a mixture of one-fourth of ammoniacal guano, cannot be excelled for either top-dressing or grain crops. It is a natural deposit, and will be delivered as imported, free from risk of adulteration. Deeply impressed with the necessity of encouraging the import of this valuable manure, her Majesty's Government has given such increased facilities for shipment, that arrangements have been made for a considerable supply. Purchasers can be supplied with suitable quantities from cargoes now on sale, containing from 45 to 66 per cent. phosphates. Present prices, 4*l.* 10*s.* to 6*l.* 10*s.* per ton, on applying to Joseph Hindson, Broker (one of the Lessees under the Crown), 20, North John St., Liverpool. Government Lessees: Ord, Hindson, & Hayes.

"Greystoke, Cumberland, Dec. 16, 1858.

"Dear Sirs,—I beg to inform you that I applied the Kooria Mooria Guano I had from you for Turnips, on land of a loamy character, incumbent on a stiff clay subsoil, and recently drained. On each side of the plot sown with Kooria Mooria Guano were Turnips manured with best Peruvian Guano. The quantities applied of each sort were of equal weight for weight per acre. The crop—a very good one throughout—is now being eaten off with sheep. Very little perceptible difference can be discovered, but if anything that difference is in favour of the Turnips sown with Kooria Mooria Guano.

(Signed) "John Barker."

"Messrs. J. & J. Graham, Guano Merchants, Penrith."

A Pamphlet, "Hints on Guano," containing a large number of reports from well-known agriculturists, and analysis of the cargoes here, may be had of the Broker, at the above address.

200 ONE, TWO, and THREE-LIGHT MELON BOXES and LIGHTS, of the best seasoned materials, ready for immediate use.—Jas. Watts, Hothouse Builder and Hot-water Apparatus Manufacturer, Old Kent Road, London.

SHAW'S TIFFANY.—The best and cheapest material for Shading Conservatories, Protecting Fruit from Birds and Wasps, &c. Sold in pieces 20 yards long by 38 inches wide. No. 1, best quality, 5*s.* per piece; second quality, 4*s.* per piece. Extra strong and thick (see Circular sent free by post with samples).

Address John Shaw & Co., Manufacturers and Dealers, Princess Street, Manchester.

SHADING.

BROWN'S FLORAL SHADING still maintains its superiority for cheapness and efficiency over all other materials used for a similar purpose, viz., shading plants under glass from the scorching rays of the sun, protecting Wall Fruit Trees when in bloom from frost, and preserving the fruit from the attacks of birds, flies, and wasps. Sold in pieces 20 yards long, 38 inches wide:—

No. 1 per piece .. 4*s.* 0*d.* | No. 2 per piece .. 4*s.* 3*d.*
No. 3, extra stout, 18 yards long, by 39 ins. wide, 7*s.* per piece.

To be obtained of all the principal Nurserymen and Seedsmen in town and country. Samples sent free on application to the Manufacturer, Charles Brown, Greenheys, Manchester

"FRIGI DOMO."—Patronised by her Majesty the Queen, the Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, and — Collier, Esq., of Dartford.

PROTECTION from COLD WINDS and MORNING FROSTS.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths. Two yards wide, 1*s.* 6*d.* per yard run; four, 3*s.* per yard. Also, an improved make for Shading Purposes. Three yards wide, 2*s.* 6*d.* per yard run.

Elisha Thomas Archer, whole and sole manufacturer, 7, Trinity Lane, Cannon Street, City, and of all Nurserymen and Seedsmen throughout the kingdom. "It is much cheaper than mats as a covering."

TO PIG AND POULTRY FEEDERS AND MILLERS.

CHICKEN RICE, 7*s.* 9*d.* per cwt., in bags 1¾ cwt. each. SCREENED RICE, 10*s.* per cwt., in bags 1¾ cwt. each. RICE MEAL, 6*s.* 6*d.* to 8*s.* 6*d.* per cwt. RICE for grinding. An allowance per Ton. American Oilcake, in barrels and bags, per ton only. Locust Beans, per ton.—Sold for Cash only by W. & R. Jupp, 6, Cross Lane, St. Mary-at-Hill, Eastcheap.

TO HORSE PROPRIETORS.—If you wish to have your Horse in high condition with a small allowance of corn use our CONCENTRATED DRAY and AGRICULTURAL HORSE MEAL, manufactured according to the most recent researches in the study of physiology. Forwarded carriage paid to any railway station, in cwt. at 30*s.*, and 15*s.* per half cwt. on receipt of Post-office Order, payable to Kemp & Skey, The Mills, Louth, Lincolnshire.

THORLEY'S FOOD FOR CATTLE.—Every person having an interest in domestic or farm animals should obtain a supply of this celebrated and economical food which will prove invaluable during the approaching season. For keeping horses in good condition, it is unequalled. Pigs fatten with surprising rapidity upon it, and their flesh increases in flavour and value. Cowkeepers will find great advantage in the increased quantity and improved quality of the milk during its use. All animals are benefited by it. A pamphlet on this interesting subject, accompanied by Testimonials from the principal Nobility, Gentry and Agriculturists forwarded on application. In casks containing 448 feeds (measures inclosed), price 50*s.*, carriage paid to any Railway Station in the United Kingdom. Post-office Orders payable to Joseph Thorley, 77, Newgate Street, London.—N.B. The public are cautioned against being imposed upon by worthless imitations.

AGRICULTURAL MACHINERY.

E. R. and F. TURNER, Ipswich, manufacture Prize Mills for Crushing Corn, Seed, Malt, &c.; Portable Grinding Mills, Steam Engines fixed and portable from 2 horse-power and upwards; Threshing Machines, Chaff Cutter, Oilcake Breakers, Horse Gears, Saw Tables, &c., all of a superior description and adapted for Home, Colonial, and Foreign use. Illustrated Price Lists sent free on application.

MR. SMITH will SMASH UP a piece of his Clay Land, Wheat Stubble, about the end of this month. Gentlemen who may be desirous may then see his Apparatus at work.—A Card, stating the day, may be had by applying to him at Woolston; or to Messrs. Howard, of Bedford.

SIGMA'S BEAN, MANGEL, & CORN PLANTERS (5 Depositors), HOES, &c. The "Multum in Parvo," combining Cultivator, Horse Hoe, Ridge Plough, Subsoiler, Broadshare, and other forms; all expanding. Complete 7*l.* 7*s.* Prospectus sent.—C. Powell, Hurstgreen, Sussex.

TO LANDOWNERS.

THE PERMANENT WAY COMPANY having been appointed the sole Licensees for the use of Dr. Boucherie's Patent Process for Preserving Timber, beg to inform Landowners and others interested in the use of English Timber that a Pamphlet, with full explanations of this cheap and most effectual process, may be had gratis on application to the undersigned. Landowners having Beech, Elm, Fir, or other Timber fit for Railway Sleepers are requested to communicate particulars of quantity, locality, and prices.
William Howden, Secretary.
26, Great George Street, Westminster.

COLLEGE OF AGRICULTURE and CHEMISTRY, and of PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.
Principal—J. C. Nesbit, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.
Patron—His Royal Highness the Prince Consort.
President of Council—Earl Bathurst.
Principal—Rev. J. S. Haygarth, M.A.
Professors, &c.
Chemistry—J. A. C. Voelcker, Ph.D., F.C.S. (Consulting Chemist to the Royal Agricultural Society of England).
Zoology, Geology, and Botany—Jas. Buckman, F.G.S., F.L.S.
Veterinary Medicine and Surgery—G. T. Brown, M.R.C.V.S.
Surveying, Civil Engineering, and Mathematics—J. M. Grindrod, C.E.
Practical Agriculture—J. Coleman.
Assistant to Chemical Professor—A. Sibson.

Students are admitted after the Summer and Winter Vacations, also in April and October.

Fees for Boarders:—Under 16 years of age, 55 guineas per annum; between 16 and 18, 70 guineas; above 18, 80 guineas. The fee for Out-students is 40*l.* per annum.

Prospectuses and information can be had on application to the Principal.

The Agricultural Gazette.

SATURDAY, MARCH 26, 1859.

MEETINGS FOR THE ENSUING WEEK.

Wednesday, March 30—Agri. Society of England.. Noon.

"Mr. Smith will smash up a piece of his clay-land - Wheat - stubble about the end of this month."—Most of our readers have, doubtless, seen his advertisement. The "smashing up" is effected by drawing a three or five-tined cultivator through it, first one way and then another, about 8 inches deep. Of course it ought to be done before winter, and if done then very little additional cultivation is needed in the spring. But it so happens that in the present case the month referred to is the present month of March, and we advise those of our readers who have not already seen it at once to ascertain from Messrs. Howard, of Bedford, the exact date of the operation, and go and witness it.

So laborious a piece of work is enough for ten or a dozen strong horses, the land being an exceedingly stiff clay. In ploughing up a Bean stubble for the Wheat crop in the autumn—turning back the old furrow slice, for that is nearly all that ploughing means—you shall uncover the print of some 16 or 20 shoes belonging to the four or

five horses which left a lasting impression there (visible now as if made yesterday), when last they ploughed the Wheat stubble for the Beans. This impression repeated year after year at a given depth below the surface fairly cuts off the subsoil from its offices of storehouse, drain, &c., for the plant, and leaves the farmer to make what he can of some 5 or 6 inches of clay soil spread as if upon a pavement. The first "smashing" up the land receives is thus work for 12 or 14 horses. But if four horses in a row below the cultivated soil do such mischief, what will not 14 horses struggling along over its surface do? It is true the cultivator follows them, and to some extent obliterates their trampling, but this unavoidable evil of horse-power is a very great one; ultimately fatal, indeed, to the fertilising influence of "smashing up" performed that way.

"Smashing up," if done at all, must be done by steam-power: but you do not gather that from Mr. Smith's advertisement. And herein lies, as we believe, the crowning distinction between Mr. Smith and his competitors in the *practical* prosecution of steam cultivation. Mr. Smith, dissatisfied with his ploughs and other time-honoured tools for clay land cultivation, set himself to construct better implements before the idea of steam-power for their traction had occurred to him. He—a farmer—realised his object first, and afterwards cheapened the process by the substitution of another power for that of horses. Others—mechanicians—have placed before themselves as the problem:—Given steam power—how best to employ its force in cultivation? Mr. Smith had already by his ingenious tool realised by one operation and to his entire satisfaction the object aimed at, and the problem with him was:—Given a thoroughly cultivated soil—how best to yoke the steam engine to the tool by which it has been cultivated? In 1855 accordingly he went to the Carlisle meeting of the Agricultural Society of England to buy a steam engine and commission a windlass. These were supplied to him by Ransome and John Fowlee respectively, and he has them still in operation.

It is only latterly that Mr. Smith has commenced making his machinery for others. His object originally was the cultivation of his own small farm of 110 acres of clay land. It has not been, we believe that any one who knows him will say, for reputation or for premiums or for wealth, that he entered on his present course. He has neither sought for patronage nor complained of neglect. While others have been making machines and seeking customers, he has been cultivating his farm and seeking after improvements in the tool by which it is done. The upshot of all this is what might have been expected. He has not gained premiums. The protest against the dilatory decision of the Agricultural Society upon this subject has all along been made in behalf of another, in whose favour indeed the decision has at length been made. Even the distinction won by Mr. Smith's steam cultivator is awarded to Messrs. Howard, who made it, not to Mr, Smith, who invented it. But it is Mr. Smith who is at this moment steam cultivating England.

While others were occupied in striving for an award which would direct the stream of customers in their particular direction, Mr. Smith was quietly cultivating his stiff clay farm, and laying it open for public examination and inspection. The consequence is that Messrs. Howard, to whom he has entrusted the making of his tools, can point to more than 40 occupiers of land in different parts of the country who have purchased Mr. Smith's apparatus and are cultivating their land by steam.

His neighbours, the best of all judges in such a case, are copying his example, and from them alone has he received any testimonial to his merits.

But we must give a short description of his farm. Mr. Smith, of Woolston, near the Bletchley station of the London and North-Western Railway, is a yeoman of the county of Bucks. His small patrimony of 200 acres, 110 arable and 90 pasture, has been in the possession of his family for more than 200 years. It cannot be described in the language of the auctioneer as lying within a ring fence. It lies in detached fragments—in a country of clay land and small fields. A more unlikely district for steam cultivation can hardly be imagined. It has at length, by throwing fields together, been brought into somewhat better shape—but Mr. Smith's plan of steam cultivation allows him to work a five-cornered field with narrower headlands than horse-power requires; and its former awkward form did not prove a hindrance to him. Most of the land is a very fertile clay—some of it a rich loam—a good deal a stiff and comparatively poor soil. It is on the stiffest portion more especially that the "smashing up" by steam is most efficient. This plan of cultivation has proved an exceedingly effective fallow. The land under it is thoroughly clean, which formerly, when it used to be ploughed and repeatedly surface buried, it never was. It is all thoroughly drained.

Mr. Smith's object is to use the 45 available days of September and October in "smashing up" Bean stubbles for Wheat and Wheat stubbles for roots—while his horses are ploughing Clover stubble for Wheat, and harrowing and drilling the steam smashed land. By thus taking the heaviest work at the heaviest season, he calculates on saving one-third the horse-power of a 15-horse power farm by an 8-horse power engine consuming for 45 days about 1 cwt. of coal per horse power per diem. It is no part of his faith that steam power is to do everything for us on a farm. It has displaced horse-power on the road, but it does not take us to our homes even now. We use it so far only as is desirable for the purposes of locomotion, and take horse-power still whenever it is most convenient. So upon the farm; it is chiefly the "smashing up" of the soil and the threshing of the corn to which it is confined. We shall have headlands to cultivate wholly, many other part processes in the work of cultivation to do all over the land, all carriage to perform, and work upon the farm sufficient for two-thirds of our present horse-stock left to be done after steam-power has done all it does at Woolston.

But we have already exceeded our space, and must postpone for a week any further detailed statement of the cultivation of this farm. Enough has been said to prove both the efficiency and practical character of the operations carried on, and the good sense as well as enthusiasm of Mr. Smith, to whom they are due.

Another great sale of Short-horns took place on Wednesday last. The herd of the late Mr. Harvey Combe, of Cobham Park, Surrey, was then brought to the hammer; and Mr. Strafford has the satisfaction of again connecting his name with another extraordinary illustration of the great value of well-bred cattle. Sixty-three head of cattle, namely 35 cows and heifers, 17 heifer calves all by "Marmaduke," and 11 bulls and bull calves, constituted the herd. The whole sold for 4838 guineas, averaging 80*l.* 12*s.* 4*d.* each, being thus about on a par with the herds of Mr. Ambler, Mr. Majoribanks, and Sir C. Knightley, which sold—50 for 84*l.* each, 59 for 90*l.* each, and 78 for 80*l.* apiece, respectively. The 35 cows and heifers sold for 2719 guineas, averaging 81*l.* 11*s.* 4*d.* each. Among them were "Cambridge Rose 6," purchased at the Kirkleavington sale and sold now at 10 years and 3 months old, to Mr. Fisher for 200 guineas—"The Beauty," her produce by "Puritan," sold to Mr. Jonas Webb at 5½ years old for 160 guineas—"Darlington 8," sold to Colonel Pennant for 120 guineas—"Leila," 3 years old, sold to Captain Spencer for 170 guineas—"Dustie," 2 years and 10 months old, sold to the Duke of Devonshire for 200 guineas; and "Gaiety," 2 years and 8 months old, sold to Mr. Rich, of Didmarton, for 150 guineas. The remarkable feature of the sale was, however, the price reached by the calves, all of them by "Marmaduke." Seventeen heifer calves, *i. e.* reckoning all as such, calved since March 1858, sold for 1253 guineas, averaging 77*l.* 7*s.* 10*d.* each. Among these Mr. Wetherall purchased "Samphire" for 120 guineas; "Looey," the calf of Capt. Spencer's Leila, named above, realised 105 guineas; "Blush," the calf of Mr. Webb's Beauty, was bought by Mr. Hale for 110 guineas; and Ayah, a nine months' calf, was bought by Mr. Crawley for 110 guineas. Much the highest price was however reached by "Moss Rose," the calf of "Cambridge Rose 6," which at 8 months old was sold to Mr. Hale for 260 guineas. She is certainly a beautiful animal, of perfect form and colour and extraordinary pedigree. Her dam "Cambridge Rose 6," with her produce, viz. two bulls and three cows and calf, sold for 841 guineas, *i.e.* 147*l.* 7*s.* each; thus proving the estimation in which the influence of Mr. Bates's breeding on the value of stock is still held.

The bulls were 11 in number, realising 866 guineas, or 82*l.* 13*s.* 3*d.* apiece. The only remarkable price reached was by "Marmaduke," who was bought by Colonel Pennant for 350 guineas. He was in perfect condition, and considering the quality of his stock just sold, he ought to have fetched a higher price. The sum now realised is 150 guineas less than that at which he was bought two years ago. But it must be remembered that his value has already been to a great extent received, and in the quality of his calves and the prices they have reached, Mr. Combe has already been repaid for his former spirited outlay.

COST OF HORSE-POWER.

In the *Agricultural Gazette* of March 5 there are some remarks on the cost of horse labour. Reading them has induced me to send you the following memorandum which I drew up lately to arrive at the cost of ploughing an acre of land with horses. I have two farms in my own hands; on each I keep an account of the work done by each horse, not reckoning fractions of a day less than half. I debit the horses with the cost of their food, veterinary attendance, and shoeing. The total charge, divided by the number of days they work, I consider as the cost of a day's work.

Below are the results for two years on one farm, for three on the other:—

	Horses.	Days.	Cost per head.
			s. *d.*
1855	6	1496	1 3
1866	5	1185	1 8
1855	8	1606	1 4
1856	8	1763	1 8
1857	8	1950	1 0

Average cost of one day's work, 1*s.* 5*d.*

The items omitted in my charge are green food or grazing, and straw. I have hitherto considered that the manure paid for the straw, but this is not strictly correct. Each horse uses about 20 stones of straw in a fortnight; taking average cost of Wheat, Barley, and Oat straw, say at 4*d.*, I get for a fortnight 80*d.*; now 20 stones of straw produce about a cartload of fresh manure, which I put at 36*d.*; the charge for a fortnight is therefore 80*d.*—36*d.* = 44*d.*, or say 3*d.* per day.

I consider the produce of one acre of Grass quite the outside of what each horse gets; this at 60*s.* per acre gives per day 2*d.* The account, therefore, stands—

Cost from books	1*s.* 5*d.*
Straw	0 3
Grass	0 2
	1 10
Or, for two horses	3 8

To determine the cost of ploughing something must be added for wear and tear of animal and tools, as also for man's wages.

	s. *d.*
Two horses, plough and harness—say 80*l.* at 20 per cent. gives for daily cost, in round numbers	1 0
Daily cost of two horses above	3 8
Ploughman	2 0
	6 8

It may be assumed that two horses can plough an acre a day; but say for a continuance they get over nine-tenths of an acre, therefore cost of ploughing 1 acre is equal to 7*s.* 5*d.*

This account also shows that out of 310 working days, each horse on an average worked 230 days. Probably a little more than is done for pure farming—as the account includes carriage of coals, stone, lime, sand, luggage, &c., all incidental to the work about a country residence. N.B. The farms are in Scotland.

C. V. B., 56, *Westbourne Terrace.*

A NEW DRAIN TILE.

[The following is part of Mr. Ferguson's paper on Subsoil Drainage given before the Newcastle Farmers' Club.]

For some years, while I was in business in Glasgow, and often employed in giving advice in draining and other agricultural operations, I was offered a commission for the sale of draining tiles and pipes of all sizes and shapes, by a manufacturer having a tilery and circular kilns, a description of which I have given, about 8 or 10 miles to the south of Glasgow. This led me into a great deal of correspondence with many gentlemen, but chiefly with landed proprietors in the West Highlands, to whom I sent from time to time large quantities of draining pipes. They were put into small vessels, and often sent through the Crinan Canal, sometimes as far as the Island of Mull, and Stornoway, in the Island of Lewes. Being consequently loaded and unloaded so often, as well as carted inland, considerable breakage was unavoidably the result, and a loss in numbers sometimes sustained of from 10 to 15 per cent. The expense, therefore, including railway carriage, loading, and freightage, as well as cartage, made draining to these proprietors a very expensive business, and very often serious complaints were made in consequence. This led me to think that possibly some other material might be found as a substitute for clay pipes in draining, and knowing many of these Highland proprietors had large quantities of peat moss on their estates, I resolved to try if tubes could not be made of it, which although, perhaps, of a rude form, might suffice for conduits, and thereby lessen the expense of draining. I therefore caused a man one day to bring to my office three barrow-loads of good black, decomposed peat earth, to make an experiment, and having got two circular dies made for one of Ainslie's pipe-tile machines, the core of each being 3 inches, I caused the peat to be put through the machine. The pipes were cut only 10 ins. long, for I found that as they were heavy and difficult to handle, they could not with advantage be cut of longer lengths, and it was discovered, also, that if there were any fibrous matter in the peat, the cutting wire of the machine would not go through it without making a very ragged end, and therefore tubes

could not be made, unless the peat earth was thoroughly decomposed. The next experiment was in drying them, and this was done by the heat of a fire; but it appeared that unless they were constantly turned over, the evaporation being more on one side than another, made them warp and twist very much. After some other trials, and getting two dies made of a hexagon form on the outside, with a projecting nozzle of about 3 inches, the tendency to warp and twist was greatly overcome, especially when the tubes were put on shelves under cover, and supported on each side by brackets. Another difficulty, however, was yet to be surmounted, for it occurred to me that if the pipes were soaked in water for a time in a drain, they might again get into a soft pulpy state, collapse, and ultimately become an obstruction in place of a conduit for the discharge of water. I therefore put one of the dried pipes into a boiler to test them, and boiled it for some days, and when taken out, it was as hard and as inflexible as when I put it in, and as you now see them; for, gentlemen, I have samples of these peat earth tubes here, which you can examine, and pass your opinion upon them. The following year after this matter became generally known, the Highland and Agricultural Society of Scotland, of which I happen to be a member, offered for competition a prize of a gold medal for the best essay or report on the use of peat as a substitute for tiles in draining. Knowing something of this from previous experience, I set about to ascertain the expense at which peat tubes could be made, the number daily, and other particulars, so that if I attempted to write a paper on the subject, I might have a fair chance in competition with others. I therefore looked about for a small piece of land to drain near to a peat moss, where proper material could be got for the experiment. This I found on the farm of Torfin, near to Mid Calder, on the Caledonian Railway, within about 10 or 12 miles of Edinburgh. To that place, I accordingly sent a man with one of Ainslie's tile machines, properly prepared with two hexagon dies. When the peat was thrown out to the side of the machine, he, with the assistance of three boys, made at an average about 2000 each day, and the contract price at which I agreed with him was 5*s.* per thousand, that sum including not only the making, but placing them between brackets upon shelves under cover as the tubes were dried by the atmosphere. The drains were cut in a hard retentive subsoil to the depth of 3 feet 6 inches, and the pipes put in in the usual manner, and I found the expense of the whole to average scarcely 1*l.* per acre, the distance between the drains being 7 yards. After I had completely tested and proved the efficiency of the peat tubes, I wrote my paper, giving all particulars. This I sent under a motto to the secretary of the Highland and Agricultural Society in Edinburgh, and after some time, I am glad to say, the medal was awarded to me. When this new mode of making draining tubes became known, I was led into a great deal of correspondence with many gentlemen in the three kingdoms, and even with gentlemen on the continent, for I remember getting an order for a machine from a party in Frankfort-on-the-Maine, in Germany. Many Highland gentlemen expressed much anxiety on the subject, and I believe some of them ordered machines for the making of peat tubes, but having soon after come to this part of the country, I lost all interest in the business, and consequently I never heard what progress was made.

DR. VOELCKER ON LIQUID MANURE.

I have been reading Dr. Voelcker's paper on liquid manure in the last number of the Society's Journal, and it seems to me the argument is not so clear against liquid manure as Dr. Voelcker makes it appear.

In the comparison of the muddy liquid from Tiptree Hall, if we make a correction for the specific gravity, which I think ought to be done, we shall find that 50,000 gallons will contain 39·15 lbs. of ammonia. In practice we seldom get guano with a larger proportion of ammonia than 16 per cent.; at this rate, and taking the price as Dr. Voelcker does at 13*s.* per cwt. with 2*s.* per cwt. added for carriage and application to the land, it will require 2·18 cwts. of guano at a cost of 1*l.* 12*s.* 8*d.* to supply the same quantity of ammonia, that is, 2*s.* 8*d.* more than Dr. V. makes it.

The expense of applying the liquid manure is given by Dr. V. as from 1½*d.* to 2*d.* per ton, and the calculation is made at the rate of 2*d.* Mr. Mechi in his book "How to Farm Profitably" says (page 89), that 1*d.* per ton would pay 7½ per cent. interest and all working charges," and he even hints (page 153) that it is not more than ¾*d.* per ton; it is therefore scarcely fair to calculate from the highest estimate he has ever given, but as he puts it (page 102) at 1½*d.* to ½*d.* let us take the medium, 1¾*d.*, and we shall find that the cost of applying the 50,000 gallons will be 32*s.* 6¼*d.* instead of 37*s.* 2*d.*, showing on the whole calculation a difference of 1¾*d.* in favour of liquid manure instead of 7*s.* 2*d.* against it, that is, my calculation reduces the cost of liquid manure by 7*s.* 3¾*d.* per acre per annum.

But this comparison with guano is made with a sample of liquid manure, which stands lowest but one in the proportion of ammonia among the six samples analysed. The liquid from Westonbirt is 20 times as rich in this important ingredient; but if we take the average of the six samples, which is 34.997 grains of ammonia in a gallon of liquid, and correct it by the average specific gravity, which is 1.0032 on five samples (for it is not given for No. 3), we shall find in 50,000 gallons about 270 lbs. of ammonia. It will therefore require 15.26 cwts. guano at a cost of 11*l.* 8*s.* 10*d.* to supply as much ammonia as may be supplied by liquid manure at a cost, as I have shown, of 1*l.* 12*s.* 6¼*d.*, that is, of the average value of these six samples.

While therefore, as Dr. Voelcker says, "It is well to remember that 50,000 gallons may not contain more fertilising matter than 2 cwt. of good Peruvian guano," it is equally important to remember that if the tanks and drains are properly arranged it is far more likely to contain as much fertilising matter as 15 cwt. of the same guano. Indeed if the liquid can be obtained as concentrated as the Westonbirt sample, 50,000 gallons would be as valuable as upwards of 2 tons of the best guano.

My own opinion is that as most farms are at present conducted and stocked, the less tanks are used the better; let the buildings be spouted, and the stock, whether in yards, boxes, or stalls, properly and carefully "bedded," and there will be very little surplus moisture to require a tank; but where a large head of stock is kept and straw is economised, especially if sparred floors are adopted, then there will be plenty of liquid manure, and by all means take care of it. Whether it should be used greatly diluted or in a more concentrated form is another question, and must, I presume, be decided chiefly by the facility you possess for dilution and distribution; where you have only the old water cart for the purpose the carriage is so expensive that most will prefer to apply it pretty strong; but where steam pumps are employed the evidence seems pretty uniform in favour of abundant dilution.

It is to be regretted that Dr. Voelcker has not given us more full information as to the particular instances in which, as he says, "little benefit results from the application of liquid manure to clay soils and fertile friable loams," and especially of the case in which his "remarkably intelligent" friend found the entire waste of his tank liquid the best mode of disposing of it. *Z. A. Z.*

P.S. Ought not the term, excess of straw, to be changed into deficiency of live stock, for does it not sound too much as if the straw was an inconvenience to be got rid of if possible, rather than a valuable material to be turned into manure by the use of cake and corn alone, if roots are not sufficiently abundant.

FALLOW CROPS.

(Continued from page 200.)

The preparation of the land for Mangel is the same as for Turnips. The seed is, however, in our own case planted by hand, and it is done in this way: as the ploughs cover the manure the land is rolled with the Turnip drill, the last roller of which is 15 inches in diameter, and three strips of Oak are nailed longitudinally on the circumference. As the roller is moved forward the triangular strips make indentations on the top of the drills 15 inches apart. A woman having a quantity of prepared Mangel seed in her apron, takes some in her right hand, and selecting two of the seed vessels between the finger and thumb presses it into the top of the drill, where the mark is made by the roller, and then pushes the earth with her foot over the seed and then steps upon it, and proceeds in this way up the row till the whole is finished. Ten women will plant the ground as fast as the two ploughs prepare the drills for them. The seed is prepared by steeping it in liquid manure from the tank for two days before it is planted. The proper time to plant our fallow or fodder crops is, for Carrots from the 1st of March till the 15th of April, and for Potatoes from the middle of February; for Mangel from the 1st of April till the 10th of May; for the common Turnip during May in Scotland and during June in England; and for the Swedes from the 20th of May till the 1st of July. By planting some of the Globe Turnips early they will be ready by the 1st of September for the lambs, sheep, and other stock.

The common Turnips may be thinned out to their proper distances in the row as soon as their second pair or rough leaves are fully developed, and in doing this with the hoe the singled-out plant may be left lying on its side without receiving any injury from the earth being thus all pushed away from it, and it will soon recover and get strength to stand upright and grow luxuriantly.

The Swedish Turnip is a more delicate plant, and before we single out the plant it should have the second pair of rough leaves fully developed. We therefore cut them out in bunches, each bunch being left at the required distance; the earth being cut out between the bunches, the outside plants fall down, and give more room for the centre ones to grow strong, and as soon as they are ready all the plants are picked out by children, leaving the strongest one in the centre.

The Quantity of Plants remaining on the Ground to come to Maturity.—Where the drills are 27 inches apart if the plants are left 8 inches apart in the row, there will be 29,040, and each will have a space of 216 square inches; if 12 inches apart in the row there will be 19,360 plants, and each will have 324 square inches; if 16 inches there will be 14,690 plants, and each will have 432 square inches; and if 20 inches apart in the row there will be 11,616 plants, and each will have 540 square inches of room.

Although we have had Swedes 15 lbs. weight, Mangel at 20 lbs., and Carrots at 12 lbs. weight, yet at all these distances we have never been able to have more than 28 tons of the bulbs of Swedes per acre over 30 acres, nor more than 33 tons of Mangel per acre over the same extent. We have had 28 tons of Carrots over 10 acres.

The implements we use to cultivate the space between the rows of roots are the expanding 5-tine one-horse grubber, the drill harrow, and the common plough having the mould-board taken off. The expanding grubbers have their tines 18 inches long bent in a curve like those of the cultivator, so that they easily enter as deep into the soil as we wish by raising the wheel. The triangular expanding harrow we also use after the plough, when we have occasion to use it between the rows.

The Modes and Time of Using these Implements.—If the weather be very dry after the seeds have been sown we use the grubber, expanding it to about 12 inches, and make it go as deep in the bottom of the furrow between the drills as one horse can go with it, which may be 1 or 2 inches deeper than the land was ploughed; this pulverises the bottom and the two sides of the furrow, and raises the earth level with the top of the drills; but if the season is moist this operation may be deferred till the time the plants are bunched out by the hand-hoe or thinned out in single plants. The next time we use it we expand the hoe to 16 or 18 inches, and make it go as deep as one horse can go with it; when the plants have recovered and begun to spread out their leaves on the ground, we again use the horse-hoe, expanding it to 18 to 20 inches, and going with it as deep as we can, and when the weather is dry and the plants seem to want moisture, or do not grow as luxuriant as we wish, we then use the plough with one horse going between the rows. In this way it is used: the mould-board is taken off, the horse goes one bout between the rows, the plough is made to go as near to the plants and as deep as not to injure the plant or push it aside; we send the drill harrow immediately after to harrow down and spread the earth moved up by the plough so as not to let in the draught into the pulverised soil. One horse drill harrow will do this work after two ploughs. The grubber is repeated in dry weather once every 10 or 15 days, but it is never used when the ground is at all damp or sticking to the horses' feet, for then it would consolidate rather than pulverise the soil, which is one of the objects we have in using it, and it is only discontinued when the leaves extend over the space between the rows, so that they get injured by this operation.

The advantage of this moving of the soil, so often repeated between the rows of the roots during their growth, is that a greater extent of the surface of the soil is exposed to the influence of the atmosphere, and this hastens the decomposition of the manure and the degradation of the mineral matter of which the soil is composed, and makes it more friable and porous. The deeper this friable soil is made the more productive will it become; it will more readily drink in the rain and dew of heaven, and retain it for the use of the growing plants. *J. M.*

(To be concluded next week.)

AGRICULTURAL WAGES.

Your correspondent "N." appears to think it necessary to use what he himself admits to be uncourteous language in attempting to refute the statement of Mr. Grey, as to the high rate of wages in Northumberland when compared with the southern and south-western counties, and tries to insinuate a charge of wilful misrepresentation against that gentleman. Any one who has the pleasure of Mr. Grey's acquaintance must know that such a charge as this is most absurd, and I am quite surprised that any person having the slightest acquaintance with the north-eastern counties can for a moment doubt the substantial accuracy of Mr. Grey's statement, in so far as relates to the higher rate of wages prevailing there. I happen to have a rather extensive experience in what may be called the agricultural labour market of England and Wales, employing, as I do, large bodies of labourers in land drainage and other operations of agricultural improvement all over the kingdom, and my experience is this—that while I can hire labourers in the southern and western counties at from 10*s.* to 12*s.* per week, I must give 15*s.* or 18*s.* in Yorkshire, Durham, and Northumberland.

Although I cannot altogether agree with Mr. Grey in the reasoning which he founded on his facts, believing as I do that there are other elements such as race, climate, and so forth which ought to be taken into account, yet his theory receives a remarkable confirmation in my own experience that if we except Wales and one or two other districts where peculiar causes operate to the prevention of an uniform result, the price of a piece of labour, measured not by weekly wages but by work performed, is nearly the same in most places.

The unsuccessful experiment of sending labourers from the south to the north proves only, I think, that sending untrained, unselected labourers away to a distance from home does not answer, and in the case quoted by Mr. Grey it is probable that those sent were indifferent specimens, as the worst men, or those least employed by the farmers, and not the best, would no doubt be sent; but no one can look at the Northumberland labourer or "hind" and compare him with the same class, say in Dorset, Berks, Bucks, Somerset, Hereford, or Wales without seeing at once the great superiority of the former, not only as the animal man, but in his habits and social condition.

It is to be hoped that great good will arise from the discussion which Mr. Grey's vigorous and admirable address has provoked. The lot of the agricultural labourer in some of the English counties is about as dreary as can well be imagined in a civilised country. Ill-housed, ill-clad, and ill-fed, if he feeds at home—his family actually always on the verge of star-

vation if he feeds in his master's house—it is high time that some energetic steps were taken for the improvement of his condition, and a great step will be gained if men can only be convinced of the truth that, *cæteris paribus*, the actual work of a well-nurtured, well-fed, well-clad, and cared-for man is as cheap, or cheaper in mere cost, than that of a starveling, even though he be stuffed while in actual service in his employer's house with meat and drink; while his wretched family have to be housed, fed, clothed, and cared-for out of the 5*s.* or 6*s.* a week handed to him as the balance of his wages, his own food and drink counting for the remainder. *J. Girdwood, 49, Pall Mall, March 22.*

Home Correspondence.

Bath and West of England Society.—It is proposed by the Bath and West of England Society to hold their Meeting in 1860 at Dorchester. A most suitable place has been found closely adjoining the town, and a committee formed for the purpose of raising the 900*l.* which the Society require, irrespective of all local expenses. The leading gentlemen and agriculturists in the immediate neighbourhood of the town itself have come forward in a most liberal manner, and it is to be hoped that "their sentiments being so well expressed may influence mightily the rest," so that the appeal of the committee to the Mayors of the other towns and the secretaries of the various agricultural Societies, will not, from the good name of the county, be without effect. Dorsetshire is, I believe, almost the only county in which a large meeting has not been held, a circumstance which I can only attribute to the apathy of the farmers; but let me remind them that it is not an enviable singularity, nor in unison with the character which they bear for hospitality, and which I never yet heard questioned. Let them refute the calumnies of those who, writing without first investigating the truth of their statements, have attempted to re-open wounds which had been for several years healed, by taking this opportunity to say: Come, judge for yourselves, and form your own conclusions of Dorsetshire and the Dorsetshire labourers. *P. P.*

Hedgerow Timber.—Will you allow me, a staunch and true friend of the working classes, and at the same time not less lover of the picturesque, to break a lance in your columns with some of the rising advocates of wholesale hedge and tree destruction upon farms. These gentry seem to take it for granted that by a simple calculation of area of trees and hedgerows, and crops growing approximate thereto, or ground gained by the removal of the same, deducting the labour to bring about the alteration, and comparing the worth of the trees with the amount of yearly increase of crop, they bring out before us a correct and flourishing table of profits. Now if the amassing wealth were really the *summum bonum*, these individuals might at first sight appear to have reason on their side; though when we look a little carefully into the matter I think I can disprove their possession of even this stronghold. Of course I do not pretend to deny that in many places trees may be felled and hedgerows removed with undeniable advantage; but the present rabid crusade against timber and hedgerows bids fair, in a short time, to turn our beautiful country into a dreary series of patches of vegetable produce, such as we see in Belgium, in the lowlands of Switzerland, and in some parts of France, between Boulogne and Paris to wit. Now man is not intended "to live by bread alone," and in this improving age we have societies for furnishing the poor with allotment gardens, with cottage flower shows, cricket clubs in our towns, with galleries of pictures and objects of taste, and museums of natural history, cheap and elevating concerts for the people, and every possible means taken to elevate and improve the mind through those organs of sight, hearing, &c., with which it has pleased the Almighty to endow us. Now all this is most right and most meritorious; but when at the same time we ruthlessly destroy the natural beauties of our country, which are the property not of ourselves but of all our poorer neighbours, and shed around a humanising influence that can scarcely be over-valued, are we not open to the charge of inconsistency—with one hand to purchase a painted landscape at a cost of 100 guineas and with the other to destroy a really existent God-created one for the sake of 3*l.* per annum? But I undertook to prove an absolute loss in £ *s. d.* from such a course. Why, sir, if to elevate man's nature tends to draw forth his resources and to diminish crime, must this not be palpably the case? The expenses of our jails, of our workhouses, of our Crown prosecutions for murder, for infanticide, and other crimes only too numerous; horses and cattle maimed and injured by brutes of men who have the charge of them, untaught to govern their own passions, careless of their masters' interests, ignorant, apathetic, and indolent—all this has to be set off against the yearly profit derived from the destruction of the face of our beautiful country. Look at the inhabitants of those flat, dreary, shadeless, treeless, hedgeless, undivided tracts of cultivation in Belgium, Switzerland, and parts of France, and remark the dull, heavy, worn, hideously ugly, stupid peasantry you find there. If any sane man would see England and the English so degraded for the sake of increasing our national or his own individual wealth, he cannot, as it appears to me, take a surer course to effect it than the mad crusade now going on without judgment or reason against our pastoral hedgerows and timbers. Surely to such persons we may apply the words, "Woe unto them that add house to house, and field to field, until there be no place left!" *T. T. S.*

Wheeled Ploughs.—As there is a good deal of discussion going on about ploughs, will you allow me to have my say in the business, and as I come "frae 'yont the Tweed," I claim some knowledge of both sides. It is several years since I came to this part of the kingdom, and perhaps I did not then look upon what was common here very favourably, but judged through a Scotch medium. And this I did strongly respecting the wheel ploughs, and I had certainly appearances in my favour at that time, for I had seen better ploughing with the swing plough than was at all common at that time and place with the wheel ones. Howards' ploughs were not then come much into fashion, and deep ploughing was the exception; few knew, and fewer cared about the angle of 45°, which some few amateurs chose to talk about; wheel-ploughs were bad, and no one could make good work with them. And so I preferred the swing plough. But Howard's J. A.'s came out, at last found their way to where I was, and at the same time deeper ploughing became more the order of the day; and though it may read strange, we used a heavier plough, ploughed deeper, and used fewer horses to draw them! Here was a revolution, and then I began to modify my views, for I found now that a plough could be set to go alone, and in good hands to do her work well, and to do fair work in any hands, so I thought this was in advance of the good old swing, and suited a lazy man much better. I liked to hold them, but could not turn them so well at the ends, but that was want of practice. I came to the conclusion that one wheel was an improvement, and that two made them nearly perfect; and yet those ploughs, though said to be fit to be used as swing ploughs, were not anything like equal to the Scotch ploughs. Now I have no doubt that in a few years the wheels will find their way across the border pretty fast, and we may be sure that where once used under anything like favourable circumstances, they will not be discarded again. But in the first introduction, mistakes do often occur that retard success: for instance, the makers say they may be used as a swing, and the ploughman being partial to them tries it so, and finds that with the cast-iron share he is not able to hold at all, so it is laid aside and condemned. With a new share and everything in good order it may be possible to use Howards' as swing ploughs, but it would be much better if the makers would omit saying that they can be used as such. There is no reason why they should be, as any one can make fair work with the wheels, and it takes a good hand to do so with a swing. It has been proved that they are lighter of draught with wheels, are less labour to hold, will make best work with a good ploughman, and will make good work with a very inferior hand. Then why should prejudice stand in the way? But I may notice one or two drawbacks belonging to them, the first and chief of which is that in ploughing across high-backed ridges they do not work at equal depths, as when the wheels take the high part of the ridge the plough is thrown out, and when they get in the furrow the plough gets too deep, so that for this purpose a swing plough is better. And if the ground is very rough on the top there is the same defect, and the draught is unsteady. Again, as they are made in England with cast iron bodies they would not do where the land has large fixed stones in it, as is the case in the greater part of Scotland. But if the English makers wish to introduce them successfully into the north they will make them of wrought iron. In short, I believe all that has to be done is to adjust wheels to the Scotch swing ploughs. One other little defect is that they cannot be entered at the furrow end so suddenly, and about a yard is passed before they get to their proper depth, so that at the best they leave their work a little imperfect at the ends, and the same fault would exist if they have to be (thrown out) lifted over fixed stones, as they often would have to be in rocky land. These, I think, are all the objections that can be urged against them; they may be a little heavier, but that may not make them draw harder. They will, like any other implement, work easier if they bear firmly against their work instead of yielding at all to it. Weight was the objection urged against iron ploughs when first introduced, but that has passed and so will the present. Some that use the swing may object to the expense of changing, but that need not be much, as all that is to do is to fit on the wheels to what they have got; for a swing plough will make a good wheel one, and then the smallest boy employed on a farm will be able to make fair work with them. *Scotus Anglicanus.*

Horse Keeping.—Your editorial columns of 5th inst. contain interesting remarks on the cost of feeding horses used in farming. We find they cost vastly more than the maximum rate there quoted from a paper in the English Agricultural Journal.* May we ask the favour of information on the point—Whether the size, and performances required, of horses employed for commercial daught work are such as to account for a large excess? *Employers of Horses for Town Work.* [You will find all the dietaries given in the paper in question. Of course, as it was agricultural work that was being valued—they are home prices, not town prices that are given. We should be very much obliged to you for details of your experience—giving quantity of food consumed and number of horses employed, and actual haulage performed in a given term of months. We understand that the horses employed by Hanbury & Trueman consume 1 cwt. of hay, 98 lbs. of Oats, and 7 lbs. of Beans per week apiece, costing 13*s.*]

* Eleven shillings per week per horse.

Oat Hay.—This has been proved to be a valuable fodder for cattle, when cut and dried before the juices have passed out of the stem into the seed, and as a larger crop can be grown of this than of Clover hay, cattle giving it the preference, I would suggest that a few experiments be made this spring, though now rather late. If liquid manure could be applied to the crop—the Oat being a gross feeder—the growth would be more rapid and the hay more tender. To prevent the stems being coarse it might be sown thickly, either broadcast or by drill. I presume it should be cut just as it is coming into bloom. As it would bear being more highly manured than Oats intended for seed, a great bulk might be grown per acre. It might answer well in a moist climate, Ireland for instance. Turnips or even Mangels would succeed well after this crop, if the land be well prepared; I grew a very heavy crop of Mangels last year, though seeded late in June, but to do this the land should be rich, and the intervals deeply and frequently stirred. I have known White Carrots do very well when late sown, if the seed bed be well prepared. Immediately the crop is off the stubble should be pared in a thin slice or sharing with the expanding blades of the new broadshare, the wings of the ridge plough being attached, so as to throw the stubble and rubbish into ridges, where it can be easily collected. The wings of the ridge plough should be then removed, when the blades should shave off another thin slice, the third operation being completed by the cultivator, when a thoroughly pulverised seed-bed of 6 inches is obtained. It would be found that even in the driest weather the whole of this pounded earth would be moist, the damp arising from below being arrested and absorbed; and the plants, being enabled to extend their roots on all sides in moist earth, grow away rapidly and healthily, mould in Swedes being in a great measure avoided. If 6 inches be not deep enough in some soils, a greater depth might be obtained, but land prepared in this way 6 inches deep is in a better state than if ploughed 8 inches deep, which thick slicings it is almost impossible to reduce to a tilth fine enough for a seed-bed if the soil be stiff and there be no rain, even although much labour be expended and the clodcrusher be used. If the land be thinly shaved there are no round hard clods, and the cultivator and harrow pulverise all in a satisfactory manner. *Sigma.*

Wythenshawe.—One or two of your correspondents having criticised the cost, &c., of my cottages, allow me to state that as they are in a conspicuous position, there is much more ornament about them than would otherwise have been desirable. For instance, there is a small gable in the roof over each bedroom window, carved barge boards, pinnacles, &c., all of which tend materially to increase the work of the painter, plumber, and slater. You made a slight error in describing the plans which I forwarded to you. The kitchen and pantry are at the back of the house-room, not alongside of it. *T. W. Tatton.*

Adulteration of Seed.—With reference to your remarks on the adulteration of seed, allow me to state a case. I wished to grow some Rape as autumn feed for sheep in a district in which it was not known or used to any extent, as an experiment. An eminent and well-known firm supplied me with this seed, as well as all the rest that I required for my green-crop break that spring; the seed was sown in June, the ground in fair order and condition, and tolerably clean; nearly 6 lbs. of seed per acre were sown I think. After a time a few Rape plants made their appearance, but many other plants came up, nearly all Charlock or Wild Mustard. In no other crop on the whole farm did so much of this obnoxious plant make its appearance. The crop was a Charlock crop undoubtedly; the proportion between Rape and it was as one is to 200 at least, and this to the exclusion of any other weed, or nearly so. Now the firm are not to blame from whom I obtained the seed. I never met—setting this case aside—with better seed than they send out of all sorts. Can they have been imposed upon? or how do you account for my evidently having sown more Charlock than Rape? I am sorry that I did not examine the seed previously to its being sown more closely, and that I did not keep a sample by me afterwards. This should now be always done. *Senex.*

Societies.

ROYAL AGRICULTURAL OF ENGLAND.

Weekly Council: *March* 23.—Colonel Challoner, Trustee, in the chair. Communications were read: 1. From Mr. Rutherford, detailing his experiments in the cultivation of Potatoes by spreading sea sand over them on light and heavy land, with and without manure. 2. From Mr. Parton, giving the result of his trials in growing Barley on light soil with a sandy gravelly subsoil, ploughed at 6 and subsoiled to 13 inches deep in each respective case, the yield in straw and grain being greater in the land not subsoiled. 3. From Mr. Birnie, suggestions for the collection of results in Turnip-cultivation and its failures. 4. From Mr. Charles Chapman, of Folkestone, details connected with Bray's Traction Engine. Adjourned to March 30

Farmers' Clubs.

Hexham: *Autumn Culture.*—In the discussion on this subject at a recent meeting of this Club—

The Chairman said it was very obvious that here they had to labour under the disadvantage of a more uncertain climate and a later harvest season than they had in the south, and there was less opportunity of doing the work which Mr. Loraine recommended to be done during autumn; but there was no question of the great advantage of putting forward that work in time. There was one advantage which Mr. Loraine had not noticed, which was not only that a certain portion of the work was done ready to their hands in the spring, but it was done in such a way that it economised labour in the spring in a very great degree, because if they had a dry season and could get the land scarified and cleaned, and then laid up with deep ploughing—but not with the harrow, for he should be against harrowing in autumn—so that it was thus exposed to the frosts of winter it would be fine enough without harrowing—and harrowing consolidated it too much—the land then would come to be taken up much drier in spring, and might be in a condition for Turnips. In his small way he had tried this for some years past. If they had a very late harvest and much Wheat to sow, then it was impossible to plough to the extent that would be required; but generally a great deal might be done, and a good deal was now being done here and in East Lothian, and even north of that.

Mr. Dodds thought a very great deal might be done in autumn in forwarding spring work. He did not like to go to the expense of a great many new implements, and he got shares of 14 inches wide, which he put into Haywood's plough, and a man and a pair of horses could do 2 or 2½ acres a day with those broad shares. The first year he tried it he kept the mould boards in, but this laid it so much over that the grubber and harrows did not get a good hold of the furrows. This year he had taken old worn-out mould boards and broken the back part off, about half way along, which set the furrow about half upon its edge, so that they got a much better hold of it with the grubber afterwards. The land Mr. Loraine had spoken of must be a good deal lighter than even the Tyneside land, for putting harrows in immediately after having scarified it made very little impression. He put in a 2-horse grubber across the plough-furrow, scarified it about 2 or 3 inches deep, and then put in a 2-horse grubber, and then the harrows; and he was sorry he had not a pair of chain harrows, for they were one of the most efficient implements yet invented for the purpose; they almost entirely saved the expense of raking the first time over. They rolled the Quickens into rolls, so that they were much more easily collected together and carted off. He had tried, however, not to combine deep ploughing and cleaning; he liked to get his fallow turned over after it was cleaned as quickly as possible. He had had two crops of Quickens off one field this year; and there was at present a capital crop of annual weeds, which, of course, when he ploughed out again, would be completely destroyed. He did not see they got much advantage from annual weeds, because they must leave it for some days, or even a week, for the springing of the weeds; and in that damp climate and backward season, if they delayed a week, there were 10 chances to one they were disappointed in getting another crop of Couch cut. Whenever he began with a field he tried to get right through without waiting for the springing of the annual weeds, but he tried to get out of the Couch, for that was the great enemy. In one field the ploughing of which he had not been able to overtake, there was a capital crop of annual weeds, and he had no doubt he would see no more of them this season; but he would much rather have seen it in rough fallow than in the state it was, even with annual weeds.

Reviews.

Journal of the Manchester and Liverpool Agricultural Society.

We have received a copy of this very useful and interesting annual—interesting and useful not only for the detailed evidence it gives of the progress of an important agricultural district, but also as an example to other provincial societies of the way in which competition and rivalry may be best exchanged and directed. The following is a report of a farm winning the Society's prize of 10*l.* as the best managed dairy or grazing farm in its district. It is in the occupation of Mr. T. Wild.

"Weaverham Wood, near Northwich, Cheshire.—Copy of Claimant's certificate: the farm contains 177 acres:—76a. of which is in pasture; 14a. of upland meadow; 13a. of irrigated meadow; 17a. of Wheat after roots; 17a. of Oats; 3a. of Barley; 9a. of Clover, mown; 14a. of Potatoes; 3a. of Turnips and Carrots: 4a. of Mangels; 1a. of orchard and gardens; and 6a. of plantation, occupation roads, and homestead—total, 177 acres. Rotation: follow a four or five years' course, according to circumstances, but chiefly alternately white and green crop. Live stock consists of four farm horses, 1 hack, 3 colts, 38 dairy cows, 17 heifers and stirks, 8 calves, 90 sheep, and 15 pigs—total at present, 226. Eight or ten extra beasts are fed in the winter; 30 lambs have also been sold within the last month. The cattle and sheep pasture in summer, and in winter the cattle are kept on straw, hay, roots, Oats, Beans, and oilcake, to cows in milk and feeders. Make annually, on the farm, about 250 tons of manure, which is applied to root crops. Purchase annually about 60 pounds' worth of bones, applied to Clover and Grass land, and Mangels and Swedes. This year have applied a small quantity of bone sawings, from Birmingham, to the Potato crop, which cost 8*l.* 6*s.* 8*d.* per ton, including carriage. Within the last three years 15 acres have been drained. Previous to that, about half of the farm had been drained, landlord finding tiles. (Signed) Thomas Wild, June 18th, 1858.

"*Inspectors' Remarks.*—This farm lies on the banks of a navigable river, and also near a canal, a good road, and a railway. The surface is very much undulated, and the general aspect is N. and N.E., but, notwithstanding this, it is in a good climate, and at no great elevation. The soil varies much, from a rich alluvial to sandy, gravelly, and strong clay loam. The subsoil still more various, strong clay, sand, gravel, fox-bench, and river *débris*. The homestead is central, and the farm buildings mostly well arranged and in a proper state of repair. The same remark will apply to the house and dairy, which are kept in very neat order, as well as the garden and orchard. The house and homestead are very beautifully situated on a knoll, 40 or 50 feet above the river, with a delightful prospect up and down the windings of the river, and of the sloping and undulating country on the opposite side. There is a tank to receive any wash from the house, cattle houses, and piggeries, which is so situated as to enable the manure water to be drawn off into a water cart without pumping. This liquid manure is applied to pasture land. In the yard there is a circular cistern into which runs a copious spring of very cold water, brought from a distance in pipes. This cistern holds the water 2 feet above the level of the yard, which makes it easy for the cattle to drink. This claimant sends the produce of the dairy stock twice a day to Liverpool by rail. In hot weather, this cold water cistern is very useful in cooling the milk before being sent off; not, we presume, by mixing the water with the milk, but by sinking the milk vessels in the water. Claimant has been tenant of the farm upwards of 30 years, and in the course of his tenancy has eradicated a great extent of old fence, and planted also a great length of new ones. These are now well grown thick Thorn fences, kept in proper bounds, but not brushed up every year, as he considers they are more useful for shelter for cattle untrimmed, and can be cut when the fields are under the plough. Since he became tenant, he has laid down 13 acres on the river side for irrigation, and which is done in a proper scientific manner as to levels, &c. This meadow is very productive of good herbage, without any assistance from the dung cart. The feeders, conducts, drains, &c., are regulated, in width and depth, so as to give a regular flow of water over each compartment. Thirty-six acres of the pasture land is old turf, all of which produces good herbage, having been boned more than once. The remainder of the pasture is of various ages, from 1 year to 5 years down, and all boned, and, with the exception of some small portions, producing good pasture. Seven acres of Potatoes planted in drills, on fallowed land, were looking extremely well—healthy, clean, and vigorous. The other 7 acres were planted in beds, on land ploughed one furrow. These were not so promising, but the soil was a stiff clay loam. The Swedes had been resown twice, having been destroyed by the fly. They were clean, but not promising for a full and uniform crop, but it was early, when expected, and much depends on the autumn. The Mangels were an exceeding regular planted, healthy looking crop, and very clean. Head-ridges properly cleaned. Wheat, Barley, and Oats all good clean crops, very promising for a good yield of grain, except about 7 acres of Oats sown on an old lea furrow; the dry weather and the grub had injured them by making them thin and unkindly. Clover of 1st year, in cutting, and a very heavy crop of good clean Clover. Claimant says he can make one-seventh more by selling milk than by cheese making, but there will be a greater expense in winter in keeping the stock. Some years ago he tried soiling his milk stock in summer, but has given it up as being very doubtful as to any profit arising from it. His present milk stock are well selected for the diary, and mostly young cows. The cows are mostly of the Irish Leicesters, which, he says, pay him best. He has a few Shropshire Downs, which he likes well, but are expensive to lay in. Has also a few Cheviots, which have been put to Leicester rams. The farm and stock are altogether under superior management, and in which both skill and industry are united. *Inspected June 18th*, 1858.

Farm Memoranda.

Mr. M'Connell's Farm in the Prairie.—I drove a few miles out of town to visit the farm of Mr. M'Connell, who was recommended to me by the Governor of the State as a man of great intelligence, integrity, and experience. I walked and drove over his farm, examined his stock, and received from him very clear and distinct information. He is a practical man who has been all his life engaged in farming, and has fought his way up to a very comfortable independance. He left "the old country" in 1811, farmed in a small way for thirty years in the State of New York, where he first settled, and moved thence to Illinois 17 years ago. He had always preferred sheep farming, and brought his small flock of merinos with him. They have been remarkably healthy, increase one-third every year, and his flock now numbers 25,000. His fleeces average 4 to 5 lbs. each, and the wool sells for 1*s.* 3*d.* to 2*s.* a lb. He brought his farm at 1*l.* an acre, and could now sell it at 10*l.*, as it is in a good position near the capital of the State. But he is so firmly persuaded of the rapidly growing wealth of this fine State, that he has no doubt of his farm being worth 20*l.* an acre a few years hence, He consider the land for 100 miles round Springfield to be the best in the world.

Mr. M'Connell sends his flock to the open Prairies in April, places about 1200 under the charge of one shepherd, who tends them and supplies them with salt. They need no other food for six months. He brings them to his enclosed ground in winter, and gives them hay when they need it, and a little corn. His flock has never suffered from any epidemic, but on the contrary have been extremely free from disease. His original flock grew one-fourth in weight and size after being brought from New York State to this better soil. He prefers the merino to the Southdown for this climate and soil, and has found from trial that the merinos yield as much mutton and far better wool. He imports pure merino rams from Germany and Spain to improve his flock.

Mr. M'Connell finds that by feeding Prairie Grass close with sheep, it, in a few years, gives way to blue Grass and white Clover—which come naturally of themselves and without being sown. But the plan he recommends for laying this land down into good meadow and pasture, is to break up the soil some time between the middle of May and middle of July; a few days earlier or later may be tolerated, but not more, as if prairie land is broken out of season the labour is worse than lost. Sow Wheat in end of August, or 1st of September: the following season, after Wheat, take a crop of Indian Corn, which must be kept clean; after the crop is removed, level the ground well, and in February sow one peck of Timothy to the acre,—if on the snow so much the better, as the dark seeds attract the sun's rays, and gradually melt a passage for themselves to the soil below, and the moment the snow disappears, they, being already imbedded in the damp soil, spring up at once, and take the start of all other vegetation. Late in March add two lbs of Clover seed per acre, and a good hay crop will be certain.—I can testify to the success of this management, as I walked over a meadow of many acres on this gentleman's land, on which there was ricked a crop of at least 2 tons an acre of very excellent mixed Clover and Grass hay. The aftermath was rich close luxuriant Clover, on which a flock of lambs were grazing, just such Clover aftermath as we should find in this country on good land after the first crop of hay. I thought it had been the first crop, but learnt to my surprise that the meadow had been sown out twelve years ago, that it had little manure all that time, had borne a crop of hay every year, and been fed close afterwards with sheep, during winter and spring, till the Prairie Grass grew. I have never seen land in Britain that would bear a close Clover aftermath at a period so distant from the time of being seeded, and cannot withhold my belief in the fertile qualities of a soil capable of doing so. Mr. M'Connell has no doubt that the prairie land would benefit by the occasional application of manure, but he never met with any other soil so constantly productive without it. He has known the first Wheat crop pay the price of the land, with the cost of fencing it, and all labour, and leave a small balance over.

With regard to sheep-farming, his opinion is that corn and hay should first be provided by a few years' cultivation, before going largely into a flock. The Prairie Grass will furnish summer keep at little or no cost, but provision must be made for the winter. Good merinos can be bought for 8*s.* to 12*s.* 6*d.* a head in flocks. There is probably no kind of farming on the prairies from which the returns would be so regular and certain.

Mr. M'Connell had tried a timber country before coming here, and was very energetic in expressing his opinion of the superior advantage to a settler on the prairie.

Miscellaneous.

Prairie Farming.—A person last spring bought 640 acres of land in this neighbourhood. He enclosed the whole of it, had it all ploughed by contract, and sowed it with Wheat. Not an acre of his purchase was left idle. It was all sown in good order and in good time, and the chances were that the whole of it would succeed. As every part of the work was done by contract, and would be so completed, I am enabled to show the exact cost of the whole operation, and the probable return.

	Dr.	
A ring fence round the whole, of substantial boards and posts, cost		£240
Contract price paid for breaking the whole, and putting in the seed		260
Paid for seed Wheat		160
Contract for harvesting, thrashing, and delivering		500
		£1160
Price of the land, cash, viz., 10 dols. or 2*l.* an acre		1280
		£2440

	Cr.	
Probable crop:—		
20 bushels an acre=12,800 bushels, worth 75 cents or 3*s.*	£1920	
Value of the land after being enclosed and broken, viz., 12½ dols. or £2 10*s.* an acre	1600	3520
Profit the first year if the crop succeeds		£1080

These figures were given to me by a man of knowledge and experience; but the contract prices at present are lower than usual, and the cost of fencing and breaking is thus below the average cost of these operations. Neither is there any charge for buildings, though that would not affect the balance, as the property would be by that amount the more valuable. And it must be remembered that the Wheat crop sometimes fails, while the above satisfactory result makes no allowance for failures. *Mr. Caird.*

Calendar of Operations.

MARCH.

Cheshire: *March 9.*—We have now entered upon the second week in March and the fine open weather which has characterised the winter months has, up to the present time, enabled the farmers to pursue their field operations almost without interruption excepting on the wet undrained clay land farms, and on these the complaints is that the absence of frost has prevented the cartage of manure from the homesteads. On the generality of farms Wheat sowing was completed before Christmas, and within the last fortnight Bean sowing commenced in good earnest, and on dry land farms the sowing of Oats will

speedily follow: early Potato planting also has been commenced in favourable situations, and in another week, should the weather be fine, a busy scene will present itself in the early Potato districts, great preparations having been made for that crop in the month of February. The Wheat plant is looking healthy and vigorous, having received little or no check during the winter, and the pastures and Clover roots have a green and spring-like appearance, but in this uncertain climate, appearances at this time of the year are not certain indications of our future crops. The working of green crop fallows is in advance of former years, and generally speaking, the land will be in fine order for receiving the different crops at the usual period. Swedish Turnips have kept tolerably well and on many farms have proved a more satisfactory crop than at one time could have been hoped for, and from their known value upon a stock farm, are still in high repute amongst some of our best farmers, notwithstanding the occasional disappointment from unfavourable seasons and other causes. There is a good store of Mangel Wurzel to succeed the Turnips, the crops of last year having been unusually great, arising from a combination of causes, more especially a favourable season for their cultivation, an improvement in quality from a more careful selection of seed, and the general management of the crop being much better understood than formerly; this root has of late very much increased in value, from the fact of its being extensively used for horses as well as for cattle and pigs. The "pleuro pneumonia" is not so prevalent as it has been, although there are some dairy farmers who have lately had serious losses in their stocks and are still suffering from its ravages, and it is to be feared that this mysterious and much dreaded disease will continue to be a source of great anxiety to dairy farmers for years to come; and from causes entirely unknown to us the losses in dairy stocks from abortion have this winter been unusually great. *W. P.*

West Sussex: *March* 14.—Spring has fairly come, and one month earlier than usual. February was dry as March should be, and up to this time it has been dry, but to-day a fine rain has fallen, which makes all growing crops look fresh. The Wheat has shown great backwardness up to this time, and may now be said to look weakly, though pretty regular on the ground, but we shall no doubt soon find a difference in its appearance. There is not yet much Barley sown, as the roots have stood out so well that the ground is not got cleared very rapidly, but as work is well forward, it will be put in as soon as possible. Last year showed how much safer it is to sow early, for it was not uncommon to have 6 quarters after early sowing, and that good, while 3 quarters was not always got after the late, and its quality much inferior. But it is always safe to sow early, and often not so with late sowing. The roots are running to seed very fast, and various expedients are adopted to stop them, some cutting off the tops, others pulling, trimming, and covering them up in the field, which appears to be the best plan. It will hardly be possible to consume them in time, and as a consequence of this lean sheep are in great demand in our market, and fat ones are brought slowly forward, so that they are dear. Wether mutton now reaches as high as 6*s.* per stone of 8 lbs., and this is likely to be the case for at least a month longer; as many will keep them to finish the roots through, they are not likely to pay much for them. Beef is not very plentiful, but though dear, it is not such a ready sale. Corn is a dull sale at any price, but will no doubt rally a little when its condition improves. All kinds of stock are doing well. The Down ewes have nearly all lambed, and the luck has been on the whole good. Cross-bred lambs are in the market, but are not a ready sale, though the price is good, from 36*s.* to 40*s.* There have been a few hands out of work, and this will be the case for some time, as this is generally as slack a time as any in the year up to the commencing of haymaking; and were it not that the militia are out, we should have more idlers, but with all due respect for our army, these are not the men we miss most in the fields. Most of the land intended for root crops has got a second ploughing, and lies in good workable order. Rolling the Wheat and ploughing and sowing after the sheep is our principal work at this time. *G. S.*

Notices to Correspondents.

Canada: *Emigrant.* Robert Russell's recent work on America contains some useful information on Canada.

Land Drainage: *J Simpson.* If satisfied that your soil would be the better of 4-feet drainage if there had not been the pan you find, we would go to the full depth in question, whether you have to break through the pan or not.

Liquid Manure: *Agricola.*—Mr. Mechi's "Sayiugs and Doings" have been published by Routledge. There is a considerable demand for manuals on different sections of farm practice which ought to be better supplied. The strength of liquid manure is to be ascertained by an analysis for ammouia which it contains.

Pigs: *J T B.* The pigs are too much confined, and probably the litter becomes very much heated. We have known the effect complained of where straw chaff at the usual length has been used as litter, fermentation being kept up in the manure by the disturbance of the pigs' feet. The chaff, if cut, should be as long as possible, or if for other objects cut short, a separate space without litter should be given to the pigs. The litter ought either to be removed daily, or otherwise remain consolidated and undisturbed till the pigs are fatted. The shortest remedy will be to give more space and more exercise. *W C S.*

Rutland: *A C.* We shall be glad to hear from you.

The Fastest Cattle Fattening: *G.* Feed them during summer in loose boxes, giving them fully grown Italian Rye-grass and Clover, with 2 or 3 lbs. of Bean-meal over a little hay-chaff daily. In September and October gradually accustom them to Swedish Turnips, and continue the hay-chaff, adding to the Bean-meal about 1 lb. of Linseed-meal boiled to mucilage and thrown over it. When they take to Swedish Turnips wholly, *i.e.*, not more than ¾ of a cwt. daily apiece—give them in addition 8 or 12 lbs. of this hay-chaff, 1 or 2 lbs. of Linseed-meal, and 3 to 5 lbs. of Bean-meal in addition daily, according to their size. In spring gradually displace the Swedes by Mangel Wurzel. And if the food is ever distasteful to them change it—as Linseed and Beans for oil cake, &c.

The Pest of Birds: *An Oppressed Farmer* says: "Do pray tell us how we can protect ourselves from these pests of birds. The other day on one of the newly ploughed fields, I saw a large flock of larks grubbing away to their entire satisfaction, and soon after I saw a great number of linnets feasting away in a Clover field on Groundsel and Chickweed. Is this not too hard on us in these depressed times?"

Woodlice: *H. Ellis, Ards Gardens, Co. Donegal,* informs our correspondent (Ellesmere) of a simple, but what he has at all times found an efficient means of destroying them, viz.:—Place some boiled Potatoes broken in small pieces into flower-pots, or any other small vessels. Cover the Potatoes lightly with some dry Moss or hay, and place these where the woodlice are most troublesome; they will feed upon the Potatoes during the night, and finding an agreeable hiding-place beneath the Moss will remain there, and can be emptied in the morning into boiling water, and the traps replaced again. He has in this way got rid of many thousands; they could easily be destroyed on the walls in the yard by syringing them with boiling hot water.

*** As usual, many communications have been received too late, and others are detained till the necessary inquiries can be made. We must also beg the indulgence of those correspondents the insertion of whose contributions is still delayed.

CLOVERS AND RYE-GRASS SEEDS.

Sutton and Sons can supply the proper quantities of the best kinds of Clovers and Italian Rye-grass seed, or Clovers and common Rye-grass at 18*s.* per acre, (including Alsike with other Clovers). In ordering, it is only necessary to state that "Clovers and Italian Rye-grass" or "Clovers and common Rye-grass" are required for so many acres, when the proper quantities will be sent.

N.B. ALSIKE CLOVER is included in this mixture, but if not required it will be omitted and a lower price charged.

Royal Berkshire Seed Establishment, Reading.

GENUINE AGRICULTURAL SEEDS.

Messrs. Dickson and Brown (late F. and A. Dickson & Co.), 43 and 45, Corporation Street, Manchester, beg to intimate that they are now ready to execute all orders with first-class AGRICULTURAL SEEDS, most of which have been saved by themselves or under their own superintendence.

Special prices for large quantities on application. A PRICED CATALOGUE is published, and may be had post free.

Manchester.—March 26.

PRIZE MANGEL WURZEL, SWEDE TURNIPS, ETC.

James Grove, Great Baddow, Essex, who obtained Prizes at the Chelmsford and Essex Agricultural Shows for nine years in succession, begs to state that his Seeds are grown from selected Roots—not Plants.

Long Red, Red Globe and Yellow Globe	1*s.* 3*d.* per lb.
Purple Top and Skirving's Swedes ..	0*s.* 9*d.* per pint.

Reference or cash required from unknown correspondents.

TURNIP SEED.

Yellow Scarisbrick and Altringham, crop 1858, selected stocks, price 30*s.* per bushel; also a quantity of POMERANIAN WHITE GLOBE, and SKIRVING'S IMPROVED PURPLE-TOP SWEDE SEED, at lowest prices.

James Fairhead & Son, Seed Growers and Merchants, Lewisham, Kent.

TO THE TRADE.

Charles Sharpe has still to offer, of his own growing, saved from the finest selected stocks—

LONG RED MANGEL	RED LINCOLNSH. GLOBE TURNIP SEED
YELLOW DO.	GREEN GLOBE DO.
„ YELLOW GLOBE DO.	YELLOW TANKARD DO.
ALTRINGHAM CARROT	

Prices given on application.—Wisbeach, Cambridgeshire.

TO THE SEED TRADE.

Thomas Ayres, Jun., Seedsman and Grower, Biggleswade, Beds., can supply every kind of Wurzel, Swede, and common Turnip Seeds, on the most reasonable terms for cash.

N.B. Dealer in Culinary and Flower Seeds, Fruit Trees, Shrubs, and Flowering Plants.

TO THE TRADE.

To be sold, 200 bushels of GREEN-TOP YELLOW SWEDE SEED, 100 bushels of LIVERPOOL SWEDE Ditto, 60 bushels of DALE'S HYBRID, grown from first-rate stock, warranted to grow well, and free from adulteration. Terms on application.—Address A. B., care Castle and Lamb, 7, Bull Head Court, Newgate Street, London.

"JACK OF NEWBURY" SWEDE, ETC.



Peter Lawson and Son, the Queen's Seedsmen, &c., 27, Great George Street, Westminster, respectfully request attention to their very genuine Stock of the above excellent Swede; also of the LOTHIAN PURPLE-TOP SWEDE, both of which have been selected with the greatest care. They have also a very fine Stock of the KOHL RABI, or TURNIP-ROOTED CABBAGE, specimens of which were shown at their Stands at Smithfield Club Show. The Kohl Rabi was largely grown last season, and may now be relied on as a substitute for the Turnip and Mangel, where these roots do not succeed, or for filling up blanks where there is a partial failure. Its feeding qualities, hardiness, and weight per acre are equal to the Swede, and all kinds of stock prefer it to other roots.

P. L. & Son have also selected a first-rate Stock of MANGEL WURZEL SEED, which they can confidently recommend. Their natural GRASS SEEDS have been also saved with very great care, and they are ready to supply them separately or in mixture, for laying down Permanent Pastures, Lawns, &c.

P. L. & Son have arranged to deliver Seeds free throughout England and Wales from their London Establishment, for all quantities exceeding 20*s.* in value.

LISTS OF PRICES of the above and all other Seeds, Plants, &c., may be had on application.

27, Great George Street, Westminster.

IMPORTANT TO FARMERS.

TURNIP AND MANGEL WURZEL SEEDS.

Wm. Jackson and Co., Nurserymen, Seed Growers, and Merchants, Bedale, Yorkshire, beg to inform Agriculturists that their DESCRIPTIVE CATALOGUES for this season, with prices very moderate, are now ready, and will be forwarded on application. Farming extensively themselves they have the great advantage of proving all the kinds of Turnips and Mangels; they therefore offer only the varieties which they have found to be the best, and which are also approved of by some of the most celebrated farmers of the present day.

Nearly all the Seeds are W. J. & Co.'s own growing from selected transplanted perfect roots, and the quality of the Seeds having been tested in their hothouses this spring, they can recommend all of them with confidence. Early applications are necessary to secure a supply.

MANGEL SEED FROM LARGE BULBS.

Sutton's Yellow Globe Mangel is saved exclusively from fully developed roots, the advantages of which have been proved for several years past.

See the following Letters:—

From the Right Hon. Lord Berwick, *Cronkhill, Dec.* 22.—"Let me have the same Globe Mangel as last year, which has given me the best crop I ever grew, good both as to bulk of crop, and also in the fineness of roots, and freedom from fangs and irregular growth. When pulled the roots were nearly as clean and as free from fibre as a Globe Turnip, and I had 50 loads per acre or more."

From Mr. Gray, Bailiff to G. Rawlins, Esq., *Bullington House.*—"I believe we had one of the finest lots of Mangels and Swedes in the country. We had not quite enough of your seed of Mangel, and sent elsewhere for some to finish the field, and though sown the same day, and with exactly similar treatment, we had not so much weight by one-third as on the part sown with your seed."

The First Prizes at Birmingham and other shows throughout the kingdom have been taken by Messrs. Sutton's customers both for Mangel and for their "Champion" Swede. The price of Sutton's Large Yellow Globe Mangel Wurzel is 9*d.* per lb., or cheaper by the cwt.

Priced Lists of other kinds of Mangel, Swedes, Turnips, Grasses, &c., will be sent gratis and post free.

Carriage free to all parts except small parcels.

Sutton & Sons, Royal Berks Seed Establishment, Reading.

FARM SEEDS, GROWTH OF 1858.

The Plymouth Seed, Agricultural Implement, and Manure Company (Limited) are prepared to execute orders for all kinds of FARM SEEDS, selected from stocks direct from the growers.

They respectfully invite the attention of Agriculturists to their FARM SEED LIST for 1859, which will be sent free on application to the Secretary.

The two following new sorts of SWEDES can be highly recommended:—

	lb.	qt.	gall.
THE PLYMOUTH IMPROVED PURPLE TOP SWEDE	1*s.* 0*d.*	1*s.* 6*d.*	6*s.* 0*d.*
GRANT'S PINE-APPLE SWEDE ..	1 0	1 6	6 0

The following extract taken from the Leading Article in the *Irish Farmers' Gazette* of October 16, 1858, will tend to show the very high character of the two varieties of Swedes here offered:—"We observed several experimental plots of Swedes, &c., amongst which we noticed a new purple-topped variety called the 'Plymouth Swede,' and also a very beautiful green-topped Turnip (Grant's Pine-Apple Swede), the name of which we did not learn. These were sown on June 16, and their shapes were the finest we have seen for a long time. The varieties were new to us, but certainly the specimens grown at Rockview left a very favourable impression on our mind, regarding both their beauty and probable value."

Price to the Trade on application.

Address—Plymouth Seed Company, Plymouth.

PREMIUM GOLD MEDAL FOR SCOTCH-GROWN SEEDS

At the Great Agricultural Competition at Paris, 1856.

R. T. Mackintosh, Seedsman and Nurseryman, Edinburgh, begs to intimate that his PRICED LIST OF AGRICULTURAL SEEDS is now ready, and may be had post free on application. R. T. M. would particularly call attention to his Scotch-grown EVERGREEN RYE-GRASS for pasture, also his TURNIP SEEDS, which for purity and excellence of quality cannot be surpassed. R. T. M's. Priced Lists may be had in London of Messrs. J. B. Brown & Co., 36, Cannon Street, City, who will receive orders for R. T. M's. Seeds.

Victoria Street, George IV. Bridge, Edinburgh.

AGRICULTURAL SEEDS.

Wm. Skirving, Queen Square, Liverpool, begs to recommend to the Farmers of the United Kingdom his select stock of the most approved sorts of English, Welsh, Dutch, and Swedish CLOVER SEEDS, and of the best varieties of WURZEL, CARROT, and TURNIP SEEDS, all either grown by himself, or selected from the most reputed growers. A short practical list, with reasonable prices affixed, may be had on application.

In addition to his general collection of Turnip Seeds, W. S. has, this season, to offer three distinct varieties of the SWEDE, all of which he can strongly recommend as likely to be of great service in such critical Turnip-growing seasons as the last two.

The 1st is a new PURPLE SWEDE, with short top, broad entire leaf, stands dry weather well, ripens early, very good for early winter use.

The 2d, a new GREEN-BRONZE SWEDE, medium-sized top, of excellent quality, fit for the table, keeps well.

The 3d, a PURPLE SWEDE, stronger top, is the largest, heaviest cropper, and longest keeper of any sort known.

The Seed of these sorts can be had only from the Advertiser. Price 1*s.* per lb.

For laying down Land for Permanent Pasture W. S. begs to offer his selection of the most useful PERENNIAL GRASS SEEDS. The sorts selected from personal observation of the growth and habits of the different Grasses grown in his experimental ground. On this system he has supplied, within a few years, seeds for many thousand acres, which have given every satisfaction. Orders, stating quantity and quality of Land to be laid down, will be correctly executed with a suitable mixture.

SEEDS FOR THE FARM.

New Oval-shaped Yellow Mangel, introduced by us two years ago, has been thoroughly tested and is now recommended with perfect confidence. It is of a remarkably vigorous growth, with finely shaped roots, intermediate in length between the Long and the Globe, and has produced from 5 to 10 tons more per acre than any other variety (see *Gardeners' Chronicle* of Jan. 8):—

SWEDE TURNIP.—All the approved sorts.

YELLOW	Do.	do.	do.
WHITE	Do.	do.	do.

In no description of crop raised on the Farm is a good or a bad one so dependent on the character of the Seed as in that of the Turnip, and from its great liability to degenerate, it requires the most scrupulous care and vigilance to produce Stocks that are every way worthy of confidence. To attain such, we have for several years past been using every known means to keep up or improve the shape, size, and texture of the various kinds; and we believe that what are now offered will give the most perfect satisfaction. All the principal varieties are our own growth, raised from large and fully developed Roots or Bulbs, and in the hope of giving a more vigorous growth to the Stock, the strongest clay soil is always selected for a considerable portion of the Swede and Yellows. This mode of raising Turnip Seed materially increases the expense, but it is a much more satisfactory system than the one usually adopted, viz., sowing random stocks late in the season, after other crops, and taking the seed from mere plants, which in many cases are not even subjected to the process of thinning. Moreover, we guarantee our Seeds free from any of the adulterations so frequently practised to increase profits or cheapen prices, so that a strong healthy "braird" is certain.

PERENNIAL RYE-GRASS.—Finest Ayrshire		
Do.	do. do.	Pacey's, 26 lbs. to 32 lbs. per bushel
ITALIAN	do.	Imported
Do.	do.	Home-grown

NATURAL GRASSES.—All the best varieties

The Stocks of Perennial Rye-grass Seed are the most select growths the country produces, and being all clean and heavy the economy of using such in preference to foul chaffy seed, however cheap, is at once apparent. Our imported Italian is from the usual source, and has always given satisfaction; while the home-grown is the direct produce of imported seed, cultivated under the most favourable circumstances, and more than ordinary pains having been used in dressing the seed; the samples of both are unusually clean and fine. In selecting the Natural Grasses care is taken to have them true to name, fully ripened, and in all respects good clean samples.

ALSIKE CLOVER, and other varieties.

LARGE BROAD-LEAVED SCOTCH TARES.

With every other description of Seed usually required for the farm, PRICED LISTS of which may be had post free on application.

W. Drummond & Sons, Seedsmen, Stirling, N.B.; also at 55, Dawson Street, Dublin.

*** Stirling is most favourably placed in point of railway accommodation, there being direct and constant traffic to all the principal stations in England and Scotland, and by steamers (*via* Glasgow), almost daily to the chief ports in Ireland, thereby insuring a speedy delivery of goods, all of which except grain and Tares, we forward carriage paid.

HUDSON'S GOLDEN MELON BARLEY.—Selected Samples for Seed of this most valuable variety, superior both for produce and malting quality, may be had of Raynbird & Harvey, of Basingstoke; and 89, Seed Market, Mark Lane, E.C.

SEED CORN FROM THE CHALK.

MESSRS. RAYNBIRD AND HARVEY beg to offer to Agriculturists requiring change of SEED Talavera, Red Nursery, and April WHEAT, the best sorts for Spring sowing.

Chevalier, Thanet, Golden Drop, Long-eared Nottingham, American, Hudson's Golden Melon, Banham's Sprat, and other varieties of BARLEY.

Canadian Potato, Hopetoun, Poland, and Tartarian OATS.

Fine CLUSTER BEANS, weighing 68 lbs. per bushel.

Samples and Prices on application.

Address—Basingstoke, and 89, Seed Market, Mark Lane, London, E.C.

NEW PLANTS.—1859.

HUGH LOW AND CO. respectfully invite attention to the annexed LIST of novelties, orders for which they will be very happy to receive:—

NEW GLOXINIAS.

Hugh Low & Co. have selected the undernamed varieties from a large number of plants raised by themselves from seed carefully and judiciously hybridised, and having flowered them for two seasons, and compared them with the varieties previously in cultivation, H. L. & Co. can with confidence recommend the selection to the notice of their friends as comprising really distinct kinds, worthy of a place in the most select collection of this much admired and easily cultivated flower Plants in April. Price, 3s. 6d. each.

ERECT-FLOWERING VARIETIES.

Atroviolacea, very dark violet purple, base of the tube beautifully spotted on a pure white ground. [white
Bridesmaid, white tube, shaded rose border, lips spotted with
Lineata superba, rosy carmine tube, towards the lips alternate bands of white and rose. [purple.
Perfection, clear white throat, dark blue belt, lips deep violet
Princess Alice, clear white tube, bright rose belt, edges very pale rose.
Princess of Prussia Improved, throat and belt very much brighter crimson than in the old variety.

DROOPING-FLOWERED VARIETIES.

Attraction, base of tube white, finely spotted, lips rosy crimson, outer edge pure white.
Beauty, white tube, inside carmine lake, broad white belt, flowers very large
Meteor, bright crimson with violet throat, carmine blotch on the lip.

NEW ROSES OF 1859.

Hybrid Perpetual.	Hybrid Perpetual.
Altesse impériale	Virginale
Ardoisé de Lyon	Beauté de Rœyghem
Comte de Beaufort	Bourbon.
Bouquet de Marie	Docteur Berthet
Empereur de Maroc	Madame Marchal
Salomon	Octavie Fontaine
Oriflamme de St. Louis	
Reine de la Cité	Tea-scented.
Ambroise Verschaffelt	Madame Damaizan
Orderic Vital	Madame Darru
Anna de Diesbach	Reine des Pays Bas

Plants 5s. each.

NEW VERBENAS.

The entire stock of these nine varieties is in the possession of H. L. & Co., and they can with the greatest confidence recommend them to their friends as distinct and first-class flowers.
Bellona, bright cerise, dark centre, good form, very distinct.
Flora, lilac, white eye, large truss, fine form.
Lady Cotton Sheppard, bright rosy purple, white eye, large truss, very distinct.
Mars, bright red, extra large truss, fine form and free flowerer.
Miss Emily Hanmer, ruby, white eye, immense truss, extra fine form, the best of its class.
Mrs. Fowke, rosy purple, fine white eye, extra large truss, fine form, very free.
Mrs. Leslie, bright rose, very large white eye, large truss, and splendid form.
Rubens, ruby red, white centre, good form, very distinct and free bloomer, from 2s. 6d. each.

VERBENA SNOWFLAKE.—The best white Verbena ever offered for bedding purposes. With a flower equal to Mrs. Holford, it produces a much larger number of trusses on the same space of ground. This variety has been grown in company with the other white kinds at present in cultivation, and has been found to be more effective than any of them. In order that it may be extensively planted the first season, H. L. & Co., have decided on offering it at a cheap rate.

Single plants, 2s. 6d.; per doz., 18s.; per 100, 100s. In April.

New Verbenas received from M. Boucharlat of Lyons:—

Abondance	Madame Denis Blain	Mons. Denis Blain
Bleu magnifique	Madame Hardy	Monsieur Hardy
Felix Roland	Madame Hoste	Reine Blanche
Gloire de Monplaisir	Madame Large	Souvenir de M.
Kossuth	Manteau d'Evêque	Seringe

Plants 1s. 6d. each, now ready.

New Verbenas received from M. Rougier-Chauvière, of Paris. These and the preceding collection include the finest varieties offered this season on the Continent.

Baccarat	Gitana	Marie Rougier
Cendrillon	Ivanhoe	Ne Plus Ultra
Cerise Clara	La Magicienne	Primulæflora
Fatima	Leandre	Rosalinda
Figaro	Lucrece	Rosamond

Plants now ready, 1s. 6d. each.

Verbena Madame Jourdin, the most distinct and beautiful of all the striped varieties, per dozen, 12s.

LOBELIA TRIGONICAULIS, a new species from Moreton Bay, figured and described by Sir Wm. J. Hooker. A beautiful dense growing variety, each plant covering a space of ground 12 to 18 inches in diameter, with its ample bright green foliage (in the way of Verbena Maonetti) and large light blue flowers with fine white eye. It will be much in demand for bedding purposes. For further description see "Cottage Gardener." Plants in April, price 2s. 6d. each, or 21s. per dozen.

Usual discount to the Trade on all the above-named plants.

Bedding Plants of older date in large quantities at low prices.

Clapton Nursery, London, N.E.—March 26.

REIGATE SILVER SAND, best quality for Florists, 16s. per ton; less quantities, 1s. 6d. per bushel; delivered to any London Wharf or Railway. Peat, Loam, and Leaf-Mould in large or small quantities. Sacks for Sand, 1s. 9d. each; or on hire, 6d. each; five hold a ton.—John Kennard, Purveyor to her Majesty, Swan Place, Old Kent Road London, S.E.

HORTICULTURAL VALUATIONS.

MR. ALFRED CHANDLER (of the late firm of Chandler & Sons, Vauxhall), begs to inform his Friends that he is at liberty to undertake the valuation of Collections of Plants, Nursery Stock, Horticultural Buildings, &c.

Mr. A. C. is also open to engagements as Censor at Horticultural Exhibitions, in which capacity he has had long and extensive experience.—28, Priory Road, Wandsworth Road, S.

MESSRS. WATERER AND GODFREY respectfully invite the attention of parties engaged in planting to the following list of very desirable plants, all of which may be seen growing in the open quarters of their Nursery, and are in the finest possible condition for transplanting:—

Araucaria imbricata, 9 to 12 inches, 5l. per 100; 40l. per 1000
" " 1½, 2, 3, 4, 5, 6, and 8 feet high. Our stock of this plant exceeds 100,000
Wellingtonia gigantea, stout handsome plants from seed, 84s. per dozen; 25l. per 100. These are all in the open ground, and are believed to be the finest lot of seedling plants in the Trade.
Cedrus Deodara, 1½ to 2 feet, 18s. per dozen; 6l. per 100
Do. 3, 4, 5, 6, 7, 8, 10 and 12, and 15 feet. Our stock of Deodars at the present moment occupies several acres of land; they have been constantly removed, and with fair usage not one in a thousand would fail. We offer them on very advantageous terms either in large or small quantities
Cedrus atlantica, 4, 5, 6, and 7 feet
Cupressus macrocarpa, magnificent plants, 7, 8, and 10 feet high
" Lawsoniana, stout handsome plants from seed, 18 inches, by the dozen or 100
Abies nobilis, from imported seed, 6l. 6s. per doz.; 40l. per 100
" do. 1, 2, and 3 feet high
" Nordmanniana, a large number of beautiful plants, all from seed, 2, 3, 4, 5, and 6 feet high
" Pinsapo, do. do.
[We believe we are justified in stating our stock of the three last-mentioned Firs offers a selection to be met with in no other Nursery.]
" Douglasi, 6, 7, 10, and 12 feet
" orientalis, 3, 4, 5, and 6 feet
Pinus Benthamiana, stout seedling plants, about 1 foot, 18s. per dozen; 5l. per 100; 40l. per 1000. Unquestionably the finest of all the long-leaved Californian kinds, and well known to be perfectly hardy. It is the most valuable of all for timber.
Juniper, Chinese, 2, 3, 5, 7, 8, and 10 feet high
Irish Upright, 3, 4, 5, 6, 7, and 8 feet. The Irish and Chinese Junipers are grown by us to a very large extent
Thuja aurea.—This plant originated in our Nursery, and our stock of it offers a choice of many hundred specimens from 1½, 2, 3, 4, and 5 feet high, and measuring from 2 to 10 and 15 feet in circumference. Nothing can well exceed the beauty of these plants, and certainly are to be met with in no other Nursery
Thuja gigantea, stout seedling plants, 1½ to 2 feet high
" Wareana, 3, 4, 5, 6, 7, and 8 feet
Thujopsis borealis, handsome plants, in quantity, 1½ & 2 ft. high
Taxus, Yew, Common English.—A large quantity, and of all sizes up to 5, 6, and 7 feet
" Irish Yew, 4, 5, 6, 7, and 10 feet. Many thousands of these beautifully formed plants grown to one stem
" Golden Yews in large quantities and of all sizes up to 6, 7, and 8 feet
We also have them worked on the Common and Irish Yew as Standards, with heads from 12 to 15 years' growth
Holly, Variegated, Scottica, laurifolia, &c. We hold probably the largest stock of good sized variegated Hollies in the kingdom, especially of the better kinds of silver and gold striped
Rhododendron ponticum, for cover, stout plants, 1½ to 2½ feet, by the 1000. All the well-known proved hardy late blooming kinds, in any quantity, at from 30s., 42s., to 84s. per dozen
Standard Rhododendrons of all kinds
Azaleas, stout bushy plants, covered with bloom buds, from 18 inches to 2 feet high, and of all colours, 9s., 12s., 18s., and 24s. per dozen; 50s., 75s., to 100s. per 100
Hardy Heaths, a first-rate collection, at 35s. per 100; 15l. p. 1000
Roses, fine Standards, of the most popular kinds, at very low prices.

As well as the above, we are very large holders of the ordinary kinds of Nursery Stock, which may be judged from the fact that the Nursery far exceeds 100 acres in extent of all such things as Laurels, Box, Lilacs, Limes, Purple Beech, and the commoner descriptions of Evergreens and Deciduous Flowering Shrubs. An enormous stock of Fruit and Forest Trees are also grown extensively.

Goods are delivered free to London, Reading, or Reigate. The Nursery is reached in an hour from Waterloo, and conveyances are always to be had at the Woking Station.

CATALOGUES, Priced and Descriptive, will be sent on application, enclosing one postage stamp, to

WATERER AND GODFREY, Knap Hill, Woking, Surrey.

GENUINE ROLL TOBACCO CLOTH.

Warranted equal in Strength to Tobacco.

JOSEPH BAKER, 10, Gough Square, Fleet St., E.C., having dealt upwards of 20 years in the above, can recommend it as the best article for destroying the Fly. 1s. 4d. per lb.; over 10 lbs., 1s. Post-office Orders payable Strand Office.

GENUINE TOBACCO PAPER.—Parties fumigating can be supplied with the best Genuine Tobacco Paper at 4l. per cwt.; any less than 56 lbs., 10d. per lb.—Ben Baxter, Messrs. Jackson & Sons, Lady Lane, Leeds.

GENUINE TOBACCO PAPER FOR FUMIGATING.

H. APPLEBY (Foreman to Messrs. Ivery & Son, Surrey), takes this opportunity of informing his patrons and the public that he is now offering the above at a very considerably reduced price. It is now sold in packets of 4 lbs. each, at 1s. 3d. per lb. A liberal discount allowed to the Trade. For testimonials that will guarantee its quality, see *Gardeners' Chronicle*, March 5, p. 189.

Sheet Iron Pots for fumigating, 3s. 6d. each.

N.B. All orders to be accompanied with a Post-office Order, payable to Henry Appleby, Dorking, Surrey.

POULTRY—DOGS—PLANTS can be kept free from Insects of every description by using the PERSIAN INSECT DESTROYING POWDER, unrivalled in killing Fleas, Flies, Beetles, and every species of Insect—harmless to animal life. Sold in packets 1s. and 2s. 6d. A shilling packet sent free by post for 14 stamps.—Thomas Keating, Chemist, 79, St. Paul's Churchyard, London, E.C.

RATS.—RATS Taken without Poison or Traps by Wholesale.—Ships, Barns, Stables, Granaries, Mills, Warehouses, Farmsteads, Houses, &c., cleared at one sweep. Any Person can by this method clear the entire premises of every RAT, however numerous they may be, in one single night. Printed directions how to entice and secure the whole lot alive sent free by return of post for Two Shillings by William Goodwin, High Halstow, near Rochester.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

EDWARD BECK Manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener, Sundays excepted. PRICED LISTS of PLANT TUBS and BOXES forwarded on application.

MICROSCOPES.

JOSEPH AMADIO'S Improved Compound MICROSCOPE, 2l. 2s.; Students', 3l. 13s. 6d.

"Both these are from Amadio, of Throgmorton Street, and are excellent of their kind, the more expensive one especially."—*Household Words*, No. 345.

A large Assortment of ACHROMATIC MICROSCOPES.

Just published, an ILLUSTRATED CATALOGUE, containing the names of 1000 Microscopic objects, post free, for 4 stamps.

Just published, a New Edition, in 16mo, with the Original Designs by George Cruikshank, price 5s. 6d. cloth,

TALPA; or, The CHRONICLES OF A CLAY FARM. By Chandos Wren Hoskyns, Esq., Author of "Inquiry into the History of Agriculture," &c. The Fourth Edition.

"Mr. Hoskyns is evidently a man of science, as well as a practical agriculturist; and has judiciously clothed his very serious truths in a garb of simple language laced with rich humour."—*Morning Advertiser.*

London: Longman, Brown, & Co., Paternoster Row.

TO FARMERS & PERSONS DESIRING TO EMIGRATE.

Just published, in 16mo, price 3s. 6d. free by post,

PRAIRIE FARMING IN AMERICA: With Notes by the Way on Canada and the United States. By James Caird, M.P., Author of "English Agriculture," "High Farming," &c.

London: Longman, Brown, & Co., Paternoster Row.

LADY-DAY VALUATIONS.

Now ready, Seventh Edition, in 8vo, price 10s. 6d. cloth,

BAYLDON'S ART OF VALUING RENTS and TILLAGES, and Claims of Tenants upon Quitting Farms at both Michaelmas and Lady-Day, as revised by Mr. Donaldson. Seventh Edition, enlarged and adapted to the present time: With the Principles and Mode of Valuing Land and other Property for Parochial Assessment and Enfranchisement of Copyholds, under the recent Acts. By Robert Baker, Land-Agent and Valuer, Writtle, Essex.

London: Longman, Brown, & Co., Paternoster Row.

MR. LOCKHART MORTON'S WORK ON THE MANAGEMENT AND IMPROVEMENT OF LANDED PROPERTY.

Just published, in One Volume, royal 8vo, illustrated with 25 Lithographic Engravings, price 31s. 6d. cloth,

THE RESOURCES OF ESTATES: A Treatise on the Agricultural Improvement and General Management of Landed Property. By John Lockhart Morton, Civil and Agricultural Engineer; Author of Thirteen Highland and Agricultural Society Prize Essays.

Contents.

1. How to make the most of Landed Property
2. The Education of Landed Proprietors and Tenant Farmers in Rural Affairs
3. The Soil: Its Nature, and the Treatment it should receive
4. Land Agents
5. Sizes of Farms; and the Capabilities, Selection, and Treatment of Tenants
6. Small Holdings
7. Farm Leases
8. Proprietors, resident and non-resident
9. The Law of Entail
10. The Game Laws
11. Building Fixtures
12. Payment of Rent in Kind
13. Valuation of Landed Property
14. Inspection of and Reporting on Landed Estates
15. The Sub-division of Farms
16. Live Hedges
17. Growing Woods
18. Clay Land Farming
19. Calcareous Applications
20. Farm Buildings
21. The Preservation of Timber
22. Home Farms
23. Let Farms
24. Drainage of Land
25. Forage and Root Crops
26. Compost Manures
27. Roads, and Water Supply

Description of the Plates and Index.

Critical Opinions.

"Contains a vast mass of advice for the intending improver of landed property."—*Spectator.*

"There is so much that is practical on every detail, that the builder of any farmhouse or farmstead cannot do better than make himself master of the book."—*Building News.*

"A standard volume on agricultural improvement and the general management of landed property, which will be eagerly sought for and highly esteemed by landowners and farmers."—*Morning Post.*

"Will be found a cyclopædia of ready reference, of great value, and of safe authority in everything relating to the improvement of landed property and the development of its resources."—*Irish Farmers' Gazette.*

"Discusses in full detail the subject of agricultural education both for the land-owner, the land-agent, and the farmer. . . Mr. Morton's work is remarkably full in its illustrations of farm buildings."—*Gardeners' Chronicle.*

London: Longman, Brown, & Co., Paternoster Row.

New Editions of

CECIL'S WORKS ON BREEDING HORSES AND ON GETTING HORSES INTO CONDITION.

Second Edition in fcp. 8vo, with Plate, price 5s.,

STABLE PRACTICE; or, Hints on Training for the Turf, the Chase, and the Road: with Observations addressed to all who are concerned in Racing, Steeplechasing, and Fox Hunting. By Cecil.

By the same Author, also Second Edition,

THE STUD FARM; or, Hints on Breeding, price 5s.

RECORDS OF THE CHASE, a Book of Sporting Anecdotes; with two Plates, price 7s. 6d.

London: Longman, Brown, & Co., Paternoster Row.

TO GARDENERS.

"There is no more general book than 'Loudon's Encyclopædia of Gardening,' which treats of all manner of things."—*Gardeners' Chronicle*, March 12, 1859.

LOUDON'S ENCYCLOPÆDIA OF GARDENING: Comprising the Theory and Practice of Horticulture, Floriculture, Arboriculture, and Landscape Gardening; including all the latest Improvements. New Edition, corrected and improved by Mrs. Loudon. A cheaper Edition of the above work, price 31s. 6d., is now ready.

London: Longman, Brown, & Co., Paternoster Row.

Of whom may be had a Cheaper Edition of

LOUDON'S ENCYCLOPÆDIA OF AGRICULTURE, uniform with the above in size and price.

PEOPLE'S EDITION OF THOMAS MOORE'S POEMS.

On Thursday next will be published, Part I., square crown 8vo, price 1s., to be continued monthly,

THOMAS MOORE'S POETICAL WORKS. An entirely New Edition, including the Author's Autobiographical Prefaces, Notes, and other Copyright Additions: with a Portrait of the Author. To be completed in 10 Parts, price 1s. each.

*** Part I. will contain the whole of LALLA ROOKH complete for ONE SHILLING.

London: Longman, Brown, & Co., Paternoster Row.

ANDREW CROSSE, THE ELECTRICIAN.

Just published, in One Vol., post 8vo, price 9s. 6d. cloth,

MEMORIALS, SCIENTIFIC AND LITERARY, OF ANDREW CROSSE, THE ELECTRICIAN. Edited by Mrs. Crosse.

"An extremely interesting and well-written piece of biography."—*Gardeners' Chronicle.*

"We have seldom risen from the perusal of a biographical memoir with more admiration than from the present."—*Lancet.*

"The concise but careful and lucid account which Mrs. Crosse gives of her husband's researches and discoveries entitles her book to the high consideration and patient attention of all students of natural science."—*Critic.*

London: Longman, Brown, & Co., Paternoster Row.

WORKS BY LORD MACAULAY.

I.

THE HISTORY OF ENGLAND from the Accession of James the Second. By the Right Hon. Lord Macaulay. A New Edition, revised and corrected. 7 vols. post 8vo. price 42*s.* cloth; or separately, 6*s.* each.

II.

HISTORY OF ENGLAND from the Accession of James the Second. Library Edition. Vols. I. and II. 8vo. price 32*s.*; Vols. III. and IV. 8vo. price 36*s.*

III.

CRITICAL AND HISTORICAL ESSAYS contributed to the "Edinburgh Review." By the Right Hon. Lord Macaulay. Library Edition (the Ninth). 3 vols. 8vo, price 36*s.*

IV.

CRITICAL AND HISTORICAL ESSAYS contributed to the "Edinburgh Review." A New Edition, in Volumes for the Pocket. 3 vols. fcp. 8vo, price 21*s.*

V.

CRITICAL AND HISTORICAL ESSAYS contributed to the "Edinburgh Review." The Traveller's Edition, complete in one Volume, with Portrait and Vignette. Square crown 8vo, 21*s.* cloth; calf, by Hayday, 30*s.*

VI.

CRITICAL AND HISTORICAL ESSAYS contributed to the "Edinburgh Review." The People's Edition, complete in 2 vols. crown 8vo, price 8*s.* cloth; or in 7 Parts, 1*s.* each.

VII.

LIST OF FOURTEEN OF LORD MACAULAY'S ESSAYS which may be had separately, in 16mo.

"Traveller's Library Edition":—

Warren Hastings	1*s.* 0*d.*
Lord Clive	1 0
William Pitt; and the Earl of Chatham	1 0
Ranke's History of the Popes; and Gladstone on Church and State	1 0
Life and Writings of Addison; and Horace Walpole	1 0
Lord Bacon	1 0
Lord Byron; and the Comic Dramatists of the Restoration	1 0
Frederick the Great	1 0
Hallam's Constitutional History of England	1 0
Croker's Edition of Boswell's Life of Johnson	1 0

VIII.

LAYS OF ANCIENT ROME, By the Right Hon. Lord Macaulay. With Illustrations, original and from the Antique, by George Scharf, jun., F.S.A., engraved on Wood by S. Williams. New Edition. Fcp. 4to, 21*s.* boards; morocco, by Hayday, 42*s.*

IX.

LAYS OF ANCIENT ROME, with IVRY and the ARMADA. New Edition. 16mo, 4*s.* 6*d.* cloth; morocco, by Hayday, 10*s.* 6*d.*

X.

SPEECHES OF THE RIGHT HON. LORD MACAULAY, corrected by Himself. 8vo, 12*s.*

XI.

SPEECHES ON PARLIAMENTARY REFORM in 1831 and 1832. Reprinted in the "Traveller's Library." 16mo, price 1*s.*

London: Longman, Brown, & Co., Paternoster Row.

MAUNDER'S POPULAR TREASURIES.

I.

GEOGRAPHY.

MAUNDER'S TREASURY OF GEOGRAPHY, Physical, Historical, Descriptive, and Political; containing a succinct account of every Country in the World: preceded by an Introductory Outline of the History of Geography; a familiar Inquiry into the varieties of Race and Language exhibited by different nations; and a view of the Relations of Geography to Astronomy and Physical Science. Completed by William Hughes, F.R.G.S. New Edition, corrected; with 7 maps and 16 steel plates, fcp. 8vo, 10*s.*

II.

HISTORY.

MAUNDER'S HISTORICAL TREASURY; Comprising a General Introductory Outline of Universal History, Ancient and Modern, and a Series of separate Histories of every principal Nation that exists; their Rise, Progress, and Present Condition, the Moral and Social Character of their respective inhabitants, their Religion, Manners and Customs, &c. New Edition, with a New Index, fcp. 8vo, 10*s.*

III.

NATURAL HISTORY.

MAUNDER'S TREASURY OF NATURAL HISTORY, or Popular Dictionary of Animated Nature: in which the Zoological Characteristics that distinguish the different Classes, Genera, and Species, are combined with a variety of interesting information illustrative of the Habits, Instincts, and General Economy of the Animal Kingdom. To which are added a Syllabus of Practical Taxidermy, and a Glossarial Appendix. New Edition, with 900 Woodcuts. Fcp. 8vo, 10*s.*

IV.

SCIENCE AND LITERATURE.

MAUNDER'S SCIENTIFIC AND LITERARY TREASURY: A Popular Encyclopædia of Science and the Belles-Lettres; including all branches of Science, and every subject connected with Literature and Art. Written in a familiar style, adapted to the comprehension of all persons desirous of acquiring information on the subjects comprised in the work; but also adapted as a manual of convenient reference for the more instructed. New Edition. Fcp. 8vo, 10*s.*

V.

BIOGRAPHY.

MAUNDER'S BIOGRAPHICAL TREASURY: Consisting of Memoirs, Sketches, and brief Notices of above 12,000 Eminent Persons of All Ages and Nations, forming a General Dictionary of Biography. Fcp. 8vo, 10*s.*

VI.

GENERAL KNOWLEDGE.

MAUNDER'S TREASURY OF KNOWLEDGE AND LIBRARY OF REFERENCE: A Popular Compendium of Universal Knowledge. Fcp. 8vo, 10*s.*

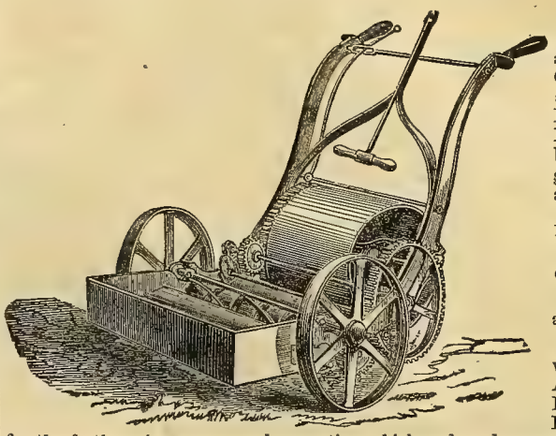
The SIX TREASURIES complete, price £3 cloth:—

Each "Treasury" { 12*s.* 6*d.* neatly whole bound in calf / 12*s.* bound in roan, gilt edges, or / 10*s.* bound in cloth lettered. } may be had separately, as above.

London; Longman, Brown, & Co., Paternoster Row.

NOTICE OF REMOVAL.

BOYD'S PATENT LAWN MOWING MACHINES



ARE the only Lawn Mowers that have a Self-Cleansing and Sharpening Apparatus attached to the Cutters, and that will cut wet Grass without clogging the Knives. They are already in successful operation at the Royal Palaces, and on the lawns of hundreds of the Nobility and Gentry. They are pronounced by all practical men as perfection, and are guaranteed for efficiency, excellence, economy, and durability.

"Doing the work of five or six men in a single hour."—*Times*, Sept. 20, 1858.

Price Lists and Testimonials free on application to—

W. DRAY & Co.,

at their new Agricultural Implement Warehouses, Adelaide Place, London Bridge,

where also may be had every description of Agricultural, Horticultural, and Gardening Implement; as also DRAY'S CELEBRATED REAPERS, which are now being manufactured for the forthcoming season, and respecting which early orders are solicited.

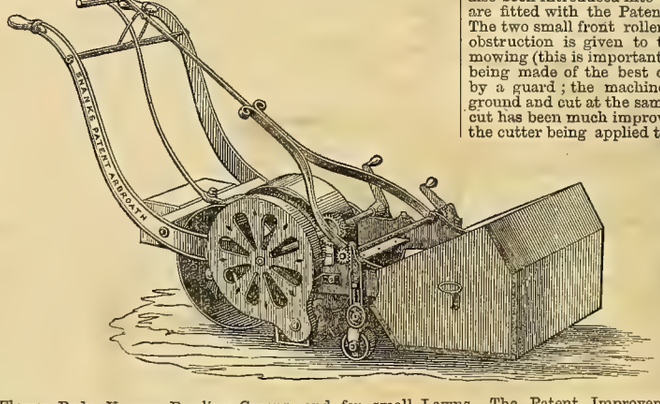
Patronised by Her Majesty Queen Victoria, His Majesty the Emperor of the French, and His Royal Highness the Prince of Prussia.

SHANKS'S PATENT

MOWING, ROLLING, COLLECTING, AND DELIVERING MACHINE FOR 1859.

THE ONLY COMPLETE MACHINE FOR HORSE OR PONY POWER.

AMONGST other valuable improvements A. Shanks & Son have this season made in their PATENT HORSE and PONY MACHINES, as fully described in the "*Gardeners Chronicle*" of March 5, page 207, the method of emptying the Grass Box is not the least important. The want of a speedy and efficient method for this purpose has been much felt for many years past. In the spring more especially, when the Grass springs up rapidly, nothing is more annoying in working a Mowing Machine than the stopping and almost constant travel from the handles to the box, and *vice versâ*, for the purpose of emptying the Grass. A great deal of time is thus lost, independent of the hard work to the man, not only in walking some hundreds of times the length of the Machine in a day, but more especially in the stooping posture which he has so often to endure. Many a Gardener can testify to this. This great want in all Mowing Machines whether past or present is completely obviated in SHANKS'S PATENT MOWING, ROLLING, COLLECTING, AND DELIVERING MACHINE FOR 1859. The improvement consists in the introduction of a simple and efficient apparatus for emptying the Box, without the man being under the necessity of either leaving the handles or stopping the machine. So effective and complete is the valuable improvement that the Box, if it were possible to fill it, could be emptied at the rate of 60 times a minute, without any undue strain being put on the apparatus. The immense advantages of this invention must be at once apparent to the practical Gardener. It will enable the Machine to do at least a third more work, while the labour and annoyance in working it, as compared with ordinary Machines, is three-fourths lessened. If a lawn which formerly took a Machine nine hours to mow, can now be done in six hours, with three-fourths less labour to the man who works the Machine, nothing further is necessary to establish the utility and worth of the invention.



No Machine will turn quicker or work better than this improved Machine; great strength in construction and superiority in workmanship render it exceedingly durable; every conceivable convenience and improvement tending to make the Machine in every way complete for level as well as uneven lawns, has been introduced at the sacrifice of much time and expense, and the Patentees have great pleasure in seeing their efforts so far successful as to enable them with all confidence to offer to the world the cheapest and the most complete Mowing, Rolling, Collecting, and Delivering Machine extant at the following prices.

No. 1 a, 48-inch Machine, 27*l.*; No. 1, 42-inch do., 24*l.*; No. 2, 36-inch do., 20*l.* 10*s.*; No. 3, 30-inch do., 17*l.* 10*s.*; No. 4, 25-inch do., 13*l.* 10*s.*; No. 5, 25-inch do., 9*l.* 10*s.* Tool Box with Sharpening Apparatus, 10*s.* extra. Boots for Horses' feet to prevent injury to soft lawns, 25*s.* a set. Machines Nos. 1 a, 1, 2, 3, and 4, have the Patent Delivery Apparatus attached. No. 5 can be had either with or without this improvement; if with it, 30*s.* extra.

Most of the improvements of the Horse and Pony sizes have also been introduced into the new Hand Machine. The rollers are fitted with the Patent Spiral Springs of the larger sizes. The two small front rollers swivel, and are so placed that no obstruction is given to the Grass in front of the cutter in mowing (this is important). The cutting parts are very strong, being made of the best cast steel. The wheels are protected by a guard; the machine will turn in a few square feet of ground and cut at the same time; the method of adjusting the cut has been much improved, the power of raising or lowering the cutter being applied to both sides of the Machine at once, thus preventing the possibility of one side cutting lower than the other. A Tool Box is fitted to each machine and is of great convenience. The machines will mow on the most uneven lawns without injury to the turf; they are strongly made, are fitted with the same care and precision of the larger sizes, so simple in construction that a labourer can work them, and are quite free from all superfluous and useless gear, which has only novelty, not improvement, as a recommendation. These Machines are peculiarly well fitted for turning and cutting amongst Flower Beds, Verges, Bowling Greens, and for small Lawns. The Patent Improvements for this season render them complete in every part. The draught is greatly lessened, and the execution of the work is unsurpassed.

Prices of Machines for Pushing or Pulling, separately or together:—

No. 6, 22-inch Machine	£7 17 6
No. 7, 19-inch ditto	7 5 0
No. 8, 16-inch ditto	6 10 0
No. 9, 13-inch ditto	5 15 0

For Pulling only—

No. 10, 22-inch Machine	£7 0 0
No. 11, 19-inch ditto	6 10 0
No. 12, 16-inch ditto	6 0 0
No. 13, 13-inch ditto	5 10 0

Tool Box, with sharpening apparatus, 5*s.* extra.

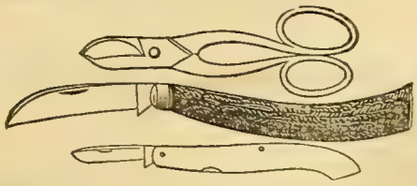
The above are net cash prices, and include delivery to any of the principal Railway Stations in England or Scotland. The Machines are warranted to give ample satisfaction; failing this (which is barely possible) they may be at once returned.

FURTHER PARTICULARS MAY BE HAD ON APPLICATION.

ALEXANDER SHANKS & SON, Patentees and Sole Manufacturers, Dens Iron Works, Arbroath, Forfarshire.

N.B. To prevent disappointment in delivery early Orders are particularly requested.

PAXTON WORKS, SHEFFIELD, ESTABLISHED 1738.

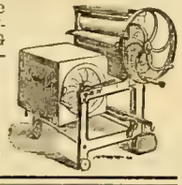


SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.—Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

FLOWER POTS, of superior Red Clay, manufactured by the Arley Pottery Company (Limited), equal in appearance to Terra Cotta at the price of the common pots usually sold, say 2*s.* per cast, delivered in London.—Apply to TAYLOR & PEARS, 8, George Yard, Lombard Street, City, E.C.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

NO ONE KNOWING the value of your Patent WASHING, WRINGING, and MANGLING MACHINE, would be without one."—*Vide Mrs. Hall.*



THOMAS BRADFORD, Patentee, Manchester.

Descriptive Pamphlet, with Prices free by post.

PATENT LAWN MOWING AND ROLLING MACHINES.

SAMUELSON'S LAWN MOWING MACHINES,

WITH BOYD'S PATENT IMPROVEMENTS.

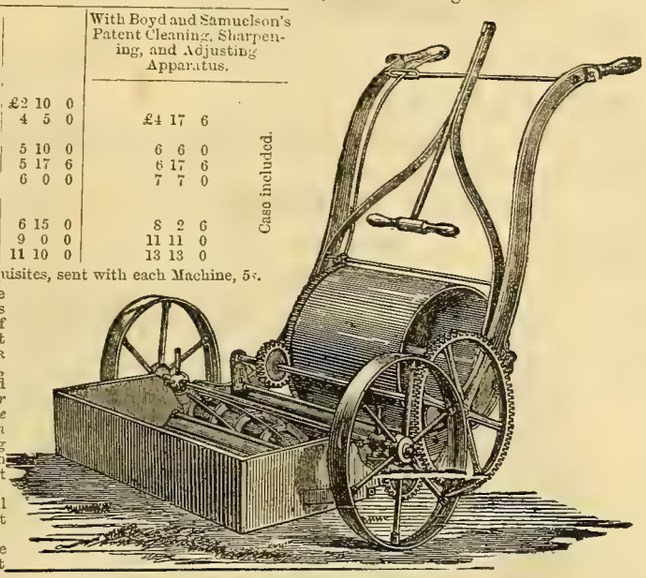
"Doing the work of five or six men."—The Times, Sept. 20, 1858.

The following PRICES include the Carriage to any Railway Station in England:—

		With Boyd and Samuelson's Patent Cleaning, Sharpening, and Adjusting Apparatus.
9 inches wide, for very narrow borders, without registered wheels	£2 10 0	
12 inches wide	4 5 0	£4 17 6
16 inches wide, with registered arrangement (for one man)	5 10 0	6 6 0
19 inches wide, ditto (for one man) ..	5 17 6	6 17 6
22 inches wide, ditto (for man and boy)	6 0 0	7 7 0
22 inches wide, ditto for ditto, and also fitted with draught links for a pony and a man to work it	6 15 0	8 2 6
25 inches wide, ditto	9 0 0	11 11 0
30 inches wide, ditto (for man and pony)	11 10 0	13 13 0

Case included.

Box of Tools, Oil Can, and other requisites, sent with each Machine, 5*s.*



Some thousands of these Machines are now in successful operation on the Lawns of Royalty, the Nobility, and Gentry of the United Kingdom and the Continent of Europe, and are pronounced SUPERIOR to *any other* for lightness of draught, efficiency, and durability. The demand for them is *yearly increasing—the number supplied by* Mr. SAMUELSON *during the years* 1856, 1857, *and* 1858 *being more than* 2100. Testimonials are continually being received from gentlemen having them in daily use, who speak in the highest terms of their efficiency.

These are the only Machines that will cut wet as well as dry Grass without clogging the knives.

Orders for 1859 should be sent at once to insure certain delivery and to prevent disappointment.

Copies of Testimonials will be forwarded post free on application to

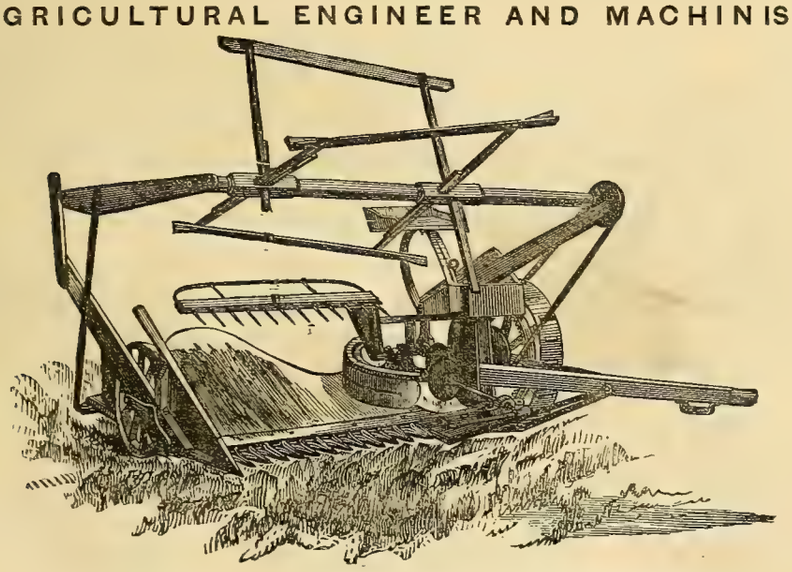
B. SAMUELSON, 76, Cannon Street West, City, London;

to the Manufactory, Britannia Works, Banbury, Oxon;

or to MESSRS. DEANE AND CO., London Bridge; or any respectable Ironmonger or Seedsman in the Kingdom.

B. SAMUELSON,

AGRICULTURAL ENGINEER AND MACHINIST,



WAREHOUSE, 76, CANNON STREET WEST, LONDON,

WORKS AT BANBURY,

INFORMS MERCHANTS, the TRADE, and AGRICULTURISTS, that he has opened the above Warehouses as a depôt for his own manufactures and those of Messrs. Barrett, Clayton, Howard, Hornsby, Nicholson, Richmond, Tuxford, Smith, and all other first-class makers, whose implements he is prepared to offer on makers' terms.

THE BRITANNIA SELF-RAKING REAPING MACHINE,

With side delivery in sheaf, no rakers or gatherers required; and all the most improved Spring Implements for the season, may be inspected at the above depôt.

B. SAMUELSON, 76, Cannon Street West, London; and Britannia Works, Banbury.

FERRABEE'S NEW PATENT MOWING MACHINES

MANUFACTURED BY

JAMES FERRABEE AND CO., PHŒNIX IRON WORKS, Stroud.—These improved Machines admit of the use of duplicate sets of cutting parts, can be accurately sharpened by an ordinary workman, are adapted to level and uneven ground and to verges, and their management is much simplified

In the following List the Letters A, B, &c., are used to facilitate reference, and the distinguishing letter of the Machine required should be given in sending an order.

The prices include carriage to the principal railway station in England, terms net cash.

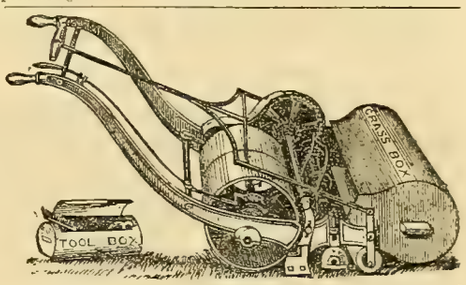
A,	cutting 12 inches wide,	for a boy	£4	10 0
B,	,, 16 ,,	for one man	6	0 0
C,	,, 19 ,,	for a man and a boy ..	6	10 0
D,	,, 22 ,,	,, ,, ..	7	0 0
E,	,, 26 ,,	for two men	8	10 0
F,	,, 22 ,,	for a donkey or a pony	8	0 0
G,	,, 26 ,,	for a pony	9	0 0

Sharpening Apparatus for any of the above, 5*s.* extra.

H,	cutting 24 inches wide,	for a horse	14	0 0
I,	,, 28 ,,	,, ...	16	0 0
K,	,, 36 ,,	,, ...	18	0 0

Sharpening Apparatus, 10*s.* extra each.

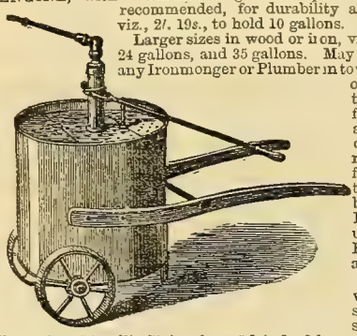
The Horse Machines H, I, K, have cylinders of large diameter and in their entire construction possess the strength and capacity necessary for horse-power, and the heaviest work of a pleasure ground.



GREEN'S PATENT LAWN MOWERS have proved to be the best by the appointed judges in all cases of competition. Full illustrations, with particulars of improvements for the present season, will appear in this Paper next week.

THOMAS GREEN, Patentee and sole Manufacturer, Smithfield Iron Works, Leeds, Yorkshire; and 2, Victoria Street, Bottom of Holborn, London. Repairs done at either of the establishments, where every information may be obtained.

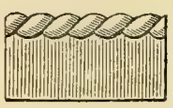
JOHN WARNER AND SONS, Crescent, Jewin Street, London.—GALVANISED IRON TUB GARDEN ENGINE, with WARNER'S Registered Spreader, is strongly recommended, for durability and low price, viz., 2*l.* 19*s.*, to hold 10 gallons.



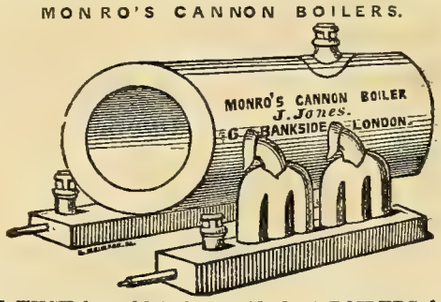
Larger sizes in wood or iron, viz., 14 gallons, 24 gallons, and 35 gallons. May be obtained of any Ironmonger or Plumber in town or country, or of the patentees and Manufacturers, as also Machinery of all kinds for raising Water from any depth to any height by Steam, Horse, or Manual Power. Prices sent on application.

Syringes of various constructions and sizes from 9*s.* upwards. Metallic String from 5*d.* to 1*s.* 3*d.* per lb.

LOOMES AND CO., Whittlesea, MANUFACTURERS OF BRICKS, TILES, POTTERY, &c., beg to call attention to their new CABLE PATTERN GARDEN BORDER EDGING, which not only surpasses others in appearance and durability, but is free from the dangerous points and sharp edges of most.—Price, delivered on any Railway at Peterborough, 5*d.* per yard.



MONRO'S CANNON BOILERS.



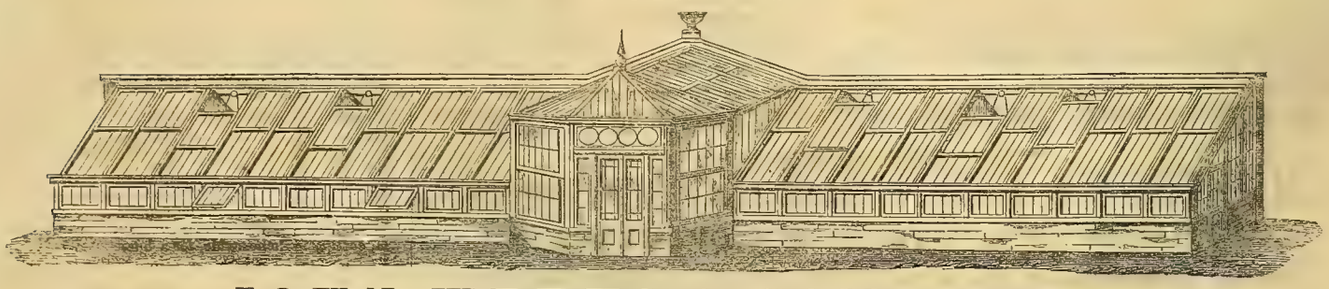
MUCH has of late been said about BOILERS for Heating by Hot Water, but these Boilers have now proved themselves to be the best at present invented. They are adapted for heating every description of building, and are made of various sizes. The Price of the

24-inch Cast Iron is	£5	10*s.*	0*d.* each
24-inch Wrought ditto	6	10	0 ,,
36-inch Cast ditto	8	0	0 ,,
36-inch Wrought ditto	8	10	0 ,,

References to Gentlemen and Nurserymen where these Boilers are now at work. The Cannon Boilers are now kept in stock, and are to be had only of J. JONES, 6, Bankside. Also, every description of Saddle and Cylinder Boilers. Hot Water Pipes and Connections at prices lower than those of any other house in London. Estimates for Hot-water Apparatus erected complete in any part of the country, and an Illustrated Catalogue on application to J. JONES, 6, Bankside, Southwark, London.

HORTICULTURAL BUILDING & HEATING BY HOT WATER.

BY APPOINTMENT.



JOHN WEEKS & COMPANY,

KING'S ROAD, CHELSEA, LONDON.

HORTICULTURAL BUILDERS AND HOT-WATER APPARATUS MANUFACTURERS, ENGINEERS, AND IRON FOUNDERS.

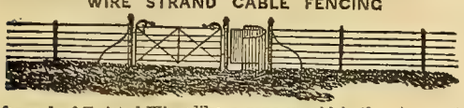
PLANS, ESTIMATES, & ILLUSTRATED CATALOGUES FREE ON APPLICATION.

PRICES REDUCED.

H. J. MORTON AND CO., Galvanised Iron Works, 2, Basinghall Buildings, Leeds.

GALVANISED IRON ROOFING for Farm Buildings and other Roofs; the cheapest, most durable, and neatest Roofing in use; also Spouting at 10½*d.* per yard.

WIRE STRAND CABLE FENCING



formed of Twisted Wires like a rope or cable), the strongest cheapest, and neatest fence in use, will resist the largest cattle, and will not bend or get out of form by trespassing upon or over. Price, with five lines of the Galvanised Strand, iron main posts, and pronged Standards, 1*s.* 2½*d.* per yard.

This fence is far cheaper than posts and rails, or any kind of iron fencing; and possesses four times the strength of solid bars. Will not rust nor corrode. Upwards of 1200 miles of this Fencing supplied.

GALVANISED GAME AND POULTRY NETTING.



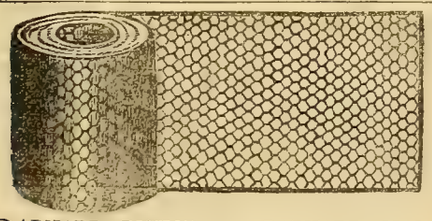
Galvanised, 24 ins. wide, 2-inch mesh, 5*d.*, 6*d.*, 7½*d.*, and 10*d.* per yard.
Galvanised, 24 ins. wide, 3-inch mesh, 4*d.*, 5*d.*, and 7*d.* per yard. The Netting made any width, and with openings of any size.

GALVANISED IRON CHAIN CAMP STOOLS & CHAIRS, POULTRY FOUNTAINS & FEEDERS, PRONGED DAHLIA RODS AND ROSE STAKES, &c.

Strong CATTLE HURDLES from 2*s.* per yard.

PATENT IMPROVED GAS WORKS of all sizes for the use of Private Houses, Mansions, Railway Stations, Mills, Collieries, Mines, Villages, &c. Works from 10 to 500 lights estimated for. The works can be entrusted to an ordinary labourer.—Apply to

HENRY J. MORTON & CO. 2, Basinghall Buildings, Leeds.



BARNARD, BISHOP, AND BARNARD, Market Place, Norwich, in consequence of improvements in their machinery for the manufacture of the above article, have been enabled to make a great reduction in the prices.

	Galvanised.	Japanned Iron.
2-inch mesh, 24 inches wide	5*d.* per yd.	4*d.* per yd.
2-inch " strong do.	6 "	4½ "
2-inch " intermediate, do. ..	7 "	5½ "
2-inch " extra strong, do. ..	9½ "	7½ "
1⅝-inch " 24 inches wide	5½ "	4½ "
1⅝-inch " strong, do.	6½ "	5½ "
1⅝-inch " intermediate, do. ..	7½ "	6 "
1⅝-inch " extra strong, do. ..	10 "	8 "

All the above kinds can be made of any width (under 8 feet at proportionate prices. If the upper half is of a coarser mesh than the lower, it will reduce the prices about one-fifth.

Strong Galvanised Poultry Netting, 8½*d.* per yard, 3 feet wide Galvanised Sparrow-proof Netting for Pheasantries, 2½*d.* per square foot. Delivered free of expense in London, Peterborough, Hull, or Newcastle. Manufacturers of Improved Strained Wire Cattle and Deer Fencing, Iron Hurdles, &c.

Illustrated Catalogues and Patterns forwarded by post.

RICK CLOTHS, with POLES, PULLIES, and LINES complete, both New and Second-hand.

NETTING, BUNTING, SCRIMS, and TIFFANY, for the protection of Fruit Trees and tender Plants, Shades for Greenhouses, &c.

Early application should be made for Second-hand Rick Cloths.

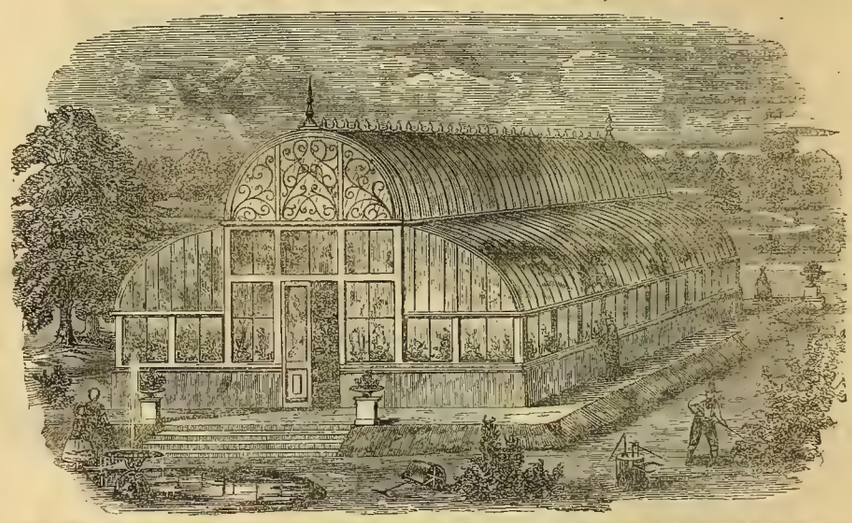
A great variety of TENTS may be seen erected on the Premises. A quantity of Second-hand MARQUEES and TENTS from the Crimea.

Address, BENJAMIN EDGINGTON, 2, Duke Street, London Bridge, S.E. West End Establishment, 32, Charing Cross.

An ILLUSTRATED CATALOGUE sent free by post.

COTTAM & COMPY., Engineers, Founders, &c.,

2, WINSLEY STREET, LONDON, W.



A SHOW ROOM DEVOTED ENTIRELY TO ARTICLES OF HORTICULTURE.

THE NEW ILLUSTRATED CATALOGUE UPON APPLICATION.

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	" Syringes	Garden Bordering
Hot-water Apparatus	Ornamental Wire Work	Hurdles	" Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

Iron Hurdles, Strained Wire Fencing, Game Netting, &c.

Every description of Plain, Ornamental, Cast and Wrought Iron, and Wire Work.

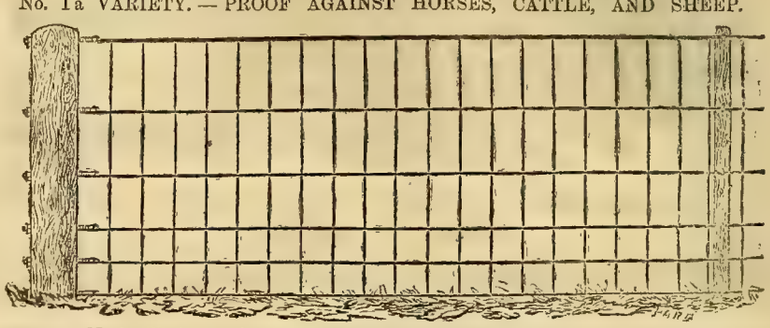
EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

N.B. COTTAM AND COY. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

GREENING & COMPANY'S PATENT WIRE FENCES.

Patronised by His Royal Highness the PRINCE CONSORT.

No. 1a VARIETY.—PROOF AGAINST HORSES, CATTLE, AND SHEEP.



SPECIFICATION.—No 1a Variety, 3 feet 9 inches high, 6 horizontal bars of stout fencing wire, strengthened and supported by vertical bars, at distances of 5 inches. **ONE SHILLING per Lineal Yard.**

Particulars of the above and other Iron and Wire Fences for Parks, Farms, Gardens, Game Preserves, Poultry Courts, &c., in the Catalogue, sent post free on application to

GREENING & COMPANY, Victoria Iron and Wire Works, 81, Oxford St., Manchester.

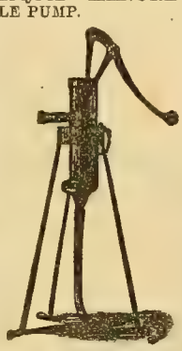
VOKINS AND HURD, Seymour House, Jubilee Place, King's Road, Chelsea, BUILDERS OF HOTHOUSES, CONSERVATORIES, GREENHOUSES, PITS, and every description of erections in Glass work, either in Wood or Iron; also Heating the same by hot water on the most approved plans and at the lowest prices consistent with good work. Estimates forwarded.

HANDS'S PATENT is the only system to circulate Heat, and for WARMING, FUMIGATING, and VENTILATING Hothouses, Greenhouses, Winter Orchards, &c.; to keep vegetation healthy in a humid atmosphere, and can be applied to any kind or shape of Forcing-houses and Conservatories now existing at trifling cost.—For particulars apply at the Office, 10, Charlotte Street, Fitzroy Square, London; or to Mr. JOHNSON HANDS, Epsom.

GREENHOUSES, ORCHARD HOUSES, AND PITS
OF EVERY DESCRIPTION, MADE BY STEAM MACHINERY, AND HEATED BY HOT WATER ON AN IMPROVED PLAN AT
J. LEWIS'S HORTICULTURAL WORKS, Stamford Hill, Middlesex, established 20 years. These Buildings are warranted of the best materials, and at prices which defy competition. The ventilation is most efficient, and the greatest improvement of the present day. Prices of any size on application. References in all parts of the United Kingdom.

TO GARDENERS, ETC.
PATENT WATERING ENGINES, PAIL MACHINES, CONSERVATORY PUMPS, and GREENHOUSE SYRINGES, with all the latest improvements, manufactured only by the Patentee,
RICHARD READ, 35, REGENT CIRCUS, PICCADILLY, LONDON.
*** Descriptions sent post free.

WARNER'S IMPROVED LIQUID MANURE OR GENERAL PORTABLE PUMP.



These Pumps are fitted with J. W. & Son's Patent Buckets and Suckers, and cannot clog in action. The barrel is of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure. The legs will fold together, and the whole may be carried on the shoulder to any pond or tank required.
Price of 4½ in. Pump, with legs, 3*l.* 3*s.* If with planished copper barrel and galvanised iron handle, &c., 14*s.* extra. The barrel is 27½ in. long, and the legs are 5 ft. high.
These Pumps are also made without the legs, with strong wrought-iron straps for screwing on to any ordinary water butt or cart, and fitted with 1½ inch brass union for attaching flexible suction. Price 50*s.*
1¾ inch Gutta Percha Suction Pipe, 1*s.* 11*d.* per foot.
Rubber and Canvas Suction and Delivery Hose, from ½ inch to 4 inches diameter, in lengths of 60 feet to order. Branch Pipes with Cocks, Union Screws, &c., at reduced prices.
May be obtained of any Ironmonger or Plumber in town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin St., London.

WARNER'S PATENT VIBRATING STANDARD PUMPS.
PATENT CAST-IRON PUMPS, fitted with J. W. & Son's Patent Buckets and Suckers, which cannot clog in action, for Farms, Cottages, and Wells, not exceeding 28 feet.

Diameter of Barrel.	Height.		£ s. d.
2½ in.	short 1 ft. 7 in.	Fitted for lead, gutta percha, or cast iron flanged pipe, as required.	1 10 0
2½ ,,	long 3 ,, 3 ,,		1 14 0
3 ,,	ditto 3 ,, 6 ,,		2 8 0
3½ ,,	ditto 3 ,, 6 ,,		2 12 0
4 ,,	ditto 3 ,, 6 ,,		3 3 0
2½ ,,	short, with 15 feet of Lead Pipe attached, ready for fixing		2 14 0
2½ in.	long ditto ditto	ditto	2 18 0

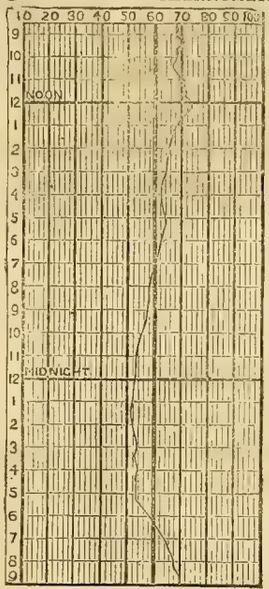


The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.
May be obtained of any Ironmonger or Plumber in Town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin Street, London.
Every description of Machinery for Raising Water by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

WILLIAM HOOD, ECONOMIC HOT-WATER ENGINEER, furnishes estimates for Apparatus fixed complete, or for Materials only.—68, Upper Thames Street, London, E. C.

BLOSSOM OF WALL FRUIT TREES effectually PROTECTED by Worsted Net, and which also protects the ripe fruit afterwards from wasps and flies. Sample and plan of fixing it sent free. Much approved, and lasts 10 years. All kinds of Garden, Fishing, Sheep, and Rabbit nets. The Tanned Fish-nets 6*s.* 3*d.* per 100 yards.—R. RICHARDSON, Whitehorse Factory, Bidborough Street, Judd Street; Office: 99, Euston Road, London.

TO HORTICULTURISTS.
GAUNTLETT'S PATENT CHRONOMETRICAL THERMOMETER.



This instrument, which combines an eight-day clock of the best English make showing time, with a newly-patented Thermometer, wherein glass and quicksilver are dispensed with, writes down the temperature of the atmosphere on a slip of paper, and when placed in a Hothouse, Forcing House, or Conservatory, &c., supplies a valuable record of the temperature, with all its variations, showing the time when any change took place, and how long such change continued.
The above slip (reduced in size) exhibits the temperature of the Royal Agricultural Society's show yard at Chester, July 22, 1858, written off by one of these instruments, to which was awarded the Society's SILVER MEDAL.
This is the only instrument that registers temperature continuously and writes it down, and no horticulturist should be without it.
Orders received by W. H. GAUNTLETT, Middlesbro' on-Tees.

GISHURST COMPOUND, PATENTED.—For preventing and destroying Red Spider, Scale, Mealy Bug, Thrip, and Green and Brown Fly.—See *Gardeners' Chronicle*, Nov. 6, 1858.—To be dissolved ¼ or ½ lb., or less, in a gallon of soft water, and applied by means of a syringe or a soft brush.

THRIP (magnified).



MEALY BUG (magnified).



On Orchids it may be used in a strong lather, applied by a shaving brush, but on tender young Geranium shoots a solution of 2 oz. to the gallon will be found sufficiently strong.
Sold in boxes at 1*s.* 6*d.* and 6*s.* each, with directions for use, and printed opinions of Mr. Rucker's Gardener, Lady Dorothy Neville's Gardener, Sir William Hooker, Mr. Rivers, Messrs. Francis & Arthur Dickson & Sons of Chester, and Messrs. Dickson & Brown of Manchester.
For Nurserymen the large size is recommended, but where the consumption is not large the compound will be found to keep its strength best in the small boxes.
Nurserymen and Seedsmen supplied by PRICE'S Patent Candle Company Limited), Belmont, Vauxhall, London, S.

TANNED NETTING, AT REDUCED PRICES.—200 square yards, 12*s.*; 500 yards, 25*s.*; 1000 yards, 47*s.*
SCRIM CANVASS for Wall Fruit, 50 yards, 16*s.*; 100 yards, 30*s.* Be particular to address in full, FREDERICK EDGINTON, Thomas Street, Old Kent Road, London, S.E.

TANNED GARDEN NETTING, for preserving Fruit Trees from frost, blight, birds, &c., and as a fence for fowls, &c. One yard wide 1½*d.*, 2 yards 3*d.*, 3 yards 4½*d.*, and 4 yards 6*d.*, per yard, in any quantity, may be had at C. WRIGHT'S, 376, Strand, W.C.—A liberal allowance to Nurserymen.

BRITTAIN'S GARDEN NET completely protects Fruit Blossoms from injury by frost, and provides for the circulation of air and admission of light, so essential to healthy growth; 55 inches wide, 5*d.*, 6*d.*, and 8*d.* a yard; good SHADING TIFFANY, yard wide, 3*d.* do.—Manchester, Mar. 26.

FOR Effectually Protecting the Bloom of Wall Trees from Spring Frosts use SHAW'S No. 3 TIFFANY, DOUBLE STRENGTH. In pieces 18 yards long by 39 inches wide, 7*s.* 6*d.* each.—JOHN SHAW & Co., Princess Street, Manchester.

HOWARDS' PRIZE IMPLEMENTS, 1859.
JAMES AND FREDK. HOWARD, Britannia Iron Works, Bedford, beg to direct attention to their
CHAMPION PLOUGHS,



For which they received All the First Prizes last offered by the Royal Agricultural Society of England, viz.:—
The First Prize for the best Plough for general purposes.
The First Prize for the best Plough for light land.
The First Prize for the best Plough for heavy land.
The only Prize ever offered by the Society for the best Double Breast or Ridging Plough was also awarded to J. & F. HOWARD.
J. & F. HOWARD have discontinued troubling the Public with a long List of Prizes awarded to their Implements, but they would just state that for PLOUGHS, HARROWS, and HORSE RAKES, they have for several years gained every Prize for which they have competed.

PLOUGHS.

P PLOUGH, with two wheels, for light work ..	£4	7	6
PP PLOUGH, ,, for general purposes	4	12	6
SKIM COULTER	0	5	6

STEEL BREASTS, 7*s.* and 7*s.* 6*d.* extra.

HARROWS.

A Set of Three 4-Beam HARROWS, with Whippletree, recommended as general Seed Harrows, 9¼ feet wide, marked No. 12	3	14	0
A Set of Three 4-Beam HARROWS, with Whippletree, adapted for 3 Horses, 10 ft. wide, marked No. 11	4	4	0

HORSE RAKES.

Price of small size RAKE, marked A, with 24 iron teeth, extreme width 7½ feet	7	10	0
Ditto, with Steel Teeth	8	0	0
Price of large size, marked B, with 28 iron teeth, extreme width 8½ feet	8	0	0
Price of large size, marked B, with steel teeth ..	8	10	0
Price of extra large size, marked C, with 24 steel teeth, extreme width, 8½ feet	10	10	0
Price of a Set of 15 Prongs, to be attached to the above when used as Weed Extirpators	1	10	0

Free Delivery to Birmingham, Bristol, Derby, Gloucester, Lincoln, Liverpool, London, Manchester, Norwich, Nottingham, Retford, Wisbeach, and Worcester; or to Dublin, Edinburgh, Glasgow, and other parts at fixed rates.
HOWARDS' NEW CATALOGUE, containing prices and description of their Patent Ploughs, Harrows, Horse Rakes, and other Implements, including Smith's Steam Cultivators, for which they received at Chester the Gold Medal of the Royal Agricultural Society of England, sent free on application to
J. & F. HOWARD, Britannia Iron Works, Bedford.

ALLENS PATENT PORTMANTEAUS AND TRAVELLING BAGS, with SQUARE OPENING; Ladies' Dress Trunks, Dressing Bags, with Silver Fittings; Despatch Boxes, Writing and Dressing Cases, and 500 other articles for Home or Continental Travelling, illustrated in their New Catalogue for 1859. By post for two stamps. J. W. & T. ALLEN, Manufacturers of Officers' Barrack Furniture and Military Outfitters (see separate Catalogue), 18 and 22, Strand.

PRIZE MEDAL, PARIS EXHIBITION 1855.
METCALFE, BINGLEY, AND CO.'S New Pattern and Penetrating Tooth Brushes, Penetrating unbleached Hair Brushes, Improved Flesh and Clothes Brushes, and genuine Smyrna Sponges; and every description of Brush, Comb, and Perfumery for the Toilet. The Tooth Brushes search thoroughly between the divisions of the Teeth and clean them most effectually—the hairs never come loose. M., B, and Co. are sole makers of the Oatmeal and Camphor, and Orris Root Soaps—sold in Tablets (bearing their names and address) at 6*d.* each, of METCALFE'S celebrated Alkaline Tooth Powder, 2*s.* per box; and of the New Bouquets.—Sole Establishment, 130B and 131, Oxford St., 2d and 3d doors west from Holles St., London.

TO BE LET, BRISTOL NURSERY GROUNDS, Kemp Town, Brighton. These Gardens are now to Let for occupation with immediate possession.—Any person desirous of treating for the same may obtain particulars and permission to view the grounds on application to Mr. R. W. LUCAS, 20, Great Marlborough Street, London, W.

Sales by Auction.

MONTHLY POULTRY SALE.
MR. J. C. STEVENS will Sell by Auction at his Great Room, 38, King Street, Covent Garden, on TUESDAY, April 5, at 12 o'Clock precisely, 250 Lots of POULTRY and PIGEONS, including birds of very superior quality, Cochins, Brahmas, Dorkings, Spanish, Gold and Silver pencilled, Hamburghs, Game, Bantams, Himalaya Rabbits, &c. The Pigeons comprise Pouters, Carriers, Runts, Tumblers, and other varieties.—Catalogues by enclosing a stamped envelope to Mr. J. C. STEVENS, 38, King Street, Covent Garden, W.C.

TO GENTLEMEN, FLORISTS, AND OTHERS.
MESSRS. PROTHEROE AND MORRIS will Sell by Auction at the Mart, Bartholomew Lane, on FRIDAY, April 1, at 12 o'Clock, a first-class Collection of Carnations, Picotees, and Pinks; about 300 choice Standard and Dwarf Roses, consisting of the most approved kinds; choice Fruit Trees, Azalea indica, Camellias, and other Plants in bloom, selected American Plants, Pæonias, Verbenas, Fuchsias, Dahlias in dry roots, &c.—May be viewed the morning of Sale. Catalogues to be had at the Mart, and of the Auctioneers, American Nursery, Leytonstone.

ADDRESS: THE MANAGERS, ST. PANCRAS IRONWORKS.

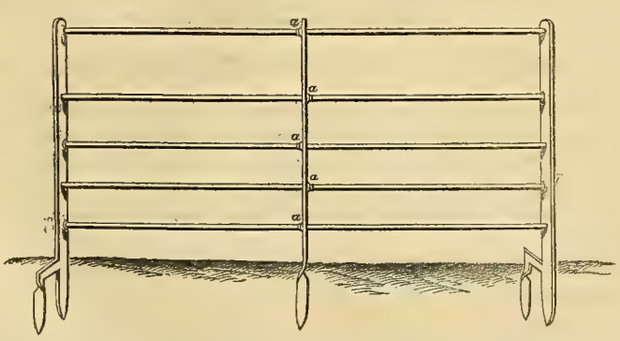
THE ST. PANCRAS IRON WORKS ARE OPPOSITE THE OLD ST. PANCRAS CHURCH,
OLD ST. PANCRAS ROAD, LONDON.

IRON COLLAR BAR HURDLES.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

Obtained the Silver Medal of the Royal Agricultural Society.

ST. PANCRAS IRON WORKS,

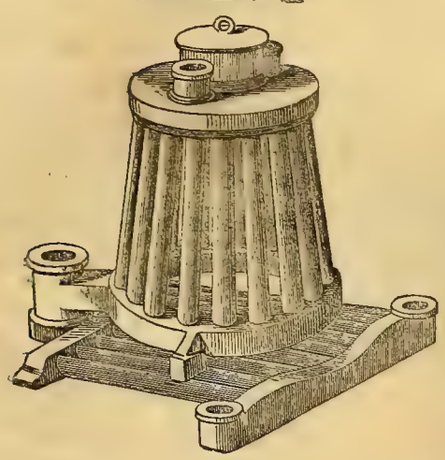


OLD ST. PANCRAS ROAD, LONDON.

The improvement by this PATENT consists in the COLLARS on the Bars which, being placed on alternate sides of the centre upright bar, keep it in its position, confine the bars to short bearings, prevent their being strained, and give more than DOUBLE STRENGTH and RIGIDITY to the HURDLE.

PROFESSOR VARNELL'S MANGERS AND STABLE FITTINGS.

By Her Majesty's Royal Letters Patent.



ORMSON'S

PATENT JOINTLESS TUBULAR BOILER.

TESTIMONIALS.

"Sir,—I feel much pleasure in bearing testimony to the efficiency of your Patent Jointless Tubular Boiler which you have erected for Baron de Rothschild, at Gunnersbury Park, and from the number of hothouses and great extent of pipe you have heated from one boiler, I now feel confident it is decidedly the most powerful, economical, and safe boiler yet invented. Having had the working of the Wrought-iron Arch, and Cast-iron Corrugated Arch Boilers in these gardens, I have no hesitation in stating that your boiler is infinitely superior to either of them in every respect.—Yours truly,

"William Forsyth.

"The Gardens, Gunnersbury Park, Acton, Middlesex."

"Sir,—It is with much satisfaction I give my testimony in favour of your admirable Patent Jointless Tubular Boiler, being attached to upwards of 3000 feet of 4-inch pipe, and doing the work of four fires, and consumes little more fuel than was required for one of the fires previous to the adoption of your boiler. We can command any amount of heat, the boiler being so powerful I am confident it would with ease heat as much more. Altogether we have realised much more economy in fuel and attendance than we at first anticipated. In addition to the great power and economy of your boiler it possesses another most important advantage over all other tubular boilers which have come under my notice, in the fact of its being jointless, consequently quite safe from all danger of leakage. On referring to my coal account I find that I now only use one where I formerly used five waggon loads of coal for the arched boilers which you took out.—I am, Sir, yours respectfully, "J. Fraser.

"The Gardens, Luton Hoo, Bedfordshire."

"Mr. Henry Ormson, Sir,—I beg to inform you of my entire satisfaction with your Hot-water Apparatus in general, and your Patent Jointless Tubular Boiler in particular, as fitted up in the new range of Hothouses you have recently erected for Lord Powerscourt. The Boilers I admire for three excellent reasons; they are simple in construction, effective in working, and I feel assured, from the calculation I have already made, a very great saving of fuel will be the consequence from using these Boilers. You will permit me to add if I had formed a contrary opinion of the merits of these Boilers I should have been candid enough to have told you so, but in justice to you I must distinctly state I consider them a great boon to the horticultural world.—I am, Sir, yours truly, "Alexander Robertson.

"The Gardens, Powerscourt, Ireland."

"Sir,—I have much pleasure in testifying to the excellent working of your Patent Jointless Tubular Boiler; though a small one it does the work of five fires, and is a great saving of fuel and labour.—I am, Sir, yours respectfully,

"Holland House Gardens, Kensington." "J. Scobie.

"Sir,—In regard to your Patent Jointless Tubular Boiler, it answers admirably the purpose for which it was erected. I consider it the most economical and powerful Boiler ever introduced, and am confident it will not fail to give general satisfaction.—I am, yours most respectfully,

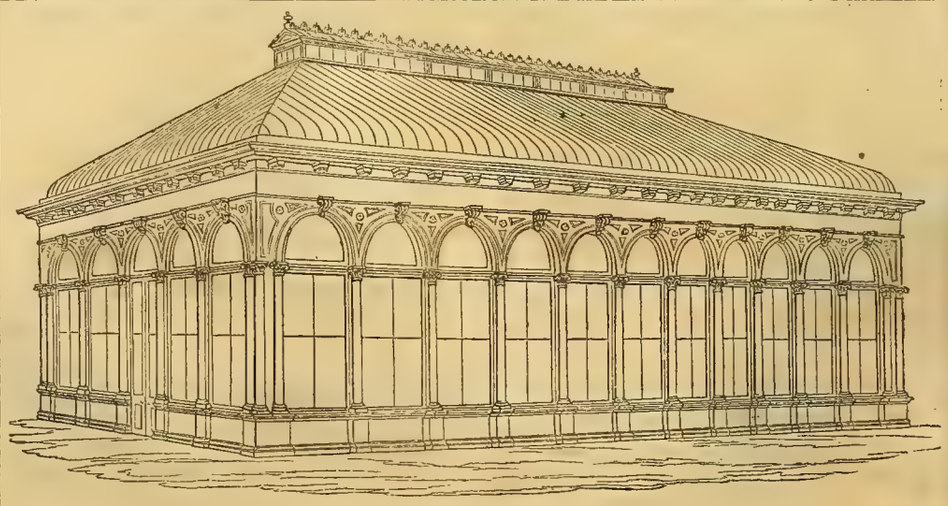
"John Lauder.

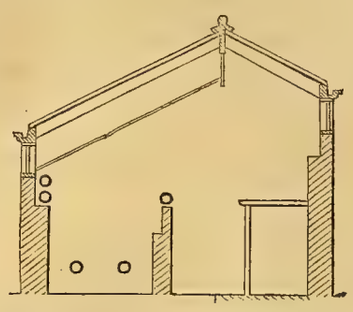
"The Gardens, Witley Court, Worcestershire."

"Sir,—I have much pleasure in testifying to the efficiency of your simple but most powerful Patent Jointless Tubular Boilers. The two small boilers you put up here are doing the work of six fires, with the addition of a range of lofty coach-houses which were afterwards attached. The amount of fuel is little more, and the attention much less, than was required for one fire before these boilers were put up; there is not the least strain on them, and I am confident if required would heat a considerably greater amount of piping. I must also add that the whole of the hot-water apparatus works satisfactory, especially the ventilating boxes you put up in the Fruiting Pine Stove, which I consider a great acquisition, supplying at all seasons a constant stream of pure warm air to the plants, which are in consequence sturdy and in the most robust health.—I am, Sir, yours respectfully, "John Clark.

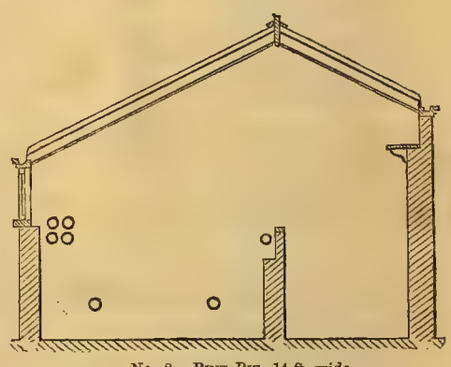
"The Gardens, Cobham Hall, Gravesend, Kent."

Ormson's Patent Jointless Tubular Boilers may be seen in successful operation at Mr. Veitch's, Royal Exotic Nursery, King's Road, Chelsea.

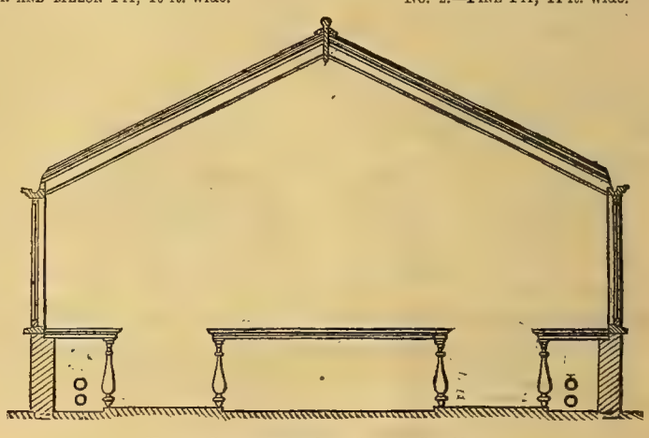




No. 1.—Cucumber and Melon Pit, 10 ft. wide.



No. 2.—Pine Pit, 14 ft. wide.



No. 6.—Greenhouse, from 18 to 20 ft. wide.

HORTICULTURAL BUILDINGS MANUFACTURED BY STEAM POWER MACHINERY.

BEST MATERIALS AND LOWEST PRICES.

HENRY ORMSON,

HORTICULTURAL BUILDER & HOT-WATER APPARATUS MANUFACTURER,

STANLEY BRIDGE, KING'S ROAD, CHELSEA, LONDON,

Deeply grateful for the very liberal and kind patronage bestowed upon him, begs most respectfully to inform the Nobility, Gentry, Nurserymen, &c., that it being his determination to spare no pains to merit a continuance of their favours, and that he may be enabled to execute his extensive and increasing orders punctually, and at the lowest possible cost (agreeably with the best Materials and Workmanship), he has erected a most complete set of Steam Power Machines, peculiarly adapted for the purposes of his Trade.

PARTIES DESIRING INFORMATION as to prices, &c., will, by referring to the above sections, receive immediate attention.

PLANS, SPECIFICATIONS, and ESTIMATES for plain and inexpensive practical Structures, and for the most elaborate Architectural Erections, either in Wood or Iron, forwarded on application.

Printed by William Bradbury, of No. 13, Upper Woburn Place, and Frederick Mullett Evans, of No. 20, Queen's Road West, both in the Parish of St. Pancras, in the Co of Middlesex Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and published by them at the Office, No. 5, Upper Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—Saturday, March 26, 1859.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 14.—1859.] SATURDAY, APRIL 2. {Price Fivepence. STAMPED EDITION, 6d.

INDEX.

Acacia tree, poisonous	288 b	Linnean Society	291 a
Acarus, Orchid	290 b	Manchester Hort. Soc.	292 a
Agri. Soc. of England	296 c	Nantes Hort. Soc.	293 a
Aphis powder, Sigma's	290 c	Orchid acarus	290 b
Avenues, to form	288 c	Pear, Comte de Flandres	290 a
Books, noticed	291 b	Pear tree, leafless	290 c
Cacti, Mexican	290 b	Pine Apple fibre, muslin from	290 b
Camellias, Milne, Arnott, & Co.'s	291 c	Plants, new	288 c
Corn supplies, foreign	298 c	—— poisonous	288 c
Crops, fallow	295 a	Potato culture	294 b
Drainage, subsoil	295 c	Rain-fall	287 c
Entomological Society	291 b	Sewage, utilisation of	296 b
Farm-yard Sunday-schools	294 c	Snakes, Madagascar	292 a
Fruit trees, to check over luxuriance in	290 c	Spergula pilifera	292 c
Garden produce, French	288 c	Straw feeding	295 b
G'asse's Gardening Book	290 a	Trade lists	291 c
Grape, Chasselas de Fontainebleau	290 a	Vanilla lutescens	288 c
Hexham Farmers' Club	295 c	Villa garden plans	289 a
Holcus saccharatus	297 a	Vine borders, covers for	290 c
Horse-power, cost of	293 c, 296 b	Violets, change of colour in	290 c
Hyacinths in glasses	290 a	Wages, Northumbrian	296 b
Ligustra—Vaccinia	289 a	Wall trees and root moisture	290 b
		Walnut trees and cattle	290 b
		Waltonian cases	290 c
		Woolston Farm	297 c

HORTICULTURAL SOCIETY OF LONDON.—Notice is hereby given that the business of the Society will be carried on in future at No. 8, St. Martin's Place, Trafalgar Square, W.C.

HORTICULTURAL SOCIETY OF LONDON.—The next Meeting of the Fruit Committee will be held at 8, St. Martin's Place, Trafalgar Square, W.C., on Tuesday, April 5, at 12 noon; on which occasion the following prizes are offered:—

For the best dish of LATE GRAPES, Two Guineas.
For the second best do., One Guinea.

Each dish to be accompanied by a form filled up by the Exhibitor. The blank forms for this and other fruits that may be exhibited, can be obtained on application to the Secretary to the Committee, Mr. ROBERT THOMPSON, Horticultural Society's Garden, Chiswick, London, W.

N.B.—The Carriage of packages of Fruit will be paid.

HORTICULTURAL SOCIETY OF LONDON, 8, ST. MARTIN'S PLACE, W.C.

Notice is hereby given that a MEETING will take place on FRIDAY, April 8, at half-past 10 A M. The only business that will be transacted is the election of Fellows.

HORTICULTURAL SOCIETY OF LONDON.—DISTRIBUTION OF SEEDS.

The Seeds annually provided for distribution being now ready, Fellows of the Society who have not received them can obtain them upon application at the Society's Office, 8, St. Martin's Place, Trafalgar Square, W.C.

HORTICULTURAL SOCIETY OF LONDON. FIRST BALLOT FOR PLANTS.

Notice is hereby given that the First Ballot for Plants is about to take place at the Society's Offices, 8, St. Martin's Place, Trafalgar Square, W.C., on which occasion the Fellows of the Society can draw for—

Pinus Don Pedri	70	Chamæcyparis thurifera	20
Seedling Ferns from Borneo	100	Pinus longifolia	40
Cupressus Lawsoniana	100	Pinus excelsa	80
Cupressus Macnabiana	100	Cupressus torulosa	80
Berberis, from Pichincha, Peru	40	Berberis dulcis	80
Hesperomeles, from Quito	80	Jasminum nudiflorum	40
Rhododendron Dalhousianum	20	Prostanthera nivea	50
Clematis microphylla, var. leptophylla	50	Helleborus Olympicus	40
Bambusa gracilis	100	Gynerium argenteum	70
Eriobotrya japonica	100	Spiræa callosa	50
		Florentine Camellias	50
		Forsythia viridissima	40
		Chamærops palmetto	40
		Acacia longifolia	20

Fellows must send in their names at the latest two clear days before each Ballot. They need not attend personally, but will be informed of the result after the Lottery shall have been drawn. Lists of the Plants to be Balloted for can be had on application at the Office, 8, St. Martin's Place, Trafalgar Square, W.C. Fellows paying four guineas a year have two chances at each Ballot. Fellows paying two guineas a year have one chance at each Ballot.

The day of Ballot will be announced next week.

ROYAL BOTANIC SOCIETY OF LONDON, REGENT'S PARK.—The SECOND SPRING EXHIBITION of PLANTS and FLOWERS for competition will take place on WEDNESDAY next, April 6. The Regulations for admission to the Gardens on this day are the same as on ordinary week-days; but the Conservatory will necessarily be closed for the arrangement of the Plants, &c., until 1 o'clock.

J. DE C. SOWERBY, Secretary.

ROYAL BOTANIC SOCIETY, REGENT'S PARK.—THE EXHIBITIONS OF PLANTS, FLOWERS, AND FRUIT this season will take place on WEDNESDAYS, May 25, June 15, and July 6. Tickets of Admission are now being issued, and can be obtained at the Gardens only by orders from Fellows or Members of the Society. Price, on or before Saturday, May 14, 4s.; after that day, 5s.; or on the days of Exhibition, 7s. 6d. each.

GRAND NATIONAL ROSE SHOW.—It is proposed to hold a Meeting of the Committee and Subscribers in London on the 13th of April. The time and place will be specified in next week's *Gardeners' Chronicle*

S. REYNOLDS HOLE, Hon. Secretary.

Caunton Manor, Newark.—April 2.

CHELMSFORD AND ESSEX HORTICULTURAL SOCIETY.—At the First Exhibition of this Society on TUESDAY, June 28, a SILVER CUP, value Five Guineas, will be offered by the Members for the Southern Division of the County for the best collection of 24 CUT ROSES. Open for Competition to all persons whose names shall be upon the books of the Society as subscribers of 5s. and upwards on the 14th April, 1859. There will also be a Sweepstakes for the best 12 BLOOMS of ROSES. Schedules of the Prizes may be obtained of the Secretary, High Street, Chelmsford.

NEW FARM SEEDS.—Purchasers of large quantities of FARM SEEDS will be treated liberally on application to SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

GOOD CLOVER SEEDS.

GENUINE NEW CLOVER SEEDS can be had of SUTTON & SONS, Seed Growers, Reading, Berks.

THE ALSIKE CLOVER.—This valuable but scarce Clover Seed is included in Messrs. SUTTON'S mixtures of Clover and Grass Seeds for permanent pasture and for alternate husbandry. It can be supplied alone if required. Price fluctuating, to be had on application.

Royal Berks Seed Establishment, Reading.

SPECIMEN GREENHOUSE AND STOVE PLANTS.—See PRICED LIST in *Gardeners' Chronicle* of March 26, page 260, with description of sizes, &c. Also a LIST containing several others sent free by post.—BASS & BROWN, Seed and Nursery Establishment, Sudbury, Suffolk.

GEORGE BAKER begs to inform the Nobility and Public that his DESCRIPTIVE CATALOGUE OF AMERICAN PLANTS AND GENERAL NURSERY STOCK will be sent free on application.

American Nursery, Windlesham, near Bagshot, Surrey, about 1 mile from Sunningdale Station, South Western Railway.

NEW DAHLIAS.

JOHN KEYNES'S SELECT CATALOGUE OF DAHLIAS, ROSES, CARNATIONS, PINKS, &c., containing Lists of all the valuable Show Flowers in each class, is now ready and will be sent on application.

Castle Street Nursery, Salisbury.—April 2.

FERN CATALOGUE.

ROBERT SIM'S NEW DESCRIPTIVE AND PRICED CATALOGUE, No. 6 (62 pages) of his COLLECTION of BRITISH AND EXOTIC FERNS, can be had, post free, for 8 stamps Gratis to all previous purchasers of Ferns.

Nursery, Foot's Cray, Kent, S.E.

HENDON PARK NURSERIES, HENDON, N.W.

SEED LIST, 1859.—A choice selection of the newest and best varieties of PEAS, BEANS, POTATOES, and all Kitchen Garden produce. The best Seeds for the Flower Garden. Forwarded on application.—EDWARD SHENTON.

HENDON PARK NURSERIES, HENDON, N.W.

EDWARD SHENTON'S Descriptive CATALOGUE of new DAHLIAS, HOLLYHOCKS, PELARGONIUMS, BEDDING AND BORDER PLANTS, and the leading New Flowers of the season 1859. Forwarded on application.

WANTED, about 1000 yards of BOX.—Apply, post paid, stating particulars of price, &c., to J. A., Gardener, 16, St. Germain's Place, Blackheath, S E.

LARGE GREEN-TOP WHITE BELGIAN CARROT.—Fine new Seed, raised from fresh-imported stock, can be supplied at 1s. per lb., or cheaper in large quantities, by SUTTON & SONS, Seed Growers, Reading.

NEW ZEALAND RUNNING BEAN.—Packets of 12 Seeds, for 14 stamps.

BASS & BROWN, Seed Growers, &c., Sudbury, Suffolk.

GRAYSON'S GIANT ASPARAGUS.—Fine 2-year roots, 2s. 6d. per 100; or 21s. per 1000.
" 3-year " 3s. 6d. " 100; or 30s. " "
The usual allowance to the Trade.

BASS & BROWN, Nurserymen, Sudbury, Suffolk.

THE IMPROVED CUSTARD MARROW.—See drawing of this handsome and productive variety in the *Gardeners' Chronicle* of Jan. 29 and Feb. 12. 12 seeds for 13 postage stamps; 9 seeds for 7 stamps. The trade supplied.

BASS & BROWN Seed Growers, Sudbury, Suffolk.

DIOSCOREA BATATAS.—Fine roots, 9 to 12 inches long, 5s. per dozen; extra size, 10s. per dozen.

BASS & BROWN, Seed Growers, &c., Sudbury, Suffolk.

DIOSCOREA BATATAS—CHINESE YAM.

WM. CUTBUSH AND SON beg to intimate that now is the best time for planting the above. Good Sets, 21s. per 100; or 4s. per doz.—Highgate Nurseries, London, N.

CHINESE POTATOES (DIOSCOREA BATATAS) for planting this month. Large sets from full-sized, well-matured tubers, some of them weighing over 2¼ lbs., grown in this country, 2s. 6d. per dozen.—Apply, WM. LEMON, Sandbach, Cheshire.

DIOSCOREAS—FINE LARGE ROOTS CHEAP.

SUTTON AND SONS, Reading, can supply DIOSCOREA BATATAS, 9 inches long, at 5s. per dozen, or 40s. per 100. This vegetable is worthy of all that has been said in its favour, and will thrive in almost any soil and situation.

SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

SORGHUM, OR HOLCUS SACCHARATUS.

SUTTON AND SONS, Importers of this Seed, can supply it wholesale and retail, warranted the true kind, and good growing Seed. 8 lbs. per acre sufficient.

Present retail price 2s. per lb, or cheaper in large quantities. Instructions on cultivation sent with the Seed.

SUTTON & SONS, Royal Berks Seed Establishment, Reading.

HOLCUS SACCHARATUS, or North China Sugar-Cane.—Pamphlet, "A Visit and a Plant;" the only English authority on the Cultivation of the above. Post free 6d. Prices of Seed on application. Samples 6d. Four varieties of Holcus remitted free by post on receipt of 10s.

CHINESE YAMS, 4s. per dozen.
ASPARAGUS plants, 16s. per 1000.

JOHN W. CLARKE, Whittlesea, Cambridgeshire.

500 BUSHELS of FLUKE and WHITE BLOSSOM SEED POTATOES, true, free from disease, and suitable sizes, at 3s. 4d. the bushel of 80 lbs., samples of which may be had on application to Mr. WM. GROSVENOR, Prospect Nursery, Cheddleton, near Leek, Staffordshire.

A remittance or reference from unknown correspondents.

CONIFERÆ.

A. PAUL AND SON have a large stock of the above, very handsome, in fine order for removal, many suited for immediate effect. For particulars see Advertisements in *Gardeners' Chronicle* of November and December last.—Nurseries, Cheshunt, Herts.

DOUBLE SCARLET INTERMEDIATE STOCKS.

J. WOOD AND SONS, Old Kent Road, beg to inform the Trade and others that they have a surplus stock of the above, in 60-pots ready for repotting or bedding. Price per 100 upon application.

SPERGULA PILIFERA.—A perfect substitute for GRASS LAWNS WITHOUT MOWING.—A two years' established Plant, showing its character, sent Post free on receipt of 2s. 6d. or 30 stamps.

Address JOHN SUMMERS, Gardener, Forest Hill, Sydenham.

PAMPAS GRASS (GYNERIUM ARGENTEUM).—The beauty of this extraordinary plant has this season been fully appreciated. It can be supplied by the dozen, hundred, or thousand, by CHARLES NOBLE, Bagshot, Surrey.

JOHN CULVERWELL, Taunton, begs to call the attention of Agriculturists to his superior selection of GRASS SEEDS, which for PURITY, change of SOIL, and CLIMATE, will bear comparison with any house in the kingdom. Prices, terms, and samples forwarded on application.

GIANT SAINFOIN SEED.—Seed of this excellent and productive Plant may be had of RAYNBIRD & HARVEY, Basingstoke, and 89, Seed Market, Mark Lane. Samples and prices on application.

N.B. R. & H. can also supply Common Sainfoin both of English and French growth at market prices.

HUDSON'S GOLDEN MELON BARLEY.—Selected Samples for Seed of this most valuable variety, superior both for produce and malting quality, may be had of RAYNBIRD & HARVEY, of Basingstoke; and 89, Seed Market, Mark Lane, E.C.

THE PRIMULARY.

THOS. WILD respectfully reminds his friends that April and May is the season for sowing CHINESE PRIMROSES. Mixed colours, 2s. 6d. per packet. Separate colours sold out.—THOS. WILD, The Primulary, Ipswich.

NEW ROSES.

A. PAUL AND SON beg to inform admirers of the Rose that they will have plants of all the NEW ROSES ready for Sale by the middle of the month at the lowest advertised prices.—Nurseries, Cheshunt, Herts.

STRAWBERRY PLANTS can now be supplied of every kind worth growing, warranted to produce a good crop this year. They are transplanted plants, and will be sent with a ball of earth to each. Price 10s. per 100, or in less quantities 2s. per dozen.—R. S YATES, St. Ann's, Manchester.

CHOICE GERANIUMS.

JAMES HOLDER can supply the above (including French, Fancy, and Show varieties), at 15s. per dozen. List of names forwarded on application.

N.B. The Trade supplied on liberal terms.
Crown Nursery, Reading, Berks.

FINEST SHOW CARNATIONS, PICOTEES, PINKS, &c.

CHARLES SCHOFIELD has a fine healthy stock of the above for sale at 6s., 12s., and 20s. per dozen pairs. Also PANSIES, DAHLIAS, VERBENAS, FUCHSIAS, &c. CATALOGUES now ready, sent free on application.—Knowsthorpe, near Leeds, Yorkshire.

CHOICE PANSIES.

HART AND NICKLIN, FLORISTS, &c., Guildford, offer a dozen choice named Pansies for 6., or 50 plants for 1l., strong and healthy. Also fine HOLLYHOCK SEED, saved from extra varieties, 100 Seeds for 1s.

Border PANSIES, PINKS, ROCKET, PHLOX, &c., 3s. p. doz.

WANTED, First-class POLYANTHUS SEED.—Address, stating price, A. D, Ladbroke Nursery, Notting Hill, W.

PANSIES.—The best and most distinct kinds, extra fine show varieties, 6s. per dozen.—DODWELL & BAYLEY, Bradshaw Gardens, Chadderton, Manchester.

BELGIAN DAISIES.—In the finest variety, 4s. per dozen.—DODWELL & BAYLEY, Bradshaw Gardens, Chadderton, Manchester.

CARNATIONS.—Twenty-five pairs strong, well rooted, and extra fine show varieties, named 1l., packing and hamper included.—DODWELL & BAYLEY, Bradshaw Gardens, Chadderton, Manchester.

PICOTEES.—Twenty-five pairs strong, well-rooted plants, and extra fine show varieties, named, 1l., packing and hamper included.—DODWELL & BAYLEY, Bradshaw Gardens, Chadderton, Manchester.

PINKS.—Twenty-five pairs fine named kinds, in strong healthy plants, 10s., packing and hamper included.—DODWELL & BAYLEY, Bradshaw Gardens, Chadderton, Manchester.

PHLOXES.—The best and most distinct kinds, strong plants, well established, 8s. per dozen.—DODWELL & BAYLEY, Bradshaw Gardens, Chadderton, Manchester

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY LIMITED supply every requisite for the Farm and the Garden.

Registered Offices, Union Road, Plymouth.

THE GOLDEN CEDO-NULLI POMPONE.

J. H. BIRD is now sending out the above beautiful new POMPONE, in strong plants at 5s. each. Usual allowance to the Trade.

Plants may also be obtained of the following:—HOGG & Co., Covent Garden Market; HARRINGTON, Kensington; J. & J. HAYES, Ponder's End, N.—Stoke Newington, April 2.

GARDENERS' CHRONICLE NEWSPAPER

NEW FUCHSIA "LORD CLYDE" (YOUELL'S).—It is with much pleasure and satisfaction that we have the opportunity of offering for the present season the above truly novel and probably the most beautiful Fuchsia that has yet been introduced. The tube and sepals (which are of great substance) are of rich glossy scarlet, the latter most perfectly reflexed, exhibiting a large well-folded corolla of rosy pink, distinctly flaked, with broad stripes of bright violet purple. The habit of the plant and the profuseness of its blooming properties are all that can be desired. It flowered for the first time in 1857, and proved again in 1858, and has maintained its character in every respect. Strong plants will be ready for sending out on and after the 27th of April, at 10s. 6d per plant. (Per post free, if required.)

Correct Coloured Engravings, by Mr. Andrews, will be forwarded to any address on receipt of six postage stamps.

YOUELL & Co 's Royal Nursery, Great Yarmouth.—April 2.

NEW VERBENAS, RAISED BY MR. ELPHINSTONE.

1. PICTURATA.—Crimson, large, and fine truss, conspicuous white round eye.
2. COMTE DE MONTALEMBERT.—Light lilac, very large flower of extra substance, with large white eye.
3. ANNIE.—Light rose, large white eye, a very desirable colour and good substance.
4. BOUQUET DE LA REINE.—Peach, large white eye, fine shape, and extra substance, quite a new colour.
5. MAGNUM BONUM.—Bright crimson, fine yellow eye, large flower and a very striking variety.
6. GRANDIFLORA PURPUREA.—Violet purple, large truss, fine white eye.

Plants ready for sending out second week in April.

D. BROWNE has great pleasure in introducing the above Six New VERBENAS, as being a decided improvement on any hitherto produced in form, colour, and extra substance, with fine strong habits so desirable for bedding purposes.

The Stock being limited, early orders are respectfully solicited so that the best Plants may be selected and reserved.

The collection of Six Varieties, package included, 20s., or 3s. 6d. each, sent free of carriage.

Horticultural Grounds, Sprowston; Seed Establishment, 41, London Street, Norwich. The Trade supplied on the usual terms.

SEEDLING FUCHSIAS.

GEORGE WHEELER, NURSERYMAN, &c., Warminster, Wilts, respectfully announces that strong plants of his SEEDLING FUCHSIAS will be ready to be sent out on and after the 20th inst.

SIR COLIN CAMPBELL. — The most beautiful double Fuchsia ever offered. Flower very large; tube and sepals dark scarlet. Corolla very prominent, large, full, and regular, and of a beautiful purple colour; a fine variety for exhibition, possessing the desirable property of holding its blooms much longer than other varieties; its large blooms makes it a very conspicuous and effective plant in a collection. Price 10s. 6d. each. Sir Colin was shown in full bloom at the Trowbridge Horticultural Exhibition the 18th August, at Bath on the 25th, Salisbury, 30th; at the National, in London, on the 2d September; and at Devizes on the 3d; at all which places it obtained Prizes or Certificates.

WILTSHIRE LASS.—Tube and sepals clear waxy white, corolla rich dark puce; an improvement on the Maid of Kent, the flower being larger, of good habit, a free bloomer, and a good grower. Price 5s. each. The usual discount to the Trade.

G. WHEELER will be enabled to send out with the above the six new Fuchsias offered by Mr G. Smith, of Tollington Nursery.

G. WHEELER has on hand a large quantity of RHODODENDRONS from 9 inches to 2 feet, at very moderate prices.

NEW PLANTS introduced by the establishment of Mr. LINDEN, in the Royal Zoological and Horticultural Garden, Brussels, and ready for sale on the 1st May next. Free to London.

Arachnothrix rosea	12s. 6d.	Begonia argentea	21s. 0d.
Begonia amabilis	21 0	,, Victoria	21 0

Orders for the two last Begonias have to be directed to Mr. J. Veitch.

Beloperone violacea	8s. 0d.	Monochætum sericeum	8s. 0d.
Centradenia grandifolia	12 0	Musa glauca	8 0
Cuphea ocymoides	8 0	Mutisia Clematis	21 0
Lindenia rivalis	8 0	Philodendron fenestratum	21 0
Maranta Porteana	21 0		

One plant over if three are ordered.

DECORATIVE PLANTS.

Crescentia regalis	42s.	Oreopanax peltatum	42s.
Curatella imperialis	63	Rhopala australis	42
Gomphia Theophrasta	42	,, glaucophylla	42
Jacquinia smaragdina	21		

And above 60 quite new FERNS of the finest genera.

Mr. LINDEN'S DESCRIPTIVE CATALOGUE, just published, contains also extensive lists of Orchids, Ferns, Bromeliads, Tropical Fruit Trees, Medical and useful Plants, fine foliaged and variegated Plants, Palms, rare Stove and Greenhouse Plants, &c., and may be had on application at his agent's office in London,

Mr. R. SILBERRAD, 5, Harp Lane, Great Tower Street.

THE BEST DWARF GERMAN ASTER SEED

EVER YET OFFERED TO THE PUBLIC.

SAVED FROM FLOWERS THAT HAVE OBTAINED FIRST PRICES FOR MANY YEARS PAST AT VARIOUS EXHIBITIONS.

EDWARD TILEY begs to inform the lovers of the above beautiful flower, that he has just purchased the entire stock of Seed, which has been selected from the finest flowers as to shape, colour, and dwarfness of growth. They were inspected by many good judges while in bloom last season, who said they had never seen the Aster brought to such perfection before, and with such a dwarf habit. Seeds 1s. 6d. per packet, or two packets for 2s. 6d.

Extra fine mixed Hollyhock seed saved from the newest and best varieties, 1s. per packet.

Antirrhinum seed, saved from spotted and striped sorts, 6d. per packet.

Sweet William seed, saved from 24 distinct varieties, the major part of which always flower double, 6d. per packet.

Delphinium formosum seed, extra fine, 6d. per packet.

The Improved Bath Cos Lettuce seed, saved from the finest stock ever grown in the west of England; it is very crisp and not at all liable to run, 1s. 6d. per packet.

A small quantity of seed of the Dwarf Incomparable Cabbage. This is a superb variety for windy or cold situations; it will stand the severest winter and will form good hearts much earlier than any other variety; it is very tender and soft when cooked, not having any large coarse ribs. If the seed be sown at several different times no person need be without good young Cabbage all the year. 1s. 6d. per packet A packet of the Improved Cos Lettuce and packet of the Dwarf Incomparable Cabbage, 2s. 6d.

Digitalis or Foxglove seed, saved from the finest collection ever yet seen; the flowers come to an immense size, and are as handsome if not handsomer than the Gloxinias, 1s. per pkt.

EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Church Yard, Bath.

A remittance must accompany all orders either in cash or penny postage stamps.

CHOICE SEEDS.

BUTLER & McCULLOCH,

While drawing attention to their general SPRING CATALOGUE of SEEDS, which has elicited such high encomiums both from the scientific botanist and amateur cultivator, avail themselves of the present opportunity to select from its pages the following list:—

(37) ACACIA LONGIFOLIA (magnifica).

One of the most splendid Acacias in cultivation, with gorgeous clusters of bright yellow flowers several inches in length; very hardy, rare, and beautiful. Of these graceful and highly ornamental plants our collection embraces no fewer than 47 varieties, all of the most decorative character.

(183) BROWALLIA CŒRULEA GRANDIFLORA.

Large sky-blue; quite new; free flowering (very rare).

(199) CALLICHROA PEDATA.

Crimson with white eye; a most beautiful plant, and quite new.

(217 A.) CAMELLIA JAPONICA.

From the newest and finest striped and other varieties of that much admired genus.

(243) CANNA INDICA SUPERBA.

A magnificent plant flowering all the winter; leaves large, fine green. Of this picturesque and most ornamental genus we have a magnificent collection, consisting of 28 kinds, all remarkable both for the beauty of their flowers and foliage.

(271) CANTUA PYRIFOLIA.

A handsome shrub, with bunches of waxy cream-coloured flowers (rare).

(299) CEANOTHUS FONTANESIANUS.

Blue shaded with red, new and handsome. Of this highly ornamental genus we possess nine splendid varieties.

(304) CELOSIA (species nova).

A most elegant plant, producing a multitude of long spikes of feathery blossoms, silvery white shaded with bright rose, retaining its colour perfectly when dried, and therefore admirably adapted for winter bouquets; one of the greatest novelties of the season, flowering out of doors or in pots from July to October. Well worth attention. A dried specimen may be seen.

(319) CESTRUM AURANTIACUM.

One of the finest conservatory plants in cultivation, being covered twice a year with handsome orange tubular blossoms.

(323) CHAMÆROPS HUMILIS.

Very ornamental Fan Palm which will stand ordinary winters out of doors in favoured localities in the South of England with very little protection.

(344) CHRYSOCOMA COMAUREA.

Fine evergreen shrub, bearing a profusion of golden ball-like flowers; one of the handsomest greenhouse plants in cultivation.

(393) CONVOLVULUS MAJOR SPLENDENS.

Brilliant crimson, most beautiful.

(451) DATURA HUMILIS FLORE PLENO.

A magnificent Brugmansia-like plant producing a profusion of deep golden-yellow flowers; very large, double, and sweet-scented. One of the greatest novelties of the season.

(577) GERANIUM NAPOLEON III.

Of this and other splendid varieties, including Scarlets, we have a fine stock, which cannot fail to prove highly satisfactory.

(976) PENTAPETES PHŒNICEA.

Bright scarlet; leaves long and serrated, a very handsome plant.

(1001) PHYGELIUS CAPENSIS.

Large red tubular flowers, inside golden yellow, a handsome plant (seeds rare).

(1095) SALVIA SPLENDENS Nova.

Species, scarlet (new).

(1137) SIPHOCAMPYLUS BETULÆFOLIUS.

A handsome plant, with scarlet tubular flowers; suitable for a trellis.

(1149) SOLANUM CAPSICASTRUM.

Miniature Orange tree, covered all winter with a profusion of scarlet fruit; a handsome plant for greenhouse or sitting rooms.

(1170) STATICE BONDUELLI.

Deep golden yellow; flowers early and profusely, in large rosettes.

(1276) VERONICA ANDERSONI.

Purple and white, all but hardy; a charming shrub.

(1282) VERONICA MELDENSIS.

Beautiful rose and white; a splendid plant.

(1335) BIGNONIA RADICANS MULTIFLORA.

Finer and brighter than radicans; flowers in large panicles producing a splendid effect.

(1375) GLYCINE SINENSIS, or WISTARIA.

One of the most valuable climbing trees for out-doors (seeds rare).

(1380) IPOMŒA HYBRIDA MARGINATA.

Large and magnificent; flowers of various colours on the same plant, varying from the richest velvety purple to sky-blue, bordered in the most distinct manner with pure white (new and rare) Tuis and three new varieties of Hederacea grandiflora far surpass the old and deservedly favourite rubrocœrulea for beauty, hardiness, and free flowering; they rank high amongst the novelties of the season, possessing advantages which will render them the grandest ornaments for the greenhouse, conservatory, or for out-door decoration.

(1431) MAURANDYA CRIMSON-TINTED PURPLE GRANDIFLORA.

Exquisitely beautiful (new).

(1438) MAURANDYA MAROON GRANDIFLORA.

Superb (new and rare).

(1468) TACSONIA IGNEA.

This magnificent Passionflower is unequalled for the brilliancy and splendour of its scarlet blossoms, far surpassing in this respect any of its class yet known. It flowers most profusely, grows rapidly, and covers a large space in an incredibly short time. It succeeds in a cold greenhouse, and even against a south wall with a little protection in winter (new and rare)

(1473) TROPÆOLUM FLAMMULUM GRANDIFLORUM.

Yellow; beautifully streaked with carmine (rare).

(1477) TROPÆOLUM GRACILE.

Sulphur, spotted with carmine: extremely pretty.

(1479) TROPÆOLUM MINIATUM MACULATUM.

Superb, striped variety (very rare).

(1488) TROPÆOLUM TRIOMPHE DE GAND FIMBRIATUM.

Fringed orange scarlet.

CARNATIONS and PICOTEES saved from the most choice Collection of English varieties grown on the continent, and which may be expected to produce flowers of the highest merit, sent out in sealed packets as received from our Sardinian correspondent, whose seeds for many years have given such universal satisfaction, and from which varieties of the greatest excellence have been raised.

For prices and further particulars with regard to the above and other novelties, we refer our patrons to the Catalogue itself, which is sent free and post paid on application.

BUTLER & M'CULLOCH, Covent Garden, London.—April 2.

750 BEDDING PLANTS for 7l. including basket and packing, or one half for 3l. 15s.

20 Anagallis, 2 sorts	25 Lobelias, 6 sorts
12 Ageratum, 3 sorts	50 Hollyhocks, Seedlings
50 Calceolaria, 6 sorts	12 Koniga
12 Celsia, 2 sorts	12 Nieremberria
50 Chrysanthemums, 50 sorts	12 Œnotheria riparia
12 Cupheas, 3 sorts	50 Petunia single, 25 sorts
50 Dahlias, 50 sorts	50 do. double, 25 sorts
50 Fuchsias, 50 sorts	20 Salvias, 6 sorts
50 Geraniums, Scarlets &c., 50 sorts	12 Senecio, double purple
	20 Tropœolum, 6 sorts
50 do. Variegated, 12 sorts	12 Variegated Mint
20 Heliotropes, 12 sorts	100 Verbena, 100 sorts

Apply to J. SCOTT, Merriott Nurseries, Crewkerne, Somerset. Post-Office Order on Crewkerne, or crossed cheques from unknown Correspondents. Catalogues on application, for two stamps.

CARNATIONS AND PICOTEES.

YOUELL AND CO.'S COLLECTION of the above deservedly favourites is probably the most extensive in the Trade, and having for a series of years paid special attention to their cultivation, introducing the best of the newest varieties, they are enabled to offer them at the following prices or fine, strong, well rooted plants.

CARNATIONS, finest first class show varieties by name, 18. and 24s. per dozen pairs.

PICOTEES, finest first class show varieties by name, 18s. and 24s. per dozen pairs.

Ditto, on yellow grounds, 20s. and 30s. per dozen pairs.

Finest mixed BORDER CARNATIONS & PICOTEES, 9s. ditto

True old CLOVE CARNATION, 12s. per dozen pairs.

Scarlet ditto ditto, 18s. ditto

NEW CARNATION "EXTRAVAGANZA."—For particulars see Advertisement last week. Price 3s. 6d. per pair, or 36s. per dozen pairs.

PINKS.—The finest first class show Pinks, by name, 9s. per doz.

Fine mixed border PINKS, 6s. per dozen pairs. [pairs.

HOLLYHOCKS, warranted all double flowers, and from the best leading kinds, 20s. per 100.

NEW PHLOXES.—An extensive and select collection of the above beautiful showy tribe of Herbaceous Plants, comprising the fine and newly introduced varieties from the Continent. May be obtained at 10s. per dozen, package included.

PANSIES.—Finest first-class show varieties, by name, 9s. per dozen.

CHRYSANTHEMUMS.—The handsomest of the new large flowering and Pompone kinds, 6s. per dozen.

DAISIES.—18 selected, of the best new Belgian vars. for 9s.

LOBELIAS.—Finest scarlet, adapted for forming magnificent groups, viz.:—Feu du Roi, splendens major, Victoria, fulgens superba, fulgens multiflora. L. St. Clare, 9s. per doz.; Blue do. Milleri; violacea, 9s. per doz.; Red Leopold, 6s. per doz.

OXALIS FLORIBUNDA AND ROSEA.—Quite hardy, producing a fine bed of rich rose colour, 6s. per dozen.

ŒNOTHERA MACROCARPA.—Large yellow, 6s. per dozen.

,, TARAXACIFOLIA.—Large white, 6s. ,,

DELPHINIUM FORMOSUM.—Finest blue, 3s. per dozen; 16s. per 100.

,, MOOREANUM.—Dark purple, 4s. per dozen; 25s. per 100

LINUM FLAVUM, 6s. per dozen.

TRITOME MEDIA.—A handsome winter and spring-flowering hardy herbaceous plant, producing large spikes of scarlet-yellow flowers, 9s. per dozen.

PENTSTEMONS.—A fine assortment, 6s. per dozen.

GAZANIA RIGENS.—Large orange yellow, with dark centre, 6s. per dozen.

STATICE MARITIMA ROSEA AND PSEUDO-ARMERIA.—Strong plants of these two beautiful and hardy species, producing throughout the year a profusion of lake-coloured flowers, 4s. per dozen.

DIELYTRA SPECTABILIS, fine strong plants, 6s. per dozen.

BERBERIS DARWINI, flowering plants, 6s. per dozen.

PRIMROSE, double yellow, 4s. per dozen.

HERBACEOUS PLANTS.—A choice collection of all the most showy kinds, 6s. per dozen; 40s. per 100.

☞ All orders of 2l. and upwards are delivered Carriage Free to London, Manchester, Liverpool, Peterborough, Hull, and Newcastle, as well as to any Railway Station within 150 miles of the Nursery.

YOUELL & Co., Royal Nursery, Great Yarmouth, Norfolk.

GEORGE SMITH, in offering the following Six Superb SEEDLING FUCHSIAS, warrants them to give satisfaction. They are all of good growth, fine habit, and free bloomers, viz.:—

ECLAT (SMITH).—This beautiful flower obtained a first-class Certificate at the National Floricultural Society; at the same time the Judges gave the following description, in their report of the proceedings of the Society's General Meeting, October 7, 1858:—"First-class Certificate to Fuchsia Eclat. Habit good, a free and abundant bloomer, sepals and tube scarlet, inside of sepal delicate rose, corolla clear white, a decided improvement on the white corolla'd varieties." G. S. has only to add that it is a plant of strong growth and fine habit in every way calculated to please as well as the Princess of Prussia, being quite distinct, 10s. 6d. Figured in the "Florist," Feb. 1859.

CHANCELLOR (SMITH).—See report of the National Floricultural Society, July 22, 1858. Certificate of Merit to Fuchsia Chancellor; character and habit first-rate, form good, size medium, substance fine, scarlet crimson tube and sepals, with violet purple corolla. The tube of this flower was considered rather too short, or it would have received a higher award. 10s. 6d.

SCIPIO (SMITH).—See report of the National Floricultural Society, August 5, 1858. First-class Certificate to Fuchsia Scipio. Habit dwarf, tube short, sepals broad, corolla bold and expanding, colour coral red sepals, with violet purple corolla, a great improvement on existing globosa varieties, and remarkable for its distinctness and boldness in bud. 10s. 6d.

FASCINATION (SMITH).—Tube rather shorter than the Princess of Prussia, the sepals broader, the corolla very large and pure, seen to great advantage by the graceful manner in which the sepals reflex. 7s. 6d.

PERICLES (SMITH).—A brilliant flower of average size, very smooth and good form, sepals crimson scarlet, broad and well reflexed, corolla violet purple, also an abundant bloomer. 7s. 6d.

GOLDEN PLOVER.—A flower in form and colour of Souvenir de Chiswick. This is particularly recommended for the elegant foliage, which is of a golden green heavily veined with purple lake, giving the plant a conspicuous and splendid appearance; fine habit. 7s. 6d.

SIR COLIN CAMPBELL (WHEELER).—An extra fine double variety, fine habit and free, particularly recommended. 10s. 6d. G. S. having made arrangements with Mr. Wheeler, can supply his Sir Colin Campbell at the same time that the collection is sent out—about the 20th of April.

G. S. can confidently recommend the following Three NEW VERBENAS as distinct, and worthy to be added to all good collections, viz.:—

CYRUS (SMITH).—Brilliant rosy purple, primrose eye, fine form, a strong grower. 5s.

MARS (SANKEY).—Brilliant crimson scarlet, conspicuous lemon eye, particularly recommended as a bedding variety, received a Certificate at the National Floricultural Society. 5s.

STRIATA PERFECTA (SMITH).—Bright lavender, with broad white stripe, of good form and habit. This is one of the most distinct and beautiful Verbenas that has been offered for years for all purposes. 5s.

Tollington Nursery, Hornsey Road, Islington, near London.

AZALEA INDICA.

J. IVERY AND SON beg respectfully to invite growers of the above named to an inspection of their unrivalled Stock of Young Specimens of all the newest and best varieties, many of which have been exhibited at the Metropolitan Exhibitions. They are clean and healthy, well set with bloom, and moderate in price. Catalogues forwarded post free upon application.—Dorking Nursery, April 2.

AZALEA INDICA.—

		s.	d.
25 choice varieties, very strong, and well established for fine bloom		45	0
12 choice ditto	ditto	24	0
25 choice ditto	ditto, including new varieties	65	0
12 choice ditto	ditto ditto	36	0
Fine flowering plants, selections, per doz., 18s., 24s., and		30	0

Carriage free for orders of 20s. and upwards to all Stations in London, &c. See CATALOGUE.

Bass & Brown, Seedsmen and Nurserymen, Sudbury, Suffolk.

MESSRS. B. ROEZL AND CO.'S NEW CATALOGUE OF MEXICAN SEEDS AND PLANTS, to be had on application to Messrs. B. A. Gractoff & Co., 4, Lime Street Square, London.

THE PETURION GOURD.—This wonderful vegetable which more than realised during the past season our most sanguine anticipations, as shown from the testimonials we are daily receiving, should now be sown. Seed (guaranteed to be pure) may be had in 1s. packets of E. P. Dixon, 57, Queen Street, Hull.

DOWNIE AND LAIRD beg to offer the following, which they warrant all fine show varieties, viz.:—

100 Pansies, in 25 sorts .. 30s.	100 Hollyhock seedlings
100 Hollyhocks, in 25 do. 8s.	from finest named vars. 20s.
100 Phloxes in 30 varieties, 40s.	

Selection of the above left to D. & L. A liberal allowance to the Trade.—17, Frederick Street, Edinburgh.

TO BE SOLD, a LARGE quantity of YEW TREE BUTTS, SLABS, and ROOTS; also a fine YEW TREE of great age.

The best Sea Shell and Garden Gravel for Conservatories and Garden Paths, to be had in any quantity at Gravel Wharf, 67, Augustus Street, Regent's Park Basin.

W. Holland, Proprietor.

DAHLIAS.

W. HOLMES offers the above in fine plants at 4s. per dozen, the new flowers of last year from 6s. to 9s. per dozen in April.

Chrysanthemums, 5s. per doz.		Verbenas, from 2s. 6d. to 4s. p doz	
Fuchsias, 4s. to 6s.	,,	Antirrhinums, 4s. to 6s.	,,
Heliotropes, 2s. 6d.	,,	Cupheas, 2s. 6d.	,,
Petunias, 3s.	,,	Calceolarias, 4s.	,,

Geraniums, Senecio, Lobelias, &c., equally cheap. Catalogues upon application free for one stamp.

Frampton Park Nursery, Well Street, Hackney.

CAMELLIAS, double flowering, well set with buds, 18s., 21s., and 24s. per dozen. Worked AZALEAS, full of flower buds, 18s., 21s., and 24s. per dozen. ORANGE TREES, with fruit on, 3s. 6d. each. STANDARD ROSES, from 9s. to 18s. per dozen, or 5l. per 100. ASH-LEAVED KIDNEY POTATOES, warranted true, 7s. per bushel; FLUKE do., 4s. And every other kind of Greenhouse Plant and Nursery Stock, &c.

Robert Green, 154, Kingsland Road; 55 doors from Shoreditch Church. No connection with any other house.

GERANIUMS. — Fine, well-established flowering plants of showy, free blooming kinds in great variety, may be had at 4s., 6s., and 9s. per dozen, according to size and quality. The following are some of the sorts:—Albira, Alma, Auguste Miellez, Carlos, Colonel Foissy, General Eugene Cavaignac, Gustave Odier, Hortensia, Jacques Duval, Generalissimo, Eugenie Duval, Madame Lamoriciere, Mochanna, Mr. Beck, Crimson King, Robert Bruce, &c.

Wood & Ingram, Huntingdon.

CHEAP BEDDING PLANTS, 2s. 6d. per dozen.—The advertiser begs to say that his unrivalled collection is this season very fine, much finer than he has ever been able to offer them; and by parties who intend to plant largely, an opportunity to make a selection from one of the most extensive and healthy collection in the country should not be missed.

CATALOGUES sent to all applications, inclosing two stamps, to J. Scott, Merriott Nurseries, Crewkerne, Somerset.

CHRYSANTHEMUMS—CHRYSANTHEMUMS.

J. H. BIRD, F.H.S., Nurseryman, Stoke Newington, the largest grower and most successful exhibitor of the Chrysanthemum in the British Empire, begs to call the attention of the lovers of the above beautiful autumn flower to his matchless collection, the stock of which amounts to upwards of 50,000 plants.

J. H. B. can supply strong plants, one dozen for 6s.; or five dozen in 30 varieties, containing two of each variety, for 1l.; or he can supply 100 plants in 50 varieties, two of each variety, for 1l. 10s. Also POMPONES in great variety; 50 Pompones in 25 varieties, two of each variety, for 10s.; or 100 in 50 varieties, two of each variety for 1l. Strong plants of the beautiful new Pompone the Golden Cedo Nulli, 5s. each, are now ready, with the usual allowance to the Trade. Every order will be accompanied by a popular work on the Chrysanthemum.

Post-office Orders payable to J. H. Bird, Stoke Newington, will be immediately attended to. Catalogues on application.

GRIEVE'S NEW DOUBLE PETUNIAS.—The universal satisfaction given by the PETUNIAS sent out last spring, raised by Mr. Grieve, Gardener at Culford Hall, near Bury St. Edmund's, induces the advertisers to offer to the public those raised by that persevering hybridiser last summer, which are considered superior to any yet offered; not in the size of the flowers, but in brilliancy of colour, consistence of petal, and regularity in form—all being very double. The following are the names adopted, which may be respectively taken as an approximate description of their colours:—

CRUENTA, CANDIDA, PURPURASCENS. } Large flowers, and most appropriate for pot culture.

ATROCOCCINEA, ROSEA STRIATA, ATRO ROSEA. } Medium-size flowers and neat habit; probably useful for bedding.

Plants of the above, 5s. each; or 21s. the set of six, to be sent out the first week in April by Osborn & Sons, Fulham Nursery, London, S. W.

N.B. The usual allowance to the Trade.

FIRST PRIZE HYACINTHS.

JAMES DICKSON & SONS, 32, South Hanover Street, Edinburgh, have much pleasure in informing their friends and the public that they have again been awarded the First Prize for the Finest Collection of HYACINTHS. Also, the First Prize for the Finest Single and the Finest Double individual Hyacinths in the room. They would also call attention to the fact that the Hyacinths which have taken most of the Prizes at the Show were supplied by them.

J. D. & Sons are now receiving orders for the collection of 18 Prize Roots in packages at 1l. 1s. each.

N.B. Parties ordering *now* will have their Roots *specially ordered* and delivered from the *first* importation of the season.

NEW ROSES FOR 1859.

WILLIAM WOOD AND SON are now executing their orders for all the best NEW ROSES of the present season. The plants are well grown, vigorous, and healthy, and are supplied at the lowest advertised prices.

DESCRIPTIVE LISTS of the above will be sent free on application. Early orders will command the strongest plants.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

ROSES FOR BEDDING,

By the Dozen, the Hundred, or the Thousand.

WILLIAM WOOD AND SON have now to offer many thousands of well grown healthy plants of ROSES, in 60 pots, which will be ready to plant out about the end of April, consisting of an immense number of the best Hybrid Perpetual, Bourbon, Tea, and Noisette Roses, Catalogues of which may be had free on application.

Early orders are most earnestly solicited, as the unsold portion of the stock will be planted out the first week in May. Extra plants presented with each order to compensate for distant carriage.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

FINE HEALTHY ROSES.—

STANDARDS	18s. per doz.	
DWARFS (on the Manetti) ..	12s. ,,	,,

As the weather still continues mild and favourable for planting, George Clarke begs to state he has still a fine stock of all the leading kinds to offer at the above prices, the selection being left to him. The Plants are all healthy and well rooted, therefore calculated to give the greatest satisfaction. Plants carefully packed for any distance. Carriage of all packages paid to London; and in all orders amounting to 20s. plants are added to compensate for distant carriage.

George Clarke, The Nursery, Brixton Hill.

NEW ROSE, HYBRID PERPETUAL "LÆLIA."—Colour delicate satin rose, petals very large, perfectly smooth, and well formed; flowers of exquisite shape, large size, and highly scented. John Cranston has the pleasure to announce that he will be prepared to supply early in April plants of this superb new Rose. It was exhibited by him in his winning stand of single blooms at the Grand National Rose Show in July last, and was unquestionably the most attractive variety of the Show, and the admiration of all who saw it. Fine healthy plants, 5s. each, with the usual discount to the Trade.—Nurseries, King's Acre, near Hereford,

NEW ROSES.

JOHN CRANSTON will be prepared to supply early in April strong plants of the under-mentioned superb NEW ROSES at 5s. each, with the usual discount to the Trade. Purchasers who may prefer leaving the selection to himself will be supplied upon the following terms:—12 choicest varieties for 2l. 10s.; 24 for 5l.; the set of 32 varieties for 6l. 6s.

Plants of the new varieties presented with each order to compensate for carriage.

TEA-SCENTED.

Enfant de Lyons | Madame Joseph Halphay
Madame Damusin | Reine des Pays Bas

BOURBON.

Docteur Berthet | Elita de Murat | Octavie Fontaine

HYBRID PERPETUAL.

Altesse Imperial	Joseph Vernet
Ardoisée de Lyon	Le Mont Vésuve
Anna Alexieff	L'Oriflamme de St. Louis
Armide	Mathilde de Mandeville
Ambroise Verschaffelt	Madame Jenny Varin
Anna de Diesbach	Madame Octavie Depeyre
Bouquet de Marie	Mignard
Beauté de Rœyghem	Orderic Vital
Comte de Beaufort	Princesse Olympie
Comtesse Cecile de Chalbrillan	Reine de la Cité
Empereur de Maroc	Solomon
Eugène Alary	Virginal

NOISETTE.—Beauté de Grennemont.

J. Cranston, Nurseries, King's Acre, near Hereford.

SUPERB DOUBLE HOLLYHOCKS.

WILLIAM CHATER can now supply fine healthy plants from his Collection, having a large stock ready for immediate planting.

See DESCRIPTIVE CATALOGUE, to be had on application.

Nurseries, Saffron Walden.

FIRST-CLASS HOLLYHOCKS.

FINE SEEDLINGS FROM

WILLIAM CHATER'S Celebrated and Newest Varieties that will flower well in September at 30s. per 100

ditto	ditto	ditto	20s.	,, 100
Ground Roots according to colour, also at		..	30s.	,, 100
Seed in 12 separate colours, the Collection		..	10s.	0d.
,, 6 ,,	,,	,,	..	5 0

From varieties such as Pourpre de Tyre, Memnon, White Globe, Hon. Mrs. H. Ashley, Canary, &c., in 12 separate colours, the Collection .. .. 7s. 6d.

Ditto in 6 separate colours, the Collection	..	4	0
Seed from 20 of the best varieties, mixed, per pkt.		5	0
,, 12 ,, ,, ,, ,,		2	6
,, good mixed, also a single variety ,,		1	0

The above can be procured from the Nurseries, Saffron Walden, Essex.

NEW HOLLYHOCKS.

A. PAUL AND SON beg to recommend the following NEW HOLLYHOCKS, which have been selected from several thousands of Seedlings. The stock of ordinary kinds is this year greatly extended. The plants are strong, well established, and perfectly healthy:—

	s.	d.
BRISEIS (Paul).—Purple, silvery edges, flower of good form, spike close	5	0
GENERAL HAVELOCK (Paul).—Bright, ruby scarlet, colour of "Scarlet King," but a close spike and a round smooth flower of perfect shape	10	6
IN MEMORIAM (Paul).—Crimson maroon, large, good substance, first-rate flower, good spike	10	6
OSSIAN (Paul).—Crimson shaded with salmon, remarkable alike for substance, closeness, and symmetry; spike good	10	6
PAINTED LADY (Paul).—Pink and blush in blotches, a large smooth flower of good substance	5	0
PLUTARCH (Paul).—Plum colour, of fine shape, and very smooth, guard and spike good	10	6
POURPRE NOIR (Paul).—Rich purplish maroon, large smooth flower, close spike	7	6
RED ROVER (Paul).—Dark fiery scarlet, flower large, spike splendid, very effective	7	6
VERITAS (Paul).—White, lemon base, large full flower, splendid spike	10	6
VESTA (Paul).—Pure white, petals thick, edges smooth, guard good	7	6
VITRUVIUS (Paul).—Pink, large flower, of perfect form and good substance	5	0
ZENO (Paul).—Rich plum colour, with silvery edges, flower large, spike good; new and distinct	5	0

The Collection of 12 varieties is offered for 4l. 4s.; good named sorts, 9s. to 18s. per dozen; very superior ditto, 24s. to 42s. per dozen; Bloomed Seedlings in separate colours, 30s. 50s. per 100; mixed Seedlings, 10s. to 21s. per 100.

HOLLYHOCK SEED, 1s. to 5s. per packet free by post.

Also a PRICED DESCRIPTIVE CATALOGUE free by post.

Nurseries, Cheshunt, Herts.

NEW SEEDS FOR 1859.

WM. CUTBUSH AND SON beg respectfully to intimate that their PRICED CATALOGUE OF VEGETABLE AND FLOWER SEEDS, &c., is now ready post free on application. Wm. C. and Son devote particular attention to this department of their business, and most of the choicer kinds of culinary seeds and roots are saved under their own inspection, and they can confidently guarantee the quality of all offered.—Highgate Nurseries, London, N. Established A.D. 1695.

A DESCRIPTIVE AND PRICED CATALOGUE of first-class GERANIUMS, Show, Fancy, English, and French Spotted kinds. A List of the best FUCHSIAS grown, including some superb Seedlings. In VERBENAS the List contains all the novelties of the season. A fine collection of DAHLIAS, including all the leading new varieties of both Show and Fancy kinds. Also a fine assortment of PETUNIAS. The above Lists forwarded in exchange for one postage stamp.

George Smith, Tollington Nursery, Hornsey Road, Islington, London.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Stove, Greenhouse, and Hardy Ferns, Miscellaneous Stove, Greenhouse, and Hardy Plants, Variegated and Ornamental foliaged Plants, Conifers, Roses, Rhododendrons, Indian Azaleas, Gloxinias, Fuchsias, Cactuses, &c., is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

GERMAN AND OTHER FLOWER SEEDS, VEGETABLE, AGRICULTURAL SEEDS, ETC.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their new PRICED and DESCRIPTIVE CATALOGUE in which is enumerated every novelty of proved merit, also all the best of the older kinds, is now published, and will be forwarded post free on application. Their whole stock has been selected from the best English and Foreign sources, and every kind is warranted true to name, and of the finest possible quality.—Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

RHODODENDRONS.

JOHN WATERER'S CATALOGUE OF UNRIVALLED HARDY SCARLET AND OTHER CHOICE RHODENDRONS, as Exhibited by him at the Royal Botanic Gardens, Regent's Park, London, is published, and will be forwarded on application.

☞ This List is recommended as a work of reference, as it contains accurate descriptions of all the esteemed varieties.

The American Nursery, Bagshot, Surrey, near the Sunningdale Station, South Western Railway.

TO NURSERYMEN.

3,000,000 RHODODENDRONS, 2, 3, 4, and 5 years old: small and strong Portugal and Common Laurels, small Red Cedar, Chinese Arbor Vitæ, Berberis, &c.; Layers of Erica Alporti, vulgaris, alba carnea, and many other things to be sold very cheap.

For price, apply to James Smith, Darley Dale Nursery, near Matlock.—April 2.

NATURAL GRASS SEEDS.

PETER LAWSON AND SON, the Queen's Seedsmen, can supply genuine Seed of all the valuable kinds of the NATURAL GRASSES suitable for Lowland and Upland Pastures; also for Laying-down Lawns, Bowling Greens, Cricket Grounds, Cemeteries, Railway Banks, &c.

PRICED LISTS may be had free on application.—Peter Lawson & Son, 27, Great George Street, Westminster.

NEW PHLOX AND PENTSTEMONS.

PHLOX COUNTESS OF HADDINGTON.—Light puce, dark violet eye, perfect form, distinct and fine.

PENTSTEMON TYNNINGHAMI. — Bright scarlet, bold flowers, close pyramidal spike, first-rate.

PENTSTEMON Mrs. LEES. — Crimson purple, pure white throat, large spike, distinct and striking.

THOMAS METHVEN has much pleasure in offering the above first-class flowers, raised by Mr. Thomas Lees, gardener to the Earl of Haddington, Tynninghame, and allowed by all who have seen them to be decided acquisitions as show flowers. Strong plants 5s. each. Usual discount to the Trade.

Stanwell and Leith Walk Nurseries, Edinburgh.—April 2.

NEW DOUBLE PETUNIAS.

C. W. HARGRAVE begs respectfully to announce that he will shortly be prepared with STOCK of the NEW DOUBLE PETUNIAS advertised by him in the *Gardeners' Chronicle* of September 25, 1858.

They constitute a unique collection in themselves, being of exquisite form, firm substance, rich and decided in colour, very fragrant, and of first-rate habit, having good guard petals, with the centres well filled, and in fact are superior to the Continental or other varieties hitherto sent out. Their nomenclature is as follows:—

ROSETTE.—Crimson, very double, dwarf habit.
ROSEA ALBA.—Rose clearly mottled with white.
PURPLE KING.—Large flower, well formed.
CRIMSON GEM.—Bright crimson, with white centre.
ALBA MAGNIFLORA.—Beautiful form, very fragrant.
KING OF CRIMSONS.—Bright crimson, brighter than its parent "Crimson King." The varieties previously introduced as crimson have all proved themselves to be only purple.

Plants of any of the above 5s. each, or the set of six 25s.

It is requested that the Trade forward their commands at their earliest convenience, as all orders will be executed in the rotation in which they are received.

C. W. HARGRAVE, The Nursery, Winchmore Hill, N.

PLOCOSTEMMA LASIANTHUM (Blume). — Amidst the prevalent scarcity of novelties of sterling merit, it is with pleasure the Subscribers invite attention to the above-named plant. It belongs to a new genus closely allied to Hoya; and the present species was received in 1857 from Mr. Hugh Low, Jun., by whom it was discovered on the north-western side of the Island of Borneo. The plant, which is not a climber, presents a noble appearance, having exceedingly handsome foliage; and it possesses a very great recommendation in being a most profuse bloomer, the clusters of flowers being produced in great numbers. The flowers are of waxy consistence, like Hoya—colour, orange; the petals reflex until they become quite perpendicular, and rest on the flower-stalk; the lower part of the petals is entirely covered with a snow-white velvety pubescence, giving them an unusually beautiful appearance. The flowers are fragrant, and 14 have expanded in one cluster on a newly imported plant, which was submitted to the inspection of Sir W. J. Hooker, of Kew, by whom it is figured and described in the November number of the "Botanical Magazine." It is also figured in the "Florist." Plants in May, price 63s. each. Usual discount to the Trade.

Hugh Low & Co., Clapton Nursery, London, N.E.

CHEAP AND USEFUL PLANTS SENT FREE TO LONDON.

A. VAN GEERT, Nurseryman, Ghent (Belgium), begs to inform amateurs and the Trade that a SUPPLEMENT to his GENERAL CATALOGUE is just published which may be had on application from his agent, Mr. R. Silberrad, 5, Harp Lane, Great Tower Street, London.

	s.	d.
Ghent Azaleas, with flower-buds, 50 varieties for ..	42	0
Ghent Hardy Rhododendrons, 25 varieties for ..	30	0
Pæonia sinensis, 25 fine varieties for	25	0
Asclepias tuberosa, per hundred	10	6
Magnolia macrophylla, per dozen	6	0
,, ,, strong, each .. .. 5s. to	10	6
Ginkgo biloba, per 50	21	0
Glycine sinensis, strong per doz.	9	0
Robinia inermis pyramidalis .. .. .. 5s. to	10	6
Pæonia arborea, 12 fine varieties	30	0
Clematis azurea grandiflora, per dozen	9	0
Viburnum macrocephalum, strong plants	5	0
Chilian Alstrœmeria, per hundred	12	0
Pinus macrophylla, per dozen	9	0
Erythrina Crista galli, per dozen	12	0
Chamærops humilis, per doz.	18	0
Citrus sinensis (Otaheite Oranges) per hundred ..	84	0
Agave filifera, fine .. .. 21s. to	42	0
,, americana variegata .. .. 3s. 6d. to	5	0
Bonapartea gracilis, very strong	84	0
Camellias, 100 varieties for	84	0
Indian Azaleas, 25 varieties for..	21	0
,, ,, eight new varieties (Vervaene) small	30	0
Canna, 15 varieties for planting out	12	0

N.B. On payment of 5s extra for package, I undertake to deliver the Plants free out of the Custom House in London. A reference is respectfully requested from unknown correspondents.

NEW PLANTS.—1859.

HUGH LOW and CO. respectfully invite attention to the annexed LIST of novelties, orders for which they will be very happy to receive :—

NEW GLOXINIAS.

Hugh Low & Co. have selected the undernamed varieties from a large number of plants raised by themselves from seed carefully and judiciously hybridised, and having flowered them for two seasons, and compared them with the varieties previously in cultivation, H. L. & Co. can with confidence recommend the selection to the notice of their friends as comprising really distinct kinds, worthy of a place in the most select collection of this much admired and easily cultivated flower Plants in April. Price, 3s. 6d. each.

ERECT-FLOWERING VARIETIES.

Atroviolacea, very dark violet purple, base of the tube beautifully spotted on a pure white ground. [white
Bridesmaid, white tube, shaded rose border, lips spotted with
Lineata superba, rosy carmine tube, towards the lips alternate bands of white and rose. [purple.
Perfection, clear white throat, dark blue belt, lips deep violet
Princess Alice, clear white tube, bright rose belt, edges very pale rose.
Princess of Prussia Improved, throat and belt very much brighter crimson than in the old variety.

DROOPING-FLOWERED VARIETIES.

Attraction, base of tube white, finely spotted, lips rosy crimson, outer edge pure white.
Beauty, white tube, inside carmine lake, broad white belt, flowers very large
Meteor, bright crimson with violet throat, carmine blotch on the lip.

NEW ROSES of 1859.

Hybrid Perpetual.	Hybrid Perpetual.
Altesse impériale	Virginale
Ardoisé de Lyon	Beauté de Rœyghem
Comte de Beaufort	
Bouquet de Marie	Bourbon.
Empereur de Maroc	Docteur Berthet
Salomon	Madame Marchal
Oriflamme de St. Louis	Octavie Fontaine
Reine de la Cité	
Ambroise Verschaffelt	Tea-scented.
Orderic Vital	Madame Damaizan
Anna de Diesbach	Madame Darru
	Reine des Pays Bas

Plants 5s. each.

NEW VERBENAS.

The entire stock of these nine varieties is in the possession of H. L. & Co., and they can with the greatest confidence recommend them to their friends as distinct and first-class flowers.
Bellona, bright cerise, dark centre, good form, very distinct.
Flora, lilac, white eye, large truss, fine form.
Lady Cotton Sheppard, bright rosy purple, white eye, large truss, very distinct.
Mars, bright red, extra large truss, fine form and free flowerer.
Miss Emily Hanmer, ruby, white eye, immense truss, extra fine form, the best of its class.
Mrs. Fowke, rosy purple, fine white eye, extra large truss, fine form, very free.
Mrs. Leslie, bright rose, very large white eye, large truss, and splendid form.
Rubens, ruby red, white centre, good form, very distinct and free bloomer, from 2s. 6d. each.

VERBENA SNOWFLAKE.—The best white Verbena ever offered for bedding purposes. With a flower equal to Mrs. Holford, it produces a much larger number of trusses on the same space of ground. This variety has been grown in company with the other white kinds at present in cultivation, and has been found to be more effective than any of them. In order that it may be extensively planted the first season, H. L. & Co., have decided on offering it at a cheap rate.

Single plants, 2s. 6d. ; per doz., 18s. ; per 100, 100s. In April.

New Verbenas received from M. Boucharlat of Lyons :—

Abondance	Madame Denis Blain	Mons. Denis Blain
Bleu magnifique	Madame Hardy	Monsieur Hardy
Felix Roland	Madame Hoste	Reine Blanche
Gloire de Monplaisir	Madame Large	Souvenir de M.
Kossuth	Manteau d'Evêque	Seringe

Plants 1s. 6d. each, now ready.

New Verbenas received from M. Rougier-Chauvière, of Paris. These and the preceding collection include the finest varieties offered this season on the Continent.

Baccarat	Gitana	Marie Rougier
Cendrillon	Ivanhoe	Ne Plus Ultra
Cerise	Clara	La Magicienne	Primulæflora
Fatima	Leandre	Rosalinda
Figaro	Lucrece	Rosamond

Plants now ready, 1s. 6d. each.

Verbena Madame Jourdin, the most distinct and beautiful of all the striped varieties, per dozen, 12s.

LOBELIA TRIGONICAULIS, a new species from Moreton Bay, figured and described by Sir Wm. J. Hooker. A beautiful dense growing variety, each plant covering a space of ground 12 to 18 inches in diameter, with its ample bright green foliage (in the way of Verbena Maonetti) and large light blue flowers with fine white eye. It will be much in demand for bedding purposes. For further description see "Cottage Gardener." Plants in April, price 2s. 6d. each, or 21s. per dozen.

Usual discount to the Trade on all the above-named plants.
Bedding Plants of older date in large quantities at low prices
Clapton Nursery, London, N.E.—April 2.

JOHN KERNAN, Seedsman, 4, Great Russell Street, Covent Garden, W.C., recommends the following FLOWER SEEDS (selected from his general List) to be sown during the present month and up to the middle of May.

Per packet—s. d.	Per packet—s. d.
Abronia umbellata .. 0 3	Lobelia speciosa, new and beautiful for bedding out, and other varieties 0 6
Acroclinium roseum .. 0 3	Lupinus, all the new varieties 0 3
Ageratum, of sorts .. 0 3	Marigold, all the varieties 0 3
Alonsoa Warcewiczi .. 0 6	Mesembryanthemum tricolor, and other vars. .. 0 3
,, grandiflora .. 0 6	Mimulus, mixed 0 6
Alyssum, in sorts 0 3	Myosotis, or Forget-me-not, several varieties .. 0 3
Amaranthus (greenhouse) 0 3	Nasturtium, all the new and beautiful varieties 0 3
Anagallis, in sorts .. 0 6	Nemesia, of sorts 0 3
Asters, Truffaut's new :—	Nemophila, all the sorts.. 0 3
,, German, splendid, in sealed packets as imported 4 0	Nierembergia, very fine mixed 0 3
,, Giant Emperor, imported seed .. 0 6	Œnotbera, all the new varieties 0 3
,, a mixture of the above, 24 vars. as imported 0 6	Oxalis rosea, and others .. 0 6
,, distinct tall and distinct dwarf ditto mixed 0 6	Pæonia, all the new vars. 0 3
,, English 0 3	Peas, Sweet and Everlasting, all colours .. 0 3
Balsam, in 12 varieties :—	Phlox, new scarlet and other annuals and perennials, embracing all the recent varieties 0 3
,, Foreign in sealed packets 4 0	Portulacca, of sorts .. 0 3
,, Camellia flowered, 12 varieties .. 4 0	Reseda grandiflora, new, large, and other vars. of Mignonette 0 3
,, Mixture from the above 0 6	Salvia Rœmeriana, and others 0 6
Brachycome, 4 best sorts .. 0 3	Saponaria, of sorts .. 0 3
Browallia Czerniakowski, a beautiful new species 0 6	Schizopetalum Walkeri .. 0 3
,, elata, white or blue.. 0 3	Senecio elegans and other varieties 0 3
Calceolaria from the finest named collection in existence, upwards of 300 sorts 1 0	Sorghum saccharatum p.lb. 2 0
Calendrinia Burridgii, and all the other best vars. .. 0 6	Spiræa Lindleyana, callosa, and others 0 6
Calliopsis nigra speciosa.. 0 3	Stocks, a selection of the finest named varieties, as imported in sealed packets, 12 and 24 varieties .. .. 4s. to 6 0
,, new marble and other varieties .. 0 3	Stocks, autumn-flowering varieties 4 0
Carnation and Piccotee, all the finest varieties, as cultivated by an eminent amateur in the south of France, with whom J. K. is in contract to have the entire product. Sow in pots in greenhouse and plant out in July .. 1 0	Stocks, Buck's Intermediate 0 3
Cheiranthus or Stocks. The finest imported distinct varieties, of 12 or 24 .. .. .. 4s. to 6 0	,, Brompton, separate or mixed 0 3
A mixture of the above .. 0 6	Sultan, of sorts 0 3
Chrysanthemum tricolor Burridgianum, quite new 0 6	Tropæolum, all the new varieties of Nasturtium 3d. to 0 6
,, venustum .. 0 6	Verbena, a selection from the choicest varieties of every hue 0 6
Cineraria, fine mixed, to be raised like Carnations .. 0 6	Veronica syriaca, a new and charming dwarf annual, brilliant blue, for pots or open ground .. 0 6
Clarkia, of sorts 0 3	Veronica Lindleyana and other varieties 0 6
Climbers, all varieties.	Violet, Russian, or Everflowering, the sweetest 0 3
Cosmidium Burridgianum 0 3	Viscaria, of sorts 0 3
Delphinium Ajacis, and other vars. of annual and perennial Larkspurs .. 0 3	Wallflower, all the choicest varieties, foreign and English 0 3
Dianthus, of sorts.. .. 0 3	Zinnia (half hardy), mixture from 20 separate varieties 0 3
Fuchsia, from the finest named sorts 1 0	30 vars. of named showy hardy annuals 5 0
Gaillardia, of sorts .. 0 3	Half the above quantity.. 2 6
Geranium, all the best varieties 1 0	All the finer varieties of keeping Potatoes, early and late.
Heartsease, all the choicest varieties 0 6	Red and White Clover.
Heliotropium, of sorts .. 0 3	Sainfoin, Trefoil, Lucerne, and Tares.
Hollyhock, named and mixed 0 3	
Ipomœa, in every variety . 0 3	
Larkspurs, of sorts .. 0 3	
Linum grandiflorum coccineum, and other choice varieties 0 6	

Parcels to any amount may be ordered, leaving the selection to J. K. whether for Garden, Vegetable or Flower Seeds. Agricultural seeds from the choicest stocks on the most reasonable terms, a list of which may be had on application. Turnip, Mangel, and Carrot (for cattle) 6d. per lb. Sorghum saccharatum, an invaluable fodder in fattening sheep and cattle, and especially for improving the milk in cows, 2s. per lb., 2 lbs. being sufficient for an acre, and not eight as is constantly advertised. A Treatise on the Advantages and Culture, with full directions, of this Plant, price 1s.

LODGE'S NEW HYBRID RHODODENDRON, "COUNTESS OF WILTON," the best and hardiest Rhododendron in cultivation.—This splendid Hybrid Rhododendron was raised from seed by the late William Lodge. The habit of this variety is entirely distinct from any other, and is the most vigorous of its class. The foliage is a beautiful olive green, of a large size, and a thick leathery appearance. The flower is a rich crimson, good form, being well cupped, of large size, and a very large truss, standing out boldly from the foliage. It is the hardiest variety of its class, having stood in an exposed situation the severest winters, without the slightest injury, with no protection whatever, while other varieties have been killed.

It possesses a very great advantage in flowering late, a desideratum much wanted in the high coloured Rhododendrons, as the other kinds are always injured by the late frosts and cold winds.

It has been exhibited at the Manchester Botanical Exhibition, and obtained a first-class certificate of merit, also a label of commendation by the judges.

The Executors of the late William Lodge have great confidence in introducing this variety to the public, and feel assured it will become a general favourite.

Strong bushy plants are now ready, from 2 to 4 feet high at One and a Half, Two, and Three Guineas each, in proportion to the size. A considerable reduction when a quantity is taken.

As the demand is great, early orders are necessary to ensure well-budded plants.

The following Nurserymen are Agents for the sale of it :— and from whom plants may now be had.

Messrs. William Rollisson & Sons, Tooting, near London;
Messrs. E. G. Henderson & Son, St. John's Wood, London;
Mr. John Waterer, Bagshot, Surrey;
Messrs. William Wood & Son, Maresfield, Sussex;
Messrs. Thomas Jackson & Son, Kingston, Surrey;
Messrs. Benjamin Reid & Co., Aberdeen;
Mr. John Keynes, Salisbury.

A remittance or reference is required from unknown correspondents. Post-office Orders made payable to James Lodge, Park Nurseries, Singleton Brook, Broughton, Manchester.

NORTH AMERICAN FERNS.

R. M. STARK having recently imported a supply of the following interesting FERNS, offers them to the Trade at the prices annexed :—

Per doz.—s. d.	Per doz.—s. d.
Adiantum pedatum .. 12 0	Osmunda spectabilis .. 30 0
Asplenium fontanum .. 18 0	,, cinnamomea .. 30 0
,, Michauxi .. 18 0	,, interrupta .. 30 0
Botrychium simplex .. 20 0	Polystichum acrostichoides 24 0
,, fumariodes 20 0	Woodsia hyperborea .. 24 0
Dicksonia punctiloba .. 12 0	,, obtusa 30 0
Lastrea marginata .. 12 0	Ranunculus cortusifolius 9 0
Onoclea sensibilis .. 9 0	Tritoma Burchelli .. 18 0
Dodecatheon elegans per 100 .. .. .. 25 0	,, Rooperi, each .. 3 6
Primula ciliata purpurea, per doz. 4 0	Trillium grandiflorum.. 9 0

A large assortment of British and Exotic species, of which PRICED CATALOGUES may be had on application.
Edinburgh, Edgehill Nursery.—April 2.

CHOICE FLOWER SEEDS.

BASS and BROWN'S Catalogue for 1859 (28th Annual Edition) sent free on application. The lists of Flower Seeds give colours, heights, month of flowering, hardiness, duration, and other descriptive and useful information. Printed instructions for raising and culture of Flower Seeds is furnished with each order.

FLOWER SEEDS free by post.

A FEW NEW AND SELECT FLOWER SEEDS.

HARDY ANNUALS.

Per packet—s. d.	Per packet—s. d.
Calliopsis nigra nana .. 0 4	Nemesia bicolor compacta 0 3
,, filiforme .. 0 3	Œnothera Drummondi nana 0 6
,, Barridgeanum.. 0 4	Phlox Drummondi, hybrid of Leopoldi 0 6
Centaurea depressa rosea 0 3	Phlox Drummondi, fine scarlet 0 4
Clarkia pulchella marginata 0 6	Phlox Drummondi alba oculata 0 6
Collinsia bicolor albiflora . 0 3	Phlox Drummondi alba marmorata 0 6
Escholtzia tenuifolia .. 0 4	Pink, Indian Imperial, dark blood 0 4
Eutoca viscida alba striata 0 6	Pink, Indian, new white margin 0 6
Larkspur, new branching tricolor 0 6	Portulacca grandiflora, new large, and other vars. 0 6
Leptosiphon aureum .. 0 4	Ricinus tumicensis .. 0 6
Lupinus hybridus insignis 0 6	,, purpureus .. 0 6
,, nanus albus .. 0 6	Salpiglossis atrosanguinea 0 3
,, tricolor elegans.. 0 3	Stock, German, fine mixed 0 6
Nemophila marginata .. 0 3	,, Wall-leaved, fine mixed 0 6
Scabiosa, new dwarf .. 0 6	Zinnia elegans, choicest mixed from imported .. 0 6
Silene pseudo-atocion .. 0 6	
,, rubella alba .. 0 6	
Viscaria cela rosa alba .. 0 6	
,, Dunnetti .. 1 0	
Whitlavia grandiflora .. 0 3	

HALF-HARDY ANNUALS.

Acroclinium roseum ..	0 4
Aster, new Crown ..	0 6
,, pæoniflora, fine vars.	3
,, Bishop's Prize, superb	0 3
Helichrysum brachyrhynchium	0 6
Helichrysum compositum	0 6
Linum grandiflorum rubrum	0 6
Marigold, extra selected French	0 6
Marigold, new tall orange African, ex.	0 6
Nasturtium, new dwf. scarlet	0 6
,, new dwarf crimson	0 6
,, new dwarf spotted..	0 6

HARDY BIENNIALS and PERENNIALS.

Per packet—s. d.	Per packet—s. d.
Abronia umbellata .. 0 4	Œnothera taraxifolia .. 0 6
Antirrhinum, from finest new 1 0	Pansy, ex. choice .. 1 0
Aquilegia, 4 vars. separate 1 6	Papaver nudicaule aureum 0 4
Carnation and Picotee, ex. 2 6	Phlox, of choicest hardy.. 1 6
Dianthus Garneriana .. 0 6	Potentilla. ex. choice .. 1 6
Digitalis, 4 fine vars. sep. 1 4	Sweet William, fine from imported 0 6
Gladiolus, ex. choice early 1 0	Sweet William, from double varieties 0 6
,, floribundus .. 0 6	Verbascum phœniceum, 3 vars. separate 1 0
,, Gandavensis .. 0 6	Wallflower, fine mixed .. 0 4
,, new hybrids .. 2 6	
Hollyhock, choice .. 1 0	
,, extra 2 6	
,, 12 choice named sep. 4 6	
Iris, finest mixed English 1 6	
,, fine German mixed 2 6	
Linum Lewisi 0 6	
Mimulus, mixed choice .. 0 6	
,, ,, cardinalis hybrid 0 6	
Obeliscaria pulcherrima .. 0 6	

GREENHOUSE, &c., PERENNIALS.

Acacia Lophantha.. ..	0 6
Anomatheca cruenta ..	0 6
Calceolaria, very choice ..	1 0
,, ex choice ..	2 6
Calampelis miniata ..	0 6
Calendrinia umbellata ..	0 6
Chorozema, vars. .. 6d. to	1 0
Cineraria, choice	1 0
,, extra choice ..	2 6
Fuchsia, from new and choice	1 0
Gaillardia picta nana ..	0 4
Geranium, ex. show flowers	2 6
,, finest Scarlets	0 6
,, rose and white Horseshoe	1 0
,, finest Fancy ..	1 0
Gloxinia, choice	0 6
,, ex. choice	2 6
Heliotropium, mixed ..	0 6
Humea elegans	0 6
Ipomœa Horsfalli	1 0
Kennedya, 6 varieties sep.	3 0
Lobelia Erinus cœru. alba	0 6
,, ,, Lindleyana	0 6
,, ,, ramosoïdes	0 6
,, Limbergensis ..	0 6
,, Roi Leopoldi.. ..	0 6
Lychnis fulgens	0 6
Nycterinia fuliginoides ..	0 4
Oxalis Napoleonoides ..	0 6
Passiflora angustifolia ..	0 6
Petunia grandifl. alba ..	0 4
,, ex. choice	1 0
Primula sinensis fimbriata, choice	1 0
Verbena, mixed choice ..	1 0
,, ex. choice	2 6
Veronica Andersoni	0 6

GREENHOUSE ANNUALS.

Balsam, very choice ..	0 6
,, French Camellia-fl.	0 6
,, Glenny's Improved, 8 vars., separate..	3 0
,, Glenny's mixed, 6d. &	1 0
Clintonia atroviolacea ..	0 4
Gomphrena aurantiaca ..	0 4
Ipomœa violacea vera ..	1 0
Rhodanthe Manglesi ..	0 6
Thunbergia, fine mixed..	0 4

FLOWER SEEDS—BEST ASSORTMENTS. (Free by Post.)

A large number of the above are included in these assortments.

Hardy Annuals, 100 varieties, 15s. ; 50 for 8s. 6d. ; 30 for 5s. 6d. ; 20 for 4s.

Half-hardy Annuals, 50 varieties, 12s. 6d. ; 30 for 8s. ; 20 for 6s.

Hardy and Half-hardy Annuals, 100 varieties, 20s. ; 50 for 10s. 6d. ; 30 for 7s. ; 20 for 5s.

Dwarf-hardy Annuals for filling Beds, 20 varieties, large packets, 7s. 6d. ; 12 for 5s.

Greenhouse Annuals, 20 varieties, 7s. 6d. ; 12 for 5s. For other assortments see Catalogue.

Imported German Seeds.—The varieties of German Stocks, Asters, Balsams, Larkspurs, Wallflowers, &c., are remarkably fine and double. See Catalogue.

Seeds of choice Florists' Flowers.—These, comprising Calceolaria, Cineraria, Geranium, Fuchsia, Carnation, Picotee, Hollyhock, &c., have been saved from very choice and first-rate collections, and are nearly all our own saving.

FINEST LAWN GRASSES.—In mixture of the best dwarf sorts (these are excellent), 1s. 3d. per lb., or 18s. per bushel. Holcus saccharatus, an abundant cropper for cattle feed, 1s. 6d. per lb.

DIOSCOREA BATATAS (Chinese Yam). — Strong tubers 9 to 12 inches long, 5s. per doz. ; extra large, 10s. per doz.

The No. V. Catalogue for the season contains lists of Achimenes, Gloxinias, and Bedding Plants ; also General Index to Catalogues No. I. to V., and is now ready for distribution.

Post-office Orders payable to Bass & Brown, or to Stephen Brown. Remittances required from unknown Correspondents.

BASS and BROWN, Seed Growers, &c., Sudbury, Suffolk.

SKIRVING'S SWEDE—SUTTON'S SELECTED STOCK.

SUTTON AND SONS have a choice stock of SKIRVING'S SWEDE SEED, growth of 1858, which they can strongly recommend. Price 9*d.* per lb., or cheaper by the bushel. Also a few bushels left of SUTTON'S Champion Swede, Improved Gloucestershire White Swede, Russian Hardy Green-Top Swede, Grant's Pine Apple Swede, Jack of Newbury, and others, prices of which may be had on application, post free.

Royal Berks Seed Establishment, Reading.

CLOVERS AND RYE-GRASS SEEDS.

SUTTON AND SONS can supply the proper quantities of the best kinds of Clovers and Italian Rye-grass seed, or Clovers and common Rye-grass at 18*s.* per acre, (including Alsike with other Clovers). In ordering, it is only necessary to state that "Clovers and Italian Rye-grass" or "Clovers and common Rye-grass" are required for so many acres, when the proper quantities will be sent.

N.B. ALSIKE CLOVER is included in this mixture, but if not required it will be omitted and a lower price charged.

Royal Berkshire Seed Establishment, Reading.

MANGEL SEED FROM LARGE BULBS.

SUTTON'S YELLOW GLOBE MANGEL is saved exclusively from fully developed roots, the advantages of which have been proved for several years past.

See the following Letters :—

From the Right Hon. Lord BERWICK, *Cronkhill, Dec.* 22.—"Let me have the same Globe Mangel as last year, which has given me the best crop I ever grew, good both as to bulk of crop, and also in the fineness of roots, and freedom from fangs and irregular growth. When pulled the roots were nearly as clean and as free from fibre as a Globe Turnip, and I had 50 loads per acre or more."

From Mr. GRAY, Bailiff to G. Rawlins, Esq., *Bullington House.*—"I believe we had one of the finest lots of Mangels and Swedes in the country. We had not quite enough of your seed of Mangel, and sent elsewhere for some to finish the field, and though sown the same day, and with exactly similar treatment, we had not so much weight by one-third as on the part sown with your seed."

The First Prizes at Birmingham and other shows throughout the kingdom have been taken by Messrs. SUTTON'S customers both for Mangel and for their "Champion" Swede. The price of SUTTON'S Large Yellow Globe Mangel Wurzel is 9*d.* per lb., or cheaper by the cwt.

Priced Lists of other kinds of Mangel, Swedes, Turnips, Grasses, &c., will be sent gratis and post free.

Carriage free to all parts except small parcels.

SUTTON & SONS, Royal Berks Seed Establishment, Reading.

TO GROWERS OF MANGEL WURZEL.—The public are respectfully informed that the TEN GUINEA CUP at the Great Birmingham Root Show, for the six best roots of Long Red and Orange Globe Mangel Wurzel and Belgian Carrots; and also the FIRST PRIZE in Class III. for Long Mangel Wurzel, were awarded to J. B. Starky, Esq., of Spye Park; and that the seed which produced the prize roots was grown and supplied by Mr. ALFRED HALL, Seed Grower, Westbury Farm, Westbury, Wilts, of whom any quantity of the same seed may be had by agriculturists or others wishing to purchase it.

PREMIUM GOLD MEDAL FOR SCOTCH-GROWN SEEDS

AT THE GREAT AGRICULTURAL COMPETITION AT PARIS, 1856.

R. T. MACKINTOSH, SEEDSMAN and NURSERYMAN, Edinburgh, begs to intimate that his PRICED LIST OF AGRICULTURAL SEEDS is now ready, and may be had post free on application. R. T. M. would particularly call attention to his Scotch-grown EVERGREEN RYE-GRASS for pasture, also his TURNIP SEEDS, which for purity and excellence of quality cannot be surpassed. R. T. M's. Priced Lists may be had in London of Messrs. J. B. BROWN & Co., 36, Cannon Street, City, who will receive orders for R. T. M's. Seeds.

Victoria Street, George IV. Bridge, Edinburgh.

SEEDS FOR THE FARM.

NEW OVAL-SHAPED YELLOW MANGEL, introduced by us two years ago, has been thoroughly tested and is now recommended with perfect confidence. It is of a remarkably vigorous growth, with finely shaped roots, intermediate in length between the Long and the Globe, and has produced from 5 to 10 tons more per acre than any other variety (see *Gardeners' Chronicle* of Jan. 8) :—

SWEDE TURNIP.—All the approved sorts.			
YELLOW	Do.	do.	do.
WHITE	Do.	do.	do.

In no description of crop raised on the Farm is a good or a bad one so dependent on the character of the Seed as in that of the Turnip, and from its great liability to degenerate, it requires the most scrupulous care and vigilance to produce Stocks that are every way worthy of confidence. To attain such, we have for several years past been using every known means to keep up or improve the shape, size, and texture of the various kinds; and we believe that what are now offered will give the most perfect satisfaction. All the principal varieties are our own growth, raised from large and fully developed Roots or Bulbs, and in the hope of giving a more vigorous growth to the Stock, the strongest clay soil is always selected for a considerable portion of the Swede and Yellows. This mode of raising Turnip Seed materially increases the expense, but it is a much more satisfactory system than the one usually adopted, viz., sowing random stocks late in the season, after other crops, and taking the seed from mere plants, which in many cases are not even subjected to the process of thinning. Moreover, we guarantee our Seeds free from any of the adulterations so frequently practised to increase profits or cheapen prices, so that a strong healthy "braird" is certain.

PERENNIAL RYE-GRASS.—Finest Ayrshire		
Do.	do.	do. Pacey's, 26 lbs. to 32 lbs. per bushel
ITALIAN	do.	Imported
Do.	do.	Home-grown

NATURAL GRASSES.—All the best varieties

The Stocks of Perennial Rye-grass Seed are the most select growths the country produces, and being all clean and heavy the economy of using such in preference to foul chaffy seed, however cheap, is at once apparent. Our imported Italian is from the usual source, and has always given satisfaction; while the home-grown is the direct produce of imported seed, cultivated under the most favourable circumstances, and more than ordinary pains having been used in dressing the seed; the samples of both are unusually clean and fine. In selecting the Natural Grasses care is taken to have them true to name, fully ripened, and in all respects good clean samples.

ALSIKE CLOVER, and other varieties.

LARGE BROAD-LEAVED SCOTCH TARES.

With every other description of Seed usually required for the farm, PRICED LISTS of which may be had post free on application.

W. DRUMMOND & SONS, Seedsmen, Stirling, N.B.; also at 8, Dawson Street, Dublin.

*** STIRLING is most favourably placed in point of railway accommodation, there being direct and constant traffic to all the principal stations in England and Scotland, and by steamers (*via* Glasgow), almost daily to the chief ports in Ireland, thereby insuring a speedy delivery of goods, all of which except grain and Tares, we forward carriage paid.

AGRICULTURAL SEEDS.

WM. SKIRVING, Queen Square, Liverpool, begs to recommend to the Farmers of the United Kingdom his select stock of the most approved sorts of English, Welsh, Dutch, and Swedish CLOVER SEEDS, and of the best varieties of WURZEL, CARROT, and TURNIP SEEDS, all either grown by himself, or selected from the most reputed growers. A short practical list, with reasonable prices affixed, may be had on application.

In addition to his general collection of Turnip Seeds, W. S. has, this season, to offer three distinct varieties of the SWEDE, all of which he can strongly recommend as likely to be of great service in such critical Turnip-growing seasons as the last two.

The 1st is a new PURPLE SWEDE, with short top, broad entire leaf, stands dry weather well, ripens early, very good for early winter use.

The 2d, a new GREEN-BRONZE SWEDE, medium-sized top, of excellent quality, fit for the table, keeps well.

The 3d, a PURPLE SWEDE, stronger top, is the largest, heaviest cropper, and longest keeper of any sort known.

The Seed of these sorts can be had only from the Advertiser. Price 1*s.* per lb.

For laying down Land for Permanent Pasture W. S. begs to offer his selection of the most useful PERENNIAL GRASS SEEDS. The sorts selected from personal observation of the growth and habits of the different Grasses grown in his experimental ground. On this system he has supplied, within a few years, seeds for many thousand acres, which have given every satisfaction. Orders, stating quantity and quality of Land to be laid down, will be correctly executed with a suitable mixture.

TO THE SEED TRADE.

THOMAS AYRES, JUN., SEEDSMAN and GROWER, Biggleswade, Beds., can supply every kind of Wurzel, Swede, and common Turnip Seeds, on the most reasonable terms for cash.

N.B. Dealer in Culinary and Flower Seeds, Fruit Trees, Shrubs, and Flowering Plants.

J. GRIFFIN begs to offer the following choice VEGETABLE and FLOWER SEEDS.

GRIFFIN'S ALMA LETTUCE, the most useful variety in cultivation, very hardy, and valuable for standing the drought of summer, 1*s.* 6*d.* per packet.

GRIFFIN'S fine RIDGE CUCUMBER, very hardy and productive, 1*s.* per packet.

Ivery's NONSUCH RED CELERY, 1*s.* per packet.

BATH DWARF DARK RED BEET, fine colour, 1*s.* p. pckt.

DELPHINIUM FORMOSUM, 1*s.* per packet.

LINUM GRANDIFLORUM RUBRUM (true), 1*s.* p. packet.

LOBELIA ERINUS SPECIOSA, the best and most effective variety yet raised, forming a close compact style of growth; reproduced true from seed; fine for bedding, 1*s.* 6*d.* per packet.

Truffaut's FRENCH ASTER, imported in 20 varieties, separate, 5*s.* per packet.

Truffaut's FRENCH ASTER, imported in 20 varieties, mixed, 2*s.* 6*d.* per packet.

New CHRYSANTHEMUM-FLOWERED ASTER, 1*s.* p. pkt.

Choice CALCEOLARIA, from the finest varieties, 2*s.* 6*d.* per packet.

Choice CINERARIA, from the finest varieties, 2*s.* 6*d.* p. pckt.

West'n Road, and 2, New Bond Street, Bath

MEADOW AND PASTURE GRASS SEED.—The great difficulty experienced by many Gentlemen and Farmers when about to lay down Land, is the selection of the proper Seeds, having no reliable practical guide as to quantity or kind. JAMES TYNAN is enabled to offer the benefit of such a guide. Speke Estate having become celebrated for its excellent practical Farming and high cultivation, has been for many years under the able management of Mr. M'Farlane. In a conversation the Advertiser had with that gentleman a few weeks ago he said:—"The great fertility of this estate I believe to be owing in a great measure to the attention I have paid to the selection of the Grass Seeds, and which I do not think I can improve. Were I to state the yield of the crops of Wheat and Barley I have obtained after these Grasses last year it would be deemed fabulous by many."

JAMES TYNAN having received orders to supply Seeds to some of the Farms on this estate, offers to send the same to gentlemen upon their giving the number of statute acres to be sown.

Selected GRASS SEEDS for LAWNS.

JAMES TYNAN, Seed Warehouse, 68, Gt. George Street, Liverpool.

HARDY HERBACEOUS PLANTS.—

	s.	*d.*
100 select and showy varieties	30	0
100 ditto ditto, including new	50	0
Selections, per dozen, 4*s.*, 6*s.*, 9*s.*, 12*s.*, and	18	0
50 fine varieties for rockwork	20	0
or per dozen, 5*s.* to	9	0
Aubrietia Mooreana, fine and early for rockwork, much larger and deeper purple than purpurea, per dozen	9	0
Chelone barbata coccinea (or mexicana splendens) very bright scarlet, per dozen	7	0
Delphinium formosum, large roots, per dozen	7	0
Dianthus albo nigrescens, fine dark, each, 2*s.* 6*d.*; per doz.	24	0
,, patens, very fine double crimson, per dozen	9	0
Fragaria variegata, silver-blotched Strawberry plant, handsome for banks or rocks, per dozen	12	0
Myosotis azoricus, ditto	5	0
Œnothera grandiflora, fine large white, ditto	6	0
,, taraxacifolia, large trailing white, ditto	6	0
,, macrocarpa, large yellow	6	0
Pentstemons, 12 varieties, best selection	9	0
,, 12 fine varieties	6	0
Potentilla King of Crimsons, the finest grown of dwarf habit, flowers 2 to 2½ inches across, each	2	0
,, Negress, rich dark velvet, per dozen	9	0
,, Shylock, rich dark vivid maroon, do.	9	0
,, Sudbury Gem, rich orange yellow, deeply shaded and spotted bright red	12	0
,, fine selections, per dozen, 6*s.* and	9	0
Saxifraga, 12 fine varieties for rock for	7	6
Sedum, 10 ,, ,,	5	0
Stipa pinnata (Feather Grass), per dozen	5	0
Trifolium pentaphyllum, dark variegated foliage, handsome for banks or rock	5	0
Vinca majorifolia elegantissima, silver-margined foliage Periwinkle	12	0
Antirrhinums, fine varieties and well marked, per dozen, 6*s.* and	9	0
Phlox, 50 fine and very superb continental and other varieties	25	0
,, 25 varieties, newest selection	20	0
,, selections, per dozen, 6*s.*, 9*s.*, and	12	0
Helianthemum, or Dwarf Rock Cistus, 24 beautiful named varieties for	15	0

CONIFERÆ.

(These are chiefly in pots, and are all in fine condition.)

50 choice hardy sorts for	100	0
25 ,, ,, ,,	50	0

CATALOGUES supplied free on application.

Goods (20*s.* and upwards) CARRIAGE FREE to all the Railway Stations in London, and all Stations on the Norwich line, *viâ* Colchester; and Plants gratis for extra carriage. Post-office Orders payable to BASS & BROWN, or to STEPHEN BROWN Remittances required from unknown correspondents.

BASS & BROWN, Seedsmen and Nurserymen, Sudbury, Suffolk

CALLICARPA PURPUREA.

JOHN STANDISH, the exhibitor of the above (at St. James's Hall), can supply a few good plants at 7*s.* 6*d.* each. The following passage from Dr. Lindley's leading article in the *Gardeners' Chronicle* for Nov. 20 will give an idea of its beauty:—"Callicarpa purpurea, quite insignificant when in flower, was beautiful in its winter dress of innumerable rich purple berries, about the size of swan shot." It is easily cultivated, and does well in a cold greenhouse or conservatory planted out, where it will produce thousands of bright purple berries resembling glass beads, and remaining on nearly the whole winter.—Bagshot, April 2.

PLANTS FOR THE FLOWER GARDEN.—The following may be had at the prices attached, and the plants are all fine and thoroughly established in single pots :—

	Per dozen.—*s.*	*d.*
Scarlet Geraniums, Tom Thumb, Frogmore and others, cut down plants, that were struck last spring	3	0
Ditto, struck last autumn	2	6
Verbenas, all the best varieties	2	6
Antirrhinums	3	0
Ageratums	2	6
Calceolarias, shrubby	2*s.* 6*d.* to 3	0
Cuphea platycentra, extra large	3	0
Dahlias, best sorts	4*s.* to 9	0
Carnations and Piccotees ditto per pair	1*s.* to 1	6
Pinks, ditto ,,	6*d.* to 1	0
Fuchsias, best sorts	3*s.* to 4	0
Gaillardia picta	2	6
Heliotropes	2	6
Lobelia speciosa and ramosoides	2	6
Alyssum variegatum	2	6
Hollyhocks, fine named flowers	9	0
Lantanas	2	6
Nierembergia gracilis	2	6
Petunias, fine sorts	2	6
Senecio (double dark Groundsel)	2	6
Salvia fulgens	2	6
Variegated Geraniums, Flower of the Day, fine cut down plants	4	0
Osborne's Brilliant	3	6

WOOD & INGRAM, Huntingdon.

HOLLY HEDGING.

EDWARD SANG AND SONS, Kirkaldy, N.B., beg to offer a quantity of fine twice transplanted HOLLIES, 15 to 18 inches high, at 15*s.* per 100, and 9 to 15 inches at 10*s.* per 100. These are just recovering from the second transplanting in 1857, and are therefore in good condition for removal. E. S. and S. have also a lot of once transplanted of the same heights, at 50*s.* and 40*s.* per 1000. The last are finer looking than the twice transplanted, but have of course inferior roots. Also a few hundreds of very fine twice transplanted, 18 to 30 inches, at 20*s.* per 100. Carriage paid to Edinburgh.

HARDY CONIFERÆ FOR SPRING PLANTING.

J. HENCHMAN, Edmonton, London, begs to offer the following CONIFERS, all Seedling Plants, in pots, and in the most robust health :—

Wellingtonia gigantea, 1 foot, in 32-pots, very fine, 10*s.* 6*d.* each; 7 to 8 inches, in 48-pots, 3*l.* per doz.; stout, 2-year seedlings, 30*s.* per doz.

Pinus Don Pedri, 21*s.* each.

,, Buonapartia or Veitchi, 10*s.* 6*d.* each.

,, insignis, 15 inches, 15*s.* per doz.

,, macrocarpa or Coulteri, 6 inches, fine, 18*s.* per doz.

,, tuberculata, stout 2-year seedlings, 18*s.* per doz.

,, Benthamiana, 2-year do. 9*s.* per doz.

Cupressus macrocarpa, 18 inches, fine, 6*s.* per doz.

,, MacNabbiana, 2 years, 9*s.* per doz.

Taxodium sempervirens, 15 inches, fine, 24*s.* per doz.

SEED CORN FROM THE CHALK.

MESSRS. RAYNBIRD AND HARVEY beg to offer to Agriculturists requiring change of SEED Talavera, Red Nursery, and April WHEAT, the best sorts for Spring sowing.

Chevalier, Thanet, Golden Drop, Long-eared Nottingham, American, Hudson's Golden Melon, Banham's Sprat, and other varieties of BARLEY.

Canadian Potato, Hopetoun, Poland, and Tartarian OATS.

Fine CLUSTER BEANS, weighing 68 lbs. per bushel.

Samples and Prices on application.

Address—Basingstoke, and 89, Seed Market, Mark Lane, London, E.C.

REIGATE SILVER SAND DEPOT.—JOHN BRYAN & Co., Nine Elms Wharf, Vauxhall, S., adjoining the South Western Railway. Delivered to any part of London. Carts Loaded.—N.B. References to the first Nurserymen both in Town and Country.

HORTICULTURAL VALUATIONS.

MR. ALFRED CHANDLER (of the late firm of Chandler & Sons, Vauxhall), begs to inform his Friends that he is at liberty to undertake the valuation of Collections of Plants, Nursery Stock, Horticultural Buildings, &c.

Mr. A. C. is also open to engagements as Censor at Horticultural Exhibitions, in which capacity he has had long and extensive experience.—28, Priory Road, Wandsworth Road, S.

GENUINE ROLL TOBACCO CLOTH.

WARRANTED EQUAL IN STRENGTH TO TOBACCO.

JOSEPH BAKER, 10, Gough Square, Fleet St., E.C., having dealt upwards of 20 years in the above, can recommend it as the best article for destroying the Fly. 1*s.* 4*d.* per lb.; over 10 lbs., 1*s.* Post-office Orders payable Strand Office.

GENUINE TOBACCO PAPER.—Parties fumigating can be supplied with the best Genuine Tobacco Paper at 4*l.* per cwt.; any less than 56 lbs., 10*d.* per lb.—BEN BAXTER, Messrs. Jackson & Sons, Lady Lane, Leeds.

GENUINE TOBACCO PAPER FOR FUMIGATING.

H. APPLEBY (Foreman to Messrs. Ivery & Son, Surrey), takes this opportunity of informing his patrons and the public that he is now offering the above at a very considerably reduced price. It is now sold in packets of 4 lbs. each, at 1*s.* 3*d.* per lb. A liberal discount allowed to the Trade. For testimonials that will guarantee its quality, see *Gardeners' Chronicle*, March 5, p. 189.

Sheet Iron Pots for fumigating, 3*s.* 6*d.* each.

N.B. All orders to be accompanied with a Post-office Order, payable to HENRY APPLEBY, Dorking, Surrey.

PAGE'S BLIGHT COMPOSITION (4*s.* per gallon, sufficiently strong to make four fit for use) has stood the test of eight years public trial, and its great success has led to numerous imitations. Dr. Lindley, in his leading article of October 25, 1856, reported 182 cases in its favour, sufficient to convince the most sceptical. Seeds packed for exportation to all parts of the world.—PAGE & TOOGOOD, Royal South Hants Seed Establishment, Southampton.

POULTRY—DOGS—PLANTS can be kept free from Insects of every description by using the PERSIAN INSECT DESTROYING POWDER, unrivalled in killing Fleas, Flies, Beetles, and every species of Insect—harmless to animal life. Sold in packets 1*s.* and 2*s.* 6*d.* A shilling packet sent free by post for 14 stamps.—THOMAS KEATING, Chemist, 79, St. Paul's Churchyard, London, E.C.

GRASS SEEDS FOR PERMANENT PASTURES & MEADOWS.

THOMAS GIBBS & CO., Corner of Half-Moon St.,

THE SEEDSMEN TO THE "ROYAL AGRICULTURAL SOCIETY OF ENGLAND,"

BEG to inform the Members of the Society and Agriculturists generally that their MIXTURES of GRASS SEEDS for Laying down Land to Permanent Grass are now ready. Each kind of Grass Seed composing these Mixtures is cleaned separately, and the kinds are proportioned to suit different soils.

☞ *Full Directions for Sowing and Management will be sent with the Seeds.*

MIXTURES for PERMANENT MEADOW and PASTURE (*to suit different soils*).
MIXTURES for PARKS, FIELD LAWNS, CEMETERIES, &c.
MIXTURES for IRRIGATION MEADOWS, GAME COVERS, and all other purposes.
RENOVATING MIXTURES for Improving Old Meadows and Pastures (8 to 12 lbs. per acre).

MANGEL WURZEL.	RYE-GRASS.		
Yellow Globe, Orange Globe (selected)	Italian (selected, very fine)	Carrots	all sorts
Long Red	Dickinson's	Clovers	,,
Red Globe	Imported Foreign Seed	Swedes	,,
Long Yellow	Common or Annual	Hybrids	,,
Silesian Sugar Beet	Pacey's Perennial	Common Turnips	,,

KITCHEN GARDEN SEEDS in Collections, at £1, £2, and £3 each.

ALL KINDS OF AGRICULTURAL SEEDS.

Price Lists sent free on application. Reference or Cash required from unknown Correspondents.

Thomas Gibbs & Co.
CORNER OF
HALF-MOON St.
Piccadilly, London, W.

SUTTON'S GRASS SEEDS AT THE ROYAL FARMS NEAR WINDSOR, AND IN THE ISLE OF WIGHT.

SUTTON'S GRASS SEEDS

FOR PERMANENT PASTURE, PARKS, AND LAWNS,

ARE NOW SOWN AT THE ROYAL FARMS, AT OSBORNE PALACE, THE ALDERSHOTT CAMP, THE CRYSTAL PALACE SYDENHAM, THE HORTICULTURAL SOCIETY'S GARDENS, THE PEOPLE'S PARK, HALIFAX, AND ON MOST OF THE LARGEST ESTATES IN THE KINGDOM.

These Grass Seeds being mixed expressly to suit the soil for which they are required, are never known to fail.

SUTTON & SONS having for many years paid especial attention to the Laying down Land to Permanent Pastures, they are well acquainted with the various soils of most parts of the United Kingdom, and the Natural Grasses suitable for each locality.

The following Sorts may be had separate or mixed, at lowest Market Prices:—

Alopecurus pratensis	Festuca duriuscula	Festuca tenuifolia	Lolium italicum	Poa pratensis	Phleum pratense major
Anthoxanthum odoratum	,, elatior	,, hordeformis	,, perenne tenue	,, trivialis	,, ,, minor
Agrostis stolonifera	,, gigantea	Glyceria fluitans	,, ,, Paceyanum	,, nemoralis	Petroselinum sativum
Avena flavescens	,, heterophylla	,, aquatica	,, ,, sempervirens	,, angustifolius	Trifolium repens
Achillea millefolium	,, pratensis	Holcus lanatus	Lotus corniculatus major	,, fertilis	,, pratense perenne
Cynosurus cristatus	,, ovina	,, avenaceus	Medicago Lupulina	,, sempervirens	,, minus
Dactylis glomerata	,, rubra				,, hybridum

ALSIKE and other CLOVER, and all the most suitable of the above are contained in our Mixtures. Cost of the best Mixtures for Permanent Pasture, **30s. to 34s. per acre**, according to the sorts required for the land.

Fine LAWN GRASS SEEDS for making New or Improving Old Garden Lawns,

Price 1s. per lb., 2s. 6d. per gallon, or 20s. per bushel.

Improvement of Grass Lands by Sowing Good Seeds of the most Suitable Kinds.

SUTTON'S RENOVATING GRASS SEEDS (6s. to 9s. per Acre)

Consist of the finest GRASSES and PERENNIAL CLOVERS, producing great improvement in the Pasture, and at a small expense. Quantity of Seed required 8 to 12 lbs. per acre. Price reduced to **9d. per lb., or 30s. per cwt.** Sow in March and April.

☞ Having greatly reduced the price of our **RENOVATING MIXTURE**, we doubt not that our liberal terms will encourage the more extensive use of the same. Our Grass Seeds have for many years been allowed to be the best, and now we may add that they are the cheapest. Meadows and Upland Pastures may be increased in value 50 per cent. by sowing these Seeds. **Grass Seeds for Laying down Permanent Pasture, 30s. to 34s. per acre.** Seeds Carriage Free to all parts, except small parcels. Catalogues post free.

SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

CHOICE FLOWERS.

BUTLER & McCULLOCH'S SPRING CATALOGUE OF SEEDS,

ARRANGED on a new and original plan, with copious Descriptive and Cultural Notes, and containing many new and rare species and varieties not found in any other Catalogue, now ready and may be had free and post paid on application.

FLOWER, SHRUB, TREE, and VEGETABLE SEEDS, the crop of 1858, saved with the greatest care, by the most eminent growers.

We may also state that the Sardinian correspondent of Messrs. James Carter & Co., whose Seeds, especially Carnations and Picotees, have given such universal satisfaction, has transferred the Agency from that firm and appointed us his representative in this country. To meet the growing demand for first class flowers, particularly FLORISTS' FLOWERS, we have adopted our usual maxim of charging the lowest possible prices.

Professor Lindley in the *Gardeners' Chronicle* of February 5th, has the following notice of B. & McC.'s Catalogue.

"Butler & McCulloch's (Covent Garden) Spring Catalogue of Choice Flower, Shrub, Tree, and Vegetable Seeds. This list fills 84 closely printed 8vo pages, and is remarkably well got up. It appears that the correspondent in Sardinia, who formerly supplied one of the great London houses with seeds raised in that warm part of Europe, has now transferred what he saves to Messrs. Butler & McCulloch. Let us add, that it yields to no Trade List in the abundance of its materials or the excellence of its arrangements."

A selection of 44 pkts. of beautiful Annual Flower Seeds						7s.	6d.	An Assortment of Vegetable Seeds, 20 quarts of Peas, and other Seeds in proportion for 1 year's supply			£3 3s. 0d.
Ditto	32	ditto	ditto	..	..	5	6				
Ditto	21	ditto	ditto	..	..	3	6				
A selection of 40 pkts. of beautiful Biennial and Perennial ditto				..	..	10	6	Ditto	ditto	12 quarts of Peas ditto ..	2 2 0
Ditto	31	ditto	ditto	..	..	7	6	Ditto	ditto	6 ditto ditto ..	1 1 0
Ditto	24	ditto	ditto	..	..	5	6	Ditto	ditto	5 ditto ditto ..	0 15 0

All Flower Seeds sent post paid, and Vegetable or Vegetable and Flower Seeds amounting to 1*l.* 1*s.* Carriage Paid to any principal Railway Station in England, Wales, and Scotland, or any port on the Irish Coast.

BUTLER & McCULLOCH, Covent Garden Market.

GENUINE AGRICULTURAL SEEDS.

MESSRS. DICKSON AND BROWN (late F. and A. Dickson & Co.), 43 and 45, Corporation Street, Manchester, beg to intimate that they are now ready to execute all orders with first-class AGRICULTURAL SEEDS, most of which have been saved by themselves or under their own superintendence.

Special prices for large quantities on application. A PRICED CATALOGUE is published, and may be had post free.

Manchester.—April 2.

"JACK OF NEWBURY" SWEDE, ETC.

PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN, &c., 27, Great George Street, Westminster, respectfully request attention to their very genuine Stock of the above excellent Swede; also of the LOTHIAN PURPLE-TOP SWEDE, both of which have been selected with the greatest care. They have also a very fine Stock of the KOHL RABI, or TURNIP-ROOTED CABBAGE, specimens of which were shown at their Stands at Smithfield Club Show. The Kohl Rabi was largely grown last season, and may now be relied on as a substitute for the Turnip and Mangel, where these roots do not succeed, or for filling up blanks where there is a partial failure. Its feeding qualities, hardiness, and weight per acre are equal to the Swede, and all kinds of stock prefer it to other roots.

P. L. & Son have also selected a first-rate Stock of MANGEL WURZEL SEED, which they can confidently recommend. Their natural GRASS SEEDS have been also saved with very great care, and they are ready to supply them separately or in mixture, for laying down Permanent Pastures, Lawns, &c.

P. L. & Son have arranged to deliver Seeds free throughout England and Wales from their London Establishment, for all quantities exceeding 20*s.* in value.

LISTS OF PRICES of the above and all other Seeds, Plants, &c., may be had on application.

27, Great George Street, Westminster.

MANGEL WURZEL SEED,

WARRANTED NEW AND TRUE, BY

SUTTON & SONS, Seed Growers, Reading.

YELLOW GLOBE	8d. per lb.	LONG RED	8d. per lb.
RED GLOBE	9d. ,,	LONG YELLOW	9d. ,,

Cheaper by the Cwt.

NEW SORTS OF MANGEL WURZEL.

The Stocks of Seeds of the following new sorts being limited and in great demand, orders should be sent in good time:—

Per lb.—*s. d.*

SUTTON'S NEW LARGE YELLOW GLOBE.—This seed is saved from large roots selected, and will produce the heaviest crop of all the Mangels 0 9

[Presuming that this superior Yellow Globe Mangel will generally be preferred for the main crop, we invariably send this sort, unless the Common Yellow Globe (see above) or the more expensive kinds described below, are mentioned.]

SUTTON'S Improved ORANGE GLOBE, remarkably fine shaped roots, with small Greens. Judges generally award the First Prize to this sort.. 0 9

FISHER HOBBS'S YELLOW GLOBE. —Deep yellow, fine shape 1 0

Per lb.—*s. d.*

***MORTON'S YELLOW GLOBE.**—Introduced by J. C. Morton, Esq., Editor of the *Agricultural Gazette* 1 0

SUTTON'S ELVETHAM LONG RED.— A heavy cropper and very full of saccharine matter. All kinds of stock thrive remarkably well on it. This sort is much in demand by the London cow-keepers.. 0 9

[Presuming that this superior sort of Long Red will be preferred, we invariably send this unless the "Common" Long Red, entered above, is distinctly ordered.]

***SUTTON'S LONG WHITE.**—Some of these roots weighed 40 lbs. each.. .. .. .. 1 0

***STRATTON'S Improved RED GLOBE.** Beautiful shape 1 0

*The Sorts marked thus * are recommended to be sown in moderate quantities only for trial.*

N.B. The "Sutton's Large Yellow Globe," and "Improved Orange Globe," are fast growing kinds, and should not be sown till the last week in April or the first week in May.

SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

JAMES CARTER & CO., Seedsmen,

238, HIGH HOLBORN, W.C.,

BEG to call attention to the 24th Annual Issue of their ENCYCLOPÆDIC CATALOGUE and GARDENERS' VADE MECUM, containing upwards of 2000 species and varieties of Flower Seeds, every requisite for the Farm and Kitchen Garden, and a comprehensive Calendar of Operations for each month throughout the year. J. C. & Co. beg to recommend the following selection:—

No. 2	Collection of 12 extra fine varieties of Quilled German Asters		1s.	6d.
,, 6	,, 12 superb ,,	New Perfection ,,	2	6
,, 13	,, 5 beautiful ,,	Dwarf Perfection ,,	2	6
,, 18	,, 16 selected ,,	Dwarf German Stocks	2	6
,, 32	,, 10 splendid ,,	Imperial ,,	2	6
,, 39	,, 12 newest ,,	Camellia-flowered Balsam	3	0
,, 40	,, 8 finest ,,	Rose-flowered ,,	2	0
	Unequalled Collections of Carnations and Picotees, 6 vars., 3s. 6d.			
,, 47	Collection of 12 extra fine varieties of Dwarf Rocket Larkspur		2	6
,, 53	,, 12 beautiful ,,	Phlox Drummondi	3	6
,, 56	,, 12 newest ,,	Salpiglossis	3	0
,, 60	,, 12 superb ,,	Wallflowers	2	6
,, 62	,, 12 splendid ,,	Zinnia elegans	3	6

Alpine Plants in collections, 12 varieties, 2s. 6d.; 25 do., 5s.; 50 do., 10s.

No.	Per packet.—*s. d.*
64.	Abronia umbellata 0 6
83.	Acacia suaveolens 1 0
89.	Achimenes 1 0
114.	Alonsoa Warscewiczi 0 4
136.	Anagallis grandiflora cærulea .. 0 6
135.	Anagallis coccinea 0 6
166.	Antirrhinum, splendid, mixed 0 6
190.	Aquilegia Witmanni, fine .. 0 6
195.	Araucaria imbricata 1 0
197.	Arctotis breviscapa 0 6
229.	Azalea indica, choice 1 0
232.	Bambusa spinosa, rare 0 6
264.	Brachycome iberidifolium .. 0 6
277.	Butea superba, stove, rare .. 2 6
291.	Calceolaria, mixed 1 0
292.	Calceolaria, finest spotted .. 1 0
310.	Calliopsis Burridgi 0 6
317.	Camellia japonica 1 0
345.	Campanula Vidalli 0 6
355.	Canna Warscewiczi 0 4
418.	Chamærops humilis 0 6
429.	Chloris radiata 0 6
432.	Chorozema Hendersoni 0 6
434.	Chorozema Lawrenciana .. 0 6
440.	Chrysanthemum indicum .. 1 0
441.	,, indicum nanum 1 0
444.	Cineraria, finest mixed 1 0
466.	Clarkia pulchella marginata .. 0 6
547.	Cryptomeria Lobbi 1 0
575.	Dahlia, finest double 1 0
—	Datura humilis fl. pl. 0 6
590.	Datura Wrighti 1 0
601.	Delphinium magnificum .. 1 0
648.	Dianthus Veitchi, fine 1 0
650.	Didymocarpus polyanthus .. 1 0
—	Erica, finest variety, 12 species 5 0
743.	Erythrina Hendersoni 1 0
772.	Filices, finest mixed 1 0
773.	Fenzlia dianthiflora 1 0
779.	Fuchsia, finest mixed 1 0
785.	Gaillardia hybrida grandiflora .. 0 6
805.	Gazania ringens 0 6
823.	Gesneria, mixed 1 0
834.	Gloxinia, finest mixed 1 0
835.	Gloxinia erecta 1 0
860.	Gymnogramma ochracea .. 1 0
861.	,, tartarea .. 1 0
903.	Hibiscus Cameroni 0 6
917.	Hoya carnosa 1 0
918.	Humea elegans 0 6
926.	Hypocalyptus obcordatus .. 1 0
947.	Ipomœa hederacea superba .. 0 6
948.	Ipomœa hederacea superba lilacina 1 0
949.	,, ,, atroviolacea 1 0
962	,, rubro-cærulea .. 1 0
998.	Kennedya longiracemosa .. 0 6
1032.	Leptosiphon arvense 0 6
1046.	Lilium colchicum 1 0
1048.	,, speciosum 1 0
1067.	Linum kermesinum 0 6
1091.	,, narbonense 0 6
1092.	Lobelia Erinus speciosa.. .. 1 0
1093.	,, formosa 1 0
1122.	Lupinus Hartwegii cœlestinus, new 0 6
1133.	,, nanus albus novus, new 0 6
1171.	Marianthus cœruleo-punctatus 0 6
1181.	Maurandya Barclayana kermesina 0 6
1204.	Mimulus pl. sp. et var.. .. 0 6
1217.	Myosotis azorica 0 6
1222.	Nelumbium speciosum.. .. 1 0
1223.	,, ,, album.. 1 0
1242.	Nierembergia gracilis 1 0
1246.	Nolana paradoxa violacea .. 1 0
1262.	Œnothera bistorta Veitchi .. 1 0
1265.	,, Drummondi nana.. 1 0
1283.	Oxalis corniculata fol. var. .. 1 0
1296.	,, tropæoloides 1 0
1315.	Passiflora cinnabarina 1 0
1320.	Paulownia imperialis 0 6
1331.	Pentstemon Hartwegi atro-cœruleum 0 6
1332.	,, coccineum 0 6
1333.	,, purpureum 0 6
1332.	,, Murrayanum .. .. 1 0.
1353.	Petunia viridicincta 0 6
1366.	Phlox Drummondi elegans nova 0 6
1372.	,, cinnabarina 1 0
1377.	Physalis edulis 0 6
1389.	Pleroma elegans 1 0
1390.	Poinciana regia, rare 1 0
1407.	Portulacca Thellusoni caryophylloides 0 6
1432.	Primula sinensis fimbriata .. 1 0
—	,, ,, Village Maid, fine 2 6
1452.	Quisqualis glabra 2 6
1457.	Rhodanthe Manglesi 0 6
1467.	Roellia ciliata 0 6
1474.	Salpiglossis sinuata atrococcinea nova 0 6
1490.	Salvia patens 1 0
1490.	,, splendens 0 6
1505.	Saponaria calabrica rosea, new 1 0
1519.	Schizopetalon Walkeri 0 6
1562.	Solanum Balbisi 0 6
1565.	,, jasminoides 0 6
1579.	Spiræa callosa 0 6
1589.	Statice Bonduelli .. . 0 4
1594.	,, Fortuni 0 4
1607.	Strelitzia angusta 2 6
1614.	Swainsonia Greyana 0 6
1615.	,, lessertiæfolia .. 0 6
1618.	Tacsonia ignea 1 0
1643.	Trichodesma zeylanicum .. 0 6
1644.	Trichosanthes colubrina .. 0 6
1646.	Tritoma Uvaria 0 6
1653.	Tropæolum Lobbianum Géant des Batailles.. 1 0
1654.	Do. do. glabrum variegatum 1 0
1658.	Do. do. Schultzi 1 0
1661.	Do. do. Triomphe de Gand.. 1 0
1662.	Do. do. Victoria Regina .. 1 0
16 7.	Do. do. speciosum 1 0
1688.	Verbena hybrida, mixed .. 1 0
1699	Victoria Regia 5 0
1708.	Viscaria cœli rosea alba.. .. 0 6
1711.	,, oculata Dunnetti .. 0 6
1720.	Zauschneria californica.. .. 0 6
1737.	Aster Emperor, new 1 0
1740.	,, La Superbe 1 0
1774.	Carnation, double, finest mixed 2 6
1772.	,, perpetual do. do. 2 6
1775.	Chrysanthemum tricolor Burridgi 0 6
1776.	,, beautiful .. 0 0
1828.	Heartsease, extra fine 1 0
1830.	Hollyhock, prize mixed .. 1 6
1850.	Larkspur tricolor elegans .. 0 0
1864.	Marigold, French, new orange 1 6
1890.	Nasturtion, dwarf spotted .. 0 0
1891.	,, Tom Thumb .. 1 6
1907.	Picotee, finest double .. . 2 0
1909.	Polyanthus, extra fine.. .. 1 0
1910.	,, new large yellow 1 6
1969.	Virginian Stock, new rose .. 0 6

J. C. & Co. beg to state that in ordering from the above the numbers in margin will be sufficient.

Catalogues forwarded post free upon application.

JAMES CARTER & CO., Seedsmen, 238, High Holborn, W.C.

NEW CHRYSANTHEMUMS.

JOHN SALTER begs to announce that his SPRING CATALOGUE is now published, in which his splendid SEEDLINGS and other new CHRYSANTHEMUMS of 1859 are fully described, as well as the unrivalled general collection, which is the largest in Europe—Strong plants of "Golden Queen of England," "Prince Albert," and every other variety, will be ready in the course of the month.—Versailles Nursery, William Street, near Hammersmith Turnpike, W.

SUPERB DOUBLE BALSAMS.

F. AND A. SMITH are now sending out seed of their superb BALSAMS, which are unrivalled for size, form, brilliancy of colour, doubleness of flower, and habit of plant.

In collections of nine separate colours .. .. 2*s. 6d.*
,, ,, mixed ,, .. 2 0
,, ,, ,, half quantity 1 0

The above are *genuine only* in our sealed packets, and may be had of most respectable Nurserymen and Seedmen in the United Kingdom.—Dulwich, Surrey, S.

PLANTS IN FLOWER.

F. AND A. SMITH have now in bloom Acacia, Azalea indica, Cinerarias (fine), Cytisus, Erica ventricosa coccinea minor; E. Cavendishi, E. hybrida, E. propendens, E. perspicua nana, E. Syndriana, Geraniums, Fairy Roses, Primula sinensis fimbriata, &c.

The above are healthy, strong, and well grown plants, prepared for sending away. Prices on application.

Dulwich, Surrey, S.

CORNISH BROCCOLIS.

MITCHINSON AND CO., Seed Merchants, Truro, Cornwall, beg to invite attention at this period (the season for sowing), to their superior BROCCOLI SEED, at 1*s. 6d.* per packet, or 4 packets for 4*s.* postage free;—

1. Mitchinson's Penzance or Early White Cornish.
2. Thomas's Penzance Dwarf Early ditto.
3. Waters's Penryn or Early Falmouth Market.
4. The Truro extra fine Late White.

These will give a succession from January to May.

STRONG BLACK HAMBURGH VINES.

THOMAS METHVEN has on hand a large stock of strong well ripened BLACK HAMBURGH VINES, which he begs to offer at 3*s. 6d.* each or 36*s.* per dozen. The usual discount to the Trade.

Stanwell and Leith Walk Nurseries, Edinburgh.—April 2.

THE GREAT VINE AT HAMPTON COURT.

THE SUBSCRIBERS being the holders of the Royal Kitchen Gardens, Hampton Court, are enabled to offer genuine the famous and truly excellent HAMPTON COURT BLACK HAMBURGH GRAPE.

Strong well-ripened plants in 9-inch pots, 42*s.* and 60*s.* per doz.

If purchased in large numbers a considerable reduction will be made in price.—Jackson & Son, Nurseries, Kingston, S.W.

THE EARLIEST PEA.—DUNNETT'S FIRST EARLY is in every respect superior to "Daniel O'Rourke," being several days earlier, having finer pods, and richer in flavour, height 2½ feet. For an early dish of fine-flavoured Peas we can confidently recommend this; 2*s.* per quart.

CHAMPION CABBAGE, the earliest and best sort, if sown in succession, may be had fit for table throughout the year, 5*d.* per ounce, or 1*s.* post free.

Ritter & McCulloch, Covent Garden Market, London.

BEAUTIFUL NEW BEGONIAS "QUEEN VICTORIA" AND "ARGENTEA."

MONS. J. LINDEN takes this means of informing all lovers of new and beautiful plants that he has placed in the hands of Mr. J. Veitch, jun., Royal Exotic Nurseries, Chelsea, a portion of the Stock of the above novelties for distribution in Great Britain, and requests that all orders may be addressed direct to that gentleman.—Brussels, March.

JAS. VEITCH, Jun., has much pleasure in announcing that he is now taking orders for the above plants which will be ready for delivery on and after the 1st May next, and in the mean time he will be happy to show them to any person who may do him the favour of visiting his Nursery.

J. V., jun., will also be able to supply any of the other new and beautiful plants offered in M. Linden's Catalogue.

Royal Exotic Nurseries, Chelsea.—April 2.

ROYAL SOUTH HANTS SEED ESTABLISHMENT.

Under the Patronage of H.R.H. the Prince Consort, The Agricultural, Horticultural Society of India, and the leading Agriculturists of the United Kingdom.

PAGE AND TOOGOOD can now supply GARDEN AND FARM SEEDS, carriage free; SEED POTATOES, &c. The numerous Prizes gained by their Stocks are convincing proofs of superior quality, and their prices compete with any house in the kingdom. WHOLESALE and RETAIL PRICED CATALOGUES upon application.

Agents for Odams's Blood Manure, Superphosphate, &c. Seeds Packed for Exportation to all Parts of the world,

37 and 38, Oxford Street (facing the Railway Terminus); and 58, Above Bar, Southampton.

The Gardeners' Chronicle.

SATURDAY, APRIL 2, 1859.

MEETINGS FOR THE FOLLOWING WEEK.

Monday, April 4—Entomological ..... 8 P.M.
Thursday, ,, 7—Linnean ..... 8 P.M.

THE continued ABSENCE OF RAIN from the metropolis is becoming a subject of very serious uneasiness. Last year the autumn supply was so short as to compel the inhabitants of all the valley of the Thames to open their wells and deepen them, and it seems as if matters were about to become worse.

On referring to p. 143 of this year's *Chronicle* it will be seen that the arrear of the fall of rain in the neighbourhood of London was 11.84 inches at the commencement of the present year. Since then we have had—

In January ..	..	0.61 inch.—Usual quantity		1.69
February ..	..	1.31 ,,	,, ,,	1.51
March to 29th	..	0.71 ,,	,, ,,	1.32
		2.63		4.52

It is therefore plain that very nearly 2 inches have now to be added to the deficiency, which,

making allowance for the proportion due to the three days of March still to run at the time when these remarks were written, may be set down at 13¾ inches.

Towards the middle of February, as we announced at the time, the springs were slightly on the rise in consequence of an average quantity of rain having fallen in the beginning of that month; but they are again receding, as will be seen from the following observations made on the depth from the surface at which the water stood in a well in the gravelly stratum near London at the following dates:—

	Feet.	Ins.
August 17th, 1858, depth of water from surface	8	3
September 9 " " "	8	6
September 23 " " "	8	8
October 15 " " "	8	9
December 13 " " "	8	10
January 1st, 1859 " "	9	1
January 22 " " "	9	1
February 12 " " "	8	11¼
March 8 " " "	8	11
March 28 " " "	9	0½

It will thus be found that during the three last weeks the underground water level has been lowering at the rate of half an inch per week.

Now it has been clearly ascertained by Mr. Dickinson that the summer flow of water is invariably responsive to the rainfall of the preceding winter, and that spring and summer rains add little or nothing to the great subterranean reservoir of water which fills our wells and ditches, and feeds our deep rooted crops. And this for the obvious reason that when rain descends in spring and summer it is intercepted before it can reach the subterranean reservoir, owing partly to mere evaporation, but much more to the enormous demand made upon it by vegetation as it passes downwards. Hales ascertained experimentally that a Sunflower plant, 3½ feet high, sometimes consumed as much as 1 lb. 14 oz. of water in a day. That fact alone points out how vast the drain must be upon the ordinary summer rain and the subterranean reservoir, by growing vegetation. "The records of the Dalton gauge," says Mr. Dickinson, "prove that the whole of the summer rain is evaporated or required for vegetation, and that the rain of winter is made available for a great hydraulic system of most admirable contrivance, and productive of inestimable advantages in the districts of country supplied throughout the year by this formation of springs and rivers."

Among the other important facts recorded by Mr. Dickinson in the valuable paper to which we have been referring is this. He found that the annual quantity of water not evaporated or carried off, and which therefore went to supply the great subterranean reservoir, varied in 14 years between 19.28 inches in 1842 and 3.10 inches in 1841. We have no means of ascertaining what a Dalton gauge has indicated for the last 12 months, but it seems as if the percolation has amounted to *nil*. At least when we see that in a well there is actually at the present moment 8¾ inches less water than there was last August that inference seems inevitable.

This is a most important matter, and it opens a very great question. It seems as if the climate of England has been gradually growing drier for some years past. If so, to what possible cause is that circumstance to be ascribed? It has been suggested that the effect of deep railway cuttings may have something to do with it. That they have produced great local inconvenience by laying dry the wells in their neighbourhood is undoubted; and it has been argued that the railways draw off water to the rivers, and the rivers send it to the ocean, where it is lost. But we do not ourselves think such an explanation satisfactory. May it not rather be the extensive destruction of hedgerow timber that is beginning to tell on the atmosphere? If, as it has been seen, trees carry off vast quantities of water from the earth, they merely discharge it into the atmosphere, where it forms clouds, condenses, and comes back in the state of rain; so that there is really no loss of moisture in wooded countries; to say nothing of another point of the highest importance, the hindrance of evaporation by shade. But when the prodigious hydraulic power of vegetation is withdrawn or diminished, much of the water in the earth finds out subterranean channels for itself, and passes away through rivers and their feeders till it is lost in the sea, while another portion is removed by constant surface evaporation.

That the effect of felling large quantities of timber is to diminish atmospheric moisture is notorious. To say nothing of the altered climate of these islands, consequent upon the removal of our superfluous ancient forests, there are other and more recent cases which may be safely quoted.

On the 27th February, 1836, the subject was brought before the *Chambre des Deputés* by M. Ladoucette, deputy for the Moselle, who adduced numerous modern instances of humid countries having become arid in consequence of the immoderate clearing of forests. He cited Fontenay and Provence as places where it has led notoriously to wells and pits becoming dry, and called as evidence to the same effect the Prefect of the Haute Garonne, who asserted that in the whole of the Eastern Pyrenees and the Herault the destruction of timber had been calamitous, temperature became higher, wells and water-courses diminished, while the dryness of the climate was greatly increased. Similar evidence was collected by Prof. Laurent, of Nancy, of whose numerous statements the following may be taken as a specimen. After referring to the desolation brought upon so many of the nations of the East by the loss of their forests, upon Babylon and Niniveh, Thebes, Memphis, Carthage, Palestine, and the Troad, he concludes by quoting similar examples in the recent history of France. In the Vosges, the destruction of forests has gone too far; so that the humid vapours so necessary to plants have diminished, while the soil has become arid and inundations frequent. In the department of the Gard it did not rain in 1837 for nine months; such a dryness was not in the memory of man; the people ascribed it to the successive destruction of the mountain forests. The town of Nismes, whose name is derived from the forests that surrounded it, exhibits little except sterile wastes (*garrigues*). At Béziers 300 members of the Agricultural Society reported in 1797 that the vast forests which once sheltered that place having disappeared the loss of the Olive crop is the inevitable consequence. The authorities of the Ière represented, in 1793, that the destruction of forests had altered the temperature, augmented dryness, and seriously affected the crops. As to wells and pits, their supply too had, before 1838, been most seriously diminished. Violent storms and torrents of rain indeed fell from time to time, but they ran off the land without soaking into it, and the subterranean reservoir gained nothing. In short, ancient mill streams were gone, or flowed only in winter; and the old head waters of the river affluents had disappeared in places where the woods had been grubbed up. The general conclusion of this well informed writer is expressed in the following words:—"By the destruction in France of a great extent of forests, in order to replace them by cultivated fields, the temperature has become very irregular. Heavy rains, storms, and dryness have each done their work upon the soil, and made crops every year more and more uncertain." (*De l'influence de la culture sur l'atmosphère et de celle des déboisements.* Nancy, 1838.)

If we prefer quoting cases at our own door, to those which are recorded in totally different climates such as Central America and the Mauritius, it is because the former are more obviously analogous to what may be anticipated in these islands, should the destruction of our timber go too far. We do not by any means say that we have yet done mischief; for there is not satisfactory evidence upon the subject. But we do say that the present dryness is a most serious matter, that it may arise out of a senseless application of very sound advice, and that it is full time to investigate a question which may be pregnant with direful consequences to all cultivators of the soil. Had we had any rational agricultural statistics the inquiry might have at once received an answer; but since Parliament, in its collective wisdom, is pleased to declare that detailed information respecting the circumstances that affect the production of our daily bread, and the value of all territorial property, is beneath its notice, the public must be content to elucidate subjects of inquiry like the present as it best may.

The world has much to learn before it shall be able to distinguish good from evil, in even the commonest things. This is especially manifested in the case of poisonous plants wild or everywhere cultivated. How few persons know that the flowers of the Daffodil, the seeds of the Laburnum, the roots of the Scarlet Runner, the leaves of Fool's Parsley, the spray of the Cypress and Yew, the berries of Belladonna, and many another familiar plant are extremely dangerous; how many a child has been poisoned by such things while the cause remained unsuspected.

To the catalogue of surrounding dangers we have now to add the common Acacia tree; a plant which a well-informed naturalist would take care to avoid, but which the public believes to be harmless. In the last Number of the *Botanische Zeitung* we read as follows:—

"Dr. J. Moller in the *Zeitschrift für Natur- und Heilkunde in Ungarn* relates the case of a little girl, eight years old, who was made seriously ill by eating a fresh root of the Acacia tree which she mistook for liquorice. The appearances of the disorder were extremely similar to those which result from eating the berries of Belladonna. A strong emetic of sulphate of copper removed the danger: lemonade and black coffee being afterwards administered. The next day all symptoms of indisposition disappeared, and only the depression consequent upon such attacks remained behind. The physician who was called in considered the following circumstances worthy of remark—before being poisoned the child was suffering from intermittent fever, which did not reappear after the attack. It is however uncertain whether the fever was removed by the emetic or by the eating of the Acacia roots; if by the latter, the action of Acacia would resemble that of Belladonna. Dr. Moller adds that a similar case of poisoning had occurred to himself in the instance of two children chewing fresh dug up roots of this Acacia (Robinia Pseud-acacia), but that also terminated favourably."

We think it the more necessary to put this fact on record in our columns because in truth the fresh root of the Acacia or Locust tree does smell very like Liquorice root, and is almost certain to be mistaken for it by persons who chance to be present when a tree is grubbed up. We ourselves happened some years ago to witness the removal of a Sophora japonica, a near relation of the Locust tree, whose roots smelt so agreeably that one of the workmen was greatly inclined "to have a suck," and it was not without some difficulty that he was persuaded to refrain, from fear of being poisoned.

Let us add a word or two to what was said a fortnight since upon the probable fate of English Market Gardening. Considering the general bad quality of the Continental Melons which come here, it was to be hoped that this fruit at least would remain in the hands of ourselves. But a report now before us dispels this illusion. It appears that Melons of the highest excellence, grown on beds in the open air, may be had in any quantity at Bordeaux by the beginning of August.

On the ground of a M. Archambeau, on about three-quarters of an acre, in a low damp situation having no advantage of soil, the ground was completely covered with magnificent Paris Cantaloup Melons, whose flavour was all that could be desired (*d'un gout irréprochable*). The number of such fruit was ascertained to be as follows:—

7 beds bearing	36	Melons each	..	.. had	252
36 " "	66	" "	..	.. "	2376
12 " "	18	" "	..	.. "	216
45 plants with 3 fruit each			..	.. "	135
2 plants in another place with 15 each			..	"	30
					3009
To which had to be added for fruit not then ripe					150
Giving a total of 3159 Melons on less than ¾ of an acre.					

Be it remembered, moreover, that Bordeaux is within a few hours' steam of England.

New Plants.

216. Vanilla lutescens. *Moquin Tandon in Rev. Hortic.* 4, *ser.* 5, 1856, *p.* 121, *f.* 21. *Duchartre in Journal de la Soc. Imp. Hort.* 5, 97, *t.* xi. 1859.

Orchid growers are not very eager to occupy space with Vanillas, whose green or watery white flowers, however curious, have nothing to strike the eye. The species however now mentioned is a great exception, for its flowers are golden yellow, measure 6 inches across, and appear in clusters of as many as 12 when the plant is in full vigour. There is an admirable figure of it in the second of the horticultural works above quoted. Whether its fruit possesses the fragrance of commercial Vanilla (V. planifolia) appears uncertain, the pods not having ripened sufficiently.

The plant described by M. Duchartre was obtained from the Garden of the Faculty of Medicine of Paris, having been imported from La Guayra by M. Coudert, of Bordeaux. We ourselves possess a wild specimen collected in French Guayana, by Martin. The living plant does not appear to have reached England as yet.

The subject being now before us we may as well add that the learned botanist who brought *V. lutescens* under the notice of the Horticultural Society of Paris is mistaken in supposing that the original Vanilla aromatica of Plumier has not been seen by any recent traveller or botanist. If he will refer to No. 632 of Gardner's Brazilian herbarium he will find excellent specimens collected in the Organ Mountains by that lamented botanical traveller.

ON FORMING AVENUES.

(*Continued from page* 265).

A word on soil adapted to the trees. I consider it an axiom that the richer the soil is, so much the better for the tree. Oaks thrive well in clay, but Sycamores abhor it. Beeches and Elms and Limes, and both

kinds of Chesnuts, are fond of level or of rising ground; and they will grow magnificently either in rocky or in sandy places. The Spanish Chesnut is a charming tree, well suited to an avenue. Its growth is rapid, its timber useful, and its fruit nutritious. Were I superintendant in the formation of an avenue, I would have every plant stand just 20 yards apart. In forming the holes for each particular plant I would dig each hole 3 feet deep and 5 feet in extent, every way from the centre. The reason is obvious. The plant having no hard ground to encounter would push its roots with astonishing rapidity. An English Elm, which was only 18 inches high, when I planted it with my own hand in the year 1806, now measures more than 10 feet in circumference at 1 foot from the ground.

A plant for an avenue will answer well if it be about half as thick as your wrist; but cut off its head, I pray you. If left on it will catch every wind that blows, and the agitation above will affect the roots below. This will retard the thriving of the tree by lessening the required support. Never mind the temporary loss of the leading shoot by the act of decapitation. In due time another will push forth and soon repair the loss. Let your young trees be planted in first-rate puddle, just stiff enough to support them in an upright position. This is a sure way to effect a prosperous issue, which will crown your labours with complete success. The delicate roots will find comfort in the puddle, and they will adhere as firmly to it as Whig and Tory do to office. Whereas, on the contrary, if you use soil in its dry state many of the delicate fibres will be crushed, and others will be so interlocked that it will require the reproducing aid of Nature to furnish a new supply ere the plant can perform its expected duty. This is not all. The use of puddle not only helps to encourage the young tree, but it renders the daily operation of the watering-pan unnecessary for many weeks.

So much for the putting of the trees into their respective holes. Let us now see how we can secure our rising hopes from the injury which they are exposed to receive through sheep and cattle, hares and rabbits, all of which are a bane to the trees, but a treasure to the table. Indeed, without them royalty itself would languish in despair, whilst our aldermen would loiter through the streets of London like phantoms from the grave, putting us in mind of Ovid's description of Famine. She was so emaciated, that you might see through her skin into her bowels—

"Dura cutis, per quam spectari viscera possent."

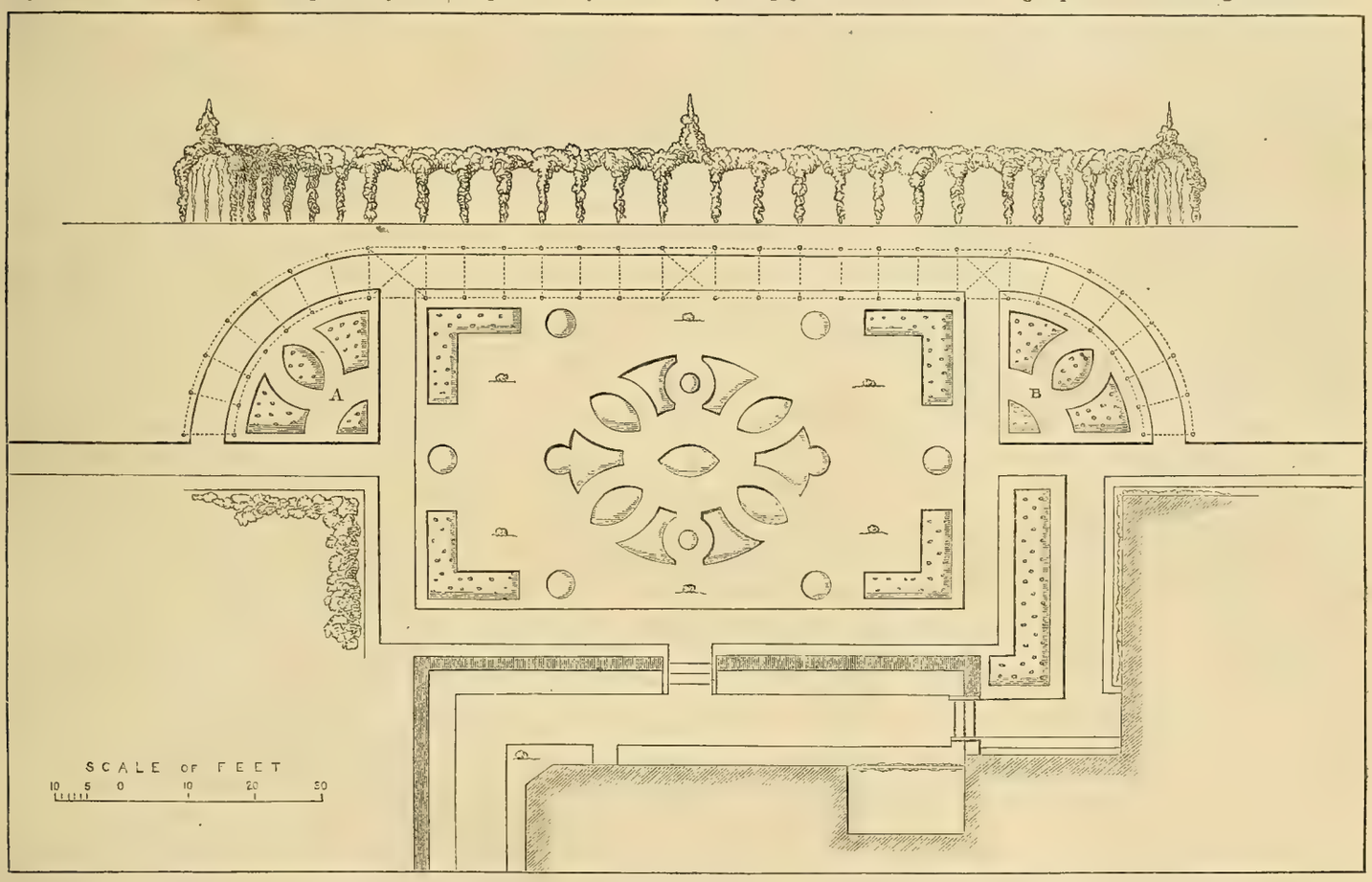
Each avenue tree will require four corner posts, each to be 4 feet 6 inches out of the ground. Also four rails split from Oaken poles. They must be 9 feet long, each pole being sufficiently strong to make four good rails. The stoops themselves may be riven out of old and knotty Oak trees, not much fit for other purposes.

Having fixed the stoops in the ground prepared for them, then drive the rails through the holes into these stoops sufficiently far to enable you to peg them at the outside of the posts; so that both rails and posts may be held firmly together. Be mindful, at the same time, to fit the rails with their sharp edge uppermost, in which position the rain cannot lodge on them. Such a fence as this will endure for 20 years, and it will prove a most effectual barrier against the pressure of cows and horses. It will even be a comfort to them, as the Duke of Argyle's milestones were occasionally to our northern brethren who labour under irritating affections of the skin. Rabbits, sheep, and hares are easily prevented from doing harm by the following process at a very trifling cost of labour and of money.

Take your wheelbarrow into the pasture, and fill it with *fresh* cow-dung. Add soot to this until the dung requires the consistency of mortar fit for use. Do not add any water to it. Then place the whole under cover for about three weeks; after which it will be quite ready. With a mason's trowel, or with your bare hand, apply it "judgematically" (as we boors in Yorkshire say) to the boles of your newly planted trees, high enough up to protect them in case of a snow-drift. This will require to be renewed only once in three years. *Charles Waterton, Walton Hall.*

PLANS FOR VILLA AND SUBURBAN GARDENS.

Plate 2 is a portion of the preceding (p. 241) plan on an enlarged scale, with a geometric elevation of Rose arcade. The group of 13 beds forming the centre of



the design is for bedding plants on the massing system in summer, to be replaced in winter with dwarf evergreens, grown in the reserve garden for that purpose. There is no necessity for keeping them in pots. Constant removal enables them to be transplanted without risk, as well as effectually checks any over luxuriance of growth. The six small circular beds are to be filled on the same principle: but the four rectangular corner beds are dwarf permanent evergreens, to form a kind of frame work to the more richly coloured centre. Six single specimen plants are shown: they are dwarf standard variegated Hollies with symmetrical heads. In the four beds of each of the quarter circles A and B are dwarf Roses. *George Lovell.*

LIGUSTRA—VACCINIA.

Alba *Ligustra* cadunt, *Vaccinia* nigra leguntur. (*Ecl.* II, v. 18.)

Every schoolboy knows this Virgilian line. "The snow-white Ligustra fall; but the dark Vaccinia are gathered." What, however, was the Ligustrum and what Vaccinium? Privet and Bilberries, cries the fourth-form boy, proud of his acquaintance with Ainsworth. Privet and Whortleberries, says Dr. Smith in his modern Latin-English dictionary, but with some hesition. Ligustrum album and Vaccinium Myrtillus, adds the systematical botanist. But M. Du Molin interposes with "Gentlemen, you are wholly wrong; they were neither the one nor the other; nor at all like them. Let us consider each separately." I will endeavour to condense his argument.

And first of Ligustrum: Is it to be believed that when Corydon, the shepherd, addressed this line to young Alexis, warning him not to trust to his good looks, because the Ligustra, fair as they are, drop away and perish, he would have alluded to so sorry a flower as the Privet. Surely he would have selected something striking and admired on every hand. And it is only in that way that the name was used by other Roman poets. "O! Galatea, thou art fairer than the white blossom of Ligustrum," says Ovid,

Candidior nivei folio, Galatea, *Ligustri*. (*Metam.* XIII v. 789.)

Martial talks of a maiden "fairer than the unsullied swan, than silver, snow, or Lilies or Ligustrum."

Loto candidior puella cycno,
Argento, nive, Lilio, *Ligustro*. (*Epig.* I, 116, v. 2 et 3.)

And again: "You surpass the Lily, and Ligustra before they fall."

Lilia tu vincis nec adhuc delapsa *Ligustra*. (*Id.*, VIII, 28, v. 11.)

And in another place, describing the folly of addressing verses to so eloquent a man as Nerva, he says: "You might as well send Violets and White Ligustra to the farmer at Pæstum, or Corsican honey to the bees of Hybla."

Pæstano Violas et cana *Ligustra* colono,
Hyblæis apibus Corsica mella dabit. (*Id.*, IX, 27, v. 3 et 4.)

In no one circumstance are these passages, or the remarkable expression of Claudian in his Rape of Proserpine, applicable to the Privet. "This one advances sparkling with Roses, the other snow-white with Ligustra."

Hæc graditur stellata Rosis, hæc alba *Ligustris*.
(*De rapt. Pros.*, lib. II, v. 130.)

What then can this favourite Ligustrum have been?

What does the word itself mean? Does it not signify a winding plant, from *ligo*, to tie or wind round; for to derive it from Liguria as if that were its native country is absurd, when speaking of a common European bush; and no tying, winding, or binding property does the Privet possess. That Ligustrum was really a twining plant seems clear from the passage in Claudian just quoted. It is easy to imagine a figure decorated with festoons of some climbing plant; but how the Privet could have produced that effect is incomprehensible. Upon the whole Du Molin is of the opinion of those who believe the Ligustrum to have been our beautiful larger Bindweed, Convolvulus (or Calystegia) sepium, a plant which for whiteness, gracefulness, brilliancy of surface, and fugitiveness, exactly suits all the passages here quoted.

His difficulty lies in some passages to be found in Sidonius Apollinaris, who dwells on the fragrance of the Violet, Cytisus, Serpyllum, and Ligustrum, even comparing it for sweetness to Violets and Thyme, and classing it among the materials for making fragrant garlands.

Fragrat odor Violam, Cytisum, Serpylla, *Ligustrum*. (*Panegyr. Anthem.*, v. 443.)
Inter Violas, Thymum. (*Propempt. ad libell.*, v. 59.)
Gerat orbis atque Lauris
Viridantibus tegatur,
Casias, *Ligustra*, Calthas
Redolentibusque sertis. (*Epist.*, lib. IX, 13, v. 81-84.)

But Du Molin is of opinion that Sidonius, who lived at a period long posterior to the great classical age, may have himself not known what Ligustrum was.

This is in brief the main argument of the ingenious French critic in proof of Ligustrum having been Con-

volvulus. Many other points are also insisted on, for which these columns have no space. It is however remarkable that Du Molin nowhere adverts to the explicit statement of Pliny that Ligustrum was a tree. Vaccinium will be the subject of another communication from *Jael.*

MR. GLASSE'S GARDENING BOOK.—No. VI.

26. *About Hyacinths, and what to do with them after Flowering in Glasses.*

I never could bear to see things wasted. Waste not, want not, was my mother's saying; and a right good one it is. People would be better off if they had sense enough to do accordingly; but they haven't. So it always went to my heart to see heaps of things that once were handsome thrown alive on the rubbish heap because their beauty was gone. I often wondered how the young ladies that treated poor Hyacinths so would feel if they were pushed out of doors in the days when their soft cheeks, sparkling eyes, and ivory teeth have departed. Ah me! they wouldn't like that, I warrant you.

What's the matter with a Hyacinth when its flowers have dropped off in my lady's chamber? It isn't dead. By no means. There is plenty of life in it yet, though it is sick; and if taken care of will bloom again and again. So when the housekeeper used to tell me "to take them things away," I always had a fancy for seeing whether I couldn't bring them round; and sure enough that was easy enough to do, for they only wanted to be planted in the border and to have their delicate leaves sheltered from cold at night, and the sleety storms of spring; and then they went on growing, and got greener and greener, and stiffer and stiffer, till the time came for them to wither, as their nature is. Well, next year they'd peep up again in the month of March, pretty strongish, a good many at least, and some would flower, weakly to be sure, but still they showed that their lives were safe. Next year they were all right, and to my mind finer than ever. "Glasse!" says my lady to me one day, "Glasse! where did you get that beautiful row of Hyacinths from? I am afraid you have been extravagant, and I shall have a long bill to pay." (My lady need not have said that, for I never was extravagant; waste not, want not, for me.) "If you please ma'am," says I, "I got 'em out of the rubbish." And then I told her how. And wasn't my lady pleased, for uncommonly handsome they were, not a bit like the long-legged spindling puling things in the drawing-room, that wanted three supports for every one to keep 'em upright. These were as stiff, and sweet, and fresh, and bright coloured as they could anyhow be where they grow wild, wherever that is. And so they were for many a long year after.

NEW PEARS.

Comte de Flandres.—This is a large and very handsome Pear; when fully ripe it is of a fine red and yellow. It is perfectly hardy, and a most abundant bearer. It does not succeed well on the Quince stock



unless double worked; but it does not require it as it bears well even when young on the Pear stock. Its leaves are remarkable, for when young they are of a silvery white. Its season is December; and although not so melting as some, it is very juicy and good.

Home Correspondence.

Origin of the famous Chasselas de Fontainebleau Grape.—I find a history of this in the *Annales de la Soc. Hort. de la Gironde*:—"The following passage occurs in the book of the commune of Cahors (Lot) called the *Livre tanné*. In the year 1534, in the reign of Francis the first, in the month of June, were presented certain missive letters from the King, our Sovereign Lord, addressed to my Lord Seneschal of Cahors, in which the said Lord commanded that a Vine-dresser of Cahors should be sent him in order to manage the plantation of a close of Vines at Fontainebleau. And after sirs, the Consuls, had assembled most of the Vine-dressers of the city, it was determined to send Jean Rivol, called Prince, a Vine-dresser of Cahors, who went; and afterwards, in November, under the care of a clerk of the latter, were collected a great number of the Vine plants of Cahors and taken to the said Fontainebleau, near Paris. And the said Rivol, called Prince, who had come back, returned once more with the said clerk, carrying 20 great casks *(barriques)* of wine for the King, and 30 mules were loaded therewith." *Jael.*

Wall Trees; Important to Gardeners.—Owing to a deficient supply of rain last season, trees in many situations made only stunted growths. Those on a loamy subsoil have their lower roots at present in a very dry state, and this must be their condition for some time even if heavy rains should commence to fall, unless recourse be had to artificial means, for it has been proved by Mr. Dickinson with a Dalton gauge that under ordinary circumstances, from April and during the summer months, a great deal of rain must fall before the moisture reaches a depth of 3 feet. Such being the case, now is the time to inquire more especially into the condition of wall trees, for if their lower roots are in a dry stratum the trees will not obtain a sufficient supply of sap and then red spider will set to work, and it is not an easy task to keep it down by syringing when the tree is dry at the root. The condition of the latter should therefore be seen to, in order that the vegetation of the trees may progress favourably, and without a check on its first starting. Besides there are other reasons why the present time is the best for thoroughly moistening fruit tree borders. The mean temperature of the air, the soil, and that of spring water are at this season nearly equal; therefore the soil and subsoil may be well soaked without chilling the roots or checking the vegetation of the tree, as would certainly be the case if the operation were deferred till the temperature of the air and soil becomes much higher than that of pump water. If water can be obtained as warm as the soil of the border, no bad consequences will result from a full supply being afforded to the roots of wall trees in the heat of summer; but as spring water has generally to be depended on, now is the time for employing it with the greatest safety. We have observed that the fruit of a Nectarine tree did not swell for more than a week after the roots had been watered in hot weather with cold water, and then the fruit cracked after it did begin to swell. *R. T.*

Walnut Trees and Cattle. — Your correspondent "Diss" inquires "whether Walnut trees are liable to have their bark stripped, and their leaves and young shoots browsed upon by sheep, horses, or cattle." I can give him no positive answer; but I can state from my own experience that Walnut trees and all other trees require when young to be protected from the rubbing of sheep, horses, and cattle. *D. C. L.*

Marvellous Literary Intelligence.—It is not long since a correspondent introduced to your notice a wonderful piece of information conveyed to his readers by Mr. Dickens in "Household Words." Allow me to add another. He has just illustrated the "beautiful adaptability" of Nature by such "most useful and life-giving forms of vegetation—as the giant Cactus of Mexico, whose juicy leaves quench the thirst of man and mule." What do you say to that? *Gradgrind.* [We say that since such leaves as the Mexican Cacti bear are more like poniards or stilettos than anything else, Mexican men and mules must have a very extraordinary way of quenching their thirst.]

Material for Muslin Dresses.—I enclose a small piece of a dress received from a friend who is resident at "Mhow," in the Bombay Presidency, where it was manufactured. It is called "Pine Apple Silk," and is made entirely of the fibre of the leaf of the Pine Apple; the texture is exquisitely fine and the pattern not so grotesque as other materials adapted for ladies' wear I have seen of Indian manufacture. Could we import or purchase such in this country it would be found a neat and agreeable substitute for barège or muslin dresses. *A Dublin Correspondent.* [It is a well-known beautiful article, but we are not informed whether our manufacturers employ it or not. Very large quantities of the fibre are prepared in the Philippines.]

Orchid Acarus.—I observe that growers of Orchids are plagued by an acarus which seems from its habit of partly burying itself under the cuticle of the leaf to be difficult to destroy by the usual methods. Permit me, therefore, to suggest a new one which at all events has the merit of being simple and easily tried, and which is infallible for common red spider; of course the plan is not applicable to plants in bloom. Make a thin starch, say about a tablespoonful of Sago-flour or Potato-starch to a quart of water; set the water on the fire, making at the same time a littery (?) of the farina and a small quantity of water, and when the water boils pour in the littery (?) and stir with the spoon until it boils again; then take it off, and it is ready to syringe the plants as soon as it is cool enough for the purpose. The proper strength of the starch will be best ascertained by experiment. If this description of starch making is not understood, or if Sago-flour or farina are not readily obtainable, get your laundry maid to make you some thin starch (not patent), and apply it or thin gum water if starch is not to be readily had; then set open the door and slides of the house, and allow the starch to dry on the leaves as quickly as it can. The consequence is that it shrivels on drying, and all the acari are carried off along with it. The plants look unsightly for a day or two, but this is immediately compensated by the total destruction of every spider and ovum on the plant, and the healthy vigorous look it assumes immediately afterwards. This plan may not be so successful with the acarus in question, seeing it partially buries itself under the cuticle, but I think it deserves a trial, for I believe the starch as it dries will draw every one that it touches. Should any Orchid grower try this plan I hope he will report on the success of the experiment. It does not answer for destroying aphides—the rosin size is best for them. *T. G., Clitheroe.*

Violets.—I never knew them to change colour. Perhaps white varieties have been grown, and those that now bloom white are seedlings which have obtained the mastery over the purple ones. I am certain that Violets never change colour. Many complain of Pansies changing colour, which they never do. The old plant sheds its seed and dies from the heat of summer; young ones spring up something like the old kind, but generally they are inferior to it. *R. Shackell.*

Checking over-luxuriance in Fruit Trees. —I happened to call some time ago at a rather extensive place, not a hundred miles from Nottingham. I there saw a plan quite new to me of checking over-luxuriant growth in young Peach and Nectarine trees. This was by boring through the stem at the part where the bud had been inserted one hole, and in some cases two, about ¼ of an inch in diameter. I could easily push a lead pencil through the aperture. What think you of that operation? The gardener who had done it had left the place about three months before I called. *A. B.*

Covers for Vine Borders.—Have any of your readers used zinc sheeting for covering Vine borders? If so, will they say if it answers the purpose or if wooden shutters are better? What is the price of zinc per superficial yard? Which of the two should a person who can have either use? If boards are recommended, what length, breadth, and thickness should they be, and should they be painted with mineral paint, or hot gas-tar? Would that preserve them better than having them well planed and without paint? *A. B.*

Sigma's Aphis Powder.—Last year I purchased some of this powder, and having kept it in a bottle closely corked in a dry room all winter, to-day I dressed a Peach tree on an open wall with it. The aspect is south and the tree covered with aphis. In about three hours I examined it, and the flies are all dead. A good syringing will make the tree perfectly clean. It appears that this powder is always efficacious when used perfectly dry, but the plants or trees dressed with it must be dry also. For applying this powder I used a *Boîte à Houppe*, a capital invention. *H. Bowler, Ipswich.*

Waltonian Cases.—This admirable invention for striking cuttings and starting seeds by bottom-heat has always been attended with one serious inconvenience arising out of the necessity for using an oil lamp to heat the boiler, except where a jet of gas is available. In experienced hands the lamp will burn from 12 to 20 hours; but a very slight variation in the method of trimming, which may occur if one is in a hurry, may cause it to smoke terribly or go out in an hour or two, when of course the heat goes down and mischief follows unless the mishap is discovered in time. And if ever so well managed the lamp is a dirty affair, and there are few who would venture to use the apparatus in a decent room or even in a well-kept greenhouse. I stated this case to Mr. G. Wilson, the talented director of Price's Patent Candle Company, and he at once turned his attention to the providing of a remedy. This is now at our command in the form of a candle, which burns 12 hours in a lamp which stands 8 inches high. The Waltonian case may now be placed beside the bed of an invalid to relieve the monotony of a sick chamber, and the most delicate hands may manage it without fear of contamination by oil or soot, and the source of heat is certain. It has proved the best of contrivances for propagation on a small scale; it will now prove the cleanest. *Shirley Hibberd.*

Leafless Pear Tree living two years without pushing. —The following is a remarkable instance of a Pear tree living two years without putting forth a leaf. A young rider tree of the sort called Poire Belgæ (?) a kind very much resembling the Beurré Rance, was planted early in January, 1857, against a south aspect of a 12 feet high brick wall. Its roots were carefully mulched over with short stable litter, and they were frequently supplied with water during the warm summer months. The tree had been growing vigorously the previous year, supported apparently principally by two roots which had penetrated into the ground and had been cut rather too short in removal, leaving but a few small fibres round the collar of the plant. No perceptible attempt was made during that warm summer to put forth a leaf, and it was removed the following winter to be replaced by another, the bark being still green. I had it planted against a wall with an east aspect, where it remained through the second summer in the same inactive state. A graft taken of it on the 19th of June last is now putting forth vigorous buds, and a graft taken from it last week will, I feel confident, be attended with the same success. I had it replanted against the same wall a short time since, and it has now more the appearance of swelling its buds and still growing than it has had for the two past seasons. Instances of plants living through one season and growing the second are not unfrequent, but I have never heard of one surviving a second year with a chance of growing. *J. W*

Societies.

Linnean: *March* 3.—The President in the chair. Professor Blunt was elected a Fellow. A valuable collection of beautifully preserved specimens of British Sea-weeds, in three folio volumes, collected by Dr. Cocks of Plymouth, was presented on behalf of 31 Fellows of the Society, who had subscribed for their purchase. The following communications were read:—1. Letter from Mr. C. Barter, of the Niger expedition, dated Jan. 2, 1859, addressed to Sir W. J. Hooker, and containing an account of the vegetation of Fernando Po and Prince's Island, as well as of sundry collections transmitted to England. Among the plants referred to by Mr. Barter as being sent in a living state, were two kinds of Sterculiaceæ, producing fruits known in Africa as Cola nuts. Immense quantities of these nuts, it was stated, pass during the dry season from the coast to the interior. During half the year caravans pass Rabba on the Kworra, and about 1000 donkeys monthly are laden with Cola nuts. These are carried pannier-fashion, two baskets by each animal, the baskets containing each about 50 lbs. weight. Cola nuts are not very often carried in the pod, being in this form too cumbersome, but as it is necessary that they should be kept moist, the baskets are well protected with leaves of a species of Phrynium, which keeps moist, and does not readily decay. Steamers running up the river, Mr. Barter observed, might take some tons of Colas from the Lower Niger, and dispose of them with advantage at Rabba. The variety of Cola called Gonja in the Nupe country is the most prized, being worth about 100 cowries each; the value of cowries at Rabba being 2500 for the dollar of 4*s.* 4*d.* The Bitter Cola, also sent home, is prized by the native people for its medicinal qualities; these nuts are intensely bitter, but not astringent as is the common Cola, and they command a higher price; the fruit is about the size of a Peach, rose-coloured, and very pretty. Prince's Island, unlike Fernando Po, has no very elevated land, but presents from the sea a number of rocky peaks, some conical, others flat-topped, with beetling cliffs or perpendicular walls of sheer precipice more than 1000 feet high, bare of vegetation, and white and dazzling in the tropical sun. The island is celebrated for producing good Coffee; Chocolate is also much grown, and traces of Sugar plantations exist. The soil is rich, composed principally of decomposed trap. Ginger, Arrowroot, Yams, and all the fruits of the coast are grown in abundance for the supply of ships. Some small islets which lie detached were visited—mere rocks rising 20 to 30 feet above the water; some were covered almost exclusively with an Oleander (called O. nodosa by Mr. Barter, but described as being 3 or 4 feet high, quite shrub-like, and consequently not that species); these, growing fully exposed to the sun and sea-breeze, were beautifully in fructification, and covered with Lichens. A large Orchid resembling a Vanda, but, like too many of the African Orchideæ, with insignificant flowers, which here were of a yellow colour, grew in abundance on the steep sides of the larger rocks. Melastomaceæ were plentiful: one species growing 12 to 16 feet high, with magnificent red flowers. A species of Mussænda with conspicuous white bracts was common; also a shrub with spikes of purple flowers like a Veronica, having a singular pair of white leaves at the base of each spike, rendering it very showy. Drynarias, Aspleniums, Elaphoglossums were there, and Polytrichum commune, occupying the moist hollows, along with which and almost buried in it, grew Trichomanes crispum. Mr. Barter particularly alluded to the exquisite beauty of the water in the quiet nooks of the bays about these islets, the eye penetrating 50 or 60 feet with ease, and discovering an irregular rocky bottom, the boat at one moment gliding over masses of coral-bound rock on which beautiful sponges and coral-lines might be seen, and at the next passing over a cavernous depth of blue water in which nothing was visible, unless a shoal of the beautiful fishes of the tropics might by chance dart across. The rocks exposed to the fluctuations of the tides were covered with the small mangrove oyster, below which, seldom exposed, occurred a pretty crimson coral, and a large Flustra, while gorgeous Actinia, and the common Echinia and star fishes of more northern climes, abounded in all the salt pools. The waters were stated to be almost destitute of Algæ, one species of Fucus, and that not attached, and a small plant of confervoid growth being the only representatives of the family which were met with. At Prince's Island some 10 or 12 species of Begonia were seen, while at Fernando Po only one species, and that with yellow flowers, was observed; they were stated to be semi-epiphytal, growing on the black soil which collects on old forest trees. An Elais met with while at Prince's Island was thought distinct from E. guineensis, the nuts being three times the size of those of the latter; the tree was found to be scattered along the shore, and was distinguishable by the pinnæ of the leaves being uniformly pendulous, whereas in E. guineensis they stand irregular; some being pendulous and others erect. Of the Ferns noticed the most common were Platycerium Stemmaria, very large, Drynaria coronans, D. vulgaris, D. irioides, Asplenium crenulatum and a species like lucidum, Mertensia gigantea, Lygodium scandens, Gymnogramma calomelanos, Angiopteris evecta, Acrostichum taxeum, Nephrodium molle, and Lastrea invisa. Tæniopsis, Lastrea, Asplenium, Adiantum, Diplazium, Gymnopteris, and Trichomanes are largely represented. An Acrostichea, resembling Stenochlæna scandens, was found very abundant, adhering to the trunks of the trees like Ivy. Lycopodiums were also abundant, L. dendroideum especially so, in loamy soil; and L. Phlegmaria epiphytal, and hanging down a yard in length, was very beautiful. Mr. Barter mentioned that some very good Cabbages are grown both at Fernando Po and Prince's Island without going to elevated ground; Water-cresses abundant, but of course introduced. Dr. Hooker observed that the collections recently received at Kew from Mr. Barter, and referred to in the earlier part of this communication, were the finest both as to condition and variety, and in regard to the information accompanying them, which had ever reached England from Tropical Africa. 2. Letter from M. Bourgeau, botanist to Capt. Pallisser's Expedition, dated Fort Garry, Saskatchewan, June 7, 1858, addressed to Sir W. J. Hooker. This was a brief account of M. Bourgeau's herborisations, and was accompanied by some interesting observations in a tabular form, undertaken at the request of Dr. Hooker, in order to ascertain the relation of the temperature of the earth, and that of the trunks of the forest trees, during the severe and almost arctic winters of that region. 3. "Observations on the growth and time of appearance of some of the Marine Algæ," by J. Cocks, Esq., M.D. Dr. Cocks had observed, during the many years he had devoted to the collecting of these plants, that many species did not invariably reappear in the locality where they had been previously met with, either disappearing altogether, or remaining for several seasons in abeyance, meanwhile however appearing in new and different localities. He had also observed that a few species were never found but in particular spots, where they appeared year after year. Some instances were cited; and the author inquired how these irregularities of appearance and disappearance were to be explained. He accounted for it, he said, in this way: For the last few years he had observed in various places on the shore a gradual advance towards low-water mark of the common Fucus serratus and vesiculosus, while the Laminariæ, whose growth is usually in deep water, had been encroaching on the shore, and were now to be met with in much shallower water. The growth of these plants from two opposite portions towards one common mutual ground, had left little or no intermediate space for the growth of other Algæ. It was in this space, namely between the tidal limits, that many of the filamentous species previously referred to are usually found, and this encroachment of the coarser species, the author thought, might account for the disappearance, in certain cases, of the more delicate kinds from their original habitats. 4. "On five new Plants from Eastern Peru," by Mr. R. Spruce.

Entomological: *March* 7.—The President in the chair. Fine specimens of Petasia nubeculosa, reared by Mr. Foxcroft, from Loch Rannoch, were exhibited, some of which had remained two years in the pupa state. A box of insects received from Mr. Diggles, resident at Moreton Bay, Australia, including a number of Microlepidoptera, and also a number of butterflies collected in Siam by M. Mouat, were exhibited. Mr. Douglas exhibited a number of small Coleoptera, with a very large kind of flea, collected in damp Grass at the sides of a pond of water; also the larva of Trinodes hirtus, resembling a hedgehog in miniature. Mr. Westwood exhibited several species of insects which had been forwarded to him by Mr. Neitner, from Ramboddo, in Ceylon, injurious to the Coffee plant. These consist of a species of Coccidæ (Lecanum Coffeæ) which infests the surface of the leaves in vast numbers; a minute moth belonging to the genus Gracilaria, and a minute fly (Agromyza, sp.); the larvæ of both of which reside within the leaves, forming blotches upon them. He also exhibited several species of insects which have been found in some of the ancient manuscripts in the Bodleian library, including two species of Anobium, A. striatum and A. paniceum, the larvæ of which are known as bookworms. He also exhibited the larvæ of a dipterous insect Thereva, remarkable for the apparent duplication of the abdominal segments, also on account of its very predacious habits, feeding upon the chrysalids of moths. Mr. White read extracts from a letter received from Mr. Gloyne, giving an account of the habits of the curious genus of beetles, Omophron. Specimens of the larvæ of a species of Anobium which feeds on Poppy seed were received from Sir Jamsetjee Jejeebhoy. A letter from Mr. Wallace giving an account of the discovery of several new and splendid species of insects in one of the islands of the New Guinea group, also of a new genus of birds of Paradise, was read. Mr. Janson mentioned the publication of a new Catalogue of European Coleoptera. A box of caterpillars preserved by a new silicate process was exhibited; they were not, however, considered successful. Captain Cox exhibited a number of drawings of the larvæ of Lepidopterous insects, and made some observations on the destruction of Scolytus destructor on Elm trees, in answer to Mr. Newman's remarks in the "Zoologist." He had calculated that one young tree had been infested with 280,000 of the larvæ of this destructive insect. The President announced that in future the Transactions should be given to members instead of being sold to them at a reduced price.

Notices of Books.

Illustrated Natural History. By the Rev. J. G. Wood. Large 8vo, Routledge, Part I. Under this title it is proposed to issue in shilling numbers a popular account of all the known races of the animal kingdom from monkeys down to sponges; the letterpress to be copiously illustrated by woodcuts from designs by artists of known reputation. Let us hope that the mistakes which creep into so many of the publications called popular will be avoided by the author of this work; an observation already called for by his statement that the savage gorilla ape of Southern Africa inhabits the same country as Bushmen, a race of men found only in the Cape Colony. We would also remark that the attack which he makes upon the technical language of science is far too unmeasured. "It is not enough," Mr. Wood says, "to accumulate facts as misers gather coins, and then to put them away on our bookshelves, guarded by the bars and bolts of technical phraseology. As coins, the facts must be circulated, and given to the public for their use. It is no matter of wonder that the generality of readers recoil from works on the natural sciences, and look upon them as mere collections of tedious names, irksome to read, unmanageable of utterance, and impossible to remember. Our scientific libraries are filled with facts, dead, hard, dry, and material as the fossil bones that fill the sealed and caverned libraries of the past. But true science will breathe life into that dead mass, and fill the study of zoology *with poetry and spirit.*" No one has more constantly than ourselves objected to the needless employment of technical language. But surely Mr. Wood cannot mean to say that science is to be stripped of it altogether. When usual words cannot be found for the facts of science, the unusual become indispensable, and are then called technical. Or when words are employed vaguely in common parlance, then technical terms which have one meaning and no more, must also be provided. Otherwise all natural history must sink back into chaos. The passage we have quoted would seem indeed to have been penned without much consideration, for our author is no more able than his neighbours to dispense with technicalities. What else are his Vertebrates and Invertebrates, Molluscs, Articulates, Radiates, Protozoa, and Crustaceans? What else than technical are such words as corpuscles, capillaries, pleura, diaphragm, trachea, solar plexus, ganglia, epigastrium, Haversian canals, Quadrumana, and the like? "Poets of spirit" may dispense with accurate language, but when the man of science abandons all technical phraseology he deserts his cause, hauls down his flag, and surrenders like a coward, frightened at the frothy declamation of the silly and the ignorant.

Lindley's Synopsis of the British Flora. A reprint of the Third Edition has been issued by Messrs. Longmans. It differs in no respect from the third edition itself, the letterpress having been stereotyped.

Trade Lists Received.—*John Scott's* (Crewkerne and Yeovil) *Catalogue of Bedding Plants and Descriptive Catalogue of Fruits, &c.* The first includes a good assortment of really useful kinds with the usual succinct memoranda; the second is in like manner a list of such fruit trees as are most worth planting, with short notes for the inexperienced. Among the Peaches are some novelties which Mr. Scott recommends to his customers.—*John Morse's* (Dursley) *Catalogue of Cuttings.* It seems that Mr. Morse deals in cuttings only, which he sends by post at the expense of purchasers; a necessary precaution considering that he executes orders to so small a value as 1*s.*—*Johnstone, W. W.*, (Panmure Nursery, Broughty Ferry, Dundee) *Catalogue of Florists' Flowers, &c.* In addition to the usual stock of bedding plants, this catalogue includes the names of a good many desirable and not common greenhouse plants, as well as Conifers.

Garden Memoranda.

Messrs. Milne, Arnott, & Co.'s Nursery, Vauxhall.—The fine collection of Camellias for which this nursery has long been celebrated has bloomed this year finer even than ever we remember to have seen it, and during the last fortnight has been greatly admired. With the exception of elegans, corallina, and Chandleri, its beauty is however now nearly over. These and one or two others are still in perfection, and being fine trees, each of which has on it some 400 blooms, the display they make is particularly striking. Double Whites have produced flowers of unusual size this season; Woodsi has been loaded with blossoms, and so have Beali and many others of smaller dimensions. Mathotiana is a crimson scarlet of unusual brilliancy, and seldom has it been finer than it has been this year. To Carnation kinds must be added a charming sort called Chandler's gloriosa, white, perfectly striped and mottled all over with rosy pink. This, when better known, cannot fail to find a place in every collection. Among other sorts Teutoniana, a pink kind on which however the flowers sometimes come white, was conspicuous. All were in most excellent health and pushing young wood freely.

To the raising of young stock great attention is paid here. More than 100 seedlings in the shape of young plants occupy pits, and in the propagating house were some very thriving grafted plants. Concerning the latter it may be worthy of notice that those worked in February last are quite as forward as plants graited last autumn. Inarching has just been completed.

In the show-house flowering plants have been mixed with Ferns with excellent effect, and in a house adjoining store pots full of cuttings have been equally judiciously intermixed with plants in blossom, which are

set off to much advantage by the green ground colour; thus situated the cuttings too get properly hardened off preparatory to their being planted out.

The flower garden portion of the grounds along the new frontage has been completed, and when filled with bedding plants cannot fail to be highly attractive.

Miscellaneous.

Madagascar Snakes.—There are also serpents in the island, of various kinds; but the largest are not poisonous, though they will bite severely if assailed or irritated. M. Provint told me that on one occasion, when he was travelling in the country, having risen from the mat on which he had slept during the night, he went a short distance, and having directed his servant to prepare the mats for resuming the journey, was called back by the man, who, on rolling up the mats, discovered an immense serpent 7 or 8 feet long, and as thick in the body as an ordinary wine bottle. It was coiled up in a circle exactly in the spot where he had been lying; to which it had probably been attracted by the warmth. He said he was startled at the sight of such a monster, and called to the natives to destroy it; but instead of this the people took a piece of stick, and just guided its head towards the long Grass and bushes, saying, "Go you away, go." They seemed to regard with a sort of superstition, almost amounting to dread, all serpents, crocodiles, and other dangerous reptiles, which they scrupulously avoid injuring, under an apprehension of experiencing retaliation, either from that identical reptile or from some other of its species, at a future time. The only serpent which I saw was a small one between 3 and 4 feet long, of a light yellow or straw colour, and beautifully marked with transverse stripes of brown; but I was told the reptile was not venomous. The gentleman under whose mats the immense serpent had coiled itself while he was sleeping also told me that, when passing through the dense unfrequented parts of the forest in the interior, he met with large serpents which, when he has come suddenly upon them, had appeared irritated and had reared themselves up several feet as if to resist his progress, till he attacked them with a spear.—*Ellis's Madagascar.*

The Manchester Botanical and Horticultural Society has announced an exhibition on Wednesday, August 24th, when productions may be exhibited either for sale or competition. We observe with regret, but without surprise, that here, too, the Council of the Society find themselves in difficulty on account of the "unavoidable deficiency caused by the Flower Shows."

The Horticultural Society of Nantes has also circulated a prospectus of an exhibition of horticultural produce and objects of garden art and industry, to take place on the 12th, 13th, and 14th May. Among the subjects for which prizes are offered are wax or other artificial fruit and flowers, garden tools, and pottery or objects intended for garden decoration.

Calendar of Operations.

(For the ensuing Week.)

PLANT DEPARTMENT.

Conservatory, &c.—All kinds of climbers should after this time be frequently examined to prevent a confused growth. Kennedyas, &c., if crowded should have their shoots thinned. The different Ipomœas and Thunbergias being subject to red spider should be well syringed to prevent that pest gaining ground. Where a large quantity of hardy shrubs is annually forced, either to decorate the drawing-room or the conservatory, it is not desirable to pot a fresh stock each season, as a number of the deciduous things, such as Roses, Lilacs, Thorns, Honeysuckles, &c., may, by proper treatment, be made to bloom for several successive seasons. Select therefore the most suitable plants when removed from the houses, and give them some kind of temporary shelter to gradually harden their foliage; those cramped for pot room shift into a size larger pot in rich turfy loam, towards the end of the month plunge them in an open situation in order that the wood may get ripe early. These plants from having been previously forced will bloom earlier than the new stock, of which a portion should each year be potted to replace such as become useless for further work. Cut down and place in a cold frame the most choice kinds of Cinerarias for suckers after they have done flowering, and put in a stock of Chrysanthemum cuttings for autumn display. As spring-flowering plants for the stove and for cutting we know of none more useful than the Begonias. Now will be a good time to commence with a stock for next season's display; as they go out of bloom allow them a short rest in a rather dry house, when they may be partially disrooted and repotted, pruning in any straggling shoots. Keep them close, and syringe frequently, when they will soon commence growing. Abundance of light and a tolerable share of pot room are necessary to ensure fine plants. Above all keep them a good distance apart that the fine foliage of some of the species may have full room to expand. As the plants advance liquid manure may now and then be given. Their period of blooming is from January to May.

FLOWER GARDEN AND SHRUBBERIES.

Look well to recently transplanted trees and shrubs. Do not allow anything to suffer for want of water at the root, but one good soaking after planting to settle the soil will be sufficient in most cases until we have more sunshine to warm and dry the ground. The soil should be kept moist but not saturated and run together by over watering, as is sometimes done. A sprinkling over head with the engine on the evening of drying days will be of more service to large evergreens than over watering them at the root. See that all recently planted things, whether large or small, are well secured against wind. The best way of effecting this in the case of large plants is to use three strong tarred cords for each specimen, fixing them to the plant by means of a collar made of strong metallic wire and thickly wrapped round with canvas to prevent its injuring the bark, and then tying them to strong pieces of Oak driven into the ground at proper distances from the stem of the tree. For specimens in prominent situations metallic wires should be employed instead of cords, being neater in appearance; and although somewhat expensive in the first instance they will last a lifetime. Take advantage of the present state of the ground to stir and rake the surface soil of shrubbery and herbaceous borders to prevent the growth of weeds and give a fresh neat appearance. Also plant out Wallflowers, double Rockets, and young stock of herbaceous plants generally. Delphinium formosum is one of the finest plants we possess in this way, and should have a place in every garden.

FORCING DEPARTMENT.

Vineries.—Give air as freely as the state of the weather will permit, using a little extra fire heat, and leaving a little air on at night so as to prevent the bloom being injured by damp settling on the berries, as is apt to be the case where the house is shut up. Figs.—Where the early crop is approaching maturity the borders should be well watered, so as to avoid the necessity of having to water the soil after the fruit begins to ripen, which is injurious to the flavour, and is also apt to cause the fruit to burst prematurely, particularly if the trees have been rather dry at the root previously. So far as the present crop is concerned the trees can, perhaps, hardly be too dry at the root while the fruit is ripening, but where a second crop is expected care must be exercised to keep the trees in health, and to prevent the foliage becoming a prey to red spider, otherwise the second crop can hardly be expected to be good for much. Use the syringe vigorously and maintain a moist atmosphere as long as this can be done without risk of injuring the fruit. Also keep the young wood thin and regularly tied in, stopping before the fourth or fifth leaf, according to the strength of the shoots, &c. Melons.—Encourage those newly planted out with a moist warm atmosphere, so as to get them into full growth as quickly as possible; but plants that are fairly established should be kept cooler, admitting air on every favourable opportunity, in order to secure short-jointed fruitful wood. Keep the shoots thin and regular, pinching out any not wanted, but avoid stopping the main shoots until they reach the sides of the pit, when by pinching out the points the laterals will start into growth and show fruit abundantly; and by this time the plants will have gained sufficient strength to set and carry a fair crop. Do not exceed 65° at night, and admit air when the glass rises to 75°, but do this very carefully on cold days. Endeavour to maintain a steady bottom heat of about 80° or 85°, and keep the soil in a healthy state as to moisture. See to providing plenty of young plants for succession crops. Cherry-house.—Syringe the trees daily with water at the same temperature as that of the house. Loosen the surface soil in the pots or borders with a hand fork, and supply the plants liberally with water until the fruit begins to change colour, after which gradually decrease the quantity and cease syringing; give abundance of air on all favourable opportunities. Strawberries.—Plants ripening their fruit should be placed by themselves and kept moderately dry. Those in later stages of growth should however be well supplied with moisture both over head and at the root. Frames.—All crops in these, such as Carrots, Potatoes, Radishes, and Cauliflowers, should have free exposure in fine weather, and be regularly supplied with water. Repot Tomatoes and Capsicums.

HARDY FRUIT AND KITCHEN GARDEN.

Seedling plants of Cauliflowers, Cabbage, &c., raised this present spring should be pricked off when large enough to get stocky for final transplanting. As the future growth of the Brassica tribe depends much on not being drawn when young; some attention should be paid to this point when they are in the seedling state, for the best after culture barely compensates for the first neglect. As the time for sowing the principal crops of winter and spring Broccoli and Greens is now at hand, select if possible an open piece of ground rather poor than rich; let the seed be sown thinly, and when large enough to handle prick them out on a similar soil. A crop of the Globe Artichokes should now be planted for producing a late supply of heads. We have in former Calendars given directions for preparing ground for these and other permanent plants; on this the young side shoots taken from the old stools may be planted in lines 4 feet apart and 18 inches between the plants, or trenches may be dug 18 inches wide, and the same in depth, in which some well-rotted manure should be dug and the plants put out as above.

COTTAGERS' GARDENS.

Let all Potato planting be finished as soon as possible. Potatoes and Onions should on no account be intermixed or shaded by other crops; there are however many things such as Carrots, Parsnips, Turnips, and all the Cabbage family which will not only bear being slightly shaded, but in warm summers like the past will enjoy it. Mixed cropping therefore is a point to which the cottager should pay especial attention. The mixture must however be arranged, so as not to interfere with soiling or gathering. Tulips, if any, will now require care. Protect and shelter them from cold winds and hailstorms. In sowing annuals do not omit Nemophila insignis and the beautiful Phlox Drummondi.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.
For the Week ending Mar. 31, 1859, as observed at the Horticultural Gardens.

March.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Min.	Mean	Temperature of the Earth 1 foot deep	2 feet deep.	Wind.	Rain.
Friday 25	21	29.986	29.960	58	44	51.0	48	47	N.W.	.00
Satur. 26	22	29.887	29.863	55	42	48.5	50	48	W.	.00
Sunday 27	23	29.923	29.270	55	45	50.0	50	48	S.W.	.00
Mon. 28	24	29.698	29.540	55	45	50.0	50	48	S.W.	.05
Tues. 29	25	29.179	29.120	53	42	47.5	50	48½	W.	.03
Wed. 30	26	29.588	29.229	37	25	31.0	49	48	W.	.71
Thurs. 31	27	30.159	29 983	41	19	30.0	47	47	N.	.00
Average		29.774	29 538	50 6	37.4	44.0	49.1	47.8		.11

March 25—Uniformly overcast; fine; overcast.
— 26—Cloudy; fine; overcast.
— 27—Cloudy and fine; overcast and mild.
— 28—Overcast; rain; drizzly; mild at night.
— 29—Fine; low white clouds; rain at night.
— 30—Overcast, heavy and continuous fall of sleet and snow; frosty.
— 31—Frosty; clear, severe frost at night.
Mean temperature of the week, 0.8 deg. above the average.

RECORD OF THE WEATHER AT CHISWICK.
During the last 33 years, for the ensuing Week, ending April 9, 1859.

April.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 3..	56.3	35.2	45 2	11	0.30 in.	5	3	3	1	3	9	5	4
Mon. 4..	56.0	36.3	46.2	14	0.48	4	7	2	3	6	5	3	3
Tues. 5..	56.8	36.3	46.5	15	0.65	—	5	4	2	3	6	11	2
Wed. 6..	56.6	36.3	46.4	12	0.30	3	8	3	2	4	10	2	1
Thurs. 7	57.0	37.0	47.0	16	0.50	2	7	3	2	1	11	6	1
Friday 8..	55.9	35.4	45.6	17	0.46	2	6	6	1	5	6	5	2
Satur. 9	54 8	35.3	45.0	16	0. 0	4	5	6	1	4	6	6	1

The highest temperature during the above period occurred on the 3d, 1848,—therm. 78 deg.; and the lowest on the 6th, 1851—therm. 21 deg.

Notices to Correspondents.

Australian Vineyards: A settler in Victoria should obtain Chaptal's *Traité sur le Vin*, 2 vols. small 8vo, or Thiébaud de Berneaud's Vigneron Français, or some other work published in the countries where the Vine is a field crop. Our English books, some of them excellent for this country, have no relation to Vineyard management. The late Mr. Busby and Sir Thomas Mitchell also each published on the subject at Sidney, where their treatises may we suppose be still had; and there is a small volume "On the Culture of the Grape Vine, &c., in Australia and New Zealand," by Suttor, published by Smith & Elder; but we advise you to study the original authorities. There are no doubt useful treatises in German, and certainly in Spanish, which would be worth reading; but you had better not procure any Italian work, the Vineyards in that country having little reputation for good management. That Australia will some day become a great wine country we entertain no doubt.

Bad Gardening: *C Y T.* We condole with you on the misfortune of having engaged a gardener who cannot keep such things as Azaleas and Camellias in health. But no opinion can be formed of the precise nature of his mismanagement without being on the spot.

Dioscorea Batatas: *J Luff.* You are right, and your correspondent is entirely wrong. His head must be in a state of delicious confusion.

Heating: *Dido.* It is impossible to answer your inquiry without seeing a correct intelligible plan of your apparatus. The description you have sent is far from clear. It is very likely that the pipe which refuses to heat is filled with air. Mind what you are about with gas in a greenhouse.

Names of Fruits: May we beg of our correspondents to send their specimens, *carriage paid*, to our Office, No. 5, Upper Wellington Street, Covent Garden, London: and to no other place whatever.—*J W, Alton.* 2, Reinette du Canada; 3, Wyken Pippin; 4, Hughes's Golden Pippin.‖

Names of Plants.—We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have or could have undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*M D.* Andromeda floribunda.—*Enquirer.* 1, Some Leguminous plant, not to be named without flowers; 2, Orobus vernus.—*J G.* 1 looks like pieces of Cupressus funebris in their last state; and 2 seems to be the same, with both the first and second sort of leaves; 3, Euonymus japonicus; 4, Aster argophyllus. It is impossible to name with certainty fragments of such Conifers as 1 and 2 without seeing their cones, or fruit.—*F F.* Daphne pontica.—*Sub.* The seeds you have sent, and which you say are used in cookery in Italy, are the Haricot riz.

Pits: *Quite a Beginner.* The plan of an unequal span-roof is good; the relative length of front and back sashes is unimportant. You will find it most convenient to have a short upright glass side next the south. Your lower ventilating openings must be nearly in contact with your flue, in order that the indraught may be warmed in cold weather. You should also have the back sashes so hinged that they may be opened much or little as occasion requires.

Sisyrinchium grandiflorum: *P L.* Your white seedling is so very inferior to the old purple, that we should say it was not worth growing. We never saw it before.‡

Spergula pilifera: *C J W.* We are not in possession of any information concerning this plant except what is given at pp. 145, 195, and 268 of this year's *Chronicle.* There is no doubt that it will be best sown broadcast; because, owing to its dwarfness, the ground must be made *perfectly level*, a result not easily arrived at if plants are to be dibbled in. We shall soon know more about it. It is under trial in our own garden. Should it really render mowing needless it will be invaluable. Time alone will discover how that is.

Tradesmen's Charges: *N Z.* We are unable to throw any light upon your inquiry. It is no business of ours to say why one person charges more than another for the same article.

Vinery: *J R.* You have kept your house much too hot; and we presume you have forgotten to provide sufficient ventilation. Consider too whether the air has not been far too dry. There must have been some very bad management. There is nothing to show that the border, covered with leaves, ails anything.

Vines: *K L V.* It is impossible for us to say with any degree of certainty what has caused your leaves to spot like those you have sent. They look as if they had been burned either by hot steam from an over-warm heating apparatus or by bright sunshine acting on partially wetted leaves. In either case the effect would be that represented. But the evil may belong to other causes which careful examination on the spot alone can discover.‡

THE PATENT

NITROPHOSPHATE OR BLOOD MANURE COMPANY (Limited),

CONSISTING OF TENANT FARMERS, OCCUPYING UPWARDS OF 30,000 ACRES OF LAND.

TRUSTEES.

Abel Smith, Jun., Esq., Walton House, Ware, Herts.
Charles Dimsdale, Esq., Essendon Place, Herts.
Edward Ball, Esq., M.P., 8, Belgrave Road, Pimlico
Major-General Hall, M.P., Western Colville, Linton, Cambridge
John Brady, Esq., M.P., Warwick Terrace, Belgrave Sq.

DIRECTORS.

Chairman.—Jonas Webb, Esq., Babraham, Cambridgeshire.
Deputy-Chairman.—John Collins, Esq., Myddleton Square, Pentonville.
Edward Bell, Esq., Tottenham, Middlesex
John Clayden, Esq., Littlebury, Essex
Richard Hunt, Esq., Stanstead Abbot, Herts.
Thomas Knight, Esq., Edmonton, Middlesex.
Robert Leeds, Esq., West Lexham, Norfolk.
Robert Morgan, Esq., 72, Camden Villas, Camden Town.
George Savill, Esq., Ingthorpe, near Stamford.
William Collins, Esq., 105, St. John Street Road.

Bankers.—Messrs. Barnett, Hoare & Co., Lombard Street.
Solicitors.—Messrs. Kingsford & Dorman, 23, Essex Street, Strand.
Auditor.—G. W. Brown, Esq , 28, Parliament Street.
Manager.—Mr. James Odams. *Secretary.*—Mr. C. T. Macadam.

Offices, 109, Fenchurch Street, London.—Manufactory, Plaistow Marshes, Essex.

The Directors beg to inform their Friends and the Agricultural Public that the following Manures are now ready:—

ODAMS'S BLOOD MANURE FOR CORN AND MANGEL.

ODAMS'S BLOOD MANURE FOR ROOTS.

ODAMS'S SUPERPHOSPHATE OF LIME.

Full particulars may be had at the Company's Offices, or of the local Agents.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. Nesbit, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

BURNARD, LACK, and CO.'S CONCENTRATED SUPERPHOSPHATE OF LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.

CONCENTRATED TURNIP MANURE, equal in value to the preceding.

Of these Manures Dr. Voelcker says:—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."

Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to Burnard, Lack, & Co., Sutton Road, Plymouth.

SOLUBLE PHOSPHATE OF LIME.

FREDERIC CORNWELL begs to inform his friends and the Agricultural public that he can now supply a "SUPERPHOSPHATE of LIME" superior to anything yet produced. Each Bag guaranteed to contain from 20 to 25 per cent. of "Soluble Phosphate of Lime." Price 5*l.* 10*s.* per ton, delivered free to any Railway or Wharf in London. Dealers and the trade supplied. Linseed-cakes, Cotton-cakes, and all descriptions of Artificial Manures at lowest market prices.
Offices, 7, Great St. Helen's, London, E. C.

REDUCTION IN PRICE OF LAWES'S MANURES.

MR. LAWES begs to announce that he has this season reduced the price of the Manures manufactured by him, viz.:—

TURNIP MANURE	from £7 to	£6 6
SUPERPHOSPHATE OF LIME ..	,, 7 to	6 6
MINERAL do. ..	,, 6 to	5 5
BARLEY MANURE..		8 0

Prof. Way and Dr. Voelcker have sampled from a bulk of 5000 to 6000 tons at his factories, and their report and analyses are given in full in Circular to be obtained on application at his office, 1, Adelaide Place, London Bridge, E.C., or of his local Agents.

N.B. Genuine Peruvian Guano direct from Messrs Gibbs, Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures. American Cotton-seed Cake supplied.

LONDON MANURE COMPANY, removed to 116, Fenchurch Street, E. C. (Established 1840), have the following MANURES ready for delivery:—

CORN MANURE for SPRINGTOP DRESSING URATE MANGEL MANURE SUPERPHOSPHATE OF LIME BLOOD MANURE	all of guaranteed quality.

In consequence of the reduction in the price of raw material the London Manure Co. are enabled to lower the price of their Superphosphate of Lime, and to materially improve the Corn Manure and Urate.

The London Manure Co. also supply PERUVIAN GUANO (direct from Messrs. A. Gibbs and Sons), SULPHATE of AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of value. Wholesale dealers supplied.
116, Fenchurch Street E.C. Edward Pursee, Secretary.

ESTABLISHED 1812.

H. AND T. PROCTOR'S TURNIP MANURE.—Messrs. H. & T. P. draw particular attention to this valuable Manure, which contains all the elements necessary for the full development of the Turnip Crop, so combined, that, from their chemical knowledge and long experience, they feel satisfied is most advantageous to the consumer. It has been very extensively used by most of the eminent Agriculturists of the day, and has attained a high reputation throughout England, Scotland, and Wales, and, they venture to say, is unrivalled for the weight and quality of the Bulbs which it produces. The application of this Manure to the Turnips will be found to benefit considerably the after crops of Barley, Clover, and Wheat.

POTATO, GRASS, BARLEY, CLOVER, AND WHEAT MANURES; also BONE DUST, PERUVIAN GUANO, and SUPERPHOSPHATE of LIME, warranted of the best quality.

Apply to H. & T. Proctor, West of England Depôt for Artificial Manures, Cathay, Bristol; or Proctor & Ryland, Birmingham, and Saltney, near Chester.

PERUVIAN GUANO

The present price of this valuable Manure is—
12*l.* per Ton for 30 Tons and upwards,
13*l.* 5*s.* per Ton for 1 Ton up to 30 Tons.

And, to guard against the purchase of adulterated mixtures and of inferior Guanos purporting to produce results equal to Peruvian, consumers are recommended to apply either to ourselves, to our agents, Messrs. Gibbs, Bright, & Co., of Liverpool and Bristol, or to dealers of established character, in whose honesty and fair dealing they may place implicit confidence.
Antony Gibbs & Sons.

SUCCESS OF THE NEW GUANO; Imported under Lease from the Crown.—Though the experiments with KOORIA MOORIA GUANO were made late in the season, and under adverse circumstances, the successful results obtained confirm beyond doubt Professor Voelcker's report—(in No. 4*l*, Part I., vol. xix., Royal Agricultural Society's Journal)—that Ammoniacal manures, applied to Turnips in the experimental field, kept back at first the crop, and had no beneficial effect either alone or in conjunction with phosphates.

The Kooria Mooria Guano is essentially a phosphatic manure, containing sufficient ammonia for roots, and, with a mixture of one-fourth of ammoniacal guano, cannot be excelled for either top-dressing or grain crops. It is a natural deposit, and will be delivered as imported, free from risk of adulteration. Deeply impressed with the necessity of encouraging the import of this valuable manure, her Majesty's Government has given such increased facilities for shipment, that arrangements have been made for a considerable supply. Purchasers can be supplied with suitable quantities from cargoes now on sale, containing from 45 to 66 per cent. phosphates. Present prices, 4*l.* 10*s.* to 6*l.* 10*s.* per ton, on applying to Joseph Hindson, Broker (one of the Lessees under the Crown), 20, North John St., Liverpool. Government Lessees: Ord, Hindson, & Hayes.

"Greystoke, Cumberland, Dec. 16, 1858.

"Dear Sirs,—I beg to inform you that I applied the Kooria Mooria Guano I had from you for Turnips, on land of a loamy character, incumbent on a stiff clay subsoil, and recently drained. On each side of the plot sown with Kooria Mooria Guano were Turnips manured with best Peruvian Guano. The quantities applied of each sort were of equal weight for weight per acre. The crop—a very good one throughout—is now being eaten off with sheep. Very little perceptible difference can be discovered, but if anything that difference is in favour of the Turnips sown with Kooria Mooria Guano.

(Signed) "John Barker."

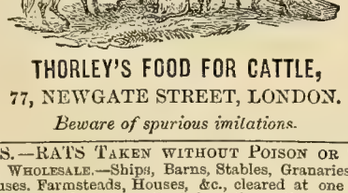
"Messrs. J. & J. Graham, Guano Merchants, Penrith."

A Pamphlet, "Hints on Guano," containing a large number of reports from well-known agriculturists, and analysis of the cargoes here, may be had of the Broker, at the above address.

AYRSHIRE HEIFERS IN FIRST CALF.—Twenty very carefully selected pure bred 3-year old HEIFERS of this celebrated Milking Breed are for Sale in one lot, or singly. Ten may be seen 20 miles from London. A good 2-year old BULL also for Sale.—Apply to John Herriot, J. Lockhart Morton's, 8, Finch Lane, London, E C.

TO HORSE PROPRIETORS.—If you wish to have your Horse in high condition with a small allowance of corn use our CONCENTRATED DRAY and AGRICULTURAL HORSE MEAL, manufactured according to the most recent researches in the study of physiology. Forwarded carriage paid to any railway station, in cwt. at 30*s.*, and 15*s.* per half cwt. on receipt of Post-office Order, payable to Kemp & Skey, The Mills, Louth, Lincolnshire.

Important to every man who keeps



THORLEY'S FOOD FOR CATTLE,
77, NEWGATE STREET, LONDON.
Beware of spurious imitations.

RATS.—RATS Taken without Poison or Traps by Wholesale.—Ships, Barns, Stables, Granaries, Mills, Warehouses, Farmsteads, Houses, &c., cleared at one sweep. Any Person can by this method clear the entire premises of every RAT, however numerous they may be, in one single night. Printed directions how to entice and secure the whole lot alive sent free by return of post for Two Shillings by William Goodwin, High Halstow, near Rochester.

AGRICULTURAL MACHINERY.

E. R. AND F. TURNER, Ipswich, manufacture Prize Mills for Crushing Corn, Seed, Malt, &c.; Portable Grinding Mills, Steam Engines fixed and portable from 2 horse-power and upwards; Threshing Machines, Chaff Cutter, Oilcake Breakers, Horse Gears, Saw Tables, &c., all of a superior description and adapted for Home, Colonial, and Foreign use. Illustrated Price Lists sent free on application.

MR. SMITH will SMASH UP a piece of his Clay Land, Wheat Stubble, the beginning of this month. Gentlemen who may be desirous may then see his Apparatus at work.—A Card, stating the day, may be had by applying to him at Woolston; or to Messrs. Howard, of Bedford.

SIGMA'S BEAN, MANGEL, & CORN PLANTERS (5 Depositors), HOES, &c. The "Multum in Parvo," combining Cultivator, Horse Hoe, Ridge Plough, Subsoiler, Broadshare, and other forms; all expanding. Complete 7*l.* 7*s.* Prospectus sent.—C. Powell, Hurstgreen, Sussex.

FARM BUILDINGS.

LOANS MAY BE OBTAINED UNDER THE GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY'S ACT, for the full amount required by the owners of Settled Estates, Incumbents, Trustees, Bodies Corporate, &c., for the erection of Farm Houses, Farm Buildings, and Labourers' Cottages, designed by their own agents and sanctioned by the Inclosure Commissioners. The Loans are repaid by a rent-charge on the estate for any term the landowner may fix, not exceeding 31 years.

No investigation of title being required, and the charge not being affected by incumbrances, no legal expenses are incurred.

The Company furnish Designs of every description, and undertake the entire responsibility of the works wherever desired by Landowners. No profit however is taken by the Company on any works they execute, the actual expenditure only, approved by the Inclosure Commissioners, with a Commission thereon, being charged in all cases. Applications to be addressed to William Clifford, the Secretary, at the Offices of the Company, 52, Parliament Street, London.

THE LANDS IMPROVEMENT COMPANY
2, Old Palace Yard, Westminster, S.W.

To Landowners, the Clergy, Solicitors, Estate Agents, Surveyors, &c.—The Company is incorporated by Special Act of Parliament for England, Wales, and Scotland.—Under the Company's Acts Tenants for Life, Trustees, Mortgagees in possession, Incumbents of Livings, Bodies Corporate, certain Lessees, and other landowners are empowered to charge the inheritance with the cost of improvements, whether the money be borrowed from the Company or advanced by the Landowner out of his own funds.

The Company advance money, unlimited in amount, for works of Land Improvement, the Loans and incidental expenses being liquidated by a rentcharge for a specified term of years.

No investigation of Title is required, and the Company being of a strictly commercial character do not interfere with the plans and execution of the works, which are controlled only by the Enclosure Commissioners.

The improvements authorised comprise Drainage, Irrigation, Warping, Embanking, Enclosure, Clearing, Reclaiming, Planting, Erecting and Improving Farm Houses and buildings for Farm purposes, Farm Roads, Jetties, Steam Engines, Water Wheels, Tanks, Pipes, &c.

Owners in fee may effect improvements on their Estates without incurring the expense and personal responsibilities incident to Mortgages, and without regard to the amount of existing incumbrances. Proprietors may apply jointly for the execution of Improvements mutually beneficial, such as a Common Outfall, Roads through the District, Water Power, &c. For further information and for forms of application apply to the Hon. W. Napier, Managing Director, 2, Old Palace Yard, Westminster S.W.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.
Principal—J. C. Nesbit, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.—WARWICK MEETING.
Entries for IMPLEMENTS, CHEESE, WOOL, FARM-GATES, and DRAINING PIPES, must be made on or before May 1.

Entries for LIVE STOCK must be made on or before June 1.

*** All Entries received in each case after those respective dates will, without any exception, be disqualified, and returned to the senders.

PRIZE SHEETS may be had on application at the Offices of the Society, 12, Hanover Square, London.

The Agricultural Gazette.

SATURDAY, APRIL 2, 1859.

MEETINGS FOR THE ENSUING WEEK.

Monday, April 4—London Farmers' Club. .... 6 P.M.
Wednesday, — 6—Agri. Society of England .. Noon.

We have received several letters on the subject of a recent leading article, in some cases calling attention to the cost of horse-power in the experience of the writer, and in others indicating errors in the calculation in the Journal of the Agricultural Society to which allusion was originally made. Our correspondent "W. G.," whose letter appears in another column, seeks a popular explanation of the definition of a horse-power as being the ability to lift 33,000 lbs. 1 foot high per minute. Without giving any history of the actual process by which that valuation or estimation of the power in question was arrived at, it is plain that the question is one to be answered simply by experiment: and the answer to it which should be obtained by striking the average performance of a number of horses engaged in pumping water from a given depth, would, it is believed, correspond pretty accurately with the commonly received datum on this subject. In the case of ploughing a strain upon the draught chain of 300 lbs. is a common enough case; and when the plough is drawn along at the rate of 2½ miles an

hour by two horses, it is as if a weight of 300 lbs. had been pulled up that height over a pulley. But 300 lbs. lifted 13,200 feet are equal to 3,960,000 lbs. lifted 1 foot, and as this is done in 60 minutes it is equal to a sixtieth part or 66,000 feet raised 1 foot high per minute, which for the work of two horses corresponds exactly with the horse-power as defined in books.

The calculations in the essay referred to by our correspondent ascertain the cost of horse-power to the farmer for every working hour of the agricultural year. They also ascertain in the same way as in the case of ploughing above described what the quantity of labour done upon the farm per annum in ploughing, harrowing, rolling, cultivating, sowing, carrying, amounts to in the form of hundredweights lifted 2½ miles per hour during all that time. If you find in the case of half a dozen farms that the horse labour of the farm is per annum or per hour as represented in columns 2 and 3 of the following table, and that the cost of horse labour in food and wages, tear and wear of horses and implements, saddler's, blacksmith's, and farrier's bills, &c., is as it is represented to be in columns 4 and 5—then it is plain that the cost of horse labour per cwt. drawn (= lifted) 2½ miles in an hour is ascertained by a simple calculation, and given in column 6.

1. No.	2. Annual Labour. Cwts. drawn 1 mile per Annum.	3. Annual Labour. Cwts. drawn 2½ miles per Hour.	4. Cost of Horse Labour. Per Annum.	5. Cost of Horse Labour. Per Hour.	6. Cost of Horse-power per cwt. drawn 2½ miles.
	Cwts.	Cwts.	£ s.	s. d.	s. d.
1	100,000	14.8	873 0	6 5¾	0 5¼
2	44,000	6.5	471 5	3 6	0 6¾
3	30,800	4.5	346 12	2 6¾	0 6¾
4	93,800	13.88	981 16	7 3½	0 6¼
5	107,900	15.98	1131 10	8 4½	0 6
6	37,106	5.5	381 10	2 10	0 6

As another example of the way in which the results in column 2 of the above table were ascertained, we give the detailed analysis of the labour of another farm; that of Mr. Melvin, at Bonnington, near Ratho.

Crops.	Acreage.	Ploughed. Deep. Acres.	Ploughed. Ordinary. Acres.	Cultivated. Acres.	Harrowed. Acres.	Rolled. Acres.	Ribbed. Acres.	Drilled. Acres.	Horsehoed. Acres.	Dung carted. Tons.	Dung carted. Miles.	Produce carried. Tons.	Produce carried. Miles.	Equal to carting 1 mile. Tons.
Pasture	150								Dung 60 Coals 285 Cake	1600 120 48	2 11 12	180 1800 125 1250 35 350 25 250 12 120 75 750 150 80	4 14 10 14 34 10	9200 1:20 370
Clover, &c.	50													987
Corn	300	300	300	95	180 950	30 190	30 190	95	60 285	850	14			2870
Beans	50		50	50	400	50	100		50	1015	14			1620
Potatoes Turnips	30 95	30 95	60 95	95	950	190	190	95		660	14			2920
Total Multiply by the miles walked per acre	675	125	305	175	3300	620	380	95	395	1615	14			15,038
Miles walked	1000	8	10	3	14	2	3	3	3					
Multiply by the draught in cwts. } Cwts. of draught	5000	5	4	4	3	2	3	1	1½	10 per cent. on which is 60,152 cwts. drawn 1 mile.†				15,038
										Add for weight of carts				60,076

The table is sufficiently self-explanatory; it may, however, be well to say that the cartage of dung, coal, and cake, is unusually heavy on this farm, and that in calculating cartage, the going and returning cart, in the one case with and in the other without the load, are together taken as doubling the labour to be done. The figures on the lowest line of the table represent the cwts. drawn (=lifted) one mile in the course of the several operations annually; and adding them together, we have the annual labour of the farm equal to 107,900 cwts. drawn (= lifted) one mile per annum; or substituting for the year 300 days of 9 hours each, the work done will be, according to calculation, equal to the lift of 393,875 lbs. one foot high per minute during all that time, which, as 20 horses are employed, is 19,693 lbs. apiece, about as much as that on Whitfield farm, and a very high average performance indeed. The work done annually corresponds to 43,160 cwts. lifted 2½ miles per annum, or 15.98 cwts. per hour during the year. Now Mr. Melvin's horse labour costs him 1131*l.* 10*s.* a year, or 8*s.* 4*d.* per hour during the year. Horse-power in this case then costs rather more than 6*d.* per cwt. drawn (= lifted) 2½ miles, at the rate of movement specified. If his horses walk 8 miles in ploughing an acre with a 5 cwt. draught (which indicates very deep and heavy work), the work is done for 8*s.* per acre. And these we repeat, as in the former case, are the figures with which an engineer would have to compare the performances of his engine.

"If you can enumerate all the operations on your farm, together with the draught incurred in accomplishing them, then you can easily convert the whole into weight lifted through a certain space in a certain time. If you can record the cost of horse food, of extras, of ploughmen, and of keeping up live and dead stock, then against the work done you can place the exact cost of doing it; and the comparison leads, as in the case worked out above, to the cost of horse-power per cwt. of draught, at a given rate of movement."

* Mr. Melvin's ordinary depth of ploughing is somewhat greater than it was on Whitfield Farm, and we estimate the draught a little higher. Two ploughings are put down against Potatoes—the labour of ploughing them up, &c., being assumed as equal to one.

† We would have reduced the per centage here, as so much of it is on the turnpike road, but Mr. Melvin's farmstead is on a height, which makes the draught heavier than it would otherwise be.

POTATO CULTURE..

A very brief treatise, carefully protected by law, with a solemn caution "against reprinting this work," was recently advertised in the *Agricultural Gazette*. The author is a practical gardener, who has had the advantage of 35 years' experience. Expecting from the imposing announcement to derive useful hints, I obtained at the cost of 1*s.* this treatise, and also a second one by the same writer, stitched in the same cover, professing to inform the public "how to plant Potatoes so as to produce the crop entirely free from disease—seasons immaterial," price 6*d.* The pamphlet is a literary curiosity as to the disproportion between the price and the quantity of letterpress. The first tract contains 137 lines and the second 43 (exclusively of the caution at foot), of which 15 lines had already done duty, and exactly in the same rank and file, in the preceding tract. The analysis of the whole may be stated in a few paragraphs. After 20 years' experience of Potato cultivation the writer finds that with some modification the system of the late Mr. Knight is the best. He does not, however, adopt what cultivators generally would consider theoretically and practically right—Mr. Knight's practice of regulating the intervals between the rows of Potatoes according to the probable foliage of the sort cultivated. 2 ft. 6 ins. is our author's standard distance, "no matter what kind of plants, early or late, short-top or long-top." Nor does he care whether the rows run "north and south or east and west, or whether the crown is placed upwards or sideways." In these latter details he may be borne out by facts. From my own experience I am disposed to coincide with him in opinion here. With respect to the seed, he selects in harvesting time the largest Potatoes of the variety to be cultivated, "however ugly or deformed in growth he does not despise them; and if the round Potatoes were even the size of a man's head, and the Kidneys the size of his foot he would prefer them." He believes that cultivating the tubers for seed tends "to surfeit the plants and causes the curl." If this were so the thousands of acres annually planted with cut seed would present a fearful extent of curl, whereas it is of rare occurrence relatively with the area of crop. He is, however, quite correct in preferring uncut and good-sized tubers. But every farmer knows this now. He disapproves of digging the land deeper than 8 inches, "as deeper digging or ploughing causes too much drainage, and the Potato grows strongest on a solid bottom." He repeats this phrase in a sentence or two afterwards as an important fact, "Solid Potatoes love a solid, rich bottom!" He treads firmly in the furrows the horse or farmyard manure before he lays down the tubers, which he places, apparently in all cases, 9 inches apart each row. Our author details an experiment. He planted 12 small-sized whole tubers in one row, 12 large ones in a second, and six large ones bisected through their crowns, and therefore making 12 sets in a third row, all of the same sort, and treated alike. The 12 small tubers produced 13½ lbs., 47 of size for table use; the 12 large tubers produced 19½ lbs., of which 86 were of size fit for table; and the 12 cut sets 13 lbs., with 46 fit for table. He calculated that the 12 large tubers produced at the rate of 480 bushels, or 17 tons to the statute acre. This would be an enormous yield under any conceivable circumstantial realities; but an advertising card accompanying the pamphlet informs us that 675 bushels (24 tons), to the acre were obtained in 1857 by the writer, and 600 last year. Who can believe such a report? I do not impute wilful mis-statement to the individual in question, but I totally discredit the correctness of the calculation. Has any one of your readers seen a field of Potatoes yielding by the scales any weight even distantly approaching to such a marvellous quantity? From 12 to 15 tons is a great acreable yield. Contrary to received notions and experience, the writer would not leave any sort of Potatoes in the land later than July. A word or two on the 6*d.* treatise of 43 lines, or more correctly, of 28 additional ones. He places large tubers on the (well trod) manure in the usual way, and spreads old tan to the depth of at least 9 inches over them, and does not at any time put any mould over this; this tan must be very comfortable covering for the Potatoes, "which in its upward growth requires a light, warm, dry porous bed, that is, for its young tubers to *lay* in; and consequently two composts are needed to suit the appetite and constitution of the best of all vegetables, quantity and quality taken into consideration." Well, having a bed instead of a coverlid over the recumbent seed, is rather an Irish idea; but let this pass. The tan is the preventive of malaria, or whatever be the morbific agent in communicating disease to the Potato. For 10 years this gardener has been growing Potatoes free from any disease. This is the sum and substance of treatise the second. "Not a diseased Potato will be found" after the above treatment. This may be quite true, yet Potatoes planted in the peat Moss soils abounding in the antiseptic tannin have been notoriously affected by the disease as in other soils. Does our experienced gardener mean to tell us that he has obtained any one of his monster crops from tubers which had been left under tan without the usual earthing up with the soil? In the first treatise he states that he draws soil to the depth of at least 4 inches over the seed, and when the stems are up distinctly, he prepares the earth for banking, and banks (moulds) up in due time well on each side of the row. The application of tan can obviously be only on a limited scale, and it is probable that in the case in question it has been used but experimentally. I shall apply some to a few drills immediately, and, God willing, report the result as to produce. The directions for preserving tubers intended for seed are judicious, and notwithstanding the criticisms I have fairly offered, some advantage may be gained, especially by an inexperienced cultivator, from the remarks of the writer. *Arator.*

FARM-YARD SUNDAY EVENING SCHOOL.

[The following seems to us to give an example worth following. It is a placard issued last year at Reigate.]

"Methinks, by all this provision for the use and service of man, the Almighty interpretatively speaks to him in this manner: 'I have now placed thee in a spacious and well furnished world: I have endowed thee with an ability of understanding what is beautiful and proportionable, and have made all things agreeable and delightful to thee. I have provided thee with materials whereon to exercise and employ thy art and strength. I have given thee an excellent instrument, the hand, accommodated to make use of them all. I have distinguished the earth into hills, and vallcys, and plains, and meadows, and woods: all these parts capable of culture and improvement by thy industry. I have committed to thee for thy assistance in thy labours in ploughing, and carrying, and drawing, and travel, the laborious ox, the patient ass, and the serviceable horse. I have created a multitude of seeds for thee to make choice out of them of what is most pleasant to thy taste, and of most wholesome and plentiful nourishment. I have also made a great variety of trees, bearing fruit, both for food and physic: these too being capable of being improved by cultivation, transplantation, pruning, watering, and other arts and devices. Till and manure thy fields, sow them with thy seeds, extirpate noxious and unprofitable weeds: guard them from the invasion and spoil of beasts; clear and fence in thy meadows and pastures: plant thy orchards with all sorts of fruit trees, in such order as may be most beautiful to the eye, and most comprehensive of plants. Gardens for culinary plants and herbs, and all kinds of salletting: for delectable flowers to gratify the eye with their agreeable colours and figures: and the scent with their fragrant odours: for odoriferous and evergreen shrubs, and suffrutices: for exotic and medicinal plants of all sorts: and dispose them in that comely order as may be both pleasant to behold, and commodious for thy access.' 'I persuade myself that the bountiful and gracious author of man's being and faculties, and all things else, delights in the beauty of his creation; and is well pleased with the industry of man in adorning the earth with beautiful cities, with pleasant villages and country houses: with regular gardens and orchards, and plantations of all sorts of shrubs, and herbs and fruits for meat, medicine, or moderate delight, with shady woods and groves and walks set with elegant trees, with pastures clothed with flocks and herds, and valleys covered over with corn, and meadows burthened with grass and whatever else differenceth a civil and well cultivated region from a barren and desolate wilderness.'"—*Ray's Wisdom of God manifested in the Works of Creation.*

"The Creator, doubtless, did not bestow so much curiosity and exquisite workmanship and skill upon his creatures, to be looked upon with a careless incurious eye, much less to have them slighted or contemned; but to be admired by the rational part of the creation—by mankind—to magnify his power, wisdom and goodness throughout all the world, and the ages thereof. My text commends God's works not only for being great, but also approves of those curious and ingenious

inquirers who seek them out, or pry into them. And the more we pry into and discover of them, the greater and more glorious we find them to be, the more worthy of, and the more expressly to proclaim their great Creator." — *Derham's Astro & Physico Theology.— Boyle's Sermons.*

"If one train of thinking be more desirable than another, it is that which regards the phenomena of nature with a constant reference to a supreme intelligent author. To have made this the ruling, the habitual sentiment of our minds is to have laid the foundation of everything which is religious. The world from thenceforth becomes a temple, and life itself one continuous course of adoration."—*Paley's Natural Theology.*

"The works of God, and the word of God may be called the two doors which open into the temple of Truth: and as both proceed from the same Almighty and Omniscient Author, they cannot, if rightly interpreted, contradict each other; but must, mutually, illustrate and confirm, 'though each in different sort and manner,' the same truth." *Motto, Kirby's Bridgewater Treatise.*

Mr. —— will, with the kind permission of Mr. ——, at his Barn Yard in Littleton Lane, give a few Lessons on Sunday Evenings, at half-past five, to Farmers' Men and Boys who have previously attended Divine Service at church or chapel, on the animals which come under their care; and the corn and vegetables which they have to cultivate, particularly the corn bearing plants, as tending to show the power, wisdom, and goodness of God, as manifested in his works; as also carrying the subjects treated of into their common practical working details. In connection with these forms of instruction there will be a "Farmers' Boy's Book Club;" consisting of books on farming affairs, the natural history of the animals and vegetables chiefly coming under their notice; in the hope of inducing them to open their eyes and their ears; to awaken their intelligence and their observation of the numerous beautiful productions to be seen in field, and wood, and lane: with which there will be other books on the duties and obligations, moral, relative, and social, to which they are subjected, and being founded on Holy Scripture, are of divine authority. The subscription for the perusal of these books will be 6*d.* a quarter, paid in advance; with which also will be connected the sale of Bibles and Testaments, the former at 10*d.*, the latter at 4½*d.* The Husbandman's Museum is usually at the end of the barn, upon which he nails the stoats and polecats, and other vermin which cross his path; and sometimes other animals which ought not wantonly or thoughtlessly to be destroyed. Perhaps means may be found to prepare for preservation subjects worthy of a better position than the end of the barn.

Heads of the First Lesson.—*Preliminary Observations*: The Horse. His history. The Cart Horse. His conformation. His adaptation to the purposes of man as a beast of burthen and of draught. His intelligence and docility. His general treatment to be gentle and humane. Grooming. Feeding. The Stable. Early rising essential to all having the care of horses, as well as for all other persons engaged in farm labour. Labour the law of God, the lot of man, and his reward.

The Bell Team.—Bells recommended as cheering the horses at their work. "Smiler," "Tipler," and "Ball," perfectly well know that the music is a march in quick time, and step on accordingly. Horses should never go out as a team but with a musical set of bells.

Tobacco Smoking.—A dangerous practice for all persons engaged about farm buildings; incurring the risk of setting fire to the litter in the stable, or the straw in the yard. This idle and useless habit is more or less injurious to health, and more especially to the healthy condition of the stomach; the essential oil of Tobacco being one of the most virulent poisons in nature. Moreover, it is an expensive habit. The money wasted, or worse than wasted, on this noxious weed, if invested in the savings bank, would, with other savings, thereby induced, lead to affluence, or at least to competence in old age, with the enjoyment of those comforts which are so essential to an advanced period of life. Useful purposes to which the various parts of the horse may be applied when dead. The skin, the flesh, the bones, the bowels, the ligaments, the hoofs, the hair of the mane and tail, the teeth.

Mr. —— begs, therefore, to invite all persons engaged in farm labour to give him their attendance at Mr. ——'s Barn Yard, as aforesaid, on Sunday Evening, at half-past 5 o'clock. The subjects of the Bullock, the Cow, the Sheep, the Pig, &c., will follow in succession.

FALLOW CROPS.

(*Concluded from last week.*)

Harvesting and Storing our Root Crop.—Whenever the Turnip or any other root has become ripe (has come to full maturity), they should be removed and placed in a dry place, and here they may be kept till the spring; but if left in the ground they begin to get soft, spongy, and rot. They are, however, generally taken up and placed in heaps of about a cartload in the field where they are pulled, and they are carted from the field as they are wanted. This we consider as an expensive mode of proceeding, besides the injury which is done to the land by the carts going over it every day or two during all weathers.

It is a great economy of labour to have all our winter food for the stock stored as near as possible to where they are to be consumed before winter. The harvesting of our roots by taking them off the land when it is dry, in October or November, is done at little expense, and the land is left in an excellent state to receive the next crop. If we make the taking up of our root crop a necessary part of our harvest work we economise our labour and save the heavy expense in winter of carting roots daily from the field.

Self-interest is the mainspring of all productive and economical labour, and it comes forth most prominently in piece-work. "In the estimation of every labourer the wages are better than the work." The labourer on piece-work not only gets value for the additional work he performs, but he also reaps the advantage of his ingenuity and skill, as well as for the additional strength he puts forth to perform a much greater hourly result than he does when working by the day. Hard work is easily performed with good will when the men know the more work they perform the more will be their earnings. Piece or task-work is greatly to his advantage; but it is also greatly to the advantage of the master, for he also partakes of the profit of piece-work, for the hands and horses which he must employ in connection with the taskers must move on more quickly, and of course more work is performed by them in the same time than would have been done if all were at work by the day either with or without the master's eye on them.

The mode of harvesting our root crops, which we have adopted for several years, is this: we let the lifting of the roots, the cutting off the leaves and the roots, putting the bulbs into the cart, and afterwards to put the leaves into the cart, at so much per acre to one man who gets other men to join with him in the work and to share in the profits; and the arrangement I require to be adopted is, that the one-horse carts employed to haul the bulbs shall be constantly employed, and they require from 16 to 18 tons of roots to be filled hourly. The number of carts required is according to the distance of the field to the store; thus, if the distance from the middle of the field to the store be 15 chains, four carts are required; if 22 chains, five carts will be required; and 30 chains require seven carts.

The Mode of Lifting the Roots.—Five men are employed to pull up the roots; each man takes two rows; standing between them he takes with his left hand a root from the row on his left side, and with his right hand a root from the row on his right side, and pulling both up at the same time, places them side by side across the row where he pulled up the roots with his right hand, so as to have the tops lying in the space between the two rows he has pulled up; the next man takes the two rows at the right hand of the last two rows we have just described, and he with each of his hands pulls up roots and places them on the line of the row which he has pulled up with his left hand, with the root end lying towards the root end of the first row, so that we have now four rows of roots lying close together in two rows side by side, with their leaves on the outside of each of these rows, and the roots of each row nearly touching each other; and every four rows when growing are thus, when pulled, laid in two rows root to root, occupying not more than 27 inches. Now as the next four rows are lifted in the same way, and placed in like manner, we have a space unoccupied of three times 27 inches or 6 feet 9 inches between each double row of roots for the cart to go between them to carry off the bulbs. After the five men pulling the roots there follow women or boys with knives, made of pieces of old scythes, who by repeated blows cut off the leaves and roots without moving one of them with their hands. This is constant work, and it requires 10 active women to keep up with the five men pulling.

Immediately on the heels of the cutters follow the carts between the two double rows of bulbs as they lie, having their leaves and roots cut off, and one of the contractors and nine active boys and girls throw up the bulbs as far as they can into the cart, the man speaking to the horse to move forward or stop, as they clear the ground. When one cart is full an empty one has been brought by one of the boys who drive the carts, and placed immediately behind the full one; so that as the boy moves off with the full cart the man calls the horse with the empty cart to move forward, and they proceed to throw the roots into the cart as fast as they did into the one that is just gone off the field.

The pulling of the roots and the filling of the carts being the principal work one of the contractors are in each of these departments, and the work proceeds with the utmost regularity and despatch; 20 cartloads have been filled hourly in the field and delivered in the store; 182 loads of a ton weight each have been pulled, in a day of nine hours, by 6 men, 10 women, and 9 boys and girls.

The stores are made of posts and rails inclosing a space 9 feet apart, 4½ feet high, and of any length the space will admit, and as near to where they are to be consumed as possible. The posts are 5 feet apart, let into the ground 18 inches, with five rails 5 inches wide nailed to the inside of the posts; and each of these stores are 3 feet apart. I have 14 of these 70 feet long, which is sufficient to store from 1000 to 1200 tons of bulbs.

In placing the roots in the store we put straw inside the rails of some thickness, to keep out the frost and wet from the side. As the store is being filled, the end of the store being railed off as the sides are, straw is placed against it and against the sides for 8 or 10 feet from the end; the carts are backed to the end, the tail-board of the cart being taken out, the load is tipped and the horse walks out of the store, when a boy who by this time has brought another loaded cart, walks off with the empty one to the field; two stores are being filled at the same time, so that each gets the alternate loads. There is one man who places the straw and thatches the stores as they are filled, one man to back the cart and empty them in the store, and two men, two boys, and two women throwing up the roots level with the other rails, and raising them in the middle, so as to form them into such an angle as will do for thatching. *J. M.*

ON SUBSOIL DRAINAGE.

[A useful practical paper on this subject was lately read by Mr. Ferguson, land-agent, before the Newcastle Farmers' Club, from which we make the following extracts.]

I know of no business so discouraging as that of a farmer of wet land. His crops are necessarily late in being sown, and consequently late in being reaped. His cattle starve on a scanty herbage, and the manure and lime which from time to time he lays on his fields are discovered to have done little or no good, and when too late, he finds that he has been feeding an ungrateful farm on one hand, and unfortunately gaining nothing but a loss on the other. But if the water is drawn off by effectual drainage, and the soil of average quality afterwards well treated and managed by an enterprising man, it will, depend upon it, very soon prove grateful by the production of abundant crops. I believe there are in draining one or two important matters which ought to be known, and which have either been entirely overlooked, or if understood by drainers, not prominently adverted to by them in any publication which I have seen. That I may point out some of these and endeavouring to make my paper somewhat intelligible, I shall divide it into three divisions or sections.

1. The proper method, in my opinion, of draining a wet soil, and the depth and distance apart the drains should generally be to effect that object. 2. The materials generally employed for conduits of drains, and the proper method of employing them. And 3. A mode of draining in districts where clay pipes cannot be obtained without great expense. I shall now first endeavour to state the proper method in my opinion of draining a wet soil, and the depth and distances apart the drains should generally be to effect that object. The first thing to be attended to in commencing to drain a field is to see where there can be a good outfall for the water, in order that a main drain may be made, into which all the smaller drains are to be discharged. This should be made at the lowest part of the field, if the water can be conveyed away by a channel on a lower level. As a general rule (if the subsoil is of a retentive or tilly nature) the main drain should be cut 4 feet 3 inches deep, and as narrow as a man can stand in it to work. In every case all main drains should be cut 4 yards from open ditches, and particularly that distance from hedge fences, in order that the roots of the hedge plants and trees (if any) may not grow into the drain and choke them. The other, or as they are called, the frequent drains, should in every case be made parallel, and directly up and down the slope; and everything depends upon the depth they are made and the distance they are apart from each other. This should be regulated not only by the nature of the subsoil but also by keeping in view the importance of drawing from the land the surface as well as the spring or under water. Many intelligent writers on draining insist on going always a certain depth, whatever the substratum of the subsoil may be, but of this theory I cannot approve. My experience, which has been considerable, leads me to say that in all soils of a stiff, retentive nature, where there is under water, the drains will, I believe, give entire satisfaction if cut 4 feet deep, and from 15 to 24 feet apart, according to the nature of the subsoil. When the subsoil is at all inclined to a porous or gravelly nature, then the drains may be cut with equal effect 4 feet 6 inches or even 5 feet deep, and from 30 to 60 feet apart, for there can be no definite rule laid down to regulate exactly either the one or the other, but in every system of draining more certainly depends on the number and frequency of the parallel drains to procure effectual drainage, than on the depth, provided they are cut 4 feet deep, which in my opinion where there is much under water ought generally to be the minimum depth. All drains ought to be cut, if possible, when the fields are in Grass, for a more clean, tidy job is made than when they are in tillage, and the proper time for draining is during the months of October and November, before frost and snow set in, which obstruct operations, and do much injury. When the fields are in Grass, a little thin turf is easily procured for the purpose of laying over the pipes with the grassy side downwards; but if a field to be drained should happen to be in stubble, and turf cannot readily be got, then a little clay, or retentive soil carefully laid over the joint of each pipe with a mason's trowel, will seal them up and prevent the entrance of any sand or sediment. The following is the specification which I have frequently used, when the soil to be drained was of a stiff, retentive nature with under water:—

The parallel drains to be cut 4 feet deep from the surface where pointed out, and each drain to be 21 feet apart. The main drains shall be cut 4 feet 3 inches deep where pointed out, so that the drains leading into them may have a drop of 3 inches. Every drain shall be carefully cleaned out at the proper depth immediately before the pipes are laid, and none of the parallel drains to be less in breadth at the bottom than 4 inches, and the main drain less in breadth than 7 inches. The drains shall be filled with the soil that is taken out of them; the inferior or bottom soil to be put in again to the bottom, and the good on the top, after the pipes laid in the drains have been carefully covered up with a Grassy turf (the Grass side to be put downwards), which must be put over the joint of each pipe. All the pipes to be carefully laid from the top of the slope downwards on a hard and uniformly level surface, so that the water running through the pipes may not convey sand or sediment to silt them up. The contractor to be paid for this part of the work by day's wages, at the rate of per day. The drains to be cut, laid with pipes, and again filled up under the inspection of , or other Inspector, whom shall appoint, and who shall certify and report to him

from time to time their efficiency, and who will give a note in respect to this as the work proceeds: so that the party contracting for the drains may be paid by instalments as the work is completed. No money to be paid until the drains are inspected and reported upon.

As to the depth drains ought to be cut, it was the opinion of many scientific gentlemen in former days that 2 feet 6 inches was generally sufficient, and now many writers on draining recommend that they should be cut not less than 5 and 6 feet in every soil. My opinion is, that both are extreme, the first too shallow, and the second (except in very porous open subsoils) too deep, for if there is no under water, and although the soil may be of a hard retentive nature, the drains will prove effectual if cut only 3 feet 6 inches deep, and from 18 to 24 feet apart. Depth, however, ought partly to be regulated by the power certain soils have to draw water upwards by capillary attraction. This, I believe, many drainers have not adverted to as it deserves. It has been said, and generally believed, that if drains are cut and pipe tiles put in 3 feet or 4 feet deep, a dry soil to that depth is the result, and the inference is invariably drawn, that good drainage has been effected; but in every soil where there is much under water that is not the fact, however near to each other the parallel drains may be, just from the power certain soils have to draw water upwards by capillary attraction, which by many drainers is not, I fear, well understood or attended to. This fact being ascertained, how are we to find out the depth of soil made dry by drainage, or, in other words, the depth of soil above the level of the pipes made damp by capillary attraction, where considerable quantities of under water are discovered to be in the soil?

(2.) I now come to the 2d division of my paper, which is—The materials generally employed for the conduits of drains, and the proper method of employing them. All materials used formerly for the bottoms of drains have now generally given way to the clay pipe tile, which undoubtedly is the cheapest and most efficient conduit for the purpose we at present are acquainted with. In my opinion, no pipes for parallel drains should be used less in bore than 1¾ to 2 inches, and they should be laid when practicable from the top of the slope downwards, by a man who should stand in the drain, and who should be employed for this work at day's wages. This is better than when the pipes are laid by contract, because the person laying them has no interest in hurrying over the work and doing it imperfectly. When a commencement is made at the top of the slope the pipes are laid on a uniformly level surface, the man going backwards clearing the seat of each pipe with his hand, and the water running through the pipe does not convey any sand or sediment to silt it up. If there is a likelihood of the drain slipping in, as is sometimes the case, then of necessity the pipes must be laid from the bottom upwards in sections as the drain is cut. If the bottoms of the main or parallel drains should happen to be soft, then the pipe tiles, to prevent them from sinking, should be laid on soles made either of clay or narrow pieces of slate, taking care that the ends of the pipes meet exactly in the middle of such soles. In places where the subsoil should happen to be of a running sand, and of a soft and spongy nature, it would be advisable that in such places the drain should be laid with circular pipes, each end inserted into a collar so that there may be less chance of the pipes getting silted up by sand, or the ends getting past each other. Main drains, generally, should be laid with 4-inch oval pipes, or sometimes of larger capacity, for of course much will depend on the quantity of water to be discharged, which should regulate the size. Each pipe opposite the ends of the parallel drains should have a hole cut in it near the top, large enough to admit the end of a 2-inch circular pipe, so that a neat junction may be made for the discharge of the water; and the parallel drains, when they meet the main drain, should have a slight bend or turn within a yard or two of the end in the direction the water is to flow, so that it may enter the main drain in an oblique direction in place of at right angles, which would partially obstruct the passage of the water downwards and perhaps derange the seat of the pipe. The mouths or outlets of main drains where they discharge into open ditches or streams, are generally large iron pipes with gratings on the outlet end, to prevent the ingress of rats or vermin into the drain, which do much injury; but as these are expensive, I have sometimes caused square wooden boxes to be used, with a valve on the outside end, which being always shut except where there is a flow of water along the drain, I have found to answer admirably.

With reference to fields which are beneath the level of rivers, or are very flat with scarcely any declivity, there is always considerable difficulty in effecting thorough drainage, from the impossibility of getting a proper outfall. In that case, the only plan is to excavate at some convenient spot a tank or pond of considerable depth, into which all the drains are discharged, and then, by the power of a windmill or horse gin, pump the water from time to time to a higher elevation to be run off. The price per acre for draining varies of course according to the nature of the soil and the wages paid in the district. Generally from 4*l*. to 6*l*. per acre in most places will suffice to defray the expense, unless smaller pipes are used than 2 inches in bore, but expense should not always be so much considered as permanent and complete drainage. Sometimes a small pipe of 1½-inch bore where there is not much under water may suffice for the top of a field, for perhaps the first 100 yards, and then increase in size towards the main drain; but, on the whole, I believe it is better generally that no pipes less in size than 2 inches in bore should be used where expense is less an object than efficient and permanent drainage. The number of pipes necessary to drain an acre, if they are 14 inches in length, and the drains

15 feet apart, are	.. ..	2490
18 do.	.. ..	2076
24 do.	.. ..	1560
30 do.	.. ..	1250

and the price in most places, where coals to burn them can be got at a reasonable price, is as follows, viz., 1½ inch in bore, and 14 inches in length,

From	15*s*. to 18*s*. per thousand.
2 inches in bore, from	18*s*. to 22*s*. ,,
2½ inches in bore, from	22*s*. to 27*s*. ,,
3 inches in bore, from	25*s*. to 32*s*. ,,
2-inch circular pipes with collars, from	20*s*. to 27*s*. ,,
4-inch oval main drain pipes, from	40*s*. to 45*s*. ,,

and others of larger size in proportion.

Before I close this part of my subject in reference to drains, I believe that I shall be justified in saying, that unless they are cut in a porous open subsoil, they will be found to act generally in a much more effective manner, if about a year after they are completed the subsoil plough is used directly across them, as may be practicable, to the depth of 10 or 11 inches under the furrow of a common plough. In this way the surface or rain water percolates more rapidly to the drains, and consequently operations in ploughing or sowing can be sooner proceeded with than when such a useful implement as the subsoil plough is unemployed.

(To be continued.)

Home Correspondence.

Northumbrian Wages.—When we have put ourselves by any means into a wrong position towards any other person it is always right to recover ourselves entirely, which we do by considering ourselves to be entirely in the wrong, and making a full apology. I beg therefore to make such an apology to Mr. Grey, and to do so without adding a word in explanation of the circumstances under which I was induced to say what I did concerning that gentleman in my letter on the above subject a fortnight ago. *N.*

Cost of Horse Power.—There is no part of your Paper which gives so much information or to which I look with so much interest as a statement of accounts or an arithmetical calculation. When the statement is one of facts, it is of course doubly instructive. I have been waiting in the hopes that some discussion would have been raised by your leading article in the *Gazette* of March 7, which I will call "Mr. Morton's Essay on Horse Power." It is doubtless a most laboured, able, and interesting article; but I fear scarcely intelligible to many of your readers. There seems a little confusion sometimes between cwts. of draught and cwts drawn, though on a close inspection of the tabulated statement this can be cleared up and made intelligible in the text. I would, however, ask if there is not a mistake in the table? 480 miles multiplied by 5 cwt. in draughts would surely give 2400, and not 2200 as stated. Also a lift of 135,450 lbs. per minute, divided by seven horses, would give 19,350 lbs. to each, and not 16,492 as stated. I should like to see a little more popular explanation of the meaning of the definition of horse power being the ability to lift 33,000 lbs. 1 foot high per minute, and the way in which this definition is applicable to Mr. Morton's calculations. Were I not satisfied that many of your readers are at least as ignorant as myself, I would not have asked for this explanation, which I have no doubt can be made simple and easy to every capacity by a few words from Mr. Morton. *W. G.* [Many thanks for pointing out these errors of calculation; both of them go to diminish the result which was really obtained on Mr. Morton's farm. The labour on that farm was equal to 37,306 cwts. drawn (= lifted) 1 mile per annum, or substituting 300 days of 9 hours each, it was equal to 136,180 lbs. lifted 1 foot high per minute all that time; which as seven horses were employed was 19,454 lbs. apiece, more than half the theoretical quantity, and curiously near the result obtained in Mr. Melvin's case.]

Utilisation of Sewage Manure.—I beg to recommend the plan of placing reservoirs at certain distances along the line of the proposed new London sewers to receive the solid matter, so that it may be available for the localities through which it passes; and I have also to suggest that the manure may be deodorised, formed into cakes, dried like Mushroom bricks which contain the spawn, and so become a valuable article of commerce as in China. *An Economist.*

Straw Feeding, &c.—Many public writers of the present day are very apt to highly praise the letters of those who agree with them, but it is better to let the public judge, as the question arises: is the individual competent to give an opinion? But all will agree as to the importance and value of your leading article on the adulteration of seeds, and that of my friend Mechi on Straw. The loss I have sustained from bad seeds the last 17 years from various leading merchants is enormous, and I generally with many others search out the growers. Only last year I wanted to lay down 16 acres to Gorse for winter food. I bought of two leading merchants and not more than 5 per cent grew. I refused to pay for either lot, but the loss and disappointment was great. I have now bought a quantity of Spring Vetches from Messrs. Page and Toogood of Southampton. They looked like winter Vetches. I wrote to say if they proved winter Vetches, I should lose from one to two hundred pounds and should come upon them for it. They had a warranty from the grower and gave me one. Now this is the way to do business. I sincerely wish all seedsmen would never buy without a warranty, and then we should have no trouble or loss. With regard to the subject of straw I greatly thank Mr. Mechi for raising a "friendly" discussion upon it; though when I tried to do the same on sheep management, I was met by an anonymous scribbler, who outraged common sense by his exaggerated statements. Such letters should not be printed in respectable papers, where people are ashamed to give their names. I never knew any farm where so much straw is used as on mine; we cut it nearly all into chaff and feed near 30 horses and about 120 head of store cattle with it, mixed either with a small portion of meal or else oilcake; never giving the cake with the chaff, but always wetting the chaff. I cannot think it of the value my friend Mechi puts it at; yet a two-year-old bullock is kept in good growing condition with straw chaff and 2 or 3 lbs. of cake per day. It has often struck me where the profitable line is to be drawn between men like myself who consume nearly all the straw, and Hampshire or Wiltshire farmers who do not keep cattle enough to tread it into dung. I think it is very profitable to give straw chaff to ewes with Turnips and Swedes in the early part of the winter, and Mangels in the spring with a little cake. If no cake is given, a large quantity of Swedes and Turnips would be required. I have tried Mangel with a fatting cow this winter and was obliged to discontinue it owing to its laxative nature. Now it does very well, thus proving the truth of what eminent writers such as Messrs. Purdon, of the *Irish Farmers' Gazette*, Dr. Voelcker, and Mr. Baker have taught. I want to draw out some practical farmers on the subject of 500 ewes and lambs being attended for 40*l*. per annum—being in yards in the winter and hurdled on Clover and Vetches in the summer, and on keeping them in condition during the winter on straw and Mangel alone. What says Mr. Hudson, of Castleacre; Mr. Twynam, of Winchester, and men of like undoubted experience? *T. Beale Browne, Salperton Park.*

Societies.

ROYAL AGRICULTURAL OF ENGLAND.

Weekly Council: *March* 30.—Colonel Challoner, Trustee, in the chair.

Mangel Wurzel.—Mr. Edward Farmer called the attention of the Council to the importance of storing of Mangel Wurzel, and to a fact which had occurred within his own experience, which led him to believe that the root in question might be kept good for food in the winter, 12 months after having been stored from the ground.

Polish Agriculture.—The Agricultural Society of the kingdom of Poland having decided to hold an annual agricultural meeting, at which a leading feature should be the trial of implements, applied to the Council for a statement of the principles on which the trials of the Royal Agricultural Society of England had been carried on. The Council ordered copies of the several reports on the trial of implements at the Society's country meetings, along with Prize Sheets for the current year, and a statement of the prospective arrangement for the trials during the ensuing four years, with an explanatory letter from the Secretary, to be forwarded to the Agricultural Society of Poland.

Adjourned to April 6.

Farmers' Clubs.

Hexham, *March* 15: *Harvest Work.*—Mr. W. Trotter, Bywell, said he had had the management of harvest work for 20 years. At the beginning of this period, no operation on the farms in this neighbourhood was worse managed than that of reaping. I early fell upon the plan of giving a small prize to the best shorn ridge in each landing: the influence of which was so great, especially amongst the learners, that in two or three years the work would have satisfied the most fastidious. As there are, perhaps, none in the room but those who have had more experience with the scythe than I have had, I shall not attempt to describe the various ways of cutting corn with it; but I will merely mention, that on our farm we approve of the plan of mowing to the standing corn, for the following reasons: viz., because the labour of lifting the corn is lighter, two women being able to band from 1 to 2 acres per day, according to the bulk of the crop, because the heads do not strip so much as when mown from the corn, because we think the corn safer in the stook than when on the ground, and because we have all hands under our eye. But as I never observe the use of the scythe with satisfaction, I shall not dwell longer upon it, but proceed by remarking that, during the 20 years to which I have alluded, other revolutions have taken place than that caused by steam; the foremost of which, as affecting our subject, is that which arose out of the Irish famine in 1847. The exhibition of 1851 came and brought out the American reaping machines at the very time when the country was ripe for their introduction. Crosskill's Bell's is pushed by the horses; it can, therefore cut its way in any desired direction amongst the standing corn; the cut corn is laid off in swathes either to the right or to the left, an advantage which only those who have had anything to do with reaping machines can sufficiently estimate. Unfortunately,

some difficulty has been experienced in steering this machine; but I have unlimited faith in man's capabilities to master such things when he sets determinedly to work. I shall not, therefore, be surprised if the machine in question attains to the position of being the best amongst those with side delivery in swathe. Burgess & Key's M'Cormick's is pulled; the horses, in commencing a field, consequently require a way cut for them. This machine has also a side delivery, ingeniously accomplished by three coarse screws upon which the cut corn falls, and which carry it to the side and leave it in a regular swathe. We have also Lord Kinnaird's M'Cormick's, which likewise leaves the cut corn in swathes by means of belts. To bring the uncut corn up to the knives these machines have reels that move at a velocity which, in my opinion, is likely to shed the grain. I ought to mention that M'Cormick's cutters consist of a series of thin steel triangular plates with serrated edges rivetted to a bar of iron. The plates are short, and form an obtuse angle at their points. Crosskill has also adopted this cutter. Bell's was nothing else than double-edged scissors. Dray's Hussey's, like M'Cormick's, requires a way made for it. The cut corn falls upon a tilting board, the application of which to reaping machines constitutes, in my opinion, although a simple yet the most valuable improvement that has been effected in them since the exhibition. The man who rides on the machine holds the fore part of the board down with his foot, and as soon as sufficient corn has been collected for a sheaf he allows the back part to fall, when the bundle slides off. These bundles, when taken up with ordinary care, have the heads all one way, and not being rolled up like mown corn are much more effectually threshed by machines with rollers, and require less labour in feeding. I need scarcely say that the sheaves left by this reaper require to be lifted out of the way before it can pass round again. This is thought by some to be an inconvenience, and much ingenuity has been exercised to obviate it; however, it is, in my opinion, one of the very best features of a good reaper. And I advocate it for the following reasons:—1st. Because the work is better done at a less price; the machine, travelling round amongst the binders, keeps every one to his place and at his work, and lends a charm to the proceedings that relieves the dull monotony of the labour—an advantage seldom sufficiently taken into account. 2d. Because reapers with back delivery can easily and readily be converted into Grass cutting machines. 3d. Because they are less complicated, less liable to get out of order, less expensive, and, with the exception of Bell's, are more readily removed from field to field. The first successful reaper to lay the corn off in bundles out of the way of the next "bout" of the horses was the production of Mr. Palmer, but the sheaves left by it were not tidy enough to meet my views of reaping. The next machine of the kind is Mr. Samuelson's Britannia, a model of which is on the table, and from which you will see the novel manner in which the machine, life-like, handles its own rake; and I am sure you will agree with me that such mechanism is highly creditable to its inventor. Not having seen the reaper in the field, I shall not venture to give an opinion of its work; but as Mr. Samuelson has been so kind as to send us this model, let us hope that he will confer an additional favour on us by sending his reaper to compete for our next prize. The cost of cutting an acre of an average crop of Wheat (say 28 bushels) by the various methods of reaping, is pretty nearly as follows. If I am wrong in any of the items I shall be glad to be corrected.

	s.	d.
By sickle—Cutting, 10s.; binding and stooking, 2s. ..	12	0
By scythe—Cutting, 4s.; lifting, 3s.; binding and stooking, 2s.	9	0
By machine, with side delivery in swathe, allowing the machine to cut 12 acres per day, and charging man and horses at 8s., and allowing a woman to rake 2½ acres per day at 2s., and a band maker 1s., binding and stooking, 2s.	3	10
By machine with best delivery, allowing 9 acres per day, man and horses, 8s.; sheafer, 4s.; binding and stooking, 2s. 5d. per acre, making altogether ..	3	9

But the advantages which reaping machines with back delivery possess over other methods of reaping are much more than expressed by these figures. The heads, as I before intimated, are laid straight, in one way, and the work is so clean that no raking of stubbles is necessary. In conclusion, I beg to say that it is desirable to roll and to stone the crops which are intended to be cut by machinery, and that it is also desirable to have the land with as few furrows as possible—another good reason why draining should be persevered in. And, I will add, that rabbit holes very much impede the progress of machines—another good reason against an excess of game. Thus we see that the application of science—the developing of Nature's laws—promotes the growth of that which is good, and roots out that which is evil.

Mr. Lee asked Mr. Trotter how he calculated the machines as being so cheap. Mr. Trotter said that eight women would take up and follow a machine and bind 9 acres per day. They had cut an acre per hour, and there were testimonials that other persons had done the same. Mr. Stephenson said they had cut 6 acres day after day.

Notices of Books.

A Visit and a Plant: or Hints on the successful cultivation in England of the North China Sugar Cane as a Forage Plant, By John Willding Clarke, Whittlesea, Cambridgeshire.

Mr. Clarke enumerates the many illustrations which modern agriculture affords of the great progress made in farming during the present century, showing how each step both suggested and necessitated future progress in order to the full development of its advantages.

"The year 1798 saw the establishment of the Smithfield Club Cattle Show, by the Duke of Bedford and others, which may be said to have effected a revolution in estimating the value of different breeds. A little egg-shaped beast now bears the palm from the former long legged elephantine ox, because it bears on its carcase more 9*d.* than 3*d.* beef. Through the agency of good Turnip culture, a full fold and a full bullock yard have made a full granary. Sliced Turnips and purchased oilcake followed, and we have the testimony of Mr. Morgan that 20 years ago the majority of the sheep brought to Smithfield Market were three or four years old, and it was difficult to find a score under two. Now a 3-year old sheep is scarcely to be met with, and fat sheep only twelve months old are plentiful. The great starting point in the new era may be dated from 1837 and 1838, which was signalised by the formation of the Royal Agricultural Society of England. It is a remarkable fact that when this Society was founded not one of its promoters foresaw the importance of the implement department. In 1841 there were exhibited at Liverpool 300 implements, in 1853 at Gloucester there were 2000. A great assistant to carrying out the object of this Society has been the locomotive; indeed the locomotive has undoubtedly proved itself the better friend to agriculture, in having held out the most money rewards to breeding, corn-growing, and feeding. The results of its establishment are astounding. The Eastern Counties alone, in the course of twelve months, has conveyed 24,000 tons of guano and other portable manures, 700,000 quarters of grain, 550 sacks of flour, 71,000 beasts, 380,000 sheep, 13,000 tons of meat and poultry, and 43,000,000 quarts of milk."

"At every stage of progress the modern English farm becomes more like a manufactory, producing on a limited surface enormous quantities of food for man; turning Peruvian guano into corn, bones from the Pampas into roots; Russian oilcake, Egyptian Beans, and Syrian Locust-pods into beef and mutton. The gain to the farmer and landlord is the most insignificent part of the benefit. The agriculturist is the manufacturer of food for the nation, and upon his skill, under Providence, it depends whether plenty or scarcity prevails in the land. Such are the thoughts attending the visit of a scientific observer to our agricultural exhibitions."

His pamphlet is however especially devoted to a description of the merits of Holcus saccharatus as a forage plant, on which we give his testimony as follows:—Those who have not watched these improved conditions have heard with surprise and incredulous wonder of the enormous amount of highly nutritious fodder, grown in this country, by a plant hitherto considered as almost exclusively tropical, but now incontestibly proved to be hardy and to afford upwards of 100 tons per acre of highly nutritious food, eaten with avidity by every description of stock. I allude to the Holcus saccharatus, or North China Sugar Cane. The trials, made under my cognisance, have in this year A.D. 1858, on every variety of soil, and in different parts of our island, been so carefully made, and faithfully recorded, that its value no longer remains a question of doubt."

The following is his account of its cultivation:—"Should the intention be to mature the canes, or not use the crop until it has attained two-thirds of its growth, the quantity of seed per acre should be 6 lbs., drilled 16 to 18 inches apart, 2 inches deep, to be afterwards singled, or set out, 12 inches apart in the drill. But should the crop be intended for hay or successive cuttings, a less distance will suffice, and more seed should be used, say 10 or 12 lbs., drills 10 inches apart; this will not require setting out. There are few plants which delight more in a liberal use of the hoe than this, for I know of no plant having such a dense mat of rootlets interlacing the surface soil: the more these spread below, the more vigorous the growth of foliage and canes. It is therefore absolutely necessary to the successful cultivation of the plant that the seed bed should be friable at the time of sowing, and be maintained so afterwards by the use of the hoe, until the young plant is firmly rooted. Not only is this essential condition maintained by its use, but the weeds are kept down—a very important matter—and for this reason: the Sorgho is eight to twelve days before it is through the surface, it then grows very slowly for the first three weeks it is above, which is the transitional period of the germ, from the exhausted store-house of food in the seed, till the rootlets are furnished in sufficient strength and number to afford nourishment to the plant from the soil, and furnish it with leaves. At this critical period it is more dependent on favourable conditions for its growth than at any other; and at no season of the year is the soil making greater efforts to let free the hitherto cold-imprisoned weeds, which if not unsparingly extirpated on their first introduction to the Sorgho, will soon maintain an undisputed possession of the land. The more valuable plant, with this treatment, will at five or six weeks old most effectually choke in the birth all weeds seriously thinking of growing. The best time for sowing will be, in favourable seasons, at the earliest, the last week in April: sow at this period or any time in May for a full crop of 100 tons. Any time in June will suffice for a crop of 40 to 50 tons (green). From seed sown third week in June, I cut 31 lbs. weight to the square yard; this will yield upwards of 60 tons per acre: the plants averaged 3½ lbs., there were nine plants to the yard, height of plants from crown of root to tip of highest leaf 6 feet, the plants very little more than half grown. When a sufficient breadth of land has not been prepared in time for early sowing, the Sorgho will amply repay transplanting; that sown in April or May can be transplanted with great advantage in the month of June or July; it will produce a crop double the weight of that produced by seed sown at the date of transplanting. When it has attained a height of 2 to 3 feet, you may mow it for the cows, beasts, horses, or pigs. Of the early sown, the first cutting will be ready the latter end of June or early in July, and as the stock eat it as well dry as green, this will be the proper time for making it into hay. The second cutting will be ready by the middle of August, and if got off the land quickly the shoots will again break vigorously, and furnish another mowing, in a favourable season, by the latter end of September. The quantity given to a beast will be 60 lbs. weight daily of the green fodder; it is eaten by them with great avidity, so much so, that while the Sorgho lasts, they will eat nothing else. Given to milch cows, it will be found to increase the produce of milk, both in quality and quantity; each cow, in full profit, giving two pints more milk daily, affording more cream, and butter of a better quality. In the last week of October the matured canes are cut, and carried contiguous to the chaff-house; on being passed through the chaff-cutter, and mixed with cut straw, they will be found to add such a condiment to the straw that the best fed horses will not refuse."

Farm Memoranda.

Woolston, near Bletchley Station, Bucks.—The farm here of Mr. William Smith, to which reference was made last week, is about 200 acres in extent, 110 of which are arable. The greater part of it is a stiff soil, varying from a comparatively poor and very stiff clay to a rich clayey loam of the highest value for the growth of Wheat, Beans, or Mangel Wurzel. One outlying patch of several fields, now laid in one, consists of nearly 40 acres, 30 of which are now in Wheat and Beans, and the remainder lies for steam cultivation for a root crop. Taking the portion of this plot, about 20 acres, which is now in Wheat, the cropping for the last 10 years runs thus:—1, Wheat; 2, Beans; 3, Wheat; 4, Clover; 5, Wheat; 6, Beans; 7, Oats; 8, Peas; 9, Barley; 10, Beans; 11 (1859), Wheat. Since the Oat crop in 1855 it has been cultivated by steam. All the 30 acres now in crop were cultivated 8 or 9 inches deep by steam in one week last autumn. It lay a month, and the Wheat was then drilled 13 inches apart, 1 bushel to the acre, and now looks exceedingly well. Eight acres of this plot were ridged up by horses in ridgelets 30 inches wide, and Beans, dibbled along the line of each ridge, are now up and promising well.

Of the whole 110 arable acres 76 are this year in corn, viz., the above 20 in Wheat, and 24 on the richer loam nearer the farmstead, than which nothing can promise better; 20 acres in Oats, which are just coming up, and 12 in Barley about to be sown. The steam cultivator is employed to break up Wheat stubble for Beans and Bean stubble for Wheat; and Mr. Smith saves more than one-third of his horses by the employment of his seven-horse engine and cultivator for about 45 days in autumn.

Mr. Smith's neighbours are adopting his system, and six or seven steam cultivators are in operation around him. It has not hitherto been supposed that Buckinghamshire agriculture is ahead of that of other counties, but in this particular it certainly is; and we do not know of any history so illustrative of energy and enterprise as that of one of these neighbours of Mr. Smith. He owned a drill and used to contract for the sowing of corn per acre—he then purchased a horse threshing machine, and ultimately owned more than one: these he sold when steam power in locomotive engines was employed for this purpose—and he became the purchaser of a locomotive engine and threshing machine: this on its first starting he hawked from one end of the county to the other without finding a customer—to find indeed on his return that his neighbours in his absence had voted him unworthy of their confidence as not knowing when to let well alone: he now owns several steam threshing machines, and has at length adopted Mr. Smith's cultivating apparatus, and would not return to the ordinary system on any account.

Calendar of Operations.

MARCH.

Wester Ross, *March* 21.—It is somewhat tantalising to read reports from all parts of the country of the peculiar fineness of the season, and of the rapid and satisfactory down-laying of all spring seeds, whilst we in the north are fairly weather-bound. For several weeks we have not had one day that did not bring us at least a sufficiency of rain or snow, and such a redundance has fallen that the land is now nearly as thoroughly soaked as it was at any time throughout the winter. Two or three fields in this neighbourhood have been sown with Oats, which were very unsatisfactorily harrowed at the time, and which are now partially covered with pools of water. On the higher and dryer portions the rooks are as busily occupied as though they had been instructed that the seed was of no use save for immediate consumption. And all the more annoying is this state of things from the fact that, as sowing cannot be proceeded with, very little besides remains to be done. The winter was so open that ploughing was further advanced than usual, and every one was calculating upon, and well prepared for, an early seed time; but here we are at the end of our

usual Oat-sowing season without having a right commencement made; and whilst I write the snow falls thick as ever. Neither can anything be done to any good purpose in the way of preparing the ground for Potatoes or Turnips. The better thing, peradventure, meanwhile is to exercise patience—an article of which farmers are somewhat scant. On well-drained land Wheat looks well, although by no means far advanced for the season; whilst the continuous rain has been hurtful to the young plants on low-lying or ill-drained lands. Dullness still characterises the grain markets. Wheat now sells at 40*s.*; Barley, 28*s.*; and Oats, from 23*s.* to 25*s.* per qr. The low prices we have had for years, with damaged grain and high rents, have been telling disastrously on the farmers in the north, and not a few are now willing to give over their farms to the proprietors. Already has part of the winter stock—both cattle and sheep—been disposed of, and greatly to the advantage of the seller. Three hundred wethers were bought at 27*s.* per head, and put on Turnips in October last; they were sold a few days ago at 47*s.* per head. The keep and expenses altogether being under 10*s.* per head, the clear profit realised was about 150*l.* In August last a lot of stirks were bought at 10*l.* per head, and after being wintered on Turnips and straw were sold, a short time ago, at 18*l.* each. We hope that the price will continue such as will make these only fair specimens of the profits for winter keep this year.

Notices to Correspondents.

FOREIGN SUPPLIES: *R.* The following figures are from a paper just obtained by Mr. Caird, M.P., being a return to an order of the House of Commons:—"An account showing in imperial quarters the quantities of Wheat and Wheat flour, Barley and Barley-meal, Oats and Oatmeal, Rye and Rye-meal, Peas and Pea-meal, Beans and Bean-meal, and of Indian Corn and meal, entered for consumption in the United Kingdom during each of the 6 years ending with 1858."

	1853	1854	1855	1856	1857	1858
	Qrs.	Qrs.	Qrs.	Qrs.	Qrs.	Qrs.
Wheat and Wheat Flour	6,112,016	4,870,862	3,145,282	5,089,453	3,969,743	5,333,936
Barley and Barley-meal	824,053	648,948	339,351	722,944	1,691,435	1,661,081
Oats and Oatmeal	1,012,160	1,007,887	1,005,543	1,146,864	1,702,309	1,848,947
Rye and Ryemeal	70,869	2388	947	29,148	77,056	101,343
Peas and Pea-meal	100,967	198,526	113,357	84,560	159,740	157,121
Beans and Bean-meal	349,440	385,031	341,808	853,480	304,972	411,548
Indian Corn and Meal	1,546,701	1,345,313	1,210,795	1,758,151	1,077,472	1,748,854
Other kinds (consisting of Buck Wheat, Buck Wheat Meal, and Bere or Bigg)	8051	913	3626	1011	2739	4560
Aggregate Consumption	10,024,847	7,709,808	6,165,959	9,184,611	8,955,610	11,266,690

Quantities of Foreign and Colonial Corn, Grain, Meal, and Flour retained for Consumption in the United Kingdom in the Years

Note.—The quantities of imported corn and meal retained for consumption in the United Kingdom, as exhibited above, are ascertained by deducting the quantities over-entered, and the quantities exported after payment of duty, from the gross quantities charged with duty on importation.

IRISH AGRICULTURAL STATISTICS: *X.* In 1858 there were in—

Wheat	.. 551,386 acres	Potatoes	.. 1,160,356 acres
Oats	.. 1,976, 929 ,,	Turnips	.. 337,877 ,,
Barley, Rye,		Other green crops	120,025 ,,
Pulse, &c.	220,086 ,,	Flax	.. .. 91,555 ,,

This last crop has dwindled during the past 6 years as follows:

1852	.. .. 137,008 acres	1855	.. .. 97,606 acres
1853	.. .. 174,579 ,,	1856	.. .. 106,311 ,,
1854	.. .. 151 403 ,,	1857	.. .. 97,721 ,,
	1858	 91,555	

KILNS: *N C.* The writer of the article to which you refer says:—"When I wrote the article I remember I had lately visited some large lime works near Birmingham, and there they used the kind of ovens I described, and the results appeared to me most satisfactory, especially in the consumption of coal. I tried an oven of this kind at Yate, and so far as my experiments went they fully bore out the favourable opinions I had formed of the plan. Since I left the Yate works however I see the oven has fallen into disuse, but for what reason I do not know. I also had an oven tried of this kind in Buckinghamshire, with the chalk, and it answered admirably. Your correspondent is wrong in supposing my experiments were tried on the Oolitic formation. They were tried upon the hard beds of the mountain limestone, and the ovens in Birmingham were burning the still harder beds of the Wenlock limestones from the Silurian formation of Dudley in Staffordshire. My own opinion is still most entirely in favour of burning in ovens (something like you burn bricks) The only advantage of the running kiln is that you can keep on both charging and drawing, but the want of economy is most striking. Your correspondent is right relative to the loss in weight by burning being chiefly (though not entirely) caused by the loss of carbonic acid and water."

POULTRY: *Cox.* You may hinder birds from acquiring the habit of eating their eggs by giving them access to chalk; but if they have already acquired the habit you cannot cure them.

*** As usual, many communications have been received too late, and others are detained till the necessary inquiries can be made. We must also beg the indulgence of the correspondents the insertion of whose contributions is still delayed.

GROOMBRIDGE AND SONS' PUBLICATIONS.

THE APPLE and its Varieties; being a History and Description of the varieties of Apples cultivated in the Gardens and Orchards of Great Britain. By ROBERT HOGG, Vice-President of the British Pomological Society, &c. 8vo, cloth, with 70 Illustrations, price 5*s.*, sent post free for 60 stamps.

THE STRAWBERRY; Forcing and Open Air Culture. By GEORGE MCEWEN. With coloured Plate, price 1*s.* 6*d.*, sent post free for 18 stamps.

AGRICULTURAL SCIENCE APPLIED IN PRACTICE, forming at once a Text Book and Concise course of Scientific and Progressive Instruction. By W. WALLACE FYFE. 16mo, cloth, price 2*s.* 6*d.*, sent post free for 30 stamps.

THE TOWN GARDEN. A Complete Manual for the Successful Management of City and Suburban Gardens. By SHIRLEY HIBBERD. Second Edition, much enlarged, fcp. 8vo, cloth, price 3*s.* 6*d.*; sent post free for 42 stamps.

THE GARDENER'S RECEIPT BOOK. A Treasury of Interesting Facts and Practical Information, useful in Horticulture. By WILLIAM JONES. Fourth Edition, much enlarged, fcp. 8vo, cloth, price 2*s.* 6*d.*; sent post free for 30 stamps.

THE BEE-KEEPER'S MANUAL. Practical Hints on the Management and Complete Preservation of the Honey Bee. By HENRY TAYLOR. Illustrated with One Hundred Engravings. Fifth Edition, fcp. 8vo, price 1*s.*; sent post free for 48 stamps.

THE CULTIVATED PLANTS of the FARM. Comprising complete Treatises on Wheat—Vetches—Turnips—Beetroot—Rye—Cabbage—Carrot—Potato—Barley—Beans—Parsnips—Oats—Peas—Rape, &c. By JOHN DONALDSON. Fcp. 8vo, price 3*s.* 6*d.*, sent post free for 42 stamps.

FARM and GARDEN ESSAYS. Comprising Treatises on Arable Land — Fruit Trees — Annuals — Poultry — Horse — Cattle—Garden Frame and Greenhouse. 12mo, cloth, price 3*s.*, sent post free for 36 stamps.

SHEEP. A Treatise on Sheep; the best means for their Improvement, Management, and Treatment of Diseases, together with the Management of Sheep in Australia. Chapters on Wool and a History of the Wool Trade. By AMBROSE BLACKLOCK. 13th Edition. Illustrated 18mo cloth, price 3*s.*, sent post free for 36 stamps.

BEAUTIFUL LEAVED PLANTS, being a Description of the most beautiful Ornamental Foliaged Plants in cultivation in this country. By E. J. LOWE, Esq., F.R.A.S.; assisted by W. HOWARD, F.H.S. To be completed in about 20 Monthly Parts, price 1*s.* each Part, containing three coloured Plates and several Wood Engravings.

A HISTORY of BRITISH BIRDS, with an Illustration of each Species, comprising in all 360 coloured Plates. By the Rev. F. O. MORRIS, B.A. Complete in six volumes, royal 8vo, cloth gilt, price 5*l.*

RUSTIC ADORNMENTS for HOMES of TASTE, and Recreation for Town Folk in the Study and Imitation of Nature. By SHIRLEY HIBBERD.

PRINCIPAL CONTENTS:

THE HOME OF TASTE.—Whatever serves to heighten the enjoyments of home, and add fresh graces to the domestic hearth, must be worthy of encouragement and culture.

MARINE AQUARIUM.—Zoology of the Deep—Construction of Tanks—Filling and Stocking Aquaria—Artificial Sea-Water—Management of Collections—Anecdotes and Memorabilia.

FRESH-WATER AQUARIUM.—Filling and Stocking—Rockwork and Aquatic Plants—Aquatic Ferneries—Lists of Plants for Aquaria—Fishes, Molluscs, and Reptilia—Secrets of Success—Cheap Forms of Aquaria—Balance of Influences.

WARDIAN CASE AND WINTER GARDEN.—Philosophy of the Wardian Case—Modes of Constructing Cases—Ferns in Rooms—Flowers in Wardian Cases—Designs, Measurements, and Embellishments—Crystal Palaces for Homes—Fern Vases—Flasks and Pots—Application of Heat to Cases—List of Plants for Large and Small Cases.

THE WALTONIAN CASE—Indoor Hothouse—Conservatory, Window, and Greenhouse Plants—How to Strike Cuttings.

FLORAL ORNAMENTS—For the Table and the Window.—Teaching of Flowers—Vases for Cut Flowers—Modes of Preserving Cut Flowers—Bouquet Stands—Flower Stages for the Window—Crystal Palace Baskets—Culture of Suspended Plants—Lists of Plants for Suspension—Trellises inside Windows—A Gay Look-Out—Plant-Screens and Floral Blinds—Rustic Balconies—Plants on Wirework.

THE AVIARY.—Bird Gossip—Designs for Aviaries—Principles of their Construction—German Cages—German Aviaries—Precaution against Diseases—Grouping of Birds in Families—Feeding—Taming—Management.

THE BEE-HOUSE.—Pleasures and Advantages of Bee-keeping—Wonders of the Hive—Construction of Apiaries—Humane Management—Stocks, Swarms, Hiving, and Depriving—Honey Harvest—Bee keeping in Towns.

THE PLEASURE GARDEN.—Taste in Gardening—Modes of Laying Out—Scenic Effects—Terraces—Banks—Water and Rockwork—Contrasts of Colours and Landscape Uses of Flowers—Plans for Pleasure Gardens—Geometric Beds—Lawns—Roses and Evergreens—Bulbs—List of Plants—General Management of Border and Bedding Flowers.

GARDEN AQUARIUM AND WATER SCENERY.—Construction of Ponds and Fountains—Designs for Fountains—Planting and Stocking—Ornamental Waters—Lists of Plants for Water Scenes—Rockery and Wilderness—A Nook of Coolness and Verdure—Rules for securing Success.

FERNERY.—Situation and necessary Elements—Soil, Planting, and General Management—Shade and Moisture—Ferns for Open Air and Greenhouse Culture—Foreign Ferns—Ferns in Pots—Fern Gardens made Easy—Lists of Ferns for various Aspects and Effects.

EMBELLISHMENTS OF THE GARDEN.—Vases, and the Way to Plant them—Rustic Baskets and Garden Seats—Pavilions and Summer House—Bark, Thatch, Root, and Moss Houses—Portable Summer Houses—Flowers for Trellises—Baskets, and Tree Stumps—Miscellaneous Garden Ornaments—Last Words on Rustic Adornments and Out-door Pursuits.

Second Edition, much enlarged, and additionally Illustrated. Cr. 8vo, cloth gilt, 14*s.*

GROOMBRIDGE AND SONS,
5, PATERNOSTER ROW, LONDON.

MURRAY'S EDITIONS FOR THE PEOPLE.

MR. CROKER'S REVISED EDITION OF BOSWELL'S JOHNSON, with Additional Notes and Letters. Parts I. and II. 8vo, 1*s.* each, are NOW READY.

Mr. Croker's Preface.—"As my original Edition revived, and in some respects extended, the public interest in Boswell's delightful work, I can desire no more than that my present revision may tend to maintain it."

*** The COMPLETE WORK, in One Volume, will be 10*s.*

II.

LORD BYRON'S POETICAL WORKS, including his Dramas. Parts I. to III. 8vo, 1*s.* each, are NOW READY.

The Athenæum.—"Those who buy an Edition of Byron's Works published without the sanction of MR. MURRAY, buy an imperfect book."

*** The COMPLETE WORK, in One Volume, will be 9*s.*

JOHN MURRAY, Albemarle Street.

HISTORICAL CLASS BOOKS
FOR ADVANCED SCHOLARS.

*** These Volumes are bound uniformly in black cloth, with red edges, to distinguish them from other School Histories.

The following are Now Ready.

THE STUDENT'S HUME; A HISTORY OF ENGLAND, FROM THE INVASION OF JULIUS CÆSAR; Based for the most part on HUME'S HISTORY, incorporating the corrections of recent writers, and continued to the PRESENT TIME. Fourth Thousand. With Woodcuts. Post 8vo, 7*s.* 6*d.* Black cloth, red edges.

The Student's Hume.—"The want which this work is intended to supply has long been evident, and no more judicious effort could have been made for the purpose than to condense Hume's information without damaging his clearness or the matchless purity of his style."—*John Bull.*

The Student's Hume.—"The work of condensation has been exceedingly well performed, and the continuation is written in an easy and comprehensive style. As an educational book, this volume ought at once to take a high position."—*Bell's Messenger.*

The Student's Hume.—"*Smith's History of Greece—Liddell's History of Rome*—and *the Student's Gibbon*, of themselves form an excellent historical library. The present volume is not altogether HUME: some of the great historian's matter is entirely omitted; a part, especially the Anglo-Saxon period, has been rewritten; and striking errors in fact have been corrected."—*Gardeners' Chronicle.*

II.

THE STUDENT'S HISTORY OF GREECE. From the Earliest Times to the Roman Conquest, with the History of Literature and Art. By WM. SMITH, LL.D. 16th Thousand. With Woodcuts. Post 8vo, 7*s.* 6*d.* Black cloth, red edges.

Dr. Wm. Smith's Greece.—"We are too much concerned for the improvement of school-books to regret the publication of a new History of Greece by such a scholar as Dr. Wm. Smith. We have much satisfaction in bearing testimony to the excellence of the plan on which he has proceeded, and the careful, scholarlike manner in which he has carried it out. The great distinctive feature, however, is the chapters on Literature and Art. *This gives it a decided advantage over all previous works of the kind.*"—*Athenæum.*

III.

THE STUDENT'S HISTORY OF ROME: from the EARLIEST TIMES to the ESTABLISHMENT of the EMPIRE. With the HISTORY of LITERATURE and ART. By H. G. LIDDELL, D.D. 10th Thousand. With Woodcuts. Post 8vo, 7*s.* 6*d.* Black cloth, red edges.

Dr. Liddell's Rome.—"We think the public is indebted to Dr. Liddell for a pre-eminently useful book. To the youthful student, to the man who cannot read many volumes, we should commend it as the one history which will convey the latest views and most extensive information. The style is simple, clear, and explanatory. . . . Our opinion is that there is no other work at present existing which so ably supplies a 'History of Rome' suited to the wants of general readers of the present day."—*Blackwood.*

IV.

THE STUDENT'S GIBBON; A HISTORY OF THE DECLINE AND FALL OF THE ROMAN EMPIRE. ABRIDGED FROM GIBBON'S HISTORY. Incorporating the researches of recent historians. Sixth thousand. With Woodcuts. Post 8vo, 7*s.* 6*d.* Black cloth, red edges.

The Student's Gibbon.—"'The Student's Gibbon' is a judicious abridgement of the great historian. The labours of late writers have been incorporated in the text, which is illustrated by excellent plates of medals, coins, temples, aqueducts, &c. At the end are genealogies of the imperial families, a list of the Roman emperors, and a full and accurate index. The work cannot fail to be a useful book of reference."—*Literary Gazette.*

JOHN MURRAY, Albemarle Street.

"FRIGI DOMO."—Patronised by her Majesty the Queen, the Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, and — Collier, Esq., of Dartford.

PROTECTION FROM COLD WINDS AND MORNING FROSTS.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths. Two yards wide, 1*s.* 6*d.* per yard run; four, 3*s.* per yard. Also, an improved make for Shading Purposes. Three yards wide, 2*s.* 6*d.* per yard run.

ELISHA THOMAS ARCHER, whole and sole manufacturer, 7, Trinity Lane, Cannon Street, City, and of all Nurserymen and Seedsmen throughout the kingdom. "It is much cheaper than mats as a covering."

PATENT GUTTA PERCHA SOLES.—IMPORTANT TO GARDENERS.—The Gutta Percha Company have the pleasure to acknowledge the receipt of the following letter from G. GLENNY, Esq., the celebrated Florist:—

"420, Strand, London.

"Gentlemen,—I have worn Gutta Percha Soles and Heels these two years, and being so much in a garden as I necessarily am in all weathers, and with the ground in all states, I would on no account be without them. As a matter of economy I would recommend Gardeners to use them, for they may repair the worn part at all times by warming the material at the fire, and pressing it from the thick parts to the worn parts as easily as if it were so much dough. I think it the duty of all persons who must occasionally wet their feet to adopt a material that completely defies damp. Many a gardener would escape colds and rheumatism by the use of Gutta Percha Soles.

"Your obedient servant, G. GLENNY."

Every variety of Gutta Percha articles, such as Mill Bands, Tubing, Soles, Goloshes, Sheet, Pump Buckets, Fire Buckets, Bosses, Union Joints, Flasks, Bottles, Bowls, Chamber Vessels, Toilet Trays, Sponge Bags, Curtain Rings, Galvanic Batteries, Talbotype Trays, &c., manufactured by the Gutta Percha Company, and sold by their wholesale dealers in town or country.—The Gutta Percha Company, Patentees, 18, Wharf Road, City Road, London.

BY ROYAL  LETTERS PATENT.

SHANKS'S PATENT LAWN MOWING MACHINES,

AS NOW USED IN

THE ROYAL GARDENS AT KEW, WINDSOR, BUCKINGHAM PALACE, OSBORNE, AND BALMORAL,

AND IN A LARGE NUMBER OF THE PRINCIPAL GARDENS IN ENGLAND AND ABROAD.

NEW AND IMPORTANT IMPROVEMENTS FOR 1859, FOR MOWING, ROLLING, COLLECTING, AND DELIVERING.

THE Machine mows the closest and finest Turf without the slightest appearance of ribbing. It is self-acting, so that in turning the Machine will mow as well as when going in a straight line. It mows on the most uneven Lawn without injuring the Turf. It turns quick and easily—turning into the most intricate windings of the Flower Garden, amongst Trees or Flower Beds, with perfect ease, and without the smallest chance of injuring the shrubs or flowers. The method of adjusting the cut has been simplified and improved. The whole Machine is nicely balanced, and consequently steady in working.

One of the most important Patent Improvements effected this season is the introduction of a simple and efficient apparatus for emptying the Grass-box without the necessity of the person working it either leaving the handles or stopping the Machine. The great want in all Mowing Machines hitherto is thus completely obviated in Shanks's Improved Patent Machine of this season. This Machine will now perform at least a *third more work*, while *the labour in working it*, compared with ordinary Machines, *is three-fourths lessened*. A Lawn which formerly took a Machine *nine hours* to mow can now be done in *six hours*, with *three-fourths less labour* to the man working it. The Improved Patent Machine for 1859 is on these and other accounts therefore the most complete and satisfactory MOWING, ROLLING, COLLECTING, and DELIVERING MACHINE possible to be made.

PRICES OF THE HAND MOWING AND ROLLING MACHINE:—

No. 6.—22-inch Machine	£7 17s. 6d.	No 8.—16-inch Machine	£6 10s. 0d.
No. 7.—19-inch Machine...	7 5 0	No. 9.—13-inch Machine	5 15 0

These prices include Free Delivery to any of the principal Railway Stations or Shipping Ports in England. Plain directions for use are sent along with each Machine. A common labourer can easily manage and work it. Prices of other Machines to be drawn by a Horse or Pony posted free on application.

The Machines are warranted to give satisfaction, and if not approved they may be at once returned.

AGENTS FOR ENGLAND:—

MESSRS. J. B. BROWN & CO., 18, CANNON STREET, LONDON, E.C.

CAST IRON VASES FOR TERRACES, FLOWER GARDENS, &c.

THE pleasing relief which tasteful and well executed Vases properly disposed impart to Pleasure Grounds is universally acknowledged. Among the most beautiful forms may be mentioned the Medici and Warwick Vases. The most perfect copies of these and other Vases are now produced in the most durable and permanent form; and as specimens of Iron Casting are unequalled for the sharpness, delicacy, and perfect beauty of outline which they display, the figures standing out in bold and vigorous relief, and conveying the very spirit of the famed originals.

MEDICI VASE.



15½ inches diameter, 19 inches high, with Figures, £2 7s. 6d.

23 inches diameter, 30 inches high, with Figures, £4 4s. 0d.

THE TAZZA VASE.



15½ inches diameter, 9 inches high, £1 5s. 0d.

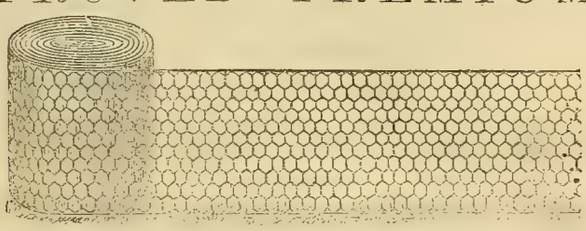
30 inches diameter, 18 inches high, £2 10s. 0d.

Drawings, with prices, of a variety of Vases, Pedestals and Fountains, forwarded free on application.

All these Vases and Fountains are warranted to give satisfaction, and if not approved will be exchanged or may be returned unconditionally.

MESSRS. J. B. BROWN & CO., 18, CANNON STREET, LONDON, E.C.

IMPROVED PREMIUM WIRE NETTING.



PRICES PER LINEAL YARD, 24 INCHES HIGH:—

Size of mesh.	Mostly used for	Light.		Medium.		Strong.		Extra strong.	
		Japanned.	Galvanized.	Japanned.	Galvanized.	Japanned.	Galvanized.	Japanned.	Galvanized.
2½ inch	Hares, Dogs, Poultry	3½d.	4½d.	4½d.	5½d.	5d.	6½d.	6d.	8d.
2 inch	Game Netting	4d.	5d.	4¾d.	6d.	5½d.	7d.	7½d.	9½d.
1⅝ inch	Small Rabbits, Hares, &c.	4½d.	5½d.	5½d.	6½d.	6d.	7½d.	8d.	10d.
1½ inch	Smallest Rabbits	6d.	7½d.	7½d.	9d.	9d.	11d.	11d.	13d.

PRICES PER FOOT SUPERFICIAL:—

Size of mesh.	Mostly used for	Light.		Medium.		Strong.		Extra strong.	
		Japanned.	Galvanized.	Japanned.	Galvanized.	Japanned.	Galvanized.	Japanned.	Galvanized.
1¼ inch	Pigeon Houses, Pheasantries, &c.	1½d.	1⅝d.	1⅝d.	2d.	2¼d.	2⅞d.	2¾d.	3½d.
1⅛ inch	Pigeon Houses, &c.	1⅝d.	2d.	2d.	2½d.	2½d.	3d.	3d.	3½d.
1 inch	Pheasantries and Small Birds	2d.	2½d.	2½d.	2⅝d.	2⅝d.	3¼d.	3½d.	4d.
⅞ inch	Aviaries, Window Guards, &c.	2¼d.	2½d.	2⅝d.	3¼d.	3⅜d.	4d.	4d.	5d.

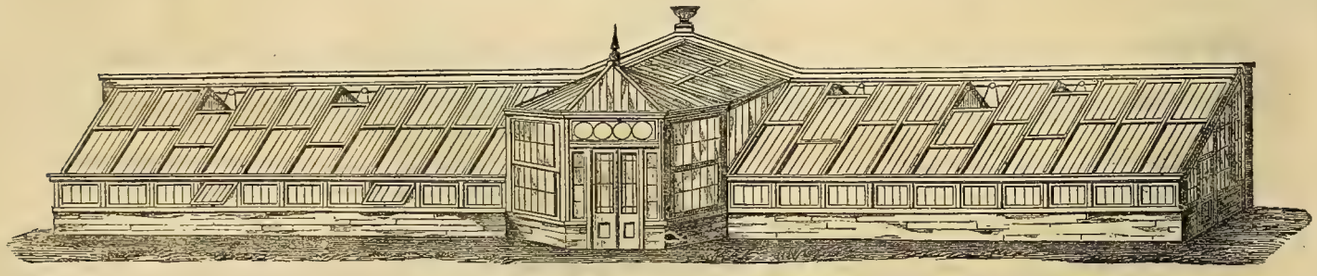
Quantities of 100 yards, or upwards, delivered free at any Railway Station or Shipping Port in England. 200 yards or upwards delivered free in Glasgow, Edinburgh, Dundee, Aberdeen, and other chief towns in Scotland; also at Belfast, Dublin, Cork, Limerick, and other chief towns in Ireland. Tying Wire or Staples for fixing the Wire Netting:—Plain Tying Wire, 6d. per lb.; Galvanized, 8d. per lb.; Plain Staples, 1s. per 100; Galvanized, 1s. 3d. per 100. Any width of Netting under 8 feet made at proportionate prices.

☞ *Every description of Netting warranted to give satisfaction, and if not approved will be exchanged, or may be returned unconditionally.*

MESSRS. J. B. BROWN & CO., 18, CANNON STREET, LONDON, E.C.

HORTICULTURAL BUILDING & HEATING BY HOT WATER.

BY APPOINTMENT.



JOHN WEEKS & COMPANY,

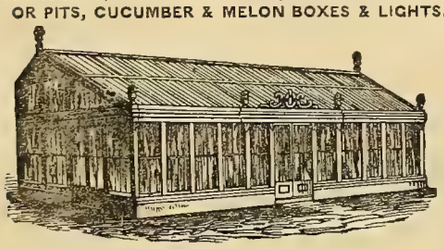
KING'S ROAD, CHELSEA, LONDON.

HORTICULTURAL BUILDERS AND HOT-WATER APPARATUS MANUFACTURERS, ENGINEERS, AND IRON FOUNDERS.

PLANS, ESTIMATES, & ILLUSTRATED CATALOGUES FREE ON APPLICATION.

VOKINS AND HURD, Seymour House, Jubilee Place, King's Road, Chelsea, Builders of Hothouses, Conservatories, Greenhouses, Pits, and every description of erections in Glass work, either in Wood or Iron; also Heating the same by hot water on the most approved plans and at the lowest prices consistent with good work. Estimates forwarded.

HOTHOUSES, CONSERVATORIES, FRAMES & LIGHTS OR PITS, CUCUMBER & MELON BOXES & LIGHTS.

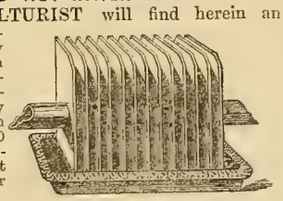


JAMES WATTS, Hothouse Builder, 8, Claremont Place, Old Kent Road, London.

Green and Hothouses, 9, 10, 11, 12, 13, and 14 feet wide, any length, from 16 to 100 feet. Frames and Lights for Pits, 6ft. 6 in., 7 ft., 7 ft. 6 in., 8 ft., and 8 ft. 6 in. wide, any length, from 12 to 100 feet. Upwards of 200 Cucumber and Melon Boxes and Lights, from 4 ft. by 3 to 10 ft. 6 in. by 5 ft. 6 in., kept ready, glazed with stout sheet glass, painted four times, complete, ready for immediate use, all made of best material, packed and sent to all parts of the kingdom.—References may be had to the Nobility, Gentry, and the Trade in most of the counties in England. Horticultural Buildings of every description heated on the most approved and economical principles.

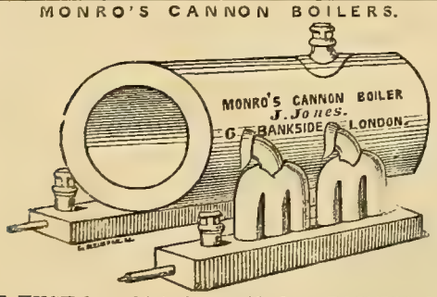
IMPROVED HOT-WATER PIPE.

THE HORTICULTURIST will find herein an inexpensive instrument of new and very important powers. An atmosphere may be produced at will either perfectly dry, partially damp, or saturated with moisture. A space of 10 inches by 12 inches contains the power of 25 feet of 4-inch pipe and other numerous advantages.



The London Warming and Ventilating Company (Limited), 26, Great George Street, Westminster, S.W.

MONRO'S CANNON BOILERS.



MUCH has of late been said about BOILERS for Heating by Hot Water, but these Boilers have now proved themselves to be the best at present invented. They are adapted for heating every description of building, and are made of various sizes. The Price of the

24-inch Cast Iron is	£5 10s. 0d.	each
24-inch Wrought ditto	6 10 0	,,
36-inch Cast ditto	8 0 0	,,
36-inch Wrought ditto	8 10 0	,,

References to Gentlemen and Nurserymen where these Boilers are now at work. The Cannon Boilers are now kept in stock, and are to be had only of J. Jones, 6, Bankside. Also, every description of Saddle and Cylinder Boilers. Hot Water Pipes and Connections at prices lower than those of any other house in London. Estimates for Hot-water Apparatus erected complete in any part of the country, and an Illustrated Catalogue on application to J. Jones, 6, Bankside, Southwark, London.

Garden Engines, Syringes, &c., upon the most approved principle.



GARDEN ENGINES, MACHINES, AND GREENHOUSE SYRINGES,

WITH ALL THE LATEST IMPROVEMENTS, MANUFACTURED BY THE PATENTEE,

RICHARD READ, Instrument Maker (by Special Appointment) to Her Majesty,

35, REGENT CIRCUS, PICCADILLY, LONDON.

Caution.—Syringes of the commonest description being extensively circulated throughout the Kingdom, and sold as Read's," the Public are respectfully informed that Read's Instruments have the Royal Arms, and Address,

"35, Regent Circus, London." *Descriptions sent post free.*

CARSON'S

ORIGINAL ANTI-CORROSION PAINT,

PATRONISED BY

The British Government,	Hon. East India Company,	Railway and Canal Companies,
The French Government,	Most of the Nobility and Gentry,	The Principal Collieries,
The Russian Government,	New River Company,	Mill Owners,
H.R.H. the Prince Consort,	The Dock Companies,	Iron Masters, &c. &c.

The ANTI-CORROSION PAINT is now used extensively for all kinds of OUT-DOOR WORK,

Such as Iron, Wood, Stone, Brick, Compo, Cement, &c., and has been proved, after a practical test of 70 years, to surpass any other Paint. It is much lower in Price, and lasts twice as long as the best White Lead, and can be easily applied by any Labourer, being sent in various Colours, requiring simply to be mixed (no grinding is needed). The Anti-Corrosion is a powder, and will keep any length of time.

COLOURS:—

White Stone	34s. per cwt.	Light and Dark Lead	28s. per cwt.
Light do.	32s. ,,	Light and Dark Chocolate	
Drab or Portland		Bright Red	
Bath do.		Dark do. (or Brick Colour)	
Light and Dark Yellow do.		Black	
Copper	30s. ,,	Invisible Green	42s. ,,
Light and Dark Oak		Bright and Deep Green	50s. ,,
		Blue (for Carts and Waggons)	50s. ,,

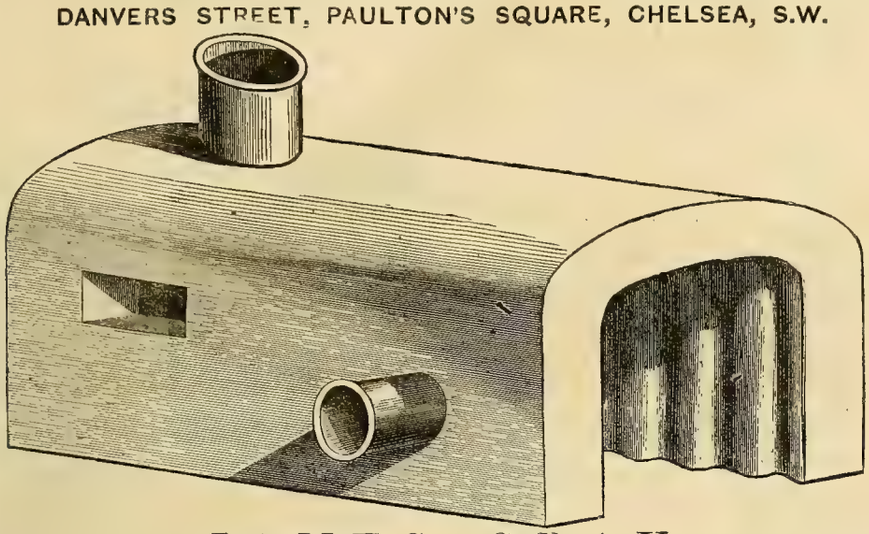
OIL, TURPENTINE, AND BRUSHES,

A Copy of Testimonials (700), will be sent upon application to

WALTER CARSON & SONS, (Successors to the Inventors), 9, Great Winchester Street near the Royal Exchange), London, E.C.

NO AGENTS THROUGHOUT THE UNITED KINGDOM.

HORTICULTURAL WORKS,
DANVERS STREET, PAULTON'S SQUARE, CHELSEA, S.W.



JAMES GRAY

RESPECTFULLY begs to inform the nobility, gentry, Nurserymen, Gardeners, and others, that he continues to carry on the business in all its branches at the above old established premises.

CONSERVATORIES, GREENHOUSES, FORCING HOUSES, VINERIES, PITS, &c.,
of every description, erected on the most approved principles.

HEATING BY HOT WATER.

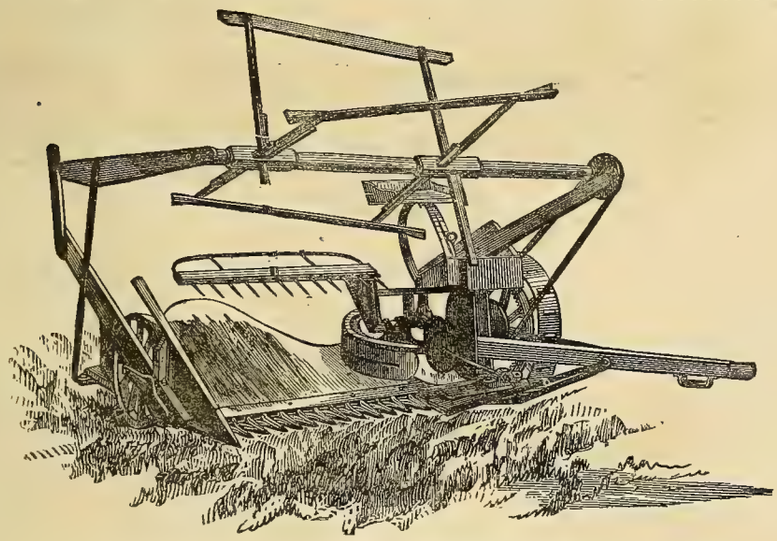
J. G. having specially devoted his attention for many years to this part of the business, is now fully prepared to Heat every description of public and private buildings, viz :—Churches, Mansions, Warehouses, &c., as well as all structures connected with Horticulture, in the most efficient manner. His system is the most simple that can be adopted—which he has found from long experience to be the best—can be constructed at less cost, and is more easily managed than those of a complicated nature which have attracted the notice of the public.

J. G. begs to call attention to his CAST-IRON CORRUGATED ARCH BOILER, which from its simplicity of construction has not the liability to fracture to which those of a more complex design are always subject. They have been extensively used for many years, and have given the greatest satisfaction.

All business is conducted at this establishment on the principle of lowest remunerative profits consistent with best materials and workmanship.

Plans and Estimates furnished on the shortest notice.

B. SAMUELSON,
AGRICULTURAL ENGINEER AND MACHINIST,



WAREHOUSE, 76, CANNON STREET WEST, LONDON,
WORKS AT BANBURY,

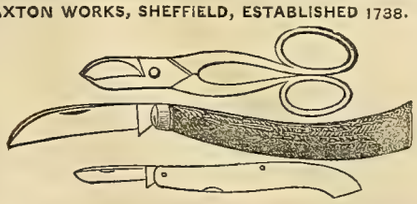
INFORMS MERCHANTS, the TRADE, and AGRICULTURISTS, that he has opened the above Warehouses as a depôt for his own manufactures and those of Messrs. Barrett, Clayton, Howard, Hornsby, Nicholson, Richmond, Tuxford, Smith, and all other first-class makers, whose implements he is prepared to offer on makers' terms.

THE BRITANNIA SELF-RAKING REAPING MACHINE,

With side delivery in sheaf, no rakers or gatherers required; and all the most improved Spring Implements for the season, may be inspected at the above depôt.

B. SAMUELSON, 76, Cannon Street West, London; and Britannia Works, Banbury.

PAXTON WORKS, SHEFFIELD, ESTABLISHED 1738.

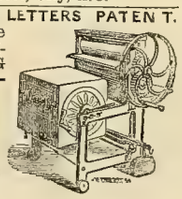


SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.—Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

FLOWER POTS, of superior Red Clay, manufactured by the Arley Pottery Company (Limited), equal in appearance to Terra Cotta at the price of the common pots usually sold, say 2s. per cast, delivered in London.—Apply to TAYLOR & PEARS, 8, George Yard, Lombard Street, City, E.C.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

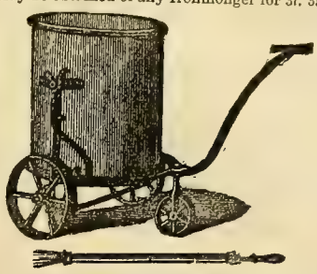
NO ONE KNOWING the value of your Patent WASHING, WRINGING, and MANGLING MACHINE, would be without one."—*Vide Mrs. Hall.*



THOMAS BRADFORD, Patentee, Manchester.

Descriptive Pamphlet, with Prices free by post.

WARNER'S SWING WATER-BARROW (To Hold Forty Gallons) Mounted on Wheels 20 inches high. Will save much of the Gardener's time and labour. May be obtained of any Ironmonger for 3*l.* 3*s.*



BRASS SYRINGES, 9*s.* to 18*s.*

Also a great variety of effective Machines for Hydraulic purposes, and to supply Gardens, Hothouses, Cottages, Farms, Mansions, or Boards of Health, with every requisite connected with the conveyance and distribution of Liquids.

Fountains suitable for Conservatories, Lawns, &c.

JOHN WARNER & SONS, 8, Crescent, Jewin Street, London.

GARDEN ENGINES AND SYRINGES.

J. TYLOR AND SONS, Warwick Lane, Newgate Street, London, E.C., beg to call attention to their very superior manufacture of GARDEN ENGINES and SYRINGES

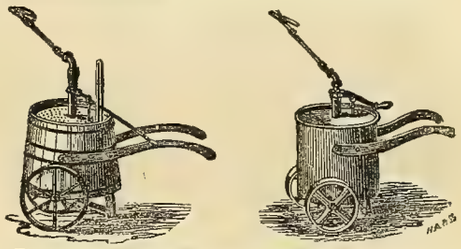


Fig. 598. J. TYLOR & SONS' BARROW GARDEN ENGINE in best well painted Oak tub, fitted with J. TYLOR & SONS' Improved Brass Pump, Universal Joint, and Registered Spreader, which answers the purpose of the separate rose, fan, and jet.

CONTENTS OF TUB :—

10 gallons	15 gallons	28 gallons
£4 10 0	£5 10 0	£6 18 0

Fig. 599. do. TINNED IRON TUB.

CONTENTS OF TUB :—

8 gallons	12 gallons	16 gallons	24 gallons	30 gallons
£2 15	£3 5	£4	£5	£5 18



Fig. 618. No. 1. REGISTERED SYRINGE, with India-rubber suction tube, one rose and jet .. .. £1 5 each.
No. 2. Ditto ditto 1 1 ,,
Telescope Branch Pipe for ditto .. .. 0 10 ,,

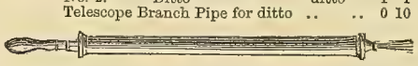


Fig. 619. GARDEN SYRINGE, with one rose and jet, 12*s.* 6*d.* each
,, 620. Ditto ditto 11*s.* 6*d.* ,,
,, 621. Ditto ditto 10*s.* 6*d.* ,,
,, 622. LADIES' GARDEN SYRINGE, without rose & jet, 8*s.*

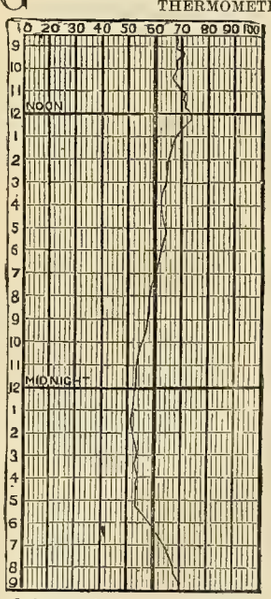


Fig. 623. READ'S SYRINGE, with two roses and one jet, 18*s.* 6*d.*
,, 624. READ'S SYRINGE, with one rose and jet .. 16 6
,, 625. Improved ditto ditto
,, 626. Ditto ditto ditto

Manufacturers of Pumps and Well Engines (for shallow or deep Wells), Plumbers' Brass Foundry of every description, High Pressure Cocks and Closets, Copper and Tinned-iron Baths. Garden and Fire Engines, Lamps of every description, Copper Goods, &c. Estimates given for Hot-water and Bath Apparatus.

TO HORTICULTURISTS.

GAUNTLETT'S PATENT CHRONOMETRICAL THERMOMETER.



This instrument, which combines an eight-day clock of the best English make showing time, with a newly-patented Thermometer, wherein glass and quicksilver are dispensed with, writes down the temperature of the atmosphere on a slip of paper, and when placed in a Hothouse, Forcing House, or Conservatory, &c., supplies a valuable record of the temperature, with all its variations, showing the time when any change took place, and how long such change continued.

The above slip (reduced in size) exhibits the temperature of the Royal Agricultural Society's show yard at Chester, July 22, 1858, written off by one of these instruments, to which was awarded the Society's SILVER MEDAL.

This is the only instrument that registers temperature continuously and writes it down, and no horticulturist should be without it.

Orders received by W. H. GAUNTLETT, Middlesbro' on-Tees.

GREAT REDUCTION IN THE PRICE OF

FOWLER'S PATENT STEAM PLOUGH.

FROM the great Improvements recently made, JOHN FOWLER is prepared to execute Orders at the following prices:—

Windlass to 8-horse Engine, with Patent Self-moving Anchor, Headland Ropes, Rope Porters, and all necessary Tools	£160 0 0
Cultivator, fitted with Three, Five, or Seven Tines	25 0 0
700 yards Iron Wire Rope, 1⅜ inch circumference, which is a sufficient length, on this plan of working, for a 350 yards furrow	22 10 0
Steel Rope, £7 10s. extra.	£207 10 0

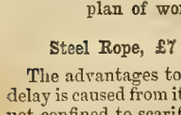
The advantages to be derived in the working of this Tackle over others are, no belt is used, consequently no delay is caused from its slipping in showery weather; it can be efficiently worked by two men and two boys; and it is not confined to scarifying only, but a two-furrow balance plough can be worked by it. From the direct action of the draught, a small engine will effect a larger quantity of work than the same engine on the "roundabout system;" only half the rope is required for the same length of furrow, and a whole field can be done without shifting. The windlass can be attached to any agricultural engine, and the weight added would only be 12 cwt. The Tackle can be set at work within an hour of entering the field intended to be cultivated. The Drums on which the Rope is worked are 4 feet in diameter, and from its being wound in grooves all CRUSHING is avoided, and by these means a great saving in wire rope is effected.

LARGER POWER ENGINES AT COMPARATIVE PRICES.

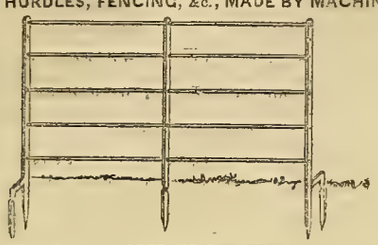
Illustrated Catalogues with new Prices will be ready shortly. For further particulars apply to

JOHN FOWLER, Jun., 28, Cornhill, London, E. C.

LOOMES AND CO., Whittlesea, MANUFACTURERS OF BRICKS, TILES, POTTERY, &c., beg to call attention to their new CABLE PATTERN GARDEN BORDER EDGING, which not only surpasses others in appearance and durability, but is free from the dangerous points and sharp edges of most.—Price, delivered on any Railway at Peterborough, 5*d.* per yard.



IRON HURDLES, FENCING, &c., MADE BY MACHINERY.

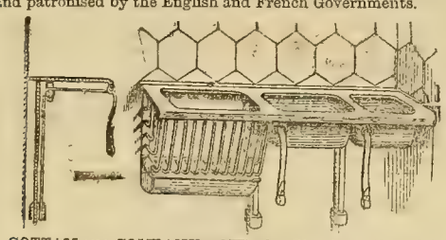


COTTAM AND COMPANY, of Winsley Street, have invented machinery for making Hurdles, &c.; the bars, instead of being pointed by hand in the old fashioned style, are nipped down by the machine, leaving a shoulder so as to more effectually tighten the standards when rivetted. They are made of superior iron only, and will compete in price with those made by hand from cinder or common iron which so frequently break. Iron Fencing, Gates, and Iron Work of all kinds, both Plain and Ornamental, Conservatories, Hot Water Apparatus and Garden Implements.

Illustrated CATALOGUES free on application to COTTAM & COMPANY, Ironfounders, 2, Winsley Street, Oxford Street, W.

N.B COTTAM & Co. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

COTTAM'S PATENT INVENTIONS FOR STABLE REQUISITES, awarded a Prize at the Paris Exhibition, and patronised by the English and French Governments.



COTTAM AND COMPANY, of Winsley Street, are the original inventors of the PATENT ENAMELLED MANGER, Water Trough, and Wrought Iron Rack, united to an iron top-plate, and forming one complete and useful fixture, having COTTAM'S patent noiseless halter guide and collar rein attached, which is taken to the back of the manger, and works with ease and freedom up or down the guide-bar.

COTTAM'S NEW PATENT SEED-BOX, an important addition to the above fittings, being simple in construction, light, and durable, promotes cleanliness, and is economical in its results.



COTTAM'S PATENT SADDLE and HARNESS BRACKET combined, can be used with great advantage where space is an object, as it can be turned up out of the way when not in use.

COTTAM'S IMPROVED SURFACE GUTTER, with perforated moveable cover, the use of which prevents accidents, and can be easily cleaned out.

COTTAM'S CAST-IRON SANITARY TRAP, from its improved construction, gives a full water passage, and does not allow any smell to ascend from the drain.

PATENT LOOSE-BOX FITTINGS, and every article for the harness-room and stable, kept in stock, plain, galvanised, and enamelled. Iron gates, fencing, hurdles, &c.

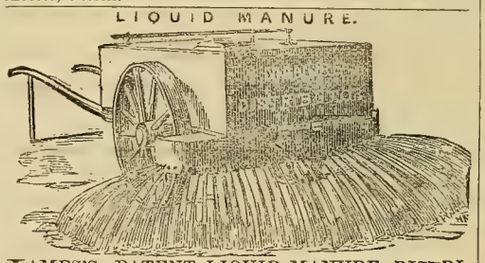
The New Illustrated Catalogue and Estimates, gratis, upon application to COTTAM and COMPANY, 2, Winsley Street, Oxford Street.

N.B. COTTAM & Co. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

SPEED AND ECONOMY for Farmers, Gentlemen, and Market Gardeners, in the use of HOARE'S REGISTERED HAND SEED PLANTING MACHINE, which from its capabilities, combined with strength, lightness, and simplicity, places it beyond a parallel. Its operative powers in planting the seeds of Mangel, Carrot, Turnip, Parsnip, and all small seeds in patches of equal depth and different distances, from 6, 7, 12, 14, 18, 21, 24, to 28 inches apart, raking in and rolling complete, render it an invaluable invention. It will act as a drill when required. Price 5*l.* 15*s.*

London Agent, Mr. B. SAMUELSON, 76, Cannon Street, West. Sold also by the inventor, J. HOARE, Old Fishbourne, Chichester, Sussex.

LIQUID MANURE.



JAMES'S PATENT LIQUID MANURE DISTRIBUTOR OR WATER-CART, warranted not to choke up or otherwise get out of order. It is thoroughly adapted for Drill Crops, or Pasture Land, or for Watering Streets; has been awarded SIX FIRST PRIZES. Full Particulars and Testimonials may be obtained of the Patentee, ISAAC JAMES, Tivoli Waggon Works, Cheltenham.—Improved LIQUID MANURE PUMPS supplied.

WARNER'S IMPROVED LIQUID MANURE OR GENERAL PORTABLE PUMP.



These Pumps are fitted with J. W. & SON'S Patent Buckets and Suckers, and cannot clog in action. The barrel is of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure. The legs will fold together, and the whole may be carried on the shoulder to any pond or tank required.

Price of 4½ in. Pump, with legs, 3*l.* 3*s.* If with planished copper barrel and galvanised iron handle, &c., 14*s.* extra. The barrel is 27½ in. long, and the legs are 5 ft. high.

These Pumps are also made without the legs, with strong wrought-iron straps for screwing on to any ordinary water butt or cart, and fitted with 1½ inch brass union for attaching flexible suction. Price 50*s.*

1¾ inch Gutta Percha Suction Pipe, 1*s.* 11*d.* per foot.

Rubber and Canvas Suction and Delivery Hose, from ½ inch to 4 inches diameter, in lengths of 60 feet to order. Branch Pipes with Cocks, Union Screws, &c., at reduced prices.

May be obtained of any Ironmonger or Plumber in town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin St., London.

WARNER'S PATENT VIBRATING STANDARD PUMPS.

PATENT CAST-IRON PUMPS, fitted with J. W. & SON'S Patent Buckets and Suckers, which cannot clog in action, for Farms, Cottages, and Wells, not exceeding 28 feet.

Diameter of Barrel.	Height.		£ s. d.
2½ in.	short 1 ft. 7 in.	Fitted for lead, gutta percha, or cast iron flanged pipe, as required.	1 10 0
2½ ,,	long 3 ,, 3 ,,		1 14 0
3 ,,	ditto 3 ,, 6 ,,		2 8 0
3½ ,,	ditto 3 ,, 6 ,,		2 12 0
4 ,,	ditto 3 ,, 6 ,,		3 3 0
2½ ,,	short, with 15 feet of Lead Pipe attached, ready for fixing		2 14 0
2½ in.	long ditto ditto		2 18 0



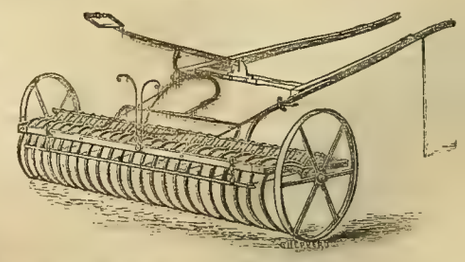
The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.

May be obtained of any Ironmonger or Plumber in Town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

HOWARDS' PRIZE IMPLEMENTS, 1859.

JAMES AND FREDK. HOWARD, Britannia Iron Works, Bedford, beg to direct attention to their PATENT STEEL-TOOTH HORSE RAKE.



For which they received the Three First Prizes last offered by the Royal Agricultural Society of England.

J. & F. HOWARD have discontinued troubling the Public with a long List of Prizes awarded to their Implements, but they would just state that for PLOUGHS, HARROWS, and HORSE RAKES, they have for several years gained every Prize for which they have competed.

PLOUGHS.

P PLOUGH, with two wheels, for light work	£4 7 6
PP PLOUGH, ,, for general purposes	4 12 6
SKIM COULTER	0 5 6

STEEL BREASTS, 7*s.* and 7*s.* 6*d.* extra.

HARROWS.

A Set of Three 4-Beam HARROWS, with Whippletree, recommended as general Seed Harrows, 9½ feet wide, marked No. 12	3 14 0
A Set of Three 4-Beam HARROWS, with Whippletree, adapted for 3 Horses, 10 ft. wide, marked No. 11	4 4 0

HORSE RAKES.

Price of small size RAKE, marked A, with 24 iron teeth, extreme width 7½ feet	7 10 0
Ditto, with Steel Teeth	8 0 0
Price of large size, marked B, with 28 iron teeth, extreme width 8½ feet	8 0 0
Price of large size, marked B, with steel teeth	8 10 0
Price of extra large size, marked C, with 24 steel teeth, extreme width, 8½ feet	10 10 0
Price of a Set of 15 Prongs, to be attached to the above when used as Weed Extirpators	1 10 0

Free Delivery to Birmingham, Bristol, Derby, Gloucester, Lincoln, Liverpool, London, Manchester, Norwich, Nottingham, Retford, Wisbeach, and Worcester; or to Dublin, Edinburgh, Glasgow, and other parts at fixed rates.

HOWARDS' NEW CATALOGUE, containing prices and description of their Patent Ploughs, Harrows, Horse Rakes, and other Implements, including Smith's Steam Cultivators, for which they received at Chester the Gold Medal of the Royal Agricultural Society of England, sent free on application to J. & F. HOWARD, Britannia Iron Works, Bedford.

FERRABEE'S NEW PATENT MOWING MACHINES

MANUFACTURED BY

JAMES FERRABEE AND CO., PHŒNIX IRON WORKS, Stroud.—These improved Machines admit of the use of duplicate sets of cutting parts, can be accurately sharpened by an ordinary workman, are adapted to level and uneven ground and to verges, and their management is much simplified

In the following List the Letters A, B, &c., are used to facilitate reference, and the distinguishing letter of the Machine required should be given in sending an order.

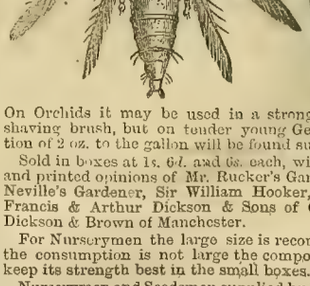
The prices include carriage to the principal railway station in England, terms net cash.

A, cutting 12 inches wide,	for a boy		£4 10 0
B, ,, 16 ,,	for one man		6 0 0
C, ,, 19 ,,	for a man and a boy		6 10 0
D, ,, 22 ,,	,, ,,		7 0 0
E, ,, 26 ,,	for two men		8 10 0
F, ,, 22 ,,	for a donkey or a pony		8 0 0
G, ,, 26 ,,	for a pony		9 0 0
Sharpening Apparatus for any of the above, 5*s.* extra.			
H, cutting 24 inches wide,	for a horse		14 0 0
I, ,, 28 ,,	,,		16 0 0
K, ,, 36 ,,	,,		18 0 0
Sharpening Apparatus, 10*s.* extra each.			

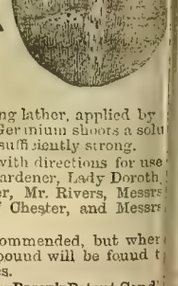
The Horse Machines H, I, K, have cylinders of large diameter and in their entire construction possess the strength and capacity necessary for horse-power, and the heaviest work or a pleasure ground.

GISHURST COMPOUND, PATENTED.—For preventing and destroying Red Spider, Scale, Mealy Bug, Thrip, and Green and Brown Fly.—See *Gardeners' Chronicle*, Nov. 6, 1858.—To be dissolved ½ or ¼ lb., or less, in a gallon of soft water, and applied by means of a syringe or a soft brush.

THRIP (magnified).



MEALY BUG (magnified).



On Orchids it may be used in a strong lather, applied by shaving brush, but on tender young Geranium shoots a solution of 2 oz. to the gallon will be found sufficiently strong.

Sold in boxes at 1*s.* 6*d.* and 6*s.* each, with directions for use and printed opinions of Mr. Rucker's Gardener, Lady Dorothy Neville's Gardener, Sir William Hooker, Mr. Rivers, Messrs. Francis & Arthur Dickson & Sons of Chester, and Messrs. Dickson & Brown of Manchester.

For Nurserymen the large size is recommended, but where the consumption is not large the compound will be found to keep its strength best in the small boxes.

Nurserymen and Seedsmen supplied by PRICE'S Patent Candle Company Limited), Belmont, Vauxhall, London, S.

GREENHOUSES, ORCHARD HOUSES, AND PITS

Of every Description, made by Steam Machinery, and Heated by Hot Water on an Improved Plan at

J. LEWIS'S Horticultural Works, Stamford Hill, Middlesex, established 20 years. These Buildings are warranted of the best materials, and at prices which defy competition. The ventilation is most efficient, and the greatest improvement of the present day. Prices of any size on application. References in all parts of the United Kingdom

WILLIAM HOOD, Economic Hot-water Engineer, furnishes estimates for Apparatus fixed complete, or for Materials only.—68, Upper Thames Street, London, E. C.

HANDS'S PATENT is the only system to circulate Heat, and for WARMING, FUMIGATING, and VENTILATING Hothouses, Greenhouses, Winter Orchards, &c.; to keep vegetation healthy in a humid atmosphere, and can be applied to any kind or shape of Forcing-houses and Conservatories now existing at trifling cost.—For particulars apply at the Office, 10, Charlotte Street, Fitzroy Square, London; or to Mr. Johnson Hands, Epsom.

C. STEPHENSON, late STEPHENSON and SONS, 61, Gracechurch Street, London, Manufacturer of Iron Hurdles, Fencing, &c., Improved Iron and Copper Conical Boilers and Apparatus for Warming Buildings of every description by Hot Water.

Prices and Estimates furnished upon application.

FOR Effectually Protecting the Bloom of Wall Trees from Spring Frosts use Shaw's No. 3 TIFFANY, DOUBLE STRENGTH. In pieces 18 yards long by 39 inches wide, 7s. 6d. each.—John Shaw & Co., Princess Street, Manchester.

BRITTAIN'S GARDEN NET completely protects Fruit Blossoms from injury by frost, and provides for the circulation of air and admission of light, so essential to healthy growth; 55 inches wide, 5d., 6d., and 8d. a yard; good SHADING TIFFANY, yard wide, 3 l. do.—Manchester, April 2.

TANNED GARDEN NETTING, for preserving Fruit Trees from frost, blight, birds, &c., and as a fence for fowls, &c. One yard wide 1½d., 2 yards 3d., 3 yards 4½d., and 4 yards 6d., per yard, in any quantity, may be had at C. Wright's, 376, Strand, W.C.—A liberal allowance to Nurserymen.

TANNED NETTING, at Reduced Prices.—200 square yards, 12s.; 500 yards, 25s.; 1000 yards, 47s. SCRIM CANVASS for Wall Fruit, 50 yards, 16s.; 100 yards, 30s. Be particular to address in full, Frederick Edgington, Thomas Street, Old Kent Road, London, S.E.

BOOT'S PATENT ANTI-CORROSIVE ENGRAVED LABEL, suitable for every description of plant. See Circular, free by post.

John Shaw, Princess Street, Manchester, Agent.

HENRY J. MORTON and CO., 2, Basinghall Buildings, Leeds.

GALVANISED IRON WATER CISTERNS

for Cottage Houses, &c., to contain 50 gallons, 25s.; 80 gallons, 30s. each; and 140 gallons, 36s., and fitted with tap, keeping the water perfectly sweet and clean; will not rust or corrode. Cisterns of all sizes.

GALVANISED IRON PUMPS

for Liquid Manure or Domestic Use, 3 inches diameter, 30s. and 32s. 6d. each; Tail Pipe for same at from 10d. per foot.

GALVANISED IRON SWING WATER BARROWS

for Garden or Farm use, containing about 20 gallons, entirely formed of iron, 32s. 6d. each.

SHAW'S TIFFANY.—The best and cheapest material for Shading Conservatories, Protecting Fruit from Birds and Wasps, &c. Sold in pieces 20 yards long by 38 inches wide. No. 1, best quality, 5s. per piece; second quality, 4s. per piece. Extra strong and thick (see Circular sent free by post with samples).

Address John Shaw & Co., Manufacturers and Dealers, Princess Street, Manchester.

SHADING.

BROWN'S FLORAL SHADING still maintains its superiority for cheapness and efficiency over all other materials used for a similar purpose, viz., shading plants under glass from the scorching rays of the sun, protecting Wall Fruit Trees when in bloom from frost, and preserving the fruit from the attacks of birds, flies, and wasps. Sold in pieces 20 yards long, 38 inches wide:—

No. 1 per piece .. 4s. 0d. | No. 2 per piece .. 4s. 3d.
No. 3, extra stout, 18 yards long, by 39 ins. wide, 7s. per piece.

To be obtained of all the principal Nurserymen and Seedsmen in town and country. Samples sent free on application to the Manufacturer, Charles Brown, Greenheys, Manchester

LAWNS—IN USE IN THE ROYAL GARDENS.

SAMUELSON'S PATENT BOYD LAWN MOWING and ROLLING MACHINE, the only one that will cut wet as well as dry Grass, is guaranteed efficient in use, easily handled, and readily kept in working order. Doing the work of five or six men. Prices, including case and carriage to any railway station in England, from 4l. 17s. 6d. and upwards. Copies of testimonials post free on application to Mr. Samuelson's London Warehouse, 76, Cannon Street West, City; Messrs. Deane's, London Bridge; or the Works, Banbury, Oxon.

PARKES' STEEL DIGGING FORKS.

BURGESS and KEY, 95, Newgate Street, London, being the Wholesale and Retail Agents for these celebrated TOOLS have always a large Stock on hand from which their Customers may select what they may require.

ANTHONY'S PATENT AMERICAN CHURN.—The FIRST PRIZE was again awarded to this Churn in Competition with several others at the Chester Meeting of the Royal Agricultural Society; it has obtained the First Prize given by the Society at every Meeting since 1850.

Messrs. Burgess & Key, 95, Newgate Street, strongly recommend it as the most perfect Churn now in use. Full particulars sent on application.

VASES, PEDESTALS, SUNDIALS, FOUNTAINS FLOWER BOXES, JARDINETS, FERN CASES, BALUSTRADES, EDGINGS AND CURBS FOR FLOWER BORDERS, SEATS, &c, in Imperishable Siliceous Stone, at reduced prices, for the adornment of the Villa Garden, the Mansion Grounds, or the private or public Park

For Priced Illustrations apply to Frederick Ransome, at the Show Rooms, Cannon Row, Westminster, S.W., or Patent Stone Works, Ipswich.

RICK CLOTHS, with POLES, PULLEYS, and LINES complete, both New and Second-hand.

NETTING, BUNTING, SCRIMS, and TIFFANY, for the protection of Fruit Trees and tender Plants, Shades for Greenhouses, &c.

Early application should be made for Second-hand Rick Cloths.

A great variety of TENTS may be seen erected on the Premises. A quantity of Second-hand MARQUEES and TENTS from the Crimea.

Address, Benjamin Edgington, 2, Duke Street, London Bridge, S.E. FIRE ESCAPES, 25s. each, may be seen at the West End Establishment, 32, Charing Cross.

An ILLUSTRATED CATALOGUE sent free by post.

PROPAGATING GLASSES.—

	s.	d.		s.	d.
2 ins. diameter	0	3½ each	12 ins. diameter	1	9 each
3 ,, ,,	0	4½ ,,	13 ,, ,,	2	0 ,,
4 ,, ,,	0	5½ ,,	14 ,, ,,	2	6 ,,
5 ,, ,,	0	6½ ,,	15 ,, ,,	3	0 ,,
6 ,, ,,	0	8 ,,	16 ,, ,,	3	6 ,,
7 ,, ,,	0	10 ,,	17 ,, ,,	4	0 ,,
8 ,, ,,	1	0 ,,	18 ,, ,,	5	0 ,,
9 ,, ,,	1	2 ,,	19 ,, ,,	6	0 ,,
10 ,, ,,	1	4 ,,	20 ,, ,,	7	0 ,,
11 ,, ,,	1	6 ,,			

CUCUMBER GLASSES.

24 inches long	..	2s 0d.	16 inches long	..	1s. 4d.
22 ,,	..	1 10	14 ,,	..	1 2
20 ,,	..	1 8	12 ,,	..	1 0
18 ,,	..	1 6	Made to any length.		

HAND GLASSES.

12 inches	6s. 0d. each		18 inches	9s. 0d. each	
14 ,, ...	7 0	,,	20 ,, ...	10 0	,,
16 ,, ...	8 0	,,	24 ,, ...	12 0	,,

Painted and glazed with 16 oz. Sheet Glass.

If open at top, 1s. extra.

WASP TRAPS, 3s. 6d. per dozen.

Agents for

HARTLEY'S PATENT ROUGH PLATE GLASS.

PAINTS.

Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, &c.

JAMES PHILLIPS and CO.,

130, Bishopsgate St. Without, London, E.C.

HORTICULTURAL GLASS—JUNE TARIFF.

THOMAS MILLINGTON'S reduced Tariff of GLASS, &c.

6 by 4, 7 by 5, 8 by 6, 9 by 7 } 16 oz. to the foot, 11s. 6d.
6½ by 4½, 7½ by 5½, 8½ by 6½, 9½ by 7½ } per 100 feet.

In 100 boxes,—4ths quality, 12s. 6d.; 3ds do., 14s. 4d.

10 by 8,	12 by 9,	12½ by 10,	14½ by 10½, 13 by 11
10½ by 8½,	12½ by 9½,	13 by 10,	15 by 10, 13½ by 11¼
11 by 9,	13 by 9,	13½ by 10½,	12 by 11, 14 by 11
11½ by 9½,	12 by 10,	14 by 10,	12½ by 11½ .. ..

20 by 12	per 100 feet	16 oz.	21 oz.
20 by 13	Common ..	16s. ..	24s.
20 by 14	Superior .	18s. ..	27s.
20 by 15			

All Boxes included.

Orchard House sizes as supplied to Mr. Rivers.

Hartley's improved Rough Plate Glass from ⅛ to ¾ in thickness.

Coloured Glass in great variety, at 9d. and 1s. per foot.

Paints, Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, Lamp Glasses, &c.

87, Bishopsgate Street Without, same side as Eastern Counties Railway.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

HETLEY and CO. are supplying 16-oz. Sheet Glass of British Manufacture, packed in boxes, containing 100 square feet each, at the following REDUCED PRICES for cash. A reduction made on 1000 feet.

Sizes.—Inches.		Inches.		Per foot.	Per 10 feet.
Under 6	by	4	at	1½d. is	£0 12 6
From 6 by 4	,,	7	,, 5 ,,	2d. ,,	0 16 8
,, 7 ,, 5	,,	8	,, 6 ,,	2½d. ,,	0 18 9
,, 8 ,, 6	,,	10	,, 8 ,,	2½d. ,,	1 0 10
,, 10 ,, 8	,,	12	,, 9 ,,	2⅔d. ,,	1 2 11

Larger sizes, not exceeding 40 inches long.

16 oz. from 3d. to 3½d. per square foot, according to size.
21 oz. ,, 3½d. to 5d. ,, ,, ,,
26 oz. ,, 3½d. to 7½d. ,, ,, ,,

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS, for Horticultural purposes, at reduced prices, by the 100 square feet.

GLASS TILES AND SLATES made to any size or pattern, either in Sheet or Rough Plate Glass.

Propagating Glasses, Beehive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in Glass.

PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.

GLASS SHADES, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the excise duty, reduced one-half. List of Prices and Estimates forwarded on application to

James Hetley & Co., 35, Soho Square, London.

GLAZIERS' DIAMONDS for CUTTING HORTICULTURAL and other GLASS, to be had of the Wholesale Manufacturer, John Edwards, 20, Sharp's Alley, West Smithfield, London, E C. Prices from 10s. to 27s. 6d.

FOR WATERING GARDENS, PLUMBERS, ENGINEERS, MILLS, and MACHINISTS.

Vulcanised India Rubber.

Washers for Hot-water and Steam Joints	Garden Watering Hose
Elastic Packing and Valves for Steam Engines	Do. fitted with Brass Joints, Taps and Spreaders
Pump Buckets (compound India-rubber)	Wheel Tires (noiseless for Trucks, &c.)
Suction Hose for Pumps	Waterproof Cart, Van, and Waggon Covers
Fire Engine Hose	Mill Bands, much improved for driving all kinds of Machinery
Air Beds, Cushions, & Bolsters	Door Springs, Gas Bags
Water Beds, Pillows, and Feet Warmers	Foot Balls, Cricketting Gloves

N.B. A Stock of the above always on hand, and any modification made to order. Please address all communications to the Manufactory.

JAMES LYNE HANCOCK,

Vulcanised India-rubber Works, Goswell Road, London, E.C.

ANTISEPTIC PAINT.

THE best and cheapest PAINT for PARK FENCING, all outside Wood and Iron Work, is MITCHELL'S ANTISEPTIC MINERAL BLACK PAINT. Sold ready for use, 17s. 6d. per cwt. Used largely now and for many years past by the West India Dock Company, for Fencing, Barges, &c. Recommended to the nobility and gentry, stewards, land agents, &c. A liberal allowance to the Trade, &c.

Manufactory, Kennington Lane, Lambeth.

MICROSCOPES.

J. AMADIO'S BOTANICAL MICROSCOPES, packed in mahogany case, with three powers, condenser, pincers, and two slides, will show the animalculæ in water. Price 18s. 6d.—Address Joseph Amadio, 7, Throgmorton Street. A large assortment of Achromatic Microscopes.

"It is marvellously cheap, and will do everything which the lover of nature can wish it to accomplish either at home or in the open air."—*The Field*, June 6, 1857.

Just published, an Illustrated Catalogue, containing the names of 1000 Microscopic objects, post free for 4 stamps.

HORTICULTURAL BUILDINGS AND HEATING BY HOT WATER.

JOHN R. PEILL, 17, New Park Street, Southwark Manufacturer of every description of Buildings for Horticultural purposes, and Inventor of the Improved Conical Boiler for heating the same, is prepared to undertake works of any magnitude, and refers among others to the celebrated range of FORCING HOUSES at HER MAJESTY'S GARDENS, FROGMORE, and at SIR ROBERT PEEL'S, DRAYTON MANOR constructed under the superintendence of his Manager, MR JOHN JONES; and also to his BOILERS fixed at the CRYSTAL PALACE, the ROYAL BOTANIC GARDENS, REGENT'S PARK, and KEW, and at several hundreds of the Nobility's seats, Public Establishments, and Manufactories in London and the provinces. J. R. P. also manufactures every description of Iron Roofs, Iron Houses, and Iron Fencing, plain and ornamental. Strong Iron Hurdles for Sheep (6 feet long, 3 feet high, with 5 bars), 4s. 3d. each; ditto for cattle, 4s. 9d. each.

Prices and other particulars forwarded on receipt of one postage stamp.

IMPROVED PATENT TURNIP AND MANGEL GRATER

MANUFACTURED BY

JOHN WARNER and SONS, No. 8, Crescent Jewin Street, London, E.C.—J. W. & Sons, in introducing their IMPROVED PATENT TURNIP and MANGEL GRATER to the notice of Agriculturists, beg to state that they have personally tested its capabilities during the last three seasons, and as such feel that they can, with the greatest confidence, recommend it as a machine that will upon trial, satisfy the requirements of Feeders of Stock generally; one man or strong lad being able with comparative ease to grate 20 bushels of roots in 10 minutes.—Price of the Machine complete, 4l. 10s. Carriage paid to any Railway Station in England. To be procured of any Ironmonger or Agricultural Machine Agent in Town or Country, or of the Manufacturers.

SMALL GAS APPARATUS, FREE FROM NUISANCE.

THE PATENT NATIONAL COAL-GAS APPARATUS, for private Residences, Farm Buildings, Churches, Chapels, Workshops, Railway Stations, and other places not hitherto lighted with Gas. It is durable, economical, and compact, and supplies the desideratum of cleanliness in the production of a Gas of better quality and purity, and at less cost, than is ordinarily obtained from Public Works. By an entirely new and peculiar process it is easily worked by a boy or inexperienced servant. The cost of Gas, including labour, wear and tear, and interest of capital, is less than one-fourth that of candles or oil. It can be fixed and completed in working order in a few days.—Further particulars, prices, testimonials, &c, on application to the Proprietors and Manufacturers, J. T. B. Porter & Co., Lincoln.

HANDSOME BRASS AND IRON BEDSTEADS.—Heal & Son's Show Rooms contain a large assortment of Brass Bedsteads, suitable both for Home use and for Tropical Climates; handsome Iron Bedsteads with Brass Mountings and elegantly Japanned; Plain Iron Bedsteads for Servants; every description of Wood Bedstead that is manufactured, in Mahogany, Birch, Walnut-tree Woods, Polished Deal and Japanned, all fitted with Bedding and Furniture complete, as well as every description of Bedroom Furniture.

HEAL and SON'S ILLUSTRATED CATALOGUE, containing Designs and Prices of 100 Bedsteads, as well as of 150 different articles of Bedroom Furniture, sent free by post.—Heal & Son, Bedstead, Bedding, and Bedroom Furniture Manufacturers, 196, Tottenham Court Road, W.

VINEGAR.—Patronised by her Majesty's Government.

CONDY'S PATENT PURE CONCENTRATED MALT VINEGAR.—Families, by using this delicious Vinegar, insure purity, and effect a saving of 50 per cent. See Report of Dr. Letheby, City Officer of Health; Dr. Hassall of the *Lancet* Commission, and others. Six Quart Sample sent free to any Railway for 3s. 6d.—Sold by the Trade, in bottles, labelled and capsuled; wholesale, 63, King William Street, London Bridge, E.C.

TO SEEDSMEN, FRUITERERS, AND GREENGROCERS.

TO BE SOLD, an OLD ESTABLISHED BUSINESS in the above line in one of the leading thoroughfares, in the City of Bath. To persons with small capital the above offers an excellent opportunity; half the rent is paid by permanent lodgers.—For further particulars apply to D. E. F., Post Office, Bath.

TO BE LET, BRISTOL NURSERY GROUNDS, Kemp Town, Brighton. These Gardens are now to Let for occupation with immediate possession.—Any person desirous of treating for the same may obtain particulars and permission to view the grounds on application to Mr. R. W. Lucas, 20, Great Marlborough Street, London, W.; and of Mr. A. Chandler, Horticultural Valuer, 28, Priory Road, Wandsworth Road, S.

Sales by Auction.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE and MORRIS will Sell by Auction at the Mart, Bartholomew Lane, on FRIDAY, April 8, at 12 o'Clock, a first-class Collection of Carnations, Picotees, and Pinks; about 200 choice Standard and Dwarf Roses, consisting of the most approved kinds; choice Ornamental Trees, Azalea indica, Camellias, and other Plants in bloom, selected American Plants, Pæonias, Verbenas, Fuchsias, Dahlias in dry roots, &c.—May be viewed the morning of Sale. Catalogues to be had at the Mart, and of the Auctioneers, American Nursery, Leytonstone.

UNIQUE PLANT.

MR. J. C. STEVENS is directed by the Council of the Horticultural Society of London to include in the Sale at his Great Room, 38, King Street, Covent Garden, on TUESDAY, April 12, the unique Shrub "FREMONTIA CALIFORNICA" (*vide* description in *Gardeners' Chronicle*, Jan. 22, 1859).—May be viewed on the Morning of Sale, and Catalogues had.

ORCHIDS AND FERNS.

MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on TUESDAY, April 12, at half-past 12 o'Clock precisely, ORCHIDS of very superior quality, the duplicate specimens from a well-known Collection, including admirably grown Plants of the following select varieties, viz.:—

Ærides Lindleyi	Galeandra devoniana
,, Larpentæ	Paphinia cristata
,, Schroderi	,, tigrina
,, nobile	Phalænopsis grandiflora
,, quinquevulnerum	Saccolabium guttatum
,, maculosum major	,, retusum
Angulos Ruckeri	Uropedium Lindeni
Cymbidium eburneum	Vanda suavis (Veitch)
Cœlogyne pandurata	,, ,, aurea
,, Lowi	&c, &c.

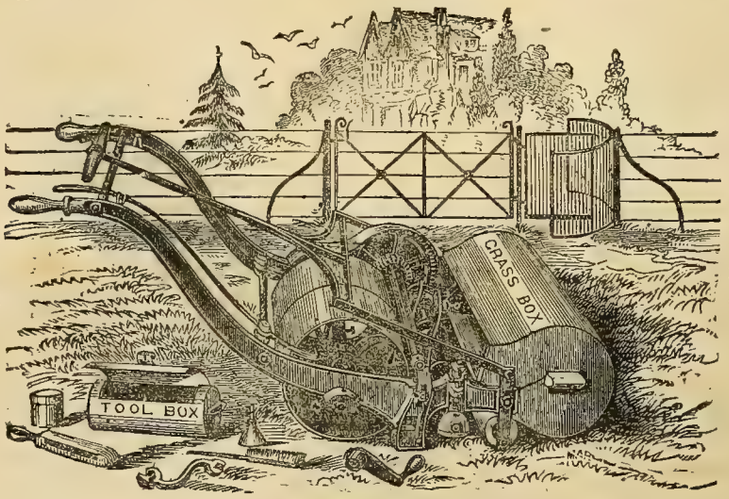
Also a few rare FERNS—Gleichenias, Alsophilas, Cyatheas, &c.—May be viewed on the morning of Sale, and Catalogues had of Mr. J. C. Stevens, 38, King Street, Covent Garden.

GREEN'S PATENT GRASS CUTTING, COLLECTING, & ROLLING MACHINES FOR 1859.

GREEN'S PATENT HAND MACHINE.

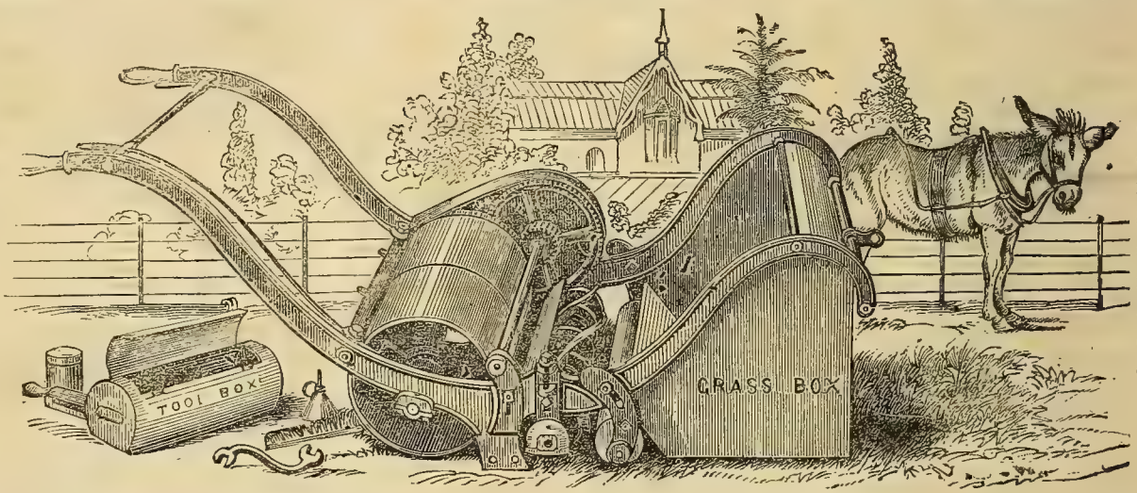
LIST OF PRICES.

To cut 14 inches, 6*l.*; 16 in. 6*l.* 10*s.*; 18 in. 7*l.*—for one person. To cut 20 inches 7*l.* 10*s.*; 22 in. 8*l.*; 24 in. 8*l.* 10*s.*—for two persons. If with Box and Tools for sharpening and keeping the Machine in order, 5*s.* extra; with Guard for preventing accidents and keeping the wheels clean, 5*s.* extra.



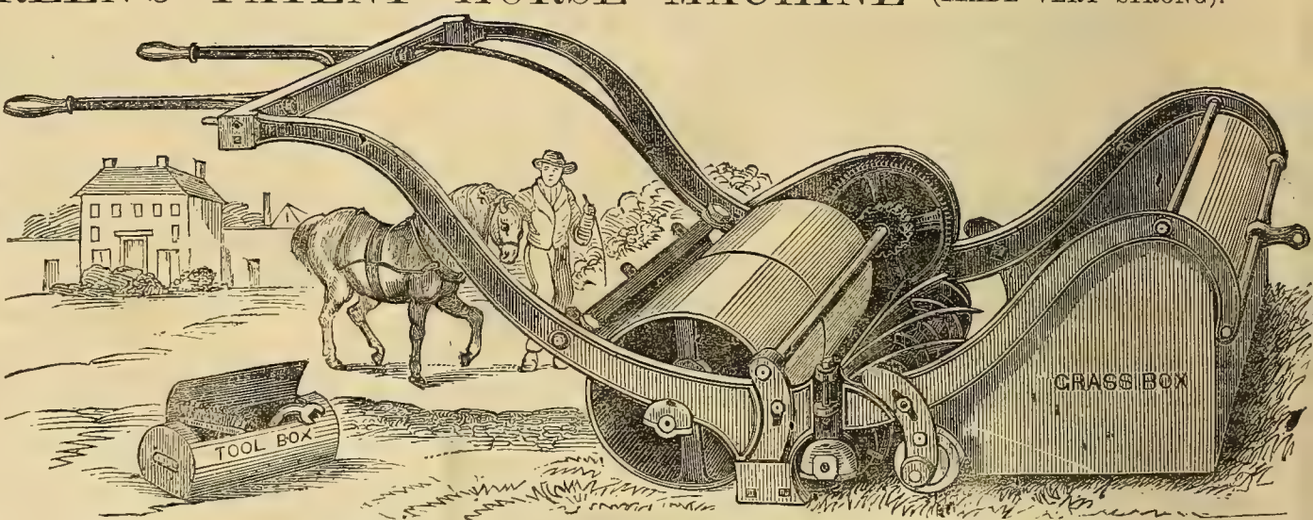
GREEN'S PATENT DONKEY AND PONY MACHINE,

Suitable for a Donkey, to cut 24 inches, 10*l.*; 26 in., 11*l.* For a Pony, 30 in., 15*l.*; box, tools, &c., 6*s.* 6*d.* extra. Leather traces, stretcher, &c., suitable to attach to common harness or chain traces, 7*s.* 6*d.* Leather boots, suitable for donkey's feet, 16*s.*; do. for a pony, 20*s.* per set of four. Guard for covering wheels, 5*s.* extra.



GREEN'S PATENT HORSE MACHINE (Made very strong).

To cut 30 ins. 18*l.*; 36 ins., 21*l.*; 42 ins. 24*l.*; 48 ins., 27*l.* Box of tools 7*s.* 6*d.* extra. Leather traces' stretcher, &c., 10*s.* Boots per set of four for Horses' feet, to prevent injury to lawns, 24*s.* Guard for wheels, 5*s.* ex. —The above are Net cash prices, delivered at any of the principal Rlway. Stations in England.



TRIAL at the London Horticultural Society's Gardens, Chiswick, June 5, 1857. Four competitors.

First trial on level ground, second do. on undulated, third do. on intricate places around trees, &c., when GREEN'S PATENT was unanimously declared to be the best in each trial by Colonel Challoner, Dr. Lindley, and G. M'Ewen, Esq., the appointed Judges.

See the *Gardeners' Chronicle* of May 22, 1858, p. 423, under the heading of "Garden Memoranda."

"London Horticultural Gardens, Chiswick.—The Grass in the Arboretum and elsewhere is in excellent condition; it is kept in order by means of one of GREEN'S 2-feet Mowing Machines, which does its work very satisfactorily, and, compared with the scythe, effects a saving of at least one-half."

Extract from London *Times* of June 8, and *Gardeners' Chronicle* of June 12, 1858.

"Trial of Mowing Machines.—A considerable number of various sizes having been brought to the ground it was agreed that the trial should take place between One Hand Machine of each exhibitor, as nearly as possible of uniform size and worked by themselves, or their men. The ground to be worked was determined by lot, the pieces having been previously selected of as uniform quality as possible. After trials on level ground and round trees, the Judges, Colonel Challoner and Mr. Edward Easton, declared GREEN'S Patent to be the best.

(Signed) "C. B. Challoner, Edward Easton, Judges."

Thos. Green respectfully informs the Nobility, Gentry, Gardeners, Amateurs, and others, that upwards of Six Hundred of these Machines were sold in 1857, and to show the increasing demand, above Nine Hundred were sold last season—they have proven to be the best in all cases of competition, are entirely remodelled, and all the little defects pointed out by the Judges last Year, are now rectified. The Patentee now considers the Machines as near perfection as possible. Although the Machines have been so much improved, at a great additional cost, no extra charge will be made, excepting for a neat Guard, which is placed over the wheels to keep them clean, and to prevent breakage or accidents, which will be 5*s.* extra to parties requiring them.

☞ The Machines are warranted to give satisfaction, or may be at once returned by the party paying the carriage back to Leeds. The Patentee has spared neither time nor expense in producing the best and cheapest Mowing, Collecting, and Rolling Machines ever brought before the public. Hundreds of Testimonials (unsolicited) may be seen, and references given with regard to the superiority of the machines, by applying to the Patentee,

T. GREEN, Smithfield Iron Works, Leeds; or, No. 2, Victoria Street, bottom of Holborn, London,

To either of which places all Cheques and Post-office Orders may be made payable.

☞ *T. G. will be glad to receive orders for Machines as early as possible, as a great difficulty was found last season in supplying the number required.*

N.B. Parties desirous of having their Machines repaired may forward them to either the London or Leeds establishment, where they will have the best attention.

Printed by William Bradbury, of 13, Upper Woburn Place, and Frederick Mullett Evans, of No 20, Queen's Road West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard St. Precinct of Whitefriars, City of London, and published by them at the Office, No. 5, Upper Wellington St., Parish of St. Paul's Covent Garden, in the said Co.—Saturday, April 2, 1859.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 15.—1859.] SATURDAY, APRIL 9. {Price Fivepence. STAMPED EDITION, 6d.

INDEX.

Agriculture, Theory of	319 a	Hyacinths, culture of	314 a
— progress of	321 b	Lithing	314 b
Agri. Soc. of England	321 a	Markets in Mauritius	316 a
Andromeda polifolia	316 a	Mignonette, tree	316 a
Avenues	314 a	Oak galls	315 a
Bath Agri. Society	321 a	Oat hay	320 b
Bean, New Zealand	312 c	Plants injured by the late frost	314 c
Books, noticed	315 b	Poplar, gigantic	316 a
Broccoli, Veitch's	315 a	Porridge, to make milk	314 b
Cress, Australian	316 c	Rainfall	314 b
Cucumbers, night temperature for	311 c	Rhododendrons, to graft	315 a
Education, half time plan of	321 c	Royal Bot. Society	315 a
Farms, large and small	318 b	Seeds, weed	318 a
Farmers' Club, London	321 b	— germination of	320 c
Fires, accidental	320 c	Steam culture, Smith's..317 c—320 c	
Forcing-houses, night temperature of	311 c—312 c	Stephens' (S. L., Esq.,) garden	315 c
Frost, effects of the late	314 c	Temperature, low night..311 c—312 c	
Gishurst Compound	312 b	Timber, hedgerow	320 c
Glass, Hartley's	316 c	Trade lists	315 b
Glasse's Gardening Book	314 a	Trees, decortication of	315 a
Grafting Rhododendrons	313 a	Wa tonian cases	315 a
Hedgerow timber	320 c	Weed seeds	318 a
		Wirewo ms, to kill	316 c

HORTICULTURAL SOCIETY OF LONDON.—Notice is hereby given that the business of the Society will be carried on in future at No. 8, St. Martin's Place, Trafalgar Square, W.C.

HORTICULTURAL SOCIETY OF LONDON.—DISTRIBUTION OF SEEDS.

The Seeds annually provided for distribution being now ready, Fellows of the Society who have not received them can obtain them upon application at the Society's Office, 8, St. Martin's Place, Trafalgar Square, W.C.

HORTICULTURAL SOCIETY OF LONDON.—BEDDING-OUT PLANTS.

In consequence of the conversion of the Garden at Chiswick into one of Experiment only, the Bedding-out Plants which had been provided for the ensuing summer will be given away to the Fellows in quantities not exceeding five dozen each.—Application to be made to the Assistant-Secretary, 8, St. Martin's Place, W. C., before APRIL 23, after which the Plants not wanted by the Fellows will be sold to the Trade.

HORTICULTURAL SOCIETY.—At a meeting held yesterday, at 8, St. Martin's Place, Trafalgar Square, the following candidates were proposed and duly elected FELLOWS of this Society, viz.:—

S. B. Potter, Esq.	Miss Sarah Reeves
Clayton de Windt, Esq.	Mr. Bennett Hooper
Samuel Reynolds Solly, Esq., F.R.S.	Mr. David Maurigy
	Mr. Wm. Dunsford
J. Gunton Chillingworth, Esq.	Mr. Fisher G. Godwin
John Bailey, Esq.	Mr. Arch. Henderson
Mrs. George A. Stretton	and others

ROYAL BOTANIC SOCIETY, REGENT'S PARK.—THE EXHIBITIONS OF PLANTS, FLOWERS, AND FRUIT this season will take place on WEDNESDAYS, May 25, June 15, and July 6. Tickets of Admission are now being issued, and can be obtained at the Gardens only by orders from Fellows or Members of the Society. Price, on or before Saturday, May 14, 4s.; after that day, 6s.; or on the days of Exhibition, 7s. 6d. each.

GRAND NATIONAL ROSE SHOW.—The Meeting of the Committee and Subscribers, previously advertised, will be held at ST. JAMES'S HALL on WEDNESDAY, April 13, at 2 o'clock P.M.

S. REYNOLDS HOLE, Hon. Secretary.
Caunton Manor, Newark.—April 9.

THE GRAND NATIONAL DAHLIA SHOW FOR 1859.—This Exhibition will take place on the 20th and 21st of September next, at Aston Hall, Birmingham. Lists of Prices will shortly be ready.

CHARLES TURNER, } Hon. Secs.
JOHN KEYNES, }

THE ROYAL NATIONAL ANNUAL EXHIBITION OF TULIPS.—The Meeting for 1859 will be held on FRIDAY, May 20, at the Royal Nursery, Slough. Lists of prizes and full particulars may be had of CHARLES TURNER, Hon. Sec., Royal Nursery, Slough.

DIOSCOREA BATATAS.—Fine roots, 9 to 12 inches long, 5s. per dozen; extra size, 10s. per dozen.
Bass & Brown, Seed Growers, &c., Sudbury, Suffolk.

DIOSCOREA BATATAS—CHINESE YAM.

WM. CUTBUSH AND SON beg to intimate that now is the best time for planting the above. Good Sets, 21s. per 100; or 4s. per doz.—Highgate Nurseries, London, N.

CHINESE POTATOES (DIOSCOREA BATATAS) for planting this month. Large sets (from full-sized, well-matured tubers, some of them weighing over 2½ lbs., grown in this country) 2s. 6d. per dozen.—Apply, WM. LEMON, Sandbach, Cheshire.

DIOSCOREA ROOTS AND SETS.

MESSRS. SUTTON'S DIOSCOREAS, which they are sending out at 5s. per doz., contain six or more sets each.

Instructions for planting are sent with the roots. Early orders necessary for strong roots.
Royal Berkshire Seed Establishment, Reading.

SORGHUM, OR HOLCUS SACCHARATUS.

SUTTON AND SONS, Importers of this Seed, can supply it wholesale and retail, warranted the true kind, and good growing Seed. 8 lbs. per acre sufficient.

Present retail price 2s. per lb., or cheaper in large quantities. Instructions on cultivation sent with the Seed.
SUTTON & SONS, Royal Berks Seed Establishment, Reading.

500 BUSHELS of FLUKE and WHITE BLOSSOM SEED POTATOES, true, free from disease, and suitable sizes, at 3s. 4d. the bushel of 80 lbs., samples of which may be had on application to Mr. WM. GROSVENOR, Prospect Nursery, Cheddleton, near Leek, Staffordshire.

A remittance or reference from unknown correspondents.

GOOD CLOVER SEEDS.

GENUINE NEW CLOVER SEEDS can be had of SUTTON & SONS, Seed Growers, Reading, Berks.

THE ALSIKE CLOVER.—This valuable but scarce Clover Seed is included in Messrs. SUTTON'S mixtures of Clover and Grass Seeds for permanent pasture and for alternate husbandry. It can be supplied alone if required. Price fluctuating, to be had on application.
Royal Berks Seed Establishment, Reading.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY LIMITED supply every requisite for the Farm and the Garden.
Registered Offices, Union Road, Plymouth.

SPECIMEN GREENHOUSE AND STOVE PLANTS.—See PRICED LIST in *Gardeners' Chronicle* of March 26, page 260, with description of sizes, &c. Also a LIST containing several others sent free by post.—BASS & BROWN, Seed and Nursery Establishment, Sudbury, Suffolk.

GEORGE BAKER begs to inform the Nobility and Public that his DESCRIPTIVE CATALOGUE OF AMERICAN PLANTS AND GENERAL NURSERY STOCK will be sent free on application.
American Nursery, Windlesham, near Bagshot, Surrey, about 1 mile from Sunningdale Station, South Western Railway.

NEW DAHLIAS.

JOHN KEYNES'S SELECT CATALOGUE OF DAHLIAS, ROSES, CARNATIONS, PINKS, &c., containing Lists of all the valuable Show Flowers in each class, is now ready and will be sent on application.
Castle Street Nursery, Salisbury.—April 9.

FERN CATALOGUE.

ROBERT SIM'S NEW DESCRIPTIVE AND PRICED CATALOGUE, No. 6 (62 pages) of his COLLECTION of BRITISH AND EXOTIC FERNS, can be had, post free, for 8 stamps. Gratis to all previous purchasers of Ferns.
Nursery, Foot's Cray, Kent, S.E.

HENDON PARK NURSERIES, HENDON, N.W.

EDWARD SHENTON'S Descriptive CATALOGUE of new DAHLIAS, HOLLYHOCKS, PELARGONIUMS, BEDDING AND BORDER PLANTS, and the leading New Flowers of the season 1859. Forwarded on application.

TO THE READERS OF THE "GARDENERS' CHRONICLE."

CHEAP GREENHOUSE AND BEDDING PLANTS.

J. SLIPPER'S CATALOGUE is now ready, and may be had for a postage stamp.
Villa Nursery, Camden Town, London, N.W.

FINEST SHOW CARNATIONS, PICOTEES, PINKS, &c.

CHARLES SCHOFIELD has a fine healthy stock of the above for sale at 6s., 12s., and 20s. per dozen pairs. Also PANSIES, DAHLIAS, VERBENAS, FUCHSIAS, &c. CATALOGUES now ready, sent free on application.—Knowsthorpe, near Leeds, Yorkshire.

JOSEPH MAY AND CO., SEEDSMEN, will send the following FLOWER SEEDS post free to any part on receipt of stamps or order:—

			s.	d.
50 packets good showy	FLOWER SEEDS	..	7	6
30 packets	ditto	ditto ..	5	0
15 packets	ditto	ditto ..	2	6
12 packets of useful and ornamental	Gourds	..	3	0

1, Wellington Street, Strand, Waterloo Bridge.

THE PRIMULARY.

THOS. WILD respectfully reminds his friends that April and May is the season for sowing CHINESE PRIMROSES. Mixed colours, 2s. 6d. per packet. Separate colours sold out.—THOS. WILD, The Primulary, Ipswich.

NEW YELLOW ROSE, "MADAME WILLIAM."—This beautiful new Rose was exhibited by A. PAUL & SON, at the Royal Botanic Society's Gardens, in the Regent's Park, on Wednesday, the 6th inst., and awarded a Certificate of Merit. Price 7s. 6d. the pair, package and carriage to London included.—A. PAUL & SON, Nurseries, Cheshunt, Herts.

LILIES OF THE VALLEY.—A few thousand roots to be sold, 1s. per 100, or 8s. per 1000.—Apply to Mr. HARRISON, Oatlands Palace Garden, Weybridge. Applications per Post-office Order or stamps will only be attended to.

NEW VERBENAS.

CHARLES TURNER is now sending out Edmonds's fine new varieties. For particulars, see Catalogue.
The Royal Nurseries, Slough.

NEW PANSY, "ELLEN."—Fine dark self, strong plants at 5s.; also NEW SUNFLOWER "CALIFORNIA," the finest yet raised; strong plants, 5s. each.
EDWARD SHENTON, Hendon Park Nurseries.

PANSIES.—The best and most distinct kinds, extra fine show varieties, 6s. per dozen.—DODWELL & BAYLEY, Bradshaw Gardens, Chadderton, Manchester.

BELGIAN DAISIES.—In the finest variety, 4s. per dozen.—DODWELL & BAYLEY, Bradshaw Gardens, Chadderton, Manchester.

CARNATIONS.—Twenty-five pairs strong, well rooted, and extra fine show varieties, named 1l., packing and hamper included.—DODWELL & BAYLEY, Bradshaw Gardens, Chadderton, Manchester.

PICOTEES.—Twenty-five pairs strong, well-rooted plants, and extra fine show varieties, named, 1l., packing and hamper included.—DODWELL & BAYLEY, Bradshaw Gardens, Chadderton, Manchester.

PINKS.—Twenty-five pairs fine named kinds, in strong healthy plants, 10s., packing and hamper included.—DODWELL & BAYLEY, Bradshaw Gardens, Chadderton, Manchester.

PHLOXES.—The best and most distinct kinds, strong plants, well established, 8s. per dozen.—DODWELL & BAYLEY, Bradshaw Gardens, Chadderton, Manchester.

FIVE FIRST-RATE BROCCOLIS FOR SUCCESSION.

	s.	d.	
WALCHEREN, for Aug. to October produce	3	0	per oz.
HAMMOND'S WHITE CAPE, Sept. to Nov.	2	6	,,
MITCHINSON'S PENZANCE, Feb. and March	5	0	,,
DILCOCK'S BRIDE, for April	1	0	,,
THE GIANT, late white, for May and June	2	0	,,

A ¼ oz. packet of each free by post for 3s. 6d. in postage stamps.
Bass & Brown, Seed Growers, Sudbury, Suffolk.

CONIFERÆ.

A. PAUL AND SON have a large stock of the above, very handsome, in fine order for removal, many suited for immediate effect. For particulars see Advertisements in *Gardeners' Chronicle* of November and December last.—Nurseries, Cheshunt, Herts.

JOHN GRIGOR AND CO., NURSERIES, Forres, beg to offer true Native Highland SCOTCH FIR SEED, grown in the celebrated Natural Forests of Strathspey, at 2s. 6d. per packet, post free, or for stamps of that value.
The Trade supplied at Wholesale Prices.

TO BE SOLD, a LARGE quantity of YEW TREE BUTTS, SLABS, and ROOTS; also a fine YEW TREE of great age. The best SEA SHELL and GARDEN GRAVEL for Conservatories and Garden Paths, to be had in any quantity at Gravel Wharf, 67, Augustus Street, Regent's Park Basin.
W. HOLLAND, Proprietor.

TO BE SOLD, OAK PLANTS of one year's growth, price 2s. per 1000. Franco, Antwerp.—For further particulars apply to GEORGE TRIMBEY & Co., 41, Queen Street, Cheapside, London.

CLIMBING PLANTS.

F. AND A. SMITH have now ready strong plants of Cobea scandens, Maurandyas, blue, white, and rose; Lophospermum, Eccremocarpus, and Tropæolums, in large quantities. Prices on application.—Dulwich, Surrey.

BEDDING PLANTS.

F. AND A. SMITH beg to offer the usual varieties of plants for bedding purposes, strong and healthy, including most of the novelties of the season, at moderate prices.
Dulwich, Surrey.

100,000 BEDDING PLANTS, the cheapest place in England. Catalogue sent for one stamp.—J. PYLE, St. John's Nursery, Upper Holloway, London.

SPERGULA PILIFERA.—A perfect substitute for GRASS LAWNS WITHOUT MOWING.—A two years' established Plant, showing its character, sent Post free on receipt of 2s. 6d. or 30 stamps.
Address JOHN SUMMERS, Gardener, Forest Hill, Sydenham.

PAMPAS GRASS (GYNERIUM ARGENTEUM).—The beauty of this extraordinary plant has this season been fully appreciated. It can be supplied by the dozen, hundred, or thousand, by CHARLES NOBLE, Bagshot, Surrey.

JOHN CULVERWELL, Taunton, begs to call the attention of Agriculturists to his superior selection of GRASS SEEDS, which for PURITY, change of SOIL, and CLIMATE, will bear comparison with any house in the kingdom. Prices, terms, and samples forwarded on application.

GIANT SAINFOIN SEED.—Seed of this excellent and productive Plant may be had of RAYNBIRD & HARVEY, Basingstoke, and 89, Seed Market, Mark Lane. Samples and prices on application.

N.B. R. & H. can also supply Common Sainfoin both of English and French growth at market prices.

HUDSON'S GOLDEN MELON BARLEY.—Selected Samples for Seed of this most valuable variety, superior both for produce and malting quality, may be had of RAYNBIRD & HARVEY, of Basingstoke; and 89, Seed Market, Mark Lane, E.C.

NEW ZEALAND RUNNER BEAN.—Price 2s. per quart.—JAS. CARTER & Co., Seedsmen, 238, High Holborn, London, W. C.

NEW ZEALAND RUNNING BEAN.—Packets of 12 Seeds, for 14 stamps.
Bass & Brown, Seed Growers, &c., Sudbury, Suffolk.

CABBAGE PLANTS.—Drumheads for Cattle, fine and true; packed and delivered to the Stations, 3s. 6d. per 1000.—THOMAS WELLAND, Surrey Gardens, Godalming, Surrey.

CUSTARD MARROW.—The improved variety, 18 Seeds for 13 stamps, or nine Seeds for seven stamps, free by post. See drawing of this productive and handsome variety in *Gardeners' Chronicle*, Jan. 29 and Feb. 12.
Bass & Brown, Seed Growers, Sudbury, Suffolk.

GRAYSON'S GIANT ASPARAGUS.—
Fine 2-year roots, 2s. 6d. per 100; or 21s. per 1000.
,, 3-year ,, 3s. 6d. ,, 100; or 30s. ,, ,,
The usual allowance to the Trade.
Bass & Brown, Nurserymen, Sudbury, Suffolk.

THE BEST TIME FOR PLANTING ASPARAGUS AND SEAKALE.

YOUELL AND CO. having a large Stock of the above growing on the Sea Coast, of the finest quality, beg to offer it at the following prices:—

ASPARAGUS, GIANT, two years	..	2s. 6d. per 100.
,, three years	.. ..	3s. 6d. ,,
SEA KALE	.. ..	6s. 0d. ,,

Royal Nursery, Great Yarmouth, Norfolk.

THE EARLIEST PEA.—DUNNETT'S FIRST EARLY is in every respect superior to "Daniel O'Rourke," being several days earlier, having finer pods, and richer in flavour, height 2½ feet. For an early dish of fine-flavoured Peas we can confidently recommend this; 2s. per quart.

CHAMPION CABBAGE, the earliest and best sort, if sown in succession, may be had fit for table throughout the year, 8d. per ounce, or 1s. post free.
BUTLER & MCCULLOCH, Covent Garden Market, London.

GARDENERS' CHRONICLE NEWSPAPER PENNY

ROYAL BOTANIC SOCIETY OF LONDON.—At the SPRING EXHIBITION, April 6, the following Awards were made:—

New Plants.—1st Prize to Messrs. J. & J. Fraser, Lea Bridge Road, for Musschia Wollastoni; 2d, to Messrs. E. G. Henderson & Son, Wellington Road Nursery, for Gastrolobium spectabile; 3d, to the same, for Aucuba himalaïca—and to Messrs. A. Henderson & Co., Pine Apple Nursery, for Griffinia Liboniana

Twelve Miscellaneous Plants.—1st Prize to Mr. Cutbush, of Barnet; 2d, to Messrs. J. & J. Fraser; 3d, to Messrs. Cutbush & Son, Highgate; 4th, to Messrs. A. Henderson & Co.

Six Cinerarias.—1st Prize to Messrs. Dobson & Son, of Isleworth; 2d, to Mr. C. Turner.

Six Roses in Pots.—1st Prize to Mr. C. Turner.

Twelve Amaryllises.—1st Prize to Messrs. E. G. Henderson & Son.

Miscellaneous.—Silver Medal to Messrs. E. G. Henderson & Son for a collection of Plants, including Camellia de la Reine; Small Silver Medal to Mr. C. Turner for 12 Auriculas; Bronze Medal to Messrs. E. G. Henderson & Son for three Standard Azaleas. Certificate to Mr. Turner for Seedling Cinerarias—Brilliant, Duchess of Sutherland, and Highland Mary—and for Seedling Camellia Eleanor; to Mr. G. M'Intosh, of Hammersmith, for a collection of Tulips; to Messrs. Paul & Son, of Cheshunt, for Madame William Tea Rose; to Mr. Bragg, of Slough, for 36 Pansies; to Mr. James, of Isleworth, for 24 Pansies; to Messrs. A. Henderson & Co. for Australian Cress; to Messrs. F. & A. Smith for Seedling Cineraria Lord Clyde.

Signed—S. M. Carson, T. Moore, A. Parsons, Censors.

BRIGHTON AND SUSSEX FLORICULTURAL AND HORTICULTURAL SOCIETY'S EXHIBITIONS for 1859 are fixed to be held on the following days:—Summer Show, WEDNESDAY and THURSDAY, June 22 and 23; Autumn Show, WEDNESDAY and THURSDAY, Sept. 14 and 15; on the same grand scale as in former years. Schedules are now ready, and may be obtained of the Secretary, 96, St. James's Street; or of E. Spary, Queen's Graperies, General Superintendent of Exhibition.

Edward Carpenter, Secretary.
Thos. Attree, Esq., Chairman of Committee.
Brighton.—April 9.

STAMFORD HORTICULTURAL SOCIETY.—The EXHIBITIONS for the present year will be held on the same grand scale as in former years. The SUMMER FETE will take place on WEDNESDAY, July 6, when three Silver Cups will be awarded for Cut Roses and Stove and Greenhouse Plants, and other prizes for various productions to the amount of 100*l*.

The AUTUMN SHOW is fixed for September 7, at which a Silver Cup for Dahlias, and other liberal prizes are offered. At each Exhibition important prizes are open to all England without subscription or entrance fee. The Schedule, with Rules, &c., will be forwarded post free on application to

Stamford, April 9. H. Johnson, Hon. Sec.

BATH AND WEST OF ENGLAND SOCIETY FOR THE ENCOURAGEMENT OF AGRICULTURE, ARTS, MANUFACTURES, AND COMMERCE.—An Exhibition of FLOWERS, FLOWERING, and ORNAMENTAL PLANTS, FRUIT, and VEGETABLES, will take place on June 1, 2, and 3, in connexion with the General Exhibition of the above Society, on the occasion of their North Devon Meeting at Barnstaple, when the following Prizes will be offered:—

		1st.	2d.
I.—1.	For the best collection of not less than 20 Stove or Greenhouse Plants (Nurserymen)	£3	—
2.	Do. do. (Amateurs)	2	£1
II.—1.	For the best collection of not less than 12 Rhododendrons and Chinese Azaleas (Nurserymen)	3	—
2.	For the best collection of not less than 8 do. (Amateurs)	2	1
III.—1.	For the best collection of not less than 8 Roses in pots (Nurserymen)	3	—
IV.—1.	For the best collection of not less than 20 Variegated Plants, or plants remarkable for their fine foliage (Nurserymen)	3	—
V.—1.	For the best collection of not less than 20 Ferns of any kind (Amateurs)	2	1
VI.—1.	For the best ornamental basket of Flowers, or of Flowers and Foliage (Amateurs)	2	1
VII.—1.	For the best group of specimens of Coniferæ, preference being given to newly introduced kinds (Nurserymen)	5	—
VIII.—1.	For the best specimen of any newly introduced or extremely rare genus of Ornamental Plant, or object of special merit in the exhibition (Nurserymen)	1	—

In addition to the above, prizes to the amount of 10*l*. will be offered for Fruit and Vegetables. A portion of the Society's ground will be set apart for the present exhibition, and space will be allotted either in a marquee or the promenade, at the discretion of the managing committee, to Nurserymen who may wish to arrange and exhibit their collections in distinct sections, irrespective of competition for prizes. Space will also be allotted for the display of Garden Decorations and works of Ornamental Art associated with Horticulture.

Plants intended for the Exhibition will (on being consigned to the Horticultural Committee) have free transit over the line of railway from Exeter to Barnstaple.

Application for space to be made to the undersigned before May 1 next.

All articles for exhibition must be staged by the evening of Tuesday, May 31, and are not to be removed earlier than the morning of Saturday, June 4.

(Signed) George Brown,
Barnstaple. Hon. Sec. Local Committee.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—Notice is hereby given that an ELECTION of PENSIONERS will take place on WEDNESDAY, the 6th July next. All persons desirous of becoming Candidates are requested to send in their testimonials, &c., to the Committee on or before the 9th May next, after which time they will not be received.—By order, Edw. R. Cutler, Sec.

14, Tavistock Row, Covent Garden, April 9.

Printed Forms of Petition may be had upon application to the Secretary.

750 BEDDING PLANTS for 7*l*. including basket and packing, or one half for 3*l*. 15*s*.

20 Anagallis, 2 sorts	25 Lobelias, 6 sorts
12 Ageratum, 3 sorts	50 Hollyhocks, Seedlings
50 Calceolaria, 6 sorts	12 Koniga
12 Celsia, 2 sorts	12 Nierembergia
50 Chrysanthemums, 50 sorts	12 Œnotheria riparia
12 Cupheas, 3 sorts	50 Petunia single, 25 sorts
50 Dahlias, 50 sorts	50 do. double, 25 sorts
50 Fuchsias, 50 sorts	20 Salvias, 6 sorts
50 Geraniums, Scarlets &c., 50 sorts	12 Senecio, double purple
50 do. Variegated, 12 sorts	20 Tropœolum, 6 sorts
20 Heliotropes, 12 sorts	12 Variegated Mint
	100 Verbena, 100 sorts

Apply to J. Scott, Merriott Nurseries, Crewkerne, Somerset. Post-Office Order on Crewkerne, or crossed cheques from unknown Correspondents. Catalogues on application, for two stamps.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.

INSTITUTED 1838.

Patroness—Her Most Gracious Majesty the QUEEN.

Patron—His Royal Highness the PRINCE CONSORT, K.G.

THE FOLLOWING SUBSCRIPTIONS HAVE BEEN RECEIVED SINCE THE FORMER LIST WAS MADE UP:—

Allen, William, Gr. to Wm. Langton, Esq.			£1 1
Babington, C. C., Esq., Cambridge	£10	10	
Baker, William, Gr., Cholmondely Castle			1 1
Bragg, William, Nurseryman, Slough			1 1
Black, J., Gr. to Sir Wm. Jollifie			1 1
Brown, William, Gr. to Earl of Chesterfield			1 1
Bruce, John, Gr. to J. Chapman, Esq.			1 1
Bundy, Thomas, Gr., North Stoneham			1 1
Cames, John, Gr. to General Cole			1 1
Cames, Thomas, Gr. to Colonel Greenwood			1 1
Cramond, Alexander, Gr. to J. C. Wyndham, Esq.			1 1
Cobden, John, Esq., Tortworth Court			1 1
Colman, J. J., Esq., Norwich			1 1
Cook, William, Gr. to F. Izant, Esq.			1 1
Cook, William, Sheffield			1 1
Cornwell, Charles, Nursery, Barnet			1 1
Edmonds, Joseph, Gr. to Colonel Buck			1 1
Edwards, John, Wellington Nursery			1 1
Erskine, The Right Hon. Thomas			1 1
Gardeners' Chronicle, Proprietors of (2d Donation)	£10	10	
Green, John, Esq., Kensington			2 2
Griffin, J., Nursery, Bath			1 1
Henderson, A., Trentham Gardens			1 1
Holmes, J., Hackney			£1 1
Hutchinson, J., Gr. to General Murray			1 1
Kemp, Edward, Birkenhead			1 1
Kershaw, Henry, Gr. to J. Howell, Esq.			1 1
Kitson, George, Gr. to John Noble, Esq.			1 1
Laing, Robert, Nursery, Twickenham			1 1
M'Donald, J., Esq., Wellstead, Bedford			1 1
M'Kenzie, Alexander, Charlton, Kent			1 1
Monk, Jas., Gardener, Dulwich			1 1
Randall, A., Gr. to C. Hole, Esq.			1 1
Reed, Bery, Nursery, Aberdeen			1 1
Richard, John, Gr. to Lord Londesborough			1 1
Roberts, James, Gr., Stoke Hall, Exeter			1 1
Rolfe, John, Gr. to H. Schmidt			1 1
Shakespear, Wm., Hothouse Manufacturer, Birmingham			1 1
Smith, Mrs., Blendon Hall, Bexley			1 1
Spire, Thomas, Gr. to Thomas Lee, Esq.			1 1
Squibb, J., Gr. to Mrs. Turner			1 1
Squibb, Rob., Gr. to the Marquis of Bristol			1 1
Stewart, A., The Gardens, Chatsworth			1 1
Veitch, Henry J., Exotic Nursery, Chelsea			1 1
Vogan, James, Esq., Swavely, Dartford			1 1
Videon, G. F., Clarendon Place, Edgeware Road			1 1
Welch, James, Gr. to H. J. Mulcock, Esq.			1 1

(Signed) E. R. Cutler, Secretary, 14, Tavistock Row, Covent Garden.

HORTICULTURAL SOCIETY OF LONDON.

SCHEDULE OF PRIZES.

EXHIBITIONS May 12 & 13, at St. James's Hall, Regent Street.

Class.	Prizes offered. 1st.	2d.	3d.
I. Ten Orchids (Amateurs)	£7	£5	£4
II. Ten Orchids (Nurserymen)	6	4	3
III. Six Chinese Azaleas (Amateurs)	4	3	2
IV. Eight Chinese Azaleas (Nurserymen)	4	3	2
V. Three Chinese Azaleas, standards, with at least 30 inches of clear stem (Amateurs)	4	3	2
VI. Six Chinese Azaleas, standards, with at least 30 inches of clear stem (Nurserymen)	4	3	2
VII. Six Rhododendrons, distinct sorts, in pots (Amateurs)	3	2	1
VIII. Eight Rhododendrons, distinct sorts, in pots (Nurserymen)	3	2	1
IX. Eight Roses, distinct sorts, in pots not exceeding 13 inches (Amateurs)	5	4	3
X. Twelve Roses, distinct sorts, in pots not exceeding 13 ins. (Nurserymen)	5	4	3
XI. Six Roses, distinct sorts, in pots of any size	4	3	2
XII. Eight fine-foliaged Plants. Variegated plants admitted	4	3	2
XIII. New or extremely rare species of Ornamental Plants not introduced by the Society	Certificates		
XIV. Single Specimen of the best Plant introduced within the last ten years, in flower	2		
XV. Single Specimen of the best plant introduced within the last 10 years, not in flower	2		
XVI. Miscellaneous	Certificates		
FRUIT.			
XVII. The best collection of Fruit (Offered by Wm. Wilson Saunders, Esq., Treasurer of the Society.)	£5		
XVIII. Pine Apples, large sorts, not Providence, single specimens	2	1	1
XIX. Pine Apples, Queens, sgl. specimens	2	1	1
XX. Grapes, black, three bunches, in baskets	3	2	1
XXI. Grapes, white, do. do.	3	2	1
XXII. Cherries, in single dishes	2	1	15*s*.
XXIII. Strawberries, 2 dishes, distinct sorts	2	1	10*s*.
XXIV. Strawberries, single dishes, of British Queen	30*s*.	20*s*.	15*s*.
XXV. Strawberries, single dishes of any one sort, except British Queen	30*s*.	20*s*.	15*s*.
XXVI. Miscellaneous	Certificates		

EXHIBITION June 29 & 30, at St. James's Hall.

I. Ten Orchids (Amateurs)	7	5	4
II. Twelve Orchids (Nurserymen)	7	5	4
III. Six Orchids (Amateurs)	4	3	2
IV. Six Orchids (Nurserymen)	3	2	1
V. Six French Spotted Pelargoniums (Amateurs)	3	2	1
VI. Eight French Spotted Pelargoniums (Nurserymen)	3	2	1
VII. Six Fancy Pelargoniums (Amateurs)	3	2	1
VIII. Eight Fancy Pelargoniums (Nrsmen.)	3	2	1
IX. Eight Roses, in pots (Amateurs)	7	5	4
X. Twelve Roses, in pots (Nurserymen)	7	5	4
XI. Six Roses, the best new sorts introduced since the Spring of 1856, in pots (Nurserymen)	Certificates		
XII. Ten Exotic Ferns, in pots (Amateurs)	5	4	3
XIII. Ten Exotic Ferns, in pots (Nrsmen)	4	3	2
XIV. Three Exotic Ferns, in baskets suspended	2	1	15*s*.
XV. Eight Lycopods, in pots	3	2	1
XVI. Three Lycopods, in baskets suspended	2	1	15*s*.
XVII. Eight fine foliaged Plants	4	3	2
XVIII. Eight variegated plants	4	3	2
XIX. Single specimen of the most ornamental plant introduced within the last three years in flower	2		
XX. Do., do., not in flower	2		
XXI. New or extremely rare species of Ornamental Plants, in flower; not introduced by the Society	Certificates		
XXII. Twelve Carnations, cut flowers	20*s*.	15*s*.	
XXIII. Twelve Picotees, do.	20*s*.	15*s*.	
XXIV. Twelve Pinks, do.	20*s*.	15*s*.	10*s*.
FRUIT.			
XXV. Fruit and Flowers, baskets in threes for the decoration of the dinner table, offered by C. Wentworth Dilke, Esq., V.P., five prizes, viz.—5*l*., 4*l*., 3*l*., 2*l*., and 1*l*. Beautiful arrangement will be the test of merit in this Exhibition; valuable flowers or fruit are therefore not demanded. Each set must consist of three baskets. The prizes will be awarded by a jury of ladies. Patterns of the baskets which must be used may be seen at the Office of the Society.			
XXVI. Pine Apples, large sorts, not Providence, single specimen	£2	£1	£1
XXVII. Pine Apples, Queens, or small kinds, single specimen	2	1	1
XXVIII. Grapes, Black Hamburgh, three bunches, in baskets	3	2	1
XXIX. Grapes, Muscats, 3 bunches, in bkts.	3	2	1
XXX. Grapes, Frontignans, 3 bunches, do.	3	2	1
XXXI. Grapes, Busby's Golden Hamburgh, three bunches in baskets, offered by Mr. Veitch	5	0	0
XXXII. Grapes, best three bunches of any one variety, except those included in classes 28, 29, 30, 31	3	2	1
XXXIII. Vines in pots; in pairs	3	2	1
XXXIV. Melons, Green-fleshed	1	15*s*.	0
XXXV. Melons, Scarlet-fleshed	1	15	0
XXXVI. Peaches, two dishes, distinct sorts, each to contain six fruits	3	2	1
XXXVII. Peaches, single dishes, in sixes	2	1	15*s*.
XXXVIII. Nectarines, two dishes, distinct sorts, in sixes	3	2	1
XXXIX. Nectarines, single dishes, in sixes	2	1	15*s*.
XL. Cherries, two dishes, distinct sorts	2	1	1
XLI. Cherries, black, in single dishes	1	1	0
XLII. Cherries, white, ditto	1	1	0
XLIII. Plums, two dishes, distinct sorts	2	1	1
XLIV. Strawberries, the best collection of sorts, one dish of each	3	2	1
XLV. Strawberries, single dishes of any one sort	30*s*.	20*s*.	15*s*.
XLVI. Peaches, Cherries, Pears, Plums, ripe or unripe, in pots, pot of each	4	3	2
XLVII. Miscellaneous	Certificates		

NEW VERBENAS,
RAISED BY MR. ELPHINSTONE.

1. PICTURATA.—Crimson, large, and fine truss, conspicuous white round eye.
2. COMTE DE MONTALEMBERT.—Light lilac, very large flower of extra substance, with large white eye.
3. ANNIE.—Light rose, large white eye, a very desirable colour and good substance.
4. BOUQUET DE LA REINE.—Peach, large white eye, fine shape, and extra substance, quite a new colour.
5. MAGNUM BONUM.—Bright crimson, fine yellow eye, large flower and a very striking variety.
6. GRANDIFLORA PURPUREA.—Violet purple, large truss, fine white eye.

Plants ready for sending out second week in April.

D. BROWNE has great pleasure in introducing the above Six New VERBENAS, as being a decided improvement on any hitherto produced in form, colour, and extra substance, with fine strong habits so desirable for bedding purposes.

The Stock being limited, early orders are respectfully solicited so that the best Plants may be selected and reserved.

The collection of Six Varieties, package included, 20*s.*, or 3*s.* 6*d.* each, sent free of carriage.

Horticultural Grounds, Sprowston; Seed Establishment, 41, London Street, Norwich. The Trade supplied on the usual terms.

NEW DOUBLE PETUNIAS.

C. W. HARGRAVE begs respectfully to announce that he will shortly be prepared with STOCK of the NEW DOUBLE PETUNIAS advertised by him in the *Gardeners' Chronicle* of September 25, 1858.

They constitute a unique collection in themselves, being of exquisite form, firm substance, rich and decided in colour, very fragrant, and of first-rate habit, having good guard petals, with the centres well filled, and in fact are superior to the Continental or other varieties hitherto sent out. Their nomenclature is as follows:—

ROSETTE.—Crimson, very double, dwarf habit.
ROSEA ALBA.—Rose clearly mottled with white.
PURPLE KING.—Large flower, well formed.
CRIMSON GEM.—Bright crimson, with white centre.
ALBA MAGNIFLORA.—Beautiful form, very fragrant.
KING OF CRIMSONS.—Bright crimson, brighter than its parent "Crimson King." The varieties previously introduced as crimson have all proved themselves to be only purple.

Plants of any of the above 5*s.* each, or the set of six 25*s.*

It is requested that the Trade forward their commands at their earliest convenience, as all orders will be executed in the rotation in which they are received.

C. W. HARGRAVE, The Nursery, Winchmore Hill, N.

PLOCOSTEMMA LASIANTHUM (Blume). — Amidst the prevalent scarcity of novelties of sterling merit, it is with pleasure the Subscribers invite attention to the above-named plant. It belongs to a new genus closely allied to Hoya; and the present species was received in 1857 from Mr. Hugh Low, Jun., by whom it was discovered on the north-western side of the Island of Borneo. The plant, which is not a climber, presents a noble appearance, having exceedingly handsome foliage; and it possesses a very great recommendation in being a most profuse bloomer, the clusters of flowers being produced in great numbers. The flowers are of waxy consistence, like Hoya—colour, orange; the petals reflex until they become quite perpendicular, and rest on the flower-stalk; the lower part of the petals is entirely covered with a snow-white velvety pubescence, giving them an unusually beautiful appearance. The flowers are fragrant, and 14 have expanded in one cluster on a newly imported plant, which was submitted to the inspection of Sir W. J. Hooker, of Kew, by whom it is figured and described in the November number of the "Botanical Magazine." It is also figured in the "Florist." Plants in May, price 63*s.* each. Usual discount to the Trade.

Hugh Low & Co., Clapton Nursery, London, N.E.

AZALEA INDICA.

J. IVERY and SON beg respectfully to invite growers of the above named to an inspection of their unrivalled Stock of Young Specimens of all the newest and best varieties, many of which have been exhibited at the Metropolitan Exhibitions. They are clean and healthy, well set with bloom, and moderate in price. Catalogues forwarded post free upon application.—Dorking Nursery, April 9.

PLANTS FOR THE FLOWER GARDEN.—The following may be had at the prices attached, and the plants are all fine and thoroughly established in single pots:—

	Per dozen.—*s.*	*d.*
Scarlet Geraniums, Tom Thumb, Frogmore and others, cut down plants, that were struck last spring	2	0
Ditto, struck last autumn	2	6
Verbenas, all the best varieties	2	6
Antirrhinums	3	0
Ageratums	2	6
Calceolarias, shrubby	2*s.* 6*d.* to 3	0
Cuphea platycentra, extra large	3	0
Dahlias, best sorts	4*s.* to 9	0
Carnations and Piccotees ditto	per pair 1*s.* to 1	6
Pinks, ditto	,, 6*d.* to 1	0
Fuchsias, best sorts	3*s.* to 4	0
Gaillardia picta	2	6
Heliotropes	2	6
Lobelia speciosa and ramosoides	2	6
Alyssum variegatum	2	6
Hollyhocks, fine named flowers	9	0
Lantanas	2	6
Nierembergia gracilis	2	6
Petunias, fine sorts	2	6
Senecio (double dark Groundsel)	2	6
Salvia fulgens	2	6
Variegated Geraniums, Flower of the Day, fine cut down plants	4	0
Osborne's Brilliant	3	6

Wood & Ingram, Huntingdon.

CHEAP AND USEFUL PLANTS SENT FREE TO LONDON.

A. VAN GEERT, Nurseryman, Ghent (Belgium), begs to inform amateurs and the Trade that a SUPPLEMENT to his GENERAL CATALOGUE is just published which may be had on application from his agent, Mr. R. Silberrad, 5, Harp Lane, Great Tower Street, London.

	s.	*d.*
Ghent Azaleas, with flower-buds, 50 varieties for	42	0
Ghent Hardy Rhododendrons, 25 varieties for	30	0
Pæonia sinensis, 25 fine varieties for	25	0
Asclepias tuberosa, per hundred	10	6
Magnolia macrophylla, per dozen	6	0
,, strong, each	5*s.* to 10	6
Ginkgo biloba, per 50	21	0
Glycine sinensis, strong per doz.	9	0
Robinia inermis pyramidalis	5*s.* to 10	6
Pæonia arborea, 12 fine varieties	30	0
Clematis azurea grandiflora, per dozen	9	0
Viburnum macrocephalum, strong plants	5	0
Chilian Alstrœmeria, per hundred	12	0
Pinus macrophylla, per dozen	9	0
Erythrina Crista galli, per dozen	12	0
Chamærops humilis, per doz.	18	0
Citrus sinensis (Otaheite Oranges) per hundred	84	0
Agave filifera, fine	21*s.* to 42	0
,, americana variegata	3*s.* 6*d.* to 5	0
Bonapartea gracilis, very strong	84	0
Camellias, 100 varieties for	84	0
Indian Azaleas, 25 varieties for	21	0
,, ,, eight new varieties (Vervaene) small	30	0
Canna, 15 varieties for planting out	12	0

N.B. On payment of 5*s.* extra per package, I undertake to deliver the Plants free out of the Custom House in London. A reference is respectfully requested from unknown correspondents.

NEW ROSES FOR 1859.

WILLIAM WOOD and SON are now executing their orders for all the best NEW ROSES of the present season. The plants are well grown, vigorous, and healthy, and are supplied at the lowest advertised prices.

DESCRIPTIVE LISTS of the above will be sent free on application. Early orders will command the strongest plants.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

ROSES FOR BEDDING,
By the Dozen, the Hundred, or the Thousand.

WILLIAM WOOD and SON have now to offer many thousands of well grown healthy plants of ROSES, in 60 pots, which will be ready to plant out about the end of April, consisting of an immense number of the best Hybrid Perpetual, Bourbon, Tea, and Noisette Roses, Catalogues of which may be had free on application.

Early orders are most earnestly solicited, as the unsold portion of the stock will be planted out the first week in May. Extra plants presented with each order to compensate for distant carriage.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

THE BEST SEASON FOR BEDDING OUT ROSES.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

WM. WOOD and SON respectfully submit that the months of April and May are the most eligible for planting out Roses from pots, for the purpose of forming groups in the Parterre and Rose Garden.

W. W. & Sons having on hand an immense Stock of many thousands, in pots, will be happy to supply them on the following reasonable terms.

Hybrid Perpetual Roses	9*s.* to 12*s.* per dozen.
Isle de Bourbon ditto	12*s.* to 18*s.* ,,
Tea-scented	12*s.* to 18*s.* ,,
China, Climbing and Noisette ditto	9*s.* to 12*s.* ,,

CATALOGUES sent post free on application.

Plants added to each order to compensate for distant carriage

FINE HEALTHY ROSES.—

STANDARDS	18*s.* per doz.
DWARFS (on the Manetti)	12*s.* ,, ,,

As the weather still continues mild and favourable for planting, George Clarke begs to state he has still a fine stock of all the leading kinds to offer at the above prices, the selection being left to him. The Plants are all healthy and well rooted, therefore calculated to give the greatest satisfaction. Plants carefully packed for any distance. Carriage of all packages paid to London; and in all orders amounting to 20*s.* plants are added to compensate for distant carriage.

George Clarke, The Nursery, Brixton Hill.

NEW ROSE, HYBRID PERPETUAL "LÆLIA."—Colour delicate satin rose, petals very large, perfectly smooth, and well formed; flowers of exquisite shape, large size, and highly scented. John Cranston has the pleasure to announce that he will be prepared to supply early in April plants of this superb new Rose. It was exhibited by him in his winning stand of single blooms at the Grand National Rose Show in July last, and was unquestionably the most attractive variety of the Show, and the admiration of all who saw it. Fine healthy plants, 5*s.* each, with the usual discount to the Trade.—Nurseries, King's Acre, near Hereford,

NEW ROSES.

JOHN CRANSTON will be prepared to supply early in April strong plants of the under-mentioned superb NEW ROSES at 5*s.* each, with the usual discount to the Trade. Purchasers who may prefer leaving the selection to himself will be supplied upon the following terms:—12 choicest varieties for 2*l.* 10*s.*; 24 for 5*l.*; the set of 32 varieties for 6*l.* 6*s.*

Plants of the new varieties presented with each order to compensate for carriage.

TEA-SCENTED.

Enfant de Lyons	Madame Joseph Halphay
Madame Damaisin	Reine des Pays Bas

BOURBON.

Docteur Berthet | Edith de Murat | Octavie Fontaine

HYBRID PERPETUAL.

Altesse Imperial	Joseph Vernet
Ardoisée de Lyon	Le Mont Vésuve
Anna Alexieff	L'Oriflamme de St. Louis
Armide	Mathilde de Mandeville
Ambroise Verschaffelt	Madame Jenny Varin
Anna de Diesbach	Madame Octavie Depeyre
Bouquet de Marie	Mignard
Beauté de Rœyghem	Orderic Vital
Comte de Beaufort	Princesse Olympie
Comtesse Cecile de Chalbrillan	Reine de la Cité
Empereur de Maroc	Solomon
Eugène Alary	Virginal

NOISETTE.—Beauté de Grennemont.

J. Cranston, Nurseries, King's Acre, near Hereford.

CHOICE ROSES IN POTS.

BIRCHAM and WARD beg respectfully to inform the admirers of the Rose that they have a large stock of the following fine varieties, which enables them to offer as under (when a fair selection is made):—

15*s.* per dozen.

Alphonse Karr	La Belle Egarée
Belle Anglaise	Madame Damet
Baronne de Wassenaer (Moss)	Madame Charlet (B.)
Berceau Imperial	Madame Comtesse
Clemence Delarue	Madame Schmidt
Cardinal Patrizzi	Madame Vidot
Docteur Ruschpler	Miss Gray
Ernest Bergmann	Standard of Sebastopol
Gustave Coraux	Victor Trouillard
Lord Raglan	

20*s.* per dozen.

Abbé Feytel	Mademoiselle Claremont
Adelaide Pavie	Mademoiselle Nancy Dubor
Bernard Nantais	Mademoiselle Zoe Mayrel
Comte de Morny	Mademoiselle Alice Leroy
Candide	Mademoiselle Anais Lorette
Claudia Augustin	Monsieur Jard
Comtesse de Labarthe	Ma Ponctuée (Moss)
Duc de Malakoff	Philomène Crozy
Felix Peretti	Reine de Denmark
General Blanchard	Souvenir d'Elize
Lord Palmerston	Souvenir de Beranger
Madame Debesse	Triomphe de Rennes
Madame Vigneron	Thomas Rivers
Madame Heraud	Triomphe de Montrouge
Madame de St. Genet	Triomphe des Beaux Arts
Madame Elize de Chenier	Vallidé (Moss)
Mademoiselle Josephine	

30*s.* per dozen.

Duke of Cambridge	Monsieur de Montigny
Evêque de Nimes	Madame Van Houtte
Gloire de Lyon	Marie Portemer
Louise d'Autriche	Mademoiselle Goddard
Lælia	Marie Thierry
Maximilian II.	Reine Blanche (Moss)

A Descriptive List of the above may be had on application

Carriage paid to London and Peterborough.

Hedenham Rosary, Bungay, Suffolk.—April 9.

EXHIBITION OF EARLY TULIPS.

WELLINGTON NURSERY, ST. JOHN'S WOOD, LONDON.

MESSRS. E. G. HENDERSON & SON

RESPECTFULLY announce that a very splendid display of these extremely gay and effective early spring-flowering BULBS may now be seen at their Nursery Establishment. The collection consists of nearly 3000 Bulbs in 400 named varieties, and differing from the late-flowering Tulips in their remarkably dwarf growth—from 6 to 9 or 12 inches in height, including vase-like flower-cups of the most chaste and brilliant self-colours, varying from snow-white to all the intermediate shades of rose, cerise, carmine, scarlet, crimson, rich bronze, and golden-yellow, and in other varieties showing rich marginal flukes, feathers, or belts of the same colours upon pure white, purple, or golden-yellow grounds.

A PERFECT SUBSTITUTE FOR GRASS WITHOUT MOWING!

SPERGULA PILIFERA,

Forms an admirable Moss-like Plant, with a dense low growth, of the easiest culture, and uniform rich verdure throughout the year. It is a charming substitute for Grass-lawns, Verges, &c., is perfectly uninjured by cold or drought; bears any degree of pressure by rolling or walking upon; is studded over in July with myriads of snow-white starry blossoms; is softer in its structure and equally level as a Turkey carpet, and

REQUIRES NO MOWING!

A further description of it is given, with directions where a beautiful Lawn may be seen, of four years' duration, in

E. G. HENDERSON & SON'S SEED CATALOGUE FOR 1859.

Offered in Seed Packets of 6d., 2s. 6d., 5s., and 10s. each.

ORNAMENTAL FIRST-CLASS BEDDING STOCK,
AND OTHER ORNAMENTAL PLANTS.

Strong Plants, including last year's first class introductions, in the following sections, are offered in selections of 12 kinds (one each) as follows:—

VERBENAS, 6*s.* to 9*s.*
PETUNIAS, single and double, 6*s.*, 9*s.*, 12*s.*
FUCHSIAS, 9*s.* 12*s.*, 18*s.*
DAHLIAS, 6*s.*, 9*s.*, 12*s.*, 18*s.*
ACHIMENES, 9*s.*, 12*s.*, 18*s.*

GLOXINIAS, 12*s.*, 18*s.*, 30*s.*
ANTIRRHINUMS, 6*s.*, 9*s.*
CALCEOLARIAS, Bedding, 6*s.*, 9*s.*, 12*s.*
,, spotted flowers for exhibition, 12*s.*, 18*s.*
CARNATIONS, per 12 pairs, 18*s.*

PICOTEES, 12 pairs, 18*s.*
PINKS, 12 pairs, 9*s.*, 12*s.*
CLOVES, distinct, 12*s.*
PHLOXES, 6*s.*, 9*s.*, 12*s.*
PANSIES, 6*s.*, 9*s.*
MIMULUS, 6*s.*, 9*s.*, 12*s.*

NEW CONTINENTAL VERBENAS AND PETUNIAS OF 1859, 18s. Per Dozen.

GERANIUMS.

STRONG PLANTS FOR THE PRESENT SEASON'S BLOOMING:—

LARGE SHOW VARIETIES, 12*s.*, 18*s.*, per dozen.
FRENCH SPOTTED do., 12*s.*, 18*s.* p. doz.
FANCY do., 12*s.*, 18*s.* per dozen.
VARIEGATED do., 9*s.*, 12*s.*, 18*s.*
SCARLET or ZONALE do., 6*s.*, 9*s.* 12*s.*

Wellington Nursery, St. John's Wood, London.

THE BEST DWARF GERMAN ASTER SEED

EVER YET OFFERED TO THE PUBLIC.

SAVED FROM FLOWERS THAT HAVE OBTAINED FIRST PRICES FOR MANY YEARS PAST AT VARIOUS EXHIBITIONS.

EDWARD TILEY begs to inform the lovers of the above beautiful flower, that he has just purchased the entire stock of Seed, which has been selected from the finest flowers as to shape, colour, and dwarfness of growth. They were inspected by many good judges while in bloom last season, who said they had never seen the Aster brought to such perfection before, and with such a dwarf habit. Seeds 1*s.* 6*d.* per packet, or two packets for 2*s.* 6*d.*

Extra fine mixed Hollyhock seed saved from the newest and best varieties, 1*s.* per packet. [packet.

Antirrhinum seed, saved from spotted and striped sorts, 6*d.* per

Sweet William seed, saved from 24 distinct varieties, the major part of which always flower double, 6*d.* per packet.

Delphinium formosum seed, extra fine, 6*d.* per packet.

The Improved Bath Cos Lettuce seed, saved from the finest stock ever grown in the west of England; it is very crisp and not at all liable to run, 1*s.* 6*d.* per packet.

A small quantity of seed of the Dwarf Incomparable Cabbage. This is a superb variety for windy or cold situations; it will stand the severest winter and will form good hearts much earlier than any other variety; it is very tender and soft when cooked, not having any large coarse ribs. If the seed be sown at several different times no person need be without good young Cabbage all the year. 1*s.* 6*d.* per packet. A packet of the Improved Coss Lettuce and packet of the Dwarf Incomparable Cabbage, 2*s.* 6*d.*

Digitalis or Foxglove seed, saved from the finest collection ever yet seen; the flowers come to an immense size, and are as handsome if not handsomer than the Gloxinias, 1*s.* per pkt.

EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Church Yard, Bath.

A remittance must accompany all orders either in cash or penny postage stamps.

LODGE'S NEW HYBRID RHODODENDRON, "COUNTESS OF WILTON," the best and hardiest Rhododendron in cultivation.—This splendid Hybrid Rhododendron was raised from seed by the late William Lodge. The habit of this variety is entirely distinct from any other, and is the most vigorous of its class. The foliage is a beautiful olive green, of a large size, and a thick leathery appearance. The flower is a rich crimson, good form, being well cupped, of large size, and a very large truss, standing out boldly from the foliage. It is the hardiest variety of its class, having stood in an exposed situation the severest winters, without the slightest injury, with no protection whatever, while other varieties have been killed.

It possesses a very great advantage in flowering late, a desideratum much wanted in the high coloured Rhododendrons, as the other kinds are always injured by the late frosts and cold winds.

It has been exhibited at the Manchester Botanical Exhibition, and obtained a first-class certificate of merit, also a label of commendation by the judges.

The Executors of the late William Lodge have great confidence in introducing this variety to the public, and feel assured it will become a general favourite.

Strong bushy plants are now ready, from 2 to 4 feet high at One and a Half, Two, and Three Guineas each, in proportion to the size. A considerable reduction when a quantity is taken.

As the demand is great, early orders are necessary to ensure well-budded plants.

The following Nurserymen are Agents for the sale of it:—and from whom plants may now be had.

Messrs. WILLIAM ROLLISSON & SONS, Tooting, near London;
Messrs. E. G. HENDERSON & SON, St. John's Wood, London;
Mr. JOHN WATERER, Bagshot, Surrey;
Messrs. WILLIAM WOOD & SON, Maresfield, Sussex;
Messrs. THOMAS JACKSON & SON, Kingston, Surrey;
Messrs. BENJAMIN REID & Co., Aberdeen;
Mr. JOHN KEYNES, Salisbury.

A remittance or reference is required from unknown correspondents. Post-office Orders made payable to JAMES LODGE, Park Nurseries, Singleton Brook, Broughton, Manchester.

GEORGE SMITH, in offering the following Six Superb SEEDLING FUCHSIAS, warrants them to give satisfaction. They are all of good growth, fine habit, and free bloomers, viz.:—

ECLAT (SMITH).—This beautiful flower obtained a first-class Certificate at the National Floricultural Society; at the same time the Judges gave the following description, in their report of the proceedings of the Society's General Meeting, October 7, 1858:—"First-class Certificate to Fuchsia Eclat. Habit good, a free and abundant bloomer, sepals and tube scarlet, inside of sepal delicate rose, corolla clear white, a decided improvement on the white corolla'd varieties." G. S. has only to add that it is a plant of strong growth and fine habit, in every way calculated to please as well as the Princess of Prussia, being quite distinct, 10*s.* 6*d.* Figured in the "Florist," Feb. 1859.

CHANCELLOR (SMITH).—See report of the National Floricultural Society, July 22, 1858. Certificate of Merit to Fuchsia Chancellor; character and habit first-rate, form good, size medium, substance fine, scarlet crimson tube and sepals, with violet purple corolla. The tube of this flower was considered rather too short, or it would have received a higher award. 10*s.* 6*d.*

SCIPIO (SMITH).—See report of the National Floricultural Society, August 5, 1858. First-class Certificate to Fuchsia Scipio. Habit dwarf, tube short, sepals broad, corolla bold and expanding, colour coral red sepals, with violet purple corolla, a great improvement on existing globosa varieties, and remarkable for its distinctness and boldness in bud. 10*s.* 6*d.*

FASCINATION (SMITH).—Tube rather shorter than the Princess of Prussia, the sepals broader, the corolla very large and pure, seen to great advantage by the graceful manner in which the sepals reflex. 7*s.* 6*d.*

PERICLES (SMITH).—A brilliant flower of average size, very smooth and good form, sepals crimson scarlet, broad and well reflexed, corolla violet purple, also an abundant bloomer. 7*s.* 6*d.*

GOLDEN PLOVER.—A flower in form and colour of Souvenir de Chiswick. This is particularly recommended for the elegant foliage, which is of a golden green heavily veined with purple lake, giving the plant a conspicuous and splendid appearance; fine habit. 7*s.* 6*d.*

SIR COLIN CAMPBELL (WHEELER).—An extra fine double variety, fine habit and free, particularly recommended. 10*s.* 6*d.* G. S. having made arrangements with Mr. Wheeler, can supply his Sir Colin Campbell at the same time that the collection is sent out—about the 20th of April.

G. S. can confidently recommend the following Three NEW VERBENAS as distinct, and worthy to be added to all good collections, viz.:—

CYRUS (SMITH).—Brilliant rosy purple, primrose eye, fine form, a strong grower. 5*s.*

MARS (SANKEY).—Brilliant crimson scarlet, conspicuous lemon eye, particularly recommended as a bedding variety, received a Certificate at the National Floricultural Society. 5*s.*

STRIATA PERFECTA (SMITH).—Bright lavender, with broad white stripe, of good form and habit. This is one of the most distinct and beautiful Verbenas that has been offered for years for all purposes. 5*s.*

Tollington Nursery, Hornsey Road, Islington, near London.

SPRING CATALOGUE.

MESSRS. ARTHUR HENDERSON AND CO.'S CATALOGUE OF SOFT-WOODED PLANTS (including all the leading useful novelties for this year), can now be had of them post free, on application.

Pine-apple Place, Edgware Road, London, W.

SEEDLING FUCHSIAS.

GEORGE WHEELER, NURSERYMAN, &c., Warminster, Wilts, respectfully announces that strong plants of his SEEDLING FUCHSIAS will be ready to be sent out on and after the 20th inst.

SIR COLIN CAMPBELL.—The most beautiful double Fuchsia ever offered. Flower very large; tube and sepals dark scarlet. Corolla very prominent, large, full, and regular, and of a beautiful purple colour; a fine variety for exhibition, possessing the desirable property of holding its blooms much longer than other varieties; its large blooms makes it a very conspicuous and effective plant in a collection. Price 10*s.* 6*d.* each. Sir Colin was shown in full bloom at the Trowbridge Horticultural Exhibition the 18th August, at Bath on the 25th, Salisbury, 30th; at the National, in London, on the 2d September; and at Devizes on the 3d; at all which places it obtained Prizes or Certificates.

WILTSHIRE LASS.—Tube and sepals clear waxy white, corolla rich dark puce; an improvement on the Maid of Kent, the flower being larger, of good habit, a free bloomer, and a good grower. Price 5*s.* each. The usual discount to the Trade.

G. WHEELER will be enabled to send out with the above the six new Fuchsias offered by Mr. G. Smith, of Tollington Nursery.

G. WHEELER has on hand a large quantity of RHODODENDRONS from 9 inches to 2 feet, at very moderate prices.

NEW PLANTS.—1859.

HUGH LOW AND CO. respectfully invite attention to the annexed LIST of novelties, orders for which they will be very happy to receive:—

NEW GLOXINIAS.

HUGH LOW & Co. have selected the undernamed varieties from a large number of plants raised by themselves from seed carefully and judiciously hybridised, and having flowered them for two seasons, and compared them with the varieties previously in cultivation, H. L. & Co. can with confidence recommend the selection to the notice of their friends as comprising really distinct kinds, worthy of a place in the most select collection of this much admired and easily cultivated flower Plants in April. Price, 3*s.* 6*d.* each.

ERECT-FLOWERING VARIETIES.

Atroviolacea, very dark violet purple, base of the tube beautifully spotted on a pure white ground. [white

Bridesmaid, white tube, shaded rose border, lips spotted with

Lineata superba, rosy carmine tube, towards the lips alternate bands of white and rose. [purple.

Perfection, clear white throat, dark blue belt, lips deep violet

Princess Alice, clear white tube, bright rose belt, edges very pale rose.

Princess of Prussia Improved, throat and belt very much brighter crimson than in the old variety.

DROOPING-FLOWERED VARIETIES.

Attraction, base of tube white, finely spotted, lips rosy crimson, outer edge pure white.

Beauty, white tube, inside carmine lake, broad white belt, flowers very large

Meteor, bright crimson with violet throat, carmine blotch on the lip.

NEW ROSES OF 1859.

HYBRID PERPETUAL.	HYBRID PERPETUAL.
Altesse impériale	Virginale
Ardoisé de Lyon	Beauté de Rœyghem
Comte de Beaufort	BOURBON.
Bouquet de Marie	Docteur Berthet
Empereur de Maroc	Madame Marchal
Salomon	Octavie Fontaine
Oriflamme de St. Louis	
Reine de la Cité	TEA-SCENTED.
Ambroise Verschaffelt	Madame Damaizan
Orderic Vital	Madame Darru
Anna de Diesbach	Reine des Pays Bas

Plants 5*s.* each.

NEW VERBENAS.

The entire stock of these nine varieties is in the possession of H. L. & Co., and they can with the greatest confidence recommend them to their friends as distinct and first-class flowers.

Bellona, bright cerise, dark centre, good form, very distinct.
Flora, lilac, white eye, large truss, fine form.
Lady Cotton Sheppard, bright rosy purple, white eye, large truss, very distinct.
Mars, bright red, extra large truss, fine form and free flowerer.
Miss Emily Hanmer, ruby, white eye, immense truss, extra fine form, the best of its class.
Mrs. Fowke, rosy purple, fine white eye, extra large truss, fine form, very free.
Mrs. Leslie, bright rose, very large white eye, large truss, and splendid form.
Rubens, ruby red, white centre, good form, very distinct and free bloomer, from 2*s.* 6*d.* each.

VERBENA SNOWFLAKE.—The best white Verbena ever offered for bedding purposes. With a flower equal to Mrs. Holford, it produces a much larger number of trusses on the same space of ground. This variety has been grown in company with the other white kinds at present in cultivation, and has been found to be more effective than any of them. In order that it may be extensively planted the first season, H. L. & Co., have decided on offering it at a cheap rate.

Single plants, 2*s.* 6*d.*; per doz., 18*s.*; per 100, 100*s.* In April.

New Verbenas received from M. Boucharlat of Lyons:—

Abondance	Madame Denis Blain	Mons. Denis Blain
Bleu magnifique	Madame Hardy	Monsieur Hardy
Felix Roland	Madame Hoste	Reine Blanche
Gloire de Monplaisir	Madame Large	Souvenir de M. Kossuth
	Manteau d'Evêque	Seringe

Plants 1*s.* 6*d.* each, now ready.

New Verbenas received from M. Rougier-Chauvière, of Paris. These and the preceding collection include the finest varieties offered this season on the Continent.

Baccarat	Gitana	Marie Rougier
Cendrillon	Ivanhoe	Ne Plus Ultra
Cerise Clara	La Magicienne	Primulæflora
Fatima	Leandre	Rosalinda
Figaro	Lucrece	Rosamond

Plants now ready, 1*s.* 6*d.* each.

Verbena Madame Jourdin, the most distinct and beautiful of all the striped varieties, per dozen, 12*s.*

LOBELIA TRIGONICAULIS, a new species from Moreton Bay, figured and described by Sir Wm. J. Hooker. A beautiful dense-growing variety, each plant covering a space of ground 12 to 18 inches in diameter, with its ample bright green foliage (in the way of Verbena Maonetti) and large light blue flowers with fine white eye. It will be much in demand for bedding purposes. For further description see "Cottage Gardener." Plants in April, price 2*s.* 6*d.* each, or 21*s.* per dozen.

Usual discount to the Trade on all the above-named plants.

Bedding Plants of older date in large quantities at low prices.

Clapton Nursery, London, N.E.—April 9.

DAHLIAS.

W. HOLMES offers the above in fine plants at 4*s.* per dozen, the new flowers of last year from 6*s.* to 9*s.* per dozen in April.

Chrysanthemums, 5*s.* per doz.		Verbenas, from 2*s.* 6*d.* to 4*s.* p. doz	
Fuchsias, 4*s.* to 6*s.*	,,	Antirrhinums, 4*s.* to 6*s.*	,,
Heliotropes, 2*s.* 6*d.*	,,	Cupheas, 2*s.* 6*d.*	,,
Petunias, 3*s.*	,,	Calceolarias, 4*s.*	,,

Geraniums, Senecio, Lobelias, &c., equally cheap. Catalogues upon application free for one stamp.

Frampton Park Nursery, Well Street, Hackney.

CHOICE SHOW AND FANCY GERANIUMS 6*s.* to 9*s.* per dozen. Also FUCHSIAS, CALCEOLARIAS, VERBENAS, PANSIES, &c. Catalogues on application to GEORGE SMITH, Florist, Seedsman, &c., Common Side, Hurdsfield, Macclesfield.

NEW PETUNIAS.

JOHN SEALEY can now supply the Seven Beautiful New Striped PETUNIAS, to which was awarded the first prize at the Bristol and Clifton Horticultural Society. J. S. has no hesitation in saying that they are the finest varieties in cultivation. The seven for 1*l.*

SPRING CATALOGUE OF DAHLIAS, HOLLYHOCKS, ROSES, &c., and of GARDEN AND AGRICULTURAL SEEDS may be had on application.—St. George's, near Bristol.

HOLCUS SACCHARATUS, or North China Sugar-Cane.—Pamphlet, "A Visit and a Plant;" the only English authority on the Cultivation of the above. Post free 6*d.* Prices of Seed on application. Samples 6*d.* Four varieties of Holcus remitted free by post on receipt of 10*s.*

CHINESE YAMS, 4*s.* per dozen.

ASPARAGUS plants, 16*s.* per 1000.

JOHN W. CLARKE, Whittlesea, Cambridgeshire.

NEW FUCHSIAS (English and Continental).—Strong established Plants, fit to grow as Specimens of the best and leading kinds:—Princess of Prussia, Prima Donna, Governor-General, cheiranthiflora, tricolor, Agnes Sorel, Prince Frederick, Wonderful, Guiding Star, &c.

NEW FRENCH SPOTTED GERANIUMS.—Fine plants set with flower buds and coming into flower, 12*s.*, 18*s.*, & 21*s.* p. doz.

SEEDLING SPOTTED AND STRIPED CALCEOLARIAS, in 6-inch pots, 12*s.* and 18*s.* per dozen.

NEW VERBENAS.—Nearly all those sent out last year and the best of the previously established plants, 4*s.*, 6*s.*, and 9*s.* per dozen.—EPPS'S Nurseries, Maidstone and Ashford.

GREENHOUSE PLANTS, 12*s.*, 18*s.*, 21*s.* per doz.—Fine bushy grown plants, consisting of the best kinds such as Pimeleas, Polygalas, Chorozemas, Aphelexis, Tremandras, Boronias, Leschenaultia, Gompholobium, &c.; also all the leading Creepers.

STOVE PLANTS, 12*s.*, 18*s.*, 21*s.* per doz.—The best kinds, Begonias of sorts (Rex), Francisceas, Ixoras, Aphelandras, Gesneras, Gloxinias, Medinillas, Vincas, Allamandas, Stephanotis, Rhynchospermums, Dipladeniums, Hoyas, Gardenias and variegated plants.

AZALEAS, consisting of the new and leading kinds, with flower-buds, 12*s.*, 18*s.*, 21*s.*, and 30*s.* per doz.—A large quantity of young specimens of various sizes.

ERICAS, fine grown stuff of the leading sorts, 12*s.*, 18*s.*, 21*s.*, 30*s.* per doz., in 48 and 32-size pots. A quantity of half and full-grown specimens.

TO THE TRADE.

20,000 of young stuff just potted off, in 60-size pots, 50*s.* per 100; pretty plants and very bushy.

ACHIMENES, TYDEAS, AND GLOXINIAS.—All the new and leading kinds (strong bulbs and tubers), of Messrs. Van Houtte, Verschaffelt, Parker, &c., 6*s.*, 9*s.*, 12*s.* per doz.

EPPS'S Nurseries, Maidstone.

CARNATIONS AND PICOTEES.

YOUELL AND CO.'S COLLECTION of the above deservedly favourites is probably the most extensive in the Trade, and having for a series of years paid special attention to their cultivation, introducing the best of the newest varieties, they are enabled to offer them at the following prices or fine, strong, well rooted plants.

CARNATIONS, finest first class show varieties by name, 18. and 24*s.* per dozen pairs.

PICOTEES, finest first class show varieties by name, 18*s.* and 24*s.* per dozen pairs.

Ditto, on yellow grounds, 20*s.* and 30*s.* per dozen pairs.

Finest mixed BORDER CARNATIONS & PICOTEES, 9*s.* ditto

True old CLOVE CARNATION, 12*s.* per dozen pairs.

Scarlet ditto ditto, 18*s.* ditto

NEW CARNATION "EXTRAVAGANZA."—For particulars see Advertisement, March 26. Price 3*s.* 6*d.* per pair.

PINKS.—The finest first class show Pinks, by name, 9*s.* per doz.

Fine mixed border PINKS, 6*s.* per dozen pairs. [pairs.

HOLLYHOCKS.—Our extensive stock of these, comprising the first-named varieties, is this season very strong and healthy, and well established in pots, price of which is 9*s.* to 12*s.* per dozen.

HOLLYHOCKS, warranted all double flowers, and from the best leading kinds, 20*s.* per 100.

NEW PHLOXES.—An extensive and select collection of the above beautiful showy tribe of Herbaceous Plants, comprising the fine and newly introduced varieties from the Continent. May be obtained at 10*s.* per dozen, package included.

PANSIES.—Finest first-class show varieties, by name, 9*s.* per dozen.

CHRYSANTHEMUMS.—The handsomest of the new large flowering and Pompone kinds, 6*s.* per dozen.

DAISIES.—18 selected, of the best new Belgian vars. for 9*s.*

LOBELIAS.—Finest scarlet, adapted for forming magnificent groups, viz.:—Feu du Roi, splendens major, Victoria, fulgens superba, fulgens multiflora. L. St. Clare, 9*s.* per doz.; Blue do. Milleri; violacea, 9*s.* per doz.; Red Leopold, 6*s.* per doz.

OXALIS FLORIBUNDA AND ROSEA.—Quite hardy, producing a fine bed of rich rose colour, 6*s.* per dozen.

ŒNOTHERA MACROCARPA.—Large yellow, 6*s.* per dozen.

,, TARAXACIFOLIA.—Large white, 6*s.* ,,

DELPHINIUM FORMOSUM.—Finest blue, 3*s.* per dozen; 16*s.* per 100.

,, MOOREANUM.—Dark purple, 4*s.* per dozen; 25*s.* per 100

AUBRIETIA MOOREANA.—A handsome hardy herbaceous plant, of dwarf growth, producing at this period a dense mass of large flowers of the brightest lilac, 6*s.* per dozen.

LINUM FLAVUM, 6*s.* per dozen.

TRITOMA MEDIA.—A handsome winter and spring-flowering hardy herbaceous plant producing large spikes of scarlet-yellow flowers, 9*s.* per dozen.

PENTSTEMONS.—A fine assortment, 6*s.* per dozen.

GAZANIA RIGENS.—Large orange yellow, with dark centre, 6*s.* per dozen.

STATICE MARITIMA ROSEA AND PSEUDO-ARMERIA.—Strong plants of these two beautiful and hardy species, producing throughout the year a profusion of lake-coloured flowers, 4*s.* per dozen.

DIELYTRA SPECTABILIS, fine strong plants, 6*s.* per dozen.

BERBERIS DARWINI, flowering plants, 6*s.* per dozen.

PRIMROSE, double yellow, 4*s.* per dozen.

HERBACEOUS PLANTS.—A choice collection of all the most showy kinds, 6*s.* per dozen; 40*s.* per 100.

☞ All orders of 2*l.* and upwards are delivered Carriage Free to London, Manchester, Liverpool, Peterborough, Hull, and Newcastle, as well as to any Railway Station within 150 miles of the Nursery.

YOUELL & Co., Royal Nursery, Great Yarmouth, Norfolk.

MANGEL SEED FROM LARGE BULBS.

SUTTON'S YELLOW GLOBE MANGEL is saved exclusively from fully-developed roots, the advantages of which have been proved for several years past. Price of Seed 9*d.* per lb., or cheaper by the cwt. Carriage free to all parts, except small parcels. Remittances requested with orders from unknown correspondents.

SUTTON & SONS, Seed Growers, Reading.

SKIRVING'S SWEDE—SUTTON'S SELECTED STOCK.

SUTTON AND SONS have a choice stock of SKIRVING'S SWEDE SEED, growth of 1858, which they can strongly recommend. Price 9*d.* per lb., or cheaper by the bushel. Also a few bushels left of SUTTON'S Champion Swede, Improved Gloucestershire White Swede, Russian Hardy Green-Top Swede, Grant's Pine Apple Swede, Jack of Newbury, and others, prices of which may be had on application, post free.

Royal Berks Seed Establishment, Reading.

NEW HARDY WHITE SWEDE.—This Swede is hardier than any other kind, grows to a large size, is adapted for sowing upon poor land, is not affected by frost, and keeps good in the ground or in store till the end of May. New and genuine Seed of this excellent Swede, price 1*s.* per lb. (carriage free for orders of 30 lbs. and upwards) may be had of RAYNBIRD & HARVEY, Seedsmen, Basingstoke; and 89, Seed Market, Mark Lane, London, E.C.

SELECTED SWEDES.

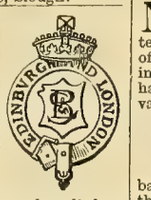
BROWNE'S WHITE SWEDE, Green-topped, is the hardiest known, and by far the best keeper, while for size, solidity, and nutritious matter it is unsurpassed. The seed is from the stock of T. Beale Browne, Esq., of Salperton Park, Gloucestershire, to whose assiduous care and attention during a series of years we owe the perfection of this invaluable root. 1*s.* per lb.

MARSHALL'S IMPROVED SKIRVING'S SWEDE. A very superior Swede, being large, almost globular, and of extraordinary firmness. The seed cannot be too strongly recommended, as every bulb it was saved from has been selected carefully. 1*s.* per lb. and other varieties 9*d.* to 1*s* per lb.

MANGEL WURZEL, all kinds, 9*d.* per lb. and all kinds of seeds requisite for the Farm, Prices and Catalogues of which may be had on application.

CHARLES TURNER, The Royal Nurseries, Slough.

"JACK OF NEWBURY" SWEDE, ETC.



PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN, &c., 27, Great George Street, Westminster, respectfully request attention to their very genuine Stock of the above excellent Swede: also of the LOTHIAN PURPLE-TOP SWEDE, both of which have been selected with the greatest care. They have also a very fine Stock of the KOHL RABI, or TURNIP-ROOTED CABBAGE, specimens of which were shown at their Stands at Smithfield Club Show. The Kohl Rabi was largely grown last season, and may now be relied on as a substitute for the Turnip and Mangel, where these roots do not succeed, or for filling up blanks where there is a partial failure. Its feeding qualities, hardiness, and weight per acre are equal to the Swede, and all kinds of stock prefer it to other roots.

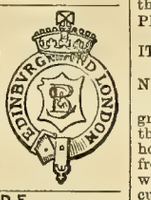
P. L. & SON have also selected a first-rate Stock of MANGEL WURZEL SEED, which they can confidently recommend. Their natural GRASS SEEDS have been also saved with very great care, and they are ready to supply them separately or in mixture, for laying down Permanent Pastures, Lawns, &c.

P. L. & SON have arranged to deliver Seeds free throughout England and Wales from their London Establishment, for all quantities exceeding 20*s.* in value.

LISTS OF PRICES of the above and all other Seeds, Plants, &c., may be had on application.

27, Great George Street, Westminster.

NATURAL GRASS SEEDS.



PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN, can supply genuine Seed of all the valuable kinds of the NATURAL GRASSES suitable for Lowland and Upland Pastures; also for Laying-down Lawns, Bowling Greens, Cricket Grounds, Cemeteries, Railway Banks, &c.

PRICED LISTS may be had free on application.—PETER LAWSON & SON, 27, Great George Street, Westminster.

TO THE SEED TRADE.

THOMAS AYRES, JUN., SEEDSMAN and GROWER, Biggleswade, Beds., can supply every kind of Wurzel, Swede, and common Turnip Seeds, on the most reasonable terms for cash.

N.B. Dealer in Culinary and Flower Seeds, Fruit Trees, Shrubs, and Flowering Plants.

TO THE TRADE.

CHARLES SHARPE has still to offer, of his own growing, saved from the finest selected stocks—

LONG RED MANGEL	RED LINCOLNSH. GLOBE
,, YELLOW DO.	TURNIP SEED
YELLOW GLOBE DO.	GREEN GLOBE DO.
ALTRINGHAM CARROT	YELLOW TANKARD DO.

Prices given on application.—Wisbeach, Cambridgeshire.

H. AND R. STIRZAKER have again to offer several millions of extra fine CABBAGE PLANTS:—Drumhead Cattle, 2*s.*; Early, of sorts, 3*s.*; Red, for pickling, 5*s.*; Cauliflower, Early London, 25*s.* per 1000. They have also a very large stock of the following extra fine rooted well-grown plants:—

Holly, Common, 1 to 1½ foot, 10*s.* per 100	Berberis aquifolia, 2ft. 10*s.* p. 100
Laurustinus, flowering, 15 in., 25*s.* per 100	Yew, English, 1 to 1½ foot, 10*s.* 6*d.* per 100
Laurel, Common, 2 ft., 9*s.* per 100; 80*s.* per 1000	Do. 2 feet, 12*s.* 6*d.* ,,
	Do. 3 feet, 40*s.* ,,
	Do. 4 feet, 60*s.* ,,

Lancaster Nurseries.

MR. ROBT. BAKER, Writtle, Essex, informs his Agricultural friends that his Seeds are now ready for delivery, and consist of MANGEL WURZEL, LONG and GLOBE RED, LONG and RED ORANGE, all grown in 1858, from carefully selected full-sized roots; LOTHIAN and Improved SKIRVING'S SWEDE TURNIP SEED, and DRUMHEAD CATTLE CABBAGE SEED. The Mangel Wurzel 14*d.* per lb.; Swede Turnip 10*d.*, and Cabbage 4*s.* per lb., packages included. A reference expected from unknown correspondents.

HOLLY HEDGING.

EDWARD SANG AND SONS, Kirkaldy, N.B., beg to offer a quantity of fine twice transplanted HOLLIES, 15 to 18 inches high, at 15*s.* per 100, and 9 to 15 inches at 10*s.* per 100. These are just recovering from the second transplanting in 1857, and are therefore in good condition for removal. E. S. and S. have also a lot of once transplanted of the same heights, at 50*s.* and 40*s.* per 1000. The last are finer looking than the twice transplanted, but have of course inferior roots. Also a few hundreds of very fine twice transplanted, 18 to 30 inches, at 20*s.* per 100. Carriage paid to Edinburgh.

GENUINE AGRICULTURAL SEEDS.

MESSRS. DICKSON AND BROWN (late F. and A. Dickson & Co.), 43 and 45, Corporation Street, Manchester, beg to intimate that they are now ready to execute all orders with first-class AGRICULTURAL SEEDS, most of which have been saved by themselves or under their own superintendence.

Special prices for large quantities on application. A PRICED CATALOGUE is published, and may be had post free.

Manchester.—April 9.

AGRICULTURAL SEEDS.

WM. SKIRVING, Queen Square, Liverpool, begs to recommend to the Farmers of the United Kingdom his select stock of the most approved sorts of English, Welsh, Dutch, and Swedish CLOVER SEEDS, and of the best varieties of WURZEL, CARROT, and TURNIP SEEDS, all either grown by himself, or selected from the most reputed growers. A short practical list, with reasonable prices affixed, may be had on application.

In addition to his general collection of Turnip Seeds, W. S. has, this season, to offer three distinct varieties of the SWEDE, all of which he can strongly recommend as likely to be of great service in such critical Turnip-growing seasons as the last two.

The 1st is a new PURPLE SWEDE, with short top, broad entire leaf, stands dry weather well, ripens early, very good for early winter use.

The 2d, a new GREEN-BRONZE SWEDE, medium-sized top, of excellent quality, fit for the table, keeps well.

The 3d, a PURPLE SWEDE, stronger top, is the largest, heaviest cropper, and longest keeper of any sort known.

The Seed of these sorts can be had only from the Advertiser. Price 1*s.* per lb.

For laying down Land for Permanent Pasture W. S. begs to offer his selection of the most useful PERENNIAL GRASS SEEDS. The sorts selected from personal observation of the growth and habits of the different Grasses grown in his experimental ground. On this system he has supplied, within a few years, seeds for many thousand acres, which have given every satisfaction. Orders, stating quantity and quality of Land to be laid down, will be correctly executed with a suitable mixture.

SEEDS FOR THE FARM.

NEW OVAL-SHAPED YELLOW MANGEL, introduced by us two years ago, has been thoroughly tested and is now recommended with perfect confidence. It is of a remarkably vigorous growth, with finely shaped roots, intermediate in length between the Long and the Globe, and has produced from 5 to 10 tons more per acre than any other variety (see *Gardeners' Chronicle* of Jan. 8):—

SWEDE TURNIP.—All the approved sorts.
YELLOW Do. do. do.
WHITE Do. do. do.

In no description of crop raised on the Farm is a good or a bad one so dependent on the character of the Seed as in that of the Turnip, and from its great liability to degenerate, it requires the most scrupulous care and vigilance to produce Stocks that are every way worthy of confidence. To attain such, we have for several years past been using every known means to keep up or improve the shape, size, and texture of the various kinds; and we believe that what are now offered will give the most perfect satisfaction. All the principal varieties are our own growth, raised from large and fully developed Roots or Bulbs, and in the hope of giving a more vigorous growth to the Stock, the strongest clay soil is always selected for a considerable portion of the Swede and Yellows. This mode of raising Turnip Seed materially increases the expense, but it is a much more satisfactory system than the one usually adopted, viz., sowing random stocks late in the season, after other crops, and taking the seed from mere plants, which in many cases are not even subjected to the process of thinning. Moreover, we guarantee our Seeds free from any of the adulterations so frequently practised to increase profits or cheapen prices, so that a strong healthy "braird" is certain.

PERENNIAL RYE-GRASS.—Finest Ayrshire
Do. do. do. Pacey's, 26 lbs. to 32 lbs. per bushel
ITALIAN do. Imported
Do. do. Home-grown

NATURAL GRASSES.—All the best varieties

The Stocks of Perennial Rye-grass Seed are the most select growths the country produces, and being all clean and heavy the economy of using such in preference to foul chaffy seed, however cheap, is at once apparent. Our imported Italian is from the usual source, and has always given satisfaction; while the home-grown is the direct produce of imported seed, cultivated under the most favourable circumstances, and more than ordinary pains having been used in dressing the seed; the samples of both are unusually clean and fine. In selecting the Natural Grasses care is taken to have them true to name, fully ripened, and in all respects good clean samples.

ALSIKE CLOVER, and other varieties.
LARGE BROAD-LEAVED SCOTCH TARES.

With every other description of Seed usually required for the farm, PRICED LISTS of which may be had post free on application.

W. DRUMMOND & SONS, Seedsmen, Stirling, N.B.; also at 6, Dawson Street, Dublin.

*** STIRLING is most favourably placed in point of railway accommodation, there being direct and constant traffic to all the principal stations in England and Scotland, and by steamers (*via* Glasgow), almost daily to the chief ports in Ireland, thereby insuring a speedy delivery of goods, all of which except grain and Tares, we forward carriage paid.

MEADOW AND PASTURE GRASS SEED.—The great difficulty experienced by many Gentlemen and Farmers when about to lay down Land, is the selection of the proper Seeds, having no reliable practical guide as to quantity or kind. JAMES TYNAN is enabled to offer the benefit of such a guide. Speke Estate having become celebrated for its excellent practical Farming and high cultivation, has been for many years under the able management of Mr. M'Farlane. In a conversation the Advertiser had with that gentleman a few weeks ago he said:—"The great fertility of this estate I believe to be owing in a great measure to the attention I have paid to the selection of the Grass Seeds, and which I do not think I can improve. Were I to state the yield of the crops of Wheat and Barley I have obtained after these Grasses last year it would be deemed fabulous by many."

JAMES TYNAN having received orders to supply Seeds to some of the Farms on this estate, offers to send the same to gentlemen upon their giving the number of statute acres to be sown.

Selected GRASS SEEDS for LAWNS.

JAMES TYNAN, Seed Warehouse, 68, Gt. George Street, Liverpool.

SEED CORN FROM THE CHALK.

MESSRS. RAYNBIRD AND HARVEY beg to offer to Agriculturists requiring change of SEED Talavera, Red Nursery, and Ap iliWHEAT the best sorts for Spring sowing.

Chevalier, Thanet, Golden Drop, Long-eared Nottingham, American, Hudson's Golden Melon, Banham's Sprat, and other varieties of BARLEY.

Canadian Potato, Hopetoun, Poland, and Tartarian OATS.

Fine CLUSTER BEANS, weighing 68 lbs. per bushel.

Samples and Prices on application.

Address—Basingstoke, and 89, Seed Market, Mark Lane, London, E.C.

CHOICE STOVE AND GREENHOUSE PLANTS AT LOW PRICES.

The following 30 CHOICE STOVE PLANTS, fine, strong, and in vigorous condition, are offered together for 55*s.*, viz.:—Æchmia fulgens longifolia, Æschynanthus splendens, Aphelandra variegata, A. Leopoldi, A. squarrosa citrina, Barbacenia Rogieri, Begonia manicata, B. albo-coccinea, Cyrtanthera magnifica, Dracæna nobilis, Eschites Pelleri, Eucharis amazonica, Franciscea confertifolia, Gardenia Fortuni, Gesneria Geraldiana, G. zebrina, G. Suttoni sub-alba, Gloriosa Planti, Hexacentris mysorensis, Hoya bella, H. cinnamomifolia, H. carnosa, H. picta, Maranta sanguinea, Meyenia erecta, Passiflora alba nigra, Stephanotis floribunda, S. Thouarsi, Thyrsicanthus rutilans, and Vinca alba. Any 20 of the above may be selected for 45*s.*, or any 12 for 35*s.*

The following 50 CHOICE GREENHOUSE PLANTS, very strong and fine plants, are offered together for 65*s.*, and 25 may be selected for 45*s.*, or any 12 for 25*s.*, viz.:—Acacia hispidissima, A. verticillata, A. armata, Boronia macrophylla, Bossiæa Hendersoni, Brachysema acuminata, Cereus Macdonaldi, Chorozema cordatum splendens, C. variumJ rotundifolium, Chironia glutinosa, Chorozema Chandleri, Coronilla glauca, Correa brilliant, Daphne indica rubra, D. Van Houtti, D. Fimiæna, Dillwynia cinnabarina, D. Henchmanni, Dracophyllum gracile, Diosma fragans vera, D. uniflora, Eriostemon intermedium, E. buxifolium, E. scabrum latifolium, Eugenia Ugni, Gaultheria coccinea, Hibbertia Reedi, Indigofera decora, Isolepis gracilis, Kennedya ovata alba, K. monophylla, K. Marryattæ, K. nigricans, Mandevilla suaveolens, Metrosideros laxifolius, Mitraria coccinea, Nerium Tangle, Platylobium triangulare, Pimelea decussata, P. Nieppergana, Pernettya mucronata major, Pultenæa Henderson, Scutellaria scarletina, Solanum jasminoides, Stylidium graminifolium, Stauntonia latifolia, Swainsoni Osborni, Tecoma jasminoïdes, Telopea speciosa, and Tetratheca verticillata.

Selections from the foregoing, when left to B. & B., will be charged as follows:—

Stove plants, 20 varieties .. .. 40*s.*
,, 12 varieties .. .. 24*s.* to 35*s.*
Greenhouse plants, 25 varieties .. 35*s.*
,, 12 varieties .. 18*s.* to 25*s.*

BRITTAIN'S NETTING and SHAW'S TIFFANY at the manufacturers' prices; also the GISHURST COMPOUND for the destruction of Red Spider, Thrip, Mealy Bug, Scale, &c.

Goods (20*s.* and upwards) free to all Stations in London, or all Stations between London and Norwich, on the Colchester Line.

BASS AND BROWN, SEED and NURSERY ESTABLISHMENT, Sudbury, Suffolk.

REIGATE SILVER SAND, best quality for Florists, 16*s.* per ton; less quantities, 1*s.* 6*d.* per bushel; delivered to any London Wharf or Railway. Peat, Loam, and Leaf-Mould in large or small quantities. Sacks for Sand, 1*s.* 9*d.* each; or on hire, 6*d.* each; five hold a ton.—JOHN KENNARD, Purveyor to her Majesty, Swan Place, Old Kent Road, London, S.E.

GENUINE ROLL TOBACCO CLOTH.

WARRANTED EQUAL IN STRENGTH TO TOBACCO.

JOSEPH BAKER, 10, Gough Square, Fleet St., E.C., having dealt upwards of 20 years in the above, can recommend it as the best article for destroying the Fly. 1*s.* 4*d.* per lb.; over 10 lbs., 1*s.* Post-office Orders payable Strand Office.

GENUINE TOBACCO PAPER FOR FUMIGATING.

H. APPLEBY (Foreman to Messrs. Ivery & Son, Surrey), takes this opportunity of informing his patrons and the public that he is now offering the above at a very considerably reduced price. It is now sold in packets of 4 lbs. each, at 1*s.* 3*d.* per lb. A liberal discount allowed to the Trade. For testimonials that will guarantee its quality, see *Gardeners' Chronicle*, March 5, p. 189.

Sheet Iron Pots for fumigating, 3*s.* 6*d.* each.

N.B. All orders to be accompanied with a Post-office Order, payable to HENRY APPLEBY, Dorking, Surrey.

WHY NOT PRESERVE YOUR HAY?
RICK CLOTHS, New and Second-hand,
At BENJAMIN EDGINGTON'S,
2, Duke Street, London Bridge, S.E., and West End,
32, Charing Cross, S.W.
MARQUEES, TENTS, &c.
Illustrated Catalogues free.

BENJAMIN EDGINGTON, 2, Duke Street, London Bridge, S.E.
MONSTER TENTS for large parties.
PRETTY TENTS for Lawns.
RICK CLOTHS, Second-hand, very cheap.
NETTING for Fruit Trees, &c.
West End Establishment, 32, Charing Cross, S.W.

"FRIGI DOMO."—Patronised by her Majesty, the Queen, the Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, and — Collier, Esq., of Dartford.

PROTECTION FROM COLD WINDS AND MORNING FROSTS.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths. Two yards wide, 1*s.* 6*d.* per yard run; four, 3*s.* per yard. Also, an improved make for Shading Purposes. Three yards wide, 2*s.* 6*d.* per yard run.

ELISHA THOMAS ARCHER, whole and sole manufacturer, 7, Trinity Lane, Cannon Street, City, and of all Nurserymen and Seedsmen throughout the kingdom. "It is much cheaper than mats as a covering."

PATENT GUTTA PERCHA SOLES.—IMPORTANT TO GARDENERS.—The Gutta Percha Company have the pleasure to acknowledge the receipt of the following letter from G. GLENNY, Esq., the celebrated Florist:—

"420, Strand, London.

"Gentlemen,—I have worn Gutta Percha Soles and Heels these two years, and being so much in a garden as I necessarily am in all weathers, and with the ground in all states, I would on no account be without them. As a matter of economy I would recommend Gardeners to use them, for they may repair the worn part at all times by warming the material at the fire, and pressing it from the thick parts to the worn parts as easily as if it were so much dough. I think it the duty of all persons who must occasionally wet their feet to adopt a material that completely defies damp. Many a gardener would escape colds and rheumatism by the use of Gutta Percha Soles.

"Your obedient servant, G. GLENNY."

Every variety of Gutta Percha articles, such as Mill Bands, Tubing, Soles, Goloshes, Sheet, Pump Buckets, Fire Buckets, Bosses, Union Joints, Flasks, Bottles, Bowls, Chamber Vessels, Toilet Trays, Sponge Bags, Curtain Rings, Galvanic Batteries, Talbotype Trays, &c., manufactured by the Gutta Percha Company, and sold by their wholesale dealers in town or country.—The Gutta Percha Company, Patentees, 18, Wharf Road, City Road, London.

GRASS SEEDS FOR PERMANENT PASTURES & MEADOWS.

THOMAS GIBBS & CO., Corner of Half-Moon St.,

THE SEEDSMEN TO THE "ROYAL AGRICULTURAL SOCIETY OF ENGLAND,"

BEG to inform the Members of the Society and Agriculturists generally that their MIXTURES of GRASS SEEDS for Laying down Land to Permanent Grass are now ready. Each kind of Grass Seed composing these Mixtures is cleaned separately, and the kinds are proportioned to suit different soils.

☞ *Full Directions for Sowing and Management will be sent with the Seeds.*

MIXTURES for PERMANENT MEADOW and PASTURE (*to suit different soils*).
MIXTURES for PARKS, FIELD LAWNS, CEMETERIES, &c.
MIXTURES for IRRIGATION MEADOWS, GAME COVERS, and all other purposes.
RENOVATING MIXTURES for Improving Old Meadows and Pastures (8 to 12 lbs. per acre).

MANGEL WURZEL.	RYE-GRASS.		
Yellow Globe, Orange Globe (selected)	Italian (selected, very fine)	Carrots	all sorts
Long Red	Dickinson's	Clovers	,,
Red Globe	Imported Foreign Seed	Swedes	,,
Long Yellow	Common or Annual	Hybrids	,,
Silesian Sugar Beet	Pacey's Perennial	Common Turnips	,,

KITCHEN GARDEN SEEDS in Collections, at £1, £2, and £3 each.

ALL KINDS OF AGRICULTURAL SEEDS.

Price Lists sent free on application. *Reference or Cash required from unknown Correspondents.*

Thomas Gibbs & Co.
CORNER OF
HALF-MOON St.
PICCADILLY, LONDON, W.

THE GREAT VINE AT HAMPTON COURT.

THE SUBSCRIBERS being the holders of the Royal Kitchen Gardens, Hampton Court, are enabled to offer genuine the famous and truly excellent HAMPTON COURT BLACK HAMBURGH GRAPE.

Strong well-ripened plants in 9-inch pots, 42*s.* and 60*s.* per doz.

If purchased in large numbers a considerable reduction will be made in price.—JACKSON & SON, Nurseries, Kingston, S.W.

STRONG BLACK HAMBURGH VINES.

THOMAS METHVEN has on hand a large stock of strong well ripened BLACK HAMBURGH VINES, which he begs to offer at 3*s.* 6*d.* each or 36*s.* per dozen. The usual discount to the Trade.

Stanwell and Leith Walk Nurseries, Edinburgh.—April 9.

PLANTS IN FLOWER.

F. and A. SMITH have now in bloom Acacia, Cinerarias (fine), Cytisus, Erica ventricosa coccinea minor; v. superbiens, v. breviflora, E. intermedia, Fuchsias, Calceolarias, Heliotrope, Hydrangea, E. Cavendishi, E. hybrida, E. perspicua nana, Geraniums, Fairy Roses, &c.

The above are healthy, strong, and well-grown [plants, prepared for sending away. Prices on application.

Dulwich, Surrey, S.

SUPERB DOUBLE BALSAMS.

F. and A. SMITH are now sending out seed of their superb BALSAMS, which are unrivalled for size, form, brilliancy of colour, doubleness of flower, and habit of plant.

In collections of nine separate colours .. .. 2*s.* 6*d.*
,, ,, mixed ,, ... 2 0
,, ,, ,, ,, half quantity 1 0

The above are *genuine only* in our sealed packets, and may be had of most respectable Nurserymen and Seedmen in the United Kingdom.—Dulwich, Surrey, S.

CHOICE GERANIUMS.

WILLIAM HUSSEY begs to offer the undernamed collection for 22*s.*, package included, viz.—Lucifer, Wonderful, Phaeton, Saracen, Sanspareil, Seraph, Empress, Zeno, Lucy, King of Scarlets, Arab, Evangeline, Roweanum, Cynthia, Enchantress, Queen of May, Floretta, Mary, optimum, Una, Attraction, Governor-General, Petruchio, Mochanna, Standard, Agnes, Eugene, Rose Celestial, serenum, Fair Ellen.

Horticultural Gardens, Norwich.

GERANIUMS. — Fine, well-established flowering plants of showy, free blooming kinds in great variety, may be had at 4*s.*, 6*s.*, and 9*s.* per dozen, according to size and quality. The following are some of the sorts:—Albira, Alma, Auguste Miellez, Carlos, Colonel Foissy, General Eugene Cavaignac, Gustave Odier, Hortensia, Jacques Duval, Generalissimo, Eugenie Duval, Madame Lamoriciere, Mochanna, Mr. Beck, Crimson King, Robert Bruce, &c.

WOOD & INGRAM, Huntingdon.

CHEAP BEDDING PLANTS, 2*s.* 6*d.* per dozen.—The advertiser begs to say that his unrivalled collection is this season very fine, much finer than he has ever been able to offer them; and by parties who intend to plant largely, an opportunity to make a selection from one of the most extensive and healthy collection in the country should not be missed.

CATALOGUES sent to all applications, inclosing two stamps, to J. SCOTT, Merriott Nurseries, Crewkerne, Somerset.

CALLICARPA PURPUREA.

JOHN STANDISH, the exhibitor of the above (at St. James's Hall), can supply a few good plants at 7*s.* 6*d.* each. The following passage from Dr. Lindley's leading article in the *Gardeners' Chronicle* for Nov. 20 will give an idea of its beauty:—"Callicarpa purpurea, quite insignificant when in flower, was beautiful in its winter dress of innumerable rich purple berries, about the size of swan shot." It is easily cultivated, and does well in a cold greenhouse or conservatory planted out, where it will produce thousands of bright purple berries resembling glass beads, and remaining on nearly the whole winter.—Bagshot, April 9.

NEW CHRYSANTHEMUMS.

JOHN SALTER begs to announce that his SPRING CATALOGUE is now published, in which his splendid SEEDLINGS and other new CHRYSANTHEMUMS of 1859 are fully described, as well as the unrivalled general collection, which is the largest in Europe.—Strong plants of "Golden Queen of England," "Prince Albert," and every other variety, will be ready in the course of the month.—Versailles Nursery, William Street, near Hammersmith Turnpike, W.

CHRYSANTHEMUMS—CHRYSANTHEMUMS.

J. H. BIRD, F.H.S., NURSERYMAN, Stoke Newington, the largest grower and most successful exhibitor of the Chrysanthemum in the British Empire, begs to call the attention of the lovers of the above beautiful autumn flower to his matchless collection, the stock of which amounts to upwards of 50,000 plants.

J. H. B. can supply strong plants, one dozen for 6*s.*; or five dozen in 30 varieties, containing two of each variety, for 1*l.*; or he can supply 100 plants in 50 varieties, two of each variety, for 1*l.* 10*s.* Also POMPONES in great variety; 50 Pompones in 25 varieties, two of each variety, for 10*s.*; or 100 in 50 varieties, two of each variety for 1*l.* Strong plants of the beautiful new Pompone the Golden Cedo Nulli, 5*s.* each, are now ready, with the usual allowance to the Trade. Every order will be accompanied by a popular work on the Chrysanthemum.

Post-office Orders payable to J. H. BIRD, Stoke Newington, will be immediately attended to. Catalogues on application.

NEW SEEDS FOR 1859.

WM. CUTBUSH AND SON beg respectfully to intimate that their PRICED CATALOGUE OF VEGETABLE AND FLOWER SEEDS, &c., is now ready post free on application. WM. C. AND SON devote particular attention to this department of their business, and most of the choicer kinds of culinary seeds and roots are saved under their own inspection, and they can confidently guarantee the quality of all offered.—Highgate Nurseries, London, N. Established A.D. 1695.

A DESCRIPTIVE AND PRICED CATALOGUE of first-class GERANIUMS, Show, Fancy, English, and French Spotted kinds. A List of the best FUCHSIAS grown, including some superb Seedlings. In VERBENAS the List contains all the novelties of the season. A fine collection of DAHLIAS, including all the leading new varieties of both Show and Fancy kinds. Also a fine assortment of PETUNIAS. The above Lists forwarded in exchange for one postage stamp.

GEORGE SMITH, Tollington Nursery, Hornsey Road, Islington, London.

RHODODENDRONS.

JOHN WATERER'S CATALOGUE OF UNRIVALLED HARDY SCARLET AND OTHER CHOICE RHODENDRONS, as Exhibited by him at the Royal Botanic Gardens, Regent's Park, London, is published, and will be forwarded on application.

☞ This List is recommended as a work of reference, as it contains accurate descriptions of all the esteemed varieties.

The American Nursery, Bagshot, Surrey, near the Sunningdale Station, South Western Railway.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Stove, Greenhouse, and Hardy Ferns, Miscellaneous Stove, Greenhouse, and Hardy Plants, Variegated and Ornamental foliaged Plants, Conifers, Roses, Rhododendrons, Indian Azaleas, Gloxinias, Fuchsias, Cactuses, &c., is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

GERMAN AND OTHER FLOWER SEEDS, VEGETABLE, AGRICULTURAL SEEDS, ETC.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their new PRICED and DESCRIPTIVE CATALOGUE in which is enumerated every novelty of proved merit, also all the best of the older kinds, is now published, and will be forwarded post free on application. Their whole stock has been selected from the best English and Foreign sources, and every kind is warranted true to name, and of the finest possible quality.—Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

DOWNIE AND LAIRD beg to offer the following, which they warrant all fine show varieties, viz.:—

100 Pansies, in 25 sorts .. 30*s.* | 100 Hollyhock seedlings from finest named vars. 20*s.*
100 Hollyhocks, in 25 do. 84*s.* | 100 Phloxes in 30 varieties, 40*s.*

Selection of the above left to D. & L. A liberal allowance to the Trade.—17, Frederick Street, Edinburgh.

NURSERYMEN, SEEDSMEN, & FLORISTS TO HER MAJESTY THE QUEEN.

NEW FUCHSIA,

"LORD CLYDE" (YOUELL'S.)

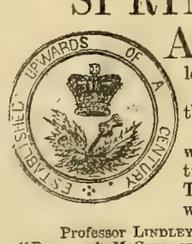
IT is with much pleasure and satisfaction that we have the opportunity of offering for the present season the above truly novel and probably the most beautiful Fuchsia that has yet been introduced. The tube and sepals (which are of great substance) are of rich glossy scarlet, the latter most perfectly reflexed, exhibiting a large well-folded corolla of rosy pink, distinctly flaked, with broad stripes of bright violet purple. The habit of the plant and the profuseness of its blooming properties are all that can be desired. It flowered for the first time in 1857, and proved again in 1858, and has maintained its character in every respect. Strong plants will be ready for sending out on and after April 27, at 10*s.* 6*d.* per plant. (Per post free, if required.)

Correct Coloured Engravings, by Mr. ANDREWS, *will be forwarded to any address on receipt of 6 postage stamps.*

YOUELL & Co.'S ROYAL NURSERY, GREAT YARMOUTH.

CHOICE FLOWERS.

BUTLER & McCULLOCH'S SPRING CATALOGUE OF SEEDS,



ARRANGED on a new and original plan, with copious Descriptive and Cultural Notes, and containing many new and rare species and varieties not found in any other Catalogue, now ready and may be had free and post paid on application.

FLOWER, SHRUB, TREE, and VEGETABLE SEEDS, the crop of 1858, saved with the greatest care, by the most eminent growers.

We may also state that the Sardinian correspondent of Messrs. JAMES CARTER & Co., whose Seeds, especially Carnations and Picotees, have given such universal satisfaction, has transferred the Agency from that firm and appointed us his representative in this country. To meet the growing demand for first class flowers, particularly FLORISTS' FLOWERS, we have adopted our usual maxim of charging the lowest possible prices.

Professor LINDLEY in the *Gardeners' Chronicle* of February 5th, has the following notice of B. & McC.'s Catalogue.

"BUTLER & MCCULLOCH'S (Covent Garden) Spring Catalogue of Choice Flower, Shrub, Tree, and Vegetable Seeds. This list fills 84 closely printed 8vo pages, and is remarkably well got up. It appears that the correspondent in Sardinia, who formerly supplied one of the great London houses with seeds raised in that warm part of Europe, has now transferred what he saves to Messrs. BUTLER & MCCULLOCH. Let us add, that it yields to no Trade List in the abundance of its materials or the excellence of its arrangements."

A selection of 44 pkts. of beautiful Annual Flower Seeds						7*s.*	6*d.*
Ditto	33	ditto	ditto	..	..	5	6
Ditto	21	ditto	ditto	..	..	3	6
A selection of 40 pkts. of beautiful Biennial and Perennial ditto						10	6
Ditto	31	ditto	ditto	..	..	7	6
Ditto	24	ditto	ditto	..	..	5	6

An Assortment of Vegetable Seeds, 20 quarts of Peas, and other Seeds in proportion for 1 year's supply						£3	3*s.*	0*d.*
Ditto	ditto	12 quarts of Peas	ditto	..	..	2	2	0
Ditto	ditto	6	ditto	ditto	..	1	1	0
Ditto	ditto	5	ditto	ditto	..	0	15	0

All Flower Seeds sent post paid, and Vegetable or Vegetable and Flower Seeds amounting to 1*l.* 1*s.* Carriage Paid to any principal Railway Station in England, Wales, and Scotland, or any port on the Irish Coast.

BUTLER & McCULLOCH, Covent Garden Market.

MANGEL WURZEL SEED,

WARRANTED NEW AND TRUE, BY

SUTTON & SONS, Seed Growers, Reading.

YELLOW GLOBE ... ... 8d. per lb. | LONG RED ... ... 8d. per lb.
RED GLOBE ... ... 9d. ,, | LONG YELLOW ... ... 9d. ,,
Cheaper by the Cwt.

NEW SORTS OF MANGEL WURZEL.

The Stocks of Seeds of the following new sorts being limited and in great demand, orders should be sent in good time:—

Per lb.—*s. d.*

SUTTON'S NEW LARGE YELLOW GLOBE.—This seed is saved from large roots selected, and will produce the heaviest crop of all the Mangels 0 9

[Presuming that this superior Yellow Globe Mangel will generally be preferred for the main crop, we invariably send this sort, unless the Common Yellow Globe (see above) or the more expensive kinds described below, are mentioned.]

SUTTON'S Improved ORANGE GLOBE, remarkably fine-shaped roots, with small Greens. Judges generally award the First Prize to this sort.. 0 9

FISHER HOBBS'S YELLOW GLOBE. —Deep yellow, fine shape 1 0

Per lb.—*s. d.*

***MORTON'S YELLOW GLOBE.**—Introduced by J. C. Morton, Esq., Editor of the *Agricultural Gazette* 1 0

SUTTON'S ELVETHAM LONG RED — A heavy cropper and very full of saccharine matter. All kinds of stock thrive remarkably well on it. This sort is much in demand by the London cow-keepers.. 0 9

[Presuming that this superior sort of Long Red will be preferred, we invariably send this unless the "Common" Long Red, entered above, is distinctly ordered.]

***SUTTON'S LONG WHITE.**—Some of these roots weighed 40 lbs. each 1 0

***STRATTON'S Improved RED GLOBE.** Beautiful shape 1 0

*The Sorts marked thus * are recommended to be sown in moderate quantities only for trial.*

N.B. The "Sutton's Large Yellow Globe," and "Improved Orange Globe," are fast growing kinds, and should not be sown till the last week in April or the first week in May.

SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

JAMES CARTER & CO., Seedsmen,

238, HIGH HOLBORN, W.C.,

BEG to call attention to the 24th Annual Issue of their ENCYCLOPÆDIC CATALOGUE and GARDENERS' VADE MECUM, containing upwards of 2000 species and varieties of Flower Seeds, every requisite for the Farm and Kitchen Garden, and a comprehensive Calendar of Operations for each month throughout the year. J. C. & Co. beg to recommend the following selection:—

No. 2	Collection of	12	extra fine varieties of Quilled German Asters	1s.	6d.
,, 6	,,	12	superb ,, New Perfection ,,	2	6
,, 13	,,	5	beautiful ,, Dwarf Perfection ,,	2	6
,, 18	,,	16	selected ,, Dwarf German Stocks	2	6
,, 32	,,	10	splendid ,, Imperial ,,	2	6
,, 39	,,	12	newest ,, Camellia-flowered Balsam	3	0
,, 40	,,	8	finest ,, Rose-flowered ,,	2	0
	Unequalled Collections of Carnations and Picotees, 6 vars., 3s. 6d.				
,, 47	Collection of	12	extra fine varieties of Dwarf Rocket Larkspur	2	6
,, 53	,,	12	beautiful ,, Phlox Drummondi	3	6
,, 56	,,	12	newest ,, Salpiglossis	3	0
,, 60	,,	12	superb ,, Wallflowers	2	6
,, 62	,,	12	splendid ,, Zinnia elegans	3	6

Alpine Plants in collections, 12 varieties, 2s. 6d.; 25 do., 5s.; 50 do., 10s.

Per packet.—*s. d.*

No.		
64.	Abronia umbellata	0 6
83.	Acacia suaveolens	1 0
89.	Achimenes	1 0
114.	Alonsoa Warscewiczi	0 4
136.	Anagallis grandiflora cœrulea	0 6
135.	Anagallis coccinea	0 6
166.	Antirrhinum, splendid, mixed	0 6
190.	Aquilegia Witmanni, fine	0 6
195.	Araucaria imbricata	1 0
197.	Arctotis breviscapa	0 6
229.	Azalea indica, choice	1 0
232.	Bambusa spinosa, rare	0 6
264.	Brachycome iberidifolium	0 6
277.	Butea superba, stove, rare	2 6
291.	Calceolaria, mixed	1 0
292.	Calceolaria, finest spotted	1 0
310.	Calliopsis Burridgi	0 6
317.	Camellia japonica	1 0
345.	Campanula Vidalli	0 6
355.	Canna Warscewiczi	0 4
418.	Chamærops humilis	0 6
429.	Chloris radiata	0 6
432.	Chorozema Hendersoni	0 6
434.	Chorozema Lawrenciana	0 6
440.	Chrysanthemum indicum	1 0
441.	,, indicum nanum	1 0
444.	Cineraria, finest mixed	1 0
466.	Clarkia pulchella marginata	0 6
547.	Cryptomeria Lobbi	1 0
575.	Dahlia, finest double	1 0
—	Datura humilis fl. pl.	0 6
590.	Datura Wrighti	1 0
601.	Delphinium magnificum	1 0
648.	Dianthus Veitchi, fine	1 0
650.	Didymocarpus polyanthus	1 0
—	Erica, finest variety, 12 species	5 0
743.	Erythrina Hendersoni	1 0
772.	Filices, finest mixed	1 0
773.	Fenzlia dianthiflora	1 0
779.	Fuchsia, finest mixed	1 0
785.	Gaillardia hybrida grandiflora	0 6
805.	Gazania rigens	0 6
823.	Gesneria, mixed	1 0
834.	Gloxinia, finest mixed	1 0
835.	Gloxinia erecta	1 0
860.	Gymnogramma ochracea	1 0
861.	,, tartarea	1 0
903.	Hibiscus Cameroni	0 6
917.	Hoya carnosa	1 0
918.	Humea elegans	0 6
926.	Hypocalyptus obcordatus	1 0
947.	Ipomœa hederacea superba	0 6
948.	Ipomœa hederacea superba lilacina	1 0
949.	,, ,, atroviolacea	1 0
962	,, rubro-cœrulea	1 0
998.	Kennedya longiracemosa	0 6
1032.	Leptosiphon arvense	0 6
1046.	Lilium colchicum	1 0
1048.	,, speciosum	1 0
1067.	Linum kermesinum	0 6
1091.	,, narbonense	0 6
1092.	Lobelia Erinus speciosa	1 0
1093.	,, formosa	1 0
1122.	Lupinus Hartwegii cœlestinus, new	0 6
1133.	,, nanus albus novus, new	0 6
1171.	Marianthus cœruleo-punctatus	0 6
1181.	Maurandya Barclayana kermesina	0 6
1204.	Mimulus pl. sp. et var.	0 6
1217.	Myosotis azorica	0 6
1222.	Nelumbium speciosum	1 0
1223.	,, ,, album	1 0
1242.	Nierembergia gracilis	1 0
1246.	Nolana paradoxa violacea	1 0
1262.	Œnothera bistorta Veitchi	1 6
1265.	,, Drummondi nana	1 0
1293.	Oxalis corniculata fol. var.	1 0
1296.	,, tropæoloides	1 0
1315.	Passiflora cinnabarina	1 0
1320.	Paulownia imperialis	0 6
1331.	Pentstemon Hartwegi atro-cœruleum	0 6
1332.	,, coccineum	0 6
1333.	,, purpureum	0 6
1332.	,, Murrayanum	1 0
1353.	Petunia viridicincta	0 6
1366.	Phlox Drummondi elegans nova	0 6
1372.	,, zinnabarina	1 0
1377.	Physalis edulis	0 6
1389.	Pleroma elegans	1 0
1396.	Poinciana regia, rare	1 0
1407.	Portulacca Thellusoni caryophylloides	0 6
1432.	Primula sinensis fimbriata	1 0
—	,, ,, Village Maid, fine	2 6
1452.	Quisqualis glabra	2 6
1457.	Rhodanthe Manglesi	0 6
1467.	Roellia ciliata	0 6
1474.	Salpiglossis sinuata atrococcinea nova	0 6
1490.	Salvia patens	1 0
1490.	,, splendens	0 6
1505.	Saponaria calabrica rosea, new	1 0
1519.	Schizopetalon Walkeri	0 6
1562.	Solanum Balbisi	0 6
1565.	,, jasminoides	0 6
1579.	Spiræa callosa	0 6
1589.	Statice Bonduelli	0 4
1594.	,, Fortuni	0 4
1607.	Strelitzia angusta	2 6
1614.	Swainsonia Greyana	0 6
1615.	,, lessertiæfolia	0 6
1618.	Tacsonia ignea	1 0
1643.	Trichodesma zeylanicum	0 6
1644.	Trichosanthes colubrina	0 6
1646.	Tritoma Uvaria	0 6
1653.	Tropæolum Lobbianum Géant des Batailles	1 0
1654.	Do. do. glabrum variegatum	1 0
1658.	Do. do. Schultzi	1 0
1661.	Do. do. Triomphe de Gand	1 0
1662.	Do. do. Victoria Regina	1 0
16 7.	Do. speciosum	1 0
1688.	Verbena hybrida, mixed	1 0
1699.	Victoria Regia	5 0
1708.	Viscaria cœli rosea alba	0 6
1711.	,, oculata Dunnetti	0 6
1720.	Zauschneria californica	0 6
1737.	Aster Emperor, new	1 0
1740.	,, La Superbe	1 0
1771.	Carnation, double, finest mixed	2 6
1772.	,, perpetual do. do.	2 6
1775.	Chrysanthemum tricolor Burridgi	0 6
1776.	,, beautiful	0 0
1828.	Heartsease, extra fine	1 0
1830.	Hollyhock, prize mixed	1 6
1850.	Larkspur tricolor elegans	0 0
1864.	Marigold, French, new orange	1 6
1890.	Nasturtion, dwarf spotted	0 0
1891.	,, Tom Thumb	1 6
1907.	Picotee, finest double	2 0
1909.	Polyanthus, extra fine	1 0
1910.	,, new large yellow	1 6
1969.	Virginian Stock, new rose	0 0

J. C. & Co. beg to state that in ordering from the above the numbers in margin will be sufficient.

Catalogues forwarded post free upon application.

JAMES CARTER & CO., Seedsmen, 238, High Holborn, W.C.

SUPERB DOUBLE HOLLYHOCKS.

WILLIAM CHATER can now supply fine healthy plants from his Collection, having a large stock ready for immediate planting.

See DESCRIPTIVE CATALOGUE, to be had on application. Nurseries, Saffron Walden.

FIRST-CLASS HOLLYHOCKS.

Fine Seedlings from

WILLIAM CHATER'S Celebrated and Newest Varieties that will flower well in September at 30*s.* per 100
ditto ditto ditto 20*s.* ,, 100
Ground Roots according to colour, also at .. 30*s.* ,, 100
Seed in 12 separate colours, the Collection .. 10*s.* 0*d.*
,, 6 ,, ,, ... 5 0
From varieties such as Pourpre de Tyre, Memnon, White Globe, Hon. Mrs. H. Ashley, Canary, &c., in 12 separate colours, the Collection .. .. 7*s.* 6*d.*
Ditto in 6 separate colours, the Collection .. 4 0
Seed from 20 of the best varieties, mixed, per pkt. 5 0
,, 12 ,, ,, ,, ,, 2 6
,, good mixed, also a single variety ,, 1 0
The above can be procured from the Nurseries, Saffron Walden, Essex.

NEW HOLLYHOCKS.

A. PAUL AND SON beg to recommend the following NEW HOLLYHOCKS, which have been selected from several thousands of Seedlings. The stock of ordinary kinds is this year greatly extended. The plants are strong, well established, and perfectly healthy:—

s. d.

BRISEIS (Paul.).—Purple, silvery edges, flower of good form, spike close 5 0
GENERAL HAVELOCK (Paul.).—Bright, ruby scarlet, colour of "Scarlet King," but a close spike and a round smooth flower of perfect shape 10 6
IN MEMORIAM (Paul.).—Crimson maroon, large, good substance, first-rate flower, good spike 10 6
OSSIAN (Paul.).—Crimson shaded with salmon, remarkable alike for substance, closeness, and symmetry; spike good 10 6
PAINTED LADY (Paul.).—Pink and blush in blotches, a large smooth flower of good substance 5 0
PLUTARCH (Paul.).—Plum colour, of fine shape, and very smooth, guard and spike good 10 6
POURPRE NOIR (Paul.).—Rich purplish maroon, large smooth flower, close spike 7 6
RED ROVER (Paul.).—Dark fiery scarlet, flower large, spike splendid, very effective 7 6
VERITAS (Paul.).—White, lemon base, large full flower, splendid spike 10 6
VESTA (Paul.).—Pure white, petals thick, edges smooth, guard good 7 6
VITRUVIUS (Paul.).—Pink, large flower, of perfect form and good substance 5 0
ZENO (Paul.).—Rich plum colour, with silvery edges, flower large, spike good; new and distinct 5 0

The Collection of 12 varieties is offered for 4*l.* 4*s.*; good named sorts, 9*s.* to 18*s.* per dozen; very superior ditto, 24*s.* to 42*s.* per dozen; Bloomed Seedlings in separate colours, 30*s.* 50*s.* per 100; mixed Seedlings, 10*s.* to 21*s.* per 100.

HOLLYHOCK SEED, 1*s.* to 5*s.* per packet free by post.

Also a PRICED DESCRIPTIVE CATALOGUE free by post. Nurseries, Cheshunt, Herts.

NEW PHLOX AND PENTSTEMONS.

PHLOX COUNTESS OF HADDINGTON.—Light puce, dark violet eye, perfect form, distinct and fine.

PENTSTEMON TYNNINGHAMI.—Bright scarlet, bold flowers, close pyramidal spike, first-rate.

PENTSTEMON MRS. LEES.—Crimson purple, pure white throat, large spike, distinct and striking.

THOMAS METHVEN has much pleasure in offering the above first-class flowers, raised by Mr. Thomas Lees, gardener to the Earl of Haddington, Tynninghame, and allowed by all who have seen them to be decided acquisitions as show flowers. Strong plants 5*s.* each. Usual discount to the Trade.

Stanwell and Leith Walk Nurseries, Edinburgh.—April 9.

NEW DESCRIPTIVE CATALOGUE FOR 1859.

WM. RUMLEY AND SONS' NEW DESCRIPTIVE SPRING CATALOGUE for 1859, of new and choice Fuchsias, Verbenas, Geraniums, Cinerarias, Petunias, Dahlias, Pansies, Chrysanthemums, Hollyhocks, Phloxes, Calceolarias, Heliotropes, Stove, Greenhouse, Bedding, and Hardy Plants, at very reduced prices, may be had on application.

It also contains descriptions of their splendid new Seedling Hollyhocks, Fuchsias, Calceolarias, Verbenas, and Heliotropes, to be sent out in April and May, and are unsurpassed.

Gilling, near Richmond, Yorkshire.

ROYAL SOUTH HANTS SEED ESTABLISHMENT.

Under the Patronage of H.R.H. the Prince Consort, The Agricultural, Horticultural Society of India, and the leading Agriculturists of the United Kingdom.

PAGE AND TOOGOOD can now supply GARDEN AND FARM SEEDS, carriage free; SEED POTATOES, &c. The numerous Prizes gained by their Stocks are convincing proofs of superior quality, and their prices compete with any house in the kingdom. WHOLESALE and RETAIL PRICED CATALOGUES upon application.

Agents for Odams's Blood Manure, Superphosphate, &c. Seeds Packed for Exportation to all Parts of the world,

37 and 38, Oxford Street (facing the Railway Terminus); and 58, Above Bar, Southampton.

The Gardeners' Chronicle.

SATURDAY, APRIL 9, 1859.

SOMEWHERE about the year 1843 we drew the attention of gardeners to the evil consequences of an unnatural practice to which the ill-informed were then addicted. Although condemned by men who knew how to enlist science on the side of practice, yet the horticultural crowd, blindly following blind leaders, persevered in maintaining in forcing houses a night temperature never, under usual circumstances, occurring in nature. The mere fact that ice will form at night in Bengal upon wet straw exposed to the heavens ought to have been a sufficient sign and warning that artificial heat must never be permitted to exercise its baneful influence in forcing houses during the night (of course we use the word heat in its common gardening acceptation as something much beyond mere warmth). There is no part of the world, not even the black burning rocks of Aden, in which, during the night, there is not a con-

siderable fall of temperature; and unless men are so conceited as to fancy that they know better than Nature herself what is beneficial to plants, their common sense ought to tell them that in forcing houses there should be a great difference between the temperature of night and day. Alas! that common sense should be so uncommon an article.

Some observations made in the garden of the Horticultural Society a few years since place this in a striking light. Certain plants were placed for several weeks in a stove, with a high night temperature—supposed to average 69°: the following were the rates of growth in inches:—

	Night.	Day.
Fig	9.60	9.92
Willow	19.08	21.55
Passionflower	36.20	35.85
Vine	34.15	34.45
	99.03	101.77

That is to say, they grew as fast by night as by day: for the apparent difference is obviously unimportant. But when these and other plants were grown in the open air, exposed to the low night temperature of England, the result was wholly different, as will be seen by the following table:—

	Night.	Day.
Fig	1.63	6.80
Willow	3.77	9.94
Hop	42.02	100.53
Vine	2.34	4.20
Scarlet Runner	23.11	97.72
Jerusalem Artichoke	8.23	22.25
Gourd	21.23	48.05
	102.33	289.49

The last experiment being carried still further, by observations continued during a part of another month, the result remained the same, the total growth by night being 119.07, and by day 337.16. Thus we see that plants exposed to natural circumstances only made 1 inch of growth by night while they made 3 by day; but that, on the contrary, under bad artificial treatment, they grew *equally day and night*. The inevitable consequence of this inversion of natural growth is immature or unripe wood, with imperfect ill-constructed buds, and a feeble constitution, incapable of bearing the shock of great falls in temperature. More especially, water accumulates in the system, and is never decomposed or removed by perspiration, in the requisite degree. In short, plants growing fast by night can neither ripen their wood nor form their inner structure well. And therefore they are incapable of developing their natural beauty, or of resisting those extremes of temperature which are natural to them, or of bearing the fruit for which they are cultivated.

We quote the abridgment of a paper in the Horticultural Transactions, as given in the *Theory and practice of Horticulture*, p. 518. It was founded upon a long series of observations made by Mr. Donald, the present intelligent gardener at Hampton Court. If indeed we consider a little what the natural habits of plants really are we find that, like animals, they *must* have their constant periods of repose. Winter to them is an annual rest; night is to them, as to ourselves, a period of daily rest; and we cannot with impunity break in upon these natural habits. When we attempt it we see Vines yielding watery wood and colourless fruit, stone fruit refusing to stone, Cucumbers flabby, emaciated, gummy and barren; and so with all other plants according to their kind. In fact, when gardeners say that plants under such circumstances are "drawn," they express the truth. The firm organisation of a plant is only secured by day, and the growth at night is merely a sort of stretching, as happens when a wire is drawn out—you gain in length, but you lose in strength, and you add nothing worth having.

What has led to these remarks is an excellent practical paper by Mr. W. P. Ayres, which appears in another column. The successful management of winter Cucumbers by this experienced cultivator is well known to his horticultural brethren. His treatise *On the Cultivation of the Cucumber in pots*, &c., published in 1841, is among the best that have ever appeared; and in that little work, p. 13, is the following important warning: "We have shown that the Cucumber will sustain no injury at a temperature of 55° during the night, *and we are certain the plants will be more vigorous and continue longer in a bearing state in a low, than if a high night temperature was maintained.*" Let us recommend the present paper by Mr. Ayres to the serious consideration of all Cucumber growers, especially to those who try to grow Cucumbers in the winter. They may possibly learn from its perusal the history of their own failures, or at all events will know what is the road to certain success in an operation in which failure seems to be the rule. The specimen of his cultivation to which Mr. Ayres alludes was unsurpassable. The fruit was excellent, but the foliage, which always predetermines whether either fruit or flowers are to be in perfection, was extremely striking. The leaves were much alike, and measured on an average *seventeen inches* from the top of the leafstalk to the point, *fifteen inches* across, and *four feet four inches* in circumference. They were as firm and green and solid as in August, and so full of good rich sap that they laid about for some hours in a dry room without flagging. Let us hope that this demonstration of the effect of a cool night temperature will make the impression upon the minds of young gardeners which its vast practical importance demands. Let them remember, too, that it is equally applicable to all kinds of plants.

Now that mildew, green fly, and all sorts of other pests are about to visit us, the time seems to have arrived for once more drawing attention to the substance called Gishurst Compound. The preparation thus named is a soap of unknown composition, capable of being readily dissolved in water, in which state it is applied with a syringe or sponge to the plants infested. Although the winter is far from being the best season in which to test the merits of such a composition, yet it appears from many testimonials before us that it has already acquired a very high value in the estimation of practical gardeners. That it really kills red spider, aphides, mealy bug, thrips and scale, it is impossible to doubt in the face of the reports of practical men, among whom we may mention Mr. D. Judd, of Althorp Gardens, a man who we all know is the last to endorse anybody's statements, unless he is satisfied of their exact truth. That being now to all appearance an established truth, the other question is whether it has no disadvantages—that is to say, whether it does not substitute injury of its own for the injury of others.

The very fact of its being so speedily fatal to animal life is calculated to raise a suspicion that it may kill plants as well; and this appears to be the fact, *if incautiously applied*, but only then. In our original notice (Nov. 6, 1858) we stated that the soft ends of Rose branches had been killed, and we find from later experience that not only Roses but Ferns and tender-leaved things are apt to suffer *if the solution is too strong*, just as vitriol when swallowed pure is fatal to ourselves, although a few drops in a glass of water are beneficial to the constitution. Upon this subject we print by permission of Mr. Wentworth Buller the following letter from that gentleman, in which he gives the result of his own experience:—

"As I have been trying the new invention called Gishurst Compound, lately referred to in your columns, perhaps the results of my experience may prove useful to other gardeners. Although I by no means wish to disparage what I have no doubt will prove a very valuable invention, I recommend gardeners to be very careful in applying this soap to plants with tender foliage. I have tried it with excellent effect on Gardenias and Ixoras to cure mealy bug, and on Oranges, Dracænas, and Camellias for scale. I do not think that it is cheaper or better than the old remedy of soft soap with a little turpentine for mealy bug, but it is certainly more efficient in curing scale than anything that I have ever tried. I found 2 oz. in a gallon of water an efficient cure for green fly on forced Roses; it is unnecessary and useless to use it stronger for this purpose. I cannot recommend its use for Ferns. I applied it to several species to destroy thrip, and I think with the exception of Dicksonia antarctica they are all more or less injured. Fronds of Platyloma hastatum were turned quite yellow, and I doubt if one rather weak plant of this species is not altogether killed. I am told it is a good remedy for red spider, but have not had an opportunity of trying it myself for this purpose.

"Strete Ralegh, Exeter, April 1."

The question to answer then is, what is the safe strength of the Gishurst Compound? Upon this point we subjoin such other opinions as the correspondence before us furnishes.

They are scanty enough, it must be owned, but valuable considering from whom they come.

Mildew. 6 oz. to 1 gallon of water; 8 oz. is too much.—*Rivers.*

Ferns. A piece the size of a small hen's egg dissolved in a quart of water, applied with a brush, and afterwards cleaned with a syringe.—*Pilcher.* ½ lb. to a gallon is too strong.—*Judd.*

Hard-wooded Plants. 1 lb. to a gallon.—*Lady Dorothy Nevill.* ½ lb. to a gallon.—*Judd.* 9 oz. to gallon.—*Bellis, Horton Hall Gardens, Chester.*

Soft-wooded Plants. ¼ lb to a gallon.—*Lady Dorothy Nevill.*—6 oz. to the gallon for the most tender foliage.—*Bellis, Horton Hall Gardens, Chester.*

Orchids. As with Ferns.—*Pilcher.*

The ensuing summer will doubtless supply all the further evidence we require. Gardeners should however be very particular in ascertaining exactly how weak the Gishurst solution may be, and this they can only do in a manner to be useful to others by *weighing* the quantity of compound which they mix with a gallon of water, and *not guessing at the weight*, like bad cooks who direct a pinch of this and a pinch of that condiment to be employed, without considering that the pinch of a broad-fingered woman is equal to two pinches of the taper fingers of another.

It may interest some of our readers to know that some Kidney Beans just forwarded by Messrs. Haage of Erfurt, under the name of the "Larch Egg Runner Kidney Bean," appear to be identical with the New Zealand Kidney Bean that has made so much noise; thus confirming our original opinion that this "novelty" was only some continental sort not cultivated in England. Let us add that a sample from the same eminent seedsmen of their "Ervum monanthes or Provence Lentil" is much like a bad sample of Dr. Rauch's supposed hybrid between Pea and Lentil.

THE NIGHT TEMPERATURE OF FORCING HOUSES.

In the early part of February I had the pleasure of forwarding for your inspection a brace of Cucumbers, and also some leaves and branches to show the sort of luxuriance which the plants attain under what many would regard as very adverse circumstances. Nearly 20 years ago, in my little pamphlet on "Cucumbers in Pots," I pointed out the absurdity of a high night temperature; it was therefore with some surprise that I saw it laid down as a rule that to grow Cucumbers properly in January it was necessary to maintain a temperature of 65° to 75° by night. I say I read the directions with surprise, because at that time my plants were luxuriating in a temperature rarely exceeding 65° by fire-heat in the day, and more frequently below 55° than above it during the night, while on more than one occasion the night heat was below 50°. I will not subject myself to the charge of egotism by stating the size of the leaves and the girth of the branches; but I will say I have seen less vigour in plants on dung beds and open ridges in the dog days. I did not consider the leaves so remarkable for their size as for the quantity of life-invigorating sap which they contained. There was no hurry-skurrying to shade the plants when the sun peeped out, nor did we run with equal alacrity to give the "benefit of light" when it was overcast, but to the best of my knowledge the house was never shaded, neither did the plants ever flag except for the want of water.

As perhaps some may be disposed to think the plants derived advantage from the construction of the house or from modern glass, I will describe the house and the management it received. It is one of a set of span-roofed structures built for general purposes, and suitable for growing anything from bedding plants to Pines or Orchids. The house is 14 feet wide, facing north and south, with 9 feet of glass on the south and about 7 feet on the north side. A brick in cement tank 3 feet wide passes along the back or north side, and through it are two 2-inch pipes for bottom-heat. Then there is a pathway 3 feet wide, and the remaining space is devoted to Pines. Bottom-heat for the Pines is obtained by fermenting materials on the Meudon plan, and atmospheric heat is obtained from three 4-inch pipes which pass close to the front wall, This wall is perforated for the admission of air, and by means of a similarly perforated board which slides in a groove, we can on the "hit and miss" principle give by a simple lateral movement from a quarter of an inch to nearly 1 foot square at each opening. These openings it will be observed are directly opposite to the pipes, and therefore whatever air passes into the house must be heated before it gets near the plants. Air can also be admitted by the top lights, but these are rarely touched in the winter season, a small swinging sash in the end elevation being sufficient for the escape of the vitiated air. Of the glass, I may say, part of the sashes have been in use a quarter of a century, and the quarries vary in size, from 3 inches by 6 inches to 11 by 6 inches. The width of the house and the length of the sashes employed to cover it show that there is nothing peculiar in its arrangement. It is a good plain useful house and nothing more. Well, in the early part of November the brick trough was filled to about 4 inches deep with ballast (burnt clay), then a turf wall was built longitudinally to divide the border, the front part being retained for propagating, and the back part was filled in with good fresh yellow loam intermixed with about one-half of fresh dung and loam which had been previously prepared for a Mushroom bed. As soon as the compost had attained sufficient heat some very poor plants were put out, and received nothing more than ordinary attention. I scarcely gave a direction respecting them, the management being left to my foreman and the young man in charge of the "houses." The rule which I have always insisted upon in the management of Cucumbers and Melons, viz., never to stop the leading shoot until it had attained the utmost limit assigned to it, was strictly adhered to, and the result you have seen in the vigour of the shoots I sent to you. The encouragement of the leader I regard as of the first importance,

and if I am going to cover a rafter 20 feet long I always adhere to it. I may have to wait a few days longer for my first fruit than those who encourage premature fruitfulness; but I get such an accumulation of vigour in the plant as will sustain it in a fruitful state for full 12 months without ceasing, and I have kept the same plant in a bearing state for three years. I have before stated that the plants were put out in November; on the 23d January the first fruit was cut, and since that time I have had a regular succession of beautiful fruit; not long, for I do not grow the long kinds, but of my own perpetual Black Spine, which is quite long enough for table use, and of greater daily importance than an occasional 2-foot fruit.

It will thus be seen there has been nothing particular in the management of the plants; they have had a comfortable bottom heat from water around the pipes in the tank into which the roots soon introduced themselves, and I have found that a pot of dung-water put occasionally into the tank did not do any injury. As to light they have been trained on the northern slope of the house, and of heat I have already spoken.

The treatment under which these plants have been more than usually vigorous and fruitful would be regarded as heretical by most cultivators; but the result shows there is a shorter and cheaper way to success in Cucumber growing, even in the winter season, than most people imagine.

So much for a low night temperature as connected with the growth of Cucumbers, but are the benefits confined to that class of plants only? I opine not, but extend through the whole range of the vegetable kingdom, for even with plants that are natives of countries where the nights in the growing season are close and warm, I believe our slavish attempts at imitation of natural conditions are noxious, and not warranted by inductive philosophy, for until we can command the brilliant and continued sunlight of the tropics, it is perfect nonsense to insist upon a corresponding night temperature. True that reasoning by analogy, and considering the night temperature of those countries where the Grape ripens to the greatest perfection, we may say the Grape ought to have a night temperature of 70° to 80° in our hot-houses. But what says experience? I will answer the question by an anecdote—A gardener who prided himself upon richly fed borders and large bunches of Grapes, but who never coloured them, thus addressed a brother culturist: "Mr. Darkbloom, I cannot tell how it is, but I can grow and do grow bunches of Grapes five times the size of yours, but you beat me in colour! How is it?"—"Cease your fires and give night air," was the curt reply, and this certainly was not advising a high night temperature.

In the house in which my Cucumbers are growing there are a few Pine plants, small suckers given me in the autumn of 1857 and planted out in October of that year Through the summer of last year they were entirely without bottom heat, indeed the chamber for dung was quite empty until the end of September. At that time several of the plants had showed fruit, and I have since cut several small but excellently swelled specimens, one, an Enville, in January weighing about 5 lbs. and equal both in swelling, colour and flavour to the best Enville I ever saw. Frontignan Vines in the same house have set their fruit as well as could be desired, and French Beans sown in January were fit to pick the first week in March.

This I think is proof sufficient that a much lower night temperature than is usual may be indulged in, and it is also a proof that young gardeners need not be harrassed out of their night's rest to maintain a temperature which is quite unnecessary and in all cases answers no good purpose except that of increasing the coal merchant's bill. I have thus detailed the circumstances under which my fruit were produced; I have I trust supplied material for thought, and I leave it to each man to decide for himself whether he will "go and do likewise." *W. P. Ayres, Orchardleigh Park, March 29.*

RHODODENDRONS.—No. VII.

While the ordinary kinds of Rhododendrons are, numerically speaking, most readily increased, and new varieties can only be raised, by seed, grafting is in some form or other the means most generally chosen for propagating these varieties when once obtained. True, layering is sometimes practised, but in the case of choice or rare kinds, that can only be of limited application; a plant must have attained a comparatively large size before it can be increased to any extent by that means. From this circumstance, and the tardiness of the process, it never has been, nor is it likely ever to be popular as a means of propagation. In all the large nurseries where Rhododendron culture is an especial feature, grafting is the principal, if not the only means employed for increasing and perpetuating the numerous hardy hybrid varieties. Occasionally, however, a few species, some of those from Sikkim for example, are increased by cuttings of the half-ripened wood, placed in very sandy soil under a bell or handglass, and plunged in a gentle bottom-heat. But, as in layering, the slowness of the process in producing established plants, compared with grafting, and having no compensating advantages, does not recommend it for general adoption.

Some few years since an attempt was made by one or two amateurs and echoed by a few others, to prove that grafted Rhododendrons were, as a rule, short lived, unhealthy, and in every way undesirable. It would lead us away from the professed object of these papers to discuss the subject in all its bearings, even if it were worth while to do so. But we may fearlessly assert that this was an entire misconception, and that no good cultivator who has bestowed his care on plants worthy of it, will be found to endorse the theory. To show the kind of horticultural knowledge sometimes coupled with an objection to grafted plants, we may mention having heard of instances where orders for collections of the best known hybrids have been given under the conditions that all the plants should be seedlings. It would be too much to assert that unhealthy, or otherwise unsatisfactory grafted plants are not sometimes found: but this usually arises from accidental and known circumstances, and has nothing whatever to do with the principles of the system. The chief cause of such unhealthiness arises from stunted or diseased stocks. If such be unfortunately employed, and even supposing an union to be effected with the scion, we believe it to be past the art of man to produce a healthy and vigorous plant with the combination. As much care is necessary, and is by the best cultivators given to the raising of and preparing the stock, as to the subsequent stages of the plants progress.

The advantages of grafting are important: its disadvantages, if any, nominal. It affords a ready and abundant means for increasing any given variety, it induces an early (as regards the life of the plant) period of flowering, and what is perhaps of equal if not of more importance, it tends to increase the profusion of flowers which even in their seedling state characterise the best hybrids. And these advantages are as manifest and as useful in the cultivation of species as they are necessary in the increase of varieties. But for the precocity induced by grafting, comparatively few of the Sikkim Rhododendrons which have flowered under artificial treatment would so soon have rewarded their cultivators. Many of those which have so flowered were while in a very young state transferred entire (*minus* their roots) as grafts to stocks of common species or hybrids; in some instances the wished for results were speedy, in a few they are yet waited for.

Since the above was written we have seen the February number of the "Journal de la Société Impériale et Centrale d'Horticulture" of France, in which is a paper from a German periodical reiterating these objections to grafted Rhododendrons, and in addition to which the writer endeavours to show that plants from cuttings ought to supersede those from grafts, as being easily produced and far more desirable. Grafted plants, he considers, present various objections; they do not, he says, always unite well, and they are moreover often ill-formed and short-lived. Upon these data M. Regel, the author, condemns grafted Rhododendrons altogether. If his objections were founded on facts the verdict would be just and reasonable enough, but they are not. With an imperfect knowledge of the nature of the Sikkim Rhododendrons when first introduced, some of them were grafted on stocks which proved unsuitable; but subsequent practice and observation have in a great measure enabled cultivators to obviate the evil. Ultimately it will no doubt be removed altogether. Grafted hybrid Rhododendrons of 30 or 40 years' standing, still handsome and vigorous, and in which the union between scion and stock can hardly be perceived, may surely plead successfully against the accusation of imperfect unions, short lives, and stunted growth. And many of the finest grafted plants of those from Sikkim present equally satisfactory results, although, of course, as yet of much briefer duration; but there is no reason whatever to fear any falling off in that respect. Another of M. Regel's objections is that no stock at all can be found for some of the small dwarf species recently introduced, an objection however hardly tenable, and, if it were, not of sufficient moment to weigh against a principle so widely and usefully applicable as grafting is known to be. With reference to the stocks most suitable for the various Sikkim Rhododendrons, we shall make special allusion to that subject in the next article.

The best season for grafting the Rhododendron is early spring—February, if the command of heat can be had. It will, however, be perfectly successful in autumn as soon as the shoots of the current season are matured. There are, however, no advantages in autumn grafting, but, on the contrary, many disadvantages, the chief of which is the necessity for protecting the plants through the winter; while those grafted in spring will be sufficiently established to be removed to the open ground the same year, *i.e.*, supposing all necessary treatment has been timely and skilfully performed. The indispensables are healthy stocks and a close warm moist atmosphere while the union between stock and scion is in progress; and when this is accomplished great care is necessary in enabling the plants to bear exposure to the open air. If the transition be too rapidly or carelessly effected, the young leaves become scorched and otherwise disfigured, and as a natural consequence the health and progress of the plants are considerably damaged. For convenience of treatment and removal the stocks are usually potted. In extensive operations exceptions are sometimes made; but for all ordinary purposes the former is the more advisable. Potting however is not necessary until the stocks are wanted.

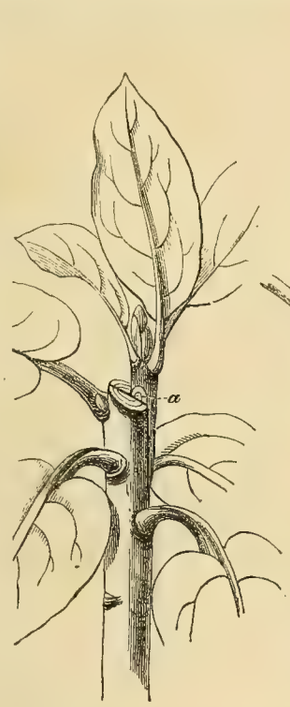


FIG. 1.

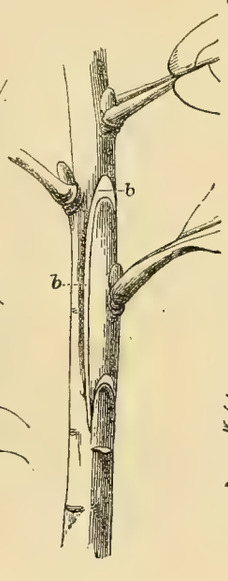


FIG. 2.



FIG. 3.

FIG. 4.

There are three principal modes of grafting, either of which is to be chosen as circumstances may seem to require; if the scion is merely a small point, as for instance, a young seedling plant, choose Fig. 1 (wedge grafting). When a shoot or two of a rare kind is to be made into as many plants as possible, Fig. 2 (side grafting) will exemplify the best method; but when plenty of good shoots can be had, adopt that illustrated in Fig 3 (saddle grafting). In Fig. 1 it will be observed that a part of the cut surface of the scion, *a*, appears above the stock. It is of importance to attend to this in practice. The stock produces a large amount of cellular matter in the progress of its union with the scion, and if the latter exactly fitted the incised part of the stock this matter would exude beyond, and result in a comparatively imperfect union with the addition of an unsightly scar. For the same purpose a portion of the stock, *b*, Fig. 2, and *c*, Fig. 3, is left uncovered by the scion. This is perhaps not strictly in accordance with the received teaching of vegetable physiology as bearing upon this branch of garden art; but it is not the less practically true, and may be classed with other minute but important matters which practice in conjunction with theory can alone reveal or teach the value of.

Nor is it necessary to cover with a bandage the whole point of union between scion and stock. To keep the former firmly in its position is all that is required, and the simpler that can be done the better. Fig. 4 shows all that is necessary. The best material is Cotton yarn. As soon as the graft is fixed, the stock should be at once placed where the union is to be effected. A close pit in which the other necessary conditions, heat and moisture, can be secured is the best structure for the purpose.

The grafts should not be inserted on a part of the stock which has acquired its hard woody nature. The union will be much more satisfactory, and be effected

in less time on the greener and more succulent portions. And moreover while grafts so inserted will form an union in a cold frame, if kept close and moist, they will rarely unite under those circumstances if the graft is attached to a hardy woody portion of the stem. But when grafting is to be effected in the absence of artificial heat altogether, the operation should be deferred for a month or six weeks after the time previously named. If February be chosen a temperature of from 60° to 65° should be at command.—*G. Lovell.*

(To be continued).

ON FORMING AVENUES.

(Concluded from page 289.)

And now a word on the selection of the trees; and another on the atmosphere. Before your plants are bought pay a short visit to the nursery where they grow. If their last year's shoots are of sufficient length, admit them; if not, reject them.

The consciences of nurserymen to the south may be straight enough, for aught I know to the contrary, but here in the north, occasionally they take a curve. Thus, when the annual sale of their plants has not realised their expectations, the remainder are said to undergo a retarding process by means of a three-pronged fork applied to their roots. This disturbs them just enough to stint their growth during the ensuing season. Whilst I was abroad, many thousands of Spruce Firs, some of them 6 feet high, were obtained from a nursery. The man who brought them in waggon-loads said inconsiderately to my labourer, who received them, "I pity your master: for my master has so lifted and shifted these poor Fir trees from year to year that they are not worth the carriage from our nursery." On my return home, seeing what trash had been pawned upon me, I ordered the greater part of the trees to be pulled up for fire wood. As 13*l.* were still due in the nurseryman's exorbitant account, I offered him his choice, either to forego his claim against me for 13*l.*, or to undergo a public exposure. He was too glad to forego the money.

Always go yourself in person to a nursery. Make your own selection, and see it put into your own cart. Then pay your bill: leave half a crown for beer money to the men, and order your man to depart.

Lastly, the atmosphere must be considered. If vitriol works are in the neighbourhood never think of planting an avenue. Let me add, that I consider soaperies and compost establishments and gas works as first cousins to vitriol works. They are all of them replete with mischief to vegetation. The climate of England (just except at the sea side) has always been favourable to the growth of trees. But now a most unfavourable change has taken place in certain districts. Long chimnies—the towering dischargers of smoke and soot—in what are termed the manufacturing districts, are now the boast and the bane of some of the most lovely and most fertile lands that ever the rising sun has shone upon. Steam, the grim promoter of eagle-speed and sudden death, of palaces and poor-houses, may be styled Lord Paramount of England.

Wherever his fiery chariot appears, Flora and Pomona turn ghastly pale. Their condition is little better than that of poor old Mother Earth, when Phaëton, rash coachman, set the world on fire by furious driving. She called aloud to Jupiter for help, and said she was nearly suffocated—

> "Ulterius tolerare vaporem,
> Non possum."

In fact, wherever steam's monster-chimnies raise their unhallowed heads, there vegetation pulls off her lovely green mantle, and puts on one of black; following the advice of Ovid:

> "Infelix, habitum temporis hujus habe."

Unless some favourable change takes place, the lands in our manufacturing districts will soon be like unto that province in Scythia, so well described by the same poet:—

> "Triste solum, sterilis, sine fruge, sine arbore tellus."
> A ruined soil,—a barren land of woe,
> Where trees have perished, and no fruit will grow.

Such localities as these are not fit sites for avenues. He who doubts this let him recollect that Flora and Vulcan, Ceres and Famine have never yet been known to travel hand in hand: and never will. *Charles Waterton, Walton Hall, March 2.*

MR. GLASSE'S GARDENING BOOK.—No. VII.

27. *More about faded Hyacinths.*

My Lady called to me about a year after I told her how to cure faded Hyacinths. "Glasse," said she, "I have been on a visit to the Marquis of Silverspoon, where you know there is a very fine garden, and a very great gardener. And one day I told Mr. Figg, the gardener, how very successful you had been with the Hyacinths; but he said he had tried your plan and it would not answer, and that it was much better to buy fresh roots every year." Says I to my Lady, "Ma'am, waste not want not, is my opinion; and the proof of the pudding is in the eating on't. Your Ladyship knows whether my Hyacinths are good or bad, and I think Mr. Figg had better try again; if it answers in our little place (it wasn't little though) it might in my Lord's big one; unless Mr. Figg holds his head so high that he can't see such small matters as a row of Hyacinths." "That's very true, Glasse," said my Lady, and she walked into the great Yew walk, where 'twas a rule not to follow her.

Thinks I to myself, thinks I, that Mr. Figg is the great gardener whose Grapes are always a shanking, and whose Cherries won't stone in his Cherry-house, and whose Camellia blooms somehow or another will tumble off before they are half open. I wonder what he did with his Hyacinths. Now it happened soon afterwards that a chap who had worked under Mr. Figg came to our place, to see if I could give him work. He was a sort of relation of mine, by name Reuben Hardhand, for his aunt was Mrs. G.'s third cousin, and being an industrious young man, I asked my Lady if I might take him on for a few weeks; and my Lady kindly said "Oh, yes, Glasse, and if he is not afraid of work you may keep him on, for I'm afraid that poor Robert—that was a young man who chopped his foot with an axe—will never be fit for garden work any more." My Lady was always good to the people about her. So one day I asked Reuben whether he knew what Mr. Figg did with the Hyacinths when he turned them out; and he told me that he made in the ground holes with a dibble, shoved them in and stamped the earth hard round 'em. "Didn't he put anything over them to keep them from frost at night?" "No," says Reuben, "he said they were hardy enough, and didn't want; and when the foreman mentioned one day that the roots were all doubled up in the holes he told him that it didn't signify, for such roots were no good." So I asked Reuben what he thought about it; and the young man answered that he didn't know, but he thought it a rummish way.

"Well Reuben," says I, "when you have to turn out Hyacinths don't do like Mr. Figg. You draw a straight line on a border of good mould; it needn't be very light if it has been well worked; and then make a cut as deep as your spade, drawing the mould well forward, so as to leave a nice smooth back to the cut, slanting a little towards you. Have ready some silver sand, mixed with a little leaf-mould. Then go down on your right knee, and with your left hand lay the Hyacinth against the back, pressing it gently into the mould so as to give it a little hold; then don't leave go, but with your right hand put all the roots straight and comfortable, and put over them a good double handful of the sand and mould; then put over that enough of the mould of the border till everything is placed firm, so that the Hyacinth can't slip. Go on in this manner till your roots are all planted. Then lay gently, gently, over the whole line the mould of the border, minding to keep the top of the Hyacinth 3 inches below the surface. Don't tread them down by no manner of means; but give them a good watering with milk-warm water till the soil is a puddle; then draw a little loose mould over the puddle and the job is done. Afterwards you must employ something to keep off frost, hoops covered with canvas do very well, if the canvas is taken off every day; or a Reed mat made to slope forwards well over the roots, or anything of that sort. Only mind to give all the air and sun you possibly can; after a fortnight a little frost won't do harm." When Reuben got a place he did as I told him, and his Hyacinths were very near as good as mine.

Home Correspondence.

Rainfall.—As I have been favoured with the records of Dalton's gauge up to Dec., 1858, I venture to send an abstract. The result is curious:—

Total mean rainfall for 24 years ..		26.01	Percolation,	8.06
,, ,,	3 years, 1835 to 1839 ..	26.82	,,	11.20
,, ,,	5 years, 1840 to 1844 ..	26.00	,,	10.06
,, ,,	5 years, 1845 to 1849 ..	25.72	,,	6.88
,, ,,	5 years, 1850 to 1854 ..	26.11	,,	3.86
,, ,,	4 years, 1855 to 1858 ..	25.28	,,	5.88

The minimum rainfall in the period and the minimum percolation, 1854:—Rainfall, 18.27; percolation, 1.40. The maximum, 1852: Rainfall, 41.14. Maximum percolation (1836), 17.75; last year rainfall, 20.50; percolation, 3.21. As for what you say of railway cuttings any one who knows anything of subterranean water must see that the effects in such a case must be local and permanent. There can be no doubt that at this time the stock of subterranean water is very low: an autumn like that of 1852 would replace it all. *J. C. Clutterbuck, Long Wittenham.*

Lithing.—I have been amused at your stumbling over my good north country word Lithing, which has however a place in one Dictionary at least (Bailey's), and has besides this the merit of describing in one word what would otherwise require a dozen. I give you Bailey's definition of the word: Lithing—"thickening, spoken of a pot of broth, as, 'lithe the pot,' *i.e.*, put oatmeal into it." But it is not simply the putting oatmeal or flour into a pot that constitutes a lithing, it is the manner of doing it; take for instance the following recipe for making milk porridge, which every man, woman, and child who can take milk, and who lives so far north as not to turn up their noses at the idea of eating oatmeal will find the most luxurious and nutritious breakfast that can be prepared, and which has more real nutriment in it than the same weight of beef or mutton, and to a northern palate the most grateful flavour. To make milk porridge: Set a quart of good new milk upon the fire in a brass pan, and whilst it is heating we will prepare our lithing in the following manner:—Take a dessert spoonful of finely sifted fresh oatmeal, add to it a spoonful of cold milk with which it must be thoroughly incorporated; then add a little more milk and a pinch of salt, gradually and carefully stirring until you have about a teacup full of the mixture, which, if properly managed, will be perfectly smooth and free from all lumps. By this time the milk on the fire will be ready to boil; as soon as it does so, pour in the lithing carefully, stirring it with the spoon until it boils up again. When it does so hang it on a crook and let it simmer for an hour, or until it is reduced to a pint, after which it must be carefully strained, so as to free it from the scum. It is then ready, and is not at all the worse for a tablespoonful of cream being added. It may be eaten with toast, crisp and well browned. It is essential to success that these remarks should be attended to. If too much oatmeal be put in it is quite spoilt, and so it is also if the simmering is not continuous, but when well managed it is a dish fit for an emperor. *T. G., Clitheroe.*

The late Snowfall and Frost. — The frost of Wednesday and Thursday last, March 30th and 31st, was singularly damaging, and it may be interesting to record what early plants suffered and what escaped. A fall of between 2 and 3 inches of snow on the evening of the 30th ended in a partial thaw or rain, and was followed by at least 6° of frost. The following morning brilliant and powerful sunshine fell on the plants from sunrise to noon, whilst many things were bowed to the ground by ice and half-frozen snow, which was not quite melted by noon. Dielytra spectabilis was crushed to the ground and pretty much destroyed, having been 2 feet high, and just in bloom. Forsythia viridissima, in full bloom, was perfectly uninjured; its flowers must be among the hardiest known. Early hybrid Rhododendrons, where fully or even partially expanded, were killed; unexpanded buds not injured. Rhododendron glaucum, buds much injured, though not expanded; R. ciliatum, in full bloom, flowers all destroyed; Moutans in full growth were crushed to the ground, and some large limbs broken by the weight of snow; but I cannot discover that a single bud was injured, though they were absolutely so encased in ice that it was pulled off with some difficulty from each individual bud. This applies to all Fortune's rarer varieties, as well as to the old Moutans, and I think it important to note it, because from their appearance the morning after the frost I thought their recovery impossible. One called Ida by Standish & Noble, a very early white one, is the most tender, but even this is uninjured. The buds of all were very forward, nearly an inch in diameter. Had they not been so forward, I suspect they would have suffered more. Apricots as big as Walnuts were totally destroyed, and the Plum blossom apparently much injured, becoming perfectly brown. Magnolia Yulan (conspicua) in bloom, flowers destroyed; M. Soulangeana, flowers just expanding, somewhat injured, but not destroyed; Laurustinus in full flower, somewhat injured. *J. R., Sevenoaks, April 6.*

——You will probably receive from various parts of the country notes of the effects of the late severe frost, and many a heavy sigh will accompany the records of fruit trees shorn of promising crops, walls stripped bare by the "untimely frost," and Roses put back to mid-winter at the very moment when their "blushing honours" were coming "thick upon them." Having been shut up for 10 days by illness, I have this morning made my first stroll over the garden, anxious to ascertain what mischief has been done. My garden lies exposed to the north, and when the wind is in that quarter, a horrible draught sweeps up it and past the house, and the only good wall for Peaches is just where this draught is fiercest, and without a weather board and Haythorn's netting we should never get a fruit. A minimum thermometer (one of Cox's) which hangs in front of the potting shed shows that the temperature has been as low as 20° since I last adjusted it. That must have been on Thursday night, March 31, when it froze as sharp as on the memorable 9th of November last, which settled the Chrysanthemums in a night. Among the plants in my collection which were exposed to 12° of frost on the 31st, I have made notes of the following, as marking the comparative degrees of hardiness (at this season) of a few things specially interesting. The soil is a rich yellow loam, rather moist but well drained. Andromeda floribunda, in peat and in a sheltered spot; the new growth killed back as if by long drought. Arbutus Unedo, exposed, unhurt; A. Croomii, new growth, shrivelled to powder, as if burnt by a blast from a furnace. Azalea amœna, brought into bloom in greenhouse, put out in a warm corner, a pair of fine old plants unhurt, as fresh as when they left the house. Berberis asiatica, fully exposed, as fresh as if nothing had happened; B. Bealii, the purple shoots slightly touched; B. Darwinii, shoots in full growth, very much blackened; buds just breaking, unhurt; B. dulcis, in splendid bloom, unhurt; B. japonica, pushing splendidly, and unhurt, though exposed to the north; B. Fortuni, new growth unhurt. Cephalotaxus Fortuni, new shoots a little shrivelled. Dielytra spectabilis in bloom since middle of February, cut down to the ground as if crushed with the foot. Eugenia Ugni, in open border under a warm wall, not a leaf hurt. Garrya elliptica, shrivelled and discoloured. Griselinia littoralis under warm wall, unhurt; also in a cold damp corner, planted last February, not a leaf hurt. Kalmia latifolia in peat, top shoots shrivelled as if scorched. Ligustrum japonicum in a sheltered spot, new growth shrivelled. L. lucidum sempervirens, very much exposed; not a leaf hurt, and the new growth as beautiful as the

foliage of Camellias. Libocedrus chilensis: top shoots shrivelled. Pavia macrocarpa, much exposed; the young shoots slightly killed back; P. californica, ditto; P. rubra, exposed; unhurt. Prinos lucidus, in loam; the beautiful tint of the foliage gone, but not seriously damaged. Roses:— Noisettes shrivelled, especially Ophirie, the new shoots of which look scorched; H.P. General Jacqueminot unhurt; but H.P. Jules Margottin in the same bed, very much cut up; pruned about the 15th of March, and new shoots 2 to 3 inches long; H. P.'s generally very little the worse; Chinas as hearty as ever. Taxus adpressa, in sheltered spot, the top shoots slightly touched. Taxus canadensis pushing beautifully; not a bud injured. Weigela rosea in a very exposed spot; a few of the top leaves touched, but very slightly. Among the fruit trees, Nectarines and Apricots on a warm close boarded fence without netting have escaped injury; a pyramid Beurré Diel Pear exposed to the north is loaded with bloom, and apparently as safe as ever; Brown Beurré, standard, looks queer; Thompson's on a north wall scarcely begun to push. But we must wait a bit to know what amount of injury has been done to fruits. Cherries seem as safe as ever, but I doubt if we shall have any Plums near London. *Shirley Hibberd, Stoke Newington.*

Veitch's Early White Broccoli.—I feel sure that when this excellent variety shall have become more generally known its merits cannot fail to render it a favourite. Its season is mid-winter and early spring. For the last two years I have grown this, together with others of acknowledged excellence, and in my opinion it is unequalled by any of them, certainly not surpassed. It produces fine close compact heads, of good colour and fine flavour. If sown the last week in March it is fit to cut the first week in January, and will continue in use till April. *J. Y. Coollattin, Wicklow.*

Waltonian Cases.—I shall, with many others, feel grateful to Mr Hibberd for information respecting these: 1st, where best to be procured; 2d, cost and expense in using; 3d, how they are managed. Any advice on these points will much oblige *A Constant Subscriber, Kew.*

Gall of Cynips Quercus-petioli.—As this gall has as yet been confined to our southern and western counties, it is desirable to record its appearance in the Cambridge Botanical Garden in the autumn of 1858. It occurred upon one young Oak tree, planted eight or ten years since, in some quantity; and as I had been looking for it in former years it is not likely that there can have been much of it in the garden before 1858. As this is not a country of Oaks it will probably do very little harm here. *C. C. Babington.*

Andromeda polifolia.—I enclose a slip of a plant with flower attached which I first discovered growing in a field of peat in this locality. It is a dwarf, slender, branching, hardy evergreen shrub. It bloomed very early in the house this spring, and pot culture improves it much, for its pearl-like blossoms were larger, whiter, and more globular than those of the enclosed specimen, which bloomed in the field where it grew. So pleased was I with the plants when in flower that I resolved to obtain more of them if possible. With that end in view I took an excursion to the place where I discovered my pet, and very fortunately met with several others distributed here and there, except one patch of about a dozen plants all in flower, and beautifully they looked. That it is a native of this locality is certain, and if it be Andromeda polifolia, as I suspect it is, is it not new its being indigenous to Britain? *Michael Westcott, Wells.* [The plant in question is Andromeda polifolia.]

Decortication of Trees.—Allow me to call attention to the following:—"The system of stripping the bark off the trunks of trees, for the purpose of destroying the insects which infest them, has now been generally applied to a large number in the Champs Elysées and elsewhere in Paris, and has led to the discovery of a curious fact, recently communicated to the Imperial Horticultural Society by M. Robert. It appears that trees may be deprived of the whole of their bark, not only without experiencing any injury, but even with considerable advantage, the operation tending to increase their power of vegetation. Elms, for example, which before the operation did not increase more than one or two millimetres in diameter each year, have been found to increase four or five when stripped of their bark. Trees having a very thin bark, such as the Birch and others, need not be stripped to obtain a similar result; it is sufficient for the purpose to make longitudinal incisions in the bark by means of a kind of three-bladed scarificator. It is now intended to subject all the young Elms in a languishing state to this treatment throughout Paris, it having answered perfectly with those planted on the fortifications. In a commercial point of view the discovery is of some importance." The above, if correct, promises most valuable results. *W. C. M., Court Lodge, Lamberhurst.*

Societies.

Royal Botanic, Regent's Park: *April* 6.—The second of the three spring exhibitions took place this day. In the class of New Plants Messrs. Fraser sent a fine example of the handsome Made' a Musschia Wollastoni, not however yet in bloom; Messrs. E. G. Henderson had Gastrolobium spectabile, a neat shrub, with good foliage, and gay orange and crimson flowers; the same exhibitors likewise sent Aucuba himalaïca, a distinct hardy shrub, with shining green leaves, having distant white-tipped teeth; Messrs. A. Henderson & Co. furnished Griffinia Liboniana, a rare plant, with prettily-spotted leaves and flowers tipped with blueish-lilac; Messrs. Ivery & Son, of Dorking, exhibited a small blue-flowered Hardenbergia; Messrs. E. G. Henderson also had Rhododendron Blumei, a species with small creamy-yellow flowers; and Pentapterygium flavum, with axillary racemes of white vacciniaceous flowers. Of Miscellaneous Plants Mr. Cutbush, of Barnet, had a collection in which a fine mass of Begonia Rex was conspicuous; Messrs. Fraser, Cutbush, of Highgate, and Messrs. A. Henderson, also showed in this class. Cinerarias came from Messrs. Dobson and Turner, and the latter also sent Roses in pots. Of Amaryllises Messrs. E. G. Henderson had a collection which contained one kind (No. 64) of a rich light scarlet, with a white central star, and of superior form; it was shown without name. Messrs. E. G. Henderson contributed a mixed collection of plants, both in and out of flower, containing many novelties, some of which were reported on at the meeting on March 23. Of the more striking, not already noticed, were Camellia De la Reine, a fine large delicate rose-coloured flower of excellent form and slightly cupped; Rhododendron jasminiflorum; Lomatia silaifolia and heteromorpha, two extremely elegant Fern-leaved plants, Araucaria glauca, &c. Mr. Turner had a well-grown collection of 12 Auriculas, among which was a new kind called Imperator, a green-edged variety of first-rate properties. Messrs. E. G. Henderson received an award for three standard Azalea indica; and Mr. Turner for Seedling Cineraria Brilliant, a free-blooming variety of medium quality, remarkable for its rich dark purple-crimson flower heads; also for the following:—Seedling Cineraria Duchess of Sutherland, a large bold variety, the florets white in the lower half, rose purple in the upper; for Seedling Cineraria Highland Mary, pure white, bold florets, purple disk; for Seedling Camellia Eleanor, a fine bold cupped, smooth-petalled, bright rose-coloured variety; and for 12 Hyacinths, shown in good variety and well grown. Mr. G. McIntosh furnished a collection of Tulips in considerable variety of form and colour. To Messrs. Paul a prize was given for two plants of Madame William, a Tea-scented Rose, with beautiful yellow flowers. This it will be remembered was shown in excellent condition at a meeting of the Horticultural Society, in St. James's Hall last year, where it was greatly admired. Mr. Bragg had a stand of Pansies, as had also Mr. James of Isleworth, and Messrs. A. Henderson sent a dish of their new Australian Cress. From Messrs. Smith of Dulwich came Seedling Cineraria Lord Clyde, a dwarf free-blooming variety, with bold nicely cupped florets of a deep purple crimson. Cineraria Acme of Perfection from Messrs. Smith, previously shown, proved to keep its good character, as did another variety named Hilax, shown by Mr. Holland of Hounslow. In addition to the foregoing, Messrs. Milne Arnott and Co., of Vauxhall, had Azalea Duchess of Wellington, a loose white; Mr. Turner Variegated Pelargonium picturatum, a white-edged grey-blotched kind with a broad pink horse-shoe mark, and Seedling Camellia Lady Mary Labouchere, a veiny light rose with a tendency to be blotched, a cupped variety but with ragged petals as shown; and Mr. W. Ivery of Peckham, Seedling Azalea Queen Victoria, a free-flowering kind, white striped with purple. Some other seedling Cinerarias, Fuchsias, Pelargoniums, &c. of inferior quality were exhibited.

Notices of Books.

British Wild Flowers, Parts 2 to 8 (Sowerby). This serial has now advanced so far that we can form a more correct opinion of its value than when the first number appeared (see p. 543, 1858). It is an account of our wild flowers illustrated by miniature figures, coloured or uncoloured, at the option of the purchaser. The figures are reduced with all possible skill from the old plates of English Botany, and to such an extent that each new plate represents 20 different species. These species being arranged according to natural affinities, the plates give the young botanist capital means of comparing one thing with another. It is announced that the volume when complete will contain 80 plates, and thus will represent 1600 different species. What would not the writer of this have given when a boy for such a charming volume of natural history! But in those days 36 volumes 8vo were required to show what in the present instance is collected into one volume only. We have seen no abridgment so thoroughly useful as this, except Calwer's wonderful *Käferbuch*, of which it is a very worthy rival. In Part VIII., the last published, the difficult order of Umbelliferous plants is brought to a close.

The Principles and Practice of Harmonious Colouring, &c. 12mo, Newman, Soho Square. Pp. 88. The object of this little treatise is not merely to point out to the student how oil colours and water colours can be most advantageously employed in art, but also to show how photographic pictures are to be dealt with. The author is of opinion that photographs are of themselves hopelessly inaccurate; wrinkles become furrows under the action of "the one Cyclopæan eye of the camera," and freckles blotches; one thing is exaggerated, another is diminished; and for these defects there is no remedy except skilful touching up and colouring. How this is best done his little book is written to show, and although we cannot praise its style we may give it credit for conveying good useful practical advice to beginners, not only in the manner of working but also in the choice of their tools.

Messrs. Chambers have announced a new *Encyclopædia of Universal Knowledge* for the people, to appear in weekly sheets at 1½*d.* or monthly, price 7*d.* It will, doubtless, be worthy the reputation of the authors. We would, however, suggest that the common practice of referring to some future article for the meaning of a familiar word is more honoured in the breach than the observance. Why should Abele be explained by "see Poplar?" It would be quite as easy and much more convenient to the reader to say at once what the Abele is. So of Abelmoschus, which, moreover, is not a Hebiscus, but a Hibiscus.

Messrs. Bradbury & Evans have announced their intention of extending the application of the *Nature-printing* process to *Seaweeds and Mosses*, and of also producing a *Fern Book* in 8vo. Specimens of the pages of the proposed works have been put into circulation. The first volume of the Seaweed book is to come out on May 31; and of the Fern book on July 30; the Mosses, which will occupy only a single volume, are we believe nearly ready. These will form a beautiful set of illustrations for amateurs.

Trade Lists Received.—*Thomas Barnes* (Danecroft, Stowmarket), *a list of Dahlias, Roses, and various bedding-out plants.* A good trade collection of really useful things. Six of the Dahlias appear to be new.—*S. Sims's* (Foot's Cray) *Catalogue of Stove, Greenhouse, and hardy Ferns.* From a very small beginning Mr. Sims's catalogue has almost advanced to the dignity of a volume, 62 pages being occupied by a descriptive account of what he now has to offer. It is prefaced by very useful instructions for cultivation.—*Bass & Brown's* (Sudbury) *Spring Catalogue* No. 5. This is a list of Achimenes, Gloxinias, half-hardy and hardy bedding-out plants, hardy bulbs, Roses in pots, &c. Among more common things we remark such rarities as Arum crinitum, Calliprora lutea, Gloriosa Planti, and Leucocoryneixioides—to which may be added an apocryphal Cyclamen africa*nus* macrophyllum, whatever that may be.

Garden Memoranda.

The Grove, Roehampton, the Residence of S. L. Stephens, Esq.—The extensive range of forcing-houses, for which this place is remarkable, being now in full operation, some account of their contents, together with a few other incidental remarks, may not be uninteresting.

Under Cucumbers, which are trained on trellises, are grown Tomatoes and Figs. Both are covered with fruit, which will be ripe in May. Being in pots they are allowed to root into the bed on which they are placed; when therefore they appear to be growing over-luxuriantly, their progress is readily checked by lifting up the pots and removing all roots that protrude beyond them. The Figs are usually placed in heat in November, and as soon as the young shoots have made three leaves their points are pinched and the shoots are tied down. This induces them to form fruit instead of wood, and thus a crop is obtained from the present year's growth. A second supply of fruit is also got from the same plants in one season by the same practice. In the Peach houses are excellent crops, the earliest of which is just stoning. Than the condition of the Vineries, too, nothing could possibly be more satisfactory. A rod is trained to each rafter and they are loaded with bunches, some of which, especially those of Barbarossa, promise to be of unusually large size. Inarching with green wood has been practised here with success in the case of pot Vines on which it was desirable to work better sorts. This was done last year, and this season they are bearing from three to five bunches on each Vine. Some large Orange trees, which had got into ill health through having been watered with bad water, are placed under the shade of the Vines in a bed of leaves. The first step taken with a view to improve them was to prune in their heads, then to shake away all soil from their roots, which were washed perfectly clean, and lastly to remove everything that appeared to be decaying. The trees were then retubbed in fresh soil, placed under the conditions just named, and now they are pushing vigorously, and will evidently soon make good heads. The Vines which over-canopy them have been planted five years; they have borne four crops consisting of 30 bunches to each Vine. In the earliest house the Grapes will be ripe in May.

Strawberries are cultivated largely here, and Mr. Drummond, the gardener, treats them somewhat differently from plans usually adopted. He brings them forward in pots in the ordinary way till they are in full flower, after which he plants them out as follows:—A bed of dung and leaves is made up in the Strawberry-house, and when it has attained a moderate degree of warmth the plants are carefully turned out of their pots and set in rows on the bed. Mould previously warmed is then placed round the balls till they are nicely covered, and the surface being neatly smoothed the whole is finished. Tiles to keep the fruit clean are then placed round the plants, and thus circumstanced they bear enormous crops of fine fruit. After the latter is all gathered the plants are turned out into beds in the open ground, where they fruit well the following season.

Out-of-doors there has been every prospect of fine

crops of fruit up to Wednesday the 30th ult., when a snowfall of from 2 to 3 inches in depth and the frost of the following night did great damage, the snow in the evening of Wednesday having partially thawed. On pyramidal Pears covered with blossom there will apparently be little fruit, many of the flowers having got killed; Plums are in little better condition. On walls Apricots, which are unusually forward, although protected by double fishing nets with branches of evergreens under them, have suffered greatly; the fruit, which is about the size of Hazel Nuts, becoming leathery, turning black in the centre, and dropping off. The thermometer on the morning of the 31st indicated here 18°; but in other places 22° is the least that has been registered. It should be remarked, however, that the garden here is open and much exposed to cold north-west winds. Early Peas have been saved; but in some places we learn that they have been somewhat damaged, as have also been several kinds of half hardy plants. Apples, Pears, and bush fruit will probably be saved.

Bedding Plants, such as Verbenas; Calceolarias, &c., as spring approaches are planted out here in cold pits, in which they are allowed to remain till they are nearly in flower. They are then transferred to the flower garden, in which a good effect is thus produced at once, and others are placed in the pits to succeed them. Thus treated the plants not only acquire additional strength, but the pots out of which they are turned can be applied to other purposes, and that at a season when pots are usually in great demand.

Mignonette, in the form of pyramids, some 4 feet in height, is grown here for the summer decoration of the conservatory. For this purpose it is sown in June, and as it progresses the side shoots are constantly kept pinched in—the under ones the least, the upper ones the most, so as to give to the plants the pyramidal shape. This kind of attention is all that is required to have fine specimens of this kind, which are greatly admired; they bloom profusely, and last longer in beauty than Mignonette usually does in its ordinary state.

Miscellaneous.

Vegetables in the Markets of the Mauritius.—This market, which occupies two large squares, is well fitted up, and is covered in with the exception of a wide thoroughfare through the centre of each square. In the eastern bazaar were arranged, in separate localities, fancy birds in cages, with poultry, including fowls, ducks, geese, and turkeys; different kinds of vegetables, many European as well as tropical; an abundant supply of good Potatoes, with Cabbages, Beans, fine Stone Turnips, Onions, Garlic, Tomatoes, and Capsicums or Chilis, Yams, Manioc, Bananas, Tamarinds, Custard Apples, and Pine Apples. Then there were Cocoa nuts, Pistache nuts, Areca nuts, Betel leaf, and many other vegetable productions new to me, all spread out upon the ground, with the kinds of fruit then in seasons. Besides these, there were seeds and grains in almost endless variety, Lentils, Rice, Barley, Millet, Maize, French Beans, turmeric, saffron, and numerous kinds of Indian grain.—*Ellis's Madagascar.*

Gigantic Poplar.—Before Mr. Gladieux's house, the trunk of an immense Liard (Populus ****) lay ready for splitting into firewood; the size appeared to be so unusual that I measured it carefully, and found it to be 4 feet 10 inches in diameter 6 feet from the base, and 4 feet 8 inches in diameter 10 feet from the base; at the base it measured 16.5 feet in circumference, and showed 150 well defined rings. *Official Report on Lake Superior and Red River.*

Calendar of Operations.

(*For the ensuing Week.*)

PLANT DEPARTMENT.

Conservatory, &c.—See that no plant suffers from drought here. Planted out things will require thorough waterings. The larger specimens in tubs or pots, if any, must also have a liberal supply, provided the drainage is complete. This is the period for free use of liquid manure, but take care that it is perfectly clear and not over strong. Large Orange trees are very fond of it. Where these trees produce gross wood, disbud or remove it altogether, and let the lower shoots take its place; this will induce fruitfulness by moderating the growth. Pay due attention to watering, shifting, stopping, &c., of stove plants in general. Make cuttings, as they can be obtained in a young state, of Geisomerias, Plumbagos, Eranthemums, Justicias, Clerodendrons, Vincas, Euphorbias, Brugmansias, Begonias, and Thunbergias, &c., in order to keep up a succession of clean young stock. See that growing Orchids have abundance of atmospheric moisture with a liberal circulation of air early in the morning, shutting up close betimes, and take care to observe moderation in the use of fire heat in order that a pure atmosphere for the night may be ensured. Growing Dendrobiums will now require liberal supplies of water; and let plants on blocks be frequently syringed. Most stove plants will succeed in the mixed greenhouse, where a medium between the cold greenhouse and the stove is observed. See to securing cuttings of Heaths as soon as the wood is fit for the purpose. Fumigate the moment an insect appears; this is best done in a moderate way two evenings in succession. Some of the hard-wooded things of no particular importance might be removed at this period to furnish more room for growing young stock and fine specimens in flower. Some protection, will, however, be necessary for them.

FORCING DEPARTMENT.

Pineries.—Plants swelling their fruit should be carefully attended to with water at the root; for, if allowed to get too dry, there is great danger of checking the fruit and preventing its attaining the size which it would do under proper treatment. It is, however, easy to err in the opposite extreme, and considerable care and practice are necessary to enable one to properly water plants having their pots plunged; therefore this should not be intrusted to inexperienced hands, who would probably water every plant if the surface soil indicated dryness. Use weak milk-warm manure water for plants that are well rooted, whether fruiters or growing stock and keep the atmosphere thoroughly moist, giving air very sparingly on cold, drying, gleamy days. Black Jamaicas and Montserrats expected to supply ripe fruit at Christmas should soon be ready for shifting into their fruiting pots, and care should be exercised to avoid checking their growth by any means, as this might lead to their fruiting prematurely. See to having the balls in a rather moist state at the time of repotting, and keep the bottom-heat regular and the atmosphere moist and rather close until the plants appear to have taken to the fresh soil. The same attention will be necessary in regard to watering and bottom-heat, &c., in the case of those growing in the open bed, for plants that are any size are apt to show fruit at this season if at all checked in their growth. Vineries.—Directly the fruit in succession houses is sufficiently advanced for thinning get this done, the laterals stopped, and the shoots regulated without loss of time, for allowing the berries to get so thick that the scissors can hardly be got amongst them renders thinning tedious, and also robs the Vines. Give inside borders a liberal supply of manure water, using that from the stable-yard tank where it can be obtained, and mixing with it a sufficient quantity of warm water to render it about milk warm. In all cases, give every possible attention to the state of the roots, securing a little artificial warmth where circumstances allow of doing so, for the ground is cold and very unfavourable for the roots of Vines. Where fermenting materials have been used on the border of the early house, the heat should not be allowed to decline until the fruit is fairly ripe, for it is easier to secure a heavy crop of well swelled fruit than to perfectly colour and ripen even a moderate crop, and a healthy root action is perhaps more important while the fruit is colouring than at any other period. Therefore let the fermenting materials be turned occasionally, adding fresh as may be requisite to keep the temperature of the border at about 70°. In cases where red spider threatens to be troublesome, in succession-houses, rendering syringing necessary, rain-water should be provided for syringing with, as if water containing lime is used, the berries are apt to be disfigured by an incrustation of it. Cherry-house.—When the fruit begins to colour syringing overhead must be discontinued, and a less degree of moisture maintained in the house, decreasing this and the quantity of water given to the plants gradually. Give abundance of air on all favourable opportunities. Strawberries ripening fruit it would be well to remove here or to a similar situation. Mushrooms.—Maintain a humid atmosphere. The old beds should be preserved for mixing in compost used for French Beans. Pits and Frames.—Geraniums and other plants in these attacked with greenfly must be fumigated. Syringe frequently overhead in mild weather.

FLOWER GARDEN AND SHRUBBERIES.

A thorough re-arrangement of all herbaceous plants should take place every spring; if this has not been done no time should be lost. Some of the grosser kinds get into too large masses, and thereby destroy all proportion in the mixed beds. Sow annuals wherever required. Early struck Verbenas, Calceolarias, &c., may be planted out 2 or 3 inches apart in beds; with proper protection they will make nice plants by the middle of May, and may be removed either to masses or borders where they will bloom at once, and soon produce a striking effect.

HARDY FRUIT AND KITCHEN GARDEN.

This is an excellent time to plant a full crop of Potatoes; Kidneys with well protected sprouts or any other early kinds planted now will be little later than those planted in February. This, however, requires a little care; the sets should be placed in baskets a single layer thick on damp litter, and carefully handled; they should by no means be planted during either sunshine or wind. Those with sprouts 2 or 3 inches long, if managed thus and covered at night until the second week in May, will closely succeed those in frames. Let a sowing of all the winter and spring Broccoli be made forthwith. Cape Broccoli and Cauliflower for Michaelmas may, however, be sown a week or two later. See that plenty of Green Kale, Savoys, Brussels Sprouts, Leeks, Scorzonera, Salsify, Beet, &c., is got in without delay. Continue successions of Horn Carrots; indeed sow a bed every month from January to September. This is the best way to be independent of the grub. Ridge Cucumbers should now be got forward, also Tomatoes and Vegetable Marrows. As soon as young Asparagus is from 3 to 6 inches high, let new plantations be made. Put in successional crops of Peas, and earth up and stake those above ground. Protect seeds appearing above ground from birds and slugs. Prick out Celery for succession crops, and attend well to the early plants with water; and if they are under glass see that sufficient air is given to keep them stocky. Seed should also be sown for the late crop Attend to keeping up a supply of all kinds of small salads by sowing frequently. Stir the surface of the ground among all growing crops with the view of preventing the growth of weeds and keeping the soil open.

COTTAGERS' GARDENS.

Prepare a bed for a few February sown Cabbages; they will succeed the autumn plants as well as give the latter time after the head is cut to make bold sprouts. A bed of Swede Turnips or Mangel may also be sown; if Potatoes should miss (and we learn that disease has already made its appearance among early sorts in frames) these will do to fill up blanks.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.
For the Week ending April 7, 1859, as observed at the Horticultural Gardens.

April.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Temperature of the Air. Min.	Temperature of the Air. Mean	Temperature of the Earth 1 foot deep.	Temperature of the Earth 2 feet deep.	Wind.	Rain.
Friday 1	27	30.260	30.033	46	38	42.0	46	46½		.09
Satur. 2	28	30.018	29.876	52	42	47.0	46¼	46	S.W.	.01
Sunday 3	☾	30.092	30.068	65	41	53.0	47½	47	S.W.	.00
Mon. 4	1	30.097	30.079	68	36	52.0	49	48	W.	.00
Tues. 5	2	30.104	30.059	69	33	51.0	50¼	48	W.	.00
Wed. 6	3	30.137	30.029	77	36	56.5	51½	49	S.W.	.00
Thurs. 7	4	29.931	29.749	79	46	62.5	53	50	S.	.00
Average		30.091	29.983	65.1	38.9	52.0	49.1	47.8		.10

April 1—Frosty; fine; overcast; rain.
— 2—Overcast; cloudy; densely overcast.
— 3—Overcast; fine; overcast.
— 4—Fine; very fine throughout.
— 5—Very fine; clear at night.
— 6—Fine; clear and fine; cloudless and hot; clear at night.
— 7—Clear and fine; exceedingly fine; quite clear; overcast at night.
Mean temperature of the week, 6 deg. above the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 33 years, for the ensuing Week, ending April 16, 1859.

April.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 10..	55.3	33.7	44.5	13	0.27 in.	2	6	7	3	4	3	5	1
Mon. 11..	55.5	36.0	45.7	17	0.51	2	8	3	1	5	8	3	3
Tues. 12..	55.8	37.4	46.6	22	0.56	2	6	5	—	2	12	1	5
Wed. 13..	56.0	34.4	45.2	14	0.45	2	5	2	4	4	7	2	7
Thurs. 14..	57.8	37.1	47.5	12	0.31	2	6	6	2	4	6	2	5
Friday 15..	58.2	38.6	48.4	18	0.47	6	8	5	1	3	5	3	2
Satur. 16..	57.1	36.8	47.0	14	0.64	6	7	5	2	3	4	3	3

The highest temperature during the above period occurred on the 16th, 1858—therm. 75 deg.; and the lowest on the 16th, 1847—therm. 20 deg.

Notices to Correspondents.

Australian Salad Cress: *Egripo.* This is a very nice article, and good to eat, but quite different from common Cress. We hope to say next week what it is. The seed is sold by Hendersons, of Pine-apple Place.

Books: *Monos.* 1, Standish on American Plants; Barron's British Winter Garden; Sweet's Hothouse and Greenhouse Cultivator; Paxton's Botanical Dictionary. 2, Crawfurd's History of the Malay Archipelago, and his Descriptive Dictionary of the Indian Islands; and a Paper in the Transactions of the Horticultural Society published in 1822. 3, Loudon's Encyclopædia of Gardening.—*Joachim.* Prof. Lindley's Descriptive Botany will teach you how to meet one branch of public examinations.

Chinese Primulas: *H P.* Your seedlings are large, of good colour and substance, and apparently well worth taking care of.‡

Cucumbers: *An old Sub.* Your leaves are, it must be owned, in a miserable state; but the only insects we find are a few straggling specimens of thrips. The plants are suffering from bad cultivation. As to the Gishurst Compound, we refer you to a leading article in another column.

Eugenia Ugni: *C C.* Treat it exactly like a common Myrtle, than which it is rather more hardy. The best fruit is produced by unprotected bushes in the open air.

Hartley's Rough Plate Glass: *W H.* Plants will not burn under this kind of glass because it renders any concentration of solar rays impossible. But we cannot say that it will render shading unnecessary. When ventilation is perfect shading is useless to trees or other plants in health; but when it is insufficient or badly managed shades must be occasionally used, not to prevent burning, but to keep down sunheat. There can be no doubt that glass made under Hartley's patent is the best for glazing all kinds of forcing-houses.

Kiln Drying. We have a letter from Mr. Hands who complains of our "severe criticism" of his new invention, and he requests us to "insert a few lines in explanation." This we would willingly have done had his explanation explained anything.

Mowing Machines: *W C W.* We cannot recommend one maker more than another. A very small one would probably suit you. Read the Advertisements.

Names of Plants.—We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have or could have undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*A D.* 1, Narcissus major; 2, N. moschatus; 3, N. odorus; 4. N. fœtidus.

Old Vines; *C W.* You may remove them of much larger size than you describe, as soon as the leaves have fallen; and with skill they will not miss the moving. If you distrust your skill you had better not try the experiment.

Pine Apples: *A Young Gardener.* There is no one thing wrong in your management, as you describe it. No one can tell how your leaves have come to such a pass; but it looks as if they had been excessively over-watered, with no sufficient ventilation to counteract the effects of the watering.

Silver Sand: *G.* It is quite immaterial whether this comes from Reigate or the Isle of Wight, provided it is silver sand; that is to say, free from salt, iron, or other impurity.

Vines: *V S.* The shoot sent looks as if its soft top had been killed by injudicious exposure to frosty winds. If this is not the cause of the mischief it must be looked for in the border; but the fact of the evil being confined to your early house, while later ones escape, favours the supposition that it may be your mode of ventilating which is at fault.‡

Wireworms: *Chester.* The waste lime of gas works is *said* to kill them, or drive them away. But we have no personal experience.

Misc.: Full price will be given for the undermentioned numbers: 4, 5, 11, 26, 36, 46, for 1858.

*** As usual, many communications have been received too late, and others are detained till the necessary inquiries can be made. We must also beg the indulgence of those correspondents the insertion of whose contributions is still delayed.

THE PATENT

NITROPHOSPHATE OR BLOOD MANURE COMPANY (Limited),

CONSISTING OF TENANT FARMERS, OCCUPYING UPWARDS OF 30,000 ACRES OF LAND.

TRUSTEES.

Abel Smith, Jun., Esq., Walton House, Ware, Herts.
Charles Dimsdale, Esq., Essendon Place, Herts.
Edward Ball, Esq., M.P., 8, Belgrave Road, Pimlico
Major-General Hall, M.P., Western Colville, Linton, Cambridge
John Brady, Esq., M.P., Warwick Terrace, Belgrave Sq.

DIRECTORS.

Chairman.—Jonas Webb, Esq., Babraham, Cambridgeshire.
Deputy-Chairman.—John Collins, Esq., Myddleton Square, Pentonville.
Edward Bell, Esq., Tottenham, Middlesex
John Clayden, Esq., Littlebury, Essex
Richard Hunt, Esq., Stanstead Abbot, Herts.
Thomas Knight, Esq., Edmonton, Middlesex.
Robert Leeds, Esq., West Lexham, Norfolk.
Robert Morgan, Esq., 72, Camden Villas, Camden Town.
George Savill, Esq., Ingthorpe, near Stamford.
William Collins, Esq., 105, St. John Street Road.
Bankers.—Messrs. Barnett, Hoare & Co., Lombard Street.
Solicitors.—Messrs. Kingsford & Dorman, 23, Essex Street, Strand.
Auditor.—G. W. Brown, Esq., 28, Parliament Street.
Manager.—Mr. James Odams. *Secretary.*—Mr. C. T. Macadam.

Offices, 109, Fenchurch Street, London.—Manufactory, Plaistow Marshes, Essex.

The Directors beg to inform their Friends and the Agricultural Public that the following Manures are now ready:—

ODAMS'S BLOOD MANURE FOR CORN AND MANGEL.
ODAMS'S BLOOD MANURE FOR ROOTS.
ODAMS'S SUPERPHOSPHATE OF LIME.

Full particulars may be had at the Company's Offices, or of the local Agents.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. Nesbit, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

LONDON MANURE COMPANY, removed to 116, Fenchurch Street, E. C. (Established 1840), have the following MANURES ready for delivery:—

CORN MANURE for SPRINGTOP DRESSING
URATE
MANGEL MANURE
SUPERPHOSPHATE OF LIME
BLOOD MANURE
} all of guaranteed quality.

In consequence of the reduction in the price of raw material the London Manure Co. are enabled to lower the price of their Superphosphate of Lime, and to materially improve the Corn Manure and Urate.

The London Manure Co. also supply PERUVIAN GUANO (direct from Messrs. A. Gibbs and Sons), SULPHATE of AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of value. Wholesale dealers supplied.
116, Fenchurch Street E.C. Edward Purser, Secretary.

ARTIFICIAL MANURES.

FREDERIC CORNWELL begs to inform his friends and the Agricultural public that he can now supply a "SUPERPHOSPHATE of LIME" superior to anything yet produced. Each Bag guaranteed to contain from 20 to 25 per cent. of "Soluble Phosphate of Lime." Price 5*l.* 10*s.* per ton, delivered free to any Railway or Wharf in London. Dealers and the trade supplied. Linseed-cakes, Cotton-cakes, and all descriptions of Artificial Manures at lowest market prices.
Offices, 7, Great St. Helen's, London, E. C.

REDUCTION IN PRICE OF LAWES'S MANURES.

MR. LAWES begs to announce that he has this season reduced the price of the Manures manufactured by him, viz.:—

TURNIP MANURE	from £7 to	£6	6
SUPERPHOSPHATE OF LIME ..	,, 7 to	6	6
MINERAL do. ..	,, 6 to	5	5
BARLEY MANURE..		8	0

Prof. Way and Dr. Voelcker have sampled from a bulk of 5000 to 6000 tons at his factories, and their report and analyses are given in full in Circular to be obtained on application at his office, 1, Adelaide Place, London Bridge, E.C., or of his local Agents.

N.B. Genuine Peruvian Guano direct from Messrs. Gibbs, Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures. American Cotton-seed Cake supplied.

ESTABLISHED 1812.

H. AND T. PROCTOR'S TURNIP MANURE.—Messrs. H. & T. P. draw particular attention to this valuable Manure, which contains all the elements necessary for the full development of the Turnip Crop, so combined, that, from their chemical knowledge and long experience, they feel satisfied is most advantageous to the consumer. It has been very extensively used by most of the eminent Agriculturists of the day, and has attained a high reputation throughout England, Scotland, and Wales, and, they venture to say, is unrivalled for the weight and quality of the Bulbs which it produces. The application of this Manure to the Turnips will be found to benefit considerably the after crops of Barley, Clover, and Wheat.

POTATO, GRASS, BARLEY, CLOVER, AND WHEAT MANURES; also BONE DUST, PERUVIAN GUANO, and SUPERPHOSPHATE of LIME, warranted of the best quality.

Apply to H. & T. Proctor, West of England Depôt for Artificial Manures, Cathay, Bristol; or Proctor & Ryland, Birmingham, and Saltney, near Chester.

BURNARD, LACK, AND CO.'S CONCENTRATED SUPERPHOSPHATE OF LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.

CONCENTRATED TURNIP MANURE, equal in value to the preceding.

Of these Manures Dr. Voelcker says:—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."

Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to Burnard, Lack, & Co., Sutton Road, Plymouth.

PERUVIAN GUANO.
The present price of this valuable Manure is—
12*l.* per Ton for 30 Tons and upwards,
13*l.* 5*s.* per Ton for 1 Ton up to 30 Tons.

And, to guard against the purchase of adulterated mixtures and of inferior Guanos purporting to produce results equal to Peruvian, consumers are recommended to apply either to ourselves, to our agents, Messrs. Gibbs, Bright, & Co., of Liverpool and Bristol, or to dealers of established character, in whose honesty and fair dealing they may place implicit confidence.
Antony Gibbs & Sons.

SUCCESS OF THE NEW GUANO; Imported under Lease from the Crown.—Though the experiments with KOORIA MOORIA GUANO were made late in the season, and under adverse circumstances, the successful results obtained confirm beyond doubt Professor Voelcker's report—(in No. 41, Part I., vol. xix., Royal Agricultural Society's Journal)—that Ammoniacal manures, applied to Turnips in the experimental field, kept back at first the crop, and had no beneficial effect either alone or in conjunction with phosphates.

The Kooria Mooria Guano is essentially a phosphatic manure, containing sufficient ammonia for roots, and, with a mixture of one-fourth of ammoniacal guano, cannot be excelled for either top-dressing or grain crops. It is a natural deposit, and will be delivered as imported, free from risk of adulteration. Deeply impressed with the necessity of encouraging the import of this valuable manure, her Majesty's Government has given such increased facilities for shipment, that arrangements have been made for a considerable supply. Purchasers can be supplied with suitable quantities from cargoes now on sale, containing from 45 to 66 per cent. phosphates. Present prices, 4*l.* 10*s.* to 6*l.* 10*s.* per ton, on applying to Joseph Hindson, Broker (one of the Lessees under the Crown), 20, North John St., Liverpool. Government Lessees: Ord, Hindson, & Hayes.

"Greystoke, Cumberland, Dec. 16, 1858.

"Dear Sirs,—I beg to inform you that I applied the Kooria Mooria Guano I had from you for Turnips, on land of a loamy character, incumbent on a stiff clay subsoil, and recently drained. On each side of the plot sown with Kooria Mooria Guano were Turnips manured with best Peruvian Guano. The quantities applied of each sort were of equal weight for weight per acre. The crop—a very good one throughout—is now being eaten off with sheep. Very little perceptible difference can be discovered, but if anything that difference is in favour of the Turnips sown with Kooria Mooria Guano.

(Signed) "John Barker."

"Messrs. J. & J. Graham, Guano Merchants, Penrith."

A Pamphlet, "Hints on Guano," containing a large number of reports from well-known agriculturists, and analysis of the cargoes here, may be had of the Broker, at the above address.

AYRSHIRE HEIFERS IN FIRST CALF.—Twenty very carefully selected pure bred 3-year old HEIFERS of this celebrated Milking Breed are for Sale in one lot, or singly. Ten may be seen 20 miles from London. A good 2-year old BULL also for Sale.—Apply to John Herriot, J. Lockhart Morton's, 8, Finch Lane, London, E.C.

THORLEY'S FOOD FOR CATTLE.—Every person having an interest in domestic or farm animals should obtain a supply of this celebrated and economical food which will prove invaluable during the approaching season. For keeping horses in good condition, it is unequalled. Pigs fatten with surprising rapidity upon it, and their flesh increases in flavour and value. Cowkeepers will find great advantage in the increased quantity and improved quality of the milk during its use. All animals are benefited by it. A pamphlet on this interesting subject, accompanied by Testimonials from the principal Nobility, Gentry and Agriculturists forwarded on application. In casks containing 448 feeds (measures inclosed), price 50*s.*, carriage paid to any Railway Station in the United Kingdom. Post-office Orders payable to Joseph Thorley, 77, Newgate Street, London.—N.B. The public are cautioned against being imposed upon by worthless imitations.

TO PIG AND POULTRY FEEDERS AND MILLERS.

CHICKEN RICE, 7*s.* 9*d.* per cwt., in bags 1¾ cwt. each. SCREENED RICE, 10*s.* per cwt., in bags 1¾ cwt. each. RICE MEAL, 6*s.* 6*d.* to 8*s.* 6*d.* per cwt. RICE for grinding. An allowance per Ton. American Oilcake, in barrels and bags, per ton only. Locust Beans, per ton.—Sold for Cash only by W. & R. Jupp, 6, Cross Lane, St. Mary-at-Hill, Eastcheap.

RATS.—RATS Taken without Poison or Traps by Wholesale.—Ships, Barns, Stables, Granaries, Mills, Warehouses, Farmsteads, Houses, &c., cleared at one sweep. Any Person can by this method clear the entire premises of every RAT, however numerous they may be, in one single night. Printed directions how to entice and secure the whole lot alive sent free by return of post for Two Shillings by William Goodwin, High Halstow, near Rochester.

AGRICULTURAL MACHINERY.

E. R. AND F. TURNER, Ipswich, manufacture Prize Mills for Crushing Corn, Seed, Malt, &c.; Portable Grinding Mills, Steam Engines fixed and portable from 2 horse-power and upwards; Threshing Machines, Chaff Cutter, Oilcake Breakers, Horse Gears, Saw Tables, &c., all of a superior description and adapted for Home, Colonial, and Foreign use. Illustrated Price Lists sent free on application.

SPEED AND ECONOMY for Farmers, Gentlemen, and Market Gardeners, in the use of HOARE'S REGISTERED HAND SEED PLANTING MACHINE, which from its capabilities, combined with strength, lightness, and simplicity, places it beyond a parallel. Its operative powers in planting the seeds of Mangel, Carrot, Turnip, Parsnip, and all small seeds in patches of equal depth and different distances, from 6, 7, 12, 14, 18, 21, 24, to 28 inches apart, raking in and rolling complete, render it an invaluable invention. It will act as a drill when required. Price 5*l.* 15*s.*
London Agent, Mr. B. Samuelson, 76, Cannon Street, West. Sold also by the inventor, J. Hoare, Old Fishbourne, Chichester, Sussex.

MR. SMITH will SMASH UP a piece of his Clay Land, Wheat Stubble, the beginning of this month. Gentlemen who may be desirous may then see his Apparatus at work.—A Card, stating the day, may be had by applying to him at Woolston; or to Messrs. Howard, of Bedford.

SIGMA'S BEAN, MANGEL, & CORN PLANTERS (5 Depositors), HOES, &c. The "Multum in Parvo," combining Cultivator, Horse Hoe, Ridge Plough, Subsoiler, Broadshare, and other forms; all expanding. Complete 7*l.* 7*s.* Prospectus sent.—C. Powell, Hurstgreen, Sussex.

VASES, PEDESTALS, SUNDIALS, FOUNTAINS FLOWER BOXES, JARDINETS, FERN CASES, BALUSTRADES, EDGINGS AND CURBS FOR FLOWER BORDERS, SEATS, &c., in Imperishable Siliceous Stone, at reduced prices, for the adornment of the Villa Garden, the Mansion Grounds, or the private or public Park.
For Priced Illustrations apply to Frederick Ransome, at the Show Rooms, Cannon Row, Westminster, S.W., or Patent Stone Works, Ipswich.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

EDWARD BECK Manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener, Sundays excepted. PRICED LISTS of PLANT TUBS and BOXES forwarded on application.

THE GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY: Offices, 52, Parliament Street.
Henry Ker Seymer, Esq., M.P., Chairman.

1. This Company is incorporated by Act of Parliament to facilitate the Drainage of Land, the Making of Roads, the Erection of Farm Houses, Farm Buildings, and Labourers' Cottages, and other Improvements on all descriptions of Property, whether held in fee, or under entail, mortgage, in trust, or as ecclesiastical or Collegiate Property.
2. In no case is any investigation of Title necessary.
3. The Works may be designed and executed by the Landowner or his Agents, or the Company will undertake the entire improvement by their experienced staff, and advance the money required for the works. Equal facilities will be afforded in either case.
4. The whole cost of the works and expenses may, in all cases, be charged on the Lands improved, to be repaid by half-yearly instalments.
5. The term of such charge may be fixed by the Landowner, and extended to 50 years for Land Improvements, and 31 years for Farm Buildings, whereby the instalments will be kept within such a fair per-centage as the occupiers of the improved Lands can afford to pay.
6. No profit is taken on any Works executed by the Company, the actual expenditure only, approved by the Inclosure Commissioners, being charged in all cases.
William Clifford, Secretary.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL AND GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.
Principal—J. C. Nesbit, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.—WARWICK MEETING.
Entries for IMPLEMENTS, CHEESE, WOOL, FARM-GATES, and DRAINING PIPES, must be made on or before May 1.

Entries for LIVE STOCK must be made on or before June 1.

*** All Entries received in each case after those respective dates will, without any exception, be disqualified, and returned to the senders.

PRIZE SHEETS may be had on application at the Offices of the Society, 12, Hanover Square, London.

The Agricultural Gazette.

SATURDAY, APRIL 9, 1859.

MEETINGS FOR THE ENSUING WEEK.

Wednesday, April 13 { Agri. Society of England .. Noon. / Dublin Agri. Society.

Mr. Smith has just issued "A few Words to the Farmers of Great Britain," on his system of steam culture, from which we extract a passage explanatory of the merits of his method, notwithstanding that the letter is necessarily for the most part a trade advertisement. He states "that 5 acres on heavy, and 7 on light land, have been found to be an average day's work; that September, October, and March are the best months for applying steam power to the cultivation of the soil; that, after deducting Sundays and a few days for threshing and stoppage by rain, the *working* days for September and October may be put down at 45, this multiplied by 5 for heavy land, and 7 for light, gives 225 acres and 315 acres as the quantity of land that can be cultivated once over with a set of apparatus within those months." By this it is clearly seen that if steam power is to be generally applied to the cultivation of the soil, every large farmer must possess a set of apparatus of *his own*. His

own experience convinces him that one operation of the cultivator in these two months does, on clay lands, produce as good an effect as two ploughings.

He divides his clay farm into eight fields—roots, Barley, Beans, Wheat, Clover, Wheat, Beans, and Wheat, respectively. which he designates, as in the following diagram, by the first

A Roots.	B Barley.	C Beans.	D Wheat.
E Clover.	F Wheat.	G Beans.	H Wheat.

eight letters of the alphabet; and the following characteristic instructions at once become intelligible:—"The harvest in, bring out the steam tackle; smash up C, G, H; if you wish for further expedition, cross-cultivate H by steam, then pack up for the winter, for the horses you *must* keep can do the rest; they can plough E, cross-cultivate C and G, and drill E, C, and G, better and cheaper than steam can. This done let the horses *bout* or *stitch* up H, manure it, split the stitches, and subsoil between them t this will lie well for the winter, and ready for drilling in the spring for roots. When they have done H, if the manure is ready they may draw it on to F, and plough F and B for Beans in the ordinary way. Having thus sketched out the work, both for horses and steam, I may state that the former will not with this arrangement have full employ during the winter, so that if more is done by steam than I have shown, the horses will be kept in idleness at the cost of your steam tackle, for D will have been sown with Clover, and A will not require much of their assistance until the spring, and then, if the land is at all adhesive and has been fed off by sheep, the steam implement will produce a much better tilth for the Barley than if ploughed in the ordinary way. If you have any spare manure the horses may take it to D, it will do the Clover good, and the Wheat crop after it. In this way your farm may be kept as clean as a garden, and with at least one-third fewer horses than are necessary where steam is not adopted; therefore, if you are keeping and working 15 horses, or two neighbours working that number between them, five may be sold, and with what they realise, and the saving in the cost of keep, an engine and apparatus may be purchased; the cost of coal, and wear and tear of apparatus being a small item compared with horse keep."

The season of the year is fast approaching, and indeed now is, when the important crop distintinguished by the farmer as "seeds" is well forward with its spring growth, and its summer yield can be predicted with more or less of accuracy.

As regards the prospect of the present year's crop our own observations would lead to the conclusion that seldom have the injuries which early frost inflicted been more thoroughly repaired than during the past month, Clovers especially tillering remarkablywell, and Rye-grasses showing the good effects of a mild season. There is however one circumstance in the "seeds" of this year which more than in any previous season that we can recollect has been productive of much mischief. We refer to the quantity of cereal Grasses, with which they are everywhere intermixed, and which, possessing leaves so much larger and growing so much taller, is in "seeds" a weed of a very destructive kind. We have this week observed some Barley, the remains of last year's crop, more than a foot high, with unusually broad flags overshadowing the Clover crop, and it is needless to say that where this is the case to any great extent the crop is much injured.

If we inquire into the causes that have led to this to a greater extent this year than usual, we shall doubtless find that the good crops of corn of last season, and the circumstance that Wheat and Barley were ripened almost together, had caused much grain to be shed in the hurry of getting it together, and the subsequent mild weather has augmented a growth which a harder winter than the one we have experienced would almost have prevented. This question is interesting as showing how one crop may become a weed to its successor, and therefore how much care should be exercised in harvesting the previous crop, so that as little shed seeds should be left as possible. It is not perhaps very easy to point to a remedy for cases of this kind, though its necessity must be evident, still even now much may be done by the scythe to destroy the interloper.

While upon this subject let us offer a few remarks upon the cultivation of "seeds," if indeed they can be said to be cultivated at all. Clover and Grass seeds are sown with the Barley that has succeeded the Turnip crop, so that it is usually thought that they succeed to a soil tolerably free from weeds; but it should be remembered that Barley is not hoed, and few farmers have not a pretty good weed admixture to separate from the grain at threshing. And besides, it must be remembered that before the Barley is ripe, and even in its cutting, enough weeds are usually sown to ensure their continuance. Supposing, however, the *seeds* to have escaped this source of contamination we are able to assert, from an examination of 30 samples of seeds, consisting of Rye-grasses and Clovers tabulated below, that as many as *eight hundred or nine hundred thousand weed seeds are often sown with each bushel of the crop seed!* A sum so wonderfully large that it is not astonishing the crop should be usually so foul.

The following Table gives the number of weed seeds contained in a bushel of six samples of each of the crops named, from which is calculated the average in round numbers of the six samples of each set:—

Table of Weed Seeds in a Bushel.

	Amount per bushel	Average.
Perennial Rye-grass	20,480	242,346
Ditto	102,400	
Ditto	184,320	
Ditto	204,800	
Ditto	430,080	
Ditto	512,000	
Italian Rye-grass	20,480	181,760
Ditto	61,440	
Ditto	92,160	
Ditto	204,800	
Ditto	261,120	
Ditto	450,560	
Red Clover	66,560	728,333
Ditto	140,880	
Ditto	245,760	
Ditto	307,200	
Ditto	1,085,440	
Ditto	2,524,160	
Cow Grass	40,960	401,066
Ditto	102,400	
Ditto	307,200	
Ditto	409,600	
Ditto	768,000	
Ditto	778,240	
White Dutch Clover	256,000	2,768,106
Ditto	1,024,000	
Ditto	1,299,840	
Ditto	1,843,200	
Ditto	4,505,600	
Ditto	7,680,000	

This is indeed a fearful array of figures, and from them we may expect the result which we know usually occurs, but which is not sufficiently attended to, viz., that Clover and Grass are very greatly injured by weeds. We say little attended to, as we doubt whether on an average so much as 6*d.* an acre is spent upon the weeding of this crop. The report from a good farmer may probably run thus:—"Spudding out Thistles, pulling up Docks, &c., say 1*s.* per acre." And from this it may be safely gathered that little besides Docks or Thistles are looked after; indeed, many other weeds are almost considered as a good part of the crop. Who troubles about—

Plantago media—Broad-leaved Plantain.
" *lanceolata*—Narrow-leaved ditto.
Ranunculus repens—Creeping Buttercup.
Geranium molle—Soft Cranesbill.
Sherardia arvensis—Field Madder.
Stellaria media—Chickweed; and a host of others, and yet where they grow the Clover or Grass plant is destroyed, and injury to the general crop is an increasing quantity.

If a crop be worth cultivating at all it is worth looking after well, and if we see weeds come up with the seed crop, we are as anxious to have them removed therefrom as from any other crop; and from practice and experience we can assure those whom it may concern that, *if need be*, from 2*s.* 6*d.* to 5*s.* per acre for this is not thrown away; for if such seeds be intended for hay, from 1 cwt. to 5 cwt., or even more, will result from an efficient use of the hoe and occasionally even the fork in a Clover field; and the good we may thereby do is not altogether confined to the occasion, but if set about at the proper time, namely the open days in early spring, all chance of seeding is prevented, and future work will thus become much less onerous and expensive.

LARGE AND SMALL FARMS.

Having been employed on farms varying from a few hundreds to 2000 acres in extent, I expected an edifying discussion between some experienced, practical agriculturist and "F. L., Land Steward, Norfolk," respecting his statements in an old impression of the *Agricultural Gazette*.

A tenant farmer of a large or small farm ought to clear as much off his farm as will defray his working expenses, and pay interest and principal for what h has judiciously invested for permanent improvements, and the purchase of implements and horses which will wear out during the lease, besides what he is entitled to for his superintendance and risk. Those farmers who cannot, with good management, realise such profits pay too high rents for their farms. Farming has now become such a fashionable pursuit that a good many people of independent means, who prefer residing in the country, rent a farm in a locality congenial to their tastes, more for the sake of healthful recreation than for pecuniary gain, rather than purchase a small estate in an outlandish isolated district. Hence to some extent the cause of farms being for some time back relet at the expiration of the lease at such an advance of rent.

The habits and tastes of a tenant farmer of a 1000-acre farm may make such a farm either a profit or a loss to the country. For instance, it is generally admitted that tenant farmers ought to possess 10*l.* for each acre of their farms to enable them to farm profitably. Too many have not more than 4*l.* and 5*l.* per acre to purchase stock and implements, and for working expenses. Farms rented by such poor tenants must be a loss to the country, and the tenants are too often verging on bankruptcy. Some wealthy farmers keep up their position in society in accordance with their means; others live in a style little above their labourers. Some of the former class keep their carriage and a first-class saddle-horse; others content themselves with a second-hand gig and a draught horse or a shaggy pony, which is groomed by the cattle man, for riding to market. The former give their families a liberal education; some of the latter just give their families an elementary education at the parish school. A 1000-acre farm which is rented by a tenant of such primitive habits is a positive loss to the country, as he and his wife do not in general circulate their money amongst those who purchase the choice articles of farm produce. Common labourers, the country blacksmith, carpenters, saddlers, grocers, and drapers, are the class of people amongst whom such farmers circulate their money. Wealthy enterprising farmers of gentlemanly habits not only give such people their respective share of employment, but they also support labour in other and higher walks of life.

Since a farm which will employ one pair of horses is what Mr. Grey of Dilston appropriately styles a "stepping-stone to the industrious labourer to benefit himself in society," small farms are necessary to suit the money qualifications of such a class of people; but a great many tenants of 100-acre and of 200-acre rack-rented farms who do not possess more than 4*l.* per acre for purchasing stock and implements, and for working expenses, would be much more comfortable were they occupying the position of a servant in some situation suitable to their experience and abilities, than occupying the apparently elevated but unenviable position of a poor embarrassed farmer.

I am at a loss to know how a small farm can produce more corn than a compact 1000-acre farm, with a suitable farm steading placed in a central position, will produce. There are still farmers who believe that "basting the joint of meat with its own dripping," *i.e.*, purchasing no artificial food nor artificial manure, is the most profitable mode of farming. If "F. L." means the small farmer to manure and crop like a market gardener, and the extensive farmer to crop and manure the land, and feed the cattle and sheep on the old jog-trot system, he may substantiate his statements; but since the deriving of pecuniary gain, pleasure, and personal comfort are the principal inducements to giving employment, how can a working tenant farmer of a 200-acre farm "employ more labour, produce more corn and more stock, and pay a much higher rent than the 1000-acre farmer," and the small farmer have a requisite percentage of clear profit for his own household expenses, the working expenses of the farm, and interest for the tear and wear of horses and implements which will wear out during the lease?

If "F. L." will show working tenant-farmers of rack-rented 200-acre farms how to accomplish such a desirable object, he would confer a great benefit upon that portion of the agricultural community. I am surprised that he should keep such valuable information to himself. Since a farmer of 500 acres ought to possess 5000*l.*, the interest of that money, if judiciously invested, ought to support a family very comfortably; nevertheless I am yet to convince that a few compact 1000-acre farms, with a suitable farm steading in a central position on each farm, "are a great loss to the country."

It being the root crop that has so enhanced the value of arable farms, any one who is acquainted with the routine of labour connected with a mixed rotation of cropping, must know that it requires a greater number of labourers and horses for carrying on all the divisions of labour connected with the sowing of Turnips than a farmer of 100 or 200 acres regularly employs. Your extracts from Mr. Grey's address show how small farmers get the Turnips sown.

The comparative condition of farm labourers in different parts of the United Kingdom is now freely described and discussed at public meetings, and through the medium of the press, but a great many men, at least Scotchmen, apparently cannot give a verbal or a written description of the labourers in their respective localities, without jumbling up their statements with an incoherent mass of illogical humbug respecting large farms being at the root of all the existing evils.

The landed proprietor, farmer, and labourer are all

sharers in a well organised system of rural economy, at least each according to his sphere ought to be so. The proprietor must erect suitable buildings on each farm for both man and beast. How many landed proprietors can say they have performed such an incumbent duty? Having resided in several English counties, I have often thought how unsuitable it must be for both farmer and labourer for so many labourers having to reside at too great a distance from the farm steadings. Scotch farmers who have not cottages for their ploughmen obviate that want to themselves by giving the men board and lodgings. Some farmers study to make their servants comfortable; but too many do not. What else is it than the want of a diffusion of general knowledge, the want of suitable cottages on each farm, and too low wages in some districts, that prevents high farming and the domestic and social condition of rural labourers from being equally alike objects of admiration?

There is a sufficient number of cottages for a competent staff of labourers on mostly every farm in several of the south-eastern counties of Scotland, and in some districts in the north of England. I have already shown you how the bondage system affects farm servants in a domestic, social, and pecuniary point of view. I observe my statements are borne out in Stephens's "Book of the Farm." I may state that there are, in that district, generally three stewards on a 1000-acre farm which is rented by a gentleman farmer—a land steward who superintends everything on the farm; a woman steward who superintends the female labourers; and a ploughman's steward, who drives a pair of horses, acts as time-keeper, and sees that the ploughmen plough the land to the specified depth.

The majority of the ploughmen in that district each having a cow, the ploughman's wife or some other member of each household gets up in time to prepare the breakfast and milk the cow before 6 o'clock. The ploughman goes to the stable to water, groom, and feed the horses he drives, and cleans out their stalls. He returns to his cottage for breakfast, and commences his work, at least leaves the stable, with his horses, at 6 o'clock. Some portions of a gentleman's estate are not adapted for large farms, owing to portions of it being nearly detached by other gentlemen's estates which surround it, or by its lying in the form of an oval or an oblong square. There is a great waste of time in walking to and from the extreme points of such a farm 1000 acres in extent.

I know of an extensive landed proprietor who 20 years ago built on an extensive farm a requisite number of labourers' cottages with separate apartments in each cottage. Allow me to ask your correspondent, "A Friend to the Labourer," who is residing in Morayshire, if his statements respecting the labourers in the district in which he resides were applicable to the labourers on that farm to which I refer, which is more than 1000 acres in extent. Would the proprietors be responsible for such a state of things? What inherent demoralising influence is there inseparably connected with a 1000-acre farm upon which there is a well organised system of management, and a sufficient number of cottages, each of which contains the requisite number of apartments to enable a family to cultivate habits of decency and self-respect? *A Labourer.*

THE THEORY OF AGRICULTURE.

By Dr. Evan Pugh.

(*Continued from p.* 224.)

Letter II. — On the Agricultural Importance of the Elementary Constituents of Artificial Manures and their Value compared with Lime.

So indispensable did the great philosophers of ancient Greece consider a clear conception of mathematical truth to a power to grasp the subtle doctrines they taught, that they are said to have engraved upon the portal of the academy, in the groves of Academus, the following inscription,

"Let no one enter who is not a geometrician."

As regards the subject we are about to consider, with still greater force than did the Athenian philosophers urge the importance of mathematical training, may we urge the importance of the study of chemistry.

If over the threshold of agricultural science had been written the inscription,

"Let no one enter who is ignorant of chemistry,"

and some modern Plato had stood by to enforce the conditions that the inscription implied, much that has been said and written upon the question we are considering never would have been expressed.

The relation between mathematical studies and that of those practical applications of mathematical principles to which the terms Navigation, Land Surveying, Mechanics, &c., have been applied, is not more intimate than is that of the study of chemistry to scientific agriculture.

Nor would the ill success of the navigator, the astronomer, or the land surveyor, who is ignorant of the mathematical principles involved in his efforts, be more marked than must that of the agricultural community, the practice of which is involved in total ignorance of chemical principles. To no other science is this practice equally indebted for the explanations afforded of the phenomena that it presents, from no other source can it hope for more as the result of future investigation, and due to no other cause are more erroneous ideas disseminated in Agricultural Journals, not even excepting those of the highest standing than to an ignorance of what chemistry teaches.

In speaking of the resources of the soil it was maintained that the analytical processes of the chemist were inadequate to determine those small differences in the composition of a soil which may constitute the difference between a fertile and a barren one. These processes do not stand in a similar relation to the differences between valuable and worthless manures. Chemistry is almost as competent to measure the value of a manure, by measuring the quantity of certain substances that it contains, as it is competent to measure the value of Californian gold sand by measuring the amount of precious metal it contains. It is not the province of this science to settle what is the value of these substances, but to measure their quantity, and in concert with agricultural practice to point out the source of the value attached to them by the latter. Arrogating to itself the prerogative of fixing this value from certain theoretical considerations, founded upon ash analysis of questionable exactitude, as also upon certain assumed analogies with regard to the relation of the vital forces to chemical elements, chemistry (or rather the chemist) has in times past been led into some grave errors, the subsequent discussion of which has sometimes assumed a personal character, derogatory to the dignity of science upon the one hand, and presenting painful instances on the other, of how very difficult it sometimes is for even great men to get at truth by a candid acknowledgment of error.

Had we a soil composed entirely of a single substance, as silica, there would be no question as to the necessity of our adding to that soil all the other substances which chemistry informed us were in the ash of the plant we wish to grow upon it. Had we extensive tracts of land upon which such soil was found, then all the ash constituents of plants would have an agricultural as well as a physiological value. This value would depend (1), upon the labour required to get each in a condition assimilable by plants to the soil; (2), upon the abundance of each in positions accessible to man; (3), upon the amount required by the plant to be assimilated; (4), upon the excess which must exist in the soil above that required by the plant, in order that the latter may get what it wants with sufficient rapidity; (5), upon the ease with which that which is once removed from the soil can be restored to it again in farm-yard manure, sewage, &c.; (6), upon the readiness with which each may be removed from the soil and lost in drain water, or may enter into combinations inaccessible to the plant in the soil; (7), and finally upon its influence in operating as a secondary agent in giving proper physical condition to the soil, of rendering other substances available, &c. Had we such an extensive tract of land, and did we know the value of all these seven conditions, the farmer might calculate for the same the minimum cost, so far as these were concerned, required to bring it to a state of fertility, or when once in that state he might have upon the account books of the farm a debtor and credit sheet, which would at any time enable him to see the amount of available capital present in his soil. To complete the sum of conditions, with regard to vegetable nutrition, upon terms required by agricultural practice, he would only have yet to consider the organic and nitrogenous food of plants; if experience proved that these were supplied in sufficient quantity for the purposes of agriculture from natural sources (rain, dew, the atmosphere, &c.,) then they could have no agricultural value; if such were not the case they would assume a value dependent upon the several conditions specified above. A little reflection upon the considerations suggested in this paragraph will render evident how very complicated must be the question of fixing the value of manurial constituents, from a consideration of the sources of their value, even in the simple case of the soil we have chosen, with the value of the resources of which we are entirely familiar. The subject requires, not only all that science and agricultural practice combined can bestow, but it also involves the consideration of important principles of political economy.

But we have no soils with the resources of which we are so familiar as we are supposed to be with the one we have just been considering. Our ignorance upon this subject was dwelt upon in my last letter. Unable by logical analyses to develope the agricultural importance of the several manurial constituents required by plants, from a consideration of the data afforded by chemistry, we are obliged to appeal to agricultural practice to see what value has been attached by the laws of the equilibrium of trade to these constituents.

In America, England, and on the continent practical agriculture has established the fact that certain kinds of artificial manures have a great agricultural importance, and chemistry has enabled us to decide that this importance is mainly due to the presence of three substances which they contain—phosphoric acid, potash, and nitrogenous compounds, the importance of which is due to the following considerations:—

1*st. To their scarcity in the soil.* — It was long before the processes of the chemist enabled him to detect the presence of phosphoric acid in many soils at all, and now that our test for this substance is most exceedingly delicate, it still requires all the skill of the practised operator to get indubitable evidence of the presence of "traces" of this substance in many soils, and very few soils contain a sufficient quantity of phosphate to exempt them very long from the necessity of a new supply. The quantity of potash present in soils, in a state assimilable by plants, is generally very limited, but not so much so as to give this substance for ordinary cereal, leguminous, and root crop rotations, the importance that is attached to phosphoric acid. The exhausted gneiss and mica slate soils of Virginia and Maryland that have grown Tobacco, doubtless owe their "dreary barrenness" principally to a want of potash, or rather its nitrate. Although most soils contain a percentage of nitrogen, which, when calculated, gives an enormous acreage amount, compared with what would be practicable to add in manures, yet we have the most positive evidence that this is often in a state inaccessible to many plants. The large quantity of nitrogen in soils has led some chemists astray as to the demands of the soil for this element. Supposing that a few hundredweights added per acre of a substance of which tons already existed in the soil could not be the direct cause of the increase of crop that followed its use, they have attributed that increase to the accidental impurities that accompanied it, or to its secondary action in making other substances already in the soil assimilable by plants. But all minds, that are not unable to become extricated from the unfortunate bias of preconceived opinions, are now able clearly to see, that the increase of cereal crops, which follows the use of the salts of ammonia or nitric acid, is due to the fact that they bring to the plant material from which to form its nitrogenous compounds.

2*d. To the quantity of each available for commercial purposes.*—The supply of phosphoric acid in bones and mineral phosphates is inexhaustible. Almost every year brings to our knowledge some new source of this substance. Potash, though not so abundant as an article of commerce, is nevertheless so widely diffused that fears of exhaustion need not be entertained. Our supplies of nitrogen alone are limited. The richly nitrogenous guanos are fast being exhausted, and the time is not very far distant when the farmer's only resources for this element will be the refuse of our manufactories, and the residual products (straw, excrement, &c.) of his own produce. It is true that about one ten-millionth part of the atmosphere is ammonia, and this is slowly absorbed by some soils, but not with sufficient rapidity for the demand of cereal crops, while on the other hand such are the laws of diffusion that the ammonia in many soils is dissipated in the air.

3*d. To the labour required to get them from their several sources of supply, and convey them to the roots of the plant in a condition capable of being assimilated by the latter.*—The labour of collecting bones and importing mineral phosphates, and grinding them, and of bringing together the materials, &c. for the manufacture of sulphuric acid to dissolve them, together with that of transporting the superphosphate formed into all parts of the country, constitute the most serious element in the conditions that make phosphoric acid important to the farmer. Potash is no less important as regards the labour required to bring it within reach of cultivated crops, from its various sources of supply. And when we contemplate the distance of our deposits of guano, and take into consideration the labour required to collect, ship, transport, unship, and distribute over the country, we see that with regard to our supplies of nitrogen from this source, labour is a most serious element amongst the causes that render nitrogen important to the agriculturist.

4*th. To the quantity required by the plant.* Whatever might be the absolute value of the three conditions just considered, that value would have no agricultural importance if this fourth condition did not possess a value, but analysis shows the presence of a very large percentage of phosphoric acid, potash, and nitrogen in cultivated crops. Chemical analysis is competent to give an exact knowledge of what the plant has received and retained at the time of analysis, but it has not yet made clear all points in connection with what the plant receives and evolves or excretes. It has not yet solved the question as to the excess that must be in the soil in order that the rootlets may get a full supply at the period of the maximum activity of the growth of the plant, nor has it measured the capabilities of the latter to get its constituents from natural sources. Therefore we are incompetent from a simple chemical view of the subject to decide what is the value of the quantity of the several manurial constituents required by cultivated crops at the hand of the agriculturist. Some chemists, who were labouring under an unfortunate bias from pre-conceived opinions, have been unwilling to admit that the substances found in plants by analysis do not correctly express the value of the demand, in the soil, for those substances by the plant. But those whose judgment is not thus unhappily affected, and who are aware of the facts now presented by agricultural practice, are obliged to admit, however anomalous in our ignorance of causes it may seem, that the quantities given by chemical analysis do not correctly express the demands of the plant for those substances in the soil. Thus, land may refuse to produce more than half a crop of Wheat, the application of an abundance of all the mineral constituents found in the ash will not give a full crop, but the addition of a nitrogenous manure will do so. Yet this same land may give a good crop of Beans, although the latter requires much more nitrogen than the Wheat. And, what is still more anomalous, a full crop of Wheat may be grown after the Beans. These facts have received no satisfactory explanation.

5*th. To the difficulty of returning the manurial constituents removed by crops back to the land again.*—This is not serious for such parts of the produce as find their way into the manure heap of the barn yard, but for those constituents which are exported from a country in grain, and the bones and flesh of live stock, the case is different. This condition involves the consideration

of the question of town sewage—a theme about which a great deal has lately been said in England; it is too extensive for our consideration here. Suffice it to say that as yet very generally the sewage is allowed to run to waste, the farmer finding it cheaper to purchase his phosphoric acid in superphosphates, and his potash and nitrogen in the corresponding commercial sources of supply than to get it from this source.

The foregoing considerations will indicate why phosphoric acid, potash, and nitrogen should have so high an agricultural importance. Several of the same causes tend to give other elements an importance, but since they do not all combine in a like degree, the sum total of that importance is inferior to what it is for these. Thus sulphuric acid often fails in soils; but since it comes to the soil as an accidental element in superphosphates, and even when applied directly as in gypsum, it costs so little, it loses the agricultural importance it would otherwise have. The same might be said of lime so far as the direct supplies of this substance to the plant are concerned. Of lime as a secondary agent we shall speak presently. The very high percentage of silica in all our cereal crops would render this a substance of very high agricultural importance, did not all soils contain enough of this substance already.

We may therefore concentrate our attention upon phosphoric acid, potash, and nitrogenous substances, as the three principal sources of value in artificial manures. Agricultural commerce, wherever it is governed by a proper intelligence in regulating its prices, has attached values to each of these substances. And then the value of any artificial manure is made to depend simply upon the quantity of these substances in it. This is a fact that cannot be too forcibly impressed upon the mind of the American farmer. The agricultural value of a manure does not more entirely depend upon the quantity of a few simple elements which it contains, than does the value of sand from the gold washings of California upon the amount of precious metal it contains. And if farmers would learn to look upon the cheap manures which quack manure manufacturers too often send into the market, with that distrust with which they would view "a very cheap gold sand," there would be fewer instances of people being cheated and disgusted as the result of having expended money in artificial manures. It is not easier to manufacture coins from spurious metal than it is to add a hundredweight of valuable manure to 19 cwt. of worthless rubbish, and then to sell the same as a "new and cheap guano." The farmer who imagines he has bought the "cheap ton" has in reality bought only a very dear hundredweight. However "cheap" it may have been, he may rest assured that he has paid a price which allowed a good profit for all the labour of adulteration, as also for the cost of transportation of this 19 cwt. of rubbish; add to this the cost of transportation from where he buys it till he gets it upon the soil, and he will see how very dearly his hundredweight of manure in his "very cheap" ton has cost him.*

Here, in Great Britain, where the Royal Agricultural Society, the Bath and West of England Society, the Highland Society of Scotland, and the Irish Agricultural Societies have salaried professors of established reputation to attend to the chemical part of the agricultural interest, the truth of the above remarks is very generally appreciated. And the very great demand for artificial manures here has induced large capitalists of known reputation and acknowledged responsibility, to erect extensive manufactories for the purpose of preparing immense quantities of superphosphate of lime and other manures, which are sent into the market at values fixed by the analyses of chemists whose veracity the farmer can trust.

The division of labour, the power to employ the best machinery, and to purchase raw material on the most advantageous terms, together with that of being able to allow a reasonable credit to the farmer, which this large capital allows, is gradually driving the smaller and less responsible manufacturers out of the market. Until a somewhat similar state of things is brought about in America, and the American farmer learns to appeal to the analyses of competent and conscientious chemists, we may expect to meet with people very much dissatisfied with the results obtained from artificial manures. There will be instances enough, as was the case with some of those who propounded the questions to which I am now replying, of persons who believe after a number of years' trial that had they expended all the money for lime which they have laid out for artificial manures, they would have been better remunerated.

I am fully aware of the prestige which lime has acquired in the minds of the farmers of the gneiss and mica slate-fields of Maryland and Eastern Pennsylvania. In no other place in the world has lime had a fuller and fairer trial, and in none has it yielded better results. Were we to tell the farmer of old England that the use of lime in America had "paid" when used at a cost per bushel nearly equal to that of Oats, he would not believe it possible. And yet much of the barren land between the cities of Philadelphia and Baltimore has been rendered fertile with lime alone on just such conditions. But until the chemist is confident that the farmer has not been cheated in the artificial manures he has used—in other words until he knows that the farmer has not paid too dearly for his phosphoric acid, and potash, and nitrogen in those manures—he cannot form any opinion as to what were their real value compared with lime or with barn-yard manure. As a rule the agriculturist may rest assured that if he has bought a very "cheap" artificial manure, he has paid very dearly for all the valuable material that it contains. He may rest assured that a "very cheap gold" is not a greater absurdity than a "very cheap manure," if by very cheap is meant a very low price for a large quantity.

With regard to lime much might be said, but we must be brief. Of itself it can supply only one of 10 to 12 substances required by plants. If all these substances are not present in the soil, the addition of lime alone will not render it fertile. But all cultivated soils, indeed all soils, do contain all these substances, but they are bound up in insoluble combinations, inaccessible to the plant; lime helps to break up these combinations, and set at liberty the valuable elements for the use of the plants. Yet it may often become a question, to be settled by a knowledge of all the circumstances of the case, as to whether it would not be better to buy these valuable elements in artificial manures than to use the lime. Again, the use of lime cannot go on for an indefinite period of time, and give good results upon all soils, since, as it only enables the plant to use what the soil already contains without supplying it with any of the ash constituents of plants, the latter must ultimately become exhausted. On many points connected with the action of lime on land we are as yet ignorant; the question is worthy of profound scientific investigation, and it is to be hoped that America will not long be behind Europe in erecting institutions for agricultural investigations, and placing at the disposal of scientific men the means of making them, in order to do her part towards solving these and other obscure points in questions so pre-eminently important to her as are all those connected with scientific and practical agriculture.

* A short time since I examined an American guano, which did not contain enough of valuable material to pay for the transportation, in waggons, of the rubbish with which it was mixed, to a distance of 10 miles. Indeed I have examined garden soils that were quite as good, and yet this was shipped across the Atlantic to sell to English and French farmers. It was "highly recommended by persons who had used it," and doubtless many may be induced to buy it owing to its low price. And after having used it they will feel thankful that they didn't try a dearer article, since even this cheap one did not pay. The sale of such rubbish is criminal, not only because of the cheat it involves, but because it destroys the confidence of the farmer in a valuable article in the hands of honest and skilful manufacturers.

Home Correspondence.

Steam Culture.—The enclosed is extracted from a letter just received. It shows the energetic spirit of my brother farmers in the sister country, and that the honour of the introduction of steam cultivation to that country belong to Mr. Gaggin, jun., in conjunction with his father. P.S. Mr. Gaggin started it himself without any one from England to assist him. *William Smith, Woolston, Bletchley Station, March* 24.

"Your cultivator, &c., has arrived here safely, and for the last two days is doing good work on my land, and though anxious (until we could get it into good order and trim) that it should not be much visited by the public in general, yet we found it impossible to stem the tide of curiosity any longer, and now from all parts of this neighbourhood we have 'streets' of visitors witnessing its performance. *John Gaggin, Bally Richard, Middleton, Co. Cork.*"

Oat Hay.—I agree with "Sigma" in the value of "Oat hay," especially when cut into chaff. I have been in the habit of growing Oats but with Tares sown along with them for several years. I make my sowing about this time of the year or earlier if the weather will permit; the soil should be in good heart. When the Tares begin to show their bloom I begin to mow and give them green to the cattle, and when it becomes too coarse I make the remainder into hay. This will be about the beginning of July; then I plough, harrow, and roll the land until it is brought into the best possible tilth. After the rolling I give the land one even turn of the harrow to form seed beds, and sow 4 bushels of the best Italian Rye-grass (which I take care to riddle well) and 4 lbs. Trifolium incarnatum to the acre: it is sown lengthways and crossways so that it may be truly done; then bush harrow and roll. In about 8 or 10 weeks I have a fine crop 2 or 3 feet high, which I cut daily for the cattle. At this time (March) the Grass is 18 inches high, and has been all winter as conspicuous a sight as an oasis in the desert. In the month of May I expect to mow it 4 feet tall and have it stacked, although my location is 300 miles north of London and 400 feet above the sea level. You must excuse my prolixity on this subject, but so important and inconceivably valuable is Italian Rye-grass that I wish all farmers would grow it, when they would find it, as I do, the most lucrative crop that the ground can produce. Allow me to enter into the detail of last year. On referring to my journal I see that on the 20th May I had my first mowing—a very heavy crop, 4½ feet long; on the 24th June mowed the second crop, 4 feet tall; on the 5th August mowed the third crop, 3½ feet; on the 28th August mowed the fourth crop, 3½ feet. I made hay four times, and on the 11th October I began to mow the fifth crop 3 feet long, as it was needed daily for the cattle, and the 6th crop, about a foot high, was buried, for it became time to plough before the frost. Now, you must not suppose that these heavy yields of Grass can be obtained without good rich feeding any more than we can get fat pigs without, so I must tell you what the food *alias* manure is which I give, and the times of feeding. I presume that the land is drained, deeply cultivated, and in high condition. Early in the year I top dress with about 4 cwt. of Peruvian guano well mixed with three times its bulk of cinder ashes or soil to the acre; then when the first crop is removed in May or June I apply the like quantity the first rainy day, then after each succeeding crop about 1½ cwt. of nitrate of soda. "Oh! but," say you, "this costs so much money." To be sure it does, but who ever hopes to get a new suit of clothes without paying for them? This I have assured myself of, that for every 5*s.* laid out in manure I have a return of 20*s.* Oh, that I could persuade farmers to follow the above course which I pursue on the banks of *Ullswater*. [What is your rainfall?]

Accidental Fires.—In your Journal of the 19th inst. you very properly call attention to an "action for damages lately raised by Mr. Lowe, of Comberford, near Tamworth, against the London and N.W. Railway, for destruction of crops and fences, terminating in a verdict for the plaintiff." Permit me to ask for your comments upon a matter which, by the mere substitution of private property and private parties for public works and large corporations, seems to me to be strictly analogous. In the northern coal-fields, and I dare say in all mineral districts, it has of late years become the practice to make use of steam instead of horse-power in the working of the collieries; and accordingly, you see the locomotive careering with its dingy load across our corn fields, and threatening ruin to our crops. In case of accident by fire, is the farmer's remedy against his landlord or the coal-owner? Has the latter any right to substitute engine for horse-power under leases granted long before the use of the locomotive was for such purposes introduced into the district? And will the nature of the remedy be the same as in the case cited by yourself? But if so, how to prove your case? Coal-owners are not usually so magnanimous in acknowledging their offences as great railway companies; and if they put you to the proof, live coals cannot testify before the court like living passengers, nor is it probable that careless engine-drivers will care to testify against their own and their masters' interests. Betwixt the two stools what becomes of the property of, sir, *One of the Aggrieved.*

Germination of Seeds.—In your Paper of the 19th March you refer to results of experiments on the germination of Turnip seeds of various ages, stating that at eight years old, 5 per cent. is the average of germination. I beg to relate a different result from my experiments. In April, 1858, I requested my gardener to sow in the greenhouse three different kinds of Swede seeds (of my own growth), 1850, 1855, and 1857. He counted 100 seeds from each kind promiscuously, and 100 plants from each vegetated, and the only difference to be observed was that the seed of eight years old was two days longer in the ground and were weaker plants. The remainder of the eight year old seed was sown in the garden, and became good-sized Turnips, and were transplanted for seed, and are now as healthy in appearance as those of other kinds in my possession. *George John Serjeantson, Camphill, Bedale, March* 28.

Hedgerow Timber.—What does "T. T. S." want? Does he see anything worth retaining in a tangled and crooked fence, a stagnant ditch, a preserve of weeds, and a blighter of crops? Is a self-sown crop more beautiful than a man-sown one? Would he stop improvements where carried out with taste? And, lastly, does he think that an unimproved county or district contains a higher class of inhabitants than an improved one? If so, I will endeavour to show that this is quite a mistake. The statements I may make are the results of observations in nearly half the counties in England, most, I am sorry to say, only progressing towards improvement. I do not see this "rabid crusade against timber and hedgerows" that your correspondent deprecates so bitterly; it is notorious that hedgerow timber is retained by landlords, in many instances to the detriment of their own pockets; if they let farms accordingly who can blame, or rather who would wish to blame them? They like many others do good indirectly in their generation, and in their own way. As an advocate for all judicious improvements, I cannot allow your readers to be carried away with the idea that an improved property does not in nearly every case presume an improvement amongst the labourers on that property. Neglected land and neglected poor are to be found together; the same spirit that leads either landlord or tenant to bestir themselves infects their poorer neighbours and gives them some better notions and feelings than they had before. Beer, or what is sold for such, is consumed in larger quantities by labourers in an ill farmed, backward, and low wage-paying county, than in a high-farmed county or neighbourhood paying a higher wage and requiring a higher class of labourers. Drunkenness leads to nearly every crime, and this comes in England to the labourer *viâ* beer in excess. I maintain (and my opinion has been acquiesced in by many employers of labour) that a man who can earn 15*s.* a week, and who is worth that wage, is better worth his salt than two men who can only earn 7*s.* or 8*s.* a week; for now that heads as well as hands are in request on farms the man of intelligence is worth more in every way than the mere machine. I ask "T. T. S." to tell me candidly where I am to find the intelligent respectable man most prevalent. I met a short time since an old man who said he did not whether a king or a queen ruled over us; that was not in a high-farmed county. Now we will return to the trees and hedgerows. Taking a farm part arable and part Grass as distinct from an estate, let us ask the question, and answer it fairly, what is this farm ostensibly for? Undoubtedly for the production of the largest quantity of food for man and beast that it is capable of—

a most pleasant and pleasing manufactory assuredly, but still a manufactory that none of us can do without. Allowing that this is the proper answer, can any man be blamed for felling or wishing to have felled that unsightly row of hedge timber that robs one-half a field of sun-light, air, moisture, and manure, and cost their own value over, and over, and over again during any named rotation? Hedgerow timber is not natural; much of it looks like rows of bottle brushes and all of it formal. I admire, I enjoy, I sketch fine, really fine trees; it cuts me to the heart to see the stately Oak or Elm fall in full majesty merely to "raise the wind," and I hope men may sleep again and again on any project that destroys so much that is irreplaceable; but I still hold that few hedgerow trees are worth retaining, perhaps not one in 15: these may remain without doing much material harm, even on an arable farm. Let every man think of cutting timber in fear and trembling; but when he has made up his mind, let him cut boldly. "T. T. S." seems to connect crime in the population of a neighbourhood with the "yearly profits derived from the destruction of the face of our beautiful country." Setting aside the term destruction—which I cannot agree is a proper one—I can refute his statement as to demoralisation of the people by pointing to nearly every amelioration of a property in England being, as I have before said, followed by an ameliorated condition of the labourer. He points to the condition of the peasants in some foreign countries, and connects their condition and aspect with skilful cultivation; few would do this, I think, but would be more inclined to connect it with other causes unconnected with agriculture, causes not affecting or likely to affect an English population. Let me assure your correspondent he need not be in any material alarm as to the degradation of our Englishman in the way he speaks of. Let him take a trip this summer and judge for himself. I feel sure he will not be disappointed in what he sees. *Senex.*

Societies.

ROYAL AGRICULTURAL OF ENGLAND.

Monthly Council, *April* 6.—His Grace the Duke of Marlborough, President, in the chair.

Finances.—Mr. Raymond Barker, Chairman of the Finance Committee, laid before the Council the Monthly Report on the accounts of the Society, from which it appeared that the current cash-balance in the hands of the bankers was 2206*l.*

Journal.—Mr. Thompson, Chairman of the Journal Committee, made the following report:

1. The Committee recommend that the spare copies of the Implement report should be sold at 2*s.* 6*d.* each.
2. That the paper on Potatoes by Dr. Lang, ordered to be reprinted should be reduced so as to be published at a very cheap rate for the use of cottagers.
3. The result of the reprint of the article on Horse-shoeing is as follows:

		£	s.	d.
Printed 5000 copies (cost)		37	10	0
Sold 3300		43	16	10
On hand 1700	Profit	6	6	10

Warwick.—Lord Berners, Chairman of the General Warwick Committee, reported to the Council the satisfactory progress made in the preparations for the Society's ensuing country meeting, to be held at Warwick in the week commencing Monday the 11th of July.

Dinner.—Mr. Fisher Hobbs brought forward the motion, of which he had given notice at the last monthly meeting, to rescind the resolution of the 5th of May last year, in reference to the conditions under which a dinner should take place in future at the county meetings of the Society, in order that he might be enabled to submit to the Council a plan by which the dinner in his opinion might be arranged without the interference of former difficulties. A very full discussion then ensued on this subject, in which the whole bearings of the question, founded on past experience, were reviewed; and Mr. Fisher Hobbs having replied to the various points of objection to his motion, the Council divided, when it was found that the Council by a large majority adhered to their resolution of last year, on which the Local Committee at Warwick had already recommended that there should be no dinner at the Warwick Meeting, and which stands as follows.

> "That, in future if any dinner be held at the country meetings under the patronage of the Society, the entire management shall be vested in the Local Committee: but the Council shall have the option and power of reserving and taking such a number of tickets as it shall think fit; and this Society shall nominate the chairman, and supply the list of toasts, but shall have no other liability connected with it."

Country Meeting of 1859.—Memorials were received from Canterbury, Croydon, Guildford, and Reigate on the subject of the country meeting to be held next year in a district comprising Kent and Surrey. An Inspection Committee was appointed, consisting of Mr. Raymond Barker, Mr. Brandreth Gibbs, the Hon. W. G. Cavendish, M.P., Mr. Fisher Hobbs, and Mr. Milward, with a request that they would visit the proposed sites, and report on their suitableness or otherwise for the purposes of the Society, by the next monthly council. M. de Tréhonnais presented a copy of his new serial work published in France, on the results and progress of agricultural improvement in England.

The Council adjourned to the 13th of April.

Bath and West of England.—Mr. Acland has addressed the following letter to the members of the Society:—

"The facts that H.R.H. the Prince Consort has become a member of the 'Bath and West of England Society for the Encouragement of Agriculture, Arts, Manufactures, and Commerce, founded 1777, A.D.,' and that the Committee of Council on Education have made a special exception in favour of the Society, in order to allow the selection of decorative works of art from South Kensington Museum to be exhibited at the North Devon meeting at Barnstaple, may justify me in asking you to allow me again to invite the attention of the members of the Society of Arts to the objects of that meeting. The Council of the Society, building on the steady progress of their agricultural gatherings, on the increased business done in the sale of agricultural implements, on the improved demand for education and scientific instruction, which has arisen in the west of England, and on the complete organisation and harmonious action of the Society, have opened a new department of 'Arts and Manufactures' for exhibition and sale. A special fund has been raised for a moveable building, to be used next year at Dorchester; an admirable plan has been furnished by Mr. Nicholson, Agricultural Engineer of Newark; and the support of the principal local dealers and manufacturers has been obtained. The idea of the Exhibition, confessedly a novel one, gains ground in public estimation. It is recognised as not only good, but practicable. The idea is this, that the summer gatherings of thousands of persons attracted by the sight of live animals, steam ploughs, poultry, and music may be made to minister to improvement in taste, if good and beautiful objects are placed before the visitors. The migratory meetings of the British Association for the Advancement of Science, of the Royal Agricultural Society, the local examinations of the Universities and of the Society of Arts, have all tended to show that the civilising action of railways must, in order to produce full results, be centrifugal as well as centripetal, and that a pleasant holiday in the country is appreciated by many hard-working townsmen, who are not directly interested in the business of the meeting. All that is wanted is a little energy, a little common sense, and a pervading spirit of harmony and goodwill among the managers of the first experiment. If the plan is a good one, and well worked out on a moderate scale, it is sure to be supported, and will be followed elsewhere. Encouraging replies and promises of articles for exhibition and sale have been received from the metropolis, from the Midlands, and from the North of England. The arrangements for protection and the charges for space appear to give satisfaction, being met on the part of exhibitors by a candid and liberal appreciation of the facts of the case. Pottery, glass, metal work, and wood work, in their most attractive forms, will be well represented. The same may be said, so far as patterns are concerned, of textile fabrics; but the scale of the Exhibition hardly admits of the exhibition of pieces of cloth or prints, nor is there, perhaps, the same need for special efforts in these departments. There will be an exquisite exhibition of water-colour drawings and sketches; the artists of the West of England need not fear comparison with all England. But in addition to the works of living artists, collections of the most precious kind, including works of Turner and other eminent artists, such as few have an opportunity of seeing, will be opened to the public in a manner which reflects the highest credit on their possessors. The Exhibition will open on the 30th of May, and last for the week. Alas! it is the week of the Derby, but we have entered, and now we must run. The entries close on the 16th April. Forms of entry may be had on application to Mr. George Down, honorary secretary, Cathedral Yard, Exeter. *Thomas Duke Acland, Jun., Chairman of the Arts and Manufactures Committee, Sprydoncote, Exeter, March* 29, 1859.

Farmers' Clubs.

London: *April* 4.—*The Progress of Agriculture.*—Mr. R. Smith, of South Molton, read a paper on this subject, from which we extract the following passages. The first part of the lecture was occupied with a history of agriculture from the earliest times. The more detailed treatment of the subject commenced with the date of the Agricultural Society of England.

Before this period of our history, who ever heard of a steam threshing-machine, a reaping machine, or a steam plough? How many parts of England had never seen specimens of our established herds and flocks? What breeders anticipated a foreign trade for their produce? Who had manured his lands with portable manures from a guano bag, the produce of foreign birds? Who had thought of reducing a hard, bony substance to a soluble food for the immediate use of the root crops? Who had anticipated the publication of such an agricultural work as the Journal of this Society? But in the field of our progress we have had another handmaid at work for us—I mean the press and agricultural literature of the present day. I would ask who in this room would now relinquish his paper? Who, indeed, could keep pace with the progress of agriculture without the *Mark Lane Express*, *Bell's Weekly Messenger*, and other journals now directly devoted to the cause of agriculture?

Mr. Smith then reviewed the history of the London Farmers' Club:—

The happy formation of this Club on the 28th June, 1843, at once announced a new era in the annals of our agriculture, inasmuch as Mr. Baker, of Writtle, was invited at the outset to introduce the subject of "Artificial Manures," for the free discussion of the members. Since that period this interesting topic has been discussed 10 different times, and there have been up to this date no less than 110 subjects discussed by the members, each of them relating to agriculture. The question of "Tenant Right" has been before the members 10 times; the agricultural labourer and his education seven times; and draining and root crops five times each. The important subjects of geology, diseases of cattle, agricultural statistics, agricultural machinery, waste lands, food of cattle, farm leases, sewage manures, the breaking-up of Grass land, carts and waggons, deep cultivation, the influence of science, the rotation of crops, weights and measures, allotment system, and the education of the farmer's son, have also shared the attention of the Club. This is a result which may be written upon the broad pages of our history, in the book of agricultural progress.

The following is a short history of the extension of our resources as to manures:—

Liebig gave the greatest scientific stimulus to agriculture by suggesting the use of vitriol or other acids to render the phosphates soluble, and therefore more quickly available for the nourishment of the plant, which result was immediately acknowledged from its first trials in 1840 and 1841; the effect of this solubility being to bring the Turnip quickly past the fly. About 1840 guano was first introduced into England. It has, undoubtedly, been a great boon to agriculturists; for, besides a large amount of nitrogen (the active principle of horn, soot, and other ammoniacal manures), it contains phosphate of lime, a manuring principle of bones, some being in a soluble state, and having therefore the properties of dissolved phosphetes. Coprolites were discovered to be manure about the same time (that is, about 1840); and, though their phosphate of lime is in a condition unadapted for solution by natural causes, by reducing them to a fine powder and treatment with acid it is dissolved. Thus we have opened up to us an amount of mineral manure of vast extent, the discovery of which has, happily, been simultaneous with that of a process necessary for its proper utilisation.

The following is a reference to the progress of inclosure:—

It is to deeper cultivation and the improvement of our waste lands that we have now to look for the extension of our acreage produce. The earliest records of substantial inclosures date from the earliest period of the reign of George the Third, in 1760. The passing of more than 3000 bills of inclosure in a reign of 60 years is a proof how rapidly the cultivation of new land proceeded in that period. A committee of the House of Commons, which sat in 1797, computed the total quantity of land enclosed during that century at about four millions of acres. We have in "Spackman's Analysis of the Occupations of the People" a complete record of the progress of inclosure from the commencement of the present century to the year 1840, viz.—

From 1800 to 1810	1,657,980 acres
From 1810 to 1820	1,410,930 ,,
Total	3,068,910 ,,

Thus, during the first 20 years the inclosures amounted to upwards of three millions of acres. But while these 20 years present to our view the phenomenon of immense inclosure, it must be stated that this took place under the stimulant of the highest range of prices for food ever known, except in cases of famine. At the close of the war in 1815 the average price of Wheat had been during the preceding 15 years 84*s.* 9*d.* per qr., and during the succeeding five years it was 78*s.* 4*d.* From 1820 the whole scene changed, and the most trying period commenced, the causes of which are now apparent. Three million acres of moderate land had been taken in hand, and a metallic currency was resorted to. The inclosure from the year 1820 to 1830 only reached 340,380 acres, thus gradually bringing round the natural remedy for the over doses of inclosure which the war had prescribed. From 1830 to 1840 only 236,070 acres were inclosed, showing that supply and demand had not yet righted themselves. Thus during the 40 years we have an addition of three and a half millions of acres to the cultivated lands, against an increase of upwards of 8,000,000 in the population. By the census of 1801 the population of Great Britain was shown to be 10,472,048: in the year 1841 it had increased to 18,664,761. Spackman then tells us that in the year 1800 we had under cultivation 42,000,000 of acres, which produced food for 10½ millions of people. The General Inclosure Act was passed in 1835. The 14th report, which has just been presented to Parliament, gives the following figures:—

Applications for inclosures since the passing of the Act	809
Exchanges	1697
Partitions, &c.	161
Total	2667

Of this number 316 have taken place in the last year.

Acreage of inclosures confirmed	281,949
Ditto ditto in progress	208,687
Total	490,636

or in round numbers half a million of acres. These returns embrace a period of five years, which were included in the last decennial period from 1830 to 1840, but I have no power of separating them. It is estimated that there are still 15,000,000 acres of waste lands capable of improvement, 6,000,000 of which would make arable land, and the remained improved pasture.

Mr. Smith concluded with a review of our progress in drainage, farm buildings, rotation of crops, green cropping, manual and horse labour, and the application of steam-power.

Reviews.

Results of an Experiment on the Half-time system of Education in Rural Districts as carried on at Ruddington, Nottinghamshire. By C. Paget, Esq. M.P. Bell & Daldy, 186, Fleet Street.

This pamphlet publishes a paper read at the Liverpool meeting of the Association of Social Science. The following is the most of it; we have no doubt we carry out the author's intention by giving it republication here.

"In November, 1854, I determined to employ eight boys on my farm, to do the work hitherto performed by four, each boy spending half his day at work, and half at school—relieving each other, so that I should always have four on the farm and four at school. I found an inconvenience in this arrangement; when the boys' clothes were wet and dirty, from their morning's work, they were unfit for school. I therefore changed my method, and the boys now work on alternate days. After four years' experience, I speak confidently of the satisfactory working of this system. As an employer of labour, I have every reason to be satisfied with it. The boys, having an alternate day of rest, work with more pleasure and spirit; and I have no difficulty in finding as many willing to accept employment, on these conditions, as I want. The parent, who might feel the entire loss of his son's wages to be too great a sacrifice, is willing to forego one-half the amount to secure to him the advantages of an education, which does not interfere with the acquisition of the knowledge which is essential to his power of maintaining himself at an early age. The great advantage, however, is to the children themselves. They are never weary, either of school or of work. Their progress is found to be very nearly equal to that of those whose sole business is attending school. At 14 years they have received not only a very fair amount of the rudiments of school-learning, but they have also acquired a knowledge of the business of life, and are ready to enter into service with all that skill arising from habits of labour, combined with hardihood from exposure in out-of-doors work, which the farmer who hires them has a right to expect. They are much better servants than the mere school-boy could be. Their school life being compared, not with a holiday, but with a day of labour, they look upon it as a rest, and their associations with books are not irksome, but agreeable; so that, as a rule, they will retain what they have acquired. The schoolmaster also feels the advantage of this system. The boys attend more regularly than the average of children—and, remaining to a later age, their attainments are higher, and they give a higher tone to the school. Mr. Spencer, the master of our Free School,

declares that any master who has once experienced the benefits of the system will be very unwilling to forego them. In the first week of October, 1858, I examined three of the boys now working on my farm, who have been upon this system a considerable time, and who are about to leave school; two being 13, and one just 14 years of age. I found that they all read intelligently and well. They wrote from dictation, from a book which they had not previously seen, in a clear hand and with few mistakes. In arithmetic I dictated sums, which satisfied me as to their knowledge of numeration. I found them quite familiar with the first four rules of arithmetic, and reduction, and compound multiplication. The best evidence I can give of the value entertained by the labouring classes for this system, is the statement that they voluntarily adopt it in their own arrangements. In addition to 16, who are working as pairs in agricultural labour, there are several pairs employed in the winding and seaming, belonging to the stocking manufactory, and several girls, who assist the mother in her domestic duties alternately; and I have good reason to believe that in both these cases the system works very satisfactorily. If every parish were blessed with a schoolmaster as benevolent, zealous, and intelligent as the master of our Free School, I do not believe there would be any difficulty in the wide extension of this system. Where, in close parishes, the possessors of estates compel the labourers to live in adjoining villages, in order that they may keep down their poor rates, no doubt there may be difficulty in providing pairs, in sufficient number for the convenience of the farmers; but this is only one of the many evils arising from the existing law of rating, which are so serious in their effect upon the moral and sanitary condition of the people that they must ere long attract the attention of the legislature. This alternate system of labour and rest appears to be indicated by our nature, in which the activity of the body is a good preparation for the activity of the mind, and every hard-working professional man has found that the best rest for his over-tasked mind is in bodily exertion. Much more than satisfied with the result of my experiment, I would earnestly request that any of the friends of education who may have it in their power will repeat it. The principle is one which admits of a very wide application. Already has a manufacturer in Nottingham adopted it with satisfactory results to the 40 boys in his employ; and I believe that our middle classes might give their sons, up to the age of 20, an alternation of a day of college and gymnastic exercises, with a day in the counting-house; and thus, with God's blessing, confer upon them that inestimable boon, a sound mind, embodied in a healthy frame."

Calendar of Operations.

APRIL.

South Dorsetshire: *April* 4.—March went out here more "like a lion" than a lamb, cold winds prevailed from the north and north west, and there was even an attempt at snow, at least the Purbeck hills appeared one morning covered with it. The weather consequently being dry and open has enabled farm operations to proceed satisfactorily. Drilling Peas and Oats, planting Potatoes and hoeing Wheat, has been the chief work for the past two or three weeks. Our Swedes are nearly all finished, land being ploughed for Barley, and sheep sent on the Clovers, which with Grass of all kinds (including water meadows) look well. Some of the Wheats on the light lands were so washed down by the heavy rain in February, that their growth was more retarded than accelerated, but the harrows and hoes will fetch them up again.

Tynesid: *April* 4.—From the date of our last report the weather continued excessively dry in this immediate district, with high W. and N.W. winds; till on the 12th March it changed to variable showery weather, and this has continued its character, with the exception of two frosty mornings last week. We commenced Oat-sowing on the last day of February, and in spite of last week's frosts, the whole breadth sown is remarkably green and vigorous, and our Barley, which was all sown in good order by the middle of March, looks growthy and promising. Wheat and Winter Beans, though not remarkably forward, have stood the winter well. A considerable portion of the fallow break has been cross-ploughed, and in some few instances Potato planting has been proceeded with, though this is by no means general. We hear complaints of great losses among ewes and lambs this season, and have shared in the common calamity. We have unfortunately for the ewes very little old Grass to serve as a winter run for them, and consequently when the one year seeds are getting bare, they have to depend in a great measure on what is laid down to them, such as small Turnips, &c. We find our flat alluvial soil does not agree with their constitutions, they bite too close to the ground; and the result is that we invariably have a large proportion of lambs, which—though strong and well developed in frame—are quite weak in the spine, and never get the length of standing erect, or drawing any supply of nourishment from their dam. Turnips are plentiful, and by shortening supplies keep up the price of beef and mutton. From the great abundance of Grass and other keep, lean stock are selling at unprecedented prices, holding out a poor prospect to the feeder for the ensuing season. *W. C. T.*

Notices to Correspondents.

Clover Sickness: *F H.* It is due to a frequent repetition of the crop upon the land, especially when the land is light and loose.

Harley *v.* Woodcock: *Sub.* This was a case in which the quality of Mangel Wurzel seed was in question. The jury gave a verdict for the defendant notwithstanding that his seed would not grow, the defence being that its failure was owing to the dryness of the season, not to the badness of the seed.

Mr. Wetherall's Herd: *F R S.* It takes place at High Grange Farm, near Richmond, Yorkshire, on the 19th of this month.

Rabbits: *Alex.* We are informed that a good recipe for preventing rabbits and hares from barking trees is to take as much thoroughly skimmed milk as required, and mix it up with soot till about as thick as paint. With this paint over the tree with a whitewash brush. It lasts well one season. A correspondent says his garden is open—full of Apples and Pears, and unless they are annually painted over, they are sure to be destroyed, but this fully preserves them.

Turnip Seed: *Cor.* Your seeds will be examined and reported on.

WARNER'S IMPROVED LIQUID MANURE OR GENERAL PORTABLE PUMP.



These Pumps are fitted with J. W. & Son's Patent Buckets and Suckers, and cannot clog in action. The barrel is of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure. The legs will fold together, and the whole may be carried on the shoulder to any pond or tank required.

Price of 4½ in. Pump, with legs, 3*l.* 3*s.*

If with planished copper barrel and galvanised iron handle, &c., 14*s.* extra. The barrel is 27½ in. long, and the legs are 5 ft. high.

These Pumps are also made without the legs, with strong wrought-iron straps for screwing on to any ordinary water butt or cart, and fitted with 1¼ inch brass union for attaching flexible suction. Price 50*s.*

1¾ inch Gutta Percha Suction Pipe, 1*s.* 11*d.* per foot.

Rubber and Canvas Suction and Delivery Hose, from ½ inch to 4 inches diameter, in lengths of 60 feet to order. Branch Pipes with Cocks, Union Screws, &c., at reduced prices.

May be obtained of any Ironmonger or Plumber in town or country, at the above prices, or of the Patentees and Manufacturers, John Warner & Sons, 8, Crescent, Jewin St., London.

WARNER'S PATENT VIBRATING STANDARD PUMPS.

PATENT CAST-IRON PUMPS, fitted with J. W. & Son's Patent Buckets and Suckers, which cannot clog in action, for Farms, Cottages, and Wells, not exceeding 28 feet.

Diameter of Barrel.	Height.	£ s. d.
2½ in. short	1 ft. 7in.	Fitted for lead, gutta percha, or cast iron flanged pipe, as required. 1 10 0
2½ ,, long	3 ,,	1 14 0
3 ,, ditto	3 ,, 6 ,,	2 8 0
3½ ,, ditto	3 ,, 6 ,,	2 12 0
4 ,, ditto	3 ,, 6 ,,	3 3 0
2½ ,, short, with 15 feet of Lead Pipe attached, ready for fixing		2 14 0
2½ in. long	ditto ditto	ditto 2 18 0



The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.

May be obtained of any Ironmonger or Plumber in Town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

PRICES REDUCED.

H. J. MORTON and CO., Galvanised Iron Works, 2, Basinghall Buildings, Leeds.

GALVANISED IRON ROOFING for Farm Buildings and other Roofs; the cheapest, most durable, and neatest Roofing in use; also Spouting at 10½*d.* per yard.

WIRE STRAND CABLE FENCING



formed of Twisted Wires like a rope or cable), the strongest cheapest, and neatest fence in use, will resist the largest cattle, and will not bend or get out of form by trespassing upon or over. Price, with five lines of the Galvanised Strand, iron main posts, and pronged Standards, 1*s.* 2½*d.* per yard.

This fence is far cheaper than posts and rails, or any kind of iron fencing; and possesses four times the strength of solid bars. Will not rust nor corrode. Upwards of 1200 miles of this Fencing supplied.

GALVANISED GAME AND POULTRY NETTING.



Galvanised, 24 ins. wide, 2-inch mesh, 5*d.*, 6*d.*, 7½*d.*, and 10*d.* per yard.

Galvanised, 24 ins. wide, 3-inch mesh, 4*d.*, 5*d.*, and 7*d.* per yard. The Netting made any width, and with openings of any size.

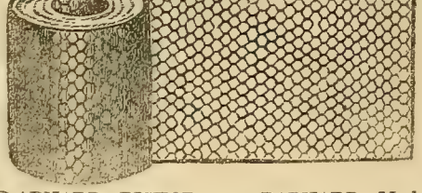
GALVANISED IRON CHAIN CAMP STOOLS & CHAIRS, POULTRY FOUNTAINS & FEEDERS, PRONGED DAHLIA RODS and ROSE STAKES, &c.

Strong CATTLE HURDLES from 2*s.* per yard.

PATENT IMPROVED GAS WORKS

of all sizes for the use of Private Houses, Mansions, Railway Stations, Mills, Collieries, Mines, Villages, &c. Works from 10 to 500 lights estimated for. The works can be entrusted to an ordinary labourer.—Apply to

Henry J. Morton & Co. 2, Basinghall Buildings, Leeds.



BARNARD, BISHOP, and BARNARD, Market Place, Norwich, in consequence of improvements in their machinery for the manufacture of the above article, have been enabled to make a great reduction in the prices.

	Galvanised.	Japanned Iron.
2-inch mesh, 24 inches wide	5*d.* per yd.	4*d.* per yd.
2-inch ,, strong do.	6 ,,	4¾ ,,
2-inch ,, intermediate, do. ..	7 ,,	5½ ,,
2-inch ,, extra strong, do. ..	9½ ,,	7½ ,,
1¾-inch ,, 24 inches wide	5½ ,,	4½ ,,
1¾-inch ,, strong, do.	6½ ,,	5¼ ,,
1¾-inch ,, intermediate, do. ..	7½ ,,	6 ,,
1¾-inch ,, extra strong, do. ..	10 ,,	8 ,,

All the above kinds can be made of any width (under 8 feet at proportionate prices. If the upper half is of a coarser mesh than the lower, it will reduce the prices about one-fifth.

Strong Galvanised Poultry Netting, 8¼*d.* per yard, 3 feet wide Galvanised Sparrow-proof Netting for Pheasantries, 2½*d.* per square foot. Delivered free of expense in London, Peterborough, Hull, or Newcastle. Manufacturers of Improved Strained Wire Cattle and Deer Fencing, Iron Hurdles, &c.

Illustrated Catalogues and Patterns forwarded by post.

PROPAGATING GLASSES.—

	s.	d.			s.	d.	
2 ins. diameter	0	3½	each	12 ins. diameter	1	9	each
3 ,, ,,	0	4½	,,	13 ,, ,,	2	0	,,
4 ,, ,,	0	5½	,,	14 ,, ,,	2	6	,,
5 ,, ,,	0	6½	,,	15 ,, ,,	3	0	,,
6 ,, ,,	0	8	,,	16 ,, ,,	3	6	,,
7 ,, ,,	0	10	,,	17 ,, ,,	4	0	,,
8 ,, ,,	1	0	,,	18 ,, ,,	5	0	,,
9 ,, ,,	1	2	,,	19 ,, ,,	6	0	,,
10 ,, ,,	1	4	,,	20 ,, ,,	7	0	,,
11 ,, ,,	1	6	,,				

CUCUMBER GLASSES.

24 inches long ..	2*s.* 0*d.*	16 inches long ..	1*s.* 4*d.*
22 ,, ..	1 10	14 ,, ..	1 2
20 ,, ..	1 8	12 ,, ..	1 0
18 ,, ..	1 6	Made to any length.	

HAND GLASSES.

12 inches	6*s.* 0*d.* each	18 inches	9*s.* 0*d.* each
14 ,, ...	7 0 ,,	20 ,, ...	10 0 ,,
16 ,, ...	8 0 ,,	24 ,, ...	12 0 ,,

Painted and glazed with 16 oz. Sheet Glass.

If open at top, 1*s.* extra.

WASP TRAPS, 3*s.* 6*d.* per dozen.

Agents for

HARTLEY'S PATENT ROUGH PLATE GLASS.

PAINTS.

Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, &c.

JAMES PHILLIPS and CO.,

180, Bishopsgate St. Without, London, E.C.

GLASS FOR CONSERVATORIES, ETC.

HETLEY and CO. supply 16-oz SHEET GLASS of British Manufacture at prices varying from 2*d.* to 3*d.* per square foot for the usual sizes required, many thousands of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES, and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to James Hetley & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

HORTICULTURAL GLASS—JUNE TARIFF.

THOMAS MILLINGTON'S reduced Tariff of GLASS, &c.

6 by 4, 7 by 5, 8 by 6, 9 by 7 } 16 oz. to the foot, 11*s.* 6*d.*
6½ by 4½, 7½ by 5½, 8½ by 6½, 9½ by 7½ } per 100 feet.

In 100 boxes,—4ths quality, 12*s.* 6*d.*; 3ds do., 14*s.* 4*d.*

10 by 8, 12 by 9, 12½ by 10½, 14½ by 10½, 13 by 11
10½ by 8½, 12½ by 9½, 13 by 10, 15 by 10, 13½ by 11½
11 by 9, 13 by 9, 13½ by 10½, 12 by 11, 14 by 11
11½ by 9½, 12 by 10, 14 by 10, 12½ by 11½ .. ..

20 by 12, 20 by 13, 20 by 14, 20 by 15	per 100 feet	16 oz. 21 oz.
	Common ..	16*s.* .. 24*s.*
	Superior .	18*s.* .. 27*s.*

All Boxes included.

Orchard House sizes as supplied to Mr. Rivers.

Hartley's improved Rough Plate Glass from ⅛ to ⅝ in thickness.

Coloured Glass in great variety, at 9*d.* and 1*s.* per foot.

Paints, Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, Lamp Glasses, &c.

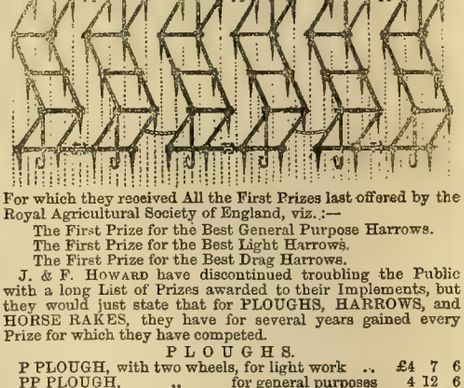
87, Bishopsgate Street Without, same side as Eastern Counties Railway.

GLAZIERS' DIAMONDS for CUTTING HORTICULTURAL and other GLASS, to be had of the Wholesale Manufacturer, John Edwards, 20, Sharp's Alley, West Smithfield, London, E.C. Prices from 10*s.* to 27*s.* 6*d.*

HOWARDS' PRIZE IMPLEMENTS, 1859.

JAMES and FREDK. HOWARD, Britannia Iron Works, Bedford, beg to direct attention to their

PATENT PRIZE HARROWS,



For which they received All the First Prizes last offered by the Royal Agricultural Society of England, viz.:—

The First Prize for the Best General Purpose Harrows.
The First Prize for the Best Light Harrows.
The First Prize for the Best Drag Harrows.

J. & F. Howard have discontinued troubling the Public with a long List of Prizes awarded to their Implements, but they would just state that for PLOUGHS, HARROWS, and HORSE RAKES, they have for several years gained every Prize for which they have competed.

PLOUGHS.

P PLOUGH, with two wheels, for light work ..	£4	7	6
PP PLOUGH, ,, for general purposes	4	12	6
SKIM COULTER	0	5	6

STEEL BREASTS, 7*s.* and 7*s.* 6*d.* extra.

HARROWS.

A Set of Three 4-Beam HARROWS, with Whippletree, recommended as general Seed Harrows, 9¼ feet wide, marked No. 12	3	14	
A Set of Three 4-Beam HARROWS, with Whippletree, adapted for 3 Horses, 10 ft. wide, marked No. 11	4	4	0

HORSE RAKES.

Price of small size RAKE, marked A, with 24 iron teeth, extreme width 7½ feet	7	10	0
Ditto, with Steel Teeth	8	0	0
Price of large size, marked B, with 28 iron teeth, extreme width 8½ feet	8	0	0
Price of large size, marked B, with steel teeth ..	8	10	0
Price of extra large size, marked C, with 24 steel teeth, extreme width, 8½ feet	10	10	0
Price of a Set of 15 Prongs, to be attached to the above when used as Weed Extirpators	1	10	0

Free Delivery to Birmingham, Bristol, Derby, Gloucester, Lincoln, Liverpool, London, Manchester, Norwich, Nottingham, Retford, Wisbeach, and Worcester; or to Dublin, Edinburgh, Glasgow, and other parts at fixed rates.

Howards' NEW CATALOGUE, containing prices and description of their Patent Ploughs, Harrows, Horse Rakes, and other Implements, including Smith's Steam Cultivators, for which they received at Chester the Gold Medal of the Royal Agricultural Society of England, sent free on application to

J. & F. Howard, Britannia Iron Works, Bedford.

Garden Engines, Syringes, &c., upon the most approved principle



GARDEN ENGINES, MACHINES, AND GREENHOUSE SYRINGES,

WITH ALL THE LATEST IMPROVEMENTS, MANUFACTURED BY THE PATENTEE,

RICHARD READ, Instrument Maker (by Special Appointment) to Her Majesty,

35, REGENT CIRCUS, PICCADILLY, LONDON.

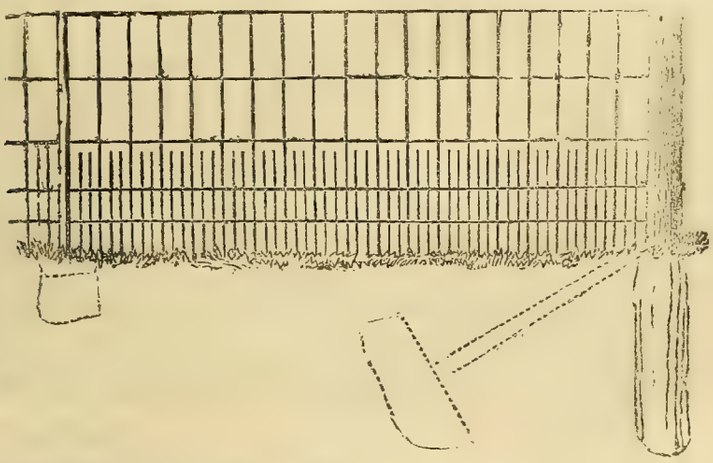
CAUTION.—R. READ begs respectfully to assure the Public that the Syringes advertised weekly by a London Firm as READ's are not his make, but are mere imitations; and on trial many of them will be found defective and useless. All Syringes made by READ are marked with the Royal Arms, and Address,

"35, Regent Circus, London." *Descriptions, with drawings, sent post free.*

GREENING & COMPANY'S PATENT WIRE FENCES.

Patronised by His Royal Highness the PRINCE CONSORT.

No. 10 c VARIETY.—PROOF AGAINST HORSES, CATTLE, SHEEP, HARES, RABBITS, &c.



SPECIFICATION.—No. 10 c Variety, 3 feet 9 inches high, 6 horizontal bars of stout fencing wire, meshes 5 inches apart at upper, and 1½ inches apart at lower half of fence. **1s. 6d. per Lineal Yard.**

G. & Co. forward (post free) on application their ILLUSTRATED CATALOGUE, containing particulars of the above and other Iron and Wire Fences for Parks, Farms, Gardens, Game Preserves, Poultry Courts, &c.

GREENING & COMPANY, Victoria Iron and Wire Works, 81, Oxford St., Manchester.

ADDRESS: THE MANAGERS, ST. PANCRAS IRONWORKS.

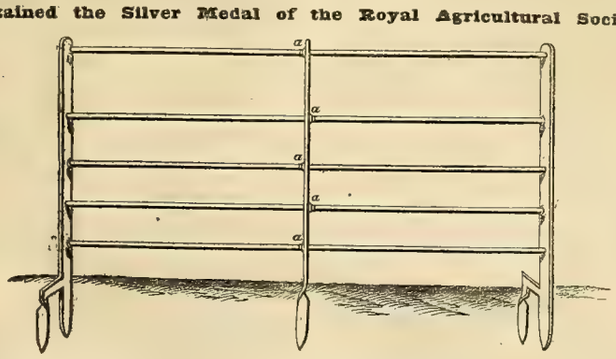
THE ST. PANCRAS IRON WORKS ARE OPPOSITE THE OLD ST. PANCRAS CHURCH,
OLD ST. PANCRAS ROAD, LONDON.

IRON COLLAR BAR HURDLES.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

Obtained the Silver Medal of the Royal Agricultural Society.

ST. PANCRAS IRON WORKS,



OLD ST. PANCRAS ROAD, LONDON.

The improvement by this PATENT consists in the COLLARS on the Bars which, being placed on alternate sides of the centre upright bar, keep it in its position, confine the bars to short bearings, prevent their being strained, and give more than DOUBLE STRENGTH and RIGIDITY to the HURDLE.

PROFESSOR VARNELL'S MANGERS AND STABLE FITTINGS.

JOHN WARNER AND SONS, Crescent, Jewin Street, London.—GALVANISED IRON TUB GARDEN ENGINE, with WARNER'S Registered Spreader, is strongly recommended, for durability and low price, viz., 2*l.* 19*s.*, to hold 10 gallons.



Larger sizes in wood or iron, viz., 14 gallons, 24 gallons, and 35 gallons. May be obtained of any Ironmonger or Plumber in town or country, or of the patentees and Manufacturers, as also Machinery of all kinds for raising Water from any depth to any height by Steam, Horse, or Manual Power. Prices sent on application.

Syringes of various constructions and sizes from 9*s.* upwards. Metallic String from 5*d.* to 1*s.* 3*d.* per lb.

GARDEN ENGINES AND SYRINGES.

J. TYLOR AND SONS, Warwick Lane, Newgate Street, London, E.C., beg to call attention to their very superior manufacture of GARDEN ENGINES and SYRINGES.

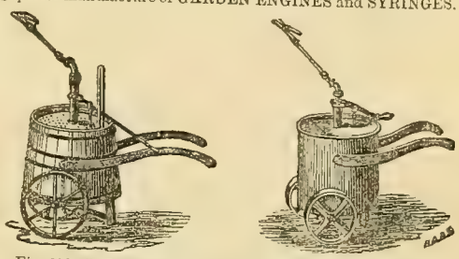


Fig. 598. J. TYLOR & SONS' BARROW GARDEN ENGINE in best well painted Oak tub, fitted with J. TYLOR & SONS' Improved Brass Pump, Universal Joint, and Registered Spreader, which answers the purpose of the separate rose, fan, and jet

CONTENTS OF TUB:—		
10 gallons	15 gallons	28 gallons
£4 10 0	£5 10 0	£6 18 0

Fig. 599. do. TINNED IRON TUB.

CONTENTS OF TUB:—				
8 gallons	12 gallons	16 gallons	24 gallons	30 gallons
£2 15	£3 5	£4	£5	£5 18

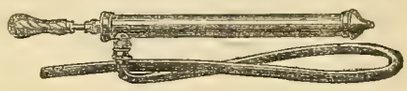


Fig. 618. No. 1. REGISTERED SYRINGE, with India-rubber suction tube, one rose and jet .. .. £1 5 each.
No. 2. Ditto ditto 1 1 ,,
Telescope Branch Pipe for ditto .. .. 0 10 ,,

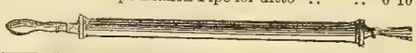


Fig. 619. GARDEN SYRINGE, with one rose and jet, 12*s.* 6*d.* each
,, 620. Ditto ditto 11*s.* 6*d.* ,,
,, 621. Ditto ditto 10*s.* 6*d.* ,,
,, 622. LADIES' GARDEN SYRINGE, without rose & jet, 8*s.*



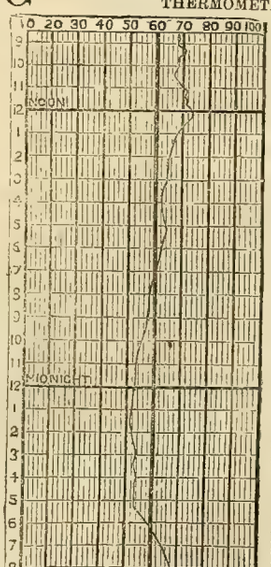
Fig. 623. READ'S SYRINGE, with two roses and one jet, 18*s.* 6*d.*
,, 624. READ'S SYRINGE, with one rose and jet .. 16 6
,, 625. Improved ditto ditto
,, 626. Ditto ditto ditto

Manufacturers of Pumps and Well Engines (for shallow or deep Wells), Plumbers' Brass Foundry of every description, High Pressure Cocks and Closets, Copper and Tinned-iron Baths. Garden and Fire Engines, Lamps of every description, Copper Goods, &c Estimates given for Hot-water and Bath Apparatus.

200 ONE, TWO, and THREE-LIGHT MELON BOXES and LIGHTS, of the best seasoned materials, ready for immediate use.—JAS. WATTS, Hothouse Builder and Hot-water Apparatus Manufacturer, Old Kent Road, London.

TO HORTICULTURISTS.

GAUNTLETT'S PATENT CHRONOMETRICAL THERMOMETER.



This instrument, which combines an eight-day clock of the best English make showing time, with a newly-patented Thermometer, wherein glass and quicksilver are dispensed with, writes down the temperature of the atmosphere on a slip of paper, and when placed in a Hothouse, Forcing House, or Conservatory, &c., supplies a valuable record of the temperature, with all its variations, showing the time when any change took place, and how long such change continued.

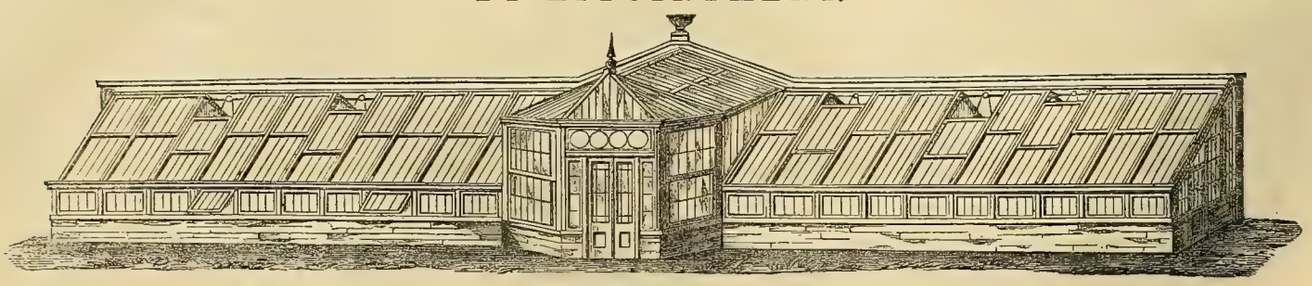
The above slip (reduced in size) exhibits the temperature of the Royal Agricultural Society's show yard at Chester, July 22, 1858, written off by one of these instruments, to which was awarded the Society's SILVER MEDAL.

This is the only instrument that registers temperature continuously and writes it down, and no horticulturist should be without it.

Orders received by W H. GAUNTLETT, Middlesbro' on-Tees.

HORTICULTURAL BUILDING & HEATING BY HOT WATER.

BY APPOINTMENT.



JOHN WEEKS & COMPANY,

KING'S ROAD, CHELSEA, LONDON.

HORTICULTURAL BUILDERS AND HOT-WATER APPARATUS MANUFACTURERS, ENGINEERS, AND IRON FOUNDERS.

PLANS, ESTIMATES, & ILLUSTRATED CATALOGUES FREE ON APPLICATION.

GREENHOUSES, ORCHARD HOUSES, AND PITS Of every Description, made by Steam Machinery, and Heated by Hot Water on an Improved Plan at

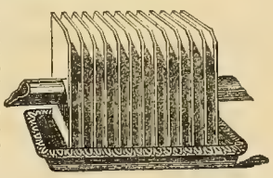
J. LEWIS'S Horticultural Works, Stamford Hill, Middlesex, established 20 years. These Buildings are warranted of the best materials, and at prices which defy competition. The ventilation is most efficient, and the greatest improvement of the present day. Prices of any size on application. References in all parts of the United Kingdom

---

HANDS'S PATENT is the only system to circulate Heat, and for WARMING, FUMIGATING, and VENTILATING Hothouses, Greenhouses, Winter Orchards, &c.; to keep vegetation healthy in a humid atmosphere, and can be applied to any kind or shape of Forcing-houses and Conservatories now existing at trifling cost.—For particulars apply at the Office, 10, Charlotte Street, Fitzroy Square, London; or to Mr. Johnson Hands, Epsom.

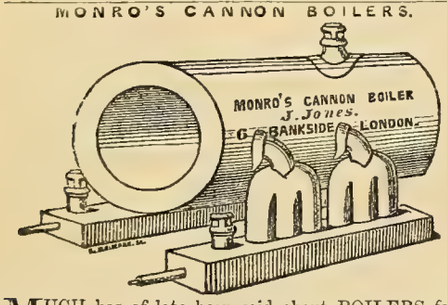
IMPROVED HOT-WATER PIPE.

THE HORTICULTURIST will find herein an inexpensive instrument of new and very important powers. An atmosphere may be produced at will either perfectly dry, partially damp, or saturated with moisture. A space of 10 inches by 12 inches contains the power of 25 feet of 4-inch pipe and other numerous advantages.



The London Warming and Ventilating Company (Limited), 26, Great George Street, Westminster, S.W.

MONRO'S CANNON BOILERS.



MUCH has of late been said about BOILERS for Heating by Hot Water, but these Boilers have now proved themselves to be the best at present invented. They are adapted for heating every description of building, and are made of various sizes. The Price of the

24-inch Cast Iron is	.. ..	.. £5 10s. 0d.	each
24-inch Wrought ditto	.. ..	.. 6 10 0	,,
36-inch Cast ditto	.. ..	.. 8 0 0	,,
36-inch Wrought ditto	.. ..	.. 8 10 0	,,

References to Gentlemen and Nurserymen where these Boilers are now at work. The Cannon Boilers are now kept in stock, and are to be had only of J. Jones, 6, Bankside. Also, every description of Saddle and Cylinder Boilers. Hot Water Pipes and Connections at prices lower than those of any other house in London. Estimates for Hot-water Apparatus erected complete in any part of the country, and an Illustrated Catalogue on application to J. Jones, 6, Bankside, Southwark, London

---

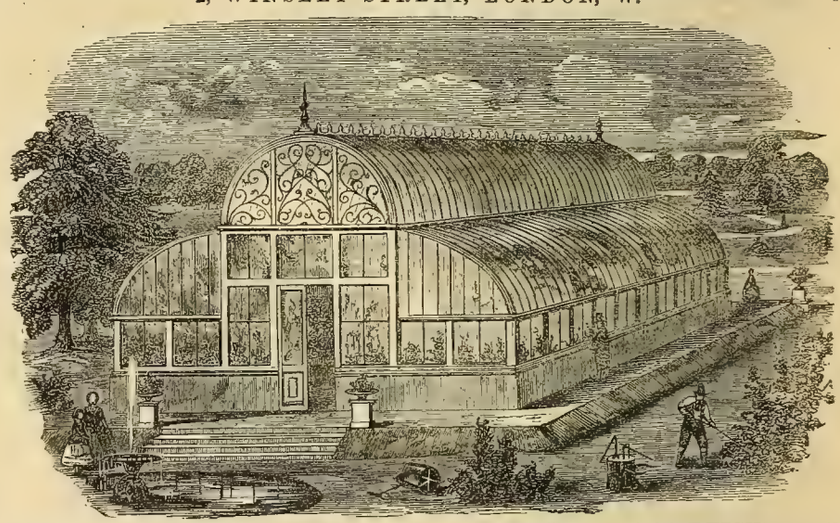
HORTICULTURAL BUILDINGS AND HEATING BY HOT WATER.

JOHN R. PEILL, 17, New Park Street, Southwark Manufacturer of every description of Buildings for Horticultural purposes, and Inventor of the Improved Conical Boiler for heating the same, is prepared to undertake works of any magnitude, and refers among others to the celebrated range of FORCING HOUSES at HER MAJESTY'S GARDENS, FROGMORE, and at SIR ROBERT PEEL'S, DRAYTON MANOR, constructed under the superintendence of his Manager, MR. JOHN JONES; and also to his BOILERS fixed at the CRYSTAL PALACE, the ROYAL BOTANIC GARDENS, REGENT'S PARK, and KEW, and at several hundreds of the Nobility's seats, Public Establishments, and Manufactories in London and the provinces. J. R. P. also manufactures every description of Iron Roofs, Iron Houses, and Iron Fencing, plain and ornamental. Strong Iron Hurdles for Sheep (6 feet long, 3 feet high, with 5 bars), 4s. 3d. each; ditto for cattle, 4s. 9d. each.

Prices and other particulars forwarded on receipt of one Postage stamp.

COTTAM & COMPY., Engineers, Founders, &c.,

2, WINSLEY STREET, LONDON, W.



A SHOW ROOM DEVOTED ENTIRELY TO ARTICLES OF HORTICULTURE.

THE NEW ILLUSTRATED CATALOGUE UPON APPLICATION.

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	,, Syringes	Garden Bordering
Hot-water Apparatus	Ornamental Wire Work	Hurdles	,, Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

Iron Hurdles, Strained Wire Fencing, Game Netting, &c.

Every description of Plain, Ornamental, Cast and Wrought Iron, and Wire Work.

EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

N.B. COTTAM and COY. beg to make it known that there is no longer an entrance to their establishment from Oxford Street but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

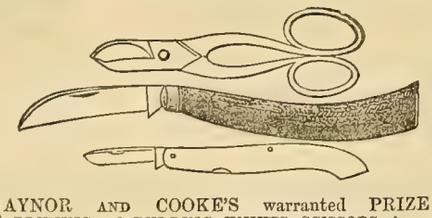
VOKINS and HURD, Seymour House, Jubilee Place, King's Road, Chelsea, Builders of Hothouses, Conservatories, Greenhouses, Pits, and every description of erections in Glass work, either in Wood or Iron; also Heating the same by hot water on the most approved plans and at the lowest prices consistent with good work. Estimates forwarded.

ANTISEPTIC PAINT.

THE best and cheapest PAINT for PARK FENCING, all outside Wood and Iron Work, is MITCHELL'S ANTISEPTIC MINERAL BLACK PAINT. Sold ready for use, 17s. 6d. per cwt. Used largely now and for many years past by the West India Dock Company, for Fencing, Barges, &c. Recommended to the nobility and gentry, stewards, land agents, &c. A liberal allowance to the Trade, &c.

Manufactory, Kennington Lane, Lambeth.

PAXTON WORKS, SHEFFIELD, ESTABLISHED 1738.



SAYNOR and COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.—Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

MARQUEES, TENTS, and RICK CLOTHS for SALE, or HIRE.—H. Piggott, 115, Fore Street, E.C.

FLOWER POTS, of superior Red Clay, manufactured by the Arley Pottery Company (Limited), equal in appearance to Terra Cotta at the price of the common pots usually sold, say 2s. per cast, delivered in London.—Apply to Taylor & Pears, 8, George Yard, Lombard Street, City, E.C.

BOOT'S PATENT ANTI-CORROSIVE ENGRAVED LABEL, suitable for every description of plant. See Circular, free by post.

John Shaw, Princess Street, Manchester, Agent.

MICROSCOPES.

JOSEPH AMADIO'S Improved Compound MICROSCOPE, 2l. 2s.; Students', 3l. 13s. 6d.

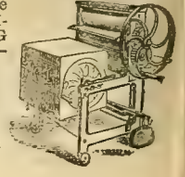
"Both these are from Amadio, of Throgmorton Street, and are excellent of their kind, the more expensive one especially."—*Household Words*, No. 345.

A large Assortment of ACHROMATIC MICROSCOPES.

Just published, an ILLUSTRATED CATALOGUE, containing the names of 1000 Microscopic objects, post free, for 4 stamps.

BY HER MAJESTY'S ROYAL L TERS PATENT.

"NO ONE KNOWING the value of your Patent WASHING, WRINGING, and MANGLING MACHINE, would be without one."—*Vide Mrs. Hall.*



Thomas Bradford, Patentee, Manchester.

Descriptive Pamphlet, with Prices free by post.

LAWNS—IN USE IN THE ROYAL GARDENS.

SAMUELSON'S PATENT BOYD LAWN MOWING and ROLLING MACHINE, the only one that will cut wet as well as dry Grass, is guaranteed efficient in use, easily handled, and readily kept in working order. Doing the work of five or six men. Prices, including case and carriage to any railway station in England, from 4*l.* 17*s.* 6*d.* and upwards. Copies of testimonials post free on application to Mr. Samuelson's London Warehouse, 76, Cannon Street West, City; Messrs. Deane's, London Bridge; or the Works, Banbury, Oxon.

MOWING MACHINES.—BUDDING'S, SHANKS'S, and GREEN'S, with all the recent improvements.—Mapplebeck & Lowe, Machinists and Manufacturers, Birmingham. Drawings and full particulars on application.

BY HER MAJESTY'S ROYAL LETTERS PATENT.



FERRABEE'S IMPROVED MOWING MACHINES FOR LAWNS, PLEASURE GROUNDS, CRICKET FIELDS, CEMETERIES, &c.—Those who wish to obtain the most useful MOWING MACHINES for any situation, at the most moderate prices, are respectfully invited to read JAMES FERRABEE & CO'S ILLUSTRATED DESCRIPTIVE CIRCULAR, which will be sent free by post on application.

The following is an extract from the letter of a gentleman ordering a Machine:—

"T——n. April 6, 1859.

"Sirs,—The recommendations of different friends who have tried different Mowing Machines have been puzzling me for several weeks as to my own selection. Your explanatory particulars, received to-day, removed all wavering from my mind on the point, and determined me to have a Machine from you."

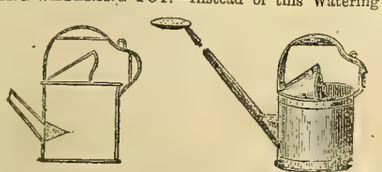
"To Messrs. Ferrabee & Co."

James Ferrabee & Co., Phœnix Iron Works, Stroud, Gloucestershire.

PATENT PRIZE SCYTHES, Price 11*s.* and 11*s.* 6*d.*

JAMES PAYNE, Kirkcudbright, invites the attention of Gardeners and others to his newly improved Patent Adjustable Sythes, which can be set to any angle in one minute's time; are light and easily managed, warranted strong, and unequalled for finish by any in the Kingdom.—Circulars on application.

THE SIR JOSEPH PAXTON PATENT FILTERING WATERING POT.—Instead of this Watering Pot



having the nozzle or rose merely slipped on, as in the old way, it is affixed by a thread-screw, so that it cannot fall off; and the spout is not liable to leak, break, or bend.

The section shows the interior, in which is a cone for the purpose of filtration. As the perforations in this cone are only half the size of the holes in the rose it is impossible for the spout to choke up. These simple improvements render the "Sir Joseph Paxton" Watering Can the best yet introduced.

To be had of all respectable Ironmongers, and Wholesale only of Messrs. B. Perkins & Son, 2 and 3, Bell Court, Cannon Street, E.C.

MAPPIN'S PRUNING KNIVES IN EVERY VARIETY. Warranted Good by the Makers.



MAPPIN BROTHERS, Queen's Cutlery Works, Sheffield; and 67 and 68, King William Street, London.

MAPPIN'S "SHILLING" RAZORS Shave well for Twelve Months without Grinding.

MAPPIN'S 2*s.* RAZORS Shave well for Three Years.

MAPPIN'S 3*s.* RAZORS (suitable for Hard or soft Beards,) Shave well for Ten Years.

MAPPIN'S SUPERIOR TABLE-KNIVES maintain their unrivalled Superiority—handles cannot possibly become loose—the blades are all of the very first quality, being their own Sheffield manufacture.

	Tole. Kns.	Dst. Kns.	Carvers.
Ivory 3⅞ in. Handle, balanced,	20*s.* p. doz.;	16*s.* p. doz.;	6*s.* p. pair
Do. 4 in. do. ..	25*s.* ,,	18*s.* ,,	9*s.* ,,

MAPPIN'S SILVER-PLATED DESSERT KNIVES and FORKS, in Mahogany Cases.

12 Pairs Knives and Forks,	Ivory Handles, in Case..	80*s.*
12 Do.	Pearl Handles, do. ..	130*s.*
12 Do.	Silver-Plated Handles, do. ..	80*s.*

MAPPIN'S ELECTRO-SILVER PLATE.—MAPPIN BROTHERS, Manufacturers by Special Appointment to the Queen, are the only Sheffield makers who supply the consumers in London. Their LONDON SHOW ROOMS, 67 and 68, King William Street, London Bridge, contain by far the largest STOCK of ELECTRO-SILVER PLATE in the World, which is transmitted direct from their Manufactory, Queen's Cutlery Works, Sheffield.

	Fiddle Pattern.	Double Thread.	King's Pattern.
12 Table Forks, best quality	£1 16 0	£2 14 0	£3 0
12 Table Spoons, best quality	1 16 0	2 14 0	3 0
12 Dessert Forks, best quality	1 7 0	2 0 0	2 4
12 Dessert Spoons, best quality	1 7 0	2 0 0	2 4
12 Tea Spoons, best quality	0 16 0	1 4 0	1 7

Messrs. Mappin Brothers respectfully invite buyers to inspect their unprecedented display, which, for beauty of design, exquisite workmanship, and novelty, stands unrivalled. Their illustrated Catalogue, which is continually receiving addition of New Designs, sent per post on receipt of 12 stamps.—Mappin Brothers, 67 and 68, King William Street, London Bridge; Manufactory, Queen's Cutlery Works, Sheffield

PRIZE MEDAL, PARIS EXHIBITION 1855.

METCALFE, BINGLEY, AND CO.'S New Pattern and Penetrating Tooth Brushes, Penetrating unbleached Hair Brushes, Improved Flesh and Clothes Brushes, and genuine Smyrna Sponges; and every description of Brush, Comb, and Perfumery for the Toilet. The Tooth Brushes search thoroughly between the divisions of the Teeth and clean them most effectually—the hairs never come loose. M., B., and Co. are sole makers of the Oatmeal and Camphor, and Orris Root Soaps—sold in Tablets (bearing their names and address) at 6*d.* each, of Metcalfe's celebrated Alkaline Tooth Powder, 2*s.* per box; and of the New Bouquets.—Sole Establishment, 130B and 131, Oxford St., 2d and 3d doors west from Holles St., London.

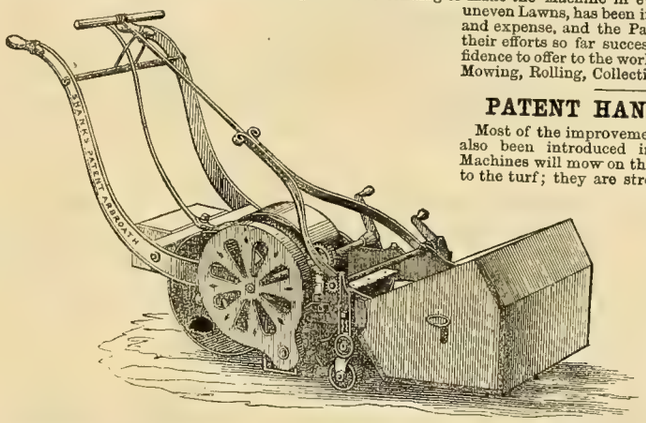
Patronised by Her Majesty QUEEN VICTORIA, His Majesty the EMPEROR of the FRENCH, and his Royal Highness the PRINCE of PRUSSIA.

SHANKS'S PATENT MOWING, ROLLING, COLLECTING, AND DELIVERING MACHINE FOR 1859.

THE ONLY COMPLETE MACHINE FOR HORSE OR PONY POWER.

AMONGST other valuable improvements, A. SHANKS and SON have this season made in their Patent Horse and Pony Machines, as fully described in the *Gardeners' Chronicle* of March 5, page 207; particular attention is requested to the new Patent method of emptying the Grass Box, which consists in the introduction of a simple and efficient apparatus for emptying it, without the man being under the necessity of leaving the handles or stopping the machine. So effective and complete is the improvement that the Box, if it were possible to fill it, could be emptied at the rate of 60 times a minute, without any undue strain being put on the apparatus. The immense advantages of this invention must be at once apparent to the practical Gardener. It will enable the machine to do at least a third more work, while the labour and annoyance in working it, as compared with ordinary machines, is three-fourths lessened. If a Lawn which formerly took a machine nine hours to mow, can now be done in six hours, with three-fourths less labour to the man who works the machine, nothing further is necessary to establish the utility and worth of the invention.

Every conceivable convenience and improvement tending to make the Machine in every way complete for level as well as uneven Lawns, has been introduced at the sacrifice of much time and expense, and the Patentees have great pleasure in seeing their efforts so far successful as to enable them with all confidence to offer to the world the cheapest and the most complete Mowing, Rolling, Collecting, and Delivering Machine extant.



PATENT HAND MACHINE for 1859.

Most of the improvements of the Horse and Pony sizes have also been introduced into the new Hand Machine. Th Machines will mow on the most uneven Lawns without injury to the turf; they are strongly made, are fitted with the same care and precision of the larger sizes, so simple in construction that a labourer can work them, and are quite free from all superfluous and useless gear, which has only novelty, not improvement, as a recommendation. These Machines are peculiarly well fitted for turning and cutting amongst Flower Beds, Verges, Bowling Greens, and for small Lawns. The Patent improvements for this season render them complete in every part. The draught is greatly lessened, and the execution of the work is unsurpassed.

The Machines are warranted to give ample satisfaction; failing this (which is barely possible), they may be at once returned.

FURTHER PARTICULARS MAY BE HAD ON APPLICATION.

ALEXANDER SHANKS & SON, Patentees and Sole Manufacturers, Dens Iron Works, Arbroath, Forfarshire.

N.B. To prevent disappointment in delivery early Orders are particularly requested.

PATENT LAWN MOWING AND ROLLING MACHINES.

SAMUELSON'S LAWN MOWING MACHINES, WITH BOYD'S PATENT IMPROVEMENTS.

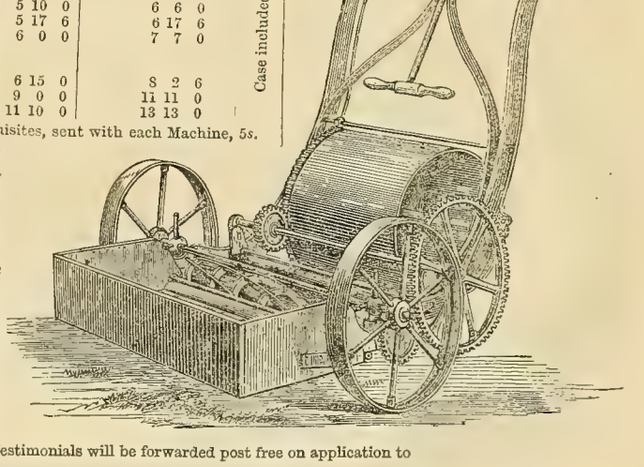
"Doing the work of five or six men."—The Times, Sept. 20, 1858.

The following PRICES include the Carriage to any Railway Station in England:—

		With Boyd and Samuelson's Patent Cleaning, Sharpening, and Adjusting Apparatus.
9 inches wide, for very narrow borders, without registered wheels	£2 10 0	
12 inches wide	4 5 0	£4 17 6
16 inches wide, with registered arrangement (for one man)	5 10 0	6 6 0
19 inches wide, ditto (for one man) ..	5 17 6	6 17 6
22 inches wide, ditto (for man and boy)	6 0 0	7 7 0
22 inches wide, ditto for ditto, and also fitted with draught links for a pony and a man to work it	6 15 0	8 2 6
25 inches wide, ditto	9 0 0	11 11 0
30 inches wide, ditto (for man and pony)	11 10 0	13 13 0

Case included.

Box of Tools, Oil Can, and other requisites, sent with each Machine, 5*s.*



Some thousands of these Machines are now in successful operation on the Lawns of Royalty, the Nobility, and Gentry of the United Kingdom and the Continent of Europe, and are pronounced SUPERIOR to *any other* for lightness of draught, efficiency, and durability. The demand for them is *yearly increasing—the number supplied by* Mr. Samuelson *during the years* 1856, 1857, *and* 1858 *being more than* 2100. Testimonials are continually being received from gentlemen having them in daily use, who speak in the highest terms of their efficiency.

These are the only Machines that will cut wet as well as dry Grass without clogging the knives.

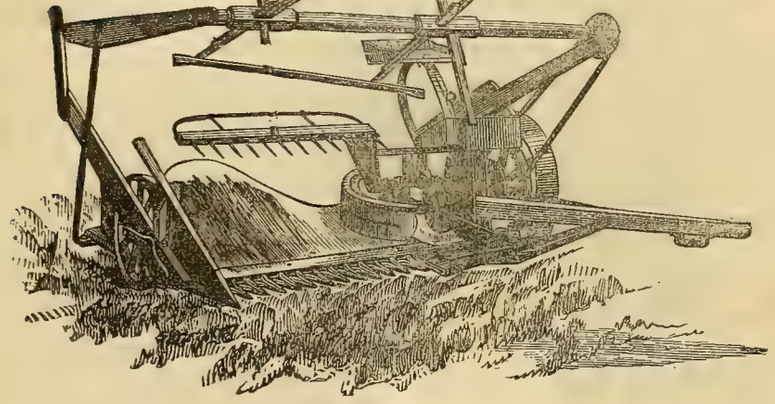
Orders for 1859 should be sent at once to insure certain delivery and to prevent disappointment.

Copies of Testimonials will be forwarded post free on application to

B. SAMUELSON, 76, Cannon Street West, City, London; to the Manufactory, Britannia Works, Banbury, Oxon; or to Messrs. DEANE and CO., London Bridge; or any respectable Ironmonger or Seedsman in the Kingdom

B. SAMUELSON,

AGRICULTURAL ENGINEER AND MACHINIST,



WAREHOUSE, 76, CANNON STREET WEST, LONDON,

WORKS AT BANBURY,

INFORMS MERCHANTS, the TRADE, and AGRICULTURISTS, that he has opened the above Warehouses as a depôt for his own manufactures and those of Messrs. Barrett, Clayton, Howard, Hornsby, Nicholson, Richmond, Tuxford, Smith, and all other first-class makers, whose implements he is prepared to offer on makers' terms.

THE BRITANNIA SELF-RAKING REAPING MACHINE,

With side delivery in sheaf, no rakers or gatherers required; and all the most improved Spring Implements for the season, may be inspected at the above depôt.

B. SAMUELSON, 76, Cannon Street West, London; and Britannia Works, Banbury.

BRITTAIN'S GARDEN NET completely protects Fruit Blossoms from injury by frost, and provides for the circulation of air and admission of light, so essential to healthy growth; 55 inches wide, 5*d*., 6*d*., and 8*d*. a yard; good SHADING TIFFANY, yard wide, 3*d*. do.—Manchester, April 9.

BRITTAIN'S SUMMER SHADINGS.—Strong Tiffany, 34 inches, 3*d*. a yard; No. 3 do. 39 inches, 7*s*. a piece, 18 yards each. Nets, Nos. 1, 2, and 3, 5*d*., 6*d*., and 8*d* a yard, 55 inches wide. ZEBRA ORNAMENTAL SHADING, 9½*d*. a yard; yard wide linen shading, 5*d*. to 5½*d*.
Peel Street, Manchester.

TANNED GARDEN NETTING, for preserving Fruit Trees from frost, blight, birds, &c., and as a fence for fowls, &c. One yard wide 1½*d*., 2 yards 3*d*., 3 yards 4½*d*., and 4 yards 6*d*., per yard, in any quantity, may be had at C. WRIGHT'S, 376, Strand, W.C.—A liberal allowance to Nurserymen.

TANNED NETTING, AT REDUCED PRICES.—200 square yards, 12*s*.; 500 yards, 25*s*.; 1000 yards, 47*s*. SCRIM CANVASS for Wall Fruit, 50 yards, 16*s*.; 100 yards, 30*s*. Be particular to address in full, FREDERICK EDGINGTON, Thomas Street, Old Kent Road, London, S.E.

TANNED NETTING, for the Protection of Fruit Trees from Frost, Blight, and Birds; also, for the security of fresh sown seeds, at 1*d*. per square yard; 200 yards, 12*s*.; 500 yards, 2*l*. 5*s*.; Scrim Canvas, for wall fruit; Garden Mats.—At EDGINGTON & Co's., Rick Cloth, Tent, and Waterproof Cloth Manufacturers, 17, Smithfield Bars, City, & Old Kent Rd.

FOR Effectually Protecting the Bloom of Wall Trees from Spring Frosts use SHAW'S No. 3 TIFFANY, DOUBLE STRENGTH. In pieces 18 yards long by 39 inches wide, 7*s*. 6*d*. each.—JOHN SHAW & Co., Princess Street, Manchester.

SHAW'S TIFFANY.—The best and cheapest material for Shading Conservatories, Protecting Fruit from Birds and Wasps, &c. Sold in pieces 20 yards long by 38 inches wide. No. 1, best quality, 5*s*. per piece; second quality, 4*s*. per piece. Extra strong and thick (see Circular sent free by post with samples).
Address JOHN SHAW & Co., Manufacturers and Dealers, Princess Street, Manchester.

ALLEN'S PATENT PORTMANTEAUS AND TRAVELLING BAGS, with SQUARE OPENING; Ladies' Dress Trunks, Dressing Bags, with Silver Fittings; Despatch Boxes, Writing and Dressing Cases, and 500 other articles for Home or Continental Travelling, illustrated in their New Catalogue for 1859. By post for two stamps. J. W. & T. ALLEN, Manufacturers of Officers' Barrack Furniture and Military Outfitters (see separate Catalogue), 18 and 22, Strand.

FOR THE TOILETTE.—OLDRIDGE'S BALM OF COLUMBIA, which has for more than 30 years been celebrated for its peculiar properties in restoring, cleansing, and beautifying the hair, promoting its growth, as well as preventing it falling off or turning grey.—C. & A. OLDRIDGE, 13, Wellington Street, North, seven doors from the Strand. Sold wholesale and retail in bottles at 3*s*. 6*d*., 6*s*., and 11*s*.; and by all Chemists and Perfumers. Its use for whiskers and moustache is invaluable.

WHITE AND SOUND TEETH are indispensable to personal attraction and to health and longevity by the proper mastication of food. ROWLANDS' ODONTO, or Pearl Dentifrice, compounded of oriental ingredients, is of inestimable value in improving and beautifying the teeth, strengthening the gums, and in rendering the breath sweet and pure. It eradicates tartar from the teeth, removes spots of incipient decay, and polishes and preserves the enamel, to which it imparts a pearl-like whiteness. As the most efficient and fragant aromatic purifier of the breath, teeth, and gums ever known, ROWLANDS' Odonto has for a long series of years occupied a distinguished place at the toilets of the sovereigns and the nobility through Europe: while the general demand for it at once announces the favour in which it is universally held.—Price 2*s*. 9*d*. per box. CAUTION.—The words "ROWLANDS' Odonto" are on the Label, and "A ROWLAND & SONS, 20, Hatton Garden," engraved on the Government stamp affixed on each box.—Sold by the Proprietors, and by Chemists and Perfumers.

HANDSOME BRASS AND IRON BEDSTEADS—HEAL & SON'S Show Rooms contain a large assortment of Brass Bedsteads, suitable both for Home use and for Tropical Climates; handsome Iron Bedsteads with Brass Mountings and elegantly Japanned; Plain Iron Bedsteads for Servants; every description of Wood Bedstead that is manufactured, in Mahogany, Birch, Walnut-tree Woods, Polished Deal and Japanned, all fitted with Bedding and Furniture complete, as well as every description of Bedroom Furniture.

HEAL AND SON'S ILLUSTRATED CATALOGUE, containing Designs and Prices of 100 Bedsteads, as well as of 150 different articles of Bedroom Furniture, sent free by post.—HEAL & SON, Bedstead, Bedding, and Bedroom Furniture Manufacturers, 196, Tottenham Court Road, W.

FENDERS, STOVES, FIRE-IRONS, AND CHIMNEY PIECES.—Buyers of the above are requested, before finally deciding, to visit WILLIAM S. BURTON'S SHOW ROOMS. They contain such an assortment of FENDERS, STOVES, RANGES, CHIMNEY PIECES, FIRE-IRONS, and GENERAL IRONMONGERY as cannot be approached elsewhere, either for variety, novelty, beauty of design, or exquisiteness of workmanship. Bright Stoves, with ormolu ornaments and two sets of bars, 3*l*. 15*s*. to 33*l*. 10*s*.; Bronzed Fenders, with standards, 7*s*. to 5*l*. 12*s*.; Steel Fenders, 2*l*. 15*s*. to 11*l*.; ditto, with rich ormolu ornaments, 2*l*. 15*s*. to 18*l*.; Chimney Pieces, from 1*l*. 8*s*. to 80*l*.; Fire-Irons, from 2*s*. 3*d*. the set to 4*l*. 4*s*. The BURTON and all other PATENT STOVES, with radiating hearth-plates.

BEDSTEADS, BATHS, AND LAMPS.—WILLIAM S. BURTON has SIX LARGE SHOW ROOMS devoted exclusively to the SEPARATE DISPLAY of Lamps, Baths, and Metallic Bedsteads. The stock of each is at once the largest, newest, and most varied ever submitted to the public, and marked at prices proportionate with those that have tended to make his establishment the most distinguished in this country.

Bedsteads, from	..	..	..	12*s*. 6*d*. to £20	0*s*. each.
Shower Baths, from	..	..	8 0	„ 6 0	„
Lamps (Moderateur), from	..	6 0	„ 7 7	„	

(All other kinds at the same rate.)
Pure Colza Oil .. .. 4*s*. 3*d*. per gallon.

CUTLERY, WARRANTED.—The most varied assortment of TABLE CUTLERY in the world, all warranted, is on SALE at WILLIAM S. BURTON'S, at prices that are remunerative only because of the largeness of the sales. 3½-inch Ivory-handled Table Knives, with high shoulders, 12*s*. 6*d*. per doz.; Desserts to match, 10*s*. 0*d*.; if to balance, 6*d*. per doz. extra; Carvers, 4*s*. 3*d*. per pair; larger sizes, from 20*s*. to 27*s*. 6*d*. p. doz.; extra fine Ivory, 33*s*.; if with silver ferrules, 40*s*. to 50*s*.; white bone Table Knives, 6*s*. 0*d*. per doz.; Desserts, 5*s*. 0*d*.; Carvers, 2*s*. 3*d*. per pair; black-horn Table Knives, 7*s*. 4*d*. per doz.; Desserts, 6*s*.; Carvers, 2*s*. 6*d*.; black wood-handled Table Knives and Forks, 6*s*. per doz.; Table Steels, from 1*s*. each. The largest stock in existence of Plated Dessert Knives and Forks, in cases and otherwise, and of the new plated Fish Carvers.

WILLIAM S. BURTON'S GENERAL FURNISHING IRONMONGERY CATALOGUE may be had gratis, and free by post. It contains upwards of 400 Illustrations of his illimited Stock of Electro and Sheffield Plate, Nickel Silver and Britannia Metal goods, Dish Covers and Hot-water Dishes, Stoves, Fenders, Marble Chimney pieces, Kitchen Ranges, Lamps, Gaseliers, Tea Urns and Kettles, Tea Trays, Clocks, Table Cutlery, Baths and Toilet Ware, Turnery, Iron and Brass Bedsteads, Bedding, Bed Hangings, &c., with Lists of Prices and Plans of the 16 large Show Rooms at 39, Oxford Street; 1, 1A, 2, and 3, Newman Street; and 4, 5 and 6, Perry's Place, London.—Established 1820.

DO YOU WANT LUXURIANT HAIR, WHISKERS, &c.?—COUPELLE'S CRINUTRIAR is guaranteed to produce whiskers, moustachios, eyebrows, &c., in two or three weeks with the utmost certainty, strengthen weak hair, prevent its falling off, check greyness in all its stages, and reproduce the hair in baldness, from whatever cause, price 2*s*. Sold by all chemists in the world; or will be sent post free, on receipt of 24 penny postage stamps, by Miss COUPELLE, 69, Castle Street, Newman Street, Oxford Street, London. A toilet guide sent post free for four penny postage stamps. "It completely restored my hair."—Miss Davis. "My whiskers are now growing freely."—H. Merry, Esq.

CHUBB'S LOCKS, FIREPROOF SAFES, DOOR LATCHES, CASH AND DEED BOXES. Illustrated Priced Lists sent free.—57, St. Paul's Churchyard, London; 28, Lord Street, Liverpool; 16, Market Street, Manchester; and at Wolverhampton.

THE ROYAL HUNT BOUQUET.

PIESSE AND LUBIN, PERFUMERY FACTORS, 2, New Bond Street, London.—"This exquisite perfume has the fragrance of a garden at evening's close." FRANGIPANNI, the YACHT CLUB NOSEGAY, and the NEWMARKET JOCKEY CLUB SCENT, 2*s*. 6*d*. each, or three bottles in a case, 7*s*.—See to have them with our name, PIESSE & LUBIN, 3, New Bond Street, London. Sold everywhere.

SPIRITS AND BEER.—Brandy, 24*s*. to 40*s*.; Whisky, 14*s*. to 18*s*.; Gin, 11*s*. 6*d*. to 15*s*. per gallon. Pale Ale, quarts, 4*s*. 6*d*. and 4*s*.; pints, 3*s*. 3*d*. and 3*s*. D'Arcy's Dublin Stout and Porter, quarts, 5*s*., 4*s*. 3*d*., and 3*s*. 6*d*.; pints, 3*s*. 6*d*., 3*s*., and 2*s*. 6*d*. Not less than 6 dozen.—OWEN & Co., 75, Lower Thames Street, E. C., and 57 & 58, Fore Street, E. C.

VINEGAR.—Patronised by her Majesty's Government.

CONDY'S PATENT PURE CONCENTRATED MALT VINEGAR.—Families, by using this delicious Vinegar, insure purity, and effect a saving of 50 per cent. See Report of Dr. Letheby, City Officer of Health; Dr. Hassall of the *Lancet* Commission, and others. Six Quart Sample sent free to any Railway for 3*s*. 6*d*.—Sold by the Trade, in bottles, labelled and capsuled; wholesale, 63, King William Street, London Bridge, E.C.

PERFECT FREEDOM FROM COUGHS is secured by Dr. Locock's PULMONIC WAFERS. They give instant relief, and a rapid cure of asthma, consumption, coughs, and all disorders of the breath and lungs. They have a most pleasant taste. Price 1*s*. 1½*d*., 2*s*. 9*d*., and 11*s*. per box. Sold by all Medicine Vendors.

HOLLOWAY'S PILLS.—The liver, that large and important organ, which secretes bile and transmits it to the gall bladder and duodenum, is exposed to serious and sometimes fatal derangements. It is necessary, therefore, to watch carefully the first symptoms. A pain on the right side of the belly, and on the top of the right shoulder, much uneasiness in lying on the left side, a dry cough and difficulty of breathing, are among the diagnostics or signs that the liver is more or less affected. For all disorders of this vital organ, HOLLOWAY'S Pills are a specific; by checking the over supply of bile, regulating its due secretion, and giving tone to the stomach, they effect a speedy and permanent cure.

PAINS IN THE BACK, Gravel, Lumbago, Rheumatism, Gout, Indigestion, Flatulency, Nervousness, Debility, &c.—Dr. DE ROOS' COMPOUND RENAL PILLS have been long established as a safe and efficacious remedy for the above complaints, discharges of any kind, retention of urine, and diseases of the kidneys, bladder and urinary organs generally, which, if neglected, frequently end in stone in the bladder and a lingering death. For depression of spirits, incapacity for society, study or business, confusion, giddiness, drowsiness, sleep without refreshment, fear, nervousness, and insanity itself, when arising from or combined with urinary diseases, they are unequalled. By their salutary action in correcting bile and acidity of the stomach, they prevent the formation of stone, and establish the healthy functions of all these organs.—Price 1*s*. 1½*d*., 2*s*. 9*d*., 4*s*. 6*d*., 11*s*., and 33*s*. per box, through all Medicine Vendors, or sent free on receipt of the amount in postage stamps, by Dr. DE ROOS, 10, Berners Street, Oxford Street.

IMPORTANT INFORMATION.—Mrs. Brown, of Queen Street, Kingsland, was for years severely afflicted with a scorbutic eruption, covering the back of both hands, and spreading up her arms. She was persuaded to try Dr. ROBERTS'S POOR MAN'S FRIEND and PILULÆ ANTISCROPHULÆ by a friend who had a large wound in her leg which baffled her doctor's skill, but was effectually cured by these medicines. She only took one box of the Pills, and used one pot of the Ointment, which effected a cure to the surprise of her friends, who wish it to be made public for the benefit of her suffering fellow creatures. Dr. ROBERTS'S POOR MAN'S FRIEND and PILULÆ ANTISCROPHULÆ have been proved, by 60 years' experience, successful in the cure of eruptions and wounds of every description. Price 1*s*. 1½*d*.; 2*s*. 9*d*.; 4*s*. 6*d*.; 11*s*.; and 22*s*. each.—Sold wholesale by the Proprietors, BEACH & BARNICOTT, at their Dispensary, Bridport, and by the London Houses; and retail by all respectable Medicine Vendors in the United Kingdom and the Colonies.

KNOW THYSELF.—MARIE COUPELLE continues to give her graphic and interesting delineations of character, discoverable from an examination of the handwriting, in an unique style of description peculiarly her own. All persons desirous of knowing themselves, or any friend in whom they are interested, must send a specimen of the writing, stating the sex and age, and enclosing 13 penny postage stamps, and a directed envelope, to Miss COUPELLE, 69, Castle Street, Oxford Street, London, and they will receive in a few days a minute detail of the talents, tastes, virtues, and failings of the writer, with many other things hitherto unsuspected. All letters are considered strictly confidential.

TO THE NERVOUS OF BOTH SEXES.—A Retired Clergyman, having been restored to health in a few days, after many years of nervous suffering, is willing to assist others by sending (free), on receiving a stamped envelope, properly addressed, a copy of the prescription used.—Direct, the Rev. E. DOUGLASS, 18, Holland Street, Brixton, London.

CHEAP AND CORRECT PRINTING FOR THE NURSERY AND SEED TRADES.—Send your orders to ROBT. EDM. TAYLOR, PRINTER, Sea Coal Lane, Skinner Street, Snow Hill, London, E. C. Estimates forwarded.

WHAT WILL THIS COST TO PRINT? is a thought often occurring to literary minds, public characters, and persons of benevolent intentions. An immediate answer to the inquiry may be obtained on application to RICHARD BARRETT, 13, Mark Lane, London. R. B. is enabled to execute every description of Printing on very advantageous terms, his office being furnished with a large and choice assortment of Types, Steam Printing Machines, Hydraulic and other Presses, and every modern improvement in the Printing Art. A Specimen Book of Types, and information for Authors, sent on application, by
RICHARD BARRETT, 13, Mark Lane, London.

ELECTRICAL INFLUENCE IN HEALTH AND DISEASE.
Just published, price 1*s*., free by post for thirteen Stamps,
SECOND LIFE: OR ELECTRICAL NERVOUS FORCE; a MEDICAL WORK intended for the special perusal of all who are suffering from the various forms of NERVOUS and PHYSICAL DEBILITY and the distressing ulterior consequences to which they lead; with practical Observations on the great Curative power of ELECTRO-GALVANISM in the Treatment of these disorders, by infusing tone and vigour in constitutions relaxed or debilitated from various enervating causes. Illustrated with Cases compiled from the Note-Book of a Registered Medical Practitioner of twenty years' standing.
MANN, 39, Cornhill, and all Booksellers.

In One Vol. 4to, 100 Plates, 6*l.* 11*s.*,

FILICES EXOTICÆ; or, Coloured Figures and Descriptions of Exotic Ferns, chiefly of such as are cultivated in the Royal Gardens of Kew. By Sir W. J. HOOKER, K.H.

*** The most magnificently illustrated book of Foreign Ferns that has been produced.

In One Vol., 680 pages, price 12*s.*,

HANDBOOK OF THE BRITISH FLORA: a Description of the Flowering Plants and Ferns Indigenous to, or Naturalised in, the British Isles. For the use of Beginners and Amateurs. By GEORGE BENTHAM, F.L.S.

"Any one conversant with botany who takes up Mr. Bentham's book will immediately feel that he is dealing with an original work."—*Athenæum.*

BOOKS FOR THE GARDEN.

Professional and Amateur Gardeners and all those who love a Garden should possess a thorough knowledge of the Plants and Flowers they cultivate. To obtain this they should have

THE COTTAGE GARDENERS' DICTIONARY which describes the Plants, Fruits and Vegetables desirable for the Garden, and explains the terms and operations employed in their cultivation. Edited by G. W. JOHNSON, Esq., Editor of "The Cottage Gardener," &c., price 8*s.* 6*d.* cloth. Also the following works:—

GLENNY'S HANDBOOK TO THE FLOWER GARDEN AND GREENHOUSE.—A new edition, thoroughly revised by the Author, will be ready in a few days. Cloth, gilt edges, 5*s.* 6*d.*

THE VEGETABLE KINGDOM AND ITS PRODUCTS.—Illustrated with nearly 300 engravings, and containing an enumeration of 7000 genera and 4000 synonyms, representing about 100,000 species of plants. By ROBERT HOGG, Author of several works upon Plants and Fruits, price 10*s.* 6*d.*, handsome cloth.

THE MANUAL OF FLOWER GARDENING FOR LADIES.—By J. B. WHITING, Corresponding Member of the Horticultural Society, price 1*s.*

London: W. KENT & Co., Paternoster Row, and 86, Fleet Street (late D. BOGUE); and all booksellers in town and country.

POLLED HERD BOOK.

BREEDERS OF POLLED CATTLE are informed that the FIRST VOLUME of the POLLED HERD BOOK is now prepared for Press. It will contain the Herds of the following Breeders:—

His Grace the Duke of Buccleuch
The Right Hon. the Earl of Aberdeen
The Right Hon. the Earl of Airlie
The Right Hon. the Earl of Cawdor
The Right Hon. the Earl of Southesk
The Right Hon. Lord Lurgan
The Right Hon. Lord Talbot de Malahide
Sir John Stuart Forbes, Bart., of Pitsligo
Bowie, Alexander, Mains of Kelly, Arbroath
Brown, George, Westertown, Fochabers
Collie, John, Ardgay, Forres
Cunningham, Samuel, Dunrod Mill, Kirkcudbright
Duncan, Alexander, Renchal, Stonehaven
Farrell, M., Woodburnden, Fordoun
Fleming, John, Ballindalloch
Graham, James, Meikle Culloch, Dumfries
Hutchison, John, Monyruy, Peterhead
Leslie, James, Thorn, Blairgowrie, Perth
M'Combie, William, of Tillyfour, Aberdeen
M'Combie, William, Easter Skene, Aberdeen
Scott, David, Calnakettle, Fettercairn
Shennan, W. & J., Balig, Kirkcudbright
Tayler, William James, of Glenbanie, Huntly
Thomson, Samuel, Blaiket, Crocketford, Dumfries
Trustees of the late Mr. Scott of Balwyllo
Walker, Robert, Portlethen, Aberdeen
White, William, Spot, Kirriemuir

New Entries will be received up to April 15, after which date none can be entered. A distinct Section of the work will be devoted to Galloway Stock.

Blank Forms of Entry may be obtained on application to Mr. RAVENSCROFT, the Editor, at PETER LAWSON & SON'S, Edinburgh; of ROBERT THRESHIE, Esq., Dumfries; or at the Office of the *Farmers' Gazette*, Dublin.

Price 1*s.* 6*d.*, free by post, 1*s.* 7*d.*

LABELS FOR THE HERBARIUM, CONSISTING OF THE NAMES OF THE CLASSES, ALLIANCES, ORDERS, AND SUB-ORDERS, OF PROFESSOR LINDLEY'S "VEGETABLE KINGDOM."

So printed in large type, that they can be cut out and pasted into THE HERBARIUM.

J. MATTHEWS, 5, Upper Wellington Street, Covent Garden, London, W.C.

In consequence of the new postal arrangements, parties in the country who desire it can have two copies sent by post for one stamp, five for two stamps, or eleven for four, in addition to the cost of the numbers.

Price 3*d.* each, or 5*s.* for 25 copies for distribution among Cottage Tenantry, delivered anywhere in London, on a Post-office Order being sent to the Publisher, JAMES MATTHEWS, at the Office of the *Gardeners' Chronicle.*

THE COTTAGER'S CALENDAR OF GARDEN OPERATIONS. By Sir JOSEPH PAXTON, M.P. Reprinted from the GARDENERS' CHRONICLE. Upwards of 126,000 have already been sold.

CONTENTS:—

African Lilies
Agapanthus
Anemones
Annuals
Apples
Apricot
Auriculas
Beans
Beet
Biennials
Black Fly
Books for Cottagers
Borage
Borecole
Box Edgings
Broccoli
Brussels Sprouts
Budding
Bulbs
Cabbage
Cactus
Calceolarias
Californian Annuals
Campanulas
Carnations
Carrots
Cauliflowers
Celery
Cherries
China Asters
China Roses
Chrysanthemums, Chinese
Chives
Clarkias
Clematis
Collinsias
Colewort
Cress
Creepers
Crocus
Crown Imperials
Cucumbers
Cultivation of flowers in windows
Dahlias
Daisies
Dog's-tooth Violets
Exhibitions, preparing articles for
Felts, as protection for borders
Fuchsias
Gentianella
Gilias
Gooseberries
Grafting
Green-fly
Heartsease
Herbs [nials
Herbaceous Peren-
Heliotrope
Hollyhocks
Honeysuckle
Horse-radish
Hyacinths
Hydrangeas
Hyssop
Indian Cress
Iris
Kidney Beans
Lavender
Layering
Leeks
Leptosiphons
Lettuce
Lobelias
London Pride
Lychnis, double
Marigold
Marjoram
Manures
Marvel of Peru
Mesembryanthemums
Mignonette
Mint
Mustard
Narcissus
Nemophilas
Œnothera bifrons
Onions
Pæonics
Parsnip
Parsley
Peaches
Pea-haulm
Pears
Peas
Pelargoniums
Perennials
Persian Iris
Petunias
Phlox
Pigs
Pinks
Planting
Plums
Polyanthus
Potatoes
Pruning
Privet [tings
Propagation by cut-
Pyracantha
Radishes
Ranunculus
Raspberries
Rhubarb
Rockets
Roses
Rue
Rustic Vases
Sage
Salvias
Savoys
Saxifrage
Scarlet Runner Beans
Seeds
Sea Daisy or Thrift
Seakale
Select Flowers
Select Vegetables and Fruit
Snails and Slugs
Snowdrops
Spinach
Spruce Fir
Spur Pruning
Stocks
Strawberries
Summer Savory
Sweet William
Thorn Hedges
Thyme
Tigridia Pavonia
Transplanting
Tree Lifting
Tulips
Turnips
Vegetable Cookery
Venus's Looking Glass
Verbenas
Vines
Virginian Stocks
Wallflowers
Willows
Zinnias

J MATTHEWS, 5, Upper Wellington Street, Covent Garden, London, W.C.

Now published (entered at Stationer's Hall), 2d Edition,

AN ENTIRE NEW SYSTEM ON

THE CULTURE OF THE POTATO.—Extraordinary produce again in 1858. See Advertisement in *Gardeners' Chronicle* of January 15; 600 bushels to the acre free from disease of that most delicate, most liable to disease, and best Potato the Lapstone Kidney, which, at 4*s.* per bushel, gives 100*l.* per acre clear profit on land in one year. The Book forwarded post free for 18 stamps.—Address R. B., Post Office, Hathersage, Derbyshire.

NEW AND ENLARGED EDITION OF

DR. LINDLEY'S THEORY OF HORTICULTURE.

Just Published, in 8vo, with 98 Woodcuts, price 21*s.* cloth.

THE THEORY AND PRACTICE OF HORTICULTURE; or, an Attempt to explain the chief Operations of Gardening upon Physiological Grounds: being the Second Edition of the "Theory of Horticulture," much enlarged. By JOHN LINDLEY, Ph.D., F.R.S., Corresponding Member of the Institute, Vice-Secretary of the Horticultural Society, Professor of Botany in University College, London, &c.

"The First Edition of this valuable work was issued in 1840, since which time it has had an extensive circulation, and has been translated into the German, Dutch, and even Russian languages. Being more particularly restricted to principles, however, the author at length resolved to render the work more generally interesting and useful by a more frequent reference to practical operations. He has thus greatly extended the matter, by supporting the physiological doctrines with an appeal to facts familiar to cultivators, or which ought to be; and the result is a still more interesting and popular compendium of the principles and practice, or the science and art, of horticulture."—*Builder.*

"This is a Second Edition of the 'Theory of Horticulture,' with the addition of a large quantity of practical matter, introduced to show how entirely scientific principles and good cultivation correspond. The volume contains about four times as much matter as the first edition . . . . Although very large additions are made to every chapter, while many passages in the first edition have been wholly struck out, it may be proper to say that the greatest changes are those which relate to vitality, climate, domestication, ventilation, propagation, pruning, resting, and soils and manures; such being the subjects in which practical men are most interested. The whole work has, indeed, assumed such a form as to make it evident that the great object of the author has been, not to produce a work suited to men of science, but one which every well-informed gardener may understand and apply. As the volume concludes with a very copious index of matter, there is no difficulty in ascertaining where any given subject is treated of."—*Gardeners' Chronicle.*

By the same Author,

INTRODUCTION TO BOTANY. 4th Edition, greatly enlarged; with 6 Plates, and numerous Wood Engravings. Two vols. 8vo, 24*s.*

*** It has been the Author's wish to bring every subject that he has introduced down, as nearly as possible, to the state in which it is found at the present day. In doing so, he has added so very considerable a quantity of new matter, especially in what relates to Vegetable Anatomy and Physiology, that the present Edition may be considered, in those respects, a new work.

London: LONGMAN, BROWN, GREEN, & LONGMANS.

GOLD PHEASANTS.

TO BE SOLD, some very handsome BIRDS, the Cocks being now in full plumage, selected from the stock of a nobleman's Pheasantry, which is overstocked. Price moderate.—Address to A. B. C., Mr. Eccles, Stationer, Woodstock, Oxon.

TO NURSERYMEN, FLORISTS, AND AMATEURS.

MR. THOMAS ASHCROFT, in retiring from the above business, which has been established for more than 30 years, begs to thank his kind Friends and the Public generally for their support so very liberally afforded him for so many years, and at the same time wishes to DISPOSE OF his STOCK of PLANTS, which is of the best description, at a fair Valuation; also, the HOUSE attached. Possession may be had immediately. The House and Nursery is in a good situation and fitted up with every convenience, with a good Trade attached. Personal applications only entertained.—Northwick Lane, near Ombersley Turnpike, Worcester.

TO SEEDSMEN, FRUITERERS, AND GREENGROCERS.

TO BE SOLD, AN OLD ESTABLISHED BUSINESS in the above line in one of the leading thoroughfares, in the City of Bath. To persons with small capital the above offers an excellent opportunity; half the rent is paid by permanent lodgers.—For further particulars apply to D. E. F., Post Office, Bath.

TO BE LET, BRISTOL NURSERY GROUNDS, Kemp Town, Brighton. These Gardens are now to Let for occupation with immediate possession.—Any person desirous of treating for the same may obtain particulars and permission to view the grounds on application to Mr. R. W. LUCAS, 20, Great Marlborough Street, London, W.; and of Mr. A. CHANDLER, Horticultural Valuer, 28, Priory Road, Wandsworth Road, S.

UNIQUE PLANT.

MR. J. C. STEVENS is directed by the Council of the Horticultural Society of London to include in the Sale at his Great Room, 38, King Street, Covent Garden, on TUESDAY, April 12, the unique Shrub "FREMONTIA CALIFORNICA" (*vide* description in *Gardeners' Chronicle*, Jan. 22, 1859).—May be viewed on the Morning of Sale, and Catalogues had.

ORCHIDS AND FERNS.

MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on TUESDAY, April 12, at half-past 12 o'Clock precisely, ORCHIDS of very superior quality, the duplicate specimens from a well-known Collection, including admirably grown Plants of the following select varieties, viz.:—

Aerides Lindleyi
" Larpentæ
" Schroderi
" nobile
" quinquevulnerum
" maculosum majus
Angulоa Ruckeri
Cymbidium eburneum
Cœlogyne pandurata
" Lowi
Galeandra devoniana
Paphinia cristata
" tigrina
Phalænopsis grandiflora
Saccolabium guttatum
" retusum
Uropedium Lindeni
Vanda suavis (Veitch
" " aurea
&c., &c.

Also a few rare FERNS—Gleichenias, Alsophilas, Cyatheas, &c.—May be viewed on the morning of Sale, and Catalogues had of Mr. J. C. STEVENS, 38, King Street, Covent Garden.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will Sell by Auction at the Mart on FRIDAY, April 15, at 12 o'Clock, a first class collection of Carnations and Picotees from a celebrated grower, handsome Azalea Indica, and other Plants in bloom; choice American plants, comprising Rhododendrons, Azaleas, Andromeda floribunda, &c. with choice Dahlias in dry roots, Fuchsias, Verbenas, &c., On view the morning of sale.—Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

Every Saturday, price Fourpence, or Stamped Fivepence,

NOTES AND QUERIES:

A MEDIUM OF INTERCOMMUNICATION FOR LITERARY MEN, ARTISTS, ANTIQUARIES, GENEALOGISTS, PHOTOGRAPHERS, &c.

NOTES AND QUERIES will, it is believed, be found to bring before the general reader every week a vast amount of curious and interesting information. It was established for the purpose of furnishing to all lovers of Literature a Commonplace Book, in which they might, on the one hand, record for their own use and the use of others those minute facts—those elucidations of a doubtful phrase or disputed passage—those illustrations of an obsolete custom—those scattered biographical anecdotes or unrecorded dates—which all who read occasionally stumble upon; and, on the other, of supplying a medium through which they might address those Queries, by which the best informed are sometimes arrested in the midst of their labours, in the hope of receiving solutions of them from some of their number. The success which has attended this endeavour to supply a want long felt by literary men, is rendered manifest by the necessity of permanently enlarging the Paper from 16 to 24 pages. For opinions of *The Quarterly Review, Athenæum, Examiner, Literary Gazette, Spectator, Dublin Review*, &c., as to the utility, &c., of NOTES AND QUERIES, see Prospectus.

A SPECIMEN NUMBER sent on receipt of five postage stamps.

NOTES AND QUERIES is also issued in Monthly Parts, for the convenience of those who may either have a difficulty in procuring the unstamped Weekly Numbers, or may prefer receiving it monthly. Each Part contains Papers by some of our most distinguished Writers. Those already issued contain articles by—

Lord Braybrooke
John Britton, Esq.
John Bruce, Esq.
J. Burtt, Esq.
W. D. Christie, Esq.
J. P. Collier, Esq.
W. D. Cooper, Esq.
Bolton Corney, Esq.
P. Cunningham, Esq.
Rev. T. Corser
Dr. Dalton
Professor De Morgan
Dr. Diamond
Hepworth Dixon, Esq.
Sir Fortunatus Dwarris
Sir Henry Ellis
C. Forbes, Esq.
E. Foss, Esq.
Rev. A. Gatty
Henry Hallam, Esq.
J. O. Halliwell, Esq.
E. Hawkins, Esq.
Rev. J. Hunter
Samuel Hickson, Esq.
Douglas Jerrold, Esq.
Rev. Dr. Kennedy
R. J. King, Esq.
Rev. L. B. Larking
Marc Antony Lower, Esq.
W. B. MacCabe, Esq.
Rev. S. R. Maitland, D.D.
Sir F. Madden
J. H. Markland, Esq.
J. E. B. Mayor, Esq.
Lord Monson [M.P.
R. Monck. Milnes, Esq.,
George Ormerod, Esq.
J. R. Planché, Esq.
E. F. Rimbault, Esq.
Rev. Dr. Rock
S. W. Singer, Esq.
E. Smirke, Esq.
George Stephens, Esq.
H. E. Strickland, Esq.
Earl of Shaftesbury
W. J. Thoms, Esq.
B. Thorpe, Esq.
Rev. J. H. Todd, D.D.
Sir W. C. Trevelyan, Bt.
T. H. Turner, Esq.
Rev. Henry Walter
Albert Way, Esq.
Benj. B. Wiffen, Bart.
W. Yarrell, Esq.,
&c. &c. &c.

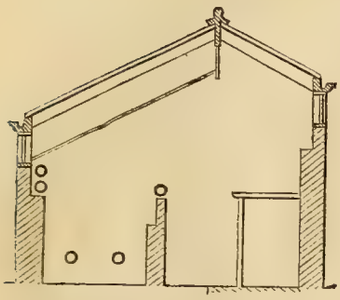
NOTES AND QUERIES is also published in Half-yearly Volumes, each with very Copious Index, price 10*s.* 6*d.* cloth boards. Of these Nine have been published; and a few Complete Sets, price 4*l.* 14*s.* 6*d.*, may still be had.

The following List of Subjects treated upon will show that these Volumes are not merely of temporary interest, but of lasting value for reference:—

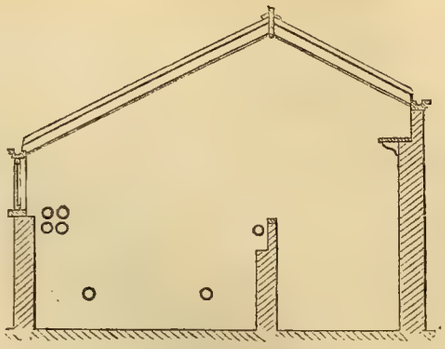
Literary History
Bibliography
Biographical Illustrations
Popular Manners and Customs
Origin of Proverbial Sayings
Folk-Lore
Illustrations of Shakspeare
Illustrations of Chaucer and Early English Literature
Glossarial Notes
Notes on Hallam, Macaulay, &c.
Genealogy and Heraldry
Miscellaneous Antiquities
Ecclesiastical History
Writings of English and Continental Reformers
History of London and its Neighbourhood
Ballads and Old Poetry
Remarkable Events in English, Scotch, and Irish History
Anglo-Saxon Literature
Fine Arts
Natural History
Photography, especially in its Relation to Archæology, &c.
&c. &c.

"As a mass of curious, out-of-the way information upon almost every matter that may be supposed to be of interest to educated minds, a Volume of NOTES AND QUERIES is of itself a curiosity, and quite an out-of-the-way treasure. Wholly apart from its very great value as an aid to the literary labourer who works upon unhacknied material—a point so well recognised that it need not be urged—we would suggest that the reader for amusement scarcely could take up a miscellany that contains more anecdote and quaint accounts of odd things new to his mind, than a Volume of NOTES AND QUERIES. . . . . It may lead to the formation of some notion on the point if we state that the Index to the Fifth Volume contains not many less than three thousand five hundred references to subjects upon which there is information given in its pages."—*Examiner.*

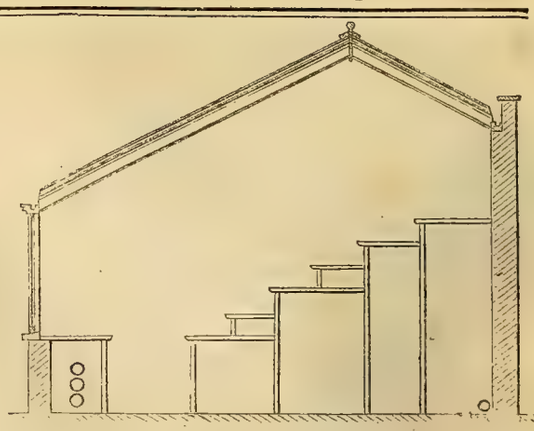
GEORGE BELL, No. 186, FLEET STREET; AND BY ORDER OF ALL BOOKSELLERS AND NEWSMEN.



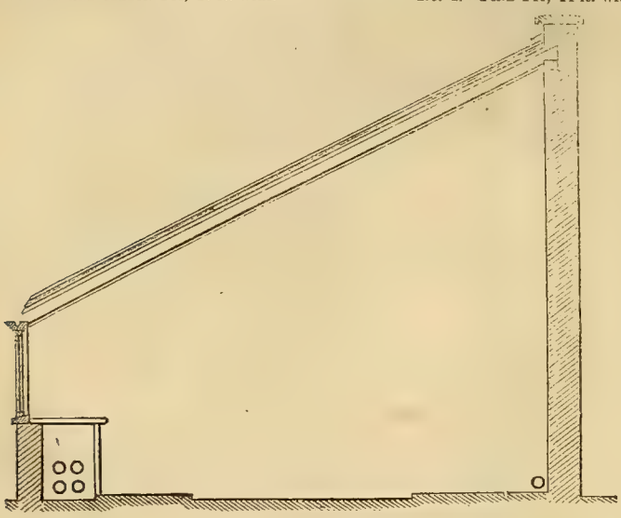
No. 1.—Cucumber and Melon Pit, 10 ft. wide.



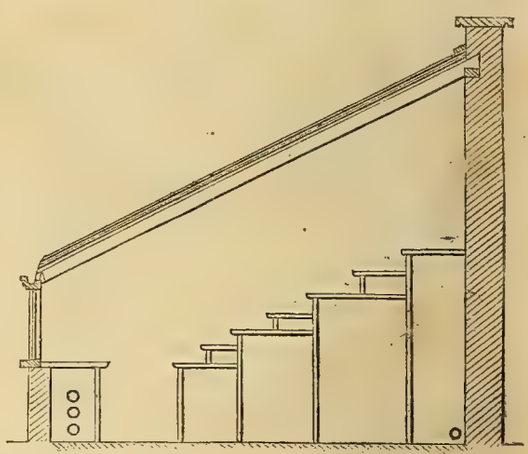
No. 2.—Pine Pit, 14 ft. wide.



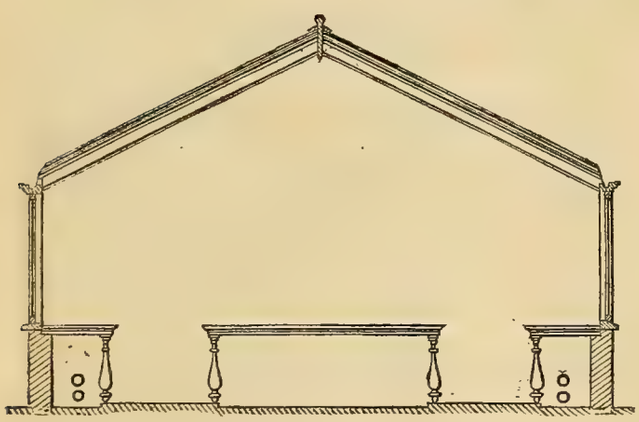
No. 3.—Greenhouse, from 14 to 18 feet wide.



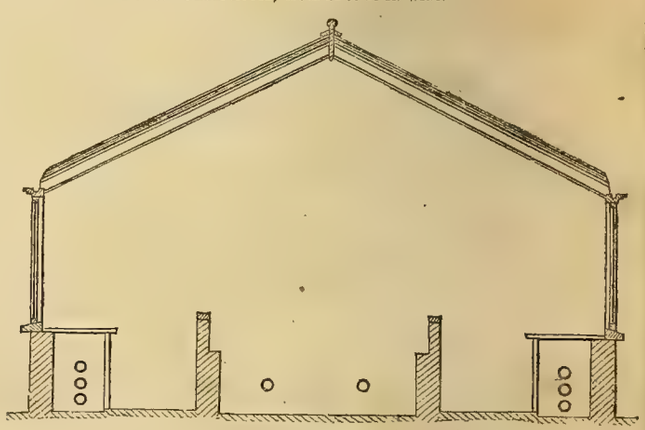
No. 4.—Vinery, from 15 to 18 ft. wide.



No. 9.—Greenhouse, from 12 to 20 ft. wide.



No. 6.—Greenhouse, from 18 to 20 ft. wide.



No. 7.—Forcing House, from 18 to 20 ft. wide.

HORTICULTURAL BUILDINGS MANUFACTURED BY STEAM POWER MACHINERY.

BEST MATERIALS AND LOWEST PRICES.

HENRY ORMSON,

HORTICULTURAL BUILDER & HOT-WATER APPARATUS MANUFACTURER.

STANLEY BRIDGE, KING'S ROAD, CHELSEA, LONDON,

Deeply grateful for the very liberal and kind patronage bestowed upon him, begs most respectfully to inform the Nobility, Gentry, Nurserymen, &c., that it being his determination to spare no pains to merit a continuance of their favours, and that he may be enabled to execute his extensive and increasing orders punctually, and at the lowest possible cost (agreeably with the best Materials and Workmanship), he has erected a most complete set of Steam Power Machines, peculiarly adapted for the purposes of his Trade.

PARTIES DESIRING INFORMATION as to prices, &c., will, by referring to any of the above sections, receive immediate attention.

PLANS, SPECIFICATIONS, and ESTIMATES for plain and inexpensive practical Structures, and for the most elaborate Architectural Erections, either in Wood or Iron, forwarded on application.

ORMSON'S PATENT JOINTLESS TUBULAR BOILERS

May be seen in successful operation at Mr. Veitch's, Royal Exotic Nursery, King's Road, Chelsea, and on view and for sale at

THE MANUFACTORY.

Printed by William Bradbury, of 13, Upper Woburn Place, and Frederick Mullett Evans, of No. 20, Queen's Road West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard St. Precinct of Whitefriars, City of London, and published by them at the Office, No. 5, Upper Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—Saturday, April 9, 1859.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 16.—1859.] SATURDAY, APRIL 16. {Price Fivepence. STAMPED EDITION, 6d.

INDEX.

Arundinaria macrosperma	338 c	Museum, British	335 c
Books, noticed	339 c	Netting, zebra	340 c
British Museum	335 c	Orchids, sale of	340 a
— Pomological Society	338 c	Peaches, double	338 c
Cattle breeding	345 a	Pine Apples, diseased	336 b
Chumber	337 a	Plants, new	336 c
Cress, Australian	338 c	Rainfall in Cumberland	338 b
Cucumbers	338 c	Rye-grass, Italian	345 c
— and bottom-heat	338 a	Sheep and Elliott's dip	341 c
Dahlias, culture of	339 c	Steam culture, Smith's	342 c
Dioscorea	338 c	Stock, wintering	342 c
Farming, Belgian	344 b	Temperature, low night	338 a
France, weather in	336 c	Trade lists	339 c
Fremontia, sale of	340 a	— memoranda	338 a
Frost, the late	338 b	Trees, decorticated	338 a
Haygarth's (Rev. J. S.) death	342 c	Turnips, manuring	344 a
Howardin carcasensis	336 c	Ventilation, new mode of	337 c
Italian Rye-grass	345 c	Weather in France	336 c
Linseed-cake manufacture	343 b	Wenlock Farmers' Club	345 a

HORTICULTURAL SOCIETY OF LONDON.—Notice is hereby given that the business of the Society will be carried on in future at No. 8, St. Martin's Place, Trafalgar Square, W.C.

HORTICULTURAL SOCIETY OF LONDON.—BEDDING-OUT PLANTS.
In consequence of the conversion of the Garden at Chiswick into one of Experiment only, the Bedding-out Plants which had been provided for the ensuing summer will be given away to the Fellows in quantities not exceeding five dozen each.—Application to be made to the Assistant-Secretary, 8, St. Martin's Place, W. C., before APRIL 23, after which the Plants not wanted by the Fellows will be sold to the Trade.

ROYAL BOTANIC SOCIETY, REGENT'S PARK.—THE EXHIBITIONS OF PLANTS, FLOWERS, AND FRUIT this season will take place on WEDNESDAYS, May 25, June 15, and July 6. Tickets of Admission are now being issued, and can be obtained at the Gardens only by orders from Fellows or Members of the Society. Price, on or before Saturday, May 14, 4s.; after that day, 5s.; or on the days of Exhibition, 7s. 6d. each.

THE ROYAL NATIONAL ANNUAL EXHIBITION OF TULIPS.—The Meeting for 1859 will be held on FRIDAY, May 20, at the Royal Nursery, Slough. Lists of prizes and full particulars may be had of CHARLES TURNER, Hon. Sec., Royal Nursery, Slough.

THE GRAND NATIONAL DAHLIA SHOW FOR 1859.—This Exhibition will take place on the 20th and 21st of September next, at Aston Hall, Birmingham. Lists of Prizes will shortly be ready.
CHARLES TURNER, JOHN KEYNES, } Hon. Secs.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY LIMITED supply every requisite for the Farm and the Garden.
Registered Offices, Union Road, Plymouth.

TO DISTILLERS AND AGRICULTURISTS.
FRESH IMPORTED WHITE SILESIAN SUGAR BEET SEED may be had genuine (if ordered early) of Messrs. SUTTON & SONS, Seed Growers and Importers, Reading, Berks.—Price reduced to 9d. per lb., or cheaper by the cwt.

DIOSCOREA BATATAS.—Fine roots, 9 to 12 inches long, 5s. per dozen; extra size, 10s. per dozen.
BASS & BROWN, Seed Growers, &c., Sudbury, Suffolk.

DIOSCOREA BATATAS—CHINESE YAM.
WM. CUTBUSH AND SON beg to intimate that now is the best time for planting the above. Good Sets, 2s. per 100: or 4s. per doz.—Highgate Nurseries, London, N.

CHINESE POTATOES (DIOSCOREA BATATAS) for planting this month. Large sets (from full-sized, well-matured tubers, some of them weighing over 2½ lbs., grown in this country) 2s. 6d. per dozen.—Apply, WM. LEMON, Sandbach, Cheshire.

DIOSCOREA ROOTS AND SETS.
MESSRS. SUTTON'S DIOSCOREAS, which they are sending out at 5s. per doz., contain six or more sets each.
Instructions for planting are sent with the roots. Early orders necessary for strong roots.
Royal Berkshire Seed Establishment, Reading.

SORGHUM, OR HOLCUS SACCHARATUS.
SUTTON AND SONS, Importers of this Seed, can supply it wholesale and retail, warranted the true kind, and good growing Seed, at reduced price, according to quantity required. 8 lbs. per acre sufficient. Instructions on cultivation sent with the Seed.
SUTTON & SONS, Royal Berks Seed Establishment, Reading.

HOLCUS SACCHARATUS, or North China Sugar-Cane.—Pamphlet, "A Visit and a Plant;" the only English authority on the Cultivation of the above. Post free 6d. Prices of Seed on application. Samples 6d. Four varieties of Holcus remitted free by post on receipt of 10s.
CHINESE YAMS, 4s. per dozen.
ASPARAGUS plants, 16s. per 1000.
JOHN W. CLARKE, Whittlesea, Cambridgeshire.

500 BUSHELS of FLUKE and WHITE BLOSSOM SEED POTATOES, true, free from disease, and suitable sizes, at 3s. 4d. the bushel of 80 lbs., samples of which may be had on application to Mr. WM. GROSVENOR, Prospect Nursery, Cheddleton, near Leek, Staffordshire.
A remittance or reference from unknown correspondents.

100,000 BEDDING PLANTS, the cheapest place in England. Catalogue sent for one stamp.—J. PYLE, St. John's Nursery, Upper Holloway, London.

DOWNIE AND LAIRD beg to offer the following, which they warrant all fine show varieties, viz.:—
100 Pansies, in 25 sorts .. 30s. | 100 Hollyhock seedlings
100 Hollyhocks, in 25 do. 8s. | from finest named vars. 20s.
100 Phloxes in 30 varieties, 40s.
Selection of the above left to D. & L. A liberal allowance to the Trade.—17, Frederick Street, Edinburgh.

SKIRVING'S SWEDE—SUTTON'S SELECTED STOCK.
SUTTON AND SONS have a choice stock of SKIRVING'S SWEDE SEED, growth of 1858, which they can strongly recommend. Price 9d. per lb., or cheaper by the bushel.—Royal Berks Seed Establishment, Reading.

THE ALSIKE CLOVER.—This valuable but scarce Clover Seed is included in Messrs. SUTTON'S mixtures of Clover and Grass Seeds for permanent pasture and for alternate husbandry. It can be supplied alone if required. Price fluctuating, to be had on application.
Royal Berks Seed Establishment, Reading.

TROPÆOLUM CANARIENSE.
CHARLES ALEXANDER, SEEDSMAN, Edinburgh, offers New Seed of the above at 20s. per lb., and 1s. 6d. per ounce.

NEW ZEALAND RUNNER BEAN.—Price 2s. per quart.—JAS. CARTER & Co., Seedsmen, 238, High Holborn, London, W. C.

NEW ZEALAND RUNNING BEAN.—Packets of 12 Seeds, for 14 stamps.
BASS & BROWN, Seed Growers, &c., Sudbury, Suffolk.

GRAYSON'S GIANT ASPARAGUS.—Fine 2-year roots, 2s. 6d. per 100; or 21s. per 1000.
" 3-year " 3s. 6d. " 100; or 30s. " "
The usual allowance to the Trade.
BASS & BROWN, Nurserymen, Sudbury, Suffolk.

CUSTARD MARROW.—The improved variety, 18 Seeds for 13 stamps, or nine Seeds for seven stamps, free by post. See drawing of this productive and handsome variety in *Gardeners' Chronicle*, Jan. 29 and Feb. 12.
BASS & BROWN, Seed Growers, Sudbury, Suffolk.

CAULIFLOWER PLANTS for Pricking out, 5s. per 1000; ASPARAGUS, 2 years, 15s. per 1000; LETTUCE, 2s. 6d. per 1000; and BEDDING PLANTS, 2s. per doz.
WALTER BIRD, Atherstone Nursery.

SPECIMEN GREENHOUSE AND STOVE PLANTS—See PRICED LIST in *Gardeners' Chronicle* of March 26, page 260, with description of sizes, &c. Also a LIST containing several others sent free by post.—BASS & BROWN, Seed and Nursery Establishment, Sudbury, Suffolk.

FERN CATALOGUE.
ROBERT SIM'S NEW DESCRIPTIVE AND PRICED CATALOGUE, No. 6 (62 pages) of his COLLECTION of BRITISH AND EXOTIC FERNS, can be had, post free, for 8 stamps. Gratis to all previous purchasers of Ferns.
Nursery, Foot's Cray, Kent, S.E.

NEW DAHLIAS.
JOHN KEYNES'S SELECT CATALOGUE OF DAHLIAS, ROSES, CARNATIONS, PINKS, &c., containing Lists of all the valuable Show Flowers in each class, is now ready and will be sent on application.
Castle Street Nursery, Salisbury.—April 16.

HENDON PARK NURSERIES, HENDON, N.W.
EDWARD SHENTON'S Descriptive CATALOGUE of new DAHLIAS, HOLLYHOCKS, PELARGONIUMS, BEDDING AND BORDER PLANTS, and the leading New Flowers of the season 1859. For warded on application.

TO THE READERS OF THE "GARDENERS' CHRONICLE."
CHEAP GREENHOUSE AND BEDDING PLANTS.
J. SLIPPER'S CATALOGUE is now ready, and may be had for a postage stamp.
Villa Nursery, Camden Town, London, N.W.

FINEST SHOW CARNATIONS, PICOTEES, PINKS, &c.
CHARLES SCHOFIELD has a fine healthy stock of the above for sale at 6s., 12s., and 20s. per dozen pairs. Also PANSIES, DAHLIAS, VERBENAS, FUCHSIAS, &c. CATALOGUES now ready, sent free on application.—Knowsthorpe, near Leeds, Yorkshire.

GOLDEN CHAIN GERANIUMS.
WILLIAM HUSSEY begs to offer the above at 4s. per doz., or 30s. per 100. Also several thousand Seedling HOLLYHOCKS, raised from a fine named Collection, at 2s. per doz., or 12s. per 100.—Horticultural Gardens, Norwich.

CHOICE SHOW AND FANCY GERANIUMS 6s. to 9s. per dozen. Also FUCHSIAS, CALCEOLARIAS, VERBENAS, PANSIES, &c. Catalogues on application to GEORGE SMITH, Florist, Seedsman, &c., Common Side, Hurdsfield, Macclesfield.

NEW VERBENAS.
CHARLES TURNER is now sending out Edmonds's fine new varieties. For particulars, see Catalogue.
The Royal Nurseries, Slough.

PANSIES.—The best and most distinct kinds, extra fine show varieties, 6s. per dozen.—DODWELL & BAYLEY, Bradshaw Gardens, Chadderton, Manchester.

BELGIAN DAISIES.—In the finest variety, 4s. per dozen.—DODWELL & BAYLEY, Bradshaw Gardens, Chadderton, Manchester.

CARNATIONS.—Twenty-five pairs strong, well rooted, and extra fine show varieties, named 1l., packing and hamper included.—DODWELL & BAYLEY, Bradshaw Gardens, Chadderton, Manchester.

PICOTEES.—Twenty-five pairs strong, well-rooted plants, and extra fine show varieties, named, 1l., packing and hamper included.—DODWELL & BAYLEY, Bradshaw Gardens, Chadderton, Manchester.

PINKS.—Twenty-five pairs fine named kinds, in strong healthy plants, 10s., packing and hamper included.—DODWELL & BAYLEY, Bradshaw Gardens, Chadderton, Manchester.

PHLOXES.—The best and most distinct kinds, strong plants, well established, 8s. per dozen.—DODWELL & BAYLEY, Bradshaw Gardens, Chadderton, Manchester.

FIVE FIRST-RATE BROCCOLIS FOR SUCCESSION.

	s.	d.	
WALCHEREN, for Aug. to October produce ..	3	0	per oz.
HAMMOND'S WHITE CAPE, Sept. to Nov. ..	2	6	"
MITCHINSON'S PENZANCE, Feb. and March	5	0	"
DILCOCK'S BRIDE, for April	1	0	"
THE GIANT, late white, for May and June ..	2	0	"

A ¼ oz. packet of each free by post for 3s. 6d. in postage stamps.
BASS & BROWN, Seed Growers, Sudbury, Suffolk.

THE PRIMULARY.
THOS. WILD respectfully reminds his friends that April and May is the season for sowing CHINESE PRIMROSES. Mixed colours, 2s. 6d. per packet. Separate colours sold out.—THOS. WILD, The Primulary, Ipswich.

LILIES OF THE VALLEY.—A few thousand roots to be sold, 1s. per 100, or 8s. per 1000.—Apply to Mr. HARRISON, Oatlands Palace Garden, Weybridge. Applications per Post-office Order or stamps will only be attended to.

NEW BLACK WALLFLOWERS.
J. LOCKHART, FLORIST and SEEDSMAN, Parson's Green, Fulham, near London, is sending out Seed of his new Single BLACK WALLFLOWER, in sealed packets, containing 50 Seeds each for 13 stamps, and Cuttings of his new Double Black Wallflower 30 stamps each, free by post.

THE BEST TIME FOR PLANTING ASPARAGUS AND SEAKALE.
YOUELL AND CO. having a large Stock of the above growing on the Sea Coast, of the finest quality, beg to offer it at the following prices:—
ASPARAGUS, GIANT, two years .. 2s. 6d. per 100.
" three years .. .. 3s. 6d. "
SEA KALE .. .. 6s. 0d. "
Royal Nursery, Great Yarmouth Norfolk.

H. AND R. STIRZAKER have again to offer several millions of extra fine CABBAGE PLANTS:—Drumhead Cattle, 2s.; Early, of sorts, 3s.; Red, for pickling, 5s.; Cauliflower, Early London, 25s. per 1000.—Lancaster Nurseries.

NEW YELLOW ROSE, "MADAME WILLIAM."—This beautiful new Rose was exhibited by A. PAUL & SON, at the Royal Botanic Society's Gardens, in the Regent's Park, on Wednesday, the 6th inst., and awarded a Certificate of Merit. Price 7s. 6d. the pair, package and carriage to London included.—A. PAUL & SON, Nurseries, Cheshunt, Herts.

CONIFERÆ.
A. PAUL AND SON have a large stock of the above, very handsome, in fine order for removal, many suited for immediate effect. For particulars see Advertisements in *Gardeners' Chronicle* of November and December last.—Nurseries, Cheshunt, Herts.

JOHN GRIGOR AND CO., NURSERIES, Forres, beg to offer true Native Highland SCOTCH FIR SEED, grown in the celebrated Natural Forests of Strathspey, at 2s. 6d. per packet, post free, or for stamps of that value.
The Trade supplied at Wholesale Prices.

TO BE SOLD, a LARGE quantity of YEW TREE BUTTS, SLABS, and ROOTS; also a fine YEW TREE of great age. The best SEA SHELL and GARDEN GRAVEL for Conservatories and Garden Paths, to be had in any quantity at Gravel Wharf, 67, Augustus Street, Regent's Park Basin.
W. HOLLAND, Proprietor.

SEEDS! GENUINE SEEDS.—For the RIGHT SEEDS at the RIGHT PRICE, go to the RIGHT PLACE, which is G. W. DIXON'S New Seed Warehouse, 48 A, Moorgate Street, London, E.C. All sorts of Garden, Grass, Agricultural, and Flower Seeds, wholesale, retail, and for exportation.

TO THE SEED TRADE.
THOMAS AYRES, JUN., SEEDSMAN and GROWER, Biggleswade, Beds., can supply every kind of Wurzel, Swede, and common Turnip Seeds, on the most reasonable terms for cash.
N.B. Dealer in Culinary and Flower Seeds, Fruit Trees, Shrubs, and Flowering Plants.

SPERGULA PILIFERA.—A perfect substitute for GRASS LAWNS WITHOUT MOWING.—A two years' established Plant, showing its character, sent Post free on receipt of 2s. 6d. or 30 stamps.
Address JOHN SUMMERS, Gardener, Forest Hill, Sydenham.

PAMPAS GRASS (GYNERIUM ARGENTEUM).—The beauty of this extraordinary plant has this season been fully appreciated. It can be supplied by the dozen, hundred, or thousand, by CHARLES NOBLE, Bagshot, Surrey.

JOHN CULVERWELL, Taunton, begs to call the attention of Agriculturists to his superior selection of GRASS SEEDS, which for PURITY, change of SOIL, and CLIMATE, will bear comparison with any house in the kingdom. Prices, terms, and samples forwarded on application.

GIANT SAINFOIN SEED.—Seed of this excellent and productive Plant may be had of RAYNBIRD & HARVEY, Basingstoke, and 89, Seed Market, Mark Lane. Samples and prices on application.
N.B. R. & H. can also supply Common Sainfoin both of English and French growth at market prices.

HUDSON'S GOLDEN MELON BARLEY.—Selected Samples for Seed of this most valuable variety, superior both for produce and malting quality, may be had of RAYNBIRD & HARVEY, of Basingstoke; and 89, Seed Market, Mark Lane, E.C.

THE EARLIEST PEA.—DUNNETT'S FIRST EARLY is in every respect superior to "Daniel O'Rourke," being several days earlier, having finer pods, and richer in flavour, height 2½ feet. For an early dish of fine-flavoured Peas we can confidently recommend this; 2s. per quart.
CHAMPION CABBAGE, the earliest and best sort, if sown in succession, may be had fit for table throughout the year. 8d. per ounce, or 1s. post free.
BUTLER & MCCULLOCH, Covent Garden Market, London.

GARDENERS' CHRONICLE NEWSPAPER STAMP PENNY

THE GREAT VINE AT HAMPTON COURT.

THE SUBSCRIBERS being the holders of the Royal Kitchen Gardens, Hampton Court, are enabled to offer genuine the famous and truly excellent HAMPTON COURT BLACK HAMBURGH GRAPE.

Strong well-ripened plants in 9-inch pots, 42*s.* and 60*s.* per doz.

If purchased in large numbers a considerable reduction will be made in price.—JACKSON & SON, Nurseries, Kingston, S.W.

STRONG BLACK HAMBURGH VINES.

THOMAS METHVEN has on hand a large stock of strong well ripened BLACK HAMBURGH VINES, which he begs to offer at 3*s.* 6*d.* each or 36*s.* per dozen. The usual discount to the Trade.

Stanwell and Leith Walk Nurseries, Edinburgh.—April 16.

AZALEA INDICA.

J. IVERY AND SON beg respectfully to invite growers of the above named to an inspection of their unrivalled Stock of Young Specimens of all the newest and best varieties, many of which have been exhibited at the Metropolitan Exhibitions. They are clean and healthy, well set with bloom, and moderate in price. Catalogues forwarded post free upon application.—Dorking Nursery, April 16.

SEEDLING FUCHSIAS.

GEORGE WHEELER, NURSERYMAN, &c., Warminster, Wilts, respectfully announces that strong plants of his SEEDLING FUCHSIAS will be ready to be sent out on and after the 20th inst.

SIR COLIN CAMPBELL. — The most beautiful double Fuchsia ever offered. Flower very large; tube and sepals dark scarlet. Corolla very prominent, large, full, and regular, and of a beautiful purple colour; a fine variety for exhibition, possessing the desirable property of holding its blooms much longer than other varieties; its large blooms makes it a very conspicuous and effective plant in a collection. Price 10*s.* 6*d.* each. Sir Colin was shown in full bloom at the Trowbridge Horticultural Exhibition the 18th August, at Bath on the 25th, Salisbury, 30th; at the National, in London, on the 2d September; and at Devizes on the 3d; at all which places it obtained Prizes or Certificates.

WILTSHIRE LASS.—Tube and sepals clear waxy white, corolla rich dark puce; an improvement on the Maid of Kent, the flower being larger, of good habit, a free bloomer, and a good grower. Price 5*s.* each. The usual discount to the Trade.

G. WHEELER will be enabled to send out with the above the six new Fuchsias offered by Mr. G. Smith, of Tollington Nursery.

G. WHEELER has on hand a large quantity of RHODODENDRONS from 9 inches to 2 feet, at very moderate prices.

LODGE'S NEW HYBRID RHODODENDRON, "COUNTESS OF WILTON," the best and hardiest Rhododendron in cultivation.—This splendid Hybrid Rhododendron was raised from seed by the late William Lodge. The habit of this variety is entirely distinct from any other, and is the most vigorous of its class. The foliage is a beautiful olive green, of a large size, and a thick leathery appearance. The flower is a rich crimson, good form, being well cupped, of large size, and a very large truss, standing out boldly from the foliage. It is the hardiest variety of its class, having stood in an exposed situation the severest winters, without the slightest injury, with no protection whatever, while other varieties have been killed.

It possesses a very great advantage in flowering late, a desideratum much wanted in the high coloured Rhododendrons, as the other kinds are always injured by the late frosts and cold winds.

It has been exhibited at the Manchester Botanical Exhibition, and obtained a first-class certificate of merit, also a label of commendation by the judges.

The Executors of the late William Lodge have great confidence in introducing this variety to the public, and feel assured it will become a general favourite.

Strong bushy plants are now ready, from 2 to 4 feet high at One and a Half, Two, and Three Guineas each, in proportion to the size. A considerable reduction when a quantity is taken.

As the demand is great, early orders are necessary to ensure well-budded plants.

The following Nurserymen are Agents for the sale of it:—and from whom plants may now be had.

Messrs. WILLIAM ROLLISSON & SONS, Tooting, near London;
Messrs. E. G. HENDERSON & SON, St. John's Wood, London;
Mr. JOHN WATERER, Bagshot, Surrey;
Messrs. WILLIAM WOOD & SON, Maresfield, Sussex;
Messrs. THOMAS JACKSON & SON, Kingston, Surrey;
Messrs. BENJAMIN REID & Co., Aberdeen;
Mr. JOHN KEYNES, Salisbury.

A remittance or reference is required from unknown correspondents. Post-office Orders made payable to JAMES LODGE, Park Nurseries, Singleton Brook, Broughton, Manchester.

CHOICE STOVE AND GREENHOUSE PLANTS AT LOW PRICES.

The following 30 CHOICE STOVE PLANTS, fine, strong, and in vigorous condition, are offered together for 55*s.*, viz.:—Æchmia fulgens longifolia, Æschynanthus splendens, Aphelandra variegata, A. Leopoldi, A. squarrosa citrina, Barbacenia Rogieri, Begonia manicata, B. albo-coccinea, Cyrtanthera magnifica, Dracæna nobilis, Eschites Pelleri, Eucharis amazonica, Franciscea confertifolia, Gardenia Fortuni, Gesneria Geraldiana, G. zebrina, G. Suttoni sub-alba, Gloriosa Planti, Hexacentris mysorensis, Hoya bella, H. cinnamomifolia, H. carnosa, H. picta, Maranta sanguinea, Meyenia erecta, Passiflora alba nigra, Stephanotis floribunda, S. Thouarsi, Thyrsicanthus rutilans, and Vinca alba. Any 20 of the above may be selected for 45*s.*, or any 12 for 35*s.*

The following 50 CHOICE GREENHOUSE PLANTS, very strong and fine plants, are offered together for 65*s.*, and 25 may be selected for 45*s.*, or any 12 for 25*s.*, viz.:—Acacia hispidissima, A. verticillata, A. armata, Boronia macrophylla, Bossiæa Hendersoni, Brachysema acuminata, Cereus Macdonaldi, Chorozema cordatum splendens, C. varium rotundifolium, Chironia glutinosa, Chorozema Chandleri, Coronilla glauca, Correa brilliant, Daphne indica rubra, D. Van Houtti, D. Fimiæna, Dillwynia cinnabarina, D. Henchmanni, Dracophyllum gracile, Diosma fragans vera, D. uniflera, Eriostemon intermedium, E. buxifolium, E scabrum latifolium, Eugenia Ugni, Gaultheria coccinea, Hibbertia Reedi, Indigofera decora, Isolepis gracilis, Kennedya ovata alba, K. monophylla, K. Marryattæ, K. nigricans, Mandevilla suaveolens, Metrosideros laxifolius, Mitraria coccinea, Nerium Tangle, Platylobium trianulare, Pimelea decussata, P. Nieppergana, Pernettya mucronata major, Pultenæa Hendersoni, Scutellaria scarletina, Solanum jasminoides, Stylidium graminifolium, Stauntonia latifolia, Swainsoni Osborni, Tecoma jasminoïdes, Telopea speciosa, and Tetratheca verticillata.

Selections from the foregoing, when left to B. & B., will be charged as follows:—

Stove plants, 20 varieties	.. ..	40*s.*
,, 12 varieties	.. ..	24*s.* to 35*s.*
Greenhouse plants, 25 varieties	..	35*s.*
,, 12 varieties	..	18*s.* to 25*s.*

BRITTAIN'S NETTING and SHAW'S TIFFANY at the manufacturers' prices; also the GISHURST COMPOUND for the destruction of Red Spider, Thrip, Mealy Bug, Scale, &c.

Goods (20*s.* and upwards) free to all Stations in London, or all Stations between London and Norwich, on the Colchester Line.

BASS AND BROWN, SEED and NURSERY ESTABLISHMENT, Sudbury, Suffolk.

UNBLOOMED SEEDLING CALCEOLARIAS.

MR. HENRY MAJOR, Knosthorpe, near Leeds, begs to announce that his Unbloomed SEEDLING CALCEOLARIAS will be ready to send out the last week of this month, at 6*s.* a parcel of 20, or three parcels for 15*s.*, post free. They are the produce of his unrivalled collection, and will bloom this year. Postage stamps in payment, or Post-office Order when the amount is 15*s.*

Choice CALCEOLARIA SEED, 2*s.* 6*d.* per packet.

SEED CORN FROM THE CHALK.

MESSRS. RAYNBIRD AND HARVEY beg to offer to Agriculturists requiring change of SEED Talavera, Red Nursery, and April WHEAT the best sorts for Spring sowing.

Chevalier, Thanet, Golden Drop, Long-eared Nottingham, American, Hudson's Golden Melon, Banham's Sprat, and other varieties of BARLEY.

Canadian Potato, Hopetoun, Poland, and Tartarian OATS.

Fine CLUSTER BEANS, weighing 68 lbs. per bushel.

Samples and Prices on application.

Address—Basingstoke, and 89, Seed Market, Mark Lane, London, E.C.

HOLLY HEDGING.

EDWARD SANG AND SONS, Kirkaldy, N.B., beg to offer a quantity of fine twice transplanted HOLLIES, 15 to 18 inches high, at 15*s.* per 100, and 9 to 15 inches at 10*s.* per 100. These are just recovering from the second transplanting in 1857, and are therefore in good condition for removal. E. S. and S. have also a lot of once transplanted of the same heights, at 50*s.* and 40*s.* per 1000. The last are finer looking than the twice transplanted, but have of course inferior roots. Also a few hundreds of very fine twice transplanted, 18 to 30 inches at 20*s.* per 100. Carriage paid to Edinburgh.

CYNERIUM ARGENTEUM, OR PAMPAS GRASS.

JOHN CATTELL has the gratification of offering two distinct and superb varieties of this highly ornamental Grass, raised from proved specimens; he is now sending them out, numbered 1 and 2. The number of plants is very limited.

No. 1 has a majestic habit, sending up its flower stems 8 to 11 feet. A good quantity of the centre leaves rise to a considerable height among the flower stems before recurving, while the outer leaves gracefully bend to the ground in great abundance, giving the whole a most noble appearance.

No. 2 in habit is altogether different; the leaves all recurve at about the same distance, so that the flower stems, which rise from 5 to 7 feet, are free from leaves at about 3 feet from the ground. The heads of flower are larger and more feathery, and about a fortnight earlier than No. 1.

Strong plants, in pots, of both, 3*s.* 6*d.* to 5*s.* each.

Strong plants of improved seedlings, 1*s.* 6*d.* to 2*s.* 6*d.* each.

ALSO,

Gladiolus brenchliensis, extra fine deep scarlet, sound bulbs, to flower this season, 1*s.* each, 10*s.* 6*d.* per dozen, or free by post, 12*s.* per dozen.

New Gladiolus, for open ground culture, in 12 magnificent varieties, fine flowering bulbs, 18*s.*

Tigridia conchiflora, 2*s.* per dozen.

Geranium, new variegated, Bijou, each, 2*s.*; per dozen, 21*s.*
,, new Perfection ,, 2*s.* ,, 21*s.*
,, new Shottesham Pet ,, 2*s.* ,, 18*s.*
,, new St. Clair .. ,, 1*s.* 6*d.* ,, 12*s.*

SEEDS OF RARE PLANTS.

	Per pckt.—*s.*	*d.*
Aquilegia Whitmanni, hardy, height and colours the same as glandulosa, and grows very freely	0	3
Amaryllis (hippeastrum), fine, mixed	1	0
Alstrœmeria acutifolia, scarlet, greenhouse climber ..	1	0
Calceolaria, from large flowered varieties, of the richest colours	2	6
,, second quality	1	6
Cineraria, from extra fine new varieties	2	6
,, from extra fine older varieties	1	6
Campanula grandiflora, hardy, the finest of all Campanulas	0	3
Geranium, from finest new French and Florist vars., mixed	1	0
Gaillardia grandiflora, extra fine	1	0
Hovea Celsi	1	0
Lilium giganteum	1	0
Linum grandiflorum, or rubrum	0	6
Maurandya Barclayana major	1	0
Nasturtium Scheuermannianum, with crimson marks ..	0	6
,, ,, with scarlet marks ..	1	0
Poppy, new tall Carnation striped	0	6

A remittance or reference is expected from unknown correspondents.

Nursery and Seed Establishment, Westerham, Kent.

PLOCOSTEMMA LASIANTHUM (BLUME). — Amidst the prevalent scarcity of novelties of sterling merit, it is with pleasure the Subscribers invite attention to the above-named plant. It belongs to a new genus closely allied to Hoya; and the present species was received in 1857 from Mr. HUGH LOW, Jun., by whom it was discovered on the north-western side of the Island of Borneo. The plant, which is not a climber, presents a noble appearance, having exceedingly handsome foliage; and it possesses a very great recommendation in being a most profuse bloomer, the clusters of flowers being produced in great numbers. The flowers are of waxy consistence, like Hoya—colour, orange; the petals reflex until they become quite perpendicular, and rest on the flower-stalk; the lower part of the petals is entirely covered with a snow-white velvety pubescence, giving them an unusually beautiful appearance. The flowers are fragrant, and 14 have expanded in one cluster on a newly imported plant, which was submitted to the inspection of Sir W. J. Hooker, of Kew, by whom it is figured and described in the November number of the "Botanical Magazine." It is also figured in the "Florist." Plants in May, price 63*s.* each. Usual discount to the Trade.

HUGH LOW & Co., Clapton Nursery, London, N.E.

NEW DOUBLE PETUNIAS.

C. W. HARGRAVE begs respectfully to announce that he will shortly be prepared with STOCK of the NEW DOUBLE PETUNIAS advertised by him in the *Gardeners' Chronicle* of September 25, 1858.

They constitute a unique collection in themselves, being of exquisite form, firm substance, rich and decided in colour, very fragrant, and of first-rate habit, having good guard petals, with the centres well filled, and in fact are superior to the Continental or other varieties hitherto sent out. Their nomenclature is as follows:—

ROSETTE.—Crimson, very double, dwarf habit.
ROSEA ALBA.—Rose clearly mottled with white.
PURPLE KING.—Large flower, well formed.
CRIMSON GEM.—Bright crimson, with white centre.
ALBA MAGNIFLORA.—Beautiful form, very fragrant.
KING OF CRIMSONS.—Bright crimson, brighter than its parent "Crimson King." The varieties previously introduced as crimson have all proved themselves to be only purple.

Plants of any of the above 5*s.* each, or the set of six 25*s.*

It is requested that the Trade forward their commands at their earliest convenience, as all orders will be executed in the rotation in which they are received.

C. W. HARGRAVE, THE NURSERY, WINCHMORE HILL, N.

FARM SEEDS.

JOSEPH MAY AND CC. beg to offer the following, which have been selected from the best growers:—

	Per lb.—*s.*	*d.*
SKIRVING'S SWEDE TURNIP ..		
GREEN-TOP Do.	1	0
RED-GLOBE TURNIP	1	0
GREEN ROUND Do.	1	0
LONG RED MANGEL	0	9
YELLOW GLOBE Do.	0	9

A General LIST of SEEDS for the Farm, Flower, and Kitchen Gardens forwarded on application.

1, Wellington Street, Strand, Waterloo Bridge.

GENUINE AGRICULTURAL SEEDS.

MESSRS. DICKSON AND BROWN (late F. and A. Dickson & Co.), 43 and 45, Corporation Street, Manchester, beg to intimate that they are now ready to execute all orders with first-class AGRICULTURAL SEEDS, most of which have been saved by themselves or under their own superintendence.

Special prices for large quantities on application. A PRICED CATALOGUE is published, and may be had post free.

Manchester.—April 16.

TO THE TRADE.

CHARLES SHARPE has still to offer, of his own growing, saved from the finest selected stocks—

LONG RED MANGEL	RED LINCOLNSH. GLOBE TURNIP SEED
YELLOW DO.	GREEN GLOBE DO.
YELLOW GLOBE DO.	YELLOW TANKARD DO.
ALTRINGHAM CARROT	

Prices given on application.—Wisbeach, Cambridgeshire.

NEW HARDY WHITE SWEDE.—This Swede is hardier than any other kind, grows to a large size, is adapted for sowing upon poor land, is not affected by frost, and keeps good in the ground or in store till the end of May. New and genuine Seed of this excellent Swede, price 1*s.* per lb. (carriage free for orders of 80 lbs. and upwards) may be had of RAYNBIRD & HARVEY, Seedsmen, Basingstoke; and 89, Seed Market, Mark Lane, London, E.C.

SELECTED SWEDES.

BROWNE'S WHITE SWEDE, Green-topped, is the hardiest known, and by far the best keeper, while for size, solidity, and nutritious matter it is unsurpassed. The seed is from the stock of T. Beale Browne, Esq., of Salperton Park, Gloucestershire, to whose assiduous care and attention during a series of years we owe the perfection of this invaluable root. 1*s.* per lb.

MARSHALL'S IMPROVED SKIRVING'S SWEDE. A very superior Swede, being large, almost globular, and of extraordinary firmness. The seed cannot be too strongly recommended, as every bulb it was saved from has been selected carefully. 1*s.* per lb. and other varieties 9*d.* to 1*s.* per lb.

MANGEL WURZEL, all kinds, 9*d.* per lb. and all kinds of seeds requisite for the Farm, Prices and Catalogues of which may be had on application.

CHARLES TURNER, The Royal Nurseries, Slough.

SUTTON'S PRIZE MANGEL AND SWEDE SEED. THE BIRMINGHAM PRIZES.

At the Great Root Show at Birmingham in December last (as in former years), the principal Prizes for Swedes, Mangels, and other Roots were awarded to Messrs. SUTTON'S Customers, viz.:—

The Rev. THOMAS STEVENS	RICHARD BENYON, Esq.
JOHN B. STARKEY, Esq.	Mr. WM. HORSBURGH
GEORGE B. MORLAND, Esq.	Mr. GEORGE MANGLES

GEORGE MACKENZIE KETTLE, Esq.

Also EIGHT 25 GUINEA CUPS from H.R.H. the PRINCE CONSORT for the best 5 acres of Swedes at each of Eight Agricultural Meetings in East Berks and South Bucks. At all of these there was great competition, and in every instance the CUP was awarded to SUTTON'S CHAMPION SWEDE. Also many other distinguished Prizes in Berkshire and other Counties. SUTTON & SONS are now sending out the Seed at 1*s.* per lb. for Champion Swede, and 9*d.* for their choice Mangel Wurzel, or cheaper by the bushel and cwt. Early orders necessary.—Royal Berkshire Seed Establishment, Reading.

THE SWEDE WHICH NEVER MILDEWS.

SUTTON'S CHAMPION SWEDE has again gained the TWO 25 GUINEA CUPS presented by H.R.H. The PRINCE CONSORT to the Royal East Berks and the Royal South Bucks Agricultural Associations, making Eight Twenty-five Guinea Cups at these two Societies.

This is the heaviest cropper and most certain, as it rarely (*if ever*) suffers from mildew, and has entirely escaped the ravages of the fly during the last two years in which these pests were so prevalent. Price 1*s.* per lb., or cheaper by the bushel.

SUTTON & SONS, Seed Growers, Reading, Berks, have at present a good stock of seed of the above. Early orders are requested to prevent disappointment.

Royal Berkshire Seed Establishment, Reading.

TO MANGEL GROWERS.

SUTTON'S ELVETHAM MANGEL WURZEL AND SELECTED YELLOW GLOBE.—These two sorts of Mangel are still preferred to all others by the principal root growers throughout the kingdom.

SUTTON & SONS have some fine SEED of each sort saved from large Roots, price 9*d.* per lb., or cheaper by the cwt.

Royal Berkshire Seed Establishment, Reading.

750 BEDDING PLANTS for 7*l.* including basket and packing, or one half for 3*l.* 15*s.*

20 Anagallis, 2 sorts	25 Lobelias, 6 sorts
12 Ageratum, 3 sorts	50 Hollyhocks, Seedlings
50 Calceolaria, 6 sorts	12 Koniga
12 Celsia, 2 sorts	12 Nierembergia
50 Chrysanthemums, 50 sorts	12 Œnotheria riparia
12 Cupheas, 3 sorts	50 Petunia single, 25 sorts
50 Dahlias, 50 sorts	50 do. double, 25 sorts
50 Fuchsias, 50 sorts	20 Salvias, 6 sorts
50 Geraniums, Scarlets &c., 50 sorts	12 Senecio, double purple
	20 Tropœolum, 6 sorts
50 do. Variegated, 12 sorts	12 Variegated Mint
20 Heliotropes, 12 sorts	100 Verbena, 100 sorts

Apply to J. SCOTT, Merriott Nurseries, Crewkerne, Somerset. Post-Office Order on Crewkerne, or crossed cheques from unknown Correspondents. Catalogues on application, for two stamps.

GOLD AND SILVER FISH.—Upwards of 100,000 always on hand at from 4*s.* to 9*s.* per doz., and 2*l.* per 100. An immense quantity of Worked Azaleas, just arrived, coming into full beauty, others not so forward, at 18*s.*, 21*s.*, and 24*s.* per dozen; Camellias, 18*s.*, 21*s.*, and 24*s* per dozen; Orange Trees coming into bloom, and some with fruit and bloom, 2*s.* 6*d.*, 3*s.* 6*d.*, and 6*s.* each; a large collection of Foreign and British Ferns, and every other kind of Greenhouse Plants, Nursery Stock, &c., at reasonable prices. Ash-leaf Kidney Potatoes, 7*s.* per bushel; Dwarf Kidney Beans and Scarlet Runners, 1*s.* per quart; Virginian Stock, Candytuft, Mignonette, 3*s.* per lb., or 4*d.* per oz.; Nemophila, 3*s.* 6*d.* per lb. or 4*d.* per oz., and every other sort at light prices.

Illustrated Catalogues may be had on sending 7 stamps. The 6*d.* will be returned to purchasers of not less than 5*s.* worth.

ROBT. GREEN, 154, Kingsland Road, 55 doors from Shoreditch Church.

NEW SEEDS FOR 1859.

WM. CUTBUSH AND SON beg respectfully to intimate that their PRICED CATALOGUE OF VEGETABLE AND FLOWER SEEDS, &c., is now ready post free on application. WM. C. AND SON devote particular attention to this department of their business, and most of the choicer kinds of culinary seeds and roots are saved under their own inspection, and they can confidently guarantee the quality of all offered.—Highgate Nurseries, London, N. Established A.D. 1695.

RHODODENDRONS.

JOHN WATERER'S CATALOGUE OF UNRIVALLED HARDY SCARLET AND OTHER CHOICE RHODENDRONS, as Exhibited by him at the Royal Botanic Gardens, Regent's Park, London, is published, and will be forwarded on application.

☞ This List is recommended as a work of reference, as it contains accurate descriptions of all the esteemed varieties.

The American Nursery, Bagshot, Surrey, near the Sunningdale Station, South Western Railway.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Stove, Greenhouse, and Hardy Ferns, Miscellaneous Stove, Greenhouse, and Hardy Plants, Variegated and Ornamental foliaged Plants, Conifers, Roses, Rhododendrons, Indian Azaleas, Gloxinias, Fuchsias, Cactuses, &c., is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

GERMAN AND OTHER FLOWER SEEDS, VEGETABLE, AGRICULTURAL SEEDS, ETC.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their new PRICED and DESCRIPTIVE CATALOGUE in which is enumerated every novelty of proved merit, also all the best of the older kinds, is now published, and will be forwarded post free on application. Their whole stock has been selected from the best English and Foreign sources, and every kind is warranted true to name, and of the finest possible quality.—Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

GERANIUMS. — Fine, well-established flowering plants of showy, free blooming kinds in great variety, may be had at 4s., 6s., and 9s. per dozen, according to size and quality. The following are some of the sorts:—Albira, Alma, Auguste Miellez, Carlos, Colonel Foissy, General Eugene, Cavaignac, Gustave Odier, Hortensia, Jacques Duval, Generalissimo, Eugenie Duval, Madame Lamoriciere, Mochanna, Mr. Beck, Crimson King, Robert Bruce, &c.

WOOD & INGRAM, Huntingdon.

NEW VARIEGATED GERANIUMS.

JANE (LENNOX).—This has an equal and fine variegation, with a profusion of fine deep scarlet flowers; the truss is large, and the flower of good shape and substance; a free growing variety. It has been exhibited this spring at the first meeting of the Royal Botanic Society, and received a Certificate of Merit. The plants are now full of bloom. 7s. 6d.

PICTURATA (CONSTANTINE).—Foliage novel and remarkable. It has white edges with a broad ring or zone of shaded crimson and pink, the centre of each leaf being green, with small scarlet trusses of bloom. 7s. 6d.

CHARLES TURNER, Royal Nursery, Slough.

DAHLIAS.

W. HOLMES offers the above in fine plants at 4s. per dozen, the new flowers of last year from 6s. to 9s. per dozen in April.

Chrysanthemums, 5s. per doz.	Verbenas, from 2s. 6d. to 4s. p. doz
Fuchsias, 4s. to 6s. ,,	Antirrhinums, 4s. to 6s. ,,
Heliotropes, 2s. 6d. ,,	Cupheas, 2s. 6d. ,,
Petunias, 3s. ,,	Calceolarias, 4s. ,,

Geraniums, Senecio, Lobelias, &c., equally cheap. Catalogues upon application free for one stamp.

Frampton Park Nursery, Well Street, Hackney.

NEW PHLOX AND PENTSTEMONS.

PHLOX COUNTESS OF HADDINGTON.—Light puce, dark violet eye, perfect form, distinct and fine.

PENTSTEMON TYNNINGHAMI. — Bright scarlet, bold flowers, close pyramidal spike, first-rate.

PENTSTEMON MRS. LEES. — Crimson purple, pure white throat, large spike, distinct and striking.

THOMAS METHVEN has much pleasure in offering the above first-class flowers, raised by Mr. Thomas Lees, gardener to the Earl of Haddington, Tynninghame, and allowed by all who have seen them to be decided acquisitions as show flowers. Strong plants 5s. each. Usual discount to the Trade.

Stanwell and Leith Walk Nurseries, Edinburgh.—April 16.

NEW PETUNIAS.

JOHN SEALEY can now supply the Seven Beautiful New Striped PETUNIAS, to which was awarded the first prize at the Bristol and Clifton Horticultural Society. J. S. has no hesitation in saying that they are the finest varieties in cultivation. The seven for 1l.

SPRING CATALOGUE OF DAHLIAS, HOLLYHOCKS, ROSES, &c., and of GARDEN AND AGRICULTURAL SEEDS may be had on application.—St. George's, near Bristol.

THE BEST DWARF GERMAN ASTER SEED

EVER YET OFFERED TO THE PUBLIC.

SAVED FROM FLOWERS THAT HAVE OBTAINED FIRST PRICES FOR MANY YEARS PAST AT VARIOUS EXHIBITIONS.

EDWARD TILEY begs to inform the lovers of the above beautiful flower, that he has just purchased the entire stock of Seed, which has been selected from the finest flowers as to shape, colour, and dwarfness of growth. They were inspected by many good judges while in bloom last season, who said they had never seen the Aster brought to such perfection before, and with such a dwarf habit. Seeds 1s. 6d. per packet, or two packets for 2s. 6d.

Extra fine mixed HOLLYHOCK SEED, saved from the newest and best varieties, 1s. per packet.

ANTIRRHINUM SEED, saved from spotted and striped sorts, 6d. per packet.

SWEET WILLIAM SEED, saved from 24 distinct varieties, the major part of which always flower double, 6d. per packet.

DELPHINIUM FORMOSUM SEED, extra fine, 6d. per pckt.

The IMPROVED BATH COS LETTUCE SEED, saved from the finest stock ever grown in the west of England; it is very crisp and not at all liable to run, 1s. 6d. per packet.

A small quantity of seed of the DWARF INCOMPARABLE CABBAGE —This is a superb variety for windy or cold situations; it will stand the severest winter, and will form good hearts much earlier than any other variety; it is very tender and soft when cooked, not having any large coarse ribs. If the seed be sown at several different times no person need be without good young Cabbage all the year. 1s. 6d. per packet A packet of the Improved Cos Lettuce and packet of the Dwarf Incomparable Cabbage, 2s. 6d.

DIGITALIS OR FOXGLOVE SEED, saved from the finest collection ever yet seen; the flowers come to an immense size, and are as handsome if not handsomer than the Gloxinias, 1s. per packet.

EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Church Yard, Bath.

A remittance must accompany all orders either in cash or penny postage stamps.

NEW ROSES FOR 1859.

WILLIAM WOOD AND SON are now executing their orders for all the best NEW ROSES of the present season. The plants are well grown, vigorous, and healthy, and are supplied at the lowest advertised prices.

DESCRIPTIVE LISTS of the above will be sent free on application. Early orders will command the strongest plants.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

ROSES FOR BEDDING,

BY THE DOZEN, THE HUNDRED, OR THE THOUSAND.

WILLIAM WOOD AND SON have now to offer many thousands of well grown healthy plants of ROSES, in 60 pots, which will be ready to plant out about the end of April, consisting of an immense number of the best Hybrid Perpetual, Bourbon, Tea, and Noisette Roses, Catalogues of which may be had free on application.

Early orders are most earnestly solicited, as the unsold portion of the stock will be planted out the first week in May. Extra plants presented with each order to compensate for distant carriage.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

THE BEST SEASON FOR BEDDING OUT ROSES.

WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

WM. WOOD AND SON respectfully submit that the months of April and May are the most eligible for planting out Roses from pots, for the purpose of forming groups in the Parterre and Rose Garden.

W. W. & Sons having on hand an immense Stock of many thousands, in pots, will be happy to supply them on the following reasonable terms.

Hybrid Perpetual Roses	9s. to 12s. per dozen.
Isle de Bourbon ditto	12s. to 18s. ,,
Tea-scented	12s. to 18s. ,,
China, Climbing and Noisette ditto ..	9s. to 12s. ,,

CATALOGUES sent post free on application.

Plants added to each order to compensate for distant carriage.

NEW HYBRID PERPETUAL ROSES FOR 1859.

E. P. FRANCIS offers the following NEW ROSES which he will be prepared to send out on and after the first week in May, at 5s. each. They have been carefully selected from amongst the numerous new French varieties:—

Anna Alexieff	Princess Olympie
Stephanie Beauharnais	Anna de Diesbach
Ambroise Verschaffelt	Beauté de Royghem
Imperatrice Eugénie	Comtesse Cecile de Chabrillan
Albert de Stella	De la Mothe
Virginale	François Arago
Altesse Impériale }	L'Oriflamme de St. Louis
Ardoisée de Lyon }	Lord Elgin
[These two splendid varieties were awarded the Gold Medal as Seedlings at Lyons.]	Madame Bruny
	Orderic Vital
Comte de Beaufort	Salomon
Docteur Bretonneau	Reine de la Cité
Empereur de Maroc	François 1st
Armide	Mignard
	Madame Jenny

Hertford Nurseries.

CHOICE ROSES IN POTS.

BIRCHAM AND WARD beg respectfully to inform the admirers of the Rose that they have a large stock of the following fine varieties, which enables them to offer as under (when a fair selection is made):—

15s. per dozen.

Alphonse Karr	La Belle Egarée
Belle Anglaise	Madame Damet
Baronne de Wassenaer (Moss)	Madame Charlet (B.)
Berceau Imperial	Madame Comtesse
Clemence Delarue	Madame Schmidt
Cardinal Patrizzi	Madame Vidot
Doctour Ruschpler	Miss Gray
Ernest Bergmann	Standard of Sebastopol
Gustave Coraux	Victor Trouillard
Lord Raglan	

20s. per dozen.

Abbé Feytel	Mademoiselle Claremont
Adelaide Pavie	Mademoiselle Nancy Dubor
Bernard Nantais	Mademoiselle Zoe Mayrel
Comte de Morny	Mademoiselle Alice Leroy
Candide	Mademoiselle Anais Lorette
Claudia Augustin	Monsieur Jard
Comtesse de Labarthe	Ma Ponctuée (Moss)
Duc de Malakoff	Philomène Crozy
Felix Peretti	Reine de Denmark
General Blanchard	Souvenir d'Elize
Lord Palmerston	Souvenir de Beranger
Madame Debesse	Triomphe de Rennes
Madame Vigneron	Thomas Rivers
Madame Heraud	Triomphe de Montrouge
Madame de St. Genet	Triomphe des Beaux Arts
Madame Elize de Chenier	Vallide (Moss)
Mademoiselle Josephine	

30s. per dozen.

Duke of Cambridge	Mousieur de Montigny
Evêque de Nimes	Madame Van Houtte
Gloire de Lyon	Marie Portemer
Louise d'Autriche	Mademoiselle Goddard
Lælia	Marie Thierry
Maximilian II.	Reine Blanche (Moss)

A Descriptive List of the above may be had on application. Carriage paid to London and Peterborough.

Hedenham Rosary, Bungay, Suffolk.—April 16.

PLANTS FOR THE FLOWER GARDEN.—The following may be had at the prices attached, and the plants are all fine and thoroughly established in single pots:—

	Per dozen.—s.	d.
Scarlet Geraniums, Tom Thumb, Frogmore and others, cut down plants, that were struck last spring ..	3	0
Ditto, struck last autumn	2	6
Verbenas, all the best varieties	2	6
Antirrhinums	3	0
Ageratums	2	6
Calceolarias, shrubby .. .. .. 2s. 6d. to	3	0
Cuphea platycentra, extra large	3	0
Dahlias, best sorts .. .. 4s. to	9	0
Carnations and Piccotees ditto .. per pair 1s. to	1	6
Pinks, ditto .. .. ,, 6d. to	1	0
Fuchsias, best sorts .. .. 3s. to	4	0
Gaillardia picta	2	6
Heliotropes	2	6
Lobelia speciosa and ramosoides	2	6
Alyssum variegatum	2	6
Hollyhocks, fine named flowers	9	0
Lantanas	2	6
Nierembergia gracilis	2	6
Petunias, fine sorts	2	6
Senecio (double dark Groundsel)	2	6
Salvia fulgens	2	6
Variegated Geraniums, Flower of the Day, fine cut down plants	4	0
Osborne's Brilliant	3	6

WOOD & INGRAM, Huntingdon.

SUPERB DOUBLE HOLLYHOCKS.

WILLIAM CHATER can now supply fine healthy plants from his Collection, having a large stock ready for immediate planting.

See DESCRIPTIVE CATALOGUE, to be had on application.

Nurseries, Saffron Walden.

FIRST-CLASS HOLLYHOCKS.

FINE SEEDLINGS FROM

WILLIAM CHATER'S Celebrated and Newest Varieties that will flower well in September at 30s. per 100

ditto	ditto	20s. ,, 100
Ground Roots according to colour, also at ..	30s. ,, 100	
Seed in 12 separate colours, the Collection ..	10s. 0d.	
,, 6 ,, ,, ,, ...	5 0	

From varieties such as Pourpre de Tyre, Memnon, White Globe, Hon. Mrs. H. Ashley, Canary, &c., in 12 separate colours, the Collection .. .. 7s. 6d.

Ditto in 6 separate colours, the Collection ..	4 0
Seed from 20 of the best varieties, mixed, per pkt.	5 0
,, 12 ,, ,, ,, ,,	2 6
,, good mixed, also a single variety ,,	1 0

The above can be procured from the Nurseries, Saffron Walden, Essex.

CHOICE HOLLYHOCKS.

WILLIAM HUSSEY begs to offer the undernamed collection for 15s., package included, viz.:—Criterion, Duchess of Sutherland, Hon. Mrs. Ashley, Jenny Lind, Omar Pacha, Black Prince, Pourpre de Tyre, Beauty of Cheshunt, Lilac Model, Walden Gem, Miss Ashley, Purple Perfection, Lemonade, Pillar of Beauty, Mrs. Oakes, Solfaterre improved, Memnon, Queen of Whites.

Horticultural Gardens, Norwich.

NEW HOLLYHOCKS.

A. PAUL AND SON beg to recommend the following NEW HOLLYHOCKS, which have been selected from several thousands of Seedlings. The stock of ordinary kinds is this year greatly extended. The plants are strong, well established, and perfectly healthy:—

	s.	d.
BRISEIS (PAUL).—Purple, silvery edges, flower of good form, spike close	5	0
GENERAL HAVELOCK (PAUL).—Bright, ruby scarlet, colour of "Scarlet King," but a close spike and a round smooth flower of perfect shape	10	6
IN MEMORIAM (PAUL).—Crimson maroon, large, good substance, first-rate flower, good spike	10	6
OSSIAN (PAUL).—Crimson shaded with salmon, remarkable alike for substance, closeness, and symmetry; spike good	10	6
PAINTED LADY (PAUL).—Pink and blush in blotches, a large smooth flower of good substance	5	0
PLUTARCH (PAUL).—Plum colour, of fine shape, and very smooth, guard and spike good	10	6
POURPRE NOIR (PAUL).—Rich purplish maroon, large smooth flower, close spike	7	6
RED ROVER (PAUL).—Dark fiery scarlet, flower large, spike splendid, very effective	7	6
VERITAS (PAUL).—White, lemon base, large full flower, splendid spike	10	6
VESTA (PAUL).—Pure white, petals thick, edges smooth, guard good	7	6
VITRUVIUS (PAUL).—Pink, large flower, of perfect form and good substance	5	0
ZENO (PAUL).—Rich plum colour, with silvery edges, flower large, spike good; new and distinct	5	0

The Collection of 12 varieties is offered for 4l. 4s.; good named sorts, 9s. to 18s. per dozen; very superior ditto, 24s. to 42s. per dozen; Bloomed Seedlings in separate colours, 30s. 50s. per 100; mixed Seedlings, 10s. to 21s. per 100.

HOLLYHOCK SEED, 1s. to 5s. per packet free by post.

Also a PRICED DESCRIPTIVE CATALOGUE free by post.

Nurseries, Cheshunt, Herts.

CALLICARPA PURPUREA.

JOHN STANDISH, the exhibitor of the above (at St. James's Hall), can supply a few good plants at 7s. 6d. each. The following passage from Dr. Lindley's leading article in the *Gardeners' Chronicle* for Nov. 20 will give an idea of its beauty:—"Callicarpa purpurea, quite insignificant when in flower, was beautiful in its winter dress of innumerable rich purple berries, about the size of swan shot." It is easily cultivated, and does well in a cold greenhouse or conservatory planted out, where it will produce thousands of bright purple berries resembling glass beads, and remaining on nearly the whole winter.—Bagshot, April 16.

NEW CHRYSANTHEMUMS.

JOHN SALTER begs to announce that his SPRING CATALOGUE is now published, in which his splendid SEEDLINGS and other new CHRYSANTHEMUMS of 1859 are fully described, as well as the unrivalled general collection, which is the largest in Europe.—Strong plants of "Golden Queen of England," "Prince Albert," and every other variety, will be ready in the course of the month.—Versailles Nursery, William Street, near Hammersmith Turnpike, W.

CHRYSANTHEMUMS—CHRYSANTHEMUMS.

J. H. BIRD, F.H.S., NURSERYMAN, Stoke Newington, the largest grower and most successful exhibitor of the Chrysanthemum in the British Empire, begs to call the attention of the lovers of the above beautiful autumn flower to his matchless collection, the stock of which amounts to upwards of 50,000 plants.

J. H. B. can supply strong plants, one dozen for 6s.; or five dozen in 30 varieties, containing two of each variety, for 1l.; or he can supply 100 plants in 50 varieties, two of each variety, for 1l. 10s. Also POMPONES in great variety; 50 Pompones in 25 varieties, two of each variety, for 10s.; or 100 in 50 varieties, two of each variety for 1l. Strong plants of the beautiful new Pompone the Golden Cedo Nulli, 5s. each, are now ready, with the usual allowance to the Trade. Every order will be accompanied by a popular work on the Chrysanthemum.

Post-office Orders payable to J. H. BIRD, Stoke Newington, will be immediately attended to. Catalogues on application.

NEW VERBENAS, RAISED BY MR. ELPHINSTONE.

1. PICTURATA.—Crimson, large, and fine truss, conspicuous white round eye.
2. COMTE DE MONTALEMBERT.—Light lilac, very large flower of extra substance, with large white eye.
3. ANNIE.—Light rose, large white eye, a very desirable colour and good substance.
4. BOUQUET DE LA REINE.—Peach, large white eye, fine shape, and extra substance, quite a new colour.
5. MAGNUM BONUM.—Bright crimson, fine yellow eye, large flower and a very striking variety.
6. GRANDIFLORA PURPUREA.—Violet purple, large truss, fine white eye.

Plants ready for sending out second week in April.

D. BROWNE has great pleasure in introducing the above Six New VERBENAS, as being a decided improvement on any hitherto produced in form, colour, and extra substance, with fine strong habits so desirable for bedding purposes.

The Stock being limited, early orders are respectfully solicited so that the best Plants may be selected and reserved.

The collection of Six Varieties, package included, 20s., or 3s. 6d. each, sent free of carriage.

Horticultural Grounds, Sprowston; Seed Establishment, 41, London Street, Norwich. The Trade supplied on the usual terms.

NEW FUCHSIAS (English and Continental).—Strong established Plants, fit to grow as Specimens of the best and leading kinds:—Princess of Prussia, Prima Donna, Governor-General, cheiranthiflora, tricolor, Agnes Sorel, Prince Frederick, Wonderful, Guiding Star, &c.

NEW FRENCH SPOTTED GERANIUMS.—Fine plants set with flower buds and coming into flower, 12s., 18s., & 21s. p. doz.

SEEDLING SPOTTED AND STRIPED CALCEOLARIAS, in 6-inch pots, 12s. and 18s. per dozen.

NEW VERBENAS.—Nearly all those sent out last year and the best of the previously established plants, 4s., 6s., and 9s. per dozen.—EPPS's Nurseries, Maidstone and Ashford.

GREENHOUSE PLANTS, 12s., 18s., 21s. per doz.—Fine bushy grown plants, consisting of the best kinds such as Pimeleas, Polygalas, Chorozemas, Aphelexis, Tremandras, Boronias, Leschenaultia, Gompholobium, &c.; also all the leading Creepers.

STOVE PLANTS, 12s., 18s., 21s. per doz.—The best kinds, Begonias of sorts (Rex), Franciscas, Ixoras, Aphelandras, Gesneras, Gloxinias, Medinillas, Vincas, Allamandas, Stephanotis, Rhynchospermums, Dipladeniums, Hoyas, Gardenias, and variegated plants.

AZALEAS, consisting of the new and leading kinds, with flower-buds, 12s., 18s., 21s., and 30s. per doz.—A large quantity of young specimens of various sizes.

ERICAS, fine grown stuff of the leading sorts, 12s., 18s., 21s., 30s. per doz., in 48 and 32-size pots. A quantity of half and full-grown specimens.

TO THE TRADE.

20,000 of young stuff just potted off, in 60-size pots, 50s. per 100; pretty plants and very bushy.

ACHIMENES, TYDEAS, AND GLOXINIAS.—All the new and leading kinds (strong bulbs and tubers), of Messrs. Van Houtte, Verschaffelt, Parker, &c., 6s., 9s., 12s. per doz.

EPPS's Nurseries, Maidstone.

NEW PLANTS.—1859.

HUGH LOW AND CO. respectfully invite attention to the annexed LIST of novelties, orders for which they will be very happy to receive:—

NEW GLOXINIAS.

HUGH LOW & Co. have selected the undernamed varieties from a large number of plants raised by themselves from seed carefully and judiciously hybridised, and having flowered them for two seasons, and compared them with the varieties previously in cultivation, H. L. & Co. can with confidence recommend the selection to the notice of their friends as comprising really distinct kinds, worthy of a place in the most select collection of this much admired and easily cultivated flower Plants in April. Price, 3s. 6d. each.

ERECT-FLOWERING VARIETIES.

Atroviolacea, very dark violet purple, base of the tube beautifully spotted on a pure white ground. [white
Bridesmaid, white tube, shaded rose border, lips spotted with
Lineata superba, rosy carmine tube, towards the lips alternate bands of white and rose. [purple.
Perfection, clear white throat, dark blue belt, lips deep violet
Princess Alice, clear white tube, bright rose belt, edges very pale rose.
Princess of Prussia Improved, throat and belt very much brighter crimson than in the old variety.

DROOPING-FLOWERED VARIETIES.

Attraction, base of tube white, finely spotted, lips rosy crimson, outer edge pure white.
Beauty, white tube, inside carmine lake, broad white belt, flowers very large
Meteor, bright crimson with violet throat, carmine blotch on the lip.

NEW ROSES OF 1859.

HYBRID PERPETUAL.	HYBRID PERPETUAL.
Altesse impériale	Virginale
Ardoisé de Lyon	Beauté de Rœyghem
Comte de Beaufort	
Bouquet de Marie	BOURBON.
Empereur de Maroc	Docteur Berthet
Salomon	Madame Marchal
Oriflamme de St. Louis	Octavie Fontaine
Reine de la Cité	
Ambroise Verschaffelt	TEA-SCENTED.
Orderic Vital	Madame Damaizan
Anna de Diesbach	Madame Darru
	Reine des Pays Bas

Plants 5s. each.

NEW VERBENAS.

The entire stock of these nine varieties is in the possession of H. L. & Co., and they can with the greatest confidence recommend them to their friends as distinct and first-class flowers.
Bellona, bright cerise, dark centre, good form, very distinct.
Flora, lilac, white eye, large truss, fine form.
Lady Cotton Sheppard, bright rosy purple, white eye, large truss, very distinct.
Mars, bright red, extra large truss, fine form and free flowerer.
Miss Emily Hanmer, ruby, white eye, immense truss, extra fine form, the best of its class.
Mrs. Fowke, rosy purple, fine white eye, extra large truss, fine form, very free.
Mrs. Leslie, bright rose, very large white eye, large truss, and splendid form.
Rubens, ruby red, white centre, good form, very distinct and free bloomer, from 2s. 6d. each.

VERBENA SNOWFLAKE.—The best white Verbena ever offered for bedding purposes. With a flower equal to Mrs. Holford, it produces a much larger number of trusses on the same space of ground. This variety has been grown in company with the other white kinds at present in cultivation, and has been found to be more effective than any of them. In order that it may be extensively planted the first season, H. L. & Co., have decided on offering it at a cheap rate.

Single plants, 2s. 6d.; per doz., 18s.; per 100, 100s. In April.

New Verbenas received from M. Boucharlat of Lyons:—

Abondance	Madame Denis Blain	Mons. Denis Blain
Bleu magnifique	Madame Hardy	Monsieur Hardy
Felix Roland	Madame Hoste	Reine Blanche
Gloire de Monplaisir	Madame Large	Souvenir de M. Keller
Kossuth	Manteau d'Evêque	Seringe

Plants 1s. 6d. each, now ready.

New Verbenas received from M. Rougier-Chauvière, of Paris. These and the preceding collection include the finest varieties offered this season on the Continent.

Baccarat	Gitana	Marie Rougier
Cendrillon	Ivanhoe	Ne Plus Ultra
Cerise Clara	La Magicienne	Primulæflora
Fatima	Leandre	Rosalinda
Figaro	Lucrece	Rosamond

Plants now ready, 1s. 6d. each.

Verbena Madame Jourdin, the most distinct and beautiful of all the striped varieties, per dozen, 12s.

LOBELIA TRIGONICAULIS, a new species from Moreton Bay, figured and described by Sir Wm. J. Hooker. A beautiful dense growing variety, each plant covering a space of ground 12 to 18 inches in diameter, with its ample bright green foliage (in the way of Verbena Maouetti) and large light blue flowers with fine white eye. It will be much in demand for bedding purposes. For further description see "Cottage Gardener." Plants in April, price 2s. 6d. each, or 21s. per dozen.

Usual discount to the Trade on all the above-named plants.

Bedding Plants of older date in large quantities at low prices.

Clapton Nursery, London, N.E.—April 16.

CHOICE SEEDS.

BUTLER & McCULLOCH,

While drawing attention to their general SPRING CATALOGUE of SEEDS, which has elicited such high encomiums both from the scientific botanist and amateur cultivator, avail themselves of the present opportunity to select from its pages the following list:—

(37) ACACIA LONGIFOLIA (magnifica).

One of the most splendid Acacias in cultivation, with gorgeous clusters of bright yellow flowers several inches in length; very hardy, rare, and beautiful. Of these graceful and highly ornamental plants our collection embraces no fewer than 47 varieties, all of the most decorative character.

(183) BROWALLIA CŒRULEA GRANDIFLORA.

Large sky-blue; quite new; free flowering (very rare).

(199) CALLICHROA PEDATA.

Crimson with white eye; a most beautiful plant, and quite new.

(217 A.) CAMELLIA JAPONICA.

From the newest and finest striped and other varieties of that much admired genus.

(243) CANNA INDICA SUPERBA.

A magnificent plant flowering all the winter; leaves large, fine green. Of this picturesque and most ornamental genus we have a magnificent collection, consisting of 28 kinds, all remarkable both for the beauty of their flowers and foliage.

(271) CANTUA PYRIFOLIA.

A handsome shrub, with bunches of waxy cream-coloured flowers (rare).

(299) CEANOTHUS FONTANESIANUS.

Blue shaded with red, new and handsome. Of this highly ornamental genus we possess nine splendid varieties.

(304) CELOSIA (species nova).

A most elegant plant, producing a multitude of long spikes of feathery blossoms, silvery white shaded with bright rose, retaining its colour perfectly when dried, and therefore admirably adapted for winter bouquets; one of the greatest novelties of the season, flowering out of doors or in pots from July to October. Well worth attention. A dried specimen may be seen.

(319) CESTRUM AURANTIACUM.

One of the finest conservatory plants in cultivation, being covered twice a year with handsome orange tubular blossoms.

(323) CHAMÆROPS HUMILIS.

Very ornamental Fan Palm which will stand ordinary winters out of doors in favoured localities in the South of England with very little protection.

(344) CHRYSOCOMA COMAUREA.

Fine evergreen shrub, bearing a profusion of golden ball-like flowers; one of the handsomest greenhouse plants in cultivation.

(393) CONVOLVULUS MAJOR SPLENDENS.

Brilliant crimson, most beautiful.

(451) DATURA HUMILIS FLORE PLENO.

A magnificent Brugmansia-like plant producing a profusion of deep golden-yellow flowers; very large, double, and sweet-scented. One of the greatest novelties of the season.

(577) GERANIUM NAPOLEON III.

Of this and other splendid varieties, including Scarlets, we have a fine stock, which cannot fail to prove highly satisfactory.

(976) PENTAPETES PHŒNICEA.

Bright scarlet; leaves long and serrated, a very handsome plant.

(1001) PHYGELIUS CAPENSIS.

Large red tubular flowers, inside golden yellow, a handsome plant (seeds rare).

(1095) SALVIA SPLENDENS Nova.

Species, scarlet (new).

(1137) SIPHOCAMPYLUS BETULÆFOLIUS

A handsome plant, with scarlet tubular flowers; suitable for a trellis.

(1149) SOLANUM CAPSICASTRUM.

Miniature Orange tree, covered all winter with a profusion of scarlet fruit; a handsome plant for greenhouse or sitting rooms.

(1170) STATICE BONDUELLI.

Deep golden yellow; flowers early and profusely, in large rosettes.

(1276) VERONICA ANDERSONI.

Purple and white, all but hardy; a charming shrub.

(1282) VERONICA MELDENSIS.

Beautiful rose and white; a splendid plant.

(1335) BIGNONIA RADICANS MULTIFLORA.

Finer and brighter than radicans; flowers in large panicles producing a splendid effect.

(1375) GLYCINE SINENSIS, or WISTARIA.

One of the most valuable climbing trees for out-doors (seeds rare).

(1380) IPOMŒA HYBRIDA MARGINATA.

Large and magnificent; flowers of various colours on the same plant, varying from the richest velvety purple to sky-blue, bordered in the most distinct manner with pure white (new and rare). This and three new varieties of Hederacea grandiflora far surpass the old and deservedly favourite rubro-cœrulea for beauty, hardiness, and free flowering; they rank high amongst the novelties of the season, possessing advantages which will render them the grandest ornaments for the greenhouse, conservatory, or for out-door decoration.

(1431) MAURANDYA CRIMSON-TINTED PURPLE GRANDIFLORA.

Exquisitely beautiful (new).

(1438) MAURANDYA MAROON GRANDIFLORA.

Superb (new and rare).

(1468) TACSONIA IGNEA.

This magnificent Passionflower is unequalled for the brilliancy and splendour of its scarlet blossoms, far surpassing in this respect any of its class yet known. It flowers most profusely, grows rapidly, and covers a large space in an incredibly short time. It succeeds in a cold greenhouse, and even against a south wall with a little protection in winter (new and rare).

(1473) TROPÆOLUM FLAMMULUM GRANDIFLORUM.

Yellow; beautifully streaked with carmine (rare).

(1477) TROPÆOLUM GRACILE.

Sulphur, spotted with carmine; extremely pretty.

(1479) TROPÆOLUM MINIATUM MACULATUM.

Superb, striped variety (very rare).

(1488) TROPÆOLUM TRIOMPHE DE GAND FIMBRIATUM.

Fringed orange scarlet.

CARNATIONS and PICOTEES saved from the most choice Collection of English varieties grown on the continent, and which may be expected to produce flowers of the highest merit, sent out in sealed packets as received from our Sardinian correspondent, whose seeds for many years have given such universal satisfaction, and from which varieties of the greatest excellence have been raised.

For prices and further particulars with regard to the above and other novelties, we refer our patrons to the Catalogue itself, which is sent free and post paid on application.

BUTLER & McCULLOCH,
COVENT GARDEN, LONDON.—APRIL 16.

JOHN KERNAN, SEEDSMAN, 4, Great Russell Street, Covent Garden, respectfully announces that he is now fully prepared to supply in any quantity the best varieties of AGRICULTURAL TURNIPS, that is, Laing's, Matson's, and Marshall's Purple-topped Swede, Skirving's do., Purple and Green-topped Scotch, &c., at 6d. per lb.; Cattle and other Cabbages for early lambs, Yellow Globe, Long Red and Red Globe Mangel, 6d. per lb.; Red, White, and Alsike Clover; Trefoil and Lucerne; Sainfoin and Tares; separate and mixed Grasses; Sorghum saccharatum, the new and invaluable fodder for fattening sheep and cattle, and especially useful for improving the quantity and quality of milk in milch cows, a Treatise on the advantages and culture of which is now ready, price 1s. Two lbs., at 2s. per lb., are sufficient for an acre, and not eight, as is constantly advertised. Guano in any quantity, from 1 lb. to 1 ton, or upwards. All the best sorts of Potatoes, early and late. The Trade supplied on the most liberal terms. Horticultural, Vegetable, and Flower Seeds, including all the recent introductions, on sale as usual. Plants of the Tussac Grass. Catalogues may be had on application.

PLANTS IN FLOWER.

F. AND A. SMITH have now in bloom Acacia, Cinerarias (fine), Cytisus, Erica ventricosa coccinea minor; v. superbiens, v. breviflora, E. intermedia, Fuchsias, Calceolarias, Heliotrope, Hydrangea, E. Cavendishi, E. hybrida, E. perspicua nana, Geraniums, Fairy Roses, &c.

The above are healthy, strong, and well-grown plants, prepared for sending away. Prices on application.

Dulwich, Surrey, S.

SUPERB DOUBLE BALSAMS.

F. AND A. SMITH are now sending out seed of their superb BALSAMS, which are unrivalled for size, form, brillancy of colour, doubleness of flower, and habit of plant.

In collections of nine separate colours	2s. 6d.
,, ,, mixed ,, ...	2 0
,, ,, ,, ,, half quantity	1 0

The above are *genuine only* in our sealed packets, and may be had of most respectable Nurserymen and Seedmen in the United Kingdom.—Dulwich, Surrey, S.

AZALEA INDICA.—The following 25 choice varieties, all fine and handsome blooming plants, may be had together for 45s.; or any 12 of the same may be selected for 21s., viz.:—blanda, Broughtonii, Bianca, coronata, conspicua purpurea, decora, Dawsonii, Frostii, Glory of Sunning Hill, Iveryana, leucomajestica, magnifica, magnifica alba, Minerva, Mrs. Fry, phœnicia, præstantissima, Rawsonii, Reddingii, Rosalia, Smithii coccinea, splendens, Stanleyana, triumphans, Vesta. For 12 varieties of the above left to our selection, 21s.

CATALOGUES, with descriptions of the above, free.

Carriage free to all stations in London, or on the E. C. Colchester Line.—BASS & BROWN, Sudbury, Suffolk.

REIGATE SILVER SAND, best quality for Florists, 16s. per ton; less quantities, 1s. 6d. per bushel; delivered to any London Wharf or Railway. Peat, Loam, and Leaf-Mould in large or small quantities. Sacks for Sand, 1s. 9d. each; or on hire, 6d. each; five hold a ton.—JOHN KENNARD, Purveyor to her Majesty, Swan Place, Old Kent Road, London, S.E.

HORTICULTURAL VALUATIONS.

MR. ALFRED CHANDLER (of the late firm of Chandler & Sons, Vauxhall), begs to inform his friends that he is at liberty to undertake the valuation of Collections of Plants, Nursery Stock, Horticultural Buildings, &c.

Mr. A. C. is also open to engagements as Censor at Horticultural Exhibitions, in which capacity he has had long and extensive experience.—28, Priory Road, Wandsworth Road, S.

CARNATIONS AND PICOTEES.

YOUELL AND CO.'S COLLECTION of the above deservedly favourites is probably the most extensive in the Trade, and having for a series of years paid special attention to their cultivation, introducing the best of the newest varieties, they are enabled to offer them at the following prices or fine, strong, well rooted plants.

CARNATIONS, finest first class show varieties by name, 18s. and 24s. per dozen pairs.

PICOTEES, finest first class show varieties by name, 18s. and 24s. per dozen pairs.

Ditto, on yellow grounds, 20s. and 30s. per dozen pairs.

Finest mixed BORDER CARNATIONS & PICOTEES, 9s. ditto

True old CLOVE CARNATION, 12s. per dozen pairs.

Scarlet ditto ditto, 18s. ditto

NEW CARNATION "EXTRAVAGANZA."—For particulars see Advertisement, March 26. Price 3s. 6d. per pair.

PINKS.—The finest first class show Pinks, by name, 9s. per doz.

Fine mixed border PINKS, 6s. per dozen pairs. [pairs.

HOLLYHOCKS.—Our extensive stock of these, comprising the first-named varieties, is this season very strong and healthy, and well established in pots, price of which is 9s. to 12s. per dozen.

HOLLYHOCKS, warranted all double flowers, and from the best leading kinds, 20s. per 100.

NEW PHLOXES.—An extensive and select collection of the above beautiful showy tribe of Herbaceous Plants, comprising the fine and newly introduced varieties from the Continent. May be obtained at 10s. per dozen, package included.

PANSIES.—Finest first-class show varieties, by name, 9s. per dozen.

CHRYSANTHEMUMS.—The handsomest of the new large flowering and Pompone kinds, 6s. per dozen.

DAISIES.—18 selected, of the best new Belgian vars. for 9s.

LOBELIAS.—Finest scarlet, adapted for forming magnificent groups, viz.:—Blue do. Milleri; violacea, 9s. per dozen; Red Leopold, 6s. per dozen.

OXALIS FLORIBUNDA AND ROSEA.—Quite hardy, producing a fine bed of rich rose colour, 6s. per dozen.

ŒNOTHERA MACROCARPA.—Large yellow, 6s. per dozen.

,, TARAXACIFOLIA.—Large white, 6s. ,,

DELPHINIUM FORMOSUM.—Finest blue, 3s. per dozen; 16s. per 100.

,, MOOREANUM.—Dark purple, 4s. per dozen; 25s. per 100

AUBRIETIA MOOREANA.—A handsome hardy herbaceous plant, of dwarf growth, producing at this period a dense mass of large flowers of the brightest lilac, 6s. per dozen.

LINUM FLAVUM, 6s. per dozen.

TRITOMA MEDIA.—A handsome winter and spring-flowering hardy herbaceous plant, producing large spikes of scarlet-yellow flowers, 9s. per dozen.

PENTSTEMONS.—A fine assortment, 6s. per dozen.

GAZANIA RIGENS.—Large orange yellow, with dark centre, 6s. per dozen.

STATICE MARITIMA ROSEA AND PSEUDO-ARMERIA.—Strong plants of these two beautiful and hardy species, producing throughout the year a profusion of lake-coloured flowers, 4s. per dozen.

DIELYTRA SPECTABILIS, fine strong plants, 6s. per dozen.

BERBERIS DARWINI, flowering plants, 6s. per dozen.

PRIMROSE, double yellow, 4s. per dozen.

HERBACEOUS PLANTS.—A choice collection of all the most showy kinds, 6s. per dozen; 40s. per 100.

☞ All orders of 2l. and upwards are delivered Carriage Free to London, Manchester, Liverpool, Peterborough, Hull, and Newcastle, as well as to any Railway Station within 150 miles of the Nursery.

YOUELL & Co., Royal Nursery, Great Yarmouth, Norfolk.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. Nesbit, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

LONDON MANURE COMPANY, removed to 116, Fenchurch Street, E. C. (Established 1840), have the following MANURES ready for delivery :—

CORN MANURE for SPRINGTOP DRESSING
URATE
MANGEL MANURE
SUPERPHOSPHATE OF LIME
BLOOD MANURE
} all of guaranteed quality.

In consequence of the reduction in the price of raw material the London Manure Co. are enabled to lower the price of their Superphosphate of Lime, and to materially improve the Corn Manure and Urate.

The London Manure Co. also supply PERUVIAN GUANO (direct from Messrs. A. Gibbs and Sons), SULPHATE of AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of value. Wholesale dealers supplied.

116, Fenchurch Street E.C. Edward Purser, Secretary.

REDUCTION IN PRICE OF LAWES'S MANURES.

MR. LAWES begs to announce that he has this season reduced the price of the Manures manufactured by him, viz. :—

TURNIP MANURE	from £7 to	£6	6
SUPERPHOSPHATE OF LIME ..	,, 7 to	6	6
MINERAL do. ..	,, 6 to	5	5
BARLEY MANURE..		8	0

Prof. Way and Dr. Voelcker have sampled from a bulk of 5000 to 6000 tons at his factories, and their report and analyses are given in full in Circular to be obtained on application at his office, 1, Adelaide Place, London Bridge, E.C., or of his local Agents.

N.B. Genuine Peruvian Guano direct from Messrs. Gibbs, Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures. American Cotton-seed Cake supplied.

ESTABLISHED 1812.

H. AND T. PROCTOR'S TURNIP MANURE.—Messrs. H. & T. P. draw particular attention to this valuable Manure, which contains all the elements necessary for the full development of the Turnip Crop, so combined, that, from their chemical knowledge and long experience, they feel satisfied is most advantageous to the consumer. It has been very extensively used by most of the eminent Agriculturists of the day, and has attained a high reputation throughout England, Scotland, and Wales, and, they venture to say, is unrivalled for the weight and quality of the Bulbs which it produces. The application of this Manure to the Turnips will be found to benefit considerably the after crops of Barley, Clover, and Wheat.

POTATO, GRASS, BARLEY, CLOVER, AND WHEAT MANURES; also BONE DUST, PERUVIAN GUANO, and SUPERPHOSPHATE of LIME, warranted of the best quality.

Apply to H. & T. Proctor, West of England Depôt for Artificial Manures, Cathay, Bristol; or Proctor & Ryland, Birmingham, and Saltney, near Chester.

BURNARD, LACK, AND CO.'S CONCENTRATED SUPERPHOSPHATE OF LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.

CONCENTRATED TURNIP MANURE, equal in value to the preceding.

Of these Manures Dr. Voelcker says :—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."

Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to Burnard, Lack, & Co., Sutton Road, Plymouth.

PERUVIAN GUANO.

The present price of this valuable Manure is—

12*l.* per Ton for 30 Tons and upwards,
13*l.* 5*s.* per Ton for 1 Ton up to 30 Tons.

And, to guard against the purchase of adulterated mixtures and of inferior Guanos purporting to produce results equal to Peruvian, consumers are recommended to apply either to ourselves, to our agents, Messrs. Gibbs, Bright, & Co., of Liverpool and Bristol, or to dealers of established character, in whose honesty and fair dealing they may place implicit confidence.

Antony Gibbs & Sons.

SUCCESS OF THE NEW GUANO; Imported under Lease from the Crown.—Though the experiments with KOORIA MOORIA GUANO were made late in the season, and under adverse circumstances, the successful results obtained confirm beyond doubt Professor Voelcker's report—(in No. 41, Part I., vol. xix., Royal Agricultural Society's Journal)—that Ammoniacal manures, applied to Turnips in the experimental field, kept back at first the crop, and had no beneficial effect either alone or in conjunction with phosphates.

The Kooria Mooria Guano is essentially a phosphatic manure, containing sufficient ammonia for roots, and, with a mixture of one-fourth of ammoniacal guano, cannot be excelled for either top-dressing or grain crops. It is a natural deposit, and will be delivered as imported, free from risk of adulteration. Deeply impressed with the necessity of encouraging the import of this valuable manure, her Majesty's Government has given such increased facilities for shipment, that arrangements have been made for a considerable supply. Purchasers can be supplied with suitable quantities from cargoes now on sale, containing from 45 to 66 per cent. phosphates. Present prices, 4*l.* 10*s.* to 6*l.* 10*s.* per ton, on applying to Joseph Hindson, Broker (one of the Lessees under the Crown), 20, North John St., Liverpool. Government Lessees: Ord, Hindson, & Hayes.

"Greystoke, Cumberland, Dec. 16, 1858.

"Dear Sirs,—I beg to inform you that I applied the Kooria Mooria Guano I had from you for Turnips, on land of a loamy character, incumbent on a stiff clay subsoil, and recently drained. On each side of the plot sown with Kooria Mooria Guano were Turnips manured with best Peruvian Guano. The quantities applied of each sort were of equal weight for weight per acre. The crop—a very good one throughout—is now being eaten off with sheep. Very little perceptible difference can be discovered, but if anything that difference is in favour of the Turnips sown with Kooria Mooria Guano.

(Signed) "John Barker."

"Messrs. J. & J. Graham, Guano Merchants, Penrith."

A Pamphlet, "Hints on Guano," containing a large number of reports from well-known agriculturists, and analysis of the cargoes here, may be had of the Broker, at the above address.

GENUINE ROLL TOBACCO CLOTH.

Warranted equal in Strength to Tobacco.

JOSEPH BAKER, 10, Gough Square, Fleet St., E.C., having dealt upwards of 20 years in the above, can recommend it as the best article for destroying the Fly. 1*s.* 4*d.* per lb.; over 10 lbs, 1*s.* Post-office Orders payable Strand Office.

GENUINE TOBACCO PAPER.—Parties fumigating can be supplied with the best Genuine Tobacco Paper at 4*d.* per cwt.; any less than 56 lbs., 10*d.* per lb.—Ben Baxter, Messrs. Jackson & Sons, Lady Lane, Leeds.

GENUINE TOBACCO PAPER FOR FUMIGATING.

H. APPLEBY (Foreman to Messrs. Ivery & Son, Nurserymen, Dorking, Surrey), takes this opportunity of informing his Patrons and the Public that he is now offering the above at a very considerably reduced price. It is now sold in packets of 4 lbs. each, at 1*s.* 3*d.* per lb. A liberal Discount allowed to the Trade. The following Testimonials amongst many others will guarantee its quality :—

"Maresfield, Sussex, Feb. 17, 1858.

"Sir,—It gives us much pleasure to inform you that the Tobacco Paper with which you supplied us has answered admirably. We have not the slightest hesitation in stating that 1 lb. of the Paper we had from you will render more service than 3 lbs. of the paper we have been in the habit of purchasing elsewhere. You will please send us a further supply of 28 lbs. at your convenience.

"Wood & Son, Nurserymen, Maresfield, Sussex."

"Royal Berkshire Seed Establishment, Reading, Dec. 6, 1858.

"Sir,—Our propagator has tried your Tobacco Paper thoroughly, and considers it very good. It is also very convenient to the Public to receive it in 4-lb. packets as you make it up. We should therefore be glad of 1 cwt. for present sale in 4-lb. packets, and will let you know when more is required.

"Sutton & Sons,

"Nurserymen and Seedsmen, Reading, Berks."

"Norwood Grove, March 28, 1859.

"Sir,—After trying your Tobacco Paper to all the different houses from the tender Vines to the hardy Azaleas, I am pleased to say it answers admirably, and will thank you to send me as early as possible the same quantity as before.

"Charles Smith,

"Gardener to A. Anderson, Esq., Norwood, Surrey."

H. Appleby's SHEET IRON FUMIGATING POT (price 3*s.* 6*d.* each), which will be a great saving of Flower Pots, as they are apt to break. The undermentioned Testimonial will guarantee its usefulness :—

"The Gardens, Oxton House, near Exeter. Dec. 11, 1858.

"Sir,—I am perfectly satisfied with the little Fumigating Pot, and can strongly recommend it in preference to flower pots, as it is a great saving and much easier managed.

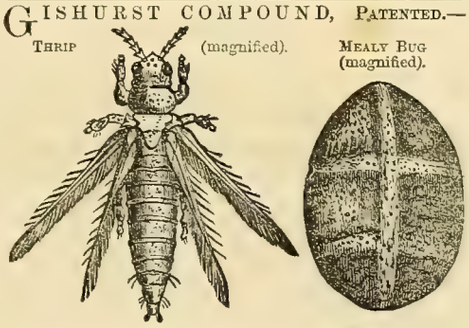
"A. Ayson,

"Gr. to Major-Gen. Studd, Oxton House, Exeter, Devon."

N.B. All orders to be accompanied with a Post-office Order, payable to Henry Appleby, Dorking, Surrey.

PAGE'S BLIGHT COMPOSITION (4*s.* per gallon, sufficiently strong to make four fit for use) has stood the test of eight years public trial, and its great success has led to numerous imitations. Dr. Lindley, in his leading article of October 25, 1856, reported 182 cases in its favour, sufficient to convince the most sceptical. Seeds packed for exportation to all parts of the world.—Page & Toogood, Royal South Hants Seed Establishment, Southampton.

GISHURST COMPOUND, Patented.—



GREEN FLY on Roses and Greenhouse Plants safely got rid of by syringing with PATENT GISHURST COMPOUND, 2 oz. to the gallon of water.

Extract from leading article in *Gardeners' Chronicle*, April 9, '59.

"That it really kills red spider, aphides, mealy bug, thrips, and scale, it is impossible to doubt in the face of reports of practical men, among whom we may mention Mr. D. Judd, of Althorp Gardens"—then follows a caution against the use of a too strong solution.

The Gishurst Compound is sold in boxes at 1*s.* 6*d.* and 6*s.* each, with directions for use, and printed opinions of Mr. Rucker's gardener, Lady Dorothy Nevill's gardener, Sir William Hooker, Mr. Rivers, and other eminent authorities. For Nurserymen the large size is recommended, but where the consumption is not large the compound keeps its strength best in the small. The undermentioned Seed Merchants, Nurserymen, &c., having taken in supplies are prepared to sell single boxes :

Barratt, Bury St. Edmunds
Bass & Brown, Sudbury
Bell & Co., Newcastle-on-Tyne
Brown, D., Norwich
Cattell, J., Westerham
Cripps, T., Tunbridge Wells
Deane & Co., London Bridge
Dickson, Francis & Arthur and Sons, Chester
Dickson & Brown, Manchester
Dickson, Hogg, & Robertson, Dublin
Dickson & Sons, Edinburgh
Epps, F., Ashford, Kent
Epps, Maidstone
Hawkins, R. T., Weymouth
Henderson, E. G. & Son, St. John's Wood, London
Henderson, A. & Co., Pine-apple Place, Edgeware Rd.
Hooper & Co., Covent Garden
Jefferies, W. B., Ipswich
Kennedy & Co., Dumfries
Mackie & Stuart, Norwich
Mann, J., Brentwood
Matheson, R. C., Gloucester
May, J. & Co., 1, Wellington St.
Pattinson & Son, Hexham
Perkins, J., Northampton

Nurserymen and Seedsmen supplied by Price's Patent Candle Company (Limited), Belmont, Vauxhall, London, S.

POULTRY—DOGS—PLANTS can be kept free from Insects of every description by using the PERSIAN INSECT DESTROYING POWDER, unrivalled in killing Fleas, Flies, Beetles, and every species of Insect—harmless to animal life. Sold in packets 1*s.* and 2*s.* 6*d.* A shilling packet sent free by post for 14 stamps.—Thomas Keating, Chemist, 79, St. Paul's Churchyard, London, E.C.

RATS.—RATS Taken without Poison or Traps by Wholesale.—Ships, Barns, Stables, Granaries, Mills, Warehouses, Farmsteads, Houses, &c., cleared at one sweep. Any Person can by this method clear the entire premises of every RAT, however numerous they may be, in one single night. Printed directions how to entice and secure the whole lot alive sent free by return of post for Two Shillings by William Goodwin, High Halstow, near Rochester.

PROPAGATING GLASSES.—

	s.	d.		s.	d.
2 ins. diameter	0	3½ each	12 ins. diameter	1	9 each
3 ,, ,,	0	4½ ,,	13 ,, ,,	2	0 ,,
4 ,, ,,	0	5½ ,,	14 ,, ,,	2	6 ,,
5 ,, ,,	0	6½ ,,	15 ,, ,,	3	0 ,,
6 ,, ,,	0	8 ,,	16 ,, ,,	3	6 ,,
7 ,, ,,	0	10 ,,	17 ,, ,,	4	0 ,,
8 ,, ,,	1	0 ,,	18 ,, ,,	5	0 ,,
9 ,, ,,	1	2 ,,	19 ,, ,,	6	0 ,,
10 ,, ,,	1	4 ,,	20 ,, ,,	7	9 ,,
11 ,, ,,	1	6 ,,			

CUCUMBER GLASSES.

24 inches long ..	2*s.* 0*d.*	16 inches long ..	1*s.* 4*d.*
22 ,, ..	1 10	14 ,, ..	1 2
20 ,, ..	1 8	12 ,, ..	1 0
18 ,, ..	1 6	Made to any length.	

HAND GLASSES.

12 inches	6*s.* 0*d.* each	18 inches	9*s.* 0*d.* each
14 ,, ...	7 0 ,,	20 ,, ...	10 0 ,,
16 ,, ...	8 0 ,,	24 ,, ...	12 0 ,,

Painted and glazed with 16 oz. Sheet Glass.
If open at top, 1*s.* extra.
WASP TRAPS, 3*s.* 6*d.* per dozen.

Agents for
HARTLEY'S PATENT ROUGH PLATE GLASS.
PAINTS.
Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, &c.
JAMES PHILLIPS and CO.,
180, Bishopsgate St. Without, London, E.C.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz SHEET GLASS of British Manufacture at prices varying from 2*d.* to 3*d.* per square foot for the usual sizes required, many thousands of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES, and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to James Hetley & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

HORTICULTURAL GLASS—JUNE TARIFF.

THOMAS MILLINGTON'S reduced Tariff of GLASS, &c.

6 by 4, 7 by 5, 8 by 6, 9 by 7 } 16 oz. to the foot. 11*s.* 6*d.*
6½ by 4½, 7½ by 5½, 8½ by 6½, 9½ by 7½ } per 100 feet.
In 100 boxes,—4ths quality, 12*s.* 6*d.*; 3ds do., 14*s.* 4*d.*
10 by 8, 12 by 9, 12½ by 10½, 14½ by 10½, 13 by 11
10½ by 8½, 12½ by 9½, 13 by 10, 15 by 10, 13½ by 11½
11 by 9, 13 by 9, 13½ by 10½, 12 by 11, 14 by 11
11½ by 9½, 12 by 10, 14 by 10, 12½ by 11½ .. ..
20 by 12 } per 100 feet 16 oz. 21 oz.
20 by 13 } Common .. 16*s.* .. 24*s.*
20 by 14 } Superior . 18*s.* .. 27*s.*
20 by 15 }
All Boxes included.

Orchard House sizes as supplied to Mr. Rivers.

Hartley's improved Rough Plate Glass from ⅛ to ⅜ in thickness.

Coloured Glass in great variety, at 9*d.* and 1*s.* per foot.

Paints, Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, Lamp Glasses, &c.

87, Bishopsgate Street Without, same side as Eastern Counties Railway.

GLAZIERS' DIAMONDS for CUTTING HORTICULTURAL and other GLASS, to be had of the Wholesale Manufacturer, John Edwards, 20, Sharp's Alley, West Smithfield, London, E.C. Prices from 10*s.* to 27*s.* 6*d.*

WHY NOT PRESERVE YOUR HAY?
RICK CLOTHS, New and Second hand,
At BENJAMIN EDGINGTON'S,
2, Duke Street, London Bridge, S.E., and West End,
32, Charing Cross, S.W.
MARQUEES, TENTS, &c.
Illustrated Catalogues free.

BENJAMIN EDGINGTON, 2, Duke Street, London Bridge, S.E.
MONSTER TENTS for large parties.
PRETTY TENTS for Lawns.
RICK CLOTHS, Second-hand, very cheap.
NETTING for Fruit Trees, &c.
West End Establishment, 32, Charing Cross, S.W.

HENRY J. MORTON AND CO.,
2, Basinghall Buildings, Leeds.

CALVANISED IRON WATER CISTERNS
for Cottage Houses, &c., to contain 50 gallons, 25*s.*; 80 gallons, 30*s.* each; and 140 gallons, 36*s.*, and fitted with tap, keeping the water perfectly sweet and clean; will not rust or corrode. Cisterns of all sizes.

CALVANISED IRON PUMPS
for Liquid Manure or Domestic Use, 3 inches diameter, 30*s.* and 32*s.* 6*d.* each; Tail Pipe for same at from 10*d.* per foot.

CALVANISED IRON SWING WATER BARROWS
for Garden or Farm use, containing about 20 gallons, entirely formed of iron, 32*s.* 6*d.* each.

SHADING.

BROWN'S FLORAL SHADING still maintains its superiority for cheapness and efficiency over all other materials used for a similar purpose, viz., shading plants under glass from the scorching rays of the sun, protecting Wall Fruit Trees when in bloom from frost, and preserving the fruit from the attacks of birds, flies, and wasps. Sold in pieces 20 yards long, 38 inches wide :—

No. 1 per piece .. 4*s.* 0*d.* | No. 2 per piece .. 4*s.* 3*d.*
No. 3, extra stout, 18 yards long, by 39 ins. wide, 7*s.* per piece.

To be obtained of all the principal Nurserymen and Seedsmen in town and country. Samples sent free on application to the Manufacturer, Charles Brown, Greenheys, Manchester.

"FRIGI DOMO."—Patronised by her Majesty, the Queen, the Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, and — Collier, Esq., of Dartford.

PROTECTION from COLD WINDS and MORNING FROSTS.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths. Two yards wide, 1*s.* 6*d.* per yard run; four, 3*s.* per yard. Also, an improved make for Shading Purposes. Three yards wide, 2*s.* 6*d.* per yard run.

Elisha Thomas Archer, whole and sole manufacturer, 7, Trinity Lane, Cannon Street, City, and of all Nurserymen and Seedsmen throughout the kingdom. "It is much cheaper than mats as a covering."

GRASS SEEDS FOR PERMANENT PASTURES & MEADOWS.

THOMAS GIBBS & CO., Corner of Half-Moon St.,

THE SEEDSMEN TO THE "ROYAL AGRICULTURAL SOCIETY OF ENGLAND,"

BEG to inform the Members of the Society and Agriculturists generally that their MIXTURES of GRASS SEEDS for Laying down Land to Permanent Grass are now ready. Each kind of Grass Seed composing these Mixtures is cleaned separately, and the kinds are proportioned to suit different soils.

☞ *Full Directions for Sowing and Management will be sent with the Seeds.*

MIXTURES for PERMANENT MEADOW and PASTURE (*to suit different soils*).
MIXTURES for PARKS, FIELD LAWNS, CEMETERIES, &c.
MIXTURES for IRRIGATION MEADOWS, GAME COVERS, and all other purposes.
RENOVATING MIXTURES for Improving Old Meadows and Pastures (8 to 12 lbs. per acre).

MANGEL WURZEL.	RYE-GRASS.		
Yellow Globe, Orange Globe (selected)	Italian (selected, very fine)	Carrots	all sorts
Long Red	Dickinson's	Clovers	,,
Red Globe	Imported Foreign Seed	Swedes	,,
Long Yellow	Common or Annual	Hybrids	,,
Silesian Sugar Beet	Pacey's Perennial	Common Turnips	,,

KITCHEN GARDEN SEEDS in Collections, at £1, £2, and £3 each.

ALL KINDS OF AGRICULTURAL SEEDS.

Price Lists sent free on application. Reference or Cash required from unknown Correspondents.

Thomas Gibbs & Co.

CORNER OF
HALF-MOON St.
PICCADILLY, LONDON, W.

SUTTON'S GRASS SEEDS AT THE ROYAL FARMS **NEAR WINDSOR, AND IN THE ISLE OF WIGHT.**

SUTTON'S GRASS SEEDS

FOR PERMANENT PASTURE, PARKS, AND LAWNS,

ARE NOW SOWN AT THE ROYAL FARMS, AT OSBORNE PALACE, THE ALDERSHOTT CAMP, THE CRYSTAL PALACE SYDENHAM, THE HORTICULTURAL SOCIETY'S GARDENS, THE PEOPLE'S PARK, HALIFAX, AND ON MOST OF THE LARGEST ESTATES IN THE KINGDOM.

These Grass Seeds being mixed expressly to suit the soil for which they are required, are never known to fail.

SUTTON & SONS having for many years paid especial attention to the Laying down Land to Permanent Pastures, they are well acquainted with the various soils of most parts of the United Kingdom, and the Natural Grasses suitable for each locality.

The following Sorts may be had separate or mixed, at lowest Market Prices:—

Alopecurus pratensis	Festuca duriuscula	Festuca tenuifolia	Lolium italicum	Poa pratensis	Phleum pratense majus
Anthoxanthum odoratum	,, elatior	,, hordeformis	,, perenne tenue	,, trivialis	,, ,, minus
Agrostis stolonifera	,, gigantea	Glyceria fluitans	,, ,, Paceyanum	,, nemoralis	Petroselinum sativum
Avena flavescens	,, heterophylla	,, aquatica	,, ,, sempervirens	,, angustifolia	Trifolium repens
Achillea millefolium	,, pratensis	Holcus lanatus	Lotus corniculatus major	,, fertilis	,, pratense perenne
Cynosurus cristatus	,, ovina	,, avenaceus	Medicago Lupulina	,, sempervirens	,, minus
Dactylis glomerata	,, rubra				,, hybridum

ALSIKE and other CLOVER, and all the most suitable of the above are contained in our Mixtures. Cost of the best Mixtures for Permanent Pasture, **30s. to 34s. per acre,** according to the sorts required for the land.

Fine LAWN GRASS SEEDS for making New or Improving Old Garden Lawns,

Price 1s. per lb., 2s. 6d. per gallon, or 20s. per bushel.

Improvement of Grass Lands by Sowing Good Seeds of the most Suitable Kinds.

SUTTON'S RENOVATING GRASS SEEDS (6s. to 9s. per Acre)

Consist of the finest GRASSES and PERENNIAL CLOVERS, producing great improvement in the Pasture, and at a small expense. Quantity of Seed required 8 to 12 lbs. per acre. Price reduced to **9d. per lb., or 80s. per cwt.** Sow in March and April.

☞ Having greatly reduced the price of our **RENOVATING MIXTURE**, we doubt not that our liberal terms will encourage the more extensive use of the same. Our Grass Seeds have for many years been allowed to be the best, and now we may add that they are the cheapest. Meadows and Upland Pastures may be increased in value 50 per cent. by sowing these Seeds. **Grass Seeds for Laying down Permanent Pasture, 30s. to 34s. per acre.** Seeds Carriage Free to all parts, except small parcels. Catalogues post free.

SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

NATURAL GRASS SEEDS.

PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN, can supply genuine Seed of all the valuable kinds of the NATURAL GRASSES suitable for Lowland and Upland Pastures; also for Laying-down Lawns, Bowling Greens, Cricket Grounds, Cemeteries, Railway Banks, &c.

PRICED LISTS may be had free on application.—PETER LAWSON & SON, 27, Great George Street, Westminster.

"JACK OF NEWBURY" SWEDE, ETC.

PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN, &c., 27, Great George Street, Westminster, respectfully request attention to their very genuine Stock of the above excellent Swede; also of the LOTHIAN PURPLE-TOP SWEDE, both of which have been selected with the greatest care. They have also a very fine Stock of the KOHL RABI, or TURNIP-ROOTED CABBAGE, specimens of which were shown at their Stands at Smithfield Club Show. The Kohl Rabi was largely grown last season, and may now be relied on as a substitute for the Turnip and Mangel, where these roots do not succeed, or for filling up blanks where there is a partial failure. Its feeding qualities, hardiness, and weight per acre are equal to the Swede, and all kinds of stock prefer it to other roots.

P. L. & SON have also selected a first-rate Stock of MANGEL WURZEL SEED, which they can confidently recommend. Their natural GRASS SEEDS have been also saved with very great care, and they are ready to supply them separately or in mixture, for laying down Permanent Pastures, Lawns, &c.

P. L. & SON have arranged to deliver Seeds free throughout England and Wales from their London Establishment, for all quantities exceeding 20s. in value.

LISTS OF PRICES of the above and all other Seeds, Plants, &c., may be had on application.

27, Great George Street, Westminster.

CHOICE FLOWERS.

BUTLER & McCULLOCH'S SPRING CATALOGUE OF SEEDS,

ARRANGED on a new and original plan, with copious Descriptive and Cultural Notes, and containing many new and rare species and varieties not found in any other Catalogue, now ready and may be had free and post paid on application.

FLOWER, SHRUB, TREE, and VEGETABLE SEEDS, the crop of 1858, saved with the greatest care, by the most eminent growers.

We may also state that the Sardinian correspondent of Messrs. JAMES CARTER & Co., whose Seeds, especially Carnations and Picotees, have given such universal satisfaction, has transferred the Agency from that firm and appointed us his representative in this country. To meet the growing demand for first class flowers, particularly FLORISTS' FLOWERS, we have adopted our usual maxim of charging the lowest possible prices.

Professor LINDLEY in the *Gardeners' Chronicle* of February 5th, has the following notice of B. & McC.'s Catalogue.

"BUTLER & MCCULLOCH'S (Covent Garden) Spring Catalogue of Choice Flower, Shrub, Tree, and Vegetable Seeds. This list fills 84 closely printed 8vo pages, and is remarkably well got up. It appears that the correspondent in Sardinia, who formerly supplied one of the great London houses with seeds raised in that warm part of Europe, has now transferred what he saves to Messrs. BUTLER & MCCULLOCH. Let us add, that it yields to no Trade List in the abundance of its materials or the excellence of its arrangements."

A selection of 44 pkts. of beautiful Annual Flower Seeds			7s.	6d.	
Ditto	33	ditto ditto	5	6	
Ditto	21	ditto ditto	3	6	
A selection of 40 pkts. of beautiful Biennial and Perennial ditto			10	6	
Ditto	31	ditto ditto	7	6	
Ditto	24	ditto ditto	5	6	

An Assortment of Vegetable Seeds, 20 quarts of Peas, and other Seeds in proportion for 1 year's supply			£3	3s.	0d.
Ditto	ditto 12 quarts of Peas	ditto ..	2	2	0
Ditto	ditto 6	ditto ditto ..	1	1	0
Ditto	ditto 5	ditto ditto ..	0	15	0

All Flower Seeds sent post paid, and Vegetable or Vegetable and Flower Seeds amounting to 1*l.* 1*s.* Carriage Paid to any principal Railway Station in England, Wales, and Scotland, or any port on the Irish Coast.

BUTLER & McCULLOCH, Covent Garden Market.

JAMES CARTER & CO, SEEDSMEN,

238, HIGH HOLBORN, W.C.,

BEG to call attention to the 24th Annual Issue of their ENCYCLOPÆDIC CATALOGUE and GARDENERS' VADE MECUM, containing upwards of 2000 species and varieties of Flower Seeds, every requisite for the Farm and Kitchen Garden, and a comprehensive Calendar of Operations for each month throughout the year. J. C. & Co. beg to recommend the following selection:—

No. 2	Collection of 12 extra fine varieties of Quilled German Asters			1s. 6d.
,, 6	,, 12 superb ,,	New Perfection ,,		2 6
,, 13	,, 5 beautiful ,,	Dwarf Perfection ,,		2 6
,, 18	,, 16 selected ,,	Dwarf German Stocks		2 6
,, 32	,, 10 splendid ,,	Imperial ,,		2 6
,, 39	,, 12 newest ,,	Camellia-flowered Balsam		3 0
,, 40	,, 8 finest ,,	Rose-flowered ,,		2 0
	Unequalled Collections of Carnations and Picotees, 6 vars., 3s. 6d.			
,, 47	Collection of 12 extra fine varieties of Dwarf Rocket Larkspur			2 6
,, 53	,, 12 beautiful ,,	Phlox Drummondi		3 6
,, 56	,, 12 newest ,,	Salpiglossis		3 0
,, 60	,, 12 superb ,,	Wallflowers		2 6
,, 62	,, 12 splendid ,,	Zinnia elegans		3 6

Alpine Plants in collections, 12 varieties, 2s. 6d.; 25 do., 5s.; 50 do., 10s.

Catalogues forwarded post free upon application.

JAMES CARTER & CO., Seedsmen, 238, High Holborn, W.C.

NURSERYMEN, SEEDSMEN, & FLORISTS TO

HER MAJESTY **THE QUEEN.**

NEW FUCHSIA,

"LORD CLYDE" (YOUELL'S).

IT is with much pleasure and satisfaction that we have the opportunity of offering for the present season the above truly novel and probably the most beautiful Fuchsia that has yet been introduced. The tube and sepals (which are of great substance) are of rich glossy scarlet, the latter most perfectly reflexed, exhibiting a large well-folded corolla of rosy pink, distinctly flaked, with broad stripes of bright violet purple. The habit of the plant and the profuseness of its blooming properties are all that can be desired. It flowered for the first time in 1857, and proved again in 1858, and has maintained its character in every respect. Strong plants will be ready for sending out on and after April 27, at 10*s.* 6*d.* per plant. (Per post free, if required.)

Correct Coloured Engravings, by Mr. ANDREWS, *will be forwarded to any address on receipt of* 6 *postage stamps.*

YOUELL & Co.'S ROYAL NURSERY, GREAT YARMOUTH.

EXHIBITION OF EARLY TULIPS.

WELLINGTON NURSERY, ST. JOHN'S WOOD, LONDON.

MESSRS. E. G. HENDERSON & SON

RESPECTFULLY announce that a very splendid display of the above may now be seen at their Nursery Establishment. The collection consists of nearly 30,000 Bulbs in 400 named varieties.

A PERFECT SUBSTITUTE FOR GRASS WITHOUT MOWING!

SPERGULA PILIFERA,

Forms an admirable Moss-like Plant, with a dense low growth, of the easiest culture, and uniform rich verdure throughout the year. It is a charming substitute for Grass-lawns, Verges, &c., is perfectly uninjured by cold or drought; bears any degree of pressure by rolling or walking upon; is studded over in July with myriads of snow-white starry blossoms; is softer in its structure and equally level as a Turkey carpet, and

REQUIRES NO MOWING!

A further description of it is given, with directions where a beautiful Lawn may be seen, of four years' duration, in

E. G. HENDERSON & SON'S SEED CATALOGUE FOR 1859.

Offered in Seed Packets of 6*d.*, 2*s.* 6*d.*, 5*s.*, *and* 10*s. each.*

ORNAMENTAL FIRST-CLASS BEDDING STOCK,

AND OTHER ORNAMENTAL PLANTS.

Strong Plants, including last year's first class introductions, in the following sections, are offered in selections of 12 kinds (one each) as follows:—

VERBENAS, 6*s.* to 9*s.*
PETUNIAS, single and double, 6*s.*, 9*s.*, 12*s.*
FUCHSIAS, 9*s.* 12*s.*, 18*s.*
DAHLIAS, 6*s.*, 9*s.*, 12*s.*, 18*s.*
ACHIMENES, 9*s.*, 12*s.*, 18*s.*
GLOXINIAS, 12*s.*, 18*s.*, 30*s.*
ANTIRRHINUMS, 6*s.*, 9*s.*
CALCEOLARIAS, Bedding, 6*s.*, 9*s.*, 12*s.*
,, spotted flowers for exhibition, 12*s.*, 18*s.*
CARNATIONS, per 12 pairs, 18*s.*
PICOTEES, 12 pairs, 18*s.*
PINKS, 12 pairs, 9*s.*, 12*s.*
CLOVES, distinct, 12*s.*
PHLOXES, 6*s.*, 9*s.*, 12*s.*
PANSIES, 6*s.*, 9*s.*
MIMULUS, 6*s.*, 9*s.*, 12*s.*

NEW CONTINENTAL VERBENAS AND PETUNIAS OF 1859,

18s. Per Dozen.

GERANIUMS.

STRONG PLANTS FOR THE PRESENT SEASON'S BLOOMING:—

LARGE SHOW VARIETIES, 12*s.*, 18*s.*, per dozen. | FRENCH SPOTTED do., 12*s.*, 18*s.* p. doz. FANCY do., 12*s.*, 18*s.* per dozen. | VARIEGATED do., 9*s.*, 12*s.*, 18*s.* SCARLET or ZONALE do., 6*s.*, 9*s.* 12*s.*

SPLENDID BEDDING PLANT,

TRITONIA AUREA,

THE GOLDEN TRITONIA.

LUCOMBE, PINCE, AND Co. having a very large stock of this most beautiful hardy bulb can offer it well established in pots, fit for immediate planting out, at the undermentioned exceedingly moderate prices.

Nothing can surpass the brilliancy of its rich golden orange-coloured flowers, which are produced in the greatest profusion upon graceful slender stems, and stand unblemished the heaviest showers and most fervent sun. We strongly recommend the Golden Tritonia as one of the most effective plants for masses ever introduced. It cannot fail to give satisfaction; indeed, as that excellent authority Donald Beaton truly remarks in the "Cottage Gardener" "IT IS ESTABLISHED AS A FIRST-RATE AUTUMNAL ORNAMENT TO THE FLOWER GARDEN."

100 Strong Bulbs.. £3 0*s.* 0*d* | 25 Strong Bulbs.. £1 0*s.* 0*d.*
50 do. do. .. 1 15 0 | 12 do. do. .. 0 12 0
Single Bulbs .. .. 1*s.* 6*d.* each.

Exeter Nursery, Exeter. Established 1720.

ROYAL SOUTH HANTS SEED ESTABLISHMENT.

UNDER THE PATRONAGE OF H.R.H. THE PRINCE CONSORT, THE AGRICULTURAL, HORTICULTURAL SOCIETY OF INDIA, AND THE LEADING AGRICULTURISTS OF THE UNITED KINGDOM.

PAGE AND TOOGOOD can now supply GARDEN AND FARM SEEDS, carriage free; SEED POTATOES, &c. The numerous Prizes gained by their Stocks are convincing proofs of superior quality, and their prices compete with any house in the kingdom. WHOLESALE and RETAIL PRICED CATALOGUES upon application.

Agents for ODAMS's Blood Manure, Superphosphate, &c. Seeds Packed for Exportation to all Parts of the world,

37 and 38, Oxford Street (facing the Railway Terminus); and 58, Above Bar, Southampton.

SPRING CATALOGUE.

MESSRS. ARTHUR HENDERSON AND CO.'S CATALOGUE OF SOFT-WOODED PLANTS (including all the leading useful novelties for this year), can now be had of them post free, on application.

Pine-apple Place, Edgware Road, London, W.

TWO HUNDRED GUINEAS IN EIGHT PRIZES.

FOR FOUR YEARS SUCCESSIVELY HIS ROYAL HIGHNESS THE PRINCE CONSORT'S PRIZE CUPS HAVE BEEN AWARDED TO

SUTTON'S CHAMPION SWEDES at the East Berks and South Bucks Agricultural Societies in 1855, 1856, 1857, and 1858. New Seed now ready, 1*s.* per lb., or cheaper by the bushel, carriage free.

Royal Berkshire Seed Establishment, Reading.

The Gardeners' Chronicle.

SATURDAY, APRIL 16, 1859.

MEETINGS FOR THE FOLLOWING WEEK.

THURSDAY, April 21—Linnean ..... 8 P.M.

THE future of the NATURAL HISTORY COLLECTIONS OF THE BRITISH MUSEUM is now fairly before Parliament; and will probably be brought under final consideration as soon as possible when the House of Commons shall have reassembled after the impending dissolution. The case indeed has become desperate; human ingenuity has exhausted itself in temporary devices to find space where space there is none; and either natural history or antiquities and art collections must be consigned to the open street unless some new building for the one or the other is provided. That the treasures of art and antiquity which can bear the London atmosphere should stir is, we presume, out of the question. It is natural history which will have to find a new lodging.

A return to an order of the House of Commons, dated the eleventh of last March, and just published, contains information upon this important subject, of the highest interest. It shows among other things that during the past year a sub-committee on natural history, consisting of certain Trustees of the Museum, have been seriously occupied in taking evidence and considering what measures they should recommend for adoption. On the 16th June they examined Sir WM. HOOKER, Dr. HOOKER, Mr. BENNETT, Dr. LINDLEY, and Prof. OWEN; on the 21st the evidence was taken of Mr. BENTHAM, Prof. HENFREY, and Dr. FALCONER; after which letters from Sir CHARLES LYELL and Mr. DARWIN were made subjects of consideration. The following are extracts from the report made by the sub-committee to the General Board of Trustees. In the first place they state:—

"That while all the botanists they have examined are of opinion that it would be advantageous to form a botanical establishment at Kew, comprising an extensive herbarium and a good library, as an addition to the garden of living plants, there are differences of opinion respecting the desirableness of also keeping up in the metropolis such a herbarium in connection

with the extensive library of the British Museum. Sir William Hooker, Dr. J. Hooker, and Dr. Lindley have given reasons in favour of the removal of the Collections from the British Museum to Kew, with the view of rendering that establishment more complete, but Dr. H. Falconer, long at the head of the Botanical Garden of Calcutta, and Professor Henfrey, support the opinion of the late eminent botanist, Mr. Robert Brown, and believe that such a removal would be of great disservice to science by depriving the consulting botanists of ready access to a central Metropolitan Herbarium and Library. In this view Mr. Bentham coincides, with this exception, that he wishes the herbarium bequeathed by Sir Joseph Banks to be removed to Kew.

"The herbaria at Kew, and the library there, are, by far the greatest part of them, private property, and only accessible to the public under certain conditions; there are no buildings belonging to the gardens in which the united collections could be deposited, and no staff sufficient for its care, and the arrangement of necessary accessions. It is also stated that the number of specimens common to the collections at the British Museum and Kew is very large. In addition to the above considerations, it is clear that such a transfer as above alluded to cannot be made at present, nor, as it appears to your sub-committee, can the question be seriously entertained until the Government has decided upon erecting the necessary buildings at Kew, and providing a sufficient establishment in that locality."

For these reasons the sub-committee were unanimously of opinion that it is not desirable to remove the botanical collection from the British Museum to Kew. We have little doubt that when the reasons which influenced the sub-committee shall have ceased to exist their opinion will be modified accordingly. At all events it is clear from what follows that neither the botanical nor any other part of the natural history collections can remain in Great Russell Street, whatever may be their destination; and we hardly suppose it to be intended that the British Museum should change its site. We also remark that on the 26th June the General Board of Trustees postponed considering the report of the sub-committee till an answer should have been received to a letter addressed to the Treasury by order of the Trustees; to which letter it appeared that no answer had been received at the end of last February. It would therefore seem that the Treasury is deliberating—as well it may.

It is a matter of public notoriety that even last spring the Trustees had been for some time unable to find space for a large quantity of valuable objects of all kinds, which were therefore stowed away in cellars and vaults. By this time their embarrassment has become very much greater. On the 8th Oct. they were informed by Mr. Panizzi that a ship load of most interesting antiquities was on its way from Budrum, Cnidus, Geronta, and Carthage, among which was a marble lion alone weighing 11 tons, for none of which could even shelter be found. In October and November Prof. Owen, Dr. Gray, and Prof. Maskelyne were urgently pressing for more room. On the 19th Nov. the memorial from Zoologists and Botanists printed at p. 861 of our last volume was received. On the 4th Dec. the arrival of the Cnidian and Carthaginian antiquities calculated to occupy 4000 cubic feet was announced; with a report from Mr. Birch, representing that the provisional space provided for their reception was not adequate for the reception, unpacking, and arrangement. Then, on the 11th Dec., came before the Trustees another memorial from 36 eminent archæologists, earnestly addressing "her Majesty's Government upon the importance of providing adequately for the reception of this valuable addition to our national collection of antiquities. It is obvious, say the memorialists, from the expedients to which the authorities of the British Museum have lately been driven, in order to find room for other important works of the kind, that the means of accommodating such monuments are lamentably deficient; and they declare that the manner of disposing of many of those remains is *alike injurious to the works and discreditable to the country.*"

Early in January Prof. Maskelyne reports that "a commencement has been made in the grouping of the minerals with a view to their final classification. * * * But the exact and definite arrangement of a large number of minerals will be impracticable until the means are furnished to the department for instituting investigations, and examining the minerals by those chemical, crystallographic, and optical methods, which, in the present advanced state of mineralogy, are quite necessary, indeed indispensable, for their exact discrimination. Until there is a proper room for chemical, as well as one for crystallographic and optical researches, the arrangement of the minerals can only be provisional. Some days have been given to the arrangement of the garnet case; but such an arrangement can only be provisional and inaccurate, in the absence of all exact means of examining a mineral either chemically or crystallographically." And this representation is backed by Prof. Owen who has "only to remark that the reference by Prof. Maskelyne to the 'Garnet Series' exemplifies the inconvenience of the continued want of a small laboratory, and of a room with a proper light for goniometrical work, *specified amongst the requirements of the keeper of mineralogy at the time of his appointment.*" Next day the Trustees are informed by Mr. Panizzi that "the antiquities from Halicarnassus, Cnidus, Santorin, Geronta, and Cos sent by Mr. Newton, as well as those from Carthage, transmitted by Mr. Davis, have arrived, together with the 160 blocks of marble forwarded by the former gentleman. The preservation of these remains of ancient art is an object of great importance, *as no other country possesses any of them*, and archæologists in foreign lands as well as artists, speak of them with admiration and envy. The antiquities from Carthage *are in some parts of the basement;* the cases are *one on the other* at present. Endeavours are being made to find room for unpacking and temporarily displaying them."

And shortly afterwards the Trustees learn that more antiquities may be expected from Cnidus. As nearly the whole of the space under the colonnade is already enclosed and occupied, it *will be difficult to find room for their reception.* The mosaics and other antiquities from Carthage have not been all unpacked; *they are deposited in the basement for want of room* elsewhere. The Rev. N. Davis reports that he has made farther discoveries, so that *fresh arrivals may be expected* from Carthage.

Finally, as if to complete the difficulties of the position, Prof. Owen lays before the board his views of what is required for the public display of the natural history collections. According to the views of this high authority, above 11 acres of ground are required for Natural History alone; in order to receive about two miles and a quarter of galleries each 50 feet wide and about 60 feet high, together with libraries, a theatre, store rooms, arranging rooms, offices, and residences for the officers.

Such is the present state of the Natural History collections and the British Museum.

Some weeks since we received from a correspondent in Kent two Pine Apples which exhibited a very curious form of disease. We contented ourselves at the time with giving the communication such a notice only as the urgency of the case required, as we were anxious to have some further information on the subject. This we have now obtained, and though unfortunately we have little to say as to the cause, the case is too important to be passed over in silence.

The disease commences when the fruit is just formed. Up to this period all seems to have gone on perfectly well, when a portion of the centre of the fruit becomes discoloured and dies. The affection gradually extends upwards and downwards, till the greater part becomes a mass of corruption. At a late stage of the disease fungi make their appearance, but they are evidently the consequence and not in any sense the cause of the affection. The first point in all such cases is to ascertain the state of the roots. Some of these indeed are dead, but the younger ones are perfectly healthy, and the plants before the disease makes its appearance are of such a healthy green as to lead to the conclusion that there is nothing materially wrong about them. The soil moreover is not such as would be likely to lead to evil; the plants, though not free from scale, are by no means infested with that troublesome insect in a degree likely to be injurious, and as far as we have heard, the mode of cultivation appears to be good. It is quite certain moreover that where the tissues of the plant are diseased, the evil has not spread from the roots upwards, but on the contrary from the diseased external organs.

It should seem then that the malady is due to some peculiar local cause, which can only be discovered on the spot. There is some defect in the ventilation, the surface of the fruit gets chilled after syringing, from draughts of air, from nocturnal radiation, or from some other cause which may possibly be ascertained by an accurate examination of the circumstances under which the plants are grown. We do not therefore believe that it is any constitutional malady, or one which can admit of any palliation from external applications. We have had other instances of disease in Pine Apples where the leaves and not the fruit were affected, and the same considerations which affect the disease of late so prevalent amongst Orchids, are applicable here.

As regards the latter plants it is worthy of observation that precisely the same appearances which present themselves on the cultivated plants, appear in specimens gathered in their native place of growth. The combined effect of moisture and depressed temperature is we believe in a multitude of instances the real cause of mischief, though other external agents may occasionally produce similar effects. *M. J. B.*

The present spring and late winter seem to have been as remarkable in France as with ourselves, according to the Revue Horticole, as will be seen by the following extract from the number for April 1. "We have (in Paris) before our eyes an Almond tree which had expanded its flowers by the 28th of February, an Apricot tree in bloom by the 3d of March, and a Pear tree by the 21st of the same month. By the 29th March the fruit garden of the Luxembourg looked like fairy-land. Every branch of every tree was white or rose-coloured. A Peach tree used by M. Hardy for his demonstrations had opened its flowers by the 26th March."——— There is nothing, however, so unusual in this as the world imagines, as is shown by some curious instances of mild winters quoted by M. Barral, the writer of the article before us. "Thus we read in Dom Bouquet that in the year 1258 the season was so mild and soft that in all the winter it froze on two days only. In the month of January there were Violets and Strawberry flowers, and the Apple trees were white with bloom. So again Peignot relates that in 1289 the temperature was so high that at Cologne on Christmas Day and Twelfth Night young maidens were decorated with Violets, Bluebells" (*Bluets*—surely not Centaurea Cyanus, or Bluebottles), "and Primroses, and that in 1421 the winter was so mild that Cherries were ripe in April and Grapes in May." There is also an account by Maraldi of the winter of 1719, which seems to have been still more extraordinary. "Most trees, in February and March, were covered with flowers which were cut off by the frosts of the end of March and beginning of April. At Marseilles fruit trees were in flower in the preceding October, and produced fruit which though small was ripened. On the 18th Dec. Cherries and Apples were gathered perfectly ripe. In several parts of the province of Genoa, the same thing happened with Plums, Cherries, Figs, and Peaches. Orange and Lemon trees in the open ground began to flower in November and produced their fruit. In Provence the Olive trees were as forward in January as they usually are in April and May." We need not cry "a miracle" then, adds M. Barral, because we have already seen a few Vines in flower, and some stone fruit set.

Have any of our correspondents information respecting the vegetation of England in the extraordinary seasons of the years 1258, 1289, 1421, and 1719? It would be interesting to compare the state of England and of the Continent on those four remarkable occasions.

New Plants.

217. Howardia Caracasensis, *Weddell; aliàs* Calycophyllum tubulosum, *Seemann; aliàs* Pinckneya ionantha *of the Belgian gardens.*

"This is indeed a very lovely stove plant, with gracefully drooping panicles of flowers, whose beauty is very much increased by the remarkable enlargement of one of the minute teeth of the calyx into a heart-shaped, petiolated, deep rose-coloured, foliaceous *lobe*, similar to what takes place (except in respect of colour) in the well-known *Mussænda* of our stoves. It is a plant, too, interesting in another point of view, as one of a new genus of which the typical species, *Howardia febrifuga*, Weddell, of Bolivia, has been detected as one of the medicinal barks of commerce, and much used by the Bolivians in intermittent fevers. To this plant Dr. Weddell has assigned the generic name *Howardia*. 'Parmi les genres,' says Dr. Weddell, 'que j'ai fait connaître dans ma Monographie des Quinquinas, il en est un auquel j'appliquai, par mégarde, un nom (*Chrysoxylon*) appartenant à une plante d'une autre famille. Pour mettre fin à ce double emploi, je vais aujourd'hui donner à ma Rubiacée un nom nouveau; et je ne fais, ce me semble, qu'un acte de justice en laissant tomber mon choix sur celui de l'excellent quinologiste qui vient de publier, en Angleterre, un mémoire aussi judicieux qu'approfondi, sur la collection de Quinquinas de José Pavon, léguée par Lambert au Musée Britannique.' No compliment could be better deserved."—*Botanical Magazine, t.* 5110.

We understand that Mr. Howard has commissioned Mr. Fitch, the eminent botanical draughtsman, to proceed to Madrid for the purpose of making drawings of some of the authentic specimens of Peruvian barks preserved in that city.

This Howardia Caracasensis is from the Caraccas, as its name implies.

CLUMBER.

This noble demesne, containing as it does the beautiful and classic residence of his Grace the Duke of Newcastle, is situated in the centre of the "Dukeries," 12 miles from Mansfield, 8 miles from Retford, and 4 miles from Worksop, market towns, at each of which there are railway stations. It is bounded on the west by the Duke of Portland's famous park at Welbeck, and on the northern side by Worksop Manor, the residence of the former Dukes of Norfolk, an immense property which of late years has been added to this already vast estate.

The park comprises an area of 3500 acres of excellent land, which little more than a century ago was one of the wildest tracts on Sherwood Forest. The surface is of a bold and irregular character, richly adorned with beautiful timber, in well disposed groups and masses, to an extent of 1400 acres, and here on the light sandy loam the Fir tribe thrives most luxuriantly. Silvers and Larches of from 80 to 90 years' growth contain on an average about 80 cubic feet; others of from 50 to 60 years planted average in measure 50 cubic feet; and possibly but few estates, more especially in the midland counties, possess such an excellent growth of this particular description of useful timber. The principal approach is from Retford; it enters the park at Appleyhead, under a lofty freestone arch, with iron gates and palisading, having handsome lodges in the classic style on either side. From this a 14-feet road sweeps over hill and dale for a distance of 3 miles before it reaches the mansion, 2 of which are between wide double rows of thriving Lime trees, some 30 years planted—a noble avenue, which now begins to wear an air of much grandeur; that portion of it, however, which is farthest from the lodge, already requires to undergo the operation of what is technically called breaking an avenue, and ought unquestionably to be cut into groups, in order that the excellent views over the rich sylvan scenery of the magnificent park might be less interrupted. Nor would this operation interfere much with the noble avenue character of this admirable drive. There are five other carriage approaches from different points, whose lodges and gates are generally in the classic style, and the roads in the aggregate 14 miles in length, and generally of the width already indicated. The green drives through the magnificent woods are also of great extent; they are wide and well directed, so as at once to obtain the best views not only of the beautiful park but also of the surrounding country. When I first knew Clumber the carriage drives were in such a condition as to be almost unsafe to travel over. They have, however, of late years been placed under the intelligent management of Mr. Spary, his Grace's forester, and have been gradually brought into a creditable condition, alike in regard to formation and keeping, and even this latter operation continued over such an extended surface is of itself a gigantic undertaking, which is now accomplished by a liberal use of salt applied at occasional periods. But not only do these roads wear a more improved and unexceptionable appearance, but all about seemed to evince unmistakeable evidence of greater painstaking and care.

The mansion is a noble pile of white freestone in the classic style of Venetian-Italian architecture, considerably enriched on three sides, and having an open colonnade terminating in a conservatory at the eastern end, conferring much dignity and elegance on the whole mass. It was built by Henry, the first Duke of Newcastle of the present family, after the year 1770. The principal apartments are of noble proportions and superbly furnished, containing a vast assemblage of articles of *vertù* and many exquisite paintings by the best masters. But the glory of Clumber are its state dining and drawing-rooms and magnificent library; the former is sufficiently large to accommodate 150 guests at table, and the latter contains, in superb mahogany cases, an extensive and well chosen collection of English, foreign, and classic literature. It occupies a central, although a somewhat low situation in the park, on the north bank of the river Woolen, a considerable stream which flows in close proximity, spreading out in its course to the east into a large expanse of more than 100 acres of water, studded with beautiful green islands. A superb frigate, which measures over all 53 feet by 15 feet, the main cabin of which is sufficiently capacious for some 20 persons to dine at its table, is a noble object. The south or garden front was laid out by the late Duke of Newcastle about 30 years ago in beautiful and richly adorned terraces, separated from the park and lawn by open balustrade fences. The lower terrace has for a centre-piece a fountain of white marble, well supported by numerous vases and other works of art. An open balustrade separates this garden from the river, and it is also divided from the upper terrace by a similar line of rail surmounted by vases well filled with beautiful flowers. These terraces are continued to the eastern side in front of the colonnade and conservatory, and the whole is laid out with much judgment and good taste, and at the period of my visit was very gay with flowers; it is an admirable garden for an effective display—the form of every bed being seen distinctly not only from the windows of the state rooms, but also from the descending steps and upper terrace. All in consequence require to be kept clean and artistically treated in order that the contrasts of colour may be well brought out, and that the view over the surface of the river, which is at this part somewhat confined, may be altogether uninterrupted. The conservatory is a very pretty structure of moderate size, and was exceedingly gay and well filled with nice specimens of plants in flower.

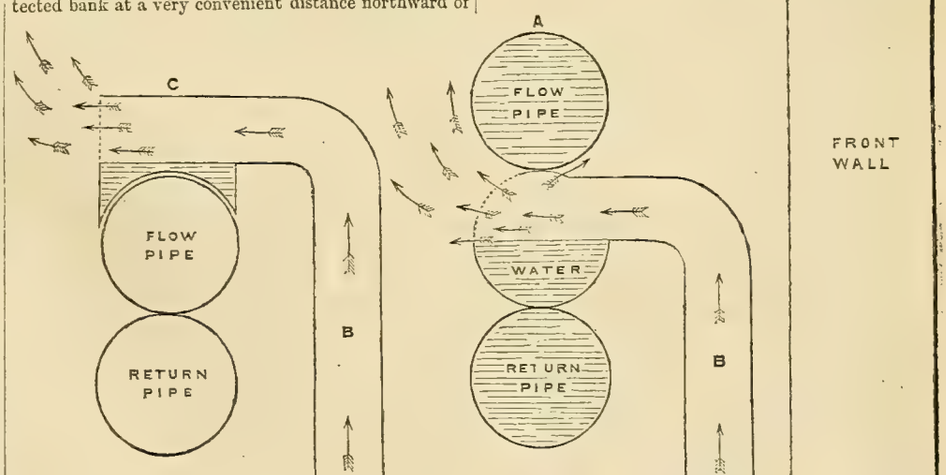
The lawn and pleasure grounds are of large and irregular form, extending onwards a considerable distance by the margin of the water; the surface is somewhat varied, and contains many remarkable specimens of fine trees, more particularly of Larch, Spruce, and Silver Firs, relieved at intervals by some unique forms of Deciduous Cypress, Tulip Trees, Purple Beech, &c.; the foreground is blended with some noble Cedars of Lebanon. One in particular of a decidedly glaucous and silvery hue is an object of great attraction—it is 60 feet in height, and contains 160 cubic feet of timber; its beautiful branches weep to the turf, and cover an area of many yards in circumference. These grounds are further interspersed with many fine specimens of Hollies, Thujas, Cupressus, &c., together with well disposed masses of Rhododendrons and other evergreens intermixed with early flowering deciduous shrubs, possessing all the charms and comforts of a winter garden. Broad and firm walks are judiciously led through these magnificent grounds, and the whole is further ornamented by colossal vases of white marble, which confer an air of grandeur and classic interest on the whole scene; these beautiful lawns and Grassy slopes, with their excellent traversing walks, were altogether faultless in regard to keeping and management. The view everywhere, and more especially from the terrace, is of the most sublime and cheering character—the large and beautiful lake with its bright and silvery surface merging as it were into the foliage of the distant woods, its well clothed verdant islands jutting out like gems on its bosom. In the middle distance the splendid frigate rides majestically at anchor—a noble object in this lovely scene, on which the eye at once fixes with delight. Near at hand stately swans glide proudly along, and multitudes of wild fowl disport on the surface of the waters, or congregate on the shores; and these moving objects in the foreground confer an exquisite degree of pleasure which a tame and inanimate scene could never by any possibility impart. On the north side the beautiful lawn interspersed with its noble forms of stately Cedars, Acacia, Purple Beech, Cupressus, &c., relieved by the more airy forms of Silver and Spruce Fir towering over all, whilst the undergrowths of Rhododendron and other kindred subjects kiss, as it were, the water along its extended margin, the whole being further adorned by beautiful objects of art, presents an excellent effect. The opposing hill to the south is backed by a vast range of stately timber, and is continued onwards across the western valley, through which the river flows, the whole of the foreground being well broken into groups and masses of noble timber, whilst single specimens of Cedars and other trees of particular interest occupy the salient points. At a considerable distance to the west the river is spanned by a very beautiful freestone bridge with an open balustrade rail, forming an object of considerable interest in the landscape, on which the eye readily fixes for relief from the monotony of this woody scene, so truly vast in its extent. From here, too, the most exquisite views of the princely mansion and its enchanting valley are obtained.

The kitchen garden is situated on a sloping well protected bank at a very convenient distance northward of the mansion. It contains some 12 acres of excellent land of a deep sandy loam, admirably adapted for fruit and vegetable culture. The interior is inclosed by lofty substantially built brick walls, of which 800 yards in length are devoted to the training of fruit trees. They are well covered with healthy trees, and I observed some very remarkable specimens of Leon le Clerc and other Pears then ungathered. The main range of forcing houses, occupying the greater portion of the northern wall, is 450 feet in length, and is divided into nine compartments of various sizes: several of these houses are very wide and somewhat lofty. There are also nine other detached forcing houses of considerable dimensions, and the whole is of the best construction; these recent erections are used for the production of Pines, Grapes, Peaches, Figs, Nectarines, Cherries, and Strawberries; and they are further available during the winter and spring months for the protection of Geraniums and other bedding plants from the inclemency of the weather, and of which enormous quantities are required for the summer decoration of the beautiful terrace gardens. These houses have long been famous for the vast quantities of fine fruit they have annually produced, and one occasionally observes some of the more select specimens on the metropolitan exhibition tables. The Melon ground is contained in an enclosed square on the western side, and consists of several ranges of nicely constructed pits, to the extent of fully 100 lights, which are used in the production of such forced vegetables and fruits as are necessary for the use of a first-rate establishment. The walks are well-proportioned, dry and firm on the surface, and their course is indicated by espalier trees in a most healthful and fruitful condition. The whole of these gardens at the period of my visit were in the best possible condition, whether as regards keeping or management, and they contained not only some excellent Grapes, but also some noble examples of Providence Pine Apples, reflecting much credit on Mr. Moffat, the worthy superintendent, whose excellent management for a long series of years has constantly been the subject of much commendation.

The Home Farm is situated within the limits of the park, and is an object of much interest to the present Duke; it contains an area of 1000 acres, a very considerable portion of which is of a free sandy loam and well adapted for the production of Barley. Root crops and this description of land are much sought after by agriculturists in the district, by reason of its free working qualities. About 30 acres of water meadow have lately been broken up and thoroughly drained; it was again laid down on the most improved principles, and is now producing four crops of green fodder annually, and this too on ground that hitherto produced but little if anything but coarse Grass and Rushes. Forty acres more of this same description of land are now undergoing the same process of renovation, and which will doubtless be attended with the same favourable result. Hitherto the farm labourers had to walk several miles to their work; it has, however, been one of the Duke of Newcastle's first considerations to improve their condition by the erection of suitable dwellings for their accommodation in a more convenient locality, and this has been accomplished in the most munificent manner, by building three groups of ornamental cottages, containing 13 separate dwellings, and also a lodging house in the same beautiful style of architecture, for the accommodation of 20 single men. These buildings are situated on a well defined platform on rising ground, at no great distance from the farm steading, and this extended terrace is laid out ornamentally, and in the latter days of September I found it a complete blaze of flowers. It is under Mr. Spary's management, who is well known to be an ardent enthusiast in such matters. *D.*

NEW MODE OF VENTILATION.

Your remarks on Mr. Hands's "new and improved system of heating and ventilating," have induced me to send you a plan which occurred to me some years ago, but fearing that better modes already existed, I have hitherto been deterred from making it known. Section A is what I would recommend to those who are about building new forcing houses. Between the flow and return pipe is a pipe of the same size, the length of the building, having one quarter of its upper surface pierced, each hole being about ¼ or ⅜ inch in diameter, and ¾ inch apart. This pipe is intended to be kept half full of water, which will become warmed from its being in contact with the flow and return. This warm air pipe would be supplied with fresh air through the cold air pipes B, which should be placed at intervals of about 3 feet, these cold air pipes to communicate with underground air-drains, and if for Vines, air-drains could not be in a better position than under the borders. Section C is applicable to existing buildings. A slight casting perforated on the inner side, and 4 or 5 inches deep, made to any convenient length, and to fit close on the flow-pipe with the cold air pipe attached,



is all that is required. Either of these plans, with ventilators in the back wall to allow the deteriorated air to escape, will furnish a constant supply of fresh air without fear of its being too cold or parched. I also consider that houses ventilated in this way would be very good for keeping late Grapes, especially in a damp climate, and as a dry atmosphere is indispensable for keeping the bunches plump and good no water should then be kept in the air pipe. *W. Hutchison, Castle Malgwyn.*

TRADE MEMORANDA.

WHO is Wm. Samson, who sends large orders from 2, Somerset Square, New Allen Street, Rochdale Road, Manchester, a place which the police report to be only a common court, of little cottages, where, at No. 2, Mr. Samson cannot be heard of?

Home Correspondence.

On Trees thriving without their Bark.—"It appears (see p. 315) that trees may be deprived of the whole of their bark, not only without experiencing any injury, but even with considerable advantage, the operation tending to increase their power of vegetation." I cannot stomach this. The dose is too potent. In times gone by, Dame Nature knew the absolute necessity of trees being furnished with bark; for Ovid, that correct field naturalist, expressly tells us that, when the Heliades were turned into Poplar trees, on account of their excessive sorrow for the untimely death of Phäeton, they were supplied with a comfortable jacket of bark, just when their voices were heard for the last time. "Cortex," says Ovid, "in verba novissima venit." And, in our days, in the year 1811, three deer escaped from the park at Nostell Priory. Having found their way into my plantations, they completely tore off the bark from many hundreds of healthy young Elms. Every Elm died down to the ground; and new shoots sprung forth at the bottom where the bark had escaped from being destroyed by the marauders. Trees, no doubt, will live for a considerable time after they have lost a large portion of their bark. Thus, in the year 1814, my neighbour at Chevet had in his pleasure-grounds one of the largest and healthiest Variegated Hollies I ever saw. One morning, some plundering vagabonds in quest of Holly bark for bird lime deprived this fine tree of its bark for fully 2 feet in circumference, so effectually that not a vestige of bark remained at the place. That same summer the tree bore leaves, blossom, and fruit. The next year, it did the same; but its produce was inferior to that of the foregoing summer. In the third year it barely vegetated; and by the close of autumn all that portion of it above the part where the mischief had been perpetrated died outright. *Charles Waterton, Walton Hall.* [Neither can *we* stomach the French story to which our much valued correspondent alludes. On the contrary, we have been assured that all the trees that have been barked have died.]

Night Temperature of Forcing Houses.—I have read Mr. Ayres's paper on this subject with much interest. If I understand him rightly, he attributes his success in growing Cucumbers during winter, chiefly if not entirely to keeping a comparatively low night temperature. I am as fully sensible as most people of the injurious effects of maintaining a high night temperature, and have during the whole of my practice insisted on having a comparatively low temperature at night. But fully impressed as I am of the advantages of the system, I cannot agree in opinion with Mr. Ayres in attributing his success mainly to keeping a low night temperature. Mr. A. does not think the plants derived any great advantages from the construction of the house nor from modern glass—for he is very minute in describing the house and management—so that people may not think his success was owing to anything superior in these. After describing the house and management, Mr. A. says—"It will thus be seen that there has been nothing particular in the management of the plants; they had a comfortable bottom-heat from water around the pipes in the tank into which the roots soon introduce themselves, and I have found that a pot of dung-water put occasionally into the tank did not do any injury. As to light, they have been trained on the northern slope of the house, and of heat I have already spoken." Here we have the subject of bottom heat merely incidentally touched upon—no remarks as to its advantages. Now in my opinion, given in all deference to that of Mr. Ayres, his success has been principally owing to his plants having "a comfortable bottom-heat." Suppose there had been no bottom heat, the result would show that even Mr. Ayres—no matter in what compost the plant may be growing, no matter how trained, no matter how treated as to temperature—could not successfully grow Cucumbers in the winter season. "In the house," observes Mr. Ayres, "in which my Cucumbers are growing there are a few Pine plants, small suckers given me in the autumn of 1857, and planted out in October of that year. Through the summer of that year they were entirely without bottom-heat, indeed the chamber for dung was quite empty until the end of September. At that time several of the plants had showed fruit, and I have since cut several small but excellently swelled specimens." Now had these Pine plants had "a comfortable bottom-heat" from the time they were planted up to now the results would be more satisfactory. Had there been no bottom-heat during the last autumn and winter, the fruit in addition to being "small" would have been badly swelled; their being "excellently swelled" was owing to the healthy root action induced by the bottom-heat applied. Some 18 or 20 years ago I grew a lot of Cucumber plants in the back of a Pine stove. Some of the plants were planted out without any bottom-heat, others were growing in pots which were plunged in the bark bed; the plants were trained and treated in every other respect alike, and what was the result? Those without bottom-heat scarcely made any growth from the middle of December until the middle of February; while the others in bottom-heat grew well and bore an abundance of fruit. Now, here were plants that had the same night temperature, the same training, received the same amount of light and air; the only difference was, the one lot had bottom-heat, and the other none. See how different the result. If a gardener has, we will suppose for instance, an Orange tree in ill health, how does he proceed to bring it round. He has all the soil removed from the roots, has it carefully potted or put in a tub, using fresh soil; he moderately prunes the head, and then plunges it where it can have "a comfortable bottom-heat." If the night temperature be kept low and the atmosphere moist, as soon as the pot or tub begins to get full of roots the tree will push away vigorously. But, I ask, would such be the immediate result if there had not been a comfortable "bottom-heat?" In the growth of Cucumbers, Melons, Pines, &c., a regular "comfortable bottom-heat" is one of the most essential points to be attended to. When that is secured, all other conditions being attended to, the results are always satisfactory. Without it, no matter how assiduously every other point is attended to, the results will be unsatisfactory. As Mr. Ayres is a great authority in practical matters, and as the whole drift of his paper goes to show that his great success in growing Cucumbers in winter has been owing chiefly if not entirely to his keeping a tolerably low night temperature, I have been induced to offer the foregoing in order that those inexperienced in such matters may not commit a great mistake. *M. S.*

Rainfall in Cumberland.—The following was taken at Silloth by the incumbent of St. Paul's Church, Holm Cultram. It may be interesting to some of your readers to compare the quantity of rain which has fallen since the commencement of this year with the rainfall of the corresponding period in the four preceding years:—

	1855.	1856.	1857.	1858.	1859.
	Ins.	Ins.	Ins.	Ins.	Ins.
January	0.340	1.720	2.166	2.241	4.968
February	0.270	2.770	1.207	0.219	2.379
March	1.701	0.020	2.185	1.547	5.074
April, 5 days ..	0.010	0.470	0.202	0.334	2.055
	2.321	4.980	5.760	4.341	14.476

Silloth is situated on the Solway, on the north-west of Cumberland, but I have no doubt that the above will hold good for any part of the county, from the unexampled continuance of wet weather which has prevailed since the 1st of January, 1859. *R., Carlisle.*——From your Paper of the 2d inst., you, in the neighbourhood of London, appear apprehensive of evil from a want of rain, whilst here, in Cumberland, we fear injury from having too much. You report the fall of rain to be in January, 0.71; in February, 1.31; in March, 0.71; together a little more than 2½ inches. At the residence of Thomas Ainsworth, Esq., near Whitehaven, the readings are—in January, 5.41; in February, 4.47; in March, 4.49; together nearly 14 inches. At Silloth, a seaport on our coast, the fall (see above) during 16 days in March was 5.074. In this town 16 inches have fallen during the last three months. *Box* 35, *Post Office, Whitehaven, April* 13.

The Frost on the Morning of the 1st inst.—The effects of this severe frost in this neighbourhood, 20 miles N.E. of London, are most disastrous. The heavy snow showers on Wednesday, the 30th ult., were followed at night by a slight wind frost, the thermometer registering 28°, or 4° of frost, Thursday, the 31st, was dry and cold, and the frost at night terribly severe, the thermometer on Friday morning standing at 20°, showing 12° of frost. Apricots were a most abundant crop on the walls, and as large as Damsons. On trees unprotected, or protected only with nets, every fruit is destroyed; on trees protected with tiffany, even double, some few are left, perhaps one in a 1000, but these, although green and apparently sound, have their kernels brown and dead. Peaches and Nectarines under the same circumstances seem all destroyed; they had set an immense crop. I never remember them blooming more kindly or setting their fruit better, owing to their shoots being so well ripened by the warmth of the summer and autumn last year. Some few kinds of Plums were in full bloom on Thursday, *i.e.*, nearly all their blossoms were expanded; the germs of all the expanded blossoms are destroyed. Several kinds had not however unfolded their blossoms, and such is the remarkable protecting power of the petals when closed—these are now in beautiful bloom with all the parts of fructification perfect. A sort called the Early Prolific seems to have withstood the frost better than any other. On Thursday the trees of this kind were covered with their beautiful pearly blossoms, but all closed; on Friday morning a single upper petal of many blossoms was brown as if mischief was done, but the trees to-day are beautiful, with stamens, pistils, and germs all perfect. Pear trees here had not unfolded their blossoms, but they seem to have suffered much; still there may be found a few in the centre of each cluster that promise fairly. And now for my orchard house. At 7 P.M. I had two pans of ignited charcoal placed in it; at 10 P.M. the thermometer in the house stood at 49°, out of doors about 26°. On Friday morning the thermometer in the house registered 29°, or 3° of frost, and my fruit was safe. I assure you I looked at my abundant crop of Apricots, as large as small nutmegs, with great satisfaction. My Peaches and Nectarines are also an abundant crop and swelling off nicely. The severity of this frost may be imagined when in spite of two large flat iron pans of charcoal in a house 95 feet long and 14 feet wide, the thermometer descended to 3° below freezing. *Hortulanus.*

Arundinaria macrosperma.—Have any of your readers in cultivation this Arundinaria, the great Cane Brake of North America, which, by the description given by botanists, for size, beauty, and hardiness seems to rival the Pampas Grass itself? Some time ago you recommended the more general cultivation of these upright forms and spoke in favour of the introduction of novelties of this class, but as yet your suggestion does not appear to have been acted upon. North America I believe is rich in robust and tall Grasses; why cannot we add some of these to our at present meagre stock of these strikingly beautiful plants? As a pecuniary consideration I need only point to the popularity which the few we have of that description possess. *J. M., Hawkchurch, near Axminster, Devon.*

Dioscorea (see p. 218).—Having read in your Paper a little time since some rather disparaging reports of the "Dioscorea japonica," you may perhaps feel disposed to insert the following account of the experience of another grower of the root in question. I planted in February of last year a single row of about 50 feet in length, and the crop proved very satisfactory, producing about 110 lbs. weight of tubers. Some of these are very fine, the largest one measured nearly 3 feet in length (inclusive of the tapering upper end), and 10 inches in circumference round the thickest part, and weighed above 3 lbs. The length of about half the crop is upwards of a foot, the other half being of smaller dimensions and more irregular shape. This crop was planted in ordinary open garden ground without manure, which had been trenched 18 inches deep. Many of the finest roots had forced their way for several inches lower down into a stiff clay, so that had the soil been dug to a greater depth and treated with manure there is good reason for believing that the produce would have been considerably increased. *S. S.* [The former report, to which our correspondent alludes, was an account of an experiment most unskilfully conducted. There is no doubt that a good crop may always be had, when proper means are employed.]

Double Peaches.—I enclose a Double Peach taken from a tree in an orchard house. I do not know whether such things are uncommon, but I have never met with an instance before. The tree from which it was taken has now upon it more than a score of similar ones, and I should consider it a great favour if you would tell me whether I had better leave them on to form part of the crop, or whether it would be more proper to take them off, and trust to the common single ones. *W. M. A.* [We should prefer trusting to the single ones, but should allow a few of the twin fruits to remain by way of experiment.]

Cucumbers.—I had some beautifully vigorous Cucumber plants with eight or ten leaves, nearly as large as my hand, in raised mounds in a pit heated by manure, the brick-walls having holes to admit fresh heat when required by outside linings. Perceiving some insects I instantly fumigated with tobacco paper and bellows in the usual way; next morning by 8 o'clock, I found the plants shrivelled, drooping, and dying. The tobacco paper was good, having used it various times in my greenhouse and hot-water pits. The thermometer was 65° in the morning. *Gratis.*

Societies.

BRITISH POMOLOGICAL: *March* 3.—Mr. Hogg in the chair.

It was announced that Mr. Newton, of Enfield Chase, desired to offer a prize of half a guinea for the best dish of six Cornish Gilliflower Apples, to be competed for at the Meeting of November 17. Mr. Newton, at the same time, announced that he should not himself compete. Premiums had been offered by advertisement at this Meeting as follows:—Two guineas, and one guinea, for the best and second best collection of well-kept Apples and Pears, three fruits of each kind, accompanied by careful descriptions of the manner in which they have been kept. The result of this advertisement was one of the largest displays of fruit the Society had ever received—and probably, for the time of year, the most interesting that had ever been exhibited in Pears and Apples; 250 dishes were sent of the kinds then in season; and some of them were accompanied by such descriptions of the manner in which they had been kept as satisfied the meeting that the experiment (originally suggested by Mr. Busby at the Committee Meeting on the 19th of August) was a very successful one. The largest and most interesting collection, sent by Mr. Rivers, of Sawbridgeworth, contained 15 varieties of Pears and 34 of Apples. All were good and sound—not over-kept, as was the case with some of the other collections. Unfortunately, however, for its consideration in regard to the premiums, it was not accompanied by the information required in the advertisement. A letter from Mr. Rivers (which had been delayed in the Post Office) arrived during the meeting, and was read by the Secretary, containing the following general information concerning the mode of cultivation:—

Apples and Pears grown on bushes in the open air in the nursery at Sawbridgeworth. Soil, clayey loam mixed with calcareous sand resting on hard white clay, with numerous chalk stones. Site, about 60 feet above

the level of the Stort, a tributary of the sea. Pruning: very slight summer pinching in June and July, and shortening leading shoots towards the end of August. Management: taking up the trees biennually in November and replanting them; cutting off the ends of straggling roots. Manure: a quarter of a peck of soot is given to each tree in March, on the surface, in a circle 3 feet in diameter.

Pears.—Manure: in replanting, some leaf mould or rotten manure, and the calcareous sand common to this district, are given to each tree; two shovelsful of the former and one of the latter, well mixed. In March the same quantity of soot, as to Apples, is given in the same manner. The Pears are all on the Quince stock, and the Apples on the English Paradise.

The day after the Meeting, the Secretary received the following letter from Mr. Rivers, which he copies in this place, as it supplies the information which was desired at the Meeting:—

I forgot to add to my notes on Apples sent, that they have been kept in a very old, dry, arched cellar, under my packing-shed, the average winter temperature of which is about 50°. Air is constantly admitted at one end, through a wire grating, and flows gently through by the crevices in a very old, ill-fitting door at the end opposite to the wire grating. I dare say you observed the remarkably fresh state of the Apples. I have kept Hawthornden Apples quite sound till May, in this cellar. The fruit is gathered, and, without any preparation, placed in small wooden compartments, in double and single layers, and never touched till wanted. The Pears were kept in a greenhouse (with Camellias) in new flower pots, covered with pieces of slate.

The Pears were firm, handsome, and well coloured, but generally unripe, excepting Bon Chrétien d'Auch, which was sweet, half melting, but astringent. Bergamot d'Esperen, just ripening, and promising to be very delicious. The other kinds sent, or some of them, would probably have been improved if they had been ripened in a higher temperature. They were as follows:—Léon le Clerc de Laval, Colmar des Invalides, Bellissime d'Hiver, Bezi de Caissoy, Bergamot des Paynes, Coulen de St. Marc, Duc de Brabant, Beurré de Breconneau, Beurré de Rance, Prevost, Morel, Fortunée Parmentier, and March Bergamot. The Apples were also very firm, handsome, and in good condition, and were generally more ripe than the Pears. A few, such as Spring Ribston Pippin and Golden Harvey, were shrivelled, though good in flavour. The best dessert kinds were:—Golden Russet, Reinette Franche des Côtes, Baxter's Pearmain, Boston Reinette, Court-pendu Plat (very good), Claygate Pearmain, Braddick's Nonpareil (rather flat, and Dutch Mignonne. The remaining kinds in this collection, and which were chiefly kitchen Apples, were in good state for use, and were as follows:—Caldwell's Keeper, Northern Greening, White Stone Pippin, Norfolk Bearer, Reinette de Canterbury, Calville Blanche, Calville Malingre, Beauty of Kent, Lady Apple, Ladies' Sweeting, Dumelow's Seedling, Gooseberry Apple, Bedfordshire Foundling, Sturmer Pippin, De Barberie, Winter Peach, Cuisse Madame, Reinette Grise, New Baldwins, Trevizand, Reinette Diel, London Pippin, Winter Colmar.

The first premium was awarded to a collection by Mr. John Cox (gr. to William Wells, Esq.), Redleaf, Kent, comprising 11 kinds of Pears and 20 of Apples. These were also very fine in condition, generally large, and not over ripe. The circumstances of soil, &c., at Redleaf have been detailed in former reports. The Pears were generally from walls, and the Apples from standards of from 15 to 30 years old; very little pruned save by occasionally thinning the branches; great attention, however, being paid to keeping the trees free from Moss, by the use of quicklime in spring. With regard to their mode of keeping, the following information accompanied the fruit:—

"The Pears were laid out singly on the floor of an upper chamber when gathered, and the windows kept open, so as to afford a thorough ventilation, for two months; they were then sorted over, the best selected, and wrapped separately in paper, and placed in layers, in deep boxes, the lids of which were laid on, but not fastened. The layers were separated from each other by very dry old Brakes (Pteris aquilina). They were not disturbed until required for use, and have kept better than I could ever keep them before on the shelves of the fruit-room. The Apples were laid in heaps on the shelves of the fruit-room and ventilation—to which I ascribe great importance—secured by leaving the door open, as well as a window at the opposite end, until the sweating process was over, when both were partially closed. Nothing more has since been done except to sort them over frequently, and pick out such as showed signs of decay. The fruit-room is a mere shed at the back of a greenhouse; but its coolness is very much increased by a strong growth of Ivy all over the roof."

Of the Pears:—Bezi (or Bergamot) d'Esperen was very sweet, juicy, melting, and high flavour, with delicious aroma—the best Pear tasted at the Meeting; Beurré Rance and Old Colmar, melting and very juicy, but not rich; Ne Plus Meuris, sweet, half melting; Easter Beurré, half melting, but flavourless; Passe Colmar and a Seedling from it (very like the parent), juicy, half melting, and tolerably sweet; and Flemish Bon Chrétien, not ripe. This collection included also a handsome dish of Catillac, and some magnificent specimens of Uvedale's St. Germain, 7 inches long and 12 inches in diameter.

Of Dessert Apples, the following are the most interesting facts:—Old Nonpareil, firm, juicy, and delicious: Flanders Pippin (true), ovate, conoid, colour pale lemon, scattered over with minute round spots of russet; flesh tender, sweet, and juicy; Reinette Grise, under the name of Pomme Royale; Sam Young, very nice and juicy, with delicious flavour; Claude, an Apple not heretofore described, but worthy of being more extensively cultivated. Fruit oblate: generally irregular in form; greatest diameter, from apex to base, 2½ inches; transversely, 3 inches; eye smooth, clean and wax-like; stalk deeply inserted, medium length and thickness; colour greenish-yellow, irregularly scattered over with minute specks of russet, rosy scarlet on sunny side, and semi-transparent; flesh firm and juicy; flavour rich and sugary. It was reported, also, to remain good till May. (Grafts hereof are requested for distribution on the 1st of February, 1860, and application for a share of them, or any other kind, must be made not later than January 25th); Blenheim Orange, large, juicy, sweet, and good, exceedingly well kept; Golden Knob, firm, and good-flavoured, but not juicy.

Of Kitchen Apples were Gooseberry Pippin, King of Pippins (flat), Yorkshire Greening, Dumelow's Seedling (under both its synonyms, Wellington and Normanton Wonder), Royal Russet, Norfolk Beaufin, and, apparently, good late-keeping Apples—probably local varieties, sent erroneously under the names of Northern Greening, Winter Queening, Winter Pearmain, and Kirk's Scarlet Admirable. This collection also contained two valuable kitchen varieties, not hitherto described in catalogues—Castle Major, a medium sized oblately spherical Apple, average diameter about 3 inches; eye open, clean; stalk long, rather slender, deeply inserted; colour pale greenish yellow, rather densely covered with whitish spots, tipped with brown russety specks; flesh firm, juicy, and briskly acid. Poor Man's Profit, a large, handsome, oblately conoid fruit; colour pale lemon, much striped with red on sunny side; average diameter 3½ inches. Evidently a first-class late kitchen Apple. The second prize was awarded to Mr. M'Laren (gardener to S. C. Whitbread, Esq.), Cardington, near Bedford, whose collection contained two varieties of Pears and 23 of Apples. No particular pains had been taken with the keeping; the fruit having been thinly spread in a loft, with a little Wheat-straw under some of the best of them. (It may be here mentioned, that it was quite easy to distinguish which kinds had been kept on the straw. Fruit-growers do not appear to be aware that choice fruits absorb the flavour of straw, moss, hay, or any strong-smelling vegetable matters which they are laid upon, or even packed in, for a very short time.) Mr. M'Laren's Pears were Easter Beurré, melting, juicy, and sweet, the best dish of the kind which had come under the Society's notice during the season; and Beurré Rance, large, very melting, and good flavoured. Some of the Apples in this collection were evidently over-ripe, and far beyond their possible season—such as Ribston Pippin, and other late autumn and early winter varieties. Of kinds in season, however, some were very good, especially the following:—Barcelona Pearmain, described in a former report, and now recognised as a synonym of Speckled Golden Reinette; Golden Nonpareil under the name of Scarlet Nonpareil, firm, juicy, and very rich; as also was Golden Reinette, which was sent under the name of Golden Russet; Court of Wick and Wyken Pippin were good, juicy, and well kept; the rest of the varieties were kitchen Apples, in good condition, but of the same kinds as those mentioned in the previous collections. Mr. Holder, of Reading, contributed a large and interesting collection, containing upwards of 30 varieties, generally in very good state of preservation. They had been kept in round hampers, in an open airy barn, and covered over with sacks, or a little straw, in cold weather. Amongst the Pears, Ne Plus Meuris was very juicy and melting, but not high-flavoured; Beurré Rance, very fine, and promising to be good, but not ripe. Of the Apples, the best were the Old Nonpareil, and a variety very nearly identical, called Brown Nonpareil; both were in excellent condition, juicy, tender-fleshed, and good in flavour; Scarlet Nonpareil, misnamed Golden Russet, in excellent order for the season; and the true Golden Russet, under the name of Orange Russet, good in flavour, but dry. Amongst Kitchen Apples were very good dishes of the Royal Russet, under the synonymes of Buff Russet and Silver Russet. The remaining dishes were of the same leading varieties as are enumerated in some of the other collections, and not sufficiently remarkable to be specially detailed. Mr. Newton (gardener to G. J. Graham, Esq.) brought a collection of 15 varieties of Apples, which exhibited the results of some experiments he had made in different methods of keeping. Most of the examples were remarkably plump and fresh in appearance; and even such varieties as Golden Pippin and Ribston Pippin were barely past condition. Mr. Newton stated that, after gathering, the fruit was laid on shelves in the fruit-room for about a month, to allow of a partial evaporation; and then the best were selected and packed in layers, with Reigate sand amongst them, in old butter-tubs. Some of the kinds were packed in sand, just as it was dug out of the pit, and containing its natural moisture; others were packed in similar sand from which the moisture had been expelled by baking. Those in the naturally damp sand had kept in excellent condition and flavour, and were rich and juicy; but those in the dried sand had lost all their flavour and part of their juiciness. Mr. Newton mentioned, however, that last season he made a similar experiment with dried sand, but enveloped each fruit in a piece of thin tissue paper, and that they had kept their flavour much better. He proposes, however, next season to take equal samples of fruit of the certain kinds, and preserve them in each of the three ways above-mentioned, that the Society may estimate exactly the results of each. The varieties he exhibited in best condition were Screveten's Golden Pippin, firm, juicy, and rich in flavour; Pearson's Plate, nice, brisk, and very juicy; Dutch Mignonne, good, but rather shrivelled, as if gathered too early; and a very good and little-known variety called Holland Pippin, which, with one or two others, were specially asked for on another occasion for better identification. Josiah Moorman, Esq., of No. 1, Portland Place, Clapham, sent a nice collection, comprising five dishes of Pears—Old Colmar and Easter Beurré, melting and juicy, but not high flavoured; Jean de Witte, very melting, sugary, and delicious; Knight's Monarch, promising to be melting and very good, but barely ripe; Ne Plus Meuris, melting, juicy, and very rich. They had been carefully placed upon open lath shelves in a fruit-room. Mr. Swinerd (gardener to John Swinford, Esq.), Minster Abbey, Isle of Thanet, Kent, sent an interesting collection of about 20 kinds, including four Pears, of which Passe Colmar and Beurré Rance were good, but not high flavoured; Easter Beurré, under ripe; and Winter Crassane, past. The Apples were plump and tender-fleshed, but not juicy or high flavoured; the best were Court-pendu Plat, under the name of Du Corfu, and Sam Young, under the name of Russet Nonpareil. Mr. Swinerd sent the following particulars concerning the mode in which they had been kept:—

"The room that the Apples and Pears have been kept in is part of the old Abbey, the walls of which are 2 feet thick, and 14 feet from the ground. The north and east walls are exposed, and the south and west are built against with other buildings. The window is in the east wall, and has got an air-tight shutter to keep the frost out. The top is covered in with a tank that holds 16 butts of water, so that it is impossible for the frost to come through at the top (?) The room is entered by a trap hatch, which shuts down air-tight. The room is fitted all round with shelves, and I never use anything but old newspapers to lay the fruit on. A stoke-hole and boiler for Vinery are fitted up under the room: and by opening the trap-door of the Apple room, and shutting the door of the stoke-hole, I can keep the frost out, and have the room at what temperature I please."

Mr. Wighton (gr. to Lord Stafford, Cossey Hall, Norfolk) sent a collection of seven Pears and 10 Apples—generally as examples of fruit kept in the long Grass under the fruit trees, where they had remained since they fell off naturally. The fruit was all firm and sound, though the skins of some were damaged and bruised.

Horticultural of Edinburgh.—This spring exhibition of flowers, fruit, and vegetables took place on the 22d ult. Though for two previous years the displays of garden produce had been fine, and the attendance by all classes showed that they were thoroughly appreciated by the public, yet on no former occasion has more taste in decoration been exhibited than has been shown this year, and the quality of the objects was on all hands admitted to be superior to any brought forward before at this early season.

Hyacinths, as usual, formed the principal feature, and a larger number was shown than on any former occasion. These, whether for competition or exhibition, were of decidedly superior quality, and called forth the admiration of the most fastidious. Next to these were placed pots filled with spikes or clusters of the flowers of allied families, amid which Narcissus, Scilla, Tulips, &c., were conspicuous. After these may be mentioned, as the prominent character of the exhibition, the noble specimens of Rhododendrons and Azaleas; the former covered with trusses of flower, presenting, besides pure white, every variety of crimson and rose, sometimes beautifully spotted and streaked; the latter, formed of compact pyramidal or hemispherical masses, composed of equally bright-tinted blooms, which in some cases almost entirely concealed stem and foliage from view. The Cineraria was another interesting flower sent for exhibition, presenting, in its heads of Daisy-shaped blossoms of richest purple and lilac, an agreeable contrast to the brighter hues of the Rhododendrons. With these plants were interspersed trays or stands with blooms of Camellias and trusses of Rhododendrons, bouquets of choicest house plants, Wardian cases with Ferns, fruit, and on a separate table samples of kitchen vegetables, the produce of gentlemen's gardens, or from market gardeners in the neighbourhood.

Among the articles for exhibition were the following:—From Isaac Anderson, Esq., Rhododendron barbatum, a variety without beard; a Sikkim species, from Dr. Hooker's collection, with purple flowers; a hybrid between R. caucasicum and R. cinnamomeum, a fine white. From Mr. Handasyde were also sent two nice small specimens of Rhododendrons, viz., campylocarpum and Keysi, the first time which these have been exhibited in Edinburgh. Messrs. Cunningham contributed almost entirely the collection of rare hybrid Rhododendrons which decorated the space in front of the platform, including a very fine scarlet in the centre. Messrs. Dickson and Co. exhibited various rare and interesting plants. A fine specimen of Farfugium grande and several choice greenhouse plants were sent by Messrs. Lawson. Mrs. Carstairs occupied a large space with greenhouse and other plants, including Geraniums, Heaths, Epacris, Lily of the Valley, Cytisus, &c., and a "Bride's" Bouquet, which was much admired. A fine row of Hyacinths, eight in number we believe, which decorated the front of the platform, were furnished by Mr. T. H. Douglas. From the same exhibitor were some fine variegated plants, among which was the interesting Pavetta Borbonica, and several new Begonias. Mr. T. Methven exhibited a fine collection of Rhododendrons in flower, Epacris, and other hardwooded plants. Mr. C. Alexander occupied also a considerable space with greenhouse plants of various kinds, Ferns, and other interesting productions. Mr. R. M. Stark had several rare and interesting Ferns, assortments of new and variegated foliaged plants, and under the gallery an extensive assortment of Apples in fine preservation. Messrs. Downie & Laird exhibited some fine Rhododendrons and Azaleas, along with a specimen of Farfugium grande, and Camellia Spofforthiana. From Mr. A. Lauder were sent for exhibition some elegant Jardinières, Aquarium Stands, and "Whatnots." W. M. Ellis, Esq., sent twelve new and finely flowered specimens of Hyacinths in pots. These having been grown in a room without application of particular aid, show how much may be accomplished in this way, the trusses being remarkably large.

Notices of Books.

O'Byrne's Pocket Post-office Directory (O'Byrne Brothers) is a kind of guide through London for the use of strangers. All such publications are more or less useful in the modern Babylon, and this will probably find favour in the eyes of country visitors. One of its peculiarities is singling out certain shops in each street, but upon what principle the selection is made we have failed to discover.

Trade Lists Received.—*George Smith's* (Macclesfield) *Descriptive Catalogue of Plants* is a little pamphlet of 16 pages wholly occupied with florists' and bedding-out plants. The prices are moderate.—*Vilmorin & Co.'s* (Paris) *Supplément, &c.* (*Supplement to their List of Tree Seeds*). This is an important addition to the list formerly issued by this great house, containing not only many rare and valuable articles from Chili and California, but the following novelties from the little known country about the Amour river, of which some account was given by us in a recent number of the *Gardeners' Chronicle* (see p. 144), viz., Acer tegmentosum, A. Cinnala, A. Mono, Corylus heterophylla, Fraxinus mandschurica, Maximoviezia amurensis, Maakia amurensis, Phellodendron amurense, Syringa pinnatifida, Tilia mandschurica, Vitis amurensis, Lilium pulchellum, L. spectabile.—*Alexander Campbell & Sons'* (Glasnevin, Dublin) *Catalogue of Dahlias and other Fancy Flowers:* a large collection showing that Horticulture is making great strides in Ireland. It would have been difficult to find such a list in 1845. "They particularly wish to draw the attention of purchasers to their superb collection of Dahlias, a few hints on the successful cultivation of which they hope to be acceptable to most of their customers. When first received from the nursery they

should be kept close and shaded for a few days to recover from the effects of travelling, after which they should be repotted into larger pots, using a rich, porous compost. They should then be kept in a pit or frame, and gradually exposed to light and air until they are about 9 inches high, giving water regularly, as required. When they have arrived at this stage of their growth, they should be exposed to the full influence of light and air, by removing the sashes altogether; by this treatment they become well established before being planted out, on which mainly depends their future success. Previous to this time the ground in which they are intended to be grown should be deeply trenched and thoroughly exposed to the atmosphere. Let it then be levelled, and a dose of quick lime spread over the surface. This we have found to be an excellent means of destroying the immense quantities of vermin which assail the Dahlia in its early growth. This done, mark off the position of each plant, allowing from 4 to 6 feet apart every way; next open holes 12 inches deep, and the same in width; fill these with prepared compost, the best that can be had, avoiding the use of too much manure at this stage of their growth. In this compost, turn out the plants with care, planting them so deep that the top of the ball containing the roots is covered about 2 inches under the level of the bed. This done, secure each plant with a good stake, and supply them liberally with water until they have taken to the soil. It is a good practice to put a 3-inch pot, with a small quantity of Moss inside, reversed, on the top of each stake, in order to entrap the earwigs, which are most destructive to the young plants. These traps should be examined every morning, and the insects concealed in them killed; by continuing this practice for some time they will soon be destroyed, and the health and beauty of the plants will amply repay the trouble taken. The last point to which attention is directed is the staking out of the branches in all directions, so as to encourage a stout healthy growth, by giving plenty of light and air. A top-dressing of old rotten manure, where it can be had, will materially assist them at this stage of their growth. They will now be coming into bloom (about the end of July), when all useless branches should be cut out; also thin out the bloom according to the habit of each variety. In the case of weak growing and abundant bloomers this should be done to a very considerable extent, especially if the blooms are required for exhibition. The neglect of the above precautions has heretofore materially prevented the more general cultivation of this gorgeous autumn flower."

Miscellaneous.

Orchids and Ferns.—An important sale of these took place on Tuesday last, at Stevens's. The Orchids more especially consisted chiefly of magnificent specimens stated to be "duplicates from a well-known collection." Smaller plants from another source were however also added. Some idea of the kind of prices they fetched may be gleaned from the following:—Aerides Schröderi, a very fine specimen, realised 31*l.*, another of the same sort 27*l.*, and a third 15*l.* 10*s.*; A. maculosum majus, 18*l.*; A. Lobbi, 17*l.* 10*s.*; A. Larpentæ, 9*l.* 10*s.*; A. nobile, 9*l.*; A. Lindleyi, 8*l.* 10*s.*; a smaller plant of the same, 6*l.* 10*s.*; A. virens, 6*l.* 10*s.*; A. quinquevulnera, 5*l.* 15*s.*; A. crispum, a similar sum, and A. affine, 5*l.* 5*s.*; other Aerides fetched from 1*l.* 6*s.* to 4*l.* per lot. A fine specimen of the large-flowered variety of Vanda suavis realised 13*l.* 10*s.*; V. suavis aurea, 7*l.* 10*s.*; V. tricolor, a plant 4 ft. in height, 5*l.* 10*s.*; a good plant of the ivory white Cymbidium eburneum, 14*l.*; a smaller specimen of the same, 5*l.* 5*s.*; Phalænopsis amabilis, 12*l.* 10*s.*; two plants in a pot of the large-flowered variety, 8*l.*; another of the same sort, 6*l.* 10*s.*; beautiful specimen of the charming Cattleya marginata, 9*l.*; C. maxima, 3*l.* 5*s.*; a splendid plant of the true Saccolabium præmorsum, 8*l.* 10*s.*; S. guttatum, 4*l.* 10*s.*; another of the same, 3*l.* 5*s.*; S. furcatum, 5*l.* 5*s.*; S. ampullaceum, 3*l.*; S. retusum, 4*l.* 10*s.*; the singular looking Uropedium Lindeni, 4*l.* 4*s.*; Miltonia candida major, 4*l.* 10*s.*; Cœlogyne Lowi, 3*l.* 10*s.*; Epidendrum bicornutum, 3*l.* 5*s.*; Camerotis purpurea, 2*l.* 5*s.*; Angræcum eburneum, 4*l.*; A. caudatum, 2*l.* 6*s.*; Paphinia cristata, 5*l.*; P. tigrina, 4*l.* 10*s.*; Galeandra Baueri, 2*l.* 10*s.*; Dendrobium Dalhousieanum, 2*l.* 5*s.*; and the scarce Eria hirsuta, 3*l.* Other lots, of which there were upwards of 100, fetched from 1*l.* to 3*l.* per lot. For Ferns the sale was heavy. They consisted of some 40 lots, among which were Gleichenias, Todeas, Gymnogrammas, Cheilanthes, Diplazium, Marattia microphylla, and Cyathea arborea. They fetched from 1*l.* to 3*l.* 5*s.* per lot. Fremontia californica, of which a full account was given in our pages on January 22d, was put up for sale on this occasion by order of the Council of the Horticultural Society, and was knocked down to Messrs. E. G. Henderson for 37*l.* 16*s.* The whole proceeds of the sale, including the sum received for the last-named plant, amounted to upwards of 500*l.*

Calendar of Operations.

(*For the ensuing Week.*)

PLANT DEPARTMENT.

Conservatory, &c.—Heat and moisture may now be more liberally supplied to tropical plants. As the season advances these should be gradually increased, but in all cases avoid a high night temperature. That must be principally obtained by closing early, and so retaining the heat derived from the sun; when fires are required they must not be so strong as to render it necessary to admit currents of cold air to keep the thermometer down. Give proper attention to Achimenes, Gloxinias, and other summer and autumn flowering plants. The last succession of Achimenes, to flower late in autumn, should now be placed in heat. Some of those formerly s arted may be potted for hanging vases, for which A. longiflora and cupreata are particularly well adapted. Prefer pans or broad shallow pots for their general cultivation, and as they require an abundant supply of moisture when they are in flower, let the drainage be as efficient as possible, in order that they may be freely watered without stagnating the soil. Let Fuchsias for summer and autumn display have due attention, repotting them as may be required in rich compost, and occasionally watering them with liquid manure. Much however of their beauty depends on the shape of the plant. Nearly all the varieties have a natural tendency to form pyramidal bushes, and by a little attention they may be guided into that very appropriate form; only one shoot should be allowed to take the lead; this should be trained perfectly upright, and the side branches regulated by stopping any exuberant ones which are outstripping their neighbours.

FORCING DEPARTMENT.

Vineries.—Where it is desirable to retard breaking in the late house as long as possible, and the glass cannot be removed nor the Vines exposed to the open air, they should be let down as far from the glass as can be done, shading the roof, and giving all the air possible. We are not quite certain, however, that there is any decided advantage in retarding Vines by artificial means after this season. We would almost invariably allow the buds to start at the bidding of the weather after this time, merely giving all the air possible, and take chance as to the fruit keeping until next March, preferring the certainty of a crop of prime fruit to being able to furnish a very late supply. Weakly or overcropped Vines ought to be very carefully examined for red spider, which may be expected to make its appearance on these, particularly if the weather becomes bright, and means should be used to thoroughly eradicate it the moment it is perceived. Probably the best method is to well wash every affected leaf with a sponge, for it is useless trying to overcome it in such cases by syringing, which only serves to keep it in check, and when the fruit begins to colour, and syringing must be laid aside, it will increase with fearful rapidity. Keep the atmosphere moist, sprinkling the floors, &c., frequently on bright days, and take care that inside borders are well supplied with water. Peach House.—The fruit in the earliest house will now be swelling fast; use water liberally until they begin to colour. In thinning later crops be guided by the vigour of the trees as to the quantity they may be allowed to bear. Syringe regularly and give air liberally on all favourable opportunities. Cherry House.—Where the leaves are thickly clustered together and shading the fruit a few may be removed to let in sunlight. Fumigate if necessary before the fruit gets so near ripe as to be affected by the necessary washing afterwards. Fig House.—Maintain steady treatment, as any check is apt to make the trees cast their fruit. Aim at preserving uniform growth. Cucumbers and Melons.—Thin and stop Vines and leaves and set the fruit. Let the night temperature be regulated according to Mr. Ayres's directions (see p. 312). Mushroom House.—Trap woodlice by means of flower pots laid on their sides, placing in the bottoms of them a Mushroom, a cut Potato or a little dry Moss. Watering occasionally round the sides of the bed with boiling water will also effectually thin their numbers. Strawberries.—Water regularly and give abundance of air. Those which have ripened their fruit may be planted on a rich border to make runners; they may possibly also produce some late fruit if the autumn prove favourable. Re-pot Capsicums and Tomatoes.

FLOWER GARDEN AND SHRUBBERIES.

Lose no time in potting off bedding plants or pricking them out into frames or boxes. As the potted plants become established they should be hardened off by gradually inuring them to the open air. The hardier kinds may soon be set upon a bed of coal ashes or plunged in old tan, ashes, or some other light material. Much of the labour of watering will thus be saved, many deaths avoided, and the plants will altogether be in a better state when planting out season arrive. Patches of showy hardy annuals should now be sown in vacant places which usually exist in herbaceous beds and in the edges of clumps and borders in the shrubbery. Double Poppies, of various colours; Lupins, Sunflowers, African and French Marigolds, Erysimum, Clarkias, Gilias, Collinsias, Silene, and Nemophila are excellent for that purpose. A sufficient quantity of cuttings and seedlings of half hardy climbers should now be potted for planting out in May. With such plants as Cobæas, Maurandyas, Lophospermums, Calampelis, Loasa, Tropæolum canariense, &c., many bare places on the walls and trellises may be covered and made ornamental which would otherwise be unsightly blemishes.

HARDY FRUIT AND KITCHEN GARDEN.

Commence disbudding Peaches and Nectarines; remove a portion of the superfluous shoots now, and in a week or 10 days go over them and regulate them finally. Advantage should be taken of a fine morning to wash the trees well with the engine. The superfluous shoots of Apricots should also be removed and the remaining ones carefully examined in search of a green caterpillar, which not only injures them but also eats holes in the young fruit, thereby causing it to gum, grow deformed, or fall off before it is stoned. As regards vegetables, continue to make periodical sowings of Spinach once a fortnight, and Peas, Beans, and Turnips once in three weeks. Successional sowing of all salads should be made with strict regularity, and strict regularity and proper attention should be paid to preserving them from the ravages of birds and insects. If the crops of Onions, Leeks, Parsnips, Beets, Salsify, Scorzonera, and Skirret are not yet sown no time should be lost, and the latest period for sowing the main crop of Carrots is near at hand. A sowing of tall Kidney Beans may now be made in early localities; the early sowing of this useful vegetable not unfrequently gets cut off by late spring frosts, but when this happens the ground should be left undisturbed, as shoots will be produced from beneath the surface.

COTTAGERS' GARDENS.

Let Broad Beans be planted between lines of Cabbages; a little late spring Broccoli may also be sown, and take care to have plenty of winter Greens to succeed the summer crops. Perhaps these may be obtained from the nearest gentleman's gardener, if he happens to have more than he wants, which is almost always the case. Scarlet Runners should be sown without delay. A few Cucumbers for Gherkins may also be raised in some warm sheltered corner. How best to manage them afterwards will be given in a future number.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.
For the Week ending April 14, 1859, as observed at the Horticultural Gardens

April.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Min.	Mean	Of the Earth. 1 foot deep.	2 feet deep.	Wind.	Rain.
Friday 8	5	29.836	29.632	60	50	55.0	53½	50½	S.W.	.10
Satur. 9	6	29.595	29.510	58	46	52.0	53	51	S.W.	.02
Sunday 10	☽	29.323	29.222	59	36	47.5	53	51	S.W	.01
Mon. 11	8	29.403	29.211	54	37	45.5	52	51	S.W.	.01
Tues. 12	9	29.622	29.281	51	37	44.0	52	51	W.	.34
Wed. 13	10	29.404	29.308	47	26	36.5	51	50	N.W.	.00
Thurs. 14	11	29.470	28.944	52	35	43.5	50½	50	S.W.	.36
Average		29.522	29.301	54.4	38.1	46.3	52.1	50.9		.84

April 8—Fine; rain; drizzly at night.
— 9—Rain; cloudy; fine; overcast.
— 10—Rather boisterous; cloudy and fine.
— 11—Fine; rain, thunder, cloudy and fine at night.
— 12—Overcast; fine; constant rain at night.
— 13—Overcast; cloudy; fine; frosty.
— 14—Fine; cloudy; boisterous with heavy rain.
Mean temperature of the week, ½ deg. above the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 33 years, for the ensuing Week, ending April 23, 1859.

April.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 17..	57.3	36.1	46.7	14	0.32 in.	5	6	4	1	3	5	6	3
Mon. 18..	58.5	36.3	47.4	14	0.49	4	6	6	1	4	3	6	3
Tues. 19..	58.8	35.2	47.0	7	0.45	6	9	3	3	1	6	5	1
Wed. 20..	60.2	35.7	48.0	14	0.39	4	7	4	1	—	9	5	3
Thurs. 21..	59.0	38.4	48.7	13	0.28	2	6	6	3	2	4	8	2
Friday 22..	58.6	38.3	48.4	17	0.32	4	8	5	3	1	4	6	2
Satur. 23..	58.6	37.3	48.0	16	0.52	1	7	5	1	1	4	5	6

The highest temperature during the above period occurred on the 19th, 1854, and 22d, 1868—therm. 77 deg.; and the lowest on the 19th, 1852—therm. 20 deg.

Notices to Correspondents.

Asagræa officinalis: *C.* This is a deadly poison; it is one of the plants which yield Sabadil'a, from which Veratria is prepared.

Books: *Y S.* Sweet's Hothouse and Greenhouse Cultivator will give you useful information; but, remember that although books are invaluable as aids to a gardener, no one was ever made a gardener by them. Careful continued observation and much experience are indispensable to success.

Hollies: *N.* Always prune these evergreens in April.

Insects; *T A.* The grubs you have sent are those of a small two-winged fly (Musca pumilionis), which eat the leading shoot of the Wheat plant; but as they are full grown no fear need be entertained that the plants will not throw up side shoots. *W.*

Melons: *J O.* You cannot grow these *well* without a nice bottom-heat; and Cucumbers should also have it. If you do not make up your bed till the end of May you will require no other heat; and if you make it up now the sun will do all you want, provided you throw mats on the sashes at night, and have a good warm hot bed for ground heat.

Names of Plants.—*Y Z.* Fuchsia cordifolia; a very handsome Oncidium to us unknown; Hermannia cuneifolia.—*W S.* 1, Saxifraga sarmentosa; 2, Corydalis bulbosa.—*A B.* Saxifraga hypnoides—not in the least like Spergula pilifera.—*A K.* 1, Begonia roseo-coccinea; 2, broken to pieces and not examinable; 3, Euphorbia splendens; 4, Cestrum aurantiacum.—*W K.* 1, Lastrea spinulosa; 2, Athyrium Filix-fœmina v. rhæticum; 3, Lastrea dilatata, lax.; 4, Lastrea Oreopteris.—*W J.* Omphalodes verna.—*Edgbaston.* 1, Epimedium pinnatum; 2, Scopolina atropoides.—*Salford.* Lonicera fragrans, a delicious shrub, in the way of L. tatarica.—*Reader.* 1, not in flower; 2, Teucrium Polium; 3, Lonicera involucrata.

New Garden Netting: We have received from *Messrs. Britain & Co.*, of Manchester, a sample of the Zebra netting, which they are manufacturing for the purpose of shading. It is a strong good article, made of a stout cotton thread in square meshes ¼ in. × ¼ in. It is dyed with dark and light indigo in bands 6 inches wide, with white bands interposed, and thus has a pretty effect in a garden. The advantage of the indigo blues is not only that they look well when fresh, but that being fast colours they will not fade with time and become unsightly.

Stephanotis: *Q C.* The fruit is acrid and poisonous.

The New Australian Salad Cress advertised by Messrs. Henderson, of Pine-apple Place, is a very nice, delicate, broad leaved plant, which we recommend to notice. As far as can be judged without seeing more of it than the leaves and seeds, it will probably turn out to be the Lepidium crispum of botanists. We understand that it has stood the late mild winter extremely well.

Vine Leaves: *J F.* They are in very good health, and there is nothing to show what has been eating them. It is probably some night-feeding insect, for which you should watch—certainly not a spider. The enemy may no doubt be discovered with patience, although not by persons who have no access to the Vinery.

Zinc Labels: *G S.* The best ink is the nitromuriate of platinum, which may be had of dealers in chemicals.

THE PATENT

NITROPHOSPHATE OR BLOOD MANURE COMPANY (Limited),

CONSISTING OF TENANT FARMERS, OCCUPYING UPWARDS OF 30,000 ACRES OF LAND.

TRUSTEES.

Abel Smith, Jun., Esq., Walton House, Ware, Herts.
Charles Dimsdale, Esq., Essendon Place, Herts.
Edward Ball, Esq., M.P., 8, Belgrave Road, Pimlico
Major-General Hall, M.P., Western Colville, Linton, Cambridge
John Brady, Esq., M.P., Warwick Terrace, Belgrave Sq.

DIRECTORS.

Chairman.—Jonas Webb, Esq., Babraham, Cambridgeshire.

Deputy-Chairman.—John Collins, Esq., Myddleton Square, Pentonville.

Edward Bell, Esq., Tottenham, Middlesex
John Clayden, Esq., Littlebury, Essex
Richard Hunt, Esq., Stanstead Abbot, Herts.
Thomas Knight, Esq., Edmonton, Middlesex.
Robert Leeds, Esq., West Lexham, Norfolk.
Robert Morgan, Esq., 72, Camden Villas, Camden Town.
George Savill, Esq., Ingthorpe, near Stamford.
William Collins, Esq., 105, St. John Street Road.

Bankers.—Messrs. Barnett, Hoare & Co., Lombard Street.

Solicitors.—Messrs. Kingsford & Dorman, 23, Essex Street, Strand.

Auditor.—G. W. Brown, Esq., 28, Parliament Street.

Manager.—Mr. James Odams. | *Secretary.*—Mr. C. T. Macadam.

Offices, 109, Fenchurch Street, London.—Manufactory, Plaistow Marshes, Essex.

The Directors beg to inform their Friends and the Agricultural Public that the following Manures are now ready:—

ODAMS'S BLOOD MANURE FOR CORN AND MANGEL.

ODAMS'S BLOOD MANURE FOR ROOTS.

ODAMS'S SUPERPHOSPHATE OF LIME.

Full particulars may be had at the Company's Offices, or of the local Agents.

NATIONAL FLAX COMPANY (Limited.)

Capital—£200,000, in 200,000 Shares of £1 each, 5s. to be paid on application, 5s. within three months from Allotment, and the remainder as the Directors may require it, in Two Payments of 5s. each.

TRUSTEES.

Henry Fenton Jadis, Esq., Comptroller of Corn Returns, Board of Trade.
J. T. Croft, Esq., 15, Regent Street, S.W.

DIRECTORS.

President—Sir John Dorat, Vice-President R.S.L:

John Beddoe, Esq., Lickhill, near Stourport, Worcestershire.
J. T. Croft, Esq., 15, Regent Street, S.W.
Lieut.-Col. C. E. Dering, 47, York Street, Portman Square, W.
Frederick Hamilton, Esq., Gresham House, E.C.
T. E. Marsland, Esq., Pall Mall, S.W.
Wallace Pedder, Esq., Wadhurst, Sussex.
George Thornton, Esq., C.E., F.G.S., &c., 25, Queen's Road, Regent's Park, N.W.

Standing Counsel.—P. MacChombaich de Colquhoun, Esq., LL.D., &c., 3, Hare Court, Temple.

Bankers—Messrs. Heywood, Kennards, and Co., 4, Lombard Street, E.C.

Solicitor.—Mr. Vaughan Prance, 37, New Bridge Street, E.C.

Engineer.—Mr. G. L. Fuller, C.E., 69, Lombard Street, E.C. | *Auditors.*—(To be appointed by the Shareholders.)

Secretary—Mr. James M. Haldon, F.R.G.S.

Offices.—193, Gresham House, Old Broad Street, London, E.C.

ABSTRACT OF PROSPECTUS.

It has been for some years past a matter of notoriety that British and Irish linen manufacturers, and also manufacturers of hempen goods, have materially suffered from a deficient supply of Flax and Hemp. This state of deficient supply arises from the fact that the cultivation of Flax in Great Britain has materially decreased instead of increased with the growing requirements of our linen manufactures. Our national commercial statistics show that, out of 150,000 tons of Flax annually consumed in the United Kingdom, not more than 50,000 tons are of home growth. In addition to this enormous importation of Flax for our linen manufactures, we have also imported hundreds of thousands of quarters of Linseed every year for home consumption.

The linen manufacturers of the United Kingdom have declared that they are ready to take any quantity which can be grown at home, and at such prices as will be more remunerative to the agriculturist than the usual produce of his lands.

The promoters of the National Flax Company are prepared to prove to the agriculturists of this country that no more profitable crop can be cultivated than that of Flax, whenever their system of rettories, and improved mechanical treatment of Flax fibre, shall be adopted in the localities of its growth. The main feature of the Company's plan is, that it will take the trouble of preparing the Flax for market entirely off the hands of the grower, by becoming the purchasers of the crop, and thus leaving the grower entirely free from the hazards of bad harvesting weather, and at the same time insuring him a certain handsome profitable return for all the Flax he can produce and deliver to the Company's depôts and rettories. The Company's operations will also embrace the whole of the requisite process of preparing the Flax and similar fibrous substances ready for the spinner.

The system of preparation adopted by this Company is the subject of a patent, the invention of Mr. George Abemarle Cator, a gentleman who has made the cultivation of Flax and its preparation for the spinner his especial study for many years past, he having fully demonstrated the great economy of labour and the very great improvement in the quality of the Flax fibre, which is the result of his improved system of Flax preparation. The system will be found fully detailed in the "Explanatory Pamphlet on Flax Cultivation and Preparation," to be had free from the Secretary of the Company and its agents; in which will also be found an exposition of the great importance of the home cultivation of Flax, as insuring a regular supply of raw material to the very important national manufactures of linen and hempen goods; half-stuff for paper makers, and also of the importance of the seed for Linseed oil and oilcake.

As an example of the intended operations of the Company, the following is quoted from the full Prospectus of the Company:—

By rettories will be understood establishments where the preparation of Flax-fibre from the raw plant for the spinner and manufacturer will be carried out through all its stages.

It is estimated that two rettories, on the scale proposed as the base of operations, will require eight patent machines, and, if constantly at work for (say) 309 days in the year will produce annually 1200 tons of Flax-fibre, 7500 quarters of Linseed, and 900 tons of tows; and allowing 50*l.* per ton to be obtained for the Flax-fibre, 56*s.* per quarter for the Linseed, and 5*l.* per ton for the tows, there is a gross yield of 85,500*l.*

Assuming that it will take as much as 10 tons of Flax-straw unseeded to produce one ton of Flax-fibre, at a cost of 4*l.* per ton, and 18*l.* per ton of fibre for all expenses, the total outlay will be 69,000*l.* leaving a balance to be divided of 15,900*l.* or nearly 30 per cent. upon 55,000*l.* (the cost of the buildings, plant, and machinery, together with sufficient working capital for two rettories), which is wholly irrespective of the dividend that may be expected from licence dues from other rettories; and as the operations of the Company are extended, the dividends will be in proportion.

The peculiar advantages of Selby, in Yorkshire, and the surrounding Flax-growing districts, have decided the Company on establishing their first rettory in that neighbourhood.

A prospective enterprise of this Company being the cultivation of Flax on reclaimable lands, of which in the United Kingdom there are some millions of acres, it is considered the Company may beneficially turn its attention to the acquirement, in due course, of an available property in such lands.

The National Flax Company will, by increasing the cultivation of Flax in the present growing districts, tend to encourage the population of other parts of the country to acquire the requisite knowledge of an industrial resource by which their local labour will become more profitable, and land of greater value. Again, the fast-extending application of the power-loom to Flax-fibre will greatly increase the demand for Flax. All considered, the circumstances of the times combine to establish the present enterprise as the nucleus of a new branch of business, and a most valuable auxiliary to the farming and manufacturing producers of the United Kingdom, and one which is well calculated to still further develop her prosperity.

Copies of the Prospectus, and all further information, may be obtained at the Offices of the Company, 193, Gresham House, City.

College of Agriculture and Chemistry, and of Practical and General Science, 37 and 38, Lower Kennington Lane, Kennington, near London.
Principal—J. C. Nesbit, F.G.S., F.C.S., &c.
The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.
Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

FARM BUILDINGS.

Loans may be obtained under the General Land Drainage and Improvement Company's Act, for the full amount required by the owners of Settled Estates, Incumbents, Trustees, Bodies Corporate, &c., for the erection of Farm Houses, Farm Buildings, and Labourers' Cottages, designed by their own agents and sanctioned by the Inclosure Commissioners. The Loans are repaid by a rent-charge on the estate for any term the landowner may fix, not exceeding 31 years.
No investigation of title being required, and the charge not being affected by incumbrances, no legal expenses are incurred.
The Company furnish Designs of every description, and undertake the entire responsibility of the works wherever desired by Landowners. No profit however is taken by the Company on any works they execute, the actual expenditure only, approved by the Inclosure Commissioners, with a Commission thereon, being charged in all cases. Applications to be addressed to William Clifford, the Secretary, at the Offices of the Company, 52, Parliament Street, London.

The Lands Improvement Company
2, Old Palace Yard, Westminster, S.W.
To Landowners, the Clergy, Solicitors, Estate Agents, Surveyors, &c.—The Company is incorporated by Special Act of Parliament for England, Wales, and Scotland.—Under the Company's Acts Tenants for Life, Trustees, Mortgagees in possession, Incumbents of Livings, Bodies Corporate, certain Lessees, and other landowners are empowered to charge the inheritance with the cost of improvements, whether the money be borrowed from the Company or advanced by the Landowner out of his own funds.
The Company advance money, unlimited in amount, for works of Land Improvement, the Loans and incidental expenses being liquidated by a rentcharge for a specified term of years.
No investigation of Title is required, and the Company being of a strictly commercial character do not interfere with the plans and execution of the works, which are controlled only by the Enclosure Commissioners.
The improvements authorised comprise Drainage, Irrigation, Warping, Embanking, Enclosure, Clearing, Reclaiming, Planting, Erecting and Improving Farm Houses and buildings for Farm purposes, Farm Roads, Jetties, Steam Engines, Water Wheels, Tanks, Pipes, &c.
Owners in fee may effect improvements on their Estates without incurring the expense and personal responsibilities incident to Mortgages, and without regard to the amount of existing incumbrances. Proprietors may apply jointly for the execution of Improvements mutually beneficial, such as a Common Outfall, Roads through the District, Water Power, &c. For further information and for forms of application apply to the Hon. W. Napier, Managing Director, 2, Old Palace Yard, Westminster S.W.

Essex Agricultural Association.—Thomas Burch Western, Esq., *President.*
The ANNUAL EXHIBITION of this Association will be held at Colchester, on JUNE 16. The following special Prizes are offered by the Association.*
1st. For the best Entire Horses for agricultural purposes, open to all England, the proprietor being a member, or paying an entrance fee of One Guinea.—25*l.*
* The Horse obtaining the above prize must either have covered regularly in the county the preceding season, or the owner must sign an undertaking that such horse shall do so the following season, and the prize will be withheld until the completion of the contract,
2d. For the best thorough-bred Entire Horse open to all England, the proprietor being a member, or paying an entrance fee of One Guinea.—25*l.*
The Horse obtaining the above prize, &c. (see above *)
3d. For the best Bull of any age of a pure breed, open to all England, the proprietor being a member, or paying an entrance fee of one guinea.—15*l.*
4th. For the best Ram of any age of a pure breed, open to all England, the proprietor being a member, or paying an entrance fee of one guinea.—10*l.*
N.B. All Sheep must be barely and fairly shorn, and any animal shorn previously to the 1st of May to be disqualified from Exhibition.
The Poultry Show is open to all England. Entrance fee 3*s.* for each pen to non-members.
By order of the Committee.—Robert Emson, Secretary.
Slough House, Halsted, April 16.

Bath and West of England Poultry Exhibition.—Entries close May 1.—In addition to the ordinary Money Prizes there will be awarded 22 handsome SILVER CUPS, open to all England.
Prize Sheets and Certificates to be obtained of the Honorary Secretary, Mr. Kingsbury, Hammett Street, Taunton.

Royal Agricultural Society of England.
SHOW-YARD REFRESHMENTS.
Persons desirous of having the privilege of supplying either First or Second-class REFRESHMENTS for the Visitors in the Society's Show-yard at Warwick, in July next, can obtain the particulars and Forms of Tender, on application at 12, Hanover Square, London, W.
Tenders must be delivered in, as above, on or before the 30th April. By Order of the Council,
James Hudson, Secretary.

Royal Agricultural Society of England.—WARWICK MEETING.
Entries for IMPLEMENTS, CHEESE, WOOL, FARM-GATES, and DRAINING PIPES, must be made on or before May 1.
Entries for LIVE STOCK must be made on or before June 1.
*** All Entries received in each case after those respective dates will, without any exception, be disqualified, and returned to the senders.
PRIZE SHEETS may be had on application at the Offices of the Society, 12, Hanover Square, London.

The Agricultural Gazette.

SATURDAY, APRIL 16, 1859.

The detailed account given by Dr. Macadam and Mr. John Gamgee of the composition, use, and action of sheep-dipping mixtures is the principal feature of the current number of the *Edinburgh Veterinary Review.*

The case which has directed so much attention to

this subject has been already stated in the *Agricultural Gazette.*

Mr. Black, a Northumberland farmer, procured last August 15 packages of a mixture for bathing 750 sheep from Mr. Elliot, a chemist and druggist of Berwick-on-Tweed. He used 14 out of 15 packages, each of which was prepared for 50 sheep; 869 animals were bathed—of these 850 died. The symptoms preceding death were those of poisoning by arsenic. The jury who had ultimately to decide the case between Messrs. Elliot and Black gave a verdict for the latter, carrying damages 1400*l.* and cost.

"Two theories were at once started to account for the death of the sheep. The first was, that the dip was too strong, and that the poison had been absorbed by the skin, and thereby caused the death of the sheep. The second theory was, that the animals had been hastily dipped, the wool had been imperfectly pressed, thereby leaving much liquid in the fleece; the animals were then sent to a Grass field, the poison dripped on or was washed by rain on to the Grass, the sheep ate the Grass, and were thereby poisoned. In the absence of direct experiment, either of the two theories might have been thought probable, or at least possible. Whenever the chemist was told of the calamity which had befallen the flock of sheep, and was informed that one of the 15 packages which he had supplied to dip the sheep still remained entire, he at once said that he never knew of the dip acting so before, and would not believe that the mixture could have been used according to directions; but he stated to the farmer that he was quite willing to purchase 25 sheep, and, at his own risk, dip them in the wash obtained by dissolving the remaining package, and whether the animals lived, or suffered, or died under the ordeal, that he (the chemist) would stand or fall by the result. The farmer refused to settle the point by experiment. He was told by scientific men that the arsenic had passed in by the skin and poisoned the animal. He adhered to death by absorption, and repudiated the idea of any experiment to support or negative this view. It was otherwise on the part of the chemist. He was anxious that mere opinion or theory, without the basement of experiment, should not rule the evidence on his side, and he was desirous of experiment. He could have remained satisfied by proving that his dip had been in use for 14 years without a single casualty; that, during the last 10 years about 200,000 sheep had been dipped in his bath, and had been the better for it; that 20,000 sheep had this year been immersed in solutions of mixtures the very same as those from which the packages sent to the farmer had been selected, and no injury or loss had been sustained. The chemist had more than 200,000 witnesses as to the excellence of his bath against the 750 supposed to have been hurt by it, viz., 300 witnesses against 1, but still he offered to stand or fall by experiment. He states this offer was not accepted."

His experiments were nevertheless made, and their results are reported in this paper by gentlemen whose evidence on the trial must have been disregarded by the jury before whom the trial took place. It seems from them that Mr. Elliot's bath used as he directs contains only 176 grains of arsenic in the liquid carried off on the fleece of each sheep bathed, while in the case of two other sheep-dipping mixtures in the market, the quantity is upwards of 330 grains per sheep.

In order then to test the effect of the materials of which these baths are compounded, a number of experiments were performed in which sheep were dipped for various lengths of time and in liquids of various strengths without any injury being done, and in which sheep infected with the scab, and therefore with unsound skin, were dipped and no harm followed.

The conclusion to which Dr. Macadam is led by these experiments is "that Elliot's mixture was and is a *reasonably fit, safe, and proper* bath for the dipping of sheep, when used according to the directions affixed to each package."

Mr. John Gamgee's contribution to this subject states that with reference to sheep dipping, the "precautions which have especially been insisted on, and are universally known to farmers, are —1st, Keeping the sheep's head out of the bath. 2d, Pressing the wool on drainers so as to allow the sheep to carry away as small a quantity as possible of the arsenical solution. 3d, Allowing the sheep to drain on a large area deprived of food."

"If sheep be scattered, as they should be, over an extensive surface immediately after being dipped, they will eat the Grass which is no doubt charged with arsenical solution to a certain extent, but they fail to pick up sufficient to injure them."

He adds:—"It is a remarkable fact that accidents should be so rare, considering the enormous amount of arsenic sold for dipping purposes. Gerlach, who is one of the ablest veterinary authorities opposed to the use of arsenical baths, is opposed to them on the ground that they can be superseded, which I think is doubtful, and on the ground that danger is to be apprehended from the dissemination of arsenical solutions over farms, a common cause, he believes, of chronic poisoning in poultry, or any other animal whose food may thus accidentally be poisoned. Professor Himly supports this view, and in speaking of Schleswig-Holstein, he says that in these two Duchies 5000 pounds of arsenic are annually consumed for the destruction of parasites of different kinds, and that such a quantity of poison cannot be disseminated about the country with impunity."

The conclusions which he draws from the experiments made in concert with Dr. Macadam are as follows:—

"1st. That the immersion of sheep, *whether sound or suffering from scab, with extensive eruption, or 'foot rot,' with free exposure of the vascular structure of the feet,* in arsenical solutions, varying in strength, is unattended by prejudicial effects, and proves salutary to the diseased animals.

"2d. That the congregation of sheep, after dipping, where food is not allowed them, is unattended with danger.

"3d. That all the sheep having remained damp from 24 to 36 hours after being dipped, cutaneous absorption of arsenical solution might have been going on rapidly during the prolonged period that the sheep continued wet; but no unfavourable symptoms ensued, indeed the reverse.

"4th. The absence of the slightest change in health, or of the manifestation of symptoms which usually ensue on the administration of arsenic to the lower animals, even in medicinal doses by the mouth, leads me to infer, that if a minute quantity of arsenic, in solution, can penetrate the system of a sheep by absorption by the skin, it is quite insufficient to develop the physiological action of the compound.

"5th. A solution of arsenic is not more readily absorbed from limited abraded surfaces than from the healthy skin, owing probably to the arsenic acting as an astringent on the sores, and rendering the latter as impermeable, *probably,* as the uninjured skin. This remark does not apply to large wounds.

"6th. It appears *impossible to poison sheep by bathing them* in arsenical solutions, provided the liquid is not introduced *directly* or *indirectly* into the stomach by the mouth.

"7th. Arsenical solutions, whether *weaker* than ordinary dipping mixtures or *much stronger,* are likewise incapable of being absorbed by the skin of sheep or man.

"8th. Sheep will partake of Grass and other food which has been smeared or soaked with an arsenical solution, notwithstanding the presence of soft soap and soda."

Mr. Gamgee, who is clearly of opinion that Mr. Black's sheep died by having eaten of Grass on which the arsenical fluid had dropped from their fleeces, thus sums up the case:—

"Here are facts to prove impregnation of the Grass by poison—introduction of arsenic into the alimentary canal—the existence of that arsenic in the contents of the stomach and intestines of the sheep—and lastly, that arsenical solution cannot be absorbed by the skin; and in face of that Mr. Elliot, of Berwick, is to be mulcted to the amount of 1400*l.* and costs, because his mixture was, on the ground of *mere hypothesis, unsupported by a single experiment,* declared to be not reasonably fit to be used according to the printed directions supplied with it."

He adds:—"It is my firm belief that arsenic is by far the best destroyer of parasites which farmers can employ for their sheep. Of all the poisons it is perhaps the safest, when employed in the shape of a bath. Farmers cannot and will not do without it, but whenever they can claim damages for their own neglect, or for accident after bathing, such as happened most unfortunately at Burton, how can they expect a respectable chemist and druggist to supply them with any of the dipping mixtures they so constantly and gladly make use of? It is to the interest of agriculturists throughout Great Britain, more than to the interest of the chemist, that if there be any mystery about the manner in which the sheep were destroyed at Burton, that mystery should be cleared up. Further investigation must prove that Elliot was not only innocent, but could in no way be held responsible for the loss of 850 sheep by Mr. Black last August, and that farmers must employ that which they know to be poisonous with all the precautions known to be requisite in dealing with poisons by any person of common sense. . . . The evidence in favour of the view that carelessness on the part of the farmer and his men at Burton, during and after dipping, aided by the inclemency of the weather, were the causes of the poisoning of the sheep, is so patent, that we cannot see how any other opinion of the wholesale poisoning can be for a moment entertained."

It is with very great regret that we announce the death last week of the Rev. J. S. Haygarth, M.A., the late principal of the Royal Agricultural College, at Cirencester. The present high standing of the college is greatly due to his energetic and judicious management; and it sustains a most severe loss by his death. Mr. Haygarth, then curate of the neighbouring parish of Rodmarton, was, we believe, appointed eight years ago to establish and carry on a school on the foundation, or rather in the place of the Agricultural College, which had at that time fallen into disrepute—the students being then only 10 in number—but recalling the dismissed staff of professors around him, he was soon convinced that its failure up till then was no unavoidable result of the institution being uncalled for and unneeded. The staff were re-engaged—that session opened with 15 pupils on the rolls, and in a few years the number has increased to as many as the institution can comfortably accommodate, while the out-students are so numerous as to be with difficulty accommodated in the town of Cirencester.

So great a success has been owing not more to the personal ability and energy of the late principal, than to the unvarying cordiality and unanimity which characterised his relations to the professors of the college and their relations under him to one another. While they all mourn him as a brother, it is the best illustration of his success in the complete organisation of the establishment, that the whole machinery of the college continues in full and harmonious action, though its revered head has been thus suddenly removed.

—— The "smashing up" of the clay land Wheat stubble referred to in a recent advertisement of Mr. Smith, of Woolston, was successfully effected last Friday. Six acres of the field were cultivated across the slope, two having been already cultivated last autumn; the whole eight were then "grubbed" or cultivated up and down; and the whole 14 acres were completed in 17 hours—the soil being moved 9 or 10 inches deep, and thoroughly disintegrated.

The engine worked at between 4 and 5-horse power; and it was plain that no amount of horse power exerted by the animals themselves could have left the land in such a condition as the steam-driven operation of last Friday brought about.

ON THE WINTER ACCOMMODATION FOR STOCK.

[The following paper was read at a late meeting of the Kingscote (Gloucestershire) Farmers' Club, by J. T. Harrison, Esq., Frocester Court.]

In some of the districts in Gloucestershire the accommodation for stock is nearly the same as it was 80 years ago, and the description of it given by a very intelligent writer in 1787 stands true to the present day.* He says—"The farmeries are very simple; and in general very mean. A small, old, timber-built dwelling house, with a calf stage, a hovel to hold a cow occasionally, and a stable for two or three horses, are considered the only requisites. If a cowshed be added the farmery is complete." The same writer says (page 18, Vol. I.): "I found nothing strikingly new in the buildings and farmyards of the Cotswold Hills."

There have however been many improvements made since then, but they are by no means general. Even so lately as 1850, Mr. Caird, the present member for Dartmouth, thus describes a Gloucestershire dairy farm in January†:—

"An inconvenient road conducted me to the entrance gate of a dilapidated farmyard, one side of which was occupied by a huge barn and waggon shed, and the other by the farmhouse, dairy, and piggeries. The farmyard was divided by a wall, and two lots of milch cows were accommodated in the separate divisions. On one side of the first division was a temporary shed, covered with bushes and straw. Beneath this shed there was a comparatively dry lair for the stock; the yard itself was wet, dirty, and uncomfortable. The other yard was the exact counterpart of this, except that it wanted even the shelter shed. In these two yards are confined the dairy stock of the farm during the winter months; they are supplied with hay in antique square hayracks, ingeniously capped over, to protect the hay, with a thatched roof very much resembling the pictures of Robinson Crusoe's hat. In each yard two of these are placed, round which the shivering animals station themselves as soon as the feeder gives them their diurnal ration, and there they patiently ruminate the scanty contents. A dripping rain fell as we looked at them, from which their heads were sheltered by the thatched roof of the hayrack, only to have it poured in a heavier stream on their necks and shoulders. In the other yard the cows had finished their provender, and showed their dissatisfaction with its meagre character by butting each other round the rack."

* Marshall's "Rural Economy of Gloucestershire," page 92, Vol. II.

† Caird's "British Agriculture," page 42.

Probably every one of us could endorse this as a true description of some dairy farms.

This state of things is not, however, confined to the dairy district of Gloucester, but is in a more or less flagrant degree to be found generally throughout the kingdom, and as pointed out by Mr. Grey, of Dilston, in a paper on Farm Buildings, published by the Royal Agricultural Society in 1843, the consequence is a much greater demand for farms that are well supplied with every convenience for man and beast.

The buildings have been well called "the meat and manure factory of the farm" (Caird, p. 67), and the constant improvements in the other departments of agriculture are forcing attention to this, which admits more than any other of the introduction of systematic and factory-like arrangements. And no more can a farm be called in a proper state for a tenant to turn it to the best account without suitable buildings than a windmill without stores would be for its profitable occupation by a miller.

It becomes then a most important question what description of buildings are most suited for the purpose, and cheapest in their construction, for I fear that in many cases the outlay expended on the home farm has deterred landlords from extending the benefit of suitable and well-arranged buildings to their tenants generally. Let us then consider the subject more in detail.

1. And first, as to the health and improvement of the stock, the economy of food, and the manufacture of manure, when the cattle are wintered in the open fields. During a winter, such as that now passing away, stock may do very well in the open fields; and I can instance one case in which, although the farmer has some accommodation in the shape of yards and sheds, he has kept all his stock in the fields. I cannot, however, believe that this is good management either as regards the stock, or the fields in which they are kept—whilst it is not economical in respect of food, and I question much if the manure is so useful as it might be—the animal selecting sheltered spots to lie upon where they give the ground an overdose, causing sour rank Grass to grow, which the cattle reject the following summer.

As I am obliged to keep some stock in the fields during the winter, I have lately erected two sheds in which I find the cattle lie every night, and by keeping them littered there is a considerable quantity of useful manure accumulating at distant parts of the farm, and I am inclined to think that for young stock, and where the land is thoroughly drained, it may be advantageous to pursue this system at a distance from the homestead, as it saves the cartage of the hay home and makes some manure where it is generally much wanted.

I may mention that the sheds I have put up are very simple. The area of each of them is about 500 square feet, affording accommodation for 16 young beasts coming two years old, at a cost of 13*l.* each shed, including all the materials (excepting the straw) and labour.

This part of the subject opens the question of the effect of the droppings of the cattle in the open field. It appears from the analysis of Dr. Voelcker that fresh manure contains very little soluble fertilising matter, and that it is only as decomposition takes place that it becomes soluble and fitted for the food of plants. Now droppings lying on the ground exposed to drying winds are not favourably placed for inducing decomposition, and I believe that even when well beaten about the effect will not be nearly so advantageous to the farmer as if the manure was collected into heaps mixed with earth, which retains the soluble nitrogenised and other substances induced by fermentation, and after being spread the first rain carries them to the roots of the Grass. It may have occurred to you that we do not require to beat our Grass grounds to any great extent after the cattle have been running in them all the season—how is this? Observe the customers we then have for this part of our farm produce. Sometimes the droppings are instantly covered by innumerable flies, at others rooks and other birds pecking away at them show that they have become the food of various worms and insects, by which, on turning it over, we find it to be thoroughly honeycombed and reduced to a mere skeleton. Here is evidently a great waste of fertilising matter. I have seen persons employed collecting the manure and carting it off in the Vale of Berkeley, and I find the practice thus recommended by Mr. Thompson in the Royal Agricultural Society's Journal for last year:—

(No. 41, page 255.)—"One of the cheapest and most effective plans is to employ an old man with a donkey-cart to go round the pastures collecting the droppings of the cattle, and making them into compost with road-scrapings, ditch-cleanings, &c. If a manure collector be once appointed, numerous odds and ends of fertilising substances will be found available which would individually be worth little and which are now wasted, &c. But the collection of manure should be incessant. The droppings of horses and cattle, especially if collected fresh, form a very important source of compost, and the improvement is twofold—1st, in the saving of that which is otherwise to a great extent wasted; 2dly, by the cleansing of the pastures and the much more uniform grazing of the cattle when the droppings are not allowed to remain and produce coarse tufts for some months after."

He recommends the turning of the compost heap once at least.

2. I shall next proceed to the consideration of the effects on the stock, food, and manure when the cattle are wintered in open yards without sheds. In such if there is a warm comfortable spot well littered the animals will soon select their bed, but there is really no one point to recommend such a mode of wintering stock; it cannot be healthy for them to be subjected to all the changes of our varying climate. Animals so exposed must require more food, and as to the manure made by them it is impossible to devise a more effectual system for its extravagant waste. It may be as well to discuss here generally the question of yard-made manure, as it will apply equally, perhaps, with greater force to that made in yards with sheds attached. Straw and droppings from cattle, did they remain in their primitive condition, would be of little use in fertilising the land, because a very small proportion of them is soluble; by degrees, however, a slow fermentation ensues, the particles re-arrange themselves, and very valuable fertilising products are formed, which are soluble, so that were the process carried far enough the whole of the valuable part of the manure might be washed out and what Mr. Wren Hoskyns calls the dead body, whose spirit is departed, alone be left to be carried to the field by neighbour Drychaff's creaking hearse. Now, consider the manure left exposed in a yard is favourably placed for undergoing rapid decomposition (unless it is literally covered with water); it is well exposed, occasionally wetted by genial showers, not too hard compressed by the treading cattle as it is spread over an extensive surface, everything is promising for a good brewing, and in due course down comes the pelting storm, and the rich porter-coloured stream flowing from the yards and down the adjoining stream but too truly tells of the efficiency of the decomposition and the value of departed worth. I feel confident that there is no satisfactory argument for manufacturing manure in exposed yards where it is subjected to be thus robbed of its most valuable constituents. It may be asked, what are we to do with our straw in cases when we have so much, and our live stock being principally sheep; it is only by exposing it in yards that we can convert it into manure at all? I question much whether we have by any means arrived at the maximum use of straw as fodder for sheep as well as cattle. The late Sir George Sinclair in his work on Husbandry (vol. 1, page 378), in 1814, mentions a saying of Dr. Keith's, "Take care of the straw, the corn will take care of itself;" and he mentions a remark of Marshall's, "that if a Yorkshire and a Norfolk farmer got equal quantities of straw, the Yorkshireman would make his cattle eat every particle, and would scarcely leave any to litter their stalls with, whilst the Norfolk man would convert the whole into muck. The Yorkshire man would keep more cattle, and would carry out his dung at less expense, whilst the Norfolk man would make more muck. Others would prefer a middle course, that of eating one-half and converting the rest into dung."

In a letter written a few weeks ago by Mr. Bond to the Editor of the *Agricultural Gazette*, explaining the means by which his sheep are maintained at so cheap a rate, it is shown that for three months in the winter they are fed on straw and Mangel alone, and during the three spring months, March, April, and May, on straw, Mangel, Cow Cabbage, and Grass, with the addition of oilcake and Bean-meal, no hay being given to them throughout the year. I should notice that his farm is a clay soil and not suitable for folding sheep on the land. Still there does not seem any decided objection to feeding them similarly in the fold as he does in the yard. I shall close my observations on open yards by heartily expressing my agreement with the following observation in Morton's Cyclopædia, that "all manures should be made under cover, either in stalls, boxes, or sheds."

(*To be concluded next week.*)

THE CAKE MANUFACTURE.

The official returns of the imports of Linseed into the United Kingdom show a large and yearly increase, as appears by the following Table, viz.:—

Year.	Quarters Imported.	Year.	Quarters Imported.
1841	363,461	1850	608,984
1842	367,700	1851	630,471
1843	470,539	1852	799,402
1844	616,947	1853	1,035,335
1845	656,793	1854	828,513
1846	506,141	1855	756,950
1847	439,512	1856	1,180,179
1848	799,650	1857	1,100,000
1849	626,495		

In 1857 the supply was derived from the following sources: viz. from Calcutta 90,000 quarters, Bombay 120,000, St. Petersburg 190,000 quarters, Archangel 60,000, Riga 75,000, Memel and other places in the Baltic about 80,000 quarters; the Black Sea 410,000, Alexandria and various other ports 60,000 quarters. It will, therefore, be observed that the largest portion of the Linseed is drawn from Russia, and a plentiful or an indifferent harvest of Linseed throughout that empire is felt by the consumer of Linseed-cakes here in a higher or lower range of prices consequent thereon. He also suffers from the inferiority of quality caused by the admixture of seeds other than Linseed, so that he has to pay for an indifferent article at a higher price. The 1,100,000 quarters of Linseed imported in 1857 would produce 137,500 tons of Linseed-cake (worth at 10*l.* per ton 1,375,000*l.*); and this is in addition to the foreign cake annually imported, amounting to about 100,000 tons. The total value of Linseed-cake consumed in this country may, therefore, be estimated at about 2,000,000*l.* annually. The East Indian qualities in general are tolerably even, seldom varying to any appreciable extent at the respective ports of shipment. They yield the greatest quantity of oil, and after pressure the cake is no doubt more nourishing and valuable than any other. But the bulk of the supplies is furnished by other countries more subject to variation of climate, and uniformity of quality in different seasons is not obtainable. Inferiority in quality is usually accompanied by adulteration, a variety of seeds being found mixed with the Linseed, such as wild Rape (Brassica campestris), wild Mustard or Charlock (Sinapis arvensis), seeds of Lolium perenne, of Dodder (Cuscuta epilinum), and of Willow-weed and Millet (Panicum miliaceum). The bulk of the Linseed being imported from the Black Sea, the standard of quality and price is chiefly regulated by the importation from thence. In good seasons the Black Sea Linseed is bold and pure, with only a small admixture of other seeds; and if the Greeks, in whose hands this article is now to a great extent centred, were not to tamper with it, the importation would leave little if any room for objection. But during the late Russian war, and indeed down to the present time, adulteration has been carried to such an extent, that a deputation of seed-crushers, appointed at a general meeting of that body with a view to redress this evil, waited upon the principal Greek houses in London. The interview, however, resulted in a total failure of the object desired to be brought about, for the deputation, on being shown a sample of pure Linseed, and also one containing the admixture complained of, and being requested to state their opinion what price such Linseed, on arrival here, would command in the market, were forced to admit that competition for seed amongst the crushers had much influence over the quality of the article supplied, and that the ready sale which could be found for an inferior quality removed all inducement from the seller to ship a genuine article. To the high price attained during the last two or three years, coupled with inferior quality and quantity arising from bad harvests, may be attributed the deterioration of quality in Linseed. The crusher, aiming at uniformity in his manufacture, but more especially to suit the tastes of his customers, has no doubt in some instances been induced to add to the already large accumulation of extraneous matter, so that, when the cake is crushed and ready for use, it cannot always be said to be *Linseed*-cake.

Our brethren across the Atlantic have studied the art of manufacturing Linseed-cake. What they produce is faultless to the eye, and, if not always perfection to the taste, it is thin, tender, flaky, and finds a ready sale in this country at the highest market price of the day, the question of genuineness being left entirely for subsequent determination. The cake pleases the eye and is always in good demand; and what more is required? Farmers have only themselves to blame in this respect. A considerable quantity of cake is now used for feeding sheep, and for this purpose cake of a tender kind, such as this, is preferred: it is produced by the addition of bran in its manufacture. Thus the farmer has to pay 10*l.* or 11*l.* per ton for cake which pleases the eye in this country, but omits to consider that for this he has to pay dearly for the admixture of bran, which costs 4*l.* or 5*l.* per ton, and in the United States probably about half that price. The intrinsic value of Linseed-cake is not sufficiently dwelt upon; hard-pressed cake, or cake which is closely ground, although genuine, is invariably refused by the farmer, and preference given to the more tender-looking but adulterated kinds. My own bailiff I have observed is inclined to the latter-mentioned quality of cake, especially for sheep. It, however, requires little if any consideration to decide where the preference should be shown. The difference may be discovered by the greater amount of mucilage which a given quantity will produce, which may be quickly and easily tested. If a ton of cake contain one-third of bran, it may be readily detected. Crushers are not always in fault; I have no hesitation in saying that they have, in some instances, received directions from their customers to mix bran in the cake, "as they preferred its being done, alleging that it made it more free." The temptation, therefore, under which the crusher finds himself does not always spring from self-interest on his part, or self-protection against those who adulterate to a much larger extent, but often from the extensive demand and ready sale for the spurious article. The intelligent farmer will, however, be found testing his sample by the simple method above named, and valuing it by its intrinsic worth, before he makes his purchase. The still greater adulteration practised by some crushers, who gather up everything that can be made to pass as Linseed-cake, is one which requires less exposure, for the farmers who purchase such an article must do it with their eyes open, and cannot complain if they have to suffer for their folly.

I am indebted to a correspondent in whom I have the greatest confidence, for the following information respecting the different qualities of Linseed-cake. He states that the finest quality is made as follows:—300 lbs. of ground Linseed are mixed with 28 lbs. of Ground Nut-cake, 28 lbs. of Rape-cake (also ground), and 28 lbs. of coarse bran. The second qualities are made of a small admixture of Linseed with a considerable part of the undermentioned articles; and the third qualities are made wholly of the last named of the following articles, without any Linseed at all:—

Foreign Linseed-cakes,	Castor-oil Nut-cakes,
Dodder-seed cakes,	Rice husks,
Poppy-seed cakes,	Cotton-seed cakes,
African Ground Nut-cakes,	Rape-cakes.

Sometimes the whole of the above are mixed and worked together; but a supply of each is not always on hand; and some or all, according to circumstances, are introduced to make up the desired quality.

I am as unwilling as I am unable to attach to the fair and honest manufacturer of Linseed-cakes any participation in such practices. He has nothing to fear

from exposure, and therefore the following Table of calculation of the money value of a ton of Linseed-cakes made to suit a cheap customer will not affect him, but, on the contrary, will prove to consumers what competition the crusher who makes cakes from Linseed has to contend against, and will, I trust, be the means of inducing the purchaser to give a fair price for an honest article. I will premise that the articles named are at the relative values at which they usually stand to each other, so that, if Linseed-cakes are lower in price, the others are likewise lower in proportion, and *vice versâ* :—

Cost of 1 ton of cake composed of the following articles :—	£	s.	d.
5 cwt. of soft green Rape-cake at 6*l.* per ton .	1	10	0
5 cwt. of bran, large flaky quality, at 4*l.* 10*s.* per ton	1	2	6
5 cwt. of Nut-cake at 6*l.* per ton	1	10	0
1 cwt. of fine Linseed equivalent to a like quantity of genuine cake, and worth 10*l.* per ton ..	2	10	0
	6	12	6
Market value of 1 ton of genuine Linseed-cakes made from Bombay, Black Sea, or Baltic seed is	10	0	0
Difference in value	3	7	6

The temptation, therefore, to manufacture a compound similar to the above finds greater inducement when cakes are high in price; but the growing disposition to purchase such a quality must also be taken into consideration. If the price of Linseed falls, as it probably will do, to a level with former averages, the inducement will be less; and the quality of the new crop is so very superior as to render adulteration less profitable. The samples of the new crop are fine and clean, so that it may be reasonably hoped that the supply henceforward, especially from Russia, will be both abundant and good. The value of Linseed-cake as food for cattle has been so often set forth in this Journal, that it is unnecessary for me to say anything in recommendation of it; it enters so much into the economy of almost every farm, that to obtain a cheap and ample supply of the genuine article should be the desire of every farmer who wishes to improve and sustain his farm. The increasing imports from the East Indies afford room for hope that the wants of the grazier will to some extent be met thereby. The vast regions in that portion of her Majesty's dominions capable, when opened out, of yielding Linseed, leave no room for doubt that a large and annually increasing supply of seed will find its way into this country from thence, and thus enable the agriculturist to manufacture his own manure, feed his cattle, and ultimately improve the condition and quality of his land, to the profit and advantage both of himself and his landlord.

In closing my remarks on this subject, I will add that it has been my endeavour throughout to show, in a spirit of fairness, how the question stands between the crusher and his customer. That he is in no way answerable for deficient harvests or defective quality will be readily admitted; and if the demand for a spurious article supports and encourages its manufacture the blame does not rest with him entirely. On the other hand, is it honest or consistent with the infallible principles of right and wrong that such a state of things should continue? The growing importance of the article to the feeder of cattle, and its yearly increasing extent, forbid it: there is no plea either of present profit or expediency that can justify it. It is as unfair to the crusher who does not adulterate, as to the consumer; and the sooner it is abandoned the better for all parties concerned. There is a wide spread belief that no crusher is an "honest miller." This I need scarcely say is far from being true: but unfortunately the odium is shared alike by the honest and dishonest trader. There are undoubtedly many who have suffered severe losses in contending against unfair competition rather than manufacture a dishonest article, and others who have begun well, but have been unable to resist strong temptation; and before I conclude I will mention an amusing anecdote illustrative of this point. An honest or rather once honest miller, living near to a neighbouring crusher, had for some time sold him all his bran, but he saw and envied the crusher's thriving trade, and resolved upon turning his refuse to a more profitable account, and accordingly erected presses adjoining his flour mill that he also might manufacture Linseed cake out of bran! I dare say when they meet they can afford a mutual smile. *William Wight, Esq., of Sigglesthorne Hall, Holderness, Yorkshire, in the Journal of the English Agricultural Society.*

Home Correspondence.

Labour in Manuring Turnip Land on the Drills.—"J. M." states at p. 200 in his remarks on fallow crops, that "three men will fill 100 cartloads in 10 hours and three one-horse carts and two ploughs will finish 10 acres in a day, drilling up the land, carting 300 loads of manure, spreading it, and covering it by the strength of seven horses, seven men, two boys, and three women." [The time specified should have been three days.] The drilling up of 10 acres of land into 27-inch drills as "J. M." describes, with only one plough, requires the ploughman to walk more than 73 miles, which is, exclusive of the time occupied in walking on the headlands and turning the horses into the drills at each end of the field, a little more than 3½ miles per hour for each of the two ploughmen. Ploughmen who have young active horses which are in good working condition will traverse such an extent of land which is pulverised to a suitable tilth and requisite depth, and is free of ground-fast boulders within the reach of the plough, as they walk quicker than when they are ploughing stubble; nevertheless it is above the average speed that the majority of plough horses travel throughout the day. According to "J. M.'s" mode of distributing his labourers, each of the three spreaders of the manure must distribute 33⅓ cartloads of manure over a little more than 12 miles of a drill. An ordinary workman ought to and can fill 10 cartloads of manure as fast as two women will spread it in an acre of 27-inch drills. Some farmers in my native district allow one man for filling the manure, and two women for spreading it to each plough, and one woman for dividing the manure heaps which the man pulls out of the cart at regular distances into the centre drill equally into the three drills for every three women; others allow only one woman for dividing the manure for every six women, but it is oppressive work for a delicate female to keep six spreaders employed. Each competent female labourer divides the manure half a day at a time. Some farmers who can yoke three ploughs when applying about 10 cartloads of manure per acre allow three fillers at the manure heap, one man to empty the carts, and seven or eight women for dividing and spreading the manure in the drills. When applying a larger quantity of manure than one man can empty to keep three ploughs employed, and four one-horse carts are required to forward the manure, two men sometimes each empty every alternate cart, and only one boy is required for driving the horses in the cart. Those farmers who have seven or eight horses and require only three for the manure carts, who allow a boy for leading the horse in the drills, distribute their labourers thus: two ploughmen making up the drills, two men filling the manure, one boy driving the carts between the heap and the drills, a boy driving and a man emptying the carts, five women, one dividing and four spreading the manure in the drills—in all, five men, five women, two boys, and seven horses. Some farmers who have not a manure drill when applying a small quantity of guano, weigh a bushel of guano and mix it with 1 or 2 bushels of sifted ashes, which enables those who sow it to distribute it more regularly in the furrows. By weighing a bushel of guano and measuring the length of the drills, the application of a specified quantity of farm-yard or artificial manure to an acre of land is not a difficult task to those who can reduce 4840 yards to square inches, divide 6,272,640 inches by the width of the drills, and divide the length of the drills of a given width in an acre of land thus obtained by the whole length of the field, exclusive of the headlands. *A Labourer.*

Foreign Correspondence.

Bruges, Belgium, *April.*—To the casual observer whirled along in a railway car, or surveying the country from the elevated canal banks which environ the town in which we write; the rich and smiling cultivation which everywhere surrounds him would convey the idea that the people were blessed with a soil eminently fertile, and that from the scrupulously neat garden-like appearance of the fields, they were aided by all the dicta of science and all the powers of mechanism, and great doubtless would be his surprise when informed that both his surmises were altogether wrong. With a soil generally poor—*sol ingrat* as it has been termed—in many districts, and these of large extent, consisting of nothing but sand, with no knowledge of what is called agricultural or chemical science, with implements few in number and rude in construction, it has been but by the exercise of an industry which never tires, and aided only by the lessons derived from a long experience, that the farmers of Flanders have succeeded in making tracts wild with bleak sterility yield rich harvests of a wide variety of plants and produce. And if stimulated by these statements into a desire to know the secret of such cultural success, our supposed observer made inquiries from those around him acquainted with Flemish practice, he would find that in the exercise of two modes of procedure lay chiefly the whole secret. These two grand features are the careful practice of deep and repeated working of the soil, and the careful sowing and lavish yet prudent distribution of manure; and of these two mutually dependent upon each other, the second may be said to be the most important. The whole pith indeed of the practice of Flanders may be gathered from their maxim, freely translated, "no forage, no cattle; no cattle, no manure; no manure, no harvest;" paraphrased in England by the rough but expressive proverb, "muck makes meal." The more thoroughly we investigate the peculiarities of Flemish practice, the more do we become convinced that this maxim is not merely held as a matter of belief simply, but that with the force of a living faith it influences all their procedures. Take a walk in the country, you see it in the lavish expenditure of the field, and in the careful saving of the farm-yard. The term manure has with us but a limited acceptation; in Flanders it has a very wide one. "Muck," with many of our farmers, includes all the material used as a fertiliser; in Flanders, under the name of "fumier," it comprises only one, the term "engrais" including a wide range of materials, of the use of which many of our farmers would never dream. To give here a list merely of those substances would occupy too much of our allotted space; we content ourselves with naming one only, human excretion. The substance of this, to us a continual source of annoyance, the terror of the sanitary reformer, and the object of the waste of the engineer, who pollutes our streams with its presence, is to the Flemish farmer an object of the greatest solicitude, and to obtain which he goes to great expense, and spares no trouble. Take a walk in the country towards the afternoon, and you will meet conveyance after conveyance making their way to the town to purchase and take back to their various districts loads of this favourite engrais. This substance yields a large revenue to towns in the provinces of east and west Flanders and of Hainault. As to the agricultural value of this engrais, Girardin, an acknowledged authority on the subject of manures, gives the following, which may be interesting to our readers. Supposing a piece of soil to yield without any manure a return of three times of any given seed, it will yield by the use of the following manures, thus—

With vegetable manures	5 returns.
Cow-house manure	7 ,,
Manure of colombine (pigeon's dung) ..	9 ,,
Horse manure	10 ,,
Human urine	12 ,,
Human excrements	14 ,,

But a very limited tour in Flanders would suffice to show numerous and striking proofs of the power of this fertilising substance, and induce many, we believe, to give it a trial; the result of which we doubt not would be their looking upon it as do the Flemish, as a material deserving of the most careful economisation rather than of the wanton waste which characterises its treatment in our country. To the agriculturist one of the greatest advantages which this manure possesses is the rapidity with which it is dissolved, and the energy with which it acts, giving in comparatively short time its full fertilising effects. Nor is the shortness of the time in which it acts considered by the Flemish, as it is by some, a defect; on the contrary, it is looked upon by them as one of its most valuable characteristics. Neither should another advantage possessed by this manure be overlooked, namely, that it is unmixed with the seeds of weeds and plants, introduced so often and so prejudicially into our arable lands through the medium of solid farm-yard manure. One disadvantage undoubtedly possessed by this substance is the difficulty of its transport. In the district immediately surrounding Bruges it is conveyed from the town in covered carts to the liquid manure tank; it being almost invariably applied in the liquid form. The people engaged in its distribution give little evidence of their disgust at the bad odour which it suffuses around; this odour however being its only disadvantage, for no sanitary evil arises from the produce. The words used above, liquid manure tank, bring us to another point very noticeable in the practice of Flemish husbandry. How is it that every farmyard has its tank, the holder of the tiniest plot of land in this country, where there are few large occupations, thinking as highly of its value as the farmer of a large holding? While there is discussion—fierce almost and uncompromising in its vehemence—going on in our country year after year as to the value of liquid manure for all crops, many among us doubting whether it is worth the expense of its distribution, the Flemish farmer we may say from time immemorial has relied upon the contents of his liquid manure tank for his ablest ally in reducing the sterility of the unpromising soil upon which he has to operate. Liquid manure in Flanders is so highly esteemed that the term applied to it by a distinguished agriculturist to whom we were talking on the subject, the "soul of agriculture," does not savour of exaggeration. Applied to the land often two or three times after sowing to the growing crops, green and cereals alike, and always with an unsparing hand, the unbeliever in its valuable properties if spending but a few weeks here will have ample opportunities of seeing much that will tend to give him new ideas on the subject, and arouse suspicions in his mind that he has been too hasty in deciding against it. Under the term "engrais liquides," the Flemish agriculturist comprises human urine and that of cattle, either pure or mixed with solid excrements; other materials, as Rape-cake, are also frequently mixed in the tank. The liquid manure known as "engrais flamande" is formed of human excretæ. When this is brought from the towns, it is deposited in the tanks, situated in the immediate neighbourhood of the farm-house, or at the sides of the roads leading to and intersecting the fields. These tanks contain from 2000 to 3000 hectolitres; they are built of brickwork, arched overhead, provided with a man-hole through which to introduce and extract the liquid, and with an aperture of less dimensions, the one of which is to give access to the air. The material—termed vidanges—is usually allowed to remain in the tanks for a period of several months, and allowed to ferment, a process which is considered to be advantageous to the quality of the "engrais." The bad odour arising when it is placed on the land is sometimes reduced by mixing with it sulphate of chalk or sulphate of iron. This engrais is applied to the industrial plants as Colza, Hops, Tobacco, Flax; these absorb it in great quantities; it is also applied to the cereals. It is not however applied much before the seed is put in, as its action is immediate, and loss is sustained by its infiltration through the soil. It is not used to the plants while in full vegetation, unless they have been previously treated with a dose of cow urine or of water; or after rain, as its action on the leaves is prejudicial, causing them to be burnt. If during wet weather they wish to apply it to any plant requiring its stimulating effect, as to Tobacco, they run it in the furrows between the lines of plants, so that it goes to the roots, avoiding the leaves of the plants. The quantity applied per hectare varies from 50 to 200 hectolitres according to circumstances of soil, &c. Used as a supplementary manure the dose

is regulated according to the fertility already possessed by the land. The industrial plants, as Colza, Hops, &c., are those which take the greatest quantities; much however depends upon the degree of purity and of concentration of the manure. Sometimes it is used without any mixture; at other times water or cow urine is added, or oilcakes dissolved in it. From the tanks the manure is generally taken to the fields in a barrel or semicircular vessel placed on a three-wheeled cart, and which contains from 9 to 10 hectolitres, sufficient quantity for a horse to pull over the arable land. Arrived at its destination, the plug at the hinder end of the vessel is withdrawn, and the liquid emptied into a barrel, which contains about a hectolitre and a half, and which is provided with a handle at each side. Under these two poles are passed, and two men walking between their extremities carry the barrel to the place where the manure is to be spread. From this barrel—sometimes however it is emptied into a third receiver, the men returning with the barrel for another supply from the cart—it is taken out by means of a scoop furnished with a long handle, and by means of which it is thrown over the land. It is amusing to see with what dexterity this is performed, how regularly each plot receives its share, and this more in the form of a gentle shower over all than that of a heavy plash at one point and little or none at another. This, as we have previously noted, throwing of the liquid over the land is not admissible during the hot weather, when it is desirable to avoid touching the leaves of the plants with it. The method of application here described takes three men to carry it out, one to spread and two to carry manure from the cart. In small occupations another method is employed necessitating only one man. The manure is placed in a barrel which is secured to his back by strong straps; a flexible tube is provided to the lower part of the barrel, and furnished with a stop-cock; as the man walks along he can direct the issuing stream to any point desirable.

The same care which we have shown to be given to the products of the population of the towns is also extended to the excretal products of the stables and the cow-houses of Flemish farms. Tanks are provided, carefully constructed to prevent either the passage of water from the surrounding soil, or the absorption of the liquid which they contain. Into these tanks the liquid from the cow-houses and the stables is conducted by means of drains; the knowing agriculturist being careful to lead also the liquid contents of the solid dung heap and the privy, as also to add to the contents of the tanks the waste water from household operations, the daily cleansings of the cow-houses: with the liquid escaping from the litter there passes a certain quantity of the solid manure. For the Flax crop, and also for the Tobacco crop, oilcakes are dissolved in the liquid. In its ordinary condition it is applied to the Colza, the Turnips, Flax, and to the cereals, although to the latter it is used with prudence, as it is considered to weaken the straw. Before using it for Clover it is advisable to allow it to ferment for five or six weeks. Although using the manure at the time of and before seeding, it is nevertheless used while the plants are in full vegetation, as to the Beet-root, Turnips, and to the Colza. It does not exert the burning influence on the leaves which is shown by the "engrais flamand," but it is generally employed in rainy weather: if the tanks get filled before there is occasion to use the liquid, the surplus is pumped on to the solid manure, or on to the compost heap. In large occupations it is transported to outlying tanks in various parts of the farm. Before extracting the contents of the cistern, the whole are well stirred so as to mix the deposited matter with the liquid; in which condition it is pumped up into the liquid manure cart, which transports it to the field where it is to be used. For arable land it is spread over the surface by the same means as already described when treating of the "engrais flamand." When employed for manuring meadow land the usual method of distributing it is by means of an apparatus resembling that used for watering the streets.

Although in Belgium, and very markedly in the provinces of East and West Flanders, the value of manure is fully estimated, nevertheless it must not be supposed that the practice of the farmers is in all departments commendable; on the contrary, in their management of the solid manures of the farm, there is much to be deprecated; and it were to be wished that the farmers generally were alive to the importance of a more economical because more scientific mode of saving and storing it. But of this subject more in another communication, which we hope to make before leaving this province of West Flanders.

Societies.

ROYAL AGRICULTURAL OF ENGLAND.

Weekly Council: *Wednesday, April* 13. — Mr. Raymond Barker, V.P., in the chair.

The names of nine candidates for election were read. Also a communication from Miss Banister on the Festuca fluitans, of the present state of growth of which she transmitted a specimen.

The Council then adjourned over Passion and Easter week to the Monthly Council on the 4th of May.

Farmers' Clubs.

Wenlock: *Principles of Cattle Breeding.*—Mr. Griffith Evans, M.R.C.V.S., &c., of Bridgnorth, delivered a lecture upon this subject, from which, as reported in the *Shrewsbury Chronicle*, we make the following extracts:—The lecturer said that horse-breeding is very much neglected throughout the country, especially hunters and carriage horses; nor has the draught horse had the attention he deserves. He (Mr. Evans) should, therefore, more especially point out how to apply the principles of breeding to horses than to other animals.

Our fairs are overstocked with horses, but so shapeless that it is difficult to say for what purposes most of them are adapted. He thought he might safely say that the average value of four-fifths of our four-year-old horses, of all sorts that we see in the fairs, is hardly 20*l.* to 25*l.*, and it is difficult to sell many of them at any price. Now, taking into consideration their cost of breeding and rearing, with all risks and so on, no wonder breeders say they do not pay. The average value of the remaining one-fifth it is difficult to say; but they sell readily for from 40*l.* up to almost any amount you can reasonably conceive. Now, I ask those breeders who complain—why do they breed horses at all? "Oh," they say, "to consume the Grass properly we must have cattle, sheep, and horses, too; they all differ in their bite so." Very well, then, if you breed horses of some sort, why won't you breed good ones? Does an ill-shaped horse consume less food than a good one? Is it cheaper to breed poor than good horses? Some of you may perhaps say, as I have heard others say, that in breeding cattle and sheep you are seldom disappointed; the progeny is always what you expected; while in breeding horses you have no idea what the colour or shape of the colt will be until you see it; it is quite a lottery.

The first great law of nature in breeding is, that like should produce like; but it must be accompanied in our mind with another law, the law of variation.

One of the causes of variation is what is called "breeding back." It is often a source of disappointment to the breeder that when he puts a well-formed female and a well-formed male, he gets an ill-formed colt or calf, and of quite a different colour to what he expected. If you inquire into the pedigree of the parents you will find the child answering in every respect to the description of an ancestor. It is this that makes many say that horse-breeding is a lottery. However, if you breed properly you have little to fear. Pure and thorough-bred animals comparatively seldom breed back, or disappoint their owners in doing so. By thorough-bred is meant those whose ancestors were for a long time of the same shape, and adapted for the same purpose as themselves. The more the animals have been crossed the more subject are they to breed back, and the more the difference of shape in crossing the more likely is breeding back to prove a disappointment. This should make you very careful in breeding stock, and to ascertain that not only the sire and dam are free from spavin curbs, &c., but that their ancestors were not subject to any hereditary affection, and not only that they were free from hereditary evils, but that they possess the same good qualities, and are adapted for the same purpose as themselves.

Now comes the vexed question, "Which has the predominating influence on the progeny, the male or the female parent? If both parents join to form the child, does one parent give one group of organs and the other parent another group; or do both give all?"

Mr. Evans related many very beautiful and interesting facts in support of each theory, which seemed conclusive in themselves; but he maintained it was not fair to look at one set of facts alone, and shut our eyes to others. It was by an impartial survey of them all that we get the truth. There was an able article upon this subject in the "Westminster Review," with which he fully agreed, which says "That both parents are always represented in the offspring; and although the male influence is sometimes seen to predominate in one direction, and the female influence in another, yet this direction is by no means constant, is often reversed, and admits of no absolute reduction to a known formula."

It is a common but silly question, "Which breed of animals is the best for the farmer?" Some advocate short-horns, others advocate the long-horns.

A particular kind is sometimes advocated under all circumstances to the exclusion of all others. Such persons remind me of those disputants about the true colour of the chamelion; all are right, and all are wrong, depending upon the point from which the object is examined. That breed of animals is the most profitable which is better adapted for that particular locality. One class do better on upland, others on lowland; some do better grassing, others do better housed. It also depends upon the demand of the neighbouring markets. In some parts cheese-making pays best; in other parts milk; in other parts meat, &c. In some districts it pays better to breed draught horses, in others hackneys and hunters, in others racehorses, in others ponies, &c. What I wish to impress deeply upon your mind is this: Every breed has its own peculiar conformation, and that conformation you will find upon close investigation to be peculiarly well adapted for a particular purpose; and when you adopt and cultivate a certain breed, you must always keep that purpose and that conformation steadily in view. If you lose the conformation, you will soon lose the purpose. For instance, we may divide cattle into two primary classes: 1, for fattening and arriving at early maturity; 2, for dairy purposes. We may also divide horses into two primary classes: to carry weights on the back, and go fast; and to draw weights after them. It is evident that they are destined for very different purposes, and must set to work in a very different manner. I now merely draw your attention to the fact that there is a peculiar shape adapted to perform any particular work, and it is essential that the young man should make himself thoroughly acquainted with those before he can be expected to be a successful breeder. Starting then upon the great law of nature, that like produces like, and being prepared to guard against variations by breeding from animals of the same sort, &c., breeding good stock becomes a simple matter of course. First ascertain what animals your land is best adapted for. Secondly, what have the readiest sale in your markets. Thirdly, having decided upon the purpose of your animal, study the best shape and conformation calculated to attain your object in a most perfect manner; if you wish to breed fat stock, study the shape most disposed to lay on fat with the least food, and to arrive at early maturity; if you wish to breed milk cows, study the proper shapes for them; if you breed horses, study the proper shapes to perform their various duties. Fourthly, don't breed from an animal, whether male or female, whose shape is not well adapted to perform the work it is intended for: let them be of the most perfect shape you can get of their kind. Fifthly, being acquainted with the law of breeding back, you will not be satisfied unless their ancestors were also of the same sort, and equally good; in fact, thorough-bred, and free from hereditary evils. Remember that I do not confine the term thorough-bred to the race-horse. It may be equally well applied to the cart-horse, or hunter, or pony, or carriage-horse, &c. It means those whose pedigree for a considerable time back were of the same class, and adapted for the same purpose as themselves. Unless you commence to establish a new breed, you should never breed from a half-bred animal. Let them all be castrated. There is too much risk connected with it; it is based upon a wrong principle; you should carry the right principle out thoroughly. Why should you breed from a half-bred mare more than from a half-bred cow? I know many excellent horses bred from half-bred mares, but there are many more failures. Some of you may say that you have no pure or thorough breeds, except racers; therefore you ask how can you avoid crossing. Well, "It is never too late to mend." Suppose Messrs. Bakewell, Adney, Smith, and other eminent breeders, had listened to such an excuse? The present system of breeding hunters and coach-horses is a bad one; because by putting a race-horse to a half-bred mare you may get a good hunter, and you often fail; you may get a hack, you may get a useless one. By putting a hunting-horse to a Cleveland mare, you may get a carriage-horse, or you may often get a good-for-nothing. You have no law to depend upon. By breeding exclusively from animals of the same shape, and, therefore, adapted for the same purpose, with careful attention to pedigree, you may easily establish a breed for any purpose whatever.

As to the qualities of the brood mare, there are some peculiarities essential for all breeds.

She must be what is called roomy, allowing sufficient space to carry a foal, and for its passage into the world. For this purpose the carcase should be long, and the back ribs deep, the pelvis or hips should be wide and deep. The forehand is usually lower in the mare than in horses of the same kind. This, as Stonehenge observes, "gives the whole framework of the trunk a larger proportion than is always desirable in the race-horse, which may easily be overtopped; and here many good runners have failed as brood mares, whilst a good number of bad runners have been dams of good race-horses. Beyond this roomy frame necessary as the eggshell of the foal, the mare only requires such a shape and make as is well adapted for the peculiar purpose she is intended for. It is better to breed from animals of a medium size of their kind, whether male or female, not too big, nor too small." To ensure the mare being stinted she should be perfectly healthy, and living as much as possible in a state of nature; not overfed with corn, but rather have cooling diet, unless she is poor. Fattened animals often prove barren. The best time for covering is when the heat commences. If convenient it is often recommended to do so a second time when the heat passes off. "Like the brood mare," says Stonehenge, "the stallion requires several essentials, commencing also, like her, 1st with his blood; 2ndly, his individual shape; 3rdly, his health, 4thly, his temper. But there is this difficulty in selecting the stallion, that he must not only be suitable, but he must also be adapted to the particular mare which he is to serve. Thus it will be manifest that the task is more difficult than the fixing upon a brood mare, because (leaving out of consideration all other points but blood) in the one case a mare only has to be chosen, which is of good blood, for her particular work; while in the other there must be the same attention paid to this particular, and also to the stallion's suitability to the mare, or to "hit" with her blood. It is a remarkable fact that the first male put to a female, especially if he be potent, influences more or less the progeny of that female by subsequent males. In explanation of this phenomenon that eminent physiologist, Professor Carpenter, in his celebrated work upon "Human Physiology," writes: "Some of these cases appear referable to the strong mental impressions left by the first male parent upon the female; but there are others which seem to render it more likely that the blood of the female has imbibed from that of the fœtus, through the placental circulation, some of the attributes which the latter has derived from its male parent; and that the female may communicate these, with those proper to herself, to the subsequent offspring of a different male parentage."

In conclusion, allow me to say that agricultural societies are to be blamed very much for the little attention they pay to horses as compared with other stock, especially poultry. They ought to give liberal prizes to the best brood mares and stallions of all breeds, and pay as much attention to them—they deserve more—as to cattle, &c. The best stallion should have to travel within the district of the society during next session, and not to receive the prize until the end of that time. I must add that our great landlords generally overlook the interest of their tenants, and consequently their own also, in not keeping good thorough-bred stallions, of different breeds, for the use of their tenants at a nominal charge. Farmers themselves also overlook their own interest too often by being "penny wise and pound foolish," in looking more at the fee of the horse, when they engage him, than at his shape.

Mr. H. Smith said: I can truly sympathise with Mr. Evans in his regret on the breed of our hunters, for the hounds frequently pass over my farm, and although my hedges are very low the hunters make horrid gaps. I have had some little experience with sheep, and in my opinion both male and female have considerable influence on their progeny; and I am of opinion that if we are to maintain our superiority in sheep we must stick to the Shropshire breed. Any admixture with another blood will be sure to deteriorate the flock. The Chairman: Have you such a distinct breed that you can go on without having recourse to the Southdown? Mr. Samuel Meire: There is not a doubt of it. If I could ensure my life for 100 years, I could keep my flock up to its standard without going to any other flock for aid. It is very easy to do it when you know how. There is no doubt but that the Shropshire sheep is a cross-bred sheep, and what breed is not? I should like to ask those who boast of the purity of the Southdown as if that was the sheep that came out of the ark.

Reviews.

On the History, Cultivation, Composition, &c., of Italian Rye-grass. By W. Tweed, Pupil of the Albert National Agricultural Institution. W. Robertson, 23, Upper Sackville Street, Dublin.

This, like a former publication on the cultivation of Mangel Wurzel, is a prize essay of the Glasnevin Agricultural College. Dr. Kirkpatrick, the principal of the college, gives the following introductory notice of the present publication:—

"In the autumn of 1857 I was induced, for the purpose of supplying a distinguished American agriculturist with full particulars relating to the preparation of the land for Mangel Wurzel, and the after-management of the crop, to offer one or two prizes for the best Essays on the History, &c., of the root, to be competed for by the pupils then in training at the Albert Institu-

tion and Model Farm. The result was so satisfactory that in the autumn of 1858 I was further induced to offer a prize for the best Essay on the 'History, Cultivation, Composition, &c., of Italian Rye-grass.' There were several competitors for the prize, which, after careful examination and deliberation, was awarded to the writer of the annexed Essay; and it is to be hoped that its publication may be productive of results as gratifying as those which have arisen from the paper on Mangel Wurzel,"—which was, it appears, re-published in America, and of considerable service to the introduction of the crop to American agriculture.

Mr. Tweed's essay refers to the natural history of the plant, and to the history of its introduction to English agriculture; and describes its cultivation in a detailed and intelligible manner. The following is an account of its growth under liquid manure on the Albert Model Farm, Glasnevin:—

The application of liquid manure to the Italian Ryegrass, has, at all times, given highly satisfactory results on this farm. "In order to economise the very large quantity of liquid manure which is carefully collected at the Albert Farm, from the cattle-houses, piggeries, and also from the pupils' dormitories, water-closets, lavatories, &c., underground iron pipes, with hydrants, have been laid for its distribution by means of steam-power on about 50 acres of the farm. Its application heretofore has been chiefly directed to the production of Italian Rye-grass, and, although the results have not equalled those which have been reported as having been realised in other places, yet they have been highly satisfactory, and have made a good return for the outlay on the necessary works.

"The following is a return of the several cuttings during the past season, and the weight of each per statute acre. Each cartload of the Grass, as it was cut for soiling, was accurately weighed, so that the very objectionable and inaccurate mode which is usually adopted for ascertaining the amount of produce by measuring a small portion of ground where the crop is supposed to be a fair average of the whole, and weighing the crop raised upon it, and from this calculating the acreable return, was effectually obviated. Thus, and thus only, can a reliable return of the acreable produce of Grass or root crops be obtained:—

Time of cutting.	Produce of each Cutting, per Statute Acre.	Amount of Liquid to each Cutting.*
	Tons cwt.	Gallons
1st Cutting, April 14th ..	6 15	9561
2d ,, June 4th ..	9 13	9030
3d ,, July 19th ..	7 14	11,221
4th ,, Sept. 1st ..	7 10	14,276
5th ,, Nov. 22d ..	6 15	6308
Total	38 7	50,396

Revue Agricole de l'Angleterre. Par M. F. Robiou de la Trehonnais, Paris. Librairie de Firmin Didot frères. Rue Jacob, 56.

This first number of a periodical intended to make English agriculture known to French farmers is conducted by a gentleman probably unrivalled in his acquaintance with the farming of the two countries. It contains articles on the agricultural influence of free trade in this country, on the history of the Smithfield Club, on Lois-Weedon culture, on reaping machines, and on cross-breeding. There is also a biography and capital portrait of Mr. Jonas Webb. The Review will no doubt obtain a considerable circulation in England as well as France.

Calendar of Operations.

APRIL.

DORSETSHIRE.—In consequence of the fine weather and indications of an early spring, the farmer has been unusually busy. The Barley and Oat sowing is therefore almost finished, the exception being where a few straggling patches of Swedes, or what once were worthy of the name, still remain. Many and curious have been the devices to retard the roots from "running to green," such as ploughing in, pulling up, collecting in heaps, mowing off the tops, and in one instance I observed a large field roller going over a 20-acre piece. Could not some of those who read the *Agricultural Gazette* mention a plan quite as likely to answer the desired effect without causing the like detriment to the root? Growing crops look well, in fact their present appearance can tend but little to improve the very low prices which Wheat at present commands. Those who sow Flax are on the "look-out" for a storm; the land is usually either let at a sum varying from 7*l.* to 8*l.* per acre to a man who finds and sows the seed, the farmer being responsible for horse labour only, or the standing crop is sold by auction. Vetches and Trifolium appear luxuriant; the pastures green, and almost as "early" as they have been on the 1st of May in several preceding years. The water meadows about this time are stocked with the dairies, consequently the yield of butter great and of a very superior quality; it for the most part finds its way to the London market, being sold to country factors for the quarter or whole year, and by them consigned to their agents in town. Sheep realise high prices, and are not too plentiful. Good mutton scarce, and worth from 8*d.* to 9*d.* per lb., and low prices not to be expected, the lambing season not having proved a favourable one. *P. P.*

Notices to Correspondents.

GRASS: *A Sub.* If it is well eaten off in the autumn, the earlier it is shut up for hay in the spring the earlier and probably the better will be the crop.

LIBRARY OF AGRICULTURAL WORKS: *G A.* There is no circulating library of agricultural works to our knowledge. And we would recommend such a thing to the bookselling trade, for we are convinced it would be a lucrative speculation.

TICKS IN LAMBS: *Isaac Markham.* They are very difficult to get rid of without injuring the wool. Linseed oil may be rubbed into the parts most infested. *W C S.*

* The liquid was very much diluted with water.

AYRSHIRE HEIFERS IN FIRST CALF. — Twenty very carefully selected pure bred 3-year old HEIFERS of this celebrated Milking Breed are for Sale in one lot, or singly. Ten may be seen 20 miles from London. A good 2-year old BULL also for Sale.—Apply to John Herriot, J. Lockhart Morton's, 8, Finch Lane, London, E.C.

IMPROVED PATENT TURNIP AND MANGEL GRATER, MANUFACTURED BY

JOHN WARNER AND SONS, No. 8, Crescent, Jewin Street, London, E.C.—J. W. & SONS, in introducing their IMPROVED PATENT TURNIP AND MANGEL GRATER to the notice of Agriculturists, beg to state that they have personally tested its capabilities during the last three seasons, and as such feel that they can, with the greatest confidence, recommend it as a machine that will upon trial, satisfy the requirements of Feeders of Stock generally; one man or strong lad being able with comparative ease to grate 20 bushels of roots in 10 minutes.—Price of the Machine complete, 4*l.* 10*s.* Carriage paid to any Railway Station in England. To be procured of any Ironmonger or Agricultural Machine Agent in Town or Country, or of the Manufacturers.

AGRICULTURAL MACHINERY.

E. R. AND F. TURNER, Ipswich, manufacture Prize Mills for Crushing Corn, Seed, Malt, &c.; Portable Grinding Mills, Steam Engines fixed and portable from 2 horse-power and upwards; Threshing Machines, Chaff Cutter, Oilcake Breakers, Horse Gears, Saw Tables, &c., all of a superior description and adapted for Home, Colonial, and Foreign use. Illustrated Price Lists sent free on application.

SPEED AND ECONOMY for Farmers, Gentlemen, and Market Gardeners, in the use of HOARE'S REGISTERED HAND SEED PLANTING MACHINE, which from its capabilities, combined with strength, lightness, and simplicity, places it beyond a parallel. Its operative powers in planting the seeds of Mangel, Carrot, Turnip, Parsnip, and all small seeds in patches of equal depth and different distances, from 6, 7, 12, 14, 18, 21, 24, to 28 inches apart, raking in and rolling complete, render it an invaluable invention. It will act as a drill when required. Price 5*l.* 15*s.*

London Agent, Mr. B. SAMUELSON, 76, Cannon Street, West. Sold also by the inventor, J. HOARE, Old Fishbourne, Chichester, Sussex.

GREAT REDUCTION IN THE PRICE OF

FOWLER'S PATENT STEAM PLOUGH.

FROM the great Improvements recently made, JOHN FOWLER, Jun., is prepared to execute Orders at the following prices:—

Windlass to 8-horse Engine, with Patent Self-moving Anchor, Headland Ropes, Rope Porters, and all necessary Tools	**£160 0 0**
Cultivator, fitted with Three, Five, or Seven Tines	**25 0 0**
700 yards Iron Wire Rope, 1¾ inch circumference, which is a sufficient length, on this plan of working, for a 350 yards furrow	**22 10 0**
Steel Rope, £7 10s. extra.	**£207 10 0**

The advantages to be derived in the working of this Tackle over others are, no belt is used, consequently no delay is caused from its slipping in showery weather; it can be efficiently worked by two men and two boys; and it is not confined to scarifying only, but a two-furrow balance plough can be worked by it. From the direct action of the draught, a small engine will effect a larger quantity of work than the same engine on the "roundabout system;" only half the rope is required for the same length of furrow, and a whole field can be done without shifting. The windlass can be attached to any agricultural engine, and the weight added would only be 12 cwt. The Tackle can be set at work within an hour of entering the field intended to be cultivated. The Drums on which the Rope is worked are 4 feet in diameter, and from its being wound in grooves all CRUSHING is avoided, and by these means a great saving in wire rope is effected.

The following TESTIMONIALS have been handed to JOHN FOWLER by some of the parties using his Steam Plough and Cultivator:—

"Sanden Lodge Farm, Chipping Norton, March 31, 1859.

"Dear Sir,—I am pleased to give you a most favourable report of your Steam Plough sent to Mr. Langston. It has been used daily for the last three weeks without the slightest accident or breakage, and has more than answered our expectations. We have ploughed with it the most varied and uneven field upon the estate, and have found the work perfect. The grubbing with plough heads and shares effects an excellent tillage. This is accomplished by removing the turn furrows; the same ploughs answer either for turning the soil or for breaking it up. We have for some years had an excellent scarifier, which is easily attached to each end of your plough beams, and this constitutes a simple and effectual cultivator, with this special recommendation, that it will work over ridge and furrow and in the roughest land without clogging. The above is the testimony of my own experience, and during the time mentioned I have given exclusive attention to the working of the plough, but it has been likewise witnessed and approved by almost every practical farmer in the neighbourhood. A large party came from Oxford on Monday last, and I feel sure that if additional evidence should be wanted to confirm my statement I could procure it from a long list of signatures well known to the agricultural public.

"I remain, sir, yours truly, "MATTHEW SAVIDGE.

"Mr. John Fowler, Jun., 28, Cornhill."

"Boyton Hall, near Chelmsford, March 2, 1859.

"My dear Sir,—Your Steam Cultivator has finished the 16-acre field to my entire satisfaction. The land was ploughed soon after harvest, and had not been moved since. The Scarifier was driven across the stetches and completely stirred the ground from 6 to 8 inches deep, in many places deeper than the previous ploughing, leaving it in a finely pulverised state. I am convinced the work could not have been done so well even with a large amount of horse labour, as the land is a stiff marl, and the treading of the horses would to a great extent have counterbalanced the benefit of the scarifying.—I am, sir, yours faithfully, "J. CHRISTY, Jun.

"John Fowler, Jun., 28, Cornhill."

"Kinnersley, Reigate, April 4, 1859.

"In reply to your favour of the 29th ult., requesting me to state my opinion of your Steam Plough, I beg to say that I had every reason to be pleased with its performance on my land during the month of November and the greater part of December in last year, when your plough turned up about 35 acres of my heavy clay land to a depth of 8 to 9 inches in a manner so satisfactory that I hope to arrange with Mr. Gurney's agent, Mr. Brooks, to bring the plough here again immediately after harvest, when he shall have the greater part of my farm to plough if he likes to undertake it.—I am, dear sir, yours truly, "J. T. SHERRARD.

"John Fowler, Jun."

"Hilton, Burton-on-Trent, April 1, 1859.

"I am decidedly of opinion that ploughing done by Fowler's Steam Plough is far superior than it is possible for horses to do it, as the treading of the horses is a decided drawback to them, whilst there is nothing of the sort when done by steam, and it is in every other respect quite equal to that done by horses, and this was the universal opinion of my friends. I am now ploughing across a mixed soil, or more properly speaking a field of different sorts of land—viz., gravel, sand, clay, and even some rocky parts, and it keeps a regular depth of about 11 inches, and leaves the land much lighter than when done by horses.—I am, &c., yours truly, "W. BRADBURN.

"John Fowler, Jun."

"Littywood, near Penkridge, April 8, 1859.

"Dear Sir,—In reply to your letter of the 29th March, I have great pleasure in certifying to the efficient working of your Steam Plough upon my farm. In the autumn of 1858 I ploughed by it 70 acres, 8 inches deep, in 15 days, part for Wheat and part for root crops, and am convinced the work could not have been done so well by horses; the Wheat is looking well, and I consider that land ploughed by steam has many advantages over that ploughed by horses, inasmuch as there is a greater tilth for the grain to grow in, and it is worked for root crops much easier. I find in riding across the land ploughed by steam my horse sinks fully 3 inches deeper in the soil than upon that ploughed by animal power, which is a proof of the good condition in which the land is left for working after the plough. You are at liberty to use my name to what I have stated in this if it will be to your service in any way.

"I am, &c. CHARLES BYRD.

"John Fowler, Jun."

"Esher, April 14, 1859.

"Dear Sir,—As manager of the Steam Plough supplied by you to Mr. Gurney last autumn, I may inform you that we ploughed with it up to the end of December last about 70 acres of land in a most efficient manner. Most of the work was deep ploughing; and on Mr. Sherrard's farm, near Reigate, unprecedently so in my experience of such soils, his being strong land on a yellow clay bed, some of which was brought to the top to increase the depth in cultivation. On the lighter land of Mr. Maniage's farm, at Nutfield, when ploughing for Wheat about 6 inches deep, we repeatedly got well over an acre in the hour without any particular effort being made for speed. Universal satisfaction was given by the quality of the work performed, and I am satisfied that with your recent improvements, which render the engine and windlass self-moving from field to field, of the value of which I am fully convinced, and the other alterations which experience has suggested, the tackle is now such as must well answer the purpose of every large occupier to possess, being simple, durable, and easily managed. "I am, &c. E. W. BROOKS.

"John Fowler, Jun."

"London, April 13, 1859.

"Dear Sir,—In reply to your inquiries respecting the working and general value of the Steam Plough you supplied me with in November last, I beg to inform you that I have every reason to be fully satisfied with it. The farm in East Lothian on which it has been used is very badly laid out, and not at all adapted for steam culture, many of the fields being angular, and of every supposable shape; still it is a fact that with the exception of the cornered pieces, and some of the shorter lands, the whole ground that has been ploughed, since I received the Steam Plough, has been so by it. The result has been that on a farm of 320 acres I have not required during the winter to keep more than six horses, and yet I believe the spring work is as well forward as it could be under any circumstances however favourable. I may mention that I have fitted on a cultivating apparatus to your subsoiling plough frame; I find this cultivator of great value in preparing the soil for root crops, and in autumn I expect it will be found of still greater use in scarifying stubble and foul land. On the whole I am well pleased with your Plough. I know very well that any one who adopts a piece of machinery like it, before it has assumed the exact state in which it is likely to come into general use, must be prepared to pay for the experience he is acquiring and working out. But I believe your Plough is now very nearly in that state which it requires to be, in order that the farmer may adopt and employ it on his land with profit, and I have therefore no hesitation in giving my recommendation in its favour. "I am, &c. J. L. MORTON."

"P.S.—The farm I ought to add is all arable, and when I got possession shortly before I purchased your Plough, scarcely any of the work was done. Now, as I have said, it is well forward; this certainly could not have been the case but for the Steam Plough.

"John Fowler, Jun."

"Mouldham Lodge, Chelmsford, April 6, 1859.

"Dear Sir,—I feel it is only due to you to state, that during the time your Steam Plough was at work on my farm, it performed its work remarkably well, ploughing the soil to a good depth, and casting the furrow even and well, and in the hands of a practical ploughman I have but little doubt its results will eventually be highly satisfactory. I make this remark because we all know the poor work a bad ploughman will make holding either a Bentall or a Howard.—I am, &c.

"JOHN MANIAGE."

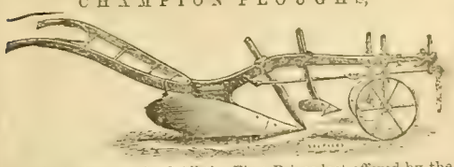
LARGER POWER ENGINES AT COMPARATIVE PRICES.

Illustrated Catalogues with new Prices will be ready shortly. For further particulars apply to

JOHN FOWLER, Jun., 28, Cornhill, London, E. C.

HOWARDS' PRIZE IMPLEMENTS, 1859.

JAMES AND FREDK. HOWARD, Britannia Iron Works, Bedford, beg to direct attention to their CHAMPION PLOUGHS,



For which they received All the First Prizes last offered by the Royal Agricultural Society of England, viz.:—

The First Prize for the best Plough for general purposes.
The First Prize for the best Plough for light land.
The First Prize for the best Plough for heavy land.
The only Prize ever offered by the Society for the best Double Breast or Ridging Plough was also awarded to J. & F. HOWARD.

J. & F. HOWARD have discontinued troubling the Public with a long List of Prizes awarded to their Implements, but they would just state that for PLOUGHS, HARROWS, and HORSE RAKES, they have for several years gained every Prize for which they have competed.

PLOUGHS.

		£	s.	d.
P PLOUGH, with two wheels, for light work ..		4	7	6
PP PLOUGH,	for general purposes	4	12	6
SKIM COULTER		0	5	6

STEEL BREASTS, 7s. and 7s. 6d. extra.

HARROWS.

A Set of Three 4-Beam HARROWS, with Whippletree, recommended as general Seed Harrows, 9½ feet wide, marked No. 12	3	14	0
A Set of Three 4-Beam HARROWS, with Whippletree, adapted for 3 Horses, 10 ft. wide, marked No. 11	4	4	0

HORSE RAKES.

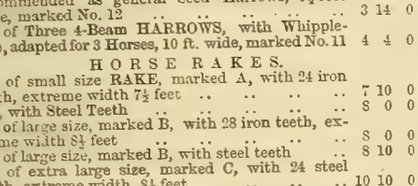
Price of small size RAKE, marked A, with 24 iron teeth, extreme width 7½ feet	7	10	0
Ditto, with Steel Teeth	8	0	0
Price of large size, marked B, with 28 iron teeth, extreme width 8½ feet	8	0	0
Price of large size, marked B, with steel teeth ..	8	10	0
Price of extra large size, marked C, with 24 steel teeth, extreme width, 8½ feet	10	10	0
Price of a Set of 15 Prongs, to be attached to the above when used as Weed Extirpators	1	10	0

Free Delivery to Birmingham, Bristol, Derby, Gloucester, Lincoln, Liverpool, London, Manchester, Norwich, Nottingham, Retford, Wisbeach, and Worcester; or to Dublin, Edinburgh, Glasgow, and other parts at fixed rates.

HOWARDS' NEW CATALOGUE, containing prices and description of their Patent Ploughs, Harrows, Horse Rakes, and other Implements, including Smith's Steam Cultivators, for which they received at Chester the Gold Medal of the Royal Agricultural Society of England, sent free on application to

J. & F. HOWARD, Britannia Iron Works, Bedford.

PAXTON WORKS, SHEFFIELD, ESTABLISHED 1738.



SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.—Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

WARNER'S IMPROVED LIQUID MANURE OR GENERAL PORTABLE PUMP.



These Pumps are fitted with J. W. & SON'S Patent Buckets and Suckers, and cannot clog in action. The barrel is of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure. The legs will fold together, and the whole may be carried on the shoulder to any pond or tank required.

Price of 4½ in. Pump, with legs, 3l. 3s. If with planished copper barrel and galvanised iron handle, &c., 14s. extra. The barrel is 27½ in. long, and the legs are 5 ft. high.

These Pumps are also made without the legs, with strong wrought-iron straps for screwing on to any ordinary water butt or cart, and fitted with 1½ inch brass union for attaching flexible suction. Price 50s.

1½ inch Gutta Percha Suction Pipe, 1s. 11d. per foot.

Rubber and Canvas Suction and Delivery Hose, from ½ inch to 4 inches diameter, in lengths of 60 feet to order. Branch Pipes with Cocks, Union Screws, &c., at reduced prices.

May be obtained of any Ironmonger or Plumber in town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin St., London

WARNER'S PATENT VIBRATING STANDARD PUMPS.

PATENT CAST-IRON PUMPS, fitted with J. W. & Son's Patent Buckets and Suckers, which cannot clog in action, for Farms, Cottages, and Wells, not exceeding 28 feet.

Diameter of Barrel.	Height.		£	s.	d.
2½ in. short	1 ft. 7 in.	Fitted for lead, gutta percha, or cast iron flanged pipe, as required.	1	10	0
2½ ,, long	3 ,, 3 ,,		1	14	0
3 ,, ditto	3 ,, 6 ,,		2	8	0
3½ ,, ditto	3 ,, 6 ,,		2	12	0
4 ,, ditto	3 ,, 6 ,,		3	3	0
2½ ,, short, with 15 feet of Lead Pipe attached, ready for fixing			2	14	0
2½ in. long	ditto	ditto	2	18	0



The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.

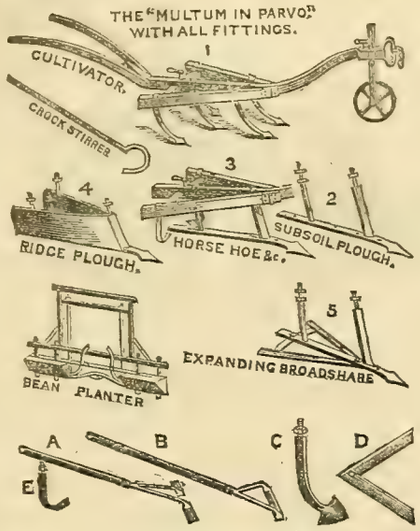
May be obtained of any Ironmonger or Plumber in Town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

PATENT PRIZE SCYTHES, Price 11s. AND 11s. 6d.

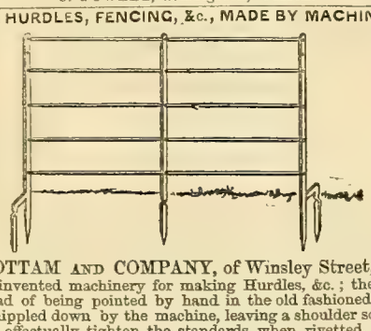
JAMES PAYNE, Kirkcudbright, invites the attention of Gardeners and others to his newly-improved Patent Adjustable Scythes, which can be set to any angle in one minute's time; are light and easily managed, warranted strong, and unequalled for finish by any in the Kingdom.—Circulars on application.

SIGMA'S BEAN, MANGEL, and CORN PLANTERS.—A Prospectus sent.



C. POWELL, Hurstgreen, Sussex.

IRON HURDLES, FENCING, &c., MADE BY MACHINERY.

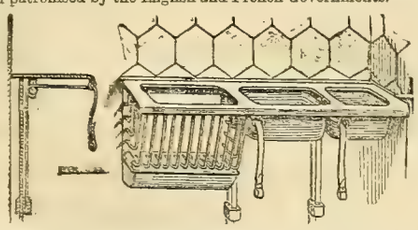


COTTAM AND COMPANY, of Winsley Street, have invented machinery for making Hurdles, &c.; the bars, instead of being pointed by hand in the old fashioned style, are nippled down by the machine, leaving a shoulder so as to more effectually tighten the standards when rivetted. They are made of superior iron only, and will compete in price with those made by hand from cinder or common iron which so frequently break. Iron Fencing, Gates, and Iron Work of all kinds, both Plain and Ornamental, Conservatories, Hot Water Apparatus and Garden Implements.

Illustrated CATALOGUES free on application to COTTAM & COMPANY, Ironfounders, 2, Winsley Street, Oxford Street, W.

N.B. COTTAM & Co. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

COTTAM'S PATENT INVENTIONS FOR STABLE REQUISITES, awarded a Prize at the Paris Exhibition, and patronised by the English and French Governments.



COTTAM AND COMPANY, of Winsley Street, are the original inventors of the PATENT ENAMELLED MANGER, Water Trough, and Wrought Iron Rack, united to an iron top-plate, and forming one complete and useful fixture, having COTTAM'S patent noiseless halter guide and collar rein attached, which is taken to the back of the manger, and works with ease and freedom up or down the guide-bar.

COTTAM'S NEW PATENT SEED-BOX, an important addition to the above fittings, being simple in construction, light, and durable, promotes cleanliness, and is economical in its results.



COTTAM'S PATENT SADDLE and HARNESS BRACKET combined, can be used with great advantage where space is an object, as it can be turned up out of the way when not in use.

COTTAM'S IMPROVED SURFACE GUTTER, with perforated moveable cover, the use of which prevents accidents, and can be easily cleaned out.

COTTAM'S CAST-IRON SANITARY TRAP, from its improved construction, gives a full water passage, and does not allow any smell to ascend from the drain.

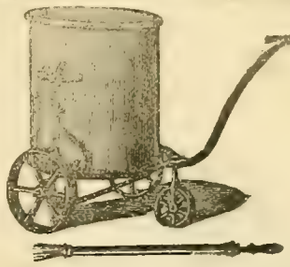
PATENT LOOSE-BOX FITTINGS, and every article for the harness-room and stable, kept in stock, plain, galvanised, and enamelled. Iron gates, fencing, hurdles, &c.

The New Illustrated Catalogue and Estimates, gratis, upon application to COTTAM and COMPANY, 2, Winsley Street, Oxford Street.

N.B. COTTAM & Co. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

WARNER'S SWING WATER-BARROW

(TO HOLD FORTY GALLONS) MOUNTED ON WHEELS 20 INCHES HIGH. Will save much of the Gardener's time and labour. May be obtained of any Ironmonger for 3l. 3s.



BRASS SYRINGES, 9s. to 18s.

Also a great variety of effective Machines for Hydraulic purposes, and to supply Gardens, Hothouses, Cottages, Farms, Mansions, or Boards of Health, with every requisite connected with the conveyance and distribution of Liquids.

Fountains suitable for Conservatories, Lawns, &c.

JOHN WARNER & SONS, 8, Crescent, Jewin Street, London.

GARDEN ENGINES AND SYRINGES.

J. TYLOR AND SONS, Warwick Lane, Newgate Street, London, E.C., beg to call attention to their very superior manufacture of GARDEN ENGINES and SYRINGES.

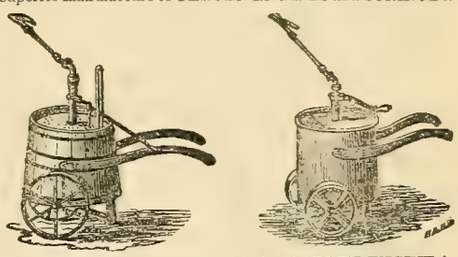


Fig. 598. J. TYLOR & SONS' BARROW GARDEN ENGINE in best well painted Oak tub, fitted with J. TYLOR & SONS' Improved Brass Pump, Universal Joint, and Registered Spreader, which answers the purpose of the separate rose, fan, and jet.

CONTENTS OF TUB:—

10 gallons	15 gallons	28 gallons
£4 10 0	£5 10 0	£6 18 0

Fig. 599. do. TINNED IRON TUB.

CONTENTS OF TUB:—

8 gallons	12 gallons	16 gallons	24 gallons	30 gallons
£2 15	£3 5	£4	£5	£5 18

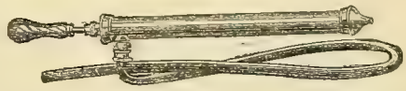


Fig. 618. No. 1. REGISTERED SYRINGE, with India-rubber suction tube, one rose and jet .. .. £1 5 each.
No. 2. Ditto ditto 1 1 ,,
Telescope Branch Pipe for ditto .. .. 0 10 ,,



Fig. 619. GARDEN SYRINGE, with one rose and jet, 12s. 6d. each
,, 620. Ditto ditto 11s. 6d. ,,
,, 621. Ditto ditto 10s. 6d. ,,
,, 622. LADIES' GARDEN SYRINGE, without rose & jet, 8s.

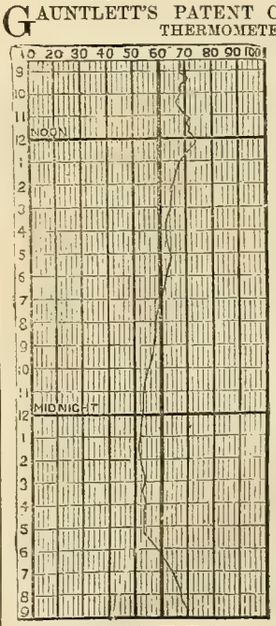


Fig. 623. READ'S SYRINGE, with two roses and one jet, 18s. 6d.
,, 624. READ'S SYRINGE, with one rose and jet .. 16 6
,, 625. Improved ditto ditto .. 14 6
,, 626. Ditto ditto ditto .. 13 0

Manufacturers of Pumps and Well Engines (for shallow or deep Wells), Plumbers' Brass Foundry of every description, High Pressure Cocks and Closets, Copper and Tinned-iron Baths. Garden and Fire Engines, Lamps of every description, Copper Goods, &c. Estimates given for Hot-water and Bath Apparatus.

TO HORTICULTURISTS.

GAUNTLETT'S PATENT CHRONOMETRICAL THERMOMETER.



This instrument, which combines an eight-day clock of the best English make showing time, with a newly-patented Thermometer, wherein glass and quicksilver are dispensed with, writes down the temperature of the atmosphere on a slip of paper, and when placed in a Hothouse, Forcing House, or Conservatory, &c., supplies a valuable record of the temperature, with all its variations, showing the time when any change took place, and how long such change continued.

The above slip (reduced in size) exhibits the temperature of the Royal Agricultural Society's show yard at Chester, July 22, 1858, written off by one of these instruments, to which was awarded the Society's SILVER MEDAL.

This is the only instrument that registers temperature continuously and writes it down, and no horticulturist should be without it.

Orders received by W. H. GAUNTLETT, Middlesbro' on-Tees.

LAWNS—IN USE IN THE ROYAL GARDENS.

SAMUELSON'S PATENT BOYD LAWN MOWING and ROLLING MACHINE, the only one that will cut wet as well as dry Grass, is guaranteed efficient in use, easily handled, and readily kept in working order. Doing the work of five or six men. Prices, including case and carriage to any railway station in England, from 4*l.* 17*s.* 6*d.* and upwards. Copies of testimonials post free on application to Mr. Samuelson's London Warehouse, 76, Cannon Street West, City; Messrs. Deane's, London Bridge; or the Works, Banbury, Oxon.

BY HER MAJESTY'S ROYAL LETTERS PATENT.



FERRABEE'S IMPROVED MOWING MACHINES FOR LAWNS, PLEASURE GROUNDS, CRICKET FIELDS, CEMETERIES, &c.—Those who wish to obtain the most useful MOWING MACHINES for any situation, at the most moderate prices, are respectfully invited to read JAMES FERRABEE & CO'S ILLUSTRATED DESCRIPTIVE CIRCULAR, which will be sent free by post on application.

The following is an extract from the letter of a gentleman ordering a Machine:—

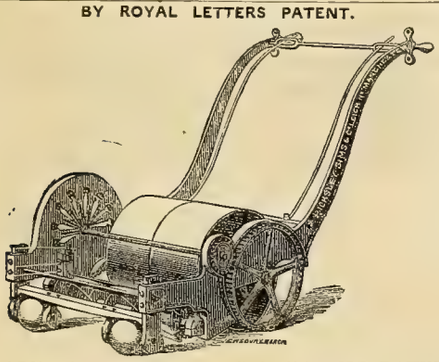
"T——n. April 6, 1859.

"Sirs,—The recommendations of different friends who have tried different Mowing Machines have been puzzling me for several weeks as to my own selection. Your explanatory particulars, received to-day, removed all wavering from my mind on the point, and determined me to have a Machine from you."

"To Messrs. Ferrabee & Co."

James Ferrabee & Co., Phœnix Iron Works, Stroud, Gloucestershire.

BY ROYAL LETTERS PATENT.



PICKSLEY, SIMS, AND Co.'s PATENT LAWN MOWING MACHINE, for Pleasure Grounds, Bowling Greens, Verges, &c., manufactured solely by the Patentees, at their Works, Leigh, Lancashire.

P., S., & Co., in introducing this very effective Lawn Mowing Machine to the attention of the public, particularly request a strict examination, or comparison and trial with any other machine made. For simplicity of construction, lightness, regularity of draught, adaptability for mowing every kind of plain, circular, and verge work, this machine has no rival, and it has commanded and gained the unbiassed approbation of every practical mechanic who has inspected it. Some of the peculiar merits of this machine we beg to enumerate:—

Firstly, we have encased the wheels of this machine so as completely to protect from injury flower borders, shrubs, &c., whilst working the machine for cutting the Grass close to them; the machine at the same time not being liable to obstruction or damage. This improvement remedies a just and general complaint.

Secondly, this machine works easily and effectively on undulated and sloping ground; it can be thrust forward or be drawn from behind, the latter being the easiest, or the larger machines may be worked both ways at the same time; the smaller machines never, under any circumstances, require more than one person to work them.

Thirdly, this is the only machine made that will work round quick curves; it will work easily and effectively round circular borders so small as 12 inches in diameter; all other machines when put to such very particular Grass-cutting entirely fail; they either tear up the Grass, drag without cutting, or they choke themselves. This very desirable improvement has been obtained by fixing to the front part of the machine, and immediately in advance of the knives, our newly-invented universal action, and self-cleaning, anti-friction spherical guiding balls; being assisted by the double gearing motion attached to the driving roller. The continual revolving of these spherical guiding balls, under the most trying circumstances, never fails; their novelty and simplicity of construction merit especial attention.

Fourthly, we have attached to this machine a rack and pinion motion, for adjusting the cutting parts of it for different lengths of Grass. There being a rack and pinion on each side of the machine, and so arranged as to act conjointly and more equally, acting at the same time upon the full length of the knives. By this simple arrangement we have converted that which is in all other machines a slow, tedious, and uncertain operation, into one of quickness, ease, and certainty.

Fifthly, the parts of this machine which have not been altered in principle have been entirely re-arranged upon a true mechanical basis. Indeed, we may say with confidence, that this machine for general and special uses stands unrivalled.

PRICES:—

					£	s.	d.
Economic Patent Lawn Mowing Machine, including Packing Case			13 inches	..	5	10	0
Ditto	ditto	ditto	16 ,,	..	6	0	0
Ditto	ditto	ditto	19 ,,	..	6	10	0
Ditto	ditto	ditto	22 ,,	..	7	0	0
For Pony	ditto	ditto	26 ,,	..	10	0	0
Ditto	ditto	ditto	30 ,,	..	13	0	0

If the rollers be made the full width of the cutters, 13, 16, 19, and 22 in., each 6*s.*; 26 and 30 in., each 12*s.* extra.

PARKES' STEEL DIGGING FORKS.

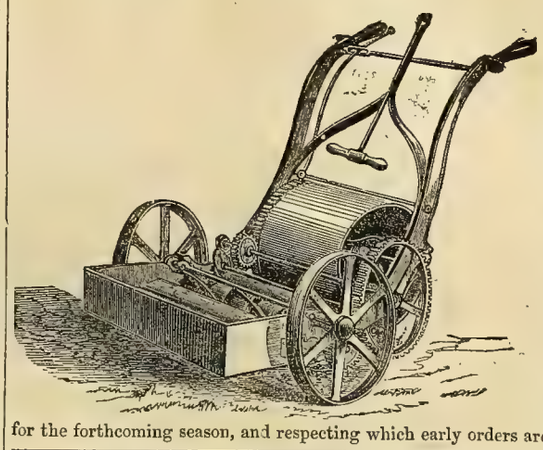
BURGESS AND KEY, 95, Newgate Street, London, being the Wholesale and Retail Agents for these celebrated TOOLS have always a large Stock on hand from which their Customers may select what they may require.

ANTHONY'S PATENT AMERICAN CHURN.—The FIRST PRIZE was again awarded to this Churn in Competition with several others at the Chester Meeting of the Royal Agricultural Society; it has obtained the First Prize given by the Society at every Meeting since 1850.

Messrs. Burgess & Key, 95, Newgate Street, strongly recommend it as the most perfect Churn now in use. Full particulars sent on application.

NOTICE OF REMOVAL.

BOYD'S PATENT LAWN MOWING MACHINES



ARE the only Lawn Mowers that have a Self-Cleansing and Sharpening Apparatus attached to the Cutters, and that will cut wet Grass without clogging the Knives. They are already in successful operation at the Royal Palaces, and on the lawns of hundreds of the Nobility and Gentry. They are pronounced by all practical men as perfection, and are guaranteed for efficiency, excellence, economy and durability.

"Doing the work of five or six men in a single hour."—*Times*, Sept. 20, 1858.

Price Lists and Testimonials free on application to—

W. DRAY & Co.,

at their new Agricultural Implement Warehouses, Adelaide Place, London Bridge,

where also may be had every description of Agricultural, Horticultural, and Gardening Implement; as also DRAY'S CELEBRATED REAPERS, which are now being manufactured for the forthcoming season, and respecting which early orders are solicited.

PATENT LAWN MOWING AND ROLLING MACHINES.

SAMUELSON'S LAWN MOWING MACHINES,

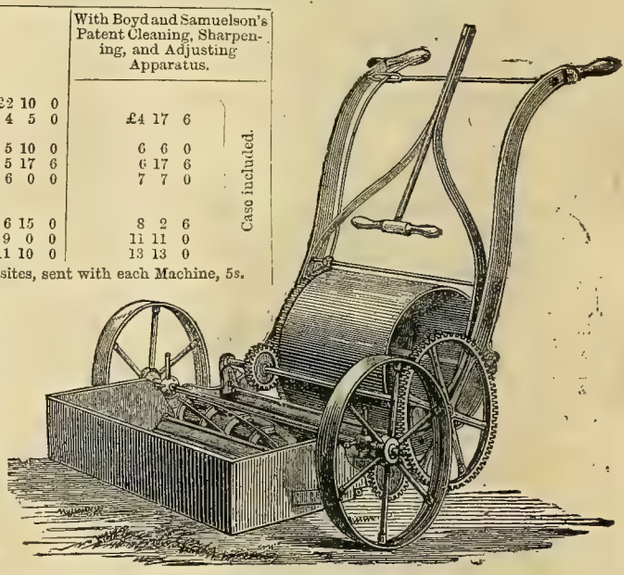
WITH BOYD'S PATENT IMPROVEMENTS.

"Doing the work of five or six men."—The Times, Sept. 20, 1858.

The following PRICES include the Carriage to any Railway Station in England:—

		With Boyd and Samuelson's Patent Cleaning, Sharpening, and Adjusting Apparatus.	
9 inches wide, for very narrow borders, without registered wheels	£2 10 0		
12 inches wide	4 5 0	£4 17 6	
16 inches wide, with registered arrangement (for one man)	5 10 0	6 6 0	
19 inches wide, ditto (for one man) ..	5 17 6	6 17 6	
22 inches wide, ditto (for man and boy)	6 0 0	7 7 0	
22 inches wide, ditto for ditto, and also fitted with draught links for a pony and a man to work it	6 15 0	8 2 6	Case included.
25 inches wide, ditto	9 0 0	11 11 0	
30 inches wide, ditto (for man and pony)	11 10 0	13 13 0	

Box of Tools, Oil Can, and other requisites, sent with each Machine, 5*s.*



Some thousands of these Machines are now in successful operation on the Lawns of Royalty, the Nobility, and Gentry of the United Kingdom and the Continent of Europe, and are pronounced SUPERIOR to *any other* for lightness of draught, efficiency, and durability. The demand for them is *yearly increasing—the number supplied by* Mr. SAMUELSON *during the years* 1856, 1857, *and* 1858 *being more than* 2100. Testimonials are continually being received from gentlemen having them in daily use, who speak in the highest terms of their efficiency.

These are the only Machines that will cut wet as well as dry Grass without clogging the knives.

Orders for 1859 should be sent at once to insure certain delivery and to prevent disappointment.

Copies of Testimonials will be forwarded post free on application to

B. SAMUELSON, 76, Cannon Street West, City, London;

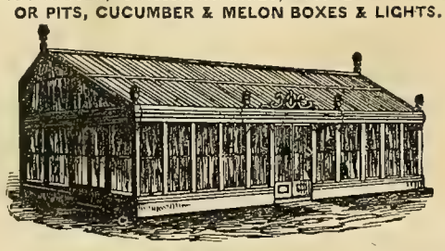
to the Manufactory, Britannia Works, Banbury, Oxon;

or to Messrs. DEANE AND CO. London Bridge; or any respectable Ironmonger or Seedsman in the Kingdom.

BOOT'S PATENT ANTI-CORROSIVE ENGRAVED LABEL, suitable for every description of plant. See Circular, free by post.

John Shaw, Princess Street, Manchester, Agent.

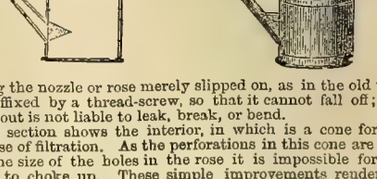
HOTHOUSES, CONSERVATORIES, FRAMES & LIGHTS OR PITS, CUCUMBER & MELON BOXES & LIGHTS.



JAMES WATTS, Hothouse Builder, 8, Claremont Place, Old Kent Road, London.

Green and Hothouses, 9, 10, 11, 12, 13, and 14 feet wide, any length, from 16 to 100 feet. Frames and Lights for Pits, 6ft. 6in., 7 ft., 7 ft. 6 in., 8 ft., and 8 ft. 6 in. wide, any length, from 12 to 100 feet. Upwards of 200 Cucumber and Melon Boxes and Lights, from 4 ft. by 3 to 10 ft. 6 in. by 5 ft. 6 in., kept ready, glazed with stout sheet glass, painted four times, complete, ready for immediate use, all made of best material, packed and sent to all parts of the kingdom.—References may be had to the Nobility, Gentry, and the Trade in most of the counties in England. Horticultural Buildings of every description heated on the most approved and economical principles.

THE SIR JOSEPH PAXTON PATENT FILTERING WATERING POT.—Instead of this Watering Pot



having the nozzle or rose merely slipped on, as in the old way, it is affixed by a thread-screw, so that it cannot fall off; and the spout is not liable to leak, break, or bend.

The section shows the interior, in which is a cone for the purpose of filtration. As the perforations in this cone are only half the size of the holes in the rose it is impossible for the spout to choke up. These simple improvements render the "Sir Joseph Paxton" Watering Can the best yet introduced.

To be had of all respectable Ironmongers, and Wholesale only of Messrs. B. Perkins & Son, 2 and 3, Bell Court, Cannon Street, E.C.

MICROSCOPES.

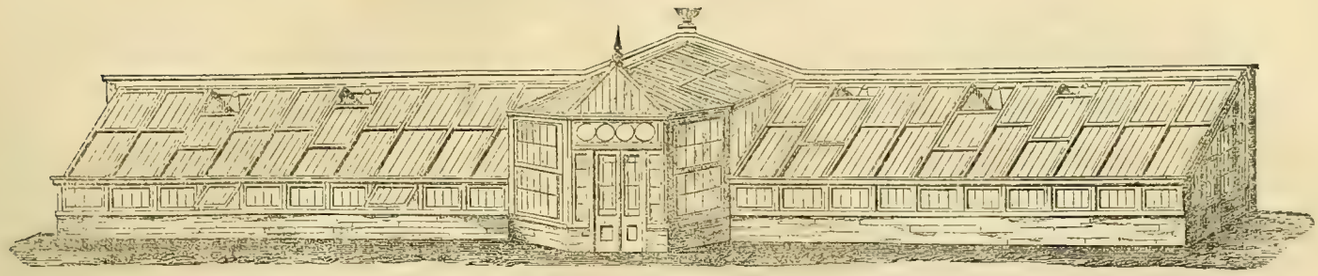
J. AMADIO'S BOTANICAL MICROSCOPES, packed in mahogany case, with three powers, condenser, pincers, and two slides, will show the animalculæ in water. Price 18*s.* 6*d.*—Address Joseph Amadio, 7, Throgmorton Street. A large assortment of Achromatic Microscopes.

"It is marvellously cheap, and will do everything which the lover of nature can wish it to accomplish either at home or in the open air."—*The Field*, June 6, 1857.

Just published, an Illustrated Catalogue, containing the names of 1000 Microscopic objects, post free for 4 stamps.

HORTICULTURAL BUILDING & HEATING BY HOT WATER.

BY APPOINTMENT.



JOHN WEEKS & COMPANY,

KING'S ROAD, CHELSEA, LONDON.

HORTICULTURAL BUILDERS AND HOT-WATER APPARATUS MANUFACTURERS, ENGINEERS, AND IRON FOUNDERS.

PLANS, ESTIMATES, & ILLUSTRATED CATALOGUES FREE ON APPLICATION.

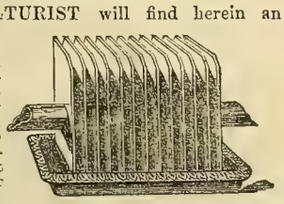
GREENHOUSES, ORCHARD HOUSES, AND PITS
Of every Description, made by Steam Machinery, and Heated by Hot Water on an Improved Plan at

J. LEWIS'S Horticultural Works, Stamford Hill, Middlesex, established 20 years. These Buildings are warranted of the best materials, and at prices which defy competition. The ventilation is most efficient, and the greatest improvement of the present day. Prices of any size on application. References in all parts of the United Kingdom.

HANDS'S PATENT is the only system to circulate Heat, and for WARMING, FUMIGATING, and VENTILATING Hothouses, Greenhouses, Winter Orchards, &c.; to keep vegetation healthy in a humid atmosphere, and can be applied to any kind or shape of Forcing-houses and Conservatories now existing at trifling cost.—For particulars apply at the Office, 10, Charlotte Street, Fitzroy Square, London; or to Mr. Johnson Hands, Epsom.

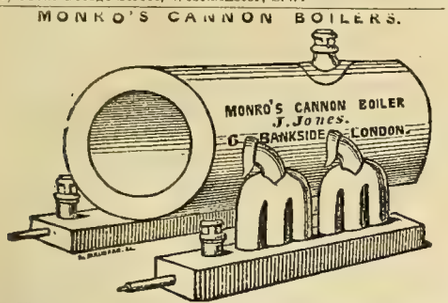
IMPROVED HOT-WATER PIPE.

THE HORTICULTURIST will find herein an inexpensive instrument of new and very important powers. An atmosphere may be produced at will either perfectly dry, partially damp, or saturated with moisture. A space of 10 inches by 12 inches contains the power of 25 feet of 4-inch pipe and other numerous advantages.



The London Warming and Ventilating Company (Limited), 26, Great George Street, Westminster, S.W.

MONRO'S CANNON BOILERS.



MUCH has of late been said about BOILERS for Heating by Hot Water, but these Boilers have now proved themselves to be the best at present invented. They are adapted for heating every description of building, and are made of various sizes. The Price of the

24-inch Cast Iron is	..	..	.. £5 10*s.* 0*d.*	each
24-inch Wrought ditto	..	..	.. 6 10 0	,,
36-inch Cast ditto	..	..	.. 8 0 0	,,
36-inch Wrought ditto	..	..	.. 8 10 0	,,

References to Gentlemen and Nurserymen where these Boilers are now at work. The Cannon Boilers are now kept in stock, and are to be had only of J. Jones, 6, Bankside. Also, every description of Saddle and Cylinder Boilers. Hot Water Pipes and Connections at prices lower than those of any other house in London. Estimates for Hot-water Apparatus erected complete in any part of the country, and an Illustrated Catalogue on application to J. Jones, 6, Bankside, Southwark, London.

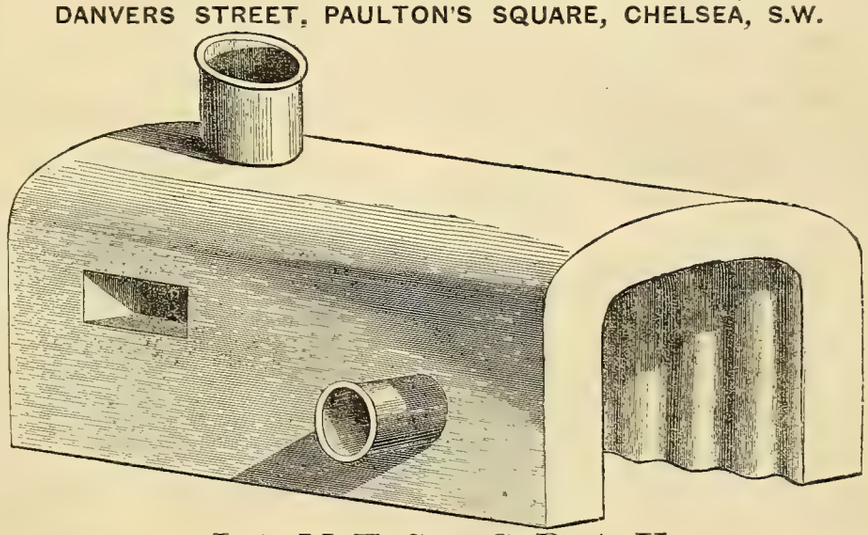
HORTICULTURAL BUILDINGS AND HEATING BY HOT WATER.

JOHN R. PEILL, 17, New Park Street, Southwark, Manufacturer of every description of Buildings for Horticultural purposes, and Inventor of the Improved Conical Boiler for heating the same, is prepared to undertake works of any magnitude, and refers among others to the celebrated range of FORCING HOUSES at HER MAJESTY'S GARDENS, FROGMORE, and at SIR ROBERT PEEL'S, DRAYTON MANOR, constructed under the superintendence of his Manager, MR. JOHN JONES; and also to his BOILERS fixed at the CRYSTAL PALACE, the ROYAL BOTANIC GARDENS, REGENT'S PARK, and KEW, and at several hundreds of the Nobility's seats, Public Establishments, and Manufactories in London and the provinces. J. R. P. also manufactures every description of Iron Roofs, Iron Houses, and Iron Fencing, plain and ornamental. Strong Iron Hurdles for Sheep (6 feet long, 3 feet high, with 5 bars), 4*s.* 3*d.* each; ditto for cattle, 4*s.* 9*d.* each.

Prices and other particulars forwarded on receipt of one postage stamp.

HORTICULTURAL WORKS,

DANVERS STREET, PAULTON'S SQUARE, CHELSEA, S.W.



JAMES GRAY

RESPECTFULLY begs to inform the nobility, gentry, Nurserymen, Gardeners, and others, that he continues to carry on the business in all its branches at the above old established premises.

CONSERVATORIES, GREENHOUSES, FORCING HOUSES, VINERIES, PITS, &c.,
of every description, erected on the most approved principles.

HEATING BY HOT WATER.

J. G. having specially devoted his attention for many years to this part of the business, is now fully prepared to Heat every description of public and private buildings, viz :—Churches, Mansions, Warehouses, &c., as well as all structures connected with Horticulture, in the most efficient manner. His system is the most simple that can be adopted—which he has found from long experience to be the best—can be constructed at less cost, and is more easily managed than those of a complicated nature which have attracted the notice of the public.

J. G. begs to call attention to his CAST-IRON CORRUGATED ARCH BOILER, which from its simplicity of construction has not the liability to fracture to which those of a more complex design are always subject. They have been extensively used for many years, and have given the greatest satisfaction.

All business is conducted at this establishment on the principle of lowest remunerative profits consistent with best materials and workmanship.

Plans and Estimates furnished on the shortest notice.

VOKINS and HURD, Seymour House, Jubilee Place, King's Road, Chelsea, Builders of Hothouses, Conservatories, Greenhouses, Pits, and every description of erections in Glass work, either in Wood or Iron; also Heating the same by hot water on the most approved plans and at the lowest prices consistent with good work. Estimates forwarded.

C. STEPHENSON, late STEPHENSON and SONS, 61, Gracechurch Street, London, Manufacturer of Iron Hurdles, Fencing, &c., Improved Iron and Copper Conical Boilers and Apparatus for Warming Buildings of every description by Hot Water.

Prices and Estimates furnished upon application.

SMALL GAS APPARATUS, FREE FROM NUISANCE.

THE PATENT NATIONAL COAL-GAS APPARATUS, for private Residences, Farm Buildings, Churches, Chapels, Workshops, Railway Stations, and other places not hitherto lighted with Gas. It is durable, economical, and compact, and supplies the desideratum of cleanliness in the production of a Gas of better quality and purity, and at less cost, than is ordinarily obtained from Public Works. By an entirely new and peculiar process it is easily worked by a boy or inexperienced servant. The cost of Gas, including labour, wear and tear, and interest of capital, is less than one-fourth that of candles or oil. It can be fixed and completed in working order in a few days.—Further particulars, prices, testimonials, &c., on application to the Proprietors and Manufacturers, J. T. B. Porter & Co., Lincoln.

FOR WATERING GARDENS, PLUMBERS, ENGINEERS, MILLS, and MACHINISTS.
Vulcanised India Rubber.

Washers for Hot-water and Steam Joints	Garden Watering Hose
Elastic Packing and Valves for Steam Engines	Do. fitted with Brass Joints, Taps and Spreaders
Pump Buckets (compound India-rubber)	Wheel Tires (noiseless for Trucks, &c.)
Suction Hose for Pumps	Waterproof Cart, Van, and Waggon Covers
Fire Engine Hose	Mill Bands, much improved for driving all kinds of Machinery
Air Beds, Cushions, & Bolsters	Door Springs, Gas Bags
Water Beds, Pillows, and Feet Warmers	Foot Balls, Cricketting Gloves

N.B. A Stock of the above always on hand, and any modification made to order. Please address all communications to the Manufactory.

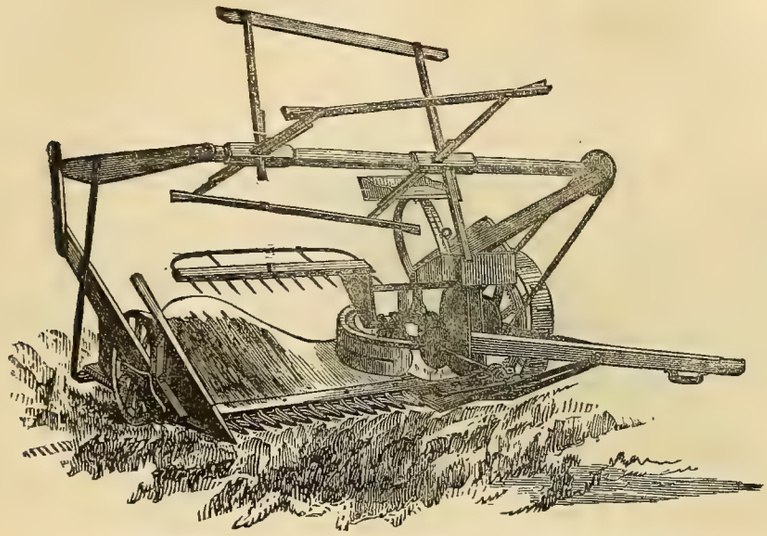
JAMES LYNE HANCOCK,
Vulcanised India-rubber Works, Goswell Road, London, E.C.

ANTISEPTIC PAINT.

THE best and cheapest PAINT for PARK FENCING, all outside Wood and Iron Work, is MITCHELL'S ANTISEPTIC MINERAL BLACK PAINT. Sold ready for use, 17*s.* 6*d.* per cwt. Used largely now and for many years past by the West India Dock Company, for Fencing, Barges, &c. Recommended to the nobility and gentry, stewards, land agents, &c. A liberal allowance to the Trade, &c.
Manufactory, Kennington Lane, Lambeth.

B. SAMUELSON,

AGRICULTURAL ENGINEER AND MACHINIST,



WAREHOUSE, 76, CANNON STREET WEST, LONDON,

WORKS AT BANBURY,

INFORMS MERCHANTS, the TRADE, and AGRICULTURISTS, that he has opened the above Warehouses as a depôt for his own manufactures and those of Messrs. Barrett, Clayton, Howard, Hornsby, Nicholson, Richmond, Tuxford, Smith, and all other first-class makers, whose implements he is prepared to offer on makers' terms.

THE BRITANNIA SELF-RAKING REAPING MACHINE,

With side delivery in sheaf, no rakers or gatherers required; and all the most improved Spring Implements for the season, may be inspected at the above depôt.

B. SAMUELSON, 76, Cannon Street West, London; and Britannia Works, Banbury.

TANNED GARDEN NETTING, for preserving Fruit Trees from frost, blight, birds, &c., and as a fence for fowls, &c. One yard wide 1½*d.*, 2 yards 3*d.*, 3 yards 4½*d.*, and 4 yards 6*d.*, per yard, in any quantity, may be had at C. WRIGHT'S, 376, Strand, W.C.—A liberal allowance to Nurserymen.

TANNED NETTING, AT REDUCED PRICES.—200 square yards, 10*s.*; 500 yards, 24*s.*; 1000 yards, 47*s.*

SCRIM CANVASS for Wall Fruit, 50 yards, 16*s.*; 100 yards, 30*s.* Be particular to address in full, FREDERICK EDGINGTON, Thomas Street, Old Kent Road, London, S.E.

TANNED NETTING, for the Protection of Fruit Trees from Frost, Blight, and Birds; also, for the security of fresh sown seeds, at 1*d.* per square yard; 200 yards, 12*s.*; 500 yards, 25*s.*; Scrim Canvas, for wall fruit; Garden Mats.—At EDGINGTON & Co's., Rick Cloth, Tent, and Waterproof Cloth Manufacturers, 17, Smithfield Bars, City, & Old Kent Rd.

FOR Effectually Protecting the Bloom of Wall Trees from Spring Frosts use SHAW'S No. 3 TIFFANY, DOUBLE STRENGTH. In pieces 18 yards long by 39 inches wide, 7*s.* 6*d.* each.—JOHN SHAW & Co., Princess Street, Manchester.

BRITTAIN'S GARDEN NET completely protects Fruit Blossoms from injury by frost, and provides for the circulation of air and admission of light, so essential to healthy growth; 55 inches wide, 5*d.*, 6*d.*, and 8*d.* a yard; good SHADING TIFFANY, yard wide, 3*d.* do.—Manchester, April 16.

BRITTAIN'S SUMMER SHADINGS.—Strong Tiffany, 34 inches, 3*d.* a yard; No. 3 do. 39 inches, 7*s.* a piece, 18 yards each. Nets, Nos. 1, 2, and 3, 5*d.*, 6*d.*, and 8*d.* a yard, 55 inches wide. ZEBRA ORNAMENTAL SHADING, 9½*d.* a yard; yard wide linen shading, 5*d.* to 5½*d.*

Peel Street, Manchester.

SHAW'S TIFFANY.—The best and cheapest material for Shading Conservatories, Protecting Fruit from Birds and Wasps, &c. Sold in pieces 20 yards long by 38 inches wide. No. 1, best quality, 5*s.* per piece; second quality, 4*s.* per piece. Extra strong and thick (see Circular sent free by post with samples).

Address JOHN SHAW & Co., Manufacturers and Dealers, Princess Street, Manchester.

MARQUEES, TENTS, AND RICK CLOTHS FOR SALE, OR HIRE.—H. PIGGOTT, 115, Fore Street, E.C.

VASES, PEDESTALS, SUNDIALS, FOUNTAINS FLOWER BOXES, JARDINETS, FERN CASES, BALUSTRADES, EDGINGS AND CURBS FOR FLOWER BORDERS, SEATS, &c., in Imperishable Siliceous Stone, at reduced prices, for the adornment of the Villa Garden, the Mansion Grounds, or the private or public Park.

For Priced Illustrations apply to FREDERICK RANSOME, at the Show Rooms, Cannon Row, Westminster, S.W., or Patent Stone Works, Ipswich.

PATENT GUTTA PERCHA SOLES.—IMPORTANT TO GARDENERS.—The Gutta Percha Company have the pleasure to acknowledge the receipt of the following letter from G. GLENNY, Esq., the celebrated Florist:—

"Gentlemen,—I have worn Gutta Percha Soles and Heels these two years, and being so much in a garden as I necessarily am in all weathers, and with the ground in all states, I would on no account be without them. As a matter of economy I would recommend Gardeners to use them, for they may repair the worn part at all times by warming the material at the fire, and pressing it from the thick parts to the worn parts as easily as if it were so much dough. I think it the duty of all persons who must occasionally wet their feet to adopt a material that completely defies damp. Many a gardener would escape colds and rheumatism by the use of Gutta Percha Soles.

"Your obedient servant, G. GLENNY."

Every variety of Gutta Percha articles, such as Mill Bands, Tubing, Soles, Goloshes, Sheet, Pump Buckets, Fire Buckets, Bosses, Union Joints, Flasks, Bottles, Bowls, Chamber Vessels, Toilet Trays, Sponge Bags, Curtain Rings, Galvanic Batteries, Talbotype Trays, &c., manufactured by the Gutta Percha Company, and sold by their wholesale dealers in town or country.—The Gutta Percha Company, Patentees, 18, Wharf Road, City Road, London.

Important to every man who keeps



THORLEY'S FOOD FOR CATTLE,

77, NEWGATE STREET, LONDON.

Beware of spurious imitations.

FLOWER POTS, of superior Red Clay, manufactured by the Arley Pottery Company (Limited), equal in appearance to Terra Cotta at the price of the common pots usually sold, say 2*s.* per cast, delivered in London.—Apply to TAYLOR & PEARS, 8, George Yard, Lombard Street, City, E.C.

CHUBB'S LOCKS, FIREPROOF SAFES, DOOR LATCHES, CASH AND DEED BOXES. Illustrated Priced Lists sent free.—57, St. Paul's Churchyard, London; 28, Lord Street, Liverpool; 16, Market Street, Manchester; and at Wolverhampton.

MAPPIN'S PRUNING KNIVES IN EVERY VARIETY.
WARRANTED GOOD BY THE MAKERS.



MAPPIN BROTHERS, Queen's Cutlery Works, Sheffield; and 67 and 68, King William Street, London.

MAPPIN'S "SHILLING" RAZORS Shave well for Twelve Months without Grinding.

MAPPIN'S 2*s.* RAZORS Shave well for Three Years.

MAPPIN'S 3*s.* RAZORS (suitable for Hard or soft Beards,) Shave well for Ten Years.

MAPPIN'S SUPERIOR TABLE-KNIVES maintain their unrivalled Superiority—handles cannot possibly become loose—the blades are all of the very first quality, being their own Sheffield manufacture.

	Tble. Kns.	Dst. Kns.	Carvers.
Ivory 3⅝ in. Handle, balanced,	20*s.* p. doz.;	16*s.* p. doz.;	6*s.* p. pair
Do. 4 in. do.	25*s.* „	18*s.* „	9*s.* „

MAPPIN'S SILVER-PLATED DESSERT KNIVES and FORKS, in Mahogany Cases.

12 Pairs Knives and Forks, Ivory Handles, in Case..		80*s.*
12 Do.	Pearl Handles, do. ..	130*s.*
12 Do.	Silver-Plated Handles, do. ..	80*s.*

MAPPIN'S ELECTRO-SILVER PLATE.—MAPPIN BROTHERS, Manufacturers by Special Appointment to the Queen, are the only Sheffield makers who supply the consumers in London. Their LONDON SHOW ROOMS, 67 and 68, King William Street, London Bridge, contain by far the largest STOCK of ELECTRO-SILVER PLATE in the World, which is transmitted direct from their Manufactory, Queen's Cutlery Works, Sheffield.

	Fiddle Pattern.	Double Thread.	King's Pattern.
12 Table Forks, best quality	£1 16 0	£2 14 0	£3 0
12 Table Spoons, best quality	1 16 0	2 14 0	3 0
12 Dessert Forks, best quality	1 7 0	2 0 0	2 4
12 Dessert Spoons, best quality	1 7 0	2 0 0	2 4
12 Tea Spoons, best quality	0 16 0	1 4 0	1 7

Messrs. MAPPIN BROTHERS respectfully invite buyers to inspect their unprecedented display, which, for beauty of design, exquisite workmanship, and novelty, stands unrivalled. Their illustrated Catalogue, which is continually receiving addition of New Designs, sent per post on receipt of 12 stamps.—MAPPIN BROTHERS, 67 and 68, King William Street, London Bridge; Manufactory, Queen's Cutlery Works, Sheffield.

HANDSOME BRASS AND IRON BEDSTEADS.—HEAL & SON'S Show Rooms contain a large assortment of Brass Bedsteads, suitable both for Home use and for Tropical Climates; handsome Iron Bedsteads with Brass Mountings and elegantly Japanned; Plain Iron Bedsteads for Servants; every description of Wood Bedstead that is manufactured, in Mahogany, Birch, Walnut-tree Woods, Polished Deal and Japanned, all fitted with Bedding and Furniture complete, as well as every description of Bedroom Furniture.

HEAL AND SON'S ILLUSTRATED CATALOGUE, containing Designs and Prices of 100 Bedsteads, as well as of 150 different articles of Bedroom Furniture, sent free by post.—HEAL & SON, Bedstead, Bedding, and Bedroom Furniture Manufacturers, 196, Tottenham Court Road, W.

FENDERS, STOVES, FIRE-IRONS, AND CHIMNEY PIECES.—Buyers of the above are requested, before finally deciding, to visit WILLIAM S. BURTON'S SHOW ROOMS. They contain such an assortment of FENDERS, STOVES, RANGES, CHIMNEY PIECES, FIRE-IRONS, and GENERAL IRONMONGERY as cannot be approached elsewhere, either for variety, novelty, beauty of design, or exquisiteness of workmanship. Bright Stoves, with ormolu ornaments and two sets of bars, 3*l.* 15*s.* to 33*l.* 10*s.*; Bronzed Fenders, with standards, 7*s.* to 5*l.* 12*s.*; Steel Fenders, 2*l.* 15*s.* to 11*l.*; ditto, with rich ormolu ornaments, 2*l.* 15*s.* to 18*l.*; Chimney Pieces, from 1*l.* 8*s.* to 80*l.*; Fire-Irons, from 2*s.* 3*d.* the set to 4*l.* 4*s.* The BURTON and all other PATENT STOVES, with radiating hearth-plates.

BEDSTEADS, BATHS, AND LAMPS.—WILLIAM S. BURTON has SIX LARGE SHOW ROOMS devoted exclusively to the SEPARATE DISPLAY of Lamps, Baths, and Metallic Bedsteads. The stock of each is at once the largest, newest, and most varied ever submitted to the public, and marked at prices proportionate with those that have tended to make his establishment the most distinguished in this country.

Bedsteads, from	12*s.* 6*d.* to £20 0*s.* each.
Shower Baths, from	8 0 „ 6 0 „
Lamps (Moderateur), from ..	6 0 „ 7 7 „

(All other kinds at the same rate.)

Pure Colza Oil .. .. 4*s.* 3*d.* per gallon.

CUTLERY, WARRANTED.—The most varied assortment of TABLE CUTLERY in the world, all warranted, is on SALE at WILLIAM S. BURTON'S, at prices that are remunerative only because of the largeness of the sales. 3½-inch Ivory-handled Table Knives, with high shoulders, 12*s.* 6*d.* per doz.; Desserts to match, 10*s.* 0*d.*; if to balance, 6*d.* per doz. extra; Carvers, 4*s.* 3*d.* per pair; larger sizes, from 20*s.* to 27*s.* 6*d.* p. doz.; extra fine Ivory, 33*s.*; if with silver ferrules, 40*s.* to 50*s.*; white bone Table Knives, 6*s.* 0*d.* per doz.; Desserts, 5*s.* 0*d.*; Carvers, 2*s.* 3*d.* per pair; black-horn Table Knives, 7*s.* 4*d.* per doz.; Desserts, 6*s.*; Carvers, 2*s.* 6*d.*; black wood-handled Table Knives and Forks, 6*s.* per doz.; Table Steels, from 1*s.* each. The largest stock in existence of Plated Dessert Knives and Forks, in cases and otherwise, and of the new plated Fish Carvers.

WILLIAM S. BURTON'S GENERAL FURNISHING IRONMONGERY CATALOGUE may be had gratis, and free by post. It contains upwards of 400 Illustrations of his illimited Stock of Electro and Sheffield Plate, Nickel Silver and Britannia Metal goods, Dish Covers and Hot-water Dishes, Stoves, Fenders, Marble Chimney pieces, Kitchen Ranges, Lamps, Gaseliers, Tea Urns and Kettles, Tea Trays, Clocks, Table Cutlery, Baths and Toilet Ware, Turnery, Iron and Brass Bedsteads, Bedding, Bed Hangings, &c., with Lists of Prices and Plans of the 16 large Show Rooms at 39, Oxford Street; 1, 1A, 2, and 3, Newman Street; and 4, 5 and 6, Perry's Place, London.—Established 1820.

PRIZE MEDAL, PARIS EXHIBITION 1855.

METCALFE, BINGLEY, AND CO.'S New Pattern and Penetrating Tooth Brushes, Penetrating unbleached Hair Brushes, Improved Flesh and Clothes Brushes, and genuine Smyrna Sponges; and every description of Brush, Comb, and Perfumery for the Toilet. The Tooth Brushes search thoroughly between the divisions of the Teeth and clean them most effectually—the hairs never come loose. M., B., and Co. are sole makers of the Oatmeal and Camphor, and Orris Root Soaps—sold in Tablets (bearing their names and address) at 6*d.* each, of METCALFE'S celebrated Alkaline Tooth Powder, 2*s.* per box; and of the New Bouquets.—Sole Establishment, 130B and 131, Oxford St., 2d and 3d doors west from Holles St., London.

ASTHMA, COUGHS, COLDS.—DR. LOCOCK'S PULMONIC WAFERS give instant relief and a rapid cure of Asthma, Consumption, Coughs, and all disorders of the breath and lungs. To Singers and Public Speakers they are invaluable for clearing and strengthening the voice. They have a pleasant taste. Price 1*s.* 1½*d.*, 2*s.* 9*d.*, and 11*s.* per box. Sold by all druggists.

HOLLOWAY'S OINTMENT AND PILLS have been used freely by millions of human beings, of both sexes and all ages, in every part of the world, and while the public Press has teemed with authenticated cases of extraordinary cures in a vast variety of diseases (such as Indigestion, Scorbutic Eruptions, and Liver Complaints), there is not on public record a single case in which their use has been attended with a bad effect. None when using HOLLOWAY'S Ointment and Pills need suffer the hope of cure to be counterbalanced by the fear of injury. They are peculiarly mild in their operations, and yet they never fail to give immediate relief, and sooner or later to effect a complete and permanent cure.

IMPORTANT INFORMATION.—Mrs. Brown, of Queen Street, Kingsland, was for years severely afflicted with a scorbutic eruption, covering the back of both hands, and spreading up her arms. She was persuaded to try Dr. ROBERTS'S POOR MAN'S FRIEND and PILULÆ ANTISCROPHULÆ by a friend who had a large wound in her leg which baffled her doctor's skill, but was effectually cured by these medicines. She only took one box of the Pills, and used one pot of the Ointment, which effected a cure to the surprise of her friends, who wish it to be made public for the benefit of her suffering fellow creatures. Dr. ROBERTS'S POOR MAN'S FRIEND and PILULÆ ANTISCROPHULÆ have been proved, by 60 years' experience, successful in the cure of eruptions and wounds of every description. Price 1*s.* 1½*d.*; 2*s.* 9*d.*; 4*s.* 6*d.*; 11*s.*; and 22*s.* each.—Sold wholesale by the Proprietors, BEACH & BARNICOTT, at their Dispensary, Bridport, and by the London Houses; and retail by all respectable Medicine Vendors in the United Kingdom and the Colonies.

PAINS IN THE BACK, Gravel, Lumbago, Rheumatism, Gout, Indigestion, Flatulency, Nervousness, Debility, &c.—DR. ROOS' COMPOUND RENAL PILLS have been long established as a safe and efficacious remedy for the above complaints, discharges of any kind, retention of urine, and diseases of the kidneys, bladder and urinary organs generally, which, if neglected, frequently end in stone in the bladder and a lingering death. For depression of spirits, incapacity for society, study or business, confusion, giddiness, drowsiness, sleep without refreshment, fear, nervousness, and insanity itself, when arising from or combined with urinary diseases, they are unequalled. By their salutary action in correcting bile and acidity of the stomach, they prevent the formation of stone, and establish the healthy functions of all these organs.—Price 1*s.* 1½*d.*, 2*s.* 9*d.*, 4*s.* 6*d.*, 11*s.*, and 33*s.* per box, through all Medicine Vendors, or sent free on receipt of the amount in postage stamps, by Dr. DE ROOS, 10, Berners Street, Oxford Street.

THE ROYAL HUNT BOUQUET.

PIESSE AND LUBIN, PERFUMERY FACTORS, 2, New Bond Street, London.—"This exquisite perfume has the fragrance of a garden at evening's close." FRANGIPANNI, the YACHT CLUB NOSEGAY, and the NEWMARKET JOCKEY CLUB SCENT, 2s. 6d. each, or three bottles in a case, 7s.—See to have them with our name, PIESSE & LUBIN, 3, New Bond Street, London. Sold everywhere.

SEWELL AND CO. respectfully solicit an inspection of their NOVELTIES IN ENGLISH AND FOREIGN MANUFACTURES.

Rich Silks of every description.
Cloaks and Mantles in all the New Shapes.
Evening and Ball Dresses with the New Soie des Fées, in Robes à Volants, or cut in any lengths.
Morning and Carriage Dresses in Mohairs and New Fancy Fabrics (the skirts made complete), Ribbons, Laces, Gloves, Shawls, and Embroideries.
Compton House, Frith Street, Soho.

GLENFIELD PATENT STARCH.—Used in the Royal Laundry, and pronounced by Her Majesty's Laundress to be the finest starch she ever used. When you ask for GLENFIELD PATENT STARCH, see that you get it, as inferior kinds are often substituted.—Sold by all Chandlers, Grocers, &c.
WOTHERSPOON & Co., Glasgow and London.

VINEGAR.—Patronised by her Majesty's Government.

CONDY'S PATENT PURE CONCENTRATED MALT VINEGAR.—Families, by using this delicious Vinegar, insure purity, and effect a saving of 50 per cent. See Report of Dr. Letheby, City Officer of Health; Dr. Hassall of the *Lancet* Commission, and others. Six Quart Sample sent free to any Railway for 3s. 6d.—Sold by the Trade, in bottles, labelled and capsuled; wholesale, 63, King William Street, London Bridge, E.C.

SPIRITS AND BEER.—Brandy, 24s. to 40s.; Whisky, 14s. to 18s.; Gin, 11s. 6d. to 15s. per gallon. Pale Ale, quarts, 4s. 6d. and 4s.; pints, 3s. 3d. and 3s. D'Arcy's Dublin Stout and Porter, quarts, 5s., 4s. 3d., and 3s. 6d.; pints, 3s. 6d., 3s., and 2s. 6d. Not less than 6 dozen.—OWEN & Co.' 75, Lower Thames Street, E. C., and 57 & 58, Fore Street, E. C'

FRY AND SONS' CHOCOLATES AND COCOAS.—Victoria Chocolate, Bon Bons, Soluble Cocoa, &c., in great variety. These delicious beverages are now sold at very moderate prices, and many of them are highly economical.

FRY'S HOMŒOPATHIC COCOA is an article of unexceptionable quality. FRY'S SOLUBLE COCOA, in Hexagon packets, and FRY'S PEARL COCOA, are strongly recommended.
FRY AND SONS, MANUFACTURERS TO THE QUEEN.

Liebig, the celebrated Chemist, asserts that nitrogen is essential to the healthy action of the bile, and the growth, sustenance, and invigoration of the body. No stronger recommendation of Cocoa and Chocolate can therefore be given than the following statement:—Caffeine and Theine each contain only about 29 per cent., whilst Theobromine (or essence of Cocoa) contains upwards of 35 per cent. of nitrogen.

KNOW THYSELF.—MARIE COUPELLE continues to give her graphic and interesting delineations of character, discoverable from an examination of the handwriting, in an unique style of description peculiarly her own. All persons desirous of knowing themselves, or any friend in whom they are interested, must send a specimen of the writing, stating the sex and age, and enclosing 13 penny postage stamps, and a directed envelope, to Miss COUPELLE, 69, Castle Street, Oxford Street, London, and they will receive in a few days a minute detail of the talents, tastes, virtues, and failings of the writer, with many other things hitherto unsuspected. All letters are considered strictly confidential.

DO YOU WANT LUXURIANT HAIR, WHISKERS, &c.?—COUPELLE'S CRINUTRIAR is guaranteed to produce whiskers, moustachios, eyebrows, &c., in two or three weeks with the utmost certainty, strengthen weak hair, prevent its falling off, check greyness in all its stages, and reproduce the hair in baldness, from whatever cause, price 2s. Sold by all chemists in the world; or will be sent post free, on receipt of 24 penny postage stamps, by Miss COUPELLE, 69, Castle Street, Newman Street, Oxford Street, London. A toilet guide sent post free for four penny postage stamps. "It completely restored my hair."—Miss Davis. "My whiskers are now growing freely."—H. Merry, Esq.

FOR THE TOILETTE.—OLDRIDGE'S BALM OF COLUMBIA, which has for more than 30 years been celebrated for its peculiar properties in restoring, cleansing, and beautifying the hair, promoting its growth, as well as preventing it falling off or turning grey.—C. & A. OLDRIDGE, 13, Wellington Street, North, seven doors from the Strand. Sold wholesale and retail in bottles at 3s. 6d., 6s., and 11s.; and by all Chemists and Perfumers. Its use for whiskers and moustache is invaluable.

SIXTY YEARS OF SUCCESS
HAVE PROVED BEYOND QUESTION THAT

ROWLANDS' MACASSAR OIL possesses extraordinary properties for promoting the growth and improving and beautifying the human hair. It prevents hair from falling off or turning grey, strengthens weak hair, cleanses it from scurf and dandriff, and makes it beautifully soft, pliable, and glossy. In the growth of the beard, whiskers, and mustachios, it is unfailing in its stimulative operation. For children it is especially recommended as forming the basis of a beautiful head of hair, while its introduction into the Nursery of Royalty, and the numerous testimonials constantly received of its efficacy, afford the best and surest proofs of its merits.—Price 3s. 6d. and 7s.; Family bottles (equal to four small), 10s. 6d.; and double that size, 21s.—CAUTION. On the wrapper of each bottle are the words, "ROWLANDS' MACASSAR OIL," &c., in white letters, and their signature, "A. ROWLAND & SONS," in red ink.—Sold at 20, Hatton Garden, London, and by Chemists and Perfumers.

WHAT WILL THIS COST TO PRINT? is a thought often occurring to literary minds, public characters, and persons of benevolent intentions. An immediate answer to the inquiry may be obtained on application to RICHARD BARRETT, 13, Mark Lane, London. R. B. is enabled to execute every description of Printing on very advantageous terms, his office being furnished with a large and choice assortment of Types, Steam Printing Machines, Hydraulic and other Presses, and every modern improvement in the Printing Art. A Specimen Book of Types, and information for Authors, sent on application, by
RICHARD BARRETT, 13, Mark Lane, London.

ELECTRICAL INFLUENCE IN HEALTH AND DISEASE.
Just published, price 1s., free by post for thirteen Stamps,

SECOND LIFE: OR ELECTRICAL NERVOUS FORCE; a MEDICAL WORK intended for the special perusal of all who are suffering from the various forms of NERVOUS and PHYSICAL DEBILITY and the distressing ulterior consequences to which they lead; with practical Observations on the great Curative power of ELECTRO-GALVANISM in the Treatment of these disorders, by infusing tone and vigour in constitutions relaxed or debilitated from various enervating causes. Illustrated with Cases compiled from the Note-Book of a Registered Medical Practitioner of twenty years' standing.
MANN, 39, Cornhill, and all Booksellers.

POPULAR MANUALS OF NATURAL HISTORY,
With many Illustrations on Steel and Wood, fcp. 8vo, cloth.

WITHERING'S BRITISH PLANTS AND FERNS. Revised by W. MACGILLIVRAY, LL.D. Tenth Edition, 10s. 6d.
Macgillivray's Manual of Botany. Second Edition, 4s. 6d.
Macgillivray's Manual of Geology. New Edition, 4s. 6d.
Macgillivray's Manual of British Birds. Second Edition, 7s.
Woodland Gleanings: a complete Description of British Forest Trees. New Edition, 4s. 6d.
Dr. J. Lindley's Botany: Physiological, Systematic, &c. 3s.
EDWARD LAW (successor to Robert Baldwin), Essex Street, Strand.

THE SOCIETY'S POPULAR HANDBOOKS FOR THE COUNTRY.
New Editions, 8vo cloth, each with many Illustrations.

SHEEP; their Breeds, Management, and Diseases. By W. YOUATT, late Professor R.V.C. Price 8s.
Cattle; their Breeds, Management, &c. By W. YOUATT. Price 8s.
The Horse; its Breeds, Management, and Diseases. By W. YOUATT. With Appendix by W. SPOONER, Principal R.V.C. Price 8s.
British Husbandry. By J. F. BURKE and C. W. JOHNSON. 2 vols., 16s.
The Art of Brewing. By David BOOTH. 1s.
Agricultural Chymistry. By Dr. H. M. Noad, F.R.S. 3s.
Useful and Ornamental Planting. By G. SINCLAIR. 2s. 6d.
Roadmaking and Repairing. By C. PENFOLD. 1s.
EDWARD LAW (successor to Robert Baldwin), Essex Street, Strand.

POLLED HERD BOOK.

BREEDERS OF POLLED CATTLE are informed that the FIRST VOLUME of the POLLED HERD BOOK is now prepared for Press. It will contain the Herds of the following Breeders:—

His Grace the Duke of Buccleuch
The Right Hon. the Earl of Aberdeen
The Right Hon. the Earl of Airlie
The Right Hon. the Earl of Cawdor
The Right Hon. the Earl of Southesk
The Right Hon. Lord Lurgan
The Right Hon. Lord Talbot de Malahide
Sir John Stuart Forbes, Bart., of Pitsligo
Bowie, Alexander, Mains of Kelly, Arbroath
Brown, George, Westertown, Fochabers
Collie, John, Ardgay, Forres
Cunningham, Samuel, Dunrod Mill, Kirkcudbright
Duncan, Alexander, Renchal, Stonehaven
Farrell, M., Woodburnden, Fordoun
Fleming, John, Ballindalloch
Graham, James, Meikle Culloch, Dumfries
Hutchison, John, Monyruy, Peterhead
Leslie, James, Thorn, Blairgowrie, Perth
M'Combie, William, of Tillyfour, Aberdeen
M'Combie, William, Easter Skene, Aberdeen
Scott, David, Calnakettle, Fettercairn
Shennan, W. & J., Balig, Kirkcudbright
Tayler, William James, of Glenbanie, Huntly
Thomson, Samuel, Blaiket, Crocketford, Dumfries
Trustees of the late Mr. Scott of Balwyllo
Walker, Robert, Portlethen, Aberdeen
White, William, Spot, Kirriemuir

New Entries will be received up to April 15, after which date none can be entered. A distinct Section of the work will be devoted to Galloway Stock.

Blank Forms of Entry may be obtained on application to Mr. RAVENSCROFT, the Editor, at PETER LAWSON & SON'S, Edinburgh; of ROBERT THRESHIE, Esq., Dumfries; or at the Office of the *Farmers' Gazette*, Dublin.

STUDENTS' CLASS BOOKS.

I.
MANUAL OF BRITISH BOTANY. By C. C. BABINGTON, M.A., &c. Fourth Edition, 10s. 6d.

II.
ELEMENTARY COURSE OF BOTANY, Structural, Physiological, and Systematic, with a brief Outline of the Geographical and Geological Distribution of Plants. By ARTHUR HENFREY, F.R.S., L.S. &c., Professor of Botany in King's College, London, Examiner in Natural Science to the Royal Military Academy and to the Society of Arts. Post 8vo, illustrated by upwards of 500 Woodcuts, price 12s. 6d.

III.
A GENERAL OUTLINE OF THE ORGANISATION OF THE ANIMAL KINGDOM, and Manual of Comparative Anatomy. By THOMAS RYMER JONES, F.R.S., Professor of Comparative Anatomy in King's College, London, late Fullerian Professor of Physiology to the Royal Institution of Great Britain, &c. Second Edition, 8vo, 884 pages, 400 Woodcuts, price £1 11s. 6d.

IV.
HANDBOOK OF CHEMICAL MANIPULATION, with very numerous Illustrations. By C. GREVILLE WILLIAMS, Principal Assistant in the Laboratory of the University of Edinburgh. Post 8vo, 15s.

V.
A MANUAL OF CHEMICAL ANALYSIS (Qualitative). By A. B. NORTHCOTE, F.C.S., and ARTHUR H. CHURCH, F.C.S. Post 8vo, 10s. 6d.

VI.
ELEMENTARY COURSE OF GEOLOGY, MINERALOGY, AND PHYSICAL GEOGRAPHY. By Professor DAVID T. ANSTED, M.A., F.R.S., F.G.S., &c., consulting Mining Engineer, Honorary Fellow of King's College, London, Lecturer on Mineralogy and Geology at the H.E.I.C. Mil. Sem. at Addiscombe, late Fellow of Jesus College, Cambridge. A second Edition, post 8vo, with many Illustrations, 12s.

"There is just enough about the general laws of matter, just enough of Chemistry and Mineralogy to make the details of Geology intelligible, and all is at once very clear and very condensed. We know of no manual so complete in all respects for the real student."—*Guardian, April* 8, 1857.
JOHN VAN VOORST, 1, Paternoster Row.

NO MORE MEDICINE.
Price 2d. free by post, a popular Treatise. 64 pages.

THE NATURAL REGENERATION OF THE DIGESTIVE ORGANS, practically Illustrating the effectual Cure, without Medicine, of Indigestion (Dyspepsia), Habitual Constipation, Flatulency, Acidity, Palpitation of the Heart, Torpidity of the Liver, Bilious Headaches, Nervousness, Biliousness, General Debility, Coughs, Asthma, Consumption, Despondency, Spleen, &c., without pills, purgatives, or medicines of any kind, by a simple, pleasant, and infallible means, adapted to the general reader.
London: MANN NEPHEWS, Booksellers, 39, Cornhill.

A CONSERVATORY TO BE SOLD CHEAP.—It is of handsome modern elevation and in good order.—To be seen at Oakfield Lodge, Lower Tulse Hill, between the hours of 10 and 4.

FREE ALE & STOUT HOUSE, WITH NURSERY GROUND.

TO BE LET, together or separate, with a Skittle Ground and Stabling, doing a good trade (two miles from London Bridge), on Lease, at a low rent. Purchasers with about 150l. will find this a rare chance.—Apply to Mr. PLANT, Auctioneer, New Kent Road, corner of Lion Street, near the Elephant and Castle.

TO BE LET, BRISTOL NURSERY GROUNDS, Kemp Town, Brighton. These Gardens are now to Let for occupation with immediate possession.—Any person desirous of treating for the same may obtain particulars and permission to view the grounds on application to Mr. R. W. LUCAS, 20, Great Marlborough Street, London, W.; and of Mr. A. CHANDLER, Horticultural Valuer, 28, Priory Road, Wandsworth Road, S.

TO BE SOLD, an old established NURSERY and SEED BUSINESS, in the Midland Counties, in a good Market Town, and immediately contiguous to a first-class Railway Station. The STOCK at present is low, but good, and may be taken to at valuation or by private treaty. Is parted with solely on account of the death of the late proprietor.—Apply to Messrs. NOBLE, COOPER, & Co., 152, Fleet Street; or Messrs. Low & Co., 7, Upper Clapton, London.

STOVE AND GREENHOUSE PLANTS.

TO BE SOLD, by Private Contract, a small and very select collection of choice STOVE and GREENHOUSE PLANTS, consisting of the best and newest varieties. They are all young, vigorous, beautifully grown plants in the finest condition. The Stove and Greenhouse plants might be taken separately by any party not requiring both. Also small and select collections of Carnations, Picotees, Pinks, Fuchsias, &c. All to be disposed of on very reasonable terms.—Inquire of the Gardener, at Dorset House, Clifton Downs.

Sales by Auction.

SEEDS OF CONIFERS, ETC., FROM INDIA, CALIFORNIA, VANCOUVER'S ISLAND, AND WESTERN AUSTRALIA.

MR. J. C. STEVENS will sell by Auction, at his Great Room 38, King Street, Covent Garden, on WEDNESDAY, April 27, at half past 12 o'Clock precisely, an importation of Seeds of Conifers from India, including 560 lbs. of CEDRUS DEODARA, 9½ lbs. of CUPRESSUS TORULOSA, 31 lbs. of PICEA PINDROW, 18 lbs. of PINUS EXCELSA, and 5 lbs. of JUNIPERUS EXCELSA. Also an importation from California and Vancouver's Island, and a collection from Western Australia.—May be viewed on the morning of Sale, and Catalogues had.

ORCHIDS.

MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on THURSDAY, May 5, at half past 12 o'Clock precisely, the COLLECTION of ORCHIDS of a Gentleman whose health compels him to give up their culture. It is particularly rich in the best South American species of Cattleya, Lælia, Odontoglossum, Cypripediums, Trichophyllas, &c., and the Plants are in fine health.—May be viewed on the morning of Sale, and Catalogues had of Mr. J. C. STEVENS, 38, King Street, Covent Garden.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will Sell by Auction at the Mart on THURSDAY, April 21, at 12 o'Clock, a first class collection of Carnations and Picotees from a celebrated grower, handsome Azalea indica, and other Plants in bloom; choice American plants, comprising Rhododendrons, Azaleas, Andromeda floribunda, &c. with choice Dahlias in dry roots, Fuchsias, Verbenas, &c., On view the morning of sale.—Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

IMPORTANT AND EXTENSIVE SALE AT THE BRISTOL NURSERY, KEMP TOWN, BRIGHTON.

MESSRS. PROTHEROE AND MORRIS have received instructions to Sell by Auction, on the premises, Bristol Nursery, Kemp Town, Brighton, Sussex, early in MAY, the whole of the valuable collection of GREENHOUSE, STOVE, and other PLANTS, including about 1000 choice Double Camellias, ranging all sizes, and in the finest state of cultivation; fine specimen plants of Chinese Azaleas, Ericas, Epacris, a quantity of Orange Trees, 2000 Show and Fancy Pelargoniums, 5000 Scarlet and Variegated Geraniums, Double-purple and White Primulas, Cyclamens, Chrysanthemums, &c.; also a large assortment of Bedding Plants, Herbaceous Plants in pots, a bed of first-rate Tulips all named, Ivies, Jasmines, Honeysuckles, Vines, &c. Due notice of the days of Sale will be given, and Catalogues forwarded on application when ready.—American Nursery, Leytonstone. N.B. The Premises to be Let, inquire of Mr. A. CHANDLER, Horticultural Valuer, 28, Priory Road, Wandsworth Road, S.; or Mr. HAWARD, 82, Oakley Street, Chelsea.

RESIDENCE AND LAND IN BERKSHIRE.

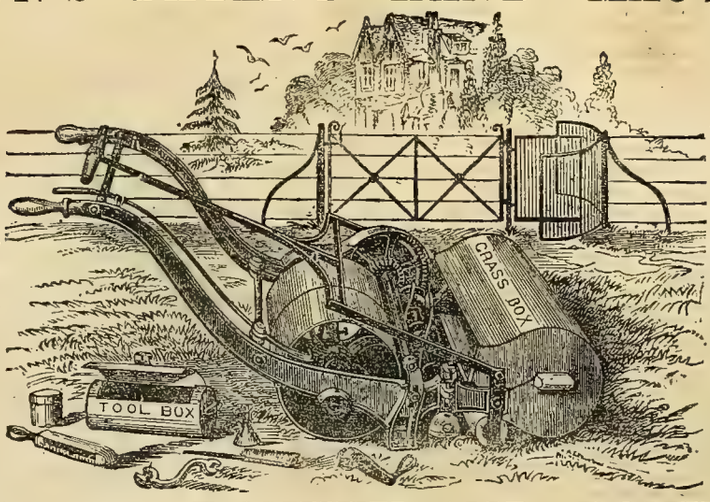
MESSRS. DAVIS AND VIGERS are directed to Sell by Auction, at Garraway's, on TUESDAY, May 10, at 12 for 1, a FREEHOLD AND COPYHOLD PROPERTY; comprising a modern and excellent House, with Pleasure Grounds, productive Gardens, good Stabling, Farmery, and 42 Acres of Land, at Cookham, Berks, only a quarter of a mile from the Cookham Station, on the Wycombe branch of the Great Western Railway, 3 miles from Maidenhead and Taplow, 7 from Windsor, 3 from Marlow, and 27 from London, a very healthy and delightful locality, screened from the east by the high grounds and woods of Hedsor and Cliefden, within an easy distance of the Thames at parts favourable for angling and admirable for scenery, and with the Queen's hounds and Prince's harriers hunting the district. Immediate possession will be given to the purchaser. To be viewed by cards, to be obtained of the Auctioneers. Particulars, with Plans and Conditions of Sale, to be had at the Bell and Dragon, Cookham; the Crown, Great Marlow; the Deer, Maidenhead; the King's Arms, Uxbridge; the Falcon, High Wycombe; the White Hart, Windsor; or Messrs. FRESHFIELDS & NEWMAN, Solicitors, New Bank Buildings, Lothbury; at GARRAWAY'S and the Estate Exchange, Change Alley, Cornhill; and of Messrs. DAVIS & VIGERS, Land Agents and Surveyors, 3, Frederick's Place, Old Jewry, E. C.

FREEHOLD RESIDENCE AND LAND, EPSOM, SURREY.

MESSRS. DAVIS AND VIGERS have received instructions to Sell by Auction, at Garraway's, on TUESDAY, May 10, at 12 for 1 o'Clock, a FREEHOLD FAMILY RESIDENCE, with Pleasure Grounds, Gardens, Orchard, and excellent Meadow Land, in all about 14 acres, agreeably situate adjoining Epsom Common, near to the town, accessible by railway from the city or west end of London, and only half a mile from the station. It comprises 13 Bed-rooms and Dressing-rooms, School-room and Bath-room, an elegant Drawing-room opening on to the lawn, Morning-room, spacious Hall with garden entrance communicating with a conservatory, excellent Domestic Offices well supplied with water; Stabling, consisting of four stalls and two loose boxes, double coach-house, and coachman's apartment. The Pleasure Grounds are tastefully arranged and highly kept, the Gardens and Orchards are very productive, and the Hothouse and Vineries in high condition. A small Farmery, with access from the meadow and from the stableyard, contains all necessary buildings, and is entirely screened and enclosed. Immediate possession will be given. To be viewed by cards to be had of Messrs DAVIS & VIGERS.—Particulars, with plans and conditions of sale, may be had of Messrs RIDSDALE & CRADDOCK, Solicitors, 5, Gray's Inn Square, Gray's Inn; at the King's Head, Epsom; the Greyhound, Croydon; at GARRAWAY'S, and the Estate Exchange, Change Alley, Cornhill; and of Messrs DAVIS & VIGERS, Land and Estate Agents, 3, Frederick's Place, Old Jewry, E.C.

GREEN'S PATENT GRASS CUTTING, COLLECTING, & ROLLING MACHINES FOR 1859.

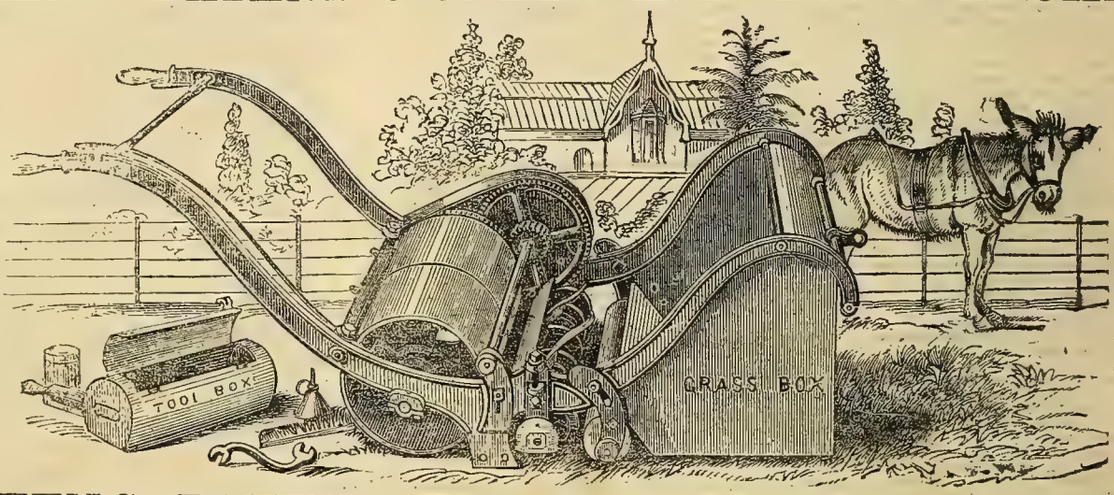
GREEN'S PATENT HAND MACHINE.



LIST OF PRICES.

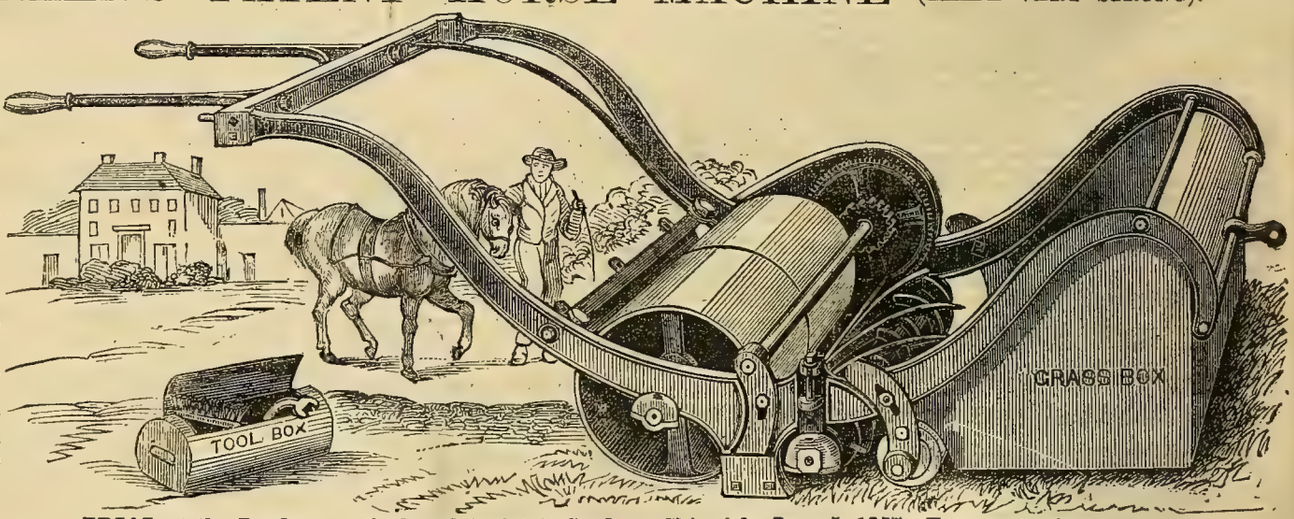
To cut 14 inches, 6*l.* ; 16 in. 6*l.* 10*s.* ; 18 in. 7*l.*—for one person. To cut 20 inches 7*l.* 10*s.* ; 22 in. 8*l.* ; 24 in. 8*l.* 10*s.*—for two persons. If with Box and Tools for sharpening and keeping the Machine in order, 5*s.* extra ; with Guard for preventing accidents and keeping the wheels clean, 5*s.* extra.

GREEN'S PATENT DONKEY AND PONY MACHINE,



Suitable for a Donkey, to cut 24 inches, 10*l.* ; 26 in., 11*l.* For a Pony, 30 in., 15*l.* ; box, tools, &c., 6*s.* 6*d.* extra. Leather traces, stretcher, &c., suitable to attach to common harness or chain traces, 7*s.* 6*d.* Leather boots, suitable for donkey's feet, 16*s.* ; do. for a pony, 20*s.* per set of four. Guard for covering wheels, 5*s.* extra.

GREEN'S PATENT HORSE MACHINE (Made very strong).



To cut 30 ins., 18*l.* ; 36 ins. 21*l.* ; 42 ins. 24*l.* ; 48 ins., 27*l.* Box of tools, 7*s.* 6*d.* extra, Leather traces, stretcher, &c., 10*s.* Boots per set of four for Horses' feet, to prevent injury to lawns, 24*s.* Guard for wheels, 5*s.* ex. —The above are Net cash prices, delivered at any of the principal Rlway. Stations in England.

TRIAL at the London Horticultural Society's Gardens, Chiswick, June 5, 1857. Four competitors.

First trial on level ground, second do. on undulated, third do. on intricate places around trees, &c., when GREEN'S PATENT was unanimously declared to be the best in each trial by Colonel Challoner, Dr. Lindley, and G. M'Ewen, Esq., the appointed Judges.

See the *Gardeners' Chronicle* of May 22, 1858, p. 423, under the heading of "Garden Memoranda."

"London Horticultural Gardens, Chiswick.—The Grass in the Arboretum and elsewhere is in excellent condition ; it is kept in order by means of one of GREEN'S 2-feet Mowing Machines, which does its work very satisfactorily, and, compared with the scythe, effects a saving of at least one-half."

Extract from London *Times* of June 8, and *Gardeners' Chronicle* of June 12, 1858.

"Trial of Mowing Machines.—A considerable number of various sizes having been brought to the ground it was agreed that the trial should take place between One Hand Machine of each exhibitor, as nearly as possible of uniform size and worked by themselves, or their men. The ground to be worked was determined by lot, the pieces having been previously selected of as uniform quality as possible. After trials on level ground and round trees, the Judges, Colonel Challoner and Mr. Edward Easton, declared GREEN'S Patent to be the best.

(Signed) "C. B. Challoner, Edward Easton, Judges."

Thos. Green respectfully informs the Nobility, Gentry, Gardeners, Amateurs, and others, that upwards of Six Hundred of these Machines were sold in 1857, and to show the increasing demand, above Nine Hundred were sold last season—they have proven to be the best in all cases of competition, are entirely remodelled, and all the little defects pointed out by the Judges last Year, are now rectified. The Patentee now considers the Machines as near perfection as possible. Although the Machines have been so much improved, at a great additional cost, no extra charge will be made, excepting for a neat Guard, which is placed over the wheels to keep them clean, and to prevent breakage or accidents, which will be 5*s.* extra to parties requiring them.

☞ The Machines are warranted to give satisfaction, or may be at once returned by the party paying the carriage back to Leeds. The Patentee has spared neither time nor expense in producing the best and cheapest Mowing, Collecting, and Rolling Machines ever brought before the public. Hundreds of Testimonials (unsolicited) may be seen, and references given with regard to the superiority of the machines, by applying to the Patentee,

T. GREEN, Smithfield Iron Works, Leeds ; or, No. 2, Victoria Street, bottom of Holborn, London,

To either of which places all Cheques and Post-office Orders may be made payable.

☞ *T. G. will be glad to receive orders for Machines as early as possible, as a great difficulty was found last season in supplying the number required.*

N.B. Parties desirous of having their Machines repaired may forward them to either the London or Leeds establishment, where they will have the best attention.

Printed by William Bradbury, of 13, Upper Woburn Place, and Frederick Mullett Evans, of No. 20, Queen's Road West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and published by them at the Office, No. 5, Upper Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—Saturday, April 16, 1859.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 17.—1859.] SATURDAY, APRIL 23. {Price Fivepence. Stamped Edition, 6d.

INDEX.

Abies, bracteata	362 b	Orchid Fungus	359 c
Agriculture, Fyfe's	369 c	Pear, triple cropper	361 c
— examination in	365 c	Plants, night growth in	361 c
Agri. Imp. Society	369 a	Potato culture	363 b
Bamboo, growth, &c., of	362 c	Rainfall, east and west	361 a
Books, noticed	363 a	Reaping machine	363 c
Botanical Soc. of Edinburgh	362 b	Rhododendrons	360 a
Cattle, Dublin	369 b	Ringing Vines	359 b
Cheirostemon platanoides	361 c	Roots and autumn culture	363 a
Comfrey, Prickly	370 b	Royal Bot. Society	362 a
Conifers, sizes of	362 c	Rye, early	369 a
— roots of	362 c	Steam culture	363 a
Entomological Society	363 a	— Smith's	363 c
Garden expenses	363 a	Stock, to winter	367 a
Gentiana, to sow	364 c	Straw, litter	370 a
Harvest temperance	369 a	Tobacco paper	362 a
Hedgerow timber	363 b	Trade lists	364 a
Hort. Soc. distribution of plants	359 c	Ventilation	361 b
Hyacinths at Hampton Court	364 a	Vines, ringing	359 b
Jasmine, Catalonian	361 c	Waltonian case	360 b
Manure, liquid	366 b	Warwick, prizes at	370 b
Natural History, sums voted for colonial	361 a	Waste, utilisation of	363 b
New Zealand, Lord Lyttelton on	363 a	Wheat top-dressings, &c.	366 a
Nuts, Brazil	361 c	Zoological collections in British Museum	362 a

HORTICULTURAL SOCIETY OF LONDON.—Notice is hereby given that the business of the Society will be carried on in future at No. 8, St. Martin's Place, Trafalgar Square, W.C.

HORTICULTURAL SOCIETY OF LONDON.—Notice is hereby given that the ANNIVERSARY MEETING of this Society for the ELECTION of COUNCIL, OFFICERS, and AUDITORS for the ensuing year will be held on MONDAY, May 2, in the Rooms of the Society of Arts, John Street, Adelphi, by permission of the Council of that Society. The chair will be taken precisely at 1 o'clock, P.M.
8, St. Martin's Place, April 23.

ROYAL BOTANIC SOCIETY, REGENT'S PARK.—THE EXHIBITIONS OF PLANTS, FLOWERS, AND FRUIT this season will take place on WEDNESDAYS, May 25, June 15, and July 6. Tickets of Admission are now being issued, and can be obtained at the Gardens only by orders from Fellows or Members of the Society. Price, on or before Saturday, May 14, 4s.; after that day, 5s.; or on the days of Exhibition, 7s. 6d. each.

THE SECOND GRAND NATIONAL ROSE SHOW will be held in the Hanover Square Rooms, London, on THURSDAY, June 23.
Caunton Manor, Newark. S. REYNOLDS HOLE, Hon. Sec.

THE ROYAL NATIONAL TULIP SOCIETY.—The ELEVENTH ANNUAL EXHIBITION of this Society will take place at the Royal Nursery, Slough, on FRIDAY, May 20.

Committee.

R. Headley, Esq. | S. M. Sanders, Esq.
J. Hunt, Esq. | R. H. Batteridge, Esq.
Mr. N. Norman | Mr. C. Turner

Thirty-one Prizes will be awarded, amounting to upwards of 50*l.* Lists of Prizes, with full particulars, may be had of
The Royal Nursery, Slough. CHARLES TURNER, Hon. Sec.

LEYTON AND WALTHAMSTOW AMATEUR FLORICULTURAL SOCIETY.—The Exhibitions of the above Society will take place on THURSDAY, June 9, and WEDNESDAY, September 14. Schedules and Rules of the Society can be obtained by enclosing one stamp to E. GOAD, Hon. Secretary, Mark House Common, Walthamstow, N.E.

THE GRAND NATIONAL DAHLIA SHOW FOR 1859.—This Exhibition will take place on the 20th and 21st of September next, at Aston Hall, Birmingham. Lists of Prizes will shortly be ready.
CHARLES TURNER, JOHN KEYNES, } Hon. Secs.

FERN CATALOGUE.
ROBERT SIM'S NEW DESCRIPTIVE AND PRICED CATALOGUE, No. 6 (62 pages) of his COLLECTION of BRITISH AND EXOTIC FERNS, can be had, post free, for 3 stamps. Gratis to all previous purchasers of Ferns.
Nursery, Foot's Cray, Kent, S.E.

NEW DAHLIAS.
JOHN KEYNES'S SELECT CATALOGUE OF DAHLIAS, ROSES, CARNATIONS, PINKS, &c., containing Lists of all the valuable Show Flowers in each class, is now ready and will be sent on application.
Castle Street Nursery, Salisbury.—April 23.

HENDON PARK NURSERIES, HENDON, N.W.
EDWARD SHENTON'S Descriptive CATALOGUE of new DAHLIAS, HOLLYHOCKS, PELARGONIUMS, BEDDING AND BORDER PLANTS, and the leading New Flowers of the season 1859. Forwarded on application.

MESSRS. B. ROEZL AND CO.'S NEW CATALOGUE OF MEXICAN SEEDS AND PLANTS, to be had on application to Messrs B. A. GRAUTOFF & Co., 4, Lime Street Square, London.

TO THE READERS OF THE "GARDENERS' CHRONICLE."
CHEAP GREENHOUSE AND BEDDING PLANTS.
J. SLIPPER'S CATALOGUE is now ready, and may be had for a postage stamp.
Villa Nursery, Camden Town, London, N.W.

CARNATIONS AND PICOTEES.—Fifty pairs strong, well rooted, and extra fine show varieties, named, 2*l.*; 25 pairs, 1*l.* Packing and hamper included.—DODWELL & BAYLEY, Bradshaw Gardens, Chadderton, Manchester.

LARGE CAMELLIAS AND AZALEAS.
J. AND R. THYNE, NURSERYMEN, Glasgow, have a dozen large CAMELLIA plants, 6 to 10 feet high, well furnished, mostly double white; also a fine lot of specimen AZALEAS, 3 to 5 feet high. Prices moderate.

SEEDS! GENUINE SEEDS.—For the RIGHT SEEDS at the RIGHT PRICE, go to the RIGHT PLACE, which is G. W. DIXON'S New Seed Warehouse, 48 A, Moorgate Street, London, E.C. All sorts of Garden, Grass, Agricultural, and Flower Seeds, wholesale, retail, and for exportat

SKIRVING'S SWEDE—SUTTON'S SELECTED STOCK.
SUTTON AND SONS have a choice stock of SKIRVING'S SWEDE SEED, growth of 1858, which they can strongly recommend. Price 9*d.* per lb., or cheaper by the bushel.—Royal Berks Seed Establishment, Reading.

THE ALSIKE CLOVER.—This valuable but scarce Clover Seed is included in Messrs. SUTTON'S mixtures of Clover and Grass Seeds for permanent pasture and for alternate husbandry. It can be supplied alone if required. Price fluctuating, to be had on application.
Royal Berks Seed Establishment, Reading.

PAMPAS GRASS (GYNERIUM ARGENTEUM).—The beauty of this extraordinary plant has this season been fully appreciated. It can be supplied by the dozen, hundred, or thousand, by CHARLES NOBLE, Bagshot, Surrey.

JOHN CULVERWELL, Taunton, begs to call the attention of Agriculturists to his superior selection of GRASS SEEDS, which for PURITY, change of SOIL, and CLIMATE, will bear comparison with any house in the kingdom. Prices, terms, and samples forwarded on application.

TO THE SEED TRADE.
THOMAS AYRES, JUN., SEEDSMAN and GROWER, Biggleswade, Beds., can supply every kind of Wurzel, Swede, and common Turnip Seeds, on the most reasonable terms for cash.
N.B. Dealer in Culinary and Flower Seeds, Fruit Trees, Shrubs, and Flowering Plants.

TO THE TRADE.
CHARLES SHARPE has still to offer, of his own growing, saved from the finest selected stocks—

LONG RED MANGEL	RED LINCOLNSH. GLOBE TURNIP SEED
,, YELLOW DO.	GREEN GLOBE DO.
YELLOW GLOBE DO.	YELLOW TANKARD DO.
ALTRINGHAM CARROT	

Prices given on application.—Wisbeach, Cambridgeshire.

NEW ZEALAND RUNNER BEAN. — Price 2*s.* per quart.—JAS. CARTER & Co., Seedsmen, 238, High Holborn, London, W. C.

NEW ZEALAND RUNNING BEAN.—Packets of 12 Seeds, for 14 stamps.
BASS & BROWN, Seed Growers, &c., Sudbury, Suffolk.

TO DISTILLERS AND AGRICULTURISTS.
FRESH IMPORTED WHITE SILESIAN SUGAR BEET SEED may be had genuine (if ordered early) of Messrs. SUTTON & SONS, Seed Growers and Importers, Reading, Berks.—Price reduced to 9*d.* per lb., or cheaper by the cwt.

DIOSCOREA ROOTS AND SETS.
MESSRS. SUTTON'S DIOSCOREAS, which they are sending out at 5*s.* per doz., contain six or more sets each.
Instructions for planting are sent with the roots. Early orders necessary for strong roots.
Royal Berkshire Seed Establishment, Reading.

DIOSCOREA BATATAS—CHINESE YAM.
WM. CUTBUSH AND SON beg to intimate that now is the best time for planting the above. Good Sets, 2*l*s. per 100; or 4*s.* per doz.—Highgate Nurseries, London, N.

SORGHUM, OR HOLCUS SACCHARATUS.
SUTTON AND SONS, Importers of this Seed, can supply it wholesale and retail, warranted the true kind, and good growing Seed, at reduced price, according to quantity required. 8 lbs. per acre sufficient. Instructions on cultivation sent with the Seed.
SUTTON & SONS, Royal Berks Seed Establishment, Reading.

HOLCUS SACCHARATUS, OR CHINA SUGAR-CANE GRASS.—Seed of this lately introduced Fodder plant can be supplied by NUTTING & SONS in any quantity. Price on application.—Seed Warehouse, 60, Barbican, London.

HOLCUS SACCHARATUS, or North China Sugar-Cane.—Pamphlet, "A Visit and a Plant;" the only English authority on the Cultivation of the above. Post free 6*d.* Prices of Seed on application. Samples 6*d.* Four varieties of Holcus remitted free by post on receipt of 10*s.*
CHINESE YAMS, 4*s.* per dozen.
ASPARAGUS plants, 16*s.* per 1000.
JOHN W. CLARKE, Whittlesea, Cambridgeshire.

YORK REGENTS.—For Sale, about 4 tons of Middlings, of first quality.—Apply to G. W., 4, Wells Road, New Road. Hammersmith.

FARM SEEDS.
JOSEPH MAY AND CO. beg to offer the following, which have been selected from the best growers:—

SKIRVING'S SWEDE TURNIP	Per lb.—	1*s.* 0*d.*
GREEN-TOP Do.		1 0
RED GLOBE TURNIP		1 0
GREEN ROUND Do.		1 0
LONG RED MANGEL		0 9
YELLOW GLOBE Do.		0 9

A General LIST of SEEDS for the Farm, Flower, and Kitchen Gardens forwarded on application.
1, Wellington Street, Strand, Waterloo Bridge.

NEW BLACK WALLFLOWERS.
J. LOCKHART, FLORIST and SEEDSMAN, Parson's Green, Fulham, near London, is sending out Seed of his new Single BLACK WALLFLOWER, in sealed packets, containing 50 Seeds each for 13 stamps, and Cuttings of his new Double Black Wallflower 30 stamps each, free by post.

UNBLOOMED SEEDLING CALCEOLARIAS.
MR. HENRY MAJOR, Knosthorpe, near Leeds, begs to announce that his Unbloomed SEEDLING CALCEOLARIAS will be ready to send out the last week of this month, at 6*s.* a parcel of 20, or three parcels for 15*s.*, post free. They are the produce of his unrivalled collection, and will bloom this year. Postage stamps in payment, or Post-office Order when the amount is 15*s.*
Choice CALCEOLARIA SEED, 2*s.* 6*d.* per packet.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY LIMITED supply every requisite for the Farm and the Garden.
Registered Offices, Union Road, Plymouth.

JOHN GRIGOR AND CO., NURSERIES, Forres, beg to offer true Native Highland SCOTCH FIR SEED, grown in the celebrated Natural Forests of Strathspey, at 2*s.* 6*d.* per packet, post free, or for stamps of that value.
The Trade supplied at Wholesale Prices.

TO BE SOLD, a LARGE quantity of YEW TREE BUTTS, SLABS, and ROOTS; also a fine YEW TREE of great age. The best SEA SHELL and GARDEN GRAVEL for Conservatories and Garden Paths, to be had in any quantity at Gravel Wharf, 67, Augustus Street, Regent's Park Basin.
W. HOLLAND, Proprietor.

GREEN HOLLIES, from 12 to 18 and 18 to 24 inches.
WHITEHOUSE AND WHITTAKER having an immense stock of the above, fine bushy plants, with good roots, can supply them at very moderate prices, which will be forwarded on application. The Trade and large purchasers very liberally dealt with.—Brereton Nursery and Seed Establishment, Rugeley, Staffordshire.

FOR SALE, 2-year Seedling SCOTCH, strong, in any quantity, 2*s.* per 1000; 2-year Seedling PINASTER and PINUS MARITIMA, 4*s.* per 1000; ANDROMEDA FORMOSA, 50*s.* per 100; RHODODENDRON STOCKS, 10*s.* per 1000.
W. H. ROGERS, Red Lodge Nursery, Southampton.

FINE MELON SEED (TRUE).—Trentham Hybrid and Orion Green-flesh forwarded in packets of 12 Seeds on receipt of 12 postage stamps for each packet.
W. H. ROGERS, 130, High Street, and Red Lodge Nursery, Southampton.

CAULIFLOWER PLANTS for Pricking out, 5*s.* per 1000; ASPARAGUS, 2 years, 15*s.* per 1000; LETTUCE, 2*s.* 6*d.* per 1000; and BEDDING PLANTS, 2*s.* per doz.
WALTER BIRD, Atherstone Nursery.

TROPÆOLUM CANARIENSE.
CHARLES ALEXANDER, SEEDSMAN, Edinburgh, offers New Seed of the above at 20*s.* per lb., and 1*s.* 6*d.* per ounce.

CHOICE SHOW AND FANCY GERANIUMS, 6*s.* to 9*s.* per dozen. Also FUCHSIAS, CALCEOLARIAS, VERBENAS, PANSIES, &c. Catalogues on application to GEORGE SMITH, Florist, Seedsman, &c., Common Side, Hurdsfield, Macclesfield.

CHEAP DAHLIAS, NOW READY.—One dozen of last year's New Dahlias for 6*s.*, two dozen for 10*s.*; older varieties—one dozen for 4*s.*, two dozen for 7*s.* Free by post. Strong well-rooted plants. No charge for boxes or packing. CATALOGUES free on application to JOHN MORSE, Nurseryman, Dursley, Gloucestershire.

100,000 BEDDING PLANTS, the cheapest place in England. Catalogue sent for one stamp.—J. PYLE, St. John's Nursery, Upper Holloway, London.

BEDDING PLANTS.
F. AND A. SMITH beg to offer the usual varieties of plants for bedding purposes, strong and healthy, including Carter's TOM THUMB, NASTURTIUM true, Carter's dwarf crimson and several double varieties, with most of the novelties of the season, at moderate prices.
Dulwich, Surrey.

CLIMBING PLANTS.
F. AND A. SMITH have now ready strong plants of COBEA SCANDENS, MAURANDYAS, blue, white, and rose; LOPHOSPERMUM, ECCREMOCARPUS, and TROPÆOLUMS, in large quantities. Prices on application.
Dulwich, Surrey.

THE GREAT VINE AT HAMPTON COURT.
THE SUBSCRIBERS being the holders of the Royal Kitchen Gardens, Hampton Court, are enabled to offer genuine the famous and truly excellent HAMPTON COURT BLACK HAMBURGH GRAPE.
Strong well-ripened plants in 9-inch pots, 42*s.* and 60*s.* per doz.
If purchased in large numbers a considerable reduction will be made in price.—JACKSON & SON, Nurseries, Kingston, S.W.

AZALEA INDICA.
J. IVERY AND SON beg respectfully to invite growers of the above named to an inspection of their unrivalled Stock of Young Specimens of all the newest and best varieties, many of which have been exhibited at the Metropolitan Exhibitions. They are clean and healthy, well set with bloom, and moderate in price. Catalogues forwarded post free upon application.—Dorking Nursery, April 23.

NEW SEEDS FOR 1859.
WM. CUTBUSH AND SON beg respectfully to intimate that their PRICED CATALOGUE OF VEGETABLE AND FLOWER SEEDS, &c., is now ready post free on application. WM. C. AND SON devote particular attention to this department of their business, and most of the choicer kinds of culinary seeds and roots are saved under their own inspection, and they can confidently guarantee the quality of all offered.—Highgate Nurseries, London, N. Established A.D. 1695.

PETURION GOURD.—This wonderful Vegetable attains the incredible weight of 130 to 135 lbs. in 36 days. It is perfectly edible, and makes an important addition to the kitchen garden. Seed may be had in packets at 7*d.* and 1*s.*, post free, from E. S. DIXON, Seed Establishment, 57, Queen Street, Hull.

THE EARLIEST PEA.—DUNNETT'S FIRST EARLY is in every respect superior to "Daniel O'Rourke," being several days earlier, having finer pods, and richer flavour, height 2½ feet. For an early dish of fine flavoured Peas we can confidently recommend this; 2*s.* per quart.
CHAMPION CABBAGE, the earliest and best sort, if sown in succession, may be had fit for table throughout the year, 3*d.* per ounce, or 1*s.* post free.
BUTLER & MCCULLOCH, Covent Garden Market, London.

ROYAL BOTANIC SOCIETY OF LONDON.—SPRING EXHIBITION, APRIL 20TH.

REPORT OF THE JUDGES.

NEW PLANTS.—FIRST PRIZE: Messrs. E. G. Henderson & Son, Wellington Road, St. John's Wood, for Fremontia californica, a reputed hardy shrub of the Sterculiaceous family, with large showy yellow flowers, a distinct and ornamental plant. SECOND PRIZES: Messrs. A. Henderson & Co., Pine-apple Nursery, for Cyanophyllum magnificum, a rare plant with beautiful-tinted leaves; and for a fine double-flowered creamy yellow Datura, of the habit of D. arborea. CERTIFICATES: Mr. C. Turner, of Slough, for Azalea Perfection, a bright rose-coloured variety of first-rate properties. Messrs. Ivery & Son, Dorking, for Azalea Leviathan, a fine semidouble white of good substance, and likely to prove a useful decorative plant. Messrs. E. G. Henderson & Son, for Lomatia Bidwilli, a distinct and elegant plant, with pinnate leaves, made up of spiny-margined curiously-auricled leaflets; for Bejaria microphylla, a pretty greenhouse shrub, with pale-rose flowers; and for Arthrotaxus Doniana. Messrs. A. Henderson & Co. for the rare and beautiful Todea hymenophylloides. Messrs. J. & J. Fraser, of Lea Bridge Road, showed the following fine plants but less novel than the foregoing:—Clematis lanuginosa, and its variety pallida, and Labichea diversifolia, together with a large rose-coloured coarse Azalea, called Benno, and a salmony-scarlet variety of good properties, named Roi Leopold. Messrs. E. G. Henderson also had an orange-yellow small-flowered species of Sedum, with Sparmannia-like leaves; and an ornamental-leaved Ferula-like plant, apparently an Umbellifer, named Monezia edulis.

12 MISCELLANEOUS PLANTS.—FIRST PRIZE: Messrs. J. & J. Fraser, Lea Bridge Road. SECOND PRIZE: Mr. Cutbush, Barnet, who showed several fine-foliaged plants, including a good specimen of Pavetta borbonica, and a finely coloured Croton.

6 AZALEAS.—FIRST PRIZE: Mr. Cutbush, for small well-grown plants of new varieties. SECOND PRIZE: Messrs. Fraser, whose plants, though larger, were less effective.

12 AURICULAS.—FIRST PRIZE: Mr. Turner, of Slough; among the varieties exhibited Dickson's Matilda was pre-eminent from its fine form and chaste markings.

6 PELARGONIUMS.—FIRST PRIZE: Mr, Turner; well-bloomed plants of moderate size.

MISCELLANEOUS.—The following awards were made:—SILVER MEDAL: Mr. Turner, for a large group of French Spotted Pelargoniums, exhibiting much variety and brilliancy of colour; among those shown, Comet was conspicuous for its rich brilliant scarlet flowers clouded with maroon, Virgine for its bright carmine colour, and Raphael for its dense shaded crimson. SMALL SILVER MEDAL: Mr. Turner, for six well grown Cinerarias of choice kinds. BRONZE MEDAL: Messrs. Dobson & Son, Isleworth, for six well-bloomed Cinerarias. CERTIFICATES: Mr. Holland, gardener to W. Peake, Esq., Spring Grove, for six Cinerarias. Mr. Cutbush, of Highgate, for Variegated Pelargonium Beauty, a variety of spreading habit, with white-edged leaves, and large light-scarlet flowers, in good trusses. Mr. Turner, for Seedling Cineraria Incomparable, a rich-looking variety, with the florets rose-crimson, having a ring of white surrounding the dark rosy disk, and forming a full flat circle; also for Seedling Cineraria Slough Rival, a variety of good habit, the disk dark and the florets white at the base, and of a purple-shaded crimson above. Mr. Turner also exhibted a dwarf variety called beauty, with rose-crimson tipped florets, but a grey disk; Acme, a small rose-crimson, scarcely white around the disk; and some others. Mr. Wiggins, gardener to E. Beck, Esq., had three Seedling Cinerarias, Clara, Lisette, and Admiral, of inferior quality; and the same remark applies to another named Lord Clyde, from Mr. Bragg, of Slough. Mr. Bragg and Mr. James, of Isleworth, exhibited stands of Pansies. Some inferior kinds of Polyanthus came from Mr. Cutbush.

A Collection of Plants not for competition were exhibited by Messrs A. Henderson & Co.; it contained among others Cupressus Lawsoniana, a fine variety of Cattleya Skinneri, called superba, a variety of Rhododendron aureum, Heaths, Aerides, &c. Another, from Messrs. E. G. Henderson, contained Rhododendron Dalhousiæ, R. Edgeworthi, Arthrotaxus cupressiformis, &c. Mr. Standish, of Bagshot, showed several cut branches of Exochorda *alias* Spiræa grandiflora, laden with racemes of its conspicuous white flowers; this very ornamental shrub, introduced a few years since by Mr. Fortune, is so thoroughly hardy that it was stated to have recently withstood 12° of frost without injury. Messrs. Ivery & Son exhibited some well-grown samples of the new esculent Dioscorea Batatas. A collection of vegetables, consisting of Peas, Asparagus, Artichokes, Cauliflowers, and Strawberries, grown in the South of France (transported by railway to Paris, and forwarded by steamer to London), were exhibited by Mr. Keeling; the Cauliflower heads were remarkably fine; the Peas and Strawberries indifferent. (Signed)

THOMAS MOORE, A. PARSONS, S. M. CARSON, Censors.

BATH AND WEST OF ENGLAND SOCIETY FOR THE ENCOURAGEMENT OF AGRICULTURE, ARTS, MANUFACTURES, AND COMMERCE.

—An Exhibition of FLOWERS, FLOWERING, and ORNAMENTAL PLANTS, FRUIT, and VEGETABLES, will take place on June 1, 2, and 3, in connexion with the General Exhibition of the above Society, on the occasion of their North Devon Meeting at Barnstaple, when the following Prizes will be offered:—

I.—1.	For the best collection of not less than 20 Stove or Greenhouse Plants (Nurserymen)	1st. £3	2d. —
2.	Do. do. .. .. (Amateurs)	2	£1
II.—1.	For the best collection of not less than 12 Rhododendrons and Chinese Azaleas (Nurserymen)	3	—
2.	For the best collection of not less than 8 do. .. .. .. (Amateurs)	2	1
III.—1.	For the best collection of not less than 8 Roses in pots .. .. (Nurserymen)	3	—
IV.—1.	For the best collection of not less than 20 Variegated Plants, or plants remarkable for their fine foliage (Nurserymen)	3	—
V.—1.	For the best collection of not less than 20 Ferns of any kind .. (Amateurs)	2	1
VI.—1.	For the best ornamental basket of Flowers, or of Flowers and Foliage .. (Amateurs)	2	1
VII.—1.	For the best group of specimens of Coniferæ, preference being given to newly introduced kinds .. .. (Nurserymen)	5	—
VIII.—1.	For the best specimen of any newly introduced or extremely rare genus of Ornamental Plant, or object of special merit in the exhibition .. (Nurserymen)	1	—

In addition to the above, prizes to the amount of 10*l.* will be offered for Fruit and Vegetables. A portion of the Society's ground will be set apart for the present exhibition, and space will be allotted either in a marquee or the promenade, at the discretion of the managing committee, to Nurserymen who may wish to arrange and exhibit their collections in distinct sections, irrespective of competition for prizes. Space will also be allotted for the display of Garden Decorations and works of Ornamental Art associated with Horticulture.

Plants intended for the Exhibition will (on being consigned to the Horticultural Committee) have free transit over the line of railway from Exeter to Barnstaple. Application for space to be made to the undersigned before May 1 next.

All articles for exhibition must be staged by the evening of Tuesday, May 31, and are not to be removed earlier than the morning of Saturday, June 4. GEORGE BROWN,

Barnstaple. Hon. Sec. Local Committee.

NEW ROSES FOR 1859.

WILLIAM WOOD AND SON are now executing their orders for all the best NEW ROSES of the present season. The plants are well grown, vigorous, and healthy, and are supplied at the lowest advertised prices.

DESCRIPTIVE LISTS of the above will be sent free on application. Early orders will command the strongest plants.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

ROSES FOR BEDDING,

BY THE DOZEN, THE HUNDRED, OR THE THOUSAND.

WILLIAM WOOD AND SON have now to offer many thousands of well grown healthy plants of ROSES, in 60 pots, which will be ready to plant out about the end of April, consisting of an immense number of the best Hybrid Perpetual, Bourbon, Tea, and Noisette Roses, Catalogues of which may be had free on application.

Early orders are most earnestly solicited, as the unsold portion of the stock will be planted out the first week in May. Extra plants presented with each order to compensate for distant carriage.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

THE BEST SEASON FOR BEDDING OUT ROSES.

WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

WM. WOOD AND SON respectfully submit that the months of April and May are the most eligible for planting out Roses from pots, for the purpose of forming groups in the Parterre and Rose Garden.

W. W. & Sons having on hand an immense Stock of many thousands, in pots, will be happy to supply them on the following reasonable terms.

Hybrid Perpetual Roses	9*s.* to 12*s.* per dozen.
Isle de Bourbon ditto	12*s.* to 18*s.* ,,
Tea-scented	12*s.* to 18*s.* ,,
China, Climbing and Noisette ditto ..	9*s.* to 12*s.* ,,

CATALOGUES sent post free on application.

Plants added to each order to compensate for distant carriage.

CHOICE ROSES IN POTS.

BIRCHAM AND WARD beg respectfully to inform the admirers of the Rose that they have a large stock of the following fine varieties, which enables them to offer as under (when a fair selection is made):—

15*s.* per dozen.

Alphonse Karr	La Belle Egarée
Belle Anglaise	Madame Damet
Baronne de Wassenaer (Moss)	Madame Charlet (B.)
Berceau Imperial	Madame Comtesse
Clemence Delarue	Madame Schmidt
Cardinal Patrizzi	Madame Vidot
Docteur Ruschpler	Miss Gray
Ernest Bergmann	Standard of Sebastopol
Gustave Coraux	Victor Trouillard
Lord Raglan	

20*s.* per dozen.

Abbé Feytel	Mademoiselle Claremont
Adelaide Pavie	Mademoiselle Nancy Dubor
Bernard Nantais	Mademoiselle Zoe Mayrel
Comte de Morny	Mademoiselle Alice Leroy
Candide	Mademoiselle Anais Lorette
Claudia Augustin	Monsieur Jard
Comtesse de Labarthe	Ma Ponctuée (Moss)
Duc de Malakoff	Philomène Crozy
Felix Peretti	Reine de Denmark
General Blanchard	Souvenir d'Elize
Lord Palmerston	Souvenir de Beranger
Madame Debesse	Triomphe de Rennes
Madame Vigneron	Thomas Rivers
Madame Heraud	Triomphe de Montrouge
Madame de St. Genet	Triomphe des Beaux Arts
Madame Elize de Chenier	Vallide (Moss)
Mademoiselle Josephine	

30*s.* per dozen.

Duke of Cambridge	Mousieur de Montigny
Evêque de Nimes	Madame Van Houtte
Gloire de Lyon	Marie Portemer
Louise d'Autriche	Mademoiselle Goddard
Lælia	Marie Thierry
Maximilian II.	Reine Blanche (Moss)

A Descriptive List of the above may be had on application. Carriage paid to London and Peterborough.

Hedenham Rosary, Bungay, Suffolk.—April 23.

FIVE FIRST-RATE BROCCOLIS FOR SUCCESSION.

	s.	*d.*
WALCHEREN, for Aug. to October produce ..	3	0 per oz.
HAMMOND'S WHITE CAPE, Sept. to Nov...	2	6 ,,
MITCHINSON'S PENZANCE, Feb. and March	5	0 ,,
DILCOCK'S BRIDE, for April	1	0 ,,
THE GIANT, late white, for May and June ..	2	0 ,,

A ¼ oz. packet of each free by post for 3*s.* 6*d.* in postage stamps.

BASS & BROWN, Seed Growers, Sudbury, Suffolk.

CHOICE STOVE AND GREENHOUSE PLANTS AT LOW PRICES.

—See names in the *Gardeners' Chronicle* of April 9, page 309, and April 16, page 330.

THIRTY CHOICE STOVE PLANTS, very strong and very fine, for 55*s.*; or, per dozen, 24*s.* to 35*s.*

FIFTY CHOICE GREENHOUSE PLANTS, very strong and fine, for 65*s.*; or 18*s.* to 25*s.* per dozen.

FIFTY FINE GREENHOUSE PLANTS, selection left to us from the Catalogue, 45*s.*

BRITTAIN'S GARDEN NETTING of 1½ yard, with 5*d.*, 6*d.*, and 8*d.* per yard.

SHAW'S TIFFANY of best quality, No. 1, 5*s.* per piece of 20 yards; also stouter qualities.

THE GISHURST COMPOUND.—Boxes 1*s.* 6*d.* each with instructions.

Goods 20*s.* and upwards free to all stations in London, or on the London and Norwich, (Colchester) line.

BASS AND BROWN,
Seed and Nursery Establishment, Sudbury, Suffolk.

NEW DOUBLE PETUNIAS.

C. W. HARGRAVE begs respectfully to announce that he will shortly be prepared with STOCK of the NEW DOUBLE PETUNIAS advertised by him in the *Gardeners' Chronicle* of September 25, 1858.

They constitute a unique collection in themselves, being of exquisite form, firm substance, rich and decided in colour, very fragrant, and of first-rate habit, having good guard petals, with the centres well filled, and in fact are superior to the Continental or other varieties hitherto sent out. Their nomenclature is as follows:—

ROSETTE.—Crimson, very double, dwarf habit.
ROSEA ALBA.—Rose clearly mottled with white.
PURPLE KING.—Large flower, well formed.
CRIMSON GEM.—Bright crimson, with white centre.
ALBA MAGNIFLORA.—Beautiful form, very fragrant.
KING OF CRIMSONS.—Bright crimson, brighter than its parent "Crimson King." The varieties previously introduced as crimson have all proved themselves to be only purple.

Plants of any of the above 5*s.* each, or the set of six 25*s.*

It is requested that the Trade forward their commands at their earliest convenience, as all orders will be executed in the rotation in which they are received.

C. W. HARGRAVE, THE NURSERY, WINCHMORE HILL, N.

H. WILLIAMS is now prepared to execute orders for Seedling PENTSTEMON GLOXINIFLORA. Received a Label of Commendation at the National Floricultural Society in August last. Large bold flower, of good form. 7*s.* 6*d.* each.

All orders from unknown correspondents must be accompanied by a remittance or reference. Orders to be made payable to HENRY WILLIAMS, on Finchley.

HENRY WILLIAMS, Nursery and Seedsman, Foster Green, Muswell Hill, Finchley.

NEW PHLOXES.

DODWELL AND BAYLEY have much pleasure in announcing to their Patrons and the Public that they are now prepared to supply the undernoted extra fine NEW PHLOXES, which they offer with confidence as indispensable additions to the most select collections.

COUNTESS OF DERBY.—Colour rosy purple with carmine eye; flowers large, flat, smooth, and of great substance, forming a compact spike; habit dwarf. An extra fine variety. 5*s.*

COUNTESS OF ELLESMERE.—White, with delicate lilac eye, strikingly chaste and beautiful; habit dwarf, truss compact and finely formed. Especially excellent for pot culture. An exquisite variety. 5*s.*

CLAYTONI.—White, with blush eye; in the height of summer pure white. A superb sort. Flowers large, of great substance, smooth and very circular; spike large, compact, and admirably shaped; habit dwarf. 5*s.*

HOLLANDI.—White, with rosy carmine centre; fine spike; flowers finely shaped, of great substance, and very smooth; habit in the style of, but more vigorous than Countess of Home. 5*s.*

The set of four, 15*s.* One over will be added for every three ordered. Terms to the Trade on application.

The best older varieties, 8*s.* and 12*s.* per dozen.

Bradshaw Gardens, Chadderton, Manchester.

NEW PLANTS.—1859.

HUGH LOW AND CO. respectfully invite attention to the annexed LIST of novelties, orders for which they will be very happy to receive:—

NEW GLOXINIAS.

HUGH LOW & Co. have selected the undernamed varieties from a large number of plants raised by themselves from seed carefully and judiciously hybridised, and having flowered them for two seasons, and compared them with the varieties previously in cultivation, H. L. & Co. can with confidence recommend the selection to the notice of their friends as comprising really distinct kinds, worthy of a place in the most select collection of this much admired and easily cultivated flower Plants in April. Price, 3*s.* 6*d.* each.

ERECT-FLOWERING VARIETIES.

Atroviolacea, very dark violet purple, base of the tube beautifully spotted on a pure white ground. [white

Bridesmaid, white tube, shaded rose border, lips spotted with

Lineata superba, rosy carmine tube, towards the lips alternate bands of white and rose. [purple.

Perfection, clear white throat, dark blue belt, lips deep violet

Princess Alice, clear white tube, bright rose belt, edges very pale rose.

Princess of Prussia Improved, throat and belt very much brighter crimson than in the old variety.

DROOPING-FLOWERED VARIETIES.

Attraction, base of tube white, finely spotted, lips rosy crimson, outer edge pure white.

Beauty, white tube, inside carmine lake, broad white belt, flowers very large

Meteor, bright crimson with violet throat, carmine blotch on the lip.

NEW ROSES OF 1859.

HYBRID PERPETUAL.	HYBRID PERPETUAL.
Altesse impériale	Virginale
Ardoisé de Lyon	Beauté de Rœyghem
Comte de Beaufort	BOURBON.
Bouquet de Marie	Docteur Berthet
Empereur de Maroc	Madame Marchal
Salomon	Octavie Fontaine
Oriflamme de St. Louis	
Reine de la Cité	TEA-SCENTED.
Ambroise Verschaffelt	Madame Damaizan
Orderic Vital	Madame Darru
Anna de Diesbach	Reine des Pays Bas

Plants 5*s.* each.

NEW VERBENAS.

The entire stock of these nine varieties is in the possession of H. L. & Co., and they can with the greatest confidence recommend them to their friends as distinct and first-class flowers.

Bellona, bright cerise, dark centre, good form, very distinct.

Flora, lilac, white eye, large truss, fine form.

Lady Cotton Sheppard, bright rosy purple, white eye, large truss, very distinct.

Mars, bright red, extra large truss, fine form and free flowerer.

Miss Emily Hanmer, ruby, white eye, immense truss, extra fine form, the best of its class.

Mrs. Fowke, rosy purple, fine white eye, extra large truss, fine form, very free.

Mrs. Leslie, bright rose, very large white eye, large truss, and splendid form.

Rubens, ruby red, white centre, good form, very distinct and free bloomer, from 2*s.* 6*d.* each.

VERBENA SNOWFLAKE.—The best white Verbena ever offered for bedding purposes. With a flower equal to Mrs. Holford, it produces a much larger number of trusses on the same space of ground. This variety has been grown in company with the other white kinds at present in cultivation, and has been found to be more effective than any of them. In order that it may be extensively planted the first season, H. L. & Co., have decided on offering it at a cheap rate.

Single plants, 2*s.* 6*d.*; per doz., 18*s.*; per 100, 100*s.* In April.

New Verbenas received from M. Boucharlat of Lyons:—

Abondance	Madame Denis Blain	Mons. Denis Blain
Bleu magnifique	Madame Hardy	Monsieur Hardy
Felix Roland	Madame Hoste	Reine Blanche
Gloire de Monplaisir	Madame Large	Souvenir de M.
Kossuth	Manteau d'Evêque	Seringe

Plants 1*s.* 6*d.* each, now ready.

New Verbenas received from M. Rougier-Chauvière, of Paris. These and the preceding collection include the finest varieties offered this season on the Continent.

Baccarat	Gitana	Marie Rougier
Cendrillon	Ivanhoe	Ne Plus Ultra
Cerise ¦ Clara	La Magicienne	Primulæflora
Fatima	Leandre	Rosalinda
Figaro	Lucrece	Rosamond

Plants now ready, 1*s.* 6*d.* each.

Verbena Madame Jourdin, the most distinct and beautiful of all the striped varieties, per dozen, 12*s.*

LOBELIA TRIGONICAULIS, a new species from Moreton Bay, figured and described by Sir Wm. J. Hooker. A beautiful dense growing variety, each plant covering a space of ground 12 to 18 inches in diameter, with its ample bright green foliage (in the way of Verbena Maonetti) and large light blue flowers with fine white eye. It will be much in demand for bedding purposes. For further description see "Cottage Gardener." Plants in April, price 2*s.* 6*d.* each, or 21*s.* per dozen.

Usual discount to the Trade on all the above-named plants.

Bedding Plants of older date in large quantities at low prices.

Clapton Nursery, London, N.E.—April 23.

RHODODENDRONS.

JOHN WATERER'S CATALOGUE OF UNRIVALLED HARDY SCARLET AND OTHER CHOICE RHODENDRONS, as Exhibited by him at the Royal Botanic Gardens, Regent's Park, London, is published, and will be forwarded on application.

☞ This List is recommended as a work of reference, as it contains accurate descriptions of all the esteemed varieties.

The American Nursery, Bagshot, Surrey, near the Sunningdale Station, South Western Railway.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Stove, Greenhouse, and Hardy Ferns, Miscellaneous Stove, Greenhouse, and Hardy Plants, Variegated and Ornamental foliaged Plants, Conifers, Roses, Rhododendrons, Indian Azaleas, Gloxinias, Fuchsias, Cactuses, &c., is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

GERMAN AND OTHER FLOWER SEEDS, VEGETABLE, AGRICULTURAL SEEDS, ETC.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their new PRICED and DESCRIPTIVE CATALOGUE in which is enumerated every novelty of proved merit, also all the best of the older kinds, is now published, and will be forwarded post free on application. Their whole stock has been selected from the best English and Foreign sources, and every kind is warranted true to name, and of the finest possible quality.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

WILD'S UNRIVALLED PRIMULAS.—

NOTICES TO CORRESPONDENTS.

Edinburgh post mark, stamps enclosed, but no letter.
B. Smith, W. Hooper, and many others, 3d Edition of Treatise, Testimonials, &c., will be published and sent to all subscribers.
Will your Primula seed hold out this season? Doubtful; order immediately.
W. C. James. Separate colours sold out; mixed, 2s. 6d. p. pkt.
No more blooms can be sent out this season.
Two fancy varieties will be introduced next season if possible

THOMAS WILD, The Primulary, Ipswich.

NEW PETUNIAS.

JOHN SEALEY can now supply the Seven Beautiful New Striped PETUNIAS, to which was awarded the first prize at the Bristol and Clifton Horticultural Society. J. S. has no hesitation in saying that they are the finest varieties in cultivation. The seven for 1l.

SPRING CATALOGUE OF DAHLIAS, HOLLYHOCKS, ROSES, &c., and of GARDEN AND AGRICULTURAL SEEDS may be had on application —St. George's, near Bristol.

NEW VARIEGATED GERANIUMS.

JANE (LENNOX).—This has an equal and fine variegation, with a profusion of fine deep scarlet flowers; the truss is large, and the flower of good shape and substance; a free growing variety. It has been exhibited this spring at the first meeting of the Royal Botanic Society, and received a Certificate of Merit. The plants are now full of bloom. 7s. 6d.

PICTURATA (CONSTANTINE).—Foliage novel and remarkable. It has white edges with a broad ring or zone of shaded crimson and pink, the centre of each leaf being green, with small scarlet trusses of bloom. 7s. 6d.

CHARLES TURNER, Royal Nursery, Slough.

CHEAP BEDDING PLANTS, 2s. 6d. per dozen.—Apply for Catalogues, enclosing two stamps, to J. SCOTT, Merriott Nurseries, Crewkerne, Somerset.

The Catalogue comprises everything suitable for Flower Garden decoration, and full descriptions of J. S.'s unrivalled collection of new DOUBLE PETUNIAS, now ready for delivery, at 6s., 9s., and 12s. per dozen. Fine new single sorts, 2s. 6d. to 3s. 6d. per dozen; Magna coccinea, the most splendid of all Bedding Petunias, 5 inches across, beautiful light crimson, 3s. 6d. per dozen.

LEPTODACTYLON CALIFORNICUM, in quantity; also PHLOX CRITERION, two lovely Bedding Plants.

PLANTS FOR THE FLOWER GARDEN.—The following may be had at the prices attached, and the plants are all fine and thoroughly established in single pots:—

	Per dozen.—s.	d.
Scarlet Geraniums, Tom Thumb, Frogmore and others, cut down plants, that were struck last spring	3	0
Ditto, struck last autumn	2	6
Verbenas, all the best varieties	2	6
Antirrhinums	3	0
Ageratums	2	6
Calceolarias, shrubby	2s. 6d. to 3	0
Cuphea platycentra, extra large	3	0
Dahlias, best sorts	4s. to 9	0
Carnations and Piccotees ditto	per pair 1s. to 1	6
Pinks, ditto	,, 6d. to 1	0
Fuchsias, best sorts	3s. to 4	0
Gaillardia picta	2	6
Heliotropes	2	6
Lobelia speciosa and ramosoides	2	6
Alyssum variegatum	2	6
Hollyhocks, fine named flowers	9	0
Lantanas	2	6
Nierembergia gracilis	2	6
Petunias, fine sorts	2	6
Senecio (double dark Groundsel)	2	6
Salvia fulgens	2	6
Variegated Geraniums, Flower of the Day, fine cut down plants	4	0
Osborne's Brilliant	3	6

WOOD & INGRAM, Huntingdon.

NEW CHRYSANTHEMUMS.

JOHN SALTER begs to announce that his SPRING CATALOGUE is now published, in which his splendid SEEDLINGS and other new CHRYSANTHEMUMS of 1859 are fully described, as well as the unrivalled general collection, which is the largest in Europe.—Strong plants of "Golden Queen of England," "Prince Albert," and every other variety, will be ready in the course of the month.—Versailles Nursery, William Street, near Hammersmith Turnpike, W.

CHRYSANTHEMUMS—CHRYSANTHEMUMS.

J. H. BIRD, F.H.S., NURSERYMAN, Stoke Newington, the largest grower and most successful exhibitor of the Chrysanthemum in the British Empire, begs to call the attention of the lovers of the above beautiful autumn flower to his matchless collection, the stock of which amounts to upwards of 50,000 plants.

J. H. B. can supply strong plants, one dozen for 6s.; or five dozen in 30 varieties, containing two of each variety, for 1l.; or he can supply 100 plants in 50 varieties, two of each variety, for 1l. 10s. Also POMPONES in great variety: 50 Pompones in 25 varieties, two of each variety, for 1l.; or 100 in 50 varieties, two of each variety for 2l. Strong plants of the beautiful new Pompone the Golden Cedo Nulli, 5s. each, are now ready, with the usual allowance to the Trade. Every order will be accompanied by a popular work on the Chrysanthemum.

Post-office Orders payable to J. H. BIRD, Stoke Newington, will be immediately attended to. Catalogues on application.

NEW PLANTS FOR 1859.

MESSRS. E. G. HENDERSON & SON

WILL OFFER FOR SALE THE FOLLOWING NEW PLANTS IN MAY, BY WHICH TIME THEIR

NEW GENERAL CATALOGUE and SPRING LIST of ORNAMENTAL BEDDING and SUMMER FLOWERING PLANTS

Will be ready for distribution, wherein will be found full descriptions of all the following and other New Plants worthy of general cultivation in private collections, and for public competition:—

ALLAMANDA VIOLACEA.

THE VIOLET-BLUE FLOWERED ALLAMANDA.

The plants now offered constitute the whole of those originally in the possession of Mr. Low, who received them from a tropical collector, and are now our sole property.

The late Mr. Gardner, Director of the Royal Botanic Gardens, Ceylon, in his papers on the Vegetation of Brazil, contributed to the Quarterly Journal of the London Horticultural Society (vol. ii.), thus alludes to it:—"On my return to Crato, I again made a few excursions in that neighbourhood, and added considerably to my herbarium. One of the finest plants met with at this time was a beautiful new species of Allamanda (A. violacea, Gardn.), a shrub from 4 to 6 feet high, bearing numerous large flowers not unlike in colour those of Gloxinia speciosa. This is by far the most beautiful species belonging to the genus, all of which, with this exception, bear yellow flowers."

As a competition plant in collections, A. violacea, in its violet-blue tint, offers a new and essential feature in colour, there being none other to associate with the golden-yellow of A. Schotti, and the delicate rosy-blush of Echites and Dipladenia. 63s. each.

AGAPETES BUXIFOLIA (NUTT.).

Sir William Hooker thus alludes to it in connection with the figure given of it:—"This very beautiful plant was imported by Mr. Nuttall from the Dupla Hills on the eastern frontier of Bhotan, bordering upon Assam, where it forms an evergreen-leaved bush, from 4 to 5 feet high, with cylindric, smooth bright red corollas," or flower-tubes. As a plant of free healthy growth and evergreen aspect, it will be found a desirable acquisition for Greenhouse culture, accommodating itself by a compact habit to all limited collections, and only requiring the general treatment of similar growing plants.

PETROPHILA PULCHELLA.

An ornamental-leaved Greenhouse Shrub, of neat and compact growth, with elegantly pectinated or winged foliage. Remarkably distinct in habit.

*NEW INDIAN AZALEAS.

ETOILE DE GAND (M. SPAE)	LEOPOLD I. (C. VAN LOO)
DUC DE BRABANT (C. VAN LOO)	REINE DES PANACHEES (DE WITTE)

The above are figured in Plate XXIII. "Illustrated Bouquet."

NEW ACHIMENES.

GIGANTEA IGNEA—LONGIFLORA FLORE PLENO
LADY DIGBY (TYDÆA)
LADY CAROLINE KERRISON (TYDÆA)
The above are seedlings raised by Mr. Breeze and Mr. Elliot.

NEW HYBRID BEGONIAS.

Seedlings raised by Mr. Strange, gardener to Herrn Consul Schiller, of Hamburg:—

PICTURATA.	SPLENDIDA BULLATA.
VITTATA.	ARGENTEA.
SPLENDIDA SANGUINEA ATROPURPUREA.	PUNCTATA.
	SPLENDIDA IMPERIALIS.

PHLOX

EVENING STAR—(LIERVAL).	VICTORIA—(BURRIDGE).
DRUMMONDI.	ALBERT—(BURRIDGE).

CALCEOLARIA

AMPLEXICAULE ALBA.

For June.] NEW BOUVARDIA.

DELICATA. | BRILLIANT.

BEDDING DAHLIAS.

GLOIRE DE FRANCE (ANCEAU)
WHITE UNIQUE (GRANT)

New Bedding Shrubby CALCEOLARIAS.

COCCINEA FLORIBUNDA (GRANT)	RED PRINCE OF ORANGE (GRANT)
GOLDEN PRINCE (GRANT)	YELLOW GEM (GRANT)

The above possess the habit and continued blooming properties as C. aurantia multiflora, and C. Yellow Prince of Orange, with improved colours and truss.

NEW FUCHSIAS.

(Seedling productions of Edward Banks, Esq.

CROWN JEWEL	MAGIC FLUTE
ISA CRAIG	LEOLINE
LA CRINOLINE	LE PROPHETE
FLOWER OF FRANCE	LITTLE DORRIT
STRADELLA	

NEW CHRYSANTHEMUM.

(Seedling productions of M. Pelé, of Paris.)

MASANIELLO	MISS TOWERS
SATANELLA	MAGIC FLUTE
SUNSET	KENILWORTH
QUEEN OF BEAUTIES	ST. JUSTIA

NEW VERBENAS.

(Seedling productions of Messrs. Breeze & Banks.)

This collection possess the greatest advance in colours, form, and size of truss, with fine habits, that we ever had the opportunity of introducing.

NEW GLOXINIAS.

SEBASTIANO.	MADONNA.
SPAGNOLETTI.	HERCYI.
SCHOLASTICE.	

VARIEGATED-LEAVED GERANIUMS.

MISS EMMA DOMVILE.	SILVER CHAIN.
GOLDEN TOM THUMB.	RAINBOW.
GOLDEN CERISE UNIQUE.	ST. CLOUD.

ZONALE, OR HORSE-SHOE GERANIUMS.

AMY ROBSART.	LADY EMMA STANLEY.
LADY CHARLES COOTE.	WHITE NOSEGAY.

NEW BEDDING GERANIUMS.

THE NOSEGAY SECTION.

The two following hybrid Geraniums (allied to the Nosegay Section) have been raised by Mr. D. Beaton of Kingston, the indefatigable horticulturist, after some years of practical experiment and cross hybridisation, with a view to obtain a neat, dwarf, and compact growth upon the otherwise thinly branched and lanky style of the old "Nosegay." These endeavours have resulted in the production of those now offered, which are, with respect to habit of growth, all that need be desired, and strikingly adapted for all the objects of decorative gardening, in beds, groups, vases, and boxes, combining in a very high degree every essential feature of growth for varied effect, with the distinctively picturesque and beautiful shades of light crimson and lake so long desired as medium tints between the inordinate profusion of scarlets, and the opposites of rosy-pink and salmon, thus presenting to the eye a charming relief from the dense scarlet trusses of the scarlet Zonale tribe, to the open and gracefully curved flower lobes of softer carmine and lake crimsons peculiar to the Imperial crimson and Model Nosegay. Having no rivals in habit and colour combined, they may be regarded as new features in decorative gardening, and from their long-continued and long-enduring bloom are worthy of a place in every flower garden where a classical arrangement in colours is united with a brilliant and prolonged effect or display. A progressive knowledge of the true theory and harmony of colours in the grouping of plants and flowers will eventually lead to a practical recognition of the relative influence of light and shade, as certainly as that a correct knowledge in the sister arts of painting and music implies a just recognition of all those minute and relative harmonies in colour and sound, which constitute beauty to the eye, or music to the ear.

IMPERIAL CRIMSON (BEATON.)—In habit this variety is neat, dwarf, close and compact, with a short-jointed style of growth; and in these features it differs from the generality of the Zonale or scarlet section, by its constitutional tendency to retain these features through the whole season. Its foliage is also readily distinguished from the well known bedding varieties by its comparatively smaller and remarkably neat well expanded leaves, of a healthy rich green thin texture, showing a faint darker zone in the centre, and in the mass forming a fine sheet-like leaf surface, above which the profusion of ample, yet compactly open and well arranged conspicuous trusses of brilliant light carmine-crimson flowers are effective and distinct from all others, in their rich yet graceful combination of flower heads, with narrower petals (thus presenting a very desirable and distinct feature from the close, heavy clusters of the Zonale scarlet section), which are produced in long continued succession throughout the whole season, without any premature dropping of their flower-lobes, as in some varieties. This very ornamental kind is admirably adapted for villa gardens of medium or larger size, but especially for beds and groups in extensive flower gardens, where it offers a beautiful relief in colour to the too prevalent uniform and monotonous dazzle of scarlet—the whole outline of the growth and bloom in this variety being less heavy, yet equally conspicuous above the leaf-surface, and apart from the absence of all stiffness in feature, and heaviness in effect, which is too much characteristic of the scarlet section, the present variety is one of the first and finest productions of an intermediate character in growth and colour, whose aggregate excellencies of habit, leaf, and flower, have resulted in producing a most valuable and decorative plant, without a single detractive feature from its merit. For the avenue or ribbon style of decoration in parallel lines it will be found uniquely-valuable as a third row plant in back contrast to the Golden Chain, or in front contrast to any other suitable scarlet at the back. For vases and terrace pedestals it will add a beautiful variety for alternate effect with the violet crimson and scarlets, its chastened brilliancy relieving the higher tints. To sum up the unique and useful qualities of this variety it may be affirmed that ere long it will, in its class and colour, be regarded as indispensable for the correct harmony or disposition of colours in the grouping of plants for the flower garden as the well-known Tom Thumb and Golden Chain have been, and are at present. 3s. 6d. each; four plants for three; ten plants for six; 20 plants for 12.

THE MODEL NOSEGAY (BEATON).—This is also a fine habited variety of the Nosegay section, of which it is the first true and thoroughly adapted bedder, and in all respects an invaluable object for the flower-garden arrangement, wherever the true theory or harmony of colours is consulted, in the grouping of ornamental flowering plants in masses. It is a free, yet neat and vigorous growing plant, somewhat taller than the Imperial crimson, of a slender, branching, and compact style of growth, with comparatively medium-sized, thin, well expanded, dark green leaves, showing a zone of subdued darker tint. Its bloom is displayed in a profusion of compact, yet elegantly arranged, open trusses of spreading-petaled flowers, narrower-lobed than the Zonale scarlet section, of a richly blended pink and lake colour, presenting a chastened contrast to any higher or lower colours, and finely adapted for a middle avenue-row between lower and higher lines of the same colour—in other words, between two scarlets of higher and lower growth; it is less brilliant than the highest tint, but extremely elegant in its adaptation for contrast with darker and lighter shades. In its own softened brilliancy, it forms a beautiful medium bed or group, satisfying the eye without tiring it, and adding a charming relief to the higher-coloured masses around it. Its compact growth fits it for alternate effect with scarlets in classic vases, or detached smaller groups on terrace borders, where appropriately subordinate in colour, it is beautiful in effect, and above its many other essential features for decoration, may be named its long continued succession of bloom and endurance upon the plant. 2s. 6d. each. Four plants for three.

SPERGULA PILIFERA

AN ADMIRABLE SUBSTITUTE FOR GRASS LAWNS WITHOUT MOWING.

(See E. G. Henderson & Son's Seed Catalogue.)

Wellington Nursery, St. John's Wood, London.

NEW FUCHSIAS (English and Continental).—Strong established Plants, fit to grow as Specimens of the best and leading kinds:—Princess of Prussia, Prima Donna, Governor-General, cheiranthiflora, tricolor, Agnes Sorel, Prince Frederick, Wonderful, Guiding Star, &c., 9s., 12s., and 18s. per dozen.

NEW FRENCH SPOTTED GERANIUMS.—Fine plants set with flower buds and coming into flower, 12s., 18s., & 21s. p. doz.

SEEDLING SPOTTED AND STRIPED CALCEOLARIAS, in 6-inch pots, 12s. and 18s. per dozen.

NEW VERBENAS.—Nearly all those sent out last year and the best of the previously established plants, 4s., 6s., and 9s. per dozen.—EPPS's Nurseries, Maidstone and Ashford.

PLOCOSTEMMA LASIANTHUM (BLUME). — Amidst the prevalent scarcity of novelties of sterling merit, it is with pleasure the Subscribers invite attention to the above-named plant. It belongs to a new genus closely allied to Hoya; and the present species was received in 1857 from Mr. HUGH LOW, Jun., by whom it was discovered on the north-western side of the Island of Borneo. The plant, which is not a climber, presents a noble appearance, having exceedingly handsome foliage; and it possesses a very great recommendation in being a most profuse bloomer, the clusters of flowers being produced in great numbers. The flowers are of waxy consistence, like Hoya—colour, orange; the petals reflex until they become quite perpendicular, and rest on the flower-stalk; the lower part of the petals is entirely covered with a snow-white velvety pubescence, giving them an unusually beautiful appearance. The flowers are fragrant, and 14 have expanded in one cluster on a newly imported plant, which was submitted to the inspection of Sir W. J. Hooker, of Kew, by whom it is figured and described in the November number of the "Botanical Magazine." It is also figured in the "Florist." Plants in May, price 63s. each. Usual discount to the Trade.

HUGH LOW & Co., Clapton Nursery, London, N.E.

GOLD AND SILVER FISH.—Upwards of 100,000 on hand, from 4s. to 9s. per doz., 2l. per 100, or 18l. per 1000.

ORANGE TREES.—Otaheite, Myrtle-leaved, St. Michael's, with fruit and bloom, 2s. 6d., 3s. 6d., 6s., and 10s. 6d. each; Azaleas and Camellias, 18s., 21s., and 24s. per doz.; a large collection of Foreign and British Ferns, and every other kind of Greenhouse and Stove Plants; Dwarf Kidney Beans and Scarlet Runners, 1s. per quart; Virginian Stock, Candytuft, Mignonette, 3s. per lb., or 4d. per oz.; Nemophila, 3s. 6d. per lb. or 4d. per oz., and every other sort.

Illustrated Catalogues for 7 postage stamps. The 6d. will be returned to purchasers of not less than 5s. worth.

ROBT. GREEN, 154, Kingsland Road, 55 doors from Shoreditch Church.

REIGATE SILVER SAND, best quality for Florists, 16s. per ton; less quantities, 1s. 6d. per bushel; delivered to any London Wharf or Railway. Peat, Loam, and Leaf-Mould in large or small quantities. Sacks for Sand, 1s. 9d. each; or on hire, 6d. each; five hold a ton.—JOHN KENNARD, Purveyor to her Majesty, Swan Place, Old Kent Road, London, S.E.

HORTICULTURAL VALUATIONS.

MR. ALFRED CHANDLER (of the late firm of Chandler & Sons, Vauxhall), begs to inform his friends that he is at liberty to undertake the valuation of Collections of Plants, Nursery Stock, Horticultural Buildings, &c.

Mr. A. C. is also open to engagements as Censor at Horticultural Exhibitions, in which capacity he has had long and extensive experience.—28, Priory Road, Wandsworth Road, S.

TO PIG AND POULTRY FEEDERS AND MILLERS.

CHICKEN RICE, 7s. 9d. per cwt., in bags 1¾ cwt. each. SCREENED RICE, 10s. per cwt., in bags 1¾ cwt. each. RICE MEAL, 6s. 6d. to 8s. 6d. per cwt. RICE for grinding. An allowance per Ton. American Oilcake, in barrels and bags, per ton only. Locust Beans, per ton.—Sold for Cash only by W. & R. JUPP, 6, Cross Lane, St. Mary-at-Hill, Eastcheap.

THORLEY'S FOOD FOR CATTLE.—Every person having an interest in domestic or farm animals should obtain a supply of this celebrated and economical food which will prove invaluable during the approaching season. For keeping horses in good condition, it is unequalled. Pigs fatten with surprising rapidity upon it, and their flesh increases in flavour and value, Cowkeepers will find great advantage in the increased quantity and improved quality of the milk during its use. All animals are benefited by it. A pamphlet on this interesting subject, accompanied by Testimonials from the principal Nobility, Gentry and Agriculturists forwarded on application. In casks containing 448 feeds (measures inclosed), price 50s., carriage paid to any Railway Station in the United Kingdom. Post-office Orders payable to JOSEPH THORLEY, 77, Newgate Street, London.—N.B. The public are cautioned against being imposed upon by worthless imitations.

"FRIGI DOMO." —Patronised by her Majesty, the Queen, the Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, and — Collier, Esq., of Dartford.

PROTECTION FROM COLD WINDS AND MORNING FROSTS.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths. Two yards wide, 1s. 6d. per yard run; four, 3s. per yard. Also, an improved make for Shading Purposes. Three yards wide, 2s. 6d. per yard run.

ELISHA THOMAS ARCHER, whole and sole manufacturer, 7, Trinity Lane, Cannon Street, City, and of all Nurserymen and Seedsmen throughout the kingdom. "It is much cheaper than mats as a covering."

PATENT GUTTA PERCHA SOLES.—IMPORTANT TO GARDENERS. —The Gutta Percha Company have the pleasure to acknowledge the receipt of the following letter from G. GLENNY, Esq., the celebrated Florist:—

"420, Strand, London

"Gentlemen,—I have worn Gutta Percha Soles and Heels these two years, and being so much in a garden as I necessarily am in all weathers, and with the ground in all states, I would on no account be without them. As a matter of economy I would recommend Gardeners to use them, for they may repair the worn part at all times by warming the material at the fire, and pressing it from the thick parts to the worn parts as easily as if it were so much dough. I think it the duty of all persons who must occasionally wet their feet to adopt a material that completely defies damp. Many a gardener would escape colds and rheumatism by the use of Gutta Percha Soles.

"Your obedient servant, G. GLENNY."

Every variety of Gutta Percha articles, such as Mill Bands, Tubing, Soles, Goloshes, Sheet, Pump Buckets, Fire Buckets, Bosses, Union Joints, Flasks, Bottles, Bowls, Chamber Vessels, Toilet Trays, Sponge Bags, Curtain Rings, Galvanic Batteries, Talbotype Trays, &c., manufactured by the Gutta Percha Company, and sold by their wholesale dealers in town or country.—The Gutta Percha Company, Patentees, 18, Wharf Road, City Road, London.

ARTIFICIAL MANURES, &c. — Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

LONDON MANURE COMPANY, removed to 116, Fenchurch Street, E. C. (Established 1840), have the following MANURES ready for delivery:—

CORN MANURE for SPRINGTOP DRESSING
URATE
MANGEL MANURE
SUPERPHOSPHATE OF LIME
BLOOD MANURE
} all of guaranteed quality.

In consequence of the reduction in the price of raw material the London Manure Co. are enabled to lower the price of their Superphosphate of Lime, and to materially improve the Corn Manure and Urate.

The London Manure Co. also supply PERUVIAN GUANO (direct from Messrs. A. Gibbs and Sons), SULPHATE of AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of value. Wholesale dealers supplied.

116, Fenchurch Street E.C. EDWARD PURSER, Secretary.

REDUCTION IN PRICE OF LAWES'S MANURES.

MR. LAWES begs to announce that he has this season reduced the price of the Manures manufactured by him, viz.:—

TURNIP MANURE	from £7 to	£6	6
SUPERPHOSPHATE OF LIME ..	,, 7 to	6	6
MINERAL do. ..	,, 6 to	5	5
BARLEY MANURE..	.. 8	0	

Prof. Way and Dr. Voelcker have sampled from a bulk of 5000 to 6000 tons at his factories, and their report and analyses are given in full in Circular to be obtained on application at his office, 1, Adelaide Place, London Bridge, E.C., or of his local Agents.

N.B. Genuine Peruvian Guano direct from Messrs. GIBBS, Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures. American Cotton-seed Cake supplied.

ESTABLISHED 1812.

H. AND T. PROCTOR'S TURNIP MANURE.—Messrs. H. & T. P. draw particular attention to this valuable Manure, which contains all the elements necessary for the full development of the Turnip Crop, so combined, that, from their chemical knowledge and long experience, they feel satisfied is most advantageous to the consumer. It has been very extensively used by most of the eminent Agriculturists of the day, and has attained a high reputation throughout England, Scotland, and Wales, and, they venture to say, is unrivalled for the weight and quality of the Bulbs which it produces. The application of this Manure to the Turnips will be found to benefit considerably the after crops of Barley, Clover, and Wheat.

POTATO, GRASS, BARLEY, CLOVER, AND WHEAT MANURES; also BONE DUST, PERUVIAN GUANO, and SUPERPHOSPHATE of LIME, warranted of the best quality.

Apply to H. & T. PROCTOR, West of England Depôt for Artificial Manures, Cathay, Bristol; or PROCTOR & RYLAND, Birmingham, and Saltney, near Chester.

BURNARD, LACK, AND CO.'S CONCENTRATED SUPERPHOSPHATE OF LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.

CONCENTRATED TURNIP MANURE, equal in value to the preceding.

Of these Manures Dr. Voelcker says:—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."

Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to BURNARD, LACK, & Co., Sutton Road, Plymouth.

PERUVIAN GUANO.

The present price of this valuable Manure is—

12l. per Ton for 30 Tons and upwards,
13l. 5s. per Ton for 1 Ton up to 30 Tons.

And, to guard against the purchase of adulterated mixtures and of inferior Guanos purporting to produce results equal to Peruvian, consumers are recommended to apply either to ourselves, to our agents, Messrs. Gibbs, Bright, & Co., of Liverpool and Bristol, or to dealers of established character, in whose honesty and fair dealing they may place implicit confidence.

ANTONY GIBBS & SONS.

SUCCESS OF THE NEW GUANO; IMPORTED UNDER LEASE FROM THE CROWN.—Though the experiments with KOORIA MOORIA GUANO were made late in the season, and under adverse circumstances, the successful results obtained confirm beyond doubt Professor Voelcker's report—(in No. 41, Part I., vol. xix., Royal Agricultural Society's Journal)—that Ammoniacal manures, applied to Turnips in the experimental field, kept back at first the crop, and had no beneficial effect either alone or in conjunction with phosphates.

The KOORIA MOORIA GUANO is essentially a phosphatic manure, containing sufficient ammonia for roots, and, with a mixture of one-fourth of ammoniacal guano, cannot be excelled for either top-dressing or grain crops. It is a natural deposit, and will be delivered as imported, free from risk of adulteration. Deeply impressed with the necessity of encouraging the import of this valuable manure, her Majesty's Government has given such increased facilities for shipment, that arrangements have been made for a considerable supply. Purchasers can be supplied with suitable quantities from cargoes now on sale, containing from 45 to 66 per cent. phosphates. Present prices, 4l. 10s. to 6l. 10s. per ton, on applying to JOSEPH HINDSON, Broker (one of the Lessees under the Crown), 20, North John St., Liverpool. Government Lessees: ORD, HINDSON, & HAYES.

"Greystoke, Cumberland, Dec. 16, 1858.

"Dear Sirs,—I beg to inform you that I applied the Kooria Mooria Guano I had from you for Turnips, on land of a loamy character, incumbent on a stiff clay subsoil, and recently drained. On each side of the plot sown with Kooria Mooria Guano were Turnips manured with best Peruvian Guano. The quantities applied of each sort were of equal weight for weight per acre. The crop—a very good one throughout—is now being eaten off with sheep. Very little perceptible difference can be discovered, but if anything that difference is in favour of the Turnips sown with Kooria Mooria Guano.

(Signed) "JOHN BARKER."

"Messrs. J. & J. Graham, Guano Merchants, Penrith."

A Pamphlet, "Hints on Guano," containing a large number of reports from well-known agriculturists, and analysis of the cargoes here, may be had of the Broker, at the above address.

IMPORTANT TO FLORISTS AND GARDENERS.

DEALEY AND DAWES'S highly CONCENTRATED FERTILISING MANURE, manufactured expressly for Stove and Greenhouse Plants, Vegetables, Trees, &c.

Messrs. DEALEY & DAWES draw particular attention to this valuable Manure, which they guarantee contains all the elements necessary for the development of Soft and Hard-wooded Plants, Vegetables, &c.

Retailed by most respectable Seedsmen, in 1lb. packets, with full directions for use; and sold Wholesale at the Manufactory, in boxes containing 112 packets, also loose in boxes of 28 lbs. each. Samples and testimonials free by post on application.—Oldbury, near Birmingnam.

GENUINE ROLL TOBACCO CLOTH.

WARRANTED EQUAL IN STRENGTH TO TOBACCO.

JOSEPH BAKER, 10, Gough Square, Fleet St., E.C., having dealt upwards of 20 years in the above, can recommend it as the best article for destroying the Fly. 1s. 4d. per lb.; over 10 lbs., 1s. Post-office Orders payable Strand Office.

GENUINE TOBACCO PAPER.—Parties fumigating can be supplied with the best Genuine Tobacco Paper at 4d. per cwt.; any less than 56 lbs., 10d. per lb.—BEN BAXTER, Messrs. Jackson & Sons, Lady Lane, Leeds.

GENUINE TOBACCO PAPER FOR FUMIGATING.

H. APPLEBY (Foreman to Messrs. Ivery & Son, Surrey), takes this opportunity of informing his patrons and the public that he is now offering the above at a very considerably reduced price. It is now sold in packets of 4 lbs. each, at 1s. 3d. per lb. A liberal discount allowed to the Trade. For testimonials that will guarantee its quality, see *Gardeners' Chronicle*, April 16, p. 333.

Sheet Iron Pots for fumigating, 3s. 6d. each.

N.B. All orders to be accompanied with a Post-office Order, payable to HENRY APPLEBY, Dorking, Surrey.

RATS.—RATS TAKEN WITHOUT POISON OR TRAPS BY WHOLESALE.—Ships, Barns, Stables, Granaries, Mills, Warehouses, Farmsteads, Houses, &c., cleared at one sweep. ANY PERSON can by this method clear the entire premises of every RAT, however numerous they may be, in one single night. Printed directions how to entice and secure the whole lot alive sent free by return of post for Two Shillings by WILLIAM GOODWIN, High Halstow, near Rochester.

GISHURST COMPOUND, PATENTED.—



GREEN FLY on Roses and Greenhouse Plants safely got rid of by syringing with PATENT GISHURST COMPOUND, 2 oz. to the gallon of water.

Extract from leading article in *Gardeners' Chronicle*, April 9, '59.

"That it really kills red spider, aphides, mealy bug, thrips, and scale, it is impossible to doubt in the face of reports of practical men, among whom we may mention Mr. D. Judd, of Althorp Gardens"—then follows a caution against the use of a too strong solution.

The Gishurst Compound is sold in boxes at 1s. 6d. and 6s. each, with directions for use, and printed opinions of Mr. Rucker's gardener, Lady Dorothy Nevill's gardener, Sir William Hooker, Mr. Rivers, and other eminent authorities. For Nurserymen the large size is recommended, but where the consumption is not large the compound keeps its strength best in the small. The undermentioned Seed Merchants, Nurserymen, &c., having taken in supplies are prepared to sell single boxes:

Barratt, Bury St. Edmunds
Bass & Brown, Sudbury
Bell & Co., Newcastle-on-Tyne
Brown, D., Norwich
Cattell, J., Westerham
Cripps, T., Tunbridge Wells
Deane & Co., London Bridge
Dickson, Francis & Arthur and Sons, Chester
Dickson & Brown, Manchester
Dickson, Hogg, & Robertson, Dublin
Dickson & Sons, Edinburgh
Epps, F., Ashford, Kent
Epps, Maidstone
Hawkins, R. T., Weymouth
Henderson, E. G. & Son, St. John's Wood, London
Henderson, A. & Co., Pine-apple Place, Edgeware Rd.
Hooper & Co., Covent Garden
Jefferies, W. B., Ipswich
Kennedy & Co., Dumfries
Mackie & Stuart, Norwich
Mann, J., Brentwood
Matheson, R. C., Gloucester
May, J. & Co., 1, Wellington St.
Pattinson & Son, Hexham
Perkins, J., Northampton

Nurserymen and Seedsmen supplied by PRICE'S PATENT CANDLE COMPANY (Limited), Belmont, Vauxhall, London, S.

ANTISEPTIC PAINT.

THE best and cheapest PAINT for PARK FENCING, all outside Wood and Iron Work, is MITCHELL'S ANTISEPTIC MINERAL BLACK PAINT. Sold ready for use, 17s. 6d. per cwt. Used largely now and for many years past by the West India Dock Company, for Fencing, Barges, &c. Recommended to the nobility and gentry, stewards, land agents, &c. A liberal allowance to the Trade, &c.

Manufactory, Kennington Lane, Lambeth.

WHY NOT PRESERVE YOUR HAY?

RICK CLOTHS, New and Second-hand,
At BENJAMIN EDGINGTON'S,
2, Duke Street, London Bridge, S.E., and West End,
32, Charing Cross, S.W.
MARQUEES, TENTS, &c.
Illustrated Catalogues free.

BENJAMIN EDGINGTON, 2, Duke Street, London Bridge, S.E.

MONSTER TENTS for large parties.
PRETTY TENTS for Lawns.
RICK CLOTHS, Second-hand, very cheap.
NETTING for Fruit Trees, &c.
West End Establishment, 32, Charing Cross, S.W.

SPEED AND ECONOMY for Farmers, Gentlemen, and Market Gardeners, in the use of HOARE'S REGISTERED HAND SEED PLANTING MACHINE, which from its capabilities, combined with strength, lightness, and simplicity, places it beyond a parallel. Its operative powers in planting the seeds of Mangel, Carrot, Turnip, Parsnip, and all small seeds in patches of equal depth and different distances, from 6, 7, 12, 14, 18, 21, 24, to 28 inches apart, raking in and rolling complete, render it an invaluable invention. It will act as a drill when required. Price 5l. 15s.

London Agent, Mr. B. SAMUELSON, 76, Cannon Street, West. Sold also by the inventor, J. HOARE, Old Fishbourne, Chichester, Sussex.

SHEET GLASS FOR GREENHOUSES, ORCHARD HOUSES,

&c. &c.

PACKED IN BOXES, CONTAINING 100 FEET EACH, AT THE FOLLOWING PRICES:—

		3rds.	4ths.
11 by 9, 12 by 9, 13 by 9, 14 by 9 ..		14s. 6d.	12s. 6d.
12 ,, 10, 13 ,, 10, 14 ,, 10, 15 ,, 10 ..			
13 ,, 11, 14 ,, 11, 15 ,, 11, 16 ,, 11 ..			
14 ,, 12, 15 ,, 12, 16 ,, 12, 17 ,, 12 ..		16s. 6d.	14s.
18 ,, 12, 19 ,, 12			
16 ,, 13, 17 ,, 13, 18 ,, 13			
19 ,, 13, 20 ,, 13, 21 ,, 13			
16 ,, 14, 17 ,, 14, 18 ,, 14			

SMALL SQUARES.—Per 100 feet.

			s. d.
6 by 4	6½ by 4½	7 by 5	7½ by 5½ } 11 6
8 ,, 6	8½ ,, 6½	9 ,, 7	9½ ,, 7½ }
10 ,, 8	10½ ,, 8½ ..	.. .. ..	.. 12 6

ORCHARD HOUSE sizes, as supplied by us to Mr. Rivers.

20 in. by 12 in.		16 oz.	21 oz.
20 in. by 13 in.	Common	14s. 0d. ..	£1 1s.
20 in. by 14 in.	Superior do. ..	.. 16 6 ..	1 5
20 in. by 15 in.	English Glass ..	.. 18 0 ..	1 9

Foreign Sheet, packed in 200 feet cases, 26*s.* 6*d.* and 30*s.* Superior Quality, 34*s.* 6*d.* and 40*s.*

English Sheet of very superior quality, in Cases of 300 feet, £3 3s. per case.

HARTLEY'S IMPROVED ROUGH PLATE GLASS, as per List, from ⅛ to ⅜ in thickness.

CUCUMBER TUBES, PROPAGATING AND BEE GLASSES, PRESERVE JARS, MILK PANS, ETC.

AQUARIA on Ebony Stands, 12 inches, 14 inches, 16 inches, 18 inches, and 20 inches.

Paints, Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, &c., &c.

JAMES PHILLIPS & Co., 180, Bishopsgate Street Without, E. C.

GLASS FOR CONSERVATORIES, ETC.

HETLEY and CO. supply 16-oz SHEET GLASS of British Manufacture at prices varying from 2*d.* to 3*d.* per square foot for the usual sizes required, many thousands of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES, and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to James Hetley & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

HORTICULTURAL GLASS—JUNE TARIFF.

THOMAS MILLINGTON'S reduced Tariff of GLASS, &c.

6 by 4, 7 by 5, 8 by 6, 9 by 7 } 16 oz. to the foot, 11*s.* 6*d.*
6½ by 4½, 7½ by 5½, 8½ by 6½, 9½ by 7½ } per 100 feet.

In 100 boxes,—4ths quality, 12*s.* 6*d.*; 3ds do., 14*s.* 4*d.*

10 by 8,	12 by 9,	12½ by 10½,	14½ by 10½, 13 by 11
10½ by 8½,	12½ by 9½,	13 by 10,	15 by 10, 13½ by 11½
11 by 9,	13 by 9,	13½ by 10½,	12 by 11, 14 by 11
11½ by 9½,	12 by 10,	14 by 10,	12½ by 11½ .. ..

20 by 12 }	per 100 feet	16 oz.	21 oz.
20 by 13 }	Common ..	16*s.* ..	24*s.*
20 by 14 }	Superior .	18*s.* ..	27*s.*
20 by 15 }			

All Boxes included.

Orchard House sizes as supplied to Mr. Rivers.

Hartley's improved Rough Plate Glass from ⅛ to ⅜ in thickness.

Coloured Glass in great variety, at 9*d.* and 1*s.* per foot.

Paints, Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, Lamp Glasses, &c.

87, Bishopsgate Street Without, same side as Eastern Counties Railway.

GLAZIERS' DIAMONDS for CUTTING HORTICULTURAL and other GLASS, to be had of the Wholesale Manufacturer, John Edwards, 20, Sharp's Alley, West Smithfield, London, E.C. Prices from 10*s.* to 27*s.* 6*d.*

200 ONE, TWO, and THREE-LIGHT MELON BOXES and LIGHTS, of the best seasoned materials, ready for immediate use.—Jas. Watts, Hothouse Builder and Hot-water Apparatus Manufacturer, Old Kent Road, London.

FLOWER POTS, of superior Red Clay, manufactured by the Arley Pottery Company (Limited), equal in appearance to Terra Cotta at the price of the common pots usually sold, say 2*s.* per cast, delivered in London.—Apply to Taylor & Pears, 8, George Yard, Lombard Street, City, E.C.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

EDWARD BECK Manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener, Sundays excepted. PRICED LISTS of PLANT TUBS and BOXES forwarded on application.

VASES, PEDESTALS, SUNDIALS, FOUNTAINS, FLOWER BOXES, JARDINETS, FERN CASES, BALUSTRADES, EDGINGS AND CURBS FOR FLOWER BORDERS, SEATS, &c., in Imperishable Siliceous Stone, at reduced prices, for the adornment of the Villa Garden, the Mansion Grounds, or the private or public Park.

For Priced Illustrations apply to Frederick Ransome, at the Show Rooms, Cannon Row, Westminster, S.W., or Patent Stone Works, Ipswich.

IRON and WIRE FENCING, AT GREATLY REDUCED PRICES, for Deer, Horses, Cattle, and Sheep. Gates, &c. Clearing Sale of the above in consequence of Alteration of Premises and removal of Works.—Catalogues of Sale with prices forwarded post free on application to Messrs. Young & Co., 19, Great George Street, Westminster, London; or Britannia Iron Works, Edinburgh.

TANNED NETTING, for the Protection of Fruit Trees from Frost, Blight, and Birds; also, for the security of fresh sown seeds, at 1*d.* per square yard; 200 yards, 12*s.*; 500 yards, 25*s.*; Scrim Canvas, for wall fruit; Garden Mats.—At Edgington & Co's., Rick Cloth, Tent, and Waterproof Cloth Manufacturers, 17, Smithfield Bars, City, & Old Kent Rd.

TANNED GARDEN NETTING, for preserving Fruit Trees from frost, blight, birds, &c., and as a fence for fowls, &c. One yard wide 1½*d.*, 2 yards 3*d.*, 3 yards 4½*d.*, and 4 yards 6*d.*, per yard, in any quantity, may be had at C. Wright's, 376, Strand, W.C.—A liberal allowance to Nurserymen.

FOR Effectually Protecting the Bloom of Wall Trees from Spring Frosts use Shaw's No. 3 TIFFANY, DOUBLE STRENGTH. In pieces 18 yards long by 39 inches wide, 7*s.* 6*d.* each.—John Shaw & Co., Princess Street, Manchester.

BRITTAIN'S SUMMER SHADINGS.—Strong Tiffany, 34 inches, 3*d.* a yard; No. 3 do. 39 inches, 7*s.* a piece, 18 yards each. Nets, Nos. 1, 2, and 3, 5*d.*, 6*d.*, and 8*d.* a yard, 55 inches wide. ZEBRA ORNAMENTAL SHADING, 9½*d.* a yard; yard wide linen shading, 5*d.* to 5½*d.*

Peel Street, Manchester.

SHAW'S TIFFANY.—The best and cheapest material for Shading Conservatories, Protecting Fruit from Birds and Wasps, &c. Sold in pieces 20 yards long by 38 inches wide. No. 1, best quality, 5*s.* per piece; second quality, 4*s.* per piece. Extra strong and thick (see Circular sent free by post with samples).

Address John Shaw & Co., Manufacturers and Dealers, Princess Street, Manchester.

MARQUEES, TENTS, and RICK CLOTHS for SALE, or HIRE.—H. Piggott, 115, Fore Street, E.C.

BOOT'S PATENT ANTI-CORROSIVE ENGRAVED LABEL, suitable for every description of plant. See Circular, free by post.

John Shaw, Princess Street, Manchester, Agent.

SIGMA'S BEAN, MANGEL, and CORN PLANTERS (5 Depositors), HOES, &c. The "Multum in Parvo," combining Cultivator, Horse Hoe, Ridge Plough, Subsoiler, Broadshare, and other forms; all expanding. Complete, 7*l.* 7*s.* Prospectus sent.—C. Powell, Hurstgreen, Sussex.

AGRICULTURAL MACHINERY.

E. R. and F. TURNER, Ipswich, manufacture Prize Mills for Crushing Corn, Seed, Malt, &c.; Portable Grinding Mills, Steam Engines fixed and portable from 2 horse-power and upwards; Threshing Machines, Chaff Cutter, Oilcake Breakers, Horse Gears, Saw Tables, &c., all of a superior description and adapted for Home, Colonial, and Foreign use. Illustrated Price Lists sent free on application.

MICROSCOPES.

JOSEPH AMADIO'S Improved Compound MICROSCOPE, 2*l.* 2*s.*; Students', 3*l.* 13*s.* 6*d.*

"Both these are from Amadio, of Throgmorton Street, and are excellent of their kind, the more expensive one especially."—*Household Words*, No. 345.

A large Assortment of ACHROMATIC MICROSCOPES.

Just published, an ILLUSTRATED CATALOGUE, containing the names of 1000 Microscopic objects, post free, for 4 stamps.

BEE-HIVES.

Prize Medal awarded to G. N. & Sons, for Bee-hives and Honey, at the Paris Exposition of 1855.

NEIGHBOUR'S IMPROVED COTTAGE BEE-HIVE, as originally introduced by George Neighbour & Sons, with all the recent improvements, glasses, and thermometer, price 35*s.*, securely packed for the country



This unique Hive has met with universal commendation, and may be worked with safety, humanity, and profit by the most timid; its arrangements are so perfect that the Honey may be taken at any time of the gathering season without at all injuring the Bees.

Early applications addressed to George Neighbour & Sons, 127, High Holborn, or 149, Regent Street, London, will receive prompt attention.

Their newly-arranged CATALOGUE of other Improved Hives with Drawings and Prices, sent on receipt of two stamps.

Agents.—Liverpool: James Cuthbert, 12, Clayton Square. Manchester: W. Wilson, 50, King Street. Glasgow: Austin & M'Aslen, 186, Trongate. Dublin: J. Edmondson & Co., 61, Dame Street.

GREENHOUSES, ORCHARD HOUSES, AND PITS

Of every Description, made by Steam Machinery, and Heated by Hot Water on an Improved Plan at

J. LEWIS'S Horticultural Works, Stamford Hill, Middlesex, established 20 years. These Buildings are warranted of the best materials, and at prices which defy competition. The ventilation is most efficient, and the greatest improvement of the present day. Prices of any size on application. References in all parts of the United Kingdom.

HANDS'S PATENT is the only system to circulate Heat, and for WARMING, FUMIGATING, and VENTILATING Hothouses, Greenhouses, Winter Orchards, &c.; to keep vegetation healthy in a humid atmosphere, and can be applied to any kind or shape of Forcing-houses and Conservatories now existing at trifling cost.—For particulars apply to Mr. Johnson Hands, Epsom.

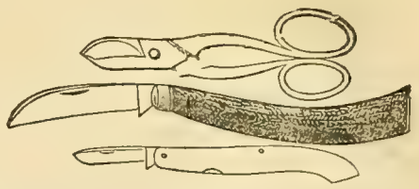
VOKINS and HURD, Seymour House, Jubilee Place, King's Road, Chelsea, Builders of Hothouses, Conservatories, Greenhouses, Pits, and every description of erections in Glass work; either in Wood or Iron; also Heating the same by hot water on the most approved plans and at the lowest prices consistent with good work. Estimates forwarded.

HORTICULTURAL BUILDINGS AND HEATING BY HOT WATER.

JOHN R. PEILL, 17, New Park Street, Southwark, Manufacturer of every description of Buildings for Horticultural purposes, and Inventor of the Improved Conical Boiler for heating the same, is prepared to undertake works of any magnitude, and refers among others to the celebrated range of FORCING HOUSES at HER MAJESTY'S GARDENS, FROGMORE, and at SIR ROBERT PEEL'S, DRAYTON MANOR, constructed under the superintendence of his Manager, MR. JOHN JONES; and also to his BOILERS fixed at the CRYSTAL PALACE, the ROYAL BOTANIC GARDENS, REGENT'S PARK, and KEW, and at several hundreds of the Nobility's seats, Public Establishments, and Manufactories in London and the provinces. J. R. P. also manufactures every description of Iron Roofs, Iron Houses, and Iron Fencing, plain and ornamental. Strong Iron Hurdles for Sheep (6 feet long, 3 feet high, with 5 bars), 4*s.* 3*d.* each; ditto for cattle, 4*s.* 9*d.* each.

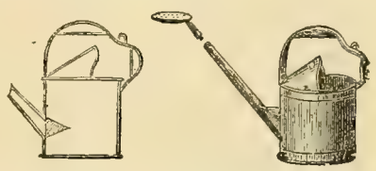
Prices and other particulars forwarded on receipt of one postage stamp.

PAXTON WORKS, SHEFFIELD, ESTABLISHED 1738.



SAYNOR and COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.—Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

THE SIR JOSEPH PAXTON PATENT FILTERING WATERING POT.—Instead of this Watering Pot



having the nozzle or rose merely slipped on, as in the old way it is affixed by a thread-screw, so that it cannot fall off; and the spout is not liable to leak, break, or bend.

The section shows the interior, in which is a cone for the purpose of filtration. As the perforations in this cone are only half the size of the holes in the rose it is impossible for the spout to choke up. These simple improvements render the "Sir Joseph Paxton" Watering Can the best yet introduced.

To be had of all respectable Ironmongers, and Wholesale only of Messrs. B. Perkins & Son, 2 and 3, Bell Court, Cannon Street, E.C.

JOHN WARNER and SONS, Crescent, Jewin Street, London.—GALVANISED IRON TUB GARDEN ENGINE, with Warner's Registered Spreader, is strongly recommended, for durability and low price, viz., 2*l.* 19*s.*, to hold 10 gallons.



Larger sizes in wood or iron, viz., 14 gallons, 24 gallons, and 35 gallons. May be obtained of any Ironmonger or Plumber in town or country, or of the patentees and Manufacturers, as also Machinery of all kinds for raising Water from any depth to any height by Steam, Horse, or Manual Power. Prices sent on application.

Syringes of various constructions and sizes from 9*s.* upwards. Metallic String from 5*d.* to 1*s.* 3*d.* per lb.

GARDEN ENGINES AND SYRINGES.

J. TYLOR and SONS, Warwick Lane, Newgate Street, London, E.C., beg to call attention to their very superior manufacture of GARDEN ENGINES and SYRINGES.

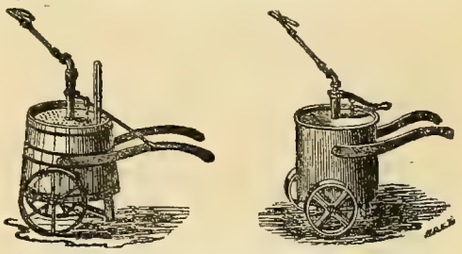


Fig. 598. J. Tylor & Sons' BARROW GARDEN ENGINE in best well painted Oak tub, fitted with J. Tylor & Sons' Improved Brass Pump, Universal Joint, and Registered Spreader, which answers the purpose of the separate rose, fan, and jet.

Contents of Tub:—

10 gallons	15 gallons	28 gallons
£4 10 0	£5 10 0	£6 18 0

Fig. 599. do. TINNED IRON TUB.

Contents of Tub:—

8 gallons	12 gallons	16 gallons	24 gallons	30 gallons
£2 15	£3 5	£4	£5	£5 18



Fig. 618. No. 1. REGISTERED SYRINGE, with India-rubber suction tube, one rose and jet .. .. £1 5 each.
No. 2. Ditto ditto 1 1 ,,
Telescope Branch Pipe for ditto .. .. 0 10 ,,



Fig. 619. GARDEN SYRINGE, with one rose and jet, 12*s.* 6*d.* each
,, 620. Ditto ditto 11*s.* 6*d.* ,,
,, 621. Ditto ditto 10*s.* 6*d.* ,,
,, 622. LADIES' GARDEN SYRINGE, without rose & jet, 8*s.*

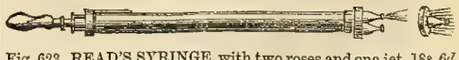


Fig. 623. READ'S SYRINGE, with two roses and one jet, 18*s.* 6*d.*
,, 624. READ'S SYRINGE, with one rose and jet .. 16 6
,, 625. Improved ditto ditto .. 14 6
,, 626. Ditto ditto ditto .. 13 0

Manufacturers of Pumps and Well Engines (for shallow or deep Wells), Plumbers' Brass Foundry of every description, High Pressure Cocks and Closets, Copper and Tinned-iron Baths. Garden and Fire Engines, Lamps of every description, Copper Goods, &c. Estimates given for Hot-water and Bath Apparatus.

GRASS SEEDS FOR PERMANENT PASTURES & MEADOWS.

THOMAS GIBBS & CO., Corner of Half-Moon St.,

THE SEEDSMEN TO THE "ROYAL AGRICULTURAL SOCIETY OF ENGLAND,"

BEG to inform the Members of the Society and Agriculturists generally that their MIXTURES of GRASS SEEDS for Laying down Land to Permanent Grass are now ready. Each kind of Grass Seed composing these Mixtures is cleaned separately, and the kinds are proportioned to suit different soils.

☞ *Full Directions for Sowing and Management will be sent with the Seeds.*

MIXTURES for PERMANENT MEADOW and PASTURE *(to suit different soils).*
MIXTURES for PARKS, FIELD LAWNS, CEMETERIES, &c.
MIXTURES for IRRIGATION MEADOWS, GAME COVERS, and all other purposes.
RENOVATING MIXTURES for Improving Old Meadows and Pastures (8 to 12 lbs. per acre).

MANGEL WURZEL.	RYE-GRASS.		
Yellow Globe, Orange Globe (selected)	Italian (selected, very fine)	Carrots	all sorts
Long Red	Dickinson's	Clovers	,,
Red Globe	Imported Foreign Seed	Swedes	,,
Long Yellow	Common or Annual	Hybrids	,,
Silesian Sugar Beet	Pacey's Perennial	Common Turnips	,,

KITCHEN GARDEN SEEDS in Collections, at £1, £2, and £3 each.

Thomas Gibbs & Co.

CORNER OF HALF-MOON St. PICCADILLY, LONDON, W.

ALL KINDS OF AGRICULTURAL SEEDS.

Price Lists sent free on application. Reference or Cash required from unknown Correspondents.

NATURAL GRASS SEEDS.

PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN, can supply genuine Seed of all the valuable kinds of the NATURAL GRASSES suitable for Lowland and Upland Pastures; also for Laying-down Lawns, Bowling Greens, Cricket Grounds, Cemeteries, Railway Banks, &c.

PRICED LISTS may be had free on application.—PETER LAWSON & SON, 27, Great George Street, Westminster.

"JACK OF NEWBURY" SWEDE, ETC.

PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN, &c., 27, Great George Street, Westminster, respectfully request attention to their very genuine Stock of the above excellent Swede; also of the LOTHIAN PURPLE-TOP SWEDE, both of which have been selected with the greatest care. They have also a very fine Stock of the KOHL RABI, or TURNIP-ROOTED CABBAGE, specimens of which were shown at their Stands at Smithfield Club Show. The Kohl Rabi was largely grown last season, and may now be relied on as a substitute for the Turnip and Mangel, where these roots do not succeed, or for filling up blanks where there is a partial failure. Its feeding qualities, hardiness, and weight per acre are equal to the Swede, and all kinds of stock prefer it to other roots.

P. L. & SON have also selected a first-rate Stock of MANGEL WURZEL SEED, which they can confidently recommend. Their natural GRASS SEEDS have been also saved with very great care, and they are ready to supply them separately or in mixture, for laying down Permanent Pastures, Lawns, &c.

P. L. & SON have arranged to deliver Seeds free throughout England and Wales from their London Establishment, for all quantities exceeding 20s. in value.

LISTS OF PRICES of the above and all other Seeds, Plants, &c., may be had on application.

27, Great George Street, Westminster.

NEW HARDY WHITE SWEDE.—This Swede is hardier than any other kind, grows to a large size, is adapted for sowing upon poor land, is not affected by frost, and keeps good in the ground or in store till the end of May. New and genuine Seed of this excellent Swede, price 1*s.* per lb. (carriage free for orders of 30 lbs. and upwards) may be had of RAYNBIRD & HARVEY, Seedsmen, Basingstoke; and 89, Seed Market, Mark Lane, London, E.C.

IMPROVED WHITE SWEDE.

WHITE SWEDES are much preferred for late feeding, as they are extremely hardy, juicy, and late in sprouting; but the white Swedes in common cultivation are coarse and rooty.

SUTTON & SONS, Seed Growers, Reading, have however now succeeded in raising a choice stock of IMPROVED WHITE SWEDE, containing all the merits of the old kind without its faults. Some of these fine Swedes were exhibited on their stand at the Smithfield Club Show, and attracted great attention. Present price of Seed, 10*d.* per lb., 5*s.* per gallon. Early orders will be necessary, as a considerable portion of the stock is already bespoke.

Royal Berkshire Seed Establishment, Reading.

SUTTON'S PRIZE MANGEL AND SWEDE SEED. THE BIRMINGHAM PRIZES.

At the Great Root Show at Birmingham in December last (as in former years), the principal Prizes for Swedes, Mangels, and other Roots were awarded to Messrs. SUTTON'S Customers, viz.:—

The Rev. THOMAS STEVENS	RICHARD BENYON, Esq.
JOHN B. STARKEY, Esq.	Mr. WM. HORSBURGH
GEORGE B. MORLAND, Esq.	Mr. GEORGE MANGLES
GEORGE MACKENZIE KETTLE, Esq.	

Also EIGHT 25 GUINEA CUPS from H.R.H. the PRINCE CONSORT for the best 5 acres of Swedes at each of Eight Agricultural Meetings in East Berks and South Bucks. At all of these there was great competition, and in every instance the CUP was awarded to SUTTON'S CHAMPION SWEDE. Also many other distinguished Prizes in Berkshire and other Counties. SUTTON & SONS are now sending out the Seed at 1*s.* per lb. for Champion Swede, and 9*d.* for their choice Mangel Wurzel, or cheaper by the bushel and cwt. Early orders necessary.—Royal Berkshire Seed Establishment, Reading.

THE SWEDE WHICH NEVER MILDEWS.

SUTTON'S CHAMPION SWEDE has again gained the TWO 25 GUINEA CUPS presented by H.R.H. The PRINCE CONSORT to the Royal East Berks and the Royal South Bucks Agricultural Associations, making Eight Twenty-five Guinea Cups at these two Societies.

This is the heaviest cropper and most certain, as it rarely (*if ever*) suffers from mildew, and has entirely escaped the ravages of the fly during the last two years in which these pests were so prevalent. Price 1*s.* per lb, or cheaper by the bushel.

SUTTON & SONS, Seed Growers, Reading, Berks, have at present a good stock of seed of the above. Early orders are requested to prevent disappointment.

Royal Berkshire Seed Establishment, Reading.

NURSERYMEN, SEEDSMEN, & FLORISTS TO HER MAJESTY THE QUEEN.

NEW FUCHSIA, "LORD CLYDE" (YOUELL'S).

IT is with much pleasure and satisfaction that we have the opportunity of offering for the present season the above truly novel and probably the most beautiful Fuchsia that has yet been introduced. The tube and sepals (which are of great substance) are of rich glossy scarlet, the latter most perfectly reflexed, exhibiting a large well-folded corolla of rosy pink, distinctly flaked, with broad stripes of bright violet purple. The habit of the plant and the profuseness of its blooming properties are all that can be desired. It flowered for the first time in 1857, and proved again in 1858, and has maintained its character in every respect. Strong plants will be ready for sending out on and after April 27, at 10*s.* 6*d.* per plant. (Per post free, if required.)

Correct Coloured Engravings, by Mr. ANDREWS, *will be forwarded to any address on receipt of* 6 *postage stamps.*

YOUELL & Co.'S ROYAL NURSERY, GREAT YARMOUTH.

TO MANGEL GROWERS.

SUTTON'S ELVETHAM MANGEL WURZEL AND SELECTED YELLOW GLOBE.—These two sorts of Mangel are still preferred to all others by the principal root growers throughout the kingdom.

SUTTON & SONS have some fine SEED of each sort saved from large Roots, price 9*d.* per lb., or cheaper by the cwt.

Royal Berkshire Seed Establishment, Reading.

EARLY SHEEP FEED.

SUTTON'S IMPROVED ITALIAN RYE-GRASS has proved the best kind for general cultivation, being the most productive and hardy, growing freely in all soils.

From JOHN BALDWIN, Esq., *Luddington, April* 11, 1859.

"It is certainly delightful to stroll about and witness the sheep up to their knees in your beautiful Italian Rye-grass."

From FREDERICK F. HALLETT, Esq., *The Manor House, Brighton, March* 15, 1858.

"I mowed your Italian Rye-grass at Christmas, 1856, within three months after sowing; again April 12, 1857; three times since, and am mowing it again now (March 16). The cut on April 12 was 4 feet high, and a perfect mass of Grass."

Messrs. SUTTON have some Seed of this sort now on sale, price 7*s.* per bushel. Quantity to be sown per acre, 3 bushels.

PRICED LISTS post free.—Address SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

750 BEDDING PLANTS for 7*l.* including basket and packing, or one half for 3*l.* 15*s.*

20 Anagallis, 2 sorts	25 Lobelias, 6 sorts
12 Ageratum, 3 sorts	50 Hollyhocks, Seedlings
50 Calceolaria, 6 sorts	12 Koniga
12 Celsia, 2 sorts	12 Nierembergia
50 Chrysanthemums, 50 sorts	12 Œnotheria riparia
12 Cupheas, 3 sorts	50 Petunia single, 25 sorts
50 Dahlias, 50 sorts	50 do. double, 25 sorts
50 Fuchsias, 50 sorts	20 Salvias, 6 sorts
50 Geraniums, Scarlets &c., 50 sorts	12 Senecio, double purple
50 do. Variegated, 12 sorts	20 Tropæolum, 6 sorts
20 Heliotropes, 12 sorts	12 Variegated Mint
	100 Verbena, 100 sorts

Apply to J. SCOTT, Merriott Nurseries, Crewkerne, Somerset. Post-Office Order on Crewkerne, or crossed cheques from unknown Correspondents. Catalogues on application, for two stamps.

GREENHOUSE PLANTS, 12*s.*, 18*s.*, 21*s.* per doz.—Fine bushy grown plants, consisting of the best kinds such as Pimeleas, Polygalas, Chorozemas, Aphelexis, Tremandras, Boronias, Leschenaultia, Gompholobium, &c.; also all the leading Creepers.

STOVE PLANTS, 12*s.*, 18*s.*, 21*s.* per doz.—The best kinds, Begonias of sorts (Rex), Franciscea, Ixoras, Aphelandras, Gesneras, Gloxinias, Medinillas, Vincas, Allamandas, Stephanotis, Rhynchospermums, Dipladeniums, Hoyas, Gardenias, and variegated plants.

AZALEAS, consisting of the new and leading kinds, with flower buds, 12*s.*, 18*s.*, 21*s.*, and 30*s.* per doz.—A large quantity of young specimens of various sizes.

ERICAS, fine grown stuff of the leading sorts, 12*s.*, 18*s.*, 21*s.*, 30*s.* per doz., in 48 and 32-size pots. A quantity of half and full-grown specimens.

TO THE TRADE.

20,000 of young stuff just potted off, in 60-size pots, 5*s.* per 100; pretty plants and very bushy.

ACHIMENES, TYDEAS, AND GLOXINIAS.—All the new and leading kinds (strong bulbs and tubers), of Messrs. Van Houtte, Verschaffelt, Parker, &c., 6*s.*, 9*s.*, 12*s.* per doz.

EPPS's Nurseries, Maidstone.

SPLENDID BEDDING PLANT, TRITONIA AUREA, THE GOLDEN TRITONIA.

LUCOMBE, PINCE, AND Co. having a very large stock of this most beautiful hardy bulb can offer it well established in pots, fit for immediate planting out, at the undermentioned exceedingly moderate prices.

Nothing can surpass the brilliancy of its rich golden orange-coloured flowers, which are produced in the greatest profusion upon graceful slender scapes, and stand unblemished the heaviest showers and most fervent sun. They strongly recommend the Golden Tritonia as one of the most effective plants for masses ever introduced. It cannot fail to give satisfaction; indeed, as that excellent authority Donald Beaton truly remarks in the "Cottage Gardener" "IT IS ESTABLISHED AS A FIRST-RATE AUTUMNAL ORNAMENT TO THE FLOWER GARDEN."

100 Strong Bulbs..	£3 0*s.* 0*d*	25 Strong Bulbs..	£1 0*s.* 0*d.*
50 do. do. ..	1 15 0	12 do. do. ..	0 12 0
Single Bulbs			1*s.* 6*d.* each.

Exeter Nursery, Exeter. Established 1720.

DOWNIE AND LAIRD beg to offer the following, which they warrant all fine show varieties, viz.:—
100 Pansies, in 25 sorts .. 30*s.* | 100 Hollyhock seedlings
100 Hollyhocks, in 25 do. 8*s.* | from finest named vars. 20*s.*
100 Phloxes in 30 varieties, 40*s.*

Selection of the above left to D. & L. A liberal allowance to the Trade.—17, Frederick Street, Edinburgh.

PLANTS IN FLOWER.

F. AND A. SMITH have now in bloom Acacia, Cactus (fine), Cytisus; Erica ventricosa coccines minor, v. superbiens, v. breviflora, E. intermedia, E. Cavendishi, E. hybrida, E. perspicua nana; Fuchsias, Calceolarias, Heliotrope, Hydrangea, Geraniums, Fairy Roses, &c.

The above are healthy, strong, and well-grown plants, prepared for sending away. Prices on application.

Dulwich, Surrey, S.

SUPERB DOUBLE BALSAMS.

F. AND A. SMITH are now sending out seed of their superb BALSAMS, which are unrivalled for size, form, brillancy of colour, doubleness of flower, and habit of plant.

In collections of nine separate colours .. .. .. 2*s.* 6*d.*
,, ,, mixed ,, ... 2 0
,, ,, ,, ,, half quantity 1 0

The above are *genuine only* in our sealed packets, and may be had of most respectable Nurserymen and Seedmen in the United Kingdom.—Dulwich, Surrey, S.

DAHLIAS.

W. HOLMES offers the above in fine plants at 4*s.* per dozen, the new flowers of last year from 6*s.* to 9*s.* per dozen in April.

Chrysanthemums, 5*s.* per doz.		Verbenas, from 2*s.* 6*d.* to 4*s.* p. doz	
Fuchsias, 4*s.* to 6*s.*	,,	Antirrhinums, 4*s.* to 6*s.*	,,
Heliotropes, 2*s.* 6*d.*	,,	Cupheas, 2*s.* 6*d.*	,,
Petunias, 3*s.*	,,	Calceolarias, 4*s.*	,,

Geraniums, Senecio, Lobelias, &c., equally cheap. Catalogues upon application free for one stamp.

Frampton Park Nursery, Well Street, Hackney.

CALLICARPA PURPUREA.

JOHN STANDISH, the exhibitor of the above (at St. James's Hall), can supply a few good plants at 7*s.* 6*d.* each. The following passage from Dr. Lindley's leading article in the *Gardeners' Chronicle* for Nov. 20 will give an idea of its beauty:—"Callicarpa purpurea, quite insignificant when in flower, was beautiful in its winter dress of innumerable rich purple berries, about the size of swan shot." It is easily cultivated, and does well in a cold greenhouse or conservatory planted out, where it will produce thousands of bright purple berries resembling glass beads, and remaining on nearly the whole winter.—Bagshot, April 23.

CHOICE FLOWERS.

BUTLER & McCULLOCH'S SPRING CATALOGUE OF SEEDS,



ARRANGED on a new and original plan, with copious Descriptive and Cultural Notes and containing many new and rare species and varieties not found in any other Catalogue, now ready and may be had free and post paid on application.

FLOWER, SHRUB, TREE, and VEGETABLE SEEDS, the crop of 1858, saved with the greatest care, by the most eminent growers.

We may also state that the Sardinian correspondent of Messrs. James Carter & Co., whose Seeds, especially Carnations and Picotees, have given such universal satisfaction, has transferred the Agency from that firm and appointed us his representative in this country. To meet the growing demand for first class flowers, particularly FLORISTS' FLOWERS, we have adopted our usual maxim of charging the lowest possible prices.

Professor Lindley in the *Gardeners' Chronicle* of February 5th, has the following notice of B. & McC.'s Catalogue.

"Butler & McCulloch's (Covent Garden) Spring Catalogue of Choice Flower, Shrub, Tree, and Vegetable Seeds. This list fills 84 closely printed 8vo pages, and is remarkably well got up. It appears that the correspondent in Sardinia, who formerly supplied one of the great London houses with seeds raised in that warm part of Europe, has now transferred what he saves to Messrs. Butler & McCulloch. Let us add, that it yields to no Trade List in the abundance of its materials or the excellence of its arrangements."

BUTLER and McCULLOCH, while drawing attention to their general SPRING CATALOGUE which has elicited such high encomiums both from the scientific botanist and amateur cultivator, avail themselves of the present opportunity to select from its pages the following list:—

(37) ACACIA LONGIFOLIA (magnifica).

One of the most splendid Acacias in cultivation, with gorgeous clusters of bright yellow flowers several inches in length; very hardy, rare, and beautiful. Of these graceful and highly ornamental plants our collection embraces no fewer than 47 varieties, all of the most decorative character.

(65) AILANTUS GLANDULOSA.

This may be compared to a gigantic Stag's-horn Sumach. It grows fast even on thin poor soil, is invaluable for avenues, and highly ornamental in shrubberies; sometimes called Tree of Heaven.

ALPINES.

Of these beautiful little plants we have a splendid collection, embracing all the most admired kinds, collected and arranged for us last autumn by M. Ortgies, the Curator of the Zurich Botanic Gardens. The value of Alpine plants for rock-work is too well known to require comment. These collections we can confidently recommend, containing, as they do, species only of highest merit.

(154) BALSAM.

New Indian variety, very ornamental, mixed colours, more robust and hardy than the other varieties.

(217 A.) CAMELLIA JAPONICA.

From the newest and finest striped and other varieties of that much admired genus.

(243) CANNA INDICA SUPERBA.

A magnificent plant flowering all the winter; leaves large, fine green. Of this picturesque and most ornamental genus we have a magnificent collection, consisting of 28 kinds, all remarkable both for the beauty of their flowers and foliage.

(304) CELOSIA (species nova).

A most elegant plant, producing a multitude of long spikes of feathery blossoms, silvery white shaded with bright rose, retaining its colour perfectly when dried, and therefore admirably adapted for winter bouquets; one of the greatest novelties of the season, flowering out of doors or in pots from July to October. Well worth attention. A dried specimen may be seen.

(237) CHRYSANTHEMUM (New Golden).

An exceedingly beautiful bedding plant. Of Chrysanthemums we have a splendid collection, embracing all that is new or rare in that fine class of plants.

(344) CHRYSOCOMA COMAUREA.

Fine evergreen shrub, bearing a profusion of golden ball-like flowers; one of the handsomest greenhouse plants in cultivation.

(451) DATURA HUMILIS FLORE PLENO.

A magnificent Brugmansia-like plant producing a profusion of deep golden-yellow flowers; very large, double, and sweet-scented. One of the greatest novelties of the season.

(553) GAILLARDIA GRANDIFLORA.

The finest of the species, flowers very large (new). Of this useful and showy genus we have several other handsome vars.

(972) PELARGONIUMS.

Of these both large flowered and fancy, very choice, and of other splendid varieties, including Scarlets, we have a fine stock, which cannot fail to prove highly satisfactory.

(1149) SOLANUM CAPSICASTRUM.

Miniature Orange tree, covered all winter with a profusion of scarlet fruit; a handsome plant for greenhouse or sitting rooms.

(1335) BIGNONIA RADICANS MULTIFLORA.

Finer and brighter than radicans; flowers in large panicles producing a splendid effect.

(1380) IPOMŒA HYBRIDA MARGINATA.

Large and magnificent; flowers of various colours on the same plant, varying from the richest velvety purple to sky-blue, bordered in the most distinct manner with pure white (new and rare). This and three new varieties of Hederacea grandiflora far surpass the old and deservedly favourite rubro-coerulea for beauty, hardiness, and free flowering; they rank high amongst the novelties of the season, possessing advantages which will render them the grandest ornaments for the greenhouse, conservatory, or for out-door decoration.

(1468) TACSONIA IGNEA.

This magnificent Passionflower is unequalled for the brilliancy and splendour of its scarlet blossoms, far surpassing in this respect any of its class yet known. It flowers most profusely, grows rapidly, and covers a large space in an incredibly short time. It succeeds in a cold greenhouse, and even against a south wall with a little protection in winter (new and rare).

(1488) TROPÆOLUM TRIOMPHE DE GAND FIMBRIATUM.

Fringed orange scarlet.

CARNATIONS and PICOTEES saved from the most choice Collection of English varieties grown on the continent, and which may be expected to produce flowers of the highest merit, sent out in sealed packets as received from our Sardinian correspondent, whose seeds for many years have given such universal satisfaction, and from which varieties of the greatest excellence have been raised.

For prices and further particulars with regard to the above and other novelties, we refer our patrons to the Catalogue itself, which is sent free and post paid on application.

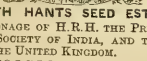
BUTLER & McCULLOCH, Covent Garden Market.

SPRING CATALOGUE.



MESSRS. ARTHUR HENDERSON and CO.'S CATALOGUE of SOFT-WOODED PLANTS (including all the leading useful novelties for this year), can now be had f them post free, on application.

Pine-apple Place, Edgware Road, London, W.



ROYAL SOUTH HANTS SEED ESTABLISHMENT,

UNDER THE PATRONAGE OF H.R.H. THE PRINCE CONSORT, THE AGRICULTURAL SOCIETY OF INDIA, AND THE LEADING AGRICULTURISTS OF THE UNITED KINGDOM.

PAGE AND TOOGOOD'S STOCKS have produced the finest specimens exhibited at Smithfield, and are so well known and appreciated that comment on their part is unnecessary. Their prices compete with any house in the trade.

PRESENT PRICES, Carriage Free to all parts of England:—

	Per lb.—*s. d.*		Per lb.—*s. d.*
kirving's Swede ..	.. 0 6	Hardy Green Round	.. 0 6
age's Improved ..	.. 0 8	Early Six Weeks ..	.. 0 6
sheroft	.. 0 6	Kohl Rabi ..	.. 2 6
reentop	.. 0 6	Yellow Globe Mangel	.. 0 6
ussex, or Jeffery's	.. 0 9	Page's Impl. Orange Globe	0 8
ankard	.. 0 7	Red Globe	.. 0 7
ed Round Turnip	.. 0 6	Elvetham Long Red	.. 0 7
age's Improved Red Globe	0 8	Long Red	.. 0 6
otch or Bullock ..	.. 0 7	Long Yellow ..	.. 0 7
omeranian White Globe	0 6	White Belgian Carrot	.. 1 0
arly Green Globe	.. 0 6	New Red	.. 1 3
,, White Tankard	.. 0 7	Long Altringham ..	.. 1 3
ed Tankard ..	.. 0 7	Cattle Cabbage ..	.. 2 6
reen ditto	.. 0 7	Cattle Parsnip ..	.. 1 0
ellow ditto ..	.. 0 7	Dwarf Essex Rape	.. 0 4

* Bulbs of this variety have acquired the enormous weight 44 lbs., as shown at Smithfield Club.

BUCKWHEAT, MUSTARD, LINSEED, TARES, SAINFOIN, HOLCUS SACCHARATUS, 1s. per lb.

Fine PERMANENT PASTURE GRASS, ITALIAN RYE-GRASS, CLOVER, &c., at lowest market prices.

Special contracts for large quantities. Seeds packed for exportation to all parts of the world.

Oxford Street and Above Bar, Southampton.

TWO HUNDRED GUINEAS IN EIGHT PRIZES.



FOR FOUR YEARS SUCCESSIVELY HIS ROYAL HIGHNESS THE PRINCE CONSORT'S PRIZE CUPS HAVE BEEN AWARDED TO SUTTON'S CHAMPION SWEDES at the East Berks and South Bucks Agricultural Societies in 1855, 1856, 1857, and 1858. New Seed now ready, 1s. per lb., or cheaper by the bushel, carriage free.

Royal Berkshire Seed Establishment, Reading.

The Gardeners' Chronicle.

SATURDAY, APRIL 23, 1859.

MEETINGS FOR THE FOLLOWING WEEK.

WEDNESDAY, April 27—Microscopical..... 8 P.M.

THE possibility of IMPROVING THE SIZE AND QUALITY OF GRAPES by ringing the branches continues to excite interest in France. The nature of the process having been explained at pp. 399 and 780 of our last volume, we have now only to add a statement of the results that were exhibited last autumn at a meeting of the Paris Horticultural Society, as published in the Annals of the Society of the Gironde.

A small lot of Grapes, says M. Glady, the Bordeaux reporter, exhibited by M. Rose Charmeux, a grower at Thomery, surpassed all the rest in beauty; one could not tire of admiring his magnificent bunches with golden transparent amber-coloured berries, far more luscious in appearance than the best coloured Grapes of our (Bordeaux) vineyards. Chasselas de Fontainebleau and Gros Damas were piled in elegant pyramids, supported by charming wicker baskets. The Gromier du Cantal, Superbe De Candolle, Valencia, Grosse Perle blanc, and Gros Ribier du Maroc, all sorts with enormous berries, excited the admiration of everybody. They readily sold at 4 fr. the kilo, although it was already the end of September.

Those who wish to know how such admirable results were obtained should well consider what follows. The Vines of Thomery are trained against walls, in such a manner as not to lose a single yard of surface; there are no vacancies, but Grapes over the whole surface. In the spring the wall is protected by screens, glass sashes, straw mats, linen blinds, or anything at hand that will keep off frost, and the low temperature of spring. Sulphuring is applied whenever necesssary. The young shoots are constantly pinched or laid in during the whole season of growth; tendrils are removed, the bunches themselves are thinned out wherever there are too many; the berries are also thinned by the Grape scissors, and when summer comes with its long dry weather the night dews are imitated by a good syringing every evening. The vigour of the Vines is also kept up by a good supply of manure every three years. Such management is the secret of the delicious Chasselas de Fontainebleau Grapes with their European reputation.

Among those who have been most successful in Vine ringing is M. Bourgeois, of Perrey, near Rambouillet. This gentleman's Chasselas were in the following condition:—He had several pieces of bearing wood each with two or three shoots whose Grapes were extremely unequal in size. The shoots left to themselves had only bunches in the common condition, while the contiguous ringed shoot bore a superb bunch with magnificent berries, each twice as large as the other. This was the case with every piece of bearing wood in which one shoot had been ringed and the other not. In the opinion of M. Bourgeois these advantages belong to the ringing system, namely, a fortnight's earliness, finer berries, and better quality. When the Vine is about to flower he removes a ring of bark something less than half an inch wide just below the insertion of the bunch to be experimented on. That is all he does, taking care however that as the shoot is eventually destroyed by the operation, such shoots only are selected as would have to be cut out at the next year's pruning.

The only difficulty in the operation consists in removing the ring neatly, and not cutting too deep. For this purpose a little instrument has been contrived by M. Creusan Jouet, a cutler in the Rue des Epiciers at Bordeaux, which may be easily obtained through any Paris nurseryman or seedsman.

IT is now pretty generally known that the Council of the Horticultural Society have decided upon employing the method of Ballot, or lottery if the word is preferred, for distributing plants among the Fellows, a measure to which they have been led by the extreme difficulty of making a satisfactory allotment by other means. Last Friday the first ballot of the season took place in presence of the Council; and the general result may not be without interest.

Two hundred and ninety-four Fellows, each having two chances, and 95 Fellows, each having one chance, had entered their names. There were 250 prizes, and consequently 433 blanks. The issue of the drawing was this:—

		Prizes.
Of Fellows having each two chances	43 obtained	...2= 86
,, ,, ,,	119 ,,	.. 1=119
,, ,, ,,	132 ,,	.. 0
Of Fellows having each one chance	45 obtained	.. 1= 45
,, ,, ,,	50 ,,	.. 0
		250

Among the prizes were 70 plants of the new and very curious Pinus Don Pedri, 20 of Rhododendron Dalhousieanum, 100 of Ferns from Borneo, 100 Cupressus Lawsoniana, 100 C. Macnabiana, 40 Berberis from Pichincha, 50 Clematis leptophylla, 100 Bambusa gracilis, 20 Chamæcyparis thurifera, 50 Prostanthera nivea, and 40 Helleborus olympicus. Another and more extensive ballot is expected to take place in the month of June.

AFTER the disheartening ravages which were inflicted last year in one of our first-rate nurseries by a little fungus, which baffled every attempt to suppress it, we are not surprised at any anomalous appearance in the stove or conservatory creating considerable alarm. Accordingly we received some anxious inquiries respecting a very curious appearance which presented itself on the leaves of Orchids and some other plants in the same stove. These leaves, but more especially their under surface, were studded with brown globular bodies as large as a grain of Mustard seed, firmly attached by a few very short mucous threads. We confess that we were at first greatly puzzled by them. It

appeared, however, that they were equally abundant on the walls of the house, therefore there was no question as to any intimate connection with the Orchids. It appeared on examination under the microscope that they were not seeds, there was not a trace of starch, and the cellular tissue and its reaction under the usual chemical agents indicated that the bodies certainly were of fungous origin.

Now there is a pretty little Fungus known under the name of *Sphærobolus stellatus*, which has the curious property of shooting out its single, globose, shot-like sporangium by the inversion of its inner membrane. The force with which this takes place must, in proportion to the size of the sporangium and the membrane in which it is contained, equal that of a shell projected from a mortar. The sporangia accordingly are sent to a considerable distance, and as the surface is sticky they adhere to the substances on which they impinge. It struck us, therefore, that the bodies on the Orchid leaves might possibly be these sporangia, and we desired the intelligent cultivator who had sent us the specimens to examine the Orchid baskets and see if he could find any traces of the *Sphærobolus*. The result of the inquiry is that we received this morning abundant specimens of the fungus, which seems to be developed upon every fragment of *Sphagnum* in the Orchid pots. All alarm has of course subsided, and the case may teach an important lesson to cultivators, who can find out many a matter for themselves upon the spot which the most experienced can only guess at without an opportunity of personal examination. We wish that all questions of Vegetable Pathology might meet with so satisfactory a solution. *M. J. B.*

RHODODENDRONS—No. VIII.

The preceding papers under this head have referred more especially to hardy hybrid Rhododendrons. We come now to speak directly of those from Sikkim and Bootan: for although the general principles for the successful treatment of all are in the main identical, the latter present some specialities for separate consideration.

As was hinted in our introductory paper, the direct garden value of these fine plants has hitherto been and will continue to be found, not as occupants of the "American garden," but as ornaments to our greenhouses and conservatories. Considered as such they can hardly be over-estimated; but with one or two exceptions they are entirely unsuited for open air culture in this country. The protection they require however is so slight as to render their successful cultivation attainable by almost every one who possesses a greenhouse or pit. Where however a structure can be devoted entirely to them as a collection, it will be found highly advantageous, for under no other circumstances can they be so successfully grown, and as any protection from cold beyond actual exclusion of frost is unnecessary, a suitable building need only be of very simple construction. Of course they may be all cultivated with more or less success in company with other plants, demanding and receiving a higher temperature than is implied by the slight protection alluded to, but, as we shall presently see, the greater the amount of warmth and confinement they are subjected to at particular periods of their growth, the greater the care required for their successful culture.

Although found growing naturally on widely different elevations and in various habitats, implying a great diversity of temperature and local influence, they, in general, associate well together under artificial treatment. The fears expressed by Dr. Hooker on their first introduction, that such would not be the practical results, have happily not been realised. Even in a natural state, they, like plants in general, readily adapt themselves to accidental circumstances, and under the opposite conditions of cultivation they are equally docile. Is not Dalhousiæ on its native hills at once an Epiphyte and a terrestrial plant? And does it not here at once settle down quietly in a pot of red clay and an artificial compost? Edgeworthii too is equally an Epiphyte, and as readily forgets the Pine branches on which it flourished in the humid forests of the Himalaya to become humbled on a greenhouse stage in England. And glaucum and setosum too from elevations of 12,000 to 16,000 feet in Nepal or Sikkim, descend to luxuriate in a peat bed at Clapham or Hounslow! And equally ready are the other kinds to adapt themselves to artificial treatment, under which aspect alone we must here consider them.

Perhaps no point in their culture is of greater importance than the necessity for preventing the scorching of the leaves. And in unskilful hands or under injudicious treatment this is very likely to be, as it often is, the result. The remedy, or rather the preventative, is a free circulation and an abundance of fresh air about the plants when growing, accompanied of course by ample root moisture. At the growing season cultivation must be liberal, any approach to a system of coddling * will assuredly be fatal. A slight shading when the sun is powerful will then often be found necessary, or at least beneficial, but even that assistance must be cautiously resorted to. If the shoots be made and matured (imperfectly of course) under conditions which have prevented the tissues of the leaves from acquiring their proper solidity, or if during their formation they be allowed either from a deficiency of moisture or from an over-heated atmosphere, or from both in combination, to become flaccid to any considerable extent, the edges at least of such leaves will rarely regain a healthy tone, but will in a short time assume the appearance of brown paper, to the destruction of the present beauty of the plant so damaged, as well as a certain hindrance to its future progress. Coddling in any garden operation in which plants are concerned is a mistaken kindness, and sooner or later defeats its own purpose; but in the cultivation of Sikkim Rhododendrons it is absolute destruction. In this respect they very much resemble Heaths, and he who can grow those plants well need not despair with the Sikkim Rhododendrons. A close atmosphere and drought at root are alike fatal to both. And though we have as yet but cursorily alluded to the importance of root moisture in connexion with the subjects of this paper, it is an equally essential condition in their success, as in that of their relatives previously treated on. Rhododendrons in pots or tubs especially demand great vigilance to prevent dryness at root, and it cannot be urged too forcibly on all who cultivate such, that if a Rhododendron so situated become once thoroughly root dried, it receives an amount of damage that years of subsequent care will hardly compensate.

Where convenience and space will allow some of the finer species to be planted out in the conservatory border, they should certainly be so treated. Careful culture would enable them to develope their true characters under such conditions; and, apart from their flowers, which would of course be their chief decorative features, the foliage would form no mean attraction, as all will readily testify who have seen large, healthy, vigorous plants of Falconeri, Hodgsonii, argenteum, or Nuttallii.

In choosing plants as permanent occupants of the conservatory or other structure devoted to a mixed collection of plants, it will of course be advisable to select such as will best sustain the greatest amount of heat; and fortunately these are among the most attractive kinds. Edgworthii, Dalhousiæ, Maddeni, Jenkinsii, calophyllum, and Nuttallii may be especially selected.

As regards soil their requirements are almost identical with those of the ordinary and hybrid varieties. A mixture of leaf mould, sand, and fibrous loam suits them admirably. And, like the hardy kinds, they, with one or two exceptions, graft well. I lately examined a collection of some hundreds of grafted plants, which were among the earliest of those "worked," and consequently are now at least 6 or 7 years old. In most of them the union between scion and stock could hardly be detected, and their general health left nothing to be wished for. It is clear therefore that objections to grafted Sikkim Rhododendrons are equally unfounded as with those of the hardy kinds. But of the stocks:—All the free-growing kinds, as Dalhousiæ, Edgeworthii, and Nuttallii, succeed best on the common ponticum, in fact Dalhousiæ refuses to unite well with any other; while fulgens, Wighti, Thomsoni, and all those which have affinity with campanulatum, are best grafted on hybrid catawbiense stocks. The process of grafting and the necessary conditions are identical with those previously detailed and illustrated.

The small free-flowering species, as setosum, ciliatum, and glaucum, may readily be increased by cuttings and seeds, and other free-growing kinds which throw plenty of wood are also easily propagated by cuttings; but for the species in general, and for quickly obtaining blooming plants, grafting offers by far the greater advantages, and to this, as we have seen, there are no valid objections. The only species which has hitherto not grafted successfully is lanatum; why, it is difficult to determine, seeing that its close allies are among the readiest to succeed, nor indeed is it more tractable on its own roots, and there is at least the satisfaction of knowing that grafted plants, indifferent though they may be, are always superior. When any of the kinds assume a straggling habit of growth as some of them naturally do, Edgworthii and Dalhousiæ for example, the knife may be fearlessly resorted to as a remedy. Cut as much as may be necessary to form well-shaped plants; plenty of new shoots will result, provided always however that the plants so pruned are strong at root and well established.

Here these papers may be brought to a close. They have run to a greater length than was originally contemplated, but as they were written to meet the inquiries of several correspondents, one of whom requested such information as should "guide those who have had no experience in the matter," it was necessary to treat the various subjects in an elementary manner, it is hoped sufficiently so. If however any topic should have been inadvertently overlooked, or too cursorily treated, and intimation of such should reach the writer it shall be amply treated in a supplementary paper. *G. Lovell, Bagshot, Surrey.*

* I use this term for lack of a better. It is at least expressive, and will be well understood by all good cultivators.

THE WALTONIAN CASE.

This contrivance takes its name from Mr. Walton, a gentleman residing at Surbiton, at whose suggestion the first case was made by Mr. West, also of Surbiton. It is, as now made, a two-light portable box, designed expressly for propagating plants by bottom-heat obtained from a tank of hot water. Imagine a common Cucumber-frame, with a wooden bottom, mounted on four legs, and you have a picture of the case in its general external aspect. Then suppose a hole to be cut in the wooden bottom and a shallow tin boiler to be dropped into it, and over the boiler a shallow zinc tray, and you have an idea of the adaptation of the frame to the work of propagating by means of hot water. Place a lighted lamp under the hole in the wooden bottom and the tank becomes heated, and you have a clear theoretical idea of the internal as well as external economies of the case. In its practical working form, as the result of a long course of experiment and observation, it is by no means so simple. I will therefore describe the case in detail, as ordinarily constructed.

The measurements inside are 34 inches by 17 inches, which gives a superficial area of 568 square inches, or sufficient for 32 4-inch pots. I have had one in use four years, and when starting seeds usually place a board over the first lot of pots, and then 32 more pots on the board. By shutting the lights close the heat is confined, and on this plan 64 pots of seeds may be set to work at once. The zinc tray on which the pots stand is 1 inch deep, and is filled with silver sand kept very wet. Attached to the under side of this tray is the boiler, which holds about two quarts of water, and is filled by means of an upright tube which passes through the tray in the centre of the bed of silver sand. When lowered into the frame, an orifice on the under side of the boiler fits over a hole in the wooden bottom, and under this is placed the lamp, candle, or gas jet, used as a source of heat. Mr. West's ingenuity has been sorely taxed to devise means for rendering effective the very small amount of heat which the lamp produces, and in the result lies the chief merit of the invention. The hot air from the flame enters a chamber between the bottom of the boiler and the proper exterior of the metal work to which it is attached, and pursues a tortuous course, so that the whole of the heat is appropriated, and the burnt air escapes by means of a small funnel at the back of the case, and cannot possibly come in contact with the plants. On the ordinary plan of a lamp for heating which by Mr. Wilson's help I have now displaced by means of a candle, a bottom-heat of from 80° to 100° is easily obtained. The proper range is 80° bottom heat, 60° top-heat, sufficient for all ordinary purposes. Many ingenious people have set themselves to make cases of this kind, but have always failed to get a draught sufficient to keep the lamp burning steadily and to obviate smoke. The secret of the thing is in the construction of the chambers: all the rest is as simple as an ordinary frame mounted on legs and finished neatly.

The value of such a contrivance is obvious. To the nurseryman or the superintendent of a large establishment it would be but a toy; but to the thousands of persons who seek recreation in the propagation of plants for the decoration of their moderate-sized gardens, it is invaluable for several reasons:—1. The heat is certain, a jet of gas will burn night and day, and the candle now made for the purpose burns 12 hours. 2. The mess and litter of a dung-pit are obviated, and the most delicate fingers may be employed in plant propagation without the necessity of their ever being soiled. 3. It will strike cuttings of all kinds, stove greenhouse, and hardy plants, with the greatest certainty, because it can be made to give a fierce heat with abundant moisture, or a very moderate dry heat at pleasure. 4. The case can be placed in a sitting room where it would be impossible to tolerate any other kind of horticultural machinery, and is an elegant piece of furniture as well as an amusing object. I shall never forget the pleasure it gave me during a season of illness two years since to have the case at work in the bed-room, and to see its cheerful flame burning all night long. 5. While serving as a plant factory, it will suffice to keep frost out of a small greenhouse, and so render any other heating apparatus unnecessary. I know of a lean-to facing the north-west, 12 feet by 8, which is heated by means of one, and a good greenhouse temperature secured.

As to what may be done with one by a practical hand, let the dimensions of the case give the data. Begin in February with 64 4-inch pots. On an average of subjects, those at the bottom will want light in a few night, say 32 are taken out every 14 days, and by the end of April, you have at least 224 pots in which the seeds or cuttings have been fairly started, say one 10 seeds or cuttings to a pot all round, and the result is 2240 plants, and your house heated sufficiently for growing them on. This is no statistical fancy. I have a house full of Fuchsias, Geraniums, Calceolarias, and other bedding plants; and a very good collection of general greenhouse and stove plants, raised from seeds and cuttings in the Waltonian case, which combines all the advantages of dung heat, and is entirely free from the possibility of accident, every detail of management being perfectly under control.

The case has been figured in the "National Magazine," June 1857; "Rustic Adornments for Homes of Taste," p. 170; "Floral World and Garden Guide" Feb. 1859. The maker is Mr. West, Victoria Road, Surbiton, Middlesex, and the price from 48*s.* to 60*s.* The cost of working with Colza oil is 1*s.* 1*d.* per week; the new candle will cost a little more, but how much more I cannot at present say. *Shirley Hibberd, Stoke Newington.*

A RETURN OF SUMS VOTED BY THE COLONIAL GOVERNMENT OF VICTORIA, N.S.W., FOR THE PROMOTION OF NATURAL HISTORY.

I. Expense of publishing reports on and illustrations of natural history—

Scientific board	£500

II. Comparative expense of the Botanical and Zoological Gardens for 1858 and 1859—

	1858.	1859.
Government botanist, with quarters ..	£600	£600
Clerk	300	300
Curator, with quarters	—	300
Superintendent, with quarters	300	—
Overseer, with quarters	—	200
Wages of gardeners, labourers, &c.	3000	4800
	4200	6200
Purchase of plants	500	150
Purchase of animals	—	3000
Tools, &c., and apparatus	400	370
Forage and food for animals	75	570
Stores	150	750
Incidental expenses	100	100
Expense of publishing works on Indigenous Plants of Victoria	—	320
Buildings and materials	1325	—
	2550	5260

RAINFALL, EAST AND WEST.—REMARKABLE CONTRAST.

[We extract the following from the columns of our able contemporary the *Whitehaven Herald.*]

By a recent paper in the *Gardeners' Chronicle* we learn that the fall of rain in the neighbourhood of London during the first quarter of the year has been as follows:—

January.....	0.61 inch.—	Usual quantity	1.69
February	1.31 ,,	,, ,,	1.51
March to 28th.....	0.71 ,,	,, ,,	1.32
	2.63		4.52

This gives a deficiency of nearly 2 inches, which, added to 11.84 inches—the arrear at the commencement of the present year—shows a total deficiency making allowance for the proportion due to the three days of March still to run when the measurement was taken, that is set down at 13¾ inches. Last year the autumn supply was so short as to compel the inhabitants of all the valley of the Thames to deepen their wells; and so far from having gained by the winter rains, the water in these, at the end of March, stood 8½ inches lower than in August last, and the reduction was progressing at the rate of half an inch a week.

In remarkable contrast with the above is our experience in West Cumberland. The fall in this town, for the first three months of the year, as indicated by the gauge in the garden of Mr. William Miller, High Street, and the number of days in each month upon which rain fell, are as follow:—

January	5.179 inches ..	20 days on which rain fell
February.....	3.703 ,, ..	20 ,,
March	3.512 ,, ..	20 ,,
	12.394 ,,	60 ,,

In a note from Mr. Miller, accompanying the above report, we are further obliged with the following memorandum:—"So far as the present month has gone (April 13th), it exceeds in wetness anything we have known for a number of years. Eleven of the thirteen days of April have been wet; and the rain already measures in excess of the total amount registered in either February or March, being 3.715 inches, making a grand total, up to the present moment, of 16.109 inches. It is a little singular that in the past quarter the number of wet days should be precisely the same for each month." Again, at Cleator, in the valley of the Ehen—some four miles nearer the Ennerdale range of fells—the fall during the same quarter has been even greater. Mr. Ainsworth supplies the following return:—

Fall of rain in January, February, and March of the years 1857, 1858, and 1859, as per reading of register at the Flosh, Cleator, near Whitehaven:

	1857.	1858.	1859.
January	4.92 in. ..	3.49 in. ..	5.41 in.
February ...	3.76 ,, ..	0.46 ,, ..	4.47 ,,
March.....	3.58 ,, ..	3.66 ,, ..	4.49 ,,
	12.26 ,, ..	7.61 ,, ..	14.37 ,,

Showing for the last three months a fall very nearly double that of the corresponding period in 1858; and, as compared with the present year, seven times greater than in the neighbourhood of London! Wet, however, as the season in West Cumberland has been, it is not the wettest on record. Turning up the synoptical tables of the late lamented Dr. Miller, (Transactions of the Royal Society of Ed., vol. xxi., part 1,) we find that in the corresponding quarter of 1851 the results given by the same pluviometers, with the wet days in each month, were as follows:—

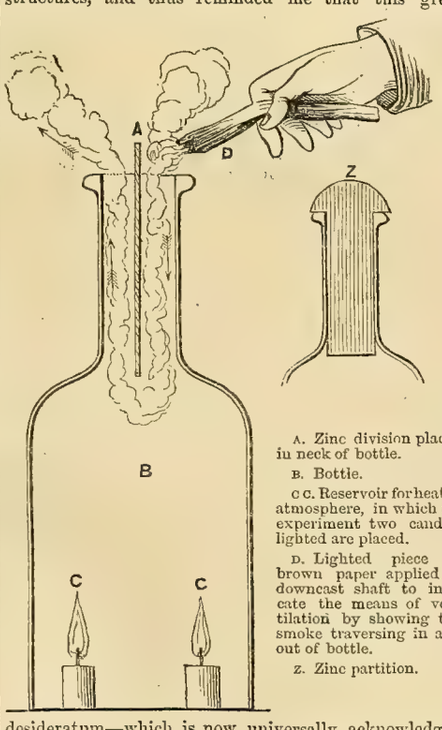
	WHITEHAVEN. Inches.	Wet days.	THE FLOSH. Inches.	Wet days.
January.....	9.412 ..	26	10.09 ..	26
February ...	3.775 ..	15	4.56 ..	15
March	3.458 ..	17	4.38 ..	22
	16.645 ..	58	19.03 ..	63

The mean fall of the first quarters in the years 1851, 1852, and 1853—(we regret we have not at hand the data for a wider quarterly averge)—was—at Whitehaven, 12.599 inches; and at the Flosh, 13.64 inches. It may be added that the mean *annual* fall, on an average of 10 years ending with 1853, was, at Whitehaven 43.535 inches, and at the Flosh 50.07 inches.

The *Gardeners' Chronicle* seems inclined to assume that the climate of England has been gradually growing drier for some years past, and raises the question,—If so, to what possible cause is that circumstance to be ascribed? It admits that the effect of deep railway cuttings, in (we presume) drawing off water from the great subterranean reservoirs, may have something to do with it; but it rejects the suggestion as not being a sufficient explanation, and asks if the extensive destruction of hedgerow and other timber may not rather be beginning to tell on our atmosphere. We might reply by asking how, on that theory, the present heavy and continuous rains in this part of the country are to be accounted for; but we refrain, for we feel that without a wider induction of facts than we are in possession of, we are not in a position to draw conclusions. That additional facts, gathered from a wider range, may possibly lead to another and less alarming theory our contemporary may perceive if he read a letter from Lieut. Colonel H. E. Austen, in *The Illustrated London News* of the 26th ult. In answer to the question, why has the weather of late been so unusually mild, Colonel Austen appeals to the truth, now axiomatically established, that all storm winds, though they seemingly blow at a right angle upon us, in reality move along parallels, in circles, whose diameter vary from 700 to 1000 miles. In our hemisphere, these wind circles, or cyclones, invariably come Europewards from intertropical regions in the direction of from S.W. to N.E.; and they bring to us heat and moisture, or cold and siccidity, according as they gyrate and impinge upon us from a western or eastern parallel. The frequent gales of this winter, says Colonel Austen, have all proceeded from cyclones moving on a western parallel, and have consequently brought us the heat and moisture overlying the areas of the Gulf Stream and Caribbean Sea. How it is that we in Cumberland have got all the moisture and a fair share of the heat, and London and its neighbourhood a due proportion of the heat with less than their wonted part of the moisture is a problem the solution of which it might be edifying to hear. Certainly it is not owing to any extension of either hedgerow or forest timber in our dales or fells.

Home Correspondence.

Ventilation.—You have lately touched upon the important question of ventilation as applied to various structures, and thus reminded me that this great



A. Zinc division placed in neck of bottle.

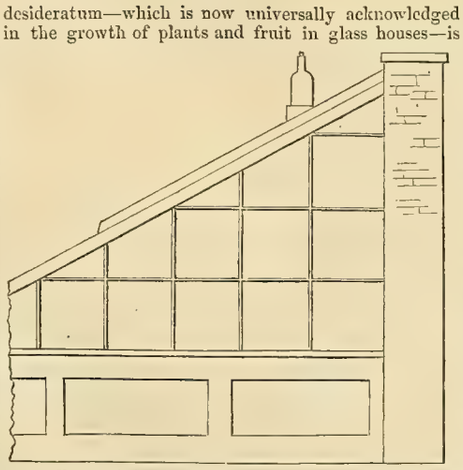
B. Bottle.

C C. Reservoir for heated atmosphere, in which for experiment two candles lighted are placed.

D. Lighted piece of brown paper applied to downcast shaft to indicate the means of ventilation by showing the smoke traversing in and out of bottle.

Z. Zinc partition.

desideratum—which is now universally acknowledged in the growth of plants and fruit in glass houses—is



generally carried out in a manner as frequently fraught with evil as good results, by admitting too great a circulation of air or of cooling to too great a degree the heated atmosphere within our glass structures. I am quite satisfied that if the plan (or similar to it) adopted in our north country collieries could be (as I have no doubt it can) applied to glass structures, that is to say, the system of ventilation on the up-cast and down-cast shaft principle, that the evils attending other modes of ventilation, especially strong currents of cold air, would be obviated, and an incessant change of air obtained without any appreciable diminution of heat within the glass house or pit. To this end I would simply apply an apparatus, invented I believe by a Mr. Watson, of Sheffield, to the highest point of a greenhouse, and which I will describe as follows:—It is a bottle-shaped cylinder, 6 to 10 inches diameter by the same in height, with a neck (similar to a bottle) of the same length, but not more than 2 or 3 inches broad (similar in fact to the diagram annexed); the neck of this glass is divided by the placing within it a piece of zinc or other metal, which has the effect of causing one half of the shaft to act as a down draught, this admitting fresh air into the glass structure above which it is placed, whilst the other shaft pumps out the heated and vitiated air of the greenhouse. The experiment of placing one or two bits of candle alight (to raise the temperature within the apparatus) would explain fully the use of this simple principle—the heat within would cause a draught down one side of the shaft, and the heated atmosphere would escape by the other, as would be seen if a piece of brown paper with the flame extinguished but still incandescent was placed over the top of the shaft, when the smoke would descend into the bottle by one shaft and ascend immediately by the other. An apparatus made of zinc or tin, applied to the top of sashes of greenhouses, would be of immense benefit in a ventilating point of view. If you are of the same opinion perhaps you will be kind enough, in a more lucid form, to give your readers the benefit of the suggestion. *J. R. S., F. H. S., Crouch End, Hornsey.*

Brazil Nuts.—Will you kindly favour me with the botanical name of the tree producing the Brazil Nuts of the shops? I find it stated in Loudon's "Hortus Brittanicus" and his "Encyclopedia of Plants," as Bertholletia excelsa; but as it is also in both of these marked as poisonous, it cannot be the Nut I mean. I believe the Nut of which I speak is called Cow-Nut in some places also, about the size and shape of one of the divisions of an Orange with a rough hard shell. *L. C.* [We cannot find the statement to which you allude. Loudon's Indexes are so ingeniously contrived as to be worse than no indexes. At all events Brazil Nuts are produced by Bertholletia, which is *not* poisonous.]

Pears.—Can you inform me what variety of Pear will answer the following description of a tree said to be a Jargonelle, growing on the wall of a house in a small town in this county (Perthshire)? It has for many years borne three crops, of which the last however is always injured by the frost. When the fruit of the first crop is about the size of a Prune the tree blossoms again, and the third blossoming succeeds when the second crop is at the same stage. If the first crop fails the second is always good, but should the second fail the third will appear in greater numbers, though from the lateness of the season always small. Is this peculiarity merely owing to local circumstances, or is it a peculiar variety? *L. C.* [We cannot answer this question.]

Ligustrum.—May I suggest in reference to an article in the *Gardeners' Chronicle* of April 2, that perhaps the Ligustrum of the Romans was the Catalonian Jasmine, J. grandiflorum. It is delightfully sweet, and any one who has seen it in Italy twining its graceful branches round an old sarcophagus or statue would not doubt of its applicability to festive garlands, while its white colour fulfils another of the conditions of the classic Ligustrum. Its congener, the Arabian Jasmine, is habitually used to this day at the native courts in India, to make fragrant chains (of the flowers threaded), which are thrown over the necks of guests whom the princes wish to honour. *L. C.*

Cheirostemon platanoides.—Has this ever flowered in this country? I have a plant of it in the greenhouse (intermediate house), which is now showing several large buds for the first time. I have a vague recollection of having heard its flowers are red and handsome, like a Magnolia. It is very rare, I believe, and if this is the first to flower it ought to be figured. Can you tell me anything more about it? I obtained my plant years ago from the Horticultural Society, of which I am a fellow. *Charles Dorrien, Ashdean, near Chichester, April* 14. [We believe it has never before flowered. Probably Sir W. Hooker would figure it in the Botanical Magazine, and we would suggest the propriety of applying to him (at the Royal Botanic Garden, Kew) on the subject.]

Night Growth.—In your leading article (p. 311) as to the injurious consequences of keeping a high night temperature in our forcing houses, you illustrate your theory by the evidence furnished by facts you there adduce to show that the night growth of plants exposed to natural circumstances was only from half to one-third of the growth by day. Now this is so opposed to a fact I lately observed closely, that I am induced to furnish you with particulars:—I planted about two years ago a "Gloire de Dijon" Rose against a south front of my residence; the first year it made but little progress, but I was glad to observe in the autumn of last year that it had produced two very vigorous shoots, which were making rapid progress. As a matter of curiosity, I each morning made a pencil mark on the wall at the extremity of each branch; on observing it again in the even-

ing progress was rarely perceptible, but the following morning a growth of an inch had taken place, and this was continued day after day—scarcely any progress during the day, but each night a growth of an inch; indeed, I almost thought I would write to you to ask you to enlighten my ignorance by informing me whether it were a recognised law in vegetable physiology, that the growth of plants occurred only at night. This, however, is so opposed to the facts now stated by you, that it appeared to me desirable to communicate the above result of my experience. *Ignoramus.* [You will find a long and very fully detailed account of the rate of growth of plants both under glass and in the open air by day and night in the Hort. Trans. 2d series, Vol. III., upon which our statement is founded.]

The Zoological Collections of the British Museum.—I see that they are now going to take earnest measures in forming a new museum for objects of natural history. Let us hope they will obtain some instructions ere they commence their work. It is rather an astounding declaration, when I say that in none of our museums are the specimens preserved in a proper manner. In making this assertion, far be it from me to condemn any individual who works in those establishments. Those whom I have the pleasure of knowing both here and abroad are clever, honest, and indefatigable men. But they all proceed upon false principles, and, of course, their labours must end in abortion. As well might we expect to give swiftness to the tortoise by cogent flogging, as to see beautiful and correct specimens turned out of their hands by means of the antiquated and faulty process of preparation which they uniformly pursue. Forty years of attention to the subject have enabled a neighbour of mine to strike out into a new and hitherto totally unknown path, embracing the four great departments of quadrupeds, birds, serpents, and insects. If any member of the Government committee, which is to decide upon a new museum, should favour your admirable correspondent Mr. Waterton with a visit, and inspect his collection, I feel quite certain that he would return to London with new ideas, and with a conviction in his own mind that the old process must be entirely laid aside, and the new one adopted, before any real good can be effected. *Deirigenus.*

Tobacco Paper.—At p. 338 there is an account of injury done to Cucumber plants which had been fumigated with this paper. When tobacco paper is burnt in the confined atmosphere of a Cucumber light the delicate structure of early leaves is apt to suffer. The reason is that tobacco paper is a sort of touch-paper, made by soaking in a strong decoction of tobacco, in which nitre or saltpetre is dissolved, and while the paper is slowly burning out the nitre is decomposed and its acid set free in the shape of gas, which at once poisons the plants, being inhaled by the pores on the surface of the leaves. I once made a canopy of muslin over a Peach tree in a pot, and burnt some of the paper to destroy those marvellously reproductive insects the aphides. The fumes of the tobacco stupified or destroyed the lice, but the fumes of the acid shrivelled and discoloured the leaves very injuriously. *W. S., Buckingham.* [We have never encouraged the use of tobacco paper, which, though low priced, is neither cheap nor safe. Many an unsuspected mischief has arisen from its use.]

Garden Expenses.—I admit that my statement (see p. 265) requires explanation. The extent of kitchen garden is stated to be 2 acres, whereas I should have deducted a considerable portion for flower-borders, walks, &c., which would leave for fruit and vegetables little more than 1¼ acre; this I can assure your correspondent is both well cropped and cultivated, so much so that generally the supply exceeds the demand, and no charge is made for what goes to the pigs or the dung-heap, nor what I use myself or give to my workmen. It must also be kept in mind that the returns from a gentleman's garden and from a market garden bear little relation to each other; the market gardener grows what will yield him the largest profits; the gentleman's gardener grows what his employer has most relish for, and moreover he is required to have all sorts of things that may be wanted on extraordinary occasions, but which at ordinary times are never asked for. I have 500 yards of wall, so says your correspondent "A. M. V.;" he may be right, I have never measured them; one thing I know is, that it is the trees which produce the fruit, not the walls, and in this as in most other gardens, part of the walls are occupied with glass structures, and part of the trees are too young to bear; and if "A. M. V." has ever seen a garden wall of any extent covered with trees, all producing even a moderate crop the same season, with no barren exceptions, he has seen what I never saw either here or elsewhere. As to the orchard-house, I need only remind "A. M. V." that these structures are of recent introduction, and that however quickly people may jump at great results in the south, here we are contented "to creep before we walk." In other words, I stocked two-thirds of my house with what are called "maiden trees," and must wait patiently for very promising results; and though the returns seem small in the eyes of your correspondent, when I tell him that the house cost less than 20*l.*, he will, I think, see little to damp enthusiasm. *J. D., Fife, N.B.*

Societies.

Royal Botanic, Regent's Park: *April* 20.—This was the last of the three spring meetings. Messrs. Henderson & Son, St. John's Wood, obtained the first prize in the class of New Plants, with the Fremontia californica formerly in the possession of the Horticultural Society, and fully noticed at p. 52; it was on this occasion nicely in flower. The same firm sent a fine Lomatia called Bidwillii, with handsome pinnated leaves, of which the long, narrow, spiny-margined leaflets were singularly enriched behind at the base; it is a distinct and handsome addition to the class of fine-foliaged plants. They had also a pretty Bejaria called microphylla, Arthrotaxus Doniana, a small-flowered orange-yellow Sedum, and a Ferula-like plant named Monezia (?) edulis. Messrs. A. Henderson & Co., Pine-apple Nursery, had a nice plant of the handsome Cyanophyllum magnificum, and a very fine double-flowered Datura, said to be from Australia, having the habit of arborea, and fine creamy yellow flowers. They also had the beautiful New Zealand Todea hymenophylloides, one of the most charming of all. Messrs. Fraser, of Lea Bridge Road, had nice plants of the fine Clematis lanuginosa and C. lanuginosa pallida; Labichea diversifolia nicely grown; an Azalea called Benno, with very large but coarse-looking flowers, rose-coloured, the upper half purple; and another Azalea called Roi Leopold, a well formed handsome flower of a salmony scarlet. Mr. C. Turner, of Slough, had a seedling Azalea, called Perfection; it is a bold and striking flower of excellent properties, and of a bright rose or purplish-tinted rose, spotted distinctly on the upper segments. Messrs. Ivery & Son, of Dorking, had a seedling Azalea, a semidouble white, with flowers of fine substance and of good size, a fine decorative variety. Miscellaneous collections of 12 plants were contributed by Messrs. Fraser and Mr. Cutbush; Azaleas in sixes by the same exhibitors; Pelargoniums in sixes by Mr. Turner; these call for no special remark. Mr. Turner showed 12 Auriculas, the best among which was Dickson's Matilda. There was a large and brilliant group of the new class of spotted French Pelargoniums contributed by Mr. Turner, among which Raphael, a dense shaded crimson, Comet, brilliant scarlet, and Virgine, bright carmine, were conspicuous from their intense colouring. Mr. Turner had also six well-grown Cinerarias of the newer varieties; and collections of Cinerarias were shown by Messrs. Dobson & Son, of Isleworth, and by Mr. Holland, of Spring Grove. Mr. Bragg, of Slough, and Mr. James, of Isleworth, exhibited stands of Pansies. A mixed collection of plants from the Pine-apple Nursery contained among others some Orchids, Heaths, the variegated Pine Apple, Cupressus Lawsoniana, a variety of Rhododendron aureum, &c. A group from the Wellington Road Nursery contained Rhododendron Dalhousiæ and Edgeworthii, Arthrotaxus cupressiformis, &c. Mr. Standish, of Bagshot, showed cut branches of the Exochordia grandiflora (noticed in a former volume) laden with its snowy white flowers, and it was stated to have recently withstood 12° of frost without injury. [The flowers of our own plant are killed.]

Some seedling Cinerarias were contributed by Mr. Turner and others. Mr. Turner obtained certificates for Incomparable, a fine variety, rosy crimson with a basal white ring around the dark eye, the florets numerous, forming a full flat circle; also for Slough Rival, a purple-shaded crimson with white basal ring and dark disc, and of good habit. In addition to these he showed Beauty, a dwarf variety with rose crimson tipped florets and a grey disc; and Acme, a small rose crimson, indistinctly marked with white around the disc. Mr. Wiggins, gr. to E. Beck, Esq., had Clara a white, Admiral a purple, and Lisette a shaded blue, but all of inferior quality; as was also Lord Clyde, from Mr. Bragg.

Some fine samples of vegetables from the south of France were sent for inspection by Messrs. Keeling and Hunt. Among these the Cauliflowers were particularly fine, Asparagus and Artichokes good, Peas and Strawberries indifferent. Messrs. Ivery & Son, of Dorking, sent some of their fine samples of Dioscorea Batatas. In our report of the first of these meetings an error we find has been committed, which we now take an opportunity of correcting. Mr. Glendinning is there stated to have exhibited the "Camellia-flowered Peach" and "Prunus triloba." Now he exhibited, he says, neither; the same error is committed in the Society's official advertisement, which Mr. Glendinning says has led to his receiving a number of letters, especially foreign, on the subject of Prunus triloba, which up to this time has never yet been exhibited at all. We hasten to set this matter right.

Botanical of Edinburgh: *Jan.* 13.—Professor Balfour in the chair. The following communications were read:—I. "Remarks on Abies bracteata." By A. Murray, Esq. This species of Spruce was first discovered by Dr. Coulter, who spent 10 years of his life in exploring the wilds of California and Mexico. It was described by Don, in the 17th volume of the Linnean Transactions. The tree reaches a height of 120 feet. Its cones exhibit long recurved bracts, but little changed from ordinary leaves, which give them a singular appearance. Hartweg, in 1847, saw this Fir in his tour in California; but the cones and seeds were in such a state as to preclude the hope of introducing the tree into Europe. Mr. Beardsley, in 1856, visited the locality in which Abies bracteata grows, but he was unable to procure perfect seeds; the cones having been injured by frost. He noticed that the tree grew in a calcareous soil. In 1857 Lobb visited the locality, but was scarcely more successful. The seeds were found almost all injured by insects, and useless for germination. In 1858 Mr. Peebles attempted to get seeds, but he, too, has only been partially successful. The cones are produced high up on the trees, and it is not easy to reach them, and the seeds seem to be very often injured. The resin of the tree is used for incense.—II. Prof. Balfour read the following communications:—1. "List of Plants found at Tayport, Fife, in September, 1858." By Prof. Lawson. 2. "Extracts from Dr. Lawson's Account of his Voyage to America in October last."—III. "On the Growth of the Bamboo Cane in the new Palm-House at the Royal Botanic Garden." In this notice Mr. M'Nab gave a detailed account of the growth of the Bamboo, taken every third day until the plant attained the height of 15 feet, with the mean temperature of the external air during each successive three days from 3d July to 14th August 1858. The average temperature of the internal air during the period of growth ranged from 65° to 70°.

Date.	Mean temperature open air.	Growth during 3 days.
July 3 to 6	54 deg.	1½ inches.
6 .. 9	46 ,,	2¼ ,,
9 .. 12	43 ,,	3¾ ,,
12 .. 15	48 ,,	7 ,,
15 .. 18	50 ,,	9½ ,,
18 .. 21	45 ,,	10¾ ,,
21 .. 24	44 ,,	13¾ ,,
24 .. 27	51 ,,	17 ,,
27 .. 30	54 ,,	18¼ ,,
30 .. 2 Aug.	52 ,,	19¾ ,,
Aug. 2 .. 5	47 ,,	17½ ,,
5 .. 8	47 ,,	18½ ,,
8 .. 11	43 ,,	19½ ,,
11 .. 14	45 ,,	20½ ,,

From the 14th of August to the 24th of September the extra height reached was 25 feet, being an average of 2 feet for every three days. On the 24th of September, the extreme height of the shoot was 40 feet, the growth of 81 days. The plant was shifted into its present tub during the spring of 1858. The soil used was turfy loam, about 4 inches of bruised bones covered the drainage previous to the plant being retubbed.—IV. "Measurement of certain Coniferous trees, taken at St. Font, Fife, by G. Patton, Esq." Communicated by Mr. M'Nab. Cryptomeria japonica (in cone)—height 21 feet; circumference of stem, 14½ inches. Taxodium sempervirens—height, 13½ feet; circumference of stem 10 inches. Abies cephalonica—height, 14½ feet, circumference of stem, 20 inches.—V. "On the Uses of the Bamboo, with illustrations." By Dr. Hunter. After alluding to the characteristics of the Bamboo and the various species described, the author remarked, "the Bamboo varies prodigiously in size in proportion to the supply of water and the richness of the soil. In dry hilly localities it grows only to 8 or 10 feet, while in moist jungles and in swamps, particularly on the banks of sluggish rivers, it attains the height of 90 to 100 feet. It has been known to grow as much as 18 inches in 24 hours. The largest Bamboos are probably those found in Burmah, where they occasionally grow to 10 inches in diameter, each joint being from 20 to 24 inches in length. The plant is often cultivated in clumps, and to form ornamental archways for avenues and gardens; also as a hedge, being bent over and interwoven so as to combine the qualities of both a hedge and a paling. There is probably no plant with which we are acquainted that is put to so many and such opposite and diversified uses as the Bamboo. The leaves when young and tender are eaten by animals. The grain is given in the form of a decoction as a remedy for fever in cattle. The young shoots of the female or hollow plant are used for making arrows; those of the male or solid plant are largely exported to Europe for making the tips of fishing-rods. The pointed lateral shoots are used when young as pins. The stems are employed for props, palings, roofing, flooring, doors, and blinds. Some houses are built entirely of Bamboo. Paper and cloth are manufactured from the plant. The tender shoots are used for pickles, and they form one of the ingredients of the celebrated preserve called Chow-chow. Baskets and boxes of various kinds are made from the Bamboo. The lacquered boxes and cups of Burmah are peculiarly beautiful. Among the other uses of the plant were noticed the following:—Poles for palanquins, for carrying water, and for pushing boats, floating rafts, swinging poles at feasts, light bullock-carts, ladders and fire-escapes, fishing-rods, boat-poles, spear-shafts, garden-chairs, plant stands, distilling tubes, hookahs, bows and arrows. The joints are employed for water-pails and bottles, also for holding letters, for musical instruments, and blow-pipes.—VI. "On the Economical Uses of the Roots of Coniferous Plants." By Mr. M'Nab. The donations of Mrs. Millar, prepared from the roots of the Abies nigra, received from the Hudson's Bay territory, and presented at the last meeting of the Botanical Society; also the donations of Mr. Jeffrey, prepared from the Abies Menziesii, from the Oregon territory, suggest the idea that something might be done in this country by a more extensive cultivation of these trees. Both species delight in open brown peat soil. Perhaps the finest specimen in Great Britain of the Abies Menziesii is to be seen on Keill Moor, Perthshire, where it is growing vigorously in good brown peat. This species differs from most of the other Conifers in being easily propaged by cutting, which, if stuck into the spongy peat, root and form trees. The Abies nigra, like A. Menziesii, also rejoices in peat soil. I have not as yet been able to ascertain the state of the roots of these trees when grown in peat, but I have no hesitation in saying that from the appearance of the roots now exhibited (grown in loam and clay) they must run freely amongst open brown sponge peat. Judging

from the strength and durability of the articles now shown, I would venture to suggest that the roots of thinnings, of these as well as other Coniferous trees, might, if found suitable, afford employment to the labouring population in the upland districts of Scotland, who might prepare these roots for baskets, hats, and other useful articles. and thus turn to profitable account soils at present wholly unproductive. The object of the foregoing remarks is to induce as much as possible the turning to account the roots of the various Coniferæ (Scotch Fir, Spruce, and Larch) annually cut down for railway sleepers, and other economic purposes. The roots of these trees are either allowed to rot in the ground, or if grubbed up, burned to get them out of the way. When we see the uses to which coniferous roots are put by the American Indians, we are entitled to conclude that something may yet be done with them in this country. Several interesting species of Gentiana, including G. cernua, were contributed by Mr. I. Anderson. They had been sent by Professor Jameson of Quito. Mr. Anderson, in his note accompanying the specimens says, "I beg to send dried specimens of three Gentians sent to me by Dr. Jameson of Quito, and gathered by him on Antisana, to which he had made an excursion on the 2d of November last. The tallest, G. cernua of Humboldt, was gathered at the place where that great naturalist found it, at 13,000 to 14,000 feet of elevation. The next tallest, about 1½ inch high, is described as scarlet-flowered, and also found at 14,000 feet. The smallest, with largest flower, is described as purple-flowered. This is the one about 1 inch high, flower included." Three gentlemen were elected Fellows.

Entomological: *April* 4.—Dr. J. E. Gray, F.R.S., President, in the chair. Mr. Samuel Stevens exhibited a number of new and remarkable insects just received from Mr. Wallace, being natives of New Guinea (near Dorey). Amongst them were a splendid new genus of Buprestidæ, some magnificent Curculionidæ of the genus Eupholus, some strange cornuted Dipterous insects, and a singular grasshopper. Mr. Janson exhibited a number of new British species of minute beetles of different genera, taken near London. Mr. W. W. Saunders exhibited a large species of centipede which had been found alive in a chest of tea from China; also specimens of the curious crustaceous insect, Branchipus stagnalis, taken in small ruts filled with water near Reigate, but which in summer are dried up. This species is interesting from being the largest British species of the Entomostraca. He also exhibited some of the Oak-galls which have recently become so numerous in different parts of the west and south of England, which led to some discussion as to the possible advantage of using them in the manufacture of ink, as had already been done, although the amount of tannin which they contained was much less than in the ink-galls of commerce. Mr. Westwood exhibited some case-bearing larvæ of a small moth (Coleophora gryphipennella), taken on Roses grown in pots in greenhouses. Mr. White read the description of one of the new species of Buprestidæ received from Mr. Wallace, forming a new genus, to which he gave the name of Demochroa carinata. Some new British Coleopterous insects of small size were also exhibited by Mr. George R. Waterhouse.

Notices of Books.

New Zealand and the Canterbury Colony. By Lord Lyttelton. Stanford. (A pamphlet.)

Under this title we have a singularly interesting and trustworthy account of one of those great English settlements which some day may become powerful Anglo-Saxon nations, the allies, not the colonies of their parent. That New Zealand offers an excellent field to industrious settlers is now a fact beyond question. There are few counties indeed between the Land's End and John o' Groat's that have not contributed their quota of emigrants, all the well-to-do of whom are known to be doing well. Any information therefor communicated by one who is himself both a landown and a fundholder in the colony is important. Our own trustworthy correspondents indeed have thrown no small light upon the subject, but the noble lord who at Hagley delivered the lecture before us in January last, is in a position to throw more. His purpose was to show his audience what New Zealand is, how it was acquired, with whom it is now peopled, what difficulties it has surmounted, and what are its future prospects. All this is done, briefly but sufficiently, in one of the most agreeable discourses we remember to have read, which will certainly be perused with pleasure even by those who care nothing about New Zealand and its future.

On one point only do we differ from the noble lecturer. Lord Lyttelton thinks it a misfortune that New Zealand should have the name it bears: —"New Zealand implies an Old Zealand, as we know there is, i Holland; but what have we to do with that country r and why are we to suggest to the half-informed emigrant that he may be going to a land of dykes and baggy trowsers, inhabited by men born with skates on their feet, and talking Low Dutch? The truth is, the name is a misfortune, and we should be glad even now if we could alter it." But surely the essential consideration in settling a place is to give it a *name by which it may be certainly known from all other places.* There is no other *New* Zealand, which is all that is required. When our gentlemen of the Colonial Office proposed to retain the old and forgotten name of New Caledonia, for what is now British Colombia, they committed a discreditable blunder, ignoring as they did the existence of a well-known French possession also called New Caledonia, and although they were shamed into correcting this extraordinary oversight, they after all contrived to confound confusion itself by calling the capital of Vancouver's Island Victoria; for now it is hard to say of what Victoria men are talking, whether that of China or Australia, Spain, or Vancouver, or the United States. If some gentleman would call the Colonial Minister to account, in his place in Parliament, for this outrage upon common sense and the general convenience, he would be doing a public service. But we must produce a few specimens of the manner in which Lord Lyttelton has dealt with his subject:—

Its Climate.—"It is, as I suppose, in great measure from this corresponding position of New Zealand, that it resembles England so much as it does in climate. The temperature is of a higher average, and the winds are often more violent; so that of one part of the colony, called Wellington, it is said that you may know a Wellington man by his habit of holding his hat on with his hand. A few earthquakes, rarely serious ones, have been known in some parts; none hitherto, be it observed, in Canterbury. But on the whole the climates are not very unlike, and it is probable that anything, animate or inanimate, that thrives in England would do as well in New Zealand."

Land Titles.—"This right to the country, however, acquired by taking possession, is of course only good as against other civilised nations. It is not good, except by the law of unjust force, against the native inhabitants of the place themselves, who are the natural lords of it, or at least of so much of it as they actually occupy, and are understood by their own usages to claim and hold. There have been endless questions and disputes, sometimes unhappily causing wars and massacres, connected with this matter in New Zealand: but into these I shall not enter now. They have been long since, it may be hoped, set at rest; and it is enough to observe that the above rule of natural justice was observed as far, perhaps, as it well could be, on our part, by the conclusion of a treaty with some of the leading chieftains of the country, soon after our occupation of it, called the treaty of Waitangi: by which the sovereignty of the land was made over to the Crown of England. Suppose a land occupied by natives, of which the Queen of England becomes Sovereign. One might think, at first sight, that it would be the simplest and best way for the English Government to say to English people, who might wish to colonise that country—Go and make your own bargains with the natives for any land of theirs which you may wish to buy. But that is just what it does not do. On the contrary, the law of England is that no one can acquire land, in a newly-occupied country, direct from the natives. The Crown reserves to itself the right to deal with the natives. The Crown gets the land from them: the English settlers get the land from the Crown. As soon as the Crown, acting by the governor appointed over the new colony, has bargained with the natives and got from them, by purchase, as much of the land as it can, or as is wanted for colonising, it disposes of it to its subjects, just as in the former cases of conquered or vacant land, on such terms as it sees fit. The opposite plan, that of letting private persons deal direct with the natives for their land, has been tried, and was given up because it led to great abuses, as may easily be explained."

Land-sharking.—"The main object in making colonists pay for their land, instead of the Government giving it to them, is to prevent what is called the land-sharking system. Now what do you suppose a land-shark is? A shark, as you know, is a very inhospitable and evil-minded fish, who is as fond of eating mankind as our friends the New Zealanders used to be. But a land-shark is not therefore one of what some one called 't' s amphibilious animals, who die in the sea and cannot on the land:' it means a man, who makes it his iness to get possession of large tracts of waste land, in order to cultivate it, but to hold it and keep it te till in the course of civilisation around him it has acquired a considerable value; and then he sells it. It is obvious that this is an utterly bad thing, and contrary to all the views with which any civilised and enterprising nation like England sets about the work of colonisation. The object of that great work is not to put money into the pockets of idle speculators—drones in what ought to be a busy hive of men—but to occupy, improve, and adorn new homes for the ever-teeming races of the old world. The simple way to prevent all this land-sharking system, as you ill have perceived, is to *put* a price on the wast nd. The Government, as I said before, does thi cording to its discretion. It makes every one v vants land pay a sum for it; which must not be arge, but such as he will *feel*. He will of course t a return for the money he has so spent, which he n only get by cultivating and stocking the land. A land-purchaser therefore in a colony takes care, besides his purchase-money for the land, to have capital enough for those further purposes."

Why Native Races wear out.—"It may be feared that this decay of native races has often arisen from their becoming familiar with the vices and excesses habitual with too many of their civilised neighbours, such as spirit-drinking. In New Zealand I hope it may not have been so, lately at least, to so great an extent as elsewhere. I once asked the Bishop of New Zealand whether he could account for it. He told me it was easy to see the *seat* of the evil, which was in the death of so many young native children; that so few large families grew up. And he said it was in great measure from the imperfect adoption, by the native mothers, of some of our nursery practices, which are very good when *fully* used. As one instance, if I remember right, he told me that those worthy mammas formerly never used to wash their babies at all, thinking it something monstrous to do; and that when they began to think it a good thing they saw no necessity for rubbing them dry, but would simply wrap them in flannel, of which they had just learned the use from us, and leave them lying about exposed to cold draughts and everything that might happen."

What Emigrants should do.—"One of the first and chief lessons to be inculcated on emigrants from this country is that of self-reliance. They must go out meaning to provide for themselves, to take care of themselves, to make their own way; we say to them, 'Don't look to us 12,000 miles off; look to yourselves, make your own laws, your own combinations, your own institutions.' In particular they must trust, under Providence, to their own sinews for their own defence. In English wars, indeed, with the causes of which they have had no concern, we should always be ready to give them protection; but against their own domestic enemies, as for their own purposes of internal police, they must establish their own militia and any other local force they may need. It is true that colonial wars against native tribes have sometimes in former days been carried on with a cruelty that could not be tolerated now. All that can be said is that our colonists in these days must learn, in homely phrase, to 'get out of that.' They must learn both to defend themselves, and to do so according to the laws of civilised warfare; as indeed they have for the most part done. They have, however, in most of our colonies been rather slow to learn this lesson of independence. I remember seeing a memorial of the people of New Plymouth, which I read with some humiliation, setting forth that they were men of peace, knew nothing of war, and were really quite unable to defend themselves. No doubt this comes from the habits of their mother country, where, as in all other advanced and highly civilised lands these things are done for us. If a row is apprehended, men look round the corner of the street and call out for one of those decorous and tightly-buttoned persons who walk about for that purpose; or if it is anything more serious, the magistrates besiege the unfortunate Lord-Lieutenant of the county for yeomanry, or soldiers of one kind or another. But such was not the ancient law of England."

Present State of the Colony.—"Of the material prosperity of the colony I will only say a word or two. Of course in all new countries there is much roughness and hardness to be undergone; and gentlemen and ladies should especially be warned to expect what has hitherto proved quite inevitable, that they must often learn to be their own servants. From causes like these a few, and but a few, have been disappointed and left the colony. But I believe hardly a single settler from the first has been compelled by distress or ruin to do so—a fact, perhaps, not to be paralleled in colonial history. And one striking fact may be stated, concerning the proportion between the public revenue and the population of the colony. The revenue of Great Britain and Ireland, I suppose, is in the gross somewhere near 70,000,000*l.*, on a population of 28,000,000, or about 2*l.* 10*s.* per head. In new colonies the proportion is greater; but I believe no colony has yet approached what has been attained in Canterbury. There the population, I think, is about 7000, and the annual public revenue 100,000*l.*, being upwards of 14*l.* per head."

Hortus Lindenianus for April, 1859, Part I. (Brussels, Huyez), is a new periodical in 8vo, illustrated with coloured figures, entirely consecrated to the publication of the numerous fine novelties introduced to cultivation by the collectors of M. Linden of Brussels, the Veitch of Belgium. Each plate is accompanied by horticultural information and botanical characters; the former by Mr. Linden himself, the latter by (we presume) Prof. Planchon, than whom few are more capable of such a task. Since none but handsome garden plants will be introduced, this will undoubtedly prove a work extremely acceptable to all lovers of fine new flowers. Let us add that the plates, which are extremely well executed, are also useful studies for young artists. The number before us contains Arachnothrix rosea, Begonia amabilis, argentea, and Victoria, Beloperone violacea, Centradenia grandifolia, Cuphea ocymoides, and Lindenia rivalis.

Flore des Serres, Nos. 25 and 26, contain, in addition to much good miscellaneous matter, original figures of nine new varieties of Achimenes, Nolana paradoxa violacea, Camellia Bonomiana, more of the huge Heddewigian Indian Pinks formerly noticed (p. 171), the very handsome hardy Azalea van Houttei fl. pl., the two superb Double Peaches sent out by Mr. Glendinning under the names of camelliæflora and dianthiflora, and three Azaleas indica, each white with red streaks, viz., Gloire de Belgique, Le Géant, and Etendard de Flandre, the first with too much green in the flower for our taste.

That's It, or Plain Teaching (Houlston & Wright). Nine y-six pag s 12mo and 300 woodcuts for ninepence arecheap; and praise by Sir Roderick Murchison, Dr Cumming, and others, whose eulogiums are duly set

forth immediately after the author's preface, appears to guarantee the excellence of this book. For ourselves we also think that the plan on which it is written is good, chiefly because it does not attempt to teach too much; but we regret to add that our approbation goes no further. The simple eyes of insects are called by the author *stennata* instead of *stemmata*; the gnat is Culex *pipens* instead of *pipiens*; the Deathwatch is tesselated instead of tessellated; and it is a strange piece of information to tell young people that the fossil resin called amber "is said to be formed by a large species of ant"! The exploded error of supposing that the so-called Pampas Grass (Gynerium argenteum) is the great Grass that covers the vast S. American plains or Pampas is duly perpetuated; Victoria regia is called V. regina; Rice is described as being more like Barley than any other corn plant, which is something like saying that a horse is more like a dog than any other animal; Humboldt is represented as describing Tasmanian forests of Tree Ferns, which he never saw; the Australian Grass tree is called hast*a*lis instead of hast*i*lis, and so on. It may be said that such blemishes as these are small and unimportant, and that our remarks are hypercritical. We cannot think so. Books for young people should be exact in orthography as well as in facts; otherwise they teach error; and unfortunately it is too well known how difficult it is to forget the misinformation conveyed to the young by those charged with the business of education. The testimonials above alluded to certainly justify the publishers in saying that their work is recommended by eminent clergymen, ministers, professors, &c.; but we regret to add that the book only offers a new instance of the worthlessness of such endorsements.

TRADE LISTS RECEIVED.—*Arthur Henderson & Co.'s* (Pine-apple Place) *Spring Catalogue for* 1859. Sixty-three pages of a descriptive priced list of soft-wooded plants fit for bedding out and of other things. We believe it contains all novelties of the kind that are worth having.

Garden Memoranda.

HAMPTON COURT PALACE GARDENS.—A bed of Hyacinths still in bloom here has been for the last week or two the admiration of all who have seen it. The sorts appeared to be Vainqueur and Baron Van Thuyll, single white and blue, forming a mass about 12 feet in length and 13 feet in width, and containing some 64 bulbs planted in rows, each colour alternating with the other. Between the rows had been stuck small branches of evergreens, which while they served to break the force of the cold winds we have lately been experiencing, at the same time formed a green ground colour with which the gorgeous heads of flowers formed an admirable contrast. We learned that the bulbs had been potted in ordinary garden soil in autumn, and plunged in the bed as soon as the beauty of the Verbenas with which it had been decorated was over. The plan of plunging in pots was adopted in order that the bulbs might not be disturbed in lifting, when the bed came again to be planted with its summer occupants. Nothing could be handsomer than a bed such as that just described, and the varieties of which it is composed being limited, and their cost but little, all having gardens might possess one.

Much has been written respecting the culture of Hyacinths in the open ground, the greater portion of which has, however, been calculated to deter persons, dependent upon such sources of information, from attempting their growth. It is usual to state that to grow a Hyacinth successfully, a very rich soil is absolutely necessary; but it has just been shown that any well-drained garden soil is easily rendered suitable for its growth. If the soil is of a strong adhesive nature, and the plunging in pots not resorted to, add two inches of sharp sand, and as much well-decayed manure; then dig the soil 2 feet deep with a steel fork, taking care to mix the sand and manure with the mould as the work proceeds. Friable loamy soils will require merely a liberal dressing of manure and deep digging; and it will be found that the Hyacinth will produce equally fine spikes of blossom grown in soil prepared thus, as when planted in more expensive compost.

The season for planting Hyacinths in beds, in the open air, is from September onwards. Select a dry day for putting in the bulbs; and if the same can be chosen for the preparation of the soil, it will be in much better condition for the growth of the plant than if worked when wet. Plant in lines, 9 inches by 12 inches apart, which will afford space between the plants, when up, to work a hoe for the destruction of weeds, and keeping the surface friable, to prevent the escape of moisture in dry weather.

Calendar of Operations.

(For the ensuing Week.)

PLANT DEPARTMENT.

CONSERVATORY, &c.—See that climbers and all plants of rambling habits have due attention in regard to stopping, water, &c. Camellias forced to make wood should have a trifling check as soon as the young leaves have attained their full size; this is best effected by diminishing the supply of water at the root. Continue, however, to shade and syringe morning and evening. Take care that Orchids in a growing state are properly shaded on bright days, and have sufficient atmospheric moisture. Do not use the syringe too freely among those starting into growth, but keep the atmosphere thoroughly moist. See that specimens on blocks and in baskets are not allowed to suffer from want of water, for when the soil in baskets is once allowed to get thoroughly dry water is apt to run off. When this is found to be the case the baskets should be immersed in tepid water until the soil gets thoroughly soaked. Attend to training the shoots of stove twiners as they advance, and do not allow these to get entangled before giving them attention. Also attend to the stopping and training of other plants and afford free growing subjects plenty of pot room. Achimenes and Gloxinias, filling their pots with roots, will enjoy an occasional watering with weak manure water. Repot and propagate Begonias. This is one of the most useful families of plants that can be grown. Keep up a cleanly system of cultivation by means of sweet and healthful soils and improved modes of potting, together with the most complete drainage and the constant use of weak and clear liquid manure during the growing season. Persevere in keeping down insects, which if allowed will now progress with great rapidity.

FORCING DEPARTMENT.

PINERIES.—Where there are not sufficient means of maintaining a thoroughly moist night temperature the growing stock may be dewed with the syringe in the morning, but where plenty of evaporation can be obtained from tanks or evaporating pans the syringe should be used over the foliage only in the afternoon, and then but lightly. Heavy syringing tends to render the soil about the collar of the plant too wet, and makes it difficult to judge of the state of the ball as to moisture, and keeping the axils of the leaves constantly full of water is not favourable to compact sturdy growth. See that none of the young stock is allowed to suffer for want of pot room or to get too dry at the root, for a short time's neglect at this season may end in a great many of the plants fruiting prematurely. Maintain a brisk bottom-heat, as near 90° as can be managed, but on no account exceed this, and keep the atmosphere as warm as the plants will bear without growing weakly. Succession, if all right at the root and near the glass, may safely be kept at from 65° to 70° at night and 75° to 85° with sun-heat, and plants swelling their fruit, if afforded a thoroughly moist atmosphere, will enjoy a night temperature of 70°. Give these plenty of manure water at the root. VINERIES.—As soon as the fruit is ripe in the early house discontinue the use of fire-heat as far as the state of the weather will admit, and keep the atmosphere cool in order to prevent the increase of spider and preserve the foliage in a healthy state as long as possible. Where the borders have been covered with fermenting materials this should not be removed in the present state of the weather where the fruit is colouring, but where the fruit is ripe the border should be uncovered so as to expose it to the sun and air and prevent the growth of laterals, &c. See that Vines in pots and boxes are well supplied with manure-water at the root. Give timely attention to the work of disbudding, stopping, and tying in the shoots in succession houses, and endeavour to get the fruit thinned directly the berries are sufficiently large. PEACH-HOUSE.—Fumigate frequently to keep down greenfly. In early houses, as the fruit approaches maturity, be rather more sparing of water. CHERRY-HOUSE.—Give abundance of air and liberal supplies of water to trees not yet ripening their fruit. FIG-HOUSE.—Give air and water as before, but do not syringe trees over head whose first crop is ripening off, or use cold water. CUCUMBERS AND MELONS.—Although in clear days the frames may get hot, yet be cautious in admitting much air while the wind keeps so cold. Stop shoots and thin out the leaves. If the plants are shy in setting a moderately high temperature will rather be beneficial than otherwise. Water in the mornings, as before, and cover up according to the state of the weather and the heat of the beds. Sow long green prickly Cucumbers for handglass, if not already done, and the short green prickly for small ones for pickling. In the case of Melons keep the beds regular in point of heat, and always aim at setting the fruit as near the main stem as possible. STRAWBERRIES.—Give abundance of air and water to the latest crops.

FLOWER GARDEN AND SHRUBBERIES.

Thorough dress all beds and borders; prepare stations on lawns for fine specimens of ornamental plants, such as large Fuchsias, &c. It is still dangerous to risk even the hardier kinds of bedding plants from under the protection of glass. All that can be safely done until the nights have become warmer, in the way of hardening the stock preparatory to its being planted out, is to give as much air as circumstances will admit without injuring the plants, and to place Calceolarias and the stronger Verbenas in turf pits where they can be protected at nights and sheltered from drying winds. Such things when removed to cold pits should be planted out in fine very sandy soil, which will save trouble in watering, and be much better for the plants than keeping them confined in small pots. Tender annuals that have been raised in heat should be pricked out in light soil under hand-glasses in order to get them strong before planting-out time.

HARDY FRUIT AND KITCHEN GARDEN.

A sloping bank should now be prepared and planted with runners of Alpine Strawberry for fruiting in September and October; plant three in a patch, at intervals of 15 inches; the ground between should be covered with slates when the plants have become established. Sow successions of round Spinach in a cool aspect, and let all Beet, Scorzonera, Salsafy, &c., be got in if not done. Secure plenty of good Parsley in highly manured beds at the nearest end of the kitchen garden. Sow a bed or two of herbs for next year's planting; this should be done every second year, as old plants are liable to wear out. Thin suckers from Raspberries, leaving four or five to each stool. Take care to thoroughly clean all Strawberry plantations before the runners come out. Disbud Peach trees, &c., as soon as the young shoots will admit of it; but do this carefully at first, going over them two or three times, so as to prevent a too sudden check to the flow of sap, and afford the fruit the protection of the leaves, &c., as long as it can be done without injury. Look sharply after green fly, and apply tobacco-water the moment it is perceived; on light sandy soils, however, it may be kept in check by frequent washings with the engine. But whatever method is preferred, see that it is applied before the pests get established. After the blossoms are fairly set, advantage should be taken of a fine morning to wash the trees with the engine, for the purpose of removing decayed blossoms and destroying the green fly. The superfluous shoots of Apricots should also be removed, and the remaining shoots carefully examined in search of the green caterpillar.

COTTAGERS' GARDENS.

Now that seeds should for the most part be sown and planting done, little else will be required for some time, except keeping down weeds and stirring the surface among growing crops. Straighten if necessary, and improve the appearance of paths. For edgings for these nothing is more profitable than Parsley or a line of Keens' Seedling Strawberry.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.
For the Week ending April 21, 1859, as observed at the Horticultural Gardens

April.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature Of the Air. Max.	Min.	Mean	Of the Earth 1 foot deep.	2 feet deep.	Wind.	Rain.
Friday 15	12	29.468	29.141	50	27	38.5	50	49	N.W.	.08
Satur. 16	13	29.651	29.590	46	27	36.5	48	48½	N.W.	.07
Sunday 17	○	29.803	29.741	50	24	37.0	48	48	N.W.	.00
Mon. 18	15	29.808	29.710	47	22	34.5	48	48	W.	.00
Tues. 19	16	29.656	29.512	51	25	38.0	47½	47½	N.E.	.00
Wed. 20	17	29.509	29.430	54	27	40.5	47	47	E.	.00
Thurs. 21	18	29.630	29.518	53	21	37.0	47	47	N.W.	.00
Average		29.646	29.520	50.1	24.7	37.4	47.9	47.8		.15

April 15—Cloudy and cold; low white clouds; hail showers; frosty.
— 16—Cloudy and cold; partially clouded; very clear; frosty.
— 17—Clear and cold; fine; clear; frosty at night.
— 18—Fine; cloudy; clear; sharp frost.
— 19—Partially overcast; slight haze; clear and frosty.
— 20—Fine; cold dry air; overcast; frosty.
— 21—Fine; very dry air; low white clouds; clear; Aurora borealis in the evening; severe frost at night.
Mean temperature of the week, 10 1-5th deg. below the average.

RECORD OF THE WEATHER AT CHISWICK.
During the last 33 years, for the ensuing Week, ending April 30, 1859.

April.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 24..	58.4	35.6	47.0	11	0.60 in.	5	4	6	4	1	8	3	2
Mon. 25..	58.6	37.7	48.1	15	1.40	5	6	4	6	6	3	2	2
Tues. 26..	59.0	36.0	47.5	14	0.53	3	8	5	1	1	4	9	2
Wed. 27..	58.7	35.9	47.3	15	0.14	11	1	6	2	5	5	3	1
Thurs. 28..	60.3	36.3	48.3	13	0.64	4	5	6	4	5	5	2	2
Friday 29..	60.7	38.4	49.5	12	0.75	4	3	6	2	4	6	2	6
Satur. 30..	61.7	37.3	49.5	13	0.31	5	3	6	1	3	7	3	5

The highest temperature during the above period occurred on the 28th, 1840—therm. 81 deg.; and the lowest on the 24th, 1854—therm. 18 deg.

Notices to Correspondents.

BIRDS: *Avis.* Next week.

BOOKS: *Subscribers.* All books on general gardening contain instructions for kitchen gardening; and we hardly know which to recommend in preference. But there is no *book* on market gardening. You will, however, find some useful practical information by Mr. Cuthill in a small treatise on the subject published by himself at Denmark Hill, Camberwell.—*T H.* For timber measurement consult Monteith's Foresters' Guide. What is "the best work on forest trees" is a question that cannot be answered because of its vagueness. What is it you want to know?—*W C.* Ayres on the Cucumber was published by one of the city houses, and may be had of any bookseller, if not out of print.

CALTHA PALUSTRIS: *O R C.* Although a subacrid plant, its leaves become eatable after having been boiled, especially if the water is changed. Asa Gray, in his Genera of the Plants of the United States, says that the *vernal herbage* is largely used as a potherb under the name of Cowslips.

COLCHESTER CHURCH INSECT. We shall have something to say next week of this strange story.

GENTIANA ACAULIS: *Spade.* Sow the seeds as soon as ripe in a damp shaded loamy border, covering with a handglass until the young plants are making a little progress. Do not cover the seeds with earth, but merely rake them in with a very fine rake. Winter Aconite may be treated in the same way.

INSECTS: *Anon.* There is no such insect as Acolytus. Scolytus destructor is an *alias* of Hylesinus destructor. Mr. Wm. Macleay (not Dr.) published a paper upon its ravages in St. James's Park, concerning which you will find a full account in the *Gardeners' Chronicle* for 1857, p. 342.—*C W S.* We believe they are the eggs of the moth called Bombyx dispar.

MEYENIA ERECTA: *Reader.* It is a handsome greenhouse shrub, which under ordinary circumstances flowers during June and July. It requires about the same treatment as an Epacris or Cape Heath. The great point is to get its wood well ripened in autumn.‡

NAMES OF PLANTS: We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have or could have undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*J P.* Rhamnus latifolius.

ORANGE-TREE BOXES: *Zeta.* Any conservatory builder would doubtless supply them. Slate ones may be had of Mr. Beck, Slate Works, Isleworth, near London.

RHODODENDRON: *N R.* Very handsome, but not more so than Blandyanum and many others. Its flowering so early detracts from its value.‡

VENTILATION: *Dalkeith.* The drawing is sent to the wood engraver.

MISC.: *Wilcebe.* Thanks for your letter about the Cottagers' Calendar, which has been communicated to Sir Joseph Paxton.

THE PATENT

NITROPHOSPHATE OR BLOOD MANURE COMPANY (LIMITED),

CONSISTING OF TENANT FARMERS, OCCUPYING UPWARDS OF 30,000 ACRES OF LAND.

TRUSTEES.

ABEL SMITH, Jun., Esq., Walton House, Ware, Herts.
CHARLES LUND-DALE, Esq., Essenden Place, Herts.
EDWARD BALL, Esq., M.P., 8, Belgrave Road, Pimlico
MAJOR-GENERAL HALL, M.P., Western Colville, Linton, Cambridge
JOHN BRADY, Esq., M.P., Warwick Terrace, Belgrave Sq.

DIRECTORS.

Chairman.—JONAS WEBB, Esq., Babraham, Cambridgeshire.

Deputy-Chairman.—JOHN COLLINS, Esq., Myddleton Square, Pentonville.

EDWARD BELL, Esq., Tottenham, Middlesex
JOHN CLAYDEN, Esq., Littlebury, Essex
RICHARD HUNT, Esq., Stanstead Abbot, Herts.
THOMAS KNIGHT, Esq., Edmonton, Middlesex.
ROBERT LEEDS, Esq., West Lexham, Norfolk.
ROBERT MORGAN, Esq., 72, Camden Villas, Camden Town.
GEORGE SAVILL, Esq., Ingthorpe, near Stamford.
WILLIAM COLLINS, Esq., 105, St. John Street Road.

Bankers.—Messrs. BARNETT, HOARE & Co., Lombard Street.

Solicitors.—Messrs. KINGSFORD & DORMAN, 23, Essex Street, Strand.

Auditor.—G. W. BROWN, Esq., 28, Parliament Street.

Manager.—Mr. JAMES ODAMS. | *Secretary.*—Mr. C. T. MACADAM.

Offices 109, Fenchurch Street, London.—Manufactory, Plaistow Marshes, Essex.

THE Directors beg to inform their Friends and the Agricultural Public that the following Manures are now ready:—

ODAMS'S BLOOD MANURE FOR CORN AND MANGEL.

ODAMS'S BLOOD MANURE FOR ROOTS.

ODAMS'S SUPERPHOSPHATE OF LIME.

Full particulars may be had at the Company's Offices, or of the local Agents.

NATIONAL FLAX COMPANY (LIMITED.)

Capital—£200,000, in 200,000 Shares of £1 each, 5s. to be paid on application, 5s. within three months from Allotment, and the remainder as the Directors may require it, in Two Payments of 5s. each.

TRUSTEES.

HENRY FENTON JADIS, Esq., Comptroller of Corn Returns, Board of Trade.
J. T. CROFT, Esq., 15, Regent Street, S.W.

DIRECTORS.

President—Sir JOHN DORAT, Vice-President R.S.L.

John Baldoe, Esq., Lickhill, near Stourport, Worcestershire.
J. T. Croft, Esq., 15, Regent Street, S.W.
Lieut.-Col. C. E. Dering, 47, York Street, Portman Square, W.
Frederick Hamilton, Esq., Gresham House, E.C.
T. E. Marsland, Esq., Pall Mall, S.W.
Wallace Pedder, Esq., Wadhurst, Sussex.
George Thornton, Esq., C.E., F.G.S., &c., 25, Queen's Road, Regent's Park, N.W.

Standing Counsel.—P. MacChombaich de Colquhoun, Esq., LL.D., &c., 3, Hare Court, Temple.

Bankers—Messrs. Heywood, Kennards, and Co., 4, Lombard Street, E.C.

Solicitor.—Mr. Vaughan Prance, 37, New Bridge Street, E.C.

Engineer.—Mr. G. L. Fuller, C.E., 69, Lombard Street, E.C. | *Auditors.*—(To be appointed by the Shareholders.)

Secretary—Mr. James M. Haldon, F.R.G.S.

Offices.—193, Gresham House, Old Broad Street, London, E.C.

ABSTRACT OF PROSPECTUS.

It has been for some years past a matter of notoriety that British and Irish linen manufacturers, and also manufacturers of hempen goods, have materially suffered from a deficient supply of Flax and Hemp. This state of deficient supply arises from the fact that the cultivation of Flax in Great Britain has materially decreased instead of increased with the growing requirements of our linen manufactures. Our national commercial statistics show that, out of 150,000 tons of Flax annually consumed in the United Kingdom, not more than 50,000 tons are of home growth. In addition to this enormous importation of Flax for our linen manufactures, we have also imported hundreds of thousands of quarters of Linseed every year for home consumption.

The linen manufacturers of the United Kingdom have declared that they are ready to take any quantity which can be grown at home, and at such prices as will be more remunerative to the agriculturist than the usual produce of his lands.

The promoters of the National Flax Company are prepared to prove to the agriculturists of this country that no more profitable crop can be cultivated than that of Flax, whenever their system of rettories, and improved mechanical treatment of Flax fibre, shall be adopted in the localities of its growth. The main feature of the Company's plan is, that it will take the trouble of preparing the Flax for market entirely off the hands of the grower, by becoming the purchasers of the crop, and thus leaving the grower entirely free from the hazards of bad harvesting weather, and at the same time insuring him a certain handsome profitable return for all the Flax he can produce and deliver to the Company's depôts and rettories. The Company's operations will also embrace the whole of the requisite process of preparing the Flax and similar fibrous substances ready for the spinner.

The system of preparation adopted by this Company is the subject of a patent, the invention of Mr. George Abemarle Cator, a gentleman who has made the cultivation of Flax and its preparation for the spinner his especial study for many years past, he having fully demonstrated the great economy of labour and the very great improvement in the quality of the Flax fibre, which is the result of his improved system of Flax preparation. The system will be found fully detailed in the "Explanatory Pamphlet on Flax Cultivation and Preparation," to be had free from the Secretary of the Company and its agents: in which will also be found an exposition of the great importance of the home cultivation of Flax, as insuring a regular supply of raw material to the very important national manufactures of linen and hempen goods; half-stuff for paper makers, and also of the importance of the seed for Linseed oil and oilcake.

As an example of the intended operations of the Company, the following is quoted from the full Prospectus of the Company:—

By rettories will be understood establishments where the preparation of Flax-fibre from the raw plant for the spinner and manufacturer will be carried out through all its stages.

It is estimated that two rettories, on the scale proposed as the base of operations, will require eight patent machines, and, if constantly at work for (say) 309 days in the year will produce annually 1200 tons of Flax-fibre, 7500 quarters of Linseed, and 900 tons of tows; and allowing 50*l.* per ton to be obtained for the Flax-fibre, 56*s.* per quarter for the Linseed, and 5*l.* per ton for the tows, there is a gross yield of 85,500*l.*

Assuming that it will take as much as 10 tons of Flax-straw unseeded to produce one ton of Flax-fibre, at a cost of 4*l.* per ton, and 18*l.* per ton of fibre for all expenses, the total outlay will be 69,000*l.* leaving a balance to be divided of 15,000*l.* or nearly 30 per cent. upon 55,000*l.* (the cost of the buildings, plant, and machinery, together with sufficient working capital for two rettories), which is wholly irrespective of the dividend that may be expected from licence dues from other rettories; and as the operations of the Company are extended, the dividends will be in proportion.

The peculiar advantages of Selby, in Yorkshire, and the surrounding Flax-growing districts, have decided the Company on establishing their first rettory in that neighbourhood.

A prospective enterprise of this Company being the cultivation of Flax on reclaimable lands, of which in the United Kingdom there are some millions of acres, it is considered the Company may beneficially turn its attention to the acquirement, in due course, of an available property in such lands.

The National Flax Company will, by increasing the cultivation of Flax in the present growing districts, tend to encourage the population of other parts of the country to acquire the requisite knowledge of an industrial resource by which their local labour will become more profitable, and land of greater value. Again, the fast-extending application of the power-loom to Flax-fibre will greatly increase the demand for Flax. All considered, the circumstances of the times combine to establish the present enterprise as the nucleus of a new branch of business, and a most valuable auxiliary to the farming and manufacturing producers of the United Kingdom, and one which is well calculated to still further develop her prosperity.

Copies of the Prospectus, and all further information, may be obtained at the Offices of the Company, 193, Gresham House, City.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.
Principal—J. C. NESBIT, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

THE GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY: Offices, 52, Parliament Street.
HENRY KER SEYMER, Esq., M.P., Chairman.

1. This Company is incorporated by Act of Parliament to facilitate the Drainage of Land, the Making of Roads, the Erection of Farm Houses, Farm Buildings, and Labourers' Cottages, and other Improvements on all descriptions of Property, whether held in fee, or under entail, mortgage, in trust, or as ecclesiastical or Collegiate Property.
2. In no case is any investigation of Title necessary.
3. The Works may be designed and executed by the Landowner or his Agents, or the Company will undertake the entire improvement by their experienced staff, and advance the money required for the works. Equal facilities will be afforded in either case.
4. The whole cost of the works and expenses may, in all cases, be charged on the Lands improved, to be repaid by half-yearly instalments.
5. The term of such charge may be fixed by the Landowner, and extended to 50 years for Land Improvements, and 31 years for Farm Buildings, whereby the instalments will be kept within such a fair per-centage as the occupiers of the improved Lands can afford to pay.
6. No profit is taken on any Works executed by the Company, the actual expenditure only, approved by the Inclosure Commissioners, being charged in all cases.

WILLIAM CLIFFORD, Secretary.

BATH AND WEST OF ENGLAND POULTRY EXHIBITION.—Entries close May 1.—In addition to the ordinary Money Prizes there will be awarded 22 handsome SILVER CUPS, open to all England.

Prize Sheets and Certificates to be obtained of the Honorary Secretary, Mr. KINGSBURY, Hammett Street, Taunton.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.
SHOW-YARD REFRESHMENTS.

Persons desirous of having the privilege of supplying either First or Second-class REFRESHMENTS for the Visitors in the Society's Show-yard at Warwick, in July next, can obtain the particulars and Forms of Tender, on application at 12, Hanover Square, London, W.

Tenders must be delivered in, as above, on or before the 30th April. By Order of the Council,
JAMES HUDSON, Secretary.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.—WARWICK MEETING.

Entries for IMPLEMENTS, CHEESE, WOOL, FARM-GATES, and DRAINING PIPES, must be made on or before May 1.

Entries for LIVE STOCK must be made on or before June 1.

*** All Entries received in each case after those respective dates will, without any exception, be disqualified, and returned to the senders.

PRIZE SHEETS may be had on application at the Offices of the Society, 12, Hanover Square, London.

The Agricultural Gazette.

SATURDAY, APRIL 23, 1859.

DURING last week the second annual examination in agriculture and the allied sciences took place under the supplementary charter of the Highland and Agricultural Society. This charter it will be remembered authorises the Society to appoint a committee to be called "the Council of the Highland and Agricultural Society on Education." The committee has been constituted as directed now for upwards of two years. After due deliberation it appointed a board of examiners, published a curriculum of study both in classes and on a farm, and authorised the grant of a diploma to such students as should pass an examination as to their agricultural and scientific knowledge and experience. During the first two years—1858 and 1859—the residence on a farm and attendence upon lectures, which will hereafter be required, have been dispensed with; and all of the required age who have presented themselves before the board of examination on the present and the first occasion of their meeting have been eligible for the Society's diploma without certificate of attendance upon classes or residence on a farm. We take from the columns of the *Scotsman* newspaper the following report of the examination just held:—

Two examinations of students coming within the scope of the scheme propounded by the Council have been held. At the examination in April last year, *three* candidates offered themslves, and *one* (Mr. Jacob Wilson, Manor House, Morpeth) received the diploma. This year *eight* gentlemen enrolled themselves. *Two* were prevented from appearing by illness or other causes. *Six* were examined. *One* was rejected. *One* was proficient in all the branches but one—namely, Practical Agriculture, and was remitted for a year to re-study that—a subject of cardinal importance. *One* had not reached the statutory age of twenty-one, and accordingly was not formally examined on Agriculture, for which he will come up next year. On all the other branches he passed with the highest distinction. *Three* candidates received the diploma, the first place in honour being assigned to a Scotchman. The classified list was as follows:—

1. John Milne, Mains of Laithers, Turriff.
2. William Henry Eley, Cobham, Kent.
3. Thomas Rome, Groundslow, Staffordshire.
4. Hewens Walton, Fenny Compton, Warwickshire, passed in the scientific branches, but, being too young

to receive a diploma, comes up next year on Agriculture.

The subjects of examination and the several examiners were as follows:—

Science and Practice of Agriculture, Mechanics, and Architecture of the Farm—Professor John Wilson; John Finnie, Swanston; Robert Russell, Kilwhiss; and John Wilson, Edington Mains.

Botany—Professor Balfour.

Chemistry—Professor Thomas Anderson.

Natural History—Professor Allman.

Technology—Professor George Wilson.

Veterinary Surgery—Professor Dick.

Field Engineering and Surveying—John Miller of Leithen, C.E., and James Stirling, C.E.

Book-keeping and Accounts—Kenneth Mackenzie, accountant, and Peter M'Lagan, yr. of Pumpherston.

The names of the examiners given above is sufficient guarantee of their capacity and impartiality, and few, we suppose, will question that a candidate who passes creditably an examination on the subjects required is entitled to an agricultural diploma. Students are left a very wide choice as to the schools or farms they may attend. The examiners are unpaid, and examine in groups, so as to act as assessors to each other. Altogether, we cannot but regard the Highland Society scheme as an important step in the right direction, and as we are confident that the candidates who have appeared before the Board of Examiners can testify to the examinations having been conducted in a fair and kindly spirit towards them, we trust that next April, when the formal regulations come into operation, there will be no lack of new applicants. There can be no question that, *ceteris paribus*, agricultural appointments will be given to holders of the diploma in preference to others.

At this season of the year, when hoeings and top-dressings remain the only means left by which we can influence the future harvest, it is well to recollect how great their influence is. We read in the current number of the English Agricultural Society's Journal of an experience on the latter of these subjects extending over a great many years, to which we propose to direct attention now.

They were confined to the two substances, nitrate of soda and common salt, and to the one crop of Wheat; but for extent and duration, and for the care and ability with which the experiments have been conducted they have seldom been excelled. In the words of the reporter:—

"Notwithstanding the varied results of these dressings, all are satisfactory, for there is hardly one of moderate cost that has not answered. The results of these trials must nevertheless be received with some degree of caution, and nitrate of soda must not be expected to produce an equal effect on all lands. The soil of Holkham Park is particularly adapted for this system of high farming. The surface soil is a light sandy loam, which requires much stimulant, and the subsoil is a chalk sufficiently dry, cool, and grateful to prevent the forced straw from lodging. Some soils do not want such assistance, and other barren lands lie on such poor and weak substrata that they cannot bear any extra forcing. The experiments show that Holkham is not the *natural soil for Wheat*. In those wet seasons when there was so poor a Wheat crop throughout the kingdom, the nitrate of soda produced the greatest results. Last year was too hot and dry for West Norfolk; and although the general crop of Wheat in England was abundant, at Holkham it was poor, and the soda did the least good. The practical result of these experiments is, that on the Holkham Park Farm from 6 to 8 stone (1 cwt.) of nitrate of soda, mixed with double the quantity of salt, is applied to all the Wheats; the quantity used being varied according to the strength of the plant, or condition of the land. The soda and salt are best applied in two dressings: the first half when the Wheat takes its early start in February or March, the rest some time in April, when the Wheat is growing vigorously."

The following are the results. We give first the experience of a wet season:—

Year.	No. of Experiments.	Nitrate of Soda.	Salt.	Cost of the Top-dressing.	Yield of Corn per Acre.	Increase in Corn over Experiment No. 2.	Weight of Straw grown per Acre.	Increase in Straw over Experiment No. 2.
				£ s. d.	Bush. pks.	Bush. pks.	Cwt. st. lbs.	Cwt. st. lbs.
1853.	1	6	12	0 15 2	39 0	14 3	30 4 8	7 5 10
	2	Nil	Nil	..	24 1	..	22 6 12	....
	3	8	16	1 0 3	33 3	9 2	30 0 0	7 1 2
	4	4	8	0 10 1½	32 2	8 1	27 3 6	4 4 8
	5	10	20	1 5 4	36 0	11 3	29 1 2	6 2 4
	6	8	Nil	0 18 0	35 0	10 3	32 2 4	9 3 6

In the years 1855, 1856, and 1857, which were comparatively dry seasons, the produce has not been so greatly increased by the top-dressing, and in one instance, as will be seen from the note, the application was a failure:—

Year.	No. of Experiments.	Nitrate of Soda.	Salt.	Cost of Top-dressing.	Yield per Acre. Head Corn.	Yield per Acre. Tail Corn.	Total Yield.	Excess over No. 2.	Weight per Bushel.	Straw per Acre.
		Stones.	Stones.	£ s. d.	Bush. pks.	Bush. pks.	Bush. pks.	Bush. pks.	lbs.	Cwt. lbs.
1855.	1	6	12	0 15 9	39 3	1 0	40 3	5 3	61	30 21
	2	Nil.	Nil.	..	34 1	0 3	35 0	..	61	27 6
	3	4	8	0 10 6	38 0	0 3	38 3	3 3	61	29 19
	4	8	16	1 1 0	41 1	1 0	42 1	7 1	61	32 80
	5	10	20	1 6 3	42 2	1 0	43 2	8 2	61½	34 11
	6	12	24	1 11 6	41 2	1 1	42 3	7 3	61	35 28
	7	saltpetre 8	Nil.	0 18 0	42 0	0 3	42 3	7 3	62	32 16
	8	8	16	1 3 0	41 3	1 0	42 3	7 3	63	31 4
	9	cwt. 3	..	1 1 0	35 2	1 0	36 2	1 2	62½	26 0
	10	,, 3	..	1 4 0	34 1	0 3	35 0	..	62½	26 40
1856	1	6	12	0 16 0	47 3	1 2	49 1	4 3	63	46 14
	2	Nil	Nil	..	42 2	2 0	44 2	..	62	36 68
	3	8	16	1 1 6	49 3	2 0	51 3	7 1	63	45 79
	4	10	20	1 7 0	50 2	2 0	52 2	8 0	62	43 98
	5	4	8	0 10 9	48 1	2 2	50 3	6 1	62½	45 86
	6	12	24	1 12 3	47 0	2 2	49 2	5 0	62¼	40 24
	7	8	Nil	0 18 6	48 1	2 2	50 3	6 1	62½	41 48
	8	saltpetre 8	16	1 3 0	49 2	1 2	51 0	7 0	62¼	40 28
1857	1	6	6	0 14 6	31 0	1 0	32 0	4 2	61½	18 44
	2	Nil	Nil	..	26 2	1 0	27 2	..	60½	17 28
	3	8	8	0 19 4	34 0	1 0	35 0	7 2	61	20 110
	4	10	10	1 4 2	35 2	1 0	36 2	9 0	60½	22 60
	5	4	4	0 9 8	28 0	0 2	28 2	1 0	60½	17 22
	6	12	12	1 9 0	30 0	1 0	31 0	3 2	61	17 96
	*7	8	..	0 18 0	25 0	1 0	26 0	..	61	15 46
	8	saltpetre 8	8	1 4 0	21 3	0 3	22 2	..	61	13 20
	9	..	36	0 6 6	23 2	1 0	24 2	..	61	13 38

Mem.—Sown in two dressings in April.

The preliminary remarks by the reporter, already quoted, must be taken as a guide to the meaning of these experiments. They are to be understood as giving entire encouragement to the practice of top-dressing Wheat with moderate applications of nitrate of soda, especially on light and comparatively poor soils—and in rainy seasons.

* This is the only experiment, out of more than 50, in which nitrate of soda has not produced an increase, and usually a paying increase, of Wheat; it will be observed that there was no salt used in this instance. The saltpetre diminished the yield 5 bushels per acre, and the salt, when applied alone, at the rate of 3½ cwt. per acre, also knocked off 3 bushels. The singular results of these three closing experiments appear very unaccountable, being quite at variance with all the preceding.

DR. VOELCKER ON LIQUID MANURE.

The impression I received on reading Dr. Voelcker's papers on Liquid Manure, in the last number of the Royal Agricultural Society's Journal, was that in him it had not met with a very friendly advocate. The sample made use of for comparison stands among the lowest in its proportion of ammonia, while the expense of distribution is reckoned at fully double what it can be done for under ordinarily favourable circumstances. The economical management of the liquid manure of a farm involves many considerations. The Professor has treated the subject in its application to various soils, as well as its analytical value, but my own experience and what I have seen lead me to differ on the point of its unfitness for clay soils. I have produced large crops of Italian Rye-grass on heavy clay with the aid of liquid manure, the whole field having been drained, deeply ploughed and limed; but that the extra luxuriance of the Grass was due to the liquid application (and not to the previous processes of drainage, subsoiling, liming, &c., as suggested by the Professor) was unmistakeably evident by the contrast it afforded to that portion of the field not so treated. I have applied liquid manure on a black loam, as also on a very light soil on a subsoil of gravel; this last requires more frequent applications, and those of a very diluted character, to produce the same result as would be obtained by a more concentrated dressing on a clay soil. It is clear that if liquid manure did not possess a greater value practically than it appears to do theoretically, few men would trouble themselves about it, and like the Professor's "remarkably intelligent" friend would allow it to escape as best it could, but in the long run the high price of guano and other manures will prevent this. I have tried 2, 3, and 4 cwt. of guano per acre on Italian Rye-grass, at each application washed in with 5000 or 6000 gallons of water, but none of the above quantities produced a crop either so thick in the ground or so high, as 2000 gallons of liquid, spec. grav. 1.018, diluted with three times the quantity of water. Comparing in this instance the superiority of the liquid manure over the guano, it appears only to be accounted for on the supposition that the constituents are in a more perfect state for assimilation in the one fertiliser than in the other. My liquid is derived from cows and feeding cattle, with the addition of an occasional quadruped reduced to a fluid state, and about 2000 gallons of gas liquor through the season, all of which is collected in covered tanks, cheaply constructed. Mr. Mechi's 50,000 gallons of dilated liquid per acre may perhaps be applied in five dressings, or 10,000 gallons at each time; its theoretical equivalent in guano would according to Professor Voelcker amount to 44¾ lbs. of guano—a quantity which, if applied and left to the mercy of sunshine, drought, and wind, would be nowhere in producing a crop of Grass. The expense of conveying liquid manure by pipes and pumps driven by water power, provided the water for dilution is not procured at an extravagant expense, does not exceed ¾d. per ton. The assumed cost of 2*d.* per ton is the price at which it can be managed by the water-cart; this I think was stated by Mr. Caird some time ago, as the result of his experiments. One great advantage in collecting the liquid manure apart from the solid is the economy of litter; the use of sparred floors and the carrying away of the liquid in drains enabling a greater number of cattle to be house-fed summer and winter, than by the old plan of making straw the absorbent. To supply the increasing demand for beef a man must economise his straw to the utmost, now that its value as an article of food is becoming appreciated, for steaming and mixing with cake, meal, or pulped roots. Mr. Horsfall has shown in his paper on Dairy Management that it is four times more valuable as a feeding material than for converting into manure. Professor Voelcker in his previous writings acknowledges that cows will extract a great deal of nourishment from cut straw, while now he seems to treat a plentiful supply as a matter of considerable inconvenience, and of no other use than to be trodden under foot. No man is likely to be troubled with an "excess of straw" except from a deficiency of stock; the high price of meat and the low price of grain will make farmers avail themselves of every means they possess of increasing their quantity of live stock. As to the best means of disposing of liquid manure, underground pipes are more economical than open channels, even where land can be irrigated by gravitation. There may be localities in which liquid manure cannot be applied with advantage, owing to a deficiency or the great cost of obtaining water, and in such situations some other absorbent must be found, but let it be a cheaper one than straw. But where farms are so fortunately situated as to command a good supply of water, the greatest attention should be paid so as to ensure the collection of every particle of the liquid in covered tanks, and with the aid of gravitation, water-wheel, or steam engine, it should be conveyed to the soil in underground pipes. The land intended for its application should be as near the farm steading as possible, and where there is motive power, let not the economy in the first outlay delude any one into selecting ground at a distance that may be available for gravitation, as the carriage of some 60 tons of Grass per acre up hill is a serious item of expense. Five or 10 acres laid down in Italian Rye-grass, and under pipe irrigation, will yield more food for summer soiling and at a cheaper rate than any other plan at present known, and from its enormous addition to the manure heap, will in its turn prove the commencement of a reproductive system. The growth of a uniform supply of Grass through the summer is invaluable: towards the end of the season when the pastures become bare a plentiful supply of food is ensured, so that stock are always kept thriving, and free from the many diseases engendered by young animals being stinted, quarter ill among the number. In these days of railroads with an increasing demand for garden produce, within a considerable area of large towns, vegetables may be produced to great perfection and with tolerable certainty under the liquid manure system, the application of the liquid, or even water, being so inexpensive, and at the same time so valuable. On looking over many farms managed on the pipe system, an error appears to have been committed in laying down a

greater extent of piping than can always be kept at work through the season; the interest of money on the unused portion having to be added, makes the cost of distribution much larger than it otherwise would be. This mistake, with the disadvantages in point of profit always attendant on those who step out of the beaten track, may in some way account for the partial success which the Professor has attributed to its application, but at any rate let us be cautious in adopting the practice of his "remarkably intelligent and practical friend." *James T. Blackburn, Mill of Forest, Kincardineshire.*

ON THE WINTER ACCOMMODATION FOR STOCK.

(*Concluded from page* 343.)

3. Let us now proceed to the consideration of covered accommodation for stock. Here a new feature presents itself—a new element of serious moment; viz., the expense; and it may be well to consider it a little separately. Simply as a matter of expense there is no system so economical as stalls. A shed 16 feet wide is sufficient for a pathway 3 feet wide, a manger, and standing room for the animals, whilst 4 feet in the length of the shed is ample for each, so that 64 square feet only are occupied by stall-fed cattle. And Mr. Caird (page 343) mentions some stalls erected on Lord Londonderry's estate, where 20 head of cattle are housed in a wooden shed at a cost of 30*l.*, or 30*s.* per head, the shed being 70 feet long and 15 feet wide, only 7 feet in width being allowed for each pair of animals, each animal thus occupying only 52 square feet.

Now on the box system it is usual to allow 10 feet by 9 feet for the box, and the gangway cannot be taken at less than 2 feet more, making 110 square feet for each animal. These boxes will certainly take in two younger animals, but each full sized fatting beast requires a separate box. As a question of first cost in the erection of the buildings the boxes may be taken at nearly double of the stalls.

As to the expense of the sheds with yards attached, much depends upon the variety. I think it is never desirable to keep more than six animals together in one yard. For this number a shed 36 feet long and 10 feet wide affords comfortable accommodation. This is 60 square feet for each animal, and is as cheap as anything; but if it is considered desirable to keep each in a separate yard it requires a shed 10 feet wide divided into lengths of 8 feet 6 ins., each animal thus occupying 85 square feet. Such sheds would, however, hold two small animals, whereas no animals could well be placed closer together in the stalls than as mentioned above.

Considering the simplicity and cheapness of a 10-feet compared to a 15-feet roof, I think I may place the order of cheapness as follows:—

1. Sheds and yards to hold six animals.
2. Stalls.
3. Sheds and yards to hold one.

And, dearest of all—4. Boxes.

But although this question of first cost is one of very material importance, I cannot think that it is one that should decide the question of selection; for I believe that the other points involved, viz., the health of the stock, the economy of food, and the manufacture of manure, should far outweigh it in the consideration of the owner as well as the occupier of the soil, for upon them in a great measure depends the improvement of the estate.

Let us first, then, consider the benefits, &c., of stalls. As to the health, &c., of the animal, however well it may be suited for fattening stock, I cannot believe that it is by any means desirable for store stock; to preserve which from the inclemency of the weather I believe to be most important, but at the same time it is equally necessary to keep them healthy and hardy, which, I conceive, can only be done by giving free access to the open air. This observation applies equally to box-feeding store stock. Mr. Huxtable, who keeps about 100 head of cattle on his Hill farm, was a great advocate for entirely housing his stock, and Mr. Caird says (p. 67), in 1851—"The whole stock of the farm, except the breeding ewes, are kept constantly housed night and day, summer and winter, and no particle of their food or manure is suffered to be wasted." It appears that Mr. Huxtable persevered in the system for six or seven years, but at last gave it up as Mr. Ruegg states in his Essay on the Farming of Dorsetshire, in the Journal of the Royal Agricultural Society for 1855 (vol. 34, p. 412):—

"Mr. Huxtable mentioned the result of an experiment which seems important. He carried on for six or seven years the practice of keeping his dairy beasts in houses, only turning them out once a day for exercise. This at first was found profitable in many respects; but ultimately the constitution of the cows and of their progeny became so enfeebled, and the development of tubercles in the lungs of the calves so marked, that two years ago the practice was altogether abandoned, and now his breeding stock and cows are kept principally in yards with sheds attached, their food being taken to them. This practice has been found to answer so well, that in future it will be wholly followed."

Mr. Grey, of Dilston, a well-known agriculturist (Journal of the Royal Agricultural Society, Part 1, vol. 4, 1843, p. 1), calls stall-feeding "the unnatural practice of tying up cattle to stakes, denying them the natural use of their limbs, the choice of their position in lying down, and the means of varying the atmosphere in which they are confined—a matter in which cattle are peculiarly discriminating and sensitive."

As to food, I believe there is little to choose between box and stall-feeding, they both admit of its most economical use; and upon this point the only difference between them and feeding in yards with sheds attached is on the point of the warmth afforded by them, and the consequently smaller quantity of food required by animals fed in them. This is of importance; but I believe it to be less so than that of health. More upon this point, however, presently.

As to the manure made in stalls, I do not think there is much to recommend them—the ordinary practice is to clean out the stalls twice a day, forming opposite the stalls a heap of manure which is generally exposed to the action of the rain, and being thrown loosely into a heap is in the very best state to encourage rapid decomposition, and I know from experience that there is an enormous loss during wet weather, and even if the precaution of a tank to receive the drainings is adopted, still I believe it entails unnecessary expenditure of labour. The system is sometimes modified by allowing the manure to remain under the animals for several weeks; it is however but a poor approximation to the box system, and as the dung gets only partially trodden it is by no means unobjectionable.

The box system next calls for attention. The same remarks apply to it as to stalls, on the health of the animals and the economy of food. It has the advantage over stalls of giving the animals greater freedom of action, and is no doubt good as to economising the food. As a manufactory for manure I believe there is no system to be compared to it. And here it may be well to make some remarks upon the subject of the manure made by farmers. We talk in our discussions upon the growth of roots, corn, &c., of applying so many tons or loads of manure to the acre, little taking into account the difference of its value per load. I will call your attention to some experiments made by Lord Kinnaird, and reported in the Royal Agricultural Society's Journal for 1853 (No. 32, page 336). The comparison was instituted between manure made by bullocks fattening in a covered yard, and that made by another lot, stall fed, which was thrown out into an open yard occupied by well-fed young animals. He considered that the manure from the circumstances under which it was made should have been about equal. The experiment was tried on a field of 20 acres, of very equal quality, a rich loam, &c., divided into two equal portions; 20 loads of manure per acre were applied, and the field planted with the same kind of Potatoes. Two acres on each half were measured and the crop weighed. The result was—

Uncovered Dung.

	Tons	cwt.	lbs.	
1st acre produced	7	6	8	of Potatoes.
2d ,, ...	7	18	99	,,

Covered Dung.

	Tons	cwt.	lbs.	
1st acre produced	11	17	56	of Potatoes.
2d ,, ...	11	12	26	,,

The field was afterward sown with Wheat, and the result was—

Wheat on Uncovered Dung.

	Produce in grain bushels lbs.	Weight per bushel lbs.	Produce of straw lbs.
1st acre	41 19	61½	3344
2d ,, ...	42 38	61½	3520

Wheat on Covered Dung.

	Produce in grain bushels lbs.	Weight per bushel lbs.	Produce of straw lbs.
1st acre	55 5	61	4840
2d ,, ...	53 47	61	4620

These figures speak for themselves, and leave a broad margin for errors of observation, &c.

Taking the Potatoes at 3*l.* a ton, and the Wheat at 5*s.* a bushel, the straw at 1*l.* a ton, the loss on the 10 acres in the two years from the injury done to the manure by exposure amounted to the sum of 157*l.*, or nearly 16*l.* an acre. The question may fairly be asked, Can this be true? Let us refer to Dr. Voelcker's valuable papers in the late Journals of the Royal Agricultural Society. We shall see—among the conclusions he comes to after a careful investigation into the condition and value of farm-yard manure under different circumstances—that the soluble constituents of dung are much more valuable fertilisers than the insoluble. That farm-yard dung, even quite in a fresh state, contains phosphate of lime, which is much more soluble than was suspected. That the drainings from dung heaps are very valuable. That well rotted dung contains a much larger proportion of soluble matters, and is richer in nitrogen than fresh; and so, weight for weight, is more valuable than fresh; it is, however, much more liable to loss from exposure to rain, whilst practically speaking all the essentially valuable manuring constituents are preserved by keeping farm-yard manure under cover. He says, however, that when there is a superabundance of straw it may be advisable to expose it. The worst method of making manure is to produce it by animals kept in open yards, since a large proportion of valuable fertilising matters is wasted in a short time; and after a lapse of 12 months at least two thirds of the substance of the manure is wasted, and only one-third, inferior in quality to an equal weight of fresh dung, is left behind.

Professor Johnson also found that well rotted dung had lost more than half of its weight, and he remarks that "a part of this loss may no doubt be ascribed to the evaporation of a portion of the water of the recent dung; but the larger part is due to an actual escape of the substance of the manure itself."

This all goes to show the very great importance of properly manufacturing manure, and when it is manufactured of properly preserving it. On this point the best system seems to be that recommended by Mr. C. Lawrence, viz., forming the heap of manure very much like our Mangel heaps, and covering or rather plastering it over with a coating of road drift or mould. The earth covering prevents the escape of ammonia, &c., and from the form of the heap the water is thrown off.

Returning, then, to box feeding, its superiority as a system for the management of manure must be admitted; as economising food also it is excellent, but I think it is very questionable as to its superiority for wintering store stock. My own impression is that sheds with yards attached are best suited for maintaining the stock in health, that there is not necessarily any great difference in the economy of the food, and that if properly managed the manure made in them may approximate very nearly to that made in boxes, whilst they have decided advantages in this respect over stalls. The following are the opinions of persons in different parts of the country.

A friend of Mr. Burnett's, in Kincardineshire, says:—"A few years ago nothing was thought so suitable for accommodation of stock as covered yards, now people are more anxious to have small sheds and yards for all store and fatting cattle." Another in Forfarshire says:—"I much prefer keeping all my store and fatting cattle in small yards and sheds, say from three to six in a yard, finding them do better than when tied up or in loose close boxes."

A friend of mine now farming in Wales who comes from Kincardineshire, also says:—"Store cattle should be in yards, with sheds to go into when they like. Avoid draughts, and do not keep too many together."

An excellent farmer in the county of Durham, a breeder of prize Short-horn stock, says he prefers box-feeding to any other method, and better still with a small yard for exercise. He says such are decidedly the best for feeding prize animals; but he recommends only two beasts being together when not tied up.

Stephens, in his "Book of the Farm" (Vol. 1, p. 293), says "Mr. Boswell's testimony in favour of hammels* (that is, small sheds and yards) is most conclusive; and it is this:—

"From the result of my own experiments as well as the unanimous opinion of every agriculturist with whom I have conversed on the subject, I feel convinced that there is no point more clearly established than that cattle improve quicker, or, in other words, thrive better in open hammels than in close byres."

Mr. Ellman, of Sussex, recommends sheds and yards for young stock, as nothing contributes more to their health and strength than giving them their liberty and suffering them to range while young.

I think these opinions are sufficient to prove that as regards the health, &c., of the stock, and the economy of food, sheds and yards are preferable to boxes.

Then as regards the manure made in them. In Morton's Cyclopædia (Vol. 1, p. 790), I find them thus objected to:—"In the system of shed and yard feeding there is the objection that the more valuable parts of the manure are exhaled into the atmosphere or washed away by every shower." Now to this I reply that it is not at all necessarily the case that either of these results should follow. All that is required is to litter the sheds which may even be slightly sunk as in the box system, and keep your yards clean, which when not littered I know is not very difficult. I do not see any objection to putting the scrapings from the yards under the sheds, covering it with straw so as to maintain a nice comfortable lair for the cattle; and I know that the manure thus made under the shed will be very similar to box-made manure. Stephens, in his Book of the Farm (Vol. 1, p. 293), who advocates sheds and yards in preference to boxes, says—"The manure would be equally as well compressed and good in sheds as in boxes." I observe sometimes the directly contrary management to that I am here advocating, viz., the practice of clearing out the sheds frequently, and exposing the manure to the action of the rain, &c. I am sure this is wrong.

But I shall be met with an objection to this by those farmers who have more straw than they know what to do with; whose great trouble, in fact, is to get their straw rotted. I have previously combatted this argument, and pointed out the necessity for the more extensive use of straw as food for our stock; but I shall be again met with the objection that the straw grown in our southern climate is by no means so good as that in the north of England and Scotland; but if Mr. Bond is able to feed and do his sheep well on straw, surely we may expect it will prove good food for cattle also.

Let me now draw your attention to some remarks of Marshall, who in writing on the farming of Gloucestershire, in 1789, thus highly speaks of the sheds and yards peculiar to it:—

"What characterises the bullock sheds of this district, and distinguishes them from those of every other I have observed in, is the circumstance of each bullock having a house and yard to himself, in which he goes loose, occupying them by turns, as appetite or amusement directs him; having a manger and a drinking trough to go to at pleasure. He of course eats when he is hungry, and drinks when he is thirsty. He is also at liberty to rub or to lick himself, as well as to keep his body in a degree of temperature as to heat or cold. Theory could not readily suggest more rational principles."

Marshall goes on to describe the dimensions, &c., of the sheds, and then adds—

"The partitions of the pens are gates, reaching from the pillars to the boundary wall, and likewise from pillar to pillar—when they are fixed in that position each bullock has his stall and his little yard. When in this each is shut up in his stall; the yards forming a lane or driftway, for taking in or turning out any individual."

A modification of this old Gloucestershire system may be seen at Colonel Kingscote's home farm; the altera-

* Prize Essay, Highland and Agricultural Society.

tion is, I think, very important, the manger and drinking trough at Kingscote is in the yard, protected by a small roof, leaving the shed simply as the bed for the animal and a manure factory.

In conclusion I beg to suggest the following propositions for discussion:—

1. That for the benefit of the land, the health of the stock, the economy of food, and preservation of the manure, it is desirable that all the stock of a farm should be housed during winter.
2. That on small farms such accommodation as is required should be provided at the homestead or on large farms at a few well selected spots, so as to economise labour and ensure efficient supervision.
3. That although yards are desirable for admitting the animals to the enjoyment of the fresh air and sunshine, and even occasionally of a good shower of rain as well as for exercise, yet that as a rule they should not be made the receptacles for or the place of manufacture of the manure in consequence of its exposure in them to the deteriorating effects of rain, &c.
4. That when it is necessary to remove manure to the fields it should either be applied immediately to the land or be so stacked as to expose the least surface to the action of the rain, and should be further protected by a covering of road drift, or earth sloping like the roof of a house so as to throw off the rain, the earthy covering intercepting the ammoniacal and other gases arising from the decomposition of the manure.
5. That the old Gloucestershire system of small yards and sheds, with a covered feeding trough in the yard, holding one full-grown animal, or the Scotch hammel system of a yard and shed adjoining, accommodating from two to six full-grown oxen, are preferable as respects the health of the stock to either stalls or boxes; that they are on an equality with them as respects economy of food in fine weather, and if free from draughts in most weather; that they are preferable to stalls, and very little if at all inferior to boxes, if properly managed, as a means of making and preserving manure.
6. That although stalls may be erected at the cheapest rate per head, the difference is not greatly in their favour.
7. That boxes are more expensive in their first construction than sheds with open yards.
8. That sheds on the Gloucestershire plan, to accommodate one animal in each compartment, should be 10 feet wide by 9 feet, with a yard of double the size.
9. That sheds on the Scotch system, to hold six animals, should be 10 feet wide and 36 feet long, with a yard 36 feet by 36 feet.
10. That in this neighbourhood the sheds should be placed facing the south or south east, avoiding a south westerly aspect, in consequence of the prevailing winds and heavy rains coming from that quarter, and that great care should be taken to prevent draughts.
11. That no farm is properly furnished for the occupation of a tenant without sufficient winter accommodation for the stock the farm will carry being provided.
12. And that as the cutting of the straw, &c., into chaff is of very important assistance in economising the food of the farm, it is highly desirable that advantage should be taken of the streams of water which abound in the neighbouring valleys as a simple, ever ready, and most steady motive power.

I shall conclude with the following opinion of Sir John Sinclair in his "British Husbandry" (Vol. 1, p. 24) in 1814. After examining the systems of feeding in open yards, feeding house, and hammels, he says, "On the whole, the third plan, that of hammels, though the most expensive, is certainly to be preferred. The advantages of it are described by Mr. Robertson in the following terms: 'I have found these hammels or cattle sheds much better than any large or open court and yard. Cattle kept in great numbers waste more straw, they fight and hurt one another with their horns; all this is prevented when they are kept in separate divisions; and above all, in these hammels we can give them what meat we choose, and in what proportion we think proper, and can separate those of different ages, which ought not to be associated together.'" He goes on to observe that they are equally suited for horses, and are much more healthy for them, in which I quite agree.

Home Correspondence.

Steam Cultivation.—Mr. Mechi early next month is to introduce the subject of steam cultivation before the Central Farmers' Club, and the *Agricultural Gazette* every week contains much information upon the subject. In fact it is now looked to by most farmers as likely to cause a revolution in farming. I must therefore confess my surprise that no one has hitherto insisted on the great importance of having our steam engines (with or without Boydell's wheels) capable of drawing their own implements, whether cultivators, ploughs, threshing machines, or whatever may be required. One great object is cheapness of first cost; not at present supplied by either Boydell or Fowler. Still customers will most willingly pay the extra percentage upon an engine which will save seven or eight horses and two men from carrying the whole machinery from place to place, arriving possibly too soon and losing much valuable time; small farmers too with only two or three horses must be in a great measure prevented from using steam at all. Mr. Fowler a year or two ago spoke in favour of applying his windlass, &c., to a small Boydell's engine. The additional expense would be nothing, for the engine having finished its day's work would have the steam ready to take itself and belongings at once to where it is next wanted. *W. H. S.*

Autumn Culture.—I am an amateur farmer and constantly read the *Agricultural Gazette*, the Royal Agricultural Society's Journal, and anything else I can get on the subject. I there learn that deep autumn cultivation is a most important preliminary in the growth of roots; autumn manuring is also strongly recommended; so I go to my bailiff direct. "You must plough this — inches deep."—"Oh," says he, "we shall bury the Twitch and never get it out again."—"Well, at any rate manure it directly."—"Well, sir, of course I can do as you like, but we shall not be able to rake off the Twitch in the spring." Accordingly he ploughs once in autumn, perhaps just a little deeper than formerly, and he ploughs three times in spring, adding greatly to the expenses of the farm, and all on account of this same Twitch. I go to my club like Hercules, for we farmers in this neighbourhood have a club, with which we give blows to our enemies in war, and on which we rest in peace. (This simile is not mine, but is taken from an old Farmer's Magazine.) The talk at the club is on Turnips, and I hear that in this dry climate we must not invert the soil for some time before sowing; but this man is always inverting, and always with the same "auld sang" about Twitch. This Hercules, by-the-bye, destroyed a monster with many heads, and when each was destroyed two sprung up in its place; why, this monster must have been Twitch. Dr. Voelcker says, "burn it and turn the ashes into Turnips;" the paper maker says, "sell it to me for paper." Very simple and easy indeed; they are welcome to it all if they will only get it out of the ground. Pray tell me how I am to get rid of this pickpocket, this thief of moisture, this strangler of crops, this many-fanged hydra, Twitch, and you will confer a lasting benefit upon your obedient servant, *W. H. S.*

Utilisation of Waste.—The interesting extract on the utilisation of waste which appears in the agricultural pages of your Journal of February 19 must have startled, as well as amused, certain of your numerous readers; more especially the remark that as small a quantity as 2½ lbs. of shoddy are equal to 100 lbs. of farmyard manure; which, it is well known, contains, besides ammonia and phosphate of lime, most of the minor constituents essential to the growth and perfecting of field and garden produce. Permit me however, to say that I have used an article similar to the above—the refuse or sweepings of a wool manufactory—for two successive years, with such results as to fully verify the assertion contained in Mr. Simmonds's statement. The writer has seen an analysis of that description of woollen waste called stercus, by J. T. Way, Esq., from which it appears that this particular variety, composed of wool and cotton refuse, chiefly the former, contains an amount of nitrogen equal to 5½ per cent. of ammonia, the other constituents not being stated. This kind of waste, however, labours under the disadvantage of being too adhesive for drilling by machine; a serious obstacle to its adoption on the farm, however suitable it may be for garden purposes. This is a subject of regret to many who have applied it by hand sowing or dibbling to Potatoes, Turnips, Mangel, &c.; a quality which, however it may militate against its more general adoption, would prove of manifest advantage could some means be devised for its ready application to field culture in high and dry localities, more especially during the two most critical and hottest months of the year. I hope that the interesting extract which has led to these observations, the results attending the application of this valuable manure upon the Hitcham allotments, according to Prof. Henslow's report of last autumn—not only as regards their favourite crop, Potatoes, but more particularly upon Grass—added to these few remarks, may lead to the discovery or invention of some ready method of shoddy appliance to agricultural purposes. *An Old Subscriber.*

Potato Culture.—Under the head "Potato Culture" in your last Number there are some remarks on my little treatise on that subject by "Arator," on which I beg to make an observation or two. "Arator" finds fault chiefly with the shortness and the literary faults of my little work. I admit that I am merely a practical gardener and not a practised writer. I hope "Arator" will forgive me for suspecting from some of his remarks that he is more a practised writer than a practical gardener. That my treatise is short is quite true; there are many I believe much longer with less matter. I could easily have spun it out to greater length if I had thought it would have been the better, not the worse for it. Whatever its faults of style may be it gives I hope all I wish to say very clearly. It contains, if not many words, the result of many years of thought and actual experiment, and if as "Arator" handsomely allows "advantage may be gained from it," that is as much as can often be said of many works of greater pretension. If it shows how Potatoes may be grown, as I have experimentally proved, free from disease, there are few but would think it well worth 1*s.* 6*d.*, though it may be short. "Arator" asks only one question, "Does our experienced gardener mean to tell us he has obtained any one of his monster crops from tubers which had been left under tan without the usual earthing up with the soil?" I certainly mean to tell "Arator" that the heaviest crop of round Potatoes I ever grew had nothing whatever but tan over them. He does not seem to be aware that Potatoes will grow well in tan even with nothing else either over or under them. He means, however, to try the tan, at which he sneers. That is right. But I hope he will allow me to say without offence that instead of sneering first and trying after, it would have been better to have tried first and sneered after—if necessary. As there are some things mentioned in which he allows that his own experience has shown that I am right, it may be possible I may be right also in things of which he has obviously had as yet no experience and I have. If "Arator," or indeed any other purchaser of my treatise thinks further explanation desirable, I shall be happy to give it him on application accompanied by a postage stamp. I could wish that the price of which he complains had enabled me to dispense with this condition. When "Arator" sends the result of his experience with tan to your Journal no one will be more happy to read it than *R. B., Bamford, Hathersage, Derbyshire.*

Hedgerow Timber.—Will you allow me a short space for reply to "Senex" on this question? He commences by expressing his ignorance of what "T. T. S." wants (an ignorance by the bye that from the context appears to be perfectly genuine), and then proceeds to demonstrate that what he wants is foolish and unnecessary. No one word in my former letter could surely be construed into a deprecation of high farming in its real and highest senses; nor am I one whit less an advocate for "judicious improvements" than "Senex" himself. Nature makes no "bottle-brushes," or anything half so imperfect; those of which "Senex" complains are produced by the farmer mauling them about to suit his land, and the fine trees which alone are worthy of "Senex's" pencil are the very ones which the farmer would be the first to fell. As I started with attacking the "rabid crusade" which "Senex" has not, but which I have seen, it is a necessary consequence that his arguments, brought to bear from such a point, pass by mine on the other side without ever coming really in contact with them. Many men cut down trees and uproot hedges just now simply to produce the ready money, but at the same time take refuge in the notion that what they are doing is high farming, though this is the sole part of that system in which they indulge, and they do so without reason or judgment. Others, again, considering that you cannot have too much of a good thing, boldly declare that had they a farm of 1000 acres (which, thank Heaven, they have not and I trust never may), they would not have a tree or a hedgerow on the whole farm. This would reduce us at once to the condition of Belgium and Lowlands of Switzerland, and for which I consider the reduction of our taxes half a million a year would be no compensation. "Senex" advises me to take a trip this summer; I probably shall do so long before, as is my custom; but I would strongly advise him to visit Belgium and the lower parts of Switzerland that he may have a true and healthy idea of the beauty of the scenery there. As it is plain that I and "Senex" agree in all our main notions on the subject, I should not have troubled you with this further communication but that I fear that those against whom my first attack was levelled, will fancy that "Senex" approves their conduct and has ably defended them and utterly annihilated me and my arguments, such not being the case in any single particular; I wish to deprive them of such an imaginary stronghold. Through an oversight of your printers the initials which appeared as *T. T. S.* should have been *J. J. S.*

The Reaping Machine.—Having seen several accounts of reaping machine performances, I beg leave to send you an account of a Crosskill's Bell's reaper which I have used the last two harvests with great satisfaction. The first season I cut 80 acres of Wheat (a heavy crop) in eight days, averaging 10 acres per day, all of which was more than one mile from home. Had 10 men to tie up, none beginning until there was a swathe cut for each man, the machine leaving work about 6 o'clock, the binders finishing shocking, setting up, &c., by 8 o'clock. My expenses were as follows:—

4 horses (working a pair two hours)		£0	12	0
1 man		0	4	0
2 boys		0	3	0
Beer		0	1	0
1 horse and 1 boy raking between shocks, half a day each		0	2	6
No. of acres cut per day	10	1	2	6
Per acre		0	2	3
Binding, including horse raking and stooking		0	6	0
Interest on 40*l.* at 5 per cent., wear and tear at 5 per cent.	40*s.* 0*d.*			
Say 100 acres cut in a season	100	40	0	
		0	4¾	or 0	0	5
Total cost per acre		0	8	5

This last season I have pursued the same plan, but cut a good deal of Barley, which it did very nicely indeed. This machine requires two very good strong active horses to work it well, and as a third cannot be yoked in would advise it being made 6 inches less in width. *T. B., Stapleford.*

Smith's Steam Tackle.—Seeing a statement in your Paper of April the 9th of Mr. Smith's plan of using his steam tackle, I should be glad to be informed how such a system could be carried out upon a farm like my own of 400 acres of heavy land under tillage. Upon looking into Mr. Smith's statement and adopting his plan of cropping I find that my horses would have to plough 50 acres Clover for Wheat, 100 acres for Beans and Peas, they would have to bout, split, and subsoil 50 acres for roots, and to cross cultivate 100 acres for Wheat. Thus reckoning three horses to plough ⅔ acre per day, bout up 1½ acre, and four horses to cross cultivate 5 acres, and split and subsoil 1 acre per day, I should have 980 days' work for one horse, or to finish the work by the end of November, reckoning 21 working days to a month (by which time I fully expect to complete it by steam) I should require to keep above five teams constantly employed for this work only, making no allowance for drilling and extra labour. I commenced ploughing with steam on my farm the 29th of last September, since which time no horses have done any ploughing or other cultivating work on it, with the exception of headlands and four small pieces, to which it was not worth while to take the tackle. The quantity of land ploughed by steam in the autumn was 210 acres, of which 110 acres were fallowed for roots, Beans, and Peas; the total cost, inclusive of all the expenses of a first start and incidental repairs, were 112*l.* 10*s.* 6*d.*, and I have no doubt the average expenses will be greatly

reduced this autumn. The ploughing was well done, deeper than it had been ploughed before, and required great power, often as much as 8 cwt. to a furrow. I have dispensed with 13 oxen, and reduced my staff of horses from 13 to 10, which number are required to do the drilling, harrowing, dung-cart, and casual work of the farm, which includes nearly 200 acres of pasture. I have this spring ploughed between 40 and 50 acres for a neighbour, and last week commenced cultivating the land for my root crop and summer tillage by steam. With such a system as Mr. Smith advocates much of my land must still have been poached by horses, which on this tenacious soil it often takes a season to recover, instead of which the land is in a healthy state, the rain percolating through the soil instead of lying on the surface or running off, and how could I have reduced my strength to its present number? As steam cultivation is deservedly becoming a subject of such great interest, I venture to trouble you with this inquiry. *T. H. Redman, Overtown, near Swindon, April* 13.

Rye.—I send you an ear of Rye gathered to-day. It seems very early. The seed was sown here on the 16th of September. *N., Parkham, North Devon, April* 13.

Temperance in the Harvest Field. — A few days' since I found myself enjoying the hospitality of a gentleman in Bedfordshire, a county magistrate and landed proprietor, who was desirous of influencing the farmers in the neighbourhood to abandon the practice of paying part of the harvest wages of their labourers in malt liquor instead of money. There were gathered together about 15 Bedfordshire farmers, the Chairman of Quarter Sessions, a retired captain in the army, a neighbouring clergyman, besides some visitors from a distance, one a well-known London minister, and four farmers from various parts of the country, who, having tried the proposed innovation themselves, were invited to meet their brother farmers in this way for discussion upon it. After a pleasant social meal, the question for the evening was introduced by our host's saying that he hoped this would not be considered as an ordinary temperance meeting, but he wished to have a friendly conversation on the advantages, in a business point of view merely, of abandoning the use of malt liquors in harvest, or at all events of giving them as part payment for labour done. Then a Gloucestershire farmer, a tried and trusty advocate of this reform, gave his opinion that not only were these drinks useless, but pernicious to a hard-worked harvest-man; he had worked when a younger man as much as any one, he knew both sides of the case, and he had no hesitation in declaring that the labours of the harvest-field and the stack-yard could not be conducted to the best advantage unless all intoxicating beverages were abandoned, and this statement he supported by numerous facts, arguments, and anecdotes of his own experience. His advice was that the men should be paid in money only, and left to provide themselves with such beverages as they chose; his own men used cocoa principally. An animated discussion followed, questions were asked, objections started and replied to, difficulties removed, and the evidence of the other farmers from a distance candidly considered, but in the language of the police reports it tended only to corroborate that of the first witness. Some further particulars were however elicited, showing that modifications may be advantageously introduced according to the special circumstances of a case, as where the men are working a great distance from their own homes it is an advantage to have tea or something similar provided for them by the farmer on the spot, or at the least to have a facility afforded for obtaining hot water. As to the finance of the subject, it appeared that by the adoption of this plan a saving of from 8*d.* to 1*s.* 2*d.* a day might be effected, which it was agreed the men ought to receive the full benefit of. The most important testimony, however, was that given by two of the Bedfordshire farmers, who stated they had seen the experiment tried to a limited extent during the past year by one or two men in their employment, who, they admitted, did their work as efficiently without beer as with it, saving more money for the use of their families, proving more valuable servants to their masters, and more respectable and worthy members of the community. More than three hours having been spent in this way, we again surrounded a well-spread table, and soon after separated, an impression having evidently been made in favour of this new doctrine on many minds, and in some cases the determination to give it a fair trial was fully expressed. It is to be hoped, that, for the first year at least, some special effort will be made by those who adopt the plan to remove any prejudices that may exist in the men's minds with regard to it. The great point is to let them clearly see that it is intended for their advantage even more than for that of their masters. Trusting that you will think this to be a matter of interest to your readers, and that it may encourage others to "go and do likewise." *Y. H. N.*

Societies.

Agricultural Improvement of Ireland: *April* 14.—The following letter was read:—

"Athelstaneford, March 28.

"My dear Sir,—The heifer I showed at Londonderry, which was awarded the first prize in two years old class, also the Purcell Challenge Cup, was sold by me to a Mr. Barret, of Henderson, Kentucky, at a very long price, and warranted in calf; she sailed from Londonderry in November last for New Orleans, but along with a number of others died on the passage, from the severity of the voyage. Mr. Black (brother-in-law to Mr. Barret), of Lislass, Omagh, Co. Tyrone, was intrusted with carrying out the arrangements of the shipment, &c., and I can testify to the fact as I have stated. I can give you my word and honour the 'Queen of Trumps' was in calf to the bull 'Sir James the Rose,' and can afford certificate from the herdsman that such was the case. I believe this information will be satisfactory to you, and will feel obliged by your forwarding me the premium. 'Venus de Medici' has not qualified herself. Mr. Black will be at the Royal Dublin spring show, and you can see him there, I shall not be present.—Yours truly,

"J. M. Royse, Esq." "James Douglas."

Resolved—"That the secretary do write to Mr. James Douglas, and express the regret of the council that as Mr. J. D.'s heifer did not produce a live calf as required by the condition in the premium sheet, the prize cannot be paid to him."

Royal Dublin Spring Cattle Show. — The following is the list of Prizes at the Show of this Society during the past week, taken from the report in the *Irish Farmers' Gazette*:—

The *Farmers' Gazette* Challenge Cup is awarded to Richard Eastwood, Burnley, England, for Short-horned Heifer "Rosette."

RREEDING STOCK.

Division A.—Short-horned Breed.

Class I.—*Short-horned.*—Section 1—Best bull, calved in 1858 (1) Henry Ambler, 5*l.* and large Silver Medal. (2) Allan Pollok, Ballinasloe, 3*l.* (3) Colonel C. P. Leslie, M.P., Glasslough. Section 2—Best, calved in 1857, (1) Thomas Barnes, 5*l.* (2) Jaffray Barcroft, Kilbogget, 3*l.* Section 3—Best, calved in 1856, (1) Captain W. B. M'C. Bunbury, 5*l.*; (2) Jaffray Barcroft, 3*l.* Section 4—Best, calved prior to 1856, (1) Lord Talbot de Malahide, 3*l.*; (2) George Roe, Nutley, large Silver Medal. Best of all the prize bulls, Lord Talbot de Malahide, Gold Medal; Henry Ambler, large Silver Medal. Section 5—Best heifer, calved in 1858, (1) Henry Ambler, Halifax, 3*l.*; (2) Thomas Lee Norman, Ardee, large Silver Medal. Section 6—Best heifer, calved in 1857, in calf, or producing a live calf within 12 months subsequent to the date of the show, Lord Clarina, 3*l.*; 2d, Fitzwilliam Welsh, Limerick, Large Silver Medal. Section 7—Best cow, calved in 1856, giving milk or in calf, Richard Eastwood, Burnley, Lancashire, 3*l.*; 2d, Fitzwilliam Welsh, Limerick, Large Silver Medal. Best of all the prize breeding heifers, giving milk or in calf, Richard Eastwood, the Gold Medal. Best 3 heifers under 4 years old, in calf, or having had live calves within 12 months preceding the date of show, and *bonâ fide* the property of the exhibitor, Fitzwilliam Welsh, Limerick, the Gold Medal. Section 8—Best cow of any age, in calf, or having had a live calf within 12 months preceding the date of show, Henry Ambler, 3*l.*; 2d, Fitzwilliam Welsh, Large Silver Medal. Best of all the prize milch cows, Henry Ambler, the Gold Medal.

Division B.—Miscellaneous Pure Breeds.

Class II.—*Herefords.*—Section 11—Best bull, calved in 1856, Allan Pollok, 3*l.*

Class III.—*Devons.*—Section 18—Best bull, calved in 1856, Earl of Charlemont, 3*l.* Section 21—Best heifer, calved in 1856, giving milk or in calf, Charles Toole, Bray, Large Medal. Section 22—Best cow of any age, in calf or having had a live calf within 12 months preceding the date of the show, Earl of Charlemont, Large Medal.

Class IV.—*West Highlands.*—Section 23—Best bull of any age, C. L. Ellison, Large Medal. Section 26—Best heifer, calved in 1856, giving milk or in calf, Allan Pollok, Large Medal. Section 27—Best cow of any age, in calf, or having had a live calf within 10 months preceding the date of the show, Chas. L. Ellison, Large Medal.

Class V.—*Scotch Polled.*—Section 28—Best bull of any age, Lord Talbot de Malahide, Large Medal.—Section 29—Best heifer, calved in 1858, Lord Talbot de Malahide, Large Medal. Section 30—Best heifer, calved in 1857, in calf, or producing a live calf within 12 months subsequent to the date of the show, Allan Pollok, Large Medal. Section 31—Best heifer, calved in 1856, giving milk, or in calf, Edward Atkinson, Large Medal. Section 32—Best cow of any age, in calf, or having had a live calf within 12 months preceding the date of the show, Lord Talbot de Malahide, Large Medal.

Class VI.—*Ayrshires.*—Section 33—Best bull of any age, Hon. Thomas Preston, Large Medal. Section 35—Best heifer calved in 1857, in calf, or producing a live calf within 12 months subsequent to the date of the show, William Boyle, Glasnevin, Large Medal. Section 37—Best cow of any age, in calf, or having had a live calf within 12 months preceding the date of the show, Hon. Thomas Preston, Large Medal.

Class VII.—*Alderneys.*—Section 38—Best bull of any age, Robert Collins, M.D., Navan, Large Medal. Section 39—Best heifer, calved in 1858, Right Hon. Judge Keogh, Large Medal. Section 41—Best heifer, calved in 1858, giving milk, or in calf, James B. Kennedy, Large Medal. Section 42—Best cow of any age, in calf, or having had a live calf within 12 months preceding the date of show, Ponsonby Moore, Large Medal.

Class VIII.—*Kerries.*—Section 43—Best bull of any age, Sir Edward M'Donnel, Large Medal. Section 44—Best heifer, calved in 1858, Earl of Charlemont, Large Medal. Section 45—Best heifer, calved in 1857, in calf, or producing a live calf within 12 months subsequent to the date of the show, Wm. Boyle, Glasnevin, Large Medal. Section 46—Best heifer, calved in 1856, giving milk, or in calf, Sir Edward M'Donnel, Large Medal. Section 47—Best cow of any age, in calf, or having had a live calf within 12 months preceding the date of the show, Sir Edward M'Donnel, Large Medal.

Sheep.

Class XXIII.—*Leicesters.*—Section 64—Best 1-shear ram, William Owen, Blesinton, 3*l.*; 2d, William Owen. Section 65—Best 2-shear ram, or ram of any other age, not exceeding 4 years, William Owen, Blesinton, 3*l.* Section 66—Best 3 hogget rams, never clipped, George Thunder, 2*l.*; 2d, George Thunder. Section 67—For the best 5 ewes, with their lambs yeaned in 1859, or in lamb, William Owen, 2*l.*; 2d, Phineas Riall. Section 68—Best 5 ewe hoggets, never clipped, William Owen, 2*l.*; 2d, George Thunder.

Class XXIV.—*Long-woolled* (not qualified to compete as Leicesters).—Section 69—Best 1-shear ram, Thomas B. Browne, 3*l.*; 2d, D. Kerr. Section 70—Best 2-shear ram, or ram of any other age, not exceeding 4 years, T. B. Browne, 3*l.* Section 71—Best 3 hogget rams, never clipped, T. B. Browne, 2*l.*; 2d, David Kerr. Section 73—Best 5 ewe hoggets, never clipped, T. B. Browne, 2*l.*; 2d, A. Bole.

Class XXV.—*Short-woolled.*—Section 76—Best 3 hogget rams, never clipped, Peter Broughton, 2*l.* Section 77—Best 5 ewes, with their lambs yeaned in 1859, C. W. Hamilton, 2*l.* Section 78—Best 5 ewe hoggets, never clipped, P. Broughton, 2*l.*

Class XXVI.—*Cheviots.*—Section 79—Best 1-shear ram, Lord Clermont, 2*l.*; best 2-shear ram, or ram of any other age, not exceeding 4 years, Lord Clermont, 2*l.*; 2d, Marquis of Conyngham. Section 81—Best 3 hogget rams, never clipped, Marquis of Conyngham, 2*l.*; 2d, Lord Clermont. Section 82—Best 5 ewes, with their lambs yeaned in 1859, or in lamb, Marquis of Conyngham, 2*l.*; 2d, Lord Clermont. Section 83—Best 5 ewe hoggets, never clipped, Lord Clermont, 2*l.*; 2d, Marquis of Conyngham.

Swine.

Class XXVIII.—*Coloured Breeds.*—Section 88—Best boar, 6 months, and not exceeding 12 months old, Lord Clermont, 3*l.*; 2d, Thomas Rutherfoord, 2*l.* Section 89—Best boar, exceeding 12, and not exceeding 24 months old, Lord Clermont, 5*l.*; 2d, Joseph Radcliffe, 3*l.* Section 90—Best boar, exceeding 24 months old, James R. Taylor, M.D., 5*l.*; 2d, Robert Collins, M.D., 3*l.* Section 91—Best breeding sow, in pig, or having had a litter within 6 months, James Macken, 3*l.*; 2d, Henry Sugden, 2*l.* Section 92—Best 3 breeding pigs of the same litter, under 10 months old, William Joyce, 3*l.*; 2d, F. W. Tomkinson, 2*l.* Section 93—Best litter of pigs not exceeding 5 months old, accompanied by the sow, J. C. Metge, 2*l.*, 2d, Hill Wilson, 2*l.*

Class XXIX.—*White Breeds.*—Section 94—Best boar, six months, and not exceeding 12 months old, Lord Lurgan, 3*l.*; 2d, C. L. Ellison, 2*l.* Section 95—Best boar, exceeding 12, and not exceeding 24 months old, Joseph Wilkinson, 5*l.*; 2d, J. H. Peart, 3*l.* Section 96—Best boar, exceeding 24 months old, R. Pattison, 5*l.*; 2d, Joseph Wilkinson, 3*l.* Section 97—Best breeding sow in pig, or having had a litter within six months, Lord Lurgan; 2d, J. H. Peart, 2*l.* Section 98—Best three breeding pigs of the same litter under 10 months old, Allan Pollok, 3*l.*; 2d, Duke of Leinster, 2*l.* Section 99—Best litter of pigs, not exceeding five months old, accompanied by the sow, C. J. Ellison, 3*l.*; 2d, Allan Pollok, 2*l.* Best fat pig of any age or breed, J. C. Metge, Large Medal; 2d, Thomas Rutherfoord, small Medal.

At the public meeting when the above prize list was read, Sir E. M'Donnel made the following remarks on the effects of competition on the agricultural progress of the country:—

"He would read a return to show the immense increase that had taken place in the number of cattle produced. It was connected with the railway in which he was most interested; but he was sure the Midland Company could furnish a still larger return. In the year 1847 there were carried on the Great Southern and Western Railway 48,000 head of cattle. In 1850, when the line was open to Cork, 108,000; and in 1858, 332,000. These figures, he thought, showed some of the satisfactory results of the agricultural shows; and they owed a deep debt of gratitude to the Royal Dublin Society for the successful efforts it had made to promote them."

The Lord Chancellor spoke on the advantages of resident proprietors to all classes in the country:—

"The old plan in Ireland was to cry, 'What is government going to do for us? What are you going to do for us in parliament?' My notion was, 'What are we going to do for ourselves.' One night in the House of Commons a great many theories were started, and I thought that one had not been tried yet, and I said, 'Will you just let us alone for 10 years.' That was in the year 1849. Well, I stand here in the year 1859, and when I look back on that period I own I entertain great hopes of the future prosperity of Ireland. I allude to the progress of its agriculture, and how it has been improved by the application of science; and, after all, science dignifies the meanest process. I sometimes object to the phrase I hear of 'the working classes,' or 'working men,' as applied merely to operatives and mechanics, and others occupied in the lower departments of human labour. For myself, I say that I am proud of having been always a 'working' man. There are various modes of working. The good work of the influence of a resident landlord is one on which much of the moral life and health of the community depended. Oftentimes, owing to the absence of their natural proprietors, properties in this country came under my hand; and in such instances those moral influences which, in properties naturally circumstanced, contribute so much to social progress, are all removed, and in place of that a kind of very coarse machinery is substituted, which I am afraid produces very bad effects in many places. There was one particular district of the country to which the attention of the House of Commons was directed as supplying the counties of Louth, Armagh, and Monaghan with a large proportion of the crime committed in them; and the matter underwent investigation by a committee. What were the peculiarities of that district? There was the small cotter population—the miserable two-acre farm, and the inhabitant living on the Potato—there was the absence of all the proprietors—the presence of the Court of Chancery and its receiver (laughter), and the secret society—all these things heaped together in that locality. Remove the causes and you get rid of the effects; and give me the good resident landlord discharging his duties faithfully as a worthy man, and availing himself of the position and influence that God has entrusted him with in order to promote the happiness of those around him. I would say this of the Irish people—and I say it heartily and sincerely of them—that I do not think there are on this earth a people more susceptible of justice and kindness; and I think they especially appreciate the kindness of their gentry. They respect the gentry. Master Brooke was once asked by Sir James Graham how he got the people to do certain things in connection with a particular estate. 'Oh,' said he, 'the Irish will do anything for a gentleman.' Like a true Irishman, I forgot the principal thing which I was to call attention to—namely, the memory of a nobleman who used to attend our meetings, and whose loss I think we ought all to regret as a great national calamity—I allude to the late Marquis of Waterford. I have a little memorandum about him which shows the value of a resident nobleman such as he was. In giving an account of his establishment it states that he had a regularly organised school, in which his grooms were all taught by a master, and their minds improved, and a Sunday school was kept for them; and that the farm, including Grass, &c., extended over 4600 acres. The day before he died he audited his account of expenditure upon labourers' houses, stables, dairy, and garden for the past year, which amounted to 11,000*l.*; and within the last few years he had expended, besides this, 12,000*l.* on farm buildings. He had more than 300 head of cattle, and 1500 sheep; and his weekly payment to labourers was upwards of 100*l.* During the last year he employed more than 300 labourers daily. During the years of distress, consequent on the famine, he employed daily upwards of 600 labourers. Not relying upon his own judgment as to the breed of cattle, his practice was to purchase prize animals at the shows in England and Ireland, and these were given for the use of the country and the tenantry. In order to afford employment to the people, a factory was established by him at Kilmacthomas for making Irish frieze, the whole profits of which went to the augmenting of the factory. 5000*l.* was expended yearly on the county of Waterford estate, and 3000*l.* yearly on the county of Derry estate. I think it right to allude to the memory of such a nobleman, and to say that while we honour the living we should not be forgetful of the memory of the dead."

Reviews.

Agricultural Science applied in Practice, forming at once a text book and concise course of Scientific and Progressive Instruction. By W. Wallace Fyfe, F.R.S.E. Groombridge & Sons, 5, Paternoster Row.

There is a great deal of information given here within very narrow compass. In his first lecture Mr. Fyfe refers to the sciences of geology, chemistry, vegetable and animal physiology, botany, meteorology, hydrostatics, mechanics, pneumatics, and he concludes with a

short account of the different schools of agriculture in this and other countries.

In his second lecture he speaks of the manipulation of the soil, of tillage, drainage, implements of cultivation, and the cultivation of a course of crops.

The third lecture discusses the germination of the seed and the growth of the plant; and in the fourth, the operation of manures and the laws of animal nutrition are considered.

It is impossible that so small a work can completely satisfy the expectations which its title-page may raise; but we may say that its 150 little pages are as full of useful and substantial information as they can hold.

The following passage may be given in illustration of the author's style, descriptive of agricultural schools:—

"The first model for an agricultural school was that of De Fellenberg, at Hofwyl, in Switzerland. It was both a school and a farm on the self-supporting principle, or rather on two principles; one establishment being self-supporting, to which De Fellenberg devoted his large fortune, being for poor boys; whilst the sons of the better classes were received as boarders at another under the same management. The Prussian State School of Agriculture at Mogelin had, under the famous agricultural writer Von Thaer, in 1820, a college and model farm of 1200 acres; a professor of mathematics, chemistry, and geology; another of the veterinary art, and a third of botany, materia medica, and entomology, who all lived upon the spot; whilst a practical agriculturist communicated the mode of applying the sciences in husbandry. Many similar institutions, erected under royal patronage, have appeared in Prussia, and throughout Germany—even in Russia, in Holland, and in France—such as that at Hohenheim, near Stuttgard, in Wurtemberg, where an old palace has been converted into a college for the reception of agricultural students, and possesses, within a ring fence, a farm of 1000 acres. Two classes attend this seminary. To one class the fees charged are equal to 37*l.* sterling, and with extras amount to 50*l.*; but the natives of Wurtemberg are admitted at a lower rate. Here the students merely inspect and superintend the operations of husbandry. Twelve professors lecture to them on mathematics, physics, chemistry, botany, tillage, rural economy, forestry (always a great leading object in the rural schools of Germany, and gaining importance in our own country), and veterinary science. There are agricultural training schools at Eldna, near the University of Griefswold, and also near Frankfort-on-the-Oder, similar to the school of Hohenheim. The Emperor of Russia, 12 years ago, established a school on the north bank of the Neva, not far from St. Petersburg, where his serfs are sent for five years to be educated in practical farming and the use of the most improved modern implements. Sixty of these serfs are sent out every year to carry the skill and knowledge thus acquired by them throughout the different provinces of the empire. There is, besides, an agricultural college at Moscow. Even in France, a model establishment—Grignon—formerly one of the Royal demesnes with a farm of 1100 acres, was founded in 1827, on a capital of 600,000 francs, raised in 1200 franc shares. The pupils of two classes actually aid in working the farm, receiving diplomas on passing a public examination. At Rennes, in Brittany, at Limours, near Rambouillet, and at Grandjouan, near Nantes, there are schools of agriculture; that at Limours is a normal school, and that at Grandjouan for training the youth of the labouring poor is described as an institute of agriculture, model farm, agricultural implement factory, and agricultural colony for the reclamation of 500 hectares (equal to 1200 acres) of land. The Dutch Agricultural School at Groningen has attached to it a farm at Floren—but the half-yearly commencements divide the year into a summer and winter period: the agricultural course of winter study being without charge to the pupils in town, who board themselves and pay about 4*l.* for the extra branches of science, including natural history, chemistry, botany, natural philosophy, mathematics, and the united application of chemistry and mechanics. The cost of the whole year's instruction, including, if requisite, French and German, is 33*l.* sterling."

Miscellaneous.

Straw, employed as litter, forms the principal ingredient of our home-made manures; being trodden into dung by the weight of the animals, and acquiring value by the absorption of urine, as well as by combining with dung in various stages of decomposition; it also imparts consistence to the mass, and carries it more evenly through the processes of fermentation and putrefaction. But for the dung, the straw, on the other hand, would rot imperfectly and with difficulty. Thus both components are advantaged and the manure adapted for all description of land, by the proportions of either that may be introduced, and the states in which they are. Bakewell's grand theory of converting the whole of the straw into food for his stock, believing that, digested and passed through their bodies, it became a much more highly enriched manure, is now exploded in the principal feeding districts. Of late years much straw has indeed been chopped down, steamed, and otherwise prepared for food, or rather for admixture with food; for while a small bulk of nutritive equivalent will satisfy a large animal the means of filling and distending the stomach must also be provided. But in Berwickshire, which is supposed to stand first in feeding practice, although perhaps too exclusive a reliance on Turnips is manifested in that county, the straw is not consumed to any extent as food, but almost all broken down. It is to be observed that steamed food, even Potatoes, oilcake, &c., given to cattle, produces costiveness, and the dung heap being free of urine, it would be good practice, though seldom or never done, to moisten it by bringing the dry outward parts into the middle of the pile and drenching it with the drainage of the yard, carefully turning it over, breaking and mixing the lumps, and finally wetting the surface and patting it close and smooth with the shovel to keep in the heat. Excess of wet is equally, however, to be guarded against; as any part suffered to remain drenched with rain would be prevented from rotting; to prevent this the heap must not be drained but spread out openly. Another reason for doing which is to prevent fire-fang from the too highly heaped-up parts contracting excessive heat, as stable dung is particularly apt to do, when it becomes mouldy, and loses value, estimated at not less than from 50 to 75 per cent. *W. W. Fyfe, in a lecture at Shroton.*

Notices to Correspondents.

GREEN VITRIOL: *A Subscriber*. It is nothing but a vegetable poison. There is many another better fixer of ammonia. The iron will lay hold of phosphoric acid and lock it up past recall. We would not allow it a place in any manure on any account.

PRICKLY COMFREY AND INDIAN MILLET: *Inquirer* will find information on Prickly Comfrey (Symphytum asperrimum) in Blackie's "Cyclopædia of Agriculture." In an American work on agriculture there is an article on the growing of Indian Millet (Holcus Sorghum), or Dourah-Corn, as follows:—"It is a native of India. There are two distinct varieties of this corn cultivated with us, the white and reddish brown; the brown is preferred; it is more prolific, yields four times as much, and matures earlier. This plant grows on the poorest soils; sandy loam is the best for it; the land ploughed into 4-feet ridges just before planting. In March, April, May, and sometimes in June and July, these ridges are opened with a 'scooter plough,' and the seed sown and covered with a harrow from 1 to 1½ inch deep; from one peck to a bushel of seed to the acre. When it comes up it will grow in spite of frost, drought, or rain, it being a very hardy plant. It is singled out with hoes and ploughed once, unless drilled for soiling, when it is not thinned out. It needs but little culture. It is sometimes cut green for soiling cattle, and if done properly so as not to injure the buds near the ground it may be cut several times in a season. It is also cured and made into hay. The ears are cut as they ripen and preserved for seed, or fed to stock; the stalks are eaten entire by cattle and hogs, and other animals. They remain green for months. Taking into consideration the fact that it will yield more stalks, fodder, and grain on a greater variety of soils and with less labour in any season, and return more litter to the land than any other grain, it may be considered valuable. Turned under with the plough if previously limed it will make a good manure." The above is a copy from the American publication. We must refer you to any good seedsman for a supply of seed.

PRIZES AT WARWICK: *F R S*. The prize list of the ensuing agricultural meeting at Warwick may be had at 12, Hanover Square. The amount offered this year for live stock is 1502*l.*, and for implements (including medals), 211*l.*; while the prizes added by the local committee amount to 695*l.*, making a total of 2408*l.* to be distributed. In the three great divisions of cattle—Short-horns, Herefords, and Devons—the prizes are of equal amount, the following being the order of classification in each case:—For bulls under six years old, 30*l.*, 15*l.*, 5*l.*; yearling bulls, 25*l.*, 15*l.*, 5*l.*; bull calves, 10*l.*, 5*l.*; cows, 20*l.*, 10*l.*, 5*l.*; heifers, 15*l.*, 10*l.*, 5*l.*; and yearling heifers, 15*l.*, 10*l.*, 5*l.* For other established breeds there are five prizes of 10*l.* In the prizes for horses, second prizes are offered in all the classes for dray horses, and in the classes for hunting and hackney mares. The sheep are arranged under Leicesters, South Downs, long-woolled sheep not Leicesters, and short-woolled sheep not South Downs—third prizes having been added in each case, and the amounts are now 20*l.*, 10*l.*, 5*l.* The special prizes offered by the local committee are for cattle best adapted for dairy purposes, for bulls of any pure breed, for pairs of cows, for pairs of heifers, for pairs of yearling heifers of a pure breed, for long-horned cattle, for Shropshire sheep, for stallions and other horses and mares for agricultural and hunting purposes, and for stallion poneys; for Berkshire boars, for sows, for pens of five breeding pigs of the Berkshire breed of the same litter, for pens of five breeding pigs of any other large breed, and for pens of five breeding pigs of any small breed. There are four prizes of 10*l.* each offered for teg wool, to be grown by the exhibitors; for the best six fleeces of Leicester, South Down, Gloucester, and Shropshire, or mixed wool respectively. 150*l.* is appropriated as prizes for cheese. 10*l.* is offered by the County of Warwick for the best farm gate, composed entirely of wood, with suitable hangings and fastenings, not to exceed 1*l.* 4*s.* in value; and the last prize on the special list is one also of 10*l.* for the best six draining pipes of 2, 4, and 6-inches bore each, manufactured by a machine the property of the exhibitor. The prizes offered for implements this year are as follows:—For the best application of steam power to the cultivation of the soil, 50*l.*; for ploughs, 40*l.*; for harrows, 20*l.*; for cultivators, 20*l.*; for rollers, 10*l.*; for clod-crushers, 10*l.*; for tile and brick machines, 20*l.*; for draining machines and implements, 20*l.*; miscellaneous awards and essential improvements, 10 silver medals, not exceeding in value 21*l.*; for the invention of any new implement, such sum as the Council may think proper to award.

RAT CATCHING: *J G N*. We have only one report to make, and that of only one of the methods proposed by the advertiser. The result was failure, although every precaution to ensure success was taken; it is, however, only fair to mention, that the less troublesome method was tried, notwithstanding the caution of the advertiser that the other "is the safest, most certain, and effectual way of clearing the premises."

SEEDS: *Burbage*. Your Turnip seed, though of good weight, is variable in size and colour. We consider it a genuine Turnip seed, but its crop would, we think, be irregular in size and trueness to sort.—*W C M*. Your seed of Skirving's Swede appears to be very good. The Purple-topped Swede is light in weight, in consequence of having been much worm-eaten. It is a very inferior sample. "The Red Clover and Rye Grass mixed" contains upwards of 100,000 weeds to the bushel, consisting principally of Alopecurus agrestis, Bromus mollis, and Ranunculus repens. "Grass seeds to renovate old pasture" is bad for the purpose, as it contains a lot of Italian Rye-grass, which is not perennial, Holcus mollis, and weeds. "Perennial Red Clover" we compute to contain 10 times as many weeds to the bushel as the Red Clover and Rye-grass mixed referred to above. These weeds, though principally Plantain, are evidently an impurity in Clover seed. *B*.

WARNER'S IMPROVED LIQUID MANURE OR GENERAL PORTABLE PUMP.



These Pumps are fitted with J. W. & SON'S Patent Buckets and Suckers, and cannot clog in action. The barrel is of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure. The legs will fold together, and the whole may be carried on the shoulder to any pond or tank required.

Price of 4½ in. Pump, with legs, 3*l.* 3*s.* If with planished copper barrel and galvanised iron handle, &c., 14*s.* extra. The barrel is 27½ in. long, and the legs are 5 ft. high.

These Pumps are also made without the legs, with strong wrought-iron straps for screwing on to any ordinary water butt or cart, and fitted with 1½ inch brass union for attaching flexible suction. Price 50*s.*

1¾ inch Gutta Percha Suction Pipe, 1*s.* 11*d.* per foot.

Rubber and Canvas Suction and Delivery Hose, from ½ inch to 4 inches diameter, in lengths of 60 feet to order. Branch Pipes with Cocks, Union Screws, &c., at reduced prices.

May be obtained of any Ironmonger or Plumber in town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin St., London

WARNER'S PATENT VIBRATING STANDARD PUMPS.

PATENT CAST-IRON PUMPS, fitted with J. W. & Son's Patent Buckets and Suckers, which cannot clog in action, for Farms, Cottages, and Wells, not exceeding 28 feet.

Diameter of Barrel.	Height.		£	s.	d.
2½ in.	short	Fitted for lead,	1	10	0
2½ ,,	long 3 ,, 3 ,,	gutta percha,	1	14	0
3 ,,	ditto 3 ,, 6 ,,	or cast iron	2	8	0
3½ ,,	ditto 3 ,, 6 ,,	flanged pipe,	2	12	0
4 ,,	ditto 3 ,, 6 ,,	as required.	3	3	0

2½ ,, short, with 15 feet of Lead Pipe attached, ready for fixing 2 14 0

2½ in. long ditto ditto ditto 2 18 0



The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.

May be obtained of any Ironmonger or Plumber in Town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

PRICES REDUCED.

H. J. MORTON AND CO., Galvanised Iron Works, 2, Basinghall Buildings, Leeds.

GALVANISED IRON ROOFING for Farm Buildings and other Roofs; the cheapest, most durable, and neatest Roofing in use; also Spouting at 10½*d.* per yard.

WIRE STRAND CABLE FENCING



(formed of Twisted Wires like a rope or cable), the strongest, cheapest, and neatest fence in use, will resist the largest cattle, and will not bend or get out of form by trespassing upon or over. Price, with five lines of the Galvanised Strand, iron main posts, and pronged Standards, 1*s.* 2½*d.* per yard.

This fence is far cheaper than posts and rails, or any kind of iron fencing; and possesses four times the strength of solid bars. Will not rust nor corrode. Upwards of 1200 miles of this Fencing supplied.

GALVANISED GAME AND POULTRY NETTING.



Galvanised, 24 ins. wide, 2-inch mesh, 5*d.*, 6*d.*, 7½*d.*, and 10*d.* per yard.

Galvanised, 24 ins. wide, 1-inch mesh, 4*d.*, 5*d.*, and 7*d.* per yard. The Netting made any width, and with openings of any size.

GALVANISED IRON CHAIN CAMP STOOLS & CHAIRS, POULTRY FOUNTAINS & FEEDERS, PRONGED DAHLIA RODS AND ROSE STAKES, &c.

Strong CATTLE HURDLES from 2*s.* per yard.

PATENT IMPROVED GAS WORKS of all sizes for the use of Private Houses, Mansions, Railway Stations, Mills, Collieries, Mines, Villages, &c. Works from 10 to 500 lights estimated for. The works can be entrusted to an ordinary labourer.—Apply to HENRY J. MORTON & Co. 2, Basinghall Buildings, Leeds.



BARNARD, BISHOP, AND BARNARD, Market Place, Norwich, in consequence of improvements in their machinery for the manufacture of the above article, have been enabled to make a great reduction in the prices.

		Galvanised.	Japanned Iron.
2-inch mesh,	24 inches wide	5*d.* per yd.	4*d.* per yd.
2-inch ,,	strong do.	6 ,,	4½ ,,
2-inch ,,	intermediate, do. ..	7 ,,	5½ ,,
2-inch ,,	extra strong, do. ..	9½ ,,	7½ ,,
1⅝-inch ,,	24 inches wide	5½ ,,	4½ ,,
1⅝-inch ,,	strong, do.	6½ ,,	5¼ ,,
1⅝-inch ,,	intermediate, do. ..	7½ ,,	6 ,,
1⅝-inch ,,	extra strong, do. ..	10 ,,	8 ,,

All the above kinds can be made of any width (under 8 feet at proportionate prices. If the upper half is of a coarser mesh than the lower, it will reduce the prices about one-fifth.

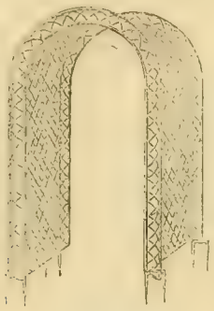
Strong Galvanised Poultry Netting, 8½*d.* per yard, 3 feet wide Galvanised Sparrow-proof Netting for Pheasantries, 2½*d.* per square foot. Delivered free of expense in London, Peterborough, Hull, or Newcastle. Manufacturers of Improved Strained Wire Cattle and Deer Fencing, Iron Hurdles, &c.

Illustrated Catalogues and Patterns forwarded by post.

ORNAMENTAL WIRE WORK FOR FLOWER GARDENS, CONSERVATORIES, ETC.



No. 1.—Flower Basket.



No. 2.—Garden Archway.



No. 3.—Flower Stand.



No. 4.—Flower Basket.

SUSPENDING FLOWER BASKETS.—No. 1, as shown above, 2*s.* 6*d.*; No. 4, 5*s.* 6*d.*; larger, 22 to 27 inches wide, with inside basket, 10*s.* 6*d.* to 13*s.* 6*d.*

GARDEN ARCHWAYS.—No. 2, as shown above, 3½ ft. wide by 7 feet high, 45*s.*; 4 feet by 8 feet, 55*s.* Other designs of Archways, 21*s.* to 58*s.*

FLOWER STANDS.—No. 3, as shown above, 2 feet 6 inches wide, 9*s.* 6*d.*; 3 feet, 10*s.* 6*d.*; 3½ feet, 13*s.* 6*d.* Tripods, 3 feet high, with top basket 10 inches wide, 4*s.* 6*d.* Other designs, very elegant, 7*s.* 6*d.* to 28*s.* 6*d.* Very tasteful Oval Flower Stand, 3 feet wide, 2 feet 8 inches high, 13*s.* 6*d.* Three Tier Step Stage for Conservatory or Hall, 3 feet wide and about the same height, 19*s.* 6*d.*

FLOWER TRAINERS.—Umbrella design with column 2½ feet to 7 feet high, 6*s.* 6*d.* to 18*s.* 6*d.* Balloon Trainers, 12 inches to 36 inches high, 2*s.* 6*d.* to 7*s.* Variety of approved designs of Pot Trainers, 7*s.* 6*d.* per dozen.

GARDEN BORDERING.—8 inches to 12 inches high, 8*d.* to 13*d.* per foot.

GARDEN CHAIRS.—Folding Stool with galvanised spiral and flexible seat and frame, japanned green or cane colour as may be desired, 4*s.* 6*d.* Folding and other chairs, 8*s.* 6*d.* to 13*s.* 6*d.*

*** The whole of the above descriptions of Wire Work painted green or cane colour as may be desired.

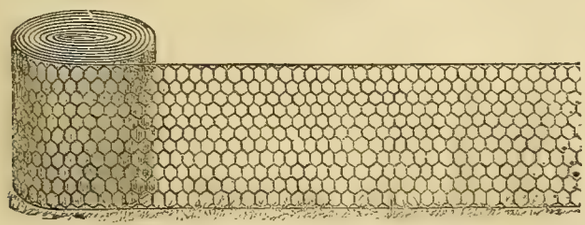
DIAMOND WIRE TRELLIS WORK for training Flowers, Plants, and Vines, and for other purposes, from ¼ inch to 6 inch mesh, japanned or galvanised. Trellis Work for fronts or sides of mansions or for walls, made to any required dimensions or design, at fixed uniform prices.

Every description of Plain or Ornamental Iron and Wire Work made to order at fixed uniform rates. Drawings with printed prices free on application.

*** *Every Article warranted to give satisfaction, and if not approved will be exchanged, or may be returned unconditionally.*

J. B. BROWN & CO., 18, CANNON STREET, CITY, LONDON, E.C.

IMPROVED PREMIUM WIRE NETTING.



PRICES per lineal yard, 24 inches high:—

Size of mesh.	Mostly used for	Light.		Medium.		Strong.		Extra strong.	
		Japanned.	Galvanized.	Japanned.	Galvanized.	Japanned.	Galvanized.	Japanned.	Galvanized.
2½ inch	Hares, Dogs, Poultry	3½*d.*	4½*d.*	4½*d.*	5½*d.*	5*d.*	6½*d.*	6*d.*	8*d.*
2 inch	Game Netting	4*d.*	5*d.*	4⅝*d.*	6*d.*	5½*d.*	7*d.*	7½*d.*	9½*d.*
1⅝ inch	Small Rabbits, Hares, &c.	4½*d.*	5½*d.*	5½*d.*	6½*d.*	6*d.*	7½*d.*	8*d.*	10*d.*
1½ inch	Smallest Rabbits	6*d.*	7½*d.*	7½*d.*	9*d.*	9*d.*	11*d.*	11*d.*	13*d.*

Quantities of 100 yards, or upwards, *delivered free* at any Railway Station or Shipping Port in England. 200 yards or upwards *delivered free* in Glasgow, Edinburgh, Dundee, Aberdeen, and other chief towns in Scotland; also at Belfast, Dublin, Cork, Limerick, and other chief towns in Ireland. Tying Wire and Staples for fixing the Wire Netting.

Any width of Netting under 8 feet made at proportionate prices.

☞ *Every description of Netting warranted to give satisfaction, and if not approved will be exchanged, or may be returned unconditionally.*

J. B. BROWN & CO., 18, CANNON STREET, CITY, LONDON, E.C.

SHANKS'S PATENT LAWN MOWING MACHINES,

AS NOW USED IN

THE ROYAL GARDENS AT KEW, WINDSOR, BUCKINGHAM PALACE, OSBORNE, AND BALMORAL,

AND IN A LARGE NUMBER OF THE PRINCIPAL GARDENS IN ENGLAND AND ABROAD.

NEW AND IMPORTANT IMPROVEMENTS FOR 1859, FOR MOWING, ROLLING, COLLECTING, AND DELIVERING.

THE Machine mows the closest and finest Turf without the slightest appearance of ribbing. It is self-acting, so that in turning the Machine will mow as well as when going in a straight line. It mows on the most uneven Lawn without injuring the Turf. It turns quick and easily—turning into the most intricate windings of the Flower Garden, amongst Trees or Flower Beds, with perfect ease, and without the smallest chance of injuring the shrubs or flowers. The method of adjusting the cut has been simplified and improved. The whole Machine is nicely balanced, and consequently steady in working.

One of the most important Patent Improvements effected this season is the introduction of a simple and efficient apparatus for emptying the Grass-box without the necessity of the person working it either leaving the handles or stopping the Machine. The great want in all Mowing Machines hitherto is thus completely obviated in Shanks's Improved Patent Machine of this season. This Machine will now perform at least a *third more work*, while *the labour in working it*, compared with ordinary Machines, *is three-fourths lessened*. A Lawn which formerly took a Machine *nine hours* to mow can now be done in *six hours*, with *three-fourths less labour* to the man working it. The Improved Patent Machine for 1859 is on these and other accounts therefore the most complete and satisfactory MOWING, ROLLING, COLLECTING, and DELIVERING MACHINE possible to be made.

PRICES OF THE HAND MOWING AND ROLLING MACHINE:—

No. 6.—22-inch Machine	**£7 17s. 6d.**	**No. 8.—16-inch Machine**	**£6 10s. 0d.**
No. 7.—19-inch Machine	**7 5 0**	**No. 9.—13-inch Machine**	**5 15 0**

PRICES OF THE HORSE POWER MACHINE:—

No. 1 (*a*) **48-inch Machine—(usually drawn by a Horse)**	**£27 0s. 0d.**	**No. 3.—30-inch Machine—(usually drawn by a Pony)** ...	**£17 10s.**
No. 1.—42-inch Machine—(usually drawn by a Horse)	**24 0 0**	**No. 4.—25-inch do.—(usually drawn by a Pony or Donkey)**	**13 10**
No. 2.—36-inch do.—(usually drawn by a Horse or Pony)	**20 10 0**	**No. 5.—25-inch do.—(made light for a small Pony or Donkey)**	**9 10**

Machines Nos. 1 (*a*), 1, 2, 3, & 4 have the Patent Delivering Apparatus attached. No. 5 can either be had with or without this improvement; if with it, 30*s.* extra.

Extract from Note received from J. Yorke, Esq., Forthampton Court, near Tewkesbury, *addressed to* Messrs. J. B. Brown & Co., *London, April* 4, 1859.

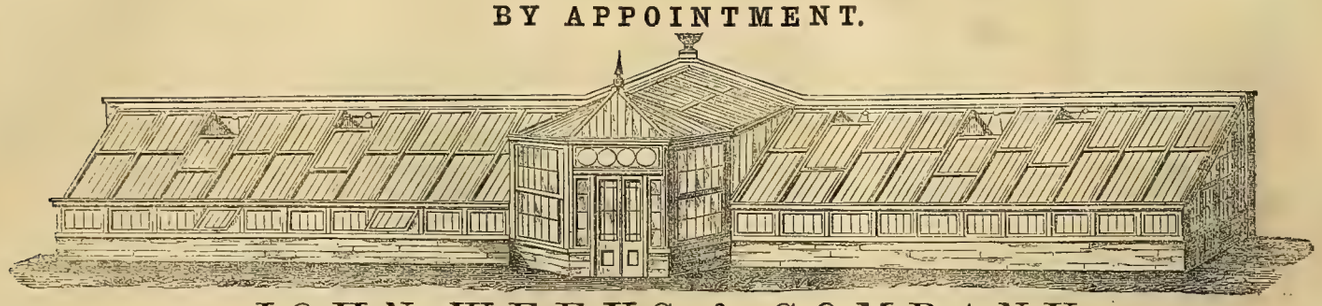
"I have had one of Shanks's Horse Machines in use for 10 years, which answers very well. It cuts the Grass very fairly even when wet. I believe you do not at all overstate the matter when you say that the avoidance of stoppages [in the new machine of this year] would save one-third the time."

LONDON AGENTS:—

MESSRS. J. B. BROWN & CO., 18, CANNON STREET, CITY, LONDON, E.C.

HORTICULTURAL BUILDING & HEATING BY HOT WATER.

BY APPOINTMENT.



JOHN WEEKS & COMPANY,

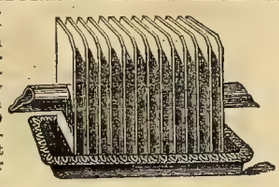
KING'S ROAD, CHELSEA, LONDON.

HORTICULTURAL BUILDERS AND HOT-WATER APPARATUS MANUFACTURERS, ENGINEERS, AND IRON FOUNDERS.

PLANS, ESTIMATES, & ILLUSTRATED CATALOGUES FREE ON APPLICATION.

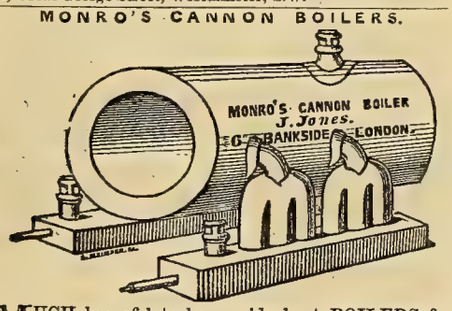
IMPROVED HOT-WATER PIPE.

THE HORTICULTURIST will find herein an inexpensive instrument of new and very important powers. An atmosphere may be produced at will either perfectly dry, partially damp, or saturated with moisture. A space of 10 inches by 12 inches contains the power of 25 feet of 4-inch pipe and other numerous advantages.



The London Warming and Ventilating Company (Limited), 26, Great George Street, Westminster, S.W.

MONRO'S CANNON BOILERS.



MUCH has of late been said about BOILERS for Heating by Hot Water, but these Boilers have now proved themselves to be the best at present invented. They are adapted for heating every description of building, and are made of various sizes. The Price of the

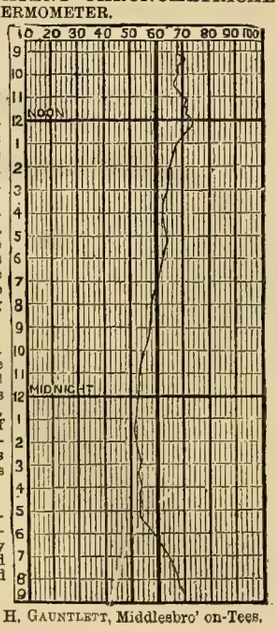
24-inch Cast Iron is	.. ..	.. £5 10s. 0d.	each
24-inch Wrought ditto	.. ..	.. 6 10 0	,,
36-inch Cast ditto	.. ..	.. 8 0 0	,,
36-inch Wrought ditto	.. ..	.. 8 10 0	,,

References to Gentlemen and Nurserymen where these Boilers are now at work. The Cannon Boilers are now kept in stock, and are to be had only of J. Jones, 6, Bankside. Also, every description of Saddle and Cylinder Boilers. Hot Water Pipes and Connections at prices lower than those of any other house in London. Estimates for Hot-water Apparatus erected complete in any part of the country, and an Illustrated Catalogue on application to J. Jones, 6, Bankside, Southwark, London.

TO HORTICULTURISTS.

GAUNTLETT'S PATENT CHRONOMETRICAL THERMOMETER.

This instrument, which combines an eight-day clock of the best English make showing time, with a newly-patented Thermometer, wherein glass and quicksilver are dispensed with, writes down the temperature of the atmosphere on a slip of paper, and when placed in a Hothouse, Forcing House, or Conservatory, &c., supplies a valuable record of the temperature, with all its variations, showing the time when any change took place, and how long such change continued.



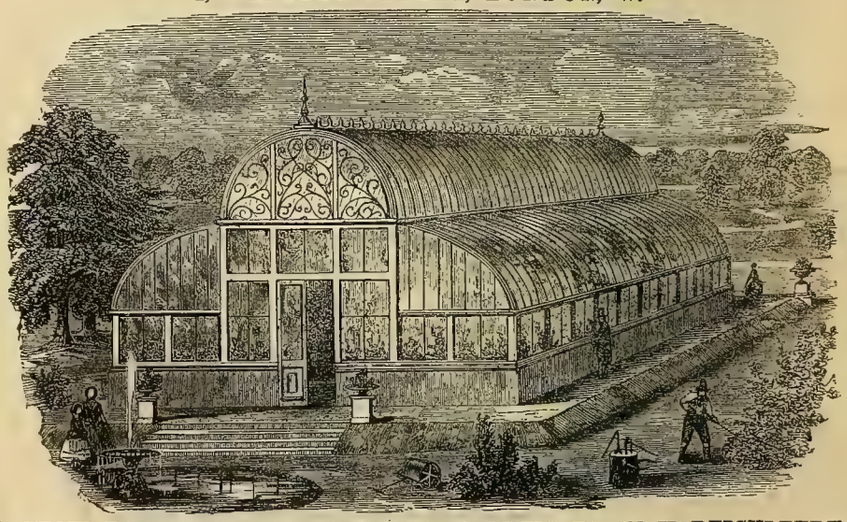
The above slip (reduced in size) exhibits the temperature of the Royal Agricultural Society's show yard at Chester, July 22, 1858, written off by one of these instruments, to which was awarded the Society's Silver Medal.

This is the only instrument that registers temperature continuously and writes it down, and no horticulturist should be without it.

Orders received by W. H. Gauntlett, Middlesbro' on-Tees.

COTTAM & COMPY., Engineers, Founders, &c.,

2, WINSLEY STREET, LONDON, W.



A SHOW ROOM DEVOTED ENTIRELY TO ARTICLES OF HORTICULTURE.

THE NEW ILLUSTRATED CATALOGUE UPON APPLICATION.

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	,, Syringes	Garden Bordering
Hot-water Apparatus	Ornamental Wire Work	Hurdles	,, Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

Iron Hurdles, Strained Wire Fencing, Game Netting, &c.

Every description of Plain, Ornamental, Cast and Wrought Iron, and Wire Work.

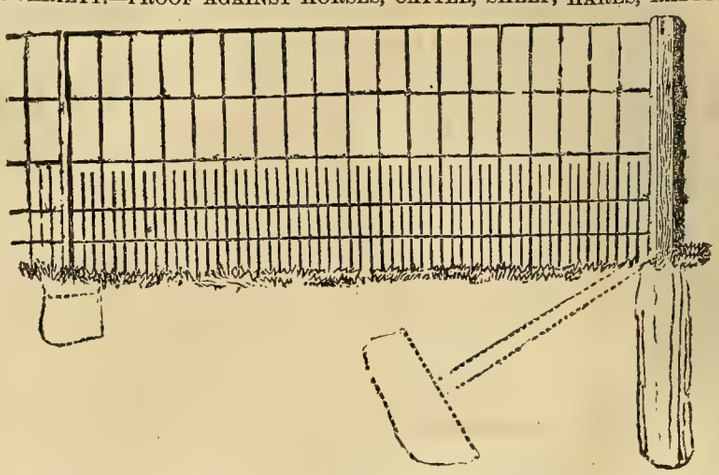
EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

N.B. COTTAM and COy. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

GREENING & COMPANY'S PATENT WIRE FENCES.

Patronised by His Royal Highness the PRINCE CONSORT.

No. 10 c VARIETY.—PROOF AGAINST HORSES, CATTLE, SHEEP, HARES, RABBITS, &c.



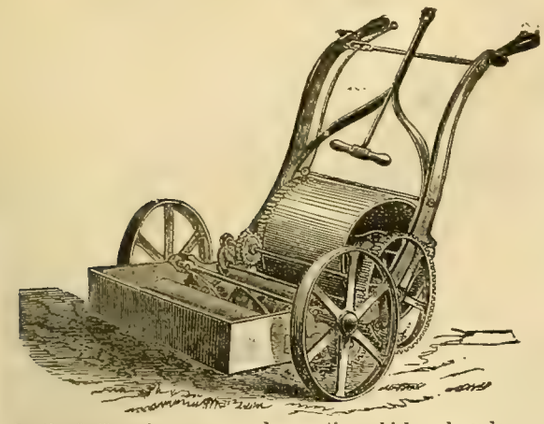
Specification.—No. 10 c Variety, 3 feet 9 inches high, 6 horizontal bars of stout fencing wire, meshes 5 inches apart at upper, and 1½ inches apart at lower half of fence. **1s. 6d. per Lineal Yard.**

G. & Co. forward (post free) on application their ILLUSTRATED CATALOGUE, containing particulars of the above and other Iron and Wire Fences for Parks, Farms, Gardens, Game Preserves, Poultry Courts, &c.

GREENING & COMPANY, Victoria Iron and Wire Works, 81, Oxford St., Manchester.

NOTICE OF REMOVAL.

BOYD'S PATENT LAWN MOWING MACHINES



ARE the only Lawn Mowers that have a Self-Cleansing and Sharpening Apparatus attached to the Cutters, and that will cut wet Grass without clogging the Knives. They are already in successful operation at the Royal Palaces, and on the lawns of hundreds of the Nobility and Gentry. They are pronounced by all practical men as perfection, and are guaranteed for efficiency, excellence, economy and durability.

"Doing the work of five or six men in a single hour."—*Times*, Sept. 20, 1858.

Price Lists and Testimonials free on application to—

W. DRAY & Co.,
at their new Agricultural Implement Warehouses, Adelaide Place, London Bridge,

where also may be had every description of Agricultural, Horticultural, and Gardening Implement; as also DRAY'S CELEBRATED REAPERS, which are now being manufactured for the forthcoming season, and respecting which early orders are solicited.

PATENT LAWN MOWING AND ROLLING MACHINES.

SAMUELSON'S LAWN MOWING MACHINES,

WITH BOYD'S PATENT IMPROVEMENTS.

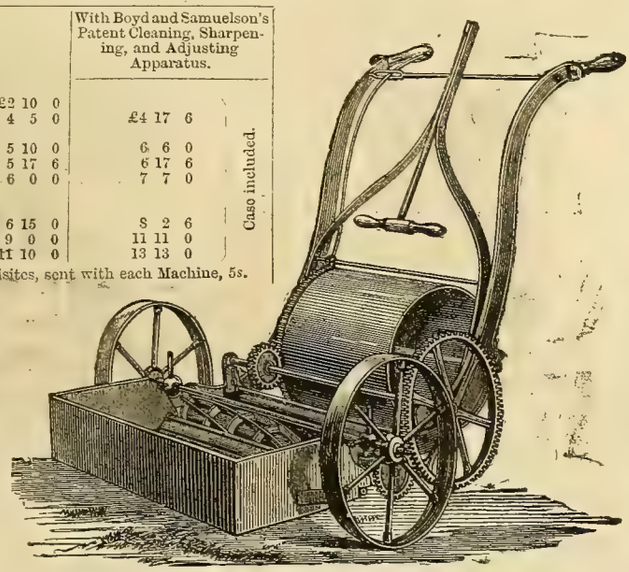
"Doing the work of five or six men."—The Times, Sept. 20, 1858.

The following PRICES include the Carriage to any Railway Station in England:—

		With Boyd and Samuelson's Patent Cleaning, Sharpening, and Adjusting Apparatus.
9 inches wide, for very narrow borders, without registered wheels	£2 10 0	
12 inches wide	4 5 0	£4 17 6
16 inches wide, with registered arrangement (for one man)	5 10 0	6 6 0
19 inches wide, ditto (for one man) ..	5 17 6	6 17 6
22 inches wide, ditto (for man and boy)	6 0 0	7 7 0
22 inches wide, ditto for ditto, and also fitted with draught links for a pony and a man to work it	6 15 0	8 2 6
25 inches wide, ditto	9 0 0	11 11 0
30 inches wide, ditto (for man and pony)	11 10 0	13 13 0

Case included.

Box of Tools, Oil Can, and other requisites, sent with each Machine, 5*s*.



Some thousands of these Machines are now in successful operation on the Lawns of Royalty, the Nobility, and Gentry of the United Kingdom and the Continent of Europe, and are pronounced SUPERIOR to *any other* for lightness of draught, efficiency, and durability. The demand for them is *yearly increasing—the number supplied by* Mr. SAMUELSON *during the years* 1856, 1857, *and* 1858 *being more than* 2100. Testimonials are continually being received from gentlemen having them in daily use, who speak in the highest terms of their efficiency.

These are the only Machines that will cut wet as well as dry Grass without clogging the knives.

Orders for 1859 should be sent at once to insure certain delivery and to prevent disappointment.

Copies of Testimonials will be forwarded post free on application to

B. SAMUELSON, 76, Cannon Street West, City, London;
to the Manufactory, Britannia Works, Banbury, Oxon;
or to MESSRS. DEANE AND CO. London Bridge; or any respectable Ironmonger or Seedsman in the Kingdom.

ADDRESS: THE MANAGERS, ST. PANCRAS IRONWORKS.

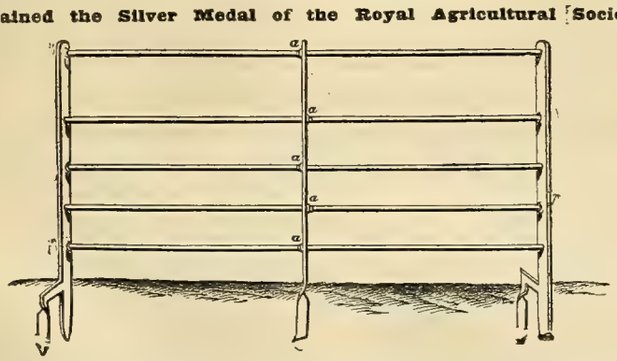
THE ST. PANCRAS IRON WORKS ARE OPPOSITE THE OLD ST. PANCRAS CHURCH,
OLD ST. PANCRAS ROAD, LONDON.

IRON COLLAR BAR HURDLES.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

Obtained the Silver Medal of the Royal Agricultural Society.

ST. PANCRAS IRON WORKS,



OLD ST. PANCRAS ROAD, LONDON.

The improvement by this PATENT consists in the COLLARS on the Bars which, being placed on alternate sides of the centre upright bar, keep it in its position, confine the bars to short bearings, prevent their being strained, and give more than DOUBLE STRENGTH and RIGIDITY to the HURDLE.

PROFESSOR VARNELL'S MANGERS AND STABLE FITTINGS.

LAWNS—IN USE IN THE ROYAL GARDENS.

SAMUELSON'S PATENT BOYD LAWN MOWING and ROLLING MACHINE, the only one that will cut wet as well as dry Grass, is guaranteed efficient in use, easily handled, and readily kept in working order. Doing the work of five or six men. Prices, including case and carriage to any railway station in England, from 4*l*. 17*s*. 6*d*. and upwards. Copies of testimonials post free on application to Mr. SAMUELSON'S London Warehouse, 76, Cannon Street West, City; Messrs. DEANE'S, London Bridge; or the Works, Banbury, Oxon.

THE NEW PATENT MOWING MACHINES may be used anywhere at any time, are self-sharpening, and admit of the use of duplicate sets of cutting parts. Prices from 4*l*. 10*s*. upwards. Illustrated Circulars free by post.—Manufactured and Sold by JAMES FERRABEE & Co., the original introducers of Mowing Machines.

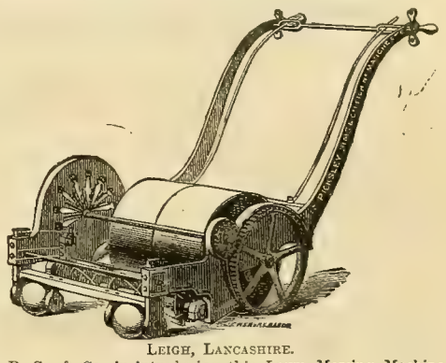
Several infringements of their patent having taken place, the Makers respectfully caution the public to see that the words "FERRABEE'S Patent" are cast on every Machine.

JAMES FERRABEE & Co., Phœnix Iron Works, Stroud.

GREEN'S PATENT LAWN MOWERS have proved to be the best by the appointed judges in all cases of competition. Full illustrations, with particulars of improvements for the present season, will appear in this Paper next week.

THOMAS GREEN, Patentee and Sole Manufacturer, Smithfield Iron Works, Leeds, Yorkshire; and 2, Victoria Street, bottom of Holborn, London. Repairs done at either of the Establishments, where every information may be obtained.

PICKSLEY, SIMS, AND CO.'S (by ROYAL LETTERS) PATENT LAWN MOWING MACHINE.



LEIGH, LANCASHIRE.

P., S., & Co., in introducing this Lawn Mowing Machine, particularly request a strict examination, or comparison and trial, for simplicity of construction, lightness, regularity of draught, adaptability for mowing every kind of plain, circular, and verge work.

Firstly, we have encased the wheels so as completely to protect from injury flower borders, shrubs, &c., whilst working the machine, at the same time not being liable to obstruction or damage.

Secondly, this machine works easily on undulated and sloping ground; it can be thrust forward or be drawn from behind, the latter being the easiest.

Thirdly, this is the only machine made that will work round quick curves; it will work easily and effectively round circular borders so small as 12 inches in diameter. This very desirable improvement has been obtained by fixing to the front part of the machine our newly-invented universal action, and self-cleaning, anti-friction spherical guiding balls. The continual revolving of these spherical guiding balls, under the most trying circumstances, never fails.

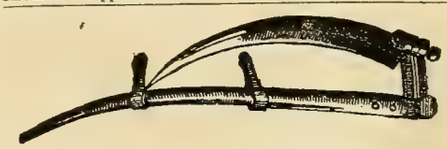
Fourthly, we have attached to this machine a rack and pinion motion, for adjusting the cutting parts (there being a rack and pinion on each side of the machine to act conjointly at the same time upon the full length of the knives), in other machines a slow, tedious, and uncertain operation, into one of quickness, ease, and certainty.

PRICES:—				£ *s*.
Patent Lawn Mowing Machine		13 inches	..	5 10
Ditto	ditto	ditto 16 ,,	..	6 0
Ditto	ditto	ditto 19 ,,	..	6 10
Ditto	ditto	ditto 22 ,,	..	7 0
Patent Chaff and Gorse Cutters from ..		.. ..	£2 5 to	22 0
,, Bean, Oat, and Malt Mills ..		.. ..	3 10 to	10 10
,, Gorse and Grain Bruisers ..		.. ..	10 10 to	21 0
,, Bone Mills		.. .. ..	27 10 to	150 0
,, Mangles, various ..		.. .. ..	2 10 to	12 10

ILLUSTRATED CATALOGUES can be had gratis.

PATENT PRIZE SCYTHES, Price 11*s*. AND 11*s*. 6*d*.

JAMES PAYNE, Kirkcudbright, invites the attention of Gardeners and others to his newly improved Patent Adjustable Scythes, which can be set to any angle in one minute's time; are light and easily managed, warranted strong, and unequalled for finish by any in the Kingdom.—Circulars on application.



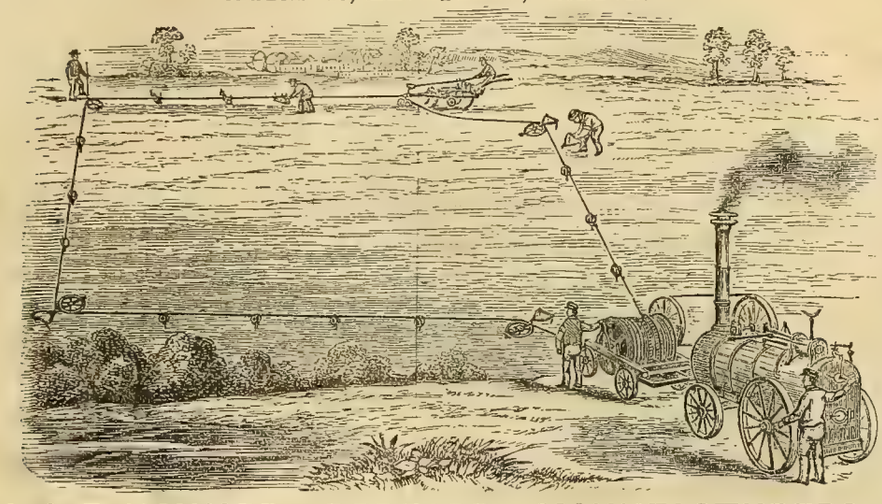
BOYD'S SELF-ADJUSTING SCYTHES are the cheapest and best, and being sold adjusted are ready for immediate use. They can be regulated in an instant to suit any person, and to cut any crop without change of Scythes. To Amateur Gardeners they are very desirable, as they afford a healthy and interesting exercise. They have stood the test of public opinion for seven years, and for excellence, ease, economy, and durability are highly recommended. Upwards of 50,000 of them have been sold. To be had of every Ironmonger, Hardwareman, and Seedsman in the United Kingdom; and Wholesale of the Sole Licensed Makers, WM. DRAY & Co., at their New Agricultural Implement Warehouses, Adelaide Place, London Bridge.

PRIZE MEDAL, PARIS EXHIBITION 1855.

METCALFE, BINGLEY, AND CO.'S New Pattern and Penetrating Tooth Brushes, Penetrating unbleached Hair Brushes, Improved Flesh and Clothes Brushes, and genuine Smyrna Sponges; and every description of Brush, Comb, and Perfumery for the Toilet. The Tooth Brushes search thoroughly between the divisions of the Teeth and clean them most effectually—the hairs never come loose. M., B., and Co. are sole makers of the Oatmeal and Camphor, and Orris Root Soaps—sold in Tablets (bearing their names and address) at 6*d*. each, of METCALFE'S celebrated Alkaline Tooth Powder, 2*s*. per box; and of the New Bouquets.—Sole Establishment, 130B and 131, Oxford St., 2d and 3d doors west from Holles St., London.

SMITH'S STEAM CULTIVATOR, 1859.

OFFICE—40, MARK LANE, LONDON.



J. & F. HOWARD, BEDFORD, MANUFACTURERS.

PRICE OF A SET OF TACKLE COMPLETE, EXCLUSIVE OF ENGINE:—

Windlass, complete, together with 8 Iron Anchors, 2 Wood ditto, 6 Snatch Blocks, 30 Rollers, 3 Wood Levers, 2 Beetles, and 2 Crow Bars	£110	0	0
1400 yards of Iron Wire Rope (1¾ inch circumference)	45	0	0
No. 3 Implement	16	0	0
Turning Bow	21	0	0
	£192	0	0

1400 yards of Steel Wire Rope (1¼ inch circumference) 15*l.* more than iron.

SMITH'S APPARATUS CAN BE DRIVEN BY AN ORDINARY SEVEN OR EIGHT-HORSE PORTABLE ENGINE.

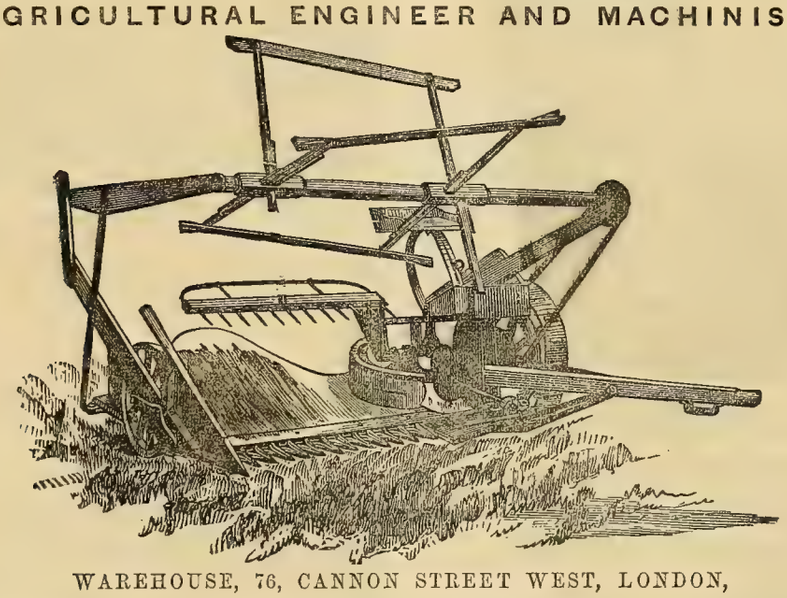
Nearly Fifty Sets are now in use, about Forty of which have been purchased by Tenant Farmers.

Catalogues, with full particulars, may be had at the Office, 40, Mark Lane, London; of

J. & F. HOWARD, Britannia Iron Works, Bedford, or of WILLIAM SMITH, Woolston, Bucks, Patentee.

B. SAMUELSON,

AGRICULTURAL ENGINEER AND MACHINIST,



WAREHOUSE, 76, CANNON STREET WEST, LONDON,

WORKS AT BANBURY,

INFORMS MERCHANTS, the TRADE, and AGRICULTURISTS, that he has opened the above Warehouses as a depôt for his own manufactures and those of Messrs. Barrett, Clayton, Howard, Hornsby, Nicholson, Richmond, Tuxford, Smith, and all other first-class makers, whose implements he is prepared to offer on makers' terms.

THE BRITANNIA SELF-RAKING REAPING MACHINE,

With side delivery in sheaf, no rakers or gatherers required; and all the most improved Spring Implements for the season, may be inspected at the above depôt.

B. SAMUELSON, 76, Cannon Street West, London; and Britannia Works, Banbury.

DRESSING CASES, DRESSING BAGS, and highly finished elegancies for presentation in great variety; Ivory-handled Table Cutlery; every requisite for the Toilet and Work Tables.—MECHI & BAZIN, 112, Regent Street; 4, Leadenhall Street; and Crystal Palace, Sydenham.

HANDSOME BRASS AND IRON BEDSTEADS.—HEAL & SON'S Show Rooms contain a large assortment of Brass Bedsteads, suitable both for Home use and for Tropical Climates; handsome Iron Bedsteads with Brass Mountings and elegantly Japanned; Plain Iron Bedsteads for Servants; every description of Wood Bedstead that is manufactured, in Mahogany, Birch, Walnut-tree Woods, Polished Deal and Japanned, all fitted with Bedding and Furniture complete, as well as every description of Bedroom Furniture.

HEAL AND SON'S ILLUSTRATED CATALOGUE, containing Designs and Prices of 100 Bedsteads, as well as of 150 different articles of Bedroom Furniture, sent free by post.—HEAL & SON, Bedstead, Bedding, and Bedroom Furniture Manufacturers, 196, Tottenham Court Road, W.

EWEN'S GRAISSE D'ENFLEURAGE; OR POMATUM BODY, indispensable to all who wish to make their Pomades from the Flowers in their gardens, by the French principle of Enfleurage.

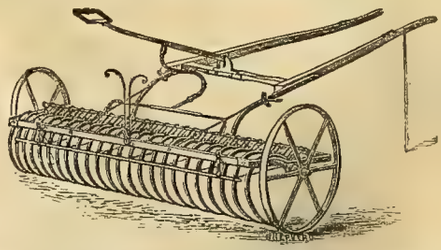
In Jars (of not less than 3 lbs.) with directions for use, at 2*s.* per lb., ex Jars. Cash on delivery.

EWEN'S CLARIFIED FAT WORKS,
AND TOILET SOAP MANUFACTORY,
17, Garlick Hill, E. C., London.

FOR THE TOILETTE.—OLDRIDGE'S BALM OF COLUMBIA, which has for more than 30 years been celebrated for its peculiar properties in restoring, cleansing, and beautifying the hair, promoting its growth, as well as preventing it falling off or turning grey.—C. & A. OLDRIDGE, 13, Wellington Street, North, seven doors from the Strand. Sold wholesale and retail in bottles at 3*s.* 6*d.*, 6*s.*, and 11*s.*; and by all Chemists and Perfumers. Its use for whiskers and moustache is invaluable.

HOWARDS' PRIZE IMPLEMENTS, 1859.

JAMES AND FREDK. HOWARD, Britannia Iron Works, Bedford, beg to direct attention to their PATENT STEEL-TOOTH HORSE RAKE.



For which they received the Three First Prizes last offered by the Royal Agricultural Society of England.

J. & F. HOWARD have discontinued troubling the Public with a long List of Prizes awarded to their Implements, but they would just state that for PLOUGHS, HARROWS, and HORSE RAKES, they have for several years gained every Prize for which they have competed.

PLOUGHS.

D PLOUGH, for a Pony	£2	5	0
DD ditto for one Horse	3	5	0
P ditto for two Horses	4	7	6
PP ditto for general purposes	4	12	6
SKIM COULTER for P or PP Plough	0	5	6

HARROWS.

A Set of Three 4-Beam HARROWS, with Whippletree, recommended as general Seed Harrows, 9½ feet wide, marked No. 12	3	14	0
A Set of Three 4-Beam HARROWS, with Whippletree, adapted for 3 Horses, 10 ft. wide, marked No. 11 if with Patent Joints, 6*s.* per set extra.	4	4	0

HORSE RAKES.

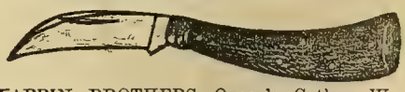
Small size, 7½ feet wide, marked A, with 24 iron teeth	7	10	0
Ditto, with Steel Teeth	8	0	0
Large size, 8½ feet wide, marked B, with 28 iron teeth	8	0	0
Ditto, with steel teeth	8	10	0
Extra large size, 8½ feet wide, marked C, with 24 steel teeth	10	10	0
A Set of 15 Prongs, to be attached to the above when used as Weed Extirpators	1	10	0

Free Delivery to Birmingham, Bristol, Colchester, Derby, Gloucester, Hull, Lincoln, Liverpool, London, Manchester, Norwich, Nottingham, Retford, Shrewsbury, Wisbeach, Worcester, and York; or to Dublin, Edinburgh, Glasgow, and other parts at fixed rates.

HOWARDS' NEW CATALOGUE, containing prices and description of their Patent Ploughs, Harrows, Horse Rakes, and other Implements, including Smith's Steam Cultivators, for which they received at Chester the Gold Medal of the Royal Agricultural Society of England, sent free on application to

J. & F. HOWARD, Britannia Iron Works, Bedford.

MAPPIN'S PRUNING KNIVES IN EVERY VARIETY.
WARRANTED GOOD BY THE MAKERS.



MAPPIN BROTHERS, Queen's Cutlery Works, Sheffield; and 67 and 68, King William Street, London.

MAPPIN'S "SHILLING" RAZORS Shave well for Twelve Months without Grinding.

MAPPIN'S 2*s.* RAZORS Shave well for Three Years.

MAPPIN'S 3*s.* RAZORS (suitable for Hard or soft Beards,) Shave well for Ten Years.

MAPPIN'S SUPERIOR TABLE-KNIVES maintain their unrivalled Superiority—handles cannot possibly become loose—the blades are all of the very first quality, being their own Sheffield manufacture.

	Tble. Kns.	Dst. Kns.	Carvers.
Ivory 3⅜ in. Handle, balanced,	20*s.* p. doz.;	16*s.* p. doz.;	6*s.* p. pair
Do. 4 in. do.	25*s.* ,,	18*s.* ,,	9*s.* ,,

MAPPIN'S SILVER-PLATED DESSERT KNIVES and FORKS, in Mahogany Cases.

12 Pairs Knives and Forks, Ivory Handles, in Case	..	80*s.*
12 Do. Pearl Handles, do.	..	130*s.*
12 Do. Silver-Plated Handles, do.	..	80*s.*

MAPPIN'S ELECTRO-SILVER PLATE.—MAPPIN BROTHERS, Manufacturers by Special Appointment to the Queen, are the only Sheffield makers who supply the consumers in London. Their LONDON SHOW ROOMS, 67 and 68, King William Street, London Bridge, contain by far the largest STOCK of ELECTRO-SILVER PLATE in the World, which is transmitted direct from their Manufactory, Queen's Cutlery Works, Sheffield.

	Fiddle Pattern.	Double Thread.	King's Pattern.
12 Table Forks, best quality	£1 16 0	£2 14 0	£3 0
12 Table Spoons, best quality	1 16 0	2 14 0	3 0
12 Dessert Forks, best quality	1 7 0	2 0 0	2 4
12 Dessert Spoons, best quality	1 7 0	2 0 0	2 4
12 Tea Spoons, best quality	0 16 0	1 4 0	1 7

Messrs. MAPPIN BROTHERS respectfully invite buyers to inspect their unprecedented display, which, for beauty of design exquisite workmanship, and novelty, stands unrivalled. Their illustrated Catalogue, which is continually receiving addition of New Designs, sent per post on receipt of 12 stamps.—MAPPIN BROTHERS, 67 and 68, King William Street, London Bridge Manufactory, Queen's Cutlery Works, Sheffield.

KNOW THYSELF.—MARIE COUPELLE continues to give her graphic and interesting delineations of character, discoverable from an examination of the hand writing, in an unique style of description peculiarly her own. All persons desirous of knowing themselves, or any friend in whom they are interested, must send a specimen of the writing, stating the sex and age, and enclosing 13 penny postage stamps, and a directed envelope, to Miss COUPELLE, 69, Castle Street, Oxford Street, London, and they will receive in a few days a minute detail of the talents, tastes, virtues, and failings of the writer, with many other things hitherto unsuspected. All letters are considered strictly confidential.

DO YOU WANT LUXURIANT HAIR WHISKERS, &c.?—COUPELLE'S CRINUTRIAR guaranteed to produce whiskers, moustachios, eyebrows, &c. in two or three weeks with the utmost certainty, strengthen weak hair, prevent its falling off, check greyness in all its stages, and reproduce the hair in baldness, from whatever cause, price 2*s.* Sold by all chemists in the world; or will be sent post free, on receipt of 24 penny postage stamps, by Miss COUPELLE, 69, Castle Street, Newman Street, Oxford Street, London. A toilet guide sent post free for four penny postage stamps. "It completely restored my hair."—Miss Davis. "My whiskers are now growing freely."—H. Merry, Esq.

CHUBB'S LOCKS, FIREPROOF SAFES, DOOR LATCHES, CASH AND DEED BOXES. Illustrated Priced Lists sent free.—57, St. Paul's Churchyard, London; 28, Lord Street, Liverpool; 16, Market Street, Manchester; and at Wolverhampton.

ALLEN'S PATENT PORTMANTEAUS AND TRAVELLING BAGS, with SQUARE OPENING; Ladies' Dress Trunks, Dressing Bags, with Silver Fittings; Despatch Boxes, Writing and Dressing Cases, and 500 other articles for Home or Continental Travelling, illustrated in their New Catalogue for 1859. By post for two stamps. J. W. & T. Allen, Manufacturers of Officers' Barrack Furniture and Military Outfitters (see separate Catalogue), 18 and 22, Strand.

FENDERS, STOVES, FIRE-IRONS, AND CHIMNEY PIECES.—Buyers of the above are requested, before finally deciding, to visit William S. Burton's SHOW ROOMS. They contain such an assortment of FENDERS, STOVES, RANGES, CHIMNEY PIECES, FIRE-IRONS, and GENERAL IRONMONGERY as cannot be approached elsewhere, either for variety, novelty, beauty of design, or exquisiteness of workmanship. Bright Stoves, with ormolu ornaments and two sets of bars, 3*l.* 15*s.* to 33*l.* 10*s.*; Bronzed Fenders, with standards, 7*s.* to 5*l.* 12*s.*; Steel Fenders, 2*l.* 15*s.* to 11*l.*; ditto, with rich ormolu ornaments, 2*l.* 15*s.* to 18*l.*; Chimney Pieces, from 1*l.* 8*s.* to 80*l.*; Fire-Irons, from 2*s.* 3*d.* the set to 4*l.* 4*s.* The BURTON and all other PATENT STOVES, with radiating hearth-plates.

BEDSTEADS, BATHS, AND LAMPS.—William S. Burton has SIX LARGE SHOW ROOMS devoted exclusively to the SEPARATE DISPLAY of Lamps, Baths, and Metallic Bedsteads. The stock of each is at once the largest, newest, and most varied ever submitted to the public, and marked at prices proportionate with those that have tended to make his establishment the most distinguished in this country.

Bedsteads, from	..	..	..	12*s.* 6*d.* to £20	0*s.* each.
Shower Baths, from	..	..	..	8 0 ,,	6 0 ,,
Lamps (Moderateur), from	..	..	..	6 0 ,,	7 7 ,,

(All other kinds at the same rate.)

Pure Colza Oil .. .. 4*s.* 3*d.* per gallon.

CUTLERY, WARRANTED. — The most varied assortment of TABLE CUTLERY in the world, all warranted, is on SALE at William S. Burton's, at prices that are remunerative only because of the largeness of the sales. 3½-inch Ivory-handled Table Knives, with high shoulders, 12*s.* 6*d.* per doz.; Desserts to match, 10*s.* 0*d.*; if to balance, 6*d.* per doz. extra; Carvers, 4*s.* 3*d.* per pair; larger sizes, from 20*s.* to 27*s.* 6*d.* p. doz.; extra fine Ivory, 33*s.*; if with silver ferrules, 40*s.* to 50*s.*; white bone Table Knives, 6*s.* 0*d.* per doz.; Desserts, 5*s.* 0*d.*; Carvers, 2*s.* 3*d.* per pair; black-horn Table Knives, 7*s.* 4*d.* per doz.; Desserts, 6*s.*; Carvers, 2*s.* 6*d.*; black wood-handled Table Knives and Forks, 6*s.* per doz.; Table Steels, from 1*s.* each. The largest stock in existence of Plated Dessert Knives and Forks, in cases and otherwise, and of the new plated Fish Carvers.

WILLIAM S. BURTON'S GENERAL FURNISHING IRONMONGERY CATALOGUE may be had gratis, and free by post. It contains upwards of 400 Illustrations of his illimited Stock of Electro and Sheffield Plate, Nickel Silver and Britannia Metal goods, Dish Covers and Hot-water Dishes, Stoves, Fenders, Marble Chimney pieces, Kitchen Ranges, Lamps, Gaseliers, Tea Urns and Kettles, Tea Trays, Clocks, Table Cutlery, Baths and Toilet Ware, Turnery, Iron and Brass Bedsteads, Bedding, Bed Hangings, &c., with Lists of Prices and Plans of the 16 large Show Rooms at 39, Oxford Street; 1, 1a, 2, and 3, Newman Street; and 4, 5 and 6, Perry's Place, London.—Established 1820.

WHITE AND SOUND TEETH are indispensable to personal attraction and to health and longevity by the proper mastication of food. ROWLANDS' ODONTO, or Pearl Dentifrice, compounded of oriental ingredients, is of inestimable value in improving and beautifying the teeth, strengthening the gums, and in rendering the breath sweet and pure. It eradicates tartar from the teeth, removes spots of incipient decay, and polishes and preserves the enamel, to which it imparts a pearl-like whiteness. As the most efficient and fragant aromatic purifier of the breath, teeth, and gums ever known, Rowlands' Odonto has for a long series of years occupied a distinguished place at the toilets of the sovereigns and the nobility through Europe: while the general demand for it at once announces the favour in which it is universally held.—Price 2*s.* 9*d.* per box. Caution.—The words "Rowlands' Odonto" are on the Label, and "A Rowland & Sons, 20, Hatton Garden," engraved on the Government stamp affixed on each box.—Sold by the Proprietors, and by Chemists and Perfumers.

HOLLOWAY'S OINTMENT AND PILLS—ASTHMA.—No person can witness an attack of Asthma—the gasping of the invalid, the wheezing, the restlessness, and the painful appearance of immediate suffocation, without feeling strongly the necessity of procuring the sufferer as speedy relief as possible. In the worst attacks Holloway's remedies, when properly used, never fail in affording relief; but the Ointment diligently rubbed on the chest and back twice a day, invariably diminishes the frequency of the paroxysms, and ultimately repels them altogether. One Asthmatic, in gratitude, called them "Heaven's Gifts." It is wonderful to witness the power possessed by Holloway's medicines in relaxing the tightened chest and giving composure to the anxious countenance, and bright crimson to the leaden lips.

IMPORTANT INFORMATION.—Mrs. Brown, of Queen Street, Kingsland, was for years severely afflicted with a scorbutic eruption, covering the back of both hands, and spreading up her arms. She was persuaded to try Dr. ROBERTS'S POOR MAN'S FRIEND and PILULÆ ANTISCROPHULÆ by a friend who had a large wound in her leg which baffled her doctor's skill, but was effectually cured by these medicines. She only took one box of the Pills, and used one pot of the Ointment, which effected a cure to the surprise of her friends, who wish it to be made public for the benefit of her suffering fellow creatures. Dr. ROBERTS'S POOR MAN'S FRIEND and PILULÆ ANTISCROPHULÆ have been proved, by 60 years' experience, successful in the cure of eruptions and wounds of every description. Price 1*s.* 1½*d.*; 2*s.* 9*d.*; 4*s.* 6*d.*; 11*s.*; and 22*s.* each.—Sold wholesale by the Proprietors, Beach & Barnicott, at their Dispensary, Bridport, and by the London Houses; and retail by all respectable Medicine Vendors in the United Kingdom and the Colonies.

PAINS IN THE BACK, Gravel, Lumbago, Rheumatism, Gout, Indigestion, Flatulency, Nervousness, Debility, &c.—Dr. De Roos' COMPOUND RENAL PILLS have been long established as a safe and efficacious remedy for the above complaints, discharges of any kind, retention of urine, and diseases of the kidneys, bladder and urinary organs generally, which, if neglected, frequently end in stone in the bladder and a lingering death. For depression of spirits, incapacity for society, study or business, confusion, giddiness, drowsiness, sleep without refreshment, fear, nervousness, and insanity itself, when arising from or combined with urinary diseases, they are unequalled. By their salutary action in correcting bile and acidity of the stomach, they prevent the formation of stone, and establish the healthy functions of all these organs.—Price 1*s.* 1½*d.*, 2*s.* 9*d.*, 4*s.* 6*d.*, 11*s.*, and 33*s.* per box, through all Medicine Vendors, or sent free on receipt of the amount in postage stamps, by Dr. De Roos, 10, Berners Street, Oxford Street.

WHEATSTONE'S CONCERTINAS, for 1*l.* 16*s.*, of superior make, six sided, with the double action, to play in five keys; ditto, to play in all keys, 2*l.* 12*s.* 6*d.* Concertinas having the full compass of notes (48 keys), from 3 to 12 guineas, the latter as used by Signor Regondi.

Manufactured by the Inventors and Patentees, Wheatstone & Co., 20, Conduit Street, Regent Street, W.

WHEATSTONE'S ENGLISH HARMONIUMS, in solid cases, manufactured by them expressly for Churches, Chapels, Schools, &c., have the full compass of keys, are of the best quality of tone, best workmanship and material, and do not require tuning. Guineas.

With 1 stop, oak case	10
With 1 stop, polished mahogany or figured oak case..	12
With 3 stops, organ tones, large size, oak case ..	15
With 5 stops, ditto	22
With 8 stops, ditto	24
With 10 stops, ditto	30

The tones of the latter can be produced either softer or louder than other harmoniums that cost double the price. Prize Medalist, 1851. An extensive assortment of French Harmoniums, with all the latest improvements, from the Six Guinea School-room Harmonium to the Sixty Guinea one for the Drawing Room, by Alexandre.

Wheatstone & Co., 20, Conduit Street, Regent Street.

THE ROYAL HUNT BOUQUET.

PIESSE AND LUBIN, Perfumery Factors, 2, New Bond Street, London.—"This exquisite perfume has the fragrance of a garden at evening's close." FRANGIPANNI, the YACHT CLUB NOSEGAY, and the NEWMARKET JOCKEY CLUB SCENT, 2*s.* 6*d.* each, or three bottles in a case, 7*s.*—See to have them with our name, Piesse & Lubin, 3, New Bond Street, London. Sold everywhere.

SPIRITS AND BEER.—Brandy, 24*s.* to 40*s.*; Whisky, 14*s.* to 18*s.*; Gin, 11*s.* 6*d.* to 15*s.* per gallon. Pale Ale, quarts, 4*s.* 6*d.* and 4*s.*; pints, 3*s.* 3*d.* and 3*s.* D'Arcy's Dublin Stout and Porter, quarts, 5*s.*, 4*s.* 3*d.*, and 3*s.* 6*d.*; pints, 3*s.* 6*d.*, 3*s.*, and 2*s.* 6*d.* Not less than 6 dozen.—Owen & Co., 75, Lower Thames Street, E. C., and 57 & 58, Fore Street, E. C.

VINEGAR.—Patronised by her Majesty's Government.

CONDY'S PATENT PURE CONCENTRATED MALT VINEGAR.—Families, by using this delicious Vinegar, insure purity, and effect a saving of 50 per cent. See Report of Dr. Letheby, City Officer of Health; Dr. Hassall of the *Lancet* Commission, and others. Six Quart Sample sent free to any Railway for 3*s.* 6*d.*—Sold by the Trade, in bottles, labelled and capsuled; wholesale, 63, King William Street, London Bridge, E.C.

NEXT OF KIN WANTED, and others who have been Advertised for—being exact Copies of Advertisements from the *Times*, *Gazette*, *Law Chronicle*, *Dispatch*, *New York Herald*, *Melbourne Argus*, *Sydney Herald*, *Indian Mail*, &c., for the last 20 years, covering many hundreds of Names and Descriptions of persons Entitled to Property of Several Millions Value. This New Book (just out) is sent post free for eight penny stamps.—Direct to Fisher & Son, Publishers, Kingsland, London, N.E.—Sent punctually per return.

CHEAP AND CORRECT PRINTING FOR THE NURSERY AND SEED TRADES.—Send your orders to ROBT. EDM. TAYLOR, Printer, Sea Coal Lane, Skinner Street, Snow Hill, London, E. C. Estimates forwarded.

WHAT WILL THIS COST TO PRINT? is a thought often occurring to literary minds, public characters, and persons of benevolent intentions. An immediate answer to the inquiry may be obtained on application to Richard Barrett, 13, Mark Lane, London. R. B. is enabled to execute every description of Printing on very advantageous terms, his office being furnished with a large and choice assortment of Types, Steam Printing Machines, Hydraulic and other Presses, and every modern improvement in the Printing Art. A Specimen Book of Types, and information for Authors, sent on application, by

Richard Barrett, 13, Mark Lane, London.

TO GARDENERS.

"There is no more general book than 'Loudon's Encyclopædia of Gardening,' which treats of all manner of things."—*Gardeners' Chronicle*, March 12, 1859.

LOUDON'S ENCYCLOPÆDIA OF GARDENING: Comprising the Theory and Practice of Horticulture, Floriculture, Arboriculture, and Landscape Gardening; including all the latest Improvements. New Edition, corrected and improved by Mrs. Loudon. A cheaper Edition of the above work, price 31*s.* 6*d.*, is now ready.

London: Longman, Brown, & Co., Paternoster Row.

Of whom may be had a Cheaper Edition of LOUDON'S ENCYCLOPÆDIA OF AGRICULTURE, uniform with the above in size and price.

THE ENGLISH DINNER QUESTION AND THE ART OF DINING.

Just published, in One Vol., fcp. 8vo, price 5*s.* cloth,

HANDBOOK OF DINING; or, How to Dine, Theoretically, Philosophically, and Historically considered. Based chiefly on the *Physiologie du Goût* of Brillat-Savarin. By Leonard Francis Simpson, Esq., M.R.S.L.

London: Longman, Brown, & Co., Paternoster Row.

The People's Edition, and only Complete Edition, of MOORE'S IRISH MELODIES, WITH THE MUSIC.

In One Volume, small 4to. price 12*s.* cloth, gilt edges; Also in 10 Numbers, to be had separately, price 1*s.*, each,

MOORE'S IRISH MELODIES, with Symphonies and Accompaniments for the Pianoforte. The only complete and copyright Edition for the People, containing both Music and Words of the entire Series of 124 Irish Melodies.

☞ "Longman & Co.'s People's Edition," price 12*s.*, should be specified in all orders.

In the Press, uniform with the above, in small 4to,

PEOPLE'S EDITION OF MOORE'S NATIONAL AIRS, with Pianoforte Accompaniments, edited by C. W. Glover. To be completed in 10 Numbers, price 1*s.* 6 each.

No. I., price 1*s.*, on May 31.

London: Longman, Brown, & Co, and Addison & Co.; Manchester: Hime & Addison.

ELECTRICAL INFLUENCE IN HEALTH AND DISEASE.

Just published, price 1*s.*, free by post for thirteen Stamps,

SECOND LIFE: OR ELECTRICAL NERVOUS FORCE; a MEDICAL WORK intended for the special perusal of all who are suffering from the various forms of NERVOUS and PHYSICAL DEBILITY and the distressing ulterior consequences to which they lead; with practical Observations on the great Curative power of ELECTRO-GALVANISM in the Treatment of these disorders, by infusing tone and vigour in constitutions relaxed or debilitated from various enervating causes. Illustrated with Cases compiled from the Note-Book of a Registered Medical Practitioner of twenty years' standing.

Mann, 39, Cornhill, and all Booksellers.

TO THE NERVOUS OF BOTH SEXES.—A Retired Clergyman, having been restored to health in a few days, after many years of great nervous suffering, is willing to assist others by sending (free), on receiving a stamped envelope, properly addressed, a copy of the prescription used.—Direct, the Rev. E. Douglas, 18, Holland Street, Brixton, London.

LAND.

WANTED, to RENT about 3 ACRES of ARABLE or MARKET-GARDEN GROUND, within 10 miles of London.—R. Jones, 5, Pelham Terrace, near Notting Hill Gate, Kensington, Middlesex.

NURSERY GROUND.

TO BE LET, WHITTINGTON NURSERY, Upper Holloway, to be entered upon immediately.—For particulars apply to J. F. Marson, Esq., Small Pox Hospital; or to Mr. Bunney, Nurseryman, Stratford, Essex.

TO BE LET, BRISTOL NURSERY GROUNDS Kemp Town, Brighton. These Gardens are now to Let for occupation with immediate possession. — Any person desirous of treating for the same may obtain particulars and permission to view the grounds on application to Mr. R. W. Lucas, 20, Great Marlborough Street, London, W.; and of Mr. A. Chandler, Horticultural Valuer, 28, Priory Road, Wandsworth Road, S.

TO BE SOLD, a good GREENHOUSE, 23 feet 7 inches long, 9 feet 9 inches wide, inside measure; Glazed span roof; one glass end, folding glass door in front, with brickwork stands and shelves complete. To be sold cheap. Temporarily erected at Mr. Aehurst's, Eltham, Kent.

Sales by Auction.

POULTRY SALE.—THE LAST FOR THE SEASON.

MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on TUESDAY, May 3, at 12 precisely, 250 lots of POULTRY AND PIGEONS, including Birds of first-rate quality, Spanish, Dorkings, Cochins, Brahmas, Hamburghs, Bantams, Rouen and Aylesbury Ducks, Himalaya and Chinchilla Rabbits, &c., from R. W. Fryer, Esq., Rev. G. Gilbert, W. G. Vivian, Esq., and others, and some very superior Carrier and other Pigeons. Catalogues by inclosing a stamped directed envelope to Mr. J. C. Stevens, 38, King Street, Covent Garden, W. C.

SEEDS OF CONIFERS, ETC.,

From India, Mexico, California, Vancouver's Island, and Western Australia.

MR. J. C. STEVENS will sell by Auction, at his Great Room, 38, King Street, Covent Garden, on WEDNESDAY, April 27, at half past 12 o'Clock precisely, an importation of Seeds of Conifers from India, including 560 lbs. of CEDRUS DEODARA, 9½ lbs. of CUPRESSUS TORULOSA, 31 lbs. of PICEA PINDROW, 18 lbs. of PINUS EXCELSA, and 5 lbs. of JUNIPERUS EXCELSA. Also an importation from California and Vancouver's Island. 250 CONES, with Seeds, and 1000 Seeds of PINUS DON PEDRI from Mexico, and a collection from Western Australia.—May be viewed on the morning of Sale, and Catalogues had.

ORCHIDS.

MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on THURSDAY, May 5, at half past 12 o'Clock precisely, the COLLECTION of ORCHIDS of a Gentleman whose health compels him to give up their culture. It is particularly rich in the best South American species of Cattleya, Lælia, Odontoglossum, Cypripediums, Trichophyllas, &c., and the Plants are in fine health.—May be viewed on the morning of Sale, and Catalogues had of Mr. J. C. Stevens, 38, King Street, Covent Garden.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will Sell by Auction, at the Mart, on FRIDAY, April 29, at 12 o'Clock, a first class collection of Carnations and Picotees from a celebrated grower, handsome Azalea indica, Ericas, Epacris, and other Plants in bloom; choice American plants, comprising Rhododendrons, Azaleas, Andromeda floribunda, &c., with choice Dahlias in dry roots, Fuchsias, Verbenas, &c. On view the morning of sale.—Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

Important and Extensive Sale at the BRISTOL NURSERY, KEMP TOWN, BRIGHTON.

MESSRS. PROTHEROE AND MORRIS have received instructions to Sell by Auction, on the premises, Bristol Nursery, Kemp Town, Brighton, Sussex (formerly in the occupation of the late Mr. Edward Mitchell), on MONDAY, May 9, and following day, at 11 o'Clock each day, the whole of the valuable collection of GREENHOUSE, STOVE, and other plants, including about 1000 choice Double Camellias, ranging all sizes and in the finest state of cultivation; fine specimen plants of Chinese Azaleas, Ericas, Epacris, a quantity of Orange Trees; 2000 Show and Fancy Pelargoniums; 5000 Scarlet and Variegated Geraniums; Double Purple and White Primulas, Cyclamens, Dahlias, Cinerarias, Crassulas, Gloxinias, Chrysanthemums, Begonias, New Fuchsias, &c.; also a large assortment of Bedding Plants, Herbaceous Plants in pots, a bed of first-rate Tulips all named; Ivies, Jasmines, Honeysuckles, Vines, Carnations, Picotees, Pinks, Cloves, &c.—May be viewed three days prior to the sale. Catalogues may be obtained 6*d.* each, returnable to purchasers on the premises; of Mr. A. Chandler, Horticultural Valuer, 28, Priory Road, Wandsworth Road, S.; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

N.B.—The Premises to be LET. Inquire of Mr. A. Chandler, as above: or Mr. Haward, 82, Oakley Street, Chelsea.

HIGH ROAD, LEE, KENT.

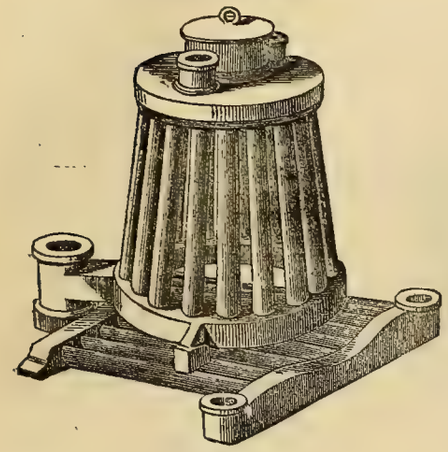
To Gentlemen, Amateurs, Gardeners, and Others.

MR. DYER (Successor to Messrs. Gilbert & Son) has received instructions from Mr. Saville to Sell by Auction, at his Nursery Grounds as above, on WEDNESDAY, April 27, at 2 for 3 o'Clock, an excellent assortment of SHRUBS and PLANTS in pots and vases, including Thuja aurea, Cedrus Deodara, Araucaria, Azalea, two Cypresses, 6 feet high; Rhododendrons, Irish Yews, variegated Holly, Box, &c.; three dozen China and other Roses, and about 14,000 fine Bedding Plants, comprising Brilliant, Tom Thumb, Firebrand, Flower of the Day, and other varieties of Geraniums, Fuchsias, Verbenas, Lobelias, &c.; also the wood erection of Hot-water Pit (20 feet by 6 feet) with Boiler, Hot-water Pipes and Furnace.—May be viewed the day preceding and morning of Sale, and Catalogues obtained of Mr. Saville, Nurseryman, Lee Cottage, High Road, Lee; or of Mr. Dyer, Estate Agent, Surveyor and Valuer, Montpelier Row, Blackheath.

THE VALUABLE LIBRARY OF THE HORTICULTURAL SOCIETY.

MESSRS. S. LEIGH SOTHEBY AND JOHN WILKINSON, Auctioneers of Literary Property and Works illustrative of the Fine Arts, will Sell by Auction at their House, 3, Wellington Street, Strand, on MONDAY, May 2, and three following days, at 1 o'Clock precisely, the valuable LIBRARY of the HORTICULTURAL SOCIETY, comprising a very complete Series of Works on Botany, Horticulture, and Agriculture, including a superb Copy of Sibthorp's Flora Græca, the Flora Danica, Flora Napoletana, Flora Fluminensis, Gallesio's Pomona Italiana, Bateman's Orchidaceæ of Mexico, Lindley's Sertum Orchidaceum, the splendid publications of Jacquin, &c.; together with several series of magnificent Botanical Drawings by Bauer, Lindley, Curtis, Hooker, Mrs. Withers, Mrs. Pope, Miss Cotton, and others, including 10 portfolios by native Chinese artists.—May be viewed two days prior, and Catalogues had on receipt of 4 stamps.

By Her Majesty's Royal Letters Patent.



ORMSON'S

PATENT JOINTLESS TUBULAR BOILER.

TESTIMONIALS.

"SIR,—I feel much pleasure in bearing testimony to the efficiency of your Patent Jointless Tubular Boiler which you have erected for Baron de Rothschild, at Gunnersbury Park, and from the number of hothouses and great extent of pipe you have heated from one boiler, I now feel confident it is decidedly the most powerful, economical, and safe boiler yet invented. Having had the working of the Wrought-iron Arch, and Cast-iron Corrugated Arch Boilers in these gardens, I have no hesitation in stating that your boiler is infinitely superior to either of them in every respect.—Yours truly,

"WILLIAM FORSYTH.

"The Gardens, Gunnersbury Park, Acton, Middlesex."

"SIR,—It is with much satisfaction I give my testimony in favour of your admirable Patent Jointless Tubular Boiler, being attached to upwards of 3000 feet of 4-inch pipe, and doing the work of four fires, and consumes little more fuel than was required for one of the fires previous to the adoption of your boiler. We can command any amount of heat, the boiler being so powerful I am confident it would with ease heat as much more. Altogether we have realised much more economy in fuel and attendance than we at first anticipated. In addition to the great power and economy of your boiler it possesses another most important advantage over all other tubular boilers which have come under my notice, in the fact of its being jointless, consequently quite safe from all danger of leakage. On referring to my coal account I find that I now only use one where I formerly used five waggon loads of coal for the arched boilers which you took out.—I am, Sir, yours respectfully, "J. FRASER.

"The Gardens, Luton Hoo, Bedfordshire.'

"Mr. Henry Ormson, Sir,—I beg to inform you of my entire satisfaction with your Hot-water Apparatus in general, and your Patent Jointless Tubular Boiler in particular, as fitted up in the new range of Hothouses you have recently erected for Lord Powerscourt. The Boilers I admire for three excellent reasons; they are simple in construction, effective in working, and I feel assured, from the calculation I have already made, a very great saving of fuel will be the consequence from using these Boilers. You will permit me to add if I had formed a contrary opinion of the merits of these Boilers I should have been candid enough to have told you so, but in justice to you I must distinctly state I consider them a great boon to the horticultural world.—I am, Sir, yours truly, "ALEXANDER ROBERTSON.

"The Gardens, Powerscourt, Ireland."

"SIR,—I have much pleasure in testifying to the excellent working of your Patent Jointless Tubular Boiler; though a small one it does the work of five fires, and is a great saving of fuel and labour.—I am, Sir, yours respectfully,

"Holland House Gardens, Kensington." "J. SCOBIE.

"SIR,—In regard to your Patent Jointless Tubular Boiler, it answers admirably the purpose for which it was erected. I consider it the most economical and powerful Boiler ever introduced, and am confident it will not fail to give general satisfaction.—I am, yours most respectfully,

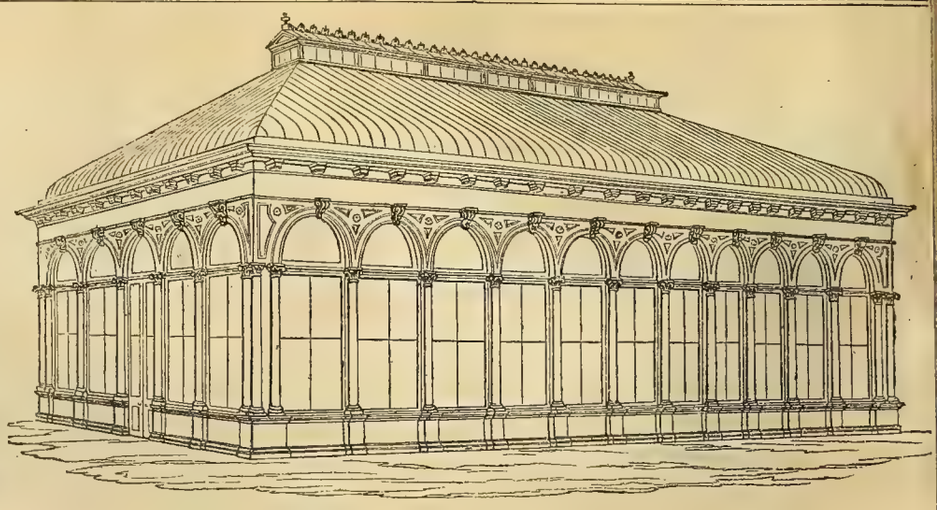
"JOHN LAUDER.

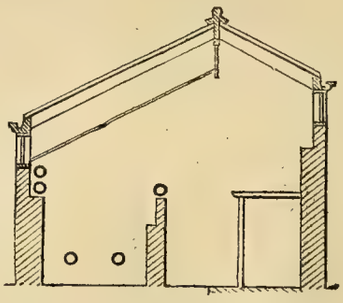
"The Gardens, Witley Court, Worcestershire."

"SIR,—I have much pleasure in testifying to the efficiency of your simple but most powerful Patent Jointless Tubular Boilers. The two small boilers you put up here are doing the work of six fires, with the addition of a range of lofty coach-houses which were afterwards attached. The amount of fuel is little more, and the attention much less, than was required for one fire before these boilers were put up; there is not the least strain on them, and I am confident if required would heat a considerably greater amount of piping. I must also add that the whole of the hot-water apparatus works satisfactory, especially the ventilating boxes you put up in the Fruiting Pine Stove, which I consider a great acquisition, supplying at all seasons a constant stream of pure warm air to the plants, which are in consequence sturdy and in the most robust health. —I am, Sir, yours respectfully, "JOHN CLARK.

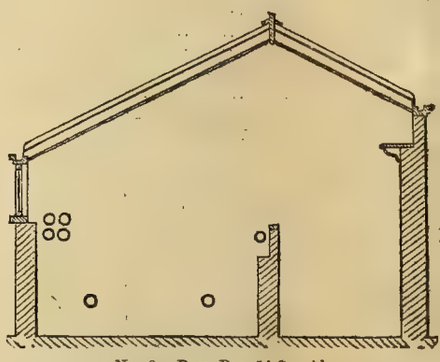
"The Gardens, Cobham Hall, Gravesend, Kent."

Ormson's Patent Jointless Tubular Boilers may be seen in successful operation at Mr. Veitch's, Royal Exotic Nursery, King's Road, Chelsea.

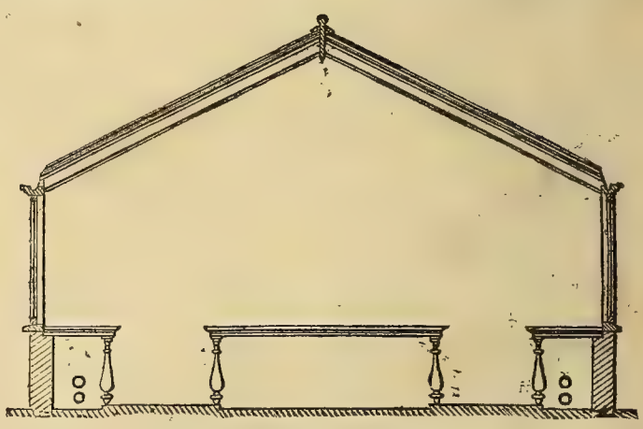




No. 1.—CUCUMBER AND MELON PIT, 10 ft. wide.



No. 2.—PINE PIT, 14 ft. wide.



No. 6.—GREENHOUSE, from 18 to 20 ft. wide.

HORTICULTURAL BUILDINGS MANUFACTURED BY STEAM POWER MACHINERY.

BEST MATERIALS AND LOWEST PRICES.

HENRY ORMSON,

HORTICULTURAL BUILDER & HOT-WATER APPARATUS MANUFACTURER,

STANLEY BRIDGE, KING'S ROAD, CHELSEA, LONDON.

Deeply grateful for the very liberal and kind patronage bestowed upon him, begs most respectfully to inform the Nobility, Gentry, Nurserymen, &c., that it being his determination to spare no pains to merit a continuance of their favours, and that he may be enabled to execute his extensive and increasing orders punctually, and at the lowest possible cost (agreeably with the best Materials and Workmanship), he has erected a most complete set of Steam Power Machines, peculiarly adapted for the purposes of his Trade.

PARTIES DESIRING INFORMATION as to prices, &c., will, by referring to the above sections, receive immediate attention.

PLANS, SPECIFICATIONS, and ESTIMATES for plain and inexpensive practical Structures, and for the most elaborate Architectural Erections, either in Wood or Iron, forwarded on application.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, and FREDERICK MULLETT EVANS, of No. 20, Queen's Road West, both in the Parish of St. Pancras, in the Co of Middlesex Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and published by them at the Office, No. 5, Upper Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—SATURDAY, April 23, 1859.

THE GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 18.—1859.] SATURDAY, APRIL 30. {Price Fivepence. {Stamped Edition, 6d.

INDEX.

Acarus, Colchester Church	383 b	Oak of Autrage	384 d
Agriculture, self-maintaining	391 b	Orchard houses	386 c
— in British Columbia	391 c	Pea, new	384 a
Araucaria disease	384 b	Peaches, twin-fruited	386 c
Beech tree, rent	386 b	— to train	384 a
Birds' eggs, artificial	386 c	Pears, new	384 c
Books, noticed	387 b	Plants, new	385 c
— for young gardeners	388 c	— Australian medical	387 c
Colchester Church Acarus	383 b	Ploughing, steam	389 b
Conifer seed, sale of	387 c	Prunus triloba	386 c
Cucumber growing	386 a	Rainfall	386 b
Farm labour	393 b	Ruyssdale Agri. School	394 a
Fertility from cultivation	393 c	Seeds, to germinate	386 c
Fortune (Mr.) award to	384 a	Short-horns, sale of	395 b
Garrya, to graft	384 a	Soy	388 c
Gorilla	384 b	Stable management	393 a
Grapes, spotted	386 c	Steam ploughing	389 b
Horse Chesnut blight	386 b	Stephanophysum Baikiei	385 c
Inventions, patent	391 a	Trade lists	387 c
Labour, Farm	393 b	Trees, decorticated	385 a
Linnean Society	387 a	Valerian leaves and wounds	384 a
Locusts, how to cook	388 a	Water, subterranean	392 b
Lois-Weedon Wheat	390 c	Weather in N. Devon	386 b
Meadow baldness	390 a	Wheat, Lois-Weedon	390 c
Mitraria coccinea	385 c	Woodlice	386 b—388 c

HORTICULTURAL SOCIETY OF LONDON.—The next MEETING of the FRUIT COMMITTEE will be held at 8, St. Martin's Place, Trafalgar Square, on TUESDAY, May 3, at 12 Noon.

N.B. The Carriage of Packages of Fruit will be paid.

ROYAL BOTANIC SOCIETY, REGENT'S PARK.—THE EXHIBITIONS OF PLANTS, FLOWERS, AND FRUIT this season will take place on WEDNESDAYS, May 25, June 15, and July 6. Tickets of Admission are now being issued, and can be obtained at the Gardens only by orders from Fellows or Members of the Society. Price, on or before Saturday, May 14, 4s.; after that day, 5s.; or on the days of Exhibition, 7s. 6d. each.

BRITISH POMOLOGICAL SOCIETY, 87 JAMES'S HALL, REGENT STREET, LONDON.

The next Meeting will be held on THURSDAY, May 5, for the examination of General Fruits in season; on which occasion a Premium of One Guinea for the best Late Seedling Kitchen Apple will be offered. The following Meeting will be held on THURSDAY, June 23. For further particulars apply to the Secretary.

CRYSTAL PALACE.—FLOWER SHOWS for 1859 will be held as follows:—

WEDNESDAY, May 18	WEDNESDAY, Sept. 7
WEDNESDAY, June 8	THURSDAY, Sept. 8

And CHRYSANTHEMUM SHOW on WEDNESDAY, Nov. 9, and THURSDAY, Nov. 10.

Schedules of Prizes may now be had on application.

By Order,
Crystal Palace, April 30. GEO. GROVE, Secretary.

THE SECOND GRAND NATIONAL ROSE SHOW will be held in the Hanover Square Rooms, London, on THURSDAY, June 23.

Caunton Manor, Newark. S. REYNOLDS HOLE, Hon. Sec.

THE GRAND NATIONAL DAHLIA SHOW FOR 1859.—This Exhibition will take place on the 20th and 21st of September next, at Aston Hall, Birmingham. Lists of Prizes will shortly be ready. CHARLES TURNER, JOHN KEYNES, } Hon. Secs.

LEYTON AND WALTHAMSTOW AMATEUR FLORICULTURAL SOCIETY.—The Exhibitions of the above Society will take place on THURSDAY, June 9, and WEDNESDAY, September 14. Schedules and Rules of the Society can be obtained by enclosing one stamp to E. GOAD, Hon. Secretary, Mark House Common, Walthamstow, N.E.

ENVILLE HALL GARDENS.

THE EARL OF STAMFORD AND WARRINGTON will allow the PUBLIC to visit the GARDENS and GROUNDS of ENVILLE HALL upon MONDAYS, TUESDAYS, and THURSDAYS, commencing Monday, May 2.

FERN CATALOGUE.

ROBERT SIM'S NEW DESCRIPTIVE AND PRICED CATALOGUE, No. 6 (62 pages) of his COLLECTION of BRITISH AND EXOTIC FERNS, can be had, post free, for 8 stamps. Gratis to all previous purchasers of Ferns:

Nursery, Foot's Cray, Kent, S.E.

C. E. ALLEN'S CATALOGUE of DAHLIAS, VERBENAS, FUCHSIAS, VARIEGATED and SCARLET GERANIUMS, &c., is now ready, and can be had gratis.

Shacklewell, near London, N.E.

NEW DAHLIAS.

JOHN KEYNES'S SELECT CATALOGUE OF DAHLIAS, ROSES, CARNATIONS, PINKS, &c., containing Lists of all the valuable Show Flowers in each class, is now ready and will be sent on application.

Castle Street Nursery, Salisbury.—April 30.

NEW DAHLIA FIRE KING.

H. LEGGE is now sending out his superb DAHLIA, bright scarlet tipped with white, the best fancy of the year, 10s. 6d. per plant. Also all the new varieties of last season, at 9s. per dozen; older sorts, 3s. per dozen.

Catalogues can be had by pre-paid application to H. LEGGE, Marsh Side, Lower Edmonton, Middlesex.

SHOW, FANCY, AND FRENCH SPOTTED PELARGONIUMS.

WM. CUTBUSH AND SON have a large stock of remarkably fine plants of the above in 48-pots of all the leading sorts, at 12s., 18s., and 24s. per dozen; or 5l. and 7l. 10s. per 100. Catalogues free on application.

Highgate Nurseries, London, N.

TO THE TRADE.

J. AND J. FRASER having a large stock of PIMELEAS, AZALEAS, BILLWYNIAS, APHELEXIS, ACACIAS, TRITONIA AUREA, and other plants of the same description, beg to offer them at very low prices. The plants are well grown in about 48-sized pots, and showing well for flower. The price may be had on application.

Lea Bridge Road Nurseries, Leyton, Essex, N.E.

SUPERB DOUBLE HOLLYHOCKS.—The present is yet a good time for planting out this noble flower for autumn blooming. W. CHATER can still supply plants fine and perfectly healthy at reasonable prices.

Apply to WILLIAM CHATER, Grove Nurseries, Saffron Walden.

CHOICE HOLLYHOCKS.

WILLIAM HUSSEY begs to offer extra strong Plants of all the newest and best sorts for exhibition, from 9s. to 12s. per dozen.—Horticultural Gardens, Norwich.

SUPERB NAMED HOLLYHOCKS.

WILLIAM PERRY has a fine healthy Stock of the above for Sale, comprising all the best sorts, from 6s. to 18s. per doz. If planted now they will make a good display through the months of July, August, September, and October. Catalogues sent free on application.

Wisemans, Sawbridgeworth, Herts.

CHOICE ROSES IN POTS.

BIRCHAM AND WARD having a large Stock of the Newest and Best ROSES in fine condition, are enabled to supply them at very reduced prices.

See CATALOGUE, which may be had on application.

Carriage paid to London and Peterborough.

Hedenham Rosary, Bungay, Suffolk.—April 30.

NEW ROSE HYBRID PERPETUAL EVÊQUE DE NÎMES.

BENJAMIN R. CANT has much pleasure in offering the above most beautiful Rose; it is quite a gem and ought to be in every good collection. Colour deep vivid crimson, of exquisite shape; the petals are disposed in the form of a rosette, which gives it a distinct and unique appearance; flower medium size, foliage and habit of growth excellent. Fine plants in pots are now ready at 3s. 6d. each, with the usual discount to the trade.

St. John's Street Nursery, Colchester.

THOMAS WILD has only a few packets of his PRIMULA SEED left, at 2s. 6d. per packet.

The Primulary, Ipswich.

CARNATIONS AND PICOTEES. — Fifty pairs strong, well rooted, and extra fine show varieties, named, 2l.; 25 pairs, 1l. Packing and hamper included.—DODWELL & BAYLEY, Bradshaw Gardens, Chadderton, Manchester.

GOLDEN CHAIN GERANIUMS.—Per dozen, 6s. | Per 100, 2l. 5s. | Per 500, 10l.

The above are offered in good strong plants by ROBERT REA, Ipswich Nursery, Ipswich, Suffolk.

UNRIVALLED BEDDING GERANIUM "CHRISTINA" (KINGHORN).—Deep rosy pink, large trusses, an abundant bloomer, small foliage, of compact and robust habit; without exception the most perfect Bedder yet raised, having such an effective colour and a continuous bloomer. 2s. 6d. each; six plants for four.

F. R. KINGHORN, Sheen Nursery, Richmond, S. W.

NEW VARIEGATED GERANIUM "BEAUTY."

WM. CUTBUSH AND SON can strongly recommend the above, which has bright green foliage, with a broad margin of pure white, flowers light scarlet of good shape in large trusses in great abundance, and very robust habit. We tested it last year with a dozen other kinds, and found it superior to any for bedding purposes. It was exhibited at the late meeting of the Royal Botanic Society, and received a Certificate of Merit. 2s. 6d. each; or 21s. per dozen.

Highgate Nurseries, London, N.

LARGE CAMELLIAS AND AZALEAS.

J. AND R. THYNE, NURSERYMEN, Glasgow, have a dozen large CAMELLIA plants, 6 to 10 feet high, well furnished, mostly double white; also a fine lot of specimen AZALEAS, 3 to 5 feet high. Prices moderate.

NEW BLACK WALLFLOWERS.

J. LOCKHART, FLORIST and SEEDSMAN, Parson's Green, Fulham, near London, is sending out Seed of his new Single BLACK WALLFLOWER, in sealed packets, containing 50 Seeds each for 13 stamps, and Cuttings of his new Double Black Wallflower 30 stamps each, free by post.

TO PINE GROWERS.

WANTED, clean healthy SUCCESSION PLANTS of the undernamed kinds:—

6 MOSCOW QUEEN.	40 SMOOTH-LEAVED CAYENNE.
44 RIPLEY QUEEN.	
50 BLACK JAMAICA.	20 WHITE PROVIDENCE.

Apply, stating cash price to HUGH LOW & Co., Clapton Nursery, London, N. E.

CLIMBING PLANTS.

F. AND A. SMITH have now ready strong plants of COBEA SCANDENS, MAURANDYAS, blue, white, and rose; LOPHOSPERMUM, ECCREMOCARPUS, and TROPÆOLUMS, in large quantities. Prices on application.

Dulwich, Surrey.

BEDDING PLANTS.

F. AND A. SMITH beg to offer the usual varieties of plants for bedding purposes, strong and healthy, including Carter's TOM THUMB, NASTURTIUM true, Cattell's dwarf crimson and several double varieties, with most of the novelties of the season, at moderate prices.

Dulwich, Surrey.

100,000 BEDDING PLANTS, the cheapest place in England. Catalogue sent for one stamp.—J. PYLE, St. John's Nursery, Upper Holloway, London.

TROPÆOLUM CANARIENSE.

CHARLES ALEXANDER, SEEDSMAN, Edinburgh, offers New Seed of the above at 20s. per lb., and 1s. 6d. per ounce.

GREEN HOLLIES, from 12 to 18 and 18 to 24 inches.

WHITEHOUSE AND WHITTAKER having an immense stock of the above, fine bushy plants, with good roots, can supply them at very moderate prices, which will be forwarded on application. The Trade and large purchasers very liberally dealt with.—Brereton Nursery and Seed Establishment, Rugeley, Staffordshire.

SKIRVING'S SWEDE—SUTTON'S SELECTED STOCK.

SUTTON AND SONS have a choice stock of SKIRVING'S SWEDE SEED, growth of 1858, which they can strongly recommend. Price 9d. per lb., or cheaper by the bushel.—Royal Berks Seed Establishment, Reading.

FARM SEEDS.

JOSEPH MAY AND CO. beg to offer the following, which have been selected from the best growers:—

	Per lb.—1s. 0d.
SKIRVING'S SWEDE TURNIP	
GREEN-TOP Do.	1 0
RED GLOBE TURNIP	1 0
GREEN ROUND Do.	1 0
LONG RED MANGEL	0 9
YELLOW GLOBE Do.	0 9

A General LIST of SEEDS for the Farm, Flower, and Kitchen Gardens forwarded on application.

1, Wellington Street, Strand, Waterloo Bridge.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY LIMITED supply every requisite for the Farm and the Garden.

Registered Offices, Union Road, Plymouth.

NEW HARDY WHITE SWEDE.—This Swede is hardier than any other kind, grows to a large size, is adapted for sowing upon poor land, is not affected by frost, and keeps good in the ground or in store till the end of May. New and genuine Seed of this excellent Swede, price 1s. per lb. (carriage free for orders of 30 lbs. and upwards) may be had of RAYNBIRD & HARVEY, Seedsmen, Basingstoke; and 89, Seed Market, Mark Lane, London, E.C.

PETURION GOURD.—This wonderful Vegetable attains the incredible weight of 130 to 135 lbs. in 36 days. It is perfectly edible, and makes an important addition to the kitchen garden. Seed may be had in packets at 7d. and 1s., post free, from E. P. DIXON, Seed Establishment, 57, Queen Street, Hull.

KEMP'S INCOMPARABLE EARLY CABBAGE.—This is quite a distinct variety, and superior to any other known kind, of delicious flavour, dwarf habit, extra early, attains a good size, will not run to seed, and every plant warranted to Cabbage. Seed may be had in sealed packets for 13 postage stamps, post free, at EDMUND P. DIXON'S, 57, Queen Street, Hull.

CABBAGE PLANTS.—True and strong Drumheads for Cattle, packed and delivered at the stations, 3s. 6d. per 1000; fine Red Pickle Plants, 4s. 6d. per 1000.—THOMAS WELLAND, Surrey Gardens, Godalming, Surrey.

CAULIFLOWER PLANTS for Pricking out, 5s. per 1000; ASPARAGUS, 2 years, 15s. per 1000; LETTUCE, 2s. 6d. per 1000; and BEDDING PLANTS, 2s. per doz.

WALTER BIRD, Atherstone Nursery.

YOUELL'S "NORFOLK HERO" CUCUMBER.—Without exception the very best Cucumber for open ground cultivation that has yet been offered. It is a most prolific bearer, as handsome as any frame variety, and is as delicate in point of texture, the fruit measuring from 16 to 20 inches in length. Packets containing 6 seeds, 1s.; 18 seeds, 2s.

YOUELL & Co., Royal Nursery, Great Yarmouth.

NEW ZEALAND RUNNER BEAN. — Price 2s. per quart.—JAS. CARTER & Co., Seedsmen, 238, High Holborn, London, W. C.

NEW ZEALAND RUNNING BEAN.—Packets of 12 Seeds, for 14 stamps.

BASS & BROWN, Seed Growers, &c., Sudbury, Suffolk.

EARLY HANDSWORTH AND MARTIN'S POTATOES.

TO THE TRADE.

WOOD AND INGRAM have a few bushels of the above left more than they require for their own planting, which they will sell at 3s. per bushel of 56 lbs. They will only be kept out one week.—Huntingdon, April 30.

HOLCUS SACCHARATUS, OR CHINA SUGAR-CANE GRASS.—Seed of this lately introduced Fodder plant can be supplied by NUTTING & SONS in any quantity. Price on application.—Seed Warehouse, 60, Barbican, London.

PAMPAS GRASS (GYNERIUM ARGENTEUM).—The beauty of this extraordinary plant has this season been fully appreciated. It can be supplied by the dozen, hundred, or thousand, by CHARLES NOBLE, Bagshot, Surrey.

LISIANTHUS RUSSELLIANUS.

WM. CUTBUSH AND SON beg to intimate that they can supply strong plants of the above elegant Conservatory Plants in 48-pots, at 2s. 6d. each; or 24s. per doz.

Highgate Nurseries, London, N.

TO THE TRADE.

CHARLES SHARPE has still to offer, of his own growing, saved from the finest selected stocks—

LONG RED MANGEL	RED LINCOLNSH. GLOBE TURNIP SEED
YELLOW DO.	
YELLOW GLOBE DO.	GREEN GLOBE DO.
ALTRINGHAM CARROT	YELLOW TANKARD DO.

Prices given on application.—Wisbeach, Cambridgeshire.

TO THE SEED TRADE.

THOMAS AYRES, JUN., SEEDSMAN and GROWER, Biggleswade, Beds., can supply every kind of Wurzel, Swede, and common Turnip Seeds, on the most reasonable terms for cash.

N.B. Dealer in Culinary and Flower Seeds, Fruit Trees, Shrubs, and Flowering Plants.

SEEDS! GENUINE SEEDS.—For the RIGHT SEEDS at the RIGHT PRICE, go to the RIGHT PLACE, which is G. W. DIXON'S New Seed Warehouse, 48 A, Moorgate Street, London, E.C. All sorts of Garden, Grass, Agricultural, and Flower Seeds, wholesale, retail, and for exportation.

JOHN GRIGOR AND CO., NURSERIES, Forres, beg to offer true Native Highland SCOTCH FIR SEED, grown in the celebrated Natural Forests of Strathspey, at 2s. 6d. per packet, post free, or for stamps of that value.

The Trade supplied at Wholesale Prices.

NEW PHLOXES.

DODWELL AND BAYLEY have much pleasure in announcing to their Patrons and the Public that they are now prepared to supply the undernoted extra fine NEW PHLOXES, which they offer with confidence as indispensable additions to the most select collections.

COUNTESS OF DERBY.—Colour rosy purple with carmine eye; flowers large, flat, smooth, and of great substance, forming a compact spike; habit dwarf. An extra fine variety. 5s.

COUNTESS OF ELLESMERE.—White, with delicate lilac eye, strikingly chaste and beautiful; habit dwarf, truss compact and finely formed. Especially excellent for pot culture. An exquisite variety. 5s.

CLAYTONI.—White, with blush eye; in the height of summer pure white. A superb sort. Flowers large, of great substance, smooth and very circular; spike large, compact, and admirably shaped; habit dwarf. 5s.

HOLLANDI.—White, with rosy carmine centre; fine spike; flowers finely shaped, of great substance, and very smooth; habit in the style of, but more vigorous than Countess of Home. 5s.

The set of four, 15s. One over will be added for every three ordered. Terms to the Trade on application.

The best older varieties, 8s. and 12s. per dozen.

Bradshaw Gardens, Chadderton, Manchester.

NEW FRENCH PHLOXES.

JOHN STANDISH can recommend the following as the best that were sent out last year, he having seen them in bloom, and selected those he thought the best. They are very beautiful dwarf, and continue flowering from June until October, or until the frost destroys them in the autumn, and are admirably adapted for bedding, being now classed as perpetual bloomers, many of them growing not more than 16 to 18 inches high:—

Empereur de toutes les Russies, shaded violet purple centre
Julie Roussel, white, with purple centre, superb
L'Enfant Prodigue, violet rose, shot with scarlet
Louis Guerard, large deep amaranth, magnificent
La Volupté, smooth rose, shot with scarlet
Madame Suer, white purple centre, very dwarf
Mademoiselle Orelly Duriez, white violet centre
Monsieur Forest, large lively amaranth, very effective
Souvenir d'un Ami, large rosy red, very fine
Surpasse Madame Rendatler, white purple centre, very dwarf.

The above 2s. 6d. each, or the lot 21s.; besides the above J. S. can supply the finest old sorts from 6s. to 12s. per dozen.

ROSES for bedding on their own roots, strong plants:—

TEA: Souvenir d'Elise, the most beautiful of all Tea Roses, 2s. each, or 18s. per dozen, or 7l. per 100
" Safrano, 1s. each, or 9s. per dozen
" Gloire de Dijon, 1s. each, or 9s. per dozen

HYBRID PERPETUAL ROSES.

General Jacqueminot, 1s. each, or 9s. per dozen
Louis Chaix, 2s. 6d. each, or 24s. per dozen
Madame Vigneron, 2s. 6d. each, or 24s. per dozen
Pauline Lansezeur, 1s. 6d. each, or 12s. per dozen. (Of all the Hybrid Perpetual Roses this is the best adapted for bedding purposes, from its dwarf bushy habit and being always healthy and always in bloom)
Victor Trouillard, 1s. 6d. each, or 12s. per dozen
NOISETTE: Triomphe de Rennes, 2s. each, or 18s. per dozen.

NEW ROSES of 1858, on their own roots.

HYBRID PERPETUAL ROSES, 2s. 6d. each, or 24s. per dozen:—

Duc de Cambridge	L'Evêque de Nîmes
Lord Palmerston	Louise d'Autriche
Marie Portimer	Reine de Denmark
Thomas Rivers	Triomphe des Beaux Arts

NEW ROSES for 1859, grafted on the Manetti Stock, strong plants, 4s. each, or 2l. 12s. 6d. the lot.

HYBRID PERPETUAL ROSES.

Ambroise Verschaffelt	Beauté de Royghem
Comte de Beauford	Celine Forestier
Docteur Brettoncau	François Ier
Empereur de Maroc	François Arago
Impératrice Eugenie	Oriflamme de St. Louis
Princesse Olympie	Stephanie Beauharnais
Virginal	Vicomtesse Laure de Giraud
TEA: Madame Damaisin	BOURBON: Octavie Fontaine

All the above plants are now ready to send out, and J. S. will have the above New Roses on their own roots ready to send out the first week in June.—Bagshot, April 30.

FINE EXHIBITION DAHLIAS in strong plants, viz., Admiral Dundas, Amazon, Annie, Airedale Beauty, Beauty of Slough, Cherub, Colonel Windham, Cossack, Dr. Gully, Deutsche Würde, Duchess of Wellington, Duke of Wellington, Duchess of Beaufort, Empress, Fanny Keynes, Grand Sultan, Incomparable, Lady Folkestone, Lady Popham, Lord Bath, Lord Palmerston, Lollipop, Miss Caroline, Mrs. Turner, Miss B. Coutts, Mrs. Edwards, Mrs. Wheeler, Mrs. Seldon, Nigger, Pandora, Perfection, Pre-eminent, Princess, Ruby Queen, Rachel Rawlings, Robert Bruce, Royal Scarlet, Sir R. Whittington, Sir J. Franklin, Touchstone, Yellow Beauty. Selections of any 12 of the above for 3s.

HENRY MAY, The Hope Nurseries, near Bedale, Yorkshire.

CHARLES KIMBERLEY has much pleasure in offering the following novelties for the spring of 1859, plants of which will be ready the first week in May:—

DAHLIA HOPE (KIMBERLEY).—Orange yellow, flaked and spotted with crimson and purple, and tipped with white, petals short and close set, with good centre, constant and good habit, one of the best fancy Dahlias of the season. Height, 3 feet. Plants 7s. 6d. each.

DAHLIA FAITH (KIMBERLEY).—Deep lilac, flaked with purple, close light centre and good habit. Height, 3 feet. Plants 7s 6d. each.

FUCHSIA GLORY OF STOKE (KIMBERLEY).—Tube and sepals bright crimson, very stout, with fine broad sepals of great length and nicely reflexed, corolla fine purple, the flower altogether well proportioned, of excellent habit, either for pots or the garden, and as an exhibition plant one of the best ever offered. Plants 10s. 6d. each.

FUCHSIA PREMIER (KIMBERLEY).—Tube and sepals bright crimson, the sepals are of great width up to the points, with a fine large rich purple corolla, which is very double and sometimes flaked with rose, habit dwarf and a very free bloomer. As a double corolla'd flower it is quite at the head of its class, and will become a general favourite. Plants 7s. 6d. each.

PETUNIA BRILLIANT (KIMBERLEY).—Rosy crimson, very bright and stout, with white centre. This will be a great acquisition either for beds or pot culture, and for bouquets it will be found very useful. Plants 5s. each.

CALCEOLARIA CANARY (KIMBERLEY).—Beautiful canary yellow, flowers about the size of aurea floribunda, very stout habit. A very fine variety either for pots or beds and for bouquets; one of the best ever offered. Plants 5s. each.

PHLOX ALBA ROSEA (KIMBERLEY).—White centre, the white extending nearly half over the flower, the other part rose colour, of fine form and large truss, a very distinct variety. Plants 5s. each.

PHLOX SNOWFLAKE (KIMBERLEY).—A beautiful white, good truss and fine shaped flower, of the omniflora class. Plants 5s. each.

Stoke Nursery, near Coventry.

THE BEST SEASON FOR BEDDING OUT ROSES.

WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

WM. WOOD AND SON respectfully submit that the months of April and May are the most eligible for planting out Roses from pots, for the purpose of forming groups in the Parterre and Rose Garden.

W. W. & Sons having on hand an immense Stock of many thousands, in pots, will be happy to supply them on the following reasonable terms.

Hybrid Perpetual Roses	9s. to 12s. per dozen.
Isle de Bourbon ditto	12s. to 18s. ,,
Tea-scented	12s. to 18s. ,,
China, Climbing and Noisette ditto ..	9s. to 12s. ,,

CATALOGUES sent post free on application.

Plants added to each order to compensate for distant carriage.

NEW ROSES IN POTS.

BENJAMIN R. CANT offers the undermentioned NEW ROSES. The plants are now ready, and are remarkably fine and healthy; many of them have strong shoots from 1 to 2 feet in length. Purchasers of 1 dozen and upwards will be supplied at a reduced rate. The trade allowed the usual discount.

NEW ROSES FOR 1859 at 5s. each:—

TEA: Madame Damaisin
BOURBON: Docteur Berthet
" Edith de Murat
HYBRID PERPETUALS:—
Altesse Impériale
Ardoisée de Lyon
Anna Alexieff
Anna de Diesbach
Beauté de Royghem
HYBRID PERPETUALS:—
Comtesse Cecile de Chabrillan
Imperatrice Eugénie
L'Oriflamme de St. Louis
Le Mont Vésuve
Orderic Vital
Princesse Olympie
Salomon
Virginal

Also the following CHOICE ROSES at 2s. 6d. each, or 25s. per dozen:—

TEA: Souvenir d'Elise
BOURBON: Caroline Riquet
" Josephine Clermont
" Madame Contesse
" Monsieur Jard
HYBRID PERPETUALS:—
Abbé Feytel
Evêque de Nîmes. 3s. 6d.
Gloire de Lyon
General MacMahon
HYBRID PERPETUALS:—
Louis Chaix
Louise d'Autriche
Lord Palmerston
Marie Thierry
Monsieur de Montigny
Philomène Crozy
Reine de Denmark
Triomphe de Mont Rouge
" des Beaux Arts

At 15s. per dozen:—

HYBRID PERPETUALS. — Adelaide Fontaine, Bacchus, Belle Anglaise, Cardinal Patrizzi, Etendard de Sebastopol, Lord Raglan, Madame Vidot, Mathurin Regnier, Pauline Lansezeur, Prince Leon, Prince de la Moskwa, Rebecca, Souvenir de la Reine d'Angleterre, Souvenir de Leveson Gower, Sir J. Franklin, Victor Trouillard.

BOURBON: Glorietta, Omer Pacha,

NOISETTE: Miss Gray, Narcisse

TEA: Devoniensis, Elise Sauvage, Gloire de Dijon, Madame Bravy, Souvenir d'un Ami, Vicomtesse de Cazes.

A fine collection of the most esteemed older varieties, such as Caroline de Sansal, Comte de Nanteuil, Colonel de Rougemont, General Jacqueminot, Jules Margottin, Souvenir de la Malmaison, at 12s. per dozen.

St. John's Street Nursery, Colchester.

AN immense quantity of WORKED AZALEAS, just arrived, coming into full beauty, others not so forward, at 18s., 21s., and 24s. per dozen; CAMELLIAS, 18s., 21s., and 24s. per dozen. ORANGE TREES coming into bloom, and some with fruit and bloom, 2s. 6d., 3s. 6d., and 5s., 7s. 6d., and 10s. 6d. each; a large collection of FOREIGN and BRITISH FERNS, and every other kind of Greenhouse Plants and Nursery Stock at reasonable prices. Ash-leaf Kidney Potatoes, 7s. per bushel; Dwarf Kidney Beans and Scarlet Runners, 1s. per quart; Virginian Stock, Mignonette, Candytuft, 3s. per lb., or 4d. per oz.; Nemophila, 3s. 6d., or 4d. per oz., and every other sort at light prices. Illustrated Catalogues may be had on sending 7 stamps. The 6d. will be returned to purchasers of not less than 5s. worth.—ROBT. GREEN, 154, Kingsland Road, 55 doors from Shoreditch Church.

NEW ANTIRRHINUMS.

HENRY MAY has now ready for delivery his fine SEEDLING ANTIRRHINUMS, selected from an immense collection of very superior Seedlings, and he can recommend them as a most beautiful set and improvement on existing kinds, viz.:—

STANDARD BEARER (MAY'S).—White throat, bright rose lip, with yellow centre, very fine and distinct.

LORD JOHN RUSSELL (MAY'S).—Pure lilac self, buff lip, very fine form and habit.

LORD DERBY (MAY'S).—Creamy white, with yellow lip, beautifully striped and veined with bright purple.

PURPLE KING (MAY'S). — Deep rich purple self, fine spike extra.

SURPRISE (MAY'S).—Bright rosy crimson gold lip, very fine, form good.

ORLANDO (MAY'S). — White tube, bright crimson lip, an improvement on Firefly, very fine.

GALATEA IMPROVED (MAY'S).—Pure white tube, bright crimson lip, fine habit and large spike good.

GITANA (MAY'S). — Bright rosy purple, white lip, fine spike extra.

The above set of eight for 25s., or 3s. 6d. each separate. The usual discount to the Trade.

HENRY MAY, The Hope Nurseries, near Bedale, Yorkshire.

NEW VERBENAS, raised by Mr. ELPHINSTONE.—

1. PICTURATA.—Crimson, large, and fine truss, conspicuous white round eye.
2. COMTE DE MONTALEMBERT.—Light lilac, very large flower of extra substance, with large white eye.
3. ANNIE.—Light rose, large white eye, a very desirable colour and good substance.
4. BOUQUET DE LA REINE.—Peach, large white eye, fine shape, and extra substance, quite a new colour.
5. MAGNUM BONUM.—Bright crimson, fine yellow eye, large flower, and a very striking variety.
6. GRANDIFLORA PURPUREA.—Violet purple, large truss, fine white eye.

Plants now ready for sending out.

D. BROWNE has great pleasure in introducing the above Six New VERBENAS, as being a decided improvement on any hitherto produced in form, colour, and extra substance, with fine strong habits so desirable for bedding purposes. The collection of Six Varieties, package included. 20s., or 3s. 6d. each, sent free of carriage. The Trade supplied on the usual terms.

D. B. begs to say that in consequence of having extensive orders from the Trade his stock is now rather limited, therefore early orders will oblige.

Horticultural Grounds, Sprowston;
Seed Establishment, 41, London Street, Norwich.

NEW DOUBLE PETUNIAS.

C. W. HARGRAVE begs respectfully to announce that he is now prepared with STOCK of the NEW DOUBLE PETUNIAS advertised by him in the *Gardeners' Chronicle* of September 25, 1858.

They constitute a unique collection in themselves, being of exquisite form, firm substance, rich and decided in colour, very fragrant, and of first-rate habit, having good guard petals, with the centres well filled, and in fact are superior to the Continental or other varieties hitherto sent out. Their nomenclature is as follows:—

ROSETTE.—Crimson, very double, dwarf habit.
ROSEA ALBA.—Rose clearly mottled with white.
PURPLE KING.—Large flower, well formed.
CRIMSON GEM.—Bright crimson, with white centre.
ALBA MAGNIFLORA.—Beautiful form, very fragrant.
KING OF CRIMSONS.—Bright crimson, brighter than its parent "Crimson King." The varieties previously introduced as crimson have all proved themselves to be only purple.

Plants of any of the above 5s. each, or the set of six 25s.

It is requested that the Trade forward their commands at their earliest convenience, as all orders will be executed in the rotation in which they are received.

C. W. HARGRAVE, THE NURSERY, WINCHMORE HILL, N.

MESSRS. E. G. HENDERSON & SON

WILL OFFER THE FOLLOWING NEW PLANTS IN MAY, AND THE

NEW GENERAL CATALOGUE and SPRING LIST of ORNAMENTAL BEDDING and SUMMER FLOWERING PLANTS

WILL IN A FEW DAYS BE READY FOR DISTRIBUTION, WHEREIN WILL BE DESCRIBED

ALLAMANDA VIOLACEA.

This plant so long looked for, and much needed by all English competing competitors, we have much pleasure in introducing for the first time to the public, and no doubt it will be for years the great feature at the leading Exhibitions. The late Mr. Gardner, Director of the Royal Botanic Gardens in Ceylon, speaks of it in his papers, published in the second volume of the London Horticultural Society's Quarterly Journal, as one of the finest shrubs he met with, and "by far the most beautiful species in the genus, bearing numerous large flowers not unlike in colour those of Gloxinia speciosa."

As a competition plant in collections, A. violacea, in its violet-blue tint, offers a new and essential feature in colour, there being none other in the same style to associate with the golden-yellow of A. Schotti, and the delicate rosy-blush of Echites and Dipladenia. 63s. each.

AGAPETES BUXIFOLIA, a neat-habited plant with good evergreen foliage, and large bright red tubular flowers, resembling the Mitraria and Epacris intermediately.

NEW INDIAN AZALEAS, fine competing kinds raised by M. Spae: M. C. Van Loo, and M. De Witte.

The scarlet-flowered variety of TYDÆA GIGANTEA, and the double-flowered ACHIMENES LONGIFLORA.

The TYDÆA LADY DIGBY, and LADY CAROLINE KERRISON (syn. Achimenes), with large brilliant rosy-crimson flowers throughout winter, free flowering habits.

The HYBRID BEGONIAS raised by Mr. Stange, Gardener to Herrn Consul Schiller, of Hamburgh, including B. PICTURATA and others from B. SPLENDIDA ARGENTEA.

LIERVAL'S NEW PHLOX EVENING STAR.

BURRIDGE'S TWO NEW PHLOX DRUMMONDI, VICTORIA AND ALBERT.

CALCEOLARIA AMPLEXICAULE ALBA, Splendid bedder.

BOUVARDIA "BRILLIANT" AND "DELICATA," with large flower tubes, and profusion of bloom.

NEW BEDDING DAHLIAS, GLOIRE DE FRANCE, AND WHITE UNIQUE.—The best white variety out, and the former as the most noble formed and richly coloured flower of any other Dahlia for beddings, a dried plant showing the dwarf and profuse blooming habit may be seen at the Wellington Nursery.

BANKS'S NEW FUCHSIAS (9 varieties, 63s.).

NEW CHRYSANTHEMUMS (8 varieties), see Plate XXVI. in the "Illustrated Bouquet."

BREEZE & BANKS'S COLLECTION OF NEW VERBENAS will include the finest blue out, the best rose, the finest violet-purple, the best peach, and maroon black, with large white eyes or centres, the Géant des Batailles far surpassed; a Mrs. Holford in truss and habit, but suffused with a beautiful pink tint. The entire collection includes a full complement of colours, as the finest ever sent out by us, and surpasses with but few exceptions any that we have cultivated under name.

FINE BEDDING GERANIUMS.

NEW NOSEGAY SECTION.

THE IMPERIAL CRIMSON, AND MODEL NOSEGAY GERANIUMS. See descriptions at page 355, and also the Catalogue.

Among Variegated Geraniums, MISS EMILY DOMVILE will prove a first-class Bedding Plant (see description in Catalogue).

The two GOLDEN-LEAVED varieties with large-petalled flowers.

THE RAINBOW, with the finest red-zoned foliage yet seen.

THE ST. CLOUD, a beautiful accompaniment to FONTAINBLEAU.

THE SILVER CHAIN, with deep margin of pure white; a fitting companion to the GOLDEN CHAIN.

NEW CALCEOLARIAS, scarlet, crimson, and yellow, of proved and true bedding, shrubby, branching growth; not half shrubby, as the majority are.

THE WHITE NOSEGAY GERANIUM (for beds).

SPERGULA PILIFERA,

AN ADMIRABLE SUBSTITUTE FOR GRASS LAWNS WITHOUT MOWING!

Permanent for years, with the most beautiful verdure through the year.

N.B. *The quotations of Price to Geraniums Imperial Crimson and Model Nosegay, at page* 355, *should have appeared as* 3s. 6d. *and* 2s. 6d. *each only.*

Wellington Nursery, St. John's Wood, London.

AZALEA INDICA.

J. IVERY AND SON beg respectfully to invite growers of the above named to an inspection of their unrivalled Stock of Young Specimens of all the newest and best varieties, many of which have been exhibited at the Metropolitan Exhibitions. They are clean and healthy, well set with bloom, and moderate in price. Catalogues forwarded post free upon application.—Dorking Nursery, April 30.

THE EARLIEST PEA.—DUNNETT'S FIRST EARLY is in every respect superior to "Daniel O'Rourke," being several days earlier, having finer pods, and richer in flavour, height 2½ feet. For an early dish of fine-flavoured Peas we can confidently recommend this; 2s. per quart.

CHAMPION CABBAGE, the earliest and best sort, if sown in succession, may be had fit for table throughout the year, 8d. per ounce, or 1s. post free.

BUTLER & McCULLOCH, Covent Garden Market, London.

HOLCUS SACCHARATUS, or North China Sugar-Cane.—Pamphlet, "A Visit and a Plant;" the only English authority on the Cultivation of the above. Post free 6d. Prices of Seed on application. Samples 6d. Four varieties of Holcus remitted free by post on receipt of 10s.

CHINESE YAMS, 4s. per dozen.

ASPARAGUS plants, 16s. per 1000.

JOHN W. CLARKE, Whittlesea, Cambridgeshire.

CHOICE STOVE AND GREENHOUSE PLANTS AT LOW PRICES.—See names in the *Gardeners' Chronicle* of April 9, page 309, and April 16, page 330.

THIRTY CHOICE STOVE PLANTS, very strong and very fine, for 55s.; or, per dozen, 24s. to 35s.

FIFTY CHOICE GREENHOUSE PLANTS, very strong and fine, for 65s.; or 18s. to 25s. per dozen.

FIFTY FINE GREENHOUSE PLANTS, selection left to us from the Catalogue, 45s.

BRITTAIN'S GARDEN NETTING of 1½ yard, with 5d., 6d., and 8d. per yard.

SHAW'S TIFFANY of best quality, No. 1, 5s. per piece of 20 yards; also stouter qualities.

THE GISHURST COMPOUND.—Boxes 1s. 6d. each with instructions.

Goods 20s. and upwards free to all stations in London, or on the London and Norwich, (Colchester) line.

BASS AND BROWN,
Seed and Nursery Establishment, Sudbury, Suffolk.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Stove, Greenhouse, and Hardy Ferns, Miscellaneous Stove, Greenhouse, and Hardy Plants, Variegated and Ornamental foliaged Plants, Conifers, Roses, Rhododendrons, Indian Azaleas, Gloxinias, Fuchsias, Cactuses, &c., is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

PLANTS FOR THE FLOWER GARDEN, 100,000.—100 strong, well hardened plants, composed of the following:—Yellow, crimson, and orange Calceolarias, Scarlet Geraniums, Antirrhinums, Cupheas, Heliotropes, Pentstemons, Phloxes, Verbenas, Salvias, Senecio, Dahlias, &c., all properly named, basket and packing included, for 12s. 6d.

New Fuchsias, of last season, at 6s. per dozen; new Verbenas, of ditto, at 4s. per dozen.

HENRY MAY, The Hope Nurseries, near Bedale, Yorkshire.

FIRST PRIZE HYACINTHS.

JAMES DICKSON AND SONS, 32, South Hanover Street, Edinburgh, have much pleasure in informing their Friends and the Public that they have again been awarded the FIRST PRIZE for the Finest Collection of HYACINTHS. Also the FIRST PRIZE for the Finest Single and the Finest Double individual HYACINTHS in the room. They would also call attention to the fact that the Hyacinths which have taken most of the Prizes at the Show were supplied by them.

J. D. & SONS are now receiving orders for the collection of 18 PRIZE ROOTS in packages at 1l. 1s. each.

N.B. Parties ordering now will have their Roots specially ordered and delivered from the first importation of the season.

BEDDING PLANTS.

WM. CUTBUSH AND SON beg to state that they can supply any quantity of extra fine plants of the following at the prices annexed:—

	s.	d.
Ageratum, per doz.	4	0
Chrysanthemum regalium flore pleno, golden yellow, an excellent plant for large beds, per doz.	6	0
Calceolaria, yellow, per doz.	4	0
Cuphæa platycentra, per doz.	4	0
Dahlias, of sorts, per doz. 6s. to	9	0
Fuchsias, of all the best varieties, per doz. 4s., 6s., and	9	0
Geraniums, Tom Thumb and other Scarlets, per doz.	4	0
,, Variegated, of sorts, per doz. 6s. to	9	0
Heliotrope, per doz.	4	0
Lobelia speciosa (from cuttings true) the best of the class, per doz.	4	0
Lobelia ramosioides, per doz.	4	0
Nasturtium Tom Thumb, per doz.	4	0
Petunias, of sorts, per doz. 4s. to	6	0
Pyrethrum per doz.	4	0
Salvia, of sorts, per doz.	4	0
Tropæolum elegans (Crystal Palace variety), a free flowering bright orange-scarlet dwarf plant, well adapted for flower gardens, per doz.	6	0
Verbenas, of the best sorts, per doz.	4	0
,, Edmonds' New, of 1859	18	0

A DESCRIPTIVE CATALOGUE of the above and general Nursery Stock can be obtained free per post on application.

Highgate Nurseries, London, N.

PLANTS FOR THE FLOWER GARDEN.—The following may be had at the prices attached, and the plants are all fine and thoroughly established in single pots:—

	Per dozen.—s.	d.
Scarlet Geraniums, Tom Thumb, Frogmore and others, cut down plants, that were struck last spring	3	0
Ditto, struck last autumn	2	6
Verbenas, all the best varieties	2	6
Antirrhinums	3	0
Ageratums	2	6
Calceolarias, shrubby 2s. 6d. to	3	0
Cuphea platycentra, extra large	3	0
Dahlias, best sorts 4s. to	9	0
Carnations and Piccotees ditto per pair 1s. to	1	6
Pinks, ditto ,, 6d. to	1	0
Fuchsias, best sorts 3s. to	4	0
Gaillardia picta	2	6
Heliotropes	2	6
Lobelia speciosa and ramosoides	2	6
Alyssum variegatum	2	6
Hollyhocks, fine named flowers	9	0
Lantanas	2	6
Nierembergia gracilis	2	6
Petunias, fine sorts	2	6
Senecio (double dark Groundsel)	2	6
Salvia fulgens	2	6
Variegated Geraniums, Flower of the Day, fine cut down plants	4	0
Osborne's Brilliant	3	6

WOOD & INGRAM, Huntingdon.

THE PATENT

NITROPHOSPHATE OR BLOOD MANURE COMPANY (LIMITED),

CONSISTING OF TENANT FARMERS, OCCUPYING UPWARDS OF 30,000 ACRES OF LAND.

TRUSTEES.

ABEL SMITH, Jun., Esq., Walton House, Ware, Herts.
CHARLES DIMSDALE, Esq., Essendon Place, Herts.
EDWARD BALL, Esq., M.P., S, Belgrave Road, Pimlico
MAJOR-GENERAL HALL, M.P., Western Colville, Linton, Cambridge
JOHN BRADY, Esq., M.P., Warwick Terrace, Belgrave Sq.

DIRECTORS.

Chairman.—JONAS WEBB, Esq., Babraham, Cambridgeshire.

Deputy-Chairman.—JOHN COLLINS, Esq., Myddleton-Square, Pentonville.

EDWARD BELL, Esq., Tottenham, Middlesex
JOHN CLAYDEN, Esq., Littlebury, Essex
RICHARD HUNT, Esq., Stanstead Abbot, Herts.
THOMAS KNIGHT, Esq., Edmonton, Middlesex.
ROBERT LEEDS, Esq., West Lexham, Norfolk.
ROBERT MORGAN, Esq., 72, Camden Villas, Camden Town.
GEORGE SAVILL, Esq., Ingthorpe, near Stamford.
WILLIAM COLLINS, Esq., 105, St. John Street Road.

Bankers.—Messrs. BARNETT, HOARE & Co., Lombard Street.

Solicitors.—Messrs. KINGSFORD & DORMAN, 23, Essex Street, Strand.

Auditor.—G. W. BROWN, Esq., 28, Parliament Street.

Manager.—Mr. JAMES ODAMS. | *Secretary.*—Mr. C. T. MACADAM.

Offices, 109, Fenchurch Street, London.—Manufactory, Plaistow Marshes, Essex.

THE Directors beg to inform their Friends and the Agricultural Public that the following Manures are now ready:—

ODAMS'S BLOOD MANURE FOR CORN AND MANGEL.
ODAMS'S BLOOD MANURE FOR ROOTS.
ODAMS'S SUPERPHOSPHATE OF LIME.

Full particulars may be had at the Company's Offices, or of the local Agents.

NATIONAL FLAX COMPANY (LIMITED).

Capital—£200,000, in 200,000 Shares of £1 each, 5s. to be paid on application, 5s. within three months from Allotment, and the remainder as the Directors may require it, in Two Payments of 5s. each.

TRUSTEES.

HENRY FENTON JADIS, Esq., Comptroller of Corn Returns, Board of Trade.
J. T. CROFT, Esq., 15, Regent Street, S.W.

DIRECTORS.

President—Sir JOHN DORAT, Vice-President R.S.L.

John Beddoe, Esq., Lickhill, near Stourport, Worcestershire.
J. T. Croft, Esq., 15, Regent Street, S.W.
Lieut.-Col. C. E. Dering, 47, York Street, Portman Square, W.
Frederick Hamilton, Esq., Gresham House, E.C.
T. E. Marsland, Esq., Pall Mall, S.W.
Wallace Pedder, Esq., Wadhurst, Sussex.
George Thornton, Esq., C.E., F.G.S., &c., 25, Queen's Road, Regent's Park, N.W.

Standing Counsel.—P. MacChombaich de Colquhoun, Esq., LL.D., &c., 3, Hare Court, Temple.

Bankers—Messrs. Heywood, Kennards, and Co., 4, Lombard Street, E.C.

Solicitor.—Mr. Vaughan Prance, 37, New Bridge Street, E.C.

Engineer.—Mr. G. L. Fuller, C.E., 69, Lombard Street, E.C. | *Auditors.*—(To be appointed by the Shareholders.)

Secretary—Mr. James M. Haldon, F.R.G.S.

Offices.—193, Gresham House, Old Broad Street, London, E.C.

ABSTRACT OF PROSPECTUS.

It has been for some years past a matter of notoriety that British and Irish linen manufacturers, and also manufacturers of hempen goods, have materially suffered from a deficient supply of Flax and Hemp. This state of deficient supply arises from the fact that the cultivation of Flax in Great Britain has materially decreased instead of increased with the growing requirements of our linen manufactures. Our national commercial statistics show that, out of 150,000 tons of Flax annually consumed in the United Kingdom, not more than 50,000 tons are of home growth. In addition to this enormous importation of Flax for our linen manufactures, we have also imported hundreds of thousands of quarters of Linseed every year for home consumption.

The linen manufacturers of the United Kingdom have declared that they are ready to take any quantity which can be grown at home, and at such prices as will be more remunerative to the agriculturist than the usual produce of his lands.

The promoters of the National Flax Company are prepared to prove to the agriculturists of this country that no more profitable crop can be cultivated than that of Flax, whenever their system of rettories, and improved mechanical treatment of Flax fibre, shall be adopted in the localities of its growth. The main feature of the Company's plan is, that it will take the trouble of preparing the Flax for market entirely off the hands of the grower, by becoming the purchasers of the crop, and thus leaving the grower entirely free from the hazards of bad harvesting weather, and at the same time insuring him a certain handsome profitable return for all the Flax he can produce and deliver to the Company's depôts and rettories. The Company's operations will also embrace the whole of the requisite process of preparing the Flax and similar fibrous substances ready for the spinner.

The system of preparation adopted by this Company is the subject of a patent, the invention of Mr. George Abemarle Cator, a gentleman who has made the cultivation of Flax and its preparation for the spinner his especial study for many years past, he having fully demonstrated the great economy of labour and the very great improvement in the quality of the Flax fibre, which is the result of his improved system of Flax preparation. The system will be found fully detailed in the "Explanatory Pamphlet on Flax Cultivation and Preparation," to be had free from the Secretary of the Company and its agents; in which will also be found an exposition of the great importance of the home cultivation of Flax, as insuring a regular supply of raw material to the very important national manufactures of linen and hempen goods; half-stuff for paper makers, and also of the importance of the seed for Linseed oil and oilcake.

As an example of the intended operations of the Company, the following is quoted from the full Prospectus of the Company:—

By rettories will be understood establishments where the preparation of Flax-fibre from the raw plant for the spinner and manufacturer will be carried out through all its stages.

It is estimated that two rettories, on the scale proposed as the base of operations, will require eight patent machines, and, if constantly at work for (say) 309 days in the year will produce annually 1200 tons of Flax-fibre, 7500 quarters of Linseed, and 900 tons of tows; and allowing 50*l.* per ton to be obtained for the Flax-fibre, 56*s.* per quarter for the Linseed, and 5*l.* per ton for the tows, there is a gross yield of 85,500*l.*

Assuming that it will take as much as 10 tons of Flax-straw unseeded to produce one ton of Flax-fibre, at a cost of 4*l.* per ton, and 18*l.* per ton of fibre for all expenses, the total outlay will be 69,000*l.* leaving a balance to be divided of 15,900*l.* or nearly 30 per cent. upon 55,000*l.* (the cost of the buildings, plant, and machinery, together with sufficient working capital for two rettories), which is wholly irrespective of the dividend that may be expected from licence dues from other rettories; and as the operations of the Company are extended, the dividends will be in proportion.

The peculiar advantages of Selby, in Yorkshire, and the surrounding Flax-growing districts, have decided the Company on establishing their first rettory in that neighbourhood.

A prospective enterprise of this Company being the cultivation of Flax on reclaimable lands, of which in the United Kingdom there are some millions of acres, it is considered the Company may beneficially turn its attention to the acquirement, in due course, of an available property in such lands.

The National Flax Company will, by increasing the cultivation of Flax in the present growing districts, tend to encourage the population of other parts of the country to acquire the requisite knowledge of an industrial resource by which their local labour will become more profitable, and land of greater value. Again, the fast-extending application of the power-loom to Flax-fibre will greatly increase the demand for Flax. All considered, the circumstances of the times combine to establish the present enterprise as the nucleus of a new branch of business, and a most valuable auxiliary to the farming and manufacturing producers of the United Kingdom, and one which is well calculated to still further develop her prosperity.

Copies of the Prospectus, and all further information, may be obtained at the Offices of the Company, 193, Gresham House, City.

GENUINE ROLL TOBACCO CLOTH.
Warranted equal in Strength to Tobacco.

JOSEPH BAKER, 10, Gough Square, Fleet St., E.C., having dealt upwards of 20 years in the above, can recommend it as the best article for destroying the Fly. 1*s.* 4*d.* per lb.; over 10 lbs, 1*s.* Post-office Orders payable Strand Office.

GENUINE TOBACCO PAPER.—Parties fumigating can be supplied with the best Genuine Tobacco Paper at 4*l.* per cwt.; any less than 56 lbs., 10*d.* per lb.—Ben Baxter, Messrs. Jackson & Sons, Lady Lane, Leeds.

GENUINE TOBACCO PAPER FOR FUMIGATING.

H. APPLEBY (Foreman to Messrs. Ivery & Son, Surrey), takes this opportunity of informing his patrons and the public that he is now offering the above at a very considerably reduced price. It is now sold in packets of 4 lbs. each, at 1*s.* 3*d.* per lb. A liberal discount allowed to the Trade. For testimonials that will guarantee its quality, see *Gardeners' Chronicle*, April 16, p. 338.

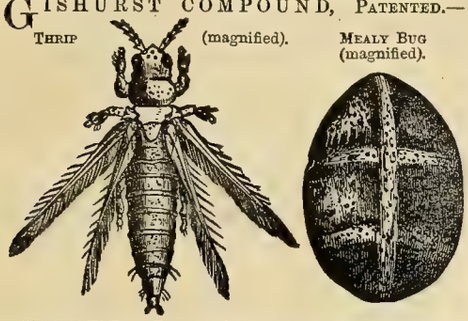
Sheet Iron Pots for fumigating, 3*s.* 6*d.* each.

N.B. All orders to be accompanied with a Post-office Order, payable to Henry Appleby, Dorking, Surrey.

PAGE'S BLIGHT COMPOSITION (4*s.* per gallon, sufficiently strong to make four fit for use) has stood the test of eight years public trial, and its great success has led to numerous imitations. Dr. Lindley, in his leading article of October 25, 1856, reported 182 cases in its favour, sufficient to convince the most sceptical. Seeds packed for exportation to all parts of the world.—Page & Toogood, Royal South Hants Seed Establishment, Southampton.

GISHURST COMPOUND, Patented.—

Thrip (magnified). Mealy Bug (magnified).



GREEN FLY on Roses and Greenhouse Plants safely got rid of by syringing with PATENT GISHURST COMPOUND, 2 oz. to the gallon of water.

Extract from leading article in *Gardeners' Chronicle*, April 9, '59.

"That it really kills red spider, aphides, mealy bug, thrips, and scale, it is impossible to doubt in the face of reports of practical men, among whom we may mention Mr. D. Judd, of Althorp Gardens"—then follows a caution against the use of a too strong solution.

The Gishurst Compound is sold in boxes at 1*s.* 6*d.* and 6*s.* each, with directions for use, and printed opinions of Mr. Rucker's gardener, Lady Dorothy Nevill's gardener, Sir William Hooker, Mr. Rivers, and other eminent authorities. For Nurserymen the large size is recommended, but where the consumption is not large the compound keeps its strength best in the small. The undermentioned Seed Merchants, Nurserymen, &c., having taken in supplies are prepared to sell single boxes:

Barnes, Thos., Thirsk.
Barratt, Bury St. Edmunds
Bass & Brown, Sudbury
Bell & Co., Newcastle-on-Tyne
Bell, John, Norwich
Brigden, T., Railway Arcade, London Bridge
Brown, D., Norwich
Chater, W., Saffron Walden
Cattell, J., Westerham
Cripps, T., Tunbridge Wells
Deane & Co., London Bridge
Dickson, Francis & Arthur and Sons, Chester
Dickson & Brown, Manchester
Dickson, Hogg, & Robertson, Dublin
Dickson & Co., Edinburgh
Epps, F., Ashford, Kent
Epps, Maidstone
Fisher, Holmes & Co., Sheffield.
Hawkins, R. T., Weymouth
Henderson, E. G. & Son, St. John's Wood, London
Henderson, A. & Co., Pineapple Place, Edgeware Rd.
Hooper & Co., Covent Garden
Jackson, Thos. & Son, Kingston
Jefferies, W. B., Ipswich
Kennedy & Co., Dumfries
King, Wm., Lincoln
Low, Hugh & Co., Clapton
Mackie & Stuart, Norwich
Mann, J., Brentwood
Matheson, R. C., Gloucester
May, J. & Co., 1, Wellington St.
Parsons, G., Brighton
Pattinson & Son, Hexham
Perkins, J., Northampton
Pope, H., Gib Heath, near Birmingham
Reid, B. & Co, Aberdeen
Smart & Mein, Kelso
Thyne, J. & R., Glasgow
Whallery, T., Liverpool
Wood & Son, Maresfield

Nurserymen and Seedsmen supplied by Price's Patent Candle Company (Limited), Belmont, Vauxhall, London, S.

FLEMING'S SALTING MACHINE FOR DESTROYING WEEDS ON GRAVEL WALKS, &c.—This most useful Machine has given the greatest satisfaction wherever it has been introduced; it is the only effectual means of keeping Drives and Walks completely clear of Weeds.

Extract from article "Trentham" in *Gardeners' Chronicle* of January 22.

"And I would observe in passing from these grounds that the whole of the Grass and Gravel are kept in the most perfect order by the aid of Machinery; the former by a Horse Machine wherever it can be worked, a small hand instrument being used in places of difficult access; the latter is kept in order by a Salting Machine, the invention of Mr. Fleming, and judging from the beautiful condition of the Gravel in every direction, I should say that it was altogether most efficient."

(The Mowing Machines here referred to are Shanks's).

From the *Field* of April 2.

"The Salting Machine will effectually destroy the Weeds on Gravel Walks and Drives."

Testimonials, with full particulars and prices, may be had on application to Alexander Shanks & Son, Dens Iron Works, Arbroath, Patentees of Improved Mowing, Rolling, Collecting and Delivering Machine for Lawns, Hot-water Apparatus Manufacturers, &c.

BOOT'S PATENT ANTI-CORROSIVE ENGRAVED LABEL, suitable for every description of plant. See Circular, free by post.

John Shaw, Princess Street, Manchester, Agent.

HENRY J. MORTON and CO., 2, Basinghall Buildings, Leeds.

GALVANISED IRON WATER CISTERNS

for Cottage Houses, &c., to contain 50 gallons, 25*s.*; 80 gallons 30*s.* each; and 140 gallons, 36*s.*, and fitted with tap, keeping the water perfectly sweet and clean; will not rust or corrod Cisterns of all sizes.

GALVANISED IRON PUMPS

for Liquid Manure or Domestic Use, 3 inches diameter, 30*s.* and 32*s.* 6*d.* each; Tail Pipe for same at from 10*d.* per foot.

GALVANISED IRON SWING WATER BARROWS

for Garden or Farm use, containing about 20 gallons, entirely formed of iron, 32*s.* 6*d.* each.

Garden Engines, Syringes, &c., upon the most approved principle.



GARDEN ENGINES, MACHINES, AND GREENHOUSE SYRINGES

WITH ALL THE LATEST IMPROVEMENTS, MANUFACTURED BY THE PATENTEE,

RICHARD READ, Instrument Maker (by Special Appointment) to Her Majesty,
35, REGENT CIRCUS, PICCADILLY, LONDON.

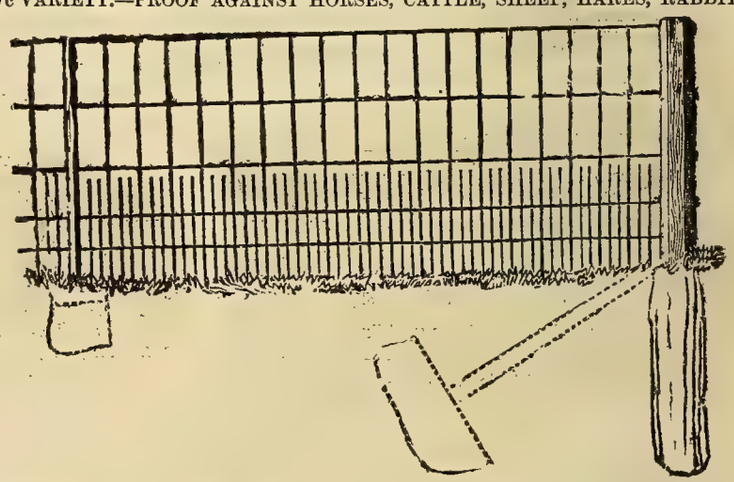
Caution.—R. Read begs respectfully to assure the Public that the Syringes advertised weekly by a London Firm as Read's are not his make, but are mere imitations; and on trial many of them will be found defective and useless. All Syringes made by Read are marked with the Royal Arms, and Address,

"35, Regent Circus, London." ☞ *Descriptions, with drawings, sent post free.*

GREENING & COMPANY'S PATENT WIRE FENCES.

Patronised by His Royal Highness the PRINCE CONSORT.

No. 10 c VARIETY.—PROOF AGAINST HORSES, CATTLE, SHEEP, HARES, RABBITS, &c.



Specification.—No. 10 c Variety, 3 feet 9 inches high, 6 horizontal bars of stout fencing wire, meshes 5 inches apart at upper, and 1½ inches apart at lower half of fence. **1*s.* 6*d.* per Lineal Yard.**

G. & Co. forward (post free) on application their ILLUSTRATED CATALOGUE, containing particulars of the above and other Iron and Wire Fences for Parks, Farms, Gardens, Game Preserves, Poultry Courts, &c.

GREENING & COMPANY, Victoria Iron and Wire Works, 81, Oxford St., Manchester.

CARSON'S
ORIGINAL ANTI-CORROSION PAINT,

PATRONISED BY

The British Government,
The French Government,
The Russian Government,
H.R.H. the Prince Consort,
Hon. East India Company,
Most of the Nobility and Gentry,
New River Company,
The Dock Companies,
Railway and Canal Companies,
The Principal Collieries,
Mill Owners,
Iron Masters, &c. &c.

The ANTI-CORROSION PAINT is now used extensively for all kinds of OUT-DOOR WORK,

Such as Iron, Wood, Stone, Brick, Compo, Cement, &c., and has been proved, after a practical test of 70 years, to surpass any other Paint; *and being peculiarly adapted for Conservatories, Hothouses, and Frames of all descriptions, is constantly used by Noblemen, Gentlemen, as also many eminent Horticulturists, for such purposes.* It is much lower in Price, and lasts twice as long as the best White Lead, and can be easily applied by any Labourer, being sent in various Colours, requiring simply to be mixed (no grinding is needed). The Anti-Corrosion is a powder, and will keep any length of time.

COLOURS:—

White Stone	34*s.* per cwt.	Light and Dark Lead	28*s.* per cwt.
Light do.	32*s.* ,,	Light and Dark Chocolate	
Drab or Portland		Bright Red	
Bath do.		Dark do. (or Brick Colour)	
Light and Dark Yellow do.		Black	
Copper	30*s.* ,,	Invisible Green	42*s.* ,,
Light and Dark Oak		Bright and Deep Green	50*s.* ,,
		Blue (for Carts and Waggons)	50*s.* ,,

OIL, TURPENTINE, AND BRUSHES,

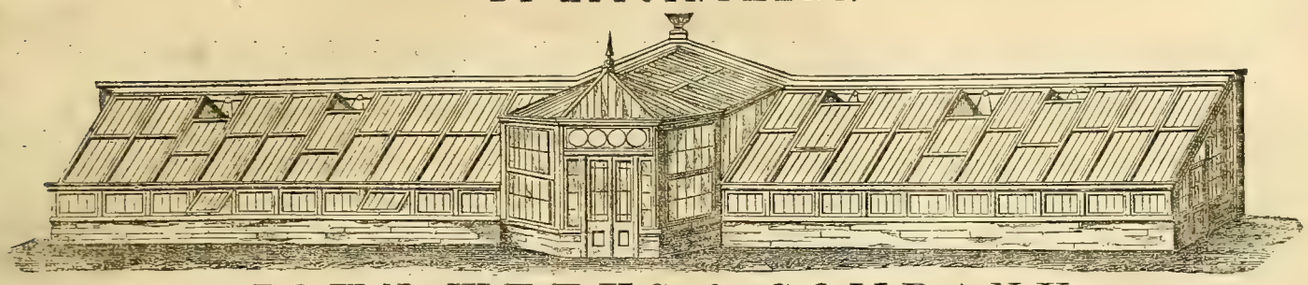
A Copy of Testimonials (700), will be sent upon application to

WALTER CARSON & SONS, (Successors to the Inventors), 9, Great Winchester Street, near the Royal Exchange), London, E.C.

NO AGENTS THROUGHOUT THE UNITED KINGDOM.

HORTICULTURAL BUILDING & HEATING BY HOT WATER.

BY APPOINTMENT.



JOHN WEEKS & COMPANY,

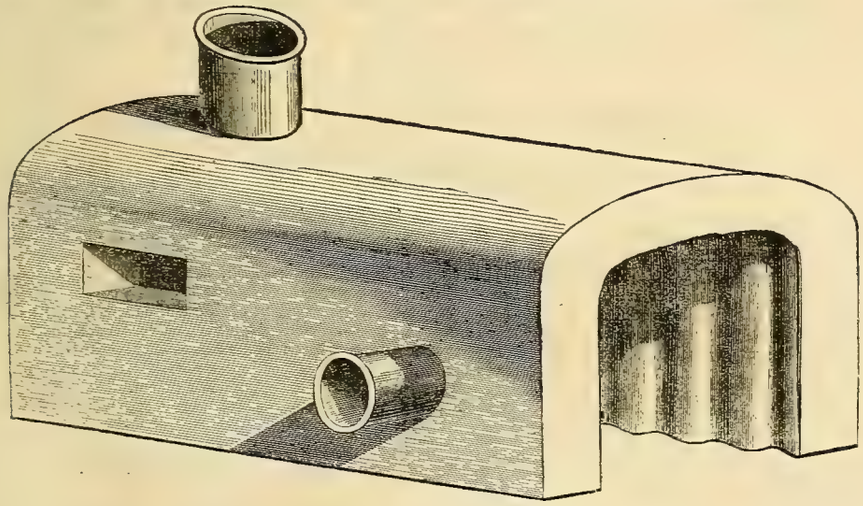
KING'S ROAD, CHELSEA, LONDON.

HORTICULTURAL BUILDERS AND HOT-WATER APPARATUS MANUFACTURERS, ENGINEERS, AND IRON FOUNDERS.

PLANS, ESTIMATES, & ILLUSTRATED CATALOGUES FREE ON APPLICATION.

HORTICULTURAL WORKS,

DANVERS STREET, PAULTON'S SQUARE CHELSEA S.W.



JAMES GRAY

RESPECTFULLY begs to inform the nobility, gentry, Nurserymen, Gardeners, and others, that he continues to carry on the business in all its branches at the above old established premises.

CONSERVATORIES, GREENHOUSES, FORCING HOUSES, VINERIES, PITS, &c.,

of every description, erected on the most approved principles.

HEATING BY HOT WATER.

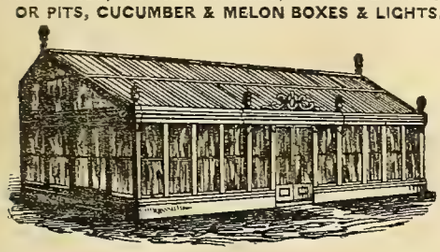
J. G. having specially devoted his attention for many years to this part of the business, is now fully prepared to Heat every description of public and private buildings, viz :—Churches, Mansions, Warehouses, &c., as well as all structures connected with Horticulture, in the most efficient manner. His system is the most simple that can be adopted—which he has found from long experience to be the best—can be constructed at less cost, and is more easily managed than those of a complicated nature which have attracted the notice of the public.

J. G. begs to call attention to his CAST-IRON CORRUGATED ARCH BOILER, which from its simplicity of construction has not the liability to fracture to which those of a more complex design are always subject. They have been extensively used for many years, and have given the greatest satisfaction.

All business is conducted at this establishment on the principle of lowest remunerative profits consistent with best materials and workmanship.

Plans and Estimates furnished on the shortest notice.

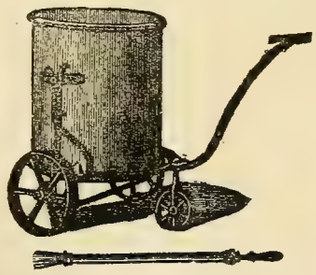
HOTHOUSES, CONSERVATORIES, FRAMES & LIGHTS OR PITS, CUCUMBER & MELON BOXES & LIGHTS.



JAMES WATTS, Hothouse Builder, 8, Claremont Place, Old Kent Road, London.

Green and Hothouses, 9, 10, 11, 12, 13, and 14 feet wide, any length, from 16 to 100 feet. Frames and Lights for Pits, 6ft. 6 in., 7 ft., 7 ft. 6 in., 8 ft., and 8 ft. 6 in. wide, any length, from 12 to 100 feet. Upwards of 200 Cucumber and Melon Boxes and Lights, from 4 ft. by 3 to 10 ft. 6 in. by 5 ft. 6 in., kept ready, glazed with stout sheet glass, painted four times, complete, ready for immediate use, all made of best material, packed and sent to all parts of the kingdom.—References may be had to the Nobility, Gentry, and the Trade in most of the counties in England. Horticultural Buildings of every description heated on the most approved and economical principles.

WARNER'S SWING WATER-BARROW (To Hold Forty Gallons). Mounted on Wheels 20 inches high. Will save much of the Gardener's time and labour. May be obtained of any Ironmonger for 3*l.* 3*s.*



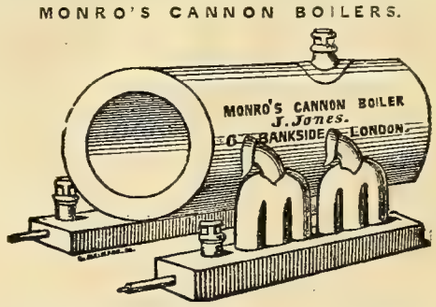
BRASS SYRINGES, 9*s.* to 18*s.*

Also a great variety of effective Machines for Hydraulic purposes, and to supply Gardens, Hothouses, Cottages, Farms, Mansions, or Boards of Health, with every requisite connected with the conveyance and distribution of Liquids.

Fountains suitable for Conservatories, Lawns, &c.

John Warner & Sons, 8, Crescent, Jewin Street, London.

MONRO'S CANNON BOILERS.



MUCH has of late been said about BOILERS for Heating by Hot Water, but these Boilers have now proved themselves to be the best at present invented. They are adapted for heating every description of building, and are made of various sizes. The Price of the

24-inch Cast Iron is	..	..	.. £5 10*s.* 0*d.*	each
24-inch Wrought ditto	..	..	.. 6 10 0	,,
36-inch Cast ditto ..	..	..	.. 8 0 0	,,
36-inch Wrought ditto	..	..	.. 8 10 0	,,

References to Gentlemen and Nurserymen where these Boilers are now at work. The Cannon Boilers are now kept in stock, and are to be had only of J. Jones, 6, Bankside. Also, every description of Saddle and Cylinder Boilers. Hot Water Pipes and Connections at prices lower than those of any other house in London. Estimates for Hot-water Apparatus erected complete in any part of the country, and an Illustrated Catalogue on application to J. Jones, 6, Bankside, Southwark, London.

BEE-HIVES.

Prize Medal awarded to G. N. & Sons, for Bee-hives and Honey, at the Paris Exposition of 1855.

NEIGHBOUR'S IMPROVED COTTAGE BEE-HIVE, as originally introduced by George Neighbour & Sons, with all the recent improvements, glasses, and thermometer, price 35*s.*, securely packed for the country.



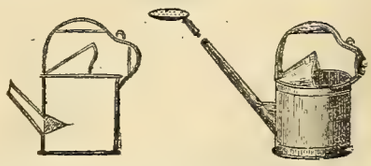
This unique Hive has met with universal commendation, and may be worked with safety, humanity, and profit by the most timid; its arrangements are so perfect that the Honey may be taken at any time of the gathering season without at all injuring the Bees.

Early applications addressed to George Neighbour & Sons, 127, High Holborn, or 149, Regent Street, London, will receive prompt attention.

Their newly-arranged CATALOGUE of other Improved Hives with Drawings and Prices, sent on receipt of two stamps.

Agents.—Liverpool: James Cuthbert, 12, Clayton Square. Manchester: W. Wilson, 50, King Street. Glasgow: Austin & M'Aslen, 186, Trongate. Dublin: J. Edmondson & Co., 61, Dame Street.

THE SIR JOSEPH PAXTON PATENT FILTERING WATERING POT.—Instead of this Watering Pot



having the nozzle or rose merely slipped on, as in the old way it is affixed by a thread-screw, so that it cannot fall off; and the spout is not liable to leak, break, or bend.

The section shows the interior, in which is a cone for the purpose of filtration. As the perforations in this cone are only half the size of the holes in the rose it is impossible for the spout to choke up. These simple improvements render the "Sir Joseph Paxton" Watering Can the best yet introduced.

To be had of all respectable Ironmongers, and Wholesale only of

Messrs. B. Perkins & Son,
2 and 3, Bell Court, Cannon Street, E.C.

GRASS SEEDS FOR ALL SOILS.

SUTTON'S GRASS SEEDS FOR PERMANENT PASTURES, PARKS, CEMETERIES, ETC.

SUTTON AND SONS have yet on hand some of every kind of Grass Seeds as offered in their Priced Lists, and in former advertisements. Prices moderate, according to quantities and sorts required by the soil.

MANGEL WURZEL SEED FROM LARGE BULBS.

THE great celebrity of "SUTTON'S Mangel Wurzel" is the result of saving seed only from large picked roots of good shape and solidity. Price 9*d.* per lb. or cheaper by the cwt. HOLCUS SACCHARATUS (or Sorghum) at reduced price, according to quantity required.

TURNIP SEEDS FROM SELECTED BULBS.

SUTTON AND SONS having for many years tested the comparative merits of all the known varieties of Turnips and Swedes, and selected the best for seed, have introduced several new kinds which are generally allowed to be superior to all others. SUTTON'S "Champion Swede," "Improved White Swede," SUTTON'S, 'Green-top Hybrid," "Purple-top Hybrid," "Lincolnshire Red Globe," and "Yellow Tankard," are particularly recommended. Many other good sorts are kept in stock, all of home growth and new seed. Prices varying from 6*d.* to 1*s.* per lb.

Priced Lists post free. Goods delivered Carriage Free to all parts. Five per cent discount allowed for Cash Payment.

ROYAL BERKSHIRE SEED ESTABLISHMENT, READING, May 1859.

GERMAN AND OTHER FLOWER SEEDS, VEGETABLE, AGRICULTURAL SEEDS, ETC.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their new PRICED and DESCRIPTIVE CATALOGUE in which is enumerated every novelty of proved merit, also all the best of the older kinds, is now published, and will be forwarded post free on application. Their whole stock has been selected from the best English and Foreign sources, and every kind is warranted true to name, and of the finest possible quality.—Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London.

CHEAP BEDDING PLANTS, 2*s.* 6*d.* per dozen.—Apply for Catalogues, enclosing two stamps, to J. SCOTT, Merriott Nurseries, Crewkerne, Somerset.

The Catalogue comprises everything suitable for Flower Garden decoration, and full descriptions of J. S.'s unrivalled collection of new DOUBLE PETUNIAS, now ready for delivery, at 6*s.*, 9*s.*, and 12*s.* per dozen. Fine new single sorts, 2*s.* 6*d.* to 3*s.* 6*d.* per dozen; Magna coccinea, the most splendid of all Bedding Petunias, 5 inches across, beautiful light crimson, 3*s.* 6*d.* per dozen.

LEPTODACTYLON CALIFORNICUM, in quantity; also PHLOX CRITERION, two lovely Bedding Plants.

JOHN CULVERWELL, Taunton, begs to call the attention of Agriculturists to his superior selection of GRASS SEEDS, which for PURITY, change of SOIL, and CLIMATE, will bear comparison with any house in the kingdom. Prices, terms, and samples forwarded on application.

NATURAL GRASS SEEDS.

PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN, can supply genuine Seed of all the valuable kinds of the NATURAL GRASSES suitable for Lowland and Upland Pastures; also for Laying-down Lawns, Bowling Greens, Cricket Grounds, Cemeteries, Railway Banks, &c.

PRICED LISTS may be had free on application.—PETER LAWSON & SON, 27, Great George Street, Westminster.

"JACK OF NEWBURY" SWEDE, ETC.

PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN, &c., 27, Great George Street, Westminster, respectfully request attention to their very genuine Stock of the above excellent Swede; also of the LOTHIAN PURPLE-TOP SWEDE, both of which have been selected with the greatest care. They have also a very fine Stock of the KOHL RABI, or TURNIP-ROOTED CABBAGE, specimens of which were shown at their Stands at Smithfield Club Show. The Kohl Rabi was largely grown last season, and may now be relied on as a substitute for the Turnip and Mangel, where these roots do not succeed, or for filling up blanks where there is a partial failure. Its feeding qualities, hardiness, and weight per acre are equal to the Swede, and all kinds of stock prefer it to other roots.

P. L. & SON have also selected a first-rate Stock of MANGEL WURZEL SEED, which they can confidently recommend. Their natural GRASS SEEDS have been also saved with very great care, and they are ready to supply them separately or in mixture, for laying down Permanent Pastures, Lawns, &c.

P. L. & SON have arranged to deliver Seeds free throughout England and Wales from their London Establishment, for all quantities exceeding 20*s.* in value.

LISTS OF PRICES of the above and all other Seeds, Plants, &c., may be had on application.

27, Great George Street, Westminster.

AMBROISE VERSCHAFFELT, NURSERYMAN, Ghent (Belgium), will now send out the following NEW PLANTS:—

	s.	*d.*
BEGONIA LEOPOLDII, one of the finest Begonias yet sent out	8	0
TYDÆA PRINCESS TROUBETZKOY (three splendid hybrids; the set)	16	0
,, GRANDIS (three splendid hybrids; the set)		
,, SANGUINEA (three splendid hybrids; the set)		
TORENIA PULCHERRIMA	2	6
CLEMATIS SOPHIA FLORE PLENO	8	0
LYCHNIS HAAGEANA	4	0

CARNATIONS AND PICOTEES.

YOUELL AND CO.'S COLLECTION of the above deservedly favourites is probably the most extensive in the Trade, and having for a series of years paid special attention to their cultivation, introducing the best of the newest varieties, they are enabled to offer them at the following prices or fine, strong, well rooted plants.

CARNATIONS, finest first class show varieties by name, 18*s.* and 24*s.* per dozen pairs.

PICOTEES, finest first class show varieties by name, 18*s.* and 24*s.* per dozen pairs.

Ditto, on yellow grounds, 20*s.* and 30*s.* per dozen pairs.

Finest mixed BORDER CARNATIONS & PICOTEES, 9*s.* ditto

True old CLOVE CARNATION, 12*s.* per dozen pairs.

Scarlet ditto ditto, 18*s.* ditto

PINKS.—The finest first class show Pinks, by name, 9*s.* per doz.

Fine mixed border PINKS, 6*s.* per dozen pairs. [pairs.

YOUELL & Co., Royal Nursery, Great Yarmouth, Norfolk.

NOW SENDING OUT—NEW FUCHSIA,

"LORD CLYDE" (YOUELL'S).

For particulars see Advertisements of last and previous *Gardeners' Chronicle.*

Strong Plants, 10s. 6d. Each,

YOUELL & Co.'S ROYAL NURSERY, GREAT YARMOUTH.

CHOICE FLOWERS.

BUTLER & McCULLOCH'S SPRING CATALOGUE OF SEEDS,

ESTABLISHED UPWARDS OF A CENTURY

ARRANGED on a new and original plan, with copious Descriptive and Cultural Notes and containing many new and rare species and varieties not found in any other Catalogue, now ready and may be had free and post paid on application.

FLOWER, SHRUB, TREE, and VEGETABLE SEEDS, the crop of 1858, saved with the greatest care, by the most eminent growers.

We may also state that the Sardinian correspondent of Messrs. JAMES CARTER & Co., whose Seeds, especially Carnations and Picotees, have given such universal satisfaction, has transferred the Agency from that firm and appointed us his representative in this country. To meet the growing demand for first class flowers, particularly FLORISTS' FLOWERS, we have adopted our usual maxim of charging the lowest possible prices.

Professor LINDLEY in the *Gardeners' Chronicle* of February 5th, has the following notice of B. & McC.'s Catalogue.

"BUTLER & MCCULLOCH'S (Covent Garden) Spring Catalogue of Choice Flower, Shrub, Tree, and Vegetable Seeds. This list fills 84 closely printed 8vo pages, and is remarkably well got up. It appears that the correspondent in Sardinia, who formerly supplied one of the great London houses with seeds raised in that warm part of Europe, has now transferred what he saves to Messrs. BUTLER & MCCULLOCH. Let us add, that it yields to no Trade List in the abundance of its materials or the excellence of its arrangements."

BUTLER AND MCCULLOCH, while drawing attention to their general SPRING CATALOGUE which has elicited such high encomiums both from the scientific botanist and amateur cultivator, avail themselves of the present opportunity to select from its pages the following list:—

(37) ACACIA LONGIFOLIA (magnifica).

One of the most splendid Acacias in cultivation, with gorgeous clusters of bright yellow flowers several inches in length; very hardy, rare, and beautiful. Of these graceful and highly ornamental plants our collection embraces no fewer than 47 varieties, all of the most decorative character.

(65) AILANTUS GLANDULOSA.

This may be compared to a gigantic Stag's-horn Sumach. It grows fast even on thin poor soil, is invaluable for avenues, and highly ornamental in shrubberies; sometimes called Tree of Heaven.

ALPINES.

Of these beautiful little plants we have a splendid collection, embracing all the most admired kinds, collected and arranged for us last autumn by M. Ortgies, the Curator of the Zurich Botanic Gardens. The value of Alpine plants for rock-work is too well known to require comment. These collections we can confidently recommend, containing, as they do, species only of highest merit.

(199) CALLICHROA PEDATA.

A new crimson annual with white eye, very beautiful.

(217 A.) CAMELLIA JAPONICA.

From the newest and finest striped and other varieties of that much admired genus.

(243) CANNA INDICA SUPERBA.

A magnificent plant flowering all the winter; leaves large, fine green. Of this picturesque and most ornamental genus we have a magnificent collection, consisting of 28 kinds, all remarkable both for the beauty of their flowers and foliage.

(304) CELOSIA (species nova).

A most elegant plant, producing a multitude of long spikes of feathery blossoms, silvery white shaded with bright rose, retaining its colour perfectly when dried, and therefore admirably adapted for winter bouquets; one of the greatest novelties of the season, flowering out of doors or in pots from July to October. Well worth attention. A dried specimen may be seen.

(337) CHRYSANTHEMUM (indicum and nanum).

Of these dwarf and tall varieties we have a fine stock, nearly all of which may be depended upon to produce double flowers, the seeds having been saved from the finest named varieties. We have a splendid collection, embracing all that is new or rare in that fine class of plants.

(344) CHRYSOCOMA COMAUREA.

Fine evergreen shrub, bearing a profusion of golden ball-like flowers; one of the handsomest greenhouse plants in cultivation.

(451) DATURA HUMILIS FLORE PLENO.

A magnificent Brugmansia-like plant producing a profusion of deep golden-yellow flowers; very large, double, and sweet-scented. One of the greatest novelties of the season.

(680 to 688) HOLCUS OR SORGHUM (Chinese Sugar Cane).

Of this important class we have nine new and important varieties from Africa, said to be more ornamental and to contain more saccharine matter, Holcus saccharatus.

(972) PELARGONIUMS.

Of these both large flowered and fancy, very choice, and of other splendid varieties, including Scarlets, we have a fine stock, which cannot fail to prove highly satisfactory.

(1149) SOLANUM CAPSICASTRUM.

Miniature Orange tree, covered all winter with a profusion of scarlet fruit; a handsome plant for greenhouse or sitting rooms.

(1335) BIGNONIA RADICANS MULTIFLORA.

Finer and brighter than radicans; flowers in large panicles producing a splendid effect.

(1380) IPOMŒA HYBRIDA MARGINATA.

Large and magnificent; flowers of various colours on the same plant, varying from the richest velvety purple to sky-blue, bordered in the most distinct manner with pure white (new and rare). This and three new varieties of Hederacea grandiflora far surpass the old and deservedly favourite rubro-cœrulea for beauty, hardiness, and free flowering; they rank high amongst the novelties of the season, possessing advantages which will render them the grandest ornaments for the greenhouse, conservatory, or for out-door decoration.

(1468) TACSONIA IGNEA.

This magnificent Passionflower is unequalled for the brilliancy and splendour of its scarlet blossoms, far surpassing in this respect any of its class yet known. It flowers most profusely, grows rapidly, and covers a large space in an incredibly short time. It succeeds in a cold greenhouse, and even against a south wall with a little protection in winter (new and rare).

(1488) TROPÆOLUM TRIOMPHE DE GAND FIMBRIATUM.

Fringed orange scarlet.

CARNATIONS and PICOTEES saved from the most choice Collection of English varieties grown on the continent, and which may be expected to produce flowers of the highest merit, sent out in sealed packets as received from our Sardinian correspondent, whose seeds for many years have given such universal satisfaction, and from which varieties of the greatest excellence have been raised.

For prices and further particulars with regard to the above and other novelties, we refer our patrons to the Catalogue itself, which is sent free and post paid on application.

BUTLER & McCULLOCH, Covent Garden Market.

TWO HUNDRED GUINEAS IN EIGHT PRIZES.



For Four Years Successively His Royal Highness the Prince Consort's Prize Cups have been Awarded to

SUTTON'S CHAMPION SWEDES at the East Berks and South Bucks Agricultural Societies in 1855, 1856, 1857, and 1858. New Seed now ready, 1s. per lb., or cheaper by the bushel, carriage free.

Royal Berkshire Seed Establishment, Reading.

SPRING CATALOGUE.



MESSRS. ARTHUR HENDERSON and CO.'S CATALOGUE of SOFT-WOODED PLANTS (including all the leading useful novelties for this year), can now be had of them post free, on application.

Pine-apple Place, Edgware Road, London, W.



ROYAL SOUTH HANTS SEED ESTABLISHMENT,

Under the Patronage of H.R.H. the Prince Consort, The Agricultural Society of India, and the leading Agriculturists of the United Kingdom.

PAGE and TOOGOOD'S STOCKS have produced the finest specimens exhibited at Smithfield, and are so well known and appreciated that comment on their part is unnecessary. Their prices compete with any house in the trade.

Present prices, Carriage Free to all parts of England :—

	Per lb.—s. d.		Per lb.—s. d.
Skirving's Swede	0 6	Hardy Green Round	0 6
Page's Improved	0 8	Early Six Weeks	0 6
Ashcroft	0 6	Kohl Rabi	2 6
Greentop	0 6	Yellow Globe Mangel	0 6
Sussex, or Jeffery's	0 9	Page's Impl. Orange Globe*	0 8
Tankard	0 7	Red Globe	0 7
Red Round Turnip	0 6	Elvetham Long Red	0 7
Page's Improved Red Globe	0 8	Long Red	0 6
Scotch or Bullock	0 7	Long Yellow	0 7
Pomeranian White Globe	0 6	White Belgian Carrot	1 0
Early Green Globe	0 6	New Red	1 3
,, White Tankard	0 7	Long Altringham	1 3
Red Tankard	0 7	Cattle Cabbage	2 6
Green ditto	0 7	Cattle Parsnip	1 0
Yellow ditto	0 7	Dwarf Essex Rape	0 4

* Bulbs of this variety have acquired the enormous weight of 44 lbs., as shown at Smithfield Club.

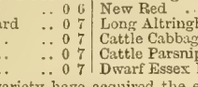
BUCKWHEAT, MUSTARD, LINSEED, TARES, SAINFOIN, HOLCUS SACCHARATUS, 1s. per lb.

Fine PERMANENT PASTURE GRASS, ITALIAN RYE-GRASS, CLOVER, &c., at lowest market prices.

Special contracts for large quantities. Seeds packed for exportation to all parts of the world.

Oxford Street and Above Bar, Southampton.

SPLENDID NEW BEGONIAS.



JAMES VEITCH, Jun., has much pleasure in having to offer the two following most beautiful and really distinct BEGONIAS. They have been placed in his hands for distribution in England, by Mr. J. Linden, of Brussels. Plants are now ready for delivery.

BEGONIA "QUEEN VICTORIA."—The foliage of this lovely species is most distinct and remarkable. The leaves are of medium size, their ground colour being a greenish brown, beautifully marked and spangled with silver, large bands of the same colour running between the principal nerves.

BEGONIA ARGENTEA.—This is certainly one of the most distinct and beautiful Begonias ever introduced. The leaves have almost the appearance of being silvered over, their upper surface being studded with faint green points, whilst the principal nerves, which radiate from the centre of each leaf, are of a pale straw colour.

BEGONIA AMABILIS (Linden).—New and very beautiful.

J. V., Jun., can with every confidence recommend these desirable novelties, feeling sure that their great beauty and distinctness will be appreciated by all lovers of fine stove plants. Price if taken separately 21s. each, or one plant of each of the three species for 50s. The usual allowance to the trade.

All the other new Plants offered in M. Linden's Catalogue, can also be supplied at the published prices.

Royal Exotic Nurseries, Chelsea, S.W.—April 30.

BOX EDGING.

MR. JAMES VEITCH, Jun., of the Royal Exotic Nursery, Chelsea, S.W., being again in want of two or three thousand yards of BOX EDGING, will be glad to receive offers stating quantity and price from such persons as have any to part with. It must be dwarf and good, and warranted to plant at least 3 yards for 1. The terms to include delivery into a Railway truck at the nearest station. To expedite the transaction, parties replying to this advertisement may send 1 yard as sample, carriage paid to London, to be forwarded by Parcels Delivery.—April 30.

NEW CHRYSANTHEMUMS.

JOHN SALTER begs to announce that his SPRING CATALOGUE is now published, in which his splendid SEEDLINGS and other new CHRYSANTHEMUMS of 1859 are fully described, as well as the unrivalled general collection, which is the largest in Europe.—Strong plants of "Golden Queen of England," "Prince Albert," and every other variety, will be ready in the course of the month.—Versailles Nursery, William Street, near Hammersmith Turnpike, W.

CHRYSANTHEMUMS—CHRYSANTHEMUMS.

J. H. BIRD, F.H.S., Nurseryman, Stoke Newington, the largest grower and most successful exhibitor of the Chrysanthemum in the British Empire, begs to call the attention of the lovers of the above beautiful autumn flower to his matchless collection, the stock of which amounts to upwards of 50,000 plants.

J. H. B. can supply strong plants, one dozen for 6s.; or five dozen in 30 varieties, containing two of each variety, for 1l.; or he can supply 100 plants in 50 varieties, two of each variety, for 1l. 10s. Also POMPONES in great variety; 50 Pompones in 25 varieties, two of each variety, for 10s.; or 100 in 50 varieties, two of each variety for 1l. Strong plants of the beautiful new Pompone the Golden Cedo Nulli, 5s. each, are now ready, with the usual allowance to the Trade. Every order will be accompanied by a popular work on the Chrysanthemum.

Post-office Orders payable to J. H. Bird, Stoke Newington, will be immediately attended to. Catalogues on application.

PLANTS IN FLOWER.

F. and A. SMITH have now in bloom Acacia, Cactus (fino), Cytisus; Erica ventricosa coccinea minor, v. superbiens, v. breviflora, E. intermedia, E. Cavendishi, E. hybrida, E. perspicua nana; Fuchsias, Calceolarias, Heliotrope, Hydrangea, Geraniums, Fairy Roses, &c.

The above are healthy, strong, and well-grown plants, prepared for sending away. Prices on application.

Dulwich, Surrey, S.

SUPERB DOUBLE BALSAMS.

F. and A. SMITH are now sending out seed of their superb BALSAMS, which are unrivalled for size, form, brilliancy of colour, doubleness of flower, and habit of plant.

In collections of nine separate colours	2s. 6d.
,, ,, mixed ,,	2 0
,, ,, ,, ,, half quantity	1 0

The above are *genuine only* in our sealed packets, and may be had of most respectable Nurserymen and Seedmen in the United Kingdom.—Dulwich, Surrey, S.

VERBENA EMPRESS OF INDIA.

WILLIAM WHITE begs to offer the above, which he strongly recommends as a bedding variety. It was exhibited at the National Floricultural Society, Sept. 1858, and their report is, "Judging from the flowers only, it was considered to be a very showy bedding variety, the vivid crimson scarlet and the fine yellow eye making it appear very conspicuous." In order that it may be extensively planted the first season W. W. has decided on offering it at a cheap rate. Single plants, 2s. 6d.; per dozen, 18s. The usual discount to the Trade.—Thorpe Nursery, near Norwich.

SPLENDID BEDDING PLANT,

TRITONIA AUREA,

THE GOLDEN TRITONIA.

LUCOMBE, PINCE, and Co. having a very large stock of this most beautiful hardy bulb can offer it well established in pots, fit for immediate planting out, at the undermentioned exceedingly moderate prices.

Nothing can surpass the brilliancy of its rich golden orange-coloured flowers, which are produced in the greatest profusion upon graceful slender stems, and stand unblemished the heaviest showers and most fervent sun. They strongly recommend the Golden Tritonia as one of the most effective plants for masses ever introduced. It cannot fail to give satisfaction; indeed, as that excellent authority Donald Beaton truly remarks in the "Cottage Gardener" "it is established as a first-rate autumnal ornament to the Flower Garden." It is also perfectly hardy.

100 Strong Bulbs	£3 0s. 0d	25 Strong Bulbs	£1 0s. 0d.
50 do. do.	1 15 0	12 do. do.	0 12 0
Single Bulbs		1s. 6d. each.	

Exeter Nursery, Exeter. Established 1720.

The Gardeners' Chronicle.

SATURDAY, APRIL 30, 1859.

MEETINGS FOR THE FOLLOWING WEEK.

Monday, May 2—Entomological ..... 8 P.M.
Thursday, — 5—Linnean ..... 8 P.M.

We lately took occasion in an article upon a species of Acarus infesting Orchid plants, to allude to the remarkable analogy existing between some of the lower forms of vegetables such as mould and fungi, and some of the minute tribes of insects, such as mites, lice, &c., which are occasionally developed in extraordinary numbers in places where they have never been seen before, and where no one would have ever expected them to occur. That the powers of propagation of these minute animals must be extraordinarily great, when a congenial position is met with, is beyond a doubt; and, indeed, like the Aphides, they, or at least the most common of them, the mite of cheese, have been ascertained to be viviparous at certain seasons of the year. That their eggs at other times must possess a vast power of resistance, so as to retard their development for long periods until they are brought into situations suitable to the welfare of the young animal when hatched, would also seem necessary, and it is apparently on such a supposition that the development of these creatures in certain situations must often be accounted for.

We have been led to make these observations in consequence of a remarkable circumstance which has recently occurred at Colchester, of which the particulars are detailed in the following extract from the *Ipswich Express*:—

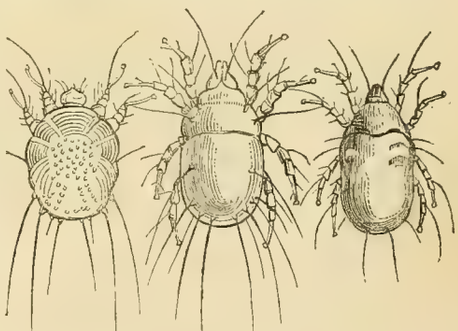
"A Fact for Entomologists.—During the past week various reports of a strange nature have been current respecting a curious fact in connection with St. Peter's Church, Colchester. The good folks of the parish have been shocked from their propriety by a report that St. Peter's was swarming with vermin, and rumour with her thousand tongues magnified the disagreeable fact until it attained the proportions of one of the plagues of Egypt. We have inquired into the matter and find that the church is certainly infested with myriads of extremely minute insects, which our local entomologists have been unable yet to classify, and for whose origin they can only assign the hypothesis of spontaneous generation. The insects are infinitesimal, and when subjected to a powerful microscope seem to have an organisation similar to the common beetle. As they swarm on the pews they resemble particles of fine dust. It is only on close examination that their vitality can be ascertained. Dr. Becker and others are of opinion that they resemble those connected with cutaneous diseases—like the tick in sheep, and that other, unknown to ears polite, the itch insect, with which our Scotch neighbours are popularly supposed to be fully acquainted; but the *savans* have not arrived at any satisfactory conclusions. It is surmised that they proceeded from the vaults underneath the church, which were opened when the recent alterations were carried out, and that they have been generated from the corruption of the crumbling remains, or from the malaria arising therefrom. It is now under consideration to remove all the new pews and fittings, and cover the floor with a layer of asphalte or concrete, as well as to fumigate the building, in order to get rid of the disagreeable visitants. Divine service is at present suspended, and the congregation will in future meet at St. Mary-at-the-Walls on Sunday evenings."

We have also been furnished with the following particulars from the architect employed in the alterations lately made in the church:—

"These insects did not appear in our church till six weeks after I had completed the works; and it seems as if we should not have seen them then had not a few days of warm weather appeared, for on the colder weather succeeding these warm days, they nearly disappeared. However, as soon as the hot-water apparatus was used to warm the church, they reappeared in swarms upon the *tops of the seats* of the centre of the church and in one aisle, not in the other; on the reading desk, not on the pulpit, though within 3 feet of it. From these partial developments we infer that it cannot be the wood which produces these insects, and we cannot trace them to the earth in any way. In fact, we are fairly puzzled to say what these animals are—how they came, and how to get rid of them. One fact I should mention, viz., that similar insects, though in very small numbers, have been found in a neighbouring church, much to the annoyance of the incumbent, who is immediately going to close the church for cleansing."

We further learn that at the commencement of the present week the insects were more numerous than ever, and that turpentine does not appear to kill them. The Curate moreover writes, "The earth is full of them; they come up and lay eggs in the crevices of the woodwork, and the heat hatches them. I took off the capping of a pew, cleaned it, and applied to it gentle heat—half an hour produced two—cleaned it well again, and in 20 minutes produced 45, and so on for several times, till I saturated it with Benzine Collas, and then no more came out."

Specimens of the insects have been obligingly furnished to us by the architect as well as by Mr. H. T. Stainton, and we are thus able to state that they are a species of Acarus very closely allied to the cheese mite. They are quite white, furnished with numerous long bristles, especially at the hind part of the body, and



with four pairs of jointed legs also sparingly furnished with shorter hairs. The head is triangular, opening with a longitudinal slit in the middle, within which a pair of short points may be seen at work under a very high power. The general appearance of the insect will be seen in the middle figure in the accompanying illustration: it is shorter and more robust than the cheese and flour mites, and with longer hairs, and its average length is about one-fiftieth of an inch. From the situation in which found, we may propose to name it Acarus (Tyroglyphus) ecclesiasticus.

What however is the origin of these myriads of insects? We are informed of the fact that the vaults underneath the church have been recently opened, but that they have been generated from the corruption of the crumbling remains or from the malaria arising therefrom, is about as philosophical a suggestion as it would be to expect them to be created by electricity or that a chalk egg should produce a chicken. That there might indeed have been a quantity of decaying wood and dust in the vaults is probable, and this will perhaps enable us to solve the question, aided by an inquiry into the habits of various closely allied species. Acarus setosus occurs in houses and stables, in dust and old straw; A. farinæ in old flour; A. hyalinus and cubicularius in dust, and in bran and Wheat dust, in stables and barns: but on the other hand Acarus domesticus (or Siro) abounds in badly made cheese; A. lactis in dirty vessels where cream is kept; A. destructor does much damage in ill kept collections of insects; and A. bicaudatus was found

in myriads in the plumes and skin of an African ostrich which died at the Jardin des Plantes.

Hence we may fairly consider either that these insects were developed in the straw and dust of the vaults, or even upon the dead bodies within; or supposing the church or pews to have been plentifully furnished with old matting, they may not even have travelled so far as from the vaults.

We may quiet the alarm of the parishioners, as they are doubtless entirely harmless to living bodies of man, being quite distinct from the Acarus Scabiei, of which a figure is added on the left side of our cut; whilst in order to show their similarity to the cheese mite, a representation of that insect is also given on the right side.

We would recommend for the destruction of these insects the fumigation of the church with brimstone and the washing of the seats and divisions of the pews with hot water and soft soap, and gas-tar water, with a subsequent rubbing with oil. *W.*

The Paris *Société d'Acclimatation* has awarded to Mr. Fortune one of their first-class medals in consideration of his having introduced to England so many useful and beautiful plants.

—— M. Carrière states that he has succeeded in grafting Garrya elliptica on Aucuba japonica. He employs ordinary cleft grafting, keeps his plants in a propagating-house under a close hand-glass until the scions have taken, works very low so as to give the scion a chance of rooting into the soil, and in two months the grafts are safe. By gradually hardening his plants, daily syringing, and shading them carefully, he gets by the end of the year much better plants than from cuttings.

—— A French Gardener, named Butté, reports his having healed a very bad cut with the leaves of Valerian (probably V. officinalis). He says that having accidentally made a gash in his left hand below the thumb and having no means of preventing the lips of the wound from gaping, he applied about 15 leaves to the cut, and in a week it was healed. To prepare the leaves shave the midrib close down on the under side, slap them two or three times on the knee or between the hands, and apply their under side to the wound.

—— The famous Oak of Autrage has been cut down and sold to the carpenter; an Oak that dates from at least the reign of King Pepin le Bref, or as some think from the days of the Druids. From some notices in the Flore des Serres we learn that this forest patriarch grew at a place called Autrage-Eschêne, near Belfort on the Lower Rhine, that it was 5 yards in diameter, and nearly 15 yards round at the ground level. One of its limbs was 5 yards in girth, and another 3 yards and a half. The hollow of the trunk was nearly 2 yards across. Assuredly this must have been one of the noblest trees in Europe, and yet, as our able contemporary observes, there was not a man in all enlightened Alsace with public spirit enough to save the old monarch from firewood for the honour of his province. Not one rich Alsacien could be found who would follow the example of a poor parish priest in the department of the Aube, which statisticians class among the most stand-still parts of the south of France. There, says M. Naudin, I have seen the tree which Father L'Huillier saved from the Vandals of the Revolution who wanted to cut it down. It was an Elm, still in full health and vigour, whose trunk measured next the ground 35 feet in circumference, and 24 feet a yard above the ground. The tree still stands in the village of Rouvenac, near the little town of Limoux. The good priest bought the tree and bequeathed it to his *commune* upon condition that it should be allowed to die a natural death. All honour to good old Father L'Huillier!

—— M. Dubreuil recommends training the Peach Tree so as to form spurs instead of laying in the wood in the usual way. This is done by repeatedly pinching the young laterals. There is a long account of the method in the *Revue Horticole*.

—— A new Pea has been introduced from China into France; the produce of the plant called Soja hispida, the common Chinese Soy Bean. This kind of Pulse is said to do very well on poor sandy Rye land near Paris, and to possess the following good qualities. Sowed in the middle of April it is ripe in the middle of October. The Beans contain, according to M. Louis Vilmorin, whose accuracy is unimpeachable, as much as 21 per cent. of oil. They are also made into an excellent cheese if boiled and pounded in a mortar. A white liquid is the result, which easily sets when pressed; the paste so obtained, with the addition of a little salt, is afterwards forced into moulds. We fear this Pea will be too tender for England; but it deserves a trial, and if it should ripen we may make our own "Soy."

It is not surprising that the common Araucaria which is now so widely distributed in England, and subjected to every variety of soil and treatment, should not flourish equally in every locality. Frequently the roots are so cramped for two or three years in pots, that the trees when planted out can never make any healthy growth; the soil or situation are from the first altogether ungenial; and we have seen instances in which the plants have failed, from the roots being attacked by mycelium from decayed matter in the ground. Independently of such causes, there is, however, frequently a more or less disastrous affection to which the plant is subject, the cause of which at present has not met with a satisfactory solution. The beauty of the foliage indeed is often defaced by a partial perishing of the leaves, while the base remains perfectly healthy. This we believe is the effect of cold during some period of growth, and therefore does not admit of remedy. The affection, however, which we have especially in view is very different. The tips of the branches acquire an unhealthy yellow tinge, the leaves and ultimately the shoots themselves pour out resin in greater or less abundance; and after a time the whole separates like a gangrened limb. The yellow tinge is not indeed always apparent. We have seen instances in which death takes place so rapidly as not to be preceded by the previous chlorosis, but the ultimate effect is essentially the same.

The disease then very closely resembles the well-known gumming of Apricots, but it does not seem to arise like that from unfavourable conditions of climate. Certainly it is no direct effect of cold, for it is not the tenderest tips which give way, which would be the case if frost were the agent. It should seem rather to be something inherent either in the soil or in the individual constitution, and if so it is either irremediable or it would require long experience and multiplied observations to arrive at any just conclusion. It would however be interesting if persons who cultivate the Araucaria largely would record the peculiar circumstances under which the disease arises, and under which in the same locality the plant is exempt. A record of isolated facts is comparatively of little use in such inquiries. *M. J. B.*

THE GORILLA.

Having treated somewhat largely on the habits of the monkey-family in the 3d Series of Essays in Natural History, and having given a lesson of prudence to my reviewer in "Fraser's Magazine," in the Introduction to a second edition of that Series, I will now venture a remark or two on the given habits of an ape, huge, black, and calculating, the skin of which is said to have been imported into England from the far-distant shores of Western Africa. It is named Gorilla.

The public prints have lately been replete with its astounding endowments. It walks constantly on its hind feet. It carries ivory until it drops down, and even dies from fatigue. It builds huts nearly in the shape of those of men, but lives on the outside of them! Nothing can exceed its ferocity. With one blow of its paw it can kill a man. It supports its dead young in its arms until the carcass drops in pieces. When a man is passing under a tree on which the Gorilla is lying in ambush, such is its giant strength and dexterity that it will seize the man's head with its terrible hind foot, furnished with an enormous thumb, grasp its victim round the throat, lift him from the earth, and finally drop him on the ground dead. I would willingly travel "over all Lombardy without money, and through the flinty roads of Savoy without shoes," to witness such a sight as this. The whole account of this Gorilla appears to me as a fabrication of some facetious knave for his own amusement.

Apes are stronger in their arms, if anything, than in their legs. Their arms act as pioneers. They secure their food, and help the animals on surprisingly in their journeys through the trees. The legs, if we may judge by their form and connection with the body, are given to them by Nature more for steadiness than for aggression. Supposing for a moment that a Gorilla could really seize a man by the throat with its hind foot, and lift him from the ground as described above, why the enormous weight of a man's body struggling and dangling from that foot would instantly throw the ape out of its equilibrium (having only three limbs to support its body on the branch), and immediately bring both the man and his tormentor to the ground. The claws of apes are not retractile like those of cats. Having no muscles to work them, they are as useless in the act of grasping as those of a dog. An ape with only three limbs at its disposal could no more lift up a man with the fourth limb, and still retain its position on the branch, than I myself could carry a dromedary on my back.

Bequeathing these stupendous performances of the Gorilla to my old grandmother's library, I will now attempt to place the Gorilla on a proper footing—taking analogy for my guide. Some time ago I had a most favourable opportunity of inspecting the great red orang-outang in the London Zoological Gardens (see 3d Series of Essays in Natural History, 2d edition); and through the kindness of Mrs. Wombwell's family I now possess two of the smaller orang-outangs or chimpanzees; and I played with them many an hour before they died. See same Essays.

Supposing then that a living Gorilla were to make its appearance amongst us, my life on it, if its economy would not be pretty nearly as follows. We should recognise in its habits and disposition a very close resemblance to those of the late huge red orang-outang. It would be gentle in its deportment, an abstainer from carnal food, amusing in its frolics, a quadruped in position, and a beast in propensity. By its name I should fancy that the Gorilla must be known to the Portuguese inhabitants of Western Africa.

In the Museum at Brussels, just as you enter, you will see on the right hand a vast collection of stuffed monkeys. Amongst them you will observe a large red orang-outang, and a black one of similar dimensions. This last I take to be a Gorilla, but possibly I may err. I will place its identity beyond doubt in my next visit to the Belgian capital. *Charles Waterton, Walton Hall, April 23.*

ABRIDGED DESCRIPTIONS OF PEARS

ACKNOWLEDGED TO BE GOOD.

By Charles Baltet, Troyes. (Condensed from *Les Bonnes Poires, leur description abrégée, et la manière de les cultiver.* Troyes, 1859.)

This monograph is stated to contain descriptions of the best sorts of Pears, as proved at Troyes, in the department of Aube, about 86 miles south-east of Paris, in a direct line. As many of the kinds are new and but little known in this country, and as information respecting them is much required, the list of varieties as it is arranged by the author may prove acceptable. It exhibits what are considered the best sorts, in the order of their becoming fit for use, and this is an important point to know. Those marked thus * are considered second-rate, but good for orchards.

JULY.
Doyenné de Juillet
Citron des Carmes

JULY—AUGUST.
Epargne (Jargonelle)
Beurré Giffard

AUGUST.
Monseigneur des Hons
Poire Pêche
*Des Vergers

AUGUST—SEPTEMBER.
Duchesse de Berry d'Eté
Bergamotte d'Eté
Ravu [chrétien
William (Williams's Bon-
Doyenné Boussoch

SEPTEMBER.
Beurré d'Amanlis
*Beurré Goubault
Bonne des Zees
*Ferdinand de Meester
*Beurré de Nantes
Beurré Superfin
Jalousie de Fontenay
Rousselet de Rheims
Fondante dès Bois (Beurré
Doyenné Blanc [Davy)
*Beurré Benoist
Beurré Hardy
Beurré D'Albret

SEPTEMBER—OCTOBER.
*Cumberland
Beurré Dumortier
Beurré d'Angleterre
Seigneur (Espéren)
Frédéric de Wurtemberg
Beurré St. Nicolas

JANUARY—MARCH.
Broom Park
Beurré d'Hardenpont
Chaumontel
Josephine de Malines
Saint Germain
Doyenné d'Hiver
Doyenné d'Alençon

FEBRUARY—APRIL.
*Bon Chrétien de Rans (Beurré
*Suzette de Bavay [Rance)
Colmar de Mars
Prince Albert
Bergamotte Espéren

MARCH—MAY.
Mme. Milet
Fortunée
Catillac
*Beurré Bretonneau
Bon Chrétien d'Hiver
Sarasin

ORNAMENTAL PEARS.
AUGUST—SEPTEMBER.
Beau Présent d'Artois

SEPTEMBER—OCTOBER.
KnightEdward(KingEdward)

OCTOBER.
Van Marum

OCTOBER—NOVEMBER.
Alexandrine Douillard
Colmar d'Aremberg

NOVEMBER.
Forelle

DECEMBER.
Curé (Vicar of Winkfield)
Bon Chrétien d'Espagne

MARCH—MAY.
Colmar Van Mons
Belle Augevine (Uvedale's St. Germain)
Tavernier de Boulogne

SEPTEMBER—OCTOBER.
*Seckel
St. Michel-Archange
Théodore Van Mons
Louise Bonne d'Avranches (Louise Bonne of Jersey)
Beurré d'Apremont (Beurré Bosc)

OCTOBER.
De Tongres
Urbaniste
Duvernoy
Fondante de Charneu
Beurré Curtet (Comte de Lamy)
Beurré Gris
Arbre Courbé
Beurré Capiaumont
Baronne de Mello
Swan's Orange
Howel
Madame Elisa
Marie Louise
Deux Sœurs

OCTOBER—NOVEMBER.
Beurré Bachelier
Doyenné d'Automne
Duchesse d'Angoulême
*Messire Jean
*Sylvange
Nouveau Poiteau
*Délices de Lovenjoul
Napoléon
Soldat Laboureur

NOVEMBER.
Graslin
*Epine Dumas
Beurré Clairgeau
Doyenné du Comice
Van Mons
Doyenné Depais
Crassane
Princesse Charlotte
Doyen Dillen
Délices d'Hardenpont

NOVEMBER—DECEMBER.
Figue d'Alençon
Nec plus Meuris (fruit "Non bosselé," therefore not the Ne plus Meuris)
Beurré Langelier
Beurré Six
Grand Soleil
Nélis d'Hiver
Comte de Flandre
Columbia
Fondante de Noël
Triomphe de Jodoigne
Beurré Diel

DECEMBER—JANUARY.
Zépherin Grégoire
Beurré Millet
Beurré Sterkmans
*Martin Sec
Bezi de Saint Vaast
Beurré de Luçon
Beurré d'Aremberg
*Jaminette
Passe Colmar

Some extracts from M. Baltet's descriptions of new or but little known sorts may prove useful.

Beurré Giffard.—Fruit middle-sized, pyriform; skin light yellow, striped with bright red, dotted with green.

Flesh fine, soft, melting, with sweet perfumed juice. The tree is very productive, somewhat delicate, and does not live long on the Quince stock. July—August.

Monseigneur des Hons.—Fruit below middle size, pyriform, greenish yellow, marbled with red, speckled with nut brown. Flesh tolerably fine grained, melting, juicy, with a musky Rousselet flavour; ripens in succession. The tree is of a fine habit of growth, vigorous, productive, and appears to accommodate itself to any form of training. August. A quite new and good sort raised at Troyes, by M. Gibey-Lorne.

Ravu.—Fruit middle-sized, turbinate; skin pale yellow, dotted with russet. Flesh fine, melting, sugary, remaining sound when ripe. Tree moderately vigorous and very productive. August—September. A new variety obtained by M. F. Gaillard at Brignais.

Doyenné Boussoch.—Fruit large, sometimes very large, oval, truncated, with a regular outline; skin thick, green, dotted with brown, becoming yellow when the fruit is fully ripe, occasionally crimson next the sun. Flesh tolerably smooth, melting and juicy. August—September. The tree is vigorous and productive, but grows rather weakly on the Quince stock.

William.—(Williams's Bon Chrétien. This is stated to bear very abundantly at Troyes, but does not like a hot soil and south exposure. It appears however that it is not gathered, as it ought to be, before it parts readily from the tree, for in August the fruit being large, is tied to the branch for support, and is only commenced to be gathered at the end of that month; then it must be disagreeably musky.)

Beurré Superfin.—Fruit rather large, obovate, with a swelling at the stalk; skin shining, reddish yellow next the sun. Flesh fine melting, with an abundance of delicious slightly acidulated juice. The tree is vigorous and should not be pruned too short.

Beurré Hardy.—Fruit rather large, oblong oval, truncated at the stalk, outline; skin reddish brown, with russet dots. Flesh fine, melting, and aromatic. September. The tree is very vigorous, succeeding in any aspect, and an abundant bearer as a standard on the Pear stock, and as a pyramid or against a wall on the Quince.

Beurré D'Albret.—Fruit very large, pyriform; skin Isabella red on a green ground. Flesh fine, buttery, and melting; apt to lose its flavour if the fruit is not gathered before it parts readily from the tree. September. The tree is moderately vigorous, and very productive. It is apt to become weak on the Quince stock, in which case the swelling at the graft may be earthed over, some notches being cut longitudinally in it to facilitate the emission of roots. In this way the tree will be supported by its own roots, and become stronger.

Beurré Dumortier.—Fruit middle-sized, roundish oval; skin greenish, becoming yellow towards its period of maturity. Flesh fine, melting, delicious, not apt to give way at the core. September and October. The tree is moderately vigorous and productive.

Seigneur.—(Espéren.) Fruit middle-sized, round; skin bright green, changing to yellow, spotted with grey. Flesh fine, melting, and so sugary, that after having tasted several our palates found them sickly. One of the very best Pears. September—October. The tree is of ordinary vigour and very productive, bearing in clusters.

Baronne de Mello.—Fruit middle-sized, short turbinate; skin brownish grey, on a green ground colour, which however is little perceptible. Flesh fine, very melting and good. October. The tree is vigorous and fertile.

Beurré Bachelier.—Fruit large, oblong-oval, skin green, becoming brighter towards maturity. Flesh fine, melting with an agreeable juice. October—November.

Duchesse d'Angoulême.—[M. Baltet states that some amateur members of the *Société d'Horticulture de l'Aube* assured him that this Pear was very good for stewing.]

Doyenné du Comice.—Fruit very large, nearly round; skin pale yellow, slightly tinged with carmine, and spotted with light brown. Flesh fine, tender, and melting, with an abundance of rich sugary juice. November. The tree is vigorous and bears abundantly on the Quince stock.

Beurré Six.—Fruit large, pyramidal; skin of a uniform green, sprinkled with olive green dots. Flesh very fine and close grained, sea-green under the skin, melting, very juicy and buttery. November—December. The tree is of moderate vigour; but on the Quince stock, in soil not very good, it soon becomes weak. It is suitable for standards, because its fruit is not apt to be blown down. In 1857 we gathered two fruits of this variety which measured 14 inches in circumference and weighed each 26 oz.

Beurré Millet.—Fruit small or middle-sized, short, slightly ribbed towards the eye; skin brown, strongly marbled with russet red. Flesh fine, juicy, excellent. December—January. Tree moderately vigorous on the Pear, but weakly on the Quince stock.

Beurré de Luçon.—Fruit rather large with a somewhat irregular outline, short ovate; at full maturity the skin, which is gritty beneath, peels off with the hand. Flesh tolerably fine, melting with an agreeable aroma; it is, however, frequently gritty near the core. December—January. Tree moderately vigorous and very productive, but does not take on the Quince stock.

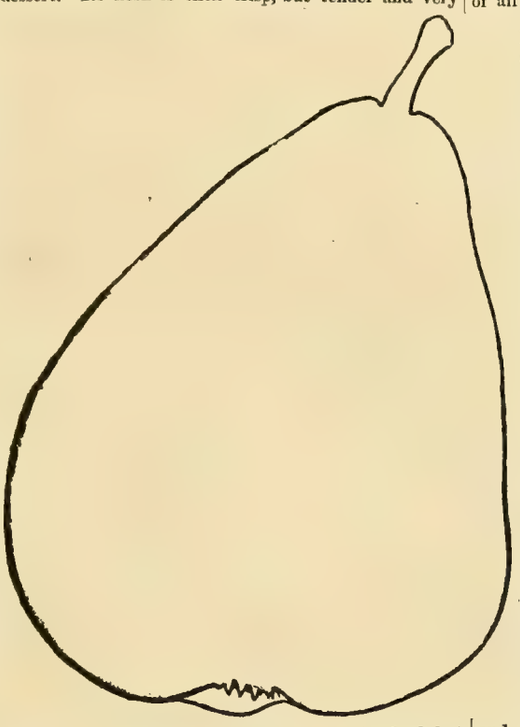
Doyenné d'Alençon. — Fruit rather large, round; skin rough to the touch, green, with fawn-coloured dots. Flesh tinted throughout, fine, melting, and juicy. January—March. As the fruit hangs on well in windy weather, the tree may be grown as a standard although of only moderate vigour. It succeeds best on the Pear stock.

Bergamotte Esperen.—Fruit middle-sized, round; skin green, changing to yellow, dotted with green. Flesh pale yellow, fine, melting with a brisk aroma. Ripens in succession throughout the winter till April. The tree is vigorous and productive.

Tavernier de Boulogne.—Fruit large, pyramidal, ventricose, stalk long and curved; skin thick, shining, green, sprinkled with ocellated green and red. Flesh coarse, crisp, juicy, but stewed in the simplest way I found it delicious. Keeps a whole year. This variety is either little known or confused with the *Tarquin des Pyrénées.*

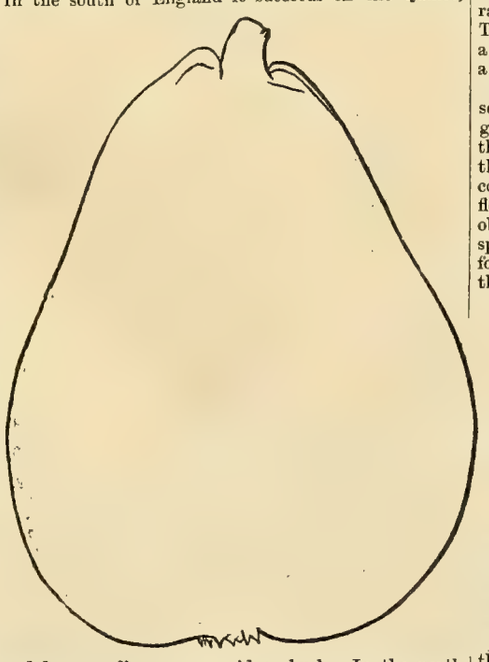
NEW PEARS.

Poire d'Avril.—A large handsome stewing Pear, which in March and April becomes fit for the dessert. Its flesh is then crisp, but tender and very



juicy. It is hardy and bears well as a standard, but should be cultivated as a pyramid on the Quince, on which it succeeds well, and commences to bear when very young.

Beurré d'Anjou.—This is the "Nec Plus Meuris" of French cultivators. A handsome and most excellent dessert Pear of medium size, ripening in December. In the south of England it succeeds on the Quince,



and bears well as a pyramid or bush. In the north it would probably require to be cultivated on walls with a warm aspect. It is a very popular variety in France and Belgium, where the Ne Plus Meuris of our collections seems entirely unknown.

Conseiller de la Cour, or Maréchal de la Cour. —A large and good dessert Pear, ripening in October. Van Mons, the raiser of it, had the highest opinion of its excellence. It is not, however, always good, in common with many of our finer kinds of Pears. In some seasons it is of the most exquisite flavour; indeed generally so. It is hardy, bears well as a pyramid, and does not require a wall. There is perhaps no kind of Pear that equals this in luxuriant growth when grafted or budded on the Quince stock, for it often makes shoots in the season from 7 to 8 feet in length and stout in proportion.

MITRARIA COCCINEA.

I am surprised that this plant is not oftener met with on our exhibition tables than it is, and still more so to find that many gardeners have given up growing it altogether, on account, as they say, of its being a shy bloomer; for from experience I can state that when properly treated it is nothing of the kind. I have seen specimens quite 7 feet in height in 13-inch pots, supported by a single stake in the centre of each plant. They formed beautiful pyramids of scarlet flowers from bottom to top, and were for a long period the admiration of all who had seen them. They had been standing in a conservatory from the third week in May, till July; for summer decoration no plants are better adapted or more easily cultivated.

The propagation of the Mitraria is exceedingly simple; half-ripened shoots of the current season placed in sandy peat in bottom-heat under a bell glass will root with certainty in a short time. They should then be gradually exposed to the air of the house, and when well established in 3-inch pots, then plunge them into bottom-heat with partial shade, and promote their growth in a rather high temperature, keeping up a good supply of moisture.

By pursuing this system fine bushy plants may be obtained the second season; but the cultivation of this lovely plant must not rest here. We ought not to content ourselves with merely producing plants in 6-inch pots; for there is scarcely anything more attractive or more desirable than well grown large specimens of this fine shrub. The soil most suitable for it is a point of some importance; for to the want of due attention to this may be ascribed many of the failures that have been experienced with this plant. A suitable compost may be made of the following materials, viz., one-third turfy peat, one-third leaf-mould, and a little silver sand. Let these be well mixed together, but not sifted; and take care that the pots are thoroughly drained. Let us suppose that a well-grown plant is required: place the plant in a close pit early in spring after being potted and plunge it in a bottom-heat of 70°; maintain a temperature of 50° in the pit by night; keep up a moderate but constant supply of moisture, as this plant delights in a warm humid atmosphere while growing, and with such encouragement the growth will be kindly and luxuriant. As the season advances increase the temperature of the pit a few degrees until it reaches 75° or so by night, and increase the size of pot should such appear to be necessary. Keep the soil moderately moist, but as vapour will be constantly rising the supply of water to the roots must be carefully administered. A little weak liquid manure may also be applied with advantage during the period of rapid growth, and until flowers make their appearance. This will be the time to expose the plant gradually to a lower temperature, for it is only in the climate of a greenhouse or conservatory that this plant succeeds.

When flowering is over it should be followed by a season of rest; the supply of moisture should be gradually withheld, and this partial check will hasten the ripening and hardening of the young wood. When that has been effected let the plants be wintered in a cool place—say in an intermediate house. They will flower beautifully the following summer. Should the object, however, be to have them in beauty early in spring, commence forcing them in November, and use for the purpose those plants which were earliest excited the previous season. *M.*

New Plants.

218. Stephanophysum Baikiei, *Hooker in Bot. Mag.*, t. 5111.

A very handsome crimson-flowered stove Acanthaceous shrub, of which Sir W. Hooker gives the following account:—

"One of the many highly interesting plants lately sent home from the present Niger Expedition by its successful commander, Dr. Baikie, and collected by the indefatigable naturalist, Mr. Barter. Seeds accompanied the dried specimens, and these have germinated, and the plants flowered in great beauty during the winter months of 1858-9. The structure is in every essential particular so much of that of *Stephanophysum*, Pohl (of which however the 13 species described by Nees are all South American) that I can have no hesitation in referring the plants to that genus.

"*Descr.*—Our plant is between 2 and 3 feet high, herbaceous at present, but will probably prove to be suffruticose, erect, branched with opposite, square, or tetragonous, erecto-patent *branches*. *Leaves* in opposite pairs, sometimes nearly a span long, including the petiole, ovato-lanceolate, submembranaceous, entire,

penniveined, acuminate, attenuated at the base. *Panicle* terminal, with copious *bracts* and *bracteoles*, and composed of many-flowered opposite *racemes* or *spikes*. *Flowers* opposite, sessile. *Calyx* cut nearly to the base into five narrow, erect, linear-subulate, glanduloso-pilose segments. *Corolla* more than 2 inches long, scarlet, tubuloso-infundibuliform, curved, very slender and much tapering at the base, inflated or ventricose in the middle, the five triangular lobes of the limb patent and even recurved."

Home Correspondence.

Cucumber Growing.—My views do not coincide with those of Mr. Ayres on this subject, well knowing as I do, from close observation and practical experience that the growing of Cucumbers in winter at the temperature mentioned is not quite so easy a matter as might be imagined, and I am well assured that hundreds of men of really good practical standing whom I might name concur with me in emphatically denying that they can be so grown with any degree of certainty, or that his advice will bear the test of sound practice. I am conscious of the fact that it is not necessary to maintain so high a night temperature as many do, when all nature as it were is wrapt in repose, but to assert that Cucumbers will luxuriate at a temperature of 50° and below at night and 60° by day is more than I can subscribe to. Believe me, I have worked hard in the management of good contrivances as well as bad ones for the production of things in season and out of season, and have used every kind of fuel and fermenting material during my practice. I may instance one case as illustrative of my experience: this occurred in mid-winter. My plants were planted out in the ordinary way in a small Cucumber house, and trained to a trellis; the heat maintained was from 75° to 85° by day, and 65° and never lower than 60° at night, and no plants could possibly do better than they did; but having changed the fuel I found I could not command — and that with great difficulty — more than 60° in the day and 50° by night. The consequence was that instead of the plants growing as they previously had done they scarcely moved at all, and got into a state which by some was considered to be not worth the keeping; being convinced however of the "why and the wherefore," I obtained the fuel formerly used, which induced a difference in temperature of from 20° to 30°, when in the course of a week or two the plants assumed as vigorous and healthy an appearance as they had before. I submit at once that where one has a good tank, &c., beneath the bed in which the plants are growing so as to retain a regular warmth for some time should the fires go out, or a change take place in the external temperature, the plants will not suffer much, although the thermometer may only register 50° during the night; but for my part I should not like such to occur too often. The principal secrets in Cucumber culture are a good open porous soil with plenty of peat in it, and well drained throughout, abundance of heat, air, and moisture. Let the amount of the latter be regulated in proportion to that of the temperature and by all means secure an active bottom heat, and if ordinary skill and attention be not wanting Cucumbers may be thus grown with ease and satisfaction. An active healthy atmosphere is the life of plants. I can show Mr. Ayres in more than one place in this neighbourhood Cucumbers growing and that in the greatest perfection possible, but not on the low temperature system; neither have I conversed with one gardener upon the subject of Cucumber growing who has any pretentions to skilful practice (and I know several) who does not entertain an opinion directly opposite to that promulgated by Mr. Ayres. One acquaintance of mine who does things well and has grown extensively for market (I should like Mr. Ayres to see his house at the present time) never thinks of ventilating till the house stands at 90°. *George Fry, Manor House Gardens, Lee, Kent.* [Well, but what do you say to the *result* obtained by Mr. Ayres? The dimensions of his leaves we ourselves determined by actual measurement. There may be something unexplained by him; but we really must believe our own eyes.]

Decorticated Trees.—My friend Mr. Waterton mentions the Holly tree at Chevet being killed by being barked for birdlime. Several Holly trees here have shared the same fate; but there are also two or three instances of trees which have been barked entirely round and have not died. They have saved themselves by forming an entirely new bark over the whole of the part stripped; and I have no doubt if a piece of oilsilk had been wrapped over that at Chevet to exclude the air, the tree would have been kept alive, and have formed for itself a new bark. I suspect that the Holly is rather peculiarly apt to form new bark in this manner, and I mean to try some experiments on some of those in the woods here to test this. I wonder whether Mr. Waterton remembers the remarkable instance of a young Spanish Chesnut in the park at Nostel Priory, near the church, which was barked some years ago by the deer, all round the stem, except a narrow strip about ½ inch wide. That narrow strip saved the life of the tree, but as new wood formed under it, the bare part of the stem died, and at last became quite detached from the new living stem that had formed by its side. For some years it helped, like a stake, to support the loss of the tree, but at last became tender, broke in two in the middle, and then for some years the two pieces stuck out from the tree like two dead branches 2 or 3 feet apart; the tree is now very vigorous, and all traces of the wound have disappeared. I read the account of the Elm trees at Paris, and took it for granted that if any of the trees had survived the operation there described, the "bark" removed could only have been the outer bark, which in the Elm during some months in the year separates very readily from the inner bark. *C. W. Strickland, Hildenley, near Malton, April* 17.—— I have just cut down a fine young Elm of about 25 years of age, completely destroyed by a white maggot still in the bark. Some years ago my cows entirely stripped the bark from a vigorous growing young Sorbus, and I concluded it would die next year; however it did not appear to have suffered, as it came out as fresh and green as ever. The following season it made some stunted growth, but it died outright the year after that, viz., the third year. I send you this, as the public cannot be too much warned against the adoption of so fatal a practice as barking trees; ringing near the bottom, if done in time, might perhaps however stop the progress of maggots, as they appear to ascend. *T. H., Stoke Newington.*

Horse Chesnut Blight.—My trees are suffering from a severe blight, of which several are dead and dying. I therefore venture to ask some of your correspondents for advice as to how best to stop the evil. The blight appears in black spots in the lower part of the tree, from which, as they increase in extent, exudes a dark-coloured, gummy substance, forming into masses of sores and blotches, and, gradually reducing the bark to a knotty, dried-up state, kills the tree. *An Old Subscriber.*

Woodlice.—With these every gardener is more or less annoyed. Owing to the fact that our Melon grounds are generally close to the wood yard, I am sure to have an unlimited number every spring, and this season they threatened to eat every Melon and Cucumber plant I had got. Dahlias which were starting, and cuttings of all kinds (for nothing comes amiss to them), shared the same fate. After trying various traps for them, I have now succeeded most effectually in clearing my frames by catching them in hundreds every night. My plan is simply to plunge a lot of flower-pot saucers, glazed inside, up to the rims, fill them three-parts full of water, and next morning will reveal the secret that during the night they tumbled in, and being unable to get out again, got drowned. *J. Rust, Fulham.*

Rainfall.—All sorts of speculations seem to be indulged in as to the moisture in past and future seasons. From a register kept 33 miles due south of London, and nearly accurately the same longitude as Greenwich, the rain in 1858 was 25 inches and 34-hundredths of an inch, and to the present time in the years 1858 and 1859 as under:—

	January.	February.	March.	April.
	Inches.	Inches.	Inches.	Inches.
1858 ..	1.59	1.20	1.88	3.29
1859 ..	2.37	3.14	2.09	3.38

With all the rain we have had both last year and this the springs are still low. *A Constant Reader, Sussex.*

The Weather in North Devon in 1858.—The following is a condensed summary of the observations taken at the Meteorological Observatory at Barnstaple in 1858. The observatory is 31 feet above the level of the sea:—

Months.	Temperature of Air.				Rain.	
	Highest.	Lowest.	Range.	Mean.	No. of days Rainfall.	Amount collected.
	Deg.	Deg.	Deg.	Deg.		Inches
January	54.	23.	31.	42.	14	1.57
February ..	55.5	26.5	29	40.4	11	0.84
March	69.	26.	13.6	43.9	12	1.17
April	69.	31.5	37.5	49.	14	4 58
May	75.	34.5	40.5	52.1	15	3.31
June	79.1	45.	34.1	61.3	8	1.67
July	75.5	47.7	29 8	59.2	18	3.26
August	80.1	45.7	34.4	61.7	8	1.88
September ..	82.	44.2	37.8	61.3	19	0.39
October	65.	32.5	32.5	52.4	21	3.87
November ..	57.2	24.5	32.7	42.3	11	2.34
December ..	55.	31.5	23.5	45.2	21	4.46
Means of the Year.	68.0	34.3	31.3	50.9	172	29.34

—*R. W. Cotton.*

Rent Beech Tree.—In front of my windows is a Beech tree in which there is a rent open to wind and weather from the ground to the height of 7 feet. At the ground it is 22 inches wide. The tree is sound and dry inside, and is growing fast. I should be much obliged by the information whether it is best to leave it as it is or to brick up the opening? *R. F., Polesden Lacey, Dorking, April* 18. [We should let it alone if it is really sound.].

New Mode of Causing Seeds to Germinate.—One of the seeds, that of a Cassabar Melon, I vegetated in less than 24 hours by my "patent" process, which I have found eminently successful in a variety of instances when all other plans have failed. It is simply by enclosing them in a small piece of flannel soaked in a weak warm solution of oxalic acid and squeezed out nearly to dryness; this is enveloped in two or three folds of oil-silk tied up and suspended by a string hung over the neck, so that the little packet may descend just to the pit of the stomach, where the heat of that part in an incredibly short space of time induces germination. The seed to-day, after 38 hours' confinement in this situation, has a rootlet of 1 inch in length. And thus have I had seeds sent me from good hands who could do nothing with them, commence growing from 24 to 48 hours after being put to nurse in the above-mentioned mode and position. *Thomas Ingle, The Villetta, Emsworth, Hants, April* 25.

Spotted Grapes.—I have some very fine Grapes just ripe, but discoloured by either the water being hard or impregnated with oxide of iron from the iron pipes. Is there any way of getting this off the berries? I have tried lime water and sulphuric acid and water without removing it. If the Grapes be of the finest quality would this discoloration prevent a first prize being awarded them? *A Constant Reader.* [We should say yes.]

Orchard Houses.—I quite agree with your correspondent "J. D.," Fife, N.B., in reference to his remarks as to orchard houses, which, as he says, are still in their infancy in the north. I have erected a small one some 21 feet long by 8 feet wide, and whatever others may say as to the system recommended by Mr. Rivers, I must confess that I am perfectly satisfied with the results of my small experiment. I see and hear on all sides that everything is spoiled by the severe frosts within the last four or five weeks, and I am quite aware that all fruit in the open air is destroyed in my neighbourhood; but in my little orchard house I have the pleasure of looking at Peaches, Nectarines, Apricots, Pears, Cherries, Plums, Figs, and Grapes, in perfect health and vigour, the fruit setting beautifully, and in no case touched by frost though almost everything outside in the same garden is destroyed. I am of opinion that the system of orchard house cultivation, introduced by Mr. Rivers, deserves the notice of every man who wishes to have a secure crop of fruit, especially if, like me, he is situated in a northern county where he may expect such frosts as have fallen to our lot within the last month. I may mention that my orchard house, the length and breadth of which I have given, is 7 feet high, and that it cost something under 15*l*. *A Constant Reader, R., Roxburghshire, N. B.*

Double or Twice-fruited Peaches.—I quite concur in your remarks with reference to these in your Paper of April 16. I have frequently observed monstrosities of similar character in a Peach house at this place, but more especially this season. My practice is never to allow any of them to remain on the tree for a permanent crop; for a time they often look promising, but when the process of stoning commences they invariably drop—and if they do stand, one portion of the fruit assumes a sickly hue—the remaining half appropriating to itself all the support. It is seldom that a good and perfect fruit is the result. If your correspondent has removed such fruit according to your advice he has acted rightly, but if he has allowed any to remain I for one would be glad to learn through your pages whether such twin-fruits equal the single ones when ripe. *John Ealington, Winch House, Seacombe.*

Prunus triloba.—It is stated at p. 362 that Mr. Glendinning exhibited neither Prunus triloba nor the Camellia-flowered Peach at the first spring meeting of the Royal Botanic Society, as stated both in your own report and the Society's official advertisement. Mr. Glendinning will perhaps inform us correctly what he did exhibit on that occasion. The official report alluded to was drawn up by me as one of the judges, and I have before me an extract from the Society's entry book, according to which and the official cards Mr. Glendinning exhibited Prunus triloba, the Rose-flowered Peach, and the Carnation-flowered Peach. These names could not have been invented by the entry clerk. There were certainly three kinds shown under Mr. Glendinning's name, two of which were double-flowered Peaches, and the third a very distinct and I may add very handsome Prunus-like plant, quite agreeing with the general features ascribed to Prunus triloba (*Gard. Chron.*, 1857, pp. 216, 268). They were all beautiful things, and the Prunus for its distinctness, and the Rose-flowered as the best of the two double Peaches were without hesitation awarded prizes. *T. M.* P.S. In the report of the third of these meetings (p. 354) a misprint of "Sedum" for "Sida" occurs.

Artificial Birds' Eggs.—As objects of natural history are now much sought after and appreciated by almost all classes, it has often struck me that to render Museums interesting to the many, it would be well to append a short and plain description of the habits, whether of birds or animals, at the foot of each, as three parties out of four go into such places and gaze about them, interested in many things no doubt for the moment, but not having books on the spot to refer to, and indeed if they had, many would be too lazy to take the trouble, so they come away just as wise as they went. If however a plain condensed description were given to each specimen, how infinitely more instructive such places would be to the community at large, but I am wandering from the point. In our pretty little town we have a capital Museum, and among other things a goodly collection of British birds and their eggs. We contemplate, beside appending a short description of the habits of the first, to suspend an egg belonging to each variety at the foot of the bird itself, and that the male and female shall be invariably for the future grouped on the same stand, to show the difference in plumage (which is often

very great), and to enlighten the public at large on the subject, more especially the young people at school; but to attach a frail egg to the specimens would render sound eggs very liable to be broken when specimens were being dusted, which they sometimes require, even when in glass cases. Could the British Museum be induced to take the matter in hand and have a regular series of the British birds' eggs coloured strictly after Nature from specimens in their possession, and made of a light, solid, and durable material, what a boon it would be both to museums and schools, as the charge of cruelty for taking the nests would be done away with, and we could then be in possession of at least the semblance of many rare specimens of eggs, which the British Museum undoubtedly possesses, but which others have little or no chance of getting. How many poor and distressed ladies in London could do such light and delicate work as this colouring after Nature, and be glad of the chance so to earn money. The materials composing the series should be light, and yet not easily to be broken; the colours should be exactly studied from the natural eggs, as well as the size and shape. If they were issued bearing the stamp of the British Museum, we should be certain that they would be correct to nature, and the series, whether attached to the birds (each its own) or kept together, would be durable, perfect, and we should have an idea of many of the eggs that we can now only get when in London. Each could be named. I merely throw out these suggestions; may I hope that they will be thought feasible? And as an old subscriber to the *Gardeners' Chronicle*, if Mr. Waterton would do the public at large the great favour to give a description of how the specimens mentioned in the last Number of that excellent paper are preserved, he would be conferring a great favour on all who are interested in such matters. Of course the British Museum would charge so much for the specimens to repay the trouble and expense of having them manufactured, and it is to be hoped the price could be made moderate. *F. N., Ludlow.*

Societies.

Linnean: *March* 17.—Prof. Bell, President, in the chair. The Rev. G. W. Braickenridge, H. B. Brady, Esq., and S. Gurney, Esq., were elected fellows. Cones of Pinus Lambertiana, and of Araucaria Bidwillii, and a capsule of the curious Uncaria procumbens, the Grapple plant, were presented by the secretary. The following papers were read:—1. "On Vegetable Affinities," by T. C. Hilgard, M.D., of St. Louis. This was a very abstruse essay on a very abstruse subject. Treating on what he called the empiric peculiarities of organic life, the author observed:—"Organic forms and individuals have been discriminated from inert or inorganic ones, such as crystallisation, and the individual crystals. Striking and impressive though the difference be, yet it is very difficult to elicit what is the essential or fundamental between the constituted organic and inert forms. Both grow originally; both require the presence of atomal substance to become embodied; both have a definite chemic and morphic constitution. Where are we to look for the distinction or essential of either constituted thing? One great distinctive feature is, that organic beings live, or develop and generate. Material development is described (not definable) as a self-caused change of form and chemic substance: self-caused implying that the peculiar cause concerned proceeds from the theory in question and not from those surroundings whose powers are inalienable and definite. As to the chemic, we find that inasmuch as organic substance has other powers of chemic action than correspond to the weight and constitution of inert matter concerned, it follows that chemism is a theory above and beyond, or usually prior to chemic inert substance, being imparted in one way on inert matter, in another on living matter. We know empirically that galvanism is more powerful than any amount of chemic affinity inherent to matter; nay, that it stands in the place of superlative affinity itself; and that affinities are apparently in inorganic matter directly dependent on their galvanic exponents." The chemical and physical power of inert matter, the author proceeded to say, was in direct proportion to its weight. The organic germ, on the contrary, does not "persist" in the amounts of chemic, physical, and dynamic powers with which it is endowed. If placed in contact with certain other substances to react upon, it will not act out a given change of circumstances in direct proportion to its weight, as sulphur, iron, or carbon would; it excites a greater amount of power, multiplying chemic potency with the assumption of more matter into its peculiarity, instead of being saturated or neutralised as in the other case. It would appear, the author inferred from these and other premises, "that generation is a most distinctive mark or apparent peculiarity of living beings; persistence of inherent power that of dead matter." The author's "vegetable series," which he next proceeded to develope, consisted of three principal groups, the Cryptogameæ, the Monocotyledoneæ, and the Dicotyledoneæ, for the details of which the botanist must consult the original. A diagram of affinities accompanied the paper.—2. "On a monstrous form of wild Carrot, Daucus Carota." By M. T. Masters, Esq. This monster was picked by the author at Olten in Switzerland in July last. The whole of the flowers of the umbel presented some abnormal condition, but in those particularly described, the tube of the calyx was adherent to the prolonged foliaceous carpels, the limb was non-adherent and divided into five small subulate teeth; five nerves corresponding with the usual primary ridges were present, but destitute of spines. The carpels were prolonged into two detached widely spreading lanceolate leaves, adherent to the tube of the calyx in their lower part; the margins of the carpels were infolded at their upper part, but there was no trace of ovules or of stylopod. The author also noticed a form of Trifolium pratense found in Blenheim Park, in which the flower-bearing axis was prolonged beyond the pistil. Sketches of the structure of both monstrosities accompanied the paper.—3. "Descriptions of some new species of Musci from New Zealand, and other parts of the Southern Hemisphere; together with an enumeration of those species collected in Tasmania by Wm. Archer, Esq., arranged upon the plan proposed in the 'Bryologiæ Indiæ Precursor,'" by William Nutten, Esq., a long paper of technical muscology.

April 7.—Prof. Bell, President, in the chair. Edward Sheppard, Esq., was elected a Fellow. Among the donations announced was a miniature of Hedwig, presented by the treasurer, Dr. Boott, and a portrait by Wageman of the late James Dickson, F.L.S. The following papers were read:—1. "On the cranial characters of a species of Rat, new to the British Fauna," by J. A. Salter, M.D. 2. "On the Moulting of the Common Lobster and Shore Crab," by Dr. J. A. Salter. 3. "A note on the Habits of the Aye-Aye, Cheiromys madagascariensis," by H. Sandwith, M.D., C.B., Colonial Secretary of the Mauritius, in a letter to Prof. Owen, V.P.L.S. Some observations were made on the cultivation in England of Cicer arietinum, Linn., the Gram of India.

Notices of Books.

Die Blattskelete der Apetalen (*Skeleton Leaves of Apetalous Plants*). By Dr. Constantin Ritter von Ettingbausen. 4to. Vienna. Williams & Norgate, London.

A quarto volume illustrated by 51 admirably nature-printed plates of the leaves of such plants as the learned author thinks most likely to elucidate the history of the vegetation of tertiary formations. The letter-press consists of a dissertation upon the types of venation to which the leaves themselves appear referable; but it contains no attempt to connect such modern forms with those of extinct vegetation.

The Portrait of a Christian Gentleman. A Memoir of Patrick Fraser Tytler. By his friend Rev. J. Burgon, 8vo. Murray, pp. 356.

The History of Scotland by the subject of the memoir before us is one of those monuments of intelligent industry which mark the character of this author. Possessing without brilliancy the far more important qualities of impartiality and accuracy, combined with moral courage to tell truth when truth is not always acceptable, it proclaimed the conscientious student and the fearless chronicler. Mr. Burgon's narrative, founded upon long personal acquaintance and ample correspondence, confirms the opinion that would have been formed from the mere perusal of the historian's writings.

Mr. Tytler, a son of Lord Woodhouselee, an eminent Scotch judge, was educated for the bar, but soon quitted the legal profession for the pursuit of literature, which he never afterwards deserted. The best part of his life, during which he became a widower, having been spent in the composition of his History, he married a second time, fell into deplorable ill health, took up his residence in Germany, and returned to England after two years' absence to die at Malvern. He appears to have been remarkable for the strong religious feelings which accompanied him through life, not less in the crowded drawing rooms of London, or the whirl of foreign travel, or the excitement of field sports in which he excelled, than in the retirement of his home and in the bosom of his family. Mr. Burgon's object has been to represent his departed friend in all the stages of his career; writing with the pencil of the miniature painter, and the hand of the panegyrist; and he has succeeded in producing a volume which will be read with pleasure by all who are interested in the details of an industrious and pious domestic life.

The Italian Valleys of the Pennine Alps. By the Rev. S. W. King. 8vo, pp. 558. Murray.

Numerous as are the excursions made every year to Switzerland and the Alps, the tour of which the present volume gives an account is not often attempted even by the more adventurous of our countrymen. Although the glaciers of Monte Rosa and Monte Moro have attracted considerable attention of late years, the Italian valleys of the Pennine Alps are by no means so well known as they deserve to be, and the tour made through them by Mr. and Mrs. King will be found to be well worthy repetition, even by persons familiar with the magnificent scenery of the Bernese Oberland and the Swiss side of the range of Mont Blanc.

Starting from the Great St. Bernard, the author visited the Val de Bosses, Val d' Entrèves, Val d'Aosta, Val Pellina, Val d'Ollomont, Val de Biona, Val St. Barthélemy, Val Toumanche, Val d'Ayas, Val de Lys, Val de Champorcher, Val de Cogne, Val Challant, Val Sesier, Val di Bours, Val Sermenta, Val Ollocia, Val Arzasca, Val Macugnaga, Val Strona, Val Mastalone, and the Val d'Ossola. In each one of these valleys, and especially in the passes over which it was necessary t climb to go from one to the other, objects of the highest interest are to be met with not only by those who are merely in the pursuit of health and pleasure, but also by persons who travel for something more than amusement, and who take an interest in the geology or natural history of the places through which they pass. To these latter no less than to the former the present volume will prove acceptable, for Mr. King travelled with his eyes open, and has noted many particulars, botanical, zoological, and geological, respecting the places visited by him. He also made sketches of the more remarkable objects, and has introduced into his work some clever drawings of, amongst other things, Monte Rosa, the Convent of Great St. Bernard, the Glacier of La Breuva, the Breithorn, Gressoney St. Jean, Pic de la Grivola, &c. Last, but not least, we find three well executed maps of Mont Blanc and its environs, Monte Rosa and its environs, and of the Italian valleys of the Pennine Alps. These maps exhibit the glaciers and passes very distinctly, and will prove invaluable to the wanderer through these little frequented regions.

It must not be supposed that because a lady accompanied the author throughout his rambles their route was easy or devoid of danger. Still less must it be imagined that our travellers met with such accommodation as is to be found in the splendid hotels of Switzerland. They had to rough it in the true sense of the word, by night as well as by day, and to encounter many obstacles, and even dangers of no slight magnitude. But for the details of these and other matters we must refer our readers to the work itself, which amongst its other recommendations has an index and full table of contents.

Beeton's Dictionary of Universal Information (18, Bouverie Street), a new serial, is a wonder. For threepence monthly it gives 32 closely printed 8vo pages, on good paper, illustrated with good maps and good woodcuts. The lowness of the price, combined with the goodness of the matter, is marvellous; and we trust it may prove a successful speculation. The repeal of the paper duties, now we fear adjourned indefinitely, would be a great help to the enterprise. The articles are written in the usual encyclopædic form, tersely, clearly, and as far as we have remarked correctly. They chiefly relate to biography and geography, other subjects being sparingly introduced. We should have thought that the low price would have been inducement enough to purchasers, but prizes are also offered to subscribers, for the nature of which we refer to the work itself.

Trade Lists. — *Supplement, &c.* (*supplement and extract from the* 65*th Catalogue of A. Verschaffelt, Ghent*), is a sheet of post letter paper containing the prices of some of the most select plants in the publisher's collection, which is well known to be rich in the more valuable species. Palms and Palm-like plants are offered at from 3 francs to 600 francs each. There is also a new Pear called General Todtleben, which is to be sent out next autumn at 10 francs each.

Miscellaneous.

Sale of Coniferous Seeds.—Consignments of these from Mexico, India, California, and Vancouver's Island were sold on Wednesday last by Mr. Stevens. Among them were 10 packets of the rare Pinus Don Pedri, which fetched from 5*l.* to 5*l.* 5*s.* per lot of 100 seeds each. Of Cedrus Deodara there were many canvas bagfulls apparently in tolerably good condition. Lots in 10 bags each weighing about 8 lbs. fetched from 3*l.* to 4*l.* per lot; small boxes of Picea amabilis 3*l.* 3*s.* each; Cupressus Lawsoniana from 3*l.* to 4*l.* per box; C. torulosa in bags not weighing more than 1 lb. from 1*l.* to 2*l.* per lot; a small box of cones of Abies Williamsoni sold for 5*l.*; a boxfull of Pinus Benthamiana fetched 2*l.* 8*s.*; and Juniperus excelsa 10 lots, in 8 oz. bags, from 1*l.* to 1*l.* 3*s.* per lot. Other lots, of which there were in all 211, fetched from 10*s.* to 1*l.* 1*s.* per lot.

Australian Medicinal Plants.—At a meeting of the Pharmaceutical Society of Victoria, held at Melbourne, Sept. 3, 1859, Dr. Mueller exhibited a series of such indigenous plants as he deemed of interest to the pharmaceutical profession; inviting attention to the important fact, that medicine and chemistry had often aided in revealing the true affinity of plants, inasmuch as frequently in genera and species of one tribe a similar or an analogous principle exists, although such medicinally and economically allied plants might occur in countries widely separated and under very different climates. He stated, for instance, that the European Daphne mezereum, from which the well-known mezereum bark originated, is characterised by a certain acrid principle, which is also found to be present in the closely allied Pimeleas, abounding in Australia: the same acridity has been observed in almost all the known species, and is found to be of remarkable intensity in Pimelea stricta and several others. He explained, also, how vastly superior the natural system had proved in this regard for arranging plants; because, notwithstanding the close relationship between Daphne, Wickstrœmia, Pimelea, and other thymelaceous genera, not only in structure and form, but also in their medicinal properties, these plants stood widely apart and in different classes of the Linnean system. It was consequently of the utmost importance to medical and pharmaceutical students to become thoroughly acquainted

with that classification which has earned the name of "natural system," according to which not a solitary or a few marks are employed for associating or distinguishing plants, but which draws from the total of their form, organisation, structure, and elements, a complex of characters for discrimination or diagnosis. Amongst Malvaceæ, of which sixty Australian species were exhibited, many were found to be demulcent, emollient, and mucilaginous, as might be expected from their natural alliance. A few Hibisci were acidulous, and could be used as antiscorbutic vegetables, whilst the root of Lavatera plebeja Sims (Malva Behriana Schl.), which is obtainable in most parts of our colony, shows equal value with that of Althæa officinalis, and might thus often be conveniently substituted for its use. Numerous Lobeliaceæ, some of great variety and beauty, were then exhibited, nearly all, more or less, to be compared in virtue to Lobelia inflata, and readily to be gathered in any part of Australia. Amongst the specimens occurred the Laurentia platycalyx, a herb hitherto noticed only in the vicinity of our bay, and which seemed remarkable for the absence of the milky fluid which forms one of the cardinal characters of the order to which it belongs. Dr. Mueller explained how by these intermediate forms nature had established a harmony in the types of the creation, and he thought we might assume that forms hitherto standing isolated —paradoxical to us—would, by future discoveries in untrodden parts of the globe, probably be brought into contact with those which received already a settled position in the botanical system. Specimens of Sebæa ovata Br. (Erythræa chloræfolia Lehm.), of Canscora diffusa Br. (Orthostemon erectus Br.), of Sebæa albidiflora Muell., and of several handsome Gentianas of this continent, were laid before the members, and particular attention was directed to the former as a most agreeable tonic, easily and abundantly obtainable, since it covers nearly every Grassy plain of extratropical Australia during the spring season. Dr. Mueller invited the Pharmaceutical Society likewise to a trial of the medicinal properties of the numerous and almost exclusively Australian Goodeniaceous plants, of which many had only become known by his last journeys. He demonstrated how the unexpected discovery of a bitter tonic principle, at first in his Goodenia or Picrophyta calcarata, and afterwards in most of the Goodenias, Velleyas, and Calogynes, had pointed out to him the near systematic relation between the Goodeniaceous and Gentianaceous orders. By means of phytochemistry, therefore, a connecting link had suddenly been established between the group called Contortæ and the Campanulaceous alliance, the former offering in the sub-order Menyantheæ, with alternate often toothed or divided leaves, with flowers of induplicate æstivation, and provided with membraneous margins, and with very similar seeds and valves of the capsules, —a close approach to the true Goodenias and Velleyas, to which indeed, also, some Villarsias bear in habit quite a striking, almost deceptive resemblance, although, on the other hand, a clear affinity is manifested by other Goodeniaceous genera towards Lobeliaceæ. *Quarterly Journal of Pharmaceutical Society of Victoria.*

How to Cook Locusts.—The locusts generally fly within 2 or 3 feet of the ground, and, as soon as their approach is perceived, the people rush out, and with great clamour endeavour to strike them down, or enclose them in their lambas, while the women and children gather them up in baskets from the ground, and detach their legs and wings, by shaking them from one end to the other of a long sack, in the same way that grocers clean their raisins. The legs and wings are then winnowed away, and the bodies dried in the sun, or sometimes fried in fat, and then kept in sacks for food, or sent to the markets for sale. In some parts of Ankova and in the provinces of the Betsileo to the southward, grasshoppers and silkworms, in the chrysalis state, are collected in large quantities, cooked and eaten as food, or offered for sale.—*Ellis's Madagascar.*

Calendar of Operations.

(For the ensuing Week.)

PLANT DEPARTMENT.

CONSERVATORY, &c.—While cold drying winds and occasional bright sunshine prevail considerable attention will be necessary to maintain a moist healthy atmosphere in this house, and no effort necessary to secure this should be spared, for it is needless to expect flowers to last in a dry warm atmosphere. A thin shade should be used to break the force of the sun, and in giving air every care should be taken to avoid drying currents, opening the top ventilator only as long as these will suffice to prevent too high a temperature, and every available surface of bed or border should be kept constantly moist, in order to secure plenty of evaporation to counteract the drying effects of the external atmosphere. Give frequent attention to climbers in free growth, regulating the young wood before it gets entangled, and see that Hardenbergias, &c., in bloom, are properly supplied with water at the root. At this busy season there is great danger of neglecting the winter-blooming favourites, such as Epacrises, Daphnes, &c., but if these are to be had in anything like perfection next season they must be properly cared for now. Show houses are generally kept too close and warm for Epacrises and such plants, and in this case they should be removed to the greenhouse as soon as out of bloom, affording them a rather damp and shady situation for a few weeks. Attend to repotting such as have started after being cut back, and keep them moist and rather close until the roots get hold of the fresh soil. Shift and attend to tree Mignonette, for flowering the ensuing season, and see that tree Violets are not infested with red spider. STOVE.—The stock here will now be growing freely, and every possible care should be exercised to secure strong vigorous wood. Attend to repotting young stock before the plants sustain any check from want of pot-room and see that everything is well supplied with water at the root.

FORCING DEPARTMENT.

PINERIES.—In cases where a regular supply of fruit is required at all seasons of the year, it will be necessary to examine the stock of plants frequently, marking those considered the most likely for fruiting, so as to be able to keep them rather dry at the root for a month or so, which will in most instances have the desired effect of checking growth and throwing the plants into fruit. The only effectual method, however, of securing a supply of fruit at any particular time is foresight in the management of the stock, taking care to get the growth well matured in sufficient time to allow of affording the plants a short period of comparative rest, which is the only certain means of inducing them to fruit at any desired season. With plenty of convenience this is easily enough managed, but where the accommodation is limited, it is by far the most difficult part of the culture of the Pine. And in cases where a regular supply of fruit has to be furnished from limited accommodation, it is safer to grow the plants in pots, so as to secure perfect command over the roots, and also be able to move the plants to a cooler pit or otherwise, as may be necessary. Black Jamaicas and Cayennes are the best varieties for winter fruiting, and the stock of these should receive every attention at this season so as to induce them to make free growth, and a portion of them should be shifted into their fruiting pots as soon as possible. Use every means to afford growing stock a moist atmosphere, which in the present state of the weather is a work that requires much attention, but must be done if the plants are to be kept in first-rate condition. Give air freely, but avoid draughts of cold drying air, and use shading to assist in keeping down the temperature without being under the necessity of admitting cold drying air too freely. VINERIES.—In cases where Muscats are grown in the same house with Hamburghs and other free setting varieties the temperature must be kept sufficiently high during bloom, and until the berries are fairly set, to suit the Muscats; for a crop of these cannot be depended upon from the most healthy Vines, unless they can be afforded a brisk temperature while in bloom and setting their fruit. It will be better, however, to risk having the Muscat bunches somewhat thin than to injure other varieties by maintaining a night temperature of 75°, which is the practice of some good growers; 68° or 70° will be found quite sufficient. Get the borders prepared for planting out young Vines, and if these are started into growth before planting do not keep them too warm, or it will be difficult to prevent their sustaining a check after planting out. MELONS.—Encourage those newly planted out with a moist warm atmosphere, so as to get them into full growth as quickly as possible; but plants that are fairly established should be kept cooler, admitting air on every favourable opportunity, in order to secure short-jointed fruitful wood.

FLOWER GARDEN AND SHRUBBERIES.

The cold weather which we have for some time past been and are now experiencing, renders the management of bedding plants somewhat difficult; it is dangerous to risk even the hardier kinds from under the protection of glass. All that can safely be done until the weather becomes warmer, in the way of hardening stock preparatory to its being planted out, is to give as much air as circumstances will admit without injuring the plants, and to place Calceolarias and the strongest Verbenas in turf pits, where they can be securely protected at nights and sheltered from drying winds. Such things, when removed to cold pits, should be planted out in light soil, which will save trouble in watering and be much better for the plants than keeping them confined in small pots. Tender annuals that have been raised in heat should be pricked out in light soil under glass in order to get them strong before planting out time. If not already done, hardy annuals should be sown after the first shower, and do not forget plenty of Mignonette and Stocks, the fragrance of which will always render them favourites. Look over plants at present in flower and mark the most admired for propagation at the proper season.

HARDY FRUIT AND KITCHEN GARDEN.

Recently transplanted trees must be carefully attended to with water, giving the ground where it may be found necessary a liberal soaking, so as to thoroughly moisten it, and lightening up the surface with a blunt fork when it has become firm. Be prepared with a supply of Tobacco water with which to attack Aphides the moment they are perceived upon Peach trees. Clean and loosen the surface about Strawberries; go over plantations made late last autumn, and replant places where the plants have failed. Take advantage of the dry state of the ground to get manure wheeled upon quarters where it may soon be wanted, and see that there is a good supply being prepared for the Celery crop, for without plenty of old rich manure large crisp Celery can hardly be obtained. As soon as the weather shall have become more favourable, get spring-raised Cauliflowers and Lettuces planted out, if not yet done, selecting for them a sheltered situation and light rich soil. A few branches of evergreens stuck amongst such things after planting so as to screen them from the sun is a great protection, and prevents their being dried up until the roots get hold of the ground. Get Scarlet Runners planted, also French Beans, if not yet done, and give the former an open situation and good deep rich soil, of which they are well deserving. Attend to ridge Cucumbers, Vegetable Marrows, Tomatoes, &c., and endeavour to get strong stocky plants, keeping them where they can be placed near the glass, and freely exposed to air on fine days; avoid getting them leggy and tender by too close treatment.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.
For the Week ending April 28, 1859, as observed at the Horticultural Gardens

April.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Min.	Mean	Temperature of the Earth. 1 foot deep.	2 feet deep.	Wind.	Rain.
Friday 22	19	29.725	29.667	58	23	40.5	47	47	N.W.	.00
Satur. 23	20	29.818	29.732	54	39	46.5	47½	47	N.E.	.28
Sunday 24	21	29.669	29.611	55	42	48.5	47½	47	S.E.	.12
Mon. 25	22	29.855	29.673	56	36	46.0	49	47½	E.	.53
Tues. 26	23	30.067	30.045	67	44	55.5	50½	48	S.W.	.00
Wed. 27	24	30.025	29.704	52	43	47.5	51	48½	E.	.00
Thurs. 28	25	29.545	29.494	55	46	50.5	50	49	E.	.08
Average		29.812	29.706	56.7	39.0	47.8	48.9	47.7		.81

April 22—Sharp frost; fine; very clear; frosty.
— 23—Slight haze; cold dry air; overcast; rain.
— 24—Stormy and wet; cloudy; showery; overcast.
— 25—Rain; showery; overcast; rain at night.
— 26—Overcast; mild and fine; low white clouds; overcast.
— 27—Cold haze; overcast; very boisterous at night.
— 28—Hazy and windy; rain; overcast; drizzly.
Mean temperature of the week, equal to the average.

RECORD OF THE WEATHER AT CHISWICK.
During the last 33 years, for the ensuing Week, ending May 7, 1859.

April.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 1..	61.0	40.0	50 5	12	0.51 in.	2	5	6	3	5	7	4	1
Mon. 2..	62.5	39.4	50.9	12	0.72	3	5	7	1	3	6	3	5
Tues. 3..	61.4	40.4	50.9	16	0.58	2	6	8	1	4	6	1	5
Wed. 4..	61.9	38.6	50.2	11	0.70	5	8	8	—	5	4	2	1
Thurs. 5..	62.1	39.4	50.7	19	1.26	5	9	3	3	7	4	1	1
Friday 6..	60.4	39.4	49.9	13	0.68	—	10	4	3	4	6	4	2
Satur. 7..	61 5	40.0	50.7	12	0.39	4	8	5	2	5	6	3	2

The highest temperature during the above period occurred on the 4th, 1833, and 6th, 1850—therm. 81 deg.; and the lowest on the 2d, 1855—therm. 20 deg.

Notices to Correspondents.

BIRDS: *Avis* would be obliged by some advice about her Canaries. She has (or had) 30 birds in an aviary outside the house. They have "flourished" for the last 6 years, but latterly (about 3 months ago) they have been attacked by a disease which renders them blind; they lose the use of their wings, and gradually become weaker until they die. It is spreading fast among them, and she will feel greatly obliged if some correspondent will suggest some remedy. The London bird fanciers are unacquainted with such a case.

BOOKS: *Exeter.* We have Liebig's new Letters on Agriculture before us; and they will be reviewed hereafter, when we have *studied* them sufficiently. The great German chemist has a right to expect that his views are understood before they are criticised, and such works as that in question can only be understood by diligent study.—*A Young Gardener.* Lindley's Introduction to Botany is much too difficult a book for a beginner. Study that author's School Botany, last edition, and nothing else for the present. You will not find anywhere the pronunciation of such terms as you mention.—*Constant Reader.* We should recommend for the use of your Under-gardeners the following:—Sowerby's Wild Flowers, now appearing in numbers; Lindley's School Botany; Loudon's Self-instruction for Young Gardeners; Neill's Fruit, Flower, and Kitchen Garden; Kemp's How to Lay-out a Garden; Lindley's Theory and Practice of Horticulture for Vegetable Physiology; for birds and animals, White's History of Selborne; Jenyns's Observations on Natural History; Waterton's Three Essays on Natural History. For insects, Kirby and Spence's Introduction to Entomology, the small edition in one volume; we are sorry to add that no other work on common insects is well suited to Gardeners' purposes. Kollar On the Insects injurious to Gardeners, translated by Loudon, is the best, but *very, very* incomplete; it is good however as far as it goes.

INSECTS: *A B C.* The insects you have sent found on your Cucumber plants after dark are a small species of rove beetle (Oxytelus carinatus) usually supposed to prey on mites and other soft-bodied insects. Pray look again carefully at the leaves after dark. If they be the real enemies, you may trap them by sticking slices of Turnip or Potato into your hot-bed.—*H T.* Your little scarlet insects found upon Vines are Acarideans named Trombidium holosericeum. We believe they are quite harmless, and that they do no injury to vegetation. *W.*

MEXICAN PINES. We have received from *Messrs. Roezl & Co.* specimens of three Pines for which they desire names. That from Durango is P. Wincesteriana; a three-leaved species from Michuacan, forming a tree 60 to 80 feet high, we do not recognise; another three-leaved kind from the same province is like a long-leaved Teocote with the cones of P. oocarpa; we do not identify it.

NAMES OF PLANTS: We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have or could have undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*W K.* 1, Lastrea dilatata; 2, Polystichum angulare; 3, Lastrea æmula (fœniseeii)—probably, but the specimens are sent in a bad state; 4, Asplenium lanceolatum.—*Dick.* Pittosporum Tobira.—*Davy.* 1, Phlebodium areolatum; 2, Athyrum Filix-fœmina; 3, Lastrea Filix-mas; 4, Dennstædtia, *alias* Dicksonia davallioides.—*J H L.* Lycium afrum. *John Day.* Be so good as mention its habit. Are the stems erect or pendulous? round or angular? are the leaves broad or narrow? do the flowers grow from the side or the end of the stem? We shall then be able to answer the question.—*A W.* Your "Parlour Ivy" is Senecio Mikaniæ.

SOY: *R P.* The sauce so named should be a Chinese preparation of a kind of Bean fermented and improved by certain unknown ingredients. What is commonly sold is a mixture of treacle and salt; sold at 2*s.* a pound instead of 6*d.*

WOODLICE: *New Sub.* Trap them by means of flower pots laid on their sides baited with a cold boiled Potato covered with dry Moss. A toad or two put into your frames will also tend to thin their numbers, as will also watering round the sides inside with boiling water. In the latter case, however, care must be taken not to injure the plants. See also p. 336, of to-day's Paper. ‡

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. Nesbit, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

LONDON MANURE COMPANY, removed to 116, Fenchurch Street, E. C. (Established 1840), have the following MANURES ready for delivery:—

CORN MANURE for SPRINGTOP DRESSING
URATE
MANGEL MANURE
SUPERPHOSPHATE OF LIME
BLOOD MANURE
} all of guaranteed quality.

In consequence of the reduction in the price of raw material the London Manure Co. are enabled to lower the price of their Superphosphate of Lime, and to materially improve the Corn Manure and Urate.

The London Manure Co. also supply PERUVIAN GUANO (direct from Messrs. A. Gibbs and Sons), SULPHATE of AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of value. Wholesale dealers supplied.

116, Fenchurch Street E.C. Edward Purser, Secretary.

REDUCTION IN PRICE OF LAWES'S MANURES.

MR. LAWES begs to announce that he has this season reduced the price of the Manures manufactured by him, viz.:—

TURNIP MANURE	from £7 to	£6 6
SUPERPHOSPHATE OF LIME ..	„ 7 to	6 6
MINERAL do. ..	„ 6 to	5 5
BARLEY MANURE..	..	8 0

Prof. Way and Dr. Voelcker have sampled from a bulk of 5000 to 6000 tons at his factories, and their report and analyses are given in full in Circular to be obtained on application at his office, 1, Adelaide Place, London Bridge, E.C., or of his local Agents.

N.B. Genuine Peruvian Guano direct from Messrs. Gibbs, Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures. American Cotton-seed Cake supplied.

ESTABLISHED 1812.

H. AND T. PROCTOR'S TURNIP MANURE.—Messrs. H. & T. P. draw particular attention to this valuable Manure, which contains all the elements necessary for the full development of the Turnip Crop, so combined, that, from their chemical knowledge and long experience, they feel satisfied is most advantageous to the consumer. It has been very extensively used by most of the eminent Agriculturists of the day, and has attained a high reputation throughout England, Scotland, and Wales, and, they venture to say, is unrivalled for the weight and quality of the Bulbs which it produces. The application of this Manure to the Turnips will be found to benefit considerably the after crops of Barley, Clover, and Wheat.

POTATO, GRASS, BARLEY, CLOVER, AND WHEAT MANURES; also BONE DUST, PERUVIAN GUANO, and SUPERPHOSPHATE of LIME, warranted of the best quality.

Apply to H. & T. Proctor, West of England Depôt for Artificial Manures, Cathay, Bristol; or Proctor & Ryland, Birmingham, and Saltney, near Chester.

BURNARD, LACK, AND CO.'S CONCENTRATED SUPERPHOSPHATE OF LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.

CONCENTRATED TURNIP MANURE, equal in value to the preceding.

Of these Manures Dr. Voelcker says:—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."

Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to Burnard, Lack, & Co., Sutton Road, Plymouth.

PERUVIAN GUANO.

The present price of this valuable Manure is—

12*l.* per Ton for 30 Tons and upwards,
13*l.* 5*s.* per Ton for 1 Ton up to 30 Tons.

And, to guard against the purchase of adulterated mixtures and of inferior Guanos purporting to produce results equal to Peruvian, consumers are recommended to apply either to ourselves, to our agents, Messrs. Gibbs, Bright, & Co., of Liverpool and Bristol, or to dealers of established character, in whose honesty and fair dealing they may place implicit confidence.

Antony Gibbs & Sons.

SUCCESS OF THE NEW GUANO; Imported under Lease from the Crown.—Though the experiments with KOORIA MOORIA GUANO were made late in the season, and under adverse circumstances, the successful results obtained confirm beyond doubt Professor Voelcker's report—(in No. 41, Part I., vol. xix., Royal Agricultural Society's Journal)—that Ammoniacal manures, applied to Turnips in the experimental field, kept back at first the crop, and had no beneficial effect either alone or in conjunction with phosphates.

The Kooria Mooria Guano is essentially a phosphatic manure, containing sufficient ammonia for roots, and, with a mixture of one-fourth of ammoniacal guano, cannot be excelled for either top-dressing or grain crops. It is a natural deposit, and will be delivered as imported, free from risk of adulteration. Deeply impressed with the necessity of encouraging the import of this valuable manure, her Majesty's Government has given such increased facilities for shipment, that arrangements have been made for a considerable supply. Purchasers can be supplied with suitable quantities from cargoes now on sale, containing from 45 to 66 per cent. phosphates. Present prices, 4*l.* 10*s.* to 6*l.* 10*s.* per ton, on applying to Joseph Hindson, Broker (one of the Lessees under the Crown), 20, North John St., Liverpool. Government Lessees: Ord, Hindson, & Hayes.

"Greystoke, Cumberland, Dec. 16, 1858.

"Dear Sirs,—I beg to inform you that I applied the Kooria Mooria Guano I had from you for Turnips, on land of a loamy character, incumbent on a stiff clay subsoil, and recently drained. On each side of the plot sown with Kooria Mooria Guano were Turnips manured with best Peruvian Guano. The quantities applied of each sort were of equal weight for weight per acre. The crop—a very good one throughout—is now being eaten off with sheep. Very little perceptible difference can be discovered, but if anything that difference is in favour of the Turnips sown with Kooria Mooria Guano.

(Signed) "John Barker."

"Messrs. J. & J. Graham, Guano Merchants, Penrith."

A Pamphlet, "Hints on Guano," containing a large number of reports from well-known agriculturists, and analysis of the cargoes here, may be had of the Broker, at the above address.

ARTIFICIAL MANURES.

FREDERICK CORNWELL begs to inform his friends and the Agricultural public that he can now supply a "SUPERPHOSPHATE of LIME" superior to anything yet produced. Each Bag guaranteed to contain from 20 to 25 per cent. of "Soluble Phosphate of Lime." Price 5*l.* 10*s.* per ton, delivered free to any Railway or Wharf in London. Dealers and the trade supplied. LINSEED-CAKES, COTTON-CAKES, and all descriptions of ARTIFICIAL MANURES at lowest market prices.—Offices, 7, Great St. Helen's, London, E. C.

IMPORTANT TO FLORISTS AND GARDENERS.

DEALEY AND DAWES'S highly CONCENTRATED FERTILISING MANURE, manufactured expressly for Stove and Greenhouse Plants, Vegetables, Trees, &c.

Messrs. Dealey & Dawes draw particular attention to this valuable Manure, which they guarantee contains all the elements necessary for the development of Soft and Hard-wooded Plants, Vegetables, &c.

Retailed by most respectable Seedsmen, in Lib. packets, with full directions for use; and sold Wholesale at the Manufactory, in boxes containing 112 packets, also loose in boxes of 28 lbs. each. Samples and testimonials free by post on application.—Oldbury, near Birmingnam.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.

Principal—J. C. Nesbit, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

BATH AND WEST OF ENGLAND POULTRY EXHIBITION.—Entries close May 1.—In addition to the ordinary Money Prizes there will be awarded 22 handsome SILVER CUPS, open to all England.

Prize Sheets and Certificates to be obtained of the Honorary Secretary, Mr. Kingsbury, Hammett Street, Taunton.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.—WARWICK MEETING.

Entries for IMPLEMENTS, CHEESE, WOOL, FARM-GATES, and DRAINING PIPES, must be made on or before May 1.

Entries for LIVE STOCK must be made on or before June 1.

*** All Entries received in each case after those respective dates will, without any exception, be disqualified, and returned to the senders.

PRIZE SHEETS may be had on application at the Offices of the Society, 12, Hanover Square, London.

The Agricultural Gazette.

SATURDAY, APRIL 30, 1859.

MEETINGS FOR THE ENSUING WEEK.

Monday, May 2—London Farmers' Club. .... 6 P.M.
Wednesday, — 4—Agri. Society of England .. Noon.

If Woolston farm, near Bletchley, presents the longest experience and oldest example of steam culture in this country, that of Overtown, near Swindon, is probably the completest instance of the kind. Mr. Redman, the tenant of this farm, has not been many months a steam ploughman. The instrument which we saw at work upon his land last Saturday is the very one which gained the Society's prize for Mr. Fowler at the late Chester Show. But in this short time, that is since October 1, it has displaced 13 oxen and 3 horses from a farm requiring 13 oxen and 13 horses for cultivation, and it has done all the winter cultivation of the land. With the exception of a small and somewhat awkward field ploughed by horses for Mangel Wurzel, it has done all the ploughing and grubbing of a farm of 410 acres of stiff arable land, besides turning over 40 acres for a neighbour.

Overtown lies four or five miles south of the Swindon station. The farm is laid out in large and open fields presenting great facilities for the long draught and regular working of Fowler's engines, ploughs, and anchorage. It is for the most part a stiff soil on chalk marl, liable to great injury from the trampling of horses if ploughed at an unsuitable time. In every respect, therefore, it presents the conditions under which steam culture is likely to be most efficient and profitable, and Mr. Redman with comparatively little enthusiasm apparent in his enterprise, but as a matter of sober calculation on business principles, has adopted Fowler's apparatus with every probability of its proving just the substitute for horse-power which the soil requires.

We saw 11 acres of Beans which had been put in after steam ploughing, 13 acres ploughed for Peas, nearly 100 acres of Wheat, 28 acres of Vetches, and upwards of 50 acres ploughed for roots—all by the steam plough.

The cultivation proceeding last Saturday was grubbing for Swedish Turnips of land previously ploughed by steam in the autumn. The grubbing was most effectually done by the shares and frames of Fowler's system of ploughs, the mould-boards having been removed. Nothing could be more satisfactory than this work, which under the circumstances was greatly preferable to a turning over of the soil by ploughs, as the soil was very foul with Thistle, Crowfoot, and other perennial weeds, all of which it was well to keep upon the surface to be dragged out by harrows. This harrowing and the hauling of the manure and produce is almost the whole of the work which will be left for horse power upon the farm. Probably there are seasons when the 10 horses remaining in the stables will be insufficient for the work of this kind to be done. At harvest time, however, when this need is most likely to arise, it will be possible to hire additional force from the vale farms, and so avoid the need of keeping a stock of horses all the year to meet the necessities of a single month.

The impression left upon the mind by an inspection of Mr. Redman's crops at present is, that the ploughing for some of the Wheat was too deeply done; an inch or two of the subsoil was brought up, and the land is somewhat loose in places. This is especially the case in one field where farm manure was ploughed in by steam, and where the land now treads somewhat loosely. On the other hand a ridge or two of the land under Peas, which had been ploughed by horses, did not promise so well as the rest of the field which had been worked by steam power. In the cultivation of fallow crops, as Turnips, Mangels, &c., there can be no doubt that steam power as acting under Smith's or Fowler's patents is unrivalled.

No other could accomplish such work as some of Mr. Redman's farm presented. The dynamometer, we are assured, exhibited a strain on one occasion of 10 cwt. per plough when turning a furrow about 7 inches deep. The horses needed for such a strain as this would have done more harm than good in trampling as they turned it.

That Mr. Redman's experience of one of the first of Fowler's apparatus—for it was used at Salisbury as well as Chester—should not be altogether without a drawback was to be expected. He is quite aware of his responsibility as one of our pioneers in the work of steam cultivation, and does not hide any of the difficulties he has overcome.

The following diary of two months' work which he has given us is a true account of breakages and stoppages as well as of work accomplished. We transcribe it as a truthful account of steam ploughing on land exceedingly well suited to it, by men however to whom it was entirely new. It should however be added that since Nov. 13 last, when the new rope was provided, not a single casualty of any kind has happened.

1858.

Sept. 29. Sent 10 horses to the station (four miles) for the steam plough—half a day.
„ 30.
Oct. 1. and half a day on } Ploughed about 15 acres for Vetches.
„ 2.
„ 4. Moved to the "Nine and Thirteen Acres."
„ 5. Ploughing for Wheat.
„ 6. Wet afternoon.
„ 7. Half a day's work.
„ 8. Propelling wheel of anchor broke; sent a man to Ipswich for a new one.
„ 10. Arrived, and got in order for work. Wet morning.
„ 11. Very heavy work, only three furrows at once.
„ 12. Finished and shifted to "Heathy Ground Field."
„ 13. Three furrows at work. Ploughed for Wheat 4¼ acres of very heavy work; land in a wet state.
„ 14. Broke furrow-arm at 11 o'clock; sent it to be repaired.
„ 15. Three furrows at once, all day.
„ 16. Four furrows at once, all day; fine weather; lighter soil; seven acres done during to day.
„ 18. Wet. Only two hours at work.
„ 19. Wet. No work.
„ 20. Began at 9 o'clock. At 12 o'clock a neglect to "signal" caused plough to run into anchor, breaking the large sheave; telegraphed for another.
„ 22. Sheave arrived.
„ 23. Finished "Heathy Ground Field," 25 acres—half was a bare fallow, and half a worked Clover lea, both for Wheat. Moved to "Middle Furlong Ruddles Field" at 6 o'clock.
„ 25. Worked three furrows, in very sticky, bare fallow; rope (an old one) gave way twice; a strand broke twice.
„ 26. } Three furrows, exceedingly heavy work.
„ 27. }
„ 28. Ploughing Clover lea, four furrows at once; broke strands of rope.
„ 29. Ploughing Clover lea, four furrows at once; rope gave way once; one strand broken twice.
Nov. 1. Obliged to remove one plough, and finished with three furrows, because of the ground being so stiff; rope gave way twice, and broke a strand twice; 29 acres done in the last six days. Moved to "Common Field," 11 acres, at half-past 6 o'clock.
„ 2. At 9 o'clock broke a strand; worked three furrows in very heavy soil. (Draught of a Howard's iron plough, 3 feet 6 inches long, is here 10 cwt. for a furrow 10 by 7 inches.)
„ 3. Rope gave way; joined at 11 o'clock. About 3½ acres done during to-day.
„ 4. Rope yielded twice, and strand broke twice.
„ 5. Moved to "Long Eleven Acres Field."
„ 6. Finished the piece, 8 acres with three furrows.
„ 8. Moved to the top of "Marlborough Way Field;" waited for new rope.
„ 9. Began work at 2 o'clock, with three furrows; the long stubble choked the ploughs very much.
„ 11. Delayed three hours in altering the plough, trying a new method of raising it.
„ 12. Received a new steel wire rope, 800 yards long.
„ 13. Old rope gave way; put on 450 yards of the new.
„ 15. Finished the piece, about 24 acres.
„ 16. Began at 11 o'clock to plough another part of the field with three furrows, 7 inches deep. The whole field is about 155 acres, and the engine traversed across the middle and back again, thus embracing many days' work, without a removal, except of the anchorage and rope.
„ 17. }
„ 18. } All day at work.
„ 19. }

Nov. 20. Broke propelling wheel of windlass at 1 o'clock.
„ 22. Wheel repaired and home again at 9 o'clock.
„ 23. Wheel fitted on at 10 o'clock; sharp frost.
„ 24. Hard frost; no work.
„ 25. Change of weather; at work at half-past 9 o'clock.
„ 26. Finished the piece, 54 acres for fallow. (Draught of Howard's plough, 6 cwt. for 10 by 6 inches furrow.)

We must not extend our remarks on Mr. Redman's farm at present. He has himself given us the gross result of a winter's experience at p. 368. Two hundred and ten acres have been ploughed for 112*l.* 10*s.* 6*d.*—the draught being often 8 cwt. to a furrow—13 oxen have been dispensed with—the horses have been reduced from 13 to 10. These are results sufficiently encouraging to any one who is balancing the alternative of steam cultivation with the existing method by horse-power alone.

What is Meadow Baldness?—From the advertisements one sees in agricultural prints of "Grass seeds to renovate old pastures," a novice might almost be induced to believe that bare spots in a meadow were so easily cured that, as for ringworm, every one has a quack remedy which is certain in its operation. In order to a due estimation of this matter, we now direct our readers' attention to the following inquiries:—

1st. The nature and causes of meadow baldness.
2d. The nature of the advertised remedies.
3d. The principles which should guide a choice of remedial measures.

1. If we examine the best old pastures in the country we shall find that the age of a meadow instead of necessarily leading to decay is, on the contrary, a guarantee for its luxuriance, old pastures indeed being usually too well attended to to need renovating seeds. But occasionally from taking hay crops too frequently, from want of rolling and harrowing and other cultivative processes, the Grass begins to die in patches and the jungle bushy method of growth of what is left behind is further aggravated by insect attacks, as the eating away of patches of Grass by caterpillars, especially those of the *Melolontha vulgaris*, cockchaffer, which caused such mischief last year, or the smaller species *M. communis*, locally so abundant, whilst another kind of injury results especially in certain soils from the formation of ant hills.

The primary cause of bald patches, however, in turf, will ever be the mistaken plan on which haymaking is too often conducted. The farmer wants as heavy a crop of hay as he can get; or if not influenced by this, he lets the Grass get too old before cutting, either from want of hands or due appreciation of the results; and thus, as the natural end aimed at in seeding has been attained, we may soon see how readily the old stems die away, and in proportion to the goodness of the crop, that is to the quantity of flowering culms, so will the mischief from this cause be increased. The true causes which lead to the need of "renovation" may be briefly described as:—(1) *Mechanical*, including unevennesses of surface (which are in a few years injured by neglect of cattle droppings) the growth of large weeds, such as Thistles and Nettles, and want of firmness from neglect of rolling.—(2) *Botanical*.—Thinness of Grass, arising from allowing the individual plants to exhaust themselves by too great a development of woody culms and seeding, a condition which is of course aided by the exhaustion of chemical principles which such growth necessarily induces, and thus leading to the most important cause, viz.—(3) *Chemical*.—If too much be taken from a meadow in the shape of hay, however rich it may be, exhaustion of its chemical or fertilising principles must at some time be the result. Thus the rich meadows on the alluvial flats of Cheshire had for years been getting poorer, a decadence which showed itself by a growth of Rushes, Sedges, and Reedy Grasses, the luxuriance of which was at one time an indication to the farmer that his meadow wanted renovating, and his plan was to apply a thick dressing of salt which had the effect of killing not only the Grasses but the weeds, and indeed the whole herbage, and of course these as dead plants soon decayed into plant elements, which were thus brought into the condition of manure to grow fresh plants, and as the seeds of these were still in the soil such manuring would cause their active germination, and the thus renovated land would for a time produce good Grasses as a rule, and bad ones as an exception, but as the former became again exhausted, the exceptional examples would increase and ultimately obtain possession and mastery.

Again, farmers often try to renovate poor pastures by years of depasturing, and with great success, but it will be seen that with this plan as with the former, nothing is brought to the soil. Sheep feeding or salting cannot make phosphatic matter for example, and thus this important fertilising principle must become less and less with every portion of bone and muscle that is made from it, and we need not wonder therefore that with the kinds of renovation mentioned, though the ruin would be retarded, and that too for a lengthened period, yet it must come some time unless chemical renovation be brought about, as indeed is now most successfully done by the application of bones, superphosphate, and guano.

2. Let us now look at the advertised remedies for these defects.—Of course those of the seedsmen will be of a botanical kind. Formerly the farmer would collect the seeds and rubbish from his hayloft to produce the desired effect, but fortunately farmers in general are now so early with their hay and really have become so much aware of the exhausting nature of growing Grass culms too old that few seeds are ripened, and so any renovation from the hayloft will be exceedingly uncertain: hence, then, the seedsman offers to supply the remedy in "Grass seeds to renovate old pastures," in which we have no doubt honest men try to get a good recipe, and to make it up in the prescribed proportions with genuine articles. Testimonials are never wanting in recommendation of the results; but as to the value of these, we must nevertheless give an opinion that the case is just a parallel to those of universal remedies in general.

But now as to the actual nature of the remedies sold for worn-out meadows. As we have fortunately a more ready method of analysing these than even that possessed by the chemist in compounded medicines, we shall give our results in as far as such examination warrants a conclusion, and they lead to this, that "seeds to renovate old pasture" *consist mostly of the dregs and refuse of the seed market*, such as seeds from a dirty patch full of weeds of all kinds, and old seeds which will not germinate. Take for example the following analysis of a sample of the kind:—

Contents of sample of Renovating Mixture.
Italian Rye-grass, *Lolium italicum.*
Black Bent, *Alopecurus agrestis.*
Soft Brome, *Bromus mollis.*
Soft Grass, *Holcus lanatus.*
Creeping Crowfoot, *Ranunculus repens.*
Narrow-leaved Plantain, *Plantago lanceolata.*

The last five were no doubt weeds which were mixed with the Clovers and other meadow Grasses of the compound; but that the bulk should be Italian Rye-grass, which is not perennial, is an evidence of great ignorance of what is required for the renovation of *permanent pasture*, or rather shows a belief that any drug is deemed good enough for a quack nostrum.

3. The principles which should guide us in remedying decayed pasture should have more immediate reference to the soil than to the plant, for it cannot be too strongly urged that Grass and meadow herbage is natural to our fields, and its decay arises from exhaustion of some useful material in the soil; *renovation* must therefore be sought for in the land. Without this it would be almost as efficacious to sow bad seeds as good, for if Grass has decayed from natural causes, such as poverty, the sowing of Grass seed is not likely to be of great use. It is just probable that a neglected pasture may have in it sufficient seeds for every purpose, if merely manure be applied capable of stimulating them into existence; in reference to which every farmer will recollect the sudden appearance of Clover in meadows in which it before only existed as an exceptional part of the pasture, on the application of lime or superphosphate.

Hence then drainage, liberal manuring where required, rest from hay-making, depasturing instead, are all so many agents in renovating pasture, without which seeds for the purpose may almost as well be bad as good, just as in restoring loss of hair arising from a change of constitution hogs' lard will be quite as efficient as bears' grease.

When however conditions are so altered as that seeds can be made grow, we should not only seek the best of their kinds, but at the same time we should make choice of the species according to the nature of the soil, both in Grasses proper, and in the Clovers and other fodder plants; for as what will flourish in sandy soils will not succeed in heavy lands, it follows as a matter of course that the notion of an invariable mixture for all cases is founded in error; and though so many certificates can be adduced in favour of very worthless mixtures, we must look upon this not as an evidence of the success of the mixture itself, but rather as showing that the result has depended upon attention to the other important principles to which we have adverted.

TEN ACRES OF LOIS-WEEDON WHEAT

GROWN BY HORSE-TILLAGE WITHOUT MANUAL DIGGING.

You are aware that I am conducting this experiment upon a piece of flat alluvial land, a clayey loam, resting at considerable depth upon "silt," or the tidal sand, underlying all our Lincolnshire salt marshes. Being low and wet compared with the rest of the farm, this field has never had a very good character; it has been partially under-drained, and in arable culture for a great many years. The rotation of late has been as follows:—1850, fallowed and manured for red round Turnips, fed off; 1851, Oats; 1852, Clover, mown for hay, and grazed afterwards; 1853, Wheat; 1854, manured for Beans; 1855, very heavy and laid crop of Wheat; 1856, Barley, half of it a good crop, half rather light; 1857, Wheat, on the Lois-Weedon or striped system; 1858, Wheat, on the same plan grown in the fallowed intervals of the last crop; 1859, Wheat on the same method. The last application of any kind of manure was for the Beans in 1854, since which have thus been taken four crops of Wheat and one of Barley in the 5 years, including the present.

I cannot enter just now upon a description of my mode of ploughing, subsoiling, scarifying, &c. which constitute the fallowing and preparation of the intervals in lieu of Mr. Smith's digging and forking. I do not attain to a greater depth than 9 or at most 10 inches at present, that is to about three-quarters of the depth that the light land 4-acre piece is worked at Lois-Weedon; my horse work is not so complete and effectual as hand labour would be, but it costs me less, and therefore I can afford to realise a smaller return than is obtained in the magnificent yields of Mr. Smith. According to the last "Word in Season," the average expenses of cultivation for the "clay piece" are 4*l.* 19*s.* 6*d.*; add rent, 40*s.*; rates and taxes, 4*s.* 3*d.*; and the total outlay is 7*l.* 3*s.* 9*d.*; and 5 per cent. interest on this brings the whole amount to 7*l.* 11*s.* per acre. The average produce of 35 bushels per acre (though greater of late years) makes the cost of growing the Wheat 4*s.* 3*d.* per bushel, without reckoning anything for the straw, which is so much profit in addition. On the light land clayed the expenses are rather less, I believe; and the average yield of 34 bushels makes the cost of growth 4*s.* per bushel, saying nothing about the straw. What is the expenditure in my case? Having kept an accurate account of all labour done, and putting down 2*s.* 6*d.* for each day's work of a horse, I find that the working expenses, seed, &c., come to 3*l.* 4*s.*; that is, about one-third less than Mr. Smith's expenses. Adding rent, 40*s.*; tithe, rates and taxes, 9*s.* 10*d.*; the total outlay is 5*l.* 13*s.* 10*d.*; and interest at 5 per cent. swells the whole to 5*l.* 19*s.* 6*d.* per acre. So that if I get 28 bushels yield, the cost will be 4*s.* 3*d.*, the same as on the Lois-Weedon clay piece; and if I get 30 bushels per acre, the cost will be 4*s.* per bushel, as on the Lois-Weedon light land 4-acre field, and the straw will be a + quantity into the bargain. Mr. Smith gets a very handsome profit; and if I produce corn of equal value per quarter for the same cost per quarter that he does, I shall evidently get as much profit upon every quarter I grow, and as large a per centage upon the capital engaged. But my produce being less per acre than his, of course the profit per acre will be also less—precisely in proportion as my outlay is less. Do I, and can I, obtain this requisite yield of 28 to 30 bushels? Well, my second crop (harvest of 1858) yielded precisely 300 bushels of marketable corn, which divided by 10, the exact number of acres, gives a produce of 30 bushels per acre. I received of the merchant for this 300 bushels of corn, 71*l.* 3*s.* 6*d.* (or only 39*s.* per quarter for the best, and 32*s.* per quarter for the portion of second quality); add to this 1*l.* 4*s.* for 8 bushels of "tailing," and the total value of the grain comes to 72*l.* 7*s.* 6*d.*, or 7*l.* 4*s.* 9*d.* per acre. Surely the straw, about 25 to 30 cwts. per acre, may be reckoned as worth 10*s.*, although I cannot dispose of it except by conversion into manure and use as litter and cattle fodder; and this will make a total return of 7*l.* 14*s.* 9*d.* per acre. Deduct the expenses, 5*l.* 19*s.* 6*d.*, and there remains a clear profit of 1*l.* 15*s.* 3*d.* per acre. Now, observe that this is in spite of a wretchedly bad market. With a yield of 30 bushels, a rise of 8*s.* per quarter in price gives an increase of 30*s.* per acre in the profit made. Had the price been 46*s.* per quarter, the clear profit would have been 3*l.* 5*s.* per acre; had the price been 54*s.*, the profit would have been 4*l.* 15*s.* per acre; had the price been up as high as 62*s.*, the profit would have reached to 6*l.* 5*s.* per acre. And at any rate the 46*s.* and the 54*s.* are not at all excessive prices for good red Wheat in a course of years; whereas an average of 39*s.* for red Wheat, weighing 60 lbs. the imperial bushel, is exceedingly low.

May I reasonably expect a produce of 30 bushels per acre, not for perpetuity but for a series of years? I must confess that I neglected last year's crop (the 30-bushel one) in some important particulars. I did not stir the intervals as deeply as I might have done; I only horse-hoed them once instead of two or three times, and I never pulverised them sufficiently well to admit of earthing up the Wheat rows; besides which my scarifier was so badly contrived that its side wheels crushed and injured a vast deal of the Wheat plant, which never recovered the damage. All these matters will be rectified in the case of the third crop now growing and looking extremely healthy and well. And the Wheat crops in this neighbourhood were all deficient in yield and quality,

the harvest years. I m 30, in fact having been the worst for several 30 bushels, ——— therefore confidently look for more than first crop of so ither than less at the ensuing harvest. My was after, I some 857 was only 24 bushels per acre, but it was in surface barley; it was very badly got in, the land prime con foul state, the season much too late when the tion fr rations for sowing began, and the tillage opera- thane, were very imperfectly done during the growth of pstic crop. I am happy to say that the land is now f pretty clear from Couch, the Buttercups and Thistles ra which infested it are getting tired of the repeated til- sa lage, and the Chickweed and choking annuals are only m far troublesome as to need frequent hoeing and ex hful weeding.

In conclusion let me ask why may not farmers adopt this system of Wheat growing for two years in succession, without trying (if they feel timid) to make a perpetual thing of it? On 300 acres arable, say 100 acres are Wheat every year in the ordinary method of cultivation; if my practice were adopted these acres would be in Wheat for two years, so that there would be 200 acres of Wheat every year upon all the land in rotation, the remaining 100 acres to bring enormous crops of Mangel and other roots, and grain and green crops for which the soil may be adapted, there being such a large amount of straw to assist in manuring it.

When corn made 46*s.* per quarter there would be a clear profit or income of 650*l.* per annum from the 200 acres yielding 30 bushels per acre, and the other 100 acres could hardly fail to yield profit in as ample a proportion when replenished by all the straw from the 200 acres. But if I get 30 bushels yield for the fourth white straw crop without manure, the produce from the 200 acres in the case supposed would doubtless be very much greater. Occupier of 300 acres of Wheat soil, is it possible for you to realise (with your landlord's consent) 1000*l.* per annum clear income from your farm without excessive outlay, and when Wheat is under 50*s.* per quarter? *I. A. C.*

THE EXHIBITION OF INVENTIONS AT THE SOCIETY OF ARTS, ADELPHI.

[We extract from the Catalogue published by the Society of Arts the following particulars of such of these inventions as are interesting to agricultural readers.]

Patent Aerated Bread; Peek, Frean, and Co., Dockhead.—In this bread, as in the ordinary fermented bread, the vesicular structure is imparted by the expansion of carbonic acid gas within the substance of the dough; but, whereas in fermented bread the carbonic acid is derived from the fermentation or degradation of a portion of the flour itself, in this bread the pure carbonic acid gas is superadded to the flour, which does not undergo any degradation whatever. The vessel in which the flour, water, and salt are mixed together (A) consists of a very strong iron globe, 3 feet in diameter, capable of bearing a pressure of 300 lbs. on the square inch; it has an opening at the top, to which an air-tight cover is fitted, and an opening at the bottom also capable of being closed air-tight. Through its centre a shaft or rod passes, on which are fitted iron mixing arms; this shaft or rod has a wheel fitted to one end, in which a smaller wheel works, which smaller wheel is moved by a pulley, which in its turn receives motion from a steam engine. The bottom of the water vessel (L) made of copper, and tinned inside, communicates with the vessel A by a pipe in which there is a stopcock, the top communicates by a descending pipe, in which is a stopcock. To this copper vessel is attached a water gauge which marks the number of gallons drawn in or out of it. Through the bottom a pipe *k* enters, and terminates within by a rose. To work this apparatus, flour and salt are put into the vessel A, which is afterwards closed air-tight, and after exhaustion of the air contained in the vessels A and L, water is drawn into L. Carbonic acid gas is then forced into it through the pipe *k*, and being discharged from the rose, bubbles through the water, rises to the top, and passes down into the vessel A. By this means the vessels are filled with a condensed atmosphere, and the water is saturated at the same time. When sufficient fixed air has been forced into the vessels the stopcock is opened, and the proper quantity of water is run into the flour. The mixing arms are then set going, and in from four to six minutes the dough is perfectly mixed. It is then drawn into pans or moulding baskets in the same way as soda water is drawn into bottles, &c., and is passed into the oven without being touched by the hands. During the drawing the carbonic acid gas, dissolved by the water while under pressure, is evolved, and by its expansion raises the bread.

Bread-Making Machinery; John Miller, Upper George Street, Edgeware Road, W.—The machine exhibited is that portion of the machinery which forms the dough into loaves. It consists of a sloping platform, which delivers the dough into a pair of steel rollers working horizontally at the end of it, capable of adjustment at any suitable distance. After passing through these rollers the sheet of dough falls on an endless web revolving horizontally, which, by means of a simple mechanical arrangement, is carried step by step the exact space required for the cutter, which stamps out the loaves in succession as it is carried along the web. The pieces of dough thus cut, which are not more than ¾ of an inch thick, are set side by side on flat tins, and placed in a warm atmosphere for about 30 or 40 minutes, until the dough has risen somewhat, when they are put into the oven. The other machinery used by Mr. Miller comprises a mixing machine and a kneading machine. The mixing machine consists of an iron cylinder, through which a horizontal axis passes, having a series of beaters, or blunt knives, fixed at right angles to it. Each knife or beater is bent round, in the form of an oblong parallelogram, which extends from the axis to within a short distance of the inner surface of the cylinder. The cylinder is stedfast, while the axis carrying the beaters revolves inside. The materials for making the bread are placed inside the cylinder, and in a very short time, by the action of the machine, they are thoroughly mixed. The kneading is performed by passing masses of the mixed material, after it has stood a sufficient time, through a pair of steel rollers several times, and thus it becomes kneaded and thoroughly amalgamated into a uniform dough, suited for passing into the machine exhibited, which forms it into loaves. (See "Journal of the Society of Arts," vol. vii., p. 236.)

Patent Bread-Making Machine; E. Stevens, 5, 6, & 7, Cambridge Road, N.E.—This machine has a double bottom for containing hot water in cold weather, to regulate and force if you wish the sponges and doughs, avoiding the necessity of using so much hot liquor, which is injurious to the bread. In very hot weather this chamber can also be used for cold water, to keep the sponges and dough cool, which always generate heat in fermentation, (particularly in hot weather); this application of cold water will cause the fermentation to work gently, producing better bread. The mixer is kept in its place by means of the pawl, which has only to be raised, when the mixer is taken out of the machine; by this means the trough is perfectly even and smooth inside in every part.

Patent Carrot Seed Bearding and Dressing Machine; J. Scott, 111, Drummond Street, Euston Square. N.W.—This machine removes the hirsute covering from Carrot seed, without, as is stated, in the slightest degree injuriously affecting it; but on the contrary, it is asserted that the vegetative properties of seed so dressed are improved from 25 to 30 per cent. The operation is effected by the use of cylinders or cones, covered with wire card metallic brushes, perforated metal, or other suitable rough surface enclosed in wire gauze casing, and capable of being regulated to suit the description of seed required to be operated on. By a slight modification it may be adapted for milling Clover or Trefoil, and other such like purposes.

Patent Britannia Self-raking Reaping Machine; B. Samuelson, Banbury, and 76, Cannon Street, West, E.C.—This machine is made to cut 5 or 6 feet in width and is drawn by two horses in advance of the near side. The action of the knife is reciprocating, the same as McCormack's, Hussey's, &c. The peculiarity in this machine is the self-acting apparatus for raking the sheaf off the platform; this is effected by means of very simple mechanism, communicating from the driving wheel to a rake-head fitted on a crank. As the cut corn falls upon the platform the rake descends upon it near the knife, sweeps it with a circular movement to the rear of the near side of the machine, and drops it in a clean bundle ready for the binder; the rake then ascends, by a turn of the crank, and traverses towards the knife again for the next sheaf. It leaves a clear space for the horses to come the next bout. The rake is completely under the control of the driver, who by placing his foot on a lever can suspend its action, to make large or small sheaves, or to suit the crop. The travelling wheels are large in diameter, and strongly constructed, enabling the machine to cross water courses or run on rough bye roads with facility and without danger of breakage. It is stated that a boy old enough to drive a pair of horses can manage it, and do from 12 to 15 acres a day.

Patent Horse and Cattle Fastening; G. W. Baker, Park-farm, Woburn.—The object of this invention is to facilitate the release of cattle in case of fire. By its means, a single person, without even entering the building, has the power of releasing a whole shed of animals at one and the same time. This is done by means of a lever at the end of the building outside, which, when pulled, opens all the fastenings simultaneously, being connected with each one continuously by ordinary iron gas piping of ¾-in. diameter. The animals are thus released with their ties on, which is a great advantage, as they can then be led away to any convenient place and tied up, instead of being turned loose into the country. The fastenings intended for horses are made shorter.

Patent Fish Manure; Samuel Osler, 12, Brighton Terrace, Great Yarmouth.—In the preparation of this manure, fish is subjected to a prolonged heat of about the temperature of boiling water, the watery portion separating from the fibre with the gelatine and oil; the whole substance of the fish being resolved into three parts, the fibre and bone, which remain in a comminuted solid, constituting the manure, and containing the ammoniacal constituents of phosphates; the gelatine being dissolved in the water, and the oil floating on the surface. This is skimmed off; and the water, with the gelatine in solution, is separated, and the fibre that remains is dried for manure. The water, with the gelatine of the fish, may be evaporated for fish glue, or inferior isinglass; otherwise it may be used for liquid manure.

ON SELF-MAINTAINING AGRICULTURE.

Is it a sound agricultural economy that rests on extraneous supplies for its success?

This is a question which, what is called, high farming tempts us to raise. The requisitions of high farming evidently render it exclusive and incapable of general application, for they require and appropriate more feeding and fertilising matters than would fall to the share of such highly farmed lands in a system capable of general adoption. To farm high must therefore imply also to farm low. Now it has been said that the happiest and most prosperous and perfect state is one in which there are neither too rich nor too poor: the truth of this maxim we must think equally applies to agriculture. It must be inferred that the consumption of an undue proportion of feeding and fertilising matters by some farms, although increasing the productive powers of a few, will by the deterioration of the many diminish the general supply of the food of the country and that, in a greater proportion than is made up by the superior produce of the favoured lands. But the supply of such matters to these lands is also an uncertainty, depending as it does on various contingencies. They may be exhausted, and that in an increasing ratio should the low farmed lands either change occupiers, or should the present occupiers by an improved economy be enabled to enter the field against them. Or the foreign supply may be cut off. A time may come, and come it must, for all things mundane are transitory, when the proud dominion of the seas shall no longer be ours, when we may have to ask our neighbours or perhaps our estranged children for leave to import. Surely the bread of the people ought not to depend on contingencies.

Would it not be a sounder policy so to regulate our agricultural economy that we may free it from a reliance on what may become failing sources, and give it a dependance on self by rendering each farm capable of sustaining a high fertility from its own internal resources, using up only a fair share of extraneous matters and allowing only an unlimited use of such mineral substances as are inexhaustible?

Desirable as may be independence in manurial properties, it is yet more so in the production of a sufficiency of food for our people; it is most unsafe that we should have to trust to foreign countries for our daily bread. Is this independency in food to be attained from the high productive powers of a few farms? Is it not more likely to be obtained by increasing the productiveness of all, even though it reach not to that of the more favoured? Now it appears to us that we may arrive at this end.

By the practice of Lois-Weedon we are assured that the demands of the cereals on manure may be satisfied, on all lands naturally fitted to produce them, from natural sources alone, thus leaving the whole of the manure produced on the farm unappropriated, and, therefore free to be applied to those grosser feeding plants cultivated for leaf or root, and for which at Lois-Weedon they are, I believe, found sufficient without the use of other help.

Were all our land cultivated on the Lois-Weedon plan all would be as productive as our vaunted high farmed lands, and probably more food would be produced than sufficient for our consumption. We should thus become independent of foreign supplies both of manure and food.

It is really time, after twelve years' experience, that this plan of Mr. Smith's should either be generally adopted or generally repudiated. How long do we halt between two opinions!

On further experience of the Lois-Weedon practice should it be found that after a lapse of years any components of the soil have been too much used up, or that the natural aerial supplies have become insufficient for the fertilising of the inorganic matters of the soil with sufficient activity for the continuous demands of the corn crops, we have still the husbanded foreign manures to recur to: and a little hand manure, with Mr. Piper, has been found sufficient to make up the loss of the soil from the recurrence of continuous crops of Wheat.

There cannot be a doubt that were the whole manure of a farm confined to only one-half of the land instead of being spread over the whole, that half being deeply drained and deeply worked, a much larger amount of leaf and root plant would be raised than where it sustained a deterioration from cereals interposed between these crops. This increased amount of cattle food would produce a corresponding increase of manure and a consequent increase of crop; thus the increase of manure and cattle food would go on until we realised the almost fabulous accounts we have of immense production, and the exception would become the rule. If the principle of rotation is still permitted to hold with regard to these crops, there is a sufficient variety in root leaf and legume to afford any desirable charge. *J. M. G., Granard.*

AGRICULTURE OF BRITISH COLUMBIA.

Here is the experience of a gentleman who was for years a farmer in Essex, in England, and who has farmed a track of land about 2 miles from Victoria for the last six years. The notes which I have taken of his operations will convey to the agricultural mind abroad an idea of the quality of the soil, the character of the seasons, and the results of farming operations conducted with skill in Vancouver's Island.

This farmer has not established as yet any fixed rotation. His general course has been, when he first breaks up the land, to sow it with Peas, which tend to "clean" and "open" the ground; next year Wheat, next Oats, and the fourth year Peas again, or Turnips. The virgin soil is too rich to require or to bear manure for a few years, unless on poor stoney spots not yet

cultivated. The essential point is to keep the land clean, free from Brakes and weeds, In a state of nature the best of the land is covered with a thick crop of Ferns, which attain an enormous size, 5, 6, and 7 feet in height, strong in stem and tough in roots. This is the system, and its results:—

Wheat.—Sown after Turnips fed off by sheep, or after Potatoes; sows 1½ bushel to the acre, broadcast. Return, 28 to 35 bushels to the acre, according to quality of soil; but the produce depends chiefly on the freedom of the soil from weeds. Cleaning makes the heavy crop. His Wheat averages 64 lbs. to the bushel. Considers the quality very good. Wheat may of course be sown after Potatoes; but after Turnips gives the best crop.

Oats.—Sows 2 bushels, broadcast, to the acre. Return, from 50 to 70 bushels to the acre; not heavy; grain rather small. None yet made into meal. An oatmeal mill is on the way out for the use of the farmers in the neighbourhood.

Barley.—Sows very little. Market hitherto limited; now increasing, with the advent of troops of mules and horses for "packing" in the adjacent mining country of British Columbia. The soil is well adapted for growing Barley.

Peas.—Sows 2 bushels to the acre. Return 30 to 40 bushels to the acre from the dun Pea and the scimitar (blue) Pea; seeds sent from England. They grow larger than in the old country, but he can't give the weight.

Potatoes.—The ground prepared by two or three ploughings and well cleaned, and (such fields as have been already cropped) manured by about 20 cartloads of farmyard dung to an acre; plants about ¾ ton to the acre in rows, 3 feet apart. Return, 8 to 10 tons an acre; the produce large in size, mealy, and well-flavoured; the quality of all kinds good, but the white oval shaped Kidney excellent. This last fact I can vouch for. They are smaller in size, but superior in flavour to the California Potato. In some few instances the produce is enormous—56 tubers from one seedling, of which number 40 were large-sized Potatoes, choice, and fit for market.

Talking of Potatoes, let a successor worthy of the immortal Soyer, ambitious of fame in culinary science, come out here and learn from the Indians their method of cooking them, carry home the art, and his fortune is made. Considering that the savages have neither pot nor pan nor oven, the result is marvellous. It is attained by steam, generated by heated stones from a little water in a wooden box, sewed (or held together) by Withes. But to resume my friend's story of his Turnips, which he sows in fallowed land, sometimes manured and sometimes not. Gets good crops from a variety of seeds, hybrids, &c. Cannot give the produce per acre; but the crops are quite as good as he ever saw in England. I saw very large ones the other day grown in rather a thin soil on a hill close to Victoria.

Clover does well. Not much land yet laid down in Clover. The land, when freed from growing timber, is laid down often in Timothy for pasture, to save the great labour and expense of clearing out the stumps of the trees—an arduous task, until machinery is had to wrench them out of the earth. I hear of such a machine being in use in America, and it is to be hoped it will travel to Vancouver's Island.

The sowing and reaping seasons are, for Wheat, the latter part of October and in November; also, in spring, as soon after February as the weather permits; all to be in the ground before the end of March, harvested in August. Oats, Barley, and Peas sown in March and April, harvested about August to middle of September. Potatoes planted as early in May as can be. None should be put in later than May, and they would do better if planted earlier, so as to be ripe before the early frosts set in; taken up in October. Turnips sown in June, July, and August—the Swedes in June; the white sorts will do to be sown down to the end of August.

The soil of this farm I should take to be a fair sample of that of the island generally, although I do know some much better soil, scattered about, within a few miles of Victoria, than any yet cultivated on this farm.

A writer in a Californian paper, who visited several portions of this island, reports that "the soil throughout consists of a warm vegetable mould, resting on a substratum of sandy or gravelly clay. This mould is generally not more than 3 or 4 inches deep, except on the bottoms, where the depth is much greater." He is mistaken as to the depth of the mould. In all the land thought worth the trouble of being cultivated the mould is deeper than 3 or 4 inches. It is deeper than the depth of an ordinary furrow; but in some situations is thin, as he says. The writer proceeds to describe the quality:—"This soil is very quick and fertile, but not durable, as after a few ploughings the land begins to show signs of impoverishment, the upper and more productive stratum of earth becoming mixed with the poorer material below; hence, after three or four crops the yield is sensibly diminished, unless manure be meantime applied." As to productiveness, from actual results, he says, "Wheat, Barley, and Oats generally give what would be considered two-thirds of an average crop in California," but "Peas do even better here than there." The comparison with California may be correct, for, except the delta of the Nile, I have not heard of any soil yielding such large returns of grain as that of California.

The quality of the crops pleased him better than the quantity. "The straw, which generally looks clean and healthy, is short and slender, and stands thin on the ground; but the berry of the grain is much larger and heavier than with us; in truth, I have in no part of the United States seen such plumpness of kernel as the Wheat and Oats here exhibit, and I doubt not most excellent crops of these cereals will always be grown on the alluvial bottoms, and also on the wood and uplands, when the latter shall receive the benefits of careful husbandry." I think this gentleman is correct in his conclusions. He has travelled over a considerable portion of the south and easterly districts, and made good use of his time. The only drawback to the cultivation of the soil is the scarcity and high price of labour. There is a ready market for all produce.

I may here remark that I find from several letters which I have of late received from England there is great misconception abroad on the subject of the climate of this island, which it is as well to remove. The farmer whose report of his farming operations I have given above tells me—"The seasons are very much the same as in England as to general character, wet in winter, but decidedly milder." The fact is, there is no better or healthier climate in the world. It is just an English climate tempered, modified, and improved; the east wind being soft and genial, instead of cold and cutting as in England. The only cold winds here are the northerly winds, and they are merely bracing—a little sharp, but without the sting so trying in England and in Scotland. They only prevail in the winter season.

The summer is drier and more steady, only a few showers of rain falling during the hot season, and the winter milder. The climate, in short, is safe for the delicate and invigorating for the robust in health. These remarks apply more strictly to the southern portion of the island. At the north, about Fort Rupert, the climate is moister, and somewhat colder.

As a proof of the genial effect of the climate, I may mention that the rains which fell occasionally during the last month have caused the Grass to spring up with such vigour that at present the meadows are fresher and greener than they were in June and July. In fact, a lawn or Grass field preserved from cattle is now, on the 11th of November, just as green as our best kept lawns in England are at any season. This is seen under the walls of the fort at Victoria, in an enclosed paddock, and in confirmation of my own assertions I may quote the experience of a Californian gentleman—a hostile critic too—writing of this place for a publication in San Francisco, who, in speaking of the climate of Victoria, reports that—"This year we have had one entire rainy day in July, and two thus far in August, besides several showers. These rains keep the Grass green, and all kinds of vegetation fresh and growing throughout the summer. The meadows and pastures now look as verdant here as in California. From May until the middle of July the wind blows fresh every day. After this it ceases, and until the winter rains set in the weather is delightfully calm, and the temperature subject to very little variation, the thermometer not changing more than 15 or 16 degrees night or day during this period. From April to November it rarely ever falls below 50 or goes above 75. In this respect it is the most even climate I have ever seen." To this testimony I will only add that Apple and Peach trees are at present partially in blossom, after having delivered themselves of abundant crops of fruit within the few past weeks. I prefer this climate myself to that of California, simply because it is not so enervating. With more streams meandering through the meadows and prairies than they have, the country could be cultivated into one grand garden for many miles all round Victoria.

On the other hand, the climate of British Columbia, the new colony, on the mainland, is hotter in summer and much colder in winter than that of this island. The climate of the mainland, as I learn from old residents in the Hudson's Bay Company's service is, however, quite healthy, and certainly, from my experience of it during the month of September last, the whole of which I passed in the open air and under canvass, nothing can be more delightful. Among the thousands of miners and others, all exposed by day and by night, with whom I forgathered, I did not meet a sick person, and only one man who complained of a headache. The winter is cold and frosty, but the air is clear and bracing. *The Times Correspondent.*

SUBTERRANEAN WATER.

WE have received from the Rev. J. Clutterbuck, of Long Wittenham, Abingdon, the following report of a lecture on this subject lately addressed by him to the Oxford Farmers' Club:—

I will first say a few words on the element of water—the quantity which falls on the surface of the ground—the amount which sinks into the earth—the condition in which it is found in the earth—and its discharge therefrom by natural or additional outlets.

1. The element of water is well-nigh all-pervading: it enters into, and forms a large part of, animal and vegetable substances. If we abstract all the water from any vegetable, especially in its growing state, a very small proportion of its original bulk remains. If the human frame were deprived of the water it contains, it would be reduced to less than one third of its weight. Water exists as vapour in the air, is found in suspension in every soil, and is essential to sustain animal and vegetable existence; it supplies motive power to machinery, either by its weight, or as converted into steam by the agency of heat; it is sung by the poet, supplies the painter with his choicest subjects, and is sanctified to the highest purposes of the imagery of Holy writ.

2. The quantity of water which falls upon the surface of the ground. Water evaporated from the sea, surface of land or sea is taken up by the atmosphere, is condensed, and returns to the earth either as dew, rain, or snow. The quantity falling as rain or snow is measured in gauges constructed for the purpose of registering the amount: there is a remarkable difference in the quantity registered by a gauge placed on the ground and another at an elevation of rather more than 20 feet above the ground, being an excess of about one-fifth in favour of that upon the ground. The variation from year to year varies very much, though the average of a number of years is wonderfully steady, amounting in this neighbourhood to 23 or 24 inches.

3. We have, thirdly, to consider the amount which sinks into the earth, which will lead us to the more immediate subject before us, namely, 'subterraneous water.' Common observation leads us to the conclusion, that only a portion of the rain falling on the surface finds its way into the lower depths of the soil. We know how soon all trace of a summer disappears; we speak of showers which scarcely lay the dust, by which we describe partial restoration to the soil of the water evaporated, and which, in its turn, is quickly evaporated again. A good ground rain is an expression denoting the fall of such a quantity as thoroughly soaks the soil; and it is worthy of observation that the greater the quantity falling, very often the less the trace it leaves behind it; there is, perhaps, nothing in which the common observer is more deceived than the amount of rain which falls.

The term 'free water' is used to describe the surplus after the water evaporated has been replaced. The free water goes to replenish the subterranean reservoirs in permeable soils, or, in tenacious soils, fills up every crack, cranny, or fissure, and then shows itself above ground, when it is called in common language, top water.

There are two ways in which the quantity of water percolating the soil may be estimated:—by an instrument I will proceed to describe, and by measuring wells. Some years since a gauge of a peculiar construction was invented by the celebrated Dr. Dalton for the purpose. It consists of a cylinder or tub of wood 3 feet deep, and of a given diameter at the top. The cylinder is filled with the ordinary soil of the country where the experiment is made; it is buried to the brim, and covered with turf, a receiver is fitted to the bottom, whence it flows by a small pipe into another vessel in which it is measured.

It is estimated that all that sinks through this 3 feet of soil to the lower receptacle will represent the amount of free water, which in porous soils finds its way into the earth. Mr. Dickenson, the well-known manufacturer of paper, is wont by this instrument, which he has used for more than 25 years, to calculate the amount of water to be reckoned on from the streams on which his mills are placed, and he thereby regulates his contracts. The quantity percolating this gauge is ruled not only by the quantity, but by the season at which it falls. Thus the summer months usually show no percolation; it is during the period from October to March inclusive that any quantity finds its way to the lower receptacle. The mean average of rain registered by Mr. Dickenson, for the last 10 years, is about 25½ inches—the quantity percolating Dalton's gauge about 5⅔ inches. During the year ending December last, only 3.21 in February, March, and April, was recorded. If a very considerable quantity of rain does not fall before the 1st of May, at latest, there will be an almost unexampled lack of water in our springs and rivers in the ensuing summer and autumn. There is another method of estimating the quantity of subterraneous water, which I have myself practised for many years, namely, the periodical measurement of wells.

This will lead me to another, and, as it seems to me the most important point of this subject, the natural adjustment of water in the soil, by which the perennial supply of rivers and springs is regulated, and which also rules the discharge of water from soils by artificial drainage. First, then, the water in wells does not indicate the supply from isolated springs, as water flowing into them is usually called, but the local surface of subterranean sheets or beds of water found in porous soils. By porous or permeable soils, or strata, I mean those soils or strata into which free water will sink, until it meets with a retentive or impervious stratum, or body of water already existing in the earth. Take as the best illustration, a chalk district, such as we find it on the southern slopes of the Chiltern Hills. Through solid chalk water will not filtrate, but chalk will absorb, by capillary attraction, a quantity equal to about one-third of its bulk, and one-quarter of its weight. This is ruled by one of those invariable laws which govern all things in nature. The chalk is almost always fissured, or has small cracks in various directions, especially in the upper chalk, beneath the beds or bands of flint; these the free water fills, and from them it will also escape, leaving behind it that amount in the chalk which is held by capillary attraction, and from which the chalk will not part by evaporation. Now, as it is known that water finds its level, and assumes a level surface when allowed to accumulate, so it is generally supposed that the water in these fissures will stand on a level;

it would do so if there were no outlets; but, as there are always some outlets, in consequence of the undulating surface of the earth, the water finds a vent at some point, and flows out in springs; the whole body of free subterraneous water will, of course, rush to the same, or such like outlets, driven there by the irresistible force of hydrostatic pressure. As the particles of the water rub against the sides of the fissures, the rapidity of the exit is retarded, hence the surface of the subterraneous sheet of water assumes an inclination, most beautifully regulated by the two opposing forces of hydrostatic pressure and friction; the angle of inclination being the mean between the highest point at which the water accumulates and the nearest vent or outfall.

(To be concluded next week.)

STABLE MANAGEMENT.

Let us take an everyday illustration. On some of the lighter, as well as on the stiffer soils of this county, three or four horses may often be seen slowly dragging a plough, at less than 2½ miles per hour; the draught of a good implement probably not showing more than 3½ cwt. on the dynamometer, at the same dimensions of furrow slice, and under the like circumstances. In fact, the next quarter of an hour's ride shows at least equally heavy work being accomplished with a couple of horses yoked abreast. In the latter case, a bushel of Oats and another of Beans, per week, are as much needed for each horse, as the Beans without the Oats would be in the former. It was but the other day that we witnessed the delivery of 35 cwt. of straw, which was loaded on two common 6-inch waggons—one being drawn by three horses, and the other by a couple. This brought the load to average only 7 cwt. for each animal, exclusive of the weight of the waggons. Contrast this with another case. Some fifteen years ago, the drummer's horse of a cavalry regiment passing through the country was drafted out as unserviceable. He was purchased at a nominal figure, and put to dray work, in carrying goods to and from the adjacent railway station. And up till lately has the old grey most nobly fulfilled his allotted labours. Many times over has he drawn behind him a load of some 3 tons, independent of the vehicle; continuing his journeys from early morn till dewy eve. It is worthy of remark that this horse actually became of aldermanic proportions, and grew in strength as he grew in years. Need it be wondered at, then, that he could consume an almost illimitable quantity of corn? In the well-known carriers' establishment of which he formed an equine ornament, the amount of feed is rarely restricted; the plan being to add Oats, Beans, bran, or chaff at all hours of the day, and according to the full appetite of the horse.

But with the majority of rent-paying farmers such a system could not long hold good. The largest amount of available power has to be got at the least outlay in money or money's-worth. Yet no sensible man will uphold the doctrine that the starve-all system is the right way to attain such a desirable end. We have tried it in several ways, and our firm conviction is, that liberal feeding, combined with what may be called if not hard work at least closely akin thereto, is the most profitable plan. With such management they will ask for few holidays, whether the weather be wet or dry; they will be well up to the mark for a stiff pull when required; and there is far less likelihood of the veterinary surgeon's presence being often needed. Only, in order to make the most of them, a fuller staff of carters or ploughmen is requisite than many Warwickshire farmers consider needful. Let us be explicit on this point. The humble judgment of the writer is that in general it is more economical to have only a couple of horses under the care of one able-bodied man, who knows how to manage them, and is fairly paid for the extra time that he ought to be in attendance, as compared with the day labourers. At least, we find that we can accomplish as much work, and do it as well, with seven pairs of horses, under this system, as with 17 or 18 horses, under a system well-known in the midland counties. And what is the present mode of management? The men enter the stable at 5 in the morning, feed, water, and groom the horses; get their own breakfasts, and turn out at 7 to the minute; work till 12, then one hour in the stable; and return from work at 5; groom, feed, litter them down, and leave at half-past 6. At 8 o'clock a resident hind gives a suppering feed, and sees that all is right, for which he receives 10*s.* extra for the winter season. As the spring advances, the horses turn out a half-hour earlier in the morning, which they receive at midday, when they are entirely unharnessed, and well rubbed down. If working at a distance of more than a mile from the stable, they are not brought home to dinner; but have the dinner-time shortened, and enter the stable as much earlier in the afternoon.

Now for the feeding. The weekly allowance for each horse in full work being as under:—

1 bush. Oats, weighing 42 to 44 lbs.
1 bush. Beans, ,, 64 to 66 lbs.
1½ cwt. Clover (for chaff, rack, and net).
½ cwt. Carrots (grated and mixed with chaff).

Taking the above at fair local value, we are not surprised to find that it is more costly than the series given by Mr. J. C. Morton, in his article on "The Cost of Horse Power," in the last issue of the "Journal." But the instance given by him refers to teams engaged in purely agricultural operations; whereas those we refer to have always lying ahead of them an unending allowance of roadwork, and other haulages. With respect to giving out the corn, it is better to have a separate lock-up bin for each team, which imparts a greater sense of responsibility to the carter than can be the case where the feeding lies to one man, or even where a horse-feeder is appointed, and the carters have only to groom and work their respective horses. The latter system is practised on the farm of the Royal Agricultural College at Cirencester, and also in various parts of the country.

In the winter of 1855 the writer adopted a more economical system of rations, but without practical advantage. It is given below, and also the cost thereof:

Oats, 1 bushel	3*s.*	9*d.*
Beans, ½ bushel	3	0
Linseed, 7 lbs. (boiled)	1	0
Clover, ¾ cwt. (cut to chaff and moistened with the Linseed)	3	3
Oat or Peas straw, *ad lib.*	0	0
	11	0

They were allowed to remain in the pastures over night till the end of November, and from these combined causes it was next Midsummer ere they again showed in full flesh and bloom. Looking at the condition of various well-kept teams of horses in the county, we believe that there is no profit derived from allowing them to lie out overnight more than five months out of the 12. If you keep them out long in autumn, the coats get long and shaggy, the hair on the legs (which in many Warwickshire horses is quite long enough otherwise), becomes still more rank and tangled, so that when they come to stand in the stable pulmonary diseases are engendered by the change. And who that knows what a touch of influenza is, when it makes the course of a stable, and compels you to lie still when you want to be actively engaged, has any desire for a return of the complaint? Its ultimate effects, too, especially on young horses, can hardly be reckoned by the simple cost of the immediate ailment. If "prevention is better than cure," let us strongly recommend the free use of boiled Linseed for moistening the food, and lubricating dry matter which would otherwise be of an irritating nature. This applies particularly to the time when the change is made from green food; and 1 lb. or 1½ lb. per day will not be found too opening in its nature with the generality of horses.

As to the preparation of the food. The common practice decides that Beans ought to be split, and well split, too. But we have not found, except in the case of aged animals, that there is any special advantage in being able to give an affirmative answer to the oft-repeated inquiry of Mary Wedlake & Co., "Do you bruise your Oats yet?" Of course we only speak of farm horses; for the detailed trials of the London Omnibus Company have demonstrated the fact that fast working horses do more good with bruised than with whole Oats. And even on the farm you occasionally find an animal disposed to bolt his feed, in which ease crushing is desirable. But there are old horses which masticate their corn as completely as horses of younger years and more robust constitution. We have repeatedly noted this fact in the case of a lively two-and-twenty years old favourite, which has probably seen as much hard work, both fast and slow, as any horse in the county. Up to this day "Jack" does his work freely, and masticates a feed of corn with the youngest in the team—whether given "neat" or mixed with cut chaff. Under any circumstances, there are few good horse feeders that give the corn without the chaff; although it is true that in Scotland there are whole districts where a chaff-cutter was till late years unknown, and where, therefore, the feed was given in the unmixed state. It probably is so still, and, as compared with southern practices, the horses undoubtedly work longer hours, and do their work as well. We are not partial to giving horses Barley-meal, feeding with Wheat, or consuming large quantitie of bran—varieties of feeding here and there to be met with.

Millers' teams are favoured with large quantities of the latter commodity, and their sleek coats and full-flesh condition is well known. No doubt there are other good things added into the bargain. And they are often thus kept in a state of unnaturally high condition. But, strange to say, and "not less strange than true," many mill teams are noted for their liability to liver complaints, and other attendant evils of excessive corpulence. Bran, however, is an excellent addition to other food, although we grudge paying two-thirds the price per ton that is obtained for good Wheat in the neighbouring Corn Exchange. This sounds very much like "buying gold too dear." A piece of rock salt for each horse to lick at, as a condiment, must not be forgotten. *Mr. T. Bowick in Leamington Courier.*

Home Correspondence.

Farm Labour on Tweed-side.—The greater part of the manual labour which is connected with the threshing and dressing of corn by machinery, the filling the manure into the carts when cleaning out the cattle pens, the turning the manure heaps and spreading the manure in the Turnip drills, the singling, hoeing, pulling, rooting, and topping the Turnips is executed by women in the neighbourhood of both sides of the Tweed. The land is ploughed mostly into 14, 14½, and 15 feet ridges for corn crops. One man and one woman generally reap upon one ridge, and one man binds and sets up the corn which four reapers cut. Each reaper cuts about half an acre per day. I have known each reaper of an extensive farm cut a fractional part more than half an acre per day during the harvest. Part of the Wheat crop averaged 54 bushels per acre, and weighed from 60 to 65 lbs. per bushel; and part of the Potato-Oat crop averaged 72 bushels per acre, and weighed 45½ lbs. per bushel. The circular corn stacks are generally about 15 feet in diameter at the base, 15 feet high from the base to the eaves, and the slope of the roof more than 45°. A good many farmers' threshing machines will thresh a stack of such dimensions in three hours. A good many farmers' labourers, whose stackyard is on a higher level than the threshing machine, wheel the corn into the barn with wheel-barrows; others carry the corn into the barn on their backs. Where two carts are required for carting the corn from the stackyard to the barn, a man or woman forks the sheaves from the stack to the cart, and two men or stout lads are required for carting the sheaves to the barn. A man feeds the machine, and two women, boys or girls untie the sheaves, lay them on the board, and keep the doorway clear; one or two women carry the corn from the spout and riddles it in a heap, *i. e.*, in barns where there is still the common threshing machine; and three or four women pack the straw in the straw barn or carry it into the cattle pens. An experienced female labourer will, according to the nature of the soil, the quantity of Turnip seed sown, and the regularity of the braird, single an acre of Turnips sown in 27 or 28 inch drills in 25 hours on some farms, on others in 30 hours or three days, with an 8-inch hoe. Much misunderstanding has been caused amongst a good many farmers by confusing the present general rate of wages paid to two distinct classes of labourers in Northumberland who may be regarded as no way connected with each other—those who in some parts of England are termed farmers' men, and waggoners, who are termed ploughmen or hinds in Northumberland and in the south of Scotland, who in that district are furnished with a cottage at a convenient nearness to the farm steading, and agree to a specified form of payment in cash or in kind; and jobbing labourers, who reside in provincial towns, villages, and cottages on farms which are not required for the ploughmen. The ploughman receives his wages in full for the time he is engaged irrespective of the state of the weather, or his having been unable to work for a few weeks through sickness; but the jobbing labourer not only is not paid for the days or weeks he does not work during a storm or a course of showery weather, but sometimes he has difficulty to get remunerative employment in good weather, has sometimes either to walk several miles to and from his work morning and evening, or take lodgings, which is like paying two house rents, and also keep a set of tools in working order. Presuming that you have a copy of "Stephens's Book of the Farm," you will observe in the second volume (p. 742) that 36 bushels of Oats, 24 bushels of Barley, 12 bushels of Peas, 3 bushels of Wheat, 3 bushels of Rye, and 40 bushels of Potatoes, the market prices of which in 1850 were respectively 2*s.*, 2*s.* 9*d.*, 3*s.* 6*d.*, 5*s.*, 3*s.* and 1*s.* per bushel; also 24 lbs. of wool, at 1*s.* per lb.; a cow's keep for the year which is estimated at 9*l.*; carriage of coals, 2*l.*; cottage and garden, 3*l.*; the liberty to keep a pig, but no value is put against that privilege; and 2*s.* 6*d.* per day for 30 days in harvest, all of which is calculated as equal to 12*s.* per week; but all the above items cannot be charged to the hind's account, since what the farmer allows the hind for the bondager's work does not amount to as much as pays her board and wages. The question that is yet unexplained is this—is the above form of payment in kind still the prevailing form of payment in Northumberland, and how far south from the Tweed does it prevail; or is that form of payment now abolished, and 15*s.* per week the general prevailing mode of paying Northumbrian ploughmen who are engaged for a twelvemonth's service? Since the bondager performs such laborious work, some of which would task the energies of men of ordinary strength, you will agree with me that 6*s.* per week is a small enough allowance to the hind for the bondager's board, lodgings, and washing, which amount to 15*l.* 12*s.* per annum, and 11*l.* being the general rate of bondager's wages, 26*l.* 12*s.* must be deducted from what the farmer pays the hind for the bondager's work. Reckoning the farmer to pay the hind 39*l.* 2*s.* 6*d.* for his own wages, and 15*l.* 12*s.* as about the maximum that the hind receives for his bondager's work—1*l.* 16*s.* for 24 days during harvest at 1*s.* 6*d.* per day, 10*l.* 11*s.* for 211 days at 1*s.* per day, 3*l.* 5*s.* for 78 days at 10*d.* per day, 54*l.* 14*s.* 6*d.* is, according to the above calculation, all that a Northumbrian hind receives in a twelvemonth for his own and his bondager's work. Hence, a Northumbrian hind's wages cannot be regarded as exceeding 28*l.* 2*s.* 6*d.* per annum, which is 10*s.* 9*d.* per week instead of 15*s.* per week. Laying aside the price of labour connected with the executing of permanent improvements in Northumberland, the above details respecting the amount of labour that bondagers perform will show you that those English farmers' working expenses who employ men for singling, hoeing, and pulling Turnips, who give such men and their ploughmen 12*s.* per week, are greater than the ordinary working expenses in the Scotch and Northumbrian districts where the bondage system prevails. *A Labourer.*

Fertility from Cultivation.—What may be the cost to a farmer of maintaining the corn producing powers of his land by means of cattle crops and home raised manure, I never could arrive at in my farming. I was conscious in my own practice that the chief profit from

stock was to be found in the increased growth of corn that resulted from keeping it, and that fertility from this source was dearly bought. It was, therefore, with much interest that 8 years ago I gave to your readers some account of the success of the Rev. Mr. Smith of Lois-Weedon in growing Wheat, year after year, upon the same land without the application of manure, and the profit that resulted from so simple a system of farming. I have again after an absence of 8 years had the pleasure of visiting Mr. Smith, and seeing his farm, and can but feebly express my astonishment at finding the same land, under the same system, carrying the same crop with the same success. Such, I assure your readers, is the fact. The thirteenth crop of Wheat without manure in 13 years is now on the ground, looking as luxuriant as can be desired, and following one that yielded 5 qrs. to the acre. The return having for 13 years been 4 and 5 qrs. per acre, and the annual profit, with Wheat at 40*s.* per qr., being upwards of 4*l.* an acre. Strange to say the land shows no exhaustion, and the only difficulty has been to keep the growth moderate, the crop having latterly often been too luxuriant, and when the yield has been reduced below 5 qrs. it has been from its being laid. I have had sent me the result of the cultivation of 2 acres on the Lois-Weedon principle by the Tiffield Reformatory School, the land having been taken in 1856, in a very foul state. In 1856 it was Potatoes; 1857, Beans, rather a foul crop, but fair in produce; 1858, Wheat, drilled three rows, and then an interval of 3 feet; the intervals forked three times during the growth of the crop and moulded up once. The produce 9 qrs., the head corn weighing 63 lbs. per bushel. It is again Wheat, and looking remarkably well. Does not all this go far to prove the improvement that is to be made by deeper cultivation, greater disintegration of the soil, and keeping the land clean. One would suppose that a practice so simple, so agreeable to reason, and so developed in every day's gardening, and carrying with it the attraction of extraordinary profit, would long since have gained the attention of farmers, but strange to say it has not done so, notwithstanding that it was shown to be the successful practice of Jethro Tull 130 years ago (the father of the drill and horse hoe) and Mr. Smith has published his "Word in Season" 11 or 12 years. I have warmly recommended it to attention because I owed much of my success in farming of poor land to the deeper tillage, wider drilling, thinner seeding, and the free use of the horse hoe that I practised, and I believe much more has yet to be done in this way. Those farmers who may not have read Jethro Tull's work I would strongly advise to see what he says on the subject. Cobbett's edition, published about 40 years ago, is to be preferred as a more readable book, and has the advantage of detailing Cobbett's own experiments in the same line; and Mr. Smith's works "A Word in Season," and "Lois-Weedon Husbandry" are recommended by his motto—

"By this mode of husbandry, compared with the ordinary, the moiety of an acre yields more than the whole."—*A free translation from Hesiod.*

Hewitt Davis, 3, *Frederick Place, Old Jewry, London.*

Oat-hay.—We would caution any person who is disposed to rely on this fodder for horses, not to cut it too soon or stock it too early, as a few years since we saw a field cut before the flower appeared, the stock sunk into a very small rotten heap of black useless stuff, and was literally good for nothing. The Oats should be "in bell" and cut before the grain is fully formed, then mowed and tied as if the corn had ripened and after having had sufficient "field room" stacked in the ordinary way, and cut up as chaff for horses or stock, as it should be borne in mind that good Oat straw makes an excellent food for horses, but the straw of unripened Oats is the best. *J. W., Peterborough.*

Foreign Correspondence.

Bruges, Belgium, *April.*—A brief account of a visit which we recently paid to the Government Reformatory at Ruysselede may interest our readers; all the more from the fact that the principal feature of the establishment is the agricultural school, in the management of which many of the peculiarities of Flemish husbandry—always an interesting subject to agriculturists—are practically illustrated. The Ecole Agricole de Réforme at Ruysselede owes its existence to the law passed in April, 1848, authorising the Government to establish it specially for young indigent children, beggars, and vagabonds, under 18 years of age, the principal aim being to employ the boys in the work of agriculture; other occupations likely to be useful to the boys in after life not, however, being excluded. The establishment at Beernem, about a mile from that of Ruysselede, is exclusively devoted to girls; the object of having it at this distance from the boys' school being to establish a complete separation of the sexes, yet to have the two schools within such easy distance as to facilitate the agricultural operations, having for their aim the raising of a sufficiency of food for the maintenance of the inmates of both schools. It is to the boys' school that we shall direct the attention of our readers.

Ruysselede is about 2½ to 3 leagues from Bruges, and the easiest mode of access to it is to take a ticket for Blaemandel station on the Bruges and Ghent Railway. A walk of an hour either along the high road or through the woods brings you to the establishment. We took the way through the woods, as it afforded us an opportunity to witness the operations of cutting down the trees (*déboisement*) of little value and of bringing the land into cultivation, or replanting (*réboisement*) the space with more valuable trees as the Beech, the Larch, and a tree bearing a species of small Cherry. The district surrounding the establishment not many years ago was entirely under-wood, and that chiefly of the lowest value. The soil is almost a pure sand, and to many would present an almost hopeless aspect for improvement, so unlikely does it appear capable of being brought into that condition fitting it to bear crops. Yet such is the practical nature of the operations put in force by the Flemish farmer, that in a marvellously short space of time its occupations are covered with rich harvests of Rye, Potatoes, and Buckwheat, these forming the base of the agricultural operations suited for the soil of this character now under consideration, and to the thoughtful observer surveying the fields such as presented themselves to our gaze as we walked along—in which in one place you saw a plot of sterile sand in close contiguity to one green with the promise of harvest—there was much to gratify the mind, and to show what patient industry could do in making the desert to bloom and blossom like the Rose. Every now and then we came upon a small charred plot which was gradually being put under cultivation, with its tiny house and cow-house, its dung pit and its liquid manure tank, the contents of which form the farmer's firmest friend in bringing the sandy soil into a condition fit to bear a wider range of crops than those we have mentioned, such as Colza, Flax, Turnips, Carrots, and the forage plants, of which the Clover is the principal and the pride and glory of Flemish farming As indicative of the garden-like care and precision with which farming operations are carried on throughout Flanders, we saw in passing one occupation, a field of Colza bordered with a fence of Black Currant trees. *En passant*, we may remark that the plant known here as Spergula (Spurry), is found to be exceedingly useful in bringing pure sandy soils into good condition. From the rapidity of its growth three sowings may be obtained in a year. The first crop is saved for seed which is sufficient for the two following crops; as these arrive at the flowering stage they are ploughed in; the Rye crop succeds. For seed the quantity of seed put in is 25 kilogrammes per hectare, for ploughing in double the quantity. The seed is sown towards the middle of April after all frosts are over; towards the end of June the first harvest is obtained. The second crop is then put in, this flowers towards the end of August, when it is ploughed in and the third crop sown, which in its turn is ploughed in towards the end of November. We may here note that in addition to its value as a manure employed in the way we have indicated, it is highly esteemed as a forage for cows, as it is said greatly to increase the yield of milk.

To return to the establishment of Ruysselede, we give short notes on the history of its agricultural progress. In 1849 the extent of land belonging to the establishment was 127 hectares—a hectare being equal to 2 acres 2 roods. The land thus appropriated was of the poorest order, and gave but little promise of being able to bear produce for the wants of the establishment. Manure was lavishly applied, this being chiefly the excretal products of the inmates of the "maison de force," at Ghent, these being brought from thence by canal; and in a brief space of time the land was capable of bearing a wide range of products. Of the 127 hectares above alluded to, 63 hectares 12 ares—one are being equal to 3 poles 28 square yards — were put under the following crops:—Rye, 18 hectares; Potatoes, 7; Oats, 6; Flax, 4; Vetches, 1; Peas, 3; Carrots, 1; Buckwheat, 8; Turnips and Rutabagas, 2; Clover 4. The stock department was made up as follows:—4 horses, 2 draught oxen, 14 milch cows, 3 heifers, 9 young cattle, heifers and bulls, 1 ass, 5 sheep (Southdown), 50 hogs (Essex breed, and that of the country), 40 fowls, 2 turkey hens, and a lot of pigeons. In spite of the poorness of the soil and the difficulties and embarrassments connected with the establishment of an institution so vast and so complicated, the produce of the first year exceeded in value all expectation. At the exposition of agricultural products, held at Ghent in the year 1849, a silver medal was awarded for a sample of Flax grown on the lands of the school, and remarkable for its fine quality. The total value of produce raised was 20,860 francs, the rate of valuation being lower than the average. The rotation of crops, &c., was based on the system generally adopted in Flanders, some idea of which may be formed from the following plan of culture adopted for the year 1850, the extent of land under culture being increased this year to 98 hectares. Excluding minor quantities the crops were as follows:—Rye, 37 hectares; Oats, 8; Potatoes, 14; Flax, 3; Peas, 2; Carrots, 3; Buckwheat, 4; Chicory, 1; Froment and early Barley, 82 ares or 2 acres; Colza, 2; Rutabagas, 1; Vetches, 1; Clover, 6; vegetables, 4; Lucerne, 1; orchard, 3. This year an experimental field was established, in which to test the value of various grains and plants, with a view to the adoption of those which adapted to the soil gave the best chance of meeting the wants of the establishment. At this period in the history of the establishment the number of children admitted was 350. It was interesting to watch the eagerness with which the great majority of the pupils entered into all the operations of the farm. Five years' industrious labour of the little workers—aided at intervals only by men whose greater strength was required for the heavy duties, as ploughing, &c.—sufficed to bring the sandy soil fit only at one time to bear the Fir tree and the Broom into land capable of bearing good harvests of a wide variety of produce. Rotation was carefully attended to, and manure unsparingly applied. Artificial meadows were also successfully introduced—a real triumph, for the sandy soil is rarely attempted to be put under meadows. The expenses of the farm for this year (1853) amounted to 48,007 francs, and the value of the produce to 66,130 francs; leaving a balance of 18,122 francs, a result which gave ample proof of what could be done by patient industry and a good system, notwithstanding the inferiority of the soil and the inexperience of the workers employed. The stock at this period was as follows:—10 horses, 1 ass, 8 draught oxen, 1 bull, 28 milch cows, 11 heifers and young bulls, 54 hogs (Essex and Berkshire), 23 sheep, 139 fowls, &c., of the court-yard. The number of inmates, 688.

The gradual increase in the fertility of the soil and the experience of workers enabled the extent of land under cultivation to be increased to 168 hectares in 1855. Of this in 1856, 95 acres were put under cultivation for produce for the house consumption, as follows:—Rye, 55 hectares; Potatoes, 29; Flax, 1; Peas, 1; vegetables, 7. For the consumption of the cattle 71 hectares, thus—Oats, 19; Buckwheat, 8; Turnips and Rutabagas, 6; Carrots, 1; Jerusalem Artichokes, 1; Clover and Rye-grass, 21; meadow, 9; orchard, 1. Thus in four years the extent of land appropriated to produce for the stock was increased from 29 to 71 hectares, or in the proportion of 3 to 7. This great increase was made to afford nourishment for a larger number of cattle; and by consequence to increase the quantity of manure. For the Flemish farmer always bears in mind the importance of this department, and that without cattle he can obtain no manure, and without manure no crops. The stock in 1855 had increased to 14 horses, 5 draught oxen, 1 ass, 44 milch cows, 37 heifers, young bulls and oxen, 30 hogs, 38 sheep—156 denizens of the court-yard. According to the last report which we have received, the plan of culture for 1858 embraced the following:—Rye, 33 hectares; Potatoes, 13; Oats, 8; Buckwheat, 3; Turnips, 3; Carrots, 1; Beetroot, 3; Rye-grass, 12; Clover, 4; Chicory, 1; prairie, 5; Haricots, 1; Jerusalem Artichokes, 1; vegetables, 6. The stock being—horses, 14; draught oxen, 6; 1 ass, 4 bulls; milch cows and heifers purchased, 39; milch cows bred on the establishment, 4; heifers do., 26; oxen do., 22; hogs, 29; pigs, 76; sheep, 39; lambs, 13; poultry, 94; turkeys, 5; ducks, 10; pigeons, 80; watch dogs, 3; sheep dog, 1. The value of the animals being, in the stables, 10,225 francs; cow-houses, 19,655 francs; piggery, 3680 francs; sheep, 1300; court-yard fowls, 159 francs; in all, 35,109 francs.

Having furnished a brief account of the agricultural progress of the establishment, we hasten to detail as briefly its internal arrangement and management. The main building, in which are the dormitories, the schools, and the dining saloons, forms one side of a large quadrangle, the other three sides of which are formed by the ranges of workshops, contained in buildings of one story in height. The offices, the board-room, and the residences of the various employés form, as it were, the enclosure of a second or outer quadrangle, the centre of which is neatly filled up with flowers and shrubbery. The centre of the inner quadrangle serves as a play-ground for the boys, and is fitted up with the usual gymnastic apparatus.

Passing from an inspection of the dormitories and the dining saloons, all of which are distinguished by scrupulous cleanliness—the result of the labour of the boys themselves—we enter the various apartments devoted to the teaching of the boys. We here see in the drawings and sketches of agricultural and mechanical subjects which adorn the walls the prominence given to the agricultural aim of the institution. Passing through the kitchen or room in which the soup was being cooked by steam in two huge caldrons, and of the nourishing nature of the contents of which the grateful odour gave ample proof, we entered the apartment in which the steam-engine was at work. This gives motion to the mill which prepares the flour for the bakery; to the corn-crushing machine and root-cutter for the cattle food; and to the machines which are employed in the labours of the mechanics' workshops. The power of the engine will shortly be employed for a purpose novel in the practice of Flemish husbandry; namely, pumping liquid manure at high pressure through a congeries of pipes leading underground to fields in the neighbourhood of the establishment. The pipes and various castings have been ordered from England for this service. Much curiosity is being excited by this attempt at using, by steam power, the favourite manure of the Flemish farmer, and the results of the trial are being looked for with anxiety by all interested in discovering a more economical mode of distributing liquid manure than any hitherto introduced. Passing through the mechanics' workshops we observed with pleasure lads of various ages busily employed, some at the forge, some at the vice, and all labouring with energy and a workmanlike aptitude, which, considering their age, was almost amusing. The way in which one little fellow was finishing a spade and another forging a fork would have done honour to many adult workmen. All the work required to keep the implements in good repair, and even to add to their number, is done by the little workmen under the superintendance of the overseer of

this department. Although the labours of the field and the garden constitute the principal features of the establishment, still there are other occupations provided at once for those lads who may prefer them, and for the employment of the lads who, engaged during the summer in the fields, cannot follow it during the winter. The labour of the boys is thus constantly changing, according to the season, these circumstances, or their own inclinations. This succession of occupations stimulates activity and awakens intelligence. There is no constraint employed, each lad may follow the bent of his inclination; the great desire being not to bring up a lad to a thorough knowledge of any branch of industry, not to lead him through a regular apprenticeship, but to induce habits of industry, and to introduce him to such a calling as may be useful to him in after life. To aid in this, then, various workshops have been added to the establishment in which the operations of carpentry, joinery, and carriage-making, weaving, shoemaking, tailoring, &c., are regularly carried on. It is curious to note the numbers of the lads engaged in the various departments. Thus, while there are 12 (in the summer months) carpenters and joiners, there are 20 tailors and a like number of shoemakers, and only two bookbinders, while there are 50 employed in the gardens, 35 in the various departments of the farmyard, and 250 in the fields. This latter is the base of all the operations of the establishment, and in spite of the tender age of the cultivators, all the work required is well performed by them, with the exception only of the work of deep ploughing, &c., which is performed by strangers.

The buildings of the farmyard are very complete. The cow-houses are kept carefully clean, this labour being performed with admirable precision by little boys. The condition of the animals as regards health, both in this, the stabling, and in the stock-feeding departments, has left little to be desired during the whole period of the history of the establishment. The system of ventilation adopted has been found admirably efficient; it consists in the application of zinc pipes opening in the ceiling above the animals and leading to the external atmosphere. The system of box-feeding has been introduced, and with decided advantages. Indeed nothing which can serve to keep up at once the health of the animals and to increase the quantity of manure has been neglected. A brewery has been recently commenced, not merely with the view of supplying beer for the establishment but to help this increase of manure, by aiding in the feeding of the animals. A covered manure pit—has also been recently erected. This step owes its existence to the efforts of Baron Peers, a distinguished agriculturist, who has long been directing the attention of Flemish farmers to the wasteful methods in use of treating farm-yard manure, and to the importance of introducing means of preserving it from the action of the showers and the sun. The plan introduced by Baron Peers is to erect a covered shed (un hangar), the outline of which is by preference an oblong, and the dimensions of which are regulated by the capabilities of the farm. The under part of the structure is built of brickwork to the depth of 2 yards; the upper ledge of which is carried a little above the ground level. The lower part is made water-tight, so as to preserve the liquid portion of the manure. The length of this tank, as it may be termed, is 20 yards long by 8 broad, or thereabouts. The upper part of the structure is entirely of wood, upright posts being inserted in the brickwork which support the roof. The sides are entirely open, with the exception of a slight railing, so that free passage is allowed to the air. This, distributing freely, is found to contribute to the desiccation of matters impregnated with a certain degree of humidity. Two gates are provided at each side of the shed, and in order to facilitate the removal of the manure an additional gate is provided at each end; the carts enter empty at one end, are filled while in the interior, and pass out full at the other. In a former communication we have given a few remarks upon the treatment of liquid manure in this country: we propose again to take up the subject, and shall then return to the subject of the treatment of farm-yard manure, to one department of which we have to some extent here adverted.

An apartment is provided for the threshing machine, which is of simple construction, its office being only to thresh, the cleaning being performed by a separate winnowing machine. In the same room the straw cutter is placed; this, like nearly all machines of this class which we have seen in Flanders, has the knives placed round an inclosed cylinder. The machines with uncovered knives attached to the fly-wheel are by no means favourites with the Flemish farmers. We have extended our communication beyond our proposed limits; but we have indeed little more to add. Everything we saw tended to convince us more and more of the thoroughly practical and valuable nature of the system of cultivation adopted in Flanders, a system which has derived little aid in its working out from the indications of science, but which is, nevertheless, admirably illustrative of the truth of its deductions. The Flemish farmers through a long course of untiring industry have discovered a mode of operation in the field which science, working in the closet, proves to be in its main principles correct—a mode of operation which, with wonderful promptitude and precision, creates out of sterile sands and bleak heaths plots covered with the richest possible verdure and the most productive of plants.

Calendar of Operations.

APRIL.

Isle of Ely, *April* 26.—March "many weathers" has become quite a hackneyed phrase; but this year the expression will better become April, for the present month has been unusually variable, embracing the cold of mid-winter and the heat of mid-summer. The month opened upon us with all the intensity of frost and cold which we usually experience in January, the thermometer early in the morning of the 1st having receded to 24°, and in less than a week we were thrown into the full heat of June, for on the 6th the thermometer stood at 77° in the shade, and on the 7th at 78°. Since then we have again experienced a return to winter with severe ice frosts every night, and cold winds during the days, and on the 16th we had some heavy snowstorms; the only time we have seen the ground thoroughly white all the winter. The wind has veered chiefly from the north-west to the north-east; but the last few days have been much less cold, and the wind has blown from the east and has brought with it some good heavy showers of rain, which were much needed. We need scarcely say that vegetation has suffered much by these sudden and severe changes. Most of the early fruit is wholly destroyed. The Wheat plant, however, has borne the cold better than could have been expected. On some of the weakest fen soils the plant is thin and looks sickly, and promises badly; but on most of our best fen soils it looks well, and bids fair to make a full crop. The Oats, also, where early sown, and where the land was well farmed, have kept their plant well; and where sown with the water drill and artificial manure, look strong and healthy, although unable to grow much; but with the present beautiful showers they will soon get a start, and should we get mild nights will quickly assume a vigorous and fruitful appearance. Beans and Peas are looking strong and healthy, and have planted well. The weather has been very favourable for working the fallows, and these are unusually forward. Mangel sowing has already commenced, but most of our farmers have found it advantageous to sow this crop later than they did some few years since, and many decline sowing until May is in. The pastures have suffered from the frosty nights, especially where stocked, and have lost much of their luxuriant appearance. Grass is however plentiful, and with mild weather will soon wear a different hue. The trade for store stock has been influenced by the cold weather; both beasts and sheep have been slow to sell at slightly lower prices. Meat is also rather dull, but prices are high. The corn trade has been affected by the threatening influences of the continent. We now seem on the eve of war, and should our worst fears be realised we shall doubtless have corn dearer. But we still hope that Providence will graciously interpose to avert such a dire calamity as an European war. *Your Fen Reporter.*

Notices to Correspondents.

Farm Accounts: *Constant Reader.* Read Mr. Morton on the subject in the Cyclopedia of Agriculture or Mr. Coleman in the last volume of the Journal of the English Agricultural Society. The latter publishes a set of books—address the College, Cirencester. The former has had a set announced for publication by Messrs. Blackie of Glasgow. Mr. Stephens too has published a set of books (Blackwood, Edinburgh).

Sale of Shorthorns: *R.* Mr. Wetherall's herd brought to the hammer last week sold as follows:—

	Purchaser.	Price Gns.
Cows and Heifers.		
1. Young Jenny Lind, 1848	Mr. Barclay	40
2. Cosy, June 4, 1850	Duke of Devonshire	53
3. Passion Flower, 1852	Col. Gandy	55
4. Edith, 1853	Mr. Parrington	25
5. Lady Scarbro', April 18, 1851	Mr. H. Smith	200
6. Duchess of Northumberland, May 26, 1851	Mr. Gamble	100
7. Moss Rose, April 22, 1853	Col. Pennant	200
8. Young Magic Flower, Nov. 22, 1853	Mr. Neesham	75
9. Oak Leaf, July, 1852	Mr. Carr	23
10. Wallflower, Sep. 15, 1854	Mr. Gell	34
11. Venus, May 31, 1854	Mr. Pole	80
12. Oak Apple, July, 1854	Hon. W. Duncombe	50
13. Lucy, Aug. 8, 1855	Lady Pigot	150
14. Countess, Feb. 20, 1856	Mr. Ivens	36
15. Crocus, April 27, 1856	Col. Gandy	83
16. Cobweb, Aug. 17, 1856	Mr. Worsey	31
17. Cowslip, Sep. 1, 1856	Mr. Marley	36
18. Acorn, May, 1856	Mr. James	52
19. Rose-leaf, March 11, 1856	Mr. Aylmer	43
20. Ayrshire Rose, Feb. 11, 1856	Col. Pennant	165
21. Lady Stanley, Jan. 27, 1857	Mr. Scott	56
22. Miss Lumley, May 16, 1857	Mr. Sheldon	60
23. Orange Blossom, June 14, 1857	Mr. Neesham	42
24. Stanley Rose, Sep. 27, 1857	Lady Pigot	300
25. Fairy Queen, Oct. 16, 1857	Mr. Worsey	30
26. Maid of the Mountain, Nov. 27, 1857	Mr. Blakey	24
27. Bell Flower, April 8, 1858	Mr. Campbell	38
28. Governess, May 16, 1858	Mr. Taylor	110
29. Comfort, Sep. 24, 1858	Duke of Devonshire	44
30. Bloom, Sep. 12, 1858	Capt. Spencer	105
31. Lady, Sep. 11, 1853	Mr. Lascelles	43
32. Perfume, Nov. 3, 1858	Mr. Ivens	20
33. Primrose, Feb., 1859	Mr. Morrill	22
34. Alice, March 11, 1859	Mr. Hopper	18
35. Roan Heifer, March 12, 1859	Mr. Pole	150
Bulls.		
1. Lord Scarbro', Oct. 15, 1854	Mr. Campbell	40
2. Statesman, Nov. 20, 1855	Mr. W. B. Cox	82
3. General Havelock, May 9, 1856	Mr. Denchfield	27
4. Wisetonian, 1857	Sir J. Crewe	55
5. Alderman, April 23, 1857	Mr. Wilson	70
8. Pilot, Sep. 25, 1857	Mr. Denchfield	22
9. Prince William, Feb. 20, 1858	Mons. Von Volsen	23
10. Lumley, March 6, 1858	Mr. Surtees	125
11. Stanley, March 6, 1858	Mr. Packe	92
12. Catton, March 26, 1858	Mr. Peacock	21
13. Traveller, May, 1858	Sir J. Paxton	27
14. Royal Oak, Aug. 19, 1853	Mr. Fawkes	70
15. Lord Aberdeen, Sep. 17, 1858	Mr. Pole	91

The 35 cows and heifers averaged 77*l.* 15*s.* 9*d.*, realising 2722*l.* 13*s.* The 13 bulls and calves fetched 60*l.* 3*s.* 6*d.* each, or 782*l.* 5*s.* in all. The whole 48 animals of all ages fetched 3504*l.* 18*s.*, or 73*l.* 4*s.* 6*d.* Among the prices it will be seen that some very long ones were given, as 91 gs. for a 7 months bull calf, 150 gs. for a 5 weeks heifer calf, and 300 gs. for a yearling heifer.

Weight of Chaff: *Correspondent.* It may be packed as close as you like; the following, however, is a memorandum of the quantity and weight of one of our "caving" baskets of (hay and straw) chaff:—Measure, 6 bushels; weight, 33 lbs., or 5½ lbs. per bushel.

*** As usual, many communications have been received too late, and others are detained till the necessary inquiries can be made. We must also beg the indulgence of those correspondents the insertion of whose contributions is still delayed.

AGRICULTURAL MACHINERY.

R. and F. TURNER, Ipswich, manufacture Prize Mills for Crushing Corn, Seed, Malt, &c.; Portable Grinding Mills, Steam Engines fixed and portable from 2 horse-power and upwards; Threshing Machines, Chaff Cutter, Oilcake Breakers, Horse Gears, Saw Tables, &c., all of a superior description and adapted for Home, Colonial, and Foreign use. Illustrated Price Lists sent free on application.

SIGMA'S BEAN, MANGEL, and CORN PLANTERS (5 Depositors), HOES, &c. The "Multum in Parvo," combining Cultivator, Horse Hoe, Ridge Plough, Subsoiler, Broadshare, and other forms; all expanding. Complete, 7*l.* 7*s.* Prospectus sent.—C. Powell, Hurstgreen, Sussex.

SPEED and ECONOMY for Farmers, Gentlemen, and Market Gardeners, in the use of HOARE'S REGISTERED HAND SEED PLANTING MACHINE, which from its capabilities, combined with strength, lightness, and simplicity, places it beyond a parallel. Its operative powers in planting the seeds of Mangel, Carrot, Turnip, Parsnip, and all small seeds in patches of equal depth and different distances, from 6, 7, 12, 14, 18, 21, 24, to 28 inches apart, raking in and rolling complete, render it an invaluable invention. It will act as a drill when required. Price 5*l.* 15*s.*

London Agent, Mr. B. Samuelson, 76, Cannon Street, West. Sold also by the inventor, J. Hoare, Old Fishbourne, Chichester, Sussex.

PROPAGATING GLASSES.—

	s. d.		s. d.
2 ins. diameter	0 3½ each	12 ins. diameter	1 9 each
3 ,, ,,	0 4½ ,,	13 ,, ,,	2 0 ,,
4 ,, ,,	0 5½ ,,	14 ,, ,,	2 6 ,,
5 ,, ,,	0 6½ ,,	15 ,, ,,	3 0 ,,
6 ,, ,,	0 8 ,,	16 ,, ,,	3 6 ,,
7 ,, ,,	0 10 ,,	17 ,, ,,	4 0 ,,
8 ,, ,,	1 0 ,,	18 ,, ,,	5 0 ,,
9 ,, ,,	1 2 ,,	19 ,, ,,	6 0 ,,
10 ,, ,,	1 4 ,,	20 ,, ,,	7 0 ,,
11 ,, ,,	1 6 ,,		

CUCUMBER GLASSES.

24 inches long	2*s* 0*d.*	16 inches long	1*s.* 4*d.*
22 ,,	1 10	14 ,,	1 2
20 ,,	1 8	12 ,,	1 0
18 ,,	1 6	Made to any length.	

HAND GLASSES.

12 inches	6*s.* 0*d.* each	18 inches	9*s.* 0*d.* each
14 ,,	7 0 ,,	20 ,,	10 0 ,,
16 ,,	8 0 ,,	24 ,,	12 0 ,,

Painted and glazed with 16 oz. Sheet Glass.
If open at top, 1*s.* extra.
WASP TRAPS, 3*s.* 6*d.* per dozen.

Agents for
HARTLEY'S PATENT ROUGH PLATE GLASS.
PAINTS.
Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, &c.
JAMES PHILLIPS and CO.,
180, Bishopsgate St. Without, London, E.C.

GLASS FOR CONSERVATORIES, ETC.

HETLEY and CO. supply 16-oz SHEET GLASS of British Manufacture at prices varying from 2*d.* to 3*d.* per square foot for the usual sizes required, many thousands of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES, and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to James Hetley & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

HORTICULTURAL GLASS—JUNE TARIFF.

THOMAS MILLINGTON'S reduced Tariff of GLASS, &c.

6 by 4, 7 by 5, 8 by 6, 9 by 7 } 16 oz. to the foot, 11*s.* 6*d.*
6½ by 4½, 7½ by 5½, 8½ by 6½, 9½ by 7½ } per 100 feet.
In 100 boxes,—4ths quality, 12*s.* 6*d.*; 3ds do., 14*s.* 4*d.*
10 by 8, 12 by 9, 12½ by 10½, 14½ by 10½, 13 by 11
10½ by 8½, 12½ by 9½, 13 by 10, 15 by 10, 13½ by 11½
11 by 9, 13 by 9, 13½ by 10½, 12 by 11, 14 by 11
11½ by 9½, 12 by 10, 14 by 10, 12½ by 11½ .. ..

20 by 12, 20 by 13, 20 by 14, 20 by 15	per 100 feet 16 oz. 21 oz. Common .. 16*s.* .. 24*s.* Superior . 18*s.* .. 27*s.*

All Boxes included.
Orchard House sizes as supplied to Mr. Rivers.
Hartley's improved Rough Plate Glass from ⅛ to ¾ in thickness.
Coloured Glass in great variety, at 9*d.* and 1*s.* per foot.
Paints, Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, Lamp Glasses, &c.
87, Bishopsgate Street Without, same side as Eastern Counties Railway.

PARKES' STEEL DIGGING FORKS.

BURGESS and KEY, 95, Newgate Street, London being the Wholesale and Retail Agents for these celebrated TOOLS have always a large Stock on hand from which their Customers may select what they may require.

ANTHONY'S PATENT AMERICAN CHURN.—The FIRST PRIZE was again awarded to this Churn in Competition with several others at the Chester Meeting of the Royal Agricultural Society; it has obtained the First Prize given by the Society at every Meeting since 1850.

Messrs. Burgess & Key, 95, Newgate Street, strongly recommend it as the most perfect Churn now in use. Full particulars sent on application.

GLAZIERS' DIAMONDS for CUTTING HORTICULTURAL and other GLASS, to be had of the Wholesale Manufacturer, John Edwards, 20, Sharp's Alley, West Smithfield, London, E.C. Prices from 10*s.* to 27*s.* 6*d.*

FOR WATERING GARDENS, PLUMBERS, ENGINEERS, MILLS, and MACHINISTS.
Vulcanised India Rubber.

Washers for Hot-water and Steam Joints	Garden Watering Hose
Elastic Packing and Valves for Steam Engines	Do. fitted with Brass Joints, Taps and Spreaders
Pump Buckets (compound India-rubber)	Wheel Tires (noiseless for Trucks, &c.)
Suction Hose for Pumps	Waterproof Cart, Van, and Waggon Covers
Fire Engine Hose	Mill Bands, much improved for driving all kinds of Machinery
Air Beds, Cushions, & Bolsters	Door Springs, Gas Bags
Water Beds, Pillows, and Feet Warmers	Foot Balls, Cricketting Gloves

N.B. A Stock of the above always on hand, and any modification made to order. Please address all communications to the Manufactory.
JAMES LYNE HANCOCK,
Vulcanised India-rubber Works, Goswell Road, London, E.C

LAWNS—IN USE IN THE ROYAL GARDENS.

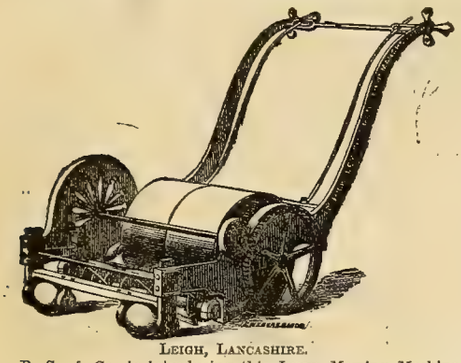
SAMUELSON'S PATENT BOYD LAWN MOWING and ROLLING MACHINE, the only one that will cut wet as well as dry Grass, is guaranteed efficient in use, easily handled, and readily kept in working order. Doing the work of five or six men. Prices, including case and carriage to any railway station in England, from 4*l.* 17*s.* 6*d.* and upwards. Copies of testimonials post free on application to Mr. SAMUELSON'S London Warehouse, 76, Cannon Street West, City; Messrs. DEANE'S, London Bridge; or the Works, Banbury, Oxon.

THE NEW PATENT MOWING MACHINES may be used anywhere at any time, are self-sharpening, and admit of the use of duplicate sets of cutting parts. Prices from 4*l.* 10*s.* upwards. Illustrated Circulars free by post.—Manufactured and Sold by JAMES FERRABEE & Co., the original introducers of Mowing Machines.

Several infringements of their patent having taken place, the Makers respectfully caution the public to see that the words "FERRABEE'S Patent" are cast on every Machine.

JAMES FERRABEE & Co., Phœnix Iron Works, Stroud.

PICKSLEY, SIMS, AND CO.'S (by ROYAL LETTERS) PATENT LAWN MOWING MACHINE.



LEIGH, LANCASHIRE.

P., S., & Co., in introducing this Lawn Mowing Machine, particularly request a strict examination, or comparison and trial, for simplicity of construction, lightness, regularity of draught, adaptability for mowing every kind of plain, circular, and verge work.

Firstly, we have encased the wheels so as completely to protect from injury flower borders, shrubs, &c., whilst working the machine, at the same time not being liable to obstruction or damage.

Secondly, this machine works easily on undulated and sloping ground; it can be thrust forward or be drawn from behind, the latter being the easiest.

Thirdly, this is the only machine made that will work round quick curves; it will work easily and effectively round circular borders so small as 12 inches in diameter. This very desirable improvement has been obtained by fixing to the front part of the machine our newly-invented universal action, and self-cleaning, anti-friction spherical guiding balls. The continual revolving of these spherical guiding balls, under the most trying circumstances, never fails.

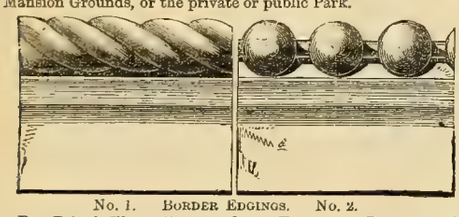
Fourthly, we have attached to this machine a rack and pinion motion, for adjusting the cutting parts (there being a rack and pinion on each side of the machine to act conjointly at the same time upon the full length of the knives), in other machines a slow, tedious, and uncertain operation, into one of quickness, ease, and certainty.

PRICES:—

			£	s.
Patent Lawn Mowing Machine	13 inches	..	5	10
Ditto ditto ditto	16 ,,	..	6	0
Ditto ditto ditto	19 ,,	..	6	10
Ditto ditto ditto	22 ,,	..	7	0
Patent Chaff and Gorse Cutters from	.. ..	£2 5 to	22	0
,, Bean, Oat, and Malt Mills	.. ..	3 10 to	10	10
,, Gorse and Grain Bruisers	.. ..	10 10 to	21	0
,, Bone Mills	.. ..	27 10 to	150	0
,, Mangles, various	.. .. ..	2 10 to	12	10

ILLUSTRATED CATALOGUES can be had gratis.

VASES, PEDESTALS, SUNDIALS, FOUNTAINS, FLOWER BOXES, JARDINETS, FERN CASES, BALUSTRADES, EDGINGS AND CURBS FOR FLOWER BORDERS, SEATS, &c., in Imperishable Siliceous Stone, at reduced prices, for the adornment of the Villa Garden, the Mansion Grounds, or the private or public Park.



No. 1. BORDER EDGINGS. No. 2.

For Priced Illustrations apply to FREDERICK RANSOME, at the Show Rooms, Cannon Row, Westminster, S.W., or Patent Stone Works, Ipswich.

PATENT PRIZE SCYTHES, Price 11*s.* AND 11*s.* 6*d.*

JAMES PAYNE, Kirkcudbright, invites the attention of Gardeners and others to his newly improved Patent Adjustable Scythes, which can be set to any angle in one minute's time; are light and easily managed, warranted strong, and unequalled for finish by any in the Kingdom.—Circulars on application.



BOYD'S SELF-ADJUSTING SCYTHES are the cheapest and best, and being sold adjusted are ready for immediate use. They can be regulated in an instant to suit any person, and to cut any crop without change of Scythes. To Amateur Gardeners they are very desirable, as they afford a healthy and interesting exercise. They have stood the test of public opinion for seven years, and for excellence, ease, economy, and durability are highly recommended. Upwards of 50,000 of them have been sold. To be had of every Ironmonger, Hardwareman, and Seedsman in the United Kingdom; and Wholesale of the Sole Licensed Makers, WM. DRAY & Co., at their New Agricultural Implement Warehouses, Adelaide Place, London Bridge.

PATENT LAWN MOWING AND ROLLING MACHINES.

SAMUELSON'S LAWN MOWING MACHINES,

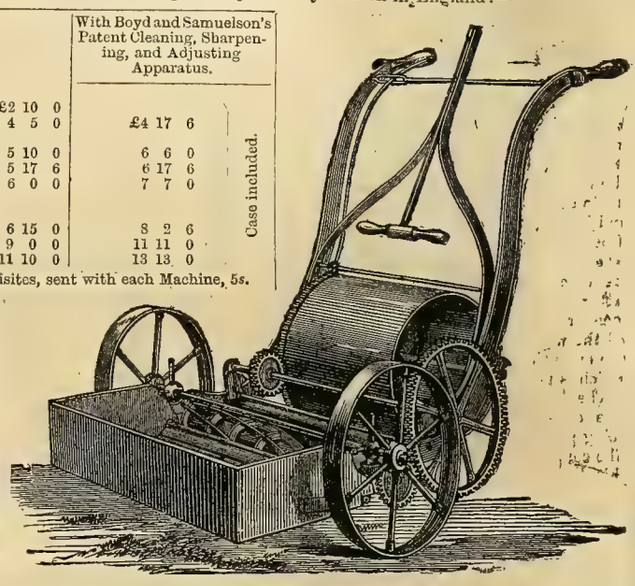
WITH BOYD'S PATENT IMPROVEMENTS.

"Doing the work of five or six men."—The Times, Sept. 20, 1858.

The following PRICES include the Carriage to any Railway Station in England:—

		With Boyd and Samuelson's Patent Cleaning, Sharpening, and Adjusting Apparatus.	
9 inches wide, for very narrow borders, without registered wheels	£2 10 0		
12 inches wide	4 5 0	£4 17 6	Case included.
16 inches wide, with registered arrangement (for one man)	5 10 0	6 6 0	
19 inches wide, ditto (for one man) ..	5 17 6	6 17 6	
22 inches wide, ditto (for man and boy)	6 0 0	7 7 0	
22 inches wide, ditto for ditto, and also fitted with draught links for a pony and a man to work it	6 15 0	8 2 6	
25 inches wide, ditto	9 0 0	11 11 0	
30 inches wide, ditto (for man and pony)	11 10 0	13 13 0	

Box of Tools, Oil Can, and other requisites, sent with each Machine, 5*s.*



Some thousands of these Machines are now in successful operation on the Lawns of Royalty, the Nobility, and Gentry of the United Kingdom and the Continent of Europe, and are pronounced SUPERIOR to *any other* for lightness of draught, efficiency, and durability. The demand for them is *yearly increasing—the number supplied by* Mr. SAMUELSON *during the years* 1856, 1857, *and* 1858 *being more than* 2100. Testimonials are continually being received from gentlemen having them in daily use, who speak in the highest terms of their efficiency.

These are the only Machines that will cut wet as well as dry Grass without clogging the knives.

Orders for 1859 should be sent at once to insure certain delivery and to prevent disappointment.

Copies of Testimonials will be forwarded post free on application to

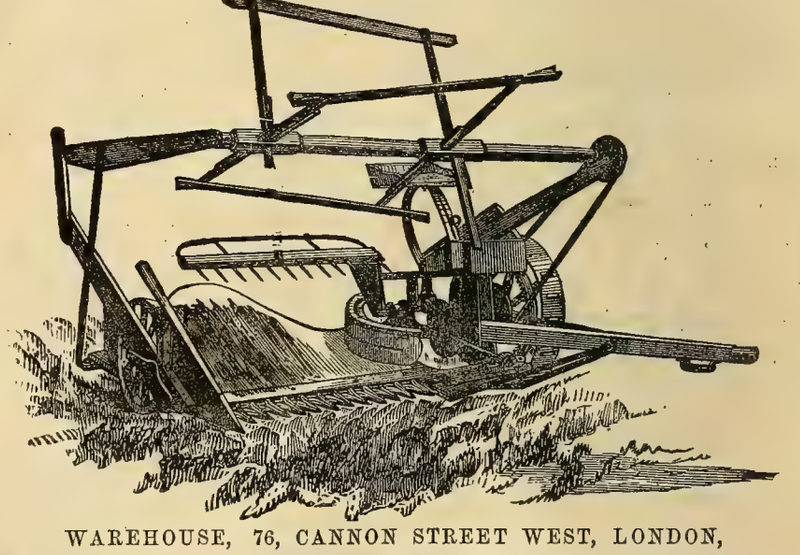
B. SAMUELSON, 76, Cannon Street West, City, London;

to the Manufactory, Britannia Works, Banbury, Oxon;

or to MESSRS. DEANE AND CO. London Bridge; or any respectable Ironmonger or Seedsman in the Kingdom

B. SAMUELSON,

AGRICULTURAL ENGINEER AND MACHINIST,



WAREHOUSE, 76, CANNON STREET WEST, LONDON,

WORKS AT BANBURY,

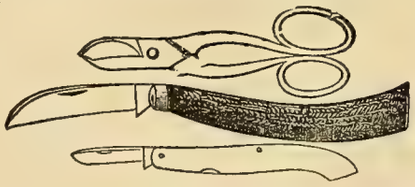
INFORMS MERCHANTS, the TRADE, and AGRICULTURISTS, that he has opened the above Warehouses as a depôt for his own manufactures and those of Messrs. Barrett, Clayton, Howard, Hornsby, Nicholson, Richmond, Tuxford, Smith, and all other first-class makers, whose implements he is prepared to offer on makers' terms.

THE BRITANNIA SELF-RAKING REAPING MACHINE,

With side delivery in sheaf, no rakers or gatherers required; and all the most improved Spring Implements for the season, may be inspected at the above depôt.

B. SAMUELSON, 76, Cannon Street West, London; and Britannia Works, Banbury.

PAXTON WORKS, SHEFFIELD, ESTABLISHED 1738.



SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.—Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

MARQUEES, TENTS, AND RICK CLOTHS FOR SALE, OR HIRE.—H. PIGGOTT, 115, Fore Street, E.C.

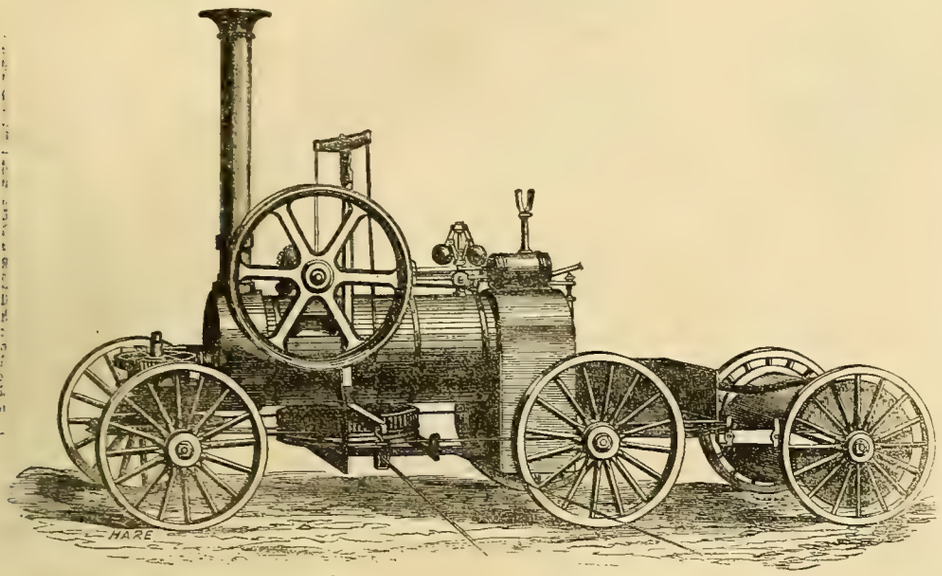
WHY NOT PRESERVE YOUR HAY?
RICK CLOTHS, New and Second hand,
At BENJAMIN EDGINGTON'S,
2, Duke Street, London Bridge, S.E., and West End,
32, Charing Cross, S.W.
MARQUEES, TENTS, &c.
Illustrated Catalogues free.

BENJAMIN EDGINGTON, 2, Duke Street, London Bridge, S.E.
MONSTER TENTS for large parties.
PRETTY TENTS for Lawns.
RICK CLOTHS, Second-hand, very cheap.
NETTING for Fruit Trees, &c.
West End Establishment, 32, Charing Cross, S.W.

FOWLER'S PATENT STEAM PLOUGH.

THIS IMPLEMENT HAS GAINED THE FOLLOWING PRIZES:—

AT STIRLING, 1857	£200	AT NORTHALLERTON (Lord BOLTON'S Prize), 1858	£25
AT CHESTER, 1858	£500	AT LONDONDERRY, 1858	£50
AT NORTHALLERTON, 1858 ...	£50	AT STIRLING, 1858	£50



A CUT OF FOWLER'S STANDARD ENGINE, WINDLASS, AND WATER CART.

Illustrated Catalogues, with reduced prices of Ploughs, will be ready shortly. For further particulars apply to

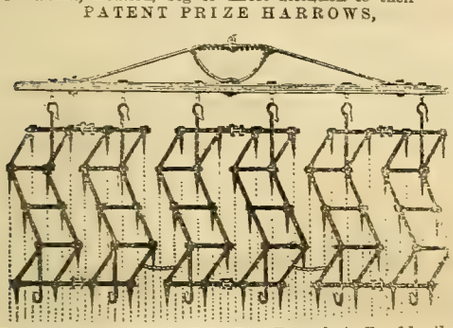
JOHN FOWLER, Jun., 28, Cornhill, London, E. C.

IMPROVED PATENT TURNIP AND MANGEL GRATER,
MANUFACTURED BY

JOHN WARNER AND SONS, No. 8, Crescent, Jewin Street, London, E.C.—J. W. & SONS, in introducing their IMPROVED PATENT TURNIP AND MANGEL GRATER to the notice of Agriculturists, beg to state that they have personally tested its capabilities during the last three seasons, and as such feel that they can, with the greatest confidence, recommend it as a machine that will upon trial, satisfy the requirements of Feeders of Stock generally; one man or strong lad being able with comparative ease to grate 20 bushels of roots in 10 minutes.—Price of the Machine complete, *4l.* 10*s.* Carriage paid to any Railway Station in England. To be procured of any Ironmonger or Agricultural Machine Agent in Town or Country, or of the Manufacturers.

HOWARDS' PRIZE IMPLEMENTS, 1859.

JAMES AND FREDK. HOWARD, Britannia Iron Works, Bedford, beg to direct attention to their PATENT PRIZE HARROWS,



For which they received All the First Prizes last offered by the Royal Agricultural Society of England, viz.:—

The First Prize for the Best General Purpose Harrows.
The First Prize for the Best Light Harrows.
The First Prize for the Best Drag Harrows.

J. & F. HOWARD have discontinued troubling the Public with a long List of Prizes awarded to their Implements, but they would just state that for PLOUGHS, HARROWS, and HORSE RAKES, they have for several years gained every Prize for which they have competed.

PLOUGHS.

D PLOUGH, for a Pony	£2 5 0
DD ditto for one Horse	3 5 0
P ditto for two Horses	4 7 6
PP ditto for general purposes	4 12 6
SKIM COULTER for P or PP Plough	0 5 6

HARROWS.

A Set of Three 4-Beam HARROWS, with Whippletree, recommended as general Seed Harrows, 9¼ feet wide, marked No. 12	3 14 0
A Set of Three 4-Beam HARROWS, with Whippletree, adapted for 3 Horses, 10 ft. wide, marked No. 11	4 4 0
If with Patent Joints, 6*s.* per set extra.	

HORSE RAKES.

Small size, 7½ feet wide, marked A, with 24 iron teeth	7 10 0
Ditto, with Steel Teeth	8 0 0
Large size, 8½ feet wide, marked B, with 28 iron teeth	8 0 0
Ditto, with steel teeth	8 10 0
Extra large size, 8½ feet wide, marked C, with 24 steel teeth	10 10 0
A Set of 15 Prongs, to be attached to the above when used as Weed Extirpators	1 10 0

Free Delivery to Birmingham, Bristol, Colchester, Derby, Gloucester, Hull, Lincoln, Liverpool, London, Manchester, Norwich, Nottingham, Retford, Shrewsbury, Wisbeach, Worcester, and York; or to Dublin, Edinburgh, Glasgow, and other parts at fixed rates.

HOWARDS' NEW CATALOGUE, containing prices and description of their Patent Ploughs, Harrows, Horse Rakes, and other Implements, including Smith's Steam Cultivators, for which they received at Chester the Gold Medal of the Royal Agricultural Society of England, sent free on application to

J. & F. HOWARD, Britannia Iron Works, Bedford.

WARNER'S IMPROVED LIQUID MANURE OR GENERAL PORTABLE PUMP.



These Pumps are fitted with J. W. & SON'S Patent Buckets and Suckers, and cannot clog in action. The barrel is of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure. The legs will fold together, and the whole may be carried on the shoulder to any pond or tank required.

Price of 4½ in. Pump, with legs, 3*l.* 3*s.* If with planished copper barrel and galvanised iron handle, &c., 14*s.* extra. The barrel is 27½ in. long, and the legs are 5 ft. high.

These Pumps are also made without the legs, with strong wrought-iron straps for screwing on to any ordinary water butt or cart, and fitted with 1½ inch brass union for attaching flexible suction. Price 50*s.*

1¾ inch Gutta Percha Suction Pipe, 1*s.* 11*d.* per foot.

Rubber and Canvas Suction and Delivery Hose, from ¾ inch to 4 inches diameter, in lengths of 60 feet to order. Branch Pipes with Cocks, Union Screws, &c., at reduced prices.

May be obtained of any Ironmonger or Plumber in town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin St., London

---

WARNER'S PATENT VIBRATING STANDARD PUMPS.

PATENT CAST-IRON PUMPS, fitted with J. W. & SON'S Patent Buckets and Suckers, which cannot clog in action, for Farms, Cottages, and Wells, not exceeding 28 feet.

Diameter of Barrel.	Height.		£ *s.* *d.*
2¼ in.	short 1 ft. 7 in.	Fitted for lead, gutta percha, or cast iron flanged pipe, as required.	1 10 0
2½ ,,	long 3 ,, 3 ,,		1 14 0
3 ,,	ditto 3 ,, 6 ,,		2 8 0
3½ ,,	ditto 3 ,, 6 ,,		2 12 0
4 ,,	ditto 3 ,, 6 ,,		3 3 0
2½ ,,	short, with 15 feet of Lead Pipe attached, ready for fixing		2 14 0
2½ in.	long ditto ditto	ditto	2 18 0



The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.

May be obtained of any Ironmonger or Plumber in Town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

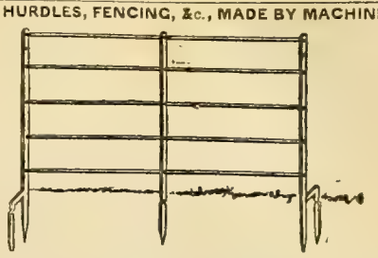
"FRIGI DOMO."—Patronised by her Majesty, the Queen, the Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, and — Collier, Esq., of Dartford.

PROTECTION FROM COLD WINDS AND MORNING FROSTS.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths. Two yards wide, 1*s.* 6*d.* per yard run; four, 3*s.* per yard. Also, an improved make for Shading Purposes. Three yards wide, 2*s.* 6*d.* per yard run.

ELISHA THOMAS ARCHER, whole and sole manufacturer, 7, Trinity Lane, Cannon Street, City, and of all Nurserymen and Seedsmen throughout the kingdom. "It is much cheaper than mats as a covering."

IRON HURDLES, FENCING, &c., MADE BY MACHINERY

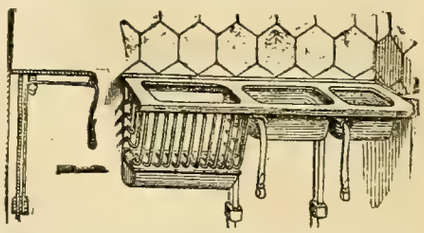


COTTAM AND COMPANY, of Winsley Street, have invented machinery for making Hurdles, &c.; the bars, instead of being pointed by hand in the old fashioned style, are nipped down by the machine, leaving a shoulder so as to more effectually tighten the standards when rivetted. They are made of superior iron only, and will compete in price with those made by hand from cinder or common iron which so frequently break. Iron Fencing, Gates, and Iron Work of all kinds, both Plain and Ornamental, Conservatories, Hot Water Apparatus and Garden Implements.

Illustrated CATALOGUES free on application to COTTAM & COMPANY, Ironfounders, 2, Winsley Street, Oxford Street, W.

N.B. COTTAM & Co. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

COTTAM'S PATENT INVENTIONS FOR STABLE REQUISITES, awarded a Prize at the Paris Exhibition, and patronised by the English and French Governments.



COTTAM AND COMPANY, of Winsley Street, are the original inventors of the PATENT ENAMELLED MANGER, Water Trough, and Wrought Iron Rack, united to an iron top-plate, and forming one complete and useful fixture, having COTTAM'S patent noiseless halter guide and collar rein attached, which is taken to the back of the manger, and works with ease and freedom up or down the guide-bar.

COTTAM'S NEW PATENT SEED-BOX, an important addition to the above fittings, being simple in construction, light, and durable, promotes cleanliness, and is economical in its results.



COTTAM'S PATENT SADDLE and HARNESS BRACKET combined, can be used with great advantage where space is an object, as it can be turned up out of the way when not in use.

COTTAM'S IMPROVED SURFACE GUTTER, with perforated moveable cover, the use of which prevents accidents, and can be easily cleaned out.

COTTAM'S CAST-IRON SANITARY TRAP, from its improved construction, gives a full water passage, and does not allow any smell to ascend from the drain.

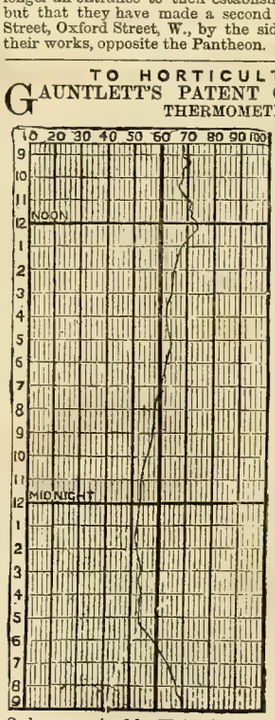
PATENT LOOSE-BOX FITTINGS, and every article for the harness-room and stable, kept in stock, plain, galvanised, and enamelled. Iron gates, fencing, hurdles, &c.

The New Illustrated Catalogue and Estimates, gratis, upon application to COTTAM and COMPANY, 2, Winsley Street, Oxford Street.

N.B. COTTAM & Co. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

TO HORTICULTURISTS.

GAUNTLETT'S PATENT CHRONOMETRICAL THERMOMETER.



This instrument, which combines an eight-day clock of the best English make showing time, with a newly-patented Thermometer, wherein glass and quicksilver are dispensed with, writes down the temperature of the atmosphere on a slip of paper, and when placed in a Hothouse, Forcing House, or Conservatory, &c., supplies a valuable record of the temperature, with all its variations, showing the time when any change took place, and how long such change continued.

The above slip (reduced in size) exhibits the temperature of the Royal Agricultural Society's show yard at Chester, July 22, 1858, written off by one of these instruments, to which was awarded the Society's SILVER MEDAL.

This is the only instrument that registers temperature continuously and writes it down, and no horticulturist should be without it.

Orders received by W. H. GAUNTLETT, Middlesbro'-on-Tees.

GREENHOUSES, ORCHARD HOUSES, AND PITS

OF EVERY DESCRIPTION, MADE BY STEAM MACHINERY, AND HEATED BY HOT WATER ON AN IMPROVED PLAN AT

J. LEWIS'S HORTICULTURAL WORKS, Stamford Hill, Middlesex, established 20 years. These Buildings are warranted of the best materials, and at prices which defy competition. The ventilation is most efficient, and the greatest improvement of the present day. Prices of any size on application. References in all parts of the United Kingdom.

C. STEPHENSON, late STEPHENSON AND SONS, 61, Gracechurch Street, London, Manufacturer of Iron Hurdles, Fencing, &c., Improved Iron and Copper Conical Boilers and Apparatus for Warming Buildings of every description by Hot Water.

Prices and Estimates furnished upon application.

HORTICULTURAL BUILDINGS AND HEATING BY HOT WATER.

JOHN R. PEILL, 17, New Park Street, Southwark, Manufacturer of every description of Buildings for Horticultural purposes, and Inventor of the Improved Conical Boiler for heating the same, is prepared to undertake works of any magnitude, and refers among others to the celebrated range of FORCING HOUSES at HER MAJESTY'S GARDENS, FROGMORE, and at SIR ROBERT PEEL'S, DRAYTON MANOR, constructed under the superintendence of his Manager, MR. JOHN JONES; and also to his BOILERS fixed at the CRYSTAL PALACE, the ROYAL BOTANIC GARDENS, REGENT'S PARK, and KEW, and at several hundreds of the Nobility's seats, Public Establishments, and Manufactories in London and the provinces. J. R. P. also manufactures every description of Iron Roofs, Iron Houses, and Iron Fencing, plain and ornamental. Strong Iron Hurdles for Sheep (6 feet long, 3 feet high, with 5 bars), 4*s.* 3*d.* each; ditto for cattle, 4*s.* 9*d.* each.

Prices and other particulars forwarded on receipt of one postage stamp.

FLOWER POTS, of superior Red Clay, manufactured by the Arley Pottery Company (Limited), equal in appearance to Terra Cotta at the price of the common pots usually sold, say 1*s.* 6*d.* per cast, at Kidderminster.—Apply to TAYLOR & PEARS, 8, George Yard, Lombard Street, City, E.C.

SHAW'S TIFFANY.—The best and cheapest material for Shading Conservatories, Protecting Fruit from Birds and Wasps, &c. Sold in pieces 20 yards long by 38 inches wide. No. 1, best quality, 5*s.* per piece; second quality, 4*s.* per piece. Extra strong and thick (see Circular sent free by post with samples).

Address JOHN SHAW & Co., Manufacturers and Dealers, Princess Street, Manchester.

TANNED GARDEN NETTING, for preserving Fruit Trees from frost, blight, birds, &c., and as a fence for fowls, &c. One yard wide 1½*d.*, 2 yards 3*d.*, 3 yards 4½*d.*, and 4 yards 6*d.*, per yard, in any quantity, may be had at C. WRIGHT'S, 376, Strand, W.C.—A liberal allowance to Nurserymen.

TANNED NETTING, for the Protection of Fruit Trees from Frost, Blight, and Birds; also, for the security of fresh sown seeds, at 1*d.* per square yard; 200 yards, 12*s.*; 500 yards, 25*s.*; Scrim Canvas, for wall fruit; Garden Mats.—At EDGINGTON & Co's., Rick Cloth, Tent, and Waterproof Cloth Manufacturers, 17, Smithfield Bars, City, & Old Kent Rd.

FOR Effectually Protecting the Bloom of Wall Trees from Spring Frosts use SHAW'S No. 3 TIFFANY, DOUBLE STRENGTH. In pieces 18 yards long by 39 inches wide, 7*s.* 6*d.* each.—JOHN SHAW & Co., Princess Street, Manchester.

BRITTAIN'S SUMMER SHADINGS.—Strong Tiffany, 34 inches, 3*d.* a yard; No. 3 do. 39 inches, 7*s.* a piece, 18 yards each. Nets, Nos. 1, 2, and 3, 5*d.*, 6*d.*, and 8*d.* a yard, 55 inches wide. ZEBRA ORNAMENTAL SHADING, 9½*d.* a yard; yard wide linen shading, 5*d.* to 5½*d.*

Peel Street, Manchester.

TO AMATEUR GARDENERS, NURSERYMEN, AGRICULTURISTS, AND OTHERS.

GUTTA PERCHA TUBING FOR WATERING GARDENS, from 2½*d.* per foot; Vulcanised India Rubber Tubing for Watering Gardens, from 4*d.* per foot; Brass Hand Branches, with Stopcock and Rose, and every description of Garden Tubing Fittings, sold Wholesale and Retail by W. R. WOODS, 94, Goswell Road, near the "Angel," Islington, London, E.C. Priced Lists can be had on application.

Please notice the Address—94, Goswell Road.

PATENT GUTTA PERCHA SOLES.—IMPORTANT TO GARDENERS.—The Gutta Percha Company have the pleasure to acknowledge the receipt of the following letter from G. GLENNY, Esq., the celebrated Florist:—

"420, Strand, London

"Gentlemen,—I have worn Gutta Percha Soles and Heels these two years, and being so much in a garden as I necessarily am in all weathers, and with the ground in all states, I would on no account be without them. As a matter of economy I would recommend Gardeners to use them, for they may repair the worn part at all times by warming the material at the fire, and pressing it from the thick parts to the worn parts as easily as if it were so much dough. I think it the duty of all persons who must occasionally wet their feet to adopt a material that completely defies damp. Many a gardener would escape colds and rheumatism by the use of Gutta Percha Soles.

"Your obedient servant, G. GLENNY."

Every variety of Gutta Percha articles, such as Mill Bands, Tubing, Soles, Goloshes, Sheet, Pump Buckets, Fire Buckets, Bosses, Union Joints, Flasks, Bottles, Bowls, Chamber Vessels, Toilet Trays, Sponge Bags, Curtain Rings, Galvanic Batteries, Talbotype Trays, &c., manufactured by the Gutta Percha Company, and sold by their wholesale dealers in town or country.—The Gutta Percha Company, Patentees, 18, Wharf Road, City Road, London.

MICROSCOPES.

J. AMADIO'S BOTANICAL MICROSCOPES, packed in mahogany case, with three powers, condenser, pincers, and two slides, will show the animalculæ in water. Price 18*s.* 6*d.*—Address JOSEPH AMADIO, 7, Throgmorton Street. A large assortment of Achromatic Microscopes.

"It is marvellously cheap, and will do everything which the lover of nature can wish it to accomplish either at home or in the open air."—*The Field*, June 6, 1857.

Just published, an Illustrated Catalogue, containing the names of 1000 Microscopic objects, post free for 4 stamps.

SMALL GAS APPARATUS, FREE FROM NUISANCE.

THE PATENT NATIONAL COAL-GAS APPARATUS, for private Residences, Farm Buildings, Churches, Chapels, Workshops, Railway Stations, and other places not hitherto lighted with Gas. It is durable, economical, and compact, and supplies the desideratum of cleanliness in the production of a Gas of better quality and purity, and at less cost, than is ordinarily obtained from Public Works. By an entirely new and peculiar process it is easily worked by a boy or inexperienced servant. The cost of Gas, including labour, wear and tear, and interest of capital, is less than one-fourth that of candles or oil. It can be fixed and completed in working order in a few days.—Further particulars, prices, testimonials, &c., on application to the Proprietors and Manufacturers, J. T. B. PORTER & Co., Lincoln.

GARDEN ENGINES AND SYRINGES.

J. TYLOR AND SONS, Warwick Lane, Newgate Street, London, E.C., beg to call attention to their very superior manufacture of GARDEN ENGINES and SYRINGES.

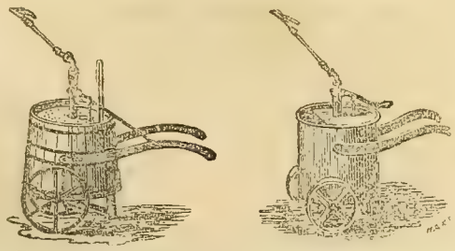


Fig. 598. J. TYLOR & SONS' BARROW GARDEN ENGINE in best well painted Oak tub, fitted with J. TYLOR & SONS' Improved Brass Pump, Universal Joint, and Registered Spreader, which answers the purpose of the separate rose, fan, and jet.

CONTENTS OF TUB:—		
10 gallons	15 gallons	28 gallons
£4 10 0	£5 10 0	£6 18 0

Fig. 599. do. TINNED IRON TUB.

CONTENTS OF TUB:—				
8 gallons	12 gallons	16 gallons	24 gallons	30 gallons
£2 15	£3 5	£4	£5	£5 18



Fig. 618. No. 1. REGISTERED SYRINGE, with India-rubber suction tube, one rose and jet .. .. £1 5 each.
No. 2, Ditto ditto 1 1 ,,
Telescope Branch Pipe for ditto .. .. 0 10 ,,



Fig. 619. GARDEN SYRINGE, with one rose and jet, 12*s.* 6*d.* each
,, 620. Ditto ditto 11*s.* 6*d.* ,,
,, 621. Ditto ditto 10*s.* 6*d.* ,,
,, 622. LADIES' GARDEN SYRINGE, without rose & jet, 8*s.*

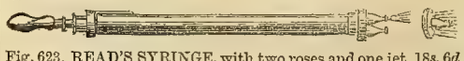


Fig. 623. READ'S SYRINGE, with two roses and one jet, 18*s.* 6*d.*
,, 624. READ'S SYRINGE, with one rose and jet .. 16 6
,, 625. Improved ditto ditto .. 14 6
,, 626. Ditto ditto ditto .. 13 0

Manufacturers of Pumps and Well Engines (for shallow or deep Wells), Plumbers' Brass Foundry of every description, High Pressure Cocks and Closets, Copper and Tinned-iron Baths. Garden and Fire Engines, Lamps of every description, Copper Goods, &c Estimates given for Hot-water and Bath Apparatus.

MAPPIN'S PRUNING KNIVES IN EVERY VARIETY.

WARRANTED GOOD BY THE MAKERS.



MAPPIN BROTHERS, Queen's Cutlery Works, Sheffield; and 67 and 68, King William Street, London.

MAPPIN'S "SHILLING" RAZORS Shave well for Twelve Months without Grinding.

MAPPIN'S 2*s.* RAZORS Shave well for Three Years.

MAPPIN'S 3*s.* RAZORS (suitable for Hard or soft Beards,) Shave well for Ten Years.

MAPPIN'S SUPERIOR TABLE-KNIVES maintain their unrivalled Superiority—handles cannot possibly become loose—the blades are all of the very first quality, being their own Sheffield manufacture.

	Tble. Kns.	Dst. Kns.	Carvers.
Ivory 3⅜ in. Handle, balanced,	20*s.* p. doz.;	16*s.* p. doz.;	6*s.* p. pair
Do. 4 in. do. ..	25*s.* ,,	18*s.* ,,	9*s.* ,,

MAPPIN'S SILVER-PLATED DESSERT KNIVES and FORKS, in Mahogany Cases.

12 Pairs Knives and Forks, Ivory Handles, in Case..		80*s.*
12 Do.	Pearl Handles, do. ..	130*s.*
12 Do.	Silver-Plated Handles, do. ..	80*s.*

MAPPIN'S ELECTRO-SILVER PLATE.—MAPPIN BROTHERS, Manufacturers by Special Appointment to the Queen, are the only Sheffield makers who supply the consumers in London. Their LONDON SHOW ROOMS, 67 and 68, King William Street, London Bridge, contain by far the largest STOCK of ELECTRO-SILVER PLATE in the World, which is transmitted direct from their Manufactory, Queen's Cutlery Works, Sheffield.

	Fiddle Pattern.	Double Thread.	King's Pattern.
12 Table Forks, best quality	£1 16 0	£2 14 0	£3 0
12 Table Spoons, best quality	1 16 0	2 14 0	3 0
12 Dessert Forks, best quality	1 7 0	2 0 0	2 4
12 Dessert Spoons, best quality	1 7 0	2 0 0	2 4
12 Tea Spoons, best quality	0 16 0	1 4 0	1 7

Messrs. MAPPIN BROTHERS respectfully invite buyers to inspect their unprecedented display, which, for beauty of design, exquisite workmanship, and novelty, stands unrivalled. Their illustrated Catalogue, which is continually receiving addition of New Designs, sent per post on receipt of 12 stamps.—MAPPIN BROTHERS, 67 and 68, King William Street, London Bridge; Manufactory, Queen's Cutlery Works, Sheffield.

VINEGAR.—Patronised by her Majesty's Government.

CONDY'S PATENT PURE CONCENTRATED MALT VINEGAR.—Families, by using this delicious Vinegar, insure purity, and effect a saving of 50 per cent. See Report of Dr. Letheby, City Officer of Health; Dr. Hassall of the *Lancet* Commission, and others. Six Quart Sample sent free to any Railway for 3*s.* 6*d.*—Sold by the Trade, in bottles, labelled and capsuled; wholesale, 63, King William Street, London Bridge, E.C.

KNOW THYSELF.—MARIE COUPELLE continues to give her graphic and interesting delineations of character, discoverable from an examination of the handwriting, in an unique style of description peculiarly her own. All persons desirous of knowing themselves, or any friend in whom they are interested, must send a specimen of the writing, stating the sex and age, and enclosing 13 penny postage stamps, and a directed envelope, to Miss COUPELLE, 69, Castle Street, Oxford Street, London, and they will receive in a few days a minute detail of the talents, tastes, virtues, and failings of the writer, with many other things hitherto unsuspected. All letters are considered strictly confidential.

HORTICULTURAL VALUATIONS.

MR. ALFRED CHANDLER (of the late firm of Chandler & Sons, Vauxhall), begs to inform his friends that he is at liberty to undertake the valuation of Collections of Plants, Nursery Stock, Horticultural Buildings, &c.

Mr. A. C. is also open to engagements as Censor at Horticultural Exhibitions, in which capacity he has had long and extensive experience.—28, Priory Road, Wandsworth Road, S.

G. HAINES, BOUQUET PAPER MAKER to all the principal Nurserymen, from 6*d.* per dozen to 1*s.* 3*d.*—7, Phœnix Street, Crown Street, Soho, late of 8, Rose Street, Covent Garden.

EWEN'S GRAISSE D'ENFLEURAGE; or Pomatum Body, indispensable to all who wish to make their Pomades from the Flowers in their gardens, by the French principle of Enfleurage. In Jars (of not less than 3 lbs.) with directions for use, at 2*s.* per lb., ex Jars. Cash on delivery.

EWEN'S Clarified Fat Works, and Toilet Soap Manufactory, 17, Garlick Hill, E.C., London.

THE ROYAL HUNT BOUQUET.

PIESSE AND LUBIN, PERFUMERY FACTORS, 2, New Bond Street, London.—"This exquisite perfume has the fragrance of a garden at evening's close." FRANGIPANNI, the YACHT CLUB NOSEGAY, and the NEWMARKET JOCKEY CLUB SCENT, 2*s.* 6*d.* each, or three bottles in a case, 7*s.*—See to have them with our name, PIESSE & LUBIN, 3, New Bond Street, London. Sold everywhere.

FOR THE TOILETTE.—OLDRIDGE'S BALM OF COLUMBIA, which has for more than 30 years been celebrated for its peculiar properties in restoring, cleansing, and beautifying the hair, promoting its growth, as well as preventing it falling off or turning grey.—C. & A. OLDRIDGE, 13, Wellington Street, North, seven doors from the Strand. Sold wholesale and retail in bottles at 3*s.* 6*d.*, 6*s.*, and 11*s.*; and by all Chemists and Perfumers. Its use for whiskers and moustaches invaluable.

SIXTY YEARS OF SUCCESS

HAVE PROVED BEYOND QUESTION THAT

ROWLANDS' MACASSAR OIL possesses extraordinary properties for promoting the growth and improving and beautifying the human hair. It prevents hair from falling off or turning grey, strengthens weak hair, cleanses it from scurf and dandriff, and makes it beautifully soft, pliable, and glossy. In the growth of the beard, whiskers, and mustachios, it is unfailing in its stimulative operation. For children it is especially recommended as forming the basis of a beautiful head of hair, while its introduction into the Nursery of Royalty, and the numerous testimonials constantly received of its efficacy, afford the best and surest proofs of its merits.—Price 3*s.* 6*d.* and 7*s.*; Family bottles (equal to four small), 10*s.* 6*d.*; and double that size, 21*s.*—CAUTION. On the wrapper of each bottle are the words, "ROWLANDS' MACASSAR OIL," &c., in white letters, and their signature, "A. ROWLAND & SONS," in red ink.—Sold at 20, Hatton Garden, London, and by Chemists and Perfumers.

DO YOU WANT LUXURIANT HAIR, WHISKERS, &c.?—COUPELLE'S CRINUTRIAR is guaranteed to produce whiskers, moustachios, eyebrows, &c., in two or three weeks with the utmost certainty, strengthen weak hair, prevent its falling off, check greyness in all its stages, and reproduce the hair in baldness, from whatever cause, price 2*s.* Sold by all chemists in the world; or will be sent post free, on receipt of 24 penny postage stamps, by Miss COUPELLE, 69, Castle Street, Newman Street, Oxford Street, London. A toilet guide sent post free for four penny postage stamps. "It completely restored my hair."—Miss Davis. "My whiskers are now growing freely."—H. Merry, Esq.

PRIZE MEDAL, PARIS EXHIBITION 1855.

METCALFE, BINGLEY, AND CO.'S New Pattern and Penetrating Tooth Brushes, Penetrating unbleached Hair Brushes, Improved Flesh and Clothes Brushes, and genuine Smyrna Sponges; and every description of Brush, Comb, and Perfumery for the Toilet. The Tooth Brushes search thoroughly between the divisions of the Teeth and clean them most effectually—the hairs never come loose. M., B., and Co. are sole makers of the Oatmeal and Camphor, and Orris Root Soaps—sold in Tablets (bearing their names and address) at 6*d.* each, of METCALFE'S celebrated Alkaline Tooth Powder, 2*s.* per box; and of the New Bouquets.—Sole Establishment, 130B and 131, Oxford St., 2d and 3d doors west from Holles St., London.

FENDERS, STOVES, FIRE-IRONS, AND CHIMNEY PIECES.—Buyers of the above are requested, before finally deciding, to visit WILLIAM S. BURTON'S SHOW ROOMS. They contain such an assortment of FENDERS, STOVES, RANGES, CHIMNEY PIECES, FIRE-IRONS, and GENERAL IRONMONGERY as cannot be approached elsewhere, either for variety, novelty, beauty of design, or exquisiteness of workmanship. Bright Stoves, with ormolu ornaments and two sets of bars, 3*l.* 15*s.* to 33*l.* 10*s.*; Bronzed Fenders, with standards, 7*s.* to 5*l.* 12*s.*; Steel Fenders, 2*l.* 15*s.* to 11*l.*; ditto, with rich ormolu ornaments, 2*l.* 15*s.* to 18*l.*; Chimney Pieces, from 1*l.* 8*s.* to 80*l.*; Fire-Irons, from 2*s.* 3*d.* the set to 4*l.* 4*s.* The BURTON and all other PATENT STOVES, with radiating hearth-plates.

BEDSTEADS, BATHS, AND LAMPS.—WILLIAM S. BURTON has SIX LARGE SHOW ROOMS devoted exclusively to the SEPARATE DISPLAY of Lamps, Baths, and Metallic Bedsteads. The stock of each is at once the largest, newest, and most varied ever submitted to the public, and marked at prices proportionate with those that have tended to make his establishment the most distinguished in this country.

Bedsteads, from ..	.. ..	12*s.* 6*d.* to £20	0*s.* each.
Shower Baths, from	.. ..	8 0 ,,	6 0 ,,
Lamps (Moderateur), from	..	6 0 ,,	7 7 ,,

(All other kinds at the same rate.)

Pure Colza Oil .. .. 4*s.* 3*d.* per gallon.

CUTLERY, WARRANTED.—The most varied assortment of TABLE CUTLERY in the world, all warranted, is on SALE at WILLIAM S. BURTON'S, at prices that are remunerative only because of the largeness of the sales. 3½-inch Ivory-handled Table Knives, with high shoulders, 12*s.* 6*d.* per doz.; Desserts to match, 10*s.* 0*d.*; if to balance, 6*d.* per doz. extra; Carvers, 4*s.* 3*d.* per pair; larger sizes, from 20*s.* to 27*s.* 6*d.* p. doz.; extra fine Ivory, 33*s.*; if with silver ferrules, 40*s.* to 50*s.*; white bone Table Knives, 6*s.* 0*d.* per doz.; Desserts, 5*s.* 0*d.*; Carvers, 2*s.* 3*d.* per pair; black-horn Table Knives, 7*s.* 4*d.* per doz.; Desserts, 6*s.*; Carvers, 2*s.* 6*d.*; black wood-handled Table Knives and Forks, 6*s.* per doz.; Table Steels, from 1*s.* each. The largest stock in existence of Plated Dessert Knives and Forks, in cases and otherwise, and of the new plated Fish Carvers.

WILLIAM S. BURTON'S GENERAL FURNISHING IRONMONGERY CATALOGUE may be had gratis, and free by post. It contains upwards of 400 Illustrations of his illimited Stock of Electro and Sheffield Plate, Nickel Silver and Britannia Metal goods, Dish Covers and Hot-water Dishes, Stoves, Fenders, Marble Chimney pieces, Kitchen Ranges, Lamps, Gaseliers, Tea Urns and Kettles, Tea Trays, Clocks, Table Cutlery, Baths and Toilet Ware, Turnery, Iron and Brass Bedsteads, Bedding, Bed Hangings, &c., with Lists of Prices and Plans of the 16 large Show Rooms at 39, Oxford Street; 1, 1A, 2, and 3, Newman Street; and 4, 5 and 6, Perry's Place, London.—Established 1820.

PRACTICAL GEOLOGY—King's College, London. Professor Tennant, F.G.S., will give a COURSE OF TWELVE LECTURES ON GEOLOGY, having especial reference to the application of the Science to ENGINEERING, MINING, ARCHITECTURE, and AGRICULTURE. The Lectures will commence on WEDNESDAY MORNING, May 4th, at 2 o'clock. They will be continued on each succeeding Friday and Wednesday at the same hour. Fee 1*l.* 11*s.* 6*d.*
R. W. Jelf, D.D., Principal.

BANK OF DEPOSIT,
Established A.D. 1844; 3, Pall Mall East, London.
Capital Stock 100,000*l.*
PARTIES desirous of INVESTING MONEY are requested to examine the Plan of The Bank of Deposit, by which a high rate of Interest may be obtained with ample security. Deposits made by Special Agreement may be withdrawn without notice. The Interest is payable in January and July. Peter Morrison, Managing Director.
Form for opening Accounts sent free on application.

WHEATSTONE'S CONCERTINAS, for 1*l.* 16*s.*, of superior make, six sided, with the double action, to play in five keys; ditto, to play in all keys, 2*l.* 12*s.* 6*d.* Concertinas having the full compass of notes (48 keys), from 3 to 12 guineas, the latter as used by Signor Regondi.
Manufactured by the Inventors and Patentees, Wheatstone & Co., 20, Conduit Street, Regent Street, W.

WHEATSTONE'S ENGLISH HARMONIUMS, in solid cases, manufactured by them expressly for Churches, Chapels, Schools, &c., have the full compass of keys, are of the best quality of tone, best workmanship and material, and do not require tuning. Guineas.
With 1 stop, oak case 10
With 1 stop, polished mahogany or figured oak case.. 12
With 3 stops, organ tones, large size, oak case .. 15
With 5 stops, ditto 22
With 8 stops, ditto 24
With 10 stops, ditto 30
The tones of the latter can be produced either softer or louder than other harmoniums that cost double the price. Prize Medalist, 1851. An extensive assortment of French Harmoniums, with all the latest improvements, from the Six Guinea School-room Harmonium to the Sixty Guinea one for the Drawing Room, by Alexandre.
Wheatstone & Co., 20, Conduit Street, Regent Street.

CHUBB'S LOCKS, FIREPROOF SAFES, DOOR LATCHES, CASH AND DEED BOXES. Illustrated Priced Lists sent free.—57, St. Paul's Churchyard, London; 28, Lord Street, Liverpool; 16, Market Street, Manchester; and at Wolverhampton.

GLENFIELD PATENT STARCH.—Used in the Royal Laundry, and pronounced by Her Majesty's Laundress to be the finest starch she ever used. When you ask for Glenfield Patent Starch, see that you get it, as inferior kinds are often substituted.—Sold by all Chandlers, Grocers, &c.
Wotherspoon & Co., Glasgow and London.

SPIRITS AND BEER.—Brandy, 24*s.* to 40*s.*; Whisky, 14*s.* to 18*s.*; Gin, 11*s.* 6*d.* to 15*s.* per gallon. Pale Ale, quarts, 4*s.* 6*d.* and 4*s.*; pints, 3*s.* 3*d.* and 3*s.* D'Arcy's Dublin Stout and Porter, quarts, 5*s.*, 4*s.* 3*d.*, and 3*s.* 6*d.*; pints, 3*s.* 6*d.*, 3*s.*, and 2*s.* 6*d.* Not less than 6 dozen.—Owen & Co., 75, Lower Thames Street, E. C., and 57 & 58, Fore Street, E. C.

DU BARRY'S delicious health-restoring REVALENTA ARABICA FOOD cures effectually—without medicine, inconvenience, or expense, as it save 50 times its cost in other remedies—indigestion, habitual constipation, flatulency, phlegm, nervousness, biliousness, liver complaints, hysteria, neuralgia, sleeplessness, acidity, palpitation, heartburn, headache, debility, despondency, cramps, spasms, nausea and sickness (during pregnancy or at sea), sinking, fits, coughs, asthma, bronchitis, consumption, also children's complaints. Cure No. 51,916: "Fifty years' indescribable agony from dyspepsia, nervousness, asthma, cough, constipation, flatulency, spasms, sickness at the stomach, and vomitings have been removed by Du Barry's excellent Food, after all medicine had failed.—Maria Joly, Ling, near Diss, Norfolk."—Cure No. 3905: "Thirteen years' cough, indigestion, and general debility have been removed by Du Barry's Food.—James Porter, Athol Street, Perth."—Cure No. 4208: "Eight years' dyspepsia, nervousness, debility, with cramp, spasms, and nausea, have been effectually removed by Du Barry's Food.—Rev. John W. Flavell."—In canisters, 1lb., 2*s.* 9*d.*; 2lbs., 4*s.* 6*d*; 12lbs., 22*s.* The 12lbs. carriage free on receipt of Post-office Order.—Barry du Barry & Co., 77, Regent Street, London; Fortnum, Mason, & Co., 182, Piccadilly; also at 49 & 60, Bishopsgate Street; at Abbis's, 60, Gracechurch Street; 4, Cheapside; 330, Strand; 63 and 150, Oxford Street.

HOLLOWAY'S PILLS AND OINTMENT.—Sluggishness of mind and body, or an indisposition to all exertion, physical or mental.—"Glorious John Dryden," one of the most powerful of our English poets, used to prepare himself for any great effort in composition by a dose of medicine. It cleared, he said, not only his stomach, but his head, and gave a fillip to his whole system. If Holloway's Pills had been then invented they would have been Dryden's favourite medicine. Happy are not only literary students, but all workers with head or hand, who, when a feeling of sluggish indolence or a fit of low spirits takes possession of them, can rouse and cheer themselves with a dose of these inestimable Pills.

IMPORTANT INFORMATION.—Mrs. Brown, of Queen Street, Kingsland, was for years severely afflicted with a scorbutic eruption, covering the back of both hands, and spreading up her arms. She was persuaded to try Dr. ROBERTS'S POOR MAN'S FRIEND and PILULÆ ANTISCROPHULÆ by a friend who had a large wound in her leg which baffled her doctor's skill, but was effectually cured by these medicines. She only took one box of the Pills, and used one pot of the Ointment, which effected a cure to the surprise of her friends, who wish it to be made public for the benefit of her suffering fellow creatures. Dr. ROBERTS'S POOR MAN'S FRIEND and PILULÆ ANTISCROPHULÆ have been proved, by 60 years' experience, successful in the cure of eruptions and wounds of every description. Price 1*s.* 1½*d.*; 2*s.*, 9*d.*; 4*s.* 6*d.*; 11*s.*; and 22*s.* each.—Sold wholesale by the Proprietors, Beach & Barnicott, at their Dispensary, Bridport, and by the London Houses; and retail by all respectable Medicine Vendors in the United Kingdom and the Colonies.

PAINS IN THE BACK, Gravel, Lumbago, Rheumatism, Gout, Indigestion, Flatulency, Nervousness, Debility, &c.—Dr. De Roos' COMPOUND RENAL PILLS have been long established as a safe and efficacious remedy for the above complaints, discharges of any kind, retention of urine, and diseases of the kidneys, bladder and urinary organs generally, which, if neglected, frequently end in stone in the bladder and a lingering death. For depression of spirits, incapacity for society, study or business, confusion, giddiness, drowsiness, sleep without refreshment, fear, nervousness, and insanity itself, when arising from or combined with urinary diseases, they are unequalled. By their salutary action in correcting bile and acidity of the stomach, they prevent the formation of stone, and establish the healthy functions of all these organs.—Price 1*s.* 1½*d.*, 2*s.* 9*d.*, 4*s.* 6*d.*, 11*s.*, and 33*s.* per box, through all Medicine Vendors, or sent free on receipt of the amount in postage stamps, by Dr. De Roos, 10, Berners Street, Oxford Street.

CHEAP AND CORRECT PRINTING FOR THE NURSERY AND SEED TRADES.—Send your orders to ROBT. EDM. TAYLOR, Printer, Sun Coal Lane, Skinner Street, Snow Hill, London, E. C. Estimates forwarded.

TO TUTORS, SURGEONS, THE HEADS OF SCHOOLS, &c.—The above can be supplied with Collections for practically Illustrating the Natural Orders, also Physiological and Medical Botany, by Fredk. Y. Brocas, who has been eight years in the medical profession, and has attended the Lectures of Professors Lindley, Lankester, Henfrey, and Forbes, and the Botanic Gardens in the vicinity of the Metropolis. Collections named, arranged, and mounted, and desiderata supplied by Fredk. Y. Brocas, Botanist, 85, St. Martin's Lane, London, W.C.

Third Edition, considerably enlarged, price 5*s.* 6*d.*, free by post, 5*s.* 10*d.*,
RURAL CHEMISTRY.
By Edward Solly, F.R.S., F.L.S., F.G.S.
Honorary Member of the Royal Agricultural Society of England, Professor of Chemistry to the Horticultural Society of London, Lecturer on Chemistry in the Hon. E. I. Co.'s Military Seminary at Addiscombe, &c., &c.
J. Matthews, 5, Upper Wellington St., Covent Garden, London, W.C.

This day is published, price 2*s.* 6*d.*,
FOLIA ORCHIDACEA, Part VIII. Containing Stelis, Oberonia, Alvisia, Brachionidium, Restrepia, and part of Pleurothallis; and also the views of M. Prilleux concerning the Fruit of the order.
Parts I. to VII., price 2*s.* 6*d.* each, may still be had.
James Matthews, 5, Upper Wellington St., Covent Garden.

Price 1*s.* 6*d.*, free by post, 1*s.* 7*d.*
LABELS FOR THE HERBARIUM,
CONSISTING OF THE NAMES OF THE
CLASSES, ALLIANCES, ORDERS, AND SUB-ORDERS,
OF
PROFESSOR LINDLEY'S "VEGETABLE KINGDOM."
So printed in large type, that they can be cut out and pasted into The Herbarium.
J. Matthews, 5, Upper Wellington Street, Covent Garden, London, W.C.

WORKS ON BOTANY, BY DR. LINDLEY.
THE VEGETABLE KINGDOM; or, The Structure, Classification, and Uses of Plants. Illustrated upon the Natural System. In One Volume, 8vo, cloth, price 36*s.*, with upwards of 400 Illustrations.
THE ELEMENTS OF BOTANY, Structural and Physiological. With a Glossary of Technical Terms. In One Volume, 8vo, cloth, with numerous Illustrations, price 12*s.*
*** The Glossary may be had separately, price 5*s.* cloth.
MEDICAL AND ŒCONOMICAL BOTANY. With numerous Illustrations. A New Edition, in One Volume, 8vo, cloth, price 7*s.* 6*d.*
SCHOOL BOTANY; or, The Rudiments of Botanical Science. In One Volume, 8vo, half-bound, with 400 Illustrations, price 5*s.* 6*d.*
DESCRIPTIVE BOTANY; or, The Art of Describing Plants correctly, in Scientific Language, for Self-Instruction and the Use of Schools. Price 1*s.*
Bradbury & Evans, 11, Bouverie Street.

Just published, price One Shilling,
LANDLORD, TENANT, AND LABOURER. In a series of Papers affecting their interests. By Mr. Fisher Hobbs.
J. Ridgway, Piccadilly.

DRAINAGE OF LAND—TABLES OF COST FOR THE POCKET. Price 1*s.* 6*d.*, in stamps for post. By J. Bailey Denton, Engineer to the General Land Drainage and Improvement Company, and Author of "Land Drainage and Drainage Systems."
And will shortly be published by the same writer, price 2*s.* 6*d.*
HINXWORTH DRAINAGE. — The Experiments Tabulated, showing the relative discharge from uniform Parallel Drainage in Clays, and from Occasional Drainage in Mixed Soils, with a Plan of the whole System adopted and a Statement of Cost.
Metchim, Parliament Street, Westminster, S. W.

BARON LIEBIG'S NEW WORK.
This day is published, in One Vol. crown 8vo, 6*s.* cloth,
LETTERS ON MODERN AGRICULTURE. By Baron Von Liebig. Edited by John Blyth, M.D., Professor of Chemistry, Queen's College, Cork.
"I am desirous to make the educated men of the nation acquainted with the principles which have been established by Chemistry in connection with the nutrition of plants, the conditions of the fertility of soils, and the causes of their exhaustion. Should I be fortunate enough to impress upon a wider circle the conviction of the value of these principles, and of their extreme importance in a national and economic point of view, I shall look upon one of the tasks of my life as accomplished. With the aid of the educated men to whom I address myself, success is, in my opinion, certain; but without their assistance it appears to me to be impossible."—*From the Author's Preface.*
By the same Author,
FAMILIAR LETTERS ON CHEMISTRY, in its Relations to Physiology, Dietetics, Agriculture, Commerce, and Political Economy. Fourth Edition, revised and much enlarged, with additional Letters. Small 8vo, 7*s.* 6*d.* cloth.
"This work of Baron Liebig is one of those books from which the mind desiring healthy philosophical instruction can receive it, in a most pleasant and yet most perfect form. There is no necessity for an acquaintance with all the intricacies of scientific nomenclature and terminology; with a moderate amount of chemical knowledge as a basis, no man of ordinary intellect will rise from the perusal of these Letters without the feeling that he has partaken of a wholesome intellectual feast."—*British Medical Journal.*
London: Walton & Maberly, Upper Gower Street, and Ivy Lane, Paternoster Row.

ELECTRICAL INFLUENCE IN HEALTH AND DISEASE
Just published, price 1*s.*, free by post for thirteen Stamps,
SECOND LIFE: or ELECTRICAL NERVOUS FORCE; a MEDICAL WORK intended for the special perusal of all who are suffering from the various forms of NERVOUS and PHYSICAL DEBILITY and the distressing ulterior consequences to which they lead; with practical Observations on the great Curative power of ELECTRO-GALVANISM in the Treatment of these disorders, by infusing tone and vigour in constitutions relaxed or debilitated from various enervating causes. Illustrated with Cases compiled from the Note-Book of a Registered Medical Practitioner of twenty years' standing.
Mann, 39, Cornhill, and all Booksellers.

TO THE NERVOUS OF BOTH SEXES.—A Retired Clergyman, having been restored to health in a few days, after many years of great nervous suffering, is willing to assist others by sending (free), on receiving a stamped envelope, properly addressed, a copy of the prescription used.—Direct, the Rev. E. Douglas, 18, Holland Street, Brixton, London.

WHAT WILL THIS COST TO PRINT? is a thought often occurring to literary minds, public characters, and persons of benevolent intentions. An immediate answer to the inquiry may be obtained on application to Richard Barrett, 13, Mark Lane, London. R. B. is enabled to execute every description of Printing on very advantageous terms, his office being furnished with a large and choice assortment of Types, Steam Printing Machines, Hydraulic and other Presses, and every modern improvement in the Printing Art. A Specimen Book of Types, and information for Authors, sent on application, by
Richard Barrett, 13, Mark Lane, London.

REIGATE SILVER SAND, best quality for Florists, 16*s.* per ton; less quantities, 1*s.* 6*d.* per bushel; delivered to any London Wharf or Railway. Peat, Loam, and Leaf-Mould in large or small quantities. Sacks for Sand, 1*s.* 9*d.* each; or on hire, 6*d.* each; five hold a ton.—John Kennard, Purveyor to her Majesty, Swan Place, Old Kent Road, London, S.E.

TO PIG AND POULTRY FEEDERS AND MILLERS.
CHICKEN and GAME RICE, 8*s.* per cwt., in bags 1½ cwt. each. SCREENED RICE, 11*s.* per cwt., in bags 1½ cwt each. RICE MEAL, 6*s.* 6*d.* to 8*s.* 6*d.* per cwt. RICE for grinding. American Oilcake and Locust Beans, per Ton only.—All Sold for Cash, and an allowance per ton, by W. & R. Jupp, Rice Merchants, 6, Cross Lane, St. Mary-at-Hill, Eastcheap.

NURSERY GROUND.
TO BE LET, WHITTINGTON NURSERY, Upper Holloway, to be entered upon immediately.—For particulars apply to J. F. Marson, Esq. Small Pox Hospital; or to Mr. Bunney, Nurseryman, Stratford, Essex.

TO BE LET, BRISTOL NURSERY GROUNDS, Kemp Town, Brighton. These Gardens are now to Let for occupation with immediate possession.—Any person desirous of treating for the same may obtain particulars and permission to view the grounds on application to Mr. R. W. Lucas, 20, Great Marlborough Street, London, W.; and of Mr. A. Chandler, Horticultural Valuer, 28, Priory Road, Wandsworth Road, S.

WESTBOURNE NURSERY, DENBIGH ROAD, BAYSWATER.
TO BE SOLD, by private contract (owing to the death of the late Mr. Wm. Gill), this valuable property, with nearly 90 years' unexpired lease, containing 6 Greenhouses, fitted with hot-water apparatus, and 40 Lights of brick fitting; the whole being in good working order, doing a good jobbing business. May now be viewed on application, and taken in the autumn, when the present Stock is sold off, at a reduced price. For further particulars, to view, &c., apply to Mrs. Wm. Gill (sole executrix to the late proprietor), on the premises.—April 30.

TO SEEDSMEN, FRUITERERS, AND GREENGROCERS.
TO BE SOLD, an OLD ESTABLISHED BUSINESS in the above line in one of the leading thoroughfares, in the City of Bath. To persons with small capital the above offers an excellent opportunity; half the rent is paid by permanent lodgers.—For further particulars apply to D. E. F., Post Office, Bath.

Sales by Auction.

ORCHIDS.
MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on THURSDAY, May 5, at half past 12 o'Clock precisely, the COLLECTION of ORCHIDS of a Gentleman whose health compels him to give up their culture. It is particularly rich in the best South American species of Cattleya, Lælia, Odontoglossum, Cypripediums, Trichophyllas, &c., and the Plants are in fine health.—May be viewed on the morning of Sale, and Catalogues had of Mr. J. C. Stevens, 38, King Street, Covent Garden.

ORCHIDS (ESTABLISHED AND IMPORTED) AND FERNS.
MR. J. C. STEVENS will Sell by Auction at his Great Room, 38, King Street, Covent Garden, on FRIDAY, May 6, at half-past 12 precisely, a collection of ORCHIDS, including Aerides nobile, A. Fieldingi, Cypripedium Fairrieanum, Cymbidium eburneum, Phalænopsis rosea, and numerous fine Cattleyas, Dendrobes, Saccolabiums, Vandas, &c., in good health; 10 established plants of Brassavola Digbyana, and an importation from India of Saccolabium retusum, a Cypripedium sent as new, and others in capital condition, and a few Ferns of rare species.—May be viewed on the morning of Sale, and Catalogues had of Mr. J. C. Stevens, 38, King Street, Covent Garden, W.C.

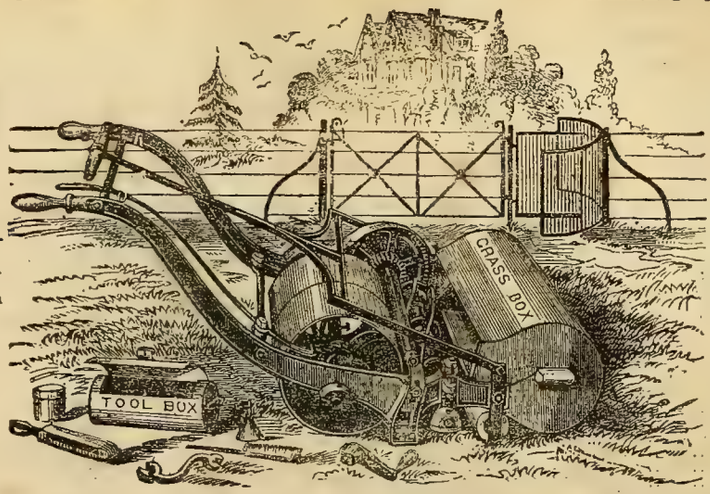
TULIPS.
MESSRS PROTHEROE AND MORRIS have received instructions to submit to public competition, by Auction, without reserve, early in May, on the premises, Rose Lodge, Mitcham, Surrey, a portion of the collection of TULIPS of Mr. Henry Goldham. Many new varieties (Seedlings) will be offered at this Sale, which have not hitherto been parted with, besides all those kinds which have previously been sent out from this collection. Future advertisements stating day of Sale will appear in May, when Catalogues may be obtained.

TO GENTLEMEN, FLORISTS, AND OTHERS.
MESSRS. PROTHEROE AND MORRIS will Sell by Auction, at the Mart, on FRIDAY, May 6, at 12 o'Clock, a first class collection of Carnations and Picotees from a celebrated grower, handsome Azalea indica, Ericas, Epacris, and other Plants in bloom; choice American plants, &c., with choice Dahlias in dry roots, Fuchsias, Verbenas, &c. On view the morning of Sale.—Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

Important and Extensive Sale at the
BRISTOL NURSERY, KEMP TOWN, BRIGHTON.
MESSRS. PROTHEROE AND MORRIS have received instructions to Sell by Auction, on the premises, Bristol Nursery, Kemp Town, Brighton, Sussex (formerly in the occupation of the late Mr. Edward Mitchell), on MONDAY, May 9, and following day, at 11 o'Clock each day, the whole of the valuable collection of GREENHOUSE, STOVE, and other plants, including about 1000 choice Double Camellias, ranging all sizes and in the finest state of cultivation; fine specimen plants of Chinese Azaleas, Ericas, Epacris, a quantity of Orange Trees; 2000 Show and Fancy Pelargoniums; 5000 Scarlet and Variegated Geraniums; Double Purple and White Primulas, Cyclamens, Dahlias, Cinerarias, Crassulas, Gloxinias, Chrysanthemums, Begonias, New Fuchsias, &c.; also a large assortment of Bedding Plants, Herbaceous Plants in pots, a bed of first-rate Tulips all named; Ivies, Jasmines, Honeysuckles, Vines, Carnations, Picotees, Pinks, Cloves, &c.—May be viewed three days prior to the sale. Catalogues may be obtained 6*d.* each, returnable to purchasers on the premises; of Mr. A. Chandler, Horticultural Valuer, 28, Priory Road, Wandsworth Road, S.; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.
N.B.—The Premises to be LET. Inquire of Mr. A. Chandler, as above; or Mr. Haward, 82, Oakley Street, Chelsea.

GREEN'S PATENT GRASS CUTTING, COLLECTING, & ROLLING MACHINES FOR 1859.

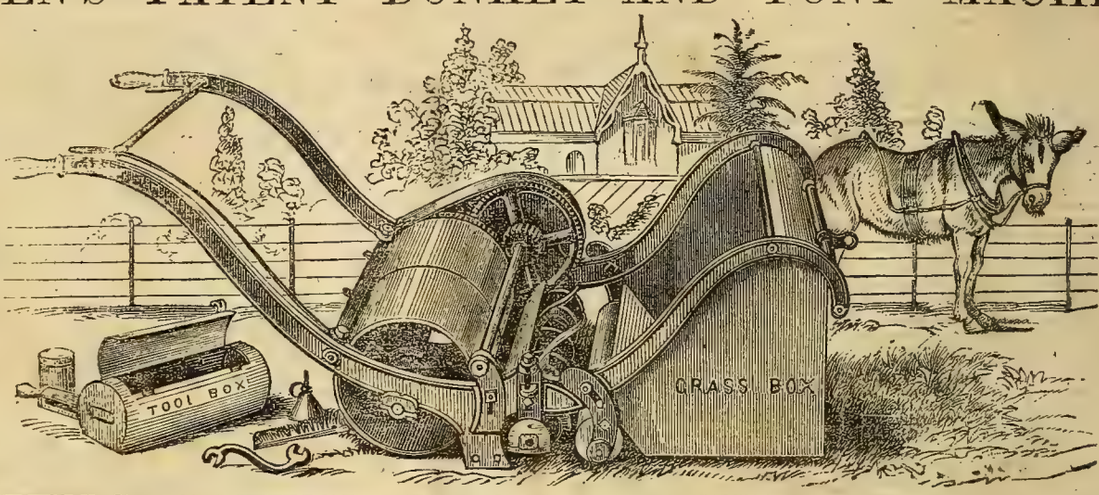
GREEN'S PATENT HAND MACHINE.



LIST OF PRICES.

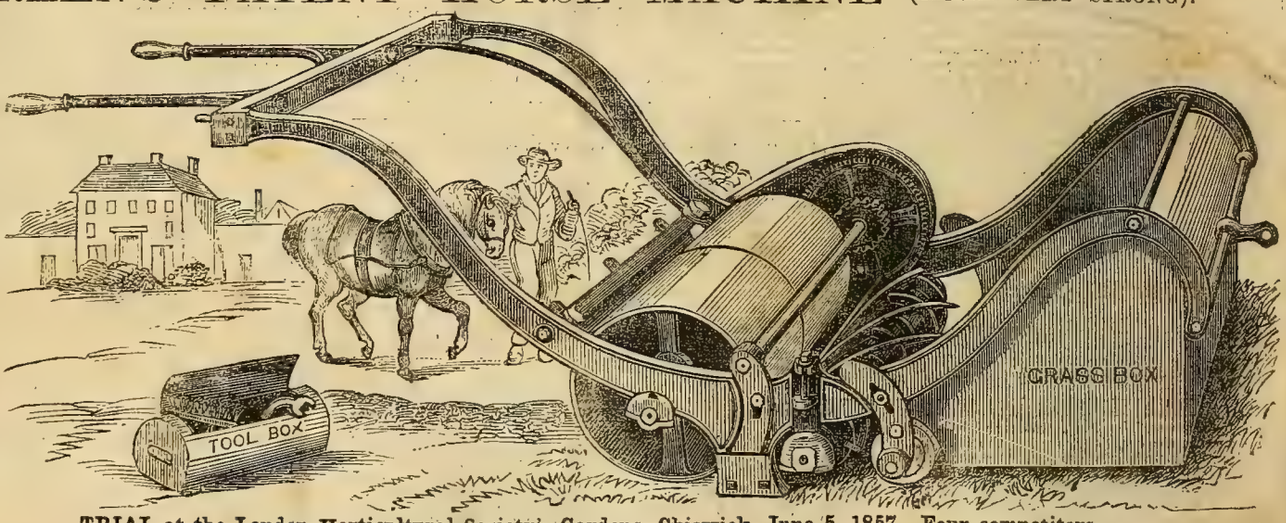
To cut 14 inches, 6*l.*; 16 in. 6*l.* 10*s.*; 18 in. 7*l.*—for one person. To cut 20 inches 7*l.* 10*s.*; 22 in. 8*l.*; 24 in. 8*l.* 10*s.*—for two persons. If with Box and Tools for sharpening and keeping the Machine in order, 5*s.* extra; with Guard for preventing accidents and keeping the wheels clean, 5*s.* extra.

GREEN'S PATENT DONKEY AND PONY MACHINE,



Suitable for a Donkey, to cut 24 inches, 10*l.*; 26 in., 11*l.* For a Pony, 30 in., 15*l.*; box, tools, &c., 6*s.* 6*d.* extra. Leather traces, stretcher, &c., suitable to attach to common harness or chain traces, 7*s.* 6*d.* Leather boots, suitable for donkey's feet, 16*s.*; do. for a pony, 20*s.* per set of four. Guard for covering wheels, 5*s.* extra.

GREEN'S PATENT HORSE MACHINE (MADE VERY STRONG).



To cut 30 ins., 18*l.*; 36 ins., 21*l.*; 42 ins., 24*l.*; 48 ins., 27*l.* Box of tools 7*s.* 6*d.* extra. Leather traces, stretcher, &c., 20*s.* Boots per set of four for Horses' feet, to prevent injury to lawns, 24*s.* Guard for wheels, 5*s.* ex. —The above are Net cash prices, delivered at any of the principal Rlway. Stations in England.

TRIAL at the London Horticultural Society's Gardens, Chiswick, June 5, 1857. Four competitors.

First trial on level ground, second do. on undulated, third do. on intricate places around trees, &c., when GREEN'S PATENT was unanimously declared to be the best in each trial by Colonel Challoner, Dr. Lindley, and G. M'Ewen, Esq., the appointed Judges.

See the *Gardeners' Chronicle* of May 22, 1858, p. 423, under the heading of "Garden Memoranda."

"LONDON HORTICULTURAL GARDENS, CHISWICK.—The Grass in the Arboretum and elsewhere is in excellent condition; it is kept in order by means of one of GREEN'S 2-feet Mowing Machines, which does its work very satisfactorily, and, compared with the scythe, effects a saving of at least one-half."

Extract from London *Times* of June 8, and *Gardeners' Chronicle* of June 12, 1858.

"TRIAL OF MOWING MACHINES.—A considerable number of various sizes having been brought to the ground it was agreed that the trial should take place between One Hand Machine of each exhibitor, as nearly as possible of uniform size and worked by themselves, or their men. The ground to be worked was determined by lot, the pieces having been previously selected of as uniform quality as possible. After trials on level ground and round trees, the Judges, Colonel Challoner and Mr. Edward Easton, declared GREEN'S Patent to be the best.

(Signed) "C. B. CHALLONER, EDWARD EASTON, Judges."

THOS. GREEN respectfully informs the Nobility, Gentry, Gardeners, Amateurs, and others, that upwards of Six Hundred of these Machines were sold in 1857, and to show the increasing demand, above Nine Hundred were sold last season—they have proven to be the best in all cases of competition, are entirely remodelled, and all the little defects pointed out by the Judges last Year, are now rectified. The Patentee now considers the Machines as near perfection as possible. Although the Machines have been so much improved, at a great additional cost, no extra charge will be made, excepting for a neat Guard, which is placed over the wheels to keep them clean, and to prevent breakage or accidents, which will be 5*s.* extra to parties requiring them.

☞ The Machines are warranted to give satisfaction, or may be at once returned by the party paying the carriage back to Leeds. The Patentee has spared neither time nor expense in producing the best and cheapest Mowing, Collecting, and Rolling Machines ever brought before the public. Hundreds of Testimonials (unsolicited) may be seen, and references given with regard to the superiority of the machines, by applying to the Patentee,

T. GREEN, Smithfield Iron Works, Leeds; or, No. 2, Victoria Street, bottom of Holborn, London,

To either of which places all Cheques and Post-office Orders may be made payable.

☞ *T. G. will be glad to receive orders for Machines as early as possible, as a great difficulty was found last season in supplying the number required.*

N.B. Parties desirous of having their Machines repaired may forward them to either the London or Leeds establishment, where they will have the best attention.

Printed by WILLIAM BRADBURY, of 13, Upper Woburn Place, and FREDERICK MULLETT EVANS, of No. 20, Queen's Road West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office Lombard St., Precinct of Whitefriars, City of London, and published by them at the Office, No. 5, Upper Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—SATURDAY, April 30, 1859.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 19.—1859.] SATURDAY, MAY 7. {Price Fivepence. STAMPED EDITION, 6d.

INDEX.

Agri. Soc. of England	411 a	Grass, Couch	411 a
Animals, some Fungi are	404 b	Hort. Society's exhibition	404 b
Barking trees, effects of	403 c	— — anniversary, 405 c—	406 b
Books not ced	407 a	Kew Gardens, report on	404 c
Chateau de Vervaine	407 b	Mangel	410 a
Coffins, pottery ware	406 b	Scolytus destructor	403 c
College, Ben. Agri.	410 c	Spergula pilifera	406 a
Cucumber disease	406 a	Steam culture	411 b
Culture, autumn	411 a	Top dressings	412 a
Electricity and its effects	405 c	Training, double oblique	408 a
Elm trees and Scolytus	403 c	Trees, effects of barking	403 c
Farmers' Club, London	411 b	Tulips early	408 c
French fruit gardening	407 b	Twitch	411 a
Fungi, animal	404 b	Veterinary surgeons	411 a
Gardens, plans for villa	405 b	Villa Garden plan	405 b
Gardeners' Benevolent Institution	405 c	Waltonian cases	406 b
Gardening, French fruit	407 b	Water, subterranean	410 b
		Wheat, rise in price of	409 c

ST. JAMES'S HALL.

THE FIRST GRAND FLOWER SHOW of the HORTICULTURAL SOCIETY will take place on THURSDAY and FRIDAY next.

ROYAL BOTANIC SOCIETY, REGENT'S PARK.—THE EXHIBITIONS OF PLANTS, FLOWERS, AND FRUIT this season will take place on WEDNESDAYS, May 25, June 15, and July 6. Tickets of Admission are now being issued, and can be obtained at the Gardens only by orders from Fellows or Members of the Society. Price, on or before Saturday, May 14, 4s.; after that day, 5s.; or on the days of Exhibition, 7s. 6d. each.

CRYSTAL PALACE.—FLOWER SHOWS for 1859 will be held as follows:—

WEDNESDAY, May 18 | WEDNESDAY, Sept. 7
WEDNESDAY, June 8 | THURSDAY, Sept. 8

And CHRYSANTHEMUM SHOW on WEDNESDAY, Nov. 9, and THURSDAY, Nov. 10.

Schedules of Prizes may now be had on application.

Gardeners' Tickets at 3s. 6d. each can be obtained on application to the Secretary. By Order,

Crystal Palace, May 7. GEO. GROVE, Secretary.

EXHIBITION OF TULIPS.

CHARLES TURNER'S COLLECTION is now in fine bloom, which may be viewed, Sundays excepted, till the end of the month. On the 20th the NATIONAL TULIP SOCIETY will hold their annual Exhibition at the Nursery, when a military band will attend.

The Royal Nurseries, Slough.—May 7.

TULIPS! TULIPS! TULIPS.

W. H. LAWRENCE, Red Lion Hotel, Hampton, begs to inform his Friends and the Public that his splendid Collection of the above Flower is now in Bloom. Admittance gratis.

A SPLENDID COLLECTION of TULIPS grown and selected by an Amateur for the last 40 years, may be viewed Gratis, Sundays excepted, by applying to Mr. J. HARDSTONE, St Mary Cray, Kent, S. E.

HOLLYHOCKS.

A. PAUL AND SON have still a large Stock of HOLLYHOCKS, strong healthy plants that will bloom this autumn at the following rates:—

MIXED SEEDLINGS from fine named sorts, 25s. per 100.
BLOOMED SEEDLINGS, in separate colours, 30s. to 50s. per 100.
NAMED SORTS, border flowers, 9s. to 18s. per doz.
show flowers, 24s. to 42s. per doz.
HOLLYHOCK SEED, 1s. to 5s. per packet.

Free by post.—Nurseries, Cheshunt, Herts.

SUPERB NAMED HOLLYHOCKS.

WILLIAM PERRY has a fine healthy Stock of the above for Sale, comprising all the best sorts, from 6s. to 18s. per doz. If planted now they will make a good display through the months of July, August, September, and October. Catalogues sent free on application.

Wisemans, Sawbridgeworth, Herts.

SUPERB DOUBLE HOLLYHOCKS.—The present is yet a good time for planting out this noble flower for autumn blooming. W. CHATER can still supply plants fine and perfectly healthy at reasonable prices.

Apply to WILLIAM CHATER, Grove Nurseries, Saffron Walden.

NEW ROSE HYBRID PERPETUAL EVÊQUE DE NÎMES.

BENJAMIN R. CANT has much pleasure in offering the above most beautiful Rose; it is quite a gem and ought to be in every good collection. Colour deep vivid crimson, of exquisite shape; the petals are disposed in the form of a rosette, which gives it a distinct and unique appearance; flower medium size, foliage and habit of growth excellent. Fine plants in pots are now ready at 3s. 6d. each, with the usual discount to the trade.

St. John's Street Nursery, Colchester.

CHOICE ROSES IN POTS.

BIRCHAM AND WARD having a large Stock of the Newest and Best ROSES in fine condition, are enabled to supply them at very reduced prices.

See CATALOGUE, which may be had on application.

Carriage paid to London and Peterborough.

Hedenham Rosary, Bungay, Suffolk.—May 7.

THE BEST SEASON FOR BEDDING OUT ROSES.

WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

WM. WOOD AND SON respectfully submit that the months of April and May are the most eligible for planting out Roses from pots, for the purpose of forming groups in the Parterre and Rose Garden.

W. W. & Sons having on hand an immense Stock of many thousands, in pots, will be happy to supply them on the following reasonable terms.

Hybrid Perpetual Roses	9s. to 12s.	per dozen.
Isle de Bourbon ditto	12s. to 18s.	,,
Tea-scented	12s. to 18s.	,,
China, Climbing and Noisette ditto	9s. to 12s.	,,

CATALOGUES sent post free on application.

Plants added to each order to compensate for distant carriage.

SKIRVING'S SWEDE—SUTTON'S SELECTED STOCK.

SUTTON AND SONS have a choice stock of SKIRVING'S SWEDE SEED, growth of 1858, which they can strongly recommend. Price 9d. per lb., or cheaper by the bushel.—Royal Berks Seed Establishment, Reading.

NEW HARDY WHITE SWEDE.—This Swede is hardier than any other kind, grows to a large size, is adapted for sowing upon poor land, is not affected by frost, and keeps good in the ground or in store till the end of May. New and genuine Seed of this excellent Swede, price 1s. per lb. (carriage free for orders of 30 lbs. and upwards) may be had of RAYNBIRD & HARVEY, Seedsmen, Basingstoke; and 89, Seed Market, Mark Lane, London, E.C.

NEW ZEALAND RUNNER BEAN. — Price 2s. per quart.—JAS. CARTER & Co., Seedsmen, 238, High Holborn, London, W. C.

NEW ZEALAND RUNNING BEAN.—Packets of 12 Seeds, for 14 stamps.

BASS & BROWN, Seed Growers, &c., Sudbury, Suffolk.

HOLCUS SACCHARATUS, OR CHINA SUGAR-CANE GRASS.—Seed of this lately introduced Fodder plant can be supplied by NUTTING & SONS in any quantity. Price on application.—Seed Warehouse, 60, Barbican, London.

HOLCUS SACCHARATUS, or North China Sugar-Cane.—Pamphlet, "A Visit and a Plant;" the only English authority on the Cultivation of the above. Post free 6d. Prices of Seed on application. Samples 6d. Four varieties of Holcus remitted free by post on receipt of 10s.

CHINESE YAMS, 4s. per dozen.

ASPARAGUS plants, 16s. per 1000.

JOHN W. CLARKE, Whittlesea, Cambridgeshire.

CAULIFLOWER PLANTS for Pricking out, 5s. per 1000; ASPARAGUS, 2 years, 15s. per 1000; LETTUCE, 2s. 6d. per 1000; and BEDDING PLANTS, 2s. per doz.

WALTER BIRD, Atherstone Nursery.

YOUELL'S "NORFOLK HERO" CUCUMBER.—Without exception the very best Cucumber for open ground cultivation that has yet been offered. It is a most prolific bearer, as handsome as any frame variety, and is as delicate in point of texture, the fruit measuring from 16 to 20 inches in length. Packets containing 6 seeds, 1s.; 18 seeds, 2s.

YOUELL & Co., Royal Nursery, Great Yarmouth.

PETURION GOURD.—This wonderful Vegetable attains the incredible weight of 130 to 135 lbs. in 36 days. It is perfectly edible, and makes an important addition to the kitchen garden. Seed may be had in packets at 7d. and 1s., post free, from E. P. DIXON, Seed Establishment, 57, Queen Street, Hull.

H. AND R. STIRZAKER have still to offer the finest DRUMHEAD CATTLE CABBAGE PLANTS at 2s.; EARLY, of sorts, 3s. 6d.; CURLED SAVOY, 4s.; CAULIFLOWER, strong, 25s. per 1000.—Lancaster Nurseries.

KEMP'S INCOMPARABLE EARLY CABBAGE.—This is quite a distinct variety, and superior to any other known kind, of delicious flavour, dwarf habit, extra early, attains a good size, will not run to seed, and every plant warranted to Cabbage. Seed may be had in sealed packets for 13 postage stamps, post free, at EDMUND P. DIXON'S, 57, Queen Street, Hull.

TO THE SEED TRADE.

THOMAS AYRES, JUN., SEEDSMAN and GROWER, Biggleswade, Beds., can supply every kind of Wurzel, Swede, and common Turnip Seeds, on the most reasonable terms for cash.

N.B. Dealer in Culinary and Flower Seeds, Fruit Trees, Shrubs, and Flowering Plants.

TO THE TRADE.

CHARLES SHARPE has still to offer, of his own growing, saved from the finest selected stocks—

LONG RED MANGEL	RED LINCOLNSH. GLOBE TURNIP SEED
YELLOW DO.	GREEN GLOBE DO.
YELLOW GLOBE DO.	YELLOW TANKARD DO.
ALTRINGHAM CARROT	

Prices given on application.—Wisbeach, Cambridgeshire.

SEEDS! GENUINE SEEDS.—For the RIGHT SEEDS at the RIGHT PRICE, go to the RIGHT PLACE, which is G. W. DIXON'S New Seed Warehouse, 48 A, Moorgate Street, London, E.C. All sorts of Garden, Grass, Agricultural, and Flower Seeds, wholesale, retail, and for exportation.

PAMPAS GRASS (GYNERIUM ARGENTEUM).—The beauty of this extraordinary plant has this season been fully appreciated. It can be supplied by the dozen, hundred, or thousand, by CHARLES NOBLE, Bagshot, Surrey.

JOHN CULVERWELL, Taunton, begs to call the attention of Agriculturists to his superior selection of GRASS SEEDS, which for PURITY, change of SOIL, and CLIMATE, will bear comparison with any house in the kingdom. Prices, terms, and samples forwarded on application.

PALM FOR SALE, a fine specimen, 7 feet high. Has not been accustomed to very much heat.—Address X., 5, Brompton Place, S.W.

GREEN HOLLIES, from 12 to 18 and 18 to 24 inches.

WHITEHOUSE AND WHITTAKER having an immense stock of the above, fine bushy plants, with good roots, can supply them at very moderate prices, which will be forwarded on application. The Trade and large purchasers very liberally dealt with.—Brereton Nursery and Seed Establishment, Rugeley, Staffordshire.

TO THE TRADE.

T. AND G. SWAILES offer several thousands as under, at 10s. per 1000:—

CUPRESSUS SEMPERVIRENS	THUJA ORIENTALIS
,, TURNEFORTI	,, PYRAMIDALIS

The above are 6 to 9 inches in 8-inch pots, about 150 in each pot.—Beverley, Yorkshire, May 7.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY LIMITED supply every requisite for the Farm and the Garden.

Registered Offices, Union Road, Plymouth.

FERN CATALOGUE.

ROBERT SIM'S NEW DESCRIPTIVE AND PRICED CATALOGUE, No. 6 (62 pages) of his COLLECTION of BRITISH AND EXOTIC FERNS, can be had, post free, for 8 stamps. Gratis to all previous purchasers of Ferns.

Nursery, Foot's Cray, Kent, S.E.

NEW DAHLIAS.

JOHN KEYNES'S SELECT CATALOGUE OF DAHLIAS, ROSES, CARNATIONS, PINKS, &c., containing Lists of all the valuable Show Flowers in each class, is now ready and will be sent on application.

Castle Street Nursery, Salisbury.—May 7.

DAHLIAS.—The finest selections, strong healthy plants, well established, 4s., 6s., 8s., and 12s. per dozen.—DODWELL & BAYLEY, Bradshaw Gardens, Chadderton, Manchester.

NEW DAHLIA FIRE KING.

H. LEGGE is now sending out his superb DAHLIA, bright scarlet tipped with white, the best fancy of the year, 10s. 6d. per plant. Also all the new varieties of last season, at 9s. per dozen; older sorts, 3s. per dozen.

Catalogues can be had by pre-paid application to H. LEGGE, Marsh Side, Lower Edmonton, Middlesex.

DAHLIAS, FUCHSIAS, VERBENAS, &c.

GEORGE SMITH, FLORIST, &c., Lorrimore Road, Walworth, begs to offer the following, in extra strong plants, true to name, his stock containing the new flowers of last year (per dozen):—

Dahlias	3s. 6d. to 8s.	Double Petunias	6s.
Verbenas	3s. to 6s.	Fine dry bulbs of Cyclamen persicum & Coum, per dozen roots	8s. to 12s.
Chrysanthemums	4s. to 6s.		
Fuchsias	4s. to 8s.		

EXOTIC NURSERY, AIR STREET, SCULCOATES, HULL.

BEDDING PLANTS, ETC.

E. P. DIXON begs to inform his patrons that his Abridged CATALOGUE OF STOVE, GREENHOUSE, AND BEDDING PLANTS, &c., is now ready for distribution, and may be had GRATIS on application.

The General Catalogue is now in the press.

Seed Establishment, 57, Queen Street, Hull.

100,000 BEDDING PLANTS, the cheapest place in England. Catalogue sent for one stamp.—J. PYLE, St. John's Nursery, Upper Holloway, London.

BEDDING PLANTS.

F. AND A. SMITH beg to offer the usual varieties of plants for bedding purposes, strong and healthy, including Carter's TOM THUMB, NASTURTIUM true, Cattell's dwarf crimson and several double varieties, with most of the novelties of the season, at moderate prices.

Dulwich, Surrey.

CLIMBING PLANTS.

F. AND A. SMITH have now ready strong plants of COBEA SCANDENS, MAURANDYAS, blue, white, and rose; LOPHOSPERMUM, ECCREMOCARPUS, and TROPÆOLUMS, in large quantities. Prices on application.

Dulwich, Surrey.

LARGE CAMELLIAS AND AZALEAS.

J. AND R. THYNE, NURSERYMEN, Glasgow, have a dozen large CAMELLIA plants, 6 to 10 feet high, well furnished, mostly double white; also a fine lot of specimen AZALEAS, 3 to 5 feet high. Prices moderate.

THOMAS WILD has only a few packets of his PRIMULA SEED left, at 2s. 6d. per packet.

The Primulary, Ipswich.

TROPÆOLUM CANARIENSE.

CHARLES ALEXANDER, SEEDSMAN, Edinburgh, offers New Seed of the above at 20s. per lb., and 1s. 6d. per ounce.

PANSIES.—The best and most distinct kinds, extra fine show varieties, 6s. per dozen.—DODWELL & BAYLEY, Bradshaw Gardens, Chadderton, Manchester.

BELGIAN DAISIES.—In the finest variety, 4s. per dozen.—DODWELL & BAYLEY, Bradshaw Gardens, Chadderton, Manchester.

CARNATIONS AND PICOTEES.—Twenty-five pairs strong, well rooted, and extra fine show varieties, named, 1l., packing and hamper included.—DODWELL & BAYLEY, Bradshaw Gardens, Chadderton, Manchester.

PINKS.—Twelve pairs fine named kinds in strong healthy plants, 5s.; 25 pairs, 10s., packing and hamper included.—DODWELL & BAYLEY, Bradshaw Gardens, Chadderton, Manchester.

GOLDEN CHAIN GERANIUMS.—Per dozen, 6s. | Per 100, 2l. 5s. | Per 500, 10l.

The above are offered in good strong plants by ROBERT REA, Ipswich Nursery, Ipswich, Suffolk.

UNRIVALLED BEDDING GERANIUM "CHRISTINA" (KINGHORN).—Deep rosy pink, large trusses, an abundant bloomer, small foliage, of compact and robust habit; without exception the most perfect bedder yet raised, having such an effective colour and a continuous bloomer. 2s. 6d. each; six plants for four.

F. R. KINGHORN, Sheen Nursery, Richmond, S.W.

THE EARLIEST PEA.—DUNNETT'S FIRST EARLY is in every respect superior to "Daniel O'Rourke," being several days earlier, having finer pods, and richer in flavour, height 2½ feet. For an early dish of fine flavoured Peas we can confidently recommend this; 2s. per quart.

CHAMPION CABBAGE, the earliest and best sort, if sown in succession, may be had fit for table throughout the year, 8d. per ounce, or 1s. post free.

BUTLER & MCCULLOCH, Covent Garden Market, London.

NEW ANTIRRHINUMS.

HENRY MAY has now ready for delivery his fine SEEDLING ANTIRRHINUMS, selected from an immense collection of very superior Seedlings, and he can recommend them as a most beautiful set and improvement on existing kinds, viz. :—

STANDARD BEARER (MAY's).—White throat, bright rose lip, with yellow centre, very fine and distinct.

LORD JOHN RUSSELL (MAY's).—Pure lilac self, buff lip, very fine form and habit.

LORD DERBY (MAY's).—Creamy white, with yellow lip, beautifully striped and veined with bright purple.

PURPLE KING (MAY's). — Deep rich purple self, fine spike extra.

SURPRISE (MAY's).—Bright rosy crimson gold lip, very fine, form good.

ORLANDO (MAY's). — White tube, bright crimson lip, an improvement on Firefly, very fine.

GALATEA IMPROVED (MAY's).—Pure white tube, bright crimson lip, fine habit and large spike good.

GITANA (MAY's). — Bright rosy purple, white lip, fine spike extra.

The above set of eight for 25s., or 3s. 6d. each separate. The usual discount to the Trade.

HENRY MAY, The Hope Nurseries, near Bedale, Yorkshire.

NEW VERBENAS, raised by Mr. ELPHINSTONE.—

1. PICTURATA.—Crimson, large, and fine truss, conspicuous white round eye.
2. COMTE DE MONTALEMBERT.—Light lilac, very large flower of extra substance, with large white eye.
3. ANNIE.—Light rose, large white eye, a very desirable colour and good substance.
4. BOUQUET DE LA REINE.—Peach, large white eye, fine shape, and extra substance, quite a new colour.
5. MAGNUM BONUM.—Bright crimson, fine yellow eye, large flower, and a very striking variety.
6. GRANDIFLORA PURPUREA.—Violet purple, large truss, fine white eye.

Plants now ready for sending out.

D. BROWNE has great pleasure in introducing the above Six New VERBENAS, as being a decided improvement on any hitherto produced in form, colour, and extra substance, with fine strong habits so desirable for bedding purposes. The collection of Six Varieties, package included, 20s., or 3s. 6d. each, sent free of carriage. The Trade supplied on the usual terms.

D. B. begs to say that in consequence of having extensive orders from the Trade his stock is now rather limited, therefore early orders will oblige.

Horticultural Grounds, Sprowston;
Seed Establishment, 41, London Street, Norwich.

PLANTS FOR THE FLOWER GARDEN.—The following may be had at the prices attached, and the plants are all fine and thoroughly established in single pots :—

	Per dozen.—s. d.
Scarlet Geraniums, Tom Thumb, Frogmore and others, cut down plants, that were struck last spring	3 0
Ditto, struck last autumn	2 6
Verbenas, all the best varieties	2 6
Antirrhinums	3 0
Ageratums	2 6
Calceolarias, shrubby	2s. 6d. to 3 0
Cuphea platycentra, extra large	3 0
Dahlias, best sorts	4s. to 9 0
Carnations and Piccotees ditto	per pair 1s. to 1 6
Pinks, ditto	6d. to 1 0
Fuchsias, best sorts	3s. to 4 0
Gaillardia picta	2 6
Heliotropes	2 6
Lobelia speciosa and ramosoides	2 6
Alyssum variegatum	2 6
Hollyhocks, fine named flowers	9 0
Lantanas	2 6
Nierembergia gracilis	2 6
Petunias, fine sorts	2 6
Senecio (double dark Groundsel)	2 6
Salvia fulgens	2 6
Variegated Geraniums, Flower of the Day, fine cut down plants	4 0
Osborne's Brilliant	3 6

WOOD & INGRAM, Huntingdon.

NEW DAHLIAS.

CHARLES TURNER is prepared to supply plants of the following fine new varieties :—

Brentford Hero (Hopkins)	10s. 6d.	Orb of Day (Church)	10s. 6d.
Chairman (Turner)	10 6	Pioneer (Turner)	7 6
Disraeli (Noel)	10 6	Piccolomini (Turner)	10 6
Emperor (Fellowes)	10 6	Rosebud (Alexander)	10 6
John Dory (Holmes)	10 6	Rosa Bonheur (Fellowes)	10 6
Lord Eversley (Green)	7 6	Wallace (Blush)	10 6
Mentor (Briggs)	7 6		

FANCY DAHLIAS.

Bacchus (Wheeler)	10s. 6d.	Mrs. C. Kean (Edmonds)	7s. 6d.
Leonard (Wheeler)	10 6	The Flirt (Holmes)	10 6

With a full Collection of established varieties at moderate prices. For descriptions, see Catalogue.

The Royal Nursery, Slough.

DWARF BEDDING DAHLIAS.

CHARLES TURNER can supply strong Plants of the following which are especially adapted for decorative purposes in the Flower Garden, either for masses, ribboning, or single specimens in mixed borders, 1s. each, or 9s. per doz. :—

ALBA FLORIBUNDA NANA (DODDS).—Pure white, dwarf, erect habit. 2 feet.

BEAUTY DE MASSIFFS. — Bright scarlet, excellent habit, and very free flowering. 2½ feet.

EMPRESS OF WHITES.—Recently sent out as White Zelinda (HEALE), pure white, of excellent habit. 2½ feet.

GOLDEN BALL (PERRY), requires no stakes, the plant being wider than it is high, colour deep yellow. 2 feet.

PRINCE FREDERICK WILLIAM (TURNER).—Crimson, small flowers, but very free flowering. 2½ feet.

PRINCE ARTHUR. — Bright crimson, erect habit, large flowers. 2 feet.

QUEEN OF WHITES.—Pure white, full-sized flowers, free bloomer. 2½ feet.

RANUNCULÆFLORA.—Recently sent out under the name of "Crystal Palace Scarlet," blooms late; if required very dwarf must be pegged down. 2½ feet.

ROYAL PURPLE.—Purple, of very free habit. The best of its class. 2½ feet.

SIR JAMES WATTS (TURNER).—Rich deep scarlet, of excellent shape and habit. 2½ feet.

TITIAN.—Bright pure yellow, full size, loose flowers, very free blooming, showy. 2½ feet.

ZELINDA, purple. 2 feet.

The Royal Nurseries, Slough.

NEW AND CHEAP PLANTS.

C. E. ALLEN has now ready for delivery the following in fine condition :—

DAHLIAS, including Alice Downie, Commander, Hon. Mrs. Trotter, King, Loveliness, Marion, Miss Pressley, Mrs. Church, Mr. Critchett, Sir H. Havelock, Standard Bearer, Venus, Village Gem, Oliver Twist, Mrs. Boshell, Marc Anthony, Lady Lacon, Favourite, &c., 9s. per dozen.

FUCHSIAS, including Governor-General, Princess of Prussia, Prince Frederick William of Prussia, Rose of Castile, Guiding Star, &c., 6s. to 9s. per dozen.

VERBENAS, varieties of 1858, such as Beauty of Castile, Celestial, Caractacus, Carlos, Cyclops, Eastern Beauty, Earl of Shaftesbury, Leviathan, Mrs. Ebrington, 4s. per dozen; older varieties, 2ls. per 100.

VARIEGATED GERANIUMS, such as Alma, Annie, Bijou, Brilliant, Countess of Warwick, Flower of the Day, Mountain of Snow, Perfection, &c.; fine plants from 9s. to 24s. per dozen.

C. E. A. has also some fine plants of POMPON CHRYSANTHEMUMS, suitable for specimens.

DESCRIPTIVE CATALOGUES can be had gratis.

C. E. ALLEN, Shacklewell, near London.

PLANTS FOR THE FLOWER GARDEN, 100,000. —100 strong, well hardened plants, composed of the following :—Yellow, crimson, and orange Calceolarias, Scarlet Geraniums, Antirrhinums, Cupheas, Heliotropes, Pentstemons, Phloxes, Verbenas, Salvias, Senecio, Dahlias, &c., all properly named, basket and packing included, for 12s. 6d.

New Fuchsias, of last season, at 6s. per dozen; new Verbenas, of ditto, at 4s. per dozen.

HENRY MAY, The Hope Nurseries, near Bedale, Yorkshire.

PHLOXES. — The best and most distinct kinds strong plants, well established, 8s. per dozen.—DODWELL & BAYLEY, Bradshaw Gardens, Chadderton, Manchester.

For particulars of New Phloxes see Advertisements April 23 and April 30.

FINE EXHIBITION DAHLIAS in strong plants, viz., Admiral Dundas, Amazon, Annie, Airedale Beauty, Beauty of Slough, Cherub, Colonel Windham, Cossack, Dr. Gully, Deutsche Würde, Duchess of Wellington, Duke of Wellington, Duchess of Beaufort, Empress, Fanny Keynes, Grand Sultan, Incomparable, Lady Folkestone, Lady Popham, Lord Bath, Lord Palmerston, Lollipop, Miss Caroline, Mrs. Turner, Miss B. Coutts, Mrs. Edwards, Mrs. Wheeler, Mrs. Seldon, Nigger, Pandora, Perfection, Pre-eminent, Princess, Ruby Queen, Rachel Rawlings, Robert Bruce, Royal Scarlet, Sir R. Whittington, Sir J. Franklin, Touchstone, Yellow Beauty. Selections of any 12 of the above for 3s.

HENRY MAY, The Hope Nurseries, near Bedale, Yorkshire.

NEW ROSES IN POTS.

BENJAMIN R. CANT offers the undermentioned NEW ROSES. The plants are now ready, and are remarkably fine and healthy; many of them have strong shoots from 1 to 2 feet in length. Purchasers of 1 dozen and upwards will be supplied at a reduced rate. The trade allowed the usual discount.

NEW ROSES FOR 1859 at 5s. each :—

TEA : Madame Damaisin	HYBRID PERPETUALS :—
BOURBON : Docteur Berthet	Comtesse Cecile de Chabrillan
,, Edith de Murat	Imperatrice Eugénie
HYBRID PERPETUALS :—	L'Oriflamme de St. Louis
Altesse Impériale	Le Mont Vésuve
Ardoisée de Lyon	Orderic Vital
Anna Alexieff	Princesse Olympie
Anna de Diesbach	Salomon
Beauté de Royghem	Virginal

Also the following CHOICE ROSES at 2s. 6d. each, or 25s. per dozen :—

TEA : Souvenir d'Elise	HYBRID PERPETUALS :—
BOURBON : Caroline Riquet	Louis Chaix
,, Josephine Clermont	Louise d'Autriche
,, Madame Contesse	Lord Palmerston
,, Monsieur Jard	Marie Thierry
HYBRID PERPETUALS :—	Monsieur de Montigny
Abbé Feytel	Philomène Crozy
Evêque de Nîmes. 3s. 6d.	Reine de Denmark
Gloire de Lyon	Triomphe de Mont Rouge
General MacMahon	,, des Beaux Arts

At 15s. per dozen :—

HYBRID PERPETUALS. — Adelaide Fontaine, Bacchus, Belle Anglaise, Cardinal Patrizzi, Etendard de Sebastopol, Lord Raglan, Madame Vidot, Mathurin Regnier, Pauline Lansezeur, Prince Leon, Prince de la Moskwa, Rebecca, Souvenir de la Reine d'Angleterre, Souvenir de Leveson Gower, Sir J. Franklin, Victor Trouillard.

BOURBON : Glorietta, Omer Pacha,

NOISETTE : Miss Gray, Narcisse

TEA : Devoniensis, Elise Sauvage, Gloire de Dijon, Madame Bravy, Souvenir d'un Ami, Vicomtesse de Cazes.

A fine collection of the most esteemed older varieties, such as Caroline de Sansal, Comte de Nanteuil, Colonel de Rougemont, General Jacqueminot, Jules Margottin, Souvenir de la Malmaison, at 12s. per dozen.

St. John's Street Nursery, Colchester.

NEW FRENCH PHLOXES.

JOHN STANDISH can recommend the following as the best that were sent out last year, he having seen them in bloom, and selected those he thought the best. They are very beautiful dwarf, and continue flowering from June until October, or until the frost destroys them in the autumn, and are admirably adapted for bedding, being now classed as perpetual bloomers, many of them growing not more than 16 to 18 inches high :—

Empereur de toutes les Russies, shaded violet purple centre
Julic Roussel, white, with purple centre, superb
L'Enfant Prodigue, violet rose, shot with scarlet
Louis Guerard, large deep amaranth, magnificent
La Volupté, smooth rose, shot with scarlet
Madame Suer, white purple centre, very dwarf
Mademoiselle Orelly Duriez, white violet centre
Monsieur Forest, large lively amaranth, very effective
Souvenir d'un Ami, large rosy red, very fine
Surpasse Madame Rendatler, white purple centre, very dwarf.

The above 2s. 6d. each, or the lot 21s.; besides the above J. S. can supply the finest old sorts from 6s. to 12s. per dozen.

ROSES for bedding on their own roots, strong plants :—

TEA : Souvenir d'Elise, the most beautiful of all Tea Roses, 2s. each, or 18s. per dozen, or 7l. per 100
,, Safrano, 1s. each, or 9s. per dozen
,, Gloire de Dijon, 1s. each, or 9s. per dozen

HYBRID PERPETUAL ROSES.

General Jacqueminot, 1s. each, or 9s. per dozen
Louis Chaix, 2s. 6d. each, or 24s. per dozen
Madame Vigneron, 2s. 6d. each, or 24s. per dozen
Pauline Lansezeur, 1s. 6d. each, or 12s. per dozen. (Of all the Hybrid Perpetual Roses this is the best adapted for bedding purposes, from its dwarf bushy habit and being always healthy and always in bloom)
Victor Trouillard, 1s. 6d. each, or 12s. per dozen
NOISETTE : Triomphe de Rennes, 2s. each, or 18s. per dozen.

NEW ROSES of 1858, on their own roots.

HYBRID PERPETUAL ROSES, 2s. 6d. each, or 24s. per dozen :—	
Duc de Cambridge	L'Evêque de Nîmes
Lord Palmerston	Louise d'Autriche
Marie Portemer	Reine de Denmark
Thomas Rivers	Triomphe des Beaux Arts

NEW ROSES for 1859, grafted on the Manetti Stock, strong plants, 4s. each, or 2l. 12s. 6d. the lot.

HYBRID PERPETUAL ROSES.	
Ambroise Verschaffelt	Beauté de Royghem
Comte de Beauford	Celine Forestier
Docteur Bretonneau	François Ier
Empereur de Maroc	François Arago
Impératrice Eugenie	Oriflamme de St. Louis
Princesse Olympie	Stephanie Beauharnais
Virginal	Vicomtesse Laure de Giraud
TEA : Madame Damaisin	BOURBON : Octavie Fontaine

All the above plants are now ready to send out, and J. S. will have the above New Roses on their own roots ready to send out the first week in June.—Bagshot, May 7.

GOLD AND SILVER FISH.—Upwards of 100,000 on hand, at 4s. to 9s. per dozen, 2l. per 100, or 18l. per 1000.

ORANGE TREES, full of bloom, and some with fruit and bloom, 3s. 6d. each; larger size, with very large fruit and bloom, 6s., 7s. 6d., and 10s. 6d. each. AZALEAS and CAMELLIAS, 18s., 21s., and 24s. per dozen; and every other kind of Greenhouse and Stove Plants, and Nursery Stock of the best quality at lowest prices for cash. — ROBT. GREEN, 154, Kingsland Road, 55 doors from Shoreditch Church.

HORTICULTURAL VALUATIONS.

MR. ALFRED CHANDLER (of the late firm of Chandler & Sons, Vauxhall), begs to inform his friends that he is at liberty to undertake the valuation of Collections of Plants, Nursery Stock, Horticultural Buildings, &c.

Mr. A. C. is also open to engagements as Censor at Horticultural Exhibitions, in which capacity he has had long and extensive experience.—28, Priory Road, Wandsworth Road, S.

MESSRS. E. G. HENDERSON & SON

WILL OFFER THE FOLLOWING NEW PLANTS IN MAY, AND THE

NEW GENERAL CATALOGUE and SPRING LIST of ORNAMENTAL BEDDING and SUMMER FLOWERING PLANTS

WILL IN A FEW DAYS BE READY FOR DISTRIBUTION, WHEREIN WILL BE DESCRIBED

ALLAMANDA VIOLACEA.

This plant so long looked for, and much needed by all English competing competitors, we have much pleasure in introducing for the first time to the public, and no doubt it will be for years the great feature at the leading Exhibitions. The late Mr. Gardner, Director of the Royal Botanic Gardens in Ceylon, speaks of it in his papers, published in the second volume of the London Horticultural Society's Quarterly Journal, as one of the finest shrubs he met with, and "by far the most beautiful species in the genus, bearing numerous large flowers not unlike in colour those of Gloxinia speciosa."

As a competition plant in collections, A. violacea, in its violet-blue tint, offers a new and essential feature in colour, there being none other in the same style to associate with the golden-yellow of A. Schotti, and the delicate rosy-blush of Echites and Dipladenia. 63s. each.

AGAPETES BUXIFOLIA, a neat-habited plant with good evergreen foliage, and large bright red tubular flowers, resembling the Mitraria and Epacris intermediately.

NEW INDIAN AZALEAS, fine competing kinds raised by M. Spae, M. C. Van Loo, and M. De Witte.

The scarlet-flowered variety of TYDÆA GIGANTEA, and the double-flowered ACHIMENES LONGIFLORA.

The TYDÆA LADY DIGBY, and LADY CAROLINE KERRISON (syn. Achimenes), with large brilliant rosy-crimson flowers throughout winter, free flowering habits.

The HYBRID BEGONIAS raised by Mr. Stange, Gardener to Herrn Consul Schiller, of Hamburgh, including B. PICTURATA and others from B. SPLENDIDA ARGENTEA.

LIERVAL'S NEW PHLOX EVENING STAR.

BURRIDGE'S TWO NEW PHLOX DRUMMONDI, VICTORIA AND ALBERT.

CALCEOLARIA AMPLEXICAULE ALBA, Splendid bedder.

BOUVARDIA "BRILLIANT" AND "DELICATA," with large flower tubes, and profusion of bloom.

NEW BEDDING DAHLIAS, GLOIRE DE FRANCE, AND WHITE UNIQUE.—The best white variety out, and the former as the most noble formed and richly coloured flower of any other Dahlia for beddings, a dried plant showing the dwarf and profuse blooming habit may be seen at the Wellington Nursery.

BANKS'S NEW FUCHSIAS (9 varieties, 63s.).

NEW CHRYSANTHEMUMS (8 varieties), see Plate XXVI. in the "Illustrated Bouquet."

BREEZE & BANKS'S COLLECTION OF NEW VERBENAS will include the finest blue out, the best rose, the finest violet-purple, the best peach, and maroon black, with large white eyes or centres, the Géant des Batailles far surpassed; a Mrs. Holford in truss and habit, but suffused with a beautiful pink tint. The entire collection includes a full complement of colours, as the finest ever sent out by us, and surpasses with but few exceptions any that we have cultivated under name.

FINE BEDDING GERANIUMS.

NEW NOSEGAY SECTION.

THE IMPERIAL CRIMSON, AND MODEL NOSEGAY GERANIUMS. See descriptions at page 355, and also the Catalogue.

Among Variegated Geraniums, MISS EMILY DOMVILE will prove a first-class Bedding Plant (see description in Catalogue).

The two GOLDEN-LEAVED varieties with large-petalled flowers.

THE RAINBOW, with the finest red-zoned foliage yet seen.

THE ST. CLOUD, a beautiful accompaniment to FONTAINBLEAU.

THE SILVER CHAIN, with deep margin of pure white; a fitting companion to the GOLDEN CHAIN.

NEW CALCEOLARIAS, scarlet, crimson, and yellow, of proved and true bedding, shrubby, branching growth; not half shrubby, as the majority are.

THE WHITE NOSEGAY GERANIUM (for beds).

SPERGULA PILIFERA,

AN ADMIRABLE SUBSTITUTE FOR GRASS LAWNS WITHOUT MOWING!

Permanent for years, with the most beautiful verdure through the year.

N.B. *The quotations of Price to Geraniums Imperial Crimson and Model Nosegay, at page* 355, *should have appeared as* 3s. 6d. *and* 2s. 6d. *each only.*

Wellington Nursery, St. John's Wood, London.

CHOICE STOVE AND GREENHOUSE PLANTS AT LOW PRICES.—See names in the *Gardeners' Chronicle* of April 9, page 309, and April 16, page 330.
THIRTY CHOICE STOVE PLANTS, very strong and very fine, for 5*s*. ; or, per dozen, 24*s*. to 35*s*.
FIFTY CHOICE GREENHOUSE PLANTS, very strong and fine, for 6*s*. ; or 18*s*. to 24*s*. per dozen.
FIFTY FINE GREENHOUSE PLANTS, selection left to us from the Catalogue, 45*s*.
BRITTAIN'S GARDEN NETTING of 1½ yard, with 5*d*., 6*d*., and 8*d*. per yard.
SHAW'S TIFFANY of best quality, No. 1, 5*s*. per piece of 20 yards; also stouter qualities.
THE GISHURST COMPOUND.—Boxes 1*s*. 6*d*. each with instructions.
Goods 20*s*. and upwards free to all stations in London, or on the London and Norwich, (Colchester) line.
BASS AND BROWN,
Seed and Nursery Establishment, Sudbury, Suffolk.

AZALEA INDICA.
J. IVERY AND SON beg respectfully to invite growers of the above named to an inspection of their unrivalled Stock of Young Specimens of all the newest and best varieties, many of which have been exhibited at the Metropolitan Exhibitions. They are clean and healthy, well set with bloom, and moderate in price. Catalogues forwarded post free upon application.—Dorking Nursery, May 7.

AMBROISE VERSCHAFFELT, NURSERYMAN, Ghent (Belgium), will now send out the following NEW PLANTS :—

	s.	*d*.
BEGONIA LEOPOLDII, one of the finest Begonias yet sent out	8	0
TYDÆA PRINCESS TROUBETZKOY (three splendid hybrids; the set)	16	0
„ GRANDIS		
„ SANGUINEA		
TORENIA PULCHERRIMA	2	6
CLEMATIS SOPHIA FLORE PLENO	8	0
LYCHNIS HAAGEANA	4	0

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Stove, Greenhouse, and Hardy Ferns, Miscellaneous Stove, Greenhouse, and Hardy Plants, Variegated and Ornamental foliaged Plants, Conifers, Roses, Rhododendrons, Indian Azaleas, Gloxinias, Fuchsias, Cactuses, &c., is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

GERMAN AND OTHER FLOWER SEEDS, VEGETABLE, AGRICULTURAL SEEDS, ETC.
MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their new PRICED and DESCRIPTIVE CATALOGUE in which is enumerated every novelty of proved merit, also all the best of the older kinds, is now published, and will be forwarded post free on application. Their whole stock has been selected from the best English and Foreign sources, and every kind is warranted true to name, and of the finest possible quality.—Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London.

PLANTS IN FLOWER.
F. AND A. SMITH have now in bloom Acacia, Cactus (fine), Cytisus ; Erica ventricosa coccinea minor, v. superbiens, v. breviflora, E. intermedia, E. Cavendishi, E. hybrida, E. perspicua nana ; Fuchsias, Calceolarias, Heliotrope, Hydrangea, Geraniums, Fairy Roses, &c.
The above are healthy, strong, and well-grown plants, prepared for sending away. Prices on application.
Dulwich, Surrey, S.

SUPERB DOUBLE BALSAMS.
F. AND A. SMITH are now sending out seed of their superb BALSAMS, which are unrivalled for size, form, brillancy of colour, doubleness of flower, and habit of plant.
In collections of nine separate colours .. .. 2*s*. 6*d*.
„ „ mixed „ 2 0
„ „ „ „ half quantity 1 0
The above are *genuine only* in our sealed packets, and may be had of most respectable Nurserymen and Seedmen in the United Kingdom.—Dulwich, Surrey, S.

CHEAP BEDDING PLANTS, 2*s*. 6*d*. per dozen.—Apply for Catalogues, enclosing two stamps, to J. SCOTT, Merriott Nurseries, Crewkerne, Somerset.
The Catalogue comprises everything suitable for Flower Garden decoration, and full descriptions of J. S.'s unrivalled collection of new DOUBLE PETUNIAS, now ready for delivery, at 6*s*., 9*s*., and 12*s*. per dozen. Fine new single sorts, 2*s*. 6*d*. to 3*s*. 6*d*. per dozen ; Magna coccinea, the most splendid of all Bedding Petunias, 5 inches across, beautiful light crimson, 3*s*. 6*d*. per dozen.
LEPTODACTYLON CALIFORNICUM, in quantity; also PHLOX CRITERION, two lovely Bedding Plants.

WM. CUTBUSH AND SON beg to state that they can supply the following BEDDING PLANTS. Any quantity of extra fine plants at the prices annexed :—

	Per dozen.—*s*.	*d*.		Per dozen.—*s*.	*d*.
Ageratum	4	0	Lobelia speciosa (from cuttings true) the best of the class	4	0
Chrysanthemum regalium flore pleno, golden yellow, an excellent plant for large beds	6	0	Nasturtium Tom Thumb .	4	0
Calceolaria, yellow ..	4	0	Petunias, of sorts .. 4*s*. to	6	0
Cuphæa platycentra ..	4	0	Pyrethrum	4	0
Dahlias, of sorts .. 6*s*. to	9	0	Salvia, of sorts	4	0
Fuchsias, of all the best varieties .. 4*s*., 6*s*., and	9	0	Tropæolum elegans (Crystal Palace variety), a free flowering bright orange-scarlet dwarf plant, well adapted for flower gardens	6	0
Geraniums, Tom Thumb and other Scarlets ..	4	0	Verbenas, of the best sorts	4	0
„ Variegated, of sorts, 6*s*. to	9	0	„ Edmonds' New, of 1859,	18	0
Heliotrope	4	0			
Lobelia ramosioides ..	4	0			

A DESCRIPTIVE CATALOGUE of the above and general Nursery Stock can be obtained free per post on application.
NEW VARIEGATED GERANIUM "BEAUTY."
WM. C. & SON can strongly recommend the above, which has bright green foliage, with a broad margin of pure white, flowers light scarlet of good shape in large trusses in great abundance, and very robust habit. We tested it last year with a dozen other kinds, and found it superior to any for bedding purposes. It was exhibited at the late meeting of the Royal Botanic Society, and received a Certificate of Merit.
2*s*. 6*d*. each ; or 21*s*. per dozen.
SHOW, FANCY, & FRENCH-SPOTTED PELARGONIUMS.—A large stock of remarkably fine plants of the above in 48-pots of all the leading sorts, at 12*s*., 18*s*., and 24*s*. per dozen ; or 5*l*. and 7*l*. 10*s*. per 100.
LISIANTHUS RUSSELLIANUS.
WM. C. & SON beg to intimate that they can supply strong plants of the above elegant Conservatory Plants in 48-pots, at 2*s*. 6*d*. each ; or 24*s*. per dozen.
Highgate Nurseries, London, N.

REIGATE SILVER SAND, best quality for Florists, 16*s*. per ton ; less quantities, 1*s*. 6*d*. per bushel ; delivered to any London Wharf or Railway. Peat, Loam, and Leaf-Mould in large or small quantities. Sacks for Sand, 1*s*. 9*d*. each ; or on hire, 6*d*. each ; five hold a ton.—JOHN KENNARD, Purveyor to her Majesty, Swan Place, Old Kent Road, London, S.E.

TWO HUNDRED GUINEAS IN EIGHT PRIZES.

FOR FOUR YEARS SUCCESSIVELY HIS ROYAL HIGHNESS THE PRINCE CONSORT'S PRIZE CUPS HAVE BEEN AWARDED TO
SUTTON'S CHAMPION SWEDES at the East Berks and South Bucks Agricultural Societies in 1855, 1856, 1857, and 1858. New Seed now ready, 1*s*. per lb., or cheaper by the bushel, carriage free.
Royal Berkshire Seed Establishment, Reading.

SPRING CATALOGUE.

MESSRS. ARTHUR HENDERSON AND CO.'S CATALOGUE of SOFT-WOODED PLANTS (including all the leading useful novelties for this year), can now be had of them post free, on application.
Pine-apple Place, Edgware Road, London, W.


ROYAL SOUTH HANTS SEED ESTABLISHMENT,
UNDER THE PATRONAGE OF H.R.H. THE PRINCE CONSORT, THE AGRICULTURAL SOCIETY OF INDIA, AND THE LEADING AGRICULTURISTS OF THE UNITED KINGDOM.
PAGE AND TOOGOOD'S STOCKS have produced the finest specimens exhibited at Smithfield, and are so well known and appreciated that comment on their part is unnecessary. Their prices compete with any house in the trade.
PRESENT PRICES, Carriage Free to all parts of England :—

	Per lb.—*s*.	*d*.		Per lb.—*s*.	*d*.
Skirving's Swede ..	0	6	Hardy Green Round ..	0	6
Page's Improved ..	0	8	Early Six Weeks ..	0	6
Ashcroft	0	6	Kohl Rabi	2	6
Greentop	0	6	Yellow Globe Mangel ..	0	6
Sussex, or Jeffery's	0	9	Page's Impl. Orange Globe*	0	8
Tankard	0	7	Red Globe	0	7
Red Round Turnip ..	0	6	Elvetham Long Red ..	0	7
Page's Improved Red Globe	0	8	Long Red	0	6
Scotch or Bullock ..	0	7	Long Yellow ..	0	7
Pomeranian White Globe	0	6	White Belgian Carrot ..	1	0
Early Green Globe ..	0	6	New Red	1	3
„ White Tankard ..	0	7	Long Altringham ..	1	3
Red Tankard	0	7	Cattle Cabbage	2	6
Green ditto	0	7	Cattle Parsnip ..	1	0
Yellow ditto	0	7	Dwarf Essex Rape ..	0	4

* Bulbs of this variety have acquired the enormous weight of 44 lbs., as shown at Smithfield Club.
BUCKWHEAT, MUSTARD, LINSEED, TARES, SAINFOIN, HOLCUS SACCHARATUS, 1*s*. per lb.
Fine PERMANENT PASTURE GRASS, ITALIAN RYE-GRASS, CLOVER, &c., at lowest market prices.
Special contracts for large quantities. Seeds packed for exportation to all parts of the world.
Oxford Street and Above Bar, Southampton.

TURNIPS AND MANGEL WURZEL SEEDS, ETC.
THOMAS GIBBS AND CO., Corner of Half-Moon Street, the Seedsmen to the "Royal Agricultural Society of England," beg to announce to the members of the Society and agriculturists generally that they have still on hand a supply of the different kinds of MANGEL WURZELS; also selected stocks of HYBRIDS, SWEDES, and other TURNIPS, &c.
MANGEL WURZEL :—
Yellow or Orange Globe, Long Red, and other kinds.
TURNIPS :—
Green-top Yellow Hybrid, strongly recommended, and bears late sowing.
Purple-top Swedes | Skirving's Swedes
Globe sorts | Tankard's sorts
GRASS SEEDS for Permanent Pastures, Cemeteries, and Church Yards, Lawns, and Grass plots, &c.
RENOVATING MIXTURES for old Swards.
PRICED LISTS sent free on application.
Thomas Gibbs & Co.
CORNER OF
HALF-MOON St.
PICCADILLY, LONDON, W.

NATURAL GRASS SEEDS.

PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN, can supply genuine Seed of all the valuable kinds of the NATURAL GRASSES suitable for Lowland and Upland Pastures ; also for Laying-down Lawns; Bowling Greens, Cricket Grounds, Cemeteries, Railway Banks, &c.
PRICED LISTS may be had free on application.—PETER LAWSON & SON, 27, Great George Street, Westminster.

"JACK OF NEWBURY" SWEDE, ETC.

PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN, &c., 27, Great George Street, Westminster, respectfully request attention to their very genuine Stock of the above excellent Swede ; also of the LOTHIAN PURPLE-TOP SWEDE, both of which have been selected with the greatest care. They have also a very fine Stock of the KOHL RABI, or TURNIP-ROOTED CABBAGE, specimens of which were shown at their Stands at Smithfield Club Show. The Kohl Rabi was largely grown last season, and may now be relied on as a substitute for the Turnip and Mangel, where these roots do not succeed, or for filling up blanks where there is a partial failure. Its feeding qualities, hardiness, and weight per acre are equal to the Swede, and all kinds of stock prefer it to other roots.
P. L. & SON have also selected a first-rate Stock of MANGEL WURZEL SEED, which they can confidently recommend. Their natural GRASS SEEDS have been also saved with very great care, and they are ready to supply them separately or in mixture, for laying down Permanent Pastures. Lawns, &c.
P. L. & SON have arranged to deliver Seeds free throughout England and Wales from their London Establishment, for all quantities exceeding 20*s*. in value.
LISTS OF PRICES of the above and all other Seeds, Plants, &c., may be had on application.
27, Great George Street, Westminster.

BATH AND WEST OF ENGLAND SOCIETY FOR THE ENCOURAGEMENT OF AGRICULTURE, ARTS, MANUFACTURES, AND COMMERCE.—An Exhibition of FLOWERS, FLOWERING, and ORNAMENTAL PLANTS, FRUIT, and VEGETABLES, will take place on June 1, 2, and 3, in connexion with the General Exhibition of the above Society, on the occasion of their North Devon Meeting at Barnstaple, when the following Prizes will be offered :—

			s.	*d*.
I.—1.	For the best collection of not less than 20 Stove or Greenhouse Plants (Nurserymen)	1st.	£3	—
2.	Do. do. .. .. (Amateurs)	2	£1	
II.—1.	For the best collection of not less than 12 Rhododendrons and Chinese Azaleas (Nurserymen)	3	—	
2.	For the best collection of not less than 8 do. .. .. (Amateurs)	2	1	
III.—1.	For the best collection of not less than 8 Roses in pots .. .. (Nurserymen)	3	—	
IV.—1.	For the best collection of not less than 20 Variegated Plants, or plants remarkable for their fine foliage (Nurserymen)	3	—	
V.—1.	For the best collection of not less than 20 Ferns of any kind .. (Amateurs)	2	1	
VI.—1.	For the best ornamental basket of Flowers, or of Flowers and Foliage .. (Amateurs)	2	1	
VII.—1.	For the best group of specimens of Coniferæ, preference being given to newly introduced kinds .. .. (Nurserymen)	5	—	
VIII.—1.	For the best specimen of any newly introduced or extremely rare genus of Ornamental Plant, or object of special merit in the exhibition .. (Nurserymen)	1	—	

In addition to the above, prizes to the amount of 10*l*. will be offered for Fruit and Vegetables. A portion of the Society's ground will be set apart for the present exhibition, and space will be allotted either in a marquee or the promenade, at the discretion of the managing committee, to Nurserymen who may wish to arrange and exhibit their collections in distinct sections, irrespective of competition for prizes. Space will also be allotted for the display of Garden Decorations and works of Ornamental Art associated with Horticulture.
Plants intended for the Exhibition will (on being consigned to the Horticultural Committee) have free transit over the line of railway from Exeter to Barnstaple.
All articles for exhibition must be staged by the evening of Tuesday, May 31, and are not to be removed earlier than the morning of Saturday, June 4. GEORGE BROWN,
Barnstaple. Hon. Sec. Local Committee.

HORTICULTURAL SOCIETY OF LONDON.—THE GRAND SPRING EXHIBITION will be held on THURSDAY and FRIDAY, May 12 and 13, ST. JAMES'S HALL, REGENT STREET. Open FREE to Fellows and the holders of Ivory Tickets, at 12 o'clock on May 12. They may be each accompanied by two Visitors presenting 2*s*. 6*d*. tickets, or on payment of 2*s*. 6*d*. each at the door. Open to the public on payment of 2*s*. 6*d*. from 1 till 7 P.M. After that hour until 10 P.M., admission 1*s*. ; and the same on the following day from 10 A.M. till 6 P.M.

ANNEXED IS THE SCHEDULE OF PRIZES.

Class.		Prizes offered. 1st.	2d.	3d.
I.	Ten Orchids .. .. (Amateurs)	£7	£5	£4
II.	Ten Orchids .. (Nurserymen)	6	4	3
III.	Six Chinese Azaleas .. (Amateurs)	4	3	2
IV.	Eight Chinese Azaleas (Nurserymen)	4	3	2
V.	Three Chinese Azaleas, standards, with at least 30 inches of clear stem (Amateurs)	4	3	2
VI.	Six Chinese Azaleas, standards, with at least 30 inches of clear stem (Nurserymen)	4	3	2
VII.	Six Rhododendrons, distinct sorts, in pots .. .. (Amateurs)	3	2	1
VIII.	Eight Rhododendrons, distinct sorts, in pots .. .. (Nurserymen)	3	2	1
IX.	Eight Roses, distinct sorts, in pots not exceeding 13 inches (Amateurs)	5	4	3
X.	Twelve Roses, distinct sorts, in pots not exceeding 13 ins. (Nurserymen)	5	4	3
XI.	Six Roses, distinct sorts, in pots of any size	4	3	2
XII.	Eight fine-foliaged Plants. Variegated plants admitted	4	3	2
XIII.	New or extremely rare species of Ornamental Plants not introduced by the Society..	Certificates		
XIV.	Single Specimen of the most ornamental Plant introduced within the last ten years, in flower	2		
XV.	Single Specimen of the most ornamental plant introduced within the last 10 years, not in flower ..	2		
XVI.	Miscellaneous	Certificates		
	FRUIT.			
XVII.	The best collection of Fruit (Offered by Wm. Wilson Saunders, Esq., Treasurer of the Society.)	£5		
XVIII.	Pine Apples, large sorts, not Providence, single specimens	2	1	1
XIX.	Pine Apples, Queens, sgl. specimens	2	1	1
XX.	Grapes, black, three bunches, in baskets	3	2	1
XXI.	Grapes, white, do. do.	3	2	1
XXII.	Cherries, in single dishes	2	1	15*s*.
XXIII.	Strawberries, 2 dishes, distinct sorts	2	1	10*s*.
XXIV.	Strawberries, single dishes, of British Queen	30*s*	20*s*.	15*s*.
XXV.	Strawberries, single dishes of any one sort, except British Queen	30*s*.	20*s*.	15*s*.
XXVI.	Miscellaneous	Certificates		

The Gardeners' Chronicle.

SATURDAY, MAY 7, 1859.

MEETINGS FOR THE FOLLOWING WEEK.
THURSDAY, May 12 } Horticultural, St. James's Hall.
FRIDAY, 13 }

THE mischief produced by a little beetle called SCOLYTUS DESTRUCTOR, which attacks and ultimately destroys old Elm trees, has of late excited much interest ; as may well be the case when it is considered that some of our most ancient and highly valued avenues, the glory of the old country homes of England, are disappearing before it. What this enemy is we have fully explained at p. 342 of the *Gardeners' Chronicle* for 1857, and elsewhere, and in what way it carries on its operations. That which has again brought it promi-

nently before the public is the statement of a correspondent at p. 315, that M. Robert, a well-known French forester, has discovered "*that trees may be deprived of the whole of their bark*, not only without experiencing any injury, but even with considerable advantage, *the operation tending to increase their power of vegetation.*" This discovery is said to have grown out of attempts to extirpate the Scolytus, which seems to be as mischievous in the Champs Elysées, Paris, as in the parks of London, or St. Giles's at Oxford.

We have been unable to find the report on so important a subject which M. Robert is said to have made to the Horticultural Society of Paris; but we do not hesitate to affirm that the naked statement, as it has come before us, must have been founded on some misapprehension. Not that trees must necessarily die because of being stripped of bark, but because the processes required to keep trees alive are not such as are likely to be employed except experimentally.

We learn indeed from the *Histoire de l'Academie Royale des Sciences* for the year 1709 that a M. Dupuis observed an Elm tree in the garden of the Tuileries, covering itself with leaves in the spring, although it had been barked up to the beginning of its branches. This observation was repeated by Duhamel, the great experimental French physiologist, who decorticated several trees of different dimensions, and he found that the length of time which they survived was in proportion to their size; so that some of the largest did not die till the fourth year. But, he adds, unless the drying up of the wounded surface was prevented the trees always died sooner or later. The question is, can this drying up be hindered by any method capable of practical application? The thing has been done no doubt, and at Paris a century ago, as is well known to vegetable physiologists; but the method employed is, as will be seen, not likely to be applied on a large scale. For the purpose of settling the point Duhamel tried the following experiment, in which a tree recovered perfectly after having been stripped of its bark:—"One spring when the Cherry trees were in full sap I caused a large tree to be barked from top to bottom of the trunk, as if it had been stripped for tan. Immediately afterwards I surrounded the trunk with long straw held together by little hoops, but in such a manner that the straw was kept a few inches off the tree. In order still better to guard the wound from the effect of sun a straw screen was placed before the south side. In this condition the tree flowered rather later than its neighbours, and stoned its fruit, notwithstanding that it cast a part of its leaves and many of its smaller twigs. The next year it appeared to be out of health, but in the third year, the tree having recovered, the straw was taken off, and I found the trunk again covered with new bark." Similar instances are also recorded by Frisch in the Berlin Journals for 1727. But can these precautions be taken in the midst of a great city, and would it not be better to let the Elms perish than to convert them into straw bundles for three or four years, to the imminent risk of their destruction by fire, and to the temporary annihilation of their beauty. If M. Robert has managed to keep them alive after being barked it must have been by other means than that described by his great countryman. It was reported indeed two years ago, that the barked surfaces had been varnished over, and that it was only a partial operation that had been employed, pieces and strips of bark being left here and there—a very different matter from depriving trees of the whole of their bark. It is also now reported that so far from M. Robert's operations having been successful they have signally failed.

We have only to look into any of our wooded country places where Oak trees have been barked, to see how impossible it is that life should be long maintained in the absence of that thick covering of their trunk which is provided by nature. And what purpose does the bark of a tree serve? Without going into a formal description of its manifold uses, it is sufficient to point out one. In all our common trees the outside of the bark is in course of perpetual destruction; it is forced asunder and rifted by the new matter that is forming beneath it. That new matter is wood on the outside of wood, and bark in the inside of bark. Where the two come into contact all the renovation and augmentation of both structures takes place. The matter out of which such augmentation arises, technically called Cambium, is at first excessively delicate, and immediately perishes if exposed to dryness. Bark keeps it always moist; and when Duhamel induced his Cherry tree to form new bark he did so by substituting for the natural bark an artificial and constantly moist covering of another kind. In the absence of that the Cherry tree would have perished. If M. Robert has really kept his Scolytus-eaten Elms alive in Paris without their bark he must have employed some method analogous to that of Duhamel. That such is the case will be evident from the following description of the method taken by that ingenious physiologist in order to ascertain in what way the bark of trees is restored. He knew that its reappearance was preceded by the production of a matter resembling mucilage which ooozed out from the surface of the wood; but the question remained whether the exuded matter was mere mucilage or nascent tissue gorged with sap. To determine that point he removed in the first days of April a ring of bark from a young Elm tree, and adapted to it a glass tube which he kept filled with water. If the exudations alluded to were mere mucilage they would dissolve in the water and not be converted into bark. Up to the 18th of the month he remarked no change; but a few days after a kind of flocculent matter began to appear here and there, and bubbles of air, apparently derived from the longitudinal fibres of the wood, began to rise to the surface of the water; this was succeeded by the formation of a white gelatinous substance, which by degrees spread irregularly and unevenly over the wound, and ultimately covered it with new bark. It is to preserve the vitality of this gelatinous matter, which is the Cambium, that perpetual moisture is indispensable. Possibly a coating of collodion or some harmless insoluble varnish might answer instead of water, or straw bandages, but of that we have at present no intelligence. In the mean while we caution gardeners to try no wild experiments in barking trees. In time M. Robert's report will doubtless be published, and when we receive it they shall be fully informed as to the nature of its contents.

The first Exhibition of the year by the Horticultural Society takes place at St. James's Hall on Thursday and Friday next. The old system of purchasing tickets of admission having been abandoned, visitors, who are not Fellows, enter by payment at the door. The season is favourable for the display of the subjects enumerated in the Schedules that have been circulated, and a very grand display of spring flowers may be anticipated. It is to be hoped that there will be such an attendance as will secure the Society against any material loss, while thus providing for the gratification of the Fellows and their friends.

SOME FUNGI ARE ANIMALS!

There is a peculiar tribe of Fungi, known from all others by their soft, pulpy, or creamy consistence when young, and the multitude of dusty, sootlike spores into which they break up when old. The common puff ball indeed has the last-mentioned character; but then when it is young it is of a firm consistence, resembling somewhat the crumb of bread, and can be handled without collapsing into a shapeless mass incapable of any farther growth. The yellow, froth-like fungus (*Æthalium septicum*), so common upon tan in stoves, filled with myriads of spores, which pollute everything with which they come in contact is a good example, and there are many allied species which occur plentifully in woods and other situations where there is sufficient moisture.

Till a late period no one had supposed that these productions were members of the animal kingdom, but such a view has lately been advanced by De Bary in the *Botanische Zeitung*, and his contributions to the history of the development of Algæ and of those parasitic Fungi more especially which are so detrimental to our corn crops, are of such value, that any views which he may broach, however heterodox, demand a careful consideration.

He founds his opinion upon certain appearances presented by their spawn and germinating spores. We do not say that these observations are incorrect, though a friend has attempted to repeat them, but without success. It is, however, fair to state that experiments on the germination of the spores of Fungi succeed in general far better in summer than in spring or winter.

The spawn of *Æthalium septicum* consists of yellow pulpy threads, which run about in every direction, branching and forming an irregular net-work. De Bary observes that the threads of which the spawn is composed change their position and some of them vanish altogether, as if they were withdrawn into the threads from which they spring. They become brown when treated with iodine, and exhibit the constant motion which is the property of the substance discovered in some of the lower animals by Dujardin, to which he has given the name of Sarcodes. The threads when suffered to grow upon a piece of glass under the microscope, exhibit all the peculiar qualities of that substance as observed in *Amœba* and some other *Infusoria* and the shell-like *Polythalamia* of our seashores. The substance, for instance, sends out shoots, which are again frequently retracted into the mother thread. Two branches are thrown out and coalesce intimately into one, while on the contrary, a constriction takes place occasionally in the middle of another anastomosing branch, and the two parts are completely retracted. In some genera the threads creep amongst the tissues of the wood on which the plants are developed, exhibiting however the same properties as before.

When perfectly ripe spores are sown upon any substance on which they can conveniently germinate, and have become completely saturated with water, so as to get altogether free from the pellicle of air which frequently adheres to them for hours after they have been immersed, the outer membrane bursts and the contents protrude, still covered by the inner membrane in the shape of a little globule. Elongated processes are sent forth from this, which are frequently retracted and replaced by new processes. Meanwhile the germinating globule elongates and bears at its tip one or two delicate flagelliform processes which undulate with great rapidity. The thread itself exhibits various motions, and from its flexibility undulates like a little worm.

Other appearances after a time present themselves. Lateral processes of various kinds are given off, the base of the threads contracts and swells out again, the threads themselves shrink up, and instead of their former lively motion creep slowly along, while their flagelliform processes vanish or are retracted; and then these same bodies resume their original form. Others appear which do not undergo these changes, and larger individuals occur, arising from a gradual transformation of the smaller. The ultimate form closely resembles *Amœba radiosa*, of Ehrenberg and Dujardin. These bodies De Bary believes are ultimately transformed into the spawn threads whose peculiarities we have described above. De Bary believes moreover that the *Amœba*-like bodies actually eat other bodies which fall in their way, though he does not profess to have observed the process.

Now, even allowing all De Bary's personal observations to be correct, it by no means follows that these productions belong to the animal kingdom. The existence of *Sarcodes* in vegetables is not a more certain proof that they are animals than the occurrence of Cellulose in the eggs of Rhipignathus, and some other undoubted animal productions, proves that they are vegetables. The ultimate movement of the spores with their germinating threads is no more sure indication of their belonging to the animal kingdom than that which is so common amongst Algæ justifies the propriety of denying their title to a place amongst vegetables. The existence of spiral vessels in *Trichia* seems to set the question completely at rest, and the mode of development of the spores in some species of *Badhamia* is almost equally conclusive.

Though we differ from De Bary as to the conclusions at which he arrives, we do not in the least wish to detract from the merit of his observations. *M. J. B.*

SIR W. J. HOOKER'S PRELIMINARY REPORT ON KEW GARDENS, &c. (*Just Published*).

Royal Gardens, Kew, W., December, 1858.

My Lord,—Aware that brevity is desirable in reports prepared for the House of Commons, I confine myself to the principal improvements, &c., effected in the past year. A leading feature in the Garden, and which much concerns the country, is the increase of visitors ever since it has so liberally been daily opened to the public; also the generally good conduct of the people, not excepting the inferior classes, and the gratification and instruction here received. This free access was first granted by her Gracious Majesty Queen Victoria, in

1841,	when the number of visitors was	..	9174
1842	,, ,,	.. ..	11,400
1843	,, ,,	.. ..	13,492
1844	,, ,,	.. ..	16,114
1845	,, ,,	.. ..	28,139
1846	,, ,,	.. ..	46,573
1847	,, ,,	.. ..	64,282
1848	,, ,,	.. ..	91,708
1849	,, ,,	.. ..	137,865
1850	,, ,,	.. ..	179,627
*1851	,, ,,	.. ..	327,960
1852	,, ,,	.. ..	231,210
1853	,, ,,	.. ..	331,210
1854	,, ,,	.. ..	339,164
1855	,, ,,	.. ..	313,818
1856	,, ,,	.. ..	344,140
1857	,, ,,	.. ..	361,978
1858	,, ,,	.. ..	405,376

It may be interesting to observe that the best attended months were—

June .. .. 82,455 | July 88,965
August 95,802

The worst attended months were—

February .. .. 1815 | November 1421
December 1443

The largest number on week days was—

April 2 (Good Friday) .. 4948 | May 24 (Whit-Monday).. 8425
July 19 (Monday) 4842

The largest number on Sundays was—

July 4 .. .. 11,729 | August 1 13,761
August 8 12,763

November stands lowest on the list, the average number of visitors on its week days being a fraction above 36, and the average of its four Sundays a fraction above 119. The maximum of any day was on August 1 (Sunday), 13,761.

The Botanic Garden, including the Plant Houses.—The late as well as the present First Commissioner having judiciously recommended greater attention to ornamental gardening, the flower beds have been augmented and intermingled with numerous deciduous flowering trees and shrubs; fine evergreens are dispersed upon the lawns; and the well-kept lawns themselves and the walks are extended and constantly improving. Higher wages have been allowed to the superior and well-conducted gardeners, and a provision is now made for the sick. The staff of liveried attendants works well, in preventing the many petty misdemeanors of which we had formerly to complain. The several Plant Houses are in excellent condition and much enriched by accessions from friends

* The year of the Great Exhibition.

and our own collectors abroad; indeed, some of these buildings begin to be too crowded, and as it is impossible, as well as undesirable, to cultivate everything, we confine ourselves (as suggested in a former Report) to the preservation and increase of those plants which are the most beautiful, curious, or interesting, commercially and economically as well as horticulturally considered. The Palm House and its rarities excite the admiration of every visitor, and the Orchideous Houses and Ferneries are scarcely less attractive.

Urgent Need of a New Conservatory.—In mentioning the excellent condition of the Plant Houses I must be understood as confining myself exclusively to those destined for plants of hot climates—and in them we stand unrivalled. But ever since my appointment in 1841, greenhouse accommodation has been annually more and more wanted. Whereas an ample provision has been made in the erection of the noble Palm Stove, and of some lesser but very useful houses for the reception of tropical productions, nothing whatever has been granted for the shelter of our existing collection of large tender trees and shrubs, Coniferæ, &c., &c., from temperate climates (South Africa, Australia, Mexico, &c.). Eighteen years ago they were the glory of this Garden. Many of them, the noble Araucarias especially, had in 1841 reached to the very top of our loftiest greenhouses, and consequently had to be mutilated to keep them within bounds. Nor was it for want of inclination on the part of the heads of this establishment that the deficiency was not long ago supplied. The costly Palm Stove and various other expenses connected with the enlargement and good keep of the collections and grounds, demanded a pause before the construction of another equally spacious edifice for plants of temperate climes. But ever since 1848, when one of the largest and oldest and most dilapidated houses (another such still remains an eye-sore to the establishment) was condemned and pulled down, with the expectation that the long-desired conservatory would be commenced, our accommodation has been literally lessened. The trees and shrubs have in consequence suffered awfully. Many have perished for want of sufficiently large tubs and the necessary pabulum of light and air; many are now past redemption, and persons who were familiar with these magnificent specimens 18 years ago hardly recognise them now. I have felt it to be my imperative duty as Conservator of this property to say, that unless we can commence the needful structure during the forthcoming year, 1859, I cannot answer for the preservation of the remains of this noble collection. We dare not give them larger tubs and more soil, for we should but encourage their growth. Indeed the largest and finest specimens ought to be planted in the ground in the conservatory. An admirable site has been chosen and approved by the Board for such an edifice, and I sincerely hope that my pleading for it this year will not be in vain.

Herbarium and Library (or Scientific Department), and Museum of Economic Botany.—It is difficult to separate the above, as they are all intimately connected with educational instruction, both of old and young, and with a scientific knowledge of the structure and uses of plants; and in extent and importance they have each steadily increased ever since their first foundation.

Herbarium.—Whatever may be the result of the Commission appointed to inquire into the state of the British Museum, and especially of its herbarium, there can be no doubt that the one thrown open for public use at Kew (which includes the collection belonging to the Director and that presented to Government by Mr. Bentham), does hold the first rank in Europe for magnitude and utility. But I must reserve the particulars for our own Garden Report, when the special advantages derived from the herbarium by scientific foreigners as well as English naturalists will be noted.

The Library stands in the same favourable condition, if not for extent, for its usefulness as a working library, and it is consequently much used.

The Museum.—This establishment must be inspected to be fully comprehended. The details of its continued increase, chiefly from the liberality of merchants and travellers, will be explained elsewhere.

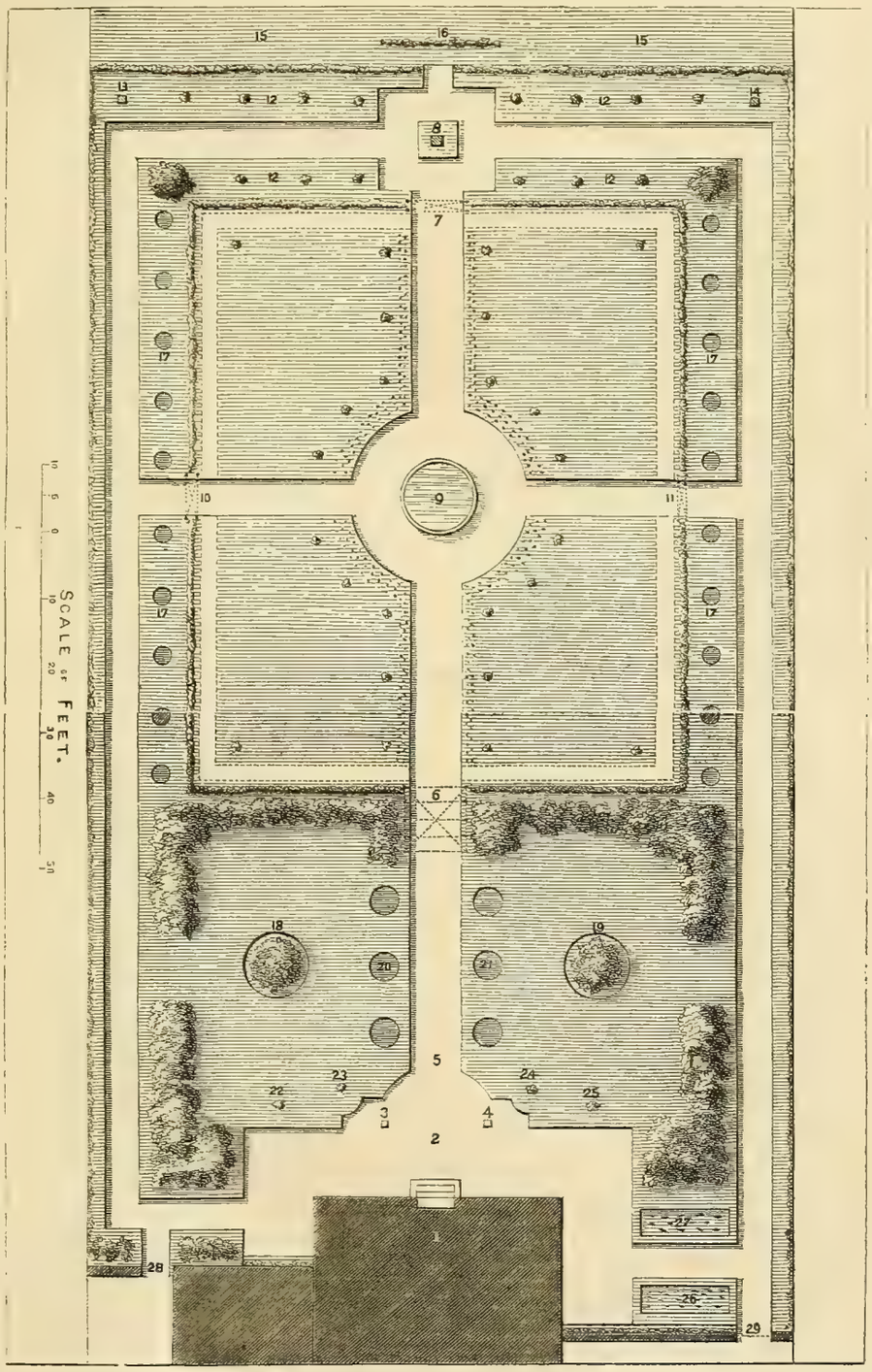
The Royal Pleasure Grounds.—No particular alteration has taken place since that of enlarging the ornamental portion of the Arboretum. The lake progresses by the needful excavation for the water. The adjacent portion of 30 acres, including the Queen's Cottage, assigned by the then First Commissioner, Lord Seymour, with the approbation of H.R.H. the Prince Consort, has been much improved by new walks and plantations of trees and shrubs. Our nursery (in the pleasure grounds) has afforded nearly 18,000 trees for the ornamenting of this ground (and I may add that we have had the satisfaction of supplying the Victoria and Battersea Parks with 2814 miscellaneous trees and shrubs from the same source, in all 20,559); and lastly, in regard to the—

Nursery expressly for Furnishing Planes and Elms to the Metropolitan Parks.—This recent establishment has not only fully met the requirements of the parks in question, but an excellent stock of trees of different ages is provided for future years. Our books show that we have during the past year supplied to—

1. Hyde Park ..	Planes, 6—14 feet ..	..	1000
	English Elms, 6—12 feet ..	..	500
			—1500
2. Battersea Park..	Planes, 5—8 feet ..	..	300
	Elms, 12—15 feet ..	..	200
			— 500
3. Victoria Park ..	Planes, 5—10 feet ..	..	300
	Elms, 6—10 feet ..	..	175
			— 475
			2475

I have, &c., W. J. Hooker.

To the Right Honourable the First Commissioner of Works, &c., &c.



PLANS FOR VILLA AND SUBURBAN GARDENS.

Plate 3.—Occupiers of small suburban residences are often desirous of devoting a portion of the limited extent of ground usually allotted to them to the cultivation of vegetables as a source of amusement. This design suggests a mode of laying-out a small garden with that view, upon a principle not generally adopted—the kitchen garden being entirely surrounded by the ornamental ground. The whole extent is little more than half an acre—the portion represented in the plan is something less. The garden front of the house, 1, is on a gravel platform 2; 3 and 4 are vases to be filled with suitable plants. A broad gravel walk, 5, extends down the middle of the garden through its whole length. There are wire arches at 6 and 7, to be covered with creepers, forming a vista, through which is seen a sundial 8, standing on a square of Grass at the junction of the several walks. The middle walk where it passes through the kitchen garden has, on either side, pyramid Apple and Pear trees, in the front of which flowers are to be cultivated, to give apparent extent to the garden immediately in front of the house. In the centre of the vegetable plot is a basin of water, 9; a simple fountain may be added with very good effect.

The wall which surrounds the garden is to be covered with Ivy and other creepers; but portions may advantageously be devoted to fruit trees. An American Arbor-vitæ hedge separates the portion devoted to vegetables from the remainder of the garden. The two side entrances to it, like those from the main walk, are under arches to be covered with Roses. On the wide margins of turf 12, bordering the walk at the end of the garden, are indicated situations for specimens of choice shrubs or small trees. The two side walks are terminated by vases 13 and 14, but their places might be occupied by other specimen plants or pillar Roses. At 15 is a space to be variously occupied, viz., as a frame ground, a compost and rubbish yard, and reserve garden. A door opening to a lane enables manure or soil to be brought in without deranging the garden. The short hedge 16 effectually screens this part of the ground without occupying much space. The small circular beds 17, by the boundary walk, are for Hollyhocks; backed by the Arbor-vitæ hedge they will have a fine effect, and form pleasing interludes in the garden. On the lawn are two beds 18 and 19 for Rhododendrons or other dwarf evergreen shrubs. The six smaller circular beds, 20 and 21, are for bedding plants. These may be filled in winter as described in a previous article. Four low growing compact plants, 22 to 25, are shown on the lawn immediately in front of the house. The two oblong beds, 26 and 27, are for dwarf Roses. At 28 a door gives admission to the offices, and at 29 is a private entrance communicating with the carriage drive. No conservatory or greenhouse is yet attached to this residence, but there is an admirable situation for one on the side opposite that of the offices. The drawing room being there they could open into each other. *George Lovell, Bagshot.*

Home Correspondence.

The Horticultural Society.—I wish as a very old member to express the satisfaction I felt at the proceedings last Monday at the anniversary. We had a thoroughly good business report, the future plans of the Council were well received as they deserved to be, and as for the generous act of those gentlemen who at one stroke relieved the Society from a demand of 2000*l.*, it appeared to me and others near me to be unprecedented in the history of such associations; I regret that their names were not given, or at least that I did not hear them, for they ought to be known through the length and breadth of the land. The only circumstance that I regretted was the language of a loquacious gentleman who seemed anxious to force the Society back into the old groove from which it has escaped; but I hope the Council will pay no more attention to him than he received at the meeting on Monday. *Fletanus.*

The Gardeners' Royal Benevolent Institution.—The next anniversary festival of this excellent charity will take place at the Crystal Palace on the 8th of June, the day of the flower show. I observe with much satisfaction that on this occasion ladies as well as gentlemen are invited to meet at dinner, an arrangement which I cannot doubt will prove popular. As Sir B. Haliburton will preside we may expect some good speaking, which cannot fail to add much to the enjoyment of the evening as well as to the funds of the charity. *Jael.*

Electricity and its Effects.—In your Paper of Saturday last you have the following passage in reference to the origin of the insects found in a church at

Colchester,—"is about as philosophical a suggestion as it would be to expect them to be created by electricity." Now if the influence of electricity acting upon certain forms of matter produce vegetable life, would not that circumstance in some degree favour the assumption that certain forms and orders of animals may be attributed to the same cause? *A Gardener.* [Yes; *if* a plant can be produced by electricity so may an animal. But the *if* is everything.]

Cucumber Disease.—Having read with interest the articles by Mr. Ayres and Mr. Fry on the culture of the Cucumber, I was induced to write to ask could some of your able correspondents inform me as to the cause or cure of a disease which has taken my plants. I have a 4-light dung frame with linings back and front and a nice gentle bottom heat; the plants were growing most luxuriantly, the leaves many of them measuring 12 inches each way, and the roots all over the frame like packthreads, and great attention paid to them as to air, water, and such like. About three or four days ago I noticed some brown specks in the stems; thinking it might be too much moisture I have kept them rather dry since. Again, a quantity of young fruit just coming, about 2 inches in length, are gumming and dropping off, and some of the fine leaves are turning brown. There are three or four good sorts of Cucumbers in the frame, such as Cuthill's Black Spine, Lord Kenyon's Favourite, Lynch's Star of the West, &c. I have likewise another frame of equal dimensions, at present looking healthy, but I am afraid showing symptoms of the same complaint, and likewise a quantity of young plants, all of which look to be going in the same state. *Young Gardener.*

Spergula pilifera.—Having had frequent opportunities of seeing Mr. Mongredien's lawn of Spergula pilifera during the last three years, I may perhaps be permitted to offer some remarks upon the plant. Highly as it has been spoken of as a substitute for Grass, its merits have not in my opinion been at all overrated. I have been kindly permitted to take many friends to see the lawn, some of whom have gone with a conviction that the published accounts of it were more fanciful than accurate; and of all the varied questions that have been asked respecting it, I know of but one which has not been satisfactorily answered, and that is, "In how short a time can a lawn be made?" Experiments are in progress for the determination of this point. Last Christmas patches of Spergula, averaging in size about 6 by 2 inches, were planted over a large piece of ground in Mr. Mongredien's garden at distances of 12 to 15 inches apart; and at the present time, the middle part of each patch is being removed, cut up into smaller pieces, and planted in the vacant intervals; and the Gardener expects the lawn will be covered before the end of the year. I apprehend that the quickest way of making a lawn would be, to prick out seedlings at 2 inches apart upon a carefully prepared surface of loam, a troublesome job doubtless, yet one that would well repay the labour; for it might be done by mere boys, under occasional supervision. The question of the time taken to form a lawn ought not, it seems to me, to be allowed to prejudice the merits of the plant at all; we do not discard many perennials because they refuse to bloom the first year; we are content to wait a season or two for Wistaria sinensis to establish itself before it gives us its lovely racemes; and we may rest assured that if Spergula pilifera does not make a lawn the first year, it will the second, and such a lawn as no Grass can equal. Like most good things, it will be liable to have an inferior article substituted for it; and as I have already noticed, in two good gardens near London, instances of Sagina procumbens being confounded with the Spergula, my chief object in writing is to call attention to the mode of distinguishing the two plants. When in bloom this is easily done, all the parts of the flower being arranged in fours in Sagina and in fives in Spergula. The foliage however requires closer inspection; and as plants are likely to be purchasable soon, it is particularly to be noticed that the apex of the leaves of Spergula pilifera is terminated by an erect bristle, which is wanting (or reduced to a blunt point) in Sagina procumbens. But in case these differential characters should be deemed unsatisfactory from their microscopic nature, I would mention other modes of separating them. Both plants in the open ground are procumbent; but if potted and placed under glass, Spergula quickly becomes attenuated and exhibits slender erect shoots, while Sagina preserves its procumbency. The roots also differ materially; those of Sagina branch immediately below the surface of the ground, while Spergula sends down a strong tap-root; I cannot find any plants of Sagina with roots more than four inches long, while the roots of a patch of Spergula two years old have been traced more than 3 feet down into the stiff clay subsoil of Mr. Mongredien's garden. Upon this extraordinary depth of root mainly depends the value of the plant for lawn purposes; first, because the greatest extremes of atmospheric changes will never affect the soil deep enough to injure it (while Sagina from its limited roothold will not bear heat or draught); and secondly, because this characteristic secures (as has been proved) a beautiful lawn, perfectly free from cracks in the hottest weather, upon a soil fit for nothing better than making bricks. Sagina procumbens is such a common weed in garden walks that it is very likely to be mistaken for, and even planted with Spergula pilifera; and as a lawn made of the former will probably be brown instead of green during the summer months, and thus earn for Spergula an undeservedly bad name, I trust you will not deem these observations out of place at the present time. *William Thomson, F. L. S.*

Pottery-ware Coffins.—It may not be uninteresting to many of your readers to know that the invention of earthenware coffins is now being carried into effect at Mr. Thorniley's Tile and Pot Works, Heaton-Mersey, near Manchester. I had lately occasion to go there to order some flower-pots, when I saw some beautiful coffins fresh from the kiln—so complete in every point that it was hardly possible to find fault with them. The shape is admirable, quite equal to the Oak and Elm coffins of our best makers. The lid falls within well-formed ledges, and, I was told, is fastened down with Roman cement before being consigned to the grave. Mr. Thorniley told me he has orders for a thousand, and hopes to be able to make at his own works from 500 to 1000 a week when his arrangements are completed. Mr. Parkinson, a Manchester gentleman and patentee of these coffins, tried many other plastic materials; but found none answerable in every way except those made of the best common clay. After many trials and diligent research, he has discovered a chemical substance or solution, which when applied renders the hardest materials and substances capable of being beautifully and enduringly "flocked." Well, these coffins when finished are exceedingly pretty, just like a piece of rich velvet without seam. Crimson flock is to be used for soldiers, blue for sailors, white for paupers, and black or Oak for private families who buy their own. When I first heard of them it struck me that they would be too heavy for general use; but those I saw for children six or eight years of age were not too heavy. After seeing these coffins it forcibly struck me that it only required an effort or two to produce good earthenware pipes for heating hot-houses with corresponding elbows, syphons, and T's. Coffins can be made 6 feet long. Surely pipes 6 inches wide and 6 feet and upwards in length can be made. The jointing could be effected by Portland or Roman cement, which answers very well for cast metal pipes. I am not at liberty to state how cheaply the coffins can be produced; but if pipes can be made at the rate of the coffins our hot-houses could be heated for one-half the cost of iron pipes. The present system of heating is good, but the materials used are expensive. *A. Pettigrew.*

Waltonian Cases.—I have been much pleased with Mr. Hibberd's satisfactory account of propagating plants in a small way in these cases. That gentleman clearly explains the facility of propagating by the means described, but if the plants are to be turned out of their comfortable quarters at 80° to the usual temperature of a dwelling-house in February and March, I fear they will die immediately. May I venture to ask what plan he suggests to those not enjoying a warm greenhouse to enable them to nurse these tender and barely-rooted plants or seeds after their time of two or three weeks in their hotbed has expired? I have this winter raised several seeds in a box filled with dung, but they shot up very weakly and sickly, and rapidly died away: such I should imagine would be the fate of the nurslings of the Waltonian cases to those who could not secure an equal day and night temperature to these tender plants for the three following months. Mr. Hibberd will perhaps be so obliging as to favour us with some information on this subject. I shall also feel obliged by being informed the best place to procure tropical fruit trees. I am anxious to send the new plants of South America and the Straits near Penang to another warm climate. In our establishments here they seem not to cultivate tropical plants. *An Old Subscriber, Kew.*

Societies.

Horticultural: *May* 2.—Anniversary Meeting for the election of Council and officers for the ensuing year, the Rev. L. Vernon Harcourt, V.P., in the Chair. The following report from the Council was read:—

The address of the Council, issued on the 29th of January last (1859), has afforded the Fellows of the Society such full information concerning the measures which it has been found necessary to take during the year, that little now remains beyond giving some further explanation of the causes that have led to the course which has been taken, and producing the customary report upon the Society's financial position. The Society has been annually informed of the difficulty of making the expenditure and income balance each other, owing to the heavy expenses of London and Chiswick, and the continual losses sustained by the Exhibitions. The Fellows are also aware, that in the opinion of many zealous friends of horticulture it was thought possible to make Chiswick once more a source of income instead of embarrassment, provided certain changes were made in the arrangements there. In pursuance of this idea, a voluntary subscription was opened for the purpose of giving the experiment a trial. A gardener, most strongly recommended as a man of great intelligence and experience, was appointed, with a liberal salary, and the entire management of the establishment was entrusted to him. Considerable and costly alterations were made in the Garden, for the purpose of rendering it more productive, more useful, and more ornamental. The Exhibitions were continued, with the addition of a class of manufactured articles required for horticultural purposes. Nurserymen, Gardeners, and Manufacturers readily contributed their productions; and with their assistance, collections unsurpassed for beauty, utility, and interest were brought together. They, however, failed to attract visitors in sufficient number to save the Society's finances from renewed loss, the Exhibitions of 1857 having cost more than 800*l.* beyond the receipts, exclusive of a very considerable expenditure upon permanent alterations made in order to increase the convenience of visitors and the facilities of exhibitors. In like manner, the Exhibitions in the year 1858-9 have again cost the Society above 500*l.* beyond the receipts, the principal part of which loss is chargeable to the Garden. Had this deficiency been assignable to any circumstance likely to be removed by time, or over which the Council could exercise control, they might have still endeavoured to struggle with the difficulties of their position, and to carry out the views of those who are favourable to the maintenance of the Garden in its integrity, in the hope that, if direct loss was sustained by the Garden Shows, an equivalent indirect advantage might be derived from the interest taken in the Garden by the public. But such was not the case; the returns of visitors showed that although the sum of 3074*l.* 18*s.*, which had been raised by voluntary subscription, and a considerable further sum taken from the income of the Society had been expended in maintaining the Garden and rendering it more attractive, yet the number of persons visiting it was not only continually decreasing, but had arrived at so low a point as to render its preservation in its previous state no longer advisable. The number of ordinary visitors, which in 1843 was 8799, and in 1854, 5140, has sunk in the past year to 2583, of which a large proportion consisted of residents in the immediate neighbourhood, passing the gates over and over again during the year. It was clear that the Garden could be no longer regarded as a place of resort sufficiently attractive to compensate for what is now considered inaccessibility, arising from the absence of useful railway conveyance; and the Council therefore arrived at the conclusion that the whole of the ornamental part must be abandoned. Measures have already been taken to reduce it to the condition of an establishment where experiments can be conducted, the true qualities of all new varieties of fruit trees and esculent plants be ascertained, fruit trees of ascertained merit be preserved, and plants propagated for distribution among the Fellows of the Society. These measures are all in active operation; very large numbers of esculent vegetables are under trial, and will be reported on by the Fruit and Vegetable Committee of the Society, several parts of whose Proceedings are already in the hands of the Fellows. And the Council take this opportunity of expressing the great obligation they are under to the gentlemen composing this Committee, for the able and zealous manner in which their interesting investigations have been conducted. The losses sustained by the circumstances just adverted to, and by a continued deficiency of income, had at the last anniversary raised the debt of the Society from 9388*l.* 10*s.* 4*d.* in 1856, to 9986*l.* 18*s.* 11*d.*, and the Council felt that unless some final stop was put to this augmentation the financial position of the Society would become serious. They have therefore, while maintaining the efficiency of the Society, and carrying out the objects for which it was incorporated to the utmost of their power, given directions on the one hand to cut down all heads of expenditure to the lowest possible point, and on the other to realise some part of the Society's property. After the Garden, the great item of expense has been the House in Regent Street, which cost 233*l.* per annum for ground rent, land tax, and rates alone, exclusive of the interest of money borrowed on its security, and the charges incident to so large a residence. They found, moreover, that there was urgent need of extensive repairs. It was therefore resolved once more to submit it to sale by public auction, and the Council have now to report that it has been disposed of for 2960*l.*, to which has to be added 50*l.* 5*s.* for fixtures, and 50*l.* 19*s.* 6*d.* for fittings and useless furniture; making in all 3061*l.* 4*s.* 6*d.* In exchange for this expensive house, chambers at No. 3, St. Martin's Place, Trafalgar Square, have been taken at a total rent of 80*l.* a year, including taxes; and on the present occasion we assemble in the house of the Society of Arts, by permission of the Council of that great institution. The inevitable consequence of quitting the extensive premises in Regent Street and hiring a mere office for business, was the sale of the principal part of the large and valuable Library which had been forming during a period of 40 years. The Council do not attempt to conceal their regret at this measure having become inevitable; but they had no alternative. They moreover considered that it would produce a further considerable sum, applicable to the extinction of debt, and that, after all, it was more in the nature of a possession to be proud of than of a property of real utility to the Fellows, for, in the opinion of the officers of the Society, scarcely more than 20 Fellows ever consulted it during the year. The sale has been entrusted to Messrs. Sotheby & Co., and commences this day. It is with no little satisfaction that the Council have to add that the measures now described appear to have met with the general approbation of the Society, if an opinion is to be formed from the number of withdrawals that have been notified since the issue of the circular letter of January 29th. The number of withdrawals between January 1st and April 1st, 1855, was 8; ditto 1856, 11; ditto 1857, 8; ditto 1858, 7; ditto 1859, 12. While divesting the Garden of its ornamental character, and reducing it to one of mere utility, abandoning the Exhibitions there, and quitting the House in Regent Street, the Council trust essentially to improve the real utility of the Society. For meetings at the Garden, and at Regent Street, they have substituted Exhibitions in St. James's Hall; and by Ballots for Plants, and more extensive distributions than formerly both of Plants and Seeds, they expect that the Fellows will receive a more substantial return than hitherto for their subscriptions. As to the Ballots for Plants, which seem calculated to render the distributions more satisfactory than heretofore, and are evidently popular, nearly 400 names having been entered for that held on the 15th ult., the Council regard them as being quite experimental; they fully expect that experience will show how to render them very much more useful, and of that experience, as well as of any suggestions on the subject, they are prepared at once to take advantage. In the Appendix to this Report will be found the usual accountant's details of income and expenditure, together with the annual balance-sheet, and estimates for the coming year. A reference to these documents will show that while the ordinary expenditure for 1858-9 has been about 120*l.* below its estimate, the ordinary income for the same period fell short of the estimate stated in the last annual report; still it was upwards of 400*l.* in excess of the previous year. And such will be the effect of the retrenchments carried out by the Council, that they feel justified in at length anticipating in the coming year a surplus of more than 1300*l.* available for the reduction of debt or for meeting contingencies. In forming this estimate they have fixed the London expenditure at 500*l.* a year, and that of the Garden at 1300*l.*, sums within which the expenses will, if possible, be confined. The year now reported on has been so entirely transitional, that no considerable increase in the numbers of the Society could have been anticipated. It is found, however, that while the total number of Fellows of all classes at the last anniversary amounted to 978, the number on our list on the present occasion is 985, the number of elections having been 62, of resignations 30, and of deaths 25. Small as this increase may be considered, the Council trust that it may be taken to indicate a determination on the part of the public to sustain this valuable association which, during more than half a century, has been conferring signal benefits upon the all-important art of cultivation; and they confidently rely upon a very considerable accession of strength as soon as the public shall have had an opportunity of seeing the effect of the measures now announced. For themselves they can only add, that it is their most anxious desire to consider fully all suggestions, and to adopt every measure within their means tending to infuse new activity into the administration of its affairs, and to increase its utility in every direction, with a view to maintain the Society in the proud position it has so long occupied among the useful institutions of Europe.

The report having been read a conversation ensued of some length, in the course of which it transpired that five members of the Council (the Rev. L. Vernon

Harcourt, the Treasurer, Mr. Godson, Mr. Blandy, and Mr. Wentworth Dilke), in order to enable the Society to meet two thousand pounds' worth of old promissory notes, had guaranteed their payment by instalments, thus relieving the Society from a serious temporary embarrassment. So liberal an act on the part of these gentlemen, which showed how much they are in earnest in their support of the Society, was regarded as deserving the warmest acknowledgments. Several Fellows expressed a wish that the Journal, or some equivalent, should be revived, and it was understood that steps would be taken for the issue of a monthly sheet, which all Fellows might receive through the post. The future arrangements in contemplation respecting the Garden at Chiswick were discussed, but as no definite conclusion had been arrived at by the Council, the consideration of this subject was postponed to some future general meeting.

The Chairman then announced that H.R.H the Prince Consort had been unanimously re-elected President; W. Wilson Saunders, Esq., Treasurer; and Professor Lindley, Secretary; the Rt. Hon. the Earl of Ducie, Professor Henfrey, and Mr. C. Edmonds, new members of Council; and Jonathan Clarke, Esq., and Mr. James Fraser, Auditors.

Notices of Books.

Invasion invited by the Defenceless State of England. By T. H. Key, M.A., and A. Williamson, F.R.S. Bell & Daldy. 2d edition.

This important pamphlet, costing only threepence, should be in the hands of every one who has even the smallest influence over members of the House of Commons. Although written by two civilians, the first of whom however is the near relation of one of our most distinguished naval officers, it bears upon its face unmistakeable marks of a thorough acquaintance with the subject of which it treats. The authors point out with great force, but without a word of exaggeration, to how dangerously low a condition the navy of England has fallen; and how great is our peril unless an instant change is introduced into the action of the Admiralty. We have ships and naval stores in abundance; but where are the gallant hearts to man the former? We have admirable naval officers, but they have no men to command. There is not an officer in the service who will not endorse every statement that these pages contain, and that being so it seems impossible to doubt that we run a most serious risk of being wrapped in the conflagration just about to rage over the continent. For years past we have managed our naval affairs like madmen, and if our rulers do not put an immediate stop to our miserable *laissez faire* system we shall undergo the fate of madmen.

The 2d part of *Routledge's Illustrated Natural History* continues the history of Monkeys, with excellently drawn figures of which it is enriched. These cuts have not been yet surpassed by the draughtsmen or wood-engravers of any country, and they receive full justice from the printer—a very important circumstance. The letterpress, which is chiefly anecdotical, supplies us with a paragraph or two for quotation.

A Jealous Mandrill.—"Sometimes they are so jealous in their disposition that they throw themselves into a transport of rage if any attentions be paid to a lady within their sight. This curious propensity was once made the means of re-capturing a large baboon—a chacma—that had escaped from its cage in the Jardin des Plantes, in Paris. It had already baffled many attempts to entice it to its home, and, when force was tried, repelled the assailants, severely wounding several of the keepers. At last, a ready-witted keeper hit upon a plan which proved eminently successful. There was a little window at the back of the cage, and when the keeper saw the baboon in front of the open door, he brought a young lady to the window, and pretended to kiss her. The sight of this proceeding was too much for the jealous feeling of the baboon, which flew into the cage for the purpose of exterminating the offending keeper. Another keeper was stationed in ambush near the cage, and the moment the infuriated animal entered the den, he shut and fastened the door."

Monkeys and Sugar-canes.—"One ready-witted Englishman succeeded in keeping the monkeys away from his plantation for more than two years, and that without using any violence, or offending the prejudices of the natives. He had planted a patch of Sugar-canes, and had seen his growing crops eaten by elephants, swine, deer, monkeys, and other animals, without being able to guard the ground from the robbers. The heavier animals he excluded by means of a deep trench surrounding the cane patch, and a strong palisading of Bamboos just within the ditch. But the monkeys cared nothing for moat or wall, and carried off whole Canes in their hands, eating them complacently as they proceeded to the shelter of the trees. For a long time this state of things continued, and the planter was doomed to see the ripening Canes devoured in his very presence, and the chewed fragments spit in his face by the robbers. This last insult proved too great a strain for his patience to endure, and, after some thought, he hit upon a stratagem which answered even beyond his expectation. He chased a flock of the monkeys into a tree, which he then felled; and, by the help of his assistants, captured a number of the young, which he conveyed home. He then mixed some treacle with as much tartar emetic as could be spared from the store, and, after painting all the young monkeys with this treacherous mixture, set them free. Their anxious parents had been watching for their offspring, and carried them away out of danger. The liberated captives were then surrounded by the whole troop, who commenced licking the treacle from their fur. Before very long, the expected effects made their appearance, and the poor monkeys presented a most pitiful appearance. The result of the affair was, that the monkeys were so terrified at the internal anguish which their depredations had caused them to suffer, that they fled the place, and not a monkey was seen in that locality until long afterwards."

Trade Lists Received.—*Fisher, Holmes, & Co.'s* (Handsworth, near Sheffield) *Catalogue of Stove, Greenhouse, and other Plants*, a very good collection of useful plants, and rich in Ferns; but the names are terribly misspelt.

Garden Memoranda.

[We extract the following account of a first-class French country-garden from the Revue Horticole.]

The Fruit Garden of the Chateau de Vervaine.—Our readers know what a great impulse an important branch of horticulture—the scientific management of dessert fruits—has received of late years through M. Du Breuil; this active and able professor, besides the courses which he gives in Paris at the Conservatoire des Arts et Métiers, is extending his teaching over all parts of France to numerous hearers who could not otherwise have the opportunity of listening to him. The success which attends the lessons of this eminent arboriculturist, and the constantly increasing number of his pupils, has induced him this year to make a new attempt.

M. Du Breuil has long since found that lessons given in the theatre, however clear they may be, require to be accompanied by an examination of results on the ground. In fact, however great the attention of the hearers, the ability of the professor to describe, and his skill to illustrate by sketching, there is in natural science a means of teaching more rapid and more certain by the inspection of the objects themselves, especially if these are living things, taken in their ordinary state of existence, and in the different phases of their growth? Excellent for those who know nothing of the subject, a lesson in the open air is beneficial to those who already understand it. One may have made great improvements at home, looked closely at that which has been done by his neighbours, and believe himself far advanced; but let him go beyond two or three departments, he will see new and ingenious methods, and will find that he has much to acquire. Every lover of botany will recall with pleasure and regret the rural excursions directed by the last of the Jussieus; the science became a hundred times more attractive when it was mingled with the pleasures of a walk, and the botanist in his study, working microscope in hand, found there an agreeable recreation from his toil?

Struck with the utility of placing before the eyes of his pupils the results of the improved method which he teaches, and to make up for the want of a model fruit garden at Paris, M. Du Breuil got up an excursion, on the 22d of March last, to the Chateau de Vervaine, situated near Alençon, and belonging to the family of Rattier. His invitation received a warm response, and each one hastened to provide himself with a ticket at single fare, a reduction which the Western Railway Company of France had generously conceded on this occasion. Unfortunately the weather at Paris on the evening before starting cooled the enthusiasm, and the number of amateurs was considerably diminished. Those who feared to accompany M. Du Breuil on this visit will doubtless regret it, for their anticipations were happily not realised, and the lecture, in which the party took a lively interest, was given in favourable weather. We were present, and are glad to be able to give an account of it to our readers.

The Chateau de Vervaine, about 2½ miles from Alençon, on the road to Brittany, besides possessing the finest orchard in France, has a park of at least 120 acres. We will not stop however to give a detailed description of this park, kept up in good style, and affording, with its pieces of water, cascades, and varied surface, a great variety of views. We will merely remark on the number and beauty of the evergreen trees, such as Araucarias and many of Conifers; together with Taxodium distichum and American Oaks, which occurred at frequent intervals.

The fruit garden which was the object of our visit consists of four inclosures, adjoining each other, and surrounded by walls; the area of the whole is nearly 3½ acres. It contained four years ago a number of wall trees, the greater part of which were in bad condition, trees in the open ground, trained in the conical form, and planted in the borders round each of the vegetable quarters. By this bad management, which is still too much adopted, the trees injured the crops, which they almost entirely overshaded, and were also prejudicial to the wall trees, to which they were too closely planted. Moreover, owing to the moisture of the climate, they soon became covered with Moss, which besides giving them a melancholy aspect, affected their production and longevity to a considerable extent.

M. Du Breuil was then employed to remedy this state of things, but to avoid at the same time any diminution, however temporary, in the produce of fruit. This condition, sufficiently embarrassing, was strictly fulfilled by the application of the new system of the learned arboriculturist, the principal advantage of which consists in inducing a full state of bearing eight years sooner than by the old mode of culture.

To obtain this result, M. Du Breuil commenced by planting afresh, *en cordon oblique* (in oblique lines), the greater part of the walls where the produce of the trees had become almost insignificant.

The next thing was to replace the trees in the open ground distributed round the kitchen garden quarters. It is here that the method of M. Du Breuil presents the greatest innovation. He distributed over a third of one of the enclosures double espaliers, with perpendicular arms (*en cordon vertical*), disposed in the middle of four parallel beds, running north and south. These beds were 6½ feet wide and 138 feet long, and separated by footpaths 3 feet 3 inches wide. The trellises were formed of upright laths, about 1 foot apart, with a strong post 5½ inches diameter, and 9 feet 9 inches high, at every 19½ feet. The entire system was kept in its place by strong iron wires having their extremities fixed in the walls, and which crossed each other at the top of the posts. Each line bears two rows of trees trained against it *en cordon vertical*.

When the espalier trees which have been planted two years bear fruit all the conical trees will be cut down, and the ground which they occupy cropped with vegetables to make up for the space taken up by the new arrangement. We will now follow M. Du Breuil in the examination of the different kinds of trees, some of which have been reserved for a practical demonstration of his new mode of short pruning.

Pears.—Wall trees, in oblique lines, against a south aspect, are composed of varieties of winter fruit; the trees are planted at 16 inches apart along a wall 410 feet long. Two-thirds of this length have been planted three years. They cover two-thirds the height of the wall, and have already borne fruit.

Double perpendicular espaliers: the trees are planted about a foot apart along 344 feet, or we may say 688 of single espalier. These trees, which occupy two lines and a half of the new plantation above-mentioned, have been planted two years; they consist of summer and autumn varieties. Old trees, trained horizontally against a north wall, are the only ones of the old plantation which will be preserved.

Peaches are planted 16 inches apart against an east aspect wall, 180 feet long, and trained in oblique lines. The trees have been planted three years, and have almost reached the top of the wall. The short pinching has succeeded perfectly. The stems were almost hid by the number of flowers borne on the spurs. Along 75 feet of the same aspect the trees were trained in the same manner, but planted 2½ feet apart, and the shoots pinched at greater length. The trees, three years old, and very fine, have reached the top of the wall.

Cherries.—Against 144 feet of south wall the trees were planted 16 inches apart. They are three years old and had nearly reached the top of the wall; they were covered with flower buds. Others were planted about a foot apart, along 138 feet of double espalier.

Plums.—Against a south wall, 98 feet long, with a south aspect, the trees were planted 16 inches apart, and trained in oblique lines; and against 69 feet of double espalier the trees were about a foot apart and trained upright.

Apricots.—Planted 16 inches apart as a single espalier, and trained in oblique lines. The espalier, 138 feet long, is sheltered on the west side by straw mats from top to bottom, and by a straw coping projecting 23 ins. This shelter is necessary from the middle of February until the end of May; they are then removed, and by this means Apricots ripened in the open air are obtained of much better quality than from a wall.

Vines.—A wall 108 feet long is planted with Vines about 14 inches apart. They are trained with single perpendicular and opposite laterals. Another wall, 98 feet long, is planted with Vines 27 inches apart, trained with a single perpendicular and alternate laterals. These walls have an east aspect, and are covered with glass, the humidity of the climate being unfavourable for the ripening of Grapes.

Apples.—These are trained horizontally along the sides of the wall and espalier borders; their total extent is 2348 feet. The trees are planted 6½ feet apart, and about a foot from the edge of the walks.

Currants.—These are trained vertically against a dwarf wall facing the west, length 98 feet. Also against an espalier 4 feet high and 138 feet in length. They are planted 8 inches apart.

Gooseberries.—Eighteen plants of these are trained in the form of goblets on wire framework.

Raspberries.—Cultivated in line against a dwarf wall 164 feet long, facing the west.

The total extent of walls and espaliers is thus described:—

	Feet.
Pears on walls	876
,, on espaliers..	688
Peaches on walls	255
Cherries on walls	144
,, on espaliers	275
Plums on walls	98
,, on espaliers..	138
Apricots on espaliers	138
Vines on glazed wall	206
,, in pits	301
Currants on walls..	98
,, on espalier	138
Raspberries in line	164
Apples trained horizontally	2348
	5857

The crop of stone-fruits is secured by straw coping projecting nearly 2 feet, and by thin canvas attached

to the edge of the coping, and slanting to 4 feet 10 inches from the bottom of the wall. The espaliers, owing to the manner in which the wires that steady the posts are placed, may easily be protected by thin canvas, which is left on for a longer or shorter time according to the state of the weather.

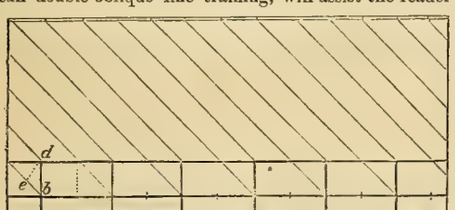
We have already stated that by the new method adopted by M. Du Breuil there is a considerable decrease in the time required for the formation of the trees. Indeed, the wall trees at Vervaine, although only three and four years old, are already in bearing. In other three years they will have reached the top of the wall, and will be in full bearing. The perpendicular espaliers, planted last year, will be completely formed in five years; while by the old mode it required on the average 16 years for the complete formation of wall trees, and 14 years for standards or pyramids.

This early bearing has no prejudicial effect on the quantity of fruit produced. On calculation it will be found that on equal surfaces of wall the length of fruit-bearing wood trained in oblique lines will be just as much as if trained horizontally; and the perpendicular espaliers will yield on the same extent of ground a crop greater by one-half than trees in the conical form.

Such are the results of the transformation directed by M. Du Breuil, and carried out with rare skill by the active and intelligent gardener at the Chateau de Vervaine, M. Chouquet.

The transformation is now complete, and the result is the finest fruit garden established in modern times. Its extraordinary extent, the attention paid to keeping the ground and the trees, the good arrangement of the shelters, the elegance and strength of the espaliers, and above all the application of the improved practice of modern arboriculture render it a complete model garden which one cannot behold without the greatest admiration.

[The following cut, representing what the French call double oblique line training, will assist the reader



in understanding what is meant in the above article by similar expressions.]

Calendar of Operations.

(For the ensuing Week.)

—✦—

PLANT DEPARTMENT.

Conservatory, &c.—When this house contains a mixed collection of plants, which it generally does, aphides are usually very troublesome at this season, and it is always desirable to avoid smoking here, for besides the expense and annoyance, it is no pleasant job to fill a large house with tobacco-smoke. Things in pots that require fumigating may be removed to a close room or put under a frame covered with calico or canvas rendered air-tight either by means of a coat of boiled oil or put where the remedy can be much more conveniently and cheaply applied than in a lofty house, and therisk of injuring the blossoms of things which do not require fumigation will be avoided. But if the enemy is to be kept under by these means suspected plants should be frequently examined, and immediate steps taken with those that are found to be in the least infected, otherwise the pest will spread to an inconvenient extent to allow of its being eradicated, without smoking the house. Should twiners or specimens planted out in the beds get infested, these should be syringed with the following mixture; viz., ½ lb. of soft soap, 1 gallon of tobacco water, and 6 gallons rain water, properly dissolving the soft soap in a portion of the water. But as there is some uncertainty about the strength of this mixture, and its action on different plants, it should not be used without first making sure that it will not injure the foliage or young shoots, and also that it is sufficiently strong to destroy the insects. The beauty of Azaleas and many other hard-wooded plants, which are now the principal ornaments here, will soon be fading, and every effort should be used to be prepared to supply their places with others in full flower.

FORCING DEPARTMENT.

Pineries.—In cases where a regular supply of fruit is required, we may repeat that it will be necessary to examine the stock of plants, frequently marking those considered the most likely for fruiting, so as to be able to keep them rather dry at the root for a month or so, which will, in most instances, have the desired effect of checking growth and throwing the plants into fruit. The only effectual method, however, of securing a supply of fruit at any particular time is foresight in the management of the stock, taking care to get the growth well matured in sufficient time to allow of affording the plants a short period of comparative rest, which is the only certain means of inducing them to fruit at any desired season. With plenty of convenience this is easily enough managed, but where the accommodation is limited, it is by far the most difficult part of the culture of the Pine. And in cases where a regular supply of fruit has to be furnished from limited accommodation, it is safer to grow the plants in pots, so as to secure perfect command over the roots, and also to be able to move the plants to a cooler pit or otherwise, as may be necessary. Black Jamaicas and Cayennes are the best varieties for winter fruiting, and the stock of these should receive every attention at this season so as to induce them to make free growth, and a portion of them should be shifted into their fruiting pots as soon as possible. Use every means to afford growing stock a moist atmosphere, which in the present state of the weather is a work that requires much attention, but must be done if the plants are to be kept in first-rate condition. Give air when favourable, but avoid cold draughts and use shading to assist in keeping down the temperature without being under the necessity of admitting cold drying air too freely.

Vineries.—In cases where Muscats are grown in the same house with Hamburghs and other free setting varieties the temperature must be kept sufficiently high during bloom, and until the berries are fairly set, to suit the Muscats; for a crop of these cannot be depended upon from the most healthy Vines, unless they can be afforded a brisk temperature while in bloom and setting their fruit. It will be better, however, to risk having the Muscat bunches somewhat thin than to injure other varieties by maintaining a night temperature of 75°, which is the practice of some good growers; 68° or 70° will be found quite sufficient. Get the borders prepared for planting out young Vines, and if these are started into growth before planting do not keep them too warm, or it will be difficult to prevent their sustaining a check after planting out.

Melons.—Encourage those newly planted out with a moist warm atmosphere, so as to get them into full growth as quickly as possible; but plants that are fairly established should be kept cooler, admitting air on every favourable opportunity, in order to secure short-jointed fruitful wood.

Fig-house.—Give air and water as before, but do not syringe trees over head whose first crop is ripening off, or use cold water.

Strawberries.—Give abundance of air and water to the latest crops.

FLOWER GARDEN AND SHRUBBERIES.

Notwithstanding that the weather has become somewhat more promising than it has lately been, it will be wise to defer planting out the bedding stock, save in very favoured localities, until we experience a more decided change. Meantime take every opportunity of exposing the plants to the open air, so as to get them well hardened off, and see that everything is perfectly free from insects, and also have the whole of the stock nicely arranged, so that when planting-out is commenced everything may be in readiness. Push forward late propagated stock, and endeavour to keep the whole growing slowly in their pots. It is a common and very bad practice to allow bedding stock to stand in small pots exposed to bright sunshine and drying winds and but scantily supplied with water until they get almost dried up, and this with the view of preparing them for planting out. The plants should be exposed to the weather as freely as circumstances will admit; but this should be done by degrees, and never to the extent of browning the foliage and drying up the tissues, and they should never be allowed to suffer for the want of water, for unless the plants are in good health when planted out they require endless care afterwards if the beds are to be covered in any reasonable time, and despite every attention are long in getting into free growth. Take advantage of showery days to give the Grass and gravel a thorough rolling.

HARDY FRUIT AND KITCHEN GARDEN.

Proceed gradually with the disbudding of Peach and Nectarine trees, but remove only a portion of the buds at once, selecting the strongest first and going over the trees two or three times at intervals of about a week. This will avoid checking the trees to the same extent as when disbudding is done all at once. Look carefully over the Apricot trees and destroy the caterpillar wherever it is found. This is sometimes very destructive to the foliage, and also the fruit when neglected but for a few days. Be in no haste to remove the protecting materials, unless where the crop is found to be destroyed, and then they might be removed for use on trees where there is still a chance of a crop. Take advantage of showery weather to plant out Lettuce, Cauliflower, &c., and see to getting Tomatoes, Cucumbers, Vegetable Marrows, &c., prepared for planting out. Make a sowing of Sweet Basil, Marjoram, Savory, &c., on a light, rich, warm border; also get the early Celery prepared for planting out as speedily as possible, and attend to the plants for succession crops, keeping them at all times well supplied with water.

COTTAGERS' GARDENS.

The destruction of weeds is of the utmost importance at the present time; the thinning of young crops also demands timely attention. Manure and dig all vacant ground for Brussels Sprouts, a little Broccoli, Winter Greens, &c. Plant a few Lettuces under walls and in other sheltered situations, also Leeks in trenches, similarly prepared as for Celery. Sow Radishes and a little Spinach for successional crops. Keep early Potatoes well earthed up; it will save them from frost if there happens to be any. Attend to the staking of Peas. If the weather continues dry many things will require to be watered. Attend to other routine matters.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.

For the Week ending May 5, 1859, as observed at the Horticultural Gardens.

April and May.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Temperature of the Air. Min.	Temperature of the Air. Mean	Temperature of the Earth. 1 foot deep.	Temperature of the Earth. 2 feet deep.	Wind.	Rain.
Friday 29	26	29.787	29.688	67	42	54.5	51	49	S.W.	.00
Satur. 30	27	29.843	29.770	47	40	43.5	52	49½	E.	.12
Sunday 1	28	29.798	29.745	56	36	46.0	51	49	E.	.00
Mon. 2	●	29.901	29.861	53	39	46.0	50½	49	E.	.00
Tues. 3	1	29.894	29.806	62	37	49.5	50	49	E.	.00
Wed. 4	2	29.783	29.712	60	30	45.0	50½	49	N.E.	.00
Thurs. 5	3	29.952	29.858	62	26	44.0	51	49	N.E.	.00
Average		29.851	29.777	58.1	35.7	46.9	50.8	49.0		.12

April 29—Light clouds, and fine; overcast at night.
— 30—Hazy; rain; overcast.
May 1—Overcast; fine throughout.
— 2—Cloudy and cold, with brisk easterly wind; overcast.
— 3—Overcast; fine; clear and cold at night.
— 4—Cloudy and cold; fine but cold; frosty.
— 5—Clear, cold, and dry; fine; clear, frosty at night.
Mean temperature of the week, 3½ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK,

During the last 33 years, for the ensuing Week, ending May 14, 1859.

May.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 8..	61.4	39.7	50.6	13	0.62 in.	1	5	7	—	5	5	6	4
Mon. 9..	61.6	40.2	50.9	13	0.60	3	8	6	1	4	9	2	—
Tues. 10..	62.0	39.8	50.9	13	0.10	4	8	6	1	2	7	4	3
Wed. 11..	62.7	40.3	51.5	12	0.36	6	7	4	1	5	5	3	2
Thurs. 12..	63.5	41.2	52.3	15	0.70	5	6	8	1	4	5	1	3
Friday 13..	63.6	39.7	51.6	16	1.10	3	8	4	2	3	7	3	3
Satur 14..	63.3	40.9	52.1	13	0.66	3	7	7	1	4	6	4	1

The highest temperature during the above period occurred on the 12th, 1833—therm. 81 deg.; and the lowest on the 8th, 1855—therm. 21 deg.

Notices to Correspondents.

Books: *W B J.* We are not acquainted with any work entitled "Book of the Orchard." Mr. George Lindley's Guide to the Orchard and Kitchen Garden is not out of print.—*A Young Gardener* who wishes to learn the names of plants in general should begin by studying the rudiments of classification which he will find explained in Prof. Lindley's School Botany. He will thus become acquainted with common plants and their names. When he has made himself master of that subject we will advise him further. If he now wants a Catalogue of the names of plants he should procure Loudon's Hortus Britannicus, or Donn's Catalogue, the last edition.—*T.H.* For the ordinary operations in forestry we prefer Brown's "Forester." But he says nothing about raising seedlings, probably because he thinks it a simple sort of work which every gardener understands, or should understand without book-teaching.—*Ghent.* You do not understand us English. If such books are not noticed by journals of high standing it is because they are beneath contempt. They only circulate among ladies' maids and petty tradesmen, who are too ignorant to distinguish sense from nonsense.

Cucumber Growing: *Novice.* You seem to be going on as well as possible; if you can maintain your night temperature at 50° it is enough. Would it not be better to cover your pit at night with mats, in case of need, rather than make an addition to your heating power?

Habitats: *A Subscriber.* Lælia purpurata and grandis come from Brazil; Chysis Limminghi from Central America; Saccolabium curvifolium and Cypripedium villosum from Continental India. We do not know such a plant as Lælia elegans.

Insects: *A R.* Your quill, enclosing an insect which had attacked your bulbs, got smashed in the post and the insect escaped. *W.*

Manures: *Messrs. Deely & Dawes.* We must decline making experiments upon what are called new manures.

Mildewed Vinery: *J B.* If all your leaves are like that which you have sent you can have no fruit fit to send to table. But we much doubt whether your enemy is mildew. All that you describe rather points to the roots being away from the surface in a cold bottom, and if so no amount of mere protection will enable the Vines to be in health. All the symptoms you describe are such as might be expected from roots that cannot act, if indeed you have any young roots. Look to it. We also suspect your means of ventilation are very insufficient; the drops you speak of point to that.

Names of Plants: We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have or could have undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*John Day.* After a careful examination of your flowers, &c., we have arrived at the conclusion that the Dendrobium is D. Falconeri as you have suspected. The flowers are smaller than usual, but they will probably be larger as the plants become stronger.—*A Y.* The Grass brought from Bombay is Eragrostis amabilis. We doubt whether it will grow in England in the open air. The variegated plant got from a London nursery where they could not tell you the name is the variegated Euonymus japonicus.—*H A.* 3, Asplenium flaccidum; 4, Pleopeltis pustulata; 5, Adiantum Cunninghami; or more properly, A. affine; 6, Hypolepis distans. Can you send us a small living piece of the last?—*J G, Clonmel.* Epimedium alpinum.—*B A.* Phlox stolonifera, a nice old-fashioned herbaceous plant now seldom seen.—*O P.* 1, Thomasia solanacea, not Lasiopetalum quercifolium; 2 seems to be a leaf of some pinnate Potentilla; 3 looks like a bit of Cupressus Goveniana; we have no recollection of what you sent before.—*Pitsford.* Cymbidium pendulum.

Peaches: *T K.* We will have woodcuts prepared and a translation made of the matter you mention.

The "New Zealand" Running Kidney Bean: *Fair Play.* This may be as good as you are told that it is; but we must have some proof that it is so. You have no personal knowledge upon the subject, and the statement of "the gentleman who knows for a certainty that it is a native of New Zealand," because somebody brought it thence, does not give us confidence in his recommendation. As to the Custard Marrow Gourd, since you "were the first to eat such vegetable in this country, now some 10 years ago when nothing but its abstract growth (what is that?) was known to its growers," we venture to inquire why you did not make its merits known?

Tulips: *Mitcham.* The kind you have sent is the famous Rex Rubrorum, or King of the Reds, a magnificent kind, unequalled among the ornaments of this season. Its superb red double flowers have withstood perfectly every night frost, and now form, when the Tulip is planted in masses, a blaze of colour, which nothing can surpass.

*** As usual, many communications have been received too late, and others are detained till the necessary inquiries can be made. We must also beg the indulgence of those correspondents the insertion of whose contributions is still delayed.

THE PATENT

NITROPHOSPHATE OR BLOOD MANURE COMPANY (Limited),

CONSISTING OF TENANT FARMERS, OCCUPYING UPWARDS OF 30,000 ACRES OF LAND.

TRUSTEES.

Abel Smith, Jun., Esq., Walton House, Ware, Herts.
Charles Dimsdale, Esq., Essendon Place, Herts.
Edward Ball, Esq., M.P., 8, Belgrave Road, Pimlico
Major-General Hall, M.P., Western Colville, Linton, Cambridge
John Brady, Esq., M.P., Warwick Terrace, Belgrave Sq.

DIRECTORS.

Chairman.—Jonas Webb, Esq., Babraham, Cambridgeshire.
Deputy-Chairman.—John Collins, Esq., Myddleton Square, Pentonville.
Edward Bell, Esq., Tottenham, Middlesex
John Clayden, Esq., Littlebury, Essex
Richard Hunt, Esq., Stanstead Abbot, Herts.
Thomas Knight, Esq., Edmonton, Middlesex.
Robert Leeds, Esq., West Lexham, Norfolk.
Robert Morgan, Esq., 72, Camden Villas, Camden Town.
George Savill, Esq., Ingthorpe, near Stamford.
William Collins, Esq., 105, St. John Street Road.

Bankers.—Messrs. Barnett, Hoare & Co., Lombard Street.
Solicitors.—Messrs. Kingsford & Dorman, 23, Essex Street, Strand.
Auditor.—G. W. Brown, Esq., 28, Parliament Street.
Manager.—Mr. James Odams. *Secretary.*—Mr. C. T. Macadam.

Offices, 109, Fenchurch Street, London.—Manufactory, Plaistow Marshes, Essex.

The Directors beg to inform their Friends and the Agricultural Public that the following Manures are now ready:—

ODAMS'S BLOOD MANURE FOR CORN AND MANGEL.
ODAMS'S BLOOD MANURE FOR ROOTS.
ODAMS'S SUPERPHOSPHATE OF LIME.

Full particulars may be had at the Company's Offices, or of the local Agents.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. Nesbit, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

LONDON MANURE COMPANY, removed to 116, Fenchurch Street, E. C. (Established 1840), have the following MANURES ready for delivery:—

CORN MANURE for SPRING TOP-DRESSING	all of guaranteed quality.
URATE	
MANGEL MANURE	
SUPERPHOSPHATE OF LIME	
BLOOD MANURE	

In consequence of the reduction in the price of raw material the London Manure Co. are enabled to lower the price of their Superphosphate of Lime, and to materially improve the Corn Manure and Urate.

The London Manure Co. also supply PERUVIAN GUANO (direct from Messrs. A. Gibbs and Sons), SULPHATE of AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of value. Wholesale dealers supplied.

116, Fenchurch Street, E.C. Edward Purser, Secretary.

REDUCTION IN PRICE OF LAWES'S MANURES.

MR. LAWES begs to announce that he has this season reduced the price of the Manures manufactured by him, viz.:—

TURNIP MANURE	from £7	to £6	6
SUPERPHOSPHATE OF LIME ..	,, 7	to 6	6
MINERAL do. ..	,, 6	to 5	5
BARLEY MANURE..		8	0

Prof. Way and Dr. Voelcker have sampled from a bulk of 5000 to 6000 tons at his factories, and their report and analyses are given in full in Circular to be obtained on application at his office, 1, Adelaide Place, London Bridge, E.C., or of his local Agents.

N.B. Genuine Peruvian Guano direct from Messrs. Gibbs, Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures. American Cotton-seed Cake supplied.

ESTABLISHED 1812.

H. AND T. PROCTOR'S TURNIP MANURE.—Messrs. H. & T. P. draw particular attention to this valuable Manure, which contains all the elements necessary for the full development of the Turnip Crop, so combined, that, from their chemical knowledge and long experience, they feel satisfied is most advantageous to the consumer. It has been very extensively used by most of the eminent Agriculturists of the day, and has attained a high reputation throughout England, Scotland, and Wales, and, they venture to say, is unrivalled for the weight and quality of the Bulbs which it produces. The application of this Manure to the Turnips will be found to benefit considerably the after crops of Barley, Clover, and Wheat.

POTATO, GRASS, BARLEY, CLOVER, AND WHEAT MANURES; also BONE DUST, PERUVIAN GUANO, and SUPERPHOSPHATE of LIME, warranted of the best quality.

Apply to H. & T. Proctor, West of England Depôt for Artificial Manures, Cathay, Bristol; or Proctor & Ryland, Birmingham, and Saltney, near Chester.

BURNARD, LACK, AND CO.'S CONCENTRATED SUPERPHOSPHATE OF LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.

CONCENTRATED TURNIP MANURE, equal in value to the preceding.

Of these Manures Dr. Voelcker says:—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."

Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to Burnard, Lack, & Co., Sutton Road, Plymouth.

IMPORTANT TO FLORISTS AND GARDENERS.

DEALEY AND DAWES'S highly CONCENTRATED FERTILISING MANURE, manufactured expressly for Stove and Greenhouse Plants, Vegetables, Trees, &c.

Messrs. Dealey & Dawes draw particular attention to this valuable Manure, which they guarantee contains all the elements necessary for the development of Soft and Hard-wooded Plants, Vegetables, &c.

Retailed by most respectable Seedsmen, in 1lb. packets, with full directions for use; and sold Wholesale at the Manufactory, in boxes containing 112 packets, also loose in boxes of 28 lbs. each. Samples and testimonials free by post on application.—Oldbury, near Birmingham.

MANURE FOR ROOT CROPS, of first-rate quality with Analysis guaranteed, manufactured by WILLIAMS & Co., 47, Mark Lane, London (Established 1847), at 6*l.* per ton, including bags. Free to Wharf or Rail in London. The Trade supplied.

ARTIFICIAL MANURES.

FREDERICK CORNWELL begs to inform his friends and the Agricultural public that he can now supply a "SUPERPHOSPHATE of LIME" superior to anything yet produced. Each Bag guaranteed to contain from 20 to 25 per cent. of "Soluble Phosphate of Lime." Price 5*l.* 10*s.* per ton, delivered free to any Railway or Wharf in London. Dealers and the trade supplied. LINSEED-CAKES, COTTON-CAKES, and all descriptions of ARTIFICIAL MANURES at lowest market prices.—Offices, 7, Great St. Helen's, London, E. C.

PERUVIAN GUANO.

The present price of this valuable Manure is—
12*l.* per Ton for 30 Tons and upwards,
13*l.* 5*s.* per Ton for 1 Ton up to 30 Tons.

And, to guard against the purchase of adulterated mixtures and of inferior Guanos purporting to produce results equal to Peruvian, consumers are recommended to apply either to ourselves, to our agents, Messrs. Gibbs, Bright, & Co., of Liverpool and Bristol, or to dealers of established character, in whose honesty and fair dealing they may place implicit confidence.

Antony Gibbs & Sons.

PRICES REDUCED.

H. J. MORTON AND CO., Galvanised Iron Works, 2, Basinghall Buildings, Leeds.

GALVANISED IRON ROOFING

for Farm Buildings and other Roofs; the cheapest, most durable, and neatest Roofing in use; also Spouting at 10½*d.* per yard.

WIRE STRAND CABLE FENCING



(formed of Twisted Wires like a rope or cable), the strongest, cheapest, and neatest fence in use, will resist the largest cattle, and will not bend or get out of form by trespassing upon or over. Price, with five lines of the Galvanised Strand, iron main posts, and pronged Standards, 1*s.* 2½*d.* per yard.

This fence is far cheaper than posts and rails, or any kind o iron fencing; and possesses four times the strength of solid bars. Will not rust nor corrode. Upwards of 1200 miles of this Fencing supplied.

GALVANISED GAME AND POULTRY NETTING.



Galvanised, 24 ins. wide, 2-inch mesh, 5*d.*, 6*d.*, 7½*d.*, and 10*d.* per yard.

Galvanised, 24 ins. wide, 1-inch mesh, 4*d.*, 5*d.*, and 7*d.* per yard. The Netting made any width, and with openings of any size.

GALVANISED IRON CHAIN CAMP STOOLS & CHAIRS, POULTRY FOUNTAINS & FEEDERS, PRONGED DAHLIA RODS AND ROSE STAKES, &c.

Strong CATTLE HURDLES from 2*s.* per yard.

PATENT IMPROVED GAS WORKS

of all sizes for the use of Private Houses, Mansions, Railway Stations, Mills, Collieries, Mines, Villages, &c. Works from 10 to 500 lights estimated for. The works can be entrusted to an ordinary labourer.—Apply to

Henry J. Morton & Co. 2, Basinghall Buildings, Leeds.

"FRIGI DOMO."—Patronised by her Majesty, the Queen, the Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, and — Collier, Esq., of Dartford.

PROTECTION FROM COLD WINDS AND MORNING FROSTS.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths. Two yards wide, 1*s.* 6*d.* per yard run; four, 3*s.* per yard. Also, an improved make for Shading Purposes. Three yards wide, 2*s.* 6*d.* per yard run.

Elisha Thomas Archer, whole and sole manufacturer, 7, Trinity Lane, Cannon Street, City, and of all Nurserymen and Seedsmen throughout the kingdom. "It is much cheaper than mats as a covering."

AGRICULTURAL MACHINERY.

E. R. AND F. TURNER, Ipswich, manufacture Prize Mills for Crushing Corn, Seed, Malt, &c.; Portable Grinding Mills, Steam Engines fixed and portable from 2 horse-power and upwards; Threshing Machines, Chaff Cutter, Oilcake Breakers, Horse Gears, Saw Tables, &c., all of a superior description and adapted for Home, Colonial, and Foreign use. Illustrated Price Lists sent free on application.

SIGMA'S BEAN, MANGEL, & CORN PLANTERS (5 Depositors), HOES, &c. The "Multum in Parvo," combining Cultivator, Horse Hoe, Ridge Plough, Subsoiler, Broadshare, and other forms; all expanding. Complete, 7*l.* 7*s.* Prospectus sent.—C. Powell, Hurstgreen, Sussex.

SPEED AND ECONOMY for Farmers, Gentlemen, and Market Gardeners, in the use of HOARE'S REGISTERED HAND SEED PLANTING MACHINE, which from its capabilities, combined with strength, lightness, and simplicity, places it beyond a parallel. Its operative powers in planting the seeds of Mangel, Carrot, Turnip, Parsnip, and all small seeds in patches of equal depth and different distances, from 6, 7, 12, 14, 18, 21, 24, to 28 inches apart, raking in and rolling complete, render it an invaluable invention. It will act as a drill when required. Price 5*l.* 15*s.*

London Agent, Mr. B. Samuelson, 76, Cannon Street, West. Sold also by the inventor, J. Hoare, Old Fishbourne, Chichester, Sussex.

TO AMATEUR GARDENERS, NURSERYMEN, AGRICULTURISTS, AND OTHERS.

GUTTA PERCHA TUBING FOR WATERING GARDENS, from 2½*d.* per foot; Vulcanised India Rubber Tubing for Watering Gardens, from 4*d.* per foot; Brass Hand Branches, with Stopcock and Rose, and every description of Garden Tubing Fittings, sold Wholesale and Retail by W. R. Woods, 94, Goswell Road, near the "Angel," Islington, London, E.C. Priced Lists can be had on application.

Please notice the Address—94, Goswell Road.

FLEMING'S SALTING MACHINE FOR DESTROYING WEEDS ON GRAVEL WALKS, &c.—This most useful Machine has given the greatest satisfaction wherever it has been introduced; it is the only effectual means of keeping Drives and Walks completely clear of Weeds.

Extract from article "Trentham" in *Gardeners' Chronicle* of January 22.

"And I would observe in passing from these grounds that the whole of the Grass and Gravel are kept in the most perfect order by the aid of Machinery; the former by a Horse Machine wherever it can be worked, a small hand instrument being used in places of difficult access; the latter is kept in order by a Salting Machine, the invention of Mr. Fleming, and judging from the beautiful condition of the Gravel in every direction, I should say that it was altogether most efficient."

(The Mowing Machines here referred to are Shanks's).

From the *Field* of April 2.

"The Salting Machine will effectually destroy the Weeds on Gravel Walks and Drives."

Testimonials, with full particulars and prices, may be had on application to Alexander Shanks & Son, Dens Iron Works, Arbroath, Patentees of Improved Mowing, Rolling, Collecting and Delivering Machine for Lawns, Hot-water Apparatus Manufacturers, &c.

THE GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY: Offices, 52, Parliament Street.

Henry Ker Seymer, Esq., M.P., Chairman.

1. This Company is incorporated by Act of Parliament to facilitate the Drainage of Land, the Making of Roads, the Erection of Farm Houses, Farm Buildings, and Labourers' Cottages, and other Improvements on all descriptions of Property, whether held in fee, or under entail, mortgage, in trust, or as ecclesiastical or Collegiate Property.

2. In no case is any investigation of Title necessary.

3. The Works may be designed and executed by the Landowner or his Agents, or the Company will undertake the entire improvement by their experienced staff, and advance the money required for the works. Equal facilities will be afforded in either case.

4. The whole cost of the works and expenses may, in all cases, be charged on the Lands improved, to be repaid by half-yearly instalments.

5. The term of such charge may be fixed by the Landowner, and extended to 50 years for Land Improvements, and 31 years for Farm Buildings, whereby the instalments will be kept within such a fair per-centage as the occupiers of the improved Lands can afford to pay.

6. No profit is taken on any Works executed by the Company, the actual expenditure only, approved by the Inclosure Commissioners, being charged in all cases.

William Clifford, Secretary.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.

Principal—J. C. Nesbit, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

The Agricultural Gazette.

SATURDAY, MAY 7, 1859.

MEETINGS FOR THE ENSUING WEEK.

Wednesday, May 11—Agri. Society of England .. Noon.

—— An almost unparallelled rise in the value of Wheat has of course created great excitement in all the corn markets of the country. Wheats worth barely 45*s.* per quarter a month ago have been sold for 68*s.* and 70*s.* during the past week—a difference this, enough on many a farm to pay the rent. More than 3*s.* per cental—let us quote the only intelligible market report of the country—has been added to the current value of all our bread corn, and all other kinds of grain have been, if not proportionably, largely enhanced in price. That the previous probability of war should not before, to a great extent, have discounted the effect of its actual proclamation, is exceedingly remarkable—proving how great an influence is exerted by a knowledge of facts as compared with a knowledge of mere risk and likelihood. The

publication of the agricultural statistics of this country, and an accurate knowledge of its last year's agricultural produce would not have hindered this sudden rise in price, though, now that we are likely to be more dependent on our home supply, it would at any rate have proved a guidance to us through the present excitement in the market. There is however one illustration, though it be of a self-evident truth, which may be drawn as perfectly from the history of the recent rise of price as it is from all other sudden changes in the market. Knowledge of our actual circumstances is better than ignorance of them, and whether it be by a sudden failure of foreign sources of supply, which could not have been foreseen, or by a sudden revelation of deficiency at home, which ought never to take any one by surprise, we are taught in the market reports from day to day how great is the importance to the country of a knowledge of the truth on such a subject as its food supply, if it can anyhow be ascertained.

—— At a time when getting in the Mangel Wurzel crop is one of the chief occupations of the arable farmer in most of our English counties, we may usefully call attention to the need of a largely extended growth of this root as compared with the Swedish or common Turnip. The difficulties which are increasing in the way of these latter crops, whether they be constitutional and resident in the plant itself, or external and attributable to deficiencies in the soil or to the virulence of insect attacks, seem as likely to drive the farmer to a substitute as the merits of the Mangel Wurzel as that substitute are to draw him. A crop of 30 tons, which is more easily obtained than another is of 20—which is as useful for either cattle food or sheep, and which remains good for 10 months after harvesting, while that other spoils in four or five, ought surely to command a more rapidly increasing cultivation than judging from localities known to us it seems to be obtaining. No doubt the difficulty in its way is the need of a somewhat more liberal manuring, if the subsequent crop of corn is not to suffer from its removal from the land. But it would be better to apply all the farm manure that may be fit in April to the growth of Mangel Wurzel, and depend entirely on superphosphate for the Turnip crop, rather than run the risk as Turnip cultivators in the south and midland counties always do of losing the root crop altogether, however liberal the dressing from the dung cart.

Another difficulty in the way of an extended growth of Mangel Wurzel is the labour and the risk of securing it through winter. The harvesting of this crop is no doubt an addition to the labour-bill of October and November—but it is a most profitable outlay considering what security it affords all feeders and breeders of stock of ample stores of food in spring and early summer. There is no root more easily kept from frost than Mangel Wurzel. Lay them in heaps, however large, and cover up the sides, leaving the tops exposed or barely covered with a little straw for a month after piling them together, and a very slight covering over all will then serve as a protection all the winter. We are informed that in those districts on the continent where Beet is collected in quantity for the distilleries, enormous quantities are piled together 6 and 7 feet high—the sides only being covered well from the frost—and a very slight sprinkling of straw at top is all that is depended on for safety from the severity of a German winter. If a thicker covering is used the roots are less likely to remain uninjured.

A CIRCULAR has been issued by Mr. MECHI with reference to the establishment of a benevolent agricultural college, seeking encouragement and promises of support. A list of names, headed by Lord RAYLEIGH, is published as sanctioning the undertaking, and under the energetic management of the warm-hearted man who has initiated it, we do not doubt of its success. The following is Mr. MECHI'S address:—

"In a country like England, teeming with philanthropy, and exhibiting such evidence of her greatness in the profusion of her charity, where science, the arts, commerce in all its extended ramifications, the church, the naval and military professions can each point with pride to its palatial asylum, erected and supported by the bounty of those whose hearts and purses are ever open to assuage and relieve the wants and necessities of their suffering fellow-creatures; where, by their charity, the infant is nurtured, the orphan clothed and educated, the invalid relieved and cared for, and the aged, whose only sin was poverty, and whose only crime was misfortune, is enabled to end his days in comfort. While in this holy cause millions are annually dispensed, wide-spread through every class and creed, agriculture, employing the largest invested capital, representing as she does the most important interest of the country, stands out—made as it were more conspicuous by its very absence—unrepresented, unable in such a glorious list to point to any refuge for the unfortunate British farmer, to any asylum where his orphan can find a home, or his widow a resting-place. To remove this blot from the agricultural escutcheon is my object in addressing you. Why should agriculture, when a whole nation is brimful with charity, be in the rear of good works? Why should not we, as agriculturists, have our college for the reception of those of our poorer and less fortunate brethren, and our school where the poor orphan can be fed, clothed, and educated? Such not only can, but must be done, if we are to maintain our position as an enlightened and advancing section of the community. If we reflect for one moment, wherein can we discover a reason why the plodding and industrious farmer should be specially screened from the frowns of fortune, or those vicissitudes which are the painful lot of every other class? Why should he expect to be exempt from that stern misfortune and bitter poverty which we see so frequently too painfully illustrated in every other department of daily life? None can say that his risks are less frequent, or his chances of success more certain. Why, then, should he in his suffering and his tribulation be shut out and excluded from the enjoyment of that support and sympathy which are diffused so profusely throughout the length and breadth of the land, for the benefit and solace of every suffering class but his own? Let us remove this reproach. Let us assume that place in so noble and charitable a list, which the influence and the dignity of agriculture demand, and I am assured the bare mention of such a project for the amelioration and relief of those who, while suffering, complain not, will speedily realise such a happy and much-needed consummation. Towards the fulfilment of such an object I have received promises of hearty and zealous support from some of the leading agriculturists and implement manufacturers in the kingdom, who most cordially sympathise with the suggestion, and I now solicit from you a promise of support and assistance.

"As soon as sufficient replies are received, a public meeting will be held, a committee appointed, and then I have good reason for hoping to secure the recognition and the patronage of the consort of our much-loved Queen."

Mr. MECHI'S benevolent object needs no words from us to commend it to the good will of agriculturists and their friends. We therefore only add that any who are disposed to join the movement should address themselves to him at Tiptree Hall, Kelvedon, Essex.

SUBTERRANEAN WATER.

(Concluded from p. 393.)

IN the year 1840 I designated this inclined line the "water level;" objections have been taken to this term; my answer is, give me a better term and I will use it. This law regulates the discharge of all subterraneous water, the surface of which is never level. Innumerable proofs could be brought forward to show the value of this provision of nature as applied to drainage on a large scale. If the waters in the earth were not so retarded in their exit, springs would fail when their waters are most wanted, and our rivers would be like mountain torrents, and cease to be perennial, because their waters would be exhausted before the replenishment could take place.

The actual inclination of the water level is best ascertained by the measurement of wells; the level at which water will be found may in many cases be calculated to the greatest nicety, not only where water is found in porous strata, but those cases in which it arises in artesian wells through impermeable strata overlying those in which the water is found. There is another proof of the inclined water line in the occasional bursting of brooks or bourns at high levels, especially in chalk districts. Though many strange theories have been started, such as subterraneous syphons, &c., it will be found on ascertaining the relative levels that these bourns burst out where the surface of the soil falls below the line of the angle at which the water line rises from its vent or out-fall. This is the case at Lambourne in Berkshire, Assenden in this county, and in many other places; and, morever, the bursting of these bourns may be predicted by noting the rise of wells even at a distance, and by the records of the rain gauge.

I have spoken of the condition under which water is found in the earth on a large scale. The same will be the case on a small scale. Subterraneous beds of water are found in chalk, some oolite rocks, large sand strata, &c.; gravels overlying clays also contain beds of water. As the exit of water from the larger strata are called main springs, so the issue of water from small or isolated patches of sand or gravel are called land springs, the one is only a smaller form of the other. It is obvious that if artificial vents are made in any stratum containing water, the water level will adjust itself to them: if they are made at lower levels than the natural springs, those springs will cease to flow. I have spoken generally of the natural adjustment of water in the earth. A few words as to the variation in level at various seasons: we may speak of them generally as seasons of exhaustion and replenishment; when replenishment by rainfall takes place the level will gradually rise in a greater proportion as the distance from the vent or outfall increases; this is marked by a very remarkable regularity; the same process will take place even with more regularity during the exhaustion, so that after some years' experience, a line of wells periodically measured would show with the greatest accuracy the quantity of water in the stratum, and the probable amount to be delivered by springs and rivers. My own opinion is, that no instrument could be so accurately constructed as to give the results that might be obtained by this simple method.

I observed that the same law that rules the discharge of subterraneous water on a large scale will also regulate the discharge of water from soils by artificial drainage. In 1845 I wrote a short paper, which appeared in the "Royal Agricultural Journal," vol. vi., part 2, on the theory of deep draining; in describing the way in which the water enters, and is discharged from the soil, I said—"In flat unbroken ground (speaking of ordinary clay soils), as the soil is saturated with the rain, the water will rise gradually on a level throughout; should there be any depression in the surface it will form pools, the level of whose surface will coincide with the subterranean level. If a drain be dug, the level will assume an inclination to that drain, the angle at which it declines being greater or less in proportion as the soil is pervious to or retentive of water: thus the inclination will represent the amount of friction or resistance which the water encounters in its passage through the soil," and it is with reference to this angle of inclination that all draining operations must be conducted, and the width between and the depth of drains determined. The practice of ridging land is but to place a portion of the soil above the subterranean level, which shows itself above ground at every furrow; the difference between the partially drained ridge and the undrained furrow is too well known to need any comment. My object, in the remainder of the paper, was to show the superior efficacy of deep over shallow drains, at a time when the point had not been decided in favour of the former; my argument was founded on the theory of the declining water line. There is another condition of soil very frequently found in this neighbourhood which ought to be noticed. There are three extensive beds or strata of clay to the north of the Chalk or Chiltern Hills, which form a large portion of the counties of Berks, Oxford, and Buckingham—they are known as the Gault, Kimmeridge, and Oxford clays, and alternate with the lower green sand and oolitic strata. In many parts, as here in Oxford and its neighbourhood, these clays are covered with a drift or gravel, which contains water, and consequently requires to be drained. It is found that the surface of these clays undulates in certain directions; hence if drains be cut the lengthway of these undulations the water is stanked back by the ridge on either side, so that even a deep drain will draw only a short distance, whereas if the drain be cut across the undulations, the water flows freely down these subterranean furrows, so that one drain will be more effectual than many in the opposite direction.

The late Mr. Joshua Trimmer, a well-known geologist, conceived that this undulating condition of the surface of clays was so universal that all drainage operations should have reference to it, and a system of drainage, known as the Keythorpe system, was recommended by him as fitted for universal application; as far as my own experience and observation goes it cannot be so supplied; he was quite right in recommending that the draining conditions of the soil should be tested by experimental drains and trial holes, but there is no reason to believe that in clay soils, except when covered by beds of drift or gravel, there is any reason for cutting drains in any direction, except that favourable to secure the best outfall for the water. In speaking of the escape of subterraneous water, there is another point to be borne in mind, namely, evaporation from the surface. Every observer cannot, I think, fail to be struck with the rapidity with which clay soils part with their free water by evaporation; this does not at all prove that drainage is unnecessary; some persons may doubt this rapidity, but let them examine the most tenacious soils, say the end of May, and judge for themselves. How is it that the soil, saturated with free water in March, contains none in June; it may be said by evaporation; evaporation extends but a very small depth into the earth; the reason I believe to be that the water rises by capillary attraction to replace that evaporated from the surface. The whole process of the dessiccation of the soil is usually attributed to evaporation; what I contend for is that evaporation is fed by capillary attraction. I notice this because it has been stated that one of the evils of undrained soils is the coldness caused by evaporation, but carefully conducted experiments have shown that often at the season of the greatest evaporation the drained soil is colder than the undrained, the fact really being that evaporation never reaches those depths where the thermometers are placed 18 inches or 2 feet beneath the surface. The real mischief of undrained land to the growth and maturity of plants is the presence of free water in the soil. There is a fact proving the action of capillary attraction, as ministering to evaporation, which I have never yet seen noticed, and which I mention rather as a subject for thought than information, namely, that water rising by capillary attraction brings again to the surface those substances which have been carried down in solution by the descending water; this may be proved by the simple experiment of placing a piece of earth on the surface of water containing carbonate of lime, such as ordinary spring water, and may be seen in nature during the heat of summer, by a white deposit on the surface of the soil.

Home Correspondence.

Twitch.—I have more than once committed the error of ploughing too deep to get rid of this pest, my idea being that I would bottom it, and so even if extra labour was required I would clear it all out, but in practice I found that my men knew better than I did, for unless you can move the whole of the till (after ploughing) with the "scuffler" "grubber" or great harrow, there would be deposited enough Twitch to renew one's labour another year. So I now plough at a moderate depth and scuffle immediately, then ditto crossways, followed by a great harrow, then a pair of harrows, and lastly a set of light harrows. If the weather and other work will permit these operations to be completed, all the Twitch that has been distributed will be seen on the land, and can be raked and picked. After gathering all we can, it is advisable to let one or two children follow each plough, and if such a process should be persisted in two or three seasons, the Twitch will be no more trouble than any other common weed; if neglected, and Clover or seeds follow the corn without getting the Twitch out, it will multiply incredibly and seriously deteriorate the soil, besides seeding, and providing a succession that will every year add to the difficulty of subduing it. Twitch is an assiduous enemy, with which we should wage constant war; we must make no terms with it, or it will plunder us; we must banish it from our fields or it will disgrace us. Twitch, Heiriff, Docks, and Thistles fly before good farming, but with bad farming they flourish and supersede corn; they add to the cost of cultivation, while the produce is diminished. *J. W., Peterborough.*

Couch Grass: Autumn Culture.—In answer to "W. H. S." I beg leave to say if he will direct his bailiff directly the corn is cut to put four horses abreast on to one of Coleman's scarifiers, and break up the stubble, no matter how Grassy or foul, four horses will do 4 acres in eight hours. It must then be well harrowed, the stubble and Twitch collected with one of Howard's horse-rakes into rows, then carted home into the yard to make a bottom for the manure from the stables; the pigs to be allowed to run on it, no matter how full of seeds. When it has laid all winter in the bottom of the yard there will be plenty of time for all kinds of seeds to swell, and after it has been thrown up into a hill in the field requiring it, it will undergo such a fermentation that no Twitch or seeds of any kind can possibly grow. I would then advise, if you have nothing better to do, to put your dung on the land; the carts will run on nicely now the land is firm and dry. You can then strike or plough the dung in at your leisure, any time before Christmas. In the spring, when the land is dry and will bear the horses well, give it another turn with the Coleman, and then harrow it again. The Twitch will not die as fast in the spring as autumn, so that you had better pick it off. By this time your land will be as clean as a garden; if not, you must scarify it until it is. The time to kill Twitch is when the sun shines. Your land is now ready for Wurzel or Swedes. There is nothing to do but drill plenty of seed and good, say 8 lbs. Wurzel and 3 or 4 lbs. Swede to the acre. You are sure of a plant, as the land will be full of moisture. No matter how dry the weather, but don't sow in wet; if you do the chances are that you have it dry when the plant has its rough leaves coming. Rainy weather soon makes them fit for the hoe. Now let us have a look at the expense. The following is an estimate of the expense of making a thorough good job and a clean one. There will be no weeds among the Turnips or Wurzel, but nevertheless, as soon as the crop is visible, put the horse-hoe to work, and don't let it stand till until the crop is too big to get cut, and then we will be sure to have one.

1 scarifying	2s.	6d.
2 heavy harrowings	2	0
1 light ditto	0	6
1 raking	0	4
Clearing and carting stubble into yards	3	0
1 striking, three horses	9	0
1 scarifying in spring	2	6
1 heavy harrowing	1	0
1 light ditto	0	6
	£1	1 4

Carting manure the same expense as heretofore.

Now pay attention if by any chance you see a piece of Twitch in the land after this; leave your hat to mark the place, as this is your *game;* and send your bailiff with a fork to take it up, and then cook it! *Charles Bates, Stanford-le-Hope, Essex.* [Mr. Bates's figures are too low.]

Veterinary Surgeon.—I shall feel obliged if you will inform me through the *Gazette* what is the best course to secure a clever veterinary surgeon for this neighbourhood. There is not one within 10 miles who can be relied upon. The man we have is rarely sober, and at the best ignorant, and from the conversation I have had with gentlemen and large farmers, I feel confident that a persevering man would be able to employ one, if not two assistants. This is both a manufacturing and agricultural district, and very populous, and is an opportunity which rarely occurs without purchase. *J. G., Yorkshire.* [You should apply to Professor Spooner, Dick, or Gamgee, at the London, the Old and the New Edinburgh Veterinary colleges respectively.]

Societies.

ROYAL AGRICULTURAL OF ENGLAND.

Monthly Council: *Wednesday, May* 4.—His Grace the Duke of Marlborough, President, in the chair.

Finances.—Mr. Raymond Barker, chairman of the Finance Committee, presented the report on the accounts of the Society, by which it appeared that the current cash balance in the hands of the bankers was 1583*l.* 1*s.* 8*d.*

Country Meeting of 1860.—The report of the Inspection Committee having been read and deputations received from Canterbury, Croydon, Guildford, and Reigate, the Council decided that the Country Meeting in 1860 should be held at Canterbury, on condition that the Mayor of that city entered into the usual agreement with the Secretary of the Society by the next Monthly Council on the 1st of June. These deputations consisted of the following members:—

Croydon Deputation.—Thomas Byron, Esq., President of the East Surrey Agricultural Society; Thomas Kem, Esq.; Richard Northey, Esq.; John Wm. Sutherland, Esq.; The Rev. E. F. Brynon; Wm. Goldsmith, Esq.; Thomas Farley, Esq.; Wm. Castledine, Esq.; Mr. John Wood.—H. Richards, Hon Sec.

Canterbury Deputation.—Lord Sondes; Sir Walter James, Bart.; Sir Norton Knatchbull, Bart.; William Deedes, Esq., M.P.; Sir Brook W. Bridges, Bart., M.P.; Hon. B. Johnstone, M.P.; E. H. Knatchbull Hugesson, M.P.; the Mayor of Canterbury; the ex-Mayor of Canterbury; Major Munn; S. M. Hilton, Esq.; Robert Lake, Esq.; Thomas Cooper, Esq.; Thomas Philpott.

Reigate Deputation.—J. C. Sherrard, of Kinnersley; J. G. Marriage, Nutfield; F. Mellersh, Reigate; C. Goldsmith, ditto; J. Lees, ditto; C. W. Eborall, Manager of South Eastern Railway.

Guildford Deputation.—Earl of Lovelace (Lord Lieutenant of Surrey), Mr. Drummond, M.P., Mr. H. Currie, Mr. Coussmaker, Mr. Elkins, Mr. Finney, Mr. Smallpiece, Mr. Scott.

Agricultural Chemistry.—Mr. Wren Hoskyns, chairman of the Chemical Committee, presented the report recommending that the wording of the rule regulating the members' privilege of analysis be altered so as to meet the intention of the Council—viz., so as to exclude all but analyses "required for the *bonâ fide* personal use of farmers." The following subjects of investigation by the Society's Consulting Chemist were recommended:—

1. The changes that take place in liquid manure in passing through different soils.
2. Experiments on top-dressings for Wheat and Barley.
3. The continuation of his experiments on the nature and physiology of cultivated Turnips.
4. The different modes of applying manure in autumn and in spring.

House Committee.—Mr. Raymond Barker, chairman of the House Committee, presented the report as to the repairs required in the drainage of the house.

Warwick Meeting.—Lord Leigh, vice-chairman of the General Warwick Committee, reported the following recommendation of the Committee—

1. That Mr. Bishop, of the Regent Hotel, Leamington, should supply the first-class refreshments for the public in the show yard; and that Mr. Cole, of the Horse and Hounds Inn, Warwick, should supply the second-class refreshments, subject to arrangements with the honorary Director of the Show.
2. That the date of entry for cheese, wool, and farm gates (being local prizes), be extended to the 1st of June, in compliance with the request of the local committee at Warwick.

The Committee further reported the arrangements that had been made for the supply of green fodder for the live stock, and the commencement of the show yard by the Society's contractor.

Steward of Implements.—On the motion of Mr. Torr, seconded by Mr. John Hudson (of Castleacre), Mr. Edward Pope was elected one of the Stewards of Implements, in the place of Lieut.-Colonel Towneley, who had conveyed to the Council his regret that he would not be able to act in consequence of absence from England.

Steward of Live Stock.—On the motion of Mr. Brandreth Gibbs, seconded by Mr. George Turner, Mr. Fisher Hobbs was elected to that office.

Country Meeting of 1861.—On the motion of Mr. Brandreth Gibbs, a communication from the Secretary of the Crystal Palace, inquiring relative to the Society's proposed Metropolitan Meeting in the year 1861, was referred to the "Metropolitan Sites Committee."

HouseList.—Agreeably with the Bye-laws, the Council arranged by ballot an election list, to be recommended by them for adoption at the ensuing General Meeting.

The Council then adjourned to its Weekly Meeting on the 11th inst.

Farmers' Clubs.

London: *May* 2.—*The Advantages of Steam in Agriculture.*—The following is the greater portion of the paper read by Mr. Alderman Mechi:—

While the agricultural community is congratulating itself on its rapid progress, and while our talented friend Monsieur de la Tréhonnais is holding us up to his countrymen in France as models of agricultural progress, your humble servant is lamenting our agricultural backwardness and imperfection. This discrepancy of sentiment may be readily accounted for. They compare the present with the past. With them the extensive back-ground of non-improvement throws up in pleasant relief the bright spots of progress. With them the exceptions excuse the rule. With me they do but condemn it, and point to its amendment. We may admit that much of our light and self-drained land is very much improved, and in many districts very highly farmed; but that extensive portion of our island called cold, stiff, tenacious clay, 15-16ths of which are still undrained, is to my certain knowledge in a most unsatisfactory and unprofitable condition, as regards the interests of landlord, tenant, and the country at large.

Now, it is in my opinion precisely these soils which, when improved, are the most dependable for a result, containing, as they do, an undeveloped treasure of ammoniacal and phosphatic fertility. Those gifts have not yet been availed of, and it is steam cultivation alone, after drainage, that can place those subterranean treasures at our disposal. My observation of the present cultivation of our stiff clays would give an average depth of about 4 to 5 inches—all below this may be considered an unknown and unimproved territory. It is true that after drainage the filtration or percolation of water and manure will gradually and certainly aerate and improve the subsoil, but the process is too slow for these quick moving times. You want rapidly to dry these dead and saturated masses by atmospheric exposure. The dense and closely packed mass of infinitesimal granules must be separated by pulverisation, so that the millions of almost imperceptible fibres may introduce themselves without difficulty to the hitherto unapproachable but fertilising ingredients of the subsoil. Liebig, and our other great chemical lights, have proved to us that every breath of air that passes over newly exposed clay abstracts from it its moisture, and in exchange blesses it with ammoniacal and fertilising gases. As you follow the steam cultivator on a dry day instantaneous exhalations strike your nostrils, and convince you that the earth is a great apothecary's shop full of chemical compounds. The rough and lightly laid fallow absorbs the fructifying sunbeams, and imparts to the air in contact with it an expansive heat, which causes it to rise in wavy playfulness in its struggle through the superincumbent but colder atmosphere. The rusty-looking iron of our so-called poor clay subsoils makes greedy claim upon the passing ammonia. A volume might be written by our chemists upon the advantages of evaporation, percolation, dews, frosts, fogs, and sunshine. Jethro Tull was the prince of cultivators, but the want of artificial drainage defeated all his calculations. The Rev. Mr. Smith, of Lois-Weedon, is the great Jethro Tull of the present day. Fifteen years ago I was convinced that on our stiff yellow clays cultivation was more important than manure; acting on that conviction, after I had drained my land, I broke it up with three horses, six other horses following in the same track, with Smith of Deanston's great subsoil plough. Our labourers called it a little earthquake, and my crops have never forgotten it; but for all that I saw how costly was horse-power when deep cultivation was attempted, and how necessary it was that we should apply steam to get a yard deep of cultivation, instead of 10 or 12 inches.

Agricultural Doubts about Steam.—I confess I was very much astonished that our progressive friend, Mr. R. Smith, in his recent lecture to this Club on agricultural progress, should describe steam culture as "yet a venture." I consider steam cultivation an accomplished fact: profitably accomplished, and therefore practically attained.

It is impossible to deny with truthfulness that both Mr. Fowler's and Mr. Smith's plans are practically proven and sealed with the stamp of superiority over horse-power, both in cost and effect, by the award and medal of the Royal Agricultural Society of England. For my own observation of both these plans, I am sure it will pay to use them. Had I not my fixed steam-engine I should at once adopt the practice, although my land has all been already very deeply disturbed, but I suppose I must hire a portable engine. As *a proof of the advantages of steam cultivation,* let me mention the following fact: at my great gathering, in July, 1856, Mr. Fowler's steam plough, with the subsoiler attached, cultivated two stetches of Clover lea, being part of a field on which Wheat was to be sown in October. Although that field had been formerly subsoiled, and forked by manual labour, Fowler's subsoil brought up and exposed to view some undisturbed nasty ochrey and rusty subsoil. Some of our agricultural friends would shrug their shoulders and say nothing would grow on it, but mark the result. In October or November the Wheat was duly drilled over the whole field; as soon as it came up, and in every stage of its growth, these two stetches showed their superiority. After harvest the field was all manured and dug with the fork, and produced a fine crop of Mangel in 1858. It is now (April, 1859) in Wheat again, and in this early stage of growth, the two stetches—steam-ploughed in 1856—still show a superiority! My men called my attention to this only on Saturday last. But who can seriously doubt the benefits of deep cultivation on strong clays after drainage? After the recent showers, I could see the deeply-moved soil, over drains, showing light-coloured and dry, whilst the intermediate spaces were dark and damp. It was deep cultivation that did this, producing facile aëration, powerful capillarity, and rapid evaporation. It proves that a yard or 4 feet deep of cultivation is not a bit too deep; and when I remember that at my friend Dixon's, near Witham, a Parsnip was pulled up whose roots were 13 feet 6 inches long, and then broke off, I seriously believe that we have no present idea as to what depth of cultivation and drainage we shall ultimately arrive at with steam power. Why did that Parsnip go so deep? Because the earth had all been moved to the depth of 14 feet. It had been a brick-earth pit, filled up with soil from the adjoining land, when it was necessary to open a new pit; air and water had circulated freely to the depth of 14 feet. It is not what an operation costs, but what profit it pays, that must guide us. The shilling flail is superseded by one that costs 300*l.*, as a matter of economy and profit. Who is to say that we shall not have scarifiers or grubbers whose tines will gradually go 4, 5, or 6 feet deep, drawn by a 100 horse-power engine? Am I visionary in anticipating such a result? Is it more astounding than Fowler's draining-plough, drawing, as it were by magic, its lines of pipes, like ropes of sausages, deep into the bowels of the most obstinate clays? And here I should consider myself ungrateful indeed did I not record my admiration of, and gratitude to, that spirited and far-seeing man, who has devoted his fortune and his mind to the successful realisation of what agriculture once considered a romantic and chimerical idea. If my anticipations are to be realised, let our shallow drainers deepen their ideas and spare their pockets.

Our Present Plans of Steam Cultivation.—My public position, as an agriculturist, brings to me many an anxious and intelligent inventor, whose sleepless mind is worn and absorbed by the great one idea, and who languishes for the wherewithal to develop and give a practical bearing to his thoughts. I often feel, as I listen to the anxious and confidential communication, how much must be done and suffered ere the practical public will avail of, and pay for the inventor's genius. We ought to feel grateful to those who I know have devoted their money and time to the improvements in machinery.

It is not my intention to make invidious comparisons between the various means for steam culture. Let each one consult the judges' decision, as given in the last number of the Royal Agricultural Society's Journal. Let him spend a little time and money in watching the practical operations which are now so extensively going on, to which access is so liberally granted, and which are so accurately described by the various agricultural publications of the day. Years ago I ventured to predict that we should soon have 40 different modes of steam cultivation. Such an idea is rapidly approaching realisation. We have now—1. Fowler's Draining and Trenching Ploughs. 2. Smith's Scarifiers. 3. Williams's ditto. 4. Boydell's Traction Engine. 5. Bray's ditto. 6. Romaine's Cultivator. 7. Fisken's Plough. 8. Rickett's Archimedean Cultivator. 9. Halkett's Railway system of Steam Culture; and I know of others which are yet to meet the public eye. I rejoice in the pungent and gladiatorial rivalry on this subject which fills the columns

of our agricultural newspapers. The steam-press is developing steam cultivation—drawing the attention of even the lag-behinds of agriculture, and making them progress in spite of their prejudices. I have no fear but that each claimant for public steam favour will meet his reward according to his merits. Agriculture is a fine open field of comparison, if people will but look at it. I recently saw Mr. Smith's Steam Cultivator (made by Messrs. Howard) at work on a farm of stiff soil in Hertfordshire. Its work appeared to be simple and perfect. It was smashing-up or grubbing the land 4½ to 5 inches deep at the cost of 1s. an acre for coal, 2s. 6d. an acre for manual labour, and something for the wear and tear of the steam-engine and steel-wire rope, &c. The rope was much smaller than one's little finger, say nine-sixteenths of an inch diameter. I have often heard heavy land farmers say that they should like to have horses without feet; this is actually the case with steam, which cultivates without pressure or consolidation.

Halkett's Guideway Steam Cultivator.—I cannot pass by, in silence, Mr. Halkett's noble efforts to effect the operations of the farm on a grand scale by an entirely novel process. Having witnessed the operation, I was struck with the simplicity and unerring accuracy of the work done, as well as by the application of the whole power of the engine without rope, and with a mere fractional friction. Every one who heard Mr. Halkett's paper read before the Society of Arts must have retired with a conviction that the subject was worthy of the most profound consideration, and of a fair national trial on a large scale.

Who is to do this and find the means is another question. I have never yet heard any one dispute Mr. Halkett's calculations. When I see that 240 tons weight can be drawn on a railway at a speed of 20 miles an hour, a whole mile for two-pennyworth of coal, I feel that the whole question hinges on the calculation of what sum would be sufficient interest for wear and te ir, and first cost of his proposed railway. I exhibit a photograph of the machine in operation, performing various farm labours. If our unduly costly railways pay the shareholders an interest equal to consols, and yet take us as cheaply as the old coach, saving three-fourths of our time, is it so utopian to imagine that similar causes should produce equal effects in agriculture? Is not time, in horse and manual labour, as much money as time on the rai l?

By-the-bye I have just heard that Boydell's traction engine is drawing coals into Manchester, from a colliery, at 1*d.* per ton per mile, on the high road. It always surprised me that railway buffers and springs were not attached to the machine when it had to draw ploughs or scarifiers. But for these buffers and springs, our railway-engines would be breaking their chains, and doing much mischief by sudden concussion. I hear that as much as 10,000*l.* has been expended on Romaine's cultivator since I lent my aid to its introduction. The inventor is still sanguine of success, judging from its operations in Yorkshire, but a large expenditure is yet required for its full development; it is intended, I believe, to fit with Boydell's wheels, or something on the same principle. I deeply regret Mr. Boydell's severe indisposition, arising from his anxious and unwearied exertions about his traction engine. I have received the following from Mr. Hall, who has used Fowler's plough for some time. It will be seen that he works at very high pressure:—

"Navestock, Essex, April 26, 1859.

"Dear Sir,—I find in practice that my portable engine, working at 320 lbs. pressure, consumes 850 lbs. of coal, worth 8*s.* 6*d.*, per each day's work of 10 hours, while drawing Fowler's four-furrow plough, by the wire-rope system; and six acres is a fair day's work at present, and which requires three men and two boys, and one horse for water.

"This same engine was worked by Boydell's wheels as a direct traction, drawing Fowler's (same) ploughs. To work 10 hours, and plough six acres she required 1100 lbs. to 1200 lbs. of coal.

"She therefore consumed about a quarter of her fuel to propel herself, besides the damage done to the land by her wheels, which was fatal to that principle for cultivation—but to be enabled to proceed into any field, without horses, is a most valuable acquisition. My fixed engine, working at 120 lbs. pressure, consumes 5 cwt. of coal in 12 hours, driving one pair of Barley-stones, grinding 8 bushels per hour; and two pairs of Wheat-stones, grinding 4 bushels per hour each.—I remain, Sir,—Yours very truly,

"Collinson Hall.

"We worked this engine at 200 lbs. pressure, and then 4 cwt. of coal performed the same quantity of work as the 5 cwt. at 120 lbs. now does.

"Since the mill was burned down, in 1845, I have thought it prudent to reduce the pressure."

Comparative Value of Horse and Steam-Power.—We are much indebted to Mr. John C. Morton for his able paper on the cost of horse power in the Royal Agricultural Society's last Journal, but, if I had any doubt before, that paper has convinced me that horse-power is at least from 50 to 100 per cent. dearer than steam, where the latter can be brought to bear. If manufacturers were asked even to make the comparison, they would ridicule the idea, and tell you that but for steam you could be neither clothed, housed, nor fed. What a manufacturer wants and uses is "power," cheap, untiring, power, and is this not exactly what the agricultural cultivator requires?

Now, you can never get combined or continued power with horses in any number. When first the mole plough was tried on a stiff clay in Essex, before the introduction of the capstan, upwards of 30 horses were attached to it, and a very Babel of confusion ensued. In their struggling attempts at uniform draught the outsiders compressed those in the centre until a cloud of steam arose from the excited and oppressed animals. Compare this with the tranquil grandeur of a 20, 50, or 500 horse-power engine. In comparing horses with steam, we could only allow a horse to work full collar, without intermission or rest, for 4½ hours—that would be an ample day's work, and it would cost 2*s.*, because a large well fed draught horse cannot be kept for less than 30*l.* per annum. Let us see what my own steam horse costs working 10 clear hours per day, full collar, and my engine is not of the latest improvement, having been in use 10 years. The exact measure of one strong horse power in steam is the evaporation of six gallons, or 60 lbs. of water per hour. My own engine evaporates 54 gallons per hour, and, therefore, gives 9 horse-power, working 10 hours per day, which is equal to 18 real horses working five hours per day.

I burn half a ton of dust coal, at 9*s.*	..	..	4*s.* 6*d.*
Cartage			1 6
			6 0

Horse-power would cost 1*l.* 7*s.*

One labourer at 2*s.* per day manages my engine, feeds it, and cleans it. How much more would it cost to attend on 18 horses? I could enlarge upon this comparison *in extenso*, but in these days it is only in agriculture that such a question would be entertained, and I must say I feel humiliated that my friend Morton in his recent excellent paper has taken so favourable a view of the endurance and availability of horse-power as compared with steam. In the great Cornish pumping engines, which are considered as the most economic in combustion, coal being dear there, 3 lbs. of coal per hour will produce one horse-power, so that assuming that four hours' incessant work would exhaust a horse for 24 hours, 12 lbs. of coal costing five farthings (or 20*s.* per ton) would do as much work as a horse which costs 2*s.*; this is no exaggeration—even the common portable agricultural engines, which are far less economical in fuel than the fixed condensing engines, will, when in perfect order, produce a day's work equal to one horse-power for 24 lbs. of coal, or 2½*d.* The trials of these engines by the Royal Agricultural Society, as reported by the judges, show a consumption of about 5 lbs. of coal per horse-power per hour. A very respectable miller assured me that he once, for a wager, ground 200 quarters of corn with 14*s.* 6*d.* worth of coal, which would be under 2*d.* per quarter, or about ¼*d.* per bushel, and I know that with the common Cornish boiler, and non-condensing high pressure engines, the ordinary fuel for grinding is only 1*d.* per bushel. How the increased population of this country could be fed had we to depend on wind, water, or horses is beyond my comprehension. We see, in fact, that almost everywhere a steam-engine is attached to the wind or water-mill, and in addition we have great steam mills at many of the railway stations. Considering that a vast number of steam engines are worked night and day, it may be fairly estimated that one-horse power worked 24 hours is equal to the labour of six real horses for the same period. Take an Atlantic steamer that steams unceasingly night and day, and suppose her power to be 1000 steam horses, you would require 6000 real horses to do the work. To imagine what space so many animals would require, their food, water, attendants, bedding, harness, and shoeing, seems an impossible absurdity, and yet practically when a farmer uses a horse where he might use steam, he is in an equally ludicrous and unprofitable embarrassment.

On how small a Farm will a Steam-engine pay, and what is a Steam-engine to do on a Farm?—When I speak of the general application of steam power in agriculture, I assume an improved and profitable condition of agriculture, very different from that which unfortunately generally exists; but let me take a well-regulated and well-drained farm of 200 acres or less, making five score of meat per acre (I make more than 10 score, the labourer makes 32 score), there will be plenty to do to grind corn, crush Oats, break Rape-cake, cut and steam chaff, thresh and dress corn, pump water, and, if opportunity offers, work irrigation pumps, and if you add to this the cultivation of the soil, an 8 horse-power engine will not have many holidays. It is a great convenience to your neighbours to send in their corn to you to be ground. I find that in this way the money I receive in grinding for others pays for all my coals, so that my engine only costs the wear and tear and attendance, and still does all my work, irrigation included. Since harvest I have ground more than 300 quarters of corn for my pigs. When your engine rests it eats nothing. I find that by treading down the chaff, cake, &c., when steamed, and thus preventing the access of air, it will keep sweet and hot for a week or more, according to the bulk of the mass, and the animals like it better. On a farm of 200 acres there ought to be at least 200 tons of straw, to cut into chaff, and to be steamed by the waste steam from the engine. The time will come when we shall warm our bullock sheds with steam in cold weather, as the manufacturers warm their mills, and in summer it would pay well to drive a circulation of air by a fanner through the cattle houses, and not a fly will be seen there, nor any disease. There is no doubt that during summer much beef could be and should be made by bullocks comfortably warm, but untormented by flies or excess of sunshine; but then all this implies a manufacturing adaptation of means to an end, which will involve a system of intelligent reconstruction in our farmeries. All this will come when our doubled or tripled population will demand twice or three times the amount of meat now produced on our little island.

Gain in Time and Opportunity by Steam Culture.—Although, irrespective of the above consideration, steam is much cheaper than horse-power, the question of cost becomes insignificant in comparison with opportunity.

Nothing can illustrate this better than the words of Mr. Smith, of Woolston, in one of his recent letters on the use of his steam cultivator. He says, "I have shown that 225 acres of heavy clay require the work of an 8 horse-power engine 45 days. I find from practice it would require 35 horses to perform this work in the same time, *i. e.*, five horses for 315 days, the whole of a year; this of course does not include what can be done by the apparatus in the spring and summer." In other words, as a farmer of 225 acres would only have eight or nine horses, three-fourths of his stubble land would be unbroken during the 45 fine days of August, September, and October. It is only the chemist of agriculture who can sufficiently appreciate the enormity of this loss of aëration, evaporation, filtration, and consequent fructification. If the consolidation of stiff clays in damp weather by pressure renders them infertile by the exclusion of air, which I practically know to be the fact, the opposite of this, by steam cultivation in dry weather, must be a great gain. Mr. Smith's comparison of horse and steam-power confirms my own calculation, that four hours of unremitting draught without a rest is an ample day's work for a horse. In the midland counties, where the barbarous practice of four horses in a line and two drivers still exists, the ceremony of turning at the headlands, the alternate coaxing and threatening to get the horses into working condition, consumes no end of time. Even in our own well-ploughed pair-horse county I have on a fine May tranquil morning been highly amused by the colloquy, if I may so term it, between a pair of knowing fat horses and a good-natured but indignant ploughman, as the ejaculations of "Boxer and Wiolet," "Worree," and "Hike, come hither," came ringing on the morning air, the horses taking especial care to reserve their effort to pull for the ploughman's last burst of indignant excitement, sometimes accompanied by a small clod—stern, untiring steam will destroy much of the poetry of agriculture, and give it a Manchester character.

The Great Economy of Steam-Power is proved by the Judges' report of comparative trials at the Chester Show:—

Hay cut into chaff ..	..	128 lbs.	in three minutes
Roots cut for sheep ..	..	314	,, ,,
Do. for bullocks ..	..	620	,, ,,
Do. for do. ..	..	1278	,, ,,
Roots pulped ..	..	490	,, ,,
Thick oilcake, broken	..	165	,, ,,
Corn winnowed ..	..	761	,, ,,
Corn dressed	..	400	,, ,,
Wheat threshed and dressed		200 sheaves	in 13 minutes.
Barley threshed and dressed		100 sheaves	in five ,,

I know that such results as these could not be obtained by ordinary farm labourers, because in these trials the machines and men are well "up to the mark," every energy strained to the utmost, and the engines in first-rate order; but even making an allowance for these circumstances, steam is, indeed, a wonderful economy. Every farmer ought to study the Judges' reports in the Royal Agricultural Society's Journals. The trials of steam cultivation are as follows:—Fowler ploughed 6 inches by 9 (equal to three-horse work), 1 acre per hour at a cost of 9*s.* 2*d.* per acre, and trench-ploughed an acre 12 inches deep and 14 inches wide, at 18*s.* 4*d.* per acre. The gain over horse-power in the latter case was enormous, as I know practically. Messrs. Howards', of Bedfords', Smiths' steam cultivator for the two operations of cultivating and cross-cultivating, or smashing up to the depth of from 6 to 7 inches, gave a charge of 14*s.* per acre, which was considerably cheaper than horse-power. I have reason to believe that both these implements have since been working even more effectively and economically on ordinary heavy land farms. On our railways 240 tons can be carried one mile for twopennyworth of coal, and three minutes' time of the stoker, guard, and engine-driver. Compare this with horses on the common road at 7*d.* per ton per mile! which would amount to 7*l.*

Saving of Food by Steam Culture.—A diminution of one-third or more of our horse-power would set free for the food of man a vast extent of our soil.

If the horses of agriculture consume the produce of one-fifth of its available area, it follows that something like 2,500,000 of acres would be gained for food for the population. Spackman estimates the farm horses at 1,500,000—in my opinion far too large an estimate, seeing, on arable farms, that we have only one horse to 25 acres. Every 100 acres of arable land require four horses, and each horse consumes the produce of 5 acres, or the food of seven men. I consider that steam for cultivation, grinding, threshing, chaff-cutting, pumping, &c., would economise two-fifths of the horse-power of the farm.

Town Sewage applied by Steam.—I have so often enlarged upon the vital importance to this country of sewage-irrigation from our towns, that I will only say to my brother farmers—

Consider the value of a daily folding on the land of 28,000,000 of well-fed human beings (or sheep), and add to this all the animal deposits in our towns, and various other waste products, and you may then fairly estimate how much you lose by permitting these treasures to flow away to the sea. Let it be "willed" by agriculture, and the engineering difficulties will vanish. Thirteen-fourteenths of the excrement of human beings and animals are the urine; so that it is in a condition to flow away, even without the addition of water. Watford, Rugby, and other towns, will bear witness to the facility with which this operation may be effected, but it must be done by steam-power; and that is why I mention it in this paper. A single engine, consuming 15*s.* worth of coals every 24 hours, raises 1,000,000 gallons of water, and then forces it through a 12-inch pipe to a tank a mile distant, and 150 feet above the engine. Now it is quite clear that about the same power and the same size pipe would re-distribute subterraneously to certain hydrants on the fields, the same quantity of water when enriched with all the good things of Croydon.

Agriculture compared with Manufactures.—Spackman, in his "Occupations of the People," estimates the agricultural interest in land and tenants' capital for the United Kingdom as 2,000,000,000*l.*, or 25 times as large as the manufacturing interest, which he estimates at 78,000,000*l.*

Although I think this is exaggerated, there can be no doubt that agriculture is by far the largest interest in the kingdom. But is it the most intelligent and unprejudiced? I think not. If I were to test this comparatively, I should estimate it by the amount of steam-power which it employs relatively to the other great producing interests of the country. Let us see how the matter stands. So far as I am able to obtain approximate estimates—

	Horse-power.
Manufactures employ 150,000 steam-engines of an average power of 20 horses	3,000,000
Railway Locomotives, 7550, 100 horse-power	755,000
Marine Engines, 2000, of 100 horse-power....	200,000
Our Armed Steam Navy, 450 ships.....	100,000
Agriculture only 6000, 8 horse-power.....	48,000

Now, if Mr. Spackman is right, agriculture should employ millions of horse-power, instead of only 48,000. In these days I take the use of steam to be the measure of progression, intelligence, and profit. What is there in agriculture so complicated or difficult that steam could not master. I saw in Manchester, the other day, two 18 horse-power engines, which cost 1000*l.*, employed entirely in packing bales, and working the hoists or lifts which carried the men and cotton goods from floor to floor. The hydraulic squeeze, given by steam-power, caused a bale to be packed in three minutes, which, by manual labour, used to require 15 minutes. Time, surely, is money, as much in agriculture as in any other industrial occupation. Taking the average of farms at the ordinary depth of cultivation, the number of steam-engines required would be enormous for cultivation alone; but if our clays are (as they ought to be) moved to a depth of 2 or 3 feet, then, indeed, great will be the requirement of steam power. As our ordinary depth of cultivation is under 5 inches, and as our little island is sea-girt, tripling or quadrupling our depth of cultivation would be equal to an immense extension of territory, without additional rent, tithes, or taxes. At present, in our stiff undrained clays, all below five inches is a *terra incognita*, unseen and unavailed of, as is shown by the "going off" of the crops in April and May.

Steam Estimates.—In estimating the probable amount of steam-power used generally in our various industrial manufacturing and commercial operations, I have to tender my thanks to my official and other friends for the kindness with which they have placed statistical facts at my disposal, and for the information which they have otherwise afforded to me.

I have been assured that in a circle of 20 miles, in and around Manchester, there are 50,000 steam-engines—if so, agriculture owes a deep debt of gratitude to Manchester, which I hope she will repay by similar means. I find that every 50 miles of passenger railway employs forty locomotives. The number of miles travelled on our railways in 1857 was over 74 millions; the average consumption of coke, 34 lbs. per mile. A very great economy has lately been effected by the use of coal: the furnace-door is left open, and the air rushing in, strikes against a deflecting-plate, which throws it on the surface of the fire, and causes perfect combustion without smoke. This is a hint which might be availed of in our agricultural portable engines. The air has much the effect of being blown on the coals by a bellows. Flame gives much more heat than red-hot coke.

Conclusion.—Apologising for the length of these remarks, I hope you will think with me that I have proved that steam is not only an advantage but a necessity for agriculture, and that it has not been sufficiently availed of. A great responsibility attaches in this matter to those in high places who have large estates. We know, especially where there is only annual tenure, that the landowner is much looked up to by his tenantry, and that there is somewhat of a patriarchal character in their relations. So long as that exists, a heavy responsibility rests with the lord of the soil; his example and encouragement are required, and almost demanded in this matter of steam. It may be necessary for men to exercise a gentle despotism in the removal of prejudices, which are often very strong in agriculture. How all this may be done is easily explained by a reference to the late great Mr. Coke, of

Norfolk, who converted a poor tenantry, and a miserable estate, into the opposites of farming wealth and greatly increased rentals. We have modern examples of this, such as Lord Lonsdale, the Duke of Bedford, and many others, who combine investment, improvement, and encouragement, with honour, profit, and progression to themselves, to their tenantry, and to their country. There is plenty of room for such examples to be followed in our, at present, half-farmed country. The mere value of steam to agriculture, in the sawing and preparing of the timber of an estate is considerable, and I remember to have been delighted thirteen years ago with the workshops and machinery of the Duke of Bedford, at Woburn, whose farmeries, cottages, and hedge-rows are a standing censure on the general agricultural non-improvement of this kingdom. In conclusion, agriculture has been, in the matter of steam, backward, miscalculating, and ungrateful. The statistical comparisons which I have made are humiliating for British agriculture, and when I say agriculture, I mean landlord as well as tenant, for property has its duties as well as its rights. When I see that landlord, tenant, and labourer are indebted to steam manufacture for cheapness and abundance in almost every necessary they possess, both mental and physical, I do consider that common gratitude should induce them to adopt similar means to feed abundantly and cheaply the enlightened manufacturing population to whom they are indebted for those benefits. My agricultural friends may think me somewhat severe in these my observations, but they are our best friends who tell us of our faults, and I only enforce what I practise, and practise profitably too. I shall therefore hope to receive their forgiveness for this my contribution to their agricultural literature. Pleased, indeed, should I be to see agriculture so perfect that "Othello's occupation would be gone."

Calendar of Operations.

APRIL AND MAY.

RUTLANDSHIRE, *April* 22.—Wheat generally looking well. Spring crops very yellow, and require rain and warm weather; land in fine condition for root crops. Artificial manures continue to be used to a considerable extent, notwithstanding the observation made about this time last year at the London Farmers' Club, that a good farm like a good joint of meat only requires basting with its own dripping; but had the Solon who made the remark only considered that artificial manures are in reality the bastings of the meat, that is, the production of the land returned to it in a condensed form, we question if we should have ever read or heard of such an observation as the one alluded to. *A. C.*

WEST SUSSEX: *May 4th.*—We appear to have got more into winter than we were at Christmas; it is now very cold, and vegetation is very much checked. The feeding off Swedes and Turnips is nearly over, and without a change to milder weather keep will soon be short. The Dutch and Trefoil on which the sheep depend after the Turnips are fed were forward and are now strong, but when once eaten make little progress; the meadows are but poorly covered with Grass, and all kinds of stock are now dull and nearly unsaleable, a month will also pass of favourable weather before there is likely to be much demand, which will be rather against the dealers who have lately stocked very heavily. A month ago the price was very high, and the demand active, as many hardly knew how to get rid of their roots. The cold east winds that we have had frequently have checked the Wheat a little; but still where the land is good it looks well. A good deal of it was sown when the land was very dry and light, and perhaps on that account although we had a mild winter it kept rather backward; but now it has got good hold of the ground, and with mild weather will do well, and promises to be a fair crop. I speak of the low-lying rich lands; on the high light land it is said to look sickly, and rather unpromising; but as far as we can judge there is plant enough, and so we may look for a fair crop. The sowing of Barley and Oats is over, they are mostly up, and the earlier sown look well. Clover, though stationary, is strong, and there are fewer failures than usual in it; and as there is a good deal of old hay left, we have a good prospect for food another year. Our market is not supplied so well with Wheat at present, but there are a good many ricks yet to thresh out, and the rise in price will set the machines to work again, especially as there is little other work pressing at this time. All kinds of fat stock are dear, and the supply is good, especially lambs, which have been rather too plentiful for the seller, but such is always the case at Easter, that being the time when they are supposed to be wanted, but a few can always be sold long before then and at higher prices, and we do not expect that the price will get lower. Mangel sowing is now the principal work, and rape for summer feeding to make way for Wheat. *G. S.*

Notices to Correspondents.

CREAM CHEESE: *Alex.*—The following are two recipes.—Take a quart of cream, or, if not desired very rich, add thereto one pint of new milk; warm it in hot water till it is about the heat of milk from the cow, add a small quantity of rennet (a tablespoonful is sufficient), let it stand till thick, then break it slightly with a spoon, and place it in the frame in which you have previously put a fine canvas cloth; press it slightly with a weight; let it stand a few hours, then put a finer cloth in the frame; a little powdered salt may be put over the cloth. It will be fit for use in a day or two.—*Another Method.* If cream is scarce, so that a sufficient quantity cannot be had at once, take a fine canvas bag, and pour as much cream as you may happen to have into it, adding additional small quantities of ice a day, and from its becoming naturally sour, the thin part will drain through the canvas, and the remainder will prove an excellent cheese. If one quart of cream can be had at once, and poured into a fine canvas bag, it will make a nice sized cheese, and of course equally good as those made by several small quantities added at convenient intervals. The cheeses made in this way are not fit for use so soon as those made with rennet.

SUBSTITUTES FOR GUANO: *H W P.* Superphosphate along with farm-yard manure is quite a sufficient substitute for guano for Swedes. Apply 3 cwt. per acre along with 10 or 12 tons of dung. Nitrate of soda, 1 or 1½ cwt., is better applied to corn crops, if used in place of guano.

PHOSPHATE OF AMMONIA: *T H.* One cwt. and a half or 2 cwt. of sulphate of ammonia per acre is a good dressing for an acre of Wheat. We would not apply superphosphate to grain crops; apply it to Swedes.

SOOT DRESSING: *J F.* If you can buy good soot at 6*d.* to 8*d.* a bushel, you can find no cheaper dressing than 40 bushels of that per acre. If you cannot get that, apply ½ cwt. of nitrate of soda and 1 cwt. of Peruvian guano per acre broadcast—in showery weather if possible.

PATENT LAWN MOWING AND ROLLING MACHINES.

SAMUELSON'S LAWN MOWING MACHINES,

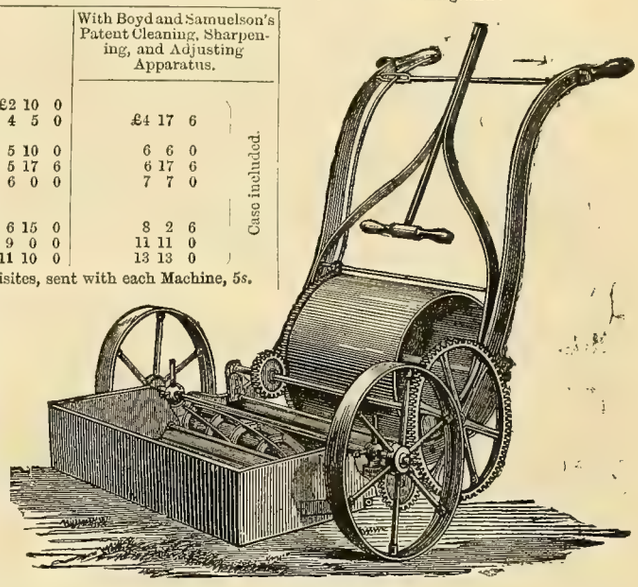
WITH BOYD'S PATENT IMPROVEMENTS.

"Doing the work of five or six men."—The Times, Sept. 20, 1858.

The following PRICES include the Carriage to any Railway Station in England:—

		With Boyd and Samuelson's Patent Cleaning, Sharpening, and Adjusting Apparatus.	
9 inches wide, for very narrow borders, without registered wheels	£2 10 0		
12 inches wide	4 5 0	£4 17 6	Case included.
16 inches wide, with registered arrangement (for one man)	5 10 0	6 6 0	
19 inches wide, ditto (for one man) ..	5 17 6	6 17 6	
22 inches wide, ditto (for man and boy)	6 0 0	7 7 0	
22 inches wide, ditto for ditto, and also fitted with draught links for a pony and a man to work it	6 15 0	8 2 6	
25 inches wide, ditto	9 0 0	11 11 0	
30 inches wide, ditto (for man and pony)	11 10 0	13 13 0	

Box of Tools, Oil Can, and other requisites, sent with each Machine, 5*s.*



Some thousands of these Machines are now in successful operation on the Lawns of Royalty, the Nobility, and Gentry of the United Kingdom and the Continent of Europe, and are pronounced SUPERIOR to *any other* for lightness of draught, efficiency, and durability. The demand for them is *yearly increasing—the number supplied by* Mr. SAMUELSON *during the years* 1856, 1857, *and* 1858 *being more than* 2100. Testimonials are continually being received from gentlemen having them in daily use, who speak in the highest terms of their efficiency.

These are the only Machines that will cut wet as well as dry Grass without clogging the knives.

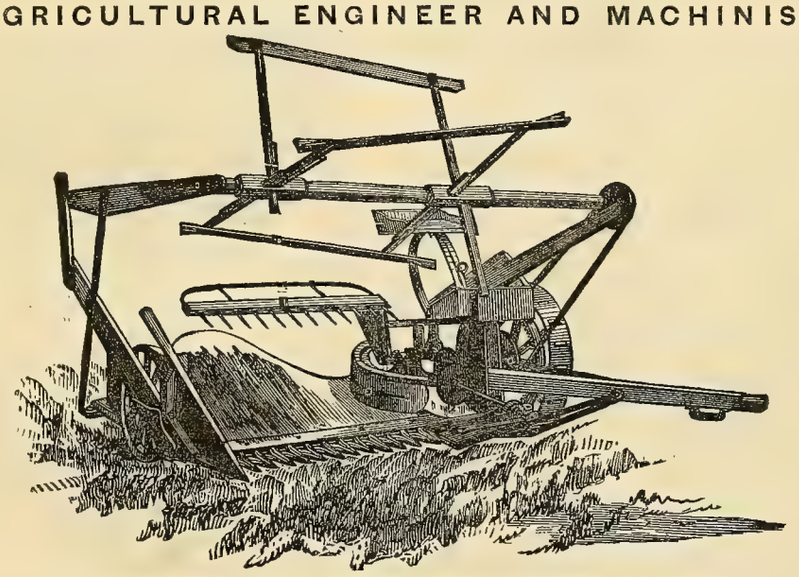
Orders for 1859 should be sent at once to insure certain delivery and to prevent disappointment.

Copies of Testimonials will be forwarded post free on application to

B. SAMUELSON, 76, Cannon Street West, City, London;
to the Manufactory, Britannia Works, Banbury, Oxon;
or to MESSRS. DEANE AND CO. London Bridge; or any respectable Ironmonger or Seedsman in the Kingdom.

B. SAMUELSON,

AGRICULTURAL ENGINEER AND MACHINIST,



WAREHOUSE, 76, CANNON STREET WEST, LONDON,

WORKS AT BANBURY,

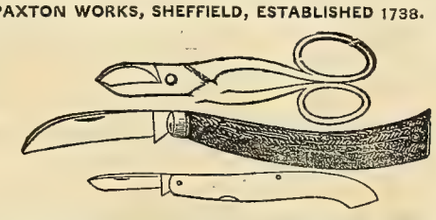
INFORMS MERCHANTS, the TRADE, and AGRICULTURISTS, that he has opened the above Warehouses as a depôt for his own manufactures and those of Messrs. Barrett, Clayton, Howard, Hornsby, Nicholson, Richmond, Tuxford, Smith, and all other first-class makers, whose implements he is prepared to offer on makers' terms.

THE BRITANNIA SELF-RAKING REAPING MACHINE,

With side delivery in sheaf, no rakers or gatherers required; and all the most improved Spring Implements for the season, may be inspected at the above depôt.

B. SAMUELSON, 76, Cannon Street West, London; and Britannia Works, Banbury.

PAXTON WORKS, SHEFFIELD, ESTABLISHED 1738.



SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.—Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

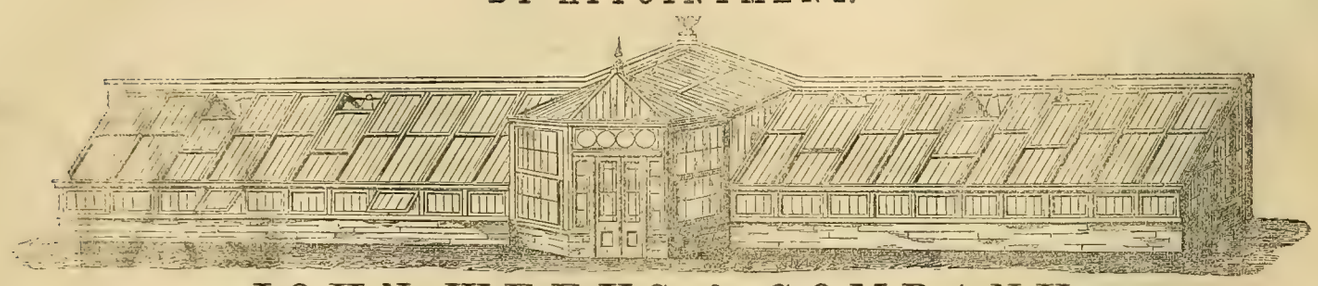
MARQUEES, TENTS, AND RICK CLOTHS FOR SALE, OR HIRE.—H. PIGGOTT, 115, Fore Street, E.C.

WHY NOT PRESERVE YOUR HAY?
RICK CLOTHS, New and Second-hand,
At BENJAMIN EDGINGTON'S,
2, Duke Street, London Bridge, S.E., and West End,
32, Charing Cross, S.W.
MARQUEES, TENTS, &c.
Illustrated Catalogues free.

BENJAMIN EDGINGTON, 2, Duke Street, London Bridge, S.E.
MONSTER TENTS for large parties.
PRETTY TENTS for Lawns.
RICK CLOTHS, Second-hand, very cheap.
NETTING for Fruit Trees, &c.
West End Establishment, 32, Charing Cross, S.W.

HORTICULTURAL BUILDING & HEATING BY HOT WATER.

BY APPOINTMENT.



JOHN WEEKS & COMPANY,

KING'S ROAD, CHELSEA, LONDON.

HORTICULTURAL BUILDERS AND HOT-WATER APPARATUS MANUFACTURERS, ENGINEERS, AND IRON FOUNDERS.

PLANS, ESTIMATES, & ILLUSTRATED CATALOGUES FREE ON APPLICATION.

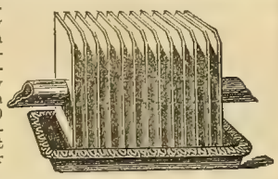
GREENHOUSES, ORCHARD HOUSES, AND PITS

Of every Description, made by Steam Machinery, and Heated by Hot Water on an Improved Plan at

J. LEWIS'S Horticultural Works, Stamford Hill, Middlesex, established 20 years. These Buildings are warranted of the best materials, and at prices which defy competition. The ventilation is most efficient, and the greatest improvement of the present day. Prices of any size on application. References in all parts of the United Kingdom.

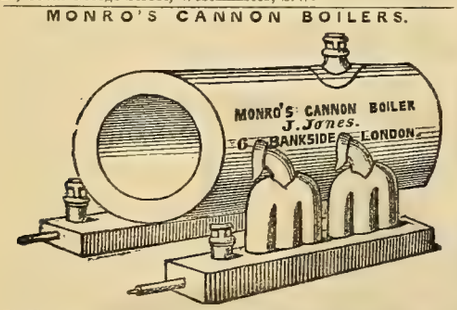
IMPROVED HOT-WATER PIPE.

THE HORTICULTURIST will find herein an inexpensive instrument of new and very important powers. An atmosphere may be produced at will either perfectly dry, partially damp, or saturated with moisture. A space of 10 inches by 12 inches contains the power of 25 feet of 4-inch pipe and other numerous advantages.



The London Warming and Ventilating Company (Limited), 26, Great George Street, Westminster, S.W.

MONRO'S CANNON BOILERS.



MUCH has of late been said about BOILERS for Heating by Hot Water, but these Boilers have now proved themselves to be the best at present invented. They are adapted for heating every description of building, and are made of various sizes. The Price of the

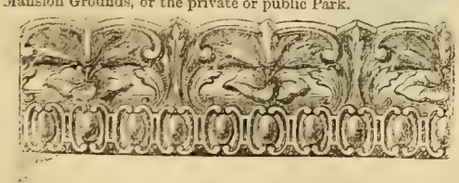
24-inch Cast Iron is	..	..	.. £5 10*s.* 0*d.*	each
24-inch Wrought ditto	..	..	.. 6 10 0	,,
36-inch Cast ditto	..	..	.. 8 0 0	,,
36-inch Wrought ditto	..	..	.. 8 10 0	,,

References to Gentlemen and Nurserymen where these Boilers are now at work. The Cannon Boilers are now kept in stock, and are to be had only of J. Jones, 6, Bankside. Also, every description of Saddle and Cylinder Boilers. Hot Water Pipes and Connections at prices lower than those of any other house in London. Estimates for Hot-water Apparatus erected complete in any part of the country, and an Illustrated Catalogue on application to J. Jones, 6, Bankside, Southwark, London.

---

200 ONE, TWO, and THREE-LIGHT MELON BOXES and LIGHTS, of the best seasoned materials, ready for immediate use.—Jas. Watts, Hothouse Builder and Hot-water Apparatus Manufacturer, Old Kent Road, London.

VASES, PEDESTALS, SUNDIALS, FOUNTAINS, FLOWER BOXES, JARDINETS, FERN CASES, BALUSTRADES, EDGINGS AND CURBS FOR FLOWER BORDERS, SEATS, &c., in Imperishable Siliceous Stone, at reduced prices, for the adornment of the Villa Garden, the Mansion Grounds, or the private or public Park.

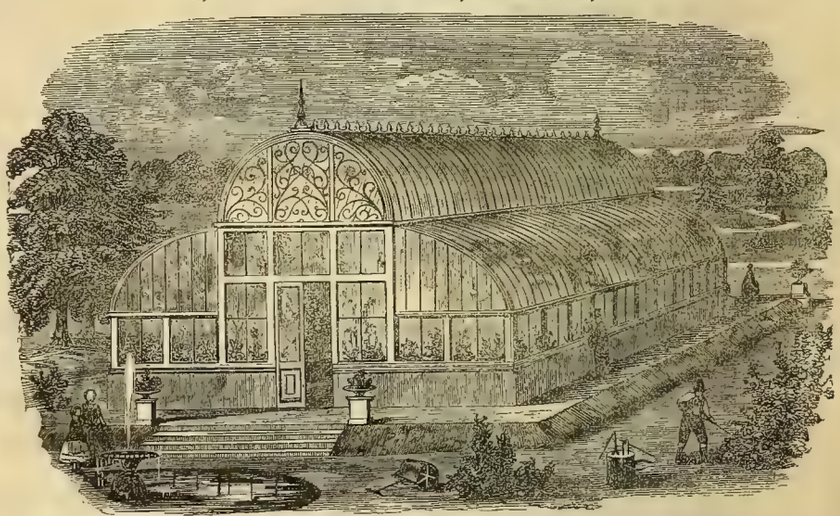


Border Edging, No. 3.

For Priced Illustrations apply to Frederick Ransome, at the Show Rooms, Cannon Row, Westminster, S.W., or Patent Stone Works, Ipswich.

COTTAM & COMPY., Engineers, Founders, &c.,

2, WINSLEY STREET, LONDON, W.



A SHOW ROOM DEVOTED ENTIRELY TO ARTICLES OF HORTICULTURE.

THE NEW ILLUSTRATED CATALOGUE UPON APPLICATION.

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	,, Syringes	Garden Bordering
Hot-water Apparatus	Ornamental Wire Work	Hurdles	,, Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

Iron Hurdles, Strained Wire Fencing, Game Netting, &c.

Every description of Plain, Ornamental, Cast and Wrought Iron, and Wire Work.

EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

N.B. COTTAM and Coy. beg to make it known that there is no longer an entrance to their establishment from Oxford Stree but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to the works, opposite the Pantheon.

ADDRESS: THE MANAGERS, ST. PANCRAS IRONWORKS.

The St. Pancras Iron Works are opposite the OLD St. PANCRAS CHURCH,

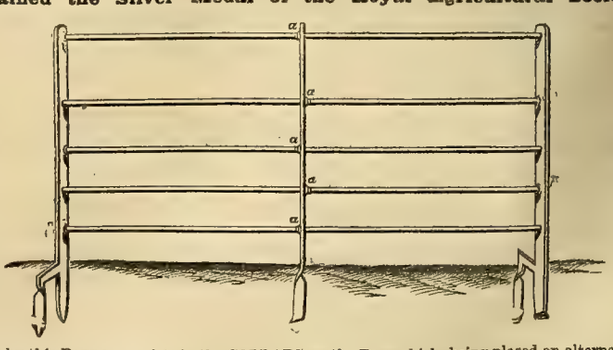
OLD St. PANCRAS ROAD, LONDON.

IRON COLLAR BAR HURDLES.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

Obtained the Silver Medal of the Royal Agricultural Society.

ST. PANCRAS IRON WORKS,



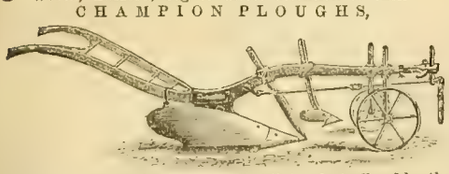
OLD ST. PANCRAS ROAD, LONDON

The improvement by this Patent consists in the COLLARS on the Bars which, being placed on alternate sides of the cent upright bar, keep it in its position, confine the bars to short bearings, prevent their being strained, and give more th double strength and rigidity to the HURDLE.

PROFESSOR VARNELL'S MANGERS AND STABLE FITTINGS.

HOWARDS' PRIZE IMPLEMENTS, 1859.

JAMES AND FREDK. HOWARD, Britannia Iron Works, Bedford, beg to direct attention to their CHAMPION PLOUGHS,



For which they received All the First Prizes last offered by the Royal Agricultural Society of England, viz.:—

The First Prize for the best Plough for general purposes.
The First Prize for the best Plough for light land.
The First Prize for the best Plough for heavy land.
The only Prize ever offered by the Society for the best Double Breast or Ridging Plough was also awarded to J. & F. HOWARD.

J. & F. HOWARD have discontinued troubling the Public with a long List of Prizes awarded to their Implements, but they would just state that for PLOUGHS, HARROWS, and HORSE RAKES, they have for several years gained every Prize for which they have competed.

PLOUGHS.

D PLOUGH, for a Pony	£2 5 0
DD ditto for one Horse	3 5 0
P ditto for two Horses	4 7 6
PP ditto for general purposes	4 12 6
SKIM COULTER for P or PP Plough	0 5 6

HARROWS.

A Set of Three 4-Beam HARROWS, with Whippletree, recommended as general Seed Harrows, 9¼ feet wide, marked No. 12	3 14 0
A Set of Three 4-Beam HARROWS, with Whippletree, adapted for 3 Horses, 10 ft. wide, marked No. 11	4 4 0
If with Patent Joints, 6s. per set extra.	

HORSE RAKES.

Small size, 7½ feet wide, marked A, with 24 iron teeth	7 10 0
Ditto, with Steel Teeth	8 0 0
Large size, 8½ feet wide, marked B, with 28 iron teeth	8 0 0
Ditto, with steel teeth	8 10 0
Extra large size, 8½ feet wide, marked C, with 24 steel teeth	10 10 0
A Set of 15 Prongs, to be attached to the above when used as Weed Extirpators	1 10 0

Free Delivery to Birmingham, Bristol, Colchester, Derby, Gloucester, Hull, Lincoln, Liverpool, London, Manchester, Norwich, Nottingham, Retford, Shrewsbury, Wisbeach, Worcester, and York; or to Dublin, Edinburgh, Glasgow, and other parts at fixed rates.

HOWARDS' NEW CATALOGUE, containing prices and description of their Patent Ploughs, Harrows, Horse Rakes, and other Implements, including Smith's Steam Cultivators, for which they received at Chester the Gold Medal of the Royal Agricultural Society of England, sent free on application to J. & F. HOWARD, Britannia Iron Works, Bedford.

GLAZIERS' DIAMONDS for CUTTING HORTICULTURAL and other GLASS, to be had of the Wholesale Manufacturer, JOHN EDWARDS, 20, Sharp's Alley, West Smithfield, London, E.C. Prices from 10s. to 27s. 6d.

STRONG-BUILT GREENHOUSES sent to any part of the kingdom, glass included, 12 ft. long by 8 wide, 10l.; 21 ft. by 12, 20l.; 44 ft. by 15, 60l.; 52 ft. by 16, 70; 60 ft. by 17, 90l. Plans and particulars sent by addressing a letter to Mr. A. SMITH, Greenhouse Builder, 233, Pentonville Road, London. SMITH'S Patent Hot-water Apparatus, from 6l., warranted.

IMPERIAL WIRE WORKS AND WINDOW BLIND MANUFACTORY (late Copelands), 370, Oxford Street, London, opposite Wells Street, W.

A variety of FLOWER STANDS AND SUSPENDING FLOWER BASKETS, of new and elegant designs for the present season, made under the personal superintendence of MR. RICHARDS, 370, Oxford Street, and at the CRYSTAL PALACE.

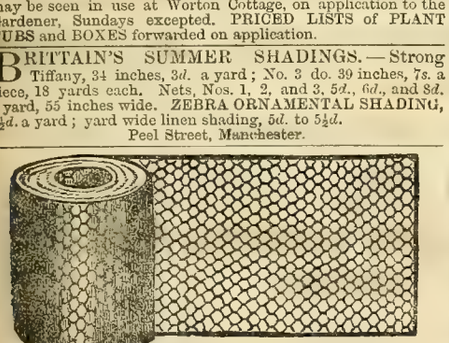
Garden Arches, Roseries, Temples, Trainers, Garden Seats, Folding Chairs, Fencing, Bordering, and every description of Wire Work imaginable. Bird Cages, &c. Conservatories and Aviaries fitted up in the best style and taste. Sun Shades and Window Blinds, &c.

FLOWER POTS, of superior Red Clay, manufactured by the Arley Pottery Company (Limited), equal in appearance to Terra Cotta at the price of the common pots usually sold, say 1s. 6d. per cast, at Kidderminster.—Apply to TAYLOR & PEARS, 8, George Yard, Lombard Street, City, E.C.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

EDWARD BECK MANUFACTURES in SLATE a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener, Sundays excepted. PRICED LISTS of PLANT TUBS and BOXES forwarded on application.

BRITTAIN'S SUMMER SHADINGS.—Strong Tiffany, 34 inches, 3d. a yard; No. 3 do. 39 inches, 7s. a piece, 18 yards each. Nets, Nos. 1, 2, and 3, 5d., 6d., and 8d. a yard, 55 inches wide. ZEBRA ORNAMENTAL SHADING, 9½d. a yard; yard wide linen shading, 5d. to 5½d.
Peel Street, Manchester.



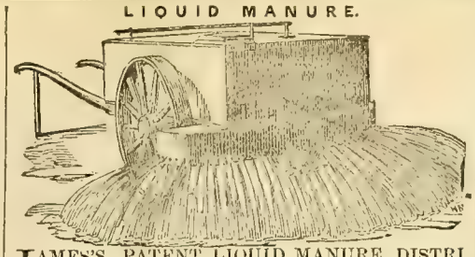
BARNARD, BISHOP, AND BARNARD, Market Place, Norwich, in consequence of improvements in their machinery for the manufacture of the above article, have been enabled to make a great reduction in the prices.

		Galvanised.	Japanned Iron.
2-inch mesh,	24 inches wide	5d. per yd.	4d. per yd.
2-inch ,,	strong do.	6 ,,	4½ ,,
2-inch ,,	intermediate, do.	7 ,,	5½ ,,
2-inch ,,	extra strong, do.	9½ ,,	7½ ,,
1⅝-inch ,,	24 inches wide	5½ ,,	4½ ,,
1⅝-inch ,,	strong, do.	6½ ,,	5½ ,,
1⅝-inch ,,	intermediate, do.	7½ ,,	6 ,,
1⅝-inch ,,	extra strong, do.	10 ,,	8 ,,

All the above kinds can be made of any width (under 8 feet at proportionate prices. If the upper half is of a coarser mesh than the lower, it will reduce the prices about one-fifth.

Strong Galvanised Poultry Netting, 8½d. per yard, 3 feet wide Galvanised Sparrow-proof Netting for Pheasantries, 2½d. per square foot. Delivered free of expense in London, Peterborough, Hull, or Newcastle. Manufacturers of Improved Strained Wire Cattle and Deer Fencing, Iron Hurdles, &c.
Illustrated Catalogues and Patterns forwarded by post.

LIQUID MANURE.



JAMES'S PATENT LIQUID MANURE DISTRIBUTOR OR WATER-CART, warranted not to choke up or otherwise get out of order. It is thoroughly adapted for Drill Crops, or Pasture Land, or for Watering Streets; has been awarded SIX FIRST PRIZES.

Full Particulars and Testimonials may be obtained of the Patentee, ISAAC JAMES, Tivoli Waggon Works, Cheltenham.
Improved LIQUID MANURE PUMPS supplied.

WARNER'S IMPROVED LIQUID MANURE OR GENERAL PORTABLE PUMP.



These Pumps are fitted with J. W. & Son's Patent Buckets and Suckers, and cannot clog in action. The barrel is of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure. The legs will fold together, and the whole may be carried on the shoulder to any pond or tank required.

Price of 4½ in. Pump, with legs, 3l. 3s. If with planished copper barrel and galvanised iron handle, &c., 14s. extra. The barrel is 27½ in. long, and the legs are 5 ft. high.

These Pumps are also made without the legs, with strong wrought-iron straps for screwing on to any ordinary water butt or cart, and fitted with 1½ inch brass union for attaching flexible suction. Price 50s.

1¾ inch Gutta Percha Suction Pipe, 1s. 11d. per foot.

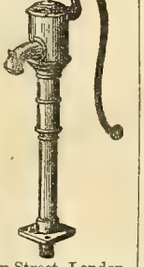
Rubber and Canvas Suction and Delivery Hose, from ½ inch to 4 inches diameter, in lengths of 60 feet to order. Branch Pipes with Cocks, Union Screws, &c., at reduced prices.

May be obtained of any Ironmonger or Plumber in town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin St., London.

WARNER'S PATENT VIBRATING STANDARD PUMPS.

PATENT CAST-IRON PUMPS, fitted with J. W. & Son's Patent Buckets and Suckers, which cannot clog in action, for Farms, Cottages, and Wells, not exceeding 28 feet.

Diameter of Barrel.	Height.		£ s. d.
2½ in. short	1 ft. 7 in.	Fitted for lead, gutta percha, or cast iron flanged pipe, as required.	1 10 0
2½ ,, long	3 ,, 3 ,,		1 14 0
3 ,, ditto	3 ,, 6 ,,		2 8 0
3½ ,, ditto	3 ,, 6 ,,		2 12 0
4 ,, ditto	3 ,, 6 ,,		3 3 0
2½ ,, short, with 15 feet of Lead Pipe attached, ready for fixing			2 14 0
2½ in. long ditto ditto			2 18 0



The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.

May be obtained of any Ironmonger or Plumber in Town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

HANDSOME BRASS AND IRON BEDSTEADS—HEAL & SON'S Show Rooms contain a large assortment of Brass Bedsteads, suitable both for Home use and for Tropical Climates; handsome Iron Bedsteads with Brass Mountings and elegantly Japanned; Plain Iron Bedsteads for Servants; every description of Wood Bedstead that is manufactured, in Mahogany, Birch, Walnut-tree Woods, Polished Deal and Japanned, all fitted with Bedding and Furniture complete, as well as every description of Bedroom Furniture.

HEAL AND SON'S ILLUSTRATED CATALOGUE, containing Designs and Prices of 100 Bedsteads, as well as of 150 different articles of Bedroom Furniture, sent free by post.—HEAL & SON, Bedstead, Bedding, and Bedroom Furniture Manufacturers, 196, Tottenham Court Road, W.

BEDSTEADS, BATHS, AND LAMPS.—WILLIAM S. BURTON has SIX LARGE SHOW ROOMS devoted exclusively to the SEPARATE DISPLAY of Lamps, Baths, and Metallic Bedsteads. The stock of each is at once the largest, newest, and most varied ever submitted to the public, and marked at prices proportionate with those that have tended to make his establishment the most distinguished in this country.

Bedsteads, from	12s. 6d. to £20 0s. each.
Shower Baths, from	8 0 ,, 6 0 ,,
Lamps (Moderateur), from	6 0 ,, 7 7 ,,
(All other kinds at the same rate.)	
Pure Colza Oil	4s. 3d. per gallon.

WILLIAM S. BURTON'S GENERAL FURNISHING IRONMONGERY CATALOGUE may be had gratis, and free by post. It contains upwards of 400 Illustrations of his illimited Stock of Electro and Sheffield Plate, Nickel Silver and Britannia Metal goods, Dish Covers and Hot-water Dishes, Stoves, Fenders, Marble Chimney pieces, Kitchen Ranges, Lamps, Gaseliers, Tea Urns and Kettles, Tea Trays, Clocks, Table Cutlery, Baths and Toilet Ware, Turnery, Iron and Brass Bedsteads, Bedding, Bed Hangings, &c., with Lists of Prices and Plans of the 16 large Show Rooms at 39, Oxford Street; 1, 1A, 2, and 3, Newman Street; and 4, 5, and 6, Perry's Place, London.—Established 1820.

NURSERY GROUND.

TO BE LET, WHITTINGTON NURSERY, Upper Holloway, to be entered upon immediately.—For particulars apply to J. F. MARSON, Esq., Small Pox Hospital; or to Mr. BUNNEY, Nurseryman, Stratford, Essex.

TO BE LET, BRISTOL NURSERY GROUNDS, Kemp Town, Brighton. These Gardens are now to Let for occupation with immediate possession.—Any person desirous of treating for the same may obtain particulars and permission to view the grounds on application to Mr. R. W. LUCAS, 20, Great Marlborough Street, London, W.; and of Mr. A. CHANDLER, Horticultural Valuer, 28, Priory Road, Wandsworth Road, S.

TO GARDENERS, FLORISTS, AND OTHERS.

TO BE SOLD, A FIFTY-FIVE YEARS' LEASE, with the option of purchasing the Freehold of a WALLED-IN GARDEN, in a highly respectable neighbourhood within three miles of Covent Garden, a newly-erected GREENHOUSE, 100 feet long, with PROPAGATING-HOUSE, PITS, &c., and GARDENERS' ROOM, STABLE, &c.; from 4000 to 5000 Greenhouse Plants and Crops in the Garden, lowest price 500l., part of which may remain on mortgage if required. Ground rent low.—For further particulars apply by letter only to D. W. J., *Gardeners' Chronicle* Office.

Sales by Auction.

BEDDING PLANTS, ORANGE TREES, CAMELLIAS, ETC.

MR. HASLAM will Sell as above at 1 o'Clock each day during the month of May, at the following places, viz.—May 7 and 17, Nag's Head, Walthamstow; May 10 and 21, White Hart, Woodford; May 14 and 24, Crown, Loughton; May 12, 19, and 26, at Auction Mart, London.

HAMPTON, MIDDLESEX.

MR. J. WILLMER begs to announce that he has received instructions from Mr. Holmes to submit to public Auction on the Premises, Hampton, Middlesex, a portion of his costly collection of TULIPS, on SATURDAY, May 14. May be viewed two days prior to the Sale, and Catalogues had on the Premises and of Mr. J. WILLMER, Auctioneer, Surveyor, and Valuer, Springfield Nursery, Sunbury.

TO TULIP GROWERS.

MR. J. WILLMER begs to announce that he has received instructions from GEO. F. DELAFORCE, Esq., to submit his costly Collection of TULIPS to Public Auction, without the least reserve, on the premises, 362, Albany Road, Camberwell, on WEDNESDAY, May 18, at 12 o'clock.—Catalogues are now ready, and may be had on the premises; and of Mr. J. WILLMER, Auctioneer, Surveyor, and Valuer, Springfield Nursery, Sunbury, S.W.

LEA BRIDGE, ESSEX.

MR. J. WILLMER has received instructions to Sell by Auction without reserve, on MONDAY, May 23, at Hendries' Gardens, Lea Bridge, the remaining portion of the late Mr. George Dunn's COLLECTION OF TULIPS, Tulip Stage Irons, Rollers, &c.—Catalogues may be had of Mr. DUNN, 1, Jewin Court, Jewin Street; or of Mr. WILLMER, Auctioneer, Surveyor, and Valuer, Springfield Nursery, Sunbury, S.W.

TO ENTOMOLOGISTS.

MR. J. C. STEVENS will Sell by Auction at his Great Room, 38, King Street, Covent Garden, on FRIDAY, May 13, at half-past 12 o'Clock precisely, the Extensive Collection of BRITISH INSECTS, formed by the late J. C. Heysham, Esq., of Carlisle, and the four very excellent Mahogany Cabinets in which it is contained. The Collection comprises all the orders, including many great varieties.—May be viewed on the day prior and morning of Sale, and Catalogues had.

BIRDS' EGGS.

MR. J. C. STEVENS will Sell by Auction at his Great Room, 38, King Street, Covent Garden, on MONDAY, May 16, at half-past 12 o'Clock precisely, the valuable collection of BRITISH BIRDS' EGGS, formed by the late J. C. Heysham, Esq., of Carlisle, all well authenticated, and the greater part taken by himself.—May be viewed on Saturday, and morning of Sale, and Catalogues had.

IMPORTANT AND EXTENSIVE SALE AT THE
BRISTOL NURSERY, KEMP TOWN, BRIGHTON.

MESSRS. PROTHEROE AND MORRIS have received instructions to Sell by Auction, on the Premises, Bristol Nursery, Kemp Town, Brighton, Sussex (formerly in the occupation of the late Mr. Edward Mitchell), on MONDAY, May 9, and following day, at 11 o'Clock each day, the whole of the valuable collection of GREENHOUSE, STOVE, and other plants, including about 1000 choice Double Camellias, ranging all sizes and in the finest state of cultivation; fine specimen plants of Chinese Azaleas, Ericas, Epacris, a quantity of Orange Trees; 2000 Show and Fancy Pelargoniums; 5000 Scarlet and Variegated Geraniums; Double Purple and White Primulas, Cyclamens, Dahlias, Cinerarias, Crassulas, Gloxinias, Chrysanthemums, Begonias, New Fuchsias, &c.; also a large assortment of Bedding Plants, Herbaceous Plants in pots, a bed of first-rate Tulips all named; Ivies, Jasmines, Honeysuckles, Vines, Carnations, Picotees, Pinks, Cloves, &c.—May be viewed three days prior to the sale. Catalogues may be obtained 6d. each, returnable to purchasers on the premises; of Mr. A. Chandler, Horticultural Valuer, 28, Priory Road, Wandsworth Road, S.; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

N.B.—The Premises to be LET. Inquire of Mr. A. CHANDLER, as above; or Mr. HAWARD, 82, Oakley Street, Chelsea.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will Sell by Auction, at the Mart, on FRIDAY, May 13, at 12 o'Clock, a first class collection of CARNATIONS and PICOTEES, handsome AZALEA INDICA, ERICAS, EPACRIS, and other Plants in bloom; Fuchsias, Verbenas, Dahlias, &c., with a large assortment of Ornamental Plants for Bedding. On view the morning of sale.—Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

CAMBERWELL.—8000 BEDDING PLANTS.

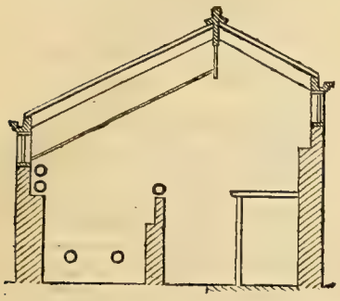
MESSRS. PROTHEROE AND MORRIS are directed by Mr. Isaac Steward to Sell by Auction, on the Premises, Beehive Nursery, Picton Street, George Street, Camberwell, on MONDAY, May 16, at 12 o'Clock, about 8000 BEDDING and other GREENHOUSE PLANTS, several Store Pots, Lilium lancifolium of sorts, an American Aloe, &c.—May be viewed prior to the Sale. Catalogues had on the premises, of the principal Seedsmen, and of the Auctioneers, American Nursery, Leytonstone, Essex.

10,000 BEDDING AND OTHER GREENHOUSE PLANTS.

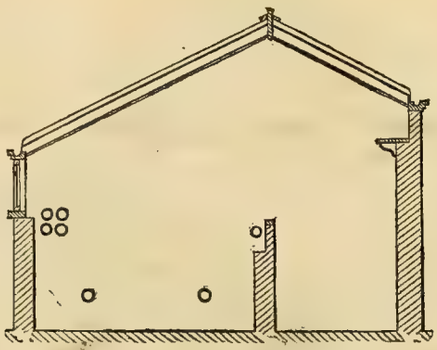
MESSRS. PROTHEROE AND MORRIS will submit to public competition by Auction, on the Premises, Mile End Nursery, Bow Road, Middlesex, near the Railway Station, on WEDNESDAY, May 18, at 12 o'Clock, about 10,000 BEDDING and other GREENHOUSE PLANTS, including the usual varieties; also Hybrid, Perpetual, China, and other Roses in pots, Dahlias, Tropæolum, Cobæa, Eccremocarpus, Maurandya, Lophospermum, &c—May be viewed three days prior to the Sale. Catalogues may be had on the premises, of the principal Seedsmen in London, and of the Auctioneers, American Nursery, Leytonstone, Essex.

TULIPS.

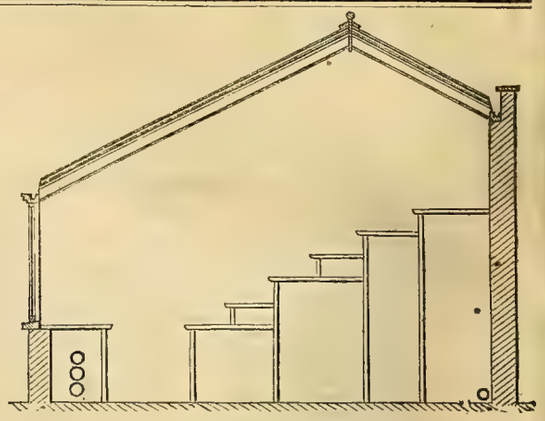
MESSRS PROTHEROE AND MORRIS have received instructions to submit to public competition, by Auction, without reserve, on SATURDAY, May 21, at 2 o'Clock, on the Premises, Rose Lodge, Mitcham, Surrey, a portion of the collection of TULIPS of Mr. Henry Goldham. Many new varieties (Seedlings) will be offered at this Sale, which have not hitherto been parted with, besides all those kinds which have previously been sent out from this collection.—May be viewed three days prior to the Sale. Catalogues may be had on the premises, of the principal Seedsmen in London, and of the Auctioneers, American Nursery, Leytonstone, Essex.



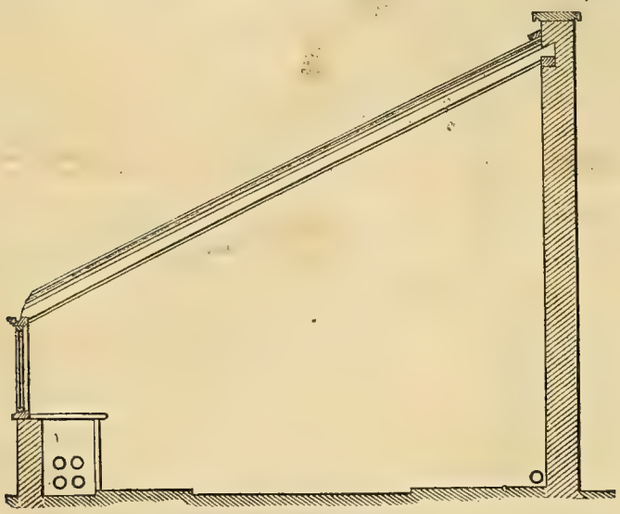
No. 1.—Cucumber and Melon Pit, 10 ft. wide.



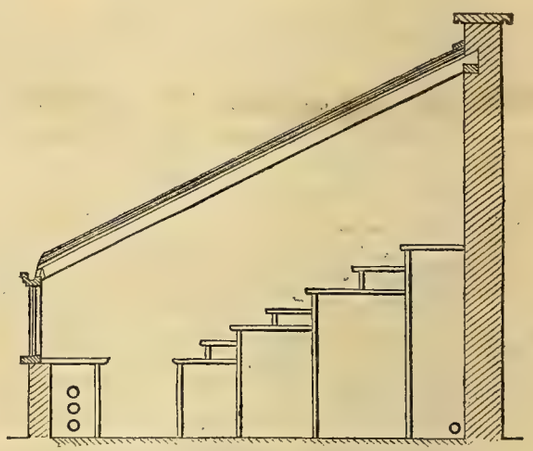
No. 2.—Pine Pit, 14 ft. wide.



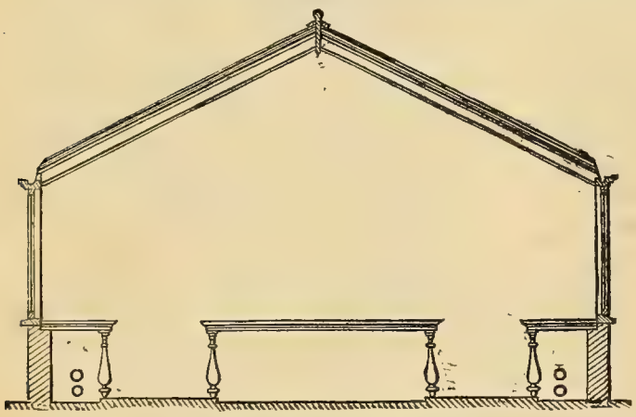
No. 3.—Greenhouse, from 14 to 18 feet wide.



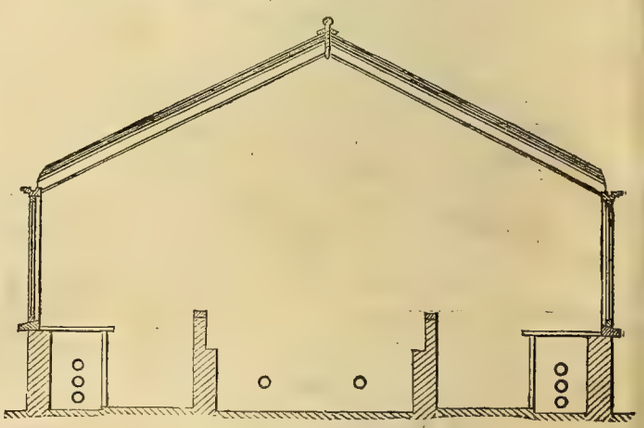
No. 4.—Vinery, from 15 to 18 ft. wide.



No. 9.—Greenhouse, from 12 to 20 ft. wide.



No. 6.—Greenhouse, from 18 to 20 ft. wide.



No. 7.—Forcing House, from 18 to 20 ft. wide.

HORTICULTURAL BUILDINGS MANUFACTURED BY STEAM POWER MACHINERY

BEST MATERIALS AND LOWEST PRICES.

HENRY ORMSON,

HORTICULTURAL BUILDER & HOT-WATER APPARATUS MANUFACTURER.

STANLEY BRIDGE, KING'S ROAD, CHELSEA, LONDON,

Deeply grateful for the very liberal and kind patronage bestowed upon him, begs most respectfully to inform the Nobility, Gentry, Nurserymen, &c. that it being his determination to spare no pains to merit a continuance of their favours, and that he may be enabled to execute his extensive and increasing orders punctually, and at the lowest possible cost (agreeably with the best Materials and Workmanship), he has erected a most complete set of Steam Power Machines, peculiarly adapted for the purposes of his Trade.

PARTIES DESIRING INFORMATION as to prices, &c., will, by referring to any of the above sections, receive immediate attention.

PLANS, SPECIFICATIONS, and ESTIMATES for plain and inexpensive practical Structures, and for the most elaborate Architectural Erections, either in Wood or Iron, forwarded on application.

ORMSON'S PATENT JOINTLESS TUBULAR BOILERS

May be seen in successful operation at Mr. Veitch's, Royal Exotic Nursery, King's Road, Chelsea, and on view and for sale at

THE MANUFACTORY.

Printed by William Bradbury, of 13, Upper Woburn Place, and Frederick Mullett Evans, of No. 20, Queen's Road West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and published by them at the Office, No. 5, Upper Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—Saturday, May 7, 1859

THE GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 20.—1859.] SATURDAY, MAY 14. {Price Fivepence. Stamped Edition, 6d.

INDEX.

Agriculture, Belgian	432 a	Guano analyses	430 a
Agri. Soc. of England	433 a	Hornsey Mutual Instruction Society	427 a
— — Imp., Irish	433 b	Horse and his Master, rev.	433 b
Amateurs, cry from	425 c	Hort. Society's exhibition	424 b
Bean, Soy	425 b	— — — report of	425 a
Books not cited	427 a	— — library	428 a
— prices of	428 a	Italian Rye-grass	430 c
Calves, rearing	434 b	Labourers' cottages	431 a
Climate and fruit growing	424 a	Landlord and tenant	429 c
Cottages, labourers'	431 a	Leaves, Weedon	431 c
Crickets	428 a	Loss, Isabella Gray	426 a
Dunham Agri. Soc.	433 a	Monkeys and Sugar Canes	425 b
Farm, Tiana Park	433 c	Pasture land	432 a
Farm buildings	433 a	Peaches, twin	426 a
Fig, tomb-stone lifted by	425 c	Rats, water	428 c
Flower beds	425 b	Rose, Isabella Gray	426 a
Fruit prospects	424 c	Russian gardening	427 c
Garden expenses	426 a	Soy Bean	425 b
Gardening, literature of	427 a	Steam cultivation	430 b
— Russian	427 c	Temperature, low night	425 a
Garrya on Aucuba	425 b	Tenant and landlord	429 c
Grapes, spot in	428 c	Vine insects	425 c
Grass seeds and weeds	430 c	Weeds, seed	430 c

CRYSTAL PALACE.—FLOWER SHOWS for 1859 will be held as follows:—

WEDNESDAY, May 18 | WEDNESDAY, Sept. 7
WEDNESDAY, June 8 | THURSDAY, Sept. 8

And CHRYSANTHEMUM SHOW on WEDNESDAY, Nov. 9, and THURSDAY, Nov. 10.

Schedules of Prizes may now be had on application.

Gardeners' Tickets at 3s. 6d. each can be obtained on application to the Secretary. By Order,

Crystal Palace, May 14. GEO. GROVE, Secretary.

CRYSTAL PALACE.—FLOWER SHOW.—The FIRST GRAND FLORICULTURAL and HORTICULTURAL EXHIBITION of the present season will be held on WEDNESDAY next, May 18. Full Display of the whole of the Upper Series of Fountains; Display of the Interior Fountains in the Nave and Fine Art Courts during the afternoon; a Military Band and the Orchestral Band of the Company will perform at intervals; Performances on the Great Organ and Pianoforte Recital. Doors open at 12. Admission by Two Guinea Season Ticket; or by One Guinea Season Ticket and payment of 2s. 6d.; by Day Ticket, 7s. 6d.; or if taken before the day of the Show, on the written order of a Season Ticket Holder, 5s.; Children under 12, half-price.

NOTICE.

JOHN WATERER'S EXHIBITION of RHODODENDRONS will be displayed as usual throughout the month of JUNE at the Royal Botanic Gardens, Regent's Park, London.—The American Nursery, Bagshot, Surrey.

EXHIBITION OF PELARGONIUMS, CALCEOLARIAS, AND CINERARIAS.

JOHN DOBSON AND SONS' unrivalled collections of the above popular flowers) among which are many new varieties) is now in full Bloom, and will continue for the next six weeks, and may be seen every day (Sundays excepted).

Woodlands Nursery, Isleworth.

EXHIBITION OF TULIPS.

CHARLES TURNER begs to announce that his extensive COLLECTION OF TULIPS are now in fine bloom, and may be viewed till the end of the month.

CHARLES TURNER invites an inspection of the above on FRIDAY, May 20.

The Eleventh Anniversary Exhibition of the ROYAL NATIONAL TULIP SOCIETY will be held at the Nursery on this occasion.

There may also be seen large collections of Specimen Pelargoniums, Chinese Azaleas, Cinerarias, &c.

By the kind permission of Colonel Parker, the band of the First Life Guards will attend.

The Royal Nurseries, Slough.—May 14.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY LIMITED supply every requisite for the Farm and the Garden.

Registered Offices, Union Road, Plymouth.

MESSRS. B. ROEZL AND CO'S NEW CATALOGUE OF MEXICAN SEEDS AND PLANTS, to be had on application to Messrs. B. .. GRAUTOFF & Co., 4, Lime Street Square, London.

NEW HARDY WHITE SWEDE.—This Swede is hardier than any other kind, grows to a large size, is adapted for sowing upon poor land, is not affected by frost, and keeps good in the ground or in store till the end of May. New and genuine Seed of this excellent Swede, price 1s. per lb. (carriage free for orders of 30 lbs. and upwards) may be had of RAYNBIRD & HARVEY, Seedsmen, Basingstoke; and 89, Seed Market, Mark Lane, London, E.C.

CHOICE ROSES IN POTS.

BIRCHAM AND WARD having a large Stock of the Newest and Best ROSES in fine condition, are enabled to supply them at very reduced prices.

See CATALOGUE, which may be had on application.

Carriage paid to London and Peterborough.

Hedenham Rosary, Bungay, Suffolk.—May 14.

NEW ROSE HYBRID PERPETUAL EVÊQUE DE NÎMES.

BENJAMIN R. CANT has much pleasure in offering the above most beautiful Rose; it is quite a gem and ought to be in every good collection. Colour deep vivid crimson, of exquisite shape; the petals are disposed in the form of a rosette, which gives it a distinct and unique appearance; flower medium size, foliage and habit of growth excellent. Fine plants in pots are now ready at 3s. 6d. each, with the usual discount to the trade.

St. John's Street Nursery, Colchester.

NEW ROSES.

JOHN HARRISON, has to offer a great stock of all the NEW HYBRID PERPETUAL and other ROSES in pots, at from 2s. 6d. to 5s. each, Catalogues of which can be had free on application. J. H. also begs to state that his stock of TEA, CHINA, and other ROSES, of which he has an immense stock, are now in splendid condition for planting out, and solicits early orders. Prices from 6s. to 18s. per dozen, according to size and strength of plants.—Darlington Nursery, May 14.

SKIRVING'S SWEDE—SUTTON'S SELECTED STOCK.

SUTTON AND SONS have a choice stock of SKIRVING'S SWEDE SEED, growth of 1858, which they can strongly recommend. Price 9d. per lb., or cheaper by the bushel.—Royal Berks Seed Establishment, Reading.

PETURION GOURD.—This wonderful Vegetable attains the incredible weight of 130 to 135 lbs. in 36 days. It is perfectly edible, and makes an important addition to the kitchen garden. Seed may be had in packets at 7d. and 1s., post free, from E. P. DIXON, Seed Establishment, 57, Queen Street, Hull.

NEW ZEALAND RUNNER BEAN.—Price 2s. per quart.—JAS. CARTER & Co., Seedsmen, 238, High Holborn, London, W. C.

NEW ZEALAND RUNNING BEAN.—Packets of 12 Seeds, for 14 stamps.

BASS & BROWN, Seed Growers, &c., Sudbury, Suffolk.

SEEDS.

E. SHENTON is now selling off his surplus stock of PEAS, BEANS, &c., at reduced prices as the season is advancing.—Hendon Park Nurseries, N.W.

THE EARLIEST PEA.—DUNNETT'S FIRST EARLY is in every respect superior to "Daniel O'Rourke," being several days earlier, having finer pods, and richer in flavour, height 2½ feet. For an early dish of fine-flavoured Peas we can confidently recommend this; 2s. per quart.

CHAMPION CABBAGE, the earliest and best sort, if sown in succession, may be had fit for table throughout the year, 8d. per ounce, or 1s. post free.

BUTLER & MCCULLOCH, Covent Garden Market, London.

H. AND R. STIRZAKER have still to offer the finest DRUMHEAD CATTLE CABBAGE PLANTS at 2s.; EARLY, of sorts, 3s. 6d.; CURLED SAVOY, 4s.; CAULIFLOWER, strong, 25s. per 1000.—Lancaster Nurseries.

KEMP'S INCOMPARABLE EARLY CABBAGE.—This is quite a distinct variety, and superior to any other known kind, of delicious flavour, dwarf habit, extra early, attains a good size, will not run to seed, and every plant warranted to Cabbage. Seed may be had in sealed packets for 13 postage stamps, post free, at EDMUND P. DIXON'S, 57, Queen Street, Hull.

TO THE TRADE.

CHARLES SHARPE has still to offer, of his own growing, saved from the finest selected stocks—

LONG RED MANGEL	RED LINCOLNSH. GLOBE TURNIP SEED
YELLOW DO.	GREEN GLOBE DO.
YELLOW GLOBE DO.	YELLOW TANKARD DO.
ALTRINGHAM CARROT	

Prices given on application.—Wisbeach, Cambridgeshire.

SORGHUM, OR HOLCUS SACCHARATUS (CHINESE SUGAR CANE GRASS).

SUTTON AND SONS, importers of this SEED, can supply it on liberal terms, according to quantity required. Royal Berkshire Seed Establishment, Reading.

HOLCUS SACCHARATUS, OR CHINA SUGAR-CANE GRASS.—Seed of this lately introduced Fodder plant can be supplied by NUTTING & SONS in any quantity. Price on application.—Seed Warehouse, 60, Barbican, London.

HOLCUS SACCHARATUS, or North China Sugar-Cane.—Pamphlet, "A Visit and a Plant;" the only English authority on the Cultivation of the above. Post free 6d. Prices of Seed on application. Samples 6d. Four varieties of Holcus remitted free by post on receipt of 10s.

CHINESE YAMS, 4s. per dozen.

ASPARAGUS plants, 16s. per 1000.

JOHN W. CLARKE, Whittlesea, Cambridgeshire.

JOSEPH MAY & Co., SEEDSMEN, beg to offer the following:—

Fifty varieties of FLOWER SEEDS, 7s. 6d. Thirty ditto, 5s.

Fifteen ditto, 2s. 6d.

Twelve varieties useful and ornamental GOURDS, post free, 3s.

HOLCUS SACCHARATUS, with directions for culture, 1s. 6d. per lb.

DIOSCOREA OR CHINESE YAM, large roots, 1s. each.

NEW ZEALAND RUNNER BEANS, 6d. per dozen.

A LIST of GARDEN and FARM SEEDS sent post free on application.—1, Wellington Street, Strand, Waterloo Bridge.

TO THE TRADE.

T. AND G. SWAILES offer several thousands as under, at 10s. per 1000:—

CUPRESSUS SEMPERVIRENS	THUJA ORIENTALIS
,, TOURNEFORTI	,, PYRAMIDALIS

The above are 6 to 9 inches in 8-inch pots, about 150 in each pot.—Beverley, Yorkshire, May 14.

PALM FOR SALE, a fine specimen, 7 feet high. Has not been accustomed to very much heat.—Address X., 5, Brompton Place, S.W.

GOLDEN CHAIN GERANIUMS.—Per dozen, 6s. | Per 100, 2l. 5s. | Per 500, 10l.

The above are offered in good strong plants by ROBERT REA, Ipswich Nursery, Ipswich, Suffolk.

UNRIVALLED BEDDING GERANIUM "CHRISTINA" (KINGHORN).—Deep rosy pink, large trusses, an abundant bloomer, small foliage, of compact and robust habit; without exception the most perfect Bedder yet raised, having such an effective colour and a continuous bloomer. 2s. 6d. each; six plants for four.

F. R. KINGHORN, Sheen Nursery, Richmond, S. W.

ROSA BONHEUR, BLAZER, AND SCARLET GLOBE.—New and attractive bedding GERANIUMS:—Rosa Bonheur—colour carmine rose, truss large, habit dwarf, foliage horseshoe; quite new and unequalled by any of its class. Blazer—large truss, very brilliant colour, habit dwarf; a great improvement. Scarlet Globe—a most showy variety, quite new and distinct from any of its class. These are seedlings of 1858, and received Certificates from all the leading exhibitions.—EDWARD SHENTON, Hendon Park Nurseries, N.W.

HOLLYHOCKS.

A. PAUL AND SON have still a large Stock of HOLLYHOCKS, strong healthy plants that will bloom this autumn at the following rates:—

MIXED SEEDLINGS from fine named sorts, 25s. per 100.

BLOOMED SEEDLINGS, in separate colours, 30s. to 50s. per 100.

NAMED SORTS, border flowers, 9s. to 18s. per doz.

" show flowers, 24s. to 42s. per doz.

HOLLYHOCK SEED, 1s. to 5s. per packet.

Free by post.—Nurseries, Cheshunt, Herts.

SUPERB DOUBLE HOLLYHOCKS.—The present is yet a good time for planting out this noble flower for autumn blooming. W. CHATER can still supply plants fine and perfectly healthy at reasonable prices.

Apply to WILLIAM CHATER, Grove Nurseries, Saffron Walden.

NEW CHRYSANTHEMUMS AND DAHLIAS.

JOHN SALTER is now sending out his splendid Seedlings and other new CHRYSANTHEMUMS, as well as those of his unrivalled general collection, which is the largest in Europe; also several fine new DAHLIAS, English and Foreign.—Versailles Nursery, Hammersmith Turnpike, W.

"DAHLIAS FOR THE MILLION."

CLARKE AND COMPANY'S CATALOGUE of the above is now ready, and may be had gratis upon application.—CLARKE & COMPANY, Florists and Seedsmen, 36, High Street, Borough, London, S.E.

DAHLIAS, FUCHSIAS, VERBENAS, &c.

GEORGE SMITH, FLORIST, &c., Lorrimore Road, Walworth, begs to offer the following, in extra strong plants, true to name, his stock containing the new flowers of last year (per dozen):—

Dahlias .. .. 3s. 6d. to 8s.	Double Petunias .. .. 6s.
Verbenas .. .. .. 3s. to 6s.	Fine dry bulbs of Cyclamen persicum & Coum, per dozen roots .. 8s. to 12s.
Chrysanthemums .. 4s. to 6s.	
Fuchsias .. .. .. 4s. to 8s.	

AZALEA INDICA.

J. IVERY AND SON beg to inform their Friends and Patrons that their New DESCRIPTIVE CATALOGUE of the above-named is now published; it contains all newest and best varieties, and may be had post-free upon application, at either the Dorking or Reigate Nurseries.

LARGE CAMELLIAS AND AZALEAS.

J. AND R. THYNE, NURSERYMEN, Glasgow, have a dozen large CAMELLIA plants, 6 to 10 feet high, well furnished, mostly double white; also a fine lot of specimen AZALEAS, 3 to 5-feet high. Prices moderate.

FERN CATALOGUE.

ROBERT SIM'S NEW DESCRIPTIVE AND PRICED CATALOGUE, No. 6 (62 pages) of his COLLECTION of BRITISH AND EXOTIC FERNS, can be had, post free, for 8 stamps. Gratis to all previous purchasers of Ferns.

Nursery, Foot's Cray, Kent, S.E.

TO ORCHID GROWERS.—Duplicate plants of the following good ORCHIDS may be had of ROBERT WARNER, Broomfield, near Chelmsford, Essex, viz., Cattleya Sion House, Labiata splendens and atropurpurea, Ianthina superba, crispa, superba, marginata, elegans, &c.

THOMAS WILD has only a few packets of his PRIMULA SEED left, at 2s. 6d. per packet.

The Primulary, Ipswich.

100,000 BEDDING PLANTS, the cheapest place in England. Catalogue sent for one stamp.—J. PYLE, St. John's Nursery, Upper Holloway, London.

PANSIES.—The best and most distinct kinds, fine show varieties, 6s. per dozen.—DODWELL & BAYLEY, Bradshaw Gardens, Chadderton, Manchester.

BELGIAN DAISIES.—In the finest variety, 4s. per dozen.—DODWELL & BAYLEY, Bradshaw Gardens, Chadderton, Manchester.

CARNATIONS AND PICOTEES.—Twenty-five pairs strong, well rooted, and extra fine show varieties, named, 1l., packing and hamper included.—DODWELL & BAYLEY, Bradshaw Gardens, Chadderton, Manchester.

PINKS.—Twelve pairs fine named kinds in strong healthy plants, 5s.; 25 pairs, 10s., packing and hamper included.—DODWELL & BAYLEY, Bradshaw Gardens, Chadderton, Manchester.

DAHLIAS.—The finest selections, strong healthy plants, well established, 4s., 6s., 8s., and 12s. per dozen.—DODWELL & BAYLEY, Bradshaw Gardens, Chadderton, Manchester.

PHLOXES.—The best and most distinct kinds strong plants, well established, 8s. per dozen.—DODWELL & BAYLEY, Bradshaw Gardens, Chadderton, Manchester.

For particulars of New Phloxes see Advertisements April 23 and April 30.

CLIMBING PLANTS.

F. AND A. SMITH have now ready strong plants of COBÆA SCANDENS, MAURANDYAS, blue, white, and rose; LOPHOSPERMUM, ECCREMOCARPUS, and TROPÆOLUMS, in large quantities. Prices on application.

Dulwich, Surrey.

TROPÆOLUM CANARIENSE.

CHARLES ALEXANDER, SEEDSMAN, Edinburgh, offers New Seed of the above at 20s. per lb., and 1s. 6d. per ounce.

PAMPAS GRASS (GYNERIUM ARGENTEUM).—The beauty of this extraordinary plant has this season been fully appreciated. It can be supplied by the dozen, hundred, or thousand, by CHARLES NOBLE, Bagshot, Surrey.

JOHN CULVERWELL, Taunton, begs to call the attention of Agriculturists to his superior selection of GRASS SEEDS, which for PURITY, change of SOIL, and CLIMATE, will bear comparison with any house in the kingdom. Prices, terms, and samples forwarded on application.

PLANTS IN FLOWER.

F. AND A. SMITH have now in bloom Acacia, Cactus (fine), Cytisus; Erica ventricosa coccinea minor, v. superbiens, v. breviflora, E. intermedia, E. Cavendishi, E. hybrida, E. perspicua nana; Fuchsias, Calceolarias, Heliotrope, Hydrangea, Geraniums, Fairy Roses, &c.

The above are healthy, strong, and well-grown plants, prepared for sending away. Prices on application.

Dulwich, Surrey, S.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Stove, Greenhouse, and Hardy Ferns, Miscellaneous Stove, Greenhouse, and Hardy Plants, Variegated and Ornamental foliaged Plants, Conifers, Roses, Rhododendrons, Indian Azaleas, Gloxinias, Fuchsias, Cactuses, &c., is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

GERMAN AND OTHER FLOWER SEEDS, VEGETABLE, AGRICULTURAL SEEDS, ETC.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their new PRICED and DESCRIPTIVE CATALOGUE in which is enumerated every novelty of proved merit, also all the best of the older kinds, is now published, and will be forwarded post free on application. Their whole stock has been selected from the best English and Foreign sources, and every kind is warranted true to name, and of the finest possible quality.—Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London.

FINE EXHIBITION DAHLIAS, in strong plants, viz., Admiral Dundas, Amazon, Annie, Beauty of Slough, Baron Alderson, Captain Ingram, Colonel Windham, Cossack, Charles Perry, Carnation, Deutsche Würde, Duchess of Wellington, Duke of Wellington, Empress, Fanny Dodds, Fanny Keynes, General Foucher, Grand Sultan, Incomparable, Lady Folkestone, Lollipop, Lord Bath, Lord Palmerston, Lady Paxton, Miss Caroline, Miss Burdett Coutts, Mrs. Edwards, Mrs. Wheeler, Mr. Seldon, Nigger, Perfection, Princess, Pre-eminent, Ruby Queen, Rachel Rawlings, Robert Bruce, Royal Scarlet, Sir R. Whittington, Sir J. Franklin, Souter Johnny, Sir William Wallace, Sir F. Bathurst, Touchstone, Triomphe de Roubaix, Yellow Beauty, Hon. Mrs. Trotter. Selections from any of the above, 3s. per dozen.

Henry May, The Hope Nurseries, near Bedale, Yorkshire.

NEW ANTIRRHINUMS.

HENRY MAY has now ready for delivery his fine SEEDLING ANTIRRHINUMS, selected from an immense collection of very superior Seedlings, and he can recommend them as a most beautiful set and improvement on existing kinds, viz.:—

STANDARD BEARER (May's).—White throat, bright rose lip, with yellow centre, very fine and distinct.

LORD JOHN RUSSELL (May's).—Pure lilac self, buff lip, very fine form and habit.

LORD DERBY (May's).—Creamy white, with yellow lip, beautifully striped and veined with bright purple.

PURPLE KING (May's). — Deep rich purple self, fine spike extra.

SURPRISE (May's).—Bright rosy crimson gold lip, very fine, form good.

ORLANDO (May's). — White tube, bright crimson lip, an improvement on Firefly, very fine.

GALATEA IMPROVED (May's).—Pure white tube, bright crimson lip, fine habit and large spike good.

GITANA (May's). — Bright rosy purple, white lip, fine spike extra.

The above set of eight for 25s., or 3s. 6d. each separate. The usual discount to the Trade.

Henry May, The Hope Nurseries, near Bedale, Yorkshire.

PLANTS FOR THE FLOWER GARDEN, 100,000. —100 strong, well hardened plants, composed of the following:—Yellow, crimson, and orange Calceolarias, Scarlet Geraniums, Antirrhinums, Cupheas, Heliotropes, Pentstemons, Phloxes, Verbenas, Salvias, Senecio, Dahlias, &c., all properly named, basket and packing included, for 12s. 6d.

New Fuchsias, of last season, at 6s. per dozen; new Verbenas, of ditto, at 4s. per dozen.

Henry May, The Hope Nurseries, near Bedale, Yorkshire.

NEW FRENCH PHLOXES.

JOHN STANDISH can recommend the following as the best that were sent out last year, he having seen them in bloom, and selected those he thought the best. They are very beautiful dwarf, and continue flowering from June until October, or until the frost destroys them in the autumn, and are admirably adapted for bedding, being now classed as perpetual bloomers, many of them growing not more than 16 to 18 inches high:—

Empereur de toutes les Russies, shaded violet purple centre
Julie Roussel, white, with purple centre, superb
L'Enfant Prodigue, violet rose, shot with scarlet
Louis Guerard, large deep amaranth, magnificent
La Volupté, smooth rose, shot with scarlet
Madame Suer, white purple centre, very dwarf
Mademoiselle Orelly Duriez, white violet centre
Monsieur Forest, large lively amaranth, very effective
Souvenir d'un Ami, large rosy red, very fine
Surpasse Madame Rendatler, white purple centre, very dwarf.

The above 2s. 6d. each, or the lot 21s.; besides the above J. S. can supply the finest old sorts from 6s. to 12s. per dozen.

ROSES for bedding on their own roots, strong plants:—

Tea: Souvenir d'Elise, the most beautiful of all Tea Roses, 2s. each, or 18s. per dozen, or 7l. per 100
" Safrano, 1s. each, or 9s. per dozen
" Gloire de Dijon, 1s. each, or 9s. per dozen

Hybrid Perpetual Roses.

General Jacqueminot, 1s. each, or 9s. per dozen
Louis Chaix, 2s. 6d. each, or 24s. per dozen
Madame Vigneron, 2s. 6d. each, or 24s. per dozen
Pauline Lansezeur, 1s. 6d. each, or 12s. per dozen. (Of all the Hybrid Perpetual Roses this is the best adapted for bedding purposes, from its dwarf bushy habit and being always healthy and always in bloom)
Victor Trouillard, 1s. 6d. each, or 12s. per dozen
Noisette: Triomphe de Rennes, 2s. each, or 18s. per dozen.

NEW ROSES of 1858, on their own roots.

Hybrid Perpetual Roses, 2s. 6d. each, or 24s. per dozen:—

Duc de Cambridge	L'Evêque de Nimes
Lord Palmerston	Louise d'Autriche
Marie Portemer	Reine de Denmark
Thomas Rivers	Triomphe des Beaux Arts

NEW ROSES for 1859, grafted on the Manetti Stock, strong plants, 4s. each, or 2l. 12s. 6d. the lot.

Hybrid Perpetual Roses.

Ambroise Verschaffelt	Beauté de Royghem
Comte de Beauford	Celine Forestier
Docteur Bretonneau	François Ier
Empereur de Maroc	François Arago
Impératrice Eugenie	Oriflamme de St. Louis
Princesse Olympie	Stephanie Beauharnais
Virginal	Vicomtesse Laure de Giraud
Tea: Madame Damaisin	Bourbon: Octavie Fontaine

All the above plants are now ready to send out, and J. S. will have the above New Roses on their own roots ready to send out the first week in June.—Bagshot, May 14.

MESSRS. E. G. HENDERSON & SON

WILL OFFER THE FOLLOWING NEW PLANTS IN MAY, AND THE

NEW GENERAL CATALOGUE and SPRING LIST of ORNAMENTAL BEDDING and SUMMER FLOWERING PLANTS

WILL IN A FEW DAYS BE READY FOR DISTRIBUTION, WHEREIN WILL BE DESCRIBED

ALLAMANDA VIOLACEA.

This plant so long looked for, and much needed by all English competing competitors, we have much pleasure in introducing for the first time to the public, and no doubt it will be for years the great feature at the leading Exhibitions. The late Mr. Gardner, Director of the Royal Botanic Gardens in Ceylon, speaks of it in his papers, published in the second volume of the London Horticultural Society's Quarterly Journal, as one of the finest shrubs he met with, and "by far the most beautiful species in the genus, bearing numerous large flowers not unlike in colour those of Gloxinia speciosa."

As a competition plant in collections, A. violacea, in its violet-blue tint, offers a new and essential feature in colour, there being none other in the same style to associate with the golden-yellow of A. Schotti, and the delicate rosy-blush of Echites and Dipladenia. 63s. each.

AGAPETES BUXIFOLIA, a neat-habited plant with good evergreen foliage, and large bright red tubular flowers, resembling the Mitraria and Epacris intermediately.

NEW INDIAN AZALEAS, fine competing kinds raised by M. Spae, M. C. Van Loo, and M. De Witte.

The scarlet-flowered variety of TYDÆA GIGANTEA, and the double-flowered ACHIMENES LONGIFLORA.

The TYDÆA LADY DIGBY, and LADY CAROLINE KERRISON (syn. Achimenes), with large brilliant rosy-crimson flowers throughout winter, free flowering habits.

The HYBRID BEGONIAS raised by Mr. Stange, Gardener to Herrn Consul Schiller, of Hamburgh, including B. PICTURATA and others from B. SPLENDIDA ARGENTEA.

LIERVAL'S NEW PHLOX EVENING STAR.

BURRIDGE'S TWO NEW PHLOX DRUMMONDI, VICTORIA AND ALBERT.

CALCEOLARIA AMPLEXICAULE ALBA, Splendid bedder.

BOUVARDIA "BRILLIANT" AND "DELICATA," with large flower tubes, and profusion of bloom.

NEW BEDDING DAHLIAS, GLOIRE DE FRANCE, AND WHITE UNIQUE.—The best white variety out, and the former as the most noble formed and richly coloured flower of any other Dahlia for beddings, a dried plant showing the dwarf and profuse blooming habit may be seen at the Wellington Nursery.

BANKS'S NEW FUCHSIAS (9 varieties, 63s.).

NEW CHRYSANTHEMUMS (8 varieties), see Plate XXVI. in the "Illustrated Bouquet."

BREEZE & BANKS'S COLLECTION OF NEW VERBENAS will include the finest blue out, the best rose, the finest violet-purple, the best peach, and maroon black, with large white eyes or centres, the Géant des Batailles far surpassed; a Mrs. Holford in truss and habit, but suffused with a beautiful pink tint. The entire collection includes a full complement of colours, as the finest ever sent out by us, and surpassee with but few exceptions any that we have cultivated under name.

FINE BEDDING GERANIUMS.

NEW NOSEGAY SECTION.

THE IMPERIAL CRIMSON, AND MODEL NOSEGAY GERANIUMS. See descriptions at page 355, and also the Catalogue.

Among Variegated Geraniums, MISS EMILY DOMVILE will prove a first-class Bedding Plant (see description in Catalogue).

The two GOLDEN-LEAVED varieties with large-petalled flowers.

THE RAINBOW, with the finest red-zoned foliage yet seen.

THE ST. CLOUD, a beautiful accompaniment to FONTAINBLEAU.

THE SILVER CHAIN, with deep margin of pure white; a fitting companion to the GOLDEN CHAIN.

NEW CALCEOLARIAS, scarlet, crimson, and yellow, of proved and true bedding, shrubby, branching growth; not half shrubby, as the majority are.

THE WHITE NOSEGAY GERANIUM (for beds).

N.B. *The quotations of Price to Geraniums Imperial Crimson and Model Nosegay, at page* 355, *should have appeared as* 3s. 6d. *and* 2s. 6d. *each only.*

Wellington Nursery, St. John's Wood, London.

CHOICE BEDDING PLANTS, &c.

YOUELL & CO.

BEG RESPECTFULLY TO OFFER THE FOLLOWING IN STRONG WELL-ESTABLISHED PLANTS (SINGLY) IN POTS:—

AGERATUM ALBUM, white, 4s. per dozen.
CŒLESTINUM, blue, best variety 4s. per dozen.
ARABIS LUCIDA VARIEGATA, beautiful for edging, 9s. per dozen.
ANAGALLIS, large red, do. blue, 4s. per dozen.
ANTIRRHINUM YOUELLI, a beautiful variety of dwarf, bushy habit. The flowers are of a brilliant orange scarlet with white tube, produced in great profusion on dense spikes of bloom, 6s. per dozen.
ANTIRRHINUMS, fine selections of all the best named kinds, 6s. per dozen.
BELLIS PERENNIS, new Belgian Daisies, of the best sorts by name, 4s. per dozen.
BELLIS AUCUBÆFOLIA, a very handsome variety, with golden blotched foliage and large scarlet flowers, 6s. per doz.
BERBERIS DARWINI, fine golden yellow, 6s. per dozen.
CALYSTEGIA PUBESCENS (rose coloured double-flowering Convolvulus), a good hardy climber, 6s. per dozen.
CALCEOLARIA AUREA FLORIBUNDA, the most desirable of all the yellow-flowering varieties. Strong plants, 4s. per dozen; 25s. per 100.
CALCEOLARIAS, of best kinds for bedding, assorted in colours, 6s. per dozen.
CAMPANULA CORALLINA GARGANICA, blue, very pretty, 4s. per dozen.
CHRYSANTHEMUM REGALIUM, fine golden yellow, 4s. per dozen.

CARNATIONS AND PICOTEES.

CARNATIONS, finest first class show varieties by name, 18s. and 24s. per dozen pairs.
PICOTEES, finest first class show varieties by name, 18s. and 24s. per dozen pairs.
Ditto, on yellow grounds, 20s. and 30s. per dozen pairs.
Finest mixed BORDER CARNATIONS & PICOTEES, 9s. ditto
True old CLOVE CARNATION, 12s. per dozen pairs.
Scarlet ditto ditto, 18s. ditto
NEW CARNATION "EXTRAVAGANZA."—For particulars see Advertisement, March 26. Price 3s. 6d. per pair.

PINKS.—The finest first class show Pinks, by name, 9s. per doz.
Fine mixed border PINKS, 6s. per dozen pairs.
COBÆA SCANDENS, fine strong plants, 6s. per dozen.
CUPHEAS, of sorts, 4s. per dozen.
CHRYSANTHEMUMS, the handsomest of the new large flowering and Pompone kinds, 6s. per dozen.
CHEIRANTHUS ATROPURPUREUS, of dwarf habit, producing a profusion of rich purple flowers, 6s. per dozen.
DAHLIAS, fine show and fancy varieties, by name, 6s. per doz.
DAHLIA PURPLE ZELINDA, fine dwarf bedded, 6s. per doz.
" CRYSTAL PALACE, scarlet, 6s. per dozen.
DELPHINIUM FORMOSUM. By far the most beautiful of the genus and forms a lovely and permanent bed of the richest blue. Strong flowering Ground Roots 16s. per 100; 3s. per dozen.
FUCHSIAS, finest bedding varieties, 6s. per dozen.
" all the new fine varieties of last season, 12s. per dozen
GAILLARDIAS of sorts, 4s. per dozen.
GERANIUMS, scarlets and other kinds of best vari 4s. per dozen.
GERANIUMS, variegated of sorts, 6s. per dozen
GAZANIA RIGENS, large orange, dark centre, 6s. per dozen.
HOLLYHOCKS, first-rate show varieties by name, 12s per doz.
" strong unbloomed Seedlings, from the very best named varieties, 4s. per dozen; 30s. per 100.
HELIOTROPES, of choice kinds, 6s. per dozen.
KONIGA VARIEGATA, very pretty for edging 4s. per dozen.
LANTANAS, 10 new and very beautiful varieties for 7s. 6d.
" of sorts, 6s. per dozen.
LINUM FLAVUM, bright yellow, 6s. per dozen.
LOBELIA SPECIOSA, the best of the dwarf blue varieties, 4s. per dozen.
" " finest scarlets adapted for forming magnificent groups, 9s. per dozen.
LOPHOSPERMUM, of sorts, 6s. per dozen.
LYCHNIS CORONATA, fine orange scarlet, 9s. per dozen.
MAURANDYA BARCLAYANA, blue and white, 4s. per dozen.
MATHIOLA TRISTIS, night-scented Stock, 6s. per dozen.
MESEMBRYANTHEMUMS, of showy kinds, 6s. per dozen.
NASTURTIUM TRIOMPHE DE GAND, } fine for baskets, 6s.
" LILLE SCHMIDT } per dozen.
" DOUBLE DARK AND DOUBLE YELLOW, 6s. per dozen.
NIEREMBERGIA FILICAULIS, white, lavender eye, very pretty for bedding, 4s. per dozen.
OXALIS FLORIBUNDA AND ROSEA, quite hardy, producing a fine bed of rich rose colour, 6s. per dozen.
ŒNOTHERA MACROCARPA, large yellow, 4s. per dozen, 25s. per 100.
" TARAXACIFOLIA, large white, 6s. per dozen.
PETUNIAS—M. Boucharlet's superb collection of 12 new double varieties, by far the handsomest yet offered, 9s. per dozen.
" Double of Sorts, 6s. per dozen.
" Gem of Suffolk, beautiful silver variegated foliage, large purple flowers, 9s. per dozen.
" of sorts, assorted colours, 4s. and 6s. per dozen.
PANSIES—Finest first-class show varieties, by name, 9s. p. doz.
PENTSTEMONS, of sorts, including the new kinds, 6s.
NEW PHLOXES—An extensive and select collection of this beautiful showy tribe, comprising the fine and newly introduced varieties from the Continent, 6s. to 9s. per dozen. Older varieties, 30s. per 100.
PHYGELIUS CAPENSIS, a handsome Pentstemon-like hardy herbaceous plant, producing tube-shaped flowers of scarlet and yellow, 9s.
SALVIAS, of sorts, 4s.
STATICE MARITIMA ROSEA AND PSEUDO-ARMERIA.—Strong plants of these two beautiful and hardy species, producing throughout the year a profusion of lake-coloured flowers, 4s. per dozen.
TRITOMA MEDIA—A handsome hardy herbaceous plant, producing large spikes of scarlet-yellow flowers, 9s. per dozen.
VERBENAS, scarlet, red, crimson, claret, rose, pink, blush, white, lavender, blue, purple, plum, striped and variegated, of the newest and handsomest varieties in cultivation, 3s. per dozen, or 20s. per 100.
HARDY HERBACEOUS AND ALPINE PLANTS of the most showy species, 6s. per dozen, 30s. per 100.

☞ *All orders of £2 and upwards are delivered Carriage Free to London, Manchester, Hull, Liverpool, Peterborough, and Newcastle, as well as to any Railway Station within* 150 *miles of the Nursery. Communications, by Steamers and Railway, to all parts of England, Ireland, and Scotland, as well as to the Continent.*

It is respectfully solicited that all Post-office Orders be made payable to YOUELL & CO., Yarmouth, Norfolk.

ROYAL NURSERY, GREAT YARMOUTH, NORFOLK.

SUTTON'S CHAMPION SWEDE,

THE SWEDE THAT NEVER MILDEWS.

"When this sort of Swede is universally grown, we shall hear very few complaints of failure of the Swede crop."

Extracts from Letters received by Messrs. SUTTON & SONS:—

From Mr. Henry Herbert, *Flax House, Pocock, Feb.* 15, 1858.
"Your Champion Swede is the best sort I ever sowed. I have an extraordinary crop sown 1st and 5th of July."

From Mr. George Parker, *Polsue House, Feb.* 20, 1858.
"The Champion Swede Seed which I had from you last year has proved exceedingly good; it is in fact considered the best Swede ever introduced in the county. I had a field 27 acres, which realised 40 tons per acre, many of them weighing 16 lbs. each."

From Mr. C. Taylor, *Cross Hill, Wigton, March* 2, 1858.
"You will see that I have enlarged my order for Swedes very much, as I am ordering for a few of my neighbours, who saw my crops last year and wished me to get some for them. All the Seeds I had from you were very good and answered well."

From G. Tyler, Esq., *Mount Gernas, March* 2, 1858.
"The Seeds sent last year were very good, and your Champion Swede gained me the prize in the Agricultural Show of Newcastle Emlyn, and has been much admired."

From Mr. William Fletcher, *Radmanthwaite, March* 12, 1858.
"The field of your Champion Swede from which I drew the prize roots for Birmingham was the finest I ever saw."

From R. T. Sparkes, Esq., *High Ashes, Abinger.*
"On a naturally very poor soil, and nearly 1000 feet above the level of the sea, your Swede far excelled any of my neighbours, although they possess a much better soil and climate."

From Mr. Ernest F. Oslar, *Whitchford, April* 6, 1858.
"Thirty acres of Swedes grown by me from your Champion has given great satisfaction. I had my doubts if so fine a breed of Turnips (if I may be allowed the expression) as the Champion would stand the winter, but I can assure you that I have 5 acres at this time with as fine green tops and sound bottoms, as ever a man might wish to see, while my neighbours who sowed other sorts have not a green top to be seen, and many of their bulbs rotten."

From W. Longstaffe, Esq., *Northbrooke, April*, 1858.
"Mr. Longstaffe has grown this year 80 acres of Sutton's Champion Swede, the best crop ever seen in the South of England."

From Daniel Potter, Esq., *Charringworth, April* 19, 1858.
"My Champion Swedes from your Seeds last year were first-rate."

From Mr. Edward Jaques, *Monkton Farleigh, April* 24, 1858.
"The Champion Swedes I had last year were very fine. I have several tons of them now in prime condition."

From Robert Russell, Esq., *Abdale, July* 6, 1858.
"Judging from my plants of Mangel and Swedes, I think every Seed must have grown."

From Mr. Joseph Woodend, *Radnal, Oct.* 12, 1858.
"The Seeds were very excellent, particularly the Elvetham Wurzel and the Champion Swede."

From John G. Ive, Esq., *The Trenches, Langley, Oct.* 21, 1858.
"At the meeting of the Royal South Bucks Agricultural Association, held October 16, I gained the Silver Cup value 20 guineas given by H.R.H. the Prince Consort to the grower of the best 5 acres of Swedes. This field was from Seed purchased this season of you, called Sutton's Champion."

From Mr. Henry Cantrell, *Baylis Farm, Stoke*, 1857.
"The judges have awarded me H.R.H. the Prince Consort's 25 guinea Cup for South Bucks, for the best 5 acres of Swedes. There is no doubt about this Champion Swede of yours being of first-class quality."

From Mr. Henry Cantrell, *Banlis Farm, Nov.* 4, 1858.
"I obtained the second prize, a Silver Salver, at our South Bucks Show. My field was nearly equal to Mr. Ive's, which gained the Prince's Cup, (the first prize) which was also from your Champion Swede, and it only proves the truth of my observation last year, that for quality and weight I thought them unequalled."

From C. Randell, Esq., *Chadbury, Nov.* 5, 1858
"A premium of 10*l* given by H.R.H. the Duke d'Aumale for the best 6 acres of Mangel, and a similar one given by John Cartwright, Esq., for the best 6 acres of Swedes, have both been awarded to me for crops grown from your Seed."

From P. Davis, Esq., *Bromfield, Nov.* 5, 1858.
"Your Champion Swede is excellent. I have succeeded in getting good crops this season as well as last. The Yellow Globe Mangel is equally good, and the crops have been very satisfactory both seasons."

From Mr. W. Fletcher, *Radmanthwaite, Nov.* 5, 1858.
"I have one field of 12 acres of your Champion Swede, the best I think in the county of Notts."

From Mr. Henry Ford, *Branscombe, Nov.* 6, 1858.
"The Champion Swede Seed which I had of you in the spring is a good crop, and as all other Seed which I had of you has given me every satisfaction, I hope to become again a customer."

From Captain Harrison, *Clanna, Nov.* 6, 1858.
"Captain Harrison sowed some Champion and Skirving's Swede in the same field, and the former are by far the best crop."

From Mr. Henry Withers, *Lodge Farm, Longparish, Nov.* 6, 1858.
"The Champion Swede Seed which I had of you in the spring has answered remarkably well, though the season has been unfavourable for the growth of roots, especially in this neighbourhood. I obtained an excellent plant; not a yard in the whole 12 acres vacant, and the bulbs handsome, with a full crop. I congratulate you on the success of the Seeds sent out by your firm."

From G. Tyler, Esq., *Mount Gernas, Nov.* 1858.
"I have gained the prize in my district both this and last year for your Champion. They are by far the finest Swedes I have seen this year."

From Mr. David Easson, *Camperdown, N.B., Nov.* 6, 1858.
"The crop of Swedes this season from the Seed of your Champion is most satisfactory."

From Mr. Charles Turner, *Kelmscott, Nov.* 5, 1858.
"My Swedes from your Champion Seed are very fine, and also my Hybrid and common Turnips after Vetches are very superior in quality and quantity."

From Joseph Blundell, Esq, *Bursledon, Nov.* 5, 1858.
"The Champion Swede Seed I purchased of you last season for the farm of A. Elphinstone, Esq., and General Robertson, turned out remarkably well."

From Mr. John Jolly, *Steeple Aston, Woodstock, Nov.* 10, 1858.
"I have been very successful with all the Seeds I had from you, especially your Champion Swede. They are a very fine crop indeed, and I like them much better than any other sort I ever grew."

From Mr. E. Castleton, *Stoke, November* 9, 1858.
"Your Champion Swedes, grown from Seed supplied by you, are allowed to be the finest field in the parish."

From Richard Neville, Esq., *Velin Vale, November* 10, 1858.
"My crop of Champion Swede and Orange Globe Mangel is the best I have seen in this neighbourhood."

From Lewis P. Madden, Esq., M.D., *Jacobstow, Nov.* 10, 1858.
"I have a first-rate crop of your Champion Swede this year; indeed, I cannot speak too highly in their praise. I have tried many sorts, as the Ashcroft, Skirving's, Copper-topped, &c., but none of them equal the Champion as to certainty of crop and size."

From W. Summerby, Esq., *North Terrace, Nov.* 6, 1858.
"The Champion Swedes raised from Seed obtained from you are in quantity and quality far above the average of an extensive district."

From Gilbert Peacock, Esq., *Greatford Hall, Nov.* 5, 1858.
"I like your Champion Swede very much, and hope to grow much more next year."

From Charles Noel, Esq., *Bell Hall, November* 8, 1858.
"My crop of Swede Turnips this year from your Champion Seed is a very fine one indeed. It is one of the best I have seen this year. I also drilled in without ploughing a second time some of your Green-topped yellow Hybrid, which succeeded very well; they are now a splendid field of Turnips, and the quality very fine."

From Thomas Bosworth, Esq., *Watnall Fields, Nov.* 10, 1858.
"I have had the prizes awarded to me this season by the Selston and Moorgreen Agricultural Societies, for the best crop of Swedes, from the Champion Seed supplied by you."

From Mr. Robert Spiller, *Branscombe, November* 13, 1858.
"I have 40 acres of your Champion Swede (although a dry season), regularly planted, good size, and very handsome bulbs. The Mangel Wurzel I grew from your seed are very superior to those I grew from seed I bought of others, particularly the Red Globe. I believe them the most handsome roots I ever saw."

From G. M. Robbins, Esq, *Hymenstown House, Tipperary, November* 13, 1858.
"I planted the Liverpool, Ashcroft, and the Champion Swede, all in the same field, and in succession as they are named above; the result was that the Champion was half as good again as the other two."

From Mr. Alfred Wicks, *Ashwick, November* 15, 1858.
"Your Champion Swede is the best I have grown for many years, and your Yellow Globe Mangel Seed has produced an excellent crop."

From Mr. E. Berry, *Whelpley Hill, Bovington, Nov.* 19, 1858.
"I gained the first prize for the best five acres of Swedes, at the Amersham and Chesham Agricultural Association (a Silver Cup given by T. T. Drake, Esq.), grown from your Champion Seed."

From E. Walshe, Esq., *Castle Hill, Ballina, November* 23, 1858.
"Your Champion Swede did very well with me this year; indeed, so good is my crop, I shall sow no other next year."

From Mr. Thomas Rush, *Haverfield Grove Farm, Nov.* 27, 1858.
"Our root crops are very good. The prize of three guineas was awarded to us for the best five acres of Swedes, given by the Rickmansworth Society." (Sort, "Sutton's Champion.")

From Mr. James Stedman, *Lucton, Kingland, Nov.* 29, 1858.
"The Champion Swede Seed I had from you last year was exceedingly good. I never saw a better field of Swedes than I had from it, as also the Green-top Hybrid Turnip."

From Mr. Arthur Bentall, *Eastwood, Dec.* 14, 1858.
"I have the best Swedes and Mangel from your Seeds that I have seen this year in this district, and wish to continue the same sorts for next season."

From Norman Matthews, Esq., *Poringland, Nov.* 8, 1858.
"My crop of Swede Turnips this year from your Champion Swede is a very fine one; indeed it is one of the best I have seen this year. I also drilled in without ploughing a second time some of your Green-top Yellow Hybrid, which succeeded very well. They are now a splendid field of Turnips, and the quality very fine."

From W. T. Hayward, Esq., *Long Wittenham.*
"Sutton's Champion Swede has gained Mr. Morrell's Cup of five guineas value, and Sweepstakes of 11 Sovereigns, for the best 5 acres of Swedes in the old Berkshire Hunt."

From Mr. John Baylis, *Lee Farm, Hurley.*
"I have the pleasure of informing you that the Twenty-five Guinea Cup given by H.R.H. the Prince Consort, for the best 5 acres of Swedes in East Berks, was gained by me with your Champion from Seed bought of you. They are the finest I have ever grown, or (as far as I remember) ever saw."

From J. F. Burrell, Esq, *Frimley.*
"Your Champion Swede has turned out very good; it is a sort I shall sow more of. I like them better than any I have ever had before."

Eight Prize Cups from H.R.H. the Prince Consort, besides numerous other Prizes throughout the Kingdom, have been awarded to fields of Sutton's Champion Swede Seed, now in course of delivery, Carriage Free to all parts (except small parcels), 1*s.* per lb., or cheaper by the bushel.

ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.—May 14.

TURNIPS AND MANGEL WURZEL SEEDS, ETC.

THOMAS GIBBS AND CO., Corner of Half-Moon Street, the Seedsmen to the "Royal Agricultural Society of England," beg to announce to the members of the Society and agriculturists generally that they have still on hand a supply of the different kinds of MANGEL WURZELS; also selected stocks of HYBRIDS, SWEDES, and other TURNIPS, &c.

MANGEL WURZEL:—
Yellow or Orange Globe, Long Red, and other kinds.

TURNIPS:—
Green-top Yellow Hybrid, strongly recommended, and bears late sowing.

Purple-top Swedes	Skirving's Swedes
Globe sorts	Tankard's sorts

GRASS SEEDS for Permanent Pastures, Cemeteries, and Church Yards, Lawns, and Grass plots, &c.
RENOVATING MIXTURES for old Swards.
PRICED LISTS sent free on application.

Thomas Gibbs & Co.
CORNER OF
HALF-MOON St.
PICCADILLY, LONDON, W.

NATURAL GRASS SEEDS.

PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN, can supply genuine Seed of all the valuable kinds of the NATURAL GRASSES suitable for Lowland and Upland Pastures; also for Laying-down Lawns, Bowling Greens, Cricket Grounds, Cemeteries, Railway Banks, &c.

PRICED LISTS may be had free on application.—PETER LAWSON & SON, 27, Great George Street, Westminster.

"JACK OF NEWBURY" SWEDE, ETC.

PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN, &c., 27, Great George Street, Westminster, respectfully request attention to their very genuine Stock of the above excellent Swede; also of the LOTHIAN PURPLE-TOP SWEDE, both of which have been selected with the greatest care. They have also a very fine Stock of the KOHL RABI, or TURNIP-ROOTED CABBAGE, specimens of which were shown at their Stands at Smithfield Club Show. The Kohl Rabi was largely grown last season, and may now be relied on as a substitute for the Turnip and Mangel, where these roots do not succeed, or for filling up blanks where there is a partial failure. Its feeding qualities, hardiness, and weight per acre are equal to the Swede, and all kinds of stock prefer it to other roots.

P. L. & SON have also selected a first-rate Stock of MANGEL WURZEL SEED, which they can confidently recommend. Their natural GRASS SEEDS have been also saved with very great care, and they are ready to supply them separately or in mixture, for laying down Permanent Pastures, Lawns, &c.

P. L. & SON have arranged to deliver Seeds free throughout England and Wales from their London Establishment, for all quantities exceeding 20*s.* in value.

LISTS OF PRICES of the above and all other Seeds, Plants, &c., may be had on application.
27, Great George Street, Westminster.

TURNIPS FOR EARLY FEEDING.

SUTTON'S LINCOLNSHIRE RED GLOBE; the heaviest cropper known. This sort is very superior to the Red Globe Turnip commonly grown in Lincolnshire. The original stock was presented to Messrs. SUTTON by the late Philip Pusey, Esq., with the earnest desire that he might be supplied annually with Seed of the same sort. Price 10*d.* per lb., or cheaper by the bushel.

POMERANIAN WHITE GLOBE TURNIP; the largest white Turnip; price 9*d.* per lb., or cheaper by the bushel.

These two Turnips thrive well on most soils, and are good for feeding off previous to Wheat sowing. Goods delivered carriage free.—Royal Berks Seed Establishment, Reading.

ROYAL BERKSHIRE SEED ESTABLISHMENT.

GOOD TURNIP SEEDS, CARRIAGE FREE.

SEEDS DIRECT FROM THE GROWERS THE MOST CERTAIN MEANS OF PREVENTING DISAPPOINTMENT.

SUTTON AND SONS, SEED GROWERS, Reading, Berks, can supply every kind of TURNIP SEEDS of genuine and superior quality.

Agriculturists residing in the most remote parts of the kingdom can procure good Seeds at very moderate prices from this Establishment.—For particulars, apply to
SUTTON & SONS, Seed Growers, Reading, Berks.

ROYAL SOUTH HANTS SEED ESTABLISHMENT,
UNDER THE PATRONAGE OF H.R.H. THE PRINCE CONSORT, THE AGRICULTURAL SOCIETY OF INDIA, AND THE LEADING AGRICULTURISTS OF THE UNITED KINGDOM.

PAGE AND TOOGOOD'S STOCKS have produced the finest specimens exhibited at Smithfield, and are so well known and appreciated that comment on their part is unnecessary. Their prices compete with any house in the trade.

PRESENT PRICES, Carriage Free to all parts of England:—

	Per lb.—*s. d.*		Per lb.—*s. d.*
Skirving's Swede	0 6	Hardy Green Round	0 6
Page's Improved	0 8	Early Six Weeks	0 6
Ashcroft	0 6	Kohl Rabi	2 6
Greentop	0 6	Yellow Globe Mangel	0 6
Sussex, or Jeffery's	0 9	Page's Impl. Orange Globe*	0 8
Tankard	0 7	Red Globe	0 7
Red Round Turnip	0 6	Elvetham Long Red	0 7
Page's Improved Red Globe	0 8	Long Red	0 6
Scotch or Bullock	0 7	Long Yellow	0 7
Pomeranian White Globe	0 6	White Belgian Carrot	1 0
Early Green Globe	0 6	New Red	1 3
" White Tankard	0 7	Long Altringham	1 3
Red Tankard	0 7	Cattle Cabbage	2 6
Green ditto	0 7	Cattle Parsnip	1 0
Yellow ditto	0 7	Dwarf Essex Rape	0 4

* Bulbs of this variety have acquired the enormous weight of 44 lbs., as shown at Smithfield Club.

BUCKWHEAT, MUSTARD, LINSEED, TARES, SAINFOIN, HOLCUS SACCHARATUS, 1*s.* per lb.

Fine PERMANENT PASTURE GRASS, ITALIAN RYE-GRASS, CLOVER, &c., at lowest market prices.

Special contracts for large quantities. Seeds packed for exportation to all parts of the world.
Oxford Street and Above Bar, Southampton.

VARIEGATED GERANIUMS FOR BEDDING OUT.

JOHN HALLY, NURSERYMAN and FLORIST, opposite the Railway Station, Blackheath, S.E., offers the following at the annexed reduced prices :—

1. BURNING BUSH.—This has proved itself the most beautiful of all the red-zoned variegated kinds, having foliage variegated with broad white edge and zone of bright crimson. The flower brilliant scarlet, in good compact trusses, standing well up above the foliage, 30s. per dozen ; a few larger plants on hand, at 5s. each.

2. SCINTILLATUM.—Foliage variegated, with white edge, and having a black and crimson zone, bears a very large truss of deep scarlet blossoms, 15s. per dozen ; strong plants, at 2s. 6d. each. The usual discount to the Trade on the above.

NEW SEEDLING AZALEA INDICAS.

Blanc de Neige	Triomphe de Gand
Pelargoniæflora nova	Vicomte de Nieuport
Prince Impérial	
Reine des Doubles	Rosæflora plena

JEAN VERSCHAFFELT, Ghent, Belgium, begs respectfully to announce that he is now prepared to send out his seven new Azalea indicas as above, in fine strong plants full in bloom. The price of the set is 3l. Early orders are requested, as they will be sent in strict rotation.

The description of the above may be had free on application to JEAN VERSCHAFFELT. Plants will be immediately forwarded after orders are received. All orders to be directed to JEAN VERSCHAFFELT, Nurseryman, Ghent, Belgium.

CACTI.

TO BE SOLD, either wholly or in part, a rare and superb collection of Exhibition Specimens of TALL CACTI, CEREUS, EPIPHYLLI, and their hybrids. They have been exhibited at all the Metropolitan Shows for years past. Being large and numerous the owner wishes to dispose of them for cash or in exchange for Camellias, Ferns.—Apply to R. BUNN, Gardener to J. R. Scott, Esq., Harringay Park, Crouch End, Hornsey, N.

GOLD AND SILVER FISH.—Upwards of 100,000 on hand, at 4s. to 9s. per dozen, 2l. per 100, or 18l. per 1000.

ORANGE TREES, full of bloom, and some with fruit and bloom, 3s. 6d. each ; larger size, with very large fruit and bloom, 6s., 7s. 6d., and 10s. 6d. each. AZALEAS and CAMELLIAS, 18s., 21s., and 24s. per dozen ; and every other kind of Greenhouse and Stove Plants, and Nursery Stock of the best quality at lowest prices for cash. — ROBT. GREEN, 154, Kingsland Road, 55 doors from Shoreditch Church.

WM. CUTBUSH AND SON beg to state that they can supply the following BEDDING PLANTS. Any quantity of extra fine plants at the prices annexed :—

	Per dozen.—s. d.		Per dozen.—s. d.
Ageratum	4 0	Lobelia speciosa (from cuttings true) the best of the class	4 0
Chrysanthemum regalium flore pleno, golden yellow, an excellent plant for large beds	6 0	Nasturtium Tom Thumb	4 0
Calceolaria, yellow	4 0	Petunias, of sorts	6 0
Cuphæa platycentra	4 0	Pyrethrum	4 0
Dahlias, of sorts	6s. to 9 0	Salvia, of sorts	4 0
Fuchsias, of all the best varieties	4s., 6s., and 9 0	Tropæolum elegans (Crystal Palace variety), a free flowering bright orange-scarlet dwarf plant, well adapted for flower gardens	6 0
Geraniums, Tom Thumb and other Scarlets	4 0	Verbenas, of the best sorts	4 0
Variegated, of sorts, 6s. to	9 0	,, Edmonds' New, of 1859, 18	0
Heliotrope	4 0		
Lobelia ramosioides	4 0		

A DESCRIPTIVE CATALOGUE of the above and general Nursery Stock can be obtained free per post on application.

NEW VARIEGATED GERANIUM "BEAUTY."

WM. C. & SON can strongly recommend the above, which has bright green foliage, with a broad margin of pure white, flowers light scarlet of good shape in large trusses in great abundance, and very robust habit. We tested it last year with a dozen other kinds, and found it superior to any for bedding purposes. It was exhibited at the late meeting of the Royal Botanic Society, and received a Certificate of Merit.

2s. 6d. each ; or 21s. per dozen.

SHOW, FANCY, & FRENCH-SPOTTED PELARGONIUMS.—A large stock of remarkably fine plants of the above in 48-pots of all the leading sorts, at 12s., 18s., and 24s. per dozen ; or 5l. and 7l. 10s. per 100.

LISIANTHUS RUSSELLIANUS.

WM. C. & SON beg to intimate that they can supply strong plants of the above elegant Conservatory Plants in 48-pots, at 2s. 6d. each ; or 24s. per dozen.

Highgate Nurseries, London, N.

NEW SCARLET VERBENA "MAGNET."—

This superb variety is a Seedling of 1858. The colour is a most vivid scarlet, with a large Lemon-coloured eye, which gives it a very striking appearance over all other scarlets ; the pips are as round, large, and good a substance as those of the most beautiful Phloxes, the truss is of immense size, many of them last season measuring 9 inches in circumference ; it is a most prolific bloomer, and always throws its trusses well up. Blooms of the finest of the Scarlet Verbenas as yet sent out were compared with it last year, but none of them approached it in size or brilliancy of colour by many degrees. It never fades in the hottest sun, and is a superb variety for pot culture. It was considered to be the finest and most conspicuous variety ever yet grown, throwing Eclipse and all other scarlet Verbenas completely in the background. This was the general opinion of the following gentlemen, nurserymen, and gentlemen's gardeners :—J. Fore, Esq., Devizes ; A. Audry, Esq., Bath ; W. Thompson, Esq., Bath ; H. Collison, Esq., Bath ; Chas. Sainsbury, Esq., Swanswick, near Bath ; Mr. Edwards, of Messrs. Henderson & Co., Wellington Road Nursery, London ; Mr. Nelson, Nurseryman, Bristol ; Mr. Parker, Paradise Nursery, London ; Mr. Caizey, of Messrs. Hugh Lowe & Co., Clapton Nursery, London ; Mr. J. Chaunday, Florist, Lewisham, Kent, S.E. ; Mr. Kitley, Nurseryman, Lyncomb, near Bath ; Mr. Shackell, Oldfield Nursery, Bath ; Mr. Webb, Assistant to Mr. Griffin, Nurseryman, Bath ; Mr. Drummond, Nurseryman, Bath ; Mr. Hann, gardener, Southstoke Rectory, near Bath ; Mr. Froud, gardener to — Wintle, Esq., Swanswick, near Bath ; Mr. Rays, gardener, Vellore, Bath ; Mr. Tootle, gardener to G. Sims, Esq., Bath ; Mr. Salter, gardener to — Yules, Esq., Bathford, Bath ; Mr. Knowles, gardener to — Wiltshire, Esq., Shockerwick, near Bath. Single plants of the above superb new Verbena, 5s.

New Verbena "LOLA MONTES," colour light, beautifully shaded rose, fine eye and truss, is a first-rate show variety, many of the pips coming as round and as large as a shilling and of good substance. Plants 3s. 6d. each.

EMPEROR OF MOROCCO VERBENA. Also a seedling of 1858, colour very dark purple, the nearest approach to a decided blue of any variety that has yet been sent out ; it throws a very fine truss, is a prolific bloomer, and good bedder. Plants 3s. 6d. each.

The above are now ready for sending out, strong, well-rooted plants. Parties taking the three varieties will be charged 10s., postage and package free.

A remittance must accompany all orders either in cash or penny postage stamps.

EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Church Yard, Bath.

FOUR SHILLINGS PER DOZEN.

DAHLIAS, PANSIES, VERBENAS, FUCHSIAS, GERANIUMS, PETUNIAS, HELIOTROPES, SALVIAS, CHRYSANTHEMUMS, LOBELIAS. Package included. Terms Cash.—THOMAS H. DOUGLAS, Rosebank Nursery, Edinburgh.

TO TULIP GROWERS—MAY'S TULIPS.

MR. MAY, FLORIST, 1, Northampton Street, Islington, N., begs respectfully to solicit an early call from his old friends in the Trade, he being the oldest grower in the kingdom, and now upwards of 82 years of age, and respectfully informs them that the whole are for unreserved Sale in single rows or otherwise. On view at the Nursery, Canonbury Square, New North Road, Islington. Printed CATALOGUES post free for stamp, addressed Mr. MAY, as above.

AMBROISE VERSCHAFFELT, NURSERYMAN, Ghent (Belgium), will now send out the following NEW PLANTS :—

	s. d.
BEGONIA LEOPOLDII, one of the finest Begonias yet sent out	8 0
TYDÆA PRINCESS TROUBETZKOY (three splendid hybrids; the set)	16 0
,, GRANDIS (three splendid hybrids; the set)	
,, SANGUINEA (three splendid hybrids; the set)	
TORENIA PULCHERRIMA	2 6
CLEMATIS SOPHIA FLORE PLENO	8 0
LYCHNIS HAAGEANA	4 0

NEW BEDDING SHRUBBY CALCEOLARIA 'GENERAL HAVELOCK.'

JAMES BURLEY has much pleasure in offering the above most beautiful CALCEOLARIA as a first-rate bedding variety. Colour rich maroon or violet crimson, in dense corymbs, presenting a broad surface of bloom to the eye ; stands the weather well. The Messrs. A. Henderson & Co., of Pine-apple Place, Edgware Road, having proved it last season, have kindly offered to become Sole Agents for the sale of it. Strong plants in large 60-pots will be ready for delivery on and after this day, at 2s. each or 18s. per dozen.

JAMES BURLEY, Florist, Limpsfield, Surrey.

NEW ROSES IN POTS.

BENJAMIN R. CANT offers the undermentioned NEW ROSES. The plants are now ready, and are remarkably fine and healthy ; many of them have strong shoots from 1 to 2 feet in length. Purchasers of 1 dozen and upwards will be supplied at a reduced rate. The trade allowed the usual discount.

NEW ROSES FOR 1859 at 5s. each :—

TEA : Madame Damaisin	HYBRID PERPETUALS :—
BOURBON : Docteur Berthet	Comtesse Cecile de Chabrillan
,, Edith de Murat	Imperatrice Eugénie
HYBRID PERPETUALS :—	L'Oriflamme de St. Louis
Altesse Impériale	Le Mont Vésuve
Ardoisée de Lyon	Orderic Vital
Anna Alexieff	Princesse Olympie
Anna de Diesbach	Salomon
Beauté de Royghem	Virginal

Also the following CHOICE ROSES at 2s. 6d. each, or 25s. per dozen :—

TEA : Souvenir d'Elise	HYBRID PERPETUALS :—
BOURBON : Caroline Riquet	Louis Chaix
,, Josephine Clermont	Louise d'Autriche
,, Madame Contesse	Lord Palmerston
,, Monsieur Jard	Marie Thierry
HYBRID PERPETUALS :—	Monsieur de Montigny
Abbé Feytel	Philomène Crozy
Evêque de Nimes. 3s. 6d.	Reine de Denmark
Gloire de Lyon	Triomphe de Mont Rouge
General MacMahon	,, des Beaux Arts

At 15s. per dozen :—

HYBRID PERPETUALS. — Adelaide Fontaine, Bacchus, Belle Anglaise, Cardinal Patrizzi, Etendard de Sebastopol, Lord Raglan, Madame Vidot, Mathurin Regnier, Pauline Lansezeur, Prince Leon, Prince de la Moskwa, Rebecca, Souvenir de la Reine d'Angleterre, Souvenir de Leveson Gower, Sir J. Franklin, Victor Trouillard.

BOURBON : Glorietta, Omer Pacha,

NOISETTE : Miss Gray, Narcisse

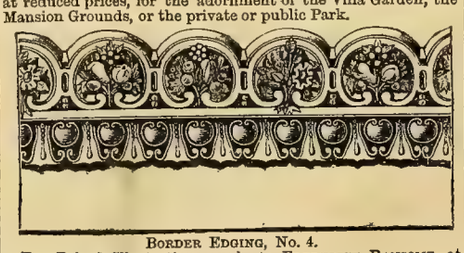
TEA : Devoniensis, Elise Sauvage, Gloire de Dijon, Madame Bravy, Souvenir d'un Ami, Vicomtesse de Cazes.

A fine collection of the most esteemed older varieties, such as Caroline de Sansal, Comte de Nanteuil, Colonel de Rougemont, General Jacqueminot, Jules Margottin, Souvenir de la Malmaison, at 12s. per dozen.

St. John's Street Nursery, Colchester.

REIGATE SILVER SAND, best quality for Florists, 16s. per ton ; less quantities, 1s. 6d. per bushel ; delivered to any London Wharf or Railway. Peat, Loam, and Leaf-Mould in large or small quantities. Sacks for Sand, 1s. 9d. each ; or on hire, 6d. each ; five hold a ton.—JOHN KENNARD, Purveyor to her Majesty, Swan Place, Old Kent Road, London, S.E.

VASES, PEDESTALS, SUNDIALS, FOUNTAINS, FLOWER BOXES, JARDINETS, FERN CASES, BALUSTRADES, EDGINGS AND CURBS FOR FLOWER BORDERS, SEATS, &c., in Imperishable Siliceous Stone, at reduced prices, for the adornment of the Villa Garden, the Mansion Grounds, or the private or public Park.



BORDER EDGING, No. 4.

For Priced Illustrations apply to FREDERICK RANSOME, at the Show Rooms, Cannon Row, Westminster, S.W., or Patent Stone Works, Ipswich.

"FRIGI DOMO."—Patronised by her Majesty, the Queen, the Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, and —Collier, Esq., of Dartford.

PROTECTION FROM COLD WINDS AND MORNING FROSTS.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and, floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths. Two yards wide, 1s. 6d. per yard run ; four, 3s. per yard. Also, an improved make for Shading Purposes. Three yards wide, 2s. 6d. per yard run.

ELISHA THOMAS ARCHER, whole and sole manufacturer, 7, Trinity Lane, Cannon Street, City, and of all Nurserymen and Seedsmen throughout the kingdom. "It is much cheaper than mats as a covering."

GENUINE ROLL TOBACCO CLOTH.

WARRANTED EQUAL IN STRENGTH TO TOBACCO.

JOSEPH BAKER, 10, Gough Square, Fleet St., E.C., having dealt upwards of 20 years in the above, can recommend it as the best article for destroying the Fly. 1s. 4d. per lb. ; over 10 lbs., 1s. Post-office Orders payable Strand Office.

GENUINE TOBACCO PAPER.

PARTIES FUMIGATING can be supplied with the best GENUINE TOBACCO PAPER at 4l. per cwt. ; any less than 56 lbs., 10d. per lb.

BEN BAXTER, Messrs. Jackson & Sons, Lady Lane, Leeds.

GENUINE TOBACCO PAPER FOR FUMIGATING.

H. APPLEBY (Foreman to Messrs. Ivery & Son, Surrey), takes this opportunity of informing his patrons and the public that he is now offering the above at a very considerably reduced price. It is now sold in packets of 4 lbs. each, at 1s. 3d. per lb. A liberal discount allowed to the Trade. For testimonials that will guarantee its quality, see *Gardeners' Chronicle*, April 16, p. 333.

Sheet Iron Pots for fumigating, 3s. 6d. each.

N.B. All orders to be accompanied with a Post-office Order, payable to HENRY APPLEBY, Dorking, Surrey.

PAGE'S BLIGHT COMPOSITION (4s. per gallon, sufficiently strong to make four fit for use) has stood the test of eight years public trial, and its great success has led to numerous imitations. Dr. Lindley, in his leading article of October 25, 1856, reported 182 cases in its favour, sufficient to convince the most sceptical. Seeds packed for exportation to all parts of the world.—PAGE & TOOGOOD, Royal South Hants Seed Establishment, Southampton.

GISHURST COMPOUND, PATENTED.—

THRIP (magnified).



MEALY BUG (magnified).



GREEN FLY on Roses and Greenhouse Plants safely got rid of by syringing with PATENT GISHURST COMPOUND, 2 oz. to the gallon of water.

Extract from leading article in *Gardeners' Chronicle*, April 9, '59 :

"That it really kills red spider, aphides, mealy bug, thrips and scale, it is impossible to doubt in the face of reports o practical men, among whom we may mention Mr. D. Judd, e Althorp Gardens"—then follows a caution against the use of a too strong solution.

The Gishurst Compound is sold in boxes at 1s. 6d. and 6s. each, with directions for use, and printed opinions of Mr. Rucker's gardener, Lady Dorothy Nevill's gardener, Sir William Hooker, Mr. Rivers, and other eminent authorities. For Nurserymen the large size is recommended, but where the consumption is not large the compound keeps its strength best in the small. The undermentioned Seed Merchants, Nurserymen, &c , having taken in supplies are prepared to sell single boxes :

Barnes, Thos., Thirsk.	Henderson, E. G. & Son, St. John's Wood, London
Barratt, Bury St. Edmunds	Henderson, A. & Co., Pine-apple Place, Edgeware Rd.
Bass & Brown, Sudbury	Hooper & Co., Covent Garden
Bell & Co., Newcastle-on-Tyne	Jackson, Thos. & Son, Kingston
Bell, John, Norwich	Jefferies, W. B., Ipswich
Brigden, T., Railway Arcade, London Bridge	Kennedy & Co., Dumfries
Brown, D., Norwich	King, Wm., Lincoln
Chater, W., Saffron Walden	Low, Hugh & Co., Clapton
Cattell, J., Westerham	Mackie & Stuart, Norwich
Cripps, T., Tunbridge Wells	Mann, J., Brentwood
Deane & Co., London Bridge	Matheson, R. C., Gloucester
Dickson, Francis & Arthur and Sons, Chester	May, J. & Co., 1, Wellington St.
Dickson & Brown, Manchester	Parsons, G., Brighton
Dickson, Hogg, & Robertson, Dublin	Pattinson & Son, Hexham
Dickson & Co., Edinburgh	Perkins, J., Northampton
Epps, F., Ashford, Kent	Pope, H., Gib Heath, near Birmingham
Epps, Maidstone	Reid, B. & Co , Aberdeen
Fisher, Holmes & Co., Sheffield.	Smart & Mein, Kelso
Hawkins, R. T., Weymouth	Thyne, J. & R., Glasgow
	Whallery, T., Liverpool
	Wood & Son, Maresfield

Nurserymen and Seedsmen supplied by PRICE'S PATENT CANDLE COMPANY (Limited), Belmont, Vauxhall, London, S.

KEATING'S PERSIAN INSECT DESTROYING POWDER.

POULTRY, DOGS, AND PLANTS are effectually freed from Fleas, and all other Vermin with which they are infested, by the above Powder, which is quite harmless to animal life. The Farmer, the Gardener, or the Sportsman, will therefore find it invaluable. Bugs, Cockroaches, Beetles, Moths in Furs, and every other species of Insect are also instantly destroyed. In packets post free, for 14, or treble size for 36 postage stamps, by THOMAS KEATING, Chemist, 79, St. Paul's Churchyard, London, E.C. Take notice each genuine packet bears the above name and address. See "THE FIELD," Oct. 2d and 9th, pp. 263, 283, and 294.

TO AMATEUR GARDENERS, NURSERYMEN, AGRICULTURISTS, AND OTHERS.

GUTTA PERCHA TUBING FOR WATERING GARDENS, from 2½d. per foot ; Vulcanised India Rubber Tubing for Watering Gardens, from 4d. per foot ; Brass Hand Branches, with Stopcock and Rose, and every description of Garden Tubing Fittings, sold Wholesale and Retail by W. R. WOODS, 94, Goswell Road, near the "Angel," Islington, London, E.C. Priced Lists can be had on application.

Please notice the Address—94, Goswell Road.

"BRITTAIN'S SUMMER SHADING."—

No. 1. 35-inch TIFFANY, 3d. a yard.
No. 3. 39 inch do. double strength, 6s. 6d. a piece of 18 yards.
No. 2. 55-inch Net, 6d. a yard ; No. 3, 8d.
55-inch ZEBRA NET, 9½d. per yard.
36-inch LINEN, 4d. to 6d. a yard.

The Tiffanies are cheap, and form a light and graceful shading for conservatories, but are not recommended as so useful nor so ornamental as the Nettings, nor are they under any circumstances so effective as a protection from frost. The Nettings have been tested by the largest consumers of the three kingdoms during six years, and have never failed. They modify the temperature, while at the same time they are so woven as to admit the natural influence of light and air, so essential to healthy growth. Patterns on application to T. BRITTAIN & Co., Manchester, sole manufacturers.

JAMES PHILLIPS AND CO.'S PRICES of GLASS for the present month.

HORTICULTURAL GLASS, STOCK SIZES, in 100 feet boxes.

	3rds.	4ths.
11 by 9, 12 by 9, 13 by 9, 14 by 9 .. / 12 „ 10, 13 „ 10, 14 „ 10, 15 „ 10 ..	14s. 6d.	12s. 6d.
13 „ 11, 14 „ 11, 15 „ 11, 16 „ 11 .. / 14 „ 12, 15 „ 12, 16 „ 12, 17 „ 12 .. / 18 „ 12, 19 „ 12, 16 „ 13, 17 „ 13 .. / 18 „ 13, 19 „ 13, 20 „ 13, 21 „ 13 .. / 16 „ 14, 17 „ 14, 18 „ 14 .. .. / 19 „ 14, 20 „ 14, 21 „ 14	16s. 6d.	14s. 0d.

Boxes included and not returnable.

PACKED IN CASES.

200 feet	£2 2 0	16 oz.
300 feet	3 3 0	
200 feet	2 18 0	21 oz.

ORCHARD HOUSE SIZES, as supplied by us to Mr. Rivers.

		16 oz.	21 oz.
20 in. by 12 in.			
20 in. by 13 in.	Common	14s. 0d. ..	£1 1s.
20 in. by 14 in.	Superior do. ..	16 6 ..	1 5
20 in. by 15 in.	English Glass	18 0 ..	1 9

Boxes included and not returnable.

SMALL SQUARES.—Per 100 feet.

				s.	d.
6 by 4	6½ by 4½	7 by 5	7½ by 5½	11	6
8 „ 6	8½ „ 6½	9 „ 7	9½ „ 7½		
10 „ 8	10½ „ 8½ ..	..	.. ..	12	6

JAMES PHILLIPS AND CO.,

180, Bishopsgate St. Without, London, E.C.

HORTICULTURAL GLASS—JUNE TARIFF.

THOMAS MILLINGTON'S reduced Tariff of GLASS, &c.

6 by 4, 7 by 5, 8 by 6, 9 by 7 / 6½ by 4½, 7½ by 5½, 8½ by 6½, 9½ by 7½ } 16 oz. to the foot, 11s. 6d. per 100 feet.

In 100 boxes,—4ths quality, 12s. 6d.; 3ds do., 14s. 4d.

10 by 8, 12 by 9, 12½ by 10½, 14½ by 10½, 13 by 11
10½ by 8½, 12½ by 9½, 13 by 10, 15 by 10, 13½ by 11½
11 by 9, 13 by 9, 13½ by 10½, 12 by 11, 14 by 11
11½ by 9½, 12 by 10, 14 by 10, 12½ by 11½ .. ..

		16 oz.	21 oz.
20 by 12 / 20 by 13 / 20 by 14 / 20 by 15	per 100 feet	16s. ..	24s.
	Common ..	18s. ..	27s.
	Superior .		

All Boxes included.

Orchard House sizes as supplied to Mr. Rivers.

Hartley's improved Rough Plate Glass from ⅛ to ⅜ in thickness.

Coloured Glass in great variety, at 9d. and 1s. per foot.

Paints, Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, Lamp Glasses, &c.

87, Bishopsgate Street Without, same side as Eastern Counties Railway.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

HETLEY AND CO. are supplying 16-oz. Sheet Glass of British Manufacture, packed in boxes, containing 100 square feet each, at the following REDUCED PRICES for cash. A reduction made on 1000 feet.

Sizes.—Inches.	Inches.	Per foot.	Per 10 feet.
Under 6 by 4	at 1½d. is	£0 12	6
From 6 by 4 „ 7 „ 5	„ 2d. „	0 16	8
„ 7 „ 5 „ 8 „ 6	„ 2½d. „	0 18	9
„ 8 „ 6 „ 10 „ 8	„ 2½d. „	1 0	10
„ 10 „ 8 „ 12 „ 9	„ 2¾d. „	1 2	11

Larger sizes, not exceeding 40 inches long.

16 oz. from 3d. to 3½d. per square foot, according to size.
21 oz. „ 3½d. to 5d. „ „ „
26 oz. „ 3½d. to 7½d. „ „ „

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS, for Horticultural purposes, at reduced prices, by the 100 square feet.

GLASS TILES AND SLATES made to any size or pattern, either in Sheet or Rough Plate Glass.

Propagating Glasses, Beehive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in Glass.

PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.

GLASS SHADES, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the excise duty, reduced one-half. List of Prices and Estimates forwarded on application to

JAMES HETLEY & Co., 35, Soho Square, London.

GLAZIERS' DIAMONDS for CUTTING HORTICULTURAL and other GLASS, to be had of the Wholesale Manufacturer, JOHN EDWARDS, 20, Sharp's Alley, West Smithfield, London, E.C. Prices from 10s. to 27s. 6d.

HORTICULTURAL BUILDINGS AND HEATING BY HOT WATER.

JOHN R. PEILL, 17, New Park Street, Southwark, Manufacturer of every description of Buildings for Horticultural purposes, and Inventor of the Improved Conical Boiler for heating the same, is prepared to undertake works of any magnitude, and refers among others to the celebrated range of FORCING HOUSES at HER MAJESTY'S GARDENS, FROGMORE, and at SIR ROBERT PEEL'S, DRAYTON MANOR, constructed under the superintendence of his Manager, MR. JOHN JONES; and also to his BOILERS fixed at the CRYSTAL PALACE, the ROYAL BOTANIC GARDENS, REGENT'S PARK, and KEW, and at several hundreds of the Nobility's seats, Public Establishments, and Manufactories in London and the provinces. J. R. P. also manufactures every description of Iron Roofs, Iron Houses, and Iron Fencing, plain and ornamental. Strong Iron Hurdles for Sheep (6 feet long, 3 feet high, with 5 bars), 4s. 3d. each; ditto for cattle, 4s. 9d. each.

Prices and other particulars forwarded on receipt of one postage stamp.

SIGMA'S BEAN, MANGEL, & CORN PLANTERS (5 Depositors), HOES, &c. The "Multum in Parvo," combining Cultivator, Horse Hoe, Ridge Plough, Subsoiler, Broadshare, and other forms; all expanding. Complete, 7l. 7s. Prospectus sent.—C. POWELL, Hurstgreen, Sussex.

PATENT PRIZE SCYTHES, Price 11s. AND 11s. 6d.

JAMES PAYNE, Kirkcudbright, invites the attention of Gardeners and others to his newly improved Patent Adjustable Scythes, which can be set to any angle in one minute's time; are light and easily managed, warranted strong, and unequalled for finish by any in the Kingdom.—Circulars on application.

PARKES' STEEL DIGGING FORKS.

BURGESS AND KEY, 95, Newgate Street, London, being the Wholesale and Retail Agents for these celebrated TOOLS have always a large Stock on hand from which their Customers may select what they may require.

ANTHONY'S PATENT AMERICAN CHURN.—The FIRST PRIZE was again awarded to this Churn in Competition with several others at the Chester Meeting of the Royal Agricultural Society; it has obtained the First Prize given by the Society at every Meeting since 1850.

Messrs. BURGESS & KEY, 95, Newgate Street, strongly recommend it as the most perfect Churn now in use. Full particulars sent on application.

BEE-HIVES.

PRIZE MEDAL AWARDED TO G. N. & SONS, FOR BEE-HIVES AND HONEY, AT THE PARIS EXPOSITION OF 1855.

NEIGHBOUR'S IMPROVED COTTAGE BEE-HIVE, as originally introduced by GEORGE NEIGHBOUR & SONS, with all the recent improvements, glasses, and thermometer, price 35s., securely packed for the country.



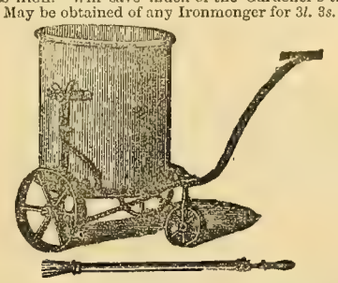
This unique Hive has met with universal commendation, and may be worked with safety, humanity, and profit by the most timid; its arrangements are so perfect that the Honey may be taken at any time of the gathering season without at all injuring the Bees.

Early applications addressed to GEORGE NEIGHBOUR & SONS, 127, High Holborn, or 149, Regent Street, London, will receive prompt attention.

Their newly-arranged CATALOGUE of other Improved Hives with Drawings and Prices, sent on receipt of two stamps.

AGENTS.—Liverpool: JAMES CUTHBERT, 12, Clayton Square. Manchester: W. WILSON, 50, King Street. Glasgow: AUSTIN & M'ASLEN, 186, Trongate. Dublin: J. EDMONDSON & Co., 61, Dame Street.

WARNER'S SWING WATER-BARROW (To Hold Forty Gallons), MOUNTED ON WHEELS 20 INCHES HIGH. Will save much of the Gardener's time and labour. May be obtained of any Ironmonger for 3l. 3s.



BRASS SYRINGES, 9s. to 18s.

Also a great variety of effective Machines for Hydraulic purposes, and to supply Gardens, Hothouses, Cottages, Farms, Mansions, or Boards of Health, with every requisite connected with the conveyance and distribution of Liquids.

Fountains suitable for Conservatories, Lawns, &c.

JOHN WARNER & SONS 8, Crescent, Jewin Street, London.

GARDEN ENGINES AND SYRINGES.

J. TYLOR AND SONS, Warwick Lane, Newgate Street, London, E.C., beg to call attention to their very superior manufacture of GARDEN ENGINES and SYRINGES.

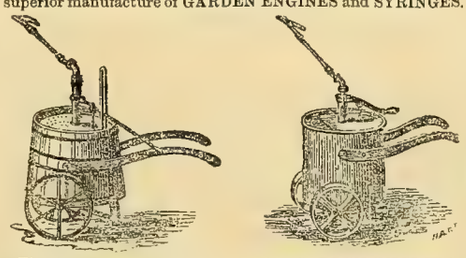


Fig. 598. J. TYLOR & SONS' BARROW GARDEN ENGINE in best well painted Oak tub, fitted with J. TYLOR & SONS' Improved Brass Pump, Universal Joint, and Registered Spreader, which answers the purpose of the separate rose, fan, and jet.

CONTENTS OF TUB:—

10 gallons	15 gallons	28 gallons
£4 10 0	£5 10 0	£6 18 0

Fig. 599. do. TINNED IRON TUB.

CONTENTS OF TUB:—

8 gallons	12 gallons	16 gallons	24 gallons	30 gallons
£2 15	£3 5	£4	£5	£5 18



Fig. 618. No. 1. REGISTERED SYRINGE, with India-rubber suction tube, one rose and jet .. .. £1 5 each.
No. 2. Ditto ditto 1 1 „
Telescope Branch Pipe for ditto .. .. 0 10 „

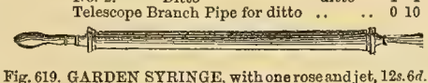


Fig. 619. GARDEN SYRINGE, with one rose and jet, 12s. 6d. each
„ 620. Ditto ditto 11s. 6d. „
„ 621. Ditto ditto 10s. 6d. „
„ 622. LADIES' GARDEN SYRINGE, without rose & jet, 8s.

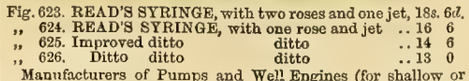


Fig. 623. READ'S SYRINGE, with two roses and one jet, 18s. 6d.
„ 624. READ'S SYRINGE, with one rose and jet .. 16 6
„ 625. Improved ditto ditto .. 14 6
„ 626. Ditto ditto ditto .. 13 0

Manufacturers of Pumps and Well Engines (for shallow or deep Wells), Plumbers' Brass Foundry of every description, High Pressure Cocks and Closets, Copper and Tinned-iron Baths. Garden and Fire Engines, Lamps of every description, Copper Goods, &c. Estimates given for Hot-water and Bath Apparatus.

AGRICULTURAL MACHINERY.

E. R. AND F. TURNER, Ipswich, manufacture Prize Mills for Crushing Corn, Seed, Malt, &c.; Portable Grinding Mills, Steam Engines fixed and portable from 2 horse-power and upwards; Threshing Machines, Chaff Cutter, Oilcake Breakers, Horse Gears, Saw Tables, &c., all of a superior description and adapted for Home, Colonial, and Foreign use. Illustrated Price Lists sent free on application.

IMPERIAL WIRE WORKS AND WINDOW BLIND MANUFACTURY (late Coupland), 370, Oxford Street, London, opposite Wells Street, W.

A variety of FLOWER STANDS AND SUSPENDING FLOWER BASKETS, of new and elegant designs for the present season, made under the personal superintendence of W. RICHARDS, 370, Oxford Street, and at the CRYSTAL PALACE.

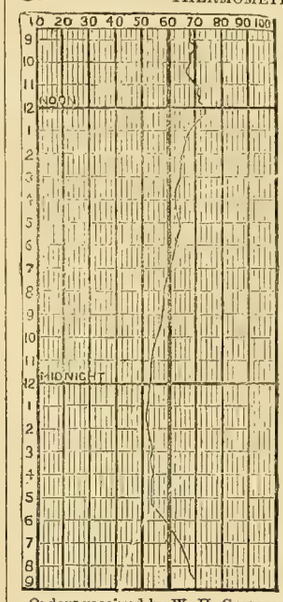
Garden Arches, Roseries, Temples, Trainers, Garden Seats. Folding Chairs, Fencing, Bordering, and every description of Wire Work imaginable. Bird Cages, &c. Conservatories and Aviaries fitted up in the best style and taste. Sun Shades and Window Blinds of all sorts.

SHAW'S TIFFANY.—The best and cheapest material for Shading Conservatories, Protecting Fruit from Birds and Wasps, &c. Sold in pieces 20 yards long by 38 inches wide. No. 1, best quality, 5s. per piece; second quality, 4s. per piece. Extra strong and thick (see Circular sent free by post with samples).

Address JOHN SHAW & Co., Manufacturers and Dealers, Princess Street, Manchester.

TO HORTICULTURISTS.

GAUNTLETT'S PATENT CHRONOMETRICAL THERMOMETER.



This instrument, which combines an eight-day clock of the best English make showing time, with a newly-patented Thermometer, wherein glass and quicksilver are dispensed with, writes down the temperature of the atmosphere on a slip of paper, and when placed in a Hothouse, Forcing House, or Conservatory, &c., supplies a valuable record of the temperature, with all its variations, showing the time when any change took place, and how long such change continued.

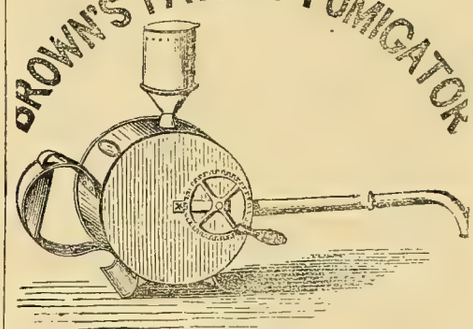
The above slip (reduced in size) exhibits the temperature of the Royal Agricultural Society's show yard at Chester, July 22, 1858, written off by one of these instruments, to which was awarded the Society's SILVER MEDAL.

This is the only instrument that registers temperature continuously and writes it down, and no horticulturist should be without it.

Orders received by W. H. GAUNTLETT, Middlesbro' on-Tees.

PRICE TEN SHILLINGS AND UPWARDS.

BROWN'S PATENT FUMIGATOR



A PORTABLE INSTRUMENT FOR FUMIGATING GREENHOUSES, STOVES, and FRAMES, OR SHRUBS AND FLOWERS, in the open air, without injuring the most delicate plant; delivering the smoke cool, in a dense mass, and effecting a great saving of Tobacco.

Manufactured and supplied to the Trade by Messrs. BARBER & GROOM, London: and may be had of all Ironmongers, Seedsmen, and Florists.

MAPPIN'S PRUNING KNIVES IN EVERY VARIETY.

WARRANTED GOOD BY THE MAKERS.



MAPPIN BROTHERS, Queen's Cutlery Works, Sheffield; and 67 and 68, King William Street, London.

MAPPIN'S "SHILLING" RAZORS Shave well for Twelve Months without Grinding.

MAPPIN'S 2s. RAZORS Shave well for Three Years.

MAPPIN'S 3s. RAZORS (suitable for Hard or soft Beards,) Shave well for Ten Years.

MAPPIN'S SUPERIOR TABLE-KNIVES maintain their unrivalled Superiority—handles cannot possibly become loose—the blades are all of the very first quality, being their own Sheffield manufacture.

	Tble. Kns.	Dst. Kns.	Carvers.
Ivory 3⅞ in. Handle, balanced,	20s. p. doz.;	16s. p. doz.;	6s. p. pair
Do. 4 in. do. ..	25s. „	18s. „	9s. „

MAPPIN'S SILVER-PLATED DESSERT KNIVES and FORKS, in Mahogany Cases.

12 Pairs Knives and Forks, Ivory Handles, in Case..		80s.
12	Do. Pearl Handles, do. ..	130s.
12	Do. Silver-Plated Handles, do. ..	80s.

MAPPIN'S ELECTRO-SILVER PLATE.—MAPPIN BROTHERS, Manufacturers by Special Appointment to the Queen, are the only Sheffield makers who supply the consumers in London. Their LONDON SHOW ROOMS, 67 and 68, King William Street, London Bridge, contain by far the largest STOCK of ELECTRO-SILVER PLATE in the World, which is transmitted direct from their Manufactory, Queen's Cutlery Works, Sheffield.

	Fiddle Pattern.	Double Thread.	King's Pattern.
12 Table Forks, best quality	£1 16 0	£2 14 0	£3 0
12 Table Spoons, best quality	1 16 0	2 14 0	3 0
12 Dessert Forks, best quality	1 7 0	2 0 0	2 4
12 Dessert Spoons, best quality	1 7 0	2 0 0	2 4
12 Tea Spoons, best quality	0 16 0	1 4 0	1 7

Messrs. MAPPIN BROTHERS respectfully invite buyers to inspect their unprecedented display, which, for beauty of design, exquisite workmanship, and novelty, stands unrivalled. Their illustrated Catalogue, which is continually receiving addition of New Designs, sent per post on receipt of 12 stamps.—MAPPIN BROTHERS, 67 and 68, King William Street, London Bridge; Manufactory, Queen's Cutlery Works, Sheffield.

SPLENDID BEDDING PLANT,
TRITONIA AUREA,
THE GOLDEN TRITONIA.

LUCOMBE, PINCE, AND Co. having a very large stock of this most beautiful hardy bulb can offer it well established in pots, fit for immediate planting out, at the undermentioned exceedingly moderate prices.

Nothing can surpass the brilliancy of its rich golden orange-coloured flowers, which are produced in the greatest profusion upon graceful slender stems, and stand unblemished the heaviest showers and most fervent sun. They strongly recommend the Golden Tritonia as one of the most effective plants for masses ever introduced. It cannot fail to give satisfaction; indeed, as that excellent authority Donald Beaton truly remarks in the "Cottage Gardener" "IT IS ESTABLISHED AS A FIRST-RATE AUTUMNAL ORNAMENT TO THE FLOWER GARDEN." It is als perfectly hardy. Now is the time for planting.

100 String Bulbs..	£3 0s. 0d	25 Strong Bulbs..	£1 0s. 0d.
50 do. do. ..	1 15 0	12 do. do. ..	0 12 0

Single Bulbs .. .. 1s. 6d. each.
Exeter Nursery, Exeter. Established 1720

JOHN KERNAN, SEEDSMAN, 4, Great Russell Street, Covent Garden, W.C., respectfully announces that he is now fully prepared to SUPPLY, in any quantity, the BEST VARIETIES of AGRICULTURAL TURNIPS, that is:—

	Per lb.—s. d.		Per lb.—s. d.
Laing's Swede	0 6	Red Clover	0 9
Matson's	0 6	White ditto	1 0
Marshall's	0 6	Alsike ditto	2 0
Skirving's	0 6	Trefoil	0 3
Purple-topped Scotch Turnip	0 6	Lucerne	1 0
Green ditto	0 6	Sainfoin and Tares, bush.	10 0
Cattle and other Cabbages for early Lambs	0 6	Separate & Mixed Grasses	6 0
Yellow Globe Mangel ..	0 6	12 var. imported German named Stocks per pkt.	3 0
Red ditto	0 6	12 ditto Asters	3 0
Long Red Mangel ..	0 6	A mixture of 24 var. of either of the above ..	0 6

CARNATIONS, PICOTEES, DELPHINIA, BROMPTON and INTERMEDIATE STOCKS of sorts, with other Biennials and Triennials for flowering early in spring, should be sown from the present time to the middle of July. For Early Greenhouse Flowers, CINERARIA, CALCEOLARIA, PRIMULA SINENSIS, SCHIZANTHUS HOOKERI, GERANIUM, NIEREMBERGIA, TROPÆOLUM LOBBII, SPIRÆA, VERBENA, and VERONICA.

JOHN KERNAN begs to say that 2 lbs., at 2s. per lb., is sufficient for an acre, and not 8, as is usually advertised by puffers, merely for the sake of the profit on the extra and unnecessary quantity, who can hardly plead ignorance that the space each plant will occupy is double that necessary for the largest Cattle Turnip.

GUANO in any quantity, from 1lb. to 1 ton and upwards.

The Trade supplied on the most liberal terms.

HORTICULTURAL, VEGETABLE, and FLOWER SEEDS, including all the recent introductions, on sale as usual. Catalogues may be had on application.

A well educated YOUTH WANTED as an Apprentice. A Premium expected.

BEDDING PLANTS, 20s. per hundred.
HARDY CONIFER & FRUIT TREES in pots, 30s. p. doz.
HERBACEOUS PLANTS, 20s. per 100.
SHRUBS, in pots, 12s. per dozen.
MANGEL WURZEL SEEDS, 6d. per lb.
SWEDE and other TURNIP SEEDS, 6d. per lb., saved from large bulbs, and of the very best quality.

CATALOGUES by inclosing one stamp to MARTIN & SONS, East Riding of Yorkshire Nursery and Seed Establishments, Cottingham (A.D. 1788), and Junction Street, near Monument Bridge, Hull.

BEDDING PLANTS.—As orders are received the best Plants will be selected, and set aside until they are required. The following 12 dozen Plants can be had for 25s., package included, viz:—

12 Scarlet Geraniums	12 Petunias [sima	12 Gazania
12 Yel. Calceolarias	*12 Vinca elegantis-	12 Blue Lobelia
12 dark ditto	12 Blue Verbenas	12 Hollyhocks
12 Dahlias	12 White Verbenas	12 Heliotropes

Thirteen Plants to the dozen. 200 Plants for 21s., the selection left to JOHN JEYES.

*** J. JEYES respectfully invites attention to a very fine COLLECTION of FERNS.

* VINCA ELEGANTISSIMA.—The most beautiful of all variegated plants. As a bordering for flower beds, or to form a bed of itself, or mixed with shrubs, it stands unequalled, and being an evergreen and hardy makes it the most desirable of all variegated plants; it resembles when in full leaf finely grown plants of the Golden Chain Geranium.
Northampton Nurseries.

BEDDING PLANTS.

F. AND A. SMITH beg to offer the following varieties, strong and healthy:—

Ageratum	Mimulus, various
Antirrhinum	Nasturtium, Tom Thumb. The best scarlet bedding plant out.
Alyssum, variegated fol.	
Anagallis	
Balm, variegated fol.	Nasturtium, Cattell's Dwarf Crimson.
Cuphea	
Calceolaria	Nasturtium, double, various, 6d. each
Dahlias	
Fuchsia	Nicreambergia
Geranium, scarlet various	Pentstemon, various
,, striped ,,	Petunias, various
,, fancy ,,	,, new double
,, unique ,,	Pyrethrum pleno alba
,, scented ,,	Roses
,, Ivy ,,	Salvias, various
Gaillardia	Senecio
Heliotrope, various	Verbenas, white
Hollyhock, 6s. per dozen	,, blue or purple
Koniga variegata	,, scarlet
Lantana	,, crimson
Lobelia	Musk, 4s. per dozen

The above in strong established plants at moderate prices, according to selection.—Dulwich, Surrey.

CHEAP BEDDING PLANTS, 2s. 6d. per dozen.—Apply for Catalogues, enclosing two stamps, to J. SCOTT, Merriott Nurseries, Crewkerne, Somerset.

The Catalogue comprises everything suitable for Flower Garden decoration, and full descriptions of J. S.'s unrivalled collection of new DOUBLE PETUNIAS, now ready for delivery, at 6s., 9s., and 12s. per dozen. Fine new single sorts, 2s. 6d. to 3s. 6d. per dozen; Magna coccinea, the most splendid of all Bedding Petunias, 5 inches across, beautiful light crimson, 3s. 6d. per dozen.

LEPTODACTYLON CALIFORNICUM, in quantity; also PHLOX CRITERION, two lovely Bedding Plants.

DAHLIAS AND BEDDING PLANTS.

JOHN HARRISON'S Stocks of the above comprise several Hundred Thousand, are in excellent condition, and now ready for sending out. CATALOGUES with prices ready, and as J. H. has again been the most successful exhibitor of Dahlias in the North of England during the past season, having taken the First Prizes at every Exhibition of note except one, he has marked with an asterisk those varieties which have proved the most constant and frequently exhibited in his winning stands.—Darlington Nursery, May 14.

FRUIT TREES IN POTS.

H. LANE AND SON, the Nurseries, Great Berkhampstead, Herts, have to offer in large quantities fine FRUITING TREES of the below-mentioned, which are now in a good state for travelling, the fruit not being heavy and likely to drop off.

They consist of PEACHES, NECTARINES, APRICOTS, 5s., 7s. 6d., to 10s. 6d. each.

CHERRIES, PLUMS, PEARS, APPLES, 3s. 6d. to 5s. each.

VINES, in pots, from eyes, with 5 to 10 bunches of Fruit, 5s. each.

FIGS, in pots, in a bearing state, 3s. 6d. each.

GOOSEBERRIES and CURRANTS, 1s. 6d. each.

Also a very large collection of EVERGREENS, of which we have a fine Stock, viz, Araucarias, Cedrus Deodara, Ced. Lobanon, Cupressus, Junipers, Pines, and all Coniferous Plants, 6 ft. to 12 ft. high; Rhododendrons, well set with flower buds, &c.

The Home Nurseries are within five minutes' walk of the Station of the London and North-Western Railway, Great Berkhampstead, Herts.

GREENHOUSE AND CONSERVATORY PLANTS.—The Subscribers having a large stock of the above in well-grown Plants, consisting of the handsomest kinds of the following genera, viz.:—Acacia, Adenandra, Aphelexis, Azalea, Beaufortia, Begonia, Boronia, Bouvardia, Brachysema, Chironia, Chorozema, Clematis, Corræa, Cyclamen, Cytisus, Daphne, Dillwynia, Diosma, Epacris (100 kinds), Epiphyllum, Erica (200 kinds), Eriostemon, Eugenia, Eutaxia, Gloxinia, Hibbertia, Hoya, Indigofera, Jasminum, Kennedya, Leschenaultia, Lilium, Magnolia, Metrosideros, Myrtus, Nerium, Oxylobium, Passiflora, Pimelea, Polygala, Pultenæa, Sollya, Statice, Swainsonia, Tacsonia, Tecoma, Tropæolum, Veronica, &c., offer them as follows:—

100 handsomest species	.. .. ..	£5	0 0
50 ,, ,,	.. .. ..	2	15 0

Any less quantity 15s. per doz.

CATALOGUES may be had on application.

☞ All orders of 2l. and upwards are delivered Carriage Free to London, Manchester, Liverpool, Peterborough, Hull, and Newcastle, as well as to any Railway Station within 150 miles of the Nursery.

YOUELL & Co., Royal Nursery, Great Yarmouth, Norfolk.

A PERFECT SUBSTITUTE FOR GRASS.
LAWNS WITHOUT MOWING.

SPERGULA PILIFERA,

IS OFFERED BY

MESSRS. E. G. HENDERSON & SON

As a perfectly hardy Alpine plant, forming a close, dense, carpet like surface, maintaining the same growth with a rich, ever-during, evergreen verdure through all weathers in winter and summer, presenting in July the living picture of an emerald green velvet-like vegetable carpet, studded over with innumerable snow white star-like blossoms.

WELL-ESTABLISHED TUFTS FOR IMMEDIATE PLANTING, 4s. PER DOZEN.
Seed Packets, 6d., 2s. 6d., 5s., 10s., and 20s. each.

Special directions for sowing, rearing, and final planting are given in E. G. HENDERSON & SON'S NEW GENERAL CATALOGUE OF ORNAMENTAL GREENHOUSE and SUMMER-FLOWERING BEDDING PLANTS, which will be ready for distribution in a few days.

Wellington Nursery, St. John's Wood, London.

CHOICE FLOWERS.

BUTLER & McCULLOCH'S
SPRING CATALOGUE OF SEEDS,



ARRANGED on a new and original plan, with copious Descriptive and Cultural Notes and containing many new and rare species and varieties not found in any other Catalogue, now ready and may be had free and post paid on application.

FLOWER, SHRUB, TREE, and VEGETABLE SEEDS, the crop of 1858, saved with the greatest care, by the most eminent growers.

We may also state that the Sardinian correspondent of Messrs. JAMES CARTER & Co., whose Seeds, especially Carnations and Picotees, have given such universal satisfaction, has transferred the Agency from that firm and appointed us his representative in this country. To meet the growing demand for first class flowers, particularly FLORISTS' FLOWERS, we have adopted our usual maxim of charging the lowest possible prices.

Professor LINDLEY in the *Gardeners' Chronicle* of February 5th, has the following notice of B. & McC.'s Catalogue.

"BUTLER & MCCULLOCH'S (Covent Garden) Spring Catalogue of Choice Flower, Shrub, Tree, and Vegetable Seeds. This list fills 84 closely printed 8vo pages, and is remarkably well got up. It appears that the correspondent in Sardinia, who formerly supplied one of the great London houses with seeds raised in that warm part of Europe, has now transferred what he saves to Messrs. BUTLER & MCCULLOCH. Let us add, that it yields to no Trade List in the abundance of its materials or the excellence of its arrangements."

BUTLER AND MCCULLOCH, while drawing attention to their general SPRING CATALOGUE which has elicited such high encomiums both from the scientific botanist and amateur cultivator, avail themselves of the present opportunity to select from its pages the following list:—

(28) ACACIA GRANDIS (TRUE).
One of the most beautiful of the A. pulchella section, producing deep golden balls. Of these graceful and highly ornamental plants our collection embraces no fewer than 47 varieties, all of the most decorative character.

(70) ALPINES.
Of these beautiful little plants we have a splendid collection, embracing all the most admired kinds, collected and arranged for us last autumn by M. Ortgies, the Curator of the Zurich Botanic Gardens. The value of Alpine plants for rock-work is too well known to require comment. These collections we can confidently recommend, containing, as they do, species only of highest merit.

(199) CALLICHROA PEDATA.
A new crimson annual with white eye, very beautiful.

(217 A.) CAMELLIA JAPONICA.
From the newest and finest striped and other varieties of that much admired genus.

(296) CEANOTHUS AZUREUS GRANDIFLORUS.
This, caruleus macrophyllus, and Fontanesianus are all beautiful varieties of this highly ornamental genus, of which we possess nine splendid varieties. They are equally suited for conservatory and out-door decoration.

CANNAS.
Of these we possess an extremely interesting collection.

(304) CELOSIA (species nova).
A most elegant plant, producing a multitude of long spikes of feathery blossoms, silvery white shaded with bright rose, retaining its colour perfectly when dried, and therefore admirably adapted for winter bouquets; one of the greatest novelties of the season, flowering out of doors or in pots from July to October. Well worth attention. A dried specimen may be seen.

(337) CHRYSANTHEMUM (tall and dwarf).
Of these dwarf and tall varieties we have a fine stock, nearly all of which may be depended upon to produce double flowers, the seeds having been saved from the finest named varieties.

(344) CHRYSOCOMA COMAUREA.
Fine evergreen shrub, bearing a profusion of golden ball-like flowers; one of the handsomest greenhouse plants in cultivation.

(451) DATURA HUMILIS FLORE PLENO.
A magnificent Brugmansia-like plant producing a profusion of deep golden-yellow flowers; very large, double, and sweet-scented. One of the greatest novelties of the season.

(625) HABROTHAMNUS HÜGELLI.
This, purpureus, and Abelli are all handsome varieties of this beautiful genus, which everybody having a greenhouse or conservatory should grow. All three are extremely ornamental.

(665) HIBISCUS ROSEUS SUPERBUS.
This, Syriacus, and Thunbergi we can highly recommend. All are plants of great beauty

(680 to 688) HOLCUS OR SORGHUM (Chinese Sugar Cane).
Of this important class we have nine new and important varieties from Africa, said to be more ornamental and to contain more saccharine matter, Holcus saccharatus.

(704) INDIGOFERA DECORA ALBA ROSEA.
The above, purpurea, and dosua are all pretty free flowering shrubs, suitable for small greenhouses. They are also highly ornamental out of doors in summer.

(972) PELARGONIUMS.
Of these both large flowered and fancy, very choice, and of other splendid varieties, including Scarlets, we have a fine stock, which cannot fail to prove highly satisfactory.

(1149) SOLANUM CAPSICASTRUM.
Miniature Orange tree, covered all winter with a profusion of scarlet fruit; a handsome plant for greenhouse or sitting rooms.

(1335) BIGNONIA RADICANS MULTIFLORA.
Finer and brighter than radicans; flowers in large panicles producing a splendid effect.

(1468) TACSONIA IGNEA.
This magnificent Passionflower is unequalled for the brilliancy and splendour of its scarlet blossoms, far surpassing in this respect any of its class yet known. It flowers most profusely, grows rapidly, and covers a large space in an incredibly short time. It succeeds in a cold greenhouse, and even against a south wall with a little protection in winter (new and rare)

(1488) TROPÆOLUM TRIOMPHE DE GAND FIMBRIATUM.
Fringed orange scarlet.

CARNATIONS and PICOTEES saved from the most choice Collection of English varieties grown on the continent, and which may be expected to produce flowers of the highest merit, sent out in sealed packets as received from our Sardinian correspondent, whose seeds for many years have given such universal satisfaction, and from which varieties of the greatest excellence have been raised.

For prices and further particulars with regard to the above and other novelties, we refer our patrons to the Catalogue itself, which is sent free and post paid on application.

BUTLER & McCULLOCH, Covent Garden Market.

HORTICULTURAL SOCIETY OF LONDON.—

St. James's Hall, May 12 and 13.

LIST OF AWARDS.

Class I.—10 ORCHIDS (Amateurs).

1st. Mr. Woolley, Cheshunt, Herts.

Class II.—10 ORCHIDS (Nurserymen).

1st. Messrs. Veitch & Son, Exeter and Chelsea.

Class IV.—8 CHINESE AZALEAS (Nurserymen).

1st. Messrs. Fraser, Lea Bridge Road, Leyton.

Class VI.—6 CHINESE AZALEAS, Standards (Nurserymen).

1st. Messrs. Fraser, Lea Bridge Road, Leyton.

2d. Messrs. Lane & Son, Great Berkhampstead.

Class VIII.—8 RHODODENDRONS, distinct, in pots (Nurserymen).

1st. Mr. J. Standish, F.H.S., Bagshot.

2d. Messrs. Lane & Son, Great Berkhampstead.

Class IX.—6 ROSES, distinct sorts, in pots.

1st. Messrs. Lane & Son, Great Berkhampstead.

Class XII.—8 fine foliaged Plants.

1st. Mr. Young, Gr. to H. Stone, Esq., Dulwich.

2d. Messrs. Jackson & Son, Kingston.

Class XIII.—New or extremely rare ORNAMENTAL PLANTS.

First-class Certificate.—Messrs. Veitch & Son, Exeter and Chelsea, for a species of Pothos; ditto, for Clianthus Dampierii.

Second-class Certificate.—Messrs. Veitch & Son, Exeter and Chelsea, for Begonia amabilis; ditto, for Caladium Chantini.

Third-class Certificate.—Messrs. Veitch & Son, Exeter and Chelsea, for Begonia Queen Victoria.

Class XIV.—Single Specimen of most ORNAMENTAL PLANT, in flower.

1st. Messrs. Veitch & Son, Exeter and Chelsea, for Philesia buxifolia.

2d. Mr. Woolley, Cheshunt, for Dendrobium lituiflorum.

3d. Messrs. A. Henderson & Co., Pine-apple Place, for Datura chlorantha.

Class XV.—Single Specimens of most ORNAMENTAL PLANT, not in flower.

1st. Messrs. Veitch & Son, Exeter and Chelsea, for Wellingtonia gigantea.

First-class Certificate.—Messrs. Veitch & Son, Exeter and Chelsea, for Farfugium grande; ditto, for Cyanophyllum magnificum; ditto, for Olea ilicifolia; Messrs. A. Henderson & Co., Pine-apple Place, for Caladium Chantini.

Second-class Certificate. — Messrs. A. Henderson & Co., Pine-apple Place, for Caladium Houlleti.

Class XVI.—MISCELLANEOUS.

First-class Certificate.—Mr. Ed. Francis, F.H.S., Hertford, for a collection of Roses; Messrs. Veitch & Son, for a large group of Miscellaneous Plants; Messrs. Henderson & Son, Wellington Road, for a Miscellaneous Collection of Plants.

Second-class Certificate. — Mr. J. Standish, F.H.S., Bagshot, for Myosotis nobilis; ditto, for Exochorda grandiflora; Mr. John Hally, F.H.S., Blackheath, for a collection of Ferns; Mr. Gaines, F.H.S., for 6 Amaryllids.

Third-class Certificate.—Mr. Bragg, Star Nursery, Slough, for cut Pansies.

FRUIT.

Class XVII.—The best Collection of Fruit.

1st. Messrs. Webber & Co., Covent Garden.

Class XVIII.—PINE APPLES; large sorts, not Providence.

1st. Mr. Gilham, Isleworth, for Black Jamaica.

2d. Mr. Davies, Gr. to J. Dixon, Esq., Astle Park, Chelford, for a Black Prince.

3d. Mr. R. Turnbull, Gr. to his Grace the Duke of Marlborough, Blenheim, for a Prickly Cayenne.

Class XIX.—PINE APPLES, Queens, single specimens.

1st. Mr. Page, Gr. to Wm. Leaf, Esq., F.H.S., Streatham.

2d. R. Crawshay, Esq., Cyfarthfa Castle.

3d. Mr. Gillham, Isleworth.

Class XX.—GRAPES, black, three bunches, in baskets.

1st. Mr. Thomas Frost, Gr. to E. L. Betts, Esq., F.H.S., Preston Hall, Kent.

2d. Mr. William Hill, Gr. to Ralph Sneyd, Esq., F.H.S., Keele Hall, Staffordshire.

3d. Mr. Tillyard, F.H.S., Gr. to Viscount Eversley, F.H.S., Heckfield, Hants.

Class XXI.—GRAPES, white, three bunches, in baskets.

1st. Mr. G. Chalmers, Gr, to Lord Southampton, F.H.S., Whittlebury, Towcester.

2d. Mr. G. Tillyard, F.H.S., Gr. to Viscount Eversley, F.H.S., Heckfield, Hants.

Class XXII.—CHERRIES, in single dishes.

1st. Mr. Shuter, Gr. to the Earl of Wilton, Heaton Park, Manchester.

2d. Mr. J. Fleming, F.H.S., Gr. to his Grace the Duke of Sutherland, F.H.S., Clevedon.

3d. Mr. McBey, Gr. to Richard Ellison, Esq., F.H.S., Sudbrooke, Holme, Lincolnshire.

Class XXIII.—STRAWBERRIES, two dishes, distinct sorts.

1st. Mr. T. Park, Gr. to G. H. Vernon, Esq., Grove Hall, Retford, for Keens' Seedling, and Victoria.

2d. Mr. J. Clark, F.H.S., Gr. to the Earl of Darnley, Cobham Hall, Kent.

3. Mr. R. Turnbull, Gr. to his Grace the Duke of Marlborough, Blenheim, for

Class. XXV.—STRAWBERRIES, single dishes, not British Queen.

1st. Mr. R. Smith, Twickenham, for Sir Charles Napier.

2d. Mr. Park, Gr. to G. H. Vernon, Esq., Grove Hall, Retford, for Keens' Seedling.

Class XXVI.—MISCELLANEOUS.

First-class Certificates.—Mr. Sparkes, Gr. to C. Collins, Esq., Hele Lodge, Collumpton, for Melons; Mr. Monro, Shinley Gardens, Barnet, for Monro's Hybrid Prolific Cucumber; Mr. Ivison, Gr. to his Grace the Duke of Northumberland, F.H.S., for Strawberries in pots; Mr. John Fleming, F.H.S., Gr. to his Grace the Duke of Sutherland, F.H.S., Clevedon, for a dish of Figs; Mr. Park, Gr. to G. H. Vernon, Esq., Grove Hall, Retford, for a dish of Beurré Rance Pears; R. Crawshay, Esq., F.H.S., Cyfarthfa Castle, for a dish of Tom Thumb Peas.

THE NEW CHAPEL AT THE LUNATIC ASYLUM, NORTHAMPTON.—A GRAND FLORAL AND HORTICULTURAL SHOW in aid of the Fund for erecting a Chapel at the County Lunatic Asylum will be held at Blisworth Gardens on THURSDAY, July 28, under the special patronage of

The Right Hon. the Earl Spencer.
The Right Hon. the Lord Southampton.
The High Shreiff of the County.
The Rev. Sir G. S. Robinson, Bart.
The Worshipful the Mayor of Northampton.

Prizes will be offered for Stove and Greenhouse Plants, Plants with variegated and fine foliage, Coniferæ, Exotic Ferns and Lycopods, Roses, Geraniums, Carnations, and Pansies, Fruit, Vegetables, &c.

Schedules will be prepared in due time, and further particulars will appear in future advertisements.

H. O. Nethercote, Honorary Secretary.

Subscriptions to carry out the above object will be received by the Honorary Secretary, or by Mr. W. J. Pierce, Auctioneer, Derngate, Northampton, to whom all communications may be addressed.

TUNBRIDGE WELLS HORTICULTURAL FÊTE, AND GRAND MUSICAL PROMENADE.

POSTPONED TO FRIDAY, JULY 1, 1859.

Patrons.

The Most Noble the Marquis Camden, K.G.
The Right Hon. the Earl of Abergavenny.
The Right Hon. the Earl de la Warr.
The Right Hon. the Lord Viscount Hardinge.
The Right Hon. Lord de L'Isle.

PRIZES OPEN TO ALL ENGLAND.—(No Entrance Fee).

Classes.	1st Prize. £ s. d.	2d Prize £ s. d.	3d Prize. £ s. d.
A.—Stove and Greenhouse Plants, not Geraniums, Fuchsias, or Calceolarias (15 varieties)	10 0 0	5 0 0	2 0 0
B.—Ditto (6 vars.), private growers only	5 0 0	2 10 0	1 0 0
C.—Pelargoniums (show), in not larger than 11-inch pots (6 varieties) ..	3 0 0	2 0 0	1 0 0
D.—Pelargoniums, fancy (6 varieties) ..	3 0 0	2 0 0	1 0 0
E.—Orchids (6 varieties)	3 0 0	2 0 0	1 0 0
F.—Ditto (3 varieties)	1 10 0	1 0 0	0 10 0
G.—Ornamental Foliage Plants (6 vars.)	3 0 0	2 0 0	1 0 0
H.—Fruit, collection of 6 dishes; each dish of Fruit to contain not less than 3 bunches of Grapes, 30 Strawberries, 6 Peaches, Nectarines, Figs, &c.	5 0 0	3 0 0	2 0 0
I.— Grapes, black (3 bunches)	1 10 0	1 0 0	0 10 0
K.—Ditto, white (3 bunches)	1 10 0	1 0 0	0 10 0

☞ Exhibitors in Class E cannot compete in Class F.

Cottagers' Prizes will also be given, a Schedule of which is published.

Special arrangements with the South-Eastern Railway Company for the convenience of visitors will be made, and also for the conveyance of flowers, &c., for exhibition.

The Band of the Royal Artillery, consisting of 50 performers, will be in attendance.

Further particulars, or information, may be obtained of the Secretary, Mr. E. F. Loof, 8, Parade, Tunbridge Wells.

COTTINGHAM AND DISTRICT FLORAL AND HORTICULTURAL SOCIETY AND POULTRY SHOW, TOGETHER WITH FARMERS' PRODUCE. — This Society's splendid Annual Exhibition of PLANTS, FLOWERS, FRUITS, VEGETABLES, POULTRY, AND FARMERS' PRODUCE, will take place on WEDNESDAY, August 31, in spacious Marquees on the grounds of Joseph Gee, Esq., when amongst other Prizes in Silver to be competed for are Two Valuable SILVER CUPS. The amount offered in prize money in the different classes exceeds 100*l*. The successful competitors to receive their prizes before leaving the ground on the day of Exhibition.

Books of Prizes, &c., to be had on application to Martin & Sons, Seedsmen, Junction Street, Hull; or by Post, enclosing three postage stamps to the Secretary.

Cottingham, May 14. Josh. Brittain.

BRIGHTON AND SUSSEX FLORICULTURAL AND HORTICULTURAL SOCIETY'S EXHIBITIONS for 1859 are fixed to be held on the following days:—Summer Show, WEDNESDAY and THURSDAY, June 22 and 23; Autumn Show, WEDNESDAY and THURSDAY, Sept. 14 and 15; on the same grand scale as in former years. Schedules are now ready, and may be obtained of the Secretary, 96, St. James's Street; or of E. Spary, Queen's Graperies, General Superintendent of Exhibition.

Thos. Attree, Esq., Chairman of Committee. | Edward Carpenter, Secretary.

The Gardeners' Chronicle.

SATURDAY, MAY 14, 1859.

MEETINGS FOR THE FOLLOWING WEEK.

Wednesday, May 18—Crystal Palace.
Friday, — 20—National Tulip at Slough.

The Fellows of the Horticultural Society are under great obligation to those excellent cultivators and earnest supporters who among them formed the interesting exhibition at St. James's Hall last Thursday; for experience has shown that to leave plants for 48 hours in a room, the air of which is dried by gasburning, is to expose the flowers to destruction, and the plants themselves to serious injury. Nevertheless, in the face of so great an obstacle, a highly pleasing collection of fine things was brought together. The particulars of the Exhibition are fully described in another column. We must however add some editorial observations to those of our reporter.

The Rose growers seem not to have had confidence in the strength of their plants to expose them to the trial we have described; with the exception of Messrs. Lane, of Berkhampstead, and Francis, of Hertford, the first of whom sent some of the largest and most beautiful bushes ever seen, and the latter a very nice and extensive set of smaller specimens. Messrs. Frazer, Lane, and Ivery contributed highly interesting collections of Chinese Azaleas. Among Mr. Woolley's Orchids was a beautiful specimen of the very striking Arpophyllum giganteum. Some very striking Palms and Araceous Plants showed the strength of the nursery of Messrs. Jackson, of Kingston. Like the Rose growers, those who make Rhododendrons their specialty shrunk from the consequences of gas-dried air, with the exception of Mr. Standish, of Bagshot, and Messrs. Lane, both of whom furnished collections, the latter confining themselves to crosses with the yellow Chinese Azalea. Superb sets of fine-foliaged plants were supplied by Messrs. Veitch, among which those majestic species called in the nurseries Theophrasta macrophylla and imperialis and Aralia Sieboldi were most especially conspicuous; an extremely pretty and new variegated Pothos was also a gem in its way. The variegated Pelargoniums and other small specimens from Messrs. E. G. Henderson & Co. and A. Henderson formed a very pretty collection. In another set from Messrs. Henderson of Pine-apple Place was to be remarked the charming little greenhouse plant, called Beronia mellina, and a delightful specimen of Todea pellucida or hymenophylloides, one of the very rarest and most delicate of all Ferns. Among plants either new or very little known were the rare crimson-flowered Philesia buxifolia and Olea ilicifolia, the latter one of the finest hardy evergreens, from Messrs. Veitch; Myosotis nobilis, the large Forget-me-Not of New Zealand, and Exochorda grandiflora, loaded with large white flowers, untouched by the cold, although cut from a bush in the open air at Bagshot, from Mr. Standish; and the new greenhouse shrub, Musschia Wollastoni, with very handsome foliage, from Messrs. Frazer.

Among fruit, which consisted of the usual supply of Grapes, Pine Apples, Strawberries, Cherries, &c., the gem was a dish of the Sir Charles Napier Strawberry, from Mr. Smith, of Twickenham, of the most brilliant *vermilion* colour, such as the most experienced eye never saw before, and of the largest possible size; for the decoration of a dessert this eclipses everything. Mr. Munro's hybrid Cucumbers, evidently bred from the Smyrna, and the Black Hamburgh Grapes from Mr. Hill, of Keele Hall, must also be distinguished by especial notice. Last not least must be mentioned a collection of fruit from Mr. Webber, of Covent Garden, among which were *specimens of Oranges from Adelaide in S. Australia!!* They were of the sort called the "navel" Orange, large, rough, and thick skinned, but rich, sweet, and juicy beyond all other sorts. The plants, we are informed, had been received at Adelaide from Rio; the Oranges were gathered on the 15th of last December, and were 11 weeks on the passage.

Among the miscellaneous articles placed on the tables was a model prepared by Mr. Hutchison, of Castle Malgwyn Gardens, showing the principle on which his new method of ventilation, described at p. 337, is to be applied. In our opinion this is a very material improvement upon all known methods except Mr. Ormson's. The object in both instances is to secure a proper warmth being gained by fresh air before it can enter the plant-house. In one of Mr. Hutchison's plans, as in Mr. Ormson's, this can only be done when the heating apparatus is first put up. But in the other of his plans (the left hand one, B C, at p. 337), it may be applied to any existing house: and it was this contrivance that the model explained. Perpendicular zinc flues, connected with horizontal subterranean ones carried under the front wall of the plant-house, rise between the front wall and the hot-water pipes, and then, by means of a neck, are connected with another close zinc flue pierced with holes and riding on the upper hot-water pipe. A simple mechanical contrivance admits air through the pierced zinc, or shuts it off as may be found necessary. For the information further of those who may desire to examine the contrivance the model will remain for the present in the office of the Horticultural Society, No. 8, St. Martin's Place, Trafalgar Square.

We avail ourselves of this opportunity to add a word or two respecting the future action of the Society, which is daily becoming clearer. After a long struggle against most formidable difficulties the Council have at last succeeded in placing the Society in a safe position. They are in possession of an income which, if the public continues to support them, is considerably in excess of the ordinary inevitable expenditure; and this enables them to take measures far more active than have of late been possible, and to infuse renewed energy into their proceedings. The public papers have announced that an application has been made to her Majesty's Commissioners for the Exhibition of 1851, for possession of the interior of that space at Kensington Gore which is to be surrounded hereafter by public or other important buildings, and we are able to add that the negociation is making sensible progress. A new Committee charged with the duty of examining and reporting upon all so-called new plants or new floral varieties, is about to be formed of experienced and disinterested persons; and thus the same course will be taken with ornamental subjects which has already worked so well with fruits and esculents. Moreover it has been just decided by the Council that a monthly printed circular shall be sent to all Fellows, giving an account of everything connected with the Society which has public interest, embodying reports of committees, results of exhi-

bitions, all notices and other information which requires to be circulated, and such miscellaneous matter as circumstances may suggest. These circulars may be eventually bound into a volume for future reference. Should the Society be sufficiently supported the circular in question may lead to a revival of the Journal, the publication of which has now been long discontinued. The mode of distributing plants by ballot is also to be considerably altered and improved, so that no one shall be exposed to the chance of obtaining plants which he does not want. In these ballots Fellows of the Society will have a number of chances proportioned to the amount of their annual subscriptions.

These unmistakeable indications of renewed progress will doubtless prove gratifying to all who have the interest of horticulture really at heart.

CLIMATE IN RESPECT TO FRUIT GROWING.

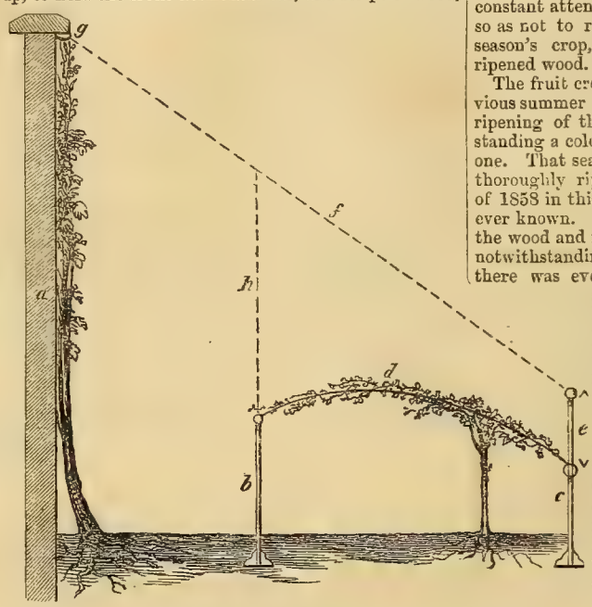
[With the permission of the Editor of the *Florist* we borrow the following from its able and extremely well-conducted columns.]

The extraordinary vicissitudes of our English climate have never within our memory been so grievously realised as in the present season. After the frosts which occurred at the end of November we have had no winter to speak of; indeed December, January, February, and March were remarkable for unusual mildness, and this too accompanied with a high barometer and the absence of rain in many localities. Our last English winter, in fact, might have answered for the south of Italy, by its immunity from frost, and generally clear bright weather. Very early in February a number of shrubs were fast breaking into leaf, and Apricots opening their blooms; during March all went on unchecked, so much so, that by the beginning of April, notwithstanding the severe frost of March 30 and 31, the woodlands and pasture grounds presented all the appearances usually shown by the first week in May, and every description of garden produce partook also of the general earliness of the season. On the 31st of March we had 10° of frost, which, following after a snow the previous evening, did a vast amount of mischief to such fruit trees in bloom, besides destroying in several places the crops of Apricots, which were then of a considerable size. Peaches had partly set, and suffered more or less throughout the country; and early Pears and Plums also. The weather became warmer, and the 4th, 5th, 6th, and 7th of April were remarkable for their great heat, the day temperature having been 82° in this neighbourhood on the 7th, and between 70° and 80° the greater part of the former three days, an extraordinary temperature for the first week of April, and exceeding by a few degrees the two or three hot days occurring later in the month of April, 1858. The weather next became sensibly colder, and on the 14th and following days indications of winter made their appearance, followed by snow storms, cold north-west winds, and frosty nights. On the morning of the 20th we had 8° of frost, accompanied by an easterly wind; this frost has almost completed the ruin of our crops of Pears, Plums, and Cherries, excepting perhaps those in some favoured locality, or which had ample protection, a thing almost impossible to effect within the means of an ordinary garden expenditure, to say nothing of orchards and open garden fruits.

We have so frequently advocated orchard-houses in the *Florist*, as an almost indispensable auxiliary to a fruit garden, that we need not go further in that direction, except to remind those of our readers who doubted their ever becoming a substitute for brick walls, that their manifest increase throughout the country affords the best evidence of their utility, and that our recommendation for their being adopted was sound advice, borne out by the experience of all those who have tried them on rational principles. We therefore leave orchard-houses out of our present calculations, to see how far it is practicable to ensure crops of fruit, during such weather as the present, without the assistance of glass.

A well-arranged garden, surrounded with walls, with its quarters well furnished with bush or pyramid-shaped Pears, &c., and its divisional and surrounding walks margined with choice espaliers, is a thing to admire, more especially when the trees are in bloom, and give hopeful promise of an abundant return for all the trouble and anxiety they cost. But how often, after witnessing the beautiful display of bloom, are we doomed to disappointment. One or more frosts, such as we have lately experienced, come on us without much warning; and, if warning was given, how could we entirely prevent the consequences? All is then over for the season, and the gardeners' motto of *Nil desperandum* scarcely keeps him progressing under disappointments such as these. It strikes us, we must alter our garden arrangements for fruit trees; true, we may continue to intersect our kitchen garden quarters with fruit trees, in whatever form we may fancy to train; and so we may continue to line our walks to the right and left with espalier Pears, Plums, &c.; but are we wise in spending so much money and time for such uncertain results? We think not, allowing for all the contingencies which intervene between planting and the realisation of returns commensurate with the outlay. Still, when there are means, we say, let the thing be done as now,—and, something else besides. Looking at most kitchen gardens, we shall find them surrounded with walls, from 10 to 16 feet high, which are accompanied by borders of a similar width, or perhaps wider, on which are grown different kinds of vegetables. The south borders must, as a matter of course, be reserved for the first crop of Peas, or hand-glass Cauliflowers, or early Potatoes, and so with all the rest; they are generally the gardener's choice bits of ground, on which to foster and grow up anything he wishes to do better than ordinary. We need not add that this cropping is now universally condemned as inimical to the well-doing of wall trees, which are frequently injured by the system to an extent in comparison of which any crop of vegetables that may be raised is a sorry equivalent. We say, then, avoid all vegetable cropping on the wall borders, and prepare them for growing what fruit you may require, with a view of protecting the trees when in bloom as noticed hereafter. The kitchen garden walks may be margined as now with Currants, &c., or even with espalier or bush Pears, &c., to stand their chance.

To render our meaning more clear, we will take a south wall, cropped, say with Peaches and Apricots; take the wall 14 feet high, and the border as 14 feet wide. Let the soil the whole width be duly prepared for fruit trees, as it generally is near the wall for the Peaches. We would then throw an arched trellis, springing 2 feet from the ground at front over the border, to within 5 or 6 feet of the wall, under which we would plant other kinds of fruit trees for covering the trellis, say the best kinds of Pears and Plums on south aspects; Cherries, Plums, and Pears on east and west borders; and Warrington Gooseberries and late Currants on north aspects. The accompanying diagram represents the wall and trellis, and will help to show the plan of protection recommended. When it is wished to put on the protecting material, the upright (*e*), which, however, may be permanent, should be set up, to hold the front horizontal bar, and strips of wood,



a. Garden wall, with trees.
b. Back support to trellis, iron or wood.
c. Front ditto.
d. Arched wire trellis.
e. Iron or wood upright every 12 feet, to receive a horizontal iron bar, or spar.
f. Wood strips or bar iron, fastened to the horizontal bar at front, and to a similar bar (*g*), under coping.
h. Tie from rod *f*, to post *b*, to keep it steady.

iron bars, or even cordage, run up every 8 or 10 feet from the front horizontal bar to the one under the coping (*g*). If the strips are not considered sufficiently strong to sustain the covering, wooden uprights may be substituted as a support for the tie (*h*).

The whole of the frame and supports (*e*, *f*, *h*) can be easily put up and removed, and may be used when the fruit wants protection in the autumn, equally as when the bloom requires it in the spring. It now remains to notice the best material for protecting the bloom; this should be so arranged on rollers as to draw up to the coping (*g*) when not wanted. Woollen netting is perhaps the best known protection against frost; but, as it is necessary that the bloom be kept dry if possible, a thin waterproof material is yet wanted, manufactured sufficiently thin and light not to be inconvenient in drawing up and letting down, and yet impervious to rain. We hope manufacturers will try what can be done towards supplying this deficiency in horticultural shadings. In the mean time Shaw's Tiffany, or Brown's Shading, dipped in oil and dried, would answer the purpose of excluding damp and a great deal of rain, and would last for a number of years, substituting netting for the autumn, when birds, wasps, &c., only are to be kept from the fruit.

That these, our thoughts on the subject, very hastily thrown together, may require some modification in carrying them out in old gardens, we are free to admit. When new gardens or new walls are in course of formation, we see no difficulty in the matter; and we are very strongly impressed with the conviction that a concentration of all our best varieties of fruit trees, so as to admit of an entire covering when necessary, will be found as sound in practice as it will in the end prove to be economical when glass cannot be afforded. *Turner and Spencer's Florist, Fruitist, and Garden Miscellany for May.*

FRUIT PROSPECTS.

Two months ago all would have said that the fruit prospects of the coming season were most promising; since then what a change has taken place! Expectations of abundant crops are blighted, and now the cry is that the severe frosts of the two last days of March and the greater part of April have all but destroyed our fruit. That the crop has suffered to a serious extent there is not the least doubt. But are matters quite as bad as they are at present represented? I think not. On the first occurrence of any calamity rumour very frequently magnifies matters. This I am of opinion has been the case in the present instance. The fruit crop has suffered, but the damage done has not been so great as is represented. From what I have seen and heard, I think that our prospects of a crop in this part of the country, though not so good as many may desire, are on the whole such as to lead us to believe it will not be much below the average. Owing to our variable climate it is not often that we have three or four heavy crops successively. Spring frosts, as they did this season, some years do great injury. Another frequent cause of bad crops is, that in cold wet summers and autumns the young wood and blossom-buds are not properly ripened. There are some other matters which more or less affect the fruit crops in certain localities, but the two principal causes of failure are unfavourable springs and unripe wood. As we cannot alter or control the seasons, we must do all we can to guard against these two causes of failure. Protection in some form or other is the only means of guarding against spring frosts. Timely disbudding constant attention to thinning and stopping the shoots, so as not to retain one more than is required for next season's crop, will in ordinary seasons ensure well ripened wood.

The fruit crop of 1856 was a bad one owing to the previous summer and autumn being unfavourable to the ripening of the wood. The crop of 1857, notwithstanding a cold unfavourable spring, was a very heavy one. That season being very hot and dry the wood got thoroughly ripened, and the result was that the crop of 1858 in this country was one of the most abundant ever known. Last season being also very hot and dry the wood and fruit buds were again well ripened; and notwithstanding the heavy crops of 1857 and '58, there was every prospect of abundance this coming season; indeed, there is no doubt that had it not been for the very severe weather we have had the crop would have been most abundant. Up to March 30th all was promise; on that day we had a good deal of snow, which was followed by 10° of frost that night; this destroyed to a great extent all the Apricots, Peaches, and Nectarines that were unprotected. At that time Cherries, Pears, and Plums (with the exception of a few early Plums), were not forward enough to suffer much injury. I never saw Apricots, Peaches, and Nectarines set more abundantly than they did this season; and wherever the simplest description of protection has been used, a good crop has been saved, notwithstanding the severe frost on March 30th and 31st. Those, therefore, who have lost their Apricots, Peaches, and Nectarines, have themselves to blame.

After the extraordinary mild winter we had, and the very forward state of everything, no person should be unprepared for emergencies. Those who were unprepared for March 30th were highly culpable. On all sides we have seen abundant crops saved by such protection as was afforded by Fir branches, straw bands, woollen netting, mats, canvas, &c. The protection afforded by properly constructed glass structures is, of course, very superior to that afforded by any of the foregoing; but in the absence of this more expensive mode of protection, it is quite possible by simple contrivances, and a little energy on the part of the cultivator, to secure abundant crops, even such seasons as the present, if the wood was previously well ripened.

With us Peaches, Nectarines, and Apricots are heavy crops—three-fourths have to be thinned—they were protected on the nights of March 30th and 31st, and during the cold weather in April. Pears, Plums, and Cherries have suffered very much on standard trees, but on trees against walls they are nearly an average crop. Among Pears the following have set pretty well on walls, viz., Jargonelle, Passe Colmar, Brown Beurré, Beurré Diel, Easter Beurré, Vicar of Wingfield, and Glou Morceau. I have never known the Glou Morceau to miss having a crop. The following have a tolerable crop on standards:—Williams's Bon Chrétien, Beurré Diel, Louise Bonne of Jersey, Beurré Bosc, and Dunmore. Among Plums, Greengage, Washington, Kirke's, Victoria, Golden Drop, and Early Orleans are nearly an average crop. Apples will, according to present appearances, if nothing very unfavourable happens, be an abundant crop. The heavy rains of the 25th, 26th, and 27th of last month cleansed the trees, and nothing can be more promising than they are at present. Bush fruit has suffered considerably, and the crop will be

rather below an average one. Among red Currants the "Raby Castle," being a late sort, has escaped from much injury, and it will be a good crop.

The foregoing is a correct statement of my own case, and I know that nearly all those who had taken precautions to protect from the severe frosts stand equally well. I also know that unfortunately too many, lulled into a false security by the remarkably mild weather, have had their crops very much injured. I have heard of Peaches suffering much from the attacks of greenfly in some places. Some attribute this to the frost, but in general it may be taken as a sign that the wood was unripened. Thoroughly matured wood almost invariably bursts into strong healthy vigorous growth, which rarely suffers from the attacks of greenfly. As it is therefore a matter of the utmost importance to secure well ripened wood; attention, I may repeat, should be immediately paid to thinning of the fruit, to disbudding, thinning, and stopping of the shoots. Retain only what are wanted next year. It is good practice to thin well. What fruit is left to ripen will always be the finer for it; the wood will be stronger, and will in ordinary seasons ripen well. With well matured wood and buds there is always a reasonable prospect of a crop. When the summer pruning is not properly attended to, the trees become crowded with young wood, which never gets properly ripened; the first spring frost so affects the young growth that it immediately becomes a prey to greenfly. By thinning the fruit and young wood we as it were economise the organised matter which is stored up in the trees, and concentrate it on the fruit and young wood that is left. The fruit becomes larger and finer; and the young wood grows stronger, and by its being kept thin gets properly ripened. By attention to these matters in summer, and by providing sufficient means of protection from severe spring frost, we may secure satisfactory crops in nine seasons out of ten. *M. Saul, Stourton, Yorkshire.*

NIGHT TEMPERATURE OF FORCING HOUSES.,

When I forwarded you my remarks on this subject and the winter growth of Cucumbers in particular, I was fully aware that I should call into action the querulous disposition of some of your correspondents. Disbelief appears to be the order of the present time, and any attempt to disentangle simple practices from by-gone usages is at once met and combated as rank heresy—and he who has achieved the success set down as a person of very limited understanding. Thus "M. S." would attribute all the success to a comfortable bottom-heat, while Mr. Fry and his friends ignore the success altogether and note it an impossibility. No doubt a comfortable bottom-heat is a very essential thing for Cucumbers or Melons at any season, but at the same time I would remind "M.S." that an instance of the necessary bottom-heat being provided is not an exceptional case, for I am quite convinced that according to ordinary and generally received rules there is no vegetable which costs so much to grow as winter or early spring Cucumbers. In fact Cucumber-growing has been invested with a kind of wonder, and time was when the man who could sow in November and cut a brace of fruit in the early part of March, was looked upon as a sort of horticultural phenomenon, who had the right to dictate to all "lesser men." To expose this absurdity, and to show that it was not necessary to incur the "frightful expense" of dung beds for the growth of Cucumbers in the winter season, I published my treatise in 1841, and subsequent experience has shown me to be quite right. I have no doubt "M. S." knows of many instances where the bottom-heat was provided, and top-heat too, Cucumbers anxiously looked for, and yet they "came not," and were it not invidious, I could name several gardens where the "comforts" were provided in superabundance, and yet the result was what? Etiolated stems and tissue-paper leaves. For my own part I am getting less and less anxious about bottom-heat; in moderation, say never to exceed 80° for any plant, it is very well, but to apply it as a panacea for all the ills that plants are heir to is frequently to do evil that good may come, and a strong bottom-heat, accompanied by a high night temperature, I regard as the root of all evil in plant cultivation. True, "M. S." tells us that his Pines did not swell in the winter season, but the specimen of Antigua Queen, which I send you with this, swelled perfectly flat, and with the rich syrupy juice oozing out on all sides proves that good Pines, like good Cucumbers, can be grown at a much lower temperature than by many would be considered orthodox. [It weighed 2 lb. 13 oz.]

I have now some small, very small plants of Lemon and Ripley Queens in and coming into bloom, and I shall be much deceived if I have a fruit less than from 4 to 6 lbs. in weight. In the same house I have eight kinds of Vines, each carrying a well set crop, and including Muscats, Frontignans, Chasselas Musqué, and Mill Hill Hamburgh, and yet when I was a knight of the shovel and did the stoking, the penalty of allowing a house containing any of the Grapes above enumerated to get below 70° would have been instant dismissal, and yet my Grapes are set as well as could be desired, and much too thick for the man who had to thin them. Am I to shut my eyes to such facts? Am I for the gratification of "M. S.," Mr. Fry, and his friends, to continue in the "old rut," or shall I allow my men to get their regular night's rest, save fuel and other expenses, and yet achieve results as good as the best of them?

Mr. Fry speaks of fine houses of Cucumbers in his neighbourhood. I should hope such sights are not rare in any part of the country in April, but an equally fine house in the depth of winter is another and very different thing. According to Mr. Fry, "the principal secrets in Cucumber culture are a good open porous soil with plenty of peat in it, and well drained throughout, abundance of heat, air, and moisture." It may surprise him to learn that I never use peat, and rarely leaf mould, and as to "drainage" the roots of my plants are standing constantly in water, and forming a complete web in the tank. So do doctors differ, and yet I have not the slightest doubt that from about nine plants I cut more Cucumbers between Michaelmas and Lady-day, through the dead of winter, than some of his friends do through the summer six months of the year. Therefore let me advise them to leave the beaten track, which has now become very "rutty," and take a shorter and easier cut to success. *W. P. Ayres, Orchardleigh Park, Frome.*

Home Correspondence.

Monkeys and Sugar Canes.—The whole of this anecdote would suit the shelves of my old grandmother's library. In fact it savours more of Munchausen than of monkey. We are informed that "a ready-witted Englishman" managed to approach so near to some wild monkeys, as to have the chewed fragments of Sugar Canes spit in his face by them. What an impossibility! We may rest quite certain that no cunning of his could enable him to get so near to the shy and wary inhabitants of the trees. Again, he actually chased a flock of monkeys into a tree, which he then felled, and secured the young ones. What noodles these young and old monkeys must have been to tarry in the tree whilst the "ready-witted Englishman" felled it! Why, on the very first stroke of his axe they would have set off, helter skelter, and left him alone to complete his useless task. Such narratives as these mar and mutilate the science of the 19th century. I take this opportunity to suggest to "R. F., Polesden Lacey, Dorking," that he would do well to secure his rent Beech tree by two iron bolts driven through it; one of them about a foot from the ground, the other about the same distance from the top. As the tree must have received its injury either from a gust of wind or from an over pressure of foliage, a repetition may occur to the final destruction of the tree itself. The bolts would prevent this most effectually. "A stitch in time saves nine." *Charles Waterton, Walton Hall, May 9.*

Grafting Garrya elliptica on Aucuba japonica (see p. 384, 1859).—The authority of M. Carrière, and the absence of any remark from the Editor, give reason for supposing that this statement is not altogether extraordinary; though to an unlearned person, who looks merely at the external habits of the two plants, it appears remarkable enough. Perhaps you would kindly take some opportunity of pointing out the precise amount of relation between the two natural orders, Loranthaceæ and Garryaceæ, to which the plants belong. *G.* [The genera Garrya and Aucuba cannot be said to have had their real affinities positively determined. The first at present represents a supposed distinct order called Garryaceæ, and the genus Aucuba is stationed near Dogwood in the order Cornaceæ (not Loranthaceæ), where it seems really to find its true relations. The experiment of M. Carrière, about the exactitude of which we suppose there is no doubt, will doubtless cause the value of the order Garryaceæ to be further considered. Its affinity to Cornaceæ has not been hitherto suspected.]

Flower Beds.—I have begun to lay out my beds for bedding out on a somewhat novel principle, for which I am indebted to the Mosaic pavement pattern book of Messrs. Maw & Co. You will observe from the annexed sketches that the chief novelty in them is the substitution of diagonal lines and triangular forms for parallel lines and parallelograms, though a mixture of the two is productive of the finest effect, as is shown in Mr. Digby Wyatt's designs for Maw & Co's pavements. *Geometricus, Salop.* [We regret that typography does not afford the means of reproducing our correspondent's sketches.]

Soja hispida—Soy Bean.—This plant will certainly ripen its seeds in favourable seasons in this country a degree or more north of London. I received some seeds of it marked Cajanus, in 1857, from South Carolina, where it is cultivated under the name of Japan Pea. The plant succeeded well and ripened its seeds, while from different species of Dolichos cultivated in the same garden, I could not even obtain flowers in the open air. It is very doubtful, however, whether the Soy Bean would succeed in a cold summer, or even in ordinary seasons. It is well figured in Kæmpfer's Amœnitates Exoticæ, where there is a curious account of its preparation for culinary purposes. It is used principally as a substitute for butter and as the well-known Soy. The first of these preparations is called Miso, and is made in the following way. The seeds are boiled for a very long time in water till they are capable of being pounded into a soft pulp. To this four parts of salt are added in summer and in winter three. The lesser proportion of salt yields the best Miso, but it will not keep so long. A quantity of steamed rice is now added equal to that of the Soy Beans, and intimately pounded up with them, and when the mass is cold it is placed for one or two days and nights in a warm cellar. The mixture is then put into a wooden vessel which has lately contained the beer the country, known under the name of sacki, and left for one or two months before it is used. The preparation of it requires great skill and experience, and is followed as a particular trade. The Soy or Sooju is thus prepared. Equal quantities of Wheat or Barley and Soy Bean are boiled and pounded together. The mixture is kept in a warm cellar for 24 hours to ferment, and then placed in an earthen jar, covered with a measure of salt equal to that of the Soy Beans, and two measures and a half of water. It is then closed up and stirred from once to three times a day for two or three months. The mass is ultimately filtered and pressed, and the liquid preserved in wooden vessels. Its quality improves, while it becomes clearer, with age. Fresh water is then applied to the marc, which is again squeezed after the mixture has been well shaken for some days. The Soy is often of a darker colour when prepared from Wheat than from Barley. *M. J. B.*

Tombstone upheld by a Fig Tree.—Having read in your columns Mr. Waterton's statement of a huge mill stone being supported in the air by a Nut tree, I beg to inform you that in the churchyard at Watford there is a large tombstone supported by a Fig tree in the same way. *J. H.*

A Cry from Amateurs.—We, the small fry as we are called, whose name is legion, and whose influence in the world of flowers is evidenced by the host of nursery folk, good, bad, and indifferent, who have sprung up thick as Mushrooms at our bidding, humbly petition you to come to our aid under difficulties and trials no longer to be endured. Our case stands thus: devoting, as we have done, all our spare time and our spare cash in the culture of flowers, many of us are compelled to entrust the care of them to other hands from our callings engaging much of our time; and a large proportion of our community now find their former greatest gratifications exchanged for continual and grievous mortifications from finding those who have the charge of the pets confided to their care wholly inefficient and unqualified, although their salaries for the most part average 60*l.* per annum; and we are strongly disposed to ascribe our mischances in a multitude of instances, too numerous to mention, to the names given to the houses in which our most choice and tender plants are grown. The stove and hothouse, in the imagination of these men, implies houses heated to broiling-point, into which a breath of air by night or day must never enter; at night especially every crack and cranny is closed up, and steam put on hot enough to boil a Cabbage, and thus yellow leaves, spot, mildew, languor, and fogging off soon occur, succeeded by drawing, dwindling, flowerless, and at last leafless stems, the plants are then discarded, with the plea that they were sent badly established, or some such bosh; and whisper but faintly a want of skill and you are soon told you know nothing about the matter, and they are not accustomed to be interfered with. Now, your petitioners are but of ordinary flesh and blood, and can but badly brook such language; and we earnestly pray you to indite, in language comprehensible to these men of high pretence though of little wit, some practical code of laws on the temperature of stoves and hothouses for day and night, on ventilation by night as well as by day, on moisture, and on light and shading. We know the real English gardener thoroughly understands how to manage all these appliances to ensure success, and proud are we to witness the proofs of their skill at our exhibitions, and they possess our highest esteem and respect; but they must be well aware that the country is overrun with men professing to be gardeners who are unworthy to fill their watering pots, and these be they who create such havoc with us little fish. They come amongst us with testimonials of ability in all departments, but how obtained we cannot tell. We know that many of our most ardent lovers of the craft have thrown up their establishments in disgust, who have spared no means or money to do things well, and this feeling of disgust is on the increase. We therefore pray you to give ear to this not unreasonable prayer, and with such authority as yours to back us, we may hope for some amendment. *Honorary Secretary to the Suffering Many.* P.S. We think the average temperature in many of our stoves decidedly too high, that air tempered by passing over pipes is right at all times where the moisture of the house is duly watched. We think the temperature at night should ordinarily be kept lower than is usually the case, and that a continuous flow of a tempered and drier air is in accordance with dame Nature. We deem the burning glare of the sun's rays through glass impinging on the tender sprouting foliage of early summer decidedly detrimental to growth, and the supersaturation of our atmosphere with water more prejudicial than the reverse of such a condition, and the evils of the latter state more readily remediable than the former. We think of many other things, but woe betide him who dares to tell his gardener his thoughts. We think that at the Crystal Palace, or Kew, or Chiswick, a college might be created to furnish all classes with men capable of attending to every department of floriculture, fruit and forest work, vegetable growing, and forcing. A large establishment might be maintained by all the pupils engaging in the work. Plants of all descriptions might be raised and propagated, and the sale of these to the public go towards the defrayment of expenses, the scholars by examination receiving their certificates.

Vines.—I was much surprised this morning in looking over my trees to find one look as if it had been shot at. On examining it I found a quantity of the Scolytus destructor in the holes. I will thank any readers of the *Gardeners' Chronicle* to say if they have seen the Vine

attacked by this insect; if so, what will kill them? *J. G. Brown.* [Surely not Scolytus, but some Curculio. If the latter he may be caught at night while feeding.]

Twin Peaches.—No very definite answer has been given to your correspondent who made inquiries about double Peaches. Such Peaches are common in orchard-houses, and my practice is, as soon as they are fairly set, to pierce one of the fruit with the point of a penknife quite to the centre, and in order to mark the performance of the operation, to remove a small slice. The wounded fruit withers, and is soon obliterated, while its twin brother swells unhurt. *G. S., Bromley.*

Crickets.—Having tried many nostrums and failed, pray let me appeal to your correspondents to ask by what means crickets can really be destroyed or expelled from a Pinery. *A. C., in distress.*

Garden Expenses.— Your correspondent "J. D." (see p. 362) has admitted the necessity of some explanation to his Dr. and Cr. account given at p. 218 But with the exception of having deducted nearly one-half from his kitchen garden, no explanatory statement of any importance has been given. He assures us that the remaining 1¼ acre is "both well cropped and cultivated." But the "supply exceeding the demand" is no proof of that, and his figures (56*l.* 3*s.* 4*d.*) really do not warrant such a conclusion, seeing that there is no entry for manure, seeds, &c., in the Dr. account. Let me assure "J. D." that an experience of 15 years has given me ample proof what kind of demands are made upon a gentleman's gardener, and I had no intention to institute a comparison between a public and private garden; but I may tell "J. D." that the outlay per acre in market gardens, even where common vegetables are grown, exceeds considerably the total returns of "J. D.'s" 1¼ acre. I would also inform him that I have seen "walls" covered with fruit, many miles further north than Fife, and although it may be true that "all trees" did not bear "even a moderate crop," yet failure was the exception and not the rule, and last year there was more than an average crop of wall fruit. In the gardens of R. Crawshay, Esq., of Ottershaw Park, there is a wall only 158 feet long covered with Peach and Nectarine trees, from which have been picked for several years on an average 200 dozen of most excellent fruit. Your correspondent states that "orchard houses are of recent introduction." They have been sufficiently long established, however, to warrant a larger return, even though "stocked with maidens," than is set down by "J. D." But your correspondent recommends his orchard house on the score of cheapness; "Curates' Vineries" must dwindle into a minority when orchard-houses 46 feet by 12 can be erected for less than 8*s.* 8½*d.* per foot run. But discussion ought to have for its object information, and if "J. D." would deal with details rather than generalities, his data would be more valuable. Such statements as that at page 218 *b* are calculated to mislead rather than to instruct. "The house" is there given as a department under "J. D.'s" charge, and he keeps it (I wonder in what?) for 39*l.* 10*s.* 5*d.* Then the "fences on the farm," and "additional farm work," seem the only part of the agricultural department under his care. In short, his balance-sheet is still very obscure, and can as yet profit little. *A. M'K., Woodlands, Blackheath.*

Isabella Gray Rose,—It may perhaps interest some of your readers to know that I have a plant of this at present in full bloom. It is upon its own roots and in a pot. The blossoms are bright yellow and very beautiful. *John Haste, Cragg Bottom, Rawden, near Leeds.*

Societies.

Horticultural: *May* 12 *and* 13.—Some of the matters exhibited on this occasion are mentioned in another column. The arrangement of the plants was in every respect excellent, and the display as a whole all that could have been desired. On the raised stages in front of the great organ were plants in flower, Ferns, and Palms from the Society's Garden. In front of these were some handsome Azaleas from Messrs. Fraser, supported on one side by a large and finely flowered specimen of Leptospermum bullatum (?) from Mr. Gaines, of Battersea, and on the other by an equally fine buff-flowered Rhododendron from the same grower. On the platform below stood two fine Wellingtonias from Messrs. Veitch, and an example of their new hardy evergreen shrub Olea ilicifolia. On lower stages nearer the body of the Hall stood the row of magnificent Rose trees from Messrs. Lane, noticed below, the effect of which was grand in the extreme. The centre table was covered with fruit and small Roses in pots, and in a line running its whole length was a row of standard Azaleas. The two side benches contained Orchids, the magnificent groups of plants remarkable for fine foliage, and those at the end near the entrance Rhododendrons. Such materials judiciously disposed, as they were, could not fail to produce the best results.

Of fine foliaged and other plants not for competition, Messrs. Veitch sent a magnificent collection, which filled one entire side of the Hall. Such liberal and disinterested support surely deserves the highest praise. Among them were Theophrasta macrophylla and imperialis, both with leaves remarkable alike for their size and beauty; Aralia Sieboldi, a magnificent species with handsomely divided foliage set on the ends of long foot stalks of remarkable strength; various Palms, all in most luxuriant health; the variegated leaved Chinese Hibiscus, Araucarias of various kinds, Rhopala magnifica, the Dragon tree (Dracæna Draco), an enormous mass of variegated Screw Pine, and others. Associated with these were such flowering plants as Eriostemons, Cape Heaths, Chinese Azaleas, Everlastings, and one or two Orchids which, tastefully intermixed as they were with the valuable plants just alluded to, produced a striking and admirable effect. On a corresponding table on the opposite side of the Hall was a fine group, chiefly Palms from Messrs. Jackson, of Kingston; among them were Livistonia borbonica and Jenkinsi, Phœnix sylvestris and dactylifera, Thrinax parviflora, Corypha australis, Pandanus odoratissimus, with long Sedge-like leaves, and the singular-looking Monstera deliciosa. Mr. Young, of Dulwich, sent a collection in which were Farfugium grande, a very fine specimen with more yellow in the leaves than usual; Bromelia sceptrum, Caladium picturatum and bicolor, Graptophyllum hortense, with white blotched foliage; the white spotted Dieffenbachia maculata, and Ananassa variegata.

Of Ferns, Mr. Hally, of Blackheath, sent a well-grown collection in which were Adiantum formosum, Gymnogramma ochracea, Mertensi, and pulchella intermedia, the Mexican Asplenium fœniculaceum, with finely cut leaves, Doodia Blechnoides, Nephrolepis Davallioides and acuta, Cibotium Barometz, Davallia bullata, Pteris tremula, and Dictyoglossum crinitum.

Rhododendrons consisted of two collections, one from Mr. Standish, of Bagshot; the other from Messrs. Lane, of Berkhampstead. In the former group were Towardi, Gem, a remarkably handsome kind; Robert Gair, purplish crimson; Mrs. Mangles, French white with spotted upper petals; Hildebrand, crimson; Queen of May, white with straw-coloured centre; and Rosabel, crimson. The next collection from Messrs. Lane consisted chiefly of yellow and other light coloured hybrids; among which the best were perhaps primulinum elegans, macranthum flavum, delicate pink and buff; delicatum, lilac and buff; aureum, Jenkinsoni, and formosum.

Of Azaleas Messrs. Lane furnished some very nice standards, some of them "unions," *i. e.*, two varieties worked together on the same stem, or rather stock. Such specimens when the colours are well contrasted produce, as they did in this instance, an excellent effect. Messrs. Fraser sent both in the shape of standards and dwarfs, rosea elegans, Louise Margottin, a semi-double white; Diana, crimson; coronata, purple; a double white called magnifica, sinensis alba, Minerva, brilliant orange scarlet; violacea superba, Duke of Devonshire, Admiration, white streaked with crimson; and optima. Of new kinds, Messrs. Ivery, of Dorking, had examples both in the form of cut blooms and plants. Among the latter were Bouquet de Flore, Distinction, salmon edged with white; Rubens, orange scarlet; Baron de Vriere, delicate pink, spotted; Duc and Duchesse de Nassau, the former a semi-double purple, the latter crimson; and Barclayana superba, white striped with purple.

Of Orchids, Messrs. Veitch had a charming collection. It consisted of Aerides Fieldingi, virens, and Lindleyanum, the latter a handsome deep purple-lipped kind; Lycaste Skinneri, Phalænopsis grandiflora, Cypripedium villosum, a noble plant with some 15 blooms on it; the singular-looking C. Lowei, C. barbatum, the exquisite Dendrobium Devonianum, and the rare and beautiful Odontoglossum Pescatorei. A second collection came from Mr. Woolley, of Cheshunt, who furnished Dendrobium nobile, Cattleya intermedia, and Skinneri, the Brassia-like Oncidium phymatochyllum, O. Phillipsianum, Vanda tricolor, Aerides virens, Gongora truncata, the Orange blossomed Epidendrum rhizophorum, and a small specimen of the charming Guatemala Arpophyllum giganteum, with small shell-like purple flowers arranged on the three spikes which produced them with singular and beautiful regularity.

Of real novelty there was perhaps little. Mr. Standish sent the beautiful Exochorda (Spiræa) grandiflora and the so-called Myosotis nobilis or great New Zealand Forget-me-Not, both of which have been formerly noticed by us. From Messrs. Veitch came Clianthus Dampieri, with brilliant crimson flowers, each furnished with a round black boss; Cyanophyllum magnificum with magnificent leaves of a deep velvety green charmingly traversed with yellowish white veins; Farfugium grande, the deep crimson flowered Philesia buxifolia, Olea ilicifolia, the new hardy evergreen Japanese shrub noticed above; Caladium 'Chantini, Begonia amabilis, and two other charming Begonias, one named argentea, the other Queen Victoria. The leaves of the latter are of medium size and very distinct. Their ground colour, a greenish brown, is beautifully marked and spangled with silver, large bands of the latter running between the principal nerves. Argentea, also a distinct and beautiful kind, has leaves which look as if they were overlaid with silver, their upper surface being studded with faint green points, whilst the principal nerves, which radiate from the centre, are pale straw coloured. Both are Belgian kinds introduced to this country by Mr. Linden. A most striking silver-blotched new Pothos, called argyræa, was also shown by the same firm.

Of Miscellaneous plants, Messrs. E. G. Henderson sent an interesting group. Among other things it contained Tydæa Duc de Brabant and T. Duchesse de Brabant, both beautiful crimson spotted, Gesneria-like plants; several fine varieties of Marantas, Campylobotrys argyroneura, with singularly-crumpled, deeply-furrowed leaves, having a brown metallic lustre; one or two of Chantin's Caladiums, among which was the neat little argyrites, with green leaves blotched with the purest white; Begonia Regina, with reddish buff foliage, ornamented with a broad silvery band; the shining green-leaved Aucuba himalaïca, formerly noticed by us; Sonerila margaritacea, Echeveria secunda, Salvia argentea, with leaves covered with long white wool; and various fine kinds of variegated Geraniums. Messrs. Fraser had Musschia Wollastoni, a promising greenhouse shrub; Gastrolobium Leakianum, and the old canary-coloured Sempervivum lineolare. Some very fine Amaryllids came from Mr. Gaines and Messrs. E. G. Henderson. From Pine-apple Place Messrs. A. Henderson sent the double yellow-flowered Datura chlorantha, the pretty Boronia mellina, the charming little Fern Todea pellucida, various Caladiums, Dracænas, and Boronias; also Brunfelsia nitida, Grevillea robusta, and one or two other plants remarkable for the beauty of their foliage.

The collection of magnificent Rose trees in pots from Messrs. Lane, noticed above, formed one of the principal features of the exhibition. Each specimen was nearly 5 feet in height and loaded with blooms. The sorts were Baronne Prevost, large rose; Duchess of Sutherland, of a slightly paler shade; the handsome Tea Rose Souvenir d'un Ami, white, or rather blush with a salmon centre; Jules Margottin, crimson, very fine; Paul Perras, rose; Triomphe de Paris, deep purple. These were, as they deserved to be, greatly admired. Mr. Francis, of Hertford, contributed an extensive assortment of very nice Roses in pots, which occupied the middle of the centre table, and formed a good background for the fruit, which was arranged in front of them. Pansy blooms came from Mr. Bragg.

Fruit was as good and as plentiful as could have been expected considering the season. From M. Webber, Covent Garden Market, came a highly interesting collection. It consisted of Cocoa-nuts, Sapucaya-nuts from Demerara, and the Ground-nuts of commerce; Litchis from China, Shaddocks from the W. Indies, Blood Oranges from Malta, Mandarin from Palermo, and a large rough-skinned kind called the Navel Orange from the neighbourhood of Adelaide, S. Australia; Pommeloes from the W. Indies, four Pine Apples, some Pears and Apples, both in good condition; Sweetwater and Hamburgh Grapes, Sir Charles Napier and other Strawberries, and May Duke Cherries, the latter small, but ripe. These were staged with taste, and excited considerable interest.

Of Pine Apples there were some good examples. Mr. Davis, gr. to J. Dixon, Esq., sent a well-ripened Black Prince; a Prickly Cayenne weighing 3¼ lbs. came from Mr. Clarke, Cobham Hall, Kent. The best Queen was furnished by Mr. Page, gr. to W. Leaf, Esq., Streatham. Mr. Oates, of Stoneleigh Abbey, had a seedling said to be a good kind for fruiting in winter; it was stated to have been a cross between a Montserrat and a Queen. Other Pines consisted of a Globe from Mr. Hickson, gr. to E. Challoner, Esq., Hermiston Grange, Yorkshire; some well-grown fruit from Mr. Fryer, gr. to R. Crawshay, Esq.; a very nice Black Jamaica from Mr. Gillham, of Isleworth; a small, but finely-coloured Queen from Mr. Turnbull; and a Prickly Cayenne from the same grower and from Mr. Crawshay. The latter was, however, past its best.

Of Grapes, three remarkably fine bunches of Black Hamburgh came from Mr. Frost, gr. to E. L. Betts, Esq., and fruit of the same variety almost equally good was contributed by Mr. Hill, gr. to R. Sneyde, Esq., of Keele Hall, Staffordshire. Mr. Tillyard, gr. to Viscount Eversley, also sent good Black Hamburgh. Other exhibitions of this kind were less remarkable. Dutch Sweetwater came from Mr. Tillyard, and Muscadine from Mr. Chalmers, gr. to Lord Southampton.

Figs were contributed by Mr. Fleming, gr. to the Duke of Sutherland at Cliveden.

Of Pears, Mr. Park, Grove Hall, Retford, sent a dish of good Beurré Rance.

May Duke Cherries were uncommonly fine. The best were produced by Mr. Shuter, Heaton Park, near Manchester. These were large and beautiful. Mr. M'Bey, Sudbrooke Holme, near Lincoln, also sent a good dish of the same variety.

Strawberries were shown in considerable quantity; but by far the best in point of appearance were those from Mr. Smith, alluded to in another column. Mr. Parke had Trollop's Victoria and Keens' Seedling both good; Mr. Clarke Keens' Seedling and Sir Harry; Mr. Ivison, gr. to the Duke of Northumberland at Sion, Keens' Seedling; Mr. Kaile, gr. to Lord Lovelace, Princess Alice; and Mr. Turnbull Keens' Seedling and Alice Maude. Some well fruited specimens in pots came from Mr. Ivison.

Melons, consisting of Golden Perfection and Orion, were contributed by Mr. Sparkes, gr. to R. Collins, Esq., Collumpton, Devon.

Among Vegetables were dishes of green Peas from Mr. Fryer, gr. to R. Crawshay, Esq., Cyfarthfa Castle, Glamorganshire. The sort was Tom Thumb, which was stated to have been grown in wooden boxes in a cold house after having been for the first three weeks in a Pine stove. Examples of Australian Cress, formerly mentioned at p. 642, came from Messrs. A. Henderson, Pine-apple Place.

Cucumbers, fine for the season, were shown by Mr. Monro, of East Barnet. The sort—a hybrid—appeared to be unusually prolific, the fruit growing in pairs from almost every joint. It is evidently a valuable sort for winter forcing.

Among Miscellaneous Articles was a new fumigator

from Mr. Spary of Brighton, of which some notice will be taken hereafter, and Mr. Hutchison's ventilator, mentioned in another column.

The list of prizes awarded on the occasion will be found in our advertising columns.

Hornsey Gardeners' Mutual Instruction: *May* 2, 1859.—This newly established Society met at the Infant School Room, Hornsey, on Monday evening last, to hear a lecture by Mr. Shirley Hibberd on "The Literature of Gardening, and the Sayings and Doings of eminent Horticulturists." Mr. Hibberd gave the lecture gratuitously for the benefit of the Society, and as it was the first meeting the Society had held for any such purpose, a more than usual degree of interest was excited. The room was quite crowded, and among the persons present were Mr. and Mrs. Cutbush, of Highgate, J. R. Scott, Esq., of the Council of the Horticultural Society; Robert Richmond, Esq., &c. The last named gentleman was the chairman of the evening, and previous to the delivery of the lecture he made some remarks on the benefit gardeners might derive from mutual association for purposes of general mental improvement, as well as for advancement in the art which it was their privilege to follow as a means of livelihood.

Mr. Hibberd then began his lecture with a brief sketch of the gardens of the ancients, and coming down to the time of Roman grandeur and luxuriance he instanced the Pompeian Court at the Crystal Palace as giving a faithful idea of a Roman house and gardens. Among the many descriptions of such scenes in ancient and modern writers, he could remember none which placed the scene before the mind more completely and accurately than Bulwer's "Last Days of Pompeii," which he had read just previous to his first visit to Sydenham. The lecturer then glanced at the changes that had taken place in gardening taste during successive ages; he described the main features of Versailles and other noted places, and dwelt with enthusiasm on the glories of the old English gardens, with their bowling alleys, their collections of "simples," their clipped Yews, and favourite border flowers, too many of which were all but thrust out of cultivation in the present day by the rage for bedding and promenade effects. Among the authors reviewed as illustrating the changes of fashion in gardening were Whately, Price, Brown, Langley, Shenstone, Gilpin, and others. In the history of cultivation he said the changes had been fewer and less striking than in those in which taste was concerned. Miller's "Dictionary" was still a book of authority, and many older works, such as Gilbert, 1663, Abercrombie, who wrote under the *nom de plume* of Mawe, and others, differed but little in their treatment to the best practices prevailing at the present day. Mr. Hibberd then considered the several divisions of horticultural practice, and passed in review the most important works relating to them. He said Aylmer Bourke Lambert did much towards that patient study of Conifers which had produced "The Pinetum" of Messrs. Gordon and Glendinning, and then discussed the several merits of Cobbett's "Forester," Sweet's "Hortus," and the works of Bliss, Forsyth, St. Hilaire, Speechly, Hoare, Sanders, Lindley, and Loudon. He said it was a disgrace to England that John Claudius Loudon, who sacrificed his health and eventually his life in the service of horticulture, had yet no monument; his works testified to his unmatched industry, zeal, and intelligence, and the "Hortus Britannicus" must be regarded as his monument until his country should do justice to his memory. The modern practice of fruit culture, including the various methods of grafting, the culture of fruit trees in pots, &c., with such books as Rivers's "Orchard House" and "Miniature Fruit Garden" were the points next touched upon. The lecturer then passed to flower culture and the books relating to it. He gave a brief sketch of the "Florimania," and by numerous anecdotes illustrated the fame which certain florists' flowers had once enjoyed, especially the Tulip, Anemone, Ranunculus, and Dahlia. Alluding to the forthcoming Tulip show at Slough, Mr. Hibberd said they must not expect to find there many of the flowers which once played their part in the great Tulip bubble, for modern fashion had set up quite a different standard of properties, and the flowers which were bought and sold in Amsterdam and Haarlem at ridiculously extravagant prices, would now be of but small value in the eyes of a critical connoisseur. The lecturer quoted from the last catalogue issued by the late John Lawrence to show that there were Tulips now valued at 2*l.*, which was the present price of Charles Williams, and he hoped a healthy love of the Tulip and every other florists' flower would continue, not to give excuse for gambling and feverish speculation, but because "a thing of beauty is a joy for ever." The Chrysanthemum, Auricula, Polyanthus, Carnation, and other popular flowers were then briefly dealt with and their histories illustrated by numerous anecdotes from Fortune's Travels, the works of Maddox, Glenny, Mrs. Loudon, Mr. Paul's works on Roses, &c. Owing to the lateness of the hour, Mr. Hibberd concluded the lecture by omitting many other topics he had intended to embrace.

J. R. Scott, Esq., one of the Council of the Horticultural Society, moved a vote of thanks. He said Mr. Hibberd had not referred to his own works, but had done justice to many able books of the present day. He considered it a privilege to hear from one who had written on horticulture such an interesting discourse on the art itself and the literature of its various branches. The vote of thanks was carried by acclamation, as was also a similar vote to the worthy chairman for his kindness in presiding on the occasion.

Notices of Books.

Occasional Papers on the Theory of Glaciers. By James D. Forbes, D.C.L., F.R.S. 8vo. Pp. 278. Edinburgh. Black.

The object of the present publication is to establish the claims of the author to the merit of having originated and established the plastic theory of glacier motion, and of having been the first to give a satisfactory explanation of dirt bands and veined structure. For this purpose most of the various papers of the author upon these curious and interesting subjects have been collected and reprinted without alteration, in the order of their dates. Without going into the question whether a plastic solid and a viscous liquid are essentially the same, or into the dispute as to whom the discovery of the true nature of glaciers is due, there can be no doubt that the present collection of papers will be welcome to those who take an interest in their subject matter.

The habit of regarding ice as in the highest degree brittle is so fixed and universal that most persons are inclined to deny the possibility of ice being altered in shape by pressure without breaking. The idea of a stream of solid flowing ice is one which the majority of even educated people would pronounce to be absurd, and yet the experiments of Dr. Forbes and others clearly show that ice is plastic, and the author asserts that a glacier itself is as it were a stream of ice always flowing, and flowing faster in the middle than at the sides, and faster near the surface than near the bottom, and faster during the day than during the night, and faster in summer than in the winter. The author relies upon his observations as proving that this motion is continuous and does not take place by jerks, and that it is due to pressure and the force of gravity, and not to the dilatation of water frozen in the substance of the glacier as at one time ingeniously supposed. He maintains that he was the first to prove that a glacier is not snow which has been melted and then frozen; but snow converted into ice by pressure in the presence of moisture.

The evidence on which these conclusions are based will be found in the present volume; but the great fact of glacial motion cannot be made more apparent than by the fate of a knapsack lost in a crevasse of the Mer de Glace in July 1836, and found ten years afterwards at a spot 4300 feet lower down the stream than the place at which it had been lost.

"The accident occurred thus:—On the 29th July 1836 (or ten years all but five days from my recovering the fragments), Dévouassou accompanied a stranger to the Jardin, taking, as usual, the knapsack from the Montanvert, with a supply of bread, cheese, and wine. They arrived without accident at the top of the Couvercle, between the Aiguille du Moine and the Glacier du Talefre; and when at the point marked in the accompanying sketch with the words 'Knapsack lost,' the guide, to shorten the way, attempted to take an oblique course to the Jardin, instead of following the usual tract on firm ground round the foot of the Aiguille du Moine, and then turning sharply to the right, so as to make the passage of the glacier as short as possible. The ice on which he ventured was partly covered with snow, as is almost always the case there in July, and near the edge it was also full of concealed fissures. Into one of these the guide suddenly dropped, leaving the astonished traveller alone in this wilderness of rocks and ice. After vainly calling to his guide and obtaining no answer, he left the place in despair, and returned to Montanvert by the way he had come. Dévouassou, however, having reached the bottom of the crevasse but little hurt, managed by the aid of his pocket knife to cut steps in the walls of ice, and, finally, with great exertion and suffering, to raise himself to the surface, and make his escape, leaving behind him his knapsack, of which, of course, he had first disembarrassed himself. Astonishing fact! that the yet undecayed vestiges, together with a part of even the very bottle which formed his burden, should be brought to light on the surface of the ice after 10 years' friction and onward movement. I took pains to measure angles with my theodolite at each point, which enabled me to project them with tolerable accuracy on the map, as shown in the plate; and I ascertained by the barometer the difference of level of the two points, and also their elevation above the sea.

	Height above the Sea—English Feet.
Knapsack lost, Glacier du Talefre, 29th July, 1836	8657
Knapsack found, Glacier du Lechaud, 24th July, 1846 ..	7512
Difference of level ..	1145
Horizontal distance moved over	4300 feet.
Declivity	14° 55′
Annual motion	430 feet.

This motion harmonises sufficiently well with the numbers found in page 193, if we allow for the acceleration manifestly due to the rapid declivity which commences immediately below station W.

"This interesting discovery forms a curious pendant to the history of De Saussure's ladder, believed to have been found in fragments opposite Trelaporte, as fully detailed in my Travels, page 86; but this new case is much better ascertained in all its particulars."

We cannot conclude this notice without remarking that the author evidently considers himself an injured man, who has been, or is, or is about to be robbed of the fame to which his observations entitle him. We believe that in this respect he is mistaken, and that his real merits are duly appreciated and acknowledged.

Dr. Parkin, the author of various treatises on epidemic and other diseases, has lately written a volume on the *Causation and Prevention of Disease* (8vo, Churchill), in which he denies that fevers and other diseases are assignable to the emanations from cesspools, foul drains, churchyards, open sewers, or even to the atmosphere vitiated by the respiration of large numbers of persons occupying a confined space. He is of opinion that miasma, as it is termed, is merely carbonic acid, "and that whatever ill results this gaseous substance may produce in the extinguishing of lights or even of life itself, it will never, can never be productive of fever, or any other disease" (p. 19). He maintains that "the products of the decomposition of animal bodies are innocuous, or at least are not productive of ordinary diseases," and he founds this opinion, *inter alia*, upon the good health of young men amidst the putrid exhalations of the dissecting room, and of knackers and others continually exposed to the horrid odour produced by the decomposition of heaps of dead animals. Such is the argument sustained through 190 pages, and if the author is right, the millions about to be expended in the metropolitan sewage scheme are an absolute waste of money. The main purpose indeed of Dr. Parkin is to show that the views of the Board of Health are founded on no sufficient ground, but are derived from the personal crotchets of some of their advisers who cannot distinguish between consequence and coincidence. We recommend the volume to the serious consideration of medical men, who alone are capable of forming upon this question an opinion on which the unprofessional part of the community ought to rely. Could not a grand inquest of jurors be held upon so all-important an inquiry?

Garden Memoranda.

Garden of Mr. Alexander Potemkin, in Russia.—In one of the last Numbers of the *Gardeners' Chronicle* you publish a letter relating to the establishment of the Prince Troubetzkoy, at Nikolsky, near Moscow, and perhaps it will not be uninteresting to some of your readers to hear something more about Russian gardening. I agree in all points with Mr. Masson, excepted this one, where he says the above-mentioned establishment is the only one of this kind in Russia; doubtless it is one of the richest, but is it the best in fine culture and the good state of plants? It is no very great merit to have a large collection when people are rich enough to purchase all that is good, handsome, and dear, but to cultivate plants under a climate like that of north-eastern Russia in such a state as you do not find them better in Germany or France (I dare not say England, because the English will be surpassed by nobody in what concerns cultivating of plants)—that I think is a matter of a greater value than having the largest collection.

There are two other establishments in Russia, which may rival with that of the Prince Troubetzkoy, both situated in the Government of Nijni-Novogorod, one 10 miles from the town of Nijni, belonging to the General Scherimeteff, still richer than that of Nikolsky; the other about 100 miles in an eastern direction from the above-mentioned town belonging to Mr. Alexander Potemkin. Everybody knows the climate in this part of the country offers very great difficulties for gardening, the winter lasting seven months almost without a sunny day, the cold amounting to —25° Fahr., and more, the summer being very short, dry, and hot, and the change from winter to summer so sudden that the spring lasts only a few weeks. But not only in the climate the gardener meets with difficulties, there are many other things injurious to his plants which give him much pain and of which English gardeners know nothing. The establishment of Mr. Alexander Potemkin, of which in particular I shall speak here, is about 350 miles beyond Moscow, and there are no other means to transport plants from this town into the inmost parts of the empire than the so-called telege, a kind of little cart drawn by one horse, so that this journey lasts at least a fortnight, and you may well imagine how much the plants suffer by it, being exposed the whole day to the burning sun of June or July. So they usually arrive in a very bad state, the half dead, and those which have supported the cruel treatment they have been exposed to are so ill, that hardly a year is sufficient to re-establish them. The head gardener is provided with a large number of grooms, here called gardeners, who, however, do not know the least thing about gardening, and to whom he can entrust nothing which offers any difficulty in practice. Notwithstanding these difficulties, and many others which time and place do not permit me to mention here, the plants are finely cultivated, and I shall give you a superficial description of the greenhouses and stove plants. The best cultivated plants are doubtless the Camellias, the collection of which consists of about 150 specimens, among them the best of the new varieties; and nowhere have I seen these plants so vigorously shooting and so abundantly flowering. Likewise the Rhododendrons are in the finest state, developing just now their beautiful flowers among the dark green leaves with the shoots about 6 and even 7 inches long. All specimens of the Sikkim Himalaya, of Bootan and Assam, are represented in fine specimens. Azaleas are very well cultivated too, and I think them to equal perfectly the best show plants of Ghent and Paris. A rich collection of Conifers and New Zealand plants has passed the winter certainly better than in any garden of the Continent. They are so fresh and grand that one could not believe they have had to suffer during seven months the air of a greenhouse where ventilation by cause of the coldness outdoors was quite impossible. A very fine Palm-house shows the best cultivated plants, among them a beautiful Latania borbonica of about 15 feet high, and perfectly well preserved leaves. Orchids and Ferns are few, but in the best health, and the multiplication of Ferns by seed is very well practised. The other stove plants such as Ixora, Medinilla (a splendid exemplar of M. magnifica is just now flowering, and bears 16 well developed clusters), Boronia, Rhopala, Theophrastas, such as imperialis, macrophylla, &c., Cyanophyllum magnificum, the new and handsome Cossignea borbonica, the Begonias recently introduced by Mr. Linden in Brussels, such as Lazuli, Rex, Miranda (!), and margaritacea, Gardenias, Franciscæas, and many others, are represented in very fine plants. The forcing department is rich and in the finest state, which is so much more required here, where Cherries, Pears, and the French specimens of Apples must be cultivated in greenhouses. Of hardy shrubs and trees there is a fine collection, and the English park is made in the best modern taste. Surely nobody would imagine that such a fine establishment exists in this rude climate, and because it is entirely out of the way of communication it is seldom seen and very little known by foreigners. When, however, any one from Germany or France beholds it, he

assures nowhere he saw better culture, and plants in a finer state. In Russia every one who knows the establishment of Mr. Alexander Potemkin calls it one of the best in the empire. *E. Clausern, Abrotschne, near Potschinki, 20th March, O. S.* (*2d April, N. S.*) 1859.

Miscellaneous.

Prices of Works on Botany and Gardening.—The recent sale by Messrs. Sotheby & Wilkinson of the larger part of the Library of the Horticultural Society throws some light not only on the value of this description of property, but on the taste of the public. We therefore select a few instances. Andrews' Heathery, 6 vols., 8vo, 3*l.* 5*s.*—Bedford's (Duke of) Salictum Woburnense, coloured plates, 14*l.* 5*s.*—Ditto Pinetum Woburnense, coloured plates, 10*l.* 15*s.*, two works of mere curiosity and no scientific value—De Candolle's Prodromus, 14 volumes, 5*l.* — Dictionnaire des Sciences Naturelles, 66 vols, 3*l.*—Dictionnaire Classique d'Histoire Naturelle, 16 vols., 1*l.* 3*s.*—Botanical Register, 21*l.* 10*s.*—Andrews' (H.) Botanist's Repository, 10 vols. 4to, 664 coloured plates, 7*l.* 7*s.*—Annales du Muséum, 20 vols., russia, and Memoires du Muséum, 20 vols., calf, and Nouvelles Annales du Muséum, 4 vols. calf, in all 44 vols., 4to, 6*l.* 17*s.* 6*d.*—Archives du Muséum, 9 vols., 4to, 8*l.* 15*s.*—Asiatick Researches, 20 vols. (wanting Vol. XVII.), original edition, 19*l.*—Aublet's Histoire des Plantes de la Guiane Françoise, 4 vols., 392 plates, russia, very scarce, 10*s.* 6*d.*—Burchell's Travels in the Interior of Southern Africa, 2 vols., 4to, 2*l.* 11*s.*—Arabida's Flora Fluminensis, 11 vols., folio, in 5, 20*l.*—Bateman's Orchidaceæ of Mexico and Guatemala folio, 13*l.*—Cavanilles Icones, 6 vols., 4to, 9*l.* 9*s.*—Chandler's Illustrations of Camellias, 3*l.* 3*s.*—Curtis's Flora Londinensis, 5 vols., fol., 20*l.* 10*s.*—Duhalde's Description of China, 2 vols., folio, 1*l.* 6*s.*—Flora Danica, fine paper, 10 vols., folio, 23*l.* 10*s.*—Gallesio's Pomona Italiana, 2 vols., fol., 20*l.* — Hernandez's Rerum Medicarum Novæ Hispaniæ Thesaurus, 1*l.* 5*s.* — Griffith's Posthumous Papers, 11*l.* 5*s.* — Hooker's Exotic Flora, 3 vols. 8vo, 3*l.* 1*s.* — Lindley's Genera and Species of Orchidaceous Plants, 1*l.*—Hooker and Greville's Icones Filicum, 2 vols., coloured plates, 11*l.*—Jacquin's Eclogæ, 10*l.* 5*s.*—Jacquin's Icones Plantarum Rariorum, 3 vols., 11*l.*—Jacquin's Hortus Schœnbrunnensis, 4 vols., fol., 13*l.*—Lambert's Description of the Genus Pinus, original edition, 9*l.*—Lindley's Sertum Orchidaceum, 11*l.* 15*s.*—Melville Island Herbarium of dried Plants, forming a Complete Flora of Melville Island, and unique, 3*l.* 18*s.*—Redouté's Roses, 8vo, 1*l.* 10*s.* — The Linnean Society's Transactions, 20 vols. calf, and 6 parts sewed, 9*l.*—Loddiges' Botanical Cabinet, 20 vols., large paper, 9*l.* 15*s.*—Royle's Illustrations of the Botany of the Himalayan Mountains, 2 vols. 4to, 4*l.* 19*s.*—Ruiz & Pavon's Flora Peruviana, 4 vols., folio, 7*l.* 17*s.* 6*d.*—Sibthorp's Flora Græca, 10 vols , folio, 60*l.*; one of the very few original copies in existence.—Sinclair's Hortus Gramineus Woburnensis, the folio, illustrated with dried specimens, in bad condition, 2*l.* 11*s.*!!—Wallich's Plantæ Asiaticæ Rariores, 3 vols. folio, 12*l.* 17*s.* 6*d.*—Sowerby's English Botany, 36 vols., and Supplement, 24*l.*—Sweet's Geraniaceæ, 5 vols., 5*l.* 10*s.* Among the Botanical and other Drawings the following prices were realised:—Ferdinand Bauer's Delineations of the genus Passiflora, 40 exquisite drawings in colours, with 40 other drawings of the dissections, 15*l.* 15*s.*—Chinese Drawings, 4 vols., containing 132 drawings, 18*l.*—Chinese Drawings of Plants, 5 vols.; undoubtedly the finest set in Europe of authentic Chinese drawings of plants, 70*l.*—230 coloured Drawings of Fruit, by W. Hooker, Robertson, Barbara Cotton, and others, 10 vols., 49*l.* 10*s.*

Calendar of Operations.

(For the ensuing Week.)

—✦—

PLANT DEPARTMENT.

Conservatory, &c.—As soon as cold frames and pits are clear of bedding stuff they should be occupied with young stock of hard-wooded plants, for the summer growth of which they are much more suitable than large houses. Such places will also be found suitable for dwarf Lobelias, Balsams, Salvia splendens, S. gesneræflora, and many other things which are generally grown for flowering in the conservatory in summer and autumn; indeed most things which require only a moderate temperature will be more manageable here and thrive better than in lofty houses with double the attention. As New Holland plants go out of bloom their seed pods should be picked off, the shoots cut back and arranged in the form most favourable to secure compact growth, placing them in an airy part of the greenhouse until they fairly start into growth. When the buds have fairly started will be the proper time for shifting such as require more pot room, as they can then be kept somewhat close for a fortnight to encourage a free root action without incurring the risk of the buds breaking scantily. Look well to the stock of plants for summer and autumn decoration, and do not allow them to sustain any check through want of pot room or carelessness in watering. Crowcas are first-rate subjects for this purpose, remaining longer in beauty than almost any other hard-wooded plant which we possess, and are not nearly so much used as they should be. Fuchsias for late blooming must not be kept too warm; but should be placed in a moist shady house, where they will grow much more freely than in a high temperature. Stove plants will now be grown freely, and will require frequent attention as regards stopping and training. Keep them properly supplied with pot room, and afford them all the sunshine they will bear without scorching, with a moist atmosphere, admitting air freely on mild days. Also afford them sufficient space for the perfect development of their foliage. Look sharp after insects, and attend to cleanliness, washing the floors and pots as often as it may be necessary to do so. Go over creepers frequently, so as to regulate their growth and prevent confusion, which without attention soon happens. Syringe and shut up early on the afternoons of bright days, and be as sparing as possible in the use of artificial heat. Orchids.—Afford those in growth a thoroughly moist atmosphere, giving them a good steaming every bright afternoon by syringing and shutting up early. Admit air in moderate quantities on mild soft days, but carefully avoid currents of drying wind. Examine the plants individually every other day, and water such as require it, but be careful not to give too much to those starting into growth, and a cool atmosphere will greatly assist in prolonging the beauty of those in bloom.

FORCING DEPARTMENT.

Pineries.—Plants swelling their fruit should be divested of all suckers, except as many as may be wanted for stock, directly they make their appearance. This will throw more of the energies of the plant into the fruit, and will also secure stronger suckers than if too many were left. Our more valuable sorts of Pines are not, however, very apt to produce any excess of suckers, but some varieties of Queen still in cultivation produce so many that the fruit never attains any size unless the suckers are thinned early. Guard against any decline of the bottom-heat, and where this is obtained from fermenting materials, a little fresh tan should be added before the heat gets too low; and it will be much safer to add a few inches occasionally as it may be wanted than to follow the old practice of renewing the bed only once or twice in the year. See to keeping the soil about the roots, where the plants are in pots or planted in the open bed, in a nice healthy state as to moisture, and give manure-water regularly to fruiters and stock in free growth. Vineries.—Go over the Vines in succession houses, frequently removing laterals, &c., before they shade or interfere with the principal foliage. Where plants must be grown under the Vines the latter should be kept sufficiently thin to allow of a moderate share of light reaching the plants, and neither laterals nor any useless wood should be allowed to obstruct the light. See that none of the plants are infested with red spider or thrips, especially the latter, which if once allowed to get upon the Vines is very difficult to eradicate, and is most destructive to the foliage. Azaleas are very subject to this pest, and if these are grown under the Vines they must be closely watched, and kept clean at any expense. See that Vines in the late house are tied up in their places before the shoots get too far advanced, as there is considerable danger of breaking these off when they are allowed to get too long before the rods are tied up. Look sharply after red spider, and use every means to keep clear of this pest. Figs.—Attend to stopping and thinning the shoots, and aim at securing short-jointed strong growth, by exposing the young wood to all the light possible. This will, of course, necessitate keeping the trees rather thin, but it is useless hoping for a crop of good fruit from trees that are crowded with wood. Keep the atmosphere moist, and give the foliage a good washing with the syringe after shutting up the house in the afternoon.

FLOWER GARDEN AND SHRUBBERIES.

Recently transplanted shrubs and trees must be carefully attended to with water until they get fairly established. It is frequently the case however that too much water is given at the root, thereby souring the soil, and rendering it uncongenial to the young rootlets and the after growth of the plants. The soil should be kept moist, but not to saturation, and the plants as soon as the weather gets warmer might be watered over head with the engine on the evenings of bright days which will be of vastly more service in repairing the loss sustained by evaporation than if given in excess to the soil while there is a deficiency of active rootlets to absorb it. Where Roses are infested with the grub it will be necessary to go over the plants frequently to destroy this pest. Green-fly is also very troublesome at this season; a good washing with the garden engine on two or three successive evenings will greatly assist in getting rid of these destructive pests, but this must be done after all danger of frost is past. Planting of all properly prepared bedding stock may now be proceeded with under favourable auspices. Begin with Calceolarias, Verbenas, Scarlet Geraniums, &c., leaving Heliotropes, Lantanas, Anagallis, and such things as are usually injured by frost until planting of the more hardy kinds is completed. Branches of evergreens are easily enough obtained about most places, and a sprinkling of these stuck into the beds after planting will be of great service in protecting the plants from the drying effects of bright sunshine, and will also help to ward off frost.

HARDY FRUIT AND KITCHEN GARDEN.

Persevere in the destruction of insects on fruit trees in order to afford the young shoots a fair chance to make healthy growth; also proceed with disbudding and stopping gross shoots. See that recently transplanted trees are not allowed to suffer through want of water. Look after the caterpillars on the Gooseberry trees. The quickest way of getting rid of this pest is to give the trees a heavy washing with a powerful engine, throwing the water against the under sides of the leaves, which will wash off the caterpillars, and they are readily killed on the ground by means of an iron rake. Get trenches filled with some fermenting materials in readiness for Cucumbers, &c., and expose the plants rather freely to light and air, to prepare them for planting under the protection of hand-glasses. If not already done see to sowing plenty of sweet Basil, Savory, &c., on a warm border of light rich soil.

COTTAGERS' GARDEN.

Every spare half hour may now be profitably employed in killing weeds and stirring the ground among growing crops. Vegetation, which has so long been checked by cold north easterly winds, is now beginning to make rapid progress; and weeds, like other things, grow apace; they therefore require sharp looking after, in order if possible to prevent them from flowering and seeding. Planting, if any, in the kitchen garden should now be done in drills. In that way the plants get more effectually watered, and the first hoeing, by filling in the drills, acts as a slight earthing up. Keep paths clean, straighten their edges, and otherwise render them not only neat but comfortable to walk on.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.
For the Week ending May 12, 1859, as observed at the Horticultural Gardens

May.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Temperature of the Air. Min.	Temperature of the Air. Mean	Temperature of the Earth 1 foot deep.	Temperature of the Earth 2 feet deep.	Wind.	Rain.
Friday 6	4	30.035	29.985	64	33	48.6	52	49½	S.E.	.00
Satur. 7	5	29.983	29.924	73	48	60.5	52½	50	S.	.39
Sunday 8	6	30.141	30.032	67	29	48.0	53	51	N.	.00
Mon. 9	7	30.217	30.100	63	46	54.5	53	51	E.	.00
Tues. 10	8	30.096	30.053	64	37	50.5	53	51	E.	.00
Wed. 11	9	30.219	30.173	60	34	47.0	54	51	N.E.	.00
Thurs. 12	10	30.175	30.123	63	32	47.5	54	52	E.	.00
Average		30.124	30.065	64.8	37.0	50.9	53.0	50.8		.39

May 6—Clear and cold; fine; clear at night.
— 7—Slight haze; very fine; slight rain.
— 8—Cloudy; very fine; clear; frosty at night.
— 9—Clear and dry air; very fine; clear.
— 10—Overcast throughout.
— 11—Overcast and fine; very clear at night.
— 12—Fine; cloudy and fine; slight frost.
Mean temperature of the week, about the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 33 years, for the ensuing Week, ending May 21, 1859.

May.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 15..	64 6	41.1	52 9	10	0.41 in.	3	9	3	2	8	6	2	1
Mon. 16..	65.9	43.0	54.5	11	0.34	6	5	6	—	2	10	3	1
Tues. 17..	66.7	42.4	54.1	14	0.58	1	6	4	1	4	9	4	4
Wed. 18..	66.0	43.2	54.1	15	0.17	1	6	5	3	2	10	5	1
Thurs. 19..	65.9	43.5	54.7	11	0 50	2	6	6	3	3	10	3	—
Friday 20..	66.1	43.4	54.8	16	0.64	1	5	7	3	4	8	1	4
Satur. 21..	65.0	45.3	55.6	15	0.36	3	5	4	2	5	5	2	2

The highest temperature during the above period occurred on the 15th, and 17th, 1853—therm. 86 deg.; and the lowest on the 15th, 1850—therm. 25 deg.

Notices to Correspondents.

Coloured Walls: *E E* asks if any of our readers can inform him of a process to change the colour of a wall that has been tarred (and which consequently is black) to a stone or any light colour,—what would be a good material to use, and how to use it?

Gishurst Compound: *Sub.* If you will refer to a leading article in a very late Number you will find all that we know on the subject.

Grapes: *Constant.* The spot is a well known disease caused by the roots being in a cold bottom and the house ill ventilated, sometimes the one, sometimes the other, sometimes both. Probably the first in your case.

Insects: The empty chrysalis skin enclosed in its burrow in a branch of Pear(?) sent by Lady W.'s gardener is that of the Wood Leopard Moth (Zenzera Æsculi, which is often very injurious to young fruit trees by boring into the stems.—*S T.* The blotches on the leaves of the evergreen Oak are caused by the minute caterpillars of a little moth (Lithocolletis Messaniella) which eat the parenchyme between the two surfaces of the leaf.—*A C.* The masses of curled up Rose leaves are not formed by a moth but by the leaf cutter bee (Megachile centuncularis), for the reception of her eggs and pollen for the food of the grubs when hatched. *W.*

Names of Plants: We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have or could have undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*Longstanding.* Prunus Padus, the common Bird Cherry.—*W.* Orchis fusca.—*Sub.* Oncidium carthaginense.—*Constant.* There is much difference of opinion among botanists as to what is a species in the genus Saxifraga. Mr. Bentham reduces the British species to 13 (see his valuable *Handbook*), regarding those you have sent and all their allies as mere forms of one common species. Your No. 1. is S. platypetala, No. 2 is palmata.

Oaks: *New Forest.* It is not possible to speak positively to so small a specimen, but it looks more like Quercus pedunculata than Q. sessiliflora.

Plans of Gardens: *J W C.* Sent to the engraver.

Sea Shingle: *L R R* would feel obliged by knowing the best plan to bind the sea beach shingle for a small coach road; at present the horses work it up.

The Ballot: *W C E.* We will inquire.

The Loquacious Gentleman: Will *Pletanus* kindly say to whom he alluded by the above expression? Some inquiries, which we think should be satisfied, have been made upon the subject. We do not ourselves much like *ambiguæ voces.*

Vines: *R B.* Muscats want a warmer atmosphere than you may be able to command; their border should also be protected from cold rain, and if warmed a little so much the better. Cold in some shape is we think your enemy.—*J S.* The excessive quantity of clusters shown by your Vine indicates its being in very good health without any tendency to luxuriance. It is only necessary to remove what are beyond the strength of the plant; we should leave one bunch on every other young lateral. The fewer you leave the larger will be the bunches and berries, and now is the time to thin them.

Water Rats: *T.* Place small balls of phosphoric rat poison in their holes, and the rats will disappear.

THE PATENT

NITROPHOSPHATE OR BLOOD MANURE COMPANY (LIMITED),

CONSISTING OF TENANT FARMERS, OCCUPYING UPWARDS OF 30,000 ACRES OF LAND.

TRUSTEES.

ABEL SMITH, Jun., Esq., Walton House, Ware, Herts.
CHARLES DIMSDALE, Esq., Essendon Place, Herts.
EDWARD BALL, Esq., M.P., 8, Belgrave Road, Pimlico
MAJOR GENERAL HALL, M.P., Western Colville, Linton, Cambridge
JOHN BRADY, Esq., M.P., Warwick Terrace, Belgrave Sq.

DIRECTORS.

Chairman.—JONAS WEBB, Esq., Babraham, Cambridgeshire.
Deputy-Chairman.—JOHN COLLINS, Esq., Myddleton Square, Pentonville.

EDWARD BELL Esq., Tottenham, Middlesex
JOHN CLAYDEN, Esq., Littlebury, Essex
RICHARD HUNT, Esq., Stanstead Abbot, Herts.
THOMAS KNIGHT, Esq., Edmonton, Middlesex.
ROBERT LEEDS, Esq., West Lexham, Norfolk.
ROBERT MORGAN, Esq., 72, Camden Villas, Camden Town.
GEORGE SAVILL, Esq., Ingthorpe, near Stamford.
WILLIAM COLLINS, Esq., 105, St. John Street Road.

Bankers.—Messrs. BARNETT, HOARE & Co., Lombard Street.
Solicitors.—Messrs. KINGSFORD & DORMAN, 23, Essex Street, Strand.
Auditor.—G. W. BROWN, Esq, 28, Parliament Street.
Manager.—Mr. JAMES ODAMS. | *Secretary.*—Mr. C. T. MACADAM.

Offices, 109, Fenchurch Street, London.—Manufactory, Plaistow Marshes, Essex.

THE Directors beg to inform their Friends and the Agricultural Public that the following Manures are now ready:—

ODAMS'S BLOOD MANURE FOR CORN AND MANGEL.
ODAMS'S BLOOD MANURE FOR ROOTS.
ODAMS'S SUPERPHOSPHATE OF LIME.

Full particulars may be had at the Company's Offices, or of the local Agents.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

ARTIFICIAL MANURES.

FREDERICK CORNWELL begs to inform his friends and the Agricultural public that he can now supply a "SUPERPHOSPHATE of LIME" superior to anything yet produced. Each Bag guaranteed to contain from 20 to 25 per cent. of "Soluble Phosphate of Lime." Price 5*l.* 10*s.* per ton, delivered free to any Railway or Wharf in London Dealers and the trade supplied. LINSEED-CAKES, COTTON-CAKES, and all descriptions of ARTIFICIAL MANURES at lowest market prices.—Offices, 7, Great St. Helen's, London, E. C.

LONDON MANURE COMPANY, removed to 116, Fenchurch Street, E. C. (Established 1842), have the following MANURES ready for delivery:—

CORN MANURE for SPRING TOP-DRESSING
URATE
MANGEL MANURE
SUPERPHOSPHATE OF LIME
BLOOD MANURE
} all of guaranteed quality.

In consequence of the reduction in the price of raw material the London Manure Co. are enabled to lower the price of their Superphosphate of Lime, and to materially improve the Corn Manure and Urate.

The London Manure Co. also supply PERUVIAN GUANO (direct from Messrs. A. Gibbs and Sons), SULPHATE of AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of value. Wholesale dealers supplied.
116, Fenchurch Street, E.C. EDWARD PURSER, Secretary.

PERUVIAN GUANO.
The present price of this valuable Manure is—
12*l.* per Ton for 30 Tons and upwards,
13*l.* 5*s.* per Ton for 1 Ton up to 30 Tons.

And, to guard against the purchase of adulterated mixtures and of inferior Guanos purporting to produce results equal to Peruvian, consumers are recommended to apply either to ourselves, to our agents, Messrs. Gibbs, Bright, & Co., of Liverpool and Bristol, or to dealers of established character, in whose honesty and fair dealing they may place implicit confidence.
ANTONY GIBBS & SONS

SUCCESS OF THE NEW GUANO; IMPORTED UNDER LEASE FROM THE CROWN.—Though the experiments with KOORIA MOORIA GUANO were made late in the season, and under adverse circumstances, the successful results obtained confirm beyond doubt Professor Voelcker's report—(in No. 4:, Part I., vol. xix., Royal Agricultural Society's Journal)—that Ammoniacal manures, applied to Turnips in the experimental field, kept back at first the crop, and had no beneficial effect either alone or in conjunction with phosphates.

The KOORIA MOORIA GUANO is essentially a phosphatic manure, containing sufficient ammonia for roots, and, with a mixture of one-fourth of ammoniacal guano, cannot be excelled for either top-dressing or grain crops. It is a natural deposit, and will be delivered as imported, free from risk of adulteration. Deeply impressed with the necessity of encouraging the import of this valuable manure, her Majesty's Government has given such increased facilities for shipment, that arrangements have been made for a considerable supply. Purchasers can be supplied with suitable quantities from cargoes now on sale, containing from 45 to 66 per cent. phosphates. Present prices, 4*l.* 10*s.* to 6*l.* 10*s.* per ton, on applying to JOSEPH HINDSON, Broker (one of the Lessees under the Crown), 20, North John St., Liverpool. Government Lessees: ORD, HINDSON, & HAYES.

"Greystoke, Cumberland, Dec. 16, 1858.

"Dear Sirs,—I beg to inform you that I applied the Kooria Mooria Guano I had from you for Turnips, on land of a loamy character, incumbent on a stiff clay subsoil, and recently drained. On each side of the plot sown with Kooria Mooria Guano were Turnips manured with best Peruvian Guano. The quantities applied of each sort were of equal weight for weight per acre. The crop—a very good one throughout—is now being eaten off with sheep. Very little perceptible difference can be discovered, but if anything that difference is in favour of the Turnips sown with Kooria Mooria Guano.

(Signed) "JOHN BARKER."

"Messrs. J. & J. Graham, Guano Merchants. Penrith."

A Pamphlet, "Hints on Guano," containing a large number of reports from well-known agriculturists, and analysis of the cargoes here, may be had of the Broker, at the above address.

MANURE FOR ROOT CROPS, of first-rate quality, with Analysis guaranteed, manufactured by WILLIAMS & Co., 47, Mark Lane, London (Established 1847), at 6*l.* per ton, including bags. Free to Wharf or Rail in London. The Trade supplied.

REDUCTION IN PRICE OF LAWES'S MANURES.

MR. LAWES begs to announce that he has this season reduced the price of the Manures manufactured by him, viz.:—

TURNIP MANURE	from £7 to	£6	6
SUPERPHOSPHATE OF LIME ..	,, 7 to	6	6
MINERAL do. ..	,, 6 to	5	5
BARLEY MANURE..	..	8	0

Prof. Way and Dr. Voelcker have sampled from a bulk of 5000 to 6000 tons at his factories, and their report and analyses are given in full in Circular to be obtained on application at his office, 1, Adelaide Place, London Bridge, E.C., or of his local Agents.

N.B. Genuine Peruvian Guano direct from Messrs GIBBS, Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures. American Cotton-seed Cake supplied.

ESTABLISHED 1812.

H. AND T. PROCTOR'S TURNIP MANURE.—Messrs. H. & T. P. draw particular attention to this valuable Manure, which contains all the elements necessary for the full development of the Turnip Crop, so combined, that, from their chemical knowledge and long experience, they feel satisfied is most advantageous to the consumer. It has been very extensively used by most of the eminent Agriculturists of the day, and has attained a high reputation throughout England, Scotland, and Wales, and, they venture to say, is unrivalled for the weight and quality of the Bulbs which it produces. The application of this Manure to the Turnips will be found to benefit considerably the after crops of Barley, Clover, and Wheat.

POTATO, GRASS, BARLEY, CLOVER, AND WHEAT MANURES; also BONE DUST, PERUVIAN GUANO, and SUPERPHOSPHATE of LIME, warranted of the best quality.

Apply to H. & T. PROCTOR, West of England Depôt for Artificial Manures, Cathay, Bristol; or PROCTOR & RYLAND, Birmingham, and Saltney, near Chester.

BURNARD, LACK, AND CO.'S CONCENTRATED SUPERPHOSPHATE OF LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.

CONCENTRATED TURNIP MANURE, equal in value to the preceding.

Of these Manures Dr. Voelcker says:—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."

Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to BURNARD, LACK, & Co., Sutton Road, Plymouth.

SPEED AND ECONOMY for Farmers, Gentlemen, and Market Gardeners, in the use of HOARE'S REGISTERED HAND SEED PLANTING MACHINE, which from its capabilities, combined with strength, lightness, and simplicity, places it beyond a parallel. Its operative powers in planting the seeds of Mangel, Carrot, Turnip, Parsnip, and all small seeds in patches of equal depth and different distances, from 6, 7, 12, 14, 18, 21, 24, to 28 inches apart, raking in and rolling complete, render it an invaluable invention. It will act as a drill when required. Price 5*l.* 15*s.*

London Agent, Mr. B. SAMUELSON, 76, Cannon Street, West. Sold also by the inventor, J. HOARE, Old Fishbourne, Chichester, Sussex.

FLEMING'S SALTING MACHINE FOR DESTROYING WEEDS ON GRAVEL WALKS, &c.—This most useful Machine has given the greatest satisfaction wherever it has been introduced; it is the only effectual means of keeping Drives and Walks completely clear of Weeds.

Extract from article "Trentham" in *Gardeners' Chronicle* of January 22.

"And I would observe in passing from these grounds that the whole of the Grass and Gravel are kept in the most perfect order by the aid of Machinery; the former by a Horse Machine wherever it can be worked, a small hand instrument being used in places of difficult access; the latter is kept in order by a SALTING MACHINE, the invention of Mr. Fleming, and judging from the beautiful condition of the Gravel in every direction, I should say that it was altogether most efficient."

(The Mowing Machines here referred to are SHANKS'S)

From the *Field* of April 2.

"The Salting Machine will effectually destroy the Weeds on Gravel Walks and Drives."

Testimonials, with full particulars and prices, may be had on application to ALEXANDER SHANKS & SON, Dens Iron Works, Arbroath, Patentees of Improved Mowing, Rolling, Collecting and Delivering Machine for Lawns, Hot-water Apparatus Manufacturers, &c.

FARM BUILDINGS.

LOANS MAY BE OBTAINED UNDER THE GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY'S ACT, for the full amount required by the owners of Settled Estates, Incumbents, Trustees, Bodies Corporate, &c., for the erection of Farm Houses, Farm Buildings, and Labourers' Cottages, designed by their own agents and sanctioned by the Inclosure Commissioners. The Loans are repaid by a rent-charge on the estate for any term the landowner may fix, not exceeding 31 years.

No investigation of title being required, and the charge not being affected by incumbrances, no legal expenses are incurred.

The Company furnish Designs of every description, and undertake the entire responsibility of the works wherever desired by Landowners. No profit however is taken by the Company on any works they execute, the actual expenditure only, approved by the Inclosure Commissioners, with a Commission thereon, being charged in all cases. Applications to be addressed to WILLIAM CLIFFORD, the Secretary, at the Offices of the Company, 52, Parliament Street, London.

THE LANDS IMPROVEMENT COMPANY,
2, Old Palace Yard, Westminster, S.W.

To Landowners, the Clergy, Solicitors, Estate Agents, Surveyors, &c.—The Company is incorporated by Special Act of Parliament for England, Wales, and Scotland.—Under the Company's Acts Tenants for Life, Trustees, Mortgagees in possession, Incumbents of Livings, Bodies Corporate, certain Lessees, and other landowners are empowered to charge the inheritance with the cost of improvements, whether the money be borrowed from the Company or advanced by the Landowner out of his own funds.

The Company advance money, unlimited in amount, for works of Land Improvement, the Loans and incidental expenses being liquidated by a rentcharge for a specified term of years.

No investigation of Title is required, and the Company being of a strictly commercial character do not interfere with the plans and execution of the works, which are controlled only by the Enclosure Commissioners.

The improvements authorised comprise Drainage, Irrigation, Warping, Embanking, Enclosure, Clearing, Reclaiming, Planting, Erecting and Improving Farm Houses and buildings for Farm purposes, Farm Roads, Jetties, Steam Engines, Water Wheels, Tanks, Pipes, &c.

Owners in fee may effect improvements on their Estates without incurring the expense and personal responsibilities incident to Mortgages, and without regard to the amount of existing incumbrances. Proprietors may apply jointly for the execution of Improvements mutually beneficial, such as a Common Outfall, Roads through the District, Water Power, &c. For further information and for forms of application apply to the Hon. W. NAPIER, Managing Director, 2, Old Palace Yard, Westminster, S.W.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.
Principal—J. C. NESBIT, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

HIGHLAND AND AGRICULTURAL SOCIETY.—EDINBURGH SHOW, August 1, 2, 3, 4, and 5.

142*l.* and 300 GOLD, SILVER, or BRONZE MEDALS will be offered for STOCK, IMPLEMENTS, and DAIRY PRODUCE.

All articles must be entered on or before Wednesday, June 15.

Schedules of entry, and copies of the Premium List and Regulations, will be issued on application to the Secretary at 6, Albyn Place, Edinburgh.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.
WARWICK MEETING.

The time for receiving entries for Wool, Cheese, and Field Gates, has been extended to the 1st of June.

By Order of the Council.
London, May 14. JAMES HUDSON, Secretary.

The Agricultural Gazette.

SATURDAY, MAY 14, 1859.

MEETINGS FOR THE ENSUING WEEK.
WEDNESDAY, May 18—Agri. Society of England .. Noon.

—— A CORRESPONDENCE has been published by Mr. SAMUEL PHIPPS, of Long Croft Farm, near Hemel Hempstead, on the estate of the Hon. GRANVILLE DUDLEY RYDER, in the county of Herts, in which the relations of a landlord to a yearly tenant receive striking illustration.

After considerable difference and discussion of terms, Mr. PHIPPS became the tenant of this farm at Michaelmas, 1854, at the yearly rent of 420*l.* for the first three years, and 430*l.* afterwards; and on the faith of this understanding he proceeded at great expense to get land in condition which at the commencement of the tenancy was in a very low state of cultivation. We now quote from the published statement:—

"In November, 1856, some words fell from my landlord which induced me to think that he was not altogether satisfied with the rent he was receiving; and as I was about to lay out a considerable sum in further improvements, I mentioned the subject to Mr. TRANTER, the steward, stating at the same time that I should wish to resign the farm at once if there was a chance of the rent being increased. A few days afterwards he informed me that I entirely misapprehended Mr. RYDER'S meaning; that he had mentioned my remarks to that gentleman, and that he had his authority for assuring me that *there was no intention whatever of raising my rent.* Upon this assurance I acted; and from that date to February, 1858, when I first heard that the rent was to be raised to 500*l.*, I expended not less than between 700*l.* and 800*l.*

"On receiving notice of the increased rental I felt aggrieved, and I think I have shown not without reason. I remonstrated. I asked that, at least, I should receive some compensation for the great outlay I had made. But no; the only answer I got from my

landlord (and here I quote his own words) was, 'that I had farmed the land in the way I thought best for my own interest;' in other words, having, at my own expense, got the land into a paying condition, to be turned to my landlord's advantage, I was but a fool for my pains—that 'I had the farm on a *yearly tenancy*'—that 'the raising of my rent was only parcel of raising the rents on the whole of the estate, owing to the increased value of land'—that 'the addition to my rent was only a little more in proportion than the addition made to the others, on account of the large outlay on my premises.' But I would ask, was not the rent in my case fixed, and the rise from 420*l.* to 430*l.* sufficiently considered at the time I took the farm?—or was the 420*l.* the commencement of a sliding scale, to be increased to 430*l.*, 500*l.* and so on, according as the land was improved by my outlay of money and labour? Again, did land increase in value to such an extent in four years, or rather between November, 1856, when I was assured no rise was to take place, and March, 1858, when notice of the rise was given? And, as to the allusion to the outlay on the building, does not this appear a mere pretext for making the rent 'a *little more in proportion* to the others,' when the letters above show that the plan was 'decided on and in the hands of the builder,' and *consequently the cost reckoned* a month before the rent was fixed? Let the letters be carefully read, and it is impossible, in fair dealing, any other conclusion can be arrived at than that the proprietor had, at the time of the negociation, taken into consideration all the items of expense, and fixed his rent accordingly.

"I must not omit to state that only 38 of 160 trees, which, according to our understanding relative to grubbing up the hedges, should have come down, were actually felled; although my part of the understanding, to grub up the hedges, I fully carried out at considerable expense, and without any adequate return.

Mr. Phipps does well to publish a history which adds one more illustration to the many already existing of the insecurity of all attempts at an improved agriculture under the system of yearly tenancy. In his address to the farmers of his county he says:—

"I have felt warranted in thus far trespassing on your patience, feeling that this case, although displaying a personal grievance, affects not me only but tenant farmers generally.

"I will merely add, and this I am prepared to show, that during the first four years of my occupation I expended in manure, and otherwise in improving the farm, upwards of 1000*l.* beyond what I should have done had I known the footing upon which I really stood.

"In conclusion, I will briefly state that having received notice of the increase of the rent at so late a period as to render it impossible to give up the farm at the end of the fourth year without incurring ruinous loss, I endured the 70*l.* increase for one year, but with the determination which I have since carried out, that the end of that year should terminate my connection."

—— The following analyses by Mr. Nesbit of late importations of Kooria Mooria guano have recently been published:—

Kooria Mooria Guanos from Liverpool, 1859.

	April 16. Ex Queenshill.	April 16. Ex Maitland.	April 20. Ex Kitson.
Moisture	6.60	8.20	5.45
Organic matter, &c.	8.55	9.00	12.45
Silica	22.45	14.80	22.80
Oxide of iron and alumina	—	—	4.25
Phosphate of iron and alumina	10.20	6.20	—
Phosphate of lime	38.37	53.96	43.86
Hydrated sulphate of lime	8.82	4.34	7.67
Alkaline salts, &c.	5.01	3.50	3.52
	100.00	100.00	100.00
Total phosphoric acid, equal to phosphate of lime	49.42	60.68	43.86
Nitrogen, equal to ammonia	0.42 / 0.51	0.14 / 0.17	0.35 / 0.43

Kooria Mooria Crust Phosphates.

	Crust Phosphates.	Light stratified Guano.
Moisture	1.18	1.28
Organic matter, &c.	11.92	9.12
Silica	1.80	0.50
Oxide of iron and alumina	0.60	0.60
Phosphoric acid	44.75	42.35
Lime	25.43	25.84
Hydrated sulphate of lime	7.89	6.04
Alkaline salts, &c.	6.43	13.07
	100.00	100.00
Total phosphoric acid equal to phosphate of lime	96.96	91.76
„ nitrogen, equal to ammonia	0.21 / 0.26	0.21 / 0.26

These so-called crust phosphates are extraordinarily rich in phosphoric acid, and as Mr. Nesbit remarks will be especially useful in the formation of superphosphates. The quantity of ammonia stated to be present is pretty much what previous analyses of this guano have declared it to be, excepting only those of Mr. Huson, published before the manure had been imported in any quantity, and when 1 or 2 per cent. of ammonia were expected along with 50 or 60 per cent. of phosphate of lime.

—— The discussion on steam cultivation before the Central Farmers' Club after Mr. Mechi's lecture on the subject did not add materially to our knowledge of the subject. Mr. Williams, of Baydon, called attention to the truthfulness of his estimates read to the club that day four years ago, and declared his belief that if one-third the agricultural horse-power of the country could be displaced by steam, 18,000,000*l.* worth of corn and fodder would be saved.

"The food so rescued from consumption by the horses would produce, assuming that they would not be fed at a loss, 80,571,500 stones of meat; or 805,715 oxen, of 100 stones each; or 8,057,150 fat sheep of 10 stones each."

"As regarded the economy of horse-power, it seemed to have been overlooked that there were 52 Sundays in the year, and that on those days the horses consumed without yielding any return. If seventy days were set down for Sundays and wet days, there were virtually 10 weeks lost, and reckoning the cost of a horse's food at only 10*s.* per week, there was about 5*l.* per annum entirely lost. Multiplying the 5*l.* by 8, that being the number of horses required for a farm of 200 acres, there alone was a balance of 40*l.* per annum in favour of steam as opposed to horse-power. Steam might be applied for a great variety of purposes in agriculture. When he read his paper before the club, he was laughed at for expressing his conviction that a steam-engine might be employed in grubbing up a hedgerow. Now, he had since applied steam successfully for such purposes as that. With a five-horse engine he had pulled up more than a mile of hedges, and no grub axe would do the work so well. By the ordinary mode of grubbing, it often happened that nearly half the roots were left in the ground; but there was no such defect where a steam-engine was used, and he should be happy for any gentleman present to come and witness how beautifully the work was done on his own farm. He had also pulled down hundreds of trees by means of the same agency."

Mr. Fowler called attention to the great advantage steam-power now gives to the cultivator of stiff clay land:—

"There was many a farmer who would not farm heavy land on any account; but he believed that with steam-power such land was worth double what it was without that auxiliary, owing to the simple fact that six times as much power might be applied as could be previously. In heavy-land cultivation a 10-horse engine would accomplish three miles an hour, and do the work of 40 horses; and unlike the horses, it would do its work without at the same time injuring the land. As regarded the economy of horses, he would remark that with steam cultivation he had seen only six horses employed where 12 used to be employed, and 10 horses where 14 horses and 14 oxen had been used. If an additional number of horses was required in the autumn, it would be easy to purchase them, and if they had afterwards to be disposed of, the season would be at hand when horses were in great demand."

Mr. Halkett referred in detail to his own system of applying steam to cultivation, by which the softest bed for seeds and plants is obtained, along with the hardest bed for carriages. We have already described Mr. Halkett's guideway scheme, but shall repeat hereafter his own statement of the cost at which the several operations of agriculture can by means of it be executed.

The most interesting address of the evening was that of Mr. Collinson Hall, of Narestock, near Romford. He said that all fear for the fate of the labourer might be dismissed.

"He (Mr. Hall) had applied steam more extensively, perhaps, than any of his neighbours, and yet he employed more labourers than his neighbours, with the further advantage that he had a higher cultivation and produced a greater amount of food. His own desire was to see the working man less laboriously employed with his body and more actively occupied with his mind. He believed the time would come when the farmers might reduce their horse-power one-half; but it would not be advisable to do that until their land was in a higher state of cultivation than it was at present. Let them keep both engines and horses until it was in a better state of cultivation. With regard to the use of high pressure, many years ago he saw that there was a difficulty in profitably introducing steam into agriculture, inasmuch as farmers estimated the cost of their horses at half-a-crown a day, whereas in commerce a horse cost 5*s.* a day; and whilst an agricultural labourer was considered to be worth 1*s.* 8*d.* a day, a workman in Manchester would be worth 5*s.* a day. Consequently, if he burned the same proportion of fuel that was consumed in Manchester, he had cent. per cent. against him to make it profitable. He came to the conclusion therefore that in order to make steam profitable he must get as economical machinery as he could, and that he ought to consume the smallest possible quantity of fuel. In 1851 he commenced an engine of 200 lbs. pressure, then another of 320 lbs. pressure, without any accident, for the simple reason that the strength was made proportionally great. He took care, if he went much beyond the point to which engineers had previously gone, to go still further relatively with the strength, and he maintained that with his 320 lbs. pressure he had greater security than was obtained from the ordinary strength they had been accustomed to. Of the fact that the application of steam to the cultivation of the soil would increase the produce there could be no question. With regard to the prospects of the future, Mr. Smith had told them, as the result of his own experience, that there was a difference of 1 quarter of corn per acre between steam and horse culture. He believed that would prove to be correct, and in that case it would be impossible to doubt the great and solid advantages of steam."

The seed trade is one of such paramount importance to all who are in any way interested in agricultural results, that it becomes a public service to review the doings of seedsmen in all their bearings.

In former papers we have dwelt upon the fact, that with our crop seeds we are continually sowing a greater or less proportion of weeds, which weeds are the result of the careless growth and handling of the seeds before they reach the farmer. We have had further to notice the direct mixing of our home-grown weed seeds with those of cultivated crops, as of Charlock seed, bought as refuse for 2*s.* 6*d.* the bushel, and mixed with Turnip seed and sold for 7*s.* the lb. And not only home-grown but foreign rubbish has been used for these nefarious purposes; Indian Rape, as our readers know, having been lately offered to the trade for mixing with Turnip seed.

It is however gratifying to know that our investigations into these matters are gradually working a salutary reform. Attention is directed to the importance of dealing with respectable men, and the following extracts from a letter from a respectable seed-growing firm will show that public inquiry has been awakened:—

"We take this opportunity of mentioning that the majority of the readers of the *Gardeners' Chronicle and Agricultural Gazette* are customers to us, so that whatever the editors say has immense effect on the minds of our customers. Many of them are clergymen and amateur farmers of but little experience, and when the impositions of the low class of seedsmen were first exposed, they understood the remarks to apply to seedsmen generally, so that we were immediately asked to give warrantry and samples, &c. before they would send their orders."

This shows that we have awakened inquiry in a matter of very great importance. Neither our remarksnor our experience will justify the application of severe strictures to all, and we particularly wish it to be understood that in the absence of accurate professional knowledge in relation to seeds by far the safer plan is to trust to men of standing and reputation, being prepared while you do so to pay a proper remunerative price for a genuine article.

This reminds us that among all the points from which the seed question may be viewed there is yet another which may be illustrated as follows:—

Our county grocer rejoiced in a large shop window which was filled full of teas and coffees on one side and raisins and plums on the other. These of course were soon despoiled of their freshness by time, by flies, wasps, and dust, and so when these were changed for others we asked him what became of the old ones; and to this simple query we are till this day without an answer. Now as regards seeds, we know that there will usually be left some stale stock, some that has not gone off in its proper season. And besides this, there will be some samples so badly grown from defects in locality or season that it must be worthless; the question is what becomes of it; and the following copy of a circular letter which has come into our hands is a sufficient answer.

"Gentlemen,— We enclose sample of light Italian Grass, *suitable for mixture*, which we offer you at 16*s.* in Liverpool, your orders for which will oblige

"Your obedient Servants ——."

We need not say that the sample was rubbish. The 16*s.* per quarter (2*s.* per bushel), if used to mix with Italian Rye-grass, such as is sold for 7*s.* per bushel, or permanent Grass mixtures, such as are sold at 15*s.* to 17*s.* the bushel (30*s.* to 34*s.* per acre), would at once make a "cheap" mixture at any price according to the quantity of the worthless article added. And it is not simply worthless, as a Grass which cannot possibly grow, but it contains weeds of all kinds which unfortunately have not that constitutional debility.

It is a very serious consideration that men of business (for this is a business letter actually received) should apply to any respectable firm as a regular trade matter to buy such things, and state boldly for what purpose it is applicable, for that some in the trade purchase this trash is quite certain. At the same time we rejoice to know that there are those who heartily join with us in denouncing and exposing such

roguery, and we are the more anxious to persevere in our own discussions of this subject, because we feel that honest men cannot be injured by our strictures, whilst on the other hand the more we can open the eyes of the farmer to the tricks of which he is the subject, the less likely are they to be successful; and in the end our readers may be benefited by even rogues finding out where their true policy lies.

LABOURERS' COTTAGES.

[We give the following abstract of the reports of judges appointed by the Agricultural Improvement Society of Ireland to award the prizes offered by the Society to the landowner who shall have erected on his property the greatest number of the most approved cottages, suitable for labourers, and fulfilling the requirements of the Cottier Tenants' Act of 1856 (19 and 20 Vic. c. 65).]

LORD CLANCARTY'S COTTAGES. — We found the cottages, six in number, to accord strictly with the plans forwarded to the society. They are situated on the road leading from Ballinasloe to Ahascragh, facing west. The total cost of the six cottages is 420*l.* or 70*l.* each, and the details of the estimate and expenditure were satisfactory. They are built of the limestone common to that district, with which the walls are brought up in rubble-dressed masonry. The chimneys are of cut stone, as also the jambs and arches of the doors and windows, all of which are well finished. Bangor dutchess slates have been used in the roofing. The ground floor consists of one apartment as kitchen, or living room, 18 feet by 14 feet 6 inches; 8 feet 3 inches in height to joist. The back door is opposite to the front or entrance door; the stairs having been judiciously placed between them to prevent cross draughts of air, though the arrangement has not been quite successful. The upper story is divided into two apartments by a boarded partition. The stairs bring you at once to the one which is 14 feet 6 inches by 11 feet, and through it you pass to the other, which is 14 feet 6 inches by 7 feet. These rooms are of a very good height, the walls, front and rear, being 7 feet from floor to wall-plate; from floor to purloins it is 10 feet. A dormer window in front and skylight in the rear give abundant light; but we should have preferred a different distribution of the space by changing the partition, and thus leaving the passage room the smaller one, and the inner room larger, with the entire light of the dormer window, which is at present divided. The skylight in the rear would thus give sufficient light to the smaller room. The floor in the lower or ground apartment is of mortar, and constant sweeping in the direction of the fire-place soon produces unevenness; we, therefore, think that portion, at least, should be tiled or have flags. The piggery, privy, and ash-pit are conveniently placed, and the gardens are to be allotted from a space directly in the rear. We deemed it right, as there was no competition, to point out some little matters of detail, which we considered might be effected at a trifling addition of cost, and would be improvements, such as shelving, or presses in the recesses; some facility for putting up a line to dry linen; eave spouting, both to save the water and also to prevent it drifting against the walls in an exposed situation. We also think there should be a stone barge course on either extremity of the range of building. *Denis Kirwan, Charles Filgate, H. J. Macfarlane.*

MARQUIS OF BATH'S COTTAGES.—The cottages on the estate of the Marquis of Bath are four in number, built in pairs, and on two distinct plans. Plan No. 1 is that for which the prize of 20*l.* was awarded by our society in 1857, and as the site is conspicuous, adjoining the high road from Carrickmacross to Dundalk, Mr. Trench has selected the ornamental design given by Mr. Neville, and has spared no expense in carrying out the architect's plans in the best manner, the very excellent building stone which is supplied by the quarries in the locality affording facilities for such work, which in few districts can be surpassed, or, perhaps, equalled. These houses are 14 feet 6 inches wide in the inside, and on entering you pass from a small interior porch into the kitchen, which is 14 feet 6 inches by 12 feet 1½ inch. On the same floor is a small bedroom 7 feet 10 inches by 7 feet 6½ inches, and a shed against the rear of the house, 14 feet by 6 inches, which contains a scullery and store room, with a back-door leading to the offices in the rear. The entire of the ground floor is laid with well burned tiles. The rooms are well lighted with large windows; one division in each window opening on a pivot, gives good ventilation, and there is also good head room, the height from floor to floor being 9 feet. On the upper floor, which is reached by a convenient staircase, are two bedrooms well lighted with good sized windows—one 8 feet 8 inches by 8 feet 10 inches, and the other 14 feet 6 inches by 11 feet 2 inches. The side walls are 4 feet high to the top of the wall plate, and the height from the floor to the collar-brace is 7 feet 6 inches. The roof is of good material, and well constructed. The slates, which are best queen tons, are laid on close boarding ¾ inch thick. By this plan of roofing, plastering between the rafters is dispensed with. The mason work is of the very best description, the walls being faced with good hammered stone, whilst all the quoins, with the jambs of the doors and windows, as also the lintels over these openings, are of cut stone of excellent quality. The offices in the rear consist of piggery and privy, with a large space alongside, excavated about 3 feet deep, for holding manure, into which is conveyed by covered sewers all that passes from the sink in the scullery, as well as from the privy and piggery adjoining. Between the manure tanks of the two cottages a most convenient passage has been constructed, walled on either side, filled in with earth and gravelled over for barrowing out the contents. The cost of these houses is 208*l.* 11*s.* for the pair. The other two houses built on plan No. 2 are not ornamented like the last, but are built in a good substantial manner. The walls are of good rubble masonry, with good, strong quoins, and cut stone lintels over the doors and windows; the roof is of the same description as in plan No. 1, except that in these the gables are secured with a good barge course of cut stone. With regard to the accommodation afforded, these houses are somewhat superior to the last, whilst the cost is rather less—viz., 204*l.* 7*s.* for the pair. On the ground floor is a kitchen, 14 feet by 6 inches by 14 feet; a bedroom, 12 feet by 9 feet, and a scullery and store 12 feet by 5 feet, the latter being included within the main walls of the house. There is no back door to these houses, which we consider an objection. The floor of the kitchen is laid with tiles; in the bedroom and scullery the floor is of mortar. The height of these rooms is 8 feet 4 inches from floor to floor. On the upper floor are two bedrooms, one 14 feet 2 inches by 11 feet 6 inches; the other, 14 feet 6 inches by 12 feet 3 inches. The side walls are 4 feet 3 inches high to the top of the wall plate, and the height from floor to collar brace is 6 feet 8 inches. The bedroom over the kitchen is lighted by a good window in the gable; the other by a skylight in the roof. A dormer window would, in our opinion, improve this room very much, without adding very much to the expense. The offices are equally good as in the first case. The recesses in all four houses are well and most conveniently fitted up with presses and shelving, and the care with which all has been finished is very creditable.

MR. O'NEILL'S COTTAGES AT RANDALSTOWN.—They are 14 in number, built in one continuous row. The plan is the same as in Mr. Trench's No. 1—viz., Mr. Neville's plan, modified to suit the circumstances; these 14 houses, being seven pairs on that plan, placed contiguously in a row. The only difference in plan between that and Mr. Trench's No. 1 is in the position of the stairs; Mr. Neville having given a choice of two arrangements. In regard to size, these houses are somewhat smaller than those built by Mr. Trench, these measuring 23 feet by 17 feet, from out to out, whilst Mr. Trench's house measures 24 feet by 18 feet. As to workmanshship and finish, these houses are extremely good. The mason work in the front wall and gables is all in strong courses, built of large blocks of fine, compact, black basaltic rock of the district, with fine cut stone quoins of the same; the rere wall of good rubble masonry. The arches and jambs of all the doors and windows, as also the chimneys, are built with Moore's patent perforated red brick, neatly jointed with white paint, and which, compared with the black stone, has a very good effect. As to internal finish, these houses are in some respects superior to those on the Marquis of Bath's estate. The entire of the ground floor is laid with tiles of excellent quality, and the rooms on both floors are ceiled over head. This we consider very beneficial as regards the bed rooms, as affording a much greater protection against variations of temperature than the boarding on the houses built by Mr. Trench. The entire range of houses is finished, both on front and rear, with metal eave-spouting, which we consider a very valuable addition, an advantage which is wanting in the houses previously described. As to the rooms, these houses are very similar to those described in the first part of this report; the diminution in the size of house occasioning, of course, a corresponding diminution in that of the rooms. The height of the rooms on the ground floor is 8 feet 1 inch to the ceilling, and of the bedrooms, 7 feet 6 inches, the side walls of the latter being 3 feet 6 inches from the floor to the spring of the roof. The larger bedroom, which is over the kitchen, is lighted by a good-sized dormer window, the other by a skylight. There is also a skylight over the stairs. As to expense, these are by much the cheapest of any that we have inspected. The entire range of 14 houses, including a shed which is being erected in the rear, is stated to cost 1189*l.* 16*s.*, which gives nearly 85*l.* for each house. In order, however, to be able to make a fair comparison of the cost as between these houses and those on the Marquis of Bath's estate, which are competing with them for the Gold Medal offered by the Royal Agricultural Improvement Society, we have thought it right to estimate the additional cost which would have been incurred had they been built in pairs, and had also been provided with a separate privy for each house, there being only six of these for the whole range, which, under the circumstances, may prove sufficient. As the houses stand now, there is a 9-inch brick wall at either end between each pair of houses, and if they had been built in pairs, there would have been required two walls of 18-inch rubble masonry instead of this one brick wall. Taking the cost of a perch, Irish, of rubble masonry, at 5*s.*, and of brick work at 9*s.*, the two stone walls would cost 5*l.* 13*s.* 4*d.*, and the one brick wall 5*l.* 2*s.*, making a saving of 11*s.* 4*d.* on each partition, or 3*l.* 8*s.* on the whole. Taking, then, the

	£	*s.*	*d.*
Cost of the 14 houses, as above, at	1189	16	0
And adding for extra work in party walls	3	8	0
And for eight privies, at 5*l.* 5*s.* each ..	42	0	0

we have 14 houses erected for 88*l.* 4*s.* a piece. As a means of testing still further the relative merits of these competing cottages, we have estimated the cost with reference to the cubical contents of each house. The following is the result of this examination. Plan No. 1, on the Marquis of Bath's estate, contains 6940 cubic feet, and the cost being 104*l.* gives 30*s.* per 100 cubic feet. Plan No. 2 contains 8190 cubic feet, which, at 102*l.* for each house, gives about 25*s.* per 100 cubic feet. Mr. O'Neill's houses contain each 6216 cubic feet, and estimating the cost, as above, at 88*l.*, we have the cost of each 100 cubic feet, 28*s.* 4*d.* Examining the houses in this point of view, it appears that the plan No. 2 is, with reference to the space contained, the cheapest of the three under consideration. This result appears to be, in a great measure, owing to their being finished in a plainer and less expensive style than either of the others, as already described. With regard, however, to the number of rooms, all three houses are alike; and, as we are instructed when making our award for the prize which has been offered for building "the greatest number (not less than four) of the most approved cottages suitable for the occupation of agricultural labourers," to take particularly into consideration "the accommodation with relation to expense," as well as the aspect, external appearance, warmth, and durability of the structures, we have no hesitation in awarding the prize, in this case, to the Rev. Wm. O'Neill, considering that his cottages, even were they not so superior as they are in point of numbers, approach more nearly than the others the class of house the building of which it is the object of our society to encourage. Before closing our report, we wish to express our unanimous opinion that all the cottages which have come under our observation are too costly for general adoption, as applicable even to the present improved wages of the agricultural labourer; too high to afford an adequate interest on the outlay—a result which may, perhaps, be attributable to the expensive model which the competitors have adopted. With a view to obtaining suitable plans for houses of a less expensive class we think it would be very desirable that our societe' should offer a prize or prizes for plans, the execution of which shall not incur a greater outlay than, on the average, 70*l.* for each house. *John Geo. Coddington.*

Home Correspondence.

Lois-Weedon.—I am glad to find that at length a response to the invitation of the 25th December last has been made, and that, so ably too, by the very effective experiments of "I. A. C." I congratulate him on his very successful innovation on the Lois-Weedon plan; this experiment and his observations, without doubt, will have much weight in promoting the adoption of the system by the timid, and by those who are deterred from it by the amount of hand labour that in its integrity it demands, His calculations are just and explicit, his argument sound and conclusive. I regard him as the greatest friend the system has yet obtained. I have no doubt that much may be effectuated on Mr. Smith's principles without the requirement of such an amount of hand labour as now, no doubt, tends to prevent its adoption by large land-holders; yet it may be a question whether we can altogether dispense with the fork. "I. A. C." has got to the depth of 9 or 10 inches, but I do not see how he can bring a strength of horse-power in the narrow breadths of the intervals, during the growth of the corn, sufficient to bring to the surface a greater depth of subsoil, should such deep working be deemed expedient; and, under Mr. Smith's view of the necessity of bringing up fresh matter to the extent he has done, it certainly is. But this, I think, may be questioned, and indeed, Mr. Smith himself seems now to think that, after having attained a certain depth, it ceases to be necessary, so that the fertility of the soil may be sustained by then a shallower working. Now if it shall be found that, in a proper Wheat soil, an inch or two of fresh subsoil affords a sufficient amount of inorganic matters for a great number of successive crops of Wheat, say 10 for instance, those deep diggings by which these fresh quantities of subsoil are brought to the surface need not take place oftener than once in 10 years, that is to say, the half of the ground every five years. Thus one-tenth of the land will only have to be dug every year, which might do no more than give employment to the idle hands of the country at the dead time of the year, and which Mr. Smith in his benevolence contemplated. As we believe all other workings of the land need be but superficial, merely sufficient to move little more than these 2 inches of subsoil, prevent the growth of weeds, and keep the surface open to aerial influences, this may well be done with the implements best fitted to the work of such light construction as may be drawn by one horse, and thus no risk of injury would arise to the growing crops. The deepening of the soil however is of primary import with Mr. Smith as affording a wide field of pasture to the roots of the plants, and, there can be no doubt that exuberance of growth is ever a consequence of a deepened soil; yet Mr. Piper reaped as good successive crops without this disintegration of the subsoil. Now the greatest economical value of improvements in agriculture does not merely consist in making them paying to the agent of them, though that should ever be their effect as it also is the general and legitimate instigator of them, but in the production of the greatest possible amount of food for the public: I do not therefore assent to "I. A. C."'s conclusion on the

counterbalancing of diminished produce with lessened expenses, for, though it may make all equal to the cultivator, it does not to the country at large. The country demands from the land the greatest possible amount of produce, cost what it may. Had we indeed an unlimited extent of territory the case were different—the idleness of the grazier might then supersede the industry of the tiller—but in our insular position, with a rapidly increasing population, it must ever be a true principle of political economy to make our land produce as largely as it can. From the less productiveness of the centre rows of the triple ones from the deteriorating effects of this row upon the exterior ones, both in contracting the earth and air field of pasture, I believe if the 5 feet occupied by the three rows and the intervals were divided equally between the three rows, making the rows equi-distant, that is 20 inches apart, a higher rate of produce would be obtained, and I submit this suggestion to "I. A. C." in its being as accessible to horse-labour as the intervals of the triple rows, and being superior in fallow; single rows may not only be as easily worked between, but every interval between them would be so worked, and the rows would be moulded on both sides; whereas in the moulding up of the triple rows the centre one cannot receive any benefit, and the mould can only be put up on the outside of the outer rows, throwing them all very much together. If 20 inches distance does not give sufficient working room it may be increased, I am satisfied, without loss to 24 inches. *J. M. G., Granard.*

Pasture Land.—In the last *Gardeners' Chronicle* you have an article on meadow land which induces me to give you my experience on pasture land. I have a field of about 7 acres of poor pasture, the Grasses are fine and cattle eat them readily, the turf feels hard under the foot, and has evidently some years ago been heavily dressed with lime. Although the quality was very good the quantity of Grass grown in the year was very small; it was thick, but took a long time to spring, and was always short; no mole heaps were to be found in it. Being anxious to improve this field, which is within the coal basin, and the soil of which is a strong clay, but dry, I have often manured portions of it with farm-yard manure, which considerably increased the growth for a few years; but it soon returned to its former state, and having seen an account of Proctor's prepared bone manure No. 1, I determined to try 10 cwt. of it upon an acre of this field. I measured an acre of the field and applied 10 cwt. of Proctor's bone manure early this spring; and already it has produced a wonderful change upon this acre; the herbage is a much brighter colour than on the remainder of the field, and the cows grazed this acre quite bare before they touched the Grass on the adjoining land. For days the cows never grazed off this acre, and even after they had grazed it quite close they still repeatedly return to it even now. Messrs. Proctor state that this manure will benefit the land for 8 or 10 years; if it will, it is a very valuable manure for pasture land, and I shall certainly get more of it next autumn. I presume it must be the phosphate of lime which has so much benefited my land, and I am consequently trying 10 cwt. of a phosphatic guano on an acre of pasture, to see if it will act as beneficially as Proctor's prepared bone, and I will let you know the result at a future time. I have some fields of a wet, moory nature, called in Wales short hay meadows, which I wished to improve without going to any very great expense. I therefore applied to a seedsman, who recommended me to sow on them about 10 lbs. of Timothy Grass to the acre. I did so, but not one of the seeds grew, and I am convinced that draining must be the first improvement to them. *D. S., Swansea.*

Foreign Correspondence.

Bruges, *April.*—"He who clothes a soil creates a country." To appreciate the full force of this fine saying, one has miles to traverse—as we have done this week—the wild tract of Belgian country known as the Campine. You feel while crossing its dreary deserts as if you were moving along the wild tracts of the barren sea-shore. There is sand everywhere; sand so fine that it rises in light clouds beneath the tread of the foot, or is whirled in masses by the winds of heaven. Sand surrounds you, it stretches far away in tracts mournfully monotonous; or broken up with high mounds which, glistening white and dazzling in the sunlight, look like drift-heaps of the winter's snow. It is impossible to exaggerate the wild dreariness of those tracts, which, as yet, are inaccessible by the art of man—or the apparent hopelessness of the task which that art undertakes when out of the sterility it proposes to create fertility. No wonder then that in the popular mind the word Campine conveys but the idea of a land desolate, of sombre hopeless aspect; the only vegetation of which consists in patches of stunted Grass or clumps of meagre Furze—a land devoted to hopeless sterility. But a closer and more philosophical investigation serves to show that there is a future of fertility for even its wildest and most unpromising tracts. And this future is evidenced by the history of the past.

Far round many of the towns and villages of the Campine you see zones rich with their smiling meadows, or gladdened with the fields of waving corn; and even in the wildest districts the eye rests with pleasure on green oases, spots where some determined, patient, and industrious cultivator has settled down, and by dint of labour wrested wealth from the domain of the desert. In all this may be traced the history of the future of the Campine; and in all this we have an exemplification of what man do with his creative arts; for in this sense agriculture is the noblest of all the arts, being essentially creative, and a fine proof, moreover, of the proverb which is so full of meaning to English ears—"where there is a will there is a way." One of the most important "ways" to help this "will" is the establishment of communication between the various districts by means of roads and canals. By the latter—the most important of the two—not only are means of transport for manure and the produce of the soil to our markets ensured, but the means of irrigation; with this herbs for the cattle are obtained; with the cattle manure, and with the manure corn. This, in fact, gives in a line the history of the agricultural progress of many districts of the Campine. Since the establishment of the canal there has been, in one district alone—that of Arendonck—2000 hectares brought into cultivation, sixteen farms formed, which rear several hundreds of cattle. The establishment of canals and of roads in improving the condition of agriculture, has increased the value of the land more than 25 per cent. They have also increased the value of wood, and favoured its production; at one time of little value, the Fir trees are now sent to distant parts in the shape of faggots for brickmaking, or of poles for Hops. It is interesting to trace the gradual increase in the value of the land: a farm which in 1826 sold for 6530 francs, in 1850 brought 14,500; a farm which in 1816 was let for 1088 francs, had in 1854 increased to 2000, and now lets at 3500. Tracts which before 1830 brought at sale 20 francs per hectare are now valued at 150 to 250 francs. Wherever manure can be obtained—and the chief means of obtaining it is by canal—there you see improved agriculture.

The tract of country known by the name of Campine extends into two provinces—those of Antwerp and Limbourg—the north-east portion of the former and the north-west of the latter province. It is bounded by Holland in the north, by the Dyle and the Demeer in the south, by Escant and Rapel in the west, and by the canal of Bois-le-duc à Maestricht in the east. It presents an almost unbroken flat, save where interrupted by the mounds of sand to which we have above alluded. The population is small for the extent of land; in 1840 it possessed nearly as many hectares of uncultivated land as inhabitants—200,000 of the former to 250,000 of the latter. The traveller who visits Brussels by devoting a day or two can easily make the excursion to the Campine. He may go by way of Brussels and Antwerp line as far as the station of Contich; taking thence the railway to Lumhout, or stopping short of Lumhotu, he may leave the railway at Herrnthal, and take the diligence to Gheel, the centre of the Campine. From Gheel on the one side he may extend his travels to Lumhout and Arendonck, and on the other to Guth and Hasselt. From the latter place he has direct railway communication to Brussels. While traversing the route here indicated, or even a less extended one, as from Brussels to Lumhout and Vache, which can be done easily in one day, the traveller will have ample opportunities of witnessing the unpromising materials out of which patient industry has gained such fertile riches. We propose now very briefly to glance at some of the features of the mode of cultivation by which this change from unproductiveness to productiveness is brought about. The soil as we have already said, if indeed it can be dignified with such a title, is almost pure sand. It is of all the sands the worst, and most difficult to subdue. A mixture of sand and oxide of iron is often met with—it is called in the country tuf—it is hard and resists equally the plough and the spade. This iron pan has to be broken up, and the loam which is usually found under it mixed up with it by means of the spade. The soil thus worked is left all winter exposed to the atmospheric influences, which bring it into a comparatively good condition. Where the oxide of iron is not in excess, this quality of soil carries very well crops of Wheat, Colza, or Beetroots. Large tracts of peat or turf are met with; usually the peat is taken off and burned before the land is put in cultivation.

The tracts of poor white sand which are generally formed of the mounds or rising ground carry Fir trees; the leaves of these as they fall form in process of time a soil which consolidates the sand and enriches it. The mixed soil carries a wider range of trees. The sandy soil, neither too dry nor too humid, is that in which cultivation properly so called is carried on.

In bringing a poor sandy soil into cultivation, if manure is not to be had, as where the farm is far distant from a town, the only thing that can be grown is Broom, which takes kindly to any soil, however poor. The leaves which fall from the plants consolidate the sand, as do also the fibres of their roots. The plant is also used for littering cattle. The plants are cut down in the third year, and the land is cropped with Buckwheat, Rye, or Potatoes. The manure heap is now pretty well formed, and regular cropping begins as the forage plants come to hand, enabling cattle to be kept in increasing numbers, and by consequence the increase of manure; the work of fertilisation progresses amazingly, and from a sand which you could kick up into clouds with your feet, you find a soil formed retentive and enriched with humus.

In bringing heathy land into cultivation, our first operation is to pare off the turf, where this is of considerable thickness. This is done very neatly and regularly. The Furze is previously cut down and used for litter. The turf sliced is next burned. The earth is then dug up by means of a spade, care being taken to keep to the surface the part most enriched with vegetable mould. If the land has previously been under plantation of trees, it is a good plan to bury the vegetable matter as the land is worked. Where iron pan is met with this must be broken up and brought to the surface. This spade work is generally done in the late autumn and winter, as labour is cheaper at these seasons; and the soil moreover is turned over to the atmospheric influences. The spring following a fine crop of Potatoes with manure is put in. After Potatoes, they put in either Rye or Oats with manure. After Rye they take a stolen crop of Spurry without manure. After Oats they sow autumn Rye, with manure. All regular rotation here ceases; and exhaustive crops of Rye are taken, interrupted sometimes with crops of Potatoes or Colza. The plan adopted by the more intelligent of the cultivators is as follows:—If the Furze or Broom is young they turn it into the soil; if old it is cut down for litter, &c. The land is then worked to a depth of 60 or 70 centimètres. The first crop taken is either Rye with manure, or Potatoes with manure. After the Rye they sow Oats with Clover and manure; or after the Potatoes they sow Rye, but always with manure. Often as a first crop they sow Spurry with a little artificial manure; they make a pasture of this at the proper stage of its growth, after which they may turn it in and follow with Rye manured.

In forming permanent pastures, after the working of the land as already described, it is found a good practice to sow it first with Oats manured mixed with Clover. This is pastured for one or two years; it is then ploughed up, and sown with Oats manured, and a mixture of seeds.

The following are a few of the rotations in use, for which we are indebted to the works of MM. Joigneaux and Delobel:—

1st year, Potatoes with manure; 2d, Rye and Carrots between—manured; 3d, Oats and Clover—manured; 4th, Clover; 5th, Rye or Wheat; 6th, Turnips after the Rye, or Spurry.

The following is the rotation followed by the farmers of Einthout, who have sandy soils to cultivate:—

1st year, Potato or Buckwheat; 2d, Rye; 3d, Rye; 4th, Oats or spring Barley with Clover; 5th, Clover; 6th, Rye.

It is needless here to say that this is a very bad rotation. Nor is the following very much better:—

1st year, roots or Buckwheat; 2d, Rye; 3d, Oats with Clover; 4th, Clover; 5th, Rye.

The better rotations have been introduced by farmers who have, coming from other provinces, established themselves in the Campine. Thus the following introduced by M. Delobel is good, although requiring much manure:—

1st year, Potatoes; 2d, winter Cereal; 3d, Colza, or other green crop which requires weeding and hoeing; 4th, spring Cereal, with artificial Grass; 5th, winter Cereal, other than that of the second year.

It may interest our readers to give a description of a novel mode of bringing the sterile lands of the Campine into cultivation introduced by M. Van der Beke-Pastrel, of Corsendeck. A commission was appointed by the governor of the province of Antwerp to examine this system, which has attracted so much attention; from this report we glean the following information:—To arrive at a quick realisation of an arable soil, M. Van der Beke soon saw the necessity of retaining in the land to be operated upon as much as possible of the humus inert, formed by the detritus of the healthy plants which covered it. To secure this the plants themselves were removed only, care being taken to avoid a too deep cutting of the turf. The plants thus cut were taken to the farm steading, and there used to form a compost or to litter the cattle. After dividing the land into fields, and then again into stetches—*planches*—open drains being made by the spade between the stetches to allow of the free passage of the drainage water, the manure from the steading is then brought and spread over the land, without any previous preparation of the soil. The seed is then sown above the manure, and finally covered with the earth which was taken from the drains between the stetches. If the preliminary operations of removing the turf, &c., are gone through in the autumn, the rotation is commenced by sowing Rye in the manure above stated; if in the spring by Oats. In either case the second crop is Red Clover. It is not till after the second crop that the land receives any working, and even then only to a small depth. A crop of Rye or Wheat follows the Clover; after that the ordinary rotation of the country is followed, the only difference being that the depth of the soil is gradually increased.

When the land possesses an unequal surface, a process of levelling is to be gone through. The turf of the lowest parts is cut in squares; and the squares placed upon the field in such a manner that one of their angles is elongated. The subsoil of the highest parts of the field under operation is carried and placed upon the squares of turf so that the interstices between them are filled up. The principal advantage of this mode of levelling is that there is a perfect mixture of the new soil brought up with the old superficial covering.

The extent of land cultivated by M. Van der Beke is 100 hectares; these now covered with the most beautiful of crops but recently appeared condemned to hopeless and perpetual sterility. The Commissioners

thus describe the crops which the land carried at the time of examination:—Five hectares of Wheat of a beauty remarkable, the produce being 20 hectolitres to the hectare, and of a weight of 70 kilogrammes to the hectolitre. 2d. Thirty-two hectares of Rye equally fine. The seed of this was sown in very wet weather, and the germination made under bad conditions—the yield of Rye is about 27 hectolitres to the hectare, of a weight of 72 kilogrammes to the hectolitre. 3d. Twelve hectares of Oats, of which the magnificent aspect promised an abundant harvest. The yield of this crop generally is 36 hectolitres to the hectare. 4th. Ten hectares of fine Buckwheat; the yield being ordinarily of this crop 30 hectolitres to the hectare. 5th. Eleven hectares of Clover. 6th. Of 4 hectares of Potatoes; and 7th, twenty-five hectares of meadows, which give 3000 to 4000 kilogrammes the hectare.

M. Van der Beke employs eight horses for working the farm, and feeds 36 head of cattle; of those two are milk cows for the use of the domestics. This system secures a large yield of manure, which joined to the composts prepared with the turf of the land undergoing improvement, serves abundantly for manuring all the fields. The carts employed for the transport of the manure, &c., have wheels with broad tires; these do not enter the light soil with the facility with which narrow ones do; great ruts are thus prevented, and the roads kept in good repair.

Societies.

ROYAL AGRICULTURAL OF ENGLAND.

A WEEKLY COUNCIL was held on May 11, the Right Hon. Lord Berners, trustee, in the chair.

A communication was read from Mr. Edward Farmer on the preservation of Mangel Wurzel roots. He transmitted a root grown and stored with the crop of 1857, and subsequently with that grown in 1858. On the root being cut it appeared quite sound excepting where it had been bruised on the outside.

A communication was read from the Consul-General of Sweden and Norway, stating that he was requested by Professor Holst, of the University of Christiana, manager of the royal farm in Norway, to forward to the Society copies of the first series of reports on the proceedings o the royal farm.

The thanks of the Council were ordered for the above communications.—Adjourned to May 18.

DURHAM: *Farm Buildings.*—During the recent annual fair at Durham, the Council of the County Agricultural Society, and other influential agriculturists of the neighbourhood, dined with Mr. Spearman, at Newton Hall. This being the fourth anniversary of these gatherings, they have begun to assume the character of perennial as well as annual. Leave has been accordingly given us on the present occasion to take this notice of them, and at the same time to give publicity to what fell from Mr. Spearman on the important topic of the general defective state of farm houses and buildings in this county.

Mr. Spearman introduced the subject by saying he was afraid gentlemen at the other end of the room had not heard a good story which had just been told by his friend on the left (Mr. Wetherell, of Aldborough) of his having been almost afraid to allude to a great calamity that had befallen an acquaintance of his, in the shape of his having had his homestead burnt down, until the sufferer put him at ease by saying, with a smiling face, "Why, between ourselves, it is no such a bad job to have a set of old buildings burned down, which happen to be pretty well insured.' Now it would be a very good job if half the farm buildings in this county were to be burned down, and that almost whether insured or not. He was satisfied he should be borne out by those he addressed, when he said that nothing could be more deplorably defective in every sense of the term than the great majority of the farm houses and buildings in this county. They had landowners constantly expressing their wish to induce men of capital to become their tenants, and nothing could be more rational. But did they really expect that men of capital, of education, and intelligence were to be induced to become the occupants of such habitations and buildings as, generally speaking, were those which alone these landowners had to offer? No doubt there were agricultural enthusiasts, like a fox-hunting friend of his who, having undertaken the hunting of a subscription pack, said, "Never mind a house; I can live in a loft, but let me have a first-rate kennel and stables!" and who would say, therefore, "Never mind house, as long as the buildings are first-rate." But my friend was a jolly bachelor, as I suspect would be the case with the agriculturists I have alluded to. It is otherwise with married men; and he took leave to say of the families of that class of farmers of whom he was speaking, that they required and deserved as good houses as could be obtained for them. As regarded well-constructed and sufficient farm buildings, they were as absolutely essential towards conducting farm business with credit and success as are manufactories and mills towards carrying on the business of our great manufacturers; and what would any of them say if they were invited to become the tenants of buildings totally unequal to their requirements? Why, that the inviter was one of Bedlam's outpensioners. True it was, that in times past, at least, it might be said by some landlords, that their estates being entailed on their eldest sons, if they laid out money on farm buildings it was enriching them at the expense of their younger children, for whom it was their duty to save a provision. Clergymen might say they were but tenants for life, and their children will have nothing to do with their benefices at their death. Others, again, might say they had no wives nor children, and did not choose to cripple themselves for the sake of those who are to come after, who might be well satisfied with the property being left them at all. But all these objections may now be met. In the case of clerical persons they have been enabled, by Act of Parliament, to charge upon their benefices the cost of agricultural improvement, to be borne as well by their successors as themselves. As regards the other description of landlords whom I have mentioned, they have been enabled, by the establishment of late years of a very important institution, to obtain pecuniary aid, and this not merely for the purpose of draining, which is afforded by the Government, but for that of agricultural buildings. An annual charge is created upon the property in respect of which the advance is thus made, including interest and a payment towards extinguishment of the debt, which is thus liquidated in a given time. He alluded to the West of England Land Improvement Society, established by Act of Parliament, under which the advances made by it took priority over other charges, which enabled it to dispense with inquiries into title. He was sorry to have to confess that on his own property the farm-houses and buildings are quite as bad as on that of his neighbours, though he had long contemplated reformation, and was going now to set about it in good earnest. With reference to the projected buildings themselves, he begged also to be allowed to say a few words. He had known instances not infrequent, of landowners proceeding to erect farm-houses and buildings under the advice of architects and builders—the result being very pretty things, architecturally speaking, but which, when submitted to the criticism of practical agriculturists, had been found anything but what, had they been consulted in the first instance, they would have suggested, though perhaps infinitely more costly. He proposed, therefore, to reverse this order of proceeding, and before he called in architect or builder, to take the advice of some of his experienced agricultural friends—some of them whom he saw present had already promised their assistance. When he should have shown them the site he had selected, which he had chosen as being centrical, but also as being close to the best roads, a matter in his opinion not always sufficiently attended to, and furnished them with the precise quantities and proportions of arable and Grass land as determining the number of draughts and consequent amount of stabling, the extent of cattle-sheds, feeding-houses, and barn room, he should request them to say what, under the circumstances, if about to occupy such a farm, they would desire to have as regards extent and arrangement of farm buildings. The farm consisted of about 500 acres, and the site of the buildings was close to the highway from Durham to Hartlepool, which runs through the farm. When they sat again, as he hoped they should do next year, he expected he should be able to report satisfactory progress, and he ventured to say that he should have established, if not quite "a model farm," yet one at least that would serve as an example and specimen of what could be done, proceeding on the principles he had mentioned, and with the aid of the West of England Land Improvement Company. —*Durham Advertiser.*

[It is right to add that there are other companies beside the West of England, as the General Land Drainage, the Land Improvement Company, &c., which have power to take a rent charge for money advanced for buildings and other permanent improvements.]

AGRICULTURAL IMPROVEMENT OF IRELAND.—The report of Council to the half-yearly general meeting was unanimously agreed to. The following are extracts from it:—

"The prize sheet for the Society's annual cattle show, to be held this year in Dundalk, has been carefully revised. The most important alteration to which your council beg to draw attention has been the withdrawal of prizes for implements. 'The *Farmers' Gazette* Challenge Cup' is still offered for competition, but it is optional for the implement exhibitors to enter for this prize. This step your council consider a prudent one, and will not affect the entries in the implement department at Dundalk. The period for holding the show has been changed from the middle of August, the time when your meetings were usually held, to the last week in July. This alteration will enable the practical farmer, unshackled by harvest operations, to attend, and also much assist your council in obtaining judges. Your council have much pleasure in reporting that the arrangements for the Society's show are progressing most favourably; and, from the energy displayed by the local committee, a most successful meeting may be anticipated. The prize sheet for local farming societies has been revived, and some useful and practical amendments made. The Society's gold medal offered by your council for labourers' cottages was competed for by two in Ulster, four in Leinster, and one in Connaught. There was no competitor from Munster. Experienced judges were appointed to inspect and adjudicate, and their several awards, together with very ample and interesting reports, embodying the plans, specifications, &c., of the prize cottages, have been published. Your council have renewed the prize for the current year, and have also offered the Society's gold medal for competition, in each province of Ireland, for the improvement of previously existing cottages; and they earnestly trust that the efforts of the Society to raise the condition of the agricultural labourer will be heartily responded to, and that each county will send forward a competitor. In conclusion, your council feel justified in congratulating the Society at large upon its continued progress, and upon the increased favour with which its operations are viewed by the public."

Mr. Royse also announced that the receipts of the Society this year exceeded by 30*l.* the receipts during any other year of the Society's existence; and the report of the finance committee, as read by Mr. Dobbyn, exhibited a balance to the credit of the Society of 181*l.* 16*s.* 4*d.*

Reviews.

The Horse and his Master, with Hints on Breeding, Breaking, &c. By Vere D. Hunt, Esq. Longmans.

This little volume contains a number of useful suggestions to breeders and keepers of horses, given however in a somewhat verbose and grandiloquent style. In the following paragraph Mr. Hunt is speaking of horse breeding in Ireland:—

"Ignorance and custom have done much to deteriorate our breed of horses, and injudicious crossing has been productive in a short time of very undesirable consequences. The introduction within the last few years, of the heavy agricultural carts and other agrarian implements, by Scotch and English agriculturists, if calculated to improve farming, have had a materially opposite effect on the breed of horses. For the increased burthens, it was considered that a larger stamp of horse than the native Irish one was necessary; and in the plenitude of unbridled ignorance, would-be clever fellows have hit upon the expedient of crossing upon our country mares, huge Clydesdale stallions, and other monstrous horses, thereby producing a nondescript brute, building, in the majority of instances coming under my notice, a huge structure upon a doubtful basis; or, to be more explicit, placing an elephant-like carcase upon legs insufficient to stand the wear and tear consequent upon such a superincumbent mass. Gentlemen, if you require waggon horses, pray remember to get suitable mares for your purpose, and never hope that you can produce them by crossing with the native Irish mares, which possess an infusion of very good blood,—and that the purer the breed, the more likely it is to be transmitted to the offspring."

The author recommends a recurrence to Arabian blood in order to "infuse into our degenerate breed of horses a new vitality and more universal soundness.

"Away to the winds with the puerile theorists who would cast a shadow of doubt upon the result of crossing high-caste Arab stallions with our native mares! Of their soundness there can be no question; their temper, docility, constitution, hardihood, enduring powers, freedom of action, and indomitable 'pluck,' has become a proverb; and their clean sinewy legs, iron feet, and beautiful form—the type of elegance and concentrated power—is known to all. The universally found healthy condition of their vitals, constitute an arrangement that makes 'broken wind' in these aristocrats of the desert unknown, and blindness is an absolute novelty in the race; what then is objectionable? His size, says some one not aware of the expansive power of the dessert blood when crossed with ours."

Instances are quoted proving that Arab stallions, though small increase rather than diminish the size of the produce of ordinary mares: some 20 pages are occupied with this advocacy of the Arabian. We do not quote from the chapters on Breaking, Horsemanship, and Riding to Hounds, in each of which will be found information interesting to the country gentleman. The following passages from the chapter on Stable Management are more likely to be useful to the majority of our readers.

Food of the Horse.—"Free from man's harrassing injustice, he lives a vigorous animal to a great age, until, in the order of creation, nature releases him from her thraldom. So is the horse in a natural state. What is the parallel, in an artificial state? Instead of the field and exhilarating atmosphere, we have generally the close stable and fœtid effluvia; for the cooling and moderate draughts of water, as nature prompts, we have the noxious gulphs that the famished animal deliriously swallows to quench his fiery thirst—for the succulent blade of his natural dietary has been not only suspended, but dry hay, Oats, and Beans have been substituted, in addition to the inflaming qualities of which heaps of warm clothing are to be borne, woollen cases on his head and legs, heaps of clothes on his body, to be stripped off whenever he is called upon to face the cutting sleet and penetrating blast. This mode of treatment is opposed to his nature—is at variance with his instinct and organisation. For the cool and refreshing herbage and elastic sod, so congenial to the feet, they are in the stable either resting upon hard stones, or buried in heating or contracting straw; water, which nature dictates to be taken in small quantities, to suit the capacity of the small stomach of the animal, is given only twice a-day, and in noxious draughts; while, to culminate the poor sufferer's wrongs, some atrocious and ignorant rascal of a groom commences to give him a 'coorse o' medicine,' prescribing similarly for the fat or lean, the gross feeder or delicate eater, the old or the young; into all alike are crammed aloes, calomel, nitre, arsenic, cordial balls, diuretics, and heaven knows what, that nothing but the most extraordinary tenacity of life could resist successfully."

Light in the Stable.—"Upon what principle is it that dark stables are tolerated? Will it suffice for their total abolition to assure the public, that from them are derived the numerous cases of defective eyes and total blindness, so prominent a feature in the ills that horse-flesh is heir to, more particularly when acquainted with the fact, that in his natural state the occurrence of blindness is unknown in the animal, and that man has a stronger predisposition to it naturally. There is a common error, that requires elucidation and correction, viz., the generally accepted idea, that a dark stable makes a horse rest better, and evidence more health and spirits at liberation from it, than when confined in one well lighted. He comes out, no doubt, more warily, stares about more wildly, and gambols more freely after issuing from it, than from a well-lighted one. But be undeceived as to its being the effects of health. The sudden transition from darkness to light shocks and dims his power of vision, which causes a more gingerly and cautious step, erect ears, and timid bearing—(observe the ears of a blind horse, when treading his way unguided)—when the eyes accomodate themselves to the distressing light, distressing, because ignorantly excluded from his stable; the poor animal feels rejoiced at his release from the dispiriting influence of a dark prison-house, and in the plenitude of his happiness, he 'bucks' and jumps for joy, exhilarated by a sense of freedom and sudden restoration to those blessings, air and light, his heritage from his Creator."

Ventilation.—"Ventilation is imperative to the health and general soundness of animal nature. The air we inhale is a very different one from that which we expire: the former is atmospheric, and charged with life-sustaining qualities; the latter is constituted of deleterious gases, inimical to animal life. If not, therefore, carried away by proper ventilation, a combination of its poisonous qualities with the atmospheric air renders its inspiration a matter of certainty; and, as effect following upon cause, if the life-supporting qualities of that air be impregnated with death-dealing gases in insufficient quantities to suspend totally the functions of nature, we have, beyond the possibility of controversion, a proportionate deterioration of constitutional power."

Farm Memoranda.

TINNA PARK, CO. WICKLOW.—A short distance beyond the beautifully situated and pleasant village of

Delgany, and sheltered from the north by a ridge of hills, lies Tinna Park, the property of John Clark, Esq. When Mr. Clark purchased this place, some seven or eight years ago, it was very much covered with timber, particularly Beech and other hard woods; but a large extent of this has since been grubbed out, and the land which has been thus reclaimed is now converted into tillage. To the majority of improvers, the clearing of such an extent of heavily timbered land would be a task with which few would willingly grapple, particularly if a ready market for the timber was not immediately available; but in Mr. Clark's case no such obstacle existed, and, in fact, the existence of such a quantity of wood was a recommendation, rather than a drawback, to him. Extensively engaged as a thread manufacturer in Scotland, one of his chief requirements is a large stock of wood which could be made into reels or spools upon which the thread is wound; and amongst his first movements, therefore, at Tinna Park, was the erection of an extensive saw mill, for the purpose of cutting the timber into suitable lengths, previous to its being shipped for Scotland. This saw mill is fully sixty feet wide, and machinery connected with it, as well as that which belongs to the farm generally, is driven by two steam engines. Adjoining the saw mill are the threshing barns and cattle houses, and from the peculiar construction of the whole, the buildings look at a little distance more like extensive manufacturing premises than a farm-yard. The threshing barns are three stories high, and are fitted up with chaff cutters, Oat bruisers, &c., besides the usual threshing machinery. The latter threshes 80 barrels of Wheat per day, equal to 1600 stones, or 373⅓ bushels, at 60 lbs. per bushel; but it is defective in some points—for instance, in the want of elevators to carry the threshed grain from the ground floor, where it is discharged from the machine, up to the third floor, where the grain is stored. In consequence of the want of such auxiliaries, considerably more labour is necessarily entailed upon the attendants. The cattle house at Tinna Park is of spacious dimensions, containing room for 180 head, and is 60 feet wide, inside measurement. This is literally under one roof, without any supporting pillars whatever. The rafters are constructed of wood, with an iron brace on each side; but the rest of the roof, with the exception of the slates, is of iron. The slates are hung on iron rods by copper wires, and all the other roofs about the place are constructed in a similar manner. Ventilators are placed along the ridge. Owing to its great span the roof is pitched high in comparison with the height of the side walls; so that, in fact, it is the most conspicuous and principal part of the building. We never met before with a roof of such a span, nor do we think it as handsome or as cheap in the construction as the series of roofs supported on iron pillars which we have previously referred to in our descriptions of Mr. Pollok's farms, of Mr. Rogerson's farm at Danestown, and Mr. Maxwell's, near Duleek. The manure pit adjoins the cattle house, and as the ground upon which this stands is a little elevated, the former has been constructed by cutting it out of the face of the bank, so that the back part, next the cattle house, is 12 or 13 feet in depth, but in front it runs out upon the level. A stage is erected at the back part, for the convenience of wheeling out the manure, and depositing it in different parts of the yard. The manure yard is faced with a stout stone wall, built with mortar, and inside there is a range of shedding, supported on light iron pillars, for the convenience of such young cattle as may be wintered in the yard. A large octagonal tank receives all the drainings from the houses. It is at present uncovered, but it is intended that it shall be roofed in. Hitherto the liquid has been taken out and distributed by means of a liquid manure cart; but pipes have been laid through several fields on the farm, for the purpose of distributing it through these, by means of the steam engine, on the Myremill plan. That portion of the farm which has been gone over is laid off in large rectangular fields, divided from each other by wire fences, or by stone walls pointed and dashed with lime. The soil is well adapted for folding sheep, and hence we found the Aberdeen Turnips in course of being consumed where they were grown. The Turnip-fed sheep were allowed at the rate of 1 lb. per head daily of crushed Oats, mixed with a good quantity of chaffed hay. This was given in boxes in the field, and the sheep were doing well under this system of management. We have found the folding of sheep objected to in some other parts of the country, owing, in a great measure, to the nature of the soil being unfavourable; but it succeeds well in the County Wicklow, as we have ere now mentioned when describing Coollattin and the district around it. It is only the Aberdeen and other soft varieties of Turnip upon which sheep are folded at Tinna Park, the Swedes being carried from the field and stored up at the houses for the use of the cattle. Mr. Clark has a capital stock of Clydesdale horses; and for the benefit of those who doubt or deny the advantages of cooked food for farm horses, we may state that we saw at the stable door a number of buckets full of boiled Turnips and light grain, in a semi-warm state, waiting the arrival of the horses from their day's work; and the excellent condition of these was a very good proof that this mode of feeding is not so very bad as some would have us imagine it to be. In fact, our experience of farm-horse management has sufficiently proved to us that one good feed at night of cooked food is indispensably necessary during winter and spring. *Irish Farmers' Gazette.*

Calendar of Operations.

MAY.

Warwickshire: Owing to the cold and stormy weather which has so much prevailed, the hay ricks are more closely worked up than for the last year or two. It is not often that we have to notice the foddering of beasts out of doors till the close of April, and even the advent of "the merry month" itself. But such has been the case, and in the course of the past week alone, prime hay has risen from 4*l.* to 4*l.* 10*s.* per ton among our local buyers. The week, however, was rather a remarkable one; chilling and searching easterly winds prevailed during the whole of it, bringing with them a heavy continuance of cold, driving showers, and with the mercurial column almost stationary at 29·5 inches. We have not, during the past four years, recorded so stationary a low barometer for the same length of time On seventeen days has rain fallen, to a depth of 2·12 inches, but this does not yet compensate for the deficiency of the past twelve months, so that unless there is a greater downfall, the land-springs must remain low, and the midland grazing districts will again complain of a short allowance. Bark peeling—the first harvest of the year—has thus far proved a tedious and wearisome business, from the harsh weather making it strip unkindly, and occasioning several breaks in this operation. There is barely the average extent of Oak, either coppice or hedge-row, being felled in the district this season. The fall of rain at the close of the month came just in time to save the winter Beans from wonted dwarfishness. As it is, the straw will be short, but those fields now in bloom show a splendid promise of a productive yield. Taking them as a whole, there is no doubt as to their being a safer crop than the spring variety, at least for the past year or two; and at present, spring Beans look anything but kindly. The same may be said of spring-sown cereals, especially Barley, which has remained long stationary in the ground, where sown about the middle of April. A favourable change of weather will, however, elevate the farmer's hopes, increase the pleasures of rural scenery, and render the spring crops all verdant in the energies of vegetable activity. Winter Wheat has a promising appearance, and is not so over-luxuriant as we sometimes see it. It has been longer than usual in starting on its spring growth, but has preferred the lolling and straggling form of stools, which is so pleasing to the eye of the old-fashioned practical farmer. He can tell that this generally speaks of a firmer seed-bed having been secured in November, and of a less lodged and more prolific crop being likely to be reaped in the coming harvest. Potatoes went in well in the early part of April, but so late as the day on which we write have we seen several farmers still committing them to the ground. Fourteen or fifteen years ago May used to be regarded as a good season for planting on the north of the Tweed, but since the fatal '46 it has been found that early planting and early raising of the crop is most likely to result in freedom from disease. With the rise in Wheat we may naturally expect that Potatoes will realise more money, and it already is so. Mangel sowing has not yet gone on so far as might have been desirable. A better season than the third week of April could hardly have been, and experience shows that the best crops in this district are obtained by sowing at the period named. If you have a few of them run to seed, they may be usefully pulled and given to the pigs, or they may be checked from unsightliness by simply cutting off, as often as required, and in either case, it will be found that the weight of those which remain will fully compensate for any little loss apparently resulting from early sowing. The din of the threshing machine is again heard in every direction, and large holders of Wheat would like several of them at work at the same time. Such a sudden rise in value as 10*s.* per quarter, in the course of a single week, is not an every day occurrence; and now that there is a rise, speculation will re-commence, so that there is a probability of even higher rates being temporarily recorded. But no wise man will care to wait any length of time before breaking the bulk of his stock. The Wheat that remains is chiefly in the hand of those who can well afford to hold on for any length of time, although even the slowest moving of them are bestirring themselves in the matter. *J.B. in County Standard.*

Notices to Correspondents.

Cultivator: *T J.* Scowlar of Haddington makes a good two-horse grubber. We would get Bentall's or Coleman's smallest size, and work so many of its teeth as we could.

Manure Merchant: *J T H.* We do not know the firm you name.

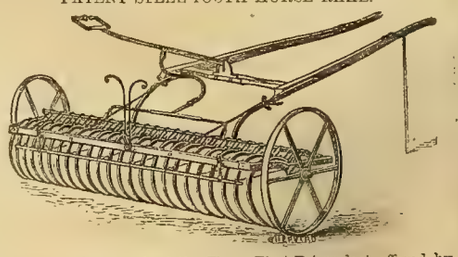
Rearing Calves: *F R S.* The following method was recommended by a correspondent of this Paper 11 years ago:—"I rear short-horn calves at all seasons of the year, or whenever one of suitable blood is dropped. Those coming from the end of August till about the middle of March are separated from the cows as soon as the dams have licked them—an operation of service to the calf and of harmless gratification to the cow—and fed on new milk solely for about three weeks, or according to the health and state of thriving. After that period a part of the new milk is substituted by a portion of skim milk, with a small quantity of boiled Oatmeal or Barley-flour gruel, gradually increased, until in about three weeks more the new milk is in most cases abandoned, and the skim-milk continued till about three months old, mixed with the gruel, which is occasionally varied with crushed Linseed. The skim-milk is gradually left off, and is replaced by Clover-tea—the calves at about three weeks or a month old usually learning to eat a little hay and Turnips. Towards spring, the older calves are turned into a dry and sheltered Grass field, for an hour or two, every mild day; and as soon as sufficient Grass comes they are sent off to pasture, according to age and weather, and remain till autumn on a very high and exposed situation, and generally do well. The calves dropped from March to August are fed by hand for a few days, and are then put to nurse-cows, giving each about 4 quarts of milk per day, and are suffered to run at Grass with their foster-dams on very high Grass land, and suckled in this way till about 4 months old, when the nurses are successively driven home and tied up on Italian Rye-grass, or other green food, a few days, till the feelings of attachment subside; and as soon as the calves are quiet again they are also successively brought down and put into the best Grass or aftermath the farm affords—the best of it not ranking equal to second quality. A few of the youngest calves have the first run over the meadows, and other fresh Grass fields; followed by the older ones in one or two bands; alternated, in the early part of winter, with a few days' run on the young Clovers during frost, or when the weather is dry enough to prevent injury by treading. Thus the calves are kept on a continual march from field to field—the youngest in the van, the oldest in the rear; each division halting a week or 10 days, according to the store of Grass in the field, and the shelter afforded against the prevailing wind, and keeping an intervening field between each division, to allow the pasture to sweeten.

Veterinary Surgeon: *J G, Yorkshire.* Please to give your address.

Erratum: In the report of the Rev. J. C. Clutterbuck's lecture before the Farmers' Club at Oxford, the statement that the chalk will not part from the water it holds by capillary attraction, *but* by evaporation, is printed "will not part by evaporation," the *but* being omitted. [See line 5 from the bottom, col. c, p. 392.]

HOWARDS' PRIZE IMPLEMENTS, 1859.

JAMES AND FREDK. HOWARD, Britannia Iron Works, Bedford, beg to direct attention to their PATENT STEEL-TOOTH HORSE RAKE.



For which they received the Three First Prizes last offered by the Royal Agricultural Society of England.

J. & F. Howard have discontinued troubling the Public with a long List of Prizes awarded to their Implements, but they would just state that for PLOUGHS, HARROWS, and HORSE RAKES, they have for several years gained every Prize for which they have competed.

PLOUGHS.

	£	s.	d.
D PLOUGH, for a Pony	2	5	0
DD ditto for one Horse	3	5	0
P ditto for two Horses	4	7	6
PP ditto for general purposes	4	12	6
SKIM COULTER for P or PP Plough	0	5	6

HARROWS.

A Set of Three 4-Beam HARROWS, with Whippletree, recommended as general Seed Harrows, 9½ feet wide, marked No. 12	3	14	0
A Set of Three 4-Beam HARROWS, with Whippletree, adapted for 3 Horses, 10 ft. wide, marked No. 11	4	4	0

If with Patent Joints, 6*s.* per set extra.

HORSE RAKES.

Small size, 7½ feet wide, marked A, with 24 iron teeth	7	10	0
Ditto, with Steel Teeth	8	0	0
Large size, 8½ feet wide, marked B, with 28 iron teeth	8	0	0
Ditto, with steel teeth	8	10	0
Extra large size, 8½ feet wide, marked C, with 24 steel teeth	10	10	0
A Set of 15 Prongs, to be attached to the above when used as Weed Extirpators	1	10	0

Free Delivery to Birmingham, Bristol, Colchester, Derby, Gloucester, Hull, Lincoln, Liverpool, London, Manchester, Norwich, Nottingham, Retford, Shrewsbury, Wisbeach, Worcester, and York; or to Dublin, Edinburgh, Glasgow, and other parts at fixed rates.

Howards' NEW CATALOGUE, containing prices and description of their Patent Ploughs, Harrows, Horse Rakes, and other Implements, including Smith's Steam Cultivators, for which they received at Chester the Gold Medal of the Royal Agricultural Society of England, sent free on application to

J. & F. Howard, Britannia Iron Works, Bedford.

HENRY J. MORTON AND CO., 2, Basinghall Buildings, Leeds.

GALVANISED IRON WATER CISTERNS

for Cottage Houses, &c., to contain 50 gallons, 25*s.*; 80 gallons 30*s.* each; and 140 gallons, 36*s.*, and fitted with tap, keeping the water perfectly sweet and clean; will not rust or corrod Cisterns of all sizes.

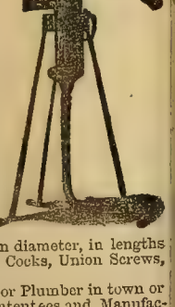
GALVANISED IRON PUMPS

for Liquid Manure or Domestic Use, 3 inches diameter, 30*s.* and 32*s.* 6*d.* each; Tail Pipe for same at from 10*d.* per foot.

GALVANISED IRON SWING WATER BARROWS

for Garden or Farm use, containing about 20 gallons, entirely formed of iron, 32*s.* 6*d.* each.

WARNER'S IMPROVED LIQUID MANURE OR GENERAL PORTABLE PUMP.



These Pumps are fitted with J. W. & Son's Patent Buckets and Suckers, and cannot clog in action. The barrel is of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure. The legs will fold together, and the whole may be carried on the shoulder to any pond or tank required.

Price of 4½ in. Pump, with legs, 3*l.* 3*s.* If with planished copper barrel and galvanised iron handle, &c., 14*s.* extra. The barrel is 27½ in. long, and the legs are 5 ft. high.

These Pumps are also made without the legs, with strong wrought-iron straps for screwing on to any ordinary water butt or cart, and fitted with 1½ inch brass union for attaching flexible suction. Price 50*s.*

1¾ inch Gutta Percha Suction Pipe, 1*s.* 11*d.* per foot.

Rubber and Canvas Suction and Delivery Hose, from ½ inch to 4 inches in diameter, in lengths of 60 feet to order. Branch Pipes with Cocks, Union Screws, &c., at reduced prices.

May be obtained of any Ironmonger or Plumber in town or country, at the above prices, or of the Patentees and Manufacturers, John Warner & Sons, 8, Crescent, Jewin St., London.

WARNER'S PATENT VIBRATING STANDARD PUMPS.

PATENT CAST-IRON PUMPS, fitted with J. W. & Son's Patent Buckets and Suckers, which cannot clog in action, for Farms, Cottages, and Wells, not exceeding 28 feet.

Diameter of Barrel.	Height.		£.	s.	d.
2½ in.	short	1 ft. 7 in.	Fitted for lead, gutta percha or cast iron flanged pipe as required.	1	10 0
2½ „	long	3 „ 3 „		1	14 0
3 „	ditto	3 „ 6 „		2	8 0
3½ „	ditto	3 „ 6 „		2	12 0
4 „	ditto	3 „ 6 „		3	3 0
2½ „	short, with 15 feet of Lead Pipe attached, ready for fixing			2	14 0
2½ in.	long	ditto ditto		2	18 0

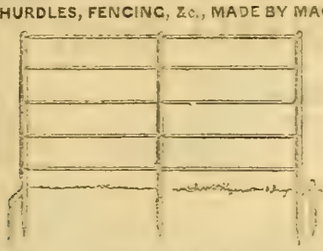


The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.

May be obtained of any Ironmonger or Plumber in Town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin Street, London

Every description of Machinery for Raising Water by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

IRON HURDLES, FENCING, &c., MADE BY MACHINERY.

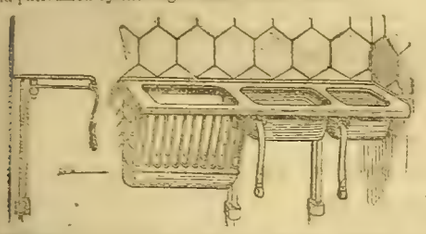


COTTAM AND COMPANY, of Winsley Street, have invented machinery for making Hurdles, &c.; the bars, instead of being pointed by hand in the old fashioned style, are nipped down by the machine, leaving a shoulder so as to more effectually tighten the standards when rivetted. They are made of superior iron only, and will compete in price with those made by hand from cinder or common iron which so frequently break. Iron Fencing, Gates, and Iron Work of all kinds, both Plain and Ornamental, Conservatories, Hot Water Apparatus and Garden Implements.

Illustrated CATALOGUES free on application to COTTAM & COMPANY, Ironfounders, 2, Winsley Street, Oxford Street, W.

N.B. COTTAM & Co. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

COTTAM'S PATENT INVENTIONS FOR STABLE REQUISITES, awarded a Prize at the Paris Exhibition, and patronised by the English and French Governments.



COTTAM AND COMPANY, of Winsley Street, are the original inventors of the PATENT ENAMELLED MANGER, Water Trough, and Wrought Iron Rack, united to an iron top-plate, and forming one complete and useful fixture, having COTTAM'S patent noiseless halter guide and collar rein attached, which is taken to the back of the manger, and works with ease and freedom up or down the guide-bar.

COTTAM'S NEW PATENT SEED-BOX, an important addition to the above fittings, being simple in construction, light, and durable, promotes cleanliness, and is economical in its results.



COTTAM'S PATENT SADDLE and HARNESS BRACKET combined, can be used with great advantage where space is an object, as it can be turned up out of the way when not in use.

COTTAM'S IMPROVED SURFACE GUTTER, with perforated moveable cover, the use of which prevents accidents, and can be easily cleaned out.

COTTAM'S CAST-IRON SANITARY TRAP, from its improved construction, gives a full water passage, and does not allow any smell to ascend from the drain.

PATENT LOOSE-BOX FITTINGS, and every article for the harness-room and stable, kept in stock, plain, galvanised, and enamelled. Iron gates, fencing, hurdles, &c.

The New Illustrated Catalogue and Estimates, gratis, upon application to COTTAM and COMPANY, 2, Winsley Street, Oxford Street.

N.B. COTTAM & Co. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.



BOYD'S SELF-ADJUSTING SCYTHES are the cheapest and best, and being sold adjusted are ready for immediate use. They can be regulated in an instant to suit any person, and to cut any crop without change of Scythes. To Amateur Gardeners they are very desirable, as they afford healthy and interesting exercise. They have stood the test of public opinion for seven years, and for excellence, ease, economy, and durability are highly recommended. Upwards of 50,000 of them have been sold. To be had of every Ironmonger, Hardwareman, and Seedsman in the United Kingdom; and Wholesale of the Sole Licensed Makers, WM. DRAY & Co., at their New Agricultural Implement Warehouses, Adelaide Place, London Bridge.

FOR WATERING GARDENS, PLUMBERS, ENGINEERS, MILLS, AND MACHINISTS.

VULCANISED INDIA RUBBER.

Washers for Hot-water and Steam Joints	Garden Watering Hose
Elastic Packing and Valves for Steam Engines	Do. fitted with Brass Joints, Taps and Spreaders
Pump Buckets (compound India-rubber)	Wheel Tires (noiseless for Trucks, &c.)
Suction Hose for Pumps	Waterproof Cart, Van, and Waggon Covers
Fire Engine Hose	Mill Bands, much improved for driving all kinds of Machinery
Air Beds, Cushions, & Bolsters	Door Springs, Gas Bags
Water Beds, Pillows, and Feet Warmers	Foot Balls, Cricketting Gloves

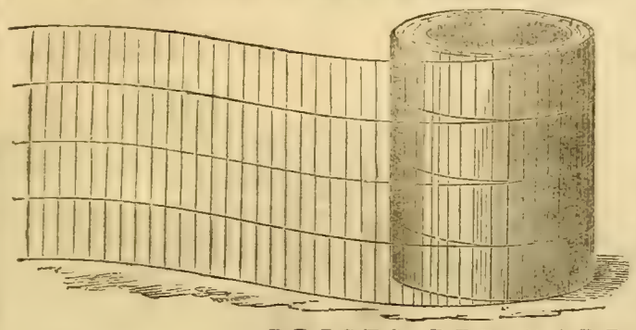
N.B. A Stock of the above always on hand, and any modification made to order. Please address all communications to the Manufactory.

JAMES LYNE HANCOCK,
Vulcanised India-rubber Works, Goswell Road, London, E.C

GREENING & COMPANY'S PATENT WIRE FENCES.

Patronised by His Royal Highness the PRINCE CONSORT.

No. 4 VARIETY.—STRONG HARE AND RABBIT-PROOF FENCE.



SPECIFICATION. — Horizontal bars of stout, tough wire, 6 inches apart; vertical bars of similar wire, 1¼ inch asunder, the whole woven firmly together. Made in rolls of 50 yards, or in other lengths, to order.

G. & Co. have been honoured with five consecutive orders for the Patent Hare and Rabbit Fencing from H.R.H. the Prince Consort, who has also personally expressed his satisfaction with the work. One yard of No. 4 variety is equal in weight to 3 yards of the best Wire Netting made.

PRICES PER YARD:—

24 inches high	...	1s. 0d.,	Japanned	24 inches high	...	1s. 3d.,	Galvanised
30 "	...	1 3	"	30 "	...	1 6	"
36 "	...	1 6	"	36 "	...	1 10	"

G. & Co. forward (post free) on application their ILLUSTRATED CATALOGUE, containing particulars of the above and other Iron and Wire Fences for Parks, Farms, Gardens, Game Preserves, Poultry Courts, &c.

GREENING & COMPANY, Victoria Iron and Wire Works, 81, Oxford St., Manchester.

SMITH & ASHBY,

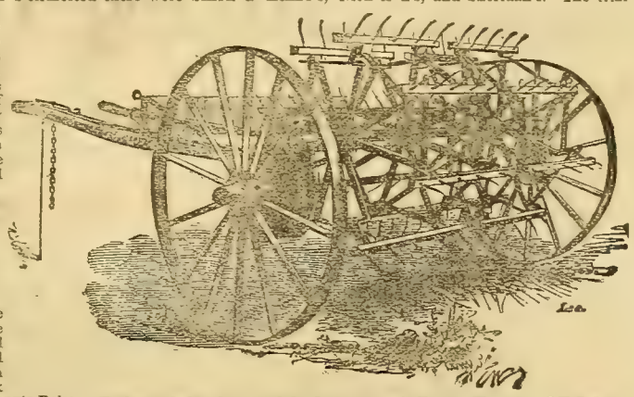
AGRICULTURAL ENGINEERS, STAMFORD.

HAYMAKING MACHINES.

THE last great trial of Haymakers took place at Londonderry, before the Council of the Royal Society of Ireland, in August last. The Machines exhibited there were SMITH & ASHBY'S, Nicholson's, and Sheridan's. The trial land was full of deep broad grips, the crop was heavy green Clover, upon which the Machines selected for trial were set to work. SMITH & ASHBY'S Machine did its work admirably, without a single failure, and was the only one that could clear the grips without clogging and flying out of gear. The Prize of 5l. was unanimously awarded to this Machine. This makes Five First-class Prizes that have been awarded to SMITH & ASHBY'S Machine since the Salisbury Meeting of the Royal Agricultural Society of England (1857).

Price £15 15s.

SMITH AND ASHBY,
AGRICULTURAL ENGINEERS, Stamford.

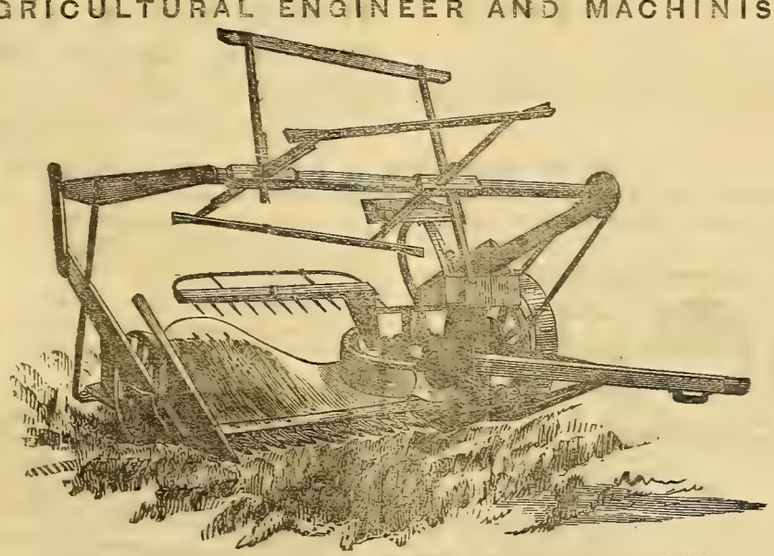


HORSE RAKES.

SMITH & ASHBY'S celebrated Horse Rake has lately been greatly improved by the introduction of their new Patent Steel Semi-angular Teeth, which are warranted not to break, and work much better than those of a circular form. Twenty-six Prizes have been awarded to SMITH & ASHBY'S Rake. **Price, full size, with improved Iron Teeth, £7 10s. Steel, £8; Extra large Size, £10.** *Catalogues with full particulars free by post on application.*

B. SAMUELSON,

AGRICULTURAL ENGINEER AND MACHINIST,



WAREHOUSE, 76, CANNON STREET WEST, LONDON,

WORKS AT BANBURY,

INFORMS MERCHANTS, the TRADE, and AGRICULTURISTS, that he has opened the above Warehouses as a depôt for his own manufactures and those of Messrs. Barrett, Clayton, Howard, Hornsby, Nicholson, Richmond, Tuxford, Smith, and all other first-class makers, whose implements he is prepared to offer on makers' terms.

THE BRITANNIA SELF-RAKING REAPING MACHINE,

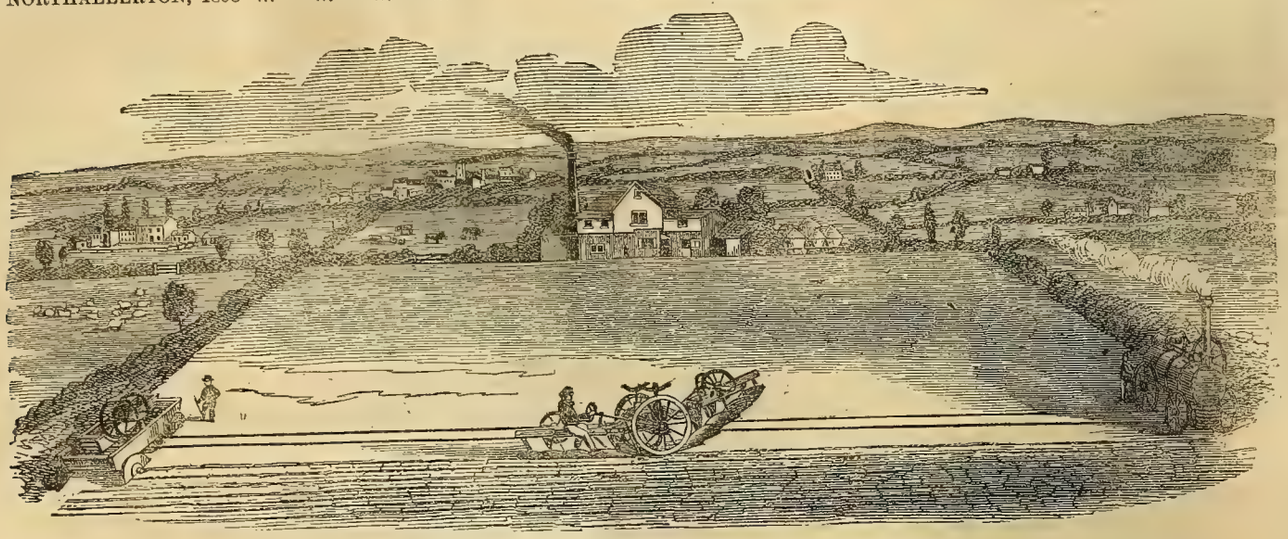
With side delivery in sheaf, no rakers or gatherers required; and all the most improved Spring Implements for the season, may be inspected at the above depôt.

B. SAMUELSON, 76, Cannon Street West, London; and Britannia Works, Banbury.

FOWLER'S PATENT STEAM PLOUGH.

THIS IMPLEMENT HAS GAINED THE FOLLOWING PRIZES:—

AT STIRLING, 1857	£200	AT NORTHALLERTON (Lord Bolton's Prize), 1858	£25
AT CHESTER, 1858	£500	AT LONDONDERRY, 1858	£50
AT NORTHALLERTON, 1858	£50	AT STIRLING, 1858	£50



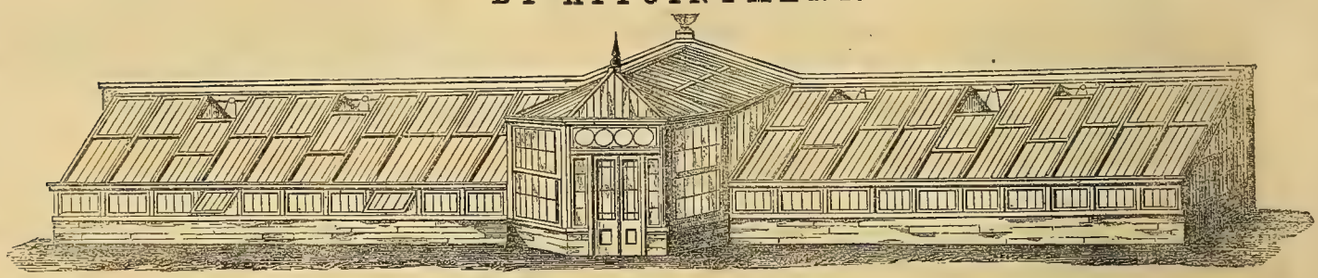
A CUT OF FOWLER'S STANDARD ENGINE, WINDLASS, AND WATER CART.

Illustrated Catalogues, with reduced prices of Ploughs, will be ready shortly. For further particulars apply to

JOHN FOWLER, Jun., 28, Cornhill, London, E.C.

HORTICULTURAL BUILDING & HEATING BY HOT WATER.

BY APPOINTMENT.



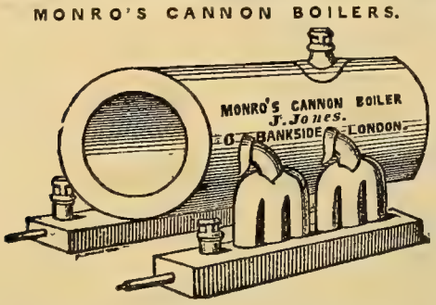
JOHN WEEKS & COMPANY,

KING'S ROAD, CHELSEA, LONDON.

HORTICULTURAL BUILDERS AND HOT-WATER APPARATUS MANUFACTURERS, ENGINEERS, AND IRON FOUNDERS.

PLANS, ESTIMATES, & ILLUSTRATED CATALOGUES FREE ON APPLICATION.

MONRO'S CANNON BOILERS.



MUCH has of late been said about BOILERS for Heating by Hot Water, but these Boilers have now proved themselves to be the best at present invented. They are adapted for heating every description of building, and are made of various sizes. The Price of the

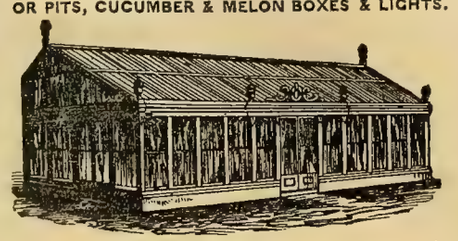
24-inch Cast Iron is	£5 10s. 0d.	each
24-inch Wrought ditto	6 10 0	,,
36-inch Cast ditto	8 0 0	,,
36-inch Wrought ditto	8 10 0	,,

References to Gentlemen and Nurserymen where these Boilers are now at work. The Cannon Boilers are now kept in stock, and are to be had only of J. Jones, 6, Bankside. Also, every description of Saddle and Cylinder Boilers. Hot Water Pipes and Connections at prices lower than those of any other house in London. Estimates for Hot-water Apparatus erected complete in any part of the country, and an Illustrated Catalogue on application to J. Jones, 6, Bankside, Southwark, London.

C. STEPHENSON, late STEPHENSON AND SONS, 61, Gracechurch Street, London, Manufacturer of Iron Hurdles, Fencing, &c., Improved Iron and Copper Conical Boilers and Apparatus for Warming Buildings of every description by Hot Water.

Prices and Estimates furnished upon application.

HOTHOUSES, CONSERVATORIES, FRAMES & LIGHTS OR PITS, CUCUMBER & MELON BOXES & LIGHTS.

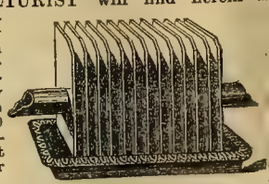


JAMES WATTS, Hothouse Builder, 8, Claremont Place, Old Kent Road, London.

Green and Hothouses, 9, 10, 11, 12, 13, and 14 feet wide, any length, from 16 to 100 feet. Frames and Lights for Pits, 6ft. 6 in., 7 ft., 7 ft. 6 in., 8 ft., and 8 ft. 6 in. wide, any length, from 1½ to 100 feet. Upwards of 200 Cucumber and Melon Boxes and Lights, from 4 ft. by 3 to 10 ft. 6 in. by 5 ft. 6 in., kept ready, glazed with stout sheet glass, painted four times, complete, ready for immediate use, all made of best material, packed and sent to all parts of the kingdom.—References may be had to the Nobility, Gentry, and the Trade in most of the counties in England. Horticultural Buildings of every description heated on the most approved and economical principles.

IMPROVED HOT-WATER PIPE.

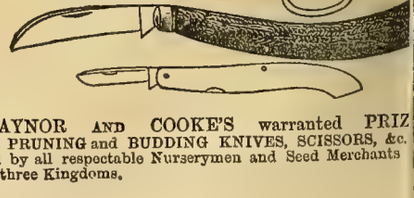
THE HORTICULTURIST will find herein an inexpensive instrument of new and very important powers. An atmosphere may be produced at will either perfectly dry, partially damp, or saturated with moisture. A space of 10 inches by 12 inches contains the power of 25 feet of 4-inch pipe and other numerous advantages.



The London Warming and Ventilating Company (Limited) 26, Great George Street, Westminster, S.W.

MARQUEES, TENTS, AND RICK CLOTHS FOR SALE, OR HIRE.—H. Piggott, 115, Fore Street, E.C.

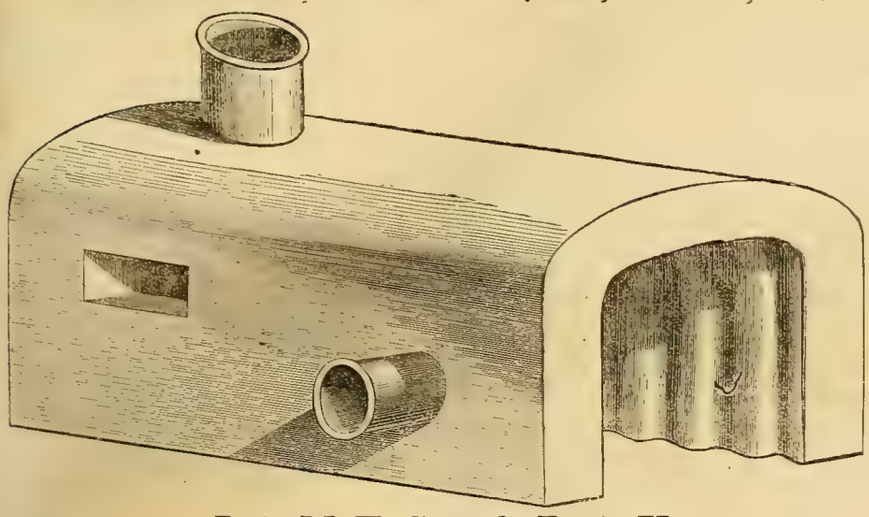
PAXTON WORKS, SHEFFIELD, ESTABLISHED 1738.



SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c. Sold by all respectable Nurserymen and Seed Merchants the three Kingdoms.

HORTICULTURAL WORKS,

DANVERS STREET, PAULTON'S SQUARE, CHELSEA, S.W.



JAMES GRAY

RESPECTFULLY begs to inform the nobility, gentry, Nurserymen, Gardeners, and others, that he continues to carry on the business in all its branches at the above old established premises.

CONSERVATORIES, GREENHOUSES, FORCING HOUSES, VINERIES, PITS, &c.,
of every description, erected on the most approved principles.

HEATING BY HOT WATER.

J. G. having specially devoted his attention for many years to this part of the business, is now fully prepared to Heat every description of public and private buildings, viz :—Churches, Mansions, Warehouses, &c., as well as all structures connected with Horticulture, in the most efficient manner. His system is the most simple that can be adopted—which he has found from long experience to be the best—can be constructed at less cost, and is more easily managed than those of a complicated nature which have attracted the notice of the public.

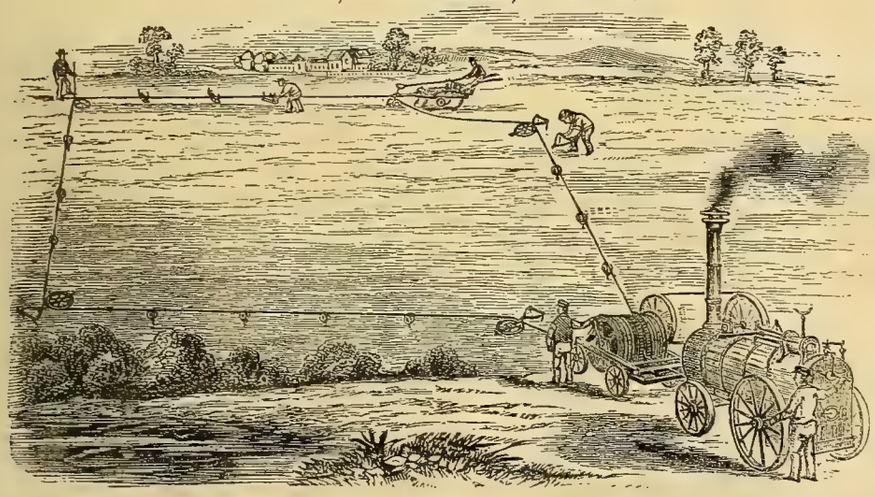
J. G. begs to call attention to his CAST-IRON CORRUGATED ARCH BOILER, which from its simplicity of construction has not the liability to fracture to which those of a more complex design are always subject. They have been extensively used for many years, and have given the greatest satisfaction.

All business is conducted at this establishment on the principle of lowest remunerative profits consistent with best materials and workmanship.

Plans and Estimates furnished on the shortest notice.

SMITH'S STEAM CULTIVATOR, 1859.

OFFICE—40, MARK LANE, LONDON.



J. & F. HOWARD, BEDFORD, MANUFACTURERS.

PRICE OF A SET OF TACKLE COMPLETE, EXCLUSIVE OF ENGINE:—

Windlass, complete, together with 8 Iron Anchors, 2 Wood ditto, 6 Snatch Blocks, 30 Rollers, 3 Wood Levers, 2 Beetles, and 2 Crow Bars	£110	0	0
1400 yards of Iron Wire Rope (1¼ inch circumference)	45	0	0
No. 3 Implement	16	0	0
Turning Bow	21	0	0
	£192	0	0

1400 yards of Steel Wire Rope (1¼ inch circumference) 15*l.* more than iron.

SMITH'S APPARATUS CAN BE DRIVEN BY AN ORDINARY SEVEN OR EIGHT-HORSE PORTABLE ENGINE.

Nearly Fifty Sets are now in use, about Forty of which have been purchased by Tenant Farmers.

Catalogues, with full particulars, may be had at the Office, 40, Mark Lane, London; of

J. & F. HOWARD, Britannia Iron Works, Bedford, or of WILLIAM SMITH, Woolston, Bucks, Patentee.

NEW GARDEN NET, 1½*d.* per yard. Tanned Fish Nets, 6*s.* 3*d.* per 100 yards. Worsted Net for shading Ripe Fruit, Blossoms, &c., much approved. Transparent Sheeting, 2 yards wide, 1*s.* per yard run.—R. RICHARDSON, White Horse Factory, Bidborough Street, Judd Street; Office: 99, Euston Road, London.

MARQUEES ON HIRE, to suit the times.—New, lofty, and extensive, and completely fitted up for any occasion. For sale, Umbrella, Bell, and Square Tents for Gardens, Cricket Clubs, &c. Attention is requested to the Iron-sided Tents recently erected by R. R. in Hyde and Battersea Parks for refreshments. They are firm, require no side lines, and safe; moderate in price, and adapted for Temporary Rooms and other purposes. Drawings of Tents, Summer Houses, and Poultry Houses free.

R. RICHARDSON, White Horse Factory, Bidborough Street, Judd Street; Office: 99, Euston Road, London.

FRUIT TREES, RIPE STRAWBERRIES, ETC.

TANNED NETTING for Protecting the above from Frost, Blight, Birds, &c.; 2 yards wide, 3*d.* per yard, or 100 yards, 20*s.* Can be had in any quantity of EATON & DELLER, 6 and 7, Crooked Lane, London Bridge.

FOR Effectually Protecting the Bloom of Wall Trees from Spring Frosts use SHAW'S No. 3 TIFFANY, DOUBLE STRENGTH. In pieces 18 yards long by 39 inches wide, 7*s.* 6*d.* each.—JOHN SHAW & Co., Princess Street, Manchester.

TANNED NETTING, for the Protection of Fruit Trees from Frost, Blight, and Birds; also, for the security of fresh sown seeds, at 1*d.* per square yard; 200 yards, 12*s.*; 500 yards, 2⁵*s.*; Scrim Canvas, for wall fruit; Garden Mats.—At EDGINGTON & Co's., Rick Cloth, Tent, and Waterproof Cloth Manufacturers, 17, Smithfield Bars, City, & Old Kent Rd.

FLOWER POTS, of superior Red Clay, manufactured by the Arley Pottery Company (Limited), equal in appearance to Terra Cotta at the price of the common pots usually sold, say 1*s.* 6*d.* per cast, at Kidderminster.—Apply to TAYLOR & PEARS, 8, George Yard, Lombard Street, City, E.C.

WHY NOT PRESERVE YOUR HAY?
RICK CLOTHS, New and Second hand,
At BENJAMIN EDGINGTON'S,
2, Duke Street, London Bridge, S.E., and West End,
32, Charing Cross, S.W.
MARQUEES, TENTS, &c.
Illustrated Catalogues free.

BENJAMIN EDGINGTON, 2, Duke Street, London Bridge, S.E.
MONSTER TENTS for large parties.
PRETTY TENTS for Lawns.
RICK CLOTHS, Second-hand, very cheap.
NETTING for Fruit Trees, &c.
West End Establishment, 32, Charing Cross, S.W.

PATENT GUTTA PERCHA SOLES.—IMPORTANT TO GARDENERS.—The Gutta Percha Company have the pleasure to acknowledge the receipt of the following letter from G. GLENNY, Esq., the celebrated Florist:—

"420, Strand, London

"Gentlemen,—I have worn Gutta Percha Soles and Heels these two years, and being so much in a garden as I necessarily am in all weathers, and with the ground in all states, I would on no account be without them. As a matter of economy I would recommend Gardeners to use them, for they may repair the worn part at all times by warming the material at the fire, and pressing it from the thick parts to the worn parts as easily as if it were so much dough. I think it the duty of all persons who must occasionally wet their feet to adopt a material that completely defies damp. Many a gardener would escape colds and rheumatism by the use of Gutta Percha Soles.

"Your obedient servant, G. GLENNY."

Every variety of Gutta Percha articles, such as Mill Bands, Tubing, Soles, Goloshes, Sheet, Pump Buckets, Fire Buckets, Bosses, Union Joints, Flasks, Bottles, Bowls, Chamber Vessels, Toilet Trays, Sponge Bags, Curtain Rings, Galvanic Batteries, Talbotype Trays, &c., manufactured by the Gutta Percha Company, and sold by their wholesale dealers in town or country.—The Gutta Percha Company, Patentees, 18, Wharf Road, City Road, London.

SMALL GAS APPARATUS, FREE FROM NUISANCE.

THE PATENT NATIONAL COAL-GAS APPARATUS, for private Residences, Farm Buildings, Churches, Chapels, Workshops, Railway Stations, and other places not hitherto lighted with Gas. It is durable, economical, and compact, and supplies the desideratum of cleanliness in the production of a Gas of better quality and purity, and at less cost, than is ordinarily obtained from Public Works. By an entirely new and peculiar process it is easily worked by a boy or inexperienced servant. The cost of Gas, including labour, wear and tear, and interest of capital, is less than one-fourth that of candles or oil. It can be fixed and completed in working order in a few days.—Further particulars, prices, testimonials, &c., on application to the Proprietors and Manufacturers, J. T. B. PORTER & Co., Lincoln.

MICROSCOPES.

JOSEPH AMADIO'S Improved Compound MICROSCOPE, 2*l.* 2*s.*; Students', 3*l.* 13*s.* 6*d.*

"Both these are from Amadio, of Throgmorton Street, and are excellent of their kind, the more expensive one especially."—*Household Words*, No. 345.

A large Assortment of ACHROMATIC MICROSCOPES.

Just published, an ILLUSTRATED CATALOGUE, containing the names of 1000 Microscopic objects, post free, for 4 stamps.

PRIZE MEDAL, PARIS EXHIBITION 1855.

METCALFE, BINGLEY, AND CO.'S New Pattern and Penetrating Tooth Brushes, Penetrating unbleached Hair Brushes, Improved Flesh and Clothes Brushes, and genuine Smyrna Sponges; and every description of Brush, Comb, and Perfumery for the Toilet. The Tooth Brushes search thoroughly between the divisions of the Teeth and clean them most effectually—the hairs never come loose. M., B., and Co. are sole makers of the Oatmeal and Camphor and Orris Root Soaps—sold in Tablets (bearing their names and address) at 6*d.* each; of METCALFE'S celebrated Alkaline Tooth Powder, 2*s.* per box; and of the New Bouquets.—Sole Establishment, 130*s* and 131, Oxford St., 2d and 3d doors west from Holles St., London.

ALLEN'S PATENT PORTMANTEAUS AND TRAVELLING BAGS, with SQUARE OPENING: Ladies' Dress Trunks, Dressing Bags, with Silver Fittings; Despatch Boxes, Writing and Dressing Cases, and 500 other articles for Home or Continental Travelling, illustrated in their New Catalogue for 1859. By post for two stamps. J. W. & T. ALLEN, Manufacturers of Officers' Barrack Furniture and Military Outfitters (see separate Catalogue), 18 and 22, Strand.

DRESSING CASES, DRESSING BAGS, and highly finished elegancies for presentation in great variety; Ivory-handled Table Cutlery; every requisite for the Toilet and Work Tables.—MECHI & BAZIN, 112, Regent Street; 4, Leadenhall Street; and Crystal Palace, Sydenham.

HANDSOME BRASS AND IRON BEDSTEADS.—HEAL & SON'S Show Rooms contain a large assortment of Brass Bedsteads, suitable both for Home use and for Tropical Climates; handsome Iron Bedsteads with Brass Mountings and elegantly Japanned; Plain Iron Bedsteads for Servants; every description of Wood Bedstead that is manufactured, in Mahogany, Birch, Walnut-tree Woods, Polished Deal and Japanned, all fitted with Bedding and Furniture complete, as well as every description of Bedroom Furniture.

HEAL AND SON'S ILLUSTRATED CATALOGUE, containing Designs and Prices of 100 Bedsteads, as well as of 150 different articles of Bedroom Furniture, sent free by post.—HEAL & SON, Bedstead, Bedding, and Bedroom Furniture Manufacturers, 196, Tottenham Court Road, W.

BEDSTEADS, BATHS, AND LAMPS.—WILLIAM S. BURTON has SIX LARGE SHOW ROOMS devoted exclusively to the SEPARATE DISPLAY of Lamps, Baths, and Metallic Bedsteads. The stock of each is at once the largest, newest, and most varied ever submitted to the public, and marked at prices proportionate with those that have tended to make his establishment the most distinguished in this country.

Bedsteads, from	..	..	12*s.* 6*d.*	to £20	0*s.* each.
Shower Baths, from	..	..	8 0	„ 6 0	„
Lamps (Moderateur), from	..	6 0	„	7 7	„

(All other kinds at the same rate.)

Pure Colza Oil .. .. 4*s.* 3*d.* per gallon.

WILLIAM S. BURTON'S GENERAL FURNISHING IRONMONGERY CATALOGUE may be had gratis, and free by post. It contains upwards of 400 Illustrations of his illimited Stock of Electro and Sheffield Plate, Nickel Silver and Britannia Metal goods, Dish Covers and Hot-water Dishes, Stoves, Fenders, Marble Chimney pieces, Kitchen Ranges, Lamps, Gaseliers, Tea Urns and Kettles, Tea Trays, Clocks, Table Cutlery, Baths and Toilet Ware, Turnery, Iron and Brass Bedsteads, Bedding, Bed Hangings, &c., with Lists of Prices and Plans of the 16 large Show Rooms at 39, Oxford Street; 1, 1A, 2, and 3, Newman Street; and 4, 5, and 6, Perry's Place, London.—Established 1820.

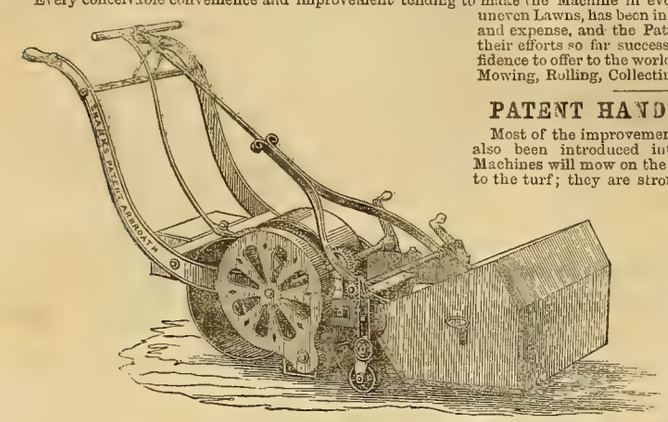
Patronised by Her Majesty QUEEN VICTORIA, His Majesty the EMPEROR of the FRENCH, and his Royal Highness the PRINCE of PRUSSIA.

SHANKS'S PATENT MOWING, ROLLING, COLLECTING, AND DELIVERING MACHINE FOR 1859.

THE ONLY COMPLETE MACHINE FOR HORSE OR PONY POWER.

AMONGST other valuable improvements, A. SHANKS AND SON have this season made in their Patent Horse and Pony Machines, as fully described in the *Gardeners' Chronicle* of March 5, page 207; particular attention is requested to the new Patent method of emptying the Grass Box, which consists in the introduction of a simple and efficient apparatus for emptying it, without the man being under the necessity of leaving the handles or stopping the machine. So effective and complete is the improvement that the Box, if it were possible to fill it, could be emptied at the rate of 60 times a minute, without any undue strain being put on the apparatus. The immense advantages of this invention must be at once apparent to the practical Gardener. It will enable the machine to do at least a third more work, while the labour and annoyance in working it, as compared with ordinary machines, is three-fourths lessened. If a Lawn which formerly took a machine nine hours to mow, can now be done in six hours, with three-fourths less labour to the man who works the machine, nothing further is necessary to establish the utility and worth of the invention.

Every conceivable convenience and improvement tending to make the Machine in every way complete for level as well as uneven Lawns, has been introduced at the sacrifice of much time and expense, and the Patentees have great pleasure in seeing their efforts so far successful as to enable them with all confidence to offer to the world the cheapest and the most complete Mowing, Rolling, Collecting, and Delivering Machine extant.



PATENT HAND MACHINE for 1859.

Most of the improvements of the Horse and Pony sizes have also been introduced into the new Hand Machine. The Machines will mow on the most uneven Lawns without injury to the turf; they are strongly made, are fitted with the same care and precision of the larger sizes, so simple in construction that a labourer can work them, and are quite free from all superfluous and useless gear, which has only novelty, not improvement, as a recommendation. These Machines are peculiarly well fitted for turning and cutting amongst Flower Beds, Verges, Bowling Greens, and for small Lawns. The Patent improvements for this season render them complete in every part. The draught is greatly lessened, and the execution of the work is unsurpassed.

The Machines are warranted to give ample satisfaction; failing this (which is barely possible), they may be at once returned.

FURTHER PARTICULARS MAY BE HAD ON APPLICATION.

ALEXANDER SHANKS & SON, Patentees and Sole Manufacturers, Dens Iron Works, Arbroath, Forfarshire.

N.B. To prevent disappointment in delivery early Orders are particularly requested.

PATENT LAWN MOWING AND ROLLING MACHINES.

SAMUELSON'S LAWN MOWING MACHINES,

WITH BOYD'S PATENT IMPROVEMENTS.

"Doing the work of five or six men."—The Times, Sept. 20, 1858.

The following PRICES include the Carriage to any Railway Station in England:—

		With Boyd and Samuelson's Patent Cleaning, Sharpening, and Adjusting Apparatus.	
9 inches wide, for very narrow borders, without registered wheels	£2 10 0		
12 inches wide	4 5 0	£4 17 6	
16 inches wide, with registered arrangement (for one man)	5 10 0	6 6 0	
19 inches wide, ditto (for one man) ..	5 17 6	6 17 6	
22 inches wide, ditto (for man and boy)	6 0 0	7 7 0	
22 inches wide, ditto for ditto, and also fitted with draught links for a pony and a man to work it	6 15 0	8 2 6	Case included.
25 inches wide, ditto	9 0 0	11 11 0	
30 inches wide, ditto (for man and pony)	11 10 0	13 13 0	

Box of Tools, Oil Can, and other requisites, sent with each Machine, 5s.



Some thousands of these Machines are now in successful operation on the Lawns of Royalty, the Nobility, and Gentry of the United Kingdom and the Continent of Europe, and are pronounced SUPERIOR to *any other* for lightness of draught, efficiency, and durability. The demand for them is *yearly increasing—the number supplied by* Mr. SAMUELSON *during the years* 1856, 1857, *and* 1858 *being more than* 2100. Testimonials are continually being received from gentlemen having them in daily use, who speak in the highest terms of their efficiency.

These are the only Machines that will cut wet as well as dry Grass without clogging the knives.

Orders for 1859 should be sent at once to insure certain delivery and to prevent disappointment.

Copies of Testimonials will be forwarded post free on application to

B. SAMUELSON, 76, Cannon Street West, City, London;

to the Manufactory, Britannia Works, Banbury, Oxon;

or to MESSRS. DEANE AND CO. London Bridge; or any respectable Ironmonger or Seedsman in the Kingdom.

SHANKS'S PATENT LAWN MOWERS are unquestionably the most perfect Machines for Mowing Lawns, Verges, &c., extant. SHANKS'S Horse and Pony Machines are the only Machines that Mow, Roll, Collect, and Deliver the Grass.—London Agents: COTTAM & Co., 2, Winsley Street, Oxford Street, W.

SHANKS'S PATENT MOWING MACHINES.

J. & C. LEE, NURSERYMEN, Hammersmith, have great confidence in recommending these as the most complete Mowing Machines offered to the public. They have had large experience with SHANKS'S Machines, and have ever found them do their work admirably, effecting a great saving in labour, and not liable to get out of order. For terms, apply to the Agents, J. & C. LEE, Nurserymen, Hammersmith.

THE NEW PATENT MOWING MACHINES may be used anywhere at any time, are self-sharpening, and admit of the use of duplicate sets of cutting parts. Prices from 4*l.* 10*s.* upwards. Illustrated Circulars free by post.—Manufactured and Sold by JAMES FERRABEE & Co., the original introducers of Mowing Machines.

Several infringements of their patent having taken place, the Makers respectfully caution the public to see that the words "FERRABEE'S Patent" are cast on every Machine.

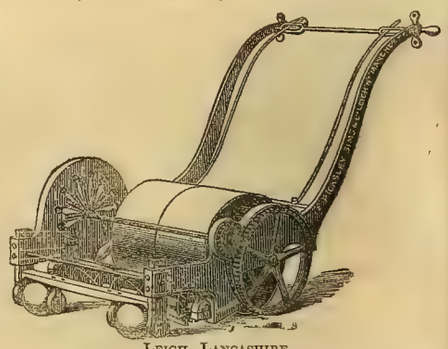
JAMES FERRABEE & Co., Phœnix Iron Works, Stroud.

CHEAP AND CORRECT PRINTING FOR THE NURSERY AND SEED TRADES.—Send your orders to ROBT. EDM. TAYLOR, PRINTER, Sea Coal Lane, Skinner Street, Snow Hill, London, E. C. Estimates forwarded.

LAWNS—IN USE IN THE ROYAL GARDENS.

SAMUELSON'S PATENT BOYD LAWN MOWING and ROLLING MACHINE, the only one that will cut wet as well as dry Grass, is guaranteed efficient in use, easily handled, and readily kept in working order. Doing the work of five or six men. Prices, including case and carriage to any railway station in England, from 4*l.* 17*s.* 6*d.* and upwards. Copies of testimonials post free on application to Mr. SAMUELSON'S London Warehouse, 76, Cannon Street West, City; Messrs. DEANE'S, London Bridge; or the Works, Banbury, Oxon.

PICKSLEY, SIMS, AND CO.'S (by ROYAL LETTERS) PATENT LAWN-MOWING MACHINE.



LEIGH, LANCASHIRE.

P., S., & Co., in introducing this Lawn Mowing Machine, particularly request a strict examination, or comparison and trial, for simplicity of construction, lightness, regularity of draught, adaptability for mowing every kind of plain, circular, and verge work.

Firstly, we have encased the wheels so as completely to protect from injury flower borders, shrubs, &c., whilst working the machine, at the same time not being liable to obstruction or damage.

Secondly, this machine works easily on undulated and sloping ground; it can be thrust forward or be drawn from behind, the latter being the easiest.

Thirdly, this is the only machine made that will work round quick curves; it will work easily and effectively round circular borders so small as 12 inches in diameter. This very desirable improvement has been obtained by fixing to the front part of the machine our newly-invented universal action, and self-cleaning, anti-friction spherical guiding balls. The continual revolving of these spherical guiding balls, under the most trying circumstances, never fails.

Fourthly, we have attached to this machine a rack and pinion motion, for adjusting the cutting parts (there being a rack and pinion on each side of the machine to act conjointly at the same time upon the full length of the knives), in other machines a slow, tedious, and uncertain operation, into one of quickness, ease, and certainty.

PRICES:—			£ s.
Patent Lawn Mowing Machine	13 inches	..	5 10
Ditto ditto ditto	16 ,,	..	6 0
Ditto ditto ditto	19 ,,	..	6 10
Ditto ditto ditto	22 ,,	..	7 0
Patent Chaff and Gorse Cutters from..	.. ..	£2 5 to	22 0
,, Bean, Oat, and Malt Mills	.. ..	3 10 to	10 10
,, Gorse and Grain Bruisers	.. ..	10 10 to	21 0
,, Bone Mills..	.. ..	27 10 to	150 0
,, Mangles, various	.. .. ..	2 10 to	12 10

ILLUSTRATED CATALOGUES can be had gratis.

WHAT WILL THIS COST TO PRINT? is a thought often occurring to literary minds, public characters, and persons of benevolent intentions. An immediate answer to the inquiry may be obtained on application to RICHARD BARRETT, 13, Mark Lane, London. R. B. is enabled to execute every description of Printing on very advantageous terms, his office being furnished with a large and choice assortment of Types, Steam Printing Machines, Hydraulic and other Presses, and every modern improvement in the Printing Art. A Specimen Book of Types, and information for Authors, sent on application, by

RICHARD BARRETT, 13, Mark Lane, London.

KNOW THYSELF.—MARIE COUPELLE continues to give her graphic and interesting delineations of character, discoverable from an examination of the handwriting, in an unique style of description peculiarly her own. All persons desirous of knowing themselves, or any friend in whom they are interested, must send a specimen of the writing, stating the sex and age, and enclosing 13 penny postage stamps, and a directed envelope, to Miss COUPELLE, 69, Castle Street, Oxford Street, London, and they will receive in a few days a minute detail of the talents, tastes, virtues, and failings of the writer, with many other things hitherto unsuspected. All letters are considered strictly confidential.

EWEN'S GRAISSE D'ENFLEURAGE; or Pomatum Body, indispensable to all who wish to make their Pomades from the Flowers in their gardens, by the French principle of Enfleurage. In Jars (of not less than 3 lbs.) with directions for use, at 2*s.* per lb., ex Jars. Cash on delivery.

EWEN'S Clarified Fat Works, and Toilet Soap Manufactory, 17, Garlick Hill, E.C., London.

FOR THE TOILETTE.—OLDRIDGE'S BALM OF COLUMBIA, which has for more than 30 years been celebrated for its peculiar properties in restoring, cleansing, and beautifying the hair, promoting its growth, as well as preventing it falling off or turning grey.—C. & A. OLDRIDGE, 13, Wellington Street, North, seven doors from the Strand. Sold wholesale and retail in bottles at 3*s.* 6*d.*, 6*s.*, and 11*s.*; and by all Chemists and Perfumers. Its use for whiskers and moustache is invaluable.

SIXTY YEARS OF SUCCESS

HAVE PROVED BEYOND QUESTION THAT

ROWLANDS' MACASSAR OIL possesses extraordinary properties for promoting the growth and improving and beautifying the human hair. It prevents hair from falling off or turning grey, strengthens weak hair, cleanses it from scurf and dandriff, and makes it beautifully soft, pliable, and glossy. In the growth of the beard, whiskers, and mustachios, it is unfailing in its stimulative operation. For children it is especially recommended as forming the basis of a beautiful head of hair, while its introduction into the Nursery of Royalty, and the numerous testimonials constantly received of its efficacy, afford the best and surest proofs of its merits.—Price 3*s.* 6*d.* and 7*s.*; Family bottles (equal to four small), 10*s.* 6*d.*; and double that size, 21*s.* — CAUTION. On the wrapper of each bottle are the words, "ROWLANDS' MACASSAR OIL," &c., in white letters, and their signature, "A. ROWLAND & SONS," in red ink.—Sold at 20, Hatton Garden, London, and by Chemists and Perfumers.

CHUBB'S LOCKS, FIREPROOF SAFES, DOOR LATCHES, CASH AND DEED BOXES. Illustrated Priced Lists sent free.—57, St. Paul's Churchyard, London; 28, Lord Street, Liverpool; 16, Market Street, Manchester; and at Wolverhampton.

FRY AND SONS' CHOCOLATES AND COCOAS. —Victoria Chocolate, Bon Bons, Soluble Cocoa, &c., in great variety. These delicious beverages are now sold at very moderate prices, and many of them are highly economical.

FRY'S HOMŒOPATHIC COCOA is an article of unexceptionable quality. FRY'S SOLUBLE COCOA, in Hexagon packets, and FRY'S PEARL COCOA, are strongly recommended.

FRY AND SONS, MANUFACTURERS TO THE QUEEN.

Liebig, the celebrated Chemist, asserts that nitrogen is essential to the healthy action of the bile, and the growth, sustenance, and invigoration of the body. No stronger recommendation of Cocoa and Chocolate can therefore be given than the following statement:—Caffeine and Theine each contain only about 20 per cent., whilst Theobromine (or essence of Cocoa) contains upwards of 35 per cent. of nitrogen.

VINEGAR.—Patronised by her Majesty's Government.

CONDY'S PATENT PURE CONCENTRATED MALT VINEGAR.—Families, by using this delicious Vinegar, insure purity, and effect a saving of 50 per cent. See Report of Dr. Letheby, City Officer of Health; Dr. Hassall of the *Lancet* Commission, and others. Six Quart Sample sent free to any Railway for 3*s.* 6*d.*—Sold by the Trade, in bottles, labelled and capsuled; wholesale, 63, King William Street, London Bridge, E.C.

GLENFIELD PATENT STARCH.—Used in the Royal Laundry, and pronounced by Her Majesty's Laundress to be the finest starch she ever used. When you ask for GLENFIELD PATENT STARCH, see that you get it, as inferior kinds are often substituted.—Sold by all Chandlers, Grocers, &c.

WOTHERSPOON & Co., Glasgow and London.

* THE ROYAL HUNT BOUQUET.

PIESSE AND LUBIN, PERFUMERY FACTORS, 2, New Bond Street, London.—"This exquisite perfume has the fragrance of a garden at evening's close." FRANGIPANNI, the YACHT CLUB NOSEGAY, and the NEWMARKET JOCKEY CLUB SCENT, 2*s.* 6*d.* each, or three bottles in a case, 7*s.*—See to have them with our name, PIESSE & LUBIN, 3, New Bond Street, London. Sold everywhere.

DO YOU WANT LUXURIANT HAIR, WHISKERS, &c.?—COUPELLE'S CRINUTRIAR is guaranteed to produce whiskers, moustachios, eyebrows, &c., in two or three weeks with the utmost certainty, strengthen weak hair, prevent its falling off, check greyness in all its stages, and reproduce the hair in baldness, from whatever cause, price 2*s.* Sold by all chemists in the world; or will be sent post free, on receipt of 24 penny postage stamps, by Miss COUPELLE, 69, Castle Street, Newman Street, Oxford Street, London. A toilet guide sent post free for four penny postage stamps. "It completely restored my hair."—Miss Davis. "My whiskers are now growing freely."—H. Merry, Esq.

TO THE NERVOUS OF BOTH SEXES.—A Retired Clergyman, having been restored to health in a few days, after many years of great nervous suffering, is willing to assist others by sending (free), on receiving a stamped envelope, properly addressed, a copy of the prescription used.—Direct, the Rev. E. DOUGLAS, 18, Holland Street, Brixton, London.

HEALTH WITHOUT PHYSIC.—Nervousness effectually cured by a novel and most successful mode of treatment, discovered in America. The most convincing proof of the efficacy of this wonderful remedy, with other details, will be sent to any address on receipt of one stamp.—Address, Mr. HILL, 27, Alfred Place, Store Street, London, W.C.

ASTHMA.—DR. LOCOCK'S PULMONIC WAFERS give instant relief, and a rapid cure of Asthma, Consumption, Coughs, and all disorders of the breath and lungs. To singers and public speakers, they are invaluable for clearing and strengthening the voice. They have a pleasant taste.—Price 1*s.* 1½*d.*, 2*s.* 9*d.*, and 11*s.* per box. Sold by all druggists.

HOLLOWAY'S OINTMENT AND PILLS.—GLANDULAR DISEASE, KERNELS, DERBYSHIRE NECK.—Affections of the glands of the throat demand instant attention; they indicate seeds of disease in the constitution which, if neglected, will grow, their roots will reach the vital organs, and death be the doom. By HOLLOWAY'S preparations these results are prevented; they check the disease at its onset, or used at a later period render it milder in its progress. If properly employed these remedies will remove both symptom and disease. They expel the virus from the blood, quicken the action of the lymphatics, cleanse the glands, and excite the skin to healthy action. If the disease be hereditary, severe, and incurable, these medicines happily defer the fatal issue.

PAINS IN THE BACK, Gravel, Lumbago, Rheumatism, Gout, Indigestion, Flatulency, Nervousness, Debility, &c.—Dr. DE ROOS' COMPOUND RENAL PILLS have been long established as a safe and efficacious remedy for the above complaints, discharges of any kind, retention of urine, and diseases of the kidneys, bladder and urinary organs generally, which, if neglected, frequently end in stone in the bladder and a lingering death. For depression of spirits, incapacity for society, study or business, confusion, giddiness, drowsiness, sleep without refreshment, fear, nervousness, and insanity itself, when arising from or combined with urinary diseases, they are unequalled. By their salutary action in correcting bile and acidity of the stomach, they prevent the formation of stone, and establish the healthy functions of all these organs.—Price 1*s.* 1½*d.*, 2*s.* 9*d.*, 4*s.* 6*d.*, 11*s.*, and 33*s.* per box, through all Medicine Vendors, or sent free on receipt of the amount in postage stamps, by Dr. DE ROOS, 10, Berners Street, Oxford Street.

IMPORTANT INFORMATION.—Mrs. Brown, 0 Queen Street, Kingsland, was for years severely afflicted with a scorbutic eruption, covering the back of both hands, and spreading up her arms. She was persuaded to try Dr. ROBERTS'S POOR MAN'S FRIEND and PILULÆ ANTISCROPHULÆ by a friend who had a large wound in her leg which baffled her doctor's skill, but was effectually cured by these medicines. She only took one box of the Pills, and used one pot of the Ointment, which effected a cure to the surprise of her friends, who wish it to be made public for the benefit of her suffering fellow creatures. Dr. ROBERTS'S POOR MAN'S FRIEND and PILULÆ ANTISCROPHULÆ have been proved, by 60 years' experience, successful in the cure of eruptions and wounds of every description. Price 1*s.* 1½*d.*; 2*s.* 9*d.*; 4*s.* 6*d.*; 11*s.*; and 22*s.* each.—Sold wholesale by the Proprietors, BEACH & BARNICOTT, at their Dispensary, Bridport, and by the London Houses; and retail by all respectable Medicine Vendors in the United Kingdom and the Colonies.

TO TUTORS, SURGEONS, THE HEADS OF SCHOOLS, &c.—The above can be supplied with Collections for practically Illustrating the Natural Orders, also Physiological and Medical Botany, by FREDK. Y. BROCAS, who has been eight years in the medical profession, and has attended the Lectures of Professors Lindley, Lankester, Henfrey, and Forbes, and the Botanic Gardens in the vicinity of the Metropolis. Collections named, arranged, and mounted, and desiderata supplied by FREDK. Y. BROCAS, Botanist, 85, St. Martin's Lane, London, W.C.

THE HANDBOOK OF BRITISH FERNS. By THOMAS MOORE, F.L.S., F.H.S., &c. THIRD EDITION, containing many new illustrations, and an account of all known varieties of the British Ferns. Price 5*s.*

London: GROOMBRIDGE & SONS, 5, Paternoster Row.

This day is published, price 2*s.* 6*d.*,

FOLIA ORCHIDACEA, Part VIII. Containing Stelis, Oberonia, Alvisia, Brachionidium, Restrepia, and part of Pleurothallis; and also the views of M. Prillieux concerning the Fruit of the order.

Parts I. to VII., price 2*s.* 6*d.* each, may still be had.

JAMES MATTHEWS, 5, Upper Wellington St., Covent Garden.

In consequence of the new postal arrangements, parties in the country who desire it can have two copies sent by post for one stamp, five for two stamps, or eleven for four, in addition to the cost of the numbers.

Price 3*d.* each, or 5*s.* for 25 copies for distribution among Cottage Tenantry, delivered anywhere in London, on a Post-office Order being sent to the Publisher, JAMES MATTHEWS, at the Office of the *Gardeners' Chronicle*.

THE COTTAGER'S CALENDAR OF GARDEN OPERATIONS. By Sir JOSEPH PAXTON, M.P. Reprinted from the GARDENERS' CHRONICLE. Upwards of 126,000 have already been sold.

J. MATTHEWS, 5, Upper Wellington Street, Covent Garden, London, W.C.

Third Edition, considerably enlarged, price 5*s.* 6*d.*, free by post, 5*s.* 10*d.*,

RURAL CHEMISTRY. By EDWARD SOLLY, F.R.S., F.L.S., F.G.S. Honorary Member of the Royal Agricultural Society of England, Professor of Chemistry to the Horticultural Society of London, Lecturer on Chemistry in the Hon. E. I. Co.'s Military Seminary at Addiscombe, &c., &c.

J. MATTHEWS, 5, Upper Wellington St., Covent Garden, London, W.C.

Price 1*s.* 6*d.*, free by post, 1*s.* 7*d.*

LABELS FOR THE HERBARIUM, CONSISTING OF THE NAMES OF THE CLASSES, ALLIANCES, ORDERS, AND SUB-ORDERS, OF PROFESSOR LINDLEY'S "VEGETABLE KINGDOM." So printed in large type, that they can be cut out and pasted into THE HERBARIUM.

J. MATTHEWS, 5, Upper Wellington Street, Covent Garden, London, W.C.

DRAINAGE OF LAND—TABLES OF COST FOR THE POCKET. Price 1*s.* 6*d.*, in stamps for post. By J. BAILEY DENTON, Engineer to the General Land Drainage and Improvement Company, and Author of "Land Drainage and Drainage Systems."

And will shortly be published by the same writer, price 2*s.* 6*d.*

HINXWORTH DRAINAGE. — The Experiments Tabulated, showing the relative discharge from uniform Parallel Drainage in Clays, and from Occasional Drainage in Mixed Soils, with a Plan of the whole System adopted and a Statement of Cost.

METCHIM, Parliament Street, Westminster, S. W.

This day, the Second and Concluding Part, 8vo, 15*s.*, of The MANUAL OF GEOGRAPHICAL SCIENCE, containing—

ANCIENT GEOGRAPHY, by the Rev. W. L. BEVAN, M.A., Vicar of Hay, Brecon.

MARITIME DISCOVERY AND MODERN GEOGRAPHY, by the Rev. C. G. NICOLAY, F.R.G.S.

With Copious Index.

The First Part, 8vo, 10*s.* 6*d.*, contains—

MATHEMATICAL GEOGRAPHY, by M. O'BRIEN, M.A.
PHYSICAL GEOGRAPHY, by D. T. ANSTED, M.A., F.R.S.
CHARTOGRAPHY, by J. R. JACKSON, F.R.S.
GEOGRAPHICAL TERMINOLOGY, by Rev. C. G. NICOLAY.

London: JOHN W. PARKER & SON, West Strand.

ELECTRICAL INFLUENCE IN HEALTH AND DISEASE.

Just published, price 1*s.*, free by post for thirteen Stamps,

SECOND LIFE: OR ELECTRICAL NERVOUS FORCE; a MEDICAL WORK intended for the special perusal of all who are suffering from the various forms of NERVOUS and PHYSICAL DEBILITY and the distressing ulterior consequences to which they lead; with practical Observations on the great Curative power of ELECTRO-GALVANISM in the Treatment of these disorders, by infusing tone and vigour in constitutions relaxed or debilitated from various enervating causes. Illustrated with Cases compiled from the Note-Book of a Registered Medical Practitioner of twenty years' standing.

MANN, 39, Cornhill, and all Booksellers.

TO BE LET, BRISTOL NURSERY GROUNDS, Kemp Town, Brighton. These Gardens are now to Let for occupation with immediate possession. — Any person desirous of treating for the same may obtain particulars and permission to view the grounds on application to Mr. R. W. LUCAS, 20, Great Marlborough Street, London, W.; and of Mr. A. CHANDLER, Horticultural Valuer, 28, Priory Road, Wandsworth Road, S.

SOMERSETSHIRE, NEAR FROME.

To FARMERS, GRAZIERS, AND MANUFACTURERS.

TO BE LET, by Tender, and entered upon at Michaelmas next, the LONG HOUSE FARM, in the parish of Orchardleigh, comprising 160 acres of excellent Pasture Land, 40 acres of which is Water Meadow, watered by the rivers Frome and Mells. The farm is suitable for either Dairy or Grazing purposes. There is a Farm House and the usual buildings, and also spacious premises formerly used as a cloth manufactory, having both Steam and Water Power, and suitable for a Paper Manufactory, or any other purpose where an abundant supply of excellent spring and river water would be desirable. This would be an excellent opportunity for a manufacturer fond of farming, or the Factory might be sub-let, or it could be let without the Farm. Rates and taxes very low; tithe free, and land tax redeemed.—Also THE MURTRY BROW FARM, in the parish of Buckland Dinham, comprising nearly 300 acres of land, the larger portion of which is arable and produces excellent crops of corn. This Farm is about to be thoroughly drained and modernised, and a suitable Dwelling House and covered Homestead on the best principle will be immediately erected. *** No tenant will be accepted who has not at the least an available capital of 10*l.* per acre; but tenants of enterprise and experience will meet with liberal encouragement.—For further particulars and to view, apply to WM. P. AYRES, Orchardleigh Park, Frome.

NURSERY GROUND.

TO BE LET, WHITTINGTON NURSERY, Upper Holloway, to be entered upon immediately.—For particulars apply to J. F. MARSON, Esq., Small Pox Hospital; or to Mr. BENNEY, Nurseryman, Stratford, Essex.

WESTBOURNE NURSERY, DENBIGH ROAD, BAYSWATER.

TO BE SOLD, by private contract (owing to the death of the late Mr. Wm. Gill), this valuable property, with nearly 90 years' unexpired lease, containing 6 Greenhouses, fitted with hot-water apparatus, and 40 lights of brick fitting; the whole being in good working order, doing a good jobbing business. May now be viewed on application, and taken in the autumn, when the present Stock is sold off, at a reduced price. —For further particulars to view, &c., apply to Mrs. WM. GILL (sole executrix to the late proprietor), on the premises.

TO SEEDSMEN, FRUITERERS, AND GREENGROCERS.

TO BE SOLD, an old-established Business in the above line, in one of the leading thoroughfares in the City of Bath. To persons with small capital the above offers an excellent opportunity, as half the rent is made by permanent lodger. The Advertiser having other engagements, price, including Produce, Stock, Fixtures, &c., 50*l.*—D. E. F., Post Office, Bath.

GREENHOUSE FOR SALE.

J. SMITH begs to solicit attention to a well built lean-to GREENHOUSE, which can be seen erected on his premises, Creek Cottage, King Street, Hammersmith. Constructed with the best yellow Deal. Large size glass. Size of House 21 feet long, by 12 ft. 4 in. in width.—Price 30*l.*

Sales by Auction.

ORCHIDS AND FOLIAGE PLANTS, FERNS, CONIFER SEEDS, ETC.

MR. J. C. STEVENS will Sell by Auction at his Great Room, 38, King Street, Covent Garden, on TUESDAY, May 17, at half-past 12 precisely, a collection of ORCHIDS, FOLIAGE and VARIEGATED PLANTS, and FERNS, comprising numerous valuable species; a small importation of Plants and Seeds from Mexico, and a consignment of Seeds from India, including Cedrus Deodara, Pinus excelsa, Picea Pindrow.—May be viewed on the morning of sale and Catalogues had.

CAMBERWELL.—8000 BEDDING PLANTS.

MESSRS. PROTHEROE AND MORRIS are directed by Mr. Isaac Steward to Sell by Auction, on the Premises, Beehive Nursery, Picton Street, George Street, Camberwell, on MONDAY, May 16, at 12 o'Clock, about 8000 BEDDING and other GREENHOUSE PLANTS, several Store Pots, Lilium lancifolium of sorts, an American Aloe, &c.—May be viewed prior to the Sale. Catalogues had on the premises, of the principal Seedsmen, and of the Auctioneers, American Nursery, Leytonstone, Essex.

TULIPS.

MESSRS PROTHEROE AND MORRIS have received instructions to submit to public competition, by Auction, without reserve, on TUESDAY, May 17, at 2 o'Clock, on the Premises, Rose Lodge, Mitcham, Surrey, the portion of the collection of TULIPS of Mr. Henry Goldham. Many new varieties (Seedlings) will be offered at this Sale, which have not hitherto been parted with, besides all those kinds which have previously been sent out from this collection.—May be viewed three days prior to the Sale. Catalogues may be had on the premises, of the principal Seedsmen in London, and of the Auctioneers, American Nursery, Leytonstone, Essex.

10,000 BEDDING AND OTHER GREENHOUSE PLANTS.

MESSRS. PROTHEROE AND MORRIS will submit to public competition by Auction, on the Premises, Mile End Nursery, Bow Road, Middlesex, near the Railway Station, on WEDNESDAY, May 18, at 12 o'Clock, about 10,000 BEDDING and other GREENHOUSE PLANTS, including the usual varieties; also Hybrid, Perpetual, China, and other Roses in pots, Dahlias, Tropæolum, Cobæa, Eccremocarpus, Maurandya, Lophospermum, &c.—May be viewed three days prior to the Sale. Catalogues may be had on the premises, of the principal Seedsmen in London, and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will Sell by Auction at the Mart, on FRIDAY, May 20, at 12 o'Clock, a choice assortment of GREENHOUSE PLANTS, comprising Scarlet and other Geraniums, Ericas, Epacris, &c., the newest varieties of Fuchsias, Verbenas, and Dahlias, with a large assortment of Ornamental Plants for Bedding.—On view the morning of Sale. Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

CHOICE TULIPS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. J. Hepworth to Sell by Auction on the Premises, Hendrie's Gardens, Lea Bridge Road, adjoining the Railway Station, on MONDAY, May 23, at 3 o'Clock, a Choice Bed of TULIPS, consisting of 144 rows of the finest strains of named varieties, and 20 rows of named Breeders, all in excellent condition and nearly every root blooming.—May be viewed prior to the Sale. Catalogues had of Mr. J. HEPWORTH, and of the Auctioneers, American Nursery, Leytonstone, Essex.

HOMERTON NURSERY.

To GENTLEMEN, NURSERYMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. J. Fry to submit to public competition by Auction, on the premises, Homerton Nursery, High Street, Homerton, within 5 minutes' walk of the Hackney Railway station, on TUESDAY, May 24, at 12 o'Clock, about 10,000 GREENHOUSE PLANTS, consisting of fine show and Scarlet Geraniums of sorts, Azalea indica, Ericas, Metrosiderons, Diosma, Cacti, Hydrangea, Calla, Roses in pots, Heliotropium, Verbenas, Fuchsias, Petunias, Calceolarias, Lobelias, Double Wallflowers, Intermediate Stocks, Lilium lancifolium and eximium, Tropæolum, Thunbergia, Lophospermum, Ferns, &c.—May be viewed three days prior to the Sale. Catalogues may be had on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

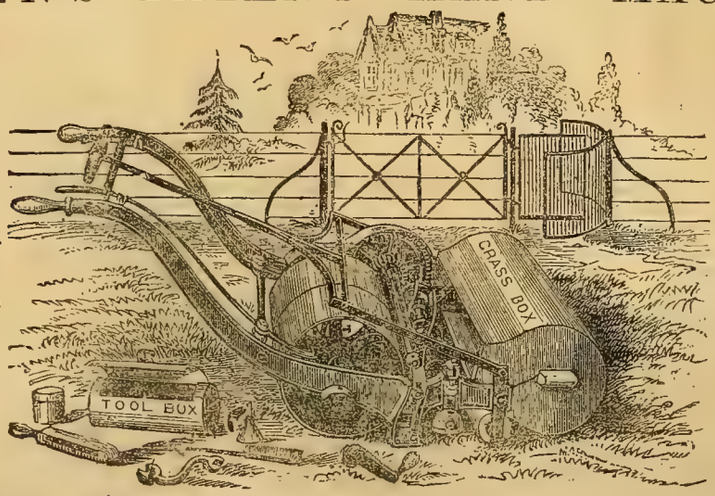
STOKE NEWINGTON.

To NOBLEMEN, GENTLEMEN, NURSERYMEN, AND AMATEURS.

MESSRS. PROTHEROE AND MORRIS are instructed to Sell by Auction, at Messrs. Brown's Nursery, Albion Road, Stoke Newington, on THURSDAY, May 26, at 12 o'Clock, the CHOICE STOCK of GREENHOUSE and other PLANTS of a gentleman who is declining their further cultivation, consisting of fine specimen Camellias, Indian Azaleas, Gardenias, Scarlet and other Rhododendrons, Barchellia, Stephanotis, Daphnes, Cytisus, Acacias, Orange Trees, &c; together with 5000 Bedding Plants, consisting of Scarlet and other Geraniums, Fuchsias, Verbenas, Petunias, Dahlias, Climbers, &c.—May be viewed, and Catalogues had on the premises; and of the Auctioneers, American Nursery, Leytonstone, Essex.

GREEN'S PATENT GRASS CUTTING, COLLECTING, & ROLLING MACHINES FOR 1859.

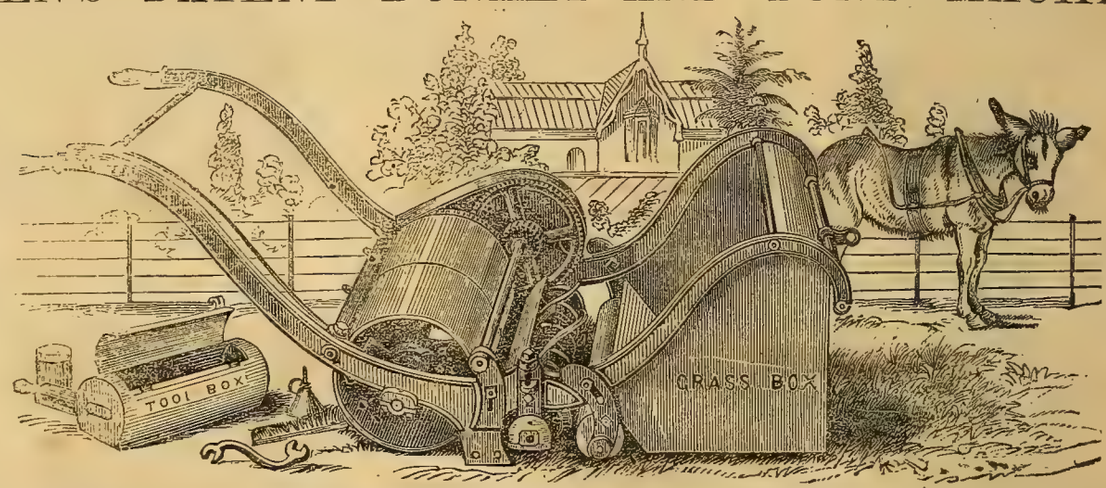
GREEN'S PATENT HAND MACHINE.



- ST OF PRICES.

To cut 14 inches, 6*l.*; 16 in. 6*l.* 10*s.*; 18 in. 7*l.*—or one person. To cut 20 inches 7*l.* 10*s.*; 22 in. 8*l.*; 24 in. 8*l.* 10*s.*—for two persons. If with Box and Tools for sharpening and keeping the Machine in order, 5*s.* extra; with Guard for preventing accidents and keeping the wheels clean, 5*s.* extra.

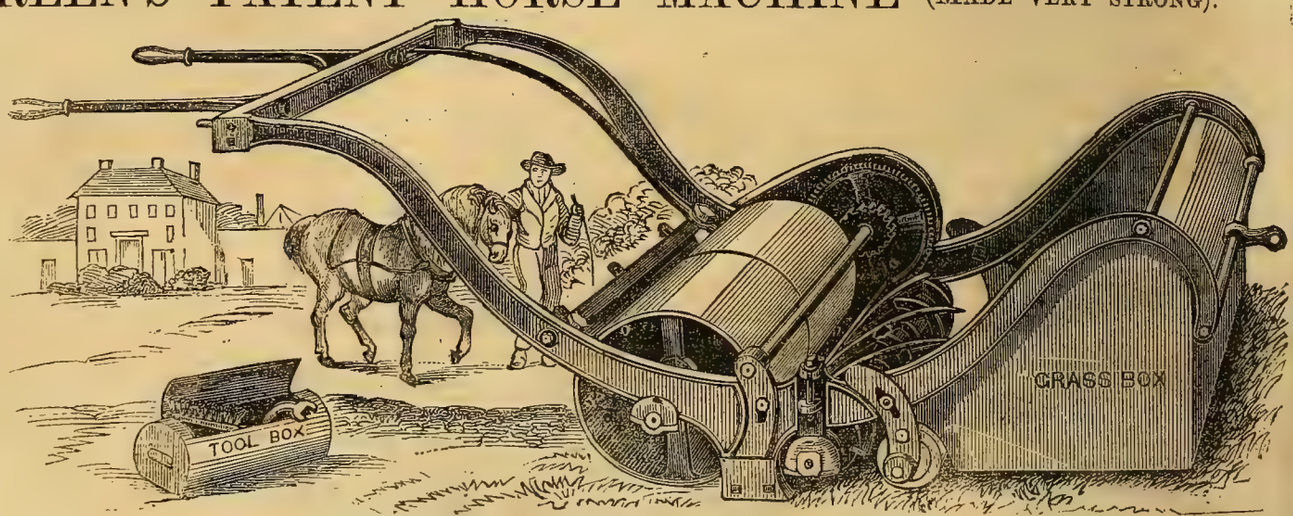
GREEN'S PATENT DONKEY AND PONY MACHINE,



Suitable for a Donkey, to cut 24 inches, 10*l.*; 26 in., 11*l.* For a Pony, 30 in., 15*l.*; box, tools, &c., 6*s.* 6*d.* extra. Leather traces, stretcher, &c., suitable to attach to common harness or chain traces, 7*s.* 6*d.* Leather boots, suitable for donkey's feet, 16*s.*; do. for a pony, 20*s.* per set of four. Guard for covering wheels, 5*s.* extra.

GREEN'S PATENT HORSE MACHINE (Made very strong).

To cut 30 ins., 18*l.*; 36 ins., 21*l.*; 42 ins., 24*l.*; 48 ins., 27*l.* Box of tools, 7*s.* 6*d.* extra, Leather traces, stretcher, &c., 10*s.* Boots per set of four for Horses' feet, to prevent injury to lawns, 24*s* Guard for wheels, 5*s.* ex. —The above are Net cash prices, delivered at any of the principal Rlway. Stations in England.



TRIAL at the London Horticultural Society's Gardens, Chiswick, June 5, 1857. Four competitors.

First trial on level ground, second do. on undulated, third do. on intricate places around trees, &c., when GREEN'S PATENT was unanimously declared to be the best in each trial by Colonel Challoner, Dr. Lindley, and G. M'Ewen, Esq., the appointed Judges.

See the *Gardeners' Chronicle* of May 22, 1858, p. 423, under the heading of "Garden Memoranda."

"London Horticultural Gardens, Chiswick.—The Grass in the Arboretum and elsewhere is in excellent condition; it is kept in order by means of one of GREEN'S 2-feet Mowing Machines, which does its work very satisfactorily, and, compared with the scythe, effects a saving of at least one-half."

Extract from London *Times* of June 8, and *Gardeners' Chronicle* of June 12, 1858.

"Trial of Mowing Machines.—A considerable number of various sizes having been brought to the ground it was agreed that the trial should take place between One Hand Machine of each exhibitor, as nearly as possible of uniform size and worked by themselves, or their men. The ground to be worked was determined by lot, the pieces having been previously selected of as uniform quality as possible. After trials on level ground and round trees, the Judges, Colonel Challoner and Mr. Edward Easton, declared GREEN'S Patent to be the best.

(Signed) "C. B. Challoner, Edward Easton, Judges."

Thos. Green respectfully informs the Nobility, Gentry, Gardeners, Amateurs, and others, that upwards of Six Hundred of these Machines were sold in 1857, and to show the increasing demand, above Nine Hundred were sold last season—they have proven to be the best in all cases of competition, are entirely remodelled, and all the little defects pointed out by the Judges last Year, are now rectified. The Patentee now considers the Machines as near perfection as possible. Although the Machines have been so much improved, at a great additional cost, no extra charge will be made, excepting for a neat Guard, which is placed over the wheels to keep them clean, and to prevent breakage or accidents, which will be 5*s.* extra to parties requiring them.

☞ The Machines are warranted to give satisfaction, or may be at once returned by the party paying the carriage back to Leeds. The Patentee has spared neither time nor expense in producing the best and cheapest Mowing, Collecting, and Rolling Machines ever brought before the public. Hundreds of Testimonials (unsolicited) may be seen, and references given with regard to the superiority of the machines, by applying to the Patentee,

T. GREEN, Smithfield Iron Works, Leeds; or, No. 2, Victoria Street, bottom of Holborn, London,

To either of which places all Cheques and Post-office Orders may be made payable.

☞ *T. G. will be glad to receive orders for Machines as early as possible, as a great difficulty was found last season in supplying the number required.*

N.B. Parties desirous of having their Machines repaired may forward them to either the London or Leeds establishment, where they will have the best attention.

Printed by William Bradbury, of 13, Upper Woburn Place, and Frederick Mullett Evans, of No. 20, Queen's Road West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and published by them at the Office, No. 5, Upper Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—Saturday, May 14, 1859.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 21.—1859.] SATURDAY, MAY 21. {Price Fivepence. STAMPED EDITION, 6d.

INDEX.

Acarus, church	445 c	Gardening, spring	447 c
Agriculture, Theory of	451 a	Gentlemen, loquacious	445 b
— Belgian	452 a	Glass dealing	445 b
— steam guideway	452 c	Landlord and tenant, Hobbs on	452 c
Agri. Soc. of England	452 b	Manures, artificial	449 c
Books noticed	446 c	— Liebig on	451 c
Butter, taste in	450 b	Morels	445 c
Charcoal, to make	443 c	Potatoes, how to get large	445 c
Citrus wood	446 c	Rainfall in Cheshire	445 b
Chreden, noticed	447 c	Rifles	448 c
Crystal Palace show	446 a	Sorgho feeding	453 a
Dining, Handbook of	447 a	Temperature, low night	444 b
Evergreens, puddle for roots of	444 b	Tree roots, puddle for	444 b
Eyles's (Mr.) appointment	444 b	Turnips and manure	450 b
Farmers' Club, London	452 b	Vines	445 b
Flax, Flanders	452 a	Waltonian cases	445 a
Flowers, spring	447 c	Watercresses	445 a

ROYAL BOTANIC SOCIETY, REGENT'S PARK.—The FIRST EXHIBITION this Season of PLANTS and FLOWERS will take place on WEDNESDAY next, May 25. Tickets to be obtained at the Gardens only by orders from Fellows or Members of the Society, price 5s. each, or on the day of Exhibition, 7s. 6d. each. The Exhibition of AMERICAN PLANTS will take place in June.

MANCHESTER BOTANICAL AND HORTICULTURAL SOCIETY.—The FIRST EXHIBITION of FRUIT and FLOWERS of the Season will be held at the Gardens, Old Trafford, on WEDNESDAY, May 25. The Exhibition will be open to the Public from 2 to 4 P.M. on payment of 2s. 6d. each, and from 4 to 7 P.M. on payment of 1s. each person. By the kind permission of Colonel Harding, the BAND of the 22d Regiment will be in attendance from 2 to 6 o'clock.

Tickets of admission may be had on application to the Secretary, or by payment at the Gates. By order,
13, Corporation Street, May 21. H. WHITWORTH, Sec.
*** A limited number of Forfeited SHARES on Sale.

GRAND YORKSHIRE GALA—YORK FLORAL FETE—PRIZES 150*l.*, 14th and 15th JUNE, 1859.

ENTRIES will close on SATURDAY, the 4th of JUNE next. Schedules, Regulations, and Forms of Entry may be had on application to JNO. WILSON, Assistant Secretary.
Committee Room, 13, New Street, Coney Street. York.

TOWCESTER FLORAL AND HORTICULTURAL SOCIETY.

Patrons:—
His Grace the Duke of GRAFTON.
The Right Honourable the Earl of EUSTON.
The Right Honourable the Earl of POMFRET.
The Right Honourable the Lord SOUTHAMPTON.
RAINALD KNIGHTLEY, Esq., M.P.
Colonel HENRY CARTWRIGHT, M.P.

The ANNUAL EXHIBITION will be held on THURSDAY, September 8. Competition will not be restricted to the county.—Schedules of Prizes can be obtained of the Secretary,
SAMUEL COOPER TITE, Towcester.

BRIGHTON AND SUSSEX FLORICULTURAL AND HORTICULTURAL SOCIETY'S EXHIBITIONS for 1859 are fixed to be held on the following days:—Summer Show, WEDNESDAY and THURSDAY, June 22 and 23; Autumn Show, WEDNESDAY and THURSDAY, Sept. 14 and 15; on the same grand scale as in former years. Schedules are now ready, and may be obtained of the Secretary, 96, St. James's Street; or of E. SPARY, Queen's Graperies, General Superintendent of Exhibition.

THOS. ATTREE, Esq., Chairman of Committee. | EDWARD CARPENTER, Secretary.

APIARIAN SOCIETY.—The first Public Meeting of this Society will, by permission of the Council, be held at the rooms of the Entomological Society, at 12, Bedford Row, on TUESDAY evening, at 8 o'clock.
W. B. TEGETMEIER, Secretary.

NOTICE.

JOHN WATERER'S EXHIBITION of RHODODENDRONS will be displayed as usual throughout the month of JUNE at the Royal Botanic Gardens, Regent's Park, London.—The American Nursery, Bagshot, Surrey.

GRAND DISPLAY OF HARDY SCARLET RHODODENDRON AZALEAS, ETC.

JOHN WATERER the pleasure to announce his collection of the above Plants is now in bloom and will continue in great beauty throughout the month of June. The Nursery is near the Sunningdale Station of the South-Western Railway, Reading Branch.
The American Nursery, Bagshot, Surrey.

ONE OF THE LARGEST COLLECTIONS OF AZALEAS, GERANIUMS, both French, Show, and Fancies, is now in FLOWER, and may be seen, gratis, any day, Sunday excepted, at GAINES's Nursery, Surrey Lane, Battersea.

EXHIBITION F AMERICAN PLANTS.

WATERER AN GODFREY beg to announce the AMERICAN F NTS at their Nursery will be in the greatest beauty on and er the 25th inst.
The Nursery is readily reached by train from Waterloo to Woking in 40 minutes. ital conveyances may be depended on at Woking station.— Hill Nursery, Woking, Surrey.

ORCHID GROW may obtain good plants of the following first-cl CHIDS at R. WARNER'S, Broomfield, Essex, viz., Erid tine superbum, crispum, cornutum, Foxbrush, Larpenta mum, roseum superbum, suavissimum, Schroederi. vir perbum, &c.

PLANTS FOR T FLOWER GARDEN, 100,000.—100 strong, well hardened plants, composed of the following:—Yellow, crimson, and orange Calceolarias, Scarlet Geraniums, Antirrhinums, Cuphea, Heliotropes, Pentstemons, Phloxes, Verbenas, Salvias, Senecio, Dahlias, &c., all properly named, basket and packing included, for 12s. 6d.
New Fuchsias, of last season, at 6s. per dozen; new Verbenas, of ditto, at 4s. per dozen.
HENRY MAY, The Hope Nurseries, near Bedale, Yorkshire.

SKIRVING'S SWEDE—SUTTON'S SELECTED STOCK.

SUTTON AND SONS have a choice stock of SKIRVING'S SWEDE SEED, growth of 1858, which they can strongly recommend. Price 9d. per lb., or cheaper by the bushel.—Royal Berks Seed Establishment, Reading.

THE SWEDE THAT NEVER MILDEWS.

SUTTON'S CHAMPION.—See *Gardeners' Chronicle*, May 14, third page. Price 1s. per lb., or cheaper by the bushel. Carriage free to all parts. Payment by cheque, or by Post-office orders payable to SUTTON & SONS, Reading, Berks.

NEW HARDY WHITE SWEDE.—This Swede is hardier than any other kind, grows to a large size, is adapted for sowing upon poor land, is not affected by frost, and keeps good in the ground or in store till the end of May. New and genuine Seed of this excellent Swede, price 1s. per lb. (carriage free for orders of 30 lbs. and upwards) may be had of RAYNBIRD & HARVEY, Seedsmen, Basingstoke; and 89, Seed Market, Mark Lane, London, E.C.

NEW ZEALAND RUNNER BEAN.
Price 2s. per quart.
JAS. CARTER & Co., Seedsmen, 238, High Holborn, London, W.C.

H. AND R. STIRZAKER have still to offer the finest DRUMHEAD CATTLE CABBAGE PLANTS at 2s.; EARLY, of sorts, 3s. 6d.; CURLED SAVOY, 4s.; CAULIFLOWER, strong, 25s. per 1000.—Lancaster Nurseries.

KEMP'S INCOMPARABLE EARLY CABBAGE.—This is quite a distinct variety, and superior to any other known kind, of delicious flavour, dwarf habit, extra early, attains a good size, will not run to seed, and every plant warranted to Cabbage. Seed may be had in sealed packets for 13 postage stamps, post free, at EDMUND P. DIXON'S, 57, Queen Street, Hull.

SORGHUM, OR HOLCUS SACCHARATUS
(CHINESE SUGAR CANE GRASS).

SUTTON AND SONS, Importers of this SEED, can supply it on liberal terms, according to quantity required. Royal Berkshire Seed Establishment, Reading.

HOLCUS SACCHARATUS, OR CHINA SUGAR-CANE GRASS.—Seed of this lately introduced Fodder plant can be supplied by NUTTING & SONS in any quantity. Price on application.—Seed Warehouse, 60, Barbican, London.

HOLCUS SACCHARATUS, or North China Sugar-Cane.—Pamphlet, "A Visit and a Plant;" the only English authority on the Cultivation of the above. Post free 6d. Prices of Seed on application. Samples 6d. Four varieties of Holcus remitted free by post on receipt of 10s.
JOHN W. CLARKE, Whittlesea, Cambridgeshire.

PAMPAS GRASS (GYNERIUM ARGENTEUM).—The beauty of this extraordinary plant has this season been fully appreciated. It can be supplied by the dozen, hundred, or thousand, by CHARLES NOBLE, Bagshot, Surrey.

JOHN CULVERWELL, Taunton, begs to call the attention of Agriculturists to his superior selection of GRASS SEEDS, which for PURITY, change of SOIL, and CLIMATE, will bear comparison with any house in the kingdom. Prices, terms, and samples forwarded on application.

NEW CHRYSANTHEMUMS AND DAHLIAS.

JOHN SALTER is now sending out his splendid Seedlings and other new CHRYSANTHEMUMS, as well as those of his unrivalled general collection, which is the largest in Europe; also several fine new DAHLIAS, English and Foreign.—Versailles Nursery, Hammersmith Turnpike, W.

PLANTS IN FLOWER.

F. AND A. SMITH have now in bloom Acacia, Cactus (fine), Cytisus; Erica ventricosa coccinea minor, v. superbiens, v. breviflora, E. intermedia, E. Cavendishi, E. hybrida, E. perspicua nana; Fuchsias, Calceolarias, Heliotrope, Hydrangea, Geraniums, Fairy Roses, &c.
The above are healthy, strong, and well-grown plants, prepared for sending away. Prices on application.
Dulwich, Surrey, S.

CLIMBING PLANTS.

F. AND A. SMITH have now ready strong plants of COBÆA SCANDENS, MAURANDYAS, blue, white, and rose; LOPHOSPERMUM, ECCREMOCARPUS, and TROPÆOLUMS, in large quantities. Prices on application.
Dulwich, Surrey.

AMBROISE VERSCHAFFELT, NURSERYMAN, Ghent (Belgium), will now send out the following NEW PLANTS:—

	s.	d.
BEGONIA LEOPOLDII, one of the finest Begonias yet sent out	8	0
TYDÆA PRINCESS TROUBETZKOY (three splendid hybrids; the set)	16	0
,, GRANDIS		
,, SANGUINEA		
TORENIA PULCHERRIMA	2	6
CLEMATIS SOPHIA FLORE PLENO	8	0
LYCHNIS HAAGEANA	4	0

PILOGYNE SUAVIS, BRYONIA SCABRA (THUNBERG).

W. THOMPSON, SEEDSMAN, Tavern Street, Ipswich, begs to offer the above plant as an interesting, novel, and desirable summer Climber. Its rapid growth, neat dark green angular foliage, and numerous clusters of small whitish sweet-scented flowers, render it well suited for trellis-work, pillars, or festooning, for which purpose it is much used in Germany. It succeeds well in common soil, and with proper training will attain the height of 10 or 12 feet or more. Price 1s. per plant; post free for 1s. 6d.

ORANGE, LEMON, AND SHADDOCK TREES, 100 full of Buds, Bloom, and some with very large Fruit, 2s. 6d., 3s. 6d., 7s. 6d., and 10s. 6d. each. CAMELLIAS and AZALEAS, 18s., 21s., and 24s. per doz. Standard FUCHSIAS, upwards of 100 plants from 4 to 7 feet high, with large bushy heads, choice varieties, 2s. 6d., 3s. 6d., and 5s. each. A large collection of FERNS and every other kind of greenhouse plants.—ROBERT GREEN, 154, Kingsland Road, 55 doors from Shoreditch Church.

HOLLYHOCKS.

A. PAUL AND SON have still a large Stock of HOLLYHOCKS, strong healthy plants that will bloom this autumn at the following rates:—
MIXED SEEDLINGS from fine named sorts, 25s. per 100.
BLOOMED SEEDLINGS, in separate colours, 30s. to 50s. per 100.
NAMED SORTS, border flowers, 9s. to 18s. per doz.
" show flowers, 24s. to 42s. per doz.
HOLLYHOCK SEED, 1s. to 5s. per packet, free by post.
Nurseries, Cheshunt, Herts.

CHOICE ROSES IN POTS.

BIRCHAM AND WARD having a large Stock of the Newest and Best ROSES in fine condition, are enabled to supply them at very reduced prices.
See CATALOGUE, which may be had on application.
Carriage paid to London and Peterborough.
Hedenham Rosary, Bungay, Suffolk.—May 21.

NEW ROSE HYBRID PERPETUAL EVÊQUE DE NÎMES.

BENJAMIN R. CANT has much pleasure in offering the above most beautiful Rose; it is quite a gem and ought to be in every good collection. Colour deep vivid crimson, of exquisite shape; the petals are disposed in the form of a rosette, which gives it a distinct and unique appearance; flower medium size, foliage and habit of growth excellent. Fine plants in pots are now ready at 3s. 6d. each, with the usual discount to the trade.
St. John's Street Nursery, Colchester.

CHEAP AND GOOD.—A very large quantity of BEDDING PLANTS for Sale in great variety at low prices, at GAINES's Nursery, Surrey Lane, Battersea.

THOMAS WILD has only a few packets of his PRIMULA SEED left, at 2s. 6d. per packet.
The Primulary, Ipswich.

TROPÆOLUM CANARIENSE.

CHARLES ALEXANDER, SEEDSMAN, Edinburgh, offers New Seed of the above at 20s. per lb., and 1s. 6d. per ounce.

GOLDEN CHAIN GERANIUMS.

WILLIAM HUSSEY begs to offer the above at 4s. per dozen or 30s. per 100. Also several thousand Seedling HOLLYHOCKS, raised from a fine named Collection, at 2s. per dozen, or 12s. per 100.—Horticultural Gardens, Norwich.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY LIMITED supply every requisite for the Farm and the Garden.
Registered Offices, Union Road, Plymouth.

FERN CATALOGUE.

ROBERT SIM'S NEW DESCRIPTIVE AND PRICED CATALOGUE, No. 6 (62 pages) of his COLLECTION of BRITISH AND EXOTIC FERNS, can be had, post free, for 8 stamps. Gratis to all previous purchasers of Ferns.
Nursery, Foot's Cray, Kent, S.E.

WILLIAM BARNES begs to inform his friends and patrons that his new PRICED and DESCRIPTIVE CATALOGUE is now ready, and can be had post free upon application. It contains the finest selections of Indian Azaleas, Cinerarias, Calceolarias, Verbenas, Fuchsias, Hollyhocks, Liliums, Phloxes, Roses, Geraniums, Chrysanthemums, Ferns, Stove and Greenhouse plants, as well as a very large assortment of choice miscellaneous plants.
Camden Nursery, Camberwell South.

UNRIVALLED SHRUBBY CALCEOLARIAS.

J. COLE has on hand some superb varieties for Bedding and Pot culture, strong bushy plants, at 9s., 12s., 15s., and 20s. per dozen; also some strong unbloomed Seedling Herbaceous CALCEOLARIAS, without pots, at 3s. per dozen.
LOBELIA SPECIOSA, strong plants, without pots, 2s. 6d. per dozen. The above for cash only.
Keyfield Nursery, St. Albans, Herts.

FIG TREES WANTED, VIZ. 1 WHITE MARSEILLES | 1 BROWN TURKEY
Good established plants, 6 feet high, fit for training against back wall of a small conservatory.—Address price and particulars, W. F., Office of the *Gardeners' Chronicle*.

100,000 BEDDING PLANTS, the cheapest place in England. CATALOGUE sent for one stamp.—J. PYLE, St. John's Nursery, Upper Holloway, London.

BEDDING PLANTS.

BUTLER AND MCCULLOCH'S LIST of the above, forwarded free by post, contains a selection of the most suitable PLANTS FOR TOWN GARDENING, together with Hints on their Culture, embodying the experience of Messrs. Broome, of the Temple Gardens; Wyness, Royal Gardens, Buckingham Palace; and Morgan, the Gardens, Lincoln's Inn Fields.—Covent Garden Market.

BEDDING PLANTS, 20s. per hundred. HARDY CONIFER & FRUIT TREES in pots, 30s. p. doz. HERBACEOUS PLANTS, 20s. per 100.
SHRUBS, in pots, 12s. per dozen.
MANGEL WURZEL SEEDS, 6d. per lb.
SWEDE and other TURNIP SEEDS, 6d. per lb., saved from large bulbs, and of the very best quality.
CATALOGUES by inclosing one stamp to MARTIN & SONS, East Riding of Yorkshire Nursery and Seed Establishments, Cottingham (A.D. 1788), and Junction Street, near Monument Bridge, Hull.

CHEAP BEDDING PLANTS, 2s. 6d. per dozen.—Apply for Catalogues, enclosing two stamps, to J. SCOTT, Merriott Nurseries, Crewkerne, Somerset.
The CATALOGUE comprises everything suitable for Flower Garden decoration, and full descriptions of J. S.'s unrivalled collection of new DOUBLE PETUNIAS, now ready for delivery, at 6s., 9s., and 12s. per dozen. Fine new single sorts, 2s. 6d. to 3s. 6d. per dozen; Magna coccinea, the most splendid of all Bedding Petunias, 5 inches across, beautiful light crimson, 3s. 6d. per dozen.
LEPTODACTYLON CALIFORNICUM, [illegible] and PHLOX CRITERION, two lovely Bedding [illegible]

GARDENERS' CHRONICLE NEWSPAPER DIGEST MONDAY PENNY

Mr. Barnett
Vaenor Park

NEW SEEDLING AZALEA INDICAS.

Blanc de Neige	Triomphe de Gand
Pelargoniflora nova	Vicomte de Nieuport
Prince Impérial	Rosæflora plena
Reine des Doubles	

JEAN VERSCHAFFELT, Ghent, Belgium, begs respectfully to announce that he is now prepared to send out his seven new Azalea indicas as above, in fine strong plants full in bloom. The price of the set is 3*l*. Early orders are requested, as they will be sent in strict rotation.

The description of the above may be had free on application to JEAN VERSCHAFFELT. Plants will be immediately forwarded after orders are received. All orders to be directed to JEAN VERSCHAFFELT, Nurseryman, Ghent, Belgium.

BEDDING PLANTS.

F. AND A. SMITH beg to offer the following varieties, strong and healthy :—

Ageratum	Mimulus, various
Antirrhinum	Nasturtium, Tom Thumb. The best scarlet bedding plant out.
Alyssum, variegated fol.	
Anagallis	Nasturtium, Cattell's Dwarf Crimson.
Balm, variegated fol.	
Cuphea	Nasturtium, double, various, 6*d*. each
Calceolaria	
Dahlias	Nierembergia
Fuchsia	Pentstemon, various
Geranium, scarlet various	Petunias, various
,, striped ,,	,, new double
,, fancy ,,	Pyrethrum pleno album
,, unique ,,	Roses
,, scented ,,	Salvias, various
,, Ivy ,,	Senecio
Gaillardia	Verbenas, white
Heliotrope, various	,, blue or purple
Hollyhock, 6*s*. per dozen	,, scarlet
Koniga variegata	,, crimson
Lantana	Musk, 4*s*. per dozen
Lobelia	

The above in strong established plants at moderate prices, according to selection.—Dulwich, Surrey.

NEW ROSES IN POTS.

BENJAMIN R. CANT offers the undermentioned NEW ROSES. The plants are now ready, and are remarkably fine and healthy; many of them have strong shoots from 1 to 2 feet in length. Purchasers of 1 dozen and upwards will be supplied at a reduced rate. The trade allowed the usual discount.

NEW ROSES FOR 1859 at 5*s*. each :—

TEA : Madame Damaisin	HYBRID PERPETUALS :—
BOURBON : Docteur Berthet	Comtesse Cecile de Chabrillan
,, Edith de Murat	Imperatrice Eugénie
HYBRID PERPETUALS :—	L'Oriflamme de St. Louis
Altesse Impériale	Le Mont Vésuve
Ardoisée de Lyon	Orderic Vital
Anna Alexieff	Princesse Olympie
Anna de Diesbach	Salomon
Beauté de Royghem	Virginal

Also the following CHOICE ROSES at 2*s*. 6*d*. each, or 25*s*. per dozen :—

TEA : Souvenir d'Elise	HYBRID PERPETUALS :—
BOURBON : Caroline Riquet	Louis Chaix
,, Josephine Clermont	Louise d'Autriche
,, Madame Contesse	Lord Palmerston
,, Monsieur Jard	Marie Thierry
HYBRID PERPETUALS :—	Monsieur de Montigny
Abbé Feytel	Philomène Crozy
Evêque de Nimes. 3*s*. 6*d*.	Reine de Denmark
Gloire de Lyon	Triomphe de Mont Rouge
General MacMahon	,, des Beaux Arts

At 15*s*. per dozen :—

HYBRID PERPETUALS. — Adelaide Fontaine, Bacchus, Belle Anglaise, Cardinal Patrizzi, Etendard de Sebastopol, Lord Raglan, Madame Vidot, Mathurin Regnier, Pauline Lansezeur, Prince Leon, Prince de la Moskwa, Rebecca, Souvenir de la Reine d'Angleterre, Souvenir de Leveson Gower, Sir J. Franklin, Victor Trouillard.

BOURBON : Glorietta, Omer Pacha,

NOISETTE : Miss Gray, Narcisse

TEA : Devoniensis, Elise Sauvage, Gloire de Dijon, Madame Bravy, Souvenir d'un Ami, Vicomtesse de Cazes.

A fine collection of the most esteemed older varieties, such as Caroline de Sansal, Comte de Nanteuil, Colonel de Rougemont, General Jacqueminot, Jules Margottin, Souvenir de la Malmaison, at 12*s*. per dozen.

St. John's Street Nursery, Colchester.

NEW SCARLET VERBENA "MAGNET."

This superb variety is a Seedling of 1858. The colour is a most vivid scarlet, with a large Lemon-coloured eye, which gives it a very striking appearance over all other scarlets ; the pips are as round, large, and good a substance as those of the most beautiful Phloxes, the truss is of immense size, many of them last season measuring 9 inches in circumference ; it is a most prolific bloomer, and always throws its trusses well up. Blooms of the finest of the Scarlet Verbenas as yet sent out were compared with it last year, but none of them approached it in size or brilliancy of colour by many degrees. It never fades in the hottest sun, and is a superb variety for pot culture. It was considered to be the finest and most conspicuous variety ever yet grown, throwing Eclipse and all other scarlet Verbenas completely in the background. This was the general opinion of the following gentlemen, nurserymen, and gentlemen's gardeners :—J. Fox, Esq., Jevizes ; A. Awdry, Esq., Bath ; W. Thompson, Esq., Bath ; H. Collison, Esq., Bath ; Chas. Sainsbury, Esq., Swanswick, near Bath ; Mr. Edwards, of Messrs. Henderson & Co., Wellington Road Nursery, London ; Mr. Nelson, Nurseryman, Bristol ; Mr. Parker, Paradise Nursery, London ; Mr. Caizey, of Messrs. Hugh Lowe & Co., Clapton Nursery, London : Mr. J. Chaunday, Florist, Lewisham, Kent, S.E. ; Mr. Kitley, Nurseryman, Lyncomb, near Bath ; Mr. Shackell, Oldfield Nursery, Bath ; Mr. Webb, Assistant to Mr. Griffin, Nurseryman, Bath ; Mr. Drummond, Nurseryman, Bath ; Mr. Hann, gardener, Southstoke Rectory, near Bath ; Mr. Froud, gardener to — Wintle, Esq., Swanswick, near Bath ; Mr. Rays, gardener, Vellore, Bath ; Mr. Tooth, gardener to G. Sims, Esq., Bath ; Mr. Salter, gardener to — Yeeles, Esq., Bathford, Bath ; Mr. Knowles, gardener to — Wiltshire, Esq., Shockerwick, near Bath. Single plants of the above superb new Verbena, 5*s*.

New Verbena "LOLA MONTES," colour light, beautifully shaded rose, fine eye and truss, is a first-rate show variety, many of the pips coming as round and as large as a shilling and of good substance. Plants 3*s*. 6*d*. each.

EMPEROR OF MOROCCO VERBENA. Also a seedling of 1858, colour very dark purple, the nearest approach to a decided blue of any variety that has yet been sent out ; it throws a very fine truss, is a prolific bloomer, and good bedder. Plants 3*s*. 6*d*. each.

The above are now ready for sending out, strong, well-rooted plants. Parties taking the three varieties will be charged 10*s*., postage and package free.

A remittance must accompany all orders either in cash or penny postage stamps.

EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Church Yard, Bath.

CRYSTAL PALACE.

GRAND HORTICULTURAL EXHIBITION,

MAY 18, 1859.

LIST OF AWARDS.

CLASS I.—20 STOVE AND GREENHOUSE PLANTS IN FLOWER (Open).

First Prize, Mr. G. S. Dods, Gr. to Sir J. Cathcart, Bart., Egham, 25*l*. ; 2d, Mr. B. Peed, Gr. to T. Treadwell, Esq., Lower Norwood, 15*l*. ; 3d, Mr. T. Page, Gr. to W. Leaf, Esq., Streatham, 10*l*. ; 4th, Mr. R. Baxendine, Gr. to W. H. Smallpiece, Esq., Guildford, 7*l*. ; extra, Mr. O. Rhodes, Gr. to J. Phillpot, Esq., Stamford Hill, 5*l*.

CLASS II.—12 STOVE AND GREENHOUSE PLANTS IN FLOWER.

1st, Messrs. J. & J. Fraser, Lea Bridge, 10*l*. ; 2d, Mr. W. J. Cutbush, Barnet, 7*l*.

CLASS III.—10 STOVE AND GREENHOUSE PLANTS IN FLOWER (Amateurs).

1st, Mr. J. Green, Gr. to Sir E. Antrobus, Bart., Cheam, 10*l*. ; 2d, Mr. J. Peed, Gr. to C. T. Gabriel, Esq., Streatham, 7*l*. ; 3d, Mr. W. Kaile, Gr. to the Earl of Lovelace, Ripley, Surrey, 5*l*. ; 4th, Mr. J. Tegg, Gr. to Baron Hambro, Roehampton, 3*l*. ; Extra, C. Smith, Gr. to A. Anderson, Esq., Norwood, 2*l*.

CLASS IV.—6 STOVE AND GREENHOUSE PLANTS IN FLOWER (Amateurs).

1st, Mr. H. Chilman, Gr. to Mrs. Smith, Epsom, 5*l*. ; 2d, Mr. W. Laybank, Gr. to T. H. Maudslay, Esq., Lower Norwood, 4*l*. ; 3d, Mr. S. M. Carson, Gr. to W. F. G. Farmer, Esq., Cheam, 3*l*. ; 4th, Mr. E. A. Hamp, Gr. to James Thorne, Esq., South Lambeth, 2*l*.

CLASS V.—12 STOVE AND GREENHOUSE PLANTS, Variegated Plants included (Nurserymen).

1st, Mr. W. Cutbush, Barnet, 7*l*.

CLASS VI.—6 STOVE AND GREENHOUSE PLANTS, Variegated Plants included (Amateurs).

1st, Mr. G. S. Dods, Gr. to Sir J. Cathcart, Bart., Egham, 7*l*. ; 2d, Mr. G. Young, Gr. to W. H. Stone, Esq., Dulwich, 5*l*. ; 3d, Mr. J. Colgate, Gr. to W. T. Woolley, Esq., Kensington, 3*l*. ; Extra, Mr. J. Summers, Gr. to A. Mongredien, Esq., Forest Hill, 2*l*. ; Mr. O. Rhodes, Gr. to J. Phillpot, Esq., Stamford Hill, 1*l*.

CLASS VII.—20 ORCHIDS OF EXOTIC SPECIES (Amateurs).

1st, Mr. Robert Bullen, Gr. to J. Butler, Esq., Woolwich, 20*l*. ; 2d, Mr. William Gedney, Gr. to Rev. W. Ellis, Hoddesdon, 15*l*. ; Mr. S. W. Carson, Gr. to W. F. G. Farmer, Esq., Cheam, 15*l*.

CLASS VIII.—15 ORCHIDS OF EXOTIC SPECIES (Nurserymen).

1st, Mr. S. Woolley, Cheshunt, 10*l*.

CLASS IX.—12 ORCHIDS OF EXOTIC SPECIES (Amateurs).

1st, Mr. G. S. Dods, Gr. to Sir J. Cathcart, Bt., Egham, 10*l*. ; 4th, Mr. Osman Rhodes, Gr. to J. Philpott, Esq., Stamford Hill.

CLASS X.—6 ORCHIDS OF EXOTIC SPECIES (Open).

1st, Mr. J. Green, Gr. to Sir E. Antrobus, Bt., Cheam, 5*l*. ; 2d, Mr. T. Page, Gr. to W. Leaf, Esq., Streatham, 4*l*.

CLASS XI.—10 GREENHOUSE AZALEAS (Amateurs).

1st, Mr. J. Green, Gr. to Sir E. Antrobus, Bart., Cheam, 12*l*. ; Mr. S. W. Carson, Gr. to W. G. F. Farmer, Esq., Cheam, 12*l*. ; 3d, Mr. T. Page, Gr. to W. Leaf, Esq., Streatham, 5*l*. ; 4th, Mr. J. Peel, Gr. to C. T. Gabriel, Esq., Streatham, 4*l*. ; Extra, Mr. O. Rhodes, Gr. to J. Phillpot, Esq., Stamford Hill, 2*l*.

CLASS XII.—8 GREENHOUSE PLANTS (Nurserymen).

1st, Messrs. J. Ivery & Son, Reigate and Dorking, 7*l*. ; 2d, Mr. C. Turner, Royal Nurseries, Slough, 5*l*. ; 3d, Mr. R. Atlee, Clapham Road, 4*l*. ; Extra, Messrs. J. & J. Fraser, Lea Bridge Road, 2*l*.

CLASS XIII.—6 GREENHOUSE AZALEAS (Amateurs).

1st, Mr. B. Peed, Gr. to T. Treadwell, Esq., Lower Norwood, 5*l*. ; 2d, Mr. W. Kaile, Gr. to the Earl of Lovelace, Ripley, Surrey, 4*l*. ; 3d, Mr. E. A. Hamp, Gr. to James Thorne, Esq., South Lambeth, 3*l*.

CLASS XIV.—10 GREENHOUSE AZALEAS, newest and best Plants.

1st, Mr. C. Turner, Royal Nurseries, Slough, 5*l*. ; 2d, Messrs. Ivery & Son, Reigate and Dorking, 3*l*. ; 3d, Mr. J. Green, Gr. to Sir E. Antrobus, Bart., Cheam, 2*l*. ; Extra, Mr. T. Page, Gr. to W. Leaf, Esq., Streatham, 3*l*. ; Mr. B. Peed, Gr. to T. Treadwell, Esq., Lower Norwood, 3*l*.

CLASS XV.—8 CAPE HEATHS (Nurserymen).

1st, Mr. W. Cutbush, Barnet, 4*l*.

CLASS XVI.—6 CAPE HEATHS (Amateurs).

1st, Mr. B. Peed, Gr. to T. Treadwell, Esq., Lower Norwood, 4*l*. ; 2d, Mr. J. Peed, Gr. to C. T. Gabriel, Esq., Streatham, 3*l*. ; 3d, Mr. J. Green, Gr. to Sir E. Antrobus, Bart., Lower Cheam, 2*l*. ; Extra, Mr. H. Chilman, Gr. to Mrs. Smith, Epsom, 1*l*. ; Mr. T. Frost, Gr. to E. J. Betts, Esq., Maidstone, 1*l*.

CLASS XVII.—6 TALL CACTI in Flower, large Plants.

1st, Mr. J. Green, Gr. to Sir E. Antrobus, Bart., Lower Cheam, 5*l*. ; 2d, Mr. R. Bunn, Gr. to J. R. Scott, Esq., Hornsey, 4*l*. ; 3, Mr. J. Summers, Gr. to A. Mongredien Esq., Forest Hill, 2*l*.

CLASS XVIII.—12 ROSES IN POTS.

1st, Messrs. Lane & Son, Berkhampstead, 10*l*. ; 2d, Mr. E. P. Francis, Hertford, 7*l*. ; 3d, Messrs. A. Paul & Son, Cheshunt, 5*l*.

CLASS XIX.—6 ROSES IN POTS (Amateurs).

1st, A. Rowland, Esq., Rosenthal, Lewisham, 5*l*. ; 2d, Mr. T. Terry, Gr. to C. W. G. Puller, Esq., Youngsbury, 4*l*.

CLASS XX.—6 FUCHSIAS IN POTS, distinct varieties.

1st, Mr. J. H. Elliott, Gr. to C. Davidson, Esq., Sydenham Hill, 4*l*. ; 2d, Mr. O. Rhodes, Gr. to J. Phillpot, Esq., Stamford Hill, 3*l*.

CLASS XXI.—10 PELARGONIUMS (Amateurs).

1st, Mr. J. Wiggins, Gr. to E. Beck, Esq., Isleworth, 8*l*. ; 2d, Mr. J. Weir, Gr. to Mrs. Hodgson, Hampstead, 6*l*.

CLASS XXII.—12 PELARGONIUMS (Nurserymen).

1st, Mr. C. Turner, Royal Nurseries, Slough, 8*l*. ; 2d, Messrs. J. Dobson & Son, Isleworth, 6*l*. ; 3d, Mr. T. Windsor, Hampstead, 4*l*. ; 4th, Messrs. J. & J. Fraser, Lea Bridge Road, 2*l*. ; Extra, Mr. T. Gaines, Battersea, 1*l*.

CLASS XXIII.—6 FANCY PELARGONIUMS (Amateurs).

1st, Mr. James Weir, Gr. to Mrs. Hodgson, Hampstead, 4*l*. ; 2d, Mr. J. James, Gr. to F. W. Watson, Esq., Isleworth, 3*l*. ; 3d, Mr. J. Holland, Gr. to R. W. Peake, Esq., Hounslow, 1*l*.

CLASS XXIV.—6 FANCY PELARGONIUMS (Nurserymen).

1st, Mr. C. Turner, Royal Nurseries, Slough, 4*l*. ; 2d, Mr. T. Gaines, Battersea, 3*l*. ; 3d, Mr. T. Windsor, Hampstead, 2*l*.

CLASS XXV.—NEW OR RARE PLANTS, in or out of Flower.

1st, Mr. S. M. Carson, Gr. to W. F. G. Farmer, Esq., Cheam, for Burlingtonia Farmeri, 3*l*. ; 2d, Mr. G. S. Dods, Gr. to Sir J. Cathcart, Egham, for Genetyllis macrostegia, 2*l*. ; 3d, Messrs. Veitch & Son, Exeter and Chelsea, for Pothos species, 1*l*. ; Mr. J. Green, Gr. to Sir E. Antrobus, Bart., Cheam, for Daviesia umbellata, 1*l*. ; Extra, Messrs. Ivery & Son, Reigate and Dorking, for Azalea "Flower of the Day," 10*s*.

CLASS XXVI.—HARDY ORNAMENTAL PLANTS (remarkable for fine habit or beauty of foliage).

2d, Messrs. Veitch & Son, Exeter and Chelsea, for Acer japonicum polymorphum, 1*l*. ; 3d, Messrs. Veitch & Son, for Wellingtonia gigantea, 10*s*.

CLASS XXVII.—SEEDLING PELARGONIUMS of 1858-9. (Prizes withheld.)

CLASS XXVIII.—6 PLANTS OF CINERARIAS.

1st, Mr. C. Turner, Royal Nurseries, Slough, 3*l*. ; 2d, Mr. J. Shrimpton, Gr. to A. J. Doxat, Esq., Putney Heath, 2*l*. ; 3d, Messrs. Dodson & Sons, Isleworth, 1*l*. ; Extra, Mr. James Holland, Gr. to R. W. Peake, Esq., Hounslow, 10*s*.

CLASS XXIX.—MISCELLANEOUS.

Extra, Mr. H. Lavey, Gr. to E. A. De Grave, Esq., Fetcham (British Ferns), 3*l*. ; 1st, Mr. W. Leybank, Gr. to T. H. Maudslay, Esq., Lower Norwood (Aphelexis), 2*l*. ; Messrs. Veitch & Son, Exeter and Chelsea (Begonias), 2*l*. ; 2d, Messrs. Dobson & Son, Isleworth, 1*l*. 10*s*. ; Mr. J. Summers, Gr. to A. Mongredien, Esq., Forest Hill (Stove Ferns), 1*l*. 10*s*. ; Ditto, Mammalaria), 1*l*. 10*s*. ; Messrs. H. Lane & Son, Berkhampstead (Cut Roses), 1*l*. 10*s*. ; 3d, Mr. T. Gaines, Battersea, 1*l*. ; Mr. J. Pepper, Gr. to R. Pulling, Esq., Penge (Achimenes), 1*l*. ; Mr. C. Turner, Slough (Seedling Verbenas), 1*l*. ; Ditto (Tulips), 1*l*. ; Mr. S. M. Carson, Gr. to W. F. G. Farmer, Esq., Cheam (Aphelandra Porteana), 1*l*. ; Messrs. J. & C. Lee, Hammersmith (Tussilago Farfara), 1*l*. ; Ditto (Centaurea candidissima), 1*l*. ; Ditto (Ferns), 1*l*. ; Mr. H. Surman, Eltham, Kent (Calceolarias), 1*l*. ; Messrs. Paul & Son, Cheshunt (Seedling Rhododendron), 1*l*. ; 4th, Mr. J. James, Gr. to W. F. Watson, Esq., Isleworth (Pansies), 15*s*. ; Mr. C. Turner, Slough (Variegated Geraniums), 15*s*. ; Ditto (Auriculas), 15*s*. ; Mr. J. Halley, Blackheath (Variegated Geraniums), 15*s*. Extra, C. Turner, Slough (Cineraria Slough Rival), 10*s*.

FRUIT.

CLASS A.—PINE APPLE (Single fruit of the Providence).—No Exhibitors.

CLASS B.—PINE APPLE, Single fruit of any other variety.

1st, Mr. T. Page, Gr. to W. Leaf, Esq., Streatham, 3*l*. ; 2d, Mr. J. Gillham, Isleworth, 2*l*. ; 3d, Mr. R. Davies, Gr. to J. Dixon, Esq., Congleton, 1*l*. ; Extra, Mr. P. Frost, Dropmore, Maidenhead, 15*s*.

CLASS C.—GRAPES, BLACK (Single Dish).

1st, Mr. T. Frost, Gr. to E. L. Betts, Esq., Maidstone, 3*l*. ; Mr. W. Hill, Gr. to R. Sneyd, Esq., Keele Hall, Staffordshire ; 2d, Mr. T. Ellis, Gr. to F. Bebb, Esq., Fleet House, Devonshire, 2*l*. ; 3d, Mr. W. Stent, Gr. to W. Herbert, Esq., Clapham Common, 1*l*.

CLASS D.—GRAPES, White (Single Dish).

1st, Mr. J. Enston, Gr. to Sir J. Duckworth, Bart., Exeter, 3*l*. ; 2d, Mr. G. Chalmers, Gr. to Lord Southampton, Towcester, 2*l*. ; 3d, Mr. W. Bones, Gr. to J. Barnett, Esq., Woodford, 1*l*.

CLASS E.—GRAPES, Muscats (Single Dish).

Extra, Mr. J. Embry, Gr. to A. Moss, Esq., Chadwell Heath, 10*s*.

CLASS F.—GRAPES, 12 lbs. weight (Market Gardeners).

1st, Mr. C. French, Burnham, Bucks, 3*l*. ; 2d, Mr. W. Davies, Starch Green, Hammersmith, 2*l*.

CLASS G.—PEACHES (Single Dish).

1st, Mr. H. Constantine, Gr. to C. Mills, Esq., Uxbridge, 3*l*. ; 2d, Mr. W. Gardiner, Weston House, Shipston-on-Stour, 2*l*.

CLASS H.—NECTARINES (Single Dish).—No Exhibitors.

CLASS I.—MELONS, Green Fleshed (Single Fruits).

1st, Mr. W. B. Peed, Gr. to T. Treadwell, Esq., Lower Norwood, 2*l*. ; 2d, Mr. H Constantine, Gr. to C. Mills, Esq., Uxbridge, 1*l*; 3d, Mr. James Tegg, Gr. to Baron Hambro, Roehampton, 10*s*.

CLASS J.—MELONS, Scarlet Fleshed (Single Fruits).

1st, Mr. B. Peed, Gr. to T. Treadwell, Esq., Lower Norwood, 2*l*.

CLASS K.—FIGS (Single Dish of 10 Fruits).

1st, Mr. H. Constantine, Gr. to C. Mills, Esq., Uxbridge, 2*l*.

CLASS L.—CHERRIES, White (Single Dish).—No Exhibitors.

CLASS M.—CHERRIES, Black (Single Dish).

1st, Mr. E. Shuter, Gr. to the Earl of Wilton, Heaton Park, Manchester, 2*l*.

CLASS N.—STRAWBERRIES (Single Dish).

1st, Mr. R. Smith, Twickenham, 2*l*. ; 2d, Mr. George, Gr. to A. Gooday, Esq., Essex, 1*l*. ; 3d, Mr. W. Taylor, Gr. to C. H. Hanbury, Esq., East Barnet, 10*s*. ; Extra, Mr. J. Gillham, Isleworth, 5*s*.

CLASS O.—MISCELLANEOUS.

1st, Mr. Gillham, Isleworth (Pine Apple), 2*l*. ; 2d, Mr. J. Waters, Gr. to F. Moore, Esq., Sydenham (Orange Trees), 1*l*. ; Mr. R. Inman, Gr. to J. Luttott, Esq., Forest Hill (Vines in pots), 1*l*. ; Mr. C. Mackay, Gr. to T. Devas, Esq., Dulwich Common (Vines in pots), 1*l*. ; 3d, Mr. C. Hutt, Gr. to Miss Burdett Coutts, Highgate (Vines in pots), 15*s*. ; 4th, Mr. Farmer, Gr. to S. Morley, Esq., Stamford Hill (Cucumbers), 10*s*. ; Mr. Munro, St. Alban's (Cucumbers), 10*s*. ; Mr. W. Kaile, Gr. to Earl Lovelace, Ripley, Surrey (Strawberries in pots), 10*s*.

GERMAN AND OTHER FLOWER SEEDS, VEGETABLE, AGRICULTURAL SEEDS, ETC.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their new PRICED and DESCRIPTIVE CATALOGUE in which is enumerated every novelty of proved merit, also all the best of the older kinds, is now published, and will be forwarded post free on application. Their whole stock has been selected from the best English and Foreign sources, and every kind is warranted true to name, and of the finest possible quality.—Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Stove, Greenhouse, and Hardy Ferns, Miscellaneous Stove, Greenhouse, and Hardy Plants, Variegated and Ornamental foliaged Plants, Conifers, Roses, Rhododendrons, Indian Azaleas, Gloxinias, Fuchsias, Cactuses, &c., is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

VARIEGATED GERANIUMS FOR BEDDING OUT.

JOHN HALLY, NURSERYMAN and FLORIST, opposite the Railway Station, Blackheath, S.E., offers the following at the annexed reduced prices:—

1. BURNING BUSH.—This has proved itself the most beautiful of all the red-zoned variegated kinds, having foliage variegated with broad white edge and zone of bright crimson. The flower brilliant scarlet, in good compact trusses, standing well up above the foliage, 30*s.* per dozen; a few larger plants on hand, at 5*s.* each.

2. SCINTILLATUM.—Foliage variegated, with white edge, and having a black and crimson zone, bears a very large truss of deep scarlet blossoms, 15*s.* per dozen; strong plants, at 2*s.* 6*d.* each. The usual discount to the Trade on the above.

BEDDING PLANTS.—As orders are received the best Plants will be selected, and set aside until they are required. The following 12 dozen Plants can be had for 25*s.*, package included, viz:—

12 Scarlet Geraniums	12 Petunias [sima	12 Gazania
12 Yel. Calceolarias	12 Vinca elegantis-	12 Blue Lobelia
12 dark ditto	12 Blue Verbenas	12 Hollyhocks
12 Dahlias	12 White Verbenas	12 Heliotropes

Thirteen Plants to the dozen. 200 Plants for 21*s.*, the selection left to JOHN JEYES.

J. JEYES respectfully invites attention to a very fine COLLECTION of FERNS.

VINCA ELEGANTISSIMA.—The most beautiful of all variegated plants. As a bordering for flower beds, or to form a bed of itself, or mixed with shrubs, it stands unequalled, and being an evergreen and hardy makes it the most desirable of all variegated plants; it resembles when in full leaf finely grown plants of the Golden Chain Geranium.

Northampton Nurseries.

NEW FRENCH PHLOXES.

JOHN STANDISH can recommend the following as the best that were sent out last year, he having seen them in bloom, and selected those he thought the best. They are very beautiful dwarf, and continue flowering from June until October, or until the frost destroys them in the autumn, and are admirably adapted for bedding, being now classed as perpetual bloomers, many of them growing not more than 10 to 18 in. high:

Empereur de toutes les Russies, shaded violet purple centre
Julie Roussel, white, with purple centre, superb
L'Enfant Prodigue, violet rose, shot with scarlet
Louis Guerard, large deep amaranth, magnificent
La Volupté, smooth rose, shot with scarlet
Mademoiselle Suer, white purple centre, very dwarf
Mademoiselle Orelly Duriez, white violet centre
Monsieur Forest, large lively amaranth, very effective
Souvenir d'un Ami, large rosy red, very fine
Surpasse Madame Rendatler, white purple centre, very dwarf.

The above 2*s.* 6*d.* each, or the lot 21*s.*; besides the above J. S. can supply the finest old sorts from 6*s.* to 12*s.* per dozen.

ROSES for bedding on their own roots, strong plants:—

TEA: Souvenir d'Elise, the most beautiful of all Tea Roses, 2*s.* each, or 18*s.* per dozen, or 7*l.* per 100
,, Safrano, 1*s.* each, or 9*s.* per dozen
,, Gloire de Dijon, 1*s.* each. or 9*s.* per dozen

HYBRID PERPETUAL ROSES.

General Jacqueminot, 1*s.* each, or 9*s.* per dozen
Louis Chaix, 2*s.* 6*d.* each, or 24*s.* per dozen
Madame Vigneron, 2*s.* 6*d.* each, or 24*s.* per dozen
Pauline Lansezeur, 1*s.* 6*d.* each, or 12*s.* per dozen. (Of all the Hybrid Perpetual Roses this is the best adapted for bedding purposes, from its dwarf bushy habit and being always healthy and always in bloom)
Victor Trouillard, 1*s.* 6*d.* each, or 12*s.* per dozen
NOISETTE: Triomphe de Rennes, 2*s.* each, or 18*s.* per dozen.

NEW ROSES of 1858, on their own roots.

HYBRID PERPETUAL ROSES, 2*s.* 6*d.* each, or 24*s.* per dozen:—

Duc de Cambridge	L'Evêque de Nîmes
Lord Palmerston	Louise d'Autriche
Marie Portemer	Reine de Denmark
Thomas Rivers	Triomphe des Beaux Arts

NEW ROSES for 1859, grafted on the Manetti Stock, strong plants, 4*s.* each, or 2*l.* 12*s.* 6*d.* the lot.

HYBRID PERPETUAL ROSES.

Ambroise Verschaffelt	Beauté de Royghem
Comte de Beauford	Celine Forestier
Docteur Bretonneau	François Ier
Empereur de Maroc	François Arago
Impératrice Eugenie	Oriflamme de St. Louis
Princesse Olympie	Stephanie Beauharnais
Virginal	Vicomtesse Laure de Giraud
TEA: Madame Damaisin	BOURBON: Octavie Fontaine

All the above plants are now ready to send out, and J. S. will have the above New Roses on their own roots ready to send out the first week in June.—Bagshot, May 21.

FRUIT TREES IN POTS.

H. LANE AND SON, the Nurseries, Great Berkhampstead, Herts, have to offer in large quantities fine FRUITING TREES of the below-mentioned, which are now in a good state for travelling, the fruit not being heavy and likely to drop off.

They consist of PEACHES, NECTARINES, APRICOTS, 5*s.*, 7*s.* 6*d.*, to 10*s.* 6*d.* each.

CHERRIES, PLUMS, PEARS, APPLES, 3*s.* 6*d.* to 5*s.* each.

VINES, in pots, from eyes, with 5 to 10 bunches of Fruit, 5*s.* each.

FIGS, in pots, in a bearing state, 3*s.* 6*d.* each.

GOOSEBERRIES and CURRANTS, 1*s.* 6*d.* each.

Also a very large collection of EVERGREENS, of which we have a fine Stock, viz., Araucarias, Cedrus Deodara, Ced. Lebanon, Cupressus, Junipers, Pines, and all Coniferous Plants, 6 ft. to 12 ft. high; Rhododendrons, well set with flower buds, &c.

The Home Nurseries are within five minutes' walk of the Station of the London and North-Western Railway, Great Berkhampstead, Herts.

DILLISTONE AND CO., of the Nurseries, Sturmer, Halstead, Essex, will have great pleasure in forwarding to any part upon receipt of 10*s.*, hamper and carriage paid to London, the following kinds of HARDY CLIMBERS:—

4 varieties of fine Honeysuckles		2 varieties of Passion Flowers	
2	,, Clematis	2	,, fine Ivies
3	,, Jasmines	1	,, Solanum
4	,, Climbing Roses	1	,, Bignonia
		1	,, Ampelopsis (tricolor)

The following Summer ditto, per 20 Plants, for 6*s.* (viz.), hamper, &c.:—

2 Maurandyas in varieties	2 Kennedyas in varieties
2 Calampelis ,,	4 Tropæolums ,,
2 Calystegias ,,	4 Ipomœas ,,
4 Lophospermums ,,	

Also the usual BEDDING PLANTS in well grown and hardened stuff, hamper, &c, 20*s.* per 100.

HERBACEOUS, all the best two of a kind, 20*s.* per 100.

NEW ANTIRRHINUMS.

HENRY MAY has now ready for delivery his fine SEEDLING ANTIRRHINUMS, selected from an immense collection of very superior Seedlings, and he can recommend them as a most beautiful set and improvement on existing kinds, viz.:—

STANDARD BEARER (MAY'S).—White throat, bright rose lip, with yellow centre, very fine and distinct.

LORD JOHN RUSSELL (MAY'S).—Pure lilac self, buff lip, very fine form and habit.

LORD DERBY (MAY'S).—Creamy white, with yellow lip, beautifully striped and veined with bright purple.

PURPLE KING (MAY'S).—Deep rich purple self, fine spike extra.

SURPRISE (MAY'S).—Bright rosy crimson gold lip, very fine, form good.

ORLANDO (MAY'S).—White tube, bright crimson lip, an improvement on Firefly, very fine.

GALATEA IMPROVED (MAY'S).—Pure white tube, bright crimson lip, fine habit and large spike good.

GITANA (MAY'S).—Bright rosy purple, white lip, fine spike extra.

The above set of eight for 25*s.*, or 3*s.* 6*d.* each separate. The usual discount to the Trade.

HENRY MAY, The Hope Nurseries, near Bedale, Yorkshire.

WM. CUTBUSH AND SON beg to state that they can supply the following BEDDING PLANTS. Any quantity of extra fine plants at the prices annexed:—

	Per dozen.—*s.d.*		Per dozen.—*s.d.*
Ageratum	4 0	Lobelia speciosa (from cuttings true) the best of the class	4 0
Chrysanthemum regalium flore pleno, golden yellow, an excellent plant for large beds ..	6 0	Nasturtium Tom Thumb	4 0
Calceolaria, yellow ..	4 0	Petunias, of sorts ..	4*s.* to 6 0
Cuphea platycentra ..	4 0	Pyrethrum	4 0
Dahlias, of sorts ..	6*s.* to 9 0	Salvia, of sorts	4 0
Fuchsias, of all the best varieties ..	4*s.*, 6*s.*, and 9 0	Tropæolum elegans (Crystal Palace variety), a free flowering bright orange-scarlet dwarf plant, well adapted for flower gardens	6 0
Geraniums, Tom Thumb and other Scarlets ..	4 0	Verbenas, of the best sorts	4 0
.. Variegated, of sorts,	6*s.* to 9 0	,, Edmonds' New, of 1859,	18 0
Heliotrope	4 0		
Lobelia ramosioides ..	4 0		

A DESCRIPTIVE CATALOGUE of the above and general Nursery Stock can be obtained free per post on application.

NEW VARIEGATED GERANIUM "BEAUTY."

WM. C. & SON can strongly recommend the above, which has bright green foliage, with a broad margin of pure white, flowers light scarlet of good shape in large trusses in great abundance, and very robust habit. We tested it last year with a dozen other kinds, and found it superior to any for bedding purposes. It was exhibited at the late meeting of the Royal Botanic Society, and received a Certificate of Merit.

2*s.* 6*d.* each; or 21*s.* per dozen.

SHOW, FANCY, & FRENCH-SPOTTED PELARGONIUMS.—A large stock of remarkably fine plants of the above in 48-pots of all the leading sorts, at 12*s.*, 18*s.*, and 24*s.* per dozen; or 5*l.* and 7*l.* 10*s.* per 100.

LISIANTHUS RUSSELLIANUS.

WM. C. & SON beg to intimate that they can supply strong plants of the above elegant Conservatory Plants in 48-pots, at 2*s.* 6*d.* each; or 24*s.* per dozen.

Highgate Nurseries, London, N.

A PERFECT SUBSTITUTE FOR GRASS.

LAWNS WITHOUT MOWING.

SPERGULA PILIFERA,

IS OFFERED BY

MESSRS. E. G. HENDERSON & SON

As a perfectly hardy Alpine plant, forming a close, dense, carpet like surface, maintaining the same growth with a rich, ever-during, evergreen verdure through all weathers in winter and summer, presenting in July the living picture of an emerald green velvet-like vegetable carpet, studded over with innumerable snow white star-like blossoms.

WELL-ESTABLISHED TUFTS FOR IMMEDIATE PLANTING, 4*s.* PER DOZEN.

Seed Packets, 6*d.*, 2*s.* 6*d.*, 5*s.*, 10*s.*, and 20*s.* each.

Special directions for sowing, rearing, and final planting are given in E. G. HENDERSON & SON'S NEW GENERAL CATALOGUE OF ORNAMENTAL GREENHOUSE and SUMMER-FLOWERING BEDDING PLANTS, which will be ready for distribution in a few days.

Wellington Nursery, St. John's Wood, London.

MESSRS. E. G. HENDERSON & SON

WILL OFFER THE FOLLOWING NEW PLANTS IN MAY, AND THE

NEW GENERAL CATALOGUE and SPRING LIST of ORNAMENTAL BEDDING and SUMMER FLOWERING PLANTS

WILL IN A FEW DAYS BE READY FOR DISTRIBUTION, WHEREIN WILL BE DESCRIBED

ALLAMANDA VIOLACEA.

This plant so long looked for, and much needed by all English competing competitors, we have much pleasure in introducing for the first time to the public, and no doubt it will be for years the great feature at the leading Exhibitions. The late Mr. Gardner, Director of the Royal Botanic Gardens in Ceylon, speaks of it in his papers, published in the second volume of the London Horticultural Society's Quarterly Journal, as one of the finest shrubs he met with, and "by far the most beautiful species in the genus, bearing numerous large flowers not unlike in colour those of Gloxinia speciosa."

As a competition plant in collections, A. violacea, in its violet-blue tint, offers a new and essential feature in colour, there being none other in the same style to associate with the golden-yellow of A. Schötti, and the delicate rosy-blush of Echites and Dipladenia. 63*s.* each.

AGAPETES BUXIFOLIA, a neat-habited plant with good evergreen foliage, and large bright red tubular flowers, resembling the Mitraria and Epacris intermediately.

NEW INDIAN AZALEAS, fine competing kinds raised by M. Spae, M. C. Van Loo, and M. De Witte.

The scarlet-flowered variety of TYDÆA GIGANTEA, and the double-flowered ACHIMENES LONGIFLORA.

The TYDÆA LADY DIGBY, and LADY CAROLINE KERRISON (syn. Achimenes), with large brilliant rosy-crimson flowers throughout winter, free flowering habits.

The HYBRID BEGONIAS raised by Mr. Stange, Gardener to Herrn Consul Schiller, of Hamburgh, including B. PICTURATA and others from B. SPLENDIDA ARGENTEA.

LIERVAL'S NEW PHLOX EVENING STAR.

BURRIDGE'S TWO NEW PHLOX DRUMMONDI, VICTORIA AND ALBERT.

CALCEOLARIA AMPLEXICAULE ALBA, Splendid bedder.

BOUVARDIA "BRILLIANT" AND "DELICATA," with large flower tubes, and profusion of bloom.

NEW BEDDING DAHLIAS, GLOIRE DE FRANCE, AND WHITE UNIQUE.—The best white variety out, and the former as the most noble formed and richly coloured flower of any other Dahlia for beddings, a dried plant showing the dwarf and profuse blooming habit may be seen at the Wellington Nursery.

BANKS'S NEW FUCHSIAS (9 varieties, 63*s.*).

NEW CHRYSANTHEMUMS (8 varieties), see Plate XXVI. in the "Illustrated Bouquet."

BREEZE & BANKS'S COLLECTION OF NEW VERBENAS will include the finest blue out, the best rose, the finest violet-purple, the best peach, and maroon black, with large white eyes or centres, the Géant des Batailles far surpassed; a Mrs. Holford in truss and habit, but suffused with a beautiful pink tint. The entire collection includes a full complement of colours, as the finest ever sent out by us, and surpasses with but few exceptions any that we have cultivated under name.

FINE BEDDING GERANIUMS.

NEW NOSEGAY SECTION.

THE IMPERIAL CRIMSON, AND MODEL NOSEGAY GERANIUMS. See descriptions at page 355, and also the Catalogue.

Among Variegated Geraniums, MISS EMILY DOMVILE will prove a first-class Bedding Plant (see description in Catalogue).

The two GOLDEN-LEAVED varieties with large-petalled flowers.

THE RAINBOW, with the finest red-zoned foliage yet seen.

THE ST. CLOUD, a beautiful accompaniment to FONTAINBLEAU.

THE SILVER CHAIN, with deep margin of pure white; a fitting companion to the GOLDEN CHAIN.

NEW CALCEOLARIAS, scarlet, crimson, and yellow, of proved and true bedding, shrubby, branching growth; not half shrubby, as the majority are.

THE WHITE NOSEGAY GERANIUM (for beds).

N.B. *The quotations of Price to Geraniums Imperial Crimson and Model Nosegay, at page* 355, *should have appeared as* 3*s.* 6*d.* *and* 2*s.* 6*d.* *each only.*

Wellington Nursery, St. John's Wood, London.

The Gardeners' Chronicle.

SATURDAY, MAY 21, 1859.

MEETINGS FOR THE FOLLOWING WEEK.

TUESDAY,	May 24	Linnean (Anniversary)	1 P.M.
WEDNESDAY,	,, 25	Royal Botanic	2 P.M.
		Microscopical	8 P.M.

MANY inquiries concerning the BEST MODE OF MAKING CHARCOAL have lately reached us. People are at last desirous of converting their vegetable refuse, their sticks, weeds, leaves, sawdust, and other dry rubbish, into a material that shall have some horticultural value. They have learned that leaves may be easily made to assume the form of something better than leaf-mould, and by a quicker process. Burning has been discovered to be one of the most wasteful of all time-honoured practices; and it is at last felt that it is better to preserve the solid constituents of vegetation than to convert them into air and drive them into space. An excellent symptom this of real unmistakable progress. Intelligence is moving forward.

There can be no doubt that charcoal, whether

derived from plants or the bones or hides of animals, is one of the most useful of all known agents to gardeners. It keeps the soil open, absorbs heat, takes up the best of the solid and gaseous matters which are found in soil, and gives them up to roots when called upon to do so. Besides which it holds in its own substance no unimportant quantity of those alkaline and other ingredients on which every plant must be able to feed. Those who have no experience of its effects may easily see how it acts by planting a Strawberry in a pot filled with earth and charcoal fragments. The new roots will cling to the charcoal with all the symptoms of a powerful natural necessity, and growth will be strong and healthy in proportion.

The only question that really requires an answer in the interest of cultivators is how charcoal can be most easily prepared from such worthless materials as were just mentioned. Before replying to this it is as well to consider in what respects charcoal is different from the substances from which it is prepared. Plants consist wholly of carbon, water, earthy, alkaline, and other incombustible matters, and various secretions differing in different species; as for instance resins in Coniferous plants, gum in stone fruit—and so on. The object to be gained in making charcoal is to obtain the carbon, without the water or peculiar secretions of plants. This is effected by heat. If a piece of wood is submitted to a temperature sufficiently high all the water and other constituents not incombustible and not carbon are separated from the wood, and the charcoal remains behind. That is the whole principle; the difficulty consists in separating the water, &c., from the carbon without setting the latter on fire; for if it once gets into a blaze it is itself converted into air and lost. What is wanted then is to heat vegetable substances up to a high temperature without allowing them to burst into flame. That is done by not allowing air to get to them while heated, and herein is the practical difficulty of charcoal making.

Having premised thus much, we will endeavour to describe two or three simple methods which, if not very scientific, are good enough for such a rough operation as making charcoal for gardeners. The most perfect way is the following:—Cut pieces of wood into lengths of 2 or 3 feet, and so that they can be packed pretty closely together and form a heap. This heap may be either placed on the level ground or in a pit; but in the latter case three or four openings should be cut in the sides from the bottom of the pit outwards in order to admit a little draught for the ignition of the wood in the first instance. In the centre of the space several long pieces of wood must be fixed so as to leave an opening for introducing the kindling; or an opening may be formed by pieces 12 or 15 inches in length, two of which are laid horizontally 6 inches apart; two others are then laid at the same distance from each other across the two first, and so on; thus forming a rough flue 6 inches square from the bottom to the top of the heap. Round this billets, faggots, or bundles of wood are closely packed in a nearly upright position. When completed the heap should be of a round, conical form. The wood may, however, be arranged in the form of a ridge, several openings being left for firing. When the pile is completed it must be covered with turf, which may be further closed by earth or sand as is found necessary during the process. Where turf cannot be easily procured, old mats or any other rubbish that will prevent the earth from mixing with the wood will afford a tolerably good substitute. When all is covered except the opening at top and some holes for air near the bottom fire is introduced down the central flue. As soon as the heaps are fairly in a blaze, the top must be well closed and the smoke, but not flame, encouraged to issue as equally as possible from every other portion of the surface by making holes with a pointed stick where smoke does not appear. Some portion of the wood will necessarily be consumed before sufficient heat can be obtained, but that must be disregarded. As soon as the wood becomes heated to 212° the water is given off in the form of steam, and the whole mass takes fire readily enough. Great care is then necessary to prevent flame bursting out; as the heat increases the openings in the covering must be reduced, and all must be finally closed when the charring is found to be complete.

Excellent material for mixing with potting earth for striking cuttings or growing seeds, &c., may be readily prepared from sawdust. A fire of dry sticks, &c., being lighted on the ground upon a circular space, when it is well alight begin to heap on sawdust with a shovel, allowing plenty of air at first for a few hours till the fire has got well hold, then cover the whole over with sawdust and pat it down with the shovel, leaving three or four stout sticks projecting to the outside, which can be raised now and then to admit a little air. When such a heap is once well alight it may be kept so for months, or indeed any length of time, taking care always to have a load or two of sawdust at hand, which is to be thrown on when fire breaks out at any spot. The heap should be sheltered from strong winds, and never allowed to burn out into the open air. A part of the charcoal thus made may be taken away every month or so from one side of the heap, leaving the rest to keep the fire burning. Any one within reach of a sawmill can get sawdust for the trouble of carting it.

Nearly all the charcoal is prepared in France by a process which is known by the name of carbonisation in heaps (*meules*). The wood is arranged in conical heaps of variable size, which are covered over with a thick layer of earth and of coal ash. The heap is kindled from the centre, where a cavity is kept open for that purpose, and which descends to the base. In this cavity burning charcoal is placed and some small pieces of wood, and the air is admitted by holes formed at the base and over the whole circumference of the heap. After some hours, during which the central cavity or chimney is allowed to remain open, in order to determine a more active combustion, the upper opening is shut, and the carbonisation is directed from above downwards, by piercing holes in the covering nearer and nearer to the base of the heap as the operation advances.

We apprehend that any intelligent workman, after such instruction, would soon form charcoal heaps—in which bones are an excellent ingredient—out of the refuse within his reach. For wood may be substituted anything green or dry than can be had; even freshly mown Grass may be employed to cover over the heaps so as to exclude air; for it will become dry in time, catch fire, and then when covered with other Grass or with earth will form good charcoal. If he lives in a clay country the heaps may be covered with dry clay only, which, if the heaps are large enough, will become red, when it may be itself covered over by more dry clay, and so on, as long as the core is hot enough. The successive falling in of the clay among the charcoal is by no means objectionable—quite the reverse.

A method of ensuring the success of trees, especially Evergreens when transplanted, is mentioned in the Proceedings of the Horticultural Society of the Rhone. M. Luizet, who recommends the following process, describes it as possessing remarkable efficacy in reviving plants dried by having had their roots too long out of the ground, and in ensuring their safe removal in late spring planting.

Into a vessel, tub, or even hole in the ground, holding about 20 gallons, pour as much water as will make it three-quarters full. Add to this about 20 lbs. weight of cowdung mixed with the same quantity of fine rich soil. By working the mixture for a long time and carefully, you reduce it to the consistence of whitewash. In this mixture steep the roots of your plants just before putting them into the ground; the earth thrown after them into the hole sticks to the roots, which immediately begin to swell. At the very first movement of sap rootlets appear through this coating, which gives them immediate manure, and not only brings on but secures the further formation of roots. Once fairly started, there is nothing more to fear.

This reminds us of the plan for encrusting seeds with manure in order to give the seedlings a good start, recommended by an ingenious gentleman at Orleans, of which an account was given in a former volume (1857, p. 189). Plants that have been packed too long in the late dry weather, and whose roots have become dry, would afford a good opportunity of testing the value of M. Luizet's practice, which has at least the merit of simplicity and cheapness; though it may not be altogether new.

The public will learn with much satisfaction that Mr. Eyles, one of the best and most experienced Gardeners in the country, has been appointed to the superintendence of every department of Horticulture, both in-doors and out-doors, at the Crystal Palace.

NIGHT TEMPERATURE OF FORCING-HOUSES.

When I read Mr. Ayres's communication in the *Gardeners' Chronicle* of April 9 on this subject, I thought it so likely to lead the inexperienced into serious mistakes that I sat myself down and wrote the few remarks which appeared in the *Gardeners' Chronicle* the following week. After a few weeks there appears another article in the same Journal on the subject by Mr. Ayres. But instead of meeting the statements in my remarks, Mr. A. runs away altogether from the subject; he says, "I was fully aware that I should call into action the querulous disposition of some of your correspondents. Disbelief appears to be the order of the present time, and any attempt to disentangle simple practices from by-gone usages is at once met and combated as rank heresy." Again he says, "I am quite convinced that according to ordinary and generally received rules there is no vegetable which costs so much to grow as winter or early spring Cucumbers. In fact, Cucumber growing has been invested with a kind of wonder," &c. He further on says, he "has some small, very small, Queen Pine plants coming into bloom which, he says, unless he shall be deceived will bring fruit not less than from 4 to 6 lbs. in weight."

Now, I ask does Mr. A. expect this result solely from keeping a low night temperature? Does Mr. A. expect this result without any bottom-heat? He also tells us he has in the same house eight kinds of Vines, including Muscats, Frontignan, Chasselas Musqué, and Mill Hill Hamburgh, and that his Grapes are set as well as could be desired.

Now, all this is but an evasion of the matter at issue between Mr. Ayres and myself. I expressed my belief that Mr. Ayres's success in growing Cucumbers during the winter was to be attributed as much, if not more, to the comfortable bottom, which, according to his own statement, the plants had, as to the night temperature they had. I did not dispute the advantages of keeping a low night temperature. I knew its advantages long ere Mr. Ayres's little work on Pot Cucumber Culture appeared, and that from practical experience in some of the very best gardens in the United Kingdom, and also from having read and thoroughly digested a work which was published some years prior to Mr. Ayres's Cucumber treatise—I mean Lindley's Theory of Horticulture. But to return to the question of bottom-heat. Mr. A. says (see p. 313) that "his plants had a comfortable bottom-heat from water around the pipes in the tank into which the roots soon introduced themselves." Now, I ask Mr. A. this plain question: if this "comfortable bottom-heat" which he describes was wanting, would he be able to grow Cucumbers successfully in winter? My own opinion is, and I believe it to be the opinion of most of the practical men in the kingdom, that Mr. Ayres could not grow Cucumbers in winter without bottom-heat—no matter what the night temperature may be. With a steady comfortable bottom-heat, and by carefully attending to all the other necessary conditions, Cucumbers can be most successfully grown during winter. Without any bottom-heat, no matter how carefully all other conditions (the night temperature included) may be observed, the attempt to grow Cucumbers in winter will end in disappointment.

Mr. Ayres says, "I have no doubt 'M. S.' knows of many instances where the bottom-heat was provided, and top heat too, Cucumbers anxiously looked for, and yet they 'came not;' and were it not invidious I could name several gardens where the 'comforts' were provided in superabundance, and yet the result was what? Etiolated stems and tissue paper leaves." I beg to assure Mr. A. I never knew an instance where the necessary bottom-heat was provided, and all other conditions properly attended to, but was attended always with success. But Mr. Ayres says—"I know gardens where the 'comforts' were provided in *superabundance*, and yet the result was what? Etiolated stems and tissue paper leaves." No doubt Mr. Ayres may know *several* gardens where the "comforts" were provided in superabundance, and such was the result. I beg to tell Mr. A. that I have too high an opinion of the intelligence and skill of the gardeners of the present day to think that such instances are common. Plants, like animals, can be injured or killed by a superabundance of the "comforts." A little guano will be beneficial to some things, but if a superabundance be given it may kill. A certain amount of bottom and top heat is essential to the successful growth of many things, but given in superabundance will always do injury. "For my own part," Mr. A. says, "I am getting less and less anxious about bottom-heat; in moderation, say never to exceed 80°, for any plant." I do not regard bottom-heat as a panacea for all the ills that plants are heir to; but I deem it absolutely necessary in the cultivation of all plants from tropical and warm climates. A bottom-heat of 75° may suit Pine plants in a state of rest in the winter months, but a bottom-heat of 85° will be nearer the mark in the summer months.

I will now briefly state my mode of growing winter Cucumbers. I always sow the last week in July, and put the plants out the first week in September on a bottom-heat from 75° to 80°, which I endeavour to maintain all through the winter months. During the whole of September and October I never give any artificial top-heat, unless a very severe frost should set in towards the end of October. I give all the air that is possible. I always give it as early in forenoons as the state of the weather permits. During the middle of the day, if the weather be mild, I give what Mr. A. would call a superabundance of air, but I always shut up before it gets late in the afternoons. I attend regularly to tying down the shoots, and I pull off any male blossoms that appear. By this treatment the plants are by the month of November, when Mr. A. plants out, in such a state of health and robust vigour, that no matter how severe the winter may be, by timely attention in observing the

necessary condition, I have always had a superabundance of Cucumbers. Owing to the amount of solar light and influence the plants receive during September and October the stems are as thick as my forefinger—not etiolated, Mr. Ayres—and the leaves are much more like pasteboard than tissue paper. I maintain during November, December, January, and February a night temperature of from 55° to 60°, which varies a degree or two according to the weather; if it gets as low as 50° I am not alarmed, so long as I know the roots have a sufficient bottom-heat, not a superabundance. I keep a top-heat of from 60° to 70°, varying a little according to the weather. By this treatment I get a superabundance of Cucumbers during winter. In March the plants are pruned in a little; they get a surface dressing of fresh soil and start into a fresh growth. By giving them the necessary attentions they bear all through the season until the following September, when they are replaced by young plants.

By the foregoing plan I have never failed to have a superabundance of Cucumbers at all seasons. Without the necessary amount of bottom-heat in winter I could not do it. The plan is as simple and inexpensive as Mr. Ayres's, and will not lead to disappointments. The readers of the *Gardeners' Chronicle* I leave to decide whether Mr. Ayres or myself is right. *M. S.*

Home Correspondence.

Waltonian Cases.—"Old Subscriber" and others who are in difficulty as to hardening off the plants struck in a Waltonian case, would at once give up their fears if they were to get sight of one at work. There are two square panes of glass in zinc frames which fit on the top and render the case almost air-tight, when of course the heat is fierce and may be as moist as you please according to the state of the sand in the tray. Across the centre is a strip of zinc on which the lights meet for support. Now by drawing each light over this so as to lap one over the other in the centre, the two ends are left open. To harden off a few at a time you have but to remove the pots from the centre to the sides, and give air in the way just stated, for then the ends of the case are cool. After 24 hours, the pots may be lifted out and stood on the edge of the case or wedged in between the side of the case and the zinc frame of the light which is next them. Thus they have full daylight, and a current of warm moist air ascends from the case round them so as to comfort them for a little while longer; and after a day or two in that position they may go to any warm shelf in a window or a greenhouse. Little manipulations of this kind are not easily described, but an experienced hand finds no difficulty in getting several degrees of heat, moisture, ventilation, &c., simultaneously, for you can have one side quite open and the other close; you can take off the lights entirely, and allow the sand and the pots to get as dry as you wish, in which case the heat declines, because no longer confined, and the plants can be transferred to any quarter that would suit stock lately removed from a hot-bed. In a greenhouse there can of course be no difficulty. The candles with which I have been experimenting this season have answered admirably. Messrs. Price & Co. have made at least a dozen different kinds for me, and I have carefully tested their several merits with a view to determine which is the best adapted to the purpose. In such experiments there are many nice points to determine, and the conditions I regard as essential are not yet completely accomplished. Since March 1st I have obtained from my case pans of Ricinus, Hibiscus Lindleyi, Quisqualis glabra, Thunbergia species, Cycas sphærica, Melia sempervirens, Duranta Plumieri, Datura fastuosa, and S. American species, Cannas in variety, Solandras, Abutilon species, Inga bigemina; Cassia occidentalis, fistula, grandis, and purpurea; Casuarina muricata, Asclepias tuberosa, Bignonia var., Lantana trifolia, Lotus indicus, above 100 Fuchsias, 1000 seedling Lobelias, nearly 500 Asters, and various lots of bedding and greenhouse plants. Many of them were put in to test the capabilities of the invention, not because I wanted them, and from my experience in its management, I would undertake to propagate in it every kind of stove and greenhouse plant, and then convert the tray into a Melon bed, and maintain a steady bottom-heat with candles. It can be made ready for use in five minutes, and again taken to pieces and packed away in a similar short space of time. *Shirley Hibberd, Stoke Newington.*

Watercresses.—I have been asked whether there are two permanent varieties of the Watercress, the green and the brown. I said I had no doubt they are one and the same plant; that they are always so considered in Lincolnshire, where it is exceedingly abundant; and that my impression was—though it was only an impression—that I had often seen them growing on the same stem, or at any rate from the same root. My querist, who cultivates them in Middlesex, was not satisfied, and took me to the stream in his grounds, Kempton Park, to show me that I was wrong. With a rake he brought out a few entire plants of the brown variety, and certainly every sprig had the brown tinge. He then drew out a considerable number, perhaps 20, of the green, which he considers worthless, though here they like it best, and on these there was not a leaf that was not pure green. Is it so then that the plants do not yield interchangeable produce? And if so, does the seed of the one not produce the other? *Iota.* [Botanists do not distinguish these varieties; but growers do. Bradbury, one of the early writers on the cultivation of Watercresses, speaks of three sorts, the green, the small brown, and the large brown. The first grows easiest, the second is the hardiest, the third the best.]

The loquacious Gentleman.—Personality is so objectionable that compliance with your correspondent's wish is out of the question, and his desire to know who was meant by the foregoing gentle epithet must remain unsatisfied. But there can be nothing wrong in describing the class of people to which he belongs—fortunately a small class. Such men have a strange incoherent style of speaking like that of the unhappy beings to be seen by visitors to private asylums. When the floodgates of their garrulity are once opened their expressions are all introduced by the word I; thus "I don't approve of it; I think I know more than most men; I have two gardeners; I do my own work though; I wouldn't give a farthing for anybody's opinion except my own; I know more than all the gardeners in England; I have a collection of Primroses; I have above 20 sorts; I gave half-a-crown apiece for some of them; I grow Cabbages; I have a wonderful lot of Gooseberry bushes; I grow Roses; I have the finest Canonia ægyptiaca in England; I gave five shillings for it; I don't mind what I give; I am ready to give five shillings more for another specimen as good as what I now have; I disapprove of consulting gardeners about garden work; I think all nurserymen humbugs; I think the builder does not know his business; I know more about fruit than twenty Rivers's, and Hoggs', and Thompsons'; I can build a better house at half the price; I can make a Cucumber bed; I have got two Cucumber beds; I recommended that, but nobody would take my recommendation; nobody ever will; I think them wrong, very wrong; I was right; I am always right; nobody is so right as I am." It is thus the loquacious gentlemen gabble on; and this little peculiarity, while it leads satirical persons to call them Messrs. Ibymyselfi, raises a doubt in the minds of the uncharitable as to their sanity. *Fletanus.*

Rainfall in Cheshire.—Referring to some remarks that appeared in your Paper respecting the fall of rain, the enclosed may be of interest to your readers. You will notice that for the last 10 months we have had a fair quantity of rain, and that the great deficiency here was the last two months of 1857, and the first three months of 1858. *G.*

Fall of Rain at Hoole Bank, Chester.

	1850.	1851.	1852.	1853.	1854.	1855.	1856.	1857.	1858.	1859.
January	.7	2.35	3.13	2.09	1.67		2.62	1.9	.8	.55
February	.2	.82	1.16	.56	.58	1.18	1.07	.46	.18	1.44
March	.75	2.47	.72	1.04	.77	1.66	.58	1.64	.72	2.37
April	2.62	1.68	.28	1.18	.59	.33	1.9	2.28	2.44	2.45
May	1.57	1.24	1.27	1.05	1.61	1.36	1.6	3.	1.87	
June	3.16	3.35	3.49	4.20	1.24	2.48	2.54	3.82	1.36	
July	2.21	2.00	3.85	5.34	2.45	4.36	3.	2.14	1.34	
August	2.7	1.48	4.47	2.24	1.74	2.85	3.75	2.49	1.25	
September ..	1.8	1.21	2.94	1.99	1.19	1.12	2.76	1.98	2.76	
October	2.04	2.25	3.54	2.48	1.47	2.32	1.99	1.98	2.87	
November ..	1.4	2.53	4.86	1.02	1.7	.00	1.93	.94	1.65	
December ..	1.05	.7	2.36	.29	1.79	.81	1.51	.36	2.16	
	20.2	22.17	32.27	24.38	16.8	18.76	25.23	22.99	19.40	

Vines.—I enclose you a piece of a branch from a Black Barbarossa Vine. They rot off in the way you see this, when from 12 to 14 inches long, some with bunches of Grapes formed on them. Can you tell me the cause or name a remedy? The Vines have grown, had fruit, and are about three years old. *Robert Norfolk.* [Cases like this should be inquired into on the spot. The specimen sent is of an unusually deep green, but the leaves are something smaller than in well grown plants. From immediately below the leaf the succulent branch is rotten all through or is about to become so, and above the leaf there is a similar tendency, so that the whole of the young shoots may be expected to meet the same fate. There can be no doubt that the cause is in the border; if coarse rank manure or Mr. Roberts's garbage has been used, that would explain the mischief; or perhaps the border is cold and wet, and the house insufficiently ventilated. The mischief seems to arise from the Vines taking up more fluid than they can decompose or throw off by perspiration, and the dark colour points to the presence of nitrogen in excess, as would arise from an overdose of ammoniacal matter in the soil.]

Glass Dealing.—Living in Ireland and wanting glass for hothouse purposes, I caught sight of Thomas Millington's advertisement in your Paper, "Reduced tariff on glass." I wrote to order "three boxes of glass, 8½ by 10½ inches, 4ths quality," which appears in the advertisement to be 12*s.* 6*d.* per box. I receive the three boxes, but am charged 18*s.* 7*d.* I write to T. Millington to remonstrate and to ask for an explanation, and he writes in answer to say that he has sent the glass he usually sends to Ireland, and that I made no allusion to his advertisement when I gave the order. I refuse to keep the glass and return it as not according to my order, and am now threatened with law proceedings. I shall be greatly obliged by your inserting this letter in your Paper, as under the circumstances Thomas Millington's advertisement is calculated to mislead, and the public ought to be made aware how far the terms of that advertisement are to be depended upon. I enclose my card. *E. R., May* 17.

How to Grow Large Potatoes.—To improve the size of Potatoes, whether planted with small or large, whole, or even cut Potatoes, now in May, when the plants are only a few inches high, let the shoots be reduced by pulling them up to one, two, or at most three of the strongest. The tubers will consequently be fewer and very much larger, also in measure nearly all fit for market and the table. Every grower will do well to try a few rows by way of experiment, if he disbelieves the truth of this statement. *A. Hardy, Maldon, Essex.*

Morels.—Is not the enclosed sketch an extraordinary size for Morchella esculenta? Morels about the size of a hen's egg have been plentiful this spring in our neighbourhood, but this week we met with the one from which I made the sketch, and also another full 7 inches wide, but it was very irregular in shape, and flattened like a cock's comb. The sketch represents a specimen with the circumference of the pileus 14 inches. Gathered on the borders of the Fir plantations, King's Weston Hill. *J. S. R., May* 11. [This is by far the largest specimen we have ever seen.]

The Church Mite.—At the gathering of the Microscopical Society at the South Kensington Museum, on Thursday the 5th inst, I had the pleasure to exhibit under the microscope the Acarus from St. Peter's Church, Colchester, of which you lately gave a description and cut. I have been requested both by the architect and churchwarden of St. Peter's to acquaint them with the result of my observations, and as you have taken this Acarus under your special auspices, I have much pleasure in forwarding to you for publication the following short account of it. Mr. Benham, churchwarden of St. Peter's, writes to me as follows:—"A few vaults were unavoidably broken into in lowering the floor, but were immediately closed and cemented, and although experiments show that the creatures exist in the soil under the pews, yet no doubt (!) it is from the decayed wood lying in that soil that they proceed"—"they reappear very quickly after all that can be seen are destroyed." Mr. Hayward says, "Similar insects though in smaller numbers have been found in a neighbouring church." The curate writes, "the earth is full of them, they come up and lay eggs in the crevices of the woodwork and the heat hatches them." The heat being a new apparatus for warming the church, the furnace being in the crypt underneath; from all which we may learn that the earth beneath the church has been lately disturbed and that artificial heat has been added. I forward you a drawing of the Acarus, which I propose calling Acarus mausolei as being more definite than Acarus ecclesiasticus proposed by Mr. Westwood in his paper, as it would be very disagreeable for the ecclesiastics if by chance the Acarus should be associated however remotely with them. [Nevertheless, the name Acarus ecclesiasticus has the right of priority and should be retained.] The drawing I inclose was taken with the aid of the sixth of an inch object glass, from a live female specimen, very large; it differs very materially from the woodcut, the latter being from a dead specimen, and not showing the plumose tails, the enlarged body, or the hairs covering it. I find it to be a full grown 8-legged Acarus, most resembling the Acarus hippopodus described and figured by Hering. "Its body is twice as long as it is broad, beset all over with small hairs, head retractile, proboscis consisting of two valves moving laterally, mouth directed rather downwards, close to it two small palpi, feet eight, five jointed, the last joint as long as the four preceding, with a small sucking disk at the end, and two small hairs on each joint; on the abdomen a small prominence, and on each side four long straight plumose bristles. The three pairs of bristles on the back and those at the abdomen can be raised like the tail of a peacock. The large bristles are plumose, the hairs on the joints of the feet diminish in length towards the extremity of the foot. Only the third joint of the first pair of feet has a longer hair." This describes the creature with really remarkable accuracy, and if you will refer to the drawing, made before reading the description, you will discover the resemblance. The great majority of the Acari are animal parasites, of which there are myriads, varying in every conceivable manner, from the nidus in which they are discovered. The Acarus mausolei I have little doubt is a higher stage of existence of the Acarus folliculorum—Von Siebold. He goes on to state, "in living persons especially if fat, and in dead bodies, the contents of one or several vesicles may be pressed out by placing the nails upon the skin two or three lines apart, and then moving them towards each other." "In the sebaceous matter which then issued, I found the animals very easily. In dead subjects I have also evacuated them by pressure."—"We shall then find that the animals occur in extreme abundance, and that authors like Wilson, according to whom but few men are free from the mites, are in the right." —"They continue to live for a considerably time in fatty oils, whether taken from living or dead subjects. If the animals are still, this is only an apparent death, and they again become lively by the application of a gentle heat." Here we have the presence of an Acarus distinctly described as existing in dead bodies, and the Acarus hippopodus is found in the gangrenous feet of horses, portions of flesh already dead. Without therefore any difficulty the Acarus mausolei may be traced to the remains found in vaults. Gervais has described the Acarus cursor as existing in skeletons; I have however not had an opportunity of consulting his work. The eggs of the Acari are very rapidly hatched by artificial heat, or they will resist cold for almost any length of time. I therefore have no hesitation in stating that the Acari of St. Peter's arise from the vaults and mould beneath the pews, that they are encouraged by the heat of the surface and hot-water pipes. Now for the question of destruction. It will be found on referring to Von Siebold, Hering, Horn, Hebra, Hardy, &c., that Acari are exceedingly difficult to destroy; they will live for a considerable time "in concentrated solutions of soap, or in fats;" they are rapidly destroyed by the essential oils, especially the oil of rosemary, turpentine, the sulphuret of potassa, and the sulphide of calcium kills them. I should therefore recommend the following plan for their destruction:—Dig into the mould beneath the pews, and scatter about the vaults the cheap sulphide of calcium, at the same time keeping the church heated to hatch the eggs, destroying the animals with the sulphide as they appear. Wash the pews with turpentine once every three days; this should in about 10 days destroy all the animals there might be present at the time. As I have already

trespassed too much upon your space, I will conclude, but I shall be happy at your desire to enter into several other questions I had noted for observation at some future time. *Harry Wm. Lobb.*

Societies.

Crystal Palace Horticultural Exhibition: *May* 18.—This, the first great Floral Exhibition held in the Palace this season, may be stated to have been in every respect successful except as regards company, which, owing to the unfavourable state of the weather, was but limited. True, fruit was scarce; but plants, although presenting little novelty, were abundant. Stove, Greenhouse, fine-foliaged plants, and Azaleas occupied the benches along the sides of the principal transept; a noble circular group of Miscellaneous plants, surmounted by a fine specimen of Norfolk Island Pine, the centre at its intersection with the nave, and the fruit table the rear in front of the great organ. Lining the nave on both sides were collections of Pelargoniums, Roses in pots, groups of Azaleas, Cape Heaths, Ferns and Orchids. These it may be remarked were shown to more advantage than usual, owing to the green baize background against which they were staged having been raised sufficiently high to shut out almost completely from view the palace and its profuse ornamentation. Of Stove and Greenhouse plants a noble collection was furnished by Mr. Dods, gr. to Sir John Cathcart, Bart. It contained blue Leschenaultia, Everlastings, Eriostemons, Azaleas, among which was a very fine specimen of Glory of Sunning Hill, a perfectly double-flowered pink variety, which was deservedly the admiration of all who saw it; Adinandra fragrans, profusely ornamented with terminal clusters of rich rosy blossoms; the early flowering and handsome Boronia pinnata, Pimelea spectabilis, Acrophyllum venosum, certainly one of the most perfect examples of the kind we have ever seen—not large, but most compact, and loaded with little branchlets furnished for a considerable portion of their length with whorls of pure white flowers, surmounted by a tuft of pretty red leaves; Boronia serrulata, such a specimen as is rarely seen, being literally covered with rosy pink blossoms from top to bottom; the handsome lilac Tetratheca ericifolia; a conspicuous white Azalea forming a depressed cone, quite a mass of flowers; and Erica depressa, a fine specimen with branches hanging down so as to almost conceal the pot. Other collections of 20 came from Mr. B. Peed, gr. to T. Treadwell, Esq.; Mr. Page, gr. to W. Leaf, Esq.; Mr. Baxendine, gr. to W. H. Smallpiece, Esq.; and Mr. Rhodes, gr. to J. Phillpot, Esq., of Stamford Hill. Among these were nice specimens of Pimelea rosea, Polygalas, blue Leschenaultias, Allamandas, Boronias, the handsome Cape Heath E. tricolor Wilsoni, Boronia Drummondi, loaded with pretty rosy pink star-shaped blossoms; Francisceas, Pimeleas, Ixoras, Everlastings, and Vincas. Smaller collections, of which there were 14 from private growers and three from nurserymen, consisted for the most part of well-grown specimens of plants similar to those just enumerated.

Of plants remarkable for fine foliage there were one or two collections. The best came from Mr. Cutbush of Barnet, and Mr. Dods. The former had a most beautiful plant of Maranta capitata with large obovate lively green leaves prominently ribbed, striking and effective; others consisted of Caladiums, Cissus, Palms, Ferns, Aralias, and plants of that description. Mr. Dods had handsome specimens of Farfugium and Platycerium grande, Caladium marmoratum, and others. Mr. Young and Mr. Summers also showed plants remarkable for the beauty of their leaves.

Orchids were furnished in tolerably good condition. Considerably the best collection came from Mr. Bullen, gr. to J. Butler, Esq., of Woolwich. It contained Epidendrum bicornutum, Saccolabium retusum, guttatum, and another fine species with five spikes of flowers; Vanda suavis, teres, tricolor, and insignis; Aerides odoratum, Cattleya Skinneri, the snowy white Calanthe veratrifolia, Cœlogyne Lowi, with five spikes of buff or rather dull yellowish blossoms; Chysis bractescens, and the rare Cypripedium hirsutissimum, a fine plant with more purple in its flowers than is usually met with in this singular genus. Mr. Gedney, gr. to the Rev. W. Ellis, Hoddesdon, and Mr. Carson, gr. to W. F. G. Farmer, Esq., Cheam, also showed in this class. In these we remarked the orange Saccolabium curviflorum, Acanthophippium bicolor, with multitudes of blossoms, literally carpeting the surface of the pot; the bright yellow Oncidium ampliatum, the somewhat rare Burlingtonia rigida, Camarotis purpurea, Vanda teres, the handsome Arpophyllum giganteum, with four flower spikes; various Aerides, Dendrobium aggregatum, a charming mass of yellow blossoms; the white Butterfly plant (Phalænopsis), the orange Lælia cinnabarina, Cypripedium villosum, a finely-flowered Cattleya Mossiæ, Dendrobium albo-sanguineum, with buff flowers, having a brown centre; the showy Lycaste Skinneri, and a large plant of the Wallich Phaius. Smaller groups came from Mr. Dods, Mr. Rhodes, and others. In the Nurserymen's Class, Mr. Woolley sent a handsome group, in which we more particularly remarked Vanda tricolor and insignis, the Fielding Fox-brush Aerides, Lælia purpurata, a magnificent species with large pure white blossoms tipped with deep purple; Stanhopea oculata, various Oncidiums, Calanthe veratrifolia, Phalænopsis, the slender growing Dendrobium lituiflorum, and others of which mention was made in our report of the Horticultural Society's exhibition in St. James's Hall.

Of Azaleas there was, as might be expected, a grand display. The plants from Messrs. Green & Carson being large and very full of blossom, and occupying as they did conspicuous positions in the principal transept, were very effective, and were deservedly much admired. In both were good examples of the yellow sinensis. The others were equally well known kinds. Collections of smaller plants were abundant. In the Nurserymen's Class Messrs. Ivery & Turner had good collections. In the former were showy plants of Iveryana, double red, magnificans, a white variety; Glory of Sunning Hill, the double kind mentioned above; and Criterion. Mr. Turner had Gledstanesi, lateritia, variegata, alba lutescens, Perryana, atropurpurea, Symmetry, and Beauty of Berkshire. Messrs. Atlee and Fraser also showed Azaleas. Of newer kinds, Mr. Turner sent a group in which were Advance, General Outram, fine orange scarlet; Criterion, Model, Miltoni, Sir H. Havelock, crispiflora, Patrichia, large and fine; and Prince Jerome, a variety with finely-formed blossoms of good colour. Messrs. Ivery had Rosy Circle, Admiration, white flaked with purple; Duchesse Adelaide de Nassau, a handsome American kind; Ivery's Gem, Model, and crispiflora. Mr. Green sent, among others, Gem, deep salmon, and Glory of Sunning Hill. From Messrs. Ivery, of Peckham, came a collection, in which was the new continental kind called Petuniæflora, a rosy peach-coloured sort, of good form, but reported not to stand sun well. From Mr. Page came a purple flaked white called Queen Victoria.

Cape Heaths were produced in large quantities, and in good condition. We however did not observe among them anything new or remarkable.

Tall Cacti were furnished by Mr. Green and Mr. Bunn, gr. to J. R. Scott, Esq., of Hornsey. Both collections contained good plants of well-known kinds, among which we noticed a white kind allied to Epiphyllum crenatum.

Roses in pots were truly magnificent, and as a matter of course much admired. Messrs. Lane, Francis, and Paul all had fine specimens, as had also A. Rowland, Esq., and Mr. Terry, gr. to C. W. G. Puller, Esq., Youngsbury, Herts. Among them the following names will be familiar to our readers, viz., Baronne Prevost, Blairi, Paul Perras, Paul Ricaut, Niphetos, Souvenir d'un Ami, one of the finest of all Tea Roses; Coupe d'Hébé, Souvenir de Malmaison, Jules Margottin, Gloire de Dijon, Madame Masson, Aubernon, Louis Bonaparte, Louis Odier, Chenédolé, Lion des Combats, Louis Peyronny, Madame Willermoz, and Devoniensis. The gem of the exhibition was unquestionably a plant of General Jacqueminot in Messrs. Lane's collection. This was just in perfection, its blossoms being of the most intense crimson scarlet, and of the most striking description. Vicomtesse Decazes from Mr. Francis was also very fine, its numerous bright yellow flowers being greatly admired. Isabella Gray was also present, but by no means in good condition.

New or rare plants were scarce. Mr. Carson had Burlingtonia Farmeri; Mr. Dods a finely grown plant of the orange scarlet Genetyllis macrostegia; Messrs. Veitch the handsome Pothos, Begonias, and other plants mentioned in our report of the Horticultural Society's late exhibition; and a small yellow Daviesia called umbellata came from Mr. Green. Of plants not in flower Messrs. Veitch sent their Holly-leaved Japanese Olea, and Acer japonicum polymorphum from Japan; this had small reddish deeply cut leaves, and if hardy, as it was stated to be, must prove a most important acquisition. Mr. Carson sent the bright orange Aphelandra Porteana.

Among Miscellaneous plants was a variegated variety of Barbarea præcox, our early British Winter Cress, which was recommended as a plant for edging flower beds with, as was also the grey-looking Centaurea candidissima. These came from Messrs. Lee, who likewise had a variegated Tussilago Farfara, and some rare Ferns. From Messrs. Paul came a plant of the yellow Rhododendron Dalhousieanum, with 14 blossoms on it all in the greatest perfection. Flowered thus profusely it is extremely handsome and effective. Of Spergula pilifera, the new substitute for lawn Grasses, Mr. Summers, gr. to A. Mongredien, Esq., sent a large panful, which seemed to excite considerable interest. It was deep green and in excellent condition.

Ferns were not so plentiful as might have been expected. Mr. Summers, gr. to A. Mongredien, Esq., Forest Hill, contributed a good collection of Exotic kinds; and from Mr. Savey, gr. to E. A. de Grave, Esq., Fetcham, near Leatherhead, was a very good set of British kinds, all well grown plants.

Pelargoniums were as a whole scarcely so fine as we have seen them in former years. Mr. Turner's, however, formed an exception. His collection of 12 plants were all that could be desired. Conspicuous among them were Symmetry, Empress Eugenie, the prettily spotted Sanspareil, an example of which might be seen in every collection; Review, Rose Celestial, Mazeppa, Governor-General, Mr. Marnock, a finely spotted variety; Etna, Viola, Candidate. Among Messrs Dobson's plants we remarked Fairest of the Fair, Sanspareil, Vestal, Wonderful, Governor-General, and Satirist. Messrs. Windsor, Fraser, and Gaines also showed in this class.

In the Amateurs' class the best plants came from Mr. Wiggins, gr. to E. Beck, Esq., of Isleworth. These were well grown and finely flowered. Among the kinds were Bride, Fanny, Sanspareil, Fairest of the Fair. Of fancy kinds an excellent collection came from Mr. Turner. Messrs. Gaines and Windsor also sent groups. In the Amateurs' class were collections from Mr. Wein gr. to Mrs. Hodgson, of Hampstead; Mr. James, gr. t W. F. Watson, Esq., of Isleworth; and Mr. Holland, gr to R. W. Peake, Esq., of Hounslow.

Of Fuchsias we observed one rather striking collec tion, the plants in which stood from 8 to 10 feet i height at least, and were tolerably well flowered. They were all trained to single stems.

Cinerarias were exhibited in beautiful condition by Mr. Turner, who sent Slough Rival, Incomparable Brilliant (Smith's) crimson, Brilliant (Lidgard's) white tipped with blue; Eclipse, Perfection, and Regulator, the last a good blue. Some fine plants were also furnished by Mr. Shrimpton, gr. to A. J. Doxat, Esq., among which we noticed optima, Loveliness, Mrs. Hoyle, Admiral Dundas, Lady Paxton, and Prince of Blues. Messrs. Dobson had Perfection, Mrs. Livingstone, and others, the names of most of which were the same as those just mentioned.

Auriculas Ne Plus Ultra and Lancashire Hero, both fine kinds, were shown by Mr. Turner.

Calceolarias, herbaceous kinds, came from Messrs. Dobson. Among them were Ruby Queen, Yellow Model, King of Yellows, Edith, and others, all finely spotted varieties.

Other florists' flowers consisted of Tulips, cut Verbenas, and Pansies.

Fruit, as has been stated, was scarce. Of Pine Apples, one specimen well worthy of special notice was a Queen 5½ lbs. in weight from Mr. Page, gr. to W. Leaf, Esq., of Streatham. This was beautifully ripened. Other fruit of this variety came from Messrs. Davis and Frost. Mr. Gillham sent three well grown Black Jamaicas.

Of Grapes, the best were exhibitions of Black Hamburgh from Messrs. Frost and Hill. Mr. Ellis, gr., Fleet House, Devonshire, also sent fine bunches of that variety, as did also Mr. Stent, gr. to W. Herbert, Esq., Clapham. Of baskets of 12 bunches each, the best Black Hamburgh came from Mr. French, of Burnham. These were large in berry and well coloured. A good basket also came from Mr. Davies, of Starch Green, Hammersmith. Some fair bunches from 2-year-old Vines were shown by Mr. Sorley, of Liverpool. White Grapes were not good.

Peaches came from Mr. Constantine, gr. to C. Mills, Esq., of Hillingdon; and from Mr. Gardiner, Shipston-on-Stour. The sorts apparently Royal George.

Of Melons the best were Orion, green-fleshed, and Polignac, scarlet fleshed, from Mr. Peed. The next in point of merit was M'Ewen's Hybrid, from Mr. Constantine. Mr. Tegg also showed a nice little Melon.

Figs, Lee's Perpetual, were furnished by Mr. Constantine.

Of Cherries, Mr. Shuter again sent a fine dish of May Duke.

Strawberries, Sir Charles Napier, were again shown in admirable condition by Mr. Smith, of Twickenham. Mr. George, gr. to A. Gooday, Esq., sent some good British Queens, and good fruit of other sorts came from Mr. Taylor and Mr. Gillham. Strawberries in pots were contributed by Mr. Kaile, gr. to Lord Lovelace.

Vines and Orange trees in pots came from Mr. Waters, gr. to F. Moore, Esq., Sydenham, and from Mr. Inman, gr. to J. Elliott, Esq., Forest Hill; Mr. Mackay, gr. to T. Devas, Esq., Dulwich; and Mr. Hutt, gr. to Miss Coutts, Highgate. Cucumbers, fine specimens, came from Mr. Farmer, gr. to S. Morley, Esq., Stamford Hill; Mr. Monro, Barnet, Herts.; and Mr. Weir, gr. to Mrs. Hodgson, of Hampstead.

Notices of Books.

The Citrus Wood of the Ancients (a very small pamphlet reprinted from the *Builder* of April 9, and sold by C. Cross, 14, Cleveland Mews, Fitzroy Square). The object of the writer of this little essay is to prove that the valuable Citrus wood of the extravagant Romans was obtained from the Burrs of Callitris quadrivalvis. Since many readers of the *Gardeners' Chronicle* are probably unacquainted with the history of these tables we quote our author's statement on that subject:—

"Of all the ornamental woods of which we have any record, none has ever enjoyed so great a celebrity as the Citrus. The Greek and Roman writers make frequent mention of this wood.

"It was one of the accusations directed by Cicero against Verres, that his cupidity was unable to withstand the attractions of a Citrean table in the possession of a fellow citizen:—'*Tu maximam et pulcherrimam mensam citream, a Quinto Lutatio Diodoro, Lilybæi, abstulisti,*' was the charge preferred by the orator, who was himself no bad judge of a Citrean table.

"Martial by comparing this wood with gold would imply that it was esteemed the first of all precious materials:—

'Accipe felices Atlantica munera sylvas;
Aurea qui dederit dona, minora dabit.'

"In another of his epigrams the same author represents a Maple table addressing a more aristocratic Citrean one thus:—

'Non sum crispa quidem, nec sylvæ filia Mauræ.'

"It is apparently with the admiration of a connoisseur that Petronius exclaims,—'*Ecce Afris eruta terris Citrea mensa;*' while Tertullian, with due Christian austerity, in alluding to the vast sums which Cicero and

others were known to have sacrificed to the fashion for fine tables, sneers at the extravagance:—'*Heu! quantis facultatibus estimavere ligneas maculas!*'

"But it is to Pliny that we are indebted for the most minute and interesting account of the Citrus, and the part played by it in the luxury and refinement of ancient Rome. 'To Mauritania and its peculiar Citrus tree,' he says, 'we owe the mania for fine tables, with which the women reproach the men when they complain of their expenditure on pearls. There is preserved to the present day a table which belonged to M. T. Cicero, and for which, notwithstanding his comparatively moderate means, he gave no less a sum than 9000*l.* sterling. Two tables also were sold by auction, which had belonged to King Juba; the price fetched by one was 10,800*l.* sterling, and the other something less. * * The largest table that has ever yet been known was one which belonged to Ptolemæus, king of Mauritania; it was made of two semi-circumferences, joined together down the middle, being 4½ feet in diameter, and a quarter of a foot in thickness. * * The Emperor Tiberius had likewise a table, which exceeded 4 feet in diameter; this, however, was only covered with a veneer of Citrus wood. * *

"The principal merit of the tables made of this material is to have veins arranged in wavy lines, or spirals, like so many whirlpools. In the former arrangement the veins run in an oblong direction, for which reason the tables presenting this appearance are called *mensæ ligrinæ*; while in the latter the marks are circling and spiral, and hence give rise to the appellation *mensæ pantherinæ*. Next in esteem to these is the wood with a small mottle, representing, as it were, a surface covered with dense masses of grain; *apiatæ* is the term given to these. But it is the colour of the wood which is the quality held in the highest esteem; that of red wine mixed with honey (*mulsum*) being the most prized, the figure coming out in such with particular brilliancy. After colour, size is looked to; at the present day entire trunks are greatly admired, and sometimes several are united in a single table.

"The Citrus formed one of the principal sacrificial woods of the ancients. According to Theophrastus, Circe was said to have employed it in her enchantments, and it was, no doubt, the same material that Homer meant by the wood *θυον*, with which he represents Calypso as fumigating her grotto."

What was the tree producing this famous wood? The author believes that no one has suspected its origin before himself; and it appears to be true that writers on Coniferous plants have failed to determine what the Citrus may have been. The learned Endlicher indeed supposes the original *Θυίον* (not *θυον*) or *Θυία* may have been Callitris quadrivalvis, but he does not also refer it to the *Κέδρος θαυμασὴ* of Theophrastus, the *Cedrus magna* of Pliny, which on the contrary, like most other authors, he supposes to have been the Cedar of Lebanon, a very improbable identification. But by some writer the Cedrus wood must have been already referred to the Callitris, for in the 3d volume of Riley's Pliny that translator says it, the Citrus, is "generally supposed to be the Thuja articulata of Desfontaines," *i. e.* Callitris quadrivalvis; adding, however, the strange remark that "Desfontaine's Thuja articulata is the same as the Cedrus atlantica of other botanists," itself a variety of the Cedar of Lebanon. So that according to Mr. Riley the Callitris quadrivalvis and the Cedar of Lebanon are the same plant!! On what authority the Cedrus is said to be "generally supposed" we do not know; but the remark shows that the suggestion is not new.

Those who are curious to see specimens of Citrean tables will find one in the Museum of Œconomic Botany at Kew, and "tables and other articles made of the above wood can be seen at the workshop of Mr. C. Cross, working cabinet-maker, 14, Cleveland Mews, Fitzroy Square."

Filices Exoticæ, or Coloured Figures and Descriptions of Exotic Ferns, such as are chiefly cultivated in the R. Gardens, Kew. By Sir W. J. Hooker, K.H., F.R.S. Reeve. 4to.

This superb work contains 100 plates, drawn by Fitch, of the finest Ferns in cultivation. To wealthy lovers of gardening it is one of the best guides they can follow; and to the collectors of fine books it is an indispensable acquisition for their libraries. Each of the hundred plants is accompanied by letterpress giving the technical description, synonyms, and popular description of the species figured, together with some scientific discussion concerning the name it ought to bear. Upon this point Sir William Hooker is one of the highest of living authorities, and Fern growers will not regret to learn that he is no friend to the prevailing rage for new names uncalled for by scientific necessity.

The Handbook of Dining. By L. F. Simpson. Longmans. Pp. 244. 12mo.

If people do not know how to dine this volume will hardly teach them. It is in reality a collection of jokes, not always quite proper, about dining, dinners, and diners founded upon the *Physiologie du Goût* of Brillat-Savarin, a merry mortal, and what the French call a good liver. We cannot compliment Mr. Simpson upon the manner in which he has executed the task which we are told he was led to impose upon himself by some, not over sensible, letters on dining which appeared in the *Times* newspaper. His preface is in very bad taste, and some of his translation is hardly more intelligible than the original to those who are unfamiliar with French. What for example are plain English people to understand by such expressions as the following, which occur every now and then, "Throw in the *sauté*," "boiled, fried *à l'huile*, in wine, hot or cold," "serve up as a *Matelote*," "the exclusive *apanage* of man," "Every guest has a *procès verbal* of the *menu*"? Such phrases are intelligible enough to those who do not require a French book to be translated for them, but are incomprehensible by those who do. We are reminded of a French Cookery Book translated after this fashion: "Fill a bottle with Bigarreaux, leaving on each a demi-centimètre of queue. Add some leaves of estragon;" and in another place, "Cut a mou de veau into small pieces. Degorge them in several waters, then put them into a casserole with a bit of butter, some Ciboules, Thyme, and Laurel leaves," and so on, by the word Laurel meaning Sweet Bay.

Notwithstanding these faults the lively style of Savarin will secure Mr. Simpson many readers among those who have not access to the original; especially if they think that nobody knows how to dine except a Frenchman; an opinion in which by the way we do not concur. The fault indeed of middle class dinners is that they are too French, for unless French cooking is excellent it is detestable, and excellent French cooking is beyond the means of most of us. A few extracts taken almost at random will let the reader know what he has to expect.

Chocolate.—"The Spanish ladies of the New World are fond of chocolate to excess. Not satisfied with taking it two or three times a day they even have it sometimes brought to them in church. For this they have often been reproved by the bishops. But they finally winked at it, and the venerable father, Escobar, whose metaphysics were as subtile as his morals were accommodating, formally declared that chocolate *à l'eau* did not interfere with fasting, quoting the old adage, '*Liquidum non frangit jejunium.*' Linnæus styles cocoa, *cacao theobroma*, or 'drink of the gods.' Attempts have been made to discover the reason for so strong a denomination; some attribute it to the fact that he was passionately fond of chocolate; others that he wished to please his confessor; others out of gallantry to please a Queen who had introduced it. Chocolate has been the subject of deep dissertations, with a view to determine its nature and properties, and to place it in the category of hot, cold, or temperate food; it must be owned that these learned documents have served but little to the establishment of the truth. But time and experience, those two great masters, have established that chocolate, carefully prepared, is as wholesome as it is agreeable; that it is nutritious and easy of digestion; that it does not hurt the complexion as coffee is supposed to do, on the contrary, it clears it; that it is well suited to men of all sedentary or mental occupations, to literary men, barristers, and travellers; finally, that it will not hurt the weakest stomachs; that it has proved beneficial in chronic diseases, and becomes the last resource in affections of the pylorus. Some people complain they cannot digest chocolate; others, on the contrary, pretend that it does not contain sufficient nourishment, and digests too soon. It is very probable that the first have only themselves to blame, and that they purchase bad chocolate; good chocolate will not offend the most delicate stomach. As regards the others, the remedy is easy; let them have a chop or a kidney with it, and let them thank Heaven for giving them a strong digestion. After having made a hearty and excellent breakfast, swallow a cup of good chocolate, and within three hours the digestive organs will have performed their functions. From zeal for the science, I requested various ladies to try it; they first said they should die, but found it answer so well that they glorified the professor."

M. Savarin's way of eating Larks.—"Take a fat little bird by the beak, sprinkle a little salt over it, take out the gullet, put the bird cleverly into your mouth, bite him off close to your fingers, and chew him manfully; the result will be an abundance of juice to envelope the whole organ, and you will enjoy a pleasure unknown to the vulgar."

Is this last method recommended for adoption among us?

Eggs fried in Gravy.—"I was travelling one day with two ladies to Melun. We left rather late in the forenoon, and reached Montgeron with a famous appetite. We put up at a very decent-looking inn, but, to our disappointment, were informed three diligences and two post-chaises had passed, and the travellers had eaten up everything, like locusts from Egypt. We had, however, looked into the kitchen, and saw a very nice-looking *gigot* of mutton turning on the spit, towards which the ladies cast hungry eyes. It belonged to three travellers in the coffee-room. With a half-hungry, half-supplicating voice, I asked whether we could not have some eggs fried in the gravy; with a cup of coffee it would suffice. 'Oh! certainly.' The cook broke the eggs into the dripping-pan. As soon as he turned his back, I maliciously drew my travelling-knife, and made two or three incisions in the roast to allow the juice to flow more freely. I then watched my eggs, and, when they were done, took them to my party. They were found excellent, and we certainly had the best part of the mutton."

All questions have two sides. In the *Past and Future of the Present Crisis* (Hardwicke, a pamphlet), Mr. H. M. Ward takes the side of the Emperor of the French, and with no little ability defends his Imperial Majesty from all the charges that a hostile press has brought against him. In like manner Austrian acts are denounced. Politicians should read the pamphlet.

We have received from *Mr. Stanford*, of 6, Charing Cross, a beautifully executed coloured map of British Columbia, Vancouver Island, &c., with the gold country laid down as exactly as existing information permits. It includes all the American continent lying between the parallels of 47° and 57° N. lat., and 113° to 153° W. long., thus including a part of North Washington territory, in the United States, and the Rocky Mountain range in British territory, with the newly discovered Kotani Pass from Western Canada into British Columbia.

Another map issued by the same active publisher is that of *Davies' Central Europe*, 31 inches by 44, giving all the European railways, roads, and principal places between the States of the Church and Denmark, thus forming an admirable guide to the present seat of war. Small places being omitted this map is singularly free from the confusion resulting from covering the ground with unimportant names.

For one shilling the visitor to London can now be provided with a very good, well executed, little guide to the metropolis, called *Hardwicke's Shilling Handy Book of London* (Hardwicke, Piccadilly) with uncommonly good engravings of some of the most striking places to be seen. The price is very low, but the execution would be worthy of even a dear book.

TRADE LISTS RECEIVED.—*Wm. Barnes* (Camberwell), *Select List of Indian Azaleas, Cinerarias, Verbenas, Fuchsias, Hollyhocks, Liliums, Phloxes, Roses, Geraniums, Chrysanthemums, Ferns, and other Miscellaneous Plants*, forms 36 pages in double columns of good useful bedding and other plants for decoration, as well as Roses, Ferns, and hardy hothouse and greenhouse plants. The collections of Azalea indica include about 130, and of Chrysanthemum and Phlox nearly 100 sorts each.—*E. G. Henderson & Son's* (Wellington Road) *Spring List of Plants* is another of those extraordinary lists which indicate unmistakeably how important a trade that of Nurseryman has become. We have here no fewer than 104 closely printed 8vo pages, got out in the best manner by Bradbury & Evans, and containing everything required in modern decorative gardening.

Garden Memoranda.

CLIVEDEN, NEAR MAIDENHEAD, ONE OF THE SEATS OF HIS GRACE THE DUKE OF SUTHERLAND.—As it has now become known that spring flower gardening is carried on here with great success under the excellent management of Mr. Fleming, some account of the appearance of this fine place at the present time may not be unacceptable. The effect produced on the beautiful lawn which lies between the mansion and the Thames, especially when viewed from the noble terrace in front of the house, is grand in the extreme, the beds being now nearly as full of blossom as they might be expected to be even in July or August. Commencing with the small flower garden in front of the conservatory, we find running its whole length on one side a small curved border edged with a broad belt of the dwarf growing early flowering Aubrietia purpurea. Behind this is a compact row of purple Pansies, and beyond them mixed Anemones, Ranunculuses, Tulips, and a good belt of dwarf Italian Wallflower. Taking the beds as they appear at present perhaps the most effective were the following mixtures, viz.: Tulips and the common blue Forget-me-Not; Anemones, Jonquils, and Erysimum Peroffskianum, edged with dark Pansies; a pink coloured Squill and Forget-me-Not, the latter now taking the place of the former, whose beauty is beginning to decline; Ranunculuses and the white Saxifraga granulata, which is one of the most beautiful spring plants of its kind; Scarlet Ranunculuses, edged with a pale blue Pansy, a most effective bed; Evergreen Candytuft, edged with dark Pansies and Scilla "Nonsuch," mixed with the purple Silene pendula; Dielytra and double Cuckoo flower (Cardamine pratensis), Tulips, and white Forget-me-Not, and Tulips, and white Alyssum. It must be observed that the beauty of the bulbous plants in most of the above masses is now nearly over, and that the plants with which they have been associated have already taken their places with excellent effect. Thus the general aspect of the beds changes at different stages of their development, one kind of flower taking the place of another as fast as the latter goes out of bloom. Along the terrace are beautiful vases extending the whole length of the south front of the house filled with Pansies of different colours clustering round suitable centres composed of other plants.

Below the terrace right and left of the centre flight of steps are two admirable ribbon borders at present full of flowers, the colours of which are finely contrasted. The lines, being curved, present an agreeable wavy appearance. The front line next the Grass consists of the grey looking Cerastium tomentosum covered with white flowers. This forms a broad belt, behind which are rows of yellow and blue Pansies, White Forget-me-Not and Alyssum mixed, the purple or rather pink Silene pendula, yellow Alyssum, blue Forget-me-Not, Wallflowers, orange Erysimum, and white and red Brompton Stocks. Each of these borders, both of which are composed of the same materials, are 47 yards in length, and from the outside curve to the terrace wall 18 feet in width; looked down upon therefore from the terrace the effect is very striking. Some idea

of the number of plants required to fill them may be formed when we state that it requires 500 Pansies for a single row on one side.

In front of each of the curves of the ribbon are circular beds on the Grass, and corresponding beds occupy suitable positions on the other side of the walk. These are filled with Anemones, Tulips, &c., surrounded by a broad edging of white Arabis and blue Pansy; yellow next the Grass is however what Mr. Fleming would have preferred. In summer these circular beds form stations for Orange trees, of which there are here some very handsome specimens. Forming a centre-piece as it were for the ribbon borders are two large baskets or vases of Austin & Seeley's artificial stone. These are filled with Hyacinths, Anemones, and mixed Tulips, edged with Pansies, blue Forget-me-Not, and white Candytuft.

We now come to the main or central flower garden, the whole of which, as has been already stated, is seen from the terrace. The beds are cut out in panels on each side of a magnificent turf-covered promenade; the whole occupying a space of some 5 acres. Here the beds are on a scale commensurate with the extent of Grass. They are edged with Privet, Spruce, and Sweet Briar, cut in the form of hedges about 9 inches in height, and as much in width. Each panel has for a centre-piece a mass of American plants, around which are Grass walks some 6 feet in width, and belts of flowers nearly equal in point of size bounded on the outside by the little hedges just named. These belts or borders have been for some time past and are still one mass of gay flowers. One contained Anemones mixed with Limnanthes Douglasii; another yellow Tulips, and the yellow Lasthenia californica; a third Tulips, blue and white Forget-me-Not, and white Alyssum; a fourth mixed Tulips and the pink Silene pendula; a fifth mixed Tulips and Forget-me-Not; a sixth white Tulips and the pale lavender-coloured Nepeta cærulea; a seventh mixed Anemones, the orange Erysimum, and the white and yellow Limnanthes Douglasii.

This constitutes one half; the other half is filled in a similar manner. Below, forming as it were a kind of termination to the whole, is a large circle of mixed flowering plants surrounding a Grassy centre; and bounding all is a raised promenade, from which the flower beds below appear to much advantage. The above will give some idea to what extent spring gardening is carried on at this place.

As soon as the beauty of these beds begin to fade they are immediately cleared of their occupants, and filled with the ordinary half hardy bedding plants, such as Geraniums, &c., thousands of which are now being prepared and hardened off for that purpose. The whole of the spring plants are removed from the beds every season and treated as follows:—Pansies are taken out the last week in May and laid in a shady corner and well watered until time can be found for propagating them, which generally commences about the second week in June; after the beds have been filled with half hardy plants, cuttings are taken off them in the usual way, and planted in a mixture of road scrapings with a frame light over them, to be planted out as soon as struck into borders where they grow until autumn, when the beds are cleared; they are then removed into the borders properly prepared for them.

Seeds of the Wallflowers, Forget-me-Not, Silene, and Anemones are sown about the second week in June; they are then left till the beds are clear in autumn, and are planted out with the Pansies.

The roots and bulbs of the Ranunculuses, Anemones, Tulips, and Saxifraga, &c., are all taken up, carefully dried, and kept till autumn, when they are again planted out. The greatest difficulty is experienced with the Alyssum and Candytuft. These require more attention than the others.

We may add that the kitchen garden and fruit department are managed with equal skill, and that the result is all that could be wished. Forced Strawberries are noticed in abundance; Grapes in two Vineries ripe, black as sloes, and well flavoured; and in a well constructed "Trentham case" was a fine crop of Peaches, some of which were all but ready to gather. On walls out of doors Apricots and Peaches are thin.

Calendar of Operations.

(For the ensuing Week.)

PLANT DEPARTMENT.

Conservatory, &c.—Climbing or trained plants still require attention in regard to thinning, training, stopping, &c. If the sun shines very brightly a slight shading would be of benefit for a few hours on very hot days. The inmates of such structures however are sometimes very various in character and habit, and the foregoing advice would be more applicable perhaps to New Holland plants, Oranges, Camellias, &c. As regards stove plants and Orchids, thorough cleanliness, free ventilation, plenty of atmospheric moisture, and occasionally a slight shading in very bright sunshine, are at present the chief requisites. No means should be neglected to encourage a free growth at this period in Orchids, in order to get their pseudo-bulbs firm, well fed, and well ripened betimes. In mixed greenhouses fires may now be nearly or entirely dispensed with. If the weather is genial and accompanied with bright sunshine heat sufficient for the night may be secured by shutting up early, not however soon enough to scorch. A general rule can scarcely be laid down in such cases to guide the inexperienced. On a sunny afternoon one-half of the air may be reduced at 3 o'clock, and the whole taken away at 4 o'clock. Continue the various points of cultivation previously recommended, remembering that now is the period for rapid growth and for applying all the encouragements accessory thereto.

FORCING DEPARTMENT.

Pineries.—Where the quality of the fruit is the first consideration, which it is or should be in every instance, care must be observed to have the soil about the roots in a rather dry state during the ripening period, and where it can be done without injuring the rest of the stock the atmosphere should be kept rather dry, admitting air more freely while the fruit is colouring; for there is no chance of fruit of prime quality if the soil is very wet about the roots, and the atmosphere kept close and saturated with moisture during the ripening period. In the case of plants growing in pots the trouble of collecting and placing together those approaching ripeness, so as to be able to treat them properly, would be well repaid. Use fire-heat as sparingly as may consist with maintaining the proper degree of temperature. Be very careful to keep the plants properly supplied with water at the root, and give plenty of manure water to those in vigorous growth, and also to plants swelling their fruit.

Vineries.—Where Muscats are grown for a late crop the night temperature of the house must not be allowed to fall too low after the bunches begin to appear, and a temperature of from 65° to 70° must be maintained while the fruit is setting to ensure good sized, close bunches. Keep a sharp look out for red spider in houses where the fruit is colouring, and if this pest make its appearance lose no time in coating the hot-water pipes with sulphur. If not already done get the litter removed from the outside borders, but if it is found that the roots have crept up into it, which will probably be the case where the Vines were started early in the season, the decayed portion at the bottom should be left, and every caution used not to disturb the young roots. And if many roots are found at the surface it will be necessary, after removing the litter, to top-dress the border to prevent these getting dried up; a slight coat of turfy loam, leaf soil, and horse-droppings will answer very well for this purpose. See that the borders of houses, where the fruit is swelling, are not allowed to get too dry. Melons.—Maintain a rather close, moist, warm temperature to plants recently planted out until they get into full growth, but avoid inducing a gross habit of growth by too much moisture and warmth after the roots fairly get hold of the soil, for it is generally somewhat difficult to secure a crop from wood of this sort. Give air as freely as the state of the weather will admit, in order to secure firm short-jointed wood, and where the crop is setting, as the young fruit is very apt to damp off unless the atmosphere is kept moderately dry. Endeavour to secure a steady bottom-heat of about 75° or 80° for plants in all stages, and also to keep the soil in a proper state as to moisture; avoid having to water while the crop is setting, by well soaking the soil before the principal blossoms begin to expand. Keep a careful look out for insects, and use every precaution to prevent these getting established upon the foliage, for there is hardly any chance of a crop of fruit unless the leaves can be preserved in health.

FLOWER GARDEN AND SHRUBBERIES.

It is now high time to think of bedding out some of the mass flowers, at least such as are least liable to injury by frost, and have undergone a proper hardening process. Much may be done as to display by a judicious arrangement or combination of both colour and form. As a general principle, our best authorities seem to agree that the various shades of orange and yellows will class well with the various purples and blues; whites are suitable with the blues, oranges, and reds; whites however, derange the effect of the yellows as also the violet shades, whilst the various red or rose-coloured flowers are, as far as colour is concerned, capable of forming a bed by themselves. Every individual bed of a flower garden should, in our opinion, be complete in itself, both with regard to colour and outline.

HARDY FRUIT AND KITCHEN GARDEN.

Let a sowing of Endive be made at once. Throw in a sprinkling of early Dutch Turnips on a cool border, neither digging nor using manure. It is a mistaken notion to persist in digging ground for these in kitchen gardens so full of old manures, the Turnip being naturally too gross then under any circumstances. Always choose the poorest hardest ground you can find, and merely hoe the seed in; by these means you will always procure good Turnips. Let full crops of Kidney Beans be planted forthwith, and a row of Knight's Marrow Peas or the British Queen. The row should be prepared after the way of a Celery drill, and the manure completely saturated with moisture.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.
For the Week ending May 19, 1859, as observed at the Horticultural Gardens.

May.	Month's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Min.	Mean	Temperature of the Earth. 1 foot deep.	2 feet deep.	Wind.	Rain
Friday 13	10	30.175	30.055	66	34	50.0	51	52	E.	.00
Satur. 14	11	30.098	30.002	63	32	47.5	53	51	E.	.00
Sunday 15	12	29.955	29.861	64	41	52.5	52½	51	N.E.	.04
Mon. 16	○	29.896	29.765	64	46	55.0	53½	51½	N.E.	.10
Tues. 17	14	29.761	29.718	56	46	51.0	54	52	N.	.06
Wed. 18	15	29.742	29.631	60	47	53.5	54	52	N.	.00
Thurs. 19	16	29.692	29.649	67	49	58.0	54	52	S.	.30
Average		29.903	29.811	62.8	42.6	52.5	53.6	51.6		.50

May 13—Fine; clear and cold at night
— 14—Dry cold haze; fine; clear and cold.
— 15—Fine; cloudy; rain at night.
— 16—Cloudy; rain; cloudy and fine.
— 17—Rain; cloudy; overcast.
— 18—Densely and uniformly overcast.
— 19—Overcast; fine; rain at night.
Mean temperature of the week, 1 deg. below the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 33 years, for the ensuing Week, ending May 28, 1359.

May.	Average Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 22..	65.4	43.7	54.5	16	0.30 in.	6	7	3	3	3	8	2	1
Mon. 23..	67.3	45.6	56.4	11	0.53	1	5	6	4	2	6	4	5
Tues. 24..	67.9	45.0	56.5	11	0.54	2	6	7	1	5	8	3	1
Wed. 25..	66.3	44.5	55.4	14	0.64	2	11	3	2	1	8	5	1
Thurs. 26..	66.8	43.6	55.2	14	0.43	2	10	5	1	3	7	3	2
Friday 27..	68.2	45.2	56.7	18	0.63	2	9	6	2	1	9	2	2
Satur. 28..	67.4	44.7	56.1	14	0.97	1	9	8	1	5	7	2	1

The highest temperature during the above period occurred on the 28th, 1847—therm. 91 deg.; and the lowest on the 25th, 1839—therm. 29 deg.

Notices to Correspondents.

American Trees: *C P.* The best book on American trees is Michaux's Arbres Forestiers. The Magnolia acuminata is as hardy as the Tulip tree, and is one of the best sorts for planting in a park in a rather exposed situation.

Books: *A Cockney.* No book will teach a person how to garden, unless he possesses some preliminary information. If he is "utterly ignorant of the most simple operations of the healthful science," then he had better try Mawe's edition of Abercrombie's *Every Man his own Gardener.*

Cedars of Lebanon: *M P.* We should move them in the middle of September when the earth is warm, and the nights damp and cool. October is rather late. We have within view a specimen 15 feet high removed with perfect safety at the time recommended. But this kind of tree requires careful removal, whatever the season.

Cucumbers: *J Cuthill.* Your white-spined fruit are very handsome, free from ribs and remarkably well grown.

Diseased Peaches: *Truro* There is no appearance of beetles having attacked the shoots. The mischief probably lies in the border. Look to that.

Greenhouse: *Quite a Beginner.* We do not see what you can do with the space where the flue runs. Nothing will grow there except Rhubarb, Seakale, and such things as want blanching in winter or spring. Even if you could obtain light enough there, which is impracticable, the dry air about the flue would be fatal to vegetation of the usual kind. Slate will form a better material on which to place your pots, and as it will be necessary to keep the house continually watered in dry weather, the extra cost of slate will be repaid by its greater durability. Take care that your ventilators are so managed that the air which enters by them cannot *possibly* pass into the house without being warmed by the flue. You may effect this perhaps by providing zinc horizontal flues, one end of which fits the ventilator and the other rests on the flue itself.

Names of Fruits: *J L A.* The specimens of Dumelow's Seedling and Rymer Apples are unquestionably correct; and so is, most probably, the Beauty of Kent, although smaller than usual.‖

Names of Plants: We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have or could have undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*J B.* 1, Epidendrum rhizophorum; 2, Epidendrum cochleatum.—*W Hooper.* Some Polygala—and if wild P. vulgaris. If not, then the specimen is indeterminable for want of the radical leaves.—*Reader.* 1, Pteris tremula; 2, Polystichum falcinellum; 3, Viburnum cotinifolium; 4, Onychium japonicum.—*A H.* 7, Lomaria Fraseri, a very rare species; 8, Cyathea medullaris; 9, Dicksonia squarrosa; 10, Goniopteris peunigera or Forsteri. Thanks for the other plant.—*M K.* Your No. 3 is we believe Lastrea æmula, as before stated, but this difficult group is not to be satisfactorily named from such imperfect specimens as yours, badly preserved, and wanting especially the stalk and its scales. There is no doubt about the others.—*B G.* Not numbered; the larger one Pleopeltis Billardieri; the smaller Cheilanthes alabamensis.—*Hastings.* Anagallis arvensis.—*B P.* 2, Hæmadictyon venosum; 1 has no flower, and has too common a form to be determined without one: it is not the Arrowroot plant. The seed is that of some Bignonia.

Night Temperature: *Liverpool.* We believe it is no less a person than Milton who says—"Where there is much desire to learn there will of necessity be much arguing, much writing, many opinions—for opinions are but knowledge in the making."

Persian Melons: *F H S.* We are informed that they all perished during the dry weather of last autumn from the attack of red spider.

Rifles: *Hulme.* There is no doubt about the Enfield rifle's fouling. When the men went out to the rifle pits before Sebastopol each man carried with him a rag and bottle of water. The Lancaster rifle does not foul; we once fired 160 rounds from a Sapper's musket, which is of Lancaster's pattern, and it was as clean at the end as at the beginning. Three days since we took down a Lancaster rifle which had not been fired for two years and was put by without the barrel being cleaned out. The cartridge grease that had adhered to the inside was in the state of dust, and was removed by merely flashing a little powder through it, when the rifle loaded as freely as ever. Since Government is to determine the arms to be issued to rifle volunteers they should apply for such rifles as are now used by the Sappers, all of which we believe are on Lancaster's smooth-bore pattern. We much doubt the possibility of preventing grooved rifles from fouling on service.

Rifle Shooting: *Goole.* You require a good tool, a good eye, a steady hand, and the power of judging pretty well of distance. In modern rifles, suited for conical balls, the trajectory is so low that if you can but shoot straight you could hardly miss a man at 500 yards, even although you mis-judged the distance to be only 400 or as much as 600 yards.

Senecio: *J B.* We have not seen a variegated variety of the kind you name. If handsome it might be suitable for edgings to flower beds.‡

The Ballot: *W C E.* The notice of the day on which it was to take place was published in the *Gardeners' Chronicle* of March 26, although by some oversight it was omitted in the number to which you refer. Would it not have been better to have expended a penny in making an inquiry in the proper quarter?

Troublesome Talkers: *Richmond.* There are many absurd people in the world, but they have not the slightest idea themselves that they are absurd. Your friend belongs to that class.

Vine Borders: *J L A.* Of the four kinds of soil, we consider No. 2 is the best; but to this we would much prefer a mixture of No. 2 and No. 4.‖

*** As usual, many communications have been received too late, and others are detained till the necessary inquiries can be made. We must also beg the indulgence of those correspondents the insertion of whose contributions is still delayed.

THE PATENT

NITROPHOSPHATE OR BLOOD MANURE COMPANY (Limited),

CONSISTING OF TENANT FARMERS, OCCUPYING UPWARDS OF 30,000 ACRES OF LAND.

TRUSTEES.

Abel Smith, Jun., Esq., Walton House, Ware, Herts.
Charles Dimsdale, Esq., Essendon Place, Herts.
Edward Ball, Esq., M.P., 8, Belgrave Road, Pimlico
Major-General Hall, M.P., Western Colville, Linton, Cambridge
John Brady, Esq., M.P., Warwick Terrace, Belgrave Sq.

DIRECTORS.

Chairman.—Jonas Webb, Esq., Babraham, Cambridgeshire.
Deputy-Chairman.—John Collins, Esq., Myddleton Square, Pentonville.
Edward Bell, Esq., Tottenham, Middlesex
John Clayden, Esq., Littlebury, Essex
Richard Hunt, Esq., Stanstead Abbot, Herts.
Thomas Knight, Esq., Edmonton, Middlesex.
Robert Leeds, Esq., West Lexham, Norfolk.
Robert Morgan, Esq., 72, Camden Villas, Camden Town.
George Savill, Esq., Ingthorpe, near Stamford.
William Collins, Esq., 105, St. John Street Road.

Bankers.—Messrs. Barnett, Hoare & Co., Lombard Street.
Solicitors.—Messrs. Kingsford & Dorman, 23, Essex Street, Strand.
Auditor.—G. W. Brown Esq., 28, Parliament Street.
Manager.—Mr. James Odams. | *Secretary.*—Mr. C. T. Macadam.

Offices 109, Fenchurch Street, London.—Manufactory, Plaistow Marshes, Essex.

The Directors beg to inform their Friends and the Agricultural Public that the following Manures are now ready:—

ODAMS'S BLOOD MANURE FOR CORN AND MANGEL.
ODAMS'S BLOOD MANURE FOR ROOTS.
ODAMS'S SUPERPHOSPHATE OF LIME.

Full particulars may be had at the Company's Offices, or of the local Agents.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. Nesbit, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

ARTIFICIAL MANURES.

FREDERICK CORNWELL begs to inform his friends and the Agricultural public that he can now supply a "SUPERPHOSPHATE of LIME" superior to anything yet produced. Each Bag guaranteed to contain from 20 to 25 per cent. of "Soluble Phosphate of Lime." Price 5*l.* 10*s.* per ton, delivered free to any Railway or Wharf in London. Dealers and the trade supplied. LINSEED-CAKES, COTTON-CAKES, and all descriptions of ARTIFICIAL MANURES at lowest market prices.—Offices, 7, Great St. Helen's, London, E. C.

LONDON MANURE COMPANY, removed to 116, Fenchurch Street, E. C. (Established 1840), have the following MANURES ready for delivery:—

CORN MANURE for SPRING TOP-DRESSING
URATE
MANGEL MANURE
SUPERPHOSPHATE OF LIME
BLOOD MANURE
} all of guaranteed quality.

In consequence of the reduction in the price of raw material the London Manure Co. are enabled to lower the price of their Superphosphate of Lime, and to materially improve the Corn Manure and Urate.

The London Manure Co. also supply PERUVIAN GUANO (direct from Messrs. A. Gibbs and Sons), SULPHATE of AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of value. Wholesale dealers supplied.
116, Fenchurch Street, E.C. Edward Purser, Secretary.

PERUVIAN GUANO.
The present price of this valuable Manure is—
12*l.* per Ton for 30 Tons and upwards,
13*l.* 5*s.* per Ton for 1 Ton up to 30 Tons.

And, to guard against the purchase of adulterated mixtures and of inferior Guanos purporting to produce results equal to Peruvian, consumers are recommended to apply either to ourselves, to our agents, Messrs. Gibbs, Bright, & Co., of Liverpool and Bristol, or to dealers of established character, in whose honesty and fair dealing they may place implicit confidence.
Antony Gibbs & Sons.

SUCCESS OF THE NEW GUANO; Imported under Lease from the Crown.—Though the experiments with KOORIA MOORIA GUANO were made late in the season, and under adverse circumstances, the successful results obtained confirm beyond doubt Professor Voelcker's report—(in No. 41, Part I., vol. xix., Royal Agricultural Society's Journal)—that Ammoniacal manures, applied to Turnips in the experimental field, kept back at first the crop, and had no beneficial effect either alone or in conjunction with phosphates.

The Kooria Mooria Guano is essentially a phosphatic manure, containing sufficient ammonia for roots, and, with a mixture of one-fourth of ammoniacal guano, cannot be excelled for either top-dressing or grain crops. It is a natural deposit, and will be delivered as imported, free from risk of adulteration. Deeply impressed with the necessity of encouraging the import of this valuable manure, her Majesty's Government has given such increased facilities for shipment, that arrangements have been made for a considerable supply. Purchasers can be supplied with suitable quantities from cargoes now on sale, containing from 45 to 66 per cent. phosphates. Present prices, 4*l.* 10*s.* to 6*l.* 10*s.* per ton, on applying to Joseph Hindson, Broker (one of the Lessees under the Crown), 20, North John St., Liverpool. Government Lessees: Ord, Hindson, & Hayes.

"Greystoke, Cumberland, Dec. 16, 1858.

"Dear Sirs,—I beg to inform you that I applied the Kooria Mooria Guano I had from you for Turnips, on land of a loamy character, incumbent on a stiff clay subsoil, and recently drained. On each side of the plot sown with Kooria Mooria Guano were Turnips manured with best Peruvian Guano. The quantities applied of each sort were of equal weight for weight per acre. The crop—a very good one throughout—is now being eaten off with sheep. Very little perceptible difference can be discovered, but if anything that difference is in favour of the Turnips sown with Kooria Mooria Guano.

(Signed) "John Barker."

"Messrs. J. & J. Graham, Guano Merchants, Penrith."

A Pamphlet, "Hints on Guano," containing a large number of reports from well-known agriculturists, and analysis of the cargoes here, may be had of the Broker, at the above address.

MANURE for ROOT CROPS, of first-rate quality, with Analysis guaranteed, manufactured by WILLIAMS & Co., 47, Mark Lane, London (Established 1847), at 6*l.* per ton, including bags. Free to Wharf or Rail in London. The Trade supplied.

REDUCTION IN PRICE OF LAWES'S MANURES.

MR. LAWES begs to announce that he has this season reduced the price of the Manures manufactured by him, viz.:—

TURNIP MANURE	from £7	to £6	6
SUPERPHOSPHATE OF LIME ..	,, 7	to 6	6
MINERAL do. ..	,, 6	to 5	5
BARLEY MANURE..		8	0

Prof. Way and Dr. Voelcker have sampled from a bulk of 5000 to 6000 tons at his factories, and their report and analyses are given in full in Circular to be obtained on application at his office, 1, Adelaide Place, London Bridge, E.C., or of his local Agents.

N.B. Genuine Peruvian Guano direct from Messrs. Gibbs, Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures. American Cotton-seed Cake supplied.

ESTABLISHED 1812.

H. AND T. PROCTOR'S TURNIP MANURE.—Messrs. H. & T. P. draw particular attention to this valuable Manure, which contains all the elements necessary for the full development of the Turnip Crop, so combined, that, from their chemical knowledge and long experience, they feel satisfied is most advantageous to the consumer. It has been very extensively used by most of the eminent Agriculturists of the day, and has attained a high reputation throughout England, Scotland, and Wales, and, they venture to say, is unrivalled for the weight and quality of the Bulbs which it produces. The application of this Manure to the Turnips will be found to benefit considerably the after crops of Barley, Clover, and Wheat.

POTATO, GRASS, BARLEY, CLOVER, AND WHEAT MANURES; also BONE DUST, PERUVIAN GUANO, and SUPERPHOSPHATE of LIME, warranted of the best quality.

Apply to H. & T. Proctor, West of England Depôt for Artificial Manures, Cathay, Bristol; or Proctor & Ryland, Birmingham, and Saltney, near Chester.

BURNARD, LACK, AND CO.'S CONCENTRATED SUPERPHOSPHATE OF LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.

CONCENTRATED TURNIP MANURE, equal in value to the preceding.

Of these Manures Dr. Voelcker says:—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."

Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to Burnard, Lack, & Co., Sutton Road, Plymouth.

"BRITTAIN'S SUMMER SHADING."—
No. 1. 35-inch TIFFANY, 3*d.* a yard.
No. 3. 39 inch do. double strength, 6*s.* 6*d.* a piece of 18 yards.
No. 2. 55-inch Net, 6*d.* a yard; No. 3, 8*d.*
55-inch ZEBRA NET, 9½*d.* per yard.
36-inch LINEN, 4*d.* to 6*d.* a yard.

The Tiffanies are cheap, and form a light and graceful shading for conservatories, but are not recommended as so useful nor so ornamental as the Nettings, nor are they under any circumstances so effective as a protection from frost. The Nettings have been tested by the largest consumers of the three kingdoms during six years, and have never failed. They modify the temperature, while at the same time they are so woven as to admit the natural influence of light and air, so essential to healthy growth. Patterns on application to T. Brittain & Co., Manchester, sole manufacturers.

"FRIGI DOMO."—Patronised by her Majesty, the Queen, the Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, and —Collier, Esq., of Dartford.

PROTECTION from COLD WINDS and MORNING FROSTS.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and, floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths. Two yards wide, 1*s.* 6*d.* per yard run; four, 3*s.* per yard. Also, an improved make for Shading Purposes. Three yards wide, 2*s.* 6*d.* per yard run.

Elisha Thomas Archer, whole and sole manufacturer, 7, Trinity Lane, Cannon Street, City, and of all Nurserymen and Seedsmen throughout the kingdom. "It is much cheaper than mats as a covering."

AGRICULTURAL MACHINERY.

E. R. AND F. TURNER, Ipswich, manufacture Prize Mills for Crushing Corn, Seed, Malt, &c.; Portable Grinding Mills, Steam Engines fixed and portable from 2 horse-power and upwards; Threshing Machines, Chaff Cutter, Oilcake Breakers, Horse Gears, Saw Tables, &c., all of a superior description and adapted for Home, Colonial, and Foreign use. Illustrated Price Lists sent free on application.

FOWLER'S PATENT STEAM PLOUGH.—A Standard set of FOWLER'S STEAM PLOUGHING TACKLE, upon the most approved principle, can be seen in operation on the 27th, 28th, and 30th inst., on the estate of W. T. Burs, Esq., M.P., Napsbury, near St. Albans, Herts.

For further particulars apply to John Fowler, Jun., 28, Cornhill, London, E.C.

SIGMA'S BEAN, MANGEL, & CORN PLANTERS (5 Depositors), HOES, &c. The "Multum in Parvo," combining Cultivator, Horse Hoe, Ridge Plough, Subsoiler, Broadshare, and other forms; all expanding. Complete, 7*l.* 7*s.* Prospectus sent.—C. Powell, Hurstgreen, Sussex.

SPEED AND ECONOMY for Farmers, Gentlemen, and Market Gardeners, in the use of HOARE'S REGISTERED HAND SEED PLANTING MACHINE, which from its capabilities, combined with strength, lightness, and simplicity, places it beyond a parallel. Its operative powers in planting the seeds of Mangel, Carrot, Turnip, Parsnip, and all small seeds in patches of equal depth and different distances, from 6, 7, 12, 14, 18, 21, 24, to 28 inches apart, raking in and rolling complete, render it an invaluable invention. It will act as a drill when required. Price 5*l.* 15*s.*

London Agent, Mr. B. Samuelson, 76, Cannon Street, West. Sold also by the inventor, J. Hoare, Old Fishbourne, Chichester, Sussex.

FLEMING'S SALTING MACHINE FOR DESTROYING WEEDS ON GRAVEL WALKS, &c.—This most useful Machine has given the greatest satisfaction wherever it has been introduced; it is the only effectual means of keeping Drives and Walks completely clear of Weeds.

Extract from article "Trentham" in *Gardeners' Chronicle* of January 22.

"And I would observe in passing from these grounds that the whole of the Grass and Gravel are kept in the most perfect order by the aid of Machinery; the former by a Horse Machine wherever it can be worked, a small hand instrument being used in places of difficult access; the latter is kept in order by a Salting Machine, the invention of Mr. Fleming, and judging from the beautiful condition of the Gravel in every direction, I should say that it was altogether most efficient."

(The Mowing Machines here referred to are Shanks's).

From the *Field* of April 2.

"The Salting Machine will effectually destroy the Weeds on Gravel Walks and Drives."

Testimonials, with full particulars and prices, may be had on application to Alexander Shanks & Son, Dens Iron Works, Arbroath, Patentees of Improved Mowing, Rolling, Collecting and Delivering Machine for Lawns, Hot-water Apparatus Manufacturers, &c.

THE GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY: Offices, 52, Parliament Street.
Henry Ker Seymer, Esq., M.P., Chairman.

1. This Company is incorporated by Act of Parliament to facilitate the Drainage of Land, the Making of Roads, the Erection of Farm Houses, Farm Buildings, and Labourers' Cottages, and other Improvements on all descriptions of Property, whether held in fee, or under entail, mortgage, in trust, or as ecclesiastical or Collegiate Property.

2. In no case is any investigation of Title necessary.

3. The Works may be designed and executed by the Landowner or his Agents, or the Company will undertake the entire improvement by their experienced staff, and advance the money required for the works. Equal facilities will be afforded in either case.

4. The whole cost of the works and expenses may, in all cases, be charged on the Lands improved, to be repaid by half-yearly instalments.

5. The term of such charge may be fixed by the Landowner, and extended to 50 years for Land Improvements, and 31 years for Farm Buildings, whereby the instalments will be kept within such a fair per-centage as the occupiers of the improved Lands can afford to pay.

6. No profit is taken on any Works executed by the Company, the actual expenditure only, approved by the Inclosure Commissioners, being charged in all cases.

William Clifford, Secretary.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL AND GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.
Principal—J. C. Nesbit, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

YORKSHIRE AGRICULTURAL SOCIETY.—GREAT SHOW at HULL, AUGUST 3 and 4.

For Prize Lists, apply to the Secretary, John Hannam, Land Agent, Kirk Deighton, Wetherby.—May 21.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.—WARWICK MEETING.

Entries for CHEESE, WOOL, and FARM GATES must be made on or before June 1.

Entries for LIVE STOCK must be made on or before June 1.

All Entries received in each case after those respective dates will without any exception be disqualified and returned to the senders.

Prize Sheets may be obtained on application at the Offices of the Society, 12, Hanover Square, London.

The Agricultural Gazette.

SATURDAY, MAY 21, 1859.

MEETINGS FOR THE ENSUING WEEK.

Wednesday, May 25—Agri. Society of England .. Noon.

Some experiments by Mr. Macpherson Grant of Craigo, published in the current number of the Highland Society's Transactions, in which various artificial manures were compared with farm-yard dung in their effects upon the Turnip crop, deserve attention, now that the Turnip crop, more difficult than ever to obtain, is occupying the time and labour of the farmer.

There are at least three sets of difficulties in the way of his success, or we may enumerate with Professor Buckman as many as four, for in addi-

tion to poverty in the soil, and drought, and insects, we must not forget the inherited character of the seed we sow. Owing to bad management in this particular we may get bulbs with branched tops and forked roots, as the result of a tendency to the natural type of the plant, aggravated no doubt by the condition of the land in which we sow this seed, and by the defects of climate and the depredations of fly and grub.

Having however obtained well grown seed, we have three principal sources of difficulty in growing it. In eastern, southern, and midland England more especially, we have not a suitable Turnip climate; and Mangel Wurzel would be much more easily and successfully grown. Even here however it is rarely that a plant well started does not continue to increase; and CHANDLER'S water drill which, if used with discretion, will generally secure the brairding of the seed, is a most valuable ally against difficulties of climate. A soil containing a sufficient quantity of absorbent vegetable matter is another great security for success in this particular aspect of the matter; though with all the aids at our command, the southern half of the island will never be able to compete, in either quantity or quality of Turnips, with the northern.

As to insect attacks, the remedy hitherto has been to place the land in such a condition as to urge a rapid growth; and this plan is now being supplemented by the direct action of machines which throw lime and other dust upon the land when the crop is growing, so as to choke or drive away the plague, or even so as to convert that which had been an attractive food for them into a distasteful poison. What may be the ultimate report of Mr. ROWLEY'S dust-blast for the fly and grub we cannot say; but it may be safely asserted that of all the difficulties to which the failure of the Turnip crop is owing, more hinges on a defective condition of the soil than on any other cause.

We have had land broken up out of pasture, pared, and burned, and ploughed, and cultivated; and seed has been sown when the soil was barely damp and insufficiently reduced to tilth and no artificial auxiliary manure was added, and a meagre dressing of farm dung applied, but in spite of everything the seed so brairded, and the plant so grew, that 29 tons per acre were obtained in September—sufficient to ensure, during the ensuing rotation of crops, the maintenance of the fertility of the newly broken land—while in ordinary years the average crop of the district does not exceed 10 or 12 tons of the Swedish Turnip. It was the quantity of decaying vegetable matter in the turfy soil, and of soluble mineral matter in the ashes spread, that insured so great a success; and the real difficulty in the way of Turnip growth, no doubt, consists in getting the land into the proper state of richness before the seed is sown. Agriculturists are therefore much indebted to those of their number who continue to publish their experience in the application of suitable manures to this and other crops. That of Mr. GRANT relates to the following substances:—

"It was resolved that ten distinct experiments should be tried, viz.:—

1. With the usual quantity of farmyard manure applied in the ordinary way, without any other fertiliser.
2. Half the usual quantity of farmyard manure, with the addition of guano at the rate of 3 cwt. per imperial acre.
3. Half the usual quantity of farmyard manure, with the addition of guano at the rate of 1½ cwt., and the same weight of superphosphate of lime, supplied by Messrs. STENHOUSE & Co., of Newcastle-upon-Tyne.
4. Peruvian guano alone, at the rate of 4 cwt. per imperial acre.
5. Half the usual quantity of farmyard manure, with the addition of superphosphate of lime at the rate of 3 cwt. per imperial acre.
6. Superphosphate of lime, supplied by Messrs. STENHOUSE & Co., of Newcastle-upon-Tyne, at the rate of 6 cwt. per imperial acre.
7. Nitrophosphate of lime, also supplied by Messrs. STENHOUSE & Co., at the rate of 5 cwt. per imperial acre.
8. SOMERVILLE'S Manure (manufactured by Mr. CHARLES S. M. SOMERVILLE, Agricultural Manure Works, Montrose), at the rate of 4 cwt. per imperial acre.
9. No manure or fertiliser of any kind.
10. Bone-ash at the rate of 1½ cwt. per acre, with the addition of double that weight of ammoniacal liquor from a gas work."

"The experiments were conducted in duplicate, or in two separate series. For the first series half an imperial acre was measured off for each experiment, and duly prepared with the manures above-mentioned, the seed sown being of that variety of yellow Turnip called 'Aberdeen Bullock;' while for the second series all the experiments (with the exception of No. 9) were repeated on a quarter of an acre each, the seed used being that of White Globe Turnip. The sowing of the first series was done on 19th and 20th June, 1857, and of the second series all on the latter day. The hoeing and subsequent treatment of every kind were as nearly as possible uniform, and the utmost care was taken to guard against partial influences."

"In the first series of experiments each division occupied 12 drills, and in the second series six. Instead of weighing the whole produce, it was thought preferable to draw for this purpose only two drills nearest the centre in each division, because with the utmost care it was not possible altogether, in sowing, to avoid a slight commixture of the manures in those drills where the divisions came in contact."

In the following tables the results of the applications are given, along with the ingredients supplied in the manures as ascertained by analysis:—

I. YELLOW ABERDEEN BULLOCK TURNIP.

	Weight of Turnips produced			Organic matter.		Phosphates.		Alkaline salts.		Ammonia		Phosphates as Soluble.		Insoluble.
	Tons.	cwt.	lbs.	cwt.	lbs.	cwt.	lbs.	cwt.	lbs.	cwt.	lbs.	cwt.	lbs.	lbs.
II. Farm manure and guano	12	6	36	38	84	2	23	1	83	1	16	..	..	..
IV. Guano alone	11	16	100	1	75	..	105	..	36	..	59	..	..	..
I. Farm manure alone	11	15	80	75	..	3	..	3	..	1	56	..	..	..
VIII. Somerville's manure	11	13	40	1	5	1	5	..	19	..	25	..	16	100
III. Farm manure, guano, and superphos.	11	9	92	38	36	2	24	1	74	..	106	..	33	7
V. Farm manure and superphosphate ..	10	5	8	37	100	2	25	1	65	.	84	..	66	14
VI. Stenhouse & Co.'s superphosphate ..	10	..	40	..	88	1	50	..	18	..	..	1	21	28
VII. Stenhouse & Co.'s nitrophosphate ..	9	16	92	..	63	1	15	..	56	..	8	..	90	36
IX. No manure	4	2	56	..	..	..	..	..	..	..	..	..	..	..
II. WHITE GLOBE TURNIPS.														
IV. Guano alone	15	11	16	1	75	..	105	..	36	..	59	..	..	..
VIII. Somerville's manure	14	18	20	1	5	1	5	..	19	..	25	..	16	100
III. Farm manure, guano, and superphos.	14	13	52	30	92	1	102	1	40	..	89	..	33	7
V. Farm manure and superphosphate ..	14	..	56	30	44	1	103	1	31	..	67	..	66	14
II. Farm manure and guano	13	18	16	31	28	1	101	1	49	1	..	..	..	..
VI. Stenhouse & Co.'s superphosphate ..	12	..	48	..	88	1	50	..	18	..	..	1	21	28
VII. Stenhouse & Co.'s nitrophosphate ..	11	14	60	..	63	1	15	..	56	..	8	..	90	36
I. Farm manure out of covered court ..	11	11	..	60	..	2	44	2	44	1	22	..	..	..

We make only one additional extract:—

"It will be remarked that farm-yard manure, both alone and in combination with other fertilisers, stands greatly lower in the scale of the second series than it does in that of the first, while the other fertilisers, contrasted among themselves, occupy precisely the same rank in each, viz., 1st, guano; 2d, SOMERVILLE'S manure; 3d, STENHOUSE & Co.'s superphosphate of lime; and 4th, STENHOUSE & Co.'s nitrophosphate of lime. The explanation of this curious result involves a question of great interest and importance to agriculturists. In the first series of experiments the farm-yard manure employed was of the description most commonly used, having been driven out of the field and rotted in dung-heaps, according to the old-established practice. In the second series it was taken direct from a large covered court, where it had been trodden upon by feeding cattle throughout the previous winter, sheltered entirely from rain, and little exposed to the atmosphere. In both cases the quantity by measure was the same; but it will be seen that the weight of covered-court manure applied was less in every instance than that of common farm-yard dung in the corresponding experiment, viz., as 12 to 15. This is to be regretted, perhaps; but it was found that a quantity of the covered-court manure, equal in weight to that of common dung ordinarily employed, could not be worked into the soil, and it was thought inexpedient to diminish the due allowance of the latter for the sake of contrasting equal weights of both, when the number of cartloads—by which this kind of manure is usually measured—was the same. The theory so much urged by chemists of the loss sustained through the excessive fermentation to which, under the old system of management, farmyard manure is subjected, appears to receive no support from these experiments; for while the fermented dung employed in the first series stands third in degree of productiveness, the less decomposed manure from the covered court stands at the very bottom of the scale in the other series. At all events, it would seem that farmyard manure, when only slightly fermented, requires the addition of some special fertiliser to act as a stimulant, or in some other way to render it immediately available for the nutrition of the Turnip plant, because the addition of guano and superphosphate of lime raised its productiveness very materially, and the combination of farmyard manure and superphosphate was more productive than either of them employed alone."

In the comparison of the farm manure from the covered court standing at the bottom of the second series with the farm manure as ordinarily rotted and prepared, it must, however, be observed that the available ingredients applied in the former case were less per acre than in the latter; in addition to which we have the undoubted fact that they were in a less available state in the less fermented material. It is the weight of useful substances in an immediately available condition which it contains that will determine the immediate effect of any fertiliser; and the result of the experiment in this particular need not shake our confidence in the inferiority of that mode of managing the manure of the farm which exposes it the least to atmospheric waste. For the rest, it will be found upon examination of these Tables, that those manures which contain ammonia as well as superphosphate stand highest at Craigo in their effects upon the Turnip crop.

THE TASTE OF BUTTER.

THE following are passages on this subject extracted from previous volumes of the *Agricultaral Gazette*:—

1. I have found chloride of lime very effectual to remove from butter the taste of Turnips, or any other bad flavour. A drachm of it to every expected pound of butter put into the water of the second washing, after it is taken out of the churn, and the butter well but rapidly kneaded in it.

2. Do not feed your cows with Turnips until they have been previously milked, by which means the animal has 12 hours to get rid of the flavour of the vegetable. Good hay must also be given in sufficient quantity. I need not add great cleanliness not only in the cow-house but in the dairy. No stale pieces of Turnip should on any account be allowed to remain in the manger, which should be cleaned out before feeding. If your correspondent does not feed largely, perhaps peeling the Turnips might answer the purpose, for it is principally in the skin that the strong smell resides. I question much if saltpetre answers any purpose in freeing the cream of the strong taste imparted by Turnips.

3. We have obtained answers from Warwickshire, Cheshire, Gloucestershire, and Devonshire. Some of them suppose the annual occurrence of the nuisance to be due to the growth of some ill-tasted weed at that time; others appear to have had no experience of the evil complained of; the only one who speaks positively says:—"The cause of the unpleasant taste in your correspondent 'R.'s' butter is wild Garlic, or what in Devonshire is known by the name of Ramsey [Ramson] which is often found here in rich pastures. The leaf is much like the Lily of the Valley, and bears a white flower. The reason of its not affecting the butter after the middle of June is, that it is then in flower, when the cows will not eat it. The best way is to dig it up early in May, or now, if not covered with Grass." The following is from Cheshire:—"I have not met with any case similar to the one you speak of respecting butter, although I have heard of instances, in some parts of North Wales, where the butter is not so good-flavoured at certain seasons of the year, and the cause was attributed to ill-flavoured plants making their appearance at those times, more especially the wild Onion. The herbage, certainly, has a great deal to do with the flavour of butter and cheese, and I find that Red Clover even affects it; in this county there is nothing to equal old pastures for the dairy. Perhaps if the farmers in Warwickshire would examine their land carefully they might be able to discover the real cause." We had cows on Grass last year, and their cream and butter had the acrid taste that you complain of. We had about a dessert-spoonful of saltpetre dissolved in water, and put into every gallon of milk before it was churned, and a small bit of common salt was put into the milk pan when the milk was brought in from the cows. The cream was put to stand in boiling water for half an hour, and frequently stirred while the water cooled before it was churned. Ultimately we had good butter, but certainly not till after this season of the year had passed. So that probably the improvement was attributable, not to our treatment, but to the natural alteration of the pasture, which is full of Buttercups at this season.

4. As soon as the milk is brought into the dairy (warm from the cows), pour into it, in the proportion of half a pint of boiling water to a gallon of milk; cover it over with a cloth, four times doubled, for half an hour; then strain and pour it into milk dishes to stand for cream. N.B. I have never known this receipt fail, unless the dairy-maid put a wooden cover over the milk-pail instead of a cloth, which absorbs the steam, and entirely removes any unpleasant taste, even when the cows are fed on yellow Turnips and straw, which makes the butter require no colouring of Carrot, and have the appearance of summer butter.

5. There is a paragraph in your Paper headed "Butter-making," in which the writer condemns the use of Turnips for feeding cows, as giving the butter and cream a bad taste, and expresses his surprise that there should not be any method to prevent it. I occupied a farm of 500 acres, and kept a large dairy of cows, and never had the taste of Turnips in the butter, by applying hot water and steam, at different times, to the milk and cream, which entirely took away all flavour of

the Turnip. We generally made from 1*d.* to 2*d.* per lb. of our butter more than market price. Should any gentleman wish to know what our process was, I should be most happy to give him any information that he may require. Our system has been carried out for 40 years, and has never been known to fail where properly attended to.

6. The popular remedy in these parts is, to put a small quantity of pounded nitre in the pail before going to milk, which answers well enough so far as the milk is concerned; but its influence can hardly be said to extend to the cheese and butter. The writer has heard it stated that nitre would meet the evil in the cheese and butter as well as in the milk, if it were only used in sufficient quantity; but then, many are of opinion that the use of nitre to the extent necessary for effectually correcting the evil in cheese, or in butter when kept for some time, would give to the dairy produce medicinal properties, of a kind not altogether agreeable; be that as it may, the point is an important one, and such as might with very great propriety be brought under the notice of some of the leading chemists of the day. As you expressed a wish to know how the flavour of Turnips was got rid of in the butter which I sent you, and which was made from the milk of cows fed, morning and evening, on Swedes, I beg to inform you and your readers that the only precaution adopted is that the cream, before being placed in the churn, should stand in a room with a fire, and raised to the temperature of 65° Fahr. This prevents a tedious operation in churning, and, with ordinary cleanliness in the diary, butter so made will never taste of Turnips. This is the whole mystery of destroying the flavour of Turnips in butter; an experience of a dozen years in a large dairy may be relied on.

7. If you collect so many gallons of cream before churning, then put that number of half pints of vinegar into the jar to begin with, and churn when the usual quantity is collected. "Quercus" is the authority for this. He "had it from a friend of his who supplies a large quantity of butter of the best quality to one of the crack shops at the west end."

8. Make a strong solution of nitre, and add a dessert-spoonful of it to every two gallons of milk as it is brought in from the cow.

9. The simplest and most convenient preventative against Turnipy taint, and one to the efficacy of which I can speak from daily experience, is to let your cows have their feed of Turnips immediately after being milked, and at no other time.

10. "S. R. S." asks for the cause of his butter being bad both in texture and taste; cows fed on Mangel Wurzel and Beans, with scrupulous cleanliness in dairy utensils, but cream churned only once a week. My cows were fed last winter on Mangel Wurzel cut into shreds with a (Moody, Frome) Turnip-cutter, and mixed with hay and straw-chaff; butter made twice a week. The butter was good in flavour, but crumbled. In the spring I was able to add Rape to the above food, the butter immediately changed to a good texture, and improved in flavour; this change I attribute to the oily nature of the plant Rape. I have this winter used oil-cake crushed, giving 2 quarts a day to each cow, 3 perhaps would not be amiss, with Mangel Wurzel, some few Swedes, and a sprinkling at times of Carrots, all cut up, being well cleared from dirt, and mixed with chaff. Butter is good both in texture and flavour, but I think it should be made winter and summer twice a week. I have used Beans, but find them neither so good nor so cheap as cake.

(To be continued).

THEORY OF AGRICULTURE.

By Dr. Evan Pugh.

(*See pages* 223, 319).

Letter III.—The Best Means of Raising Crops to Ensure the Greatest Profit.

The question which we are now about to consider is almost invariably the first, and it is too often the only one that is asked by the practical farmer. He too often cares little about looking after causes if he can but secure the effects which he desires; to him it seems of little importance why a certain manure will produce a certain result with one crop and not with another, or why certain soils are adapted to a particular kind of husbandry and not to another kind. It appears sufficient for practical purposes to know what manure should be used, and what kind of husbandry should be adopted in order to give satisfactory results, and then to leave to the theoretical and the scientific man the consideration of the relations between the manure used, or the husbandry followed and the effect produced.

Now if there were no other object to be attained by the study of natural things and natural causes than simply to develop the means of administering to our bodily wants—if the study of agricultural principles could lead to no other result than to enable us to produce maximum crops at a minimum expense—if there were even no desire that the youth of our agricultural communities should find in the principles involved in the occupation of their lives a theme for study upon which they might develop the natural resources of their own minds—there would still be an abundance of reasons why the farmer should not be contented with simply knowing how to get satisfactory results, without caring anything about why he gets them. And it shall not be so much the object of the present article to attempt to give any practical rule by which the farmer can make the greatest amount of money, or raise the largest crop at the least expense, as to endeavour to show that no such practical rule can be given, except it be deduced from a knowledge of agricultural principles; and that, such being the case, the question proposed at the head of this article cannot be answered until a great number of other questions with regard to these principles have been solved. The question proposed is, indeed, but a simple corollary, the answer to which would be self-evident were the main proposition involving the principles concerned solved, but until it is solved this must remain either totally unanswered or partially so.

It is true that certain empirical rules, founded upon a practice which has been more or less successful, have in all agricultural communities been adopted. And in many instances these rules have been established without any regard to a principle upon which to found them, or by which to explain the practice which they demand. They have been followed up for years with a good degree of success by men who have cared nothing about such principles; and this success may be adduced as evidence of the value of the rules and of the correctness of the method by which they were constructed. It is also equally true, that before any time had been devoted to the study of oceanic currents, the direction of winds, and the laws of storms, ships crossed the Atlantic and commerce flourished. For every ship that was stranded on an unknown shoal, or dashed to pieces against an uncharted rock, hundreds of others rode smoothly onwards unharmed. Yet, notwithstanding this success, no one doubts the great benefit that have been derived from the immense expenditures that have been made by the maritime powers of the world to chart the ocean and to study the laws of physical forces that operate upon it.

Systems purely empirical are always dangerous in the hands of empiricists; whenever circumstances are liable to change, as is the case in agriculture, they meet with phenomena entirely inexplicable, and are liable to fall into the most disastrous blunders. Such systems are almost as various and incongruous as are the number and character of the persons by whom they are developed. One system recommends the use of lime as the universal panacea for all sterile land; another finds that gypsum is the great restorer of the soil's exhausted resources; while others inform us that bones, or wood ashes, or organic matter, or ammoniacal salts, or some other particular thing that experiment has proved to give a satisfactory result in limited circumstances, is the philosopher's stone, which is to fill the farmer's pocket with almighty dollars. On the other hand, we could find equally satisfactory evidence that each and every one of these several systems had failed under particular circumstances.

We could find instances enough in Pennsylvania, Maryland, and Virginia, of the farmers coming to a dead halt upon an exhausted soil and not knowing what to do next. Empiricism had well-nigh left our mica slate, and gneiss soils a barren and exhausted plain, when science first came forward to point out the use of bones, ammoniacal salts, and guano.

Not very long since one of the favourite results of agricultural empiricism, particularly amongst the German part of our population, was the connection between the position of the planets, the sun and moon in the zodiac, and the state of vegetation. Empiricism had afforded the most incontestable evidence that Potatoes planted in the wrong "sign" would produce no crop, and that corn hoed when the sign was in a vital part would assuredly die. Animals that were born under particular planets would in consequence of some sub-planetary influence exhibit certain peculiarities.

Empiricism had no doubt about the correctness of its conclusions; it did not hesitate to answer such a question as that at the head of this article with all the confidence that ignorance alone could inspire. As the alchymist with his philosopher's stone professed to perform experiments from which modern chemistry would shrink in despair, so the empiricist in agricultural practice would boldly venture upon ground where science with all its refinement would hesitate to tread.

The empiric is confident because he trusts to his senses rather than to his understanding. Like the travelled fool, "he has seen and sure he ought to know," and since it is not his purpose to trace relationships between the individual things he does see, it matters not how incongruous the latter may be, or how incompatible one phase of his vision may have been with another, it is still sufficient to "know" that he did see it.

The man of science, on the other hand, is ever ready to doubt the evidence of his senses if he cannot bring it into harmony with his understanding. Isolated facts to him have no value. Facts are important only in their relations to other facts. They are only important as forming the stepping stones upon which to ascend to principles. Principles once discovered and fully understood, the facts through which they were detected, like the scaffolding of a finished edifice, become of little importance. The civilised world will never cease to do homage to that transcendant genius which first grasped the idea of universal gravitation, but it will never care about the particular circumstances of the first observations by which the immortal Newton satisfied himself that the gravitating force varied directly as the mass and inversely as the square of the distance.

Principles once understood, a knowledge of them becomes a powerful engine in the development of other facts, and in the control of causes. To show that the steam engine, the electric telegraph, and all the various physical agents which have contributed to the greatness of the present age owe mainly the efficiency of their development to the study which has been devoted to the fundamental principles involved in their construction, would be but to reiterate truths familiar to every mind that has given a moment's thought to the subject. These subjects have been followed in many instances by scientific men more with a view to develop principles than to obtain practical results from the application of them. And these principles once understood by the scientific man and the student, the practical man and the mechanic have made those practical applications of them which so pre-eminently characterises the middle of the present century.

Now, there is no industrial occupation the success or failures of which are more influenced by the operation of agents which it is the province of science to investigate, than is that of agriculture. The farmer, then, must distinctly understand that in order to bring his favourite art to the highest possible degree of perfection he must understand the principles upon which it depends, and since these principles embrace all that modern science combined with practice can bring to bear upon the subject, the question of the most profitable method of farming is not to be exhausted in a single essay. It is not a subject to be embraced in a short receipt, such as that which accompanies the "cure alls," which the vendors of quack medicines put off upon those who patronise them. It can only be mastered by a command of its principles, and these can only be understood and appreciated by a cultivated intelligence and an enlightened understanding, such as we cannot hope to attain in all parts of our agricultural populations until we have suitable agricultural schools and colleges at which the work of education shall be commenced in youth. Here in England where a greater degree of talent has been brought to bear upon agricultural practice than in any other part of the world we find agriculture brought to a degree of perfection surpassing that of any other part of the world; it has, however, yet much to learn in order to avail itself of all the advantages to be derived from the study of its principles.

But we have been discussing this subject upon the assumption that the practical result of a maximum crop at a minimum expense is the only object to be derived from the study of agricultural principles.

When we come to consider the subject of agricultural education, we shall find that one of the great advantages of the study of agricultural principles in agricultural communities will be the mental and moral elevation of the masses of the population. It is a notorious fact that the agricultural labourers of England, Germany, and France constitute the most ignorant part of the population. Indeed, to simply characterise them as ignorant does not convey an adequate idea of the complete stultification which abounds amongst them.

The moral and mental torpitude of the English farm labourer is the subject of remark with every foreigner who traverses the country. With nothing to occupy his thought but the monotonous duties of the farm, he drags out a wearied existence, thinking only of those duties in connection with the pittance he receives for performing them, as a means of administering to his bodily necessities. Of agricultural principles and practice—of the reasons why he performs what he does, and of the connection between one part of his labour and another, which might constitute a theme upon which to cultivate his intelligence, and make him a more efficient because a more intelligent labourer, he knows nothing.

In America (at least in the Free States) where we have no recognised class, the fathers and grandfathers of whom have been, and the children and grandchildren of whom will be simply labourers, without any capital, this deplorable stultification does not exist, but even there the state of general intelligence amongst our "hired men" is more the result of a mental activity devoted to subjects foreign to that of their daily avocations than to these. At the termination of our common school course, which has as little reference to agriculture as to the inhabitants of the moon, his intelligence is mainly kept alive by the discussion of political and reform subjects, which are ever so exciting in our country, and which our cheap press, in some form or other, is constantly bringing before the entire population.

When the study of agricultural chemistry and of science in general as applied to agriculture shall have taken its proper place in our country schoolrooms and on our farms, the subject of maximum crops at a minimum expense will become clear to our agricultural communities, and until such change is brought about, we cannot hope that such clearness can be attained.

Home Correspondence.

Liebig on Manure.—Liebig's last agricultural utterances are perhaps the most important, as such, that he or indeed any one ever placed before the world. They deserve the closest attention on the part of your agricultural readers, and of every one interested in the common welfare of our country. It would be a measure attended with much good if the volume which contains these precious utterances could, through some arrangement with the publisher, be placed in an accessible cheap form before the eyes, and in the hands of every man who holds or drives a plough. Liebig shows in clear impressive language that we suffer our towns to be encumbered with the dirt, the refuse, the waste in short, attending the processes of life in man and brute; that we suffer this waste in short to be utterly lost, carried off by the winds and the rains, the rivers and the sea, in place of retaining it for the benefit of the soil, and the behoof of man. The great cloaca of

Rome, he says and truly says, engulfed the agricultural prosperity, first of Italy, then of Sicily, and lastly of Northern Africa, in succession. The stamina of the soil were removed, there was no substitute, and desolation and ruin followed in due course. At the present moment the agricultural wealth of England, Scotland, and Ireland is carried away by the sewers of towns great and small, never to be recovered, unless partially and for a time from the guano islands, into the ocean. These kingdoms are in the position of a strong man, both of whose arms are tied up and bleeding, and no provision or no adequate provision made to keep up his strength, and repair his loss. In our towns, the poor directly, and indirectly the rich, suffer from the retention of the waste, that would, if judiciously applied, confer health and strength, instead of, as it is, inflicting pollution and disease upon humanity. The farmers' insanity suffer their manure heaps to be washed by the rains, disintegrated by the sun and winds, while we as insanely poison the beautiful rivers flowing through our towns, and let the rich refuse escape, which, were it properly hoarded, would confer health, wealth, and prosperity, instead of entailing misery and disease. *Henry M'Cormac, M.D., 3, Wellington Place, Belfast, May* 12.

Foreign Correspondence.

Bruges, Belgium, *April*.—An inspection of the Flax districts of Flanders has resulted—as with the majority of travellers who have preceded us—in imbuing us with a profound conviction that a system of agriculture which can, with by no means promising materials, establish localities marked by the neatness of the fields, by the depth of their cultivation, and the richness of their crops, if not absolutely is at least very nearly perfect. By no means desirous to elevate the agricultural position of this wonderful country at the expense of that of England, still we deem our statement to be pretty nearly the truth when we say that the system of Flax cultivation in Belgium is altogether unique, and has no equal in any country. Nothing can exceed the untiring industry of the farmer in preparing the land, applying the manure, and carefully watching the progress of the plant in all its stages; the result is a condition of matters which from its perfect finish is an absolute treat to all interested in agricultural operations. You walk through districts which convey the idea of carefully cultivated garden plots rather than of farm fields, and it is only by a survey of their extent that you come to appreciate the extent and the value of the labour which must have been bestowed upon them.

With us the Flax crop is by no means a favourite; looked upon as a plant which takes more than it gives, it is jealously regarded by most of our farmers. But if for no other reason than this, that Flax cultivation involves good husbandry—for good Flax crops and bad farming are altogether incompatible—and that it affords an excellent school for the practice of good modes of procedure, it is worth while inquiring how, and by what means the Flemish farmers have from time immemorial succeeded in raising fine crops of Flax; not only maintaining, but actually increasing the fineness of its qualities, and all this without in any degree bringing about that exhaustion of the soil's fertility, which we are told is the almost invariable result of its cultivation elsewhere, se much so that it is more frequently looked upon as a robbing rather than a giving plant. That it is not to the fertility of the soil that the fine crops of Flax in Flanders are to be attributed, a very brief inspection of it will suffice to show. We have before us a sample of soil taken from a celebrated district, at which we do not hesitate to say many an English farmer would turn up his nose as beneath his notice and unworthy of his cultural cares. It is to the careful working of the soil, the unstinted supply of manure, of which the quality and mode of action on the soil and plants is a matter of careful and anxious study; to an equally careful attention to the quality of the seed and the properties of the plant; and last, not least, by carrying out a well-considered system of rotation, in which long intervals are allowed to pass between the successive growths on the same soil;—it is to all this that the Flemish farmer owes his success in Flax culture. Flax can be grown, and grown well, in a wide variety of soils, essentials being the deep and careful pulverisation of the soil, and the unsparing application of manure. Even a soil of almost pure sand will bear a good crop if well worked, and supplied both with solid and liquid manure; but the fibres grown upon this quality although long and fine are not so strong as those produced on better soils. The soil sought after by the experienced farmer is that which is new, easily worked, strong, and fertile; neither too wet nor too dry. The finest Flax is obtained in the deep soil of a clayey sand or loam. In the strong, fat, humid soils the Flax in good seasons grows to a great length, but is never fine in its filaments. In light soils the Flax is shorter but the filaments are fine and silky. In Courtrai the soil is generally a clayey sand. In the neighbourhood of Bruges the soil is sandy, as also in the Pays de Waes, a part of East Flanders celebrated for the fineness of its Flax.

The choice of seed exercises one important influence upon the Flax crop. In Flanders two sorts are generally grown, that bearing white and that bearing blue flowers. The latter, which is cultivated chiefly in the Pays de Waes, gives a strong Flax, which is generally mixed and worked along with Hemp. The former gives a finer and softer Flax. The best seed is that which is bulky and heavy, and of a clear colour, smooth and brilliant, oily, without mouldy or sour smell, and which sinks in water, and when burnt consumes rapidly and clearly. A very good test to put seed to is that of germination. For this test they keep a piece of flannel extended and in a moist state, and on the surface of which they place a few of the seeds; if germination takes place uniformly within 24 hours the seed may be relied upon; if it is retarded to a space of three to five days, and takes place unequally, the seed is not to be relied upon. Two-year-old seed may be sown without inconvenience, but the object is to have seed of the same harvest—not mixed—so that it will germinate equally. The changing of the seed at intervals is necessary. Riga seed may serve for three or four years; after that it degenerates rapidly. The rotation adopted exercises an influence most important on the productiveness of the crop. In connection with this it may be taken as an axiom that the more rarely the crop comes upon the same soil the better the produce. Short rotations exercise a most unfavourable influence upon the crop, and wherever they have been introduced with a view to force production, the invariable result has been a deterioration in the quality of the Flax. Where Flax is cultivated *à la ramés* (that is, where the plants are supported by a species of net-work formed of poles and cords—this being done where filaments of the finest nature are required), the rotation extends over a period of 18 or 20 years—this being necessitated from the demands which the Flax thus grown makes upon the soil. For Flax grown in the ordinary manner, the period over which the rotation extends should not be less than from 6 to 7 years. In the province of West Flanders, of which Bruges is the chief town, the rotation extends over a period of 5 to 10 years; in East Flanders, of which Ghent is the chief town, it extends over a period of 5 to 9. Generally the Flax crop succeeds the Clover, Oats, Rye, Wheat, or Hemp. It loves new land, as a meadow or pasturage broken up. Astonishing crops are obtained from land in the neighbourhood of towns where market-garden produce is raised from the great quantity of manure employed, as in the case of the Onion, &c.

In West Flanders a six-years' rotation is as follows:—1st year, Potatoes; 2d, Rye with Carrots—these being largely watered; 3d, Flax; 4th, Rye; 5th, Turnips; 6th, Oats. A nine-years' rotation is as follows:—1st year, Oats; 2d, Flax and Turnips; 3d, Wheat, manured; 4th, Rye or Colza alone, or with Clover; 5th, Clover; 6th, Wheat; 7th, Potatoes or Beans; 8th, Oats with Clover, sometimes with Wheat; 9th, Clover.

In the Pays de Waes (East Flanders) a seven-years' rotation is as follows:—1st year, Potatoes, Hemp, Barley, or Rye; 2d, after Potatoes or Hemp, Rye or Wheat; 3d, after Rye or Wheat, Flax and Clover, or Flax and Carrots; 4th, Clover, and if Carrots have been grown during the 3d year as above, Rye; 5th, after Rye Oats, after the Clover Barley or Rye; 6th, Buckwheat or Rye, Rye after Barley; 7th, Rye. Where the oleaginous plants are cultivated, as Rape, the following is a nine-years' rotation:—1st year, Potatoes; 2d, Flax and Turnips; 3d, Oats with Clover; 4th, Clover; 5th, Wheat; 6th, Rye; 7th, Colza; 8th, Barley; 9th, Rye and Turnips.

In connection with the manures employed and the mode of preparing the land for the reception of the seed, with the sowing, the weeding and reaping, there remain many points of practical interest yet to be adverted to; these we hope to overtake in another and an early communication.

Societies.

ROYAL AGRICULTURAL OF ENGLAND.

A Weekly Council was held on Wednesday, May 18th, present Col. Challoner, Trustee, in the Chair.

The names of candidates proposed for election were read.

The Secretary of the Belgian Legation transmitted copies of the programme of the International Exhibition of Reaping Machines to be held at Brussels, under the auspices of the Central Agricultural Society of Belgium.

The Hon. Leslie Melville laid before the Council copies of the prospectus of a gas apparatus adapted to lighting farm buildings and stables and private houses. Having had one in operation himself for a year he was enabled from personal observation to detail its success. He stated that an intelligent labourer could manage it, and that the cost of gas varied from 2*s*. 9½*d*. to 3*s*. 6*d*. per 1000 feet, but of course subject to variation according to the price of the coal used.

Mr. Fisher Hobbs expressed his willingness to detail to the Council the result of his practical experience relative to the Turnip fly, and his success in lessening the ravages made by it. The Council expressed their hope that Mr. Fisher Hobbs would favour the Society with this statement at the Weekly Council to be held on Wednesday next, the 25th inst.

Adjourned to Weekly Council, on 25th inst.

Farmers' Clubs.

The London Farmers' Club: *June Discussion*. We regret to hear that Mr. Robert Baker is still too unwell to introduce the subject standing in his name for the next meeting of the London Club. Mr. Owen Wallis, of Overstone, has, however, kindly consented to take Mr. Baker's place. Mr. Wallis is already well known by the papers he has read here, while his practical ability would promise to do full practice to that now coming on for consideration—"The most profitable system of cultivation upon mixed soils."

Reviews.

Landlord, Tenant, and Labourer, in a Series of Papers affecting their Interests. By W. F. Hobbs. J. Ridgway, Piccadilly.

This is the very effective title of a pamphlet in which Mr. Fisher Hobbs has republished three papers on the Beershop System, on Copyhold Tenure, and on the Transfer of Land respectively, which he read some years ago before the Central Farmers' Club.

The conclusions to which the Club were led by Mr. Hobbs on these several points were as follows:—

"1. *On the Beer-shop System.*—That the effect of the present beer-shop system is to deteriorate in the greatest degree the character and value of the agricultural labourer, tending as it does to encourage habits of idleness, dissipation, and dishonesty. 2. That as all other classes necessarily suffer, it becomes the duty of every one to use his utmost exertion to hasten the suppression of these sources of crime. 3. That in the opinion of this club the labourer should have every opportunity given him for brewing the beer he requires, or for procuring it on fairer and cheaper terms; and that the retention of the malt tax is to him. as a consumer of that his labour produces, both a serious oppression and a direct injustice."

"2. *On Copyhold Tenure.*—That copyhold and customary tenures are frequently a bar to the application of skill and capital, an impediment to the improvement of the land, injurious to the public, and inconvenient to the lord as well as the tenant. That it is highly desirable for the interests of lord, tenant, and public that the entire enfranchisement of these tenures should be effected as soon as practicable on equitable terms, due regard being had to the rights and just claims of all parties."

"3. *On Land Transfer.*—1. That the difficulties attending the transfer of land have generally become so many and embarrassing as to demand the serious attention of the legislature, with a view to removing them. 2. That the effect of these difficulties is in the highest degree injurious—to the owners of the land who, encumbered with them, can seldom make the most of their property; to the cultivators of it, who are thus too often denied that aid and encouragement in the way of permanent improvements, such as buildings and draining, that should properly come from the landlord; and to the public at large, who are consequently deprived of those opportunities for investment, and the advantages of increased production, they would otherwise enjoy. 3. That the first and most direct means for removing these difficulties would be the improvement of the law of real property, the simplification of titles and forms of conveyance, together with the establishment of some effective system for the registration of deeds."

These resolutions are perfectly justified by the arguments and statements preceding them, which are well worth the perusal of any one seeking information on the topics specified.

Let us here call attention to the immense store of valuable agricultural information which the Journal and proceedings of the Farmers' Club embody. A series now of many years' duration of monthly papers oh the points of greatest agricultural interest written by the men best qualified to discuss them, must include a great deal of useful material which ought to be more accessible than it at present is. We commend the field to the cultivation of the secretary to the society in question, who might, we are persuaded, with the permission of the authors, edit a number of useful volumes from the materials thus at his disposal—volumes which would command a large circle of readers.

Miscellaneous.

Halkett's Guideway Agriculture.—My system consists of laying down rails over the farm, the cultivating implements, and carts for the carriage required on the farm, travelling upon these rails. Both the following advantages are thus gained to an extreme—the softest and deepest bed for the plants, and the hardest road for the passage of carts and implements. Under the present system of agriculture, the ground being more and more cultivated by the modern requirements of deep and fine tillage, of which we have heard so much to-night, is becoming more than ever an unfit medium for the economic cartage of the farm; whilst, on the other hand, the trampling and pressure in cartage, and all the other operations of the year, annuls as well as man can do it the effect aimed at, of keeping the ground in a state suitable to the plants. Again, the system assures a perfect operation of the implements, the rails forming the guides, and thus all the operations of the field are enabled to be brought under the power of the steam. Let us now see the value of these advantages in other operations, besides those of ploughing, grubbing, subsoiling, rolling, harrowing, &c., which I do by steam. On some lands, after a long continuance of dry weather, followed by perhaps two days of rain, and again fine weather, the surface is dry, but underneath the soil is soft and deep: the whole is as tender as possible, and might almost be hoed with a feather. The gardeners will at once stir and hoe the ground, bringing up the black mould in strong contrast with the fresh green plants; for the weeds will now spring into rapid growth. And if the farmer can yet go upon his land without injuring the plants, he requires many days to hoe them, whilst in a short time the surface becomes again hard and caked, and covered with weeds; or perhaps more rain will still further delay the operation. But on my system I can hoe from 150 to 200 acres in 24 hours with the greatest precision, without putting a foot on the land. So again with seeding: I am enabled to seize a favourable moment in the weather for crumbling the earth fine, or for putting in the seed. In 24 consecu-

tive hours 150 or 200 acres of land may be drilled. The manner of carrying out the various operations I will not allude to to-night. I refer gentlemen desirous of examining the subject to the professional papers of December, 1857, read at the Freemasons' Tavern, and of 1858 before the Society of Arts. But allow me to draw your attention to parts of the subject not before discussed. Let me, for instance, consider a rotation of crops, taking first the Grasses. Inasmuch as by my system the carriages run upon the rails, the economic advantages are so great that I am enabled to cart water and distribute it on the land at 1*s.* per acre, giving about 3000 gallons on that space. Secondly, I am enabled to mow by the machine at a great saving; and I can cart the large crops which some of the artificial Grasses will yield, if watered and repeatedly cut, at an equally reduced charge. If this be considered, it will be seen what a large herd of cattle may be supported with summer food, besides raising a great quantity of manure. The root crop also, for the reasons before stated, of better cultivation, and from the great abundance of manure, will yield much larger crops—and an increased quantity of meat will thus be raised—whilst the land being richer, the cereals also will bear heavier crops. When, independent of all these advantages, it is found that I can cultivate land 1*l.* per acre less than it can be done at present, after paying all expenses for interest and renewal, will it appear strange that if the profits afford thus a very large interest upon the capital laid out, I should look for the system to be adopted as a matter of course? The amount of the money required is of no moment at all; in fact, the greater amount the better, if the interest be large, and upon what security can a man expend capital better than on land? All that is wanted is to ascertain that the system is true. I grant there is a difficulty at the present; for the farmer who takes the greatest interest in my system (and there are several present here who I believe will corroborate my statements of the work done) is not willing to lay out capital on his landlord's property; whilst the latter does not sufficiently appreciate the system to risk its adoption. But when proved, money may be borrowed for the purpose, the same as for drainage; or a landlord, receiving say 2000*l.* a year, by selling a portion of his land, will be enabled to lay down the remainder on this system. And if he then receives, after paying for renewals, a net income of 4000*l.* a year, there is but little doubt that his example will be followed wheresoever it can be. *Mr. Halkett at the late meeting of the London Farmers' Club.*

Calendar of Operations.

MAY.

WESTER ROSS: *May 16th.*—Within a wonderfully short space of time we have passed from the extreme cold and wet of winter to the heat and drought of summer. A few weeks only have gone by since we were complaining that the Oats could not be satisfactorily sown because of wet: now we are afraid to commence the Swedes because of drought. Then we complained of violent east winds, bitterly cold and scathing: now we say the weather is unbearably hot and dry. As there is not yet any great want of sap where the ground has not been repeatedly stirred, and as the heat is great, everything grows very rapidly. A few days of such heat would advance the crops as much as they would have been with a more genial spring. Our Oats which were all sown wet, and in bad condition, have come away nicely, and are making good progress. Barley also presents a regular and vigorous braird, and has got a good start. Wheat is advancing rapidly, but would be greatly the better of a shower, as the dark green is already beginning to give place to a green greatly lighter, and much more unpromising. A good shower within a few days would be greatly advantageous. Potato planting is nearly finished, and the earlier plantings are coming above ground. As Potatoes have been very low priced this season, fetching only from 27*s.* to 30*s.* per ton, the common people are planting more than usual. Farmers now show no desire to speculate in them. There is still a good demand for cattle, although prices have fallen considerably. At our last Muir of Ord market a great many beasts changed hands at a reduction of some 10 per cent. upon the prices paid in early spring, but as many of these cattle were purchased last autumn when prices were very low, the seller had a considerable profit notwithstanding. A few farmers in this neighbourhood some weeks ago sold their winter stock to a would-be dealer, who failed to send back the money, or take off the cattle. The beasts, after being kept for some weeks, were disposed of at a loss of some 2*l.* per head. Upon the declaration of war Wheat rushed up some 20*s.* per quarter, and whilst farmers were congratulating each other upon their unexpected windfalls, the price as rapidly tumbled down again, leaving us disappointed not a little. We are now, and will for some time be, busily engaged preparing the ground for Turnips, and more suitable weather for that purpose we could not desire. Turnip sowing is scarcely commenced.

Notices to Correspondents.

ADDRESSES: *G H Haig.* As to the cultivation, Mr. Coleman, Chelmsford. As to the peat compressing machine, Mr. Slight, engineer, Edinburgh.

GAME: *R.* An association has been formed at Chester "to remedy a great national evil by enforcing the existing laws of the United Kingdom, which are opposed, letter and spirit, to the creation of nuisances injurious to the morality of the preserver of game and the gamekeeper, in nearly the same degree as the poacher." Their proceedings commence with temperate remonstrances by letter to individual preservers, and if these are not heeded will be followed by indictments for nuisances.

THE CHINESE SUGAR SORGHO: *X.* In the French Agricultural Journals it is stated, on the authority of the Marquis de Vibrave, that its effects have been mischievous in the experience both of himself and neighbours. "On a farm which I occupy myself, 25 horned cattle have been fed exclusively on Sorgho during a month; and from the precise day on which it was introduced in feeding the cattle, the journal of the farm shows a diminution of the profit of the dairy by one-half, and the same decrease was exhibited every month of feeding with Sorgho."

THE HON. D. RYDER AND MR. S. PHIPPS.—We referred to this subject in a leading article last week. We have now in type extracts from what appears to us the successful rejoinder of Mr. Ryder; but must postpone their publication for a week.

TURNIPS FOR EARLY FEEDING.

SUTTON'S LINCOLNSHIRE RED GLOBE; the heaviest cropper known. This sort is very superior to the Red Globe Turnip commonly grown in Lincolnshire. The original stock was presented to Messrs. SUTTON by the late Philip Pusey, Esq., with the earnest desire that he might be supplied annually with Seed of the same sort. Price 10*d.* per lb., or cheaper by the bushel.

POMERANIAN WHITE GLOBE TURNIP; the largest white Turnip; price 9*d.* per lb., or cheaper by the bushel.

These two Turnips thrive well on most soils, and are good for feeding off previous to Wheat sowing. Goods delivered carriage free.—Royal Berks Seed Establishment, Reading.

TWO HUNDRED GUINEAS IN EIGHT PRIZES.

FOR FOUR YEARS SUCCESSIVELY HIS ROYAL HIGHNESS THE PRINCE CONSORT'S PRIZE CUPS HAVE BEEN AWARDED TO SUTTON'S CHAMPION SWEDES at the East Berks and South Bucks Agricultural Societies in 1855, 1856, 1857, and 1858. New Seed now ready, 1*s.* per lb., or cheaper by the bushel, carriage free.

Royal Berkshire Seed Establishment, Reading.

ROYAL SOUTH HANTS SEED ESTABLISHMENT,

UNDER THE PATRONAGE OF H.R.H. THE PRINCE CONSORT, THE AGRICULTURAL SOCIETY OF INDIA, AND THE LEADING AGRICULTURISTS OF THE UNITED KINGDOM.

PAGE AND TOOGOOD'S STOCKS have produced the finest specimens exhibited at Smithfield, and are so well known and appreciated that comment on their part is unnecessary. Their prices compete with any house in the trade.

PRESENT PRICES, Carriage Free to all parts of England:—

	Per lb.—*s. d.*		Per lb.—*s. d.*
Skirving's Swede	0 6	Hardy Green Round	0 6
Page's Improved	0 8	Early Six Weeks	0 6
Ashcroft	0 6	Kohl Rabi	2 6
Greentop	0 6	Yellow Globe Mangel	0 6
Sussex, or Jeffery's	0 9	Page's Impl. Orange Globe*	0 8
Tankard	0 7	Red Globe	0 7
Red Round Turnip	0 6	Elvetham Long Red	0 7
Page's Improved Red Globe	0 8	Long Red	0 6
Scotch or Bullock	0 7	Long Yellow	0 7
Pomeranian White Globe	0 6	White Belgian Carrot	1 0
Early Green Globe	0 6	New Red	1 3
,, White Tankard	0 7	Long Altringham	1 3
Red Tankard	0 7	Cattle Cabbage	2 6
Green ditto	0 7	Cattle Parsnip	1 0
Yellow ditto	0 7	Dwarf Essex Rape	0 4

* Bulbs of this variety have acquired the enormous weight of 44 lbs., as shown at Smithfield Club.

BUCKWHEAT, MUSTARD, LINSEED, TARES, SAINFOIN, HOLCUS SACCHARATUS, 1*s.* per lb.

Fine PERMANENT PASTURE GRASS, ITALIAN RYE-GRASS, CLOVER, &c., at lowest market prices.

Special contracts for large quantities. Seeds packed for exportation to all parts of the world.

Oxford Street and Above Bar, Southampton

TURNIPS AND MANGEL WURZEL SEEDS, ETC.

THOMAS GIBBS AND CO., Corner of Half-Moon Street, the Seedsmen to the "Royal Agricultural Society of England," beg to announce to the members of the Society and agriculturists generally that they have still on hand a supply of the different kinds of MANGEL WURZELS; also selected stocks of HYBRIDS, SWEDES, and other TURNIPS, &c.

MANGEL WURZEL:—
Yellow or Orange Globe, Long Red, and other kinds.

TURNIPS:—
Green-top Yellow Hybrid, strongly recommended, and bears late sowing.
Purple-top Swedes | Skirving's Swedes
Globe sorts | Tankard's sorts

GRASS SEEDS for Permanent Pastures, Cemeteries, and Church Yards, Lawns, and Grass plots, &c.

RENOVATING MIXTURES for old Swards.

PRICED LISTS sent free on application.

Thomas Gibbs & Co.

CORNER OF
HALF-MOON St.
PICCADILLY, LONDON, W.

NATURAL GRASS SEEDS.

PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN, can supply genuine Seed of all the valuable kinds of the NATURAL GRASSES suitable for Lowland and Upland Pastures; also for Laying-down Lawns, Bowling Greens, Cricket Grounds, Cemeteries, Railway Banks, &c.

PRICED LISTS may be had free on application.—PETER LAWSON & SON, 27, Great George Street, Westminster.

"JACK OF NEWBURY" SWEDE, ETC.

PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN, &c., 27, Great George Street, Westminster, respectfully request attention to their very genuine Stock of the above excellent Swede; also of the LOTHIAN PURPLE-TOP SWEDE, both of which have been selected with the greatest care. They have also a very fine Stock of the KOHL RABI, or TURNIP-ROOTED CABBAGE, specimens of which were shown at their Stands at Smithfield Club Show. The Kohl Rabi was largely grown last season, and may now be relied on as a substitute for the Turnip and Mangel, where these roots do not succeed, or for filling up blanks where there is a partial failure. Its feeding qualities, hardiness, and weight per acre are equal to the Swede, and all kinds of stock prefer it to other roots.

P. L. & SON have also selected a first-rate Stock of MANGEL WURZEL SEED, which they can confidently recommend. Their natural GRASS SEEDS have been also saved with very great care, and they are ready to supply them separately or in mixture, for laying down Permanent Pastures, Lawns, &c.

P. L. & SON have arranged to deliver Seeds free throughout England and Wales from their London Establishment, for all quantities exceeding 20*s.* in value.

LISTS OF PRICES of the above and all other Seeds, Plants, &c., may be had on application.

27, Great George Street, Westminster.

CACTI.

TO BE SOLD, either wholly or in part, a rare and superb collection of Exhibition Specimens of TALL CACTI, CEREUS, EPIPHYLLI, and their hybrids. They have been exhibited at all the Metropolitan Shows for years past. Being large and numerous the owner wishes to dispose of them for cash or in exchange for Camellias, Ferns.—Apply to R. BURNS, Gardener to J. R. Scott, Esq., Harringay Park, Crouch End, Hornsey, N.

WARNER'S IMPROVED LIQUID MANURE OR GENERAL PORTABLE PUMP.



These Pumps are fitted with J. W. & SON'S Patent Buckets and Suckers, and cannot clog in action. The barrel is of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure. The legs will fold together, and the whole may be carried on the shoulder to any pond or tank required.

Price of 4½ in. Pump, with legs, 3*l.* 3*s.* If with planished copper barrel and galvanised iron handle, &c., 14*s.* extra. The barrel is 27½ in. long, and the legs are 5 ft. high.

These Pumps are also made without the legs, with strong wrought-iron straps for screwing on to any ordinary water butt or cart, and fitted with 1½ inch brass union for attaching flexible suction. Price 50*s.*

1½ inch Gutta Percha Suction Pipe, 1*s.* 11*d.* per foot.

Rubber and Canvas Suction and Delivery Hose, from ½ inch to 4 inches in diameter, in lengths of 60 feet to order. Branch Pipes with Cocks, Union Screws, &c., at reduced prices.

May be obtained of any Ironmonger or Plumber in town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin St., London.

WARNER'S PATENT VIBRATING STANDARD PUMPS.

PATENT CAST-IRON PUMPS, fitted with J. W. & SON'S Patent Buckets and Suckers, which cannot clog in action, for Farms, Cottages, and Wells, not exceeding 28 feet.



Diameter of Barrel.	Height.		£	*s.*	*d.*
2½ in. short	1 ft. 7 in.	Fitted for lead, gutta percha or cast iron flanged pipe as required.	1	10	0
2½ ,,	long 3 ,, 3 ,,		1	14	0
3 ,,	ditto 3 ,, 6 ,,		2	8	0
3½ ,,	ditto 3 ,, 6 ,,		2	12	0
4 ,,	ditto 3 ,, 6 ,,		3	3	0
2½ ,,	short, with 15 feet of Lead Pipe attached, ready for fixing		2	14	0
2½ in. long	ditto	ditto ditto	2	18	0

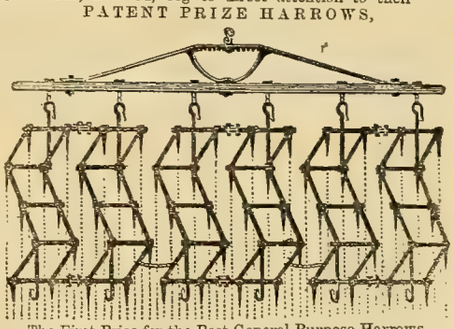
The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.

May be obtained of any Ironmonger or Plumber in Town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

HOWARDS' PRIZE IMPLEMENTS, 1859.

JAMES AND FREDK. HOWARD, Britannia Iron Works, Bedford, beg to direct attention to their PATENT PRIZE HARROWS,



The First Prize for the Best General Purpose Harrows.
The First Prize for the Best Light Harrows.
The First Prize for the Best Drag Harrows.

For which they received All the First Prizes last offered by the Royal Agricultural Society of England, viz.:—

J. & F. HOWARD have discontinued troubling the Public with a long List of Prizes awarded to their Implements, but they would just state that for PLOUGHS, HARROWS, and HORSE RAKES, they have for several years gained every Prize for which they have competed.

PLOUGHS.

D PLOUGH, for a Pony	£2	5	0
DD ditto for one Horse	3	5	0
P ditto for two Horses	4	7	6
PP ditto for general purposes	4	12	6
SKIM COULTER for P or PP Plough	0	5	6

HARROWS.

A Set of Three 4-Beam HARROWS, with Whippletree, recommended as general Seed Harrows, 9½ feet wide, marked No. 12	3	14	0
A Set of Three 4-Beam HARROWS, with Whippletree, adapted for 3 Horses, 10 ft. wide, marked No. 11	4	4	0

If with Patent Joints, 6*s.* per set extra.

HORSE RAKES.

Small size, 7½ feet wide, marked A, with 24 iron teeth	7	10	0
Ditto, with Steel Teeth	8	0	0
Large size, 8½ feet wide, marked B, with 28 iron teeth	8	0	0
Ditto, with steel teeth	8	10	0
Extra large size, 8½ feet wide, marked C, with 24 steel teeth	10	10	0
A Set of 15 Prongs, to be attached to the above when used as Weed Extirpators	1	10	0

Free Delivery to Birmingham, Bristol, Colchester, Derby, Gloucester, Hull, Lincoln, Liverpool, London, Manchester, Norwich, Nottingham, Retford, Shrewsbury, Wisbeach, Worcester, and York; or to Dublin, Edinburgh, Glasgow, and other parts at fixed rates.

HOWARDS' NEW CATALOGUE, containing prices and description of their Patent Ploughs, Harrows, Horse Rakes, and other Implements, including Smith's Steam Cultivators, for which they received at Chester the Gold Medal of the Royal Agricultural Society of England, sent free on application to

J. & F. HOWARD, Britannia Iron Works, Bedford.

SHANKS' PATENT LAWN MOWING MACHINES

NOW USED IN ALL THE ROYAL GARDENS.

NEW AND IMPORTANT IMPROVEMENTS FOR MOWING, ROLLING, COLLECTING, AND DELIVERING.

PRICES OF THE HORSE POWER PATENT MOWING, ROLLING, COLLECTING, AND DELIVERING MACHINE

No. 1 (*a*) **48-inch Machine—(usually drawn by a Horse) £27 0 0**
No. 1.—42-inch Machine—(usually drawn by a Horse) 24 0 0
No. 2.—36-inch do.—(usually drawn by a Horse or Pony) 20 10 0
No. 3.—30-inch Machine—(usually drawn by a Pony) ... £17 10
No. 4.—25-inch do.—(usually drawn by a Pony or Donkey) 13 10
No. 5.—25-inch do.—(made light for a small Pony or Donkey) 9 10

Machines Nos. 1 (*a*), 1, 2, 3, & 4 have the Patent Delivering Apparatus attached. No. 5 can either be had with or without this improvement; if with it, 30*s.* extra.

PRICES OF THE HAND MOWING AND ROLLING MACHINE

No. 6.—22-inch Machine £7 17 6
No. 7.—19-inch Machine... ... ... 7 5 0
No. 8.—16-inch Machine £6 10 0
No. 9.—13-inch Machine 5 15 0

☞ *Detailed Printed Circulars free on application.*

LONDON AGENTS

MESSRS. J. B. BROWN & CO., 18, CANNON STREET, CITY, LONDON, E.C.

LAWNS—IN USE IN THE ROYAL GARDENS.

SAMUELSON'S PATENT BOYD LAWN MOWING and ROLLING MACHINE, the only one that will cut wet as well as dry Grass, is guaranteed efficient in use, easily handled, and readily kept in working order. Doing the work of five or six men. Prices, including case and carriage to any railway station in England, from 4*l.* 17*s.* 6*d.* and upwards. Copies of testimonials post free on application to Mr. SAMUELSON'S London Warehouse, 76, Cannon Street West, City; Messrs. DEANE'S, London Bridge; or the Works, Banbury, Oxon.

THE NEW PATENT MOWING MACHINES may be used anywhere at any time, are self-sharpening, and admit of the use of duplicate sets of cutting parts. Prices from 4*l.* 10*s.* upwards. Illustrated Circulars free by post.—Manufactured and Sold by JAMES FERRABEE & Co., the original introducers of Mowing Machines.

Several infringements of their patent having taken place, the Makers respectfully caution the public to see that the words "FERRABEE'S Patent" are cast on every Machine.

JAMES FERRABEE & Co., Phœnix Iron Works, Stroud.

GREEN'S PATENT LAWN MOWERS have proved to be the best by the appointed judges in all cases of competition. Full illustrations, with particulars of improvements for the present season, will appear in this Paper next week.

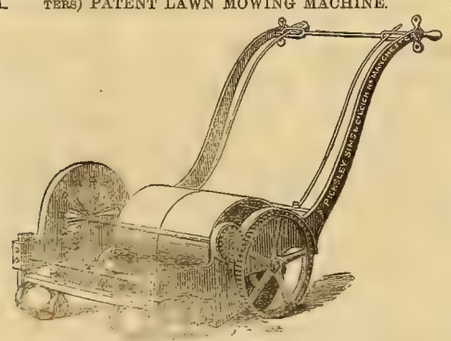
THOMAS GREEN, Patentee and Sole Manufacturer, Smithfield Iron Works, Leeds, Yorkshire; and 2, Victoria Street, bottom of Holborn, London. Repairs done at either of the Establishments, where every information may be obtained.

SHANKS'S PATENT LAWN MOWERS are unquestionably the most perfect Machines for Mowing Lawns, Verges, &c., extant. SHANKS'S Horse and Pony Machines are the only Machines that Mow, Roll, Collect, and Deliver the Grass.—London Agents: COTTAM & Co., 2, Winsley Street, Oxford Street, W.

SHANKS'S PATENT MOWING MACHINES.

J. AND C. LEE, NURSERYMEN, Hammersmith, have great confidence in recommending these as the most complete Mowing Machines offered to the public. They have had large experience with SHANKS'S Machines, and have ever found them do their work admirably, effecting a great saving in labour, and not liable to get out of order. For terms, apply to the Agents, J. & C. LEE, Nurserymen, Hammersmith.

PICKSLEY, SIMS, AND CO.'S (by ROYAL LETTERS) PATENT LAWN MOWING MACHINE.



LEIGH, LANCASHIRE.

P., S., & Co., in introducing this Lawn Mowing Machine, particularly request a strict examination, or comparison and trial, for simplicity of construction, lightness, regularity of draught, adaptability for mowing every kind of plain, circular, and verge work.

Firstly, we have encased the wheels so as completely to protect from injury flower borders, shrubs, &c., whilst working the machine, at the same time not being liable to obstruction or damage.

Secondly, this machine works easily on undulated and sloping ground; it can be thrust forward or be drawn from behind, the latter being the easiest.

Thirdly, this is the only machine made that will work round quick curves; it will work easily and effectively round circular borders so small as 12 inches in diameter. This very desirable improvement has been obtained by fixing to the front part of the machine our newly-invented universal action, and self-cleaning, anti-friction spherical guiding balls. The continual revolving of these spherical guiding balls, under the most trying circumstances, never fails.

Fourthly, we have attached to this machine a rack and pinion motion, for adjusting the cutting parts (there being a rack and pinion on each side of the machine to act conjointly at the same time upon the full length of the knives), in other machines a slow, tedious, and uncertain operation, into one of quickness, ease, and certainty.

PRICES:—				£	s.
Patent Lawn Mowing Machine		13 inches	..	5	10
Ditto	ditto	16 ,,	..	6	0
Ditto	ditto	19 ,,	..	6	10
Ditto	ditto	22 ,,	..	7	0
Patent Chaff and Gorse Cutters from..			..	£2 5 to	22 0
,, Bean, Oat, and Malt Mills ..			..	3 10 to	10 10
,, Gorse and Grain Bruisers ..			..	10 10 to	21 0
,, Bone Mills..			..	27 10 to	150 0
,, Mangles, various ..			..	2 10 to	12 10

ILLUSTRATED CATALOGUES can be had gratis.

PATENT LAWN MOWING AND ROLLING MACHINES.

SAMUELSON'S LAWN MOWING MACHINES,

WITH BOYD'S PATENT IMPROVEMENTS.

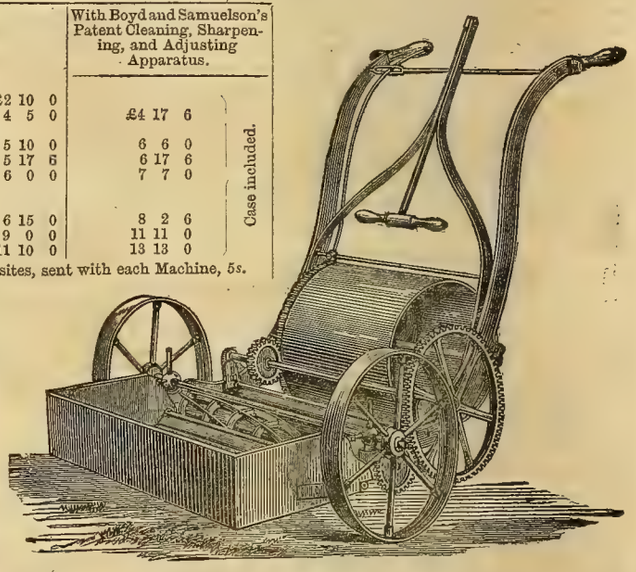
"Doing the work of five or six men."—The Times, Sept. 20, 1858.

The following PRICES include the Carriage to any Railway Station in England:—

		With Boyd and Samuelson's Patent Cleaning, Sharpening, and Adjusting Apparatus.
9 inches wide, for very narrow borders, without registered wheels	£2 10 0	
12 inches wide	4 5 0	£4 17 6
16 inches wide, with registered arrangement (for one man)	5 10 0	6 6 0
19 inches wide, ditto (for one man) ..	5 17 6	6 17 6
22 inches wide, ditto (for man and boy)	6 0 0	7 7 0
22 inches wide, ditto for ditto, and also fitted with draught links for a pony and a man to work it	6 15 0	8 2 6
25 inches wide, ditto	9 0 0	11 11 0
30 inches wide, ditto (for man and pony)	11 10 0	13 13 0

Case included.

Box of Tools, Oil Can, and other requisites, sent with each Machine, 5*s.*



Some thousands of these Machines are now in successful operation on the Lawns of Royalty, the Nobility, and Gentry of the United Kingdom and the Continent of Europe, and are pronounced SUPERIOR to *any other* for lightness of draught, efficiency, and durability. The demand for them is *yearly increasing—the number supplied by* Mr. SAMUELSON *during the years* 1856, 1857, *and* 1858 *being more than* 2100. Testimonials are continually being received from gentlemen having them in daily use, who speak in the highest terms of their efficiency.

These are the only Machines that will cut wet as well as dry Grass without clogging the knives.

Orders for 1859 should be sent at once to insure certain delivery and to prevent disappointment.

Copies of Testimonials will be forwarded post free on application to

B. SAMUELSON, 76, Cannon Street West, City, London;
to the Manufactory, Britannia Works, Banbury, Oxon;

or to MESSRS. DEANE AND CO. London Bridge; or any respectable Ironmonger or Seedsman in the Kingdom.

CARSON'S

ORIGINAL ANTI-CORROSION PAINT,

PATRONISED BY

THE BRITISH GOVERNMENT,
THE FRENCH GOVERNMENT,
THE RUSSIAN GOVERNMENT,
H.R.H. THE PRINCE CONSORT,
HON. EAST INDIA COMPANY,
MOST OF THE NOBILITY AND GENTRY,
NEW RIVER COMPANY,
THE DOCK COMPANIES,
RAILWAY AND CANAL COMPANIES,
THE PRINCIPAL COLLIERIES,
MILL OWNERS,
IRON MASTERS, &c. &c.

The ANTI-CORROSION PAINT is now used extensively for all kinds of OUT-DOOR WORK,

Such as Iron, Wood, Stone, Brick, Compo, Cement, &c., and has been proved, after a practical test of 70 years, to surpass any other Paint; *and being peculiarly adapted for Conservatories, Hothouses, and Frames of all descriptions, is constantly used by Noblemen, Gentlemen, as also many eminent Horticulturists, for such purposes.* It is much lower in Price, and lasts twice as long as the best White Lead, and can be easily applied by any Labourer, being sent in various Colours, requiring simply to be mixed (no grinding is needed). The Anti-Corrosion is a powder, and will keep any length of time.

COLOURS:—

White Stone	34*s.* per cwt.	Light and Dark Lead	28*s.* per cwt.
Light do.	32*s.* ,,	Light and Dark Chocolate	
Drab or Portland		Bright Red	
Bath do.		Dark do. (or Brick Colour)	
Light and Dark Yellow do.		Black	
Copper..	30*s.* ,,	Invisible Green..	42*s.* ,,
Light and Dark Oak		Bright and Deep Green	50*s.* ,,
		Blue (for Carts and Waggons)	50*s.* ,,

OIL, TURPENTINE, AND BRUSHES,

A Copy of Testimonials (700), will be sent upon application to

WALTER CARSON & SONS, (Successors to the Inventors), 9, Great Winchester Street, near the Royal Exchange), London, E.C.

NO AGENTS THROUGHOUT THE UNITED KINGDOM.

COTTAM & COMPY., Engineers, Founders, &c.,

2, WINSLEY STREET, LONDON, W.



A SHOW ROOM DEVOTED ENTIRELY TO ARTICLES OF HORTICULTURE.

THE NEW ILLUSTRATED CATALOGUE UPON APPLICATION.

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	,, Syringes	Garden Bordering
Hot-water Apparatus	Ornamental Wire Work	Hurdles	,, Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

Iron Hurdles, Strained Wire Fencing, Game Netting, &c.

Every description of Plain, Ornamental, Cast and Wrought Iron, and Wire Work.

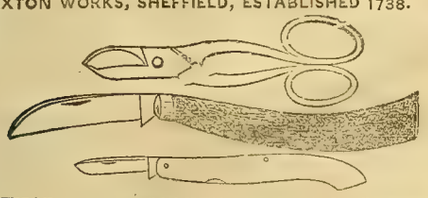
EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

N.B. COTTAM AND COY. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

---

200 ONE, TWO, and THREE-LIGHT MELON BOXES and LIGHTS, of the best seasoned materials, ready for immediate use.—JAS. WATTS, Hothouse Builder and Hot-water Apparatus Manufacturer, Old Kent Road, London.

PAXTON WORKS, SHEFFIELD, ESTABLISHED 1738.



SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.—Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

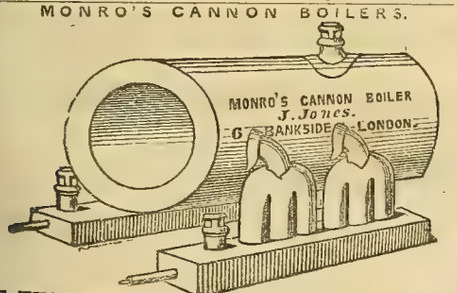
JOHN WARNER AND SONS, Crescent, Jewin Street, London.—GALVANISED IRON TUB GARDEN ENGINE, with WARNER'S Registered Spreader, is strongly recommended, for durability and low price, viz., 2l. 19s., to hold 10 gallons.

Larger sizes in wood or iron, viz., 14 gallons, 24 gallons, and 35 gallons. May be obtained of any Ironmonger or Plumber in town or country, or of the patentees and Manufacturers, as also Machinery of all kinds for raising Water from any depth to any height by Steam, Horse, or Manual Power. Prices sent on application.



Syringes of various constructions and sizes from 9s. upwards. Metallic String from 5d. to 1s. 3d. per lb.

MONRO'S CANNON BOILERS.



MUCH has of late been said about BOILERS for Heating by Hot Water, but these Boilers have now proved themselves to be the best at present invented. They are adapted for heating every description of building, and are made of various sizes. The Price of the

24-inch Cast Iron is	.. ..	.. £5 10s. 0d.	each
24-inch Wrought ditto	.. ..	.. 6 10 0	,,
36-inch Cast ditto	.. ..	.. 8 0 0	,,
36-inch Wrought ditto	.. ..	.. 8 10 0	,,

References to Gentlemen and Nurserymen where these Boilers are now at work. The Cannon Boilers are now kept in stock, and are to be had only of J. JONES, 6, Bankside. Also, every description of Saddle and Cylinder Boilers. Hot Water Pipes and Connections at prices lower than those of any other house in London. Estimates for Hot-water Apparatus erected complete in any part of the country, and an Illustrated Catalogue on application to J. JONES, 6, Bankside, Southwark, London

---

GARDEN ENGINES AND SYRINGES.

J. TYLOR AND SONS, Warwick Lane, Newgate Street, London, E.C., beg to call attention to their very superior manufacture of GARDEN ENGINES and SYRINGES.

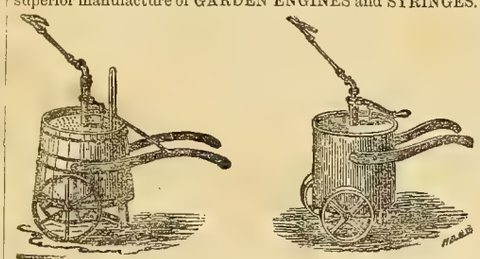


Fig. 598. J. TYLOR & SONS' BARROW GARDEN ENGINE in best well painted Oak tub, fitted with J. TYLOR & SONS' Improved Brass Pump, Universal Joint, and Registered Spreader, which answers the purpose of the separate rose, fan, and jet

CONTENTS OF TUB:—

10 gallons	15 gallons	28 gallons
£4 10 0	£5 10 0	£6 18 0

Fig. 599. do. TINNED IRON TUB.

CONTENTS OF TUB:—

8 gallons	12 gallons	16 gallons	24 gallons	30 gallons
£2 15	£3 5	£4	£5	£5 18

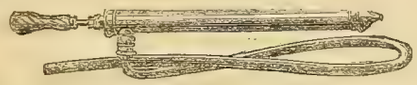


Fig. 618. No. 1. REGISTERED SYRINGE, with India-rubber suction tube, one rose and jet .. .. £1 5 each.
No. 2. Ditto ditto 1 1 ,,
Telescope Branch Pipe for ditto .. .. 0 10 ,,

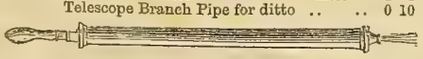


Fig. 619. GARDEN SYRINGE, with one rose and jet, 12s. 6d. each
,, 620. Ditto ditto 11s. 6d. ,,
,, 621. Ditto ditto 10s. 6d. ,,
,, 622. LADIES' GARDEN SYRINGE, with one rose & jet, 8s.

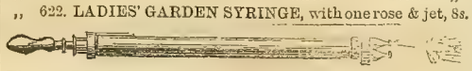
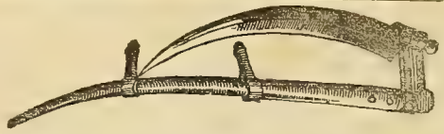


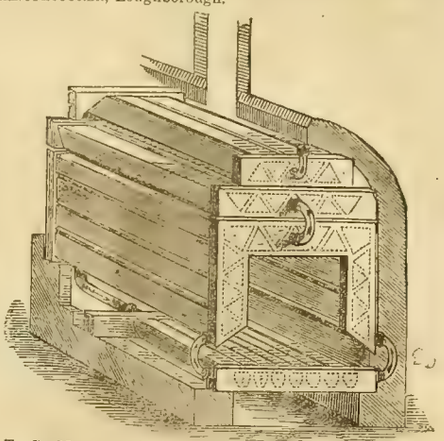
Fig. 623. READ'S SYRINGE, with two roses and one jet, 18s. 6d.
,, 624. READ'S SYRINGE, with one rose and jet .. 16 6
,, 625. Improved ditto ditto .. 14 6
,, 626. Ditto ditto ditto .. 13 0

Manufacturers of Pumps and Well Engines (for shallow or deep Wells), Plumbers' Brass Foundry of every description, High Pressure Cocks and Closets, Copper and Tinned-iron Baths. Garden and Fire Engines, Lamps of every description, Copper Goods, &c. Estimates given for Hot-water and Bath Apparatus.



BOYD'S SELF-ADJUSTING SCYTHES are the cheapest and best, and being sold adjusted are ready for immediate use. They can be regulated in an instant to suit any person, and to cut any crop without change of Scythes. To Amateur Gardeners they are very desirable, as they afford a healthy and interesting exercise. They have stood the test of public opinion for seven years, and for excellence, ease, economy, and durability are highly recommended. Upwards of 50,000 of them have been sold. To be had of every Iron monger, Hardwareman, and Seedsman in the United Kingdom; and Wholesale of the Sole Licensed Makers, WM. DRAY & CO., at their New Agricultural Implement Warehouses, Adelaide Place, London Bridge.

T. G. MESSENGER, HORTICULTURAL BUILDER and PATENT HOT-WATER APPARATUS and GARDEN ENGINE MANUFACTURER, Loughborough.



T. G. MESSENGER'S Divisionless Horticultural Erections, ventilated with screw mechanism by which the top or front lights are opened the entire length of the house momentarily, do not fail to give complete satisfaction (as numerous Testimonials can show), for the following reasons:—They are much lighter in appearance, more durable, much stronger, and cheaper than any other can possibly be.

Three years' trial has proved his PATENT BOILER to be superior to any hitherto invented; a great number of houses can be heated at once with this Boiler, with the facility of heating any separately.

Illustrated descriptions and prices of his Patent and greatly approved GARDEN ENGINES sent free upon application; also Plans, Estimates, and Testimonials for Building or Heating.

TO PIG AND POULTRY FEEDERS AND MILLERS.

CHICKEN AND GAME RICE, 8s. per cwt., in bags 1½ cwt. each. SCREENED RICE, 11s. per cwt., in bags 1¾ cwt. each. RICE MEAL, 6s. 6d. to 8s. 6d. per cwt. RICE for grinding. American Oilcake and Locust Beans, per Ton only.—All Sold for Cash, and an allowance per ton, by W. & R. JUPP, Rice Merchants, 6, Cross Lane, St. Mary-at-Hill, Eastcheap.

TO BE LET, BRISTOL NURSERY GROUNDS, Kemp Town, Brighton. These Gardens are now to Let for occupation with immediate possession.—Any person desirous of treating for the same may obtain particulars and permission to view the grounds on application to Mr. R. W. LUCAS, 20, Great Marlborough Street, London, W.; and of Mr. A. CHANDLER, Horticultural Valuer, 28, Priory Road, Wandsworth Road, S.

NURSERY GROUND.

TO BE LET, WHITTINGTON NURSERY, Upper Holloway, to be entered upon immediately.—For particulars apply to J. F. MARSON, Esq., Small Pox Hospital; or to Mr. BUNNEY, Nurseryman, Stratford, Essex.

TO BE DISPOSED OF, A BUSINESS in the SEED TRADE, where an immense retail trade may be done. Proof of trade shown, and most satisfactory reasons for leaving given.—Address, A. Z., *Gardeners' Chronicle* Office.

Sales by Auction.

GREENHOUSE AND BEDDING PLANTS.

MR. PREECE is instructed to Sell by Auction (without reserve), on MONDAY, May 23, at 11 for 12 o'Clock, upon the premises of Mr. W. Bragg, "Star" Nursery, Slough, several thousands of BEDDING-OUT and other choice Plants, Geraniums, Hollyhocks, Dahlias, Carnations, Picotees, Fuchsias, Pot Roses, &c.—Catalogues on application.

CHOICE TULIPS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. J. Hepworth to Sell by Auction on the Premises, Hendrie's Gardens, Lea Bridge Road, adjoining the Railway Station, on MONDAY, May 23, at 3 o'Clock, a Choice Bed of TULIPS, consisting of 144 rows of the finest strains of named varieties, and 20 rows of named Breeders, all in excellent condition and nearly every root blooming.—May be viewed prior to the Sale. Catalogues had of Mr. J. HEPWORTH, and of the Auctioneers, American Nursery, Leytonstone, Essex.

HOMERTON NURSERY.—10,000 ORNAMENTAL BEDDING AND GREENHOUSE PLANTS.

TO GENTLEMEN, NURSERYMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. J. Fry to submit to public competition by Auction, on the premises, Homerton Nursery, High Street, Homerton, within 5 minutes' walk of the Hackney Railway Station, on TUESDAY, May 24, at 12 o'Clock, about 10,000 ORNAMENTAL BEDDING, BORDER, and GREENHOUSE PLANTS, consisting of fine show and Scarlet Geraniums of sorts, Azalea indica, Ericas, Metrosiderons, Diosma, Cacti, Hydrangea, Calla, Roses in pots, Heliotropium, Verbenas, Fuchsias, Petunias, Calceolarias, Lobelias, Double Wallflowers, Intermediate Stocks, Lilium lancifolium and eximium, Tropæolum, Thunbergia, Lophospermum, Ferns, &c.—May be viewed three days prior to the Sale. Catalogues may be had on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

STOKE NEWINGTON.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, AND AMATEURS.

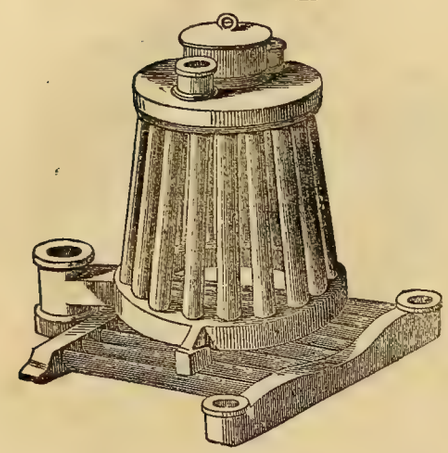
5000 GREENHOUSE AND BEDDING PLANTS.

MESSRS. PROTHEROE AND MORRIS are instructed to Sell by Auction, at Messrs. Brown's Nursery, Albion Road, Stoke Newington, on THURSDAY, May 26, at 12 o'Clock, the CHOICE STOCK of GREENHOUSE and other PLANTS of a gentleman who is declining their further cultivation, consisting of fine specimen Camellias, Indian Azaleas, Gardenias, Scarlet and other Rhododendrons, Burchellia, Stephanotis, Daphnes, Cytisus, Acacias, Orange Trees, &c.; together with 5000 Bedding Plants, consisting of Scarlet and other Geraniums, Fuchsias, Verbenas, Petunias, Dahlias, Climbers, &c.—May be viewed, and Catalogues had on the premises; and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will Sell by Auction at the Mart, on FRIDAY, May 27, at 12 o'Clock, a choice assortment of GREENHOUSE PLANTS, comprising Scarlet and other Geraniums, Ericas, Epacris, &c., the newest varieties of Fuchsias, Verbenas, and Dahlias, with a large assortment of Ornamental Plants for Bedding.—On view the morning of Sale. Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

By Her Majesty's Royal Letters Patent.



ORMSON'S
PATENT JOINTLESS TUBULAR BOILER.

TESTIMONIALS.

"Sir,—I feel much pleasure in bearing testimony to the efficiency of your Patent Jointless Tubular Boiler which you have erected for Baron de Rothschild, at Gunnersbury Park, and from the number of hothouses and great extent of pipe you have heated from one boiler, I now feel confident it is decidedly the most powerful, economical, and safe boiler yet invented. Having had the working of the Wrought-iron Arch, and Cast-iron Corrugated Arch Boilers in these gardens, I have no hesitation in stating that your boiler is infinitely superior to either of them in every respect.—Yours truly,
"William Forsyth.
"The Gardens, Gunnersbury Park, Acton, Middlesex."

"Sir,—It is with much satisfaction I give my testimony in favour of your admirable Patent Jointless Tubular Boiler, being attached to upwards of 3000 feet of 4-inch pipe, and doing the work of four fires, and consumes little more fuel than was required for one of the fires previous to the adoption of your boiler. We can command any amount of heat, the boiler being so powerful I am confident it would with ease heat as much more. Altogether we have realised much more economy in fuel and attendance than we at first anticipated. In addition to the great power and economy of your boiler it possesses another most important advantage over all other tubular boilers which have come under my notice, in the fact of its being jointless, consequently quite safe from all danger of leakage. On referring to my coal account I find that I now only use one where I formerly used five waggon loads of coal for the arched boilers which you took out.—I am, Sir, yours respectfully,
"J. Fraser.
"The Gardens, Luton Hoo, Bedfordshire.'

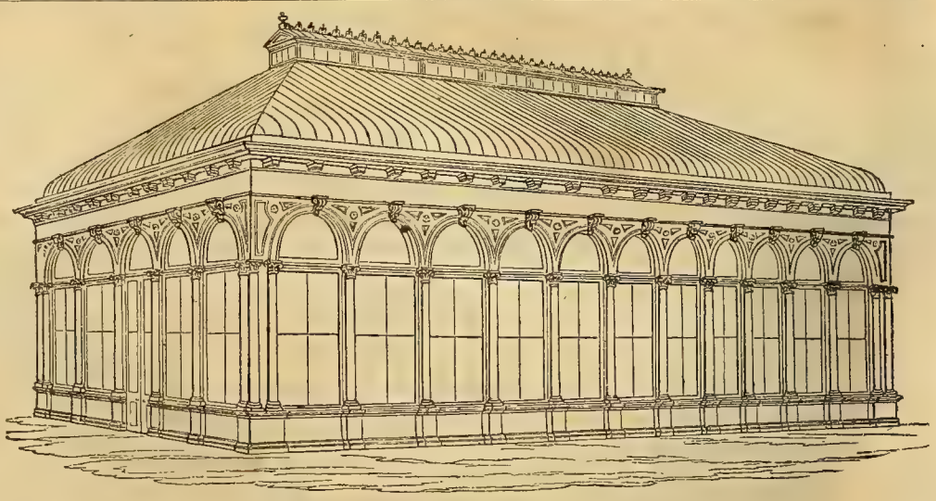
"Mr. Henry Ormson, Sir,—I beg to inform you of my entire satisfaction with your Hot-water Apparatus in general, and your Patent Jointless Tubular Boiler in particular, as fitted up in the new range of Hothouses you have recently erected for Lord Powerscourt. The Boilers I admire for three excellent reasons; they are simple in construction, effective in working, and I feel assured, from the calculation I have already made, a very great saving of fuel will be the consequence from using these Boilers. You will permit me to add if I had formed a contrary opinion of the merits of these Boilers I should have been candid enough to have told you so, but in justice to you I must distinctly state I consider them a great boon to the horticultural world.—I am, Sir, yours truly,
"Alexander Robertson.
"The Gardens, Powerscourt, Ireland."

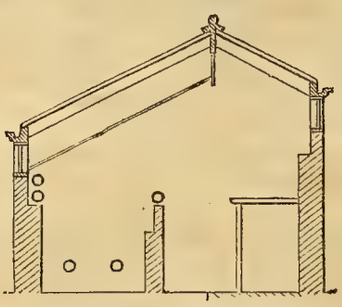
"Sir,—I have much pleasure in testifying to the excellent working of your Patent Jointless Tubular Boiler; though a small one it does the work of five fires, and is a great saving of fuel and labour.—I am, Sir, yours respectfully,
"Holland House Gardens, Kensington." "J. Scobie.

"Sir,—In regard to your Patent Jointless Tubular Boiler, it answers admirably the purpose for which it was erected. I consider it the most economical and powerful Boiler ever introduced, and am confident it will not fail to give general satisfaction.—I am, yours most respectfully,
"John Lauder.
"The Gardens, Witley Court, Worcestershire."

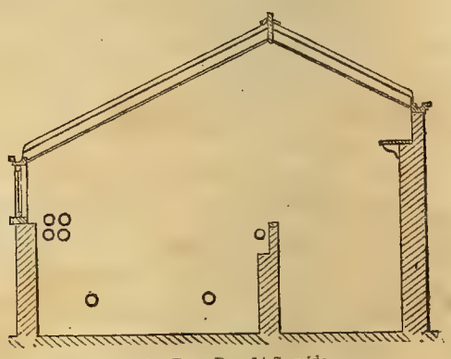
"Sir,—I have much pleasure in testifying to the efficiency of your simple but most powerful Patent Jointless Tubular Boilers. The two small boilers you put up here are doing the work of six fires, with the addition of a range of lofty greenhouses which were afterwards attached. The amount of fuel is little more, and the attention much less, than was required for one fire before these boilers were put up; there is not the least strain on them, and I am confident if required would heat a considerably greater amount of piping. I must also add that the whole of the hot-water apparatus works satisfactory, especially the ventilating boxes you put up in the Fruiting Pine Stove, which I consider a great acquisition, supplying at all seasons a constant stream of pure warm air to the plants, which are in consequence sturdy and in the most robust health.—I am, Sir, yours respectfully,
"John Clark.
"The Gardens, Cobham Hall, Gravesend, Kent."

Ormson's Patent Jointless Tubular Boilers may be seen in successful operation at Mr. Veitch's, Royal Exotic Nursery, King's Road, Chelsea.

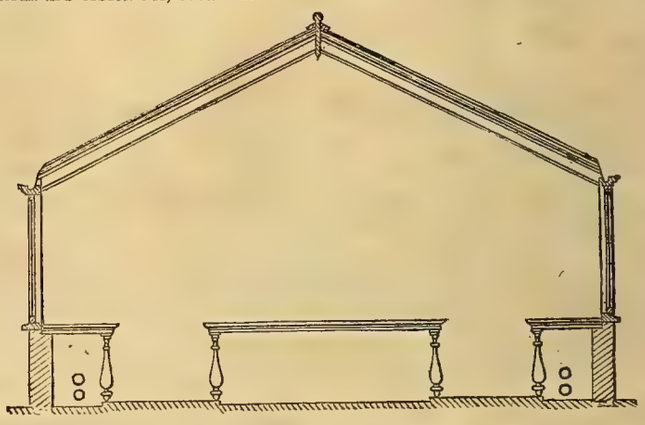




No. 1.—Cucumber and Melon Pit, 10 ft. wide.



No. 2.—Pine Pit, 14 ft. wide.



No. 6.—Greenhouse, from 18 to 20 ft. wide.

HORTICULTURAL BUILDINGS
MANUFACTURED BY STEAM POWER MACHINERY.

BEST MATERIALS AND LOWEST PRICES.

HENRY ORMSON,

HORTICULTURAL BUILDER & HOT-WATER APPARATUS MANUFACTURER,

STANLEY BRIDGE, KING'S ROAD, CHELSEA, LONDON.

Deeply grateful for the very liberal and kind patronage bestowed upon him, begs most respectfully to inform the Nobility, Gentry, Nurserymen, &c., that it being his determination to spare no pains to merit a continuance of their favours, and that he may be enabled to execute his extensive and increasing orders punctually, and at the lowest possible cost (agreeably with the best Materials and Workmanship), he has erected a most complete set of Steam Power Machines, peculiarly adapted for the purposes of his Trade.

PARTIES DESIRING INFORMATION as to prices, &c., will, by referring to the above sections, receive immediate attention.

PLANS, SPECIFICATIONS, and ESTIMATES for plain and inexpensive practical Structures, and for the most elaborate Architectural Erections, either in Wood or Iron, forwarded on application.

Printed by William Bradbury, of No. 13, Upper Woburn Place, and Frederick Mullett Evans, of No. 20, Queen's Road West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and published by them at the Office, No. 5, Upper Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—Saturday, May 21, 1859.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 22.—1859.] SATURDAY, MAY 28. {Price Fivepence. / Stamped Edition, 6d.

INDEX.

Agardh, late Bishop	465 a	India, Cinchonas for	464 b
Agriculture, Liebig's letters on	467 c	Landlord and tenant	471 b
Agri. Soc. of England	472 c	Liebig's letters on agriculture	467 c
Amateurs, cry from	466 a	Linnean Society	467 b
Andromeda polifolia	466 a	Linum grandiflorum	466 a
Barley, premiums for	474 a	Mangel, culture of	470 a
Bean, New Zealand Running	468 c	Melons, quality of	463 c
Bee stand indicator	464 b	Morphology	466 b
Beet, culture of	470 a	Ornithological want	466 b
Books noticed	468 a	Oxford Farmers' Club	473 c
Broccoli, new	468 c	Peruvian Bark trees for India	464 b
Butter, taste of	470 c	Plants, Somerset peat	466 a
Cinchonas for India	464 b	Rainfall in E. counties	465 b
Crickets	466 b	Root crops, culture of	469 c
Cucumbers	466 a	Rose, Isabella Gray	464 a
Filters	468 c	Royal Botanic Society	466 c
Flax culture, Belgian	472 a	Ryder v. Phipps	471 b
Fruit prospects	466 b	Sheep dipping	473 c
Gardeners' Benevolent Institution	464 b–465 b	Tea plants, &c., at Washington	464 b
Glass dealing	466 b	Tenant and landlord	471 b
Grubber, Coleman's	472 a	Trade, courtesies of	466 a
		Turnip fly	473 a

CRYSTAL PALACE.—FLOWER SHOW.—The SECOND GRAND FLORICULTURAL and HORTICULTURAL EXHIBITION of the present season will be held on WEDNESDAY, June 8. Doors open at 12. Admission free by Two Guinea Season Tickets; or by One Guinea Season Tickets on payment of 2s. 6d.; by Day Tickets, 7s. 6d., or if taken before the day of the Show, 5s. Children under 12, half-price. Tickets had at the Crystal Palace, at 2, Exeter Hall, and at the usual Agents.

SCHEDULES OF THE SECOND GRAND NATIONAL ROSE SHOW, to be held in the Hanover Square Rooms, on THURSDAY, June 23, may be had on application to the Honorary Secretary,
The Rev. REYNOLDS HOLE,
Caunton Manor, Newark, Nottinghamshire.

GRAND YORKSHIRE GALA—YORK FLORAL FETE—PRIZES 150*l.*, 14th and 15th JUNE, 1859.
ENTRIES will close on SATURDAY, the 4th of JUNE next. Schedules, Regulations, and Forms of Entry may be had on application to JNO. WILSON, Assistant Secretary.
Committee Room, 13, New Street, Coney Street, York.

LEAMINGTON FLOWER SHOW will be held in the Jephson Gardens, on TUESDAY, June 28. Numerous additional visitors are now assembling for the Agricultural Show; this occasion is therefore a special opportunity for large growers, for whom a portion of the Schedule has been expressly prepared. Schedules (including the First Prize of 10*l.*) to be obtained on application to the Honorary Secretary, Mr. R. RUSSELL, 5, Lower Parade, Leamington.

GRAND FLORAL AND HORTICULTURAL FÊTE AT STAMFORD.—The SUMMER SHOW of the Stamford Horticultural Society will take place on WEDNESDAY, July 6, on the same magnificent scale as in former years. Liberal Prizes are offered, including two SILVER CUPS for CUT ROSES and one for STOVE and GREENHOUSE PLANTS, open to all England. Every facility afforded to Exhibitors, and the Schedule with Rules forwarded free on application to Mr. H JOHNSON, Hon. Sec.

NOTICE.
JOHN WATERER'S EXHIBITION of RHODODENDRONS will be displayed as usual throughout the month of JUNE at the Royal Botanic Gardens, Regent's Park, London.—The American Nursery, Bagshot, Surrey.

GRAND DISPLAY OF HARDY SCARLET RHODODENDRONS, AZALEAS, ETC.
JOHN WATERER has the pleasure to announce his collection of the above Plants is now in bloom and will continue in great beauty throughout the month of June. The Nursery is near the Sunningdale Station of the South-Western Railway, Reading Branch.
The American Nursery, Bagshot, Surrey.

GEORGE BAKER begs to inform the nobility, gentry, and public that his extensive collection of HARDY RHODODENDRONS, AZALEAS, KALMIAS, &c., are now in perfection, and may be viewed free.—American Nursery, Windlesham, near Bagshot, Surrey (1½ mile from the Sunningdale Station of the Staines and Wokingham Railway, where conveyances are always to be had).—May 28.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY LIMITED supply every requisite for the Farm and the Garden.
Registered Offices, Union Road, Plymouth.

ORCHID GROWERS may obtain good plants of the following first-class ORCHIDS at R. WARNER'S, Broomfield, Essex, viz.:—Saccolabium ampullaceum, Blumei majus, furcatum, guttatum, guttatum giganteum, guttatum splendens, præmorsum, retusum, &c.; Dendrobiums, Lælias, Odontoglossums, &c.

FIG TREES WANTED, VIZ., 1 WHITE MARSEILLES | 1 BROWN TURKEY
Good established plants, 6 feet high, fit for training against a back wall of a small conservatory.—Address price and particulars, W. F., *Gardeners' Chronicle* Office.

CACTI.
TO BE SOLD, either wholly or in part, a rare and superb collection of Exhibition Specimens of TALL CACTI, CEREUS, EPIPHYLLI, and their hybrids. They have been exhibited at all the Metropolitan Shows for years past. Being large and numerous the owner wishes to dispose of them for cash or in exchange for Camellias, Ferns.—Apply to R. BUNN, Gardener to J. R. Scott, Esq., Harringay Park, Crouch End, Hornsey, N.

ORANGE, LEMON, AND SHADDOCK TREES, 100 full of Buds, Bloom, and some with very large Fruit, 2s. 6d., 3s. 6d., 7s. 6d., and 10s. 6d. each. CAMELLIAS and AZALEAS, 18s., 21s., and 24s. per doz. Standard FUCHSIAS, upwards of 100 plants from 4 to 7 feet high, with large bushy heads, choice varieties, 2s. 6d., 3s. 6d., and 5s. each. A large collection of FERNS and every other kind of greenhouse plants.—ROBERT GREEN, 154, Kingsland Road, 55 doors from Shoreditch Church.

THE SWEDE THAT NEVER MILDEWS.
SUTTON'S CHAMPION.—See *Gardeners' Chronicle*, May 14, third page. Price 1s. per lb., or cheaper by the bushel. Carriage free to all parts. Payment by cheque, or by Post-office orders payable to SUTTON & SONS, Reading, Berks.

NEW HARDY WHITE SWEDE.—This Swede is hardier than any other kind, grows to a large size, is adapted for sowing upon poor land, is not affected by frost, and keeps good in the ground or in store till the end of May. New and genuine Seed of this excellent Swede, price 1s. per lb. (carriage free for orders of 30 lbs. and upwards) may be had of RAYNBIRD & HARVEY, Seedsmen, Basingstoke; and 89, Seed Market, Mark Lane, London, E.C.

NEW ZEALAND RUNNER BEAN.
Price 2s. per quart.
JAS. CARTER & Co., Seedsmen, 238, High Holborn, London, W.C.

KEMP'S INCOMPARABLE EARLY CABBAGE.—This is quite a distinct variety, and superior to any other known kind, of delicious flavour, dwarf habit, extra early, attains a good size, will not run to seed, and every plant warranted to Cabbage. Seed may be had in sealed packets for 13 postage stamps, post free, at EDMUND P. DIXON'S, 57, Queen Street, Hull.

SORGHUM, OR HOLCUS SACCHARATUS
(CHINESE SUGAR CANE GRASS).
SUTTON AND SONS, Importers of this SEED, can supply it on liberal terms, according to quantity required. Royal Berkshire Seed Establishment, Reading.

HOLCUS SACCHARATUS, OR CHINA SUGAR-CANE GRASS.—Seed of this lately introduced Fodder plant can be supplied by NUTTING & SONS in any quantity. Price on application.—Seed Warehouse, 60, Barbican, London.

HOLCUS SACCHARATUS, or North China Sugar-Cane.—Pamphlet, "A Visit and a Plant;" the only English authority on the Cultivation of the above. Post free 6d. Prices of Seed on application. Samples 6d. Four varieties of Holcus remitted free by post on receipt of 10s.
JOHN W. CLARKE, Whittlesea, Cambridgeshire.

TROPÆOLUM CANARIENSE.
CHARLES ALEXANDER, SEEDSMAN, Edinburgh, offers New Seed of the above at 20s. per lb., and 1s. 6d. per ounce.

PAMPAS GRASS (GYNERIUM ARGENTEUM).—The beauty of this extraordinary plant has this season been fully appreciated. It can be supplied by the dozen, hundred, or thousand, by CHARLES NOBLE, Bagshot, Surrey.

WILD'S ORION MELON.—
FIRST PRIZE, St. JAMES'S HALL, May 12, 1859.
FIRST PRIZE, CRYSTAL PALACE, May 18, 1859.
THOMAS WILD, the Primulary, Ipswich.

GRAPE VINES FOR PRESENT PLANTING.
MESSRS. ARTHUR HENDERSON AND CO. can now supply LARGE and SMALL plants (at reduced prices) of the
MUSCAT HAMBURGH GRAPE;
Also the
STOCKWOOD GOLDEN HAMBURGH,
and all the best leading Grape Vines of the day, suitable for planting at the present season. Prices to be had of them on application.—Pine Apple Place, Edgware Road, May 28.

CINERARIA SEED
SAVED FROM THE
CHOICEST NEW SORTS.
LUCOMBE, PINCE, AND CO. have now ready for sending out SEEDS of their very superior
CINERARIAS,
Which have been saved with the greatest care from fine selected flowers of the best new varieties. The great satisfaction which their Cinerarias have given for many years past has induced them to pay even greater attention to the quality, which enables L., P., & Co. to recommend their Seed of this present season's saving as being vastly superior to any previously sent out by them:—
Large packets .. 5s. 0d. each } Post free, sealed and war-
Small do. .. 2 6 ,, } ranted by L., P., & Co.
The present is an excellent time for sowing, and as their stock owing to its select quality is limited, early orders are respectfully solicited.
Exeter Nursery, Exeter. Established 1720.

CHOICE SEEDS.
MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that they can now supply the following choice SEEDS, all of which are warranted genuine and of the finest quality.

Per packet—s. d.		Per packet—s. d.	
Calceolaria, herbaceous	2 6	Gaillardia grandiflora	0 6
Cineraria, from named vars.	2 6	Primula sinensis, mixed	1 6
Clianthus Dampieri	2 6	Pansy, from named vars.	1 0
Hollyhock, from named vars.	0 6	Sweet William, from extra fine vars.	0 6

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

SELECT NEW ROSES FOR 1859.
FRANCIS AND ARTHUR DICKSON & SONS beg to offer the following superb NEW ROSES, which are a selection of the best of the New Roses of this season. Extra strong plants in pots 5s. each, or 42s. per dozen.

HYBRID PERPETUALS.
Altesse Impériale.
Anna de Diesbach.
Anna Alexieff.
Ardoisé de Lyon.
Armide.
Beauté de Royghem.
Comtesse de Chabrilland.
Empereur de Maroc.
Orderic Vital.
Oriflamme de St. Louis.
Princess Olympie.
Virginal.

BOURBON.
Docteur Berthet.
Mdlle. Aline Pierron.
Octavie Fontaine.

TEA-SCENTED.
Madame Damaizin.

FRANCIS & ARTHUR DICKSON & SONS, Upton Nurseries, Chester.

FERN CATALOGUE.
ROBERT SIM'S NEW DESCRIPTIVE AND PRICED CATALOGUE, No. 6 (62 pages) of his COLLECTION of BRITISH AND EXOTIC FERNS, can be had, post free, for 8 stamps. Gratis to all previous purchasers of Ferns.
Nursery, Foot's Cray, Kent, S.E.

WILLIAM BARNES begs to inform his friends and patrons that his new PRICED and DESCRIPTIVE CATALOGUE is now ready, and can be had post free upon application. It contains the finest selections of Indian Azaleas, Cinerarias, Calceolarias, Verbenas, Fuchsias, Hollyhocks, Liliums, Phloxes, Roses, Geraniums, Chrysanthemums, Ferns, Stove and Greenhouse plants, as well as a very large assortment of choice miscellaneous plants.
Camden Nursery, Camberwell South.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Stove, Greenhouse, and Hardy Ferns, Miscellaneous Stove, Greenhouse, and Hardy Plants, Variegated and Ornamental foliaged Plants, Conifers, Roses, Rhododendrons, Indian Azaleas, Gloxinias, Fuchsias, Cactuses, &c., is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

UNRIVALLED SHRUBBY CALCEOLARIAS.
J. COLE has on hand some superb varieties for Bedding and Pot culture, strong bushy plants, at 9s., 12s., 15s., and 20s. per dozen; also some strong unbloomed Seedling Herbaceous CALCEOLARIAS, without pots, at 3s. per dozen.
LOBELIA SPECIOSA, strong plants, without pots, 2s. 6d. per dozen. The above for cash only.
Keyfield Nursery, St. Albans, Herts.

NEW CHRYSANTHEMUMS AND DAHLIAS.
JOHN SALTER is now sending out his splendid Seedlings and other new CHRYSANTHEMUMS, as well as those of his unrivalled general collection, which is the largest in Europe; also several fine new DAHLIAS, English and Foreign.—Versailles Nursery, Hammersmith Turnpike, W.

NEW ROSE HYBRID PERPETUAL EVÊQUE DE NÎMES.
BENJAMIN R. CANT has much pleasure in offering the above most beautiful Rose; it is quite a gem and ought to be in every good collection. Colour deep vivid crimson, of exquisite shape; the petals are disposed in the form of a rosette, which gives it a distinct and unique appearance; flower medium size, foliage and habit of growth excellent. Fine plants in pots are now ready at 3s. 6d. each, with the usual discount to the trade.—St. John's Street Nursery, Colchester.

HUMEA ELEGANS.—Strong flowering plants, in 6 and 8-inch pots.
NEW ROSES for 1859.—A choice selection.
PHLOXES.—A collection of the finest new varieties.
PLANTS FOR BEDDING. Strong and in great variety.
Prices and DESCRIPTIVE LISTS on application to JAMES DICKSON & SONS, Newton Nurseries, Chester.

CALCEOLARIA YELLOW PRINCE OF ORANGE.—Strong healthy plants, the best of its class, new last year, 6s. per doz.—E. SHENTON, Hendon Park Nursery, Hendon, N.W.

CABBAGE PLANTS.—Fine Drumheads, also the choicest sorts of Early Cabbage, all at 3s. 6d. per 1000.—By THOMAS WELLAND, Surrey Gardens, Godalming, Surrey. Packing and stationing included.

CLIMBING PLANTS.
F. AND A. SMITH have now ready strong plants of COBÆA SCANDENS, MAURANDYAS, blue, white, and rose; ECCREMOCARPUS, and TROPÆOLUMS, in large quantities. Prices on application.—Dulwich, Surrey.

CHEAP BEDDING PLANTS.—The following varieties 1*l.* 1s. per hundred:—Verbenas, Scarlet Geraniums, Fuchsias, Salvias, Calceolarias, Koeniga variegata, Cerastrum tomentosum, &c., the best plant out for an edging, having silvery foliage and white flowers. Sold in collections 25 of a sort.—E. SHENTON, Hendon Park Nursery, Hendon, N.W.

BEDDING PLANTS.
BUTLER AND McCULLOCH'S LIST of the above, forwarded free by post, contains a selection of the most suitable PLANTS FOR TOWN GARDENING, together with Hints on their Culture, embodying the experience of Messrs. Broome, of the Temple Gardens; Wyness, Royal Gardens, Buckingham Palace; and Morgan, the Gardens, Lincoln's Inn Fields.—Covent Garden Market.

AMBROISE VERSCHAFFELT, NURSERYMAN, Ghent (Belgium), will now send out the following NEW PLANTS:—

	s.	d.
BEGONIA LEOPOLDII, one of the finest yet sent out	8	0
TYDÆA PRINCESS TROUBETZKOY, GRANDIS, SANGUINEA (three splendid hybrids; the set)	16	0
TORENIA PULCHERRIMA	2	6
CLEMATIS SOPHIA FLORE PLENO	8	0
LYCHNIS HAAGEANA	4	0

E. ADOLPHE, 47, Rue de la Paix, Boulogne-sur-Mer, offers the following 13 new French GERANIUMS in strong cut down plants in flower, at 5*l.* the set; small rooted cuttings, 3*l.* Grande Duchesse Stephanie, Impératrice Eugénie, Prince Jerome, Reine Hortense, Alma, Le Crimée, Madame de Wendel, Beauté de Rochefuret, Cicero, Pline, Senèque, Virgile, Horace. Orders must contain payment. Package and transport to London included.

TO THE TRADE.—Ericas, Azaleas, Boronias, Dillwynias, Epacris, Eutaxias, Aphelexis, Chorozemas, Hibbertias, Leschenaultias, Myrtus of sorts, Jasminum grandiflorum, Pimeleas, Polygalas, &c.; healthy plants and the best sorts in 60-sized pots, 50s. per 100. Greenhouse and Stove Creepers, fine, 9s. to 12s. per dozen. Stove and Variegated plants of all the best kinds, fine plants, 5*l.* per 100. All the new Tydæas and Achimenes, 6s. to 12s. per dozen. Fine plants of the new Gesnerias and Begonias. Extra strong plants of French and Spotted Geraniums, 12s. to 18s. per dozen.—Epps's Nursery, Maidstone.

LIST OF THE AWARD OF PRIZES
AT THE FIRST EXHIBITION,
ROYAL BOTANIC GARDENS,
REGENT'S PARK, MAY 25, 1859.

EXTRA GOLD MEDAL.

Mr. G. Dods, Gr. to Sir J. Cathcart, Bart., Cooper's Hill, Egham, Surrey, for 16 Stove and Greenhouse Plants
Mr. Gedney, Gr. to Mrs. Ellis, Hoddesdon, Herts, for 20 Exotic Orchids

LARGE GOLD MEDAL.

Mr. Whitbread, Gr. to H. Colyer, Esq., Dartford, Kent, for 16 Stove and Greenhouse Plants
Mr. Bullen, Gr. to J. Butler, Esq., Woolwich, for 20 Exotic Orchids

MEDIUM GOLD MEDAL.

Mr. B. Peed, Gr. to T. Tredwell, Esq., St. John's Lodge, Norwood, for 16 Stove and Greenhouse Plants
Mr. W. Cutbush, Nurseryman, Barnet, Herts, for 12 Stove and Greenhouse Plants
Mr. W. May, Gr. to J. Spode, Esq., Hawkesyard Park, Rugeley, Staffordshire, for 10 Stove and Greenhouse Plants
Messrs. J. Ivery & Son, Nurserymen, Dorking and Reigate, for 10 Greenhouse Azaleas
Mr. Carson, Gr. to W. F. G. Farmer, Esq., Nonsuch Park, Surrey, for 8 Greenhouse Azaleas
Mr. Carson, Gr. to W. F. G. Farmer, Esq., for 20 Exotic Orchids
Mr. S. Woolley, Nurseryman, Cheshunt, Herts, for 16 Exotic Orchids
Mr. G. Dods, Gr. to Sir J. Cathcart, Bart., for 12 Exotic Orchids
Messrs. Paul & Son, Nurserymen, Cheshunt, Herts, for 10 Roses in 13-inch pots

GOLD MEDAL.

Messrs. J. & J. Fraser, Nurserymen, Leyton, Essex, for 12 Stove and Greenhouse Plants
Mr. Green, Gr. to Sir E. Antrobus, Bart., Lower Cheam, Surrey, for 10 Stove and Greenhouse Plants
Mr. W. Cutbush, Barnet, for 10 Cape Heaths
Mr. B. Peed, Gr. to T. Tredwell, Esq., for 8 Cape Heaths
Mr. C. Turner, Nurseryman, Slough, Bucks, for 10 Greenhouse Azaleas
Mr. Page, Gr. to W. Leaf, Esq., Park Hill, Norwood, for 8 Greenhouse Azaleas
Mr. O. Rhodes, Gr. to J. Philpott, Esq., for 12 Exotic Orchids
Messrs. Lane & Son, Nurserymen, for 10 Roses in 13-inch pots
Mr. C. Turner, Nurseryman, for 12 Pelargoniums
Mr. Nye, Gr. to E. Foster, Esq., Clewer Manor, Berks, for 10 Pelargoniums

LARGE SILVER GILT MEDAL.

Mr. Baxendine, Gr. to H. Smallpiece, Esq., Guildford, Surrey, for 16 Stove and Greenhouse Plants
Mr. O. Rhodes, Gr. to J. Philpott, Esq., Stamford Hill, for 16 Stove and Greenhouse Plants
Mr. W. J. Epps, Nurseryman, Maidstone, Kent, for 12 Stove and Greenhouse Plants
Mr. J. Peed, Gr. to C. T. Gabriel, Esq., Norfolk House, Streatham, for 10 Stove and Greenhouse Plants
Mr. Laybank, Gr. to T. Maudslay, Esq., Lower Norwood, for 6 Stove and Greenhouse Plants
Messrs. J. & J. Fraser, Nurserymen, Leyton, Essex, for 10 Greenhouse Azaleas
Mr. Green, Gr. to Sir E. Antrobus, Bart., for 8 Greenhouse Azaleas
Mr. G. Dods, Gr. to Sir J. Cathcart, Bart., for 6 Greenhouse Azaleas
Mr. May, Gr. to J. Spode, Esq., for 6 Exotic Orchids
Mr. E. Francis, Nurseryman, Hertford, for 10 Roses in 13-inch pots
A. Rowland, Esq., Rosenthal, Lewisham, Kent, for 6 Roses in 13-inch pots
Messrs. Dobson & Son, Nurserymen, Isleworth, for 12 Pelargoniums
Mr. Wiggins, Gr. to E. Beck, Esq., Isleworth, for 10 Pelargoniums

LARGE SILVER MEDAL.

Mr. Chilman, Gr. to Mrs. Smith, Ashtead House, Epsom, for 6 Stove and Greenhouse Plants
Mr. J. Peed, Gr. to C. T. Gabriel, Esq., for 8 Cape Heaths
Mr. Laybank, Gr. to T. Maudslay, Esq., for 6 Cape Heaths
Mr. C. Turner, Nurseryman, for 6 Greenhouse Azaleas
Mr. Green, Gr. to Sir E. Antrobus, Bart., for 6 Exotic Orchids
Mr. C. Turner, Nurseryman, for 6 Fancy Pelargoniums
Mr. Bailey, Gr. to T. T. Drake, Esq., Shardiloes, Amersham, Bucks, for 6 Fancy Pelargoniums

SILVER GILT MEDAL.

Mr. Kaile, Gr. to Earl of Lovelace, East Horsley Towers, Surrey, for 10 Stove and Greenhouse Plants
Mr. Tegg, Gr. to Baron Hambro, Roehampton, Surrey, for 6 Stove and Greenhouse Plants
Mr. O. Rhodes, Gr. to J. Philpott, Esq., for 8 Cape Heaths
Mr. W. May, Gr. to J. Spode, Esq., for 6 Cape Heaths
Messrs. H. Lane & Son, Nurserymen, Great Berkhampstead, for 10 Greenhouse Azaleas
Mr. O. Rhodes, Gr. to J. Philpott, Esq., for 8 Greenhouse Azaleas
Mr. Kaile, Gr. to Earl of Lovelace, for 6 Greenhouse Azaleas
Mr. G. H. Bunney, Nurseryman, Stratford, Essex, for 6 Exotic Orchids
Mr. Terry, Gr. to C. W. Puller, Esq., Youngsbury, Ware, Herts, for 6 Roses in 13-inch pots
Mr. C. Turner, Nurseryman, for 6 Cinerarias
Messrs. Fraser, Nurserymen, for 6 Fancy Pelargoniums
Mr. Windsor, Nurseryman, Child's Hill, Hampstead, for 12 Pelargoniums
Mr. Bailey, Gr. to T. T. Drake, Esq, Shardiloes, Amersham, for 10 Pelargoniums
Mr. Weir, Gr. to Mrs. Hodson, for 6 Fancy Pelargoniums

SILVER MEDAL.

Mr. Hamp, Gr. to J. Thorne, Esq., Mawby House, South Lambeth, for 10 Stove and Greenhouse Plants
Mr. Page, Gr. to W. Leaf, Esq., Park Hill, Streatham, for 6 Stove and Greenhouse Plants
Mr. Harlock, Gr. to R. W. Nather, Esq., Wanstead, Essex.
Mr. Green, Gr. to Sir E. Antrobus, Bart., for 6 Greenhouse Azaleas
Mr. Page, Gr. to W. Leaf, Esq., for 6 Exotic Orchids
Mr. Shrimpton, Gr. to A. Doxat, Esq., Putney Heath, for 6 Cinerarias
Messrs. J. & J. Fraser, Nurserymen, for 12 Pelargoniums
Mr. Weir, Gr. to Mrs. Hodson, the Elms, Hampstead, for 10 Pelargoniums
Mr. Windsor, Nurseryman, for 6 Fancy Pelargoniums
Mr. Holland, Gr. to R. W. Peake, Esq., Spring Grove, Hounslow, for 6 Fancy Pelargoniums
Messrs. Veitch, Nurserymen, Chelsea and Exeter, for Cattleya sp. (nova)
Messrs. Veitch, for Pothos species
Mr. Williams, Nurseryman, Fortis Green, Muswell Hill, for Caladium Argyrites
Messrs. E. G. Henderson, for a collection of New Plants
Mr. Green, Gr. to Sir E. Antrobus, Bart., for 6 Tall Cacti
Mr. W. Cutbush, for Variegated Plants
Messrs. Parker & Williams, for 12 Amaryllis
Messrs. Parker & Williams, for 6 Begonias

SMALL SILVER MEDAL.

Mr. Baxendine, Gr. to H. Smallpiece, Esq., for 8 Cape Heaths
Mr. Page, Gr. to W. Leaf, Esq, for 6 Cape Heaths
Mr. Green, Gr. to Sir E. Antrobus, Bart., for 6 Cape Heaths
Mr. R. Atlee, Nurseryman, Clapham Road, for 10 Greenhouse Azaleas
Messrs. J. Ivery & Son, Nurserymen, for 6 Greenhouse Azaleas
Mr. Ivison, Gr. to the Duke of Northumberland, Sion House, for 6 Exotic Orchids
Mr. Farmer, Gr. to S. Morley, Esq., Stamford Hill, for 6 Cinerarias
Mr. Gaines, Nurseryman, Battersea, for 6 Fancy Pelargoniums
Mr. James, Gr. to W. F. Watson, Esq., Isleworth, for 6 Fancy Pelargoniums
Messrs. Downie & Laird, Nurserymen, Edinburgh, for 36 Pansies
Mr. James, Gr. to W. F. Watson, Esq., for 24 Pansies
Mr. J. Hunt, High Wycombe, Bucks, for 18 Tulips
Messrs. Veitch, for Begonia argentea
Messrs. Veitch, for Begonia Queen Victoria
Messrs. Parker & Williams, Nurserymen, Holloway, for Vanda species
Messrs. Parker and Williams, for Tydæa Leopardi
Messrs. E. G. Henderson, Wellington Nursery, for Grevillea Drummondi
Mr. Whitbread, Gr. to H. Colyer, Esq., for Correct Labels
Mr. Dods, for Arrangement of Colour
Messrs. H. Lane & Son, Nurserymen, for 3 Boxes of cut Roses
Mr. Hamp, Gr. to J. Thorne, Esq., for 6 tall Cacti
Messrs. Dobson, for 6 Herbaceous Calceolarias

BRONZE MEDAL.

Mr. Chilman, Gr. to Mrs. Smith, for 6 Cape Heaths
Mr. T. Gaines, Nurseryman, Battersea, for 10 Greenhouse Azaleas
Mr. B. Peed, Gr. to T. Treadwell, Esq., for 8 Greenhouse Azaleas
Messrs. H. Lane & Son, Nurserymen, for 6 Greenhouse Azaleas
Messrs. Dobson & Son, Nurserymen, for 6 Cinerarias
Mr. Parmenter, Gr. to J. W. Taylor, Esq., Croft Lodge, Kentish Town, for 10 Pelargoniums
Mr. Turnbull, Gr. to Lady Goldsmid, St. John's Lodge, Regent's Park, for 6 Fancy Pelargoniums
Mr. C. Turner, Nurseryman, for 36 Pansies
Mr. Holder, Gr. to Rev. — Maryatt, Eton College, for 24 Pansies
Mr. Turner, for 18 Tulips
Mr. Ellis, Gr. to A. Dunn, Esq., Pymmes Park, for Bignomier gandavensis
Messrs. Parker & Williams, for Tydæa Duc de Brabant
Messrs. Parker & Williams, for Tydæa Princess Charlotte
Mr. O. Rhodes, Gr. to J. Philpott, Esq., for Correct Labels
Mr. Green, Gr. to Sir E. Antrobus, Bart, for Correct Labels
Mr. B. Peed, for Arrangement of Colour
Messrs. Fraser, for ditto
Messrs. Lane, for Collection of Rhodcdendrons
Messrs. Paul, for 3 Boxes of Cut Roses
Mr. Williams, Nurseryman, Fortis Green, for 6 Begonias
Mr. Gaines, Nurseryman, for 10 Amaryllis

CERTIFICATE OF MERIT.

Mr. Turner, for Pelargonium Spark
Messrs. Ivery & Son, for Azalea Flower of the Day
Messrs. Ivery, for Azalea Model
Mr. C. Turner, for Azalea Advance
Mr. B. Peed, Gr. to T. Treadwell, Esq., for Correct Labels
Mr. B. Peed, Gr. to T. Treadwell, Esq., for Correct Labels
Mr. O. Rhodes, for Arrangement of Colour
Mr. C. Turner, for Fancy Pelargonium Miss Arabella Goddard
Mr. C. Turner, for a collection of cut Verbenas
Mr. C. Turner, for Seedling Pelargonium Hero
Mr. C. Turner, for Seedling Pelargonium King of Purples
G. W. Hoyle, Esq., Reading, for Pelargonium Czar
G. W. Hoyle, Esq., Reading, for Pelargonium Angelina
Mr. Carson, Gr. to W. F. G. Farmer, Esq., for Aphelandra Porteana
Mr. Foster, Clewer Manor, for Pelargonium Autocrat
Mr. Kent, St. Alban's, for 6 Shrubby Calcealarias.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION. — The SIXTEENTH ANNIVERSARY FESTIVAL will take place at The Crystal Palace, Sydenham, on WEDNESDAY, June 8, the day of the Grand Flower Show.

The Honourable Mr. JUSTICE HALIBURTON in the chair.

Stewards.

SIR JOSEPH PAXTON, M.P.

Samuel Ainsworth, Esq.	John Green, Esq.
Henry G. Bohn, Esq.	Thos. Hancock, Esq.
R. Boyd, Esq.	Chas. Horsley, Esq.
M. Busby, Esq.	Wm. Hoskins, Esq.
Edwin Chadwick, Esq.	Wm. S. Johnson, Esq.
Captain Trevor Clark	John Laurie, Esq.
John Cobden, Esq.	J. B. Mackay, Esq,
G. E. Cockerell, Esq.	R. Marnock, Esq.
James Cutbush, Esq.	Chas. Ratcliffe, Esq.
F. Davies, M.D.	Thos. Rivers, Esq.
Chas L. Dorrien, Esq.	George Rollisson, Esq.
Benjamin Edgington, Esq.	R. Stains, Esq.
Wm. Edgar, Esq.	F. B. Thomas, Esq.
T. N. Farquhar, Esq.	James Vickers, Esq.
F. J. Graham, Esq.	Edmund Wilder, Esq.
	Chas. Zetterquist, Esq.

In order to meet the wishes of a great number of the Patrons and Friends of the Society, arrangements have been made for the admission of LADIES to the Dinner. By the kind liberality of the Directors of the Crystal Palace Company, the tickets for the Dinner will include ADMISSION TO THE PALACE.

Tickets :—Gentlemen, 20*s.*; Ladies, 10*s.* May be had of any of the above-mentioned Gentlemen, and of

EDWARD R. CUTLER, Secretary.

14, Tavistock Row, Covent Garden, W.C.

Dinner upon Table at Half-past Five o'Clock precisely in the SOUTH WING.

ROYAL OXFORDSHIRE HORTICULTURAL SOCIETY.

Patron.—H.R.H. THE PRINCE CONSORT.

The SUMMER EXHIBITION of the above Society will be holden in the Gardens of Worcester College, Oxford, on TUESDAY, July 5, when, in addition to the prizes confined to members, the following are offered, opened to all England, entrance free :—

Stove or Greenhouse plants (not Fuchsias or Geraniums), nine varieties : 1st prize, 10*l.*; 2d do., 8*l.*; 3d do., 7*l.* Cape Heaths, six varieties : 1st prize, 5*l.*; 2d do., 4*l.* Geraniums (not fancies) in 8-inch pots, 12 varieties : 1st prize, 6*l.*; 2d do., 4*l.*

No person will be allowed to take more than one prize in a class.

Notice of intention to exhibit must be given to the Secretary by post on or before Saturday, June 25.

The Flowers must be labelled with their names, and staged ready for the Judges by 11 o'clock on the morning of the day of Show, and will not be allowed to be removed till the close of the Exhibition (7 o'clock, P.M.).

Exhibitors will be required to sign a declaration that the flowers are *bonâ fide* their property, or the property of their employers.

The Judges have the power of withholding the first or any other prize if the flowers exhibited are not worthy.

The Band of the Coldstream Guards will play during the afternoon.

W. R. HOBBS, Acting Secretary,
May 28. 23, St. Giles's Street, Oxford.

THE NEW CHAPEL AT THE LUNATIC ASYLUM, NORTHAMPTON.—A GRAND FLORAL AND HORTICULTURAL SHOW (Open to all England), in aid of the Fund for erecting a Chapel at the County Lunatic Asylum will be held at Blisworth Gardens on THURSDAY, July 28, under the special patronage of

THE RIGHT HON. THE EARL SPENCER.
THE RIGHT HON. THE LORD SOUTHAMPTON.
THE HIGH SHERIFF OF THE COUNTY.
THE REV. SIR G. S. ROBINSON, BART.
THE WORSHIPFUL THE MAYOR OF NORTHAMPTON.

Prizes will be offered for Stove and Greenhouse Plants, Plants with variegated and fine foliage, Coniferæ, Exotic Ferns and Lycopods, Roses, Geraniums, Carnations, and Pansies, Fruit, Vegetables, &c.

Schedules will be prepared in due time, and further particulars will appear in future advertisements.

H. O. NETHERCOTE, Honorary Secretary.

Subscriptions to carry out the above object will be received by the Honorary Secretary, or by Mr. W. J. PEIRCE, Auctioneer, Derngate, Northampton, to whom all communications may be addressed.

NEW SEEDLING AZALEA INDICAS.

Blanc de Neige	Triomphe de Gand
Pelargoniflora nova	Vicomte de Nieuport
Prince Impérial	Rosæflora plena
Reine des Doubles	

JEAN VERSCHAFFELT, Ghent, Belgium, begs respectfully to announce that he is now prepared to send out his seven new Azalea indicas as above, in fine strong plants full in bloom. The price of the set is 3*l.* Early orders are requested, as they will be sent in strict rotation.

The description of the above may be had free on application to JEAN VERSCHAFFELT. Plants will be immediately forwarded after orders are received. All orders to be directed to JEAN VERSCHAFFELT, Nurseryman, Ghent, Belgium.

VARIEGATED GERANIUMS FOR BEDDING OUT.

JOHN HALLY, NURSERYMAN and FLORIST, opposite the Railway Station, Blackheath, S.E., offers the following at the annexed reduced prices :—

1. BURNING BUSH.—This has proved itself the most beautiful of all the red-zoned variegated kinds, having foliage variegated with broad white edge and zone of bright crimson. The flower brilliant scarlet, in good compact trusses, standing well up above the foliage, 30*s.* per dozen ; a few larger plants on hand, at 5*s.* each.

2. SCINTILLATUM.—Foliage variegated, with white edge, and having a black and crimson zone, bears a very large truss of deep scarlet blossoms, 15*s.* per dozen ; strong plants, at 2*s.* 6*d.* each. The usual discount to the Trade on the above.

FRUIT TREES IN POTS.

H. LANE AND SON, the Nurseries, Great Berkhampstead, Herts, have to offer in large quantities fine FRUITING TREES of the below-mentioned, which are now in a good state for travelling, the fruit not being heavy and likely to drop off.

They consist of PEACHES, NECTARINES, APRICOTS, 5*s.*, 7*s.* 6*d.*, to 10*s.* 6*d.* each.

CHERRIES, PLUMS, PEARS, APPLES, 3*s.* 6*d.* to 5*s.* each.

VINES, in pots, from eyes, with 5 to 10 bunches of Fruit, 5*s.* each.

FIGS, in pots, in a bearing state, 3*s.* 6*d.* each.

GOOSEBERRIES and CURRANTS, 1*s.* 6*d.* each.

Also a very large collection of EVERGREENS, of which we have a fine Stock, viz., Araucarias, Cedrus Deodara, Ced. Lebanon, Cupressus, Junipers, Pines, and all Coniferous Plants, 6 ft. to 12 ft. high ; Rhododendrons, well set with flower buds, &c.

The Home Nurseries are within five minutes' walk of the Station of the London and North-Western Railway, Great Berkhampstead, Herts.

BEDDING PLANTS.

F. AND A. SMITH beg to offer the following varieties, strong and healthy:—

Ageratum
Antirrhinum
Alyssum, variegated fol.
Anagallis
Balm, variegated fol.
Cuphea
Calceolaria
Dahlias
Fuchsia
Geranium, scarlet various
,, striped ,,
,, fancy ,,
,, unique ,,
,, scented ,,
,, Ivy ,,
Gaillardia
Heliotrope, various
Hollyhock, 6s. per dozen
Koniga variegata
Lantana
Lobelia
Mimulus, various
Nasturtium, Tom Thumb. The best scarlet bedding plant out.
Nasturtium, Cattell's Dwarf Crimson.
Nasturtium, double, various, 6d. each
Nierembergia
Pentstemon, various
Petunias, various
,, new double
Pyrethrum pleno album
Roses
Salvias, various
Senecio
Verbenas, white
,, blue or purple
,, scarlet
,, crimson
Musk, 4s. per dozen

The above in strong established plants at moderate prices, according to selection.—Dulwich, Surrey.

NEW ROSES IN POTS.

BENJAMIN R. CANT offers the undermentioned NEW ROSES. The plants are now ready, and are remarkably fine and healthy; many of them have strong shoots from 1 to 2 feet in length. Purchasers of 1 dozen and upwards will be supplied at a reduced rate. The trade allowed the usual discount.

NEW ROSES for 1859 at 5s. each:—

Tea: Madame Damaisin
Bourbon: Docteur Berthet
,, Edith de Murat
Hybrid Perpetuals:—
Altesse Impériale
Ardoisée de Lyon
Anna Alexieff
Anna de Diesbach
Beauté de Royghem
Hybrid Perpetuals:—
Comtesse Cecile de Chabrillan
Imperatrice Eugénie
L'Oriflamme de St. Louis
Le Mont Vésuve
Orderic Vital
Princesse Olympie
Salomon
Virginal

Also the following CHOICE ROSES at 2s. 6d. each, or 25s. per dozen:—

Tea: Souvenir d'Elise
Bourbon: Caroline Riquet
,, Josephine Clermont
,, Madame Contesse
,, Monsieur Jard
Hybrid Perpetuals:—
Abbé Feytel
Evêque de Nimes. 3s. 6d.
Gloire de Lyon
General MacMahon
Hybrid Perpetuals:—
Louis Chaix
Louise d'Autriche
Lord Palmerston
Marie Thierry
Monsieur de Montigny
Philomène Crozy
Reine de Denmark
Triomphe de Mont Rouge
,, des Beaux Arts

At 15s. per dozen:—

Hybrid Perpetuals. — Adelaide Fontaine, Bacchus, Belle Anglaise, Cardinal Patrizzi, Etendard de Sebastopol, Lord Raglan, Madame Vidot, Mathurin Regnier, Pauline Lansezeur, Prince Leon, Prince de la Moskwa, Rebecca, Souvenir de la Reine d'Angleterre, Souvenir de Leveson Gower, Sir J. Franklin, Victor Trouillard.
Bourbon: Glorietta, Omer Pacha,
Noisette: Miss Gray, Narcisse
Tea: Devoniensis, Elise Sauvage, Gloire de Dijon, Madame Bravy, Souvenir d'un Ami, Vicomtesse de Cazes.

A fine collection of the most esteemed older varieties, such as Caroline de Sansal, Comte de Nanteuil, Colonel de Rougemont, General Jacqueminot, Jules Margottin, Souvenir de la Malmaison, at 12s. per dozen.

St. John's Street Nursery, Colchester.

BOYD'S SELF-ADJUSTING SCYTHES are the cheapest and best, and being sold adjusted, are ready for immediate use. They can be regulated in an instant to suit any person, and to cut any crop without change of Scythes. For Amateur Gardeners they are very desirable, as they afford a healthy and interesting exercise. They have stood the test of public opinion for seven years, and for excellence, ease, economy, and durability, are highly recommended. Upwards of 50,000 of them have been sold. To be had of every Ironmonger, Hardwareman, and Seedsman in the United Kingdom, and wholesale of the Sole Licensed Makers, Wm. Dray & Co., at their New Agricultural Implement Warehouses, Adelaide Place, London Bridge.

SHAW'S TIFFANY.—The best and cheapest material for Shading Conservatories, Protecting Fruit from Birds and Wasps, &c. Sold in pieces 20 yards long by 38 inches wide. No. 1, best quality, 5s. per piece; second quality, 4s. per piece. Extra strong and thick (see Circular sent free by post with samples).

Address John Shaw & Co., Manufacturers and Dealers, Princess Street, Manchester.

PATENT GUTTA PERCHA SOLES.—Important to Gardeners.—The Gutta Percha Company have the pleasure to acknowledge the receipt of the following letter from G. Glenny, Esq., the celebrated Florist:—

"420, Strand, London

"Gentlemen,—I have worn Gutta Percha Soles and Heels these two years, and being so much in a garden as I necessarily am in all weathers, and with the ground in all states, I would on no account be without them. As a matter of economy I would recommend Gardeners to use them, for they may repair the worn part at all times by warming the material at the fire, and pressing it from the thick parts to the worn parts as easily as if it were so much dough. I think it the duty of all persons who must occasionally wet their feet to adopt a material that completely defies damp. Many a gardener would escape colds and rheumatism by the use of Gutta Percha Soles.

"Your obedient servant, G. Glenny."

Every variety of Gutta Percha articles, such as Mill Bands, Tubing, Soles, Goloshes, Sheet, Pump Buckets, Fire Buckets, Bosses, Union Joints, Flasks, Bottles, Bowls, Chamber Vessels, Toilet Trays, Sponge Bags, Curtain Rings, Galvanic Batteries, Talbotype Trays, &c., manufactured by the Gutta Percha Company, and sold by their wholesale dealers in town or country.—The Gutta Percha Company, Patentees, 18, Wharf Road, City Road, London.

CASELLA'S COTTAGE BAROMETER.—"Equals one in our possession at 10 times the price. The Thermometer, self-registering, has proved upon trial to be equally efficient."—See *Gardeners' Chronicle*, Sept. 1857.

The recent extraordinary variations in the weather and sudden changes of temperature induce L. C. to announce that his POPULAR SERIES of SCIENTIFIC GARDEN INSTRUMENTS now includes the Cottage Barometer, 11s. 6d.; Greenhouse Thermometer, 1s. 9d.; Garden Thermometer, to Register Cold, 4s.; ditto, for Heat, 7s. 6d.; Garden Window Thermometer, in Mahogany, from 5s. 6d.; Garden Rain Gauge, 15s. 6d.; Pine or Melon Pit Thermometer, for surface and 2 feet below. 18s. 6d. and 21s. A DESCRIPTIVE LIST on receipt of stamp, —L. Casella, Instrument Maker to the Admiralty, 23, Hatton Garden, London.

C. STEPHENSON, late STEPHENSON AND SONS, 61, Gracechurch Street, London, Manufacturer of Iron Hurdles, Fencing, &c., Improved Iron and Copper Conical Boilers and Apparatus for Warming Buildings of every description by Hot Water.

Prices and Estimates furnished upon application.

GREENHOUSES.

HENRY FREEMAN, Hothouse Builder and Hot-Water Apparatus Manufactory, Triangle, Hackney. Established 20 years. Good substantially-built Greenhouses fixed in any part of the kingdom, for cash. 42 ft. long by 13 ft., 90*l.*; 21 ft. by 13 ft., 50*l.*; 12½ ft. by 10 ft., 30*l.* A first-class Conservatory, 30 ft. by 16 ft., 130*l.* A large assortment kept. Estimates for Heating.



T. G. MESSENGER, Horticultural Builder and Patent Hot-Water Apparatus and Garden Engine Manufacturer, Loughborough.

T. G. Messenger's Divisionless Horticultural Erections, ventilated with screw mechanism by which the top or front lights are opened the entire length of the house momentarily, do not fail to give complete satisfaction (as numerous Testimonials can show), for the following reasons:—They are much lighter in appearance, more durable, much stronger, and cheaper than any other can possibly be.

Three years' trial has proved his PATENT BOILER to be superior to any hitherto invented; a great number of houses can be heated at once with this Boiler, with the facility of heating any separately.

Illustrated descriptions and prices of his Patent and greatly approved GARDEN ENGINES sent free upon application; also Plans, Estimates, and Testimonials for Building or Heating. See *Gardeners' Chronicle*, May 21.

WANTED, the Address of any Gardener or his Employer wishing to have Patterns, with Prices and Testimonials, of HAYTHORN'S HEXAGON and CHISWICK GARDEN NETS, now used in most Gardens and recommended by all the principal Gardeners.—Please direct Mr. Haythorn, Nottingham.

FOR Effectually Protecting the Bloom of Wall Trees from Spring Frosts use Shaw's No. 3 TIFFANY, DOUBLE STRENGTH. In pieces 18 yards long by 39 inches wide, 7s. 6d. each.—John Shaw & Co., Princess Street, Manchester.

TANNED NETTING, at Reduced Prices.—200 square yards, 10s.; 500 yards, 24s. A quantity of good second-hand Rick Cloth for Sale, Cheap, all sizes, and only once used. Samples sent free.—Address Frederick Edgington, Thomas Street, Old Kent Road, London, S.E.

TANNED NETTING, for the Protection of Fruit Trees from Frost, Blight, and Birds; also, for the security of fresh sown seeds, at 1*d.* per square yard; 200 yards, 12s.; 500 yards, 25s.; Scrim Canvas, for wall fruit; Garden Mats.—At Edgington & Co's., Rick Cloth, Tent, and Waterproof Cloth Manufacturers, 17, Smithfield Bars, City, & Old Kent Rd.

FRUIT TREES, RIPE STRAWBERRIES, ETC.

TANNED NETTING for Protecting the above from Frost, Blight, Birds, &c.; 2 yards wide, 3*d.* per yard, or 100 yards, 20s. Can be had in any quantity of Eaton & Deller, 6 and 7, Crooked Lane, London Bridge.

TANNED GARDEN NETTING for Preserving Fruit Trees from Frost, Blight, Birds, &c., and as a Fence for Fowls, &c. One yard wide 1½*d.*, 2 yards 3*d.*, 3 yards 4½*d.*, and 4 yards 6*d.* per yard, in any quantity, may be had at C. Wright's, 376, Strand, W.C.

A liberal allowance to Nurserymen.

TO FARMERS.—If you wish to PRESERVE YOUR HAY, go to Davis & Co., 64, West Smithfield, E.C., where you may purchase a RICK CLOTH of the best material and workmanship, cheaper than at any house in London.

WHY NOT PRESERVE YOUR HAY?

BENJAMIN EDGINGTON respectfully informs the Nobility and Gentry that they can be supplied on the best terms with RICK CLOTHS, with Poles complete.

Early application should be made for SECOND-HAND RICK CLOTHS. MARQUEES, TENTS, and FLAGS. A great variety of Marquees and Tents may be seen erected on the premises. A quantity of SECOND-HAND TENTS from the Crimea at a greatly reduced price. An Illustrated Catalogue sent post free.

West End Establishment, 32, Charing Cross, S.W.

Benjamin Edgington, 2, Duke Street, London Bridge, S.E.

JAMES PHILLIPS AND CO.'S PRICES of GLASS for the present month.

HORTICULTURAL GLASS, Stock Sizes, in 100 feet boxes.

	3rds.	4ths.
11 by 9, 12 by 9, 13 by 9, 14 by 9 .. / 12 ,, 10, 13 ,, 10, 14 ,, 10, 15 ,, 10 ..	14s. 6d.	12s. 6d.
13 ,, 11, 14 ,, 11, 15 ,, 11, 16 ,, 11 .. / 14 ,, 12, 15 ,, 12, 16 ,, 12, 17 ,, 12 .. / 18 ,, 12, 19 ,, 12, 16 ,, 13, 17 ,, 13 .. / 18 ,, 13, 19 ,, 13, 20 ,, 13, 21 ,, 13 .. / 16 ,, 14, 17 ,, 14, 18 ,, 14 .. .. / 19 ,, 14, 20 ,, 14, 21 ,, 14	16s. 6d.	14s. 0d.

Boxes included and not returnable.

Packed in Cases.

200 feet	£2 2 0	16 oz.
300 feet	3 3 0	
200 feet	2 18 0	21 oz.

ORCHARD HOUSE SIZES, as supplied by us to Mr. Rivers.

20 in. by 12 in.		16 oz.	21 oz.
20 in. by 13 in.	Common	14s. 0d. ..	£1 1s.
20 in. by 14 in.	Superior do. ..	16 6 ..	1 5
20 in. by 15 in.	English Glass ..	18 0 ..	1 9

Boxes included and not returnable.

SMALL SQUARES.—Per 100 feet.

				s.	d.
6 by 4	6½ by 4½	7 by 5	7½ by 5½	11	6
8 ,, 6	8½ ,, 6½	9 ,, 7	9½ ,, 7½		
10 ,, 8	10½ ,, 8½ ..	.. ..	.. ..	12	6

JAMES PHILLIPS AND CO.,

180, Bishopsgate St. Without, London, E.C.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz SHEET GLASS of British Manufacture at prices varying from 2*d.* to 3*d.* per square foot for the usual sizes required, many thousands of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES, and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to James Hetley & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

HORTICULTURAL GLASS—JUNE TARIFF.

THOMAS MILLINGTON'S reduced Tariff of GLASS, &c.

6 by 4, 7 by 5, 8 by 6, 9 by 7 } 16 oz. to the foot, 11s. 6*d*
6½ by 4½, 7½ by 5½, 8½ by 6½, 9½ by 7½ } per 100 feet.

In 100 boxes,—4ths quality, 12s. 6*d.*; 3ds do., 14s. 4*d.*

10 by 8,	12 by 9,	12½ by 10½,	14½ by 10½,	13 by 11
10½ by 8½,	12½ by 9½,	13 by 10,	15 by 10,	13½ by 11½
11 by 9,	13 by 9,	13½ by 10½,	12 by 11,	14 by 11
11½ by 9½,	12 by 10,	14 by 10,	12½ by 11½ ..	..

20 by 12 / 20 by 13 / 20 by 14 / 20 by 15	per 100 feet	16 oz.	21 oz.
	Common ..	16s. ..	24s.
	Superior .	18s. ..	27s.

All Boxes included.

Orchard House sizes as supplied to Mr. Rivers.

Hartley's improved Rough Plate Glass from ⅛ to ⅜ in thickness.

Coloured Glass in great variety, at 9*d.* and 1*s.* per foot.

Paints, Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, Lamp Glasses, &c.

87, Bishopsgate Street Without, same side as Eastern Counties Railway.

GLAZIERS' DIAMONDS for CUTTING HORTICULTURAL and other GLASS, to be had of the Wholesale Manufacturer, John Edwards, 20, Sharp's Alley, West Smithfield, London, E.C. Prices from 10s. to 27s. 6*d.*

HORTICULTURAL BUILDINGS AND HEATING BY HOT WATER.

JOHN R. PEILL, 17, New Park Street, Southwark, Manufacturer of every description of Buildings for Horticultural purposes, and Inventor of the Improved Conical Boiler for heating the same, is prepared to undertake works of any magnitude, and refers among others to the celebrated range of FORCING HOUSES at HER MAJESTY'S GARDENS, FROGMORE, and at SIR ROBERT PEEL'S, DRAYTON MANOR, constructed under the superintendence of his Manager, MR. JOHN JONES; and also to his BOILERS fixed at the CRYSTAL PALACE, the ROYAL BOTANIC GARDENS, REGENT'S PARK, and KEW, and at several hundreds of the Nobility's seats, Public Establishments, and Manufactories in London and the provinces. J. R. P. also manufactures every description of Iron Roofs, Iron Houses, and Iron Fencing, plain and ornamental. Strong Iron Hurdles for Sheep (6 feet long, 3 feet high, with 5 bars), 4s. 3*d.* each; ditto for cattle, 4s. 9*d.* each.

Prices and other particulars forwarded on receipt of one postage stamp.

CARSON'S

ORIGINAL ANTI-CORROSION PAINT,

PATRONISED BY

The British Government,
The French Government,
The Russian Government,
H.R.H. the Prince Consort,
Hon. East India Company,
Most of the Nobility and Gentry,
New River Company,
The Dock Companies,
Railway and Canal Companies,
The Principal Collieries,
Mill Owners,
Iron Masters, &c. &c.

The ANTI-CORROSION PAINT is now used extensively for all kinds of OUT-DOOR WORK,

Such as Iron, Wood, Stone, Brick, Compo, Cement, &c., and has been proved, after a practical test of 70 years' to surpass any other Paint; *and being peculiarly adapted for Conservatories, Hothouses, and Frames of all descriptions, is constantly used by Noblemen, Gentlemen, as also many eminent Horticulturists, for suchpurposes.* It is much lower in Price, and lasts twice as long as the best White Lead, and can be easily applied by any Labourer, being sent in various Colours, requiring simply to be mixed (no grinding is needed). The Anti-Corrosion is a powder, and will keep any length of time.

COLOURS:—

White Stone	34s. per cwt.	Light and Dark Lead .. .. / Light and Dark Chocolate .. .. .. / Bright Red .. .. / Dark do. (or Brick Colour) .. .. / Black	28s. per cwt.
Light do. .. .. / Drab or Portland .. .. / Bath do. .. .. / Light and Dark Yellow do.	32s. ,,		
Copper.. .. .. / Light and Dark Oak	30s. ,,	Invisible Green..	42s. ,,
		Bright and Deep Green	50s. ,,
		Blue (for Carts and Waggons)	50s. ,,

OIL, TURPENTINE, AND BRUSHES,

A Copy of Testimonials (700), will be sent upon application to

WALTER CARSON & SONS, (Successors to the Inventors), 9, Great Winchester Street, near the Royal Exchange), London, E.C.

NO AGENTS THROUGHOUT THE UNITED KINGDOM.

GREAT SUCCESS OF

SHANKS' PATENT MOWING, ROLLING, COLLECTING, AND DELIVERING MACHINE FOR LAWNS, &c.

THE ONLY COMPLETE MACHINE FOR HORSE OR PONY POWER.

SHANKS' PATENT HORSE AND PONY LAWN MOWERS

ARE the only Machines that deliver the Grass without the man leaving the handles or stopping the horse. These immense advantages enable the Machine to do at least a third more work with three-fourths less labour to the man who works it. The Machines answer exceedingly well for uneven as well as level Lawns, are strong and very durable, while the execution of the work cannot be surpassed.

SHANKS' PATENT HAND MACHINE for 1859,

fitted with all the new improvements, is the most efficient and complete Hand Mower that has ever been before the public. For convenience in turning and cutting small Lawns, Verges, around Flower Beds, &c., it has no equal.

Read the following Testimonials in favour of SHANKS' new Horse Machine before ordering:—

From Mr. SHEARER, *Gardener to the* Marquis of TWEEDDALE, *Yester Garden, May* 13, 1859.

"GENTLEMEN,—Allow me to congratulate you on the success of your improved Grass Cutting Machine which we got the other day from you, especially the delivering part; it is a mechanical triumph. You know that I expressed my doubts to you about it before I got the Machine, but having cut all our Grass with it I must say that it acts far beyond my expectation, and it performs all you say in your prospectus. We can now go on the whole day without stopping, except to oil the parts that require it. The men are quite in love with it; a good proof of its utility.—I am, Gentlemen, yours respectfully, "ALEX. SHEARER."

From Mr. MACKIE, *Gardener to* His Grace the Duke of ATHOLL, *The Gardens, Dunkeld, May* 18, 1859.

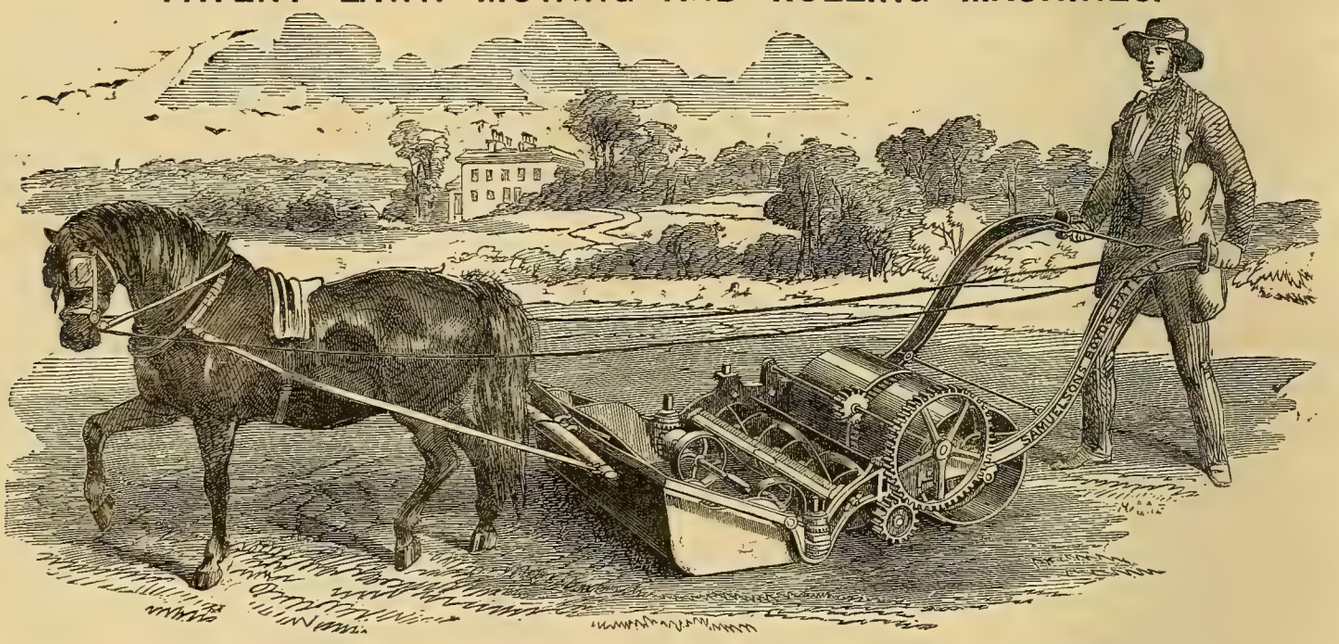
"GENTLEMEN,—After repeated trials with our Grass-Cutting Machine, as now fitted up with your Delivering Apparatus, I have much pleasure in saying that I now consider your Machines complete. We can now do as much work in six hours as we used to do in ten hours, with the old plan of stopping to empty the Grass Box, and with far greater ease both to man and horse. His Grace is so well pleased with the working of the Apparatus, and the saving of time effected by it, that he has ordered the Machine from Blair Castle to be sent through to you to be fitted up in the same way as the one here.—I am, Gentlemen, yours, &c., "JAMES MACKIE."

Illustrated Price Lists with further particulars forwarded on application. The Machines are warranted to give ample satisfaction, failing this they may be at once returned.

ALEXANDER SHANKS & SON, Patentees and Sole Manufacturers,

DENS IRON WORKS, ARBROATH, FORFARSHIRE.

PATENT LAWN MOWING AND ROLLING MACHINES.



30-inch wide Pony-power Machine, made also of smaller sizes for Hand Power.

SAMUELSON'S LAWN MOWING MACHINES,

WITH BOYD'S PATENT IMPROVEMENTS.

"*Doing the work of five or six men.*"—*The Times, September* 20, 1858.

The following PRICES include the Carriage to any Railway Station in England:—

		With Boyd and Samuelson's Patent Cleaning, Sharpening, and Adjusting Apparatus.
9 inches wide, for very narrow borders, without registered wheels	£2 10 0	
12 inches wide	4 5 0	£4 17 6
16 inches wide, with registered arrangement (for one man)	5 10 0	6 6 0
19 inches wide ditto (for one man)	5 17 6	6 17 6
22 inches wide ditto (for man and boy)	6 0 0	7 7 0
22 inches wide, ditto for ditto, and also fitted with draught links for a pony and a man to work it	6 15 0	8 2 6
25 inches wide, ditto	9 0 0	11 11 0
30 inches wide, ditto (for man and pony)	11 10 0	13 13 0

Case included.

Box of Tools, Oil Can, and other requisites, sent with each Machine, 5*s*.

Some thousands of these Machines are now in successful operation on the Lawns of Royalty, the Nobility, and Gentry of the United Kingdom and the Continent of Europe, and are pronounced SUPERIOR to *any other* for lightness of draught, efficiency, and durability. The demand for them is *yearly increasing—the number supplied by* Mr. SAMUELSON *during the years* 1856, 1857, *and* 1858 *being more than* 2100. Testimonials are continually being received from gentlemen having them in daily use, who speak in the highest terms of their efficiency.

These are the only Machines that will cut wet as well as dry Grass without clogging the knives.

Orders for 1859 should be sent at once to insure certain delivery and to prevent disappointment.

Copies of Testimonials will be forwarded post free on application to

B. SAMUELSON, 76, Cannon Street West, City, London;

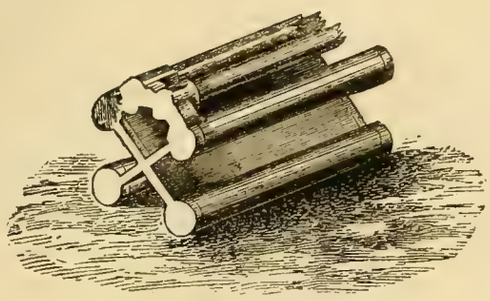
TO THE MANUFACTORY, BRITANNIA WORKS, BANBURY, OXON;

or to Messrs. DEANE & CO., London Bridge; or any respectable Ironmonger or Seedsman in the Kingdom.

MEIKLEJON'S PATENT CRUCIFORM OR WEBBED BOILER.

No. 1 BOILER, 4 ft. long by 2 ft. 3 in. wide, having 60 feet of heating surface ... ... £9 0s. 0d.
Set of Furnace Mountings for ditto ... 3 10 0
„ including Front, with flue door ... 1 18 6

Two Tubes for each Boiler, 3s. 6d., also included in price of Mountings.



No. 2 BOILER, 3 ft. long by 2 ft. wide, having upwards of 30 feet of heating surface ... ... £6 0s. 0d.
Set of Furnace Mountings for ditto ... 2 5 0
„ including Front with flue doors ... 1 2 6

Delivered in Edinburgh and Leith.

MEIKLEJON'S PATENT VALVES, forming Valve, Expansion Box, and Bend, 42s. each.

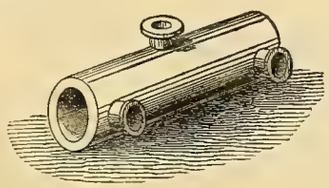
JOHN MEIKLEJON, Horticultural Engineer,

WESTFIELD IRON WORKS, DALKEITH,

BEGS respectfully to lay before the Public his PATENT BOILER which, for the last twelve months has been in constant use in a great number of Gardens in the three kingdoms, and from all parties who have thus proved them (without one single exception) highly satisfactory testimonials have been received.

J. M.'s long experience and extensive practice in heating large ranges of every description have enabled him to produce this durable, cheap, and efficient Boiler, possessing advantages which he is certain will recommend it to all parties interested in Horticultural pursuits. J. M. would also draw the attention of his Customers and others to THOMSON'S IMPROVED SINGLE RETORT BOILERS, of which he is the original and now the only authorised maker.

No. 1. SINGLE RETORTS £4 0 0
Set of Furnace Mountings, complete... 1 15 0
One Tube for each Boiler, 1s. 6d.



AMATEUR BOILER £2 10 0
Set of Furnace Mountings complete ... 1 15 0
Including front 0 18 0

TESTIMONIALS:—

"Newcombe Villa, Murrayfield, Edinburgh, March 2, 1859.

"Dear Sir,—At the time I ordered five of your new Cruciform Boilers I had no doubt in my own mind that they were constructed upon sound theoretical principles. Since then I have seen several of them at work, and am glad to contribute my opinion of their great efficacy in practice, nor is this my opinion only, for I have the satisfaction to inform you that several parties who have had them in use during the past winter speak in the highest terms of them. I hope as you have spent so much time and means in this department of Horticultural Engineering, that you will reap a more substantial reward for your exertions than any expression I can give you of my unqualified approval of them.—I am, &c.,

(Signed) "Charles M'Intosh,
"Garden Architect and Landscape Gardener."

"The Gardens, Dalkeith Park, April 28, 1859.

"Dear Sir,—I bear willing testimony to the substantial manner in which you have manufactured the Retort Boilers, as well as to the cost you have incurred in the getting up of the recent improvements on these Boilers. I am also much pleased with the action of your New Patent Boiler fixed according to my specifications in the new range of glass, recently erected for his Grace the Duke of Roxburgh, at Floors Castle, Kelso. I consider your Patent Brass Stop Valve meets what has hitherto been much needed, viz. :—a good Stop Valve whose action is sure and yet so simple as not to be easily deranged nor subject to corrosion.—I am, &c.,

(Signed) "William Thomson."

"Drumlanrig Gardens, Thornhill, March 10, 1859.

"Dear Sir,—I have great pleasure in saying that the Patent Cruciform or Webbed Boilers which you have erected here for his Grace the Duke of Buccleuch are giving me entire satisfaction. You know I have only had a short time of practically proving the value and capabilities of your Boiler, but (from the trial I have had), I unhesitatingly admit that throughout my experience in the business I have never met with any Boiler that will approach yours in all its various merits.—I am, &c., (Signed) "James M'Intosh."

"Floors Castle, Kelso, April 17, 1859.

"Sir,—I have much pleasure in bearing testimony to the great power and efficiency of the heating apparatus you have fitted up in the large range of glass recently erected here under the directions of Mr. Thomson, Dalkeith Gardens. You have fixed two Boilers (and space is left for a third if in very severe weather it should be required), but I find in ordinary weather your Patent Cruciform Boiler can work the whole itself, comprising nearly 4000 feet of 4-inch pipes, besides numerous bends and patent valves fixed in seven span-roofed Houses, each 60 feet long by 20 feet wide, and 16 feet high (glass to the ground), and a Corridor 270 feet long of the same dimensions as the other houses in width and height. I also find your New Patent Stop Valves answer admirably.—I am, &c.,

(Signed) "H. Rose."

"The Gardens, Bothwell Castle, April 11, 1859.

"Sir,—I have much pleasure in informing you that your No. 1 Cruciform or Webbed Boiler, lately fitted up here for the Countess of Home, is answering the purpose admirably and heating very efficiently, with a considerable reduction of labour and fuel, what was formerly heated by five fires.—I am, &c ,

(Signed) "Andrew Turnbull."

"Culcreuch, Stirlingshire, March 11, 1859.

"Sir,—Having now had a fair trial of the Hot-water Apparatus fitted up by you in the new range of hothouses erected for A. G. Spiers, Esq., I beg to inform you of my entire satisfaction with it as a whole, and more particularly with your No. 2 Patent Boiler. Its heating powers are very great, construction simple, management remarkably easy, and what is of equal importance it saves a great quantity of fuel. It now heats two Vineries, but will as you are aware be shortly applied to a Plant Stove also, when I am confident it will only consume the usual quantity of coal required for one fire. I consider that your Patent Boiler, being so economical, will be of great benefit to all engaged in horticultural pursuits, but more especially to those located at a distance from the coal markets.—I am, &c., (Signed) "C. Taylor."

"The Gardens, Norton Hall, Sheffield, March 10, 1859.

"Sir,—I cannot speak too highly of your No. 1 Cruciform Boiler now at work here, it having surpassed my most sanguine expectations. Of its full capabilities I cannot speak, as at present we have not anything like sufficient glass connected with it to test its powers. It consumes a very small quantity of coal or small coke (working equally well with either), and requires very little attention, while the peculiarity of its form renders the setting of it an easy matter to any common bricklayer. Altogether I am highly pleased with it.—I am, &c.,

(Signed) "J. Adams."

"The Gardens, Dalhousie Castle, April 28, 1859.

"Sir,—Your Patent Boiler gives entire satisfaction, and I cordially bear my testimony to its great power of heating, combined with its small consumption of fuel; and I have no doubt but it will be found to surpass every other Boiler for heating hothouses, churches, &c. Your Patent Ground Valves also answer the purpose most effectually.—I am, &c.,

(Signed) "William Stewart."

"May 7, 1859.

"The extensive range of Forcing and Greenhouses erected here from designs by Charles M'Intosh, Esq., were fitted up with Hot-water Apparatus by Mr. Meiklejon, Dalkeith. There are about 3000 feet of 4-inch pipe, which have been in use nearly five years, and I have great satisfaction in stating that they have wrought admirably. He likewise made and fitted up the Plant Stages, Trellising for Vineries, Cast-iron Pillars and Arches for supporting, and Iron work for binding the houses together, which, for lightness and elegance, combined with great strength, have been admired by hundreds who have seen those houses. Altogether the work executed here by Mr. Meiklejon has been done in a very superior manner, and I have great pleasure in bearing testimony to its efficiency. (Signed) "James Mitchell,
"Gr. to the Rt. Hon. Lord Panmure, Panmure Castle, N.B."

DILLISTONE AND CO., of the Nurseries, Sturmer, Halstead, Essex, will have great pleasure in forwarding to any part upon receipt of 10s., hamper and carriage paid to London, the following kinds of HARDY CLIMBERS:—

4	varieties of fine Honeysuckles	2	varieties of Passion Flowers
2	,, Clematis	2	,, fine Ivies
3	,, Jasmines	1	,, Solanum
4	,, Climbing Roses	1	,, Bignonia
		1	,, Ampelopsis (tricolor)

The following Summer ditto, per 20 Plants, for 6s. (viz.), hamper, &c.:—

2 Maurandyas in varieties	2 Kennedyas in varieties
2 Calampelis ,,	4 Tropæolums ,,
2 Calystegias ,,	4 Ipomœas ,,
4 Lophospermums ,,	

Also the usual BEDDING PLANTS in well grown and tdened stuff, hamper, &c, 20s. per 100.

HERBACEOUS, all the best two of a kind, 20s. per 100.

BEDDING PLANTS.—As orders are received the best Plants will be selected, and set aside until they are required. The following 12 dozen Plants can be had for 25s., package included, viz:—

12 Scarlet Geraniums	12 Petunias	12 Gazania
12 Yel. Calceolarias	12 Vinca elegantissima*	12 Blue Lobelia
12 dark ditto	12 Blue Verbenas	12 Hollyhocks
12 Dahlias	12 White Verbenas	12 Heliotropes

Thirteen Plants to the dozen. 200 Plants for 21s., the selection left to JOHN JEYES.

*** J. JEYES respectfully invites attention to a very fine COLLECTION of FERNS.

* VINCA ELEGANTISSIMA.—The most beautiful of all variegated plants. As a bordering for flower beds, or to form a bed of itself, or mixed with shrubs, it stands unequalled, and being an evergreen and hardy makes it the most desirable of all variegated plants; it resembles when in full leaf finely grown plants of the Golden Chain Geranium.

Northampton Nurseries.

WM. CUTBUSH AND SON beg to state that they can supply the following BEDDING PLANTS. Any quantity of extra fine plants at the prices annexed:—

	Per dozen.—s.d.		Per dozen.—s.d.
Ageratum	4 0	Lobelia speciosa (from cuttings true) the best of the class	4 0
Chrysanthemum regalium fiore pleno, golden yellow, an excellent plant for large beds	6 0	Nasturtium Tom Thumb	4 0
Calceolaria, yellow	4 0	Petunias, of sorts	4s. to 6 0
Cuphea platycentra	4 0	Pyrethrum	4 0
Dahlias, of sorts	6s. to 9 0	Salvia, of sorts	4 0
Fuchsias, of all the best varieties	4s., 6s., and 9 0	Tropæolum elegans (Crystal Palace variety), a free flowering bright orange-scarlet dwarf plant, well adapted for flower gardens	6 0
Geraniums, Tom Thumb and other Scarlets	4 0	Verbenas, of the best sorts	4 0
,, Variegated, of sorts,	6s. to 9 0	,, Edmonds' New, of 1859,	18 0
Heliotrope	4 0		
Lobelia ramosioides	4 0		

A DESCRIPTIVE CATALOGUE of the above and general Nursery Stock can be obtained free per post on application.

NEW VARIEGATED GERANIUM "BEAUTY."

WM. C. & SON can strongly recommend the above, which has bright green foliage, with a broad margin of pure white, flowers light scarlet of good shape in large trusses in great abundance, and very robust habit. We tested it last year with a dozen other kinds, and found it superior to any for bedding purposes. It was exhibited at the late meeting of the Royal Botanic Society, and received a Certificate of Merit.

2s. 6d. each; or 21s. per dozen.

SHOW, FANCY, & FRENCH-SPOTTED PELARGONIUMS.—A large stock of remarkably fine plants of the above in 48-pots of all the leading sorts, at 12s., 18s., and 24s. per dozen; or 5l. and 7l. 10s. per 100.

LISIANTHUS RUSSELLIANUS.

WM. C. & SON beg to intimate that they can supply strong plants of the above elegant Conservatory Plants in 48-pots, at 2s. 6d. each; or 24s. per dozen.

Highgate Nurseries, London, N.

NEW FRENCH PHLOXES.

JOHN STANDISH can recommend the following as the best that were sent out last year, he having seen them in bloom, and selected those he thought the best. They are very beautiful dwarf, and continue flowering from June until October, or until the frost destroys them in the autumn, and are admirably adapted for bedding, being now classed as perpetual bloomers, many of them growing not more than 16 to 18 in. high:

Empereur de toutes les Russies, shaded violet purple centre
Julie Roussel, white, with purple centre, superb
L'Enfant Prodigue, violet rose, shot with scarlet
Louis Guerard, large deep amaranth, magnificent
La Volupté, smooth rose, shot with scarlet
Madame Suer, white purple centre, very dwarf
Mademoiselle Orelly Duriez, white violet centre
Monsieur Forest, large lively amaranth, very effective
Souvenir d'un Ami, large rosy red, very fine
Surpasse Madame Rendatler, white purple centre, very dwarf.

The above 2s. 6d. each, or the lot 21s.; besides the above J. S. can supply the finest old sorts from 6s. to 12s. per dozen.

ROSES for bedding on their own roots, strong plants:—

TEA: Souvenir d'Elise, the most beautiful of all Tea Roses, 2s. each, or 18s. per dozen, or 7l. per 100
,, Safrano, 1s. each, or 9s. per dozen
,, Gloire de Dijon, 1s. each, or 9s. per dozen

HYBRID PERPETUAL ROSES.

General Jacqueminot, 1s. each, or 9s. per dozen
Louis Chaix, 2s. 6d. each, or 24s. per dozen
Madame Vigneron, 2s. 6d. each, or 24s. per dozen
Pauline Lansezeur, 1s. 6d. each, or 12s. per dozen. (Of all the Hybrid Perpetual Roses this is the best adapted for bedding purposes, from its dwarf bushy habit and being always healthy and always in bloom)
Victor Trouillard, 1s. 6d. each, or 12s. per dozen
NOISETTE: Triomphe de Rennes, 2s. each, or 18s. per dozen.

NEW ROSES of 1858, on their own roots.

HYBRID PERPETUAL ROSES, 2s. 6d. each, or 24s. per dozen:—

Duc de Cambridge	L'Evêque de Nimes
Lord Palmerston	Louise d'Autriche
Marie Portemer	Reine de Denmark
Thomas Rivers	Triomphe des Beaux Arts

NEW ROSES for 1859, grafted on the Manetti Stock, strong plants, 4s. each, or 2l. 12s. 6d. the lot.

HYBRID PERPETUAL ROSES.

Ambroise Verschaffelt	Beauté de Royghem
Comte de Beaufort	Celine Forestier
Docteur Bretonneau	François Ier
Empereur de Maroc	François Arago
Impératrice Eugenie	Oriflamme de St. Louis
Princesse Olympie	Stephanie Beauharnais
Virginal	Vicomtesse Laure de Giraud

TEA: Madame Damaisin | BOURBON: Octavie Fontaine

All the above plants are now ready to send out, and J. S. will have the above New Roses on their own roots ready to send out the first week in June.—Bagshot, May 28.

THE NEW GRASS SUBSTITUTE FOR LAWNS.

SPERGULA PILIFERA.

BASS & BROWN

HAVE a few thousand ready for sale of this handsome Grass-like Alpine plant, well established tufts (not seedlings), 3s. per dozen; or damp moss can be placed to the roots, if requested, and sent by post free for 8d. per dozen extra, or 6d. per dozen for more than a dozen. Directions as to distance and culture sent with plants. BASS & BROWN'S No. V. CATALOGUE, comprising their Superb Achimenes, Gloxinias, Gesnerias, and Bedding Plants, sent on application.

Goods (20s. and upwards) Carriage free to all Stations in London, &c. See Catalogue.

SEED & NURSERY ESTABLISHMENT, SUDBURY, SUFFOLK.

CHOICE BEDDING PLANTS, &c.

YOUELL & CO.

BEG RESPECTFULLY TO OFFER THE FOLLOWING IN STRONG WELL-ESTABLISHED PLANTS (SINGLY) IN POTS:—

AGERATUM ALBUM, white, 4s. per dozen.
CŒLESTINUM, blue, best variety 4s. per dozen.
ARABIS LUCIDA VARIEGATA, beautiful for edging, 9s. per dozen.
ANAGALLIS, large red, do. blue, 4s. per dozen.
ANTIRRHINUM YOUELLI, a beautiful variety of dwarf, bushy habit. The flowers are of a brilliant orange scarlet with white tube, produced in great profusion on dense spikes of bloom. 6s. per dozen.
ANTIRRHINUMS, fine selections of all the best named kinds, 6s. per dozen.
BELLIS PERENNIS, new Belgian Daisies, of the best sorts by name, 4s. per dozen.
BELLIS AUCUBÆFOLIA, a very handsome variety, with golden blotched foliage and large scarlet flowers, 6s. per doz.
BERBERIS DARWINI, fine golden yellow, 6s. per dozen.
CALYSTEGIA PUBESCENS (rose-coloured double-flowering Convolvulus), a good hardy climber, 6s. per dozen.
CALCEOLARIA AUREA FLORIBUNDA, the most desirable of all the yellow-flowering varieties. Strong plants, 4s. per dozen; 25s. per 100.
CALCEOLARIAS, of best kinds for bedding, assorted in colours, 6s. per dozen.
CAMPANULA CORALLINA GARGANICA, blue, very pretty, 4s. per dozen.
CHRYSANTHEMUM REGALIUM, fine golden yellow, 4s. per dozen.

CARNATIONS AND PICOTEES.

CARNATIONS, finest first class show varieties by name, 18s. and 24s. per dozen pairs.
PICOTEES, finest first class show varieties by name, 18s. and 24s. per dozen pairs.
Ditto, on yellow grounds, 20s. and 30s. per dozen pairs.
Finest mixed BORDER CARNATIONS & PICOTEES, 9s. ditto
True old CLOVE CARNATION, 12s. per dozen pairs.
Scarlet ditto ditto, 18s. ditto
NEW CARNATION "EXTRAVAGANZA."—For particulars see Advertisement, March 26. Price 3s. 6d. per pair.

PINKS.—The finest first class show Pinks, by name, 9s. per doz.
Fine mixed border PINKS, 6s. per dozen pairs.
COBÆA SCANDENS, fine strong plants, 6s. per dozen.
CUPHEAS, of sorts, 4s. per dozen.
CHRYSANTHEMUMS, the handsomest of the new large flowering and Pompone kinds, 6s. per dozen.
CHEIRANTHUS ATROPURPUREUS, of dwarf habit, producing a profusion of rich purple flowers, 6s. per dozen.
DAHLIAS, fine show and fancy varieties, by name, 6s. per doz.
DAHLIA PURPLE ZELINDA, fine dwarf bedded, 6s. per doz.
,, CRYSTAL PALACE, scarlet, 6s. per dozen.
DELPHINIUM FORMOSUM. By far the most beautiful of the genus and forms a lovely and permanent bed of the richest blue. Strong flowering Ground Roots 16s. per 100; 3s. per dozen.
FUCHSIAS, finest bedding varieties. 6s. per dozen.
,, all the new fine varieties of last season, 12s. per dozen
GAILLARDIAS of sorts, 4s. per dozen.
GERANIUMS, scarlets and other kinds of best variety per dozen.
GERANIUMS, variegated of sorts, 6s. per dozen
GAZANIA RIGENS, large orange, dark centre, 6s. per dozen.
HOLLYHOCKS, first-rate show varieties by name, 12s per doz.
,, strong unbloomed Seedlings, from the very best named varieties, 4s. per dozen; 30s. per 100.
HELIOTROPES, of choice kinds, 6s. per dozen.
KONIGA VARIEGATA, very pretty for edging 4s., per dozen.
LANTANAS, 10 new and very beautiful varieties for 7s. 6d.
,, of sorts, 6s. per dozen.
LINUM FLAVUM, bright yellow, 6s. per dozen.
LOBELIA SPECIOSA, the best of the dwarf blue varieties, 4s per dozen.
,, ,, finest scarlets adapted for forming magnificent groups, 9s. per dozen.
LOPHOSPERMUM, of sorts, 6s. per dozen.
LYCHNIS CORONATA, fine orange scarlet, 9s. per dozen.
MAURANDYA BARCLAYANA, blue and white, 4s. per dozen.
MATHIOLA TRISTIS, night-scented Stock, 6s. per dozen.
MESEMBRYANTHEMUMS, of showy kinds, 6s. per dozen.
NASTURTIUM TRIOMPHE DE GAND, } fine for baskets, 6s.
,, LILLE SCHMIDT } per dozen.
,, DOUBLE DARK AND DOUBLE YELLOW, 6s. per dozen.
NIEREMBERGIA FILICAULIS, white, lavender eye, very pretty for bedding, 4s. per dozen.
OXALIS FLORIBUNDA AND ROSEA, quite hardy, producing a fine bed of rich rose colour, 6s. per dozen.
ŒNOTHERA MACROCARPA, large yellow, 4s. per dozen, 25s. per 100.
,, TARAXACIFOLIA, large white, 6s. per dozen.
PETUNIAS—M. Boucharlet's superb collection of 12 new double varieties, by far the handsomest yet offered, 9s. per dozen.
,, Double of sorts, 6s. per dozen.
,, Gem of Suffolk, beautiful silver variegated foliage, large purple flowers, 9s. per dozen.
,, of sorts, assorted colours, 4s. and 6s. per dozen.
PANSIES—Finest first-class show varieties, by name, 9s. p. doz.
PENTSTEMONS, of sorts, including the new kinds, 6s.
NEW PHLOXES—An extensive and select collection of this beautiful showy tribe, comprising the fine and newly introduced varieties from the Continent, 6s. to 9s. per dozen. Older varieties, 30s. per 100.
PHYGELIUS CAPENSIS, a handsome Pentstemon-like hardy herbaceous plant, producing tube-shaped flowers of scarlet and yellow, 9s.
SALVIAS, of sorts, 4s.
STATICE MARITIMA ROSEA AND PSEUDO-ARMERIA.—Strong plants of these two beautiful and hardy species, producing throughout the year a profusion of lake-coloured flowers, 4s. per dozen,
TRITOMA MEDIA—A handsome hardy herbaceous plant, producing large spikes of scarlet-yellow flowers, 9s. per dozen.
VERBENAS, scarlet, red, crimson, claret, rose, pink, blush, white, lavender, blue, purple, plum, striped and variegated, of the newest and handsomest varieties in cultivation, 3s. per dozen, or 20s. per 100.
HARDY HERBACEOUS AND ALPINE PLANTS of the most showy species, 6s. per dozen, 30s. per 100.

All orders of £2 and upwards are delivered Carriage Free to London, Manchester, Hull, Liverpool, Peterborough, and Newcastle, as well as to any Railway Station within 150 miles of the Nursery. Communications, by Steamers and Railway, to all parts of England, Ireland, and Scotland, as well as to the Continent.

It is respectfully solicited that all Post-office Orders be made payable to YOUELL & CO., Yarmouth, Norfolk.

ROYAL NURSERY, GREAT YARMOUTH, NORFOLK.

TURNIPS AND MANGEL WURZEL SEEDS, ETC.

THOMAS GIBBS AND CO., Corner of Half-Moon Street, the Seedsmen to the "Royal Agricultural Society of England," beg to announce to the members of the Society and agriculturists generally that they have still on hand a supply of the different kinds of MANGEL WURZELS; also selected stocks of HYBRIDS, SWEDES, and other TURNIPS, &c.

MANGEL WURZEL:—
Yellow or Orange Globe, Long Red, and other kinds.

TURNIPS:—
Green-top Yellow Hybrid, strongly recommended, and bears late sowing.

Purple-top Swedes	Skirving's Swedes
Globe sorts	Tankard's sorts

GRASS SEEDS for Permanent Pastures, Cemeteries, and Church Yards, Lawns, and Grass plots, &c.
RENOVATING MIXTURES for old Swards.

PRICED LISTS sent free on application.

Thomas Gibbs & Co.

CORNER OF
HALF-MOON St.
PICCADILLY, LONDON, W.

CHEAP BEDDING PLANTS, 2s. 6d. per dozen.—Apply for Catalogues, enclosing two stamps, to J. SCOTT, Merriott Nurseries, Crewkerne, Somerset.

The CATALOGUE comprises everything suitable for Flower Garden decoration, and full descriptions of J. S.'s unrivalled collection of new DOUBLE PETUNIAS, now ready for delivery, at 6s., 9s., and 12s. per dozen. Fine new single sorts, 2s. 6d. to 3s. 6d. per dozen; Magna coccinea, the most splendid of all Bedding Petunias, 5 inches across, beautiful light crimson, 3s. 6d. per dozen.

LEPTODACTYLON CALIFORNICUM, in quantity; also PHLOX CRITERION, two lovely Bedding Plants.

FINE EXHIBITION DAHLIAS, in strong plants, viz., Admiral Dundas, Amazon, Annie, Beauty of Slough, Baron Alderson, Captain Ingram, Colonel Windham, Cossack, Charles Perry, Carnation, Deutsche Würde, Duchess of Wellington, Duke of Wellington, Empress, Fanny Dodds, Fanny Keynes, General Foucher, Grand Sultan, Incomparable, Lady Folkestone, Lollipop, Lord Bath, Lord Palmerston, Lady Paxton, Miss Caroline, Miss Burdett Coutts, Mrs. Edwards, Mrs. Wheeler, Mr. Seldon, Nigger, Perfection, Princess, Pre-eminent, Ruby Queen, Rachel Rawlings, Robert Bruce, Royal Scarlet, Sir R. Whittington, Sir J. Franklin, Souter Johnny, Sir William Wallace, Sir F. Bathurst, Touchstone, Triomphe de Roubaix, Yellow Beauty, Hon. Mrs. Trotter. Selections from any of the above, 3s. per dozen.

HENRY MAY, The Hope Nurseries, near Bedale, Yorkshire.

A PERFECT SUBSTITUTE FOR GRASS.
LAWNS WITHOUT MOWING.

SPERGULA PILIFERA

IS OFFERED BY

MESSRS. E. G. HENDERSON & SON.

WELL-ESTABLISHED TUFTS FOR IMMEDIATE PLANTING, 4s. PER DOZEN.
Seed Packets, 6d., 2s. 6d., 5s., 10s., and 20s. each.

Special directions for sowing, rearing, and final planting are given in E. G. HENDERSON & SON'S

NEW GENERAL CATALOGUE and SPRING LIST of ORNAMENTAL BEDDING and SUMMER FLOWERING PLANTS

IS READY FOR DISTRIBUTION, WHEREIN WILL BE DESCRIBED

ALLAMANDA VIOLACEA.

This plant so long looked for, and much needed by all English competing competitors, we have much pleasure in introducing for the first time to the public, and no doubt it will be for years the great feature at the leading Exhibitions. The late Mr. Gardner, Director of the Royal Botanic Gardens in Ceylon, speaks of it in his papers, published in the second volume of the London Horticultural Society's Quarterly Journal, as one of the finest shrubs he met with, and "by far the most beautiful species in the genus, bearing numerous large flowers not unlike in colour those of Gloxinia speciosa."

As a competition plant in collections, A. violacea, in its violet-blue tint, offers a new and essential feature in colour, there being none other in the same style to associate with the golden-yellow of A. Schotti, and the delicate rosy-blush of Echites and Dipladenia. 63s. each.

CALCEOLARIA AMPLEXICAULIS ALBA, Splendid bedder.
BOUVARDIA "BRILLIANT" AND "DELICATA," with large flower tubes, and profusion of bloom.
NEW BEDDING DAHLIAS, GLOIRE DE FRANCE, AND WHITE UNIQUE.—The best white variety out, and the former as the most noble formed and richly coloured flower of any other Dahlia for beddings, a dried plant showing the dwarf and profuse blooming habit may be seen at the Wellington Nursery.
BANKS'S NEW FUCHSIAS.

NEW CHRYSANTHEMUMS (8 varieties), see Plate XXVI. in the "Illustrated Bouquet."

BREEZE & BANKS'S COLLECTION OF NEW VERBENAS will include the finest blue out, the best rose, the finest violet-purple, the best peach, and maroon black, with large white eyes or centres, the Géant des Batailles far surpassed: a Mrs. Holford in truss and habit, but suffused with a beautiful pink tint. The entire collection includes a full complement of colours, as the finest ever sent out by us, and surpasses with but few exceptions any that we have cultivated under name.

FINE BEDDING GERANIUMS.

NEW NOSEGAY SECTION.

THE IMPERIAL CRIMSON, AND MODEL NOSEGAY GERANIUMS. See descriptions at page 355, and also the Catalogue.

Among Variegated Geraniums, MISS EMILY DOMVILE will prove a first-class Bedding Plant (see description in Catalogue).

The two GOLDEN-LEAVED varieties with large-petalled flowers.

THE RAINBOW, with the finest red-zoned foliage yet seen.

THE ST. CLOUD, a beautiful accompaniment to FONTAINBLEAU.

THE SILVER CHAIN, with deep margin of pure white; a fitting companion to the GOLDEN CHAIN.

THE WHITE NOSEGAY GERANIUM (for beds).

Wellington Nursery, St. John's Wood, London.

CHOICE FLOWERS.

BUTLER & McCULLOCH'S
SPRING CATALOGUE OF SEEDS,

ARRANGED on a new and original plan, with copious Descriptive and Cultural Notes, and containing many new and rare species and varieties not found in any other Catalogue, now ready and may be had free and post paid on application.

FLOWER, SHRUB, TREE, and VEGETABLE SEEDS, the crop of 1858, saved with the greatest care, by the most eminent growers.

We may also state that the Sardinian correspondent of Messrs. JAMES CARTER & Co., whose Seeds, especially Carnations and Picotees, have given such universal satisfaction, has transferred the Agency from that firm and appointed us his representative in this country. To meet the growing demand for first class flowers, particularly FLORISTS' FLOWERS, we have adopted our usual maxim of charging the lowest possible prices.

Professor LINDLEY in the *Gardeners' Chronicle* of February 5th, has the following notice of B. & McC.'s Catalogue.

"BUTLER & MCCULLOCH'S (Covent Garden) Spring Catalogue of Choice Flower, Shrub, Tree, and Vegetable Seeds. This list fills 84 closely printed 8vo pages, and is remarkably well got up. It appears that the correspondent in Sardinia, who formerly supplied one of the great London houses with seeds raised in that warm part of Europe, has now transferred what he saves to Messrs. BUTLER & MCCULLOCH. Let us add, that it yields to no Trade List in the abundance of its materials or the excellence of its arrangements."

BUTLER AND MCCULLOCH, while drawing attention to their general SPRING CATALOGUE which has elicited such high encomiums both from the scientific botanist and amateur cultivator, avail themselves of the present opportunity to select from its pages the following list:—

(28) ACACIA GRANDIS (TRUE).
One of the most beautiful of the A. pulchella section, producing deep golden balls. Of these graceful and highly ornamental plants our collection embraces no fewer than 47 varieties, all of the most decorative character.

(70) ALPINES.
Of these beautiful little plants we have a splendid collection, embracing all the most admired kinds, collected and arranged for us last autumn by M. Ortgies, the Curator of the Zurich Botanic Gardens. The value of Alpine plants for rock-work is too well known to require comment. These collections we can confidently recommend, containing, as they do, species only of highest merit.

(199) CALLICHROA PEDATA.
A new crimson annual with white eye, very beautiful.

(217 A.) CAMELLIA JAPONICA.
From the newest and finest striped and other varieties of that much admired genus.

(296) CEANOTHUS AZUREUS GRANDIFLORUS.
This, cæruleus macrophyllus, and Fontanesianus are all beautiful varieties of this highly ornamental genus, of which we possess nine splendid varieties. They are equally suited for conservatory and out-door decoration.

CANNAS.
Of these we possess an extremely interesting collection.

(304) CELOSIA (species nova).
A most elegant plant, producing a multitude of long spikes of feathery blossoms, silvery white shaded with bright rose, retaining its colour perfectly when dried, and therefore admirably adapted for winter bouquets; one of the greatest novelties of the season, flowering out of doors or in pots from July to October. Well worth attention. A dried specimen may be seen.

(337) CHRYSANTHEMUM (tall and dwarf).
Of these dwarf and tall varieties we have a fine stock, nearly all of which may be depended upon to produce double flowers, the seeds having been saved from the finest named varieties.

(344) CHRYSOCOMA COMAUREA.
Fine evergreen shrub, bearing a profusion of golden ball-like flowers; one of the handsomest greenhouse plants in cultivation.

(451) DATURA HUMILIS FLORE PLENO.
A magnificent Brugmansia-like plant producing a profusion of deep golden-yellow flowers; very large, double, and sweet-scented. One of the greatest novelties of the season.

(625) HABROTHAMNUS HÜGELLI.
This, purpureus, and Abelli are all handsome varieties of this beautiful genus, which everybody having a greenhouse or conservatory should grow. All three are extremely ornamental.

(665) HIBISCUS ROSEUS SUPERBUS.
This, Syriacus, and Thunbergi we can highly recommend. All are plants of great beauty.

(680 to 688) HOLCUS OR SORGHUM (Chinese Sugar Cane).
Of this important class we have nine new and important varieties from Africa, said to be more ornamental and to contain more saccharine matter, Holcus saccharatus.

(704) INDIGOFERA DECORA ALBA ROSÉA.
The above, purpurea, and dosua are all pretty free flowering shrubs, suitable for small greenhouses. They are also highly ornamental out of doors in summer.

(972) PELARGONIUMS.
Of these both large flowered and fancy, very choice, and of other splendid varieties, including Scarlets, we have a fine stock, which cannot fail to prove highly satisfactory.

(1149) SOLANUM CAPSICASTRUM.
Miniature Orange tree, covered all winter with a profusion of scarlet fruit; a handsome plant for greenhouse or sitting rooms.

(1335) BIGNONIA RADICANS MULTIFLORA.
Finer and brighter than radicans; flowers in large panicles producing a splendid effect.

(1468) TACSONIA IGNEA.
This magnificent Passionflower is unequalled for the brilliancy and splendour of its scarlet blossoms, far surpassing in this respect any of its class yet known. It flowers most profusely, grows rapidly, and covers a large space in an incredibly short time. It succeeds in a cold greenhouse, and even against a south wall with a little protection in winter (new and rare).

(1488) TROPÆOLUM TRIOMPHE DE GAND FIMBRIATUM.
Fringed orange scarlet.

CARNATIONS and PICOTEES saved from the most choice Collection of English varieties grown on the continent, and which may be expected to produce flowers of the highest merit, sent out in sealed packets as received from our Sardinian correspondent, whose seeds for many years have given such universal satisfaction, and from which varieties of the greatest excellence have been raised.

For prices and further particulars with regard to the above and other novelties, we refer our patrons to the Catalogue itself, which is sent free and post paid on application.

BUTLER & McCULLOCH, Covent Garden Market.

ROYAL BERKSHIRE SEED ESTABLISHMENT.

GOOD TURNIP SEEDS. CARRIAGE FREE.
SEEDS DIRECT FROM THE GROWERS THE MOST CERTAIN MEANS OF PREVENTING DISAPPOINTMENT.

SUTTON AND SONS, SEED GROWERS, Reading, Berks, can supply every kind of TURNIP SEEDS of genuine and superior quality.

Agriculturists residing in the most remote parts of the Kingdom can procure good Seeds at very moderate prices from this Establishment.—For particulars, apply to
SUTTON & SONS, Seed Growers, Reading, Berks.

NEW PRICED & DESCRIPTIVE GENERAL CATALOGUE.

Just Published by

MILNE, ARNOTT, AND CO., Successors to Chandler & Sons, and will be forwarded free upon application, a General Descriptive CATALOGUE, containing select priced Lists of new Hybrid Achimenes, Camellias, Azaleas, Ferns, Stove and Greenhouse plants, Chrysanthemums, Dahlias, Fuchsias, Pelargoniums, Verbenas, Petunias, Phloxes, Bedding Plants, hardy Trees, Shrubs, Fruit Trees, &c.

Wandsworth Road, London, S. Established upwards of 60 years.

ROYAL SOUTH HANTS SEED ESTABLISHMENT,
UNDER THE PATRONAGE OF H.R.H. THE PRINCE CONSORT, THE AGRICULTURAL SOCIETY OF INDIA, AND THE LEADING AGRICULTURISTS OF THE UNITED KINGDOM.

PAGE AND TOOGOOD'S STOCKS have produced the finest specimens exhibited at Smithfield, and are so well known and appreciated that comment on their part is unnecessary. Their prices compete with any house in the trade.

PRESENT PRICES, Carriage Free to all parts of England:—

	Per lb.—s. d.		Per lb.—s. d.
Skirving's Swede	0 6	Hardy Green Round	0 6
Page's Improved	0 8	Early Six Weeks	0 6
Ashcroft	0 6	Kohl Rabi	2 6
Greentop	0 6	Yellow Globe Mangel	0 6
Sussex, or Jeffery's	0 9	Page's Impl. Orange Globe	0 8
Tankard	0 7	Red Globe	0 7
Red Round Turnip	0 6	Elvetham Long Red	0 7
Page's Improved Red Globe	0 8	Long Red	0 6
Scotch or Bullock	0 7	Long Yellow	0 7
Pomeranian White Globe	0 6	White Belgian Carrot	1 0
Early Green Globe	0 6	New Red	1 3
,, White Tankard	0 7	Long Altringham	1 3
Red Tankard	0 7	Cattle Cabbage	2 6
Green-ditto	0 7	Cattle Parsnip	1 0
Yellow ditto	0 7	Dwarf Essex Rape	0 4

* Bulbs of this variety have acquired the enormous weight of 44 lbs., as shown at Smithfield Club.

BUCKWHEAT, MUSTARD, LINSEED, TARES, SAINFOIN, HOLCUS SACCHARATUS, 1s. per lb.

Fine PERMANENT PASTURE GRASS, ITALIAN RYE-GRASS, CLOVER, &c., at lowest market prices.

Special contracts for large quantities. Seeds packed for exportation to all parts of the world.
Oxford Street and Above Bar, Southampton.

NATURAL GRASS SEEDS.

PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN, can supply genuine Seed of all the valuable kinds of the NATURAL GRASSES suitable for Lowland and Upland Pastures; also for Laying-down Lawns, Bowling Greens, Cricket Grounds, Cemeteries, Railway Banks, &c.

PRICED LISTS may be had free on application.—PETER LAWSON & SON, 27, Great George Street, Westminster.

"JACK OF NEWBURY" SWEDE, ETC.

PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN, &c., 27, Great George Street, Westminster, respectfully request attention to their very genuine Stock of the above excellent Swede; also of the LOTHIAN PURPLE-TOP SWEDE, both of which have been selected with the greatest care. They have also a very fine Stock of the KOHL RABI, or TURNIP-ROOTED CABBAGE, specimens of which were shown at their Stands at Smithfield Club Show. The Kohl Rabi was largely grown last season, and may now be relied on as a substitute for the Turnip and Mangel, where these roots do not succeed, or for filling up blanks where there is a partial failure. Its feeding qualities, hardiness, and weight per acre are equal to the Swede, and all kinds of stock prefer it to other roots.

P. L. & SON have also selected a first-rate Stock of MANGEL WURZEL SEED, which they can confidently recommend. Their natural GRASS SEEDS have been also saved with very great care, and they are ready to supply them separately or in mixture, for laying down Permanent Pastures, Lawns, &c.

P. L. & SON have arranged to deliver Seeds free throughout England and Wales from their London Establishment, for all quantities exceeding 20s. in value.

LISTS OF PRICES of the above and all other Seeds, Plants, &c., may be had on application.
27, Great George Street, Westminster.

The Gardeners' Chronicle.

SATURDAY, MAY 28, 1859.

MEETINGS FOR THE FOLLOWING WEEK.
THURSDAY, June 2—Linnean ..... 8 P.M.

ENQUIRIES respecting the quality of MELONS made the subject of experiment remind us of a curious trial by some French gentlemen who found that although Melon seed, especially of the Persian sorts, is saved with the utmost care, yet it is so apt to produce a degenerate offspring that no one can absolutely rely on its good quality. This was ascertained to be the case in a long series of experiments on Melons grown in France under equal circumstances, conducted by Messrs. DECAISNE and NAUDIN at Paris, and M. DURIEU DE MAISONNEUVE at Bordeaux; and nothing could

well be more contradictory than the results at which they arrived. The two former excellent and experienced observers were astonished at the change in quality brought about by change in the place of growth. Thus the Melons called *Gurmuck* and *Goorgab*, and all the Persian races, original seeds of which were sent for trial from the Horticultural Society, the *Gardeners' Chronicle*, and other sources, proved to be scarcely eatable in Paris, and were universally condemned as being inferior to the very worst market sorts, but were pronounced admirable at Bordeaux. On the other hand the *Melon blanc dur* which is quite delicious in Paris was disagreeably bitter at Bordeaux. These changes are ascribed by Messrs. DECAISNE and NAUDIN to climate and the nature of the soil; and possibly also to unknown meteorological influences. They suggest that the changes are such as occur in the races of the Vine, which are so remarkably affected for the better or the worse by the place in which they are planted.

The detailed account given by M. DURIEU DE MAISONNEUVE of the comparative quality of the Melons tried by him at Bordeaux against those of Paris furnishes some further facts of interest. Thus:

HUNTER'S LONG BOKHARA. Small, very sugary—*Paris*. Long, pretty large, sugary—*Bordeaux*.

SERPENT CUCUMBER CROSSED BY THE CHITO MELON. Uneatable—*Paris*. Eatable but not good—*Bordeaux*.

VILMORIN'S PERSIAN MELON. Delicious, rather small—*Paris*. Large, weighing above 10 lbs. Melting and sugary, very good, but not better than others of the same race—*Bordeaux*.

MOGUL. Very good in 1857—*Paris*. Insipid, scarcely sweet, bad—*Bordeaux*.

CHATE. Must be cooked; raw uneatable—*Paris*. Flesh melting and sugary, very good raw—*Bordeaux*.

DE COULOMMIER'S. Enormous, fine and very good—*Paris*. Pretty large. Not pleasant tasted. Not worth keeping—*Bordeaux*. (See Ann. de la Soc. Hort. de la Gironde.)

Let us add that the Melon of Archangel, a sort highly recommended in France for its hardiness and excellent quality, does not seem to meet with favour here; neither do the great black Portuguese Melons, sometimes weighing on the Continent as much as 30 lbs., and measuring 16 or 17 inches in diameter (see the *Proceedings of the Paris Horticultural Society*, Sept. 10, 1857) gain with us any such weight and dimensions.

These facts should not be lost sight of by Melon growers, who are too apt to blame their seedsmen or gardeners when they find that their fruit, raised from seed of which they have had a very high account, turns out of inferior quality. It was only last year that the following case was reported to us. A very zealous wealthy amateur tasted at a table in Prussia a scarlet-fleshed Melon of most remarkable sweetness, richness, and thinness of rind. He was presented by his host with seeds taken from this Melon before it left the table. In 1858 the seed was placed in the hands of his gardener, a careful and experienced man, with directions to raise plants enough of that sort only for the supply of the family. The order was obeyed; and a plentiful crop was obtained in spite of red spider, by which less skilful gardeners in the neighbourhood allowed their Melons to be destroyed. But the fruit was so unlike that from which the seed had been saved that Mr. —— would not believe the latter not to have been changed. He found his Melons smoother and greener and thicker in the rind, with the flesh watery and pale instead of being sugary, firm, and deep salmon coloured. It seemed impossible that such a worthless brood should have come from such a parentage; and in the end the unfortunate gardener was removed.

And yet there is no doubt whatever that the original seed was really sown, and the crop complained of what it produced. Had Mr. —— known what has just been related he would never have committed so great an injustice as to throw on his gardener the consequences of a deterioration natural to the Melon itself.

The true cause of this uncertainty in quality is possibly undiscoverable. It may be owing to differences in soil, or in climate, or in atmospheric conditions; or, which is quite as likely, to unsuspected contamination by hybridising. For the present we can only point to the facts, and beg that gardeners may not be made answerable for what is quite beyond their control.

THE ISABELLA GREY ROSE, a fine double yellow variety, about which and against which so much has been said (not by us), is beginning to show her true character and to vindicate her claim to stand in the first rank of beauty. In the county of Middlesex, in a double-walled enclosure containing about 18 cubic feet of earth rich and black, with morsels of charcoal and burnt clay, helped with a watering or two of liquid manure, and against the wall of a dwelling house facing the south-west, a wee specimen was planted in the summer of 1857. In 1858 it grew away with much vigour, but showed no flowers. The pruning knife was strictly prohibited. A fortnight since an expanded flower was observed, pinched by the cold, but with unmistakeable indications of beauty to come; and another is already opening, although the season of blossoming would seem to be the autumn.

More success still has attended a lady's patience at Torquay, as will be seen by the following note which accompanied a nice specimen of this Rose. "Mrs. —— presents her compliments to the Editor, and sends him by this post a specimen of the Isabella Grey Rose, grown against a south wall just above the sea. The buds declined opening till a warm sun came. The Rose is on its own roots its third year, grew immensely last year, and has above 90 buds on it, most of which are rapidly expanding. The Editor is at liberty to mention this statement, suppressing Mrs. ——'s name." We cannot but anticipate similar communications from others.

A like result may be expected with the famous CLOTH OF GOLD Rose, which so many persons think can never be made to flower. In a similar double-walled enclosure in the same Middlesex garden, but facing the south-east, a very weak plant was placed in the autumn of 1857. Attempts at making it even grow had previously failed in the same garden, as elsewhere. This time however the plant took, survived the winter, and grew rapidly in 1858, no pruning being allowed. It is now in 1859 making vigorous healthy dark purple shoots, and will doubtless be covered with Roses by the month of July.

Hence it would seem that Roses like the Cloth of Gold and Isabella Grey demand four things; 1, a *warm* rich soil; 2, a southern exposure; 3, time; 4, to be protected from the pruning knife. May not these be also the conditions demanded by the famous old Double Yellow Rose herself?

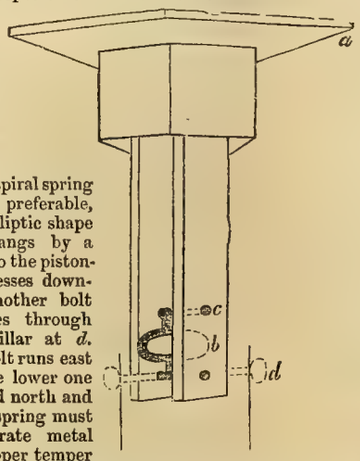
WE observe that the annual dinner of the GARDENERS' BENEVOLENT INSTITUTION will this year take place at the Crystal Palace, and there is reason to believe that it will prove an unusually agreeable meeting, especially since the tickets of the Institution admit on that day to the Flower Show, and ladies will form a part of the company. An appeal has been made to all gardeners who are subscribers, asking them to obtain the permission of their employers to assist the dinner by contributing some fruit, &c., to form the dessert, and it is probable that an interesting display will be thus formed.

—— Letters from Washington mention the formation of a garden and greenhouses there for the express purpose of nursing and propagating the numerous Tea plants and other valuable Chinese vegetable productions received from Mr. FORTUNE. The establishment is placed under a Scotch gardener, and it is to be hoped that he will accomplish in a satisfactory manner the important duty entrusted to him. It is understood that this arrangement will render the intended visit of Mr. FORTUNE to the United States unnecessary for the present.

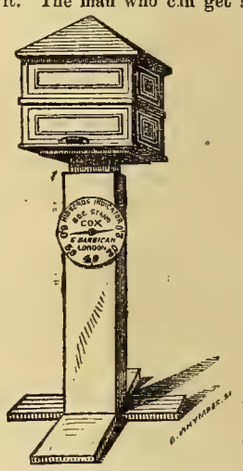
—— It is also reported on good authority that the Indian Council has commissioned Mr. CLEMENT MARKHAM, a relative, we believe, of the Earl of ELLENBOROUGH, to proceed to South America, for the purpose of procuring seeds and plants of the various kinds of Cinchona or "Peruvian bark" trees for transmission to India—an operation demanding not only great energy, but a very considerable amount of practical knowledge in gardening, as well as much botanical experience.

INDICATOR BEE STAND.

THE indicator bee stand which I described last year in the *Gardeners' Chronicle* (May 15, 1858, p. 400) proved so interesting and instructive that I am induced once more to suggest its general adoption in apiaries; indeed I would recommend every bee keeper who makes a study as well as a profit of bees to have one for the purpose of making its indications a special subject for a bee journal. It would not be sufficient in support of such a suggestion were I merely to say that I am indebted to Mr. Cox, of 5, Barbican, London, for the carrying out of my views, or to add that Mr. Cox supplies these stands under my direction, because there are many earnest apiarians who cannot afford 25*s.* or 30*s.* for one, which is the price I myself pay to Mr. Cox for them; I will therefore explain the construction as clearly as I can with the help of a working diagram, so that an amateur skilled in the use of tools may make one for himself. In my first description I advised the use of "a spiral spring fitted inside a hollow post," which was the construction I at first adopted when the idea seized me to register the daily work of a stock of bees. Numerous experiments and careful observations have resulted in the adoption of a definite plan and pattern as follows:—Construct a hollow pillar of inch Deal 2 feet 10 inches high, and 5½ inches square. To fit the inside of this very loosely, construct another pillar of the shape shown in the diagram. The top plate or table *a* to be of inch Deal, 1 foot square. As this is to receive the hive, its shape and size may be varied at discretion. Underneath *a* is a short rest 5½ inches square, which falls on the top of the outer pillar, and below this rest is a 2 feet length of woodwork consisting of two parallel pieces, between which is fixed the spring which gives the indications. Before we quit this wood-work, let it be understood that the construction here represented is intended to play up and down freely within the outer pillar, and to assist it four little brass wheels are let in just under the rest, but are not represented in the cut. Consider the outer pillar to be a piston, and the inner one the piston-rod, and you have an exact idea of their relationships.



Instead of a spiral spring I use, as far preferable, one of an elliptic shape *b*, which hangs by a cross-bolt *c* to the piston-rod, and presses downward on another bolt which passes through the outer pillar at *d*. If the top bolt runs east and west the lower one will be placed north and south. The spring must be of first-rate metal and of a proper temper to play kindly under a range of from 20 to 60 or 80 lbs. If well japanned the weather will not affect it. The man who can get so far in the manufacture will find no difficulty in converting the perpendicular action of the spring into a horizontal or rotary motion. As made by Mr. Cox, a circular plate of polished zinc divided to show pounds up to 60 is placed in front as a dial with hands. One of these works round as the spring is pressed upon by means of an upright slip of brass, notched to correspond with a brass cog-wheel placed behind the centre zinc dial. It is the simplest piece of ratchet work imaginable, and as *a* sinks down on the spring *b* with the increasing weight of the hive, the centre wheel is turned, and the travelling hand to which it is affixed registers the weight in pounds. The other hand is free of the ratchet work, and can be moved to any number to show the dead weight of the hive when first put on the stand. Suppose the hive with bees to weigh 20 lbs., the loose hand is placed at 20 lbs. The other takes its place there by means of the ratchet work, and as the store increases it travels on, and you can at any time deduct from the gross weight which it indicates the dead weight pointed to by the other. If a super is put on the additional dead weight must be taken note of, and the loose hand moved on to correspond. Thus, if the indicating hand is at 40 and the other at 25, the difference consists of comb, honey, &c., 15 lbs. The last point is to make sure that the instrument gives correct indications, and the final adjustment of the dial plate and ratchet work must be performed with the help of weights. Put a 20 lb. weight on the table *a* and see that the indicator points to 20; then put on 40 lbs., and then 60 lbs., and you have the three main divisions. A little more patience will suffice to ensure the simultaneous action of spring and index, and unless they work together and tell a true tale on the dial the thing is of no use at all. Every one sent out by Mr. Cox is tried first with a series of weights, in order to avoid twisting the dial about, for it would look ridiculous, if upside down; so the adjustment is accomplished by shortening or lengthening the ratchet. The other cut represents the indicator in use, fitted with Tegetmeier's bar and slide hive, which is the best bee box I have ever used; it combines the advantages of Taylor's with the economy of the Stewarton, which latter is of too large a make for ordinary use with southern swarms. Herewith I give from my bee journal a few of the registers of last year, to show how interesting are the indications:—On May 16 a swarm was hived into a pair of Stewarton boxes, and was at once placed on an indicator bee-stand; the dead weight was then 23 lbs. The loose hand was



placed at 23; by the 1st of June the gross weight had increased to 34 lbs. After this the dead weight was reduced to 18 lbs. by the removal of a stone from the crown-board, which was placed there to prevent the hive being blown off before the bees had cemented it to the floor-board. After this the registers were as follows:—

	Dead weight.	Gross weight.	Produce.
	lbs.	lbs.	lbs.
June 7	18	35½	17½
„ 15	18	38	20
„ 28	18	40	22
„ 30	18	41	23
July 5	18	44	26
„ 6	18	45	27
„ 13	18	48	30
„ 14	18	49	31
„ 15	18	50½	32½
„ 16	18	50	32
„ 19	18	49½	31½

On July 15, therefore, the balance was struck between production and consumption. From that day the store began to decrease, and if no other result had been attained I should consider myself well repaid in having visible evidence of the very day on which honey collecting ceased to be in excess of the wants of the community. Not that this is any discovery. Bee-keepers of the modern school know well that if honey is to be taken it should be taken early, and that to harvest the store in September and October on the plan of most cottagers is to be content with the gleanings of a field from which the best of the harvest has disappeared. But to fix the day appears to me a matter of no small moment, and though it may vary with seasons, places, and the strength of the stocks, here are the means by which it may be noted, as well also as the effect of weather and other circumstances from day to day in the progress of a colony in its industrial endeavours. *Shirley Hibberd, Stoke Newington.*

THE LATE BISHOP AGARDH.

By the death of Bishop Agardh, on the 28th January of the present year, Sweden has lost one of her most illustrious sons, who throughout a long and active life largely contributed to maintain the honour of his country by his labours and writings in various departments of literature and science. As the late bishop's name will always occupy a distinguished position amongst the cultivators of Natural History, and especially of Botany, and as he was moreover distinguished for his great learning and many talents and acquirements, it may be interesting to give a brief sketch of his life and works.

C. A. Agardh was born at Båstud, in Harland, in 1785, and in 1799 he became a student in the University of Lund, where he applied himself especially to Natural History and Mathematics. In 1807 he was nominated Matheseos Docens of the University of Lund, but soon after devoted himself to Botany, to which science indeed he had very early displayed an attachment; and after a visit to Stockholm, where he became the pupil and friend of that famous man and amiable botanist Olaf Swatz, he ardently entered upon the study of Algæ. After travelling on the Continent he returned to Lund, and was named first E. O. Botanices Demonstrator, and in 1812 Botanices and Æconomiæ practicæ Professor, upon which he entered upon his active career as a botanist. Perceiving that though much had been done towards adding to the species of Algæ in the admirable works of Turner, Dillwyn, and Vaucher, little advance had been made towards a philosophical classification of the order, he laboured to discover an arrangement of the genera that should be founded on natural principles as derived from their internal structure. At that time Sweden was taking the lead in the study of Cryptogamic plants, Swartz was labouring upon the Ferns and Mosses, Acharius on Lichens, Fries on Lichens and Fungi, when Agardh by adding his labours on Algæ secured to the country of Linnæus that supremacy in every department of Cryptogamic botany which had been already universally awarded to her in Phænogamic.

The Dispositio Algarum Sueciæ which appeared in 1812 was for the most part founded on the old principles, but in the Synopsis Algarum Scandinaviæ, which appeared in 1812, he applied his untiring diligence, powers of observation, and matured judgment in scientifically developing a method which had already been used to some extent by Lamouroux, and by which he established sound genera and accurately defined species. In his Species Algarum, Icones Algarum, and lastly in his Systema Algarum, published in 1827, he completed his reform of that great division of the Vegetable Kingdom, and laid the foundations of all modern Algology.

The above-mentioned works contain Agardh's most important discoveries and most extensive and valuable contributions to the science of botany, but these alone would give but an inadequate idea of the amount and variety of his labours or of the influence he exerted on the progress of the science. Amongst other claims on the gratitude of his country it must be especially remembered that he was the first Swedish author on Vegetable Physiology. In his Aphorismi Botanici and Classes Plantarum he treated on Morphological and Systematic Botany. His Organography and Biology of Plants was translated into German, and he was the author of,—Essai de réduire la physiologie végétale à des principes fondamentaux (1828); Essai sur la développement intérieure des Plantes (1829); Observations sur les Prêles; Dissertatio de Metamorphosi Algarum; Ueber die Anatomie und den Kreislauf der Characen, &c., besides many monographs (on Lemania, Conferva, Carex, Byssus, Ruppia, Gentiana, Calamogrostis, Verbascum, &c.), including one on the fossil plants of Skane.

Many of his minor works are scarcely known out of Sweden, having appeared as Dissertationes Academicæ, but in all we find Agardh taking broad and philosophical views of vegetable phenomena; considering the bearing of his observations upon biological principles, and on many subjects enunciating original ideas that could not fail to have a wide influence on the progress of scientific botany. Besides possessing these solid acquirements, and applying them to his favourite science, it must be remembered that Agardh was for many years the glory of his University, the zealous and friendly promoter of the studies of many young botanists, at a later period the President of the meetings of Scandinavian Naturalists, and that he continued at a very advanced age to contribute interesting botanical matter to various publications, thus filling a position amongst the cultivators of science in Sweden, that was second to few in influence and usefulness.

As Botanical, Economical, and practical Professor, Agardh's attention was necessarily turned to political economy and kindred subjects, upon which he has left a quantity of papers of the greatest importance towards developing the material resources of his country. His last publication was on the statistics of Sweden, and in the last part of that great work is his treatise on the forest trees of Scandinavia, considered economically and botanically, in which he delights to regard science and its application under a common point of view. As a member of the Swedish Parliament for the year 1817, he exerted himself as the zealous advocate of all measures bearing on the public welfare, and owing to his great learning and experience, his sparkling eloquence, and his fascinating manner and delivery, he always commanded the attention of the auditory even when he failed to persuade them.

In 1816 Agardh took orders, and in 1837 was consecrated Bishop of Carlstadt; and here again his active and useful talents were immediately exerted in promoting the cause of national education so effectually, that there are few who can be said to have contributed so largely to infuse a new vigour into the national schools and instructional bodies; and he was ever advocating by personal superintendence in his own sphere, and by discussion or correspondence with others, the necessity of introducing modern science, and especially botany, into the educational bodies.

There are perhaps many of Agardh's botanical views which have not met with universal acceptation, and his speculations in theology, and above all in moral philosophy*, together with his projects for reform in finance and sociology, have been much opposed; but it is impossible for any one to withhold his admiration of his skill in introducing them, his penetration of whatever was obscure, his earnest desire to render everything as clear to others as it was to himself, his conscientious endeavours to diffuse for the public good his often almost too daring or paradoxical views, and the pure patriotism that animated him in all his ways and works. For the love of science and the honour of Sweden he thought and wrote and laboured by word and by deed, and his loss is consequently felt to be a heavy national calamity.

Home Correspondence.

Gardeners' Benevolent Institution.—I think it right to inform you that the Council of the Horticultural Society, with that liberality which has always marked their proceedings to this Society, has granted the Committee the free use of their rooms for them to hold their monthly meetings. Also that the Council of the Society of Arts, following the example thus set by the Horticultural Society, has through the influence of the Chairman, Mr. Dilke, kindly granted this Institution the gratuitous use of their great room to hold their general meetings. This has been to avoid the inconvenience so generally felt by charitable institutions in being obliged to hold their meetings at taverns. *Edw. R. Cutler, Secretary.*

Rainfall in the Eastern Counties of England.—Permit me to direct attention to one or two important and interesting points in natural science which are likely to receive some elucidation this approaching summer. It has been proved by Mr. Dickinson, the millowner and paper-maker of Watford, in a practical and convincing manner, and is believed by meteorological observers generally, that the water supply of the country during the summer months, *i. e.* from April to September inclusive, depends almost wholly upon the rainfall of the winter months of November, December, January, and February, which replenishes the springs and subterranean reservoirs in the water-bearing strata. These four winter months are essentially "non-evaporating" months (if I may use such a term in a comparative sense), as Mr. Dickinson has shown by the valuable records kept by him showing the proportion of the rainfall which filtrates the soil and passes down to the subterranean water-level to be discharged by springs at the surface. The two months of March and October are those in which evaporation is much in excess of filtration, and the proportion of the rainfall which then descends to the subsoil is frequently unappreciable, whereas in the four winter months specified as "non-evaporating," the mean percentage infiltrated in eight years was 83.5. A wet October succeeded by a wet November and December nevertheless affords the greatest security that we shall have a plentiful supply of "spring" water during the following summer. In the summer months—*i.e.*, from April to September inclusive—the proportion which descends is very small. About 90 tons of water per acre reaches the subsoil out of 1300 tons, which is the average weight of rain which falls on the surface of England in those months; evaporation and vegetation intercept and dispose of the rest. If these assumptions are sound, and no one doubts them, it is manifest that not only are the rivers dependent in summer on the rainfall of the preceding winter, but any scarcity will be increased, summer after summer, if the preceding winters are successively deficient in infiltrated supply. This deduction has a very pertinent bearing on the present condition of the eastern counties of England. Taking the rainfall at Chiswick as the mean quantity of the eastern side, from Oxford to Harwich, we find the average quantity for 18 years of the four "non-evaporating" months to have been 6½ inches:—

	Inches		Inches
1841-2	= 7.91	1850-1	= 7.15
1842-3	= 8.77	1851-2	= 4.95
1843-4	= 7.23	1852-3	= 10.90
1844-5	= 7.35	1853-4	= 3.91
1845-6	= 9.04	1854-5	= 4.03
1846-7	= 5.29	1855-6	= 4.83
1847-8	= 8.35	1856-7	= 5.23
1848-9	= 7.18	1857-8	= 3.71
1849-50	= 4.98	1858-9	= 3.59

By these figures it will be seen that every winter's rainfall since that of the very wet winter of 1852-3 has been deficient—the greatest quantity having fallen in 1856-7, when 5.23 inches were recorded—and that the supply of the last two winters barely exceeds the average fall of one winter. Last summer and autumn were remarkable for the scarcity of water in the eastern counties. The labouring poor were paying for it by the pail, and the farmers were carting it from a distance into the fields for the use of their stock. What are we to anticipate for the ensuing autumn? "February fill-dyke" has failed to fill even the ponds in the fields, and we look anxiously though in vain for a seasonable illustration of the Wiltshire truism, that "as the days lengthen so the springs strengthen." So insignificant, in fact, is the rise of subterranean water in the wells throughout the eastern counties that the daily draught has exceeded the influx, and the consequence is the majority of wells in the less favoured districts are now dry that were never dry before. If this be so at the beginning of May, when the subterranean supply is gaining its maximum height, what will be the condition of the eastern counties in July, August, and September, when the springs are rapidly declining, evaporation is active, vegetation is thirsty, and infiltration "nil?" While this state of things has prevailed in the east of England, the rainfall in the west and north-west has been plentiful. While in Essex the fall was only 14 inches and in Kent only 17 inches in the whole year of 1858, the fall in Lancashire was above 59 inches, and in Devon 40 inches in the same period. This great difference existing, it would indeed be interesting to discover how far the dip of the water-bearing strata serves as a means of conducting the water absorbed in the higher grounds of the north-west to the lower districts of the south-east. We know that art has done and is doing much to overcome, by boring through one stratum into another, the deficiencies of certain localities, such as Bourne in Lincolnshire, where an Artesian well is constantly disgorging its many thousand gallons per minute, but it is a problem yet unsolved whether or not the eastern and lower districts derive any of their subterranean water supply from the higher districts of the north-west. If Nature by some hidden means, by "faults" or by omissions of strata, such as we have recently been told occur under the metropolis, makes good our deficiencies we cannot be too grateful, but under any circumstances the whole subject, with the considerations involved in it, demands the attention of the country. It is a common remark that the prevalent scarcity of water arises from the drainage of land, which has extended lately with such marvellous benefit to agriculture. It is hardly necessary to expose this popular delusion. Careful experiments have proved that no water can be discharged by under drains until the subsoil is surcharged (*i. e.*, that no water can flow off by the drains until the soil beneath them is replenished by descended water), and that the result of under-draining is to diminish evaporation and thereby increase the water actually discharged after the subsoil is replenished. It is, however, more than possible that by reducing evaporation the rainfall itself may be slightly reduced even in this sea-girt island, but even if it be so the loss, whatever it may be, is more than equalled by the proportion of the rainfall rescued from evaporation by drainage, which it need hardly be said

* In my short announcement of the death of Bishop Agardh, communicated to the *Chronicle* by Dr. Hooker, I made no allusion to his merits as an author and man of science, being well aware that these needed no heralding in England, but amongst the appended cursory remarks upon his views as an economist, moral philosopher, and theologian, are some which (owing to my imperfect command of the English language), now appear to me to convey a false impression of his character. I need not assure your readers that nothing was farther from my thoughts than to cast a slight on his memory as a man of honour and principle. *N. J. Andersson.* [We need hardly remark, that had it occurred to us that Dr. Andersson's remarks could have borne the interpretation of impugning the memory of a man so esteemed in this country, they would never have been published in our columns. *Ed. G. C.*]

renders the soil capable of absorbing and of discharging that which in undrained land is retained on, until evaporated from, the surface. But as it will require some disastrous inundation to induce inquiry into and to bring about a reformation in the arterial drainage of the country, now daily becoming more urgent as underdraining extends, so it will require some calamitous suffering by drought to make the landed interest appreciate the value of those drainage-waters so heedlessly discharged, but which might be impounded at little cost and turned to profitable uses if attended to. *J. Bailey Denton, Stevenage, May* 9.

The Courtesies of Trade.—I am pleased to see "E. R.'s" letter inserted; it may do some service. I lately ordered of one party—advertising in yours—½ cwt. of white lead; he sent 1 cwt., coolly remarking he had no halves in store just then. From another (copying his advertisement) I had a box of glass marked 30*s.*; the bill came in 2*l.* 12*s.* 6*d.*; I paid both rather than come into collision with the gentleman. But the unprotected female is their readiest victim. I sought redress for one, and the gent summed up a rather lengthy reply as follows:—"I scorn your vile insinuations, you are no gentleman. Let the galled jade (the lady I presume) wince, my withers are unhung"—plainly written and unmistakably "unhung." I enclose my card and the names of the persons alluded to. *T. T.*

Cucumbers.—Having been much interested in the discussion on Cucumber growing between "M. S." and Mr. Ayres, I should feel obliged if "M. S." would state the name of his winter Cucumbers, what soil he uses, and whether his bottom-heat is drived from tan or hot water. *An Amateur, Chelmsford.*

A Cry from Amateurs.—I see in your last week's Paper some remarks with this heading. I am one of those alluded to perhaps by the writer of the lament, as for a length of time I carried on gardening, "in all its branches," with some success, but paying pretty smartly from the first. I could cut Cucumbers as early as my neighbours, sometimes a little earlier, so long as the good old dung beds were in vogue, but not so since hot-water pipes and steam tanks took their place. In good old times I could grow whatever I thought fit and could please myself in all things and great were my delights; but in course of time things were sadly changed, and every expense increased. Failure upon failure followed quickly in succession through men of paper or newspaper rather than sound practice. Plants of the newest and the best mysteriously disappeared, fogged off, or died (at least so I was told); my early crops of fruits were eaten off by insects; though certainly to me they seemed to grow and ripen well; and especially I had to purchase much garden stuff for family necessities. My men meanwhile grew fat and saucy, the wives of one or two dressing finer than my own. At last I grew tired of all this and threw up all that once had lightened the labours of a fagging day and given me so much real pleasure. What I did was this: after much inquiry I got a man who was accustomed to grow early fruits and vegetables for the London market, and since then I have every reason to be satisfied, and he supplies me with all I want without stint, keeps my gardens in good trim, and my houses fairly dressed. I supply him from my stables with manure, but he pays all outgoings, and pockets all the rest without a farthing wages from my hands. He seems well satisfied; his family, though large, is well maintained, some working with him in the garden after their return from school, and I trust the man is doing well and putting in the savings' bank as I advise such portions of his earnings as he can spare. He supplies my fruits for table in good condition, and in plenty. I am quite content, and certainly ought to be, finding myself richer in pocket by full 200*l.* a year, and can enjoy a sly chuckle at my neighbours, who go on grumbling, as was my case before my revolutionary move. I like the notion of a collegiate institution to turn out gardeners of all degrees, and suited to the wants of flower gardening folks, small fish as well as large, respectable and certificated men, with salaries proportioned to attainments in one or more branches of their business. It would, I know, be a boon to many, beside the legion of complainers, and I think I know the man to set the scheme agog—if present prices are maintained, and the supplies of Continental produce not increased. *A Constant Subscriber.* [We think that this subject has gone far enough.]

Andromeda polifolia in Somersetshire.—A correspondent having a few weeks ago expressed some surprise at finding this plant in the neighbourhood of Glastonbury, it may be interesting to observe that it is very plentiful in the drier parts of the Turf Moor, not only near Glastonbury, but more or less frequently as much as 5 or 6 miles to the west of that place. It is so common as to be well known to the people living on the Moor by the name of "Bog Rosemary," the leaves having a considerable resemblance (especially on the under side) to the common Rosemary. This district is a most interesting one to the botanist. Besides the Andromeda, Epilobium angustifolium (the Rose Bay Willow-herb) grows in great abundance in some parts, particularly at the sides of the Glastonbury Canal. Rhynchospora alba and fusca, and Lastræa Thelypteris are also plentiful; Pinguicula vulgaris and lusitanica are occasionally met with, and many other plants of somewhat rare occurrence. Among the latter may be especially mentioned the variety of Rubus idæus with amber-coloured fruit. This plant is referred to in a local "Catalogue of the Rarer Plants of the Turf Moors of Somerset" as having been found in two different places towards the border of the Moor. *J. W. Chapman, Dulwich.*

Crickets.—Procure some small glazed earthenware pots about 3 inches deep, such as are used for preserved fruit; in the evening put about a square inch of new bread broken into small pieces in each pot; then fill them half full of boiling water and sink them in the tan or other plunging material up to the brim; the vapour arising from the hot water attracts crickets to the bait, and they go in and get drowned. The pots must be emptied in the morning and refilled with cold water to keep them sweet till the following evening. *J. D., The Gardens, Beechwood.*—Mix some arsenic with oatmeal, and place it in their runs. I and others have tried it with success. *A Novice, Tunbridge Wells.*

Fruit Prospects.—I was glad to see by Mr. Saul's report that it was likely there would be an average crop in his part of Yorkshire; such is not the case here in south Lincolnshire. The wall fruit has suffered very seriously in many places, and is quite a failure; Peaches, although protected, have all fallen off; Gooseberries and Currants are very thin. In some places the Currant trees have been quite killed by frost. Early Apples, such as the Hawthornden and Keswick Codling, are all falling off, and most of the late sorts, exposed to the north-east winds, will be a failure. Pears will likewise be very thin; in some places none. *J. B.*

Linum grandiflorum coccineum.—Will any of your Correspondents furnish me with the best mode of raising this most beautiful of all annuals? Some trade lists recommend steeping the seed, others raising it in heat, but both of these modes so far as my experience goes are not quite satisfactory. Considering the expense of the seed, parties like myself with limited means cannot afford to lose their money, to say nothing of the disappointment. *Betsy.*

An Ornithological Want.—I would through the columns of your excellent Paper point out a want that may perhaps if brought to notice be supplied. In the Museum at Ludlow, plenty of the members attend to the fossils, of which we have a goodly collection of the Silurian, being situated in I believe nearly the centre of Sir Roderick Murchison's discoveries; but as regards the ornithological branch, which had been much neglected as regards additions for some time, there is no one but myself to attend to it, and having only lately taken up the study, I feel often grievously puzzled to identify some of the birds, especially the females. Unfortunately, many of the works on the subject do not take the trouble to represent these at all, of which the otherwise admirable Bewick is an example. Yarrell, it is true, often does, but then his is a plain edition. Myers's folio is expensive and cumbrous. What a pity it is that a coloured work of a manageable size and moderate price is not brought out. The British Museum might publish a really good coloured edition, as they have all the birds in their possession to copy from; and surely if the male and female were cleverly set up side by side, and photographed, we should have perfect accuracy of shape and form. All that we want is extreme accuracy; and above all, the female as well as the male. Why should the sober-coated little dames be banished because of their dress? Let them take post beside their mates as they have a perfect right to do. Howitt, in his Rural Life of England, says: "The female is usually clad in much more sober dress than the male, as if it were otherwise she would undoubtedly get pulled off her nest and destroyed by some bird or beast of prey. *F. N.*

Morphology.—Is it usual to find the flower of an Epacris modified as in the present example? I should fancy it was a similar freak of nature as in the modification of the female organs of the Rose, &c., as in that plant I have seen it occur very often. *J. E. L., Edinburgh.* [You will find a similar case figured in Lindley's Elements of Botany, p. 62, but it is very rare. The axis of the flower, which is usually incapable of lengthening, suddenly, owing to some unknown cause, extends itself into a branch. The Epacris, the Rose, the Pear, Potentilla, the Apple are especially subject to such changes.]

Glass Dealing.—In a paragraph in your last number under this heading, signed "E. R.," I perceive my name mentioned, and I shall be obliged by your insertion of the following, which will fully explain the transaction, and will, I think, remove any injurious impression which the letter in question may have made on the public. The following are the particulars. Extract of a letter, without date, received on the 29th ult.:—"Carrick-on Suir, Ireland. Be so good as to send me 300 feet of glass 10½ by 8½, fourth quality, together with a good glazier's diamond. I am anxious to have the glass as soon as possible, and although the order is only a small one, it may be larger at some future time if promptly attended to." Signed Rev. E. Ridgeway. Replied to on the 29th April, as follows:—"87, Bishopsgate Street, Without. Enclosed I hand you invoice of glass forwarded this day, which I trust will arrive safe and please. You do not state in your letter what substance you require, so have sent you 21oz. I have inclosed a strong useful diamond." Signed T. Millington. It will be obvious that the Rev. E. Ridgeway infers that I have charged him 18*s.* 7*d.* per box instead of 12*s.* 6*d.* as advertised, at the same time withholding the most important fact, that 21oz. glass was sent, of full value as advised. Damage having arisen on several occasions to glass by this route, I thought it prudent to forward this substance, none being mentioned. All this was fully explained to "E. R." previous to his paragraph being inserted, he having before threatened to expose me in your Journal as a public duty, and which I invited him to do if he did it with truth. The charge for the glass sent was 2*l.* 16*s.* 3*d.*, and the charge on it, he having returned it, is 1*l.* 11*s.* 1*d.*, being nearly its value, and this is the encouragement I have received by promptly attending to his order, having sent it the day the order was received. *Thomas Millington, 87, Bishopsgate Street Without, May* 26. [Some part of this communication, which has no bearing upon the complaint of "E. R.," is necessarily omitted.]

Societies.

Royal Botanic, Regent's Park: *May* 25.—This was in all respects an excellent exhibition. Azaleas and Pelargoniums being numerous and effectively arranged, made a brilliant display. Roses were also in good condition, and there was as usual a large assemblage of stove and greenhouse plants. The weather being favourable there was a large attendance of visitors.

In the class of 16 Stove and Greenhouse Plants the chief contest lay between Mr. Dods, gr. to Sir J. Cathcart, Bart., and Mr. Whitbread, gr. to H. Collyer, Esq., of Dartford. The first had plants nearly the same as those shown by him at the Crystal Palace, and fully described in our Number for last week. Mr. Collyer's group was every way in excellent condition, and so nearly equal in point of merit to that of Sir J. Cathcart that it was for some time difficult to decide the proper position of the two collections. The first prize was however ultimately awarded to Mr. Dods. Mr. Collyer had among others large and beautifully-flowered specimens of Gompholobium polymorphum, trained in the form of a bush; some charming examples of Aphelexis, the pretty deep, rosy-blossomed Boronia Drummondi; a fine plant of Azalea variegata and Juliana, the latter a variety seldom seen in first-rate order; the bright yellow Pultenæa stipularis, Erica elegans, and tortuliflora, the last a noble plant; Chorozema Henchmanni, and the very pretty C. varium nanum; a huge Epacris, Allamanda cathartica, Ixora coccinea, a large Eriostemon and Polygala, and Leschenaultia formosa. Other groups came from Messrs. Peed, Baxendine, and Rhodes.

In the class of 10 Stove and Greenhouse Plants, the best were contributed by Mr. May, gr. to J. Spode, Esq. These, although they had travelled all the way from Rugeley in Staffordshire, a distance of 124 miles, were as fresh and unshaken in appearance as if they had not been carried as many yards. They consisted of Aphelexis sesamoides superba, a grand specimen, whose showy blossoms were admired by everybody; Gompholobium polymorphum, trained as has now (and properly) become the fashion in the form of a bush; Azalea Criterion, a useful kind now apparently superseded by Admiration; Hederoma tulipiferum with large drooping bell-shaped pale lemon-coloured blossoms streaked with reddish brown; Ixora coccinea superba, stated to be an improvement in point of size of truss on the old kind; the deservedly much admired Dipladenia crassinoda, Chorozema varium nanum, and a fine plant of Pimelea Hendersoni. Messrs. Green, Peed, Kaile, Hamp, and others, also showed good groups of stove and greenhouse plants, as did likewise Messrs. Cutbush, Fraser, & Epps.

Collections of Orchids were not materially different from those shown on the previous Wednesday. In the different groups we remarked beautiful examples of Dendrobium Devonianum and densiflorum, some good plants of Vanda suavis, especially one from the Rev. W. Ellis, with four fine spikes of bloom on it; Cypripedium villosum and a very dark variety of barbatum, Cycnoches barbatum, with a fine spike of buff flowers not at all attractive, looked at from a distance, but on close inspection extremely interesting on account of their whole surface being beautifully dotted over with minute chocolate-coloured spots; various varieties of the lovely Lælia purpurata, some with pure white flowers with the lip as usual edged with deep purple, others with the last named colour diffused more or less extensively and with different degrees of intensity all over both sepals of petals; Arpophyllum giganteum, and various fine Phalænopsis.

Azaleas, as has already been stated, were present in large numbers and in great perfection. Mr. Carson's plants were very fine. With the exception of the golden yellow A. sinensis, those from Mr. Green were a little past their best. The kind just named was, however, all that could possibly have been desired, and was, as it deserved to be, greatly admired. The collections from Messrs. Ivery, Turner, & Dods contained many charming examples of well-known kinds. Of new varieties Messrs. Ivery had a pretty white, pink-flaked sort called Flower of the Day; and from Mr. Turner came Advance, also a promising kind. It is a light purple strongly marked and very handsome. Miltoni and Chameleon were also good flowers. A. elegantissima, a striped kind, was also promising. Glory of Sunning Hill, though not new, still appears to be the finest double-flowered variety.

Cape Heaths were shown in good condition, both by amateurs and nurserymen. They were, however, strikingly devoid of novelty.

Roses in pots were again the admiration of everybody. General Jacqueminot, so brilliant at the Crystal Palace, was this time evidently past his best; the bright sunshine we have experienced during these last few days having changed the intense crimson then displayed in every bloom to deep purple. The same ill effects of bright weather were also visible on other sorts. Blairi No. 2, delicate pink (on this occasion nearly white) with crimson centre, was very handsome. Others were not different from what have been already reported on.

New plants are still scarce—a Cattleya, somewhat resembling Aclandiæ, was shown by Messrs. Veitch, and Messrs. Parker & Williams also sent two or three kinds of Cattleya allied to intermedia. From the former firm were likewise shown their handsome Begonias and

Pothos formerly noticed by us, and a yellow-blossomed Blandfordia. Mr. Williams, nurseryman, Muswell Hill, had the pretty Caladium argyrites, with small leaves, charmingly blotched with white. Tydæa Duchesse de Brabant and Leopardi came from Messrs. Parker & Williams, the former purple and the latter scarlet, large and showy, both beautifully marked and very handsome. The last-named firm also sent a pretty little Vanda with straw-coloured sepals and petals, and violet lip. We also noticed one or two fine-foliaged plants, none of them very new, from Messrs. E. G. Henderson.

Of Amaryllids, Messrs. Parker & Williams sent a fine collection, chiefly red kinds and white striped with red.

Pelargoniums, like Azaleas and Roses, looked infinitely better under canvas than they did at the Crystal Palace; as shown on Wednesday last they were very effective. In the Nurserymen's class Mr. Turner was first with a finely-coloured Etna, the large orange-blossomed Festus, Empress Eugenie, Carlos, Mazeppa, Admirable, Governor-General, Lord Raglan, Sanspareil, delicatum, Fair Ellen, and Matilda. Messrs. Dobson had Rosamond, Evelyn, Vestal, Governor-General, Fairest of the Fair, Rosalie, Bride, Admirable, Sanspareil, Starlight, Carlos, Eugenie Duval. Messrs. Fraser sent Clara, Governor-General, Una, delicatum, Admirable, Rosamond, Lucy, Sanspareil, Pallas, Gem of the West, Mr. Hoyle, Eclipse. Mr. Windsor and Mr. Gaines, of Battersea, also showed in this class. Of Fancies, Mr. C. Turner sent large well bloomed plants in good variety, several of which were new. Of the latter were crimson Pet, Rosabella, Bridesmaid, Princess Royal, Madame Rougière, and Carminatum. Messrs. Fraser had Richard Cobden, Celestial, conspicuum, formosissimum, Madame Sontag, and delicatum. Mr. Windsor furnished Electra, Duchesse d'Aumale, delicatum, Perfection, Lady Hume, Campbell, and Cassandra. Mr. Gaines also contributed a collection.

In the Amateur's Class Mr. Nye, gr. to E. Foster, Esq., furnished a fine plant of Carlos, Fair Ellen, Sanspareil, Saracen, Governor-General, Pallas, Wonderful, Una, Admirable, and Rose Celestial. Mr. Wiggins, gr. to E. Beck, Esq., Isleworth, had Bride, Admirable, Fanny, Laura, Governor-General, Vestal, Wonderful, Sanspareil, and Symmetry. Mr. Bailey, gr. to T. T. Drake, Esq., Amersham, had some well grown plants, consisting of conspicuum, Gem of the West, Admirable, Carlos, Governor-General, floribundum, Fair Ellen, and Mr. Marnock.

In Fancies, the best 6 came from Mr. Bailey, whose kinds were Madame Sontag, Cloth of Silver, formosum, Celestial, Evening Star, and Lady of the Lake. Mr. James and Mr. Holland, both from Isleworth, exhibited well in this class, in which Mr. Weir and Mr. Turnbull were also competitors.

A nice bank of Seedlings appeared to greatly interest growers of this popular flower, as well as the public. The best were Autocrat (Foster), white centre, dark top, and richly painted lower petals; King of Purples (Turner), rosy purple, spotted on the lower petals; Czar (Hoyle), similar in character to Autocrat; Angelina (Hoyle), a smooth flower, light lower petals, very dark top; Hero (Turner), salmon spotted; Spark (Turner), a small but vivid scarlet, much the brightest of its class; Fancy Arabella Goddard (Turner), soft rose, white eye and edge, fine form. The Judges selected the above for prizes. There were also Juno (Beck), bright crimson; Apollo (Beck), scarlet, dark top; Eastern Beauty (Hoyle), rose, fine form; Inez (Hoyle), dark top, lower petals light; Jessica (Hoyle), orange, very bright; Lightning (Foster), Favourite (Turner), Mammoth (Turner), Hesperus (Beck), Bridesmaid (Beck), white, resembling The Bride. All the above possess some merit, and many of them at some future time may possibly be found in winning collections. In Fancies, Negress, multiflorum, Symmetry, and Miss Turner appeared to be dissimilar in colour, and were of the finest form. A pretty seedling variegated Geranium, Magnet, appeared dwarf and of good colour, but not new in foliage.

Although the season for Cinerarias is now nearly over, nevertheless the two first collections were very good. They came from Mr. Turner, of Slough, and Mr. Shrimpton, of Putney. Messrs. Dobson also had some good plants. The best were Slough Rival, Perfection, Baroness Rothschild, Mrs. Colman, Brilliant (Lidyard), ditto (Smith), and Mr. Hoyle.

Of Tulips, some good blooms were shown by J. Hunt, Esq., Wycombe, and Mr. Turner. The best were Eliza, Sarah Headly, Mary Headly, Blœmart, Magnum Bonum, Maid of Orleans, King, Victoria, and Heroine.

Of Verbenas, Mr. Turner had a beautiful boxful of cut blooms, among which the most conspicuous were perhaps Rosalind, large and showy scarlet; Mrs. Pennington, rosy pink, large and fine; and Lord Elgin, deep plum with a white eye.

LINNEAN: *April* 21.—The President in the chair. J. Forbes Watson, M.D., was elected a Fellow. N. B. Ward, Esq., presented a collection of Mosses made in N. Wales by W. Valentine, Esq. The Secretary read an extract of a letter from A. Hambrough, Esq., to the Librarian, announcing the discovery on the sea-shore at Ventnor of a rather scarce shell, Vertigo cylindrica; also a note on the phenomena of the present season on the French coast by Dr. Forster, who had been residing at Boulogne since September last. The writer mentioned that the Tussilago fragrans was in bloom in November, the Snowdrop at the end of January, the Croci in February, the yellow one, C. mœsiacus, by February 1, and all out of flower by March 1; Pilewort, Ficaria verna, on the 3d or 4th March, at which time Daisies covered the upland hills and meadows; Cynoglossum omphalodes had flowered all the winter, and Cyclamen Coum and the different varieties of Hepatica were in flower by the end of February. The chimney swallow was seen about the shortest day, and at the date of writing, about the end of March, the Ficarias or Willow wrens and the blackcap had arrived, and the blackbird and thrush were heard every morning. The following additional communications were read:—1. "Remarks on Gnetum," by the late W. Griffith, Esq., communicated with a prefatory note, by Prof. Henfrey. The original paper of Griffith, written in 1835, contained an elaborate technical account of the structure of the Gnetaceæ; and from this, according to Prof. Henfrey, were derived the particulars communicated by Dr. Lindley in the article Gnetaceæ in the Vegetable Kingdom. "My curiosity," observed Prof. Henfrey, "was excited by Mr. Griffith's account of a long convoluted suspensor in the ovule of Gnetum. It appeared to me that this indicated an additional affinity between the Gnetaceæ and the Coniferæ and Cycadaceæ; and that this would be still more striking if it were accompanied by the phenomena of polyembryony, such as are met with in the undoubted gymnosperms. On examination of some specimens I found that the lower end of the long convoluted suspensor does divide into a number of distinct processes, as in Conifers, and that the embryo is developed at the end of one of these. I now became anxious to examine some flowers in an early stage of development, with a view to ascertain if Gnetum produced corpuscula; which I thought might have been overlooked by Mr. Griffith, his memoir having been written before the publication of Mr. Brown's celebrated memoir on the Plurality of Embryos in the Coniferæ." Specimens of the flowers in various stages were obtained from the Kew Museum, and together with Griffith's paper, in the possession of the Society, were examined. "The study of this paper," continued Prof. Henfrey, "under the light of my own observations, has led me to attach great importance to it, and I have recommended its publication before communicating the results of my investigations, on account of the author's having forestalled me in the greater part of the facts important in the history of development of this genus, and rendered it unnecessary for me to do more than supplement his observations in a few points, before entering upon the general conclusions I have drawn from his and my own studies. * * * My investigations lead me to look very favourably upon the opinion expressed by Prof. Agardh, in his new Theoria Systematis Plantarum, that the Gnetaceæ are related even more closely to the Loranthaceæ than to the Coniferæ."—2. "Note on the species of Croton described by Linnæus under the names of Clutia Eleuteria and Clutia Cascarilla." By J. J. Bennett, Esq., Secretary. During a late residence in the Bahama Islands, Dr. W. F. Daniell had directed especial attention to the species of Croton growing in those islands, and by means of the materials he collected Mr. Bennett was enabled to clear up much of the obscurity in which the species furnishing the Cascarilla Barks of commerce have been involved. Linnæus first described Clutia Eleuteria in the Hortus Cliffortianus; of this plant an authentic specimen exists in Clifford's Herbarium in the British Museum, so that it can be satisfactorily identified. In his Flora Zeylanica and Materia Medica, the synonyms of Breynius, Plukenet, and Seba, belonging to the Croton niveum of Jacquin, and those of Plumier and Catesby, the foundation of Linnæus's own Croton Cascarilla, are given to this plant. Swartz's C. Eleuteria is distinct from the foregoing, and is called C. Sloanei by Mr. Bennett. The plant figured by Catesby is the original Clutia Cascarilla of Linnæus, who, however, mis-stated the habitat. The various discordant citations of Linnæus in respect to these plants were traced by the author, and the following conclusions were based upon his examination of the subject:—(1). The *C. Eleuteria* of the first edition of Sp. Pl., the Eleuteria of Lin. Hort. Cliff., 486, is that figured by Woodville at t. 223, fig. 2 of his Medical Botany; (2) *C. Cascarilla* of the same edition of Sp. Pl. is that figured by Plumier t. 240, fig. 1, and by Catesby at t. 46; (3) *C. lineare* of Jacq. (Amer. t. 162, fig. 4) is the Clutia Cascarilla of Lin. in Amœn. Acad., and of the Linnæan Herbarium, and the Croton Cascarilla of Woodville, t. 222; (4) *C. Sloanei*, Bennett, is the Clutia Eleuteria of Lin. in Amœn. Acad., and of the Linnæan Herbarium, the Croton Eleuteria of Swartz and of Woodville, who has given a very bad figure at his t. 223, fig. 1. Of these four W. Indian and totally distinct species, the characters and synonymy were given. Two other species of Croton were gathered by Dr. Daniell, in the Bahamas.

Notices of Books.

Letters on Modern Agriculture. By Baron v. Liebig. Edited by John Blyth, M.D. Small 8vo. Pp. 284. Walton & Maberly.

The learned author in this work presents us as usual with a series of highly interesting dissertations upon a variety of topics, bearing upon the science of cultivation, prepared with all the skill of an accomplished writer and experienced philosopher. He discourses learnedly upon vegetable nutrition, exhaustion and restoration, on Humus, Ammonia and Guano, on empirical practices as distinguished from rational practice, and so on; but we confess that we have been unable to find any absolutely new announcement in the pages before us. What we really have are well-known facts placed in a new point of view, or accompanied by such striking illustrations as a man with Professor Liebig's talent always has at command. The Editor indeed speaks of new and important facts which are brought forward connected with the nutrition of plants; but the examples that he gives are to our apprehension far from novel. Surely it is not novel to say that if the mineral constituents of a field are incessantly removed and never replaced, the field will at last be exhausted; or that the more rapidly they are removed by high cultivation the more quickly it will be exhausted. This strikes us as a very old doctrine; and Dr. Blyth does not point to anything else. But since we are told in the preface that the author's observations chiefly apply to German and French cultivators, it is to be presumed that what is not novel in these islands is really so in those countries. This however we must in justice say, that some of the author's remarks have a large application among ourselves.

"One of the worst points in the character of practical men is their sensibility to opposition. The total want of foundation for their erroneous views is the reason why they regard them with so much affection and tenderness. It makes them blind to their own interest, and deaf to all instruction. They look on every one as an enemy who does not flatter their prejudices, who openly tells them that there yet remains much to be learned, and that the consciousness and confession of our ignorance, and the knowledge of our faults are the first steps towards improvement."

And again: "It is not at all the province of science to seek out the means of increasing produce or augmenting incomes. She inquires not after what is profitable; this belongs to experimental art, with which she has been confounded. The business of science is to seek for causes, and like a light, to illuminate the surrounding darkness. Science confers power, not money; and power is the source of riches and of poverty,—of riches when it produces, and of poverty when it destroys; it is expended by use, and renewed by supply.

"If agriculture is to arrive at results which are to be lasting, she must decide upon entering on that path which science has recognised to be the only trustworthy one to lead to a knowledge of hidden objects and their relations. This could be done without renouncing one of the facts acquired by experience. There is no lack of these, but agriculturists are at fault in their mode of comprehending them. They must, in the first place, desist from drawing hasty conclusions for special purposes from these facts, and only occupy themselves with investigating the proximate conditions of all the facts connected with the life and development of plants, the production of which is their object. From the favourable action of the constituent of a manure in one case, they must not at once infer its equally favourable action in another, in order to derive immediate profit from it; but they ought, in the first place, to inquire into the reason of its good effects in the special case.

"Such investigations are in an agricultural point of view greatly facilitated by all the conditions of the incidents, or effects, or their proximate causes, being clearly perceptible by the senses, and palpably manifest if we know the proper way to proceed.

"The favourable action of a manure A is always dependent on certain physical conditions of the soil, and on the presence of a second substance B, of a third C, of a fourth D, and so on. After investigating these different points, our conclusion must then be submitted to proof, which must show whether all the conditions have been considered together, and none overlooked. We must endeavour to produce the same effect in another soil, by the combination of all the conditions found. Should the result correspond with our expectations, and be equally favourable as in the first instance, we have made an extraordinary step in advance; for from this special case we can now in all similar cases predict the like or unlike effect of the manure A. The effects will be like, in every instance in which we know that we have present the same conditions united in the same manner; and unlike, when one of these is known to be wanting.

"The presence and united action of all the conditions of the effect observed is designated by the term, a special law; because it refers to a special case, to a certain plant for instance. If this law holds good for superphosphate of lime and 'Turnips,' it does not follow that it is equally true for 'Wheat.' But a similar special law can be established for each manure, each plant; and from these again general laws can be deduced, which express the conditions of the growth and development of all varieties of cereals, all species of Turnip and tuberous plants, &c. These connected general laws now receive the name of theory.

"It must be evident, even to the most limited understanding, that there is nothing hypothetical in this proceeding. It differs from blind experimental art, only in being the result of thought and reflection. As the train of thoughts, on which the experiments are based, is carried out in a precise and fixed direction, this mode of proceeding has received the name of the inductive method."

The following great truth, so little appreciated, is very happily put: "The technical part of an industrial pursuit can be learned; principles alone can be taught. To learn the trade of husbandry, the agriculturist must serve an apprenticeship to it; to inform his mind in the principles of the science, he must frequent a school specially

devoted to this object. It is impossible to combine the two; the only practicable way is to take them up successively. I formerly conducted at Giessen a school for practical chemistry, analysis, and other branches connected therewith, and 30 years' experience has taught me that nothing is to be gained by the combination of theoretical with practical instruction. A student of chemistry who attends the lecture-hall and the laboratory concurrently positively defeats thereby the object of his stay at the school, and misses the aim of his studies. It is only after having gone through a complete course of theoretical instruction in the lecture-hall that the student can with advantage enter upon the practical part of chemistry; he must bring with him into the laboratory a thorough knowledge of the principles of the science, or he cannot possibly understand the practical operations. If he is ignorant of these principles, he has no business in the laboratory.

"In all industrial pursuits connected with the natural sciences, in fact, in all pursuits not simply dependent on manual dexterity, the development of the intellectual faculties, by what may be termed 'school learning,' constitutes the basis and chief condition of progress and of every improvement. A young man, with a mind well stored with solid scientific acquirements, will, without difficulty or effort, master the technical part of an industrial pursuit; whereas, in general, an individual who may be thoroughly master of the technical part is altogether incapable of seizing upon any new fact that has not previously presented itself to him, or of comprehending a scientific principle and its application.

"I have often found that students coming from good colleges will speedily leave the pupils of industrial and polytechnic schools far behind them even in the natural sciences, though the latter, when compared with the former, were at first giants in knowledge."

(To be continued).

We have received from *Mr. Bohn* a copy of the third edition of his edition of the *Greek New Testament* (12mo, pp. 598) with Burs's Greek and English Lexicon to it (pp. 246) as a supplement. It is extremely well printed, has facsimiles of a fragment of the Cotton Manuscript, and another of a more recent manuscript, an introduction giving the history of the various codices which now exist, and a very full chronology of events. In addition to this the margin is occupied by cross references, and the foot notes by a copious list of various readings. The whole is issued at the low price of 5*s*.—The same active publisher has brought out a neat illustrated pocket edition of *Hudibras*, with abundant notes and an excellent index; and also the 4th part of a new edition of *Lowndes's Bibliographer's Manual* of English Literature, corrected and enlarged by himself.

The *Linnean Society* have issued another supplemental part of their Journal, completing Mr. Mitten's *Enumeration of Indian Mosses*, with an excellent index of the genera and species.

Tyas's *Wild Flowers of England* (Houlston & Wright) are now completed, and form a nice gay-looking drawing-room volume. The learned and reverend author should, however, be more critical with his printer, as the following mistakes in the account of the Mezereum sufficiently show:—Flowers do not grow in the *axes* of leaves, but in their axils; there is no French chemist of the name of Vanqueline, but Vauquelin is well known. We would also suggest that considering the commonness of the Mezereum it would have been better to say that its bark has formidable blistering powers, and is excessively acrid; than to remark that it affords "a *stimulating* decoction used for various *medicinal* purposes," which we fear is calculated to expose to serious danger the ignorant who may try its effects as a "medicinal stimulant," an expression very likely to be misunderstood.

TRADE LISTS RECEIVED.—*Edmund Philip Dixon's* (Hull) *Catalogue of Stove, &c., Plants, Ferns, Orchids, Bedding Plants, &c.* A very good country collection of all sorts of useful plants.—*Milne, Arnott, & Co.'s* (Wandsworth Road, London) *General Catalogue* fills 48 closely printed pages, and is rich in all sorts of things except stove plants, the list of which is small.

Calendar of Operations.

(For the ensuing Week.)

PLANT DEPARTMENT.

CONSERVATORY, &c.—Early New Holland and other greenhouse plants will soon be getting past their best, and some foresight and care will be necessary to avoid being short of specimens in bloom with which to supply their places. Many things in the stove (as Allamandas, Clerodendrons, Croweas, Achimenes, Gloxinias, &c.) should now be in a forward state, but these must be carefully prepared for removal to the cooler and drier atmosphere of the conservatory, otherwise there will be great risk of injuring the foliage, &c. Where circumstances will admit plants that have been grown in a warm moist atmosphere should be removed to an intermediate house about a fortnight previous to their being taken to the conservatory and gradually inured to a free circulation of air, &c. By attention to this and placing the plants in the warmest corners in the conservatory, the Clerodendrons, Allamandas, &c., will continue growing slowly and blooming for some three months, whereas if this is neglected, their beauty may be very short-lived. Aim at maintaining an even temperature in the conservatory after removing plants thence that have been grown in the stove, and avoid allowing the atmosphere to become very bright on warm sunny days. Also see that every plant is perfectly clean before placing it in this house, and that the creepers, &c., are not infested with insects. Young stock in pits will now be making rapid growth, and must be carefully attended to as to watering, stopping, training, &c. Examine Heaths frequently for mildew, and apply sulphur the moment it is perceived, some of the soft-foliaged varieties being very liable to be attacked by this pest at this season.

FORCING DEPARTMENT.

PINERY.—Where the quality of the fruit is of great importance, care must be observed to have the soil in a healthy rather dry state during the period of ripening, for as there is no reasonable hope of obtaining high-flavoured fruit from plants growing in pots, the trouble necessary to collect and place together those approaching ripeness, so as to be able to afford them a rather dry atmosphere, and avoid touching them with the syringe after they begin to colour, will be well repaid. Suckers that are not very strong will be benefited by being left on the stool for a month after the fruit is cut, but this will seldom be necessary in the case of healthy vigorous plants. Any neglect in the way of watering and maintaining a moist atmosphere in the case of succession stock may lead to their fruiting prematurely, therefore let there be no lack of attention at present. Plants swelling their fruit should be encouraged with plenty of liquid manure and a moist high temperature, shutting up early in the afternoon after syringing. VINES.—If spider makes its appearance on the foliage after fruit has commenced colouring, no time should be lost in coating the hot-water pipes with sulphur. The sulphur should be mixed in water with about equal quantities of lime and soot, and applied with a brush. The lime serves to prevent the sulphur being washed or rubbed off, and the soot helps to prevent any disagreeable appearance. The temperature of late houses where the fruit is now showing must not be allowed to fall too low at night if good-sized bunches are expected, and where Muscats are grown for a late supply, there will be but little chance of securing a good crop of these unless a temperature of 70° is maintained. Attend carefully to young Vines recently planted, keeping the borders in a healthy moist state, maintaining a moist atmosphere, and shading if necessary until the Vines get a fair start. Proceed diligently with thinning the berries, &c., immediately they are ready, for they progress rapidly at this season; stop all the laterals in time, and allow no confusion. MELONS.—Where the fruit is swelling the soil should be kept in a properly moist state, and every means should be used to preserve the foliage in perfect health, as there is no possibility of obtaining good flavoured fruit unless the foliage is kept in health. Keep the Vines thin, and prevent their being encumbered with useless laterals, and remove any decaying leaves at once, as these when left only serve as a harbour for insects. There is yet plenty of time to secure a good crop in dung beds, and if any of the frames which have been used for getting up "bedding-out stuff" can be spared for this purpose the plants should be got out at once.

FLOWER GARDEN AND SHRUBBERIES.

Examine recently transplanted trees, shrubs, &c., frequently to see that they are not suffering from want of water. Give a liberal soaking where necessary and stir and mulch the surface afterwards. The half-hardy plants now consigned to their summer places after many months' shelter under glass and much attention and care, must be duly attended to with water until they lay hold of the soil, and with the present favourable weather and proper attention they will speedily cover the beds and will repay all the trouble that has been bestowed upon them, but every effort must be used to prevent their sustaining any check, for if allowed to get into an unhealthy state at present there will be much difficulty in getting them into free growth without much loss of time. Spare hand-glasses should now be used for the propagation of favourite spring blooming plants, as Pansies, Phloxes, &c. These do best on a shady border.

HARDY FRUIT AND KITCHEN GARDEN.

Strawberries may soon require attention as to watering, &c. After thoroughly cleaning the beds a thorough soaking should be given, and if manure-water from the stable-tank can be given when the ground has been well saturated with clear water, it will assist in securing large fruit. The beds should be mulched as soon after watering as convenient, in order to prevent evaporation and the fruit from being soiled. Where clean straw cannot be afforded, fresh litter from the stable-yard will form a very good substitute.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.
For the Week ending May 26, 1859, as observed at the Horticultural Gardens.

May.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Min.	Mean	Temperature of the Earth 1 foot deep	2 feet deep	Wind.	Rain.
Friday 20	17	29.709	29.699	60	46	53.0	54½	52½	N.	.19
Satur. 21	18	29.938	29.843	61	41	51.0	55	53	N.E.	.00
Sunday 22	19	30.048	30.014	61	36	48.5	55	53	E.	.00
Mon. 23	20	30.039	29.938	68	40	54.0	55	53	N.E.	.00
Tues. 24	"	29.949	29.859	70	35	52.5	55	53	N.E.	.00
Wed. 25	22	29.871	29.841	73	38	55.5	55	53	N.	.00
Thurs. 26	23	29.916	29.890	72	38	55.0	55	53	N.E.	.00
Average		29.924	29.869	66.4	39.1	52.7	54.9	52.9		.19

May 20—Cloudy; showery; overcast at night.
— 21—Cloudy; overcast, fine; cloudy.
— 22—Cloudy; fine; very clear at night.
— 23—Overcast; fine; very clear.
— 24—Very fine throughout; cloudy and cool.
— 25—Very fine; hot and dry; clear and cold at night.
— 26—Very fine; hot and dry; very clear.
Mean temperature of the week, 2½ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK.
During the last 33 years, for the ensuing Week, ending June 4, 1859.

May and June.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 29..	65.9	44.7	55 3	12	0.97 in.	3	11	1	2	5	6	4	2
Mon. 30..	67.3	44.7	56.0	12	0.34	3	7	6	—	3	8	3	3
Tues. 31..	68.9	45.2	57.1	11	0.46	2	7	6	—	4	8	4	2
Wed. 1..	69.9	45.9	57.9	11	0.27	1	9	3	—	5	9	3	3
Thurs. 2..	69.6	46.2	57.9	13	0 33	1	5	2	3	3	9	5	5
Friday 3..	71.1	45.4	58.2	13	0.91	—	3	5	1	5	12	3	4
Satur. 4..	71.0	46.1	58.6	11	0.76	1	5	2	2	4	9	6	4

The highest temperature during the above period occurred on the 1st and 3d, 1838—therm. 87 deg.; and the lowest on the 31st, 1857—therm. 32 deg.

Notices to Correspondents.

BOOKS: *Arthur J.* There is just out a volume called "Manual of Practical Gardening," by Mr. Glenny, which we recommend to you. Want of space prevents our noticing it this week, but we shall certainly do so very soon.—*Alexander Crombie.* London's Self-Instruction for Young Gardeners contains all you want to know. It costs 7*s*. 6*d*.

BROCCOLI: *Messrs. Carter & Co.* have sent us specimens of a Broccoli with the following memorandum:—"This Broccoli has been proved side by side with the Wilcove's Late White. Ward's Late White, Reading Giant Late White, Dwarf Danish, and other approved late kinds, and has shown itself superior to all of them. The Wilcove's Late White are finished cutting more than a fortnight since; this variety is just coming in, and fine heads will be cut for the next 10 days." The heads forwarded to us were of the finest possible quality, very large, not in the least coarse, white rather than cream-coloured, and proved when cooked to be wholly free from the strong taste which spoils so many Broccolis.

DISEASES: *J R.* On comparing your Moutan leaves with some which have been affected by the late frosts, we see no difference. They are quite free from parasites. We should be inclined therefore to attribute the diseased appearance to cold, rather than Fungi. You had better examine cautiously the root, and if you find that free from spawn, you may consider yourself safe, unless the stem should be affected in the same way as the leaves and petioles. *M J B.*

FILTERS.—We have received from the patentees, Messrs. Harrison & Co., 62, Fleet Street, a specimen of an ingenious contrivance for filtering water by means of what is called moulded carbon, a contrivance for forcing water through the carbon, instead of between the pieces. Experiments upon rain, river, pond, and spring waters, impregnated with noxious matters, are said to have shown that when passed through moulded carbon, they are rendered inodorous, tasteless, sparkling, and wholesome. The apparatus varies in form according to the purposes to which it is to be applied, and in all cases seems likely to do its work well. When the moulded carbon becomes dirty it can be cleaned by mere scrubbing with a brush. These filters are cheap and handy; they may be even put into the pocket, and appear to deserve a trial by all who are unfortunate enough not to be within reach of pure water. The table filters made of clear white glass are 7½ inches in diameter, shaped like an hour-glass, and are less than 14 inches high.

GRAPES AND FERNS: *T J.* Depend upon it the mischief you describe is traceable to the border; but it may be of no consequence. Had you sent a berry a better opinion might have been formed. Your plan of a Fernery will do very well if you have proper ventilation without drying the air.

INSECTS: *J G.* The grubs you obtained out of the head of the sheep are the larvæ of the sheep bot, Œstrus ovis. The eggs are laid by the parent fly in the nostrils of the sheep, and the grubs when hatched work their way into the frontal sinus where they remain till full grown, when they descend and go into the ground to become pupæ, and afterwards appear in the middle of the summer as two-winged flies, smaller and greyer than the blowfly.—*W W.* The Poplar twigs are infested with the larvæ of a small moth, Tinea (Gelechia) Populella. We should scarcely have supposed that the destruction of the young shoots would have resulted in the falling off of all the leaves of the trees and their death. Be so good as to send us a fresh supply of the twigs and caterpillars—not in a paper box, as it is liable, like the last, to be smashed in the post. You would of course do good to the trees to relieve them of the infested shoots. *W.*

NAMES OF PLANTS: We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have or could have undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*Robin Hood.* We do not see how the leaves differ from those of Southernwood, Artemisia Abrotanum.—*Sudbury.* One appears to be Lithospermum purpuro-cœruleum, the other not being in flower cannot be named. Both are ruined by being packed in cotton wool, the worst of all kinds of packing. Mere paper is quite sufficient.—*T D.* The Fern is Adiantum hispidulum, that form which is known as A. pubescens. The flowering plant is Prunus Padus.—*Thos. Cripps.* Some Eugenia, apparently E. Jambos.—*W Fuller.* The very rare plant gathered at Gorleston, Suffolk, in a soapy soil under the north side of a hedge, is Claytonia perfoliata, an introduced weed. The other is a Doronicum, and probably plantagineum.—*A M S.* Halesia tetraptera. Pray do not send to any other place than 5, Upper Wellington Street, Covent Garden, W.C.

NEW ZEALAND RUNNING BEAN: *Anti-humbug.* We have uniformly stated that this was not a native of New Zealand, but some continental sort unknown in English trade. Surely that was a good warning. It may be, as you say, sold in Paris under the name of Haricot Boulot; but we don't think the seedsmen here are bound to know that. As for the name H. Boulot, we do not find it in any French list within our reach, and it seems to be a mere shop name.

PEAR TREE DISEASE: *L C.* The disease on your Pear leaves is very common, and sometimes extends to the fruit. There is often a little perforation in the centre, and the pustules are sometimes inhabited by an Acarus, but whether they have any close connection with the Acarus is uncertain. They do not, we believe, arise from anything wrong about the soil, and so long as they are confined to the leaves are not apparently injurious. *M J B.*

THE BALLOT: *F H S.* The next of these meetings for the distribution of plants by the Horticultural Society is expected to take place in June. It will be more extensive than the last, and conducted upon a different principle, the particulars of which will be announced in due time.

THE LOQUACIOUS GENTLEMAN: *Brompton.* You are surely under a misapprehension.

TILEY'S "MAGNET" VERBENA. We are requested to say that Messrs. E. G. Henderson & Son disclaim all personal knowledge of the Verbena offered by this name. It *may* be good, or otherwise, but the vendor has no authority from them to quote their testimony in its favour—they not having seen it, neither has it been submitted to them for approval.

THE PATENT

NITROPHOSPHATE OR BLOOD MANURE COMPANY (LIMITED),

CONSISTING OF TENANT FARMERS, OCCUPYING UPWARDS OF 30,000 ACRES OF LAND.

TRUSTEES.

ABEL SMITH, Jun., Esq., Walton House, Ware, Herts.
CHARLES DIMSDALE, Esq., Essendon Place, Herts.
EDWARD BALL, Esq., M.P., 8, Belgrave Road, Pimlico
MAJOR-GENERAL HALL, M.P., Western Colville, Linton, Cambridge
JOHN BRADY, Esq., M.P., Warwick Terrace, Belgrave Sq.

DIRECTORS.

Chairman.—JONAS WEBB, Esq., Babraham, Cambridgeshire.
Deputy-Chairman.—JOHN COLLINS, Esq., Myddleton Square, Pentonville.
EDWARD BELL, Esq., Tottenham, Middlesex
JOHN CLAYDEN, Esq., Littlebury, Essex
RICHARD HUNT, Esq., Stanstead Abbot, Herts.
THOMAS KNIGHT, Esq., Edmonton, Middlesex.
ROBERT LEEDS, Esq., West Lexham, Norfolk.
ROBERT MORGAN, Esq., 72, Camden Villas, Camden Town.
GEORGE SAVILL, Esq., Ingthorpe, near Stamford.
WILLIAM COLLINS, Esq., 105, St. John Street Road.

Bankers.—Messrs. BARNETT, HOARE & Co., Lombard Street.
Solicitors.—Messrs. KINGSFORD & DORMAN, 23, Essex Street, Strand.
Auditor.—G. W. BROWN Esq., 28, Parliament Street.
Manager.—Mr. JAMES ODAMS. | *Secretary.*—Mr. C. T. MACADAM.

Offices, 109, Fenchurch Street, London.—Manufactory, Plaistow Marshes, Essex.

THE Directors beg to inform their Friends and the Agricultural Public that the following Manures are now ready:—

ODAMS'S BLOOD MANURE FOR CORN AND MANGEL.
ODAMS'S BLOOD MANURE FOR ROOTS.
ODAMS'S SUPERPHOSPHATE OF LIME.

Full particulars may be had at the Company's Offices, or of the local Agents.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

ARTIFICIAL MANURES.

FREDERICK CORNWELL begs to inform his friends and the Agricultural public that he can now supply a "SUPERPHOSPHATE of LIME" superior to anything yet produced. Each Bag guaranteed to contain from 20 to 25 per cent. of "Soluble Phosphate of Lime." Price 5*l.* 10*s.* per ton, delivered free to any Railway or Wharf in London. Dealers and the trade supplied LINSEED-CAKES, COTTON-CAKES, and all descriptions of ARTIFICIAL MANURES at lowest market prices.—Offices, 7, Great St. Helen's, London, E. C.

LONDON MANURE COMPANY, removed to 116, Fenchurch Street, E. C. (Established 1849), have the following MANURES ready for delivery:—

CORN MANURE for SPRING TOP-DRESSING
URATE
MANGEL MANURE
SUPERPHOSPHATE OF LIME
BLOOD MANURE
} all of guaranteed quality.

In consequence of the reduction in the price of raw material the London Manure Co. are enabled to lower the price of their Superphosphate of Lime, and to materially improve the Corn Manure and Urate.

The London Manure Co. also supply PERUVIAN GUANO (direct from Messrs. A. Gibbs and Sons), SULPHATE of AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of value. Wholesale dealers supplied.
116, Fenchurch Street, E C. EDWARD PURSER, Secretary.

PERUVIAN GUANO.
The present price of this valuable Manure is—
12*l.* per Ton for 30 Tons and upwards,
12*l.* 3*s.* per Ton for 1 Ton up to 30 Tons.

And, to guard against the purchase of adulterated mixtures and of inferior Guanos purporting to produce results equal to Peruvian, consumers are recommended to apply either to ourselves, to our agents, Messrs. Gibbs, Bright, & Co., of Liverpool and Bristol, or to dealers of established character, in whose honesty and fair dealing they may place implicit confidence.
ANTONY GIBBS & SONS.

SUCCESS OF THE NEW GUANO; IMPORTED UNDER LEASE FROM THE CROWN.—Though the experiments with KOORIA MOORIA GUANO were made late in the season, and under adverse circumstances, the successful results obtained confirm beyond doubt Professor Voelcker's report—(in No. 41, Part I., vol. xix., Royal Agricultural Society's Journal)—that Ammoniacal manures, applied to Turnips in the experimental field, kept back at first the crop, and had no beneficial effect either alone or in conjunction with phosphates.

The KOORIA MOORIA GUANO is essentially a phosphatic manure, containing sufficient ammonia for roots, and, with a mixture of one-fourth of ammoniacal guano, cannot be excelled for either top-dressing or grain crops. It is a natural deposit, and will be delivered as imported, free from risk of adulteration. Deeply impressed with the necessity of encouraging the import of this valuable manure, her Majesty's Government has given such increased facilities for shipment, that arrangements have been made for a considerable supply. Purchasers can be supplied with suitable quantities from cargoes now on sale, containing from 45 to 66 per cent. phosphates. Present prices, 4*l.* 10*s.* to 6*l.* 10*s.* per ton, on applying to JOSEPH HINDSON, Broker (one of the Lessees under the Crown), 20, North John St., Liverpool. Government Lessees: ORD, HINDSON, & HAVES.

"Greystoke, Cumberland, Dec. 16, 1858.

"Dear Sirs,—I beg to inform you that I applied the Kooria Mooria Guano I had from you for Turnips, on land of a loamy character, incumbent on a stiff clay subsoil, and recently drained. On each side of the plot sown with Kooria Mooria Guano were Turnips manured with best Peruvian Guano. The quantities applied of each sort were of equal weight for weight per acre. The crop—a very good one throughout—is now being eaten off with sheep. Very little perceptible difference can be discovered, but if anything that difference is in favour of the Turnips sown with Kooria Mooria Guano.

(Signed) "JOHN BARKER."

"Messrs. J. & J. Graham, Guano Merchants, Penrith."

A Pamphlet, "Hints on Guano," containing a large number of reports from well-known agriculturists, and analysis of the cargoes here, may be had of the Broker, at the above address.

MANURE FOR ROOT CROPS, of first-rate quality, with Analysis guaranteed, manufactured by WILLIAMS & Co., 47, Mark Lane, London (Established 1847), at 6*l.* per ton, including bags. Free to Wharf or Rail in London. The Trade supplied.

REDUCTION IN PRICE OF LAWES'S MANURES.

MR. LAWES begs to announce that he has this season reduced the price of the Manures manufactured by him, viz.:—

TURNIP MANURE	from £7 to £6	6
SUPERPHOSPHATE OF LIME ..	,, 7 to 6	6
MINERAL do. ..	,, 6 to 5	5
BARLEY MANURE..	.. 8	0

Prof. Way and Dr. Voelcker have sampled from a bulk of 5000 to 6000 tons at his factories, and their report and analyses are given in full in Circular to be obtained on application at his office, 1, Adelaide Place, London Bridge, E.C., or of his local Agents.

N.B. Genuine Peruvian Guano direct from Messrs. GIBBS, Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures. American Cotton-seed Cake supplied.

ESTABLISHED 1812.

H. AND T. PROCTOR'S TURNIP MANURE.—Messrs. H. & T. P. draw particular attention to this valuable Manure, which contains all the elements necessary for the full development of the Turnip Crop, so combined, that, from their chemical knowledge and long experience, they feel satisfied is most advantageous to the consumer. It has been very extensively used by most of the eminent Agriculturists of the day, and has attained a high reputation throughout England, Scotland, and Wales, and, they venture to say, is unrivalled for the weight and quality of the Bulbs which it produces. The application of this Manure to the Turnips will be found to benefit considerably the after crops of Barley, Clover, and Wheat.

POTATO, GRASS, BARLEY, CLOVER, AND WHEAT MANURES; also BONE DUST, PERUVIAN GUANO, and SUPERPHOSPHATE of LIME, warranted of the best quality.

Apply to H. & T. PROCTOR, West of England Depôt for Artificial Manures, Cathay, Bristol; or PROCTOR & RYLAND, Birmingham, and Saltney, near Chester.

BURNARD, LACK, AND CO.'S CONCENTRATED SUPERPHOSPHATE OF LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.

CONCENTRATED TURNIP MANURE, equal in value to the preceding.

Of these Manures Dr. Voelcker says:—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."

Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to BURNARD, LACK, & Co., Sutton Road, Plymouth.

WESTLAKE AND DENDY, AGRICULTURAL ENGINEERS, Hornchurch, Essex.

HAY MACHINES.

Small size, No. 1.. .. £10 | Large size, No. 1 .. £12
Large size, No. 2 .. .. .. £13

These Machines are free from small and delicate parts, and can be easily understood by a farm labourer. They have gained several prizes at the Royal Agricultural Society's Shows.

HORSE RAKES.

No. 1 .. .. £6 10*s.* | No. 2 .. .. £7 10*s.*

WESTLAKE & DENDY'S Horse Rakes are made on the tubular principle, combining great strength and lightness. Free to all the principal Railway Stations.

WESTLAKE & DENDY, Union Foundry, Hornchurch, Essex.

"FRIGI DOMO."—Patronised by her Majesty, the Queen, the Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, and —Collier, Esq., of Dartford.

PROTECTION FROM COLD WINDS AND MORNING FROSTS.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths. Two yards wide, 1*s.* 6*d.* per yard run; four, 3*s.* per yard. Also, an improved make for Shading Purposes. Three yards wide, 2*s.* 6*d.* per yard run.

ELISHA THOMAS ARCHER, whole and sole manufacturer, 7, Trinity Lane, Cannon Street, City, and of all Nurserymen and Seedsmen throughout the kingdom. "It is much cheaper than mats as a covering."

CONSERVATIVE LAND SOCIETY.—Investment of Savings and Capital for all Classes. The rate of interest on completed Shares, and Shares paid a year in advance and upwards is now 5 per cent. per annum. The rate of interest on deposits has been raised from 3 to 4 per cent. per annum. Prospectuses sent free. CHARLES LEWIS GRUNEISEN, Sec.
Offices: 33, Norfolk Street, Strand, W.C.

FARM BUILDINGS.

LOANS MAY BE OBTAINED UNDER THE GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY'S ACT, for the full amount required by the owners of Settled Estates, Incumbents, Trustees, Bodies Corporate, &c., for the erection of Farm Houses, Farm Buildings, and Labourers' Cottages, designed by their own agents and sanctioned by the Inclosure Commissioners. The Loans are repaid by a rent-charge on the estate for any term the landowner may fix, not exceeding 31 years.

No investigation of title being required, and the charge not being affected by incumbrances, no legal expenses are incurred.

The Company furnish Designs of every description, and undertake the entire responsibility of the works wherever desired by Landowners. No profit however is taken by the Company on any works they execute, the actual expenditure only, approved by the Inclosure Commissioners, with a Commission thereon, being charged in all cases. Applications to be addressed to WILLIAM CLIFFORD, the Secretary, at the Offices of the Company, 52, Parliament Street, London.

THE LANDS IMPROVEMENT COMPANY, 2, Old Palace Yard, Westminster, S.W.

To Landowners, the Clergy, Solicitors, Estate Agents, Surveyors, &c.—The Company is incorporated by Special Act of Parliament for England, Wales, and Scotland.—Under the Company's Acts Tenants for Life, Trustees, Mortgagees in possession, Incumbents of Livings, Bodies Corporate, certain Lessees, and other landowners are empowered to charge the inheritance with the cost of improvements, whether the money be borrowed from the Company or advanced by the Landowner out of his own funds.

The Company advance money, unlimited in amount, for works of Land Improvement, the Loans and incidental expenses being liquidated by a rentcharge for a specified term of years.

No investigation of Title is required, and the Company being of a strictly commercial character do not interfere with the plans and execution of the works, which are controlled only by the Enclosure Commissioners.

The improvements authorised comprise Drainage, Irrigation, Warping, Embanking, Enclosure, Clearing, Reclaiming, Planting, Erecting and Improving Farm Houses and buildings for Farm purposes, Farm Roads, Jetties, Steam Engines, Water Wheels, Tanks, Pipes, &c.

Owners in fee may effect improvements on their Estates without incurring the expense and personal responsibilities incident to Mortgages, and without regard to the amount of existing incumbrances. Proprietors may apply jointly for the execution of Improvements mutually beneficial, such as a Common Outfall, Roads through the District, Water Power, &c. For further information and for forms of application apply to the Hon. W. NAPIER, Managing Director, 2, Old Palace Yard, Westminster, S.W.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.
Principal—J. C. NESBIT, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

HIGHLAND AND AGRICULTURAL SOCIETY.—EDINBURGH SHOW, August 1, 2, 3, 4, and 5.
Entries must be made on or before June 15.
Programmes of the Show, and Forms of Entry, to be applied for at 6, Albyn Place, Edinburgh.

YORKSHIRE AGRICULTURAL SOCIETY.—GREAT SHOW AT HULL, AUGUST 3 AND 4.
For Prize Lists, apply to the Secretary, JOHN HANNAM, Land Agent, Kirk Deighton, Wetherby.—May 28.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.—WARWICK MEETING.
Entries for CHEESE, WOOL, and FARM GATES must be made on or before June 1.
Entries for LIVE STOCK must be made on or before June 1.
All Entries received in each case after those respective dates will without any exception be disqualified and returned to the senders. Prize Sheets may be obtained on application at the Offices of the Society, 12, Hanover Square, London.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.
JUDGES OF CATTLE.—Governors and Members of the Society are requested to forward to the Secretary on or before SATURDAY June 11, their nomination of such Judges of Live Stock as they can certify from their personal knowledge to be qualified and willing to act in the division of Live Stock for which they are respectively recommended.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.—The WARWICK MEETING will be held in the week commencing MONDAY, July 11; THURSDAY being the principal day of the Show.

The Agricultural Gazette.

SATURDAY, MAY 28, 1859.

MEETINGS FOR THE ENSUING WEEK.
WEDNESDAY, June 1—Agri. Society of England .. Noon.

THE following remarks on root-crop culture relate more especially to the width of drill by which the maximum amount of food may be realised and the greatest profit secured. It must be remembered in connection with this subject that great as are the services rendered by chemistry to the agriculturist, it is a mistake to suppose that chemical analysis forms in every case an unerring guide to the practical farmer in deciding his course of action. There is ample illustration of this point in the analyses of plants hitherto published.

In order that these analyses be valuable for comparison three conditions should be strictly observed:

1. The crops whose analyses are to be compared should be grown under the same circumstances as to soil and climate.

2. The individual constitutional peculiarities of the plants should be as like as possible.

3. Regard should be had to the size of the plants

analysed; for as we shall presently see, Prof. Sullivan has invariably found that in the case of root crops, such as Turnips and Mangel Wurzel, the smaller the roots the larger the amount of solid matter which they contain. As this point has not been observed, nearly all the analyses of root crops hitherto published are comparatively worthless.

Some time ago this subject was investigated in the Government School of Chemistry, Dublin, and by the chemist of the Agricultural Improvement Society of Ireland; more recently by Dr. W. K. Sullivan, whose investigations in Vegetable Physiology have revived the subject, and as we have ourselves experimented in the same direction we may briefly advert to his results.

In carrying out a series of analyses on Sugar Beet, Mr. Sullivan invariably found that the smaller the root the greater the per centage of sugar it contained. Dr. Apjohn, of Trinity College, Dublin, repeated Mr. Sullivan's experiments, and though in some respects the results differed, they agreed in the fact already enunciated—that the smaller roots contained the larger amount of solid matter.

The following Table, compiled from Mr. Sullivan's paper in the "Atlantis" for July, 1858, and embodying his recent remarks, is conclusive on this point:—

White Silesian Beet.		Mangel Wurzel.	
Weight of Roots.	Per cent. of Solid Matter.	Weight of Roots.	Per cent. of Solid Matter.
lbs. oz.		lbs. oz.	
7 10½	11.94	8 6¾	12.84
6 12¼	12.32	6 11¾	13.03
6 6½	12.80	3 4	15.20
6 2¼	13.09	1 5¼	14.80
4 3¾	14.32	1 4¾	16.96
2 6½	16.92		
2 12¼	14.56		
1 15¾	15.48		

In this case Mr. Sullivan has determined the total quantity of solid matter in the roots, while in his earlier investigations he operated on cross sections cut through the thickest part of the roots. It is very curious to find, that if we cut five sections across a root the percentage of sugar varies very considerably in these sections. Thus Mr. Sullivan quotes the following from Rehring:—

* *Beet experimented on, 15th November.*

Section.	Percentage of sugar.
Crown	2.00
Segment below crown	8.94
Body of root	12.31
Point of root	10.89
Bifurcations and smaller roots	7.34

Dr. Apjohn pushes his inquiry a little farther than the determination of the percentage of sugar and solid matter in the roots. Thus he determined the percentage of (1), azotised or nitrogenised constituents; (2), of ash, distinguishing the part soluble from that insoluble in water; and (3), the amount of phosphoric acid in the ash of each root. Dr. Apjohn deduced from his own researches the conclusion that in the case of the dried matter of the Beets the nitrogen and the albuminous compounds are greater in quantity in large than small roots. But in the same paragraph in which he announces this deduction he remarks that the "relation is constant only in the Beet, for the Mangels and Swedes are sometimes not in accordance with it." Now, it is hardly possible that any law of this kind could be established in relation to the composition of Beet which did not hold good in Mangels, which are merely field Beet, and the conclusion deduced by Dr. Apjohn can therefore hardly be accepted.

As regards the phosphoric acid in roots, we find from his table that in the majority of cases there was a greater percentage of it in small than large roots. This is true of all the Turnips analysed by him; and yet in his deductions, Dr. Apjohn observes, "if we confine our attention to the Beets the phosphoric acid appears to be more abundant in the larger than in the smaller specimens." Dr. Apjohn's table gives only four analyses of Beet, two large and two small specimens, and out of the four he only gives the phosphoric acid in one small root. Why, therefore, in deducing important conclusions "confine our attention" to the Beets, while there were 17 specimens of Mangels analysed and five specimens of Swedes, in nearly all of which there was a larger percentage of phosphoric acid in the smaller roots? Under these circumstances we submit that no law has been established by Dr. Apjohn as to the relative quantities of nitrogenised compounds and phosphoric acid in large and small roots. And even if he had established any such law we might still dispute his further deductions. He says (p. 344, vol. I., Journal of Royal Agricultural Society of Ireland):—"In Beets, Mangels, and Swedes the amount of the non-azotised alimentary matter is always relatively large—in fact more than sufficient for the performance of the duties we have ascribed to them—viz., of giving rise to oleaginous matter and maintaining animal heat."

In this statement Dr. Apjohn enunciates a doctrine neither borne out by experience nor attested by science. On the contrary the recent researches of Dr. Gilbert show that the non-nitrogenised constituents of food exercise higher functions than had been previously assigned to them. Dr. Apjohn further observes that "in estimating the feeding properties of roots the point to be principally attended to is the amount of azote which is contained in them." A special dependance upon this element for determining feeding value is however no longer taught by scientific men. In the late report of Messrs. Lawes and Gilbert, it appears that "by far the larger proportion of the solid increase of the so-called fattening animals is really *fat itself*; and moreover, it is probable that, at least in great part, the fat formed in the body is normally derived from starch and other non-nitrogenised constituents of the food; and since the current fattening foods contain such a very large amount of nitrogen compared with that eventually retained in the increase of the animal, it can hardly be surprising that, contrary to the usually accepted opinions, the comparative values of our staple food-stuffs are much more nearly measurable by their amount of digestible and assimilable non-nitrogenous constituents than by that of the digestible and assimilable nitrogenous compounds." So that the theory propounded by Dr. Apjohn has been directly controverted by the actual experience of Messrs. Lawes and Gilbert. We are therefore fairly entitled to make the following deductions from the foregoing facts:

1. That even granting that large roots contained a little more nitrogen than small roots, we are not justified in under-estimating the importance of the non-nitrogenous compounds in plants, which, according to Mr. Sullivan, are far more abundant in small than large roots.

2. That it is not proved that large roots contain more phosphoric acid or nitrogenous compounds than small roots.

3. That taking all circumstances into account small roots, weight for weight, contain more solid matter, and are therefore more valuable for feeding purposes than large roots.

Now, what practical conclusions can be drawn from these deductions? Are we to advise farmers to grow small roots weighing only a couple of lbs. each? In reply to these questions, let us remark that every law established by science cannot be practically applied. There may be difficulty of a mechanical or artistic nature to thwart the utilising of a scientific fact. And this is the case with the application of Mr. Sullivan's able researches. In the present state of agricultural mechanics it were vain to try and realise all the advantages of green crop fallowing if the roots are grown in narrow drills. Mr. Garrett's horse hoe is a valuable adjunct; but we could not recommend the abandonment of a system which works well and which is the base of all good cultivation. But we find in Mr. Sullivan's researches sufficient reasons for questioning the practice of those who grow excessively large roots, by which it is supposed the largest amount of feeding is obtained. We have seen drills for Mangels 40 inches wide, which from our own experiments we are inclined to consider a waste of ground. Our observations have been taken on a farm under a very close system of tillage and brought to a very high state of cultivation, and the *entire produce* of every field is annually weighed, so that our conclusions are based on accurate data.

In our own case, that of a farm under a fair climate for Mangel Wurzel, we are bound to say that the greatest acreable weight of produce has been obtained when the drills are 28 inches apart, and the plants thinned from 10 to 12 inches asunder in these drills. We do not, however, advocate so small an interval as a general rule; a space of 2½ feet between the rows and 15 inches between the plants will probably be more generally profitable.* If, however, instead of making our drills 28 inches wide, we extend the width to 3 feet, and thus lose two drills out of every nine, we would lose a very large number of roots per acre, and bearing Mr. Sullivan's researches in mind the loss of nutriment to our stock would probably be considerable.

With these facts before us there seems good ground for condemning the system adopted by many agricultural societies in awarding prizes for large roots, which may not be only watery and comparatively worthless for feeding purposes, but which may have been grown on a hot bed (as we have seen them grown for exhibition), and cost ten times their value. A system so delusive and mischievous should at once be abolished, and no longer permitted to remain a disgrace to the present enlightened position of agriculture.

* To avoid lengthened tables we only give one showing the distance at which the plants may be thinned in drills 28 inches apart. The crop experimented on was Long Red Mangel.

Distance of Plants in Drills.	Acreable yield.
8 inches	22 tons
9 ,, ...	24½ ,,
10 ,, ...	26¾ ,,
10½ ,, ...	27½ ,,
11 ,, ...	27 ,,
12 ,, ...	25½ ,,

TASTE OF BUTTER.

(*Concluded from p.* 451.)

11. Your correspondent "Clitheroe," to whom your readers are indebted for some apparently very good recipes for making cream cheeses, gives also a recipe for preventing the taste of Turnips in butter by the application of scalding water. It has often been a matter of surprise with me that the system, adopted in Devonshire, of scalding the milk has not become more general in other parts of the kingdom; and as some of your readers may not be aware of the manner in which this is performed, I purpose, in as few words as may be, giving some little account of it. The milk when first brought from the cow is strained, as usual, into the pans, which for this purpose are deeper and narrower than those used in the ordinary way; it remains thus for 12 or more hours, when it is placed on the hot plate of the kitchen range, or some such suitable place, where it is scalded, but not suffered to boil (in which case it would be spoiled); this done, it is removed to the dairy, where it remains for 12 hours or so, when it is skimmed. The process of making butter is performed by putting the cream into a butter tub and then working it about with the hand; in a few minutes the butter forms, and separates from the butter-milk; it is then washed and made up as usual. As in all cases, of course the utmost cleanliness is requisite as regards the dairy-maid. The advantages I hold to be these: the use of a churn is avoided; the butter is much sooner made; a smaller quantity may be made, if requisite, than can be made by the churn; and lastly, it is free from any unpleasant taste. I have tried it through all seasons, and whether through the fall of the leaf in autumn or at this time, when we are using the hybrid Turnip (with the greens on), I find no unpleasant taste. The longest time I have known butter to be "coming" by this process was 20 minutes, but it is generally made in a very few minutes; while by the churn I have frequently known it to be two or three hours.

12. It is probable the "Man of Kent" would cure the bad flavour of his butter, if he would keep his cows off his meadows; the Grass remaining over from last summer being withered and much decayed is eaten by the cows, and being of a musty and disagreeable flavour imparts its own offensiveness to the cream and butter. The "Man of Kent" should also examine his meadows and see that no weeds of early growth are the cause of the rancidity complained of; in some meadows, Chives make their appearance and spoil both milk and butter. Another and fruitful source of bad butter in the winter is the way in which it is made; the cream is allowed to be reduced almost to freezing, or, it may happen, is frozen, and as the temperature has to be raised some 30° or more before the peculiar sound of the "butter is coming" can be heard, all sorts of plans and nostrums are practised to get rid of the churn: add to this neglect or rather mismanagement the cream of stale milched cows, and what need be the surprise if the butter is not sweet and according to expectation. I would recommend your correspondent to adopt the preventive system, it is better than the curative; if his cows eat old and decayed Grass in his meadows he cannot have good butter, if they get at strong-scented herbs the butter will partake of the smell, if the cream is mismanaged before and during churning he must not expect pleasant butter, if his cows are too stale milched the butter will be rancid. If cleanliness and attention to the diet of the cows be looked to, cases of failure would be very rare.

13. The *Echo du Monde Savant* says, "An agriculturist in the neighbourhood of Brussels having succeeded in removing the bad smell and disagreeable taste of some butter by beating or mixing it in fresh water with chloride of lime, he was encouraged by this happy result to continue his experiments, by trying them upon butter so rancid as to be past use; and he has restored to butter, whose odour and taste were insupportable, all the sweetness of fresh. This operation is extremely simple and practicable for all: it consists in beating the butter in a sufficient quantity of water, in which put 25 or 30 drops of chloride of lime to 2 lbs. of butter. After having mixed it till all its parts are in contact with the water, it may be left in it for an hour or two, afterwards withdrawn, and washed anew in fresh water. The chloride of lime having nothing injurious in it, can with safety be augmented; but after having verified the experiment, it was found that 12 or 14 drops to a pound of butter were sufficient."

14. Wild recommends that the butter should be kneaded with fresh milk, and then with pure water. He states, that by this treatment, the butter is rendered as fresh and pure in flavour as when recently made. He ascribes this result to the fact that butyric acid, to which the rancid odour and taste are owing, is readily soluble in fresh milk, and is then removed.

15. There is a very general complaint against Turnips, that they give a bad taste to the butter; but this is not

necessarily the case. The fact is Turnip-milk will not keep as long as Grass milk, but gets rancid; and this is increased by the practice of keeping the churn near the fire in winter, which is sometimes done. The milk, on the contrary, should be kept cool, and warmed when churning by as much boiling water as it will bear. When yellow Turnips are used, the butter will be nevertheless a good colour; but if wanted with more of a yellow shade, dairy-maids use grated Carrot in a cloth, wet with boiling water, and squeeze it into the churn. As the milk does not keep, it is of great importance to churn often, at least twice, and if possible, three times a week, so that it cannot be let stand for cream, but churned whole. Where so frequent churning is impossible, it is useful to add one-eighth part of boiling water to the milk as it comes from the cow, and cover it over with a double cloth, which prevents the heat escaping, and imbibes the steam which seems to carry off with it the peculiar flavour which the Turnip would otherwise communicate; but under any management much will always depend on the cleanliness and attention of the dairy-maid. As a means of enabling people to churn often, and thereby get rid of the Turnip taste, I have lately introduced the French churn invented by Mr. Valcourt, which can be made of so small a size that the owner of a single cow may churn three times in the week. To dissolve salt-petre in water, and put a glassful of the liquid into the pail, before making, takes away the taste also in a great degree; but there is nothing effectual but frequent churning, and the milk may be strained in a sufficient quantity of buttermilk to ripen it more quickly.

16. I do not agree with your correspondent, never having found saltpetre would take away the taste of Turnips. I have a remedy, gleaned from your *Gazette* about a year ago; but the proportions were incorrect, and a churning or two spoiled in consequence, and this might be the case with others and cause it to be given up. When the cream is in the churn, and the proper temperature gained (57 degrees), I put in a little chloride of lime mixed in a little water. Of course the quantity depends upon its pureness, and also upon the degree of taint. I put as much as will lie upon a sixpence to three gallons. One or two trials will ascertain the proper quantity. Too much gives a disagreeable flavour, a little improves and gives a sweet nutty taste.

17. In your last *Agricultural Gazette* a correspondent complains that he could never give his dairy cows Turnips without spoiling the butter and the milk. I have given my milch cows for 50 years Turnips regularly in the winter, and both milk and butter have been perfectly good. The Turnips are Swedes or Aberdeen, and I take them up in October and carefully cut off every bit of leaf and root, and stack them in a dry cellar in my cow yard; if every bit of leaf be not carefully cut off it will taint the milk. Should your correspondent wish for further information I will readily answer his queries; or if he doubt my statement will send him a pat of butter to any place which he will appoint.

18. If your correspondent who wishes for information on this subject will direct his dairymaid to adopt the following very simple remedy, he need henceforth have no more of that disagreeable and unpleasant taste in his butter, occasioned by his cows feeding upon Turnips—viz., let his dairymaid, before going to milk her cows, place on the fire her kettle filled with water; and on her return to the dairy with the new milk, add to every gallon of milk a sixteenth, or half-pint of boiling water; stir both a minute or two, and after the usual interval pour them out into the lead, earthen, or (as the case may be), glass bowls. I practised this method the whole of last winter (and am doing the same now), when my cows had as many Swede Turnips as they could eat, and not the slightest trace of the Turnip flavour can be discovered. The water must be boiling when added, or the experiment fails.

19. I have never remarked this taste in this county, where the cream is separated by fire, and churns are unknown; the butter is made with the hand in a few minutes.

20. The letter of your correspondent Mr. Caird on Mr. Lawes's paper on Turnip culture in Devonshire induces me to say a word on the same side in behalf of the butter-eating part of the community, whose interests and those of the farmers are sadly opposed on this subject. For it is, I think, an unquestionable fact that wherever Turnip culture flourishes, there it is impossible to get any butter or cream that those who know what good butter and cream are would pronounce deserving of that epithet. In fact they are both, in Turnip countries, detestable; and to us butter-buyers in other counties the Devonshire pastures are thought of with many regrets, especially in winter, when every pound we buy seems worse than its predecessor. Now, Turnips in their proper place are doubtless good food, but it is rather hard in these improving days that one should have them in one's tea and bread and butter, spoiling one's breakfast every morning. I have no faith in any of the remedies sugested for taking away the taste, such as saltpetre, chloride of lime, &c.; they all fail, or leave another taste as bad as the Turnips. All modern improvements in agriculture have, or ought to have, for their object, to increase the quantity and improve the quality of human food; but in the case of Turnip culture, however much the quantity may be increased, the quality of butter and cream is changed from a capital article of food to a positively detestable one; and I really think the unfortunate public will soon lose all satisfaction in that most agreeable meal, breakfast, unless every man can afford to keep his own cows and feed them on other food. I do not know whether you will admit such heretical opinions into your journal, but I wish Mr. Mechi, Mr. Davis, Mr. Huxtable, and other great improvers, would add to the number of their good deeds by finding out how to make good milk and butter compatible with good farming, which at present they certainly are not.

21. "A. Z." discovers an unpleasant taste in the milk which has been placed in zinc vessels. He will be prudent if he avoids using them. The acid of milk forms with zinc a salt which is a deadly poison. It is said to operate by causing violent vomiting; but though the solution of it may not be strong enough to produce death by a single dose, or even to occasion vomiting, it can scarcely be doubted that it must be very injurious to health if frequently repeated. Zinc butter-churns were for a time recommended as increasing the quantity of butter by some galvanic effect; but they were found to make the food so dangerous and unwholesome that they have been in many instances, and it is believed, universally, now discontinued.

THE HON. G. D. RYDER AND HIS TENANT, MR. SAMUEL PHIPPS.

We referred the other week to the case of Mr. S. Phipps, late tenant of Longcroft Farm, near Hemel Hempstead, on the estate of the Hon. G. D. Ryder, who has given up his occupation rather than submit to the increased rent demanded by his landlord.

We are bound to add that the complete history of the transaction, which is now before the public, since Mr. Ryder has published his account of the matter, while it appears to strengthen the impression at first produced of the extreme impolicy of a tenant at will relationship between the owner and occupier of the land, does entirely exonerate the landlord in this particular instance from the charge of injustice or dishonesty, under which he appeared to lie. For let us quote Mr. Ryder's statement:—

"Mr. Phipps took to Longcroft Farm in 1854, on a tenancy from year to year, by his own choice, terminable on six months' notice at any Lady-day. He was offered a lease, but declined it—his reason being, as he has since told my steward, that he did not know whether the farm would suit him. His occupation, therefore, at 420*l.* per annum for three years, and of 430*l.* afterwards, was, from the beginning, subject to termination on such notice being given by either party in any year; so that this rent would endure, only if both parties continued satisfied with it from year to year. Last year, four years after Mr. Phipps entered upon Longcroft—the best four years together that farmers have known since the French war—I raised the rents on the whole of this estate. They were not high originally, as is well known. They had been reduced in bad times, and they had not been increased in the late good times. The new lettings in the neighbourhood, moreover, were on higher terms, owing to the enhanced value of land, and the competition for it. Mr. Phipps's rent, which, without taking his new house into consideration at all, was only a little above the old letting (the oldest and lowest on the estate), was raised with the rest, but in a rather higher proportion, on account of my large expenditure on a new house and farm-buildings having made them superior, in all respects, to those on any other holding. Now, Mr. Phipps disputes my equitable right to raise his rent at all; and what does his reasoning on this point amount to? Precisely to this—that, unbound as he was to me by his agreement for more than one year for his own convenience, I was not only bound to him for four years certain by the same document, but must actually retain him at the same rent for just that number of additional years which suited him. This view of a contract is at least a novel one. But Mr. Phipps's complaint becomes still more unwarrantable when the real facts regarding the new buildings are understood, which he has deliberately and entirely misrepresented. Happily there can be no doubt about these facts, as Mr. Phipps's letter sufficiently supplies them. And what are they? That I agreed to erect 'a good new brick house,' and 'to rearrange the farm buildings, and repair them' (see Mr. Phipps's letter, page 2). To these terms he consented, and they were embodied, as regards the buildings, in the agreement which he signed, in these words, 'Mr. Ryder agrees to adapt the buildings, which are to be put in repair, to feeding stock,' &c. No allusion of any kind, you perceive, was made to any new farm buildings whatever, before Mr. Phipps had settled to take the farm. On these terms, then, the rent was finally fixed, but not before Mr. Phipps had learnt distinctly from me, both by word of mouth and by letter (see Mr. Phipps's letter, bottom of page 2), that in a rent of 420*l.*, to which I eventually acceded, 'a new house had not at all entered into the calculation;' so that he was fully aware that I considered this rent inadequate, even in respect only of a new house. I should add that Mr. Phipps and his friends had pressed me very hard to pull down the old, and to erect new farm buildings; but I positively refused to do so, alleging the inconvenience of the expense, in addition to that of the new house, and the insufficiency of the rent, lowered as it was below my original demand, to yield any return on the house alone (see Mr. Phipps's letter, top of page 3). Not only, therefore, had Mr. Phipps no reason whatever to expect a new set of farm buildings at the rent fixed in the agreement, but he had every reason, which the most explicit terms on paper, and by word of mouth, could impress upon him, not to expect the erection of them at all. It suits, indeed, Mr. Phipps's truthful purpose to affirm that my letter of April 17 (see Mr. Phipps's letter, page 2), written before he had taken the farm, shows that my plan for the farm-buildings was 'then decided upon, and in the hands of the builder;' but that same letter expressly refers that plan to the house alone; and, even if the plan had related to the farm-buildings, it could only point to what I say immediately afterwards respecting them, that they should be 'rearranged and repaired.'

"But Mr. Phipps knows well that the question about the farm-buildings was never gone into at all, until November, when the house was being finished, and the workmen were expected to be soon at liberty to begin upon them. He cannot have forgotten, for he was present, that I then consulted Mr. Sedgwick, of Watford, as the best authority on the subject, respecting the cheapest and most effectual mode of 're-arranging and repairing the old buildings,' according to my covenant. Nor can Mr. Phipps be ignorant that it was only after receiving from Mr. Sedgwick a strong opinion against re-arranging and repairing at all, together with a plan for new buildings, which I showed to Mr. Phipps, that I finally determined, though with much reluctance, to face the great additional expense of erecting a whole set of new premises, which should be, as I was about it, of a first-rate character. Perhaps Mr. Phipps may remember my informing him of my new determination, and the gratification which it seemed to afford him.

"From this statement of facts it results that, as the new buildings were finished soon after Michaelmas, 1855, and the old house was turned into cottages soon after Christmas, Mr. Phipps had the enjoyment for nearly three years of admirable new premises, at the same rent as he had covenanted to pay for 're-arranged and repaired old buildings.' In other words, Mr. Phipps had the benefit of my outlay of capital (estimated by my surveyor at 1500*l.* beyond the covenant, the whole expense on the premises exceeding 3000*l.*) for that period, during which I received no interest upon it. Now, by the agreement, I had power to give notice to quit, on any one of those years, in order to raise the rent on a holding, rendered so much more valuable at my own cost. It does then seem most unwarrantable that Mr. Phipps should hold me forth to the world as having acted dishonourably, in at length, after these three years had expired, requiring some return on my expenditure, and at a time too when the enhanced value of land enabled me to raise the rents of my other tenants, whose premises were of a very inferior character. That the rent was not then put up beyond what the farm was worth has been sufficiently proved by the numerous applications which I received this year to take it at the same rent, although the prices were lower than last year, and the cultivation of the land had been let down by Mr. Phipps for the last 12 months, with a view to quitting the farm this year by his own option."

We extract one more passage:—

"I proceed, secondly, to consider his special ground for questioning this right, viz., that I raised his rent after promising that I would not, and then profited by the outlay he was thus induced to make.

"Mr. Phipps founds this statement on a conversation which he had with Mr. Tranter, my steward. Now the facts relating to this conversation are as follows:—Towards the close of the autumn of 1856, Mr. Tranter mentioned to me that Mr. Phipps gathered from some observations of mine to him, that I was dissatisfied with the rent he paid me. To this I replied that I certainly was so, as I had laid out so large an additional sum on the buildings beyond the agreement, for which I received no return; whilst Mr. Phipps seemed never contented with anything done for him, and was always pressing me for more buildings still; but that, as he had been put to inconvenience during their construction, I should not then raise the rent. I sent no message, however to Mr. Phipps on the subject, nor did I even know that Mr. Tranter would communicate with him upon it. When therefore some days afterwards, Mr. Tranter told me that he had done so, I felt some surprise and misgiving, and immediately expressed my hope that he had taken special care to limit my not raising the rent to the present. He assured me, as he still assures me, and has always maintained before Mr. Phipps and others, that he was particularly cautious on this point, because I had been so explicit myself upon it, as well as in stating how dissatisfied I was with the existing rent. From Mr. Tranter's high character, as well as from the most obvious considerations, I entertain no doubt whatever that he committed me no further than for the present. His only object, in naming my observation to Mr. Phipps at all, was to set his mind at ease respecting the coming season, that he might act accordingly. If Mr. Tranter was in his right senses he could have committed me no further; and how could Mr. Phipps suppose that I, if I also was in my senses, should bind myself verbally to him in a conversation with another person, to set aside the written agreement by continuing for an indefinite period (to be determined apparently by Mr. Phipps himself) the existing rent, with which he well knew I neither was nor could be satisfied; and, as you have seen, with very good reason? Solely, then, out of consideration to Mr. Phipps, the rent remained the same for two years longer, as the higher rent only began at Michaelmas last. I repeat that this was done solely out of consideration for him, because the new buildings having been completed before the close of 1855, if I had put on a higher rent either in 1856 or 1857 (which I was at liberty to do), and Mr. Phipps had

refused to give it, or if he had not cultivated his land properly, there can be no question whatever that having such a house and premises to offer, produce being at so high a price (much higher than now), and competition for farms so eager, I could have instantly obtained a substantial successor to him, at the rent I asked, who would have laid out his capital on the farm, in the place of Mr. Phipps. He and his capital, therefore, were no necessity to me, as he seems to imply. Moreover, it was my obvious interest to raise the rent at once, whilst the times were good, which might not last; so that I could have no inducement to keep on Mr. Phipps at the old and inadequate rent, except a wish to compensate to him liberally for the inconvenience to which he had been put, by the erection of the new farm-buildings, during the first year of his tenancy, and for any extra expense to which he might have been put in improving the land."

Home Correspondence.

Coleman's Grubber.—I see the answer to a question as to a two-horse cultivator in your last *Gardeners' Chronicle*. Coleman makes a small one for two horses. I have had one of him with only four teeth, and I find it very useful. At first through the workmen not properly understanding how to work it it was upset on the side of a hill and damaged, but since that the men know how to manage it, and find it very handy; yet I am far from certain that your advice is not the best—to have a larger one, and use only as many teeth as you have power to work. Yet I imagine care must be taken to have as much weight on one side as on the other; one tooth in the centre, two teeth on one side, and one tooth on the other side would, I imagine, make the cultivator work very heavy, and incline it to one side. I saw in your paper some time ago a statement that Howard's two-wheel plough would not work well without the wheels. I have one which is worked fully as much without the wheels as with, and I find it work excellently without the wheels; in fact, I have a Scotch plough which my men will never use if they can get Howard's plough. In Carmarthenshire, where my farm lies, swing ploughs only are used, and none of my men will use the wheels to the plough if they can help it; yet they praise Howard's plough without the wheels very much. Mine has a steel mould-board, which I think is a very great advantage; it cleans itself in all land, and I think must make the work for the horses lighter. It lays even soft Turnip ground in furrows much the same as if it were lea ground. *D. S.*

Foreign Correspondence.

Bruges.—While treating some weeks ago of the Flax crop, we promised to take up at a future period the consideration of points connected with the manuring of the land, its preparation for the seed, &c.; that promise we now redeem. And first as to manures. These are used in the two forms of liquid and solid. Of the former are the *vidanges* (human excretæ, for our notes on this subject see a former article), diluted with the urine of the stock; the *purin*, and the oilcakes dissolved in water on the *purin*. The liquid manures play an important part in the Flax culture. In the Courtrai district as you walk along the highway or the farm roads, you will see close by their sides long Grass-covered circular mounds. On a closer examination you will discover that these raised parts are the semi-circular roofs of liquid manure tanks. These are generally provided with a large aperture having a cover, and through which the contents are supplied to and taken out of the interior when required. At the end of the tank a small aperture is provided communicating with the external atmosphere, and through which the air is admitted to the interior. The tanks being generally placed at the roadside the *vidanges* are easily supplied to them from the conveyances which bring them from the towns. The solid manures employed are very numerous, as the court-yard manure, that of sheep and hogs, crushed oilcake of Colza or other oleaginous plants, as the *oillette* or the cameline-guano, the mud scrapings from the road, Peat ashes, chalk, and marl. In the Pays de Waes, a celebrated district or part of East Flanders, they employ universally cattle manure and *vidanges*; the oilcakes are not much used excepting in certain soils containing iron. The manures above mentioned are not usually applied to the Flax itself, the soil having obtained a rich manuring for the previous crop. In Courtrai district the oilcakes are generally employed; those of Colza, reckoned a cold, and of *oillette* reckoned a warm manure, being mixed together. The mixture of the two is considered to be beneficial, as the *oillette* is considered to quicken the growth too rapidly. In the province of Hainant, the manure used is *purin* and oilcake, well diluted. In the provinces of Namur and Brabant the liquid manures are rarely employed.

The preparation of the soil for the Flax crop is of the utmost importance; unless it is well worked so as to have a fine tilth and of considerable depth, and the manure well mixed, no specially good crop need be expected. Flax loves a well divided soil, deep into which to send its roots, and rich in fertilising manures. The working of the soil previous to the sowing of the seed varies in different districts, and also according to the crop which the Flax succeeds. We select from M. Demoor's practical work on the "Flax culture," the following points in connection with the preparation of the soil in the districts of Courtrai and the Pays de Waes. Before giving these we may here note that where the Flax succeeds the Hemp crop, and where the land has received a strong application of *vidanges*, there is every prospect of an excellent crop. There is a proverb embodies the popular belief in some districts that the Flax does best in the land which has borne Hemp, and been so treated, and which may be thus paraphrased:—

> If thou sowest thy Hemp in well manured land,
> Thou holdest thy fine Flax already in hand.

The Flax is of the best quality when it succeeds the Clover. In Flanders it usually follows the Wheat or the Rye, followed by a crop of Turnips which are well manured, well watered. Flax after Bere does well where the soil is in good condition; after Potatoes gives the worst crop.

To proceed with our notes on the preparation of the soil in the Courtrai district. In this district the Flax generally succeeds the Oats, the Rye, or the Clover; the first working is given to the soil as soon as the crop is off the ground. Immediately after this is done or after the interval of a few days, the instrument called the *traineau* is hauled over the ground to break the clods, and to destroy the weeds, &c. The *traineau*, an implement peculiarly Belgian, is of very simple construction. It is a frame of wood narrower at one end, that to which the draught chains are attached, than at the other; it is partly or wholly covered with planks; while being drawn over the land the driver stands upon it and gives weight to its action and keeps it level. To return: after the labours of winter are over a second working is given to the land, so as to get a fine tilth, and as deep as possible. In stony and wet lands thus they give a working to the land before winter, throwing it up into ridges more or less elevated, which they afterwards spread out into large flats more or less curved in outline. Towards spring advantage is taken of the first fine weather to work the land, and to give it a harrowing. After this the first preparation of the land it is well manured with a mixture of *purin* and oilcakes, which is taken to the field in barrels containing from 3 to 5 hectolitres, and spread uniformly over the land by means of a scoop provided with a long handle. The oilcakes are added to the *purin* some eight or ten days before the mixture is taken and spread upon the land. The proportion of oilcake to the *purin* is from 1200 to 1600 of the former to 200 to 300 hectolitres of the latter.

For wet lands the oilcake is also used as a manure, but in the solid form. It is reduced to powder and spread upon the land as uniformly as possible. A mixture of oilcake, of Colza, and of *oillette* is preferred to Colza alone. After the oilcake dust is distributed over the land, *purin* is applied as a liquid manure by means of the manure cart, to the extent of 150 to 175 hectolitres the hectare. After the land is dry enough, they harrow it three or four times, and afterwards pass the roller over to consolidate it. Three or four harrowings are again given at the end of three or four weeks, after which the land is ready for the seed. In West Flanders generally the land is worked by means of the plough; in a great part of East Flanders by the spade. The farmers of the Pays de Waes treat the land very much in the same manner as those of Courtrai. They work it well in the early fine weather of spring, spreading over it *purin* at the rate of 12 to 16 cartloads to the hectare. Others use generally the Dutch cinders with the *purin*. Although considerable diversity of practice is observable in this district in the modes of culture—sometimes not giving any working to the land before winter, at others working and harrowing it vigorously—still on one point all are agreed: namely, the necessity—if a good crop is desirable—of preparing the soil by good manurings and waterings of liquid manure (*vidanges*).

The following is a statement of the cost of preparing a hectare of land for the seed. In Courtray, from 452 to 475 fr., made up thus:—rent and taxes, 98 fr. to 111 fr.; manure, oilcakes, and *purin*, 322 fr. to 332 fr.; ploughings, harrowings, 32 fr. In the district of the Pays de Waes the cost per hectare is from 502 fr. to 625 fr.; rent and taxes, 120 fr. to 170 fr.; solid manure, 160 fr. to 181 fr.; liquid manure, 175 fr.; labour, 47 fr. to 50 fr.

The land being prepared as we have indicated, the sowing is proceeded with. In accordance with the time at which the seed is put in so is the quality of the Flax. If the sowing takes place during the period from the end of March to the 10th of April, the Flax obtained is known by the name of "*Lin tardif*," or of slow growth; if the sowing is performed during the period from the 15th of April to the end of May, the Flax is known by the name of "*Lin hâtif*," or of quick growth. The former quality yields a fibre fit only for ordinary purposes; it never acquires the fineness of the latter species, which affords a fibre fit for all purposes. In Flanders the time of sowing is greatly regulated by the fineness of the weather. The seed is sown broadcast, the quantity generally being 200 kilogrammes to the hectare; the quantity, however is regulated by the quality of the soil and the destination of the plant; if it is cultivated for the fibre it is sown thicker than when it is grown for the seed. In West Flanders the Flax is almost always sown alone; in East Flanders they obtain two products, sowing with the Flax Carrots or Clover, the Flax being the first, the Carrots or Clover the second crop. The Carrots and Flax seed are often sown together, while the Clover seed is not sown till the cotyledonous leaves of the Flax show above the surface of the ground. After the seed is in, it is covered with the harrow, and finally rolled with a light roller drawn by a man. Flax is grown in two ways, *non ramé* and *ramé*, that is, where it is allowed to ripen self-supporting; and, as in the latter case, where the fibres are supported by a means similar to garden Peas. This latter method is only employed where the fibres are required of the finest quality. For Flax cultivated *ramé* the quantity of seed is much less—a half or a third—than that for Flax grown *non ramé*. After the thinning or first weeding takes place, stakes from 16 to 20 centimetres in length are driven in the ground, at a distance from each other of a metre; these stakes support a species of net-work formed of little rods or switches, which support the Flax as it grows.

Towards the 12th or 15th day after the sowing, the weeding is proceeded with. This is performed by females by preference, who, divested of their shoes or wooden sabots, and kneeling down against the wind, weed out the plants foreign to the crop, and at the same time give a light stirring to the soil at the foot of the plants. Sometimes more than one weeding is given to the crop to clear it of all weeds, &c. The crop being thoroughly cleaned, it is left to itself till ready for pulling. The flowering takes place in the *Lin hâtif* towards the latter end of June or the beginning of July; later for the "*Lin tardif*."

Thus far have we followed the Flax crop; we may at a future time devote a paper or two to a brief detail of the methods adopted in pulling and stacking the crop, of saving the seed, and of the process of retting. Meanwhile those of our readers desirous of going more deeply into the subject than the space at the disposal has admitted of, cannot do better than consult the pages of M. Demoor's work "*De la Culture du Lin*," or of M. Ledocte's "*Manuel du Culture*," both of which are published in Brussels.

Societies.

ROYAL AGRICULTURAL OF ENGLAND.

At the half-yearly general meeting held on Monday Mr. R. Milward moved the election of Lord Walsingham as President for the next year.

Col. Challoner seconded the nomination, which was carried unanimously.

Mr. B. Gibbs then read the following *Report of the Council.*

The Society consists at the present time of—78 life-governors, 130 annual governors, 927 life members, 4008 annual members, 18 honorary members, making a total of 5161 names on the list. The Council has elected Lord Leigh, of Stoneleigh Abbey, a member of the Council, to supply the vacancy caused by the resignation of Sir Archibald K. Macdonald, Bart. The funded capital of the Society stands at 10,000*l.* stock, in the New Three per Cents. The Council has appointed Professor Spooner, of the Royal Veterinary College, joint Veterinary Inspector with Professor Simonds, at the Annual Country Meetings of the Society. This step has been found necessary in order that every facility may be afforded for a thorough examination of the animals sent to the shows, more especially as to their freedom from any hereditary diseases, which might be transmitted to their progeny; and also as to whether the state of dentition fully bears out the ages stated in the certificates. The Council has decided that Professor Voelcker, the Society's consulting chemist, shall investigate the following subjects:—1st. The changes that take place in liquid manures, in passing through different soils. 2d. Experiments on top-dressing of Wheat and Barley. 3d. The different modes of applying manure in autumn and spring. 4th. The nature and physiology of cultivated Turnips, being a continuation of his experiments connected with this subject. The Council has determined to amend the wording of the rule regulating the members' privilege of analyses, so as to prevent dealers or manufacturers of manures availing themselves of the reduced scale of charges, which has been secured for the benefit of such members as may require these analyses *bonâ fide* for their own personal use as agriculturists. The Warwick meeting (to be held in the week commencing Monday, July 11th) promises to be of a highly interesting character. The arrangements for the meeting are steadily progressing. The entries for implements are so extremely large as to require six sheds to be added to last year's plans, in the implement department alone; and the applications for space in the yard devoted to "machinery at work" are also far greater than on any former occasion. The entries for live stock will, as usual, be received up to the 1st of June. The numerous applications for certificate-forms that are being received daily indicate that this portion of the show will at least be equal to any former exhibition. The local committee at Warwick having declined to undertake the arrangements and expenses connected with the dinner during the Society's meeting, the Council has determined to adhere to the resolution of last year—not to take these responsibilities on itself on the present occasion. The special attention of the General Warwick Committee has been directed to the subject of the supply of refreshments for visitors in the show-yard during the exhibition; and such arrangements have already been made and are still in progress as, it is hoped, will secure to the public due accommodation in this respect, at a fixed tariff of charges. Since the Society first prominently drew attention to the important subject of the application of steam-power to the cultivation of the soil, by offering a special prize of large amount, several inventions and improvements have been brought before the public; and the advancement made was such as to lead the Council to award the prize of 500*l.* at the Chester Meeting last year. As no doubt further improvements have since been made, it may be confidently expected that the trials to be carried on at Warwick, under the direction of the Society's Judges, will prove an interesting feature in the meeting, by affording agriculturists an opportunity of personally inspecting the different inventions that will then be brought together in competition. The Council has decided that the Country Meeting of next year, for the South-eastern district (comprising the counties of Kent and Surrey), shall be held at the city of Canterbury. The accommodation offered and guaranteed by the authorities promises to be unusually convenient and complete. The Council has the satisfaction of recording that the interest taken by agriculturists generally in these annual exhibitions appears steadily to increase, and that year by year greater anxiety is manifested by the authorities and inhabitants of the principal towns within the district proposed to be visited to secure the Society's meeting being held in their respective localities, and to offer every facility in their power to aid the Council in carrying it to a successful issue. In conclusion, the Council congratulate the members on the steady

progress of the Society in accomplishing the various important objects for which it was established.

(By order of Special Council, May 20th, 1859.)

The report was adopted.

Mr. R. Barker, chairman of the Finance Committee, presented the following balance-sheet:—

HALF-YEARLY ACCOUNT, EXTENDING FROM THE 1ST OF JULY TO THE 31ST OF DECEMBER, 1858.

RECEIPTS.

	£	s.	d.
Balance in the hands of the bankers, July 1, 1858 ..	2225	15	9
Petty cash balance in the hands of the Secretary, July 1, 1858	3	14	4
Dividends on stock	146	17	6
Governor's life-composition	50	0	0
Governors' life-subscriptions	30	0	0
Members' life-composition	167	0	0
Members' annual subscriptions	664	2	0
Journal receipts	187	8	6
Sale of horse-shoeing tracts	17	18	10
Country Meeting receipts:—			
Salisbury	14	1	0
Chester	4566	15	7
	£8073	13	6

PAYMENTS.

	£	s.	d.
Permanent charges	179	17	6
Taxes and rates	15	17	6
Establishment	631	8	3
Postage and carriage	18	14	2
Advertisements	7	7	6
Journal payments	648	2	6
Essay prizes	120	6	0
Veterinary grant	100	0	0
Chemical grant	150	0	0
Country Meeting Payments:—			
Chester	4792	8	1
Subscription (paid in error by banker) returned ..	5	0	0
Purchase of 735*l.* 11s. 1*d.* Stock in the New Three per Cents	717	3	4
Sundry items of petty cash	4	7	9
Balance in hands of the bankers, Dec. 31, 1858 ..	649	11	6
Petty cash balance in the hands of the Secretary, Dec. 31, 1858	0	15	5
	£8073	13	6

(Signed) THOMAS RAYMOND BARKER, Chairman, C. B. CHALLONER, } Finance Committee.

Examined, audited, and found correct, this 20th day of May, 1858.

(Signed) JOSEPH DRUCE, GEORGE T. RAYMOND BARKER, } Auditors on the part of the Society.

Thanks were voted to the auditors. The election of the Council then took place, and with one exception, the house-list was adopted. Three new members of Council were elected, viz., Mr. J. W. Buller, M.P., the Hon. Augustus Vernon, and Professor John Wilson. Colonel Challoner proposed that the cordial thanks of the meeting be given to his Grace the Duke of Marlborough, for the services which he had rendered to the Society as President. Mr. H. Corbet, in seconding the motion, regretted that in consequence of the Council having determined to get rid of the annual dinner, they would not have an opportunity of seeing him preside over a full gathering of the members. The motion was carried by acclamation.

A WEEKLY COUNCIL was held Wednesday, June 24. Present, Sir John Johnstone, Bart., M.P., in the chair.

The names of candidates for election were read.

Mr. Fisher Hobbs, in accordance with the arrangement made at the last Council, favoured the meeting with the following statement of his practical experience in preventing the ravages of the Turnip-fly:—

"Having been requested at the last meeting of the Society to introduce to the notice of the members my experience of, and mode of treatment for, preventing the ravages of the Turnip-fly, I readily consented to do so with, however, the understanding that what I had to say should be given more in a conversational form than as a paper specially prepared for the occasion. I was induced the more to respond to this invitation in the hope that it might act as something of an example for other members, and that the Weekly Council Meetings of the Society might become of some interest and service to us all, by affording the time and place for talking over subjects of passing importance to agriculturists generally. In introducing this subject I wish you particularly to understand that I have no new theory to expound, but merely to impress the result of my practice and the policy of carrying out certain principles which have long been known and admitted; but, I fear, not sufficiently observed. My remarks on the cultivation I should here state are intended to apply more to the Swede Turnip than to any other varieties which are generally grown after green crops, but the great work of destruction by the fly is applicable alike to both. As 'prevention is better than cure,' I shall commence with the preparation of the land, assuming that this has been thoroughly under-drained wherever requisite. 1st. I consider that autumnal cultivation is essentially necessary; first, by broadsharing for the destruction of weeds and insects, as well as for the aëration of the soil. 2d. That deep ploughing should follow, and subsoiling if required, and it is frequently my practice during the early part of winter to carry on to the land intended for a root crop the unfermented manure direct from the yards or sheds, and at once plough it in, and not a particle must be suffered to be seen on the surface; this I believe to be important, for if not attended to the undecayed portion of the manure becomes a receptacle, and subsequently a nursery for insects. 3d. That at the commencement of spring it is most desirable, as soon as the state of the land will permit, to apply the harrows and roll, especially the former. I believe that more good may be done towards the destruction of insects of various kinds at that period than at any other throughout the year. Afterwards scarify, harrow, and roll until the land is in a pulverised state, and for a fortnight or three weeks before the time for drilling let the land remain like a seed-bed, so as to attract moisture, to allow vegetation for the seeds of weeds and for insects to deposit their larvæ; this is frequently termed 'purging' the land. I need not refer to the common mode of applying the fermented or partly rotted farm-yard manure for the Turnip crop, except to state that it ought at once to be ploughed in, and the seed deposited immediately. 4th. That at the time of drilling the seed it is best for the land to be ploughed (but some prefer scarifying only), and the seed to be immediately deposited. This is so important that I have frequently known total failures from the neglect of so doing. There is another point which I would strongly recommend, that is, in dry and sunny weather to plough and sow early in the morning and late in the afternoon, but never during the heat of the day. I know an instance where the most signal success has for several years attended this mode of operation, and where the manager has never failed to secure a plant, although he is one of the old school, and still sows the seed broadcast with his own hand. This can be confirmed by several large farmers in the neighbourhood, who, strange to say, notwithstanding the example thus placed before them, continue to incur an amount of loss from having to sow two or three times, simply from the obstinacy and prejudice with which they continue to adhere to the customary working hours for their horses and men. 5th. That at the time of depositing the seed it is my invariable practice to use some description of artificial manure, generally superphosphate of lime, and I likewise add about 30 bushels of ashes per acre, made from hedge trimmings, weeds, &c., collected upon the land at different periods throughout the year. The roller may now be used with great advantage, before, and sometimes after the drilling. In dry weather I strongly recommend the application of the liquid manure drill. 6th. That before or immediately the young plants appear, the horse-hoe should be resorted to for the purpose of destroyed the ova or larvæ of the insects to prevent their coming to maturity. When once the plant is well up the roller may sometimes be applied with much benefit as it tends still further to disturb the insect tribe, as well as to retain moisture for the young plant, and to consolidate the farm-yard manure where lately applied. At this period the plant requires frequent watching throughout the day, and if the enemy shows itself in any force set to work as quickly as possible to accomplish its annihilation. Having described to you briefly my mode of prevention, I will now proceed to give you the cure, which is simply by the application of one or more 'top-dressings.' I have tried various experiments, steeping the seed, and top-dressings for upwards of 30 years, but though sometimes successful I could not depend on any of them until I adopted my present system, and I think it is only fair that I should state that I derived the chief features as to the use of this top-dressing from my late bailiff Mr. O. Hawkins, who came to me some nine years since with an especial recommendation on this point; in fact, he himself engaged to secure the Turnip plant from the ravages of the fly, adding that he was willing to give up his situation immediately if he could not do so. I can only add that for eight years, during the whole time he was with me, he fulfilled all he promised in this respect. The following is Mr. Hawkins's recipe for a top-dressing:—1 bushel of white gas-ashes, fresh from the gas-house; 1 bushel of fresh lime from the kiln, 6 lbs. of sulphur, and 10 lbs. of soot, well mixed together and got to as fine a powder as possible, so that it may adhere to the young plant The above is sufficient for 2 acres when drilled at 27 inches. It should be applied very early in the morning, when the *dew is on the leaf*—a broad-cast machine being the most expeditious mode of distributing it, or it may be sprinkled with the hand carefully over the rows. If the fly continues troublesome the process should be repeated; by this means 200 to 220 acres of Turnips, Swedes, and Rape have been grown on my farms annually for eight or nine years without a rod of ground losing plants. The above is a strong dressing to be used when the fly is very numerous, and has never failed when applied at night. Numerous experiments have been tried, and amongst them I recommend the following in ordinary cases, and intend to use it during the present season if necessary:—14 lbs. of sulphur, 1 bushel of fresh lime, and 2 bushels of road scrapings per acre, mixed together for a few days before it is used, and applied at night, either by means of a small drill, or strewed along the rows by hand. I have known sulphur mixed with water applied in a liquid state by means of water-carts during the night and the horse-hoe immediately following the water cart. This has succeeded admirably. In consequence of the dryness of the climate in my neighbourhood (the rain-fall being on the average only about 16 inches annually) I usually sow on the flat; but the dressings above-named are equally applicable to crops sown on the ridge. I would strongly impress the necessity of frequently applying the horse-hoe. It is not my intention to enter upon the subject of the history, habits, and transformations of the various insects that infest the Turnip crop, but I would rather refer you to Curtis's excellent treatises on the subject, which appear in our journals. I think that these papers might be reprinted with great advantage in a cheap form in something of the same style of pamphlet as Mr. Miles's Essay on Horse-hoeing. I am quite sure there is no subject of which the farmer has so little scientific knowledge as entomology, nor is there one that has had less attention paid to it by the Society. In offering these rough notes to your notice I am fully aware of the little information I have given, and I wish you to understand that I feel I have only acted up to the principle which I have always endeavoured to observe in the course of my agricultural career. I have ever been anxious to impart information as well as to acquire it. I have no secrets to keep, and in my opinion there ought to be none in farming. The system I here recommend is founded upon my own practice and experience, and for many years I have proved and can answer for its efficacy. I am induced from these results to conclude that by care and attention the Turnip plant may be as effectually and as certainly freed from the ravages of the fly as seed Wheat has been for upwards of the last 20 years from smut and other destructive fungi."

Mr. Nesbit, in reply to a question from the Chairman, stated that the paper read by Mr. Fisher Hobbs was calculated to be of great benefit to the farmer. Mr. Hobbs's experience extended over a period of nine years, and whilst using the substances mentioned, in the manner indicated, he had not lost one rod of Turnips. It was evident that the most important ingredient in these mixtures was sulphur. In the "gas-ashes," or rather "gas-lime," sulphur was found in considerable quantity. Gas lime was produced by using lime in proper receivers for the purpose of absorbing sulphur from gas. When applied in quantity to land in its original state it destroyed all vegetation. When mixed with earth and turned over for a twelvemonth it became more mild, and might be used with safety. The quantity mentioned by Mr. Fisher Hobbs could not possibly do any harm, and as its application had been successful for some years, he would not himself recommend any considerable alteration in the quantity to be applied per acre. The use of soot, he thought, was decidedly right. In the case of using sulphur with lime, their union, if properly effected by slaking the lime and making the mixture moist, would give a compound of lime and sulphur somewhat analogous to gas lime, and possessed of similar properties. This mixture might of course be made in any locality where gas lime could not be obtained, but near most towns the gas lime might be had for the trouble of fetching it. Dry road dust added to the compound would render it capable of being sown, and the presence of the former on the leaves would present a mechanical difficulty to the ravages of the fly. Sulphur unassociated with an alkali or an alkaline earth, such as lime, though it might be to some extent advantageous, would require to be used to such an amount as to entail an unnecessary expense. The experience of Mr. Hobbs was very interesting in a scientific point of view, as it gave an increased importance to some previously well-known facts, as, the oïdium or Grape disease had yielded to the action of alkaline sulphurets, and on the Hop plant sulphur had been found beneficial both in the case of the mould and the fly. The working of the soil at night or morning when the dew was on the ground, he thought was worthy of the serious attention of the farmer.

The Hon. Leslie Melville said, that on his dry and shallow soil he had found by experience that late ploughing should be avoided. His attention had first been drawn to this fact in the Essay in the Society's Journal, and he had found it borne out in practice that no ploughing should be done later than March, and all subsequent preparation should be by scarifying, &c He had also found (by experiment) that both Turnips and Potatoes answered best on such soils as his own, when the drills run north and south, as the plants partially shade each other during the intense heat of the day. He also named that he had found a composition manufactured by "Price's Candle Company" most effective against the green-fly and red spider in his greenhouses.

Mr. Spooner, of Southampton, had made experiments last year by measuring out three plots of his Turnip crop, to which he applied the following dressing:—1st, sulphur; 2d, lime; 3d, soot. From the sulphur he found no effects; from the lime a little benefit; and from the soot the most. With reference to the gas lime he believed that the smell might be greatly instrumental in keeping the fly away, as that insect possesses the sense of smell in a high degree.

Mr. Nesbit, in answer to a question put to him, stated that he was of opinion that the action of sulphur by itself would be but little—and unless in considerable quantities almost inert. He believed almost the secret of the success to be that the lime rendered the sulphur soluble.

Mr. Badham stated that he had found rolling young Turnips to be very beneficial.

Mr. Slaney, M.P., inquired of Mr. Hobbs whether he considered that sand would answer as well as road scrapings—because the latter in many districts could not be obtained.

Mr. Hobbs replied that in his opinion any sharp grit would answer the purpose, because he had observed that after heavy rain had caused any grit to adhere to the young plants they had generally escaped the ravages of the fly. He would impress upon all who wished to try experiments the necessity of applying the dressing by night when the leaves of the young plant are *wet with dew* and when the insects are on the surface feeding.

The thanks of the Meeting were voted to Mr. Fisher Hobbs for his interesting communication. A letter from Mr. Smith as to Steam Cultivation was referred to the Implement Committee. A letter from Miss Banister was read, and a specimen of the growth of Dactylis glomerata (Cock's foot Grass) was laid on the table.

Farmers' Clubs.

OXFORD: *Dipping Sheep.*—Mr. Mein introduced the subject of which he had previously given notice, namely, "Sheep Dipping," and said that his reason for choosing it was because he thought it was an interesting one and capable of improvement, in addition to which it was one to which the attention of chemists should be directed. Sheep dipping had been practised for the last 30 years; the previous plan was to run the mixture along the sheep's back, tail, and head, and this was used with success for the prevention and cure of scab, lice, and other cutaneous diseases to which sheep were liable, but for the cure of scab he had found nothing so efficacious as spirits of tar and tobacco juice. The principal aim in sheep dipping was to kill the tick and prevent the striking of the fly, without injury to the constitution of the animal, but great care was necessary in the manufacture of the dipping preparation, as well as in the applying it. In making the mixture strong, to kill the tick, they had no doubt succeeded, but it oftentimes affected some sheep considerably, while others of a strong constitution walked off with impunity. He disapproved of many of the sheep-dipping compositions, and, as he did not intend to puff any, he would, without mentioning names, state that he had used two which he had found answer very well, and from which he had had no deaths. He had, however, seen cases where the little sheep, and those with a weak constitution, had been completely paralysed after being dipped, and a great deal depended on whether it was done in good or bad weather; if done in bad weather, it was injurious to the wool, as well as to the constitution of the animal. He had seen some sheep in good condition that were completely salivated; and it was worthy of notice that ram breeders did not dip their rams at all, because they believed that it injured their breeding powers; and without a great deal of care was used, he believed that it affected the ewes in the same way, and caused them to be barren. Even in the present system of dipping, they got the oil neutralised, and, for want of that oil, the wool was dry, and the sheep suffered by the rain penetrating to the skin. They ought always to dip in very dry weather, for if they did it in wet or stormy weather they would not dry. The best time for dipping was in June, July, or August, when the wool had grown. Shepherds did what they could to prevent the fly striking, but it was necessary that every one should study his flock, and dip in the best way, and at the best time. Chemists could not be too careful in mixing the preparations, and if that rule was not attended to, it might cause a great deal of injury and death to the stock, and give rise to litigation. In many mixtures, fish oil and soft soap were used to assist and promote the growth of the wool, adding to it what they took away, but generally speaking, the dipping preparation were not what they ought to be. Mr. Mein concluded by moving the following resolution:—"That this club wishes to draw the attention of chemists to the sheep-dipping compositions at present in use, and to solicit them to devise one that would be equally efficacious, but not so injurious, to the animal." Mr. Watson seconded the resolution, and remarked that he had been in the habit of employing persons to dip his sheep, for which he paid them so much a score. The party provided the preparation, and he had had very good luck and no loss, and had experienced very little injury either with regard to the wool or to the health of the animal. *Oxford Journal.*

Calendar of Operations.

MAY.

ISLE OF ELY, *May* 17.—It is now raining hard after a week of brilliant sunshine and strong searching east and north-east winds. The nights have been uniformly cold and slightly frosty, and vegetation has progressed very tardily; and until

we have a change of wind, and get some genial and life-giving breezes from the south-west, we can hardly expect luxuriant vegetation. The time of year has now come, however, when we may reasonably expect the advent of spring weather. The Wheat plant maintains its vigour, and perhaps has been benefited rather than otherwise by the severity of the season. A few weeks ago it was growing too rapidly, and was getting full of coarse Flag, and consequently was beginning to fall about in all directions, and looked weak and unpromising; but the cold dry winds of the last fortnight have stiffened and strengthened it considerably, and it is now as magnificent in its appearance as we could well desire to see it. Some of the thinly planted crops on our weakest and poorest fen soils are improving, and with seasonable weather may yet produce a fair crop. The Oat crop has suffered most from the cold dry winds and frosty nights, and where infested with wireworm has lost plant considerably. Unless we get a speedy change we must inevitably have a very patchy and broken crop, which generally produces a very poor yield. Beans are beginning to run, and are thickly planted, but have in thousands of instances, in consequence of the frost, lost the eye, and must make a fresh lead before they can run. How far this may affect the crop we venture not thus early in the season to predict. Most of our Fen farmers have sown their Mangels, and those first planted are just beginning to show themselves, and look unusually strong and healthy. This is an invaluable crop, and is becoming much more extensively cultivated. Grass keeping has become more scarce than it was a month ago, and where stocked at all heavily has wasted fast. It now wants a thoroughly good rain with warm nights. The Clovers for mowing are very little forwarder than they were six weeks ago. The price of both lean and fat stock has been lower, and sales have been very slowly effected. The corn trade has manifested great unsteadiness, advancing 10*s.* per quarter one week, receding from 6*s.* to 8*s.* the next, and again advancing 3*s.* to 4*s.* the next. We can scarcely expect steady prices again, so long as the war in Europe is continued. *Your Fen Reporter.*

Lammermuir Sheep Farm: *May* 18.—The spring set in mild and genial, but true to the old proverb, "February Grass is April hunger," the weather changed for the worse and we had a very barren month of April, making Grass scarce enough at a time when every green blade is prized. Notwithstanding the unfavourable weather, the loss of young lambs has we believe been below the average; and now that May has set in fine, we have Grass in the fields and may hope speedily to see the hills change their winter grey for a clothing of livelier green. The lambing season being now nearly over, it is good practice to separate and keep by themselves the few ewes that are still in lamb, the better to avoid loss of lambs by strangling in the birth, which is sure to follow on the customary but slovenly practice of marking the "grit" ewes and turning them to the hill with the rest of the flock, there to take the chance of being seen by the shepherd in the course of his usual rounds. We have noticed that the loss of lambs at this stage of the lambing season, and from the above-mentioned cause, is quite out of proportion, considering the small number of ewes in hand. The lambs are much larger when born, and the ewes seem to go over their time when the weather is warm and sunny. Each year's experience convinces us the more thoroughly of the advantage, in fact the necessity, of having, even on strictly pastoral farms, one or two Grass fields for this and other purposes. We have begun to work our fallows, but they turn up decidedly out of temper, either from the want of frost or from excess of moisture during winter, and the droughty weather of the last fortnight only confirms them in their obstinacy and stubborn resistance. The usual small extent of Swedes is being sown, and we have ventured upon a plot of Mangel which (should we succeed in growing in our high climate) will no doubt be a valuable addition to our spring keep, *J. S. B.*

Notices to Correspondents.

Beetroot Distilling (Leplay's System): *A. Z.* It consists in fermenting the juice while still in slices of the root, and in passing over-heated steam through vessels full of these slices after the fermentation is completed. Mr. Weekes, of Bolney Lodge, Sussex, has stated in the *Times* that nearly 5000 tons have been distilled in this country on this plan in one season, yielding 40,000 gallons of proof spirit. The refuse is nutritive, and he says that his experience of the steamed roots after distillation is conclusive on this point. "Some cull Southdown lambs I purchased at 12*s.* 6*d.* each, and sold, fatted almost entirely on the steamed roots, at 38*s.* each, after taking a better fleece of wool than usual; nor could I have fatted them so well on any other produce. And in so steaming the roots is it not better to catch the steam and condense it into spirit than let it go up the chimney to evaporate in the air?" It is only right to add that the subject is properly one for experiment, the view thus expressed not being so self-evident as it is here implied to be. The steam carries off that which in the original root contributes to its nutritive character—the fermentation having conferred an evaporable character upon it; and French grown roots, grown under a somewhat different climate, contain probably more of this spirit-yielding portion of the root than our own.

Marl: *Streatley.* Its efficiency depends often on phosphate present in them in small quantities rather than on the lime or other more abundant earth that they contain. A heavy dressing of marl is often sufficient for many years, and a re-dressing under such circumstances would be useless. The gradual descent of any dressing, as of ashes, marl, &c., is owing to the worm casts being taken from below them continually. Mr. Darwin's explanation of this was given some years ago in the Transactions, we believe, of the Geological Society.

Premiums for Barley: *Cor.* Prize crops are offered by Messrs. Blizard Brothers & Godsall, of Tewkesbury, for the best sample of Barley. These cups produced, as was intended, a double advantage—first to the farmer, who was induced to produce a better article and obtain a better price; and next, to themselves as maltsters, who were enabled to get the best kind of grain for their manufacture. At the recent presentation of the cup, Mr. Blizard said:—The cultivation of Barley had, in former years, undoubtedly been neglected: a stimulant had been applied, and as a proof of its effect he would point to the samples of that day, which he firmly believed could not be equalled in any town in England. Mr. Blizard then referred to some remarks he had made last year relating to the machines used for dressing the Barley. He regretted that the evil still continued; the grain was broken at the ends, and gave out a blue mould which rendered it totally unfit for malting. He had proposed, with others, to offer a prize of 50*l.* for such improvements in the machines as should obviate this evil; nothing, however, had as yet been done in it, but he trusted that agricultural machinists would give attention to the subject, and that before long the difficulty would be overcome. Mr. Rice, in response for the judges, said they felt surprise that the clay land had won the prize; but it was a fact that the sand Barleys were burnt up last year, which of course accounted for it. There had been 60 samples from Gloucestershire, Worcestershire, and Herefordshire sent in; and 10 from Berks and Wilts. In the course of their examination the samples of Mr. J. Creese and Mr. G. Woodward stood well for a long time, but at the conclusion they were bound to admit that those of the Rev. W. Parker for the former counties, and of Mr. W. H. Gillett, of Swindon, for the latter, were the best.

ADDRESS: THE MANAGERS, ST. PANCRAS IRONWORKS.

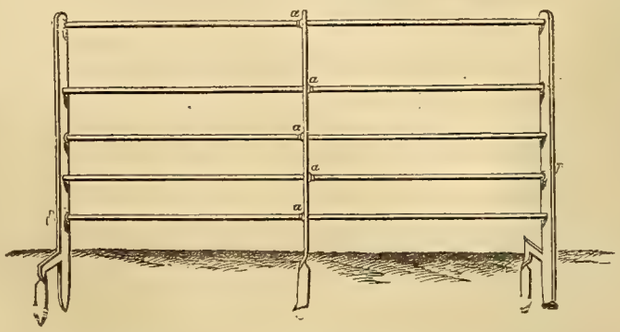
The St. Pancras Iron Works are opposite the Old St. Pancras Church,
Old St. Pancras Road, London.

IRON COLLAR BAR HURDLES.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

Obtained the Silver Medal of the Royal Agricultural Society.

ST. PANCRAS IRON WORKS,



OLD ST. PANCRAS ROAD, LONDON.

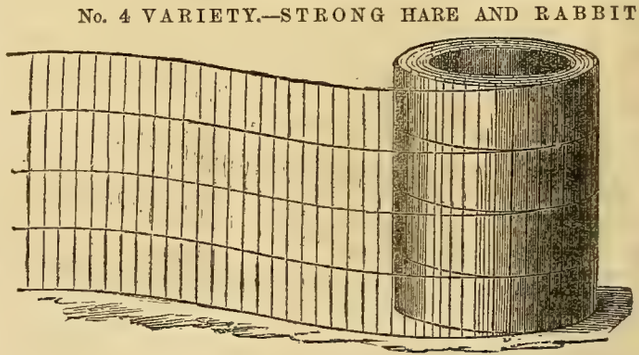
The improvement by this Patent consists in the COLLARS on the Bars which, being placed on alternate sides of the centre upright bar, keep it in its position, confine the bars to short bearings, prevent their being strained, and give more than double strength and rigidity to the HURDLE.

PROFESSOR VARNELL'S MANGERS AND STABLE FITTINGS.

GREENING & COMPANY'S PATENT WIRE FENCES.

Patronised by His Royal Highness the PRINCE CONSORT.

No. 4 VARIETY.—STRONG HARE AND RABBIT-PROOF FENCE.



Specification. — Horizontal bars of stout, tough wire, 6 inches apart; vertical bars of similar wire, 1½ inch asunder, the whole woven firmly together. Made in rolls of 50 yards, or in othe lengths, to order.

G. & Co. have been honoured with five consecutive orders for the Patent Hare and Rabbit Fencing from H.R.H. the Prince Consort, who has also personally expressed his satisfaction with the work. One yard of No. 4 variety is equal in weight to 3 yards of the best Wire Netting made.

PRICES PER YARD:—

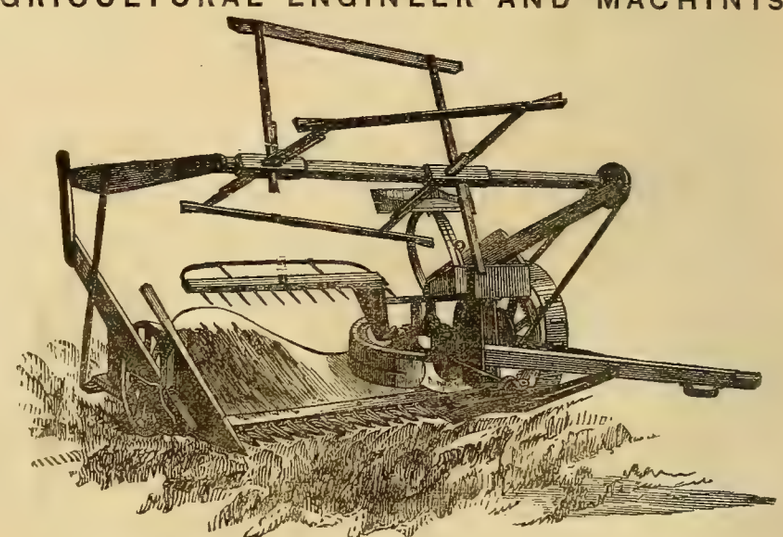
24 inches high	...	**1s. 0d.,**	**Japanned**	**24 inches high**	...	**1s. 3d.,**	**Galvanised**
30 „	...	**1 3**	„	**30** „	...	**1 6**	„
36 „	...	**1 6**	„	**36** „	...	**1 10**	„

G. & Co. forward (post free) on application their ILLUSTRATED CATALOGUE, containing particulars of the above and other Iron and Wire Fences for Parks, Farms, Gardens, Game Preserves, Poultry Courts, &c.

GREENING & COMPANY, Victoria Iron and Wire Works, 81, Oxford St., Manchester.

B. SAMUELSON,

AGRICULTURAL ENGINEER AND MACHINIST,



WAREHOUSE, 76, CANNON STREET WEST, LONDON,

WORKS AT BANBURY,

Informs Merchants, the Trade, and Agriculturists, that he has opened the above Warehouses as a depôt for his own manufactures and those of Messrs. Barrett, Clayton, Howard, Hornsby, Nicholson, Richmond, Tuxford, Smith, and all other first-class makers, whose implements he is prepared to offer on makers' terms.

THE BRITANNIA SELF-RAKING REAPING MACHINE,

With side delivery in sheaf, no rakers or gatherers required; and all the most improved Spring Implements for the season, may be inspected at the above depôt.

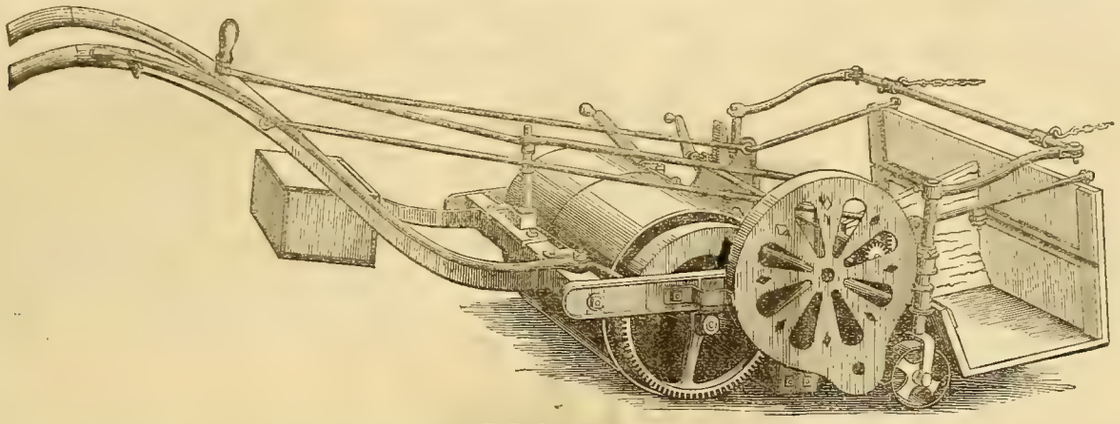
B. SAMUELSON, 76, Cannon Street West, London; and Britannia Works, Banbury.

SHANKS' PATENT LAWN MOWING MACHINES,

NOW USED IN ALL THE ROYAL GARDENS.

NEW AND IMPORTANT IMPROVEMENTS FOR MOWING, ROLLING, COLLECTING, AND DELIVERING.

HORSE POWER PATENT MOWING, ROLLING, COLLECTING, AND DELIVERING MACHINE.



PRICES

No. 1(*a*)48-inch MACHINE (usually drawn by a Horse)	£27	0	0	No. 3.—30-inch MACHINE (usually drawn by a Pony)	£17	10	0
No. 1.—42-inch MACHINE (usually drawn by a Horse)	24	0	0	No. 4.—25-inch MACHINE (usually drawn by a Pony or Donkey)	13	10	0
No. 2.—36-inch MACHINE (usually drawn by a Horse or Pony)	20	10	0	No. 5.—25-inch MACHINE (made light for a small Pony or Donkey)	9	10	0

Machines Nos. 1 (*a*), 1, 2, 3, & 4 have the Patent Delivering Apparatus attached. No. 5 can either be had with or without this improvement; if with it, 30*s.* extra.

PRICES OF THE HAND MOWING AND ROLLING MACHINE

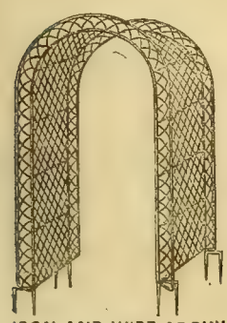
No. 6.—22-inch MACHINE	£7	17	6	No. 8.—16-inch MACHINE	£6	10	0
No. 7.—19-inch MACHINE	7	5	0	No. 9.—13-inch MACHINE	5	15	0

☞ FULLY ILLUSTRATED AND DETAILED CIRCULARS ON APPLICATION.

LONDON AGENTS

MESSRS. J. B. BROWN & CO., 18, CANNON STREET, CITY, LONDON, E.C.

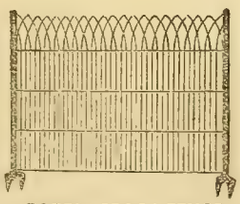
IRON & WIRE WORK, & WIRE NETTING.



IRON AND WIRE ARCHWAY.



FLOWER BASKET.



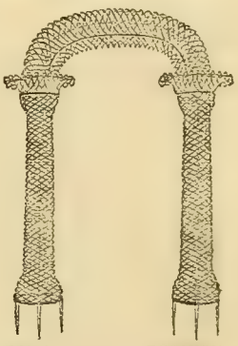
RABBIT PROOF FENCE.



FLOWER STAND.



FLOWER BASKET.



IRON AND WIRE COLUMN.

IRON HURDLES
STRAINED WIRE FENCING
CONTINUOUS BAR FENCING
ORNAMENTAL PORTABLE FENCING
CARRIAGE AND WICKET GATES
GARDEN CHAIRS AND STOOLS
HAND-GLASS FRAMES

IRON AND WIRE ESPALIERS
PLAIN AND GALVANIZED WIRE
WIRE NETTING
ORNAMENTAL WIRE WORK
WIRE TRELLIS WORK
FLOWER STANDS
GARDEN ARCHES

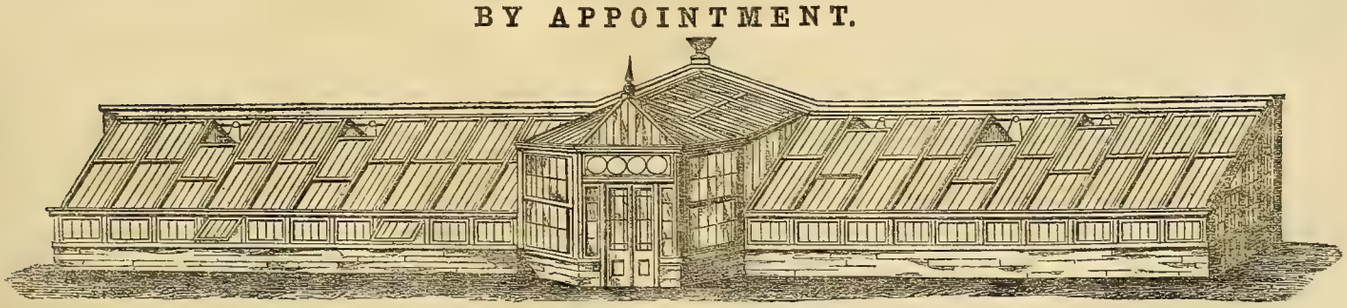
VASES AND FOUNTAINS
GARDEN ROLLERS
GARDEN ENGINES
LIFT AND FORCE PUMPS
IRON FLOWER STAKES
GARDEN BORDERING

☞ *Every Article warranted to give satisfaction, and if not approved may be exchanged or returned unconditionally.*

J. B. BROWN & CO., OFFICES, 18, CANNON STREET, CITY, LONDON, E.C.

HORTICULTURAL BUILDING & HEATING BY HOT WATER.

BY APPOINTMENT.



JOHN WEEKS & COMPANY,

KING'S ROAD, CHELSEA, LONDON.

HORTICULTURAL BUILDERS AND HOT-WATER APPARATUS MANUFACTURERS, ENGINEERS, AND IRON FOUNDERS.

PLANS, ESTIMATES, & ILLUSTRATED CATALOGUES FREE ON APPLICATION.

FOWLER'S PATENT STEAM PLOUGH

SEEN AT WORK.

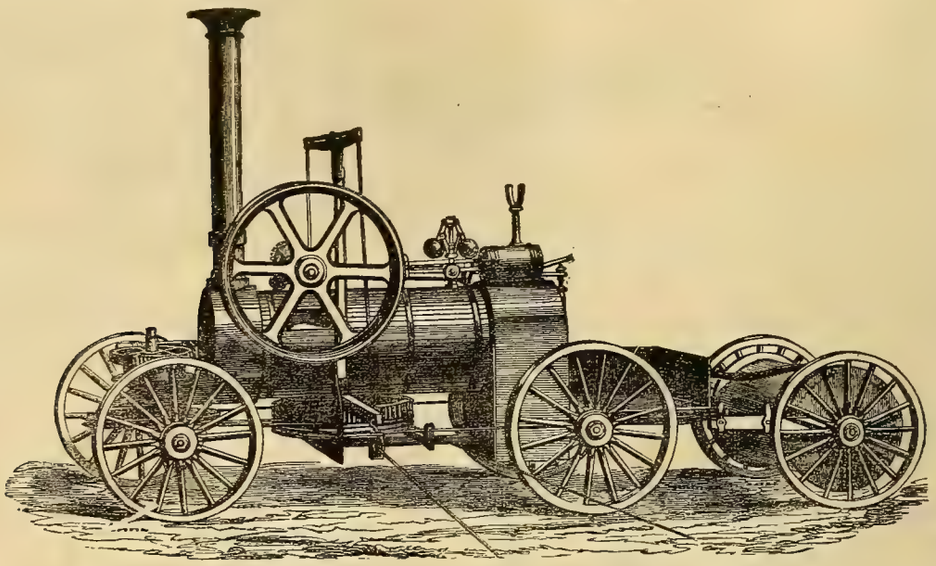
A STANDARD SET OF FOWLER'S STEAM-PLOUGHING TACKLE,

UPON THE MOST APPROVED PRINCIPLE,

CAN BE SEEN IN OPERATION THIS DAY AND MONDAY, 30th INST.,

ON THE

ESTATE OF M. T. BASS, ESQ., M.P., NAPSBURY, NEAR ST. ALBANS, HERTS.



FOWLER'S ENGINE, WINDLASS, AND WATER CART.

☞ **Illustrated Catalogues will be ready shortly.**

The following TESTIMONIALS have been handed to John Fowler by some of the parties using his Steam Plough and Cultivator:—

(No. 1.)

"Sarsden Lodge Farm, Chipping Norton, March 31, 1859.

"Dear Sir,—I am pleased to give you a most favourable report of your Steam Plough sent to Mr. Langston. It has been used daily for the last three weeks without the slightest accident or breakage, and has more than answered our expectations. We have ploughed with it the most varied and uneven field upon the estate, and have found the work perfect. The grubbing with plough heads and shares effects an excellent tillage. This is accomplished by removing the turn furrows; the same ploughs answer either for turning the soil or for breaking it up. We have for some years had an excellent scarifier, which is easily attached to each end of your plough beams, and this constitutes a simple and effectual cultivator, with this special recommendation, that it will work over ridge and furrow and in the roughest land without clogging. The above is the testimony of my own experience, and during the time mentioned I have given exclusive attention to the working of the plough, but it has been likewise witnessed and approved by almost every practical farmer in the neighbourhood. A large party came from Oxford on Monday last, and I feel sure that if additional evidence should be wanted to confirm my statement I could procure it from a long list of signatures well known to the agricultural public.

"I remain, sir, yours truly, Matthew Savidge.

"Mr. John Fowler, Jun., 28, Cornhill."

(No. 2.)

"London, April 13, 1859.

"Dear Sir,—In reply to your inquiries respecting the working and general value of the Steam Plough you supplied me with in November last, I beg to inform you that I have every reason to be fully satisfied with it. The farm in East Lothian on which it has been used is very badly laid out, and not at all adapted for steam culture, many of the fields being angular, and of every supposable shape; still it is a fact that with the exception of the cornered pieces, and some of the shorter lands, the whole ground that has been ploughed, since I received the Steam Plough, has been so by it. The result has been that on a farm of 320 acres I have not required during the winter to keep more than six horses, and yet I believe the spring work is as well forward as it could be under any circumstances however favourable. I may mention that I have fitted on a cultivating apparatus to your subsoiling plough frame; I find this cultivator of great value in preparing the soil for root crops, and in autumn I expect it will be found of still greater use in scarifying stubble and foul land. On the whole I am well pleased with your Plough. I know very well that any one who adopts a piece of machinery like it, before it has assumed the exact state in which it is likely to come into general use, must be prepared to pay for the experience he is acquiring and working out. But I believe your Plough is now very nearly in that state which it requires to be, in order that the farmer may adopt and employ it on his land with profit, and I have therefore no hesitation in giving my recommendation in its favour. "I am, &c. J. L. Morton."

"P.S.—The farm I ought to add is all arable, and when I got possession shortly before I purchased your Plough, scarcely any of the work was done. Now, as I have said, it is well forward; this certainly could not have been the case but for the Steam Plough.

"John Fowler, Jun."

(No. 3.)

"Esher, April 14, 1859.

"Dear Sir,—As manager of the Steam Plough supplied by you to Mr. Gurney last autumn, I may inform you that we ploughed with it up to the end of December about 70 acres of land in a most efficient manner. Most of the work was deep ploughing; and that on Mr. Sherrard's farm, near Reigate, unprecedently so in my experience of such soils, his being strong land on a yellow clay, which was brought to the top to increase the depth in cultivation. On the lighter land of Mr. Marriage's farm, at Nutfield, when ploughing for Wheat about 6 inches deep, we repeatedly got well over an acre in the hour without any particular effort being made for speed. Universal satisfaction was given by the quality of the work performed, and I am satisfied that with your recent improvements, which render the engine and windlass self-moving from field to field, of the value of which I am fully convinced, and the other alterations which experience has suggested, the tackle is now such as must well answer the purpose of every large occupier to possess, being simple, durable, and easily managed. "I am, &c. E. W. Brooks.

"John Fowler, Jun."

(No. 11.)

"Wickham Market, May 24, 1859.

"Dear Sir,—In answer to your inquiry as to my experience with the Steam Plough and Apparatus purchased of you for Mr. Lyne Stephens last year, I beg to state that a very large extent of land has been ploughed by it at a depth greater than is generally approved in the neighbourhood, the policy of which, for the present, must remain a matter of opinion; in point of execution everything that can be desired; beside other advantages it is decidedly cheaper than horse labour, and when the cost price of the plough, &c., is brought within the reach of the tenant of a moderate-sized occupation, nothing can prevent its general use; equally so with threshing by the same power; of this I entertain not the smallest doubt. The comparison between your plough and Smith's, of Woolston, so lauded in some of the newspapers, is perfectly farcical. Before purchasing of you I went over with a party of Norfolk gentlemen to see Mr. Smith's at work near Lynn; I advise others to do the same, and then judge which of the two is the better implement.

"I am, &c. (Signed) Cornelius Welton.

"John Fowler, Jun."

(No. 9.)

"Navestock, Essex, May 14, 1859.

"Dear Sir,—In reply to yours, I am happy to inform you that I have succeeded in drawing my Draining Plough, with your tackle, through my strong marl land 26 inches deep, and as I am determined to lay all my land on the flat (with even a water furrow), I have made each drain 7 feet apart only. I have just completed 14 acres, and I have no doubt but that we shall soon be able to do 5 to 7 acres per day at this distance. I am much pleased with your Steam Plough, and by taking off the breasts, I scarified 40 acres for my Mangel 10 inches deep, which I thought for the first time over would be sufficient. I quite congratulate you on the perfection you have made in your Steam Plough, rendering steam cultivation an accomplished and profitable fact, and which will now be readily admitted by practical men.—I am, &c. Collinson Hall.

"P.S.—I have formerly drawn my Draining Plough with 24 horses, 18 to 20 in. deep, and am delighted to dispense with their services in future by the steady draft of steam."

(No. 8.)

"Littywood, near Penkridge, April 8, 1859.

"Dear Sir,—In reply to your letter of the 29th March, I have great pleasure in certifying to the efficient working of your Steam Plough upon my farm. In the autumn of 1858 I ploughed by it 70 acres, 8 inches deep, in 15 days, part for Wheat and part for root crops, and am convinced the work could not have been done so well by horses; the Wheat is looking well, and I consider that land ploughed by steam has many advantages over that ploughed by horses, inasmuch as there is a greater tilth for the grain to grow in, and it is worked for root crops much easier. I find in riding across the land ploughed by steam my horse sinks fully 3 inches deeper in the soil than upon that ploughed by animal power, which is a proof of the good condition in which the land is left for working after the plough. You are at liberty to use my name to what I have stated in this if it will be to your service in any way.

"I am, &c. Charles Byrd.

"John Fowler, Jun."

(No. 4.)

"Kinnersley, Reigate, April 4, 1859.

"Dear Sir,—In reply to your letter of the 29th ult., requesting me to state my opinion of your Steam Plough, I beg to say that I had every reason to be pleased with its performance on my land during the month of November and the greater part of December in last year, when your plough turned up about 35 acres of my heavy clay land to a depth of 8 to 9 inches in a manner so satisfactory that I hope to arrange with Mr. Gurney's agent, Mr. Brooks, to bring the plough here again immediately after the harvest, when he shall have the greater part of my farm to plough if he likes to undertake it.—I am, dear sir, yours truly. "J. T. Sherrard.

"John Fowler, Jun."

(No. 5.)

"Boyton Hall, near Chelmsford, March 2, 1859.

"My dear Sir,—Your Steam Cultivator has finished the 16-acre field to my entire satisfaction. The land was ploughed soon after harvest, and had not been moved since. The Scarifier was driven across the stetches and completely stirred the ground from 6 to 8 inches deep, in many places deeper than the previous ploughing, leaving it in a finely pulverised state. I am convinced the work could not have been done so well even with a large amount of horse labour, as the land is a stiff marl, and the treading of the horses would to a great extent have counterbalanced the benefit of the scarifying.—I am, sir, yours faithfully, "J. Christy, Jun.

"John Fowler, Jun., 28, Cornhill."

(No. 6.)

"Morelsham Lodge, Chelmsford, April 6, 1859.

"Dear Sir,—I feel it is only due to you to state, that during the time your Steam Plough was at work on my farm, it performed its work remarkably well, ploughing the soil to a good depth, and casting the furrow even and well, and in the hands of a practical ploughman I have but little doubt its results will eventually be highly satisfactory. I make this remark because we all know the poor work a bad ploughman will make holding either a Bentall or a Howard.—I am, &c.

"John Marriage."

(No. 7.)

"Hilton, Burton-on-Trent, April 1, 1859.

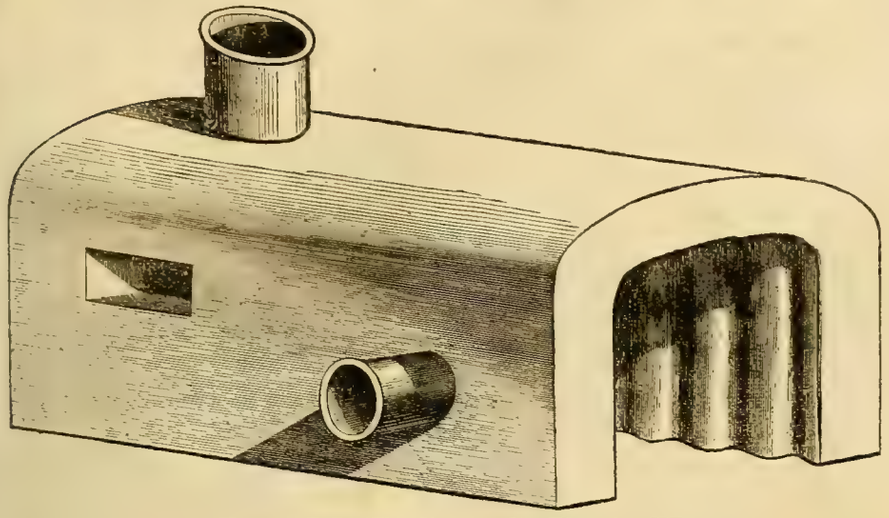
"I am decidedly of opinion that ploughing done by Fowler's Steam Plough is far superior than it is possible for horses to do it, as the treading of the horses is a decided drawback to them, whilst there is nothing of the sort when done by steam, and it is in every other respect quite equal to that done by horses, and this was the universal opinion of my friends. I am now ploughing across a mixed soil, or more properly speaking a field of different sorts of land—viz., gravel, sand, clay, and even some rocky parts, and it keeps a regular depth of about 11 inches, and leaves the land much lighter than when done by horses.—I am, &c., yours truly, "W. Bradburn.

"John Smith, Coven."

For further particulars apply to JOHN FOWLER, Jun., 28, Cornhill, London, E.C.

HORTICULTURAL WORKS,

DANVERS STREET, PAULTON'S SQUARE, CHELSEA, S.W.



JAMES GRAY

RESPECTFULLY begs to inform the nobility, gentry, Nurserymen, Gardeners, and others, that he continues to carry on the business in all its branches at the above old established premises.

CONSERVATORIES, GREENHOUSES, FORCING HOUSES, VINERIES, PITS, &c.,

of every description, erected on the most approved principles.

HEATING BY HOT WATER.

J. G. having specially devoted his attention for many years to this part of the business, is now fully prepared to Heat every description of public and private buildings, viz :—Churches, Mansions, Warehouses, &c., as well as all structures connected with Horticulture, in the most efficient manner. His system is the most simple that can be adopted—which he has found from long experience to be the best—can be constructed at less cost, and is more easily managed than those of a complicated nature which have attracted the notice of the public.

J. G. begs to call attention to his CAST-IRON CORRUGATED ARCH BOILER, which from its simplicity of construction has not the liability to fracture to which those of a more complex design are always subject. They have been extensively used for many years, and have given the greatest satisfaction.

All business is conducted at this establishment on the principle of lowest remunerative profits consistent with best materials and workmanship.

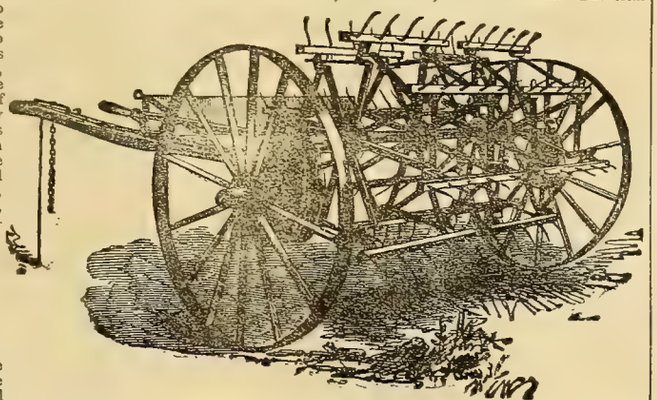
Plans and Estimates furnished on the shortest notice.

SMITH & ASHBY,

AGRICULTURAL ENGINEERS, STAMFORD.

HAYMAKING MACHINES.

THE last great trial of Haymakers took place at Londonderry, before the Council of the Royal Society of Ireland, in August last. The Machines exhibited there were SMITH & ASHBY'S, Nicholson's, and Sheridan's. The trial land was full of deep broad grips, the crop was heavy green Clover, upon which the Machines selected for trial were set to work. SMITH & ASHBY'S Machine did its work admirably, without a single failure, and was the only one that could clear the grips without clogging and flying out of gear. The Prize of 5*l.* was unanimously awarded to this Machine. This makes Five First-class Prizes that have been awarded to SMITH & ASHBY'S Machine since the Salisbury Meeting of the Royal Agricultural Society of England (1857), being every Prize offered since that Show, and in addition to the 31 First Prizes announced last season.



Price £15 15s.

SMITH AND ASHBY,
AGRICULTURAL ENGINEERS, Stamford.

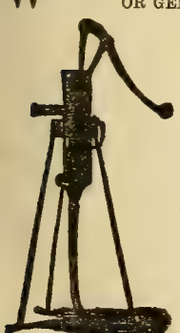
HORSE RAKES.

SMITH & ASHBY'S celebrated Horse Rake has lately been greatly improved by the introduction of their new Patent Steel Semi-angular Teeth, which are warranted not to break, and work much better than those of a circular form. In addition to the Twenty-six Prizes announced up to last season, SMITH & ASHBY'S Rake took the First Prize of the Royal North Lancashire Society at Ulverstone in September last. The same Rake took the First Prize of the Royal Agricultural Society of Ireland two years in succession.

Price, full size, with improved Iron Teeth, £7 10s. Steel, £8; Extra large Size, £10.

☞ *For full particulars see* S. & A.'s *Catalogue, posted free on application.*

WARNER'S IMPROVED LIQUID MANURE OR GENERAL PORTABLE PUMP.



These Pumps are fitted with J. W. & SON'S Patent Buckets and Suckers, and cannot clog in action. The barrel is of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure. The legs will fold together, and the whole may be carried on the shoulder to any pond or tank required.

Price of 4½ in. Pump, with legs, 3*l.* 3*s.* If with planished copper barrel and galvanised iron handle, &c., 14*s.* extra. The barrel is 27½ in. long, and the legs are 5 ft. high.

These Pumps are also made without the legs, with strong wrought-iron straps for screwing on to any ordinary water butt or cart, and fitted with 1½ inch brass union for attaching flexible suction. Price 50*s.*

1½ inch Gutta Percha Suction Pipe, 1*s.* 11*d.* per foot.

Rubber and Canvas Suction and Delivery Hose, from ½ inch to 4 inches in diameter, in lengths of 60 feet to order. Branch Pipes with Cocks, Union Screws, &c., at reduced prices.

May be obtained of any Ironmonger or Plumber in town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin St., London.

WARNER'S PATENT VIBRATING STANDARD PUMPS.

PATENT CAST-IRON PUMPS, fitted with J. W. & SON'S Patent Buckets and Suckers, which cannot clog in action, for Farms, Cottages, and Wells, not exceeding 28 feet.



Diameter of Barrel.	Height.		£.	s.	d.
2½ in.	short 1 ft. 7 in.	Fitted for lead, gutta percha or cast iron flanged pipe as required.	1	10	0
2½ ,,	long 3 ,, 3 ,,		1	14	0
3 ,,	ditto 3 ,, 6 ,,		2	8	0
3½ ,,	ditto 3 ,, 6 ,,		2	12	0
4 ,,	ditto 3 ,, 6 ,,		3	3	0
2½ ,,	short, with 15 feet of Lead Pipe attached, ready for fixing		2	14	0
2½ in.	long ditto ditto ditto		2	18	0

The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.

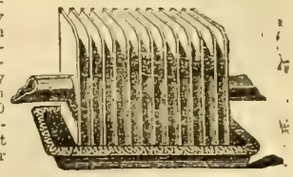
May be obtained of any Ironmonger or Plumber in Town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

MARQUEES, TENTS, AND RICK CLOTHS FOR SALE, OR HIRE.—H. PIGGOTT, 115, Fore Street, E.C.

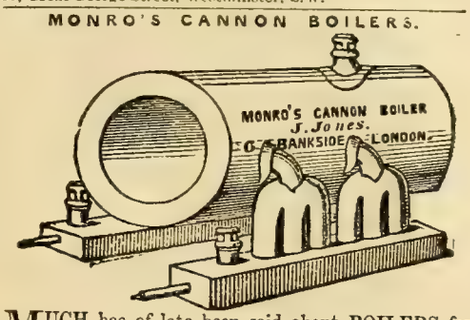
IMPROVED HOT-WATER PIPE.

THE HORTICULTURIST will find herein an inexpensive instrument of new and very important powers. An atmosphere may be produced at will either perfectly dry, partially damp, or saturated with moisture. A space of 10 inches by 12 inches contains the power of 25 feet of 4-inch pipe and other numerous advantages.



The London Warming and Ventilating Company (Limited), 26, Great George Street, Westminster, S.W.

MONRO'S CANNON BOILERS.

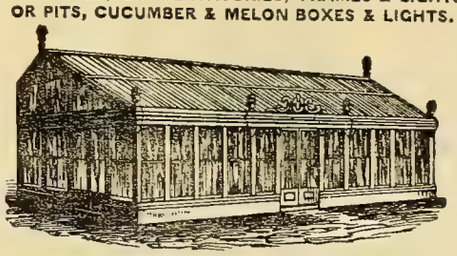


MUCH has of late been said about BOILERS for Heating by Hot Water, but these Boilers have now proved themselves to be the best at present invented. They are adapted for heating every description of building, and are made of various sizes. The Price of the

24-inch Cast Iron is	.. ..	..	£5 10*s.* 0*d.*	each
24-inch Wrought ditto	.. ..	..	6 10 0	,,
36-inch Cast ditto	.. ..	..	8 0 0	,,
36-inch Wrought ditto	.. ..	..	8 10 0	,,

References to Gentlemen and Nurserymen where these Boilers are now at work. The Cannon Boilers are now kept in stock, and are to be had only of J. JONES, 6, Bankside. Also, every description of Saddle and Cylinder Boilers. Hot Water Pipes and Connections at prices lower than those of any other house in London. Estimates for Hot-water Apparatus erected complete in any part of the country, and an Illustrated Catalogue on application to J. JONES, 6, Bankside, Southwark, London.

HOTHOUSES, CONSERVATORIES, FRAMES & LIGHTS OR PITS, CUCUMBER & MELON BOXES & LIGHTS.



JAMES WATTS, HOTHOUSE BUILDER, 8, Claremont Place, Old Kent Road, London.

Green and Hothouses, 9, 10, 11, 12, 13, and 14 feet wide, any length, from 16 to 100 feet. Frames and Lights for Pits, 6ft. 6 in., 7 ft., 7 ft. 6 in., 8 ft., and 8 ft. 6 in. wide, any length, from 12 to 100 feet. Upwards of 200 Cucumber and Melon Boxes and Lights, from 4 ft. by 3 to 10 ft. 6 in. by 5 ft. 6 in., kept ready glazed with stout sheet glass, painted four times, complete, ready for immediate use, all made of best material, packed and sent to all parts of the kingdom.—References may be had to the Nobility, Gentry, and the Trade in most of the counties in England. Horticultural Buildings of every description heated on the most approved and economical principles.

LOOMES' GARDEN EDGING —CABLE PATTERN.



Price at Peterborough.	In London.
Straight .. .. .. 5*d.*	— 6*d.* per yard
Bends .. .. .. 6*d.*	— 7*d.* ,,
If fitted to plans .. 7*d.*	— 8*d.* ,,

LOOMES & Co., Manufacturers, Whittlesea, near Peterborough.

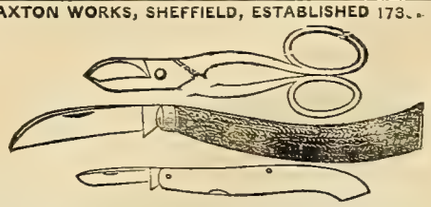
VASES, PEDESTALS, SUNDIALS, FOUNTAINS, FLOWER BOXES, JARDINETS, FERN CASES, BALUSTRADES, EDGINGS AND CURBS FOR FLOWER BORDERS, SEATS, &c, in Imperishable Siliceous Stone, at reduced prices, for the adornment of the Villa Garden, the Mansion Grounds, or the private or public Park.

CURB FOR GARDEN BORDER.—No. 90, 7*d.* per foot run.



For Priced Illustrations apply to FREDERICK RANSOME, at the Show Rooms, Cannon Row, Westminster, S.W., or Patent Stone Works, Ipswich.

PAXTON WORKS, SHEFFIELD, ESTABLISHED 173..

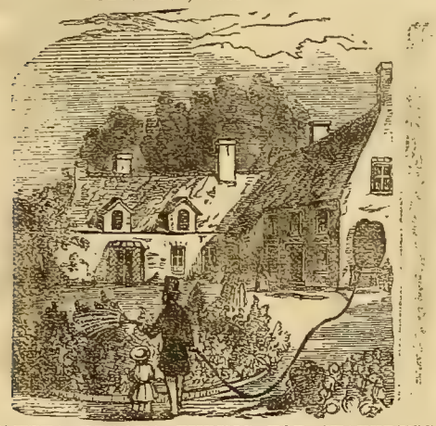


SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.—Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

AGRICULTURAL MACHINERY.

E. R. AND F. TURNER, Ipswich, manufacture Prize Mills for Crushing Corn, Seed, Malt, &c.; Portable Grinding Mills, Steam Engines fixed and portable from 2 horse-power and upwards; Threshing Machines, Chaff Cutter, Oilcake Breakers, Horse Gears, Saw Tables, &c., all of a superior description and adapted for Home, Colonial, and Foreign use. Illustrated Price Lists sent free on application.

TO AMATEUR GARDENERS, NURSERYMEN, AGRICULTURISTS, AND OTHERS.



GUITA PERCHA TUBING FOR WATERING GARDENS, from 2½*d.* per foot; Vulcanised India Rubber Tubing for Watering Gardens, from 4*d.* per foot; Brass Hand Branches, with Stopcock and Rose, and every description of Garden Tubing Fittings, sold Wholesale and Retail by W. R. WOODS, 94, Goswell Road, near the "Angel," Islington, London, E.C. Priced Lists can be had on application.

Please notice the Address—94, Goswell Road.

WARNER'S SWING WATER-BARROW (TO HOLD FORTY GALLONS). MOUNTED ON WHEELS 20 INCHES HIGH. Will save much of the Gardener's time and labour. May be obtained of any Ironmonger for 3*l.* 3*s.*



BRASS SYRINGES, 9*s.* to 18*s.*

Also a great variety of effective Machines for Hydraulic purposes, and to supply Gardens, Hothouses, Cottages, Farms, Mansions, or Boards of Health, with every requisite connected with the conveyance and distribution of Liquids.

Fountains suitable for Conservatories, Lawns, &c.

JOHN WARNER & SONS 8, Crescent, Jewin Street, London.

GARDEN ENGINES AND SYRINGES.

J. TYLOR AND SONS, Warwick Lane, Newgate Street, London, E.C., beg to call attention to their very superior manufacture of GARDEN ENGINES and SYRINGES.

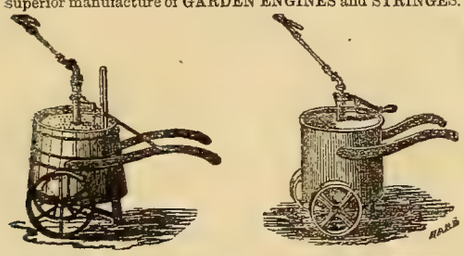


Fig. 598. J. TYLOR & SONS' BARROW GARDEN ENGINE in best well painted Oak tub, fitted with J. TYLOR & SONS' Improved Brass Pump, Universal Joint, and Registered Spreader, which answers the purpose of the separate rose, fan, and jet.

CONTENTS OF TUB:—

10 gallons	15 gallons	28 gallons
£4 10 0	£5 10 0	£6 18 0

Fig. 599. do. TINNED IRON TUB.

CONTENTS OF TUB:—

8 gallons	12 gallons	16 gallons	24 gallons	30 gallons
£2 15	£3 5	£4	£5	£5 18



Fig. 618. No. 1. REGISTERED SYRINGE, with India-rubber suction tube, one rose and jet .. .. £1 5 each.

No. 2. Ditto ditto 1 1 ,,

Telescope Branch Pipe for ditto .. .. 0 10 ,,

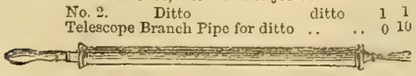


Fig. 619. GARDEN SYRINGE, with one rose and jet, 12*s.* 6*d.* each

,, 620. Ditto ditto 11*s.* 6*d.* ,,

,, 621. Ditto ditto 10*s.* 6*d.* ,,

,, 622. LADIES' GARDEN SYRINGE, with one rose & jet, 8*s.*

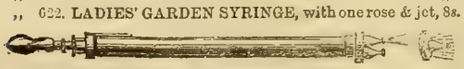


Fig. 623. READ'S SYRINGE, with two roses and one jet, 18*s.* 6*d.*

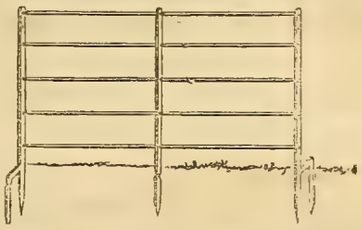
,, 624. READ'S SYRINGE, with one rose and jet .. 16 6

,, 625. Improved ditto ditto .. 14 6

,, 626. Ditto ditto ditto .. 13 0

Manufacturers of Pumps and Well Engines (for shallow or deep Wells), Plumbers' Brass Foundry of every description, High Pressure Cocks and Closets, Copper and Tinned-iron Baths. Garden and Fire Engines, Lamps of every description, Copper Goods, &c. Estimates given for Hot-water and Bath Apparatus.

IRON HURDLES, FENCING, &c., MADE BY MACHINERY.

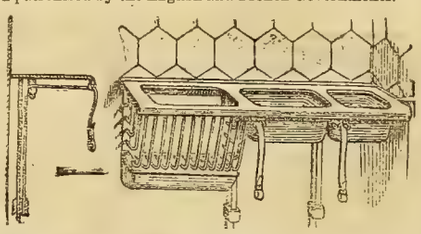


COTTAM AND COMPANY, of Winsley Street, have invented machinery for making Hurdles, &c.; the bars, instead of being pointed by hand in the old fashioned style, are nipped down by the machine, leaving a shoulder so as to more effectually tighten the standards when rivetted. They are made of superior iron only, and will compete in price with those made by hand from cinder or common iron which so frequently break. Iron Fencing, Gates, and Iron Work of all kinds, both Plain and Ornamental, Conservatories, Hot Water Apparatus and Garden Implements.

Illustrated CATALOGUES free on application to COTTAM & COMPANY, Ironfounders, 2, Winsley Street, Oxford Street, W.

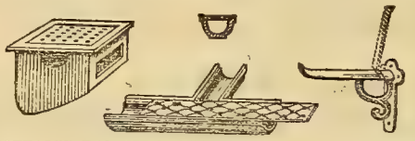
N.B. COTTAM & Co. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

COTTAM'S PATENT INVENTIONS FOR STABLE REQUISITES, awarded a Prize at the Paris Exhibition, and patronised by the English and French Governments.



COTTAM AND COMPANY, of Winsley Street, are the original inventors of the PATENT ENAMELLED MANGER, Water Trough, and Wrought Iron Rack, united to an iron top-plate, and forming one complete and useful fixture, having COTTAM'S patent noiseless halter guide and collar rein attached, which is taken to the back of the manger, and works with ease and freedom up or down the guide-bar.

COTTAM'S NEW PATENT SEED-BOX, an important addition to the above fittings, being simple in construction, light, and durable, promotes cleanliness, and is economical in its results.



COTTAM'S PATENT SADDLE and HARNESS BRACKET combined, can be used with great advantage where space is an object, as it can be turned up out of the way when not in use.

COTTAM'S IMPROVED SURFACE GUTTER, with perforated moveable cover, the use of which prevents accidents, and can be easily cleaned out.

COTTAM'S CAST-IRON SANITARY TRAP, from its improved construction, gives a full water passage, and does not allow any smell to ascend from the drain.

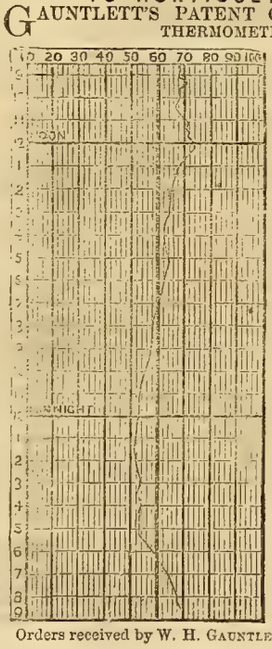
PATENT LOOSE-BOX FITTINGS, and every article for the harness-room and stable, kept in stock, plain, galvanised, and enamelled. Iron gates, fencing, hurdles, &c.

The New Illustrated Catalogue and Estimates, gratis, upon application to COTTAM and COMPANY, 2, Winsley Street, Oxford Street.

N.B. COTTAM & Co. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

TO HORTICULTURISTS.

GAUNTLETT'S PATENT CHRONOMETRICAL THERMOMETER.



This instrument, which combines an eight-day clock of the best English make showing time, with a newly-patented Thermometer, wherein glass and quicksilver are dispensed with, writes down the temperature of the atmosphere on a slip of paper, and when placed in a Hothouse, Forcing House, or Conservatory, &c., supplies a valuable record of the temperature, with all its variations, showing the time when any change took place, and how long such change continued.

The above slip (reduced in size) exhibits the temperature of the Royal Agricultural Society's show yard at Chester, July 22, 1858, written off by one of these instruments, to which was awarded the Society's SILVER MEDAL.

This is the only instrument that registers temperature continuously and writes it down, and no horticulturist should be without it.

Orders received by W. H. GAUNTLETT, Middlesbro' on-Tees.

BEE-HIVES.

PRIZE MEDAL AWARDED TO G. N. & SONS, FOR BEE-HIVES AND HONEY, AT THE PARIS EXPOSITION OF 1855.

NEIGHBOUR'S IMPROVED COTTAGE BEE-HIVE, as originally introduced by GEORGE NEIGHBOUR & SONS, with all the recent improvements, glasses, and thermometer, price 35*s.*, securely packed for the country.



This unique Hive has met with universal commendation, and may be worked with safety, humanity, and profit by the most timid; its arrangements are so perfect that the Honey may be taken at any time of the gathering season without at all injuring the Bees.

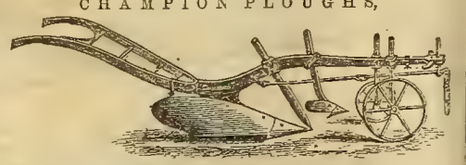
Early applications addressed to GEORGE NEIGHBOUR & SONS, 127, High Holborn, or 149, Regent Street, London, will receive prompt attention.

Their newly-arranged CATALOGUE of other Improved Hives with Drawings and Prices, sent on receipt of two stamps.

AGENTS.—Liverpool: JAMES CUTHBERT, 12, Clayton Square. Manchester: W. WILSON, 50, King Street. Glasgow: AUSTIN & M'ASLEN, 186, Trongate. Dublin: J. EDMONDSON & Co., 61, Dame Street.

HOWARDS' PRIZE IMPLEMENTS, 1859.

JAMES AND FREDK. HOWARD, Britannia Iron Works, Bedford, beg to direct attention to their CHAMPION PLOUGHS,



For which they received All the First Prizes last offered by the Royal Agricultural Society of England, viz.:—

The First Prize for the best Plough for general purposes.
The First Prize for the best Plough for light land.
The First Prize for the best Plough for heavy land.

The only Prize ever offered by the Society for the best Double Breast or Ridging Plough was also awarded to J. & F. HOWARD.

J. & F. HOWARD have discontinued troubling the Public with a long List of Prizes awarded to their Implements, but they would just state that for PLOUGHS, HARROWS, and HORSE RAKES, they have for several years gained every Prize for which they have competed.

PLOUGHS.

D PLOUGH, for a Pony	£2 5 0
DD ditto for one Horse	3 5 0
P ditto for two Horses	4 7 6
PP ditto for general purposes	4 12 6
SKIM COULTER for P or PP Plough	0 5 6

HARROWS.

A Set of Three 4-Beam HARROWS, with Whippletree, recommended as general Seed Harrows, 9½ feet wide, marked No. 12	3 14 0
A Set of Three 4-Beam HARROWS, with Whippletree, adapted for 3 Horses, 10 ft. wide, marked No. 11	4 4 0

If with Patent Joints, 6*s.* per set extra.

HORSE RAKES.

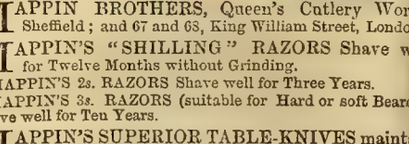
Small size, 7½ feet wide, marked A, with 24 iron teeth	7 10 0
Ditto, with Steel Teeth	8 0 0
Large size, 8½ feet wide, marked B, with 28 iron teeth	8 0 0
Ditto, with steel teeth	8 10 0
Extra large size, 8½ feet wide, marked C, with 24 steel teeth	10 10 0
A Set of 15 Prongs, to be attached to the above when used as Weed Extirpators	1 10 0

Free Delivery to Birmingham, Bristol, Colchester, Derby, Gloucester, Hull, Lincoln, Liverpool, London, Manchester, Norwich, Nottingham, Retford, Shrewsbury, Wisbeach, Worcester, and York; or to Dublin, Edinburgh, Glasgow, and other parts at fixed rates.

HOWARDS' NEW CATALOGUE, containing prices and description of their Patent Ploughs, Harrows, Horse Rakes and other Implements, including Smith's Steam Cultivators for which they received at Chester the Gold Medal of the Royal Agricultural Society of England, sent free on application to J. & F. HOWARD, Britannia Iron Works, Bedford.

MAPPIN'S PRUNING KNIVES IN EVERY VARIETY.

WARRANTED GOOD BY THE MAKERS.



MAPPIN BROTHERS, Queen's Cutlery Works, Sheffield; and 67 and 68, King William Street, London.

MAPPIN'S "SHILLING" RAZORS Shave well for Twelve Months without Grinding.

MAPPIN'S 2*s.* RAZORS Shave well for Three Years.

MAPPIN'S 3*s.* RAZORS (suitable for Hard or soft Beards) Shave well for Ten Years.

MAPPIN'S SUPERIOR TABLE-KNIVES maintain their unrivalled Superiority—handles cannot possibly become loose—the blades are all of the very first quality, being their own Sheffield manufacture.

	Table Kns.	Dst. Kns.	Carvers
Ivory 3⅝ in. Handle, balanced,	20*s.* p. doz.;	16*s.* p. doz.;	6*s.* p. pa
Do. 4 in. do. ..	25*s.* ,,	18*s.* ,,	9*s.* ,,

MAPPIN'S SILVER-PLATED DESSERT KNIVES and FORKS, in Mahogany Cases.

12 Pairs Knives and Forks, Ivory Handles, in Case..		80*s.*
12	Do. Pearl Handles, do. ..	130*s.*
12	Do. Silver-Plated Handles, do. ..	80*s*

MAPPIN'S ELECTRO-SILVER PLATE.—MAPPIN BROTHERS, Manufacturers by Special Appointment to the Queen, are the only Sheffield makers who supply the consumers in London. Their LONDON SHOW ROOMS, 67 and 68, King William Street, London Bridge, contain by far the largest STOCK of ELECTRO-SILVER PLATE in the World, which is transmitted direct from their Manufactory, Queen's Cutlery Works, Sheffield.

	Fiddle Pattern.	Double Thread.	King's Patter
12 Table Forks, best quality	£1 16 0	£2 14 0	£3
12 Table Spoons, best quality	1 16 0	2 14 0	3
12 Dessert Forks, best quality	1 7 0	2 0 0	2
12 Dessert Spoons, best quality	1 7 0	2 0 0	2
12 Tea Spoons, best quality	0 16 0	1 4 0	1

Messrs. MAPPIN BROTHERS respectfully invite buyers to inspect their unprecedented display, which, for beauty of design, exquisite workmanship, and novelty, stands unrivalled. The illustrated Catalogue, which is continually receiving additions of New Designs, sent per post on receipt of 12 stamps.—MAPPIN BROTHERS, 67 and 68, King William Street, London Bridge Manufactory, Queen's Cutlery Works, Sheffield

SHANKS'S PATENT LAWN MOWERS are unquestionably the most perfect Machines for Mowing Lawns, Verges, &c., extant. SHANKS's Horse and Pony Machines are the only Machines that Mow, Roll, Collect, and Deliver the Grass.—London Agents: COTTAM & Co., 2, Winsley Street, Oxford Street, W.

SHANKS'S PATENT MOWING MACHINES.

J. AND C. LEE, NURSERYMEN, Hammersmith, have great confidence in recommending these as the most complete Mowing Machines offered to the public. They have had large experience with SHANKS's Machines, and have ever found them do their work admirably, effecting a great saving in labour, and not liable to get out of order. For terms, apply to the Agents, J. & C. LEE, Nurserymen, Hammersmith.

LAWNS—IN USE IN THE ROYAL GARDENS.

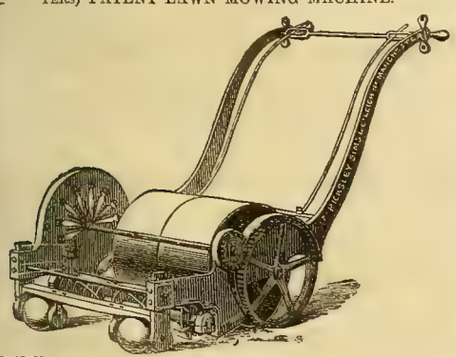
SAMUELSON'S PATENT BOYD LAWN MOWING and ROLLING MACHINE, the only one that will cut wet as well as dry Grass, is guaranteed efficient in use, easily handled, and readily kept in working order. Doing the work of five or six men. Prices, including case and carriage to any railway station in England, from 4*l.* 17*s.* 6*d.* and upwards. Copies of testimonials post free on application to Mr. SAMUELSON's London Warehouse, 76, Cannon Street West, City; Messrs. DEANE's, London Bridge; or the Works, Banbury, Oxon.

THE NEW PATENT MOWING MACHINES may be used anywhere at any time, are self-sharpening, and admit of the use of duplicate sets of cutting parts. Prices from 4*l.* 10*s.* upwards. Illustrated Circulars free by post.—Manufactured and Sold by JAMES FERRABEE & Co., the original introducers of Mowing Machines.

Several infringements of their patent having taken place, the Makers respectfully caution the public to see that the words "FERRABEE'S Patent" are cast on every Machine.

JAMES FERRABEE & Co., Phœnix Iron Works, Stroud.

PICKSLEY, SIMS, AND CO.'S (by ROYAL LETTERS) PATENT LAWN MOWING MACHINE.



LEIGH, LANCASHIRE.

P., S., & Co., in introducing this Lawn Mowing Machine, particularly request a strict examination, or comparison and trial, for simplicity of construction, lightness, regularity of draught, adaptability for mowing every kind of plain, circular, and verge work.

Firstly, we have encased the wheels so as completely to protect from injury flower borders, shrubs, &c., whilst working the machine, at the same time not being liable to obstruction or damage.

Secondly, this machine works easily on undulated and sloping ground; it can be thrust forward or be drawn from behind, the latter being the easiest.

Thirdly, this is the only machine made that will work round quick curves; it will work easily and effectively round circular borders so small as 12 inches in diameter. This very desirable improvement has been obtained by fixing to the front part of the machine our newly-invented universal action, and self-cleaning, anti-friction spherical guiding balls. The continual revolving of these spherical guiding balls, under the most trying circumstances, never fails.

Fourthly, we have attached to this machine a rack and pinion motion, for adjusting the cutting parts (there being a rack and pinion on each side of the machine to act conjointly at the same time upon the full length of the knives), in other machines a slow, tedious, and uncertain operation, into one of quickness, ease, and certainty.

PRICES:—

				£	s.
Patent Lawn Mowing Machine		13 inches	..	5	10
Ditto	ditto ditto	16 ,,	..	6	0
Ditto	ditto ditto	19 ,,	..	6	10
Ditto	ditto ditto	22 ,,	..	7	0
Patent Chaff and Gorse Cutters from		.. ..	£2 5 to	22	0
,, Bean, Oat, and Malt Mills		.. ..	3 10 to	10	10
,, Gorse and Grain Bruisers		.. ..	10 10 to	21	0
,, Bone Mills		.. ..	27 10 to	150	0
,, Mangles, various		.. ..	2 10 to	12	10

ILLUSTRATED CATALOGUES can be had gratis.

HENRY J. MORTON AND CO., 2, Basinghall Buildings, Leeds.

GALVANISED IRON WATER CISTERNS

for Cottage Houses, &c., to contain 50 gallons, 25*s.*; 80 gallons 30*s.* each; and 140 gallons, 36*s.*, and fitted with tap, keeping the water perfectly sweet and clean; will not rust or corrod Cisterns of all sizes.

GALVANISED IRON PUMPS

for Liquid Manure or Domestic Use, 3 inches diameter, 30*s.* and 32*s.* 6*d.* each; Tail Pipe for same at from 10*d.* per foot.

GALVANISED IRON SWING WATER BARROWS

for Garden or Farm use, containing about 20 gallons, entirely formed of iron, 32*s.* 6*d.* each.

PARKES' STEEL DIGGING FORKS.

BURGESS AND KEY, 95, Newgate Street, London, being the Wholesale and Retail Agents for these celebrated TOOLS have always a large Stock on hand from which their Customers may select what they may require.

ANTHONY'S PATENT AMERICAN CHURN.—The FIRST PRIZE was again awarded to this Churn in Competition with several others at the Chester Meeting of the Royal Agricultural Society; it has obtained the First Prize given by the Society at every Meeting since 1850.

Messrs. BURGESS & KEY, 95, Newgate Street, strongly recommend it as the most perfect Churn now in use. Full particulars sent on application.

MICROSCOPES.

JOSEPH AMADIO'S Improved Compound MICROSCOPE, 2*l.* 2*s.*; Students', 3*l.* 13*s.* 6*d.*

"Both these are from Amadio, of Throgmorton Street, and are excellent of their kind, the more expensive one especially."—*Household Words*, No. 345.

A large Assortment of ACHROMATIC MICROSCOPES.

Just published, an ILLUSTRATED CATALOGUE, containing the names of 1000 Microscopic objects, post free, for 4 stamps.

GENUINE TOBACCO PAPER.

PARTIES FUMIGATING can be supplied with the best GENUINE TOBACCO PAPER at 4*l.* per cwt.; any less than 56 lbs., 10*d.* per lb.

BEN BAXTER, Messrs. Jackson & Sons, Lady Lane, Leeds.

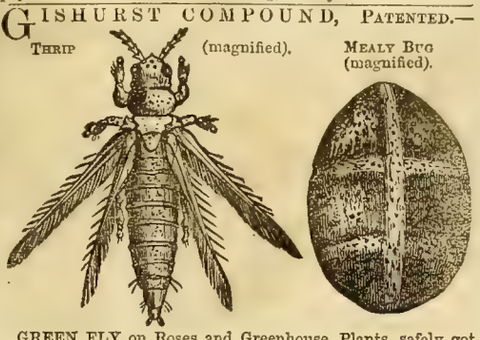
GENUINE TOBACCO PAPER FOR FUMIGATING.

H. APPLEBY (Foreman to Messrs. Ivery & Son, Surrey), takes this opportunity of informing his patrons and the public that he is now offering the above at a very considerably reduced price. It is now sold in packets of 4 lbs. each, at 1*s.* 3*d.* per lb. A liberal discount allowed to the Trade. For testimonials that will guarantee its quality, see *Gardeners' Chronicle*, April 16, p. 338.

Sheet Iron Pots for fumigating, 3*s.* 6*d.* each.

N.B. All orders to be accompanied with a Post-office Order, payable to HENRY APPLEBY, Dorking, Surrey.

GISHURST COMPOUND, PATENTED.—



THRIP (magnified). MEALY BUG (magnified).

GREEN FLY on Roses and Greenhouse Plants safely got rid of by syringing with PATENT GISHURST COMPOUND, 2 oz. to the gallon of water.

Extract from leading article in *Gardeners' Chronicle*, April 9, '59.

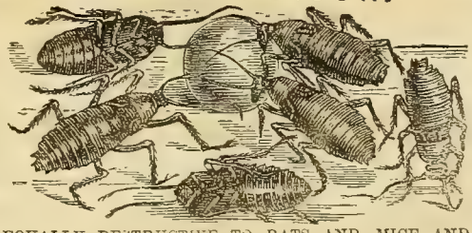
"That it really kills red spider, aphides, mealy bug, thrips, and scale, it is impossible to doubt in the face of reports of practical men, among whom we may mention Mr. D. Judd, of Althorp Gardens"—then follows a caution against the use of a too strong solution.

The Gishurst Compound is sold in boxes at 1*s.* 6*d.* and 6*s.* each, with directions for use, and printed opinions of Mr. Rucker's gardener, Lady Dorothy Nevill's gardener, Sir William Hooker, Mr. Rivers, and other eminent authorities. For Nurserymen the large size is recommended, but where the consumption is not large the compound keeps its strength best in the small. The undermentioned Seed Merchants, Nurserymen, &c., having taken in supplies are prepared to sell single boxes.

Alexander, C., Edinburgh
Bailey, G., Rugby
Barker, W., Godalming
Barnes, Thos., Thirsk.
Barratt, Bury St. Edmunds
Bass & Brown, Sudbury
Batt & Rutley, Strand
Bell & Co., Newcastle-on-Tyne
Bell, John, Norwich
Bradley & Sons, Halam Nursery, near Southwell
Brigden, T., Railway Arcade, London Bridge
Brown, D., Norwich
Broye, H., Great Malvern
Burgess, C., Cheltenham
Caldwell, W. G., Knitsford
Cattell, J., Westerham
Chater, W., Saffron Walden
Clark, J., Cheltenham
Clark, T., 25, Bishopsgate Street Within
Cooks & Son, Dorrington, near Spalding
Cottrell, J. H., Birmingham
Cripps, T., Tunbridge Wells
Darby, R. F., Cirencester
Davies & Co., Wavertree, near Liverpool
Deane & Co., London Bridge
Denyer, Mr., Gracechurch Street, City
Dickson, Francis & Arthur and Sons, Chester
Dickson & Brown, Manchester
Dickson, Hogg, & Robertson, Dublin
Dickson & Co., Edinburgh
Epps, F., Ashford, Kent
Epps, Maidstone
Fisher, Holmes & Co., Sheffield.
Foster, W., Stroud
Gray, W., Gainsborough
Griffin, J., Bath
Harrison, J., Darlington
Hawkins, R. T., Weymouth
Henderson, E. G. & Son, St. John's Wood, London
Henderson, A. & Co., Pine-apple Place, Edgeware Rd.
Hooper & Co., Covent Garden
Ivery & Son, Dorking
Jackman & Son, Woking
Jackson, Thos. & Son, Kingston
Jefferies, W. B., Ipswich
Josling, K., St. Albans
Kennedy & Co., Dumfries
Kenway, J. S., Batheaston
King, Wm., Lincoln
Laws, T., Beccles
Low, Hugh & Co., Clapton
Mackie & Stuart, Norwich
Mann, J., Brentwood
Matheson, R. C., Gloucester
May, J. & Co., 1, Wellington St.
Nelson, J., Bristol
Parsons, G., Brighton
Pattinson & Son, Hexham
Perkins, J., Northampton
Pontey, A., Plymouth
Pope, H., Gib Heath, near Birmingham
Reid, B. & Co., Aberdeen
Samson & Co., Kilmarnock
Stuart & Mein, Kelso
Sutton & Sons, Reading
Taber, G., Rivershall, Witham
Thyne, J. & R., Glasgow
Tynan, J., Liverpool
Walker, J., Thame
Whallery, T., Liverpool
Wood & Son, Maresfield
Wood & Son, Woodbridge
Wright, W., Retford

Nurserymen and Seedsmen supplied by PRICE'S PATENT CANDLE COMPANY (Limited), Belmont, Vauxhall, London, S.

CHASE'S
BEETLE POISON.



EQUALLY DESTRUCTIVE TO RATS AND MICE, AND HARMLESS TO CATS AND DOGS.

A SAFE and most effectual Destroyer of BLACK BEETLES and COCKROACHES; one trial alone will suffice to prove its great efficacy, and one box will destroy thousands. The great advantage in this preparation is, that it does not leave their bodies to decay and corrupt the air, but completely dries up and destroys them, so that nothing is left to cause an unpleasant odour when dead. *Directions for use.*—Place four or five of the Balls each night where the Beetles mostly resort.—Sold in boxes at 1*s.* each, or sent free to any part of the kingdom for Twenty Stamps (or a case containing one dozen boxes sent *carriage free* on a receipt of a Post-office Order for 12*s.*), by THOMAS CHASE, Chemist, 14, Holborn, London, E. C., and may be obtained through all Chemists, Booksellers, and Medicine Vendors.

Testimonials from the Rev. Edwin Sidney, Cornard Parva Rectory, near Sudbury, Suffolk; James Veitch, jun., Esq., of the Royal Exotic Nursery, Chelsea; Lucombe, Pince, & Co.; E. G. Henderson & Son, Wellington Nursery, St. John's Wood; C. Loddiges, Esq., of Hackney, and many others.

PAGE'S BLIGHT COMPOSITION (4*s.* per gallon, sufficiently strong to make four fit for use) has stood the test of eight years public trial, and its great success has led to numerous imitations. Dr. Lindley, in his leading article of October 25, 1856, reported 182 cases in its favour, sufficient to convince the most sceptical. Seeds packed for exportation to all parts of the world.—PAGE & TOOGOOD, Royal South Hants Seed Establishment, Southampton.

BARBER'S POISONED WHEAT, Kills Mice and Sparrows on the spot.—In 1*d.*, 2*d.*, 4*d.*, and 8*d.* packets, with directions and testimonials. No risk nor damage in laying this Wheat about. From a single packet hundreds of Mice and Sparrows are found dead. Agents: Barclay & Sons, 95, Farringdon Street; W. Sutton & Co., Bow Churchyard; B. Yates & Co., 25, Budge Row, London; and sold by all Druggists, Grocers, &c., throughout the United Kingdom.

BARBER's Poisoned Wheat Works, Eye, Suffolk.

KEATING's PERSIAN INSECT DESTROYING POWDER.

POULTRY, DOGS, AND PLANTS are effectually freed from Fleas, and all other Vermin with which they are infested, by the above Powder, which is quite harmless to animal life. The Farmer, the Gardener, or the Sportsman, will therefore find it invaluable. Bugs, Cockroaches, Beetles, Moths in Furs, and every other species of Insect are also instantly destroyed. In packets post free, for 14, or treble size for 36 postage stamps, by THOMAS KEATING, Chemist, 79, St. Paul's Churchyard, London, E.C. Take notice each genuine packet bears the above name and address. See "THE FIELD," Oct. 2d and 9th, pp. 263, 283, and 294.

FOR WATERING GARDENS, PLUMBERS, ENGINEERS, MILLS, AND MACHINISTS.

VULCANISED INDIA RUBBER.

Washers for Hot-water and Steam Joints	Garden Watering Hose
Elastic Packing and Valves for Steam Engines	Do. fitted with Brass Joints, Taps and Spreaders
Pump Buckets (compound India-rubber)	Wheel Tires (noiseless for Trucks, &c.)
Suction Hose for Pumps	Waterproof Cart, Van, and Waggon Covers
Fire Engine Hose	Mill Bands, much improved for driving all kinds of Machinery
Air Beds, Cushions, & Bolsters	Door Springs, Gas Bags
Water Beds, Pillows, and Feet Warmers	Foot Balls, Cricketting Gloves

N.B. A Stock of the above always on hand, and any modification made to order. Please address all communications to the Manufactory.

JAMES LYNE HANCOCK,
Vulcanised India-rubber Works, Goswell Road, London, E.C

TO MARKET GARDENERS.—The Advertiser is about to build a large extent of HOTHOUSES for Forcing Vegetables and Fruits for the London and other markets. They will be supplied with hot water of an uniform and sufficient heat without the use of coals, or any other expense to the tenants, and will be let at rents not very much more than the mere saving of labour and coals. The Advertiser would be glad to engage with respectable parties for taking any portion of the Houses, which may be built according to their plans and wishes.—Any further particulars may be had by addressing G. M., *Gardeners' Chronicle* Office.

TO PIG AND POULTRY FEEDERS AND MILLERS.

CHICKEN AND GAME RICE, 8*s.* per cwt., in bags 1½ cwt. each. SCREENED RICE, 11*s.* per cwt., in bags 1¾ cwt. each. RICE MEAL, 6*s.* 6*d.* to 8*s.* 6*d.* per cwt. RICE for grinding. American Oilcake and Locust Beans, per Ton only.—All Sold for Cash, and an allowance per ton, by W. & R. JUPP, Rice Merchants, 6, Cross Lane, St. Mary-at-Hill, Eastcheap.

FANCY POULTRY.

TO BE SOLD, EGGS and BIRDS from first-class breeds, from the Poultry Court of an Amateur of rank, who is overstocked.—Address A. B. C., Mr. Eccles, Woodstock.

100 PURE BRED ALDERNEY COWS AND HEIFERS.—Purchasers are invited to inspect this herd—the largest in England.—Address, JAMES DUMBRELL, Jun., Ditchling, Hurstpierpoint, Sussex, 1½ mile from Hassock's Gate Station, London and Brighton Railway.

TO GARDENERS, ETC.

TO BE LET OR SOLD, with immediate possession, a small NURSERY, suitable for the Jobbing Trade. Good reasons will be giving for leaving.—Apply 6, Alpha Road, St. John's Wood.

NURSERY GROUND.

TO BE LET, WHITTINGTON NURSERY, Upper Holloway, to be entered upon immediately.—For particulars apply to J. F. MARSON, Esq., Small Pox Hospital; or to Mr. BUNNEY, Nurseryman, Stratford, Essex.

TO BE LET, BRISTOL NURSERY GROUNDS, Kemp Town, Brighton. These Gardens are now to Let for occupation with immediate possession.—Any person desirous of treating for the same may obtain particulars and permission to view the grounds on application to Mr. R. W. LUCAS, 20, Great Marlborough Street, London, W.; and of Mr. A. CHANDLER, Horticultural Valuer, 28, Priory Road, Wandsworth Road, S.

WARWICKSHIRE.

FOR SALE, by Private Contract, an ESTATE, of between 800 and 900 acres in a ring fence. Situation first-rate. Applications (from Principals or Solicitors only) to the care of Messrs. RYLAND & MARTINEAU, Solicitors, Birmingham.

Sales by Auction.

TO NOBLEMEN, GENTLEMEN, AND NURSERYMEN.

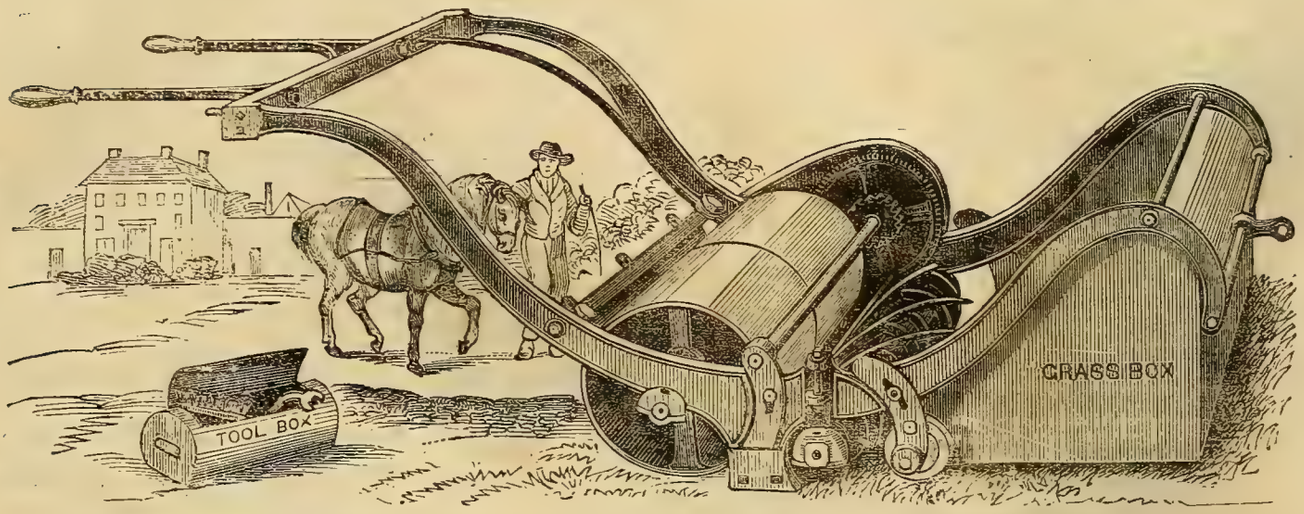
MR. J. C. STEVENS is favoured with instructions (in consequence of the agreement that existed between Mr. R. Fortune and Mr. Glendinning of the Chiswick Nursery having expired) to announce for unreserved Sale by Auction, at his Great Room, 38, King Street, Covent Garden, on THURSDAY, June 9, at half-past 12 precisely, the remaining stock of Mr. Fortune's recent CHINESE INTRODUCTIONS, including Abies Kæmpferi from 6 inches to 3 feet, A. Jezoensis, Pinus Bungeana (the lace barked Pine of China), Torreya grandis (several extra strong plants), Cephalotaxus Fortuni, the Chusan Palm, Farfugium grande (some of them specimen plants), Aralia papyrifera (the Chinese Rice-paper plant), Ilex cornuta and terrago, Limonia trifoliata, &c.—May be viewed on the day prior and morning of Sale, and Catalogues had.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will Sell by Auction at the Mart, on FRIDAY, June 3, at 12 o'Clock, a choice assortment of GREENHOUSE PLANTS, comprising Scarlet and other Geraniums, Ericas, Epacris, &c., the newest varieties of Fuchsias, Verbenas, and Dahlias, with a large assortment of Ornamental Plants for Bedding.—On view the morning of Sale. Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

GREEN'S PATENT HORSE MACHINE,

MADE VERY STRONG.



TRIAL at the London Horticultural Society's Gardens, Chiswick, June 5, 1857.

FOUR COMPETITORS.

First trial on level ground, second do. on undulated, third do. on intricate places around trees, &c., when GREEN'S PATENT was unanimously declared to be the best in each trial by Colonel Challoner, Dr. Lindley, and G. M'Ewen, Esq., the appointed Judges.

See the *Gardeners' Chronicle* of May 22, 1858, p. 423, under the heading of "Garden Memoranda."

"London Horticultural Gardens, Chiswick.—The Grass in the Arboretum and elsewhere is in excellent condition; it is kept in order by means of one of GREEN'S 2-feet Mowing Machines, which does its work very satisfactorily, and, compared with the scythe, effects a saving of at least one-half."

Extract from London *Times* of June 8, and *Gardeners' Chronicle* of June 12, 1858.

"Trial of Mowing Machines.—A considerable number of various sizes having been brought to the ground it was agreed that the trial should take place between One Hand Machine of each exhibitor, as nearly as possible of uniform size and worked by themselves, or their men. The ground to be worked was determined by lot, the pieces having been previously selected of as uniform quality as possible. After trials on level ground and round trees, the Judges, Colonel Challoner and Mr. Edward Easton, declared GREEN'S Patent to be the best.
(Signed) "C. B. Challoner, Edward Easton, Judges."

Extract from the "Cottage Gardener" of June 15, 1858.

"The decision was just what was anticipated, all present being satisfied of the manifest superiority of Green's Machine, both in construction, lightness of draught, and superiority of work."

THOMAS GREEN respectfully informs the Nobility, Gentry, Gardeners, Amateurs, and others, that upwards of Six Hundred of these Machines were sold in 1857 and to show the increasing demand, above Nine Hundred were sold in 1858, and in the early part of this season considerably more than One Thousand have already been ordered, and in all probability will exceed Two Thousand before the end of the present season. They have proved to be the best in all cases of competition, are entirely remodelled, and all the defects pointed out by the Judges up to the present time are here rectified. It would be superfluous to attempt to give here extracts from the numerous letters T. G. receives, giving unbounded testimony to the great superiority of

GREEN'S PATENT MOWING MACHINES

over all others. As several infringements of this Patent have been attempted, the Maker respectfully requests parties purchasing to see that "Green's Patent, Leeds," with the number of each Machine, are cast on the side, and the whole of the Wheels and Gearing works inside the frame, and have wood rollers in front.

LIST OF PRICES:—

HAND MACHINES.		DONKEY and PONY MACHINE (stronger).		HORSE MACHINE (very strong).	
To cut 14 inches	£6 0 0	To cut 24 inches	£10 0 0	To cut 30 inches	£18 0 0
To cut 16 inches	6 10 0	To cut 26 inches	11 0 0	To cut 36 inches	21 0 0
To cut 18 inches	7 0 0	To cut 30 inches	15 0 0	To cut 42 inches	24 0 0
To cut 20 inches	7 10 0	Donkey Boots	0 16 0	To cut 48 inches	27 0 0
To cut 22 inches	8 0 0	Pony Boots	1 0 0	Horse Boots	1 4 0
To cut 24 inches	8 10 0	Leather Traces and Stretcher	0 7 6	Leather Traces and Stretcher	0 10 0

The Patentee now considers the Machines as near perfection as possible. Notwithstanding the great improvements now introduced at much additional cost, no extra charge will be made, excepting for a neat Guard, which is placed over the wheels to keep them clean, and to prevent breakage or accidents, which will be 5*s.* extra to parties requiring them.

GREEN'S IMPROVED GARDEN ROLLERS,

WITH ORNAMENTAL ENDS.

Length and Diameter equal	16 inches	18 inches	20 inches	22 inches	24 inches	26 inches	28 inches	30 inches
	31*s.* 6*d.*	34*s.* 0*d.*	42*s.* 6*d.*	47*s.* 0*d.*	56*s.* 0*d.*	62*s.* 0*d.*	75*s.* 6*d.*	97*s.* 6*d.*
Extra (if double)	3 0	4 0	5 0	6 0	7 0	9 0	12 0	15 0

The great advantage of the Double Rollers are the comparative ease in turning them without disturbing the ground or the gravel walks; also, being much heavier and are easier drawn, they are capable of performing their work in a superior manner, which is acknowledged by all who have tried them. The above are the lowest Net Cash Prices, delivered at all the principal Railway Stations.

The number of Testimonials from Noblemen, Gentlemen, and almost all the first-class Gardeners in the United Kingdom and many other parts of Europe, would fill a volume if T. G. was to attempt to give them. So many numerous respectful references are kindly permitted that any lady or gentleman requiring references can on inquiry be supplied with every information necessary, and so widely are they spread that they may be seen within easy distance of their own seats.

☞ The Machines are warranted to give satisfaction, or may be at once returned by the party paying the carriage back to Leeds. The Patentee has spared neither time nor expense in producing the best and cheapest Mowing, Collecting, and Rolling Machines ever brought before the public. Every information may be had by applying to the Patentee,

THOMAS GREEN, Smithfield Iron Works, Leeds;

or, No. 2, Victoria Street, bottom of Holborn, London;

or at the CRYSTAL PALACE, Sydenham, where the Machines may be seen working daily in suitable weather.

N.B. Parties desirous of having their Machines repaired may forward them to either the London or Leeds establishment, where they will have the best attention.

Printed by William Bradbury, of 13, Upper Woburn Place, and Frederick Mullett Evans, of No. 20, Queen's Road West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and published by them at the Office, No. 5, Upper Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—Saturday, May 28, 1859.

THE GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 23.—1859.] SATURDAY, JUNE 4. {Price Fivepence. Stamped Edition, 6*d*.

INDEX.

Acarus, Colchester church	485 *b*	Gishurst compound	488 *c*
Advertisement impostors	489 *c*	Glenny's Manual of Gardening	487 *c*
Agri. Soc. of England	490 *a*—491 *b*	Harvest prospects	489 *c*—491 *b*
Aquaria, plan of aerating	488 *a*	Horticulture, Australian	484 *c*
Assafœtida plant	487 *a*	Labourer, prize essays on	493 *a*
Australian horticulture	484 *c*	Linnean Society	486 *b*
Bath Agri. Soc.	490 *a*—491 *c*	Linum grandiflorum	486 *a*
Bee stand indicator	486 *a*	Manures, money value of	490 *c*
Books noticed	489 *c*	Manure horse, liquid	493 *a*
Botanical Soc. of Edinburgh	486 *c*	Mildew, Vine	483 *c*
Carnations, Sardinian	486 *a*	Orchard houses	486 *a*
Ceylon ancient Tarsus	488 *a*	Peach pruning, French	484 *a*
Cucumbers, winter	485 *c*	Plough, steam	490 *a*
— without heat	486 *b*	Pond weeds	485 *c*
Dairy farm, Cheshire	490 *a*	Poultry, gapes in	493 *a*
Devon Hort. Society	487 *a*	Rainfall in Scotland	486 *b*
Dielytra, succession of	486 *a*	Rose Show, National	484 *c*
Earwigs	486 *b*	Strawberries, early	486 *b*
Entomological Society	486 *c*	Turnip experiment, Craigo	491 *b*
Farming, Cheshire dairy	490 *a*	Verbena, Tiley's Magnet	485 *c*
Food plants, foreign	486 *c*	Vine mildew	483 *c*
Fortune's (Mr.) plants, sale of	484 *c*	Weeds, pond	485 *c*
Ginger beer, to make	488 *c*	Weights and measures, French	488 *a*

HORTICULTURAL SOCIETY OF LONDON.—The next MEETING of the FRUIT COMMITTEE will be held at 8, St. Martin's Place, Trafalgar Square, on TUESDAY, June 7, at 12 Noon.

N.B. The Carriage of Packages of Fruit will be paid.

CRYSTAL PALACE.—FLOWER SHOW.—The SECOND GRAND SUMMER FLOWER AND FRUIT SHOW of the present season will be held on WEDNESDAY, June 8. Doors open at 12 o'clock. Admission free by Two Guinea Season Tickets; or by One Guinea Season Tickets on payment of 2*s*. 6*d*.; by Day Tickets, 7*s*. 6*d*., or if taken before the day of the Show, 5*s*. Children under 12, half-price. Tickets may be had at the Crystal Palace, at 2, Exeter Hall, and at the usual Agents. A Train will leave London Bridge Station at 6 o'clock A.M. for the convenience of Gardeners.

SCHEDULES OF THE SECOND GRAND NATIONAL ROSE SHOW, to be held in the Hanover Square Rooms, on THURSDAY, June 23, may be had on application to the Honorary Secretary,

The Rev. REYNOLDS HOLE,
Caunton Manor, Newark, Nottinghamshire.

NOTICE.—THE NEXT MEETING OF THE DISS HORTICULTURAL SOCIETY will be held at the usual place on THURSDAY, June 30, when, in addition to the usual Prizes, the following will be given (open to all England):—For 24 varieties of ROSES, single blooms, 1st Prize, a Silver Cup, value 5*l*. 5*s*.; 2d Prize, in money, 2*l*. 2*s*.; 3d Prize, ditto, 1*l*. 1*s*. Entrance fee, 5*s*. Further particulars may be obtained of Rev. C. H. BROWNE, Secretary.

Blo'Norton, East Harling, Norfolk.

NOTICE.

JOHN WATERER'S EXHIBITION of RHODODENDRONS will be displayed as usual throughout the month of JUNE at the Royal Botanic Gardens, Regent's Park, London.—The American Nursery, Bagshot, Surrey.

GRAND DISPLAY OF HARDY SCARLET RHODODENDRONS, AZALEAS, ETC.

JOHN WATERER has the pleasure to announce his collection of the above Plants is now in bloom and will continue in great beauty throughout the month of June. The Nursery is near the Sunningdale Station of the South-Western Railway, Reading Branch.

The American Nursery, Bagshot, Surrey.

GEORGE BAKER begs to inform the nobility, gentry, and public that his extensive collection of HARDY RHODODENDRONS, AZALEAS, KALMIAS, &c., are now in perfection, and may be viewed free.—American Nursery, Windlesham, near Bagshot, Surrey (1¼ mile from the Sunningdale Station of the Staines and Wokingham Railway, where conveyances are always to be had).—June 4.

EXHIBITION OF AMERICAN PLANTS.

KNAP HILL NURSERY, NEAR WOKING.

MESSRS. WATERER AND GODFREY beg to announce that the AMERICAN PLANTS are now in their greatest beauty, and may be seen daily. The Nursery is readily reached by Train from Waterloo to Woking in 40 minutes. Capital conveyances may at all times be depended on at the Woking Station.

E. ADOLPHE, 47, Rue de la Paix, Boulogne-sur-Mer, offers the following 13 new French GÉRANIUMS in strong cut down plants in flower, at 5*l*. the set; small rooted cuttings, 3*l*. Grande Duchesse Stephanie, Impératrice Eugénie, Prince Jerome, Reine Hortense, Alma, Le Crimeen, Madame de Wendel, Beauté de Rochefuret, Ciceron, Pline, Senèque, Virgile, Horace. Orders must contain payment. Package and transport to London included.

NEW SEEDLING AZALEA INDICAS.

Blanc de Neige	Triomphe de Gand
Pelargoniflora nova	Vicomte de Nieuport
Prince Impérial	
Reine des Doubles	Rosæflora plena

JEAN VERSCHAFFELT, Ghent, Belgium, begs respectfully to announce that he is now prepared to send out his seven new Azalea indicas as above, in fine strong plants. The price of the set is 3*l*. Early orders are requested, as they will be sent in strict rotation. One selection over on three to the Trade.

The description of the above may be had free on application to JEAN VERSCHAFFELT. Plants will be immediately forwarded after orders are received. All orders to be directed to JEAN VERSCHAFFELT, Nurseryman, Ghent, Belgium.

TO THE TRADE.—Ericas, Azaleas, Boronias, Dillwynias, Epacris, Eutaxias, Apheleas, Chorozemas, Hibbertias, Leschenaultias, Myrtus of sorts, Jasminum grandiflorum, Pimeleas, Polygalas, &c.; healthy plants and the best sorts in 60-sized pots, 50*s*. per 100. Greenhouse and Stove Creepers, fine, 9*s*. to 12*s*. per dozen. Stove and Variegated plants of all the best kinds, fine plants, 5*l*. per 100. All the new Tydæas and Achimenes, 6*s*. to 12*s*. per dozen. Fine plants of the new Gesnerias and Begonias. Extra strong plants of French and Spotted Geraniums, 12*s*. to 18*s*. per dozen.—EPPS's Nursery, Maidstone.

SORGHUM OR HOLCUS SACCHARATUS.

CARRIAGE FREE TO ALL PARTS.

SUTTON AND SONS, Importers of this Seed, can supply it wholesale and retail. Warranted the true kind, and good growing Seed at reduced price according to quantity required. Sample packets 6*d*. post free. Instructions on Cultivation sent with the Seed.

SUTTON & SONS, Royal Berks Seed Establishment, Reading.

HOLCUS SACCHARATUS, or North China Sugar-Cane.—Pamphlet, "A Visit and a Plant;" the only English authority on the Cultivation of the above. Post free 6*d*. Prices of Seed on application. Samples 6*d*. Four varieties of Holcus remitted free by post on receipt of 10*s*.

JOHN W. CLARKE, Whittlesea, Cambridgeshire.

NEW ZEALAND RUNNER BEAN.

Price 2*s*. per quart.

JAS. CARTER & Co., Seedsmen, 238, High Holborn, London, W.C.

KEMP'S INCOMPARABLE EARLY CABBAGE.—This is quite a distinct variety, and superior to any other known kind, of delicious flavour, dwarf habit, extra early, attains a good size, will not run to seed, and every plant warranted to Cabbage. Seed may be had in sealed packets for 13 postage stamps, post free, at EDMUND P. DIXON'S, 57, Queen Street, Hull.

TURNIPS FOR EARLY FEEDING.

SUTTON'S LINCOLNSHIRE RED GLOBE; the heaviest cropper known. This sort is very superior to the Red Globe Turnip commonly grown in Lincolnshire. The original stock was presented to Messrs. SUTTON by the late Philip Pusey, Esq., with the earnest desire that he might be supplied annually with Seed of the same sort. Price 10*d*. per lb., or cheaper by the bushel.

POMERANIAN WHITE GLOBE TURNIP; the largest white Turnip; price 9*d*. per lb., or cheaper by the bushel.

These two Turnips thrive well on most soils, and are good for feeding off previous to Wheat sowing. Goods delivered carriage free.—Royal Berks Seed Establishment, Reading.

TWO HUNDRED GUINEAS IN EIGHT PRIZES.



FOR FOUR YEARS SUCCESSIVELY HIS ROYAL HIGHNESS THE PRINCE CONSORT'S PRIZE CUPS HAVE BEEN AWARDED TO

SUTTON'S CHAMPION SWEDES at the East Berks and South Bucks Agricultural Societies in 1855, 1856, 1857, and 1858. New Seed now ready, 1*s*. per lb., or cheaper by the bushel, carriage free.

Royal Berkshire Seed Establishment, Reading.

NEW SORTS OF SWEDES.

CARRIAGE FREE, except small parcels.

	Per lb.—*s*. *d*.		Per lb.—*s*. *d*.
Sutton's Champion	1 0	Shepherd's Golden Globe	1 0
Grant's Pine Apple	1 0	Russian Hardy Green-top	1 0
Sharp's Improved	1 0	Jeffrey's Swede	1 0
Marshall's Purple-top	1 0	Improved Gloucestershire	
Jack of Newbury	1 6	White do	1 0

Or cheaper by the bushel.

SUTTON & SONS, Royal Berkshire Seed Establishment, Reading

THE SWEDE THAT NEVER MILDEWS.

SUTTON'S CHAMPION.—See *Gardeners' Chronicle*, May 14, third page. Price 1*s*. per lb., or cheaper by the bushel. Carriage free to all parts. Payment by cheque, or by Post-office orders payable to SUTTON & SONS, Reading, Berks.

THE RUSSIAN HARDY GREEN-TOP SWEDE.

SUTTON AND SONS recommend this sort for cold exposed situations. It stands the most severe winter in the field, and is also good for storing. The quality of the flesh is also good. Price Two Guineas per bushel (carriage free).

Royal Berks Seed Establishment, Reading.

GRASS SEEDS FOR PRESENT SOWING.

SUTTON AND SONS have reserved some of each of the best kinds of Permanent Grass and Clover Seeds for those of their customers who could not prepare their land for sowing earlier. In ordering it is only necessary to state in general terms the nature of the soil and the quantity of land to be laid down.—Royal Berkshire Seed Establishment, Reading.

PAMPAS GRASS (GYNERIUM ARGENTEUM).—The beauty of this extraordinary plant has this season been fully appreciated. It can be supplied by the dozen, hundred, or thousand, by CHARLES NOBLE, Bagshot, Surrey.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY LIMITED supply every requisite for the Farm and the Garden.

Registered Offices, Union Road, Plymouth.

CACTI.

TO BE SOLD, either wholly or in part, a rare and superb collection of Exhibition Specimens of TALL CACTI, CEREUS, EPIPHYLLI, and their hybrids. They have been exhibited at all the Metropolitan Shows for years past. Being large and numerous the owner wishes to dispose of them for cash or in exchange for Camellias, Ferns.—Apply to R. BUNN, Gardener to J. R. Scott, Esq., Harringay Park, Crouch End, Hornsey, N.

CINERARIA, CALCEOLARIA, AND PRIMULA SINENSIS SEED, OF FIRST-CLASS QUALITY.—The present season is the most suitable for sowing to secure an early and continuous bloom of the above favourite plants for the Greenhouse and Conservatory. The last-named may be had either white or red, separately or mixed. 2*s*. 6*d*. per packet.

E. G. HENDERSON & SON, Wellington Road, St. John's Wood.

THE NEW SPRING CATALOGUE, containing the novelties of the season in ORNAMENTAL, GREENHOUSE, HOTHOUSE, AND BEDDING PLANTS FOR THE FLOWER GARDEN will be forwarded free on application.

E. G. HENDERSON & SON, Wellington Road, St. John's Wood.

ROSE ISABELLA GRAY.

A. PAUL AND SON have a large STOCK of the above ROSE, originally introduced by them, and so highly spoken of in the *Gardeners' Chronicle* of last week. Strong healthy plants, 2*s*. 6*d*. to 3*s*. 6*d*. each. A liberal discount to the Trade.—Nurseries, Cheshunt, Herts, June 4

CHOICE ROSES IN POTS.

BIRCHAM AND WARD having a large Stock of the Newest and Best ROSES in fine condition, are enabled to supply them at very reduced prices.

See CATALOGUE, which may be had on application.

Carriage paid to London and Peterborough.

Hedenham Rosary, Bungay, Suffolk.—June 4.

NEW ROSE HYBRID PERPETUAL EVÊQUE DE NÎMES.

BENJAMIN R. CANT has much pleasure in offering the above most beautiful Rose; it is quite a gem and ought to be in every good collection. Colour deep vivid crimson, of exquisite shape; the petals are disposed in the form of a rosette, which gives it a distinct and unique appearance; flower medium size, foliage and habit of growth excellent. Fine plants in pots are now ready at 3*s*. 6*d*. each, with the usual discount to the trade.—St. John's Street Nursery, Colchester.

NEW CHRYSANTHEMUMS AND DAHLIAS.

JOHN SALTER is now sending out his splendid Seedlings and other new CHRYSANTHEMUMS, as well as those of his unrivalled general collection, which is the largest in Europe; also several fine new DAHLIAS, English and Foreign.—Versailles Nursery, Hammersmith Turnpike, W.

CALCEOLARIA YELLOW PRINCE OF ORANGE.—Strong healthy plants, the best of its class, new last year, 6*s*. per doz.—E. SHENTON, Hendon Park Nursery, Hendon, N.W.

WILD'S ORION MELON.—FIRST PRIZE, ST. JAMES'S HALL, May 12, 1859.
FIRST PRIZE, CRYSTAL PALACE, May 18, 1859.
THOMAS WILD, the Primulary, Ipswich.

Extract from the "Cottage Gardener," Nov. 1857.

VINCA ELEGANTISSIMA.—"It makes one of the most beautiful edgings that possibly can be desired."

Twelve plants sent free by post for 36 post stamps, by JOHN JEYES, Nurseryman, Northampton.

FERN CATALOGUE.

ROBERT SIM'S NEW DESCRIPTIVE AND PRICED CATALOGUE, No. 6 (62 pages) of his COLLECTION of BRITISH AND EXOTIC FERNS, can be had, post free, for 8 stamps. Gratis to all previous purchasers of Ferns.

Nursery, Foot's Cray, Kent, S.E.

PLANT CATALOGUE.

E. P. DIXON'S CATALOGUE OF STOVE, GREENHOUSE AND BEDDING PLANTS, FERNS, ORCHIDS, &c., may be had, post free, upon application at 57, Queen Street, Hull.—Exotic Nursery, Air Street, Sculcoates.

CHOICE SEEDS.

MESSRS. PARKER AND WILLIAMS beg to inform ther friends and patrons that they can now supply the following choice SEEDS, all of which are warranted genuine and of the finest quality.

	Per packet—*s*. *d*.		Per packet—*s*. *d*.
Calceolaria, herbaceous	2 6	Gaillardia grandiflora	0 6
Cineraria, from named vars.	2 6	Primula sinensis, mixed	1 0
Clianthus Dampieri	2 6	Pansy, from named vars.	1 0
Hollyhock, from named vars.	0 6	Sweet William, from extra fine vars.	0 6

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

SPLENDID CINERARIAS.

F. AND A. SMITH are now sending out Seeds of their fine COLLECTION of the above, which for brilliancy of colour, profuseness of flowering, and compactness of growth, are unsurpassed. Great care has been taken to select only the very best for Seed from upwards of 10,000 of the finest produced in the country, some of which were exhibited at the Spring Meetings of the Botanic Society, obtained certificates of merit, and were much admired. In packets 1*s*. 6*d*., 2*s*. 6*d*., and 5*s*. each in stamped envelopes, and may be had of most respectable Seedsmen in the United Kingdom.—Dulwich, Surrey, S.

FLOWERING PLANTS.

F. AND A. SMITH have now in bloom a fine sample of KALOSANTHA COCCINEA, also HYDRANGEA, blue and pink; GERANIUM, French, Fancy, and Show varieties; FUCHSIAS, HELIOTROPES, CALCEOLARIAS (herbaceous and shrubby), ERICA, CACTUS, ROSES, &c., at moderate prices.—Dulwich, Surrey.

CHEAP BEDDING PLANTS.—The following varieties 1*l*. 1*s*. per hundred:—Verbenas, Scarlet Geraniums, Fuchsias, Salvias, Calceolarias, Kœniga variegata, Cerastrum tomentosum, &c., the best plant out for an edging, having silvery foliage and white flowers. Sold in collections 25 of a sort.—E. SHENTON, Hendon Park Nursery, Hendon, N.W.

BEDDING PLANTS.

BUTLER AND MCCULLOCH'S LIST of the above, forwarded free by post, contains a selection of the most suitable PLANTS FOR TOWN GARDENING, together with Hints on their Culture, embodying the experience of Messrs. Broome, of the Temple Gardens; Wyness, Royal Gardens, Buckingham Palace; and Morgan, the Gardens, Lincoln's Inn Fields.—Covent Garden Market.

CHEAP BEDDING PLANTS, 2*s*. 6*d*. per dozen.—Apply for Catalogues, enclosing two stamps, to J. SCOTT, Merriott Nurseries, Crewkerne, Somerset.

The CATALOGUE comprises everything suitable for Flower Garden decoration, and full descriptions of J. S.'s unrivalled collection of new DOUBLE PETUNIAS, now ready for delivery, at 6*s*., 9*s*., and 12*s*. per dozen. Fine new single sorts, 2*s*. 6*d*. to 3*s*. 6*d*. per dozen; Magna coccinea, the most splendid of all Bedding Petunias, 5 inches across, beautifully fringed, 3*s*. 6*d*. per dozen.

LEPTODACTYLON CALIFORNICUM, in quantity, also PHLOX CRITERION, two lovely Bedding Plants.

GARDENERS' CHRONICLE NEWSPAPER PENNY

TO PLANTERS OF THE SPERGULA PILIFERA.

THE TRUE SPECIES.

WE quite concur with E. G. Henderson & Sons (who have very properly introduced this excellent Alpine for Lawn Planting) in the caution they recommend in the purchase of other kinds of Spergula. With regard however to their statement that "all the divisional stock derived from the parent lawn will pass through their hands," we beg to remark that the plant (though we believe it to be very scarce) *is not new*, having been several years introduced; and in order to afford satisfaction to those who wish to procure strong tufts at the price we offer, we have purchased a few as a sample from E. G. Henderson & Sons, which are growing in a bed by the side of our own, for the purpose of removing any fears on the part of our customers. A few thousand tufts, ready for immediate planting, strong and well established (not Seedlings), which will flower freely this season, price, per dozen, 3*s.*, sent in or out of pots, or if requested will be sent prepaid by post at 8*d.* extra for one dozen, or 6*d.* per dozen extra for orders of more than one dozen. Directions as to distance and culture sent.

BASS & BROWN'S CATALOGUES for the present season sent free on application.

Goods (20s. and upwards) Carriage free to all Stations in London, &c. See Catalogue.

BASS & BROWN, Seed and Nursery Establishment, Sudbury, Suffolk.

CINERARIA SEED

SAVED FROM THE

CHOICEST NEW SORTS.

LUCOMBE, PINCE, AND CO. have now ready for sending out SEEDS of their very superior

CINERARIAS,

Which have been saved with the greatest care from fine selected flowers of the best new varieties. The great satisfaction which their Cinerarias have given for many years past has induced them to pay even greater attention to the quality, which enables L., P., & Co. to recommend their Seed of this present season's saving as being vastly superior to any previously sent out by them:—

Large packets .. 5*s.* 0*d.* each } Post free, sealed and war-
Small do. .. 2 6 ,, } ranted by L., P., & Co.

The present is an excellent time for sowing, and as their stock owing to its select quality is limited, early orders are respectfully solicited.

Exeter Nursery, Exeter. Established 1720.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Stove, Greenhouse, and Hardy Ferns, Miscellaneous Stove, Greenhouse, and Hardy Plants, Variegated and Ornamental foliaged Plants, Conifers, Roses, Rhododendrons, Indian Azaleas, Gloxinias, Fuchsias, Cactuses, &c., is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

DILLISTONE AND CO., of the Nurseries, Sturmer, Halstead, Essex, will have great pleasure in forwarding to any part upon receipt of 10*s.*, hamper and carriage paid to London, the following kinds of HARDY CLIMBERS:—

4 varieties of fine Honeysuckles		2 varieties of Passion Flowers	
2 ,, Clematis		2 ,, fine Ivies	
3 ,, Jasmines		1 ,, Solanum	
4 ,, Climbing Roses		1 ,, Bignonia	
		1 ,, Ampelopsis (tricolor)	

The following Summer ditto, per 20 Plants, for 6*s.* (viz.), hamper, &c.:—

2 Maurandyas in varieties	2 Kennedyas in varieties
2 Calampelis ,,	4 Tropæolums ,,
2 Calystegias ,,	4 Ipomœas ,,
4 Lophospermums ,,	

Also the usual BEDDING PLANTS in well grown and hardened stuff, hamper, &c, 20*s.* per 100.

HERBACEOUS, all the best two of a kind, 20*s.* per 100.

BEDDING PLANTS.—As orders are received the best Plants will be selected, and set aside until they are required. The following 12 dozen Plants can be had for 25*s.*, package included, viz:—

12 Scarlet Geraniums	12 Petunias [sima	12 Gazania
12 Yel. Calceolarias	*12 Vinca elegantis-	12 Blue Lobelia
12 dark ditto	12 Blue Verbenas	12 Hollyhocks
12 Dahlias	12 White Verbenas	12 Heliotropes

Thirteen Plants to the dozen. 200 Plants for 21*s.*, the selection left to JOHN JEYES.

*** J. JEYES respectfully invites attention to a very fine COLLECTION of FERNS.

* VINCA ELEGANTISSIMA.—The most beautiful of all variegated plants. As a bordering for flower beds, or to form a bed of itself, or mixed with shrubs, it stands unequalled, and being an evergreen and hardy makes it the most desirable of all variegated plants; it resembles when in full leaf finely grown plants of the Golden Chain Geranium.

Northampton Nurseries.

NEW ROSES IN POTS.

BENJAMIN R. CANT offers the undermentioned NEW ROSES. The plants are now ready, and are remarkably fine and healthy; many of them have strong shoots from 1 to 2 feet in length. Purchasers of 1 dozen and upwards will be supplied at a reduced rate. The trade allowed the usual discount.

NEW ROSES FOR 1859 at 5*s.* each:—

TEA: Madame Damaisin	HYBRID PERPETUALS:—
BOURBON: Docteur Berthet	Comtesse Cecile de Chabrillan
,, Edith de Murat	Imperatrice Eugénie
HYBRID PERPETUALS:—	L'Oriflamme de St. Louis
Altesse Impériale	Le Mont Vésuve
Ardoisée de Lyon	Orderic Vital
Anna Alexieff	Princesse Olympie
Anna de Diesbach	Salomon
eauté de Royghem	Virginal

Also the following CHOICE ROSES at 2*s.* 6*d.* each, or 25*s.* per dozen:—

TEA: Souvenir d'Elise	HYBRID PERPETUALS:—
BOURBON: Caroline Riquet	Louis Chaix
,, Josephine Clermont	Louise d'Autriche
,, Madame Contesse	Lord Palmerston
,, Monsieur Jard	Marie Thierry
HYBRID PERPETUALS:—	Monsieur de Montigny
Abbé Feytel	Philomène Crozy
Evêque de Nimes. 3*s.* 6*d.*	Reine de Denmark
Gloire de Lyon	Triomphe de Mont Rouge
General MacMahon	,, des Beaux Arts

At 15*s.* per dozen:—

HYBRID PERPETUALS. — Adelaide Fontaine, Bacchus, Belle Anglaise, Cardinal Patrizzi, Etendard de Sebastopol, Lord Raglan, Madame Vidot, Mathurin Regnier, Pauline Lanszezeur, Prince Leon, Prince de la Moskwa, Rebecca, Souvenir de la Reine d'Angleterre, Souvenir de Leveson Gower, Sir J. Franklin, Victor Trouillard.

BOURBON: Glorietta, Omer Pacha,

NOISETTE: Miss Gray, Narcisse

TEA: Devoniensis, Elise Sauvage, Gloire de Dijon, Madame Bravy, Souvenir d'un Ami, Vicomtesse de Cazes.

A fine collection of the most esteemed older varieties, such as Caroline de Sansal, Comte de Nanteuil, Colonel de Rougemont, General Jacqueminot, Jules Margottin, Souvenir de la Malmaison, at 12*s.* per dozen.

St. John's Street Nursery, Colchester.

WILLIAM BARNES begs to inform his friends and patrons that his new PRICED and DESCRIPTIVE CATALOGUE is now ready, and can be had post free upon application. It contains the finest selections of Indian Azaleas, Cinerarias, Calceolarias, Verbenas, Fuchsias, Hollyhocks, Liliums, Phloxes, Roses, Geraniums, Chrysanthemums, Ferns, Stove and Greenhouse plants, as well as a very large assortment of choice miscellaneous plants.

Camden Nursery, Camberwell South.

NEW PRICED & DESCRIPTIVE GENERAL CATALOGUE.

Just Published by

MILNE, ARNOTT, AND CO., Successors to Chandler & Sons, and will be forwarded free upon application, a General Descriptive CATALOGUE, containing select priced Lists of new Hybrid Achimenes, Camellias, Azaleas, Ferns, Stove and Greenhouse plants, Chrysanthemums, Dahlias, Fuchsias, Pelargoniums, Verbenas, Petunias, Phloxes, Bedding Plants, hardy Trees, Shrubs, Fruit Trees, &c.

Waudsworth Road, London, S. Established upwards of 60 years.

ROYAL SOUTH HANTS SEED ESTABLISHMENT,

UNDER THE PATRONAGE OF H.R.H. THE PRINCE CONSORT, THE AGRICULTURAL SOCIETY OF INDIA, AND THE LEADING AGRICULTURISTS OF THE UNITED KINGDOM.

PAGE AND TOOGOOD'S STOCKS have produced the finest specimens exhibited at Smithfield, and are so well known and appreciated that comment on their part is unnecessary. Their prices compete with any house in the trade.

PRESENT PRICES, Carriage Free to all parts of England:—

	Per lb.—*s. d.*		Per lb.—*s. d.*
Skirving's Swede ..	.. 0 6	Hardy Green Round	.. 0 6
Page's Improved ..	.. 0 8	Early Six Weeks ..	.. 0 6
Ashcroft	.. 0 6	Kohl Rabi	.. 2 6
Greentop	.. 0 6	Yellow Globe Mangel	.. 0 6
Sussex, or Jeffery's	.. 0 9	Page's Impl. Orange Globe*	0 8
Tankard	.. 0 7	Red Globe	.. 0 7
Red Round Turnip	.. 0 6	Elvetham Long Red	.. 0 7
Page's Improved Red Globe	0 8	Long Red	.. 0 6
Scotch or Bullock ..	.. 0 7	Long Yellow ..	.. 0 7
Pomeranian White Globe	0 6	White Belgian Carrot	.. 1 0
Early Green Globe ..	0 6	New Red	.. 1 3
,, White Tankard	.. 0 7	Long Altringham ..	.. 1 3
Red Tankard ..	.. 0 7	Cattle Cabbage ..	.. 2 6
Green ditto	.. 0 7	Cattle Parsnip ..	.. 1 0
Yellow ditto ..	.. 0 7	Dwarf Essex Rape	.. 0 4

* Bulbs of this variety have acquired the enormous weight of 44 lbs., as shown at Smithfield Club.

BUCKWHEAT, MUSTARD, LINSEED, TARES, SAINFOIN, HOLCUS SACCHARATUS, 1*s.* per lb.

Fine PERMANENT PASTURE GRASS, ITALIAN RYE-GRASS, CLOVER, &c., at lowest market prices.

Special contracts for large quantities. Seeds packed for exportation to all parts of the world.

Oxford Street and Above Bar, Southampton.

NATURAL GRASS SEEDS.

PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN, can supply genuine Seed of all the valuable kinds of the NATURAL GRASSES suitable for Lowland and Upland Pastures; also for Laying-down Lawns, Bowling Greens, Cricket Grounds, Cemeteries, Railway Banks, &c.

PRICED LISTS may be had free on application.—PETER LAWSON & SON, 27, Great George Street, Westminster.

"JACK OF NEWBURY" SWEDE, ETC.

PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN, &c., 27, Great George Street, Westminster, respectfully request attention to their very genuine Stock of the above excellent Swede; also of the LOTHIAN PURPLE-TOP SWEDE, both of which have been selected with the greatest care. They have also a very fine Stock of the KOHL RABI, or TURNIP-ROOTED CABBAGE, specimens of which were shown at their Stands at Smithfield Club Show. The Kohl Rabi was largely grown last season, and may now be relied on as a substitute for the Turnip and Mangel, where these roots do not succeed, or for filling up blanks where there is a partial failure. Its feeding qualities, hardiness, and weight per acre are equal to the Swede, and all kinds of stock prefer it to other roots.

P. L. & SON have also selected a first-rate Stock of MANGEL WURZEL SEED, which they can confidently recommend. Their natural GRASS SEEDS have been also saved with very great care, and they are ready to supply them separately or in mixture, for laying down Permanent Pastures, Lawns, &c.

P. L. & SON have arranged to deliver Seeds free throughout England and Wales from their London Establishment, for all quantities exceeding 20*s.* in value.

LISTS OF PRICES of the above and all other Seeds, Plants, &c., may be had on application.

27, Great George Street, Westminster.

GARDEN ARCHES, painted any colour, at 12*s.*, 15*s.*, 20*s.*, and 25*s.* each; also some very handsome Ornamental Pillar Arches, 25*s.* Iron baskets of every pattern from 4*d.*, 6*d.*, 1*s.*, 1*s.* 3*d.*, 1*s.* 6*d.*, 1*s.* 9*d.*, and 2*s.* each, and every other kind of Wire Work, Wire Netting, Rustic Tubs, Tables, Chairs, &c.—ROBERT GREEN, 154, Kingsland Road, 55 doors from Shoreditch Church.

NEW SCARLET VERBENA "MAGNET."—This superb variety is a Seedling of 1858. The colour is a most vivid scarlet with a large lemon coloured eye, which gives it a very striking appearance over all other scarlets; the pips are as round, large, and as good a substance as those of the most beautiful Phloxes; the truss is of an immense size, many of them last season measuring 9 inches, in circumference. It is a most prolific bloomer, and always throws its trusses well up. Blooms of the finest of the Scarlet Verbenas as yet sent out were compared with it last year, but none of them approached it in size or brilliancy of colour by many degrees. Single Plants of this superb new Verbena, 5*s.* each.

NEW VERBENA "LOLA MONTES."—Colour light, beautifully shaded rose, fine eye and truss. Is a first rate show variety, many of the pips coming as round and large as a shilling, and of good substance. Plants 3*s.* 6*d.* each.

"EMPEROR OF MOROCCO" VERBENA."—Also a Seedling of 1858. Colour very dark purple, the nearest approach to a decided blue of any that has yet been sent out. It shows a very fine truss, is a prolific bloomer, and good bedder. Plants 3*s.* 6*d.* each.

The above are now ready for sending out in strong well rooted plants. Parties taking the three varieties will be charged 10*s.*, postage and package free.

For further particulars and list of testimonials see this Paper of May 21, 1859, page 442.

A remittance must accompany all orders either in cash or penny postage stamps.

EDWARD TILEY, NURSERYMAN, SEEDSMAN, AND FLORIST, 14, Abbey Church Yard, Bath.

TO LANDSCAPE GARDENERS.

LANDSCAPE GARDENERS desirous of LAYING OUT the NEW WALCOT CEMETERY, which is to consist of 12 Acres, are requested to communicate in writing with Mr. WILLIAMS, at the Offices of the Walcot Burial Board, 1, Fountain Buildings, Bath. The Site selected being admirably adapted for the formation of a Picturesque Cemetery, the Board will only accept the services of a Gardener of proved taste and ability. Applications must, therefore, specify some undertakings of a similar nature accomplished by Applicant, and the name of the Officials connected therewith, to whom reference may be made.

MARQUEES, TENTS, AND RICK CLOTHS FOR SALE, OR HIRE.—H. PIGGOTT, 115, Fore Street, E.C.

---

200 ONE, TWO, and THREE-LIGHT MELON BOXES and LIGHTS, of the best seasoned materials, ready for immediate use.—JAS. WATTS, Hothouse Builder and Hot-water Apparatus Manufacturer, Old Kent Road, London.

JOHN WARNER AND SONS, Crescent, Jewin Street, London.—GALVANISED IRON TUB GARDEN ENGINE, with WARNER'S Registered Spreader, is strongly recommended, for durability and low price, viz., 2*l.* 19*s.*, to hold 10 gallons.



Larger sizes in wood or iron, viz., 14 gallons, 24 gallons, and 35 gallons. May be obtained of any Ironmonger or Plumber in town or country, or of the patentees and Manufacturers, as also Machinery of all kinds for raising Water from any depth to any height by Steam, Horse, or Manual Power. Prices sent on application.

Syringes of various constructions and sizes from 9*s.* upwards. Metallic String from 5*d.* to 1*s.* 3*d.* per lb.

GARDEN ENGINES AND SYRINGES.

J. TYLOR AND SONS, Warwick Lane, Newgate Street, London, E.C., beg to call attention to their very superior manufacture of GARDEN ENGINES and SYRINGES.

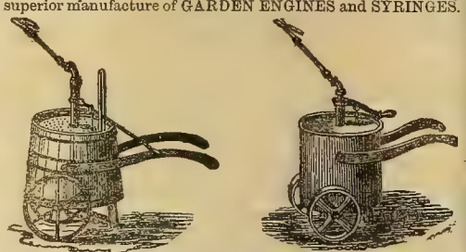


Fig. 598. J. TYLOR & SONS' BARROW GARDEN ENGINE in best well painted Oak tub, fitted with J. TYLOR & SONS' Improved Brass Pump, Universal Joint, and Registered Spreader, which answers the purpose of the separate rose, fan, and jet.

CONTENTS OF TUB:—

10 gallons	15 gallons	28 gallons
£4 10 0	£5 10 0	£6 18 0

Fig. 599. do. TINNED IRON TUB.

CONTENTS OF TUB:—

8 gallons	12 gallons	16 gallons	24 gallons	30 gallons
£2 15	£3 5	£4	£5	£5 18

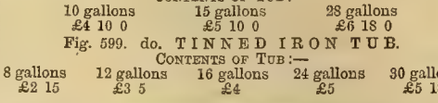


Fig. 618. No. 1. REGISTERED SYRINGE, with India-rubber suction tube, one rose and jet .. .. £1 5 each.
No. 2. Ditto ditto 1 1 ,,
Telescope Branch Pipe for ditto .. .. 0 10 ,,



Fig. 619. GARDEN SYRINGE, with one rose and jet, 12*s.* 6*d.* each
,, 620. Ditto ditto 11*s.* 6*d.* ,,
,, 621. Ditto ditto 10*s.* 6*d.* ,,
,, 622. LADIES' GARDEN SYRINGE, with one rose & jet, 8*s.*

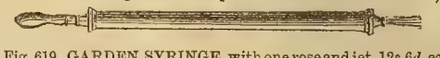


Fig. 623. READ'S SYRINGE, with two roses and one jet, 18*s.* 6*d.*
,, 624. READ'S SYRINGE, with one rose and jet .. 16 6
,, 625. Improved ditto ditto .. 14 6
,, 626. Ditto ditto ditto .. 13 0

Manufacturers of Pumps and Well Engines (for shallow or deep Wells), Plumbers' Brass Foundry of every description. High Pressure Cocks and Closets, Copper and Tinned-iron Baths, Garden and Fire Engines, Lamps of every description, Copper Goods, &c. Estimates given for Hot-water and Bath Apparatus.

A PERFECT SUBSTITUTE FOR GRASS.
LAWNS WITHOUT MOWING.

SPERGULA PILIFERA

IS OFFERED BY

MESSRS. E. G. HENDERSON & SON.

WELL-ESTABLISHED TUFTS FOR IMMEDIATE PLANTING, 4*s.* PER DOZEN.
Seed Packets, 6*d.*, 2*s.* 6*d.*, 5*s.*, 10s., and 20*s.* each.

Special directions for sowing, rearing, and final planting are given in E. G. HENDERSON & SON'S

NEW GENERAL CATALOGUE and SPRING LIST of ORNAMENTAL BEDDING and SUMMER FLOWERING PLANTS

IS READY FOR DISTRIBUTION, WHEREIN WILL BE DESCRIBED

ALLAMANDA VIOLACEA.

This plant so long looked for, and much needed by all English competing competitors, we have much pleasure in introducing for the first time to the public, and no doubt it will be for years the great feature at the leading Exhibitions. The late Mr. Gardner, Director of the Royal Botanic Gardens in Ceylon, speaks of it in his papers, published in the second volume of the London Horticultural Society's Quarterly Journal, as one of the finest shrubs he met with, and "by far the most beautiful species in the genus, bearing numerous large flowers not unlike in colour those of Gloxinia speciosa."

As a competition plant in collections, A. violacea, in its violet-blue tint, offers a new and essential feature in colour, there being none other in the same style to associate with the golden-yellow of A. Schotti, and the delicate rosy-blush of Echites and Dipladenia. 63*s.* each.

CALCEOLARIA AMPLEXICAULIS ALBA, Splendid bedder.
BOUVARDIA "BRILLIANT" AND "DELICATA," with large flower tubes, and profusion of bloom.
NEW BEDDING DAHLIAS, GLOIRE DE FRANCE, AND WHITE UNIQUE.—The best white variety out, and the former as the most noble formed and richly coloured flower of any other Dahlia for beddings, a dried plant showing the dwarf and profuse blooming habit may be seen at the Wellington Nursery.
BANKS'S NEW FUCHSIAS.

NEW CHRYSANTHEMUMS (8 varieties), see Plate XXVI. in the "Illustrated Bouquet."

BREEZE & BANKS'S COLLECTION OF NEW VERBENAS will include the finest blue out, the best rose, the finest violet-purple, the best peach, and maroon black, with large white eyes or centres, the Grant des Batailles far surpassed; a Mrs. Holford in truss and habit, but suffused with a beautiful pink tint. The entire collection includes a full complement of colours, as the finest ever sent out by us, and surpasses with but few exceptions any that we have cultivated under name.

FINE BEDDING GERANIUMS.

NEW NOSEGAY SECTION.

THE IMPERIAL CRIMSON, AND MODEL NOSEGAY GERANIUMS. See descriptions at page 855, and also the Catalogue.

Among Variegated Geraniums, MISS EMILY DOMVILE will prove a first-class Bedding Plant (see description in Catalogue).

The two GOLDEN-LEAVED varieties with large-petalled flowers.

THE RAINBOW, with the finest red-zoned foliage yet seen.

THE ST. CLOUD, a beautiful accompaniment to FONTAINBLEAU.

THE SILVER CHAIN, with deep margin of pure white; a fitting companion to the GOLDEN CHAIN.

THE WHITE NOSEGAY GERANIUM (for beds).

Wellington Nursery, St. John's Wood, London.

CHOICE FLOWERS.

BUTLER & McCULLOCH'S
SPRING CATALOGUE OF SEEDS,



ARRANGED on a new and original plan, with copious Descriptive and Cultural Notes, and containing many new and rare species and varieties not found in any other Catalogue, now ready and may be had free and post paid on application.

FLOWER, SHRUB, TREE, and VEGETABLE SEEDS, the crop of 1858, saved with the greatest care, by the most eminent growers.

We may also state that the Sardinian correspondent of Messrs. JAMES CARTER & Co., whose Seeds, especially Carnations and Picotees, have given such universal satisfaction, has transferred the Agency from that firm and appointed us his representative in this country. To meet the growing demand for first class flowers, particularly FLORISTS' FLOWERS, we have adopted our usual maxim of charging the lowest possible prices.

Professor LINDLEY in the *Gardeners' Chronicle* of February 5th, has the following notice of B. & McC.'s Catalogue.

"BUTLER & McCULLOCH'S (Covent Garden) Spring Catalogue of Choice Flower, Shrub, Tree, and Vegetable Seeds. This list fills 84 closely printed 8vo pages, and is remarkably well got up. It appears that the correspondent in Sardinia, who formerly supplied one of the great London houses with seeds raised in that warm part of Europe, has now transferred what he saves to Messrs. BUTLER & McCULLOCH. Let us add, that it yields to no Trade List in the abundance of its materials or the excellence of its arrangements."

BUTLER AND McCULLOCH, while drawing attention to their general SPRING CATALOGUE which has elicited such high encomiums both from the scientific botanist and amateur cultivator, avail themselves of the present opportunity to select from its pages the following list:—

(28) ACACIA GRANDIS (TRUE).
One of the most beautiful of the A. pulchella section, producing deep golden balls. Of these graceful and highly ornamental plants our collection embraces no fewer than 47 varieties, all of the most decorative character.

(70) ALPINES.
Of these beautiful little plants we have a splendid collection, embracing all the most admired kinds, collected and arranged for us last autumn by M. Ortgies, the Curator of the Zurich Botanic Gardens. The value of Alpine plants for rock-work is too well known to require comment. These collections we can confidently recommend, containing, as they do, species only of highest merit.

(199) CALLICHROA PEDATA.
A new crimson annual with white eye, very beautiful.

(217 A.) CAMELLIA JAPONICA.
From the newest and finest striped and other varieties of that much admired genus.

(296) CEANOTHUS AZUREUS GRANDIFLORUS.
This, cæruleus macrophyllus, and Fontanesianus are all beautiful varieties of this highly ornamental genus, of which we possess nine splendid varieties. They are equally suited for conservatory and out-door decoration.

CANNAS.
Of these we possess an extremely interesting collection.

(304) CELOSIA (species nova).
A most elegant plant, producing a multitude of long spikes of feathery blossoms, silvery white shaded with bright rose, retaining its colour perfectly when dried, and therefore admirably adapted for winter bouquets; one of the greatest novelties of the season, flowering out of doors or in pots from July to October. Well worth attention. A dried specimen may be seen.

(337) CHRYSANTHEMUM (tall and dwarf).
Of these dwarf and tall varieties we have a fine stock, nearly all of which may be depended upon to produce double flowers, the seeds having been saved from the finest named varieties.

(344) CHRYSOCOMA COMAUREA.
Fine evergreen shrub, bearing a profusion of golden ball-like flowers; one of the handsomest greenhouse plants in cultivation.

(451) DATURA HUMILIS FLORE PLENO.
A magnificent Brugmansia-like plant producing a profusion of deep golden-yellow flowers; very large, double, and sweet-scented. One of the greatest novelties of the season.

(625) HABROTHAMNUS HÜGELLI.
This, purpureus, and Abelli are all handsome varieties of this beautiful genus, which everybody having a greenhouse or conservatory should grow. All three are extremely ornamental.

(665) HIBISCUS ROSEUS SUPERBUS.
This, Syriacus, and Thunbergi we can highly recommend. All are plants of great beauty.

(680 to 688) HOLCUS OR SORGHUM (Chinese Sugar Cane).
Of this important class we have nine new and important varieties from Africa, said to be more ornamental and to contain more saccharine matter, Holcus saccharatus.

(704) INDIGOFERA DECORA ALBA ROSEA.
The above, purpurea, and dosua are all pretty free flowering shrubs, suitable for small greenhouses. They are also highly ornamental out of doors in summer.

(972) PELARGONIUMS.
Of these both large flowered and fancy, very choice, and of other splendid varieties, including Scarlets, we have a fine stock, which cannot fail to prove highly satisfactory.

(1149) SOLANUM CAPSICASTRUM.
Miniature Orange tree, covered all winter with a profusion of scarlet fruit; a handsome plant for greenhouse or sitting rooms.

(1335) BIGNONIA RADICANS MULTIFLORA.
Finer and brighter than radicans; flowers in large panicles producing a splendid effect.

(1468) TACSONIA IGNEA.
This magnificent Passionflower is unequalled for the brilliancy and splendour of its scarlet blossoms, far surpassing in this respect any of its class yet known. It flowers most profusely, grows rapidly, and covers a large space in an incredibly short time. It succeeds in a cold greenhouse, and even against a south wall with a little protection in winter (new and rare).

(1488) TROPÆOLUM TRIOMPHE DE GAND FIMBRIATUM.
Fringed orange scarlet.

CARNATIONS and PICOTEES saved from the most choice Collection of English varieties grown on the continent, and which may be expected to produce flowers of the highest merit, sent out in sealed packets as received from our Sardinian correspondent, whose seeds for many years have given such universal satisfaction, and from which varieties of the greatest excellence have been raised.

For prices and further particulars with regard to the above and other novelties, we refer our patrons to the Catalogue itself, which is sent free and post paid on application.

BUTLER & McCULLOCH, Covent Garden Market.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—The SIXTEENTH ANNIVERSARY FESTIVAL will take place at The Crystal Palace, Sydenham, on WEDNESDAY, June 8, the day of the Grand Flower Show.

The Honourable Mr. JUSTICE HALIBURTON in the chair.

Stewards.

SIR JOSEPH PAXTON, M.P.

Samuel Ainsworth, Esq.	John Green, Esq.
Henry G. Bohn, Esq.	Thos. Hancock, Esq.
R. Boyd, Esq.	Chas. Horsley, Esq.
M. Busby, Esq.	Wm. Hoskins, Esq.
Edwin Chadwick, Esq.	Wm. S. Johnson, Esq.
Captain Trevor Clark	John Laurie, Esq.
John Cobden, Esq.	J. B. Mackay, Esq.
G. E. Cockerell, Esq.	R. Marnock, Esq.
James Cutbush, Esq.	Chas. Ratcliffe, Esq.
F. Davies, M.D.	Thos. Rivers, Esq.
Chas. L. Dorrien, Esq.	George Rollisson, Esq.
Benjamin Edgington, Esq.	R. Stains, Esq.
Wm. Edgar, Esq.	F. B. Thomas, Esq.
T. N. Farquhar, Esq.	James Vickers, Esq.
F. J. Graham, Esq.	Edmund Wilder, Esq.
	Chas. Zetterquist, Esq.

In order to meet the wishes of a great number of the Patrons and Friends of the Society, arrangements have been made for the admission of LADIES to the Dinner. By the kind liberality of the Directors of the Crystal Palace Company, the Tickets for the Dinner will include ADMISSION TO THE PALACE.

Tickets:—Gentlemen, 20*s.*; Ladies, 10*s.* May be had of any of the above-mentioned Gentlemen, and of

EDWARD R. CUTLER, Secretary.

14, Tavistock Row, Covent Garden, W.C.

Dinner upon Table at Half-past Five o'Clock precisely in the SOUTH WING.

ROYAL OXFORDSHIRE HORTICULTURAL SOCIETY.—*Patron:* H.R.H. THE PRINCE CONSORT.

The SUMMER EXHIBITION of the above Society will be holden in the Gardens of Worcester College, Oxford, on TUESDAY, July 5, when, in addition to the prizes confined to members, the following are offered, opened to all England, entrance free:—

Stove or Greenhouse plants (not Fuchsias or Geraniums), nine varieties: 1st prize, 10*l.*; 2d do., 8*l.*; 3d do., 7*l.* Cape Heaths, six varieties: 1st prize, 5*l.*; 2d do., 4*l.* Geraniums (not fancies) in 8-inch pots, 12 varieties: 1st prize, 6*l.*; 2d do., 4*l.*

No person will be allowed to take more than one prize in a class.

Notice of intention to exhibit must be given to the Secretary by post on or before Saturday, June 25.

The Flowers must be labelled with their names, and staged ready for the Judges by 11 o'clock on the morning of the day of Show, and will not be allowed to be removed till the close of the Exhibition (7 o'clock, P.M.).

Exhibitors will be required to sign a declaration that the flowers are *bond fide* their property, or the property of their employers.

The Judges have the power of withholding the first or any other prize if the flowers exhibited are not worthy.

The Band of the Coldstream Guards will play during the afternoon.

W. R. HOBBS, Acting Secretary,
June 4. 23, St. Giles's Street, Oxford.

The Gardeners' Chronicle.

SATURDAY, JUNE 4, 1859.

MEETINGS FOR THE FOLLOWING WEEK.

MONDAY, June 6—Entomological ..... 8 P.M.
TUESDAY, — 7—Horticultural (Fruit Committee at St. Martin's Place) ..... Noon.
WEDNESDAY, — 8—Crystal Palace ..... Noon.

NOTWITHSTANDING all that has been written on the Vine Mildew, cultivators do not seem to have very clear notions as to what it is. The specimens submitted to us for examination frequently present not a single spore of the Oidium, and faults due to the bad condition of the soil or ventilation are improperly charged to the parasite, while at the same time surprise is expressed at the insufficiency of the remedies recommended, when they are utterly inapplicable to the particular case.

An instance of this kind was noticed in our answers to correspondents, May 7, 1859. The mischief in that case was clearly not due to mildew, but to inefficient ventilation as indicated by the persistent drops of moisture at the serratures of the leaves. We have now before us a very curious instance in which a slight degree of mildew co-exists with this condition of the leaves, an instance at once calculated to mislead and affording matter for reflection.

On the tender shoots, but not upon the leaves, there are undoubted specimens of the Oidium, but at present not to any serious extent. The bunches, whose blossoms are still unexpanded, are perfectly free, and we believe that a slight dressing with *sublimed*,* not ground sulphur, would remove it. At the same time either surface of the leaves is disfigured with white blotches, as if they had been syringed with water containing a great quantity of carbonate of lime, and, as our correspondent correctly remarks, principally occupying the exact spots where the drops of fluid exuded. A few similar spots, however, appear upon the central part of the leaves, and even on the stems, doubtless where the moisture has dripped upon them. As we have often found similar spots arising from syringing regarded as mildew, we at once applied sulphuric acid, without however producing more than a globule or two of air, which might arise from particles of lime accidentally present, and not a strong ebullition like that which takes place when the whole of the white deposit is calcareous. On a close examination with the microscope some minute radiating snow-white acicular crystals appeared, together with transparent threads forming round tolerably well defined patches.

* It is indispensable that Flowers of sulphur (*i.e.*, sublimed sulphur) be used. Ground sulphur (*i.e.*, brimstone) is useless.

Abundance of minute subelliptic spores averaging about $\frac{1}{3000}$ of an inch in length, but variable in size, appeared, and at the same time Cladosporium herbarum with its fruit just formed. It is possible that the parasite first mentioned may be a condition of the Cladosporium, but this is uncertain. At any rate we are unable to refer it to any distinct genus or species. The point of importance, however, is that these moulds have been clearly developed upon the sugary or gummy deposit from the drops of sap which have oozed from the leaves, and the crystals are, we believe, due to some salt contained in that fluid. Similar groups were rapidly formed on the field of the microscope from water in which the white pellicle had been immersed. The production indeed is very similar to the white efflorescence which has for years appeared in one of the conservatories at Kew, on certain Podocarpi and Myrtads and which is described in this Journal, 1855, p. 172.*

We thus have spots simulating the Oidium, but due to crystallisation, and to vegetable growth in the inspissated drops of sap which have exuded from the leaves, and ultimately the development of Cladosporium, which is of itself when luxuriant quite enough without the Oidium to damage the crop, blocking up as it does the pores of the leaves, preventing the due intercourse of the cellular tissue of the leaves with the outer air, and disfiguring whatever it does not destroy. A common lens is sufficient to show the difference between these spots and the Oidium. The latter has a mealy loose mode of growth without any definite margin, while these spots are tolerably well defined without anything like loose spores projecting from the surface. Though the sulphur is specific against the Oidium, it is by no means clear that it is so against the Cladosporium, especially when the original cause of evil is not remedied.

The lesson from the whole is clearly to acquire habits of accurate observation, and to look well to ventilation. If everything else be right, a defect there may be as disastrous as the mildew. *M. J. B.*

WITHIN the last three years the French have invented a method of treating the Peach tree wholly at variance with all previous contrivances. It originated with a grower at Chartres, and has been partly explained but scarcely in his usual able manner by M. DUBREUIL, the great authority among our Gallic friends in all matters relating to pruning and training fruit trees. I have taught, says this gentleman, the old mode of training for 16 years, and if I now abandon it it is because the new way is better; and if a better still should be invented I should as readily abandon this. In an article in the *Revue Horticole* will be found a discussion of the advantages and disadvantages of this method by M. DUBREUIL, of which and the woodcuts accompanying it we have availed ourselves with the assistance of Mr. THOMPSON in order to make out exactly in what the method consists.

In order to explain the system to which we refer it is necessary to observe, in the first place, that the Peach tree bears its fruit on the preceding summer's shoots; these, when growing vigorously, usually throw out *laterals*, which are also termed *summer laterals*, because they are produced from recently formed buds on the young summer's shoots, and not from buds that have existed during winter. Sometimes, according to the state of the tree, no such laterals are produced unless the growing shoot is stopped or shortened; this induces several of the eyes left to burst into shoots instead of remaining in the bud state till the following spring. These are termed by the French *bourgeons anticipés*, to distinguish them from the regular shoots, that is, those which spring from buds pruned in the preceding summer, and which do not push till the following spring.

According to the new system it appears that of the shoots which push from mature buds those situated on the front and sides of the branches only are retained; those behind are disbudded as soon as they are $2\frac{3}{4}$ inches long. At the same time the others are pinched so as to preserve only the two lowest well-developed leaves as at A A Fig. 1. The weak leaves, B B B, are not taken into account. This pinching has the effect of causing the young buds situated in the axils of the two leaves to burst into shoots A A, Fig. 2, and

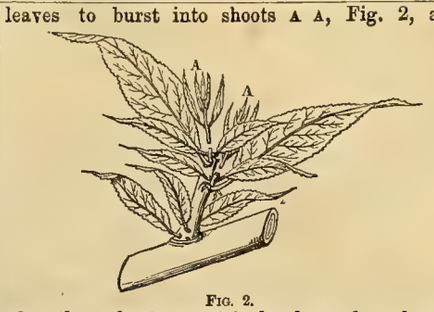


FIG. 2.

when these shoots are 2 inches long they also are cut off above the first leaf from their origin. The

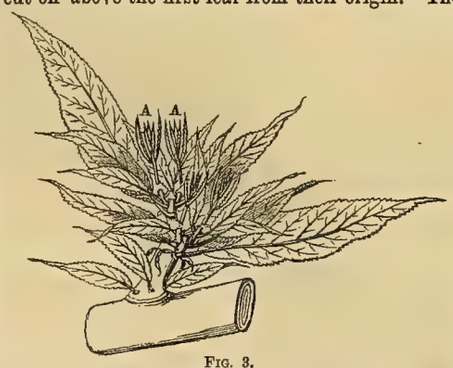


FIG. 3.

secondary laterals which push from the first ones are likewise pinched to one leaf from their bases, as at A A, Fig. 3. Those shoots which push afresh from vigorous parts are entirely removed.

These operations cause the production of buds which at the winter pruning have the appearance represented by Fig. 4; they are then cut at A A, A A so as to leave only the flower buds nearest the base.



FIG. 4.

When numerous laterals push, on the leading shoots, C, Fig. 5, those situated behind are entirely removed. The others ought to be pinched as soon as the second pair of leaves have the buds in their axils sufficiently advanced. If the operation is deferred too long, the shoot lengthens and a spur is produced, which at the winter pruning is like that represented by Fig. 6. If the operation is performed too early, before the buds have commenced to form, the shoot withers as in Fig. 7.

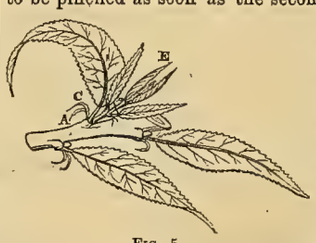


FIG. 5.

But when the pinching is performed at the proper time the shoot ceases to lengthen, and the lower pair of leaves remains near the base. At the winter pruning the shoots have the appearance represented by Fig. 8.

It sometimes happens that, in spite of pinching, the laterals continue to lengthen. In this case a cut is made with the point of the knife on one side of the base, as at A, Fig. 9, about half an inch in length. This cut stops the growth, and a few days after the lateral is pinched, and the eyes are formed in the axils of the two lower leaves, as at D.

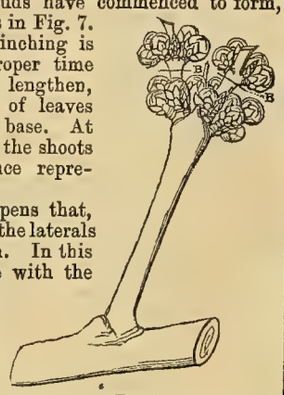
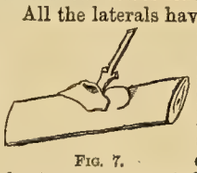


FIG. 6.

All the laterals having been pinched for the first time, on several of them one or two generations of young shoots will be produced. These are pinched above the leaf nearest to their base, as already explained, and this operation will give rise to shoots as represented in Figs 8 and 10. At the winter pruning they are cut as at B, Fig. 8.


FIG. 7.

Sometimes the spur resulting from these repeated pinchings becomes entirely composed of blossom buds, as represented Fig. 10. If left they so completely weaken the spur that it is apt to die. To prevent this all the flower buds are cut off, and an incision made as at A, Fig. 11.

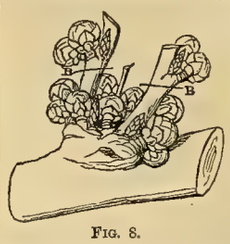


FIG. 8.

Finally, close pinching is not practised during the first year after the tree is planted.

Such appears to be the plan now advocated by M. DUBREUIL under the name of *pincement court*, which we prefer to call spur pruning. That the method has been unsuccessful in several places he admits, but he thinks that this has been owing to want of skill in the operator. His own experience tells him that it possesses the following advantages. 1. It saves labour by getting rid of the necessity of summer and winter nailing. 2. It saves half the cost of trellis work (the French train their Peach trees to wooden or wire trellis). 3. Winter and summer pruning becomes much more simple and more readily understood by gardeners. 4. The fruit spurs projecting from the front of the old wood protect it with their leaves from the scorching action of the sun. 5. The fruit spurs being very short the old wood that bears them may be twice as thick, and consequently a wall will carry twice as much fruit.

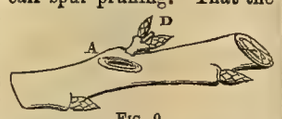


FIG. 9.

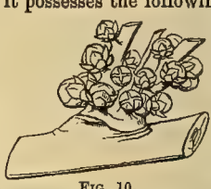

FIG. 10.



FIG. 11.

Nor does it appear to M. DUBREUIL that the plan of spur-pruning is affected by climate; for he has practised it successfully in extremely different parts of France. We must, however, express a doubt whether an equally satisfactory result would attend it in our damp insular climate. That is however a point to be determined by actual experiment, and in no other manner.

THE gardening world cannot have yet forgotten the wonderful DISPLAY OF ROSES last year at St. James's Hall. Should any have been oblivious let us refer them to page 523 of these columns for 1858, while we at the same time remind them that another grand exhibition is about to be made on the 23d of June under the guidance of the same master hand as directed the arrangements of last year.

Never perhaps did the Rose tribe make such rapid growth as now, and a most beautiful as well as bountiful show may be anticipated, for just about that time the first and best blooms should be ready; and growers, whether amateur or professional, will have the opportunity of putting forth all their strength.

We observe that, in order to aid in interesting the public and bringing the exhibition more within the notice of the higher classes, the good offices of many ladies of rank have been secured, who have undertaken to act as Patronesses on the occasion. A merely nominal duty thus devolves upon these ladies, that of spreading among their own class the intelligence of the glorious spectacle which is in store for them, a duty which can be best performed by the fairest part of society.

IN our advertising columns will be found the announcement that a large quantity of Mr. FORTUNE'S PLANTS will be brought to the hammer on Thursday next by Mr. STEVENS. We are able to state that the sale will include some of the finest specimens in England of those two noble and hardy trees, the Abies Kæmpferi and Torreya grandis.

AUSTRALIAN HORTICULTURE.

THE S. Australian newspapers give some striking information concerning the Horticulture of that country, which seems to be now very seriously occupied in measures of more social interest than gold digging. The Oranges from Adelaide, exhibited lately by Mr. Webber before the Horticultural Society, were the finest that ever reached London, and other produce, for which the S. Australian climate is suitable, especially wines, may soon be expected in the English markets. We give such extracts as we can find room for, from *Andrews's Farm and Garden*.

GAWLER AGRICULTURAL SOCIETY.—The annual show of this Society was held on Thursday, February



FIG. 1.

* In this case Dr. Owen Rees believed the crystals to be due to the combination of some vegetable acid with potash or soda.

10. On a long table in different compartments was displayed a splendid series of "collections of fruits," including exquisite specimens of many choice varieties. The show of Grapes, both wine and table, was extensive, and superior to anything we had expected to see. From the tables it was evident that some of the most successful cultivators of the Vine on Gawler Plains are German colonists. There were not many exhibitors of vegetables, but we noticed some fine Onions and several bags of capital Potatoes. There were a few branches from Plum and Damson trees suspended over the table so thickly studded with fruit as to excite general notice and admiration; as also did four large glasses filled with honeycombs. Among the various articles exhibited which deserved especial mention was a collection of 15 bottles of South Australian preserved fruit. The bottles included nearly every variety of preserved fruit which the housewife could desire. There were a few bouquets of flowers on the table, but they appeared to have been extemporized, and had no claim to notice. The principal subjects of exhibition were Grapes, Apples, Pears, Plums, Peaches, Lemons, Raisins, Melons, Onions, as well as Farm and Dairy produce. On the Wines the judges pronounced as follows:—"We consider that they fully substantiate the character South Australian wines are gradually establishing for themselves. There were five samples of one gallon each exhibited; one of red and four of white wine. No. 1 (Frontignac) we consider entitled to the first prize, being an extremely pleasant and good bodied wine. No. 4 (Tokayer) we consider very little inferior to the above, and fully entitled to the second prize. No. 5 (Madeira) a good wine, but too new, and badly corked. [We can ourselves speak to the injury done to Australian wine by the bad quality of corks. A case from the late Sir Thomas Mitchell was spoiled during its voyage to England entirely owing to this circumstance. ED. *Gardeners' Chronicle.*]

SOUTH AUSTRALIAN AGRICULTURAL AND HORTICULTURAL SOCIETY.—The annual exhibition took place on Thursday, Feb. 17, and the distribution of the productions sent for competition was vastly superior to that of former years. Fruit was no longer exhibited in jumbled collections belonging to different individuals, which sometimes caused Cherries and Cucumbers, Oranges and Pumpkins, Celery and Siberian Crabs to be heterogeneously congregated; but it was properly classified. The Grapes had their own proper locality, the Apples theirs, and the Plums theirs. The season of the year, the month of all our summer months the hottest, precluded the expectation of a large display of flowers, but the few that were brought forward were choice. Among those not shown for competition was a splendid collection of Cacti and Cerei, 100 pots in all, from the Botanical Garden, and a handsome collection of mixed plants, principally Fuchsias, 52 pots in all, from Mr. J. R. Smith, of Norwood. There were but two bouquets exhibited, but one for its richness and freshness created wonder as to where so many lovely flowers could have come from. The fruits laid claim to more than 40 prizes. First came white table Grapes, many of the bunches of which were very fine, weighing, we suppose, from 5 to 7 or 8 lbs. Then came the dark table Grapes, the bunches of which were, in the main, not so large, the berries, however, being in general much larger. Among those which were exhibited for the prize awarded to the six largest and finest shaped bunches were some magnificent clusters. The wine Grapes were unripe (indeed the show was too early for all the Grapes, or the Grapes were too late for the show), but there were seven collections, each numbering many varieties, some shown in the naked bunch, others hanging to the Vine, and all proving that if we do not make good wine it will not be owing to our not possessing the right sorts or varieties of Grape. There was a poor display of Citrons. Peaches also were but feebly represented, the season being principally over for them, and the supply of Nectarines was very meagre. But the accumulation of Apples—sort upon sort, and collection upon collection, kitchen and dessert, late and early, from hill and plain—was amazing, and must have fairly bewildered the judges. Many of the Apples must have weighed from 1½ lb. to 2 lbs. each, and must have been nearly 1½ foot in circumference. There were Ribstone Pippins finer than any we ever saw in England; and cookers which, for size, excelled any we ever saw at Lisbon, famed as that place is for growing the fruit to perfection. A magnificent collection of Pears, numbering about 40 varieties, took the first prize for that fruit, but many of these were far from having arrived at maturity. The collection of Plums which took the first prize contained 35 varieties. There were gleanings of the Strawberry, Raspberry, Cherry, and Mulberry, with a good dish or two of fine black Turkey Figs. A few Water Melons of large proportions were exhibited, and two dishes of Quinces. Among vegetables there were a few Cabbages which looked hearty and well, but the Cucumbers had rather a seedy appearance. Some samples of French Beans were fleshy, green, and brittle; others were somewhat sere and stringy. There was a moderate show of Peas, some fine-shaped and beautifully grown Turnips, and Carrots "according to the usual perfection." Ponderous Pumpkins cousined with baskets of uncommonly fine Onions. The Potatoes were sound and large; among them was a fine sack of White Kidneys, but a hundredweight of Redskins took the first prize. The Parsnips were as good as we expect that esculent will ever be in this colony. The Rhubarb was in excellent stalk, especially that which gained the favourable opinion of the judges. Some fine specimens of dried and bottled fruits and jams were shown. The first prize was affixed to a bottle of very fine Olives. There were some beautiful specimens of honey. The wax was very pure and somewhat bleached. Silk was fine and glossy, showing that South Australia might become a silk-producing colony. The Mulberry thrives here better than most trees. It is only the price of labour, we presume, which stops silk-production. As to wines the judges reported as follows: Red—With the exceptions of Nos. 1, 2, and 4, which are decidedly good wines, whose qualities are in the rotation mentioned, the remainder of the samples exhibit a decided falling off from last year. White—No. 7 was the next best, and No. 6 also a good wine. The white wines as a class were decidedly better than the red. White of any previous year—No. 5 (first prize) sample decidedly out of condition. No. 1 (second prize) very little inferior to No. 5, condition excellent. Other samples of wine exhibited, but not for competition, of which the judges entertained a favourable opinion. There was also a fair sample of colonial spirits.

TANUNDA ANNUAL EXHIBITION OF THE VINTAGERS' AND GARDENERS' ASSOCIATION.—The German settlement of Tanunda is rendering itself celebrated for the production of wine. This township is situated about 15 miles north-east of Gawler, and between that town and Angaston, upon the North Para River, which stream continuing to run throughout the year adds much to the beauty of this place of Vineyards and gardens. The name is not, as many suppose, German, but a native appellation of the ancient lords of the soil, and has reference to the waters that skirt the place the year round. The Association was established two years ago, and the exhibition now under notice is the third that has been held, but the first including a show of colonial wines. The Melons were very fine. We observed in particular a pie Melon, grown by Mr. Aldenhoven, J.P., of Tanunda, of huge dimensions and in fine condition. On tasting several, however, we were struck with the insipidity that characterised them. Whether this is attributable to the soil or season must be a matter for the investigation of those more immediately interested. Three monster Pumpkins were prominent, being each about 18 inches diameter. The Cucumbers were firm and well grown. The Potatoes, which we were informed had been raised in sandy soil, were inferior to samples which we have recently examined in other parts of the colony. A new German Plum, of the egg kind, attracted deserved attention. Of Peaches, only one basket was exhibited, hardly ripe and not very fine, had they even been mature. The Apples were very fine, and as this fruit is one of considerable interest to the colony, we give a brief notice of the sorts exhibited:—Royal Nonpareil, very fine; Hawthornden, large and fine; Admirable, a fine cooking fruit; Ribstone Pippin—this fruit was nearly double the size of the great American article of export, and resembled it closely, with the exception observable in most fruits of this kind in South Australia of being higher in colour; Mobb's Codlins, a fine fruit; Dixon's Pippin, good hard fruit for cooking; Downton Pippin, an elegant little table fruit of the Golden Pippin kind; Mobb's Royal, fine large, for table or kitchen; Margaret, good, but very variable in appearance; Cornish Gilliflower, a Pear-shaped production, not remarkable for beauty; Prolific, fine large green Apple; Margil, middle-sized, not remarkable; Winter Pearmain, an old and well-known favourite, very handsome sample and strongly redstreaked; Golden Harvey, a misnomer and more like a Russet. The Pears were good but limited in quantity. Of Grapes there appeared to those who have visited our recent country exhibitions a comparatively large display, containing a great variety, among which were very fine Sweetwater, excellent Black Hamburgh, splendid Damascus and Black Prince, as large as Violet Plums, and the Pineau Rouge, a beautiful close clustered fruit of very fine flavour. The whole of the specimens were sent in by the exhibitors in a very clean and creditable style. One of the most interesting departments of the show was that of the dried fruits, which contained dried Figs, dried Apples of good condition and flavour, dried Apricots of good character, dried Peaches of inferior quality, very fine colonial Raisins and Zante Currants, the clean and clear condition of which contrasted strongly with the usual dirty state of the imported article. Of the wines there were no less than 49 samples, of which seven were afterwards withdrawn, The report of the judges is, however, so meagre that we can make nothing more of it than that they awarded eight prizes, and that they were of opinion that the new wines showed a very marked improvement upon those of older vintages.

Home Correspondence.

Colchester Church Mite.—Mr. Lobb having called in question the accuracy of my figure and description of this insect, alleging that they were taken from a dead specimen, I beg to state that they were made from several living specimens examined under a strong achromatic microscope. I have also examined Mr. Lobb's drawing of the insect which he has been so good as to send me, and I find it represents the ventral surface of the mite, the body, legs, and bristles of which are delineated as entirely covered with short spines. I have re-examined my specimens (which I exhibited under the microscope last Monday at the meeting of the Ashmolean Society in Oxford), and find the body and legs destitute of these short spines; the long bristles of the hind part of the body have a few minute spines near the base, not longer than the diameter of the bristle itself; these, however, become much rarer towards the middle of the bristles, where they then disappear. I am consequently under the necessity of believing that Mr. Lobb has not correctly drawn the object he has had in view. I possess Hering's excellent paper on the mites infesting the bodies of various animals, and can assure Mr. Lobb that the Church Mite has no connection with that of the horse's hoof, and much less with the Acarus folliculorum; indeed, the observation in which Mr. Lobb has indulged respecting the relation of the Church Mite with the last named insect, is only another instance of the mischief resulting from such works as the "Vestiges of Creation." As to the Acarus cursor, of Gervaez, its name alone, independent of its different habits, would point out the difference between it and the sluggish Church Mite. I learn, moreover, that a mite, which from the description given to me of it appears to be identical with the Colchester animal, was noticed five or six years ago on the cushions in New College Chapel, Oxford. *J. O. Westwood.*

Tiley's "Magnet" Verbena.—In your Paper of May 28 is a paragraph from Messrs. E. G. Henderson & Son, disclaiming all knowledge of this Verbena. You will find on referring to my advertisement that their name is not mentioned as having seen the Verbena, but that of their traveller, Mr. Edwards, who saw the first bloom as it opened on the seedling plant, he being in Bath at the time. He offered to buy the Verbena of me several times, but on my refusing to sell it he immediately ordered six plants, which were in due time forwarded to the firm in question. About a week after that they wrote and denied all knowledge of the order. I suppose the reason of this was that when it was ordered the Verbena had no name. *Edward Tiley,* 14, *Abbey Churchyard, Bath.* [We do not see that Mr. Tiley has made any use of the name of Messrs. Henderson & Co. All he said was that the *traveller to their firm* had approved of it.]

Take care of your Pockets.—I enclose for your inspection a reply from a Mr. Davison to an advertisement of mine which appeared in your columns, and which I believe to be a downright imposition. I shall therefore be greatly obliged if you will favour me with your opinion of the matter. You will observe that the letter in question cost me 2*d.*, and to make the deception more complete "stamped" is written on the envelope, and a little gum daubed where the stamp should have been placed. If you would kindly expose the case perhaps some of my brother gardeners might profit by your so doing, as a young gardener (here) paid 2*d.* for a similar note from the same party. *Isaac Watson, or J. T. W.* [We are making inquiries through the police. In the meanwhile we caution you and others to be very careful what you do with people who write to you in the style of this Davison. There is no registry office at the place in Beech Street, which is kept by a man of the name of Bainbridge, who denies all knowledge of the person in question.]

Pond Weeds.—We have a piece of water here about 2 acres in extent. It was cleaned out two years ago, and since then there has been a great accumulation of weeds; the bottom of the pond seems quite foul, and is continually covering the top with a brown scum resembling some seaweed, and clinging to Sagittaria. I believe several other weeds also thickly cover the bottom. Since cleaning out, the fish have not made their appearance. I ought to mention that all drains from the house run into the water, which is I think the cause of the bottom being so foul. Is there any remedy for the evil just complained of, or what are the best means of cleaning the top? We are now trying scythes rivetted together, and having a ring on each end to which ropes are attached. They are then lowered into the water from a boat, and worked by two men, and two rowing. The scythes are each 3 feet long, and are I believe river scythes, making in all 9 feet in length. The floating surface material is raked into a boat. *G. W., Greenhill, near Whetstone, Herts.* [Your mode of cleaning the surface from weeds will probably answer; but you will never be able to keep either the bottom of the pond or the water clean or have your fish thrive, until you prevent all drains from the house from running into it.]——We have here in the middle of some ornamental grounds a pond that has been made some years, and till this spring has always been very clear; lately it has become very foul from the growth of a slimy sort of vegetable matter of a brownish green colour rising in flakes from the bottom, and on reaching the surface floats upon the top. We have cleaned it off several times, but the next day it is as bad as ever. Can any of your readers inform me how we can remedy the evil, and a hint as to the cause of it appearing now after so many years? *Ellesmere.*

Winter Cucumber Growing.—For the information of your correspondent "An Amateur," who wishes me to state the name of my Cucumbers, what soil I use, and whether the bottom-heat is derived from tan or hot water, I beg to say that the Cucumber I grow at present is a kind raised a few years ago by a friend of mine, between Victory of Bath and Sion House. It is longer than the latter, equally productive, and a strong grower. I have grown Sion House for years, also a short, black-spined sort, called Smithers's Cucumber—a very old sort and a very excellent one. I have also grown many other kinds. The soil I use is composed of one-half turfy loam and one-half rotten leaves from a hotbed. In spring the plants get a good dressing of soil—one-half loam and one-half rotten dung—and

receive good waterings of liquid manure during the spring and summer months. I have also grown Cucumbers successfully in peat. My bottom-heat is derived from hot-water pipes, but I have also grown them very successfully in tubs plunged in a bed of leaves. Winter Cucumbers should always be trained on trellises. I regard early planting, combined with bottom-heat and an abundance of air, as most essential points in the culture of Winter Cucumbers. They should never be planted out later than the first week in September. They should have an abundance of air and no artificial top heat during September and October; and all the male blossoms should be pulled off. By this treatment there will be an abundance of fine strong healthy vigorous shoots and foliage which, with proper care and attention, will not fail to produce an abundance of fruit during winter. Many people plant their Cucumber plants too late in the autumn, which often ends in disappointment. No matter what treatment plants may receive that are planted in November, they cannot make such healthy vigorous growth as those planted at the beginning of September. *M. S.*

Orchard Houses.—I have had an orchard house in operation now for 18 months. The Peaches, Apricots, and Nectarines in it this year have set very badly, and I shall not gather two dozen Peaches off nine trees in pots. I should be glad to learn whether such failure is common this year, and may be ascribed to the severe frost at Easter; or if the management of the house as to over or under ventilation is likely to be in fault. The crop of Plums is heavy and Figs look well. During the cold weather I applied a slight degree of heat from a portable stove. *L. H., Scotland.*

Linum grandiflorum, concerning which a correspondent inquires in your last issue, undoubtedly succeeds best treated as a hardy annual. When raised in a frame the plants are never so vigorous or bushy as when sown in the open ground; and it is a singular fact that, however treated, old seed, say two winters old, usually vegetates in a larger proportion than fresh. The eminent French firm by whom seed of this beautiful plant was first introduced into the trade, informed me of this peculiarity several years since, and my own experience with this plant, which dates from 1853, has satisfied me of the correctness of their statement. The removal of the mucilage by steeping is a somewhat troublesome process, and as far as my own trials go does little to rouse the vitality of the seed when dormant. Perhaps the weak solution of oxalic acid often employed in the case of the Australian Leguminosæ, and referred to by Dr. Ingle in a recent number of the *Gardeners' Chronicle*, might prove of service. An experiment or two shall be tried and reported on at a future period. *W. Thompson, Ipswich.*——The best mode of raising this Linum is I find to sow it in seed pans in the month of February or March in finely sifted leaf-mould with a little loam and a good quantity of silver sand, all well mixed together. Drain thoroughly with broken pots, rough pieces of turfy peat and loam, and set the pans near the light—the nearer the better—in a temperature of from 60° to 80°. I have never steeped the seeds in milk nor anything else before sowing. *A. Barclay, the Gardens, Gillside.*

Indicator Bee Stand.—Your correspondent Mr. Shirley Hibberd has occupied much space in telling us how to construct this. Allow me to suggest to your readers that a common spring balance or "ouncal," as I believe they are called, will have all the effect at a great saving to their pockets. Buy a spring balance to weigh up to 60 lbs., which I believe they can get for something like 7*s.* 6*d.*, and let them suspend their hive on a board with four cords, like a single scale thereto. *A Looker On.*

Sardinian Carnations and Picotees.—How is it, may I ask, that plants of these are not offered for sale, while the seed is so highly spoken of and warranted to produce such splendid blooms? Surely, if that were so, nurserymen would have found it worth their while to grow a stock for market, in the same way as they do other kinds. Being anxious to know what they really have turned out to be, perhaps some of your readers who have tried the seed will kindly state the result of their experience with it. I remember, when on a visit to the late Mr. Porterfield of Duchall, near Paisley, in Renfrewshire, many years ago, having seen growing in his garden a large deep yellow-coloured Carnation, with regular bright scarlet stripes, very double, and exceedingly beautiful, which he called an Italian sort, but how it had been produced I cannot say. Upon again visiting Mr. P. the following year, I found that no layers of the said Carnation had been made, and that the plant itself had perished during the winter. Since then, I have tried in vain to procure a similar variety, although, among the Paisley weavers, so celebrated for their Carnations and Pinks, I found several very pretty yellow kinds of the former, not met with elsewhere that I know of, and which they told me had been raised by themselves from seed, none of them, however, at all to be compared with the one described. *J. H., Whitland.*

Dielytra spectabilis.—I have in my garden a magnificent specimen of this plant, the foliage and blossoms of which were entirely destroyed by the severe frost we had last spring, just as they were coming into beauty, exactly in the same way as Potatoes are destroyed by frost. I consequently cut off at the time every shoot close to the ground. Soon afterwards the plant began to push strongly, and it is now one splendid mass of bloom; indeed, so far from its having been injured by the circumstances just mentioned, it appears rather to have been benefited by it, and, moreover, it has produced its flowers at a season when these are generally over, or nearly so. Next year, in order to obtain the same result, I mean to shave off the first shoots in like manner from some of my plants, whether they may be blighted by frost or not; and as a succession of this beautiful flower will no doubt be also desirable to some of your readers, they will find their wishes fully gratified in that respect by adopting the same plan. *A Subscriber, South Wales.*

Cucumbers without Bottom-heat.—Having read with much interest the discussion between Mr. Ayres and "M. S.," I have forwarded for your inspection some leaves and a small fruit from a young plant grown without a particle of artificial bottom-heat. It is in a brick pit with nothing but old decayed tan at the bottom. I also beg to say that I have cut fruit of the same sort from a dung-bed since the first week in April in abundance, many measuring 22 inches in length with the bloom on the end. The night-heat has never at any time been over 60°, and after the first 10 days from planting never more than 55°, and often 50° at night. *S. Farmer, Gardener, South Lodge, Ham Common, Surrey.* [The leaves in question were deep green, healthy, and vigorous, the largest measuring nearly 36 inches in circumference. The fruit, a white spined sort, measured 10 inches long and 5 inches in circumference.]

Early Strawberries.—On the 27th of last month I gathered in Mr. Cuthill's garden at Camberwell some of his "Black Prince" perfectly ripe, and from others I saw among the leaves half devoured it was evident that they had been mature several days earlier, but being few in number had apparently been abandoned to the slugs. Surely this is the most rapid grower of all the tribe. Let me add that I am exceedingly interested in the history given by your correspondent Mr. Hibberd of the "Waltonian case." It promises a great boon to a certain class of gardeners, to which class I belong. *E. Thornton, Camberwell.*

Rainfall in Scotland.—In the "Edinburgh New Philosophical Journal" I published the particulars of the fall of rain at 35 stations in Scotland for the year 1856, at 55 stations for the year 1857, and have just sent to the same Journal like particulars from 60 stations for the year 1858. As it may be interesting to your readers to compare the rainfall over Scotland during each of these years, I append the mean deposit of rain in inches of vertical depth during each month of these several years.

YEAR.	Jan.	Feb.	March	April	May	June	TOTAL.
1856	2.86	3.55	0.37	2.69	2.96	4.36	1856, 36.96 inches.
1857	3.29	2.14	3.41	2.40	1.85	3.08	
1858	3.12	1.14	2.01	2.03	3.37	2.36	

	July	August	Sept.	October	Nov.	Dec.	
1856	2.64	4.00	4.79	1.91	1.98	4 85	1857, 34.90 inches.
1857	2.48	2.28	4.39	2.57	3.05	3.96	
1858	4.35	2.15	3.35	5.12	2.33	4.20	1858, 36.53 inches.

James Stark, M.D., Edinburgh.

Earwigs.—A friend of mine has been suffering for a year or two from the depredations of innumerable earwigs; indeed, he speaks of their rivalling one of the plagues of Egypt. Nothing escapes them; they devour every young thing in the garden, and not content with what they find there, enter the house and are found everywhere—at bed and board. I have been looking through your journal for a remedy, but can find nothing applicable to the pest on so large a scale. I suggested that beetle traps set with some food which the insects particularly affect might be tried. Can any of your correspondents tell me what would be the most likely bait, or if any other mode of capture would be more certain? *J. C. H., Essex.* [Edwards's earwig traps would possibly answer better than beetle traps. They have been advertised in our columns, and may, we believe, be had of any respectable nurseryman.]

Societies.

LINNEAN: *May* 5.— Prof. Bell, President, in the chair. H. Munroe, Esq., M.D., and C. Prentis, Esq., were elected as Fellows; and Prof. Brandt, Prof. Grisebach, Prof. Löven, and M. H. A. Weddell, as foreign members. The following papers were read:— 1. "Further observations on the new organ in the antennæ of Insects," by J. B. Hicks, Esq., M.D. —2. "Synopsis of the genera Camellia and Thea," by Dr. Berthold Seemann. After inquiring into the various distinguishing features assigned by authors to these genera, many of which it was observed had been set aside by increased knowledge of the plants, the author explained the characters by which he proposed to separate them. He ascribed to Camellia a many-leaved calyx with deciduous sepals; free stamens within the monadelphous ring, twice as many in number as the petals, and erect sessile flowers. To Thea he assigned a bracteated, five-sepaled calyx, with persistent sepals; free stamens equalling the petals in number, and nodding pedunculate flowers. Full generic characters, together with a synopsis of the species, were given.— 3. "Synopsis of the Fructification of the simple Sphæriæ of the Hookerian Herbarium," by F. Currey, Esq.—4. "Additional Notes on the Phenomena of the present Season," by Thos. Forster, Esq., M.D. Mr. Forster mentioned that, at Brussels, on the 19th April, one swallow only was seen, and but one had been observed since that day. Neither the sand marten nor the house martlet had appeared. The peasants regard the appearance of the tribe as a certain indication of spring, and were continually asking when they would come and usher in warm weather, commencing about the middle of April. Various Narcissi had been observed.

ENTOMOLOGICAL: *May* 2.—H. T. Stainton, Esq., Vice-President, in the chair. Amongst the donations received since the last meeting was a copy of Mr. Wilkinson's new work on the British Tortrices, forming a companion volume to that on the Tineæ by Mr. Stainton. Mr. Stevens exhibited a variety of new and very beautiful Lepidoptera sent from Dorei, in New Guinea, by Mr. Wallace. Mr. Westwood exhibited both sexes of a very remarkable aculeate Hymenopterous insect from South Africa, the male of which has the antennæ bipectinated. Also specimens of the following insects new to the British Fauna:—1. Blatta Acervorum of Panzer, forming the type of the genus Myrmecophila, and considered by MacLeay to form the connecting link between the cursorial and saltatorial Orthoptera, taken by Mr. Hope near Netley. 2. Bethyllus (Pristocerus) depressus, one of the connecting links between the aculeate and terebrant Hymenoptera, also taken by Mr. Hope. 3. Dryenus formicarius of Latreille's genera, taken by Dr. Baly at Cobham. Mr. Westwood also exhibited several kinds of insects, especially species of Anobium and Ptinus, with their larvæ, found gnawing and burrowing in books and upon book covers. Also specimens of several kinds of rove beetles (Staphylinidæ) found after dark upon young Cucumber plants, of which it was affirmed that several successive sowings had been eaten off by these insects. Mr. W. W. Saunders read a paper containing descriptions of some very extraordinary Dipterous insects collected in New Guinea by Mr. Wallace. A paper was also read from Mr. Wallace containing remarks disapproving of the practice of publishing magnified coloured figures of insects, which were considered as liable to give erroneous ideas of the true size and appearance of the insects. Mr. Wallace's remarks were objected to by most of the members present.

BOTANICAL OF EDINBURGH: *April* 14.—The President in the chair. The following communications were read:—1. "On some of the Plants used for Food by the Feejee Islanders." By Mr. W. Milne, late botanical collector in Captain Denham's expedition to the South Seas. The inhabitants of the Feejee Islands subsist mainly on the fruits of the earth. The principal articles of food are Yams, Taro, Breadfruit, and Bananas. Of Yams there are upwards of 50 varieties in the islands. These grow sometimes to an enormous size, being occasionally 50 lbs. or 80 lbs. in weight; their general average, however, is from 2 lbs. to 8 lbs. They will keep for eight or ten months after being dug. The planting season extends from June to September, and the Yams reach maturity in March, and are dug in April. On the west coast of Naviti Levu two crops are secured, one in November and another in March. The natives prepare the ground for cultivation by cutting down the natural vegetation, allowing it to dry, then burning it, and using the ashes as manure. They dig the ground with sticks about 6 feet long, sharpened at the end. The smallest Yams are used for planting, and sometimes the large ones are cut up like Potatoes, and the pieces planted separately. When the Yams begin to sprout sticks and Reeds are placed in the earth, and a rude frame is formed on which the twining stems of the Yams can support themselves. When the Yams are ripe they are dug up and stored like Potatoes. They are cooked either by boiling, baking, or roasting. The boiling is conducted in pottery ware of native manufacture, and is superintended by the women; baking is the work of the men. A large hole from 9 to 18 feet in circumference and 2-3 feet deep forms the oven. This is filled with firewood, on which stones are laid. When these are thoroughly heated the oven is cleaned out, the stones being placed at the bottom and covered with leaves. The walls of the pit are lined with the same material. The Yams, after being scraped, are laid on the stones and covered with several layers of leaves, and, finally, the oven is covered with a mound of earth. The Yam, as well as other food, is served on wooden trays, which are covered with leaves. Another article of Feejeean food is the Ndalo or Taro, the root or rhizome of Colocasia macrorhiza. The principal crops are raised from November to April. The average weight of the root is 2 lbs. There are two varieties, called land Ndalo and water Ndalo; the latter is that which is most generally grown. It requires irrigation, and valleys are selected for its cultivation through which a stream of water flows. The stalks and leaves of the plant are acrid, but in the young state they are used after preparations as articles of diet, either like Spinach or in soup. The root is employed for making the mindrai or native bread. It contains much starch. The Banana yields abundance of fruit from November till March. There are numerous varieties of it. The plant takes 12 months to arrive at maturity and bear fruit. The unripe Bananas are boiled and baked, and the ripe ones are used as dessert. Sometimes they are made into puddings or bread. The Musa Cavendishi, or Chinese Banana, has been introduced, and it bears abundance of fruit. The Breadfruit Tree (Artocarpus incisa) is another vegetable pro-

duction of the Feejee Islands; it grows in abundance on the coast. The Sweet Potato or Kumera (Convolvulus Batatas) is also cultivated, and some other species of Convolvulus. The Kawai, or Sweet Yam, is another edible root. The root of the Ki or Dracæna terminalis also yields food. It weighs from 10 lb. to 40 lb. Sugar Cane is eaten by the natives. The Cocoa Nut is also employed as an article of diet, especially in times of scarcity. Among other fruits of these islands are Tarawan, a kind of Plum (?); Kavika, or the Malay Apple (Eugenia malaccensis); and the Ivi, a kind of Hog Plum (Spondias dulcis). The rhizome of Tacca pinnatifida yields a large quantity of starch, and is used as food after the acrid matter of the root has been removed by washing. The root or rhizome is grated, and after being steeped, is made into a kind of jelly, which is sweetened with the juice of the Sugar Cane. From October to December there is sometimes a scarcity of food. The chief causes of want of food are improvidence on the part of the natives, war, and occasional failure of crops. Native bread is prepared from the Taro, Banana, Kawai, Breadfruit, and Tahitian Chestnut. The roots and unripe fruit are scraped and bruised in pits thickly lined with Banana leaves. These are covered over and left to ferment. The bread thus prepared may be kept for a long time. The material is taken out of the pit when wanted and made into cakes, which are wrapped in leaves and then either boiled or baked. In general it may be said that the food of the Feejeeans during January consists of Ndalo or Taro and Bananas; February, Ndalo; March to September, Yams and Ndalo; October, Breadfruit; November and December, Ndalo and Bananas. A great improvement has taken place in the habits of the natives since the introduction of Christianity.—II. "Extracts from correspondence between Dr. Skene and Linnæus and John Ellis, about the year 1765."—III. "Notice of Narthex Assafœtida (the Assafœtida plant at present in flower in the Botanic Garden)." By Professor Balfour. This season another of the Assafœtida plants in the Botanic Garden, raised from seeds sent home by Sir John M'Neill and Dr. Falconer, has produced a flowering stem. The specimen was planted out in front of the houses in the Garden about five years ago. It began to show symptoms of developing a flowering stem at the end of February and beginning of March; none of the large radical leaves were produced, but the flowering axis shot up at once from the underground stem. At the time when this took place none of the other specimens in the open ground of the garden had shown any leaves. Warned by the untimely fate of the plant last year, which was suddenly destroyed by an intense frost on 13th April, when the thermometer fell to 22°, Mr. M'Nab secured the present specimen from injury by getting a glazed wooden frame, about 8 feet high, erected around it, and connecting it with the adjoining stove, so that a moderate degree of heat might be supplied in the event of intense frost occurring during night. In this way the plant has been completely protected from the effects both of very high winds and of cold. It has progressed vigorously and rapidly. On the 13th April its height was 7 feet 8 inches. This height had been reached in about 45 days. The last 30 inches of growth have been accomplished in 11 days—*i.e.*, from 2d to 13th April. The first anther expanded at 11 A.M. on 7th April, and in the course of that day the anthers appeared by hundreds. The plant has flowered well, and promises to bear fruit. At present there are 45 compound umbels on it, some of which are 5 or 6 inches across.—The following note was read from A. G. Spiers, Esq., of Culcreuch:—"The enclosed I took off a Cryptomeria Lobbii; they appear to be attempts to form cones, and I have not heard of that tree seeding in this country."—Dr. Balfour noticed the flowering of Rhododendron Falconeri in Professor Syme's garden at Millbank. The plant has produced 28 flowers, which are of a white colour, and are beautifully marked with a purple spot inside.—Mr. J. B. Booth exhibited specimens of a Thuja, which he had received from British Columbia, under the name of Thuja gigantea, but supposed to be the true Thuja Menziesii of Douglas. The specimens were taken from a tree 200 feet in height, and from 4 to 6 feet in diameter.—Mr. Murray exhibited specimens of Spraguea umbellata from California.—Mr. M'Nab laid on the table specimens of the common Hawthorn (Cratægus oxyacantha), having the leaves of 1858 still green upon it, as well as the mature leaves of 1859, with blossoms fully developed. He likewise laid on the table specimens of Cratægus heterophylla in full leaf, with flower buds far advanced.

DEVON AND EXETER BOTANICAL AND HORTICULTURAL: *May* 27.—We learn from *Trewman's Exeter Flying Post* that this was in all respects an excellent exhibition. A brilliant collection of floral gems was contributed by Messrs. Veitch & Son. The whole of a large marquee was solely occupied by choice, rare, and beautiful flowers and plants from their extensive conservatories, all of which were admirably arranged under the superintendence of Mr. Veitch, jun., and their foreman Mr. Dominy. They were placed in two lines on either side of the marquee, and the crowded state of the latter during the whole afternoon showed how fully the visitors appreciated this really magnificent exhibition. The Orchids were on this occasion exceedingly fine. Among them were four plants of Lælia purpurata, with pure white blossoms, edged with rich purple; from 30 to 40 of the White Butterfly plant — Phalænopsis; Cypripedium barbatum, the snowy white Calanthe veratrifolia, Aerides virens, the Fielding Fox-brush, and A. Veitchii—the latter a rare variety, with delicate pink-spotted flowers. The Azaleas were also beautiful and effective. Among them were exquisita, lateritia, Iveryana, Perryana, dilecta, Eulalie Van Geert, Roi Leopold, the latter with fine salmon-coloured flowers, and other good kinds. Cape Heaths were present in great variety, and in fine bloom; those deserving of special notice were—Cavendishi, depressa, vestita coccinea, and Spenceriana. The most attractive feature perhaps of the whole exhibition was the Roses, which were magnificent, and elicited the admiration of all. There were Charles Lawson, a vivid rose, large and double; Jules Margottin, Coupe d'Hébé, Paul Perras, Duchess of Sutherland, and Madame Domage, together with several beautiful specimens of General Jacqueminot, rich crimson scarlet, and others. Of New Holland plants there was a good collection. Hardy Rhododendrons too were much admired. Amongst the latter were several new seedlings raised by the Messrs. Veitch. Among new and rare plants were Clianthus Dampieri, with brilliant crimson blossoms and dark boss; Olea ilicifolia, a handsome evergreen shrub from Japan; Rhododendron Veitchianum, a greenhouse species from Moulmein, with beautiful pure white flowers, 4 inches across, and crisped round the edge; Cyanophyllum magnificum, a handsome stove plant, with deep velvety green foliage; Embothrium coccineum, an evergreen shrub, with flowers of the richest scarlet; Caladium Chantini, with green leaves blotched with purest white; two Belgian Begonias, argentea and Queen Victoria, distinct kinds very fine. There was also exhibited in a glass case the strikingly beautiful new Pothos argyræa; also a fine collection of Anæctochilus, with handsomely marked foliage. These all came from the Messrs. Veitch, who likewise contributed among other rare plants the fine conservatory climber Lapageria rosea, from Chili, with crimson bell-shaped flowers; Philesia buxifolia, a beautiful shrub from Patagonia, with deep rose-coloured blossoms; the curious Pitcher plants, Nepenthes lanata, Rafflesiana, ampullacea, vittata, and others. The new and commodious marquee, which was erected on this occasion for the first time, contained large quantities of plants, flowers, and fruit, and also some prodigious vegetables. A great number of prizes was awarded on the occasion, for the enumeration of which we are unable to find room.

Notices of Books.

Our Woodlands, Heaths, and Hedges. By W. S. Coleman (Routledge), is a shilling volume of gossip about trees and shrubs, very well done, and containing in addition to the principal subject matter, useful information on entomological subjects. It is illustrated by small woodcuts sufficient for identification. The author should have pointed out however the poisonous nature of Holly berries; nor do we see why the true Service tree, Pyrus domestica, should have been omitted.

Pets, a paper dedicated to all who do not spell Pets —Pests. By Major Egerton Leigh (Longmans). Those must have passed a very agreeable evening who had the good fortune to hear the gallant author read this charming essay to the Mechanics' Institute at Chester. Its title marks its character—serious, jocular, witty, and full of lively anecdote. Lovers of domesticated animals will be proud of their graceful champion, and cling more fondly than ever to the little creatures of their affection. Through 62 pages there is a running fire of good stories, capitally told, as may be judged from the following extract:—

"My own earliest Pet was a mouse, caught in my schoolboy days, and highly educated. At that particular school we were all mouse tamers. The first process was conducted on the water-cure principle, breaking the wild spirit of independence by letting the mice swim till they were tired. After the preparatory immersion had been undergone, their education was conducted on principles of decided kindness. Our mice knew and would come to us like dogs, and were most docile and teachable. I grieve to have to confess that in a moment of extreme poverty I disposed of an 'admirable Crichton' of a mouse for the unheard-of sum of five shillings. 'Toby' (that was his name) was a genius, knew his name, came to the whistle, leapt, ran up poles, opened doors, shouldered arms, &c. In the course of their education our mice often got bad falls, and the pharmacy we adopted in these cases is not the least curious part of mouseology. The fainting sufferer was phlebotomized by cutting off a link of his tail with a sharp knife; the drop of blood which followed this process generally brought the patient round. A very accomplished mouse might have been known by the shortness of his tail, as the senior wrangler may often be distinguished at the universities by the baldness of his forehead. Apropos of mice, I remember hearing of an English officer in a smart uniform being introduced during the short peace to Napoleon the First at the Tuilleries as 'Capitaine des Souris.' The Emperor could not at first solve the problem of the English mice requiring a commanding officer till it was explained to him that the officer was a captain in the *Surrey* Yeomanry."

And thus Major Leigh goes on sparkling and sparkling till his tales die out, with one last reflection in which all kind-hearted folks will join. "And now what moral can I draw from my subject? That there must be some good reason for the general cultivation and popularity of Pets; that it is one of the many ways by which lessons of humanity may be impressed on a child's young heart in the pleasantest and most lasting manner. Kindly affections are fostered by the means of Pets in those of a riper age. Pets cheer the bed of sickness, solace the hours of solitude, bring to mind absent or deceased friends, and soften and render more endurable the trials of poverty and sorrow.

"'He prayeth well who loveth well,
Both man and bird and beast.
He prayeth best who loveth best
All things both great and small;
For the dear God, who loveth us,
He made and loveth all.'"

Glenny's Manual of practical Gardening (8vo. Houlston, pp. 384) is a really good book and deserves to be favourably received by the gardening world. It treats indeed of common things only, but of these it treats well, and it is upon them that the great mass of cultivators requires to be informed. Amateurs in particular have here an adviser in whom they may place confidence. In short Mr. Glenny's volume seems to us the best work on the details of ordinary cultivation that has appeared since Abercrombie's. The author describes his object as being to give, as concisely as possible, such instructions as may be profitably learned by all classes, as part of their scholastic acquirements: he does not propose to elaborate upon all the modes of grafting; for many that help to fill up modern treatises are mere whims and fancies,—which, like difficult pieces of music without melody, by astonishing instead of pleasing the hearer, serve only to show the skill of the performer, which nobody wishes to dispute. His object is to give the easiest and most efficient instructions for all the necessary operations in gardening; not to introduce the novelties which have nothing to recommend them but their novelty. This is a fair account of the way in which the work before us is prepared. "Nobody," the author adds, "can defend those writers who put 20 lessons before a pupil, all different, all professing to accomplish the same end, and without once informing him which are the safest and best, the easiest and most economical. Young gardeners, of all others, should have no puzzling matters; their path ought to be as straight as circumstances will admit of. We should think our work but half done, or very ill done, were we to record the useless variety of methods adopted by as many different authors, and leave our less experienced friends to discover which is the best. Yet such has been the character of some of our most popular works on gardening: perhaps 20 authors are quoted, and all of them persons of some note in their profession; but with all these quotations, the person wholly inexperienced would be bewildered, while the moderately well-informed gardener would be actually misled." Mr. Glenny confines his statements within his own experience, and in so doing has conferred a substantial benefit on his readers.

Messrs. Longmans have just published a new and greatly improved edition of *Maunder's* useful *Treasury of Knowledge*. The English Grammar occupies 59 pages, the English Dictionary 344 pages, the Gazetteer 277 pages, the Classical Dictionary of proper names 60 pages, the Chronological Compendium 30 pages, besides which are various minor matters, in all forming a duodecimo volume of 900 pages beautifully printed in double columns in very small type, and costing no more than 10*s*. We have also before us from the same great publishers a new and revised edition of *Mangnall's Historical and Miscellaneous Questions* in the form of a small duodecimo of 570 pages.

Mr. Bohn has brought out a translation of *Dante's Inferno*, by the *Rev. J. W. Thomas*, who tells his readers that his main object has been "to unite with a version almost literal the *form*, the *beauty*, and the *spirit* of the original." In the first he has succeeded, but we greatly doubt whether readers will recognise the presence of the other two qualities.

The 9th Part of Prof. Lindley's *Folia Orchidacea* has appeared, containing the completion of Pleurothallis. What progress the knowledge of Orchids has made of late years may be seen from this instance. When, in 1830, the genus was introduced by the author into his *Genera et Species Orchidearum*, only 19 species had been published, of which he had only seen 15, many in the state of unexaminable fragments. The present classification is formed upon 280 species, nearly all of which have been carefully dissected; exclusive of three doubtful species, and nine which are now referred to other genera.

Messrs. Blackie & Son have now carried *Thompson's Gardener's Assistant* (see p. 638, 1858) as far as the 10th Part, in which they announce that the author finds notwithstanding all his efforts to confine the various subjects within the limits of 10 parts, at the same time doing justice to the articles, that the matter has so extended upon his hands as to render it necessary to enlarge the work to 12 parts, as the only means of maintaining proper harmony between the various sections, and allowing that scope for their treatment which the importance of the subjects and the interests of the purchasers demand. We are glad to say that the coloured plates are improved, and that the work continues to justify the favourable opinion we formerly expressed of it.

From Mr. Murray we have an excellent abridgment of the *Life of George Stephenson*, by Mr. Smiles. It

now appears in a form which brings it within the reach of everybody who can spare 6s., and there is surely no one book in the English language more worthy of being placed in the hands of the young. It is here they find the history of one who by a life of steady industry, sobriety, intelligent perseverance, and a resolution to be deterred by no difficulty, raised himself from the low condition of a poor peasant boy to the highest rank among those great engineers who, following in his footsteps, are rapidly affecting the destinies of the mightiest nations of the earth. The narrative of the simple means by which so great a result was obtained should be placed in the hands of every schoolboy, with the advice to read, digest, and do likewise. The volume just provided is not however a mere abridgment of Mr. Smiles's former biography, but is enriched with many interesting illustrations, calculated to fix the attention of young people upon some of the most striking periods in Stephenson's career. We shall hope to learn that the volume is universally accepted by those intrusted with education as the most valuable piece of biography that can be placed in the hands of their pupils.

Miscellaneous.

Measures and Weights used in the Vegetable Markets of Paris.—Most sorts, such as Carrots, Turnips, Parsnips, Leeks, Radishes, Onions, &c., and small herbs are sold by the *botte*, which weighs about 1 kilo (nearly 2¼ lbs.). Sorrel, Spinach, Parsley, and Chervil are made up into *paquets* (bundles), which are about the same in weight as the *botte*. Some of the articles usually sold by the botte are otherwise brought to market at certain seasons; thus Onions are in *grains* up to the hectolitre (2¾ bushels) from November or December; and Sorrel and Spinach after September cease to be offered in *paquets*, but come for sale in *mannes* (punnets), the price of which is according to size. Mushrooms are sold in *clayettes*, each consisting of 24 *maniveaux;* this is a very small basket, holding five or six middle-sized Mushrooms; but when Mushrooms are exported from Paris they are sold by weight. The *Calais*, a measure used for wild Chicory, contains 12 heads. Cos Lettuces are sold in bottes of 32 heads, or in *bottillons* of four heads each. Other heavy articles, such as Cabbages, Cauliflowers, sometimes Celery, are sold by the hundred, as are also Curled Endive, Batavian Endive, and Cabbage Lettuces. *Rev. Hort.*



Aquaria.—We find in the *Pharmaceutical Journal* the following ingenious instrument for forcing air into the water of Aquaria, invented by Mr. Stevenson, of Edinburgh. "This is a very simple, elegant, and efficient instrument. It is formed of an india-rubber air ball, A, attached to one end of a glass tube, B, which has a ball of cotton wool, C, tied firmly to the other end of it, whilst there is a valve opening inwards. When the india-rubber ball is pressed or squeezed, the air expelled from it shuts the valve, V, rushes down the tube, and is forced through the ball of cotton, which distributes it in small globules. When the pressure is removed, the expansion of the elastic india-rubber ball opens the valve, the external air rushes through it and again fills the ball, so that by alternately squeezing this ball with the hand and relaxing the pressure, a current of fresh air is thrown out at the ball of cotton."

Ceylon the ancient Tarsus or Tarshish.—A correspondent who appears to have seen portions of Sir Emerson Tennent's forthcoming work on Ceylon, speaks of it in very high terms. Our correspondent writes that the author "proves that Ceylon is the Tarsus of the Scriptures—that a very large trade was carried on with it hundreds of years before the Christian era—with Turkey, Ophir (Sumatra), and China from the Red Sea—proves this by official documents from Turkey and China. He has maps showing the ancient and native names of the places." *Colombo Observer.*

Calendar of Operations.

(For the ensuing Week.)

PLANT DEPARTMENT.

CONSERVATORY, &c.—The conservatory should now be thoroughly relieved of all superfluous stock. Nothing therefore will be required in structures of that kind but to carry out a cleanly system of cultivation and to introduce specimens in flower from other houses or pits. Keep the atmosphere as moist as circumstances will admit. Ventilate thoroughly, and shade with thin canvas during bright sunshine. Attend to plants for autumn and early winter decoration, such as Japan Lilies, Chrysanthemums, Scarlet Salvias, Tree Carnations, and things of that sort. Give them plenty of pot room, good rich compost, a moist atmosphere, and plenty of space for the proper development of their branches and leaves. Selago distans is a good useful plant which must not be forgotten; it flowers freely and requires nothing better than a cold pit to grow in. Epacrises, winter blooming Heaths, and Cytisus should likewise be cultivated in quantity, for few plants surpass them for winter decoration. The atmosphere of plant houses can scarcely be kept too moist at this season; therefore sprinkle every available surface frequently and syringe growing stock lightly twice a day during bright weather.

FORCING DEPARTMENT.

PINERIES.—Where the bottom-heat is obtained from tan or other fermenting matter it will be necessary to add a little fresh material at intervals, in order to recruit the heat, but at this season it will be safer to surface with a few inches of fresh tan in a rather dry state than to turn the bed, mixing the fresh materials, which often cause too strong a heat; and at this season there is much more danger of erring on the side of too much than too little bottom heat. Give every attention to keeping up a succession of fruit. Perhaps the most certain method of doing this is by securing and potting a number of suckers proportionate to the demand at short intervals during the growing season, therefore attend to keeping up a regular supply of young plants if doing this should necessitate throwing away a few overgrown plants which have failed to fruit at the desired time. We have frequently seen gardeners allow the number of large plants to increase, so that there was little room left for the young stock, which suffered accordingly, and disappointment came in due course. Do not let the growing stock suffer for want of pot room, or through dryness at the root, and afford them a moist atmosphere, syringing and shutting up early in the afternoon, so as to give the house a good steaming. Recently potted plants, especially if they were much pot bound before being repotted, should be kept rather close and shady, with a thoroughly moist atmosphere, and very carefully attended to with water until they appear to have taken to the fresh soil. VINERIES.—In the case of fruit intended to be kept as long as possible, the berries should be thinned, so that they will hardly touch when fully swelled, for it is scarcely possible to keep Grapes through the winter except they are severely thinned. Be particularly careful of the foliage of the Vines intended to furnish a late supply of Grapes, and if plants must be grown in the house, see that they are not infested with black thrips or red spider, for if either of these pests is allowed to gain a footing on the Vines, the foliage will probably be greatly injured, and then there will be no chance of keeping the Grapes in good condition for any time after they are ripe. Muscats must be encouraged with a brisk temperature while setting. PEACH HOUSE.—Use means to eradicate insects if any from the early house as soon as the fruit is gathered, in order that the trees may be perfectly free from them before the lights are removed. Syringe copiously to destroy red spider, dust with sulphur for mildew, and smoke with tobacco for green fly. MELONS.—In dung beds keep up a good heat by means of linings. Let no water fall upon the fruit after it is fully swelled, and give air more freely. Sprinkle late Melons overhead early in the afternoon before closing up the frames; a little air may be left on during warm nights if the bottom heat is brisk. Keep the Vines thin and shade lightly if the weather should become suddenly very dry or hot. CUCUMBERS.—Attend to watering and thinning out superfluous shoots. If in frames, and the latter are small, they may be raised by placing bricks under the corners so as to allow the shoots to run outside. Stop and train those under handlights, and supply them liberally with water.

FLOWER GARDEN AND SHRUBBERIES.

All newly bedded out things will during hot weather require daily waterings. The benefit of little basins round each plant will then be readily seen. Let the young shoots on all old Fuchsia stools be thinned out to five or six. Attend diligently to standard Roses, constant disbudding is necessary at this period; also keep down suckers. Let every attention be paid to propagating a reserve stock to fill gaps, and let those already rooted, or the remains of store pots, have kindly cultivation forthwith, in order to be ready to fill blanks. They should be kept in a shady border entirely by themselves, and should receive frequent waterings.

HARDY FRUIT AND KITCHEN GARDEN.

In order to have a good and constant supply of winter Endive a full sowing should now or very soon be made. Endive is generally sown too thickly. Another good sowing should be made in the first week of July, and a second towards the middle, after which the plants will not attain full size. As soon as the plants are a few inches high some mow the tops of the leaves off with a scythe, cutting about one-third of the leaves away. This they do to stiffen the plants and cause more heart to develope itself; it also enables them to bear transplanting better. A good breadth of dwarf and compact Cabbages may be sown for early Coleworts; also a bed of Horn Carrots. This is a good time for a liberal sowing of autumn Turnips; the Dutch or Stone are useful sorts for the kitchen garden. Prepare for Leeks by heavy dressings of manure, also for Celery. Water late Cauliflowers abundantly, also Lettuces for salad. Mushroom spawn should be made without delay. See that fresh planted trees have thorough mulchings and waterings.

COTTAGERS' GARDEN.

As soon as early Potatoes are fit for use and up let the ground be immediately cropped with Winter Greens. The Early Ulm Savoy, Brussels Sprouts, and above all Green and Cottagers' Kale should be amongst the foremost to claim attention. If a cow is kept the Thousand-headed Cabbage will be found to furnish a large amount of good food for her. A bit of the early Potato ground should be sown with Turnips forthwith. Celery and Leek ground should be got ready. Leeks well grown and large are most useful in a cottager's family. Blanks among late Potatoes should be filled up with transplanted Swedes.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.
For the Week ending June 2, 1859, as observed at the Horticultural Gardens.

May and June.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Temperature of the Air. Min.	Temperature of the Air. Mean	Temperature of the Earth 1 foot deep.	Temperature of the Earth 2 feet deep.	Wind.	Rain.
Friday 27	24	29.831	29.753	74	46	60.0	55	53	N.E.	.00
Satur. 28	25	29.925	29.667	69	52	60.5	57	55	N.E.	.00
Sunday 29	26	29.680	29.621	76	47	61.5	57½	55	E.	.34
Mon. 30	27	29.659	29.587	75	52	63.5	59	56½	W.	.01
Tues. 31	28	29.739	29.630	76	45	60.5	60	58	S.E.	.07
Wed. 1	●	29.838	29.725	75	52	63.5	61	58½	N.E.	.22
Thurs. 2	1	29.598	29.515	74	55	64.5	62	59	E.	.03
Average		29.753	29.649	74.1	49.8	62.0	58.8	56.4		.67

May 27—Overcast; fine; overcast.
— 28—Very fine throughout; rather foggy at night.
— 29—Uniform haze; thunder and lightning; rain at night.
— 30—Foggy; cloudy and mild; clear and fine.
— 31—Hazy; fine; thunderstorm in afternoon; fine.
June 1—Very fine throughout.
— 2—Cloudy; overcast; fine; rain at night.
Mean temperature of the week, 5 deg. above the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 33 years, for the ensuing Week, ending June 11, 1859.

June.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 5..	70.8	47.2	59.0	17	0.64 in.	2	6	2	1	5	8	6	3
Mon. 6..	69.5	47.7	58.6	17	0.28	6	5	1	2	4	9	3	3
Tues. 7..	68.8	47.6	58.2	12	0.53	3	7	1	4	4	8	3	4
Wed. 8..	70.3	47.5	58.9	12	0.45	3	7	1	1	4	12	4	2
Thurs. 9..	70.6	48.1	59.4	16	1.48	1	5	2	2	3	14	3	3
Friday 10..	71.5	48.0	59.7	14	0.95	1	8	2	2	3	8	5	4
Satur. 11..	72.2	48.3	60.3	10	0.47	—	7	3	2	4	7	10	—

The highest temperature during the above period occurred on the 7th,—1846—therm. 90 deg.; and the lowest on the 5th, 1856—therm. 33 deg.

Notices to Correspondents.

BOOKS: *A—, Rectory.* Utrum mavis.

BROCCOLI: *Shaw and Crosland.* Your "Richmond Dwarf Late White" appears to be a valuable variety for this season of the year. The heads sent (which were pale sulphur coloured rather than white) measured on an average 2 feet in circumference. All of them were however rather past their best.

CAULIFLOWER PLANTS: *H E.* If they are suffering from fly, give them a good syringing once or twice with tobacco-water, washing it off afterwards with clean water. That will probably cause them to disappear.‡

FUNGI: *C E.* The soot-like fungus from the inside of a large Elm (Ulmus montana) is Reticularia maxima. It generally grows first upon the bare soil, running from thence over everything which is in its way. It is not the cause of the decay of your tree, its connection with which is probably merely accidental. *M J B.*

GINGER BEER: *F P, Maidstone.* The following is a very good way to make it:—Take of ginger bruised or sliced 1½ oz.; cream of Tartar, 1 oz.; loaf sugar, 1 lb.; one Lemon sliced. Put them into a pan and pour 6 quarts of boiling water upon them. When nearly cold put in a little yeast and stir it for about a minute. Let it stand till next day, then strain and bottle it. It is fit to drink in three days, but will not keep good longer than a fortnight. The corks should be tied down, and the bottles placed upright in a cool place.

INSECTS: *J S.* The night feeding insect which attacks the young Vines in your house is the destructive Weevil Otiorhynchus sulcatus. They may be trapped by laying a white cloth under the Vines, which should be visited some time after dark and suddenly shaken.—*J S* (Ferry Barr). The grubs which have eaten off your Lobelias, Alyssums, Verbenas, and Calceolarias are the larvæ of one of the smaller species of Daddy-long-legs (Tipula hortorum ?). Your plan of gently forking round the roots and picking out the grubs is the best you could have adopted. The grubs are now nearly full grown and have done their worst. They will now turn to inactive pupæ underground, and in a few weeks the perfect insects will be produced; it will then be worth your while to employ children to catch the Daddy-long-legs.—*H Y.* The grubs which have attacked your Oat plants by thousands and have also eaten off your spring Tares, Carrots, and Mangel Wurzel are the larvæ of one of the larger species of Tipulidæ. We do not think any fluid could be applied in sufficient quantities to injure the grubs, and can therefore only recommend the plans suggested in the preceding answer.—*W P.* Your Barley plants have been eaten off by the larvæ of another but smaller species of Tipula. See the two preceding answers. *W.*

NAMES OF PLANTS: We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have or could have undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*Dick.* Justicia carnea.—*Redfern.* Certainly nothing more than a viviparous Poa annua, whose strange structure has been produced by the growth of the chaffs of the flowers into common leaves.—*Adam Ball.* Certainly the real Spergula pilifera. From what part of Europe did the seed come to you ?—*W T.* Pilogyne suavis and Bryonia scabra are supposed to be the same plant; but that is not quite clear. We fear the plant you have sent is too much dried up to have a chance of growing.—*J L Capper.* Polygala vulgaris.—*B W S.* Arenaria marina, Anthyllis vulneraria, and Bunium flexuosum. The specimens are not numbered.—*J P, Castle Carey.* 1, Fedia cornucopiæ; 2, smashed to pieces and indeterminable. — *Lydia T.* Abies Douglasii. — *T K.* Stanhopea guttata.

ROSES: *Somersetensis.* It is difficult to say with certainty from the specimen sent what the name of your yellow Rose is. It looks like Cloth of Gold, but we should think it is too early for that variety to be in flower now, even on a warm south wall. We are rather inclined to think that it is Solfaterre.‡

THE GISBURST COMPOUND: *Newbury.* It appears that you dissolved the compound in hard water which has a tendency to form a curd, and after using, left the solution to dry upon the plants. It is especially recommended to use soft or rain water for the purpose of dissolving this substance, and to rinse or syringe off the solution before it is allowed to dry upon the leaves.

MISC.: *G S.* The Portuguese Apple you mention is the Reinette du Canada, and is in cultivation here. So is the Patchouli plant, which we suppose may be had in the great nurseries. With the other plant we are unacquainted.—*Southampton.* We really cannot occupy ourselves with querulous ignorance.

*** As usual, many communications have been received too late, and others are detained till the necessary inquiries can be made. We must also beg the indulgence of those correspondents the insertion of whose contributions is still delayed.

THE PATENT

NITROPHOSPHATE OR BLOOD MANURE COMPANY (Limited),

CONSISTING OF TENANT FARMERS, OCCUPYING UPWARDS OF 30,000 ACRES OF LAND.

TRUSTEES.

Abel Smith, Jun., Esq., Walton House, Ware, Herts.
Charles Dimsdale, Esq., Essendon Place, Herts.
Edward Ball, Esq., M.P., 8, Belgrave Road, Pimlico
Major-General Hall, M.P., Western Colville, Linton, Cambridge
John Brady, Esq., M.P., Warwick Terrace, Belgrave Sq.

DIRECTORS.

Chairman.—Jonas Webb, Esq., Babraham, Cambridgeshire.
Deputy-Chairman.—John Collins, Esq., Myddleton Square, Pentonville.
Edward Bell, Esq., Tottenham, Middlesex
John Clayden, Esq., Littlebury, Essex
Richard Hunt, Esq., Stanstead Abbot, Herts.
Thomas Knight, Esq., Edmonton, Middlesex.
Robert Leeds, Esq., West Lexham, Norfolk.
Robert Morgan, Esq., 72, Camden Villas, Camden Town.
George Savill, Esq., Ingthorpe, near Stamford.
William Collins, Esq., 105, St. John Street Road.

Bankers.—Messrs. Barnett, Hoare & Co., Lombard Street.
Solicitors.—Messrs. Kingsford & Dorman, 23, Essex Street, Strand.
Auditor.—G. W. Brown, Esq., 28, Parliament Street.
Manager.—Mr. James Odams. *Secretary.*—Mr. C. T. Macadam.

Offices 109, Fenchurch Street, London.—Manufactory, Plaistow Marshes, Essex.

The Directors beg to inform their Friends and the Agricultural Public that the following Manures are now ready:—

ODAMS'S BLOOD MANURE FOR CORN AND MANGEL.
ODAMS'S BLOOD MANURE FOR ROOTS.
ODAMS'S SUPERPHOSPHATE OF LIME.

Full particulars may be had at the Company's Offices, or of the local Agents.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. Nesbit, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

ARTIFICIAL MANURES.

FREDERICK CORNWELL begs to inform his friends and the Agricultural public that he can now supply a "SUPERPHOSPHATE of LIME" superior to anything yet produced. Each Bag guaranteed to contain from 20 to 25 per cent. of "Soluble Phosphate of Lime." Price 5*l.* 10*s.* per ton, delivered free to any Railway or Wharf in London. Dealers and the trade supplied. LINSEED-CAKES, COTTON-CAKES, and all descriptions of ARTIFICIAL MANURES at lowest market prices.—Offices, 7, Great St. Helen's, London, E. C.

LONDON MANURE COMPANY, removed to 116, Fenchurch Street, E. C. (Established 1840), have the following MANURES ready for delivery:—

CORN MANURE for SPRING TOP-DRESSING
URATE
MANGEL MANURE
SUPERPHOSPHATE OF LIME
BLOOD MANURE
} all of guaranteed quality.

In consequence of the reduction in the price of raw material the London Manure Co. are enabled to lower the price of their Superphosphate of Lime, and to materially improve the Corn Manure and Urate.

The London Manure Co. also supply PERUVIAN GUANO (direct from Messrs. A. Gibbs and Sons), SULPHATE of AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of value. Wholesale dealers supplied.
116, Fenchurch Street, E.C. Edward Purser, Secretary.

PERUVIAN GUANO.
The present price of this valuable Manure is—
12*l.* per Ton for 30 Tons and upwards,
13*l.* 5*s.* per Ton for 1 Ton up to 30 Tons.

And, to guard against the purchase of adulterated mixtures and of inferior Guanos purporting to produce results equal to Peruvian, consumers are recommended to apply either to ourselves, to our agents, Messrs. Gibbs, Bright, & Co., of Liverpool and Bristol, or to dealers of established character, in whose honesty and fair dealing they may place implicit confidence.
Antony Gibbs & Sons.

SUCCESS OF THE NEW GUANO; Imported under Lease from the Crown.—Though the experiments with KOORIA MOORIA GUANO were made late in the season, and under adverse circumstances, the successful results obtained confirm beyond doubt Professor Voelcker's report—(in No. 41, Part I., vol. xix., Royal Agricultural Society's Journal)—that Ammoniacal manures, applied to Turnips in the experimental field, kept back at first the crop, and had no beneficial effect either alone or in conjunction with phosphates.

The Kooria Mooria Guano is essentially a phosphatic manure, containing sufficient ammonia for roots, and, with a mixture of one-fourth of ammoniacal guano, cannot be excelled for either top-dressing or grain crops. It is a natural deposit, and will be delivered as imported, free from risk of adulteration. Deeply impressed with the necessity of encouraging the import of this valuable manure, her Majesty's Government has given such increased facilities for shipment, that arrangements have been made for a considerable supply. Purchasers can be supplied with suitable quantities from cargoes now on sale, containing from 45 to 66 per cent. phosphates. Present prices, 4*l.* 10*s.* to 6*l.* 10*s.* per ton, on applying to Joseph Hindson, Broker (one of the Lessees under the Crown), 20, North John St., Liverpool. Government Lessees: Ord, Hindson, & Hayes.

"Greystoke, Cumberland, Dec. 16, 1858.

"Dear Sirs,—I beg to inform you that I applied the Kooria Mooria Guano I had from you for Turnips, on land of a loamy character, incumbent on a stiff clay subsoil, and recently drained. On each side of the plot sown with Kooria Mooria Guano were Turnips manured with best Peruvian Guano. The quantities applied of each sort were of equal weight for weight per acre. The crop—a very good one throughout—is now being eaten off with sheep. Very little perceptible difference can be discovered, but if anything that difference is in favour of the Turnips sown with Kooria Mooria Guano.
(Signed) "John Barker."

"Messrs. J. & J. Graham, Guano Merchants, Penrith."

A Pamphlet, "Hints on Guano," containing a large number of reports from well-known agriculturists, and analysis of the cargoes here, may be had of the Broker, at the above address.

MANURE for ROOT CROPS, of first-rate quality, with Analysis guaranteed, manufactured by WILLIAMS & Co., 47, Mark Lane, London (Established 1847), at 6*l.* per ton, including bags. Free to Wharf or Rail in London. The Trade supplied.

REDUCTION IN PRICE OF LAWES'S MANURES.

MR. LAWES begs to announce that he has this season reduced the price of the Manures manufactured by him, viz.:—

TURNIP MANURE	from £7 to	£6 6
SUPERPHOSPHATE OF LIME ..	„ 7 to	6 6
MINERAL do. ..	„ 6 to	5 5
BARLEY MANURE..	..	8 0

Prof. Way and Dr. Voelcker have sampled from a bulk of 5000 to 6000 tons at his factories, and their report and analyses are given in full in Circular to be obtained on application at his office, 1, Adelaide Place, London Bridge, E.C., or of his local Agents.

N.B. Genuine Peruvian Guano direct from Messrs. Gibbs, Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures. American Cotton-seed Cake supplied.

ESTABLISHED 1812.

H. AND T. PROCTOR'S TURNIP MANURE.—Messrs. H. & T. P. draw particular attention to this valuable Manure, which contains all the elements necessary for the full development of the Turnip Crop, so combined, that, from their chemical knowledge and long experience, they feel satisfied is most advantageous to the consumer. It has been very extensively used by most of the eminent Agriculturists of the day, and has attained a high reputation throughout England, Scotland, and Wales, and, they venture to say, is unrivalled for the weight and quality of the Bulbs which it produces. The application of this Manure to the Turnips will be found to benefit considerably the after crops of Barley, Clover, and Wheat.

POTATO, GRASS, BARLEY, CLOVER, AND WHEAT MANURES; also BONE DUST, PERUVIAN GUANO, and SUPERPHOSPHATE of LIME, warranted of the best quality.

Apply to H. & T. Proctor, West of England Depôt for Artificial Manures, Cathay, Bristol; or Proctor & Ryland, Birmingham, and Saltney, near Chester.

BURNARD, LACK, AND CO.'S CONCENTRATED SUPERPHOSPHATE OF LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.

CONCENTRATED TURNIP MANURE, equal in value to the preceding.

Of these Manures Dr. Voelcker says:—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."

Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to Burnard, Lack, & Co., Sutton Road, Plymouth.

TO AGRICULTURISTS AND DEALERS IN ARTIFICIAL MANURES.

MESSRS. RICE, BROTHERS, AND SEARLE will Sell at the New Corn Exchange Coffee House, Mark Lane, on MONDAY, June 6, at 2 o'Clock precisely, 250 tons of MANURE, comprising 200 tons of genuine SUPERPHOSPHATE of LIME, which will be sold by guaranteed analysis, and 50 tons of WOOL SHODDY. N.B.—Approved Bills at two months will be taken of purchasers to the amount of 25*l.* and upwards.—Samples may be seen, with the analysis, &c., at the Auctioneer's Offices, 263, Borough, Southwark, S.E.

"FRIGI DOMO."—Patronised by her Majesty, the Queen, the Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, and —Collier, Esq., of Dartford.

PROTECTION FROM COLD WINDS AND MORNING FROSTS.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and, floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths. Two yards wide, 1*s.* 6*d.* per yard run; four, 3*s.* per yard. Also, an improved make for Shading Purposes. Three yards wide, 2*s.* 6*d.* per yard run.

Elisha Thomas Archbe, whole and sole manufacturer, 7, Trinity Lane, Cannon Street, City, and of all Nurserymen and Seedsmen throughout the kingdom. "It is much cheaper than mats as a covering."

AGRICULTURAL MACHINERY.

E. R. AND F. TURNER, Ipswich, manufacture Prize Mills for Crushing Corn, Seed, Malt, &c.; Portable Grinding Mills, Steam Engines fixed and portable from 2 horse-power and upwards; Threshing Machines, Chaff Cutter, Oilcake Breakers, Horse Gears, Saw Tables, &c., all of a superior description and adapted for Home, Colonial, and Foreign use. Illustrated Price Lists sent free on application.

WEDLAKE AND DENDY, Agricultural Engineers, Hornchurch, Essex.

HAY MACHINES.
Small size, No. 1 .. £10 | Large size, No. 1 .. £12
Large size, No. 2 .. .. .. £13

These Machines are free from small and delicate parts, and can be easily understood by a farm labourer. They have gained several prizes at the Royal Agricultural Society's Shows.

HORSE RAKES.
No. 1 .. .. £6 10*s.* | No. 2 .. .. £7 10*s.*

Wedlake & Dendy's Horse Rakes are made on the tubular principle, combining great strength and lightness. Free to all the principal Railway Stations.

Wedlake & Dendy, Union Foundry, Hornchurch, Essex.

TO FARMERS.—If you wish to PRESERVE YOUR HAY, go to Davis & Co., 64, West Smithfield, E.C., where you may purchase a RICK CLOTH of the best material and workmanship, cheaper than at any house in London.

WHY NOT PRESERVE YOUR HAY?

BENJAMIN EDGINGTON respectfully informs the Nobility and Gentry that they can be supplied on the best terms with RICK CLOTHS, with Poles complete.

Early application should be made for SECOND-HAND RICK CLOTHS. MARQUEES, TENTS, and FLAGS. A great variety of Marquees and Tents may be seen erected on the premises. A quantity of SECOND-HAND TENTS from the Crimea at a greatly reduced price. An Illustrated Catalogue sent post free.
West End Establishment, 32, Charing Cross, S.W.
Benjamin Edgington, 2, Duke Street, London Bridge, S.E.

TO AMATEUR GARDENERS, NURSERYMEN, AGRICULTURISTS, AND OTHERS.

GUITA PERCHA TUBING FOR WATERING GARDENS, from 2½*d.* per foot; Vulcanised India Rubber Tubing for Watering Gardens, from 4*d.* per foot; Brass Hand Branches, with Stopcock and Rose, and every description of Garden Tubing Fittings, sold Wholesale and Retail by W. R. Woods, 94, Goswell Road, near the "Angel," Islington, London, E.C. Priced Lists can be had on application.
Please notice the Address—94, Goswell Road.

GUTTA PERCHA TUBING FOR WATERING GARDENS.

THE GUTTA PERCHA COMPANY have the pleasure to acknowledge the receipt of the following

Testimonial from Mr. J. Farrah, *Gr. to* Boswell Middleton Jalland, Esq., *of Holderness House, near Hull.*

"I have had 400 feet of your Gutta Percha Tubing, in lengths of 100 feet each, with union joint, in use for the last 12 months for watering these gardens, and I find it to answer better than anything I have ever yet tried. The pressure of the water is very considerable, but this has not the slightest effect on the tubing. I consider this tubing to be a most valuable invention for Gardeners, inasmuch as it enables us to water our gardens in about one-half the time, and with one-half the labour required."

Manufactured by the Gutta Percha Company, Patentees, 18, Wharf Road, City Road, London, and sold by their Wholesale Dealers in town and country.

THE GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY: Offices, 52, Parliament Street.
Henry Ker Seymer, Esq., M.P., Chairman.

1 This Company is incorporated by Act of Parliament to facilitate the Drainage of Land, the Making of Roads, the Erection of Farm Houses, Farm Buildings, and Labourers' Cottages, and other Improvements on all descriptions of Property, whether held in fee, or under entail, mortgage, in trust, or as ecclesiastical or Collegiate Property.

2. In no case is any investigation of Title necessary.

3. The Works may be designed and executed by the Landowner or his Agents, or the Company will undertake the entire improvement by their experienced staff, and advance the money required for the works. Equal facilities will be afforded in either case.

4. The whole cost of the works and expenses may, in all cases, be charged on the Lands improved, to be repaid by half-yearly instalments.

5. The term of such charge may be fixed by the Landowner, and extended to 50 years for Land Improvements, and 31 years for Farm Buildings, whereby the instalments will be kept within such a fair per-centage as the occupiers of the improved Lands can afford to pay.

6. No profit is taken on any Works executed by the Company, the actual expenditure only, approved by the Inclosure Commissioners, being charged in all cases.
William Clifford, Secretary.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.
Principal—J. C. Nesbit, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

YORKSHIRE AGRICULTURAL SOCIETY.—GREAT SHOW at HULL, AUGUST 3 and 4.
For Prize Lists, apply to the Secretary, John Hannam, Land Agent, Kirk Deighton, Wetherby.—June 4.

The Agricultural Gazette.

SATURDAY, JUNE 4, 1859.

MEETINGS FOR THE ENSUING WEEK.

Monday, June 6—Central Farmers' Club. .... 6 P.M.
Wednesday, — 8—Agri. Society of England .. Noon.

Having traversed during the past week many of the western and midland counties we are able to say that the country generally has rarely at this season exhibited a finer promise. Our grain crops are generally of good colour and well covering the ground; Wheat is almost everywhere strong and dark, and Barley and Oats are generally full of leaf, and sufficiently forward. Perhaps the sandier parts of Cheshire should be excepted as suffering over all its late sown spring corn from want of rain. But on the more clayey lands in that

county nothing can look finer than the Wheat crop and the Potato crop, and the abundant growth of Grass in the pastures. In Northamptonshire and Bedfordshire, again, the promise is everything that could be wished.

—— Mr. FOWLER'S steam plough was successfully at work on Monday last on a farm belonging to M. T. BASS, Esq., M.P., near St. Albans. Seven acres of ploughing were effected 6 inches deep in a long day, and 20 acres of grubbing done in two days. We were lately across the red gravelly and marly district lying to the south and west of Stafford, in which Mr. BYRD'S farm at Littywood is situated—where 70 acres were ploughed 8 inches deep last autumn in 15 days by FOWLER'S apparatus. The Wheat looks well after the work—and on the steam-cultivated land near Bedford, worked by SMITH'S apparatus, there is the same superiority manifest in the crop after steam cultivation as compared with that which has been cultivated and *trodden* under horse labour. There seems every reason to believe that on every kind of land, and especially on the clay wherever it is laid out in fields of reasonable size, the soil can be cultivated so much more efficiently by steam power as to render the necessary outlay an economical investment.

—— The proceedings of the Agricultural Society last week possess unusual interest. Mr. FISHER HOBBS'S paper, and the discussion upon remedies for the Turnip fly which ensued upon it, will be read with especial interest at this season. A most satisfactory feature in the history of it is the immediate transmission of the report to the agricultural journals, enabling us without difficulty to publish it at once in full. For this our readers are indebted to Mr. BRANDRETH GIBBS, who is the acting secretary of the Society, and who forwarded all the documents to be printed without the usual delay. We have to add the unexplained announcement, as intimated in the official report elsewhere, of Mr. HUDSON'S retirement from the office of secretary of the Society, which he has held for so many years.

—— During the past few days, too, the Bath and West of England Agricultural Society have held their annual meeting at Barnstaple. A report of it is given in another page.

FROM none of the lines of railway by which we have traversed Cheshire do you receive a just impression either of the fertility or farm management of the best parts of the county. You pass too often by the rough and broken fences, which Mr. MECHI describes as stretching away unaffected by a good example from the trim and tidy hedges of the railway: you traverse rough and poached pastures, with weedy ponds in their midst fringed by neglected shrubbery, and lines of Rushes marking the parallel furrows between the ridges. But this is not the universal nor even the general character of the land. On many large estates, and on many scattered farms throughout the county, you will find well fenced pasture fields containing a bulkier produce now of Grass, which if coarser than you see elsewhere is more genuine—less made up of weeds—and as nutritious—capable of maintaining probably a larger head of stock than any other in the country. You will find these farms more generally provided with a considerable proportion of arable land than is generally seen in other dairy districts, that of Gloucestershire, for instance, and this is generally better cultivated and presents just now, so far as during the past week we have seen it, as good a promise of its crops, especially Wheat, and Oats, and Potatoes, as any that we have anywhere observed. The Cheshire farmer is thus enabled more economically to manage his farm horses, which have work provided for them pretty evenly throughout the year. He is also able more satisfactorily than most dairy farmers can, at least in the corresponding districts of Gloucestershire and Somersetshire, to feed his cows economically and well throughout the winter.

Let us by way of a specimen of good Cheshire dairy farming describe the management and land of Mr. W. PALIN, who is well known as a public-spirited and intelligent agriculturist beyond the limits of his county. Stapleford Hall stands near the village of Tarvin, about six miles east of Chester. The farm lies partly on the sand and partly on the clay of the new red sandstone formation. Of its 250 acres 60 are arable. A herd of 52 cows are milked, and the other stock besides pigs consists of a flock of 60 or 80 wether sheep, and 40 or 50 ewes with lambs, bought in and sold fat every year, and 15 or 20 calves, with a similar number of yearlings, and of two and three-year-old heifers, which are partly introduced into the herd as they come into milk and partly sold. Mr. PALIN suffered severely from the pleuro-pneumonia several years ago, and also from the "hask" amongst the young calves, having last year lost 18 from that complaint, and he has not yet regained his full strength of herd—as he dares not replenish it by direct purchase at the fairs—and must therefore recover it gradually. The cows are now in full milk, the earliest calving having been nearly seven weeks at Grass, and nearly the whole being now at the pail.

The dairy management is as follows:—The cows are milked at night and the milk is poured into tin pans on the floor of the milk-house. This milk is skimmed in the morning, and then poured into the large tub where the curd is "set." As the morning's milking proceeds, the pails full are brought one after another and poured into this tub. A pan of milk is warmed in a boiler in the dairy, and when sufficiently hot the cream just taken from the evening's milk is mixed with it, and the whole thus warmed is poured at last into the tub which thus contains the whole milk, cream and all, of both "meals." The colouring matter, "annatto," apparently about a gill, is added to the 100 or 120 gallons which may be then in the tub as the produce of 48 to 50 cows—a half handful of saltpetre is thrown in with the view of correcting the bitterness which is to be detected while the Butter-cups are in full leaf; and the rennet, about a pint of brine in which two or three little bits of the prepared vells or "tag skins" have been steeped over night is added to the milk, which is then left for an hour covered up till the curd has fully formed. It is then cut slowly with a wire curd breaker, and the curd sinking, the whey is baled out; the curd is collected and squeezed both by hand and by the direct pressure of a weight above a board placed upon it, and the last of the whey being removed it is lifted into one of the large Cheshire cheese vats pierced with holes for the further escape of fluid — the lower part being a wooden cylindrical vat, and the upper a tinned cylinder slipping into it as the curd on pressure sinks. After a certain pressure in this *form* the curd is removed and cut and broken by hand, and from 1 to 2 lbs. of fine salt is scattered over it, and the whole rebroken and refilled into the vat, into which a cheese cloth has previously been placed. There it remains for the day—yielding somewhat to the pressure of its own weight. It is then put gradually under pressure, which on the second or third day amounts to nearly a ton weight upon each cheese.

Every day the cheese is turned and wrapped in fresh cloths, and on the seventh or eighth day of this treatment, or as soon as dry, it is removed to the loft and there swathed around with strong girthing, placed on a bench. By and bye it is laid, still swathed as before, on a layer of straw on the floor of the room, and there it lies till from 10 weeks to four months old, when it is ready for sale.

This is pretty generally the history of a Cheshire cheese. In some dairies, in order to the perfect extraction of the whey, skewers are used to pierce it, being thrust repeatedly into it through the holes in the cheese vat, in order to the formation of drains for the liquid. The whey is heated in a boiler, and throws up a cream, called "fleetings," which is skimmed twice, the first yielding a very good butter, and the latter a substance used principally for feeding calves; the whey is afterwards given to the pigs. Excepting a portion of the cream from the milk used in the house, and that which thus comes from the whey, the Cheshire cheese is a whole-milk cheese, and as rich, therefore, as any that is made.

The breed of cows is essentially short-horn, though possessed of no record of pedigree. They are large framed, well made animals, white, roan, and red. The pastures, some of the best we have seen, are on the clayey and marly part of the farm, owing their quality to original fertility, to drainage, and to boning. This last application at the rate of a ton to 30 cwt. per acre had been effected, most of it, many years ago, to the permanent improvement of the land. In more recent instances it had been used with perfect success on rough and sour portions of fields, making them yield sweet and palatable food, so that the patches formerly avoided are now eaten most readily. It is over the pastures on these marly soils that bone-dust has exerted its wonderful effect on the quantity and quality of the annual produce.

The arable land on Mr. PALIN'S farm is for the most part on the sandier portion of its subsoil. The rotation adopted is — 1st, Oats on "lea" furrow; 2d, Wheat; 3d, green crop, Turnips, Mangel Wurzel, or Potatoes; 4th, Barley or Oats laid down with Clovers and other Grass seeds for three or four years, when it is usually broken up again, and the same process gone through. It is a tolerably easily worked soil, and every field bears rich promise of a crop.

A considerable portion of the arable land is devoted to the growth of early Potatoes and of seeds. The Potatoes are grown on the so-called lazybed system, one of the best methods existing for the growth of early Potatoes on a large scale. The ridges are about 4 feet wide, and the Potatoes being dibbled in rows across them are covered over, on coming through, with the earth taken deeply from the furrows. As fast as the Potatoes are removed towards the end of June, selected Mangel plants or Swedish Turnip plants are dibbled in their places. Thirty-five tons per acre of Mangels have been thus grown as a transplanted crop. These are harvested in the usual way, and roots again selected in February are transplanted for the crop of seed. The Mangels are now shooting up their leaves and stems, the Swedish Turnips are in full bloom, and a magnificent promise of both is offered.

This seed growing has itself been a gradual growth, and is an instance of the kind which the Rev. Mr. BERKELEY has more than once recommended in our columns, in which a devotion to this department of cultivation by a well known and trustworthy man has proved, as he alleged, the existence of an increasing demand (although at higher prices) for seed grown from carefully selected roots.

The reference to this part of Mr. PALIN'S management is however beside our present object, which is to present a picture of a well managed Cheshire dairy farm. We ought to add as to the herd of cows, that being gradually brought in towards winter, as the yield of milk ceases, they are fed in stalls, first on Mangel Wurzel leaves, then on the Turnip-tops, and then successively on Turnips, Swedes, and Mangel Wurzel (the last of which has just disappeared), along with cut straw and hay chaff. They thus come to their calving in fair condition and receive then a full allowance of hay until ready to be turned out to Grass.

A reference of this kind to Cheshire farming would be incomplete without mentioning the condition of the labourers. They are better off in Mr. PALIN'S neighbourhood than anywhere we know—receiving 10s. a week during nine months of the year, and 2s. a day during the rest, together with all their food during the corn harvest weeks; they also have cheap cottages of abundant room. Those on Mr. PALIN'S farm let at 1s. a week, though containing four rooms and outhouses, including cowhouse and loft, and pigstye in the garden. Most of them have also a Grass paddock of 2 acres or more at an agricultural rent, enabling them to keep a cow and to rear one or two calves. The men are made comfortable in their station without being offered thereby any temptation to leave it. Altogether the immediate neighbourhood of Tarvin, in so far as it is represented by Stapleford Hall Farm, presents as satisfactory a picture of agricultural prosperity in all classes as any county in the kingdom can present.

THE MONEY VALUE OF MANURES.

[The following passages are extracted from a paper read by Mr. Baldwin, of Glasnevin, before the Royal Dublin Society.]

The Manure Trade.—There are no accurate data for arriving at a conclusion as to the actual quantity of commercial, as distinguished from farm-yard manure, used in these countries; but we may approximate. In 1858 the imports of Peruvian guano amounted to 312,000 tons, and taking the consumption at 300,000 tons, and the retail price at 13*l.* 5*s.* per ton, we have in this article an outlay of 3,975,000*l.*, or very nearly four millions sterling. It is exceedingly difficult to arrive at an accurate conclusion as to the consumption of manures, such as superphosphates; but I do not think we can over-state the quantity manufactured if we take the number of tons to be at least equal to that of imported Peruvian guano, or, say 300,000 tons, at 7*l.* 10s. per ton, which gives the commercial value of what may be denominated the unsophisticated manures turned out by the manufacturers at 2,250,000*l.* annually. We thus obtain the aggregate value of imported Peruvian guano and home-made superphosphate to be about six millions and a quarter sterling. As a very interesting piece of statistics for a "Blue Book," we may suggest to some industrious individual to ascertain the extent to which fraud is practised on this capital in passing through nefarious hands. In the absence of accurate data, we may assume that British farmers are annually swindled by the dishonest practice of manure dealers to the amount of a million and a half sterling, over and above the legitimate profit of respectable manufacturers of superphosphates and the importers of guano.

I have no doubt but this statement will sound alarming; but we cannot too loudly sound the tocsin, nor too impressively express our opinions on this question. There are few articles of ordinary use free from adulteration. The bread we eat and the bever-

ages we drink are subject to the most systematised species of wholesale sophistication. I am inclined to think, however, that the manure trade is at the present time in a more unsatisfactory and calamitous condition than any other, and that there is no class of the community so flagrantly defrauded as those tillage farmers who find it necessary to have recourse to the manure market. Fraud pervades many a recess in this market, stalks forth occasionally in daylight, and not unfrequently unmasks itself in the advertising sheet of the farmer's newspaper.

Fortunately, however, science boldly treads on the track of fraud; and if she does not always discover and disarm it, she has in a very sensible manner checked its career. He would be a blind farmer, indeed, who in this age would slight the aid of the man of science. Further progress in the mode of restoring the lost fertility of land with economy cannot be effected without more of that light which chemistry has shed upon the brow of practice, and immediate relief from the crushing tax imposed on farmers by unprincipled manure vendors can be afforded only by the diffusion of the knowledge we already possess of the chemistry of manures.

The Nitrogen in Manure.—Now, in manure the nitrogen may exist either in the form of ammonia—a salt of ammonia—or be locked up in the tissues of the structure of the substances forming the manure, and its effects on plants depend materially on whether it exists in one or other of those states—so much so that Dr. Voelcker estimates the value of the nitrogen in ammonia at one-third more than the nitrogen in animal or vegetable substances. The advanced agriculturist who estimates the real importance of economising time will always seek to obtain a manure in which the nitrogen exists in a state, say, of actual ammonia, in which it can minister to vegetable nutrition as soon as it is put into the ground, in preference to the "potential" state, as Dr. Ure, many years ago, denominated the nitrogen that may, in course of time, be converted into ammonia. That it is desirable to take this state of combination of the nitrogen into account in estimating the value of a manure may be evidenced by one or two examples.

1. Estimating the value of a specimen of Welsh coal by the quantity of nitrogen which it contains (upwards of 2 per cent.), it would be worth more than 1*l.* per ton; and yet no sane man would pay the cost of its carriage for manure.

2. We know that unboiled bones are probably the cheapest source of nitrogen at our command, and yet in practice the intelligent farmer, who knows that his soil wants nitrogen in the shape of manure, prefers purchasing that element at a higher price in the form of guano. In the bones the nitrogen is in an inactive, and not immediately available condition; whereas in guano it exists in an active state, of which plants can make ready use. We may, no doubt, obtain the full benefit of the nitrogen of the bones before the expiration of a lease, or even before the end of a short rotation; but time is in our time the mother of the tripping sixpence, and the farmer who neglects it will have little chance of competing for maximum profits.

If these premises be true, it follows that the common mode of estimating the commercial value of manures, as far as it depends on nitrogen, is far from being satisfactory. That mode consists in ascertaining by processes which we will not describe the percentage of nitrogen in the manure, and then, after finding how much ammonia this nitrogen is equivalent to, or, in other words, how much ammonia it would produce if it were converted into that substance, estimating the ammonia so determined at the same price per ton as if the nitrogen existed in the state of ammonia. To show the absurdity of this rule, let me remind you that 2 per cent. of nitrogen in guano is worth upwards of 1*l.* per ton; while the 2 per cent. of nitrogen in coal would practically be valueless as a source of nourishment to plants!

But what are the various sources of ammonia within reach of the farmer, and its price per ton?

The cheapest source of this substance is the liquor of gas works; but as that source is very limited, compared to the present enormous demand for ammonia, it may be overlooked. The cheapest salt of ammonia, and the only one used to any extent in agriculture, is the sulphate—a salt formed by the union of pure sulphuric acid, water, and the gas ammonia. Every 100 lbs. of pure sulphate of ammonia consists of—

Ammonia	22.7
Sulphuric acid	53.3
Water	24.0

The salt of commerce contains impurities to the extent of 10 per cent. or so: we may, therefore, assume its composition in every 100 parts as—

Ammonia	20.4 parts
Sulphuric acid..	48.0 ,,
Water	31.6 ,,

Now, on looking on last Saturday's quotations in the *Farmers' Gazette* I find sulphate of ammonia offered for sale to farmers at from 15*l.* to 16*l.* a ton. We will assume the former figure:—

One ton of agricultural sulphate of ammonia ..	£15 0 0
Deduct the value of 1075 lbs. of sulphuric acid contained in the ton, which would be supplied by the sulphuric acid in about 1 ton (20¾ cwt.) of sulphate of lime or gypsum, for	1 10 0
	£13 10 0

Leaving 13*l.* 10*s.* as the price the farmer pays for the 457 lbs. of ammonia contained in a ton of the sulphate of ammonia, or a fraction more than 7*d.* per lb., or 65*l.* 6*s.* 4*d.* per ton.

In oil-cake at 10*l.* per ton the farmer pays for ammonia about 1*s.* 6*d.* per lb.; in Rape-cake at 5*l.* per ton he pays about half the price, so that as manure these articles cannot be considered economical. In the scale for valuing manure adopted in the laboratories of our leading chemists, 56*l.* per ton is the price of ammonia, which is rather under its commercial value.

(To be concluded next week.)

Home Correspondence.

The Craigo Turnip Experiment.—You are good enough frequently to give your readers details of agricultural experiments made by practical men for the determination of some point of interest to the experimenters. One is forcibly struck, however, with the frequently apparently contradictory character of the results. How is this? Have the functions of the soil, or the growth of plants, or the action of manures no well-defined laws of operation, or are the experiments at fault? We know agriculture to be a most profound art, and that inquiries of the soil when made with much circumspection are not always successfully answered, though the reply be most patiently waited for; but how much more difficult of comprehension is the answer, when we clog the question with unnecessary conditions! Permit me to remark that field experiments should only be made for the elucidation of one well-defined point. We may, it is true, from the reply draw minor inferences, or possibly obtain an answer not sought for—but put only one question at a time and such question to be clearly put—and in triplicate, not merely duplicate. In your last Number you give the experiments of Mr. Grant, of Craigo. Not having access to the Journal of the Highland Society, I beg to remark on them as standing in your Journal. Two sorts of seed were used; here we have a departure from the simplicity of the question—the question being put not as to the character of the seeds, but rather of the manures. Two sorts of dung were used, so that as regards the dung the experiments were not even duplicate. Then only the two centre rows were weighed. After which statement the experiments lose all title to confidence. The weights given might be correct, which is all we can say in their favour. The reason assigned for not weighing all the rows is the mixing of the manures at the end of each sort; as well might the chemist excuse the imperfection of his results by the plea that he had neither rinsed out his vessels or washed his filters. What a pity it is that valuable time should be spent in working up a promising experiment and then compromise the results by the want of attention to mere detail. Let us suppose, however, the weights given to be correct; then what is the difference in the results of the two sorts of dung? The White Globes have produced a larger crop than the Yellow Aberdeens. Leave out the "no manure" in the first because it is absent in the second. Omit in each experiment the produce of farm manure alone, then we shall have as the total weights of yellow Aberdeen Bullock Turnip, 77 tons 8 cwt. 2 qrs. 16 lbs.; and that of the White Globe Turnip, 96 tons 16 cwt. 1 qr. 16 lbs. The produce of farm manure alone is of Yellow Aberdeen, 11 tons 15 cwt. 2 qrs. 24 lbs.; of White Globe, 11 tons 11 cwt 0 qrs. 0 lbs. Now as

tons. cwt. qrs. lbs.	tons cwt. qrs. lbs.	tons cwt. qrs. lbs.
77 8 2 16 :	96 16 1 16 : :	11 15 2 24
Answer .. :	14 tons 14 cwt. 2 qrs. 0 lbs.	

But it is stated that there was less dung used in the second experiment than in the first, in the proportion of 12 to 15.

	tons cwt. lbs.		tons cwt. qrs.
Then as 15 : 12 : :	14 14 2 :	Answer	11 15 0
Whereas the produce was			11 11 0

So that if the experiments are to be relied on they do not at all go to invalidate the numerous testimonies we have had in favour of the "covered court," or better preserved manure. As there will be many experiments tried this season on the Turnip crop, you will do agriculturists great service by sounding a warning note, and pointing out the conditions necessary to success. *Charles F. Burnard, Plymouth.*

Anticipated Early Harvest.—In this district, South Essex, there are vast breadths of thickly planted and early sown "rough chaffed" Wheats, this day, May 31st, in full ear, but it is to be regretted of very diminutive size and length. The thinner planted however will not be so forward for a week or nine days to come, resulting in about two-thirds, and in some cases not more than half the number of ears on equal spaces of land, but of full size, very large and long, consequently of greater productiveness. On a whole, should not a dripping June deteriorate the crops by lodging them, and injuring them in their blooming season, a very early and abundant harvest may reasonably be expected. Never in my recollection of 50 years can I remember Wheat in ear on Whitsun-Tuesday but once, and in that year I saw a field of the Talaverian variety in full blossom on that day. This year it will then be generally so of all varieties of Wheats. It must be borne in mind however that Whitsuntide cannot possibly fall so late (I think) only once in two centuries as in the present year 1859, though in the year above alluded to, it fell within two days as late. *A. Hardy, Maldon, Essex, May* 31.

Societies.

ROYAL AGRICULTURAL OF ENGLAND.

A SPECIAL COUNCIL was held, by order of the President, on Friday, May 27th, Lord Walsingham in the chair. The Report of the Finance Committee was read.

A communication having been made by the Council to Mr. Hudson, the Secretary, and his reply having been received, it was unanimously resolved—

On the motion of Mr. Milward, seconded by Lord Feversham, "That Mr. Hudson be suspended from the office of Secretary from this time."

On the motion of the Hon. Colonel Hood, seconded by Mr. Jonas, "That Mr. Brandreth Gibbs be requested to accept the office of Honorary Acting Secretary *pro tem.*"

On the motion of the Hon. Colonel Hood, seconded by Lord Feversham, "That all letters be addressed to Mr. Brandreth Gibbs, as Honorary Secretary to the Society."

On the motion of the Hon. Colonel Hood, seconded by Mr. Jonas, "That these resolutions be made known to the public journals in the usual manner."

The Council came to other resolutions relative to the details rendered necessary for carrying into effect the above decisions, and gave orders accordingly.

At a Monthly Council (for the transaction of business), held June 1, present the Right Hon. Lord Portman, Trustee, in the chair, several new Members were elected.

FINANCES.—Mr. Raymond Barker, Chairman of the Finance Committee, presented the monthly report on the accounts, from which it appeared that the current cash balance in the hands of the bankers was 1759*l.* 4*s.* 11*d.* On the motion of Mr. Thompson, seconded by Col. Challoner, a special committee was appointed to examine the past accounts, and to make certain reports thereon to a special meeting of the Council to be summoned.

AGRICULTURAL CHEMISTRY.—Mr. Wren Hoskyns, Chairman of the Chemical Committee, reported that Professor Voelcker had analysed a specimen of Mangel that had been stored two years, and that the Professor will be prepared at the next meeting of the Council to make some remarks upon the analysis he has made, with the object of turning attention to the general question of the causes (manurial and otherwise), exercising influence upon the important subject of the storing qualities of root crops generally.

WARWICK MEETING.—Lord Leigh, Vice-Chairman of the General Warwick Committee, reported the recommendations of the Committee in reference to—1st, the Hon. Director of the Show being empowered to order shedding, hurdles, &c., according to the number of entries (which close this day, June 1st), also as to arrangements with the Local Committee at Warwick, for hay, straw, and the yardmen and assistants required; 2d, as to the lodgings to be provided for the judges of the Show; 3d, as to the printing of the Award of Prizes; 4th, the arrangement of the programme of the Meeting; 5th, the application to be made to her Majesty's principal Secretary of State for the Home Department for the usual number of Metropolitan police; and other matters of detail connected with the Meeting.

SPECIAL COUNCIL FOR APPOINTMENT OF JUDGES.—The President was requested to summon a Special Council for 10 o'clock on June 22, for receiving the report of the Special Committee on Accounts, and of the Judges Committee, and appointing the judges for the several departments of live stock, implements, and also for cheese and wool at the Warwick meeting.

STEWARD ELECT OF IMPLEMENTS.—On the motion of Colonel Challoner, the Right Hon. Lord Leigh was unanimously appointed Steward elect of Implements.

The Council gave authority to the House Committee as to carrying out the details of matters intrusted to them.

MEETING OF THE BATH AND WEST OF ENGLAND SOCIETY AT BARNSTAPLE.

Our notes this week of a very successful annual meeting must refer almost exclusively to the contents of the cattle yards, and anything like a detailed reference to the Implements and the Art Exhibition must for the present be postponed.

The Cattle Show.—It cannot be denied that whatever excellence may belong to the various classes exhibited, the best class of cattle in the yard was the Devon. It sometimes happens that when a meeting of the kind is held in a district celebrated for some particular stock, that either from expectation having been raised to too high a pitch, or from the want of spirit in local exhibitors, it has disappointed public expectation in the very department in which it was expected mostly to excel. This could not be said on the present occasion; a good show was expected and a better one was never obtained—whilst the long red line extending from one end of the yard to the other denoting the locality of the Devons, had a pleasing effect in the distance, a nearer approach greatly heightened the gratification by the great number of symmetrical and almost faultless animals brought under close inspection. Good animals were the rule, moderate ones the exception, bad animals were scarcely to be found. On the whole we may justly say that without exception it was the finest exhibition of Devon stock ever brought together. This was not to be attributed however entirely to local merits alone, for various competitors from a distance boldly challenged the native breeders, and succeeded in wresting some of the prizes from them. The most prominent of these was H.R.H. Prince Albert, who showing in three animals succeeded in getting two prizes.

CLASS I. Bulls above 3 years.—Seven animals were

shown. Probably this was the weakest class amongst the Devons. The prize was awarded to Mr. John Bodley's No. 2, who stood between two good animals, Lord Portman's "Palmerston," No. 1, and Captain Davy's No. 3. The judges no doubt had good reason for their selection, but many preferred No. 1 to the prize bull; and we find on reference to the catalogue that he was the sire of No. 15, the best bull not exceeding 3 years old, as well as of No. 50, the prize heifer in Class V. If the commendations had been rather more liberal, we do not think they would have been undeserved.

CLASS II.—Not exceeding 3 years old. There were eight entries. No. 15, the property of Mr. James Merson, carried away the prize as well as the local prize of 10*l.* 10*s.* As before observed, his sire was No 1.

CLASS III.—Bulls not exceeding 2 years. No. 10, belonging to the Prince Consort, received the first prize of 10*l.*; Mr. Thos. Hooper (Sir George), the second of 5*l.*, No. 35; and Mr. George Turner's No. 22, Prince Frederick; all were animals of great merit, as well as many others in the same class, in which 28 were entered.

CLASS IV., Cows in calf or in milk—eight were entered. Mr. Walter Farthing's "Nelly" was the prize winner, and Mr. Cecil Smith's 3-year old cow Florence, No. 42, had the second honour. Mr. James Merson's No. 43 was a good deal thought of by the Devonshiremen, and so was Mr. James Quartly's No. 40, who some thought should have had a prize.

CLASS V., In-calf or In-milk Heifers, we find was highly commended by the judges, which of course enhanced the merits of the prize winners, No. 50, Mr. Turner's Vandine (sire Palmerston), and No. 55, Mr. W. Laugdon's Treasure, the winner of the second prize.

CLASS VI. Pairs of Heifers not exceeding 2-years old.—The first honours were awarded to No. 57, the Prince Consort's; whilst the second was won by Mr. Buller's (58). Both pairs were greatly admired, There were five other pairs exhibited in this class, most of whom possessed much merit.

The SHORT-HORN Classes were as well filled as could have been expected in the locality. There were six classes and 34 entries, which were mostly filled up. Mr. Holland's bull was the winner of the 1st prize for bulls above 3 years old; Mr. Brown's, No. 68, for bulls under 3 years old, and the Rev. Mr. Marker the 2d prize. Among young bulls, Mr. Stratton's No. 70 was the first, and Mr. Abbot's the second. The Cows were remarkably good. Mr. Stratton's Matchless 4th, No. 80, received the first, and was beyond all comparison. Lady Pigot's cow, 82A, was also greatly admired; Mr. Abbot's heifer (89) received the first prize in her class, and Mr. Stratton's, 84, the second. Lady Pigot's pair of beautiful heifers, 91, received the first prize, and Mr. Stratton's, 90, the second. This class was very good.

The HEREFORDS were few in number but very good, although there was little competition, as with one exception all the exhibitors were prize winners in one class or another.

The LONG-WOOLLED Sheep, both Cotswold and Leicesters, were very good, but the Downs, both Sussex and Hampshire, were but moderate. There were no Shropshire shown.

The HORNED SOMERSET Sheep were not numerous but good.

The MOUNTAIN EXMOOR Sheep were exceedingly good, and those who have viewed them in the distance ranging over the North Devon hills, could little imagine the weight these little animals can reach or the weight of their fleece. We postpone further observations until next week.

The Pigs were very indifferent and the Poultry a good show.

HORSES.—In this department the society has been hitherto somewhat indifferent. The difference between a good animal and a bad one is as great in a horse as in a short-horn or a Devon; whether raised for the purposes of sale or for being worked on the farm, an inferior brute not only consumes the food and occupies the place of a more valuable animal, but the work to get through is more ineffectually accomplished.

Including the local prizes there were no less than 20 classes submitted to the decision of the Judges. Commencing with Class XXXVII, for the best mare with or in foal for Agricultural purposes, we have six entries. The first prize is given to a fine black mare in foal, number belonging to Mr. R. Gibbs, possessing an exceedingly good back, loins and hind quarters. The second prize was given to a very useful Suffolk mare, belonging to Sir R. G. Throckmorton, Bart. of fair quality, active and roomy, but not quite so compact as we could wish, yet of sufficient merit to rival very closely the first-prize mare. An useful brown mare belonging to Mr. Thos. Kemble was commended.

In CLASS XXXVIII. (two-year-old Colts) there were seven entries; the 1st prize of 10*l.* being given to No. 261, a well shaped powerful colt of considerable promise belonging to Edw. Holland, Esq., M.P. The 2d prize was taken by 258, belonging to Mr. H. Watson, a neat active horse, nearly three years old—a very active compact animal, rather too short in the ribs, and of less relative size than the first-prize colt, but probably well adapted for a hilly country. A handsome black colt of Sir R. Throckmorton's was commended. Mr. R. Bucknell's bay colt No. 264, also reeeived a commendation.

CLASS XXXIX. (two-year-old Fillies) was not good. The 1st prize was therefore withheld, and the 2d given to No. 265, a bay filly belonging to Mr. W. Smith.

CLASS XL. Yearling Colts or Fillies.—There were five entries in this class. (237) Mr. W. Smith's bay colt, a promising animal, winning the first, and (268) Mr. G. S. Stone Poole, gaining the second with his brown cart colt "Little John," and the Rev. J. G. Coplestone's chesnut cart filly being highly commended.

CLASS XLI. Mares in Foal or with Foal, for hacks or hunters, had six entries, but not all filled. A very superior well-bred chesnut mare belonging to the Rev. G. F. Hodson (275), and a brown well-bred with some good points, belonging to Mr. Richard Passmore (274), were first and the second.

CLASS XLII. (two-year-old Fillies for Hacks or Hunters) contained four good entries. The winner (279) was the offspring of the prize winner in the last class and belonged to the same owner, the sire being "Bowstring." She was a fine filly. The 2d prize was given to a very promising chesnut filly belonging to Mr. Hamilton Baillie (281), and Mr. Thomas Brinley's thorough-bred Bowstring filly was highly commended.

CLASS XLIII. Yearling Colts or Fillies for Hacks or Hunters.—Mr. Richard Passmore's No. 284, a brown filly, was the first prize winner; and No. 289, a bay colt, belonging to Mr. Hamilton Baillie, the second—both promising animals, having some ordinary ones as companions in the Class.

CLASS XLIV., Hacks or Hunters of either sex under 3 years, afforded several good animals. No. 295, a brown colt 3 years old, belonging to Mr. William Gapper, winning the first; and Mr. R. T. Head's thorough-bred the second; 298, Mr. John Anthony's, being commended.

The Pony Classes (Mares under 14 hands) were perhaps, next to the Devons, the most attractive objects in the Show. No. 304, Mr. J. W. Knight's bay Exmoor pony, Nelly, was the winner of the first prize; she was a very superior little animal, good in all her points, and with very superior action. The second prize was given to Mr. Wall's black Welsh pony (302), compact and strong, with good loins, but too fat for work, and better adapted for harness; 303, Mr. James Merson's bay pony, was highly commended, had remarkably good action—a superior fore-hand to the last but not so good in his loins.

CLASS XLVI. Mare Ponies under 13 hands.—No. 309, Mr. R. Ogilvie, a very superior bay pony, with remarkably good action, was the winner of the 1st prize; 311, Mr. Cridge's, the 2d—all were good. A year old cream-coloured filly, No. 308, had considerable merit, but should not have been shown in this class.

CLASS XLVII. A Roan Welsh Stallion Pony, No. 313, strong, compact, with good action, Mr. Wall's, had the 1st prize; and Mr. Ogilvie's bay Welsh pony the 2d—both were good. The labours of the judges were increased by the number of local prizes given; thus there were no less than 11 classes for horses alone.

CLASS LVI. For Cobs or Galloways not exceeding 14½ hands or 5 years in age.—The winner, No. 378, belonged to Mr. James Harris, whilst Mr. Brailey, No. 377, was commended—both good animals. There were only three entries.

CLASS LXVII. Mares and Foals for agricultural purposes.—Only one entry, Mr. W. Howe's, but a good animal, and worthy of the prize.

CLASS LXVIII. Two-year-old Colt or Filly.—Mr. Bowden's chesnut colt, 381, was a good animal, and received the prize, but there was little competition.

CLASS LXIX. Thorough-bred Stallions.—Two only were shown, the winner, 383, belonging to Mr. John Brewer, a brown horse, Swinton, had many good points, was not at all weedy, and deserved the prize.

CLASS LXX. Cart Stallions.—One only was shown, viz., a Suffolk horse, bred by the late Mr. Catlin, and well deserving a prize. The owner, Mr. James Harris, is likely, by his means, to improve the cart stock in the neighbourhood of the Show.

CLASS LXXI. Stallions under 13 hands. — Mr. Knight's 6-year-old pony, 390, was a very perfect animal with extrordinary action. No. 381, belonging to the same owner, was highly commended; though somewhat less perfect than the other, they made a capital match, and were just what ponies ought to be.

CLASS LXXII. Mare Ponies under 13 hands.—Mr. Dennis, 391, received the prize, and 395, Mr. Knight's, the second. In Extra Stock, Mr. G. Elliott, No. 429. Mr. R. Smith's Bobby was first named, and was certainly one of the most perfect animals in the show yard—a bright bay stallion pony, bred in Scotland, but having some Arabian blood, strong and symmetrical, and with superior action, is just the animal to increase the size and improve the quality of the Exmoor breed. He also gained Mr. Buller's special prize of 5*l.* 5*s.* for the best pony under 14 hands. No. 430, a very perfect Welsh brown pony, though small, was also named, as well as Mr. G. Elliott for a very good cart horse, and Mr. Brewer for a thorough-bred.

Amongst the animals most worthy of notice throughout the Show we may enumerate Mr. James Merson's Devon bull, the winner of two prizes; the Prince Consort's bull and heifers; Mr. Stratton's Short-horn cow, No. 80; Mr. R. Smith's pony stallion Bobby; Mr. Knight's Exmoor pony Bobby; Mr. Merson's Exmoor sheep.

The Show altogether was very successful and well attended, and was exceedingly well managed by the Director and the Stewards; whilst the attractions afforded by the Flower Show and exhibition of Fine Arts added much to the attractions of the meeting. The great and successful exertions of Mr. T. D. Acland in this department appear to be generally appreciated.

The following is the award of the judges in the live stock yard:—

CATTLE. — DEVONS. — Class 1. 1st, Mr. J. Bodley, of Stockley Pomeroy, Crediton (old Bull). — Class 2. 1st, Mr. J. Merson, Northmolton (3-yrs. Bull), also 10*l.* 10*s.* given by J. Sillifant, Esq, for the best Bull in Classes 2 and 3; 2d, Mr. W. Farthing, Stowey Court.—Class 3. 1st, H.R.H. the Prince Consort (2-yrs. Bull); 2d, Mr. T. Hooper, Heanton Barton, Peatrockstow; 3d, Mr. George Turner, of Barton.—Class 4. 1st, Mr. W. Farthing (Cow); 2d, Mr. C. Smith, Lydeard House, Taunton.—Class 5. 1st, Mr. Geo. Turner (Heifer); 2d, Mr. J. Quartly, Molland House. — Class 6. 1st, H.R.H. the Prince Consort, (pair of Heifers); 2d, J.W. Buller, Esq., M.P., Crediton.

SHORTHORNS.—Class 7. 1st, E. Holland, Esq., M.P., Evesham (old Bull).—Class 8. 1st, Mr. J. W. Brown, Upcott, Swindon (3-yrs. Bull); 2d, Rev. G. T. Marker, Uffculme, Cullumpton.—Class 9. 1st, Mr. R. Stratton, Broad Hinton (2-yrs. Bull); 2d, Mr. Abbott, Long Ashton, Bristol.—Class 10. 1st, Mr. Stratton (Cow); 2d, Lady E. Pigot, Chippenham.—Class 11. 1st, Mr. C. H. Abbott, Long Ashton (Heifer); 2d, Mr. R. Stratton.—Class 12. 1st, Lady Pigot (Pair of Heifers); 2d, Mr. R. Stratton.

HEREFORDS.—Class 13. 1st, Mr. E. Price, Pembridge (aged Bull).—Class 14. 1st, Mr. J. Williams, St. Mary's Kingsland, Leominster (3-years Bull); 2d, Mr. Edward Price.—Class 15. 1st, Mr. T. Edwards, Wintercott, Leominster (2-years Bull); 2d, Lord Bateman.—Class 16. 1st, Mr. Wm. Perry, Cholstrey (Cow). — Class 17. 1st, Lord Bateman (Heifer); 2d, Mr. W. Williams, Ely, Cardiff.—Class 18. 1st, Mr. Price (pair of Heifers); 2d, Mr. J. Williams, Kingsland.

SHEEP.—Class 19. 1st, Mr. T. Potter, Thorverton (yearling Leicester Ram); 2d, Mr. G. Turner; 3d, ditto.—Class 20. 1st, Mr. G. Turner (Ram); 2d, ditto.—Class 21. 1st, Mr. G. Turner (pen of Ewes); 2d, Mr. James B. Corner, Longforth, Wellington; 3d, J. W. Buller, Esq., M.P., Crediton, Devon.—Class 22. 1st, Mr. T. P. Brown, Hampen, Andoversford, Cheltenham (Cotswold Ram); 2d, Mr. E. Handy, Sierford, Cheltenham.—Class 23. 1st, Mr. T. B. Brown (Ram); 2d, Mr. E. Handy.—Class 24. 1st, Mr. T. B. Brown (pen of Ewes); 2d, Mr. W. Smith, Bibury Fairford.—Class 25. 1st, Sir R. G. Throckmorton, Bart., Buckland, Faringdon (Southdown Ram); 2d, ditto.—Class 26. ditto; 2d, ditto.—Class 27. 1st, Sir R. G. Throckmorton, Bart. (pen of Southdown Ewes); 2d, Mr. R. N. Grenville, Glastonbury.—Class 28. 1st, Mr. J. W. Brown, Uffcote, Swindon (Hampshire Ram); 2d, Mr. G. Harbin, Yeovil.—Class 29. 1st, E. Holland, Esq., M.P. (Ram); 2d, Mr. J. W. Brown.—Class 30. 1st, Mr. J. Moore, Littlecott Farm, Pewsey (pen of Ewes); 2d, Mr. J. W. Brown.—Class 31. 1st, Mr. Danger, Huntstile, Bridgewater (Dorset Ram); 2d, Mr. F. Bond, Ilminster.—Class 32. 1st, Mr. T. Danger (Ram); 2d, Mr. F. Bond.—Class 33. 1st, Mr. T. Danger (pen of Ewes); 2d, Mr. F. Bond.—Class 34. 1st, Mr. J. Merson, Brinsworthy, Northmolton (Exmoor Ram); also 5*l.* 5*s.*, given by F. W. Knight, Esq., M.P., for the best Exmoor Ram in the yard.—Class 36. 1st, Mr. J. Merson (pen of 5 Ewes); also 5*l.* 5*s.*, given by F. W. Knight, Esq., M.P., for the best pen of Exmoor Ewes in the yard; 2d, Mr. J. Harris, Barnstaple.

HORSES.—Class 37. 1st, Mr. Robert Gibbs, Carhampton, Dunster (Cart Mare); 2d, Sir R. G. Throckmorton, Bart.—Class 38. 1st, E. Holland, Esq., M.P. (Colt); 2d, Mr. H. Watson, Dorsely, Totnes.—Class 39. 2d, Mr. W. Smith, Bibury, Fairford (Filly).—Class 40. 1st, Mr. W. Smith, Bibury (Colt); 2d, Mr. G. S. Poole, Bridgewater.—Class 41. 1st, Rev. G. F. Hodson, North Petherton (Mare and Foal); 2d, Mr. R. Passmore, Barnstaple.—Class 42. 1st, Rev. G. F. Hodson (Filly); 2d, Mr. H. Baillie, Cowbridge. — Class 43. 1st, Mr. R. Passmore, Eastdown (Filly); 2d, Mr. H. Baillie, Cowbridge. — Class 44. 1st, Mr. W. Gapper, Dudlestone, Taunton (Colt); 2d, Mr. R. T. Head, Alphington.—Class 45. 1st, F. W. Knight, Esq., M.P. (Exmoor Pony); 2d, Mr. J. C. Wall, Redland Lodge, Bristol (Welsh Pony).—Class 46. 1st, Mr. R. Ogilvie, Barnstaple (Exmoor Pony); 2d, Mr. R. Cridge. Southmolton, Devon (Exmoor Pony). — Class 47. 1st, Mr. J. C. Wall (Welsh Pony); 2d, Mr. Rd. Ogilvie, Barnstaple, Devon (Welsh Pony).

PIGS.—LARGE BREED.—Class 48. 1st, Mr. W. Bryant, Pitt Farm, Barnstaple (Boar); 2d, Mr. W. Hewer, Sevenhampton, Highworth.—Class 49. 1st, Mr. W. Hewer (Sow); 2d, Sir R. G. Throckmorton.—Class 50. 1st, Mr. W. Hewer (pen of 3 Sows); 2d, Rev. H. G. Baily, Swindon.

PIGS.—SMALL BREED.—Class 51. 1st, Mr. J. Partridge, jun., of Bow, Crediton (Essex Boar); 2d, Mr. George Turner, Barton.—Class 52. 1st, Mr. George Turner (Essex Sow); 2d, Mr. W. D. Bragington, Knapp, Bideford. — Class 53. 1st, Rev. S. N. Kingdon, Holsworthy (pen of 3 Sows); 2d, Mr. W. D. Bragington, Bideford.

LOCAL PRIZES.—Class 54. 1st, Mr. G. Lock, Instow Barton (Devon Steers), bred by himself.—Class 55. 1st, Mr. Richard Mogridge, Southmolton (pair of Devon Steers); 2d, ditto.—Class 56. 1st, Mr. John Snow, Barnstaple (Devon Cow); 2d, Mr. G. S. Burden, Swimbridge.—Class 57. 1st, Mr. W. Langdon, Ashford, Barnstaple (Devon Heifer); 2d, Mr. H. Passmore.—Class 58. 1st, Mr. John Tapp, Southmolton (Devon Heifer); 2d, Mr. John Snow.—Class 59. 1st, Mr. John Snow (Devon Heifer); 2d, Mr. G. S. Burden, Swimbridge, Barnstaple.

SHEEP.—Class 60. 1st, Mr. R. Symonds, Buckland Barton, Devon (Ram).—Class 62. 1st, Lord Clinton, Beaford (pen of 5 Ewes); 2d, Mr. James B. Torr, Bideford, Devon.—Class 63. 2d, Mr. James Harris, Barnstaple, Devon (Ram).—Class 64. Mr. J. Harris (pen of Ewes); 2d, do.—Class 65. Mr. C. Halse, Molland (pen of 5 Wethers); 2d, do.

HORSES.—Class 66. 1st, Mr. James Harris (bay Cob). Class 67. 1st, Mr. Wm. Howe, Townsend, Braunton (Bay Mare). Class 68. Mr. H. K. Bowden, Combmartin (Colt).—Class 69. 1st, Mr. W. J. Brewer, Barnstaple (thorough-bred Stallion).—Class 70. 1st, Mr. James Harris (Cart Stallion).

PONIES.—Class 71. 1st, F. W. Knight, Esq., M.P. (Exmoor Pony).—Class 72. 1st, Mr. T. J. Dennis, Barnstaple (Pony).

PIGS.—Class 74. 1st, Mr. A. Clement, Sloo Farm, Bideford (Essex Sow).—Class 76. 1st, Mr. T. J. Dennis, Barnstaple (Sow).

The show of implements has not suffered from the absence of any such additional inducement to competition as prizes are supposed to offer. The leading manufacturers who protest against the prize system and have not competed at previous exhibitions of this Society, are at Barnstable in full force. Messrs. Ransome, Humphries, Barratt & Exall, Hornsby, Garrett, Clayton, Smith & Ashby, and many others, are among the exhibitors. And the local machine-makers are also liberal exhibitors.

There was an exhibition of many of the implements at work; and among other attractions a well-attended ploughing match. But to this we must return next week.

The Fine Arts exhibition, an entirely new department of these annual Shows, originated by Mr. T. D. Acland, included contributions from the Museum at South Kensington, and contributions from tradesmen and manufacturers of ornamental glass, furniture, electroplate and bronzes, book-binding, carpets, carriages, vases, earthenware, photographs, and water-colour drawing—the whole forming a very attractive and useful exhibition.

Reviews.

The Two Prize Essays of the Suffolk Agricultural Association on the Elevation, Improvement, and Education of the Labouring Classes. By Mr. G. Kersey Cooper, Euston; and Mr. Robert Bond, Secretary to the Association, Thorington and Kentwell. Wertheim, Mackintosh, & Hunt, Paternoster Row.

Both of these essays are written by men convinced that on the moral condition of a man, more than on any other cause, depends his well-being. And while abundant and comfortable house-room, ample garden ground, temperance, intelligence, friendly societies, &c., are advocated, yet it is argued that the solution of the whole difficulty as regards the condition of our labourers depends "on one thing, not on many. Much may be done by the improvement of their dwellings—by the extension of education—by the suppression, or better regulation of beer houses; but most of all, by the encouragement of a sober and practical sense of religion."

Mr. Cooper's Essay, from which this passage is extracted, concludes with a reference to the influence for good or evil of the example of employers; quoting Justice Talfourd's dying charge upon the power of that too seldom active principle, sympathy between classes.

Mr. Bond is even more outspoken and impressive on the religious aspect of the subject; and the award of their prize by an association of tenant farmers to one of their number for a paper which might have been even more appropriately spoken by an earnest preacher from the pulpit is a remarkable circumstance. "Christianity is God's instrument for good," if generally, so also with reference to any particular class. This is the keynote of the whole performance—for though political causes such as affect the investment of capital in land, and purely social influences such as the character of cottages, the agency of schools, and the example and sympathy of employers, are discussed through many pages of this pamphlet, yet the author recurs continually to the one and only remedy for evil—the establishment and growth of a personal relationship of gratitude and service to his Saviour—as the only source which can always be depended on for really raising the condition of the labouring or any other man.

We need hardly say, although our columns have not seemed a fitting channel for religious teaching on this subject, that we entirely agree with the Suffolk Agricultural Association and their secretary in their treatment of it. Their essays are not only unusually energetic in the establishment of the right principle and foundation on which all efforts should be built, but very explicit and particular on the various methods which may be adopted by a well disposed man for the welfare of his neighbours.

Notices to Correspondents.

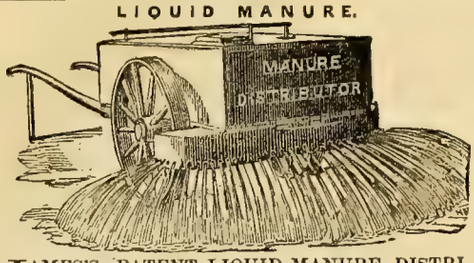
GAPES IN POULTRY: *W P.* There is more difficulty in giving the origin of this disorder than there is in describing it. It is caused by the presence of very small red worms in the windpipe, at the extremity of it. They are active wiry little creatures, and it is in the vain hope of getting rid of them, and the tickling they cause, that the fowl gapes. There is little doubt in the minds of many people who are able to form a correct judgment that the disease is contracted from bad water. There are two reasons for this opinion:—first, that it never exists where fowls drink from running streams; next, that it is asserted from microscopic observation that the worm is identical with that which is found at the bottom of tubs and other wooden vessels where water remains stagnant. The treatment by a doubled horse hair is correct; but a better plan is to strip a tail feather within an inch of the end, and to dip it in turpentine, then to introduce it into the windpipe, and twist it sharply round several times. The worms will be found entangled in the feather. The advantage of the turpentine is, that it kills those the feather does not remove. This remedy only fails when the feather is put down the gullet instead of the windpipe. As the gapes speedily depress and waste chickens, it is always well, after they have been subjected to the operation of removing the worms, to give them a stimulant for a day or two, and nothing is so effectual or so easy as stale bread soaked in strong beer; under the influence of it they cough up the dead worms. The preventive is, clean, cool, spring-water in zinc, iron or earthenware vessels, but not wooden, and the water with which they are supplied should be fresh from a spring or well, but not from ponds or from vessels filled by rain falling from roofs of houses. We write from experience: we lost many chickens where a man persisted in using rain-water, and none where it was drawn from a deep well. *J. Baily*, 113, *Regent Street, W.*

LIQUID MANURE: *H P.* It is worth collecting—if you can do so inexpensively—but the washings of the yard will be so weak that you had better keep them separate from the urine of the cattle stalls. Your best remedy is to roof your feeding yard, and so hinder the washing of the manure. For flooring material, next week.

LIQUID MANURE HOSE: *Correspondent.* Mr. Mechi is good enough to state his experience as follows:—I used for several years the Gutta Percha hose, having found all others fail; but latterly I have adopted the vulcanised Indian-rubber, having within it sundry layers of canvas. The canvas gives rigidity to the vulcanised Indian-rubber, whilst the latter strengthens and protects from rotting the internal canvas. It stands our enormous pressure well, is more manageable than Gutta Percha, and does not melt like Gutta Percha in the heat of the sun. The cost is about the same. I purchased mine from Messrs. Perreaux & Co., Mark Lane. Their vulcanised Indian-rubber pump valves I consider as a valuable acquisition. Messrs. Hughes, of New Cross, Deptford, use them in their high-pressure engines with unfailing action, and for ordinary or manure pumps they save no end of trouble. *J J Mechi.*

SUNDRIES: 1. Savine has considerable effect on the uterus, and its administration would probably be the cause of the mare slipping her foal. We do not think it to be the cause of blindness in the young horse. No carter ought to be allowed to drug his master's horses. 2. Mangel Wurzel given freely and early to heavy ewes will certainly endanger the slipping of the lamb. Turnips have produced the same effect. As a rule ewes should not have roots before they lamb. *W O S.*

LIQUID MANURE.



JAMES'S PATENT LIQUID MANURE DISTRIBUTOR OR WATER-CART, warranted not to choke up or otherwise get out of order. It is thoroughly adapted for Drill Crops, or Pasture Land, or for Watering Streets; has been awarded SIX FIRST PRIZES.

Full Particulars and Testimonials may be obtained of the Patentee, ISAAC JAMES, Tivoli Waggon Works, Cheltenham.

Improved LIQUID MANURE PUMPS supplied.

WARNER'S IMPROVED LIQUID MANURE OR GENERAL PORTABLE PUMP.



These Pumps are fitted with J. W. & SON'S Patent Buckets and Suckers, and cannot clog in action. The barrel is of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure. The legs will fold together, and the whole may be carried on the shoulder to any pond or tank required.

Price of 4½ in. Pump, with legs, 3*l.* 3*s.* If with planished copper barrel and galvanised iron handle, &c., 14*s.* extra. The barrel is 27½ in. long, and the legs are 5 ft. high.

These Pumps are also made without the legs, with strong wrought-iron straps for screwing on to any ordinary water butt or cart, and fitted with 1½ inch brass union for attaching flexible suction. Price 50*s.*

1⅝ inch Gutta Percha Suction Pipe, 1*s.* 11*d.* per foot.

Rubber and Canvas Suction and Delivery Hose, from ½ inch to 4 inches in diameter, in lengths of 60 feet to order. Branch Pipes with Cocks, Union Screws, &c., at reduced prices.

May be obtained of any Ironmonger or Plumber in town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin St., London.

WARNER'S PATENT VIBRATING STANDARD PUMPS.

PATENT CAST-IRON PUMPS, fitted with J. W. & SON'S Patent Buckets and Suckers, which cannot clog in action, for Farms, Cottages, and Wells, not exceeding 28 feet.



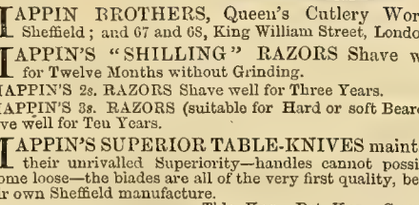
Diameter of Barrel.	Height.		£.	s.	d.
2½ in.	short 1 ft. 7 in.	Fitted for lead, gutta percha or cast iron flanged pipe as required.	1	10	0
2½ ,,	long 3 ,, 3 ,,		1	14	0
3 ,,	ditto 3 ,, 6 ,,		2	8	0
3½ ,,	ditto 3 ,, 6 ,,		2	12	0
4 ,,	ditto 3 ,, 6 ,,		3	3	0
2½ ,,	short, with 15 feet of Lead Pipe attached, ready for fixing		2	14	0
2½ in.	long ditto ditto	ditto	2	18	0

The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.

May be obtained of any Ironmonger or Plumber in Town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

MAPPIN'S PRUNING KNIVES IN EVERY VARIETY.
WARRANTED GOOD BY THE MAKERS.



MAPPIN BROTHERS, Queen's Cutlery Works, Sheffield; and 67 and 68, King William Street, London.

MAPPIN'S "SHILLING" RAZORS Shave well for Twelve Months without Grinding.

MAPPIN'S 2*s.* RAZORS Shave well for Three Years.

MAPPIN'S 3*s.* RAZORS (suitable for Hard or soft Beards,) Shave well for Ten Years.

MAPPIN'S SUPERIOR TABLE-KNIVES maintain their unrivalled Superiority—handles cannot possibly become loose—the blades are all of the very first quality, being their own Sheffield manufacture.

	Tble. Kns.	Dst. Kns.	Carvers.
Ivory 3⅞ in. Handle, balanced,	20*s.* p. doz.;	16*s.* p. doz.;	6*s.* p. pair
Do. 4 in. do. ..	25*s.* ,,	18*s.* ,,	9*s.* ,,

MAPPIN'S SILVER-PLATED DESSERT KNIVES and FORKS, in Mahogany Cases.

12 Pairs Knives and Forks, Ivory Handles, in Case	..	80*s.*
12 Do. Pearl Handles, do.	..	130*s.*
12 Do. Silver-Plated Handles, do.	..	80*s.*

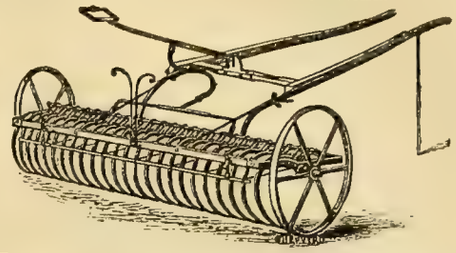
MAPPIN'S ELECTRO-SILVER PLATE.—MAPPIN BROTHERS, Manufacturers by Special Appointment to the Queen, are the only Sheffield makers who supply the consumers in London. Their LONDON SHOW ROOMS, 67 and 68, King William Street, London Bridge, contain by far the largest STOCK of ELECTRO-SILVER PLATE in the World, which is transmitted direct from their Manufactory, Queen's Cutlery Works, Sheffield.

	Fiddle Pattern.	Double Thread.	King's Pattern.
12 Table Forks, best quality	£1 16 0	£2 14 0	£3 0
12 Table Spoons, best quality	1 16 0	2 14 0	3 0
12 Dessert Forks, best quality	1 7 0	2 0 0	2 4
12 Dessert Spoons, best quality	1 7 0	2 0 0	2 4
12 Tea Spoons, best quality	0 16 0	1 4 0	1 7

Messrs. MAPPIN BROTHERS respectfully invite buyers to inspect their unprecedented display, which, for beauty of design, exquisite workmanship, and novelty, stands unrivalled. Their illustrated Catalogue, which is continually receiving addition of New Designs, sent per post on receipt of 12 stamps.—MAPPIN BROTHERS, 67 and 68, King William Street, London Bridge; Manufactory, Queen's Cutlery Works, Sheffield.

HOWARDS' PRIZE IMPLEMENTS, 1859.

JAMES AND FREDK. HOWARD, Britannia Iron Works, Bedford, beg to direct attention to their PATENT STEEL-TOOTH HORSE RAKE.



For which they received the Three First Prizes last offered by the Royal Agricultural Society of England.

J. & F. HOWARD have discontinued troubling the Public with a long List of Prizes awarded to their Implements, but they would just state that for PLOUGHS, HARROWS, and HORSE RAKES, they have for several years gained every Prize for which they have competed.

PLOUGHS.

D PLOUGH, for a Pony	.. ..	£2	5 0
DD ditto for one Horse	.. ..	3	5 0
P ditto for two Horses	.. ..	4	7 6
PP ditto for general purposes	.. ..	4	12 6
SKIM COULTER for P or PP Plough	.. ..	0	5 6

HARROWS.

A Set of Three 4-Beam HARROWS, with Whippletree, recommended as general Seed Harrows, 9½ feet wide, marked No. 12	.. ..	3	14 0
A Set of Three 4-Beam HARROWS, with Whippletree, adapted for 3 Horses, 10 ft. wide, marked No. 11		4	4 0
If with Patent Joints, 6*s.* per set extra.			

HORSE RAKES.

Small size, 7½ feet wide, marked A, with 24 iron teeth		7	10 0
Ditto, with Steel Teeth	.. ..	8	0 0
Large size, 8½ feet wide, marked B, with 28 iron teeth		8	0 0
Ditto, with steel teeth	.. ..	8	10 0
Extra large size, 8½ feet wide, marked C, with 24 steel teeth	.. ..	10	10 0
A Set of 15 Prongs, to be attached to the above when used as Weed Extirpators	.. . .	1	10 0

Free Delivery to Birmingham, Bristol, Colchester, Derby, Gloucester, Hull, Lincoln, Liverpool, London, Manchester, Norwich, Nottingham, Retford, Shrewsbury, Wisbeach, Worcester, and York; or to Dublin, Edinburgh, Glasgow, and other parts at fixed rates.

HOWARDS' NEW CATALOGUE, containing prices and description of their Patent Ploughs, Harrows, Horse Rakes, and other Implements, including Smith's Steam Cultivators, for which they received at Chester the Gold Medal of the Royal Agricultural Society of England, sent free on application to

J. & F. HOWARD, Britannia Iron Works, Bedford.

SHAW'S TIFFANY.—The best and cheapest material for Shading Conservatories, Protecting Fruit from Birds and Wasps, &c. Sold in pieces 20 yards long by 38 inches wide. No. 1, best quality, 5*s.* per piece; second quality, 4*s.* per piece. Extra strong and thick (see Circular sent free by post with samples).

Address JOHN SHAW & Co., Manufacturers and Dealers, Princess Street, Manchester.

OBSERVATORY BEE-HIVES.—A cheap form of permanent OBSERVATORY HIVE is now issued at 1*l.*, the same in polished mahogany, 2*l.* Improved bar and slide hives complete, 16*s.*—Prospectuses on application to Mr. TEGETMEIER, Muswell Hill, London, N.

BEE-HIVES.

PRIZE MEDAL AWARDED TO G. N. & SONS, FOR BEE-HIVES AND HONEY, AT THE PARIS EXPOSITION OF 1855.

NEIGHBOUR'S IMPROVED COTTAGE BEE-HIVE, as originally introduced by GEORGE NEIGHBOUR & SONS, with all the recent improvements, glasses, and thermometer, price 35*s.*, securely packed for the country.

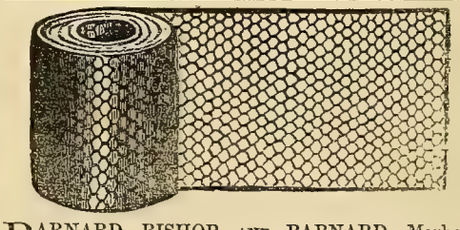


This unique Hive has met with universal commendation, and may be worked with safety, humanity, and profit by the most timid; its arrangements are so perfect that the Honey may be taken at any time of the gathering season without at all injuring the Bees.

Early applications addressed to GEORGE NEIGHBOUR & SONS, 127, High Holborn, or 149, Regent Street, London, will receive prompt attention.

Their newly-arranged CATALOGUE of other Improved Hives with Drawings and Prices, sent on receipt of two stamps.

AGENTS.—Liverpool: JAMES CUTHBERT, 12, Clayton Square. Manchester: W. WILSON, 50, King Street. Glasgow: AUSTIN & M'ASLEN, 186, Trongate. Dublin: J. EDMONDSON & Co., 61, Dame Street.



BARNARD, BISHOP, AND BARNARD, Market Place, Norwich, in consequence of improvements in their machinery for the manufacture of the above article, have been enabled to make a great reduction in the prices.

	Galvanised.	Iron.
2-inch mesh, 24 inches wide	5*d.* per yd.	4*d.* per yd.
2-inch ,, strong do.	6 ,,	4¾ ,,
2-inch ,, intermediate, do. ..	7 ,,	5½ ,,
2-inch ,, extra strong, do. ..	9½ ,,	7½ ,,
1⅝-inch ,, 24 inches wide ..	5½ ,,	4½ ,,
1⅝-inch ,, strong, do.	6½ ,,	5¼ ,,
1⅝-inch ,, intermediate, do. ..	7½ ,,	6 ,,
1⅜-inch ,, extra strong, do. ..	10 ,,	8 ,,

All the above kinds can be made of any width (under 8 feet) at proportionate prices. If the upper half is of a coarser mesh than the lower, it will reduce the prices about one-fifth.

Strong Galvanised Poultry Netting, 8½*d.* per yard, 3 feet wide Galvanised Sparrow-proof Netting for Pheasantries, 2½*d.* per square foot. Delivered free of expense in London, Peterborough, Hull, or Newcastle. Manufacturers of Improved Strained Wire Cattle and Deer Fencing, Iron Hurdles, &c.

Illustrated Catalogues and Patterns forwarded by post.

HORTICULTURAL BUILDING & HEATING BY HOT WATER.

BY APPOINTMENT.



JOHN WEEKS & COMPANY,

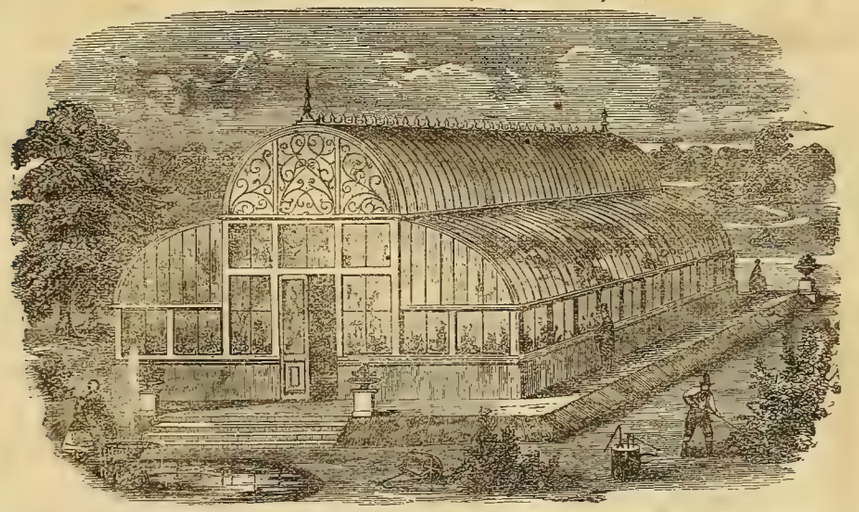
KING'S ROAD, CHELSEA, LONDON.

HORTICULTURAL BUILDERS AND HOT-WATER APPARATUS MANUFACTURERS, ENGINEERS, AND IRON FOUNDERS.

PLANS, ESTIMATES, & ILLUSTRATED CATALOGUES FREE ON APPLICATION.

COTTAM & COMPY., Engineers, Founders, &c.,

2, WINSLEY STREET, LONDON, W.



A SHOW ROOM DEVOTED ENTIRELY TO ARTICLES OF HORTICULTURE.

THE NEW ILLUSTRATED CATALOGUE UPON APPLICATION.

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	,, Syringes	Garden Bordering
Hot-water Apparatus	Ornamental Wire Work	Hurdles	,, Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

Iron Hurdles, Strained Wire Fencing, Game Netting, &c.

Every description of Plain, Ornamental, Cast and Wrought Iron, and Wire Work.

EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

N.B. COTTAM AND COY. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

WANTED, the Address of any Gardener or his Employer wishing to have Patterns, with Prices and Testimonials, of HAYTHORN'S HEXAGON and CHISWICK GARDEN NETS, now used in most Gardens and recommended by all the principal Gardeners.—Please direct Mr. HAYTHORN, Nottingham.

FRUIT TREES, RIPE STRAWBERRIES, ETC.

TANNED NETTING for Protecting the above from Frost, Blight, Birds, &c.; 2 yards wide, 3*d.* per yard, or 100 yards, 20*s.* Can be had in any quantity of EATON & DELLER, 6 and 7, Crooked Lane, London Bridge.

TANNED NETTING, at REDUCED PRICES.—200 square yards, 10*s.*; 500 yards, 24*s.* A quantity of good second-hand Rick Cloth for Sale, Cheap, all sizes, and only once used. Samples sent free.—Address FREDERICK EDGINGTON, Thomas Street, Old Kent Road, London, S.E.

TANNED NETTING, for the Protection of Fruit Trees from Frost, Blight, and Birds; also, for the security of fresh sown seeds, at 1*d.* per square yard; 200 yards, 12*s.*; 500 yards, 25*s.*; Scrim Canvas, for wall fruit; Garden Mats.—At EDGINGTON & Co's., Rick Cloth, Tent, and Waterproof Cloth Manufacturers, 17, Smithfield Bars, City, & Old Kent Rd.

FOR Effectually Protecting the Bloom of Wall Trees from Spring Frosts use SHAW'S No. 3 TIFFANY, DOUBLE STRENGTH. In pieces 18 yards long by 39 inches wide, 7*s.* 6*d.* each.—JOHN SHAW & Co., Princess Street, Manchester.

BOYD'S SELF-ADJUSTING SCYTHES are the cheapest and best, and being sold adjusted, are ready for immediate use. They can be regulated in an instant to suit any person, and to cut any crop without change of Scythes. For Amateur Gardeners they are very desirable, as they afford a healthy and interesting exercise They have stood the test of public opinion for seven years, and for excellence, ease, economy, and durability, are highly recommended. Upwards of 50,000 of them have been sold. To be had of every Ironmonger, Hardwareman, and Seedsman in the United Kingdom, and wholesale of the Sole Licensed Makers, WM. DRAY & Co., at their New Agricultural Implement Warehouses, Adelaide Place, London Bridge.

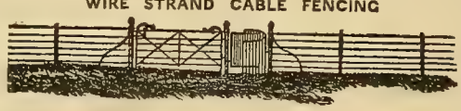
PRICES REDUCED.

H. J. MORTON AND CO., Galvanised Iron Works, 2, Basinghall Buildings, Leeds.

GALVANISED IRON ROOFING

for Farm Buildings and other Roofs; the cheapest, most durable, and neatest Roofing in use; also Spouting at 10½*d.* per yard.

WIRE STRAND CABLE FENCING



(formed of Twisted Wires like a rope or cable), the strongest, cheapest, and neatest fence in use, will resist the largest cattle, and will not bend or get out of form by trespassing upon or over. Price, with five lines of the Galvanised Strand, iron main posts, and pronged Standards, 1*s.* 2½*d.* per yard.

This fence is far cheaper than posts and rails, or any kind of iron fencing; and possesses four times the strength of solid bars. Will not rust nor corrode. Upwards of 1200 miles of this Fencing supplied.

GALVANISED GAME AND POULTRY NETTING.



Galvanised, 24 ins. wide, 2-inch mesh, 5*d.*, 6*d.*, 7½*d.*, and 10*d.* per yard.

Galvanised, 24 ins. wide, 3-inch mesh, 4*d.*, 5*d.*, and 7*d.* per yard. The Netting made any width, and with openings of any size.

GALVANISED IRON CHAIN CAMP STOOLS & CHAIRS, POULTRY FOUNTAINS & FEEDERS, PRONGED DAHLIA RODS AND ROSE STAKES, &c.

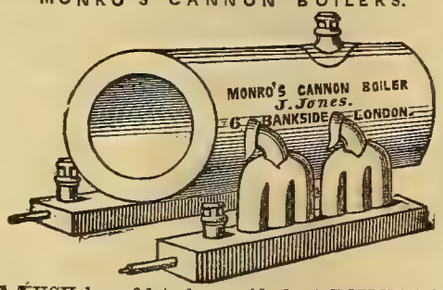
Strong CATTLE HURDLES from 2*s.* per yard.

PATENT IMPROVED GAS WORKS

of all sizes for the use of Private Houses, Mansions, Railway Stations, Mills, Collieries, Mines, Villages, &c. Works from 10 to 500 lights estimated for. The works can be entrusted to an ordinary labourer.—Apply to

HENRY J. MORTON & Co. 2, Basinghall Buildings, Leeds.

MONRO'S CANNON BOILERS.

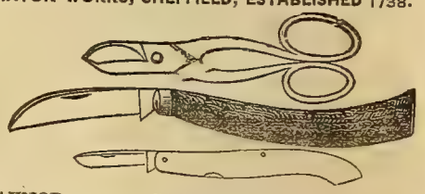


MUCH has of late been said about BOILERS for Heating by Hot Water, but these Boilers have now proved themselves to be the best at present invented. They are adapted for heating every description of building, and are made of various sizes. The Price of the

24-inch Cast Iron is	..	..	..	£5 10*s.* 0*d.*	each
24-inch Wrought ditto	..	..	..	6 10 0	,,
36-inch Cast ditto	..	..	..	8 0 0	,,
36-inch Wrought ditto	..	..	..	8 10 0	,,

References to Gentlemen and Nurserymen where these Boilers are now at work. The Cannon Boilers are now kept in stock, and are to be had only of J. JONES, 6, Bankside. Also, every description of Saddle and Cylinder Boilers. Hot Water Pipes and Connections at prices lower than those of any other house in London. Estimates for Hot-water Apparatus erected complete in any part of the country, and an Illustrated Catalogue on application to J. JONES, 6, Bankside, Southwark, London.

PAXTON WORKS, SHEFFIELD, ESTABLISHED 1738.

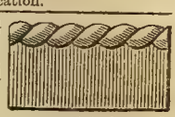


SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.—Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

EDWARD BECK MANUFACTURES in SLATE a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener, Sundays excepted. PRICED LISTS of PLANT TUBS and BOXES forwarded on application.

LOOMES' GARDEN EDGING —CABLE PATTERN.



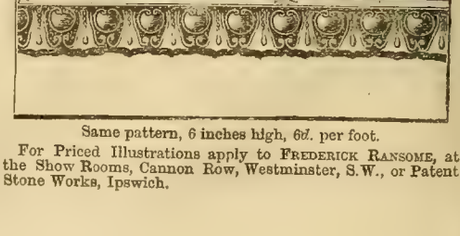
Price at Peterborough. In London.

Straight	5*d.* —	6*d.* per yard
Bends	6*d.* —	7*d.* ,,
If fitted to plans ..	7*d.* —	8*d.* ,,

LOOMES & Co., Manufacturers, Whittlesea, near Peterborough.

VASES, PEDESTALS, SUNDIALS, FOUNTAINS, FLOWER BOXES, JARDINETS, FERN CASES, BALUSTRADES, EDGINGS AND CURBS FOR FLOWER BORDERS, SEATS, &c., in Imperishable Siliceous Stone, at reduced prices, for the adornment of the Villa Garden, the Mansion Grounds, or the private or public Park.

CURB FOR GARDEN BORDER.—No. 91, 1*s.* per foot.



Same pattern, 6 inches high, 6*d.* per foot.

For Priced Illustrations apply to FREDERICK RANSOME, at the Show Rooms, Cannon Row, Westminster, S.W., or Patent Stone Works, Ipswich.

THOMAS MILLINGTON'S REDUCED TARIFF for GLASS.

87, Bishopsgate Street Without, London, E. C.

ORCHARD HOUSE SIZES,

AS SUPPLIED TO MR. RIVERS AND OTHERS.

20 .. 12 / 20 .. 13 / 20 .. 14 / 20 .. 15 — 16 oz. Common, per 100 feet, 14*s.* ; Super „ 16*s.* 6*d.* | If 21 oz. Common, per 100 feet, 21*s.* ; Super „ 25*s.*

PACKED IN BOXES OF 100 FEET EACH, PACKAGE FREE.

Inches by Inches.	Inches by Inches.			Inches by Inches.	Inches by Inches.	Inches by Inches.		
6 .. 4	9 .. 7			12 .. 9	13½ .. 10½	13 .. 11	3rds.	4ths.
6½ .. 4½	9½ .. 7½	3rds.	4ths.	12½ .. 9½	14 .. 10	13½ .. 11½	Super	Common.
7 .. 5	10 .. 8			13 .. 9	14½ .. 10½	14 .. 11		
7½ .. 5½	10½ .. 8½	12*s.* 6*d*	11*s.* 6*d*	12 .. 10	15 .. 10	.. ..	14*s.* 4*d*	12*s.* 6*d*
8 .. 6	11 .. 9			12½ .. 10½	12 .. 11	.. ..		
8½ .. 6½	11½ .. 9½			13 .. 10	12½ .. 11½	.. ..		

14½ .. 11½	14 .. 12	22 .. 12	18 .. 14	24 .. 15			
15 .. 11	14½ .. 12½	15 .. 13	19 .. 14	18 .. 16	3rds.	4ths.	
15½ .. 11½	15 .. 12	16 .. 13	20 .. 14	20 .. 16			
16 .. 11	15½ .. 12½	17 .. 13	21 .. 14	22 .. 16			
16½ .. 11½	16 .. 12	18 .. 13	22 .. 14	24 .. 16	16*s.* 6*d.*	14*s.* 0*d.*	
17 .. 11	16½ .. 12½	20 .. 13	24 .. 14	20 .. 17			
18 .. 11	17 .. 12	23 .. 13	18 .. 15	22 .. 17			
13 .. 12	18 .. 12	16 .. 14	20 .. 15	20 .. 18			
13½ .. 12½	20 .. 12	17 .. 14	22 .. 15	. ..			

HARTLEY'S IMPROVED ROLLED ROUGH PLATE, PROPAGATING AND BEE GLASSES, CUCUMBER TUBES, PRESERVE JARS, WASP TRAPS, &c.

LINSEED OIL, PUTTY, GENUINE WHITE LEAD, LINSEED AND BOILED OILS, BRUSHES, &c.

ESTABLISHED 1750.

PROPAGATING GLASSES.—

	s.	*d.*		*s.*	*d.*	
2 ins. diameter	0	3½	each	12 ins. diameter 1	9	each
3 „ „	0	4½	„	13 „ „ 2	0	„
4 „ „	0	5½	„	14 „ „ 2	6	„
5 „ „	0	6½	„	15 „ „ 3	0	„
6 „ „	0	8	„	16 „ „ 3	6	„
7 „ „	0	10	„	17 „ „ 4	0	„
8 „ „	1	0	„	18 „ „ 5	0	„
9 „ „	1	2	„	19 „ „ 6	0	„
10 „ „	1	4	„	20 „ „ 7	0	„
11 „ „	1	6	„			

CUCUMBER GLASSES.

24 inches long ..	2*s* 0*d*.	16 inches long ..	1*s.* 4*d*.	
22 „ ..	1 10	14 „ ..	1 2	
20 „ ..	1 8	12 „ ..	1 0	
18 „ ..	1 6	Made to any length.		

HAND GLASSES.

12 inches	6*s.* 0*d.* each	18 inches	9*s.* 0*d.* each				
14 „	7 0 „	20 „	10 0 „				
16 „	8 0 „	24 „	12 0 „				

Painted and glazed with 16 oz. Sheet Glass.
If open at top, 1*s.* extra.
WASP TRAPS, 3*s.* 6*d.* per dozen.

AGENTS FOR
HARTLEY'S PATENT ROUGH PLATE GLASS.
PAINTS.
Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, &c.
JAMES PHILLIPS AND CO.,
180, Bishopsgate St. Without, London, E.C.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

HETLEY AND CO. are supplying 16-oz. Sheet Glass of British Manufacture, packed in boxes, containing 100 square feet each, at the following REDUCED PRICES for cash. A reduction made on 1000 feet.

Sizes.—Inches.		Inches.		Per foot.		Per 10 feet
	Under 6	by 4	at	1½*d.*	is	£0 12 6
From 6 by 4	„ 7	„ 5	„	2*d.*	„	0 16 8
„ 7 „ 5	„ 8	„ 6	„	2½*d.*	„	0 18 9
„ 8 „ 6	„ 10	„ 8	„	2½*d.*	„	1 0 10
„ 10 „ 8	„ 12	„ 9	„	2⅔*d.*	„	1 2 11

Larger sizes, not exceeding 40 inches long.
16 oz. from 3*d.* to 3½*d.* per square foot, according to size.
21 oz. „ 3½*d.* to 5*d.* „ „ „
26 oz. „ 3½*d.* to 7½*d.* „ „ „

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS, for Horticultural purposes, at reduced prices, by the 100 square feet.
GLASS TILES AND SLATES made to any size or pattern, either in Sheet or Rough Plate Glass.
Propagating Glasses, Beehive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in Glass.
PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.
GLASS SHADES, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the excise duty, reduced one-half. List of Prices and Estimates forwarded on application to
JAMES HETLEY & Co., 35, Soho Square, London.

GLAZIERS' DIAMONDS for CUTTING HORTICULTURAL and other GLASS, to be had of the Wholesale Manufacturer, JOHN EDWARDS, 20, Sharp's Alley, West Smithfield, London, E.C. Prices from 10*s.* to 27*s.* 6*d.*

GREENHOUSES.

HENRY FREEMAN, HOTHOUSE BUILDER and HOT-WATER APPARATUS MANUFACTORY, Triangle, Hackney. Established 20 years. Good substantially-built Greenhouses fixed in any part of the kingdom, for cash, 42 ft. long by 13 ft., 90*l.* ; 21 ft. by 13 ft., 50*l.* ; 12½ ft. by 10 ft., 30*l.* A first-class Conservatory, 30 ft. by 16 ft., 130*l.* A large assortment kept. Estimates for Heating.

HORTICULTURAL BUILDINGS AND HEATING BY HOT WATER.

JOHN R. PEILL, 17, New Park Street, Southwark, Manufacturer of every description of Buildings for Horticultural purposes, and Inventor of the Improved Conical Boiler for heating the same, is prepared to undertake works of any magnitude, and refers among others to the celebrated range of FORCING HOUSES at HER MAJESTY'S GARDENS, FROGMORE, and at SIR ROBERT PEEL'S, DRAYTON MANOR, constructed under the superintendence of his Manager, MR. JOHN JONES; and also to his BOILERS fixed at the CRYSTAL PALACE, the ROYAL BOTANIC GARDENS, REGENT'S PARK, and KEW, and at several hundreds of the Nobility's seats, Public Establishments, and Manufactories in London and the provinces. J. R. P. also manufactures every description of Iron Roofs, Iron Houses, and Iron Fencing, plain and ornamental. Strong Iron Hurdles for Sheep (6 feet long, 3 feet high, with 5 bars), 4*s.* 3*d.* each; ditto for cattle, 4*s.* 9*d.* each.
Prices and other particulars forwarded on receipt of one postage stamp.

CASELLA'S COTTAGE BAROMETER.—"Equals one in our possession at 10 times the price. The Thermometer, self-registering, has proved upon trial to be equally efficient."—See *Gardeners' Chronicle*, Sept. 1857.
The recent extraordinary variations in the weather and sudden changes of temperature induce L. C. to announce that his POPULAR SERIES of SCIENTIFIC GARDEN INSTRUMENTS now includes the Cottage Barometer, 11*s.* 6*d.* ; Greenhouse Thermometer, 1*s.* 9*d.* ; Garden Thermometer, to Register Cold, 4*s.* ; ditto, for Heat, 7*s.* 6*d.* ; Garden Window Thermometer, in Mahogany, from 5*s.* 6*d.* ; Garden Rain Gauge, 15*s.* 6*d.* ; Pine or Melon Pit Thermometer, for surface and 2 feet below. 18*s.* 6*d.* and 21*s.* A DESCRIPTIVE LIST on receipt of stamp, —L. CASELLA, Instrument Maker to the Admiralty, 23, Hatton Garden, London.

CHUBB'S LOCKS, FIREPROOF SAFES, DOOR LATCHES, CASH AND DEED BOXES. Illustrated Priced Lists sent free.—57, St. Paul's Churchyard, London; 28, Lord Street, Liverpool; 16, Market Street, Manchester; and at Wolverhampton.

HANDSOME BRASS AND IRON BEDSTEADS. —HEAL & SON'S Show Rooms contain a large assortment of Brass Bedsteads, suitable both for Home use and for Tropical Climates; handsome Iron Bedsteads with Brass Mountings and elegantly Japanned; Plain Iron Bedsteads for Servants; every description of Wood Bedstead that is manufactured, in Mahogany, Birch, Walnut-tree Woods, Polished Deal and Japanned, all fitted with Bedding and Furniture complete, as well as every description of Bedroom Furniture.
HEAL AND SON'S ILLUSTRATED CATALOGUE, containing Designs and Prices of 100 Bedsteads, as well as of 150 different articles of Bedroom Furniture, sent free by post.—HEAL & SON, Bedstead, Bedding, and Bedroom Furniture Manufacturers, 196, Tottenham Court Road, W.

VINEGAR.—Patronised by her Majesty's Government.
CONDY'S PATENT PURE CONCENTRATED MALT VINEGAR.—Families, by using this delicious Vinegar, insure purity, and effect a saving of 50 per cent. See Report of Dr. Letheby, City Officer of Health; Dr. Hassall of the *Lancet* Commission, and others. Six Quart Sample sent free to any Railway for 3*s.* 6*d.*—Sold by the Trade, in bottles, labelled and capsuled; wholesale, 63, King William Street, London Bridge, E.C.

TO PIG AND POULTRY FEEDERS AND MILLERS.

CHICKEN AND GAME RICE, 8*s.* per cwt., in bags 1½ cwt. each. SCREENED RICE, 11*s.* per cwt., in bags 1¾ cwt. each. RICE MEAL, 6*s.* 6*d.* to 8*s.* 6*d.* per cwt. RICE for grinding. American Oilcake and Locust Beans, per Ton only.—All Sold for Cash, and an allowance per ton, by W. & R. JUPP, Rice Merchants, 6, Cross Lane, St. Mary-at-Hill, Eastcheap.

100 PURE BRED ALDERNEY COWS AND HEIFERS.—Purchasers are invited to inspect this herd—the largest in England.—Address, JAMES DUMBRELL Jun., Ditchling, Hurstpierpoint, Sussex, 1½ mile from Hassock's Gate Station, London and Brighton Railway.

WANTED, a good Second-hand GREENHOUSE OR VINERY, about 20 feet long, 12 feet wide, door at each end near the back.—Address particulars and price to Mr. DAVIDSON, 2, Randolph Road, Maida Hill.

PRAIRIE LANDS—AMERICA.

FOR SALE, 1,300,000 ACRES OF LAND in Illinois, lying along 700 miles of the leading Railway, and at distances chiefly between one and five miles from the Line. The soil is of the greatest fertility, very accessible, in the midst of excellent markets, and with command of sufficient labour. The State of Illinois, which already contains a population exceeding 1,500,000, is the nearest and most fertile Prairie State in the Union, and now produces more Grain than both Ireland and Scotland. The best bred Short-horn Cattle and Merino Sheep thrive on its pastures. It is famous for its Peach and Apple Orchards, and abounds in Minerals, Coal, Iron, Copper, and Lime. These lands can at present be had on terms of payment, and under certain advantages of exemption for a period of years from State taxes, which cannot be obtained elsewhere in that country. This is an admirable field for the investment of spare capital, as it may be easily visited, and the land is every year rapidly rising in value. It is peculiarly adapted to extensive Sheep and Cattle Grazing. Under the terms offered, an English Farmer, without giving up his business, may go out to Illinois and start several sons as the Owners of Farms under Crop for a less sum than would be needed to place one son as the Tenant merely of one similar Farm in England. Persons not brought up to Agriculture, but who may desire to settle their Sons in Freehold Land where the capital cannot be lost, may start them under the guidance of an intelligent Bailiff, or farm the land for a year or two in "shares" till experience is gained. Associations of individuals from the same locality desiring to emigrate and settle together may make very valuable arrangements. The voyage from this country and the journey inland may all be made within 14 days, at a cost varying from 7*l.* to 15*l.*—Further and full particulars may be learned on application to Mr. CAIRD (who has the Sole Agency in the United Kingdom for the sale of these Lands), or to his Secretary, at 6, Serjeant's Inn, Fleet Street, London.

NURSERY GROUND.

TO BE LET, WHITTINGTON NURSERY, Upper Holloway, to be entered upon immediately.—For particulars apply to J. F. MARSON, Esq., Small Pox Hospital; or to Mr. BUNNEY, Nurseryman, Stratford, Essex.

TO BE LET, BRISTOL NURSERY GROUNDS, Kemp Town, Brighton. These Gardens are now to Let for occupation with immediate possession. —Any person desirous of treating for the same may obtain particulars and permission to view the grounds on application to Mr. R. W. LUCAS, 20, Great Marlborough Street, London, W.; and of Mr. A. CHANDLER, Horticultural Valuer, 28, Priory Road, Wandsworth Road, S.

TO AMATEUR GARDENERS.

TO BE LET ON LEASE, or at a Rental of 75*l.* per annum, a SEMI-DETACHED COTTAGE, containing Ten Rooms, two Water-closets, Kitchen, Scullery, Wash-house, large Cellars, Coach-house, and Stabling, with Loft, Fore Court with Lawn, and extensive Pleasure Garden, with Conservatory and Ornamental Fountain. The whole in thorough substantial repair, well supplied with Soft and Spring Water, and lighted with Gas. Situate within five miles west of Charing Cross on gravel and sand. Omnibuses every 10 minutes.—For Cards apply to Messrs. LAHEE & WOOD, 65, New Bond Street; or to Mr. PITTS, Walham Green.

FREEHOLD NEAR LONDON.

TO BE SOLD, a FARM, about 70 acres in first-rate condition, with all necessary Buildings, including a comfortable Cottage, built within two years. Eight miles south of the Royal Exchange, on the high road to which it has a long frontage.—Address A. A., care of Sotheran & Willis, Tower Street, E.C.

Sales by Auction.

TO NOBLEMEN, GENTLEMEN, AND NURSERYMEN.

MR. J. C. STEVENS is favoured with instructions (in consequence of the agreement that existed between Mr. R. Fortune and Mr. Glendinning of the Chiswick Nursery having expired) to announce for unreserved Sale by Auction, at his Great Room, 38, King Street, Covent Garden, on THURSDAY, June 9, at half-past 12 precisely, the remaining stock of Mr. Fortune's recent CHINESE INTRODUCTIONS, including Abies Kæmpferi from 6 inches to 3 feet, A. Jezoensis, Pinus Bungeana (the lace barked Pine of China), Torreya grandis (several extra strong plants), Cephalotaxus Fortuni, the Chusan Palm, Farfugium grande (some of them specimen plants), Aralia papyrifera (the Chinese Rice-paper plant), Ilex cornuta and terrago, Limonia trifoliata, &c.—May be viewed on the day prior and morning of Sale, and Catalogues had.

ORCHIDS, FOLIAGE PLANTS, FERNS, ETC.

MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on TUESDAY, June 14, at half-past 12 precisely, a small collection of ORCHIDS, established plants, from a gentleman in the north of England, and including the most favourite East Indian and South American species, an importation of Cattleya Mossiæ and other varieties from Laguayra, and many other fine-foliaged Plants and Ferns.—May be viewed on the morning of Sale, and Catalogues had.

ORCHIDS.

MR. J. C. STEVENS is instructed by the executors of the late Mr. Thomas Jackson, to announce for Sale by Auction at his Great Room, 38, King Street, Covent Garden, on TUESDAY, June 21, at half-past 12 o'Clock precisely, the valuable collection of ORCHIDS from the Kingston Nursery, in fine health, and including the following :—

Aerides Fieldingi	Odontoglossum gloriosum
„ Lindleyana	Oncidium Barkeri
„ quinquevulnerum	„ sessile
Cattleya Lemoni	Phalænopsis amabilis
„ Boothi	„ grandiflora
„ elegans	Saccolabium ampullaceum
Cymbidium eburneum	„ guttatum giganteum
Cypripedium hirsutissimum	Tricophilia suavis
Dendrobium anosmum	„ sp. crispa?
„ Farmeri roseum	Vanda helvola
Lælia grandis	„ Lowi
„ purpurata	„ suavis (Veitch's)

And numerous other species well deserving the attention of growers.
May be viewed on the morning of Sale, and Catalogues had of Mr. J. C. STEVENS, 38, King Street, Covent Garden.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will Sell by Auction at the Mart, on FRIDAY, June 10, at 12 o'Clock, a choice assortment of GREENHOUSE PLANTS, comprising Scarlet and other Geraniums, Ericas, Epacris, &c., the newest varieties of Fuchsias, Verbenas, and Dahlias, with a large assortment of Ornamental Plants for Bedding.—On view the morning of Sale. Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

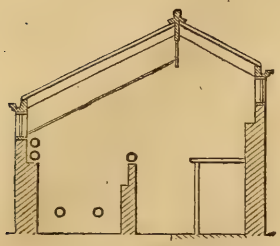
EMBER COURT GARDENS.

Meadow Land, Cherry Orchards, Nursery Ground, and Market Garden, with about 2600 feet of Building Frontage, on the high road from Hampton Court to Esher, and 10 minutes from the Railway Station, including also a Gentleman's Cottage Residence, with Stabling, containing together 35 acres, all Freehold, and with early possession.
JOHN DAWSON AND SON beg to call the attention of Nurserymen, Market Gardeners, Land Companies, and Builders to the above valuable property, which will be Sold as Lots 2 and 3 in the Sale of the EMBER COURT ESTATE, at the Mart, on THURSDAY, June 9, at 12 o'clock.—Auction and Land Offices, Marlborough Chambers, 49, Pall Mall.

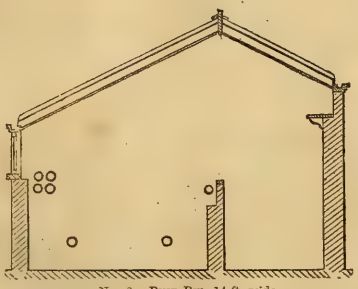
GLOUCESTERSHIRE.

A SUPERIOR INVESTMENT.—A RICH DAIRY FARM OF 257 A. 2 R. 24 P., LET AT 340*l.* PER ANNUM.

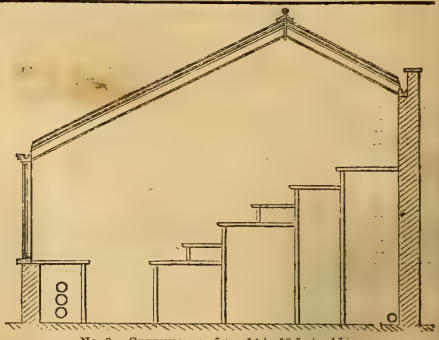
MESSRS. DAVIS & VIGERS are instructed to Sell by Auction, on TUESDAY, July 5, at 12 o'Clock, at Garraway's Coffee House, by order of the proprietor, who will be leaving England in August, the HAROLD FIELD AND OLD ABBEY FREEHOLD FARM, situate in the parish of Ringwood, near Wotton-under-Edge, containing 257 a. 2 r. 24 p., all of which, except about 12 acres, is pasture, provided with a suitable Farm House, Cowman's Cottage, Homestead, and accommodation for a large Dairy of Cows, the Buildings having lately been put into a good state of repair. It is Tithe free and Land Tax redeemed, and only wants draining to farther develope its great natural fertility. It is let to Mr. Thos. Witts, a yearly tenant, at 340*l.* a year, whose family have occupied it for several generations. The Farm is situated about 2 miles from the Wickwar station, and 3 miles from the Charfield station on the Bristol and Birmingham Railway, and about 2 miles from the market towns of Wotton-under-Edge and Wickwar, and near to three large Monthly Cheese Markets. —May be viewed by permission, and Particulars and Plans had at the Swan, Wotton-under-Edge; the New Inn, Wickwar; the Bell Hotel, Gloucester; Queen's Hotel, Cheltenham; the White Lion Hotel, Bristol; Messrs. VIZARD & SHUTE, Solicitors, Dursley; and in London of Messrs. VIZARD & GARNHAM, Solicitors, 55, Lincoln's Inn Fields; the Estate Exchange; and GARRAWAY'S, Change Alley, Cornhill; and of the Auctioneers, 3, Frederick's Place, Old Jewry, E.C.



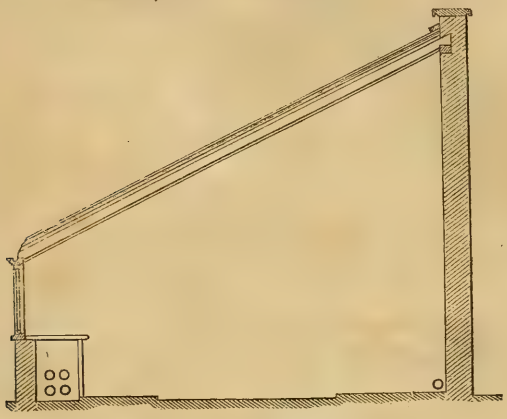
No. 1.—CUCUMBER AND MELON PIT, 10 ft. wide.



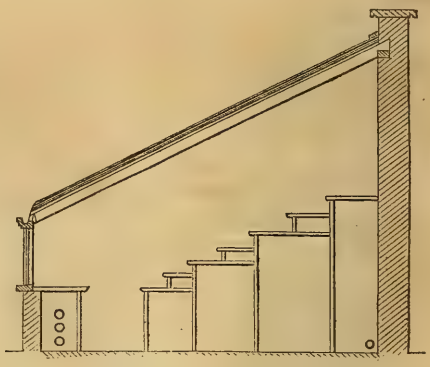
No. 2.—PINE PIT, 14 ft. wide.



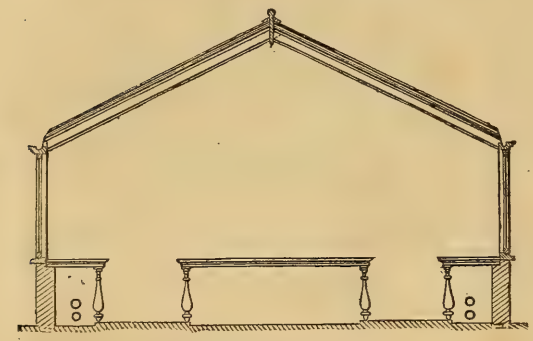
No. 3.—GREENHOUSE, from 14 to 18 feet wide.



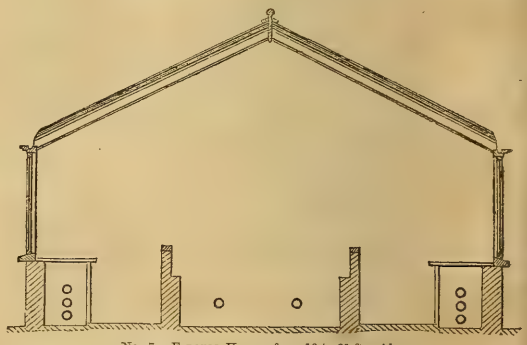
No. 4.—VINERY, from 15 to 18 ft. wide.



No. 9.—GREENHOUSE, from 12 to 20 ft. wide.



No. 6.—GREENHOUSE, from 18 to 20 ft. wide.



No. 7.—FORCING HOUSE, from 18 to 20 ft. wide.

HORTICULTURAL BUILDINGS MANUFACTURED BY STEAM POWER MACHINERY

BEST MATERIALS AND LOWEST PRICES.

HENRY ORMSON,

HORTICULTURAL BUILDER & HOT-WATER APPARATUS MANUFACTURER.

STANLEY BRIDGE, KING'S ROAD, CHELSEA, LONDON,

Deeply grateful for the very liberal and kind patronage bestowed upon him, begs most respectfully to inform the Nobility, Gentry, Nurserymen, &c. that it being his determination to spare no pains to merit a continuance of their favours, and that he may be enabled to execute his extensive and increasing orders punctually, and at the lowest possible cost (agreeably with the best Materials and Workmanship), he has erected a most complete set of Steam Power Machines, peculiarly adapted for the purposes of his Trade.

PARTIES DESIRING INFORMATION as to prices, &c., will, by referring to any of the above sections, receive immediate attention.

PLANS, SPECIFICATIONS, and ESTIMATES for plain and inexpensive practical Structures, and for the most elaborate Architectural Erections, either in Wood or Iron, forwarded on application.

ORMSON'S PATENT JOINTLESS TUBULAR BOILERS

May be seen in successful operation at Mr. VEITCH'S, Royal Exotic Nursery, King's Road, Chelsea, and on view and for sale at

THE MANUFACTORY.

Printed by WILLIAM BRADBURY, of 13, Upper Woburn Place, and FREDERICK MULLETT EVANS, of No. 20, Queen's Road West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London and published by them at the Office, No. 5, Upper Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—SATURDAY, June 4, 1859.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 24.—1859.] SATURDAY, JUNE 11. {Price Fivepence. Stamped Edition, 6d.

INDEX.

Advertisement swindlers .... 505 c
Agriculture, Belgian ..... 514 a
— Liebig on, rev. ..... 507 b
Agri. Soc. of England ..... 512 b
Ammonia, to manufacture ..... 510 c
Analyses, reports on ..... 513 b
Asparagus beetle ..... 508 c
Asparagus, Bath ..... 506 a
Bath Agri. Society ..... 512 c
Belgian agriculture ..... 514 a
Books noticed ..... 507 b
British Columbia ..... 506 a
Cattle stalls, floors for ..... 515 a
Chemico-Agri. Soc., Ulster ..... 513 a
Churn Valcourt's ..... 515 a
Crystal Palace show ..... 506 b
Cultivation, modifications of .. 509 c
Cutlinge, French striking .... 504 a
Earwigs ..... 506 a
Farm leases ..... 515 b
Farming, Wallis on ..... 510 a
Fortune's (Mr.) plant sale .... 508 a
Foxhounds, price of ..... 515 a
Gardens, plans, villa ..... 505 b
Gardeners' Benevolent Institution ..... 504 b
Grafting, herbaceous ..... 504 a
Guano, Patagonian, &c. ..... 513 b
Horticultural Society ..... 504 a
Leases ..... 513 b
Liebig's Agriculture, rev. ..... 507 b
Lovell, the late Mr. ..... 505 c
Manures, money value of ..... 511 c
Newcastle Farmers' Club ..... 513 b
Ponds, foul ..... 506 a
Rhododendron Nuttallii ..... 506 b
Roots, to store ..... 513 a
School, village ..... 511 a
Seeding, thick and thin ..... 512 b
Smithfield Club ..... 514 a
Swindlers, advertisement ..... 503 c
Tar and oil v. insects ..... 504 b
Trees, tar and oil on ..... 504 b
Villa garden plans ..... 505 b
Village school ..... 511 a
Vines, to bud ..... 506 a

HORTICULTURAL SOCIETY.—Notice is hereby given that the next ORDINARY MEETING of this Society will be held in the rooms of the Society of Arts, John Street, Adelphi, on TUESDAY, June 21. The Chair will be taken at 11 o'clock, A.M. On this occasion a Second Ballot for plants will take place, of which the following is a List:—

100 Pinus Don Pedri
7 Pinus, from Popocatepetli
9 Pinus Regeliana
14 Pinus calabra
17 Pinus Brutia
50 Abies, sp., from Mexico
70 Cupressus Macnabiana
70 Cupressus Lawsoniana
70 Pentstemons, from Mexico
40 Veronica decussata devoniana
27 Aralia japonica
27 Eurybia quercifolia
40 Pomaderris Phillyreæfolia
50 Bambusa gracilis
40 Platycodon chinensis
50 Seedling Camellias
40 Buddlea, sp., from Mexico
25 Sida malvæfolia
50 Clematis microphylla, var. leptophylla
30 Wistaria sinensis alba

Also Seeds of Silkim Rhododendrons.

Fellows of the Society desirous of obtaining any of the above are requested, if they are subscribers of four guineas a year, to name the *four* sorts they would prefer; or if subscribers of two guineas a year, to name the *two* sorts they would prefer. Should there be any more applications for any particular plant than the number prefixed to its name in the list, a ballot will then take place to determine which applicants are to be supplied.

The arrangements for conducting this ballot render it necessary that the names of the plants to be drawn for should be sent to the office of the Society, 8, St. Martin's Place, W.C., at the latest by Saturday, June 18.

ROYAL BOTANIC SOCIETY, Regent's Park.—THE SECOND EXHIBITION this season of PLANTS, FLOWERS, AND FRUIT will take place on WEDNESDAY, June 15. Tickets to be obtained at the Gardens only, by orders from Fellows or Members of the Society, price 5*s.* each; or on the day of Exhibition, 7*s.* 6*d.* each.

The Gates open at 2 o'Clock.

BRITISH POMOLOGICAL SOCIETY.—The next Meeting for GENERAL FRUIT IN SEASON will be held on THURSDAY, June 23, when premiums of 21*s.* and 10*s.* 6*d.* are offered for the best second collections of Strawberries in dishes of not less than 20 fruits, accompanied with flowers and leaves. The object is to draw together for comparison the largest number of varieties. 21*s.* is also offered by Mr. Turner for the best Seedling Strawberry.

The Meeting advertised for June 16 is merged into the above. Forms and other information to be obtained of the Secretary, St. James's Hall, Regent Street.

THE SECOND GRAND NATIONAL ROSE SHOW will be held in the Hanover Square Rooms, London, on THURSDAY, June 23.

Patronesses.

The Duchess of Beaufort.
The Marchioness of Exeter.
The Marchioness of Londonderry.
The Countess of Dartmouth.
The Countess of Digby.
The Countess of Roden.
The Countess Manvers.
The Countess Granville.
The Countess of Gainsborough.
Lady Burghley.
Lady Burghersh.
Lady Newark.
Lady Curzon.
The Vicountess Hood.
Lady Rivers.
Lady Southampton.
Lady Sarah Hay Williams.
Lady Charlotte Sturt.
Lady Augustus Sturt.
Lady Pauncefort Duncombe.

ADMISSION.—From 1 o'clock to 4, 5*s.*; from 4 to 7, 1*s.* Tickets of Admission may be obtained at Mr. MITCHELL'S Royal Library, 33, Old Bond Street, and at the Hanover Square Rooms. Money also will be received at the doors.

An excellent Band of Music will attend.

The Schedule of Prizes may be had on application to the
Rev. S. REYNOLDS HOLE, Hon. Sec.
Caunton Manor, Newark, Notts.

CHICHESTER HORTICULTURAL SOCIETY.—The SUMMER EXHIBITION will be held on TUESDAY, June 14, and will be held by the kind permission of the Lord Bishop in the Palace Gardens. By the kind permission of Lieut.-Colonel Lord A. G. Russell the splendid Band of the Rifle Brigade from Portsmouth will attend, under the direction of Mr. W. Miller. Open from 2 till 6.

Particulars of Premiums may be had of JAMES GRAHAM,
North Gate Nursery, Chichester. Hon. Sec.

THE GREAT SUMMER FETE of the LEICESTER AND LEICESTERSHIRE FLORAL AND HORTICULTURAL SOCIETY will be held on the Leicester Race Course, on TUESDAY, June 28. A SILVER CUP will be given for the best collection of 24 CUT ROSES exhibited by a Nurseryman. Prizes of 3*l.* and 2*l.* will be offered to gentlemen's Gardeners for 24 CUT ROSES; and Prizes of 2*l.* and 1*l.* to Amateurs for 24 CUT ROSES. These Classes are open to all England. The Worshipful the Mayor of Leicester, in answer to a requisition, has called upon the inhabitants to close their places of business on the afternoon of this great Gala day. The Midland Railway will run Special Trains from all their principal stations.—For Programme apply to the Hon. Sec., 15, Newarke Street, Leicester.

NOTICE.—THE NEXT MEETING OF THE DISS HORTICULTURAL SOCIETY will be held at the usual place on THURSDAY, June 30, when, in addition to the usual Prizes, the following will be given (open to all England):—For 24 varieties of ROSES, single blooms, 1st Prize, a Silver Cup, value 5*l.* 5*s.*; 2d Prize, in money, 2*l.* 2*s.*; 3d Prize, ditto, 1*l.* 1*s.* Entrance fee, 5*s.* Further particulars may be obtained of Rev. C. H. BROWNE, Secretary.
Blo'Norton, East Harling, Norfolk.

SLEAFORD HORTICULTURAL SOCIETY.—THE ANNUAL EXHIBITION OF FLOWERS, FRUITS, AND VEGETABLES will take place at Sleaford, in the Nursery Grounds of Mr. CHARLES SHARPE, on THURSDAY, July 21. Prizes open to all England. Entrance in each Class, 2*s.* 6*d.*

Class A. Best collection of 12 Stove and Greenhouse Plants, distinct varieties.—1st Prize, 10*l.*; 2d do., 5*l.*

Class B. Collection of 8 varieties of Fruits fit for Dessert (Pines excluded).—1st Prize, 1*l.* 10*s.*; 2d do., 1*l.*

Class C. Stand of 24 Roses, varieties, single blooms, named.—1st Prize, 1*l.* 10*s.*; 2d do., 1*l.*

Class D. 11 Spikes of Hollyhocks, distinct varieties, named.—1st Prize, 2*l.*; 2d do., 1*l.*

N.B. The 1st Prize in Class A will not be awarded unless there are more than two competitors.

Articles intended to be exhibited must be sent to the place of exhibition as early as possible after 8 o'clock in the morning, and no article shall be admitted after 10 o'clock, or removed before 6 in the evening.

The Forms of Entry are now ready, and may be obtained on application to the Treasurer, Secretary, or Mr. FRANK WARWICK, Sleaford.

TOWCESTER FLORAL AND HORTICULTURAL SOCIETY.

Patrons:—

His Grace the Duke of GRAFTON.
The Right Honourable the Earl of EUSTON.
The Right Honourable the Earl of POMFRET.
The Right Honourable the Lord SOUTHAMPTON.
RAINALD KNIGHTLEY, Esq., M.P.
Colonel HENRY CARTWRIGHT, M.P.

The ANNUAL EXHIBITION will be held on THURSDAY, September 8. Competition will not be restricted to the county.—Schedules of Prizes can be obtained of the Secretary,
SAMUEL COOPER TITE, Towcester.

TO THE MEMBERS OF THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—HENRY MCMILLAN begs to solicit the favour of your VOTES at the ensuing Election of Pensioners which will take place July 6, in favour of MARIA SQUIBB, No. 14, on the List of Candidates. Her late husband subscribed 14 years to the funds.—Westerham, June 11.

GARDENERS' BENEVOLENT INSTITUTION.—JAMES WALLAIS, of Foot's Cray, Kent, aged 81, totally blind during the last 20 years, would thankfully RECEIVE the VOTES of the Members of the above at the ensuing Midsummer Election.

GARDENERS' BENEVOLENT INSTITUTION.—ELEVENTH APPLICATION.—The assistance of Subscribers is earnestly solicited in behalf of JAMES SMITH, of Brighton, 73 years of age, in ill health, and whose name has been on the list of candidates since the year 1854.

Proxies will be thankfully received by Mr. SPARY, Queen's Graperies, Brighton; and Mr. L. SOLOMON, Grape Vine, Centre Row, Covent Garden, London.

NOTICE.

JOHN WATERER'S EXHIBITION of RHODODENDRONS will be displayed as usual throughout the month of JUNE at the Royal Botanic Gardens, Regent's Park, London.—The American Nursery, Bagshot, Surrey.

GRAND DISPLAY OF HARDY SCARLET RHODODENDRONS, AZALEAS, ETC.

JOHN WATERER has the pleasure to announce his collection of the above Plants is now in bloom and will continue in great beauty throughout the month of June. The Nursery is near the Sunningdale Station of the South-Western Railway, Reading Branch.
The American Nursery, Bagshot, Surrey.

NEW VERBENA.—Edmonds's set of the above as sent out this spring by Mr. Chas. Turner. Twelve of the best, including package, 12*s.*
J. & W. BADMAN, Nurserymen, Gravesend.

SORGHUM OR HOLCUS SACCHARATUS.
CARRIAGE FREE TO ALL PARTS.

SUTTON AND SONS, Importers of this Seed, can supply wholesale and retail. Warranted the true kind, and good growing Seed at reduced price according to quantity required. Sample packets 6*d.* post free. Instructions on Cultivation sent with the Seed.
SUTTON & SONS, Royal Berks Seed Establishment, Reading.

HOLCUS SACCHARATUS, or North China Sugar-Cane.—Pamphlet, "A Visit and a Plant;" the only English authority on the Cultivation of the above. Post free 6*d.* Prices of Seed on application. Samples 6*d.* Four varieties of Holcus packet free by post on receipt of 10*s.*
JOHN W. CLARKE, Whittlesea, Cambridgeshire.

CABBAGE SEED.

CATTELL'S "DWARF BARNES," AND CATTELL'S "DWARF RELIANCE," may be had as usual by post for 12 penny stamps per packet; the former containing 1 oz., and the latter ½ oz. May be sown as early as the middle of July, and will not run to seed the following spring.
Seed Establishment, Westerham, Kent.

SUPERB CAPE OR GIANT AND BROMPTON STOCKS.

CHARLES ALEXANDER, SEEDSMAN, Edinburgh, can supply the following, which are highly recommended. Sow any time this month. Post free on receipt of Stamps:—

1 packet Young's Scarlet Cape or Giant Stock .. 1*s.*
1 packet Young's White Cape or Giant Stock .. 1*s.*
1 packet Young's Scarlet Brompton Stock .. 1*s.*
1 packet Young's Dark Bloody Wallflower .. .. 1*s.*

CINERARIA, HERBACEOUS CALCEOLARIA, AND HALF SHRUBBY DITTO SEED.—These have been saved from Turner's most beautiful varieties; in 1*s.* and 2*s.* 6*d.* packets. Primula and Hollyhock, from the newest and handsomest varieties, 1*s.* per packet. Agents for F. & A. Smith's splendid Cinerraria, in 1*s.* 6*d.*, 2*s.* 6*d.*, and 5*s.* packets; also agents for Dobson & Son's splendid Calceolaria, in 1*s.* 6*d.*, 2*s.* 6*d.*, 3*s.* 6*d.*, & 5*s.* packets.—Catalogues of the newest Flower Seeds, and newest Dutch and Cape Bulbs, sent post-paid.
BUTLER & MCCULLOCH, Seedsmen, Covent Garden Market.

CHEAP BEDDING PLANTS, 2*s.* 6*d.* per dozen.—Apply for Catalogues, enclosing two stamps, to J. SCOTT, Merriott Nurseries, Crewkerne, Somerset.

The CATALOGUE comprises everything suitable for Flower Garden decoration, and full descriptions of J. S.'s unrivalled collection of new DOUBLE PETUNIAS, now ready for delivery, at 6*s.*, 9*s.*, and 12*s.* per dozen. Fine new single sorts, 2*s.* 6*d.* to 3*s.* 6*d.* per dozen; Magna coccinea, the most splendid of all Bedding Petunias, 5 inches across, beautiful light crimson, 3*s.* 6*d.* per dozen.

LEPTODACTYLON CALIFORNICUM, in quantity; also PHLOX CRITERION, two lovely Bedding Plants.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Stove, Greenhouse, and Hardy Ferns, Miscellaneous Stove, Greenhouse, and Hardy Plants, Variegated and Ornamental foliaged Plants, Conifers, Roses, Rhododendrons, Indian Azaleas, Gloxinias, Fuchsias, Cactuses, &c., is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

GEORGE BAKER begs to inform the nobility, gentry, and public that his extensive collection of HARDY RHODODENDRONS, AZALEAS, KALMIAS, &c., are now in perfection, and may be viewed free.—American Nursery, Windlesham, near Bagshot, Surrey (1¼ mile from the Sunningdale Station of the Staines and Wokingham Railway, where conveyances are always to be had).—June 11.

WILLIAM BARNES begs to inform his friends and patrons that his new PRICED and DESCRIPTIVE CATALOGUE is now ready, and can be had post free upon application. It contains the finest selections of Indian Azaleas, Cinerarias, Calceolarias, Verbenas, Fuchsias, Hollyhocks, Liliums, Phloxes, Roses, Geraniums, Chrysanthemums, Ferns, Stove and Greenhouse plants, as well as a very large assortment of choice miscellaneous plants.
Camden Nursery, Camberwell South.

FERN CATALOGUE.

ROBERT SIM'S NEW DESCRIPTIVE AND PRICED CATALOGUE, No. 6 (62 pages) of his COLLECTION of BRITISH and EXOTIC FERNS, can be had, post free, for 8 stamps. Gratis to all previous purchasers of Ferns.
Nursery, Foot's Cray, Kent, S.E.

ROSE ISABELLA GRAY.

A. PAUL AND SON have a large STOCK of the above ROSE, originally introduced by them, and so highly spoken of in the *Gardeners' Chronicle* of last week. Strong healthy plants, 2*s.* 6*d.* to 3*s.* 6*d.* each. A liberal discount to the Trade.—Nurseries, Cheshunt, Herts, June 11

Extract from the "Cottage Gardener," Nov. 1857.

VINCA ELEGANTISSIMA.—"It makes one of the most beautiful edgings that possibly can be desired."
Twelve plants sent free by post for 36 post stamps, by JOHN JEYES, Nurseryman, Northampton.

CINERARIA SEED saved from CHARLES TURNER'S well known collection of named varieties, now ready in 2*s.* 6*d.* packets.—Royal Nurseries, Slough.

FLOWER OF THE DAY GERANIUM.

WILLIAM HUSSEY begs to offer the above at 3*s.* per dozen; or 20*s.* per 100. Also GERANIUM BRILLIANT, 3*s.* per dozen; or 20*s.* per 100.
Horticultural Gardens, Norwich.

PAMPAS GRASS (GYNERIUM ARGENTEUM).—The beauty of this extraordinary plant has this season been fully appreciated. It can be supplied by the dozen, hundred, or thousand, by CHARLES NOBLE, Bagshot, Surrey.

NEW ZEALAND RUNNER BEAN.
Price 2*s.* per quart.
JAS. CARTER & Co., Seedsmen, 238, High Holborn, London, W.C.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY LIMITED supply every requisite for the Farm and the Garden.
Registered Offices, Union Road, Plymouth.

SPLENDID CINERARIAS.

F. AND A. SMITH are now sending out Seeds of their fine COLLECTION of the above, which for brilliancy of colour, profuseness of flowering, and compactness of growth, are unsurpassed. Great care has been taken to select only the very best for Seed from upwards of 10,000 of the finest produced in the country, some of which were exhibited at the Spring Meetings of the Botanic Society, obtained certificates of merit, and were much admired. In packets 1*s.* 6*d.*, 2*s.*, 6*d.*, and 5*s.* each in stamped envelopes, and may be had of most respectable Seedsmen in the United Kingdom.—Dulwich, Surrey, S.

FLOWERING PLANTS.

F. AND A. SMITH have now in bloom a fine sample of KALOSANTHA COCCINEA, also HYDRANGEA, blue and pink; GERANIUM, French, Fancy, and Show varieties; FUCHSIAS, HELIOTROPES, CALCEOLARIAS (herbaceous and shrubby), ERICA, CACTUS, ROSES, &c., at moderate prices.—Dulwich, Surrey.

E. ADOLPHE, 47, Rue de la Paix, Boulogne-sur-Mer, offers the following 13 new FRENCH GERANIUMS in strong cut down plants in flower, 3*l.* the set; small rooted cuttings, 3*l.* Grande Duchesse Stephanie, Impératrice Eugénie, Prince Jerome, Reine Hortense, Amadis, Le Crimée, Madame de Wendel, Beauté de Rochefort, Ciceron, Pline, Senèque, Virgile. Horace. Orders must contain payment. Package and transport to London included.

GARDENERS' CHRONICLE NEWSPAPER
DULCET MONARCH PENNY

NEW SEED OF FIRST-CLASS

CALCEOLARIAS AND CINERARIAS.

JAMES CARTER & CO.

Are now ready to supply Seed of the above, in three-sized packets, *all of the same quality,*

1s. ... 2s. 6d. ... 5s.

JAMES CARTER & CO., Seedsmen, 238, High Holborn, W.C.

PAGE'S COMPOSITION

FOR THE

DESTRUCTION OF BLIGHT UPON ROSES, WALL FRUIT TREES, CUCUMBERS, MELONS, VINES, STOVE AND GREENHOUSE PLANTS.

Extra Strong, 4s. per gallon, sufficient to make four fit for use. (Jars and Barrels charged at cost price.) Ten gallons and upwards Carriage Free to London.

NO Journal would grant space to publish the testimonials. In 7 years it has attained great reputation, is used in the principal gardens of the kingdom, and should be by every person who has a Rose bush or a Wall Fruit Tree. It destroys insect life, and produces luxuriant growth by its fertilising properties. On October 25, 1856, Professor Lindley reported upon 192 cases, 10 only of which were adverse. W. H. T. Hawley, Esq., says of it—

"For a series of years my wall fruit trees have been destroyed by a gradual decay, which I supposed proceeded from causes affecting their roots, and I attributed it to the nature of the soil, to want of drainage, and in short every cause but the right one, which the use of your invaluable mixture proved to be the aphides attacking the leaves, which appeared as if scorched up, and the poisonous effects produced by these insects shortly extended themselves to the branches, which withered and died, and most of the trees have ultimately been quite destroyed by them. I have this year well saturated the trees with the blight mixture once—just before the blossoms made their appearance, and again when the trees were in full leaf, and the result has been that not an aphis has remained upon them; they have exhibited a thoroughly healthy appearance, and have made vigorous shoots, and have borne a plentiful crop of fruit—results which never happened previously. I may add the effects of the mixture on my Rose trees and other plants have been equally successful, and I shall much obliged to you to send me another supply before the winter closes, in time to repeat the successful experiment next spring."

LONDON AGENTS:—

HENDERSON & Co., Pine-apple Place	VEITCH & SON, Chelsea
HOOPER & Co., Covent Garden	CUTBUSH & SON, Highgate
W. BARNES, Camden Nursery	G. CLARK, Streatham Place
F. HOPGOOD & Co., Shepherd's Bush	MILNE, ARNOTT, & Co., Wandsworth Road

All the leading Provincial Nurserymen, and of the Inventors and Manufacturers,

PAGE & TOOGOOD, Seed-Growers, 37 & 38, Oxford Street, Southampton, (adjoining Radley's, 10 yards from the Railway Station).

Seeds packed for Exportation to all parts of the world.

CARSON'S
ORIGINAL ANTI-CORROSION PAINT,

PATRONISED BY

THE BRITISH GOVERNMENT,	HON. EAST INDIA COMPANY,	RAILWAY AND CANAL COMPANIES,
THE FRENCH GOVERNMENT,	MOST OF THE NOBILITY AND GENTRY,	THE PRINCIPAL COLLIERIES,
THE RUSSIAN GOVERNMENT,	NEW RIVER COMPANY,	MILL OWNERS,
H.R.H. THE PRINCE CONSORT,	THE DOCK COMPANIES,	IRON MASTERS, &c. &c.

The ANTI-CORROSION PAINT is now used extensively for all kinds of OUT-DOOR WORK,

Such as Iron, Wood, Stone, Brick, Compo, Cement, &c., and has been proved, after a practical test of 70 years' to surpass any other Paint; *and being peculiarly adapted for Conservatories, Hothouses, and Frames of all descriptions, is constantly used by Noblemen, Gentlemen, as also many eminent Horticulturists, for such purposes.* It is much lower in Price, and lasts twice as long as the best White Lead, and can be easily applied by any Labourer, being sent in various Colours, requiring simply to be mixed (no grinding is needed). The Anti-Corrosion is a powder, and will keep any length of time.

COLOURS:—

White Stone	34s. per cwt.	Light and Dark Lead	28s. per cwt.
Light do.	32s. ,,	Light and Dark Chocolate	
Drab or Portland		Bright Red	
Bath do.		Dark do. (or Brick Colour)	
Light and Dark Yellow do.		Black	
Copper	30s. ,,	Invisible Green	42s. ,,
Light and Dark Oak		Bright and Deep Green	50s. ,,
		Blue (for Carts and Waggons)	50s. ,,

OIL, TURPENTINE, AND BRUSHES,

A Copy of Testimonials (700), will be sent upon application to

WALTER CARSON & SONS, (Successors to the Inventors), 9, Great Winchester Street, near the Royal Exchange), London, E.C.

NO AGENTS THROUGHOUT THE UNITED KINGDOM.

GLAZIERS' DIAMONDS for CUTTING HORTICULTURAL and other GLASS, to be had of the Wholesale Manufacturer, JOHN EDWARDS, 20, Sharp's Alley, West Smithfield, London, E.C. Prices from 10s. to 27s. 6d.

PARKES' STEEL DIGGING FORKS.

BURGESS AND KEY, 95, Newgate Street, London, being the Wholesale and Retail Agents for these celebrated TOOLS have always a large Stock on hand from which their Customers may select what they may require.

ANTHONY'S PATENT AMERICAN CHURN.—The FIRST PRIZE was again awarded to this Churn in Competition with several others at the Chester Meeting of the Royal Agricultural Society; it has obtained the First Prize given by the Society at every Meeting since 1850.

Messrs. BURGESS & KEY, 95, Newgate Street, strongly recommend it as the most perfect Churn now in use. Full particulars sent on application.

BARBER'S POISONED WHEAT Kills Mice and Sparrows on the spot.—In 1d., 2d., 4d., and 8d. packets, with directions and testimonials. No risk nor damage in laying this Wheat about. From a single packet hundreds of Mice and Sparrows are found dead. Agents: Barclay & Sons, 95, Farringdon Street; W. Sutton & Co., Bow Churchyard; B. Yates & Co., 25, Budge Row, London; and sold by all Druggists, Grocers, &c., throughout the United Kingdom.

BARBER'S Poisoned Wheat Works, Eye, Suffolk.

MARQUEES, TENTS, AND RICK CLOTHS FOR SALE, OR HIRE.—H. PIGGOTT, 115, Fore Street, E.C.

GENUINE TOBACCO PAPER FOR FUMIGATING.

H. APPLEBY (Foreman to Messrs. Ivery & Son, Surrey), takes this opportunity of informing his patrons and the public that he is now offering the above at a very considerably reduced price. It is now sold in packets of 4 lbs. each, at 1s. 3d. per lb. A liberal discount allowed to the Trade. For testimonials that will guarantee its quality, see *Gardeners' Chronicle*, April 16, p. 338.

Sheet Iron Pots for fumigating, 3s. 6d. each.

N.B. All orders to be accompanied with a Post-office Order, payable to HENRY APPLEBY, Dorking, Surrey.

KEATING'S PERSIAN INSECT DESTROYING POWDER.

POULTRY, DOGS, AND PLANTS are effectually freed from Fleas, and all other Vermin with which they are infested, by the above Powder, which is quite harmless to animal life. The Farmer, the Gardener, or the Sportsman, will therefore find it invaluable. Bugs, Cockroaches, Beetles, Moths in Furs, and every other species of Insect are also instantly destroyed. In packets post free, for 14, or treble size for 36 postage stamps, by THOMAS KEATING, Chemist, 79, St. Paul's Churchyard, London, E.C. Take notice each genuine packet bears the above name and address. See "THE FIELD," Oct. 2d and 9th, pp. 263, 283, and 294.

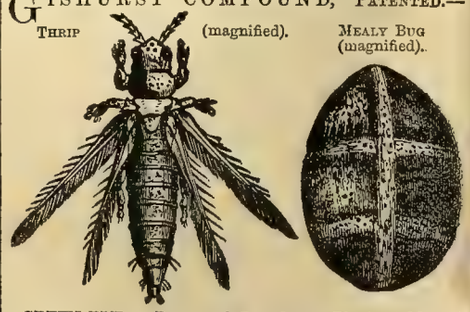
INSECT, APHIS, OR GREENFLY POWDER (QUITE NEW).—Warranted to kill these insects, not to leave the slightest stain, or injure the most tender foliage or human beings. A trial requested. 2s. per lb. The "MULTUM IN PARVO," with Fittings for Implements in seven different forms, 7l. 7s. SEED DIBBLERS, 3l. 10s. SIGMA HOES, 4s., and HAND CULTIVATORS, 2s.

C. POWELL, Hurstgreen, Sussex.

RATS.—RATS TAKEN WITHOUT POISON OR TRAPS BY WHOLESALE.—Ships, Barns, Stables, Granaries, Mills, Warehouses, Farmsteads, Houses, &c., cleared at one sweep. ANY PERSON can by this method clear the entire premises of every RAT, however numerous they may be, in one single night. Printed directions how to entice and secure the whole lot alive sent free by return of post for Two Shillings by WILLIAM GOODWIN, High Halstow, near Rochester.

GISHURST COMPOUND, PATENTED.—

THRIP (magnified). MEALY BUG (magnified).



GREEN FLY on Roses and Greenhouse Plants safely got rid of by syringing with PATENT GISHURST COMPOUND, 2 oz. to the gallon of water.

Extract from leading article in *Gardeners' Chronicle*, April 9, '59.

"That it really kills red spider, aphides, mealy bug, thrips, and scale, it is impossible to doubt in the face of reports of practical men, among whom we may mention Mr. D. Judd, of Althorp Gardens"—then follows a caution against the use of a too strong solution.

The Gishurst Compound is sold in boxes at 1s. 6d. and 6s. each, with directions for use, and printed opinions of Mr. Rucker's gardener, Lady Dorothy Nevill's gardener, Sir William Hooker, Mr. Rivers, and other eminent authorities. For Nurserymen the large size is recommended, but where the consumption is not large the compound keeps its strength best in the small. The undermentioned Seed Merchants, Nurserymen, &c., having taken in supplies are prepared to sell single boxes.

Alexander, C., Edinburgh	Foster, W., Stroud
Bailey, G., Rugby	Gray, W., Gainsborough
Barker, W., Godalming	Griffin, J., Bath
Barnes, Thos., Thirsk.	Harrison, J., Darlington
Barratt, Bury St. Edmunds	Hawkins, R. T., Weymouth
Bass & Brown, Sudbury	Henderson, E. G. & Son, St. John's Wood, London
Batt & Rutley, Strand	Henderson, A. & Co., Pine-apple Place, Edgeware Rd.
Bell & Co., Newcastle-on-Tyne	Hooper & Co., Covent Garden
Bell, John, Norwich	Ivery & Son, Dorking
Bradley & Sons, Halam Nursery, near Southwell	Jackman & Son, Woking
Brigden, T., Railway Arcade, London Bridge	Jackson, Thos. & Son, Kingston
Brown, D., Norwich	Jefferies, W. B., Ipswich
Bwye, H., Great Malvern	Josling, K., St. Albans
Burgess, C., Cheltenham	Kennedy & Co., Dumfries
Caldwell, W. G., Knitsford	Kenway, J. S., Batheaston
Cattell, J., Westerham	King, Wm., Lincoln
Chater, W., Saffron Walden	Laws, T., Beccles
Clark, J., Cheltenham	Low, Hugh & Co., Clapton
Clark, T., 25, Bishopsgate Street Within	Mackie & Stuart, Norwich
Cooks & Son, Dorrington, near Spalding	Mann, J., Brentwood
Cottrell, J. H., Birmingham	Matheson, R. C., Gloucester
Cripps, T., Tunbridge Wells	May, J. & Co., 1, Wellington St.
Darby, R. F., Cirencester	Nelson, J., Bristol
Davies & Co., Wavertree, near Liverpool	Parsons, G., Brighton
Deane & Co., London Bridge	Pattinson & Son, Hexham
Denyer, Mr., Gracechurch Street, City	Perkins, J., Northampton
Dickson, Francis & Arthur and Sons, Chester	Pontey, A., Plymouth
Dickson & Brown, Manchester	Pope, H., Gib Heath, near Birmingham
Dickson, Hogg, & Robertson, Dublin	Reid, B. & Co., Aberdeen
Dickson & Co., Edinburgh	Samson & Co., Kilmarnock
Epps, F., Ashford, Kent	Stuart & Mein, Kelso
Epps, Maidstone	Sutton & Sons, Reading
Fisher, Holmes & Co., Sheffield.	Taber, G., Rivershall, Witham
	Thyne, J. & R., Glasgow
	Tynan, J., Liverpool
	Walker, J., Thame
	Whalley, T., Liverpool
	Wood & Son, Maresfield
	Wood & Son, Woodbridge
	Wright, W., Retford

Nurserymen and Seedsmen supplied by PRICE'S PATENT CANDLE COMPANY (Limited), Belmont, Vauxhall, London, S.

CHASE'S
BEETLE POISON.



EQUALLY DESTRUCTIVE TO RATS AND MICE, AND HARMLESS TO CATS AND DOGS.

A SAFE and most effectual Destroyer of BLACK BEETLES and COCKROACHES; one trial alone will suffice to prove its great efficacy, and one box will destroy thousands. The great advantage in this preparation is, that it does not leave their bodies to decay and corrupt the air, but completely dries up and destroys them, so that nothing is left to cause an unpleasant odour when dead. *Directions for use.*—Place four or five of the Balls each night where the Beetles mostly resort.—Sold in boxes at 1s. each, or sent free to any part of the kingdom for Twenty Stamps (or a case containing one dozen boxes sent *carriage free* on a receipt of a Post-office Order for 12s.), by THOMAS CHASE, Chemist, 14, Holborn, London, E. C., and may be obtained through all Chemists, Booksellers, and Medicine Vendors.

Testimonials from the Rev. Edwin Sidney, Cornard Parva Rectory, near Sudbury, Suffolk; James Veitch, jun., Esq., of the Royal Exotic Nursery, Chelsea; Lucombe, Pince, & Co.; E. G. Henderson & Son, Wellington Nursery, St. John's Wood; C. Loddiges, Esq., of Hackney, and many others.

TO AMATEUR GARDENERS, NURSERYMEN, AGRICULTURISTS, AND OTHERS.

GUTTA PERCHA TUBING FOR WATERING GARDENS, from 2½*d.* per foot; Vulcanised India Rubber Tubing for Watering Gardens, from 4*d.* per foot; Brass Hand Branches, with Stopcock and Rose, and every description of Garden Tubing Fittings, sold Wholesale and Retail by W. R. WOODS, 94, Goswell Road, near the "Angel," Islington, London, E.C. Priced Lists can be had on application.
Please notice the Address—94, Goswell Road.

GUTTA PERCHA TUBING FOR WATERING GARDENS.

THE GUTTA PERCHA COMPANY have the pleasure to acknowledge the receipt of the following *Testimonial from* Mr. J. FARRAH, *Gr. to* BOSWELL MIDDLETON JALLAND, Esq., *of Holderness House, near Hull.*

"I have had 400 feet of your Gutta Percha Tubing, in lengths of 100 feet each, with union joint, in use for the last 12 months for watering these gardens, and I find it to answer better than anything I have ever yet tried. The pressure of the water is very considerable, but this has not the slightest effect on the tubing. I consider this tubing to be a most valuable invention for Gardeners, inasmuch as it enables us to water our gardens in about one-half the time, and with one-half the labour required."

Manufactured by the Gutta Percha Company, Patentees, 18, Wharf Road, City Road, London, and sold by their Wholesale Dealers in town and country.

FOR WATERING GARDENS, PLUMBERS, ENGINEERS, MILLS, AND MACHINISTS.
VULCANISED INDIA RUBBER.

Washers for Hot-water and Steam Joints	Garden Watering Hose
Elastic Packing and Valves for Steam Engines	Do. fitted with Brass Joints, Taps and Spreaders
Pump Buckets (compound India-rubber)	Wheel Tires (noiseless for Trucks, &c.)
Suction Hose for Pumps	Waterproof Cart, Van, and Waggon Covers
Fire Engine Hose	Mill Bands, much improved for driving all kinds of Machinery
Air Beds, Cushions, & Bolsters	Door Springs, Gas Bags
Water Beds, Pillows, and Feet Warmers	Foot Balls, Cricketting Gloves

N.B. A Stock of the above always on hand, and any modification made to order. Please address all communications to the Manufactory.

JAMES LYNE HANCOCK,
Vulcanised India-rubber Works, Goswell Road, London, E.C

WARNER'S SWING WATER-BARROW (To Hold Forty Gallons). MOUNTED ON WHEELS 20 INCHES HIGH. Will save much of the Gardener's time and labour. May be obtained of any Ironmonger for 3*l.* 3*s.*



BRASS SYRINGES, 9*s.* to 18*s.*

Also a great variety of effective Machines for Hydraulic purposes, and to supply Gardens, Hothouses, Cottages, Farms, Mansions, or Boards of Health, with every requisite connected with the conveyance and distribution of Liquids.
Fountains suitable for Conservatories, Lawns, &c.
JOHN WARNER & SONS 8, Crescent, Jewin Street, London.

GARDEN ENGINES AND SYRINGES.

J. TYLOR AND SONS, Warwick Lane, Newgate Street, London, E.C., beg to call attention to their very superior manufacture of GARDEN ENGINES and SYRINGES.

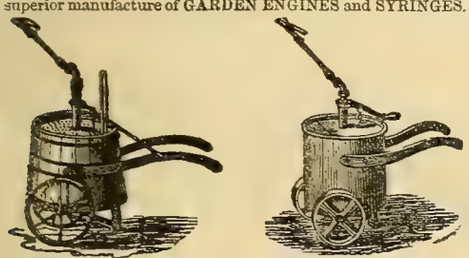


Fig. 598. J. TYLOR & SONS' BARROW GARDEN ENGINE in best well painted Oak tub, fitted with J. TYLOR & SONS' Improved Brass Pump, Universal Joint, and Registered Spreader, which answers the purpose of the separate rose, fan, and jet.

CONTENTS OF TUB:—

10 gallons	15 gallons	28 gallons
£4 10 0	£5 10 0	£6 18 0

Fig. 599. do. TINNED IRON TUB.

CONTENTS OF TUB:—

8 gallons	12 gallons	16 gallons	24 gallons	30 gallons
£2 15	£3 5	£4	£5	£5 18

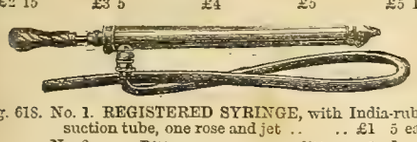


Fig. 618. No. 1. REGISTERED SYRINGE, with India-rubber suction tube, one rose and jet .. .. £1 5 each.
No. 2. Ditto ditto 1 1 ,,
Telescope Branch Pipe for ditto .. .. 0 10 ,,

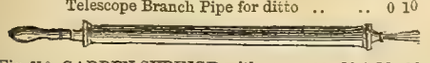


Fig. 619. GARDEN SYRINGE, with one rose and jet, 12*s.* 6*d.* each
,, 620. Ditto ditto 11*s.* 6*d.* ,,
,, 621. Ditto ditto 10*s.* 6*d.* ,,
,, 622. LADIES' GARDEN SYRINGE, with one rose & jet, 8*s.*

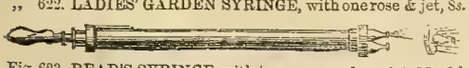


Fig. 623. READ'S SYRINGE, with two roses and one jet, 18*s.* 6*d.*
,, 624. READ'S SYRINGE, with one rose and jet .. 16 6
,, 625. Improved ditto ditto .. 14 6
,, 626. Ditto ditto ditto .. 13 0

Manufacturers of Pumps and Well Engines (for shallow or deep Wells), Plumbers' Brass Foundry of every description. High Pressure Cocks and Closets, Copper and Tinned-iron Baths, Garden and Fire Engines, Lamps of every description, Copper Goods, &c. Estimates given for Hot-water and Bath Apparatus.

Garden Engines, Syringes, &c., upon the most approved principle.



GARDEN ENGINES, MACHINES, AND GREENHOUSE SYRINGES

WITH ALL THE LATEST IMPROVEMENTS, MANUFACTURED BY THE PATENTEE,

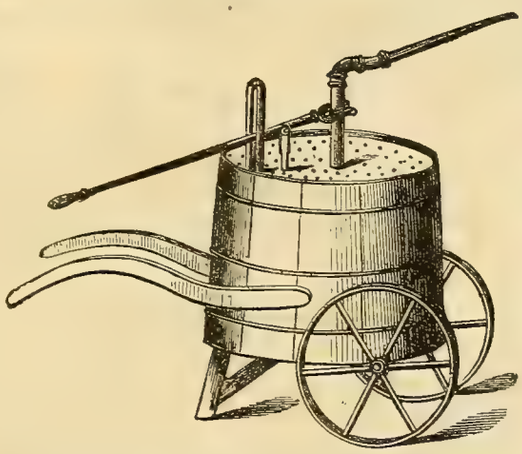
RICHARD READ, Instrument Maker (by Special Appointment) to Her Majesty,

35, REGENT CIRCUS, PICCADILLY, LONDON.

CAUTION.—R. READ begs respectfully to assure the Public that the Syringes advertised weekly by a London Firm as READ'S are not his make, but are mere imitations; and on trial many of them will be found defective and useless. All Syringes made by READ are marked with the Royal Arms, and Address,

"35, Regent Circus, London." ☞ *Descriptions, with drawings, sent post free.*

DEANE & COMPANY'S
HORTICULTURAL TOOLS.



GARDEN ENGINES, Galvanized Iron Prices 55s., 63s., 105s., 120s.
Ditto, Wood, 84s,, 105s, 130s.
Flower Stands, 4s. 6d. each.
Cast Iron Ornamental ditto, to hold 7 Vases, 27s.
Deane's Mowing Machines, with Boyd's Patented Improvements, £4 17s. 6d; £6 6s. 0d., £6 17s. 6d., £7 7s. 0d.
Green House Syringes, 8s., 10s., 18s. 6d
Garden Rollers, £1 14s. 6d., £2., £2 12s. £3 3s., £3 18s., £4 13s., £5 12s., £7 10s.
Garden Stools, 4s. 6d.
Garden Chairs, from 30s.
Boyd's Self-adjusting Scythe, 10s. 6d.
Wire Work, 18in. 4d. per yard run.

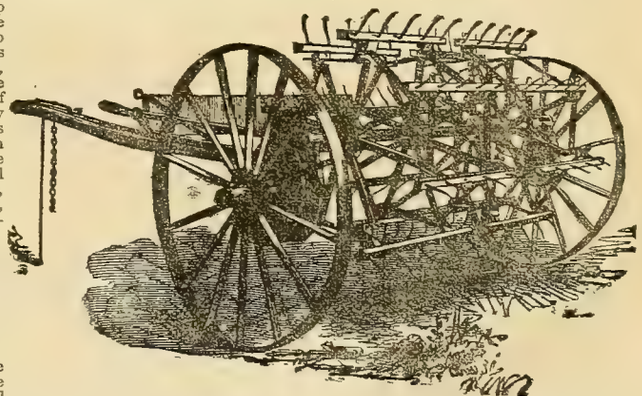
Every Implement for Garden use on the lowest Terms.

DEANES:—Opening to the Monument, London Bridge.

SMITH & ASHBY,
AGRICULTURAL ENGINEERS, STAMFORD.

HAYMAKING MACHINES.

THE last great trial of Haymakers took place at Londonderry, before the Council of the Royal Society of Ireland, in August last. The Machines exhibited there were SMITH & ASHBY'S, Nicholson's, and Sheridan's. The trial land was full of deep broad grips, the crop was heavy green Clover, upon which the Machines selected for trial were set to work. SMITH & ASHBY'S Machine did its work admirably, without a single failure, and was the only one that could clear the grips without clogging and flying out of gear. The Prize of 5*l.* was unanimously awarded to this Machine. This makes Five First-class Prizes that have been awarded to SMITH & ASHBY'S Machine since the Salisbury Meeting of the Royal Agricultural Society of England (1857), being every Prize offered since that Show, and in addition to the 31 First Prizes announced up to last season.



Price £15 15s.

SMITH AND ASHBY,
AGRICULTURAL ENGINEERS, Stamford.

HORSE RAKES.

SMITH & ASHBY'S celebrated Horse Rake has lately been greatly improved by the introduction of their new Patent Steel Semi-angular Teeth, which are warranted not to break, and work much better than those of a circular form. In addition to the Twenty-six Prizes announced up to last season, SMITH & ASHBY'S Rake took the First Prize of the Royal North Lancashire Society at Ulverstone in September last. The same Rake took the First Prize of the Royal Agricultural Society of Ireland two years in succession.

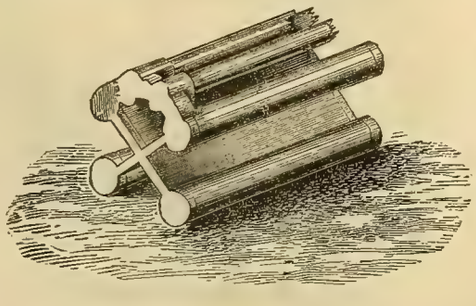
Price, full size, with improved Iron Teeth, £7 10s. Steel, £8; Extra large Size, £10.

☞ *For full particulars see* S. & A.'s *Catalogue, posted free on application.*

MEIKLEJON'S

PATENT CRUCIFORM OR WEBBED BOILER.

No. 1 BOILER, 4 ft. long by 2 ft. 3 in. wide, having 60 feet of heating surface	£9	0s.	0d.
Furnace front, with flue doors	1	18	6
Two Tubes, Screwed, &c.	0	3	6
Set of Bars, Bearer, Damper, &c. ...	1	8	0
„ Furnace Mountings complete ...	3	10	0



No. 2 BOILER, 3 ft. long by 2 ft. wide, having upwards of 30 feet of heating surface	£6	0s.	0d.
Furnace front, with flue doors	1	2	6
Two Tubes	0	3	6
Set of Bars, Bearers, Damper, &c. ...	0	19	0
„ Furnace Mountings complete ...	2	5	0

MEIKLEJON'S PATENT VALVES, forming Valve, Expansion Box, and Bend, 42s. each.

Prices for delivery in Edinburgh or Leith.

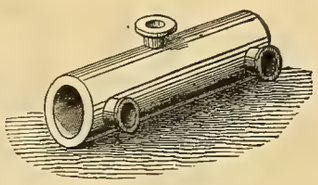
JOHN MEIKLEJON, HORTICULTURAL ENGINEER,

WESTFIELD IRON WORKS, DALKEITH,

BEGS respectfully to lay before the Public his PATENT BOILER which, for the last twelve months has been in constant use in a great number of Gardens in the three kingdoms, and from all parties who have thus proved them (without one single exception) highly satisfactory testimonials have been received.

J. M.'s long experience and extensive practice in heating large ranges of every description have enabled him to produce this durable, cheap, and efficient Boiler, possessing advantages which he is certain will recommend it to all parties interested in Horticultural pursuits. J. M. would also draw the attention of his Customers and others to THOMSON'S IMPROVED SINGLE RETORT BOILERS, of which he is the original and now the only authorised maker.

No. 1 SINGLE RETORTS, with flue plate ...	£4	0	0
Furnace front	0	18	0
One Tube	0	1	6
Bars, Bearers, Damper, Soot Box, &c.	1	0	6
Furnace Mountings, complete	2	0	0



AMATEUR BOILER, with flue plate	£2	10	0
Furnace front...	0	18	0
One Tube	0	1	6
Bars, Bearers, Damper, Soot Box, &c.	0	15	6
Furnace Mountings complete	1	15	0

TESTIMONIALS:—

"Newcombe Villa, Murrayfield, Edinburgh, March 2, 1859.

"Dear Sir,—At the time I ordered five of your new Cruciform Boilers I had no doubt in my own mind that they were constructed upon sound theoretical principles. Since then I have seen several of them at work, and am glad to contribute my opinion of their great efficacy in practice, nor is this my opinion only, for I have the satisfaction to inform you that several parties who have had them in use during the past winter speak in the highest terms of them. I hope as you have spent so much time and means in this department of Horticultural Engineering, that you will reap a more substantial reward for your exertions than any expression I can give you of my unqualified approval of them.—I am, &c.,

(Signed) "CHARLES M'INTOSH,
"Garden Architect and Landscape Gardener."

"The Gardens, Dalkeith Park, April 28, 1859.

"Dear Sir,—I bear willing testimony to the substantial manner in which you have manufactured the Retort Boilers, as well as to the cost you have incurred in the getting up of the recent improvements on these Boilers. I am also much pleased with the action of your New Patent Boiler fixed according to my specifications in the new range of glass, recently erected for his Grace the Duke of Roxburgh, at Floors Castle, Kelso. I consider your Patent Brass Stop Valve meets what has hitherto been much needed, viz. :—a good Stop Valve, the action of which is sure and yet so simple as not to be easily deranged nor subject to corrosion.—I am, &c.,

(Signed) "WILLIAM THOMSON."

"Drumlanrig Gardens, Thornhill, March 10, 1859.

"Dear Sir,—I have great pleasure in saying that the Patent Cruciform or Webbed Boilers which you have erected here for his Grace the Duke of Buccleuch are giving me entire satisfaction. You know I have only had a short time of practically proving the value and capabilities of your Boiler, but (from the trial I have had), I unhesitatingly admit that throughout my experience in the business I have never met with any Boiler that will approach yours in all its various merits.—I am, &c., (Signed) "JAMES M'INTOSH."

"Floors Castle, Kelso, April 17, 1859.

"Sir,—I have much pleasure in bearing testimony to the great power and efficiency of the heating apparatus you have fitted up in the large range of glass recently erected here under the directions of Mr. Thomson, Dalkeith Gardens. You have fixed two Boilers (and space is left for a third if in very severe weather it should be required), but I find in ordinary weather your Patent Cruciform Boiler can work the whole itself, comprising nearly 4000 feet of 4-inch pipes, besides numerous bends and patent valves fixed in seven span-roofed Houses, each 60 feet long by 20 feet wide, and 16 feet high (glass to the ground), and a Corridor 270 feet long of the same dimensions as the other houses in width and height. I also find your New Patent Stop Valves answer admirably.—I am, &c.,

(Signed) "H. ROSE."

"The Gardens, Bothwell Castle, April 11, 1859.

"Sir,—I have much pleasure in informing you that your No. 1 Cruciform or Webbed Boiler, lately fitted up here for the Countess of Home, is answering the purpose admirably and heating very efficiently, with a considerable reduction of labour and fuel, what was formerly heated by five fires.—I am, &c.,

(Signed) "ANDREW TURNBULL."

"Culcreuch, Stirlingshire, March 11, 1859.

"Sir,—Having now had a fair trial of the Hot-water Apparatus fitted up by you in the new range of hothouses erected for A. G. Spiers, Esq., I beg to inform you of my entire satisfaction with it as a whole, and more particularly with your No. 2 Patent Boiler. Its heating powers are very great, construction simple, management remarkably easy, and what is of equal importance it saves a great quantity of fuel. It now heats two Vineries, but will as you are aware be shortly applied to a Plant Stove also, when I am confident it will only consume the usual quantity of coal required for one fire. I consider that your Patent Boiler, being so economical, will be of great benefit to all engaged in horticultural pursuits, but more especially to those located at a distance from the coal markets.—I am, &c., (Signed) "C. TAYLOR."

"The Gardens, Norton Hall, Sheffield, March 10, 1859.

"Sir,—I cannot speak too highly of your No. 1 Cruciform Boiler now at work here, it having surpassed my most sanguine expectations. Of its full capabilities I cannot speak, as at present we have not anything like sufficient glass connected with it to test its powers. It consumes a very small quantity of coal or small coke (working equally well with either), and requires very little attention, while the peculiarity of its form renders the setting of it an easy matter to any common bricklayer. Altogether I am highly pleased with it.—I am, &c.,

(Signed) "J. ADAMS."

"The Gardens, Dalhousie Castle, April 28, 1859.

"Sir,—Your Patent Boiler gives entire satisfaction, and I cordially bear my testimony to its great power of heating, combined with its small consumption of fuel; and I have no doubt but it will be found to surpass every other Boiler for heating hothouses, churches, &c. Your Patent Ground Valves also answer the purpose most effectually.—I am, &c.,

(Signed) "WILLIAM STEWART."

"May 7, 1859.

"The extensive range of Forcing and Greenhouses erected here from designs by Charles M'Intosh, Esq., were fitted up with Hot-water Apparatus by Mr. MEIKLEJON, Dalkeith. There are about 3000 feet of 4-inch pipe, which have been in use nearly five years, and I have great satisfaction in stating that they have wrought admirably. He likewise made and fitted up the Plant Stages, Trellising for Vineries, Cast-iron Pillars and Arches for supporting, and Iron work for binding the houses together, which, for lightness and elegance, combined with great strength, have been admired by hundreds who have seen those houses. Altogether the work executed here by Mr. MEIKLEJON has been done in a very superior manner, and I have great pleasure in bearing testimony to its efficiency. (Signed) "JAMES MITCHELL,
"Gr. to the Rt. Hon. Lord Panmure, Panmure Castle, N.B.

READ THIS.

H. M'CALLA

(Late Principal Draughtsman and Clerk with Messrs. J. Weeks & Co., Horticultural Builders, &c., King's Road, Chelsea),

BEGS TO INFORM THE NOBILITY, GENTRY, AND AGRICULTURISTS THAT HE HAS COMMENCED BUSINESS ON HIS OWN ACCOUNT AS

HORTICULTURAL BUILDER AND HOT-WATER APPARATUS MANUFACTURER,

and from experience knowing that the present charges of Horticultural Structures have been exorbitantly high, has come to the conclusion after minute calculations that they can be erected for 20 per cent less, leaving a fair profitable margin for the builder.

H. M'C. will furnish PLANS and ESTIMATES free of any charge whatever, or will supply WORKING DRAWINGS at a trifling cost for any Gentleman wishing to construct his own, thereby effecting a second saving. H. M'C., being favoured with any commands, will guarantee both Materials and Workmanship to be of the first class, having engaged superior artisans of all trades.

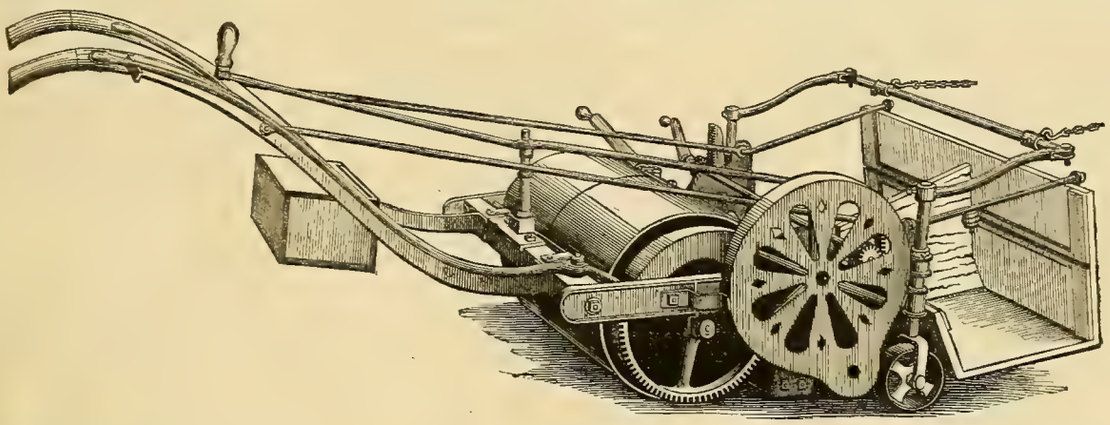
OFFICE: 7, UPPER CHEYNE ROW, KING'S ROAD, CHELSEA.

SHANKS' PATENT LAWN MOWING MACHINES,

NOW USED IN ALL THE ROYAL GARDENS.

NEW AND IMPORTANT IMPROVEMENTS FOR MOWING, ROLLING, COLLECTING, AND DELIVERING.

HORSE POWER PATENT MOWING, ROLLING, COLLECTING, AND DELIVERING MACHINE.



PRICES

No. 1(*a*) 48-INCH MACHINE (USUALLY DRAWN BY A HORSE)	£27 0 0	No. 3.—30-INCH MACHINE (USUALLY DRAWN BY A PONY)	£17 10 0
No. 1.—42-INCH MACHINE (USUALLY DRAWN BY A HORSE)	24 0 0	No. 4.—25-INCH MACHINE (USUALLY DRAWN BY A PONY OR DONKEY)	13 10 0
No. 2.—36-INCH MACHINE (USUALLY DRAWN BY A HORSE OR PONY)	20 10 0	No. 5.—25-INCH MACHINE (MADE LIGHT FOR A SMALL PONY OR DONKEY)	9 10 0

Machines Nos. 1 (*a*), 1, 2, 3, & 4 have the Patent Delivering Apparatus attached. No. 5 can either be had with or without this improvement; if with it, 30*s*. extra.

PRICES OF THE HAND MOWING AND ROLLING MACHINE

No. 6.—22-INCH MACHINE	£7 17 6	No. 8.—16-INCH MACHINE	£6 10 0
No. 7.—19-INCH MACHINE	7 5 0	No. 9.—13-INCH MACHINE	5 15 0

☞ FULLY ILLUSTRATED AND DETAILED CIRCULARS ON APPLICATION.

LONDON AGENTS

MESSRS. J. B. BROWN & CO., 18, CANNON STREET, CITY, LONDON, E.C.

GREAT SUCCESS OF

SHANKS' PATENT MOWING, ROLLING, COLLECTING, AND DELIVERING MACHINE FOR LAWNS, &c.

THE ONLY COMPLETE MACHINE FOR HORSE OR PONY POWER.

SHANKS' PATENT HORSE AND PONY LAWN MOWERS

ARE the only Machines that deliver the Grass without the man leaving the handles or stopping the horse. These immense advantages enable the Machine to do at least a third more work with three-fourths less labour to the man who works it. The Machines answer exceedingly well for uneven as well as level Lawns, are strong and very durable, while the execution of the work cannot be surpassed.

SHANKS' PATENT HAND MACHINE for 1859,

fitted with all the new improvements, is the most efficient and complete Hand Mower that has ever been before the public. For convenience in turning and cutting small Lawns, Verges, around Flower Beds, &c., it has no equal.

Read the following Testimonials in favour of SHANKS' new Horse Machine before ordering:—

From Mr. SHEARER, *Gardener to the* Marquis of TWEEDDALE, *Yester Garden, May* 13, 1859.

"GENTLEMEN,—Allow me to congratulate you on the success of your improved Grass Cutting Machine which we got the other day from you, especially the delivering part; it is a mechanical triumph. You know that I expressed my doubts to you about it before I got the Machine, but having cut all our Grass with it I must say that it acts far beyond my expectation, and it performs all you say in your prospectus. We can now go on the whole day without stopping, except to oil the parts that require it. The men are quite in love with it; a good proof of its utility.—I am, Gentlemen, yours respectfully, "ALEX. SHEARER."

From Mr. MACKIE, *Gardener to* His Grace the Duke of ATHOLL, *The Gardens, Dunkeld, May* 18, 1859.

"GENTLEMEN,—After repeated trials with our Grass-Cutting Machine, as now fitted up with your Delivering Apparatus, I have much pleasure in saying that I now consider your Machines complete. We can now do as much work in six hours as we used to do in ten hours, with the old plan of stopping to empty the Grass Box, and with far greater ease both to man and horse. His Grace is so well pleased with the working of the Apparatus, and the saving of time effected by it, that he has ordered the Machine from Blair Castle to be sent through to you to be fitted up in the same way as the one here.—I am, Gentlemen, yours, &c., "JAMES MACKIE."

From Mr. DELL, *Gardener to* CHRIS. TURNER, Esq., *Stoke Rochford.*

"DEAR SIRS,—I have great pleasure in bearing testimony to the great efficiency of your new Patent Apparatus for delivering the Grass without stopping the Machine. After repeated trials both in dry and showery weather I am certain we can now do as much in one hour as we used to do in one hour and a half with the old plan.

"MESSRS. SHANKS & SON. "I am, &c. (Signed) "J. DELL."

Illustrated Price Lists with further particulars forwarded on application. The Machines are warranted to give ample satisfaction, failing this they may be at once returned.

ALEXANDER SHANKS & SON, Patentees and Sole Manufacturers,

DENS IRON WORKS, ARBROATH, FORFARSHIRE.

CINERARIA SEED
SAVED FROM THE
CHOICEST NEW SORTS.

LUCOMBE, PINCE, AND CO. have now ready for sending out SEEDS of their very superior
CINERARIAS,
Which have been saved with the greatest care from fine selected flowers of the best new varieties. The great satisfaction which their Cinerarias have given for many years past has induced them to pay even greater attention to the quality, which enables L., P., & Co. to recommend their Seed of this present season's saving as being vastly superior to any previously sent out by them:—

Large packets .. 5s. 0d. each } Post free, sealed and war-
Small do. .. 2 6 ,, } ranted by L., P., & Co.

The present is an excellent time for sowing, and as their stock owing to its select quality is limited, early orders are respectfully solicited.

Exeter Nursery, Exeter. Established 1720.

CHOICE SEEDS.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that they can now supply the following choice SEEDS, all of which are warranted genuine and of the finest quality.

	Per packet—s. d.		Per packet—s. d.
Calceolaria, herbaceous	2 6	Gaillardia grandiflora	0 6
Cineraria, from named vars.	2 6	Primula sinensis, mixed	1 6
Clianthus Dampieri	2 6	Pansy, from named vars.	1 0
Hollyhock, from named vars.	0 6	Sweet William, from extra fine vars.	0 6

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

NEW SEEDLING AZALEA INDICAS.

Blanc de Neige	Triomphe de Gand
Pelargoniflora nova	Vicomte de Nieuport
Prince Impérial	Rosæflora plena
Reine des Doubles	

JEAN VERSCHAFFELT, Ghent, Belgium, begs respectfully to announce that he is now prepared to send out his seven new Azalea indicas as above, in fine strong plants. The price of the set is 3l. Early orders are requested, as they will be sent in strict rotation. One selection over on three to the Trade.

The description of the above may be had free on application to JEAN VERSCHAFFELT. Plants will be immediately forwarded after orders are received. All orders to be directed to JEAN VERSCHAFFELT, Nurseryman, Ghent, Belgium.

CACTI.

TO BE SOLD, either wholly or in part, a rare and superb collection of Exhibition Specimens of TALL CACTI, CEREUS, EPIPHYLLI, and their hybrids. They have been exhibited at all the Metropolitan Shows for years past. Being large and numerous the owner wishes to dispose of them for cash or in exchange for Camellias, Ferns.—Apply to R. BUNN, Gardener to J. R. Scott, Esq., Harringay Park, Crouch End, Hornsey, N.

TO THE TRADE.—Ericas, Azaleas, Boronias, Dillwynias, Epacris, Eutaxias, Apheleas, Chorozemas, Hibbertias, Leschenaultias, Myrtus of sorts, Jasminum grandiflorum, Pimeleas, Polygalas, &c.; healthy plants and the best sorts in 60-sized pots, 50s. per 100. Greenhouse and Stove Creepers, fine, 9s. to 12s. per dozen. Stove and Variegated plants of all the best kinds, fine plants, 5l. per 100. All the new Tydæas and Achimenes, 6s. to 12s. per dozen. Fine plants of the new Gesnerias and Begonias. Extra strong plants of French and Spotted Geraniums, 12s. to 18s. per dozen.—EPPS's Nursery, Maidstone.

40 FINEST NEW VERBENAS OF 1859.—Ajax, Figaro, Cerise, Bellona, Rubens, Fellx Roland, Mrs. Fowke, Mrs. Leslie, Miss Emily Hanmer, Gitania Verdii, Madam Hardy, Rosalinde, Rosemande, Mrs. Maclean, Satanella, Cendrillon, Lord Clyde, Reine Blanche, Comte de Morello,, Bandmaster, Lightning, striata perfecta, Mathilde, Mrs. Pennington, Bleu Magnifique, Baccarah, Lady Cotton Sheppard, Comet, Marie Bougiere, Madam Large, Novelty, Abundance, Madam Hoste, Sir J. Lawrence, Ne Plus Ultra, Gloire de Mont Plaisir, Fatima, Azucena, Mrs. White.

Selections of 12 of the above by purchaser, 1s. each; the set entire, 30s., post free, in fine strong well hardened plants.

HENRY MAY, The Hope Nurseries, near Bedale, Yorkshire.

136 BEDDING PLANTS for 20s., or half the Collection for 10s. (package included); or any of the articles separate at the price per doz. attached.—Per doz. s. d.

12 Variegated Geraniums (Flower of the Day), or at	4 0
12 Scarlet Geraniums, or at	2 6
24 Verbenas	2 0
12 Dahlias, in 12 first class show sorts	4 0
12 Shrubby Calceolarias	2 6
12 Blue and Scarlet Salvias	2 6
12 Cupheas	2 6
12 Ageratums	2 6
6 Fuchsias, 6 new sorts	6 0
12 Lobelia speciosa	2 6
6 Heliotropes	2 6
6 Petunias	2 6

The above plants are all fine and well established in single pots. The lowest price per 100 for any particular sort can be had on application. Also a Descriptive and Priced Catalogue free through the post on receipt of one postage stamp.

12 NEW VERBENAS of 1859 for 6s., free through the post if required.

GOLDEN CHAIN GERANIUMS, 6s. per dozen.

FLOWER OF THE DAY GERANIUMS, 25s. per 100.

Unknown correspondents will please accompany their orders with a remittance or reference. Post-office Orders on New Malton.—EDWARD TAYLOR, Seed and Plant Establishment, Malton, Yorkshire.

NEW SCARLET VERBENA "MAGNET."—This superb variety is a Seedling of 1858. The colour is a most vivid scarlet with a large lemon coloured eye, which gives it a very striking appearance over all other scarlets; the pips are as round, large, and as good a substance as those of the most beautiful Phloxes; the truss is of an immense size, many of them last season measuring 9 inches, in circumference. It is a most prolific bloomer, and always throws its trusses well up. Blooms of the finest of the Scarlet Verbenas as yet sent out were compared with it last year, but none of them approached it in size or brilliancy of colour by many degrees. Single Plants of this superb new Verbena, 5s. each.

NEW VERBENA "LOLA MONTES."—Colour light, beautifully shaded rose, fine eye and truss. Is a first rate show variety, many of the pips coming as round and large as a shilling, and of good substance. Plants 3s. 6d. each.

"EMPEROR OF MOROCCO" VERBENA."—Also a Seedling of 1858. Colour very dark purple, the nearest approach to a decided blue of any that has yet been sent out. It shows a very fine truss, is a prolific bloomer, and good bedder. Plants 3s. 6d. each.

The above are now ready for sending out in strong well rooted plants. Parties taking the three varieties will be charged 10s., postage and package free.

For further particulars and list of testimonials see this Paper of May 21, 1859, page 442.

A remittance must accompany all orders either in cash or penny postage stamps.

EDWARD TILEY, NURSERYMAN, SEEDSMAN, AND FLORIST, 14, Abbey Church Yard, Bath.

CRYSTAL PALACE.

GRAND HORTICULTURAL EXHIBITION,

JUNE 8, 1859.

LIST OF AWARDS.

FLOWERS.

CLASS I.—20 STOVE AND GREENHOUSE PLANTS, IN FLOWER.

First Prize, 25l. each, Mr. G. S. Dods, Gr. to Sir J. Cathcart, Bart., Chertsey; Mr. T. Whitbread, Gr. to H. Collyer, Esq., Dartford; Second ditto, 15l. each, Mr. B. Peed, Gr. to T. Treadwell, Esq., Lower Norwood; Mr. J. Green, Gr. to Sir E. Antrobus, Bart., Cheam; Third ditto, 10l., Mr. T. Page, Gr. to W. Leaf, Esq., Streatham; Extra ditto, 5l., Mr. Baxendine, Gr. to W. H. Smallpiece, Esq., Guildford.

CLASS II.—12 STOVE AND GREENHOUSE PLANTS IN FLOWER.

First Prize, 10l., Mr. O. Rhodes, Gr. to J. Philpott, Esq., Stamford Hill; Second ditto, 7l., Mr. J. Peed, Gr. to C. T. Gabriel, Esq., Streatham; Third ditto, 5l. each, Mr. W. Cutbush, Barnet; Mr. W. Kaile, Gr. to Earl of Lovelace, Ripley, Surrey.

CLASS III.—6 STOVE AND GREENHOUSE PLANTS IN FLOWER (Amateurs).

First Prize, 5l., Mr. H. Chilman, Gr. to Mrs. Smith, Epsom; Second ditto, 4l., Mr. C. Smith, Gr. to A. Anderson, Esq., Norwood; Third ditto, 3l., Mr. S. M. Carson, Gr. to W. F. G. Farmer, Esq., Cheam; Fourth ditto, 2l., Mr. J. Tegg, Gr. to Baron Hambro, Roehampton; Extra ditto, 1l. 10s., Mr. E. A. Hamp, Gr. to J. Thorne, Esq., South Lambeth.

CLASS IV.—12 STOVE AND GREENHOUSE PLANTS (Nurserymen).

First Prize, 7l., Messrs. Veitch & Son, Exeter and Chelsea; Second ditto, 5l., Messrs. Jackson & Son, Kingston; Third ditto, 3l., Mr. W. Cutbush, Barnet.

CLASS V.—10 STOVE AND GREENHOUSE PLANTS IN FLOWER (Amateurs).

First Prize, 7l., Mr. Dods; Second ditto, 5l. each, to Mr, Colgate, Gr. to W. F. Woolley, Esq., Kensington; and Mr. G. Young, Gr. to W. H. Stone, Esq., Dulwich; Third ditto, 3l., Mr. Summers, Gr. to A. Mongredien, Esq., Forest Hill; Extra Prizes, 2l. each, Mr. Oubridge, Gr. to J. Foster, Esq., Stamford Hill; Mr. Rhodes; 1l. to Mr. Hamp.

CLASS VI.—20 ORCHIDS OF EXOTIC SPECIES (Amateurs).

First Prize, 20l., Mr. Gedney, Gr. to Rev. W. Ellis, Hoddesden; Second ditto, 15l., Mr. Bullen, Gr. to J. Butler, Esq., Woolwich.

CLASS VII.—15 ORCHIDS OF EXOTIC SPECIES (Nurserymen).

First Prize, 10l., Messrs. Veitch & Son; Third ditto, 5l., Mr. S. Woolley, Cheshunt.

CLASS VIII.—12 ORCHIDS OF EXOTIC SPECIES (Amateurs).

First Prize, 10l., Mr. G. S. Dods; Second ditto, 7l., Mr. S. M. Carson; Third ditto, 5l., Mr. O. Rhodes.

CLASS IX.—6 ORCHIDS OF EXOTIC SPECIES (Open).

First Prize, 5l., Mr. Page; Second ditto, 4l., Mr. J. Green.

CLASS X.—8 GREENHOUSE AZALEAS.

First Prize, 7l., Mr. J. Green; Second ditto, 5l., Mr. T. Page; Extra Prize, 1l., Mr. Rhodes.

CLASS XI.—6 GREENHOUSE AZALEAS (Amateurs).

First Prize, 5l., Mr. Carson; Second ditto, 4l., Mr. B. Peed; Third ditto, 3l., Mr. J. Peed; Extra Prize, 1l., Mr. Hamp; Extra ditto, 15s., Mr. Chilman.

CLASS XII,—8 CAPE HEATHS (Nurserymen).

First Prizes, 4l. each, Mr. W. Cutbush, Barnet; Messrs. Jackson & Son, Kingston.

CLASS XIII.—6 CAPE HEATHS (Amateurs).

First Prize, 4l., Mr. B. Peed; Second ditto, 3l., Mr. J. Peed; Third ditto, 2l., Mr. Page; Fourth ditto, 1l. each, Mr. Baxendine, Mr. Chilman.

CLASS XIV.—6 TALL CACTI IN FLOWER (large Plants).

First Prize, 5l., Mr. Green; Second ditto, 4l., Mr. Bunn, Gr. to J. R. Scott, Esq., Hornsey; Extra Prize, 10s., Mr. Waters, Gr. to A. F. Moore, Esq., Sydenham.

CLASS XV.—12 ROSES IN POTS.

1 First Prize, 10l., Messrs. Lane & Son, Berkhampstead.

CLASS XVI.—6 ROSES IN POTS (Amateurs).

First Prize, 5l., Mr. Terry, Gr. to C. W. G. Puller, Esq., Youngsbury; Second ditto, 4l., A. Rowland, Esq., Lewisham.

CLASS XVII.—6 CALCEOLARIAS.

First Prize, 3l., Mr. Cross, Gr. to Lord Ashburton, Addiscombe; Second ditto, 2l., Mr. Burley, Limpsfield, Surrey; Third ditto, 1l., Mr. Cole, St. Alban's.

CLASS XVIII.—6 FUCHSIAS IN POTS (Distinct Varieties).

First Prize, 4l., Mr. Oubridge; Second ditto, 3l., Mr. Elliot, Gr. to C. Davidson, Esq., Sydenham; Third ditto, 2l., Mr. Cannell, Gr. to E. Grove, Esq., Tulse Hill.

CLASS XIX.—10 PELARGONIUMS (Amateurs).

First Prize, 7l., Mr. W. Nye, Gr. to E. Foster, Esq., Windsor; Second ditto, 5l., Mr. T. Bailey, Gr. to T. T. Drake, Esq., Shardeloes; Third ditto, 3l., Mr. Wiggins, Gr. to E. Beck, Esq., Isleworth.

CLASS XX.—12 PELARGONIUMS (Nurserymen).

First Prize, 7l., Mr. C. Turner, Slough; Second ditto, 5l., Messrs. Dobson & Son, Isleworth; Third ditto, 3l., Mr. Windsor, Hampstead; Fourth ditto, 2l., Messrs. J. & J. Fraser, Lea Bridge Road.

CLASS XXI.—6 FANCY PELARGONIUMS (Amateurs).

First Prize, 4l., Mr. T. Bailey; Second ditto, 3l., Mr. James, Gr. to W. F. Watson, Esq., Isleworth; Third ditto, 2l., Mr. R. Oubridge.

CLASS XXII.—6 FANCY PELARGONIUMS (Nurserymen).

First Prize, 4l., Mr. C. Turner, Slough; Second ditto, 3l., Mr. T. Windsor, Hampstead; Third ditto, 2l., Messrs. J. and J. Fraser, Lea Bridge.

CLASS XXIII.—NEW OR RARE PLANTS, IN OR OUT OF FLOWER.

First Prize, 3l., Messrs. Veitch & Son, Exeter and Chelsea (Cattleya sp.); Second ditto, 2l., Mr. W. Barnes, Camberwell (Begonia Queen of England); Third ditto, 1l., R. Sim, Foot's Cray (Selaginella rubricaulis). Extra Prize, 10s., Messrs. J. & J. Fraser (Epiphyllum Andersonii).

CLASS XXIV.—HARDY ORNAMENTAL PLANTS.

First Prize, 2l., Messrs. Veitch & Son (Torreya myristica); Second ditto, 1l. (Thuja Lobbii); Third ditto, 10s. (Chamæbatia foliolosa).

CLASS XXV.—SEEDLING PELARGONIUMS OF 1858 & '59.

Pelargoniums.—First Prize, 10s., Mr. Nye (Lord Clyde); Second ditto, 7s., Mr. Turner (Angelina); Third ditto, 5s., Mr. Turner (Bijou).

Fancy Pelargoniums.—First Prize, 10s., Mr. Turner (King of Purples); Second ditto, 7s., Mr. Turner (Bracelet); Third ditto, 5s., Mr. Turner (Magpie).

Spotted Pelargoniums.—First Prize, 10s., Messrs. Veitch & Son (Mrs. Ponsonby Moore); Second ditto, 7s., Mr. Kinghorn (Christina).

Scarlet Geraniums.—First Prize, 10s., Mr. Turner (Sarah Turner); Second ditto, 7s., Mr. Turner (Omega).

FLOWERS.

CLASS XXVI.—6 PLANTS OF NEPENTHES.

First Prize, 5l., Messrs. Veitch & Son; Second ditto, 4l., Mr. Gedney.

CLASS XXVII.—12 EXOTIC FERNS (Nurserymen).

First Prize, 3l., Messrs. Veitch & Son; Second ditto, 2l., Mr. S. Woolley, Cheshunt; Third ditto, 1l., Mr. Hally, Blackheath.

CLASS XXVIII.—12 EXOTIC FERNS (Amateurs).

First Prize, 4l., Mr. R. Baillie, Gr. to W. C. Carbonell, Esq., Harrow Road; Second ditto, 3l., Mr. J. Summers; Third ditto, 2l., Mr. Gedney; Third ditto, 2l., Mr. Lavey, Gr. to E. A. De Grave, Esq., Leatherhead; Fourth ditto, 1l., Mr. Stacey, Gr. to R. O. White, Esq., Blackheath.

CLASS XXIX.—MISCELLANEOUS.

First Prize, 2l., each, Mr. Pfersdorff, Kensal New Town; Mr. Sim; Messrs. Veitch & Son; Second ditto, 1l. 10s. each, Mr. C. Turner, Mr. Waters, Mr. Lavey, and Mr. Binder, Gr. to Rev. T. Stainforth, Windermere; Third ditto. 1l. each, Mr. Summers, Mr. Baillie, Mr. C. Young, and Mr. J. Wood, Norwood; Fourth ditto, 15s., Mr. H. Williams, Muswell Hill.

CLASS XXX.—50 ROSES (Distinct varieties).

First Prize, 3l., Messrs. Paul & Son, Cheshunt.

CLASS XXXI.—25 ROSES (Distinct varieties).

First Prize, 2l., A. Rowland, Esq.; Second ditto, 1l. 10s., Mr. Terry; Third ditto, 1l., Mr. Hollingworth, Turkey Mills, Maidstone.

CLASS XXXII.—24 ROSES (Distinct varieties).

First Prize, 1l., Mr. Hollingworth.

CLASS XXXIII.—24 PINKS (Distinct varieties).

First Prize, 15s., Mr. C. Turner; Second ditto, 10s. Mr. Bragg, Slough.

CLASS XXXIV.—24 PANSIES (Distinct varieties).

First Prize, 15s., Mr. August, Beddington; Second ditto, 10s. Mr. James; Third ditto, 5s., Mr. Bragg.

FRUIT.

CLASS A.—COLLECTIONS OF FRUIT IN EIGHT DISHES ONLY. (5 distinct kinds.)

First Prize, 7l., Mr. T. Dawson, Gr. to Earl Cowper, Panshanger, Herts.

CLASS B.—PINE APPLE (Single Fruit of the Providence).

First Prize, 3l., Mr. T. Bailey; Second ditto, 2l., Mr. R. Floud, Gr. to R. Fothergill, Esq., Aberdare; Third ditto, 1l., Mr. T. Young, Gr. to C. Bailey, Esq., M.P., Aberdare.

CLASS C.—PINE APPLE, (Single Fruit of the Queen), any variety.

First Prize, 3l., Mr. G. Young; Second ditto, 2., Mr. T. Bailey; Third ditto, 1l., Mr. W. Davies, Starch Green, Hammersmith.

CLASS D.—PINE APPLE, (Single Fruit of any variety).

First Prize, 3l., Mr. A. Scott, Leigh Park, Havant; Second ditto, 2l., Mr. T. W. Booth, Gr. to R. E. E. Warburton, Esq., Norwich; Third ditto, 1l., Mr, B. Peed.

CLASS E.—GRAPES, Black (Single Dish).

First Prize, 3l., Mr. W. Hill, Gr. to R. Sneyd, Esq., Staffordshire; Second ditto, 2l., Mr. T. Frost, Gr. to E. L. Betts, Esq., Maidstone; Second ditto, 2l., Mr. G. Tillyard, Gr. to Viscount Eversley, Heckfield, Hants; Third ditto, 1l., Mr. G. Thomas, Gr. to J. Baxendale, Esq., Whetstone.

CLASS F.—GRAPES, White (Single Dish).

First Prize, 3l., Mr. G. Smith, Gr. to H. Littledale, Esq., Liscard Hall, Cheshire; Second ditto, 2l., Mr. C. W. Alderson, Langley Lane, South Lambeth; Third ditto, 1l., Mr. T. Bailey.

CLASS G.—GRAPES, Muscat (Single Dish).

First Prize, 3l., Mr. J. Embry, Gr. to A. Moss, Esq., Chadwell Heath; Second ditto, 2l., Mr. J. Richards, Grimston Park, Tadcaster; Third ditto, 1l., Mr. H. Baker, Thurmaston, Leicester.

CLASS H.—GRAPES, 12 lbs. weight (Market Gardeners).

First Prize, 3l., Mr. H. Baker; Second ditto, 2l., Mr. C. W. Alderson; Third ditto, 1l., Mr. H. Smith, Twickenham.

CLASS I.—PEACHES (Single Dish).

First Prize, 3l., Mr. G. Sage, Ashridge, Berkhampstead; Second ditto, 2l., Mr. T. Frost; Third ditto, 1l., Mr. W. Hill; Extra Prize, 10s., Mr. G. Masters, Gr. to Earl Macclesfield, Sherburn Castle, Oxon.

CLASS J.—NECTARINES (Single Dish, one kind only).

Two equal First Prizes, 3l. each, Mr. T. Frost and Mr. W. Hill; Second ditto, 2l., Mr. T. Page; Third ditto, 1l., Mr. G. Masters.

CLASS K.—MELONS, PERSIAN, OR HYBRIDS FROM IT (the Heaviest).

First Prize, 2l., Mr. T. Harwood, Gr. to G. H. Turnbull, Esq., Down, Kent; Second ditto, 1l., Mr. J. Tapling, Teddesley Park, Staffordshire.

CLASS L.—MELONS, GREEN-FLESHED (Single Fruits).

First Prize, 2l., Mr. J. Bailey; Second ditto, 1l., Mr. W. Kaile; Third ditto, 10s., Mr. J. Taplin.

CLASS M.—MELONS, SCARLET-FLESHED (Single Fruit).

First Prize, 2l., Mr. J. Tegg; Second ditto, 1l., Mr. T. Bailey.

CLASS N.—FIGS (Single Dish of 10 Fruits).

First Prize, 2l., Mr. S. Snow, Gr. to Earl de Grey, Wrest Park, Beds; Second ditto, 1l., Mr. T. Frost; Third ditto, 10s., Mr. J. Richards.

CLASS O.—CHERRIES, WHITE (Single Dish).

First Prize, 2l., Mr. Henderson, Gr. to the Duke of Sutherland, Trentham.

CLASS P.—CHERRIES (Single Dish, Black, in Fifties).

First Prize, 2l., Mr. Henderson; Second ditto, 1l., Mr. Ferguson, Stowe, Bucks.

CLASS Q.—PLUMS (Single Dish, 10 Fruits).

First Prize, 2l., Mr. Ingram, Gr. to J. J. Blandy, Esq., Highgrove, Reading.

CLASS R.—STRAWBERRIES (Collection of 3 Dishes, distinct variety).

First Prize, 2l., Mr. R. Smith, Richmond Road, Twickenham; Second ditto, 1l., Mr. R. Clarke, Twickenham; Third ditto, 10s., Mr. P. Stoddart, Wivenhoe Park, Colchester.

CLASS S.—VINES IN POTS (with Ripe Fruit).

First Prize, 4l., Mr. Alderson; Second ditto, 3l., Mr. J. Summers; Third ditto, 2l., Mr. R. Inman, Gr. to J. Lintott, Esq., Forest Hill.

CLASS T.—MISCELLANEOUS.

Prizes, 1l. 10s., Mr. J. Tegg, Gr. to Baron Hambro; Prizes, 1l. each, Mr. Snow, Mr. Horwood, Mr. Wortley, Gr. to Mrs. Maubert, Norwood; Prize 10s., Mr. G. Young.

MESSRS. E. G. HENDERSON & SON'S

NEW GENERAL CATALOGUE

AND

SPRING LIST OF ORNAMENTAL BEDDING AND SUMMER-FLOWERING PLANTS,

Is ready for distribution (free by post) wherein are described the following NEW PLANTS and also special directions for sowing, rearing, and final planting of

SPERGULA PILIFERA,

the admirable substitute for Grass on Lawns, without mowing, of which good established tufts for immediate planting (from Mr. Mongredien's fine lawn at Forest Hill, near to the Crystal Palace), are offered at 4*s.* and 2*s.* per dozen, according to their respective size. Seed Packets, 6*d.*, 2*s.* 6*d.*, 5*s.*, 10*s.*, and 20*s.* each.

BEATON'S NEW SEEDLING BEDDING GERANIUMS of unique and beautiful colours are—
THE IMPERIAL CRIMSON and the MODEL NOSEGAY.

ALLAMANDA VIOLACEA.
CALCEOLARIA AMPLEXICAULIS ALBA.
DWARF DAHLIA, THE WHITE UNIQUE.
" GLOIRE DE FRANCE.
BANKS'S NEW FUCHSIAS.
PELE'S NEW CHRYSANTHEMUMS.

GERANIUM WHITE NOSEGAY.
" SILVER CHAIN.
" ST. CLOUD.
" GOLDEN TOM THUMB.
" " CERISE UNIQUE.
" THE RAINBOW.

OF VERBENAS,

THE MOST SPLENDID COLLECTION EVER OFFERED are those now in bloom at the Wellington Nursery, and to which E. G. HENDERSON & SON have called the special attention of cultivators for the first time this season. The present season is the most suitable for sowing

CALCEOLARIA, CINERARIA, AND PRIMULA,

to secure an early and continuous bloom of the above favourite plants for Greenhouse and Conservatory decoration. Seed Packets, of first class quality in each kind, at 2*s.* 6*d.* each.

Wellington Nursery, St. John's Wood, London.

CHOICE FLOWERS.

BUTLER & McCULLOCH'S SPRING CATALOGUE OF SEEDS,

ARRANGED on a new and original plan, with copious Descriptive and Cultural Notes, and containing many new and rare species and varieties not found in any other Catalogue, now ready and may be had free and post paid on application.

FLOWER, SHRUB, TREE, and VEGETABLE SEEDS, the crop of 1858, saved with the greatest care, by the most eminent growers.

We may also state that the Sardinian correspondent of Messrs. JAMES CARTER & Co., whose Seeds, especially Carnations and Picotees, have given such universal satisfaction, has transferred the Agency from that firm and appointed us his representative in this country. To meet the growing demand for first class flowers, particularly FLORISTS' FLOWERS, we have adopted our usual maxim of charging the lowest possible prices.

Professor LINDLEY in the *Gardeners' Chronicle* of February 5th, has the following notice of B. & McC.'s Catalogue.

"BUTLER & MCCULLOCH'S (Covent Garden) Spring Catalogue of Choice Flower, Shrub, Tree, and Vegetable Seeds. This list fills 84 closely printed 8vo pages, and is remarkably well got up. It appears that the correspondent in Sardinia, who formerly supplied one of the great London houses with seeds raised in that warm part of Europe, has now transferred what he saves to Messrs. BUTLER & MCCULLOCH. Let us add, that it yields to no Trade List in the abundance of its materials or the excellence of its arrangements."

BUTLER AND MCCULLOCH, while drawing attention to their general SPRING CATALOGUE which has elicited such high encomiums both from the scientific botanist and amateur cultivator, avail themselves of the present opportunity to select from its pages the following list:—

(28) ACACIA GRANDIS (TRUE).
One of the most beautiful of the A. pulchella section, producing deep golden balls. Of these graceful and highly ornamental plants our collection embraces no fewer than 47 varieties, all of the most decorative character.

(70) ALPINES.
Of these beautiful little plants we have a splendid collection, embracing all the most admired kinds, collected and arranged for us last autumn by M. Ortgies, the Curator of the Zurich Botanic Gardens. The value of Alpine plants for rock-work is too well known to require comment. These collections we can confidently recommend, containing, as they do, species only of highest merit.

(199) CALLICHROA PEDATA.
A new crimson annual with white eye, very beautiful.

(217 A.) CAMELLIA JAPONICA.
From the newest and finest striped and other varieties of that much admired genus.

(296) CEANOTHUS AZUREUS GRANDIFLORUS.
This, cæruleus macrophyllus, and Fontanesianus are all beautiful varieties of this highly ornamental genus, of which we possess nine splendid varieties. They are equally suited for conservatory and out-door decoration.

CANNAS.
Of these we possess an extremely interesting collection.

(304) CELOSIA (species nova).
A most elegant plant, producing a multitude of long spikes of feathery blossoms, silvery white shaded with bright rose, retaining its colour perfectly when dried, and therefore admirably adapted for winter bouquets; one of the greatest novelties of the season, flowering out of doors or in pots from July to October. Well worth attention. A dried specimen may be seen.

(337) CHRYSANTHEMUM (tall and dwarf).
Of these dwarf and tall varieties we have a fine stock, nearly all of which may be depended upon to produce double flowers, the seeds having been saved from the finest named varieties.

(344) CHRYSOCOMA COMAUREA.
Fine evergreen shrub, bearing a profusion of golden ball-like flowers; one of the handsomest greenhouse plants in cultivation.

(451) DATURA HUMILIS FLORE PLENO.
A magnificent Brugmansia-like plant producing a profusion of deep golden-yellow flowers; very large, double, and sweet-scented. One of the greatest novelties of the season.

(625) HABROTHAMNUS HÜGELLI.
This, purpureus, and Abelli are all handsome varieties of this beautiful genus, which everybody having a greenhouse or conservatory should grow. All three are extremely ornamental.

(665) HIBISCUS ROSEUS SUPERBUS.
This, Syriacus, and Thunbergi we can highly recommend. All are plants of great beauty.

(680 to 688) HOLCUS OR SORGHUM (Chinese Sugar Cane).
Of this important class we have nine new and important varieties from Africa, said to be more ornamental and to contain more saccharine matter, Holcus saccharatus.

(704) INDIGOFERA DECORA ALBA ROSEA.
The above, purpurea, and dosua are all pretty free flowering shrubs, suitable for small greenhouses. They are also highly ornamental out of doors in summer.

(972) PELARGONIUMS.
Of these both large flowered and fancy, very choice, and of other splendid varieties, including Scarlets, we have a fine stock, which cannot fail to prove highly satisfactory.

(1149) SOLANUM CAPSICASTRUM.
Miniature Orange tree, covered all winter with a profusion of scarlet fruit; a handsome plant for greenhouse or sitting rooms.

(1335) BIGNONIA RADICANS MULTIFLORA.
Finer and brighter than radicans; flowers in large panicles producing a splendid effect.

(1468) TACSONIA IGNEA.
This magnificent Passionflower is unequalled for the brilliancy and splendour of its scarlet blossoms, far surpassing in this respect any of its class yet known. It flowers most profusely, grows rapidly, and covers a large space in an incredibly short time. It succeeds in a cold greenhouse, and even against a south wall with a little protection in winter (new and rare).

(1488) TROPÆOLUM TRIOMPHE DE GAND FIMBRIATUM.
Fringed orange scarlet.

CARNATIONS and PICOTEES saved from the most choice Collection of English varieties grown on the continent, and which may be expected to produce flowers of the highest merit, sent out in sealed packets as received from our Sardinian correspondent, whose seeds for many years have given such universal satisfaction, and from which varieties of the greatest excellence have been raised.

For prices and further particulars with regard to the above and other novelties, we refer our patrons to the Catalogue itself, which is sent free and post paid on application.

BUTLER & McCULLOCH, Covent Garden Market.

NEW PRICED & DESCRIPTIVE GENERAL CATALOGUE

Just Published by

MILNE, ARNOTT, AND CO., Successors to Chandler & Sons, and will be forwarded free upon application, a General Descriptive CATALOGUE, containing select priced Lists of new Hybrid Achimenes, Camellias, Azaleas, Ferns, Stove and Greenhouse plants, Chrysanthemums, Dahlias, Fuchsias, Pelargoniums, Verbenas, Petunias, Phloxes, Bedding Plants, hardy Trees, Shrubs, Fruit Trees, &c.

Wandsworth Road, London, S. Established upwards of 60 years

ROYAL SOUTH HANTS SEED ESTABLISHMENT,
UNDER THE PATRONAGE OF H.R.H. THE PRINCE CONSORT, THE AGRICULTURAL SOCIETY OF INDIA, AND THE LEADING AGRICULTURISTS OF THE UNITED KINGDOM.

PAGE AND TOOGOOD'S STOCKS have produced the finest specimens exhibited at Smithfield, and are so well known and appreciated that comment on their part is unnecessary. Their prices compete with any house in the trade.

PRESENT PRICES, Carriage Free to all parts of England:—

	Per lb.—*s. d.*		Per lb.—*s. d.*
Skirving's Swede	0 6	Hardy Green Round	0 6
Page's Improved	0 8	Early Six Weeks	0 6
Ashcroft	0 6	Kohl Rabi	2 6
Greentop	0 6	Yellow Globe Mangel	0 6
Sussex, or Jeffery's	0 9	Page's Impl. Orange Globe*	0 8
Tankard	0 7	Red Globe	0 7
Red Round Turnip	0 6	Elvetham Long Red	0 7
Page's Improved Red Globe	0 8	Long Red	0 6
Scotch or Bullock	0 7	Long Yellow	0 7
Pomeranian White Globe	0 6	White Belgian Carrot	1 0
Early Green Globe	0 6	New Red	1 3
" White Tankard	0 7	Long Altringham	1 3
Red Tankard	0 7	Cattle Cabbage	2 6
Green ditto	0 7	Cattle Parsnip	1 0
Yellow ditto	0 7	Dwarf Essex Rape	0 4

* Bulbs of this variety have acquired the enormous weight of 44 lbs., as shown at Smithfield Club.

BUCKWHEAT, MUSTARD, LINSEED, TARES, SAINFOIN, HOLCUS SACCHARATUS, 1*s.* per lb.

Fine PERMANENT PASTURE GRASS, ITALIAN RYE-GRASS, CLOVER, &c., at lowest market prices.

Special contracts for large quantities. Seeds packed for exportation to all parts of the world.

Oxford Street and Above Bar, Southampton

SUTTON'S CHAMPION SWEDE.

NOTIFICATION.

SUTTON AND SONS respectfully intimate that owing to the great demand they have quite sold out of seed of this fine sort of Swede.

The following excellent sorts can still be supplied:—
IMPROVED WHITE SWEDE
SKIRVING'S IMPROVED PURPLE-TOP
GRANT'S PINE APPLE | RUSSIAN GREEN TOP.
Price 1*s.* per lb., or cheaper by the bushel.
Royal Berkshire Seed Establishment, Reading.

The Gardeners' Chronicle.

SATURDAY, JUNE 11, 1859.

MEETINGS FOR THE FOLLOWING WEEK.

WEDNESDAY, June 15—Royal Botanic ..... 2 P.M.
THURSDAY, — 16—Linnean ..... 8 P.M.

IF there is any one thing more infamous than another it is the robbery of poor people upon the false pretence of rendering them a service. The columns of the daily and weekly papers literally teem with advertisements from persons anxious to obtain employment; it is with no small difficulty that many of them can spare the money required to make such announcements; and, inexperienced in the world, they too often thus become mere objects of plunder by the harpies who infest this modern Babylon.

Let us explain one of the methods in which this nefarious practice is carried on. A. B. advertises that he or she is in want of employment. In a day or two a letter is received, purporting to come from a London registry office, informing the advertiser that upon remitting the amount of a "registration fee" he or she will stand an excellent chance of obtaining the employment sought. To this is added a hint that some places of the kind wanted are just then vacant. The simple advertiser remits the fee, which is either 2*s.* 6*d.* or 5*s.*, and hears no more of the matter. Patience being exhausted, personal inquiry is instituted, when it is discovered that there is no registry office at the place to which the fee is sent, nor is anything to be heard of the gentleman who has received the fee. The end of the matter is that the poor advertiser is victimised. We have taken the trouble to inquire after one of the persons engaged in this kind of swindling; and we find him to be well known to the police, who are also acquainted with his practices. There is hardly a day but some one is looking after the registry office which has swallowed the registration fee, but of course to no purpose, since the registry office does not exist. During this very week five or six sufferers, among whom are two young girls, have been endeavouring to discover the man. What is very surprising, the district postman is in the con-

stant habit of redirecting the ingenious gentleman's letters to another part of the city.

Let us hope that all who read this statement will draw attention to it; and so caution advertisers against falling into the trap that is set for them.

THE Council of the Horticultural have just issued the following important notice:—

"The Council have to-day the satisfaction of issuing the first number of a monthly report upon the proceedings of the Horticultural Society, and of informing the Fellows that the continuation will be regularly forwarded by post or otherwise. It is intended that this monthly issue should contain an account of all matters of interest connected with the Society; those of merely a temporary nature being printed on the wrapper, while the part which is regularly paged will receive subjects of permanent importance, such as Reports of Councils and Committees, Accounts of Meetings, or other proceedings and matter of general Horticultural intelligence. *A second ballot for plants*, of which a list and particulars are annexed, is arranged to take place at the rooms of the Society of Arts, which have been liberally placed at the service of the Society. The Council also trust to be in a position to make a highly important communication with reference to the formation of *a large garden near the Metropolis*, upon terms advantageous to the Society. Should their anticipations be realised, the arrangements connected with so great a change will call for all the means which the Society can possibly make available. It having been ascertained that gardeners are most unwilling to send their valuable plants for exhibition in a gas-lighted room, in consequence of the injury they sustain from so dry an atmosphere, the Council have determined upon incurring no further expense in that direction, and *upon abandoning the Meeting which has been announced to take place in St. James's Hall on the 29th and 30th of June.* This will not, however, affect the Grand Fruit Exhibition in December next, which will certainly be held in London. The disinterested support which the Society has received from the public during a period of very great difficulty, and the prospect now opened of the sacrifices which have been made being about to be amply rewarded, lead the Council to rely with confidence upon the measures now announced being regarded as the dictates of a sound and prudent policy, by which they hope and believe the Horticultural Society will be preserved in the high position it has so long occupied among the most useful associations of the United Kingdom, for the advancement of every branch of Horticulture."

It is understood that the situation contemplated for a large garden near London is the centre of the land at Kensington Gore belonging to the Royal Commissioners of the Exhibition of 1851. Should the arrangements for obtaining this ground be brought to a satisfactory conclusion, there can be no doubt that the place would be by far the best near the metropolis. We do not mean that it would be as good for all plants as if it were 20 miles away from town; but that, in connection with a small garden of supply, which would be necessary, it would be an admirable place for exhibiting everything that is going on in Horticulture, in the most advantageous manner. And as to soil and exposure, it is infinitely preferable to any place on the cold, heavy, unworkable clay on the north of London.

M. LOISEAU recommends that the usual method of STRIKING CUTTINGS should be altered. When, he observes, a cutting is put in perpendicularly, the sap, whose natural tendency is to rise, is expended in pushing forward a new bud instead of forming a root. But if a cutting is laid horizontally or even with its lower end higher than the upper, that is not the case; the sap prefers to move towards the higher end, or at all events is evenly distributed between the two extremities. This causes the callus to form so rapidly that if the cuttings are put in a warm place, 8 or 10 days are enough to secure its formation or even that of roots.

Autumn-struck cuttings taken off a little before the sap ceases to move, and treated in this manner, form their callus so quickly, that they are ready for planting out before winter. In winter it is necessary to put in cuttings in a gentle heat (*une couche tiede*), or beneath leaves deep enough to keep off frost, and even then a callus will be found to have formed by spring time.

As for cuttings taken off in May they *must* have more heat, such for instance as is afforded by a hotbed or a hothouse, and they will then take in many cases in a few days.

—— M. LOISEAU also states that HERBACEOUS GRAFTING may be practised on woody plants, any time after the middle of May, without taking any greater precaution than is demanded in ordinary grafting—at least in the case of Apples, Pears, and the like (*fruits à pépin*). Grafts put on in this manner he finds grow so fast that they soon overtake the spring grafts; that a better junction is formed between the scion and stock; that as it is immaterial whether the bark will run or not it may be practised all the summer long without any particular precautions. He also adds that if done in the course of the summer it has this great advantage over budding that you may have shoots 12 or 14 inches long the first summer, even if the operation is not performed before the 1st of August. Another advantage which he finds in herbaceous grafting consists in being able, when spring grafting misses, to graft over and over again at a late period: a power extremely convenient when old branches that have been headed back have to be grafted (*Journ. Soc. Imp.*).

—— It is not clear to every one whether smearing trees with pitch or grease in order to keep off insects is mischievous or not; some people asserting that such applications are highly dangerous, others that they are highly beneficial. Considering how important it is to settle this point, Mr. JAEGER has recorded in the *Monatsbericht für Pomologie* the result of some experiments that he has tried.

A mixture of tar and whale oil was applied to some fruit trees six years old in perfect health, in the spring before they were quite in leaf. 1. A tree, the trunk of which was covered all over by the mixture, pushed feebly; when the tar became firm the bark burst in various places, and began to bleed there. By the autumn the tree was well nigh dead. 2. When the trees had their stems covered only one-third or half-way up, they took very little harm, pushing freely the year afterwards. 3. When only a ring a hand's breadth wide was tarred they took no harm at all.

Hence it is to be inferred that a mixture of tar and whale oil may be safely used to form a ring which caterpillars or other insects that crawl up trees from the ground cannot possibly pass.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.

THE anniversary festival of this institution was held on Wednesday last in the Crystal Palace. Covers had been laid for 247, leaving a considerable margin for casual visitors, but so unexpected were the numbers who attended, beyond those provided for, that the anticipations of the committee were agreeably surprised, although somewhat puzzled for the moment. In order, therefore, to seat all who presented tickets it became necessary to improvise a supplemental dining room without delay, and thus some 50 ladies and gentlemen were accommodated. Ladies were numerous, and sat down with the gentlemen at table. A military band enlivened the dinner by the performance of select musical compositions.

The Chairman on taking his seat was supported by Sir Joseph Paxton, M.P., General Dickson, Admiral Cary, the Rev. H. M. Bellew, C. W. Dilke, Esq., Sir Charles Fox, Mr. Charles Horsley, one of the Directors, Mr. Farquhar, the Chairman of the Crystal Palace, &c. After the removal of the cloth "Non nobis domine" was sung, and accompanied on the pianoforte.

The Chairman then rose and said: "Ladies and gentlemen, in all parts of the wide spread dominions of this country, at every social feast and meeting, the first toast that is given is that of her Most Gracious Majesty. That toast is never accompanied by any remark or by any preparatory observations, because it requires none. It speaks directly to all the affections of all her Majesty's subjects, who consider it a great privilege as well as a duty to invoke in that toast 'Long life and health to her Majesty the Queen.'" The toast was drunk with all the honours, the company standing whilst the national anthem "God save the Queen," was sung.

The Chairman proceeded: "Ladies and gentlemen, the next toast which in the natural order follows that of her Majesty, is the health of the Prince Consort, the Prince of Wales, and the rest of the Royal family." The toast was drunk with enthusiasm.

The Chairman: "The next toast I have to propose to you is, 'Our gallant defenders the Army and Navy.' The approbation that you have been pleased to pass upon that toast shows me how unnecessary it is for me to add any observations to it. The gallant actions of both those highly meritorious and noble services are recorded in history; to those it is not necessary to allude, but the more recent ones, and perhaps the most glorious exploits of our army we have only had in telegrams from the East, where we have been surprised to see in one victory after another, how bravely they have conducted themselves. Now that the revolt has been crushed we require time to gather our senses together, to form a fair estimate of the exploits of our army. Whatever men can do, British soldiers have proved that they are the people to do it, as they have ever done. The endurance, gallantry, fearless intrepidity, and the marvellous manner in which they threw themselves on countless hosts, how they drove them back and the way in which they succeeded has become the object of envy of all foreign nations, and the admiration of our own. With respect, however, to the other branch of the service, there has not, recently, been any opportunity for showing what they can do, excepting in a few naval tactics, and where they have landed troops in different parts of India. But should the united arms of army and navy be required, we well know that they are composed of the same stuff, the same material, that won laurels for themselves at the battle of the Nile and the battle of Trafalgar, and wherever and whenever the sons are called upon they will be able to give as good an account of themselves and their foes as their forefathers have done before them. I have lived the greatest part of my life at the largest naval station belonging to this country, out of Great Britain, namely, North America, and I had the honour of the acquantance of a large number of naval men. Of the seniors I say nothing; their deeds are recorded in the naval history of the country; but with respect to the lieutenants of the navy, a more independent, a more brave, a more useful, or a more serviceable body of men is not to be found in any branch of her Majesty's service. The only regret I have is, that they are not better paid, and that their promotion is not more certain, rapid, and somewhat commensurate with their deserts. Having said so much on that head, I think I may say in the company of the ladies that these 'jolly tars'—a word I like myself, for I am a jolly old man—that these jolly tars are as invincible in love as they are in war. I recollect a story told me of a lady who was suffering very much with a severe pain in the side. She went about complaining of some affection of the heart which she feared was hopeless, and would become fatal, and she was asked if it was ossification that was the matter with her? She shook her head, laid her hand on her heart, and said. 'Oh! no, sir, it is something far worse than that; it is a lieutenant of the navy.' Having said this, ladies and gentlemen, I have great pleasure in proposing those toasts, 'the Army and Navy,' coupled with the healths of the gallant General Dickson and Admiral Cary." (Drunk with all the honours.) Both the gallant officers returned thanks in a few brief sentences for the honour done to their respective services.

Sir Charles Fox next rose, and proposed the health of the Right Hon. the Earl of Carlisle, the President of the Institution, which was responded to most warmly.

The Chairman: "Ladies and gentlemen, I am about to propose to you what is usually called 'the toast of the evening,' and that is, 'Prosperity to the Gardeners' Benevolent Society.' I assure you when the honour was proposed to me to preside at this distinguished meeting, I demurred very considerably to it, because I felt that there were so many other people, who, both from their knowledge of gardening, their station in society, had better ability to perform the duties of the office that devolved upon me, that I should have preferred to have transferred those duties to their hands. I felt that it was not any power of speech that was required, but a person who could extract the money from their pockets in some other way. However, if I was put into the witness-box I could give impartial testimony, and I would with sincerity and truth declare that I know of no body of men in this country for whom I entertain so great a respect and regard as the gardeners of England. I have visited this country at different intervals and marked its progress. In nothing have I noticed it so much as in the decorative art of the gardener. I believe we are more indebted to the gardener in this country than we, who have lived in the country, are aware of. There are one or two things expressed in the report which I should like to see expunged. I see it called the 'trade' of gardening. Now when I consider the scientific knowledge, the general attainments, the great skill, the particular accomplishments necessary to make a gardener, I don't see why we should call him a 'tradesman.' Nor will I advance him to the learned professions, but I would put him among the liberal professions of England. There is also another word in the report which I should like to see expunged, and that is, that this Society is called a 'charity.' It is no such thing as a charity. There is a great deal in words, more than we think—a great deal in the station of a man, and I would therefore advance the gardener himself to the dignity of a profession. This would raise him in the estimation of his employers, and whilst he and they contribute largely out of their profits to the wants of their aged body, it is very wrong to call that a charity. I should be wrong so to call the grateful offerings we have to make here to those who have contributed so much to our pleasure and modified our taste—and we ought not to hurt their feelings by calling it a charitable association. Those two words I hope to see expunged. This Society, by an abstract which has been placed before me, I am told was founded in the year 1838, but did not make any progress until 1840; since then it has steadily and gradually progressed. Well, this society may not certainly have been called by that name before 1838, but it existed long before then, for our first forefather Adam was a gardener, and I believe myself that if the female gardener had not eaten before she had seen the beautiful fruit which has been distributed here at this particular season of the year, she would hardly have risked so much for an Apple. It must have been very inferior in flavour to the fruit which has been spread before us to-day; still a moral may be drawn from it, which is that a gardener may admonish his wife not to touch forbidden fruit. The pensioners of this society, I see, are allowed to reside in any part of the United Kingdom. Well, there is very little in that; but I see by the number on the pension list that the average age is 73 years. Gardening must be a very healthful occupation; if the average age is 73 a great many must be over 100 years old. I strongly recommend the occupation of a gardener. I see again that no man can be placed on the list of pensioners unless his character will bear the strictest investigation. Well, I think the Society are not likely to have many applicants, for I never yet saw the man whose character would stand the test of the *strictest* investigation, and I should be very sorry to trust my character to such an examination. The stock is invested in Government funds, and the treasurer is called Robert Wrench, Esq. A capital name, as he will be wanted to put the screw on occasionally, but I hope it will be unnecessary in this case to put the screw on anybody. That's the business part of it, and now, ladies and gentlemen, allow me for one minute more. I hope I don't intrude myself too long upon you. You must recollect that this is the object for which we have met here to-day—it is to aid the benevolent institution of the Gardeners' Society. I said before that we are more indebted to the gardeners of this country—much more than we are aware of. I have been, on a small scale, myself a practical gardener; and I know that the progress of farming is built on the experience of the gardener. Now there are three important things which you all know must be done if you wish to succeed in farming or gardening, and they are—make your land dry, let it be warm, and keep it clean. Those three great axioms we owe to the principles of underdraining shown us by the market gardener; the deep trenching and the deep and beautiful cultivation which they practise. Therefore let us give praise where it is due. Here to-day we are honoured, as every society must be honoured who has the good fortune to have it, and as every society must receive a great advantage from it—I mean the presence of the ladies. I am delighted they are here, because a reciprocal benefit is derived, both by the ladies from the gardener and the gardener from the ladies. They give a refined taste, by the means of their art, to the ladies of the land, for they do that work which cannot be done without skill, and the ladies, on the other hand, are the great patronisers of the gardeners. Show me a lady that is fond of gardening and I will show you a lady of refined taste, and those domestic qualities by which you can judge of her character. It is a very great advantage and honour to the gardener to have had the ladies here, and I think the ladies are in their proper sphere when patronising the gardener, who is contributing so much to their taste and enjoyment. There are two words in this report which I have said I object to, and here are some more. There is a plant called 'Prime Minister,' and I should like to hear what Lord Derby would say to this description of Lord Palmerston, or *vice versâ*—'Orange crimson mouth, fine form, excellent spike,' whatever that is, and 'a good bedder.' Then I find in the description of a highly respectable gentleman—who may bring an action for damages—here is Lord Raglan described as 'having a fine eye, not constant, and with rather loose habits.' There is another gentleman who is connected, as the head, with almost all the religious and philanthropic societies in London—I mean the Earl of Shaftesbury. No more worthie man is to be found; but he is described here as 'a fine plant showing the white of his eyes.' With respect to the ladies, don't think they ought to be exposed in this way. There is the Princess Matilda, whoever she is, 'has a rosy blush, and is very free.' One lady, whose name I shall not give, is celebrated for her 'beautiful white neck.' Then there is 'Mrs. Church. She has 'a full throat, great constancy, and may be depended on.' Now what a character that is, for there are very few that 'may be depended on.' Notwithstanding these latter words that might be altered there is a great deal to admire, a great deal to applaud, and a great deal of scientific knowledge in the gardener. The object of this meeting is to raise a subscription to aid this benovolent Institution; it is n

arity, and I should be sorry to call it a charity. nstitution' is not the word you would choose to express charity by. The ladies are the patronisers in this country the gardeners and the garden—they are in fact the great tronisers of gardening—and they could patronise nothing tter. Now there is one subject I wish to make mention of. d that is that when people employ a gardener—and no one nploys them except persons of property—I hope the gardener ll say 'We have a society, and I hope you will in addition to y salary contribute a guinea a year to the funds.' If the rdener asks his employers to contribute a sum that is not to into his own pocket; but to help to provide for his brethren their old age, he will suffer no depreciation and find very w to refuse. I throw out the suggestion. Had I happpened have been an humble member of the House of Commons at e time when Mr. Disraeli talked of a 60*l.* savings' bank qua- ication for a vote, had I the means, I would have given a te to every gardener in England. Ladies and gentlemen, I all conclude a somewhat lengthened speech by recommend- g to your notice the interests of the Gardeners' Benevolent ssociation, and that it is well orthy and entitled to your pport, I am sure you will all ree with me."

The Rev. H. M. Bellew se and proposed the health the Chairman, "who was ke distinguished by his ients in literature, in law, d the honesty of his purpose. rdeners well knew the value a good transplant, and they d presiding over them at at moment a gentleman who s a transplantation amongst em. He trusted they would spond to the toast, and drink e health of their hon. chair- an 'right *stick* off.'"

The toast was drunk with unds of cheering. When e applause had subsided, the airman in replying to the ast said, "I assure you that never rose before with a dif- ulty to express what I feel on occasions of this kind eater than I do at this mo- ent. I thank you with all y heart for the very kind ception you have given to y name—a reception I can ver forget. The rev. gentle- an who proposed my health s gratified me in one par- ular thing, and that is that has understood the motives om which those books of ine have sprung. I should spise myself as much as any- dy could, and look with in- fference and contempt upon yself if I had written a mere st book. I addressed myself my countrymen to point out rtues as well as errors, and I erefore put a little sugar on e pill before they swallowed It is a trick of trade, the uggists understand it, and hy should not authors? When vere advice is given to people is put off to another day; I ose a vein of humour, and hile laughing at what I wrote might be that some of those orals I wished to teach were us inculcated. The rev. gen- man in ascribing those mo- res to me has done me honour, I feel they might be open to different interpretation to at which he has put upon em." The hon. gentleman sumed his seat amid the rmest congratulations; in ew minutes he rose and pro- sed the health of the Vice- esidents of the Society, upled with the names of Sir seph Paxton and Mr. Bohn. they wanted to know more out the subject of the toast, he could say was *circum- ice*, Sir Joseph might justly y, "I am the architect of my n fortune and the architect this building."

Mr. Bohn having returned anks, congratulated the lies on being present, and whose influence he attri- ted the numbers being much ger than they could accom- odate. He referred with gret to the emigration that as going on among gar- ners, and said that it almost rved us right, for their wages re only 14*s.* or 15*s.* a week stead of 40*s.* or 50*s.* He hoped at the Society would con- ue to flourish, and thanked em for receiving his name th the toast of the "Vice- esidents."

Sir Joseph Paxton next rose, and was received with cheers. e said that "the Society was a very useful one, and he ould be glad of any donations they might be pleased to give. e great centre of civilisation, London, was also the centre of nevolence, and the fittest place for an institution of that nd to take up its position in. After looking at the number of sitors with which they had been honoured that day, there n be no doubt but that the Crystal Palace was the proper ace for a gardener's dinner. He had long believed so, but at day's result had convinced him. They had had a hundred ore than on any previous occasion, and more than ever they d before, they had had the advantage of the ladies, and the st time for such a gathering was, no doubt, a flower show. ie Directors of the Palace had met the proposal in the most eral spirit, and were entitled to the entire approbation of e Society. The Company had done great things for horticul- re, and are giving it every encouragement; indeed, their pport was exerting a most powerful influence all over the untry. He should propose the health of the Directors of ystal Palace Company, coupled with the name of Mr. Far- har, their chairman." The toast was drank with three nes three.

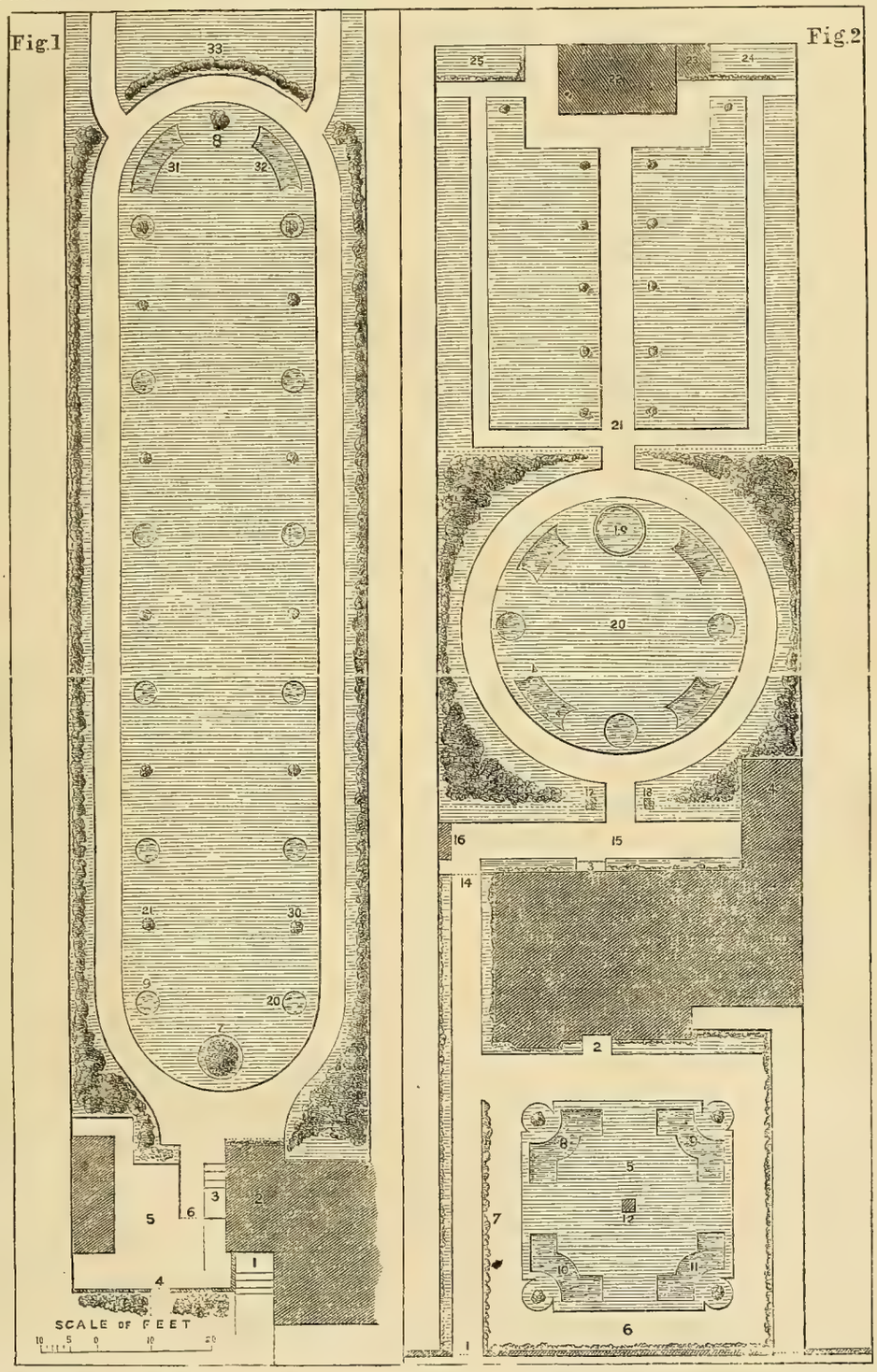
Mr. Farquhar returned thanks in a very appropriate manner r himself and co-directors, and sat down amid applause.

The Chairman next proposed "The health of the Secretary," which was heartily responded to. The latter read the statement for the past year, and announced the subscriptions of the evening to be 340*l.*

"The Ladies" was next drunk, and having been responded to with cheers the company separated.

PLANS FOR VILLA AND SUBURBAN GARDENS.

Plate 4.—Two plans are here given, neither of which however call for any lengthened description; they are both of a very simple kind—fig. 1 especially. It was recently designed by me for a semi-detached residence. The owner being fond of archery requested that an uninterrupted space should be preserved throughout the whole length of the ornamental portion; and in the plan as actually executed the bed



7 and plant 8 are omitted. The following references will explain the arrangements:—1, the front door of the house; 2, from which you pass to the garden by steps 3; 4 is the entrance to a small yard and offices 5; there is also admission to these from the garden at 6. The circular bed 7 was intended for dwarf evergreens, and 8 as the position for a handsome Rhododendron already on the ground, but the exigencies of archery demanded their omission. The 12 circular beds 9 to 20 are for "bedding" plants in summer. The alternating permanent plants 21 to 30 are standard Roses, and beds 31 and 32 for dwarf Roses. A Laurel hedge with the small shrubberies near the house and offices surround the ornamental garden. The portion devoted to vegetables, commencing at 33, extends beyond this for about two-thirds the whole extent shown. A road common to all in the "Crescent" passes some 10 or 12 feet from the front windows.

Fig. 2.—It may be questioned whether in so small a garden as the one here represented, a plot for vegetables would not be advantageously omitted. I was, however, requested to provide for such when preparing the original of this design. And the arrangement as here given may be of use in laying out a greater extent of ground upon the same principle. The residence is detached, and the front garden separated from the public thoroughfare by a wall with iron palisades. The whole garden is also surrounded by a low wall. At 1 is the principal entrance from the street, 2 the front door, 3 the garden entrance, 4 a portion of the offices. The small flower plot 5 is surrounded by a gravel walk 6, and an evergreen hedge 7; beds 8 to 11 are on Grass; a vase 12 occupies the centre. The kitchen entrance is at 13. At 14 is a trellis through which the garden is entered by a door of like material, 15 a broad gravel walk, 16 a seat, 17 and 18 two vases, 19 a basin of water and fountain; these last were built by a former occupier. Seven beds surrounding the circular plot 20 are for ordinary "massing" plants, or they may be dwarf permanent ones to be intermixed with gayer kinds in summer. The boundary shrubbery is intended merely to hide the wall, and to mingle in appearance with the plants in the adjoining gardens. When this is effectually attained an apparent extent will be given to this small plot, of which the plan can give no idea. On either side the walk, 21, are pyramid fruit trees; these will form a vista to carry the eye in a pleasing manner to the small greenhouse 22, which, when filled with gay plants and the front doors thrown open, will form an interesting feature from the house. On the walls in the vegetable garden fruit trees are trained. At 23 is the greenhouse boiler, 24 and 25 are receptacles for pots, rubbish, &c., concealed by evergreen hedges. *George Lovell, Bagshot.*

[We have to announce with very great regret the termination of these little articles in consequence of the decease of the talented author. Mr. Lovell was the son of a gardener to Sir Hussey (afterwards Lord) Vivian, and was himself brought up to the business. After spending many years in qualifying himself for a place, he was engaged by the late Marchioness of Hastings to take charge of her very pretty grounds at Efford House, near Lymington. It was here that he acquired that fondness for the more scientific departments of Horticulture, in which he became distinguished. Already in 1849 he had produced a very good paper, "On the Growth and Maturation of the Wood of Plants," which was printed in the fourth volume of the Journal of the Horticultural Society, to which he afterwards made further contributions. When Lady Hastings left Efford, Mr. Lovell found employment in the Nursery of Mr. Standish of Bagshot, and so remained till the period of his death, occupying himself chiefly with Landscape Gardening, for which he possessed a very decided taste. If we are not misinformed, he had a large share in the designs for the Queen's Pavilion at Aldershott. Exclusive of his "Plans for Villa Gardens," he communicated many other articles to our columns, the latest of which were on Rhododendron cultivation.

Mr. Lovell died at Bagshot on Monday the 30th of May, of tubercular peritonitis, in the 37th year of his age, to the very great regret of all who were aware of his many excellent qualities as a most amiable man, as well as of his solid attainments as a practical and scientific gardener. Ed. *G. C.*]

Home Correspondence.

Budding Vines.—An amateur Grape grower will feel greatly obliged to any of your readers for some information relative to this subject; whether in ancient or modern practice any case has occurred where a bud of one season's growth has in the month of August of the same season been inserted in the stock of another Vine and produced fruit the next season; or rather is it practicable for buds (similar to those used in budding Roses) to be taken from a Vine that will be sent out in August 1859, to be inserted in another stock, and produce Grapes fit for exhibition in September 1860?

Foul Ponds.—For 20 years I have had such a pond as is described at page 485. It was cleared by navvies and planted with white Water Lily, yellow and pink Rush, yellow Flag, and other plants. The surface has been kept clean by ducks sent on daily throughout the year. Fish have recently been put in, as the ducks have destroyed nearly all the plants, but the water is uniformly clear by pumping plentifully from the well of the house. *A Subscriber, Toxteth Park.*

Bath Asparagus.—Could you favour me with the name of the enclosed, which is sold in our market in bunches as a substitute for Asparagus, and when dressed as that vegetable is very good indeed? It is found in the woods in this neighbourhood, and has a root not unlike that of the double white Narcissus. *J. Smith, Bath.* [It is Bath Asparagus, or Ornithogalum pyrenaicum.]

Earwigs.—Your correspondent "J. C. H." Essex, had better try flower pots as traps for these. The plan is to get some No. 40 or 60 flower pots, and fill them about half full of perfectly dry Moss, then turn the pots on the top of all the Dahlia or any other stakes he may have in the garden; look them over every alternate day and kill the earwigs collected; be sure to keep dry Moss in the pots. This is an old and simple plan, but I think that it is the best yet. *H. Smith, Darley Dale Nurseries, near Matlock.*——About two years ago a gardener told me he had a frame full of Cucumbers, which were nearly destroyed by earwigs. I told him to get as many tobacco-pipes as he could—old ones with a little ashes left in them, and to put them in the frame. In one week he came to tell me that he had thus cleared his frame. But for this plan I could not have a Dahlia bloom entire. *Robert Ashcroft, West Derby.*

Rhododendron Nuttallii.—This is now flowering in the gardens of the Archdeacon of Canterbury at Saltwood, and is I think without exception the most beautiful thing of its class, *i.e.*, of those Rhododendrons producing tubular flowers. It is sweet scented, and a magnificent plant even without blossoms. I have been informed that this is the first plant of its kind which has produced flowers in England; is that the case? *Wm. Acomb, Saltwood, Hythe, Kent.* [We think not.]

Foreign Correspondence.

Camp, Queensborough (or New Westminster), March 20, 1859.

BRITISH COLOMBIA.—*Discovery of Lake Burnaby.*—We started from here four days ago on an exploring expedition up the Frazer. The stream at first was not thought to be of so much importance as it has since turned out to be, but as we got a mile or so up it deepened greatly and widened, the current running with great rapidity, 5 or 6 miles an hour and more in the rapids, of which we had a continuous succession nearly all the way up. I cannot describe the beauty of the scenery, as bend after bend opened to the view, the hill sides crowned with mighty Cedars and Douglas Pines that seemed imminent rather than merely impending over our tiny canoes as they passed through the ravines, across which they grandly flung their arms. Every half hour we came to some huge log that had fallen across the water, then we had to unload everything and cut away branches or little trees, and carry the canoes over by main force. Sometimes we had to carry them over the banks for some distance, cutting a path as we went.

The river was much swollen from the snow beginning to melt, and as we were the first Europeans who had been up it, there was no feasible passage open, we had to pole in all three-fourths of the way, and the greater part through rapids, the undertow of which was really dangerous, at least it put swimming out of the question, as each of us experienced before the expedition was over. It was quite a little excitement, and joined with the fine weather, and the bright and clear lights and shades, made the porter's work we were going through a real pleasure. At the first portage the canoe suddenly turned over and in I went; but I got hold of a branch or two, and with the greatest difficulty, amid the cheers and jests of the Indians and my companions, I got at last safe to shore, but had to sit all the rest of the day in wet clothes.

At length the shades of evening began to fall, and we busied ourselves in felling trees, cutting wood, and building a huge fire for the first night's camping out preparatory to "turning in." We found a beautiful nest under some enormous Cedars near 200 feet high, and from 5 to 8 feet in diameter (as near as we could calculate without a measure), fringed round in a circle by low saplings which were preparing to take the place of the parent trees. On scraping away the snow we came to some of the most glorious moss you can fancy; that done we ranged ourselves in a circle round the fire, piled up the wood in a handy spot for firing at night, pulled out the blankets, and produced the eatables, pork and biscuit called by the Indians "muck-a-muck," topping out with a "horn," *anglicè* a drink of whiskey. And then the fun began; tales of forest life alternating with B.'s experiences in the Gulf of Tartary, and ending in a regular round of songs which made the still, silent, old forest glades ring again with sounds of unwonted merriment. The dusky sons of the forest who "canoed" for and with us, got their "muck-a-muck" and formed another camp not far from ours, and so the night drove on with songs and clatter till one by one we sank into silence, and after a little earnest prayer for ourselves and those far away, we forgot all and everything till daybreak woke us to another day.

Then came breakfast, the same as supper; then "All on board" was the cry, and we embarked. Our canoe, the largest, and I had almost said the most experienced, took all the baggage of the party (except two Enfield rifles), with four days' provisions for the whites, that for the Indians by some oversight having been forgotten. We pushed over "portage" and big fallen trees that blocked up the passage every 100 yards, poled our way through rapids and all sorts of impossible looking places, crashing through bushes till all at once we came upon a huge tree which was particularly difficult to pass. All got on the tree, the *voyageurs* and Indians strove to get the canoe across; to help them I passed B—— on the tree, his indian-rubber boots slipped, and bang he went into the river, emerging like a drowned cat, cold and shivering for the rest of that day. I opened both eyes wide in the hopes of finding sandstone, limestone, ironstone, and coal; and in the broken banks of the river, and also in its bed, I at last discovered sandstone and a sort of shale, preliminary I trust one day to coal, which must in my opinion be somewhere hereabouts.

Thence proceeding full of hope we at length emerged into a beautiful lake 2½ miles long, which we called "Burnaby Lake," after a friend of mine of that name. It is situated seven miles from Queensboro', with fall enough to supply any amount of water for the new town. There are lots of game, swans, duck, teal, &c., and myriads of fish, salmon trout jumping up in crowds under the very bows of the canoe. We were compelled to camp in a swamp by the side of the lake, in the prospect of making our way across the next day to "Burrard's Inlet," which from its great depth of water may one day, in case of war, be of the greatest importance to Queensboro', protecting its rear by ships of war and the fire of a battery of heavy guns on a sort of "Drake's island" in the centre. All along the river we saw traces of beaver which the Indians, who we afterwards found knew all about the place, did not like our examining, thinking it would interfere with their hunting grounds, on which they partially subsist. Our camp for the second night was on leaves and decaying vegetation, with the water oozing up at every step. Unfortunately it came on to snow and rain incessantly, so we had but poor lodging after all. My boots and clothes have never been quite dry since. The lake rose and we literally slept in the water, and built our fire on logs raised above water; the sides of our camping place we stuffed with brushwood, and the bottom was thickly laid with branches of the Spruce Fir and Arbor-vitæ, which latter gives out a most delicious fragrance. We laid it a foot thick, and added to the bed as the water rose; however it beat us at last, so we decamped and made the best of our way down. And then at what a pace we went. The Indian at the stern gave the word to another Indian at the bow; we glided swiftly past point and tree and snag, rushing madly down rapids that every moment threatened us with swamping—slap on upon thick timber sticking out in the middle of the stream, when a word from the helmsman, a turn of the hand or paddle from the bowsman, and presto—the canoe gave a slight deflexion, and round we went clear of the obstacle that threatened us with destruction. It was perfectly wonderful to see them, so easy, composed, and graceful in the most difficult situations. We had passed our first resting place coming up, and were now rushing down after the smaller canoe that had started before us when we saw a man on the bank—our corporal in undress uniform, dripping like a Naiad, waving his arms to us to stop, and shouting above the noise of the waters that all was lost. A little inquiry supplied the intelligence that their canoe, which had broken its bows against a log in passing down the rapids we were approaching, had gone head foremost under, and had sent them all flying down stream, they saving themselves with considerable difficulty by catching hold of boughs and pulling themselves by main force ashore; the two rifles and the canoe, with part of B.'s uniform and great coat, having fallen a sacrifice to the angry god of the river. However, the men were saved, so it all came into the day's work. We gave them shirts and coats warm off our bodies and took them in, and though with a double load and eight men in our canoe we got safe over all difficulties, and returned to our anxious friends after four days' absence with the satisfactory intelligence of our discoveries. On our way back to camp I pricked my leg with a plant which grows in marshy places here, the stem of which is jointed, and covered with sharp pointed hairs. Inflammation immediately came on, and was succeeded by very severe pain, which has confined me to my tent. If from so imperfect a description you can tell me its name, my friends and I should be very glad to know it. [This was probably the *Panax horridum*, figured by Sir Wm. Hooker in the first volume of his valuable Flora Boreali-americana, the plant which according to Douglas, who found it in Oregon, is the "Prickly Ash" of the Alexander Mackenzie's voyage. Douglas states in the above work, that it is common on the west side of the Rocky Mountains from the Head Springs of the Colombia to the coast. Dr. Scouler met with it at Queen Charlotte's Sound. "The entangled stems of this remarkable plant are described as a great impediment to travellers in the woods of N. W. America." *Hooker.* We hope our enterprising correspondent will be able to send home ripe seeds of it, and of the Cedar and Arbor-vitæs he speaks of, as well as of other natives of British Colombia. Old Westminster should have its neighbourhood some of the productions of New Westminster, the name which it is intended to give the capital of British Colombia.]

Societies.

CRYSTAL PALACE HORTICULTURAL EXHIBITION *June* 8.—A fine day and an excellent exhibition brought together on this occasion a considerable assemblage of visitors.

Stove and Greenhouse Plants were again furnished in great quantities, and in beautiful condition. Indeed nothing in their way could possibly be finer than the magnificent plants which covered the stages of the large round table in the centre of the principal transept. These were contributed chiefly by Mr. Dods, gr. to Sir J. Cathcart, Bart, and Mr. Whitbread, gr. to H. Collyer, Esq., of Dartford, between which the struggle for mastery in this class of plants now principally lies. This time, as will be seen by an advertisement in another column, their merits were regarded by the judges to be equal. In Mr. Dods' group were noble examples of Allamanda, blue Leschenaultia, Everlastings, among which Aphelexis macrantha rosea was conspicuous; Azalea variegata and lateritia, both still in admirable condition as regards bloom; the fine variety of Cape Heath called Erica tricolor Wilsoni, Coleonema rubrum, Eriostemons, Adenandras, Boronia serrulata, and some very fine Ixoras, more especially a plant of the Willow-leaved variety, on which were such heads of bloom as one rarely sees on this kind. It had been grafted on I. coccinea, which appears to be an excellent stock for it. In Mr. Collyer's group were equally fine specimens of nearly the same kinds of plants, collections of which were also contributed by Messrs. Peed, Green, Page, and Baxendine. Smaller exhibitions came from Messrs. Rhodes, Cutbush, Kyle, Chilman, Smith, Carson, Tegg, and Hamp. Among these were nice specimens of Stephanotis floribunda, Pimelea Hendersoni, Polygalas, Dracocephalum grandiflorum, blue Leschenaultias, Cyrtoceras reflexum, Allamandas, Boronias, Abelia floribunda, Ixoras, Combretum coccineum finely in flower, Everlastings, Cape Heaths, and Azaleas.

Of Plants remarkable for fine foliage there was a large collection from Messrs. Veitch, who contributed among other things beautiful plants of Dieffenbachia picta, Dracænas, Palms, variegated Screw Pines, Maranta vittata and zebrina, Crotons, and the handsome Theophrasta imperialis, and some Tree Ferns. Messrs. Jackson & Cutbush also furnished good collections, as did likewise Messrs. Dods, Colgate, Young, Summers, Oubridge, Rhodes, and Hamp. Among these were the handsome Maranta capitata, formerly noticed by us; Caladiums of different kinds, Cissus discolor, Palms, Ferns, among which was a magnificent example of Platycerium grande from Mr. Dods; Aralias of different sorts, Farfugium grande, Begonias, Dracænas, Musas, and Calatheas.

Orchids were produced on this occasion in better condition than we have seen them at any exhibition this year. Messrs. Veitch had a splendid group, which contained among other things beautiful specimens of White Butterfly plants (Phalænopsis), Cattleya Mossiæ, one of the handsomest varieties of Cypripedium barbatum; various Aerides, among which the Fielding Fox-brush was conspicuous; Saccolabium guttatum, Vanda suavis, the charming purple-lipped white-blossomed Lælia purpurata, the showy clear yellow blossomed Oncidium ampliatum majus, and others. The next group in point of merit came from Mr. Gee, gr. to the Rev. Mr. Ellis, of Hoddesdon. It consisted of Cypripedium villosum, finely in flower; Phalænopsis, the beautiful Dendrobium Devonianum, the yellow Tulip-like Anguloa Clowesi, Lælia purpurata, Dendrobiums of different kinds, Aerides, and Saccolabiums. From Mr. Bullen, gr. to J. Butler, Esq., of Woolwich, came the handsome Dendrobium Farmeri, with numerous racemes of cream-coloured flowers blotched with rich orange; Cattleya Loddigesi, with its lilac blossoms; the showy Sobralia macrantha, Anguloa Clowesi with six flowers, all in perfection; and Trichopilia coccinea. Mr. Woolley had a good group, as had also Messrs. Dods, Carson, Rhodes, Page, and Green. In these we remarked the old Saccolabium curviflorum, Camarotis purpurea, Dendrobium aggregatum, Lælia cinnabarina, Lycaste Skinneri, Stanhopea oculata, and Calanthe veratrifolia.

Azaleas were greatly past their best, and made little display. Tall Cacti, of which two collections were produced—one from Mr. Green, the other from Mr. Bunn, gr. to R. S. Scott, Esq., of Hornsey—were never better, if possible, in flower than they were in May, and were for their number, which was small, very effective. A handsome Seedling Epiphyllum, rich rose and crimson in colour, was shown by Messrs. Fraser

Cape Heaths were again furnished in great quantities and in good condition: but still deficient in novelty. They, however, had their admirers.

Roses in pots showed unmistakably the ill effects of the late bright weather. With the exception of those from Messrs. Lane, which were good, the rest were very much past their best. Among them were Baronne Prevost, Madame Plantier, Coupe d'Hébé, Paul Perras, General Jacqueminot, and other well-known kinds. Of yellows, we noticed a fine plant of the Persian, from Mr. Terry, gr. to C. W. G. Puller, Esq., of Youngsbury, Herts. Cut blooms, very good for the season, were shown by Messrs. Paul. Among them Jules Margottin and Coupe d'Hébé were remarkably fine.

Ferns, both Exotic and British, were in unusually good condition and formed one of the principal features of the show. Of the former the best collection came from Messrs. Veitch, who sent among others splendid examples of Gleichenia flabellata, Speluncæ, dichotoma, and hecistophylla; Angiopteris evecta, Cyathea dealbata, Alsophila guianensis, Dicksonia antarctica, Balantium culcita, Todea Fraseri, Cibotium Schiedei, and Davallia polyantha. Messrs. Woolley and Halley also showed good groups, as did also Mr. Baillie, gr. to C. Carbonell, Esq., and Mr. Summers, gr. to A. Mongredien, Esq. The former sent Todea pellucida, quite a gem; four species of Gleichenia, one, microphylla, very large and fine; Alsophila aculeata, a beautiful Microlepia platyphylla, and Davallia oculata, the last a charming species. Mr. Summers sent Microlepia polypodioides, Adiantum trapeziforme, a very good Cheilanthes elegans, the Bird's Nest Fern, the rare Gymnogramma hybrida, and a good plant of Lygodium scandens. Among British sorts was nothing remarkable.

Of New Plants, Messrs. Veitch sent as usual the largest number. Among them were the Californian Torreya myristica, and Thuja Lobbii; various fine Begonias, the best of which have been noticed by us on former occasions; a cut specimen of Ceanothus too withered to judge of its merits, Farfugium grande, the lilac and white-flowered annual Fenzlia dianthiflora, Chamæbatia foliolosa, a hardy flowering shrub from California, with handsome Mimosa-like foliage; Clianthus Dampieri, a charming variety of Cattleya in the way of C. elegans, and a new variety of Gymnogramma. Messrs. Jackson sent some handsome Caladiums and Genetyllis macrostegia. From Mr. Standish came a white-blossomed Viburnum from the north of China; Mr. Carson, Cyanophyllum magnificum; Mr. Williams, the North American Goodyera pubescens, a pretty kind, which will succeed in a greenhouse; Mr. Gedney, a handsome large rich orange-flowered Hemerocallis from Natal, with semi-double flowers, and Tachiadenus carinatus, a Gentian-like plant with pretty violet blossoms. Mr. Barnes, of Southampton Street, Camberwell, had some handsome Begonias, the best of which was Queen of England, a kind with large and showy leaves. The same eminent cultivator also sent Prince of Wales, Princess Alice, Minnie, and Water Witch, all pretty, but perhaps a little too much alike. From the neighbourhood of Windermere, Mr. Binder sent a good specimen of the Holly-like Desfontainea spinosa, well furnished with bright crimson flowers tipped with orange yellow. And we also noticed from another exhibitor the orange scarlet Embothrium coccineum, also one of Messrs. Veitch's valuable introductions to this country.

Of Pitcher plants Messrs. Veitch and Gedney exhibited splendid collections, in which were noble examples of lanata, Hookeri, lævis, Rafflesiana, distillatoria, ampullacea, vittata, and others, all of which excited much interest.

At the end of a long bank of Pelargoniums were the seedlings, to which eight prizes were awarded. In large varieties Lord Clyde was selected as the best. It is a bright free-flowering scarlet, of fine form and substance, with very dark blotch on the top, having a narrow margin of vivid crimson. This and Bijou, which was third, a curious shade of bluish purple, were raised by Mr. Nye, gr. to E. Foster, Esq., Clewer Manor. Bacchus, Ajax, and Unique, also of superior form, were from the same raiser. Angelina (Hoyle), an improved Fair Ellen, and very fine, was second. Of large spotted kinds, known as French, there were considerable numbers. King of Purples is a large flower of good quality; Bracelet, rose ground, finely marked with maroon spots, full size, and good habit; Magpie, white and maroon with black in centre of the spots. Rifleman, Beadsman, flowers in the style of Sansparcil, much better, and as free. These all came from Mr. Turner of Slough, the three first named being selected by the judges for prizes. In fancies were Sarah Turner, bright crimson, with white centre and edge, and free good habit; and Omega, a rosy crimson, suffused with purple, and of the finest possible form; Amy Sedgwick, fine rose, Louisa Pyne, light, and Lady Craven, crimson rose, were each and all good and new. These were raised and exhibited by Mr. Turner. The judges selected the two first.

In Bedding Geraniums, Messrs. Veitch received a first prize for Mrs. Ponsonby Moore, a spotted kind, of dwarf free blooming habit, colour bright crimson, each petal being ornamented with distinct maroon spots. This was greatly admired. Christina (Kinghorn) also received a prize; it appeared to be a good free blooming bedding kind of a lively pink colour.

Collections of Pelargoniums were numerous and generally good. Mr. Nye had some fine plants, the best and most effective of which were Flora, Prince of Wales, Saracen, Meteor, Fair Ellen, Viola, Wonderful, and Carlos. Mr. Thos. Bailey, gr. to T. J. Drake, Esq., Amersham, sent the next best collection, which contained a good Carlos, Miss Foster, Meteora, Mr. Marnock, Governor-General, and Spotted Gem. Mr. Bailey was first with Fancies in the amateur class, his plants being nicely bloomed, but not large—Acme, Celestial, Lady of the Lake, Evening Star, Princess Royal, and formosissimum were the kinds. Mr. James and Mr. Oubridge also contributed collections. In the Nurseryman's Class Mr. Turner, Messrs. Dobson, Mr. Windsor, and Messrs. Fraser were placed in the order in which their names appear. The best in Mr. Turner's collection were Candidate, Cynthia, Viola, Governor-General, Fair Ellen, and Saracen. Messrs. Dobson's contained good plants of Evelyn, Fairest of the Fair, the Bride, Miss Foster, and Roseleaf.

In the class of Fancies were some remarkable specimens. Mr. Turner's plants were Celestial, delicatum, Evening Star, Madame Sontag, Madame Rogière, and Cassandra. These were of immense size and of unequalled beauty, every leaf being hid by the mass of blossoms, which in some cases were so crowded together as to prevent many opening. Mr. Windsor and Messrs. Fraser also sent well bloomed collections.

Of Fuchsias there were some beautiful exhibitions, consisting of pyramidal plants 6 and 8 feet high, and loaded with flowers from bottom to top. The sorts were not different from those shown before this year. One plant, Souvenir de Chiswick, is however well worthy of notice. It was a fine specimen of a good kind, and was literally loaded with large and showy blossoms, whose charming violet-coloured corollas and deep crimson sepals and petals rendered them objects of general admiration. This is a kind well worth possessing.

Calceolarias, both herbaceous and shrubby, were shown; but we did not observe among them anything new. Of the former the best came from Mr. Cross, gr. to Lord Ashburton, at Addiscombe. They consisted of yellow and buff grounds dotted all over with minute spots, with the exception of one, which was blotched, a class to which too little attention has lately been paid.

Verbenas were shown in fine variety in a cut state by Mr. Turner. We have before named the best kinds. Mrs. Maclean was very beautiful.

Pinks were shown by Mr. Turner and Mr. Bragg. Mr. Turner's kinds were: Unanimity, Napoleon, Gem, Godfrey Seedling No. 3, Seedling Mr. Hobbs, Mr. Weedon, Winchester Rival, Sovereign, Prince of Wales, optimus, Adonis, Koh-i-noor, Invincible, Helen, Lady Blandford, New Criterion, Colchester, Cardinal, Seedling No. 6, Hebe, Sultan, Seedling Little Gem. These were finely laced, and larger than the average.

Of fruit a considerable quantity was produced, but much of it was not above mediocrity. A Providence Pine Apple, weighing 11 lbs. 4 oz., came from Mr. Bailey, gr. to T. Drake, Esq., Shardeloes, and some good fruit of the same variety also came from Mr. Floud, gr. to R. Fothergill, Esq., of Aberdare. Mr. Young, gr. to C. Bailey, Esq., likewise sent a good Providence. The best Queen came from Mr. Young, gr. to W. H. Stone, Esq., of Dulwich. Mr. Bailey also had a good fruit, and a third came from Mr. Davis, of Starch Green, Hammersmith. Mr. Scott, of Leigh Park, sent a very good Black Prince. We also noticed one or two Black Jamaicas.

Black Hamburgh Grapes were again furnished in admirable condition—large and black both in bunch and berry—by Mr. Hill, Keele Hall, Staffordshire; by Mr. Frost, gr. to E. L. Betts, Esq.; Mr. Tillyard, gr. to Viscount Eversley; and Mr. Thomas, gr. to J. Baxendine, Esq., of Whetstone. The best basket of 12 lbs. came from Mr. Thurston, of Leicester. Messrs Alderson and Smith also showed well in this class. White Grapes were not good. The best Muscats were exhibited by Mr. Embry, gr. to A. Moss, Esq., of Chadwell Heath; and Mr. Richards and Mr. Baker also sent exhibitions. Exhibitions of Grapes in pots were not good. The bunches were small, and in some cases unripe.

Peaches were not very plentiful. The best Royal George were contributed by Mr. Sage, of Ashridge. Mr. Frost also sent the same variety, as did also Mr. Hill and Mr. Masters, gr. at Sherburn Castle, Oxon. Elruge Nectarines, large and fine, were furnished by Mr. Frost, of Preston Hall, and an equally fine dish of Violet Hâtive came from Mr. Hill, gr. to R. Sneyd, Esq. Mr. Page and Mr. Masters also both showed good dishes.

Of Apricots, a dish of small but well ripened fruit came from Mr. Ferguson, of Stowe.

Melons were present in considerable numbers. The best in point of flavour in the opinion of the judges were Bailey's Green-fleshed and the Bromham Hall. Of scarlet-fleshed sorts the best was one called Gem, a small kind from Mr. Tegg, gr. to Baron Hambro', at Roehampton.

Of Figs Mr. Snow, gr. to Earl de Grey, sent a beautiful dish of the Brown Turkey large and finely ripened. Some good fruit of this kind also came from Mr. Frost and Mr. Richards of Tadcaster.

Of Cherries, by far the best were two dishes, one of Black Circassian, the other Elton, from Mr. Henderson, gr. to the Duke of Sutherland at Trentham. These we were informed had been grown in the kind of glass structure known as the "Trentham case," and were certainly very fine. Others came from Mr. Ferguson, of Stowe.

Plums were shown by Mr. Ingram, gr. to J. J. Blandy, Esq., who sent good fruit of Denyer's Victoria.

Strawberries were not remarkable either for quantity or excellence. The best were dishes of Sir Charles Napier, British Queen, and Keens' Seedling from Mr. Smith, of Twickenham. Mr. Clarke, of Twickenham, and Mr. Stoddart, of Colchester, also both had good fruit of the kinds just named.

Among Miscellaneous exhibitions we noticed a bunch of unripe Bananas and some very good Cucumbers.

Notices of Books.

Letters on Modern Agriculture. By Baron v. Liebig. Edited by John Blyth, M.D. Small 8vo. Pp. 284. Walton & Maberly.

(*Concluded from page 468.*)

The first point of common belief assailed by the author is that plants can only be fed by substances in a state of solution. "We have hitherto believed," he says, "that plants received their food from a solution, and that the rapidity of its effect was in direct proportion to its solubility. We have supposed the active elements to be carried in solution in rain water and carbonic acid to their roots, and have regarded them in the light of sponges, half in the moist ground and half in the air, continuously absorbing by their roots the water which evaporated from their leaves. Whatever was in solution passed with the water into the roots, and by the process of nutrition was appropriated by the plant. The soil and the plant were both passive in the operation. Vegetable physiology has taught that an element of food in the soil, at a distance from the rootlets of plants, is available as nourishment, provided there is water between the rootlets and the food to dissolve the latter. In consequence of the evaporation from the leaves, the rootlets suck up the water, which thus, with the substances dissolved in it, receives a movement onwards towards them. We believed that the water was the carrier of the most remote elements of the oils to the immediate presence of the plant. But all this has been a great mistake. We have inferred from the effect of water and carbonic acid on rocks, a similarity of action on soils; but this conclusion is false. There is not to be found in chemistry a more wonderful phenomenon, one which more confounds all human wisdom, than is presented by the soil of a garden or field. By the simplest experiment, any one may satisfy himself that rain water filtered through field or garden soil does not dissolve out a trace of potash, silicic acid, ammonia, or phosphoric acid. The soil does not give up to the water one particle of the food of plants which it contains. The most continuous rain cannot remove from the field, except mechanically, any of the essential constituents of its fertility. The soil not only retains firmly all the food of plants which is actually in it, but its power to preserve all that may be useful to them extends much further. If rain or other water, holding in solution ammonia, potash, phosphoric and silicic acids, be brought in contact with the soil, these substances disappear almost immediately from the solution; the soil withdraws them from the water. Only such substances are completely withdrawn by the soil as are indispensable articles of food for plants; all others remain wholly or in part in solution."

This is excellently put, but surely vegetable physiologists when treating of food lying in the earth contend for no more than this—that all matter which can be received into the system of a plant must be either gaseous or fluid. Nobody, since Way's capital experiments, doubts the filtering power of common soil, and that the food of vegetation is detained by its particles to be given up to roots *when the two come in contact*. But still the matters that are thus detained must be soluble, and it cannot be said that they can only be received into the system of a plant after they have been absorbed by particles of earth. If that were so how could plants exist in pure sand, which has no power of absorption, but in which they may nevertheless be maintained alive by artificial feeding? or in water, from which earthy particles are wholly absent? Surely the learned author does not mean to say that dry potash can be taken up by plants or that the elements of food are not distributed through the soil by means of water, or that when one particle of earth is saturated water does not carry those elements onwards to another particle, and that roots cannot seize upon the elements while *in transitu*.

Nothing can be more just than the following comparison of the plough and the spade, and we trust that cultivators will appreciate it; for it involves some of the greatest of truths, an entire conviction of the importance of which is all that is wanted to terminate the career of an antiquated implement whose merit consists in its ability to perform much bad work in little time.

"If the food of plants in the soil cannot move towards the roots, it is evident that the roots must spread about to look for food."

"A piece of bone weighing about 30,000 milligrammes, (one ounce) in a cubic foot of earth, produces no marked effect on its fertility. But if these 30,000 milligrammes of phosphate of lime be uniformly distributed throughout the earth, it will suffice for the nourishment of 120 Wheat plants. Ten thousand milligrammes of food, having a surface extent of 100 square millimètres, are within the same given time not more effective than ten milligrammes having the same surface extent. Of two fields with the same amount of food, one may be very fertile, and the other equally

unfruitful, if the food is more uniformly distributed throughout the former than the latter.

"*The common plough breaks and turns up the soil without mixing it;* it only displaces, to a certain extent, the spots on which plants are already grown. *But the spade breaks, turns, and mixes it thoroughly.*"

"As the smallest portions of food cannot of themselves leave the spot in which they are held firmly fixed by the soil, we can understand what immense influence must be exerted on its fertility by its careful mechanical division and thorough intermixture. This is the greatest of all the difficulties which the agriculturist has to overcome.

"If a field is to produce a crop, corresponding to the full amount of food present in it, the first and most important condition for its accomplishment is, that its physical state be such as to permit even the finest rootlets to reach the spots where the food is to be found. The extension of the roots in every direction must not be obstructed by the cohesion of the soil. Plants with thin delicate roots cannot grow on a tenacious heavy soil, even with abundance of mineral food. These facts explain in a very simple manner one of the many favourable effects of green manures on such soils, and enable us to understand the reasons of the preference given in many cases, by agriculturists, to fresh over rotten farm-yard manure. The mechanical condition of the ground is, in fact, remarkably altered by the ploughing in of plants and their remains. A tenacious soil loses thereby its cohesion; it becomes brittle, and more readily pulverised than by the most careful ploughing; and, in a sandy soil, a certain coherence is introduced among its shifting particles. Each stem of the green manure plants ploughed in opens up by its decay a road by which the delicate rootlets of the Wheat plant ramify in all directions to seek their food. With the exception of their combustible elements, the ground receives from the green manure plants nothing which it did not previously contain; and these of themselves would have no effect on the increase of the crop, without the presence in the soil of the necessary mineral food."

Professor Liebig strongly advocates the use of green manures, a system pursued much more extensively on the continent than here.

"The keeping of cattle is necessary for the production of manure; but the production of manure is by no means necessary for the fertilisation of corn fields. In the system of the rotation of crops, all that is required is that green crops should be grown, and that their constituent parts be incorporated with the arable surface soil of the field; and it is quite immaterial for the cereals whether the green crops be previously eaten by the cattle and converted into manure or not. If Lupines, Vetches, Clover, Turnips, &c. are cut up and ploughed in, in the green state, their action is far more powerful."

To the use of the word MANURE he has the strongest objection.

"In scientific agriculture manure finds no longer a place; for the notions that were formerly attached to the term are completely obsolete; just as is the case with the word Phlogiston, which, up to the end of last century, was used to explain chemical phenomena."

"Absurd as would now be the attempt of a teacher of chemistry to account for any chemical process by having recourse to phlogiston, it is no less inadmissible in a teacher of scientific agriculture to explain a given fact by attributing it to 'manure;' for, in the place of the obsolete notion of 'manure,' which has no longer any meaning, we have now for every plant certain positively known elements of food, to the united action of which we have to look for an explanation of the fact or phenomenon in question."

This may be true in a mere chemical sense, but the term is not likely to disappear from practice nor ought it. The chemist here assumes that he has fathomed the mystery of vegetable nutrition, and that only certain substances found in manure can have any effect upon vegetation. But non-chemists may be permitted to doubt whether the subject is exhausted; and can hardly be expected either to ignore the mechanical effects on the soil of certain substances present in manure, or to admit that chemists have nothing more to learn. Manure is a complex mixture of substances having a known effect upon land; the cultivator is certain that a given quantity of manure will produce a certain effect upon his soil; but his experience tells him that he can obtain no such certain effect by merely using the potash, phosphoric acid, and ammonia separable from it by chemical analysis. Quite the contrary, as long ago was discovered by those who have trusted wholly to liquid applications. Let us preserve then our word manure with all possible deference to the great man who proscribes it.

Our space will not permit us to advert to the interesting inferences drawn by Baron Liebig from the Chinese system of husbandry. To that portion of his work the attention of philodysodists, and especially of our friend Dr. Parkyn may be advantageously directed.

Miscellaneous.

Mr. Fortune's Plants.—Those sold by Mr. Stevens on Thursday last realised the following prices:—Abies Kæmpferi, first imported plant, 3 feet in height, and a fine specimen, 5*l.* 10*s.*; other fine plants, equally good, from 4*l.* 15*s.* to 6*l.* per plant; 50 lots of 5 plants each, from 10*s.* to 2*l.* 15*s.* per lot; 20 lots of 10 plants each, from 1*l.* 8*s.* to 1*l.* 12*s.* per lot; Pinus Bungeana, the Lace-bark Pine of China, from 1*l.* 10*s.* to 1*l.* 17*s.* per lot of 6 plants each; lots consisting of two Torreya grandis, four Abies Kæmpferi, and one Pinus Bungeana, from 1*l.* 14*s.* to 2*l.* 2*s.* per lot; ditto of Torreya grandis, first specimen plant, and two Abies Kæmpferi, from 2*l.* 10*s.* to 4*l.* 5*s.* per lot; Cephalotaxus Fortuni, from 10*s.* to 1*l.* 9*s.* per lot of 25 plants each; Chusan Palm, from 1*l.* 4*s.* to 2*l.* 4*s.* per lot of 10 plants each; Ilex terago, from 11*s.* to 14*s.* per lot of 10 plants each; I. cornuta, from 1*l.* 6*s.* to 1*l.* 10*s.* per lot of 25 plants each; Limonia trifoliata, a fine plant, 12*s.*; Aralia papyrifera, the Rice-paper plant, a fine specimen, a similar sum; Farfugium grande, a large and fine plant, 2*l.*; other lots, 5 and 10 plants each, from 5*s.* to 1*l.* 1*s.* per lot; Abies Jezoensis, 25 plants, 11*s.* The whole sale consisted of 229 lots.

Calendar of Operations.

(*For the ensuing Week.*)

PLANT DEPARTMENT.

CONSERVATORY, &c.—It is a very common practice in the management of the show house to huddle the plants thickly, in order to produce a dense mass of bloom; but this should never be done with hard-wooded plants, especially at this season, when they are starting into growth, and most things if they are to be of any further service require a fair share of light and air while in bloom. Valuable specimens of hard-wooded things, particularly Heaths, should be frequently examined, turning them partly round in order that their shoots may be equally exposed to the light. Should the weather continue bright the beds and borders of this house will require a liberal supply of water to keep them properly moist; and the soil about strong growing plants should be occasionally examined to see that it is not too dry towards the bottom of the bed, for the amount of moisture absorbed by such things at this season is much greater than inexperienced persons are apt to imagine. GREENHOUSE.—Now that many of the inmates can with safety be removed to the open plant ground, where they will do quite as well or better during summer than under glass, there will be no necessity for crowding the specimens left, therefore see that every plant stands quite clear, so that all its parts may be fully exposed to light and air. In placing greenhouse things out of doors care should be taken not to rashly expose them to bright sunshine, particularly if they are at all tender through having been kept close or are in a growing state. Indeed, the plant ground should be so situated that the plants will not be exposed to the mid-day sun, for few things in pots will do much good if exposed to the full force of our summer's sun.

FORCING DEPARTMENT.

VINERIES.—Borders that have been lately uncovered should be carefully examined, and if found too dry give a liberal soaking of good strong manure water from the stable or farm-yard tank. It will be advisable, however, to mix the manure-water with sufficient warm water to bring the temperature to from 70° to 90°. Take advantage of bright days to admit air freely where the Grapes are colouring, and avoid moisture in the atmosphere by removing all plants from under the Vines. Attend carefully to young Vines recently planted, keeping the soil about the roots in a healthy moist state, maintaining a moderately moist atmosphere, and shading if necessary until the Vines get a fair start. MELONS.—Where the fruit is swelling endeavour to keep the soil in a nice healthy state as to moisture, avoiding either extreme. Give air freely whenever the weather admits, and use every means to preserve the foliage in health. Keep the Vines thin, and prevent their being encumbered with useless laterals, and remove any decaying leaves immediately they are perceived, which when left only serves as nurseries for insects. There is yet a fair chance of obtaining a good crop in "dung frames," and if any of the frames which have been used for getting up the bedding-out stock can be spared for this purpose the beds should be made and the plants got in without loss of time. Very little artificial heat will be necessary at present, and the bed should not be made to heat too strongly, otherwise there will be time lost before the plants can be safely put in. The beds should be made high enough however to allow of applying a lining if necessary.

FLOWER GARDEN AND SHRUBBERIES.

The weather for the last 10 days has been favourable for newly-planted out stock, and well-prepared plants which have only been planted during this time are rooting into the fresh soil freely; and those who delayed planting out until the first week in June, and were then prepared with strong plants in good condition, will probably have their beds covered before those who planted out earlier. Should the weather be dry, water. Where there is a large demand for cuttings for spring propagation a number of plants of each variety proportionate to the demand for cutting should be selected from the reserve stock, potted in 7-inch pots in light soil, and plunged in the reserve garden. These with very little attention will make nice stocky plants in the course of the summer, and there is no risk of losing in winter plants prepared in this way, and this can hardly be said of autumn rooted cuttings of many things; and by repotting and placing them in growing circumstances early in spring each plant will furnish a large number of cuttings sufficiently early to make good strong plants before planting out time. Young specimens of ornamental shrubs and trees which it is desirable to get to grow rapidly should be thoroughly soaked with water at once, especially Coniferous plants.

HARDY FRUIT AND KITCHEN GARDEN.

Trees that have not got fully established since replanting will be benefited by mulching over their roots, which will prevent rapid evaporation, and keep the soil in a healthy state as to moisture. And the same attention will be useful to trees in shallow borders, especially Peaches and Nectarines, which are very subject to the attacks of mildew if allowed to get too dry at the root in summer. Those who are fortunate enough to have a heavier crop of fruit set than the trees are likely to bring to perfection, should thin at once, in order to secure fine fruit with a prospect of a crop next season. See that there is plenty of Peas planted for furnishing a late autumn supply, and also attend to keeping up a succession of French Beans, Spinach, and all kinds of salad.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.

For the Week ending June 9, 1859, as observed at the Horticultural Gardens.

June.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Min.	Mean	Temperature of the Earth 1 foot deep.	2 feet deep.	Wind.	Rain.
Friday 3	2	29.615	29.591	72	57	64.5	62½	60	N.E.	.52
Satur. 4	3	29.759	29.725	73	58	66.5	63	60	W.	.14
Sunday 5	4	29.911	29.862	76	51	63.5	65	61	N.E.	.64
Mon. 6	5	30.021	29.954	78	52	65.0	65	62	E.	.00
Tues. 7	D	29.993	29.863	76	47	61.5	65	62	E.	.00
Wed. 8	7	29.803	29.704	77	54	65.5	65	62	N.E.	.00
Thurs. 9	8	29.718	29.620	73	52	62.5	65	62½	N.E.	.00
Average		29.831	29.759	75.2	53 0	64.1	64.3	61.3		1.30

June 3—Hazy and mild; overcast; heavy rain at night.
— 4—Hazy and dull; uniformly overcast; thunderstorm 6 P.M.
— 5—Overcast and mild; very fine; thunderstorm; heavy rain.
— 6—Foggy; very fine throughout.
— 7—Foggy; fine; lightning at night.
— 8—Very fine; exceedingly fine throughout.
— 9—Fine; very fine; overcast at night.
Mean temperature of the week, 5⅔ deg. above the average.

RECORD OF THE WEATHER AT CHISWICK,

During the last 33 years, for the ensuing Week, ending June 18, 1859.

June.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W
Sunday 12..	71.2	49.7	60.5	14	0.78 in.	—	7	3	1	6	10	3	3
Mon. 13..	71.9	49.1	60.5	16	0.77	1	5	5	1	2	9	5	2
Tues. 14..	72.8	49.1	60.9	15	0.56	1	2	5	1	6	10	7	1
Wed. 15..	73.0	49.4	61.2	14	0.38	1	4	7	2	4	7	3	5
Thurs. 16 .	72.7	49.3	61.0	14	0.46	2	3	6	1	9	7	3	2
Friday 17..	72.9	48.7	60.8	19	0.80	1	4	3	—	7	9	4	5
Satur. 18..	72.5	50.3	61.4	17	0.30	2	2	3	2	5	6	10	3

The highest temperature during the above period occurred on the 16th, 1858—therm. 97 deg.; and the lowest on the 15th, 1850—therm. 30 deg.

Notices to Correspondents.

BLIGHT: *J M.* Curious, but not new; a drawing is in the hands of the wood engraver.

GRAPES: *G.* The Calabrian Raisin is a very nice large white Grape, but not of first quality.

INSECTS: *W C B.* The beetles which have attacked your Grapes are the destructive weevil, Otiorhynchus sulcatus. Search the Vines after dark, and lay a sheet beneath them, upon which the beetles will fall on being disturbed or the branches shaken. They must then be killed with boiling water.—*W W.* Some of the shoots of the Willow sent are infested with the galls of an aphis, each gall containing an entire brood. *W.*

LAWNS: *S T.* You cannot get rid of Quitch from your lawn except by very carefully picking it out as fast as it continues to appear. Every joint left in the ground becomes a new plant, and the difficulty is to know when all the joints have been removed. Unless this answers you will have to break up the lawn and leave it fallow until you have succeeded in forking out every bit of the Quitch, when, and not till when, it may be relaid.

MONSTROUS CARDAMINE: *D W.* The specimens are a little injured by their travel through the post office. We have, however, put them in hospital, and hope to report on them next week. The case seems to be a very curious one. Much obliged.

NAMES OF PLANTS: We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have or could have undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*G A D, Norwich.* The specimens are young, but seem to belong to Potamogeton densum. Clear the water if you can, by such means as were pointed out last week, *before the plant is in flower.* It is not likely to impede navigation to any serious extent.—*F S.* 1, Rhododendron ferrugineum; 2, R. hirsutum; 3, Kalmia glauca.

ORCHID DISEASE: *J C, Norwich.* There is no appearance of the Acarus, but your leaves are in a sad state; probably owing to too much dampness and too little or unskilful ventilation. The mischief does not however appear to be recent. Although terribly spotted and decayed, the leaf sent is perfectly clean.

THE ASPARAGUS BUG: *F Mellon.* This insect is not a bug, but a beetle called Crioceris Asparagi. You should carefully hand-pick the branches, putting the insects into a vial of water as you gather them, and afterwards pouring boiling water over them. Moreover you will find the twigs of the Asparagus bristling with little brown oval bodies, usually fixed in rows, and of a dull brown colour. Those are the eggs of the beetle, and will soon become grubs devouring the Asparagus shoots. Nip off all the little twigs on which you can find such eggs, and throw them into the fire.

VANCOUVER'S ISLAND, B. C.: *Exmouth.* All depends upon the Government here. If supported in good earnest the new colony will be one of the most important, both agriculturally and POLITICALLY, of all her Majesty's foreign possessions. We publish in another column an interesting letter from British Columbia. We believe Government to be in earnest in the matter.—*St Austell.* There is no exaggeration about the gold; nor is there any unusual difficulty in obtaining it. A gold-finder's life is never suited to a soft-skinned young gentleman.

MISC.: *A Correspondent.* The two ought to have 12 feet of solid clay between them. As to the legal question, you must consult your solicitor.

*** As usual, many communications have been received too late, and others are detained till the necessary inquiries can be made. We must also beg the indulgence of those correspondents the insertion of whose contributions is still delayed.

THE PATENT

NITROPHOSPHATE OR BLOOD MANURE COMPANY (Limited),

CONSISTING OF TENANT FARMERS, OCCUPYING UPWARDS OF 30,000 ACRES OF LAND.

TRUSTEES.

Abel Smith, Jun., Esq., Walton House, Ware, Herts.
Charles Dimsdale, Esq., Essendon Place, Herts.
Edward Ball, Esq., M.P., 8, Belgrave Road, Pimlico
Major-General Hall, M.P., Western Colville, Linton, Cambridge
John Brady, Esq., M.P., Warwick Terrace, Belgrave Sq.

DIRECTORS.

Chairman.—Jonas Webb, Esq., Babraham, Cambridgeshire.
Deputy-Chairman.—John Collins, Esq., Myddleton Square, Pentonville.
Edward Bell, Esq., Tottenham, Middlesex
John Clayden, Esq., Littlebury, Essex
Richard Hunt, Esq., Stanstead Abbot, Herts.
Thomas Knight, Esq., Edmonton, Middlesex.
Robert Leeds, Esq., West Lexham, Norfolk.
Robert Morgan, Esq., 72, Camden Villas, Camden Town.
George Savill, Esq., Ingthorpe, near Stamford.
William Collins, Esq., 105, St. John Street Road.

Bankers.—Messrs. Barnett, Hoare & Co., Lombard Street.
Solicitors.—Messrs. Kingsford & Dorman, 23, Essex Street, Strand.
Auditor.—G. W. Brown, Esq., 28, Parliament Street.
Manager.—Mr. James Odams. | *Secretary.*—Mr. C. T. Macadam.

Offices 109, Fenchurch Street, London.—Manufactory, Plaistow Marshes, Essex.

The Directors beg to inform their Friends and the Agricultural Public that the following Manures are now ready:—

ODAMS'S BLOOD MANURE FOR CORN AND MANGEL.
ODAMS'S BLOOD MANURE FOR ROOTS.
ODAMS'S SUPERPHOSPHATE OF LIME.

Full particulars may be had at the Company's Offices, or of the local Agents.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. Nesbit, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

MANURE FOR ROOT CROPS, of first-rate quality, with Analysis guaranteed, manufactured by WILLIAMS & Co., 47, Mark Lane, London (Established 1847), at 6*l.* per ton, including bags. Free to Wharf or Rail in London. The Trade supplied.

ARTIFICIAL MANURES.

FREDERICK CORNWELL begs to inform his friends and the Agricultural public that he can now supply a "SUPERPHOSPHATE of LIME" superior to anything yet produced. Each Bag guaranteed to contain from 20 to 25 per cent. of "Soluble Phosphate of Lime." Price 5*l.* 10*s.* per ton, delivered free to any Railway or Wharf in London. Dealers and the trade supplied. LINSEED-CAKES, COTTON-CAKES, and all descriptions of ARTIFICIAL MANURES at lowest market prices.—Offices, 7, Great St. Helen's, London, E. C.

LONDON MANURE COMPANY, removed to 116, Fenchurch Street, E. C. (Established 1840), have the following MANURES ready for delivery:—

CORN MANURE for SPRING TOP-DRESSING
URATE
MANGEL MANURE
SUPERPHOSPHATE OF LIME
BLOOD MANURE
} all of guaranteed quality.

In consequence of the reduction in the price of raw material the London Manure Co. are enabled to lower the price of their Superphosphate of Lime, and to materially improve the Corn Manure and Urate.

The London Manure Co. also supply PERUVIAN GUANO (direct from Messrs. A. Gibbs and Sons), SULPHATE of AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of value. Wholesale dealers supplied.
116, Fenchurch Street, E.C. Edward Purser, Secretary.

PERUVIAN GUANO.
The present price of this valuable Manure is—
12*l.* per Ton for 30 Tons and upwards,
13*l.* 5*s.* per Ton for 1 Ton up to 30 Tons.
And, to guard against the purchase of adulterated mixtures and of inferior Guanos purporting to produce results equal to Peruvian, consumers are recommended to apply either to ourselves, to our agents, Messrs. Gibbs, Bright, & Co., of Liverpool and Bristol, or to dealers of established character, in whose honesty and fair dealing they may place implicit confidence.
Antony Gibbs & Sons.

ESTABLISHED 1812.

H. AND T. PROCTOR'S TURNIP MANURE.—Messrs. H. & T. P. draw particular attention to this valuable Manure, which contains all the elements necessary for the full development of the Turnip Crop, so combined, that, from their chemical knowledge and long experience, they feel satisfied is most advantageous to the consumer. It has been very extensively used by most of the eminent Agriculturists of the day, and has attained a high reputation throughout England, Scotland, and Wales, and, they venture to say, is unrivalled for the weight and quality of the Bulbs which it produces. The application of this Manure to the Turnips will be found to benefit considerably the after crops of Barley, Clover, and Wheat.
POTATO, GRASS, BARLEY, CLOVER, AND WHEAT MANURES; also BONE DUST, PERUVIAN GUANO, and SUPERPHOSPHATE of LIME, warranted of the best quality.
Apply to H. & T. Proctor, West of England Depôt for Artificial Manures, Cathay, Bristol; or Proctor & Ryland, Birmingham, and Saltney, near Chester.

BURNARD, LACK, AND CO.'S CONCENTRATED SUPERPHOSPHATE OF LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.
CONCENTRATED TURNIP MANURE, equal in value to the preceding.
Of these Manures Dr. Voelcker says:—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."
Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to Burnard, Lack, & Co., Sutton Road, Plymouth.

REDUCTION IN PRICE OF LAWES'S MANURES.

MR. LAWES begs to announce that he has this season reduced the price of the Manures manufactured by him, viz.:—

TURNIP MANURE	from £7 to	£6	6
SUPERPHOSPHATE OF LIME ..	,, 7 to	6	6
MINERAL do. ..	,, 6 to	5	5
BARLEY MANURE..	8	0	

Prof. Way and Dr. Voelcker have sampled from a bulk of 5000 to 6000 tons at his factories, and their report and analyses are given in full in Circular to be obtained on application at his office, 1, Adelaide Place, London Bridge, E.C., or of his local Agents.
N.B. Genuine Peruvian Guano direct from Messrs. Gibbs, Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures. American Cotton-seed Cake supplied.

SOFT STUFF GREAVES ARE A CAPITAL MANURE FOR WHEAT LANDS.—The undersigned have sent large quantities to Norwich, where they are highly approved.—Price 4*l.* 10*s.* per ton in tierces (no charge for casks), delivered free to any railway station in London.
John Williams & Son, Soap Works, Clerkenwell, London.

TO FARMERS.—If you wish to PRESERVE YOUR HAY, go to Davis & Co., 64, West Smithfield, E.C., where you may purchase a RICK CLOTH of the best material and workmanship, cheaper than at any house in London.

WHY NOT PRESERVE YOUR HAY?

BENJAMIN EDGINGTON respectfully informs the Nobility and Gentry that they can be supplied on the best terms with RICK CLOTHS, with Poles complete.
Early application should be made for SECOND-HAND RICK CLOTHS. MARQUEES, TENTS, and FLAGS. A great variety of Marquees and Tents may be seen erected on the premises. A quantity of SECOND-HAND TENTS from the Crimea at a greatly reduced price. An Illustrated Catalogue sent post free.
West End Establishment, 32, Charing Cross, S.W.
Benjamin Edgington, 2, Duke Street, London Bridge, S.E.

WEDLAKE AND DENDY, Agricultural Engineers, Hornchurch, Essex.
HAY MACHINES.
Small size, No. 1 .. £10 | Large size, No. 1 .. £12
Large size, No. 2 .. .. .. £13
These Machines are free from small and delicate parts, and can be easily understood by a farm labourer. They have gained several prizes at the Royal Agricultural Society's Shows.
HORSE RAKES.
No. 1 .. .. £6 10*s.* | No. 2 .. .. £7 10*s.*
Wedlake & Dendy's Horse Rakes are made on the tubular principle, combining great strength and lightness. Free to all the principal Railway Stations.
Wedlake & Dendy, Union Foundry, Hornchurch, Essex.

HENRY J. MORTON AND CO., 2, Basinghall Buildings, Leeds.
GALVANISED IRON WATER CISTERNS
for Cottage Houses, &c., to contain 50 gallons, 25*s.*; 80 gallons 30*s.* each; and 140 gallons, 36*s.*, and fitted with tap, keeping the water perfectly sweet and clean; will not rust or corrod Cisterns of all sizes.
GALVANISED IRON PUMPS
for Liquid Manure or Domestic Use, 3 inches diameter, 30*s.* and 32*s.* 6*d.* each; Tail Pipe for same at from 10*d.* per foot.
GALVANISED IRON SWING WATER BARROWS
for Garden or Farm use, containing about 20 gallons, entirely formed of iron, 32*s.* 6*d.* each.

"FRIGI DOMO."—Patronised by her Majesty, the Queen, the Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, and —Collier, Esq., of Dartford.
PROTECTION FROM COLD WINDS AND MORNING FROSTS.
"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and, floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths. Two yards wide, 1*s.* 6*d.* per yard run; four, 3*s.* per yard. Also, an improved make for Shading Purposes. Three yards wide, 2*s.* 6*d.* per yard run.
Elisha Thomas Archer, whole and sole manufacturer, 7, Trinity Lane, Cannon Street, City, and of all Nurserymen and Seedsmen throughout the kingdom. "It is much cheaper than mats as a covering."

THE LANDS IMPROVEMENT COMPANY 2, Old Palace Yard, Westminster, S.W.
To Landowners, the Clergy, Solicitors, Estate Agents, Surveyors, &c.—The Company is incorporated by Special Act of Parliament for England, Wales, and Scotland.—Under the Company's Acts Tenants for Life, Trustees, Mortgagees in possession, Incumbents of Livings, Bodies Corporate, certain Lessees, and other landowners are empowered to charge the inheritance with the cost of improvements, whether the money be borrowed from the Company or advanced by the Landowner out of his own funds.
The Company advance money, unlimited in amount, for works of Land Improvement, the Loans and incidental expenses being liquidated by a rentcharge for a specified term of years.
No investigation of Title is required, and the Company being of a strictly commercial character do not interfere with the plans and execution of the works, which are controlled only by the Enclosure Commissioners.
The improvements authorised comprise Drainage, Irrigation, Warping, Embanking, Enclosure, Clearing, Reclaiming, Planting, Erecting and Improving Farm Houses and buildings for Farm purposes, Farm Roads, Jetties, Steam Engines, Water Wheels, Tanks, Pipes, &c.
Owners in fee may effect improvements on their Estates without incurring the expense and personal responsibilities incident to Mortgages, and without regard to the amount of existing incumbrances. Proprietors may apply jointly for the execution of Improvements mutually beneficial, such as a Common Outfall, Roads through the District, Water Power, &c. For further information and for forms of application apply to the Hon. W. Napier, Managing Director, 2, Old Palace Yard, Westminster, S.W.

FARM BUILDINGS.
LOANS MAY BE OBTAINED UNDER THE GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY'S ACT, for the full amount required by the owners of Settled Estates, Incumbents, Trustees, Bodies Corporate, &c., for the erection of Farm Houses, Farm Buildings, and Labourers' Cottages, designed by their own agents and sanctioned by the Inclosure Commissioners. The Loans are repaid by a rent-charge on the estate for any term the landowner may fix, not exceeding 31 years.
No investigation of title being required, and the charge not being affected by incumbrances, no legal expenses are incurred.
The Company furnish Designs of every description, and undertake the entire responsibility of the works wherever desired by Landowners. No profit however is taken by the Company on any works they execute, the actual expenditure only, approved by the Inclosure Commissioners, with a Commission thereon, being charged in all cases. Applications to be addressed to William Clifford, the Secretary, at the Offices of the Company, 52, Parliament Street, London.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.
Principal—J. C. Nesbit, F.G.S., F.C.S., &c.
The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.
Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

ROYAL AGRICULTURAL IMPROVEMENT SOCIETY OF IRELAND.—The GREAT ANNUAL CATTLE SHOW of this Society will be held at DUNDALK, on JULY 27, 28, and 29.
All Entries must be made with the Secretary on or before July 13, from whom a detailed Prize Sheet, together with Entry Forms for the different Classes can be obtained.
The following favourable arrangements have been made with the respective Rail and Steam Boat Companies for the conveyance of Stock, &c., to the Show:—
On the Great Southern and Western, Live Stock (except Entire Horses and Poultry) FREE to the Show, and any unsold returned free. Entire Horses charged to the Show, and any unsold returned free. Implements charged to the Show; any unsold returned free.
The Ulster Railway Company will convey everything to the Show free.
The Dublin and Drogheda, the Belfast Junction, the Midland Great Western, and the Dundalk and Enniskillen Lines will convey back from the Show all unsold Stock, Implements, &c., free of charge.
The Dundalk and Liverpool Steam Packet Company will convey from Liverpool all Stock, Implements, &c., intended for exhibition, free of freight.
By Order, J. M. Royse, Secretary.
Society's Rooms, 42, Upper Sackville Street.—June 11.

YORKSHIRE AGRICULTURAL SOCIETY.—GREAT SHOW AT HULL, AUGUST 3 AND 4.
For Prize Lists, apply to the Secretary, John Hannam, Land Agent, Kirk Deighton, Wetherby.—June 11.

The Agricultural Gazette.

SATURDAY, JUNE 11, 1859.

MEETINGS FOR THE ENSUING WEEK.
Wednesday, June 15—Agri. Society of England .. Noon.

One of the most useful and interesting agricultural discussions of the season was that of last Monday before the London Farmers' Club—On the Modifications of Cultivation rendered necessary by existing Agricultural circumstances. The paper of the evening was read by Mr. Owen Wallis, of Northamptonshire. The "circumstances" to which he chiefly referred were those rather of the soil than of the market place, and it was the altered practice to which the farmer was *driven* by reason of the impossibility of getting the Turnip crop, the Barley crop, and the Clover crop which formerly he could—not the altered practice to which he was *drawn* by the enhanced price of meat or the altered prices of grain—that were the subjects of his discourse.

Nearly every speaker declared in succession the increasing difficulty that is almost everywhere experienced in obtaining a good Turnip crop. "My land is certainly in a better state than it was 20 years ago—more fertile—fuller of the food of plants. It carries as much stock, and the dung-heap is as large as ever. Moreover, I can go into the market now for guano and artificial manure,

and I use them largely, which 20 years ago I could not do. But I cannot grow the Turnip crops which I used to do." This was the almost universal testimony.

Mr. OWEN WALLIS had a similar complaint with reference to the Barley crop; its weaker straw, and inferior yield, accompanied the rotting Turnip crop. The fault was attributed for the most part to the too frequent recurrence of these crops in the four-course rotation. On light lands Turnips should alternate with Mangel Wurzel in five-course systems. They come thus only once in 10 years' time apiece, and are followed by Wheat and that by Barley, and this by seeds which again may be alternately Red Clover and Dutch with Trefoil, either of them followed by Wheat. In some cases Oats may follow the green crop, and Wheat follow Oats instead of Barley after Wheat. Under good management there is no risk of the land getting foul. Care taken in digging up patches of Couch before they spread, and in the autumn cleansing of stubble is effectual for the prevention of perennial weeds, and a spring hoeing of the green crop will keep down annual weeds. Care must however be also taken that while destroying weeds with one hand you are not sowing them with the other. Mr. WALLIS has for several successive weeks gone the round of all the stands in Mark Lane without finding a single clean sample of Rye-grass seed offered for sale. And our own columns have repeatedly exposed the monstrous adulteration of the seed of crops with those weeds to which the farmer is exposed.

Under Mr. WALLIS's five years' course three-fifths of the land are in grain—the Turnip crop receives a half-dressing of dung and a half-dressing of superphosphate, all the young Clover receives a dressing of 8 loads of rotten dung per acre; one-third of the Turnip crop is pulled and carried to the yards to be consumed by cattle, and only two-thirds are consumed on the land with sheep; on a small portion, some 10 or 12 acres, of the corn stubble Rye is sown to be mown and fed in the spring, and afterwards to yield a crop of Turnips, and these have generally proved one of the best portions of the whole Turnip break upon the farm.

Under a more self-supporting system of farming and one less obnoxious to those difficulties to which the four-course cropping is liable, a six years' rotation of crops is recommended, viz., 1, Turnips; 2, Barley; 3, seeds mown; 4, seeds grazed; 5, Wheat; 6, Barley receiving half a dressing of manure.

The second year of seeds is an economy as regards the labour of the farm, and it enables the keeping of a larger breeding stock. As an alternative, Oats may be grown after the second year's seeds and Wheat taken after the Oats.

Keeping land down in Grass longer than one year and keeping a breeding stock requires good fences; and Mr. WALLIS digressed into the subject of fence management, condemning the practice of annual clipping, and recommending them to be cut only once in a rotation! On the whole, considering the increased facilities for the profitable management of a breeding stock which it affords—the diminished cost of cultivation—the half of the land being in corn—and the probable re-invigoration of the Turnip crop if taken once in six years instead of every fourth, there is a great deal in this six-years rotation to recommend it.

On stiff clay soils more difficult to clean fallows either bare or succeeding green crops must come more frequently. Italian Rye-grass may be sown with a portion of the Wheat, and will in the following spring yield a good deal of food for stock, and Mangel Wurzel well adapted to clay soil may be grown on a portion of the land and fed off on this young Grass land, which is afterwards to be ploughed up and well fallowed during summer for another grain crop. Such spring feeding on Tares, and Rye-grass, and Mangel Wurzel can be carried out to a considerable extent on stiff clay lands, greatly to the maintenance and increase of their fertility under this method of management.

Mr. OWEN WALLIS concluded his very excellent paper with a recommendation to tenants to farm not "highly" but liberally, not to put heavy dressings to any one crop (with the one exception of Mangel Wurzel)—to feed off roots with liberal supplies of corn and cake to the feeding cattle and sheep (the manure so made does not weaken straw, it rather strengthens it)—to stand for the most part, excepting such modifications as "circumstances" enforced, by the rotation generally adopted in the district—no shift being so bad as the "everlasting shift." To landlords Mr. WALLIS recommended such liberality in the interpretation of agreements as would enable an intelligent tenant to farm more independently of them, and in accordance with the altered "circumstances" which rendered old practice unadvisable and impossible.

The subsequent discussion was animated and instructive. Mr. PAIN found his remedy for that difficulty in growing Turnips that would keep, which he dated from the general use of artificial manures, in the increased growth of Mangel Wurzel.—Mr. SMITHIES, occupying clay land, could not grow Swedes once in four years, but had sown Mangel Wurzel and Rape in place of them with perfect success. His rotation was:—1, green crop (Mangel Wurzel); 2, white grain crop (Wheat, Barley, or Oats); 3, green crop (Clover well manured); 4, Beans; 5, Wheat.—Mr. MARSH, from the county of Kent, spoke of light land management on the chalk—the soil Turnip sick, but still growing Turnips with a certain amount of success—Clover-sick too, but yet, with an occasional turn of the Giant Sainfoin, growing a tolerable crop occasionally of Clover.—Mr. PARKINSON spoke very decidedly, not merely on the coincidence of the rottenness in the Turnip crop with the use of guano and artificial manures, but of their standing to one another in the relation of cause and effect. We force the crop at its early stage without supplying it with the food which it thus all the more requires during its later stages. So long as farm manure and bones were the only Turnip manures, we had no difficulty in growing crops of Turnips. Since we have depended on guano and superphosphate they have failed. Mr. PARKINSON quoted and defended his own rotation of cropping on light land, viz.:—1, Turnips; 2, Barley; 3, Red Clover; 4, Wheat; 5, Turnips; 6, Barley; 7, 8, 9, seeds grazed during three successive years; 10, Oats or Wheat. He also spoke of the good effects of salt—3 cwt. per acre applied with guano on the young Wheat.

Mr. FISHER HOBBS spoke at considerable length on the general subject of crop rotations, recommending the growth of Rape seed or other oil seed crop as profitable in itself, and useful by way of change in its effect on the other crops of a rotation. He also spoke of a method of procuring three green crops from the same land in one year by taking Vetches after Wheat, feeding them off in April, and after ploughing the land and drilling 3 cwt. of superphosphate, taking a crop of early dwarf Rape, which will be ready to feed off before the first week in July, when it is quite early enough to sow common Turnips; or when the Rape land may be horse-hoed and white Mustard sown to come up along with a second crop of the Rape, and to be fed off during the autumn in time enough to be succeeded by another Wheat crop. He referred to the proper management of fences recommended in opposition to Mr. WALLIS's annual cutting properly performed, which should leave the hedge ridge form, with sloping side, angular at top and wide at bottom.

Towards the end of the discussion a gentleman farming on the Lincolnshire Wolds rose to defend the four-course system of cropping. Mr. WALLIS's paper was no doubt perfectly adapted to the circumstances of *his* locality—but speaking for the wolds of Lincolnshire he could say that so far from artificial manure being the cause of Turnip failure, Turnips could not there be grown without them. He had grown 46 acres last year with seven or eight heavy loads of good farm dung and three loads of compost per acre, and 4 cwt. per acre of nitrophosphate had been sown broadcast before the seed. A double drill width had been left here and there over the field without the artificial manure, receiving therefore the heavy dressing of farm dung alone, and it was plain to every observer that the crop on those places was not one-half so good as it was elsewhere. He had grown Mangel Wurzel too—three years ago he grew 4 acres—two years ago he grew 8 acres—last year he had grown 12 acres—this year he had 40, all up and looking well. Their manuring was 2 cwt. of guano, 3 cwt. of salt, and 3 cwt. of nitrophosphate per acre applied through the liquid manure drill in addition to a dressing of farmdung. He found a difficulty in growing 14 tons of Swedes per acre, but he had no difficulty in growing 30 to 40 tons of Mangel Wurzel. It was his belief that with an ample supply of manure there was nothing in the recurrence of the crops every four years to hinder an abundant yield.

It must be admitted that the general experience of farmers is against him—but there is we believe an experience if not on so great a scale, at least for as long a time, and in so large a number of instances which he might have quoted on his side.

We had the pleasure last week of riding with Mr. TRETHEWY, of Silsoe, Bedfordshire, over the occupations of 500 separate tenants, where Wheat has been taken every other year since the date of the new Poor-law—where Potatoes have been taken nearly as often. There was no evidence apparent in the crops of anything like degeneracy or failure in the Wheat, or the Potatoes, or any other crop that we saw growing in such luxuriance over these many different "farms" in Silsoe and the neighbouring parishes. What is there in the management of our "allotments," the fiftieth part of a field apiece, as compared with that of a farm, fifty fields perhaps in one, to explain the difference in the experience of their respective tenants on this subject of crop rotations which puzzled the gentlemen of the London Farmers' Club last Monday? One thing is plain—it is not by any plan of economising labour or laying the land three years out of 10 to rest that allotment cultivation is successful when agriculture fails.

METHOD OF MANUFACTURING AMMONIA.

BY ALEXANDER WILLIAMS, NEATH.

THE importance of ammonia, and its sister compound, nitric acid, in an agricultural point of view, as forming probably the chief sources whence the nitrogen of plants is obtained, and the high commercial price of compounds containing either of these substances, have led practical chemists to look upon any new method of obtaining them as one of the great desiderata of the day.

The atmosphere, with its water, contains the elements necessary for the formation both of ammonia and nitric acid, and during the passage of electricity both are formed; but, so far as our present knowledge extends, and from a long series of experiments on the subject, I am led to believe that it will be some time ere the Society's premium will be claimed "for the production of ammonia or nitric acid from the elements, by methods which would admit of practical application."

After having been engaged for many years in experiments on this subject, I have arrived at the conclusion that, except under peculiar circumstances, nitrogen and hydrogen in their gaseous, or elementary state, will not combine together in sufficient quantities to be commercially available. To make them unite in any quantity it is necessary that the nitrogen should, in its nascent state, be brought in contact with the hydrogen, when union will take place, but this combination is much more readily effected if both be in their nascent state.

To obtain nascent nitrogen it is of course necessary to decompose one of its compounds, and thus far I had only arrived at the same conclusion as every one else. The object of this paper is to direct attention to a bye-product of one of our most important chemical manufactories, which is exactly adapted for our purpose.

The animal and vegetable kingdoms have been so thoroughly searched by the shoals of manure manufacturers of this and other countries, that the discovery of any new nitrogen compound in these kingdoms seems to be altogether improbable; one is therefore naturally led to the mineral kingdom, and our ideas as naturally become fixed on nitrate of soda as the cheapest source. It has been known for years that nitric acid, or other compounds of nitrogen and oxygen could be converted into ammonia, and therefore the use of a nitrate would present no novelty; but if we can obtain the nascent nitrogen from nitrate of soda as a bye-product, we shall have made a grand step towards facilitating the manufacture of ammonia.

This, I believe, I have accomplished. Of the thousands of tons of nitrate of soda annually imported into this country, I have been told, on good authority, that about half is used in the manufacture of sulphuric acid. It is well known that sulphuric acid is usually manufactured in a large leaden chamber having attached to it a burner where sulphur is kept constantly burning, by which it is converted into sulphurous acid. The great difficulty of the manufacture is to give another atom of oxygen to this sulphurous acid ($S O_2$), to convert it into sulphuric acid ($S O_3$), and it is for this purpose that the nitrate of soda (cubic nitre) is used, and usually in the following manner:—One or more moveable iron pots are placed in the burner. Into each of these pots is put, as often as required, a few pounds of nitrate of soda, and with it a sufficient quantity of sulphuric acid to decompose it. Sulphate of soda (salt cake) remains in the pot, whilst nitric acid and probably other compounds of nitrogen and oxygen pass with the sulphurous acid into the leaden chamber. The sulphurous acid ($S O_2$) gains an additional atom of oxygen from the nitrogen compounds, and becomes converted into sulphuric acid ($S O_3$) which, with water afforded by steam jet or otherwise, condenses as a liquid at the bottom of the chamber, whilst a quantity of gas escapes.

Such is a rough sketch of the first part of the process usually adopted for making sulphuric acid or oil of vitriol, and the gas which escapes from the vitriol chamber must now be the subject of our inquiry.

On referring to Dr. Ure, our great authority on manufacturing chemistry, I found that he asserts that in a properly working chamber nothing but nitrogen gas should escape; in fact, that the whole of the oxygen should be taken up, and that the nitrogen should be reduced to its elementary condition. This, although the generally received opinion of the manufacturing chemists of the present day, appeared to me fallacious; as, on considering the affinities, I did not think it probable that sulphurous acid, although it is known to form a compound with nitric oxide ($N O_2$), should, under the circumstances occurring in the vitriol chambers, be able to decompose it. Experiments were immediately instituted to ascertain the truth, and they led to the knowledge of the fact that a chemical compound of nitrogen and oxygen was escaping, and not free nitrogen. What

particular compound of nitrogen and oxygen it is has not been ascertained, as the fact of its being a chemical compound was sufficient for the purpose intended, viz., of applying this waste product for the manufacture of ammonia.

At the commencement of the year 1856, I transferred a portion of the gases escaping from a vitriol chamber to my own laboratory, and there and then succeeded in converting them into ammonia.

This was an important step, but I did not feel satisfied until I had tried the process on the large scale; therefore, in November in the same year, an arrangement was entered into for this purpose with Messrs. Lewis & Pollard, of the Pontardawe Vitriol Works, whose kind assistance in the matter I take this opportunity of acknowledging.

The apparatus fitted up was of the following description:—A furnace was built above the exit tube of one of their vitriol chambers, and a brick gas retort, about 14 inches in diameter, 8 feet long, and open at both ends, was passed through its whole length. This retort was filled with charcoal, and kept at a red heat; the exit tube of the chamber, and a steam-jet to supply the hydrogen, were attached to one end, whilst to the other end was fixed an upright leaden cylinder, filled with coke, and moistened with diluted sulphuric acid. On passing the waste gases and steam through the retort containing red-hot charcoal, both were decomposed, the oxygen of each uniting with the charcoal to form carbonic acid ($C O_2$); the nitrogen and hydrogen combining to form ammonia ($N H_4 O$, or without water, $N H_3$); then together, probably forming carbonate of ammonia ($N H_4 O_1 C O_2$), which was again decomposed by the diluted sulphuric acid, the sulphate of ammonia being found remaining in solution. This solution was then evaporated, and in July, 1857, I first had the pleasure of obtaining any quantity of crystals of sulphate of ammonia, by this process, from a vitriol chamber in actual work.

It was the intention at that time to have secured the invention by patent, and therefore, when the above comparatively rough result had been obtained, the further prosecution of the experiments to ascertain yield, &c., was not proceeded with, lest the process should become public. Several circumstances have since prevented their renewal. I therefore merely wish to offer the process as it is to those interested in the matter, hoping some one else may apply it more profitably than I have, and feeling sure that—as there seems no reason why it should not be successfully carried out—it will be the means of advancing the "arts, manufactures, and commerce" of this country, by increasing the supply of one of our most valuable fertilisers.

Perhaps it may be thought that the process is only adapted to such gases as escape directly from the chamber, and that, if any of the late improvements as coke cylinders, &c., be used, it cannot be applied; but provided the assertion be correct that sulphurous acid is incapable of reducing compounds of nitrogen and oxygen to their elementary state, then the process will be available after all these improvements have been carried out, and not only to the waste gases, but also, by a slight modification, to any nitrogen compounds that may have been absorbed by the dilute sulphuric acid, and be given off in its evaporation, so that really a very minute portion only of the nitrogen contained in the nitrate of soda need be lost.

With regard to the quantity obtainable by these means, I have not as yet been able to ascertain with certainty the amount of nitrate of soda imported, but, as already stated, it appears probable that about half of the whole quantity arriving in this country is used in the manufacture of oil of vitriol, or sulphuric acid. Now every thousand tons of this cubic nitre, allowing 10 per cent. for impurities, would, if the whole of its nitrogen were converted into chloride of ammonia ($N H_4 O$), yield about 565 tons of this substance, which, at 30*l.* per ton, would be worth nearly 17,000*l.*, and there are doubtless many thousands of tons of nitrate of soda used by the vitriol makers of this country. Although these figures give, of course, no approximation to the practical yield likely to be afforded by this process, yet they enable us to form a very good idea of the enormous amount of valuable material daily wasted. The process suggested, or some modification of it, may render this waste unnecessary, and thus save the pocket of the manufacturer, and at the same time benefit the public. *Journal of the Society of Arts.*

SUCCESS OF A VILLAGE SCHOOL.

[The following passage is extracted from Mr. Moseley's report published some years ago, of the National School in the parish of King's Somborne, Hampshire, then under the care of the Rev. R. Dawes, the present Dean of Hereford.]

We break off a fragment from our own education, and give it to the poor man's child in charity.

We consult neither his judgment in the matter nor his independence. We have no faith in his affection for his child, or in his willingness to make sacrifices for its welfare; and thus we give him no encouragement to make them, and scarcely an opportunity.

It is the fault of all the eleemosynary good we seek to do, that we claim the right of doing it in our own way. When we spend our own money, we spend it as we like. What we give, we give to whom we like, and in the manner we like best. It is with us rather a matter of sentiment and impulse than of deliberation. We do not make this expenditure with the same forethought, and caution, and thriftiness as we do others, or with the same reference to a profitable result; and thus it is that we so often give in vain.

If our education has failed of its results, if we find the poor but little benefited by our schools, careless of sending their children to them, and ready to take them away on the least chance of profitable employment, let us remember that they have themselves had no voice in the matter; that in the education we offer to their children, the springs of opinion among them have never been considered, nor their wants consulted.

It is in this that the secret of Mr. Dawes's success appears to me to lie. He has shown his knowledge of the springs of opinion amongst the poor by consulting their independence, and adapted the education he offers to their wants, by a careful study of their condition.

The King's Somborne school was commenced in the exercise of abundant faith in the affection of a labouring man for his children; and, notwithstanding that the wages of labour in the parish of King's Somborne are very low, the school fee was fixed at double that of other neighbouring schools, under the impression that he would be willing to pay more than is usually claimed of him for what he believed to be a really good and useful education, and that the higher fee would tend to create this belief in his mind.

Who are to be considered farmers, and to pay the highest fee, and who tradesmen and labourers, Mr. Dawes claims the right himself to decide, but all are placed within the walls of the school on terms of perfect equality; they are intermingled in their seats, and in the classes in which they are taught, and precisely the same advantages of instruction are offered to all.

Here, then, is a practical recognition of the principle which your lordship's recent measures appear to embody, and which public opinion now recognises, that education is not a privilege to be graduated according to men's social condition, but the right of all, inasmuch as it is necessary to the growth of every man's understanding, and, into whatever state of life it may please God to call him, an essential element in his moral well-being.

To give to a labouring man everything needful for the support of his family would be to pauperise him. To give him the education of his children is, moreover, to make him undervalue it. It is for this, among other reasons, that the estimation of education among the poor has for years past been sinking.

To treat labourers always as a separate and dependent class appears the likeliest way to perpetuate their state of dependence. In all we do—carefully to avoid intermingling with them those persons who, having emerged from their condition, have achieved some degree of independence (the employers and the employed), is to neglect an obvious means of cultivating those feeling of neighbourly consideration and mutual respect and good-will, on which the links of society depend for their permanence, and the commonwealth for its safety.

It was to embody these views, to unite in a new relation the farmers, the tradesmen, and labourers of his parish, that Mr. Dawes conceived the idea of bringing their children together in the parish school. He had a faith in the practicability of this, and he had the moral courage to act upon it. Much, no doubt, to the astonishment of the neighbouring farmers, he announced that the National school was open to their children to received the same education as their labourers' children were receiving, on condition of their paying for the privilege a higher rate of remuneration. On the one hand were their prejudices, and on the other, the fact that their children were offered a better education at home for 2*l.* a year than they could get by sending them to boarding school, for which they must pay from 30*l.* to 40*l.* The fact of the better education being once established in their minds, to attack them on the side of economy was to carry the day. One-third of the children are accordingly those of farmers and tradesmen, and the remaining two-thirds those of labourers. Thus in the King's Somborne school the foundation is laid of that mutual respect and good-will between the employers and the employed which is said once to have existed in England, but which seems of late years to have been disappearing from among us.

There is so intimate a connection and dependance between the education of the farmer and that of the labourer, that it is impossible to conceive the existence of a class of educated workmen fostered by a class of ignorant farmers, or a class of educated farmers in constant intercourse with a class of brutalised workmen.

If the one class is to be educated, we must educate also the other; and the only place where the education they both thus need can be given to either is the parish school. The labourer can get it nowhere else, neither can the agricultural tradesman or farmer. Farmers and country tradesmen live too far apart to enable them, as a class, to maintain good day schools for their children, and they are deterred by motives of economy from sending them to boarding schools. When therefore our training schools have sent out a new class of schoolmasters, it is to the parish school that both classes must look for education.

But that this may be accomplished, it must offer an education adapted to the wants of both; and in this adaptation consists the chief element in the success of the King's Somborne schools. What is the nature of it Mr. Dawes has himself fully detailed in his work entitled "Suggestive Hints on Secular Instruction." No other person having the same claim to attention appears to have given the same deliberate consideration to the subject, and no one else has, with the like success, subjected opinions thus formed to the test of experiment.

It is sufficient to say of his system, that it deals with reasons rather than with facts, and with things rather than with words: that, intended for a class of persons who are to delve out an existence from the material objects which surround them, it assumes the properties of those objects to be legitimate subjects of interest to them, and of reflection; and, as a principle, that the Almighty, in manifesting his wisdom and goodness in all material things, has, in mercy, associated the elements of thought with labour, and the means of exercising the highest intelligence with the humblest craft.

That it is for this reason that thinking and doing are associated in a pleasurable relation, so that what we do in the exercise of our judgment for some object and with an adaptation to some end we do with pleasure, but not that which is done with no exercise of our own judgment, for no object, and with an adaptation to no end.

Assuming, then, that in the knowledge or science of the things with which his observation is familiar, or which are associated with his labour, is to be sought a legitimate sphere for the exercise of a labouring man's reason and reflection; and that these afford the means of exercising those faculties and of developing them to the utmost limit of his powers, it gives to "the science of common things" an important place in the system of the school, and a remarkable development; and this seems to lie at the root of its success. Mr. Dawes thus speaks on this subject:

"With respect to that part of the instruction described in the foregoing pages which is of a scientific kind, I would say, and I do so from a feeling of conviction which experience gives, that in no way can the teachers in our higher class of elementary schools give such a character of usefulness to their instruction, as by qualifying themselves to teach in these subjects, introducing simple and easy experiments, which illustrate the things happening before their eyes every day, and convey conviction with them the moment they are seen and explained. It is a great mistake to suppose that boys of 12 and 13 years of age cannot understand elementary knowledge of this kind, when brought before them by experiment. Seeing the way in which the bigger boys were interested in it here, and the tendency it had to raise the standard of teaching, and to give rise to a wish for information, it has proceeded further than I at first contemplated; and the result has been that the school is provided with sufficient of a philosophic apparatus for all the common experiments of a pneumatic and hydrostatic kind, a small galvanic battery, an electric apparatus, &c. One little book used as a text-book is a volume of Chambers's Edinburgh books, 'Matter and Motion,' and this is illustrated by experiment.

"The end of all education ought to be, to prepare them for those duties and those situations in life they are called upon to fulfil, whether they be 'hewers of wood, or drawers of water;' of those who belong to the labouring, the middle, or the upper classes in life, to make them in their respective stations good citizens and good Christians; and I think it will be found that, according as a teacher keeps this in view, making his instruction bear upon the ordinary duties of life, or loses sight of it (I am speaking of a teacher competent to his work), he will succeed, or the contrary. I am perfectly convinced that many well-meaning efforts have not been attended with the success expected from them, entirely owing to their leaving out all instruction relaing to the occupations by which they were, in after-life, to earn their bread."—*Suggestive Hints*, p. 151.

If ever we are to educate the labouring classes it must, in my opinion, be by teaching them to reason and to understand about things which are connected with their ordinary pursuits; the things out of which each is compelled to extract a livelihood, or which lie in his daily path. With the labouring man these are things so engrossing, that whatever other process of instruction we may begin in his mind when a little boy at school, the consideration of these will infallibly take the place of it when he comes to be a man, and when his education should tell upon him.

It may be difficult to teach him principles, but not when those principles are associated with results, and those results to him useful results.

I have expressed in this Report an opinion that it would be possible to create such schools as that at King's Somborne generally in the country, and with this view, that the opportunity should be afforded to the promoters of such schools of some general direction and guidance in the management of them; and the training colleges placed on such a footing as to yield an adequate number of masters competent to teach them. It is a further condition of success that books should be provided specially adapted to the instruction of the children in these subjects, and the masters made familiar with the use of these books.—*An Account of the King's Somborne School.**

THE MONEY VALUE OF MANURES.

(Concluded from page 289.)

The Phosphoric Acid in Manure.—The various sources of this substance are (1) coprolites; (2) the "green sand" of England and the north of Ireland; (3) bones; (4) inferior guanos, or those from which the ammonia has been dissipated by rain, &c. Phosphate of lime, as produced in coprolites, costs about 6*l.* per ton.

Bone ash, containing 70 per cent. of phosphate of lime, sold last year for from 5*l.* 10*s.* to 6*l.* 10*s.*; and assuming the mean at 6*l.*, we pay in this state for phosphate of lime upwards of 8*l.* 10*s.* per ton. Good ground bones, which would not cost the manufacturer more than 7*l.* per ton, would contain:—

Of bone earth	46 per cent.	
From the price per ton	£7	0 0
Deduct the value of the nitrogen (in the 28 per cent. of gelatine) about 5 per cent., equal to 6 per cent. of ammonia, at 56*l.* per ton	3	7 2
Cost of the 46 parts of phosphates or 7*l.* 16*s.* per ton	£3	12 10

* Groombridge and Sons.

The chemical substances known as phosphate of lime, therefore, may be said to cost the manufacturer—

a In coprolites	£6 0 0	per ton
b Bone ash	8 10 0	,,
c Ground bones	7 16 0	,,
d And in boiled bones he ought to have it for	7 0 0	,,

I have satisfied myself by direct experiment that ground coprolites (the phosphates in which are valued by chemists at 7*l.* or 8*l.* a ton) are worthless in the production of the crop to which they are immediately applied, while ground bones are most efficacious manures.

Now, nearly all manure manufacturers employ coprolites, and, no doubt, when acted upon by sulphuric acid, their phosphates become powerful manures; but as all their phosphates are not dissolved, and as the portion not so dissolved is valued at 7*l.* or 8*l.* a ton, I submit that little reliance can be put in the present mode of estimating the value of superphosphates, so far as the insoluble phosphates are concerned. And if it be true that the price at which the insoluble phosphate is usually valued be unsatisfactory, I think it will soon appear that the rule adopted in reference to the soluble phosphates is perfectly anomalous.

Those chemists who value (insoluble) phosphate of lime at 7*l.* a ton say that the soluble or biphosphate is worth four times as much, or 28*l.* per ton. The relative quantities of the acid in the two salts is as follows:—

Every 100 lbs. contain—	Phosphate of lime. Lbs.	Bi-phosphate. Lbs.
Phosphoric acid	46.15	72
Lime	53.85	28
	100.00	100

Supposing that a ton of lime obtained from coprolites cost 6*l.*, let us endeavour to ascertain the cost of producing a ton of biphosphate from that source.

In converting the phosphate into biphosphate of lime we require 45 lbs. of the real acid for every 100 lbs. of phosphate, or to dissolve a ton of sulphate we must employ 1008 of real acid, which is supplied by 1236 lbs. of best liquid acid, which, at 1*d.* per lb., amounts to 5*l.* 3*s.*

Now, by acting on a ton of phosphate, worth ..	£6 0 0
With 1236 lbs. acid, worth	5 3 0
Total..	11 3 0
We get of sulphate of lime or gypsum 1725 lbs., at 30s. per ton	1 3 0
And 1523 lbs. of biphosphate for	£10 0 0

Or, in other words, by acting on coprolites by means of sulphuric acid we obtain the biphosphate at about 15*l.* per ton.

But, granting that we act on bones, a ton of which, say

	£ s. d.
Costs	8 0 0
With 1236 lbs. acid, worth	5 3 0
Total	13 3 0
We get, as before, 1725 lbs. gypsum, worth ..	1 3 0
And 1523 lbs. biphosphate of lime, for or about 18*l.* per ton. ..	12 0 0

If those calculations be correct, I am at a loss to understand how chemists value biphosphate of lime at from 28*l.* to 48*l.* per ton. And I do urgently invite the attention of our chemical friends to this part of the subject to which I have undertaken to ventilate.*

Valuation of Manure.—I may now explain for the information of the practical farmer, how he may, with the aid of an analysis (which should always be made by a first-class chemist), ascertain the value of a manure.

The following is the table of prices adopted up to the present time; and any substance not mentioned in the table may be altogether overlooked in the calculation.

Component parts.	Price per ton. £ s. d.
Organic matter	0 10 0
Ammonia	56 0 0
Phosphate of lime	7 0 0
Soluble or biphosphate of lime	28 0 0
Alkaline salts, when chiefly soda compounds	1 0 0
Potash	20 0 0
Unburnt sulphate of lime or gypsum ..	1 10 0

Now, in applying these figures to the calculation of the value of a ton of any manure, the simplest mode of procedure is that recommended by Mr. Nesbit, namely, to consider the percentage of ammonia, biphosphate, &c., in the manure, as the number of tons of those matters contained in 100 tons of the manure (for 5 per cent. means 5 tons in every 100 tons, or 5 lbs. in every 100 lbs.); multiply the percentage of each ingredient by its price per ton, and the sum of the product divided by 100 gives the price per ton.

In order to illustrate the application of those figures, I will estimate the value of genuine Peruvian guano, the average composition of which is as follows:—

	Per cent. composition, &c.	Price per ton. £ s. d.	Value of 100 tons. £
Ammonia	16.52	56 0 0	924
Organic matter and ammoniacal salts	52.05	0 10 0	26
Potash	3.50†	20 0 0	70
Insoluble phosphate	22.78	7 0 0	161
Phosphoric acid in alkaline salts 3.34, equivalent to biphosphate of lime	4.63	28 0 0	140
			£1321

Or to 13*l.* 4*s.* 2*d.* per ton.

* The explanation of the anomaly is simply this—that you do not get so large a quantity of superphosphate from the use of the materials verified. The result is partly neutral phosphate, and only *partly* biphosphate.

† Potash is not usually estimated; but Mr. Way found this quantity in genuine guano.

We shall always find that the price at which guano is sold will agree pretty accurately with its estimated value according to the foregoing scale of valuation—a result which is to be expected, as the prices of other manures revolve round that of guano. The great mass of manures in the market are superphosphates, omitting, of course, sophisticated articles, which belong to no known genus, and can be referred to no definite species. It is no uncommon thing to find manures vended in which the farmer purchases ammonia at the rate of 160*l.* per ton, and soluble phosphates at a corresponding figure. Manures not worth more than 2*l.* or 3*l.* per ton are hawked about the country, freely advertised, and offered for sale at from three to four times their value. Every man who has an interest in the advancement of agriculture should lend his aid in stemming this fraudulent system, detrimental alike to science and progress, by causing a reaction in the minds of those who are victimised. I know an establishment in this city professing to sell Peruvian guano which does not obtain 1 ton of that substance from the Messrs. Gibbs. I know of a concern in Dublin where hundreds of tons of oyster and other shells are calcined, and after being reduced to a fine powder are mixed with a little guano to give the peculiar smell and something of the appearance of that substance. And the effect of the mixture is to dissipate the little ammonia contained in the limited quantity of guano added. I see manure vendors at present selling superphosphate according to analyses made two years ago. I find a Scotch firm advertising phospho-Peruvian guano, and ingeniously stating that their sample contains a quantity of ammonia equal to 15 per cent. of crystallised sulphate of ammonia, which is calculated to mislead the ordinary farmer, as that quantity of sulphate is only equal to about 3 per cent. of ammonia. I see, in last Saturday's papers, a manure advertised under the name of British Economical Manure in these terms—"1½ to 1½ cwt. of it per acre, though costing only 15*s.* to 18*s.*, has been found equal to 3 cwt. Peruvian guano" (which, at retail price, would cost about 2*l.*). Surely, no intelligent farmer will be gulled by such an announcement; and to crown the farce, we are informed that more (than 1¼ to 1½ cwt. per acre) must not be used, and that a saving of 75 per cent. may be effected by the use of this manure, which is backed by thousands of testimonials.

To guard the farmer from fraud, I submit three very simple propositions:—1st. To deal with men of well known probity—men who have a stake in the country and a character to lose.

2d. To send a sample of the manure which he purchases to a chemist for analysis, and ascertain by the table already given the commercial value of the article.

3d. The small farmer should, in my opinion, always manufacture his own manure, and this can be easily accomplished in the following manner:—Procure a large, shallow vat, in which place ground bones—boiled bones being the cheapest and best; moisten them with their own weight of boiling water, after which add one-third their own weight of brown sulphuric acid, which costs ¾*d.* per lb. The action will be more effectual if the water and acid are first mixed together, but it is safer to proceed as I have directed, as a very violent action takes place when water and vitriol are mixed. As the action of the acid on the bones goes on for some days, the mass should be frequently stirred; and when the work of solution ceases, the mass may be dried with fine dry mould.

An intelligent manufacturer, who can command skill and every appliance which science points out, and who is content with fair remuneration for superintendence and capital, can manufacture superphosphate cheaper than the mere farmer; but it seems to me exceedingly desirable to teach the small farmer, who is most liable to become a prey to fraud, how he may make his own superphosphate.

Home Correspondence.

Thick or Thin Sowing.—I am about to "flag" great part of a field of Wheat drilled with 4½ pecks of seed per acre. It is too thick. Had I sown 2 bushels it would have gone down in the Grass. The field was Wheat in 1857 and Beans in 1858. So much for deep cultivation, drainage, and cleanliness. A thick crop is not always the result of a thick sowing. Much money is lost by sowing large quantities on highly farmed lands. If I were to catechise a farmer I should say: How many bushels of crop do you get for one bushel of seed? A Russian nobleman told me to-day he got 2 to 2½ for one. I replied that my crops which he was looking at would most probably yield 40 for one. In Oats and Wheat we need not be alarmed at Russian productions just yet. His land was sandy and boggy, in the same province as St. Petersburgh. Hoeing and weeding is not a Russian practice, consequently they are sure at any rate of a good crop of weeds. *J. J. Mechi, Tiptree.*

Societies.

ROYAL AGRICULTURAL OF ENGLAND.

AT a Weekly Council held Wednesday, June 8th, present the Right Hon. Lord Berners, Trustee, in the chair,

The names of candidates for election were read.

A letter from Mr. R. Wainwright was read relative to a compound that he stated he had discovered to be unusually fertilising. The Council expressed their willingness to receive any further particulars he might wish to communicate.

Mr. H. Smythies, of Auckland, New Zealand, addressed an inquiry to the Council as to whether they were in possession of any remedy (poisonous or otherwise) against a small caterpiller, which he stated passes over the face of the country in swarms during hot dry summers and devours all vegetation.

A communication from Mr. Greenwood, of Abermant, Brecon, was read relative to an insect that had destroyed his Mangel Wurzel crop. This insect is not seen during the day-time, and the specimens which were placed on the table had been collected very early in the morning. Lord Berners stated that his bailiff had found the Mangel plant on his lordship's estate eaten all over when about an inch high by a similar insect.

Professor Simonds stated that his Mangel plants had been attacked by an underground grub. The Council directed the insects to be forwarded to Mr. Curtis, the entomologist, for examination, and also desired it to be stated in the reports of the proceedings of the meeting, that the Society would be obliged by any further information on this subject from the members or others whose Mangel crops had suffered in a similar manner to those above named, and in case any successful remedy had been discovered by an account of its nature and mode of application.

Mr. Whitehead transmitted copies of the prospectus of the "Cottage Improvement Society," 18, Adam Street, Strand.

Baron de Cetto, of the Bavarian Legation, transmitted copies of the Transactions and Almanac of the Agricultural Society of Bavaria.

The thanks of the Council were ordered for the above communications, as also for the Journal of the Statistical Society, the Transactions of the Entomological Society, and the American Geographical and Statistical Society, which were placed on the table.

The Council then adjourned to the weekly meeting on Wednesday next.

BATH AND WEST OF ENGLAND.—In addition to the remarks last week upon the stock and implements exhibited at their very successful annual meeting at Barnstable, we now give an extract from the report of the Council to the Society, in which some of the statistics of the exhibition will be found.

The General Meeting of the Members of the Society took place last Thursday, J. Sillifant, Esq., President, in the chair. A letter was read from Sir Thomas Dyke Acland, enclosing a cheque for 50*l.*, for distribution as extra prizes among the successful exhibitors of cattle and sheep. The letter was received with acclamation, and a vote of thanks unanimously passed. The report of the Council was then read declaring the steady increase of the Society, an increase of five governors, two life members, and 75 other members, since last meeting. There were 146 exhibitors of stock at the present meeting; and the number of animals was: cattle 177, sheep 325, horses 55, pigs 35, total 592. The number of exhibitors of implements was 108, and 1080 articles were entered. In the portion appropriated to machinery in motion there were 18 exhibitors. The report stated that in January last the Council decided upon having an exhibition of arts and industry, and they had the satisfaction of reporting that the exhibition comprised one of the most beautiful collections of the works of art to be found in this country. The Council acknowledged the kindness of those who had contributed in this department, in which there were about 5000 articles. They recommended that the place of meeting next year be at Dorchester. The committee appointed by the Society, on the question of weights and measures, reported that they considered it desirable that a uniform standard of weight and measure should be adopted throughout the kingdom; that weight is the surest test of quantity as well as quality of grain; and that in any legislation on the subject it will be necessary to determine what weight of corn should be substituted for the imperial bushel, in ascertaining the averages for the purposes of the tithe commutation. Lord Rivers is invited to accept the appointment of president for the ensuing year.

From the interest excited in the locality and the large attendance at the meeting, its effects will no doubt tend permanently to improve the agriculture of the neighbourhood. Although the implement makers could not expect in the country of small farms to dispose of their machines, particularly of the larger kinds, to the same extent as in the purely agricultural districts, where large occupations afforded wide fields for their employment, yet we doubt not the opportunity afforded for examination by the very capital implement show will set on foot the spirit of inquiry, which will not be satisfied until very many of these implements become part and parcel of the stock of the Devonshire farms. So far as the giving of prizes being essential to the collection of a large and good show, the question has been fully solved by the late meeting. It was the best show of implements this Society has ever had. The prize system no doubt has its advantages as well as its disadvantages. It no doubt stimulates inventive talent, and directs attention to novelties and meritorious inventions; but at the same time the very hasty trials that have often been instituted and the crude judgments founded thereon have frequently had the effect of awarding praise where it is not due, and still more

frequently really good inventions have been condemned by the public owing to their being hastily or unwittingly passed over by the judges.

We omitted in our notice of the Barnstaple Show last week to state that it was held in a very convenient field of 16 acres, about a ¼ mile from the town; and while there was ample space afforded for the display of the numerous attractions of the meeting, the attendance was so good on the principal days that there really appeared to be no space to spare. We alluded last week to the exhibition of fine and useful arts, and the display of the works of water-colour painters, of which Devonshire furnishes considerably more than any other county. We cannot attempt to point out the principal objects or those worthy of the most attention, but on the whole this branch of the exhibition was considered very successful. It is worthy of note that as each district is celebrated for some particular trade or manufacture, such meetings as the present afford very suitable and attractive opportunities for their public display. We should not forget to mention that the town was handsomely decorated for the occasion, and the authorities vied with each other in their endeavours to welcome the members of the Society, the Mayor taking the lead in a display of the most unbounded hospitality. In speaking of the implement department, although there were but few novelties amongst the many really good implements exhibited, it is right to mention a rather important improvement in threshing machines introduced by Messrs. Garrett & Sons, by which the fan is rendered more available in separating the corn, and being driven from the drum, a great speed is attained and a number of bearings dispensed with, by which the machine is cheapened as well as improved. We also noticed an improvement in ploughs by Messrs. Taskers, by which the implement is turned with greater facility and speed, and without dragging on the ground, the improvement being introduced without increased expense. Messrs. Clayton & Shuttleworth were there with their admirable steam-engines, and Messrs. Ransome & Sims with a large collection of their sterling implements.

Amongst the useful novelties of the Show were a class of Prizes given by Mr. Miles, of Dixfield, Exeter, for the best Shoeing Smiths. The Judges of Horses were called in on Wednesday to adjudicate—eight competitors entered the lists, and were each called upon to make a fore-shoe and put it on. The adjudication became a question of points; and it was somewhat difficult to decide the respective merits, as some operators excelled in making or fitting shoes, and others in putting them on. However, a decision was at length arrived at, and three prizes were awarded respectively to Jenkins, Culwill, and May, whilst several others were commended. It may be interesting to note that the time taken in making and fitting a shoe ranged from 29 minutes to 57, and the nailing on from 3¾ to 8½ minutes, certainly a very wide range.

In conclusion we are pleased to find that in a pecuniary point of view the meeting has been highly successful, more so indeed than on any former occasion, a result which the excellence of the arrangements systematically carried out by a great number of gentlemen well deserved. The dinner in a large tent in the show yard on Thursday, although less numerously attended from the heavy storm prevailing at its commencement, proved a very interesting feature of the week's proceedings. It was indeed admirably presided over by the President, J. Sillifant, Esq., who was well supported, and its interest was throughout well maintained.

CHEMICO-AGRICULTURAL, ULSTER: *Steaming Bones.* Mr. M'Mechan gave an account of some experiments he had tried with bones softened by steaming; and also with bones steamed and acted on by sulphuric acid, in which he had found that the advantages derived from the addition of the acid were so evident in the produce of Turnips obtained, that he had resolved to continue the use of vitriolised bones.—Dr. Hodges illustrated, by experiment, the great advantages derived from the minute state of division of the phosphates of bones, obtained by the employment of the acid solvent. Though the superphosphate became decomposed, on contact with the lime and other constituents of the soil, yet the distribution of the finely divided tri-basic phosphate was greater than could be effected by any mechanical method of division.

Storing of Root Crops.—The following letter, in reference to a communication at a late meeting, was read:

"Having just seen, in the report of your proceedings at your last meeting, a letter from Mr. Healy, of Larne Agricultural School, in which he speaks somewhat condemnatory of the practice hitherto adopted in many districts of storing Turnips with straw covering, I beg to make a comment with the view of correcting what I consider to be erroneous doctrine calculated to entail unnecessary labour and expense in this particular department of the business of the farm. As to the most desirable mode of storing Turnips or Mangels, there is none equal to that of pitting, or binging them up in large heaps, convenient to the place of consumption, secured with thatch and ropes. The crop may be stored in bings of any size, at pleasure, from 4 to 7 ft. wide at base, and carried up thereon at equal angles to a fine thin top (taking care, in the course of formation, to throw out all bad or even slightly damaged Turnips, as well as the very smallest in size, the latter being kept for the finishing of the bing). There is no danger whatever from fermentation, there being sufficient ventilation through all the straw that is required for the perfect covering of the heap. The straw should be put on evenly and neatly, and with as much care as in the case of covering a corn stack. This attended to, a very ordinary supply will suffice,—a heavy covering is quite unnecessary. I have kept Turnips up till the middle of May stored in this manner, and I can vouch for the fact, that at that period they were, on that side not stricken by the sun, as hard and firm, and in every way in as good condition as they were on the day carted in. I must admit, however, that the Turnips on that side of the bing on which the sun reflected were somewhat soft in quality; and, to obviate this, I would recommend that some part shaded with trees should be selected for the place of storing. In the winter of 1853—the wettest, I believe, in the memory of man—I stored up an immense quantity of Turnips, Carrots, &c., the former carted in and built up often in the midst of heavy rains; and, as in this case, building and covering were carried on at same time, and the roots keeping, as aforesaid, until the end of their season, no better proof could be adduced of the safety and desirability of the method. Mangels and Carrots, lifted and stored in the time of frost, are sure to give way in the heaps. Turnips left out in the fields in winters of protracted frost, will be sure to rot immediately on the fresh weather setting in. I have never found this to fail.—*R. M. Cairns, Stirling.*"

Reports on Analyses.—Dr Hodges reported the results of analyses of manures offered for sale in the present season. Among these he directed attention to the composition of two samples of Ritchie's vitriolised bone compound, one of which had been examined for the manufacturers, and the other for a member of the Society in Newtownlimavady. 100 parts contained:—

Water	10.82
*Organic and ammoniacal matters	32.84
Biphosphate of lime	11.50
Equal to bone phosphate made soluble	18.12
Insoluble phosphate of lime	4.48
Hydrated sulphate of lime	31.02
Insoluble siliceous matter	4.20
Alkaline salts	5.14
Containing 0.76 phosphoric acid Equal to phosphate of lime	1.20
	100.00

*Capable of yielding 2.9 ammonia.

representing a fertiliser of high value.

Patagonian Guano.—A sample of guano, termed Patagonian by the importers, had lately been examined, and was found to be much superior in quality to that usually brought to this country. It had been, he (Dr. H.) was informed, taken from a newly-opened deposit belonging to Messrs. H. C. Smith & Co. of Liverpool. The large amount of soluble phosphates which its analysis showed it to contain added very much to its value. 100 parts of it had the following composition:—

Water	9.66
Organic matters capable of yielding 1.61 of ammonia	25.42
Phosphate of lime	23.02
Sulphate and carbonate of lime	7.24
Alkaline salts, containing phosphoric acid equal to 9.16 soluble phosphates	15.72
Insoluble earthy matters	18.94
	100.00

Inferior Phospho-Peruvian Guano. — Dr. Hodges placed before the meeting a sample of Phospho-Peruvian guano offered for sale in Londonderry at 12*l.* per ton. It was darker in colour than that which had been examined for Messrs. Seagrave of Liverpool, and was not value for more than 6*l.* per ton. The following was its composition. 100 parts contained—

Water	17.20
*Organic matters	14.12
Bi-phosphate of lime, equal soluble phosphate, 4.00	2.55
Insoluble phosphate of lime	31.30
Hydrated sulphate of lime	10.93
Alkaline salts	2.90
Sand	21.20
	100.00

*Capable of yielding ammonia 3.24

Farmers' Clubs.

NEWCASTLE-UPON-TYNE: *Farm Leases.*—At a late monthly meeting of this club, Mr. Dunn read a paper on this subject from which we make the following extracts:—Having during an extended professional mining practice in England, Scotland, and Ireland, been made conversant with the principles of mining leases, I have, at the same time, directed considerable attention to the various customs regarding the tenure, letting, and management of lands. I have heard and seen much of the misery and ruinous state of agriculture in Ireland. I have witnessed the excellent condition of the cultivation in Scotland, under the prevailing custom of 19 years' leases, and I am constantly witnessing the evil effects upon districts where leases are not granted, and where the tenancies are from year to year, or, what is much the same, for short terms of agreement. I particularly allude to corn farms. I am constantly hearing it asserted and determined by Farmers' Clubs that the most advantageous state of the land, both for landlord, tenant, and the public, and for the obtaining the greatest amount of produce from the soil, is that farms should be held on permanent leases for 15 or 20 years' duration. The object to be attained by such lease being that the farmer will freely spend his capital, labour, and skill upon the presumption (should he so long live) that they will produce advantages to himself and family, whilst the estate of the landlord will participate in the advantages. The first point to which my attention has been directed is the apparent difficulty in laying down such principles as will be agreeable to both landlord and tenant, which, with great deference, I enumerate as follows:—

1. The difficulty of establishing a fixed rent for so long a period as 15 or 20 years, during the ever-varying state of labour and the value of produce.

2. The absence of a provision for enabling a tenant not only to quit at certain appointed periods, but to alienate his lease in case of death or other circumstances; first, offering it to the landlord under tenant-right compensation, so as to realise any improved value that his capital and industry may have produced.

Upon the subject of terminating the lease, I find that many intelligent persons conceive it highly unreasonable that the tenant shall have the power at certain periods to quit the landlord, unless the landlord have a corresponding power to quit the tenant. Now, such a clause as this would in my opinion negative justice, and strike at the root of all improvements to arise from a lease. The clause in favour of the tenant would remain a dead letter so long as the holding of the farm was profitable to him, whereas the landlord might have an obvious advantage in demanding an increased rent, under pain of notice to quit. Without any power of terminating the lease, the landlord is satisfied to receive the agreed rent during the whole term; and should not, I submit, object to the tenant possessing the power of quitting, under circumstances which would call for a reduction of rent or a return of — per cent., when imperatively demanded; for a tenant, pressed by circumstances of loss, and not allowed to quit, would obviously be an unprofitable tenant, inasmuch as he would cease to work and improve the farm as he ought to do. With the loss of production in mining leases, the power of quitting on the part of the tenant only is all but universal, and also of disposing of his lease; and I submit that the comparison is not out of course, for the meaning of a lease is the inducement to expend capital. In many cases a compensating medium is adverted to by a sliding scale, founded upon the rise and fall in the market of the chief produce of the land*—for instance, Wheat and Oats; and although such an application cannot be made entirely to meet every contingency, yet it may be made to supply a certain quota, amounting to a sort of return, such as landlords are wont to give when their tenants are very clamorous. The difference between the two systems being, that in one case the tenant acquires the reduction as a right, whereas in the other case he has to entreat it from his landlord or his agent as a favour; and that, after repeated application and delays, during which the tenant's resources become exhausted, and his spirit broken. I will with great deference submit for the consideration of the club the basis of a lease, calculated to secure to the landlord his proper quota of rent, viz., a fair proportion of the amount value of the produce; whilst it also would defend the tenant from the evil consequences arising from the fall of prices, &c., as hereinbefore enumerated. The general principle is illustrated in mining leases, where the produce and value are altogether uncertain, viz., that the landlord reserves for himself 1-6th or 1-8th of the value, whether paid in kind or in money value; the same principle applies to tithes in kind. The question therefore arises: cannot some similar principle be made applicable to farm leases? Although this is the acknowledged basis of mine rent it is often found more convenient to commute it for a certain tonnage, for the principle cannot be carried out unless some standard of value can be laid hold of, and this is not practical in case of indirect selling in distant markets. If a code of this sort can be hit upon, then I humbly submit that it would tend to elevate the position of the tenant above that to which he is driven in the casual and perpetually recurring application to the landlord or his agent for a return of 10 or 15 per cent. It occurs to me, therefore, that the authentic fact of average prices in the different markets ought to form the grand basis for such a structure as I have taken the liberty to suggest; but professing myself unequal to the task of assigning the details, I leave the matter in the hands of the club, trusting that they may see it worthy the consideration of a special committee of their body to scrutinise and report.

Suggested Basis for a Permanent Lease—1. Term, 15 and 20 years to A B, his executors, administrators, and assigns. 2. Power for tenant to quit or alienate the lease at every — years (varying according to the scheme of husbandry adopted) by giving six or 12 months' notice in writing, and having complied with all the obligations of the lease—time of quitting to be May. 3. In case of death or otherwise, the representatives of the tenant, before offering the lease for sale, to offer it first to the landlord, at a price, if necessary, to be fixed by disinterested referees, and also to receive from the landlord such compensation, for added value, or inexhausted improvements, as may be fixed by indifferent valuators, the grounds of such claim to be specified in the agreement. 4. The general principles of managing the farm of course to be laid down specifically, and the usual remedies for the landlord reserved. 5. As the rent (corn farm) is assumed to be founded chiefly upon the average price of Wheat and Oats, the averages to be procured from a certain market upon which the certain rent is first fixed. But in case such averages should be found to fall, then for every — per boll reduced value a diminution shall take place in the rental of — per cent,—and also that a corresponding ratio should also hold in favour of the landlord. The principle of a corn rent is so little practised, and I may add so little understood, that I am willing to waive that part of the subject, because, if the landlord and tenant agree in preferring a certain annual rent, it does not affect the other material points in the case. The

* Such I understand to form the basis of the farm leases of his Grace the Duke of Portland upon the Bothal estate, the particulars of which have been transmitted to me by one of the tenants, as follows:—

"Scale of reductions for calculating his Grace the Duke of Portland's rents in Bothal Barony, commencing 13th of May, 1832. ——. —— Farm.

"The rent of your farm is fixed to be 274*l.* per annum when the average price of Wheat in Newcastle market is 7*s.* 6*d.* per bushel, and

			£	s.	d.
When Wheat is	7*s.* 3*d.*	per bushel, every 10*l.* of rent will be reduced to	9	16	8
,,	7*s.* 0*d.*	,, ,,	9	13	4
,,	6*s.* 9*d.*	,, ,,	9	10	0
,,	6*s.* 6*d.*	,, ,,	9	6	8
,,	6*s.* 3*d.*	,, ,,	9	3	4
,,	6*s.* 0*d.*	,, ,,	9	0	0
,,	5*s.* 9*d.*	,, ,,	8	16	8
,,	5*s.* 6*d.*	,, ,,	8	13	4
,,	5*s.* 3*d.*	,, ,,	8	10	0
,,	5*s.* 0*d.*	,, ,,	8	6	8

observation of certain intelligent land agents is, that such clauses as here suggested would negative the very existence of the lease: but that I deny, the principal object being to divest it as much as possible of ruinous variation, for which the capital of the tenant is not prepared, it being specially the business of the corn merchant to buy at market price, and hold upon the speculation for a rise. 6. Lease to have a general clause of reference to settle disputes which may arise during the currency of the lease.

[A discussion of the subject was postponed till the following month, when several addresses were delivered, which will be given next week.]

SMITHFIELD CLUB.—The following is their balance sheet of the past year:—

Balance in hand of bankers, Dec. 10, 1857, including Life Compositions to be invested, 42*l.*		£1452	7 2
Balance in hands of Hon. Secretary, Dec. 10, 1857		6	11 11
Received since (by bankers)—			
Half-year's dividend on 3 per cent Consols, due January, 1858		26	4 9
Half-year's dividend on 3 per cent. Consols, due July, 1858		27	17 11
Annual subscriptions for 1858 .. £1 1 0			
" " 1859 .. 2 2 0			
	3	3	0
Received since (by Hon. Secretary)—			
Of Mr. Boulnois, for Show 1857	700	0	0
Compositions	73	10	0
Annual subscriptions for 1853 .. £1 1 0			
" " 1854 .. 1 1 0			
" " 1855 .. 1 1 0			
" " 1856 .. 2 2 0			
" " 1857 .. 25 4 0			
" " 1858 .. 175 7 0			
" " 1859 .. 4 4 0			
	210	0	0
Non-members' fees. Stock at Show 1858 ..	130	4	0
" " Implements " ..	603	15	0
For steam engines and barn works	45	0	0
	3278	13	9
Drafts, prizes 1857, not presented at bankers—			
M'Combie £10 0 0			
Earl Darnley 5 0 0			
	15	0	0
	£3293	13	9

INVESTMENT ACCOUNT.

1858. Dec. 1, Amount of Stock standing in 3 per cent. Consols in the name of the trustees .. (This includes 1000*l.* surplus income ordered to be invested until wanted for current expenses.)	£1920	14	2
Paid on account of Prizes awarded at Show 1857 ..	985	0	0
Medals	155	10	0
Judges and Veterinary Inspector, Show 1857 ..	35	0	0
Bills—			
Printing (Wilson) £55 17 0			
Advertising (*Mark Lane Express*) .. 7 10 0			
" (*Bell's Messenger*) .. 5 10 0			
" (*Gardeners' Chronicle*) .. 4 6 0			
" (Ridgway) 4 4 0			
Weighing Sheep (James & Co.) .. 2 2 0			
Stationery (Mason) 2 6 6			
Tin Numbers (Marchant) 2 11 0			
Show-yard Agreement and Stamps (Clutton) 11 17 2			
Bookbinding (Jones) 0 8 3			
Dinner arrangements (Genge) .. 12 12 0			
Collecting clerk, dinner ticket .. 0 13 0			
Toast master 0 5 0			
	110	1	11
Postage and receipt stamps during the year, up to Dec. 1, 1858 (as per postage book)	16	16	6
Clerks' time (as per time book)	35	14	5
Commission on Post-office orders, returning over-payments for steam engines and barn works not admitted, show 1858	0	3	3
Stamped cheque book and draft stamps for renr. of book in use	0	15	6
Compositions invested, added to stock in 3 per cent. Consols	115	10	0
	£1454	11	7
Balance in hand of bankers, Dec. 1, 1858.. ..	1827	7	8
Balance in hands of Hon. Secretary, Dec. 1, 1858	11	14	6
	£3293	13	9

Dec. 4, 1858, Audited and found correct,
(Signed) WM. SANDAY,
W. TORR,
JAMES QUARTLEY.

Foreign Correspondence.

SPA, BELGIQUE.—On a beautiful sunny morning in the balmy spring time, we set out from Bruges in one of those comfortable hooded gigs, which while permitting a view of all as you pass along still give shelter from the wind and rain—conveyances in every way more comfortable than the nondescript vehicles known in England, and the possession of one of which, according to a first-rate authority, confers on the owner the title of "respectable." Our destination was the town of L'Ecleuse, in Holland, and the object of our visit to it was to examine the peculiarities of that interesting department of Flemish or Belgian agriculture, known as the Polders cultivation, examples of which are met with in its immediate neighbourhood.

As we passed along we met with more pasture land than we had yet seen in our rambles in Flanders—indeed the district in this direction some miles from Bruges is somewhat celebrated for its meadows. A striking feature of the farm steadings was the large orchards attached to them. This department has considerable attention paid to it in the neighbourhood of Bruges; immense quantities of the fruit reared in the orchards being sent off to London in the season. An orchard well managed should yield a profit of 30*l.* an acre. Great pains are taken to select good trees, and of such qualities that as one goes out another comes in; by this means a succession of crops is secured during the season. The land devoted to orchards is well worked before the trees are planted, and a crop or two well manured taken off.

The country, although flat as a bowling green, was by no means dull or uninteresting—a Flemish farm district is never this—for what with the trees grown in avenues of handsome breadth and great length (we have passed through one three leagues long), and dotted here and there in clumps over the landscape, the finely cultivated fields with their beautiful green or their brilliant patches of Colza, and thickly studded with farm houses with their red-tiled roofs and whitewashed walls, a prospect is made up, which if wanting in the charms which hill and dale, rock and valley give, is at least pleasant to the eye; and abounds at all events in that degree of interest which affords much thought to the contemplative mind. For every step one takes, and every field one sees, tell of the successful battle fought and won by man over materials of the most unpromising kind. For every yard of the district we are now travelling through has been wrested from the ocean; in times long gone by the sea rolled over places where now the corn waves, and where now the sounds of human labour are heard as it goes on merrily with its work, or the lowing of cattle or the bark of the house dog breaks the silence, the howl of the wind as it swept over sand heaps, and the roar of the ocean as it broke in thunder tones on the beach, reigned supreme in the olden times long ago. Slowly, and foot by foot, has territory been won from old Neptune's hands; and were it not for evidences which are everywhere met with, you would have great difficulty in believing that such has been the case. Thus not far—a few minutes' walk—from Bruges, the village of St. Pierre sur la Digue is met with. As its name imports, this village in ancient times was close upon the *digue* or sea wall, which kept out the tide from the cultivated lands. Again, this morning's drive took us through the village of Damme; and as you passed along its quiet street, and admired the quaintness of the houses, or wished to examine the old church, you certainly would not have dreamt that you were passing through what in ancient times was a most important maritime town. But so it was, and had a large harbour from which issued ships of no small burthen trading with all parts of the world. No look now about it of a seafaring town; no ships lying there with streamers idly floating from their mastheads; not a vestige left to tell of its history in the olden time; completely and altogether changed in its aspect and fortunes now. Neptune's temple has for once and ever been closed, and his worshippers now throng that of Ceres.

It was odd as we drove along to notice how the churches, one and all, were stripped of their spires, nothing but their towers left, which looked unfinished, and loomed large and heavy in the landscape. This general demolition of the spires was, we were led to understand, done by the orders of Napoleon, who wished not to give by their means a series of useful landmarks to the sailors of the ships of the "nation of shopkeepers" who swept the seas.

As we drove on we passed by means of two handsome suspension bridges the broad waters of the two canals of diversion; one of these brings the waters of drainage from the district of Ghent, the other from that of Courtrai; yet here not far from the sea they run parallel to each other at a distance of not more than 60 or 80 yards. There was little to tell us when the frontier line, dividing Belgium from Holland, was crossed, save the erection of stone pillars, placed at distances along the line; one side bearing a cast-iron tablet with the arms of Belgium, the other side a tablet with those of Holland. The country on both sides was in every respect alike in aspect. The farm houses had however little garden plots attached to them which, cultivated with the greatest care and having a large variety of flowers and plants, showed that we were among a people having a "flower-love." Flower gardens we have rarely seen attached to the Flemish farm houses. As we drove into L'Ecleuse we passed huge, misshapen, straggling mounds, and were told that they were the remains of the earthworks or batteries raised in the stormy times of the Revolution of 1830. "In Flanders," said our companion as we passed them, "these would long ago have been levelled and cultivated instead of lying waste as they do here." Our friend clearly had no great love for the Dutch; he did not tell us why, and we were indifferent to know. The town of L'Ecleuse struck us as particularly neat and clean, with its dazzling white walls and brightly painted doors and jalousies it looked more like a toy-town than one where staid burghers dwelt. The town is not remarkable for anything save a clock. A man armed with a large hammer and worked by machinery comes out and strikes a bell previous to the clock striking the hours. We were led to believe that this figure struck the hours, which would have taken a higher range of mechanism than that which enables him to "warn" the hour, which is all he does. We were idle or curious enough to stand in the Grand Place five minutes to hit the time when the figure would go through his work. In the doing of this he had a spasmodic stiffness, a jerking, jolting gait and action, somewhat unsatisfactory. As we turned to go away we had a notion that the exhibition was not worth waiting for, and that the whole affair smacked strongly of humbug; but as the inhabitants looked evidently upon it as a thing of vast importance, something to be proud of, if not to swear by, we discreetly kept our thoughts to ourselves, and duly expressed our surprise at the exhibition, albeit not saying at what we were surprised.

Thirty years ago vessels came close up to the town; now the water way is completely choked up, and land with rough herbage upon it gradually forming over the place where years ago vessels sailed. So far now is the sea from the town, that we had to walk for nearly two hours along the top of the embankments or *digues* before we arrived in sight of the sea-shore, on which we saw the waves of the turbulent North Sea breaking in long lines of curling foam. This walk affords an excellent opportunity of observing the formation of cultivable land in all its stages, and also, when fairly under the hand of man, in its fair and rich fertility. On the seaward side of the embankment which surrounds the reclaimed portion, you see as you walk along tracts of marshy half-formed soil, with here a patch of miserable vegetation, in which a sheep or two find a precarious footing and a scanty feed; there, a space of yielding quicksand on whose surface a bird dare scarcely tread; anon a pool of water lying black and murky in the shade or sparkling in the sunlight. All is bleak, dreary, and wild around you; you have but to turn however, and cast your eyes over the fair fields which greet your view on the other side of the embankment to feel convinced of the wealth which will some day be worked from it. Already seaward you perceive on the parts on which the sea comes but seldom now, and which have in measure become solid soil—a flock of sheep picking up a somewhat meagre meal off the scanty Grass; their very presence there tending still further to enrich the soil and to make it yield hereafter more fruitful produce. It is curious on the side of the embankment to trace what may be called the "sea-margins," left marked there by each successive overflowing to, which this land in high tides is now and then subjected. Each margin is lower than the other, showing how the land is gradually becoming more elevated on the sea receding further; at the lowest you pick up shells so fresh looking that you half expect them to contain the remains of the animals which they once gave shelter to; weeds which might but a few days ago have floated on the rising tide; higher up you find shells and sea-weed in the various stages of decay, till near the top, where the sea margin is so faintly marked that it merges with the bright green of the luxuriant Grass which covers the sides of the embankment, and the shells of which, or rather the crumbling remains of those which a close examination only will reveal to you, are fast decaying to dust and soil.

A few words will suffice to explain the general method of the formation of the Polders. The rivers and canals of diversion bring down to the sea vast quantities of *débris* which when the waters are met with the rising tide are placed in a position of comparative stagnation, and which allows of its subsidence. Banks of mud are gradually formed, through which the waters flow in self-made channels, until at last the deposition is such that the banks are raised above the level of the tide, and are covered only at intervals under high tides. Plants of various kinds begin to grow; and as the land becomes consolidated sheep find a scanty pasture. In this stage of formation the tracts of land are called *schorres*. The lands are fairly reclaimed from the tide by the erection of embankments more or less expensive in character—from the simple mud to the elaborate sea wall—according to the circumstances of the locality.

The Polder land in Belgium is of vast extent, and is yearly increasing, for the action of the sea is such that it is gradually leaving Belgium and encroaching on the Dutch coast. It forms a belt of land from near the neighbourhood of Valais, in France, round to L'Ecleuse in Holland. The subsoil of the Polder land is—as may be gathered from the above description of its formation—formed of turf or peat composed of the remains of the rich vegetation brought down by the rivers in days long gone by, and which have been kept back and deposited along the margin of the sea by its tidal action. The upper or arable soil is formed of mud and of marine plants and shells, which are brought up by the tide and left. The soil thus formed is noted for its amazing fertility; it can be cropped for years without any manure. For the first 50 years or so after reclamation the lands are known as new Polders; but if cropped up to this period without manure, the ordinary methods in use to increase the fertility of the soil will require to be carried out with unsparing hand. The soil is generally cropped for the first 20 or 30 years without manure. The soil of the whole zone of the Polder is generally speaking of the same uniform character; interruptions of small extent, however, occur where tracts of pure sand are met with; this owes its presence to the flowing in of the sea permitted by the destruction of the dykes in times of tempest or of war.

The most notable feature in the cultivation of the Polder is the existence of the "fallow" system; this we may here state, and we shall hereafter fully recur to it, has no part in the Flemish or Flanders cultivation where the land is under perpetual cropping. At one period in the history of the Polder cultivation, the fallow came round every seven years; it is now generally every nine years in the rotation. Where the latter rotation is adopted, the sixth year is Clover, of which they take a first cutting, and then it is ploughed in with manure for the next crop. M. Kerkoyn gives the following rotation:—1st year, Barley or Colza; 2d, Beans; 3d, Wheat; 4th, Beans; 5th, Wheat; 6th, Clover; 7th, Wheat; 8th, Potatoes or Carrots; 9th Oats; next, the fallow; after which the rotation begins with Barley or Colza as above. The root crops are little cultivated and manure is by no means abundant. The cattle are miserably fed during winter on Wheat straw and Beans, and are turned out in a wretched condition to pasture in spring. The districts of the Polders, thus, it will be perceived, play a very unimportant part in the breeding and rearing of cattle.

Distinguished Flemish agriculturists are endeavouring to introduce the system of root cultivation and the substitution of the perpetual cropping system of Flanders for their fallow system. Stolen crops, so remarkable a feature of Flemish husbandry, form generally—or at least where they do to a small extent only—no part of the Polder cultivation.

Unlike the other districts of Flanders, the holdings of the Polder districts are comparatively large; a farm of 200 acres is not uncommon. This difference in the management of the land is observable at once, for in place of the landscape being dotted with numerous farm houses, which give so much of human interest to many a Flemish commune, the eye but seldom rests upon them; they are few and far between, and divided from each other by roads bad at the best but so fearfully opposed to all transit in long continued bad weather as effectually to put a stop to all communication between them. It was perhaps this feeling of their utter isolation in the depths of winter that made us look upon a Polder farm house with a melancholy which never visited us at other periods of our travel in the same districts of Flanders. Fiercely as the sun shone out that early spring day, and blithe and gay as all Nature looked under its cheering influence, still a wind came sweeping up from the sea which somehow, as we stood on the lofty bank, made us think of the time when the sky would present another aspect—black with winter's leaden-hued storm clouds; and when the wind, now sweeping over green meadows and waving Colza, would come careering wildly over snow-clad fields, and bearing with it as on wings the sea spray, and to lonely hearths the hoarse roar of the waves dashing drearily on the desert of sand beyond. Surrounded thus with sights and sounds of so cheerless a kind, farm life in the Polders during a comparatively large portion of the year will present few charms to lone people to venture upon a trial of it. Nor—not very pleasing at the best of times, and being utterly destitute of all the requisites which go to make a picturesque or romantic aspect—have the Polders the advantage of being healthy places for man to pitch his camp in. The sea breezes too often, instead of bringing health on their wings, carry the seeds of ague or of the "Polder fever." All these things tend to make the population very scant as compared with other parts of the province, and labour to be comparatively dear. A feature of Polder farms of practice to be noticed here is the practice of giving a portion of ploughed land to the labourer, who rears his tiny crops of Potatoes or of Flax upon it. The working of this is generally done by the family of the labourer. The Flax grown is worked for domestic purposes, while the Potatoes are used for food or for a cow or a pig.

Miscellaneous.

Price of Fox Hounds.—How far an established pack of fox hounds is cheap at a thousand or twelve hundred pounds, is a matter of consideration with reference to concomitant circumstances. We should put the average price at something less than the highest of the above sums, although several packs have been sold for the former sum; and the justly renowned one of Mr. Warde fetched 2000 guineas. When blindness unhappily compelled Mr. Foljambe to lay aside the scarlet in 1845, his pack was sold for 3000 guineas. The late Lord Middleton gave Mr. Osbaldeston 2000 guineas for 10 couples of hounds out of his kennel, and the Earl of Stamford gave 470 guineas for four couples of Mr. Richard Sutton's hounds. *From the Encyclopædia Britannica—New Edition.*

Notices to Correspondents.

BLACK PUDDINGS: *J M.* Take 1 quart of whole oatmeal, boil it and let it steep all night in the water; boil a penny loaf in milk, put in 2 lbs. of hog fat cut small, four eggs, some Pennyroyal, Sage, sweet Leeks or Onions, black Pepper, Nutmeg, Cloves, and Mace, and what blood you think proper; fill the intestine a little more than half full. Boil it three-quarters of an hour. The blood should be stirred when hot to prevent its congealing.

BLOOD STRIKING in sheep is of the nature of apoplexy, that is, the blood is suddenly determined to a particular part of the body, and the vessels become congested. Blood letting is desirable if the sheep can be seen sufficiently early, which however is not often the case. A change of the food which produces, with saline purgatives, is the best preventative. *W C S.*

CHURN: *Victoria Little.* We have not for many years heard of Valcourt's churn. It was a box churn we believe with a double exterior, the interval being capable of being filled with water of any desired temperature. No dairy on a scale of any size employs any of these niceties of contrivance. Put your milk or cream of the right temperature into the churn and churn it in a room of as nearly the right temperature as possible.

FLOOR FOR CATTLE STALLS: *H P.* Asphalte flooring has been recommended. We give the following recipe, not on our own experience, but on that of a correspondent "J.P.B." who says, "Dig sifted gravel, such as is used for topping walks, and use coal-gas tar; level the ground perfectly; mix gravel and tar, two quarts of the latter to each bushel of the former, till every particle of gravel is saturated with tar. This is best done on a boarded or stone floor; spread evenly, about one inch thick; roll till hard with a heavy garden roller. When dry, add from two to five inches more, according to the purpose for which the floor is required. Roll as soon as laid, and frequently, until it is quite solid. Cost, at 6 inches deep, 9*d.* per square yard, at the following high prices:—gravel, 1*d.* per bushel; gas tar, 4½*d.* per gallon; labour, 1*s.* 6*d.* per day."

MANGEL WURZEL: *E L S.* We should have no hesitation in sowing guano and common salt about 2 or 3 cwt. each per acre by hand between the rows of young plants, and horse hoe it in, if there is any doubt about the land being rich enough to produce a good crop.

MR. RYDER AND HIS TENANT: *N.* A reply has been published by Mr. Phipps to the pamphlet issued by his late landlord; and as the whole correspondence has been published in it, any one desirous of full information on this subject should procure this pamphlet published by George Dean, 13 and 14, Tothill Street, Westminster.

SHANKS'S PATENT MOWING MACHINES.

JAMES AND C. LEE, NURSERYMEN, Hammersmith, have great confidence in recommending these as the most complete Mowing Machines offered to the public. They have had large experience with SHANKS'S Machines, and have ever found them do their work admirably, effecting a great saving in labour, and not liable to get out of order. For terms, apply to the Agents, J. & C. LEE, Nurserymen, Hammersmith.

SHANKS'S PATENT LAWN MOWERS are unquestionably the most perfect Machines for Mowing Lawns, Verges, &c., extant. SHANKS'S Horse and Pony Machines are the only Machines that Mow, Roll, Collect, and Deliver the Grass.—London Agents: COTTAM & Co., 2, Winsley Street, Oxford Street, W.

LAWNS—IN USE IN THE ROYAL GARDENS.

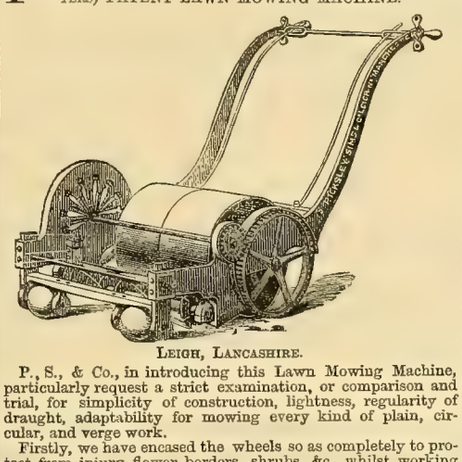
SAMUELSON'S PATENT BOYD LAWN MOWING and ROLLING MACHINE, the only one that will cut wet as well as dry Grass, is guaranteed efficient in use, easily handled, and readily kept in working order. Doing the work of five or six men. Prices, including case and carriage to any railway station in England, from 4*l.* 17*s.* 6*d.* and upwards. Copies of testimonials post free on application to Mr. SAMUELSON'S London Warehouse, 75, Cannon Street West, City; Messrs. DEANE'S, London Bridge; or the Works, Banbury, Oxon.

THE NEW PATENT MOWING MACHINES may be used anywhere at any time, are self-sharpening, and admit of the use of duplicate sets of cutting parts. Prices from 4*l.* 10*s.* upwards. Illustrated Circulars free by post.—Manufactured and Sold by JAMES FERRABEE & Co., the original introducers of Mowing Machines.

Several infringements of their patent having taken place, the Makers respectfully caution the public to see that the words "FERRABEE'S Patent" are cast on every Machine.

JAMES FERRABEE & Co., Phœnix Iron Works, Stroud.

PICKSLEY, SIMS, AND CO.'S (by ROYAL LETTERS) PATENT LAWN MOWING MACHINE.



LEIGH, LANCASHIRE.

P., S., & Co., in introducing this Lawn Mowing Machine, particularly request a strict examination, or comparison and trial, for simplicity of construction, lightness, regularity of draught, adaptability for mowing every kind of plain, circular, and verge work.

Firstly, we have encased the wheels so as completely to protect from injury flower borders, shrubs, &c., whilst working the machine, at the same time not being liable to obstruction or damage.

Secondly, this machine works easily on undulated and sloping ground; it can be thrust forward or be drawn from behind, the latter being the easiest.

Thirdly, this is the only machine made that will work round quick curves; it will work easily and effectively round circular borders so small as 12 inches in diameter. This very desirable improvement has been obtained by fixing to the front part of the machine our newly-invented universal action, and self-cleaning, anti-friction spherical guiding balls. The continual revolving of these spherical guiding balls, under the most trying circumstances, never fails.

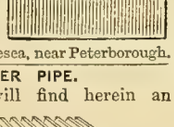
Fourthly, we have attached to this machine a rack and pinion motion, for adjusting the cutting parts (there being a rack and pinion on each side of the machine to act conjointly at the same time upon the full length of the knives), in other machines a slow, tedious, and uncertain operation, into one of quickness, ease, and certainty.

PRICES:—

		£	s.
Patent Lawn Mowing Machine	13 inches	5	10
Ditto ditto ditto	16 ,,	6	0
Ditto ditto ditto	19 ,,	6	10
Ditto ditto ditto	22 ,,	7	0
Patent Chaff and Gorse Cutters from		£2 5 to 22	0
,, Bean, Oat, and Malt Mills		3 10 to 10	10
,, Gorse and Grain Bruisers		10 10 to 21	0
,, Bone Mills		27 10 to 150	0
,, Mangles, various		2 10 to 12	10

ILLUSTRATED CATALOGUES can be had gratis.

LOOMES' GARDEN EDGING —CABLE PATTERN.

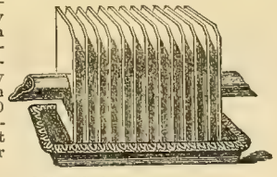


	Price at Peterborough.	In London.
Straight	5*d.*	— 6*d.* per yard
Bends	6*d.*	— 7*d.* ,,
If fitted to plans	7*d.*	— 8*d.* ,,

LOOMES & Co., Manufacturers, Whittlesea, near Peterborough.

IMPROVED HOT-WATER PIPE.

THE HORTICULTURIST will find herein an inexpensive instrument of new and very important powers. An atmosphere may be produced at will either perfectly dry, partially damp, or saturated with moisture. A space of 10 inches by 12 inches contains the power of 25 feet of 4-inch pipe and other numerous advantages.



The London Warming and Ventilating Company (Limited), 26, Great George Street, Westminster, S.W.

BOYD'S SELF-ADJUSTING SCYTHES are the cheapest and best, and being sold adjusted, are ready for immediate use. They can be regulated in an instant to suit any person, and to cut any crop without change of Scythes. For Amateur Gardeners they are very desirable, as they afford a healthy and interesting exercise. They have stood the test of public opinion for seven years, and for excellence, ease, economy, and durability, are highly recommended. Upwards of 50,000 of them have been sold. To be had of every Ironmonger, Hardwareman, and Seedsman in the United Kingdom, and wholesale of the Sole Licensed Makers, WM. DRAY & Co., at their New Agricultural Implement Warehouses, Adelaide Place, London Bridge.

JAMES PHILLIPS AND CO.'S PRICES of GLASS for the present month.

HORTICULTURAL GLASS, STOCK SIZES, in 100 feet boxes.

	3rds.	4ths.
11 by 9, 12 by 9, 13 by 9, 14 by 9 .. / 12 ,, 10, 13 ,, 10, 14 ,, 10, 15 ,, 10 .. / 13 ,, 11, 14 ,, 11, 15 ,, 11, 16 ,, 11 .. / 14 ,, 12, 15 ,, 12, 16 ,, 12, 17 ,, 12 ..	14*s.* 6*d.*	12*s.* 6*d.*
18 ,, 12, 19 ,, 12, 16 ,, 13, 17 ,, 13 .. / 18 ,, 13, 19 ,, 13, 20 ,, 13, 21 ,, 13 .. / 16 ,, 14, 17 ,, 14, 18 ,, 14 .. .. / 19 ,, 14, 20 ,, 14, 21 ,, 14	16*s.* 6*d.*	14*s.* 0*d.*

Boxes included and not returnable.

PACKED IN CASES.

200 feet	£2 2 0	16 oz.
300 feet	3 3 0	
200 feet	2 18 0	21 oz.

ORCHARD HOUSE SIZES, as supplied by us to Mr. Rivers.

		16 oz.	21 oz.
20 in. by 12 in. / 20 in. by 13 in. / 20 in. by 14 in. / 20 in. by 15 in.	Common	14*s.* 0*d.* ..	£1 1*s.*
	Superior do.	16 6 ..	1 5
	English Glass	18 0 ..	1 9

Boxes included and not returnable.

SMALL SQUARES.—Per 100 feet.

				s.	*d.*
6 by 4	6½ by 4½	7 by 5	7½ by 5½	11	6
8 ,, 6	8½ ,, 6½	9 ,, 7	9½ ,, 7½		
10 ,, 8	10½ ,, 8½ ..	.. ..	.. ..	12	6

JAMES PHILLIPS AND CO.,

130, Bishopsgate St. Without, London, E.C.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz SHEET GLASS of British Manufacture at prices varying from 2*d.* to 3*d.* per square foot for the usual sizes required, many thousands of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES, and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

HORTICULTURAL GLASS—JUNE TARIFF.

THOMAS MILLINGTON'S reduced Tariff of GLASS, &c.

6 by 4, 7 by 5, 8 by 6, 9 by 7 / 6½ by 4½, 7½ by 5½, 8½ by 6½, 9½ by 7½ } 16 oz. to the foot, 11*s.* 6*d.* per 100 feet.

In 100 boxes,—4ths quality, 12*s.* 6*d.*; 3ds do., 14*s.* 4*d.*

10 by 8, 12 by 9, 12½ by 10½, 14½ by 10½, 13 by 11
10½ by 8½, 12½ by 9½, 13 by 10, 15 by 10, 13½ by 11½
11 by 9, 13 by 9, 13½ by 10½, 12 by 11, 14 by 11
11½ by 9½, 12 by 10, 14 by 10, 12½ by 11½ .. ..

20 by 12 / 20 by 13 / 20 by 14 / 20 by 15	per 100 feet	16 oz.	21 oz.
	Common ..	16*s.* ..	24*s.*
	Superior .	18*s.* ..	27*s.*

All Boxes included.

Orchard House sizes as supplied to Mr. Rivers.

Hartley's improved Rough Plate Glass from ⅛ to ⅜ in thickness.

Coloured Glass in great variety, at 9*d.* and 1*s.* per foot.

Paints, Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, Lamp Glasses, &c.

87, Bishopsgate Street Without, same side as Eastern Counties Railway.

COUPLAND'S IMPERIAL WIRE AND WINDOW BLIND MANUFACTORY, 370, Oxford Street, W.—Wire work of superior description, useful and ornamental, for Conservatory, Garden, Drawing-room, Flower Stand and Basket, Garden Arch, Rosery, Fencing, Birdcage, &c., and Domestic and other purposes in elegant variety. Aviaries and Conservatories fitted up in the best style. Sun Shades and Window Blinds of all sorts.

TULIP CABINET, nearly new, of the best construction, for 60 rows, with zinc front and ends. Price 3*l.* 10*s.*—Apply to C. TURNER, Royal Nurseries, Slough.

C. STEPHENSON, late STEPHENSON AND SONS, 61, Gracechurch Street, London, Manufacturer of Iron Hurdles, Fencing, &c., Improved Iron and Copper Conical Boilers and Apparatus for Warming Buildings of every description by Hot Water.

Prices and Estimates furnished upon application.

GREENHOUSES.

HENRY FREEMAN, HOTHOUSE BUILDER and HOT-WATER APPARATUS MANUFACTORY, Triangle, Hackney. Established 20 years. Good substantially-built Greenhouses fixed in any part of the kingdom, for cash, 42 ft. long by 13 ft., 90*l.*; 21 ft. by 13 ft., 50*l.*; 12½ ft. by 10 ft., 30*l.* A first-class Conservatory, 30 ft. by 16 ft., 130*l.* A large assortment kept. Estimates for Heating.

T. G. MESSENGER, HORTICULTURAL BUILDER and PATENT HOT-WATER APPARATUS and GARDEN ENGINE MANUFACTURER, Loughborough.

T. G. MESSENGER'S Divisionless Horticultural Erections, ventilated with screw mechanism by which the top or front lights are opened the entire length of the house momentarily, do not fail to give complete satisfaction (as numerous Testimonials can show), for the following reasons:—They are much lighter in appearance, more durable, much stronger, and cheaper than any other can possibly be.

Three years' trial has proved his PATENT BOILER to be superior to any hitherto invented; a great number of houses can be heated at once with this Boiler, with the facility of heating any separately.

Illustrated descriptions and prices of his Patent and greatly approved GARDEN ENGINES sent free upon application; also Plans, Estimates, and Testimonials for Building or Heating. See *Gardeners' Chronicle*, May 21.

HORTICULTURAL BUILDINGS AND HEATING BY HOT WATER.

JOHN R. PEILL, 17, New Park Street, Southwark, Manufacturer of every description of Buildings for Horticultural purposes, and Inventor of the Improved Conical Boiler for heating the same, is prepared to undertake works of any magnitude, and refers among others to the celebrated range of FORCING HOUSES at HER MAJESTY'S GARDENS, FROGMORE, and at SIR ROBERT PEEL'S, DRAYTON MANOR, constructed under the superintendence of his Manager, MR. JOHN JONES; and also to his BOILERS fixed at the CRYSTAL PALACE, the ROYAL BOTANIC GARDENS, REGENT'S PARK, and KEW, and at several hundreds of the Nobility's seats, Public Establishments, and Manufactories in London and the provinces. J. R. P. also manufactures every description of Iron Roofs, Iron Houses, and Iron Fencing, plain and ornamental. Strong Iron Hurdles for Sheep (6 feet long, 3 feet high, with 5 bars), 4*s.* 3*d.* each; ditto for cattle, 4*s.* 9*d.* each.

Prices and other particulars forwarded on receipt of one postage stamp.

HORTICULTURAL BUILDING & HEATING BY HOT WATER.

BY APPOINTMENT.



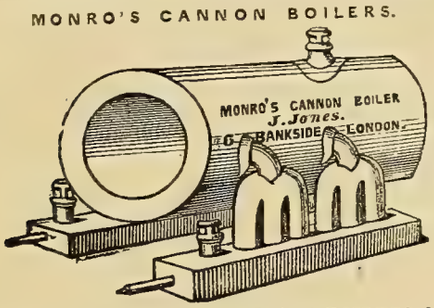
JOHN WEEKS & COMPANY,

KING'S ROAD, CHELSEA, LONDON.

HORTICULTURAL BUILDERS AND HOT-WATER APPARATUS MANUFACTURERS, ENGINEERS, AND IRON FOUNDERS.

PLANS, ESTIMATES, & ILLUSTRATED CATALOGUES FREE ON APPLICATION.

MONRO'S CANNON BOILERS.



MUCH has of late been said about BOILERS for Heating by Hot Water, but these Boilers have now proved themselves to be the best at present invented. They are adapted for heating every description of building, and are made of various sizes. The Price of the

24-inch Cast Iron is	..	..	.. £5 10s. 0d.	each
24-inch Wrought ditto	..	..	.. 6 10 0	,,
36-inch Cast ditto ..	..	..	.. 8 0 0	,,
36-inch Wrought ditto	..	..	.. 8 10 0	,,

References to Gentlemen and Nurserymen where these Boilers are now at work. The Cannon Boilers are now kept in stock, and are to be had only of J. JONES, 6, Bankside. Also, every description of Saddle and Cylinder Boilers. Hot Water Pipes and Connections at prices lower than those of any other house in London. Estimates for Hot-water Apparatus erected complete in any part of the country, and an Illustrated Catalogue on application to J. JONES, 6, Bankside, Southwark, London.

MICROSCOPES.

JOSEPH AMADIO'S Improved Compound MICROSCOPE, 2*l.* 2*s.*; Students', 3*l.* 13*s.* 6*d.*

"Both these are from Amadio, of Throgmorton Street, and are excellent of their kind, the more expensive one especially."—*Household Words*, No. 345.

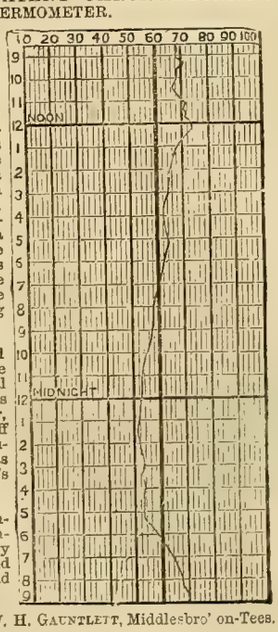
A large Assortment of ACHROMATIC MICROSCOPES.

Just published, an ILLUSTRATED CATALOGUE, containing the names of 1000 Microscopic objects, post free, for 4 stamps.

TO HORTICULTURISTS.

GAUNTLETT'S PATENT CHRONOMETRICAL THERMOMETER.

This instrument, which combines an eight-day clock of the best English make showing time, with a newly-patented Thermometer, wherein glass and quicksilver are dispensed with, writes down the temperature of the atmosphere on a slip of paper, and when placed in a Hothouse, Forcing House, or Conservatory, &c., supplies a valuable record of the temperature, with all its variations, showing the time when any change took place, and how long such change continued.



The above slip (reduced in size) exhibits the temperature of the Royal Agricultural Society's show yard at Chester, July 22, 1858, written off by one of these instruments, to which was awarded the Society's SILVER MEDAL.

This is the only instrument that registers temperature continuously and writes it down, and no horticulturist should be without it.

Orders received by W. H. GAUNTLETT, Middlesbro' on-Tees.

FOWLER'S PATENT STEAM PLOUGH

SEEN AT WORK.

STANDARD SETS OF FOWLER'S STEAM-PLOUGHING TACKLE can be seen in operation on the 1st of July next at the Show of

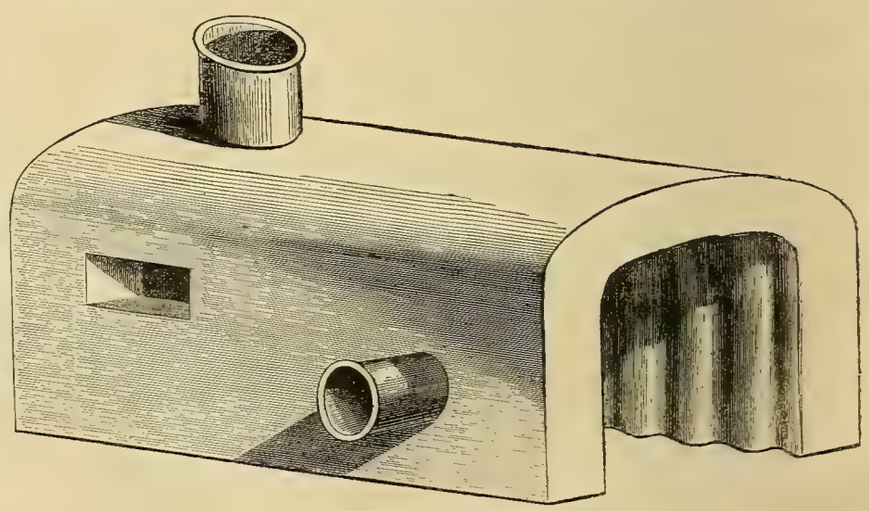
SUFFOLK AGRICULTURAL ASSOCIATION AT IPSWICH.
SOUTH YORKSHIRE AND NORTH DERBYSHIRE AGRICULTURAL SOCIETY AT SHEFFIELD.
SUSSEX AGRICULTURAL SOCIETY AT HAILSHAM.

For further particulars apply to

JOHN FOWLER, JUN., 28, CORNHILL, LONDON, E.C.

HORTICULTURAL WORKS,

DANVERS STREET, PAULTON'S SQUARE, CHELSEA, S.W.



JAMES GRAY

RESPECTFULLY begs to inform the nobility, gentry, Nurserymen, Gardeners, and others, that he continues to carry on the business in all its branches at the above old established premises.

CONSERVATORIES, GREENHOUSES, FORCING HOUSES, VINERIES, PITS, &c.,

of every description, erected on the most approved principles.

HEATING BY HOT WATER.

J. G. having specially devoted his attention for many years to this part of the business, is now fully prepared to Heat every description of public and private buildings, viz :—Churches, Mansions, Warehouses, &c., as well as all structures connected with Horticulture, in the most efficient manner. His system is the most simple that can be adopted—which he has found from long experience to be the best—can be constructed at less cost, and is more easily managed than those of a complicated nature which have attracted the notice of the public.

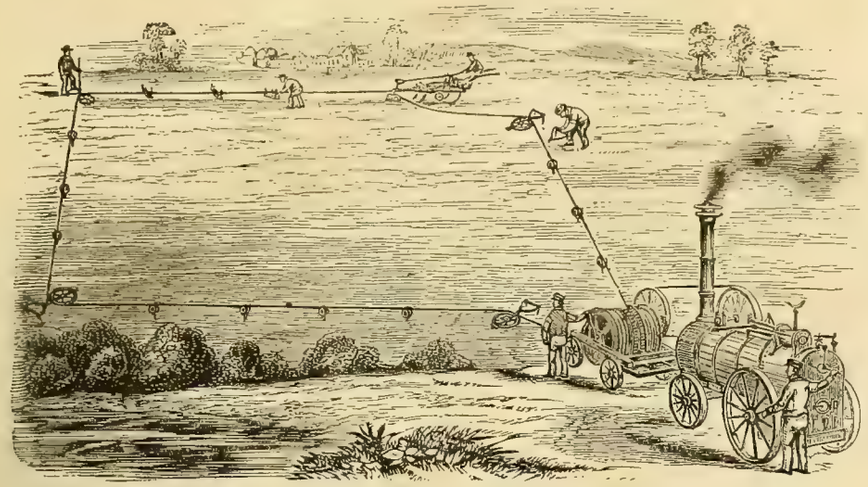
J. G. begs to call attention to his CAST-IRON CORRUGATED ARCH BOILER, which from its simplicity of construction has not the liability to fracture to which those of a more complex design are always subject. They have been extensively used for many years, and have given the greatest satisfaction.

All business is conducted at this establishment on the principle of lowest remunerative profits consistent with best materials and workmanship.

Plans and Estimates furnished on the shortest notice.

SMITH'S STEAM CULTIVATOR, 1859.

OFFICE—40, MARK LANE, LONDON.



J. & F. HOWARD, BEDFORD, MANUFACTURERS.

PRICE OF A SET OF TACKLE COMPLETE, EXCLUSIVE OF ENGINE:—

Windlass, complete, together with 8 Iron Anchors, 2 Wood ditto, 6 Snatch Blocks, 30 Rollers, 3 Wood Levers, 2 Beetles, and 2 Crow Bars	£110	0	0
1400 yards of Iron Wire Rope (1¾ inch circumference)	45	0	0
No. 3 Implement	16	0	0
Turning Bow	21	0	0
	£192	0	0

1400 yards of Steel Wire Rope (1½ inch circumference) 15*l.* more than iron.

SMITH'S APPARATUS CAN BE DRIVEN BY AN ORDINARY SEVEN OR EIGHT-HORSE PORTABLE ENGINE.
Nearly Fifty Sets are now in use, about Forty of which have been purchased by Tenant Farmers.

Catalogues, with full particulars, may be had at the Office, 40, Mark Lane, London; of

J. & F. HOWARD, Britannia Iron Works, Bedford, or of WILLIAM SMITH, Woolston, Bucks, Patentee.

ADDRESS: THE MANAGERS, ST. PANCRAS IRONWORKS.

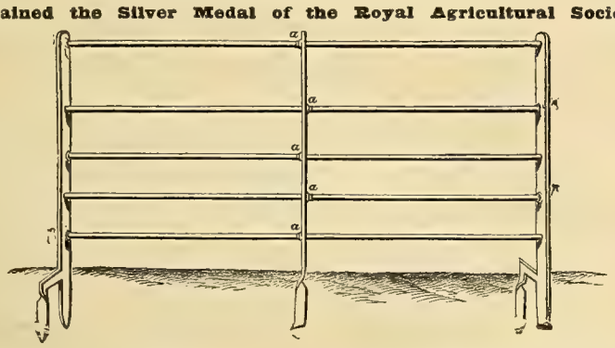
THE ST. PANCRAS IRON WORKS ARE OPPOSITE THE OLD ST. PANCRAS CHURCH,
OLD ST. PANCRAS ROAD, LONDON.

IRON COLLAR BAR HURDLES.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

Obtained the Silver Medal of the Royal Agricultural Society.

ST. PANCRAS IRON WORKS,



OLD ST. PANCRAS ROAD, LONDON.

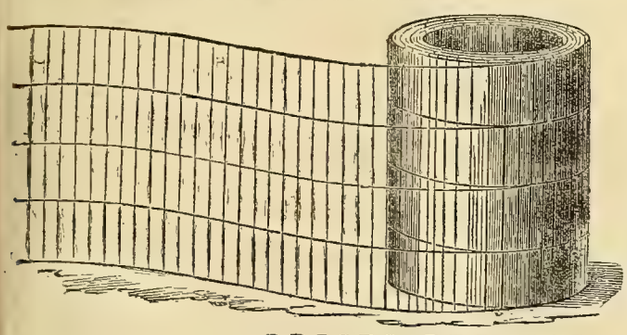
The improvement by this PATENT consists in the COLLARS on the Bars which, being placed on alternate sides of the centre upright bar, keep it in its position, confine the bars to short bearings, prevent their being strained, and give more than DOUBLE STRENGTH and RIGIDITY to the HURDLE.

PROFESSOR VARNELL'S MANGERS AND STABLE FITTINGS.

GREENING & COMPANY'S PATENT WIRE FENCES.

Patronised by His Royal Highness the PRINCE CONSORT.

No. 4 VARIETY.—STRONG HARE AND RABBIT-PROOF FENCE.



SPECIFICATION. — Horizontal bars of stout, tough wire, 6 inches apart; vertical bars of similar wire, 1¼ inch asunder, the whole woven firmly together. Made in rolls of 50 yards, or in other lengths, to order.

G. & Co. have been honoured with five consecutive orders for the Patent Hare and Rabbit Fencing from H.R.H. the Prince Consort, who has also personally expressed his satisfaction with the work. One yard of No. 4 variety is equal in weight to 3 yards of the best Wire Netting made.

PRICES PER YARD:—

24 inches high	...	1s. 0d.,	Japanned	24 inches high	...	1s. 3d.,	Galvanised
30 „	...	1 3	„	30 „	...	1 6	„
36 „	...	1 6	„	36 „	...	1 10	„

G. & Co. forward (post free) on application their ILLUSTRATED CATALOGUE, containing particulars of the above and other Iron and Wire Fences for Parks, Farms, Gardens, Game Preserves, Poultry Courts, &c.

GREENING & COMPANY, Victoria Iron and Wire Works, 81, Oxford St., Manchester.

BEE-HIVES.

PRIZE MEDAL AWARDED TO G. N. & SONS, FOR BEE-HIVES AND HONEY, AT THE PARIS EXPOSITION OF 1855.

NEIGHBOUR'S IMPROVED COTTAGE BEE-HIVE, as originally introduced by GEORGE NEIGHBOUR & SONS, with all the recent improvements, glasses, and thermometer, price 35*s.*, securely packed for the country.



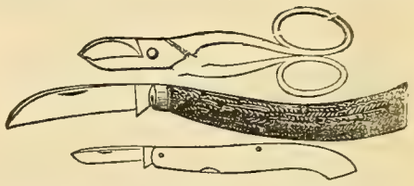
This unique Hive has met with universal commendation, and may be worked with safety, humanity, and profit by the most timid; its arrangements are so perfect that the Honey may be taken at any time of the gathering season without at all injuring the Bees.

Early applications addressed to GEORGE NEIGHBOUR & SONS, 127, High Holborn, or 149, Regent Street, London, will receive prompt attention.

Their newly-arranged CATALOGUE of other Improved Hives with Drawings and Prices, sent on receipt of two stamps.

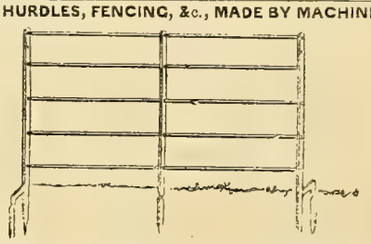
AGENTS.—Liverpool: JAMES CUTHBERT, 12, Clayton Square. Manchester: W. WILSON, 50, King Street. Glasgow: AUSTIN & M'ASLEN, 186, Trongate. Dublin: J. EDMONDSON & Co., 61, Dame Street.

PAXTON WORKS, SHEFFIELD, ESTABLISHED 1738.



SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.—Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

IRON HURDLES, FENCING, &c., MADE BY MACHINERY.

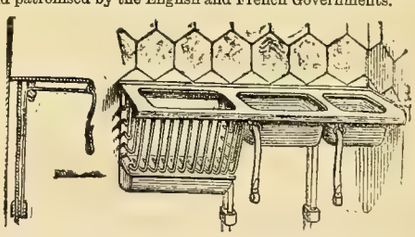


COTTAM AND COMPANY, of Winsley Street, have invented machinery for making Hurdles, &c.; the bars, instead of being pointed by hand in the old fashioned style, are nipped down by the machine, leaving a shoulder so as to more effectually tighten the standards when rivetted. They are made of superior iron only, and will compete in price with those made by hand from cinder or common iron which so frequently break. Iron Fencing, Gates, and Iron Work of all kinds, both Plain and Ornamental, Conservatories, Hot Water Apparatus and Garden Implements.

Illustrated CATALOGUES free on application to COTTAM & COMPANY, Ironfounders, 2, Winsley Street, Oxford Street, W.

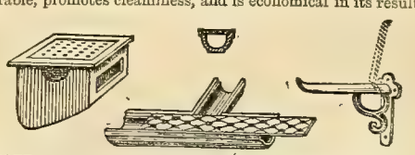
N.B. COTTAM & Co. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

COTTAM'S PATENT INVENTIONS FOR STABLE REQUISITES, awarded a Prize at the Paris Exhibition, and patronised by the English and French Governments.



COTTAM AND COMPANY, of Winsley Street, are the original inventors of the PATENT ENAMELLED MANGER, Water Trough, and Wrought Iron Rack, united to an iron top-plate, and forming one complete and useful fixture, having COTTAM'S patent noiseless halter guide and collar rein attached, which is taken to the back of the manger, and works with ease and freedom up or down the guide-bar.

COTTAM'S NEW PATENT SEED-BOX, an important addition to the above fittings, being simple in construction, light, and durable, promotes cleanliness, and is economical in its results.



COTTAM'S PATENT SADDLE and HARNESS BRACKET combined, can be used with great advantage where space is an object, as it can be turned up out of the way when not in use.

COTTAM'S IMPROVED SURFACE GUTTER, with perforated moveable cover, the use of which prevents accidents, and can be easily cleaned out.

COTTAM'S CAST-IRON SANITARY TRAP, from its improved construction, gives a full water passage, and does not allow any smell to ascend from the drain.

PATENT LOOSE-BOX FITTINGS, and every article for the harness-room and stable, kept in stock, plain, galvanised, and enamelled. Iron gates, fencing, hurdles, &c.

The New Illustrated Catalogue and Estimates, gratis, upon application to COTTAM and COMPANY, 2, Winsley Street, Oxford Street.

N.B. COTTAM & Co. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

RIPE FRUIT, STRAWBERRIES, AND SEED BEDS.

NEW TWINE NETTING, Tanned if required, 1 yard wide, 2*d.* per yard; 2 yards wide, 4*d.* per yard; 4 yards wide, 8*d.* per yard. Half-inch MESH ditto, 2 yards wide, 8*d.* per yard. The ELASTIC HEXAGON GARDEN NETTING, 76 Meshes to the square inch, effectually excludes birds, wasps, flies, &c., from fruit trees, flower or seed beds, 4½*d.* per square yard. TANNED NETTING, 2 or 3 yards wide, 1½*d.* per yard; 4 or 6 yards wide, 3*d.* per yard.—At W. CULLINGFORD'S, 1, Edmund Terrace, Ball's Pond, Islington.

FRUIT TREES, RIPE STRAWBERRIES, ETC.

TANNED NETTING for Protecting the above from Frost, Blight, Birds, &c.; 2 yards wide, 3*d.* per yard, or 100 yards, 20*s.* Can be had in any quantity of EATON & DELLER, 6 and 7, Crooked Lane, London Bridge.

TANNED NETTING, at REDUCED PRICES.—200 square yards, 10*s.*; 500 yards, 24*s.* A quantity of good second-hand Rick Cloth for Sale, Cheap, all sizes, and only once used. Samples sent free.—Address FREDERICK EDGINGTON, Thomas Street, Old Kent Road, London, S.E.

TANNED NETTING, for the Protection of Fruit Trees from Frost, Blight, and Birds; also, for the security of fresh sown seeds, at 1*d.* per square yard; 200 yards, 12*s.*; 500 yards, 25*s.*; Scrim Canvas, for wall fruit; Garden Mats.—At EDGINGTON & Co's., Rick Cloth, Tent, and Waterproof Cloth Manufacturers, 17, Smithfield Bars, City, & Old Kent Rd.

TANNED GARDEN NETTING for Preserving Fruit Trees from Frost, Blight, Birds, &c., and as a Fence for Fowls, &c. One yard wide 1½*d.*, 2 yards 3*d.*, 3 yards 4½*d.*, and 4 yards 6*d.* per yard, in any quantity, may be had at C. WRIGHT'S, 376, Strand, W.C.
A liberal allowance to Nurserymen.

SHAW'S TIFFANY is universally acknowledged to be the best, neatest, and cheapest material for shading conservatories, and other Hothouses. Effectually securing Plants from the scorching rays of the sun, without obscuring the light. Also, for protecting the Bloom of Wall Trees from spring frosts, and Fruit from birds and wasps. Sold in pieces,
No. 1.—20 yards long, by 38 inches wide, 5*s.* per piece.
No. 3.—Double strength, 18 yards long, by 39 inches wide, 7*s.* 6*d.* per piece.
No. 4.—Treble strength, 18 yards long, by 39 inches wide, 9*s.* per piece.
A liberal allowance to the Trade when ten or more Pieces are taken.—JOHN SHAW & Co., Princess Street, Manchester.

NURSERYMEN, FLORISTS, GARDENERS, &c., may select INDIA-RUBBER SPRINGS (partly damaged) of various strength and length, at a reduced price, at R. E. HODGES'S Warehouse, 44, Southampton Row, Russell Square.
These Springs are useful for supporting newly planted ornamental trees, trees borne down by over-abundance of fruit, delicate shrubs and flowers, at the same time that they allow their natural play with the breeze. They are also excellent for keeping in tension, under every force of wind and change of atmosphere, cloth for shading and protecting fruit trees, &c.

VASES, PEDESTALS, SUNDIALS, FOUNTAINS, FLOWER BOXES, JARDINETS, FERN CASES, BALUSTRADES, EDGINGS AND CURBS FOR FLOWER BORDERS, SEATS, &c., in Imperishable Siliceous Stone, at reduced prices, for the adornment of the Villa Garden, the Mansion Grounds, or the private or public Park.
For Priced Illustrations apply to FREDERICK RANSOME, at the Show Rooms, Cannon Row, Westminster, S.W., or Patent Stone Works, Ipswich.

TO MARKET GARDENERS.—The Advertiser is about to build a large extent of HOTHOUSES for Forcing Vegetables and Fruits for the London and other markets. They will be supplied with hot water of an uniform and sufficient heat without the use of coals, or any other expense to the tenants, and will be let at rents not very much more than the mere saving of labour and coals. The Advertiser would be glad to engage with respectable parties for taking any portion of the Houses, which may be built according to their plans and wishes.—Any further particulars may be had by addressing G. M., *Gardeners' Chronicle* Office.

AGRICULTURAL MACHINERY.

E. R. AND F. TURNER, Ipswich, manufacture Prize Mills for Crushing Corn, Seed, Malt, &c.; Portable Grinding Mills, Steam Engines fixed and portable from 2 horse-power and upwards; Threshing Machines, Chaff Cutter, Oilcake Breakers, Horse Gears, Saw Tables, &c., all of a superior description and adapted for Home, Colonial, and Foreign use. Illustrated Price Lists sent free on application.

MAPPIN'S PRUNING KNIVES IN EVERY VARIETY.

WARRANTED GOOD BY THE MAKERS.



MAPPIN BROTHERS, Queen's Cutlery Works Sheffield; and 67 and 68, King William Street, London.

MAPPIN'S "SHILLING" RAZORS Shave well for Twelve Months without Grinding.
MAPPIN'S 2*s.* RAZORS Shave well for Three Years.
MAPPIN'S 3*s.* RAZORS (suitable for Hard or soft Beards,) Shave well for Ten Years.

MAPPIN'S SUPERIOR TABLE-KNIVES maintain their unrivalled Superiority—handles cannot possibly become loose—the blades are all of the very first quality, being their own Sheffield manufacture.

	Tble. Kns.	Dst. Kns.	Carvers.
Ivory 3⅝ in. Handle, balanced,	20*s.* p. doz.;	16*s.* p. doz.;	6*s.* p. pair
Do. 4 in. do. ..	25*s.* ,,	18*s.* ,,	9*s.* ,,

MAPPIN'S SILVER-PLATED DESSERT KNIVES and FORKS, in Mahogany Cases.

12 Pairs Knives and Forks, Ivory Handles, in Case..		80*s.*
12 Do.	Pearl Handles, do. ..	130*s.*
12 Do.	Silver-Plated Handles, do. ..	80*s.*

MAPPIN'S ELECTRO-SILVER PLATE.—MAPPIN BROTHERS, Manufacturers by Special Appointment to the Queen, are the only Sheffield makers who supply the consumers in London. Their LONDON SHOW ROOMS, 67 and 68, King William Street, London Bridge, contain by far the largest STOCK of ELECTRO-SILVER PLATE in the World, which is transmitted direct from their Manufactory, Queen's Cutlery Works, Sheffield.

	Fiddle Pattern.	Double Thread.	King's Pattern.
12 Table Forks, best quality	£1 16 0	£2 14 0	£3 0
12 Table Spoons, best quality	1 16 0	2 14 0	3 0
12 Dessert Forks, best quality	1 7 0	2 0 0	2 4
12 Dessert Spoons, best quality	1 7 0	2 0 0	2 4
12 Tea Spoons, best quality	0 16 0	1 4 0	1 7

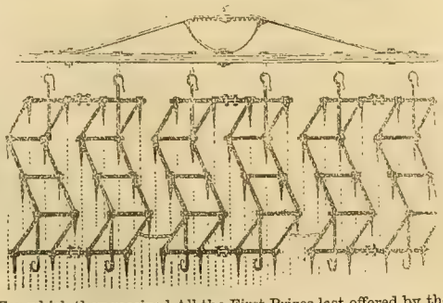
Messrs. MAPPIN BROTHERS respectfully invite buyers to inspect their unprecedented display, which, for beauty of design, exquisite workmanship, and novelty, stands unrivalled. Their illustrated Catalogue, which is continually receiving addition of New Designs, sent per post on receipt of 12 stamps.—MAPPIN BROTHERS, 67 and 68, King William Street, London Bridge; Manufactory, Queen's Cutlery Works, Sheffield.

HORTICULTURAL VALUATIONS.

MR. ALFRED CHANDLER (of the late firm of Chandler & Sons, Vauxhall), begs to inform his friends that he is at liberty to undertake the valuation of Collections of Plants, Nursery Stock, Horticultural Buildings, &c.
Mr. A. C. is also open to engagements as Censor at Horticultural Exhibitions, in which capacity he has had long and extensive experience.—28, Priory Road, Wandsworth Road, S.

HOWARDS' PRIZE IMPLEMENTS, 1859.

JAMES AND FREDK. HOWARD, Britannia Iron Works, Bedford, beg to direct attention to their
PATENT PRIZE HARROWS,



For which they received All the First Prizes last offered by the Royal Agricultural Society of England, viz.:—
The First Prize for the Best General Purpose Harrows.
The First Prize for the Best Light Harrows.
The First Prize for the Best Drag Harrows.
J. & F. HOWARD have discontinued troubling the Public with a long List of Prizes awarded to their Implements, but they would just state that for PLOUGHS, HARROWS, and HORSE RAKES, they have for several years gained every Prize for which they have competed.

PLOUGHS.

D PLOUGH, for a Pony	£2 5 0
DD ditto for one Horse	3 5 0
P ditto for two Horses	4 7 6
PP ditto for general purposes	4 12 6
SKIM COULTER for P or PP Plough	0 5 6

HARROWS.

A Set of Three 4-Beam HARROWS, with Whippletree, recommended as general Seed Harrows, 9½ feet wide, marked No. 12	3 14 0
A Set of Three 4-Beam HARROWS, with Whippletree, adapted for 3 Horses, 10 ft. wide, marked No. 11	4 4 0
If with Patent Joints, 6*s.* per set extra.	

HORSE RAKES.

Small size, 7½ feet wide, marked A, with 24 iron teeth	7 10 0
Ditto, with Steel Teeth	8 0 0
Large size, 8½ feet wide, marked B, with 28 iron teeth	8 0 0
Ditto, with steel teeth	8 10 0
Extra large size, 8½ feet wide, marked C, with 24 steel teeth	10 10 0
A Set of 15 Prongs, to be attached to the above when used as Weed Extirpators	1 10 0

Free Delivery to Birmingham, Bristol, Colchester, Derby, Gloucester, Hull, Lincoln, Liverpool, London, Manchester, Norwich, Nottingham, Retford, Shrewsbury, Wisbeach, Worcester, and York; or to Dublin, Edinburgh, Glasgow, and other parts at fixed rates.
HOWARDS' NEW CATALOGUE, containing prices and description of their Patent Ploughs, Harrows, Horse Rakes, and other Implements, including Smith's Steam Cultivators, for which they received at Chester the Gold Medal of the Royal Agricultural Society of England, sent free on application to
J. & F. HOWARD, Britannia Iron Works, Bedford.

WARNER'S IMPROVED LIQUID MANURE OR GENERAL PORTABLE PUMP.



These Pumps are fitted with J. W. & SON'S Patent Buckets and Suckers, and cannot clog in action. The barrel is of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure. The legs will fold together, and the whole may be carried on the shoulder to any pond or tank required.
Price of 4½ in. Pump, with legs, 3*l.* 3*s.*
If with planished copper barrel and galvanised iron handle, &c., 14*s.* extra. The barrel is 27½ in. long, and the legs are 5 ft. high.
These Pumps are also made without the legs, with strong wrought-iron straps for screwing on to any ordinary water butt or cart, and fitted with 1½ inch brass union for attaching flexible suction. Price 50*s.*
1½ inch Gutta Percha Suction Pipe, 1*s.* 11*d.* per foot.
Rubber and Canvas Suction and Delivery Hose, from ½ inch to 4 inches in diameter, in lengths of 60 feet to order. Branch Pipes with Cocks, Union Screws, &c., at reduced prices.
May be obtained of any Ironmonger or Plumber in town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin St., London.

WARNER'S PATENT VIBRATING STANDARD PUMPS.

PATENT CAST-IRON PUMPS, fitted with J. W. & SON'S Patent Buckets and Suckers, which cannot clog in action, for Farms, Cottages, and Wells, not exceeding 28 feet.



Diameter of Barrel.	Height.		£.	s.	d.
2½ in. short	1 ft. 7 in.	Fitted for lead,	1	10	0
2½ ,, long	3 ,, 3 ,,	gutta percha	1	14	0
3 ,, ditto	3 ,, 6 ,,	or cast iron	2	8	0
3½ ,, ditto	3 ,, 6 ,,	flanged pipe	2	12	0
4 ,, ditto	3 ,, 6 ,,	as required.	3	3	0
2½ ,, short, with 15 feet of Lead Pipe attached, ready for fixing			2	14	0
2½ in. long	ditto	ditto	2	18	0

The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.
May be obtained of any Ironmonger or Plumber in Town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin Street, London.
Every description of Machinery for Raising Water by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

CHUBB'S LOCKS, FIREPROOF SAFES, DOOR LATCHES, CASH AND DEED BOXES. Illustrated Priced Lists sent free.—57, St. Paul's Churchyard, London; 28, Lord Street, Liverpool; 16, Market Street, Manchester; and at Wolverhampton.

ALLEN'S PATENT PORTMANTEAUS AND TRAVELLING BAGS, with SQUARE OPENING; Ladies' Dress Trunks, Dressing Bags, with Silver Fittings; Despatch Boxes, Writing and Dressing Cases, and 500 other articles for Home or Continental Travelling, illustrated in their New Catalogue for 1859. By post for two stamps. J. W. & T. ALLEN, Manufacturers of Officers' Barrack Furniture and Military Outfitters (see separate Catalogue), 18 and 22, Strand.

DRESSING CASES, DRESSING BAGS, and highly finished elegancies for presentation in great variety, Ivory-handled Table Cutlery; every requisite for the Toilet and Work Tables.—MECHI & BAZIN, 112, Regent Street; 4, Leadenhall Street; and Crystal Palace, Sydenham.

BEDSTEADS, BATHS, AND LAMPS.—WILLIAM S. BURTON has SIX LARGE SHOW ROOMS devoted exclusively to the SEPARATE DISPLAY of Lamps, Baths, and Metallic Bedsteads. The stock of each is at once the largest, newest, and most varied ever submitted to the public, and marked at prices proportionate with those that have tended to make his establishment the most distinguished in this country.

Bedsteads, from	.. ..	12*s.* 6*d.*	to	£20	0*s.* each.
Shower Baths, from ..	..	8 0 ,,		6 0	,,
Lamps (Moderateur), from ..		6 0 ,,		7 7	,,

(All other kinds at the same rate.)
Pure Colza Oil .. .. 4*s.* 3*d.* per gallon.

THE PERFECT SUBSTITUTE FOR SILVER.—The REAL NICKEL SILVER, introduced more than 20 years ago by WILLIAM S. BURTON, when PLATED by the patent process of Messrs. Elkington & Co., is beyond all comparison the very best article next to sterling silver that can be employed as such, either usefully or ornamentally, as by no possible test can it be distinguished from real silver. A small useful plate chest, containing a set, guaranteed of first quality for finish and durability, as follows:—

	Fiddle or Old Silver Pattern.	Thread or Brunswick Pattern.	King's Pattern.	Military Pattern.
	£ *s.* *d.*	£ *s.* *d.*	£ *s.* *d.*	£ *s.* *d.*
12 Table Forks	1 18 0	2 8 0	3 0 0	3 10 0
12 Table Spoons	1 18 0	2 8 0	3 0 0	3 10 0
12 Dessert Forks	1 10 0	1 15 0	2 2 0	2 10 0
12 Dessert Spoons ..	1 10 0	1 15 0	2 2 0	2 10 0
12 Tea Spoons	0 18 0	1 4 0	1 10 0	1 18 0
6 Egg Spoons, gilt bowls..	0 12 0	0 15 0	0 18 0	1 1 0
2 Sauce Ladles	0 7 0	0 8 6	0 10 6	0 16 0
1 Gravy Spoon	0 8 0	0 11 0	0 13 6	0 16 0
2 Salt Spoons, gilt bowls..	0 4 0	0 5 0	0 6 0	0 7 6
1 Mustard Spoon, gilt bowl	0 2 0	0 2 6	0 3 0	0 3 9
1 Pair of Sugar Tongs ..	0 3 0	0 3 9	0 5 0	0 7 0
1 Pair of Fish Carvers ..	1 4 0	1 7 6	1 12 0	1 18 0
1 Butter Knife	0 3 6	0 5 9	0 7 0	0 8 0
1 Soup Ladle	0 13 0	0 17 6	1 0 0	1 1 0
1 Sugar Sifter	0 4 0	0 4 9	0 5 9	0 8 6
Total	11 14 6	14 11 3	17 14 9	21 4 9

Any article to be had singly at the same prices. An oak chest to contain the above, and a relative number of knives, &c., 2*l.* 15*s.* Tea and coffee sets, cruet and liqueur frames, waiters, candlesticks, &c., at proportionate prices. All kinds of re-plating done by the patent process.

WILLIAM S. BURTON'S GENERAL FURNISHING IRONMONGERY CATALOGUE may be had gratis, and free by post. It contains upwards of 400 Illustrations of his illimited Stock of Electro and Sheffield Plate, Nickel Silver and Britannia Metal goods, Dish Covers and Hot-water Dishes, Stoves, Fenders, Marble Chimney-pieces, Kitchen Ranges, Lamps, Gaseliers, Tea Urns and Kettles, Tea Trays, Clocks, Table Cutlery, Baths and Toilet Ware, Turnery, Iron and Brass Bedsteads, Bedding, Bed Hangings, &c., with Lists of Prices and Plans of the 16 large Show Rooms at 39, Oxford Street; 1, 1a, 2, and 3, Newman Street; and 4, 5, and 6, Perry's Place, London.—Established 1820.

PRIZE MEDAL, PARIS EXHIBITION 1855.

METCALFE, BINGLEY, AND CO.'S New Pattern and Penetrating Tooth Brushes, Penetrating unbleached Hair Brushes, Improved Flesh and Clothes Brushes, and genuine Smyrna Sponges; and every description of Brush, Comb, and Perfumery for the Toilet. The Tooth Brushes search thoroughly between the divisions of the Teeth and clean them most effectually—the hairs never come loose. M., B., and Co. are sole makers of the Oatmeal and Camphor and Orris Root Soaps—sold in Tablets (bearing their names and address) at 6*d.* each; of METCALFE'S celebrated Alkaline Tooth Powder, 2*s.* per box and of the New Bouquets.—Sole Establishment, 130B and 131, Oxford St., 2d and 3d doors west from Holles St., London.

FOR THE TOILETTE.—OLDRIDGE'S BALM OF COLUMBIA, which has for more than 30 years been celebrated for its peculiar properties in restoring, cleansing, and beautifying the hair, promoting its growth, as well as preventing it falling off or turning grey.—C. & A. OLDRIDGE, 13, Wellington Street, North, seven doors from the Strand. Sold wholesale and retail in bottles at 3*s.* 6*d.*, 6*s.*, and 11*s.*; and by all Chemists and Perfumers. Its use for whiskers and moustache is invaluable.

SIXTY YEARS OF SUCCESS
HAVE PROVED BEYOND QUESTION THAT

ROWLANDS' MACASSAR OIL possesses extraordinary properties for promoting the growth and improving and beautifying the human hair. It prevents hair from falling off or turning grey, strengthens weak hair, cleanses it from scurf and dandriff, and makes it beautifully soft, pliable, and glossy. In the growth of the beard, whiskers, and mustachios, it is unfailing in its stimulative operation. For children it is especially recommended as forming the basis of a beautiful head of hair, while its introduction into the Nursery of Royalty, and the numerous testimonials constantly received of its efficacy, afford the best and surest proofs of its merits.—Price 3*s.* 6*d.* and 7*s.*; Family bottles (equal to four small), 10*s.* 6*d.*; and double that size, 21*s.*—CAUTION. On the wrapper of each bottle are the words, "ROWLANDS' MACASSAR OIL," &c., in white letters, and their signature, "A. ROWLAND & SONS," in red ink.—Sold at 20, Hatton Garden, London, and by Chemists and Perfumers.

DO YOU WANT LUXURIANT HAIR, WHISKERS, &c.?—COUPELLE'S CRINUTRIAR is guaranteed to produce whiskers, moustachios, eyebrows, &c., in two or three weeks with the utmost certainty, strengthen weak hair, prevent its falling off, check greyness in all its stages, and reproduce the hair in baldness, from whatever cause, price 2*s.* Sold by all chemists in the world; or will be sent post free, on receipt of 24 penny postage stamps, by Miss COUPELLE, 69, Castle Street, Newman Street, Oxford Street, London. A toilet guide sent post free for four penny postage stamps. "It completely restored my hair."—Miss Davis. 'My whiskers are now growing freely."—H. Merry, Esq.

THE BURTON SPLENDID ALE, AT 7*d.* PER GALLON.

HOW TO BREW SPLENDID STRONG ALE, fine as Sherry, and an aroma equal to Burton Tenpenny. This new Practical Treatise is by a Derbyshire man of 28 years' labour at the spigot and tun in the best brewery in the county. No brewing utensils required, only those for household use. This is guaranteed to be the best and cheapest mode to produce fine Ale ever made public, leaving a profit of 1*s.* 9*d* per gallon. The above beautifully printed in large type can be had of the sole publishers for 12 Pence, or 12 Penny Postage stamps. Sent post-free, to any address. Direct to FISHER & SON, Publishers, Kingsland, London. Established 1847.

NOTICE.—Just appended to this universally prized Book, all the methods to make the improved Aerated Unfermented Ginger Beer, Soda Water, Lemonade, and all the Cordials and Nectars, together with the Penny French Ices, the Delightful Summer Cooling and Warm Water Drinks, and all the best American and English cheap fruit drinks.

VINEGAR.—Patronised by her Majesty's Government.

CONDY'S PATENT PURE CONCENTRATED MALT VINEGAR.—Families, by using this delicious Vinegar, insure purity, and effect a saving of 50 per cent. See Report of Dr. Letheby, City Officer of Health; Dr. Hassall of the *Lancet* Commission, and others. Six Quart Sample sent free to any Railway for 3*s.* 6*d.*—Sold by the Trade, in bottles, labelled and capsuled; wholesale, 63, King William Street, London Bridge, E.C.

PURE WATER.—The great public want of a perfect and cheap Water Filter is now supplied by the PATENT MOULDED CARBON COMPANY'S FILTERS, by which rain, river, pond and spring waters impregnated with noxious matters are rendered perfectly inodorous, tasteless, bright, sparkling, and wholesome. Price from 3*s.* upwards. PRICE LISTS on application.—Sold wholesale and retail by HARRISON & Co., 62, Fleet Street, London, E.C.

KNOW THYSELF.—MARIE COUPELLE continues to give her graphic and interesting delineations of character, discoverable from an examination of the handwriting, in an unique style of description peculiarly her own. All persons desirous of knowing themselves, or any friend in whom they are interested, must send a specimen of the writing, stating the sex and age, and enclosing 13 penny postage stamps, and a directed envelope, to Miss COUPELLE, 69, Castle Street, Oxford Street, London, and they will receive in a few days a minute detail of the talents, tastes, virtues, and failings of the writer, with many other things hitherto unsuspected. All letters are considered strictly confidential.

ASTHMA.—DR. LOCOCK'S PULMONIC WAFERS give instant relief and a rapid cure of Asthma, Consumption, Coughs, and all disorders of the breath and lungs. They have a most pleasant taste. Price 1*s.* 1½*d.*, 2*s.* 9*d.*, and 11*s.* per box. Sold by all Medicine Vendors.

HOLLOWAY'S OINTMENT AND PILLS.—Scarlet Fever, Diphtheria, Swollen Glands, Hoarseness. —The first two diseases, from the very inclement state of the weather, are at this time particularly prevalent, the mortality from which, according to the report of the Registrar-General, is far above the average. Hoarseness, Swollen Glands, and Sore Throat, invariably accompany weather in which the thermometer daily indicates a variation of thirty degrees. The danger from Scarlatina and Diphtheria is vastly increased by the present dense and impure state of the air. From the attacks of these ever-reigning diseases no precautions will preserve, but if the patient have HOLLOWAY'S remedies at hand, the assault will neither be long nor disastrous, for they check both fever and ulceration.

IMPORTANT INFORMATION.—Mrs. Brown, of Queen Street, Kingsland, was for years severely afflicted with a scorbutic eruption, covering the back of both hands, and spreading up her arms. She was persuaded to try DR. ROBERTS'S POOR MAN'S FRIEND and PILULÆ ANTISCROPHULÆ by a friend who had a large wound in her leg which baffled her doctor's skill, but was effectually cured by these medicines. She only took one box of the Pills, and used one pot of the Ointment, which effected a cure to the surprise of her friends, who wish it to be made public for the benefit of her suffering fellow creatures. Dr. ROBERTS'S POOR MAN'S FRIEND and PILULÆ ANTISCROPHULÆ have been proved, by 60 years' experience, successful in the cure of eruptions and wounds of every description. Price 1*s.* 1½*d.*; 2*s.* 9*d.*; 4*s.* 6*d.*; 11*s.*; and 22*s.* each.—Sold wholesale by the Proprietors, BEACH & BARNICOTT, at their Dispensary, Bridport, and by the London Houses; and retail by all respectable Medicine Vendors nthe United Kingdom and the Colonies.

PAINS IN THE BACK, Gravel, Lumbago, Rheumatism, Gout, Indigestion, Flatulency, Nervousness, Debility, &c.—Dr. DE ROOS' COMPOUND RENAL PILLS have been long established as a safe and efficacious remedy for the above complaints, discharges of any kind, retention of urine, and diseases of the kidneys, bladder and urinary organs generally, which, if neglected, frequently end in stone in the bladder and a lingering death. For depression of spirits, incapacity for society, study or business, confusion, giddiness, drowsiness, sleep without refreshment, fear, nervousness, and insanity itself, when arising from or combined with urinary diseases, they are unequalled. By their salutary action in correcting bile and acidity of the stomach, they prevent the formation of stone, and establish the healthy functions of all these organs.—Price 1*s.* 1½*d.*, 2*s.* 9*d.*, 4*s.* 6*d.*, 11*s.*, and 33*s.* per box, through all Medicine Vendors, or sent free on receipt of the amount in postage stamps, by Dr. DE ROOS, 10, Berners Street, Oxford Street

HEALTH WITHOUT PHYSIC.—Nervousness effectually cured by a novel and most successful mode of treatment, discovered in America. The most convincing proof of the efficacy of this wonderful remedy, with other details, will be sent to any address on receipt of one stamp.—Address, Mr. HILL, 27, Alfred Place, Store Street, London, W.C.

Works by Mr. BORLASE CHILDS, F.R.C.S., by Exam., Surgeon Metropolitan Free Hospital, Surgeon-in-Chief to the City Police Force, &c.

URETHRITIS and its CONSEQUENCES, with a Short Historical Sketch of Syphilis.

On the IMPROVEMENT and PRESERVATION of the FEMALE FIGURE.

Effingham Wilson, Royal Exchange, E.C.

LECTURES on INJURIES INCIDENTAL to WARFARE.

London: JOHN CHURCHILL, New Burlington Street, W.

ELECTRICAL INFLUENCE IN HEALTH AND DISEASE,

Just published, price 1*s.*, free by post for thirteen Stamps,

SECOND LIFE: OR ELECTRICAL NERVOUS FORCE; a MEDICAL WORK intended for the special benefit of all who are suffering from the various forms of NERVOUS and PHYSICAL DEBILITY and the distressing ulterior consequences to which they lead; with practical Observations on the great Curative power of ELECTRO-GALVANISM in the Treatment of these disorders, by infusing tone and vigour in constitutions relaxed or debilitated from various enervating causes. Illustrated with Cases compiled from the Note-Book of a Registered Medical Practitioner of twenty years' standing.

MANN, 39, Cornhill, and all Booksellers.

This day is published, price 2*s.* 6*d.*,

FOLIA ORCHIDACEA, Part IX. Containing the conclusion of Pleurothallis.

Parts I. to VIII., price 2*s.* 6*d.* each, may still be had.

JAMES MATTHEWS, 5, Upper Wellington St., Covent Garden.

Third Edition, considerably enlarged, price 5*s.* 6*d.*, free by post, 5*s.* 10*d.*,

RURAL CHEMISTRY.

By EDWARD SOLLY, F.R.S., F.L.S., F.G.S.

Honorary Member of the Royal Agricultural Society of England, Professor of Chemistry to the Horticultural Society of London, Lecturer on Chemistry in the Hon. E. I. Co.'s Military Seminary at Addiscombe, &c., &c.

J. MATTHEWS, 5, Upper Wellington St., Covent Garden,

In consequence of the new postal arrangements, parties in the country who desire it can have two copies sent by post for one stamp, five for two stamps, or eleven for four, in addition to the cost of the numbers.

Price 3*d.* each, or 5*s.* for 25 copies for distribution among Cottage Tenantry, delivered anywhere in London, on a Post-office Order being sent to the Publisher, JAMES MATTHEWS, at the Office of the *Gardeners' Chronicle.*

THE COTTAGER'S CALENDAR OF GARDEN OPERATIONS. By Sir JOSEPH PAXTON, M.P.

Reprinted from the GARDENERS' CHRONICLE. Upwards of 126,000 have already been sold.

CONTENTS:—

African Lilies	Gentianella	Planting
Agapanthus	Gilias	Plums
Anemones	Gooseberries	Polyanthus
Annuals	Grafting	Potatoes
Apples	Green-fly	Pruning
Apricot	Heartsease	Privet [tings
Auriculas	Herbs [nials	Propagation by cut-
Beans	Herbaceous Peren-	Pyracantha
Beet	Heliotrope	Radishes
Biennials	Hollyhocks	Ranunculus
Black Fly	Honeysuckle	Raspberries
Books for Cottagers	Horse-radish	Rhubarb
Borage	Hyacinths	Rockets
Borecole	Hydrangeas	Roses
Box Edgings	Hyssop	Rue
Broccoli	Indian Cress	Rustic Vases
Brussels Sprouts	Iris	Sage
Budding	Kidney Beans	Salvias
Bulbs	Lavender	Savoys
Cabbage	Layering	Saxifrage
Cactus	Leeks	Scarlet Runner
Calceolarias	Leptosiphons	Beans
Californian Annuals	Lettuce	Seeds
Campanulas	Lobelias	Sea Daisy or Thrift
Carnations	London Pride	Seakale
Carrots	Lychnis, double	Select Flowers
Cauliflowers	Marigold	Select Vegetables
Celery	Marjoram	and Fruit
Cherries	Manures	Snails and Slugs
China Asters	Marvel of Peru	Snowdrops
China Roses	Mesembryanthe-	Spinach
Chrysanthemums,	mums	Spruce Fir
Chinese	Mignonette	Spur Pruning
Chives	Mint	Stocks
Clarkias	Mustard	Strawberries
Clematis	Narcissus	Summer Savory
Collinsias	Nemophilas	Sweet William
Colewort	Œnothera bifrons	Thorn Hedges
Cress	Onions	Thyme
Creepers	Paeonies	Tigridia Pavonia
Crocus	Parsnip	Transplanting
Crown Imperials	Parsley	Tree Lifting
Cucumbers	Peaches	Tulips
Cultivation of flowers	Pea-haulm	Turnips
in windows	Pears	Vegetable Cookery
Dahlias	Peas	Venus's Looking
Daisies	Pelargoniums	Glass
Dog's-tooth Violets	Perennials	Verbenas
Exhibitions, prepar-	Persian Iris	Vines
ing articles for	Petunias	Virginian Stocks
Felts, as protection	Phlox	Wallflowers
for borders	Pigs	Willows
Fuchsias	Pinks	Zinnias

J MATTHEWS, 5, Upper Wellington Street, Covent Garden, London, W.C.

BOTANY.

WEEDS AND WILD FLOWERS. By Lady WILKINSON. Post 8vo, with Coloured Engravings and Woodcuts. 10*s.* 6*d.*

MANUAL OF BRITISH BOTANY; containing the Flowering Plants and Ferns, arranged according to their Natural Orders. By C. C. BABINGTON, M.A., F.R.S., F.L.S., &c. 12mo, the Fourth Edition, with many additions and corrections. 10*s.* 6*d.* cloth.

ELEMENTARY COURSE OF BOTANY; Structural, Physiological, and Systematic. With a brief Outline of the Geographical and Geological Distribution of Plants. By ARTHUR HENFREY, F.R.S., L.S., &c., Professor of Botany in King's College, London, Examiner in Natural Science to the Royal Military Academy and to the Society of Arts. Illustrated by upwards of 500 Woodcuts. Post 8vo, 12*s.* 6*d.*

Also by Professor HENFREY,

RUDIMENTS OF BOTANY. A Familiar Introduction to the Study of Plants. With Illustrative Woodcuts. Second Edition, foolscap 8vo, 3*s.* 6*d.*

A SET OF SIX COLOURED DIAGRAMS ILLUSTRATIVE OF THE RUDIMENTS OF BOTANY; for Schools and Lectures. 15*s.*

JOHN VAN VOORST, 1, Paternoster Row.

Just published, Part I., to be completed in Eight Parts, price 2*s.* 6*d.* each, plain; 3*s.* 6*d.* each, coloured.

FARM INSECTS:

BEING THE

NATURAL HISTORY AND ECONOMY OF THE INSECTS INJURIOUS TO THE

FIELD CROPS OF GREAT BRITAIN AND IRELAND,

AND ALSO

THOSE WHICH INFEST BARNS AND GRANARIES.

WITH SUGGESTIONS FOR THEIR DESTRUCTION.

BY JOHN CURTIS, F.L.S.

Honorary Member of the Ashmolean Society of Oxford, and of the Entomological Society of France;

Corresponding Member of the Imperial and Royal Georgofili Society of Florence, of the Academy of Natural Sciences of Philadelphia, &c.

ILLUSTRATED WITH MANY HUNDRED FIGURES ON STEEL AND WOOD.

BLACKIE & SON, Warwick Square, City, London; and all Booksellers.

TO TUTORS, SURGEONS, THE HEADS OF SCHOOLS, &c.—The above can be supplied with Collections for practically Illustrating the Natural Orders, also Physiological and Medical Botany, by FREDK. Y. BROCAS, who has been eight years in the medical profession, and has attended the Lectures of Professors Lindley, Lankester, Henfrey, and Forbes, and the Botanic Gardens in the vicinity of the Metropolis. Collections named, arranged, and mounted, and desiderata supplied by FREDE. Y. BROCAS, Botanist, 85, St. Martin's Lane, London, W.C.

CHEAP AND CORRECT PRINTING FOR THE NURSERY AND SEED TRADES.—Send your orders to ROBT. EDM. TAYLOR, PRINTER, Sea Coal Lane, Skinner Street, Snow Hill, London, E. C. Estimates forwarded.

GRATIS AND POST FREE TO ALL PARTS OF THE UNITED KINGDOM.—A new CATALOGUE, corrected to May 1st, containing 10,000 Volumes of New and Popular Books, with the published price affixed to each; from which a discount of 2*d.* in the 1*s.* is allowed. S. and T. GILBERT, 4, Copthall Buildings, back of the Bank of England, London, E.C. Copy the address. N.B.—All warranted perfect in every respect, and precisely the same as if the full price were paid.

TO PIG AND POULTRY FEEDERS AND MILLERS.

CHICKEN AND GAME RICE, 8*s.* per cwt., in bags 1½ cwt. each. SCREENED RICE, 11*s.* per cwt., in bags 1½ cwt. each. RICE MEAL, 6*s.* 6*d.* to 8*s.* 6*d.* per cwt. RICE for grinding. American Oilcake and Locust Beans, per Ton only.—All Sold for Cash, and an allowance per ton, by W. & R. JUPP, Rice Merchants, 6, Cross Lane, St. Mary-at-Hill, Eastcheap.

FREEHOLD NEAR LONDON.

TO BE SOLD, a FARM, about 70 acres in first-rate condition, with all necessary Buildings, including a comfortable Cottage, built within two years. Eight miles south of the Royal Exchange, on the high road to which it has a long frontage.—Address A. A., care of Sotheran & Willis, Tower Street, E.C.

CARDIGANSHIRE, SOUTH WALES.

TO BE LET, the FARM OF PWLPYRAN, near Hafod, containing nearly 400 acres and a large extent of Hill Pasturage, with an excellent Residence, fitted up with every convenience, well-arranged Farm Buildings, and two Cottages. The situation is delightful and the soil dry. Distant from Aberystwith 15 miles, and 3 from the far-famed Devil's Bridge. Fishing and Shooting over 1500 acres. The present Furniture to be taken at a valuation.—For Rent and particulars apply to Mr. J. BAILEY DENTON, 52, Parliament Street, Westminster, S. W.

CARMARTHENSHIRE.

TO BE LET, the FARM OF KILLIFAWR, containing 309 acres, mostly drained, with a New House and suitable Farm Buildings. It is situate within 3 miles of the Narberth Road Station, on the South Wales Railway. Immediate possession can be given. Also,

PEMBROKESHIRE.

TO BE SOLD, THE PONTVANE ESTATE, comprising the Parish of Pontvane, consisting of 1150 acres, with the advowson of the living. The Estate is beautifully situate, well timbered, and capable of great improvement. There is a small Mansion, recently erected, after the designs of Mr. Poynter, of Westminster.—For particulars, apply to Mr. J. BAILEY DENTON, Land Agent, 52, Parliament Street, Westminster, S. W.

TO BE LET, BRISTOL NURSERY GROUNDS, Kemp Town, Brighton. These Gardens are now to Let for occupation with immediate possession.—Any person desirous of treating for the same may obtain particulars and permission to view the grounds on application to Mr. R. W. LUCAS, 20, Great Marlborough Street, London, W.; and of Mr. A. CHANDLER, Horticultural Valuer, 28, Priory Road, Wandsworth Road, S.

WANTED, a SMALL NURSERY in the neighbourhood of London, with Jobbing attached.—Address, F., Post Office, Framfield, Hurstgreen, Sussex.

Sales by Auction.

WINDING UP SALE FOR THE SEASON.

To GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will Sell by Auction at the Mart, on FRIDAY, June 17, at 12 o'Clock, a choice assortment of GREENHOUSE PLANTS, comprising Scarlet and other Geraniums, Ericas, Epacris, &c., the newest varieties of Fuchsias, Verbenas, and Dahlias, with a large assortment of Ornamental Plants for Bedding.—On view the morning of Sale. Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

ORCHIDS, FOLIAGE PLANTS, FERNS, ETC.

MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on TUESDAY, June 14, at half-past 12 precisely, a small collection of ORCHIDS, established plants, from a gentleman in the north of England, and including the most favourite East Indian and South American species, an importation of Cattleya Mossiæ and other varieties from Laguayra, and many other fine-foliaged Plants and Ferns.—May be viewed on the morning of Sale, and Catalogues had.

ORCHIDS.

MR. J. C. STEVENS is instructed by the executors of the late Mr. Thomas Jackson, to announce for Sale by Auction at his Great Room, 38, King Street, Covent Garden, on TUESDAY, June 21, at half-past 12 o'Clock precisely, the valuable collection of ORCHIDS from the Kingston Nursery, in fine health, and including the following:—

Aetides Fieldingi	Odontoglossum gloriosum
,, Lindleyana	Oncidium Barkeri
,, quinquevulnerum	,, sessile
Cattleya Lemoni	Phalænopsis amabilis
,, Boothi	,, grandiflora
,, elegans	Saccolabium ampullaceum
Cymbidium eburneum	,, guttatum giganteum
Cypripedium hirsutissimum	Tricophilia suavis
Dendrobium anosmum	,, sp. crispa?
,, Farmeri roseum	Vanda helvola
Lælia grandis	,, Lowi
,, purpurata	,, suavis (Veitch's)

And numerous other species well deserving the attention of growers.

May be viewed on the morning of Sale, and Catalogues had of Mr. J. C. STEVENS, 38, King Street, Covent Garden.

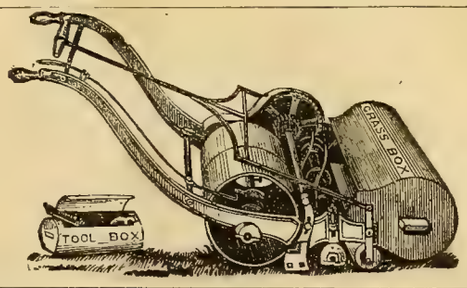
LANDS OF CUNNING PARK FOR SALE.

TO BE SOLD, by Public Roup, within the King's Arms Hotel, Ayr, on TUESDAY, July 5, at 2 o'Clock afternoon, the well-known property of CUNNING PARK, extending to 27 acres, 3 roods, 10 poles, imperial or thereby, beautifully situated at the confluence of the river Doon with the Sea, about ½ mile from the Town of Ayr. The Land is in the highest possible state of cultivation, and has been managed for many years by the proprietor upon the most approved system of modern husbandry. There is a good House, and excellent Offices and Farm Buildings. The lands are laid throughout with Pipes for the distribution of Liquid Manure.

ABERCROMBY COTTAGE, a pleasant Sea-bathing Residence, is situated on the property, and will be included in the sale of Cunning Park, or exposed as a separate lot to suit purchasers.—For further particulars apply to the Liquidators of the Western Bank at Glasgow; Messrs. BANNATYNE'S & KIRKWOOD, Writers, there; WILLIAM KILPATRICK, Writer, in Ayr; or CHARLES G. SHAW, Writer, County Buildings, Ayr, in whose hands are the Title Deeds, Articles of Roup, and a Plan of the property.—Ayr, June 11.

BY ROYAL LETTERS PATENT.

GREEN'S PATENT GRASS CUTTING, COLLECTING, AND ROLLING MACHINES.



TRIAL at the London Horticultural Society's Gardens, Chiswick, June 5, 1857.

FOUR COMPETITORS.

First trial on level ground, second do. on undulated, third do. on intricate places around trees, &c., when GREEN'S PATENT was unanimously declared to be the best in each trial by Colonel Challoner, Dr. Lindley, and G. M'Ewen, Esq., the appointed Judges.

See the *Gardeners' Chronicle* of May 22, 1858, p. 423, under the heading of "Garden Memoranda."

"LONDON HORTICULTURAL GARDENS, CHISWICK.—The Grass in the Arboretum and elsewhere is in excellent condition; it is kept in order by means of one of GREEN'S 2-feet Mowing Machines, which does its work very satisfactorily, and, compared with the scythe, effects a saving of at least one-half."

Extract from London *Times* of June 8, and *Gardeners' Chronicle* of June 12, 1858.

"TRIAL OF MOWING MACHINES.—A considerable number of various sizes having been brought to the ground it was agreed that the trial should take place between One Hand Machine of each exhibitor, as nearly as possible of uniform size and worked by themselves, or their men. The ground to be worked was determined by lot, the pieces having been previously selected of as uniform quality as possible. After trials on level ground and round trees, the Judges, Colonel Challoner and Mr. Edward Easton, declared GREEN'S Patent to be the best.

(Signed) "C. B. CHALLONER, EDWARD EASTON, Judges."

Extract from the "Cottage Gardener" of June 15, 1858.

"The decision was just what was anticipated, all present being satisfied of the manifest superiority of GREEN'S Machine, both in construction, lightness of draught, and superiority of work."

TESTIMONIAL FROM JOSHUA MAJOR, ESQ., THE LANDSCAPE GARDENER, KNOSTHORPE, NEAR LEEDS.

"SIR,—When I look over your list of patrons, knowing as I do the great demand you have already had both for your Pony and Hand Mowing Machines, any further testimonials seem almost unnecessary, nevertheless, I have again pleasure in giving my opinion upon your late improvements. Since your first attempt, some years ago, to improve upon the Mowing Machines then in use, you have made many changes, and have certainly been highly successful in your efforts to find out the best principle. The change you made in reducing all the machinery within the framework (thereby preventing the wheels from catching and injuring the plants and flowers while operating), was a very important one; this, together with the neat and compact form of the Machine, its substantial workmanship, and the easy and effectual manner in which it could be worked, did seem to me all that could be desired, but the Mower just sent for my inspection possesses still further and more decided improvements, viz.:—1st, Your tubular or circular Grass Box, which is very neat and compact, and much less liable to catch and injure plants than the usual angular square boxes. 2d, Your new plan of having the wheels together on one side the framework, which you say gives strength to the works, and in which it is easy to see two great advantages. In the first place, it admits of the cutters being so placed as to throw the cut Grass from the wheels, which on the old plan, was thrown amongst them, and so impeded their working; and again, the wheels being all together affords a ready opportunity for placing a guard over them, and thus preventing not only their getting clogged with dirt, but also the liability of children to become entangled in the wheels. 3d, The small wooden rollers stretching in front the whole length of the cutters have considerable advantage over the old plan of iron castors by keeping the Machine perfectly steady, and leaving a smooth even surface, which the latter in wet weather sometimes left a little ribbed. 4th, The levers employed to put the machinery in and out of gear being now self-acting, have totally done away with all the attention and labour for the hand which was required before.

I may just add that I know nothing more calculated to throw discredit upon Mowing Machines of all classes, although their management is simple, than their falling into the hands of inexperienced and careless persons. A lawn not rolled previous to being operated upon, but kept in a rough state, and not cleared of stones, bones, &c., most certainly must injure the cutters. The Machine moreover, being set to cut short Grass, cannot possibly be expected to cut long or coarse Grass, which, through carelessness, it is often set to do, and then the labour is too heavy, and the work done so badly that the Machine gets all the blame, and so the labourer returns to the scythe. To prevent such abuses therefore you ought by all means to give full and clear directions to every purchaser.

"Mr. GREEN."

The number of Testimonials from Noblemen, Gentlemen, and almost all the first-class Gardeners in the United Kingdom and many other parts of Europe, would fill a volume if T. G. was to attempt to give them. So many numerous respectful references are kindly permitted that any lady or gentleman requiring references can on inquiry be supplied with every information necessary, and so widely are they spread that they may be seen within easy distance of their own seats. The letter however with which T. G. has been favoured from Joshua Major, Esq., the Landscape Gardener, whose professional pursuits bring frequently such things under his notice, will no doubt be considered a sufficient guarantee as to the utility and quality of his Machines. The directions alluded to by Mr. Major are strictly attended to, and are forwarded in a printed form with every Machine.

THOMAS GREEN respectfully informs the Nobility, Gentry, Gardeners, Amateurs, and others, that upwards of Six Hundred of these Machines were sold in 1857 and to show the increasing demand, above Nine Hundred were sold in 1858, and in the early part of this season considerably more than One Thousand have already been ordered, and in all probability will exceed Two Thousand before the end of the present season. They have proved to be the best in all cases of competition, are entirely remodelled, and all the defects pointed out by the Judges up to the present time are here rectified. It would be superfluous to attempt to give here extracts from the numerous letters T. G. receives, giving unbounded testimony to the great superiority of

GREEN'S PATENT MOWING MACHINES

over all others. As several infringements of this Patent have been attempted, the Maker respectfully requests parties purchasing to see that "GREEN'S Patent, Leeds," with the number of each Machine, are cast on the side, and the whole of the Wheels and Gearing works inside the frame, and have wood rollers in front.

LIST OF PRICES:—

HAND MACHINES.		DONKEY and PONY MACHINE (stronger).		HORSE MACHINE (very strong).	
To cut 14 inches	£6 0 0	To cut 24 inches	£10 0 0	To cut 30 inches	£18 0 0
To cut 16 inches	6 10 0	To cut 26 inches	11 0 0	To cut 36 inches	21 0 0
To cut 18 inches	7 0 0	To cut 30 inches	15 0 0	To cut 42 inches	24 0 0
To cut 20 inches	7 10 0	Donkey Boots	0 16 0	To cut 48 inches	27 0 0
To cut 22 inches	8 0 0	Pony Boots	1 0 0	Horse Boots	1 4 0
To cut 24 inches	8 10 0	Leather Traces and Stretcher	0 7 6	Leather Traces and Stretcher	0 10 0

The Patentee now considers the Machines as near perfection as possible. Notwithstanding the great improvements now introduced at much additional cost, no extra charge will be made, excepting for a neat Guard, which is placed over the wheels to keep them clean, and to prevent breakage or accidents, which will be 5*s.* extra to parties requiring them.

☞ The Machines are warranted to give satisfaction, or may be at once returned by the party paying the carriage back to Leeds. The Patentee has spared neither time nor expense in producing the best and cheapest Mowing, Collecting, and Rolling Machines ever brought before the public. Every information may be had by applying to the Patentee,

GREEN'S IMPROVED GARDEN ROLLERS,

WITH ORNAMENTAL ENDS.

Length and Diameter equal / Extra (if double) ...	16 inches	18 inches	20 inches	22 inches	24 inches	26 inches	28 inches	30 inches
	31*s.* 6*d.*	34*s.* 0*d.*	42*s.* 6*d.*	47*s.* 0*d.*	56*s.* 0*d.*	62*s.* 0*d.*	75*s.* 6*d.*	97*s.* 6*d.*
	3 0	4 0	5 0	6 0	7 0	9 0	12 0	15 0

The great advantage of the Double Rollers are the comparative ease in turning them without disturbing the ground or the gravel walks; also, being much heavier and are easier drawn, they are capable of performing their work in a superior manner, which is acknowledged by all who have tried them. The above are the lowest Net Cash Prices, delivered at all the principal Railway Stations.

THOMAS GREEN, Smithfield Iron Works, Leeds;
or, No. 2, Victoria Street, bottom of Holborn, London; or of
Mr. ROSE, Manager of Agricultural Department, Crystal Palace, Sydenham, where the Machines may be seen working daily in suitable weathe

N.B. Parties desirous of having their Machines repaired may forward them to either the London or Leeds establishment, where they will have the best attention.

Printed by WILLIAM BRADBURY, of 13, Upper Woburn Place, and FREDERICK MULLETT EVANS, of No. 20, Queen's Road West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and published by them at the Office, No. 5, Upper Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—SATURDAY, June 11, 1859.

THE GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 25.—1859.] SATURDAY, JUNE 18. {Price Fivepence. STAMPED EDITION, 6d.

INDEX.

Agri. Soc. of England	531 b	Gardening, Glenny's Manual of	525 a
— Journal, Bath	532 b	Guano, Bahia	531 b
— show, catalogues of	531 a	— islands, American	532 c
Bambusa gracilis	528 c	Linnean Society	526 b
Barnstaple, notes from	531 b	London Farmers' Club	532 a
Books noticed	527 a	Mangel beetle	531 c
Burnham, Orchids at	527 c	Miasma	525 a
Cardamine, monstrous	525 a	Mowing machines	530 a
Carnations, Sardinian	525 c	Mushrooms, open air	523 c
Charcoal	525 c	— spawn	524 a
Chemico-Agri. Soc.	531 c	Nettles, destroying	530 a
Chrysanthemum peg	525 b	Orchids, Mr. Reid's	527 c
Cirencester College	529 c	Pea Lentil	524 a
Cucumber growing	525 b	Pike, the	528 a
Cultivation, four-course	532 a	Puff balls	525 a
Dalbergiea, Bentham on	526 b	Rollisson's (Messrs.) nursery	527 b
Farm Implements, Belgian	530 b	Roses, Cloth of Gold, &c.	528 a
Flowers, fragrance of	525 a	Royal Botanic Society	525 c
Flower garden, plan of	524 c	Turnip crop and guano	532 a
Game preserving	530 a	Weigela amabilis	525 a
Gardeners' Benevolent Institution	525 a	Wheat, prices of	533 a
		Yucca gloriosa	525 c

CRYSTAL PALACE.—SUMMER SHOW OF POULTRY AND RABBITS, August 29, 30, 31, and September 1. Schedules of Prizes and Certificates of Entry are now ready. All communications to be addressed to Mr. W. HOUGHTON, Secretary to the Poultry Show, Crystal Palace, Sydenham. Entries close on the 30th July.

ROSE SHOW.—The SECOND GRAND NATIONAL ROSE SHOW, under distinguished patronage, will be held in the Hanover Square Rooms, on THURSDAY next, June 23. Admission from 1 o'clock to 4, 5s.; from 4 to 7, 1s. Tickets may also be obtained at Mr. MITCHELL'S Royal Library, 33, Old Bond Street. The Schedule of Prizes may be had on application to The Rev. S. REYNOLDS HOLE, Hon. Sec. Caunton Manor, Newark, Notts.

APIARIAN SOCIETY.—The next Meeting will take place on TUESDAY, June 21, at 8 P.M., at the Rooms of the Entomological Society, 12, Bedford Row.
W. B. TEGETMEIER, Hon. Sec.

THE GREAT SUMMER FETE OF THE LEICESTER AND LEICESTERSHIRE FLORAL AND HORTICULTURAL SOCIETY will be held on the Leicester Race Course, on TUESDAY, June 28. A SILVER CUP will be given for the best collection of 24 CUT ROSES exhibited by a Nurseryman. Prizes of 3l. and 2l. will be offered to gentlemens' Gardeners for 24 CUT ROSES; and Prizes of 2l. and 1l. to Amateurs for 24 CUT ROSES. These Classes are open to all England. The Worshipful the Mayor of Leicester, in answer to a requisition, has called upon the inhabitants to close their places of business on the afternoon of this great Gala day. The Midland Railway will run Special Trains from all their principal stations.—For Programme apply to the Hon. Sec., 15, Newarke Street, Leicester.

LEAMINGTON FLOWER SHOW, June 28.—Exhibitors are reminded that next SATURDAY will be the last day for making Entries. Schedules may be obtained on application to Mr. R. RUSSELL, Hon. Sec. 5, Lower Parade, Leamington.

GRAND FLORAL AND HORTICULTURAL FÊTE AT STAMFORD.—The SUMMER SHOW of the Stamford Horticultural Society will take place on WEDNESDAY, July 6, on the same magnificent scale as in former years. Liberal Prizes are offered, including two SILVER CUPS for CUT ROSES and one for STOVE and GREENHOUSE PLANTS, open to all England. Every facility afforded to Exhibitors, and the Schedule with Rules forwarded free on application to Mr. H. JOHNSON, Hon. Sec.

TO THE MEMBERS OF THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—HENRY MCMILLAN begs to solicit the favour of your VOTES at the ensuing Election of Pensioners which will take place July 6, in favour of MARIA SQUIBB, No. 14 on the List of Candidates. Her late husband subscribed 14 years to the funds.—Westerham, June 18.

GARDENERS' BENEVOLENT INSTITUTION.—JAMES WALLAIS, of Foot's Cray, Kent, aged 81, totally blind during the last 20 years, would thankfully RECEIVE the VOTES of the Members of the above at the ensuing Midsummer Election.

GARDENERS' BENEVOLENT INSTITUTION.—ELEVENTH APPLICATION.—The assistance of Subscribers is earnestly solicited in behalf of JAMES SMITH, of Brighton, 73 years of age, in ill health, and whose name has been on the list of candidates since the year 1854.
Proxies will be thankfully received by Mr. SPARY, Queen's Graperies, Brighton; and Mr. L. SOLOMON, Grape-Vine, Centre Row, Covent Garden, London.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY LIMITED supply every requisite for the Farm and the Garden.
Registered Offices, Union Road, Plymouth.

ROSES.
JAMES MITCHELL begs to announce to the Nobility and Gentry that his unrivalled Collection is now in fine Bloom—Piltdown Nurseries, Maresfield, Sussex, 24 miles from Uckfield Station of the London, Brighton, and South Coast Railway.

ROSE ISABELLA GRAY.
A. PAUL AND SON have a large STOCK of the above ROSE, originally introduced by them, and so highly spoken of in the *Gardeners' Chronicle* of last week. Strong healthy plants, 2s. 6d. to 3s. 6d. each. A liberal discount to the Trade.—Nurseries, Cheshunt, Herts, June 18.

ROSES.
A. PAUL AND SON respectfully invite all lovers of ROSES to inspect the Collection growing at the Cheshunt Nurseries. They are now in full bloom and will continue at their best for about a fortnight. There will be a good show of the autumnal kinds from the present time till November.
Trains of the Eastern Counties Railway (Cambridgeshire) to and from Waltham or Cheshunt Stations several times daily.
Nurseries, Cheshunt, Herts.

JULY KIDNEYS.
J. MAY AND CO. beg to announce they have a fine Stock of the above, for producing fresh Potatoes through the Autumn and Winter. Price 2s. per peck, or 5s. per bushel.—1, Wellington Street, Strand, W.C.

NEW ZEALAND RUNNER BEAN.
Price 2s. per quart.
JAS. CARTER & Co., Seedsmen, 238, High Holborn, London, W.C.

FERN CATALOGUE.
ROBERT SIM'S NEW DESCRIPTIVE AND PRICED CATALOGUE, No. 6 (62 pages) of his COLLECTION of BRITISH AND EXOTIC FERNS, can be had, post free, for 8 stamps. Gratis to all previous purchasers of Ferns.
Nursery, Foot's Cray, Kent, S.E.

FLOWERING PLANTS.
F. AND A. SMITH have now in bloom a fine sample of KALOSANTHA COCCINEA, also HYDRANGEA, blue and pink; GERANIUM, French, Fancy, and Show varieties; FUCHSIAS, HELIOTROPES, CALCEOLARIAS (herbaceous and shrubby), ERICA, CACTUS, ROSES, &c., at moderate prices.—Dulwich, Surrey.

GRAPE VINES FOR PRESENT PLANTING.
MESSRS. ARTHUR HENDERSON AND CO. can now supply LARGE and SMALL plants (at reduced prices) of the
MUSCAT HAMBURGH GRAPE;
Also the
STOCKWOOD GOLDEN HAMBURGH,
and all the best leading Grape Vines of the day, suitable for planting at the present season. Prices to be had of them on application.—Pine Apple Place, Edgware Road, June 18.

HOLLYHOCK SEED.
A. PAUL AND SON beg to offer packets of Seed, saved from their unrivalled collection, free by post at the following rates:—

	s. d.
12 separate packets, saved from 12 good and distinct named sorts, containing about 500 seeds	5 0
Mixed seed, first quality	2 6
Second quality, per packet	1 0

N.B. June and July are the best months for sowing out of doors to bloom next year.—Nurseries, Cheshunt, Herts.

CHOICE SEEDS.
MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that they can now supply the following choice SEEDS, all of which are warranted genuine and of the finest quality.

Per packet—s. d.		Per packet—s. d.	
Calceolaria, herbaceous	2 6	Gaillardia grandiflora	0 6
Cineraria, from named vars.	2 6	Primula sinensis, mixed	1 6
Clianthus Dampieri	2 6	Pansy, from named vars	1 0
Hollyhock, from named vars.	0 6	Sweet William, from extra fine vars.	0 6

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Stove, Greenhouse, and Hardy Ferns, Miscellaneous Stove, Greenhouse, and Hardy Plants, Variegated and Ornamental foliaged Plants, Conifers, Roses, Rhododendrons, Indian Azaleas, Gloxinias, Fuchsias, Cactuses, &c., is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

SUPERB CAPE OR GIANT AND BROMPTON STOCKS.
CHARLES ALEXANDER, SEEDSMAN, Edinburgh, can supply the following, which are highly recommended. Sow any time this month. Post free on receipt of Stamps:—

1 packet Young's Scarlet Cape or Giant Stock	1s.
1 packet Young's White Cape or Giant Stock	1s.
1 packet Young's Scarlet Brompton Stock	1s.
1 packet Young's Dark Bloody Wallflower	1s.

CABBAGE SEED.
CATTELL'S "DWARF BARNES," AND CATTELL'S "DWARF RELIANCE," may be had as usual by post for 12 penny stamps per packet; the former containing 1 oz., and the latter ½ oz. May be sown as early as the middle of July, and will not run to seed the following spring.
Seed Establishment, Westerham, Kent.

HOLCUS SACCHARATUS, or North China Sugar-Cane.—Pamphlet, "A Visit and a Plant;" the only English authority on the Cultivation of the above. Post free 6d. Prices of Seed on application. Samples 6d. Four varieties of Holcus remitted free by post on receipt of 10s.
JOHN W. CLARKE, Whittlesea, Cambridgeshire.

GEORGE BAKER begs to inform the nobility, gentry, and public that his extensive collection of HARDY RHODODENDRONS, AZALEAS, KALMIAS, &c., are now in perfection, and may be viewed free.—American Nursery, Windlesham, near Bagshot, Surrey (1¼ mile from the Sunniugdale Station of the Staines and Wokingham Railway, where conveyances are always to be had).—June 18.

SKIRVING'S IMPROVED TURNIP SEEDS.
WILLIAM SKIRVING begs to recommend the following New Varieties of SWEDE as the best for present sowing, viz., his NEW EARLY DWARF TOP PURPLE SWEDE, and his NEW EARLY DWARF TOP GREEN-BRONZE DITTO. These varieties, if sown any time in June, will give a full crop of excellent quality. Price of Seed, 1s. per lb. For later sowing he recommends his Improved YELLOW BULLOCK and HARDY GREEN ROUND TURNIP as by far the best of the common Turnips. Price 9d. per lb.
Queen Square, Liverpool.—June 18.

E. ADOLPHE, 47, Rue de la Paix, Boulogne-sur-Mer, offers the following 13 new French GERANIUMS in strong cut down plants in flower, at 5l. the set; small rooted cuttings, 3l. Grande Duchesse Stephanie, Impératrice Eugénie, Prince Jerome, Reine Hortense, Alma, Le Crimeen, Madame de Wendel, Beauté de Rochefuret, Ciceron, Pline, Seuèque, Virgile, Horace. Orders must contain payment. Package and transport to London included.

CINERARIA SEED.
WILLIAM HUSSEY begs to offer the above, saved from the best Show flowers, at 1s. per packet.
Horticultural Gardens, Norwich.

CINERARIA SEED saved from CHARLES TURNER'S well known collection of named varieties, now ready in 2s. 6d. packets.—Royal Nurseries, Slough.

CINERARIA, HERBACEOUS CALCEOLARIA, AND HALF SHRUBBY DITTO SEED.—These have been saved from Turner's most beautiful varieties; in 1s. and 2s. 6d. packets. Primula and Hollyhock, from the newest and handsomest varieties, 1s. per packet. Agents for F. & A. Smith's splendid Cineraria, in 1s. 6d., 2s. 6d., and 5s. packets; also agents for Dobson & Son's splendid Calceolaria, in 1s. 6d., 2s. 6d., 3s. 6d., & 5s. packets.—Catalogues of the newest Flower Seeds, and newest Dutch and Cape Bulbs, sent post-paid.
BUTLER & MCCULLOCH, Seedsmen, Covent Garden Market.

SPLENDID CINERARIAS.
F. AND A. SMITH are now sending out Seeds of their fine COLLECTION of the above, which for brilliancy of colour, profuseness of flowering, and compactness of growth, are unsurpassed. Great care has been taken to select only the very best for Seed from upwards of 10,000 of the finest produced in the country, some of which were exhibited at the Spring Meetings of the Botanic Society, obtained certificates of merit, and were much admired. In packets 1s. 6d., 2s. 6d., and 5s. each in stamped envelopes, and may be had of most respectable Seedsmen in the United Kingdom.—Dulwich, Surrey, S.

WILLIAM BARNES begs to inform his friends and patrons that his new PRICED and DESCRIPTIVE CATALOGUE is now ready, and can be had post free upon application. It contains the finest selections of Indian Azaleas, Cinerarias, Calceolarias, Verbenas, Fuchsias, Hollyhocks Liliums, Phloxes, Roses, Geraniums, Chrysanthemums, Ferns, Stove and Greenhouse plants, as well as a very large assortment of choice miscellaneous plants.
Camden Nursery, Camberwell South.

AZALEA INDICA "FLOWER OF THE DAY" (IVERY'S).—This fine variety will be ready for delivery the last week in June. It is a decided improvement on Iveryana; has been exhibited only three times, and gained two Certificates and an extra Prize. For description see Catalogue, which will be sent post free on application. Price, per plant, 21s. each.—Dorking Nursery, June 18.

CACTI.
TO BE SOLD, either wholly or in part, a rare and superb collection of Exhibition Specimens of TALL CACTI, CEREUS, EPIPHYLLI, and their hybrids. They have been exhibited at all the Metropolitan Shows for years past. Being large and numerous the owner wishes to dispose of them for cash or in exchange for Camellias, Ferns.—Apply to R. BUNN, Gardener to J. R. Scott, Esq., Harringay Park, Crouch End, Hornsey, N.

SPERGULA PILIFERA.—The true species. See our Advertisement of June 4, p. 482. Fine strong spreading tufts in pots (not Seedlings) which will each make large patches this season, 3s. per dozen; or smaller tufts may now be had, 2s. per dozen. A dozen may be had prepaid, by post, for 8d. extra; or 6d. per dozen extra for orders of more than a dozen. Directions as to distance and culture sent.
BASS & BROWN'S CATALOGUES sent free on application. Goods (20s. and upwards) carriage free to all stations in London, &c. See Catalogue.—BASS & BROWN, Seed and Nursery Establishment, Sudbury, Suffolk.

40 FINEST NEW VERBENAS OF 1859.—Ajax, Figaro, Cerise, Bellona, Rubens, Felix Roland, Mrs. Fowke, Mrs. Leslie, Miss Emily Hanmer, Gitania Verdii, Madam Hardy, Rosalinde, Rosemande, Mrs. Maclean, Satanella, Cendrillon, Lord Clyde, Reine Blanche, Comte de Morello, Bandmaster, Lightning, striata perfecta, Mathilde, Mrs. Pennington, Bleu Magnifique, Baccarah, Lady Cotton Sheppard, Comet, Marie Bougiere, Madam Large, Novelty, Abundance, Madam Hoste, Sir J. Lawrence, Ne Plus Ultra, Gloire de Mont Plaisir, Fatima, Azucena, Mrs. White.
Selections of 12 of the above by purchaser, 1s. each; the set entire, 30s., post free, in fine strong well hardened plants.
HENRY MAY, The Hope Nurseries, near Bedale, Yorkshire.

TO SALESMEN, FRUITERERS, AND OTHERS.
TO BE SOLD, A HOUSE OF BLACK HAMBURGH GRAPES, very fine, and splendid colour. The owner not having time to Market them would dispose of them at a reasonable rate.—Apply to Mr. T. Lodge, Mill Hill, Hendon, Middlesex.

GENUINE TOBACCO PAPER FOR FUMIGATING.
H. APPLEBY (Foreman to Messrs. Ivery & Son, Surrey), takes this opportunity of informing his patrons and the public that he is now offering the above at a very considerably reduced price. It is now sold in packets of 4 lbs. each, at 1s. 3d. per lb. A liberal discount allowed to the Trade. For testimonials that will guarantee its quality, see *Gardeners' Chronicle*, April 16, p. 333.
Sheet Iron Pots for fumigating, 3s. 6d. each.
N.B. All orders to be accompanied with a Post-office Order, payable to HENRY APPLEBY, Dorking, Surrey.

INSECT, APHIS, OR GREENFLY POWDER (QUITE NEW).—Warranted to kill these insects, not to leave the slightest stain, or injure the most tender foliage or human beings. A trial requested. 2s. per lb. The "MULTUM IN PARVO," with Fittings for Implements in seven different forms, 7l. 7s. SEED DIBBLERS, 3l. 10s. SIGMA HOES, 4s., and HAND CULTIVATORS, 2s.
C. POWELL, Hurstgreen, Sussex.

BARBER'S POISONED WHEAT Kills Mice and Sparrows on the spot.—In 1d., 2d., 4d., and 8d. packets, with directions and testimonials. No risk nor damage in laying this Wheat about. From a single packet hundreds of Mice and Sparrows are found dead. Agents: Barclay & Sons, 95, Farringdon Street; W. Sutton & Co., Bow Churchyard; B. Yates & Co., 25, Budge Row, London; and sold by all Druggists, Grocers, &c., throughout the United Kingdom.
BARBER'S Poisoned Wheat Works, Eye, Suffolk.

NEW SEED OF FIRST-CLASS

CALCEOLARIAS AND CINERARIAS.

JAMES CARTER & CO.

Are now ready to supply Seed of the above, in three-sized packets, *all of the same quality*,

1s. ... 2s. 6d. ... 5s.

JAMES CARTER & CO., Seedsmen, 238, High Holborn, W.C.

NEW PRICED & DESCRIPTIVE GENERAL CATALOGUE,

Just Published by

MILNE, ARNOTT, AND CO., Successors to Chandler & Sons, and will be forwarded free upon application, a General Descriptive CATALOGUE, containing select priced Lists of new Hybrid Achimenes, Camellias, Azaleas, Ferns, Stove and Greenhouse plants, Chrysanthemums, Dahlias, Fuchsias, Pelargoniums, Verbenas, Petunias, Phloxes, Bedding Plants, hardy Trees, Shrubs, Fruit Trees, &c.

Wandsworth Road, London, S. Established upwards of 60 years.

LIST OF THE AWARD OF PRIZES AT THE SECOND EXHIBITION, ROYAL BOTANIC GARDENS, REGENT'S PARK, June 15, 1859.

EXTRA GOLD MEDAL.

Mr. May, Gr. to Josiah Spode, Esq., Hawkesyard Park, Rugeley, Staffordshire, for 16 Stove and Greenhouse Plants
Mr. Gedney, Gr. to Rev. W. Ellis, Hoddesdon, for 20 Exotic Orchids

LARGE GOLD MEDAL.

Mr. Whitbread, Gr. to H. Collyer, Esq., Dartford, Kent, for 16 Stove and Greenhouse Plants
Mr. Dods, Gr. to Sir J. Cathcart, Bart., Cooper's Hill, Egham, Surrey, for 16 Stove and Greenhouse Plants
Mr. Bullen, Gr. to J. Butler, Esq., Woolwich, for 20 Exotic Orchids

MEDIUM GOLD MEDAL.

Mr. B. Peed, Gr. to T. Tredwell, Esq., St. John's Lodge, Norwood, for 16 Stove and Greenhouse Plants
Mr. W. Cutbush, Nurseryman, Barnet, Herts, for 12 Stove and Greenhouse Plants
Mr. Green, Gr. to Sir E. Antrobus, Bart., Cheam, Surrey, for 10 Stove and Greenhouse Plants
Messrs. Paul, Nurseryman, Cheshunt, Herts, for 10 Roses in pots
Mr. Woolley, Nurseryman, Cheshunt, Herts, for 16 Exotic Orchids
Mr. G. Dods, Sir to Sir J. Cathcart, Bart., for 12 Exotic Orchids

GOLD MEDAL.

Messrs. J. & J. Fraser, Nurserymen, Leyton, Essex, for 12 Stove and Greenhouse Plants
Mr. Rhodes, Gr. to J. Philpott, Esq., Stamford Hill, for 10 Stove and Greenhouse Plants
W. Cutbush, Nurseryman, for 10 Cape Heaths
Mr. B. Peed, Gr. to T. Tredwell, Esq., for 8 Cape Heaths
Mr. Carson, Gr. to W. F. G. Farmer, Esq., Nonsuch Park, Cheam, for 12 Exotic Orchids
Mr. C. Turner, Nurseryman, Slough, for 12 Pelargoniums
Mr. Nye, Gr. to E. Foster, Esq., Clewer Manor, Berks, for 10 Pelargoniums

LARGE SILVER GILT MEDAL.

Mr. Baxendine, Gr. to H. Smallpiece, Esq., Guildford, Surrey, for 10 Stove and Greenhouse Plants
Mr. Chilman, Gr. to Mrs. Smith, Ashtead House, Epsom, for 6 Stove and Greenhouse Plants
Mr. Terry, Gr. to C. W. G. Puller, Esq., Youngsbury, Ware, Herts, for 6 Roses in pots
Messrs. Ivery & Son, Nurserymen, Dorking and Reigate, for 10 Greenhouse Azaleas
Mr. Rhodes, Gr. to J. Philpott, Esq., for 12 Orchids
Mr. G. H. Bunney, Nurseryman, Stratford, Essex, for 6 Exotic Orchids [Fuchsias
Mr. Oubridge, Gr. to J. Foster, Esq., Stamford Hill, for 6
Messrs. Dobson, Nurserymen, Isleworth, for 12 Pelargoniums
Mr. Bailey, Gr. to T. F. Drake, Esq., Amersham, for 10 Pelargoniums

LARGE SILVER MEDAL.

Mr. Carson, Gr. to W. F. G. Farmer, Esq., Nonsuch Park, Cheam, Surrey, for 6 Stove and Greenhouse Plants
Messrs. Jackson, Nurserymen, Kingston, Surrey, for 10 Cape Heaths
Mr. J. Peed, Gr. to C. Gabriel, Esq., Norfolk House, for 8 Cape Heaths
Mr. Rhodes, Gr. to J. Philpott, Esq., for 6 Cape Heaths
Mr. May, Gr. to J. Spode, Esq., for 6 Exotic Orchids
Mr. C. Turner, Nurseryman, for 6 Fancy Pelargoniums
Mr. Bailey, Gr to T. Drake, Esq., for 6 Fancy Pelargoniums
Mr. Whitbread, Gr. to H. Collyer, Esq., for 8 Ixoras

SILVER GILT MEDAL.

Mr. J. Peed, Gr to C. Gabriel, Esq., Norfolk House, Streatham, for 10 Stove and Greenhouse Plants
Mr. Tegg, Gr. to Baron Hambro, Rochampton, Surrey, for 6 Stove and Greenhouse Plants
Mr. Harlock, Gr to R. W. Nutter, Esq., Wanstead, Essex, for 8 Cape Heaths
Mr. Chilman, Gr. to Mrs. Smith, for 6 Cape Heaths
Mr. Mitchell, Nurseryman, Maresfield, Sussex, for 50 Cut Roses
W. Cant, Esq., Colchester, for 25 Cut Roses
Mr. Ivison, Gr. to the Duke of Northumberland, Sion House, for 6 Exotic Orchids
Mr. Baillie, Gr. to C. W. Carbonell, Esq., Harrow Road, for 12 Exotic Ferns
Mr. Cole, Nurseryman, St. Albans, Herts, for 6 Calceolarias
Mr. Davidson, Gr. to G. Bishop, Esq., South Villa, Regent's Park, for 6 Fuchsias
Mr. Windsor, Nurseryman, Child's Hill, Hampstead, for 12 Pelargoniums
Mr. Baillie, Gr. to E. Carbonell, Esq., for 10 Pelargoniums
Mr. Windsor, Nurseryman, for 6 Fancy Pelargoniums
Mr. Wiggins, Gr. to E. Beck, Esq., Isleworth, for 6 Fancy Pelargoniums
Mr. Young, Gr to C. Bailey, Esq., M.P., Glamorgan, for 1 Providence Pine Apple
Mr. Bailey, Gr. to T. T. Drake, Esq., for a Providence Pine Apple
Mr. Flould, Gr. to R. Fothergill, Esq., for 1 Queen Pine
Mr Flould, for 1 Enville Pine
Mr. Frost, Gr. to E. L. Betts, Esq., Maidstone, for a Dish of Black Hamburgh Grapes
Mr. Thomas, Gr. to G. Baxendale, Esq., for a Dish of Black Hamburgh Grapes
Mr. Allport, Gr. to W. Akroyd, Esq., for a Dish of Black Prince Grapes
Mr. Bailey, for a Dish of Muscadine Grapes
Mr. Drewett Gr to Mrs Cubitt, for a Dish of Frontignan Grapes
Mr. J. Gorton, Gr. to Rev. F. Hudson, for a Dish of Peaches
Mr. G Sage, G. to Earl Howe, Gopsal Hall, Atherstone, for a Dish of Peaches
Mr. Frost, Gr. to E. L. Betts, Esq., for a Dish of Nectarines
Mr J. Peacock, Gr. to J. Crawley, Esq., for a Dish of Nectarines

SILVER MEDAL.

Mr. Baxendine, Gr. to H. Smallpiece, Esq., for 8 Cape Heaths
Messrs. Paul, for 50 Cut Roses
Mr. Hollingworth, Turkey Mills, Maidstone, for 25 Cut Roses
Mr. Carson, Gr. to G. Farmer, Esq., for 8 Azaleas
Mr. B. Peed, Gr. to T. Tredwell, Esq., for 8 Azaleas
Mr. Green, Gr. to Sir E. Antrobus, Bart., for 6 Exotic Orchids
Messrs. Parker & Williams, Nurserymen, Holloway, for Meyenia erecta alba
Mr. Lawrence, Gr. to Bishop of Winchester, for Coelogyne pandurata
Mr. G. H. Bunney, Nurseryman, for 12 Exotic Ferns
Mr. J. Burley, Nurseryman, Limpsfield, Godstone, for 6 Calceolarias
Mr. M'Elroy, Gr. to J. Lancaster, Esq., for 6 Fuchsias
Messrs. Dobson & Son, for 6 Fancy Pelargoniums
Mr. James, Gr. to W. F. Watson, Esq., Isleworth, for 6 Fancy Pelargoniums
Messrs. Veitch & Son, Nurserymen, Chelsea, for collection of New and Rare Plants
Mr. Whitbread, for 2 Orchids
Mr. W. Cutbush, for 12 Variegated Plants
Messrs. E. G. Henderson, for collection of Ornamental Plants
Mr. G. Young, Gr. to W. Thorne, Esq., Dulwich, for 1 Queen Pine
Mr. Bailey, Gr. to T. T. Drake, Esq., for 1 Pine Apple.
Mr. Hill, Gr. to R. Sneyd, Esq., Keele Hall, Staffordshire, for a Dish of Black Hamburgh.
Mr. Fullerton, Gr. to H. L. Gaskell, Esq., Kiddington Hall, Oxon, for a Dish of Black Prince.
Mr. Turner, Gr. to J. Hill, Esq., the Rookery, Streatham, for a Dish of Black Prince.
Mr. Wood, Gr. to J. R. S. Murray, Esq., for a Dish of Muscadine Grapes.
Messrs. Jackson, for a Dish of Muscadine Grapes.
Mr. Budd, Gr. to J. Barnet, Esq., Woodford, Essex, for a Dish of Frontignans.
Mr. Oates, Gr. to Lord Leigh, Kenilworth, for a Dish of Peaches.
Mr. Clarke, Gr. to Earl Darnley, Cobham Hall, for a Dish of Peaches.
Mr. Carmichael, Gr. to Countess Dunmore, Falkirk, for a Dish of Nectarines.
Mr. Forbes, Gr. to Duke of Bedford, Woburn Abbey, for a Dish of Nectarines.
Mr. Frost, Gr. to E. L. Betts, Esq.

SMALL SILVER MEDAL.

Mr. E. P. Francis, Nurseryman, Herts, for 50 Cut Roses
Mr Terry, Gr. to C. W. G. Puller, Esq., for 25 Cut Roses
— Taylor, Gr to — Hanbury, Esq., for 25 Cut Roses
Mr. Mitchell, Nurseryman, for 24 Cut Roses
Messrs. Parker & Williams, Nurserymen, for Sinningia affinis
Mr. A. Parsons, Gr. to W. J. Blake, Esq., Welwyn, Herts, for Achimenes Dazzle
Mr. Gedney, Gr. to Rev. W. Ellis, for 12 Exotic Ferns
Mr. Baillie, Gr. to C. W. Carbonell, Esq., for 12 British Ferns
Mr B. Peed, Gr. to T. Tredwell, for Correct Labels, 1st class
Mr. May, Gr. to J. Spode, Esq., for Arrangement of Colour
Mr. Turnbull, Gr. to Lady Goldsmid, Regent's Park, for 6 Fuchsias
Mr. Weir, Gr. to Mrs. Hodgson, The Elms, Hampstead, for 6 Fancy Pelargoniums
Mr. C. Turner, for 24 Pinks
Messrs. Downie & Laird, Nurserymen, Edinburgh, for 36 Pansies
Mr. Norman, Bullfield, Plumstead, Kent, for 12 Pinks
Mr. August, Beddington, Surrey, for 24 Pansies
Mr. Francis, for 40 Roses in pots
Mr. C. Turner, for a collection of cut Verbenas
Messrs. Parker & Williams, for 12 Begonias
Mr. Binder, Gr., for Desfontainia spinosa
Mr. Rhodes, for 15 Variegated Plants
Mr. Williams, Nurseryman, Muswell Hill, for a collection of Variegated Plants
Mr. Rosher, for Eucharis amazonica
Mr. Young, Gr. to C. Bailey, Esq., for 1 Queen Pine
Mr. Bailey, Gr. to T. T. Drake, Esq., for a Green-fleshed Melon
Mr. Snow, Gr. to Earl de Grey, Silsoe, Beds, for a Green-fleshed Melon
Mr. Bailey, for a Scarlet-fleshed Melon
Mr. Drewett, Gr. to Mrs. Cubitt, Denbies, Dorking, for Black Hamburgh Grapes
Mr. Wood, Gr. to R. S. Murray, Esq., Danesfield, Bucks, for a Dish of Black Hamburgh Grapes
Mr. Henderson, Gr. to Sir H. Beaumont, Bart., Coleorton Hall, Ashby-de-la-Zouch, for a Dish of Black Hamburgh Grapes
Mr. Miller, Gr. to Sir W. Smith, Bart., Eardiston Hall, Worcestershire, for a Dish of Black Prince
Mr. Frost, Gr. to E. L. Betts, Esq., for a Dish of Muscadine
Mr. J. Parr, Gr. to J. R. K. Barker, Esq., Fairford Park, Gloucestershire, for a Dish of Frontignans
Mr. J. Peacock, Gr. to J. Crawley, Esq., Stockwood, for a Dish of Peaches
Mr. Snow, Gr. to Earl de Grey, for a Dish of Peaches
Mr. W. Cox, Gr. to Earl Beauchamp, Maresfield Court, Worcestershire, for a Dish of Nectarines
Mr. E. Robinson, Gr. to R. Benyon, Esq., Englefield, for a Dish of Nectarines
Mr. Henderson, Gr. to Duke of Sutherland, Trentham, for a Dish of Black Cherries
Mr. Henderson, Gr. to Duke of Sutherland, Trentham, for a Dish of White Cherries
Mr. Clarke, Market Gardener, Twickenham, for 2 Dishes of Strawberries
Mr. C. Turner, for Seedling Srtawberries
Mr. Embery, Gr. to A. Moss, Esq., Chadwell Heath, for a Dish of Muscats

BRONZE MEDAL.

Mr. Turner, Nurseryman, for 24 Cut Roses
Mr. Woolley, Nurseryman, for 12 Exotic Ferns
Mr. M'Elroy, Gr. to J. Lancaster, Esq., for 12 British Ferns
Mr. T. Whitbread, Gr. to H. Colyer, Esq., for Correct Labels, 1st class [2d class
Mr. Green, Gr. to Sir E. Antrobus, Bart., for Correct Labels,
Mr. Green, for Arrangement of Colour
Mr. Bragg, Nurseryman, Slough, for 24 Pinks
Mr. Bragg, for 36 Pansies
Mr. August, for 12 Pinks
Mr. Hall, Stoke Park, Bucks, for 24 Pansies
Messrs. Paul & Son, for Cut Herbaceous Plants
Mr. Bragg, for Collection of Sweet William Plants
Mr. R. Oubridge, for Collection of Variegated Plants
Mr. Floud, Gr. to R. Fothergill, Esq., Abernant, Glamorgan, for a Providence Pine
Mr. Richards, Gr. to Lord Londesborough, Grimston Park, Yorkshire, for a Green-fleshed Melon.
Mr. J. Gorton, Gr. to Rev. T. Hudson, Frogmore Lodge, Herts, for a Green-fleshed Melon.
Mr. B. Peed, for 6 Greenhouse Azaleas
Mr. B. Peed, for a Green-fleshed Melon
Mr. Whiting, Gr. to T. Hope, Esq., Deepdene Gardens, for a Scarlet-fleshed Melon
Mr. J. Godfrey, Gr. to W. Sheppard, Esq., Ware Park Mill, Herts, for a Scarlet-fleshed Melon
Mr. Maher, Gr. to Sir R. Bulkeley, Bart., Beaumaris, for a Scarlet-fleshed Melon
Mr. C. W. Alderson, Market Gardener, Mogden Lane, Lambeth, for a Dish of Muscadine
Mr. Miller, for a Dish of Peaches
Mr. Hill, for a Dish of Peaches
Mr. Hill, for a Dish of Nectarines
Mr. Robinson, for a Dish of Nectarines
Mr. Peachey, Gr. to G. South, Esq., Acton, for a Dish of Black Cherries
Mr. Peachey, for a Dish of White Cherries
Mr. Wood, Gr. to J. R. Scott Murray, Esq., for 2 Dishes of Strawberries
Mr. Burnett, Gr. to H. Thurlow, Esq.

CERTIFICATE OF MERIT.

Mr. Cant, Nurseryman, Colchester, for 24 Cut Roses
Mr. Hollingworth, for 24 Cut Roses
Mr. Francis, for 24 Cut Roses
Mr. B. Peed, Gr. to T. Tredwell, Esq., for Correct Labels (second class).
Mr. Dods, Gr. to H. Collyer, Esq., for Arrangement of Colour
Mr. Cannell, Gr. to E. Groves, Esq., Bury House, Norwood, for 6 Fuchsias
Mr. Nye, for Seedling Pelargonium Lord Clyde
Mr. Wiggins, for Pelargonium nitidum
Mr. Cole, Nurseryman, St. Alban's, Herts, for 6 Calceolarias
C. Turner, for Seedling Pelargonium Lady M. Labouchere
C. Turner, for Seedling Pelargonium Bracelet
C. Turner, for Seedling Fancy Pelargonium Sarah Turner
C. Turner, for Seedling Fancy Pelargonium Musjid
C. Turner, for Seedling Pink Eleanor
Mr. Nye, for Seedling Pelargonium Bacchus
Mr. Nye, for Seedling Pelargonium Bijou
Mr. Nye, for Seedling Pelargonium Ajax
Messrs. Parker & Williams, for a Centaurea
Mr. G. Smith, Nurseryman, Hornsey, for Geranium Vivid
Mr. Rhodes, for 8 Azaleas
Mr. Norman, for Charles William Pink
Messrs. Veitch, for Pelargonium Mrs. Ponsonby Moore
Messrs. Veitch, for Tradescantia odoratissima
Messrs. Veitch, for Boehmeria argentea
Messrs. Veitch, for Cyanophyllum magnificum
Messrs. Veitch, for Rhopala glaucophylla
Messrs. Veitch, for Begonia Luzuli
Messrs. Veitch, for Euronema marmorea
Messrs. E. G. Henderson, for Cyanophyllum magnificum
Messrs. E. G. Henderson, for Achimenes splendens
Messrs. E. G. Henderson, for Dianthus Hedwigi
Messrs. Parker & Williams for Begonia Isis
Messrs. Parker & Williams for Begonia grandis
Messrs. Parker & Williams for Boehmeria argentea
Messrs. E. G. Henderson, for Begonia Rollissoni
Messrs. E. G. Henderson, for Begonia Leopoldina
Messrs. E. G. Henderson, for Rhopala glaucophylla
Messrs. E. G. Henderson, for Maranta Porteana
Mr. Bray, Gr. to T. B. Lousada, Esq., Peak House, Devon, for 1 Queen Pine
Mr. Bailey, Gr. to T. T. Drake, Esq., for 1 Queen Pine
Mr. Tegg, Gr. to Baron Hambro, for Green-fleshed Melon
Mr. G. Thomas, Gr. to J. Baxendale, Esq., Whetstone, for Green-fleshed Melon
Mr. Whitbread, Gr, to H. Collyer, Esq., Dartford, for a Scarlet-fleshed Melon
Mr. Hanson, Gr. to R. Thornton, Esq., Beavor Hall, Southgate, for a Dish of Black Hamburgh Grapes
Mr. Aller, Gr. to W. Clegg, Esq., Withington Hall, Cheshire, for a Dish of Black Hamburgh Grapes
Mr. Standish, Nurseryman, Bagshot, for a Dish of Frontignans
Mr. Allport, for a Dish of Frontignans
Mr. Marcham, Gr. to E. Oates, Esq., for a Dish of Black Cherries
Mr. Bartlett, Gr. to P. Rose, Esq., for a Dish of Black Cherries
Mr. Widdowson, Gr. to C. Barnes, Esq., Rickmansworth, for 2 Dishes of Strawberries
Mr. Henderson, Gr. to Sir H. Beaumont, Bart.
Mr. Snow, Gr. to Earl Grey
Mr. Hutt, Gr. to Miss B. Coutts
Mr. Embery, Gr. to A. Moss, Esq.
Mr. Wood, Gr. to S. Murray, Esq.

MESSRS. E. G. HENDERSON & SON'S

NEW GENERAL CATALOGUE

AND

SPRING LIST OF ORNAMENTAL BEDDING AND SUMMER-FLOWERING PLANTS,

Is ready for distribution (free by post) wherein are described the following NEW PLANTS and also special directions for sowing, rearing, and final planting of

SPERGULA PILIFERA,

the admirable substitute for Grass on Lawns, without mowing, of which good established tufts for immediate planting (from Mr. Mongredien's fine lawn at Forest Hill, near to the Crystal Palace), are offered at 4*s.* and 2*s.* per dozen, according to their respective size. Seed Packets, 6*d.*, 2*s.* 6*d.*, 5*s.*, 10*s.*, and 20*s.* each.

BEATON'S NEW SEEDLING BEDDING GERANIUMS of unique and beautiful colours are—
THE IMPERIAL CRIMSON and the MODEL NOSEGAY.

ALLAMANDA VIOLACEA.
CALCEOLARIA AMPLEXICAULIS ALBA.
DWARF DAHLIA, THE WHITE UNIQUE.
,, GLOIRE DE FRANCE.
BANKS'S NEW FUCHSIAS.
PELE'S NEW CHRYSANTHEMUMS.

GERANIUM WHITE NOSEGAY.
,, SILVER CHAIN.
,, ST. CLOUD.
,, GOLDEN TOM THUMB.
,, CERISE UNIQUE.
,, THE RAINBOW.

OF VERBENAS,

THE MOST SPLENDID COLLECTION EVER OFFERED are those now in bloom at the Wellington Nursery, and to which E. G. HENDERSON & SON have called the special attention of cultivators for the first time this season. The present season is the most suitable for sowing

CALCEOLARIA, CINERARIA, AND PRIMULA,

to secure an early and continuous bloom of the above favourite plants for Greenhouse and Conservatory decoration. Seed Packets, of first class quality in each kind, at 2*s.* 6*d.* each.

Wellington Nursery, St. John's Wood, London.

CHOICE FLOWERS.

BUTLER & McCULLOCH'S SPRING CATALOGUE OF SEEDS,



ARRANGED on a new and original plan, with copious Descriptive and Cultural Notes, and containing many new and rare species and varieties not found in any other Catalogue, now ready and may be had free and post paid on application.

FLOWER, SHRUB, TREE, and VEGETABLE SEEDS, the crop of 1858, saved with the greatest care, by the most eminent growers.

We may also state that the Sardinian correspondent of Messrs. JAMES CARTER & Co., whose Seeds, especially Carnations and Picotees, have given such universal satisfaction, has transferred the Agency from that firm and appointed us his representative in this country. To meet the growing demand for first class flowers, particularly FLORISTS' FLOWERS, we have adopted our usual maxim of charging the lowest possible prices.

Professor LINDLEY in the *Gardeners' Chronicle* of February 5th, has the following notice of B. & McC.'s Catalogue.

"BUTLER & MCCULLOCH'S (Covent Garden) Spring Catalogue of Choice Flower, Shrub, Tree, and Vegetable Seeds. This list fills 84 closely printed 8vo pages, and is remarkably well got up. It appears that the correspondent in Sardinia, who formerly supplied one of the great London houses with seeds raised in that warm part of Europe, has now transferred what he saves to Messrs. BUTLER & MCCULLOCH. Let us add, that it yields to no Trade List in the abundance of its materials or the excellence of its arrangements."

BUTLER AND MCCULLOCH, while drawing attention to their general SPRING CATALOGUE which has elicited such high encomiums both from the scientific botanist and amateur cultivator, avail themselves of the present opportunity to select from its pages the following list:—

(28) ACACIA GRANDIS (TRUE).
One of the most beautiful of the A. pulchella section, producing deep golden balls. Of these graceful and highly ornamental plants our collection embraces no fewer than 47 varieties, all of the most decorative character.

(70) ALPINES.
Of these beautiful little plants we have a splendid collection, embracing all the most admired kinds, collected and arranged for us last autumn by M. Ortgies, the Curator of the Zurich Botanic Gardens. The value of Alpine plants for rock-work is too well known to require comment. These collections we can confidently recommend, containing, as they do, species only of highest merit.

(199) CALLICHROA PEDATA.
A new crimson annual with white eye, very beautiful.

(217 A.) CAMELLIA JAPONICA.
From the newest and finest striped and other varieties of that much admired genus.

(296) CEANOTHUS AZUREUS GRANDIFLORUS.
This, cæruleus macrophyllus, and Fontanesianus are all beautiful varieties of this highly ornamental genus, of which we possess nine splendid varieties. They are equally suited for conservatory and out-door decoration.

CANNAS.
Of these we possess an extremely interesting collection.

(304) CELOSIA (species nova).
A most elegant plant, producing a multitude of long spikes of feathery blossoms, silvery white shaded with bright rose, retaining its colour perfectly when dried, and therefore admirably adapted for winter bouquets; one of the greatest novelties of the season, flowering out of doors or in pots from July to October. Well worth attention. A dried specimen may be seen.

(337) CHRYSANTHEMUM (tall and dwarf).
Of these dwarf and tall varieties we have a fine stock, nearly all of which may be depended upon to produce double flowers, the seeds having been saved from the finest named varieties.

(344) CHRYSOCOMA COMAUREA.
Fine evergreen shrub, bearing a profusion of golden ball-like flowers; one of the handsomest greenhouse plants in cultivation.

(451) DATURA HUMILIS FLORE PLENO.
A magnificent Brugmansia-like plant producing a profusion of deep golden-yellow flowers; very large, double, and sweet-scented. One of the greatest novelties of the season.

(625) HABROTHAMNUS HÜGELLI.
This, purpureus, and Abelli are all handsome varieties of this beautiful genus, which everybody having a greenhouse or conservatory should grow. All three are extremely ornamental.

(665) HIBISCUS ROSEUS SUPERBUS.
This, Syriacus, and Thunbergi we can highly recommend. All are plants of great beauty

(680 to 688) HOLCUS OR SORGHUM (Chinese Sugar Cane).
Of this important class we have nine new and important varieties from Africa, said to be more ornamental and to contain more saccharine matter, Holcus saccharatus.

(704) INDIGOFERA DECORA ALBA ROSEA.
The above, purpurea, and dosua are all pretty free flowering shrubs, suitable for small greenhouses. They are also highly ornamental out of doors in summer.

(972) PELARGONIUMS.
Of these both large flowered and fancy, very choice, and of other splendid varieties, including Scarlets, we have a fine stock, which cannot fail to prove highly satisfactory.

(1149) SOLANUM CAPSICASTRUM.
Miniature Orange tree, covered all winter with a profusion of scarlet fruit; a handsome plant for greenhouse or sitting rooms.

(1335) BIGNONIA RADICANS MULTIFLORA.
Finer and brighter than radicans; flowers in large panicles producing a splendid effect.

(1468) TACSONIA IGNEA.
This magnificent Passionflower is unequalled for the brilliancy and splendour of its scarlet blossoms, far surpassing in this respect any of its class yet known. It flowers most profusely, grows rapidly, and covers a large space in an incredibly short time. It succeeds in a cold greenhouse, and even against a south wall with a little protection in winter (new and rare).

(1488) TROPÆOLUM TRIOMPHE DE GAND FIMBRIATUM.
Fringed orange scarlet.

CARNATIONS and PICOTEES saved from the most choice Collection of English varieties grown on the continent, and which may be expected to produce flowers of the highest merit, sent out in sealed packets as received from our Sardinian correspondent, whose seeds for many years have given such universal satisfaction, and from which varieties of the greatest excellence have been raised.

For prices and further particulars with regard to the above and other novelties, we refer our patrons to the Catalogue itself, which is sent free and post paid on application.

BUTLER & McCULLOCH, Covent Garden Market.

NEW VERBENA.—Edmonds's set of the above as sent out this spring by Mr. Chas. Turner. Twelve of the best, including package, 12*s.*
J. & W. BADMAN, Nurserymen, Gravesend.

BUSBY'S STOCKWOOD GOLDEN HAMBURGH GRAPE.

IN consequence of the Horticultural Society having abandoned their intended Exhibition at St. James's Hall on the 29th and 30th of this month, on account of the injury sustained by the plants from the heat and dryness of a gas-lighted room,

JAMES VEITCH, JUN., begs to announce that the PRIZE of 5*l.* 5*s.* offered by him for the BEST THREE BUNCHES of the above GRAPE, will now be awarded at the next Meeting of the HORTICULTURAL SOCIETY'S FRUIT COMMITTEE, at 8, St. Martin's Place, Trafalgar Square,

On TUESDAY, July 12, 1859, at 3 P.M.

J. V., Jun., also offers a PRIZE of 5*l.* 5*s.* for the BEST THREE BUNCHES Exhibited at the CRYSTAL PALACE SHOW, September 9 and 10, 1859, as before advertised.

N.B. The Grapes intended for Exhibition at St. Martin's Place on July 12 should be delivered there not later than 11 A.M on that day; and J. V., Jun., will be happy to pay the carriage of those that are sent.

ROYAL SOUTH HANTS SEED ESTABLISHMENT,
UNDER THE PATRONAGE OF H.R.H. THE PRINCE CONSORT, THE AGRICULTURAL SOCIETY OF INDIA, AND THE LEADING AGRICULTURISTS OF THE UNITED KINGDOM.

PAGE AND TOOGOOD'S STOCKS have produced the finest specimens exhibited at Smithfield, and are so well known and appreciated that comment on their part is unnecessary. Their prices compete with any house in the trade.

PRESENT PRICES, Carriage Free to all parts of England:—

	Per lb.—*s. d.*		Per lb.—*s. d.*
Skirving's Swede	0 6	Hardy Green Round	0 6
Page's Improved	0 8	Early Six Weeks	0 6
Ashcroft	0 6	Kohl Rabi	2 6
Greentop	0 6	Yellow Globe Manzel	0 6
Sussex, or Jeffery's	0 9	Page's Impl. Orange Globe*	0 8
Tankard	0 7	Red Globe	0 7
Red Round Turnip	0 6	Elvetham Long Red	0 7
Page's Improved Red Globe	0 8	Long Red	0 6
Scotch or Bullock	0 7	Long Yellow	0 7
Pomeranian White Globe	0 6	White Belgian Carrot	1 0
Early Green Globe	0 6	New Red	1 3
,, White Tankard	0 7	Long Altringham	1 3
Red Tankard	0 7	Cattle Cabbage	2 6
Green ditto	0 7	Cattle Parsnip	1 0
Yellow ditto	0 7	Dwarf Essex Rape	0 4

* Bulbs of this variety have acquired the enormous weight of 44 lbs., as shown at Smithfield Club.

BUCKWHEAT, MUSTARD, LINSEED, TARES, SAINFOIN, HOLCUS SACCHARATUS, 1*s.* per lb.

Fine PERMANENT PASTURE GRASS, ITALIAN RYE-GRASS, CLOVER, &c., at lowest market prices.

Special contracts for large quantities. Seeds packed for exportation to all parts of the world.

Oxford Street and Above Bar, Southampton

CINERARIA SEED
SAVED FROM THE
CHOICEST NEW SORTS.

LUCOMBE, PINCE, AND CO. have now ready for sending out SEEDS of their very superior
CINERARIAS,
Which have been saved with the greatest care from fine selected flowers of the best new varieties. The great satisfaction which their Cinerarias have given for many years past has induced them to pay even greater attention to the quality, which enables L., P., & Co. to recommend their Seed of this present season's saving as being vastly superior to any previously sent out by them:—

Large packets .. 5*s.* 0*d.* each | Post free, sealed and warranted by L., P., & Co.
Small do. .. 2 6 ,, |

The present is an excellent time for sowing, and as their stock owing to its select quality is limited, early orders are respectfully solicited.

Exeter Nursery, Exeter. Established 1720.

The Gardeners' Chronicle.

SATURDAY, JUNE 18, 1859.

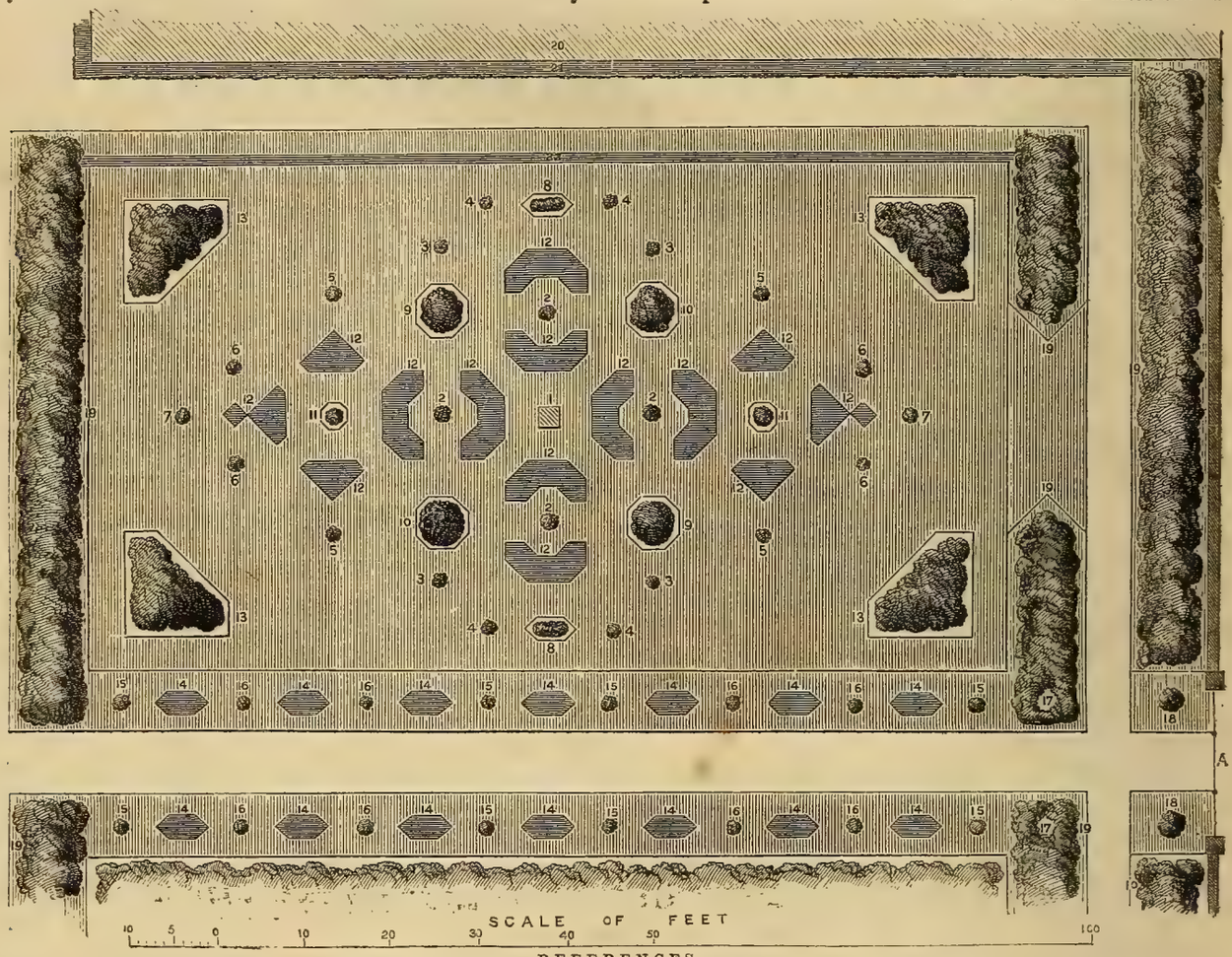
MEETINGS FOR THE FOLLOWING WEEK.
THURSDAY, June 23—National Rose at Hanover Square Rooms.

ALMOST every one is aware of the great superiority of true field MUSHROOMS over those which are grown under sheds or in houses warmed by flues, though the latter are often preferred from the comparative safety with which they can be used, and on that account are the only Mushrooms which are allowed to be sold publicly in the markets at Paris. Attempts have been made with greater or less success to grow Mushrooms in the open air, but after all, except they break through turf they are often gritty, and at present few persons seem to be able to manage Mushroom beds coated with green sods.

Some years since the late Mrs. HUSSEY, who devoted so much time in conjunction with our lamented friend, Dr. BADHAM, to the study of esculent Fungi, proposed their cultivation in lawns. We believe, however, that her proposition was merely theoretical, and, if at all, very imperfectly carried out into practice. Mrs. LOUDON, indeed, in her "Gardening for Ladies," as stated in this Journal (Jan. 17, 1857), writes "that Mushrooms may be made to grow on lawns and in pleasure grounds by procuring some bricks of spawn in April or May, and after breaking them into pieces one or two inches square, burying the pieces at intervals all over the lawn. In each place a little of the turf should be raised, under which the spawn should be inserted and the turf then pressed down over it. The lawn should be afterwards

rolled, and no other care will be requisite till the plants are ready for gathering, which they will be in September if the summer has been tolerably warm and dry. This plan only succeeds where there are no snails." Whether Mrs. LOUDON had any experience of this method we are unable to state, but it has been frequently tried, though, as far as we know, uniformly without success. Without discouraging further experiments in this line, it may be well to have recourse to another plan where it is desired to make the lawn a prolific Mushroom bed. Some lawns are naturally productive of Mushrooms, but there seems to be a prejudice in some quarters against the use of the Mushrooms they produce, though beyond doubt without the slightest foundation. The plan we should propose is to procure the spawn at once from the fields, and for this purpose those spots should be preferred where the specimens are scattered about irregularly and not produced in rings, as there will be a better chance of obtaining the spawn free from any admixture with that of inferior and more vigorous species of Agaric, such as *Agaricus arvensis* (the Horse-Mushroom), for *Agaricus campestris* is the species which every one would wish in preference to cultivate. If not convenient to get the spawn at once when the Mushrooms appear, the spots should be carefully marked, and at the very first convenience a patch of turf should be taken out 1 foot or more square, and at least a foot deep, breaking the soil beneath as little as possible. This should be inserted, after careful removal, without needless delay into the lawn, and after the new turf has been closely pressed, watered with rain-water occasionally till the union with the old turf is complete. If there is nothing wrong about the drainage or locality, there can be little doubt that this plan would succeed. It would at least be certain that the healthy Mushroom spawn is used, which is not always the case with what is purchased. The cultivation of *Agaricus arvensis*, and *A. Oreades* (the Champignon), but especially that of the former is not desirable on lawns, as the fertile turf is always withered up and has a disagreeable aspect. To *Agaricus gambosus* there is the same objection, and highly as it is spoken of, it is more fit for flavouring than for stewing from its tough unyielding texture, and those who have any taste for the St. George's Mushroom may well be content to gather it in its own natural station, where it is generally abundant in spring and early summer.

As however *A. Oreades* is next to *A. campestris* the very best of Fungi, should its cultivation in the lawn be wished for we should give precisely the same advice as in the former case, and recommend isolated patches to be selected for removal rather than specimens of spawn from rings. In either instance the spawn should be disturbed as little as possible, for though it is very true that the artificial spawn may be crumbled up with impunity, that in the natural ground is impatient of interference, notwithstanding the occasional difficulty of eradicating it where it is once thoroughly established. The finest Mushrooms are always found in pastures which have never been disturbed within the memory of man, and the best chance of success will be where the spawn in its new situation is as nearly as possible in the same condition as that in which it was before its removal. *M. J. B.*



REFERENCES.

1. Pedestal for Sun-dial.
2. Specimen Irish Yews.
3. Do. dwarf Golden Hollies.
4. Do. Andromeda floribunda.
5. Do. Yucca gloriosa.
6. Do. Berberis japonica.
7. Do. Pernettya mucronata.
8. Beds of Berberis Darwini.
9. Do. Rhododendron hirsutum.
10. Do. do. ferrugineum album
11. Do. mixed Heaths.
12. Beds for Geraniums, Verbenas, &c., one colour to each bed.
13. Beds of Hybrid Rhododendrons.
14. Beds for choice Herbaceous and other plants.
15. Specimen Hybrid Rhododendrons.
16. Do. Half-standard Roses.
17. Standard Wistaria sinensis.
18. Deodar Cedars.
19. Masses of Rhododendrons, Kalmias, and other American plants.
20. Conservatory.
21. Border for Climbing Plants, with a Box edging.
22. Terrace, bank of Grass, 1 foot in width, and 6 inches below the gravel walk in front of Conservatory.

AT the end of last January some remarks appeared in these columns upon what was called a PEA LENTIL, that is to say, a mule between a Pea and a Lentil, which Dr. RAUCH of Bamberg announced his having obtained by artificial crossing. Our announcement was however made with all the caution that so startling an occurrence demanded; its improbability was pointed out, no well attested case of mules among Pea-flowered plants having been previously recorded; to say nothing of the obvious difficulty of effecting, by any kind of manipulation, the intermixture of such very different flowers as the tiny Lentil, and the large-flowered Garden Pea.

Nevertheless in the face of such evidence as was produced no one could absolutely deny the truth of the statement. There was the guarantee of Dr. RAUCH's name, and samples of the Pea Lentils reached us from correspondents who had obtained them from Dr. RAUCH himself. Among these was Mr. VAN HOUTTE, who had been assured by the raiser that the "hybridization had been effected by fecundating the Common Lentil" (Ervum Lens) with the pollen of a sort of Sugar Pea. Nothing then remained to be done except to sow the Pea Lentils and report the result.

Many of our home correspondents were furnished with seeds for trial, a few being reserved for ourselves. The latter are now in flower, and we find it necessary to state—1. That there is no appearance whatever of the Garden Pea having been concerned in their parentage; 2. That they are equally free from the blood of a Lentil; and 3. That they are merely a Vetch of some kind, at present undistinguishable from the *Vicia globosa* of continental gardens. We understand moreover from Dr. SEEMANN that some similar statement has been made in the Hamburgh Gartenzeitung, where this Pea Lentil has proved to be the white seeded common Vetch (*Vicia sativa leucosperma*). Whether it is the latter, or the former, which indeed is probably a mere form of *Vicia sativa*, our own plants do not at present enable us to report; but it is doubtless either the one or the other.

This being the case, we think it due to the public that Dr. RAUCH should offer some explanation of the circumstances that led him to put forth the statement thus shown to be wholly unfounded, and which, in the absence of such an explanation, looks like a discreditable hoax.

Let us add that some time ago (p. 312) it was mentioned in our columns that a parcel of seed from Messrs. HAAGE of Erfurt, marked *Ervum monanthos* or Provence Lentil, was apparently the same as Dr. RAUCH's Pea Lentil; and at present we see no difference between the plants of the two.

DESIGN FOR A FLOWER GARDEN IN THE FORMAL STYLE.

THE accompanying plan for a Flower Garden is now in course of formation at the Nurseries of Messrs. Rollisson, of Lower Tooting. A Conservatory of large dimensions, about 130 feet in length by 28 feet in width, for the exhibition of specimen plants has recently been erected, and it was desired to arrange the piece of ground in front so as to set this off to advantage, and at the same time to afford an opportunity for the display of any new or remarkable plants. The Coniferous and other trees would be placed in the border on the left hand side of the principal walk from the entrance gate (A), the Rhododendrons and other American plants in the beds (Nos. 13 and 19), while the Herbaceous, Bedding, and other similar plants will be arranged in the Flower beds at Nos. 12 and 14. The wall of the Conservatory being about 3 feet in height, a border (No. 21) 18 inches wide is to be made

at the foot of this, in which climbing plants are to be placed. As there was a slight fall from the Conservatory to the ground in front of it, a small Terrace Bank (No. 22) is formed, which has the effect of raising the walk 6 inches above the Flower Garden. It should be observed that there is a fountain in the line of the entrance gate, which forms an appropriate termination to the principal walk. (There was not room to show this in the plan.) The branches of the two Wistaria sinensis (No. 17) will eventually form a kind of arch over this walk near the gateway. *J. W. Chapman, Dulwich.*

Home Correspondence.

Glenny's Manual of Practical Gardening.—I fear your reviewer's notice of this book will produce disappointment. Acting on his recommendation I purchased a copy, and although the matter is in itself very good, yet it is put together in a manner to puzzle the most industrious reader. In truth it is a mere jumble of good things without any means of finding where they are. I have been looking for Chrysanthemum, but give up the search. The name is not in the Index, as it is called, which leads to nothing; nor can I discover its place in any part of the volume. Your notices of books are generally very just, but I think good-nature has in this instance pushed justice from her stool. *Carlton.*

Monstrous Cardamine.—I send you some "monstrous" specimens of Cardamine, thinking, if you have not seen the same state before, they might be interesting to you, as you observe what in the normal state should be the pod becomes a second flower, and in some cases the specimen is at once a double flower. *Daniel Wheeler, M.R.C.S.* [This is the most extraordinary deviation from usual structure that we have yet seen. A flower appears in its usual state; the calyx, petals, and stamens fall away; then the ovary acquires a long stalk, swells, and opens on one side, where a cluster of petals bursts forth in imitation of the natural flower. This flower in the inside the ovary arises from the torus (or growing point) of the first flower; but seems to be independent of the placenta, which bears abortive ovules much as usual. We hope to examine this structure hereafter upon better specimens.]

Fragrance.—"A. Z." will feel much obliged to the Editor if he will give an answer to the following query: "To what do plants owe their fragrance?" And why is one kind of flower odoriferous and another scentless; as all the tissue of plants is originally without scent? [We can only reply by asking other questions. Why has one person flaxen and another black hair? Why is a cat free from bad smell and a fox intolerable?—seeing that in the beginning their animal tissue was alike.]

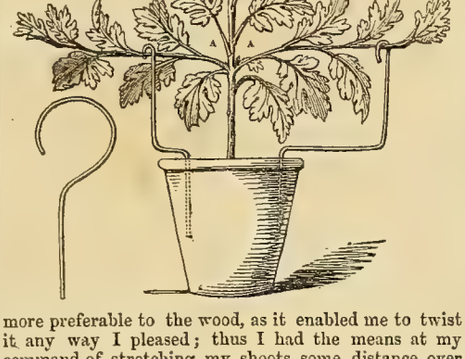
Weigela amabilis (alias *Corœnsis*).—I observe in the *Revue Horticole* that this plant when raised from seed loses all its distinctive characters, and becomes mere W. rosea, of which, therefore, it is evidently only a variety. Is not this equally true of an enormous number of what are called species by garden botanists and gardeners? *Jael.*

Are Puff Balls good to eat?—This neighbourhood is now beginning to teem with Agaricus arvensis, the *Boule de Neige* of the French, and a very bad substitute it is for true Mushrooms. I found some very large young Puff Balls the other day, which were dressed according to Mrs. Hussey's and Dr. Badham's "indications," and they were detestable. *M.*

Miasma or Malaria.—Being absent from England, it was only to-day that I observed the notice which you did me the honour to take of my work in the *Gardeners' Chronicle* of the 14th ult. In that article the reviewer states:—"He (the author) is of opinion that miasma, as it is termed, is merely carbonic acid, and that whatever ill results this gaseous substance may produce in the extinguishing of lights, or even of life itself, it will never, can never, be productive of fever or any other disease." If by miasma be meant the emanation arising from decomposing or putrefactive matter, in addition to carbonic acid, carburetted hydrogen, sulphuretted hydrogen, phosphoretted hydrogen, nitrogen or azote and ammonia, should also have been mentioned—these being, as is well known, the ordinary gaseous products of the putrefactive process. The argument, however, is the same, for it has been my object to show that neither of these gaseous substances possesses the chemical or physical properties of that invisible but well-known substance malaria—to the agency of which the majority of diseases are to be ascribed. I entirely concur with the writer of the article referred to in wishing that an inquest of jurors—of scientific medical jurors—might be held on the subject; for if my conclusions be correct, animal *excretæ*, instead of being thrown into the sea, might be applied to agricultural purposes, and thus become a mine of wealth to the agriculturists, and a source of revenue instead of expenditure to the inhabitants of all our large towns. *J. Parkin, London, June* 10.

Gardeners' Benevolent Institution.—As a member of this Institution, and one who works hard in the heat of the day, I beg to tender my humble thanks to Mr. Justice Haliburton for the kind manner in which he advocated the cause of us gardeners at the last anniversary festival. I sincerely believe that every working gardener would unite with me in thanking that gentleman; he said the word "charity" ought to be expunged, a statement in which I quite agree. How can it be any such thing? The station of a man of course is thought of, and whilst he contributes out of his profits to the wants of his aged brethren it would be "very wrong to call that charity;" it cannot in any way assume that definition. The Institution ought rather to be called the Gardeners' Society, as it chiefly consists of a united body of gardeners and those who patronise them. I have been for 10 years an annual subscriber, and many other gardeners I know have been so much longer; surely, therefore, the time is coming, or has come that the gentlemen of the committee will well consider what they are doing and come forward with an open and impartial verdict, and not let this our Society be an exception to all others, viz., by allowing gardeners to become candidates for the pension that are not subscribers. It would rather be better for them to decide upon augmenting the pension from 16*l.* to 20*l.* per year to every gardener who is elected a pensioner, and 16*l.* in the place of 12*l.* to widows. I am sure such a movement would give universal satisfaction to that indefatigable class of men who strive to support their brother labourers that have been doing likewise, and should the hour of need come or befall them, they themselves may not be cast out but be gladly received. *A Working Gardener.* [We quite agree that it would be better to drop the word charity if facts justified the change; and that would be the case if no persons received assistance except those who have subscribed, a measure the sound policy of which we shall never cease to advocate. But when the funds of the institution are applied to the relief of those who have never contributed anything to it, that surely is charity and nothing else.]

Chrysanthemum Peg.—Finding I needed something to keep the branches of my Chrysanthemums down, I referred to your Number of last year, page 639, and found there the representation of a wooden peg invented by Mr. Broome. As however I have not much time to devote to the sawing and cutting of wood, I bethought myself of something more easily attainable, and I think at the same time more serviceable. It is as follows: I procured a small quantity of copper wire, I think technically termed "18s," and cutting this up into pieces about 6 inches in length, the end is readily bent with the fingers into the shape of the peg just adverted to as made by Mr. Broome. But a difficulty arose. My branches were overhanging the pots they were in, consequently pegging them down to the pots was of very little use. I therefore found that the copper was much



more preferable to the wood, as it enabled me to twist it any way I pleased; thus I had the means at my command of stretching my shoots some distance over the sides of the pots. The above is a sketch of its appliances in the form I have it now in use. These slips are capable of being bent to any shape, whereas the wooden ones could with great inconvenience only be used for pot plants. Another advantage gained is that for the price of 2*d.* I procured sufficient wire to make 40, and the time (an object with me) occupied in making them was only 20 minutes. It is therefore I think an improvement on the wooden peg; should, however, a doubt arise that the wire would slip from the mould, this may be remedied by pressing the surface with the finger where the wire enters, thus giving a compact body to resist any attempt at rising. But before concluding I must add a word of caution to amateurs like myself, namely, that should the branch intended to be bent down be too strong and too full grown, it will be found necessary to have a crutch or prop (similar in shape only to those used by laundresses in supporting their clothes-lines) formed out of a piece of wood, or the joints at AA in the woodcut may snap and produce disappointment. A piece of bast tied round the branch bent and again to the parent stem will answer the same purpose as a crutch. Any information as to recent improvements that may have been made will be considered a boon. The Tulip, the Dahlia, and several other plants have long been favourites with the public, and as the Chrysanthemum now seems rising in estimation all that can be gleaned from experience in regard to the management of that plant will be highly acceptable. *G. Aucutt.*

Cucumber Growing.—Much having been written of late on growing Cucumbers without bottom-heat, I have forwarded for your inspection two leaves taken from a plant just coming into bearing; the sort is Webb's Imperial Black Spine, which promises to be very prolific. It was planted in a brick pit in April, with a little bottom-heat to start it, obtained from dung and leaves, which declined long since and will not be renewed during summer. But in winter I certainly should not think of being successful without a steady bottom-heat. I also send a large leaf taken from Black Hamburgh Vine, which with the rest in the house I am informed has been planted nearly 20 years. This is one out of many nearly as large, and the crop of fruit and bunches is large also. *W. Chesher, Beaufront Gardens, Hexham.* [The Cucumber leaves sent measured 14 inches from stalk to point, and 1 foot in diameter. The Vine leaf 12 inches from stalk to point, and the same in diameter.]

Yucca gloriosa.—We have a large plant of this here with a stem or trunk, about 5 feet in height, coming into bloom, or rather the flower stem has just made its appearance. Caring more about the plant than the flowers, and knowing that often after blooming the trunk rots, would you advise me to cut the flower stalk away? By so doing would it preserve the plant from decaying? *G. A., Finedon Hall.* [Let it flower; you will have plenty of suckers.]

Sardinian Carnations and Picotees.—The seed offered for sale under this designation is saved in Sardinia from English, French, and Belgian plants; the indigenous Sardinian Carnations being comparatively worthless. The fine climate of southern Europe enables Carnations to ripen freely, and the seed is consequently more fully developed; but although seeds thus saved give a large proportion of double flowers, they being mostly ragged-edged are not suitable for show-blooms, for which reason they are not worthy of extensive cultivation by nurserymen; more especially as Carnations and Picotees very rarely come true to description from seed. Has "J. H." looked over the catalogues of the following firms—"Turner," "Henderson," and "Dodwell & Bailey?" I think he will find the sort he requires in one of the above lists. *Italy.*

Charcoal.—I have for many years practised the making of charcoal in a very simple and economical way from every refuse of wood kind, which is either too worthless or too small to be good for anything else; of course small charcoal, but that is no disadvantage for gardening purposes. The materials have been the small branches and twigs of all trees, clippings of hedges, Evergreens, &c., which it generally costs labour to destroy. I could produce this charcoal at a cost of 10*s.* a ton—for the mere labour of making—assuming that the materials must be got rid of somehow. Of course it could be sold with a profit at any price above 10*s.* The mode of making can be best understood by being seen—as there is a little, but very little, practical skill required. The materials are placed in a large heap, as if to be burnt to ashes, but near where water is at hand. The heap is set fire to, and allowed to burn up, but when some way advanced it is then drenched with buckets of water. This arrests the burning to ash. An iron rake must then be applied to the burning mass, the larger parts separated from the smaller in a half burnt and burning state. The smaller will be found the excellent small charcoal, the larger half charred wood and still burning. This part of the mass must be raked to one side, and a mass of new raw material placed on the top of it, which will blaze up, and when it has burnt to the proper point, water must be administered as before, the raking take place, and the same operations pursued *ad infinitum*. No doubt a small portion of the finer twigs is reduced to an ash, but that loss is amply compensated by the economy of the process and the large proportion of perfect charcoal produced. It is obvious that a little practical experience is required to execute the process, as well as it admits of being performed, but a person who well understands it can teach another to do it as well as himself in one hour. I manufactured it to a considerable extent, but no one would buy my charcoal, so I ceased to make more than I could use, and had to revert to the wasteful practice of destroying annually a vast mass of material which might have been converted into excellent charcoal at a cost of 10*s.* a ton. I had no intention of writing so much when I commenced. The quantity of charcoal which might be produced by this simple process in all districts is immense, if people only would use it in culture and in deodorising, and in that event it might be a source of profit to the owners of woodlands. The mere dressings of the hedges of the kingdom would produce an immense quantity. *K.*

Societies.

Royal Botanic, Regent's Park: *June* 15.—This was an excellent show, and was very well attended. Stove and Greenhouse plants were in great perfection, and so were Cape Heaths and Pelargoniums. The only weak points were Roses in pots and Azaleas, the season for both of which is evidently over. There were, however, some charming boxfuls of cut Roses. The fruit show was an improvement on that held last week at the Crystal Palace.

Stove and Greenhouse plants were contributed by the usual exhibitors; but this time considerably the finest large collection was produced by Mr. May, gr. to J. Spode, Esq., of Hawkesyard, near Rugeley. These, although they had travelled nearly 150 miles, were in excellent condition. Among them were admirable samples of Dracophyllum gracile loaded with compact heads of small snow-white blossoms, which are well suited for bouquets; Allamandas, Dipladenia splendens beautifully flowered, Ixora coccinea, Phœnocoma proliferum unusually well furnished with fine heads of showy blossoms, Stepha-

notis floribunda, and Pleroma elegans, the last one of the very handsomest of Melastomads, its flowers being of the most beautiful Tyrian purple, and each of them larger than a five shilling piece. They are also more persistent than those of most of the class to which they belong. Mr. Dods, gr. to Sir J. Cathcart, Bart., and Mr. Whitbread, gr. to H. Collyer, Esq., were placed equal in point of merit. In these groups were fine specimens of the well-known Mahernia incisa, Allamandas, Ixoras, including the fine example of the Willow-leaved kind, to which attention was directed in our report of the Crystal Palace. This may safely be asserted to be one of the best of the genus. Its great heads of showy flowers of a brilliant orange colour stand well up above the leaves, which are long and pendent, thus giving to the former an amount of individuality and artistic beauty not possessed by other species of the genus. Smaller collections were furnished by Messrs. Cutbush, Fraser, Green, Rhodes, Baxendine, Peed, Chilman, Carson, and Tegg. These for the most part consisted of plants that were shown at Sydenham last week.

Orchids were furnished in beautiful condition; in general, however, they were very much the same as those produced at the Crystal Palace. In the Rev. Mr. Ellis's group were the handsome Cattleya superba, and the singular looking rather than beautiful Uropedium Lindeni. Mr. Bullen, gr. to J. Butler, Esq., had a splendidly flowered Brassia and Anguloa Clowesi, with no fewer than five blossoms on it, all in the greatest possible perfection. Two Sobralias (macrantha and Galeotti) from Mr. Woolley were admired; Mr. Dods sent a very fine Phalænopsis; Mr. Carson the elegant green tailed Dendrochilum filiforme and Stanhopea tigrina; and Mr. Ivison, gr. to the Duke of Northumberland at Sion, Acineta Humboldti with a remarkably fine spike of pale watery looking yellow blossoms. Others did not differ materially from those mentioned last week.

Among Cape Heaths, several collections of which were exhibited, were some beautiful specimens of mutabilis, tricolor Wilsoni, one of the best of its class; obbata, a fine old Heath; Massoni, small but very handsome; and different seedlings of Hartnelli and aristata.

Conspicuous among Azaleas were Ivery's Gem, a sort remarkable for fine form; and Extrani, the latter a lovely rosy pink kind, still finely in flower.

Of real novelty there was little. Though not absolutely new perhaps the most striking was a charming specimen of Cœlogyne pandurata from Mr. Lawrence, gr. to the Bishop of Winchester. This had a fine spike of pale green flowers stained on the lip with jet black, a contrast of colours not less remarkable than pleasing. Messrs. Parker & Williams sent a white variety of Meyenia erecta, which promises to be a useful plant; Mr. Parsons a hybrid Achimenes called Dazzle, with brilliant red flowers in the way of Meteor. From Messrs. E. G. Henderson came Aucuba himalaïca, a velvety crimson-flowered variety of Dianthus sinensis called Hedwigii, and Amphicome Emodi, with lilac flowers stained in the throat with yellow. The Dianthus, to which we have formerly alluded, promises to be a fine thing; its blossoms measure at least 2 inches across. We hope, however, to see it again in better condition.

Of Miscellaneous articles, Messrs. Veitch sent Oreopanax hypargyreum, a noble plant with palmate leaves; Blandfordia grandiflora in flower, Rhopala glaucophylla, the violet Tradescantia odoratissima, and Tacca integrifolia, a well known plant, whose singular dark looking leafy inflorescence takes a form not unlike that of some Orchids. A fine specimen of Eucharis amazonica was shown by Mr. Davis, of St. John's Wood.

Ferns were shown in considerable quantity, and served to fill up odd nooks and corners with excellent effect. Among those from Mr. Carbonell were the New Zealand Todea hymenophylloides, the Jamaica Hymenophyllum hirtellum, the handsome Gleichenia flabellata, dichotoma, and a wonderfully fine G. microphylla.

Roses in pots, as has been stated, were much past their best. Among them however one, Charles Lawson, deserves notice. It is very double, something like Coupe d'Hébé, and altogether a very fine kind. Among those shown in boxes in a cut state were many fine blooms of most of the leading sorts. The best came from Mr. Mitchell, of Piltdown, Sussex. Messrs. Paul & Francis also showed fine blooms. Conspicuous among the latter were Madame Vidot, Paul Ricaut, General Jacqueminot, Lord Raglan, Madame Willermoz, and Gloire de Dijon.

Pelargoniums were not very different from the kinds mentioned at p. 507. Those from Mr. Turner, of Slough, both fancies and ordinary kinds, were all that could possibly be wished for, both as regarded good cultivation and profusion of bloom. Mr. Dobson's were also good, as were likewise the collections from Amateur growers. Of the latter the best came from Mr. Foster. Messrs. E. G. Henderson sent imperial crimson, a bright kind but without what florists call form. The same firm also sent two pretty kinds suitable for bedding purposes, allied to Golden Chain. Messrs. Veitch had the very handsome spotted dwarf kind mentioned in our report of the Crystal Palace, and from Mr. Turner and others was a fine bank of seedling florists' varieties, the best of which will be found described in last week's report.

Fruit was tolerably plentiful. Providence Pines weighing between 8 and 10 lbs. each came from Messrs. Young, Bailey, and Flood. The latter sent the best Queen, whose weight was about 4 lbs. It was well ripened and finely grown. From Messrs. Young, Bray, and Bailey also came fine fruit of this variety. An Enville 6 lbs. weight came from Mr. Fothergill, and we noticed one or two small Jamaicas.

Grapes were good, especially Black kinds. The best Black Hamburgh came from Messrs. Flood, Thomas, and Hill. The three bunches from the latter weighed together 6 lbs. Others from Messrs. Henderson, Wood, and Drewett were nearly equally good. West's St. Peter's and Black Prince, fine bunches, were furnished by Messrs. Allport, Fullerton, Turner, and Miller. Of white sorts Mr. Bailey sent excellent examples of Muscadine, and exhibitions of the same kind also came from Messrs. Jackson, Wood, Frost, and Alderson. Frontignans came from Messrs. Drewett, Bond, Parr, Standish, and Allport. Muscats were not at all good, and many of them were unripe. An exhibition marked Stillwell's Sweetwater, from Mr. Allport, appeared to be White Frontignan and very good of its kind. Grizzly Frontignan came from Mr. Richards. "Musqué Frontignan," exhibited on this occasion, was evidently the Chasselas Musqué. It was very fine and not cracked, the only fault belonging to this Grape. The specimens in question proved however that under proper management it may be obtained without this defect. Vines in pots well fruited were shown by Mr. Hutt.

Peaches, beautiful fruit of the Violet Hâtive sort, came from Mr. Gorton and Mr. Sage; Mr. Oats sent Bellegarde; and fine fruit was also contributed by Messrs. Peacock, Miller, and Hill. The best Nectarines, Violet Hâtive, came from Messrs. Peacock and Frost. Messrs. Carmichael, Forbes, Robinson, Cox, and Hill also showed fine dishes, consisting of Elruge, Violet Hâtive, and Pitmaston Orange.

Of Cherries, both black and white, the best were again furnished by Mr. Henderson, gr. to the Duke of Sutherland at Trentham. The sorts were Black Circassian and Elton, both large and in every way perfect. Messrs. Peachey, Marcham, and others also showed good fruit. Messrs. Lane had some finely fruited trees in pots.

Strawberries were scarcely so good as might have been expected. The best were furnished by Messrs. Clarke, Wood, and Widdowson. Among the varieties were British Queen, Sir C. Napier, Keens' Seedling, Myatt's Surprise, and Sir Harry, the last very dark coloured, which it should be when fully ripe.

Of Melons a great many were exhibited. The best green-fleshed sorts were Bailey's and Snow's. Mr. Bailey also sent the best scarlet-fleshed variety.

Of Figs were noticed some good examples of Lee's Perpetual and Brown Turkey.

Among Miscellaneous Fruit were some Bananas and Apples of the French Crab variety, the latter fine specimens as sound as the day they were gathered.

Linnean: *May* 24 (*Anniversary*).—Prof. Bell, President, in the chair. The special thanks of the Society were given to Mr. Cuming for a valuable present of works on Conchology not previously existing in the Society's library. The secretary reported that since the last anniversary 18 Fellows, three Foreign Members, and two Associates had died, that one Fellow had withdrawn, and that 26 new Fellows, four Foreign Members, and two Associates had been elected. The financial statement read showed a balance in favour of the Society on the year's account of 238*l.* 15*s.* 3*d.* At the ballot which ensued C. C. Babington, Esq.; C. Darwin, Esq.; J. D. Hooker, M.D.; R. Hudson, Esq.; and R. McAndrew, Esq., were removed from the Council, and the following Fellows were elected in their room:—F. Currey, Esq.; R. E. Grant, M.D.; T. C. Janson, Esq.; Prof. Lindley, Ph.D.; and Sir C. Lyell. Prof. Bell was re-elected President; F. Boott, M.D., Treasurer; J. J. Bennett, Esq., Secretary; and G. Busk, Esq., Assistant-Secretary. The President nominated G. Bentham, Esq., F. Boott, Esq., Prof. Owen, and W. W. Saunders, Esq., as Vice-Presidents. Resolutions requesting that the President's address, and the obituary notices by the secretary might be printed, were unanimously adopted.

June 2.—Prof. Bell, President, in the chair. W. Camps, M.D., was elected a Fellow. Dr. Iliff exhibited specimens of the Acarus (described at p. 453), which has lately been found to infest a church at Colchester. The following papers were read:—1. "Notes on Homalineæ," by G. Bentham, Esq.—2. "Synopsis of Dalbergieæ, a tribe of Leguminosæ," by G. Bentham, Esq. The author stated that when working up the South American Dalbergieæ some 20 years ago, he had adopted in their fullest extent the prevailing ideas of the importance of the modifications of the fruit in the limitation of genera, but having since had much more ample materials before him for examination, from the warmer regions of Asia, Africa, and America, he had been led to considerably modify his former views on this point. The paper, which was a very long one, consisted mainly of descriptions of the genera and species, with critical remarks on their affinities. This part was however prefaced by some general observations from which the following particulars are gleaned. The majority of the Dalbergieæ are for the most part hard-wooded trees, often of considerable size and great beauty, or climbers of various degree from the short or small tree with weak sarmentose branches to the tall liane twining up to the summits of the highest trees or supported by their twisted petioles or hooked spinous stipules. The wood of the arborescent species, as in the case of most Leguminous trees, is hard and durable, and often of great beauty. That of many of the species is considered of great value as timber, and is largely exported to Europe for the manufacture of furniture, being elegantly veined, and susceptible of a high polish. Of the principal varieties of Rosewood imported into this country, the two best, obtained from the interior of Brazil by way of Rio Janeiro, are certainly supplied by Dalbergieæ, and principally by Dalbergia nigra. Other qualities are derived from species of Machærium. The Honduras and Martaban Rosewoods appear also to be the produce of some species of this tribe, and the tropical African Rosewood or Camwood is certainly that of Pterocarpus erinaceus or P. echinatus. The Red Sandars and Ruby woods of India are the produce of species of Pterocarpus and the Sisso wood of Dalbergia Sisso. Several species supply gum resins, such as the Kino from Pterocarpus erinaceus or echinatus in Africa; and from P. marsupium and P. santalinus in India. Gum Dragon is said to be produced by Pterocarpus indicus in Asia, and by P. draco in tropical America. Very similar resinous products are attributed to Ecastophyllum monetarium, Drepanocarpus lunatus, and some others. The roots, bark, and fruits of several species are known to be highly astringent, narcotic, or poisonous. All the species of Andira, commonly known in South America under the name of Angelina, are there considered as powerfully anthelmintic. The Lonchocarpi, allied to the Tephrosias, include like them several species used for poisoning fish; as also is the closely connected Piscidia Erythrina. The fruits of several species, on the other hand, are much eaten in some countries, though we have occasional hints of their deleterious qualities, and they are probably never very palatable. Those especially noted as articles of food for the natives are Pterocarpus esculentus, and the similarly corky-fruited species or varieties of Ecastophyllum in tropical Africa, the Geoffroya superba in North Brazil and Venezuela, the G. spinosa about Carthagena, and it is said also a species of Dipteryx, known as Almeadron in Antioquia. All the Dipteryx fruits or seeds are however more used under the name of Tonga Beans or Camaroo, for scenting snuff or for their oil, one of them supplying the Eboe oil of the Mosquito country. The fruits of the Pterodons of S. Brazil are still more replete with an oil which is there said to have powerful medicinal properties. The Poonga or Kurunj oil of India is the produce of Pongamia glabra. Whether for food or for medical purposes, care is generally recommended in the use of all fruits and seeds of this tribe, on account of their narcotic or intoxicating qualities, a principle which prevails more or less in the tribes most nearly allied, especially in the arborescent Galegeæ and many Phaseoleæ, among which we find in the seeds of closely allied species important articles of food or virulent poisons. Even the common Phaseolus vulgaris seeds, or Haricots, are apt to be deleterious (and fortunately at the same time disagreeable to the taste) if stewed without throwing away the first water. The paper contained descriptions of 286 species distributed in 23 genera.—3. A letter from C. Knight, Esq., "on the Common Slug of New Zealand."—4. "Catalogue of the Dipterous Insects, collected by Mr. Wallace, at Makessar in Celebes," by F. Walker, Esq.

Notices of Books.

On the growth of Cotton in India, its present state and future prospects, &c. By J. Forbes Watson, A.M., M.D. (reprinted from the Journal of the Society of Arts).

This is a long statistical account of the present state of Cotton cultivation in India. Although we have failed to discover much novelty in its pages, they will be valuable for purposes of reference. We should have thought however that the possibility of growing good Cotton in many of the regions under the government of India had been already shown so amply by the reports of Wight and Royle, that to insist at great length upon that point would have been superfluous. What required explanation were the causes that had hitherto paralysed the government officers as well as the little Indian farmers (Ryots), whose power has proved powerless. Upon that subject Dr. Watson has shrunk from expressing an opinion. Not so Colonel Sykes, who takes the view which has always been taken in these columns, and without hesitation fixes the cause of failure upon the manufacturers themselves. We rejoice to meet with such an ally, whose plain speaking does him honour. After pointing to Royle's diagram which showed "that as the price of American Cotton rose in the market here, so did the price and supply of Indian Cotton increase; and as the price of American Cotton fell, the quantity of Indian Cotton fell in a corresponding degree," the gallant Colonel proceeded as follows (the Italics are ours):—

"Had the price been kept up at the maximum there would have been a maximum supply from India. The ascents and descents of the quantities, as shown upon that diagram, were truly marvellous. They would scarcely suppose that there had been a supply of 30 millions of lbs. this year in consequence of an increase of a halfpenny or a penny per lb., and if that continued he had no doubt the quantity would rush up to 100 millions of lbs. next year. The fact was, when Cotton was at a price of 3½*d.* per lb., instead of coming to England it went to China, where they got a better price. Therefore, as far as the supply was concerned, there was no doubt India could furnish it, *provided the price was remunerative.* It was not the cultivators themselves who supplied it, but the intermediate agents. The cultivator got his three half-

pence per lb., and there all advantages to him ceased. It then came into the hands of other persons, and so found its way gradually to the coast at an augmented price, through the accumulated profits of the agents through whose hands it passed. When there was a want of Indigo it was thought worth while to send out Europeans to get it, and they got land in Bengal for its cultivation. These were in the 'dark' days of the Company's government, when it was said that Europeans were interdicted from going into the country; but, nevertheless, those persons somehow contrived to get land. *The Indigo had increased in quantity consistent with the demand in this country and in Europe generally.* How was that? *By those who wanted it going after it.* It was the same with Sugar. It had increased from small beginnings to an enormous amount. It was thought worth while by some European houses to send out agents to India, to go into the villages and collect the Sugar, until it was put on board by hundreds of thousands of tons. *Why should not the people of Manchester do the same when they wanted Cotton, as had been done in the cases of Indigo and Sugar?* The government of India never prevented them going there.

"The Chairman.—There were no roads for the traffic when they got there.

"Colonel Sykes.—If the roads were sufficient to bring Sugar down 1200 miles, surely the Cotton could have found its way down; and it had done so to the extent of 250,000,000 of lbs. in one year. There was no question that they could get the Cotton, if those gentlemen who raised the outcry against the Indian government *would pay a proper price for it;* but the wheel stuck in the rut, and, instead of helping themselves, they called upon Hercules to assist them."

This is the pivot of the whole question. The manufacturers *must* help themselves, if they want either Cotton or any other article of great consumption.

Botany and Religion, or Illustrations of the Works of God in the Structure, Functions, Arrangement and General Distribution of Plants. By Prof. Balfour. 3d edition. Black, Edinburgh. Pp. 436, 12mo, with upwards of 260 woodcuts.

The Rudiments of Botany, Structural and Physiological, being an Introduction to the Study of the Vegetable Kingdom, &c. By Christopher Dresser. Large 8vo. Virtue. Pp. 443, with numerous woodcuts.

So far as botanical science is concerned these works add nothing to our stock of knowledge. The first is the author's "Class-book of Botany," recast by himself; the second is the learning of others stitched together in a new pattern. Dr. Balfour addresses the religious world, Mr. Dresser talks to art students. The learned Edinburgh professor follows in the steps of John Ray, except that he limits "the wisdom of God manifested in the works of the Creation" to the evidence afforded by the Vegetable Kingdom, and accompanies his statements by a copious introduction of Scripture texts. The ingenious London lecturer appropriates the work of others, cribbing a bit here and a morsel there, and illustrating his sentences by cross references, sometimes *apropos* and sometimes the contrary. We must add that in two other rather important aspects they also differ; Dr. Balfour understands his subject and has produced a cheap volume which was needed by clergymen; Mr. Dresser does not understand his subject and has produced an expensive book, which was quite uncalled for. The fitness of the latter gentleman for the task he has imposed upon himself is indeed to be estimated from his statement (p. 208), that a Fig may be regarded as a *peduncle turned inside out!!!*

Dictionary of Geography, Descriptive, Physical, Statistical, and Historical, forming a complete general Gazetteer of the World. By A. K. Johnston, F.R.S.E. 8vo. Longmans. (A new Edition revised to May 1859).

This ponderous volume of 1352 pages, beautifully printed in double columns, is one of the remarkable works of the age, and is doubtless the most complete book of its kind, descending to even obscure English parishes with a population of 50 or 60 souls. The various articles are very carefully written and most skilfully condensed; so that in reality had the work been managed otherwise it would have filled three times its actual space, without conveying a word more information. In a book of such magnitude, and compiled in a manner so thoroughly conscientious, it seems hypercritical to point out omissions; we will nevertheless suggest to its learned author that the important colony of British Columbia, and the interesting discoveries of Hector and Palliser in that direction, have scarcely received so much attention as they demand.

Farm Insects: being the Natural History and Œconomy of the Insects injurious to Field Crops, &c. By John Curtis, F.L.S. Part I. Square 8vo. Blackie.

The entomological papers which formerly appeared in our columns with the signature of *Ruricola*, universally admitted to be models of careful description, as well as the result of very long experience in the field, have long been known to have come from the pen of Mr. Curtis, whose eminence as a naturalist is familiar to all men of science. At a later period he furnished a series of elaborate articles to the Journal of the Royal Agricultural Society; and now, in the work the first number of which is before us, he resumes his valuable labours, by republishing the latter in a separate form with such alterations or additions as the course of time and further experience has suggested. It is proposed to bring the work out in eight parts, price 2*s.* 6*d.* each if plain, or 3*s.* 6*d.* if coloured; and we may even now congratulate our country friends upon the probability of their acquiring, at a reasonable cost, a work of sterling value. The first part, which is occupied by the natural history and œconomy of the different insects affecting the Turnip crop, consists of 72 pages (exclusive of introductory matter), two coloured plates, and six woodcuts, illustrating the structure of the insects described. These last however are scarcely worthy of the letter-press, owing to unskilful engraving and not over good work in the printing office. The publishers will see what we mean if they turn to the beautiful woodcuts of insects in Blackwood's Book of the Garden, or their own Cyclopædia of Agriculture.

Professor Balfour has published (Maclachlan and Stuart) *A List of the Medicinal and Poisonous Plants cultivated in the R. Botanic Garden, Edinburgh.* This would form a useful list for other gardens in which similar plants are grown for the use of students.

Murray's Edition of Lord Byron's Poetical Works, Part V., contains the great poet's "Hours of Idleness," and some other miscellaneous matter, among which figures the rough writing of "English Bards and Scotch Reviewers," and "Hints from Horace." The new edition of *Boswell's Life of Johnson,* edited by Croker, is now at Part IV., the hero of the gossip being in his 64th year.

Notes on the Defences of Great Britain and Ireland. By Lieut.-Gen. Shaw Kennedy, C.B. (Murray, a pamphlet). The gallant author states that "these Notes while in manuscript underwent the criticism of Officers of eminence, of great practical and strategical knowledge; also of Naval and other Authorities on the subjects embraced in them; who unanimously were of opinion that they should be laid before the Public." What higher guarantee can be given of their importance at the present conjuncture? and who is there except the Vellutis of the press to deny the force of Gen. Kennedy's last sentence: "This country will not be in her proper position until she can openly show to the world, *by the actual state of her defensive means,* that on her own shores she can not only overcome the invading force of any one power, but that of any combination of powers that could possibly arise against her." A table of contents would be a great improvement, considering the multifarious subjects included in the pamphlet.

Recreations in Shooting, &c., by Craven (12mo, Bohn), is a very nice edition of a good book, abundantly illustrated by steel engravings and woodcuts. It would, however, be a mistake to suppose that a man would become a sportsman by merely reading books like this, which are only useful to sportsmen themselves.

Garden Memoranda.

Messrs. Rollisson's Nursery, Tooting.—Some account of the more important alterations that have lately been effected in this nursery will be found at p. 524. The Camellia house has been unusually gay. The plants have pushed vigorously. The house is a long lean-to, one end of which is filled with greenhouse plants, which are separated from the Camellias by a few large and fine specimens of the true Rhododendron arboreum. Of the different varieties of Everlastings there is a fine assortment, as indeed there is of most greenhouse plants, more especially of Cape Heaths, for which this nursery has long been famed. Of these there are some beautiful specimens which promise to bloom beautifully this season. Of the handsome Rhododendron javanicum we noticed large quantities. This variety, which was once regarded as a stove plant, is now found to succeed perfectly well in a cool greenhouse. It will not however withstand the cold of our winters out of doors. An orange-flowered Rhododendron named retusum, also from Java, promises to be a good thing. In shape its blossoms somewhat resemble those of R. jasminiflorum; but they are smaller.

Among Orchids are some good specimens. Foremost among them may be mentioned Dendrobium macranthum, and a large flowered variety of that kind; also the handsome D. densiflorum, together with various plants of D. nobile; Burlingtonia fragrans; some of the handsomer kinds of Cattleyas, among which we noticed the still scarce C. Aclandiæ. Among other Orchids were Odontoglossum hastilabium, a white-lipped species with long narrow sepals and petals beautifully marked with bands of deep purple; the still scarce O. Pescatorei; and the graceful yet singular-looking Lowe's Lady's Slipper (Cypripedium Lowei). This last has bloomed beautifully here. In addition to the above we observed Brassia cinnamomea, a species so named on account of half of each of its flowers being cinnamon coloured. It is not a plant of great beauty, but it finds favour with some on account of the peculiar odour which it possesses. Of Vandas several were in flower, and at the end of the house where it is most damp and shaded were some fine Pitcher plants, while in another house were numbers of Cephalotus follicularis, and young plants of Nepenthes raised from seed, Of Ferns there is an interesting collection here, among which were fine examples of Platycerium grande; the most remarkable, however, was a noble plant of Nephrolepis davallioides, whose graceful fronds measured nearly 3 feet in length and half a foot in width. Of Begonias we noticed some handsome Java kinds with fine foliage; some of them were covered all over with bright red hairs, which gave them a rich and brilliant appearance. The beautiful B. Rex, on account of the facility with which it may be propagated, may now be had in any quantity. It is therefore comparatively cheap. Other fine kinds consisted of grandis, Isis, nebulosa, Rollissoni, Urania, and Virginia. These are hybrids raised between splendida and Rex, and are all remarkable for the beauty of their finely variegated foliage, the colours of the markings of which, varying as they do from white to crimson, are very handsome. One interesting feature of these hybrids is that they are furnished with beautiful long hairs varying in the different varieties from white to bright red. The blossoms are generally of a rich pink colour, and are individually larger than in most of the other kinds of this family. Of Meyenia erecta we found some good plants; the large violet white-eyed blossoms of this plant must always render it a favourite, but it is seldom well managed. Cultivators forget that it is a Cape plant, requiring nearly the same treatment as a Heath, and give it too much heat: the consequence is plenty of wood and leaves, but few flowers. A cool greenhouse suits it best. Among Vacciniums was Rollissoni, a small, dark, crimson-flowered kind, which is said to be hardy; and among Conifers the beautiful Cupressus Lawsoniana, Thujopsis borealis, Podocarpus antarctica, the smaller leaved P. acicularis, and Thuja gigantea were conspicuous.

To soft-wooded plants such as Pelargoniums considerable attention has lately been paid here; there is now therefore a good collection of things of that sort. Of spotted Pelargoniums there is here a large assortment, an enumeration of two or three of the best of which may not be unacceptable. Victoria has purplish maroon top petals margined with white; lower petals pure white spotted with crimson. Aglaia, crimson upper petals surrounded with bright red and margined with white; under petals white; a prettily spotted kind. Julia, upper petals spotted with deep crimson and surrounded with a belt of bright red and French white; under petals delicate blush, spotted with rosy purple; a handsome kind. Theodosia, deep crimson upper petals, with broad belt of bright red; under petals bright crimson and blotched. Irene, upper petals rich maroon, surrounded with bright red, and margined with pink; under petals pale salmon, deeply blotched with dark crimson; truss large and striking. These are stated to have been obtained by carefully hybridising the most attractive of the French kinds with the best varieties of English raisers, so that while possessing the striking colours of the French sorts combined with their acknowledged free flowering character, they partake of the improved shape and substance of the English kinds. In all the spots are very clear and well defined, which is not the case with the majority of the French varieties.

Of double-blossomed and striped Petunias, the following are some of the best, viz., Antiope, shaded purple, a compact good flower; Countess, bluish purple, a fine bold kind; Fanty, shaded French white, distinct and compact; Athamas, red, striped with white, a single variety, but one of the best; Mandarin, shaded purplish lilac, and striped with white. These are all, we believe, continental kinds.

The general aspect of this nursery is becoming greatly improved; the internal arrangement of the grounds has been considerably altered, and a new flower garden, or rather frontage, is being laid out by Mr. Chapman, of Dulwich. Of the latter we have been furnished with a plan which will be found in another column.

Burnham, Somerset, the Seat of G. Reed, Esq., has for some time been noted for its large and magnificent collection of Orchids, of which some 150 plants are now in blossom. On entering the Cattleya house, opposite the door was a splendid specimen of Lælia purpurata, with no fewer than 26 expanded flowers on it, each of the latter measuring about 6 inches across. On the left of it stood a noble plant of Cypripedium barbatum, with 40 blooms on it. In the same pit was another very neat specimen of Lælia purpurata, but darker in colour than that just mentioned; it had 17 flowers on it. Also Cattleya Mossiæ, the White Butterfly plant (Phalænopsis), Oncidium papilio with six blossoms on it, and Chysis Limminghi in flower. In another department of the same house were some fine specimens of Aerides, together with Vandas and Saccolabiums.

In what was called the Mexican house were splendid specimens of Sobralia macrantha, with 12 expanded flowers on it; Calanthe Masuca, with twelve blue flower spikes showing just above the foliage; a large Odontoglossum citrosmum, with 10 good spikes of blossoms; two magnificent specimens of the snowy white Calanthe veratrifolia, with 36 spikes of blossom; a good example of the rare and beautiful Oncidium sessile, with six spikes of yellow flowers; together with the beautiful Dendrobium devonianum, large specimens of the old Brassia maculata, Maxillaria tenuifolia, the latter with two or three hundred blooms on it. Associated with these were large plants of Brassia verrucosa and B. verrucosa major, a large group of Dendrobiums, all large specimens; the rare and beautiful Barkeria spectabilis, with 27 good flower spikes. On the lawn were some fine Araucarias and other Conifers, also many ornamental shrubs and trees. The kitchen garden was

also in excellent condition. By the kind permission of Mr. Reed, the houses here are I understand open to visitors, Sundays excepted. *Viator.*

Miscellaneous.

Roses.—Cloth of Gold.—Isabella Grey.—As might naturally be expected, the controversy about the merits of these two Roses has commenced with the blooming season. The *Gardeners' Chronicle* of last Saturday has a notice of the two Roses, accompanied by reports from two correspondents, one of whom has been blessed with so slight a modicum of success with the fair Isabella that he must indeed be thankful for small mercies to chronicle it—one expanded bloom, pinched by the cold but showing unmistakable indications of beauty, and an opening bud, being the crop of a vigorous specimen planted in 1857. The other correspondent, a lady, has more cause for joy; her Isabella (at Torquay), in its third year, and which grew immensely last year, having now about 90 buds on it, most of which are rapidly expanding. The specimen sent to the Editor of the *Gardeners' Chronicle* is described by him as a "nice" one; not a very glowing description of a selected bloom, sent by a lady. However, 90 buds, opening into even nice blooms, is something encouraging. In each case the fact that no pruning has been allowed is dwelt on with great force, and to that circumstance is attributed the success. One of the correspondents, he whose Isabella Grey has produced one pinched bloom, and a second about to open, has also a Cloth of Gold, which has been treated in the same way as the Isabella. It, also, was planted in 1857, "grew rapidly in 1858, no pruning being allowed, and is now, in 1859, making vigorous, healthy, dark-purple shoots, and will doubtless be covered with Roses by the month of July!" May it be so! But those "vigorous, healthy, dark-purple shoots" are sad deceivers, too often finishing their career with blind ends, to the disgust of the disappointed grower, whether professional or amateur. The inference to be drawn from the remarks of the *Gardeners' Chronicle* itself, as well as from those of its correspondents, is that "protection from the pruning knife" (coupled with age and suitable aspect) is the grand secret in getting Cloth of Gold blooms, and probably those of Isabella Grey, and of other yellow varieties. Perhaps it may be in the recollection of the readers of this Paper that on the 10th of June, last year, a description was given of a Cloth of Gold Rose growing at the Rev. R. M. Atkinson's, on the Rectory House at Great Cheverell, on which there were 200 or 300 blooms fully expanded, and a far greater number of buds ready to expand, the tree itself (worked on a Yellow Banksia) being in the highest health. Now this tree, which is covered with blooms every year, having at this time (although it has suffered much both in foliage and bloom from the severe blight) upwards of 100 fully expanded blooms of deep yellow colour and great beauty, with twice or thrice that number ready to burst forth, is, and always has been regularly pruned, every shoot being cut back to two or three eyes, except when it is necessary to lead in long shoots to fill up any blank space on the wall. Another constantly blooming Cloth of Gold, in this neighbourhood, has also been always subjected to close pruning. In other cases, whether pruned or unpruned, the rule is, no blooms; the exception, a few stragglers, so that pruning no more seems to prevent free blooming, than non-pruning seems to promote it. It may be recollected, too, that the account of Mr. Atkinson's Cloth of Gold, above alluded to, caused a long correspondence in this Paper, and in the *Gardeners' Chronicle* as well, on the subject, and that it was suggested by Mr. Ayres, of Orchardleigh Park, near Frome, that the most likely way to insure a free-blooming Cloth of Gold would be to take the bud for working from immediately below a bloom. We should be glad if any correspondent who has tried the experiment will favour us with the result. And now a word about the Isabella Grey. Mr. Mould, the well-known gardener and florist of Devizes, has this year succeeded in producing a very fine and high coloured bloom, under glass; the bloom was of good size, perfect shape, and of exquisite fragrance. That plant had been pruned. On the other hand, on a very warm sunny wall with south aspect we have seen upwards of 30 strong shoots of Isabella Grey (budded on a Banksia) from 1 to 4 feet in length, unpruned, both wood and foliage a deep red, and showing the highest health, and not a single blossom-bud to be seen; each one of these vigorous shoots going off with blind ends! Thus it would seem that pruning has really nothing to do with it. *Wiltshire Independent, June 2.*

The Pike.—The pike is one of the largest of fresh-water fishes, and indeed, if the accounts which some writers give are not exaggerated, it occasionally attains a size not greatly inferior to the gigantic inhabitants of the ocean. Individuals are recorded as measuring from 5 to 9 feet in length. They frequently weigh above 30 lbs. in the lakes of the north of England; and Dr. Grierson mentions one taken in Loch Ken, in Galloway, which weighed 61 lbs. Pallas states that the lakes in the government of Tobolsk in Siberia nourish multitudes of pikes which attain the size of between 30 and 40 lbs. In North America, which seems to be the head-quarters of the family, since not only the common European species, but several others exist in the great lakes of that country, 30 lbs. is considered a large size, though doubtless some individuals attain a greater weight. Most authors have cited the accounts of one said to have been caught at Kaiserslautern, near Mannheim, in 1497, which was nearly 19 feet in length, and weighed 350 lbs. The skeleton of this extraordinary specimen was for a long time preserved, and bore a brass ring with an inscription to the effect that the fish was put into a pond by the hands of the Emperor Frederick II., the 5th of October 1262. From this it is inferred that it was upwards of 235 years old. *From the Encyclopædia Britannica — New Edition.*

Calendar of Operations.

(For the ensuing Week.)

—♦—

PLANT DEPARTMENT.

CONSERVATORY, &c.—This house should now be gay with such things as Achimenes, Clerodendrons, Allamandas, Gardenias, Stephanotis, and other showy plants from the stove, for without the assistance of these it is hardly possible to produce a first-rate display at this season. And if the house can be kept rather close many of our most showy stove plants will be more at home here while in bloom than they would be in the stove, and the length of time which they retain their beauty renders it desirable to grow them largely for this purpose. To do these justice, however, the house should be cleared of Ericas and such plants as are soon injured by a close confined atmosphere, so as to be able to keep it closer and moister than would suit these, for very few of our stove plants will do any good in a temperature that is regulated for Ericas and such like plants. If the permanent occupants of the beds and the twiners, however, are such as require a free circulation of air, the house must not be kept so close as to injure them; but where Passifloras, Ipomœas, Mandevilla suaveolens, Tecomas, Bignonias, &c., are grown for covering the roof, and Orange trees and other things that enjoy a fair amount of warmth and moisture while making their wood occupy the beds, the hardier stove plants will form the most suitable decoration for the next three months. Go over the twiners frequently and regulate their growth before the shoots get entangled, but avoid keeping them tied too closely, for they are never seen to advantage unless they are allowed to hang in a natural and graceful manner.

FORCING DEPARTMENT.

VINERIES.—Attend to keeping cool and moist where the fruit has been cut in order to preserve the foliage in a healthy state as long as possible. The laterals need not be kept very closely stopped after the fruit is cut, but they must not be allowed to shade or injure the principal leaves. If there is any appearance of red spider give the foliage a good washing with the engine directly the fruit is cleared off, and repeat this as long as there is a vestige of the enemy to be seen. Give prompt attention to the thinning of the fruit in succession houses, for like many other jobs this is most easily and expeditiously done when taken in time. Look well to the state of the borders where the fruit is swelling, and give a thorough soaking of tepid, good strong manure-water wherever the soil is found to be at all dry, and aim at having the borders in a healthy state as to moisture where the fruit is about colouring, for a healthy root action has more to do with the colouring of the fruit than many persons seem to suppose. Young Vines planted out this season should be encouraged to grow freely, and as the roots will be near the surface see that they are not allowed to suffer for the want of water, and in the event of continued dry weather a slight mulching over the roots would be useful. Do not keep the laterals too closely stopped, as the more leaves, &c., the Vines are allowed to make the more freely the roots will run in the border, and this deserves attention the first season. PEACHES.—Spare no pains to maintain a moist state of the atmosphere where the fruit is swelling, syringing freely, and shut up early in the afternoon, but give air sufficiently early in the morning to prevent the least risk of scorching.

FLOWER GARDEN AND SHRUBBERIES.

Late sown annuals should be thinned out as soon as they are well above ground, for if left to grow too thickly they spoil one another, and never make half the display plants do that are allowed plenty of space and which are grown strongly from the first. Attend to staking such of the herbaceous plants as require it before they get blown about and injured, and do not huddle the stems together, as is too frequently done. The early flowering bulbs, as Tulips, Hyacinths, Turban Ranunculuses, &c., will now be ready for taking up, and should not be left in the ground after the decay of the foliage, as if wet weather occurs they will be making fresh roots, which weaken them for next season. On light dry soils American plants will be greatly benefited by a good soaking of water after flowering, and the finer specimens should be mulched to assist in keeping the roots moist during the growing season. Attend to the propagation of the better varieties of Pentstemons, which are exceedingly useful plants. Also see to having a good stock of the border Picotees and Carnations, which are invaluable for cutting. Cuttings of these, if put in before the wood gets too hard, root as freely as Pinks.

HARDY FRUIT AND KITCHEN GARDEN.

Proceed with nailing in the young wood of wall trees, and see that they are perfectly clear of insects. Also stop any gross shoots, and endeavour to secure a fair supply of bearing wood all over the tree. Gross shoots that were stopped early in the season should be divested of all the laterals except one, or if they can be spared removed altogether. Keep the breast wood on Pear and other wall or espalier trees closely stopped in and attend to thinning the fruit where the crop is too heavy for the strength of the tree. Look to preparing Strawberry runners for forcing next spring. If not already done a good breadth of Brussels Sprouts should soon be planted on rich deep soil, for if not got in early the crop will be but poor, and it is very desirable to secure a good supply of this most useful winter green. A fair supply of Savoys and Broccoli, &c., should also be planted soon. Continue to plant out Celery as ground can be spared, and keep it well supplied with water. Cauliflowers and other strong growing things will be greatly benefited by an occasional watering with manure. Keep the hoe in action on dry days; cut Box edgings in showery weather; and endeavour to have all neat and clean.

COTTAGERS' GARDEN.

If Carrots have failed a small bed of the Early Horn may yet be sown. Continue to fill spare ground with various winter greens. York Cabbages may be sown for autumn use; they will do to plant in any small gaps that may exist among other crops. Stake up flowers, dub hedges, pipe Pinks, and lay Carnations. Cuttings of choice Roses may be made, choosing the early wood just getting firm.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.
For the Week ending June 16, 1859, as observed at the Horticultural Gardens.

June.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Temperature of the Air. Min.	Temperature of the Air. Mean	Temperature of the Earth. 1 foot deep.	Temperature of the Earth. 2 feet deep.	Wind.	Rain.
Friday 10	9	29.616	29.551	72	51	61.5	65	62	N.E.	.00
Satur. 11	10	29.624	29.555	69	52	60.5	63	62	S.E.	.00
Sunday 12	11	29.834	29.735	74	50	62.0	64	62	S.W	.57
Mon. 13	12	29.912	29.838	75	44	59.5	65	62	S.W.	.00
Tues. 14	13	29.946	29.911	67	42	54.5	64½	62	N.E.	.60
Wed. 15	○	29.932	29.811	73	42	57.5	64	62	N.W.	.00
Thurs. 16	15	29.896	29.831	72	41	56.5	64	62	N.E.	.00
Average		29.825	29.749	71.7	46 0	58.8	64.5	62		0.57

June 10—Fine; overcast at night.
— 11—Overcast; cloudy and fine; overcast and warm.
— 12—Uniformly overcast; cloudy; thunderstorm with heavy rain; fine.
— 13—Light haze; very fine; densely overcast.
— 14—Densely overcast; very fine; overcast.
— 15—Clear; very fine throughout.
— 16—Very fine; dry air; cloudy and cool at night.
Mean temperature of the week, 1½ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 33 years, for the ensuing Week, ending June 25, 1859.

June.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W
Sunday 19..	70.6	49.0	59.8	17	0.62 in.	2	3	2	2	3	5	10	6
Mon. 20..	72.3	49.7	61.0	15	0.68	1	4	1	1	5	9	9	2
Tues. 21..	74.0	50.7	62.4	14	0.68	2	4	3	2	1	15	3	1
Wed. 22..	73.3	49.6	61.4	12	0.59	2	2	1	1	2	13	9	3
Thurs. 23..	74.1	48.9	61.5	12	0.44	2	1	3	11	4	4	5	3
Friday 24..	73.7	49.8	61.7	11	0.49	1	3	4	2	2	14	7	1
Satur. 25..	72.8	50.4	61.6	16	0.72	1	1	6	2	5	10	5	3

The highest temperature during the above period occurred on the 19th and 22d, 1846—therm. 93 deg.; and the lowest on the 20th, 1855—therm. 30 deg.

Notices to Correspondents.

BAMBUSA GRACILIS: *Bayswater.* Plant in a rather damp place, where the soil is rich or enriched, and in the sun—not in the shade. That being done it will take care of itself. A good mulching of stable litter in November will, however, do it good.

BOTANICAL EXAMINATIONS: *Cirencester.* There is no doubt that the gentlemen charged with this public duty will in future demand from examinees a familiarity with the art of describing plants in technical form and language. The course they have thus determined to pursue is far better suited than any other for testing the relative powers of students in observation and the methodical arrangement of ideas as well as a knowledge of plants. You will find the whole subject fully explained in Dr. Lindley's "Descriptive Botany," published by Bradbury & Evans, price 1s.

INSECTS: *Major C.* The thread-like creature sent is a species of hair worm, Gordius, which lives in water and damp earth, and is harmless; its habits, however, are but little known. *W.*

NAMES OF FRUITS: *W W.* Your Apple appears to be the Cluster Golden Pippin.‖

NAMES OF PLANTS: We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have or could have undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*O O.* Carex distans and intermedia.—*Anonymous, Thirsk.* 1, a morsel of some Zichya, apparently Z. tricolor; 2, Ajuga reptans; 3, Galium cruciatum; 4, looks like fragments of Rhodiola rosea.—*Galway.* Lavatera maritima.—*E G., Ramsgate.* Tamarix germanica and Bupleurum fruticosum.—*Mrs. F.* A seedling of Scolopendrium vulgare.

PRUNING: *E C M.* If the Rose trees planted last December, some of which are now showing blossom while others are running into wood, look very healthy, although not so vigorous as those about to blossom, we advise you to do nothing to them till next year's pruning, unless indeed you like to destroy the flower-buds, which will have the effect of throwing strength into the branches.

SEEDS: *Oxon.* It is impossible to justify the conduct of a newspaper in which tradesmen are recommended; unless under some very peculiar circumstances. *Caveat emptor* is all that can be said. You will have no difficulty in obtaining the information you seek by private inquiry among your horticultural friends.

THE SLIDING RULE: *Geo. Frost.* It has been most truly said, that with this instrument for a few shillings most persons might put into their pockets some hundred times as much power of calculation as they have in their heads. There are various sorts; all to be had of good instrument makers with explanatory treatises. There is a good account of the sliding rule in "The Universal Ready Reckoner by an Idle Gentleman," published in 1839; or you may obtain "Ingram's Concise System of Mathematics." For prices inquire of booksellers.

TOMATOS: *Brixton.* These are now selling in the Paris market at from 17 to 23 francs per 100; Artichokes now fetch there 24 francs per 100.

*** As usual, many communications have been received too late, and others are detained till the necessary inquiries can be made. We must also beg the indulgence of those correspondents the insertion of whose contributions is still delayed.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

ARTIFICIAL MANURES.

FREDERICK CORNWELL begs to inform his friends and the Agricultural public that he can now supply a "SUPERPHOSPHATE of LIME" superior to anything yet produced. Each Bag guaranteed to contain from 20 to 25 per cent. of "Soluble Phosphate of Lime." Price 5*l.* 10*s.* per ton, delivered free to any Railway or Wharf in London. Dealers and the trade supplied. LINSEED-CAKES, COTTON-CAKES, and all descriptions of ARTIFICIAL MANURES at lowest market prices.—Offices, 7, Great St. Helen's, London, E. C.

PERUVIAN GUANO.

The present price of this valuable Manure is—
12*l.* per Ton for 30 Tons and upwards,
13*l.* 5*s.* per Ton for 1 Ton up to 30 Tons.

And, to guard against the purchase of adulterated mixtures and of inferior Guanos purporting to produce results equal to Peruvian, consumers are recommended to apply either to ourselves, to our agents, Messrs. Gibbs, Bright, & Co., of Liverpool and Bristol, or to dealers of established character, in whose honesty and fair dealing they may place implicit confidence.

ANTONY GIBBS & SONS.

BURNARD, LACK, AND CO.'S CONCENTRATED SUPERPHOSPHATE OF LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.

CONCENTRATED TURNIP MANURE, equal in value to the preceding.

Of these Manures Dr. Voelcker says:—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."

Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to BURNARD, LACK, & Co., Sutton Road, Plymouth.

ESTABLISHED 1812.

H. AND T. PROCTOR'S TURNIP MANURE.—Messrs. H. & T. P. draw particular attention to this valuable Manure, which contains all the elements necessary for the full development of the Turnip Crop, so combined, that, from their chemical knowledge and long experience, they feel satisfied is most advantageous to the consumer. It has been very extensively used by most of the eminent Agriculturists of the day, and has attained a high reputation throughout England, Scotland, and Wales, and, they venture to say, is unrivalled for the weight and quality of the Bulbs which it produces. The application of this Manure to the Turnips will be found to benefit considerably the after crops of Barley, Clover, and Wheat.

POTATO, GRASS, BARLEY, CLOVER, AND WHEAT MANURES; also BONE DUST, PERUVIAN GUANO, and SUPERPHOSPHATE of LIME, warranted of the best quality.

Apply to H. & T. PROCTOR, West of England Depôt for Artificial Manures, Cathay, Bristol; or PROCTOR & RYLAND, Birmingham, and Saltney, near Chester.

LONDON MANURE COMPANY, removed to 116, Fenchurch Street, E. C. (Established 1840), have the following MANURES ready for delivery:—

CORN MANURE for SPRING TOP-DRESSING URATE MANGEL MANURE SUPERPHOSPHATE OF LIME BLOOD MANURE	all of guaranteed quality.

In consequence of the reduction in the price of raw material the London Manure Co. are enabled to lower the price of their Superphosphate of Lime, and to materially improve the Corn Manure and Urate.

The London Manure Co. also supply PERUVIAN GUANO (direct from Messrs. A. Gibbs and Sons), SULPHATE of AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of value. Wholesale dealers supplied.

116, Fenchurch Street, E.C. EDWARD PURSER, Secretary.

REDUCTION IN PRICE OF LAWES'S MANURES.

MR. LAWES begs to announce that he has this season reduced the price of the Manures manufactured by him, viz.:—

TURNIP MANURE	from £7 to	£6 6
SUPERPHOSPHATE OF LIME ..	,, 7 to	6 6
MINERAL do. ..	,, 6 to	5 5
BARLEY MANURE..		8 0

Prof. Way and Dr. Voelcker have sampled from a bulk of 5000 to 6000 tons at his factories, and their report and analyses are given in full in Circular to be obtained on application at his office, 1, Adelaide Place, London Bridge, E.C., or of his local Agents.

N.B. Genuine Peruvian Guano direct from Messrs GIBBS, Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures. American Cotton-seed Cake supplied.

SOFT STUFF GREAVES ARE A CAPITAL MANURE FOR WHEAT LANDS.—The undersigned have sent large quantities to Norwich, where they are highly approved.—Price 4*l.* 10*s.* per ton in tierces (no charge for casks), delivered free to any railway station in London.

JOHN WILLIAMS & SON, Soap Works, Clerkenwell, London.

COUPLAND'S IMPERIAL WIRE AND WINDOW BLIND MANUFACTORY,
370, Oxford Street, W.

Wire work of superior description, useful and ornamental, for Conservatory, Garden, Drawing-room, Flower Stand and Basket, Garden Arch, Rosery, Fencing, Birdcage, &c., and Domestic and other purposes in elegant variety. Aviaries and Conservatories fitted up in the best style. Sun Shades and Window Blinds of all sorts.

"FRIGI DOMO."—Patronised by her Majesty, the Queen, the Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, and —Collier, Esq., of Dartford.

PROTECTION FROM COLD WINDS AND MORNING FROSTS.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and, floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths. Two yards wide, 1*s.* 6*d.* per yard run; four, 3*s.* per yard. Also, an improved make for Shading Purposes. Three yards wide, 2*s.* 6*d.* per yard run.

ELISHA THOMAS ARCHER, whole and sole manufacturer, 7, Trinity Lane, Cannon Street, City, and of all Nurserymen and Seedsmen throughout the kingdom. "It is much cheaper than mats as a covering."

FOWLER'S PATENT STEAM PLOUGH
SEEN AT WORK.

STANDARD SETS OF FOWLER'S STEAM-PLOUGHING TACKLE can be seen in operation on the 1st of July next at the Show of

SUFFOLK AGRICULTURAL ASSOCIATION AT IPSWICH.
SOUTH YORKSHIRE AND NORTH DERBYSHIRE AGRICULTURAL SOCIETY AT SHEFFIELD
SUSSEX AGRICULTURAL SOCIETY AT HAILSHAM.

FOWLER'S ENGINE, WINDLASS, AND WATER CART.

For further particulars apply to

JOHN FOWLER, JUN., 28, CORNHILL, LONDON, E.C.

AGRICULTURAL MACHINERY.

E. R. AND F. TURNER, Ipswich, manufacture Prize Mills for Crushing Corn, Seed, Malt, &c.; Portable Grinding Mills, Steam Engines fixed and portable from 2 horse-power and upwards; Threshing Machines, Chaff Cutter, Oilcake Breakers, Horse Gears, Saw Tables, &c., all of a superior description and adapted for Home, Colonial, and Foreign use. Illustrated Price Lists sent free on application.

WARNER'S IMPROVED LIQUID MANURE OR GENERAL PORTABLE PUMP.



These Pumps are fitted with J. W. & Son's Patent Buckets and Suckers, and cannot clog in action. The barrel is of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure. The legs will fold together, and the whole may be carried on the shoulder to any pond or tank required.

Price of 4½ in. Pump, with legs, 3*l.* 3*s.* If with planished copper barrel and galvanised iron handle, &c., 14*s.* extra. The barrel is 27½ in. long, and the legs are 5 ft. high.

These Pumps are also made without the legs, with strong wrought-iron straps for screwing on to any ordinary water butt or cart, and fitted with 1¼ inch brass union for attaching flexible suction. Price 50*s.*

1¾ inch Gutta Percha Suction Pipe, 1*s.* 11*d.* per foot.

Rubber and Canvas Suction and Delivery Hose, from ½ inch to 4 inches in diameter, in lengths of 60 feet to order. Branch Pipes with Cocks, Union Screws, &c., at reduced prices.

May be obtained of any Ironmonger or Plumber in town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin St., London.

WARNER'S PATENT VIBRATING STANDARD PUMPS.

PATENT CAST-IRON PUMPS, fitted with J. W. & Son's Patent Buckets and Suckers, which cannot clog in action, for Farms, Cottages, and Wells, not exceeding 28 feet.



Diameter of Barrel.	Height.		£. *s.* *d.*
2½ in.	short 1 ft. 7 in.	Fitted for lead, gutta percha or cast iron	1 10 0
2½ ,,	long 3 ,, 3 ,,		1 14 0
3 ,,	ditto 3 ,, 6 ,,		2 8 0
3½ ,,	ditto 3 ,, 6 ,,	flanged pipe	2 12 0
4 ,,	ditto 3 ,, 6 ,,	as required.	3 3 0
2½ ,,	short, with 15 feet of Lead Pipe attached, ready for fixing		2 14 0
2½ in.	long ditto	ditto	2 18 0

The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.

May be obtained of any Ironmonger or Plumber in Town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

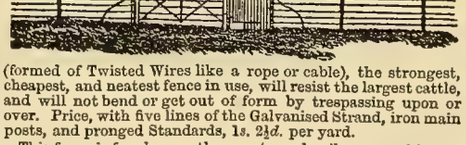
PRICES REDUCED.

H. J. MORTON AND CO., Galvanised Iron Works, 2, Basinghall Buildings, Leeds.

GALVANISED IRON ROOFING

for Farm Buildings and other Roofs; the cheapest, most durable, and neatest Roofing in use; also Spouting at 10½*d.* per yard.

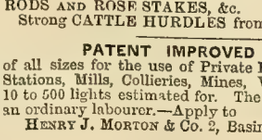
WIRE STRAND CABLE FENCING



(formed of Twisted Wires like a rope or cable), the strongest, cheapest, and neatest fence in use, will resist the largest cattle, and will not bend or get out of form by trespassing upon or over. Price, with five lines of the Galvanised Strand, iron main posts, and pronged Standards, 1*s.* 2½*d.* per yard.

This fence is far cheaper than posts and rails, or any kind of iron fencing; and possesses four times the strength of solid bars. Will not rust nor corrode. Upwards of 1200 miles of this Fencing supplied.

GALVANISED GAME AND POULTRY NETTING.



Galvanised, 24 ins. wide, 2-inch mesh, 5*d.*, 6*d.*, 7½*d.*, and 10*d.* per yard.

Galvanised, 24 ins. wide, 3-inch mesh, 4*d.*, 5*d.*, and 7*d.* per yard. The Netting made any width, and with openings of any size.

GALVANISED IRON CHAIN CAMP STOOLS & CHAIRS, POULTRY FOUNTAINS & FEEDERS, PRONGED DAHLIA RODS AND ROSE STAKES, &c.

Strong CATTLE HURDLES from 2*s.* per yard.

PATENT IMPROVED GAS WORKS

of all sizes for the use of Private Houses, Mansions, Railway Stations, Mills, Collieries, Mines, Villages, &c. Works from 10 to 500 lights estimated for. The works can be entrusted to an ordinary labourer.—Apply to

HENRY J. MORTON & Co. 2, Basinghall Buildings, Leeds.

TO FARMERS.—If you wish to PRESERVE YOUR HAY, go to DAVIS & Co., 64, West Smithfield, E.C., where you may purchase a RICK CLOTH of the best material and workmanship, cheaper than at any house in London.

WHY NOT PRESERVE YOUR HAY?

BENJAMIN EDGINGTON respectfully informs the Nobility and Gentry that they can be supplied on the best terms with RICK CLOTHS, with Poles complete.

Early application should be made for SECOND-HAND RICK CLOTHS. MARQUEES, TENTS, and FLAGS. A great variety of Marquees and Tents may be seen erected on the premises. A quantity of SECOND-HAND TENTS from the Crimea at a greatly reduced price. An Illustrated Catalogue sent post free.

West End Establishment, 32, Charing Cross, S.W.

BENJAMIN EDGINGTON, 2, Duke Street, London Bridge, S.E.

WEDLAKE AND DENDY, AGRICULTURAL ENGINEERS, Hornchurch, Essex.

HAY MACHINES.

Small size, No. 1 .. £10 | Large size, No. 1 .. £12
Large size, No. 2 .. .. .. £13

These Machines are free from small and delicate parts, and can be easily understood by a farm labourer. They have gained several prizes at the Royal Agricultural Society's Shows.

HORSE RAKES.

No. 1 .. .. £6 10*s.* | No. 2 .. .. £7 10*s.*

WEDLAKE & DENDY'S Horse Rakes are made on the tubular principle, combining great strength and lightness. Free to all the principal Railway Stations.

WEDLAKE & DENDY, Union Foundry, Hornchurch, Essex.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

EDWARD BECK MANUFACTURES in SLATE a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener, Sundays excepted. PRICED LISTS of PLANT TUBS and BOXES forwarded on application.

YORKSHIRE PRIZE PIGS.

MR. WAINMAN has a few YOUNG BOARS AND SOWS of his Large White Breed to dispose of, bred from prize parents on both sides. The Carhead Pigs have had 17[illegible] Prizes and Medals awarded to them at the Royal Agricultural Shows of England, Birmingham, and the principal Shows in Yorkshire and Lancashire.—Apply to Mr. FISHER, Carhead Farm, Cross Hills, Leeds.

TO PIG AND POULTRY FEEDERS AND MILLERS.

CHICKEN AND GAME RICE, 8*s.* per cwt., in bags 1½ cwt. each. SCREENED RICE, 11*s.* per cwt., in bags 1½ cwt. each. RICE MEAL, 6*s.* 6*d.* to 8*s.* 6*d.* per cwt. RICE for grinding. American Oilcake and Locust Beans, per Ton only.—All Sold for Cash, and an allowance per ton, by W. & R. JUPP, Rice Merchants, 6, Cross Lane, St. Mary-at-Hill, Eastcheap.

THE GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY: Offices, 52, Parliament Street.

HENRY KER SEYMER, Esq., M.P., Chairman.

1. This Company is incorporated by Act of Parliament to facilitate the Drainage of Land, the Making of Roads, the Erection of Farm Houses, Farm Buildings, and Labourers' Cottages, and other Improvements on all descriptions of Property, whether held in fee, or under entail, mortgage, in trust, or as ecclesiastical or Collegiate Property.

2. In no case is any investigation of Title necessary.

3. The Works may be designed and executed by the Landowner or his Agents, or the Company will undertake the entire improvement by their experienced staff, and advance the money required for the works. Equal facilities will be afforded in either case.

4. The whole cost of the works and expenses may, in all cases, be charged on the Lands improved, to be repaid by half-yearly instalments.

5. The term of such charge may be fixed by the Landowner, and extended to 50 years for Land Improvements, and 31 years for Farm Buildings, whereby the instalments will be kept within such a fair per-centage as the occupiers of the improved Lands can afford to pay.

6. No profit is taken on any Works executed by the Company, the actual expenditure only, approved by the Inclosure Commissioners, being charged in all cases.

WILLIAM CLIFFORD, Secretary.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.

Principal—J. C. NESBIT, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

The Agricultural Gazette.
SATURDAY, JUNE 18, 1859.

MEETINGS FOR THE ENSUING WEEK.

WEDNESDAY, June 22—Agri. Society of England .. Noon.

A PRINCIPAL to the Royal Agricultural College at Cirencester has been appointed in the person of the Rev. J. CONSTABLE, Cantab., late of Upham, Hants. It is satisfactory to know that he is possessed of the highest testimonials, and that

his selection has been the result of a most painstaking investigation of the claims of a large list of candidates who were possessed of first-rate recommendations.

The College Session closed on the 15th inst. The reports of all the professors declare that never have they been enabled to speak more highly of the progress and general good conduct of their classes, a testimony which does honour to the memory of the late Principal as evidencing the completeness of the plan which he had organised.

—— The past week has witnessed many a successful trial of the American mowing machine, which will no doubt ultimately be as frequently employed in this and the following month as the reaper is in August and September. It, like the reaper, needs adaptation to its work: a rapidity of movement in the cutting parts which would amply suffice for a poor crop, would not save the implement from choking when engaged upon a heavier produce. Whether it will be generally approved of for the Clover haymaking may be doubted, for ordinary cutting of meadow land there is however little doubt of its being soon adopted. It leaves the Grass behind it, lying where it stood, already spread and tedded as it were over the surface of the ground: Clover, however, is not tedded—but left in swathe, and merely turned. Too much movement breaks the leaf and wastes it, and unless it be raked at once into "rollers" the Clover left, as by this machine it is, will not be easily gathered together without harm.

—— The weather has latterly been everything that could have been desired; and there is every probability that a very heavy growth of Grass will be successfully harvested. The warm and sunny weather is just what all our grain crops also need. There is generally a very bulky growth upon the ground—some of it already laid—and a wet summer would no doubt injure it materially.

—— A very unusual difference between a tenant and his landlord has been lately published in the report of a suit before the Court of Chancery, in which a tenant farmer is in effect prosecuted by his landlord for preserving game! Lord LOVELACE had let certain farms in Surrey to a Mr. FROGLEY, together with exclusive right of shooting on them—it being, however, reserved by his lordship that no injury was thereby to be done to his property or that of his other tenants. Such injury having, however, as was alleged, been suffered, the exclusive right of sporting was revoked, and "large bodies of men, under the orders of the landlord, were employed to destroy the hares and rabbits on the farm, thereby disturbing and driving away the pheasants which had been preserved at the expense of the tenant." Mr. FROGLEY obtained an injunction restraining the landlord from thus interfering with the game, and on a motion to dissolve this injunction appears to have established the right to which he had laid claim.

WHAT IS THE BEST METHOD OF DESTROYING NETTLES? It is a question so often put to us that we cannot do better during the present prolific season of these pests than offer a few notes upon some points in their natural history.

Everybody knows that our common Stinging Nettle is a plant which annually sends up new shoots from a perennial "running-root," as it is popularly called, but which the botanist views as an underground stem, or as he terms it, "rhizome."

Its fresh shoots make their appearance with the first genial weather of spring; but these are so liable to injury by cold that the first frosty night usually destroys the young leaves, though the bud ultimately recovers, and the crop of Nettles soon overtops the Grass of the meadow. Here though a most conspicuous it is no pleasing object, as it prevents the growth of the Grass, while itself is totally unfit for food for cattle, which reject it both in the green and in the dried state. Having run its summer race the frosts of autumn very early kill it to the ground, leaving behind the underground stem to perpetuate the pest.

Now as its most mischievous position is in pastures where of course its extermination by way of forking out would, if possible, be avoided, its growth above ground is that which is commonly attended to: and if we take into consideration that the leaves are among the active organs by which the growth of flowering plants is ordinarily provided for; being not only the lungs concerned in the due preparation of the sap, but in all probability to a great extent the stomach too—the eliminators of organic food—it follows that by crippling the leaf growth we must cause a falling off in the increase of produce in the whole plant, and cutting them down is therefore doubtless the best way of dealing with it. But though this is admitted by all, still the question is constantly recurring:—How to destroy Nettles.

The fact is, that in dealing with this pest, the farmer has followed rhyme rather than reason, as the following rustic directions for the destruction of the Nettle proves:—

> "If Nettles be cut in April,
> They reappear in a while;
> If Nettles be cut in May,
> They peep out again the next day;
> If cut in June,
> They appear again soon;
> If cut in July,
> They'll hardly die;
> But cut in August,
> Die they must."

Let us now offer a commentary upon these directions, which it is hoped will make clear the rationale of the process. The common plan of cutting Nettles is with the scythe, which is no doubt the best implement for the purpose. We commence in April, but soon see our diligence rewarded by the appearance of two or three shoots for one. We need not, however, let this distress us, as they will always be very small, and if the portion experimented upon be left until autumn it will be seen that even as regards the surface growth its produce will be less than that which was left untouched.

May is the season for the most vigorous putting forth of shoots of plants, and if cut then truly they are quick enough at reappearing; but again we would say, as the result of experience, that the crop will be still more diminished than if it had been cut in April.

June is also a turning point of great importance in the annual history of this plant. Bearing in mind that leaves are concerned in the growth of all other parts of the plant, those well developed in May will all June be feeding the underground as well as the surface growth of the plant. Cutting them then is certainly better than nothing, yet it by no means cripples growth so much as if done the previous month. As to July, it is true that if then cut a few shoots only will reappear as a second crop, but we must remember that what was true of June is more so now; in fact, the above-ground growth is completed, and the rhizomes, or underground stems, have by this time been aided nearly, if not quite, as much as Nature intended, so that they are scarcely, if at all, injured for the next year.

In August, again, the Nettle has performed all its functions for the year, even to the production of seed, so that although on being cut down it will disappear for that year, the pest is not at all injured in productiveness for the next season. The fallacy of recommending August cutting of these weeds must be apparent to everybody. The madman in the poem is made to say to the soldier as to killing his enemies,—

> "Kill a fool's head of your own;
> They'll die of themselves if you let them alone."

And this is quite true of these enemies of the farmer at this season. The first cold night acts quite as readily in destroying the above-ground growth as the most careful cutting. Hence the injury inflicted by August cutting is more apparent than real.

The conclusion then at which we have arrived is this: that if we were to confine our operations as regards the Nettle to any particular month, we should choose May for cutting it down; but it fortunately happens that we are not so confined, and we would therefore knock off the young shoots of this plant first in April. In May we shall have the second crop of shoots to deal with, in all probability in increased numbers; the process must be repeated therefore both in May and in the following month, and even in July if they again appear; and with this treatment we can answer for it that the Nettle will not have increased its underground growth that year. Much, indeed, will have been killed entirely, so that usually in the following season little will reappear; and with reference to what does again make its appearance, the rule of the first year must be the practice of the second.

At any rate, do not wait until August, as in all probability the plant will have ripened seed as well as made much underground wood; the evil is thus sure to appear in the following season in an aggravated degree. By pursuing the plan recommended seeding is impossible, and we know from experiment that it is the easiest method of eradicating Nettles.

BELGIAN FARM IMPLEMENTS.

THERE is perhaps no country which possesses so deep an interest to the agriculturist as that of Belgium, none certainly which presents such striking evidences of what man can do if he wills, so many proofs of the power of mind over matter. If we travel through the flat fields of Flanders, examine the wide tracts of land wrested from the rule of old Ocean, or view the smiling meadows or the waving corn fields of the Campine and the pastures of the Ardennes, we have equally presented to us a series of cultural triumphs as gratifying to the philosophic as they are to the practical mind. It is always interesting to trace the results of man's patient industry, and to note the victories which he obtains by it over great and difficult obstacles, and in no country can the traveller see such repeated and marked evidences of what man can do in working with the most unpromising materials as in Belgium. Our mother earth is always grateful, and repays a hundredfold, and with a ready grace, the gifts which her sons bestow upon her. To feel the full force of this, the reader must have seen, as we have, the tracts of land green with a rich fertility and waving with the hopes of a bounteous harvest, which in times gone by were expanses of barren sand, or heath covered with a scant vegetation, or more striking still, sea-margins on which the waves of ocean rolled, and the winds blew into heaps of sand or seaweed. The observant traveller has many opportunities presented to him of noticing what has been done in the way of culture and the materials out of which such a rich fertility has been won. Alongside of a band of smiling green, he will note with wonder a strip of sand not yet brought under the mastery of man—sand so loose and poor that he kicks it up into tiny dust-clouds as he walks along, or sees it whirled in masses by the winds of heaven. And yet the soil which now yields the produce which gladdens his eyes was years ago the same shifting sand, so apparently hopelessly sterile. Or he walks along the ridge of a mound (*digue*) which skirts the ocean; and on one side he sees bleak and barren tracts, here with a patch of green the produce of a miserable vegetation springing up on some soil more consolidated than the rest; there a mass of yielding quicksand—and anon sand heaps and shells and seaweed—on the other side he will see with pleasure well laid out fields, bearing a wide variety of plants and produce, fields which in days past presented an aspect of sad sterility, and gave to the inexperienced observer but little promise of pleasant pastures and waving corn fields. In viewing then for the first time the evidence of what has been done in this land of cultural wonders with materials the most hopeless in appearance, and the most unpromising in character, the traveller is apt to suppose that in the "battle of the workman" with such a foe he will most assuredly have been aided by the most accurate deductions of science, and the most powerful and perfect of mechanism. And great doubtless will be his surprise when he is informed that all these triumphs have been obtained with the aid only of an industry which never tires; the brave working of the brawny arm carrying out the processes which have been the result of a long experience and a close observation. No country owes so few obligations to agricultural science and agricultural mechanism as Belgium, and yet no country has done so much to wrest fertility from an unwilling source—and we may add, to prove by practice the correctness of theory. We do not, however, wish to convey to the reader the idea that all these cultural triumphs have been won in spite of the absence of science and the power of mechanism—they have been won by patiently working out a system which it has taken the slow experience of centuries to elaborate, and it is not difficult to suppose that the perfecting of the system would have been greatly aided and its growth more rapid had the cultivators brought to their aid all the indications of science. Our readers, then, who have had no previous knowledge of the subject will now be prepared to learn that unlike the farmers of England or of Scotland, the farmers of Belgium, and more markedly those of Flanders, are aided very triflingly by machines and implements. In England the stranger is perplexed by the multiplicity of the mechanical appliances which are used in a well stocked farm. In Flanders his examination will only discover what may be called the rudimental implements, the spade, the plough, and the harrow; the other implements are few in number and simple in character. It is in other parts of Belgium that the more advanced, or at least the more complicated, machines and implements, which are of British origin, are chiefly if not altogether met with. We propose, in the course of a brief paper or two, to glance at the leading features of the mechanism of Belgian farming; more particularly dwelling on that of Flanders. The first implement we shall pass under review is the plough.

The first obvious distinction between the plough of Flanders and the swing plough of Scotland and England, of which indeed it is the progenitor or model, is the absence of two stilts or handles, one only being provided. This rises from the beam at an angle more or less oblique, according to the opinion or fancy of the maker, and is provided with a small curved horn or handle near its upper extremity. It is this small handle which is grasped by the workman, in guiding and adjusting the plough while at work. Properly speaking no "guiding" in the meaning of the term as applied to ploughing as executed in England is required, for a well constructed Flemish plough follows with admirable precision the line of the furrow traced out for its path. The real use of the handle is to ease the plough when it happens to meet any obstacle which tends to throw it out of the exact line of working. This easing of the plough should be, and by an experienced ploughman is, effected almost intuitively, the obstacle to the progress of the plough being, as it were, felt by instinct. To this

end it is necessary that the workman should always keep his right hand in contact with the handle, to be ready to meet any change in the position of the plough when it meets an obstacle. So accustomed are we in Great Britain to use ploughs with two stilts or handles, that at first view it seems impossible that a Flemish plough can do its work. It is nevertheless true that it does this with admirable precision and ease; so much so, that it appears to require little or none of the control of the operator. It should be remembered, however, while contrasting the operation of the Flemish with the Scotch or English swing plough, that the soils in which they respectively work are very different in character. The heaviest soil in Flanders bears little affinity to what is called heavy land in Great Britain; it is in fact a soil light enough for Turnips, and is far removed from the stiff, heavy, retentive clays characterising the heavy soils of England. The lightest soils of Flanders again are more like sand than anything else; and in none are the stones and boulders which abound in so much of the soil of Scotland met with. The soil of Flanders then possesses all the features of a medium well calculated to aid the easy and regular working of an implement like the Flemish plough, which is light and remarkably easy of draught. It is doubtful how far a one-stilted Flemish plough would work in the unequal soils of Great Britain, in those of Scotland especially, where the numerous obstacles to uniform working met with necessitate so complete and powerful a control over the plough; a control attainable, we think, only by the use of two handles or stilts. The one-handled plough of Flanders is preferred by the farmers there for another reason, namely, allowing the left hand of the ploughman to be at perfect freedom to handle the long tool or implement by means of which he can free the mould-board of the manure, the earth, or the roots of plants which adhere to it, and impede the operation of the plough. This constant manipulation is, therefore, not compatible with two handles, which would require the use of both hands. The one-handled plough then of Flanders appears well designed for the peculiarities of the mode of cultivation and kind of soil in which it is required to operate.

The sole (*sep*) to which the working parts of the plough, as the share (*soc*) and the mould-board or turn-furrow (*versoir*) are attached, is generally made of wood; it is a species of sledge, which slides along the bottom of the furrow, and the left side of which works against the part of the land not operated upon by the plough. In good constructions the under part and left side of the sole are armed with bands of iron, which tend to reduce the friction and to prevent the rapid wearing of the wood. The length of the (*sep*) sole obviously regulates that of the working parts of the plough; some advocate a long sole, some a short one; the first will give steadier action, the second less surface for friction. The action of the sole in adding to the draught of the plough, and also in forming a hard surface in the bottom of the furrow, attracts no less the attention of the Belgian than it does that of the British agricultural mechanic. In both countries the evil has been sought to be avoided by the use of the same appliance. This consists in the adaptation of wheels which are placed behind the sole; these derive their motion of revolution from the progressive motion of the plough, and serve as they revolve to ease the pressure of the sole on the soil. These may act very well in the extremely light soils met with in Belgium; but in soils tenacious they will speedily become clogged, and act if not prejudicially at least little favourably.

To the fore part of the sole the share (*soc*) is connected. This is very broad, and is sharp on the right edge. The duty of the *soc* being not only the horizontal separation or cutting of the furrow-slice, but to lead this easily up to the face of the mould-board or turn furrow (*versoir*), its junction with the latter requires to be made so well that it will afford no obstacle to the free passage of the slice of earth along the mould-board. In many of the ploughs met with in Flanders the mould-board or turn-furrow is constructed of wood, armed on the face with sheet-iron to reduce the friction and to maintain the integrity of its outline. In improved ploughs it is made entirely of iron. The upper part of the turn-furrow or mould-board is so curved that it lays over the slice of earth at the usual angle of 45°. The coulter *(coutre)* in the Flemish plough generally has a carved outline nearly equal to that of the front line of mould-board; it is rarely placed vertically on the beam—or at least nearly vertical—as in the Scotch or English plough. *R. S. B.*

Home Correspondence.

Catalogues at the Annual Agricultural Show.—I was unfortunately prevented attending the last half-yearly meeting of the Royal Agricultural Society, where I intended to have brought under notice the subject of the scarcity of catalogues at the Shows. I know I shall only be echoing the remark of thousands when I say that the want of catalogues in sufficient quantity to meet the demand at the Shows year after year is very discreditable to the managers. To persons who like myself cannot spare time to explore every stand in the implement yard but who wish to see anything new or likely to be useful, the want of a catalogue is nearly equivalent to sending some one to an inhabitant of this metropolis with no other address than "London" to go by; and although I must bear witness to the courtesy I have always experienced in being provided with a catalogue at the Directors' booth when I complained, yet as that is a resource not open to every one I hope the Directors will see to it in time to prevent such an occurrence this year, more especially as they may confidently reckon upon from 50 to 100 per cent. more visitors than even at Chester with ordinary weather. I was told while complaining at Chester by a gentleman who takes a very active part in the management of Agricultural Societies that it was almost impossible to have a supply of catalogues, but I referred him for advice to some of the men that turn out their 10,000, 15,000, or 20,000 copies of a newspaper in two or three hours daily or weekly, and expressed my hope that the R.A.S. had not yet arrived at the point of "circumlocution" indicated by the confession of a foregone conclusion of "how not to do it." *J. Girdwood, 49, Pall Mall, June 8.*

Supplementary Notes at Barnstaple.—Of the Devon Notts fair specimens were shown as extra stock. Mr. Merson was the winner of the prizes for the Exmoor sheep, both ram and ewes, and well deserved the honour. The improvement effected in these sheep by judicious selection has been immense. They have not only the good hind-quarters which belong to a mountain breed, but their short fore legs are far apart, the barrel deep and circular, and the fleece heavy. The ram shown was computed to be not less than 30 lbs. per quarter. In speaking of the pony classes in your last as possessing so much merit, you mentioned the winner of the special prize as the best in the yard. This handsome, compact, but highly bred *bay* pony, "Bobby," belonged to Mr. R. Smith of Exmoor, and his purpose is to improve the Exmoor ponies, or rather to breed stock by which they may be improved. The produce of "Bobby" belonging to Mr. Milward sold at Tattersall's a fortnight since and averaged 60*l.* each. In South Down sheep Sir R. Throgmorton carried everything before him, but there were none of Mr. Jonas Webb's, the Duke of Richmond's, and Mr. Rigden's to compete with. The Horn Dorset and Somerset were good, but were principally confined to a few exhibitors. These sheep have been well managed and carefully selected and improved of late years. Mr. Danger has the first prize and Mr. Bond the second. The Hampshire and the West-country Downs were not represented in proportion to the vast and increasing extent of country these sheep now occupy. Next year at Dorchester we may expect to see them in greater force. Mr. Brown had most of the prizes, sharing some with Mr. Moore, Mr. Holland, and Mr. Harbin. *S.*

Societies.

ROYAL AGRICULTURAL OF ENGLAND.

At a WEEKLY COUNCIL held June 15, present Mr. Raymond Barker, Vice-President, in the chair—

The Earl of Malmesbury, Secretary of State for Foreign Affairs, transmitted the report of Mr. Morgan, her Majesty's Consul at Bahia, respecting some original deposits of guano (from which nitrate is extracted) existing in the province of Bahia. The Lords of the Committee of Privy Council for Trade transmitted the three boxes of samples of the guano referred to in the above despatch, and requested to be favoured with the result of any experiments that may be made with a view to ascertaining the value of this substance. Mr. Morgan's report states that favourable accounts have been given of the samples already sent to London, Liverpool, and Birmingham. The deposits exist in beds of limestone, some of them extending over 20 square leagues. The most available deposits are found on the road to the diamond districts. The chief drawback is the want of good roads, but the formation of a railroad is in contemplation. There are also other and almost inexhaustible deposits in the neighbourhood of the River San Francesco, province of Pianhy. These altogether extend over a territory of upwards of 200 square leagues. The report proceeds to detail the process of extracting the nitre, which is used to prepare gunpowder of a very ordinary quality, and to preserve meat and fish. The report concludes thus: "From information received from several of the proprietors of those deposits lying in the intended line I believe, with the railroad, the primitive earth or manure could be replaced in England at 7*l.* to 9*l.* per ton. Should the trade in this article increase, either from competition or abundance, it is but natural to suppose it would be placed at a lower figure for the purposes of our commerce, inasmuch as the manure in question contains highly organised matter with a large quantity of real ammonia and nitrogen, alkalies, magnesia, sulphate, and carbonate of lime."

On the motion of Mr. Wren Hoskyns, these communications were referred to the Chemical Committee with a view to the samples being analysed by Dr. Voelcker, the Society's consulting chemist; and the thanks of the Council were ordered to be conveyed to the Earl of Malmesbury and to the Board of Trade for these communications.

A letter from Mr. Bullock Webster (dated from Athens) was read, in which he states that he has been devoting attention to the Vine disease, and that the application of sulphur has proved most successful in Greece, and that the same effect has been produced on blighted green crops. He can speak with confidence as to Potatoes, Beans, Peas, fruit trees, Roscs, trees, &c., and that he has no doubt of its efficacy as regards both Turnips and Hops. He also states that the sulphur ought to be applied in a very fine powder in the early stage of the growth of the plant, as soon as any blight shows itself; it is applied either by means of a large tin pepper-box or small bellows (of which he enclosed a sketch). A woman can dress an acre of Vines per day. Scarcely any change will be observable in the crop for the first 10 days; after that it becomes healthy. Should rain fall within five days after the application of the sulphur the operation has to be repeated.

A letter was read from Mr. Curtis, the entomologist, respecting the insects forwarded by order of the Council, and by which Mr. Greenwood's Mangel Wurzel crop had been nearly destroyed. Mr. Curtis states them to be the larvæ of a beetle which has at various times injured the crops of Mangel Wurzel in Ireland and in France. The beetle is the Silpha opaca, fully described in the Society's Journal (vol. viii., page 404, and plate S, figures 12 to 24). Mr. Curtis observes that notwithstanding the leaves being nearly or entirely consumed, the plants have been known to recover and to produce a fair crop. Mr. Curtis also transmitted the prospectus and the first number of an entire edition of his 16 reports published in the Society's Journal, and which are now being reproduced in a complete separate form by Messrs. Blackie & Son, entitled "Farm Insects."

The thanks of the Council were ordered for each of the above communications.

The Council then adjourned.

CHEMICO-AGRICULTURAL, ULSTER:—*Drying Milk Cows.*—The following letter was read:—"I am rather surprised that Mr. Andrews and other extensive feeders, graziers, and agriculturists are not better informed on that simple matter. Having had considerable practice in a small way, I beg to submit the plan I have long adopted without a failure. No matter what quantity of milk the cow is yielding, stop at once, not by milking every second or third day, but for ten, twelve, or fourteen days; it is only by refusing to take away the milk that it ceases to be formed. This is the whole secret. But attention must be given to prevent injury to the animal. If the quantity of milk be large, the udder should be wet or bathed with cold water, and rubbed frequently for the first four days to keep down inflammation. On the fourth day, four quarts, or, if the cow be large, five, or even six quarts of blood should be taken from the neck. Bleeding before hefting, or before inflammation has set in, is worse than useless. On the fifth or sixth day, the udder will begin to soften and gradually subside, but don't milk for ten days at least; by that time, milk will almost have disappeared without any bad consequence resulting. I have known some cases where after such treatment the animal has been put to Grass at May, after one milking only, and not again touched until brought in for slaughter at the end of the season. The above is the treatment of cows in the house before being sent to Grass; but on pasture the bathing and rubbing may be dispensed with—the Grass being a substitute for the cold bath—the friction of the cow's thighs in walking being better than hand-rubbing to the udder. There is sometimes trouble with cows that run out their milk. A small gutta percha band on the teat or teats will put a stop to it. To prevent the band becoming embedded and difficult to remove, place a small piece of calico, or thin, soft leather, on the teat, below the band, fixing on the band a small ring of cord to hang out, so that a ready hold may be got, and the point of a small knife applied to the band where it cannot be otherwise got off. No necessity to reduce the feeding in the slightest degree.—Mr. Henry Miller said that he had repeatedly and most successfully treated diseases of the udder in cows by the employment of the homœopathic remedy—the tincture of bryonia. In a case in which he administered the bryonia to a three-year-old heifer, in very high condition, the udder was much inflamed and distended three days before calving. After giving one dose the udder became much softer. In twelve hours he commenced to milk her, and gave no more medicine. After calving, the udder again became very much inflamed, and her body exceedingly swollen as far forward as the fore legs. She remained in that state for four days. He then gave her bryonia every eight hours, and the swelling almost immediately disappeared, and the udder became quite soft. To another three-year-old heifer also in high condition, he gave bryonia before calving; the udder became soft, and it was not necessary to milk her, and, by continuing the medicine, the udder never became distended, as in the other case. He also directed the attention of the meeting to the fact tha a professional gentleman, Dr. Peart, who farms nea Dublin, had treated pleuro-pneumonia among his owu stock with extraordinary success by homœopathic remedies, as detailed in the *Irish Farmers' Gazette.*

Analysis of Manures.—Among samples lately examined was one forwarded by Mr. Bishop, steward of Mr. Agnew, of Kilwaughter Castle, Larne. It had the following composition:—100 parts consisted of—

Water	6.40
*Organic and ammoniacal matters	10.50
Phosphate of lime	11.24
Carbonate of lime	15.42
Alkalies	5.04
Sand and earthy matter	51.40
	100.00

*Capable of yielding 1.38 parts of ammonia.

The value of the manure represented by this sample was only 1*l.* 17*s.* 3*d.* per ton. 73 lbs. in every 100 lbs. consisted of worthless matters; yet it was, probably, bought by farmers at 10*l.* per ton. The sand extracted from the sample was exhibited to the meeting.

Farmers' Clubs.

LONDON: *Turnip Culture.*—The following is an abridged report of the discussion before this Club on Monday of last week:—

Mr. J. Pain (Bedfordshire) agreed with Mr. Wallis, that the four-course system in the growth of Turnips on light land, if not already abandoned, was about to be so. It was too frequent for both Turnips and Clovers, and finding that he could hardly raise a Turnip at all on his farm, he (Mr. Pain) had during the last three or four years adopted a 6-course system, by doing which he found he had a little better chance. Upon what was considered good Turnip land in Bedfordshire, they could not grow Turnips as they used to do. Therefore they substituted Mangel, in the proportion of half Mangel and half Turnips; and at present the Mangels had succeeded admirably. They also grew Mangels on their cold lands, with Tares or something else as a substitute for Turnips on the fallows; thus Barley, Beans, Clover, Wheat, Beans and Wheat. When the land was good and well farmed no difficulty had been experienced in getting two crops of Wheat in six years.

Mr. Coussmaker (Farnham) could corroborate what Mr. Pain had said respecting the general failure of the Turnip crop. He had farmed chiefly heavy lands, and had done so for 20 years.

He had pursued a five-course system. The land, when he first entered upon it, had not been subjected to a Turnip crop; still it grew very good Turnips and Swedes, though he had some difficulty in feeding it off; but he found that he could not now produce the Turnip crops that he used to do. His rotation is a green crop suitable to the nature of the soil—Turnips, Mangel, Tares, or whatever that might be; next, a white corn crop, according to circumstances—Wheat, Barley, or Oats; then a seed crop, which he invariably followed by Beans, and the Bean crop by Wheat. He had gone on the five-course shift, but having only a portion of his land adapted to Turnips he had called upon that land, perhaps, oftener than he otherwise should. He had at length declined growing Turnips, and this year he had not grown any at all. He had substituted Globe Mangel for Swedes, and Rape for Early Turnips. A friend of his had recommended him to manure with lime, and he tried it a year or two ago; but he did not find that it was successful. The seed crop did not fail, but then, he only came upon that once in 10 years, whilst the Turnip crop, once in five years, he certainly could not grow. He does not use much artificial manure, their effects depending much on the weather. If they used a strong application of guano, and wet weather followed, it answered; but if the weather chanced to be dry, the results were rather the reverse. After all, he did not find that even for high farming there was anything upon which they could so well rely as good farmyard dung. He laid on all his manure on the Clover lea for Beans, and took his Wheat afterwards, and the result of that was invariably a better crop.

Mr. Parkinson (Newark) said previous to the introduction of guano that it was impossible to say of what bulk or weight they might grow Swede Turnips, for neither of them had been able to grow one beyond its power, and at that time they had Swede Turnips on their farms of 16 lbs. and 17 lbs., and not a hollow one amongst them.

Now, in his opinion, it was mainly to the introduction of guano that they owed the failure of the Turnip crop, though not perhaps entirely to it, yet to other artificial manure as well. But they could not "eat their cake and have it too;" they could not force the crop in the first stage of its growth, and expect to have the benefits to the end. So long as the cultivation of the Turnip was confined to the use of bones and farmyard manure, the Turnips never failed. At all events, until the year 1841, or a little later perhaps, he had never seen anything like a hollow Swede, though he had frequently seen them since: he had, therefore, come to the conclusion that it was chiefly owing to these forcing manures that there had been such a great deterioration in the Turnip crop. Mr. Wallis had denounced the four-course system in very proper terms. He advocated carrying the system rather further with regard to seeds than even Mr. Wallis had gone. He carried the seeds to three years. Always grazed. The system of rotation adopted was this:—1st Turnips, 2d Barley, 3d Red Clover mown, 4th Wheat, 5th Turnips, 6th Barley, 7th, 8th, and 9th, Seeds pastured, 10th Oats. The land was light land in Sherwood Forest, but the crops were so heavy, and produced with so small an expense in the cultivation, that it was found in practice to be a very profitable system. It was now being continued upon the same land, and he had no doubt that the present tenant found it to be equally profitable. With regard to Wheaten straw, he had derived great benefit from the use of salt. Upon one occasion, however, a neighbour of his applied guano to his Wheat crop, on the same description of soil as that to which he himself had applied salt, and the result was marvellous. His neighbour's Wheat was laid down, whilst his own was standing well up to the time of harvest, and he got a quarter per acre more, and that of a very superior sample. As to raising Wheat after Oats, he thought there was this difficulty—that the sample of Wheat could not be kept entirely free from the Oat.

Mr. W. Fisher Hobbs said that the discussion, so far as it had gone, clearly showed that the four-course system of cultivating mixed soils was not under any circumstances the most profitable.

It had often struck him that an oleaginous crop might be introduced with very great advantage; he meant such a crop as Rape-seed or other crop producing oil. At the present day we were dependent altogether upon foreign countries for the Colza oil with which our house lamps were supplied, and if unfortunately hostilities were to break out with France, the first effect would be to double, treble, or quadruple the price of Colza, or we might even have to do without it. In travelling through France at this season of the year he had seen, for two or three years past, immense tracts of land upon which they were growing those valuable crops of Rape-seed. They were found to be much more profitable than white crops; and he did think that occasionally, say once in eight or 10 years, an oleaginous crop, such as Rape, might be introduced in the farming of England with the best results. Independent of its intrinsic value as a crop, it tended very much to destroy insects; it altered the rotation; and, what was more, was in every way profitable. Under the system he pursued he had frequently three green crops in one season. That too was a change, the adoption of which enabled him to keep a larger number of sheep; and as far as he had carried it out it had proved eminently successful. As soon as the Wheat crop was off he sowed the land with Vetches and winter Oats mixed. Then, in the spring, when the sheep had fed off the Vetches, he ploughed the land, and drilled in about 3 cwts. of superphosphate and Rape seed per acre. The early Rape would be ready in eight or 10 weeks from the time of putting into the ground, and which came off in the last week of June or the 1st July, which in his climate was quite time enough to sow any common or even hybrid Turnips. If the land was at all tenacious, after the Rape had been fed off a first time he frequently horse-hoed in Mustard seed with the Rape which came up a second time, and then it was a most valuable food for a flock of ewes, especially during the time that the tups were turned into them. That too was a change in rotation; but he need not go further than to say, that they could not lay down any particular rule, and that the crops should be varied to suit differences in soil and climate. With reference to the management of hedges in this county (Essex), which was the driest in England, the hedges were, he believed, the worst; one reason of which was that the bank was the fence, and not the hedge. The bank was thrown up high, consequently it was very dry; and he did not think there was another county in England where the fences were so badly managed. In his opinion they ought to be planted as near the ground as possible, the same as in Lincolnshire. During the last 12 years he himself had planted a considerable quantity of new Quick, and he thought that it should be kept and trimmed in the form of a wedge, as recommended by Mr. Smythies. In respect of artificial manures, salt, &c., he had no doubt of the useful properties of salt; indeed he found it very beneficial. But so far as the stiffening of the straw was concerned, he believed that wide drilling had as much to do with that as salt. He had observed in the course of the present year, especially in places which had been visited by thunder storms, that when Wheat was drilled 10 or 12 inches wide the straw was much stiffer, and stood very much better; and that when with this they combined the use of salt mixed with guano the straw was still more stiffened. Guano for a Wheat crop, particularly upon heavy land, when mixed with salt, was the most beneficial manure he had ever applied, far surpassing any farmyard manure in the autumn. Within the last three or four years during the dry seasons, wherever he had applied guano to Mangel Wurzel, it had invariably been successful. In a climate where the rainfall did not exceed 16 inches he recommended superphosphate for the root crops instead of guano; but for Wheat crops upon heavy lands, which might be out of condition, he never found anything answer so well as guano and salt mixed. He had used it upon clay lands in the proportion of 2 cwt. of guano and 3 cwt. of salt.

Mr. Lyall (Lincolnshire) said, that in the district in which he resided there was a great deal of light land that, from his experience, could be more profitably farmed on the four-course system than any other.

It was less expensive, and produced a greater weight of green crops and corn; and a well approved maxim was—"Grow all you can; sell all you can; and at the least cost you can." As to artificial manures, in the Lincolnshire Wolds instead of their injuring the Turnip crop the farmers would scarcely know how to produce a Turnip without them. During the past year he had one field of 46 acres, which he heavily dressed with good cake manure, at the rate of seven or eight good Lincolnshire cart loads per acre. In addition to that he put on three loads of compost, mixed with 4 cwt. of nitrate of phosphate, through the drill. This mixture he divided into 10 heaps. The land was all manured alike, with the exception of two drill breadths between the heaps, which were left for the purpose of seeing what the effect would be without the nitro-phosphate. The result was, that where the nitrate was not used there was not half the growth of Turnips as where it had been used. He was but a young Mangel Wurzel grower, having commenced only four years back. But his progress was not slow. The first year he grew 4 acres; the next 8; the next 12, and this year 40. For Mangel he used 2 cwt. of guano, 3 cwt. of salt, and 3 cwt. of nitrate, in addition to farmyard dung; and he applied it through a drill. Mangel being sown early was not so liable to the depredations of the fly as the Swede Turnip, or so difficult to be kept clear of weeds. From his experience he should say that the root crop was the basis of all good husbandry; and that, if the land were properly prepared, suitable manures used, and a good selection of seeds made, they need not fear the Turnip crop degenerating, or becoming depreciated in this country.

Mr. Fell (Lincolnshire), having been asked by Mr. Parkinson to state what had been his experience of the use of artificial manures on the heaths and wolds of that county, said that for the last three or four years there had been complaints of the Turnips rotting. They got Turnips as usual. During the last season or two the fly had been troublesome, but to that they were always more or less subject. The great bulk of the farmers on the heaths and wolds, however, would say that for the last two or three years the Turnips were much more decayed, and gave way earlier than formerly.

Mr. Hooker had known Turnip lands where no superphosphate or other artificial manures had been used, and the crops had failed as well as where those manures had been used. On the stiff clay lands in his county they grew Wheat every second year. They sowed Tares, and after Tares Rape, and the Rape they fed off with sheep, with oilcake; they were thus enabled to get a very good crop of Wheat indeed. The following year they sowed Beans, and sometimes Rape. The method proved a very advantageous one.

Mr. Lyall had understood Mr. Wallis to say that the best mode of farming was to use good farmyard dung and bones for Turnips. (Mr. Wallis assented.) Now, last year, an experiment, much talked of at the time, was made upon the farm of his neighbour, Mr. Fowler, of Kirkhall, a tenant of Sir Montague Cholmeley. More than a dozen competitors entered their manures, and against the manufacturers of manures Mr. Fowler tried his stable manures and bones, and of all the 13 crops in the field that of Mr. Fowler was decided to be the worst.

The Chairman strongly advocated the use of salt on light lands, and moderately so on mixed lands. On the former he would apply it in the proportion of 4 or 5 cwt. per acre, mixed with guano; but on strong land he should hesitate doing so, inasmuch as it made the land still more sticky and adhesive.

Mr. Owen Wallis, in the course of a brief reply, said he did not believe that the use of artificial food or manure had been the cause of delay or failure in the Turnip crop; for some of the worst tubers he had seen were upon land cultivated with farmyard manure only. His own opinion was, that the decay was owing to some important principle being extracted from the soil by the repeated growth of the Turnip crop, and not to the manure. Indeed, he believed that the manures recently introduced had assisted materially in keeping the Turnip afloat. With regard to straw, his remark had applied not to Wheat but to Barley. He had no difficulty with the Wheat crop at all; but Barley he could not keep upon its legs, and everybody was complaining of the failure of their Barley both in respect of quantity and quality. Salt was no doubt an admirable application to light lands; he should be extremely shy, however, in applying it to clay soils. True, he had seen it thus applied; but so tenacious was the soil for years afterwards that little improvement could be made upon it, and the crops were almost a total failure for three or four years. So far as the Lincolnshire Wolds were concerned, they must not be compared with the old arable districts of the country. They had only recently been broken up, and within the memory of man had been heaths and rabbit warrens.

Reviews.

Journal of the Bath and West of England Society for the Encouragement of Agriculture, Arts, Manufactures, and Commerce. 1859.

The current volume of this excellent agricultural Journal contains reports of the Cardiff Show—a Statement of Personal Experience on a Farm—an Essay on the Sheep of the West of England—papers on Carts and Waggons—on Orchards—on Irrigation—on French Agriculture—on Farm Buildings for Small Farms—on the Barnstaple Exhibition (Arts and Manufactures)—an Elementary Introduction to the Principles and History of Art; and "The Note Book," including 26 shorter interesting notices and paragraphs—altogether an exceedingly satisfactory volume. There is in addition to these Papers a report of the Local Examination connected with the Universities, in which indeed, through Mr. Acland, the Bath and West of England Society had early taken a special interest. The volume also contains the report of a committee of the Society, to whom had been deputed the subject of Tenant right. The history of their progress towards certain conclusions is given in detail, and the conclusions themselves are as follows:—

"*Resolutions as Amended by the Committee on Jan.* 22, 1859, *being the Report of the Committee.*—1st. That it is desirable that terms of arrangement between landlord and tenant should be reduced to writing and signed before the entry of the tenant on the land. 2d. That the basis of such arrangements should be one of mutual security to landlord and tenant:—(*a*). In favour of the Tenant: Security that if he farms the estate up to the expiration of the tenancy, as if he were going to continue in the occupation, he shall not be called upon to leave capital beneficial to his successor, from which he has not had time to obtain a fair return himself, without being paid for it. (*b*). In favour of the Landlord: Security that, on the other hand, any permanent or temporary damage done to the farm by foulness or bad management, will be a charge against the outgoing tenant. 3d. That cultivation clauses should not needlessly restrict the tenant as to the succession of his crops. 4th. That such restrictive clauses as may be necessary should, as far as practicable, carry definite penalties, by way of additional rent, so as to be capable of enforcement without the necessity of resorting to legal proceedings to assess damages. 5th. That no claim for compensation on the ground of having made a farm clean be entertained. 6th. That ordinary claims on the part of the outgoing tenant be limited to crops in the ground and acts of husbandry, to be estimated according to their value to the incoming tenant. 7th. That in making arrangements between landlord and tenant, the usual "custom of the country" be specially barred. 8th. That claims for compensation for purchased manure or purchased food be matter of special agreement, under which compensation is not to be claimed, without previous definite notice given, and consent obtained from the landlord or his agent. 9th. That claims for any special outlay in permanent improvements—such as draining, fencing, road-making, or building—be in like manner made in the form of a definite sum, spread over a given number of years, after previous notice given and consent obtained, as in the last case."

Miscellaneous.

American Guano Islands.—The discovery of the extraordinary fertilising properties of guano is of such recent date, comparatively speaking, that few intelligent readers are unacquainted with its history. The marvellous growth of the guano trade, however, is scarcely realised by any one who has not given the subject a particular and minute examination. The waters of the Pacific Ocean have for the past few years been the theatre of discovery, towards which enterprising commercial men have sent their vessels upon voyages planned expressly for the development of new guano islands, and thus far the most extraordinary success has crowned their efforts. In these voyages of discovery, the lion's share has fortunately fallen to our own countrymen; whether owing to their superior energy of character or nor we will not pretend to say, although they have been participated in by vessels of various nationalities. True it is, that nothing that will compare with the Chincha Islands, on the coast of Peru, has yet been found, but for all this, there have been enough discoveries made to render the American ownership of guano islands an item of almost inconceivably great importance, while the number is increasing, constantly, through the continued researches that are being made by enterprising explorers. [The names of 48 guano islands now claimed by American citizens, as recorded at Washington, are then given.] To these may be added—Johnson's Island, owned by parties in this city, the discovery of which is believed to be due to the late W. H. Parker, who recently committed suicide at Washington; "French Frigate Shoals," which Lieutenant J. M. Brooke, of the U. S. surveying schooner Fennimore Cooper, discovered to be extensive guano islands; and another purporting to have been discovered recently by the schooner E. L. Frost, which sailed from Honolulu, the name and location of which is unknown. From this showing, it will be seen that the American guano islands are becoming of immense value and importance. A correspondent of the *New York Tribune*, to whom we are indebted for the above statement of the number of guano islands now claimed by Americans, understands that "these acquisitions are all to be surveyed and charted, and the quality and quantity of the guano thereon to be ascertained by competent analytical chemists and topographical engineers, and a report thereof made to congress at the earliest practicable period." Elide Island, on the Mexican coast, nominally owned by the Mexican government, is virtually owned by a company of American citizens, who are now engaged in shipping

large quantities of this valuable deposit. There are two kinds of guano, known among scientific men as the ammoniacal and mineral. In regard to the relative value of each, there exists quite a contrariety of opinion, "the former advocated by Lawes, Gilbert, Johnson, and others, and the latter by Liebig, Gale, and others, who claim that it is nutritious not stimulant, which is the great desideratum." The ammoniacal guano deposits, so far as known, are confined to the Chinchas, Ichaboe, and Elide islands, the others coming under the head of mineral. *Atlas California.*

Notices to Correspondents.

AGRICULTURAL SOCIETY: *R.* The Papers referred to in the paragraph at page 490 were published on the previous week at page 473.

BEANS: *J P.* Your parcel has been submitted to examination and will be reported on very soon. We have not yet seen any proof that the attack is anything more than local.

HOOSE IN CALVES: *W P.* A disease of the windpipe and air passages, in which are found a number of small worms which produce a troublesome cough, and is often fatal. The disease is a sign of poverty or want of tone in the system, and it may be caused by bad water or a short supply; the eggs of the worm are probably taken with the water. To prevent the disease give the calves some oilcake or Rape-cake during the winter in comfortable herds. To cure it give the following:—Linseed oil, 4 ozs.; oil of turpentine, 1 oz.; oil of carraways, 20 drops, to calves from six to 10 months old. To be repeated in a week. Three doses may be given. *W C S.*

POULTRY: *D H.* Give them a large run and plenty of green food; access to a Grass field would probably cure them.

PRICES OF GRAIN: *An Old Subscriber.* The following tables are taken from Morton's "New Farmer's Almanack" for 1856. It will answer your question as to the extent and frequency of variations in the price of Wheat during and since the Corn Law:—

Highest and lowest Monthly Average Prices of Wheat, from 1840 to 1854.

Year.	Highest.	Month.	Lowest.	Month.
1840	72*s.* 6*d.*	August	59*s.* 4*d.*	December
1841	73 4	..	61 3	January
1842	64 9	July	47 4	December
1843	59 7	August	46 2	April
1844	56 3	March	45 3	December
1845	58 10	November	45 3	March
1846	60 7	..	46 3	August
1847	92 10	June	52 3	December
1848	54 2	September	47 7	June
1849	48 3	July	39 3	December
1850	43 8	August	37 10	April
1851	42 11	July	35 11	October
1852	43 3	December	38 4	January
1853	72 5	November	44 2	April
1854	80 10	February	56 7	September
	61 7		46 10	

Year	Extent of Fluctuations.		Period of Fluctuation.
1840	Decline 13*s.* 2*d.*	August to December	4 months.
1841	Rise 12 1	January to August	7 ,,
1842	Decline 17 5	July to December	5 ,,
1843	Rise 13 5	April to August	4 ,,
1844	Decline 11 0	March to December	9 ,,
1845	Rise 13 7	March to November	8 ,,
1846	Rise 14 4	August to November	3 ,,
1847	Decline 40 7	June to December	6 ,,
1848	Rise 6 7	June to September	3 ,,
1849	Decline 9 0	July to December	5 ,,
1850	Rise 5 10	April to August	4 ,,
1851	Decline 7 0	July to October	3 ,,
1852	Rise 4 11	January to December	11 ,,
1853	Rise 28 3	May to November	6 ,,
1854	Decline 24 3	February to Septembr	7 ,,
	Average 18 0	Average	5½ months.

Year.	Annual Average Prices per Imperial quarter.		
	Wheat.	Barley.	Oats.
1813	109*s.* 9*d.*	58*s.* 6*d.*	38*s.* 6*d.*
1814	74 4	37 4	25 8
1815	65 7	30 3	23 7
1816	78 6	33 11	27 2
1817	96 11	49 4	32 5
1818	86 3	53 10	32 5
1819	74 6	45 9	28 2
1820	67 10	33 10	24 2
1821	56 1	26 0	19 6
1822	44 7	21 10	18 1
1823	53 4	31 6	22 11
1824	63 11	36 4	24 10
1825	68 6	40 0	25 8
1826	58 8	34 4	26 8
1827	58 6	37 7	28 2
1828	60 5	32 10	22 6
1829	66 3	32 6	22 9
1830	64 3	32 7	24 5
1831	66 4	38 0	25 4
1832	58 8	33 1	20 5
1833	52 11	27 6	18 5
1834	46 2	29 0	20 11
1835	39 4	29 11	22 0
1836	48 6	32 10	23 1
1837	55 10	30 4	23 1
1838	64 7	31 5	22 5
1839	70 8	39 6	23 11
1840	66 4	36 5	25 8
1841	64 4	32 10	22 5
1842	57 3	27 6	19 6
1843	50 1	29 6	18 4
1844	51 3	33 8	20 7
1845	50 10	31 8	22 6
1846	54 8	32 8	22 8
1847	69 9	44 2	28 5
1848	50 6	31 6	21 6
1849	44 3	27 9	17 6
1850	40 3	23 6	16 5
1851	48 6	24 9	18 7
1852	40 9	28 6	19 1
1853	53 3	33 2	21 0
1854	72 5	36 0	27 11

WARTY UDDER: *W P.* The warts should be removed by knife and cautery, or ligature when the animal is not in milk. *W C S.*

COTTAM & COMPY., Engineers, Founders, &c.,

2, WINSLEY STREET, LONDON, W.



A SHOW ROOM DEVOTED ENTIRELY TO ARTICLES OF HORTICULTURE.

THE NEW ILLUSTRATED CATALOGUE UPON APPLICATION.

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	,, Syringes	Garden Bordering
Hot-water Apparatus	Ornamental Wire Work	Hurdles	,, Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

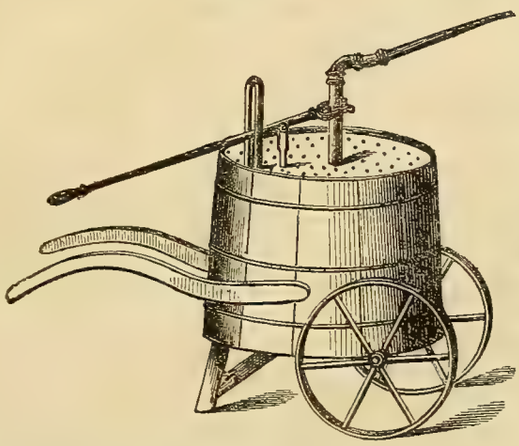
Iron Hurdles, Strained Wire Fencing, Game Netting, &c.

Every description of Plain, Ornamental, Cast and Wrought Iron, and Wire Work.

EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

N.B. COTTAM AND COY. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

DEANE & COMPANY'S HORTICULTURAL TOOLS.



GARDEN ENGINES, Galvanized Iron
Prices 55s., 63s., 105s., 120s.
Ditto, Wood, 84s,, 105s, 130s.
Flower Stands, 4s. 6d. each.
Cast Iron Ornamental ditto, to hold 7 Vases, 27s.
Deane's Mowing Machines, with Boyd's Patented Improvements, £4 17s. 6d; £6 6s. 0d., £6 17s. 6d., £7 7s. 0d.
Green House Syringes, 8s., 10s., 18s. 6d
Garden Rollers, £1 14s. 6d., £2., £2 12s.
£3 3s., £3 18s., £4 13s., £5 12s., £7 10s.
Garden Stools, 4s. 6d.
Garden Chairs, from 30s.
Boyd's Self-adjusting Scythe, 10s. 6d.
Wire Work, 18in. 4d. per yard run.

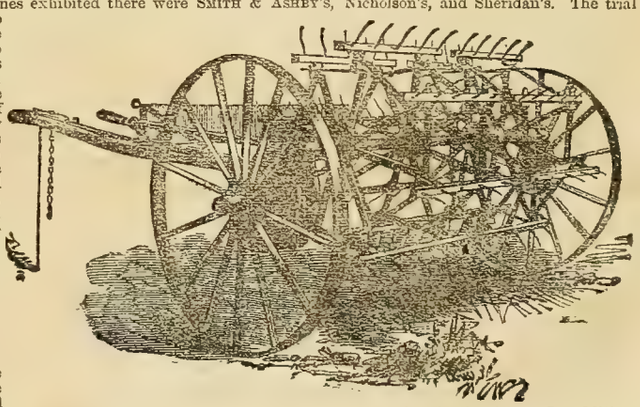
Every Implement for Garden use on the lowest Terms.

DEANES:—Opening to the Monument, London Bridge.

SMITH & ASHBY,
AGRICULTURAL ENGINEERS, STAMFORD.

HAYMAKING MACHINES.

THE last great trial of Haymakers took place at Londonderry, before the Council of the Royal Society of Ireland, in August last. The Machines exhibited there were SMITH & ASHBY'S, Nicholson's, and Sheridan's. The trial land was full of deep broad grips, the crop was heavy green Clover, upon which the Machines selected for trial were set to work. SMITH & ASHBY'S Machine did its work admirably, without a single failure, and was the only one that could clear the grips without clogging and flying out of gear. The Prize of 5*l.* was unanimously awarded to this Machine. This makes Five First-class Prizes that have been awarded to SMITH & ASHBY'S Machine since the Salisbury Meeting of the Royal Agricultural Society of England (1857), being every Prize offered since that Show, and in addition to the 31 First Prizes announced up to last season.



Price £15 15s.

SMITH AND ASHBY,
AGRICULTURAL ENGINEERS, Stamford.

HORSE RAKES.

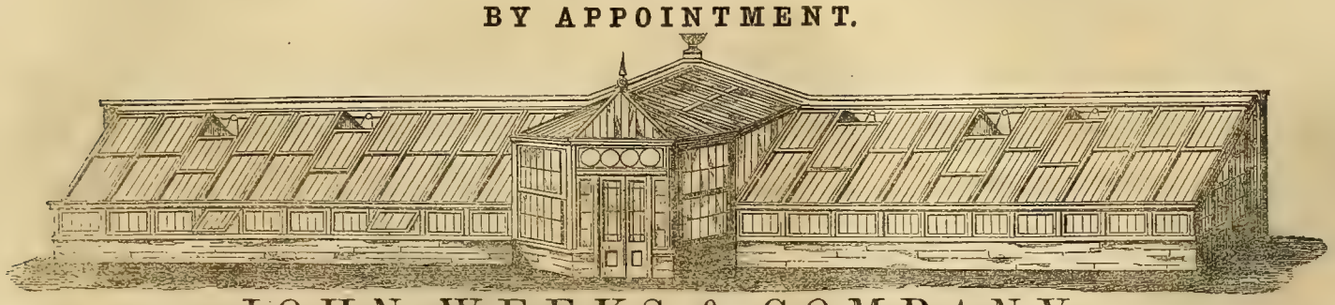
SMITH & ASHBY'S celebrated Horse Rake has lately been greatly improved by the introduction of their new Patent Steel Semi-angular Teeth, which are warranted not to break, and work much better than those of a circular form. In addition to the Twenty-six Prizes announced up to last season, SMITH & ASHBY'S Rake took the First Prize of the Royal North Lancashire Society at Ulverstone in September last. The same Rake took the First Prize of the Royal Agricultural Society of Ireland two years in succession.

Price, full size, with improved Iron Teeth, £7 10s. Steel, £8; Extra large Size, £10.

☞ *For full particulars see* S. & A.'s *Catalogue, posted free on application.*

HORTICULTURAL BUILDING & HEATING BY HOT WATER.

BY APPOINTMENT.



JOHN WEEKS & COMPANY,

KING'S ROAD, CHELSEA, LONDON.

HORTICULTURAL BUILDERS AND HOT-WATER APPARATUS MANUFACTURERS, ENGINEERS, AND IRON FOUNDERS.

PLANS, ESTIMATES, & ILLUSTRATED CATALOGUES FREE ON APPLICATION.

H. M'CALLA

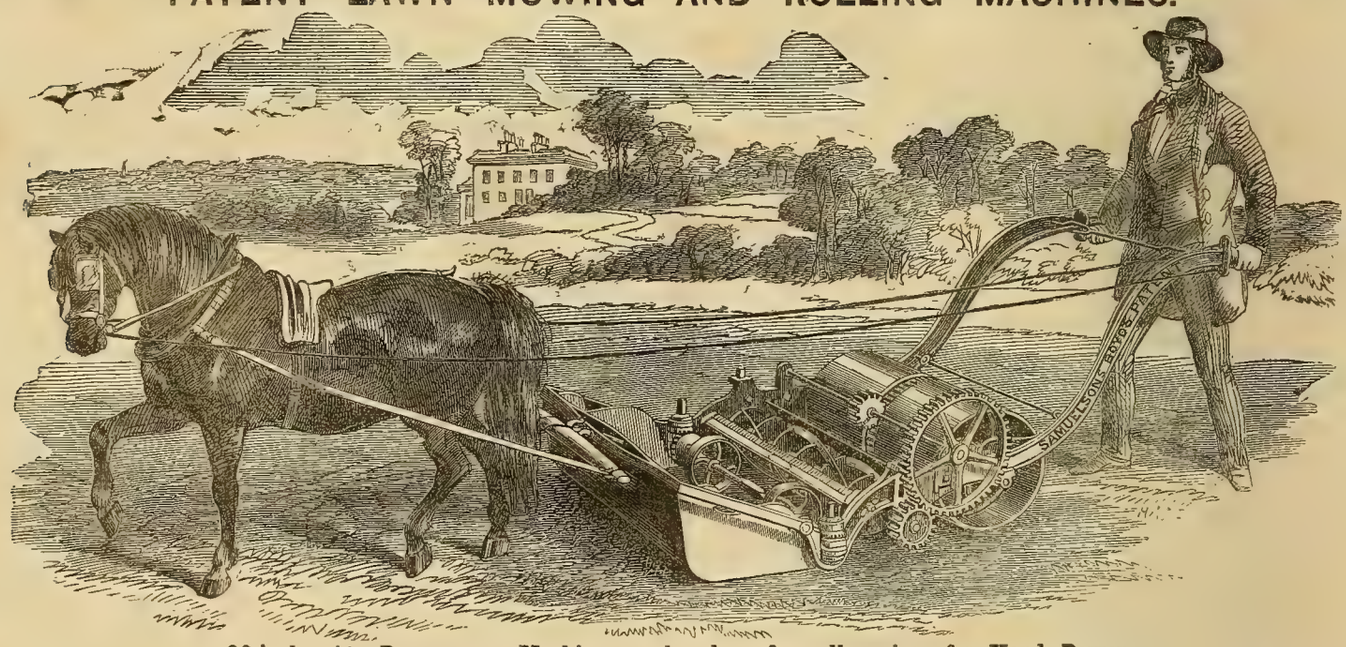
(LATE WITH MESSRS. J. WEEKS & CO., HORTICULTURAL BUILDERS, &c., KING'S ROAD, CHELSEA),

HORTICULTURAL BUILDER AND HOT-WATER APPARATUS MANUFACTURER.

H. M'C. will furnish PLANS and ESTIMATES free of any charge whatever, or will supply WORKING DRAWINGS at a trifling cost for any Gentleman wishing to construct his own, thereby effecting a great saving. H. M'C., being favoured with any commands, will guarantee both Materials and Workmanship to be of the first class (having engaged superior artisans of all trades), **and 20 per cent. lower than any other establishment.**

OFFICE: 7, UPPER CHEYNE ROW, KING'S ROAD, CHELSEA.

PATENT LAWN MOWING AND ROLLING MACHINES.



30-inch wide Pony-power Machine, made also of smaller sizes for Hand Power.

SAMUELSON'S LAWN MOWING MACHINES,

WITH BOYD'S PATENT IMPROVEMENTS.

"Doing the work of five or six men."—The Times, September 20, 1858.

The following PRICES include the Carriage to any Railway Station in England:—

		With Boyd and Samuelson's Patent Cleaning, Sharpening, and Adjusting Apparatus.	
9 inches wide, for very narrow borders, without registered wheels	£2 10 0		
12 inches wide	4 5 0	£4 17 6	Case included.
16 inches wide, with registered arrangement (for one man)	5 10 0	6 6 0	
19 inches wide ditto (for one man)	5 17 6	6 17 6	
22 inches wide ditto (for man and boy)	6 0 0	7 7 0	
22 inches wide, ditto for ditto, and also fitted with draught links for a pony and a man to work it	6 15 0	8 2 6	
25 inches wide, ditto	9 0 0	11 11 0	
30 inches wide, ditto (for man and pony)	11 10 0	13 13 0	

Box of Tools, Oil Can, and other requisites, sent with each Machine, 5*s*.

Some thousands of these Machines are now in successful operation on the Lawns of Royalty, the Nobility, and Gentry of the United Kingdom and the Continent of Europe, and are pronounced SUPERIOR to *any other* for lightness of draught, efficiency, and durability. The demand for them is *yearly increasing—the number supplied by* Mr. SAMUELSON *during the years* 1856, 1857, *and* 1858 *being more than* 2100. Testimonials are continually being received from gentlemen having them in daily use, who speak in the highest terms of their efficiency.

These are the only Machines that will cut wet as well as dry Grass without clogging the knives.

Orders for 1859 should be sent at once to insure certain delivery and to prevent disappointment.

Copies of Testimonials will be forwarded post free on application to

B. SAMUELSON, 76, Cannon Street West, City, London;

TO THE MANUFACTORY, BRITANNIA WORKS, BANBURY, OXON;

or to Messrs. DEANE & CO., London Bridge; or any respectable Ironmonger or Seedsman in the Kingdom.

LOOMES' GARDEN EDGING —CABLE PATTERN.

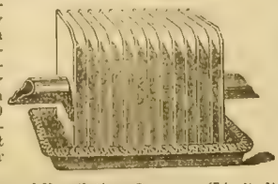


Price at Peterborough.	In London.
Straight .. .. .. 5*d.* — 6*d.* per yard	
Bends .. .. .. 6*d.* — 7*d.* ,,	
If fitted to plans .. 7*d.* — 8*d.* ,,	

LOOMES & Co, Manufacturers, Whittlesea, near Peterborough.

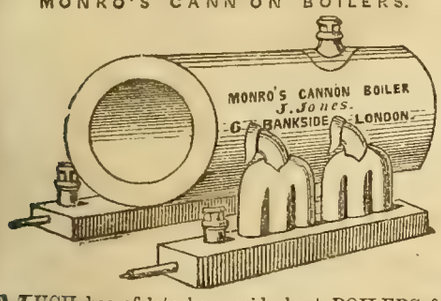
IMPROVED HOT-WATER PIPE.

THE HORTICULTURIST will find herein an inexpensive instrument of new and very important powers. An atmosphere may be produced at will either perfectly dry, partially damp, or saturated with moisture. A space of 10 inches by 12 inches contains the power of 25 feet of 4-inch pipe and other numerous advantages.



The London Warming and Ventilating Company (Limited), 26, Great George Street, Westminster, S.W.

MONRO'S CANNON BOILERS.

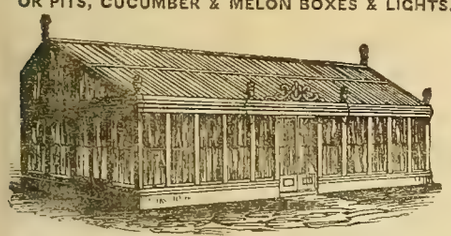


MUCH has of late been said about BOILERS for Heating by Hot Water, but these Boilers have now proved themselves to be the best at present invented. They are adapted for heating every description of building, and are made of various sizes. The Price of the

24-inch Cast Iron is	.. ..	.. £5 10*s.* 0*d.*	each
24-inch Wrought ditto	.. ..	.. 6 10 0	,,
36-inch Cast ditto	.. ..	.. 8 0 0	,,
36-inch Wrought ditto	.. ..	.. 8 10 0	,,

References to Gentlemen and Nurserymen where these Boilers are now at work. The Cannon Boilers are now kept in stock, and are to be had only of J. JONES, 6, Bankside. Also, every description of Saddle and Cylinder Boilers. Hot Water Pipes and Connections at prices lower than those of any other house in London. Estimates for Hot-water Apparatus erected complete in any part of the country, and an Illustrated Catalogue on application to J. JONES, 6, Bankside, Southwark, London

HOTHOUSES, CONSERVATORIES, FRAMES & LIGHTS OR PITS, CUCUMBER & MELON BOXES & LIGHTS.



JAMES WATTS AND CO., HOTHOUSE BUILDER, 8, Claremont Place, Old Kent Road, London.

Green and Hothouses, 9, 10, 11, 12, 13, and 14 feet wide, any length, from 16 to 100 feet. Frames and Lights for Pits, 6ft. 6in., 7 ft., 7 ft. 6 in., 8 ft., and 8 ft. 6 in. wide, any length, from 12 to 100 feet. Upwards of 200 Cucumber and Melon Boxes and Lights, from 4 ft. by 3 to 10 ft. 6 in. by 5 ft. 6 in., kept ready, glazed with stout sheet glass, painted four times, complete, ready for immediate use, all made of best material, packed and sent to all parts of the kingdom.—References may be had to the Nobility, Gentry, and the Trade in most of the counties in England. Horticultural Buildings of every description heated on the most approved and economical principles.

BEE-HIVES.

PRIZE MEDAL AWARDED TO G. N. & SONS, FOR BEE-HIVES AND HONEY, AT THE PARIS EXPOSITION OF 1855.

NEIGHBOUR'S IMPROVED COTTAGE BEE-HIVE, as originally introduced by GEORGE NEIGHBOUR & SONS, with all the recent improvements, glasses, and thermometer, price 35*s.*, securely packed for the country.



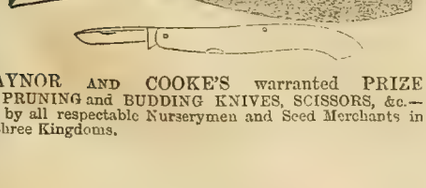
This unique Hive has met with universal commendation, and may be worked with safety, humanity, and profit by the most timid; its arrangements are so perfect that the Honey may be taken at any time of the gathering season without at all injuring the Bees.

Early applications addressed to GEORGE NEIGHBOUR & SONS, 127, High Holborn, or 149, Regent Street, London, will receive prompt attention.

Their newly-arranged CATALOGUE of other Improved Hives with Drawings and Prices, sent on receipt of two stamps.

AGENTS.—Liverpool: JAMES CUTHBERT, 12, Clayton Square.
Manchester: W. WILSON, 50, King Street.
Birmingham: J. H. COTTRELL, 15, Bull Ring.
Dublin: J. EDMONDSON & Co., 61, Dame Street.

PAXTON WORKS, SHEFFIELD, ESTABLISHED 1738.



SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.—Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

JOHN WARNER AND SONS, Crescent, Jewin Street, London.—GALVANISED IRON TUB GARDEN ENGINE, with WARNER'S Registered Spreader, is strongly recommended, for durability and low price, viz., 2*l.* 19*s.*, to hold 10 gallons.



Larger sizes in wood or iron, viz., 14 gallons, 24 gallons, and 35 gallons. May be obtained of any Ironmonger or Plumber in town or country, or of the patentees and Manufacturers, as also Machinery of all kinds for raising Water from any depth to any height by Steam, Horse, or Manual Power. Prices sent on application.

Syringes of various constructions and sizes from 9*s.* upwards. Metallic String from 5*d.* to 1*s.* 3*d.* per lb.

GARDEN ENGINES AND SYRINGES.

J. TYLOR AND SONS, Warwick Lane, Newgate Street, London, E.C., beg to call attention to their very superior manufacture of GARDEN ENGINES and SYRINGES.

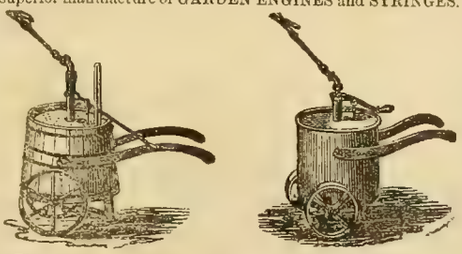


Fig. 598. J. TYLOR & SONS' BARROW GARDEN ENGINE in best well painted Oak tub, fitted with J. TYLOR & SONS' Improved Brass Pump, Universal Joint, and Registered Spreader, which answers the purpose of the separate rose, fan, and jet.

CONTENTS OF TUB:—

10 gallons	15 gallons	28 gallons
£4 10 0	£5 10 0	£6 18 0

Fig. 599. do. TINNED IRON TUB.

CONTENTS OF TUB:—

8 gallons	12 gallons	16 gallons	24 gallons	30 gallons
£2 15	£3 5	£4	£5	£5 18



Fig. 618. No. 1. REGISTERED SYRINGE, with India-rubber suction tube, one rose and jet .. .. £1 5 each.
No. 2. Ditto ditto 1 1 ,,
Telescope Branch Pipe for ditto .. .. 0 10 ,,

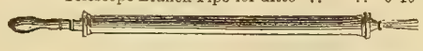


Fig. 619. GARDEN SYRINGE, with one rose and jet, 12*s.* 6*d.* each
,, 620. Ditto ditto 11*s.* 6*d.* ,,
,, 621. Ditto ditto 10*s.* 6*d.* ,,
,, 622. LADIES' GARDEN SYRINGE, with one rose & jet, 8*s.*

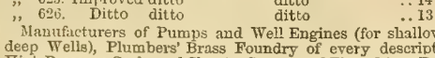
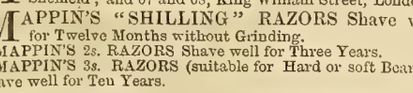


Fig. 623. READ'S SYRINGE, with two roses and one jet, 18*s.* 6*d.*
,, 624. READ'S SYRINGE, with one rose and jet .. 16 6
,, 625. Improved ditto ditto .. 14 6
,, 626. Ditto ditto ditto .. 13 0

Manufacturers of Pumps and Well Engines (for shallow or deep Wells), Plumbers' Brass Foundry of every description. High Pressure Cocks and Closets, Copper and Tinned-iron Baths, Garden and Fire Engines, Lamps of every description, Copper Goods, &c Estimates given for Hot-water and Bath Apparatus.

MAPPIN'S PRUNING KNIVES IN EVERY VARIETY.
WARRANTED GOOD BY THE MAKERS.



MAPPIN BROTHERS, Queen's Cutlery Works Sheffield; and 67 and 68, King William Street, London.

MAPPIN'S "SHILLING" RAZORS Shave well for Twelve Months without Grinding.

MAPPIN'S 2*s.* RAZORS Shave well for Three Years.

MAPPIN'S 3*s.* RAZORS (suitable for Hard or soft Beards,) Shave well for Ten Years.

MAPPIN'S SUPERIOR TABLE-KNIVES maintain their unrivalled Superiority—handles cannot possibly become loose—the blades are all of the very first quality, being their own Sheffield manufacture.

	Tble. Kns.	Dst. Kns.	Carvers.
Ivory 3⅞ in. Handle, balanced,	20*s.* p. doz.;	16*s.* p. doz.;	6*s.* p. pair
Do. 4 in. do. ..	25*s.* ,,	18*s.* ,,	9*s.* ,,

MAPPIN'S SILVER-PLATED DESSERT KNIVES and FORKS, in Mahogany Cases.

12 Pairs Knives and Forks, Ivory Handles, in Case..		80*s.*
12	Do. Pearl Handles, do. ..	130*s.*
12	Do. Silver-Plated Handles, do. ..	80*s.*

MAPPIN'S ELECTRO-SILVER PLATE.—MAPPIN BROTHERS, Manufacturers by Special Appointment to the Queen, are the only Sheffield makers who supply the consumers in London. Their LONDON SHOW ROOMS, 67 and 68, King William Street, London Bridge, contain by far the largest STOCK of ELECTRO-SILVER PLATE in the World, which is transmitted direct from their Manufactory, Queen's Cutlery Works, Sheffield.

	Fiddle Pattern.	Double Thread.	King's Pattern.
12 Table Forks, best quality	£1 16 0	£2 14 0	£3 0
12 Table Spoons, best quality	1 16 0	2 14 0	3 0
12 Dessert Forks, best quality	1 7 0	2 0 0	2 4
12 Dessert Spoons, best quality	1 7 0	2 0 0	2 4
12 Tea Spoons, best quality	0 16 0	1 4 0	1 7

Messrs. MAPPIN BROTHERS respectfully invite buyers to inspect their unprecedented display, which, for beauty of design, exquisite workmanship, and novelty, stands unrivalled. Their illustrated Catalogue, which is continually receiving addition of New Designs, sent per post on receipt of 12 stamps.—MAPPIN BROTHERS, 67 and 68, King William Street, London Bridge; Manufactory, Queen's Cutlery Works, Sheffield.

BOYD'S SELF-ADJUSTING SCYTHES are the cheapest and best, and being sold adjusted, are ready for immediate use. They can be regulated in an instant to suit any person, and to cut any crop without change of Scythes. For Amateur Gardeners they are very desirable, as they afford a healthy and interesting exercise They have stood the test of public opinion for seven years, and for excellence, ease, economy, and durability, are highly recommended. Upwards of 50,000 of them have been sold. To be had of every Ironmonger, Hardwareman, and Seedsman in the United Kingdom, and wholesale of the Sole Licensed Makers, WM. DRAY & Co., at their New Agricultural Implement Warehouses, Adelaide Place, London Bridge.

MICROSCOPES.

J. AMADIO'S BOTANICAL MICROSCOPES, packed in mahogany case, with three powers, condenser, pincers, and two slides, will show the animalculæ in water. Price 18*s.* 6*d.*—Address JOSEPH AMADIO, 7, Throgmorton Street. A large assortment of Achromatic Microscopes.

"It is marvellously cheap, and will do everything which the lover of nature can wish it to accomplish either at home or in the open air."—*The Field*, June 6, 1857.

Just published, an Illustrated Catalogue, containing the names of 1000 Microscopic objects, post free for 4 stamps.

SURREY.—A COMPACT FARM, WITH RIGHT OF SHOOTING IN A SPORTING PART OF THE COUNTY, 14 MILES FROM TOWN, WITH RAILWAY STATION ON TWO LINES AT 2 AND 3 MILES DISTANCE, RESPECTIVELY.

TO BE LET, a well cultivated FARM as above, containing 110 Acres of good Arable and Meadow Land, in a Ring Fence, with an old fashioned comfortable Farm Cottage, Coach-house, and Stable, and all needful Farm buildings. Worthy the attention of a gentleman wishing for a light agricultural occupation, with some sporting; less than one hour distant from town.—Apply to JOHN DAWSON & SON, Auctioneers and Estate Agents, Kingston; and Marlborough Chambers, 49, Pall Mall.

TO BE SOLD, a BUSINESS in the SEED and PLANT TRADE, doing a good ready money business, in one of the best situations in London. Sum required about 200*l.* for Stock, Fixtures, and goodwill.—Apply Y. Z., Messrs. Dando & Todhunter, 22, Gresham Street, City.

TO GARDENERS AND FLORISTS.

TO BE LET, A SEED AND FLORIST BUSINESS, with Jobbing attached, in the best neighbourhood, three miles west of London, with Cottage, Show House, Growing House, &c. Coming in for goodwill, Growing House, Garden Tools, Plants, &c, about 50*l.*; rent, 32*l.*—Direct A. B., 22, Albert Terrace, Knightsbridge.

TO BE LET, BRISTOL NURSERY GROUNDS, Kemp Town, Brighton. These Gardens are now to Let for occupation with immediate possession.—Any person desirous of treating for the same may obtain particulars and permission to view the grounds on application to Mr. R. W. LUCAS, 20, Great Marlborough Street, London, W.; and of Mr. A. CHANDLER, Horticultural Valuer, 28, Priory Road, Wandsworth Road, S.

Sales by Auction.

ORCHIDS.

MR. J. C. STEVENS is instructed by the executors of the late Mr. Thomas Jackson, to announce for Sale by Auction at his Great Room, 38, King Street, Covent Garden, on TUESDAY, June 21, at half-past 12 o'Clock precisely, the valuable collection of ORCHIDS from the Kingston Nursery, in fine health, and including the following:—

Aerides Fieldingi	Odontoglossum gloriosum
,, Lindleyana	Oncidium Barkeri
,, quinquevulnerum	,, sessile
Cattleya Lemoni	Phalænopsis amabilis
,, Bootbi	,, grandiflora
,, elegans	Saccolabium ampullaceum
Cymbidium eburneum	,, guttatum giganteum
Cypripedium birsutissimum	Tricophilia suavis
Dendrobium anosmum	,, sp. crispa?
,, Farmeri roseum	Vanda helvola
Lælia grandis	,, Lowi
,, purpurata	,, suavis (Veitch's)

And numerous other species well deserving the attention of growers.

May be viewed on the morning of Sale, and Catalogues had of Mr. J. C. STEVENS, 38, King Street, Covent Garden.

GLOUCESTERSHIRE.

A SUPERIOR INVESTMENT.—A RICH DAIRY FARM OF 257 A. 2 R. 24 P., LET AT 340*l.* PER ANNUM.

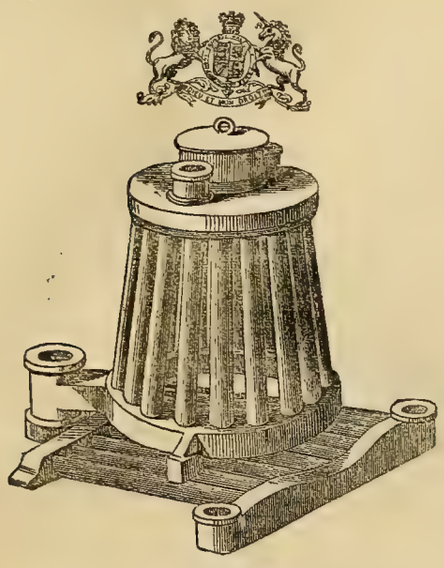
MESSRS. DAVIS & VIGERS are instructed to Sell by Auction, on TUESDAY, July 5, at 12 o'Clock, at Garraway's Coffee House, by order of the proprietor, who will be leaving England in August, the HAROLD FIELD AND OLD ABBEY FREEHOLD FARM, situate in the parish of Ringswood, near Wotton-under-Edge, containing 257 a. 2 r. 24 p., all of which, except about 12 acres, is pasture, provided with a suitable Farm House, Cowman's Cottage, Homestead, and accommodation for a large Dairy of Cows, the Buildings having lately been put into a good state of repair. It is Tithe free and Land Tax redeemed, and only wants draining to farther develope its great natural fertility. It is let to Mr. Thos. Witts, a yearly tenant, at 340*l.* a year, whose family have occupied it for several generations. The Farm is situated about 2 miles from the Wickwar station, and 3 miles from the Charfield station on the Bristol and Birmingham Railway, and about 2 miles from the market towns of Wotton-under-Edge and Wickwar, and near to three large Monthly Cheese Markets.—May be viewed by permission of the tenant, and Particulars and Plans had at the Swan, Wotton-under-Edge; the New Inn, Wickwar; the Bell Hotel, Gloucester; Queen's Hotel, Cheltenham; the White Lion Hotel, Bristol; Messrs. VIZARD & SHUTE, Solicitors, Dursley; and in London of Messrs. VIZARD & GARNHAM, Solicitors, 55, Lincoln's Inn Fields; the Estate Exchange; and GARRAWAY'S, Change Alley, Cornhill; and of the Auctioneers, 3, Frederick's Place, Old Jewry, E.C.

LANDS OF CUNNING PARK FOR SALE.

TO BE SOLD, by Public Roup, within the King's Arms Hotel, Ayr, on TUESDAY, July 5, at 2 o'Clock afternoon, the well-known property of CUNNING PARK, extending to 27 acres, 3 roods, 10 poles, imperial or thereby, beautifully situated at the confluence of the river Doon with the Sea, about 1¼ mile from the Town of Ayr. The Land is in the highest possible state of cultivation, and has been managed for many years by the proprietor upon the most approved system of modern husbandry. There is a good House, and excellent Offices and Farm Buildings. The lands are laid throughout with Pipes for the distribution of Liquid Manure.

ABERCROMBY COTTAGE, a pleasant Sea-bathing Residence, is situated on the property, and will be included in the sale of Cunning Park, or exposed as a separate lot to suit purchasers.—For further particulars apply to the Liquidators of the Western Bank at Glasgow; Messrs. BANNATYNE'S & KIRKWOOD, Writers, there; WILLIAM KILPATRICK, Writer, in Ayr; or CHARLES G. SHAW, Writer, County Buildings, Ayr, in whose hands are the Title Deeds, Articles of Roup, and a Plan of the property.—Ayr, June 18.

By Her Majesty's Royal Letters Patent.



ORMSON'S

PATENT JOINTLESS TUBULAR BOILER.

TESTIMONIALS.

"SIR,—I feel much pleasure in bearing testimony to the efficiency of your Patent Jointless Tubular Boiler which you have erected for Baron de Rothschild, at Gunnersbury Park, and from the number of hothouses and great extent of pipe you have heated from one boiler, I now feel confident it is decidedly the most powerful, economical, and safe boiler yet invented. Having had the working of the Wrought-iron Arch, and Cast-iron Corrugated Arch Boilers in these gardens, I have no hesitation in stating that your boiler is infinitely superior to either of them in every respect.—Yours truly,

"WILLIAM FORSYTH.

"The Gardens, Gunnersbury Park, Acton, Middlesex."

"SIR,—It is with much satisfaction I give my testimony in favour of your admirable Patent Jointless Tubular Boiler, being attached to upwards of 3000 feet of 4-inch pipe, and doing the work of four fires, and consumes little more fuel than was required for one of the fires previous to the adoption of your boiler. We can command any amount of heat, the boiler being so powerful I am confident it would with ease heat as much more. Altogether we have realised much more economy in fuel and attendance than we at first anticipated. In addition to the great power and economy of your boiler it possesses another most important advantage over all other tubular boilers which have come under my notice, in the fact of its being jointless, consequently quite safe from all danger of leakage. On referring to my coal account I find that I now only use one where I formerly used five waggon loads of coal for the arched boilers which you took out.—I am, Sir, yours respectfully, "J. FRASER.

"The Gardens, Luton Hoo, Bedfordshire.'

"Mr. Henry Ormson, Sir,—I beg to inform you of my entire satisfaction with your Hot-water Apparatus in general, and your Patent Jointless Tubular Boiler in particular, as fitted up in the new range of Hothouses you have recently erected for Lord Powerscourt. The Boilers I admire for three excellent reasons; they are simple in construction, effective in working, and I feel assured, from the calculation I have already made, a very great saving of fuel will be the consequence from using these Boilers. You will permit me to add if I had formed a contrary opinion of the merits of these Boilers I should have been candid enough to have told you so, but in justice to you I must distinctly state I consider them a great boon to the horticultural world.—I am, Sir, yours truly, "ALEXANDER ROBERTSON.

"The Gardens, Powerscourt, Ireland."

"SIR,—I have much pleasure in testifying to the excellent working of your Patent Jointless Tubular Boiler; though a small one it does the work of five fires, and is a great saving of fuel and labour.—I am, Sir, yours respectfully,

"Holland House Gardens, Kensington." "J. SCOBIE.

"SIR,—In regard to your Patent Jointless Tubular Boiler, it answers admirably the purpose for which it was erected. I consider it the most economical and powerful Boiler ever introduced, and am confident it will not fail to give general satisfaction.—I am, yours most respectfully,

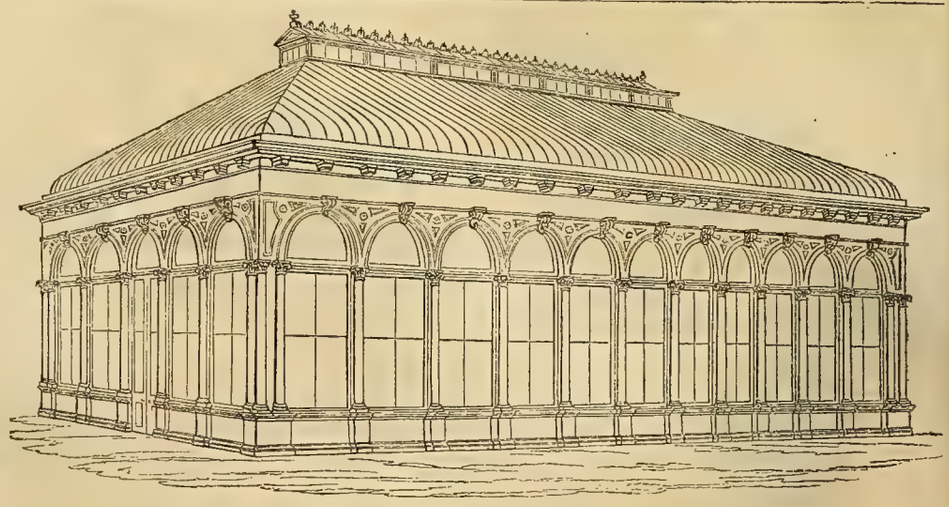
"JOHN LAUDER.

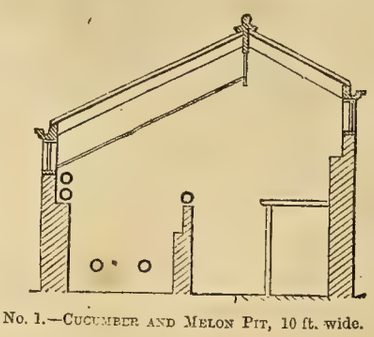
"The Gardens, Witley Court, Worcestershire."

"SIR,—I have much pleasure in testifying to the efficiency of your simple but most powerful Patent Jointless Tubular Boilers. The two small boilers you put up here are doing the work of six fires, with the addition of a range of lofty coach-houses which were afterwards attached. The amount of fuel is little more, and the attention much less, than was required for one fire before these boilers were put up; there is not the least strain on them, and I am confident if required would heat a considerably greater amount of piping. I must also add that the whole of the hot-water apparatus works satisfactory, especially the ventilating boxes you put up in the Fruiting Pine stove, which I consider a great acquisition, supplying at all seasons a constant stream of pure warm air to the plants, which are in consequence sturdy and in the most robust health. —I am, Sir, yours respectfully, "JOHN CLARK.

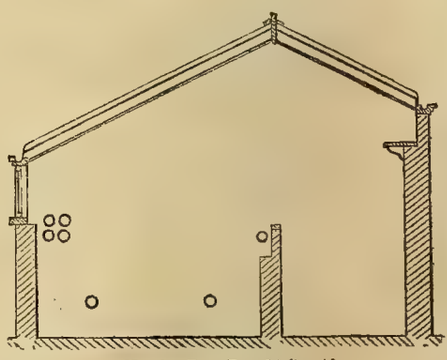
"The Gardens, Cobham Hall, Gravesend, Kent."

Ormson's Patent Jointless Tubular Boilers may be seen in successful operation at Mr. Veitch's, Royal Exotic Nursery, King's Road, Chelsea.

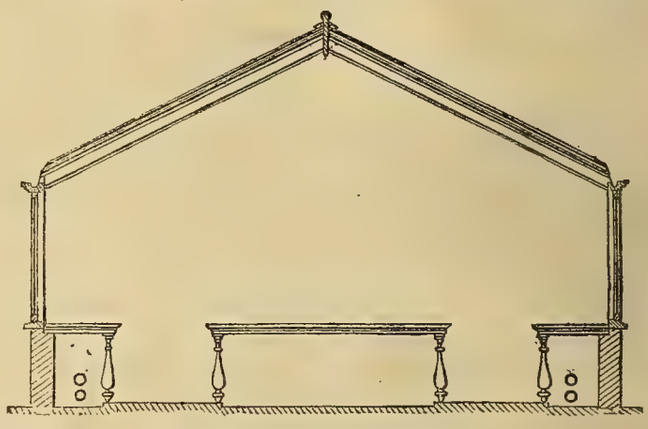




No. 1.—CUCUMBER AND MELON PIT, 10 ft. wide.



No. 2.—PINE PIT, 14 ft. wide.



No. 6.—GREENHOUSE, from 18 to 20 ft. wide.

HORTICULTURAL BUILDINGS MANUFACTURED BY STEAM POWER MACHINERY.

BEST MATERIALS AND LOWEST PRICES.

HENRY ORMSON,

HORTICULTURAL BUILDER & HOT-WATER APPARATUS MANUFACTURER,

STANLEY BRIDGE, KING'S ROAD, CHELSEA, LONDON.

Deeply grateful for the very liberal and kind patronage bestowed upon him, begs most respectfully to inform the Nobility, Gentry, Nurserymen, &c., that it being his determination to spare no pains to merit a continuance of their favours, and that he may be enabled to execute his extensive and increasing orders punctually, and at the lowest possible cost (agreeably with the best Materials and Workmanship), he has erected a most complete set of Steam Power Machines, peculiarly adapted for the purposes of his Trade.

PARTIES DESIRING INFORMATION as to prices, &c., will, by referring to the above sections, receive immediate attention.

PLANS, SPECIFICATIONS, and ESTIMATES for plain and inexpensive practical Structures, and for the most elaborate Architectural Erections, either in Wood or Iron, forwarded on application.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, and FREDERICK MULLETT EVANS, of No. 20, Queen's Road West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and published by them at the Office, No. 5, Upper Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—SATURDAY, JUNE 18, 1859.

THE GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 26.—1859.] SATURDAY, JUNE 25. {Price Fivepence. Stamped Edition, 6d.

INDEX.

Agricultural meetings	546 b	Lawns, Mushrooms on	541 c
— Soc. of England	547 b	Leases, farm	547 c
American farming	548 a	Linum grandiflorum	541 c
Australian colonies, South	539 c	Monte Rosa, tour round	543 b
Bean disease	545 c	Mushrooms, on lawns	541 c
Books noticed	544 a	Newcastle Farmers' Club	547 c
Calla æthiopica	542 b	Oak, lightning-struck	541 c
Dairy management	546 c	Orange leaves, spot on	544 c
Farm leases	547 c	Puff balls, eatable	542 a
Farming, American	548 a	Root propagation	541 b
Geraniums, root propagation of	541 b	Rose exhibition	542 b
Glenny's Gardening	541 c	Seeds, vitality of	544 c
Grafting summer	542 a	Seed adulteration	546 c
Gulf Stream	544 a	Sloe blight	542 b
Harvey's S. African Flora	543 c	Strawberries, new	544 c
Hemlock, gigantic	541 c	— early	542 a
Henderson's Illustrated Bouquet	544 a	Tacsonia manicata	541 b
Heracleum, large	541 c	Tomatos, French	540 b
Horticultural Society	542 b	Vines, budding	542 a
Ivy at Montpelier	540 c	Wheat, blacks in	549 a
		Wheat crop	547 b

ROYAL BOTANIC SOCIETY, Regent's Park.—The LAST EXHIBITION of PLANTS, FLOWERS, and FRUIT this season will take place on WEDNESDAY, July 6. Tickets to be obtained at the Gardens only by orders from Fellows or Members of the Society, price 5*s.*, or on the day 7*s.* 6*d.* each. The gates will be opened at 2 o'clock.

THE GREAT SUMMER FETE of the LEICESTER and LEICESTERSHIRE FLORAL and HORTICULTURAL SOCIETY will be held on the Leicester Race Course, on TUESDAY, June 28. A SILVER CUP will be given for the best collection of 24 CUT ROSES exhibited by a Nurseryman. Prizes of 3*l.* and 2*l.* will be offered to gentlemens' Gardeners for 24 CUT ROSES; and Prizes of 2*l.* and 1*l.* to Amateurs for 24 CUT ROSES. These Classes are open to all England. The Worshipful the Mayor of Leicester, in answer to a requisition, has called upon the inhabitants to close their places of business on the afternoon of this great Gala day. The Midland Railway will run Special Trains from all their principal stations.—For Programme apply to the Hon. Sec., 15, Newarke Street, Leicester.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—Notice is hereby given, that the HALF-YEARLY GENERAL MEETING of MEMBERS will be holden on WEDNESDAY, July 6, at the House of the Society of Arts, John Street, Adelphi, for the purpose of ELECTING THREE PENSIONERS on the Funds. The chair will be taken at 12 o'clock. The Ballot will close at 2 o'clock precisely.

Edw. R. Cutler, Secretary,
14, Tavistock Row, W.C.—June 25.

P.S. The Voting Papers have all been delivered, and any Subscriber not having received one is respectfully requested to make immediate application to the Secretary.

A YORKSHIREMAN WANTED.

MR. J. W. HAYTHORN, Hexagon Garden Net Office, Nottingham, will be obliged to any person who will in confidence favour him with the present address of Mr. R. Hancock, Gardener and Seedsman, late of the Asylum Road, Wakefield.

JAMES STEEL, Gardener, formerly resident in Dundee, will please send his present address to the undersigned. Important.—Wm. P. Laird, Nurseryman and Seedsman, Dundee.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY LIMITED supply every requisite for the Farm and the Garden.

Registered Offices, Union Road, Plymouth.

PROTHEROE and MORRIS beg most respectfully to inform their friends and the public that their unrivalled COLLECTION OF ROSES (which are in bloom and will continue for some time) is in the finest condition and well worthy an inspection. Trains leave Fenchurch Street and Bishopsgate Street 12 times daily to Leytonstone Railway Station, which adjourns the Nursery.

American Nursery, Leytonstone.—June 25.

ROSES.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

WM. WOOD and SON'S extensive stock of ROSES, occupying an area of many acres of land, is now coming into flower, and will continue in great beauty during the Rose season.

The Nurseries are distant three miles from the Uckfield Station of the London, Brighton, and South Coast Railway, where conveyances may at all times be obtained.

ROSES.

THOS. RIVERS informs his friends and the public that his collection of ROSES will be in Bloom about the first week in July. The 10.57 train to the Harlow Station (where Flys are in attendance) is the most convenient.

Nurseries, Sawbridgeworth.

ROSES.

JAMES MITCHELL begs to announce to the Nobility and Gentry that his unrivalled Collection is now in fine Bloom.—Piltdown Nursery, Maresfield, Sussex, 2½ miles from Uckfield Station of the London, Brighton, and South Coast Railway.

ROSES.

A. PAUL and SON respectfully invite all lovers of ROSES to inspect the Collection growing at the Cheshunt Nurseries. They are now in full bloom and will continue at their best for about a fortnight. There will be a good show of the autumnal kinds from the present time till November.

Trains of the Eastern Counties Railway (Cambridgeshire) to and from Waltham or Cheshunt Stations several times daily.

Nurseries, Cheshunt, Herts.

ROSE ISABELLA GRAY.

A. PAUL and SON have a large STOCK of the above ROSE, originally introduced by them, and so highly spoken of in the *Gardeners' Chronicle* of last week. Strong healthy plants, 2*s.* 6*d.* to 3*s.* 6*d.* each. A liberal discount to the Trade.—Nurseries, Cheshunt, Herts, June 25.

JOSEPH MAY and CO. beg to offer the following kinds of CABBAGE SEEDS, which have been selected carefully, and are amongst the best kinds grown:—

SHILLING'S QUEEN	per oz. 8*d.*
EARLY CHAMPION	,, 8*d.*
ENFIELD MARKET	,, 8*d.*
ROSETTE COLEWORT	,, 8*d.*

Sent post free on receipt of stamps or order.

1, Wellington Street, Strand, Waterloo Bridge.

JULY KIDNEYS.

J. MAY and CO. beg to announce they have a fine Stock of the above, for producing fresh Potatoes through the Autumn and Winter. Price 2*s.* per peck, or 8*s.* per bushel.—1, Wellington Street, Strand, W.C.

HOLCUS SACCHARATUS, or North China Sugar-Cane.—Pamphlet, "A Visit and a Plant;" the only English authority on the Cultivation of the above. Post free 6*d.* Prices of Seed on application. Samples 6*d.* Four varieties of Holcus remitted free by post on receipt of 10*s.*

John W. Clarke, Whittlesea, Cambridgeshire.

FERN CATALOGUE.

ROBERT SIM'S NEW DESCRIPTIVE AND PRICED CATALOGUE, No. 6 (62 pages) of his COLLECTION of BRITISH and EXOTIC FERNS, can be had, post free, for 8 stamps. Gratis to all previous purchasers of Ferns.

Nursery, Foot's Cray, Kent, S.E.

WILLIAM BARNES begs to inform his friends and patrons that his new PRICED and DESCRIPTIVE CATALOGUE is now ready, and can be had post free upon application. It contains the finest selections of Indian Azaleas, Cinerarias, Calceolarias, Verbenas, Fuchsias, Hollyhocks Liliums, Phloxes, Roses, Geraniums, Chrysanthemums, Ferns, Stove and Greenhouse plants, as well as a very large assortment of choice miscellaneous plants.

Camden Nursery, Camberwell South.

GRAPE VINES FROM EYES.

JOHN and CHARLES LEE beg to offer a large healthy Stock of well-grown VINES, of all the NEW and POPULAR KINDS, fit for immediate planting.

Vines planted at the present time will reach the top of the rafters and ripen their wood before winter, and thus a season will be gained.

Nursery and Seed Establishment, Hammersmith, London.

EDWARD SHENTON, Hendon Park Nursery, N.W.—CINERARIA SEED of the finest quality saved from Brilliant, Earl Clarendon, Baroness Rothschild, Lord Palmerston, Emperor of the French, Prince of Wales, Wonderful, &c., in packets at 1*s.* 6*d.* and 2*s.* 6*d.* each.

GAINES'S COLLECTION of GERANIUMS.—Show, French, and Fancy varieties in bloom, hundreds of thousands in all sizes for Sale, and may be seen any day, Sundays excepted. Persons wishing to improve their collection cannot do better than visit the Nursery, Surrey Lane, Battersea.

GEORGE BAKER begs to inform the nobility, gentry, and public that his extensive collection of HARDY RHODODENDRONS, AZALEAS, KALMIAS, &c., are now in perfection, and may be viewed free.—American Nursery, Windlesham, near Bagshot, Surrey (1¼ mile from the Sunningdale Station of the Staines and Wokingham Railway, where conveyances are always to be had).—June 25.

AZALEA INDICA "FLOWER OF THE DAY" (Ivery's).—This fine variety will be ready for delivery the last week in June. It is a decided improvement on Iveryana; has been exhibited only three times, and gained two Certificates and an extra Prize. For description see Catalogue, which will be sent post free on application. Price, per plant, 21*s.* each.—Dorking Nursery, June 25.

SUPERB CAPE OR GIANT AND BROMPTON STOCKS.

CHARLES ALEXANDER, Seedsman, Edinburgh, can supply the following, which are highly recommended. Sow any time this month. Post free on receipt of Stamps:—

1 packet Young's Scarlet Cape or Giant Stock	1*s.*
1 packet Young's White Cape or Giant Stock	1*s.*
1 packet Young's Scarlet Brompton Stock	1*s.*
1 packet Young's Dark Bloody Wallflower	1*s.*

CINERARIA, HERBACEOUS CALCEOLARIA, and HALF SHRUBBY DITTO SEED.—These have been saved from Turner's most beautiful varieties; in 1*s.* and 2*s.* 6*d.* packets. Primula and Hollyhock, from the newest and handsomest varieties, 1*s.* per packet. Agents for F. & A. Smith's splendid Cineraria, in 1*s.* 6*d.*, 2*s.* 6*d.*, and 5*s.* packets; also agents for Dobson & Son's splendid Calceolaria, in 1*s.* 6*d.*, 2*s.* 6*d.*, 3*s.* 6*d.*, & 5*s.* packets.—Catalogues of the newest Flower Seeds, and newest Dutch and Cape Bulbs, sent post-paid.

Butler & McCulloch, Seedsmen, Covent Garden Market.

SPERGULA PILIFERA.—The true species. See our Advertisement of June 4, p. 482. Fine strong spreading tufts in pots (not Seedlings) which will each make large patches this season, 3*s.* per dozen; or smaller tufts may now be had, 2*s.* per dozen. A dozen may be had prepaid, by post, for 8*d.* extra; or 6*d.* per dozen extra for orders of more than a dozen. Directions as to distance and culture sent.

Bass & Brown's CATALOGUES sent free on application. Goods (20*s.* and upwards) carriage free to all stations in London, &c. See Catalogue.—Bass & Brown, Seed and Nursery Establishment, Sudbury, Suffolk.

40 FINEST NEW VERBENAS OF 1859.—Ajax, Figaro, Rubens, Felix Roland, Mrs. Fowke, Miss E. Hanmer, Gitania Verdii, Madame Hardy, Rosalinde, Rosemande, Satanella, Cendrillon, Lord Clyde, Reine Blanche, Comte de Morello,, Lightning, Bandmaster, Mathilde, Mrs. Pennington, Baccarah, Azucena, Lady Cotton Sheppard, Comet, Marie Rougiere, Madame Large, Novelty, Abondance, Madam Hoste, Ne Plus Ultra, Fatima, Mrs. White, Lord Elgin, Isa Craig, Mars, Lucrèce, Flora, Ivanhoe, Balfe, Manteau d'Evêque. Any of the above, 9*s.* per dozen, free by post.

Henry May, The Hope Nurseries, near Bedale, Yorkshire.

GRASS SEEDS FOR PRESENT SOWING.

SUTTON and SONS, Reading, can supply at moderate prices the best kinds of GRASS SEEDS for laying down Permanent Pasture, or for mending.

TURNIPS FOR EARLY FEEDING.

SUTTON'S LINCOLNSHIRE RED GLOBE, the heaviest cropper known.—This sort is very superior to the Red Globe Turnip commonly grown. The original stock was presented to Messrs. Sutton by the late Philip Pusey, Esq., with the earnest desire that he might be supplied annually with Seed of the same sort. Price 10*d.* per lb., or cheaper by the bushel.

POMERANIAN WHITE GLOBE TURNIP; the largest white Turnip; price 9*d.* per lb., or cheaper by the bushel.

These two Turnips thrive well on most soils, and are good for feeding off previous to Wheat sowing. Goods delivered carriage free.—Royal Berks Seed Establishment, Reading.

SKIRVING'S IMPROVED TURNIP SEEDS.

WILLIAM SKIRVING begs to recommend the following New Varieties of SWEDE as the best for present sowing, viz., his NEW EARLY DWARF TOP PURPLE SWEDE, and his NEW EARLY DWARF TOP GREEN-BRONZE DITTO. These varieties, if sown any time in June, will give a full crop of excellent quality. Price of Seed, 1*s.* per lb. For later sowing he recommends his Improved YELLOW BULLOCK and HARDY GREEN ROUND TURNIP as by far the best of the common Turnips. Price 9*d.* per lb.

Queen Square, Liverpool.—June 25.

CABBAGE SEED.

CATTELL'S "DWARF BARNES," and CATTELL'S "DWARF RELIANCE," may be had as usual by post for 12 penny stamps per packet; the former containing 1 oz., and the latter ½ oz. May be sown as early as the middle of July, and will not run to seed the following spring.

Seed Establishment, Westerham, Kent.

NEW VERBENA.—Edmonds's set of the above as sent out this spring by Mr. Chas. Turner. Twelve of he best, including package, 12*s.*

J. & W. Badman, Nurserymen, Gravesend.

HOLLYHOCK SEED.

A. PAUL and SON beg to offer packets of Seed, saved from their unrivalled collection, free by post at the following rates:—

	s.	*d.*
12 separate packets, saved from 12 good and distinct named sorts, containing about 500 seeds	5	0
Mixed seed, first quality	2	6
Second quality, per packet	1	0

N.B. June and July are the best months for sowing out of doors to bloom next year.—Nurseries, Cheshunt, Herts.

FINE PRIMULA SEED.

F. and A. SMITH have now ready SEED of their fine fringed PRIMULA, red and white, separate or mixed, in sealed packets, 1*s.* 6*d.* and 2*s.* 6*d.* each. May be had also of most respectable Seedsmen.—Dulwich, Surrey, S.

FLOWERING PLANTS.

F. and A. SMITH have now in bloom a fine sample of KALOSANTHES COCCINEA, also HYDRANGEA, blue and pink; GERANIUM, French, Fancy, and Show varieties; FUCHSIAS, HELIOTROPES, CALCEOLARIAS (herbaceous and shrubby), ERICA, CACTUS, ROSES, NERIUM SPLENDENS, BALSAMS, &c., at moderate prices.

Dulwich, Surrey.

SPLENDID CINERARIAS.

F. and A. SMITH are now sending out Seed of their fine COLLECTION of the above, which for brilliancy of colour, profuseness of flowering, and compactness of growth, are unsurpassed. Great care has been taken to select only the very best for Seed from upwards of 10,000 of the finest produced in the country, some of which were exhibited at the Spring Meetings of the Botanic Society, obtained certificates of merit, and were much admired. In packets 1*s.* 6*d.*, 2*s.* 6*d.*, and 5*s.* each in stamped envelopes, and may be had of most respectable Seedsmen in the United Kingdom.—Dulwich, Surrey, S.

MESSRS. PARKER and WILLIAMS beg to inform their friends and patrons that their PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Stove, Greenhouse, and Hardy Ferns, Miscellaneous Stove, Greenhouse, and Hardy Plants, Variegated and Ornamental foliaged Plants, Conifers, Roses, Rhododendrons, Indian Azaleas, Gloxinias, Fuchsias, Cactuses, &c., is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

INSECT APHIS, or GREENFLY POWDER (Quite New).—Warranted to kill these insects, not to leave the slightest stain, or injure the most tender foliage or human beings. A trial requested. 2*s.* per lb. The "MULTUM IN PARVO," with Fittings for Implements in seven different forms, 7*l.* 7*s.* SEED DIBBLERS, 3*l.* 10*s.* SIGMA HOES, and HAND CULTIVATORS, 2*s.*

C. Powell, Hurstgreen, Sussex.

GENUINE TOBACCO PAPER FOR FUMIGATING.

H. APPLEBY (Foreman to Messrs. Ivery & Son, Surrey), takes this opportunity of informing his patrons and the public that he is now offering the above at a very considerably reduced price. It is now sold in packets of 4 lbs. each, at 1*s.* 3*d.* per lb. A liberal discount allowed to the Trade. For testimonials that will guarantee its quality, see *Gardeners' Chronicle*, April 16, p. 333.

Sheet Iron Pots for fumigating, 3*s.* 6*d.* each.

N.B. All orders to be accompanied with a Post-office Order, payable to Henry Appleby, Dorking, Surrey.

BARBER'S POISONED WHEAT Kills Mice and Sparrows on the spot.—In 1*d.*, 2*d.*, 4*d.*, and 8*d.* packets, with directions and testimonials. No risk nor damage in laying this Wheat about. From a single packet hundreds of Mice and Sparrows are found dead. Agents: Barclay & Sons, 95, Farringdon Street; W. Sutton & Co., Bow Churchyard; B. Yates & Co., 25, Budge Row, London; and sold by all Druggists, Grocers, &c., throughout the United Kingdom.

Barber's Poisoned Wheat Works, Eye, Suffolk.

GARDENERS' CHRONICLE PENNY

NEW SEED OF FIRST-CLASS

CALCEOLARIAS AND CINERARIAS.

JAMES CARTER & CO.

Are now ready to supply Seed of the above, in three-sized packets, *all of the same quality*,

1s. ... 2s. 6d. ... 5s.

JAMES CARTER & CO., Seedsmen, 238, High Holborn, W.C.

MARQUEES, TENTS, AND RICK CLOTHS FOR SALE, OR HIRE.—H. PIGGOTT, 115, Fore Street, E.C.

GREENHOUSES.

HENRY FREEMAN, HOTHOUSE BUILDER and HOT-WATER APPARATUS MANUFACTORY, Triangle, Hackney. Established 20 years. Good substantially-built Greenhouses fixed in any part of the kingdom, for cash, 42 ft. long by 13 ft., 90*l*.; 21 ft. by 13 ft., 50*l*.; 12½ ft. by 10 ft., 30*l*. A first-class Conservatory, 30 ft. by 16 ft., 130*l*. A large assortment kept. Estimates for Heating.

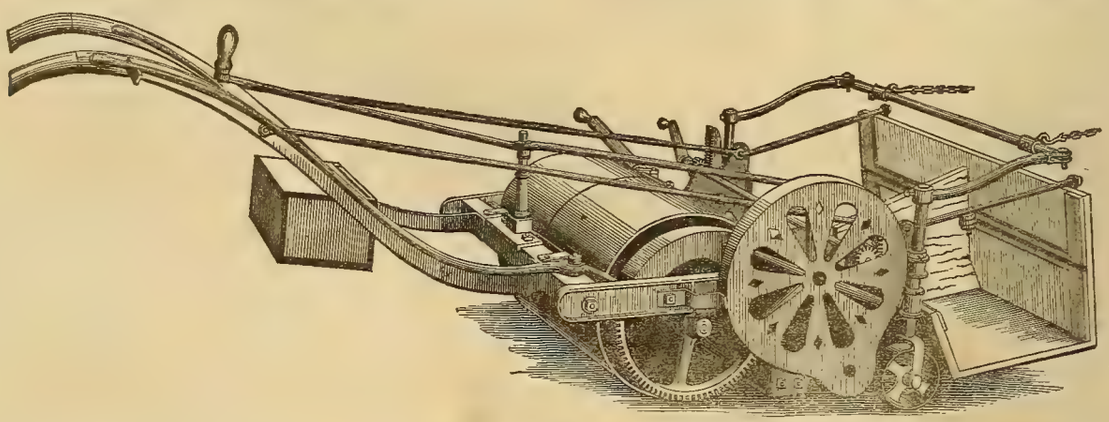
C. STEPHENSON, late STEPHENSON AND SONS, 61, Gracechurch Street, London, Manufacturer of Iron Hurdles, Fencing, &c., Improved Iron and Copper Conical Boilers and Apparatus for Warming Buildings of every description by Hot Water.
Prices and Estimates furnished upon application.

SHANKS' PATENT LAWN MOWING MACHINES,

NOW USED IN ALL THE ROYAL GARDENS.

NEW AND IMPORTANT IMPROVEMENTS FOR MOWING, ROLLING, COLLECTING, AND DELIVERING.

HORSE POWER PATENT MOWING, ROLLING, COLLECTING, AND DELIVERING MACHINE.



PRICES

No. 1(*a*)48-INCH MACHINE (USUALLY DRAWN BY A HORSE)	£27 0 0	No. 3.—30-INCH MACHINE (USUALLY DRAWN BY A PONY)	£17 10 0
No. 1.—42-INCH MACHINE (USUALLY DRAWN BY A HORSE)	24 0 0	No. 4.—25-INCH MACHINE (USUALLY DRAWN BY A PONY OR DONKEY)	13 10 0
No. 2.—36-INCH MACHINE (USUALLY DRAWN BY A HORSE OR PONY)	20 10 0	No. 5.—25-INCH MACHINE (MADE LIGHT FOR A SMALL PONY OR DONKEY)	9 10 0

Machines Nos. 1 (*a*), 1, 2, 3, & 4 have the Patent Delivering Apparatus attached. No. 5 can either be had with or without this improvement; if with it, 30*s*. extra.

PRICES OF THE HAND MOWING AND ROLLING MACHINE

No. 6.—22-INCH MACHINE	£7 17 6	No. 8.—16-INCH MACHINE	£6 10 0
No. 7.—19-INCH MACHINE	7 5 0	No. 9.—13-INCH MACHINE	5 15 0

TESTIMONIALS IN FAVOUR OF SHANKS' NEW HORSE MACHINE.

From Mr. ALEXR. SHEARER, *Gardener to the* MARQUIS of TWEEDDALE, *Yester Garden, May* 13, 1859.

"The success of your improved Grass Cutting Machine which we got the other day—especially the delivering part—is a mechanical triumph. Having cut all our Grass with it, I must say that it acts far beyond my expectation, and it performs all you say in your prospectus. We can now go on the whole day without stopping, except to oil the parts that require it. The men are quite in love with it; a good proof of its utility."

From Mr. JAMES MACKIE, *Gardener to* His Grace the DUKE of ATHOLL, *The Gardens, Dunkeld, May* 18, 1859.

"After repeated trials with our Grass Cutting Machine, as now fitted up with your Delivering Apparatus, I have much pleasure in saying that I now consider your Machines complete. *We can now do as much work in six hours as we used to do in ten hours*, with the old plan of stopping to empty the Grass Box, *and with far greater ease both to man and horse.* His Grace is so well pleased with the working of the Apparatus, and the saving of time effected by it, that he has ordered the Machine from Blair Castle to be sent through to be fitted up in the same way as the one here."

☞ FULLY ILLUSTRATED AND DETAILED CIRCULARS ON APPLICATION.

LONDON AGENTS

MESSRS. J. B. BROWN & CO., 18, CANNON STREET, CITY, LONDON, E.C.

BY APPOINTMENT.

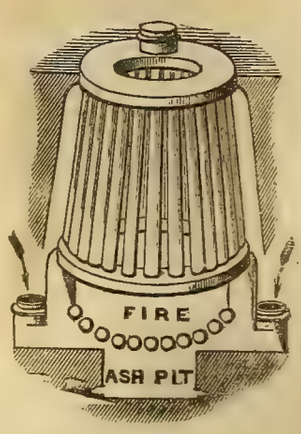
HORTICULTURAL BUILDING & HEATING BY HOT WATER.

STEAM POWER WORKS.

JOHN WEEKS & COMPANY



BEG respectfully to call the attention of the Horticultural World to the more than usual facilities at their command to offer superior Horticultural Erections of every style and description at lowest possible prices. The extensive additions to their Machinery, Workshops, Iron Foundry, and Plant now form a complete and unequalled Manufactory for the production of every branch of Horticultural Building and Heating by Hot-Water. J. WEEKS & Co.'s ONE BOILER SYSTEM of heating has from its efficiency, cleanliness, and economy, rendered such unbounded satisfaction as now to become almost universally adopted. Numerous Horticultural Establishments of considerable extent formerly heated by 10 or 12 ordinary Boilers, also Churches, Chapels, Schools, Museums, Warehouses, Hospitals, and Public Buildings are now more effectually heated at an incredible saving of labour and fuel by JOHN WEEKS & Co.'s ONE BOILER SYSTEM.



JOHN WEEKS & COMPANY, King's Road, Chelsea, London, Horticultural Buildings and Hot-water Apparatus Manufacturers, Engineers, and Iron Founders.

Plans, Estimates, and Illustrated Catalogues Free on application.

MESSRS. E. G. HENDERSON & SON'S

NEW GENERAL CATALOGUE

AND

SPRING LIST OF ORNAMENTAL BEDDING AND SUMMER-FLOWERING PLANTS,

Is ready for distribution (free by post) wherein are described the following NEW PLANTS and also special directions for sowing, rearing, and final planting of

SPERGULA PILIFERA,

the admirable substitute for Grass on Lawns, without mowing, of which good established tufts for immediate planting (from Mr. Mongredien's fine lawn at Forest Hill, near to the Crystal Palace), are offered at 4*s.* and 2*s.* per dozen, according to their respective size. Seed Packets, 6*d.*, 2*s.* 6*d.*, 5*s.*, 10*s.*, and 20*s.* each.

BEATON'S NEW SEEDLING BEDDING GERANIUMS of unique and beautiful colours are—
THE IMPERIAL CRIMSON and the MODEL NOSEGAY.

ALLAMANDA VIOLACEA.
CALCEOLARIA AMPLEXICAULIS ALBA.
DWARF DAHLIA, THE WHITE UNIQUE.
,, GLOIRE DE FRANCE.
BANKS'S NEW FUCHSIAS.
PELE'S NEW CHRYSANTHEMUMS.

GERANIUM WHITE NOSEGAY.
,, SILVER CHAIN.
,, ST. CLOUD.
,, GOLDEN TOM THUMB.
,, ,, CERISE UNIQUE.
,, THE RAINBOW.

OF VERBENAS,

THE MOST SPLENDID COLLECTION EVER OFFERED are those now in bloom at the Wellington Nursery, and to which E. G. HENDERSON & SON have called the special attention of cultivators for the first time this season. The present season is the most suitable for sowing

CALCEOLARIA, CINERARIA, AND PRIMULA,

to secure an early and continuous bloom of the above favourite plants for Greenhouse and Conservatory decoration. Seed Packets, of first class quality in each kind, at 2*s.* 6*d.* each.

Wellington Nursery, St. John's Wood, London.

CHOICE FLOWERS.

BUTLER & McCULLOCH'S SPRING CATALOGUE OF SEEDS,

ESTABLISHED UPWARDS OF A CENTURY

ARRANGED on a new and original plan, with copious Descriptive and Cultural Notes, and containing many new and rare species and varieties not found in any other Catalogue, now ready and may be had free and post paid on application.

FLOWER, SHRUB, TREE, and VEGETABLE SEEDS, the crop of 1858, saved with the greatest care, by the most eminent growers.

We may also state that the Sardinian correspondent of Messrs. JAMES CARTER & Co., whose Seeds, especially Carnations and Picotees, have given such universal satisfaction, has transferred the Agency from that firm and appointed us his representative in this country. To meet the growing demand for first class flowers, particularly FLORISTS' FLOWERS, we have adopted our usual maxim of charging the lowest possible prices.

Professor LINDLEY in the *Gardeners' Chronicle* of February 5th, has the following notice of B. & McC.'s Catalogue.

"BUTLER & McCULLOCH'S (Covent Garden) Spring Catalogue of Choice Flower, Shrub, Tree, and Vegetable Seeds. This list fills 84 closely printed 8vo pages, and is remarkably well got up. It appears that the correspondent in Sardinia, who formerly supplied one of the great London houses with seeds raised in that warm part of Europe, has now transferred what he saves to Messrs. BUTLER & McCULLOCH. Let us add, that it yields to no Trade List in the abundance of its materials or the excellence of its arrangements."

BUTLER AND McCULLOCH, while drawing attention to their general SPRING CATALOGUE which has elicited such high encomiums both from the scientific botanist and amateur cultivator, avail themselves of the present opportunity to select from its pages the following list:—

(28) ACACIA GRANDIS (TRUE).
One of the most beautiful of the A. pulchella section, producing deep golden balls. Of these graceful and highly ornamental plants our collection embraces no fewer than 47 varieties, all of the most decorative character.

(70) ALPINES.
Of these beautiful little plants we have a splendid collection, embracing all the most admired kinds, collected and arranged for us last autumn by M. Ortgies, the Curator of the Zurich Botanic Gardens. The value of Alpine plants for rock-work is too well known to require comment. These collections we can confidently recommend, containing, as they do, species only of highest merit.

(199) CALLICHROA PEDATA.
A new crimson annual with white eye, very beautiful.

(217 A.) CAMELLIA JAPONICA.
From the newest and finest striped and other varieties of that much admired genus.

(296) CEANOTHUS AZUREUS GRANDIFLORUS.
This, cæruleus macrophyllus, and Fontanesianus are all beautiful varieties of this highly ornamental genus, of which we possess nine splendid varieties. They are equally suited for conservatory and out-door decoration.

CANNAS.
Of these we possess an extremely interesting collection.

(304) CELOSIA (species nova).
A most elegant plant, producing a multitude of long spikes of feathery blossoms, silvery white shaded with bright rose, retaining its colour perfectly when dried, and therefore admirably adapted for winter bouquets; one of the greatest novelties of the season, flowering out of doors or in pots from July to October. Well worth attention. A dried specimen may be seen.

(337) CHRYSANTHEMUM (tall and dwarf).
Of these dwarf and tall varieties we have a fine stock, nearly all of which may be depended upon to produce double flowers, the seeds having been saved from the finest named varieties.

(344) CHRYSOCÓMA COMAUREA.
Fine evergreen shrub, bearing a profusion of golden ball-like flowers; one of the handsomest greenhouse plants in cultivation.

(451) DATURA HUMILIS FLORE PLENO.
A magnificent Brugmansia-like plant producing a profusion of deep golden-yellow flowers; very large, double, and sweet-scented. One of the greatest novelties of the season.

(625) HABROTHAMNUS HÜGELLI.
This, purpureus, and Abelli are all handsome varieties of this beautiful genus, which everybody having a greenhouse or conservatory should grow. All three are extremely ornamental.

(665) HIBISCUS ROSEUS SUPERBUS.
This, Syriacus, and Thunbergi we can highly recommend. All are plants of great beauty

(680 to 688) HOLCUS OR SORGHUM (Chinese Sugar Cane).
Of this important class we have nine new and important varieties from Africa, said to be more ornamental and to contain more saccharine matter, Holcus saccharatus.

(704) INDIGOFERA DECORA ALBA ROSEA.
The above, purpurea, and dosua are all pretty free flowering shrubs, suitable for small greenhouses. They are also highly ornamental out of doors in summer.

(972) PELARGONIUMS.
Of these both large flowered and fancy, very choice, and of other splendid varieties, including Scarlets, we have a fine stock, which cannot fail to prove highly satisfactory.

(1149) SOLANUM CAPSICASTRUM.
Miniature Orange tree, covered all winter with a profusion of scarlet fruit; a handsome plant for greenhouse or sitting rooms.

(1335) BIGNONIA RADICANS MULTIFLORA.
Finer and brighter than radicans; flowers in large panicles producing a splendid effect.

(1468) TACSONIA IGNEA.
This magnificent Passionflower is unequalled for the brilliancy and splendour of its scarlet blossoms, far surpassing in this respect any of its class yet known. It flowers most profusely, grows rapidly, and covers a large space in an incredibly short time. It succeeds in a cold greenhouse, and even against a south wall with a little protection in winter (new and rare).

(1488) TROPÆOLUM TRIOMPHE DE GAND FIMBRIATUM.
Fringed orange scarlet.

CARNATIONS and PICOTEES saved from the most choice Collection of English varieties grown on the continent, and which may be expected to produce flowers of the highest merit, sent out in sealed packets as received from our Sardinian correspondent, whose seeds for many years have given such universal satisfaction, and from which varieties of the greatest excellence have been raised.

For prices and further particulars with regard to the above and other novelties, we refer our patrons to the Catalogue itself, which is sent free and post paid on application.

BUTLER & McCULLOCH, Covent Garden Market.

CHOICE SEEDS.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that they can now supply the following choice SEEDS, all of which are warranted genuine and of the finest quality.

Per packet—*s. d.*	Per packet—*s. d.*
Calceolaria, herbaceous .. 2 6	Gaillardia grandiflora .. 0 6
Cineraria, from named vars. 2 6	Primula sinensis, mixed.. 1 6
Clianthus Dampieri .. 2 6	Pansy, from named vars . 1 0
Hollyhock, from named vars. 0 6	Sweet William, from extra fine vars. 0 6

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

FRUIT TREES IN POTS.

H. LANE AND SON, The Nurseries, Great Berkhampstead, Herts, have still to offer in large quantities fine TREES, well set with Fruit (which are now in a good state for travelling, the fruit not being heavy and likely to drop off), of—

PEACHES, NECTARINES, and APRICOTS, 5*s.*, 7*s.* 6*d.* to 10*s.* each; also APPLES, 3*s.* 6*d.* to 5*s.*
FIGS in a bearing state, 3*s.* 6*d.*
GOOSEBERRIES and CURRANTS, 1*s.* 6*d.*
VINES from eyes, with Fruit on, 5*s.*

They also have a fine collection of Roses in 60-size pots for bedding out, and Roses in 32-size or 6-inch pots suitable for filling up vacancies, and a most splendid lot of Araucaria imbricata; also Indian and Ghent Azaleas, Rhododendrons, Cedrus Deodara, Cedar of Lebanon, and Evergreens of every description.

Catalogues of the above may be had upon application at the Home Nurseries, which are within 5 minutes' walk of the station of the London and North-Western Railway, Great Berkhampstead, Herts.

ROYAL BERKSHIRE SEED ESTABLISHMENT.

GOOD TURNIP SEEDS, CARRIAGE FREE.

SEEDS DIRECT FROM THE GROWERS THE MOST CERTAIN MEANS OF PREVENTING DISAPPOINTMENT.

SUTTON AND SONS, SEED GROWERS, Reading, Berks, can supply every kind of TURNIP SEEDS of genuine and superior quality.

Agriculturists residing in the most remote parts of the kingdom can procure good Seeds at very moderate prices from this Establishment.—For particulars, apply to

SUTTON & SONS, Seed Growers, Reading, Berks.

ROYAL SOUTH HANTS SEED ESTABLISHMENT,

UNDER THE PATRONAGE OF H.R.H. THE PRINCE CONSORT, THE AGRICULTURAL AND HORTICULTURAL SOCIETY OF INDIA, AND THE LEADING AGRICULTURISTS OF THE UNITED KINGDOM.

NEW TURNIP SEEDS, 6*d.* per lb.
Carriage free, parcels under 20 lbs. excepted.

PAGE AND TOOGOOD have harvested a fine stock of HARDY GREEN ROUND TURNIP, which is ready for immediate delivery. They have yet a few of their

IMPROVED SKIRVING'S SWEDES at 6*d.* per lb.
PAGE'S IMPROVED PURPLE-TOP do. at 8*d.* do.
JEFFERY'S OR SUSSEX do. at 9*d.* do.
SCOTCH HYBRIDS, 7*d.* per lb.
YELLOW TANKARD, 7*d.* do.
POMERANIAN WHITE GLOBE, 6*d.* per lb. and also
PAGE'S IMPROVED RED GLOBE, 8*d.* per lb., which W. Baker, Esq., Purewell, says is preferred by his beasts and sheep to any he has grown; it is quite hardy, and less injured by Fly than other sorts.—PAGE & TOOGOOD, Seed Growers, 37, and 38, Oxford Street, and 58, Above Bar, Southampton.

BUSBY'S STOCKWOOD GOLDEN HAMBURGH GRAPE.

IN consequence of the Horticultural Society having abandoned their intended Exhibition at St. James's Hall on the 29th and 30th of this month, on account of the injury sustained by the plants from the heat and dryness of a gas-lighted room,

JAMES VEITCH, JUN., begs to announce that the PRIZE of 5*l.* 5*s.* offered by him for the BEST THREE BUNCHES of the above GRAPE, will now be awarded at the next Meeting of the HORTICULTURAL SOCIETY'S FRUIT COMMITTEE, at 8, St. Martin's Place, Trafalgar Square,

On TUESDAY, July 12, 1859, at 3 P.M.

J. V., Jun., also offers a PRIZE of 5*l.* 5*s.* for the BEST THREE BUNCHES Exhibited at the CRYSTAL PALACE SHOW, September 7 and 8, 1859, as before advertised.

N.B. The Grapes intended for Exhibition at St. Martin's Place on July 12 should be delivered there not later than 11 A.M. on that day; and J. V., Jun., will be happy to pay the carriage of those that are sent.

The Gardeners' Chronicle.

SATURDAY, JUNE 25, 1859.

MEETINGS FOR THE FOLLOWING WEEK.
WEDNESDAY, June 29—Microscopical..... 8 P.M.

IN the history of progress few things are more remarkable than the changes which have taken place in our SOUTH AUSTRALIAN COLONIES. Thirty years ago they were hardly known except to explorers and geographers. When MITCHELL first saw their rich plains, and called them Australia Felix, he little dreamt of their mineral wealth being far greater than their pastoral. Nor did the discoverers of gold suspect that the time would come when the scene would change once more, and the cultivation of the soil become of greater importance than mining itself. Nevertheless such a contingency does not seem to be remote, if we can judge from the agricultural and horticultural statistics partly collected by the South Australian Government, and published in a late number of the Melbourne *Farm and Garden*—statistics so interesting that we gladly reproduce them,

although the returns for 1858 were not ready when our file of papers left Melbourne.

The first table given by Mr. ANDREWS, the Editor, states the population, number of acres under cultivation, and proportion of acreage for every 100 of the population, from the year 1836 to the year 1857:—

Dates.	Population.	Acres.	Proportion.
1836	200	..	..
1837	1200	75	6¼
1838	5000	81	1⅝
1839	10,000	443	4⅜
1840	14,610	2687	18
1841	No returns.	6722	..
1842	No returns.	19,790	..
1843	17,366	28,690	165
1844	18,999	26,907	141
1845	21,759	26,218	120
1846	25,893	33,292	128
1847	31,153	36,440	149
1848	38,666	48,911	126
1849	52,904	44,983	85
1850	63,700	64,728	101
1851	66,538	No returns.	..
1852	68,663	No returns.	..
1853	76,050	No returns.	..
1854	85,550	129,692	151
1855	96,982	No returns.	..
1856	104,708	203,423	194
1857	109,917	235,965	214

From this it appears that in 1837 only two-thirds of an acre were provided for every hundred persons, a sufficient explanation of the enormous price of all articles of food at that time; but that in 1857 there were more than two acres per head devoted to the comfort or sustenance of the population, nearly 236,000 acres being under either spade or plough, instead of 7 acres and three-quarters—in fact a small Potato-field.

Of these 236,000 acres above 8000 were exclusively occupied by garden stuff; as the next table explains:—

Dates.	Gardens and Orchards.	Vineyards.	Potatoes.	Other crops.	Totals.
1837	6	..	1½	..	7½
1838	25	..	20	..	45
1839	60	..	75	70	205
1840	183	..	440	..	623
1841	..	..	456	..	456
1842	850	..	690	..	1540
1843	840	..	470	..	1310
1844	761	..	397	..	1158
1845	631	..	459	..	1090
1846	896	112	591	..	1599
1847	993	198	381	..	1572
1848	1300	219	596	..	2115
1849	1497	198	875	..	2570
1850	1372	283	1785	..	3440
1854	2974	410	1712	392	5488
1856	4148	754	2379	897	8178
1857	4501	1056	2130	397	8084

One of the most striking facts in this return is the extension of Vine culture. The Vineyards, which in 1846 embraced only 112 acres, in 1857 had increased to 1056 acres. And in the opinion of the Editor of the *Farm and Garden* every succeeding year will doubtless add largely to the quantity. That much of the wine is at present unsuited to European consumption will be readily believed; but the climate and soil are perfectly well suited to Vine growing, and the quality of the wine will mend with time. That of Sydney was poor stuff at first; but now, as regards its sweet kinds, it takes rank by the side of the French Muscats; and some of the dry wines are of superior excellence. The Government returns show that even in 1856-7 as many as 100,624 gallons were produced, and the quantity is so steadily and rapidly increasing that South Australia must already be regarded as a wine producing colony. Nor are the gardeners there behind those of Europe in the search after new varieties of the Grape possibly better suited to the climate than those of Europe. They are now talking of a "Black Mammoth," described as a magnificent sort.

With regard to the agricultural produce, although it should in strictness be reported in the other side of our *Chronicle*, yet we crave permission to mention it in connection with the Horticultural. Upon this subject Mr. ANDREWS has prepared the following table:—

Dates.	Wheat.	Barley.	Oats.	Maize.	Hay, &c.	Totals.
1837	..	..	..	¼	..	¼
1838	20	1	5	10	..	36
1839	120	23	30	60	..	238
1840	1059	388	425	192	..	2064
1841	4154	897	501	714	..	6266
1842	14,000	2700	700	850	..	18,250
1843	23,000	3300	790	290	..	27,380
1844	18,980	4264	1045	242	1218	25,749
1845	18,838	4342	1486	86	376	25,128
1846	26,135	3489	1963	106	..	31,693
1847	25,920	5840	2947	161	..	34,868
1848	29,737	8479	3977	4603	..	55,796
1849	35,185	5751	1470	7	..	42,413
1850	41,807	4029	2112	37	13,303	61,288
1854	89,945	6454	4359	44	23,402	124,204
1856	162,012	7823	2822	67	22,516	195,245
1857	175,865	10,209	2912	48	38,847	227,881

No Government returns were published in the years here omitted. It is, however, evident, that there has been a gradually progressive increase in the number of acres brought under cultivation for Wheat—the great agricultural product of South Australia. The advance from 20 bushels in 1838 to 175,865 in 1857 is most remarkable. This is rather more than a bushel and a half per head, so that South Australia is rapidly becoming independent of other countries for the staff of life. It is moreover to be observed that a large part of what agricultural crops the colony now produces is exported, to the value in 1857 of more than 700,000*l*., as is seen in the next Table.

Dates.	Agricultural.	Horticultural.	Totals.
	£ s.	£ s.	£ s.
1843	10,509 1	249 10	10,758 11
1844	20,350 12	43 4	20,393 16
1845	25,604 7	78 6	25,682 13
1846	27,419 0	219 0	27,638 0
1847	40,792 19	57 0	40,849 19
1848	37,209 0	21 0	37,230 0
1849	32,205 15	3 0	32,208 15
1850	38,312 0	Nil	38,312 0
1851	73,311 10	Nil	73,311 10
1852	215,160 9	1446 0	216,606 9
1853	295,375 11	2153 0	297,528 11
1854	399,556 10	6074 10	405,631 0
1855	240,014 0	466 0	240,480 0
1856	556,741 0	1674 0	558,415 0
1857	701,432 0	3299 0	704,731 0
	Grand total during 15 years ..		£2,729,777 4

Under the head of "Agricultural" are included flour, Wheat, Barley, Oats, bran, pollard, hay, Maize, and malt; and under the head "Horticultural" fruit, vegetables, wine, plants, roots, and seeds.

What a tempting prospect is thus presented to clever, skilful, energetic, practical men—whether husbandmen or gardeners—who find it impossible to make head against the difficulties inherent in all old countries. No one can doubt that in S. Australia are sources of wealth far more important than "pit-holes," and "pockets of gold," and auriferous mud.

And so will it be with British Columbia, the mineral wealth of which promises to exceed even the fabulous accounts of Californian treasure. Crowds are flocking to the gold streams there, enduring every possible hardship in the search for wealth ready made. But these crowds must be fed and clothed, and the purveyors of the necessaries of life follow close on the miners' footsteps and easily share profits with them. Then come luxuries and the countless forms of imaginary want; for of what worth is gold except for what it can procure? Fine clothes, fine houses, fine carriages, and delicate viands are quickly in demand, and thus will soon be created in a savage wilderness in the north Pacific cities and towns with their halls of justice and of legislature, that in 20 years will look like those of Europe, and in 20 years more will be talking of independence, and boasting like South Australia of exporting millions worth of farm and garden produce.

WE are asked how the beautiful TOMATOS, so common in the French markets and so much finer than our own, are obtained; and why it is that the sauce made from them is so incomparably better. The obvious answer would seem to be "climate;" without French climate you cannot have French Tomatos. But that is certainly not all. Climate will influence the quality of the fruit but not its quantity: and moreover climate itself is not absolutely beyond reach. Management has doubtless in this as well as in other cases much to do with result.

Our common way of growing this plant does not seem to require alteration. Bringing it forward early, planting it in the hottest place that can be found, and keeping it from night cold and heavy rain, while ripening; these points are very well understood by experienced men; although it must be owned that the inexperienced are too apt to neglect them: as might have been seen last year in a pretty good country place not a hundred miles from Hastings, where they were stationed at the foot of a north-west wall, and left to sprawl over the ground like wild things, with no pruning, and no autumn shelter.

The common English practice, in the best hands, is almost unobjectionable; nor indeed does it materially differ from the French except in summer management. To nail them to a wall, or to lead them over slates, is right; but to peg them down on banks, although it answers for a market gardener in very warm dry autumns, is certainly not to be recommended in private gardens where quality is more important than quantity, inasmuch as the fruit of the Tomato is compelled to absorb rain or heavy dews whenever they fall on the bank, at the very time when it requires to be kept perfectly dry.

The best French gardeners are quite particular about stopping their plants, so that as nice a balance may be maintained between fruit and leaves as in a Peach tree. They are not satisfied with mere topping as soon as there is plenty of flowers, and with pinching off laterals afterwards. Their method is this. As soon as a cluster of flowers is visible they top the stem down to the cluster, so that the flowers terminate the stem. The effect is that sap is immediately impelled into the two buds next below the cluster, which immediately push strongly and presently produce another cluster of flowers each. The moment these are visible the branch to which they belong is also topped down to their level; and this is done five times successively. The effect is to form stout dwarf bushes not above 18 inches high. In order to prevent their falling over, sticks or string are stretched horizontally along the rows so as to keep the plants tolerably upright. In addition to this all laterals that have no flowers, and after the fifth topping all laterals whatsoever are nipped off. In this way the ripe sap is directed into the fruit, which acquires a beauty, size, and excellence unattainable by other means, and we are assured that 14 lbs. of ripe Tomatoes per plant is no very unusual produce; even 16 lbs. being known.

Whether or not this exact method is suitable to our climate may be doubted; but the soundness of its principle is beyond dispute. Five successive toppings are more than our short summers will justify except in very hot dry places; three we should consider quite enough; for although the fourth and fifth toppings would doubtless increase the quantity of fruit, yet there is little probability of such late fruit ripening well; and it must be safest to direct the energies of the plant to bear a smaller quantity of the highest excellence that our soil and climate can secure in a species which grows best in a country where the summer heat rises to 100° and does not fall below 50°, with a mean in the warmest month of 77°.

ON SOME

REMARKABLE PLANTS OF IVY

MEASURED AT MONTPELLIER, AND ON A NEW METHOD OF EMPLOYING THIS SHRUB IN THE ORNAMENTATION OF GARDENS.

(From the *Revue Horticole*).

DE CANDOLLE has described an Ivy which existed at Gigean, near Montpellier. In 1814 its base was 6 feet in circumference, whence proceeded two large stems which spread over a wall, and covered a surface of 72 square metres; its entire height was 6 metres. This Ivy was blown down by a hurricane in 1829.

The climate and soil of Montpellier appear favourable to the growth of this fine shrub. I have measured one in the wood of Oscar, which was 0m. 39 in circumference, but its age is unknown; this is not the case with the one I am about to describe. On demolishing some houses previous to building the choir of the cathedral, an old wall was exposed, which had formed part of the ancient monastery of the Benedictines, founded by Urban V., and now occupied by the school of medicine. An Ivy, planted in the ancient cemetery of the convent, covers the northern side of the wall at the back of the large amphitheatre of the faculty. At 0m. 30 above the ground, the circumference of the stem is 0m. 77. At the height of 2 metres it divides in three branches, of which the eastern is the largest, being 0m. 45 in circumference. The Ivy spreads over the surface of the wall in the form of a perfectly regular reversed triangle, the height of which is 10m. 88, and its base, which coincides with the top of the wall, is 23m. 25 in length; it presents therefore a surface of 126 square metres, a space much larger than that covered by the Ivy of Gigean. If the wall were higher, the surface covered by the Ivy would be still more considerable, for not only do the branches rise above the top of the wall, but they extend on to the roof of the amphitheatre which abuts against it, and they are cut from time to time to prevent their entirely covering it. It is proposed to surround the new cathedral by a square; if the municipality of Montpellier carry out this project, this fine Ivy will be one of the most curious ornaments of the new promenade.

I had fancied this Ivy must be extremely venerable, when a lucky accident introduced me to an old gardener named Aymard, 71 years old, who gave me the following information;—At the age of 8 or 10 years he was assisting his father in planting a Nut-hedge to conceal the wall in question, when he noticed a young plant of Ivy clinging to the wall: he spared it, and it gradually increased in size. As the child became a man he took pleasure, when cultivating the neighbouring gardens, in seeing his Ivy gradually ascend the wall, reach the summit about 1833, and finally pass it. The prodigious growth of this Ivy, which is thus proved to be about 65 years old at most, is a remarkable instance of the influence of decomposed animal matter upon vegetation. I have already stated that the garden in which it grows served as a burial-ground to the monks of the priory of St. Germain, founded in 1366 by the Pope Urban V.; but besides this, Aymard affirmed that during the Revolution they had buried there many bones and coffins taken from some catacombs in the neighbourhood, called

the Public Vaults. For a considerable distance the soil was filled with human bones and rotten wood, which were found in large quantities when digging the foundations of the choir of the cathedral. This Ivy has therefore grown in land manured in an exceptional manner, and incomparably richer in phosphate of lime than the richest ordinary soil.

To obtain an idea of the influence of this unusual amount of food, I have had the curiosity to calculate what would have been the age of the Ivy if it had grown in a non-manured soil. De Candolle furnished a basis for the calculation; he measured at Montpellier an Ivy growing in ordinary ground; it was 45 years old and was 0m. 065 in diameter. If we establish a geometrical ratio between the diameter and age of this Ivy, and the diameter (0m. 245) of the Ivy of the cathedral, with the view of ascertaining the probable age of the latter, we should commit a gross error, for foresters, horticulturists, nay even woodcutters and sawyers, know very well that in all trees the ligneous layers diminish in thickness from the centre to the circumference. Unfortunately the laws of this diminution have not even been ascertained for the commonest species. With the assistance of my friend Auguste Bravais I have determined them for the Pinus sylvestris, the growth of which we have studied from 70° of N. latitude to 51½°; that is to say, from Lapland to the north of France. It is in the middle of Sweden, in lat. 60°, that this tree presents the finest proportions and most regular growth, and it is there also that we have been able to measure the oldest trees. We have ascertained that the mean decrease of the layers is represented by a hyperbolic curve with a horizontal asymptote. Other considerations show that it is very probable that the hyperbola represents the general law of the growth in thickness of all species of trees in our climate.

For want of other elements I shall therefore suppose that the Ivy of the medical school would have followed this law had it grown in a poor soil; in which case I find that it would have been about 360 years old. Thus, an Ivy planted in a highly manured soil has acquired in 65 years the diameter which it would only have attained at the end of 360 years if unmanured; consequently a manure abounding in phosphate of lime has quintupled the vegetative power of this shrub.

These facts complicate with a new and very important element the approximate calculation of the age of trees deduced from their size; for example, the Ivy observed at Gigean by De Candolle in 1814, and which was 0m. 620 in diameter, would have attained the extraordinary age of about 800 years if it had grown in an unmanured soil, but in a well manured garden its age would be considerably less, while, had it grown in the ancient cemetery of the Abbey of St. Germain, it would be but 160 years old.

The Montpellier Garden possesses an Ivy remarkable in another way, and which will interest horticulturists and landscape gardeners more than the great age of those of which we have been speaking. In 1811 or 1812, De Candolle planted in the newly added northern part a forest school, in which the trees were arranged in natural families. The common Ivy was planted there, as usual, with a support. The stems embraced this, and by interlacing around it formed a trunk similar to those of the American Lianes, which end by killing and replacing the tree which they enfold. The support was not high, so that the trunk is only 1m. 30 high; it is 2m. 30 in circumference at 0m. 30 above the ground; the top of the tree, which is perfectly round, is not more than 4m. 35 in height, but it is 19m. 30 in circumference. The extremities of the lowest branches touch the earth, and the entire tree presents the appearance of a pyramid of verdure placed upon the ground. This Ivy is now 46 years old; its trunk, as I have said, is not simple, but is composed of an agglomeration of entwined stems and branches which have been continually increasing in number. If we desire to form an idea of the age of the Ivy, it is very important to distinguish these compound trunks from single ones like that of the Ivy on the school of medicine.

This tendency of Ivy to form a trunk by the interlacing and joining of its branches may be taken advantage of in the ornamentation of parks and gardens. I have proved this by experience. In 1852, I transplanted a Pinus Laricio of 5 metres in height, and placed it opposite the house which I occupy in the botanic garden. After some months the tree died; on which I cut off its branches, and planted at its foot two Ivies and two Banksia Roses; for two years both creepers flourished, and the yellow Roses showed to advantage against the dark green foliage of the Ivy; but by degrees the latter gained the ascendancy, stifled its weaker companion, and gained the top of the prop. I then placed on the top of the tree an iron hoop 1 metre in diameter; the branches of the Ivy soon reached the edge of this, and they now fall down all around, presenting the appearance of an evergreen candelabrum. The hollow trunk of the Ivy is already strong enough to support itself if the Pine should decay, but the resinous nature of this tree ensures its preservation. Were I to begin again, I would make the hoop twice the size, so as to leave, between the stem and the hanging branches, a verdant summerhouse, always cool and shady.

In central Europe the Ivy still grows vigorously, but it does not pass the 58° of N. latitude; it exists, however, in the island of Gothland, but it is not found in Sweden. In Britain it stops at the Shetlands, and neither grows in the Hebrides nor in the Feroe isles. In England and Germany it embellishes all the ruins, clothing them with a perpetual verdure. No traveller will forget the Ivy which adorns the ruins of the castle of Heidelberg, the feudal fortress of Bressuire in Vendée, and the castle of Courtalein (Eure-et-Loire), the inheritance of the Montmorency family. This castle has stood since 1440; it is flanked by a tower 23 metres in height; the Ivy is trained with much care over a trellis, and the windows appear as if cut out of the foliage. It is impossible to form an idea of the charming effect of this castle of verdure. In England I have admired the Ivy clothing the ruins of Kenilworth. Loudon describes those of Brockley Hall, in Somersetshire, which climb over the trees; one is 0m. 266 in diameter, another 0m. 285; both must be very old, for the growth of the Ivy is slower in England than in the south of France. Another Ivy covers a cottage in the town of Morpeth, in Northumberland; it grows out of a wall, and measures 0m. 490 in diameter at the place where it branches, a height of 3 metres above the ground.

Ivies so often cover ruins or old buildings, that it would be very interesting to study their growth in diameter; this can be done by counting the number of ligneous layers in old Ivies cut down at the base, or by measuring the diameter of those of which the age is known. A certain number of examples compared together would furnish a mean by which we might calculate the age of all large Ivies of which the diameter was measured; for these shrubs, if growing near a ruin, in a soil which is neither cultivated nor manured, may be supposed to have in France a mean growth.

The calculation of the age of Ivy on a ruin would of itself be very interesting, for I am sure examples of prodigious longevity would be met with; besides which we should evidently have a minimum limit by the age of the ruin itself, since this must necessarily be anterior to the Ivy which clothes it. Vegetable physiology and the history of the ruins which cover Europe would thus have an equal interest in the pursuit of these investigations. *Charles Martins.*

Home Correspondence.

Geraniums struck from roots.—The accompanying is a specimen of propagating this class of plants by roots. I don't know if it is generally known. I find it very useful. Roots cut into short pieces at any time



of the year grow just covered with earth. If put in in the autumn they will push in spring; any time during summer they are up in a few weeks. *W. W.*

Tacsonia manicata.—A plant was distributed a few years ago by the Horticultural Society under this name, but I do not hear of it as having flowered in many places, nor have I ever seen it except in my own greenhouse. It is nevertheless by far the most splendid in colour of the splendid genus Passiflora, and moreover a hardy greenhouse climber. Neither Passiflora princeps (racemosa), the Brazilian stove species, nor P. Le Michauxii, nor P. Kermesina, all stove plants though they be, equal in colour Tacsonia manicata. Its colour is intense orange scarlet, so identical with the average scarlet Geranium, that petal being laid upon petal you can hardly distinguish a shade between them, whilst the rays, which are nearly black, enhance this colour and give the effect of a scarlet Anemone. The flower is nearly the same size as Passiflora cærulea. It is nothing like so compact as the older Tacsonias, and may be flowered in any ordinary greenhouse, and it is so hardy that its wood survives even when run through the iron bars of the lights within an inch of the glass in a cool greenhouse. Its only peculiarity is in pruning. It flowers, not as Passiflora cærulea on the wood of the year, but upon laterals produced on that wood, and the most successful treatment is to shorten the principal shoots in August when it forms laterals which produce flowers the following spring. I suspect that in a warmer house than mine it would flower early in spring or perhaps in autumn, but as the thermometer falls with me to 35° or 36°, it sometimes loses some of its buds which are formed in autumn, but even thus, enough remains to make the plant very gay in the spring, and, well cultivated, it would be by far the most gorgeous climber we know. *J. R. S. O.*

Glenny's Manual of Practical Gardening.—So a writer who signs "Carlton" has questioned your honesty or judgment, and tells you that your review will cause disappointment. He says "although the matter is in itself very good, yet it is put together in a manner to puzzle the most industrious reader. In truth it is a mere jumble of good things without any means of finding where they are. I have been looking for Chrysanthemum, but give up the search; the name is not in the index, as it is called, which leads to nothing, nor can I discover its place in any part of the volume." He might just as well have told you that he fished in the Thames for a red herring. He looks for Chrysanthemum in a work entirely devoted to practical operations, a work which does not treat of a single florist's flower, and condemns it because he could not find what had no business there. I must contradict him flatly when he says "the index leads to nothing." There is not a single item in the index that does not directly lead to the number of the page on which the article referred to appears. No doubt Carlton fancied he had made a great discovery, when in his ignorance of what the work should be, he missed Chrysanthemum, but I can assure him that Dr. Lindley's "Theory of Horticulture" has just the same deficiency with regard to prize fighting. There is nothing about the boxing ring in the index, "nor can I discover its place in any part of the volume." Clever fellow, this Carlton! *George Glenny.*

Lightning-struck Oak.—I have a large and handsome Oak tree which has been struck by lightning and much damaged. The bark round the main stem for some distance, about one-third part down, has been torn off and loosened, and the electric fluid has then passed down the trunk, rifting not splintering the bark from the first point of injury to the ground. The tree is in a place where it is a great ornament, and I am very unwilling to cut it down. Can any of your readers tell me—1st, whether there is any hope of its living after the shock and injury; 2dly, whether any means can be taken to help its recovery? If the only injury were the tearing of the bark I could see hopes by plastering over the part, but I fear the shock to the whole system must have been great. The age of the tree must be about 100 or 120 years, in full vigour and beauty. *L. W. G.*

Gigantic "Hemlock."—At a jobbing gardener's near here there is an American Hemlock 11 feet high, with leaves 2 or more feet across, and 4 feet long; the topmost head of bloom measures about 18 inches in diameter, and there are seven or more heads of flowers nearly equally fine. *J. C.* [This is no Hemlock, but no doubt one of the great species of Heracleum.]

Mushrooms in Lawns and Meadows.—Like your able correspondent "M. J. B.", I attempted some years since to persuade Mushrooms to come up on my lawn. I took all the precautions which were suggested, indulged in the flattering anticipation of fine "flaps" for breakfast and "buttons" for sauce to my boiled fowl at dinner. But alas! nothing came. I am wrong—I did get one whole Mushroom—but no more. Discouraged at my failure, being assured by great gardeners that it was useless to try, and not seeing in what respect my experiment was faulty, nothing more has been done. But, now that the subject is revived, I trust that among the many intelligent correspondents of the *Gardeners' Chronicle* some will be found able to discuss this interesting subject. For myself I cannot see why Mushroom spawn should not be made to "run" in a lawn as well as on a Mushroom bed; nor why, if once established, it should wear out faster than in a meadow. Suppose long surface drains were rammed full of loam and horse droppings, and then spawned! *Agriomyce.*

——Although I have gathered beautiful Mushrooms from an exposed Asparagus bed in April, yet I have never been able to get them to grow on my lawn. My failure I however attribute more to the spawn being bad than to mismanagement, and I am sorry to say that good spawn is difficult to get; it is either not present at all in the "bricks" you buy, or it has begun to run and has got killed. I examined several samples in Covent Garden Market last week, and found that in every instance it had started and was dead. I however intend to renew the experiment, and that directly as follows:—I shall take care this time to get good spawn, and having got that I shall have some circular holes cut here and there in my lawn about 1 foot in diameter and 8 inches deep. These I shall fill with dung prepared as for an ordinary Mushroom bed, introduce into each hole a good lump of spawn, covering it lightly with the dung, replace the sods, make all firm, and leave the rest to chance. In this way I do not doubt that I shall get Mushrooms; but you shall know the result. I have frequently seen beautiful ones raised on Mushroom beds turfed over, with green sods; and I see no good reason why a good crop should not be obtained from my lawn in the way just described. *M.*

Linum grandiflorum.—I have observed in recent numbers of your Paper some communications with regard to the vegetation of the seeds of this annual. I believe the difficulty is caused by the great quantity of

mucilage which adheres to the seeds, and which may be removed by steeping them for a night in water, and then rubbing them between the hands with wet sand. This method, recommended to me by a French gardener, I have found to answer perfectly. *A. D. B.*

Summer Grafting.—In your Number of the 11th of this month you have a note or paragraph on grafting trees by M. Loiseau, in which he says he can graft all the summer to the 1st of August, but he does not say how he prepares his grafts. Does he cut them off in the spring and preserve the vital spark until the 1st of August, or does he cut them fresh from the trees? Perhaps if this meet his eye he will be kind enough to explain in some future number how he prepares or keeps his grafts; it would be most valuable information, and would greatly oblige one that has grafted many a thousand. *P. T., Priory Grange, near Sheffield, June* 20. [If you will be so good as refer to M. Loiseau's statement you will find that he speaks of *herbaceous* grafting; a term which conveys a distinct reply to your inquiry.]

Budding Vines.—In the *Gardeners' Chronicle* of the 11th inst. you kindly had inserted under "Home Correspondence" some queries from me relative to budding Vines, and I regret to find in the past week's edition no notice has been taken of it by gardeners or readers. Will you therefore allow me to bring this subject before your notice, as there is a great deal more in it than appears at first sight, for if it can be proved that in the months of July or August buds can be transferred from one Vine to another, and the next season bear as good fruit as an established Vine, it certainly is a new and the best means of at once changing any variety not approved of, and moreover when a new variety is let out, such for instance as the "Muscat Hamburgh" last year, it must be of great importance, especially to growers of advanced years, to be able to produce fine ripe "Black Muscat Hamburgh" this year on an established stock budded as I propose. If you think this worthy of your attention and the Grape-growing world, I shall have something more to say on the subject, but I have wished first to ascertain if it has yet been in operation. *James Aldrige Dearwith, Radwell, Weymouth, June* 20. [We are not aware that the process has been tried. Why not try M. Loiseau's summer grafting? Dormant wedge buds will take very well as soon as the stock is so far in leaf as to cease bleeding: but we do not understand that to be what our correspondent means.]

Early Strawberries.—First and foremost amongst early Strawberries comes the May Queen (Nicholson, Egglescliffe). I purchased some plants in August last, and I think it due to Mr. N. to give my experience of the merits of this variety. The plants thrived so prosperously after travelling some 200 miles and the usual delay of transit, that I was enabled to take a considerable number of good stout runners from them in October, which I potted and placed in a cool house in February. Very little fire-heat was used, and every plant produced a nice quantity of fruit early in April. I name this to show its prolific tendency, for the plants were roughly treated; and being runners from young plants of the same season it was not expected they would form good buds if taken up with a trowel, replanted in pots late in the season too, and not forced to any extent. I augur, therefore, that under proper treatment with plants properly potted it will be found our earliest and one of the best and easiest forcers. As to open ground culture, I found that out of my collection of some 50 sorts, I had none that passed through the winter and looked so well as the May Queen; and though the terrible spring frosts destroyed the early blooms, still the general character of the plants was strong and healthy. I gathered ripe fruit on the 3d inst., and I have no doubt but for the very severe frosts of the 18th, 19th, and 20th of April, which destroyed nearly all the fruit in my garden, I should have had ripe Strawberries by the 20th of May at least. The plants produced a good crop notwithstanding the loss of perhaps more than half the bloom, so that I imagine it is prolific enough for all purposes of an early Strawberry. The fruit is above medium size, inclined to globular in shape, of brightish red colour, very highly perfumed, and when well ripened of delicious flavour, more like to my thinking a well-grown Swainston Seedling, than any other, which is no mean praise. I gathered several berries yesterday (20th) of the size of an average Keens' Seedling, which after a hot day's sun were quite exquisite in flavour; so that on the whole the May Queen may be safely recommended as a step in the right direction in prolonging the season of this excellent fruit, and I think it is only just to the raiser to say thus much in its favour. Of course, as with most other kinds, its character will vary more or less with the kind of soil. Mine is a light dry soil on a gravelly subsoil. Those who are favoured with a better Strawberry soil may be enabled to say still more in its behalf. *W. Roden, M.D., Kidderminster.*

Puffballs are good to Eat.—In reply to your correspondent "M." I agree that the general class of Puffballs are unpalatable, although they may be innocuous. The Lycoperdon giganteum or giant Puffball, however, is an exception, and in some seasons is frequently met with in this neighbourhood. When fried with butter in its fresh pulpy state I know of nothing to equal it in richness and delicacy of flavour. The Agaricus deliciosus and procerus are worthy, too, of being better known, the former abounding in Fir plantations during the autumnal months. Some of my neighbours have them served as a daily standing dish during the season, and think them superior to the common Mushroom in flavour. There may be some difficulty in making converts. One friend to whom I sent a basketfull had to partake of them alone the first day they made their appearance at his table; but having eaten them with impunity his family and some guests took courage the following day, and the dish was emptied and pronounced delicious and worthy of its name. I was amused in sending another quantity to a physician, who wished to try them, but much against the urgent attack of his housekeeper, who warned him against the fatal effects that must ensue, and listened anxiously occasionally at the dining-room door to satisfy herself that her master was really living. Most of the esculent funguses require to be well cooked, and the late Dr. Badham's direction for the deliciosus is excellent:—"Duly season with pepper and salt, and putting a piece of butter upon each, bake in a closely covered pie-dish for about three-quarters of an hour." *Richard Ward, Salhouse, Norwich.*

Calla æthiopica: Somersetshire Climate.—There exists in this county, at Nettlecombe, near Taunton, a plant of Calla æthiopica, which was put some years since by Sir Walter Trevelyan into a small stream that passes through his garden, and which this year has 40 blossoms on it. I think that at Cheshunt, in Hertfordshire, a similar example was formerly to be found in a deep pond in the garden of the late Mr. Wm. Harrison. *Jael.*

Sloe Blight.—Among the effects produced by blight, the bush from which I gathered the enclosed twigs is certainly one of the most remarkable I have met with. You will perceive it is the common Sloe or "snag," as it is familiarly called (Prunus spinosa). You can hardly form an adequate idea of the strange appearance of a large bush decorated with myriads of these pendant monsters in various stages of growth, and odd enough, mingled with fruit in a healthy and flourishing state. *J. M., Hawkchurch, near Axminster, Devon.* [The Sloe branch covered with bladder-like fruit, in which there is not a vestige of stone, resembles exactly what have been figured in this Journal 1850, p. 406, and 1855, p. 532, where the requisite information will be found. *M. J. B.*]

Societies.

HORTICULTURAL: At a meeting of this Society held in the rooms of the Society of Arts, John Street, Adelphi, on Tuesday, the 21st inst., the following gentlemen were elected Fellows, viz.:—

E. P. Sells, Jun., Esq., Highbury Park West.
W. S. Dixon, Esq., 1, Dixon Street, Glasgow.
G. F. Wilson, Esq., Belmont, Vauxhall.
B. Noakes, Esq., Hope Cottage, Highgate.

A variety of plants selected by the Council for distribution were balloted for, and will be shortly forwarded to those Fellows who were successful in gaining prizes.

GREAT ROSE EXHIBITION.—The second grand annual meeting of the National Rose Show took place on Thursday last in the Hanover Square Rooms, and notwithstanding that in many localities there is as yet a scarcity of blooms owing to the first growths having been cut off by frost in April last, the whole of the large room devoted to the exhibition was literally filled with magnificent examples of the different varieties of this queen of flowers. Two tables running the entire length of the great concert room were covered with charming boxes full of Roses, both in the shape of single blooms and of exhibitions of three trusses of each variety. In the centre of one of the tables, and placed at intervals along its whole length, were groups of Roses in pots from Messrs. Paul, and along the middle of the corresponding table were multitudes of beautiful little plants, chiefly Hybrid Perpetuals, all on the Manetti Stock, from Mr. Francis, of Hertford. The orchestra was ornamented with fine foliaged plants, liberally contributed by Messrs. Veitch.

In the Nurserymen's class the best collection of 100 trusses of three blooms each came from Messrs. Paul, who sent beautiful examples of Devoniensis, Paul Perras, Jules Margottin, a magnificent rose, large and fine; Pierre Jaucens, dark velvety rose; charming examples of crested Moss; Lamarque, Madame Laffay, Dr. Lepestre, Madame Place, Solfaterre, Triomphe d'Avranches, bright rose, not very double, but showy; Souvenir d' un Ami, with an unusual amount of colour in it; Madeline, white suffused with pink; Blairii No. 2, a very fine Rose; Madame de Manoel, George Cuvier, Raphael, Transon Goubault, a fine deep rose, full and fragrant; Cardinal Patrizzi, deep velvety crimson; Madame Pauline Labronte, Ohl, an old but still favourite sort; Panachée d'Orléans, one of the few striped kinds, none of which are remarkable either for form or beauty; Triomphe de Beauté, Narcisse, pale yellow; Victor Trouillard, one of the few fine recent additions to deep velvety crimsons; Cynthia, Brennus, Cabbage Moss, Lord Palmerston, deep rose, full and good; Madame Vidot and Madame Rivers, both nearly of the same colour, delicate pink, and both excellent of their kinds; Prince Leon, one of the best of Roses; General Pelissier, not sufficiently blown; Col. Rougemont, a larger and by some considered a finer Rose than Baronne Prevost, which it greatly resembles; Madame Masson, one of the best of its class; Madame Ducher; Souvenir de Leveson Gower, very beautiful deep rose; Louise Peyronny, lilac; Duchess of Norfolk, a little loose, but still a first-class Rose; Comtesse de Ségur, white; Gloire de Dijon, bronzy yellow; Pauline Lansezeur, rich full deep rose; Charles Duval, Joan of Arc, an old but good variety; Count Boubert, Madame Hardy, white; Triomphe de Beaux Arts, a deep velvety crimson Hybrid Perpetual, not very double, but somewhat novel in colour; Latour d'Auvergne, bright rose; Paul Ricaut, Mademoiselle Therèse Appert, pale lilac rose; Bougère, Kean, a favourite old kind; Triomphe de Paris, rosy crimson, in this instance showing a green eye; Laure Ramond, a sort somewhat resembling M. Vidot; William Jesse, Baronne Prevost, Evêque de Nîmes, nearly as brilliant as General Jacqueminot; Télémaque, Paul Dupuy, Adam, Old Cabbage, Bath White Moss, Baronne de Wassenaer, deep lilac tinged with rose; Boule de Nanteuil, one of our best old deep lead-coloured kinds; M. Victor Jacquin, Duke of Cambridge, a good full dark coloured Rose; Auguste Guinoisseau, large and loose but showy; Queen of Denmark, Lord Raglan, perhaps the best of all the brilliant scarlet kinds; Gloire de Parthenay, Caroline de Sansal, Chénédolé, rich and fine; M. Domage, large and beautiful; Madame Zoetmans, large white; Felicité Parmentier, delicate pink; Gloire des Mousseuses, large fine Moss; Mrs. Elliott; Souchet, brilliant crimson; M. de Cambacères, fine full deep rosy lilac; M. Willermoz, pale yellow, with a salmon centre; General Jacqueminot, with blossoms at least 5 inches across, and very brilliant; Mathurin Regnier, delicate pink, good; Noëmi, Triomphe de l'Exposition, crimson, faulty in the centre, but showy; Charles Lawson, one of the best of Roses, large and double; William Griffiths, Géant de Batailles, Lafontaine, a large coarse kind; General Simpson, Louis Chaix, a fine comparatively new sort, which should be in every collection; M. Knorr, Dr. Deilthem, Gen. Castellane, one of the handsomest of bright rosy crimsons; Dr. Juillard, Coupe d'Hébé, Lion des Combats, Duchess of Sutherland, and Souvenir de Malmaison. From Mr. Francis, who also showed in this class, came pretty blooms of Persian Yellow, the most striking of its colour; Cloth of Gold, White Bath Moss, Col. Rougemont, large and fine; Gen. Jacqueminot, Prince Leon, Gen. Castellane, and Elise Sauvage, pale yellow.

In the class of 50 varieties Messrs. Cant and Tiley had the best collections. In these we remarked beautiful blooms of Boule de Nanteuil, Joan of Arc, La Ville de Bruxelles, lilac rose, large and fine; Louis Chaix, Victor Trouillard, deep velvety crimson; Gloire de Dijon, Prince Regent, Comte de Nanteuil, Triomphe de l'Exposition, velvety shaded crimson; Mathurin Regnier, Souvenir d'un Ami, Etendard des Amateurs, crimson shading off to rose; Chénédolé, M. Rivers, Gloire des Mousseuses, General Castellane, Triomphe de Paris, Ariel, M. de Cambacères, Bacchus, a good brilliant crimson; Kean, Comte de Paris, M. Stolz, Pauline Lansezeur, rose shading off to lilac; Paul Ricaut, Prince Leon, Charles Lawson, M. Bravy, cream coloured; Sir J. Franklin, dark rose; General Jacqueminot, large and fine; William Griffiths, Devoniensis, Colonel Rougemont, Emperor Napoleon, deep velvety crimson, nearly one of the darkest of its class; Lafontaine, rough and changeable in colour; Julie, M. Vidot, Duke of Cambridge, rosy crimson; William Jesse, Prince de la Moskwa, a very dark kind approaching to black; Solfaterre, large and fine; Souvenir des Braves, rich rose, but not very full; Souvenir de Leveson Gower, an excellent Rose; Caroline de Sansal, Lord Raglan, M. Knorr, rosy centre, shading off to lilac; Alphonse de Lamartine, lilac, medium size, and of fine form; Jules Margottin, Souvenir de Malmaison, very large; Acidalie, an old but still good Rose; Gloire de Dijon, with more pink in it than usual, and others. It may be remarked that those that came from Bath were for the most part very large and fine.

In the class of 24 varieties Messrs. Fraser, of Lea Bridge, contributed the best collection. It consisted of Col. Rougemont, Duc d'Ossuna, carmine, large, and fine; Duchess of Norfolk, Duke of Cambridge, Anna Alexieff, a new Rose of considerable promise; Generals Castellane and Jacqueminot, Jules Margottin, Lord Raglan, Louis Chaix, M. Heraud, fine carmine; M. de Cambacères, M. Recamier, flesh-coloured, changing to white; Madlle. Therèse Appert, delicate rose; Madlle. Alice Leroy, delicate pink, large and fine; Pauline Lansezeur, Prince Leon, Souvenir des Braves, bright red, large, and showy; S. de Leveson Gower, deep rose, large, and double; Triomphe de l'Exposition, bright reddish crimson, large and finely formed; Triomphe des Beaux Arts, deep violet crimson; Victor Trouillard, Wm. Griffiths, and Devonensis.

In the class for Amateurs who kept a Gardener, the best collection of 50 varieties came from Mr. May, gr. to C. M. Worthington, Esq., who sent Berenice, Colonel Coombes, M. Willermoz, La Quintine—a very dark kind; Dido, Auguste Mie, Moiret, Laurence de Montmorency, Triomphe de Paris, Coupe d'Hébé, Paul Ricaut, Cynthie, Triomphe de l'Exposition, Solfaterre, Hector Jacquin, Devoniensis, Triomphe des Beaux Arts, Knorr, Œillet Parfait, Caroline de Sansal, Col. Rougemont, Gloire de Dijon, and others whose names did not differ from those already mentioned.

Of 24 varieties shown in the class last named, the best came from Mr. Moffatt, Easter Lodge, Dunmow, Essex. It consisted of Lady Stuart, Pauline Lansezeur, M. Vidot, Chénédolé, M. Domage, Paul Dupuy, William Jesse, Baronne Prevost, M. Masson, Comtesse d'Orléans,

Jules Margottin, Cynthia, General Jacqueminot, Duchess of Sutherland, Triomphe de Paris, M. Rivers, Colonel Rougemont, M. Place, Paul Ricaut, William Griffiths, Prince Leon, Souvenir de Malmaison, and Baronne Hallez.

Of 12 varieties shown by Amateurs' Gardeners the best were furnished by Mr. May, gr. to C. M. Worthington, Esq. The sorts were Duchess of Sutherland, M. Masson, Baronne Hallez, Paul Ricaut, Cloth of Gold, Jules Margottin, Lord Raglan, Prince Leon, Madame William, the yellow Rose which was so much admired a year ago in St. James's Hall; Emperor Napoleon, and Baronne Prevost. Mr. Plester, of Elsenham Hall, sent the next best lot, in which were William Griffiths, Paul Perras, William Jesse, Baronne Prevost, Charles Duval, Paul Ricaut, M. Bosanquet, Jules Margottin, Souvenir de Malmaison, Gloire de Dijon, General Jacqueminot, and Coupe d'Hébé. A third collection, from the Rev. H. Helyar, contained Lafontaine, Lord Raglan, Baronne Wassenaer, a good Moss; Jules Margottin, Prince Leon, Adèle Prevost, Cardinal Patrizzi, Paul Ricaut, Gloire de Dijon, Emperor Napoleon, General Jacqueminot, and William Griffiths.

In the class for Amateurs not keeping a Gardener, the best 24 sorts came from G. Cant, Esq., who sent beautiful blooms of Boule de Nanteuil, M. Schmidt, Paul Ricaut, Prince Imperial, a kind nearly as large as a Moutan, rough but showy; Charles Lawson, one of the finest blooms of the kind at the show; Caroline de Sansal, Jules Margottin, General Jacqueminot, not the fine brilliant crimson sort known by that name now-a-days, but the old Hybrid China General Jacqueminot, which has a deep slate-coloured flower; M. Knorr, Prince Leon, Souvenir de Malmaison, Etendard des Amateurs, Gloire de Dijon, Wm. Jesse, Kean, Souvenir d'un Ami, Géant des Batailles, Devoniensis, Evêque de Nimes, Pauline Lanszeour, Lord Raglan, Solfaterre, Coupe d'Hébé, and General Jacqueminot. From Thomas Mallet, Esq., came General Jacqueminot, Boule de Nanteuil, Paul Ricaut, Lord Raglan, Amandine, Kean, General Castellane, General Jacqueminot, Jules Margottin, William Jesse, Lion des Combats, Souvenir de la Malmaison, Duchess de Cambacères, Caroline de Sansal, Triomphe de Paris, Madame Rivers, Louise Peyronny, General Simpson, Madame Knorr, Madame Lamoricière, Charles Duval, Madame Place, Standard of Marengo, and La Ville de Bruxelles.

Of 12 varieties in the class last named, the best were furnished by Mr. Cant, who sent magnificent blooms of Charles Lawson, Madame Masson, Boule de Nanteuil, Jules Margottin, Solfaterre, Baronne Prevost, Kean, Comte de Nanteuil, Omar Pacha, Devoniensis, Lord Raglan, and Coupe d'Hébé. Thomas Walker, Esq., had Boule de Nanteuil, Paul Ricaut, Jules Margottin, Lord Raglan, Caroline de Sansal, Madame Masson, William Griffiths, Lion des Combats, Prince Leon, and Baronne Prevost. Mr. Thomas Mallet sent Caroline de Sansal, Paul Ricaut, Louise Peyronny, Boule de Nanteuil, General Jacqueminot, General Simpson, Jules Margottin, Baron Prévost, Archduc Charles, Madame Rivers, and Lord Raglan.

In these and other collections, for the names of the flowers in which we cannot spare room, we observed charming trusses of the following varieties, viz., HYBRID PERPETUALS:—Madame Vidot, Duchess of Norfolk, Madame Heraud, Madame Hector Jacquin, Victor Trouillard, Madame Masson, Duchesse d'Orleans, Comte de Nanteuil, Cardinal Patrizzi, Madame Place, Lady Stuart, Gloire de Vitry, Madame Knorr, General Simpson, General Castellane, Gloire de Parthenay, Panachée d'Orléans, Madame de Cambacères, Prince Leon, Géant des Batailles, Mathurin Regnier, Lord Raglan, Caroline de Sansal, William Griffiths, Noëmi, Jules Margottin, Madame Rivers, Triomphe de l'Exposition, Louis Peyronny, Auguste Mie, Baronne Prevost, Lion des Combats, General Pelissier, General Jacqueminot, and Joan of Arc. GALLICA:—Transon Goubault, Cynthie, Boule de Nanteuil, Colonel Coombes, Latour d'Auvergne, Prince Regent, Dido, Ohl, Kean. BOURBON:—Acidalie, Souvenir de Malmaison, Coupe d'Hébé. HYBRID CHINA:—Brennus, Chénédolé, Victor Hugo, Madeleine, Paul Perras, Madame Rameau. TEA:—Souvenir d'un Ami, Narcisse, Gloire de Dijon, Madame Willermoz, Bougère, Devoniensis.

The following list contains some of the very finest varieties selected from the whole exhibition. BLUSH:—Madame Vidot, Madame Rivers, Duchess of Orléans, Auguste Mie (deep blush), Caroline de Sansal, and Mathurin Regnier. SCARLET or DARK CRIMSON:—Lord Raglan, Gen. Jacqueminot, Lion des Combats, Gen. Castellane, Prince Leon, Paul Ricaut, and Sir J. Franklin. ROSE:—Col. Rougemont, Madame Hector Jacquin, Jules Margottin, William Griffiths, Gloire de Vitry, Prince Imperial, coarse but showy; Coupe d'Hébé, and Paul Perras. YELLOWS:—Cloth of Gold, some tolerably fine blooms of which were exhibited; Decazes, and Persian Yellow. Of WHITES there is still a deficiency. The best are Dr. Henon, Princess Clementine, the old white Provins, Louise Magnan, and Beauté de Melan. STRIPES were not good. Among them we noticed Panachée d'Orleans and Œillet Parfait. Among Moss Roses we have little to recommend beyond the usual well known kinds. There were, however, some good blooms of the white Bath.

Of Roses not for competition, Mr. Cranston sent some very fine boxfuls of Gen. Jacqueminot, Old Moss, Jules Margottin, many of them measuring 5 inches across, highly coloured and beautifully double; Géant des Batailles, very fine; and charming trusses of Louis Chaix, Gloire de Dijon, Duchess of Norfolk, Queen, Narcisse—pale sulphur, Crested Moss, and other favourite kinds. We also noticed some charming masses of different kinds from Messrs. Veitch, Turner, Hollamby, and Laing.

Of Seedling Roses, Mr. Standish had one named Eugène Appert, a deep velvety crimson Hybrid Perpetual, said to be suitable either for pot culture or for beds. It was commended by the judges, and certainly promises to be a really fine thing. It is in the way of Victor Trouillard and other very dark Roses of that class. Except this we saw nothing really new.

Let us add that the day being fine there was a very good attendance of visitors. We only regret that the beauty of the exhibition and the pleasure of a meeting such as this, should have been so much impaired by the fearful noise of a band which drowned all sounds except those of its own crashing instruments.

Notices of Books.

A Lady's Tour round Monte Rosa. 8vo. Longmans.

When will the English public be tired of reading Swiss tours? One would have fancied the subject a hackneyed one, now that Chamouni and Interlaken are as familiar as Hampstead and Richmond, and Zermatt and Courmayeur scarcely less so; yet every book that appears on the subject is read, however little novelty it may contain. The present volume is more particularly addressed to ladies, and may perhaps prove all the more interesting to such, since the excursions it records are not exceptional feats fitted for none but the most adventurous, but are within the powers of any one possessed of health and strength. The authoress says:—"I feel certain that any lady blessed with moderate health and activity, who is capable of taking a little exercise 'al fresco,' and has a taste for the picturesque and sublime, may accomplish the tour of Monte Rosa with great delight and few inconveniences, and all who do so must bring back with them a store of delightful recollections for the solace of future years. Two or three hours in the badly ventilated rooms of a crowded picture gallery will generally produce a feeling of more thorough fatigue than a journey over an eight-hours' pass in the pure, invigorating mountain air."—P. 391.

The authoress writes well, in a simple and interesting style, and if she records but little that is new, yet the old is pleasantly brought forward, and often presented from a new point of view. As the ascent of the Æggisch-horn is perhaps among the least [e]known, a few extracts respecting it may be acceptable: for the benefit of those unacquainted with Switzerland it may be well to state that this mountain is situated near Viesch, on the northern side of the Rhone valley. The authoress slept at an hotel about three parts up the mountain, whence she and her companions started at 5.10 A.M. on the 7th September.

"After ascending for above 35 minutes we had a fine view of the Strahlhorn and Weisshorn; and beyond them, in the far distance, which the rising sun had just reached, the stately form of Mont Cervin, or the Matterhorn, was also visible. * * *

"At 6 A.M. I dismounted, for 'Frity' could go no farther, and I accompanied the gentlemen on foot the rest of the way, which is excessively steep. The path winds upwards amongst large blocks of stone, which form a kind of staircase to the summit. This I reached at 6.55 A.M., without once requiring any assistance. * * * On reaching the summit, one's first difficulty is to discover a secure resting-place from which to make observations, for there is no level spot on which to stand; but having done this, I found myself poised on a pile of huge, loose rocks, which are heaped together on the top of the mountain in so strange a fashion that one wonders the heap does not separate and tumble down on the Aletsch Glacier below. This feeling of insecurity is, however, soon forgotten, and the mind becomes absorbed in admiration and delight at the wonderful view. This is almost unparalleled in extent and variety. It embraces the range of the Bernese Alps on the north, and that of the Monte Rosa chain on the south. The Æggisch-horn is placed between these two magnificent chains of mountains, and at an immense depth below, at one's very feet, lies the great Aletsch Glacier, stretching away in an unbroken expanse for about 20 miles long and perhaps two or three wide. On the southern edge of this glacier is the small lake called Märjelen See, which is of a deep blue colour, with icebergs of the purest white floating about in it. On every side arise snowy peaks of the highest mountains." P. 60.

On a second occasion this small lake was visited:—"When we reached the Märjelen See we sat down and examined it with the greatest admiration and astonishment. This lake is fed by water supplied from the Aletsch Glacier, to which it forms a lateral outlet, though the principal part of the drainage of that glacier is at its southward termination, where the Massa torrent flows from it, and empties itself into the Rhone a little above Brieg. The glacier, where it touches the Märjelen See, does not form a great cavern, but breaks off in huge masses, which fall into the lake, and thus enormous perpendicular cliffs of deep blue ice are formed. These cliffs extend for more than half a mile across the ravine, where the lateral outlet is. The lake was now about three-parts dry, but there was still deep water at the base of the ice cliffs, which in consequence of the draining of the lake rose more than 100 feet above its level; in ordinary times the height is about 60 feet. As the glacier moves downwards in its long course from the southern side of the Jungfrau and Mönch to the Massa torrent, it misses the support of the rocks when it meets this lateral outlet, and large pieces of many hundred tons split off by their own weight and tumble into the lake, where, when there is plenty of water, they float about like icebergs in the North Sea. We approached some of these icebergs which had been left dry, and walked round them, and even through a kind of arcade which was in one of the largest. The ice of which they were composed was of a deep blue colour when viewed in the mass, but of the purest and clearest white when in smaller pieces. The fragments of the glacier which strewed the bed of the lake were of various sizes—some as big as a cottage, and some as small as mincemeat. We observed that many of the mud-covered stones which had been left dry abounded with a kind of sandworm or serpula, which lives in this intensely cold water just drained from the glacier, and kept icy cold by the enormous icebergs which float in it. * * * Nothing could be more singular than the appearance of the enormous ice-cliffs which towered above the lake. They were already split by immense fissures, and in some places hung over the lake, ready to fall with a tremendous crash at any instant. We appeared to see into the very heart of the glacier, and all its inmost depths were disclosed. Nothing indeed could exceed the exquisite beauty and delicacy of its colour, of which no description can convey an adequate idea. In consequence of the sudden draining away of the greater part of the lake,* the ice-cliffs, which are generally half hidden in the deep water, were laid bare nearly to their foundations; and it was curious to observe the different character and colour of the ice above and below the usual water-line, that below being of a far deeper and more brilliant hue. In some places the ice assumed the most fantastic shapes, and at one spot it appeared to form a kind of landing-place from the lake to the glacier, with rude steps and balustrades of ice leading up to small deep blue caverns." P. 160.

From this book, as well as from Mr. King's "Pennine Alps," it would appear that the inconveniences to be encountered on the Italian side of the Alps are considerably greater than those to the northward; at the same time this region has the advantage of being less overrun by travellers, and there is more of the excitement of novelty and uncertainty in the different excursions. All accounts agree in representing the southern valleys as extremely beautiful.

"I have known some persons, especially ladies, who have been so much overpowered and even terror-stricken by the stern and severe character of Swiss scenery, that they could not fully appreciate its sublimity; but who would nevertheless thoroughly enjoy the softer beauties of the south, where the same majestic, snow-capped mountains are indeed met with, but set in a frame of the richest vegetation, which softens their ruggedness, and at the same time forms a lovely combination and contrast. The noble Chesnut and Walnut trees grow to a greater height on the southern side of the Alps, where they spread themselves in the grandest masses of luxuriant foliage. The little Alpine plants and flowers also abound on the Italian side more profusely than in Switzerland, and adorn the mountain sides up to the very edge of the snow, frequently making a garden in places where nothing could be seen from a distance but stony desolation. The number, and perhaps the variety, of buttterflies and moths, is also greater on the sunnier side of the Alps; and even as late as August and September I have seen many beautiful specimens," p. 5. On the other hand, the heat of the Piedmontese valleys and the absence of the invigorating mountain air of Switzerland must be very trying, and a drawback to the thorough enjoyment of any exercise, especially that of walking.

The illustrations are generally good, though the chromo-lithographs, as is often the case, are too brightly coloured. One fault must be pointed out, namely, that the red line in the map, if intended to trace the journeys of the authoress, is not correct, since she confesses at p. 380 that she has not attempted the most difficult part of the circuit, namely, the pass of the St. Théodule. It is true she has supplied this omission from the journal of a friend; nevertheless, she cannot be considered strictly accurate in commencing her book with the statement that she has "successfully accomplished the tour of Monte Rosa."

Thesaurus capensis; or Illustrations of the South-African Flora, being figures and brief descriptions of S. African Plants selected from the Dublin University Herbarium. By W. H. Harvey, M.D., F.R.S. No. 1 (5*s*.). Hodges, Dublin.

Under this title Dr. Harvey has commenced a series of uncoloured, but very useful, and scientifically exact, figures of the more remarkable plants inhabiting the Cape of Good Hope, and the colony to the northward. It is intended to be a running supplement and illustration of the *Flora Capensis*, or general description of the plants of South Africa, now in preparation by the learned author and Dr. Sonder of Hamburgh, the two greatest living authorities upon South African vegetation. Each number of the work will contain 25 plates, four quarterly numbers forming a volume, which will be complete in itself. Since only 250 copies will be printed, of which 150 are reserved for the Cape Colony, those interested in the publication should im-

* It had burst its barrier on the previous night.

immediately instruct their booksellers to secure the work. Dr. Harvey does not bind himself to issue more than one volume; but if the work is sufficiently encouraged, then he will proceed to the preparation of five, or six, or even more, similar volumes. Some of the plants are remarkable for their beauty as well as novelty, and nurserymen will do well to study these Parts as they appear. To botanists the work is invaluable.

The 6th part of Messrs. Henderson's *Illustrated Bouquet*, completing the volume, is now before the public. It contains fine figures of three varieties of Gladiolus gandavensis, viz. Danäe, Adonis, and Archimedes; four Pompone Camellias, viz., St. Justin, Miss Towers, Satanella, and Queen of Beauties; Clianthus Dampieri, Dipteracanthus affinis, a scarlet flowered stove plant allied to Ruellia; and the three Gloxinias, Princess Alice, Cartoni-robusta, and Mathilde de Landevoisin. All these are accompanied by very full instructions for cultivation. The volume is dedicated by permission to H.R.H. the Princess Mary of Cambridge.

We have also received the following:—*Practical Guide for Italy* (Longmans) is a closely printed half-crown volume, giving the traveller information upon all sorts of useful matters. Roads, passports, luggage, exports, imports, conversation, railways, inns, tradesmen, things to be seen, how to see them, excursions, and a multitude of other matters fill the pages, to which is added a small map of Italy as low as Rome. The author is said to be "an Englishman abroad," and he is evidently familiar with what he describes. His purpose is to tell the traveller "how to see all that ought to be seen in the shortest period and at the least expense."—*A Map of the Seat of War in North Italy*, remarkable for the beauty of its execution, and the abundance of its details, has been published by Messrs. Blackie, at the price of 1*s.*—*Mental Arithmetic*, by Hugo Reid (Longmans), a little volume intended as much for teachers as for learners, and apparently well calculated for either.—A new edition of the excellent *Manual of Scientific Inquiry*, published by authority of the Lords of the Admiralty (square 8vo., Murray), under the superintendance of the Rev. R. Main, of the Greenwich Observatory. Many additions and some omissions belong to this edition; among the latter of which is Sir John Herschel's appendix on reducing foreign languages to the form of our own. We observe that Mr. Hanbury has aided Sir William Hooker in revising the botany.

Miscellaneous.

The Gulf Stream.—The Gulf Stream, where it quits the Gulf of Florida, has a velocity of from three to five miles per hour (varying with the season), a breadth of only a few miles, and a temperature of 83°. Thence it follows the coast of America to about the 36th degree of latitude, where it still possesses a temperature of 76° Fahr., and where it quits the coast about Cape Fear, and encircling the Azores, spreads itself in wide diverging streams over the basin of the Atlantic, between the coasts of America and Spain, forming a vast eddy, overgrown with the "Sargasso" or Gulf-weed. The main stream, however, continues to run north-westward, directed full towards the British Islands, to about the 46th parallel, in the 40th degree of west longitude, where its force is much weakened by subdivision. The surface water, however, continues to flow onwards in the same direction, and its presence on our western shores is evidenced by the warm vapours the south-west winds waft from above it, and by tropical plants and seeds thrown ashore on the west coast of Ireland, on the Hebrides, and even on Norway. Were the isthmus of Panama broken through, there is no doubt that the whole climate of our islands would undergo a most notable deterioration. *From the Encyclopædia Britannica—New Edition.*

Calendar of Operations.

(*For the ensuing Week.*)

—✦—

PLANT DEPARTMENT.

CONSERVATORY, &c. — Shading should be used sparingly here, except on bright days, for during dull unsettled weather plants require all the light that conservatories afford, and are greatly benefited by an occasional gleam of sunshine. The beauty of most soft-wooded plants will be considerably prolonged by the use of weak manure water, which should be given frequently whenever it can be done. Indeed, such things as Achimenes, Clerodendrons, &c., may be had in full beauty from June to October through being liberally supplied with manure water, but this must not be given too strong at first. Keep the atmosphere as moist as can be done, but avoid damp on cold nights by leaving sufficient air to cause a gentle circulation, and spare no attention to keep the plants clear of insects. Stock for autumn and winter flowering will require careful attention to get it sufficiently forward. Chinese Primulas, especially the double varieties, if at all backward should be placed in a cold frame and shaded from the sun, where they will make rapid progress, particularly if the pots stand on a slight bottom heat. Cinerarias for early flowering should also be potted and started at once, choosing the strongest suckers, and placing them in a close shady frame till rooted. These are sometimes very subject to the attack of thrips at this season, but if they are kept cool and moist, and smoked occasionally, there is no danger of their being clean and growing vigorously. STOVE.—The stock here will now be growing very rapidly, and must be afforded sufficient space to allow of the perfect development of the foliage and the formation of compact handsome specimens. The atmosphere of this house can hardly be kept too moist, and the plants should be sprinkled over head morning and evening and every available surface kept moist.

FORCING DEPARTMENT.

PINERIES.—Such varieties as are at all liable to spoil at the bottom before the upper pips are coloured should now be kept as dry as possible immediately they show the least signs of colouring, keeping the atmosphere also as dry as can be done without injury to the rest of the stock. VINERIES.—Grapes intended to hang through the winter should be thinned very freely, and, if necessary, they should be gone over a second time, leaving them so that the berries when fully swelled will scarcely touch each other. A moderate crop only should be left on the Vines; for to ensure success in keeping Grapes fresh and in good condition till next March the Vines must be in first-rate health; be satisfied, therefore, with a moderate or rather light crop in the late house. Keep the atmosphere of houses where the fruit is colouring in active circulation, using gentle fires by day, with abundance of air, and leaving a little air on at night to prevent damp. If red spider appears inclined to be troublesome, wash the pipes, &c., with a mixture of soot and lime, and if the colour is objectionable add more soot. FIGS.—Trees that have been kept dry while ripening the first crop, and are now cleared of this, should be well watered at the root, and if there is any appearance of red spider the leaves should be thoroughly washed with the engine. Give manure-water to trees showing a heavy second crop, and keep the atmosphere moist by frequently sprinkling the passages and borders, &c. Keep the shoots thin and regularly tied, so as to avoid confusion, and expose all parts of the tree equally to the light. Where the fruit is ripening attend to previous directions, and keep the atmosphere and borders as dry as can conveniently be done. Assist trees in pots by giving them a liberal supply of manure-water.

FLOWER GARDEN AND SHRUBBERIES.

Go over the beds frequently and keep the young shoots of Verbenas, &c., nicely regulated and pegged down until the ground is fairly covered, after which the shoots may be allowed to grow more at liberty. On poor dry soils two or three applications of weak manure water given at intervals of a few days, and when the ground is moist, will greatly assist in getting the beds covered without loss of time. Remove dead and dying leaves from Roses, and give the autumn flowering varieties plenty of manure water in order to keep them in vigorous health, and secure plenty of wood for blooming in autumn. Those budded on the Dog Rose must be kept clear of suckers, which, when allowed to grow, weaken the head, besides having an unsightly appearance. Budding should be proceeded with during cloudy weather. Mildew is sometimes very troublesome after this season, and no time should be lost in dusting the infested plants with sulphur, for the enemy will soon spread and destroy the foliage, and ruin the plants for blooming in autumn. Proceed with the propagation of herbaceous plants as expeditiously as possible, in order to get this work out of hand and the glasses, &c., at liberty. Take advantage of showery weather, give the walks and lawns a good rolling, and endeavour to keep the Grass short and neatly mown, for nothing looks worse than badly kept Grass.

HARDY FRUIT AND KITCHEN GARDEN.

Occasional showers will be found favourable for the growth of Strawberry runners, and a sufficient stock for forcing next season should be potted at once, and placed in a close shady frame until they get established, which will soon be the case. Prepare ground for fresh plantations by heavily manuring and trenching, or if ground cannot be obtained at once select the strongest runners and plant them on a shady border in rich soil, to be transplanted with balls early next month. Asparagus beds can hardly have too much manure-water from the stable or farmyard tank during the present month. On dry friable soils salt may be applied with advantage, but this should not be used on strong adhesive soils, as it keeps the ground wet in winter and decays the roots. See that there is plenty of Peas planted for furnishing a late autumn supply, and also attend to keeping up a succession of French Beans, Spinach, and salad.

COTTAGERS' GARDEN.

Let every bit of spare ground be constantly broken up at this period, and filled with some kinds of greens or Turnips. If the cottager is short of manure extra spade husbandry will in some degree compensate for the want of it. This is the cottager's chief capital, and is generally most efficient.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.
For the Week ending June 23, 1859, as observed at the Horticultural Gardens.

June.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Min.	Mean	Temperature of the Earth. 1 foot deep.	2 feet deep.	Wind.	Rain.
Friday 17	16	30.011	29.988	71	41	56.0	64	62	W.	.00
Satur. 18	17	30.136	30.034	76	53	64.5	63½	62	N.	.00
Sunday 19	18	30.015	29.929	74	56	65.0	64	62	N.W.	.01
Mon 20	19	29.830	29.819	66	41	53.5	64	62	W.	.13
Tues. 21	20	29.928	29.858	76	55	65.5	63	62	N.W.	.00
Wed. 22	21	30.003	29.898	74	52	63.0	63	62	S.W.	.00
Thurs. 23	☾	30.014	29 988	69	41	55.0	64	62	S.W.	.00
Average		30.012	29.930	72.3	48 4	60.3	63.6	62.0		0.14

June 17—Clear; very fine; cool at night.
— 18—Fine; very fine; overcast.
— 19—Cloudy; very fine; shower; overcast.
— 20—Overcast; rain; overcast at night.
— 21—Fine throughout.
— 22—Very fine; cloudy; overcast.
— 23—Fine; very fine; cool at night.
Mean temperature of the week, 1 deg. below the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 33 years, for the ensuing Week, ending July 2, 1859.

June and July.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 26..	73.7	50.8	62.2	14	1.00 in.	1	2	4	2	2	10	9	3
Mon. 27..	74.2	50.7	62.5	17	0.80	3	2	2	2	4	14	6	—
Tues. 28..	73.6	50.1	61.8	11	0.65	3	2	6	1	2	9	4	6
Wed. 29..	73.0	50.8	61.9	8	0.20	3	4	3	1	1	14	5	2
Thurs. 30..	73.1	51.3	62.2	12	0.80	—	4	4	2	4	11	5	3
Friday 1..	71.9	51.8	61.9	16	1.18	1	4	5	—	4	10	6	3
Satur. 2..	73 1	51.9	62.5	12	0.22	2	5	2	—	5	10	7	2

The highest temperature during the above period occurred on the 27th, 1826—therm. 93 deg.; and the lowest on the 27th, 1858—therm. 35 deg.

Notices to Correspondents.

BOOKS: *A Constant Sub.* Any *good* books on general Gardening teach you how to grow Strawberries. As for special treatises there is Reid on the Strawberry, published by Baldwin, and another little book by M'Ewen, published by Groombridge. We cannot find the subject in Glenny's Manual.

CACTUS: *G Fry.* Your small-flowered seedling, with an unusually large amount of the charming violet tinge of speciosissimus in it, is very handsome. We have seen others, however, very much like it.‡

CAULIFLOWER PLANTS: *H E.* If they are suffering from fly, give them a good syringing once or twice with tobacco-water, washing it off afterwards with clean water. That will probably cause them to disappear. ‡

CHRYSANTHEMUMS: *Landor.* These never produce in the open border flowers worth looking at unless they are parted in March or April, left with not more than three young shoots each, planted in very rich soil, pegged down when long enough, and treated to plenty of coarse manure while preparing for flowering. The old flower stems of the previous year are useless.

DAPHNE CNEORUM: *Old Sub.* In order to make this grow more compactly, prune it in a little, just after it has done blooming, or rather when it begins to push fresh wood. It will then stand a little cutting without injury.‡

DISEASED MELONS: *C A.* As far as we can judge your disease is caused by too much moisture somewhere *combined with* insufficient ventilation.

FUNGI: *A very old Subscriber.* The specimens are the true Champignon, or Agaricus oreades.

FUNGI IN MELON BEDS: *Uttoxeter.* You will destroy them by dusting them with hot lime, which will do your Melon plants no harm whatever.

GLASS: *J B, Bray.* We prefer for all horticultural purposes Hartley's rough plate glass; it is perfectly well adapted to grow and colour Grapes under.

GRAPES: *X Y Z.* No opinion can possibly be formed of the cause of the disease without seeing specimens of the berries attacked.

INSECTS: *W M M.* The Elm leaves are infested with the galls formed by Eriosoma Gallarum Ulmi, a species of the Aphidæ. We can recommend no other remedy than that of picking off the infested leaves at the present season, but when the galls burst the leaves may be syringed with gas tar water, which will kill the inclosed insects. *W.*

LONG-SUSPENDED VITALITY IN SEEDS: *J W.* The seeds which have been in your family and in their present state for upwards of a century are those of Abrus precatorius. That any of them after being soaked in lukewarm water should have shown signs of germination, one having sprouted three-quarters of an inch, although it subsequently died, is a very interesting fact.

MORPHOLOGY: *D Judd.* Your specimen of a Plum is a capital example of the change of calyx into common leaves.

NAMES OF PLANTS: We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have or could have undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*Z C D.* 1 and 2 are not in flower; 3 is Pteris longifolia; 4, Gymnogramma ochracea.—*Diss.* The purple-leaved variety of Trifolium repens.—*A Devonian.* In so young a state it is not possible to form a positive opinion. The specimen looks like a bit of the variegated Thuja orientalis, which the Japanese are known to cultivate; but it may be some Retinispora.—*F A P.* The "blight" is the well known Æcidium laceratum, a most mischievous kind of fungus; it is very likely to attack Pear trees and Medlars. The double Escholtzia is not uncommon, but has not at present fixed itself; perhaps your plants may be more tractable. The Hibiscus fruit probably belongs to H. Manihot. We do not find any Hollyhock seeds.—*E J E M.* Ozothamnus rosmarinifolius.—*R J M.* Sisyrinchium striatum.—*David.* Platanthera bifolia, the Butterfly Orchis. *C F.* Spiræa Aruncus.—*C.* 1, Adiantum formosum; 2, A. cuneatum; 3, Pteris longifolia; 4, Selaginella uncinata, commonly called Lycopodium cæsium.

SLOE BLIGHT: *J P.* See our "Home Correspondence" of today, p. 542, col. *b.* ‡

SPERGULA PILIFERA: *G M.* Your plant is not by any means that to which the foregoing name belongs.

SPOT ON ORANGE LEAVES: *R R.* These specimens are certainly in the state which by gardeners is always ascribed to burning by the sun's rays. It is however incomprehensible how that should be; as was shown in our columns many years ago. It is more probable that the mischief is produced either by cold drops falling from the roof upon tender leaves, or from the sudden and rapid evaporation of drops of water collected on the leaves; which evaporation produces cold enough to kill the young tissue.

STRAWBERRIES.—We have received from Mr Knevett, of Isleworth, a remarkably fine Strawberry called the Empress Eugénie, of the largest size, red inside like Red Beet, and extremely good, though not equal to the British Queen and the race to which that kind belongs. The flesh of Knevett's Strawberry is very firm, so that it ought to travel well.

STRAWBERRY LEAVES: *C B Hall.* The leaves have evidently been in rude health; and the spots by which they are disfigured are certainly not caused by either fungi or insects. We should suspect that the leaves have received a volley of hail-stones when young. If that cannot be, and since there is no trace of constitutional disease another conclusion would be that the soil contains something noxious.

STRAWBERRY RUNNERS: *T P.* There can be no doubt that the oldest runners of the year are the best.

THE LOCUST TREE: *J O.* As several different trees bear this name, we must beg you to repeat your question and to say *what* Locust tree it is concerning which information is desired.

VERBENA: *C J P.* Your crimson seedling, with a pale yellow eye, is apparently a fine kind. Its blooms were, however, considerably withered when they reached us, and nearly scentless.‡

MISC: *Sub.* Flowers of sulphur is right, not flour of sulphur.‡

*** As usual, many communications have been received too late, and others are detained till the necessary inquiries can be made. We must also beg the indulgence of those correspondents the insertion of whose contributions is still delayed.

THE PATENT

NITROPHOSPHATE OR BLOOD MANURE COMPANY (LIMITED),

CONSISTING OF TENANT FARMERS, OCCUPYING UPWARDS OF 30,000 ACRES OF LAND.

TRUSTEES.

ABEL SMITH, Jun., Esq., Walton House, Ware, Herts.
CHARLES DIMSDALE, Esq., Essendon Place, Herts.
EDWARD BALL, Esq., M.P., 8, Belgrave Road, Pimlico
MAJOR-GENERAL HALL, M.P., Western Colville, Linton, Cambridge
JOHN BRADY, Esq., M.P., Warwick Terrace, Belgrave Sq.

DIRECTORS.

Chairman.—JONAS WEBB, Esq., Babraham, Cambridgeshire.
Deputy-Chairman.—JOHN COLLINS, Esq., Myddleton Square, Pentonville.
EDWARD BELL, Esq., Tottenham, Middlesex
JOHN CLAYDEN, Esq., Littlebury, Essex
RICHARD HUNT, Esq., Stanstead Abbot, Herts.
THOMAS KNIGHT, Esq., Edmonton, Middlesex.
ROBERT LEEDS, Esq., West Lexham, Norfolk.
ROBERT MORGAN, Esq., 72, Camden Villas, Camden Town.
GEORGE SAVILL, Esq., Ingthorpe, near Stamford.
WILLIAM COLLINS, Esq., 105, St. John Street Road.

Bankers.—Messrs. BARNETT, HOARE & Co., Lombard Street.
Solicitors.—Messrs. KINGSFORD & DORMAN, 23, Essex Street, Strand.
Auditor.—G. W. BROWN, Esq., 28, Parliament Street.
Manager.—Mr. JAMES ODAMS. *Secretary.*—Mr. C. T. MACADAM.

Offices, 109, Fenchurch Street, London.—Manufactory, Plaistow Marshes, Essex.

THE Directors beg to inform their Friends and the Agricultural Public that the following Manures are now ready:—

ODAMS'S BLOOD MANURE FOR CORN AND MANGEL.
ODAMS'S BLOOD MANURE FOR ROOTS.
ODAMS'S SUPERPHOSPHATE OF LIME.

Full particulars may be had at the Company's Offices, or of the local Agents.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

ARTIFICIAL MANURES.

FREDERICK CORNWELL begs to inform his friends and the Agricultural public that he can now supply a "SUPERPHOSPHATE of LIME" superior to anything yet produced. Each Bag guaranteed to contain from 20 to 25 per cent. of "Soluble Phosphate of Lime." Price 5*l.* 10*s.* per ton, delivered free to any Railway or Wharf in London. Dealers and the trade supplied. LINSEED-CAKES, COTTON-CAKES, and all descriptions of ARTIFICIAL MANURES at lowest market prices.—Offices, 7, Great St. Helen's, London, E. C.

PERUVIAN GUANO.

The present price of this valuable Manure is—
12*l.* per Ton for 30 Tons and upwards,
13*l.* 5*s.* per Ton for 1 Ton up to 30 Tons.

And, to guard against the purchase of adulterated mixtures and of inferior Guanos, purporting to produce results equal to Peruvian, consumers are recommended to apply either to ourselves, to our agents, Messrs. Gibbs, Bright, & Co., of Liverpool and Bristol, or to dealers of established character, in whose honesty and fair dealing they may place implicit confidence.
ANTONY GIBBS & SONS.

BURNARD, LACK, AND CO.'S CONCENTRATED SUPERPHOSPHATE OF LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.

CONCENTRATED TURNIP MANURE, equal in value to the preceding.

Of these Manures Dr. Voelcker says:—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."

Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to BURNARD, LACK, & Co., Sutton Road, Plymouth.

LONDON MANURE COMPANY, removed to 116, Fenchurch Street, E. C. (Established 1840), have the following MANURES ready for delivery:—

CORN MANURE for SPRING TOP-DRESSING
URATE
MANGEL MANURE
SUPERPHOSPHATE OF LIME
BLOOD MANURE
} all of guaranteed quality.

In consequence of the reduction in the price of raw material the London Manure Co. are enabled to lower the price of their Superphosphate of Lime, and to materially improve the Corn Manure and Urate.

The London Manure Co. also supply PERUVIAN GUANO (direct from Messrs. A. Gibbs and Sons), SULPHATE of AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of value. Wholesale dealers supplied.
116, Fenchurch Street, E.C. EDWARD PURSER, Secretary.

REDUCTION IN PRICE OF LAWES'S MANURES.

MR. LAWES begs to announce that he has this season reduced the price of the Manures manufactured by him, viz.:—

TURNIP MANURE	from £7 to £6	6
SUPERPHOSPHATE OF LIME ..	,, 7 to 6	6
MINERAL do. ..	,, 6 to 5	5
BARLEY MANURE..	.. ..	8 0

Prof. Way and Dr. Voelcker have sampled from a bulk of 5000 to 6000 tons at his factories, and their report and analyses are given in full in Circular to be obtained on application at his office, 1, Adelaide Place, London Bridge, E.C., or of his local Agents.

N.B. Genuine Peruvian Guano direct from Messrs. GIBBS, Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures. American Cotton-seed Cake supplied.

AGRICULTURAL MACHINERY.

E. R. AND F. TURNER, Ipswich, manufacture Prize Mills for Crushing Corn, Seed, Malt, &c.; Portable Grinding Mills, Steam Engines fixed and portable from 2 horse-power and upwards; Threshing Machines, Chaff Cutter, Oilcake Breakers, Horse Gears, Saw Tables, &c., all of a superior description and adapted for Home, Colonial, and Foreign use. Illustrated Price Lists sent free on application.

WARNER'S IMPROVED LIQUID MANURE OR GENERAL PORTABLE PUMP.



These Pumps are fitted with J. W. & SON'S Patent Buckets and Suckers, and cannot clog in action. The barrel is of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure. The legs will fold together, and the whole may be carried on the shoulder to any pond or tank required.

Price of 4½ in. Pump, with legs, 3*l.* 3*s.* If with planished copper barrel and galvanised iron handle, &c., 14*s.* extra. The barrel is 27½ in. long, and the legs are 5 ft. high.

These Pumps are also made without the legs, with strong wrought-iron straps for screwing on to any ordinary water butt or cart, and fitted with 1¼ inch brass union for attaching flexible suction. Price 50*s.*

1¾ inch Gutta Percha Suction Pipe, 1*s.* 11*d.* per foot.

Rubber and Canvas Suction and Delivery Hose, from ¼ inch to 4 inches in diameter, in lengths of 60 feet to order. Branch Pipes with Cocks, Union Screws, &c., at reduced prices.

May be obtained of any Ironmonger or Plumber in town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin St., London.

WARNER'S PATENT VIBRATING STANDARD PUMPS.

PATENT CAST-IRON PUMPS, fitted with J. W. & SON'S Patent Buckets and Suckers, which cannot clog in action, for Farms, Cottages, and Wells, not exceeding 28 feet.



Diameter of Barrel.	Height.		£.	*s.*	*d.*
2½ in.	short	1 ft. 7 in.	1	10	0
2½ ,,	long	3 ,, 3 ,,	1	14	0
3 ,,	ditto	3 ,, 6 ,,	2	8	0
3½ ,,	ditto	3 ,, 6 ,,	2	12	0
4 ,,	ditto	3 ,, 6 ,,	3	3	0

Fitted for lead, gutta percha or cast iron flanged pipe as required.

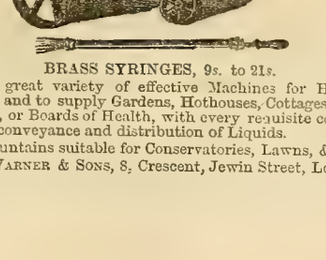
2½ ,, short, with 15 feet of Lead Pipe attached, ready for fixing 2 14 0
2½ in. long ditto ditto ditto 2 18 0

The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.

May be obtained of any Ironmonger or Plumber in Town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

WARNER'S SWING WATER-BARROW (TO HOLD FORTY GALLONS). MOUNTED ON WHEELS 20 INCHES HIGH, will save much of the Gardener's time and labour. May be obtained of any Ironmonger for 3*l.* 3*s.*



BRASS SYRINGES, 9*s.* to 21*s.*

Also a great variety of effective Machines for Hydraulic purposes, and to supply Gardens, Hothouses, Cottages, Farms, Mansions, or Boards of Health, with every requisite connected with the conveyance and distribution of Liquids.

Fountains suitable for Conservatories, Lawns, &c.
JOHN WARNER & SONS, 8, Crescent, Jewin Street, London.

YORKSHIRE PRIZE PIGS.

MR. WAINMAN has a few YOUNG BOARS AND SOWS of his Large White Breed to dispose of, bred from prize parents on both sides. The Carhead Pigs have had 175 Prizes and Medals awarded to them at the Royal Agricultural Shows of England, Birmingham, and the principal Shows in Yorkshire and Lancashire.—Apply to Mr. FISHER, Carhead Farm, Cross Hills, Leeds.

TO PIG AND POULTRY FEEDERS AND MILLERS.

CHICKEN AND GAME RICE, 8*s.* per cwt., in bags 1¼ cwt. each. SCREENED RICE, 11*s.* per cwt., in bags 1¾ cwt each. RICE MEAL, 6*s.* 6*d.* to 8*s.* 6*d.* per cwt. RICE for grinding. American Oilcake and Locust Beans, per Ton only.—All Sold for Cash, and an allowance per ton, by W. & R. JUPP, Rice Merchants, 6, Cross Lane, St. Mary-at-Hill, Eastcheap.

FARM BUILDINGS.

LOANS MAY BE OBTAINED UNDER THE GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY'S ACT, for the full amount required by the owners of Settled Estates, Incumbents, Trustees, Bodies Corporate, &c., for the erection of Farm Houses, Farm Buildings, and Labourers' Cottages, designed by their own agents and sanctioned by the Inclosure Commissioners. The Loans are repaid by a rent-charge on the estate for any term the landowner may fix, not exceeding 31 years.

No investigation of title being required, and the charge not being affected by incumbrances, no legal expenses are incurred.

The Company furnish Designs of every description, and undertake the entire responsibility of the works wherever desired by Landowners. No profit however is taken by the Company on any works they execute, the actual expenditure only, approved by the Inclosure Commissioners, with a Commission thereon, being charged in all cases. Applications to be addressed to WILLIAM CLIFFORD, the Secretary, at the Offices of the Company, 52, Parliament Street, London.

THE LANDS IMPROVEMENT COMPANY,
2, Old Palace Yard, Westminster, S.W.

To Landowners, the Clergy, Solicitors, Estate Agents, Surveyors, &c.—The Company is incorporated by Special Act of Parliament for England, Wales, and Scotland.—Under the Company's Acts Tenants for Life, Trustees, Mortgagees in possession, Incumbents of Livings, Bodies Corporate, certain Lessees, and other landowners are empowered to charge the inheritance with the cost of improvements, whether the money be borrowed from the Company or advanced by the Landowner out of his own funds.

The Company advance money, unlimited in amount, for works of Land Improvement, the Loans and incidental expenses being liquidated by a rentcharge for a specified term of years.

No investigation of Title is required, and the Company being of a strictly commercial character do not interfere with the plans and execution of the works, which are controlled only by the Enclosure Commissioners.

The improvements authorised comprise Drainage, Irrigation, Warping, Embanking, Enclosure, Clearing, Reclaiming, Planting, Erecting and Improving Farm Houses and buildings for Farm purposes, Farm Roads, Jetties, Steam Engines, Water Wheels, Tanks, Pipes, &c.

Owners in fee may effect improvements on their Estates without incurring the expense and personal responsibilities incident to Mortgages, and without regard to the amount of existing incumbrances. Proprietors may apply jointly for the execution of Improvements mutually beneficial, such as a Common Outfall, Roads through the District, Water Power, &c. For further information and for forms of application apply to the Hon. W. NAPIER, Managing Director, 2, Old Palace Yard, Westminster, S.W.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.—WARWICK, 1859.

PROGRAMME.

TUESDAY, July 12; WEDNESDAY, 13.—The Implement Yard open from 10 o'clock in the morning till 6 o'clock in the evening on Tuesday; and from 7 o'clock in the morning till 6 o'clock in the evening on Wednesday, at an admission charge of 2*s.* 6*d.* for each person. Machinery will be shown by the Exhibitors at work on each of these days.

WEDNESDAY, 13.—The Judges to inspect the Live Stock, and to award the Prizes.

Public trials of the Steam Cultivators, on land in the neighbourhood of the city, during such hours as the Stewards may determine.

At 1 o'clock (or as soon after as all the Judges shall have delivered in their awards, of which notice will be given), the Public will be admitted into the Cattle Yard on the payment of 5*s.* each person, at the Special Entrances.

THURSDAY, 14.—The General Show Yard of Cattle, Horses, Sheep, Pigs, and Implements open to the Public from 6 o'clock in the morning till 6 in the evening; admission 2*s.* 6*d.* each person.

FRIDAY, 15.—The General Show Yard open to the Public from 6 o'clock in the morning till 6 in the evening; admission 1*s.* each person.

General Meeting of the Members, in the Shire Hall, at 10 o'clock in the forenoon.

By Order of the Council, B. T. BRANDRETH GIBBS,
London, June 25. Hon. Acting Secretary, *pro tem.*

By the Regulations of the Society, all persons admitted into the Show Yard, or other places in the temporary occupation of the Society during the Meeting, shall be subject to the Rules, Orders, and Regulations of the Council.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.
Principal—J. C. NESBIT, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

The Agricultural Gazette.

SATURDAY, JUNE 25, 1859.

MEETINGS FOR THE ENSUING WEEK.

WEDNESDAY, June 29—Agri. Society of England .. Noon.

BEANS have always been considered one of the most precarious crops which come under the care of the agriculturist. If the weather is dry, they are short and unproductive; if wet, they are rank and luxuriant, but still more unproductive; and in years when they go on for a time admirably,

and promise a productive harvest, the hopes of the farmer are frequently completely frustrated by the ravages of plant lice. There are other minor afflictions to which they are subject arising from other insects or parasitic Fungi, but in general not to such an extent as to attract much notice.

It was hoped that the introduction of winter Beans might make the result of cultivation more certain, but like the older variety, they suffer from drought or excessive moisture, and notwithstanding their comparative forwardness, they are sometimes, as was too surely proved last year, rendered almost abortive by aphides.

To the affections above mentioned, in the case of winter Beans, one is superadded which renders their cultivation still more precarious. At the present moment in all parts of the country this crop is rotting upon the ground with singular rapidity, the whole becoming from a state of apparent health in the course of a few days a loathsome mass, without the most distant prospect of relief. The only course left to the farmer is at once to plough his Beans in and secure if he can a crop of Turnips or Coleseed, or where the evil has not advanced far enough, to mow them down for fodder.

Ten years since the writer of this article published some remarks in the *Agricultural Gazette* (June 2, 1849, p. 345), which agree so singularly with the state of matters during the present season, that we shall make no apology for reproducing one or two of the opening paragraphs.

"Early in the spring every energy was called into premature action, which was as suddenly checked by a course of dull cold wet weather attended frequently with frost, and an almost total absence of direct solar light for some weeks. The wonder is under such circumstances that at present most crops should look so well, rather than that there should be an occasional failure." The condition of the winter Beans is then mentioned according precisely with the experience of the present year, and in the resemblance of the disease in external character to one which appeared in Tares in the year 1843.

The course of the present season has hitherto been almost exactly like that of 1849, and we may therefore conclude that it has borne no small part in the production of the Bean rot. It appears however, on an inspection of different crops, that the affection is in direct proportion to the quantity of plant upon the ground. Where the stalks are very close there is in some instances an absolute failure of produce, while the stalks themselves are rapidly becoming soft and pappy, exactly as is the case with the Potato haulm when affected by the murrain; whereas, on the contrary, where the plants are thinly scattered, the stalks are already well corned and there is very little appearance of disease. It is very true that a few spots appear upon the leaves, and should these extend to the stems there may still be danger, but such spots occur in common Bean crops almost every year without inducing any serious mischief. We observed in the thinly planted Beans, that vegetation had been of late so rapid that the cuticle of the stem was sometimes ruptured, and the subjacent tissue much discoloured in consequence of exposure to the air, but this did not exist to any great extent. We have heard also that the common Beans where over luxuriant are slightly affected, but at present we have no ocular testimony upon the subject.

The affection arises, we believe, purely from conditions of climate, and is in no degree produced either by insects or parasitic Fungi; though in some cases where it is well established, it is very possible that they may aggravate the mischief. If our remarks, however, are borne out by experience, it is clear that the cultivator may profit hereafter by the experience of the present year. Should a forward spring occur again, and his winter Beans look extremely luxuriant in March or April, it would be wise to hoe out every other plant, taking them alternately in the drills, so as to make them stand in a sort of quincunx. We are convinced that, had this been done, some crops which we have seen would not have suffered to an injurious extent. The exact proportion of plants to be removed must of course depend upon the state of the crop, and proper judgment must be exercised as to the peculiar conditions which require such treatment.

In conclusion we may make one additional remark. Some farmers before pulling up the diseased Beans have observed a number of little tubers at the roots, and fancied that they had some connection with the malady. But this is not the case. Let them pluck up the first plant of Clover, or indeed of almost any closely allied plant, and they will find similar tubers, and if they watch the growth of a Bean when sprouting they will find that these tubers make their appearance uniformly at a very early period of growth. *M. J. B.*

—— During last week several provincial agricultural societies have held their annual meetings. The Norfolk Agricultural Association met at Swaffham; the Essex Society met at Colchester; and the annual meeting took place of the Cornwall Agricultural Society. At the last of these meetings Captain DAVY, of Southmolton, who had officiated as judge of cattle, referred to the duties of his office in terms which especially deserve publication at a season when the merits of competing cattle are everywhere being determined.

The following is a passage extracted from Captain DAVY'S speech:—

"Somebody had remarked that the Cornish farmers had been found fault with for not knowing how to farm. They knew, however, how to feed young bulls, and to make them fat at a very early age; but his friends and himself had often been called on for this sort of work before, and the Cornish fat could not entice them from certain animals, which had an indication to fatten. He contended it was their duty as judges not to be led away by the fat animals, but to see whether there were not animals in a fair condition, with a tendency to fatten, and much more even in their shape. He would draw attention to the first and the third prize bulls in the second class. They would be called by some, poor little things. And why? Because some cwts. of oilcake had not passed through them. But put so much oilcake or other nutritive matter through them, and put them by the side of the others, and see how they will look. You must remember that fat will cover deficiencies, and those little animals we awarded the prize to had no fat, and he thought it would take more powerful eyes than he had, to point out any great deficiencies in them. He should not be afraid to go round the yard with any gentleman, to satisfy him as to the awards, and to fight him from the head to the tail, as to the merits of any animal that had been awarded a prize. There was one animal among the cows that they might wonder had not gained a prize. She was of beautiful quality and the best shaped cow in the class; but she only gave milk from one teat, and he did not consider a cow so injured was a fit animal to award a prize to as a milch cow. In agriculture milk was a rather important article of produce, and butter makes a good price. It was an all-prevailing law of the animal kingdom that 'like produces like,' and he firmly believed there was a very great probability that the offspring of that cow would be diseased, if not to the same extent, in a similar way, and for that reason they did not award her a prize."

—— The agricultural meeting at Swaffham, though signalised by a very creditable show of cattle and sheep, and by a good exhibition of implements—180 entries from 26 exhibitors—was not so large as on previous occasions. Hay-making and mowing machines were exhibited in operation. The local breed of cattle was well represented, and Norfolk has a number of well-known South Down flocks, from which the best portion of the show of sheep was derived. There was a good show of Devon cattle from the herds of Lord LEICESTER and some of his tenants, and a tolerable show of short-horns, in which Lord WALSINGHAM, Lady PIGOTT, Mr. S. GOOCH, and others were distinguished.

—— At Colchester, the second annual meeting of the Essex Society was distinguished by a remarkably good show of implements by all the neighbouring manufacturers. Messrs. RANSOME, E. & F. TURNER, SMYTH & SONS, GARRETT, COLEMAN & SONS, BENTALL, BURRELL, CATCHPOOL & THOMPSON, WOOD, and BOBY—all "county" men; with HUMPHRIES of Pershore, and BURGESS & KEY, and others from a distance. There was also an excellent collection of cattle and horses, not so numerous as that of the previous year—a comparatively poor display of sheep and pigs, and a tolerable show of poultry. At the meeting after the show, Mr. REBOW referred in the following terms to the faults and merits of Essex agriculture:—

"He hoped he should not be considered unwarrantably proud of his own locality when he stated that in his part of the county they need not bow their heads to any one in regard to arable farming. He believed he might safely say that in that corner of Essex they grew the finest samples of corn, and they understood the growth of corn as well as the agriculturists of any other part of England. Within comparatively few years the laws of England had been changed in reference to the advantages of growing corn, and therefore more general attention has been called to another branch of agriculture, with a view to ascertain whether it is as profitable as the growth of corn. It was from that cause that Essex farmers had only now turned their attention to the growth of stock. And there was another reason for their dilatoriness hitherto. The climate of this part of England is peculiarly suitable to the growth of corn, and not peculiarly suited to the growth of animals. Now, it is of course known to every agriculturist that a dry climate must be advantageous to the growth of corn. Well, in the year 1858 the downfall of rain in this part of Essex was only 14 inches, while in the west and north of England it was between 60 and 70 inches. From this it must be apparent that this part of the country is better suited to the growth of corn than the growth of stock; and it was on that account that few persons in the eastern part of Essex had given their attention to the growth of stock. He referred more particularly to sheep, which require a large extent of Grass cultivation. He believed he was within bounds when he said that within 20 miles of this town not half-a-dozen flocks were kept. At all events they had a smaller exhibition of sheep than shows in many other parts of the country would secure; but the show of stock taken as a whole was one which they need not be ashamed to exhibit in any part of the United Kingdom."

—— A correspondent writing from Cheshire suggests the propriety of including manure and seed adulteration in Mr. SCHOLEFIELD'S Bill about to be brought into Parliament for the punishment of food adulterations. The former are almost as mischievous as the latter. The following are his remarks:—

"To give an instance of how adulteration in the seed market works, a small farmer said to me the other day, 'I will never have anything to do with Italian Rye-grass; it fills the land full of Twitch.' A neighbour of his had so suffered, no doubt from his having purchased foul seed. And so it is with artificial manures. Farmers are cheated, and then discontinue using them altogether. Thus is improvement seriously checked, the consequence of course being loss to the public in a less production of food, as well to the tenant, and ultimately to the landlord. In a dairy district it is most difficult to induce the older, smaller, and more ignorant farmers to make a single step out of the beaten track. This class eagerly jump at such things as I have narrated, to give them an excuse for continuing simply as their fathers did before them."

DAIRY MANAGEMENT.

SIR JOHN SINCLAIR has stated that "it is supposed that the same quantity of herbage that would add 224 lbs. to the weight of an ox would produce 900 English gallons of milk." Now, if we reckon 6 oz. of butter to be the average weight obtained from a gallon of milk, we will get 337 lbs. of butter from the same quantity of herbage as was supposed to produce 224 lbs. of beef. Or, if we convert the two into their respective money values, according to present rates, we will obtain 6*l.* 10*s.* 8*d.* as the value of the beef, reckoning the beef at 7*d.* per lb., and 16*l.* 17*s.* as the value of the butter, reckoning the butter at 1*s.* per lb. If the hypothesis of Sir J. Sinclair be correct, there can be no doubt that it is the interest of the farmer to adopt the dairy system in preference to the feeding of cattle. But even granting that the difference between the production of beef and butter is not so great as stated by him, yet it is generally admitted that there is a considerable margin in favour of butter, particularly when we take into account the relative price of the two at the present time.

The importance of the subject being admitted, we may inquire shortly as to what kind of feeding is best adapted for producing the largest yield of butter. Aiton, in his "Agriculture of Ayrshire," published about the beginning of this century, tells us that the winter food of the dairy stock at that time was the straw of Oats, or, towards the muirish parts of the country, the hay of bog meadows, frequently but ill preserved. "For a few weeks after they calved, they were allowed some weak corn and chaff, boiled, with infusions of hay; and by way of luxury, a morsel of Rye-grass, or lea-hay once every day; and of late years, by some farmers, a small quantity of Turnips in the early part of the winter, and a few Potatoes in the spring have been added." The effect of such feeding on the animals is apparent when they are turned out on the Grass in summer; "many of them are so dried up and emaciated, that they appear like the ghosts of cows, their milk vessels are dried up, and it is not till they have been several weeks on the Grass, that they give either much milk or that of a rich quality." The summer feeding was generally pasture; and though a much better system of feeding has been practised throughout the country since the introduction of Turnip husbandry, yet an approximation to that described by Mr. Aiton will be found in some of the upland districts.

Farmers have now, however, a great variety of food from which they can make a selection; and the problem to be solved now is not—how a sufficiency of one particular kind of food is to be gathered together to keep the cows in life for a considerable period of the year, but rather what variety of food, or better, what mixture of varieties, how much, and in what state (raw or cooked), will prove most profitable for the production of butter. The mainstay of the dairy farmer now as formerly in summer is Grass; in winter, however, there has been a great improvement in the feeding of the cows from the use of Turnips and other roots, as well as many other substances, such as Beans, draff, or distillers' and brewers' grains, Linseed, and Rape cake, &c. Even now in summer, in some districts, it is found advisable and profitable, where butter is wanted more

than milk, to give to the cows some nourishing food, in addition to the pasture, at the very height of the season. Draff and Bean meal are the two substances more generally used in such circumstances.

If the production of butter is to be the main object of keeping a dairy, there are two things to which the farmer should pay particular attention: the kind of cows he keeps, and the feeding. When we speak of the feeding, we mean not merely the quality of what food the farmer purchases, but of what is grown on his farm. It is well known that the Grass and Turnips on some farms will produce far more butter from the same quantity of milk than those grown on others. We have known cattle fed on Turnips alone from particular farms made fat in the same time as similar animals fed on Turnips with the addition of 2 or 3 lbs. of Linseed-cake each per day, the treatment and housing of the animals being alike in both cases. Certain fields will give a larger proportion of butter to the milk than others on the same farm. A farmer, therefore, should be guided, not only by the locality, but by the farm, in determining what department of the dairy he should turn his attention to. While he may find it most profitable to sell all his sweet milk, even at a considerable distance from town, it might be ruinous to him to convert it into butter, unless he used a great deal of extra food for his cows, the profit from which, unless judiciously used, is not always certain. We are aware that often draff is used where the production of butter is the main object, with the certain result of a large increase of milk, and also increase of butter, but by no means in the same ratio. We are convinced that were farmers to make some experiments, and not be satisfied with the small increase of butter as a proof of the value of the draff, they would come to the conclusion that it would be their interest to use less draff and more of other substances. Of course, if all the milk is to be sold sweet, the larger the quantity that can be obtained, however watery or inferior in quality, the greater will be the return. In this case the consumer, not the farmer, is the loser.

Without referring at all at present to the kind of cow most profitable for a butter dairy, we pass on to a consideration of the kinds of food that may be used most profitably for the production of butter. The great authority on this subject is Mr. Horsfall, who has laid the public under great obligations to himself for the publication of his experiments and views on this interesting question. His method of feeding is the following:—In May his cows are turned out on rich pasture near the homestead; towards evening they are housed for the night, when they are supplied with a mess of a steamed mixture, to be afterwards described, and a little hay each morning and evening. During June mown Grass is given to them instead of hay, and they are also allowed two feeds of steamed mixture. This treatment is continued till October, when they are again wholly housed. After this they receive steamed food *ad libitum* three times per day. After each meal Cabbages are given, from October till December; Kohl Rabi till February; and Mangel till Grass-time—the supply of each of these varieties of green food being limited to 30 or 35 lbs. per day for each cow; 4 lbs. of meadow hay are also allowed after each meal, or 12 lbs. per day for each cow, and water is placed before them twice a-day, of which they partake as much as they feel inclined for. The steamed food spoken of above consists of "5 lbs. of Rape-cake, 2 lbs. of bran, for each cow, mixed with a sufficient quantity of Bean-straw, Oat-straw, and shells of Oats, in equal proportions, to supply them three times a day with as much as they will eat. The whole of the materials are moistened and blended together, and, after being well steamed, are given to the animals in a warm state. The attendant is allowed 1 lb. to 1½ lbs. of Bean-meal per cow, according to circumstances, which he is charged to give to each cow in proportion to the yield of milk, those in full milk getting 2 lbs. each per day, others but little; it is dry, and mixed with the steamed food on its being dealt out separately." This is certainly high feeding, but it is amply repaid by the results; for while cows fed in the ordinary way seldom produce milk which yields more than 1 oz. to every quart, Mr. Horsfall's milk gives upwards of 1½ oz. for every quart. It is also an important part of his system never to allow his cows to fall off in condition. He considers the maintenance of the condition essential to a large yield of milk. There can be no doubt of the soundness of this opinion. A cow low in condition cannot give the same quantity of milk, as much of the nourishment of the food is drawn off to make up the condition of the animal. And when a very lean cow is put on rich food it is some weeks before the full benefit of the food can be obtained in milk for the reason stated above. Another useful deduction made by Mr. Horsfall from his experiments is, that albuminous matter is the most essential element in the food of the milk cow, and that any deficiency in the supply of this will be attended with loss of condition, and a consequent diminution in the quality of the milk.

In Scotland bran is not very often used as an ingredient in any mixture of food for milk cows; but it will be seen from the foregoing that it forms an important part of Mr. Horsfall's mixture. Some time ago we came upon the following extract, we believe from the *Irish Farmers' Gazette*, which gives some valuable hints as to the use of different substances in the feeding of milk cows:—"In reading over the experiments on feeding in Stephens, a difference of opinion exists as to the comparative fattening qualities of Linseed-cake, Bean and other meal; and in the 'Report of the Larne National Agricultural School for 1853,' 1 lb. of Beans is said to be equal in fattening qualities to 30 lbs. of Turnip, and nearly 3 lbs. of oatmeal. I tried the Bean-meal one season, at the rate of 3 lbs. a day, boiled for each milk cow, with Mangel, Turnip, and hay. By February one of them was fat, but I may say dry; and the others with about half the quantity of milk they had when commencing. I tried for two winters oatmeal, the same quantity in the same way, and each cow gave three times the quantity of milk and butter, and turned out full better the following summer. I tried the same quantity of yellow Indian meal last winter, and I think it good for both milk and butter. I tried bran for three winters, at the rate of 4 lbs. every night for each cow; it was equal to the Oat-meal, while using, and my cows turned out better the following summer than on any other feeding. The bran not only keeps them healthy, and gives them a greater relish for their food, but there is some combination of qualities in it beyond what any writer I have seen attributes to it."

The state in which the food is given has also a great effect in the production of both milk and butter. We have observed more than once that the yield of butter and milk is never so great when we give cows boiled Turnips, with Beans boiled quite soft amongst them, as when they get the boiled Turnips and the same weight of Beans made into meal and mixed raw with them. Again, there is more milk and no taste of the Turnip in it, when the Turnips are pulped and mixed with cut straw or chaff and fermented, than if the same weight of Turnips are given whole and raw. In the "Journal d'Agriculture Pratique" we read a short notice on this subject by M. Lejeune, a director of the Agricultural School at Thourout, in Belgium. The facts he reports are not to be regarded as experiments instituted to test any theory, but are merely extracted from his accounts, and show the importance of attending to the mode in which their food is given to milk cows. In February 1855 the milk of eight cows was selected for experiment. The cows were fed in the following manner:—Each cow got per day 4.4 lbs. of meadow hay, 13.2 lbs. straw, 48 lbs. Linseed meal, 11.5 lbs. of Beetroot, and a cooked mash, consisting of 55 lbs. of Turnips, 27 lbs. of Beetroot, 1.2 lbs. Linseed meal, 3.2 lbs. of Rape-cake, 1.1 lb. of grain dust, 1.1 lb. of mixed meal, about 1½ oz. of salt, and 6 gallons of water. From this very watery diet a large quantity of milk was obtained, 16 quarts of which gave 1 lb. of butter. In the month of February, 1856, the calculation was made from the milk of 10 cows, eight of which were those with which the observations were mode in the previous year. The nutritive value of the food detailed above was calculated to be equivalent to upwards of 30 lbs. of good meadow hay per head. The food given in 1856 consisted of Oat straw, Beetroot, the meal of Rye, Oats, and Buckwheat, Linseed-cake, Rape-cake, and the dust of Wheat or bran, given in such proportions as to make the rquivalent value of the day's feed equal to a little more than 31 lbs. per head of hay. None of it was cooked, and the Beetroot was reduced to small pieces and sprinkled over the meal. There was not the same quantity of milk, but the proportion of butter was much larger, being 2 lbs. of butter for every 20 quarts of milk. The cows, with the exception of the food, were managed in the same way in both years, and there were more newly-calved cows in 1855 than in 1856. *The Farmers' Note-book in the Journal of Agriculture.*

Home Correspondence.

The Wheat Crop in the North on the whole looks promising; it is I think about a week later than last year in coming into ear. Beans are blooming very short; Oats are I think likely to prove an average crop. The same may be said of Barley; Potatoes are showing very feebly Of the Turnip crop it is too early to speak with confidence, but the early sown Swedes in many places have had a terrible struggle with the fly; some farmers have sown a second time, while others have left the leafless stumps alone, in the hope that if we get rain there will still be plenty for a crop. It is a pity the remedy you recently published was not earlier known among farmers in the north, as many of them no doubt would gladly have given it a trial. Corn markets have all tended downwards lately; I apprehend, however, that a halt will be made now that it has got to 48*s.* per quarter, as there is not any probability of much foreign Wheat coming profitably to our market below that rate, and although from the considerable quantity of Wheat still in farmers' hands there will no doubt be a fair supply sent for sale, it will be their own fault if at such a time they glut the market, and thus cause a fall in price as great perhaps and as uncalled for as the rise which took place a few weeks ago. *H. J. Turner, Richmond, Yorkshire.*

Societies.

ROYAL AGRICULTURAL OF ENGLAND.

At a Special Council held Wednesday, June 22, 1859, his Grace the Duke of Marlborough, President, in the chair—

The report of the Special Committee appointed to examine the past accounts of the Society was read, received, and confirmed.

It was moved by the Hon. Col. Hood, and seconded by Lord Berners, "That Mr. Hudson be dismissed from the office of Secretary."

The Special Committee (with the addition of the names of Mr. Fisher Hobbs and Mr. Brandreth) was reappointed to carry out certain recommendations contained in the above report, and instructions were given by the Council relative thereto.

On the motion of Mr. Brandreth, seconded by Col. Challoner, it was resolved, "That a Committee be appointed consisting of the President, Vice-presidents, Trustees, and the following members of the Council: the Hon. Col. Hood, Mr. Barnett, Mr. Jonas Webb, Mr. Wren Hoskyns, Mr. Torr, Mr. Fisher Hobbs, Mr. Milward, Mr. Brandreth Gibbs, Mr. Amos, and Mr. Brandreth, to take into consideration and report to the next general Council what in their opinion should be the general and particular duties of the Secretary and the mode of his appointment."

Judges for the Warwick Show.—Col. Challoner, chairman of the Implement Committee, presented the report recommending the judges of implements.

Mr. Milward, chairman of the Live Stock Judges Committee, presented the report recommending the judges of live stock, cheese, and wool. These reports were received and confirmed.

Steward of Cheese and Wool.—On the motion of Mr. Brandreth Gibbs, Mr. Pain was elected to this office.

Prize Essay.—Mr. H. S. Thompson, chairman of the Journal Committee, reported the recommendation that the Prize of 25 Sovereigns for the best Report on the Agriculture of the Islands of Jersey, Guernsey, Alderney, and Sark, be awarded to the author of the Essay bearing the motto "Practical." The sealed envelope having been opened by the President, the author was declared to be C. P. Le Corme (Honorary Secretary to the Royal Jersey Agricultural Society), Beaumont, Jersey.

Lodgings for Judges at Warwick.—At the request of the Council Mr. Pain kindly undertook to proceed to Warwick to make arrangements relative to this accommodation.

The Council decided several cases as to qualification of live stock and implements; also matters of detail connected with the approaching show at Warwick.

The Council then adjourned to its weekly meeting on Wednesday, the 29th inst., when Prof. Voelcker's report on the analysis of a Mangel root kept two years will be read.

Farmers' Clubs.

Newcastle: *Farm Leases.*—The following discussion ensued on the reading of the paper published the week before last:—

Mr. Chrisp, Hawk Hill, did not oppose leases; they were very desirable, especially with a tenant of capital and skill. The intention of a lease was to guard the interest of the landlord, so that a farm should not suffer from a tenant over-cropping it. In general leases were good; but Mr. Dunn evidently though there was a weakness in them or he would not have loaded them with so many conditions to guarantee the tenant's interest. He (Mr. Chrisp) objected decidedly to a corn rent, and to allowing the tenant the power to quit at a certain number of years unless the same power was given to the landlord. An obligation of this kind ought to be reciprocal, or there was no use in it. There were far fewer leases now than formerly. There were good and middling farmers both under leases and agreements from year to year. Mr. Dunn laid it down that leases were the sole things to guarantee the tenant and assist the improvement of the land; now this was not so. They might have a very good effect in certain districts, and in Scotland they were carried out to great advantage; but the south of England was mostly under a tenancy from year to year, and it had taken greater strides in proportion than Scotland. It had been said that the advantage of a lease was to enable the farmer to replace the capital he might lay out. Now, if he were to build, fence, or drain, the landlord could not, in the majority of cases, expect above one-half of the rental he would get if he were to make these improvements at his own expense. At present, when the Land Improvement Commissioners would lend any amount of money, at no higher percentage than a farmer could command, a tenant crippled himself very much if he did the work at his own expense. Their worthy friend, Mr. Dunn, mentioned clauses to guard the tenant's interest, but in many instances they had been over much guarded, to the great detriment of the landlord. This was the reason why landlords frequently objected to granting long leases. He did not say "Don't grant leases," but let every man do what he thought right, according to the state of the farm and other circumstances. To urge a lease upon all occasions, unless you looked very closely to the tenant as well as the landlord, was one of the most fallacious things that possibly could be, and would do a great deal more harm than good. Then, as respected compensation to tenants, otherwise tenant-right, Mr. Caird said it led to nothing but chicanery and deceit; that it neither benefited landlord nor tenant.

Mr. Ferguson said: A lease of a farm for a considerable number of years was decidedly of greater advantage to both landlord and tenant than yearly tenancy, and on this point he entirely agreed with Mr. Dunn. He (Mr. Ferguson) believed landlords generally would think his paper on farm leases somewhat one-sided; and therefore likely to discourage leases altogether. The interest of a landlord and tenant are, or ought to be, identical, but if tenants generally had the power to sublet their farms, or sell their leases to any one and at any time, irrespective of the proprietor, their interest would then be the very reverse of identical, for the only object of the outgoing tenant would be to get a large premium for his bargain, whereas the object of the landlord always is to get a man with a good agricultural character, and whom he believes may become a good neighbour and a good friend, as well as a good farmer. He is planted on the property of the landlord, and it is reasonable and fair that he should, as he always will, select his own tenants. Mr. Dunn hinted at a corn rent, and believes that mode of fixing the rent preferable to any other method; but in several districts where that plan has for a long period been in practice the landlords as well as tenants are getting tired of it, for the one never could tell what he was to receive, nor the other what he was to pay, and hence the difficulty of regulating the expenses of the year. A bad season also always operates severely against a tenant when his rent is paid by the price of grain, for ir is often highest when he has little to take to the market. A fixed money rent was decidedly preferable for both landlord and tenant. I did not observe in Mr. Dunn's paper any recommendation as to how the farm is

to be managed or cropped. Perhaps he wished that this should be left open in the lease, so that the tenant may cultivate according to his own fancy. When a landlord has perfect confidence in his tenant, then he ought to have liberty to use his own discretion as to management, and be left very much to himself, because such a tenant will not take any advantage, or attempt to plunder the farm. But this liberty ought to be given, irrespective of the leases, which should be carefully drawn, and some mode of cultivation (according to the nature and situation of the farm) carefully specified and entered in the lease, not with the view of cramping an energetic tenant, but for the purpose of preventing the farm from being plundered and the soul taken out of it, in the event of its coming into the hands of a non-professional man. We all know that a lease, write it who may, will never make a bad tenant a good one. It will not make a tenant put one horse into a loaded cart on a good level road, when he is determined to put two (as we may see almost every day) to do the work of one. It will not make him cut his corn low when he is disposed to cut it high, nor will a lease compel a tenant to plough deep when he is disposed to plough shallow; but a lease will give perfect security to a tenant, so that he may reap the benefit of his own improvements, and it will also, if properly and carefully drawn, protect the property of the landlord from being plundered and overcropped in the event of the lease which is heritable coming into the hands of a non-professional man. Some gentlemen who write leading articles in agricultural papers go quite crazy when they hear that a landlord inserts in his leases a particular mode of management or cropping of a farm, and they severely criticise such an arrangement, and insist that it is unfair to a tenant to be bound to any system of management. They studiously, however, keep out of view altogether that a lease is heritable property. Now, when a landlord has perfect confidence in his tenants, then he might with propriety allow them full liberty to follow the bent of their own mind as to cropping, but still that liberty ought to be given altogether independent of the lease, so that the landlord might have it in his power to protect his property from mismanagement in the event of a change of tenancy taking place.

The Chairman said it would be impossible to compel tenants and landlords to accept leases—that would be a principle acted on in no branch of commerce. If a man invested capital, the first consideration was to invest it safely and properly; and the same consideration arose with a prudent tenant taking a lease. Every man would not like to take a lease, but would prefer a yearly taking; but if a person wished to lease a part of his estate, and found a tenant willing to take it, it became a matter of fair bargain between the two; and if he understood the lease question aright, it was to make the bargain a fair one between man and man. The landlord had his rights—the property was his, and very likely he laid down certain conditions on which he would let it; but the right way was to have the conditions so that he would entice men of capital and enterprise to farm his land properly and give him a high rent. It was no use evading the question; if a person had property it was his right and duty to get as fair a return for it as he possibly could. No man could find fault with a landlord for this; but if he went beyond this, the result was the same as in other cases of demand and supply; his conduct recoiled upon himself. In all cases, whether under leases or yearly tenancies that he knew of, the landlord was made perfectly secure of obtaining his rent, except, of course, when men got wrong in their circumstances, although they had seen many instances where farmers had cheated their landlords. He was favourable to leases, with a sort of tenant-right at the end of them, such as that four years before the expiry between the landlord and tenant, were granted for 21 years a treaty should be entered into to renew the lease. In this he went further than upon the principle of equity between the landlord and tenant; he went upon the principle that no land in this country ought to be in a state of unproductiveness, and that every person holding property in this kingdom ought to endeavour to make it produce as much food for the people as he could. It seemed a great hardship that a farmer should be compelled to go on for 21 years; it was a long time for a man to be in operation and have no power of selling his lease; and another great hardship was that his widow and family might be objected to. He was not of Mr. Ferguson's opinion, that widows in general made very bad farmers; they were generally very much imposed upon. A colliery lease was very different from a lease of land; a colliery lease was a very speculative description of property to go into; but when you took a farm you knew the land was there. Mr. Dunn had made a mistake in talking about corn rents; corn rents had proved to be very fallacious. If a man had a Wheat farm, he might have a fixed medium of exchange; but if he had a farm of mixed husbandry—and such farms, more than anything else, had been the means of improving the agriculture of the north of England—he would have a variety of ways of meeting the times. This year a great Barley grower was a very fortunate, and a great Wheat grower a very unfortunate man. The point Mr. Dunn wished to establish was, that to encourage men of capital as tenants to put their money into land they should have a security. But he (the Chairman) doubted whether the landlord allowed the tenant to have much hold upon the land in this respect. Mr. Dunn, in talking of a valuation, introduced a kind of tenant right. Now he (the Chairman) had seen a great deal of tenant right in the south of England, and where it was understood it worked very well. A man should be paid for unexhausted improvements; but he had no idea of letting the farmer receive something without being liable also to pay. If the tenant farmed his land so badly that he could not pay his rent, he ought not to be allowed to go on; and therefore the valuation only followed on one side—when there was an improved value. When there was an unimproved value the tenant should be amenable to make it up otherwise: it was an encouragement for under-farming; and no landlord would like an unfit man upon his land. Mr. Ferguson's plan of re-letting the land, and giving the tenant the improved value, would be very good as far as it went; but the advanced value might not be due to the tenant for improved husbandry, but from a change of circumstances and times over which he had no control. They knew that the great bulk of the land in the north of England had not had capital enough put into it; this was proved by the establishment of large societies for the lending of money. Men having large estates borrowed it; and if it were not there the land would go as unproductive as ever. There should be still more money put into the land to make it advantageous for the landlord and tenant, and if it were advantageous for these it was advantageous for the country. At present, under most leases, a man was bound not to let without his landlord's consent; this was a matter of favour, not a matter of right, as it ought to be. You could not encourage a man to put additional capital into the land for a matter of favour. It must be a matter of right. Mr. Dunn's great point was, that he wanted the farmer to be secured for the additional capital he lays out, and to be encouraged to lay it out; and if this principle were agreed upon they could easily work out the details.

Farm Memoranda.

AMERICAN FARMING: MR. S. WALRATH'S FARM *in Canton, New York.*—My farming operations, in this place, commenced in the spring of 1839, when the earth was to be reclaimed from the primitive forest. The process was naturally slow and toilsome. The forest, when removed, left the earth obstructed by stumps and roots that required time and labour to reduce the land to a condition capable of good husbandry. In addition to these hindrances, the soil was mixed with sandstones that required great labour in digging and removing from cultivated fields. The process could not be performed in any one year, even to a limited extent, without a sacrifice of time and money, and this labour must be performed before any efficient attempt at subsoiling and thorough cultivation could be made with present profit and a fair prospect of future improvement. I adopted a plan of gradual improvement, both in clearing and breaking the subsoil, which has been successful and brought its annual rewards. The hard crust which underlaid the native soil was attacked by gradual and persistent assaults, year by year, carrying the plough a little deeper each successive season, and allowing the new matter brought up time to slack by the influence of air and water, and to form a homogeneous mass with the soil. In this manner, and by successful assaults, the crust of hard pan has been broken and made part of the soil on all my cultivated lands, and the soil greatly improved.

Formerly my crop of Wheat averaged 10 or 12 bushels, and my corn 20 or 25 bushels per acre. Now, on same land, where the hard crust has been thoroughly broken and mingled with the soil, my Wheat averages 20 bushels or over, and my corn averages full 60, and sometimes amounts to 80 bushels per acre. My meadows, which were formerly liable to fail in dry seasons, and be hardly worth mowing, now yield large and uniform crops of 2 or 3 tons to the acre.

Every man must adapt his mode to his means as well as his soil, in order to a satisfactory result. The soil on which I have operated being stony, gravelly, and loose on the highest parts, needed no sub-soiling. Here the labour and expense was that of clearing from stone, pulverising and enriching. On the slopes and in the intervales, the natural soil was underlaid by a hard compact formation of little depth that required breaking and pulverising to improve the crop and insure its certainty. The best method, under the circumstances, is supposed to have been adopted. For had the land been thoroughly cleaned and sub-soiled in one season, it would have required an amount of labour and manure that could not be afforded; while, by the gradual process, fair crops have been obtained at moderate expense. The cost of clearing the land of stumps, roots and stones, and the manure necessary for each acre, thoroughly prepared and sub-soiled, could not be estimated at less than 30 dollars per acre; which is an amount of expense that can only be incurred by those who make farming a pastime without regard to profits. In the intervals and natural water-ways, on my farm, the hard crust was thickest. There the water in the spring and the drought of summer were alike unfavourable to vegetation of any valuable kind. In order to remedy these evils I commenced a system of blind drains, of a width and depth proportioned to the water that might be expected to pass through them. They are from 3 to 6 feet deep, and the width is from 2 to 3 feet. Stone are laid on the sides of the drain at the bottom, from 6 to 10 inches high, and covered by flat stone. The ditch is then filled up with small loose stone, within a foot and a half of the top. Straw is laid over the stone to prevent the earth from obstructing the drain, and the soil dug from the drain filled in. The result has been most satisfactory. Lands that were formerly useless are made the most productive spots on the farm, and the adjacent soil quickened. I have about 200 rods of these drains constructed at an expense of about 50 cents. per rod.

I make a compost heap annually. The Hop Vines and other vegetable substances that are not useful for feeding stock are gathered in the fall and placed in the centre of the barn yard. Straw and other coarse fodder is scattered over it, and the animals feed and tramp it down during the winter. In the spring when the frost is out, the heap is gathered and covered with muck from a neighbouring creek, and additions made to the heap during the summer, of such materials as will increase its value. Salt is added to the heap before and after the muck, for the purpose of retaining moisture as well as for its fertilising properties in small quantities. When the heap is formed the soap suds and other waste waters are thrown upon it, to keep it moist and prevent the escape of gases, which constitute an important element of manures. In the fall this compost is used on the Hop field for a top-dressing, to enrich the soil and shield the roots from the action of frost. I also make a composition of 6 bushels of house ashes, 1 bushel of plaster, 1 bushel of slacked lime, and ¼ bushel of salt, a small quantity of sulphur, pounded bones, &c. This is used for a top dressing. It is sown broad cast, on grain and meadows. On grain it should be sowed soon after the grain is up; on meadows as early as practicable after the Grass shoots up in the spring, and before a rain if practicable. On corn it is applied before and after hoeing. On Potatoes it is applied to the hill at the time of hoeing, and slightly covered, and in the same manner on gardens. This composition was made at an expense of about 20 cents per bushel, and used at the rate of 2 to 3 bushels per acre, on grain and meadows. This composition, with a small addition of guano, was used upon about an acre, constantly cultivated for 10 years, without other manures, and the result was a constantly increasing annual product. The last crop was Wheat, and the yield 30 bushels per acre. It was then seeded with Clover and Timothy, and during the past season it has produced 2 crops of hay; the first of two, the second of one ton.

I sow what is known as Scotch Wheat, after corn, Potatoes or Peas, 2 bushels per acre. The ground is prepared by ploughing in the fall and again in the spring, as early as practicable. After the sowing the ground is mellowed, and the grain covered by the harrow or cultivator, and sometimes by both, if necessary, and then rolled. If the earth is dry roll immediately; if not, it is better to postpone the rolling till the Wheat comes up. After the Wheat appears, I sow 2 to 3 bushels to the acre of the top-dressing already deserибed. If any weeds or Thistles appear in the field, they should be eradicated before they attain a size to overshadow and check the growth of the Wheat. With this care, nature developes and matures the crop, and it needs but little attention till fit to harvest. I harvest my Wheat soon after the colour changes and while the joints are green, bind immediately after the cradle, stook and cap, and let the grain and straw cure in the field till they are fit for the mow. There are several advantages in this method: Firstly, it does not shell, and little or none of the grain is wasted; secondly, the straw is more palatable and nutritious to stock; thirdly, the Wheat is better in appearance, and affords more and better flour. During the past season I left a portion of a field, sowed with the same seed upon the same day, for ten days, and the early and the latter harvesting were kept separate. The difference in the two samples was so marked that an experienced miller, who regarded them as two kinds of grain, considered the early gathered grain worth a shilling a bushel more than the other. The same management of other grains, as I apply to Wheat, will be equally successful. My average crop of Oats has been about 55 bushels, and of Peas 25 bushels per acre.

The wireworm has been injurious for several years. It attacks Potatoes and the roots of most kinds of grain. About eight years ago I sowed a barrel of salt, in which I mixed 3 lbs. of arsenic, upon about ⅝ of an acre of land, badly infested with wireworms. I ploughed the salt in and dragged the ground; and in three or four days I ploughed the ground again and planted it with corn, and the crop was uninjured by the worm, and produced about 80 bushels per acre. In my later experience, I find that the wireworm is not partial to Clover or Peas, and when they have become troublesome I seed down with Clover and the worms uniformly disappear. There are several other kinds of flies, grubs, and worms that affect the crops, but these are the most troublesome and destructive in this section.

The Grasses that I cultivate are Clover and herds Grass. I sow 16 lbs. of Clover seed when used alone, and when mixed I sow 4 lbs. of Clover with 8 quarts of Timothy seed per acre. It may be sowed either in the fall or spring, according to the crop, but should be sowed early in order to attain a strong root before the summer droughts come on. For dairy purposes white Clover is the best, and is natural to our soil and flourishes without care or culture. For two years past I have mowed only six acres, producing an average yield of about 2½ tons per acre. My time for cutting Clover is when the heads begin to change colour. It is wilted and put into small cocks, where it is allowed to stand and make in the air. When it is thoroughly cured it is opened and aired previous to being mowed in the barn.

Experience has convinced me that the pig is the only animal whose idle life is more profitable to the farmer than one of industry. If he is allowed to shift for himself he learns habits of mischief, and becomes a loafer of the first class, lean, lank and careless of appearances, and ready to prey upon the unwary and unsuspecting by night and day. These swine are kept till they are eight or nine months old, and when slaughtered generally exceed 300 lbs. each. Carrots are the most sure of the root crops, and the best for animals in this country.

My orchard at its commencement failed. I have since set trees, grafted on seedlings, which thrive well and begin to bear. I wash the trees with soap suds every spring, and the bark is smooth and the growth vigorous. I have 160 rods of stone wall, 3 feet wide at bottom, 20 inches at top, and 4½-feet high, built at a cost of about one dollar and a quarter per rod. I have 75 rods of board fence that cost about the same per rod as the wall, and 200 rods of rail fence that cost about 62½ cents per rod. The house is of wood, 28 by 38 feet on the ground, one and a half stories in height, clap-boarded and painted white on the outside, the roof covered with Pine shingles, and the windows shaded with blinds. Attached to it is a wing, 18 by 28, a story and a half high, and finished like the main building on the outside. It is divided into a kitchen, pantry, and wood-house on the lower floor, and a large lodging room overhead. I have a cellar under the main body of the house with a double wall laid in mortar, that is proof against frost and rats. Under the kitchen is a cistern, built of brick and water lime, of the capacity of 100 barrels, which affords an unfailing supply of soft water.

Calendar of Operations.

JUNE.

ISLE OF ELY: *June* 15.—To-day the thermometer stands at 66°, on the 16th of June last year it stood at 90° in the shade. The contrast is very great; the intense heat which continued for several days last year about the middle of June was very prejudicial to the growing crops generally, more especially to those on the hot gravelly soils. This year the weather is much more favourable, and is exerting a very beneficial influence upon every description of crop. The copious rains we received a

fortnight ago have produced marvellous results. The Oat crop and the pastures appear to have vied with each other in seeking to present a luxuriant and fruitful appearance. Some of the heavy crops of Wheat have been laid a good deal, and must inevitably yield a small produce and of inferior quality. The lighter crops where there was less flag and grossness have benefited largely by the seasonable and fructifying showers, and promise now to yield far better than those which previously we regarded with so much favour. On all our early lands the ear is beginning to show itself distinctly above the blade, which will, with seasonable weather, bring us to about the last few days of July, or quite the beginning of August for harvest. As already intimated, the Oat crop has made immense—we had almost said unparalleled—progress. Certainly we never saw so much improvement in so short a time. Where there is a full plant there is every prospect of abundance, and even where the wire-worms had so seriously thinned and weakened it, the progress has been so great that in most instances there will be a fair average bulk of straw. The earlier sown are just breaking into corn. The Beans look very strong and healthy, and grow rapidly. We may say the same of the Peas, but we dare not venture an opinion beyond present appearances; for the sudden and destructive enemy of last year is not forgotten by us, and a like calamity may again overtake us. Indeed we have heard of some such visitation upon the winter Beans already, although as none are yet grown here we have been unable to ascertain accurate particulars. Mangels have planted irregularly in several instances, although in others, they are all that could be desired. We think the later sown present the most promising appearance, showing less failure of plant. Potatoes on the high lands grow strong and look extremely healthy but on some of the Fens are very weak and poor being injured by wireworm. Haymaking has commenced generally, and some of the earliest cut is being stacked in fine condition. The crop is heavy but the quality rather coarse. Pastures are splendid, and could not well be better. We have consequently an increased demand for lean cattle and sheep, and prices are moving upwards. Meat is not so brisk a trade, especially pork, which is 6*d*. per st. lower. We seem likely to have the anomaly of a war in Europe and low prices for corn. The Wheat trade is dull in the extreme, and prices are within 1*s*. or 2*s*. per qr. of what they were before the commencement of hostilities. The future is veiled in darkness, and we seek not to pry into its secrets. Wool is advancing, and for those farmers who brought in their sheep when prices were comparatively low, will be very remunerative. *Your Fen Reporter.*

CHESHIRE: *June* 15.—The nice genial showers we have had within the last fortnight appear to have allayed the fears of the farmers regarding their pastures, hay crops and late sown spring corn, all of which have recovered from the effects of the previous dry weather and now present as luxuriant an appearance as could well be desired. Wheat is generally looking well and Beans under a good system of management are most promising, and we think a greater breadth than usual has been sown. Mangel Wurzels have been very tardy in coming up, in consequence of the dry weather, and in some instancs, the wireworm and other insects have attacked them, but they now appear more regular in the row, and from the fine condition of the land, we hope they will soon make up for lost time. The Swedes too have received a check from the prevalence of the fly, and in some instances doubts have been entertained of their recovery; the weather however is much in their favour, and it is not yet too late for Swedes. We find thick sowing the greatest security against the fly. The haulm of the early "radical" Potato is very much curled, which we think is an indication of disease, but the cause does not appear to be understood, nor will the effect upon the crop be known until it is taken up, which may be expected to commence pretty generally in about a fortnight; the Ashleaf Kidney, the earliest kind we have, does not appear affected with the curl, and a few have already been sent to market. The team horses are now principally employed in cleaning the green crops, repairing roads, &c. Where cattle are perfectly healthy, they are milking well, but many dairy stocks are suffering from the foot and mouth distemper, which greatly interferes with the progress of cheese making, and in some instances the "pleuro" still lingers. Clover roots are much improved by the late rains, and we may expect the scythe to be busy at work in the course of another week. *W. P.*

WESTER ROSS: *June* 20.—Dry, dry! excessively dry. For 33 years we have had no season for drought like this. It is now more than two months since we have had a shower of any importance, and consequently all the later fields of Oats and Barley have had scarcely a drop of rain since they were sown. And wonderful it is how things have looked until within these few days; but now every day is telling disastrously, and every succeeding dry day will tell with rapidly increasing disaster. Pasture Grass is becoming thoroughly scorched, even in the best fields, whilst for some time it has been completely withered away on light soils; hay is light everywhere, and in many places is getting dry as stubble; Wheat is coming rapidly into ear, and must now be poorly strawed, being both thin and short. The earlier sown fields of Oats and Barley are also getting into ear, and cannot be very materially benefited should rain now come; but with present rain the later fields would be greatly advantaged. And it is no slight rain that would now be really serviceable. The dry, over-heated soil would cause even a heavy shower to evaporate so rapidly, that in a few hours one could not tell where it fell. But the farmer has at present more to vex and annoy him than his scorched and withering crops. The Swedes have been sown for some time, and few comparatively have brairded, and many of these have again disappeared. We know of few fields in the county that have a close, promising braird. And what is now best to be done? is the perplexing question. A large proportion of the common Turnips remains to be sown, and the time for sowing has fully come. Some are proceeding in the usual way, and sowing their Turnips in soil dry as ashes, hoping that rain will come, and believing that when it comes the seed will start away. Others are opening the drills, and covering in the manure, and leaving the ground unsown until rain come; and others again, exercising commendable patience, are leaving the ground untouched. Potatoes are the only crop that as yet appear to bid defiance to the drought. They are coming away rapidly and vigorously. Altogether, in present circumstances, with stinted crops and unbrairded Turnips, it is no easy matter to join a neighbour of mine in saying, "We must just be content with the crops that grow to us."

Notices to Correspondents.

BLACKS IN WHEAT: *R H.* They are the complete development of a parasitic fungus, which finds its way into the plant from the soil, and ultimately comes to reside and multiply in the young ear. It is not, like bunt, likely to infect a sample of the grain—and so the "pickling" which seed Wheat gets before sowing is directed, not against "blacks" but against bunt. It is probable that vigorous growth in the young plant may enable it to resist the attacks of this parasitic growth; and thus good cultivation is the only probable remedy.

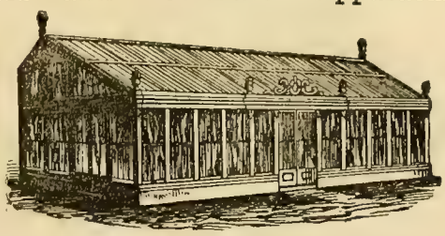
CHARCOAL: *Regular Reader.* We shall refer to the subject next week.

ITALIAN RYE-GRASS: *Cheshire.* It will not do to continue its growth beyond the first year after sowing. It dies after seeding. Wheat does not succeed after it unless it has been most liberally dealt with as to manure. We should plough it up in October and re-plough in spring, and either sow Oats or take a green crop before Wheat.

J. WATTS & CO.,

Hothouse Builders and Hot-Water Apparatus Manufacturers.

Our economic Heating Apparatus combines great power with simplicity of construction, a Range of Houses being Heated as easily as the smallest Pit.



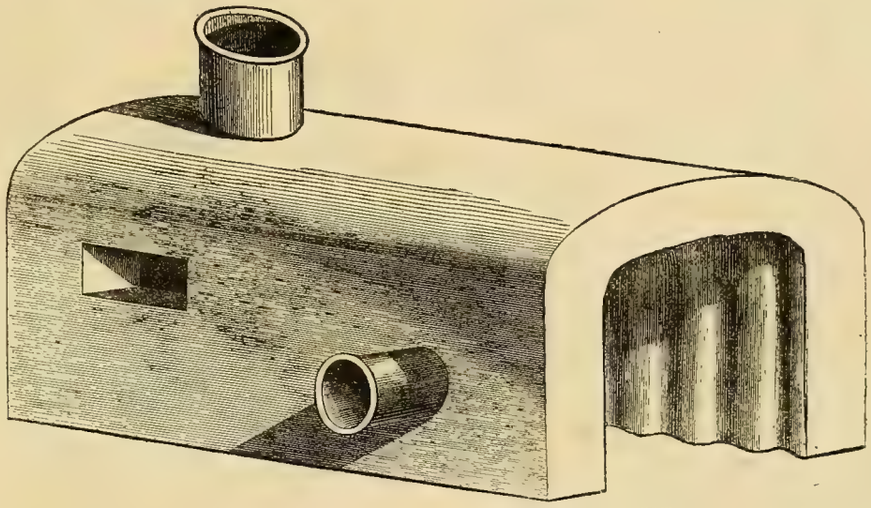
Two Hundred Cucumber Boxes and Lights, and from Three Hundred to Four Hundred Lights of all sizes kept in stock, glazed and painted complete, ready for immediate use.

References to the Nobility and Gentry in most of the Counties in England.

Claremont Place, Old Kent Road, London, S.E.

HORTICULTURAL WORKS,

DANVERS STREET, PAULTON'S SQUARE, CHELSEA S.W.



JAMES GRAY

RESPECTFULLY begs to inform the nobility, gentry, Nurserymen, Gardeners, and others, that he continues to carry on the business in all its branches at the above old established premises.

CONSERVATORIES, GREENHOUSES, FORCING HOUSES, VINERIES, PITS, &c.,
of every description, erected on the most approved principles.

HEATING BY HOT WATER.

J. G. having specially devoted his attention for many years to this part of the business, is now fully prepared to Heat every description of public and private buildings, viz:—Churches, Mansions, Warehouses, &c., as well as all structures connected with Horticulture, in the most efficient manner. His system is the most simple that can be adopted—which he has found from long experience to be the best—can be constructed at less cost, and is more easily managed than those of a complicated nature which have attracted the notice of the public.

J. G. begs to call attention to his CAST-IRON CORRUGATED ARCH BOILER, which from its simplicity of construction has not the liability to fracture to which those of a more complex design are always subject. They have been extensively used for many years, and have given the greatest satisfaction.

All business is conducted at this establishment on the principle of lowest remunerative profits consistent with best materials and workmanship.

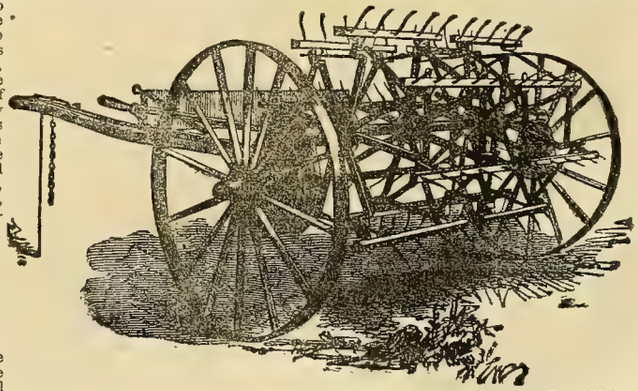
Plans and Estimates furnished on the shortest notice.

SMITH & ASHBY,

AGRICULTURAL ENGINEERS, STAMFORD.

HAYMAKING MACHINES.

THE last great trial of Haymakers took place at Londonderry, before the Council of the Royal Society of Ireland, in August last. The Machines exhibited there were SMITH & ASHBY'S, Nicholson's, and Sheridan's. The trial land was full of deep broad grips, the crop was heavy green Clover, upon which the Machines selected for trial were set to work. SMITH & ASHBY'S Machine did its work admirably, without a single failure, and was the only one that could clear the grips without clogging and flying out of gear. The Prize of 5*l*. was unanimously awarded to this Machine. This makes Five First-class Prizes that have been awarded to SMITH & ASHBY'S Machine since the Salisbury Meeting of the Royal Agricultural Society of England (1857), being every Prize offered since that Show, and in addition to the 31 First Prizes announced up to last season.



Price £15 15s.

SMITH AND ASHBY,
AGRICULTURAL ENGINEERS, Stamford.

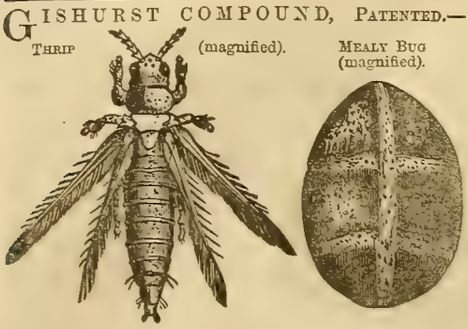
HORSE RAKES.

SMITH & ASHBY'S celebrated Horse Rake has lately been greatly improved by the introduction of their new Patent Steel Semi-angular Teeth, which are warranted not to break, and work much better than those of a circular form. In addition to the Twenty-six Prizes announced up to last season, SMITH & ASHBY'S Rake took the First Prize of the Royal North Lancashire Society at Ulverstone in September last. The same Rake took the First Prize of the Royal Agricultural Society of Ireland two years in succession.

Price, full size, with improved Iron Teeth, £7 10s. Steel, £8; Extra large Size, £10.

☞ *For full particulars see* S. & A.'s *Catalogue, posted free on application.*

GISHURST COMPOUND, PATENTED.—



GREEN FLY on Roses and Greenhouse Plants safely got rid of by syringing with PATENT GISHURST COMPOUND, 2 oz. to the gallon of water.

Extract from leading article in *Gardeners' Chronicle*, April 9, '59.

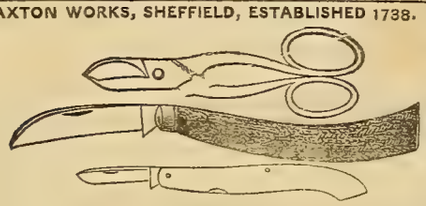
"That it really kills red spider, aphides, mealy bug, thrips, and scale, it is impossible to doubt in the face of reports of practical men, among whom we may mention Mr. D. Judd, of Althorp Gardens"—then follows a caution against the use of a too strong solution.

The Gishurst Compound is sold in boxes at 1*s.* 6*d.* and 6*s.* each, with directions for use, and printed opinions of Mr. Rucker's gardener, Lady Dorothy Nevill's gardener, Sir William Hooker, Mr. Rivers, and other eminent authorities. For Nurserymen the large size is recommended, but where the consumption is not large the compound keeps its strength best in the small. The undermentioned Seed Merchants, Nurserymen, &c., having taken in supplies are prepared to sell single boxes

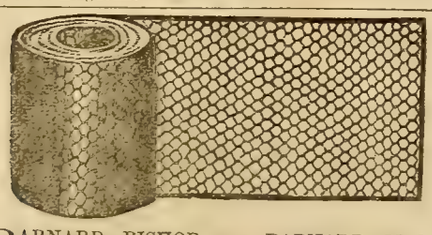
Alexander, C., Edinburgh
Bailey, G., Rugby
Barker, W., Godalming
Barnes, Thos., Thirsk.
Barratt, Bury St. Edmunds
Bass & Brown, Sudbury
Batt & Rutley, Strand
Bell & Co., Newcastle-on-Tyne
Bell, John, Norwich
Bradley & Sons, Halam Nursery, near Southwell
Brigden, T., Railway Arcade, London Bridge
Brown, D., Norwich
Bwye, H., Great Malvern
Burgess, C., Cheltenham
Caldwell, W. G., Knitsford
Cattell, J., Westerham
Chater, W., Saffron Walden
Clark, J., Cheltenham
Clark, T., 25, Bishopsgate Street Within
Cooks & Son, Dorrington, near Spalding
Cottrell, J. H., Birmingham
Cripps, T., Tunbridge Wells
Darby, R. F., Cirencester
Davies & Co., Wavertree, near Liverpool
Deane & Co., London Bridge
Denyer, Mr., Gracechurch Street, City
Dickson, Francis & Arthur and Sons, Chester
Dickson & Brown, Manchester
Dickson, Hogg, & Robertson, Dublin
Dickson & Co., Edinburgh
Epps, F., Ashford, Kent
Epps, Maidstone
Fisher, Holmes & Co., Sheffield.
Foster, W., Stroud
Gray, W., Gainsborough
Griffin, J., Bath
Harrison, J., Darlington
Hawkins, R. T., Weymouth
Henderson, E. G. & Son, St. John's Wood, London
Henderson, A. & Co., Pineapple Place, Edgeware Rd.
Hooper & Co., Covent Garden
Ivery & Son, Dorking
Jackman & Son, Woking
Jackson, Thos. & Son, Kingston
Jefferies, W. B., Ipswich
Josling, E., St. Albans
Kennedy & Co., Dumfries
Kenway, J. S., Batheaston
King, Wm., Lincoln
Laws, T., Beccles
Low, Hugh & Co., Clapton
Mackie & Stuart, Norwich
Mann, J., Brentwood
Matheson, R. C., Gloucester
May, J. & Co., 1, Wellington St.
Nelson, J., Bristol
Parsons, G., Brighton
Pattinson & Son, Hexham
Perkins, J., Northampton
Pontey, A., Plymouth
Pope, H., Gib Heath, near Birmingham
Reid, B. & Co., Aberdeen
Samson & Co., Kilmarnock
Stuart & Mein, Kelso
Sutton & Sons, Reading
Taber, G., Rivershall, Witham
Thyne, J. & R., Glasgow
Tynan, J., Liverpool
Walker, J., Thame
Whalley, T., Liverpool
Wood & Son, Maresfield
Wood & Son, Woodbridge
Wright, W., Retford

Nurserymen and Seedsmen supplied by PRICE'S PATENT CANDLE COMPANY (Limited), Belmont, Vauxhall, London, S.

PAXTON WORKS, SHEFFIELD, ESTABLISHED 1738.



SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.—Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.



BARNARD, BISHOP, AND BARNARD, Market Place, Norwich, in consequence of improvements in their machinery for the manufacture of the above article, have been enabled to make a great reduction in the prices.

	Galvanised.	Japanned Iron.
2-inch mesh, 24 inches wide	5*d.* per yd.	4*d.* per yd.
2-inch ,, strong do.	6 ,,	4½ ,,
2-inch ,, intermediate, do. ..	7 ,,	5½ ,,
2-inch ,, extra strong, do. ..	9½ ,,	7½ ,,
1⅝-inch ,, 24 inches wide	5½ ,,	4½ ,,
1⅝-inch ,, strong, do.	6½ ,,	5¼ ,,
1⅝-inch ,, intermediate, do. ..	7½ ,,	6 ,,
1⅝-inch ,, extra strong, do. ..	10 ,,	8 ,,

All the above kinds can be made of any width (under 8 feet) at proportionate prices. If the upper half is of a coarser mesh than the lower, it will reduce the prices about one-fifth.

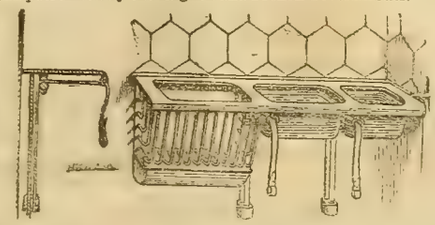
Strong Galvanised Poultry Netting, 8½*d.* per yard, 3 feet wide Galvanised Sparrow-proof Netting for Pheasantries, 2½*d.* per square foot. Delivered free of expense in London, Peterborough, Hull, or Newcastle. Manufacturers of Improved Strained Wire Cattle and Deer Fencing, Iron Hurdles, &c.

Illustrated Catalogues and Patterns forwarded by post.

AGRICULTURAL AND HORTICULTURAL IMPLEMENTS manufactured by RICHMOND & CHANDLER, RANSOME & SIMS, SAMUELSON, and other eminent makers, ordered from WM. DAVIES & Co., Frodsham Street Bridge, Chester, will be supplied at manufacturers' prices.

COTTAM'S PATENT INVENTIONS FOR STABLE REQUISITES,

awarded a Prize at the Paris Exhibition, and patronised by the English and French Governments.



COTTAM AND COMPANY, of Winsley Street, are the original inventors of the PATENT ENAMELLED MANGER, Water Trough, and Wrought Iron Rack, united to an iron top-plate, and forming one complete and useful fixture, having COTTAM'S patent noiseless halter guide and collar rein attached, which is taken to the back of the manger, and works with ease and freedom up or down the guide-bar.

COTTAM'S NEW PATENT SEED-BOX, an important addition to the above fittings, being simple in construction, light, and durable, promotes cleanliness, and is economical in its results.



COTTAM'S PATENT SADDLE and HARNESS BRACKET combined, can be used with great advantage where space is an object, as it can be turned up out of the way when not in use.

COTTAM'S IMPROVED SURFACE GUTTER, with perforated moveable cover, the use of which prevents accidents, and can be easily cleaned out.

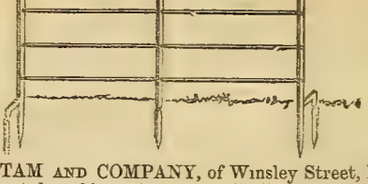
COTTAM'S CAST-IRON SANITARY TRAP, from its improved construction, gives a full water passage, and does not allow any smell to ascend from the drain.

PATENT LOOSE-BOX FITTINGS, and every article for the harness-room and stable, kept in stock, plain, galvanised, and enamelled. Iron gates, fencing, hurdles, &c.

The New Illustrated Catalogue and Estimates, gratis, upon application to COTTAM and COMPANY, 2, Winsley Street, Oxford Street.

N.B. COTTAM & Co. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

IRON HURDLES, FENCING, &c., MADE BY MACHINERY.



COTTAM AND COMPANY, of Winsley Street, have invented machinery for making Hurdles, &c.; the bars, instead of being pointed by hand in the old fashioned style, are nipped down by the machine, leaving a shoulder so as to more effectually tighten the standards when rivetted. They are made of superior iron only, and will compete in price with those made by hand from cinder or common iron which so frequently break. Iron Fencing, Gates, and Iron Work of all kinds, both Plain and Ornamental, Conservatories, Hot Water Apparatus and Garden Implements.

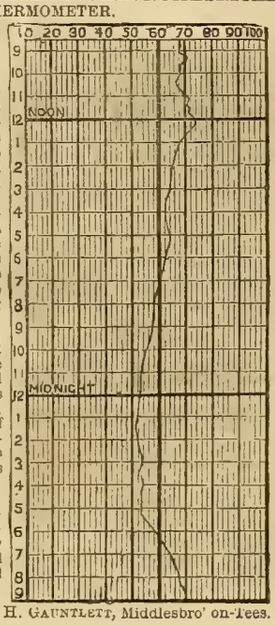
Illustrated CATALOGUES free on application to COTTAM & COMPANY, Ironfounders, 2, Winsley Street, Oxford Street, W.

N.B. COTTAM & Co. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

TO HORTICULTURISTS.

GAUNTLETT'S PATENT CHRONOMETRICAL THERMOMETER.

This instrument, which combines an eight-day clock of the best English make showing time, with a newly-patented Thermometer, wherein glass and quicksilver are dispensed with, writes down the temperature of the atmosphere on a slip of paper, and when placed in a Hothouse, Forcing House, or Conservatory, &c., supplies a valuable record of the temperature, with all its variations, showing the time when any change took place, and how long such change continued.



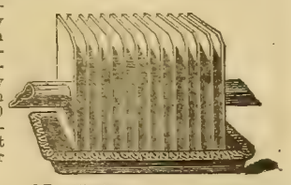
The above slip (reduced in size) exhibits the temperature of the Royal Agricultural Society's show yard at Chester, July 22, 1858, written off by one of these instruments, to which was awarded the Society's SILVER MEDAL.

This is the only instrument that registers temperature continuously and writes it down, and no horticulturist should be without it.

Orders received by W. H. GAUNTLETT, Middlesbro' on-Tees.

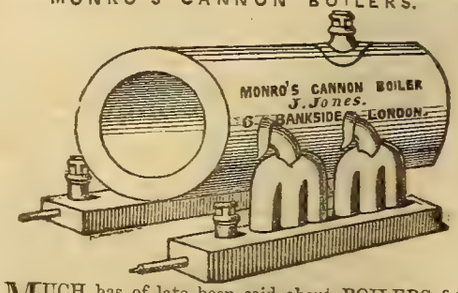
IMPROVED HOT-WATER PIPE.

THE HORTICULTURIST will find herein an inexpensive instrument of new and very important powers. An atmosphere may be produced at will either perfectly dry, partially damp, or saturated with moisture. A space of 10 inches by 12 inches contains the power of 25 feet of 4-inch pipe and other numerous advantages.



The London Warming and Ventilating Company (Limited), 26, Great George Street, Westminster, S.W.

MONRO'S CANNON BOILERS.



MUCH has of late been said about BOILERS for Heating by Hot Water, but these Boilers have now proved themselves to be the best at present invented. They are adapted for heating every description of building, and are made of various sizes. The Price of the

24-inch Cast Iron is	£5 10*s.* 0*d.* each
24-inch Wrought ditto	6 10 0 ,,
36-inch Cast ditto	8 0 0 ,,
36-inch Wrought ditto	8 10 0 ,,

References to Gentlemen and Nurserymen where these Boilers are now at work. The Cannon Boilers are now kept in stock, and are to be had only of J. JONES, 6, Bankside. Also, every description of Saddle and Cylinder Boilers. Hot Water Pipes and Connections at prices lower than those of any other house in London. Estimates for Hot-water Apparatus erected complete in any part of the country, and an Illustrated Catalogue on application to J. JONES, 6, Bankside, Southwark, London.

BEE-HIVES.

PRIZE MEDAL AWARDED TO G. N. & SONS, FOR BEE-HIVES AND HONEY, AT THE PARIS EXPOSITION OF 1855.

NEIGHBOUR'S IMPROVED COTTAGE BEE-HIVE, as originally introduced by GEORGE NEIGHBOUR & SONS, with all the recent improvements, glasses, and thermometer, price 35*s.*, securely packed for the country.



This unique Hive has met with universal commendation, and may be worked with safety, humanity, and profit by the most timid; its arrangements are so perfect that the Honey may be taken at any time of the gathering season without at all injuring the Bees.

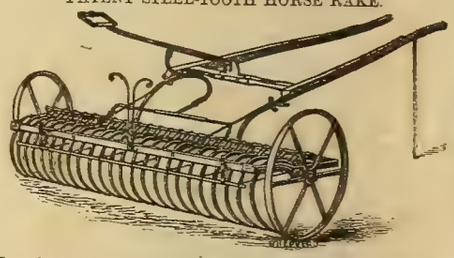
Early applications addressed to GEORGE NEIGHBOUR & SONS, 127, High Holborn, or 149, Regent Street, London, will receive prompt attention.

Their newly-arranged CATALOGUE of other Improved Hives with Drawings and Prices, sent on receipt of two stamps.

AGENTS.—Liverpool: JAMES CUTHBERT, 12, Clayton Square.
Manchester: W. WILSON, 50, King Street.
Birmingham: J. H. COTTRELL, 15, Bull Ring.
Dublin: J. EDMONDSON & Co., 61, Dame Street.

HOWARDS' PRIZE IMPLEMENTS, 1859.

JAMES AND FREDK. HOWARD, Britannia Iron Works, Bedford, beg to direct attention to their PATENT STEEL-TOOTH HORSE RAKE.



For which they received the Three First Prizes last offered by the Royal Agricultural Society of England.

J. & F. HOWARD have discontinued troubling the Public with a long List of Prizes awarded to their Implements, but they would just state that for PLOUGHS, HARROWS, and HORSE RAKES, they have for several years gained every Prize for which they have competed.

PLOUGHS.

D PLOUGH, for a Pony	£2 5 0
DD ditto for one Horse	3 5 0
P ditto for two Horses	4 7 6
PP ditto for general purposes	4 12 6
SKIM COULTER for P or PP Plough	0 5 6

HARROWS.

A Set of Three 4-Beam HARROWS, with Whippletree, recommended as general Seed Harrows, 9½ feet wide, marked No. 12	3 14 0
A Set of Three 4-Beam HARROWS, with Whippletree, adapted for 3 Horses, 10 ft. wide, marked No. 11	4 4 0
If with Patent Joints, 6*s.* per set extra.	

HORSE RAKES.

Small size, 7½ feet wide, marked A, with 24 iron teeth	7 10 0
Ditto, with Steel Teeth	8 0 0
Large size, 8½ feet wide, marked B, with 28 iron teeth	8 0 0
Ditto, with steel teeth	8 10 0
Extra large size, 8½ feet wide, marked C, with 24 steel teeth	10 10 0
A Set of 15 Prongs, to be attached to the above when used as Weed Extirpators	1 10 0

Free Delivery to Birmingham, Bristol, Colchester, Derby, Gloucester, Hull, Lincoln, Liverpool, London, Manchester, Norwich, Nottingham, Retford, Shrewsbury, Wisbeach, Worcester, and York; or to Dublin, Edinburgh, Glasgow, and other parts at fixed rates.

HOWARDS' NEW CATALOGUE, containing prices and description of their Patent Ploughs, Harrows, Horse Rakes, and other Implements, including Smith's Steam Cultivators, for which they received at Chester the Gold Medal of the Royal Agricultural Society of England, sent free on application to J. & F. HOWARD, Britannia Iron Works, Bedford.

JAMES PHILLIPS AND CO.'S PRICES of GLASS for the present month.

HORTICULTURAL GLASS, STOCK SIZES, in 100 feet boxes.

	3rds.	4ths.
11 by 9, 12 by 9, 13 by 9, 14 by 9 ..	14s. 6d.	12s.0d
12 „ 10, 13 „ 10, 14 „ 10, 15 „ 10 ..		
13 „ 11, 14 „ 11, 15 „ 11, 16 „ 11 ..		
14 „ 12, 15 „ 12, 16 „ 12, 17 „ 12 ..		
18 „ 12, 19 „ 12, 16 „ 13, 17 „ 13 ..	16s. 6d.	14s.0d.
18 „ 13, 19 „ 13, 20 „ 13, 21 „ 13 ..		
16 „ 14, 17 „ 14, 18 „ 14		
19 „ 14, 20 „ 14, 21 „ 14		

Boxes included and not returnable.

PACKED IN CASES.

200 feet	.. ..	£2	2	0 } 16 oz.
300 feet	.. ..	3	3	0 }
200 feet	.. ..	2	18	0 21 oz.

ORCHARD HOUSE SIZES, as supplied by us to Mr. Rivers.

20 in. by 12 in.		16 oz.		21 oz.
20 in. by 13 in.	Common	14s. 0d.	..	£1 1s.
20 in. by 14 in.	Superior do. ..	16 6	..	1 5
20 in. by 15 in.	English Glass ..	18 0	..	1 9

Boxes included and not returnable.

SMALL SQUARES.—Per 100 feet. s. d.

6 by 4	6½ by 4½	7 by 5	7½ by 5½	11 6
8 „ 6	8½ „ 6½	9 „ 7	9½ „ 7½	
10 „ 8	10½ „ 8½ ..	.. ..	.. ..	12 6

JAMES PHILLIPS AND CO.,

180, Bishopsgate St. Without, London, E.C.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz SHEET GLASS of British Manufacture at prices varying from 2d. to 3d. per square foot for the usual sizes required, many thousands of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES, and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

HORTICULTURAL GLASS—JUNE TARIFF.

THOMAS MILLINGTON'S reduced Tariff of GLASS, &c.

6 by 4, 7 by 5, 8 by 6, 9 by 7 } 16 oz. to the foot, 11s. 6d.
6½ by 4½, 7½ by 5½, 8½ by 6½, 9½ by 7½ } per 100 feet.

In 100 boxes,—4ths quality, 12s. 6d.; 3ds do., 14s. 4d.

10 by 8, 12 by 9, 12½ by 10, 14½ by 10½, 13 by 11
10½ by 8½, 12½ by 9½, 13 by 10, 15 by 10, 13½ by 11½
11 by 9, 13 by 9, 13½ by 10½, 12 by 11, 14 by 11
11½ by 9½, 12 by 10, 14 by 10, 12½ by 11½ .. ..

20 by 12 }	per 100 feet	16 oz.	21 oz.
20 by 13 }	Common ..	16s. ..	24s.
20 by 14 }	Superior .	18s. ..	27s.
20 by 15 }			

All Boxes included.

Orchard House sizes as supplied to Mr. Rivers.

Hartley's improved Rough Plate Glass from ⅛ to ⅜ in thickness.

Coloured Glass in great variety, at 9d. and 1s. per foot.

Paints, Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, Lamp Glasses, &c.

87, Bishopsgate Street Without, same side as Eastern Counties Railway.

GLAZIERS' DIAMONDS FOR CUTTING HORTICULTURAL and other GLASS, to be had of the Wholesale Manufacturer, JOHN EDWARDS, 20, Sharp's Alley, West Smithfield, London, E.C. Prices from 10s. to 27s. 6d.

LOOMES' GARDEN EDGING —CABLE PATTERN.



	In London.
Price at Peterborough.	
Straight .. .. .. 5d.	— 6d. per yard
Bends .. .. .. 6d.	— 7d. „
If fitted to plans .. 7d.	— 8d. „

LOOMES & Co., Manufacturers, Whittlesea, near Peterborough.

HENRY J. MORTON AND CO., 2, Basinghall Buildings, Leeds.

CALVANISED IRON WATER CISTERNS

for Cottage Houses, &c., to contain 50 gallons, 25s.; 80 gallons, 30s. each; and 140 gallons, 36s., and fitted with tap, keeping the water perfectly sweet and clean; will not rust or corrode. Cisterns of all sizes.

GALVANISED IRON PUMPS

for Liquid Manure or Domestic Use, 3 inches diameter, 30s. and 32s. 6d. each; Tail Pipe for same at from 10d. per foot.

GALVANISED IRON SWING WATER BARROWS

for Garden or Farm use, containing about 20 gallons, entirely formed of iron, 32s. 6d. each.

PARKES' STEEL DIGGING FORKS.

BURGESS AND KEY, 95, Newgate Street, London, being the Wholesale and Retail Agents for these celebrated TOOLS have always a large Stock on hand from which their Customers may select what they may require.

ANTHONY'S PATENT AMERICAN CHURN.—The FIRST PRIZE was again awarded to this Churn in Competition with several others at the Chester Meeting of the Royal Agricultural Society; it has obtained the First Prize given by the Society at every Meeting since 1850.

Messrs. BURGESS & KEY, 95, Newgate Street, strongly recommend it as the most perfect Churn now in use. Full particulars sent on application.

BOYD'S SELF-ADJUSTING SCYTHES are the cheapest and best, and being sold adjusted, are ready for immediate use. They can be regulated in an instant to suit any person, and to cut any crop without change of Scythes. For Amateur Gardeners they are very desirable, as they afford a healthy and interesting exercise They have stood the test of public opinion for seven years, and for excellence, ease, economy, and durability, are highly recommended. Upwards of 50,000 of them have been sold. To be had of every Ironmonger, Hardwareman, and Seedsman in the United Kingdom, and wholesale of the Sole Licensed Makers, WM. DRAY & Co., at their New Agricultural Implement Warehouses, Adelaide Place, London Bridge.

"FRIGI DOMO."—Patronised by her Majesty, the Queen, the Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, and —Collier, Esq., of Dartford.

PROTECTION FROM COLD WINDS AND MORNING FROSTS.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and, floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths. Two yards wide, 1s. 6d. per yard run; four, 3s. per yard. Also, an improved make for Shading Purposes, Three yards wide, 2s. 6d. per yard run.

ELISHA THOMAS ARCHER, whole and sole manufacturer, 7, Trinity Lane, Cannon Street, City, and of all Nurserymen and Seedsmen throughout the kingdom. "It is much cheaper than mats as a covering."

SHANKS'S PATENT MOWING MACHINES.

J. AND C. LEE, NURSERYMEN, Hammersmith, have great confidence in recommending these as the most complete Mowing Machines offered to the public. They have had large experience with SHANKS's Machines, and have ever found them do their work admirably, effecting a great saving in labour, and not liable to get out of order. For terms, apply to the Agents, J. & C. LEE, Nurserymen, Hammersmith.

SHANKS'S PATENT LAWN MOWERS are unquestionably the most perfect Machines for Mowing Lawns, Verges, &c., extant. SHANKS's Horse and Pony Machines are the only Machines that Mow, Roll, Collect, and Deliver the Grass.—London Agents: COTTAM & Co., 2, Winsley Street, Oxford Street, W.

LAWNS—IN USE IN THE ROYAL GARDENS.

SAMUELSON'S PATENT BOYD LAWN MOWING and ROLLING MACHINE, the only one that will cut wet as well as dry Grass, is guaranteed efficient in use, easily handled, and readily kept in working order. Doing the work of five or six men. Prices, including case and carriage to any railway station in England, from 4*l.* 17*s.* 6*d.* and upwards. Copies of testimonials post free on application to Mr. SAMUELSON's London Warehouse, 76, Cannon Street West, City; Messrs. DEANE's, London Bridge; or the Works, Banbury, Oxon.

THE NEW PATENT MOWING MACHINES may be used anywhere at any time, are self-sharpening, and admit of the use of duplicate sets of cutting parts. Prices from 4*l.* 10*s.* upwards. Illustrated Circulars free by post.—Manufactured and Sold by JAMES FERRABEE & Co., the original introducers of Mowing Machines.

Several infringements of their patent having taken place, the Makers respectfully caution the public to see that the words "FERRABEE's Patent" are cast on every Machine.

JAMES FERRABEE & Co., Phœnix Iron Works, Stroud.

PRIZE LAWN MOWERS.

16 inches, price	.. .. ..	£5	10 0
19 „ „	.. .. ..	6	0 0
22 „ „	.. .. ..	6	10 0

Otway's PATENT SELF-ADJUSTING SCYTHE, 10*s.* each.

Improved GARDEN ENGINES, 3*l.* 3*s.*

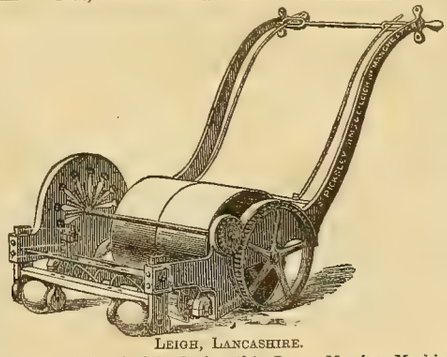
Cast Steel DIGGING FORKS, and Garden Tools of all kinds.

Boîtes à Houppe for the application of Sulphur, Lime, or any other powder to the Vine, Trees, and all kinds of plants. 2*s.* 6*d.* each

BURGESS & KEY, 95, Newgate Street, London.

PRICE LISTS sent free. ILLUSTRATED CATALOGUES on receipt of six postage stamps.

PICKSLEY, SIMS, AND CO.'S (by ROYAL LETTERS) PATENT LAWN MOWING MACHINE.



LEIGH, LANCASHIRE.

P., S., & Co., in introducing this Lawn Mowing Machine, particularly request a strict examination, or comparison and trial, for simplicity of construction, lightness, regularity of draught, adaptability for mowing every kind of plain, circular, and verge work.

Firstly, we have encased the wheels so as completely to protect from injury flower borders, shrubs, &c., whilst working the machine, at the same time not being liable to obstruction or damage.

Secondly, this machine works easily on undulated and sloping ground; it can be thrust forward or be drawn from behind, the latter being the easiest.

Thirdly, this is the only machine made that will work round quick curves; it will work easily and effectively round circular borders so small as 12 inches in diameter. This very desirable improvement has been obtained by fixing to the front part of the machine our newly-invented universal action, and self-cleaning, anti-friction spherical guiding balls. The continual revolving of these spherical guiding balls, under the most trying circumstances, never fails.

Fourthly, we have attached to this machine a rack and pinion motion, for adjusting the cutting parts (there being a rack and pinion on each side of the machine to act conjointly at the same time upon the full length of the knives), in other machines a slow, tedious, and uncertain operation, into one of quickness, ease, and certainty.

PRICES:—

			£	s.
Patent Lawn Mowing Machine	13 inches	..	5	10
Ditto ditto ditto	16 „	..	6	0
Ditto ditto ditto	19 „	..	6	10
Ditto ditto ditto	22 „	..	7	0
Patent Chaff and Gorse Cutters from..	..	£2 5 to	22	0
„ Bean, Oat, and Malt Mills ..	..	3 10 to	10	10
„ Gorse and Grain Bruisers ..	..	10 10 to	21	0
„ Bone Mills..	..	27 10 to	150	0
„ Mangles, various	..	2 10 to	12	10

ILLUSTRATED CATALOGUES can be had gratis.

FLOWER VAN FOR SALE.—Has been used for two seasons only. Very large, and capable of holding a large number of Show Plants.—Apply to J. MAYNARD, Palace Farm, Bromley, S.E.

T. G. MESSENGER, HORTICULTURAL BUILDER and PATENT HOT-WATER APPARATUS and GARDEN ENGINE MANUFACTURER, Loughborough.

T. G. MESSENGER's Divisionless Horticultural Erections, ventilated with screw mechanism by which the top or front lights are opened the entire length of the house momentarily, do not fail to give complete satisfaction (as numerous Testimonials can show), for the following reasons:—They are much lighter in appearance, more durable, much stronger, and cheaper than any other can possibly be.

Three years' trial has proved his PATENT BOILER to be superior to any hitherto invented; a great number of houses can be heated at once with this Boiler, with the facility of heating any separately.

Illustrated descriptions and prices of his Patent and greatly approved GARDEN ENGINES sent free upon application; also Plans, Estimates, and Testimonials for Building or Heating. See *Gardeners' Chronicle*, May 21.

WEST OF ENGLAND HOTHOUSE AND HOT-WATER APPARATUS MANUFACTORY, BRIDEWELL ST., BRISTOL.

VINCENT SKINNER (late Partner in and for seven years connected with the firm of John Weeks & Co., of Chelsea), erects Horticultural Buildings and Hot-water Apartments with all modern improvements. Upright Tubular Boilers. Plans and Estimates.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

H. M'CALLA (late with Messrs. J. Weeks & Co., of the King's Road, Chelsea), HORTICULTURAL BUILDER and HOT-WATER APPARATUS MANUFACTURER, begs to call the attention of the nobility, gentry, and horticulturists to the enormous prices they have hitherto paid for horticultural structures, and to assure them that, from his experience and minute calculations, he erects them for at least 20 per cent. less than any other establishment.

H. M'C. will furnish Plans and Estimates free of any charge, or will supply working Drawings and Specifications at a trifling cost for any gentleman wishing to construct his own, thereby effecting a great saving.

H. M'C. being favoured with any commands he will guarantee both materials and workmanship of the first class.

Plans, &c., also furnished for all kinds of Farm Buildings, Homesteads, Laying out of Estates, Drainage, &c.

Office: 7, Upper Cheyne Row, King's Road, Chelsea, London.

HORTICULTURAL BUILDINGS AND HEATING BY HOT WATER.

JOHN R. PEILL, 17, New Park Street, Southwark, Manufacturer of every description of Buildings for Horticultural purposes, and Inventor of the Improved Conical Boiler for heating the same, is prepared to undertake works of any magnitude, and refers among others to the celebrated range of FORCING HOUSES at HER MAJESTY'S GARDENS, FROGMORE, and at SIR ROBERT PEEL'S, DRAYTON MANOR, constructed under the superintendence of his Manager, MR. JOHN JONES; and also to his BOILERS fixed at the CRYSTAL PALACE, the ROYAL BOTANIC GARDENS, REGENT'S PARK, and KEW, and at several hundreds of the Nobility's seats, Public Establishments, and Manufactories in London and the provinces. J. R. P. also manufactures every description of Iron Roofs, Iron Houses, and Iron Fencing, plain and ornamental. Strong Iron Hurdles for Sheep (6 feet long, 3 feet high, with 5 bars), 4*s.* 3*d.* each; ditto for cattle, 4*s.* 9*d.* each.

Prices and other particulars forwarded on receipt of one postage stamp.

HAYMAKERS, possessing the best features of Nicholson's Prize Machines, with recent improvements peculiar to those supplied and manufactured only for RICHMOND AND CHANDLER, Salford.

Branch Establishment, South John Street, Liverpool.

N.B. The celebrated Bedford and Stamford Prize HORSE RAKES always in stock, with latest Patented Improvements.

TO MARKET GARDENERS, HOTEL KEEPERS, ETC.

TO BE LET, with immediate possession, a good DWELLING HOUSE, with suitable Sheds, Outhouse and Stabling, and about 10 acres of highly productive Market Garden ground, in a good state of cultivation, very eligibly situate, adjoining the Fulham Road.—To view, apply to Mrs. THORNTON, Dawes Lane, Walham Green.

TO BE LET, BRISTOL NURSERY GROUNDS, Kemp Town, Brighton. These Gardens are now to Let for occupation with immediate possession.—Any person desirous of treating for the same may obtain particulars and permission to view the grounds on application to Mr. R. W. LUCAS, 20, Great Marlborough Street, London, W.; and of Mr. A. CHANDLER, Horticultural Valuer, 28, Priory Road, Wandsworth Road, S.

LANDS OF CUNNING PARK FOR SALE.

TO BE SOLD, by Public Roup, within the King's Arms Hotel, Ayr, on TUESDAY, July 5, at 2 o'Clock afternoon, the well-known property of CUNNING PARK, extending to 27 acres, 3 roods, 10 poles, imperial or thereby, beautifully situated at the confluence of the river Doon with the Sea, about 1½ mile from the Town of Ayr. The Land is in the highest possible state of cultivation, and has been managed for many years by the proprietor upon the most approved system of modern husbandry. There is a good House, and excellent Offices and Farm Buildings. The lands are laid throughout with Pipes for the distribution of Liquid Manure.

ABERCROMBY COTTAGE, a pleasant Sea-bathing Residence, is situated on the property, and will be included in the sale of Cunning Park, or exposed as a separate lot to suit purchasers.—For further particulars apply to the Liquidators of the Western Bank at Glasgow; Messrs. BANNATYNE'S & KIRKWOOD, Writers, there; WILLIAM KILPATRICK, Writer, in Ayr; or CHARLES G. SHAW, Writer, County Buildings, Ayr, in whose hands are the Title Deeds, Articles of Roup, and a Plan of the property.—Ayr, June 25.

TO MARKET GARDENERS AND OTHERS.

TO BE LET, with possession on the 1st September, the GARDENS of DOEPARK, in the immediate neighbourhood of Wootton and Liverpool, consisting of two Walled Gardens with Fruit Trees on all the walls, five Vineries, four Forcing Pits, three Conservatories, convenience for growing any quantity of Mushroom, Large Shed for Potting, &c., with room containing fire-place, a good private room, and outside Loft, a Gardener's House and Tool House in Garden; also another large Kitchen Garden, about 2 imperial acres, with good Cottage and Pig-styes attached, and large Orchard with Paddock and Shed for a Cow. To an enterprising Gardener of undoubted respectability these Gardens cannot fail to be a source of profit; the demand for all kinds of Garden produce in the neighbourhood is unlimited. A gentleman's family occupies the house, who would take the daily consumption from these gardens if sold at market price.—For all further particulars and to view the premises, apply to JAMES CUTHBERT, 12, Clayton Square, Liverpool.

Sales by Auction.

ORCHIDS, FERNS, AND FOLIAGE PLANTS.

MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on TUESDAY, July 5, at half-past 12 precisely, A MISCELLANEOUS COLLECTION OF PLANTS, including a few good Orchids, rare Anæctochili, Foliage Plants, and choice Ferns, and an importation of Epidendrum vitellinum, Cattleya Mossiæ, &c.—May be viewed on the Morning of Sale, and Catalogues had.

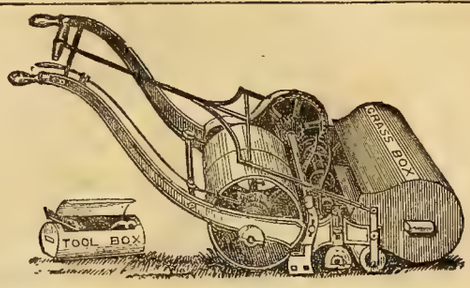
TO GENTLEMEN, ARCHITECTS, BUILDERS, LANDSCAPE GARDENERS, AND OTHERS.

THE GENUINE STOCK OF A MODELLER AND FIGURE MAKER.

MR. J. A. SMITH is instructed to Sell by Auction, on the Premises, near Ravenscourt Park, West End, Hammersmith, on WEDNESDAY, June 29, at 12 o'clock, by order of the Proprietor, relinquishing the business, the carefully selected STOCK, comprising 30 Classical and Mythological Figures and Pedestals, 100 Vases, Urns, and Fountains, Ornamental Trusses, Brackets, and a variety of Architectural decorations in artificial stone. May be viewed the day preceding and morning of sale.—Catalogues forwarded on application to the Auctioneer, near the Broadway, Hammersmith, W. N.B. The Moulds and Patterns, with possession of the Premises, to be disposed of by private treaty.

BY ROYAL LETTERS PATENT.

GREEN'S PATENT GRASS CUTTING, COLLECTING, AND ROLLING MACHINES.



TRIAL at the London Horticultural Society's Gardens, Chiswick, June 5, 1857.

FOUR COMPETITORS.

First trial on level ground, second do. on undulated, third do. on intricate places around trees, &c., when GREEN'S PATENT was unanimously declared to be the best in each trial by Colonel Challoner, Dr. Lindley, and G. M'Ewen, Esq., the appointed Judges.

See the *Gardeners' Chronicle* of May 22, 1858, p. 423, under the heading of "Garden Memoranda."

"LONDON HORTICULTURAL GARDENS, CHISWICK.—The Grass in the Arboretum and elsewhere is in excellent condition; it is kept in order by means of one of GREEN'S 2-feet Mowing Machines, which does its work very satisfactorily, and, compared with the scythe, effects a saving of at least one-half."

Extract from London *Times* of June 8, and *Gardeners' Chronicle* of June 12, 1858.

"TRIAL OF MOWING MACHINES.—A considerable number of various sizes having been brought to the ground it was agreed that the trial should take place between One Hand Machine of each exhibitor, as nearly as possible of uniform size and worked by themselves, or their men. The ground to be worked was determined by lot, the pieces having been previously selected of as uniform quality as possible. After trials on level ground and round trees, the Judges, Colonel Challoner and Mr. Edward Easton, declared GREEN'S Patent to be the best.

(Signed) "C. B. CHALLONER, EDWARD EASTON, Judges."

Extract from the "Cottage Gardener" of June 15, 1858.

"The decision was just what was anticipated, all present being satisfied of the manifest superiority of GREEN'S Machine, both in construction, lightness of draught, and superiority of work."

From *Sanders News' Letter and Daily Advertiser*, June 16, 1859.

ROYAL DUBLIN SOCIETY'S HORTICULTURAL SHOW, DUBLIN, June 15, 1859.

PUBLIC TRIAL OF LAWN MOWING MACHINES ON THE GROUNDS AT THE TRINITY COLLEGE, DUBLIN.

Judges for the Agricultural Implement Department:—Sir George Hodson, Bart.; Henry L. Fry, Esq., Westmorland Street; William Kelly, Esq., Portrane. Steward—John Barton, Esq.

"We carefully examined the Machines for Mowing Short Grass, and find that GREEN'S, exhibited by Messrs. Kennan & Son, to be a very superior article, performing its operations with efficiency and despatch, and we recommend that a First Prize be awarded in this case."

TESTIMONIAL FROM JOSHUA MAJOR, ESQ., THE LANDSCAPE GARDENER, KNOSTHORPE, NEAR LEEDS.

"SIR,—When I look over your list of patrons, knowing as I do the great demand you have already had both for your Pony and Hand Mowing Machines, any further testimonials seem almost unnecessary, nevertheless, I have again pleasure in giving my opinion upon your late improvements. Since your first attempt, some years ago, to improve upon the Mowing Machines then in use, you have made many changes, and have certainly been highly successful in your efforts to find out the best principle. The change you made in reducing all the machinery within the framework (thereby preventing the wheels from catching and injuring the plants and flowers while operating), was a very important one; this, together with the neat and compact form of the Machine, its substantial workmanship, and the easy and effectual manner in which it could be worked, did seem to me all that could be desired, but the Mower just sent for my inspection possesses still further and more decided improvements, viz.:—1st, Your tubular or circular Grass Box, which is very neat and compact, and much less liable to catch and injure plants than the usual angular square boxes. 2d, Your new plan of having the wheels together on one side the framework, which you say gives strength to the works, and in which it is easy to see two great advantages. In the first place, it admits of the cutters being so placed as to throw the cut Grass from the wheels, which on the old plan, was thrown amongst them, and so impeded their working; and again, the wheels being all together affords a ready opportunity for placing a guard over them, and thus preventing not only their getting clogged with dirt, but also the liability of children to become entangled in the wheels. 3d, The small wooden rollers stretching in front the whole length of the cutters have considerable advantage over the old plan of iron castors by keeping the Machine perfectly steady, and leaving a smooth even surface, which the latter in wet weather sometimes left a little ribbed. 4th, The levers employed to put the machinery in and out of gear being now self-acting, have totally done away with all the attention and labour for the hand which was required before.

I may just add that I know nothing more calculated to throw discredit upon Mowing Machines of all classes, although their management is simple, than their falling into the hands of inexperienced and careless persons. A lawn not rolled previous to being operated upon, but kept in a rough state, and not cleared of stones, bones, &c., most certainly must injure the cutters. The Machine moreover, being set to cut short Grass, cannot possibly be expected to cut long or coarse Grass, which, through carelessness, it is often set to do, and then the labour is too heavy, and the work done so badly that the Machine gets all the blame, and so the labourer returns to the scythe. To prevent such abuses therefore you ought by all means to give full and clear directions to every purchaser.

"MR. GREEN."

The number of Testimonials from Noblemen, Gentlemen, and almost all the first-class Gardeners in the United Kingdom and many other parts of Europe, would fill a volume if T. G. was to attempt to give them. So many numerous respectful references are kindly permitted that any lady or gentleman requiring references can on inquiry be supplied with every information necessary, and so widely are they spread that they may be seen within easy distance of their own seats. The letter however with which T. G. has been favoured from Joshua Major, Esq., the Landscape Gardener, whose professional pursuits bring frequently such things under his notice, will no doubt be considered a sufficient guarantee as to the utility and quality of his Machines. The directions alluded to by Mr. Major are strictly attended to, and are forwarded in a printed form with every Machine.

THOMAS GREEN respectfully informs the Nobility, Gentry, Gardeners, Amateurs, and others, that upwards of Six Hundred of these Machines were sold in 1857 and to show the increasing demand, above Nine Hundred were sold in 1858, and in the early part of this season considerably more than One Thousand have already been ordered, and in all probability will exceed Two Thousand before the end of the present season. They have proved to be the best in all cases of competition, are entirely remodelled, and all the defects pointed out by the Judges up to the present time are here rectified. It would be superfluous to attempt to give here extracts from the numerous letters T. G. receives, giving unbounded testimony to the great superiority of

GREEN'S PATENT MOWING MACHINES

over all others. As several infringements of this Patent have been attempted, the Maker respectfully requests parties purchasing to see that "GREEN'S Patent, Leeds," with the number of each Machine, are cast on the side, and the whole of the Wheels and Gearing works inside the frame, and have wood rollers in front.

LIST OF PRICES, including GUARD for WHEELS and BOX of TOOLS complete:—

HAND MACHINES.		DONKEY and PONY MACHINE (stronger).		HORSE MACHINE (very strong).	
To cut 14 inches	£6 10 0	To cut 24 inches	£10 11 6	To cut 30 inches	£18 12 6
To cut 16 inches	7 0 0	To cut 26 inches	11 11 6	To cut 36 inches	21 12 6
To cut 18 inches	7 10 0	To cut 30 inches	15 11 6	To cut 42 inches	24 12 6
To cut 20 inches	8 0 0	Donkey Boots	0 16 0	To cut 48 inches	27 12 6
To cut 22 inches	8 10 0	Pony Boots	1 0 0	Horse Boots	1 4 0
To cut 24 inches	9 0 0	Leather Traces and Stretcher	0 7 6	Leather Traces and Stretcher	0 10 0

The Patentee now considers the Machines as near perfection as possible. Notwithstanding the great improvements now introduced at much additional cost, no extra charge will be made. The above are Nett Cash prices delivered at any of the principal Railway Stations in England.

☞ The Machines are warranted to give satisfaction, or may be at once returned by the party paying the carriage back to Leeds. The Patentee has spared neither time nor expense in producing the best and cheapest Mowing, Collecting, and Rolling Machines ever brought before the public. Every information may be had by applying to the Patentee,

THOMAS GREEN, Smithfield Iron Works, Leeds;

or, No. 2, Victoria Street, bottom of Holborn, London; or of

Mr. ROSE, Manager of Agricultural Department, Crystal Palace, Sydenham, where the Machines may be seen working daily in suitable weather.

N.B. Parties desirous of having their Machines repaired may forward them to either the London or Leeds establishment, where they will have the best attention.

Printed by WILLIAM BRADBURY, of 13, Upper Woburn Place, and FREDERICK MULLETT EVANS, of No. 20, Queen's Road West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and published by them at the Office, No. 5, Upper Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—SATURDAY, June 25, 1859.

THE GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 27.—1859.] SATURDAY, JULY 2. {Price Fivepence. Stamped Edition, 6d.

INDEX.

Agri. Soc. of England ..... 571 c
Ague, marsh ..... 562 c
Analysis of Manure ..... 571 c
Books noticed ..... 563 b—572 a
Cardamine, monstrous ..... 562 c
Carnations, Sardinian ..... 562 c
Cattle foods ..... 565 c—570 c
Charcoal ..... 557 a
College, Agri. ..... 567 b
Dairy experience ..... 557 b
Edinburgh, Australian ..... 564 a
Entomological Society ..... 563 a
Foods, cattle ..... 565 c—570 c
Gardiner the late Will. ..... 564 a
Grafting Vines ..... 559 b
Horses, to feed ..... 570 c
Horticultural Society ..... 559 a
Kew, report on ..... 560 b
Lattice plant ..... 564 c
Linnean Society ..... 563 a
Linum grandiflorum ..... 562 b
Mangel analysis ..... 571 c
Manuring ..... 572 b
Morton, Mr. J. C. ..... 559 a
Mowing machines ..... 566 b
Nettles ..... 571 c—573 a
Oak, lightning-struck ..... 562 b
Ourvirandra ..... 564 c
Pinanba Palm ..... 563 a
Pea Lentil ..... 562 a
Potato disease ..... 562 c
Reaping machines, French trial of ..... 567 a
Roots, culture of ..... 566 c
Roses, new ..... 559 a
Sheep v. cattle ..... 571 b
Short-horns ..... 569 c
Statistics, Irish ..... 566 c
Strawberry, May Queen ..... 562 c
Tillage v. grazing ..... 570 a
Tree stump extractor ..... 564 a
Turnip culture v. fly & drought 568 a
Veronicas, hybrid ..... 563 a
Vine grafting ..... 559 b
Wheat, blacks in ..... 573 a
Worms, value of ..... 572 c

HORTICULTURAL SOCIETY OF LONDON.—Notice is hereby given that a SPECIAL GENERAL MEETING of this Society will be held in the Rooms of the Society of Arts, John Street, Adelphi, on THURSDAY, July 7, at 11 o'clock in the forenoon, to consider an arrangement with Her Majesty's Commissioners of the Exhibition of 1851, for LEASING to the Horticultural Society 20 acres of ground at Kensington Gore, upon terms and for objects to be then explained.—S, St. Martin's Place, W.C., July 2.

HORTICULTURAL SOCIETY OF LONDON.—The next Meeting of the FRUIT COMMITTEE will be held at 8, St. Martin's Place, Trafalgar Square, on TUESDAY, July 12, at 1 P.M.

N.B. The Carriage of Packages of Fruit will be paid.

ROYAL BOTANIC SOCIETY, REGENT'S PARK.—The LAST EXHIBITION this season of PLANTS, FLOWERS, AND FRUIT will take place on WEDNESDAY next, July 6. Tickets to be obtained at the Gardens only by orders from Fellows or Members of the Society, price 5s., or on the day 7s. 6d. each. The gates will be opened at 2 o'clock.

BRITISH POMOLOGICAL SOCIETY.—The next meeting will be held at ST. JAMES'S HALL, on THURSDAY, July 7, when the following premiums are offered for special subjects:—

One guinea, and half-a-guinea, for the best and second best collections of STRAWBERRIES, exhibited in dishes of 20 fruits, with leaves and leaf-stalks.

Two guineas, one guinea, and half-a-guinea, for the best, second, and third collections of FIGS, in dishes of three fruits, accompanied by leaves.

Two guineas, and one guinea, for the best and second best collections of MELONS.

For further information address the Secretary, Mr. DAVIDSON, 2, Randolph Road, Maida Hill, London, W.

The following meeting will be held on July 23, and the ANNUAL MEETING on August 4.

SLEAFORD HORTICULTURAL SOCIETY.—THE ANNUAL EXHIBITION OF FLOWERS, FRUITS, AND VEGETABLES will take place at Sleaford, in the Nursery Grounds of Mr. CHARLES SHARPE, on THURSDAY, July 21. Prizes open to all England. Entrance in each Class, 2s. 6d.

Class A. Best collection of 12 Stove and Greenhouse Plants, distinct varieties.—1st Prize, 10l.; 2d do., 5l.

Class B. Collection of 8 varieties of Fruits fit for Dessert (Pines excluded).—1st Prize, 1l. 10s.; 2d do., 1l.

Class C. Stand of 24 Roses, varieties, single blooms, named.—1st Prize, 1l. 10s.; 2d do., 1l.

Class D. 11 Spikes of Hollyhocks, distinct varieties, named.—1st Prize, 2l.; 2d do., 1l.

N.B. The 1st Prize in Class A will not be awarded unless there are more than two competitors.

Articles intended to be exhibited must be sent to the place of exhibition as early as possible after 8 o'clock in the morning, and no article shall be admitted after 10 o'clock, or removed before 6 in the evening.

The Forms of Entry are now ready, and may be obtained on application to the Treasurer, Secretary, or Mr. FRANK WARWICK, Sleaford.

TOWCESTER FLORAL AND HORTICULTURAL SOCIETY.

Patrons:—

His Grace the Duke of GRAFTON.
The Right Honourable the Earl of EUSTON.
The Right Honourable the Earl of POMFRET.
The Right Honourable the Lord SOUTHAMPTON.
RAINALD KNIGHTLEY, Esq., M.P.
Colonel HENRY CARTWRIGHT, M.P.

The ANNUAL EXHIBITION will be held on THURSDAY, September 8. Competition will not be restricted to the county.—Schedules of Prizes can be obtained of the Secretary.

The Committee have resolved on INCREASING the Premiums to be added to the following classes of Sweepstakes:—

The best Collection of 50 Roses, from 2l. to 5l.
The best Collection of 36 Dahlias, from 2l. to 4l.
The best Collection of 8 Fruit Trees, from 2l. to 4l.
And the best Collection of 12 Stove or Greenhouse Plants, Lycopodiums, or Ferns, from 2l. to 5l.

SAMUEL COOPER TITE, Towcester.

ALL Persons having CLAIMS upon the ESTATE of THOMAS JACKSON AND SON, NURSERYMEN, &c., Kingston, Surrey, previous to May 19, 1859, are requested to forward them immediately to the Executors of the late THOMAS JACKSON, that they may be examined and discharged; and all Persons INDEBTED to the same Estate are requested to forward the amount of such Debts to the said Executors.

GEORGE JACKSON,
JAMES HATT,
HENRY LAMB,
} Executors.

Kingston, Surrey, July 2.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY LIMITED supply every requisite for the Farm and the Garden.
Registered Offices, Union Road, Plymouth.

ROSES.

A. PAUL AND SON respectfully invite all lovers of ROSES to inspect the Collection growing at the Cheshunt Nurseries. They are now in full bloom and will continue at their best for about a fortnight. There will be a good show of the autumnal kinds from the present time till November.

Trains of the Eastern Counties Railway (Cambridgeshire) to and from Waltham or Cheshunt Stations several times daily.
Nurseries, Cheshunt, Herts.

ROSES.

J. AND J. FRASER beg to announce that their collection of ROSES is now in flower, and respectfully invite their patrons and the public generally to an inspection of the same. Trains leave the Bishopsgate Station for Lea Bridge about ten times a day.
Lea Bridge Road Nurseries, Leyton, Essex, N.E.

ROSES.

THOS. RIVERS informs his friends and the public that his collection of ROSES will be in Bloom about the first week in July. The 10.57 train to the Harlow Station (where Flys are in attendance) is the most convenient.
Nurseries, Sawbridgeworth.

ROSES.

JAMES MITCHELL begs to announce to the Nobility and Gentry that his unrivalled Collection is now in fine Bloom.—Piltdown Nurseries, Maresfield, Sussex, 2½ miles from Uckfield Station of the London, Brighton, and South Coast Railway.

ROSES.

WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

WM. WOOD AND SON'S extensive stock of ROSES, occupying an area of many acres of land, is now coming into flower, and will continue in great beauty during the Rose season.

The Nurseries are distant three miles from the Uckfield Station of the London, Brighton, and South Coast Railway, where conveyances may at all times be obtained.

ROSES.

GEO. CLARKE begs to invite his friends and the public generally to an inspection of his superb Collection, extending over 10 acres of ground, and which are in great beauty.

Amateurs and others are reminded that the blooming season is the best time for orders to be given, as a better selection as to colour, form, &c., can then be made.

Fine collections of Evergreens, Fruit Trees, Greenhouse Plants, and every article in the trade.

Omnibuses from the City and West End every 10 minutes pass the Nursery.—Streatham Place, Brixton Hill, S.

ROSES IN BLOOM.

H. LANE AND SON have great pleasure in informing the lovers of this beautiful flower that their splendid collection, consisting of nearly 10 Acres, is now in full bloom, and will continue for some time.

The Nurseries, Great Berkhampstead, Herts.
A Train leaves London, Euston Square, at 11 o'clock.

ROSE NURSERIES, HERTFORD.

E. P. FRANCIS begs leave to invite the attention of ladies and gentlemen to his extensive collection of ROSES, which are now in full bloom. Trains direct to Hertford from King's Cross and Eastern Counties.

PROTHEROE AND MORRIS beg most respectfully to inform their friends and the public that their unrivalled COLLECTION OF ROSES (which are in bloom and will continue for some time) is in the finest condition and well worthy an inspection. Trains leave Fenchurch Street and Bishopsgate Street 12 times daily to Leytonstone Railway Station, which adjoins the Nursery.
American Nursery, Leytonstone.—July 2.

ADMIRERS OF SWEET WILLIAMS are invited to inspect some new and very beautiful varieties at Springfield Watercress and Pleasure Grounds, Wandsworth Road, a few minutes' walk from Vauxhall Bridge and Station, or Nine Elms Pier (just beyond the Stag Turnpike, opposite Chandler's Nursery).

GEORGE BAKER begs to inform the nobility, gentry, and public that his extensive collection of HARDY RHODODENDRONS, AZALEAS, KALMIAS, &c., is now in perfection, and may be viewed free.—American Nursery, Windlesham, near Bagshot, Surrey (1¼ mile from the Sunningdale Station of the Staines and Wokingham Railway, where conveyances are always to be had).—July 2.

NEW VERBENA.—Edmonds's set of the above as sent out this spring by Mr. Chas. Turner. Twelve of the best, including package, 12s.
J. & W. BADMAN, Nurserymen, Gravesend.

DEODAR OR CEDAR SEEDS, fresh from India.—About 2 cwt. to be sold very cheap.—Apply to E. GILBERT, 110, Warwick Street, S. W.

CALCEOLARIA SEED, all hybridised and unrivalled for quality, is now being sent out by Messrs. DOBSON & SONS, and their Agents, a list of whom will appear next week. In sealed packets at 1s. 6d., 2s. 6d., 3s. 6d., and 5s.
Woodlands Nursery, Isleworth.

EDWARD SHENTON, Hendon Park Nursery, N.W.—CINERARIA SEED of the finest quality saved from Brilliant, Earl Clarendon, Baroness Rothschild, Lord Palmerston, Emperor of the French, Prince of Wales, Wonderful; also PELARGONIUM SEED, saved from the newest varieties, in packets, 1s. 6d. and 2s. 6d. each.

AZALEA INDICA "FLOWER OF THE DAY" (IVERY'S).—This fine variety will be ready for delivery the last week in June. It is a decided improvement on Iveryana; has been exhibited only three times, and gained two Certificates and an extra Prize. For description see Catalogue, which will be sent post free on application. Price, per plant, 21s. each.—Dorking Nursery, July 2.

CINERARIA, HERBACEOUS CALCEOLARIA, AND HALF SHRUBBY DITTO SEED.—These have been saved from Turner's most beautiful varieties; in 1s. and 2s. 6d. packets. Primula and Hollyhock, from the newest and handsomest varieties, 1s. per packet. Agents for F. & A. Smith's splendid Cineraria, in 1s. 6d., 2s. 6d., and 5s. packets; also agents for Dobson & Son's splendid Calceolaria, in 1s. 6d., 2s. 6d., 3s. 6d., & 5s. packets.—Catalogues of the newest Flower Seeds, and newest Dutch and Cape Bulbs, sent post-paid.
BUTLER & MCCULLOCH, Seedsmen, Covent Garden Market.

GRAPE VINES FOR PRESENT PLANTING.

MESSRS. ARTHUR HENDERSON AND CO. can now supply LARGE and SMALL plants (at reduced prices) of the

MUSCAT HAMBURGH GRAPE;
Also the
STOCKWOOD GOLDEN HAMBURGH,

and all the best leading Grape Vines of the day, suitable for planting at the present season. Prices to be had of them on application.—Pine Apple Place, Edgware Road, July 2.

GRAPE VINES FROM EYES.

JOHN AND CHARLES LEE beg to offer a large healthy Stock of well-grown VINES, of all the NEW and POPULAR KINDS, fit for immediate planting.

Vines planted at the present time will reach the top of the rafters and ripen their wood before winter, and thus a season will be gained.
Nursery and Seed Establishment, Hammersmith, London.

HOLLYHOCK SEED.

A. PAUL AND SON beg to offer packets of Seed, saved from their unrivalled collection, free by post at the following rates:—

	s.	d.
12 separate packets, saved from 12 good and distinct named sorts, containing about 500 seeds	5	0
Mixed seed, first quality	2	6
Second quality, per packet	1	0

N.B. June and July are the best months for sowing out of doors to bloom next year.—Nurseries, Cheshunt, Herts.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Stove, Greenhouse, and Hardy Ferns, Miscellaneous Stove, Greenhouse, and Hardy Plants, Variegated and Ornamental foliaged Plants, Conifers, Roses, Rhododendrons, Indian Azaleas, Gloxinias, Fuchsias, Cactuses, &c., is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

FIRST PRIZE CALCEOLARIA, CINERARIA, AND PRIMULA.

"Shanakiel House, Cork, June, 1859.

"GENTLEMEN,—The Calceolaria Seed you sent me turned out so remarkably well, my gardener got First Prize for the plants at our recent Flower Show. You will please send me another half-crown packet, for which I enclose postage stamps.

"Messrs. Jackson & Son. "FRANCIS R. LEAHY."

Seed of the same excellence is now being supplied by post or otherwise. CALCEOLARIA, 1s., 1s. 6d., and 2s. 6d.; CINERARIA, 6d., 1s., and 2s.; and PRIMULA, 1s., 1s. 6d., and 2s. 6d. per packet.
T. JACKSON & SON, Nurserymen and Seedsmen, Kingston, S.W.

FERN CATALOGUE.

ROBERT SIM'S NEW DESCRIPTIVE AND PRICED CATALOGUE, No. 6 (62 pages) of his COLLECTION of BRITISH AND EXOTIC FERNS, can be had, post free, for 8 stamps. Gratis to all previous purchasers of Ferns.
Nursery, Foot's Cray, Kent, S.E.

THE MAY QUEEN STRAWBERRY—the earliest of all Strawberries.—Fine well-rooted plants can now be supplied at 12s. per dozen; 1l. per 25; 1l. 15s. per 50; 2l. per 100. For a full description see an article by W. Roden, Esq., M.D., Kidderminster, June 25, p. 542 of the *Gardeners' Chronicle*.—WILLIAM J. NICHOLSON, Egglescliffe, Yarm, Yorkshire.

HOLCUS SACCHARATUS, or North China Sugar-Cane.—Pamphlet, "A Visit and a Plant;" the only English authority on the Cultivation of the above. Post free 6d. Prices of Seed on application. Samples 6d. Four varieties of Holcus remitted free by post on receipt of 10s.
JOHN W. CLARKE, Whittlesea, Cambridgeshire.

CABBAGE SEED.

CATTELL'S "DWARF BARNES," AND CATTELL'S "DWARF RELIANCE," may be had as usual by post for 12 penny stamps per packet; the former containing 1 oz., and the latter ½ oz. May be sown as early as the middle of July, and will not run to seed the following spring.
Seed Establishment, Westerham, Kent.

SUPERB CAPE OR GIANT AND BROMPTON STOCKS.

CHARLES ALEXANDER, SEEDSMAN, Edinburgh, can supply the following, which are highly recommended. Sow any time this month. Post free on receipt of Stamps:—

1 packet Young's Scarlet Cape or Giant Stock ..	1s.
1 packet Young's White Cape or Giant Stock ..	1s.
1 packet Young's Scarlet Brompton Stock ..	1s.
1 packet Young's Dark Bloody Wallflower ..	1s.

FLOWERING PLANTS.

F. AND A. SMITH have now in bloom a fine sample of KALOSANTHES COCCINEA, also HYDRANGEA, blue and pink; GERANIUM, French, Fancy, and Show varieties; FUCHSIAS, HELIOTROPES, CALCEOLARIAS (herbaceous and shrubby), ERICA, CACTUS, ROSES, NERIUM SPLENDENS, BALSAMS, &c., at moderate prices.
Dulwich, Surrey.

WILLIAM BARNES begs to inform his friends and patrons that his new PRICED and DESCRIPTIVE CATALOGUE is now ready, and can be had post free upon application. It contains the finest selections of Indian Azaleas, Cinerarias, Calceolarias, Verbenas, Fuchsias, Hollyhocks, Liliums, Phloxes, Roses, Geraniums, Chrysanthemums, Ferns, Stove and Greenhouse plants, as well as a very large assortment of choice miscellaneous plants.
Camden Nursery, Camberwell South.

GARDENERS' CHRONICLE NEWSPAPER DIRECT FROM LONDON PENNY

NEW VERBENAS OF 1859.

JOHN HARRISON begs to offer to his friends 50 of the best New Verbenas of the present season, containing the two sets of Mr. Edwards, Smith, and others. Some of the Continental ones are now in bloom and are certainly great improvements. The plants are strong and established in pots ready for blooming or bedding out. The 50 varieties for 40*s.* or 12*s.* per dozen; small rooted plants from the cutting bed, 50 varieties for 25*s.*, free per post.

J. H. has still on hand a splendid Stock of ROSES in pots, fit for immediate planting out.—Darlington Nursery, July 2.

40 FINEST NEW VERBENAS OF 1859.—Ajax, Figaro, Rubens, Felix Roland, Mrs. Fowke, Miss E. Hanmer, Gitania Verdii, Madame Hardy, Rosalinde, Rosemande, Satanella, Cendrillon, Lord Clyde, Reine Blanche, Comte de Morello,, Lightning, Bandmaster, Mathilde, Mrs. Pennington, Baccarah, Azucena, Lady Cotton Sheppard, Comet, Marie Rougiere, Madame Large, Novelty, Abondance, Madam Hoste, Ne Plus Ultra, Fatima, Mrs. White. Lord Elgin, Isa Craig, Mars, Lucrèce, Flora, Ivanhoe, Balfe, Manteau d'Evêque. Any of the above, 9*s.* per dozen, free by post.

HENRY MAY, The Hope Nurseries, near Bedale, Yorkshire.

LAWNS WITHOUT MOWING.—SPERGULA PILIFERA.

J. A. SUMMERS begs to inform the Public that he himself is now prepared to send out established plants of the above, taken from the lawn at Forest Hill, at 4*s.*, 3*s.*, 2*s.* (turned out of pots full of roots), and 1*s.* per dozen, according to their respective sizes. A specimen showing its true character post free, 1*s.*

Howard Park Nursery, Perry Hill, Sydenham.

☞ For lawns that burn up in summer this plant is particularly recommended.

FRUIT TREES IN POTS.

H. LANE AND SON, The Nurseries, Great Berkhampstead, Herts, have still to offer in large quantities fine TREES, well set with Fruit (which are now in a good state for travelling, the fruit not being heavy and likely to drop off), of—

PEACHES, NECTARINES, and APRICOTS, 5*s.*, 7*s.* 6*d.* to 10*s.* each; also APPLES, 3*s.* 6*d.* to 5*s.*

FIGS in a bearing state, 3*s.* 6*d.*

GOOSEBERRIES and CURRANTS, 1*s.* 6*d.*

VINES from eyes, with Fruit on, 5*s.*

They also have a fine collection of Roses in 60-size pots for bedding out, and Roses in 32-size or 6-inch pots suitable for filling up vacancies, and a most splendid lot of Araucaria imbricata; also Indian and Ghent Azaleas, Rhododendrons, Cedrus Deodara, Cedar of Lebanon, and Evergreens of every description.

Catalogues of the above may be had upon application at the Home Nurseries, which are within 5 minutes' walk of the station of the London and North-Western Railway, Great Berkhampstead, Herts.

MINERALS AND FOSSILS for selection of single cabinet specimens from the largest and most select stock in London; also in Collections of any extent to order of JAMES R. GREGORY, 3, King William Street, Strand, London, W.C.

VASES, PEDESTALS, SUNDIALS, FOUNTAINS, FLOWER BOXES, JARDINETS, FERN CASES, BALUSTRADES, EDGINGS AND CURBS FOR FLOWER BORDERS, SEATS, &c., in Imperishable Siliceous Stone, at reduced prices, for the adornment of the Villa Garden, the Mansion Grounds, or the private or public Park.

For Priced Illustrations apply to FREDERICK RANSOME, at the Show Rooms, Cannon Row, Westminster, S.W., or Patent Stone Works, Ipswich.

HAYMAKERS, possessing the best features of Nicholson's Prize Machines, with recent improvements peculiar to those supplied and manufactured only for

RICHMOND AND CHANDLER, Salford.

Branch Establishment, South John Street, Liverpool.

N.B. The celebrated Bedford and Stamford Prize HORSE RAKES always in stock, with latest Patented Improvements.

WEST OF ENGLAND HOTHOUSE AND HOT-WATER APPARATUS MANUFACTORY, BRIDEWELL ST., BRISTOL.

VINCENT SKINNER (late Partner in and for seven years connected with the firm of John Weeks & Co., of Chelsea), erects Horticultural Buildings and Hot-water Apartments with all modern improvements. Upright Tubular Boilers. Plans and Estimates.

HORTICULTURAL BUILDINGS AND HEATING BY HOT WATER.

JOHN R. PEILL, 17, New Park Street, Southwark, Manufacturer of every description of Buildings for Horticultural purposes, and Inventor of the Improved Conical Boiler for heating the same, is prepared to undertake works of any magnitude, and refers among others to the celebrated range of FORCING HOUSES at HER MAJESTY'S GARDENS, FROGMORE, and at SIR ROBERT PEEL'S, DRAYTON MANOR, constructed under the superintendence of his Manager, MR. JOHN JONES; and also to his BOILERS fixed at the CRYSTAL PALACE, the ROYAL BOTANIC GARDENS, REGENT'S PARK, and KEW, and at several hundreds of the Nobility's seats, Public Establishments, and Manufactories in London and the provinces. J. R. P. also manufactures every description of Iron Roofs, Iron Houses, and Iron Fencing, plain and ornamental. Strong Iron Hurdles for Sheep (6 feet long, 3 feet high, with 5 bars), 4*s.* 3*d.* each; ditto for cattle, 4*s.* 9*d.* each.

Prices and other particulars forwarded on receipt of one postage stamp.

SHAW'S TIFFANY is universally acknowledged to be the best, neatest, and cheapest material for shading conservatories, and other Hothouses. Effectually securing Plants from the scorching rays of the sun, without obscuring the light. Also, for protecting the Bloom of Wall Trees from spring frosts, and Fruit from birds and wasps. Sold in pieces.

No. 1.—20 yards long, by 38 inches wide, 5*s.* per piece.

No. 3.—Double strength, 18 yards long, by 39 inches wide, 7*s.* 6*d.* per piece.

No. 4.—Treble strength, 18 yards long, by 39 inches wide, 9*s.* per piece.

A liberal allowance to the Trade when ten or more Pieces are taken.—JOHN SHAW & Co., Princess Street, Manchester.

"FRIGI DOMO."—Patronised by her Majesty, the Queen, the Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, and —Collier, Esq., of Dartford.

PROTECTION FROM COLD WINDS AND MORNING FROSTS.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and, floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths. Two yards wide, 1*s.* 6*d.* per yard run; four, 3*s.* per yard. Also, an improved make for Shading Purposes. Three yards wide, 2*s.* 6*d.* per yard run.

ELISHA THOMAS ARCHER, whole and sole manufacturer, 7, Trinity Lane, Cannon Street, City, and of all Nurserymen and Seedsmen throughout the kingdom. "It is much cheaper than mats as a covering."

GREEN'S PATENT LAWN MOWERS have proved to be the best by the appointed judges in all cases of competition. Full illustrations, with particulars of improvements for the present season, will appear in this Paper next week.

THOMAS GREEN, Patentee and Sole Manufacturer, Smithfield Iron Works, Leeds, Yorkshire; and 2, Victoria Street, bottom of Holborn, London. Repairs done at either of the Establishments, where every information may be obtained.

SMITHFIELD IRON WORKS,
Leeds, June 29.

Royal Dublin Society's Horticultural Show, June 15.

Public Trial of Lawn Mowing Machines on the Grounds of the Trinity College, Dublin. The appointed Judges for the Horticultural Implement department were Sir George Hodson, Bart.; Henry L. Fry, Esq, Westmorland Street; and William Kelly, Esq., Portrane, when they unanimously declared GREEN'S PATENT to be the best in all points, and recommended a First Prize to be given for this Machine.

At the Leeds Horticultural Fête in the Kirkstall Abbey Grounds, June 24, a Prize of Two Pounds was awarded by the Judges, who spoke highly of the superiority of GREEN'S Patent Lawn Mowing Machine above all others, and which Machines in all cases of competition have invariably been proved the best by the appointed judges.

GREEN'S Patent Lawn Mowers may be seen daily working at the Crystal Palace, Sydenham, and every information may be obtained of Mr. ROSE, Manager of the Agricultural Department; and also of THOMAS GREEN, PATENTEE and SOLE MANUFACTURER, Smithfield Iron Works, Leeds, Yorkshire, and 2, Victoria Street, bottom of Holborn, London; or of THOMAS KENNAN & SON, Agents, Dublin, where all inquiries will be duly answered. Repairs done at any of these establishments. Full Illustrations, with all particulars, will appear in this Paper next week.

N.B. The Patentee having made extensive alterations, additions, and improvements in his Factory and Machinery, is now prepared to send Machines off on receipt of order.

THE NEW PATENT MOWING MACHINES may be used anywhere at any time, are self-sharpening, and admit of the use of duplicate sets of cutting parts. Prices from 4*l.* 10*s.* upwards. Illustrated Circulars free by post.—Manufactured and Sold by JAMES FERRABEE & Co., the original introducers of Mowing Machines.

Several infringements of their patent having taken place, the Makers respectfully caution the public to see that the words "FERRABEE'S Patent" are cast on every Machine.

JAMES FERRABEE & Co., Phœnix Iron Works, Stroud.

SHANKS'S PATENT MOWING MACHINES.

J. AND C. LEE, NURSERYMEN, Hammersmith, have great confidence in recommending these as the most complete Mowing Machines offered to the public. They have had large experience with SHANKS'S Machines, and have ever found them do their work admirably, effecting a great saving in labour, and not liable to get out of order. For terms, apply to the Agents, J. & C. LEE, Nurserymen, Hammersmith.

SHANKS'S PATENT LAWN MOWERS are unquestionably the most perfect Machines for Mowing Lawns, Verges, &c., extant. SHANKS'S Horse and Pony Machines are the only Machines that Mow, Roll, Collect, and Deliver the Grass.—London Agents: COTTAM & Co., 2, Winsley Street, Oxford Street, W.

PRIZE LAWN MOWERS.

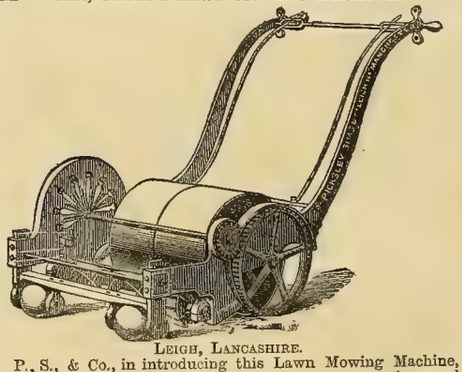
16 inches, price	.. .. ..	£5 10	0
19 ,, ,,	.. .. ..	6 0	0
22 ,, ,,	.. .. ..	6 10	0

Otway's PATENT SELF-ADJUSTING SCYTHE, 10*s.* each.
Improved GARDEN ENGINES, 3*l.* 3*s.*
Cast Steel DIGGING FORKS, and Garden Tools of all kinds.
Boîtes à Houppe for the application of Sulphur, Lime, or any other powder to the Vine, Trées, and all kinds of plants. 2*s.* 6*d.* each.

BURGESS & KEY, 95, Newgate Street, London.

PRICE LISTS sent free. ILLUSTRATED CATALOGUES on receipt of six postage stamps.

PICKSLEY, SIMS, AND CO.'S (by ROYAL LETTERS) PATENT LAWN MOWING MACHINE.



LEIGH, LANCASHIRE.

P., S., & Co., in introducing this Lawn Mowing Machine, particularly request a strict examination, or comparison and trial, for simplicity of construction, lightness, regularity of draught, adaptability for mowing every kind of plain, circular, and verge work.

Firstly, we have encased the wheels so as completely to protect from injury flower borders, shrubs, &c., whilst working the machine, at the same time not being liable to obstruction or damage.

Secondly, this machine works easily on undulated and sloping ground; it can be thrust forward or be drawn from behind, the latter being the easiest.

Thirdly, this is the only machine made that will work round quick curves; it will work easily and effectively round circular borders so small as 12 inches in diameter. This very desirable improvement has been obtained by fixing to the front part of the machine our newly-invented universal action, and self-cleaning, anti-friction spherical guiding balls. The continual revolving of these spherical guiding balls, under the most trying circumstances, never fails.

Fourthly, we have attached to this machine a rack and pinion motion, for adjusting the cutting parts (there being a rack and pinion on each side of the machine to act conjointly at the same time upon the full length of the knives), in other machines a slow, tedious, and uncertain operation, into one of quickness, ease, and certainty.

PRICES:—

				£	s.
Patent Lawn Mowing Machine		13 inches	..	5	10
Ditto	ditto ditto	16 ,,	..	6	0
Ditto	ditto ditto	19 ,,	..	6	10
Ditto	ditto ditto	22 ,,	..	7	0
Patent Chaff and Gorse Cutters from		.. ..	£2 5 to	22	0
,, Bean, Oat, and Malt Mills		.. ..	3 10 to	10	10
,, Gorse and Grain Bruisers		.. ..	10 10 to	21	0
,, Bone Mills		.. .. ..	27 10 to	150	0
,, Mangles, various		.. .. ..	2 10 to	12	10

ILLUSTRATED CATALOGUES can be had gratis.

LAWNS—IN USE IN THE ROYAL GARDENS.

SAMUELSON'S PATENT BOYD LAWN MOWING and ROLLING MACHINE, the only one that will cut wet as well as dry Grass, is guaranteed efficient in use, easily handled, and readily kept in working order. Doing the work of five or six men. Prices, including case and carriage to any railway station in England, from 4*l.* 17*s.* 6*d.* and upwards. Copies of testimonials post free on application to Mr. SAMUELSON'S London Warehouse, 76, Cannon Street West, City; Messrs. DEANE'S, London Bridge; or the Works, Banbury, Oxon.

BOYD'S SELF-ADJUSTING SCYTHES are the cheapest and best, and being sold adjusted, are ready for immediate use. They can be regulated in an instant to suit any person, and to cut any crop without change of Scythes. For Amateur Gardeners they are very desirable, as they afford a healthy and interesting exercise. They have stood the test of public opinion for seven years, and for excellence, ease, economy, and durability, are highly recommended. Upwards of 50,000 of them have been sold. To be had of every Ironmonger, Hardwareman, and Seedsman in the United Kingdom, and wholesale of the Sole Licensed Makers, WM. DRAY & Co., at their New Agricultural Implement Warehouses, Adelaide Place, London Bridge.

AGRICULTURAL MACHINERY.

E. R. AND F. TURNER, Ipswich, manufacture Prize Mills for Crushing Corn, Seed, Malt, &c.; Portable Grinding Mills, Steam Engines fixed and portable from 2 horse-power and upwards; Threshing Machines, Chaff Cutter, Oilcake Breakers, Horse Gears, Saw Tables, &c., all of a superior description and adapted for Home, Colonial, and Foreign use. Illustrated Price Lists sent free on application.

MICROSCOPES.

J. AMADIO'S BOTANICAL MICROSCOPES packed in mahogany case, with three powers, condenser, pincers, and two slides, will show the animalculæ in water. Price 18*s.* 6*d.*—Address JOSEPH AMADIO, 7, Throgmorton Street. A large assortment of Achromatic Microscopes.

"It is marvellously cheap, and will do everything which the lover of nature can wish it to accomplish either at home or in the open air."—*The Field*, June 6, 1857.

Just published, an Illustrated Catalogue, containing the names of 1000 Microscopic objects, post free for 4 stamps.

COUPLAND'S IMPERIAL WIRE AND WINDOW BLIND MANUFACTORY,
370, Oxford Street, W.

Wire work of superior description, useful and ornamental for Conservatory, Garden, Drawing-room, Flower Stand and Basket, Garden Arch, Rosery, Fencing, Birdcage, &c., and Domestic and other purposes in elegant variety. Aviaries and Conservatories fitted up in the best style. Sun Shades and Window Blinds of all sorts.

GLAZIERS' DIAMONDS FOR CUTTING HORTICULTURAL and other GLASS, to be had of the Wholesale Manufacturer, JOHN EDWARDS, 20, Sharp's Alley, West Smithfield, London, E.C. Prices from 10*s.* to 27*s.* 6*d.*

GLASS PRESERVE JARS

	Without Lids.	With Lids.
3 inches diameter	.. 0 4½*d.* ..	0 6½*d.* each
4 ,, ,,	.. 0 6 ..	0 9 ,,
5 ,, ,,	.. 0 8 ..	0 11 ,,
6 ,, ,,	.. 0 10 ..	1 2 ,,
7 ,, ,,	.. 1 0 ..	1 4 ,,
8 ,, ,,	.. 1 4 ..	1 8 ,,
9 ,, ,,	.. 1 8 ..	2 2 ,,
10 ,, ,,	.. 2 0 ..	2 8 ,,

Intermediate Sizes in proportion.

CUCUMBER GLASSES.

24 inches long	.. 2*s* 0*d*.	16 inches long	.. 1*s*. 4
22 ,,	.. 1 10	14 ,,	.. 1 2
20 ,,	.. 1 8	12 ,,	.. 1 0
18 ,,	.. 1 6	Made to any length.	

WASP TRAPS, 3*s.* 6*d.* per dozen.

AGENTS FOR
HARTLEY'S PATENT ROUGH PLATE GLASS.
PAINTS.

Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, &c.

JAMES PHILLIPS AND CO.,
180, Bishopsgate St. Without, London, E.C.

HORTICULTURAL GLASS—JUNE TARIFF.

THOMAS MILLINGTON'S reduced Tariff for GLASS, &c.

6 by 4, 7 by 5, 8 by 6, 9 by 7 } 16 oz. to the foot, 11*s.* 6
6½ by 4½, 7½ by 5½, 8½ by 6½, 9½ by 7½ } per 100 feet.

In 100 boxes,—4ths quality, 12*s.* 6*d.*; 3ds do., 14*s.* 4*d.*

10 by 8, 12 by 9, 12½ by 10½, 14½ by 10½, 13 by 11
10½ by 8½, 12½ by 9½, 13 by 10, 15 by 10, 13½ by 11½
11 by 9, 13 by 9, 13½ by 10½, 12 by 11, 14 by 11
11½ by 9½, 12 by 10, 14 by 10, 12½ by 11½ .. ..

20 by 12	per 100 feet	16 oz.	21 oz.
20 by 13	Common ..	16*s.* ..	24*s.*
20 by 14	Superior .	18*s.* ..	27*s.*
20 by 15			

All Boxes included.

Orchard House sizes as supplied to Mr. Rivers.

Hartley's improved Rough Plate Glass from ⅛ to ⅜ in thickness.

Coloured Glass in great variety, at 9*d.* and 1*s.* per foot.

Paints, Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, Lamp Glasses, &c.

87, Bishopsgate Street Without, same side as Eastern Counties Railway.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

HETLEY AND CO. are supplying 16-oz. Sheet Glass of British Manufacture, packed in boxes, containing 10 square feet each, at the following REDUCED PRICES for cash. A reduction made on 1000 feet.

Sizes.—Inches.	Inches.	Per foot.	Per 10 feet
	Under 6 by 4	at 1½*d.* is	£0 12 6
From 6 by 4	,, 7 ,, 5	,, 2*d.* ,,	0 16 8
,, 7 ,, 5	,, 8 ,, 6	,, 2½*d.* ,,	0 18 9
,, 8 ,, 6	,, 10 ,, 8	,, 2½*d.* ,,	1 0 10
,, 10 ,, 8	,, 12 ,, 9	,, 2¾*d.* ,,	1 2 11

Larger sizes, not exceeding 40 inches long.

16 oz. from 3*d.* to 3½*d.* per square foot, according to size.
21 oz. ,, 3¾*d.* to 5*d.* ,, ,,
26 oz. ,, 3½*d.* to 7½*d.* ,, ,,

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS, for Horticultural purposes, reduced prices, by the 100 square feet.

GLASS TILES AND SLATES made to any size or pattern either in Sheet or Rough Plate Glass.

Propagating Glasses, Beehive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in Glass.

PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.

GLASS SHADES, as ornamental to, and for the preservation every description of goods susceptible of injury by exposure. Prices, since the removal of the excise duty, reduced one-half.

List of Prices and Estimates forwarded on application to

JAMES HETLEY & Co., 35, Soho Square, London.

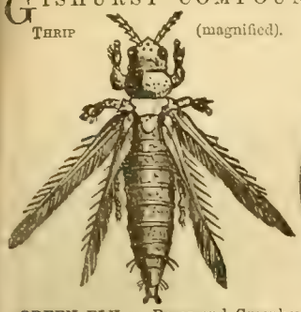
GENUINE TOBACCO PAPER FOR FUMIGATING.

H. APPLEBY (Foreman to Messrs. Ivery & Son, Surrey), takes this opportunity of informing his patrons and the public that he is now offering the above at a very considerably reduced price. It is now sold in packets of 4 lbs. each, at 1*s.* 3*d.* per lb. A liberal discount allowed to the Trade. For testimonials that will guarantee its quality, see *Gardeners' Chronicle*, April 16, p. 333.

Sheet Iron Pots for fumigating, 3*s.* 6*d.* each.

N.B. All orders to be accompanied with a Post-office Order, payable to HENRY APPLEBY, Dorking, Surrey.

GISHURST COMPOUND, PATENTED.—



THRIP (magnified).



MEALY BUG (magnified).

GREEN FLY on Roses and Greenhouse Plants safely got rid of by syringing with PATENT GISHURST COMPOUND, 2 oz. to the gallon of water.

Extract from leading article in *Gardeners' Chronicle*, April 9, '59.

"That it really kills red spider, aphides, mealy bug, thrips, and scale, it is impossible to doubt in the face of reports of practical men, among whom we may mention Mr. D. Judd, of Althorp Gardens"—then follows a caution against the use of a too strong solution.

The Gishurst Compound is sold in boxes at 1*s.* 6*d.* and 10*s.* each, with directions for use, and printed opinions of Mr. Rucker's gardener, Lady Dorothy Nevill's gardener, Sir William Hooker, Mr. Rivers, and other eminent authorities. For Nurserymen the large size is recommended, but where the consumption is not large the compound keeps its strength best in the small. The undermentioned Seed Merchants, Nurserymen, &c., having taken in supplies are prepared to sell single boxes.

Alexander, C., Edinburgh
Bailey, G., Rugby
Barker, W., Godalming
Barnes, Thos., Thirsk.
Barratt, Bury St. Edmunds
Bass & Brown, Sudbury
Batt & Rutley, Strand
Bell & Co., Newcastle-on-Tyne
Bell, John, Norwich
Bradley & Sons, Halam Nursery, near Southwell
Brigden, T., Railway Arcade, London Bridge
Brown, D., Norwich
Bwye, H., Great Malvern
Burgess, C., Cheltenham
Caldwell, W. G., Knitsford
Cattell, J., Westerham
Chater, W., Saffron Walden
Clark, J., Cheltenham
Clark, T., 25, Bishopsgate Street Within
Cooks & Son, Dorrington, near Spalding
Cottrell, J. H., Birmingham
Cripps, T., Tunbridge Wells
Darby, R. F., Cirencester
Davies & Co., Wavertree, near Liverpool
Deane & Co., London Bridge
Denyer, Mr., Gracechurch Street, City
Dickson, Francis & Arthur and Sons, Chester
Dickson & Brown, Manchester
Dickson, Hogg, & Robertson, Dublin
Dickson & Co., Edinburgh
Epps, F., Ashford, Kent
Epps, Maidstone
Fisher, Holmes & Co., Sheffield.
Foster, W., Stroud
Gray, W., Gainsborough
Griffin, J., Bath
Harrison, J., Darlington
Hawkins, R. T., Weymouth
Henderson, E. G. & Son, St. John's Wood, London
Henderson, A. & Co., Pine-apple Place, Edgeware Rd.
Hooper & Co., Covent Garden
Ivery & Son, Dorking
Jackman & Son, Woking
Jackson, Thos. & Son, Kingston
Jefferies, W. B., Ipswich
Josling, K., St. Albans
Kennedy & Co., Dumfries
Kenway, J. S., Batheaston
King, Wm., Lincoln
Laws, T., Beccles
Low, Hugh & Co., Clapton
Mackie & Stuart, Norwich
Mann, J., Brentwood
Matheson, R. C., Gloucester
May, J. & Co., 1, Wellington St.
Nelson, J., Bristol
Parsons, G., Brighton
Pattinson & Son, Hexham
Perkins, J., Northampton
Pontey, A., Plymouth
Pope, H., Gib Heath, near Birmingham
Reid, B. & Co., Aberdeen
Samson & Co., Kilmarnock
Stuart & Mein, Kelso
Sutton & Sons, Reading
Taber, G., Rivershall, Witham
Thyne, J. & R., Glasgow
Tynan, J., Liverpool
Walker, J., Thame
Whalley, T., Liverpool
Wood & Son, Maresfield
Wood & Son, Woodbridge
Wright, W., Retford

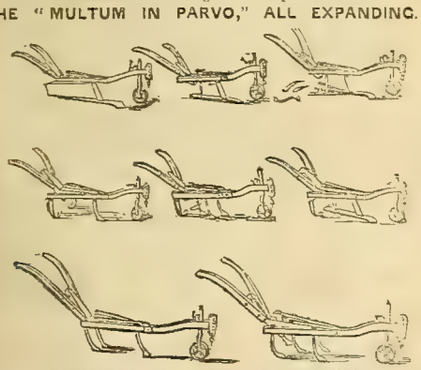
☞ A revised List of Agents will shortly be published.

Nurserymen and Seedsmen supplied by PRICE'S PATENT CANDLE COMPANY (Limited), Belmont, Vauxhall, London, S.

SIGMA'S INSECT OR GREEN-FLY POWDER, QUITE NEW AND VERY FIRST RATE.

Messrs. BURGESS & KEY, 95, Newgate Street, Wholesale and Retail London Agents. 2*s.* per lb.

THE "MULTUM IN PARVO," ALL EXPANDING.



C. POWELL, Hurst Green, Sussex. £7 7*s.*

A Prospectus, with large Engravings, sent on application.

KEATING'S PERSIAN INSECT DESTROYING POWDER.

POULTRY, DOGS, AND PLANTS are effectually freed from Fleas, and all other Vermin with which they are infested, by the above Powder, which is quite harmless to animal life. The Farmer, the Gardener, or the Sportsman, will therefore find it invaluable. Bugs, Cockroaches, Beetles, Moths in Furs, and every other species of Insect are also instantly destroyed. In packets post free, for 14, or treble size for 36 postage stamps, by THOMAS KEATING, Chemist, 79, St. Paul's Churchyard, London, E.C. Take notice each genuine packet bears the above name and address. See "THE FIELD," Oct. 2d and 9th, pp. 263, 283, and 294.

PAGE'S COMPOSITION

FOR THE

DESTRUCTION OF BLIGHT UPON ROSES, WALL FRUIT TREES, CUCUMBERS, MELONS, VINES, STOVE AND GREENHOUSE PLANTS.

Extra Strong, 4s. per gallon, sufficient to make four fit for use. (Jars and Barrels charged at cost price.) Ten gallons and upwards Carriage Free to London.

NO Journal would grant space to publish the testimonials. In 7 years it has attained great reputation is used in the principal gardens of the kingdom, and should be by every person who has a Rose bush or a Wall Fruit Tree. It destroys insect life, and produces luxuriant growth by its fertilising properties. On October 25, 1856, Professor Lindley reported upon 192 cases, 10 only of which were adverse. W. H. T. Hawley, Esq., says of it—

"For a series of years my wall fruit trees have been destroyed by a gradual decay, which I supposed proceeded from cause, affecting their roots, and I attributed it to the nature of the soil, to want of drainage, and in short every cause but the right one, which the use of your invaluable mixture proved to be the aphides attacking the leaves, which appeared as if scorched up, and the poisonous effects produced by these insects shortly extended themselves to the branches, which withered and died, and most of the trees have ultimately been quite destroyed by them. I have this year well saturated the trees with the blight mixture once—just before the blossoms made their appearance, and again when the trees were in full leaf, and the result has been that not an aphis has remained upon them: they have exhibited a thoroughly healthy appearance, and have made vigorous shoots, and have borne a plentiful crop of fruit—results which never happened previously. I may add the effects of the mixture on my Rose trees and other plants have been equally successful, and I shall much obliged to you to send me another supply before the winter closes, in time to repeat the successful experiment next spring."

LONDON AGENTS:—

HENDERSON & Co., Pine-apple Place
HOOPER & Co., Covent Garden
W. BARNES, Camden Nursery
F. HOPGOOD & Co., Shepherd's Bush
VEITCH & SON, Chelsea
CUTBUSH & SON, Highgate
G. CLARK, Streatham Place
MILNE, ARNOTT, & Co., Wandsworth Road

All the leading Provincial Nurserymen, and of the Inventors and Manufacturers,

PAGE & TOOGOOD, Seed-Growers, 37 & 38, Oxford Street, Southampton, (adjoining Radley's, 10 yards from the Railway Station).

Seeds packed for Exportation to all parts of the world.

CARSON'S
ORIGINAL ANTI-CORROSION PAINT,

PATRONISED BY

THE BRITISH GOVERNMENT,
THE FRENCH GOVERNMENT,
THE RUSSIAN GOVERNMENT,
H.R.H. THE PRINCE CONSORT,
HON. EAST INDIA COMPANY,
MOST OF THE NOBILITY AND GENTRY,
NEW RIVER COMPANY,
THE DOCK COMPANIES,
RAILWAY AND CANAL COMPANIES,
THE PRINCIPAL COLLIERIES,
MILL OWNERS,
IRON MASTERS, &c. &c.

The ANTI-CORROSION PAINT is now used extensively for all kinds of OUT-DOOR WORK,

Such as Iron, Wood, Stone, Brick, Compo, Cement, &c., and has been proved, after a practical test of 70 years to surpass any other Paint; *and being peculiarly adapted for Conservatories, Hothouses, and Frames of all descriptions, is constantly used by Noblemen, Gentlemen, as also many eminent Horticulturists, for such purposes.* It is much lower in Price, and lasts twice as long as the best White Lead, and can be easily applied by any Labourer, being sent in various Colours, requiring simply to be mixed (no grinding is needed). The Anti-Corrosion is a powder, and will keep any length of time.

COLOURS:—

White Stone	34*s.* per cwt.	Light and Dark Lead	28*s.* per cwt.
Light do.	32*s.* ,,	Light and Dark Chocolate	
Drab or Portland		Bright Red	
Bath do.		Dark do. (or Brick Colour)	
Light and Dark Yellow do.		Black	
Copper	30*s.* ,,	Invisible Green	42*s.* ,,
Light and Dark Oak		Bright and Deep Green	50*s.* ,,
		Blue (for Carts and Waggons)	50*s.* ,,

OIL, TURPENTINE, AND BRUSHES,

A Copy of Testimonials (700), will be sent upon application to

WALTER CARSON & SONS, (Successors to the Inventors), 9, Great Winchester Street, near the Royal Exchange), London, E.C.

NO AGENTS THROUGHOUT THE UNITED KINGDOM.

BARBER'S POISONED WHEAT Kills Mice and Sparrows on the spot.—In 1*d.*, 2*d.*, 4*d.*, and 8*d.* packets, with directions and testimonials. No risk nor damage in laying this Wheat about. From a single packet hundreds of Mice and Sparrows are found dead. Agents: Barclay & Sons, 95, Farringdon Street; W. Sutton & Co., Bow Churchyard; B. Yates & Co., 25, Budge Row, London; and sold by all Druggists, Grocers, &c., throughout the United Kingdom.

BARBER'S Poisoned Wheat Works, Ipswich, removed from Eye.

CHASE'S
BEETLE POISON.



EQUALLY DESTRUCTIVE TO RATS AND MICE, AND HARMLESS TO CATS AND DOGS.

A SAFE and most effectual Destroyer of BLACK BEETLES and COCKROACHES; one trial alone will suffice to prove its great efficacy, and one box will destroy thousands. The great advantage in this preparation is, that it does not leave their bodies to decay and corrupt the air, but completely dries up and destroys them, so that nothing is left to cause an unpleasant odour when dead. *Directions for use.*—Place four or five of the Balls each night where the Beetles mostly resort.—Sold in boxes at 1*s.* each, or sent free to any part of the kingdom for Twenty Stamps (or a case containing one dozen boxes sent *carriage free* on a receipt of a Post-office Order for 12*s.*), by THOMAS CHASE, Chemist, 14, Holborn, London, E. C., and may be obtained through all Chemists, Booksellers, and Medicine Vendors.

Testimonials from the Rev. Edwin Sidney, Cornard Parva Rectory, near Sudbury, Suffolk; James Veitch, jun., Esq., of the Royal Exotic Nursery, Chelsea; Lucombe, Pince, & Co.; E. G. Henderson & Son, Wellington Nursery, St. John's Wood; C. Loddiges, Esq., of Hackney, and many others.

TO AGRICULTURISTS AND OTHERS.

EDWARDS'S PATENT CANVAS SUCTION AND DELIVERY HOSE are the best and cheapest in use.

EDWARDS'S PATENT CANVAS DRIVING BANDS FOR CHAFF CUTTING AND THRESHING MACHINES, &c.

C. J. EDWARDS's Leather and Canvas Hose and Band Manufactory, 32, Great Sutton Street, Clerkenwell, London, E.C.

VULCANIZED INDIA-RUBBER HOSE AND TUBING FOR WATERING GARDENS, &c.

J. L. HANCOCK supplies this article, of superior make, of any required strength or size.

BRASS SCREW JOINTS, for connecting the Hose to Cisterns, also HAND BRANCHES, TAPS, and WATER SPREADERS in great variety. Orders by post promptly executed, and Illustrated Price Catalogue on application.

JAMES LYNE HANCOCK, Vulcanized India-Rubber Works, Goswell Mews, and No. 8, Goswell Road, London, E.C.

TO AMATEUR GARDENERS, NURSERYMEN, AGRICULTURISTS, AND OTHERS.

GUTTA PERCHA TUBING FOR WATERING GARDENS, from 2½*d.* per foot; Vulcanised India Rubber Tubing for Watering Gardens, from 4*d.* per foot; Brass Hand Branches, with Stopcock and Rose, and every description of Garden Tubing Fittings, sold Wholesale and Retail by W. R. WOODS, 94, Goswell Road, near the "Angel," Islington, London, E.C. Priced Lists can be had on application.

Please notice the Address—94, Goswell Road.

GUTTA PERCHA TUBING FOR WATERING GARDENS.

THE GUTTA PERCHA COMPANY have the pleasure to acknowledge the receipt of the following

Testimonial from Mr. J. FARRAH, *Gr. to* BOSWELL MIDDLETON JALLAND, Esq., *of Holderness House, near Hull.*

"I have had 400 feet of your Gutta Percha Tubing, in lengths of 100 feet each, with union joint, in use for the last 12 months for watering these gardens, and I find it to answer better than anything I have ever yet tried. The pressure of the water is very considerable, but this has not the slightest effect on the tubing. I consider this tubing to be a most valuable invention for Gardeners, inasmuch as it enables us to water our gardens in about one-half the time, and with one-half the labour required."

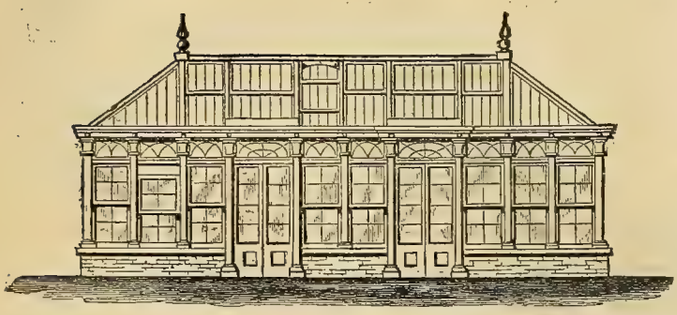
Manufactured by the Gutta Percha Company, Patentees, 18, Wharf Road, City Road, London, and sold by their Wholesale Dealers in town and country.

BY APPOINTMENT.

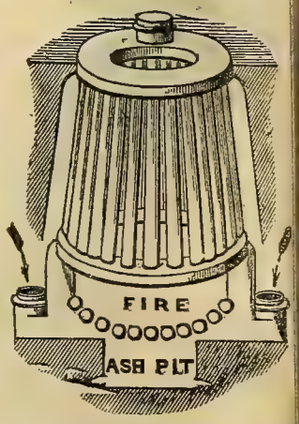
HORTICULTURAL BUILDING & HEATING BY HOT WATER.

STEAM POWER WORKS.

JOHN WEEKS & COMPANY



BEG respectfully to call the attention of the Horticultural World to the more than usual facilities at their command to offer superior Horticultural Erections of every style and description at lowest possible prices. The extensive additions to their Machinery, Workshops, Iron Foundry, and Plant now form a complete and unequalled Manufactory for the production of every branch of Horticultural Building and Heating by Hot-Water. J. Weeks & Co.'s ONE BOILER SYSTEM of heating has from its efficiency, cleanliness, and economy, rendered such unbounded satisfaction as now to become almost universally adopted. Numerous Horticultural Establishments of considerable extent formerly heated by 10 or 12 ordinary Boilers, also Churches, Chapels, Schools, Museums, Warehouses, Hospitals, and Public Buildings are now more effectually heated at an incredible saving of labour and fuel by John Weeks & Co.'s ONE BOILER SYSTEM.

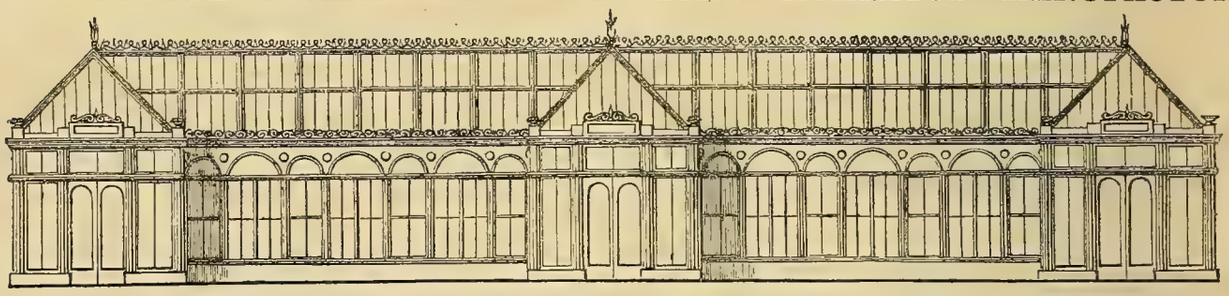


JOHN WEEKS & COMPANY, King's Road, Chelsea, London, Horticultural Buildings and Hot-water Apparatus Manufacturers, Engineers, and Iron Founders.

Plans, Estimates, and Illustrated Catalogues Free on application.

H. M'CALLA,

HORTICULTURAL BUILDER AND HOT-WATER APPARATUS MANUFACTURER.

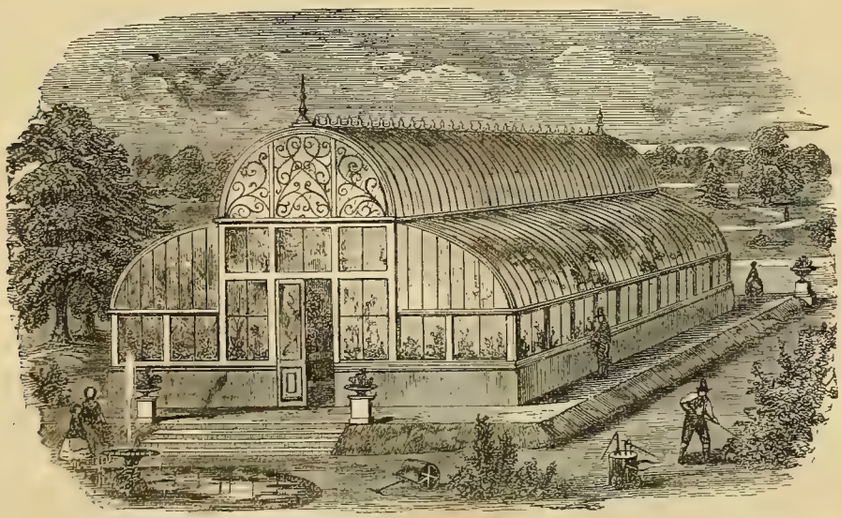


H. M'C. will furnish PLANS and ESTIMATES free of any charge whatever, or will supply WORKING DRAWINGS at a trifling cost for any Gentleman wishing to construct his own, thereby effecting a great saving.

OFFICE: 7, UPPER CHEYNE ROW, KING'S ROAD, CHELSEA.

COTTAM & COMPY., Engineers, Founders, &c.,

2, WINSLEY STREET, LONDON, W.



A SHOW ROOM DEVOTED ENTIRELY TO ARTICLES OF HORTICULTURE.

THE NEW ILLUSTRATED CATALOGUE UPON APPLICATION.

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	,, Syringes	Garden Bordering
Hot-water Apparatus	Ornamental Wire Work	Hurdles	,, Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

Iron Hurdles, Strained Wire Fencing, Game Netting, &c.

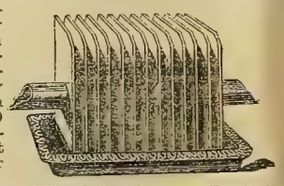
Every description of Plain, Ornamental, Cast and Wrought Iron, and Wire Work.

EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

N.B. COTTAM and COy. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

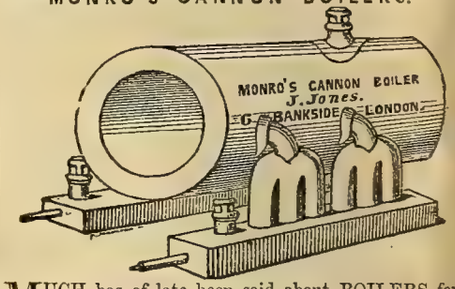
IMPROVED HOT-WATER PIPE.

THE HORTICULTURIST will find herein an inexpensive instrument of new and very important powers. An atmosphere may be produced at will either perfectly dry, partially damp, or saturated with moisture. A space of 10 inches by 12 inches contains the power of 25 feet of 4-inch pipe and other numerous advantages.



The London Warming and Ventilating Company (Limited), 26, Great George Street, Westminster, S.W.

MONRO'S CANNON BOILERS.



MUCH has of late been said about BOILERS for Heating by Hot Water, but these Boilers have now proved themselves to be the best at present invented. They are adapted for heating every description of building, and are made of various sizes. The Price of the

24-inch Cast Iron is	.. ..	.. £5 10*s.* 0*d.*	each
24-inch Wrought ditto	.. ..	.. 6 10 0	,,
36-inch Cast ditto	.. ..	.. 8 0 0	,,
36-inch Wrought ditto	.. ..	.. 8 10 0	,,

References to Gentlemen and Nurserymen where these Boilers are now at work. The Cannon Boilers are now kept in stock, and are to be had only of J. Jones, 6, Bankside. Also, every description of Saddle and Cylinder Boilers. Hot Water Pipes and Connections at prices lower than those of any other house in London. Estimates for Hot-water Apparatus erected complete in any part of the country, and an Illustrated Catalogue on application to J. Jones, 6, Bankside, Southwark, London.

LOOMES' GARDEN EDGING —CABLE PATTERN.



Price at Peterborough.	In London.
Straight .. .. .. 5*d.* — 6*d.* per yard	
Bends .. .. .. 6*d.* — 7*d.* ,,	
If fitted to plans .. 7*d.* — 8*d.* ,,	

LOOMES & Co., Manufacturers, Whittlesea, near Peterborough.

JOHN WARNER AND SONS, Crescent, Jewin Street, London.—GALVANISED IRON TUB GARDEN ENGINE, with WARNER'S Registered Spreader, is strongly recommended, for durability and low price, viz., 10 gallons, 2*l.* 15*s.*; 16 gallons, 3*l.* 15*s.*; 24 gallons, 5*l.*; or in strong oak tub, 14 gallons, 5*l.* 10*s.*; 24 gallons, 6*l.* 18*s.* May be obtained of any Ironmonger or Plumber in town or country, or of the patentees and Manufacturers; as also Machinery of all kinds for raising Water from any depth to any height by Steam, Horse, or Manual Power. Prices sent on application.



Syringes of various constructions and sizes from 9*s.* upwards. Metallic String from 10*d.* to 1*s.* 2*d.* per lb.

GARDEN ENGINES AND SYRINGES.

J. TYLOR AND SONS, Warwick Lane, Newgate Street, London, E.C., beg to call attention to their very superior manufacture of GARDEN ENGINES and SYRINGES.

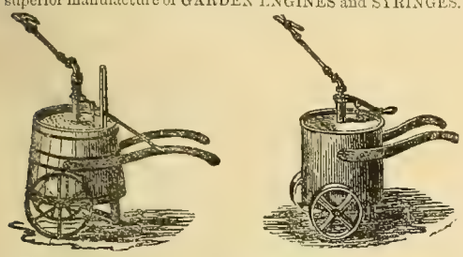


Fig. 598. J. TYLOR & SONS' BARROW GARDEN ENGINE in best well painted Oak tub, fitted with J. TYLOR & SONS' Improved Brass Pump, Universal Joint, and Registered Spreader, which answers the purpose of the separate rose, fan, and jet.

CONTENTS OF TUB:—

10 gallons	15 gallons	28 gallons
£4 10 0	£5 10 0	£6 18 0

Fig. 599. do. TINNED IRON TUB.

CONTENTS OF TUB:—

8 gallons	12 gallons	16 gallons	24 gallons	30 gallons
£2 15	£3 5	£4	£5	£5 18



Fig. 618. No. 1. REGISTERED SYRINGE, with India-rubber suction tube, one rose and jet .. .. £1 5 each.
No. 2. Ditto ditto 1 1 ,,
Telescope Branch Pipe for ditto .. .. 0 10 ,,



Fig. 619. GARDEN SYRINGE, with one rose and jet, 12*s.* 6*d.* each
,, 620. Ditto ditto 11*s.* 6*d.* ,,
,, 621. Ditto ditto 10*s.* 6*d.* ,,
,, 622. LADIES' GARDEN SYRINGE, with one rose & jet, 8*s.*



Fig. 623. READ'S SYRINGE, with two roses and one jet, 18*s.* 6*d.*
,, 624. READ'S SYRINGE, with one rose and jet .. 16 6
,, 625. Improved ditto ditto .. 14 6
,, 626. Ditto ditto ditto .. 13 0

Manufacturers of Pumps and Well Engines (for shallow or deep Wells), Plumbers' Brass Foundry of every description. High Pressure Cocks and Closets, Copper and Tinned-iron Baths, Garden and Fire Engines, Lamps of every description, Copper Goods, &c. Estimates given for Hot-water and Bath Apparatus

PRICES REDUCED.

H. J. MORTON AND CO., Galvanised Iron Works, 2, Basinghall Buildings, Leeds.

GALVANISED IRON ROOFING for Farm Buildings and other Roofs; the cheapest, most durable, and neatest Roofing in use; also Spouting at 10½*d.* per yard.

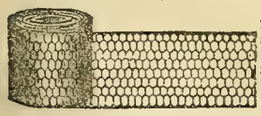
WIRE STRAND CABLE FENCING



(formed of Twisted Wires like a rope or cable), the strongest cheapest, and neatest fence in use, will resist the largest cattle, and will not bend or get out of form by trespassing upon or over. Price, with five lines of the Galvanised Strand, iron main posts, and pronged Standards, 1*s.* 2½*d.* per yard.

This fence is far cheaper than posts and rails, or any kind of iron fencing; and possesses four times the strength of solid bars. Will not rust nor corrode. Upwards of 1200 miles of this Fencing supplied.

GALVANISED GAME AND POULTRY NETTING.



Galvanised, 24 ins. wide, 2-inch mesh, 5½*d.*, 7½*d.* and 9½*d.* per yard.
Galvanised, 24 ins. wide, 3-inch mesh, 4*d.*, 5*d.*, and 7*d.* per yard. The Netting made any width, and with openings of any size.

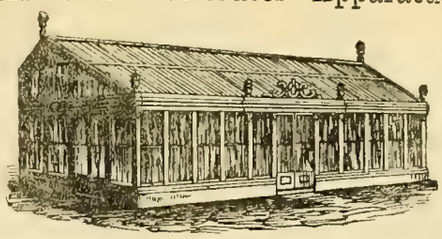
GALVANISED IRON CHAIN CAMP STOOLS & CHAIRS, POULTRY FOUNTAINS & FEEDERS, PRONGED DAHLIA RODS AND ROSE STAKES, &c.
Strong CATTLE HURDLES from 2*s.* per yard.

PATENT IMPROVED GAS WORKS,
of all sizes for the use of Private Houses, Mansions, Railway Stations, Mills, Collieries, Mines, Villages, &c. Works from 10 to 500 lights estimated for. The works can be entrusted to an ordinary labourer.—Apply to
HENRY J. MORTON & Co. 2, Basinghall Buildings, Leeds.

J. WATTS & CO.,

Hothouse Builders and Hot-Water Apparatus Manufacturers.

Our economic Heating Apparatus combines great power with simplicity of construction, a Range of Houses being Heated as easily as the smallest Pit.

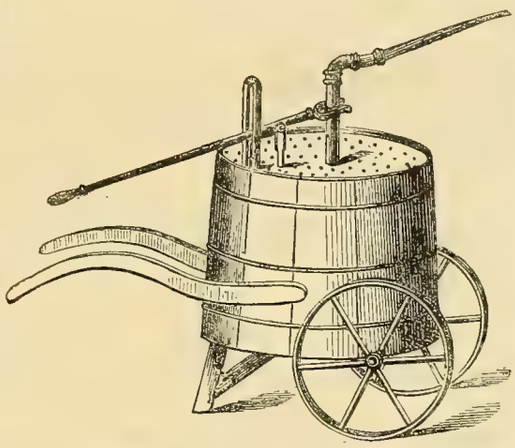


Two Hundred Cucumber Boxes and Lights, and from Three to Four Hundred Lights of all sizes kept in stock, glazed and painted complete, ready for immediate use.

References to the Nobility and Gentry in most of the Counties in England.

Claremont Place, Old Kent Road, London, S.E.

DEANE & COMPANY'S
HORTICULTURAL TOOLS.



GARDEN ENGINES, Galvanized Iron
Prices 55s., 63s., 105s., 120s.
Ditto, Wood, 84s,, 105s, 130s.
Flower Stands, 4s. 6d. each.
Cast Iron Ornamental ditto, to hold 7 Vases, 27s.
Deane's Mowing Machines, with Boyd's Patented Improvements, £4 17s. 6d; £6 6s. 0d., £6 17s. 6d., £7 7s. 0d.
Green House Syringes, 8s., 10s., 18s. 6d
Garden Rollers, £1 14s. 6d., £2., £2 12s.
£3 3s., £3 18s., £4 13s., £5 12s., £7 10s.
Garden Stools, 4s. 6d.
Garden Chairs, from 30s.
Boyd's Self-adjusting Scythe, 10s. 6d.
Wire Work, 18in. 4d. per yard run.

Every Implement for Garden use on the lowest Terms.

DEANES:—Opening to the Monument, London Bridge.

FOWLER'S PATENT STEAM PLOUGH

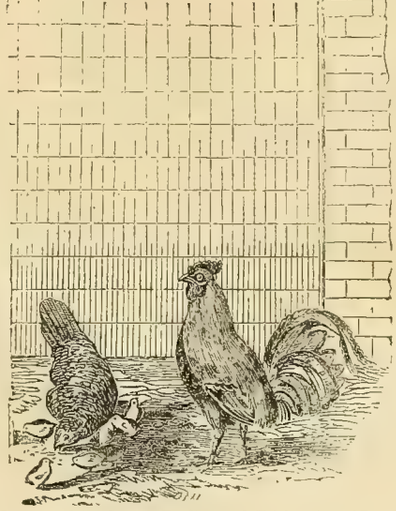
SEEN AT WORK.

STANDARD SETS OF FOWLER'S STEAM-PLOUGHING TACKLE
CAN BE SEEN IN OPERATION AT THE SHOWS OF
SUFFOLK AGRICULTURAL ASSOCIATION AT IPSWICH ON JULY 1.
SOUTH YORKSHIRE AND NORTH DERBYSHIRE AGRICULTURAL SOCIETY AT SHEFFIELD ON JULY 1, 2, 4, AND 5.
SUSSEX AGRICULTURAL SOCIETY AT HAILSHAM ON JULY 1.
ROYAL AGRICULTURAL SOCIETY AT WARWICK ON JULY 12, 13, 14, AND 15.

For further particulars apply to
JOHN FOWLER, JUN., 28, CORNHILL, LONDON, E.C.

GREENING & COMPANY'S
PATENT WIRE FENCES.

PATRONISED BY HIS ROYAL HIGHNESS THE PRINCE CONSORT.



No. 11 variety, Strong Poultry and Chicken Proof Fence.

SPECIFICATION.—Horizontal bars of stout tough wire 6 inches apart. Meshes at the foot of fence, 1 inch apart; at the centre of fence, 2 inches; at the top of fence, 4 inches.

"By far the most elegant and durable wire fencing that has come under our notice. Below it is sufficiently fine to be proof alike against the ingress of rats and the egress of chickens, and being spiked above it affords no resting-place for the fowls, who consequently do not attempt to fly over it."—*Poultry Book.*

PRICES PER YARD:—

3 feet high,	1*s.* 6*d.* japanned;	1*s.* 10*d.* galvanised.			
4 ,,	1 11	,,	2 4	,,	
5 ,,	2 3	,,	2 9	,,	
6 ,,	2 6	,,	3 0	,,	

G. & CO.'S NEW ILLUSTRATED CATALOGUE
is now ready.

It contains descriptions of the above and other Iron and Wire Fences for Parks, Farms, Gardens, Game Preserves, Poultry Courts, &c.

Post free on receipt of stamp.

GREENING & Co., Victoria Iron and Wire Works, 81, Oxford Street, Manchester.

NEW SEED OF FIRST-CLASS

CALCEOLARIAS AND CINERARIAS.

JAMES CARTER & CO.

Are now ready to supply Seed of the above, in three-sized packets, *all of the same quality*,

1s. ... 2s. 6d. ... 5s.

JAMES CARTER & CO., Seedsmen, 238, High Holborn, W.C.

MESSRS. HENDERSON & SON

OFFER

CALCEOLARIA, CINERARIA, & PRIMULA SINENSIS,

In seed packets at 2*s.* 6*d.* each kind. The superior quality of the above may be seen in the fine varieties from which the seed is produced, as they are bloomed in the Wellington Nursery at their respective seasons. The CALCEOLARIAS and CINERARIAS of the present year are much finer than those of any previous one.

SPERGULA PILIFERA,

The admirable substitute for Grass, REQUIRING NO MOWING! is offered in good established plants for immediate planting, at 4*s.*, 3*s.*, 2*s.*, and 1*s.* per dozen, according to their respective sizes, and in seed packets at 6*d.*, 2*s.* 6*d.*, 5*s.*, 10*s.*, and 20*s.* each.

BEATON'S NEW NOSEGAY BEDDING GERANIUMS of unique and beautiful colours are—

the IMPERIAL CRIMSON and the MODEL NOSEGAY.

ALLAMANDA VIOLACEA, the GOLDEN TOM THUMB GERANIUM, and other New Plants are described in the NEW SPRING CATALOGUE.

Wellington Nursery, St. John's Wood, London.

CHOICE FLOWERS.

BUTLER & McCULLOCH'S SPRING CATALOGUE OF SEEDS,

ARRANGED on a new and original plan, with copious Descriptive and Cultural Notes, and containing many new and rare species and varieties not found in any other Catalogue, now ready and may be had free and post paid on application.

FLOWER, SHRUB, TREE, and VEGETABLE SEEDS, the crop of 1858, saved with the greatest care, by the most eminent growers.

We may also state that the Sardinian correspondent of Messrs. JAMES CARTER & Co., whose Seeds, especially Carnations and Picotees, have given such universal satisfaction, has transferred the Agency from that firm and appointed us his representative in this country. To meet the growing demand for first class flowers, particularly FLORISTS' FLOWERS, we have adopted our usual maxim of charging the lowest possible prices.

Professor LINDLEY in the *Gardeners' Chronicle* of February 5th, has the following notice of B. & McC.'s Catalogue.

"BUTLER & McCULLOCH's (Covent Garden) Spring Catalogue of Choice Flower, Shrub, Tree, and Vegetable Seeds. This list fills 84 closely printed 8vo pages, and is remarkably well got up. It appears that the correspondent in Sardinia, who formerly supplied one of the great London houses with seeds raised in that warm part of Europe, has now transferred what he saves to Messrs. BUTLER & McCULLOCH. Let us add, that it yields to no Trade List in the abundance of its materials or the excellence of its arrangements."

SPLENDID DOUBLE ITALIAN-SAVED CARNATION AND PICOTEE SEED, IN SEALED PACKETS,

FROM ONE OF THE CHOICEST COLLECTIONS IN EUROPE.

The following collections of Carnations and Picotees have been saved with the greatest care by our Sardinian correspondent, a most successful and distinguished amateur, and only from the most perfect flowers of the newest and handsomest of the English stage varieties, or seedlings from them: they can be confidently recommended to the lovers of this exquisitely beautiful class of plants, as certain to produce at least 80 per cent. of fine double flowers, and with a fair chance of obtaining varieties of the greatest value. The Perpetual or Tree kind is comparatively a new class of Carnations and Picotees; they bloom beautifully in the open ground, during the whole of the Autumn months; and, if grown in pots, are highly ornamental in the Conservatory or Greenhouse in Winter and Spring.

CARNATION.					s.	d.
Self or one-coloured, in 12 beautiful vars.			of 10	seeds each	5	6
Do.	do.		of 5	do.	3	0
Flake or Striped	do.		of 10	do.	6	0
Do.	do.		of 5	do.	3	6
Bizarre or three-coloured	do.		of 10	do.	6	0
Do.	do.		of 5	do.	3	6
Fancy Coloured	do.		of 10	do.	5	6
Do.	do.		of 5	do.	3	6
Yellow Bizarre and Self	do.		of 10	do.	7	0
Do.	do.		of 5	do.	4	0
Yellow Flake	do.		of 10	do.	7	0
Do.	do.		of 5	do.	4	0
Yellow Fancy	do.		of 10	do.	7	0
Do.	do.		of 5	do.	4	0

Choice Mixed, 2*s.* per packet.—Fine Mixed, 1*s.* per packet.

Perpetual Self or one-coloured, in 12 beautiful varieties			of 10	seeds each	5	6
Do.	do.	do.	of 5	do.	3	0
Perpetual Flake	do.	do.	of 10	do.	5	6
Do.	do.	do.	of 5	do.	3	0
Pepetual Fancy	do.	do.	of 10	do.	5	6
Do.	do.	do.	of 5	do.	3	0

Perpetual Choice Mixed, 2*s.* p. packet.—Fine Mixed, 1*s.* p. pkt.

CRYPTOMERIA JAPONICA.—An exceedingly Ornamental Coniferous Tree, suitable for Lawns or Pleasure Grounds. Seeds sown in the open ground germinate freely, and make more handsome specimens than "worked" plants, 1*s.* per packet.

PICOTEE.

White, margined with various colours, in 12 beautiful varieties			of 10	seeds each	6	0
Do.	do.	do.	of 5	do.	3	6
Yellow	do.	do.	of 10	do.	7	6
Do.	do.	do.	of 5	do.	4	0

Choice Mixed, 2*s.* per packet.—Fine Mixed, 1*s.* per packet.

Perpetual, white, margined with various colours, in 12 beautiful varieties of 10 seeds each	6	0
Do. do. 5 do.	3	6
Perpetual, choice mixed, 2*s.* per pkt. Fine mixed, per pkt.	1	0

Dried petals from Sardinia, such as the above may be expected to produce, may be seen at our place of business.

CALCEOLARIA.

Herbaceous, saved from the choicest hybridised flowers, in packets, 1*s.*, 1*s.* 6*d.* and	2	6
Half-Shrubby, saved from the newest and most beautiful flowers of this exceedingly interesting class. The flowers are smaller and in clusters, the habit more dwarf and compact than the herbaceous varieties, in packets, 1*s.*, 1*s.* 6*d.*, and	2	6
Agents for Dobson & Sons splendid hybridised varieties, in packets, 1*s.* 6*d.*, 2*s.* 6*d.*, 3*s.* 6*d.*, and	5	0

CINERARIA.

Saved from a splendid collection, composed of the newest and most beautiful of this class, in packets, 1*s.*, 1*s.* 6*d.*, and	2	6
Agents for F. & H. Smith's splendid collection, in packets, 1*s.* 6*d.*, 2*s.* 6*d.* and	5	0

PRIMULA.

Saved from splendid flowers, in packets, 1*s.*, 1*s.* 6*d.*, and	5	0
Agents for F. & H. Smith's, do. 1*s.* 6*d.*, 2*s.* 6*d.*, and	5	0

DOUBLE HOLLYHOCK.

20 packets, embracing the newest and most beautiful named prize varieties..	5	0
12 packets do do. do. ..	3	6
The same mixed	1	0

BUTLER & McCULLOCH, Covent Garden Market.

HORTICULTURAL SOCIETY.

I. Notice is hereby given, that a Special General Meeting will be held in the rooms of the Society of Arts, John Street, Adelphi, on THURSDAY, July 7, at 11 o'clock A.M., to consider an arrangement with her Majesty's Commissioners of the Exhibition of 1851, for leasing to the Horticultural Society 20 Acres of Ground at Kensington Gore upon terms, and for objects, to be then explained.

II. CHANGE OF ENTRANCE TO THE GARDEN.—The Council have directed that the Gate leading into the Garden from the Duke of Devonshire's road shall be closed; and that, in future, the principal entrance shall be at the National School Gate, immediately opposite the Church on Turnham Green.

III. MEETINGS OF THE FRUIT COMMITTEE.—Notice is hereby given, that the Meetings of this Committee for the next three months will be held at 8, St. Martin's Place, Trafalgar Square, at 3 P.M., on TUESDAY, JULY 12,
TUESDAY, AUGUST 9 | TUESDAY, SEPTEMBER 20.

At the Meeting on August 9, a Prize of One Guinea will be awarded for the best EARLY SEEDLING PEACH or NECTARINE, if found to possess sufficient merit. The fruit should be accompanied by two or three of the full-grown leaves.

On September 20 a Prize of Two Guineas will be awarded for the best SEEDLING GRAPE; a Prize of One Guinea will also at this Meeting be given for the best dish of SEEDLING STRAWBERRIES.

Blank forms to be filled up and sent with Seedling or other Fruits may be obtained on application to Mr. ROBERT THOMPSON, Secretary to the Fruit Committee, Horticultural Society's Garden, Chiswick, London, W.

N.B. The carriage of packages of Fruit will be paid. They should be directed "To the Secretary to the Fruit Committee, 8, St. Martin's Place, Trafalgar Square, London;" and should be delivered before 1 P.M. on the respective days of meeting.

IV. At a meeting held in the rooms of the Society of Arts on Tuesday, June 21, the following gentlemen were elected Fellows, viz.:—

E. P. Sells, jun., Highbury Park, West	G. F. Wilson, Esq., Belmont, Vauxhall
W. S. Dixon, Esq., 1, Dixon Street, Glasgow	B. Noakes, Esq., Hope Cottage, North Hill, Highgate

A ballot took place for the undermentioned plants, which were declared to have been gained by the following Fellows, viz.:

Pinus from Popocatapetl, 7 Plants. 14 Applicants.

Mr. Wm. Cotterell	Mr. Fisher Godwin	Col. Leslie
Mr. Charlwood	Earl of Leicester	Lady Rolle
	Mr. J. Veitch, jun.	

Pinus Regeliana, 9 Plants. 21 Applicants.

Capt. Best	W. J. Lloyd, Esq.	Rev. T. Stainforth
Mr. J. R. Challice	J. G. Parry, Esq.	Mr. J. Veitch, jun.
Sir C. Lemon	Lady Rolle	Lord Vernon

Pinus Calabra, 13 Plants. 31 Applicants.

Mr. W. Barron	A. S. Gladstone, Esq.	Earl of Scarborough
W. Childers, Esq.	Rt. Hanbury, Esq.	Mr. J. Shaw
Arthur Currie, Esq.	Wm. Hunt, Esq.	Mr. J. Veitch, jun.
Sir P. Egerton	Lady Rolle	Lord Vernon
	C. B. Warner, Esq.	

Pinus Brutia, 17 Plants. 28 Applicants.

Capt. Best	J. Fielden, Esq.	Col. Leslie
Robt. Capper, Esq.	Mr. J. Garaway	Earl of Scarbrough
Mr. J. R. Challice	Dr. Henderson	Mr. J. Shaw
Fredk. Chatfield, Esq.	Wm. Hunt, Esq.	Sir W. C. Trevelyan
	Mr. J. Ivery	Lord Walsingham
Sir Philip Egerton	Rev. W. B. Lee	Lady C. Wellesley

Wistaria sinensis alba, 30 Plants. 53 Applicants.

Edw. Banks, Esq.	Jas. Heywood, Esq.	Sir F. Shuckburgh
J. E. Bartlet, Esq.	W. H. Hughes, Esq.	J. S. Smith, Esq.
E. Brown, Esq., Oakhill	Col. Mason	A. J. R. Stewart, Esq
	P. Nelson, Esq.	J. Straith, Esq.
W. F. Lindsay Carnegie, Esq.	G. H. Packe, Esq.	Lady L. Tennisson
	A. F. Paxton, Esq.	J. N. Walker, Esq.
R. Crawshay, Esq.	W. J. Phelps, Esq.	Lord Walsingham
Lord Egerton of Tatton	E. P. Richards, Esq.	J. C. Whiteman, Esq.
	Col. Richardson	Miss Wilson
W. J. Etches, Esq.	G. S. Ridgway, Esq.	G. Wood, Esq.
Hon. F. L. Cower	R. Rogers, Esq.	J. Deacon, Esq.

The following plants, of which there was a sufficient number to supply all the Fellows who applied for them, were also ordered to be distributed:—

	Applicants		Applicants.
Pinus Don Pedri	93	Bambusa gracilis	33
Abies, sp. from Mexico ..	15	Platycodon chinensis ..	21
Cupressus Macnabiana ..	49	Seedling Camellias	41
,, Lawsoniana	67	Buddlea, sp. from Peru ..	19
Pentstemon, from Mexico	47	Sida malvæolia	18
Veronica decussata Devon.	31	Clematis microphylla, var.	
Aralia japonica	15	leptophylla	26
Eurybia quercifolia	9	Seeds of Sikkim Rhododendron	41
Pomaderris phillyreæfolia..	10		

V.—NEXT ORDINARY MEETING FOR ELECTION OF FELLOWS, AND BALLOT FOR PLANTS.—Notice is hereby given that the next Ordinary Meeting will be held in the rooms of the Society of Arts, in the Adelphi, on TUESDAY, JULY 19th: the Chair to be taken at 11 o'clock, A.M. On this occasion a third Ballot for plants will take place.

List of Plants for Ballot.

100 "NERGALI," or HILL BAMBOO OF THE PUNJAUB. Hardy herbaceous plant.
50 CUPRESSUS MACNABIANA. Hardy tree.
50 CUPRESSUS LAWSONIANA. Hardy tree.
50 CUPRESSUS TORULOSA. Hardy tree.
50 ABIES SMITHIANA. Hardy tree.
30 PINUS PATULA. Half-hardy tree.
20 PINUS DON PEDRI. Hardy (?) tree.
20 PINUS BRUTIA. Hardy tree.
80 STATICE BRASSICÆFOLIA. Greenhouse herbaceous plant.
30 HESPEROMELES, sp. from Mexico. Half-hardy shrub.
40 BERBERIS, sp. from Pichincha. Half-hardy shrub.
20 TECOMA LATROBEI. Greenhouse climber.
40 SPIRÆA CALLOSA. Hardy shrub.
30 SCLEROTHAMNUS DIFFUSUS. Greenhouse shrub.
30 BOUVARDIA LONGIFOLIA. Greenhouse shrub.
40 CALLISTEMON RUGULOSUM. Greenhouse shrub.
40 BUDDLEA, sp. from Peru. Greenhouse shrub.
40 PENTSTEMONS, sp. from Peru. Hardy herbaceous plants.
50 SEEDLING CAMELLIAS.
50 BAMBUSA GRACILIS Hardy herbaceous plant.
40 CUPRESSUS GOVENIANA. Hardy tree.
30 CUPRESSUS CASHMERIANA. Hardy tree.

Fellows of the Society desirous of obtaining any of these plants are requested, if they are subscribers of 4 guineas a year, to name the *four* sorts they would prefer; or, if subscribers of 2 guineas a year, to name *two* sorts. Should there be more applications for any particular plant than the number prefixed to its name in the List, a Ballot will then take place to determine which applicants are to be supplied. The arrangements for conducting this Ballot render it necessary that the names of the plants to be obtained for should be sent to the Office of the Society, 8, ST. MARTIN'S PLACE, W.C., at the latest by Saturday, July 16.

VI.—FURTHER MEETINGS OF COUNCIL, 1859–60.

1859.—July 22, August 19, September 23, October 21, November 18, December 23.

1860.—January 20, February 24, March 20, April 20.

ORCHIDS.

THOMAS JACKSON AND SON having determined upon reducing their extensive collection of Orchids, have resolved to offer them at extremely low prices; for instance, they now offer 12 good plants, selected from the under-named (purchaser's selection), for 2*l.* 10*s.*, or the 20 for 4*l.*, package included:—Aerides odoratum majus, A. roseum, Barkeria spectabilis, Brassavola glauca, Calanthe vestita, Cattleya Mossiæ, Cœlogyne flaccida, Dendrobium aggregatum, D. chrysanthum, D. densiflorum, D. nobile, Epidendrum primulinum, Lycaste aromatica, Miltonia spectabilis, Odontoglossum grande, O. pulchellum, Oncidium leucochilum, O. papilio, Stanhopea oculata, S. tigrina, and the new and rare sorts at equally reduced prices. Post-office Orders to be made payable at Kingston-on-Thames, Kingston, S.W.

CHOICE SEEDS.

MESSRS. PARKER AND WILLIAMS beg to inform ther friends and patrons that they can now supply the following choice SEEDS, all of which are warranted genuine and of the finest quality.

	Per packet—*s. d.*		Per packet—*s. d.*
Calceolaria, herbaceous	2 6	Gaillardia grandiflora	0 6
Cineraria from named vars.	2 6	Primula sinensis, mixed	1 6
Clianthus Dampieri	2 6	Pansy, from named vars.	1 0
Hollyhock, from named vars.	0 6	Sweet William, from extra fine vars.	0 6

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

SPLENDID CINERARIAS.

F. AND A. SMITH are now sending out Seed of their fine COLLECTION of the above, which for brilliancy of colour, profuseness of flowering, and compactness of growth, are unsurpassed. Great care has been taken to select only the very best for Seed from upwards of 10,000 of the finest produced in the country, some of which were exhibited at the Spring Meetings of the Botanic Society, obtained certificates of merit, and were much admired. In packets 1*s.* 6*d.*, 2*s.* 6*d.*, and 5*s.* each in stamped envelopes, and may be had of most respectable Seedsmen in the United Kingdom.—Dulwich, Surrey, S.

ROYAL SOUTH HANTS SEED ESTABLISHMENT,

UNDER THE PATRONAGE OF H.R.H. THE PRINCE CONSORT, THE AGRICULTURAL AND HORTICULTURAL SOCIETY OF INDIA, AND THE LEADING AGRICULTURISTS OF THE UNITED KINGDOM.

NEW TURNIP SEEDS, 6*d.* per lb.

Carriage free, parcels under 20 lbs. excepted.

PAGE AND TOOGOOD have harvested a fine stock of HARDY GREEN ROUND TURNIP, which is ready for immediate delivery. They have yet a few of their

IMPROVED SKIRVING'S SWEDES at 6*d.* per lb.
PAGE'S IMPROVED PURPLE-TOP do. at 8*d.* do.
JEFFERY'S OR SUSSEX do. at 9*d.* do.
SCOTCH HYBRIDS, 7*d.* per lb.
YELLOW TANKARD, 7*d.* do.
POMERANIAN WHITE GLOBE, 6*d.* per lb. and also
PAGE'S IMPROVED RED GLOBE, 8*d.* per lb., which W. Baker, Esq., Purewell, says is preferred by his beasts and sheep to any he has grown; it is quite hardy, and less injured by Fly than other sorts.—PAGE & TOOGOOD, Seed Growers, 37, and 38, Oxford Street, and 58, Above Bar, Southampton.

The Gardeners' Chronicle.

SATURDAY, JULY 2, 1859.

MEETINGS FOR THE FOLLOWING WEEK.

MONDAY, July 4—Entomological ..... 8 P.M.
WEDNESDAY, — 6—Royal Botanic ..... 2 P.M.

IT is no secret that the gentleman who so ably conducts the agricultural department of this Journal is Mr. JOHN CHALMERS MORTON, the editor of an excellent Cyclopædia of Agriculture. It has also become notorious that a Mr. JOHN LOCKHART MORTON, also a writer on agriculture, has been committed for trial on a charge of forgery. We therefore think it necessary to state publicly that there is no kind of connection or relationship between the last person and Mr. J. C. MORTON. The ancestors of the latter gentleman's father have been farmers for generations in the county of Fife, while those of his mother have been for the most part clergymen of the Scotch Church in the same county; the late Dr. CHALMERS being her brother.

As to the person committed for forgery, he is believed to be a Lanark man, and at all events resembles Mr. J. C. MORTON in nothing whatever beyond his name.

THE negotiations between the Royal Commissioners of the Exhibition of 1851 and the Council of the Horticultural Society, to which we alluded lately (p. 504), have now arrived at something like a conclusion, and a general meeting of the Society has been summoned for Thursday next, when the Council will be prepared to lay before the Fellows the reply to their application.

It is understood that the Royal Commissioners have had under their consideration the propriety of granting to the Society a lease of 20 acres of land at Kensington Gore.

Although it is not so stated in the advertisement we believe that no objection will be made to the presence of strangers at the meeting on Thursday

IT will have been seen from our report of the great ROSE SHOW held last week that, with one exception, not a single new variety was exhibited separately. That however was a fine one; and STANDISH'S Eugene Appert promises to take rank among the best.

How is this absence of novelty to be explained? And is it a subject of regret or of congratulation? Foreign trade lists abound as much as ever in new names attached to "wonderful improvements" of what seems unimprovable. High prices are asked for new seedlings, which, in order to render them more attractive, are decorated with the names of persons, places, or things famous for rank, or beauty, or great deeds. And doubtless the present season will bring forth some Duke of Solferino, or Duchesse de Magenta, or Belle Palestrina, to say nothing of Buffaloras, and Montebellos, and Garibaldis. But alas! a name carries nothing with it, especially among Roses; it is no guarantee that the bearer is sweeter, or fairer, or healthier than those who were born before her; perhaps it is rather the reverse.

As a matter then of mere conjecture we may venture to suggest that no new Roses were produced on this occasion because none are equal to the old ones. The importance of this tacit confession of inferiority will doubtless be well understood by the purchasers of Roses. For ourselves, we rejoice to see in it a sign of improvement in the judgment of the public. A few years ago such an exhibition as this would have been crowded with carefully selected buds and single blooms produced under the magical name of seedlings, and purchasers would have eagerly contended for their possession; there being a notion in the mind of the worthy public that to be a seedling was to be worth having—an idea by no means indeed confined to Roses. We well remember hinting to an excellent horticulturist and great buyer of plants, now alas! no more, that some of her high-priced acquisitions did not seem so good as her ancient favourites; a suggestion not taken in very good part. "Not so good!" exclaimed the fair dame; "why, my good sir, they are all seedlings, let out this year for the first time by BALIVERNE & Co., the great Continental nurserymen." That was the light in which seedlings were regarded in those days; but another sun is shining now.

Nothing has so much contributed to this change in public opinion as the great annual exhibitions near London of horticultural produce. For there it has been easy to contrast new things with old ones, and to institute comparisons under equal circumstances, it being certain that everything sent for exhibition was the best that a grower could furnish. Best being thus placed side by side with best, that judgment must have been indeed defective which could not discover the truth. In such places it was not possible to say that a new flower was inferior to an old one because the grower of the former did not know how to manage it, or because of his soil, or his climate, or something else equally misty or intangible. It was always certain that the exhibitor would produce it in the best possible state; and that being so, its relative value was no longer open to dispute or doubt.

Such in our judgment has been one of the important consequences of public competitive exhibitions. If they have thus worked advantageously among plants in general, they have been most especially useful among Roses; and we trust that the National Rose Shows, so skilfully organised by the Rev. Mr. HOLE, will have given the *coup de grace* to the second-rate pretenders in that class who are always struggling to be placed in the front rank of beauty, in spite of ephemeral complexion, loose array, wrinkling skin, and feeble constitution.

THERE is no fruit tree cultivated under glass of so much importance as the VINE, nor any so useful for the dessert. Pine Apples, although expensive owing to the amount of fuel which they require, are less esteemed by most persons. Peaches and Nectarines are admirable and delicious when brought to perfection; but they are soon over, unless forced in successional houses. From one Grape house, however, a long supply for the dessert may be daily obtained, with proper management and a judicious selection of sorts.

But it frequently happens that in houses of well established Vines there are sorts for which it would be desirable to substitute others. A set of young Vines, raised from eyes, if planted in a fresh made border will soon fill a house; but the rooting up of an established plant from amongst others, and planting a young one in its place, is in some respects an objectionable proceeding; for the roots of those intended to remain are liable to be injured, or otherwise they take possession of the newly loosened soil prepared for the young plant before the latter is itself able to do so. In order to avoid these inconveniences recourse should be had to grafting, which will be found the best mode of substituting for any existing sort one that is more desirable? As regards the Vine, however, the principle of this operation is not, generally speaking, so perfectly well understood as it ought to be. It is very simple; but many failures, with considerable loss, and disappointment, have been the result of not knowing it. It consists in *performing the operation when the Vine is in active growth, and can be cut without bleeding.* If this is attended to, any of the usual modes of placing the scion in contact with the stock will succeed, such as whip, cleft, or saddle grafting; but a certain failure will be the result of every mode if performed when the Vine is in a bleeding state.

Mr. KNIGHT states in a paper read before the Horticultural Society in 1821, that "The practice of grafting the Vine appears to be very ancient; for it is mentioned both by CATO and COLUMELLA in a way which shows that it was common in the Vineyards of Italy at the period in which they wrote. It must consequently have been an operation of easy execution, though it is rarely seen to succeed well in the hands of the modern gardener, who is, nevertheless, certainly much better provided with instruments, and can scarcely be supposed to be inferior in skill or science to the cultivators of that period. It is therefore probable that the ancients were acquainted with some mode of operating, of which the modern gardener is ignorant. It is well known that the ancients, in propagating the Vine, employed cuttings which consisted partly of one-year-old and partly of two-year-old wood." Mr. KNIGHT conceived it probable that the success of the Roman cultivators in grafting their Vines might have arisen from the selection of grafts similar to their cuttings. He therefore selected scions consisting of about 2 inches of old wood and 5 inches of annual wood. With these he was successful; but the condition of the Vine as regards its vegetation is not stated. It is, however, evident that if he had known the simple principle to which we have as above directed attention he would have at once expressly and clearly pointed it out. Instead of ascribing his success to the circumstance of employing a portion of two-year-old wood, he could have stated that with scions of one-year-old wood the chances would be that not one in 20 would fail, especially in the hands of so practised an operator as Mr. KNIGHT was known to be. This great physiologist, however, in 1832, pointed out the right principle in the analogous case of grafting the Walnut tree.

So far as we are aware the credit of first discovering and explaining the essential principle for the successful grafting of Vines is due to the late JOHN BRADDICK. In a communication from that gentleman to the Horticultural Society in 1822, and which was published in the "Transactions of the Society," vol. v., p. 201, details of experiments are given which render evident the cause of failure, and likewise the principle according to which success in Vine grafting is ensured. Believing that many of our readers would profit by an account of these interesting and conclusive experiments, we give the following extract from Mr. BRADDICK'S communication.

"The information which I collected from books on that subject was, that Vines may be easily made to grow by grafting; and that the proper time for performing the operation was in January and February, for Vines growing under glass; and in March for Vines growing in the open border. But out of 40 or 50 Vines which I operated upon in the above months, I had the mortification to find that very few of the grafts grew, and those which did take became weakly plants.

"I observed that the stocks of the Vines grafted as above-mentioned all bled profusely, and upon unbinding those grafts which did not take, I found that the parts of the grafts which joined to the stocks were sodden and turned black, by their being steeped for a considerable time in the thin sap of the stock.

"To stop the bleeding I tried every experiment with styptics, cements, &c., which I ever heard of, with many others suggested by my own imagination, but all without effect. One experiment I will mention, as it may serve to show the great power of the rising sap of the Vine while its buds are breaking. On March 20, in the middle of a warm day, I selected a strong seedling Vine five years old, which grew in a well prepared soil against a south-west wall; I took off its head horizontally with a clean cut, and immediately observed the sap rising rapidly through all the pores of the wood from the centre to the bark. I wiped away the exuded moisture, and covered the wound with a piece of bladder, which I securely fastened with cement and a strong binding of waxed twine. The bladder, although first drawn very close to the top of the shoot, soon began to stretch and to rise like a ball over the wound;

thus distended, and filled with the sap of the Vine, it felt as hard as a cricket ball, and seemed to all appearance as if it would burst. I caused cold water from a well to be thrown upon the roots of the plant, but neither this nor any other plan which I could devise, prevented the sap from flowing, which it continued to do with so much force as to burst the bladder in about 48 hours after the operation was performed; the weather continuing the whole time warm and genial.

"I now fitted a graft to this stock, and after binding it on, I took a piece of bladder doubled, and made a small hole in it so as just to let the tip of the graft and the eye pass through the hole; he inside of the bladder I covered with a cement made of bees-wax, resin, and tallow, and bound the whole with strong waxed twine from just under the eye of the graft to 6 inches below on the stock. The sap, having now no other way to escape, was forced up through the pores of the graft; in a short time I was pleased with observing the bud of the graft swell, and when the other Vines on the same wall began to grow it broke, and made a shoot with several joints. It however soon became evident that no union had taken place between the graft and the stock, as the shoot of the former turned sickly, and before Midsummer died entirely away.

"The next season I took a healthy growing Vine in a pot, and carefully matched it with a seedling Vine of the same size, growing in the open ground; these I inarched together, and bound a bladder round the wound instead of using cement. Upon cautiously removing the bladder at different times, I found that both the Vines bled profusely, and no adhesion began to take place until they had both shot out four or five joints from each of their eyes; the bleeding then ceased, as I judged, by the sap becoming more glutinous.

"It consequently now occurred to me that the proper time for cutting off the heads and grafting of Vines, without the danger of their suffering through bleeding, was when they had reached that period of their annual growth at which the sap ceases to flow thinly and rapidly. I accordingly cut the branches of several in that state, and grafted them with cuttings of the preceding year; all these grew, the operation was performed by whip grafting, and no other covering was used than a binding of bast surrounded with grafting clay.

"From these and various other experiments which I have since made I feel confident in stating that healthy Vines may be successfully grafted with young wood of the preceding year's growth from the time that the shoots of the stocks which the grafts are to be put upon have made four or five eyes until Midsummer; with every prospect of the grafts growing, and without the least danger of the stocks suffering by bleeding.

"Some cuttings of Vines sent from Madeira which I received from the Horticultural Society were grafted on the 10th of May by me on seedling Vines which were growing under glass, but without fire heat, with the following results:—

"The *Verdelho* shot 14 feet, produced one small bunch of Grapes, and ripened its wood well.

"The *Negro Molle*, grafted on the same stock, shot upwards of 12 feet, produced no fruit, but ripened its wood.

"Another graft, of which the name was accidentally lost, was not put on till the 1st of July; it was then worked on the top of a young shoot of the same summer's growth; this has also grown and ripened three eyes of its wood."

From the above experiments it is evident that by grafting the Vine when its state of vegetation is such that bleeding ensues, the consequence is complete failure; on the contrary, when the operation is performed after the buds of the Vine have burst into leaf, when no bleeding takes place, the flow of sap being then readily taken up by the foliage, complete success is the result; and this, to the best of our knowledge, was first clearly pointed out by Mr. BRADDICK, in the above communication.

About the year 1834 Mr. WILLIAM GOWANS, Cadder Gardens, near Glasgow, was very successful in grafting Vines, of which he produced a proof by exhibiting a bunch of Grapes from a strong, vigorous, well ripened shoot 22 feet long, from a graft of the same season. His plan was wedge-grafting, and, as stated in the Transactions of the Horticultural Society, second series, vol. II., p. 114, no fewer than 22 out of 23 grafts were attended with decided success. He selected for a scion a portion of the preceding year's shoot with one eye, and cut it into the form of a wedge; a shoot of similar age and thickness was split down the middle, and both sides thinned to fit the wedge-shaped portion of the scion, which was inserted with its eye opposite to that on the top of the stock; then tied and clayed over, leaving a hole for the bud. We have found, however, that whip-grafting answers quite as well, and in many cases is to be preferred. After describing his mode of operation, Mr. GOWANS adds, "What I thought, and still think of essential importance to success in this mode, is to leave the eye or young shoot on the top of the stock, and allow it to grow for a few days, when it should be cut off, leaving only one eye and one leaf to draw sap to the scion, till it be fairly united to the stock.

"With regard to the time for grafting I find it will succeed pretty well when the stocks are about to break into leaf. But I think there is more certainty of success when the shoots of the stock, into which the grafts are to be inserted, have made 12 or 15 inches of new wood. For instance, the grafts which I made on the 25th February this year have not broken so freely, nor yet advanced so far, as those grafted a month after when the stocks had made about 15 inches of new wood; by this time the sap has begun to flow freely (into the leaves), and the danger of the stocks suffering from bleeding is over."

In the "Reports of the Fruit Committee of the Horticultural Society," there is an account of a Vine having been very successfully grafted after it had come into leaf, by Mr. SPARY, of the Queen's Graperies, Brighton. The particulars of this case were given in the *Gardeners' Chronicle* of this year, page 167. For a Trebbiana in a bearing state a Muscat was desired to be substituted on the 1st of April, 1858, the Trebbiana being at that time in full leaf; it was cut off rather more than 2 feet from the ground, a cleft was made in the top of the portion of stem left, and in this cleft was inserted, on the one side, a scion of the Muscat, and on the other one of the Golden Hamburgh. The former grew to the length of 18 feet in the same season; its girth measured very nearly 3½ inches; and it also bore fruit.

From what we have stated the cause of failure in Vine grafting will be fully understood, and therefore can be easily avoided in future. There is in fact as little difficulty in successfully grafting the Vine as there is in grafting the Apple or Pear; and any one who wishes to substitute one sort of Vine for another may do so without the risk of disappointment. He may cut back at the winter pruning to where he wishes to graft, or he may wait, as Mr. SPARY did, till the Vine is in leaf; in either case allow the uppermost shoot on the part left to push, say 6 or 8 inches, place the graft by whip grafting opposite that shoot, which may at the same time be stopped; bind the stock and scion together with matting, surround with clay, and over this some Moss which should be kept moist. Finally, cut back the shoot left on the top of the stock to one leaf as soon as the graft begins to push. *T.*

REPORT ON THE PROGRESS AND CONDITION OF THE ROYAL GARDENS OF KEW, FROM 1853 TO 1859.

AN official Report by Sir Wm. J. Hooker, K.H., to the First Commissioner of H.M. Works, &c., on the progress and condition of the Royal Gardens of Kew, during a period of six years, viz., from the commencement of 1853 to that of 1859, has just been issued. The following are extracts:—

Royal Gardens, Kew, January 1, 1859.

I must premise that the following statement relates chiefly to the last six years; a period which I have selected, mainly because, until 1853, this establishment altogether lacked two of the most essential requisites of a National Botanic Garden, viz., a Herbarium and a Library;* by which only can the objects in the Gardens and Museum be properly named, arranged, and ticketed, and that information be afforded to manufacturers, travellers, and men engaged in the arts, sciences, or horticulture, which is here daily sought. It is also since 1853 that the new Museum has been built and its contents arranged; that a magnificent collection of vegetable products has been acquired from the French Exhibition; that the demand for more ornamental plants in the Gardens and Conservatories, and for the use of the Schools of Design, has been as much as possible supplied; that the Gardens and Museums have been thrown open to the public on Sunday afternoons; that the average of visitors has risen to upwards of 1000 daily; and that the request for information, the correspondence on vegetable products, and the number of donors to the establishment have augmented more than twofold. Within this period, too, the most complete Arboretum in Europe has been formed in the Pleasure Grounds, nurseries have been established for stocking with trees the metropolitan parks (and these are already found very profitable); the Queen's Garden has been enlarged by 14 acres; and a lake of 4½ acres has been commenced in the Pleasure Grounds, and an enormous quantity of earth removed from it at no cost to the public.

As regards the staff, since 1856 an assistant has been appointed to the Director, and one to the Curator; constables (Crimean soldiers) have been selected to keep order during public hours; the foremen have been put on a better scale of remuneration; while more liberal pay and promotion to the gardeners have greatly increased their efficiency, by rewarding the meritorious, and encouraging the deserving men; and an allowance for medical attendance and support has also been granted, both to gardeners and labourers, when sick.

Owing to the unparalleled advantages afforded by our vast collections to scientific men, I shall have to report the publication of a large number of works in the English, Latin, French, and German languages, executed more or less at Kew, by distinguished British and foreign naturalists, upon economic and scientific botany. I shall have, further, to report an increase in the number of young men instructed here, and sent out as naturalists or collectors to Government expeditions and commercial enterprises, or as curators of scientific gardens in England, the Colonies, and on the Continent.

Thus it is only within these six years that the Royal Gardens can be considered as becoming a nearly complete national establishment. Till 1853, they were but in course of formation; whereas they now approach that condition when any considerable extension would, in the state of our present commercial and scientific relations, be unadvisable; and when (the long-desired "Conservatory" once completed) we shall do better to economise our means than indefinitely to enlarge them. It must not be forgotten that, 18 years ago, England stood alone in having no national botanic establishment like Paris, Berlin, Vienna, Göttingen, Petersburg, Copenhagen, and even Stockholm; and that within this period we have been called upon to rival foreign gardens, some of which had enjoyed for more than two centuries the lavish patronage of their respective Governments; added to which, that (thanks chiefly to the Horticultural Society) the Gardens of the Universities, and of noblemen and private individuals, and of many provincial towns in the kingdom, had attained an excellence during that time, which it would have been discreditable to the Royal Gardens not to rival.

In my Annual Reports, I have classed the improvements in the Gardens, &c, under two heads, indicative of the chief objects of Government in establishing and supporting them. They are—

1. As a place for the healthy recreation of the public, gratifying the national love of gardening, and affording much popular information as to the appearance, names, uses, and native countries, &c., of an extensive series of useful and ornamental plants, from all lands and climates, together with their products, whether as food, drugs, dyes, timbers, textiles, or cabinet-work.

2. By encouraging horticulture and scientific botany, promoting the useful arts which depend on vegetable produce, supplying information to botanists, and aiding their publications, and imparting a knowledge of plants to travellers, merchants, and manufacturers; also by training plant collectors and gardeners, for home, colonial, and foreign service.

These manifold objects are not attained by supporting a number of independent branches of the establishment at Kew; but are the result of a system, designed to provide that accurate popular information which cannot be acquired without scientific aid and appliances. Thus the Library is indispensable for determining the objects in the Gardens, the Museums, and the Herbarium, and for ticketing and illustrating them properly. The Herbarium is essential for naming the plants in the Gardens and Museum, and for relieving the former of a vast number of plants which are of great botanical or scientific interest, but which are not capable of cultivation, nor worth the expense or the space they would require; and it contains a permanent record in its preserved specimens, of what has lived and flowered in the Gardens. The Museum, again, furnishes a receptacle for specimens of economic interest which are too bulky for the Herbarium, and samples of curious woods and fruits, reared in the Gardens, and for a named series of seeds, which are in constant requisition as giving the best means of determining the many unnamed kinds which are sent to Kew from all parts of the world.

In the present Report, I shall continue to view the several branches of the establishment under the above-mentioned aspects, of gratifying the public and giving information and aid to the practical and the scientific man; but more detail being required on each of these heads, together with some account of the method of conducting these departments, and the limitation of demands upon them, I adopt the following more methodical sub-division:—I. The Staff and its Organisation; II. The Botanic Gardens; III. The Pleasure Grounds; IV. The Museums; V. The Library and Herbarium; VI. List of Donors, &c.

I. STAFF AND ITS ORGANISATION.

1. *Director.*—The general superintendence of the whole establishment devolves upon the Director, who is responsible for the good keep and efficient working of every part. He conducts all the correspondence, which, as regards the colonies and our own and other foreign possessions, is very great. He daily visits the gardens and houses, directs the exchanges of growing plants and seeds, prepares the reports, revises the estimates, and recommends all alterations and improvements. Once a week he inspects and signs the bill vouchers and accounts of the Garden, Museum, Library, and Herbarium. He selects foremen and gardeners for colonial and other establishments. He supplies the names of plants and their products to manufacturers, merchants, and druggists, nurserymen, amateurs, and travellers in all parts of the world; and he has hitherto been able to satisfy all requisitions of this kind, if at all moderate, and without drawing any distinction between those applicants who had benefited the gardens and others. But it is evident that these demands may become so numerous as to require some such regulations as were found indispensable in the matter of living specimens of plants, to which I shall hereafter allude. In the performance of all the above-mentioned duties, and especially in the charge of the Library and Herbarium, the Director is aided by the Assistant-Director.

2. *Curator.*—He takes the practical superintendence of the cultivation in all parts of the Botanic Garden, the Stoves, and Greenhouses, and sees that the tickets are attached to the living plants; he has the supervision of the plants and seeds received and sent away, and of all the arrangements connected with the hire and discharge of the foremen, gardeners, labourers, &c. It is his duty to prepare and balance the accounts, to keep an accurate list of the implements, of the coals, coke, soil, pots, and gravel required, and of horse and cart hire; he examines candidates for employment, and draws up their certificates. He is assisted by a Sub-Curator.

3. *Foremen.*—There are seven who devote their energies to as many departments of the garden. Each has a set of gardeners and labourers under him, for whose conduct during working hours he is answerable to the Director and Curator; as he is for his implements, and for the safety, order, and good culture of the collections. The foremen's responsibilities are very heavy, especially those of the individuals who are charged with the propagation of plants (the culture of numerous kinds, both hot-house, greenhouse, and hardy, requiring very varied modes of treatment), or with the decoration of the ground in a manner to gratify the public, by producing much floral effect over an exceedingly large area, and for many months of the year. It must be remembered that at Kew plants of all kinds, and especially the most difficult to grow, are constantly asked for; and the foremen are further ordered to render an account of a vast multitude of seeds, roots, and living plants (the greater part often proving unworthy of cultivation), which are presented to the Gardens. The foremen superintend by turns the Gardeners' Library, the Reading Room, the Plant Houses on Sundays, and the night work; and they have often other similar occasional duties to perform. To each of the following departments a foreman is assigned.

a. A Foreman superintends the double Propagating House, No. 22; the Hardy Ferns in No. 21; the Tropical Ferns, Begonias, and rare Palms in the double House No. 12; the Aroideæ, Ginger, and Root-spices in No. 19; the Cacti, Aloes, and Succulent Plants in No. 7. He has the raising of all Hot-house Plants, and of Seeds that require heat; he personally superintends the packing of Ward-cases, and of the plants sent abroad, and keeps accurate lists of what are received and given away.

* Till that time these desiderata were wholly supplied by the Director's private Herbarium and Library, to which I shall refer when describing these departments of the establishment.

b. A Foreman has charge of the Orchids in Nos. 4, 5, and 16; of the ornamental and variegated-leaved Stove Plants, Water Lilies, Nepenthes, &c., in No. 6; of the Tropical Fruit Trees and Spices, as Mangosteen, Cloves, Nutmeg, &c., which demand great care and skill: also of the Plants in No. 9.

c. The Conservatories devoted to the Trees and Shrubs of our Colonies, and of other countries possessing temperate climates, requiring protection, and contained in Nos. 12 and 18, are under another Foreman, whose duty it also is to keep the large double house, No. 10, well filled always with ornamental Azaleas, Fuchsias, Roses, &c.

d. The Palm House and new Victoria House, from the great size of the former, and of the plants they both contain, demand a Foreman's entire time. The operations here performed are very laborious, retubbing, cleaning, and watering daily by hoses; while the care of a somewhat complicated apparatus for heating, syringing, and ventilating is attached to this department.

e. A Foreman is charged with the Hardy Herbaceous Plants (some 6000 species), which are scientifically arranged. He raises all seeds of out-door plants, and maintains a large stock of duplicates, his department being the oftenest applied to by European and some Colonial Gardens.

f. A Foreman is entrusted with the Flower Beds of various sizes of the entire Garden, no fewer than 400; and to stock them properly during summer and autumn, demands on an average a supply of 40,000 plants. The majority are preserved as roots or cuttings during winter, and great industry and forethought are required to secure a proper supply of bedding-out plants in our changeful climate, when a night's frost often cuts off the labours of many months. Besides this charge, he keeps a large number of well-grown Fuchsias, Roses, Geraniums, &c., to be sunk during the summer in the lawns for their special ornament.

g. The trees, lawns, walks, clumps, Rhododendrons, and the flowering shrubs of the lawns and walls, demand the whole energies of a Foreman as well as a great many labourers, varying in number with the season and weather.

Gardeners coming for improvement are invariably young men, who would otherwise perhaps be apprenticed; and they are selected for their good character, promising abilities, and fair education. Each must bring one or more satisfactory written characters, and fill up a printed set of inquiries as to age, and attainments in gardening, reading, writing, arithmethic, mensuration, &c., &c. The nominal period for which they enter is two years, during which they may, by good conduct, energy, and ability, rise from gardeners at 12*s.* to assistant foreman at 18*s.*; some of our best foremen having begun as gardeners, while others have been sent to colonies, &c.

Labourers.—Their number necessarily varies with the season and the work. The Royal Gardens also employ one policeman, three liveried constables, and two constant gatekeepers; two female attendants in the ladies' cloak rooms; a label writer, and several stokers and engine men.

When speaking of the duties of foremen, gardeners, &c., it must be observed that it is only up to noon (the dinner hour) that they can exclusively and uninterruptedly do the work of the gardens. On the admission of the public, besides the inevitable disturbance caused by a large body of people, with the need that everything should be in its place, and that no watering or inconveniencing operation should then go on, it is essential that the men be so dispersed as to keep a sufficient eye to the safety of the collections, the closing of Conservatory doors, &c. Thus it often happens, especially when the visitors are very numerous, that the actual gardening work is more or less restricted to half a day.

II. The Botanic Gardens.

On the transference in 1841 of these beautiful grounds by the Royal family to the public, the Botanic Gardens consisted only of 11 acres, and were extended by successive additions till, in 1847, they had reached their present dimensions of 75 acres; this is exclusive of the Pleasure Grounds, which I shall hereafter mention. As regards the number of visitors, beginning with 9174 in 1841, the increase has been gradual to 405,376 in 1858 (exclusive of those to the Herbarium and Library); while the generally good behaviour of this mass of people, often inconveniently crowding the Plant-houses and Museums, the eagerness with which they inspect the more curious and interesting plants and their products, and read the notices and explanations given in the Guide Books and attached to the objects in the Museum, all evince that such privileges minister food to the mind, as well as health to the body.

The greatest number of persons admitted in one day to the Gardens (where they have free access to all parts), has been 13,761. The best attended months, as may be supposed, are June, July, and August, during which we have numbered so many as 267,223 persons. The fewest visitors are in November, December, and February, when they have been so low as 4679. For the further gratification of the public, the First Commissioners have, during the last three years, obtained an increased grant for the higher keep and ornament of the Gardens. More flower borders have been designed, the walks are gravelled with a better material, new shrubberies and clumps have been formed, and standard flowering trees and shrubs have been planted with an excellent effect.

All the hot-houses and greenhouses are progressing satisfactorily, both in beauty and usefulness. Of late years, some of the more remarkable and curious plants have become conspicuous, from their increased size and more perfect maturity of flower and fruit. The Palms unquestionably stand unrivalled; as do the Ferns, particularly the Tree Ferns; the Cactuses, Agaves, Aloes, and other succulent plants, and the Bananas. Among the last is the most extraordinary plant in all our collections, the gigantic Abyssinian Banana (Musa Ensete), described and figured by no author, save the celebrated Bruce, and now first introduced to Europe through W. C. M. Plowden, Esq., the British Consul at Mussowah. This striking herbaceous plant has attained in the Palm Stove, in five years' time, a height of more than 30 feet, with a stem of 7½ feet in circumference, and leaves, of which the blade, independent of the stalk or petiole, is 16 feet long! It also now shows promise of a flower-spike, corresponding with its foliage The Orchideous Plants, under a recently-appointed and very skilful special cultivator, are improving remarkably. The singular Pitcher Plants, the noble Zamias, the Cycads and their allies, the Rice-paper Plant of Formosa, the wonderful Lattice-Leaf (Ouvirandra fenestralis) brought by the Rev. William Ellis from the Lakes of Madagascar, the Traveller's Tree (Urania speciosa), described by the same writer, the Lace Bark of Jamaica, the rare Cinchona, or best Peruvian bark, the noble collection of Sikkim Himalayan Rhododendrons, to say nothing of objects of lesser note, particularly of the almost innumerable hardy and out-of-door plants, have proved highly attractive to all ranks of people. The greenhouse Coniferæ and other trees and shrubs of temperate climates that require protection in winter, alone show too evident symptoms of deterioration, caused by want of suitable house accommodation, which we trust will soon be remedied. The applications for growing plants, seeds, and museum objects are so numerous that it is sometimes difficult to meet even all those which proceed from persons who have sent valuable contributions. As a general rule, we profess to give only in exchange for what is received; or as a return for those facilities of in reasing the Kew collections and diminishing their expenses, which have been freely afforded by many departments of Government, by public companies, and private individuals. Colonial Gardens and similar Government establishments are considered to have a very early claim for duplicates, and in certain cases it is well to take the initiative with them. But it is plainly more to their advantage than to that of the Royal Gardens, that such intercommunication should proceed on the principle of exchange, it being the duty of the Colonial Gardens especially to communicate with those of the mother country. An active correspondence and interchange of this nature are the measure of the usefulness and success of these establishments; and it is only needful to refer to the eminent services rendered by the Botanic Gardens of Ceylon, Calcutta, Victoria, Jamaica, and the Mauritius, as cases in point. Another class of demands is for cut flowers and leaves, for flower-painting, decoration, and for preparing skeleton specimens. These last requests were for a time largely granted, and they consequently multiplied far beyond the power of supply; so that they are now generally refused, except when preferred by persons who have done us service or have other claims. I may remark that they usually came from individuals who had no such claim, and were as often for the commonest shrubs, trees, and weeds of the roadsides as for the rarest stove plants. Had the applications been generally granted, various plants, both in the gardens and houses, would have been materially damaged; and as no more men than are absolutely required are kept at Kew, to have employed them in selecting, packing, and despatching parcels of leaves and flowers would have seriously deranged their daily operations.

The hours of admission to the Royal Gardens are from 1 P. M. till dusk on week days, and from 2 P. M. on Sundays. On Christmas Day only they are wholly closed.

Incessantly are applications, personal and written, made for leave to visit the Gardens before 1 P. M.; but they are necessarily refused, except to persons who have actual business or other claims to be admitted. Considering that, as previously explained, the whole of the work in the Houses and Museums must be concluded before noon (the dinner hour for the men), it is obvious that the exclusion of the general public till 1 P. M. must be rigidly enforced; otherwise the foremen cannot be answerable for the safety of their respective collections, or the steady working of their gardeners, who are often addressed, and are in many ways interrupted in their duties, by strangers. Large schools are admitted under certain regulations, namely, that the children be divided into groups of 10 to 12, each with a suitable guardian, so that they do not incommode other visitors, and that the Houses, Museums, and walks may not be inconveniently crowded. The public are forbidden to carry baskets of provision or parcels into the Gardens, or large reticules which may excite suspicion, or similar articles which facilitate the concealment of specimens.

Connected with the Garden Establishment is a very important feature—the Gardeners' Library and Reading-room. It consists of two small apartments, adjoining the director's office, and contains a selection of the more useful works on Horticulture, Elementary Botany, Geography, and Physics, Agricultural Chemistry, Landscape Gardening, and a few volumes of Voyages and Travels, together with two Horticultural Weekly Journals, some Maps, and a small supply of stationery for the use of readers. It is open every evening for the gardeners, under the direction of the Curator and Foremen, who are responsible, by turns, for the safety of the books and good conduct of the men. The Foremen also, in rotation, attend to the fires, prepare the rooms, collate the books with the catalogue, and act as librarians. The men, on entering the Reading-room, inscribe their names in a book kept on purpose; and when their period of retirement from the service of the Gardens arrives, the amount of attendance at the library is considered in drawing up their testimonials. Lastly, in connexion with the Gardens proper, I have to notice the Guide Books of the Garden; 16 editions, each of 3000 copies, of the "Garden Guide" have been sold, between the years 1846 and 1858; and three large impressions of the more recent "Museum Guide."

III. The Pleasure Grounds, or Arboretum.

This large and ornamental piece of ground consists of 250 acres, separated by a wire fence from the Botanic Gardens, and opening into them by four gates. It was placed under my charge in 1846, since which time it has been laid out primarily as an Arboretum, for the cultivation of every tree and shrub which will stand the open air in this climate. An active and intelligent Foreman superintends it, who has one assistant, one efficient gardener, and the necessary supply of labourers. The Pleasure Grounds are daily open to the public from the middle of May till the last day of September, at the same hours as, and under similar restrictions to those of, the Botanic Gardens. Among the more remarkable natural and artificial features of the Pleasure Grounds, I have to report briefly on—1. The Arboretum. 2. The Nurseries. 3. The Lake (in process of formation). 4. The Queen's Garden. There will further be the great Conservatory (if sanctioned by Parliament), and the Flag-staff of "Douglas Pine," (Abies Douglassii) from British Columbia, a magnificent spar, 118 feet long, which has been presented to the Gardens during the preparation of this report, and which it is proposed to erect on a hill in these grounds.

1. *Arboretum.*—The peculiarities of the climate of England render it singularly favourable for the growth of a large collection of the trees and shrubs of temperate regions, from almost all parts of the globe; and hence arose the eminent desirableness of attaching to the Royal Gardens such an Arboretum as should be worthy of Great Britain, and serviceable to its extensive possessions and foreign relations. In pursuance of this object, the best suited localities in these grounds have been devoted to a classified collection of hardy trees and shrubs, amounting to about 3500 kinds (including marked varieties), and they are mostly in a thriving condition. Some years must however elapse ere the general effect of the whole can be fully seen, and when the groups of different Pines, Oaks, Planes, Beeches, Ashes, Birches, Poplars, Willows, &c., each forming a clump of allied but distinct kinds, will produce a beautiful variety of foliage in well-disposed masses, enabling also the visitor to compare the character of a vast number of carefully-named trees adapted to this climate, and to judge of their effect in the lawn, the park, or the forest.

2 *Nurseries.*—There are two in the Arboretum; one specially intended for planting the Kew grounds with ornamental trees and shrubs, and rearing a stock for exchange; the other (formed at the desire of the First Commissioner in 1855), to supply the metropolitan parks. Both are profitable; and the latter has proved to be a very useful part of this establishment. In 1856 it furnished 1010 trees (chiefly Planes and Elms); in part 1857, 4100 trees; and in 1858, 2475; the sizes varying from 6 to 14 feet; while our own Pleasure Ground Arboretum sent to the parks of the metropolis, with the sanction of the Board, in 1857, 9289, and in 1858, 2814 trees and shrubs of great variety, besides furnishing the grounds at Kew with no fewer than 18,000 in the year just closed.

3. *The Lake.*—A sheet of water in such extensive and noble grounds as those of Kew, had long been a desideratum. It is now in process of being supplied; advantage having been taken of a depressed spot, so situated in respect to walks and trees, that nothing would be sacrificed, while its proximity to the Thames would allow of its being filled and emptied at pleasure, by taking advantage of the tides. The position is singularly favourable, for it borders one side of the noblest avenue in the grounds (that which conducts from the Palm House to the river), and it will be in view both from the Palm House and the new Conservatory. Hitherto, 16,000 yards of stones have been removed for the repair of the public roads, not only at no expense, but with considerable advantage to this establishment, for a bed of excellent gravel was thus discovered, which served to renovate the walks in the whole garden. Other 10,000 yards will be required to form the terrace of the new Conservatory at but a short distance; after which a very trifling sum will suffice for the removal of the remaining soil, and for constructing the conduit to the Thames.

4. *The Queen's Garden.*—This beautiful piece of ground, reserved for the use of her Majesty, and situated on the S.W. angle of the Pleasure Grounds, consisting of 12 acres, has lately been enlarged by 11 more acres taken from the adjacent Royal Deer Park; new walks have been cut through it, much old decayed wood and copse cleared away, the paths freshly gravelled, and other improvements effected.

IV. The Museum of Economic Botany.

The formation of this establishment suggested itself to my mind in 1847, when a very humble building (within the precincts of what had been the kitchen and fruit garden), which had been used for the conservation of the fruit for the Royal table, was no longer required for that purpose. It promised to afford, for a time, the needful accommodation for a display of the various products of the vegetable kingdom; especially such as are in demand by the merchant and manufacturer, the timber-dealer, the cabinet-maker, the druggist, &c., and to form, in short, the nucleus of a Museum of Economic as well as Structural Botany, which should contain all that was interesting or curious in vegetable organisation, and that could not be preserved nor generally exhibited in the living state. Such a collection could not fail to answer the *cui bono?* so often propounded, by showing the uses and applications of plants. It was commenced by the transference to this building of a considerable series of articles of this nature, which the Director had been forming during the previous 40 years, in connection with his own private Herbarium; and, thanks to the contributions of friends, in a few years' time the 10 apartments (two of them of considerable dimensions) in this Museum were full. An additional structure, of much more capacious accommodation, was then required: it was commenced in 1855, finished early in the summer of 1856, and but little vacant space is to be seen in 1858.

The Museum, when first founded, was put under the charge of Mr. Alexander Smith, the Curator's son, and for its rapid progress it is largely indebted to his ability, assiduity, and zeal. For the first eight years it required no other care than Mr. A. Smith's, assisted in the mornings by a neat-handed person who attended to the public in the afternoons. Since the addition of the second and larger Museum, and the accession of crowds of visitors, more than quadrupling the amount of necessary supervision, two constant and two occasional attendants have been employed. The cost incurred by increasing the contents of the Museum has been exceedingly small; for owing to the interest felt in these collections, it is seldom necessary to buy specimens; they are almost invariably given, and in the case of articles imported into England, often without being asked for. The majority are, however, procured by correspondence direct from the countries producing them. On the walls of the new Museum staircase are exhibited a large number of engravings and original chalk drawings, the portraits of botanists, and of travellers who have largely promoted the study of botany and horticulture. These are the property of the Director; as was the extensive series of magnified drawings of plants and botanical scenery which hangs above them.

Demands for duplicate specimens from the Museums are frequently and most energetically urged; and they mostly emanate from public establishments, and especially provincial museums. But I need hardly remark that the preparation, conservation, and naming of museum articles are works of much time, labour, and skill. In most instances the specimens are preserved in glass, often in fluids, and to be of service as museum objects they must be ample and prominent. Thus the value of the specimens is trifling to that of the time consumed in packing, unpacking, selecting, correctly naming, and fitting them for public inspection. To carry out in the Museum the complicated system of exchange and distribution pursued in the Garden and Herbarium, it would be necessary not only to increase the assistants and the present accommodation for duplicates, but to provide a special scientific curator, who should be answerable for the accuracy of the names and proper selection of the specimens sent out, and for such a distribution as should satisfy claimants of all degrees. For it is obvious that errors of information, emanating from Kew, or jealousies excited by apparent partiality to one recipient above another, are not only directly prejudicial to the establishment, but a reflection on it. Duplicates do indeed occasionally accumulate; but much less than is supposed, both because we decline accepting them, and because many articles spoil by keeping, and require renewal. Such duplicates are given away from time to time to individuals who have most benefited the Museum and Gardens; or they are sent to the Colonies, where similar museums are being formed. In conclusion, I would remark that the Kew Museums were established to indicate how such institutions may be founded and conducted, and not as the source whence they are to draw.

V. Herbarium and Library.

To render the Kew Gardens a complete botanical establishment, a Herbarium and Library (without which the plants could not be correctly named) were long a desideratum. True, the very extensive Library and Herbarium belonging to me were accommodated in a suitable building, the property of the Crown; and by an arrangement between the Board of Works and myself, they were thrown open, with the needful attendants, to all men of science. And in 1853, as fully recorded in former reports, two collections of dried plants (Herbaria) were added as gifts, and they now form that portion of this department which belongs to the Crown. These, combined with my own (placed under the same roof, but in quite different apartments, and even on different floors), unquestionably constitute the most extensive and practically useful Herbarium and Library ever formed; and they cannot fail to be, and have indeed already proved, of inestimable service to all who are engaged in subjects connected with botany and horticulture.

In proof of this assertion, I subjoin a list of the principal works, more or less completely carried out by means of the ready access granted to these collections, confining myself, however, to those which have been in progress during the last six years. [Here follows the list referred to.]

Many of the authors above enumerated have taken up their residence at Kew for weeks and even months, in order to acquire that information which, it may be safely said, is nowhere else to be so conveniently or fully obtained. Add to them the casual visitors who come (in always increasing numbers) from the metropolis and the provinces, &c., and who are engaged in botanical, medical, and economical publications, and some idea may be formed of the importance of this branch of the Kew establishment; to say nothing of the inquiries continually made by letter, inquiries that always meet with prompt and encouraging attention. After these statements, avouched by the acknowledgments of the authors in their respective works, it cannot be denied that the Kew Herbarium and Library, especially taken in conjunction with the noble collections of living plants in the Garden, and the products of plants in the Museums, are admirably adapted for the study of botanical science. And there is the great and inestimable privilege, not attainable in the capital of England, that the collections do not suffer from dust and coal-smoke, which are destructive both to paper and specimens.

I have here to mention that this establishment has, during the last year, rendered a most important service to Indian botany, by rescuing from total destruction the enormous collections of plants made under the orders of the Indian Government by officers of their service, and which had been accumulating for 30 years in the cellars of the India House, in consequence of the urgent remonstrances that emanated

from Kew, the Hon. East India Company consented to these collections being arranged under our supervision, and to defray the necessary expenses for carriage, materials, and assistance in arranging and preserving them. In July last these collections arrived in 11 large waggons, and the work of inspection and selection commenced. They proved to be of much greater bulk than was anticipated, but upwards of one half were totally destroyed by damp, vermin, and coal smoke. Amongst the remainder are some of great interest and value; especially the first collections ever made in Kashmir and Tibet (Dr. Falconer's), of which there were 70 chests full; all Mr. Griffiths's Herbaria, made during Government missions to every part of India, from the borders of Persia to Birma and Malacca, together with all his MSS. and drawings, in many volumes and portfolios; and all Mr. Helfer's Tenasserim and Andaman Island plants. The whole are still regarded as appertaining to the department of the Government of India, who will decide upon their ultimate destination.

Nor are the benefits of this establishment at all restricted to the authors, more or less eminent, who by its aid have carried out the above-mentioned works; they are also educational, in a very important degree. By selecting for assistants young men, who, besides a competent education, are imbued with a thorough love of science and zeal in the duties connected with it, we train them for more lucrative positions; and a respectable list could be offered of individuals, now filling important posts as botanical collectors abroad, or as superintendents of colonial and other gardens (particularly in the Indian Presidencies), who have gone from Kew. The ill-health of the late able Curator, Mr. Alexander Smith, has deprived the Museum of his valuable services; but suitable training has enabled Mr. Jackson, strongly recommended by the President of the Linnæan Society, to become a competent successor. Mr. Oliver and Mr. Black, now in the Herbarium and Library, are rendering good service by their industry, tact, and zeal; whilst a third assistant has been selected for a botanical mission to Japan and China.

One appendage to the Library must not pass unnoticed; it is the very extensive and valuable collection of Botanical Prints and Drawings, mainly presented by myself; they are deposited in 75 convenient portfolios, made on purpose, and have proved of great service to persons studying the different families of plants. Among them are—1st, the original drawings, made by Dr. Hooker, during his extensive voyages and travels; 2d, very numerous drawings by Mr. Walter Fitch (who is undeniably the best among the botanical artists of the day), executed during the last 30 years for the "Botanical Magazine," and other publications (the largest proportion are from Kew plants); 3d, 800 of the original coloured plates, by Sowerby, of Dr. Sibthorp's magnificent Flora Græca; 4th, the extensive and valuable series of Indian drawings, announced in a former Garden Report, as presented by Miss Cathcart; and 5th, a considerable series of coloured drawings made at Kew, under the directorship of Mr. Aiton, previous to 1840. Our collection contains about 30,000 original drawings and numerous engravings, systematically arranged, and attached to sheets of atlas folio paper, of the same size as the portfolios.

It is now my duty to point out the further service rendered by this garden to horticulture and botany, in the several missions and botanical explorations that have been carried out of late years, to the very great promotion of science; and these, too, at a comparatively small expense to the Gardens, the costs being either wholly or partly defrayed by other departments of Government, or borne by the individuals themselves. To go no further back than the last six years, I may mention the following:—

1. M. Bourgeau, botanist, appointed to Captain Palliser's expedition for exploring the unknown territories of British North America, especially on the east side of the Rocky Mountains. (Wholly under the auspices of the Secretary of State for the Colonies.)

2. Dr. Kirk, botanist in Dr. Livingstone's expedition to the Zambesi, and for making researches into the interior of Tropical Eastern Africa, quite a *terra incognita* to us. (Lords of the Admiralty.)

3. Mr. Milne, botanist and collector in H.M.S. Herald, Captain Denham, commander, for survey of the Fiji and other scarcely known islands in the South Pacific Ocean. (Lords of the Admiralty; a small portion only of the salary falling upon the Garden.) This botanical mission is just concluded, and Mr. Milne has returned with his collections.

4. Dr. Lyall, R.N., botanist to the very important expedition sent to determine the boundary line between the British and United States possessions in British Columbia. This territory includes Vancouver's Island (which has already supplied us with seeds of noble hardy Pines, and most commercially important spars for the navy, of unprecedented size and value), and the interior of the mainland across the Rocky Mountains. (Secretary of State for the Colonies.)

5. Corporal Buttle, assistant collector to Dr. Lyall. (Under the same authority.)

6. Mr. C. Wilford, late an assistant in the Kew Herbarium, now on a botanical mission to Hong Kong, Japan, Northern China, &c. His collections have arrived from Hong Kong and Formosa. He has now joined her Majesty's Ship Actæon, and is about to proceed to the coast of Eastern Tartary, in that surveying vessel, under the command of Lieutenant Ward. (A special grant to the Garden from the Treasury of 600*l.* for three years; and the Admiralty gives him a free passage and rations.)

7. Mr. Barter, botanist to Dr. Baikie's second expedition up the Niger, or rather the third, the officers having descended the river to Fernando Po, where another vessel met them, in which they have again ascended. These voyages have, both as concerns geography and natural history, proved the most successful ever undertaken in Western Tropical Africa; and the collections sent to Kew by Dr. Baikie and Mr. Barter from the scene of Mungo Park's death, are extensive and of the highest interest; they are moreover in excellent condition, considering the difficulties encountered in obtaining them. (Expenses defrayed partly by the Foreign Office and partly by the Admiralty.)

8. Mr. Spruce's exploration of South America, by way of the Amazon and the Andes, crossing that vast continent, from the Atlantic to the Pacific. This expedition, though undertaken wholly at Mr. Spruce's own risk and cost, has proved singularly productive in plants; and by purchase, at a small outlay, has added greatly to the horticultural and scientific stores at Kew, especially to the Museum. And now that this traveller has made the Cinchona regions in Equador his headquarters, many more valuable collections may be expected.

[The report concludes with a list of the principal contributors to the Gardens, Museum, and Herbarium.]

Home Correspondence.

The Pea Lentil.—In consequence of your reference to the so-called Pea Lentil in a late number of your Paper, I take the opportunity to communicate to you what I know about it. Your remarks upon it in January last induced me to write to Dr. Rauch, requesting him for further particulars and a sample of it. He gave information to the effect that the affair rested upon a Yankee hoax, besides his report on it having been misunderstood by some party in France. He mentioned having received seed of it under that name from America, with the remark that it is a hybrid between the Honey Pea (a variety of the Marrows) and common Lentil, raised by a Mr. Murray, of Peponville. Dr. Rauch, however, concurred in the opinion of others, that it is apparently no hybrid, but probably a variety of Vicia sativa; and stated in his report on it in his treatise of new Kitchen Garden and Agricultural Plants, that it is a plant standing between the Pea and Lentil, without stating that it is a hybrid between these two kinds of plants, as erroneously translated by some party in France, I believe. The sample I received along with the above information led me at once to consider it identical with the Provence Lentil (Ervum monanthos), which I have grown and sold under that name for the last 30 years, and of which I forwarded you a sample at the time. It is a very productive forage plant, yielding abundance of stalks and leaves, and is much esteemed by cattle either in a green or dry state, and suitable for any sort of soil. However, I doubt the value of its seeds for culinary purposes, which have the bitter taste of Vetches. I do not know if the name Ervum monanthos is correct, but it is by no means a variety of Vicia sativa, as supposed by several authorities. It is quite different in form of the seed and habit of the plant from that species, although it may be some other species of Vicia. [We believe V. globosa, as was lately stated.] Along with the sample of seed sent you of the above I submitted to you a parcel of Beans, known in this country under the name of Larch Egg Runner Bean, an old-fashioned sort almost out of cultivation, being superseded in quality by other kinds. I consider it identical with the New Zealand Runner Bean, of which I received one dozen seeds for 3*s.* per post. I have some very handsome new annuals, &c., from Mexico, of which I would take the liberty to send you plants in flower for your opinion, if you will permit me to do so. [Certainly.] Amongst others is a beautiful orange-coloured large flowered Sanvitalia as free blooming and lasting as S. procumbens, but much more showy; an extremely neat Œnothera with beautiful cup-shaped carmine flowers; a very free blooming Lophospermum; of garden hybrids a brilliant carmine striped variety of Verbena Maouetti (Imperatrice Elizabeth), a striking improvement on the old variety; a beautifully variegated variety of Cobæa scandens, &c. *J. W. Haage, Erfurt.*

Lightning-struck Oak (see p. 54).—I beg to suggest that "L. W. G." will do well to let his Oak remain entirely under the fostering care of old Dame Nature for a few months. If at the close of the present summer he shall perceive that the bark at the place where the damage ceases has begun to form itself anew, he may have good hopes of ultimate recovery. If on the contrary no such a sign is perceptible, he may conclude that his tree is in a very alarming state, and that, ere long, it will be as dead as Julius Cæsar himself. As to the "tearing of the bark," that portion of it which has been loosened by the stroke, even in the slightest degree, will never more unite with the wood underneath it. At present it would be only loss of time in "L. W. G." to apply a "plastering over the parts." A plaster is of no use whatever in producing a new bark. All it can ever do is to prevent the rain from penetrating, and at last causing rot in the tree. Should the tree recover, some years may elapse before the application of a plaster in the shape of sheet lead or of compost will be required for an Oak. Not so with regard to the Walnut tree; its parts, when deprived of their bark, soon begin to decay. I once had an ornamental Oak so fatally blasted in a thunderstorm that it died outright both in root and branch. Had I "L. W. G." here I could show him divers trees which have been sorely riven by the lightning's rage, but which are now visibly on the mending hand. I pay considerable attention to them, and although I do not consider myself in the light of a tree doctor worthy of a diploma, still I fancy that what with my own simple nostrum and the renovating powers of old Dame Nature together, all my injured trees, either by lightning or by tempests, are now in a comfortable state of convalescence. I must add, in strict justice to the dame, that to herself belong nine-tenths of the merit that may be due. *Charles Waterton, Walton Hall, June* 28.——During these last few years several large Oaks on this estate having been struck by lightning and subsequently cut down, I have had an opportunity of examining the extent of the damage which they had sustained. And although not equal externally to that described by your correspondent as having happened to his tree, yet it was found, when they were cut up, that the wood was rent and split in all directions, to such an extent that it was quite evident the trees could have survived only for a short time. I have therefore little doubt that if your correspondent should decide on cutting down his injured tree, he will find it similar to those I have described. *H. Petrie, Elsham Hall.*

Linum grandiflorum.—Some weeks ago there was an inquiry in your Paper as to the best means of raising this. Nobody seems to have answered the question with any great confidence, and as I have been quite successful in raising seedlings, I write to communicate my plan. Use wide pots, about 4 inches deep, not many sherds in the bottom, but a good quantity of siftings of very fibrous peat; use a mixture of heath mould, loam, and sand in equal parts, and sow the seeds ¼ inch deep. Let the earth be pretty moist at first, but never water over head at all. Place the pots in an intermediate house or not very moist stove; and to keep the earth moist place each pot every morning for about two or three hours in a saucer of water. They should have a pretty good deal of light, but not the full rays of the sun. When the first two leaves are grown to their full size remove them to a frame, gradually giving air to harden them. By these means, after discarding a few obviously bad seeds from a packet, I have succeeded in raising every seed, and as this plant is certainly well worth growing, perhaps my plan may be of use to others. *Wentworth W. Buller, Strete Ralegh, Exeter, June* 22.

Potato Disease.—A report weekly in your Paper respecting the progress of this disease, as it is observable in different parts of the country, may be serviceable if it be accompanied by statements of the time of planting and mode of culture. Do you not think so? In this neighbourhood I hear that the haulm begins to show unmistakeable signs of decay. Between the 19th of February and 4th of March I planted a good breadth of Prince Regents, of a sort known in Berkshire as Golden Reeds, and of Ash-leaf Kidneys. A few of the former were damaged by the late frosts, but not seriously, and their growth has been uniform and gradual, evidencing a robust habit in the size and strength of the haulm, which is not succulent or too high, but short and stout. No manure was dug in at the time of planting, the ground being naturally strong; and I had prepared it by digging with a Parkes's steel fork two spits deep. I should have supposed that this mode of culture would have ensured a diminution of the evil; but on the contrary, last week the disease appeared with the utmost virulence, and has distributed its favours equally among all the sorts, which lie contiguous to one another, but at the distance of 22 inches apart in the rows. I remarked yesterday in this neighbourhood another peculiarity in the aspect of the disease this season. At Nash, distant two miles, a lot of Potatoes entirely free from the appearance of disease in the haulm were found on Saturday to be affected; several bad Potatoes being taken up in a bunch of tubers which were quite ripe, and the haulm of which, quite devoid of spot or mildew, only showed tokens of maturity. I fear that after all that has been said and written on this subject, we poor gardeners, professional as well as amateur, are as much in the dark as at the first outbreak of the disease. *J. S. Templer, Thornborough, Buckingham, June* 27. [We first observed it last Monday in the Garden at Chiswick, and it is spreading there.]

Sardinian Carnations and Picotees.—In consequence of a correspondence in your Paper relative to Sardinian Carnations, we have had forwarded to us petals taken from the laterals of numerous seedlings which have been raised this season in that warm part of Europe, and which we feel much pleasure in submitting to your inspection. In contradiction to the remarks of "Italy" on the 18th inst., you will observe that the edges of the flowers are by no means ragged. The markings are fine and the shape good, while the variety in shade and colour at once shows the care and judgment brought to bear in the selection of flowers for hybridisation—the most perfect in shape and with colours the most diverse. In justice to Sardinian growers we have thought it right to make the above remarks. *Butler & McCulloch, Covent Garden Market.* [The specimens submitted to us are very handsome, and quite correspond with Messrs. B. & McC.'s statement.]

Marsh Agues.—I perceive that you have opened your columns to the discussion of ague. Suffering as I do very much from that complaint, and having hitherto been led to believe that the miasma arising from the decaying vegetation in the marsh ditches was the cause of all my family's constant attacks of ague, I shall esteem it a great favour if your reviewer or Mr. Parkin will be kind enough to tell us from what our ague does proceed, as there is hardly a person, young or old, native or not, in this parish that does not have an attack once in six months at least. *Charles Bates, Stanford-le-Hope, Essex.*

Monstrous Cardamine.—I used to find in great profusion, in a meadow adjoining Beenham Vicarage, Berks, a variety of Cardamine pratensis, which is perhaps identical with the specimen described in your Paper of last week. It is thus noticed in "Flowers of the Field," p. 54:—"A double variety is sometimes found wild, which is remarkably proliferous, the leaflets producing new plants where they come in contact with the ground, and the flowers, as they wither, sending up a stalked flower-bud from their centres." *C. A. Johns.*

May Queen Strawberry.—In your last Number Dr. Roden has given a very high opinion of this Strawberry, and asks if others cannot say even more in its behalf than he has done. I regret to say I cannot speak in its favour. I can answer for its earliness, having sent a dish of it to the Reading exhibition on the 1st of June from the open ground; also to the last meeting of the Pomological Society; at both places the flavour was considered to be very inferior. On account of its being so very small and acid I have just destroyed a hundred strong plants. It is certainly not worth keeping in a select collection, but in cases like Dr. Roden's, where 50 varieties are grown, it may be allowed a place. *Charles Turner, Slough.*——I received plants of this kind last autumn from Mr. Nicholson, and had some of them planted out by the side of Keens' Seedling, others near to plants of the Black Prince in a tenacious dark soil inclined to clay, but very favourable to Strawberries. I planted this new and, said to be, very early kind with the above sorts to test its merits as to earliness and flavour. Those planted near the Black Prince ripened with it early in June. The berries were of the same size, and in flavour not at all superior to it. Those

planted alongside of Keens' Seedling ripened some three or four days before that excellent kind, and were decidedly inferior in flavour to it. I was inclined to impute this lack of earliness and flavour to some peculiarity in my soil, and therefore suspended my opinion. On Thursday, the 23d ult, Mr. Turner exhibited a considerable quantity of the May Queen Strawberry at the meeting of the Pomological Society. The berries were like mine in size, colour, and shape, but in flavour even inferior; in fact they were pronounced to be flat, acid, and the most inferior kind in the whole collection. On tasting them I felt inclined to make a prompt demand on Mr. Nicholson to return the money I had paid him for 100 plants, but on seeing in your Paper for June 25 a letter from Dr. Roden, a most skilful amateur gardener, highly eulogistic of this kind, I am inclined to think that neither Mr. Turner nor myself have received the true kind, or at least the variety described by Dr. Roden as the May Queen. *Thos. Rivers, Sawbridgeworth.*

Hybrid Veronicas.—I send you flowers of seedling Veronicas raised by myself between V. speciosa and decussata, which may be interesting, partaking as they do of the character of both parents. No. 1 is one of the first batch of seedlings, and is perfectly hardy with me, forming a very neat Evergreen shrub, 4 feet high, and about 22 feet in circumference. The others are second crosses from decussata, and are smaller plants, possessing more of the paternal character, but a far more floriferous habit. *A. Devonian.* [No. 1 is extremely handsome both as respects flowers and foliage, the beautiful arrangement and shining dark green of the latter setting off the deep lilac violet tinged blossoms to excellent advantage. As a bush even without flowers it must be handsome. The leaves of the others are smaller and less conspicuous; the flowers had dropped before the specimens reached us.]

Societies.

Entomological: *June* 6.—Dr. J. E. Gray, F.R.S., President, in the chair. Mr. Stevens exhibited a number of beautiful butterflies recently received from Mr. Wallace, by whom they had been collected in Ternate, near New Guinea. He also read an extract from a letter by the same gentleman, announcing the capture of a new and most gorgeous species of Papilio, as well as a new kind of Bird of Paradise. Specimens had been forwarded to England. Mr. Stevens also mentioned the capture by himself of various rare British Coleoptera, including Læmophilæus clematidis, Stenolophus elegans, and Hetærius sesquicornis. Mr. Janson exhibited a new British genus of ants' nest beetles, belonging to the Staphylinidæ found in the nest of Formica fuliginosa, named Aploglossa gentilis. Mr. Stainton mentioned that Dr. Herrick Schaffer of Ratisbon had recently shown him a small species of butterfly from the East Indies which resides in the perfect state in ants' nests; it is of dull colours, and its legs are peculiarly constructed for its mode of life. Mr. Westwood suggested that this insect would most probably prove to be a species of the genus Symetha figured in Dr. Horsfield's work on the Javanese Lepidoptera. Mr. MacLachlan exhibited a variety of the rare Lily beetle, Crioceris merdigera, and Mr. Douglas illustrations of the habits of two species of Micro-Lepidoptera belonging to the genera Ornis and Tortrix. He also read some notes on the transformations of the genus Rhaphidia, and on those of the genus Trinodes. Mr. Baly read descriptions of some new exotic species of Chrysomelidæ.

Linnean: *June* 16.—Prof. Bell, President, in the chair. E. Bradford, Esq., the Ven. Archdeacon Hale, M. H. Lackersteen, M.D., J. T. Llewelyn, Esq., Dr. G. Rolleston, and D. Williams, Esq., were elected Fellows. The following papers were read:—1. "A revised Synopsis of the Distomidæ," by T. S. Cobbold, M.D.—2. A memoir "On the structure of the genus Nepenthes, with descriptions of new species from Borneo, by J. D. Hooker, M.D.—3. "A Synopsis of the Indian species of Impatiens;" 4. "A description of a new genus of Balanophoreæ;" 5. "A description of the genus Fropiera of Bouton;" all by Dr. J. D. Hooker.—6. "On Leopoldinia Piassaba, of Wallace," by R. Spruce, Esq. The Palm producing the Piassaba of the Rio Negro (better known as that of Para, from which port it is exported in vast quantities to Europe and North America,) has been supposed, for want of sufficient data, to be identical with the Attalea fumifera of Martius, which furnishes the Piassaba of Bahia. Mr. Wallace however had correctly referred the Rio Negro Piassaba to the genus Leopoldinia, which genus Martius has stated to be spatheless, but incorrectly, for according to Mr. Spruce it has in reality two thin fusiform spathes, which fall away at an early stage, long before the flowers are fully formed. The ascertained distribution of the Piassaba Palm, which grows in low sandy flats where the water stands to a slight depth in rainy weather, is from the river Padauiri, a large tributary of the Rio Negro, on the south, to the cataracts of the Orinoco on the north, and from near the Japura on the west to the sources of the Pacimoni on the east. "Near two Indian villages on the south side of the Casiquiare," the author remarked, "where I penetrated deep into the forest, I came on large groves of Piassaba, and nothing that I have seen in Amazonian forests dwells more strongly and pleasantly on my memory than my walk among these strange bearded columns, from whose apex sprung the green interlacing arches which shaded me overhead." Of the Piassaba collected on the Casiquiare and Guainia, about half, it was stated, is taken down to Para, and the other half goes to Angostura on the Orinoco. In the summer season the Indian villages on those rivers present a very lively appearance from the boat-building and rope-making which occupy the inhabitants. Besides the use made of the beard of the Piassaba, Mr. Spruce stated that the pulpy envelope of the sarcocarp in the ripe fruit is said to yield the most delicious of all Palm drinks, bearing great resemblance to cream both in colour and taste. "I have not," he remarked, "had the good fortune to taste it, or even to see the ripe fruit, which comes into season at Midsummer, but like the fruit of most other trees is subject to seasons or periods of intermittance, when little or none is matured." The fruit appears to take about nine months to ripen. Mr. Spruce gave as follows the dimensions of one of these Palms, which he cut in the forests of the Guainia:—Caudex, 40 feet; fronds, 15½ to 16½ feet, including a petiole of 4 feet 8 inches; pinnæ, 63 pairs; beard, 21 inches long, on young plants growing close by it was as much as 4 feet 9 inches long; spadix, 4 feet. Another bearded Palm which extends all along the eastern roots of the Andes, Mr. Spruce described to be a true Attalea, distinct from A. fumifera. The beard of this, which is deciduous, not persistent as in the Piassaba, makes excellent brooms. In the Quitinian Andes a very similar broom is made of the base of the petiole of the Cádi Palm (Phytelephas macrocarpa), but the decayed parenchyma requires to be combed away from the fibres before they can be put to this use.—7. "Notice of the cultivation of Cocoa-nuts in Ceylon," by the Rev. Thomas Foulkes, in a letter to Sir W. J. Hooker. The writer first mentioned the unsystematic but all prevailing cultivation of this tree by the natives, remarking that it obtains everywhere on the coasts of the island and to the height of 2000 feet on its mountain sides. A somewhat authentic computation estimates the number of trees in all parts of Ceylon at upwards of 20 millions for this mode of cultivation alone. The systematic cultivation of the Cocoa-nut by Europeans in plantations exclusively devoted to it, however, dates from about the year 1842, when it was undertaken with very sanguine hopes of quick and large returns upon the capital invested in it. In a very short time thousands of acres of unprofitable jungle were cleared in different parts of the island, and probably upwards of half a million sterling has been expended on the estates. Omitting the central province where the Coffee take the place of the Cocoa-nut plantations, there are in the remaining provinces, which occupy an area of 18,509 square miles, 99 Cocoa-nut estates, extending over 22,400 acres. Taking an average of 80 trees to the acre, this acreage would give 1,792,000 Cocoa-nut trees, raised in Ceylon during the last 20 years. Added to those previously mentioned, we have 22 millions for the total of trees throughout the island, and assuming each tree to produce annually on an average 50 nuts, we should have the enormous number of eleven hundred millions of Cocoa-nuts as the annual produce of Ceylon. As all the trees cannot be in full bearing, this must be beyond the truth, and yet since fifty nuts to each tree is a low average for those already in bearing two-thirds of the above number would probably be a fair though low computation. Indeed, one estate in the western province, with about one-fifth of its trees in full bearing, is said to be producing at the present time 600,000 nuts annually on 800 acres. The estimated yield of the Jaffera estates alone for the present year is 5,000,000 of nuts, on 9000 acres; a small proportion only of the trees being in full bearing. The quantity of Cocoa-nut oil exported from Ceylon in 1857 (the last return) was 1,767,413 gallons. The paper gave an interesting account of the management of the plantations, and the author concluded with the following Hindoo riddle on the subject:

"It dwells on high; but it is not the eagle:
It produces water; but it is not the rain-cloud:
It is white; but it is not the silver moon:
It has three eyes; but it is not Siva."

—8. A memoir "On the Embryogeny of Endogens," by B. Clarke, Esq.—9. Notes "On the structure and affinities of Batideæ and Callitrichaceæ; on the structure and affinities of Vochysiaceæ; and on Cassytheæ," by B. Clarke, Esq.

Notices of Books.

Mary Stuart, by Alphonse de Lamartine. 8vo. Black. With portrait, autograph, and vignette.

A graceful translation of one of the most beautiful narratives of modern days, to which are added about 70 pages of illustrative matter in the form of an appendix. It is for literary journals to criticise works of this class; we can only commend them when they deserve praise, as this does most abundantly, excepting always the translations of the poetry of the Queen and of Ronsard. We may however extract the concluding passages by Lamartine, in which he eloquently condenses his own opinions as to the true character of the unfortunate Scottish Queen.

"If we regard Mary Stuart in the light of her charms, her talents, her magical influence over all men who approached her, she may be called the Sappho of the 16th century. All that was not love in her soul was poetry; her verses, like those of Ronsard, her worshipper and teacher, possess a Greek softness combined with a quaint simplicity; they are written with tears, and even after the lapse of so many years, retain something of the warmth of her sighs.

"If we judge her by her life, she is the Scottish Semiramis; casting herself, before the eyes of all Europe, into the arms of the assassin of her husband, and thus giving to the people she had thrown into civil war a coronation of murder for a lesson of morality.

"Her direct and personal participation in the death of her young husband has been denied, and nothing in effect, except those suspected letters, proves that she actually and personally accomplished or permitted the crime; but that she had attracted the victim into the snare; that she had given Bothwell the right and the hope of succeeding to the throne after his death; that she had been the end, the means, and the alleged prize of the crime; finally, that she absolved the murderer by bestowing upon him her hand,—no doubt can be entertained regarding these points. To provoke to murder, and then to absolve the perpetrator—is not this equivalent to guilt?

"In fine, if she be judged by her death—comparable in its majesty, its piety, and its courage, to the most heroic and the holiest sacrifices of the primitive martyrs—the horror and aversion with which she had been regarded change at last to pity, esteem, and admiration. As long as there was no expiation she remained a criminal; by expiation she became a victim. In her history blood seems to be washed out by blood; the guilt of her former years flows as it were from her veins, with the crimson stream; we do not absolve, we sympathise; our pity is not absolution, but rather approaches to love; we try to find excuses for her conduct in the ferocious and dissolute manners of the age; in that education, depraved, sanguinary, and fanatical, which she received at the Court of the Valois; in her youth, her beauty, her love. We are constrained to say with M. Dargaud—to whom we feel deeply indebted for the researches which have guided us—'we judge not—we only relate.'"

Garden Memoranda.

A. J. Doxat's, Esq., Putney Heath.—At few places are Cinerarias and Chrysanthemums grown in such perfection as they are here by Shrimpton, Mr. Doxat's gardener. Some account of his mode of managing them may therefore not be unacceptable. In the case of Cinerarias, they are cut down after blooming and set in a cold frame or pit (under a north wall is preferable), and shaded from the midday sun. As soon as they have pushed sufficiently to enable them to be divided, the offsets are removed and put into 3-inch pots in very light sandy soil and kept rather close for a few days, attending to watering and shading, &c. When rooted they are sprinkled overhead morning and evening, to encourage growth. When strong they are shifted into 48 pots, given weak manure water, and plenty of air, but still shaded. They should never be allowed to suffer from want of water. As they fill the pots with roots they are potted on, using pots according to the size of the plants. When they begin to start into growth they are pinched back, so as to make them break strongly from the bottom. After they have made shoots long enough the latter are pegged out so as to form a spreading plant, or otherwise, as may be required. By stopping them again the size is increased, and it prolongs the time of coming into bloom. Those who have no stock by them, or who wish to obtain fresh sorts should lose no time now in ordering them from the nursery, so as to obtain nice little plants to start with, which will make fine specimens for all purposes from a 4-inch pot up to a 10-inch one if required. The soil Mr. Shrimpton uses is turfy loam and stable dung, bulk for bulk, laid together 12 months previously, and well turned at different times), with sand, the latter to secure a free open soil, and good drainage. They ought never to want for water when they require it. Cinerarias are very subject to the attacks of aphides, which must be destroyed as soon as perceived. For that purpose the following recipe has always been found effectual, viz.—4 oz. of tobacco and 1 lb. of soft soap to 5 gallons of soft water; get all the strength out of the tobacco and dissolve the soft soap; then strain it through a coarse cloth to prevent dirt passing and thus injuring the plants. Carefully dip them into it, but not the pots. It will not only destroy but prevent fly from making its appearance. Should mildew attack them use sulphur, putting it on one day and washing it off the next. Well sprinkle the plants all over with it, it will not harm the foliage. By giving freqent doses of manure water and attending to the above directions, plants will be produced which will repay every care bestowed on them.

The Chrysanthemums grown at this place, like the Cinerarias, are remarkable not only for abundance of bloom, but for the health and beauty of the plants themselves, furnished as they are with foliage quite down to the pots. To ensure this the following points are attended to:—When hot dry weather sets in the plants are well mulched with rotten dung, which prevents the sun's rays from scorching the little rootlets which may be found in multitudes just under the surface of the soil. If these get scorched or burned, the plants are almost sure to shed their lower leaves; this is however easily avoided by the mulching just mentioned and frequent waterings, a practice which causes the plants to grow healthily and renders them ornaments to the garden, even when out of bloom. Pompones Mr. Shrimpton keeps in shady

situations till September; he stops them two or three times during the season, and they are supplied plentifully with water, taking care, if the mould should open or crack round the inside of the pot, to fill up the gap with a little finely sifted soil. If this is not attended to, water when supplied passes off between the soil and pot and leaves the middle dry. Another point requiring particular attention is not to allow the plants to get too high before they are stopped; if this is neglected they do not break at the bottom or throw out laterals low enough to induce a handsome bushy habit. Mildew, to which the Chrysanthemum is very subject, is kept down by sprinkling the plants with water, and then well powdering them with flowers of sulphur. To be effectual however this ought to be done immediately the pest makes its appearance; for, if allowed to fairly establish itself, it is very difficult to eradicate, and the plants never look so healthy afterwards.

Miscellaneous.

The late William Gardiner.—We learn with much pleasure that the friends in Dundee of this lamented botanist have been enabled out of the small sum raised for his family to maintain him with every comfort and attendance till death, when there remained at their disposal a sum which enabled them to print, bind, and mount a fourth edition of the "First Series of Twenty Lessons on British Mosses," the proceeds of the sale of which have been nearly sufficient, with certain local aid, to bring up his orphan son. The boy, following the bent of a strong inclination for a sea life, has decided on being a sailor. In accordance with his determination, he has been fitted out, and is at present serving an apprenticeship on board a merchantman, the Onega, brigantine, Captain Scott, of Dundee. His guardians have incurred in this final expense, when added to a deficiency for his up-bringing, about 26*l*. As this will be the last effort which, in duty, they will be called on to make, they would freely solicit the kind friends of the father to assist them in discharging this obligation. On the authority of the Rev. William B. Borwick, Dundee, and the Rev. J. W. Taylor, F. C., Flisk and Creich, Fifeshire, both of whom have taken considerable interest in him, it may be stated that the boy is promising as to disposition, morals, and ability. All communications may be addressed, and Post-office orders made payable, to the *curator bonis*, Mr. James Scrymgeour, Superintendent of the Dundee Band of Hope, Kemback Place, Lilybank, Dundee. There are a few copies of poor Gardiner's book of Mosses, illustrated with specimens, price 3*s*. 6*d*., still on hand, which may be had through any bookseller of the Messrs. Longman, publishers, London.

Patent Stump and Tree Extractor.—A machine of rather a novel character, adapted for the purpose of clearing land of trees and stumps, was tested the other day in the Parliamentary reserve, in the presence of his Excellency the Governor. The machine, which has been patented by Messrs. Mansfield and Hewitt, consists of an iron-bound beam about 2½ feet in circumference and 20 feet in length. It is supported horizontally by a small wheel at each end. This beam is used as a lever, the fulcrum being obtained by fastening it with a chain to a tree or stump at a distance of about 100 yards from the tree to be removed, around which a strong chain is fastened at a considerable elevation from the root. The other end of the chain is fixed by a hook to the lever, about 8 inches from the fulcrum. The action of the machine is caused by four bullocks being harnessed to the end of the lever, and drawing it alternately backwards and forwards in a half-circle. At each turn, the chain connecting the tree with the lever is shortened, by a contrivance for the purpose, and the strain is consequently increased, while at the same time, the declination gained is preserved. The machine appears to be constructed on true mechanical principles, and when applied, it is evident that either it or the tree must give way. In the experiments yesterday the trees were pulled down in a few minutes, and apparently without any great strain on the machine. The trees experimented on, however, although rather above the average girth and height, were dead, permission having been refused to remove any trees exhibiting signs of vitality. The patentees state that a tree in full vigour presents no greater obstacles to the action of the machine, and possesses this advantage, that in its fall the roots are drawn entire from the ground, whereas in a dead tree they break off and are left in the ground. Four trees were yesterday taken up, and the time required for each did not exceed 10 minutes. For the eradication of stumps a second lever, with a vertical action, is used, but this portion of the machine was not tested. *Melbourne Argus.*

Australian Garden Edgings.—During one of my rambles about two years ago in search of plants to dry and send to England, after surmounting a barren and rugged range of hills I was agreeably surprised to find the opposite slope covered with a beautiful Heath-like plant, which brought vividly to my recollection the Heath-covered hills of the old country. The plants were from 6 inches to a foot high, and covered with multitudes of pink flowers. On removing several plants to the nursery, I noticed that the shoots, about as thick as a knitting pin, were clustered with small fibres at their base. I immediately pulled them to pieces, making of each bunch 20 or 30 small rooted plants. Here then, I thought, I have a substitute for Box-edging. I stretched a line, made a small straight trench, and kneeling down placed these slender rooted shoots about an inch from each other, holding all safe with the back of my left hand whilst I drew the soil to them and fastened them with my right. They were not watered, but took their chance. The result was that every one grew, and I now have as beautiful a neat edging as can possibly be desired. It is called Tetratheca ericæfolia, and I think if some plants were procured, and a bed or two edged with it at the Botanic Garden, Mr. Francis would be able to report also on its merits, and visitors would likewise be enabled to distinguish the plant, so as in many cases to procure it in their own neighbourhoods. Bottles for flower-border edgings are monstrous, always inculcating the idea that we, as colonists, are "a thirsty lot." Camomile looks mangy, and untidy at certain seasons; Thyme is of a dull colour, sometimes dying off in patches, and as for Box it will be too expensive and uncertain for general purposes for years. *J. F. Wood, Evandale Nurseries in the Melbourne* Farm and Garden.

Calendar of Operations.

(*For the ensuing Week.*)

—✦—

PLANT DEPARTMENT.

CONSERVATORY, &c. — Now that many of the Camellias, Azaleas, and other plants have been placed in summer quarters out-of-doors, painting or other repairs required by any of the plant-houses may be more conveniently done than at any other season. As recommended last week pay great attention to plants for autumn and early winter decoration. Let them have plenty of pot-room, good rich compost to grow in, a moist atmosphere, and plenty of space for perfect development, regulating the temperature according to the nature of the plant, and they will make rapid progress. Mealy bug and thrips will require to be looked after; the utmost diligence must be used to keep these in check. STOVE.—If there are any sickly or badly rooted specimens here they must be frequently examined, for red spider; otherwise they will become a nursery for this pest, and from them it will soon spread to adjoining plants. See that young growing stock is not allowed to suffer for want of pot room; attend carefully to watering, giving manure-water to all plants in free growth that enjoy it. Gardenias and other things that have been in the conservatory while in bloom should be replaced in heat as soon as their beauty is over, in order to allow time for getting their growth ripened before short days and dull weather have arrived. ORCHIDS.—Growing stock will require encouragement. Shading must be promptly attended to when bright sunshine occurs. Allow them, however, as much light as they will bear without injury, using a very light screen, and that only when absolutely necessary. Keep them clear of insects and dust by frequent syringings or spongings.

FORCING DEPARTMENT.

PINERIES.—Such varieties as are at all liable to spoil at the bottom before the upper pips are coloured should now be kept as dry as possible immediately they show the least signs of colouring, keeping the atmosphere also as dry as can be done without injury to the rest of the stock. VINERIES.—Grapes intended to hang through the winter should be thinned very freely, and, if necessary, they should be gone over a second time, leaving them so that the berries, when fully swelled, will scarcely touch each other. A moderate crop only should be left on the Vines; for, to ensure success in keeping Grapes fresh and in good condition till next March, the Vines must be in first-rate health; be satisfied, therefore, with a moderate, or rather light crop, in the late house. Keep the atmosphere of houses where the fruit is colouring in active circulation, using gentle fires by day, with abundance of air, and leaving a little air on at night, to prevent damp. If red spider appears inclined to be troublesome, wash the pipes, &c., with a mixture of soot and lime, and if the colour is objectionable, add more soot. FIGS.—Trees that have been kept dry while ripening the first crop, and are now cleared of this, should be well watered at the root, and if there is any appearance of red spider, the leaves should be thoroughly washed with the engine. Give manure-water to trees showing a heavy second crop, and keep the atmosphere moist by frequently sprinkling the passages and borders, &c. Keep the shoots thin and regularly tied, so as to avoid confusion, and expose all parts of the tree equally to the light. Where the fruit is ripening attend to previous directions, and keep the atmosphere and borders as dry as can conveniently be done. Assist trees in pots by giving them a liberal supply of manure-water.

FLOWER GARDEN AND SHRUBBERIES.

Continue to clear everything away decaying and to introduce good things from pots in the reserve ground. A good reserve ground, if properly situated and systematically planned and conducted, would be one of the most useful plots about a garden. Such a valuable adjunct as this would, however, require the constant attendance of a man possessing some little knowledge of flowers, and therefore could not be carried out where there is a stint of labour. Decayed patches of bulbs which are required to stand for early spring flowering may have dressy Verbenas or other things introduced from pots between them. Cuttings of Pansies should be got out in succession before the shoots are too much exhausted. All boundary or other hedges should be clipped forthwith.

HARDY FRUIT AND KITCHEN GARDEN.

Tomatos must be regularly attended to, keeping the shoots thin and stopping them above a cluster of fruit, for if the plants are allowed to ramble and grow too freely there will be a poor chance in an unfavourable season of securing a good crop of fruit. Shallots, if left in the ground after the bulbs are matured, are apt to mildew and rot in wet weather, therefore these should be pulled as soon as the tops begin to decay, and spread out in an airy place to dry before storing them away. Get herbs in flower cut and dried for winter use. Where a sufficient breadth of Celery is not yet planted out, this must be attended to as speedily as possible, and must be well cared for with water, &c., until well established after planting, otherwise good sized heads need hardly be expected. Earth up former plantings, and encourage rapid growth by occasional waterings with manure water. See that a good bed of some approved early variety of Cabbage is sown for spring use. Ply the hoe freely among all growing crops, both for the destruction of weeds and for loosening the surface of the soil after heavy rains. Look over all trained fruit trees frequently for the purpose of stopping and shortening any gross shoots, and keeping the growth nicely regulated; also get the young shoots of wall trees laid in where not already done.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.
For the Week ending June 30, 1859, as observed at the Horticultural Gardens.

June.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Min.	Mean	Temperature of the Earth 1 foot deep.	2 feet deep.	Wind.	Rain.
Friday 24	23	30.083	30.026	72	34	53.0	63½	61½	S.W.	.00
Satur. 25	24	30.001	29.826	78	33	55.5	62	62	S.W.	.00
Sunday 26	25	29.938	29.775	81	55	68.0	63½	61½	S.W.	.10
Mon. 27	26	30.094	30.044	80	56	68.0	65	63	S.W.	.12
Tues. 28	27	29.933	29.816	71	50	60.5	65	63	S.W.	.62
Wed. 29	28	30.050	30.040	72	42	57.0	65	63	N.W.	.00
Thurs. 30	●	30.092	30.066	74	40	57.0	64	63	N.E.	.00
Average		30.207	29.943	75.4	47.1	61.3	64.0	62.4		0.34

June 24—Very fine throughout; cold at night.
— 25—Clear; dry air and fine.
— 26—Thunder and lightning, 6.40 A.M.; very fine; lightning at night.
— 27—Very fine; cloudy; rain; overcast.
— 28—Rain, very heavy; rain at night.
— 29—Fine; very fine throughout.
— 30—Very fine; clear and fine at night.,
Mean temperature of the week, ¾ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 33 years, for the ensuing Week, ending July 9, 1859.

July.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W
Sunday 3..	74 2	51.7	63 0	14	0.78 in.	1	6	2	1	3	11	8	1
Mon. 4..	76.2	51.4	63.8	10	0.33	1	4	2	1	2	14	7	12
Tues. 5..	77.6	51.3	64.4	13	0.59	1	2	4	1	5	11	9	—
Wed. 6..	76.3	51.6	63.9	14	0.45	—	3	1	4	5	11	7	12
Thurs. 7..	73.5	52.3	62.9	18	0 34	2	1	5	2	6	9	5	3
Friday 8..	73.5	50.5	62.0	18	0.46	1	1	5	3	5	9	4	5
Satur. 9..	73 7	50.1	61.9	15	0.82	4	1	2	—	3	8	10	5

The highest temperature during the above period occurred on the 5th, 1852—therm. 97 deg.; and the lowest on the 3d and 9th, 1856, and 4th, 1851 and 1855—therm. 37 deg.

Notices to Correspondents.

DISEASED GRAPES: *J Robertson.* We are at a loss to know what has caused the mischief in your Grapes. This is certain: 1, that the decay is internal, not external; and 2, that it occurs in the pulp where the veins run, and on them, and nowhere else. Is there nothing in the soil that you can ascribe it to? No mildew fungi are discoverable. But minute bubbles of air appear in the diseased spots as soon as the skin is removed, a circumstance that suggests fermentation as going on in the spots. Is your border warm and well drained? Look to that.

GUERNSEY LILIES: *H H.* You will find ample directions for their culture in No. 47, p. 742, of our volume for 1852.‡

INSECTS: *Old Sub.* The Rose leaves sent here had the under surface gnawed off by the yellow larvæ of a small black Sawfly, (Selandria æthiops). It is difficult to reach them by syringing the plants, but by enveloping the trees in a sheet and fumigating them with brimstone the larvæ will fall off the leaves, and may be caught on sheets of paper and destroyed. *W.*

NAMES OF PLANTS: We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have or could have undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*J M'J.* Niphobolus Lingua; 2, Asplenium fragrans; 3, Pleopeltis Billardieri; 4, Nephrodium molle.—*R C.* 1, Saxifraga sarmentosa; 2, Lycium barbarum.—*D J.* It is Helleborus fœtidus. There is no such plant as *H.* officinalis that we know of.—*G B.* 1, Brasavola tuberculata; 2 is so much withered that it cannot be determined; send fresh flowers not quite open, and say what sort of looking plant it is if you cannot spare a leaf.—*N.* The Fern-leaved Hornbeam.—*G.* One of the varieties of Rhododendron cinnabarinum.—*Canterbury.* 1, Malva capensis; 2, Polygala myrtifolia; 3, Jasminum gracile.—*G.* 1, Callipteris ambigua, *alias* Diplazium malabaricum; 2, Asplenium lucidum; 3, Lastrea tenericaulis, often called Polypodium trichodes; 4, Lysimachia nemorum.—A few answers under this head are unavoidably deferred till next week.

STRAWBERRIES: *A P.* Of your three seedlings, 1 is the most distinct; in flavour it is perhaps too acid for some people. 2 somewhat resembles British Queen; but is not so good. The best in the latter respect is the smaller one of the three, which does not appear to differ from Cuthill's Princess Royal. We advise you to send fruit to the meeting of the Horticultural Fruit Committee, at 8, St. Martin's Place, on the 12th inst.—*H B.* We can offer no opinion on your seedling. Send it for the inspection of the Horticultural Society's Fruit Committee on the 12th.‡

THE LATTICE PLANT: *Curious.* It requires both skill and attention. It must be always under water, which must be soft, and its temperature never below 70°. The root should be in soft mud, and the water should be kept in motion by any contrivance that will prevent its becoming stagnant. Were we to take it in hand we should also endeavour to keep a few fish in the water.

VINES: *W P.* If you will be so good as refer to a leading article in another column, you will we trust find your question fully answered.

THE PATENT

NITROPHOSPHATE OR BLOOD MANURE COMPANY (LIMITED),

CONSISTING OF TENANT FARMERS, OCCUPYING UPWARDS OF 30,000 ACRES OF LAND.

TRUSTEES.

ADEL SMITH, Jun., Esq., Walton House, Ware, Herts.
CHARLES DIMSDALE, Esq., Essendon Place, Herts.
EDWARD BALL, Esq., M.P., 8, Belgrave Road, Pimlico
MAJOR-GENERAL HALL, M.P., Western Colville, Linton, Cambridge
JOHN BRADY, Esq., M.P., Warwick Terrace, Belgrave Sq.

DIRECTORS.

Chairman.—JONAS WEBB, Esq., Babraham, Cambridgeshire.
Deputy-Chairman.—JOHN COLLINS, Esq., Myddleton Square, Pentonville.
EDWARD BELL, Esq., Tottenham, Middlesex
JOHN CLAYDEN, Esq., Littlebury, Essex
RICHARD HUNT, Esq., Stanstead Abbot, Herts.
THOMAS KNIGHT, Esq., Edmonton, Middlesex.
ROBERT LEEDS, Esq., West Lexham, Norfolk.
ROBERT MORGAN, Esq., 72, Camden Villas, Camden Town.
GEORGE SAVILL, Esq., Ingthorpe, near Stamford.
WILLIAM COLLINS, Esq., 105, St. John Street Road.

Bankers.—Messrs. BARNETT, HOARE & Co., Lombard Street.
Solicitors.—Messrs. KINGSFORD & DORMAN, 23, Essex Street, Strand.
Auditor.—G. W. BROWN, Esq., 28, Parliament Street.
Manager.—Mr. JAMES ODAMS. | *Secretary.*—Mr. C. T. MACADAM.

Offices, 109, Fenchurch Street, London.—Manufactory, Plaistow Marshes, Essex.

THE Directors beg to inform their Friends and the Agricultural Public that the following Manures are now ready:—

ODAMS'S BLOOD MANURE FOR CORN AND MANGEL.
ODAMS'S BLOOD MANURE FOR ROOTS.
ODAMS'S SUPERPHOSPHATE OF LIME.

Full particulars may be had at the Company's Offices, or of the local Agents.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.

Principal—J. C. NESBIT, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

SOFT STUFF GREAVES ARE A CAPITAL MANURE FOR WHEAT LANDS.—The undersigned have sent large quantities to Norwich, where they are highly approved.—Price 4*l.* 10*s.* per ton in tierces (no charge for casks), delivered free to any railway station in London.

JOHN WILLIAMS & SON, Soap Works, Clerkenwell, London.

ARTIFICIAL MANURES.

FREDERICK CORNWELL begs to inform his friends and the Agricultural public that he can now supply a "SUPERPHOSPHATE of LIME" superior to anything yet produced. Each Bag guaranteed to contain from 20 to 25 per cent. of "Soluble Phosphate of Lime." Price 5*l.* 10*s.* per ton, delivered free to any Railway or Wharf in London. Dealers and the trade supplied. LINSEED-CAKES, COTTON-CAKES, and all descriptions of ARTIFICIAL MANURES at lowest market prices.—Offices, 7, Great St. Helen's, London, E. C.

BURNARD, LACK, AND CO.'S CONCENTRATED SUPERPHOSPHATE OF LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.

CONCENTRATED TURNIP MANURE, equal in value to the preceding.

Of these Manures Dr. Voelcker says:—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."

Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to BURNARD, LACK, & Co., Sutton Road, Plymouth.

LONDON MANURE COMPANY, removed to 116, Fenchurch Street, E. C. (Established 1840), have the following MANURES ready for delivery:—

CORN MANURE for SPRING TOP-DRESSING URATE MANGEL MANURE SUPERPHOSPHATE OF LIME BLOOD MANURE	all of guaranteed quality.

In consequence of the reduction in the price of raw material the London Manure Co. are enabled to lower the price of their Superphosphate of Lime, and to materially improve the Corn Manure and Urate.

The London Manure Co. also supply PERUVIAN GUANO (direct from Messrs. A. Gibbs and Sons), SULPHATE of AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of value. Wholesale dealers supplied.

116, Fenchurch Street, E.C. EDWARD PURSER, Secretary.

REDUCTION IN PRICE OF LAWES'S MANURES.

MR. LAWES begs to announce that he has this season reduced the price of the Manures manufactured by him, viz.:—

TURNIP MANURE	from £7 to £6	6
SUPERPHOSPHATE OF LIME ..	,, 7 to 6	6
MINERAL do. ..	,, 6 to 5	5
BARLEY MANURE..		8 0

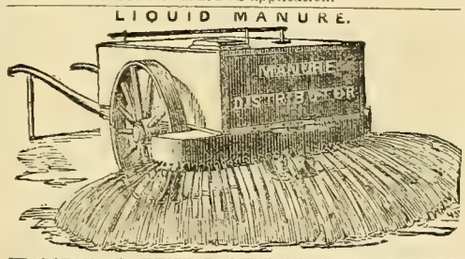
Prof. Way and Dr. Voelcker have sampled from a bulk of 5000 to 6000 tons at his factories, and their report and analyses are given in full in Circular to be obtained on application at his office, 1, Adelaide Place, London Bridge, E.C., or of his local Agents.

N.B. Genuine Peruvian Guano direct from Messrs. GIBBS, Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures. American Cotton-seed Cake supplied.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

EDWARD BECK MANUFACTURES in SLATE a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener, Sundays excepted. PRICED LISTS of PLANT TUBS and BOXES forwarded on application.

LIQUID MANURE.



JAMES'S PATENT LIQUID MANURE DISTRIBUTOR OR WATER-CART, warranted not to choke up or otherwise get out of order. It is thoroughly adapted for Drill Crops, or Pasture Land, or for Watering Streets; has been awarded SIX FIRST PRIZES.

Full Particulars and Testimonials may be obtained of the Patentee, ISAAC JAMES, Tivoli Waggon Works, Cheltenham.

Improved LIQUID MANURE PUMPS supplied.

WARNER'S IMPROVED LIQUID MANURE OR GENERAL PORTABLE PUMP.



These Pumps are fitted with J. W. & SON'S Patent Buckets and Suckers, and cannot clog in action. The barrel is of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure. The legs will fold together, and the whole may be carried on the shoulder to any pond or tank required.

Price of 4½ in. Pump, with legs, 3*l.* 3*s.* If with planished copper barrel and galvanised iron handle, &c., 14*s.* extra. The barrel is 27½ in. long, and the legs are 5 ft. high.

These Pumps are also made without the legs, with strong wrought-iron straps for screwing on to any ordinary water butt or cart, and fitted with 1½ inch brass union for attaching flexible suction. Price 50*s.*

1¾ inch Gutta Percha Suction Pipe, 1*s.* 11*d.* per foot.

Rubber and Canvas Suction and Delivery Hose, from ½ inch to 4 inches in diameter, in lengths of 60 feet to order. Branch Pipes with Cocks, Union Screws, &c., at reduced prices.

May be obtained of any Ironmonger or Plumber in town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin St., London.

WARNER'S PATENT VIBRATING STANDARD PUMPS.

PATENT CAST-IRON PUMPS, fitted with J. W. & SON'S Patent Buckets and Suckers, which cannot clog in action, for Farms, Cottages, and Wells, not exceeding 28 feet.



Diameter of Barrel.	Height.		£.	s.	d.
2½ in.	short 1 ft. 7 in.	Fitted for lead, gutta percha or cast iron flanged pipe as required.	1	10	0
2½ ,,	long 3 ,, 3 ,,		1	14	0
3 ,,	ditto 3 ,, 6 ,,		2	8	0
3½ ,,	ditto 3 ,, 6 ,,		2	12	0
4 ,,	ditto 3 ,, 6 ,,		3	3	0
2½ ,,	short, with 15 feet of Lead Pipe attached, ready for fixing		2	14	0
2½ in.	long ditto ditto ditto		2	18	0

The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.

May be obtained of any Ironmonger or Plumber in Town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

MR. JONAS WEBB begs to inform his friends and the public that his THIRTY-THIRD ANNUAL SHOW of PURE SOUTHDOWN RAMS will take place on THURSDAY, July 7, when the honour of their company will be esteemed a favour.

The Sheep will be Let or Sold as usual, and may remain upon the farm until required by the purchasers. Conditions of the Sheep-letting may be obtained on application.

JONAS WEBB will forward Sheep half way should the distance be farther than 12, and not exceed 100 miles, and these let at 20 guineas and upwards will be sent free by J. W. to any Railroad Station, and their carriage back paid by him.

Whittlesford Station on the Eastern Counties Line is two miles from Babraham, and by permission, all trains, except the express, will on that day stop at Whittlesford, where conveyances will be in readiness to meet them.—Church Farm, Babraham, near Cambridge.

THE GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY: Offices, 52, Parliament Street.

HENRY KER SEYMER, Esq., M.P., Chairman.

1. This Company is incorporated by Act of Parliament to facilitate the Drainage of Land, the Making of Roads, the Erection of Farm Houses, Farm Buildings, and Labourers' Cottages, and other Improvements on all descriptions of Property, whether held in fee, or under entail, mortgage, in trust, or as ecclesiastical or Collegiate Property.

2. In no case is any investigation of Title necessary.

3. The Works may be designed and executed by the Landowner or his Agents, or the Company will undertake the entire improvement by their experienced staff, and advance the money required for the works. Equal facilities will be afforded in either case.

4. The whole cost of the works and expenses may, in all cases, be charged on the Lands improved, to be repaid by half-yearly instalments.

5. The term of such charge may be fixed by the Landowner, and extended to 50 years for Land Improvements, and 31 years for Farm Buildings, whereby the instalments will be kept within such a fair per-centage as the occupiers of the improved Lands can afford to pay.

6. No profit is taken on any Works executed by the Company, the actual expenditure only, approved by the Inclosure Commissioners, being charged in all cases.

WILLIAM CLIFFORD, Secretary.

ROYAL AGRICULTURAL IMPROVEMENT SOCIETY OF IRELAND.—The GREAT ANNUAL CATTLE SHOW of this Society will be held at DUNDALK, on JULY 27, 28, and 29.

All Entries must be made with the Secretary on or before July 13, from whom a detailed Prize Sheet, together with Entry Forms for the different Classes can be obtained.

The following favourable arrangements have been made with the respective Rail and Steam Boat Companies for the conveyance of Stock, &c., to the Show:—

On the Great Southern and Western, Live Stock (except Entire Horses and Poultry) FREE to the Show, and any unsold returned free. Entire Horses charged to the Show, and any unsold returned free. Implements charged to the Show; any unsold returned free.

The Ulster Railway Company will convey everything to the Show free.

The Dublin and Drogheda, the Belfast Junction, the Midland Great Western, and the Dundalk and Enniskillen Lines will convey back from the Show all unsold Stock, Implements, &c., free of charge.

The Dundalk and Liverpool Steam Packet Company will convey from Liverpool all Stock, Implements, &c., intended for exhibition, free of freight.

By Order, J. M. ROYSE, Secretary.

Society's Rooms, 42, Upper Sackville Street.—July 2.

YORKSHIRE AGRICULTURAL SOCIETY.

HULL MEETING, 1859.

OPEN TO THE UNITED KINGDOM.

The TWENTY-SECOND ANNUAL MEETING will be held at Hull on WEDNESDAY, August 3, and THURSDAY, August 4, when nearly 900*l.* will be offered in prizes for Stock, Poultry, Implements, &c., including Steam Ploughs and Reapers.

Prize Lists and Certificates of Entry may be had on application to the Secretary. The Entry closes on the 20th July.

JOHN HANNAM, Secretary.

N.B.—Persons desirous of becoming members of the Society are requested to send their names immediately to the Secretary.

An Annual Subscription of 1*l.* enables a member to exhibit an unlimited number of Stock, to view all the Exhibitions, and to receive the Society's Publications free of charge.

Kirk Deighton, Wetherby, July 2.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.—WARWICK, 1859.

PROGRAMME.

TUESDAY, July 12; WEDNESDAY, 13.—The Implement Yard open from 10 o'clock in the morning till 6 o'clock in the evening on Tuesday; and from 7 o'clock in the morning till 6 o'clock in the evening on Wednesday, at an admission charge of 2*s.* 6*d.* for each person. Machinery will be shown by the Exhibitors at work on each of these days.

WEDNESDAY, 13.—The Judges to inspect the Live Stock, and to award the Prizes.

Public trials of the Steam Cultivators, on land in the neighbourhood of the city, during such hours as the Stewards may determine.

At 1 o'clock (or as soon after as all the Judges shall have delivered in their awards, of which notice will be given), the Public will be admitted into the Cattle Yard on the payment of 5*s.* each person, at the Special Entrances.

THURSDAY, 14.—The General Show Yard of Cattle, Horses, Sheep, Pigs, and Implements open to the Public from 6 o'clock in the morning till 6 in the evening; admission 2*s.* 6*d.* each person.

FRIDAY, 15.—The General Show Yard open to the Public from 6 o'clock in the morning till 6 in the evening; admission 1*s.* each person.

General Meeting of the Members, in the Shire Hall, at 10 o'clock in the forenoon.

By Order of the Council, B. T. BRANDRETH GIBBS,
London, July 2. Hon. Acting Secretary, *pro tem.*

By the Regulations of the Society, all persons admitted into the Show Yard, or other places in the temporary occupation of the Society during the Meeting, shall be subject to the Rules, Orders, and Regulations of the Council.

The Agricultural Gazette.

SATURDAY, JULY 2, 1859.

MEETINGS FOR THE ENSUING WEEK.

WEDNESDAY, July 6—Agri. Society of England ..... Noon.
THURSDAY, — 7—Mr. Jonas Webb's Ram Sale at Babraham.

WHAT are the merits of the so-called "CONCENTRATED CATTLE FOODS?"—so called to distinguish them from the ordinary foods with which cattle are fed or fattened. They are very costly, on the plea implied or expressed that by a well

studied combination of ingredients a food is prepared of so much greater health giving and feeding properties as to be increased in value from about 7*l.* for its ingredients to as much as 40*l.* for their combination.

We have in the course of years been brought in contact with every class making up the rural population, and happen to know from experience how anxious are the carter and the shepherd and the cowman to acquire "resaits" for use in their several departments as keepers of the live stock of the farm. Without trying to follow the two last worthies into the secret arcana of their many much prized compounds for the "yellows," the "red water," or the "shab," it will be enough for our present purpose to review some of the doctoring predilections of the carter.

A man having charge of horses, if he be worth anything as a groom, is desirous of having his cattle look healthy and well; and, especially in the earlier part of the year when the coat begins to change, he is solicitous that the new garment shall be sleek and fine, an effect sure to be brought about by proper feeding and good grooming. But your carter is slow to admit that Nature can effect so much as his peculiar leechcraft, and so he follows out with his horse to the present moment what was formerly a custom with the higher animal, man. Every spring, or perhaps at spring and fall, he plies his beast with some medicated stuff, even though it be forbidden by the master; and so powerful is the influence of tradition in favour of these nostrums, that these poor men pay out of their own pockets as much as from 2*s.* 6*d.* to 5*s.* at a time for horse powders.

But, again, as showing the firm hold which the system possesses, it will be not out of place here to state another circumstance connected with the matter. At the time the horse powders are being administered it is deemed desirable that the animal should be better fed than ordinarily; and it is not at all uncommon for a carter to crib from time to time a store of corn with which the animal is duly primed, while taking the medicines; and as he is in this and in every other way better cared for than usual, no wonder that good locks and sleek coat should result. Now all this is done in secret and with great caution; few farmers know of this periodical tampering, the finding out of which would often involve the carter in loss of place and character; and yet these probabilities are braved, and what is perhaps more, several days' wages are not unfrequently sacrificed to procure the stuff which we shall now inquire into. It will be well here to state that the foundation of horse powders consists of seeds or other parts of aromatic plants, as thus—Aniseed, Coriander, Carraway, and especially Fenugræc seeds, the roots, or underground stems—rhizomata—of Ginger or Turmeric; these and others are sometimes mixed with varied quantities of nitre, sulphur, or antimony, according as the urine or skin may be thought to require them, which as these are really powerful medicines very frequently lead to disasters in the cattle, the causes of which are but little dreamed of. Fortunately, however, where only the vegetable medicines are employed no evil results ensue, and this is partly owing to the dilution which the active principle in each undergoes at the hands of the wholesale drug merchant and the country druggist. The extent to which this is carried on may be gathered from the following *formulæ* copied *verbatim* from Gray's Supplement to the Pharmacopœia, which was formerly a druggist's recipe-book in constant use:—

Semina Fenugræci trita reducta.

	lbs.	
Sem. Fenugræc.	56	Fenugræc seeds.
Rad. Curcumæ	7	Turmeric root.
Fabarum	36	Beans.
Whiting	14	
Boxwood	14	
	Powder.	

This is a tolerable dilution, but still it contains some of the real seed; the next it will be seen is an entire sophistication.

Sem. Anisi trita reducta.

	lbs.	
Sem. Lini	32	Linseed.
P. Lini	36	Linseed-meal.
Rus Guaiaci..	20	Guaiacum shavings.
Ebor	4	Ivory black.
Dutch Pink..	7	
	Powder.	

Take again Turmeric root, which is of an intensely yellow colour, and we shall find it more than half sophistication; the colour however is maintained by the addition of a colouring wood.

Rad. Curcumæ trita reducta.

	lbs.	
Rad. Curcumæ	12	Turmeric root.
Fabarum	12	Beans.
Lign. rubri	4	Brazil Wood (?)
	Powder.	

These examples are sufficient to show the kind of stuff the carter has been content to buy at such a large cost, and as we happen to know that in some country towns a considerable traffic, and that, too, mostly on the Sunday morning, is carried on in these articles, it indicates in a strong light the kind of preparation some minds had undergone for listening to the marvels related of the more modern cattle-food preparations.*

The compounders of cattle food then, it would appear, have discovered a prejudice to which they very cunningly administer. They know full well that it jumps with the humour of all who have to do with horses or cattle to mix medicated powders with their food, and they prepare for it by a pretended concentration of feeding materials; and so much are people taken with professions of this class, that the other day a friend of ours told us with no little surprise "that his horses ate quite as much corn; and indeed that he could not keep them a bit cheaper since he used the new food." However, people may not be much surprised at this who may read the following remarks with comments upon an analysis of cattle food, read before the Dublin University by Dr. Cameron:—

"This so-called *concentrated* cattle food is sold at 42*l.* per ton, which is at the rate of 4½*d.* per lb.; while in reality it is not, at the very utmost, worth 7*l.*, or ⅝*d.* It is far less nutritious than either Linseed-cake or Rape-cake, though it is no doubt more palatable to cattle than the latter. Its great inferiority to the oilcakes may be rendered more apparent by contrasting its analysis with that of an average sample of Linseed-cake."

No wonder, therefore, that this writer should have added the following remarks to his report, in which we cordially agree:—

"I consider the sale of the peculiar article they prepare an imposition of the grossest kind on the agricultural public, and on that portion of the urban community who are proprietors of horses. I have no hesitation in placing the manufacturers of 'concentrated cattle foods' in that category of the farmer's benefactors which includes the manufacturers of and dealers in spurious guano, for both take advantage of the prevailing ignorance of the farmer as to what really constitutes a nutritious article of food, or an excellent fertiliser of the soil. What is the moral difference between the man who sells guano at 12*l.* per ton, knowing it not to be worth 3*l.*, and the highly respectable dealer who vends cattle food at 42*l.* per ton and yet knows that its ingredients may be purchased at one-sixth of that amount?"

However, while endeavouring to show our agricultural friends the foundation upon which the superstructure of these cattle foods has been built, we would not have them unmindful of the fact that the flavour of the food is a really important matter—an inquiry into which, as it will further elucidate our present subject, we shall hope to go in a future Number.

A trial of Burgess & Key's mowing machine at Glasnevin, near Dublin, is reported in the *Weekly Agricultural Review* as having been remarkably successful. Mr. Baldwin, of the Albert Institution there, estimates that, kept continually at work by alternate pairs of horses, it will mow 12 acres in a day. It performs the work admirably when the ground is even and free from stones, indeed the work could not be better done.

The following is Mr. Baldwin's estimate of the cost per acre:—

"Assuming a farm of 200 statute acres, under a four course rotation, and having 50 acres of Grass, the cost would be as follows:—

	s.	d.	s.	d.
Interest on the first cost of the machine for wear and tear, &c., say 12½ per cent., 3*l.* 15*s.*, or per acre			1	6
Wages of a man to drive	2	0		
,, of a boy	1	0		
	3	0		
Or per acre			0	3
Total per acre			1	9

So that, omitting the cost of horse labour, we may safely say that the cost of mowing with the machine would not exceed 2*s.* per acre. Now, I know several farmers who paid upwards of 5*s.* per acre last summer for mowing Grass not exceeding in luxuriance that on the trial field at Glasnevin. And even if we charge the machine with the feeding of the horses, it will still be more economical than the scythe. The keep of four horses may on an average be assumed at 10*s.*, or about 1*s.* per acre, so that the cost of the "mower" will not exceed 3*s.* per acre where there are 50 acres of Grass to be cut down annually; and, of course the cost will diminish as the area to be mown increases. I have not drawn any comparison between the mower of Messrs. Burgess & Key and other machines in the market. It is enough to say that the work executed at Glasnevin is very creditable and calculated to inspire farmers with the hope that the cost of tillage will diminish in proportion as the science of agricultural machine-making is advanced."

We may add to this that Wood's combined reaper and mower, a rival machine brought out we believe by Richmond & Chandler, of Salford, has also been successfully in operation in various parts of the country.

—— At the meeting of the East of Berwickshire Farmers' Club the other day reports were read of the experience of members in the cultivation of Swedes and Mangel Wurzel. Mr. George Wilson, of Harelaw, Chirnside, found that Peruvian guano was among the less effective of the six manures two guineas worth of each of which had been applied per acre upon Swedish Turnips; while bone-dust and dissolved bones were among the most effective of the series.—Mr. John Wilson, of Cumledge, reported favourably of Mangel Wurzel, of which 30 tons per acre had been grown where Swedes treated in the same manner, with the exception of wanting a second dressing of artificial manure, yielded rather less than 20 tons.

"The land, a gravel loam, had been manured with not very rotten farmyard dung, upwards of 20 cart loads per acre in autumn 1857, after a crop of Oats, ploughed with a deep furrow, and ploughed again in the end of March, and well harrowed, grubbed, and drilled up about the 12th April with 1½ cwt. of Peruvian guano. Previous to drilling 3 cwt. of salt was applied. The drills were compressed with a light roller, and allowed to remain for eight days to gather sap, and then sown at the rate of 5 lbs. of seed per acre, on the 22d April. The seed brairded about the 8th May, very irregularly, from careless sowing; the blanks were filled by transplanting when the crop was thinned, about the 15th June. As it was moist weather this succeeded very well, although the plants were not ultimately so large as those grown from the seed. The plants were about 15 inches apart, where regular; the width of the drills was 28 inches. The ground was cleaned with the little ploughs and scufflers the same as for Turnips, with the exception of being stirred between the drills with a two-horse grubbler as deep as the horses could work it, about the beginning of July. Towards the end of that month, a dressing of a mixture of Peruvian guano and dissolved bones was applied, 1½ cwt. per acre, and worked in with the small plough and scuffler. Four kinds of Mangel were sown, Long Red, Red Globe, Long Yellow, and Yellow Globe; there was not much difference. The storing process was too long delayed, and it was stopped in the middle with a week's frost, in the beginning of December. What was stored before the frost is in perfect order at this time, the 4th June; what was stored after the few days' frost, although first used, was all much deteriorated, and many of the roots were quite rotten."

Mr. Wilson believes that Mangel will be cultivated in Berwickshire to a much greater extent than it has ever yet been. It is the best root that can be given to ewes when lambing, and to cows, the milk produced by it being so safe for calves, as well as to feeding cattle in late spring and early summer. All sheep and cattle seem to be very fond of it, preferring it to any other roots after April.

—— An addendum to last year's report of Irish Agricultural Statistics has lately been published by Mr. Donnelly, in which the estimated produce per acre of the several crops during 1858 is applied to the ascertained acreage, as given last autumn, so as to bring out the gross produce of the country. The Tables accompanying the report indicate that "in 1858, compared with 1857, Wheat shows an increase of 83,507 quarters although a less extent was sown—the average produce per acre having been greater. Oats, with the same average yield per acre as in 1857, produced 58,194 quarters more in 1858, owing to a larger acreage; Barley and Bere, with a higher average yield per acre, gave a lower total produce, owing to the decrease in their extent. Potatoes exhibit an increase both in acreage and average yield per acre, and afforded an addition of 1,382,881 tons to the food of the country. Turnips, Mangel Wurzel, and Cabbage, also show an increased produce in 1848. Flax, although with a diminished extent of 6075 acres, shows, owing to a greater produce per acre, a general increase in yield of 3108 tons in 1858. The hay crop also appears to have produced 134,362 tons more in 1858 than in 1857. According to the returns, the average yield per acre of the principal crops during the last 10 years (1849 to 1858), was as follows:—Wheat, 5.3 barrels of 20 stones; Oats, 7.8 barrels of 14 stones; Barley, 8.5 barrels of 16 stones; Bere, 8.0 barrels of 16 stones; Rye, 7.1 barrels of 20 stones; Beans and Peas, 27.1 bushels of 8 gallons; Potatoes, 39.4 barrels of 20 stones; Turnips, 15.1 tons; Mangel Wurzel, 16.6 tons; Cabbage, 13.1 tons; Flax, 85.8 stones of 14 lbs.; hay, 2.0 tons.

From the tables, it would appear that the yield of the Wheat crop in 1858 was about the tenth of

* It should be noted that the powders previously described are manufactured from articles sent to the drug mills, and mostly in London. The country druggist often knows little about them except that they are commonly reported as "very good" by their purchasers, while the genuine article could hardly be sold.

a barrel per acre above the average of the previous 10 years; whilst Oats, Barley Bere, Rye, Potatoes, Turnips, Cabbage, Flax, and hay were below the mean acreable produce for the same period.

—— A trial of mowing machines near Boreham Park, the seat of Sir J. Tyrrell, excited a good deal of interest last week. Three machines were tried—Burgess & Key's mower, Wood's combined reaper and mower, and a smaller implement, also of Wood's. Of these Burgess & Key's mowing machine did the best work, though not the most in the time. It was drawn by two horses, and cut half an acre in little more than half an hour, performing the work well, *i.e.* close to the ground and regularly without missing.

—— A correspondent asks for the value of charcoal as a fertiliser. There is certainly a superiority which black imperfectly burned turf ashes exhibit over quickly and thoroughly burned or red ashes, and this superiority is in some measure due to the charcoal which the former contains, and which has been burned out of the latter. It is possible that some of the inferiority of the latter may however be due to the effect of a greater heat upon its other ingredients, and that owing to this greater heat there may be a less quantity of useful soluble matter in the quickly and thoroughly burned ash than in the slowly burned and black ash. Carbon is itself the most insoluble and unchangeable of substances, and its influence as a manure cannot depend, as that of others does, upon ability to become directly and of itself the food of plants; but as it exists in charcoal it is united with the mineral part of the plant from which it is prepared. And this is distributed throughout it, so as to become very readily dissolved by water passing through it. The carbon too in charcoal is presented in such a porous form as to possess great powers of absorbing and concentrating within itself gaseous substances which are available as food of plants, and so of checking waste from the soil to which it is applied of those volatile products of decomposition which are probably always more or less evaporating from its surface. It is in this way chiefly that such fertilising properties as charcoal possesses are explained. Whether, as our correspondent asks, it may be a profitable speculation to undergo the cost of grubbing up 60 acres of copsewood for the charcoal which it would yield depends on many other things than the value of charcoal as manure. It may be more profitable to sell it for fuel and buy guano and superphosphate with the proceeds. If used as manure it must be reduced to a coarse powder, and would probably be more serviceable in a compost with farmyard dung or other ammoniacal manure than applied directly to the soil. If so applied, however, we would rather depend upon it as a permanent fertiliser of the soil, and as fitting it for the growth of all sorts of plants than as specially adapted for the growth of any particular crop. It would improve the texture of stiff soils, and the powers which it is believed to possess of attracting fertilising vapours from both soil and air would make it a good nurse and feeder of all kinds of crops.

—— A special competition of Reaping Machines will be held, under the superintendance of the French Government, from the 20th to the 25th of the month, at the Imperial farm of Fouilleuse, near Saint Cloud, a station of the railway from Paris to Versailles, 5 miles from Paris. The competition is an international one; all foreigners are admitted to compete for the premiums and medals.

The following prizes are offered by the French Government to Foreign Competitors:—

1st prize, 40*l.*, with a Gold Medal.
2d prize, 20*l.*, with a Silver Medal.
3d prize, 12*l.*, with a Bronze Medal.

And a Great Gold Medal will be awarded to the best Reaping Machine exhibited, either French or Foreign.

The prizes will be awarded by a jury after careful examination and ample trial, in the fields of the Imperial farm, of all the machines exhibited.

The day, hour, and place of the trial will be indicated in proper time to every exhibitor, by the Director of the competition. Exhibitors or their agents are requested to be in attendance during the trials, while the judges are inspecting the implements, in case any explanation may be required from them, and they or their servants must give every facility to the commissaires and the judges, by having their implements ready for inspection and trial at the time intimated; and any exhibitor, after having had due notice, will be liable either to have his machine tried at his own risk, in his absence, or to have it removed altogether from the show, without any responsibility attaching to the Director. No reaping machine will be allowed to commence work in the trial field unless by the express orders of the Director of the competition. No machine will be allowed to be painted or varnished after it has been brought into the yard.

All the expenses of the trial will be borne by the French Government; the transport of the machines to the show-yard will be at the charge of the exhibitors. It is desirable that the machines should be landed at Boulogne-sur-Mer, where every facility will be given to exhibitors to go through the Custom House.

The certificates of entry must be sent by the exhibitors to his Excellency the Minister of Agriculture, 78 *bis*, Paris, on or before the 10th of this month. Forms of certificates are to be had on application at the same address.

The certificates must contain full information about the machines to be exhibited, such as—the name and address of the exhibitor—the name and address of the inventor and those of the constructor—what improvements have been effected—on what principle the machine is constructed—what power it requires to work it—how many horses and how many labourers are required to work it—how much work it can perform per hour or per day—the space required by the machine—whether the machine both cuts and puts into sheaves or only cuts, and any other particulars.

ROYAL AGRICULTURAL COLLEGE.

The sessional examination was brought to a close on June 16th, for the first time under the superintendence of the new Principal, the Rev. John Constable, M.A., when the following students obtained the College Diploma, and thereby became members and graduates of the institution:—

1. James Nott, Folly, Alfrick, Worcestershire.
2. Thomas Westray, Workington, Cumberland.

PRIZES.

Farm Books.
1. Appleby
2. Jekyll

Farm Journals.
1. Gibbon
Highly commended—Turner
Mounsey
Commended—Harding

Laboratory.
Classes 1 and 2—J. Knott
Classes 3 and 4—M'Ivor Tindall
Highly commended—Phillips
Classes 5 and 6—Dawson
Commended—Harding

Natural History.
Geology—T. Newton
Agronomics—W. E. Ivey

Hospital Journals.
1. Nott
2. Beverley
Anatomical—1. Doxet
2. M'Ivor Tindall

Field Surveying and Levelling Books.
1*st Division*—1. Brown
Commended—Dixie
Bigge
2*d Division*—1. Ivey
Commended—A. Carey
M'Ivor Tindall
3*d Division*—1. Allanson
Highly commended—Mounsey
Doxet

A few of the first names in each of the departments in order of merit:—

Practical Agriculture.

1*st Division.*	2*d Division.*
1. Nott	1. Deacon, M'Ivor Tindall } eq.
2. Westray	
3. J. B. Jones	3. Doxet, Gibbon } eq.
4. Appleby	
5. Hull	5. Harding
6. Beverley	
7. Bramston, Ivey } eq.	

Chemistry.

Organic.	*Inorganic.*
1. Westray	1. M'Ivor Tindall
2. Nott, Appleby } eq.	2. Ivey
	3. Clarke
4. Bigge, J. B. Jones } eq.	4. Doxet

Natural History.

Geology.	Agronomics.
1. Bigge, Hull } eq.	1. Doxet, Ivey } eq.
3. J. B. Jones, Nott } eq.	3. Congreve, Harding, Twamley } eq.
5. Appleby	6. Phillips
6. Beverley, Westray } eq.	

Veterinary.

Pathology.	Anatomy.
1. Nott	1. Doxet, M'Ivor Tindall, Ivey } eq.
2. J. B. Jones	
3. Westray	
4. Bigge	4. Deacon

Surveying and Engineering.

1*st Division.*	2*d Division.*	3*d Division.*
1. Nott	1. Ivey	1. Doxet
2. J. B. Jones	2. M'Ivor Tindall	2. Deacon
3. Westray	3. Twamley	3. Allanson.
4. Beverley	4. Dayman	

DAIRY EXPERIENCE.

The quantity of milk yielded by a dairy of cows depends altogether on their feeding, as nothing is more common than farmers overstocking their pastures in summer, and keeping more stock in winter than they have sufficient feeding for. This miserable economy is the rule; sufficiency of food given to milk cows is the exception. My experience leads me to believe that it is profitable to allow cows as much pasture as they can eat in summer, and as many roots in winter as will maintain them in good condition; the quantity requisite to do so depends on whether their pastures have been eaten bare during summer, and what description of fodder is allowed them. When the foggage is good in winter, 60 lbs. of Turnips daily will keep cows in good condition, but when the foggage is bare it will require 84 lbs. per day; this is assuming Wheat straw as the fodder, where hay is given less will suffice. My position being a dairyman, who rents cows by the year from a farmer, with a certain stipulated quantity of feeding for each cow, I will not speak of what might be made by extraordinary feeding, but will only note what is my own routine, and state the results. In the dairy of 100 cows rented by me, in winter we give each cow 42 lbs. of Turnips at 5 o'clock in the morning, commence to milk at 6; as soon as that is concluded, fodder with straw, then cleanse out the cowhouses, and curry-comb all the cows, fodder again between 10 and 11, and at 12 turn them out to drink, put another feed of 42 lbs. of Turnips in their troughs, and allow them to return to the house as soon as they desire; fodder again with straw as soon as they have their feed of Turnips consumed, cleanse out the cowhouse again, and after milking again at 6 o'clock, the last fodder is given between 7 and 8 o'clock. The litter is carefully shaken up on their beds every time they get fodder. Two active girls will do all the necessary work in feeding and cleansing 100 cows, until the calves begin to drop in the spring, when a third one may be needed. As the cows approach calving, a little Bean meal in a mash of steamed or boiled Turnips, mixed with chaff or chopped straw, is given daily to each cow, and by the time the cow is a week calved, she gets half of her allowance of Turnips boiled or steamed, and mixed with chaff, or chopped, and 3½ lbs. of finely ground Bean meal in each mash (given her twice every day). After having tried various methods and different sorts of grain, as Oats, Wheat, Barley, Indian Corn, oilcake, Rape, &c., I decidedly prefer Bean meal, both for quantity and quality of milk and butter. These two mashes are given at about blood heat, being well mixed and saturated with water. A stock of cows calved by April 1st, and receiving this feeding—assuming that all the herd have come to their proper time of calving—will average about 11 imperial quarts each daily, or 28 lbs. per cow. I mention the weight of milk as being the most certain way of being accurate with new milk, and in speaking of the quantities of butter or cheese produced by a stated quantity of milk, it requires to be understood that milk from newly calved cows does not yield so much butter or cheese as milk from cows approaching their time of going dry (in proportion to the weight of milk). Thus from a stock of cows all calved by May 1st, 260 lbs. of milk will give 22 lbs. of cheese ready for the market in the month of June, while the same quantity of milk from the same cow in October will produce 28 lbs. ready for the market, and increase in the yield of cheese from the quantity of milk until the cow goes dry. The monthly yield of milk in my dairy stands as under:—

April—30 days' yield,		28 lbs.	of milk	daily		840 lbs.
May—	31	,,	30	,,	,,	930 ,,
June—	30	,,	33	,,	,,	990 ,,
July—	31	,,	26	,,	,,	806 ,,
August—	31	,,	22	,,	,,	682 ,,
September—	30	,,	18	,,	,,	540 ,,
October—	31	,,	14	,,	,,	434 ,,
November—	30	,,	10	,,	,,	300 ,,
December—	31	,,	4	,,	,,	124 ,,
					Milk	5646 lbs.

which, allowing 10 lbs. of milk on an average to yield 1 lb. of cheese, will leave as the year's produce of each cow 564 lbs. of cheese. This has been yielded by a dairy of 100 cows on an average, and I have been credibly informed by a farmer in the high districts of New Cummock, Ayrshire, that he has made more off each cow; but his stock was extra good, also his pasture and feeding. The greatest part of milk is in Scotland made into cheeses on the Dunlop method, and very little intelligence is brought to bear on their manufacture as generally practised—consequently the cheeses are inferior. Generally in this branch of husbandry the Scotch are far behind the English cheese-makers, and the inferiority of the Scotch cheeses is entirely to be attributed to the manner in which the milk is turned into cheese. It is not even the Dunlop method properly followed that is to blame for it, as cheeses little if at all inferior to either Chedder or Cheshire may be made. My method of making Dunlop cheese is as follows:—putting the last night's and morning's milk together after milking in the morning, raising the temperature to from 76° to 80°, using sweet steep (rennet) and no more of it than will coagulate the milk in an hour, breaking the curds thoroughly at first, and after the whey is run off keeping up the temperature of the dairy, so as not to suffer the curd to cool rapidly, lifting the curds out of the tub and putting them into a cloth in a dresser and continuing to cut or break them up frequently, increasing the weight on them until they are very firm—6 or 8 breakings or cuttings will suffice generally. Then mill the curd and salt them and put it into the cheese press; having changed it in half a hour repeat that at 5 and 9 o'clock, again next morning at 5 and 10, and the cheese will be entirely dry and pressed by 1 o'clock next day. Thus a cheese only remains 24 hours under the press, and if properly attended to the cheese will be easily pressed and of excellent quality. The principal feature of difference in the manner of making Cheddar is the raising of the temperature by heated whey, first, after the curd is broken, to 80° of heat, and afterwards when the curd has stood an hour, when it is raised up to 100°. This I consider the most rational way of getting up the temperature to free the curd entirely from whey, as it does it most effectually when properly performed. There is a movement going on in Scotland to alter from the old Dunlop to the Cheddar mode, and if judiciously carried out it will effect a great improvement; but there is much danger of only an imperfect

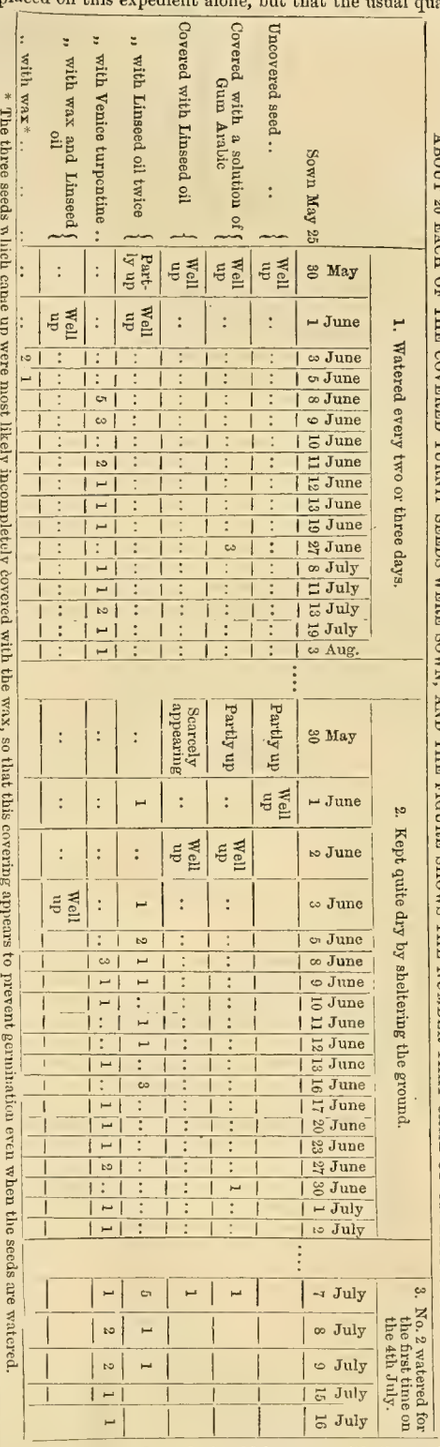
alteration being made, and then the advantage will only be trifling. The different minutiæ must be thoroughly understood, and the reasons for doing so fully comprehended, with the variations necessary from changes of the atmosphere. It cannot be learned from a mere description, it requires a time under some person capable to perform the different manipulations properly and to explain the reason for so doing to the learner, until it is completely mastered. It then requires tact to vary the mode under atmospheric changes. A great want felt by cheesemakers is some instrument (an acidometer) to indicate the exact degree of acidity in milk when it has stood 12 hours. Could such an instrument be made cheeses might be made of uniform quality, by following stated rules. It is often necessary to use sour whey, and an acidometer would show the quantity needed. Besides, it would show the quantity of rennet needed for coagulation of the milk, as less is needed when the milk is far advanced towards acidity. It is a bad plan to set part of the milk overnight in the cheese tub, as sudden changes of the atmosphere have a greater effect on milk when in large quantities, and it is likely to be occasionally too far advanced by the time of coagulation, and that when once done cannot be remedied. It is thus better to set the milk thin in plates or coolers and have it kept sweet, by being well cooled, and use sour whey to give it the proper amount of acidity. It is often asserted that certain tubs and implements will produce better quality of cheese than some other kinds. After having tried various sorts, I believe that it matters nothing at all whether the tub is copper, tin, or oak, providing it is properly kept clean. The complete extraction of the whey from the cheese is the great thing sought after. This is not to be effected by the amount of pressure applied to the cheese in the cheesevat; it depends far more on the previous handling of the curds, whether the system followed be the Cheddar, the Cheshire, or the Dunlop, and as previously stated, a description is not sufficient to teach that, it must be learned by practice and observation. After the whey is properly extracted, the ripening of the cheese for market is the great object; this is best done at a temperature of from 65° to 75° of the thermometer. When the natural temperature falls under 55° artificial heat ought to be kept up, care being taken to allow the air occasionally to sweep away the vapours that arise from heated air or a stove in cheese-room. Light ought also to be excluded from the store-room, as it tends to mottle the cheese by extracting the colour and makes it of a rancid taste. In Scotland milk is often all churned up together. The mode of doing this is by setting the new milk in plates or coolers for 12 hours; it is then lifted and put into a deep tub termed a "lappering dish;" it stands then without being in any way stirred until it is lappered, that is, coagulated spontaneously; it is then strained through a cloth and raised up to 61 or 62° of the thermometer by warm water being added, care being taken to keep the churn moving during the act of pouring in the water. It will then require two hours' churning to bring butter, the churn going at the rate of 40 strokes per minute. The churn requires to be rinsed clean and some cold water put in to reduce the temperature to 58° when the butter is beginning to form. The butter produced by this method is finer and more delicate than cream butter. 260 lbs. of new milk in the month of June treated in this manner will yield 9½ lbs. of excellent butter, and the buttermilk is valuable either for selling or feeding calves or pigs. 260 lbs. of new milk set in plates and skimmed after setting 24 hours yields only 8 lbs. of butter from the cream: thus there is a sixth part more butter from churning all the milk; but the skimmed milk yields 17 lbs. of skim cheese to balance the value of the buttermilk. Having thus stated the results of my practice with milk, not including fractional parts, I will conclude by mentioning a peculiarity of Scotch dairy practice that is now extensively followed, that is, the farming out of the cows to Bowers or Dairymen by the farmers. This relieves the farmer of the whole trouble of superintending the operations of the dairy. The dairyman takes care of and feeds the cows, with a stipulated amount of pasture and food (furnished by the farmer), and pays so much for each cow. It has been found that generally cows are better tended and more is made out of them, from being under the care of a person having an interest in them, than when it is done by servants, as it is well known that the better a cow is attended to she will yield the more milk, and when that milk is once produced, the greater the degree of care and intelligence that is brought to bear on the turning of it to account in the manufacture of cheese, butter, or otherwise, is ultimately a benefit to the farmer. *R. McAdam, Silverdale, Newcastle, Staffordshire.*

PROPOSAL OF A NEW REMEDY FOR THE RAVAGES OF THE TURNIP FLY AND THE FAILURE OF CROPS FROM THE DRYNESS OF THE WEATHER.

By B. Clarke, F.L.S., &c.

The following remedy for the ravages of the Turnip fly suggested itself some time since, and as the inquiry seems one of unabated interest, I put the question to an agriculturist as to whether such a remedy might possibly prove effectual, and he was decidedly of opinion that if Turnip seed could be sown so as to lie on the ground till a heavy and continued rain came, and then all came up at once, the Turnips would then be more likely to escape the fly.* He also informed me that the worst weather for the Turnip was when showers and fine weather succeeded each other at short intervals, so that the seed did not all come up at once, but at intervals, in consequence of the rain not being sufficient to make all the seed germinate at once.

The proposed plan consists in immersing the Turnip seed in a thick solution of gum arabic or varnish, or any other substitute for them thought suitable for the purpose, and then having drained off the superfluous liquid the seed is passed through a sieve and made to fall into flour or any other convenient powder, so as to prevent its sticking together. Thus protected it will lie in the ground till the first soaking rain comes, and then all coming up together and growing during or immediately after the rain, will be more likely to escape the fly. It is not however proposed that dependence should be placed on this expedient alone, but that the usual quantity of uncovered seed should be sown with the seed so covered, so as to give the Turnips two chances against the fly instead of one.



* The three seeds which came up were most likely incompletely covered with the wax, so that this covering appears to prevent germination even when the seeds are watered.

The expense of covering the seed would be very small, and machinery would I believe easily accomplish it. All that would be required is a sieve consisting of a tin plate with holes only large enough to allow one seed to pass through at a time, the holes being made at ¼ inch or ½ inch distant from each other (like those of some culinary utensils), so that the seed in falling into the flour or other powder would be prevented from sticking together.

I have made but one experiment in this mode of growing Turnip seed, the results of which are contained in the table written down daily as the seed came up, and any further details seem unnecessary so far as showing the practicability of the proposed remedy; the question that remains is whether it can be made available for agricultural purposes. But should it be so, it will perhaps require some years of experience before such a process could be brought to perfection. If the process can be varied so as to produce any required result—and it seems quite probable that it can—it may be expected that it will prove to have the desired effect of obviating the ravages of the Turnip fly, but whether it would do so always is a question for some years of experience to answer.

In the experiment a circumstance occurred which shows that covering the seed might be expected to prove useful in very dry weather; previous to watering No. 2 on the 4th of July (five weeks after the seeds had been sown) all the plants had died for want of water except two, which had recently come up. Would it not secure a good plant of Mangel Wurzel and Beet? which are occasionally very thin in consequence of the seed having germinated in very dry weather and dying of drought.*

* In going through the experiment shown by the table, I did not in watering the seed imitate a heavy rain, as I was not then aware of the importance of the seed all coming up at once; only sufficient water was given so as to keep the surface of the earth moist, rather imitating that weather which is most dangerous to the Turnip.

NOTES UPON SHEEP FEEDING.

By Charles W. Hamilton.

There must always be great difference of opinion as to the decision of judges at our cattle shows, and I should be the last to bring forward a mere opinion on the subject; but I think that the discussion of one case upon which I have taken pains to obtain accurate information may be of some assistance in future to the Royal Dublin Society in classifying, and their judges in deciding prizes.

In the schedule advertised for the 25th November, Class 26 was for a pen of long-wool wethers, not exceeding 22 months old: Class 30, a pen of short-woolled wethers, not exceeding 34 months old.

Now, if this means anything, it means that a short-woolled sheep takes a year longer than a long-woolled sheep to fatten. As a short-woolled sheep breeder I must protest against this inference, and express my belief (in support of which I am in a position to produce facts) that the distinction is founded merely in gnorance on the part of the Committee of Agriculture.

The only entries in class 30 were:—Three Southdown wethers, born in 1856, and bred by Hugh M. Tuite, Esq., of Sanna; three Shropshire Down wethers, born in 1857, and bred by me. Mine were, therefore, a year younger; and as the instructions to the judges were to base their decisions on "the amount and quality of flesh, lightness of offal, and early maturity," I thought it desirable to compare the lots more fully than the judges who awarded the first prize to Mr. Tuite's wethers had the opportunity of doing, and so test their judgment. The lots were each weighed in the show-yard, and were exactly equal, viz., 4¼ cwt., or averaging 12 stones live-fasted weight each. They were bought by the same butcher and at the same price, viz., 3*l.* each. The dead weights were:—

Mr. Tuite's three sheep—Carcasses	.. ..	315 lbs.
,, ,, Inside fat	.. ..	48 ,,
My own three sheep—Carcasses	.. ..	302 ,,
,, ,, Inside fat	.. ..	43 ,,

So that, by feeding a year more, his produced only 4 lbs. 5 ozs. of meat, 1 lb. 10 ozs. inside fat, or about 3*s.* more of value on each sheep, an amount, as in this case, not sufficient to affect the selling price.

Now let us compare the cost of feeding. Mr. Tuite's were fed in his park at Sanna until about six weeks before the show, when they were put on Rape, but received no bought food whatever. Mine were kept upon pasture not above a-third of the value of his park at Sanna until July 25, when I began to give them as much oilcake as they could eat, and latterly half a pint of Oats per diem. They were, therefore, for four months strongly forced. On the 1st May, 1858, I valued my hoggets at 2*l.*; they immediately afterwards gave me each 7 lbs. of wool, which sold for 11*s.*, and they then stood me for fattening at 29*s.* Although the Southdowns, which I imported from Sussex, used to give me only from 3½ to 5 lbs. of wool, yet as I have no proof of what Mr. Tuite's sheep clipped, I will assume that his sheep in their hogget year were started shorn at the same value, 29*s.* I will also assume what I believe to be pretty nearly the value of the year's average keep of such a sheep as 20*s.*, and at this rate the cost of Mr. Tuite's sheep will have been 2*l.* 19*s.* My three wethers consumed in addition to the same charge, for

Pasturage	.. ..	£0 11 3
15 st. 1 lb. oilcake	.. ..	1 0 9
2st. 2 lbs. Oats	.. ..	0 2 0
Each	.. ..	1 14 0
Cost at May	.. ..	1 9 0
		£3 3 0

I therefore got in 19 months within 4*s.* of what Mr. Tuite got in 30 months, and if early maturity, the mother of the tripping sixpence, is the farmer's great object, I think I have put my sheep in the first place, though the judges put them in the second.

I am now going to tread upon more delicate ground,

* I have very recently been favoured with some conversation with Mr. Curtis, who was disposed to believe the remedy might be successful, but said that experience only could prove whether it would be applicable or not. He informed me that the blast drill was expected to prove very successful; but my remedy would be much less expensive, and in very dry weather both this and the blast drill might perhaps be required to secure a good plant of Turnips in some localities.

though I fully feel how dangerous it is to draw conclusions from isolated experiments; but as the value of artificial food is a matter of such vital importance to the farmers, I think it may be useful to throw out the following observations, in order to lead others who have more opportunity to multiply and reason upon them more extensively.

The experience of the practical farmer has long ago convinced him that bought food does not pay for itself in the increase of beef and mutton, but that a manifest improvement takes place in pastures where sheep have been fed with oilcake.

The natural question for the farmer to ask is, how much of the cost of the oilcake consumed am I to charge to the animal, and how much to the pasture? In my own case how much of the 1*l.* 3*s.* 9*d.* paid for oilcake and Oats, with the whole of which I have debited my sheep, ought really to have gone to the debit of the pastures, as compared with the top-dressing of guano which Mr. Horsfall proves to be so remunerative?

If we refer to the able article of Messrs. Lawes and Gilbert, "On the composition of some of the animals fed and slaughtered as human food," (proceedings of the Royal Society, June 17, 1858) we find the following conclusion from an extensive series of accurate experiments and analyses:—

"Taking first the proportion of each class of constituents stored up for 100 of the same consumed, it is concluded that in the case of sheep liberally fed on a mixed diet of dry and succulent food, the increase of the animals will, perhaps, generally carry off less than 5 per cent. of the consumed mineral matter. Somewhere about 5 per cent. (varying according to the proportion in the food) of the consumed nitrogenous compound substance in the food; and lastly, that for every 100 of collective dry substance of food consumed there will be in sheep about 8 or 9 parts of dry matter in increase stored up."

It is clear from this that out of my 1*l.* 2*s.* 9*d.* worth of food the sheep have had value in only 2*s.* 9*d.* What has become of the rest?

The average daily consumption of my wethers was, of

Oilcake	1½ lb.
Oats	½ lb.

In the first experiment which was made to determine the amount and manurial value of the solid excrement, one of the wethers was compared with a ewe, same age and size, which had never had any feed but Grass; they were kept for 48 hours on a clean floor, and the dung was carefully collected as often as possible; it weighed for the

Wether	6 lbs. 7 oz., or 3 lbs. 3½ oz. per diem.
Ewe	5 lbs. 15 oz., or 2 lbs. 15½ oz. per diem.

The same sheep were subsequently placed in a sheep shed, the bottom of which consisted of spars, which enabled me to collect all the urine which passed during 24 hours; it was collected frequently and carefully guarded against evaporation, and the amount measured in a glass vessel graduated for water (I do not make the slight correction on account of the specific gravity) was, for the

Wether	2 lbs. 11½ oz.
Ewe	3 lbs. 11 oz.

This, as well as other matters referred to, were all analysed by Professor Apjohn, so far as to ascertain their manurial value, and from his report I subjoin the following extract:—"In wether's dung:

Water	58.96
Dry matter	41.04
	100.00

"The dry matter is composed of

Ash	Organic matter	66.50
	Insoluble in muriatic acid	15.30
	Soluble in do.	18.20
		100.00

"The 18.20 parts soluble in muriatic acid contained 3.72 phosphoric acid = 8.07 phosphate of lime. 100 parts of the dry dung gave 2.49 ammonia. Extracting the money value of this from the phosphate of lime and ammonia, I find that—

One ton when dried is worth	£2 12 2
Do. before being dried	1 1 7

"Dung of the ewe—

Water	70.29
Dry matter	29.71
	100

"The dry matter gave—

Organic matter		65 9.1
Ash	Insoluble in muriatic acid	19.72
	Soluble in muriatic acid	14.3.7
		100

In the 14.37 parts of ash were found 2.44 phosphoric acid = 5.31 phosphate of lime. 100 parts of the dung gave 2.51 ammonia. Money value—

Dry dung	£2 7 7
Dung before drying	0 14 1"

The wether's dung was, therefore (allowing for the quantity rendered), valued at 1*s.* ½*d.*, and the ewe's 8½*d.* per cwt. The monthly value of the dung would be, in the wether 10*d.*, ewe 6*d.*

The analysis of the urine was as follows:—

"Urine of ewe, sp. grav. 1.009; it was strongly acidulated with muriatic acid, and then evaporated down, until upon cooling it was converted into a solid; the residuum was weighed and found to constitute 2.609 per cent. of the weight of the urine; such amount of it (2.609 lbs.) was then burnt with soda lime, and in this way it was found to yield 0.542 lbs. of ammonia = 0.390 nitrogen. Urine of wether, sp. grav. 1.057; treated in the same way it gave a much larger residuum, consisting of 25.43 per cent. of the urine, and this, when burnt with soda lime, gave 9.165 lbs. ammonia = 7.45 nitrogen. The comparison gives—

	sp. gr.	ammonia.	nitrogen.
Urine of ewe	1.009	0.542	0.390
Urine of wether	1.057	9.165	7.486

We then arrive at this conclusion, that the urine of the wether yields very nearly 17 times as much ammonia as that of the ewe, and that using the ammonia as a measure, the value of the urine of the wether is to that of the best Peruvian guano in the ratio of 9 to 17."

The greater quantity rendered in this case by the ewe reduces the ratio from 17 to 12, and the value of the urine would be per month, wether, 4*s.*; ewe, 4*d.*; so that we have in ammonia and phosphate of lime a differential value in favour of the wether fed on oilcake of 4*s.* 1*d.* a month, or 16*s.* 4*d.* on the whole out of the 1*l.* 2*s.* 9*d.* to give to the improvement of the land, and the corrected statement of the cost of the two lots going into the showyard would be—

Mr. Tuite's	£2 19 0
Mine	0 7 8

The 9 per cent. stored up in the carcase, according to Messrs. Lawes and Gilbert, will be valued at 2*s.* 6*d.* The exudation (which is probably added to the value of the sheep track) would, according to Barrall, as quoted by Mr. Horsfall, be 1*s.* worth, leaving only 3*s.* unaccounted for, and this is probably owing to the exorbitant price of oilcake. At 9*l.* 10*s.* per ton, my account would have balanced.

I have thus reasoned upon the manurial value of the excretions to show that though the feeding of my sheep cost 4*s.* more than the feeding of Mr. Tuite's, yet that my gain was three times that sum in improvement of the land. I have my money to turn again, instead of losing a year's interest upon it, and besides, all the chances that the use of next summer's Grass may give in; besides, I shall shear a hogget while he shears a two-year old sheep.

Let us now take the differential weights. I have in 19 months produced nearly as much mutton as Mr. Tuite has in 31 months, or, as the quantities were, as 105 to 101 nearly, and his increase was 3st. 6 lb. per month unassisted. I may assume that mine, increasing at somewhat of the same rate, 3st. 6 lb. on the gross, owed 40 lb. in 10 lb. per month to the extra feeding equal at the rate—

They sold for	£1 4 0
But the extra feed cost	1 2 9½
Money gained	£0 1 2½

unless we admit what the judges ignored, the great tendency to early maturity in the Shropshire Downs.

I have made these calculations on the results of the first experiments, which I believe to have been the best, as between a sheep wholly Grass-fed and one fed on oilcake, &c.; as, however, the result seemed so unexpected, I made a second trial between two wethers that had been fed equally on oilcake and Oats, dropping the artificial food with one (No. 2), and feeding him on Grass alone for three days previous to his being shut up for 24 hours. The urine alone was analysed, and contained per lb. avoirdupoise—

	Sp. grav.	Grs. ammonia.	Grs. phos. lime.
No. 1	1.0428	252.80	3.92
No. 2	1.0057	33.12	1.76

The per-centage difference is not the same as in the other case, but three days was probably not sufficient to prevent the previous highly nitrogenised feeding from having told on the secretions of No. 2, but the experiment is the more satisfactory as showing how completely the value of the excretion follows the quality of the food.

I had the oilcake also carefully analysed by Dr. Apjohn, and though he reports it as being only of average quality, it gave of

Water	12.80
Protein compound	26.18
Oil	10.50
Starch, lignin, &c.	43.42
Ash	7.10
	100

And the ash gave per 100 parts { 5.088 ammonia. / 4.710 phosphate of lime;

so that 1 lb. of the oilcake produced of

	Grs.
Ammonia	355.60
Phosphate of lime	329.70

Oats, according to Boussingault, would contain—

	Grs.
Ammonia	154.00
Phosphate of lime	229.60

Now let us look to the quantities No. 1 consumed during the 24 hours he was shut up: 2 lb. oilcake, ½ lb. Oats; this was more than the average, as he eat little else in confinement. The consumption was, therefore, of

	Grs.
Ammonia	788.20
Phosphate of lime	774.20

The liquid excretion, taking the quantity as the same voided in the first experiment, would be of

	Grs.
Ammonia	687.30
Phosphate of lime	10.70

The difference in the ammonia is very nearly what would be accounted for in the quantity stored on, according to Mr. Gilbert, together with the small proportion voided in the dung. It is clear, from the former experiment, that the phosphate of lime can be equally well accounted for in the solid excrement, though in this instance the urine alone was analysed as a check upon the former remarkable result, which I think it has fully confirmed, and the quantities were not again measured. I am not chemist enough to do more than point out the general bearings of Dr. Apjohn's analysis, but I think I have sufficiently opened the question for others more qualified to take it up, and shown the practical farmer that where he gives artificial food to his sheep, out of every 10*l.* expended at least 8*l.* 15*s.* goes to the improvement of the land.

This will further lead to the conclusion that where the manure made by cattle fed in the house is carefully guarded from waste, the value of one class of manure may be much greater than that of another, and there is no doubt that its application to crops should be regulated accordingly, for there is great waste in giving to crops more than a sufficiency of manure, whatever that may be. *Abridged from Agricultural Review.*

A WEST OF ENGLAND SHORT-HORN HERD.

Readers of the "Journal" of the Royal Agricultural Society, are no doubt familiar with Mr. Bowly's practical and highly suggestive essay on the management of a breeding herd. In regard to Mr. Bowly's management, with the condition of his stock, we propose adding a word or two, as the result of a personal inspection. When in the West country a week or two back, we gladly embraced the opportunity of paying our respects to the short-horns at Siddington House. From Cirencester—noted for its Roman antiquities of the past and its Agricultural College of the present—a pleasant walk of two miles brings you to Siddington, a widely-scattered hamlet, or series of hamlets, on the Thames and Severn Canal. Some nice specimens of water meadows lie in either direction, and of an amount of Grass produced, with which in this county we are unfamiliar. From the richness of the aspect, and the forwardness of the Grass, with the extent of old turf, it is evident that this herd possesses natural advantages far ahead of those of Colonel Towneley, or Mr. Douglas of Athelstaneford. We first called at the furthest of the two homesteads, as the chief ornament of the herd was located here. We refer to that celebrated bull, the Fourth Duke of Oxford (11,387), now nearly nine years old, and still in active service. Good management has more to do with such results than good fortune. His morning's grooming, and morning hours' exercise, under the care of two men—with a sufficiency of good, but not over-stimulating food—reveal the secret of his success. As a bull, you rarely see his like, and he has given a distinctive character to his progeny, which is delightful to witness. All of them, with only one exception, possesses the fine fore hand and capital chine of the sire. Their colour was of the orthodox character, and with only one white that we noticed of his getting—the prevailing colour being red and white. He has a superior quality of flesh and hair, capital thighs, and a real masculine head. A couple of cows and calves formed the rest of the live stock at this farm, and we therefore gave some attention to the current agricultural operations. The drillman was getting Hornsby's General Purpose Drill into gearing for planting Mangels, in the arrangement of which there are several peculiarities. Mr. Bowly grows two ridges of Mangels and two of Swedes alternately, and has for several years found it to answer well—his Swede crops being free from fly, and decidedly superior. The Mangels were receiving most liberal treatment, and the dung was of that fine rich soapy consistency, which delights the eye of the practical farmer and tells of animals fed on something better than the diet of Mr. Mechi's far-famed Irish steers. The burned ashes, also, drilled with the various root crops, is a special peculiarity of the Cotswold district—at least as far as quantity is concerned. The Mangel seed had been sprouted on the barn floor, to a quarter of an inch, or thereby; and we confess that we should have felt timid in sowing seed so freely sprouted, in such dry weather. Among our stiff clays of the midland counties it would inevitably go back, unless sufficient moisture followed; but being put in along with the ashes referred to, there is little doubt but sufficient dampness would be attracted from the surrounding soil.

The other farm, where the bulk of the breeding stock is kept, has a suite of large, old-fashioned buildings, but withal of a comfortable appearance. Nothing seems neglected that might conduce to the well-being of the animals; and the presence of an experienced cowman, who has been 19 years in his employer's service, speaks well both for master and man. Although good blood is evidently valued at Siddington, and although 80 or 90 guinea prices for calves may not have been uncommon, yet the fact is evidently not overlooked, that good food, and plenty of it, is as essential to the perfection of first class as of third rate stock. On looking into the mealhouse, the walls of which were decorated with Chester, Yeovil, and Taunton prize cards, we noticed the usual presence of Barley-meal and bran, Lentils, Indian corn, &c.

"A List of Pedigrees of the Siddington Herd" has been got up by the proprietor—the numbers referring to "Coates's Herd Book." This greatly facilitates an inspection of the stock, and forms a pleasant reminiscence for future reference. We find three of the cows going back as far as 1844, 1846, and 1847 respectively, for the date of birth; so that they exceed the usual age of their sex—and may justly be styled female patriarchs of their species. But though of such age, we found the red cow, Garland, twelve years old, quite as sprightly to the eye as a five-year old with a second calf by her side. So true is it that well bred stock, of any kind, retains its natural appearance and energy much longer than mongrels of the same breed. Juliet, on the other hand, which was one year her senior, being low in flesh, showed much greater comparative age. But whenever she bids her owner good bye, she will not die seriously in debt, for we observed some splendid stock among her descendants, such as Caprice, Fanny, Elsie, and Fairstar, of the female sex, and a pair of twin bull calves, Romulus and Remus, got by

the Fourth Duke, and presented by her in October last. We also heard of a calf of hers realising the high price already named—being the calf presented prior to the Roman brethren. To our taste, Orphan, a rich roan six years old cow, carried off the palm among her competitors. Her genealogy traces back twelve or thirteen generations, and she evidently possesses some of the choicest short-horn blood in her veins. When three years and a half old, she produced White Rose, (appropriately named), by Siddington Duke; and Oriel, a red-and-white bull, by the Fourth Duke, followed in January, 1858. Elsie and Miss Christmas, although a little deficient in size, gained the Cirencester honours, when the county show was last held there; while Peace and Ruby, both very handsome, stood in the like position at Gloucester. Songstress was fully as showy a two-year-old heifer as any of her compeers, and we anticipate again meeting her on Warwick race-course, in the course of next month. Emerald, Isis, or Warbler, all over one year old, will no doubt also make an appearance there; but the cowman is probably wide of the mark in his idea that "they will stand a good chance in the local or special division, since that is not so generally known." They will stand a good chance anywhere; but it will probably appear that the competition will be almost, if not altogether, as close in the one department as in the other. He is capitally up to showing off a young bull or heifer, and giving the head an aristocratic bearing; but we do think that his philosophy in the other respect is at fault. Leaving the lawn surrounding the handsome villa residence of Mr. Bowly, we found half-a-dozen promising yearlings grazing in a field of rich pasture at the back. Of these, Comet, a very handsome light roan, bore the palm; but if asked to compare these with the earlier specimens of the herd, we could not think that the increase in quality had been great. And is it not generally so? Do we not find a point in the breeding of all our domestic animals, at which a hidden principle says "Hitherto shalt thou go, and no farther?" Probably the fact of females being put to bull at an earlier age, as well as the more stimulating character of the food, and the unbounded desire for early precocity, have much to do in producing such a state of things. But no unalterable rules appear to be here laid down, as regards the age at which they should bring the first calf. And an experiment of a most interesting character is also being tried in another direction. We refer to a nice roan two-year-old heifer, in which many of the best points of the short-horn race are well developed. Respecting her, a note says that the granddam was a cow bought in for a nurse, without any peculiar character or breed—and to ascertain how soon all the characteristics of a pure short-horn may be produced by breeding in and in on the pure side. We cannot conceal the fact that the Cotswold district needs, to the fullest extent, all the good blood, and also the example, which can be brought to bear upon it, as far as the beasts are concerned. They have an unrivalled breed of sheep, which is cultivated with spirit and judgment; but in the other department there is some headway to make up. We saw but this day three-year old steers, bred and reared in Gloucestershire, that would barely realize 12*l.* per head; and we would respectfully ask "Where can the margin for profit come from, in rearing such animals as these?" *T. Bowick, abridged from the Leamington Courier.*

TILLAGE *VERSUS* GRAZING.

[The following is an abridgment of a paper read by Mr. Levinge before the Dublin Society. It has reference more especially to the lighter class of soils on Irish uplands.]

VIEWING the position of Ireland generally as an agricultural country, the question as to the most profitable mode of managing the land, whether as regards the interest of the landowner, the tenant-farmer, or the community, must always be one of deep interest and importance.

Looking forward even to a gradual diminution of the labouring population, the most profitable mode of managing the land may naturally be expected to become of deep interest to all who are anxious for the welfare of this country, but especially to those who are engaged in agriculture.

As a general rule, the rich grazing lands of Ireland return such a large and quick profit, by being devoted to pasture, or to pasture and meadow, that few will be tempted to convert them to the purposes of tillage, even under the most improved system of cultivation.

On such land cattle can be kept over the winter on hay, and fattened by the end of July, when a fresh lot can be put in and finished off by November.

A great deal of this kind of land, if converted to tillage, would not produce as heavy, or heavier crops than the light arable lands of the country, cultivated under a suitable rotation of crops.

There is not, therefore, any necessity on the present occasion to dwell on the management of this class of soils, where a large number of labourers are not required at present, and where the rents, profits, and gross produce are, perhaps, higher than could be expected under the best and most improved system of tillage that we are at present acquainted with.

There is another class of soils, chiefly stiff or wet clays, which produce excellent corn, Pulse, and green crops, but which are not so well suited to fattening stock when in pasture as the soils before mentioned. The herbage is coarser, yet it will rear and support a very large quantity of store cattle and even strong sheep. It is probable that this class of land would be found on a calculation to produce as high rents and profits, and an equal amount of gross produce, whether in tillage or in Grass.

There are other classes of soils to which particular attention is requested, viz., those on the light lands, which are usually stated to be and are well adapted to form sheep pastures, and which are, at the same time, useful for dairy purposes, and for rearing young cattle.

It is now proposed to show that these light land soils generally would be far more productive and remunerative if kept in tillage than in Grass.

In the first place, suppose a farm of 200 Irish acres of light land, as already described in pasture, of an average quality.

Such land will generally carry a sheep to the acre all the year round. There would be as much Grass besides as would enable the occupier to keep a dairy of, say, 10 cows, and a stock of, say, 30 two-year-old cattle, together with 30 yearlings, to replace the two-year-olds sold off annually to the feeder.

But the farmer would also be able to cultivate in tillage a small portion of the farm, to supply oatmeal and vegetables for the use of his family.

The expenses of management and the returns under this system may be briefly stated as follows:—

DEBTOR.			
Rent of 200 acres, at 25*s.*	£250	0	0
Herd's wages yearly	30	0	0
Labour, at 1*l.* per week	52	0	0
Poor rate, county cess, &c.	15	0	0
Sundries, as medicine for stock, &c.	13	0	0
Total	£360	0	0
CREDITOR.			
Profit on 200 sheep, at 1*l.* per annum	£200	0	0
Do. on 30 two-year-old cattle, at 6*l.*	180	0	0
Do. on 10 dairy cows, at 6*l.*	60	0	0
Do. on 10 calves reared at 3*l.*	30	0	0
Sundries, as pigs, vegetables, &c, for use of the farmer's family, say	30	0	0
Total	£500	0	0
Deduct Debtor	360	0	0
Balance	£140	0	0

This system shows a balance to the farmer of 140*l.* per annum.

On the other hand—supposing the same land to be cultivated under a five-course rotation of crops, viz:—40 acres of Turnip or other green crops, including a small portion of Potatoes; 40 acres in Oats after green crops; 40 do. in first year's Grass; 40 do. in second year's Grass; 40 do. in Oats, after second year's Grass; and that the landowner perfected all the building accommodation requisite for conducting this system—the farmer could feed in the stalls on Turnips 120 head of cattle every winter, and the Grass, besides supplying hay, would rear 40 young cattle, and afford keep for a dairy of 10 cows. There would be 55 acres of Oats to sell, besides Rye-grass seed and other sundries.

The result may be stated, generally, as follows:—

DEBTOR.			
The rent for 200 acres might be 2*l.* per annum	£400	0	0
Steward's wages yearly, say	70	0	0
Labour, at 6*l.* per week	312	0	0
Blacksmith per annum	30	0	0
Carpenter work per annum	15	0	0
Harness maker per annum	15	0	0
Extra manure, as guano	80	0	0
Poor rate, county cess, &c.,	15	0	0
Seeds	10	0	0
Sundries, say	48	0	0
Total	£1000	0	0
CREDITOR.			
40 acres of Turnips, &c., at 15*l.* profit	£600	0	0
55 acres of Oats, to sell at 8*l.*	440	0	0
40 store cattle, increased in value, at 7*l.*	280	0	0
10 dairy cows' produce, at 6*l.*	60	0	0
10 calves produce, at 3*l.*	30	0	0
Rye-grass seed sold, say	20	0	0
Pigs, poultry, &c.	30	0	0
Total	£1460	0	0
Deduct Debtor	1000	0	0
Balance	£460	0	0

This system shows a balance to the farmer of 460*l.* per annum.

It will be seen at once that although the prices mentioned in this latter case are moderate, there is an immense difference in the amount of rent, profit, and gross produce in favour of the system of tillage as compared with Grass; and it will be observed that the sufficient accuracy of the old system of valuing land for tillage purposes—viz., allowing one-third of the gross produce for rent, one-third for expenses of management, and the other third for the farmer's profit—is borne out by the last calculation.

It appears that on this light class of land the rent might be one-third, that the gross produce and the farmer's profit would be two-thirds higher under a system of tillage than under a grazing system.

No calculation has been made in either case as to interest of capital or losses; these would be applicable to both systems, and the omission does not affect the general result. Neither is it intended that the above estimates should refer to farms of 200 acres only—they would apply equally to farms of 5 or 1000 acres.

The foregoing remarks have been made partly from practical personal experience and general observation, and in part from inquiry as to the general average capability of soils such as have been described.

[We insert the above extract from a paper which raised considerable discussion when read, in the hope that it may excite discussion here. It is plain however that such rough estimates of expenditure and returns as are here given are decisive of nothing. How does Mr. Levinge make 15*l.* per annum profit off his Turnips?]

ON FEEDING HORSES AND CATTLE.

IT is a practice now with a very few scientific farmers—that is, farmers who never pay their rents from their farms—to chop all the hay, straw, green Clover, Vetches, &c., for both horses and cattle, and also to steam all the roots and chopped dry food. These men will tell you, in their speeches and writings, that all the straw must be made to go through the intestines of the animal to convert it into manure, and that to use any portion for bedding to make the animal comfortable, is a great waste and inconsistent with good farming. Some of them will tell you there is far more nutriment in Wheat straw than in Oat straw. These men keep their pigs, cattle, and sheep, in pens with open boarded floors, and tanks beneath, to receive the liquid and solid manure made by the animals. Thus the poor animals are pent up in rooms just large enough to turn themselves round, without bedding, and in the constant smell of their own excrement. Now these very same men will make speeches before Improvement Commissioners of town and villages, or at meetings called to enforce the laws relative to the abatement of nuisances, and in their speeches use very forcible and very proper language in showing the bad effects of the effluvia rising from stagnant ditches, dung hills, and pettys, and yet in their speeches at agricultural dinners, they will not admit of any deleterious effluvia arising from the tanks under the animals, on open boarded floors. The inconsistency of these men is strange.

The above has reference to the practice of a few amateur farmers scattered over Britain, some of them exceedingly useful as experimental farmers, but dangerous as guides to young farmers, or any just commencing farming for the first time.

With the great body of our best practical farmers, men who have good common sense notions, both on the cultivation of land and the feeding of stock, the above mode of lodging of cattle is never adopted. But these men are in many cases ruled by the tyrant fashion both in the house and farm yard (for this tyrants put his nose into the affairs of nearly all men). Many of them cut all the hay and straw, and steam all the food given to horses, but not to other stock. Others again cut and steam all the food given to all descriptions of live stock, except sheep. It is to this class of farmers I wish to state my own experience on the subject, and recommend them to seriously think on it, and to try experiment without swallowing or condemning all, or any part, of what either I or any other person may say on this important subject.

For 10 years before I commenced farming I was sometimes my father's ploughman, and had horses under my care, and sometimes had the care of dairy cows and young stock. I thus got a knowledge of feeding and taking care of stock in the old way of never cutting or steaming anything. My father had an excellent manservant who took a great delight in teaching young lads to work, and I learned more from him as to the proper treatment of live stock than from even my father's instructions.

In 1813 I commenced farming, and became a sort of enthusiast in my profession, and went to see the practice of many men noted for good farmers. Draining, deeper ploughing, Scotch ploughs, drilling root crops, cultivating Mangels and Swedes, chopping and steaming food for cattle in winter, and soiling in summer, was then becoming the order of the day with all improving farmers; the high prices caused by the ruinous and debt-creating French war had given a great stimulus to farming. So far as to the cultivation of land, introducing new crops, and new implements, I followed the new practice, and intended to do the same in feeding stock. But the question of cash interfered dreadfully with my plans, as it required considerable outlay in providing conveniences and apparatus for carrying all things out properly in horse and cattle feeding. However, for a few years, I partially adopted the newest fashions in feeding, and paid very considerable attention to the result. I also paid very considerable attention, in this matter, to the practice of other farmers who carried it out more fully, and the result and conclusion I arrived at was that the old system, properly carried out, was more profitable, when all the various contingencies of risk, expense, and care attending the new system were considered. Within the last few years many farmers have told me they have found no benefit in the steaming and chopping, except in steaming Potatoes. This exactly agrees with my ideas. I feel certain that in another half century the system will be given up as a general one.

When there is plenty of straw, soiling in summer is profitable under most circumstances. Horses at work should always be soiled; and now the best farmers raise early green food in spring, which to horses and milk stock is exceedingly valuable. One cwt. of green food in April and May is worth double the quantity when the summer is more advanced.

It will be seen that my objection to the present system of feeding stock, at least to all kinds of stock, the natural food of which is Grass, is to cutting hay and straw, and to steaming these and Turnips. My objections are many.

It is not the way Nature intended them to be fed. It is more expensive, and requires more capital—as more buildings are required, machinery to purchase, fix up, and keep in repair, more than double the cost of labour in preparing the food, serving it out, and in keeping everything sweet and clean. Without great attention to cleanliness, the whole concern is horrible

to come near. There is the cost of coals. Requires a better class of servants both for honesty, diligence, and intelligence. If this is not the case, the master must never leave the farm-yard without suffering loss either in waste or negligence. More waste may be made undetected by the master than by the natural mode of feeding. Bad hay and straw may be made more palatable, but not more nutritious, by cutting and steaming. Cattle can swallow their food quicker when steamed, but this is no advantage, except to very old animals. Food is far better masticated with the animal as he takes it. It gets better digested except the animal is unwell, and its digestive organs out of order. An animal kept on dry food must have a sufficiency of water; but I have never known an animal take harm by taking water when kept on hay and straw uncut.

By a great many farmers a far greater stress is laid on making bad hay palatable, than on the importance of making good hay at hay harvest.

Mr. Mechi, and many other steamers and choppers, honestly admit that the only profit in cattle feeding, on an arable farm, is the manure they make. But by the natural system of feeding, profit can be, and is made, exclusive of the manure. We often hear Scotch farming extolled, but chopping and steaming is little practised there, and yet the system would be of more use there than here, as the farmers are bad hay makers.

I shall now give what I consider the most profitable mode of keeping stock, and a few of the most successful farmers of my acquaintance always followed the system, and men who never closed their eyes to any thing really profitable in practice, but men of foresight and of calculation, not taking for granted everything new as an improvement.

I shall first state how I should keep horses in full work on a farm. When I was a farmer, or at least after I had been a farmer five or six years, I fed them on hay uncut, crushed Oats, crushed Beans and bran, with a few raw Potatoes or Swedes every day. The Oats, Beans, and bran mixed in equal proportions. The quantity according to the work required to be done.

The first thing, at 5 in the morning, a feed of the mixture and a little hay were given while they and the stable were cleaned. Then gave what water they would drink, and a little more hay. Not cram the catches full. At 7 o'clock go to work till 12 o'clock. As soon as they are in the stable give a few quarts of water, a feed of the mixture, and a little hay. After the ploughman has got dinner more water and hay. At 2 o'clock go to work till 6 at ordinary times, and at very particularly busy times later; often at seed time till 7 or 8 o'clock. When in the stable again a little water and hay till supper is over with the men. Then well cleaned. After this give what water they will take, then a feed of the mixture, and a few handfuls of sliced Swedes, Potatoes, or Carrots. Give a bed of from 12 to 18 inches deep of straw. If it be thought they will eat a little more hay give it, but not otherwise. It is very common to cram the catches the last thing, which is a very bad practice, as it is a waste of hay, and tempts the horse to keep nibbling at it instead of lying down and taking his rest. As I have before said, the quantity of Oats, Beans, and bran to be given should be regulated according to the labour to be performed. They should be fed so as to keep them firm in flesh and in full vigour, but not fat. In the summer Clover or Vetches to be given instead of hay; and if the labour be not very severe no corn will be required. Colts and horses out of work are best out at pasture. Never give medicine either when turned out to Grass or when taken up from it, or at any other time except when actually unwell. Some horsekeepers are everlastingly physicking them, particularly gentlemen's grooms and coachmen.

For horned cattle the following plan of feeding I practised and considered the best after trying many experiments.

Say first, for dairy cows, for three months before calving, and say from Nov. 1st—food, Oat or Barley straw, uncut, and common Turnips sliced twice a day; and water twice a day. If the straw be good and well got, give no more than they will eat up; but if coarse, or ill-got, give plenty to run through, to pick the best, and the rest go for bedding. Never give Wheat straw except fodder be very scarce. Give sufficient quantity of Turnips to keep them in good condition up to the time of calving. Immediately after calving give her all her first beestings, while warm from the udder, except what is given to the calf; and let the cow lick the calf while in beesting. If left to herself in a field, she will lick it till it can stand and suck her. Licking does both good. After calving, never cram a cow with better food for several days. Give her oatmeal gruel once, and give her water blood heat. If she has had a very hard or difficult time of calving, give some good honest ale in her gruel. After a few days, let her food be hay, uncut Swedes or Mangels sliced, twice a day, with crushed Oats or Beans amongst the sliced roots. I should prefer the Swedes and Mangels mixed. Cows in full milk must be well fed, but never so much food given at one time as to pall the appetite. If, when food is given, the animal does not begin to eat with a relish, take it from her till the next feeding time. The food and water must be given at regular stated hours every day. The same with milking. Cows are animals of habit, and do not like change. They have not to work, but they have to manufacture milk and butter. For this they require many hours a day of undisturbed quietness from the feeder or any other person. When water is given let them have it out of doors, and let them remain out at a quarter or half an hour each time, according to the state of the weather. Raise green food as early as possible in the spring, of either very rich pasture, Rye, winter Vetches, Clover, or Rape. Do not turn them out in the night till June comes in, and take them up when October comes in. Dairy cows are excellent chemists, and very correct thermometers. In their milk secretions they very soon test the quality of food given, and the temperature of the air surrounding them. They ought never to be out in the night when there is the least frost, or in cold wet nights.

Young stock never require hay at any season. Turnips and straw in the winter, and pasture in the summer, is sufficient; but, in winter and spring have Turnips sufficient to keep them in condition and thriving. They should never be allowed to sink in condition at any season. When there are frosty nights and hot sunny days in the autumn and spring, they should, by all means, be kept indoors in the night, but most particularly in low situations, on the banks of rivers and brooks. It is the extremes of temperature, in such weather, between the cold of the morning and the heat at noon, which, in my opinion, gives the quarter evil, and many other complaints. The difference is often from 30 to 40 degrees in six hours.

It is always disagreeable to find fault, but I am going to find fault with the Cheshire farmers, because with them so much depends on the dairy. In a ramble through the county, in April, I was surprised to see so many dairy stocks out in the fields, and out of condition, and on farms where I had considered the occupiers good farmers. I saw several stocks which I had seen in September last, and if they had been in the same condition in April as in September, they would have been worth 3*l*. a head more. They would, I think, have produced 1 cwt. more cheese this season each.

They are also "penny wise and pound foolish" in hay making, particularly in making hay for a dairy stock. After Grass has been cut 24 hours it should never be allowed to get wet with either dew or rain if possible. It should be cocked up in the night in the best weather. None of their wives would allow her tea to lie in the dew several nights, saying nothing of rain, before she used it.

But the Cheshire farmers are not the only ones who are faulty in this respect. There are but too many in this county who sadly neglect this branch of rural economy. However, in a district of 10 miles round Bury, you will generally find this article in perfection, so far as the weather will allow, and they have far more rain there than in most parts of Lancashire or Cheshire. Yet, for milking purposes, their hay is worth from 10*s*. to 20*s*. per ton more than a very great quantity made under more favourable circumstances. By the mode of making hay there, it is, in fine weather, made in one day less time, and in bad weather in perhaps two or three days, or a week less time, and often on this account at less expense. *W. Rothwell in the Warrington Guardian of May* 28.

Home Correspondence.

Sheep v. *Cattle.*—I have met with the following passage on this subject in a lecture by Mr. Bond before the Ipswich Agricultural Society, which I think deserves your attention:—I believe that in this and the adjoining counties we have erred by too expensive a system of bullock grazing; that we have bought our lean beasts at too dear a rate for profit; that under altered circumstances we have too much adhered to old past fattening principles, and we have too much adhered, to exploded and expensive methods of manure making to the partial neglect of cattle and sheep rearing. More may be profitably done in lamb rearing on heavy land, and more may be done in sheep-breeding and fattening on light and mixed soils. Let me relate the practice of a gentleman in West Suffolk, and the result of his long experience. I visited him last month, and was pleased with the first-class condition of the lambs and the healthy and satisfactory appearance of the ewes, as well as with the large number of sheep kept to so small a portion of land. He farms 260 acres of very good friable loam clay land, of which only about 25 are pasture, and by gradually increasing his stock yearly, as lamb rearing has promised to pay, he now annually keeps from 20 to 21 scores of ewes, and each year the fall of lambs has been large: this year exceeding 30 to the score. Of course, the wonder is how so many are maintained, and the supposition follows that much artificial food must be used. The annexed account of expenses and returns is copied from his balance-sheet:—

1857.

Expenditure.	£	s.	d.
Artificial food ..	66	0	0
Outkeep in summer	55	0	0
Annual loss of 10 ewes and the amount expended for 60 shearling ewes after deducting the value of crones	70	0	0
Amount realised for farm produce consumed by flock ..	535	18	0
	726	18	0

1857.

Receipts.	£	s.	d.
400 lambs, at 24*s*. ..	480	0	0
100 lambs, at 22*s*. ..	110	0	0
18 lambs, at 14*s*. ..	12	12	0
3 fat	5	2	0
Wool	119	4	0
	726	18	0

The value of the manure is placed against the labour. Now, how is this vast practical result annually accomplished? How are the sheep fed? The secret is, the yard and straw system. The ewes are mainly fed during the winter months upon fresh-threshed Barley or Oat-straw placed in binns, and some cut into chaff, with which is admixed Trefoil husk when procurable, and, previous to lambing, some miller's offal is given. They have also about four Scotch cart-loads of Turnips each day. For the spring feed, Rye and Italian Rye-grass are grown upon the fallow shift, previous to sowing for the Turnip crop. Cabbages are also grown, and the Clover layers usually fed. Of course, it would appear probable that the whole farm must be given up to sheep husbandry. Now such is not the case; and upon April 8, 1859, I recorded the present position of the farm as to its cropping. It is as follows:—

Acres.	
49	Wheat
55	Barley
24	Peas and Barley
12	White Clover fed in spring, and to be saved for seed
16	Red Clover fed in spring, and to be saved for seed
15½	Italian Rye-grass, ditto ditto
10½	Sainfoin, to be reserved for hay
1	Cabbage seed
2	Oats, after Cabbages
41	Fallow — 16 acres for Mangel Wurzel; 8 acres Italian Rye-grass, after feeding for Swedes, Turnips, or Kohl Rabi; 6 acres winter Oats, ditto ditto; 8 acres Rye ditto ditto; 3 acres Tares, ditto for Cabbages
25	pasture
8	waste
259	acres.

Thus 130 acres are with corn, 44½ for seeds, 10½ for mowing; consequently, nothing more than the fallow shift is specially set apart for the flock, and although the Clovers and Italian Rye-grass intended for seeding are first fed, it is not at all clear to me, at the present market price of seeds, that such a course is not much more paying than growing Wheat at 20*s*. per coomb. I am convinced it is more profitable, and ample food is thus provided for spring consumption for the lambs. Thus, straw and a few roots, with slight artificial additions, suffice for the first three months after tupping; then Cabbages are added as lambing proceeds, and then the Italian Rye-grass and Clovers. After the lambs are sold, the ewes are put out to keepfor two or three months, and after the Italian Rye-grass has seeded, Rape is sown, upon which the ewes are fed during tupping. *M. S.*

Nettles.—As there is nothing better than actual experience to guide us successfully through difficulties, I desire to lay before your readers a plan which has effectually answered in destroying Nettles in old Grass land. I ought first perhaps to state that on one of the estates under my care where there is much valuable old Grass near a monastic ruin which was very much overrun with Nettles, cutting with the scythe at various seasons had been applied yearly for a long period, and yet at each returning spring another and apparently a larger crop of Nettles appeared. The owner of the property then determined to pull them up by hand, and this laborious operation was diligently carried into effect. The result has been most satisfactory, as when these Nettles were pulled up two years ago there is scarcely a single plant now to be seen, and their place is occupied by fine herbage. In several of the plots so cleared the Nettles stood as closely as a corn crop. The persons pulling them up took care to get as much of the "running root" as possible, and the work being done after the ground was well soaked with rain, most of the roots were got up; although this work seemed rather costly at first, a great part has been destroyed, and as no more annual cuttings will be required, it will in the end no doubt prove also the cheaper plan. *H. J. Turner, Richmond, Yorkshire.*

Societies.

ROYAL AGRICULTURAL OF ENGLAND.

At a weekly Council held Wednesday, June 29, Col. Challoner, Trustee, in the chair, the names of candidates for election were read.

Dr. Voelcker submitted to the Council the following analysis of a Mangel Wurzel which was grown in 1857, and has been kept for nearly two years in an apparently sound condition:—

Detailed Composition.

	In natural state.	Calculated dry.
Water	92.25 ..	..
*Soluble proteine compounds ..	.97 ..	12.51
Sugar, gum, and pectin	4.08 ..	52.67
Soluble inorganic salts	1.23 ..	15.87
†Insoluble proteine compounds ..	.16 ..	2.06
Woody fibre (cellulose)	1.18 ..	15.22
Insoluble mineral matter	.13 ..	1.67
	100.00	100.00
*Containing nitrogen	.155 ..	2.00
†Containing nitrogen	.025 ..	.32
Total nitrogen	.18 ..	2.32

The amount of water in this root it will be noticed is as large as in common White Turnips. It is much more considerable than in good Mangels, in which there is an average of 88 to 89 per cent. of water. The proportion of mineral matter in this root is larger than in good roots. Nearly the whole of the mineral matter consists of soluble salts, and more than one half of these was found to be chloride of sodium or common salt. It appears, therefore, that salt was largely employed in growing the Mangels of which a specimen was analysed. The proportion of nitrogen in the root is also larger than the average. The legitimate conclusion which may be

deduced from the preceding results and observations is that this Mangel, although apparently sound, has undergone some changes which have deteriorated its feeding qualities. Dr. Voelcker's report explained in what manner this deterioration may have taken place, and remarked that it must be a matter of considerable interest to practical men to know how long Mangels can be stored without suffering injury, and what time of the year stored roots had acquired their maximum feeding properties. He also suggested that the large quantity of salt in the Mangel Wurzel which kept apparently sound for two years may have had its share in preserving it for so long a time, and expressed the opinion that the character of the manures used for growing Mangels had a material influence on their composition, a circumstance which naturally must affect their keeping qualities. Dr. Voelcker stated in conclusion—"In the absence of precise information and experiments, I abstain from further speculating on this subject, and allude to it mainly for the purpose of showing how desirable it is that the whole question should be thoroughly investigated. This can alone be done properly by a systematic series of practical and analytical experiments."

Mr. Fisher Hobbs suggested that in publishing Dr. Voelcker's report in a condensed form it should be stated that the analysis was of one small root only, which had been preserved two years, and that it could hardly be taken as a fair average example of the keeping properties of a whole crop.

A communication was read by Mr. Charles Fulbrook, of Dallington, Hurst Green, giving the result of his investigations of the laws governing the wet and dry seasons occasionally experienced in this country. On the motion of Lord Feversham, seconded by the Hon. Wm. Cavendish, this communication was referred to the Journal Committee, and the thanks of the Council were ordered to be conveyed to Mr. Fulbrook.

M. Tisserand, Inspector of the Imperial Farms in France, transmitted to the Council programmes of the special international competition of reaping machines, to take place at the Imperial Farm of Fouilleuse, near St. Cloud, between July 20th and 25th next. The certificates of entry to be sent by exhibitors to his Excellency the Minister of Agriculture, 78 *bis*, Rue de Varennes, Paris, on or before July 10th.

The following communications were also received from Mr. Chas. W. Hamilton, a Schedule of Queries issued by the Royal Dublin Society respecting the Condition of Farm Labourers; the Journal of the Agricultural Society of Alger, and the Journal of the Central Agricultural Society of Belgium, for all of which the thanks of the Council were ordered.

Mr. H. Tucker, from the New York States Agricultural Society, presented a letter deputing him to attend on behalf of that Society at the Warwick Show. The Chairman assured Mr. Tucker that the officers of the Society would afford him every facility in their power to enable him to inspect the trials and general exhibition.

The Council then adjourned to the Monthly Council on July 6th.

Reviews.

Agricultural Essays: No 1. *Soils.* By Thomas Baldwin, Lecturer on Agriculture, Albert Model Farm, Glasnevin. W. Robertson, 23, Upper Sackville Street, Dublin.

This pamphlet contains chapters on the general constitution of soils—on their classification—on clay, light, and peaty soils—and on the physical properties of soils. We presume that the work itself is the first of a series of textbooks from which the students of Agriculture at the Albert Institution are taught. If the others of the series equal this, the agricultural instruction given there is sound and good. Mr. Baldwin's essay on soils gives the results of both chemical research and practical experience on the several topics specified. We have the results of analyses and the theories of chemists founded on them, as well as descriptions of the best farm management on various soils specified. Not only Liebig, Johnston, Voelcker, Thaer, Gasparin, and Way, with other men of science, are quoted, but Low, Stephens, Tanner, Vallentine, and other writers on the practice of agriculture. We give the following passage as an illustration of the author's style when discussing the practical division of his subject.

"The general management of strong and sandy soils is totally different. While the clays are habitually wet, sandy soils are naturally dry. If a sandy soil rests on a porous subsoil, no amount of rain can injure it. Indeed, from its porosity and want of attraction for water, there is great difficulty in raising good crops on such a soil. When under a green fallow crop, for instance, the moisture dissipates so readily that every precaution must be taken to retain a sufficiency of it. The raised drill, by exposing a large surface to the air, is, in many cases, unsuited to the lighter class of soils, especially in dry districts. And accordingly we find green crops grown on the unraised or flat drill system in such situations.

"'In moist climates,' says Vallentine, 'raised drills leave a kind of water-course or channel between the artificial heights, which act most conveniently for carrying the superfluous moisture away, and not only that, but the ridges are left, in the intervals of dry weather, in a proper state for working the land, for the horse and hand-hoeing, as the case may be. Where, as in Ireland and Scotland, 40 inches of rain fall in a year, with a much less average temperature than in the south and east of England, raised drills are decidedly preferable, as the flat surface would usually be a puddle; but the case is completely reversed in the dry districts of England just named, where little more than 20 inches of rain fall annually. The summer heat is also greater, and, of course, the evaporation is far more than in Scotland or Ireland.'

"One of the chief causes of the many failures that occur in Turnip-growing on light land is the undue exposure of the soil immediately before the time of sowing. In the case of clays, every time we expose a fresh surface we may expect some beneficial result, unless the ground is wet; but every time a fresh surface is turned up on light land in May or June, the Turnip-sowing season, we must expect an injurious effect by an escape of moisture. A clay soil retains sufficient moisture in the driest season; but a light soil has no such retentive force.

"The practice of autumn cleaning, which is now coming into use, is well adapted to light-land farming. We would recommend the cleaning and ploughing of light land in autumn, and agree with Mr. Vallentine, that 'all soils which have a tendency to lose moisture quickly should be prepared, as far as possible, for the Turnip crop in autumn.' If light land is cleaned in autumn it has time to acquire consistency and moisture before spring, and only requires a grubbing and harrowing before drilling at seed time, by which the 'natural sap' is retained in the soil. If any circumstance should prevent autumn cleaning, the next best thing is to prepare it as early as possible in spring, before the heat advances so as to dissipate the moisture 'Some years ago the practice was general, and, in some districts, is still continued, of ploughing Turnip-fallows, even clean land, three or four times in spring and summer, for the purpose of pulverising the soil and making it work well; such a practice on light soils is quite against the economy of labour and the chance of securing a Turnip-braird, as it dissipates the moisture of the soil.' We think it right to quote here the opinion of an able writer—Mr. Clare Sewell Read—who, in his report of Norfolk farming, says: 'When these light lands of Norfolk are clean, autumn cultivation does more harm than good. They are sufficiently friable by nature, and do not want to be finely pulverised or constantly stirred, as the heavy winter rains then wash more of the manure into the porous subsoil; so that the best farmers (where the land is clean) give a good winter ploughing before Christmas, and thus grow better Turnips than when the soil has been well cultivated after harvest."—*J. R. A. S. England*, vol. xix., p. 283.

"The time and mode of applying manure should be materially influenced by the character of the soil. There can be no doubt but that by ploughing-in the farm-yard manure, in its recent or fresh state, we add most fertility to the soil. To add to this there is, in the case of clays, the additional advantage, that in decaying the manure tends to open up or render the soil more loose and open. It would seem, however, that this explanation is opposed to applying recent manure to light soils; nevertheless, if applied in autumn, no injury can result; on the contrary, it is found to increase the retentive power of the soil for moisture. There is one important consideration, however, in connexion with this subject; namely, is the soil capable of retaining the elements of fertility as they are liberated in the decaying manure? Clay soils have this power, and the practice may with safety be carried out on those soils; but owing to the facility with which water descends through sandy or light soils, and the little power they possess of taking up the elements which it dissolves out of the manure, we apprehend the practice of autumn-manuring is not a safe one on the lighter soils.

"When, and in what state, then, should farm-yard manure be applied to light Turnip lands? In answering this question, we may review its bearings:—1st, by allowing manure to ferment, it diminishes in value; 2nd, if applied in a recent state in autumn and ploughed in, it is liable to be washed out of the soil; 3rd, if applied in a recent state at or before seed-sowing, it renders the soil still lighter and more liable to part with its moisture; and, besides, it will not have become available for the crops in due time. Under these circumstances, it is evident that the best system is to form the manure into heaps, in which, while it decomposes, loss of any of the liberated elements is prevented; and to apply it under the seed in a pretty well decomposed state.

"In treating of manures, we will show that farm-yard manure can be prevented from undergoing any depreciation in value, by carefully covering it with earth, peat mould, &c., in the heap. Manure should be covered in as fast as it is applied to light land, and the seed sown immediately after; for on light soils, the difference of a few hours, and certainly of a day or two, may materially affect a green crop. The manure, too, suffers injury by exposure; but far more injury is done during a hot day by loss of moisture than by loss of the elements of the manure itself. 'The system practised by many, of dunging a great breadth of Turnip land at once, is highly injudicious on the average of seasons, when it is desirable to retain moisture in the soil; and those who follow such a course fail more generally than they succeed in getting a regular braird. The land may lose by injudicious exposure, with a rough surface, more moisture in a few days than it can obtain from an ordinary fall of rain.' Let the careless farmers reflect on this, and guard against the evil which it involves—an evil of serious moment.

"On the after culture of green crops, on light lands, there is some difference of opinion. One agriculturist tells us, that we cannot too frequently employ the hoe and other implements, as the more finely pulverised the soil, the more moisture it absorbs. That this is true, there cannot be a doubt. The gardener always recognises the fact, and is incessantly hoeing and digging, &c. The farmer, too, is aware of it. But if it gives a greater surface for the absorption of moisture, it gives the same increased surface for the evaporation of moisture. We think clay lands cannot be too frequently stirred, as they absorb freely and part with moisture tardily. The case is different, however, with light soils, which should be only hoed just as frequently as is necessary to keep down weeds, and retain the surface open for the admission of air. The frequent horse-hoeings of high drills must prove injurious on light soils, especially when the implement "cuts down the sides of the drills so much as to leave but a narrow strip of earth containing the plants, exposed to the sun's heat on all sides." Hand and horse implements must, therefore, be used with caution and discretion on light soils.

"The crops best adapted to light soils are bulbous-rooted plants such as Turnips, Carrots, &c.; also Oats, Barley, and Rye. These follow each other in a regular course of cropping, suited to this class of soils. Light soils will not bear such frequent cropping with grains as clays; nor will they all grow remunerative crops of Wheat and Beans, unless improved in texture by the addition of clay or marl, or some others means. They do not yield the more valuable farm plants, but produce abundant returns of the more useful crops. Laying these soils down to Grass is a frequent means of renovating them. As the roots of the Grasses accumulate and decay in the soil, they add to it organic matter, in which sandy soils are naturally deficient; this, besides directly increasing fertility, also gives them a degree of consistency which enhances their value. It is for this reason that the five course (two years' Grass) is better adapted to light soils than the four course (one year's Grass). If very light, a six, seven, or eight years' course may be followed, by which the land is in Grass three, four, or five years.

"By sheep folding on Turnips, many light land districts have been greatly improved; in some cases, the rental has been increased fourfold. We have examples of this improvement on the most extensive scale in Norfolk and other parts of England. The sheep consolidate the ground, and enrich it by their excrements. It has been truly remarked, that 'Turnips are the sheet-anchor of light land cultivation.' Thousands of acres of light lands, now yielding remunerating crops, would have remained in a worthless state, had it not been for the introduction of Turnip husbandry, with all its various accompaniments of artificial manures, &c., which have in no small degree contributed to enhance the value of this class of soils.

"Among the other means of improving sandy soils may be mentioned: first, green manuring, which adds organic matter to them. This consists in growing Rape, Turnips, Buckwheat, or any other crop with an abundance of green foliage, and ploughing them in where they grow before forming their seeds; second, applying farm-yard manure, which is also abundant in organic matter; third, peat, which also abounds in organic matter, and which should be made into a compost; fourth, claying; fifth, marling, which is similar in practice and principle to claying. As the first three and the last of these processes belong to the subject of manures, we shall notice in this place only the fourth, namely, claying. According to our definition of manures, claying may be considered under that head; nevertheless, it is so peculiar to sandy soils that we may introduce it here. Clay has been applied to land in three ways: first, in its natural state, as dug from under, or found on the surface of the ground; second, in a calcined or burnt state; third, in a compost with lime or other substances. It is of the first we are now to speak.

"The quantity of clay per acre necessary to be applied in order to correct the bad qualities of a sandy soil depends: first, on the quality of the clay; second, on the character of the soil to be improved. If the clay be calcareous, it will resemble marl in its effects. If it contains much alumina, it will impart the more firmness and retentiveness to the soil; and when the clay contains ochrey or ferruginous matter (as many clays do), it will only injure and poison the soil. Clays of a white sandy nature are bad, but those of a pliable, and more or less unctuous character, and of a solid consistency, are always safe.

"It takes 134 cubic yards to cover an acre an inch deep. This may not appear at first a heavy application; but when it is considered that the ordinary depth of cultivation does not exceed 8 or 10 inches, it will at once be seen that this is a very heavy dose. The usual application may be said to vary from 58 to 120 cart-loads, the average being about 80.

"Autumn or early winter is the usual time for applying clay to sandy or light soils, as the weather is then likely to pulverise the clay and incorporate it with the soil."

Miscellaneous.

Value of the Earth-worm.—The common earth-worm, though apt to be despised and trodden on, is really a useful creature in its way. Mr. Knapp describes it as

the natural manurer of the soil, consuming on the surface the softer parts of decayed vegetable matters, and conveying downwards the more woody fibres, which there moulder and fertilize. They perforate the earth in all directions, thus rendering it permeable by air and water, both indispensable to vegetable life. According to Mr. Darwin's mode of expression, they gave a kind of under tillage to the land, performing the same below ground that the spade does above for the garden, and the plough for arable soil. It is, in consequence, chiefly of the natural operations of worms that fields which have been overspread with lime, burnt marl, or cinders, become in process of time covered by a finely divided soil, fitted for the support of vegetation. This result, though usually attributed by farmers to the "working down" of these materials, is really due to the action of earth-worms, as may be seen in the innumerable *casts* of which the initial soil consists. These are obviously produced by the digestive proceedings of the worms, which take into their intestinal canal a large quantity of the soil in which they feed and burrow, and then reject it in the form of the so-called casts. "In this manner," says Mr. Darwin, "a field, manured with marl, has been covered, in the course of 80 years, with a bed of earth averaging 13 inches in thickness." *From the Encyclopædia Britannica—New Edition.*

Calendar of Operations.

JUNE.

Border of the Fens: *June* 27.—Large quantities of hay and Clover have been secured in good condition; the crop of hay is generally abundant, and therefore has been cut early; Clover is not so heavy. Mangels now become an important item in the labour account; we see people among them everywhere, hoeing, weeding, and singling out. Turnips have also made their appearance, and the weather seems to have been as favourable to the green crops as it has been to everything else; even the winter Beans have improved where they have been suffered to stand after the extreme blight which affected them just after flowering. Many have been ploughed up. The spring Beans appear to have escaped, the flower has "set" well, and the pods are forming in a healthy state. The disease is attributed to sharp spring frosts succeeding an unusually mild winter. The same cause injured the Oats; we observed one very early crop to be quite prostrated and cut off. The owner put a "Coleman's" through it and sowed the field again; the experiment has succeeded, for a finer plant could not be, and though rather late it bids fair to yield largely. The Wheat everywhere looks well, a full standing crop; Barley is equally luxuriant and promises to be very fine; Potatoes grow well, and the country has a very beautiful appearance. The graziers have had so much Grass as to feel quite an "embarras de richesses," consequently store stock has been in great demand and very dear; trade is however now more quiet, and fat stock has somewhat declined; no doubt the markets may be expected to be well supplied throughout this autumn, and with abundant food for the stock, sheep and cattle will be offered in prime condition. Pigs even partook of the animation in the trade, and even now are about twice the value as stores that they were in the autumn. Labourers are well employed at 12*s.* per week. *J. W., Peterborough.*

West Sussex: *June* 28.—After a continuance of very dry weather we are now likely to get a little rain, and it appears to be much wanted here, although a few miles farther off there has been more than was agreeable for haymaking. But here we have had no rain since the end of last month, and food is getting much dried up; ponds and wells are getting low. But with a falling barometer and some rain having fallen during the past night we soon hope to see a change. Wheat looks well with us, quite up to the average, and perhaps we shall have harvest earlier than even last year, for ears in May were more plentiful than they have been for a long time. Barley, where forwardly sown, is good; but the later sown has showed signs lately of suffering from the excessive dryness, but may yet recover. The same may be said of Oats. Peas are a good crop, and a week or two more will make them fit to cut. The hay crop has not been a very heavy one, but has been nearly all secured in good order, so that there is no fear of want in the coming winter. Mangel generally looks well, though with its usual blanks; but these will disappear as they grow. Swedes with some are forward and good, others have lost them by fly, and some not sown so early have lain in the ground waiting for a shower. There are not many Turnips yet sown, as if put in early they get too ripe and dry before they are wanted. There will be time to put in Turnips after the Peas, and they do well, and so does the spring corn after them; and it seems a better system than Wheat, Peas, Wheat, especially as prices now rule. Our corn market is not very heavily supplied; but as everywhere else trade is done quietly, just enough for passing wants — this applies especially to Wheat — for all other corn the sale is ready, and the price good. Our stock market increases very fast; within the past few years it has doubled, but the demand keeps pace with it, and perhaps we have at Chichester as good a market for everything as any in the south of England, out of London. On Wednesday last we had our annual wool fair, and owing to prices having been put a little too high, business was checked for a time, but eventually a good many lots were bought at considerably higher prices. The Duke of Richmond's sold at 1*s.* 9*d.* per lb.; the average for the best South Down flocks was 1*s.* 6*d.*; for ewe wool, 1*s.* 4½*d.* to 1*s.* 5*d.*, which is far above the market quotations. But still in the present unsettled state of continental affairs, there is a good deal of hesitation about dealing largely. All feel it to be more than usually a speculation. Work is well advanced, and hands are plentiful, but none to spare, and had not the season been good so that work was kept in advance all through, such would not be the case; there is no doubt that harvest hands will run short if the militia are still up, but it would be well if our rulers could get our suspected friends bound over to keep the peace for six weeks to come, and then we could keep a look-out for them again. *G. S.*

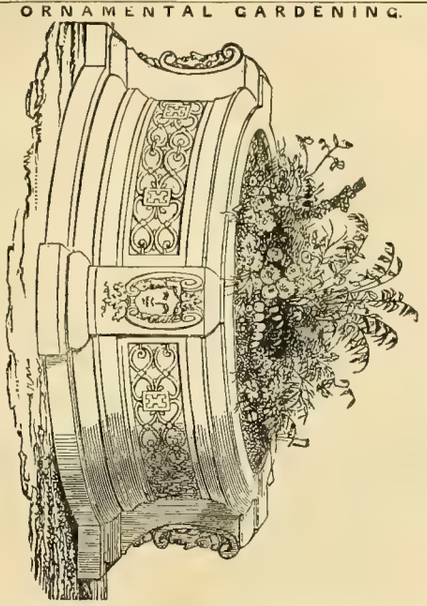
Notices to Correspondents.

Blacks in Wheat: *Cefn-cottim.* You cannot explain these blacks on any chemical theory. They are not Wheat (*i. e.*, starch, gluten, &c.) *minus* water owing to the dry season! They are the effects of a true vegetable organism with a life, habits, and structure proper to itself, the germ of which enters the young plant and ripens and developes in the ripening ear generally to the entire destruction of the part attacked.

Nettles: *An Old Subscriber* says:—"Seeing an article in your paper of the 20th on 'Nettles,' I would state that 2 years ago my farm abounded with them. I applied agricultural salt, only one dressing, and at various periods of the year, and scarcely a Nettle is now to be seen. Of course it kills the Grass for the time, but it is notwithstanding that, the simplest and most effectual cure that in my opinion could be adopted."

THE FINEST FRUITS IN ENGLAND.—The Nobility, Clergy, Gentry, and Gardeners are respectfully informed that HAYTHORN'S HEXAGON and CHISWICK GARDEN NETS are guaranteed to protect all kinds of Fruit from Birds, Wasps, Flies, &c. The Nets are used in most gardens, and are recommended by all the principal gardeners. For testimonials, patterns, and prices (gratis, and free by post), please direct to Mr. Haythorn, Nottingham.

ORNAMENTAL GARDENING.



AUSTIN, SEELEY, and CO. respectfully invite the attention of the Nobility and Gentry to their large FLOWER BASINS or "PORTE-FLEURS," of which they have now some handsome designs, from 7 to 20 feet diameter.

Fountains of every description, Vases and Figures for Gardens, and Ornamental Balustrading.—370 to 375, Euston Road.

RICK AND HAY CLOTHS, HAY ROPES second-hand MARQUEES and TENTS; NETTING, new and old, for protecting fruit trees; SCAFFOLD CORD, SACK TYERS, BLIND and SASH LINES, Patent Circinate NOSEBAGS, &c., &c.

J. Morison, Manufacturer, 25, Norton Folgate, N.E.

TO FARMERS.—If you wish to PRESERVE YOUR HAY, go to Davis & Co., 64, West Smithfield, E.C., where you may purchase a RICK CLOTH of the best material and workmanship, cheaper than at any house in London.

HAY HARVEST. NICHOLSON'S PATENT HAYMAKER, to which was awarded the First Prize of the Royal Agricultural Society of England at the last contested trial.

The celebrated STAMFORD HORSE RAKE has lately been much improved, and has obtained 26 Prizes at competitive trials.

MOWING AND REAPING MACHINES are performing their work most satisfactorily, and fully justify public expectation, cutting about 10 acres per day, at a cost of 9*d.* per acre.

Orders for the above machines should be given at once to Richmond & Chandler, Salford, Manchester.

Branch Establishment, South John Street, Liverpool.

WHY NOT PRESERVE YOUR HAY?

BENJAMIN EDGINGTON respectfully informs the Nobility and Gentry that they can be supplied on the best terms with RICK CLOTHS, with Poles complete.

Early application should be made for SECOND-HAND RICK CLOTHS. MARQUEES, TENTS, and FLAGS. A great variety of Marquees and Tents may be seen erected on the premises. A quantity of SECOND-HAND TENTS from the Crimea at a greatly reduced price. An Illustrated Catalogue sent post free.

West End Establishment, 32, Charing Cross, S.W.

Benjamin Edgington, 2, Duke Street, London Bridge, S.E.

WEDLAKE AND DENDY, Agricultural Engineers, Hornchurch, Essex.

HAY MACHINES.

Small size, No. 1 .. £10 | Large size, No. 1 .. £12
Large size, No. 2 .. .. .. £13

These Machines are free from small and delicate parts, and can be easily understood by a farm labourer. They have gained several prizes at the Royal Agricultural Society's Shows.

HORSE RAKES.

No. 1 .. .. £6 10*s.* | No. 2 .. .. £7 10*s.*

Wedlake & Dendy's Horse Rakes are made on the tubular principle, combining great strength and lightness. Free to all the principal Railway Stations.

Wedlake & Dendy, Union Foundry, Hornchurch, Essex.

Stand No. 30.—ROYAL AGRICULTURAL SOCIETY'S SHOW AT WARWICK, July, 1859.

B. SAMUELSON,

AGRICULTURAL ENGINEER AND MACHINIST,

76, CANNON STREET, WEST, LONDON; WORKS—BANBURY, OXON;

INVITES the atttention of Agriculturists to his

IMPROVED DOUBLE-ACTION HAY-MAKER (Price 13*l.* 13*s.*).

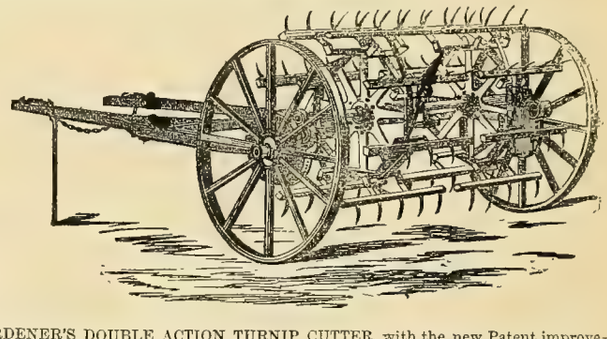
This Machine is guaranteed against breakages in fair usage.

SAMUELSON'S IMPROVED HORSE RAKES.

No. 3, extreme width, 7 feet 6 ins. £7 10 0
No. 4, " " 8 feet 6 ins. 8 0 0
Steeled Teeth, 10*s.* extra.

SAMUELSON'S PATENT BRITANNIA SELF-RAKING REAPING MACHINE, with side delivery in sheaf (requires no rakers or gatherers), price 32*l.* 10*s.* at the Works, Banbury; 34*l.* in London.

SAMUELSON'S BOYD'S PATENT LAWN MOWING AND ROLLING MACHINES. The only Machine that will cut WET as well as dry Grass. Price, from 4*l.* 17*s.* 6*d.* to 13*l.* 13*s.*



SAMUELSON'S PATENT PRIZE GARDENER'S DOUBLE ACTION TURNIP CUTTER, with the new Patent improvement for separating the dirt and small chippings from the clean and useful pieces.

SAMUELSON'S PRIZE CHAFF CUTTERS, MILLS, CAKE BREAKERS, and food-preparing Implements of every description; also HARROWS, FIELD ROLLERS, CLOD CRUSHERS, &c.

The above may be inspected at Mr. Samuelson's stand, No. 30, at the Warwick Show, where CATALOGUES and PRICE LISTS may be obtained, or at the

Works, Banbury, Oxon; London Warehouse, 76, Cannon Street, West.

ADDRESS: THE MANAGERS, ST. PANCRAS IRONWORKS.

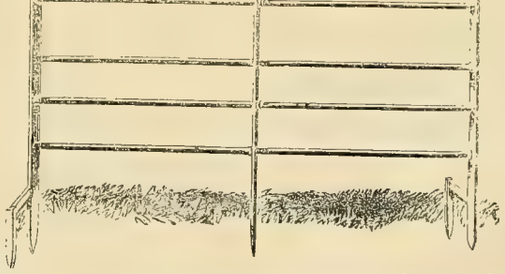
The St. Pancras Iron Works are opposite the OLD St. PANCRAS CHURCH,
OLD St. PANCRAS ROAD, LONDON.

IRON COLLAR BAR HURDLES.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

Obtained the Silver Medal of the Royal Agricultural Society.

ST. PANCRAS IRON WORKS,



OLD ST. PANCRAS ROAD, LONDON.

The improvement by this Patent consists in the COLLARS on the Bars which, being placed on alternate sides of the centre upright bar, keep it in its position, confine the bars to short bearings, prevent their being strained, and give more than double strength and rigidity to the HURDLE.

PROFESSOR VARNELL'S MANGERS AND STABLE FITTINGS.

BEE-HIVES.

PRIZE MEDAL AWARDED TO G. N. & SONS, FOR BEE-HIVES AND HONEY, AT THE PARIS EXPOSITION OF 1855.

NEIGHBOUR'S IMPROVED COTTAGE BEE-HIVE, as originally introduced by GEORGE NEIGHBOUR & SONS, with all the recent improvements, glasses, and thermometer, price 35s., securely packed for the country.



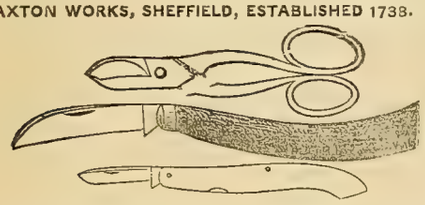
This unique Hive has met with universal commendation, and may be worked with safety, humanity, and profit by the most timid; its arrangements are so perfect that the Honey may be taken at any time of the gathering season without at all injuring the Bees.

Early applications addressed to GEORGE NEIGHBOUR & SONS, 127, High Holborn, or 149, Regent Street, London, will receive prompt attention.

Their newly-arranged CATALOGUE of other Improved Hives with Drawings and Prices, sent on receipt of two stamps.

AGENTS.—Liverpool: JAMES CUTHBERT, 12, Clayton Square.
Manchester: W. WILSON, 50, King Street.
Birmingham: J. H. COTTRELL, 15, Bull Ring.
Dublin: J. EDMONDSON & Co., 61, Dame Street.

PAXTON WORKS, SHEFFIELD, ESTABLISHED 1738.

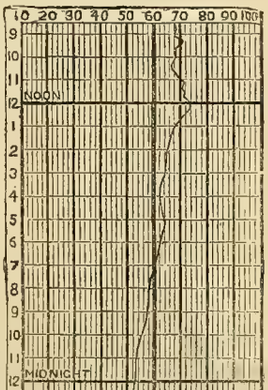


SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.—Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

TO HORTICULTURISTS.

GAUNTLETT'S PATENT CHRONOMETRICAL THERMOMETER.

This instrument, which combines an eight-day clock of the best English make showing time, with a newly-patented Thermometer, wherein glass and quicksilver are dispensed with, writes down the temperature of the atmosphere on a slip of paper, and when placed in a Hothouse, Forcing House, or Conservatory, &c., supplies a valuable record of the temperature, with all its variations, showing the time when any change took place, and how long such change continued.



The above slip (reduced in size) exhibits the temperature of the Royal Agricultural Society's show yard at Chester, July 22, 1858, written off by one of these instruments, to which was awarded the Society's SILVER MEDAL.

This is the only instrument that registers temperature continuously and writes it down, and no horticulturist should be without it.

Orders received by W. H. GAUNTLET, Middlesbro' on-Tees.

MAPPIN'S PRUNING KNIVES IN EVERY VARIETY.
WARRANTED GOOD BY THE MAKERS.



MAPPIN BROTHERS, Queen's Cutlery Works Sheffield; and 67 and 68, King William Street, London.

MAPPIN'S "SHILLING" RAZORS Shave well for Twelve Months without Grinding.
MAPPIN'S 2s. RAZORS Shave well for Three Years.
MAPPIN'S 3s. RAZORS (suitable for Hard or soft Beards,) Shave well for Ten Years.

MAPPIN'S SUPERIOR TABLE-KNIVES maintain their unrivalled Superiority—handles cannot possibly become loose—the blades are all of the very first quality, being their own Sheffield manufacture.

	Tble. Kns.	Dst. Kns.	Carvers.
Ivory 3¾ in. Handle, balanced,	20s. p. doz. ;	16s. p. doz. ;	6s. p. pair
Do. 4 in. do. ..	25s. ,,	18s. ,,	9s. ,,

MAPPIN'S SILVER-PLATED DESSERT KNIVES and FORKS, in Mahogany Cases.

12 Pairs Knives and Forks, Ivory Handles, in Case.. 80s.
12 Do. Pearl Handles, do. .. 130s.
12 Do. Silver-Plated Handles, do. .. 80s.

MAPPIN'S ELECTRO-SILVER PLATE.—MAPPIN BROTHERS, Manufacturers by Special Appointment to the Queen, are the only Sheffield makers who supply the consumers in London. Their LONDON SHOW ROOMS, 67 and 68, King William Street, London Bridge, contain by far the largest STOCK of ELECTRO-SILVER PLATE in the World, which is transmitted direct from their Manufactory, Queen's Cutlery Works, Sheffield.

	Fiddle Pattern.	Double Thread.	King's Pattern.
12 Table Forks, best quality	£1 16 0	£2 14 0	£3 0
12 Table Spoons, best quality	1 16 0	2 14 0	3 0
12 Dessert Forks, best quality	1 7 0	2 0 0	2 4
12 Dessert Spoons, best quality	1 7 0	2 0 0	2 4
12 Tea Spoons, best quality	0 16 0	1 4 0	1 7

Messrs. MAPPIN BROTHERS respectfully invite buyers to inspect their unprecedented display, which, for beauty of design, exquisite workmanship, and novelty, stands unrivalled. Their illustrated Catalogue, which is continually receiving addition of New Designs, sent per post on receipt of 12 stamps.—MAPPIN BROTHERS, 67 and 68, King William Street, London Bridge; Manufactory, Queen's Cutlery Works, Sheffield.

GARDEN WATERING ENGINES, PAIL MACHINES, CONSERVATORY PUMPS, and GREENHOUSE SYRINGES, with all the latest improvements, manufactured only by the Patentee,
RICHARD READ, 35, REGENT CIRCUS, PICCADILLY, LONDON.
☞ Descriptions with drawings sent post free.

TO WATER GARDENS in the easiest way is by the BEST FLEXIBLE TUBE. Brass Hand Branches, Roses and Jets, Garden Engines, Syringes, &c.—Apply for Illustrated Price Lists to JAMES SHEATH & Co., the Patent Gutta Percha and India Rubber Factory, 35, Old Street Road, E.C.
N.B. The best articles only manufactured.

FRUIT TREES, RIPE STRAWBERRIES, ETC.

TANNED NETTING for Protecting the above from Frost, Blight, Birds, &c.; 2 yards wide, 3d. per yard, or 100 yards, 20s. Can be had in any quantity of EATON & DELLER, 6 and 7, Crooked Lane, London Bridge.

TANNED NETTING, at REDUCED PRICES.—200 square yards, 10s.; 500 yards, 24s. A quantity of good second-hand Rick Cloth for Sale, Cheap, all sizes, and only once used. Samples sent free.—Address FREDERICK EDGINGTON, Thomas Street, Old Kent Road, London, S.E.

TANNED NETTING, for the Protection of Fruit Trees from Frost, Blight, and Birds; also, for the security of fresh sown seeds, at 1d. per square yard; 200 yards, 12s.; 500 yards, 25s.; Scrim Canvas, for wall fruit; Garden Mats.—At EDGINGTON & Co's., Rick Cloth, Tent, and Waterproof Cloth Manufacturers, 17, Smithfield Bars, City, & Old Kent Rd.

GARDEN, RABBIT, CRICKET, SHEEP, AND FISHING NETS, at J. ALLEN'S, 7, Chenies Place, St. Pancras Road, London, N.W.

RATS.—A novel Stratagem for taking RATS by wholesale, without POISON or TRAPS.—Ships, Mills, Barns, Stables, Granaries, Warehouses, Farmsteads, and Houses, cleared at one sweep. Any person can by this method clear the entire premises of every rat, however numerous they may be, in one single night. Printed directions how to entice and secure the whole lot alive, but powerless to move, sent free by post for 12 penny stamps.—Direct FISHER & SON, Publishers, Kingsland, London, N.E. Established 1847.
NOTICE.—Appended to this invaluable Publication will be found, sixty Graziers', Farmers', and Agricultural Recipes, the rarest in the world.

PRIZE MEDAL, PARIS EXHIBITION 1855.

METCALFE, BINGLEY, AND CO.'S New Pattern and Penetrating Tooth Brushes, Penetrating unbleached Hair Brushes, Improved Flesh and Clothes Brushes, and genuine Smyrna Sponges; and every description of Brush, Comb, and Perfumery for the Toilet. The Tooth Brushes search thoroughly between the divisions of the Teeth and clean them most effectually—the hairs never come loose. M., B, and Co. are sole makers of the Oatmeal and Camphor and Orris Root Soaps—sold in Tablets (bearing their names and address) at 6d. each; of METCALFE'S celebrated Alkaline Tooth Powder, 2s. per box; and of the New Bouquets.—Sole Establishment, 130B and 131, Oxford St., 2d and 3d doors west from Holles St., London.

HANDSOME BRASS AND IRON BEDSTEADS—HEAL & SON'S Show Rooms contain a large assortment of Brass Bedsteads, suitable both for Home use and for Tropical Climates; handsome Iron Bedsteads with Brass Mountings and elegantly Japanned; Plain Iron Bedsteads for Servants; every description of Wood Bedstead that is manufactured, in Mahogany, Birch, Walnut-tree Woods, Polished Deal and Japanned, all fitted with Bedding and Furniture complete, as well as every description of Bedroom Furniture.

HEAL AND SON'S ILLUSTRATED CATALOGUE, containing Designs and Prices of 100 Bedsteads, as well as of 150 different articles of Bedroom Furniture, sent free by post.—HEAL & SON, Bedstead, Bedding, and Bedroom Furniture Manufacturers, 196, Tottenham Court Road, W.

BEDSTEADS, BATHS, AND LAMPS.—WILLIAM S. BURTON has SIX LARGE SHOW ROOMS devoted exclusively to the SEPARATE DISPLAY of Lamps, Baths, and Metallic Bedsteads. The stock of each is at once the largest, newest, and most varied ever submitted to the public, and marked at prices proportionate with those that have tended to make his establishment the most distinguished in this country.

Bedsteads, from	12s. 6d. to £20 0s. each.
Shower Baths, from	8 0 ,, 6 0 ,,
Lamps (Moderateur), from ..	6 0 ,, 7 7 ,,
(All other kinds at the same rate.)	
Pure Colza Oil	4s. 3d. per gallon.

THE PERFECT SUBSTITUTE FOR SILVER.—The REAL NICKEL SILVER, introduced more than 20 years ago by WILLIAM S. BURTON, when PLATED by the patent process of Messrs. Elkington & Co., is beyond all comparison the very best article next to sterling silver that can be employed as such, either usefully or ornamentally, as by no possible test can it be distinguished from real silver. A small useful plate chest, containing a set, guaranteed of first quality for finish and durability, as follows:—

	Fiddle or Old Silver Pattern.	Thread or Brunswick Pattern.	King's Pattern.	Military Pattern.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
12 Table Forks	1 18 0	2 8 0	3 0 0	3 10 0
12 Table Spoons	1 18 0	2 8 0	3 0 0	3 10 0
12 Dessert Forks	1 10 0	1 15 0	2 2 0	2 10 0
12 Dessert Spoons ..	1 10 0	1 15 0	2 2 0	2 10 0
12 Tea Spoons	0 18 0	1 4 0	1 10 0	1 18 0
6 Egg Spoons, gilt bowls..	0 12 0	0 15 0	0 18 0	1 1 0
2 Sauce Ladles	0 7 0	0 8 6	0 10 6	0 16 0
1 Gravy Spoon	0 8 0	0 11 0	0 13 6	0 16 0
2 Salt Spoons, gilt bowls..	0 4 0	0 5 0	0 6 0	0 7 6
1 Mustard Spoon, gilt bowl	0 2 0	0 2 6	0 3 0	0 3 9
1 Pair of Sugar Tongs ..	0 3 0	0 3 9	0 5 0	0 7 0
1 Pair of Fish Carvers ..	1 4 0	1 7 6	1 12 0	1 18 0
1 Butter Knife	0 3 6	0 5 9	0 7 0	0 8 0
1 Soup Ladle	0 13 0	0 17 6	1 0 0	1 1 0
1 Sugar Sifter	0 4 0	0 4 9	0 5 9	0 8 6
Total	11 14 6	14 11 3	17 14 9	21 4 9

Any article to be had singly at the same prices. An oak chest to contain the above, and a relative number of knives, &c., 2l. 15s. Tea and coffee sets, cruet and liqueur frames, waiters, candlesticks, &c., at proportionate prices. All kinds of re-plating done by the patent process.

WILLIAM S. BURTON'S GENERAL FURNISHING IRONMONGERY CATALOGUE may be had gratis, and free by post. It contains upwards of 400 Illustrations of his illimited Stock of Electro and Sheffield Plate, Nickel Silver and Britannia Metal goods, Dish Covers and Hot-water Dishes, Stoves, Fenders, Marble Chimney-pieces, Kitchen Ranges, Lamps, Gaseliers, Tea Urns and Kettles, Tea Trays, Clocks, Table Cutlery, Baths and Toilet Ware, Turnery, Iron and Brass Bedsteads, Bedding, Bed Hangings, &c., with Lists of Prices and Plans of the 16 large Show Rooms at 39, Oxford Street; 1, 1A, 2, and 3, Newman Street; and 4, 5, and 6, Perry's Place, London.—Established 1820.

CHUBB'S LOCKS, FIREPROOF SAFES, DOOR LATCHES, CASH AND DEED BOXES. Illustrated Priced Lists sent free.—57, St. Paul's Churchyard, London; 28, Lord Street, Liverpool; 16, Market Street, Manchester; and at Wolverhampton.

ALLEN'S PATENT PORTMANTEAUS AND TRAVELLING BAGS, with SQUARE OPENING; Ladies' Dress Trunks, Dressing Bags, with Silver Fittings; Despatch Boxes, Writing and Dressing Cases, and 500 other articles for Home or Continental Travelling, illustrated in their New Catalogue for 1859. By post for two stamps. J. W. & T. ALLEN, Manufacturers of Officers' Barrack Furniture and Military Outfitters (see separate Catalogue), 18 and 22, Strand.

FRY AND SONS' CHOCOLATES AND COCOAS.—Victoria Chocolate, Bon Bons, Soluble Cocoa, &c., in great variety. These delicious beverages are now sold at very moderate prices, and many of them are highly economical.
FRY'S HOMŒOPATHIC COCOA is an article of unexceptionable quality. FRY'S SOLUBLE COCOA, in Hexagon packets, and FRY'S PEARL COCOA, are strongly recommended.
FRY AND SONS, MANUFACTURERS TO THE QUEEN.
Liebig, the celebrated Chemist, asserts that nitrogen is essential to the healthy action of the bile, and the growth, sustenance, and invigoration of the body. No stronger recommendation of Cocoa and Chocolate can therefore be given than the following statement:—Caffeine and Theine each contain only about 29 per cent., whilst Theobromine (or essence of Cocoa) contains upwards of 35 per cent. of nitrogen.

VINEGAR.—Patronised by her Majesty's Government.

CONDY'S PATENT PURE CONCENTRATED MALT VINEGAR.—Families, by using this delicious Vinegar, insure purity, and effect a saving of 50 per cent. See Report of Dr. Letheby, City Officer of Health; Dr. Hassall of the *Lancet* Commission, and others. Six Quart Sample sent free to any Railway for 3s. 6d.—Sold by the Trade, in bottles, labelled and capsuled; wholesale, 63, King William Street, London Bridge, E.C.

PURE WATER.—The great public want of a perfect and cheap Water Filter is now supplied by the PATENT MOULDED CARBON COMPANY'S FILTERS, by which rain, river, pond and spring waters impregnated with noxious matters are rendered perfectly inodorous, tasteless, bright, sparkling, and wholesome. Price from 3s. upwards. PRICE LISTS on application.—Sold wholesale and retail by HARRISON & Co., 62, Fleet Street, London, E.C.

KNOW THYSELF.—MARIE COUPELLE continues to give her graphic and interesting delineations of character, discoverable from an examination of the handwriting, in an unique style of description peculiarly her own. All persons desirous of knowing themselves, or any friend in whom they are interested, must send a specimen of the writing, stating the sex and age, and enclosing 13 penny postage stamps, and a directed envelope, to Miss COUPELLE, 69, Castle Street, Oxford Street, London, and they will receive in a few days a minute detail of the talents, tastes, virtues, and failings of the writer, with many other things hitherto unsuspected. All letters are considered strictly confidential.

DO YOU WANT LUXURIANT HAIR, WHISKERS, &c.?—COUPELLE'S CRINUTRIAR is guaranteed to produce whiskers, moustachios, eyebrows, &c., in two or three weeks with the utmost certainty, strengthen weak hair, prevent its falling off, check greyness in all its stages, and reproduce the hair in baldness, from whatever cause, price 2s. Sold by all chemists in the world; or will be sent post free, on receipt of 24 penny postage stamps, by Miss COUPELLE, 69, Castle Street, Newman Street, Oxford Street, London. A toilet guide sent post free for four penny postage stamps. "It completely restored my hair."—Miss Davis. "My whiskers are now growing freely."—H. Merry, Esq.

FOR THE TOILETTE.—OLDRIDGE'S BALM OF COLUMBIA, which has for more than 30 years been celebrated for its peculiar properties in restoring, cleansing, and beautifying the hair, promoting its growth, as well as preventing it falling off or turning grey.—C. & A. OLDRIDGE, 13, Wellington Street, North, seven doors from the Strand. Sold wholesale and retail in bottles at 3s. 6d., 6s., and 11s.; and by all Chemists and Perfumers. Its use for whiskers and moustache is invaluable.

WHITE AND SOUND TEETH are indispensable to personal attraction and to health and longevity by the proper mastication of food. ROWLANDS' ODONTO, or Pearl Dentifrice, compounded of oriental ingredients, is of inestimable value in improving and beautifying the teeth, strengthening the gums, and in rendering the breath sweet and pure. It eradicates tartar from the teeth, removes spots of incipient decay, and polishes and preserves the enamel, to which it imparts a pearl-like whiteness. As the most efficient and fragant aromatic purifier of the breath, teeth, and gums ever known, ROWLANDS' Odonto has for a long series of years occupied a distinguished place at the toilets of the sovereigns and the nobility through Europe: while the general demand for it at once announces the favour in which it is universally held.—Price 2s. 9d. per box. CAUTION.—The words "ROWLANDS' Odonto" are on the Label, and "A ROWLAND & SONS, 20, Hatton Garden," engraved on the Government stamp affixed on each box.—Sold by the Proprietors, and by Chemists and Perfumers.

IMPORTANT INFORMATION.—Mrs. Brown, of Queen Street, Kingsland, was for years severely afflicted with a scorbutic eruption, covering the back of both hands, and spreading up her arms. She was persuaded to try Dr. ROBERTS'S POOR MAN'S FRIEND and PILULÆ ANTISCROPHULÆ by a friend who had a large wound in her leg which baffled her doctor's skill, but was effectually cured by these medicines. She only took one box of the Pills, and used one pot of the Ointment, which effected a cure to the surprise of her friends, who wish it to be made public for the benefit of her suffering fellow creatures. Dr. ROBERTS'S POOR MAN'S FRIEND and PILULÆ ANTISCROPHULÆ have been proved, by 60 years' experience, successful in the cure of eruptions and wounds of every description. Price 1s. 1½d.; 2s. 9d.; 4s. 6d.; 11s.; and 22s. each.—Sold wholesale by the Proprietors, BEACH & BARNICOTT, at their Dispensary, Bridport, and by the London Houses; and retail by all respectable Medicine Vendors in the United Kingdom and the Colonies.

PAINS IN THE BACK, Gravel, Lumbago, Rheumatism, Gout, Indigestion, Flatulency, Nervousness, Debility, &c.—Dr. DE ROOS' COMPOUND RENAL PILLS have been long established as a safe and efficacious remedy for the above complaints, discharges of any kind, retention of urine, and diseases of the kidneys, bladder and urinary organs generally, which, if neglected, frequently end in stone in the bladder and a lingering death. For depression of spirits, incapacity for society, study or business, confusion, giddiness, drowsiness, sleep without refreshment, fear, nervousness, and insanity itself, when arising from or combined with urinary diseases, they are unequalled. By their salutary action in correcting bile and acidity of the stomach, they prevent the formation of stone, and establish the healthy functions of all these organs.—Price 1s. 1½d., 2s. 9d., 4s. 6d., 11s., and 33s. per box, through all Medicine Vendors, or sent free on receipt of the amount in postage stamps, by Dr. DE ROOS, 10, Berners Street, Oxford Street.

DRESSING CASES, DRESSING BAGS, and highly finished elegancies for presentation in great variety; Ivory-handled Table Cutlery; every requisite for the Toilet and Work Tables.—MECHI & BAZIN, 112, Regent Street; 4, Leadenhall Street; and Crystal Palace, Sydenham.

CHEAP AND CORRECT PRINTING FOR THE NURSERY AND SEED TRADES.—Send your orders to ROBT. EDM. TAYLOR, PRINTER, Sea Coal Lane, Skinner Street, Snow Hill, London, E. C. Estimates forwarded.

HEALTH WITHOUT PHYSIC. — Nervousness effectually cured by a novel and most successful mode of treatment, discovered in America. The most convincing proof of the efficacy of this wonderful remedy, with other details, will be sent to any address on receipt of one stamp.—Address, Mr. HILL, 27, Alfred Place, Store Street, London, W.C.

HOLLOWAY'S PILLS AND OINTMENT.—WEAK OR SORE EYES.—In infancy, from various causes, the foundation of this complaint is laid, which in maturer years becomes a distressing defect, and at riper age impairs the vision. However young the infant, on the first appearance of sore eyes the nurse should well rub HOLLOWAY'S Ointment thrice a day upon the spine and behind the ears, carefully washing the matter from the eyelids with tepid milk and water. This treatment, properly applied, never fails to cure the very worst cases of infantile ophthalmia. When the disease has been maltreated or neglected, the Pills and Ointment, together, will remedy the error, and secure those important organs from chronic inflammation, which blemishes beauty and injures sight.

TO TUTORS, SURGEONS, THE HEADS OF SCHOOLS, &c.—The above can be supplied with Collections for practically Illustrating the Natural Orders, also Physiological and Medical Botany, by FREDK. Y. BROCAS, who has been eight years in the medical profession, and has attended the Lectures of Professors Lindley, Lankester, Henfrey, and Forbes, and the Botanic Gardens in the vicinity of the Metropolis. Collections named, arranged, and mounted, and desiderata supplied by FREDK. Y. BROCAS, Botanist, 85, St. Martin's Lane, London, W.C.

This day is published, price 2s. 6d.,

FOLIA ORCHIDACEA, Part IX. Containing the conclusion of Pleurothallis.

Parts I. to VIII., price 2s. 6d. each, may still be had.

JAMES MATTHEWS, 5, Upper Wellington St., Covent Garden. London, W.C.

Price 1s. 6d., free by post, 1s. 7d.

LABELS FOR THE HERBARIUM,

CONSISTING OF THE NAMES OF THE

CLASSES, ALLIANCES, ORDERS, AND SUB-ORDERS,

OF

PROFESSOR LINDLEY'S "VEGETABLE KINGDOM."

So printed in large type, that they can be cut out and pasted into THE HERBARIUM.

J. MATTHEWS, 5, Upper Wellington Street, Covent Garden, London W.C

Third Edition, considerably enlarged, price 5s. 6d., free by post, 5s. 10d.,

RURAL CHEMISTRY.

By EDWARD SOLLY, F.R.S., F.L.S., F.G.S.

Honorary Member of the Royal Agricultural Society of England, Professor of Chemistry to the Horticultural Society of London, Lecturer on Chemistry in the Hon. E. I. Co.'s Military Seminary at Addiscombe, &c., &c.

J. MATTHEWS, 5, Upper Wellington St., Covent Garden,

In consequence of the new postal arrangements, parties in the country who desire it can have two copies sent by post for one stamp, five for two stamps, or eleven for four, in addition to the cost of the numbers.

Price 3d. each, or 5s. for 25 copies for distribution among Cottage Tenantry, delivered anywhere in London, on a Post-office Order being sent to the Publisher, JAMES MATTHEWS, at the Office of the *Gardeners' Chronicle*.

THE COTTAGER'S CALENDAR OF GARDEN OPERATIONS. By Sir JOSEPH PAXTON, M.P.

Reprinted from the GARDENERS' CHRONICLE. Upwards of 126,000 have already been sold.

J. MATTHEWS, 5, Upper Wellington Street, Covent Garden, London, W.C.

Parts I. and II. now ready, to be completed in Eight Parts, price 2s. 6d. each, plain; 3s. 6d. each, coloured.

FARM INSECTS:

BEING THE

NATURAL HISTORY AND ECONOMY OF THE INSECTS INJURIOUS TO THE

FIELD CROPS OF GREAT BRITAIN AND IRELAND,

AND ALSO

THOSE WHICH INFEST BARNS AND GRANARIES.

WITH SUGGESTIONS FOR THEIR DESTRUCTION.

By JOHN CURTIS, F.L.S.

Honorary Member of the Ashmolean Society of Oxford, and of the Entomological Society of France;

Corresponding Member of the Imperial and Royal Georgofili Society of Florence, of the Academy of Natural Sciences of Philadelphia, &c.

ILLUSTRATED WITH MANY HUNDRED FIGURES ON STEEL AND WOOD.

BLACKIE & SON, Warwick Square, City, London; and all Booksellers.

EDINBURGH REVIEW, No. CCXXIII. ADVERTISEMENTS intended for insertion are requested to be forwarded to the Publishers immediately. ADVERTISEMENTS and BILLS cannot be received later than FRIDAY NEXT.

London: LONGMAN & Co., 39, Paternoster Row.

ANNUAL SUBSCRIPTION, TWELVE SHILLINGS.

THE JOURNAL OF AGRICULTURE, AND THE TRANSACTIONS OF THE HIGHLAND AND AGRICULTURAL SOCIETY OF SCOTLAND. No. LXV. July 1859.

Price 3s. Free by post, 3s. 4d. Published Quarterly.

WILLIAM BLACKWOOD & SONS, Edinburgh and London.

CONTINUATION OF ALISON'S EUROPE.

CONCLUDING VOLUME.

THE HISTORY OF EUROPE, FROM THE FALL OF NAPOLEON TO THE ACCESSION OF LOUIS NAPOLEON. By Sir ARCHIBALD ALISON, Bart., D.C.L.

Vol. VIII. 908 pp., and Index Volume, 320 pp.; price together, 22s. 6d.

THE CONTENTS OF VOL. VIII. INCLUDE

War in China in 1841-2, and of India from the Affghanistan disaster till the conclusion of Lord Dalhousie's Administration—France from the Fall of Louis Philippe to the Assumption of the Imperial Crown by Louis Napoleon in 1852—Insurrection in Italy, and War between Austria and Sardinia in 1848-9—Austria-Hungarian War—Intervention of Russia—Domestic History of Great Britain, 1848-52, &c.

The Work is now complete in Eight Vols., and Index Volume, Demy Octavo, price 6l. 7s. 6d., uniform with the "Library Edition" of the Author's "History of Europe from the French Revolution in 1789 to the Battle of Waterloo."

WILLIAM BLACKWOOD & SONS, Edinburgh and London.

ONCE A WEEK.

Contents of No. I., published this day, price Threepence:—

ONCE A WEEK. By SHIRLEY BROOKS. Illustrated by JOHN LEECH.
MAN AMONG THE MAMMOTHS. Illustrated.
AUDUN AND HIS WHITE BEAR. By G. W. DASENT. Illustrated by JOHN TENNIEL.
SNAKES AND THEIR PREY.
AN AFRICAN ADVENTURE.
ENGLISH PROJECTILES. By W. BRIDGES ADAMS.
MAGENTA. By TOM TAYLOR. Illustrated by J. E. MILLAIS.
A GOOD FIGHT. By CHARLES READE. Illustrated by C. KEENE.
THE TAIL OF A TADPOLE. By G. H. LEWES.
THE ORIGINAL BUNHOUSE. Illustrated by JOHN LEECH.

BRADBURY AND EVANS, 11, BOUVERIE STREET.

THE PEOPLE'S BYRON.

Now ready, Parts I. to VI. (to be completed in 9 Monthly Parts), 8vo, 1s. each,

LORD BYRON'S POETICAL WORKS. With Illustrations. (MURRAY'S complete Edition.)

Part I. contains CHILDE HAROLD.

JOHN MURRAY, Albemarle Street.

Now ready, Parts I. to V. (to be completed in 10 Monthly Parts), 8vo, 1s.,

MR. CROKER'S LAST REVISED EDITION OF BOSWELL'S LIFE OF JOHNSON. With Illustrations. (Murray's complete Edition.)

JOHN MURRAY, Albemarle Street.

BY AUTHORITY OF

THE LORDS COMMISSIONERS OF THE ADMIRALTY.

Now Ready, Third Edition, thoroughly Revised, with Maps, &c., post 8vo, 9s,

THE ADMIRALTY MANUAL OF SCIENTIFIC ENQUIRY, prepared for the Use of Officers, and Travellers in general. Edited by Sir JOHN F. W. HERSCHEL, Bart. A New Edition, superintended by Rev. ROBERT MAIN, M.A.

CONTENTS:—

Astronomy—By G. B. AIRY.
Magnetism—LT.-COL. SABINE.
Hydrography—CPT. BEECHEY.
Tides—DR. WHEWELL.
Geography—W. J. HAMILTON.
Geology—C. DARWIN.
Earthquakes—R. MALLET.
Mineralogy—SIR H. DE LA BECHE.
Meteorology—Sir J. F. W. HERSCHEL.
Atmospheric Waves—W. R. BIRT.
Zoology—R. OWEN.
Botany—SIR W. HOOKER.
Ethnology—DR. PRITCHARD.
Statistics—G. R. PORTER.
Medical Statistics—Dr. BRYSON

JOHN MURRAY, Albemarle Street, Publisher to the Admiralty.

BOHN'S ILLUSTRATED LIBRARY FOR JULY.

PETRARCH'S SONNETS, TRIUMPHS, and other POEMS, translated for the first time completely into English verse. By various hands. With a Life of the Poet by Thomas Campbell. Illustrated with 16 engravings on steel. Post 8vo. cloth. 5s.

London: HENRY G. BOHN, York Street, Covent Garden.

BOHN'S CHEAP SERIES FOR JULY.

THE CONVALESCENT: His Rambles and Adventures. By N. PARKER WILLIS, Author of "Pencillings by the Way," "People I have Met," &c. Post 8vo. 1s. 6d.

London: HENRY G. BOHN, York Street, Covent Garden.

BOHN'S CHEAP SERIES FOR JULY.

WASHINGTON IRVING'S LIFE OF GENERAL WASHINGTON. Authorised Edition (Uniform with Bohn's edition of the Complete Works). In 5 volumes. Vol. 5, completing the work, with a general Index to the whole. Post 8vo, boards. 2s. 6d.

London: HENRY G. BOHN, York Street, Covent Garden.

BOHN'S CHEAP SERIES FOR JULY. Price 2s.

JOHNSONIANA: a Collection of Miscellaneous Anecdotes and Sayings of Dr. Samuel Johnson, gathered from nearly a hundred publications. A Sequel to Croker's edition of Boswell's Life of Johnson, as revised and enlarged by John Wright, Esq., of which it forms ninth and tenth volumes. Vol. I. with engravings on steel. (Vol. II. will contain a General Index to the ten volumes.)

London: HENRY G. BOHN, York Street, Covent Garden.

VAN HOUTTE'S PERIODICAL.

THE FLORE DES SERRES ET DES JARDINS DE L'EUROPE. In large 8vo. Each monthly number contains nine highly Coloured Plates, numerous Woodcuts, and 16 pages of text. Price post free 32s. per annum.

Twelve Volumes are published, containing 1289 plates, numberless woodcuts, and 2356 miscellaneous matters. Price 18l. 8s. **** Only a few copies of the complete work remain.

London: Messrs. BARTHES & LOWELL, Booksellers.

Just published, in quarto, cloth, price 24s., Vol. XVIII., of the

ENCYCLOPÆDIA BRITANNICA. Eighth Edition. Illustrated by numerous Engravings, and containing, amongst other important articles, the following:—

PLAYFAIR (JOHN). By Lord JEFFREY.
PNEUMATICS. By Sir JOHN ROBISON, late Professor of Natural Philosophy in the University of Edinburgh.
POETRY. By GEORGE MOIR, Advocate. Revised by W. EDMONSTOUNE AYTOUN, Professor of Rhetoric and Belles Lettres in the University of Edinburgh.
POISON. By ROBERT CHRISTISON, M.D., Professor of Materia Medica in the University of Edinburgh.
POLAND. By JAMES BROWNE, LL.D. Revised.
POLAR REGIONS. By Sir JOHN RICHARDSON, K.B.
POLICE, AND POST OFFICE. By EDWARD EDWARDS, Author of the article "Libraries."
POLITICAL ECONOMY, AND PRECIOUS METALS. By J. R. M'CULLOCH.
POLYNESIA. By the Rev. W. ELLIS, Author of "Three Visits to Madagascar."
POOR LAWS. By GEORGE COODE, Barrister-at-Law.
POPE. By THOMAS DE QUINCEY.
POPULATION. By the Rev. T. R. MALTHUS, late Professor of Political Economy, East India College, Hertford.
POTTERY AND PORCELAIN. By CHARLES TOMLINSON.
PRECESSION AND PROBABILITY. By THOMAS GALLOWAY, late Secretary to the Royal Astronomical Society.
PRESBYTERIANISM. By the Rev. WILLIAM H. GOOLD, D.D.
PRESCOTT. By WILLIAM STIRLING, M.P.
PRINTING. By T. C. HANSARD, Barrister-at-Law.
PRISON DISCIPLINE. By JOHN HILL BURTON, Secretary to the General Board of Directors of Prisons in Scotland.
PRUSSIA. By Dr. G. VON BUNSEN.
PUNJAB. By E. B. EASTWICK, Author of the article "Persia."
QUAKERS. By WILLIAM HOWITT, Author of "Visits to Remarkable Places," &c.
QUESNAY. By J. R. M'CULLOCH.
QUINTILIANUS. By FREDERIC W. FARRAR, Fellow of Trinity College, Cambridge.
RABELAIS. By THEODORE MARTIN.
RAILWAYS. By D. K. CLARE, Author of "Mechanical Engineering of Railways," &c.
REGISTRATION By JAMES T. HAMMACK, Superintendent, General Register Office.

Edinburgh: ADAM & CHARLES BLACK.
London: SIMPKIN, MARSHALL, & Co.

WORKS ON BOTANY, BY DR. LINDLEY.

THE VEGETABLE KINGDOM; OR, THE STRUCTURE, CLASSIFICATION, AND USES OF PLANTS. Illustrated upon the Natural System. In One Volume, 8vo, cloth, price 36s., with upwards of 500 Illustrations.

THE ELEMENTS OF BOTANY, Structural and Physiological. With a Glossary of Technical Terms. In One Volume, 8vo, cloth, with numerous Illustrations, price 12s. **** The Glossary may be had separately, price 5s. cloth.

MEDICAL AND ŒCONOMICAL BOTANY. With numerous Illustrations. A New Edition, in One Volume, 8vo, cloth, price 7s. 6d.

SCHOOL BOTANY; OR, THE RUDIMENTS OF BOTANICAL SCIENCE. In One Volume, 8vo, half-bound, with 400 Illustrations, price 5s. 6d.

DESCRIPTIVE BOTANY; OR, THE ART OF DESCRIBING PLANTS correctly, in Scientific Language, for Self-Instruction and the Use of Schools. Price 1s.

BRADBURY & EVANS, 11, Bouverie Street.

GLENNY'S ANNUAL ADVERTISER. — Forty pages of Advertisements from Nurserymen who can be depended on, and a List of the best 60 SEEDS for Amateurs. Free on receipt of a directed envelope.

G. GLENNY, Horticultural Agent, Fulham, S. W.

**** Mr. GLENNY'S engagements as Judge are nearly filled.

GLENNY'S GARDENERS' GAZETTE increased in size to 16 pp. imp. 8vo. Price 3d. monthly; post free 4d. —JAMES ALLEN, Warwick Lane, E.C.; R. J. KENNETT, York Street, Covent Garden, W. C.

GLENNY'S GARDENERS' EVERY-DAY BOOK. —Price 5s.; free by post, 5s. 6d. Containing plain instructions for the cultivation of all classes of Flowers, Fruits, and Vegetables, and for the practical management of every department of Horticulture and Floriculture.

HOULSTON & WRIGHT, 65, Paternoster Row.

TO PIG AND POULTRY FEEDERS AND MILLERS.

CHICKEN AND GAME RICE, 8s. per cwt., in bags 1¼ cwt. each. SCREENED RICE, 11s. per cwt., in bags 1¾ cwt. each. RICE MEAL, 6s. 6d. to 8s. 6d. per cwt. RICE for grinding. American Oilcake and Locust Beans, per Ton only.—All Sold for Cash, and an allowance per ton, by W. & R. JUPP, Rice Merchants, 6, Cross Lane, St. Mary-at-Hill, Eastcheap.

FARM IN HAMPSHIRE TO BE LET

BY TENDER FOR A TERM OF YEARS FROM MICHAELMAS NEXT.

TO BE LET, A SHEEP AND CORN FARM, with Chalk Subsoil, containing about 657 acres, and situated within five miles of the important market towns of Winchester and Romsey. The proprietors do not bind themselves to accept the highest or any Tender.—For further particulars and to view, apply to Mr. HUGH RAYNBIRD, Land Agent, &c., Hackwood, near Basingstoke, to whom Tenders are to be addressed on or before 10th August next.

TO BE LET, BRISTOL NURSERY GROUNDS, Kemp Town, Brighton. These Gardens are now to Let for occupation with immediate possession. — Any person desirous of treating for the same may obtain particulars and permission to view the grounds on application to Mr. R. W. LUCAS, 20, Great Marlborough Street, London, W.; and of Mr. A. CHANDLER, Horticultural Valuer, 28, Priory Road, Wandsworth Road, S.

FISHING RESIDENCE, TAPLOW, NEAR MAIDENHEAD.

Five minutes' walk from the Railway Station.

TO BE SOLD, the LEASE (10 years), of a RESIDENCE, standing in the centre of 7 acres of Pleasure Ground, tastefully laid out in Lawns, Shrubberies, Flower and Kitchen Gardens, 3 acres of Ornamental Water, abounding with Fish; 12 Rooms, Coachhouses, Stables, and Out-buildings.—Apply to Messrs. JACKSON & GRAHAM, 37, Oxford Street, London; or to Mr. TRESS, 27, Queen Street, City, E.C.

PRAIRIE LANDS—AMERICA.

FOR SALE, 1,300,000 ACRES OF LAND in Illinois, lying about 700 miles of the leading Railway, and at distances chiefly between one and five miles from the Line. May be purchased in lots of from 40 to 10,000 acres, either for cash, or by payments spread over seven years, at prices from 35s. to 60s. an acre. The soil is of the greatest fertility, very accessible, in the midst of excellent markets, and with command of sufficient labour. The State is famous for its Peach and Apple Orchards, and abounds in Minerals, Coal, Iron, Copper, and Lime. These Lands are peculiarly adapted to extensive Sheep or Cattle Grazing. The voyage from this country and the journey inland may all be made within 14 days, at a cost varying from 7l. to 20l. —Further and full particulars may be learned on application to JAMES CAIRD, Esq., M.P.; or, to his Secretary, at 6, Serjeant's Inn, Fleet Street, London.

Sales by Auction.

ORCHIDS, FERNS, AND FOLIAGE PLANTS,

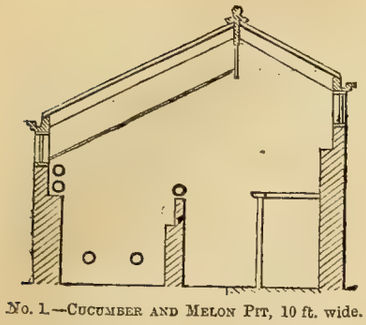
AND THE COLLECTION OF CACTI, CEREUS, &c., THE PROPERTY OF J. R. SCOTT, GARDENER, OF HORNSEY.

MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on TUESDAY, July 5, at half-past 12 precisely, a MISCELLANEOUS COLLECTION OF PLANTS, including a few good Orchids, rare Anæctochili, Foliage Plants, and choice Ferns, Cacti, Cereus, &c., many of which are specimen plants.—May be viewed on the Morning of Sale, and Catalogues had.

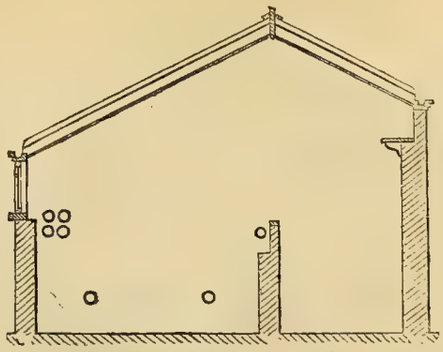
HAMPEN ANNUAL RAM SALE, 1859.

T. BEALE BROWNE, Esq., has fixed MONDAY, July 18th, for the Sale by Auction of about 60 COTSWOLD SHEARING RAMS, and Three or Four OLDER SHEEP. Mr. BEALE BROWNE will be happy to see his numerous Friends and Sheep Breeders generally upon this occasion. The Sale will commence at 4 o'Clock. JAMES VILLAR, Auctioneer.

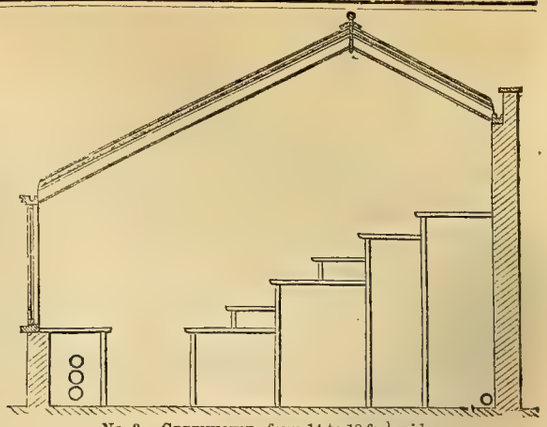
N B.—This Flock took 24 Prizes last year, and this year has taken Three First Prizes at Dublin, Three First Prizes at the Bath and West of England Show, and Two First Prizes at Oxford. Hampen is 8 miles from Cheltenham, 13 from Cirencester, and 2 from Andoversford.



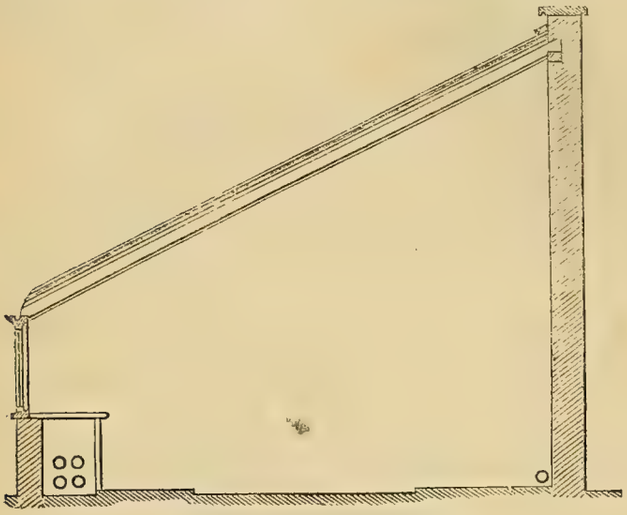
No. 1.—Cucumber and Melon Pit, 10 ft. wide.



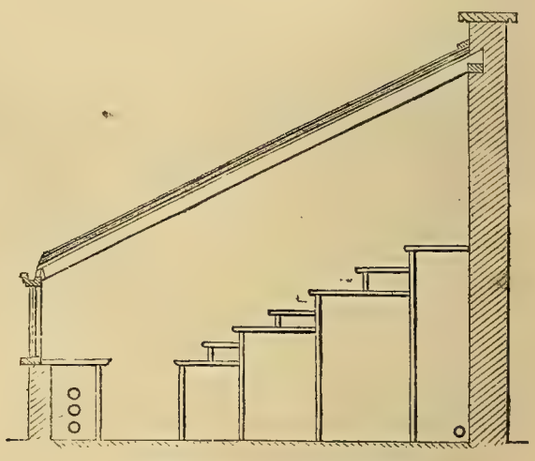
No. 2.—Pine Pit, 14 ft. wide.



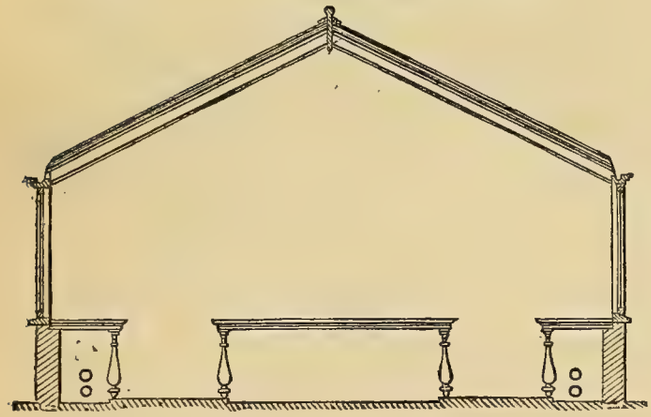
No. 3.—Greenhouse, from 14 to 18 feet wide.



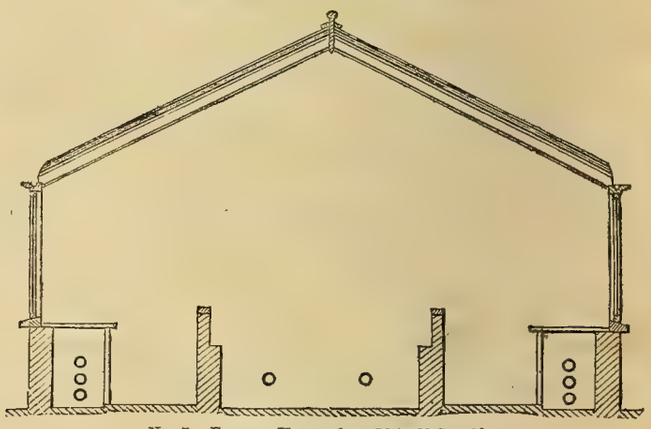
No. 4.—Vinery, from 15 to 18 ft. wide.



No. 9.—Greenhouse, from 12 to 20 ft. wide.



No. 6.—Greenhouse, from 18 to 20 ft. wide.



No. 7.—Forcing House, from 18 to 20 ft. wide.

HORTICULTURAL BUILDINGS MANUFACTURED BY STEAM POWER MACHINERY

BEST MATERIALS AND LOWEST PRICES.

HENRY ORMSON,

HORTICULTURAL BUILDER & HOT-WATER APPARATUS MANUFACTURER.

STANLEY BRIDGE, KING'S ROAD, CHELSEA, LONDON,

Deeply grateful for the very liberal and kind patronage bestowed upon him, begs most respectfully to inform the Nobility, Gentry, Nurserymen, &c., that it being his determination to spare no pains to merit a continuance of their favours, and that he may be enabled to execute his extensive and increasing orders punctually, and at the lowest possible cost (agreeably with the best Materials and Workmanship), he has erected a most complete set of Steam Power Machines, peculiarly adapted for the purposes of his Trade.

PARTIES DESIRING INFORMATION as to prices, &c., will, by referring to any of the above sections, receive immediate attention.

PLANS, SPECIFICATIONS, and ESTIMATES for plain and inexpensive practical Structures, and for the most elaborate Architectural Erections, either in Wood or Iron, forwarded on application.

ORMSON'S PATENT JOINTLESS TUBULAR BOILERS

May be seen in successful operation at Mr. Veitch's, Royal Exotic Nursery, King's Road, Chelsea, and on view and for sale at

THE MANUFACTORY.

Printed by William Bradbury, of 13, Upper Woburn Place, and Frederick Mullett Evans, of No. 20, Queen's Road West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, 5 Board St., Precinct of Whitefriars, City of London, and published by them at the Office, No. 5, Upper Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—Saturday, July 2, 1859.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 28.—1859.] SATURDAY, JULY 9. {Price Fivepence. Stamped Edition, 6d.

INDEX.

Books noticed	587 a	Plants, luminous	581 c
Chalking and liming	580 a	Prairie Lands	591 b
Colza culture	592 a	Rats, water	584 b
Fence, entering a	591 a	Roses, Cloth of Gold	584 a
Farming, French and English	594 a	— Isabella Gray	584 a
— Somerset	589 c	— old and new	584 a
Guano	594 c	Sheep in New Zealand	595 a
Gutta percha, Surinam	588 a	Southill	582 b
Highland and Agri. Society	594 a	Vine border covers	584 b
— — Journal of	592 a	Vines, budding	584 b
Horticultural Society	581 b–584 c	Water rats	584 b
Luminosity	581 c	Water, bad	584 b
Manuring, liquid	590 b	Warwick Agri. Show	589 b
Pinus nobilis	584 b	Weight, cental	591 c

HORTICULTURAL SOCIETY OF LONDON.—The following awards have been this day made by the Floral Committee of the Horticultural Society at its preliminary meeting:—

First-Class Certificates to—

Pteris argyræa, from Messrs. Veitch & Son
Lygodium polystachyum, from Messrs. Veitch & Son
Seedling Carnation: Sir H. Havelock, from Mr. C. Turner

Commendations to

Spraguea umbellata, from Messrs. Veitch & Son
Dianthus sinensis giganteus, from Messrs. E. G. Henderson & Son
Gazania splendens, from Messrs. E. G. Henderson & Son
Seedling Picotee: Rival Purple, from Mr. C. Turner
Seedling Picotee: Rev. A. Mathews, from Mr. C. Turner

The next Meeting of the Committee will take place on THURSDAY, July 28, at 8, St. Martin's Place. The chair to be taken at 2 P.M. Subjects for Exhibition must be in the room by 1 P.M. Any persons may exhibit.—The Regulations to be observed may be had on application to the Secretary to the Floral Committee of the Horticultural Society, 8, St. Martin's Place, Trafalgar Square, London, W.C.—July 9

ALL Persons having CLAIMS upon the ESTATE of THOMAS JACKSON AND SON, Nurserymen, &c., Kingston, Surrey, previous to May 19, 1859, are requested to forward them immediately to the Executors of the late Thomas Jackson, that they may be examined and discharged; and all Persons INDEBTED to the same Estate are requested to forward the amount of such Debts to the said Executors.

George Jackson,
James Hatt,
Henry Lamb,
} Executors.

Kingston, Surrey, July 9.

ROSES.

J. AND J. FRASER beg to announce that their collection of ROSES is now in flower, and respectfully invite their patrons and the public generally to an inspection of the same. Trains leave the Bishopsgate Station for Lea Bridge about ten times a day.

Lea Bridge Road Nurseries, Leyton, Essex, N.E.

ROSES.

A. PAUL AND SON respectfully invite all lovers of ROSES to inspect the Collection growing at the Cheshunt Nurseries. They are now in full bloom and will continue at their best for about a fortnight. There will be a good show of the autumnal kinds from the present time till November.

Trains of the Eastern Counties Railway (Cambridgeshire) to and from Waltham or Cheshunt Stations several times daily.

Nurseries, Cheshunt, Herts.

ROSES.

GEO. CLARKE begs to invite his friends and the public generally to an inspection of his superb Collection, extending over 10 acres of ground, and which are in great beauty.

Amateurs and others are reminded that the blooming season is the best time for orders to be given, as a better selection as to colour, form, &c., can then be made.

Fine collections of Evergreens, Fruit Trees, Greenhouse Plants, and every article in the trade.

Omnibuses from the City and West End every 10 minutes pass the Nursery.—Streatham Place, Brixton Hill, S.

ROSES IN BLOOM.

H. LANE AND SON have great pleasure in informing the lovers of this beautiful flower that their splendid collection, consisting of nearly 10 Acres, is now in full bloom, and will continue for some time.

The Nurseries, Great Berkhampstead, Herts.
A Train leaves London, Euston Square, at 11 o'clock.

ROSE NURSERIES, HERTFORD.

E. P. FRANCIS begs leave to invite the attention of ladies and gentlemen to his extensive collection of ROSES, which are now in full bloom. Morning and evening, and cloudy days, are the best for viewing Roses. Trains direct to Hertford from King's Cross and Eastern Counties.

NEW STRAWBERRY "OSCAR."

CHARLES TURNER, having purchased the entire Stock of this favourite STRAWBERRY, will send out Plants after the 20th August. Price and other particulars in future Advertisements.

THE MAY QUEEN STRAWBERRY—the earliest of all Strawberries.—Fine well-rooted plants can now be supplied at 12s. per dozen; 1l. per 25; 1l. 15s. per 50; 3l. per 100. For a full description see an article by W. Roden, Esq., M.D., Ridderminster, June 25, p. 542 of the *Gardeners' Chronicle*.—William J. Nicholson, Egglescliffe, Yarm, Yorkshire.

WILLIAM BARNES begs to inform his friends and patrons that his new PRICED and DESCRIPTIVE CATALOGUE is now ready, and can be had post free upon application. It contains the finest selections of Indian Azaleas, Cinerarias, Calceolarias, Verbenas, Fuchsias, Hollyhocks, Liliums, Phloxes, Roses, Geraniums, Chrysanthemums, Ferns, Stove and Greenhouse plants, as well as a very large assortment of choice miscellaneous plants.

Camden Nursery, Camberwell South.

SEEDS FOR PRESENT SOWING.—See MESSRS. SUTTON'S ADVERTISEMENT in another page, headed "Royal Berkshire Seed Establishment."

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY LIMITED supply every requisite for the Farm and the Garden.

Registered Offices, Union Road, Plymouth.

MUSHROOM SPAWN!—In any quantity, in fine condition.—Price on application to J. Reeves, Ladbroke Nursery, Notting Hill, W.

FERN CATALOGUE.

ROBERT SIM'S NEW DESCRIPTIVE AND PRICED CATALOGUE, No. 6 (62 pages) of his COLLECTION of BRITISH AND EXOTIC FERNS, can be had, post free, for 8 stamps. Gratis to all previous purchasers of Ferns.

Nursery, Foot's Cray, Kent, S.E.

BULBOUS ROOTS.—PRICE LISTS of BULBS of first-rate quality and at the lowest possible price (for the present year), and comprising some of extra quality, may be obtained upon application, post paid, to C. Zandoliet, Florist, at Sassenheim, near Haarlem, Holland.

AZALEA INDICA "FLOWER OF THE DAY" (Ivery's).—This fine variety will be ready for delivery the last week in June. It is a decided improvement on Iveryana; has been exhibited only three times, and gained two Certificates and an extra Prize. For description see Catalogue, which will be sent post free on application. Price, per plant, 21s. each.—Dorking Nursery, July 9.

GRAPE VINES FROM EYES.

JOHN AND CHARLES LEE beg to offer a large healthy Stock of well-grown VINES, of all the NEW and POPULAR KINDS, fit for immediate planting.

Vines planted at the present time will reach the top of the rafters and ripen their wood before winter, and thus a season will be gained.

Nursery and Seed Establishment, Hammersmith, London.

FLOWERING PLANTS.

F. AND A. SMITH have now in bloom a fine sample of KALOSANTHES COCCINEA, also HYDRANGEA, blue and pink; GERANIUM, French, Fancy, and Show varieties; FUCHSIAS, HELIOTROPES, CALCEOLARIAS (herbaceous and shrubby), ERICA, CACTUS, ROSES, NERIUM SPLENDENS, BALSAMS, &c., at moderate prices.

Dulwich, Surrey.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Stove, Greenhouse, and Hardy Ferns, Miscellaneous Stove, Greenhouse, and Hardy Plants, Variegated and Ornamental foliaged Plants, Conifers, Roses, Rhododendrons, Indian Azaleas, Gloxinias, Fuchsias, Cactuses, &c., is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

CHOICE SEEDS.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that they can now supply the following choice SEEDS, all of which are warranted genuine and of the finest quality.

Per packet—s. d.		Per packet—s. d.	
Calceolaria, herbaceous	2 6	Gaillardia grandiflora	0 6
Cineraria, from named vars.	2 6	Primula sinensis, mixed	1 6
Clianthus Dampieri	2 6	Pansy, from named vars	1 0
Hollyhock, from named vars.	0 6	Sweet William, from extra fine vars.	0 6

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

LAWNS WITHOUT MOWING.—SPERGULA PILIFERA.

J. A. SUMMERS begs to inform the Public that he himself is now prepared to send out established plants of the above, taken from the lawn at Forest Hill, at 4s., 3s., 2s. (turned out of pots full of roots), and 1s. per dozen, according to their respective sizes. A specimen showing its true character post free, 1s.

Howard Park Nursery, Perry Hill, Sydenham.

For lawns that burn up in summer this plant is particularly recommended.

ARAUCARIA IMBRICATA.

YOUELL AND Co. beg to inform the Trade they have to offer a fine and healthy stock of the above in 1 year old plants.

GLADIOLUS BRENCHLEYENSIS.—An extensive stock of large flowering Bulbs of this magnificent Gladiolus, the colour of which is vermilion scarlet, the best and brightest variety known. Prices of the above on application.

Royal Nursery, Great Yarmouth.

FRUIT TREES IN POTS.

H. LANE AND SON, The Nurseries, Great Berkhampstead, Herts, have still to offer in large quantities fine TREES, well set with Fruit (which are now in a good state for travelling, the fruit not being heavy and likely to drop off), of—

PEACHES, NECTARINES, and APRICOTS, 5s., 7s. 6d. to 10s. each; also APPLES, 3s. 6d. to 5s.
FIGS in a bearing state, 3s. 6d.
GOOSEBERRIES and CURRANTS, 1s. 6d.
VINES from eyes, with Fruit on, 5s.

They also have a fine collection of Roses in 60-size pots for bedding out, and Roses in 32-size or 6-inch pots suitable for filling up vacancies, and a most splendid lot of Araucaria imbricata; also Indian and Ghent Azaleas, Rhododendrons, Cedrus Deodara, Cedar of Lebanon, and Evergreens of every description.

Catalogues of the above may be had upon application at the Home Nurseries, which are within 5 minutes' walk of the station of the London and North-Western Railway, Great Berkhampstead, Herts.

HOLLYHOCK SEED.

A. PAUL AND SON beg to offer packets of Seed, saved from their unrivalled collection, free by post at the following rates:—

	s.	d.
12 separate packets, saved from 12 good and distinct named sorts, containing about 500 seeds	5	0
Mixed seed, first quality	2	6
Second quality, per packet	1	0

N.B. June and July are the best months for sowing out of doors to bloom next year.—Nurseries, Cheshunt, Herts.

SPLENDID CINERARIAS.

F. AND A. SMITH are now sending out Seed of their fine COLLECTION of the above, which for brilliancy of colour, profuseness of flowering, and compactness of growth, are unsurpassed. Great care has been taken to select only the very best for Seed from upwards of 10,000 of the finest produced in the country, some of which were exhibited at the Spring Meetings of the Botanic Society, obtained certificates of merit, and were much admired. In packets 1s. 6d., 2s. 6d., and 5s. each in stamped envelopes, and may be had of most respectable Seedsmen in the United Kingdom.—Dulwich, Surrey, S.

CHOICE CALCEOLARIA AND CINERARIA.

J. HENCHMAN is now sending out New Seed of his well-known strain of CALCEOLARIAS and CINERARIAS, in packets at 2s. 6d. each.—Edmonton, London.

CINERARIA, HERBACEOUS CALCEOLARIA, AND HALF SHRUBBY DITTO SEED.—These have been saved from Turner's most beautiful varieties; in 1s. and 2s. 6d. packets. Primula and Hollyhock, from the newest and handsomest varieties, 1s. per packet. Agents for F. & A. Smith's splendid Cineraria, in 1s. 6d., 2s. 6d., and 5s. packets; also agents for Dobson & Son's splendid Calceolaria, in 1s. 6d., 2s. 6d., 3s. 6d., & 5s. packets.—Catalogues of the newest Flower Seeds, and newest Dutch and Cape Bulbs, sent post-paid.

Butler & McCulloch, Seedsmen, Covent Garden Market.

FIRST PRIZE CALCEOLARIA, CINERARIA, AND PRIMULA.

"Shanakiel House, Cork, June, 1859.

"Gentlemen,—The Calceolaria Seed you sent me turned out so remarkably well, my gardener got First Prize for the plants at our recent Flower Show. You will please send me another half-crown packet, for which I enclose postage stamps.

"Messrs. Jackson & Son. "Francis R. Leahy."

Seed of the same excellence is now being supplied by post or otherwise. CALCEOLARIA, 1s., 1s. 6d., and 2s. 6d.; CINERARIA, 6d., 1s., and 2s.; and PRIMULA, 1s., 1s. 6d., and 2s. 6d. per packet.

T. Jackson & Son, Nurserymen and Seedsmen, Kingston, S.W.

ORCHIDS.

THOMAS JACKSON AND SON having determined upon reducing their extensive collection of Orchids, have resolved to offer them at extremely low prices; for instance, they now offer 12 good plants, selected from the under-named (purchaser's selection), for 2l. 10s., or the 20 for 4l., package included:—Aerides odoratum majus, A. roseum, Barkeria spectabilis, Brassavola glauca, Calanthe vestita, Cattleya Mossiæ, Cœlogyne flaccida, Dendrobium aggregatum, D. chrysanthum, D. densiflorum, D. nobile, Epidendrum primulinum, Lycaste aromatica, Miltonia spectabilis, Odontoglossum grande, O. pulchellum, Oncidium leucochilum, O. papilio, Stanhopea oculata, S. tigrina, and the new and rare sorts at equally reduced prices. Post-office Orders to be made payable at Kingston-on-Thames, Kingston, S.W.

ORCHARD HOUSES.

THOMAS RIVERS will feel much pleasure in showing his friends his Peach Trees in pots trained "en cordon droit" or close pyramids by the new system of incessantly pinching in their young shoots. The trees are full of fine fruit, and are beautiful objects of successful culture. Trains daily to the Harlow Station, where Flys are in attendance.

Nurseries, Sawbridgeworth.

CACTI.

TO BE SOLD, either the Collection, or singly, Show Plants; some of the finest in England, obtained many prizes this and previous years.—Apply to Mr. Young, Millfield Lane, Highgate, N.

KEMP'S NEW EARLY INCOMPARABLE CABBAGE.—This excellent variety may be had in sealed packets, at 1s. each, of Messrs. Hurst & M'Mullen, 6, Leadenhall Street, London; Messrs. Noble, Cooper & Bolton, 152, Fleet Street; Mr. G. W. Dixon, 48 A, Moorgate Street, or free by Post for 13 postage stamps of E. P. Dixon, 57, Queen St., Hull.

CABBAGE SEED.

CATTELL'S "DWARF BARNES," AND CATTELL'S "DWARF RELIANCE," may be had as usual by post for 12 penny stamps per packet; the former containing 1 oz., and the latter ½ oz. May be sown as early as the middle of July, and will not run to seed the following spring.

Seed Establishment, Westerham, Kent.

SUPERB CAPE OR GIANT AND BROMPTON STOCKS.

CHARLES ALEXANDER, Seedsman, Edinburgh, can supply the following, which are highly recommended. Sow any time this month. Post free on receipt of Stamps:—

1 packet Young's Scarlet Cape or Giant Stock	1s.
1 packet Young's White Cape or Giant Stock	1s.
1 packet Young's Scarlet Brompton Stock	1s.
1 packet Young's Dark Bloody Wallflower	1s.

CABBAGE PLANTS.—True Drumheads; also Choice Early GARDEN PLANTS of sorts, 3s. 6d.; a variety of BROCCOLIES and CELERIES, 4s. 3d.; SAVOYS and KALES, 3s. per 1000.—Thomas Welland, Surrey Gardens, near Godalming, Surrey. Packing and Stationing included.

HOLCUS SACCHARATUS, or North China Sugar-Cane.—Pamphlet, "A Visit and a Plant;" the only English authority on the Cultivation of the above. Post free 6d. Prices of Seed on application. Samples 6d. Four varieties of Holcus remitted free by post on receipt of 10s.

John W. Clarke, Whittlesea, Cambridgeshire.

GARDENERS' CHRONICLE NEWSPAPER

C. STEPHENSON, late STEPHENSON AND SONS, 61, Gracechurch Street, London, Manufacturer of Iron Hurdles, Fencing, &c., Improved Iron and Copper Conical Boilers and Apparatus for Warming Buildings of every description by Hot Water.

Prices and Estimates furnished upon application.

HENRY McCALLA, HORTICULTURAL BUILDER AND HOT-WATER APPARATUS MANUFACTURER, supplies Plans and Estimates free of any charge whatever; or will furnish Working Drawings and specifications at a trifling cost, for any gentleman wishing to construct his own, thereby effecting a great saving. Plans, &c., for all kinds of Farm Buildings, Homesteads, Laying out of Estates, Drainage, &c.—Office: 7, Upper Cheyne Row, Oakley Street, King's Road, Chelsea.



T. G. MESSENGER, HORTICULTURAL BUILDER and PATENT HOT-WATER APPARATUS and GARDEN ENGINE MANUFACTURER, Loughborough.

T. G. MESSENGER'S Divisionless Horticultural Erections, ventilated with screw mechanism by which the top or front lights are opened the entire length of the house momentarily, do not fail to give complete satisfaction (as numerous Testimonials can show), for the following reasons:—They are much lighter in appearance, more durable, much stronger, and cheaper than any other can possibly be.

Three years' trial has proved his PATENT BOILER to be superior to any hitherto invented; a great number of houses can be heated at once with this Boiler, with the facility of heating any separately.

Illustrated descriptions and prices of his Patent and greatly approved GARDEN ENGINES sent free upon application; also Plans, Estimates, and Testimonials for Building or Heating. See *Gardeners' Chronicle*, May 21.

HORTICULTURAL BUILDINGS AND HEATING BY HOT WATER.

JOHN R. PEILL, 17, New Park Street, Southwark, Manufacturer of every description of Buildings for Horticultural purposes, and Inventor of the Improved Conical Boiler for heating the same, is prepared to undertake works of any magnitude, and refers among others to the celebrated range of FORCING HOUSES at HER MAJESTY'S GARDENS, FROGMORE, and at SIR ROBERT PEEL'S, DRAYTON MANOR, constructed under the superintendence of his Manager, MR. JOHN JONES; and also to his BOILERS fixed at the CRYSTAL PALACE, the ROYAL BOTANIC GARDENS, REGENT'S PARK, and KEW, and at several hundreds of the Nobility's seats, Public Establishments, and Manufactories in London and the provinces. J. R. P. also manufactures every description of Iron Roofs, Iron Houses, and Iron Fencing, plain and ornamental. Strong Iron Hurdles for Sheep (6 feet long, 3 feet high, with 5 bars), 4*s.* 3*d.* each; ditto for cattle, 4*s.* 9*d.* each.

Prices and other particulars forwarded on receipt of one postage stamp.

GARDEN WATERING ENGINES, PAIL MACHINES, CONSERVATORY PUMPS, and GREENHOUSE SYRINGES, with all the latest improvements, manufactured only by the Patentee,

RICHARD READ, 35, REGENT CIRCUS, PICCADILLY, LONDON.

☞ Descriptions with drawings sent post free.

TO WATER GARDENS in the easiest way is by the BEST FLEXIBLE TUBE. Brass Hand Branches, Roses and Jets, Garden Engines, Syringes, &c.—Apply for Illustrated Price Lists to JAMES SHEATH & Co., the Patent Gutta Percha and India Rubber Factory, 35, Old Street Road, E.C.

N.B. The best articles only manufactured.

TO AGRICULTURISTS AND OTHERS.

EDWARDS'S PATENT CANVAS SUCTION AND DELIVERY HOSE are the best and cheapest in use.

EDWARDS'S PATENT CANVAS DRIVING BANDS FOR CHAFF CUTTING AND THRESHING MACHINES, &c.

C. J. EDWARDS'S Leather and Canvas Hose and Band Manufactory, 32, Great Sutton Street, Clerkenwell, London, E.C.

VULCANIZED INDIA-RUBBER HOSE AND TUBING FOR WATERING GARDENS, &c.

J. L. HANCOCK supplies this article, of superior make, of any required strength or size.

BRASS SCREW JOINTS, for connecting the Hose to Cisterns, also HAND BRANCHES, TAPS, and WATER SPREADERS in great variety. Orders by post promptly executed, and Illustrated Price Catalogue on application.

JAMES LYNE HANCOCK, Vulcanized India-Rubber Works Goswell Mews, and No. 8, Goswell Road, London, E.C.

TO AMATEUR GARDENERS, NURSERYMEN, AGRICULTURISTS, AND OTHERS.

GUTTA PERCHA TUBING FOR WATERING GARDENS, from 2½*d.* per foot; Vulcanised India Rubber Tubing for Watering Gardens, from 4*d.* per foot; Brass Hand Branches, with Stopcock and Rose, and every description of Garden Tubing Fittings, sold Wholesale and Retail by W. R. WOODS, 94, Goswell Road, near the "Angel," Islington, London, E.C. Priced Lists can be had on application.

Please notice the Address—94, Goswell Road.

GUTTA PERCHA TUBING FOR WATERING GARDENS.

THE GUTTA PERCHA COMPANY have the pleasure to acknowledge the receipt of the following

Testimonial from Mr. J. FARRAH, *Gr. to* BOSWELL MIDDLETON JALLAND, Esq., *of Holderness House, near Hull.*

"I have had 400 feet of your Gutta Percha Tubing, in lengths of 100 feet each, with union joint, in use for the last 12 months for watering these gardens, and I find it to answer better than anything I have ever yet tried. The pressure of the water is very considerable, but this has not the slightest effect on the tubing. I consider this tubing to be a most valuable invention for Gardeners, inasmuch as it enables us to water our gardens in about one-half the time, and with one-half the labour required."

Manufactured by the Gutta Percha Company, Patentees, 18, Wharf Road, City Road, London, and sold by their Wholesale Dealers in town and country.

"FRIGI DOMO."—Patronised by her Majesty, the Queen, the Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, and —Collier, Esq., of Dartford.

PROTECTION FROM COLD WINDS AND MORNING FROSTS.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and, floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths. Two yards wide, 1*s.* 6*d.* per yard run; four, 3*s.* per yard. Also, an improved make for Shading Purposes. Three yards wide, 2*s.* 6*d.* per yard run.

ELISHA THOMAS ARCHER, whole and sole manufacturer, 7, Trinity Lane, Cannon Street, City, and of all Nurserymen and Seedsmen throughout the kingdom. "It is much cheaper than mats as a covering."

GLASS PRESERVE JARS.

	Without Lids.	With Lids.
3 inches diameter	.. 0 4½*d.* ..	0 6½*d.* each
4 ,, ,,	.. 0 6 ..	0 9 ,,
5 ,, ,,	.. 0 8 ..	0 11 ,,
6 ,, ,,	.. 0 10 ..	1 2 ,,
7 ,, ,,	.. 1 0 ..	1 4 ,,
8 ,, ,,	.. 1 4 ..	1 8 ,,
9 ,, ,,	.. 1 8 ..	2 2 ,,
10 ,, ,,	.. 2 0 ..	2 8 ,,

Intermediate Sizes in proportion.

CUCUMBER GLASSES.

24 inches long ..	2*s* 0*d.*	16 inches long ..	1*s.* 4*d.*
22 ,, ..	1 10	14 ,, ..	1 2
20 ,, ..	1 8	12 ,, ..	1 0
18 ,, ..	1 6	Made to any length.	

WASP TRAPS, 3*s.* 6*d.* per dozen.

AGENTS FOR

HARTLEY'S PATENT ROUGH PLATE GLASS.

PAINTS.

Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, &c.

JAMES PHILLIPS AND CO.,

180, Bishopsgate St. Without, London, E.C.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz SHEET GLASS of British Manufacture at prices varying from 2*d.* to 3*d.* per square foot for the usual sizes required, many thousands of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES, and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

HORTICULTURAL GLASS—JUNE TARIFF.

THOMAS MILLINGTON'S reduced Tariff of GLASS, &c.

6 by 4, 7 by 5, 8 by 6, 9 by 7 } 16 oz. to the foot, 11*s.* 6*d.*
6½ by 4½, 7½ by 5½, 8½ by 6½, 9½ by 7½ } per 100 feet.

In 100 boxes,—4ths quality, 12*s.* 6*d.*; 3ds do., 14*s.* 4*d.*

10 by 8, 12 by 9, 12½ by 10½, 14½ by 10½, 13 by 11
10½ by 8½, 12½ by 9½, 13 by 10, 15 by 10, 13½ by 11½
11 by 9, 13 by 9, 13½ by 10½, 12 by 11, 14 by 11
11½ by 9½, 12 by 10, 14 by 10, 12½ by 11½ .. ..

20 by 12, 20 by 13, 20 by 14, 20 by 15 } per 100 feet 16 oz. 21 oz.
Common .. 16*s.* .. 24*s.*
Superior . 18*s.* .. 27*s.*

All Boxes included.

Orchard House sizes as supplied to Mr. Rivers.

Hartley's improved Rough Plate Glass from ⅛ to ⅜ in thickness.

Coloured Glass in great variety, at 9*d.* and 1*s.* per foot.

Paints, Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, Lamp Glasses, &c.

87, Bishopsgate Street Without, same side as Eastern Counties Railway.

VASES, PEDESTALS, SUNDIALS, FOUNTAINS, FLOWER BOXES, JARDINETS, FERN CASES, BALUSTRADES, EDGINGS AND CURBS FOR FLOWER BORDERS, SEATS, &c., in Imperishable Siliceous Stone, at reduced prices, for the adornment of the Villa Garden, the Mansion Grounds, or the private or public Park.

For Priced Illustrations apply to FREDERICK RANSOME, at the Show Rooms, Cannon Row, Westminster, S.W., or Patent Stone Works, Ipswich.

SEEDS FOR PRESENT SOWING.

ROYAL BERKSHIRE SEED ESTABLISHMENT.

SEEDS DIRECT FROM THE GROWERS THE MOST CERTAIN MEANS OF PREVENTING DISAPPOINTMENT.

TRIFOLIUM INCARNATUM,
TURNIP SEEDS, GRASS SEEDS,
MUSTARD SEED, RAPE SEED,
COW CABBAGE, EARLY CABBAGE,
CINERARIA, CALCEOLARIA, AND PRIMULA,

SUTTON & SONS have a good stock of New Seeds of the above kinds which they are now sending out at very moderate prices, as see Priced List. Carriage-free to all parts, and 5 per cent. allowed for cash payment.

Address, SUTTON & SONS, Seed Growers, Reading, Berks.

BUSBY'S STOCKWOOD GOLDEN HAMBURGH GRAPE.



IN consequence of the Horticultural Society having abandoned their intended Exhibition at St. James's Hall on the 29th and 30th of this month, on account of the injury sustained by the plants from the heat and dryness of a gas-lighted room,

JAMES VEITCH, JUN., begs to announce that the PRIZE of 5*l.* 5*s.* offered by him for the BEST THREE BUNCHES of the above GRAPE, will now be awarded at the next Meeting of the HORTICULTURAL SOCIETY'S FRUIT COMMITTEE, at 8, St. Martin's Place, Trafalgar Square,

On TUESDAY, July 12, 1859, at 3 P.M.

J. V., Jun., also offers a PRIZE of 5*l.* 5*s.* for the BEST THREE BUNCHES Exhibited at the CRYSTAL PALACE SHOW, September 7 and 8, 1859, as before advertised.

N.B. The Grapes intended for Exhibition at St. Martin's Place on July 12 should be delivered there not later than 11 A.M. on that day; and J. V., Jun., will be happy to pay the carriage of those that are sent.



ROYAL SOUTH HANTS SEED ESTABLISHMENT,

UNDER THE PATRONAGE OF H.R.H. THE PRINCE CONSORT, THE AGRICULTURAL AND HORTICULTURAL SOCIETY OF INDIA, AND THE LEADING AGRICULTURISTS OF THE UNITED KINGDOM.

NEW TURNIP SEEDS, 6*d.* per lb.

Carriage free, parcels under 20 lbs. excepted.

PAGE AND TOOGOOD have harvested a fine stock of HARDY GREEN ROUND TURNIP, which is ready for immediate delivery. They have yet a few of their

IMPROVED SKIRVING'S SWEDES at 6*d.* per lb.
PAGE'S IMPROVED PURPLE-TOP do. at 8*d.* do.
JEFFERY'S OR SUSSEX do. at 9*d.* do.
SCOTCH HYBRIDS, 7*d.* per lb.
YELLOW TANKARD, 7*d.* do.
POMERANIAN WHITE GLOBE, 6*d.* per lb. and also
PAGE'S IMPROVED RED GLOBE, 8*d.* per lb., which W. Baker, Esq., Purewell, says is preferred by his beasts and sheep to any he has grown; it is quite hardy, and less injured by Fly than other sorts.—PAGE & TOOGOOD, Seed Growers, 37, and 38, Oxford Street, and 58, Above Bar, Southampton.

CHOICE FLOWER SEEDS

FOR AUTUMN SOWING.

JAMES CARTER & CO., SEEDSMEN,

238, HIGH HOLBORN, LONDON, W.C.,



BEG leave to offer Seeds of the following, of *this year's harvesting*, saved from SEVERAL UNRIVALLED COLLECTIONS, and they can with confidence recommend them as being of first-rate quality, both for form, colour, and variety.

CALCEOLARIA, CINERARIA, PRIMULA SINENSIS FIMBRIATA, in three-sized packets, all of the same quality, 1*s.*, 2*s.* 6*d.*, and 5*s.* each.

J. C. & Co. have also selected from their general Catalogue of Seeds a few varieties of HARDY and HALF-HARDY PERENNIALS (including Seeds of Florists' Flowers of undoubted quality), also Seeds for sowing in the Greenhouse and Conservatory.

HARDY AND HALF-HARDY PERENNIALS.

	Per packet.—*s. d.*
Antirrhinum, extra choice, mixed	.. 0 6
Aquilegia, finest mixed	.. 0 6
Alyssum saxatile	.. 0 3
Campanula, finest mixed	.. 0 6
Delphinium formosum	.. 0 6
Dianthus Veitchi	.. 1 0
Digitalis, extra fine, mixed	.. 0 6
Gaillardia, finest mixed	.. 0 6
Lupinus, finest mixed	.. 0 6
Œnothera Drummondi nana	.. 0 6
Œnothera macrocarpa	.. 0 6
Œnothera taraxacifolia	.. 1 0
Pentstemon Murrayanum	.. 1 0
Phlox, 12 newest French varieties	.. 3 6
Phlox, finest mixed	.. 1 0
Potentilla atrosanguinea	.. 0 3
Potentilla pedata	.. 0 6
Silene Schafta	.. 0 3
Canterbury Bell, fine, mixed	.. 0 3
Marvel of Peru, mixed	.. 0 3
Stock, Imperial, 10 splendid varieties	2 6
Stock, Imperial, finest, mixed	.. 0 6
Stock, Brompton, 12 splendid varieties	2 6
Stock, Brompton, finest mixed	.. 0 6
Stock, Intermediate, scarlet	.. 0 6
Verbena, extra choice	.. 1 0
Wallflower, 12 finest varieties	2 6
Wallflower, finest mixed, double	.. 1 0
Wallflower, single, blood	.. 0 3

SEEDS OF FLORISTS' FLOWERS.

J. C. & Co. can particularly recommend the following, especially the CARNATIONS and PICOTEES; they are all saved from first-rate named flowers, and J. C. & Co. have no doubt will give the utmost satisfaction:—

		Per packet.—*s. d.*
Carnations ..	24 splendid vars.	12*s.* 0*d.*
Do.	12 ,,	6 0
Do.	6 ,,	3 6
Do. Yellow ..	12 ,,	7 6
Do. do.	6 ,,	4 0
Do. Perpetual,	12 ,,	6 6
Do. do.	6 ,,	3 6.
Picotees, white ground,	12 vars.	6 0
Picotees, white ground, 6 varieties		3*s.* 6*d.*
Do., yellow ground,	12 ,,	7 0
Do. do.	6 ,,	4 0
Do., perpetual	12 ,,	6 6
Do. do.	6 ,,	3 6
Carnation, choicest mixed, p. pckt.		2 6
Do. perpetual	,,	2 6
Picotee, choicest mixed	,,	2 6
Geranium, finest varieties	..	1 0
Do. new French varieties	..	1 0
Heartsease, finest mixed	..	1 0
Hollyhock, 12 show varieties	..	5 0
Do. 8 ,,	..	2 6
Do. finest mixed	..	1 0
Polyanthus, extra fine	..	1 0

GREENHOUSE SEEDS.

	Per packet.—*s. d.*
Acacia longifolia	.. 0 6
Canna, choice mixed	.. 1 0
Chorozema, finest mixed	.. 1 0
Clianthus magnificus	.. 0 6
Cobæa scandens	.. 0 6
Erica, finest mixed	.. 2 6
Fuchsia, finest mixed	.. 1 0
Gloxinia, choice mixed	.. 1 0
Humea elegans	.. 0 6
Kennedya Marryattæ	.. 0 6
Linum grandiflorum kermesinum	.. 0 6
Lisianthus Russellianus	.. 1 0
Lobelia formosa	.. 0 6
Lophospermum, finest mixed	.. 0 6
Maurandya, finest mixed	.. 0 6
Mimulus, finest mixed	.. 0 6
Nierembergia gracilis	.. 1 0
Passiflora cinnabarina	.. 1 0
Petunia, finest mixed	.. 0 6
Phlox Drummondi, finest mixed	.. 0 6
Pleroma elegans	.. 1 0
Salvia patens	.. 1 0
Schizanthus retusus, two varieties	.. 0 6
Swainsonia, finest mixed	.. 0 6
Thunbergia, fine mixed	.. 0 6
Tropæolum Lobbianum, mixed	.. 1 0
Tropæolum speciosum	.. 1 0
Verbena, choicest mixed	.. 1 0

JAMES CARTER & CO., Seedsmen, 238, High Holborn, W.C.

DIANTHUS SINENSIS GIGANTEUS.

The above magnificent JAPANESE PINK can now be supplied in young plants, and in Autumn by Seeds.

GAZANIA SPLENDENS,

A very beautiful orange-yellow flowered plant for flower garden decoration, in groups and beds, will be offered for sale in August. These were exhibited by E. G. HENDERSON & SON, at the Regent's Park Show on July 6, and were universally admired as the finest decorative plants in their respective colours yet introduced.

CALCEOLARIA, CINERARIA, & PRIMULA SINENSIS FIMBRIATA,

Of first quality, in seed packets, 2*s.* 6*d.* each.

SPERGULA PILIFERA,

The admirable substitute for Grass, REQUIRING NO MOWING! Seed packets, 6*d.*, 2*s.* 6*d.*, and 5*s.*

E. G. HENDERSON & SON, Wellington Nursery, St. John's Wood, London.

CHOICE FLOWERS.

BUTLER & McCULLOCH'S SPRING CATALOGUE OF SEEDS,



ARRANGED on a new and original plan, with copious Descriptive and Cultural Notes, and containing many new and rare species and varieties not found in any other Catalogue, now ready and may be had free and post paid on application.

FLOWER, SHRUB, TREE, and VEGETABLE SEEDS, the crop of 1858, saved with the greatest care, by the most eminent growers.

We may also state that the Sardinian correspondent of Messrs. JAMES CARTER & Co., whose Seeds, especially Carnations and Picotees, have given such universal satisfaction, has transferred the Agency from that firm and appointed us his representative in this country. To meet the growing demand for first class flowers, particularly FLORISTS' FLOWERS, we have adopted our usual maxim of charging the lowest possible prices.

Professor LINDLEY in the *Gardeners' Chronicle* of February 5th, has the following notice of B. & McC.'s Catalogue.

"BUTLER & McCULLOCH'S (Covent Garden) Spring Catalogue of Choice Flower, Shrub, Tree, and Vegetable Seeds. This list fills 84 closely printed 8vo pages, and is remarkably well got up. It appears that the correspondent in Sardinia, who formerly supplied one of the great London houses with seeds raised in that warm part of Europe, has now transferred what he saves to Messrs. BUTLER & McCULLOCH. Let us add, that it yields to no Trade List in the abundance of its materials or the excellence of its arrangements."

SPLENDID DOUBLE ITALIAN-SAVED CARNATION AND PICOTEE SEED, IN SEALED PACKETS,

FROM ONE OF THE CHOICEST COLLECTIONS IN EUROPE.

The following collections of Carnations and Picotees have been saved with the greatest care by our Sardinian correspondent, a most successful and distinguished amateur, and only from the most perfect flowers of the newest and handsomest of the English stage varieties, or seedlings from them: they can be confidently recommended to the lovers of this exquisitely beautiful class of plants, as certain to produce at least 80 per cent. of fine double flowers, and with a fair chance of obtaining varieties of the greatest value. The Perpetual or Tree kind is comparatively a new class of Carnations and Picotees; they bloom beautifully in the open ground, during the whole of the Autumn months; and, if grown in pots, are highly ornamental in the Conservatory or Greenhouse in Winter and Spring.

CARNATION.					*s.*	*d.*
Self or one-coloured, in 12 beautiful vars.		of 10	seeds	each	5	6
Do.	do.	of 5	do.		3	0
Flake or Striped	do.	of 10	do.		6	0
Do.	do.	of 5	do.		3	6
Bizarre or three-coloured	do.	of 10	do.		6	0
Do.	do.	of 5	do.		3	6
Fancy Coloured	do.	of 10	do.		5	6
Do.	do.	of 5	do.		3	6
Yellow Bizarre and Self	do.	of 10	do.		7	0
Do.	do.	of 5	do.		4	0
Yellow Flake	do.	of 10	do.		7	0
Do.	do.	of 5	do.		4	0
Yellow Fancy	do.	of 10	do.		7	0
Do.	do.	of 5	do.		4	0

Choice Mixed, 2*s.* per packet.—Fine Mixed, 1*s.* per packet.

Perpetual Self or one-coloured, in 12 beautiful varieties		of 10	seeds	each	5	6
Do.	do.	do.	of 5	do.	3	0
Perpetual Flake	do.	do.	of 10	do.	5	6
Do.	do.	do.	of 5	do.	3	0
Pepetual Fancy	do.	do.	of 10	do.	5	6
Do.	do.	do.	of 5	do.	3	0

Perpetual Choice Mixed, 2*s.* p. packet.—Fine Mixed, 1*s.* p. pkt.

CRYPTOMERIA JAPONICA.—An exceedingly Ornamental Coniferous Tree, suitable for Lawns or Pleasure Grounds. Seeds sown in the open ground germinate freely, and make more handsome specimens than "worked" plants, 1*s.* per packet.

PICOTEE.					*s.*	*d.*
White, margined with various colours, in 12 beautiful varieties		of 10	seeds	each	6	0
Do.	do.	do.	of 5	do.	3	6
Yellow	do.	do.	of 10	do.	7	6
Do.	do.	do.	of 5	do.	4	0

Choice Mixed, 2*s.* per packet.—Fine Mixed, 1*s.* per packet.

Perpetual, white, margined with various colours, in 12 beautiful varieties of 10 seeds each					6	0
Do.	do.	5	do.		3	6

Perpetual, choice mixed, 2*s.* per pkt. Fine mixed, per pkt. 1 0

Dried petals from Sardinia, such as the above may be expected to produce, may be seen at our place of business.

CALCEOLARIA.						
Herbaceous, saved from the choicest hybridised flowers, in packets, 1*s.*, 1*s.* 6*d.* and					2	6
Half-Shrubby, saved from the newest and most beautiful flowers of this exceedingly interesting class. The flowers are smaller and in clusters, the habit more dwarf and compact than the herbaceous varieties, in packets, 1*s.*, 1*s.* 6*d.*, and					2	6
Agents for Dobson & Sons splendid hybridised varieties, in packets, 1*s.* 6*d.*, 2*s.* 6*d.*, 3*s.* 6*d.*, and					5	0
CINERARIA.						
Saved from a splendid collection, composed of the newest and most beautiful of this class, in packets, 1*s.*, 1*s.* 6*d.*, and					2	6
Agents for F. & H. Smith's splendid collection, in packets, 1*s.* 6*d.*, 2*s.* 6*d.* and					5	0
PRIMULA.						
Saved from splendid flowers, in packets, 1*s.*, 1*s.* 6*d.*, and					5	0
Agents for F. & H. Smith's, do. 1*s.* 6*d.*, 2*s.* 6*d.*, and					5	0
DOUBLE HOLLYHOCK.						
20 packets, embracing the newest and most beautiful named prize varieties					5	0
12 packets do do. do.					3	6
The same mixed					1	0

BUTLER & McCULLOCH, Covent Garden Market.

THE FINEST FRUITS IN ENGLAND.—The Nobility, Clergy, Gentry, and Gardeners are respectfully informed that HAYTHORN'S HEXAGON and CHISWICK GARDEN NETS are guaranteed to protect all kinds of Fruit from Birds, Wasps, Flies, &c. The Nets are used in most gardens, and are recommended by all the principal gardeners. For testimonials, patterns, and prices (gratis, and free by post), please direct to Mr. HAYTHORN, Nottingham.

FRUIT TREES, RIPE STRAWBERRIES, ETC.

TANNED NETTING for Protecting the above from Frost, Blight, Birds, &c.; 2 yards wide, 3*d.* per yard, or 100 yards, 20*s.* Can be had in any quantity of EATON & DELLER, 6 and 7, Crooked Lane, London Bridge.

TANNED GARDEN NETTING for Preserving Fruit Trees from Frost, Blight, Birds, &c., and as a Fence for Fowls, &c. One yard wide 1½*d.*, 2 yards 3*d.*, 3 yards 4½*d.*, and 4 yards 6*d.* per yard, in any quantity, may be had at C. WRIGHT'S, 376, Strand, W.C.

A liberal allowance to Nurserymen.

TANNED NETTING, for the Protection of Fruit Trees from Frost, Blight, and Birds; also, for the security of fresh sown seeds, at 1*d.* per square yard; 200 yards, 12*s.*; 500 yards, 25*s.*; Scrim Canvas, for wall fruit; Garden Mats.—At EDGINGTON & Co's., Rick Cloth, Tent, and Waterproof Cloth Manufacturers, 17, Smithfield Bars, City, & Old Kent Rd.

COUPLAND'S IMPERIAL WIRE AND WINDOW BLIND MANUFACTORY,
370, Oxford Street, W.

Wire work of superior description, useful and ornamental, for Conservatory, Garden, Drawing-room, Flower Stand and Basket, Garden Arch, Rosery, Fencing, Birdcage, &c., and Domestic and other purposes in elegant variety. Aviaries and Conservatories fitted up in the best style. Sun Shades and Window Blinds of all sorts.

SHAW'S TIFFANY is universally acknowledged to be the best, neatest, and cheapest material for shading conservatories, and other Hothouses. Effectually securing Plants from the scorching rays of the sun, without obscuring the light. Also, for protecting the Bloom of Wall Trees from spring frosts, and Fruit from birds and wasps. Sold in pieces.

No. 1.—20 yards long, by 38 inches wide, 5*s.* per piece.

No. 3.—Double strength, 18 yards long, by 39 inches wide, 7*s.* 6*d.* per piece.

No. 4.—Treble strength, 18 yards long, by 39 inches wide, 9*s.* per piece.

A liberal allowance to the Trade when ten or more Pieces are taken.—JOHN SHAW & Co., Princess Street, Manchester.

AGRICULTURAL MACHINERY.

E. R. AND F. TURNER, Ipswich, manufacture Prize Mills for Crushing Corn, Seed, Malt, &c.; Portable Grinding Mills, Steam Engines fixed and portable from 2 horse-power and upwards; Threshing Machines, Chaff Cutter, Oilcake Breakers, Horse Gears, Saw Tables, &c., all of a superior description and adapted for Home, Colonial, and Foreign use. Illustrated Price Lists sent free on application.

HAY HARVEST. NICHOLSON'S PATENT HAYMAKER, to which was awarded the First Prize of the Royal Agricultural Society of England at the last contested trial.

The celebrated STAMFORD HORSE RAKE has lately been much improved, and has obtained 26 Prizes at competitive trials.

MOWING AND REAPING MACHINES are performing their work most satisfactorily, and fully justify public expectation, cutting about 10 acres per day, at a cost of 9*d.* per acre.

Orders for the above machines should be given at once to RICHMOND & CHANDLER, Salford, Manchester.

Branch Establishment, South John Street, Liverpool.

GENUINE TOBACCO PAPER FOR FUMIGATING.

H. APPLEBY (Foreman to Messrs. Ivery & Son, Surrey), takes this opportunity of informing his patrons and the public that he is now offering the above at a very considerably reduced price. It is now sold in packets of 4 lbs. each, at 1*s.* 3*d.* per lb. A liberal discount allowed to the Trade. For testimonials that will guarantee its quality, see *Gardeners' Chronicle*, April 16, p. 333.

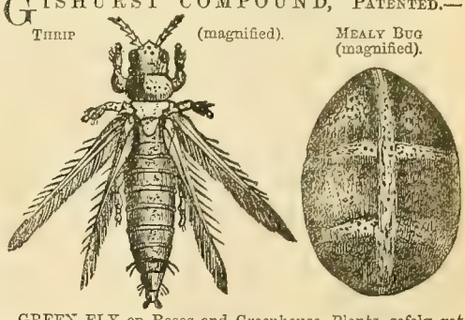
Sheet Iron Pots for fumigating, 3*s.* 6*d.* each.

N.B. All orders to be accompanied with a Post-office Order, payable to HENRY APPLEBY, Dorking, Surrey.

BARBER'S POISONED WHEAT Kills Mice and Sparrows on the spot.—In 1*d.*, 2*d.*, 4*d.*, and 8*d.* packets, with directions and testimonials. No risk nor damage in laying this Wheat about. From a single packet hundreds of Mice and Sparrows are found dead. Agents: Barclay & Sons, 95, Farringdon Street; W. Sutton & Co., Bow Churchyard; B. Yates & Co., 25, Budge Row, London; and sold by all Druggists, Grocers, &c., throughout the United Kingdom.

BARBER'S Poisoned Wheat Works, Ipswich, removed from Eye.

GISHURST COMPOUND, PATENTED.—



GREEN FLY on Roses and Greenhouse Plants safely got rid of by syringing with PATENT GISHURST COMPOUND, 2 oz. to the gallon of water.

Extract from leading article in *Gardeners' Chronicle*, April 9, '59.

"That it really kills red spider, aphides, mealy bug, thrips, and scale, it is impossible to doubt in the face of reports of practical men, among whom we may mention Mr. D. Judd, of Althorp Gardens"—then follows a caution against the use of a too strong solution.

The Gishurst Compound is sold in boxes at 1*s.* 6*d.* and 6*s.* each, with directions for use, and printed opinions of Mr. Rucker's gardener, Lady Dorothy Nevill's gardener, Sir William Hooker, Mr. Rivers, and other eminent authorities. For Nurserymen the large size is recommended, but where the consumption is not large the compound keeps its strength best in the small. The undermentioned Seed Merchants, Nurserymen, &c., having taken in supplies are prepared to sell single boxes.

Alexander, C., Edinburgh
Bailey, G., Rugby
Barker, W., Godalming
Barnes, Thos., Thirsk.
Barratt, Bury St. Edmunds
Bass & Brown, Sudbury
Batt & Rutley, Strand
Bell & Co., Newcastle-on-Tyne
Bell, John, Norwich
Bradley & Sons, Halam Nursery, near Southwell
Brigden, T., Railway Arcade, London Bridge
Brown, D., Norwich
Bwye, H., Great Malvern
Burgess, C., Cheltenham
Caldwell, W. G., Knitsford
Cattell, J., Westerham
Chater, W., Saffron Walden
Clark, J., Cheltenham
Clark, T., 25, Bishopsgate Street Within
Cooks & Son, Dorrington, near Spalding
Cottrell, J. H., Birmingham
Cripps, T., Tunbridge Wells
Darby, R. F., Cirencester
Davies & Co., Wavertree, near Liverpool
Deane & Co., London Bridge
Denyer, Mr., Gracechurch Street, City
Dickson, Francis & Arthur and Sons, Chester
Dickson & Brown, Manchester
Dickson, Hogg, & Robertson, Dublin
Dickson & Co., Edinburgh
Epps, F., Ashford, Kent
Epps, Maidstone
Fisher, Holmes & Co., Sheffield.
Foster, W., Stroud
Gray, W., Gainsborough
Griffin, J., Bath
Harrison, J., Darlington
Hawkins, R. T., Weymouth
Henderson, E. G. & Son, St. John's Wood, London
Henderson, A. & Co., Pine-apple Place, Edgeware Rd.
Hooper & Co., Covent Garden
Ivery & Son, Dorking
Jackman & Son, Woking
Jackson, Thos. & Son, Kingston
Jefferies, W. B., Ipswich
Josling, K., St. Albans
Kennedy & Co., Dumfries
Kenway, J. S., Batheaston
King, Wm., Lincoln
Laws, T., Beccles
Low, Hugh & Co., Clapton
Mackie & Stuart, Norwich
Mann, J., Brentwood
Matheson, R. C., Gloucester
May, J. & Co., 1, Wellington St.
Nelson, J., Bristol
Parsons, G., Brighton
Pattinson & Son, Hexham
Perkins, J., Northampton
Pontey, A., Plymouth
Pope, H., Gib Heath, near Birmingham
Reid, B. & Co., Aberdeen
Samson & Co., Kilmarnock
Stuart & Mein, Kelso
Sutton & Sons, Reading
Taber, G., Rivershall, Witham
Thyne, J. & R., Glasgow
Tynan, J., Liverpool
Walker, J., Thame
Whalley, T., Liverpool
Wood & Son, Maresfield
Wood & Son, Woodbridge
Wright, W., Retford

☞ A revised List of Agents will shortly be published.

Nurserymen and Seedsmen supplied by PRICE'S PATENT CANDLE COMPANY (Limited), Belmont, Vauxhall, London, S.

KEATING'S PERSIAN INSECT DESTROYING POWDER.

POULTRY, DOGS, AND PLANTS are effectually freed from Fleas, and all other Vermin with which they are infested, by the above Powder, which is quite harmless to animal life. The Farmer, the Gardener, or the Sportsman, will therefore find it invaluable. Bugs, Cockroaches, Beetles, Moths in Furs, and every other species of Insect are also instantly destroyed. In packets post free, for 14, or treble size for 36 postage stamps, by THOMAS KEATING, Chemist, 79, St. Paul's Churchyard, London, E.C. Take notice each genuine packet bears the above name and address. See "THE FIELD," Oct. 2d and 9th, pp. 263, 283, and 294.

CAST-IRON GARDEN ORNAMENTS, viz.—ORNAMENTAL VASES, of various sizes, do. with pedestal, GARDEN CHAIRS and STOOLS, RUSTIC GARDEN SEATS and TABLES, both plain and bronzed, also GARDEN ROLLERS of all sizes.—Prices on application to J. JONES, Iron Merchant, 6, Bankside, London.

HENRY J. MORTON AND CO.,
2, Basinghall Buildings, Leeds.

GALVANISED IRON WATER CISTERNS

for Cottage Houses, &c., to contain 50 gallons, 25*s.*; 80 gallons, 30*s.* each; and 140 gallons, 36*s.*, and fitted with tap, keeping the water perfectly sweet and clean; will not rust or corrode. Cisterns of all sizes.

GALVANISED IRON PUMPS

for Liquid Manure or Domestic Use, 3 inches diameter, 30*s.* and 32*s.* 6*d.* each; Tail Pipe for same at from 10*d.* per foot.

GALVANISED IRON SWING WATER BARROWS

for Garden or Farm use, containing about 20 gallons, entirely formed of iron, 32*s.* 6*d.* each.

LIST OF THE AWARD OF PRIZES AT THE THIRD EXHIBITION, ROYAL BOTANIC GARDENS, REGENT'S PARK, JULY 6, 1859.

EXTRA GOLD MEDAL.

Mr. Whitbread, Gr. to H. Collyer, Esq., Dartford, Kent, for 16 Stove and Greenhouse Plants
Mr. Gedney, Gr. to Rev. W. Ellis, Hoddesdon, Herts, for 20 Exotic Orchids

LARGE GOLD MEDAL.

Mr. May, Gr. to J. Spode, Esq., Hawkesyard Park, Rugeley, Staffordshire, for 16 Stove and Greenhouse Plants
Mr. Bullen, Gr. to J. Butler, Esq., Woolwich, Kent, for 20 Exotic Orchids

MEDIUM GOLD MEDAL.

Mr. B. Peed, Gr. to T. Tredwell, Esq., St. John's Lodge, Norwood, for 16 Stove and Greenhouse Plants
Mr. Cutbush, Nurseryman, Barnet, Herts, for 12 Stove and Greenhouse Plants
Mr. Green, Gr. to Sir E. Antrobus, Bart., Cheam, Surrey, for 10 Stove and Greenhouse Plants
Mr. Woolley, Nurseryman, Cheshunt, Herts, for 16 Exotic Orchids
Mr. Carson, Gr. to W. F. G. Farmer, Esq., Nonsuch Park, Cheam, Surrey, for 12 Exotic Orchids

GOLD MEDAL.

Messrs. J. & J. Fraser, Nurserymen, Leyton, Essex, for 12 Stove and Greenhouse Plants
Mr. Page, Gr. to W. Leaf, Esq., Park Hill, Streatham, for 10 Stove and Greenhouse Plants
Mr. Cutbush, for 10 Cape Heaths
Mr. B. Peed, Gr. to T. Tredwell, Esq., for 8 Cape Heaths
Mr. O. Rhodes, Gr. to J. Philpott, Esq., Stamford Hill, for 12 Exotic Orchids
Messrs. Veitch & Son, Nurserymen, Exeter and Chelsea, for 20 Foliage Plants
Mr. C. Turner, Nurseryman, Slough, for 12 Pelargoniums
Mr. Shrimpton, Gr. to A. Doxatt, Esq., Putney Heath, for 10 Pelargoniums
Mr. Bailey, Gr. to T. T. Drake, Esq., Shardeloes, Amersham, Bucks, for 10 Pelargoniums
Mr. Turnbull, Gr. to the Duke of Marlborough, Blenheim Palace, for a collection of Fruits

LARGE SILVER GILT MEDAL.

Mr. Rhodes, Gr. to J. Philpott, Esq., Stamford Hill, for 16 Stove and Greenhouse Plants
Mr. Baxendine, Gr. to Haydon Smallpiece, Esq., Guildford, Surrey, for 10 Stove and Greenhouse Plants
Mr. Chilman, Gr. to Mrs. Smith, Ashstead House, Epsom, for 6 Stove and Greenhouse Plants
Mr. May, Gr. to J. Spode, Esq., for 6 Exotic Orchids
Messrs. Jackson & Son, Nurserymen, Kingston, Surrey, for 20 Foliage Plants
Mr. Oubridge, Gr. to J. Foster, Esq, Stamford Hill, for 6 Fuchsias
Mr. T. Windsor, Nurseryman, Child's Hill, Hampstead, for 12 Pelargoniums
Mr. T. Gaines, Battersea, for 6 Pelargoniums (large size)
Mr. T. Windsor, for 6 Scarlet Pelargoniums
Mr. Dawson, Gr. to Earl Cowper, Panshanger, for a Collection of Fruit [of Grapes
Mr. Drewett, Gr. to Mrs. Cubitt, Denbies, Dorking, for 3 dishes

LARGE SILVER MEDAL.

Mr. Rhodes, Gr. to J. Philpott, Esq., for 8 Cape Heaths
Mr. Green, Gr. to Sir E. Antrobus, Bart., for 6 Cape Heaths
Mr. T. Page, Gr. to W. Leaf, Esq., for 6 Exotic Orchids
Mr. Turner, Nurseryman, for 6 Pelargoniums
Mr. Shrimpton, Gr. to A. Doxatt, Esq., for 6 Fancy Pelargoniums
Mr. C. Turner, for 6 Pelargoniums; second year of blooming
Mr. Thomas, Gr. to J. Baxindale, Esq., Whetstone, for a Collection of Fruits
Mr. Davies, Gr. to J. Dixon, Esq. for 4 Pine Apples
Mr. Standish, Nursery, Bagshot, for Vines in pots (White var.)
Mr. Alderson, for Vines in pots (Black variety)

SILVER GILT MEDAL.

Mr. Harlock, Gr. to R. W. Nutter, Esq., Wanstead, Essex, for 8 Cape Heaths [Heaths
Mr. Frost, Gr. to E. L. Betts, Esq., Maidstone, Kent for 8 Cape
Mr. G. Young, Gr. to W. Stone, Esq., Dulwich Hill, for 20 Foliage Plants
Mr. R. Baillie, Gr. to W. C. Carbonell, Esq., Harrow Road, for 12 Exotic Ferns
Mr. Cole, Nurseryman, St. Alban's, Herts, for 6 Calceolarias
Mr. W. Gray, Gr. to Lady Goldsmid, St. John's Lodge, Regent's Park, for 6 Fuchsias
Mr. Bragg, Nurseryman, Slough, for 12 Pelargoniums
Mr. Windsor, for 6 Fancy Pelargoniums [goniums
Mr. Tandy, Gr. to E. Saunders, Esq., for 6 Fancy Pelar-
Mr. Turner, Slough, for 6 Pelargoniums (large size)
Mr. Tennant, Gr. to R. Hutchinson, Esq., Croydon, Surrey, for 6 Scarlet Pelargoniums
Messrs. Dobson & Son, for 6 Pelargoniums (2d year)
Messrs. Paul & Son, Nurserymen, Cheshunt, for 50 Cut Roses.
Mr. J. Wilcox, Gr. to Miss Crawshay, Caversham Park, Berks, for 25 Cut Roses [Apples
Mr. Floud, Gr. to R. Fothergill, Esq., Abernant, for 4 Pine
Mr. Alderson, Market Gardener, South Lambeth, for Vines in pots (White variety)
Mr. Standish, Vines in pots (Black variety)
Mr. Miller, Gr. to Sir W. Smith, Bart., Eardiston Hall, for 4 Dishes of Peaches and Nectarines
Messrs. Veitch for New and Rare Plants
Mr. Turner, for Collection of Pelargoniums
Messrs. Parker & Williams, for New and Rare Plants
Mr. Allport, Gr. to H. Ackroyd, Esq., Cheshire, for 3 Dishes of Grapes
Mr. Hill, Gr. to R. Sneyd, Esq., Keele Hall, Stafford, for 12 lbs. of Grapes
Mr. Young, Gr. to Viscount Barrington, Becket Hall, Berks, for a Dish of Black Hamburgh Grapes
Mr. Allport, for a Dish of Black Prince Grapes
Mr. Ingram, Gr. to J. J. Blandy, Esq., Reading, for a Dish of Muscats
Mr. Thomson, Gr., Dalkeith, for a Dish of Grapes (any kind)

SILVER MEDAL.

Mr. Baxendine, Gr. to H. Smallpiece, Esq., for 8 Cape Heaths
Mr. Page, Gr. to W. Leaf, Esq., for 6 Cape Heaths
Messrs. Veitch & Son, Nurserymen, Exeter and Chelsea, for Pentstemon Jaffrayi
Messrs. Veitch, for Calla (spec.)
Messrs. Veitch, for Spragua umbellata [umbellata
Messrs. H. Low & Co, Nurserymen, Clapton, for Spragua
Messrs. H. Low & Co., for Plocostemma lasianthum
Mr. G. H. Bunney, Nurseryman, Stratford, Essex, for 20 Foliage
Mr. W. Cutbush, for 20 Foliage Plants [Plants
Mr. G. H. Bunney, for 12 Exotic Ferns
Mr. Burley, Nurseryman, Limpsfield, Godstone, Surrey, for 6 Calceolarias
Mr. Webb, Gr. to H. Walmesley, Esq., Atherstone House, Clapham Park, for 6 Fuchsias

SILVER MEDAL.

Mr. T. Gaines, Nurseryman, Surrey Lane, Battersea, for 12 Pelargoniums
Mr. Weir, Gr. to Mr. Hodson, the Elms, Hampstead, for 10 Pelargoniums
Mr. Bailey, Gr. to T. Drake, Esq., for 6 Fancy Pelargoniums
Mr. Shrimpton, Gr. to A. Doxatt, Esq., for 6 Pelargoniums, (large size)
Mr. Bragg, for 6 Scarlet Pelargoniums
Mr. Bragg, for 6 Pelargoniums, 2d year of blooming
Messrs. J. and J. Fraser, for 50 Cut Roses
Mr. Terry, Gr. to G. Puller, Esq. for 25 Cut Roses
Mr. Ruffett, Gr. to Lord Palmerston, Brocket Hall, for a Collection of Fruits
Mr. Young, Gr. to C. Bailey, Esq., M.P., Aberdare, for 4 Pine Apples
Mr. Povey, Gr. to Rev. J. Thornicroft, Esq. Congleton, for a Providence Pine [Pine
Mr. Floud, Gr. to R. Fothergill, Esq., Glamorgan, for a Queen
Mr. Dalrymple, Gr., Pontypool Park, Monmouth, for a Queen Pine
Mr. Taylor, Gr. to H. C. Ingram, Esq. Templenewsum, for 1 Pine Apple
Mr. Ivison, Gr. to Duke of Northumberland, for Vines in pots, (Black variety)
Mr. T. Thomas, G. to J. Baxendale, Esq. Whetstone, for 4 dishes of Peaches and Nectarines
Mr. Henderson, Gr. to Sir H. Beaumont, Bart., Coleorton Hall, for 4 Dishes of Peaches and Nectarines
Mr. Perkins, Gr. to J. Fletcher, Esq.
Mr. Miller, Gr. to Sir W. Smith, Bart., for Peaches and Nectarines
Mr. Taylor, Gr. to C. Hanbury, Esq., for a Dish of Peaches
Mr. Dawson, Gr. to Earl Cowper, for 2 Dishes of Peaches and
Mr. Turner, for 24 Carnations [Nectarines
Mr. G. H. Bunney, for 12 Lycopodiums
Mr. Tillyard, Gr. to Viscount Eversley, for 3 Dishes of Grapes
Mr. Wortley, Gr. to Sir J. Hawley, Maidstone, Kent, for 3 Dishes of Grapes
Mr. Frost, Gr. to E. L. Betts, Esq., for 3 Dishes of Grapes
Mr. Henderson, for a Dish of Black Hamburgh
Mr. Little, for a Dish of Black Hamburgh
Mr. Williamson, Gr. to Earl Lonsdale, Whitehaven Castle, for 1 Dish of Black Prince Grapes
Mr. Turnbull, for a Dish of Muscats
Mr. Allport, for a Dish of Muscats
Mr. Allport, for a Dish, any kind.

SMALL SILVER MEDAL.

Messrs. Veitch & Son, for Bilbergia (species)
Messrs. Veitch & Son, for Calanthe Domini
Messrs. Veitch & Son, for Æschynanthus tricolor
Messrs. Parker & Williams, for Statice brasicæfolia
Mr. Bullen, Gr. to J. Butler, for a new Cattleya.
Mr. Carson, for Rodriguezia coccinea
Messrs. E. G. Henderson, for Portlandia platenthe
Mr. Gedney, Gr. to Rev. W. Ellis, for 12 Exotic Ferns
Mr. Taylor, Gr. to Miss Clarkson, Avenue Road, for 12 British
Mr. B. Peed, for Correct Labels [Ferns
Mr. W. Cutbush, for Arrangement of Colour
Mr. T. Gaines, Nurseryman, Battersea, for 6 Calceolarias
Mr. Turner, for 6 Fuchsias [goniums
Mr. Baillie, Gr. to W. Carbonell, Esq., for 6 Fancy Pelar-
Messrs. Dobson & Son, for 6 Pelargoniums
Mr. J. Davidson, Gr. to G. Bishop, Esq., for 6 Scarlet Pelar-
Mr. Bragg, for 24 Pinks [goniums
Mr. Bragg, for 36 Pansies
Mr. August Beddingham, for 12 Pinks
Mr. August Beddingham, for 24 Pansies
Mr. E. Francis, Nurseryman, for 50 Cut Roses
Mr. Taylor, Gr. to C. A. Hanbury, for 25 Cut Roses
Mr. C. Turner, for 24 Cut Roses
Mr. Page, Gr. to W. Leaf, Esq., for 4 Pine Apples
Mr. Davis, Gr. to J. Dixon, Esq., for a Providence Pine
Mr. Fryer, Gr. to A. Crawshay, Esq., Cyfarthfa Castle, for a Queen Pine
Mr. Bailey, Gr. to T. T. Drake, Esq., for 1 Pine Apple any sort
Mr. Maker, Gr. to Sir R. W. Bulkely, Bart., Beaumaris, for 1 Green-fleshed Melon
Mr. Davies, Gr. to J. Dixon, Esq., Astle Park, Chelford, for Collection of Fruit
Mr. Davies, Gr. to J. Dixon, Esq., for a Scarlet-fleshed Melon
Mr. Turnbull, for 4 Dishes of Peaches and Nectarines
Mr. Henderson, for a Box of Nectarines
Mr. Judd, Gr. to Earl Spencer, Althorp, for 2 Dishes of Peaches and Nectarines
Mr. Rutland, Gr. to Capt. Peploe, Gurnston Castle, Hereford, for 2 Dishes of Peaches and Nectarines
Mr. Sawkins, Gr. to G. Brassey, Esq., Bramfield, for 2 Dishes of Peaches and Nectarines
Mr. Miller, for 2 Dishes of Peaches and Nectarines.
Mr. Bailey, Gr. to Earl Howe, Gopsall Hall, for 4 Dishes of
Messrs. Jackson, for 12 lbs. of Grapes [of Grapes
Mr. Bragg, for 24 Picotees [Strawberries
Mr. Turner, for 24 Picotees
Messrs. E. G. Henderson, for Ornamental Plants
Mr. Norman, for 12 Carnations
Mr. Norman, for 12 Picotees
Mr. Sage, Gr. to Earl Howe, for 3 Dishes of Grapes
Mr. Bousie, Gr. to Hon. H. Labouchere, Slough, for 3 Dishes of Grapes
Mr. Wood, Gr. to R. S. Murray, Esq., for 3 Dishes of Grapes
Mr. Hotson, Gr. to Mrs. Round, Colchester, for 12 lbs. of Grapes
Mr. Bailey, Gr. to T. T. Drake, Esq., for 12 lbs. of Grapes
Mr. Thompson, Gr., Dalkeith, for 12 lbs. of Grapes
Mr. Hill, Gr. to R. Sneyd, Esq., 1 Dish of Black Hamburgh
Mr. Sawkins, 1 Dish of Black Hamburgh
Mr. Turnbull, for a Dish of Black Prince
Mr. Turner, Gr. to J. Hill, Esq., the Rookeries, for a Dish of Black Prince Grapes
Mr. Drewett, for a Dish of Grapes (any kind)

BRONZE MEDAL.

Mr. Chilman, Gr. to Mrs. Smith, for 6 Cape Heaths
Mr. T. Gaines, Nurseryman, Battersea, for 6 Cape Heaths
Mr. Lavey, Gr. to E. A. Degraves, Esq, Fetcham, Surrey, for 12 British Ferns
Mr. R. Baillie, Gr. to W. C. Carbonell, Esq., for 12 British Ferns
Messrs. Veitch & Son, for Correct Labels
Mr. B. Peed, for Correct Labels
Mr. May, for Arrangement of Colour
Mr. Davidson, Gr. to G. Bishop, Esq., South Villa, Regent's Park, for 6 Fuchsias
Mr. Cannell, Gr. to E. Groves, Esq., Tulse Hill, Brixton, for 6 Fuchsias
Mr. James Ellis, Gr. to A. R. Dunn, Esq., Pymmes Park, Edmonton, for collection of Achimenes
Mr. William, Gr. to Josiah Spode, Esq., for Ixora alba
Mr. Cutbush, Nurseryman, for 1 Erica Eitonia Traduga
Mr. Bragg, Nurseryman, Slough, for 24 Carnations

BRONZE MEDAL.

Mr C. Turner, Nurseryman, Slough, for Collections of 24 varieties of Verbenas
Mr. E. Shenton, Nurseryman, Hendon, for 36 Pansies
Mr. Mitchell, Nurseryman, Maresfield, Sussex, for 50 Cut Roses
Mr. Francis, for 24 Cut Roses
Messrs. E. G. Henderson & Son, Wellington Nurseries, for Collection of Petunias
Messrs. E. G. Henderson & Son, for Gazania splendens
Messrs. E. G. Henderson & Son, for Dianthus giganteus sinensis
Mr. T. Young, Gr. to C. Bailey, Esq., for Providence Pine
Mr. Page, Gr. to W. Leaf, Esq., for 1 Queen Pine Apple
Mr. Oates, Gr. to Lord Leigh, for 1 Pine Apple
Mr. Oates, Gr. to Lord Leigh, for 1 Green-fleshed Melon
Mr. Bailey, for 1 Scarlet-fleshed Melon
Mr. Widdowson, Gr. to C. Barrow, Esq., Rickmansworth, for 6 Peaches
Mr. C. Little, Gr. to A. Darley, Esq., Stoke Court, for 4 Dishes of Peaches and Nectarines
Mr. Allen, Gr. to J. B. Glegg, Esq., Wythington, for 4 Dishes of Peaches and Nectarines
Mr. O. Goldsmith, Gr. to Sir W. R. Farquhar, Bart., for 2 Dishes of Peaches and Nectarines
Mr. Henderson, Gr. to Sir G. H. Beaumont, Bart., for 2 Dishes of Peaches and Nectarines
Mr. Drewitt, Gr. to Mrs. Cubitt, Denbies, Dorking, for 2 Dishes of Peaches and Nectarines
Mr. Booth, Gr. to H. Alexander, Esq., East Barnet, for 2 Dishes of Peaches and Nectarines
Mr. Gordon, Gr. to the Rev. T. D. Hudson, Ware, Herts, for 2 Dishes of Peaches and Nectarines
Mr. Cameron, Gr. to the Duke of Richmond, Goodwood, Sussex, for 1 Dish of Apricots
Mr. Sage, Gr. to Earl Howe, Gopsal Hall, for 1 Dish of Figs
Mr. Bousie, Gr. to the Right Hon. H. Labouchere, Stoke Park, Slough, for 1 Dish of Black Cherries
Mr. Wood, Gr. to C. R. Scott Murray, Esq., Dainsfield, Bucks, for 1 Dish of Black Cherries
Mr. S. Snow, Gr. to Earl de Grey, Wrest Park, Silsoe, Beds, for 1 Dish of White Cherries
Mr. Sage. Gr. to Earl Howe, Gopsal Hall, Leicestershire, for 4 Dishes of Strawberries
Mr. C. Turner, Nurseryman, for 4 dishes of Strawberries
Mr. Kimberley, Nurseryman, for 4 Dishes of Strawberries
Mr. G. Tillyard, Gr. to the Right Hon. Lord Eversley, Heckfield, Hants, for 4 Dishes of Strawberries
Mr. Phipps, Gr. to Earl Carnarvon, Highclere Castle, for 4 Dishes of Strawberries [Grapes
Mr. Sage, Gr. to Earl Howe, for 1 Dish of Black Hamburgh
Mr. Hanson, Gr. to J. Thornton, Esq., Southgate, for 1 Dish of Black Hamburgh Grapes
Mr. Turnbull, for 3 Dishes of Grapes

CERTIFICATE OF MERIT.

Messrs. Jackson, for Correct Labels
Mr. Rhodes, for Correct Labels
Mr. Whitbread, for Arrangement of Colour
Mr. Cole, Nurseryman, for 12 Seedling Shrubby Calceolarias
Mr. Jas. Ellis, Gr. to A. R. Dunn, Esq., Pymnees Park, Edmonton, for 24 blooms of Cloth of Gold Rose
Mr. Bragg, Nurseryman, Slough, for 24 Hollyhocks (cut flowers)
Mr. Bragg, Nurseryman, Slough, for 6 Pelargoniums (large size)
Mr. Bragg, Nurseryman, Slough, for a Collection of Hunt's Sweet William [Geranium
Mr. C. Turner, Nurseryman, Slough, for Seedling Bedding
Mr. C. Turner, Nurseryman, Slough, for Seedling Carnation Sir H. Havelock
Mr. C. Turner, Nurseryman, Slough, for Phlox Model
Mr. C. Turner, Nurseryman, for Phlox Blanche
Mr. E. Shenton, Nurseryman, Hendon Park, near Hendon, for Miscellaneous Collection of Verbenas
Mr. C. J. Perry, The Cedars Castle, Bromwich, near Birmingham, for Collection of Seedling Cut Verbenas
Mr. Dyer, Gr. to C. Godson, Esq., Barnet, Herts, for Seedling Variegated Geranium
Mr. Standish, Nurseryman, Bagshot, for Rose Eugene Appert
Mr. W. Barnes, Camden Nursery, Camberwell, for Collection of Begonias
Mr. Smith, Nurseryman, Hornsey Road, for Fuchsia Senator
Mr. Ellis, for 25 Cut Roses
Messrs. Lane & Son, for 50 Cut Roses.
Mr. Kimberley, Nurseryman, Stoke, for 24 Cut Roses
Messrs. H. Low & Co., Clapton Nursery, for Genotanthus
Mr. Laing, Nurseryman, for 24 Cut Roses [cupreus
Messrs. H. Low & Co., Clapton Nursery, for Myrsine picta
Messrs. H. Low & Co., for Plant (unknown)
Messrs. H. Low & Co., Nurserymen, for Chamæbatia foliolosa
Messrs. H. Low & Co., for Franciscea confertifolia variegata
Messrs. H. Low & Co., for Plant (unknown)
Messrs Paul, Nurserymen, for Collection of Herbaceous Plants
Mr. Veitch, Nurseryman, for Pteris argyrea
Mr. Veitch, Nurseryman, for Lycopodium (species)
Mr. Veitch, Nurseryman, for Ceratodactyle osmundoides
Mr. Veitch, Nurseryman, for Selaginella Lyalli
Mr. Veitch, Nurseryman, for Lygodium polystachion
Mr. Veitch, Nurseryman, for Chamæbatia foliolosa
Mr. Veitch, Nurseryman, for Platycerium Wallichi
Mr. Oates, Gr. to Lord Leigh, Stoneleigh Abbey, for a Providence Pine
Mr. Davies, Gr. to W. Booker, Esq., Valindra House, Cardiff, for 1 Queen Pine
Mr. Temple, Gr. to G. Clarke, Esq., Dowlais House, Glamorgan, for 1 Queen Pine
Mr. Temple, Gr. to G. Clarke, Esq., for 1 Queen Pine
Mr. Halliday, Gr. to the Earl of Mansfield, Scone Palace, Perth, for 1 Queen Pine [Melon
Mr. Davies, Gr. to J. Dixon, Esq., Chelford, for 1 Green-fleshed
Mr. Phipps, Gr. to the Earl of Carnarvon, Highclere Castle, for 1 Green-fleshed Melon
Mr. Rawbone, Gr. to R. Adderley, Esq., Barlaston Hall, Staffordshire, for 1 Dish of Royal George Peach
Mr. S. Snow, Gr. to Earl De Grey, Wrest Park, Silsoe, Beds, for 1 Dish of Figs
Mr. Ruffett, Gr. to Viscount Palmerston, Brocket Hall, Hertford, for 1 Dish of Figs
Mr. C. Hutt, Gr. to Miss Burdett Coutts, Holly Lodge, Hampstead, for 1 Dish of Figs
Mr. Widdowson, Gr. to C. Burrows, Esq., Rickmansworth, Herts, for 1 Dish of White Cherries [berries
Mr. Widdowson, Gr. to C. Burrow, Esq., for 4 Dishes of Straw-
Messrs. Jackson, Kitchen Garden, Hampton Court, for 12 lbs.
Mr. Kay, Market Gardener, Finchley, for 12 lbs. of Grapes
Mr. Simpson, Gr. to Lady Molyneux, Stoke Farm, Slough, for 1 Dish of Black Hamburgh Grapes
Mr. Nicholson, Gr. to G. Majoribanks, Esq., Bushy Grove, Watford, for 3 Dishes of Grapes
Mr. Perkins, for 1 Dish of Black Hamburgh Grapes
Mr. Tillyard, for 1 Dish of Black Prince Grapes

HORTICULTURAL SOCIETY.

CHANGE OF ENTRANCE TO THE GARDEN.—The Council have directed that the Gate leading into the Garden from the Duke of Devonshire's road shall be closed; and that, in future, the principal entrance shall be at the National School Gate, immediately opposite the Church on Turnham Green.

MEETINGS OF THE FRUIT COMMITTEE.—Notice is hereby given, that the Meetings of this Committee for the next three months will be held at 8, St. Martin's Place, Trafalgar Square, at 3 P.M., on

TUESDAY, JULY 12, | TUESDAY, AUGUST 9,
TUESDAY, SEPTEMBER 20.

At the Meeting on August 9, a Prize of One Guinea will be awarded for the best EARLY SEEDLING PEACH or NECTARINE, if found to possess sufficient merit. The fruit should be accompanied by two or three of the full-grown leaves.

On September 20 a Prize of Two Guineas will be awarded for the best SEEDLING GRAPE; a Prize of One Guinea will also at this Meeting be given for the best dish of SEEDLING STRAWBERRIES.

Blank forms to be filled up and sent with Seedling or other Fruits may be obtained on application to Mr. ROBERT THOMPSON, Secretary to the Fruit Committee, Horticultural Society's Garden, Chiswick, London, W.

N.B. The carriage of packages of Fruit will be paid. They should be directed "To the Secretary to the Fruit Committee, 8, St. Martin's Place, Trafalgar Square, London;" and should be delivered before 1 P.M. on the respective days of meeting.

At a meeting held in the rooms of the Society of Arts, on Tuesday, June 21, the following gentlemen were elected Fellows, viz.:—

E. P. Sells, jun., Highbury Park, West
W. S. Dixon, Esq., 1, Dixon Street, Glasgow
G. F. Wilson, Esq., Belmont, Vauxhall
B. Noakes, Esq., Hope Cottage, North Hill, Highgate

A ballot took place for the undermentioned plants, which were declared to have been gained by the following Fellows, viz.:

Pinus from Popocatapetl, 7 Plants. 14 Applicants.

Mr. Wm. Cotterell	Mr. Fisher Godwin	Col. Leslie
Mr. Charlwood	Earl of Leicester	Lady Rolle
	Mr. J. Veitch, jun.	

Pinus Regeliana, 9 Plants. 21 Applicants.

Capt. Best	W. J. Lloyd, Esq.	Rev. T. Stainforth
Mr. J. R. Challice	J. G. Parry, Esq.	Mr. J. Veitch, jun.
Sir C. Lemon	Lady Rolle	Lord Vernon

Pinus Calabra, 13 Plants. 31 Applicants.

Mr. W. Barron	A. S. Gladstone, Esq.	Earl of Scarborough
W. Childers, Esq.	Rt. Hanbury, Esq.	Mr. J. Shaw
Arthur Currie, Esq.	Wm. Hunt, Esq.	Mr. J. Veitch, jun.
Sir P. Egerton	Lady Rolle	Lord Vernon
	C. B. Warner, Esq.	

Pinus Brutia, 17 Plants. 28 Applicants.

Capt. Best	J. Fielden, Esq.	Col. Leslie
Robt. Capper, Esq.	Mr. J. Garaway	Earl of Scarbrough
Mr. J. R. Challice	Dr. Henderson	Mr. J. Shaw
Fredk. Chatfield, Esq.	Wm. Hunt, Esq.	Sir W. C. Trevelyan
	Mr. J. Ivery	Lord Walsingham
Sir Philip Egerton	Rev. W. B. Lee	Lady C. Wellesley

Wistaria sinensis alba, 30 Plants. 53 Applicants.

Edw. Banks, Esq.	Jas. Heywood, Esq.	Sir F. Shuckburgh
J. E. Bartlet, Esq.	W. H. Hughes, Esq.	J. S. Smith, Esq.
E. Brown, Esq., Oakbill	Col. Mason	A. J. R. Stewart, Esq
	P. Nelson, Esq.	J. Straith, Esq.
W. F. Lindsay Carnegie, Esq.	G. H. Packe, Esq.	Lady L. Tennisson
	A. F. Paxton, Esq.	J. N. Walker, Esq.
R. Crawshay, Esq.	W. J. Phelps, Esq.	Lord Walsingham
Lord Egerton of Tatton	E. P. Richards, Esq.	J. C. Whiteman, Esq.
	Col. Richardson	Miss Wilson
W. J. Etches, Esq.	G. S. Ridgway, Esq.	G. Wood, Esq.
Hon. F. L. Gower	R. Rogers, Esq.	J. Deacon, Esq.

The following plants, of which there was a sufficient number to supply all the Fellows who applied for them, were also ordered to be distributed:—

	Applicants		Applicants.
Pinus Don Pedri	93	Bambusa gracilis	33
Abies, sp. from Mexico	15	Platycodon chinensis	21
Cupressus Macnabiana	49	Seedling Camellias	41
,, Lawsoniana	67	Buddlea, sp. from Peru	18
Pentstemon, from Mexico	47	Sida malvæfolia	18
Veronica decussata Devon.	31	Clematis microphylla, var. leptophylla	26
Aralia japonica	15		
Eurybia quercifolia	9	Seeds of Sikkim Rhododendron	41
Pomaderris phillyreæfolia	10		

NEXT ORDINARY MEETING FOR ELECTION OF FELLOWS, AND BALLOT FOR PLANTS.—Notice is hereby given that the next Ordinary Meeting will be held in the rooms of the Society of Arts, in the Adelphi, on TUESDAY, JULY 19th; the Chair to be taken at 11 o'clock, A.M. On this occasion a third Ballot for plants will take place.

LIST OF PLANTS FOR BALLOT, JULY 19.

100 "NERGALI," or HILL BAMBOO OF THE PUNJAUB. Hardy herbaceous plant.
50 CUPRESSUS MACNABIANA. Hardy tree.
50 CUPRESSUS LAWSONIANA. Hardy tree.
50 CUPRESSUS TORULOSA. Hardy tree.
50 ABIES SMITHIANA. Hardy tree.
30 PINUS PATULA. Half-hardy tree.
20 PINUS DON PEDRI. Hardy (?) tree.
20 PINUS BRUTIA. Hardy tree.
80 STATICE BRASSICÆFOLIA. Greenhouse herbaceous plant.
30 HESPEROMELES, sp. from Mexico. Half-hardy shrub.
40 BERBERIS, sp. from Pichincha. Half-hardy shrub.
20 TECOMA LATROBEI. Greenhouse climber.
40 SPIRÆA CALLOSA. Hardy shrub.
30 SCLEROTHAMNUS DIFFUSUS. Greenhouse shrub.
30 BOUVARDIA LONGIFOLIA. Greenhouse shrub.
40 CALLISTEMON RUGULOSUM. Greenhouse shrub.
40 BUDDLEA, sp. from Peru. Greenhouse shrub.
40 PENTSTEMONS, sp. from Peru. Hardy herbaceous plants.
50 SEEDLING CAMELLIAS.
50 BAMBUSA GRACILIS. Hardy herbaceous plant.
40 CUPRESSUS GOVENIANA. Hardy tree.
30 CUPRESSUS CASHMERIANA. Hardy tree.

Fellows of the Society desirous of obtaining any of these plants are requested, if they are subscribers of 4 guineas a year, to name the *four* sorts they would prefer; or, if subscribers of 2 guineas a year, to name *two* sorts. Should there be more applications for any particular plant than the number prefixed to its name in the List, a Ballot will then take place to determine which applicants are to be supplied. The arrangements for conducting this Ballot render it necessary that the names of the plants to be drawn for, should be sent to the Office of the Society, 8, ST. MARTIN'S PLACE, W.C., at the latest by Saturday, July 16.

VI.—FURTHER MEETINGS OF COUNCIL, 1859–60.
1859.—July 22, August 19, September 23, October 21, November 18, December 23.
1860.—January 20, February 24, March 23, April 20.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—At a General Meeting of the Members of this Society held on Wednesday, July 6, at the House of the Society of Arts, John Street, Adelphi, for the Election of Three Pensioners, the following was the result of the ballot:—

CANDIDATES.

No.	Names.	Application.	Age	Votes
1	JAMES SMITH	Eleventh	73	554
2	WILLIAM PRIEST (a Subscriber 7 years)	Seventh	64	515
3	WILLIAM CROUCHER	Sixth	69	145
4	JOHN MACKINTOSH (a Subscriber 5 years)	Sixth	68	419
5	GEORGE DRURY	Fifth	73	49
6	JOHN ALDERMAN	Fourth	70	161
7	MARGARET MITCHINSON (husband subscribed 7 years)	Fourth	65	135
8	JOHN DOWNING	Third	72	658
9	THOMAS JENKINS (a Subscriber 11 years)	Third	71	386
10	JAMES WALLIS	Third	81	115
11	GEORGE ANNABALL	Second	62	96
12	SAMUEL FAULKNER (a Subscriber 6 years)	Second	65	20
13	WILLIAM SMITH	Second	82	21
14	MARIA SQUIBBS (Husband subscribed 14 years)	Second	60	853
15	JAMES BROWNE (a Subscriber 5 years)	First	73	333
16	ELIZABETH FLINN	First	67	3

The Meeting then declared MARIA SQUIBBS, JOHN DOWNING, and JAMES SMITH duly elected Pensioners of this Society.
14, Tavistock Row.—July 7. EDW. R. CUTLER, Sec.

70 FINEST NEW VERBENAS OF 1859.—Azucena, Dentonia, Belinda, True Blue, Mrs. White, Il Trovatore, Comet, conspicua, Eleanor, Gem, Lord Clyde, Lord Elgin, Mathilde, Mrs. Maclean, Norfolk Beauty, Novelty, Ajax, Bandmaster, Balfe, Comte de Morello, Isa Craig, Lightning, Miss Drake, Mrs. Blyth, Mrs. Pennington, Princess Clothilde, Satanella, Verdii, striata perfecta, Abundance, Baccarah, Blue Magnifique, Cerise, Cendrillon, Clara, Cyrus, Fatima, Felix Roland, Figaro, Gitana, Gloire de Mon Plaisir, Ivanhoe, La Magicienne, Lucrèce, Madame Hardy, Madame Hoste, Madame Large, Malakoff, Manteau d'Evêque, Mars (Sankey), Mars (Chauvière), Monsieur Hardy, Monsieur Denis Blain, Ne Plus Ultra, Primuleflora, Reine Blanche, Rosalinde, Rosamonde, Mrs. Fowke, Souvenir de M. Scringe, Miss E. Hanmer, Liandre, Mrs. Leslie, Lady C. Sheppard, Snowflake, Kossuth, Marie Rougiere, Le Bon Nicholas, Flora, Rubens, Bellona. The above 70 Verbenas for 30*s.*; or selections of any 12 sorts, 9*s.* They are fine, strong, well hardened plants in single pots (free by post).
HENRY MAY, The Hope Nurseries, Bedale, Yorkshire.

The Gardeners' Chronicle.

SATURDAY, JULY 9, 1859.

MEETINGS FOR THE FOLLOWING WEEK.
TUESDAY, July 12 { Horticultural (Fruit Committee at St. Martin's Place) ..... 3 P.M.

IN another column will be found a very full report of the MEETING OF THE HORTICULTURAL SOCIETY last Thursday, assembled for the purpose of determining whether they would authorise the Council to proceed with the plan of forming a new garden in the centre of the quadrangle at KENSINGTON GORE, belonging to H.M.'s Commissioners of the Great Exhibition of 1851. It will be seen that after hearing the details of the plan, inspecting the designs which had been prepared by order of the Royal Commissioners, and fully discussing the principal terms proposed by them, the meeting unanimously authorised the Council to proceed.

This essential point having been resolved on, an announcement was then made that so great is the interest taken by the Queen and the Prince Consort in the welfare of the Horticultural Society, that HER MAJESTY, entirely approving of the plan proposed by the Council, was most graciously pleased to signify her royal intention of subscribing the sum of ONE THOUSAND POUNDS towards the fund which must be raised for carrying it out, and of causing various branches of the Royal family to be elected as Life Members of the Society; at the same time his Royal Highness authorised the meeting to be informed that he also was prepared to subscribe the sum of FIVE HUNDRED POUNDS in aid of the measure, and also to provide a further sum of ONE THOUSAND POUNDS by taking ten of the debentures of 100*l.* each, which the Society proposes to issue. It was at the same time announced that H.R.H. the Princess FREDERIC WILLIAM, Princess Royal of England, proposed to join the Society as a Life Member. It is needless to add that these munificent contributions were acknowledged with the deepest gratitude by every one present, and that the noble chairman of the meeting was requested to convey to HER MAJESTY, to H.R.H. the PRINCE CONSORT, and to H.R.H. the PRINCESS ROYAL, the most respectful thanks of the Society.

So very considerable a number of new supporters of the Society was also named, in the event of the proposed Garden being constructed, as to give the Council increased confidence in being able to bring their arrangements to a satisfactory termination.

It is impossible to exaggerate the importance of this movement with reference to its bearing on the progress of English gardening. No public body ever imparted such a stimulus to cultivation as the Horticultural Society, partly by introducing almost every new plant that found its way into gardens between the years 1816 and 1850, and partly by conferring medals and pecuniary rewards upon meritorious cultivators: the first of these operations having cost above 13,000*l.* for pay of collectors alone; and the second having amounted to considerably more than 20,000*l.* Nor was there any abatement of activity in these two most important lines of operation, so long as the means at the disposal of the Society were sufficient. But when the world forsook the Chiswick Gardens for other places of more convenient access, income rapidly declined, and with income the power to render public services as formerly. A great opportunity now presents itself of recovering the lost income and very largely increasing it. There can be no possible doubt that a magnificent garden, such as it is proposed to construct at Kensington Gore, would be thronged daily by crowds of visitors eager to exchange the dirty streets of London for a place where they can cheaply enjoy the pleasures of a garden, without the inconvenient intrusion of that lowest class which infests all places of resort that are absolutely public. Its contiguity to the parks, and to the immense population of western London, together with the facility of access from the north and east by the North of London Railway, which is expected to be extended to the very corner of the proposed garden, renders the situation unrivalled in the vicinity of the metropolis. It is from the admission money paid at the gates on ordinary days, as well as on days specially set apart for great exhibitions or other occasions of unusual importance, that the income we contemplate will be derived, and that must of necessity be so large, especially while the Garden enjoys the high privilege of being the favourite resort of our beloved Sovereign and her Royal family, as to reduce all such questions as providing the funds now demanded, to insignificance. That income again possessed, new plants valuable for their hardiness, beauty, and utility, whether merely ornamental, or important as additions to our dessert, our kitchens, or even our agricultural resources may be rapidly introduced and distributed among the Fellows of the Society. The world contains many a corner rich beyond belief in vegetable treasures that never yet have reached us, and with sufficient means at its disposal, the Horticultural Society will know how to penetrate such regions, and carry off whatever deserves to be introduced.

A CORRESPONDENT or two remind us that the season has arrived when some at least of the instances of LUMINOUS APPEARANCES reported to have been seen among living plants may be verified. Should verification be possible, it is to those who live in gardens that we must look for information; and a season so dry as this has hitherto been may be expected to prove favourable to such appearances—if they ever occur.

The best English account of the phænomenon in question is to be found in Dr. BALFOUR'S Class-book of Botany; from which we borrow the following details:—

"The younger LINNÆUS states that the flowers of Nasturtium, the African Marigold, the orange Lily, and other orange flowers, give out, at the end of a hot summer day, intermittent phosphorescence resembling little flashes of light. DOWDEN also mentions a luminous appearance of a similar nature in the common Marigold (Calendula vulgaris). He noticed it on the 4th of August, 1842, at 8 P.M., after a week of very dry warm weather. A gold-coloured lambent light seemed to play from floret to floret, and to make a course round the disk of the flower. JAMES states that at Moseley, in Worcestershire, after a hot dry day, the flashes of light from Papaver pilosum, or hairy red Poppy, were observed by himself and others. The light given out by flowers has been remarked by various other observers. The plants in the flowers of which it has been observed are Tropæolum majus, Helianthus annuus, Calendula officinalis, Tagetes erecta and patula, Lilium chalcedonicum and bulbiferum, Polyanthes tuberosa, Papaver orientale and pilosum, Chrysanthemum inodorum, Œnothera macrocarpa, and Gorteria rigens."

"In the case of Dictamnus Fraxinella, it is reported that in a still warm evening the resinous vapour given off by a plant is in such abundance as to take fire when a flame is applied to it. The writer of the work entitled Garden Flowers says, that on a fine summer evening in June, before the twilight had commenced, he held a light about half an inch from the flower, when the vapour which it emitted took fire, and a beautiful blue flame ran over every part of the plant, which was about 3 feet high. It occupied half a minute in progress, and the plant was not injured." (*Balfour, p.* 676-7.)

The general opinion of vegetable physiologists has been that such appearances are either illusory or connected with rapid chemical action in the

interior of plants. Prof. Henfrey adopts the first view (*Elementary Course*, *p.* 615), regarding "the asserted luminosity of flowers as at present a very questionable matter." Prof. Allman holds the same opinion. Dr. Carpenter adopts the second idea, which is the common one. In his opinion it is probable that the extrication of light is in part connected with that conversion of oxygen into carbonic acid, which takes place very rapidly in flowers, and which may be regarded as a slow combustion. This also, as will be presently seen, is the interpretation of Tulasne, a very distinguished observer.

For ourselves we find the subject so surrounded by difficulty that we hesitate to offer any opinion; and it is probably very far from being so simple a question as has been supposed. That Fraxinella is really luminous at night, under some circumstances, can hardly be doubted; and yet we have never been able to perceive the smallest sign of that plant possessing such a quality. Darwin, indeed, assumes the story to be true:—

> Slow o'er the twilight sands, or leafy walks,
> With gloomy dignity Dictamna stalks;
> In sulphurous eddies round the weird dame
> Plays the light gas, or kindles into flame,

thus explaining the phænomenon by saying that at certain seasons the plant emits an inflammable air or gas, and flashes on the approach of a candle. And this, his notion, has been adopted by subsequent writers. If so the luminosity ascribed to it must be something very different from what occurs in Marigolds and Poppies, which contain very little volatile oil; although it may be analogous to that spoken of in the Tuberose.

But it is certain that some Fungi are really luminous in the dark; upon that point the evidence is clear. We again quote Balfour—

"Light is undoubtedly given out by Fungi in certain circumstances. Luminosity has been noticed in many species of Agaricus growing on dead or decaying wood, such as Agaricus olearius, indigenous in the south of Europe; Agaricus Gardneri, in Goyaz, Brazil; Agaricus igneus, in the island of Amboyna; and Agaricus noctilucens, in Manilla. The first two are of an orange colour, the third of an ash colour, and the fourth white. The light of the Agaric of the Olive-grounds (Agaricus olearius) may be compared to that of phosphorus; it is a continued white light without scintillations, very bright when the plant is young and recently gathered. Agaricus igneus has a bluish light. The whole plant of Agaricus Gardneri gives out at night a bright phosphorescent light, somewhat similar to that emitted by the larger fire-flies, having a pale greenish hue. From this circumstance, and from growing on a Palm, it is called by the inhabitants of Villa de Natividade, Flor de fogo.

"Drummond describes two species of Agaricus near the Swan River, which emit a most curious light. They grow parasitically on trunks of trees such as Banksias. When placed on paper, the Agarics emitted by night a phosphorescent light sufficient to allow a person to read by it, and they continued to do so for several nights with gradually decreasing intensity as the plant dried up. Another phosphorescent Agaric was noticed by Mr. Drummond in Australia on the trunk of a dead Eucalyptus occidentalis. The upper surface of the pileus was nearly black, while the central portion and the gills were milk-white, the stipe being attached to one side of the pileus.

"Some species of Rhizomorpha are remarkable for the phosphorescence which they display. These plants vegetate in dark caverns, and in the coal mines of Germany. They are seen hanging from the roof in great numbers. Their luminous qualities are most developed in the furthest recesses of the mines. Prestoc has noticed that the spawn of the Truffle is luminous, and that it may thus be collected at night in the Truffle-grounds. These are instances of luminosity in living Fungi, which disappears with life. Luminosity has also been observed in plants in a state of putrescence, as in rotten wood and in half-decayed Potatoes.

"Tulasne has made observations on the light given out by Rhizomorpha subterranea. By preserving it in a proper state of humidity the phosphorescence was kept up for several evenings. When the Fungus began to dry it lost its luminosity. Tulasne considers the light as similar to the phosphorescence in decaying plants, and he concludes that the same agents, namely oxygen, water, and heat, furnish the combination necessary for producing phosphorescence, both in organised living beings and in those which have ceased to live. In both cases the luminous phenomenon accompanies a chemical reaction, which consists chiefly in the combination between organised matter and the oxygen of air, that is to say, a slow combustion, giving rise to carbonic acid."

It is thus certain that some plants are luminous while alive; and if so why should not others be so? The whole subject is a question of fact. It has indeed been maintained that the luminosity of Fungi is something peculiar to that order, and that when decaying wood is found to be phosphorescent it is only because it is infested with the spawn of Fungi. But the sap of plants having no relation to Fungi is also luminous.

"Mornay describes a tree in South America called Cipó de Cunanam, with a milky juice, which gave out in the dark a bright light when wounded. The phosphorescent light appeared at every cut in the stem, and each drop of the milky juice was luminous. Martius also observed the same kind of light in the sap of Euphorbia phosphorea, a Brazilian plant, when wounded. When this was observed, the temperature was 97.25° F., but it ceased when the heat sank to 68° F.; he did not find that it affected the galvanometer in the east."

It is therefore by no means necessary to assume that when plants are luminous they are infested with Fungi.

The only example of manifest luminosity that has come before ourselves is recorded in the volume of the *Gardeners' Chronicle* for 1845. General Cullen, an Indian officer, informed the Royal Asiatic Society that a plant luminous at night had been discovered by a Tahsildar, who having been compelled by rain to seek shelter at night under a mass of rock in the jungle, had been astonished at seeing a blaze of phosphoric light diffused "over all the Grass in the vicinity" (see *Gard. Chron.*, 1845, *p.* 243). A piece of the root, or rhizome, was sent home by General Cullen, and was found, although dead, to become luminous after being wetted. Having been enabled to examine this plant we found that it gleamed in the dark with all the vividness of a glowworm, or the electric Scolopendra, after having been moistened. Nor did the phosphorescence appear to be exhaustible; for the plant lighted up again as often as it was moistened. Here then was an unquestionable case of luminosity, not in rotten wood, but in a piece of a plant which, although dry, appeared to ourselves to be quite sound and free from decay. Our learned friend Dr. Wight, in a communication with which he has lately favoured us, believes however that the phosphorescence was really caused by Fungi. The ground, he says, in which the luminous rhizomes were found had been recently broken up, having been covered with Andropogons and other rhizomatous Grasses. "These rhizomes," he adds, "thus exposed probably for weeks or months to the action of soaking rains and heavy dews alternating with hot sunshine, would naturally begin to decay, or may have become impregnated with minute luminous Fungi, and in that state, when damped, became luminous in the dark. This is the inference I was led to draw from General Cullen's account of the matter, strengthened by the fact that other specimens of the plant sent to me in a living state did not exhibit the slightest trace of luminosity."

But Balfour states, upon the authority of the late General Madden, that the rhizomes of several Indian Grasses are occasionally luminous by night during the rainy season; and we do not understand that their phosphorescence is consequent on death and decay.

Such being the state of this curious question, we concur with our correspondents in thinking that the attention of those who dwell in gardens should be invited to the subject, and we shall hope to learn that many a quick intelligent eye has been directed towards it.

SOUTHILL.

This magnificent estate, containing as it does the noble demesne and beautiful classic structure, the principal residence of William Henry Whitbread, Esq., lies south-east of Bedford, and is intersected by the London road for some 10 or 11 miles in extent. The Leicester and Hitchin Railway also passes through the property, and there is a Southill station in close proximity to the park, something less than a mile from the mansion. There is also a station at Biggleswade, on the Great Northern line, four miles distant; and to Bedford by road, over the high ground, the distance is nine miles; by this rout some exquisite views are obtained of that magnificent town, and the surrounding beauties of its broad and fertile plain, enriched and animated as it is by the sluggish waters of the Ouse.

The park comprises an area of 600 acres of excellent land of a bold and irregular character, richly adorned with noble timber in well disposed groups and masses, and the salient points are well brought out, with many remarkable examples of fine trees. An admirable specimen of Weeping Birch, growing in a commanding position, is an object of very great beauty; it is 40 feet in height, and at some distance from the ground the girth is 9 feet, covering with beautifully pendent branches an area of 170 feet in circumference. This tree is at all times an object of peculiar interest, but when covered with hoary frost or loaded with pearly dew, the effect is then of the most charming description. Of late years many Deodars and other remarkable Conifers have been planted unsparingly in well marked positions in this beautiful park; all of them look promising and well. Many of these have already reached a height of 14 or 15 ft., and are now objects of great beauty and attraction. An avenue of Cedars of Lebanon has been planted, through which the carriage drive passes for a considerable distance in its course to the new station of the Leicester and Hitchin Railway. A small stream threads its way through the park eastward, and expands into a beautiful sheet of water of more than 40 acres in extent immediately in front of the mansion; in its centre is a well clothed green island, and on the opposite shore a beautiful Doric temple nobly proportioned with an admirable background of stately wood, which rises up majestically behind. The principal approaches are those from Bedford over the high ground on the west, and from the pretty village of Southill on the eastern side. The roads are wide and exceedingly well directed; they enter the park by simple and unpretending gates and lodges. There are also three other approaches from different points, which unite with the Bedford drive; these with their gates and lodges are of the same simple and useful character as the others; they reach the mansion by rising ground on either side at the northern or entrance point on a noble parallelogram of gravel 400 feet in length, and 46 feet in width; there is also a diverging entrance at the western end. The park is bounded on the north by Lord Ongley's woods and the beautifully picturesque village of Old Warden, which at this period of the season is a scene of much interest and attraction on account of the gorgeous masses of flowering shrubs, creepers, and other beautiful plants with which its tastefully ornamented cottages are so profusely decorated, enhanced, too, by the cleanliness and comfort which seems to pervade the whole. Near here is also his lordship's once famous Swiss garden—with its handsome curvilinear conservatory—its lake, bridges, banks of turf, aviaries, statuary, and vases filled with choice flowers—its fine shrubs, trees, and plants, the whole scene being enlivened with birds of fine plumage, some disporting on the waters of the lake or soaring over head, others rambling or congregating at will, all united in forming a scene of the most enchanting kind—a paradise—now alas! a neglected wilderness.

The mansion is proudly situated on a well-marked acclivity, and is a noble pile of white freestone in the classic style—the centre a large square mass, with wings and connections on either side; the roofs of the wings are pointed, and have an exceedingly good effect, and the whole presents a façade of 226 feet in length, and there are 270 feet of offices and excellent stable buildings continued from the eastern end, and hidden by plantations from the main portion of the building, the carriage drive being diverted by a sweep, so as at once to give depth of effect and more privacy to the entrance front of this superb residence. It was built for the late Samuel Whitbread, Esq., M.P., in the years 1796–7, by Holland, who has been described as one of the most experienced and eminent architects of his time, and to whom Brown, the celebrated architect and landscape gardener, at his decease, bequeathed the whole of his drawings. It contains a noble suite of magnificent apartments, superbly furnished and rich in articles of *virtù* and taste, its walls being adorned with many admirable paintings by the best masters; and over the doors of some of the principal apartments are animals in basso-relievo by Garrard and paintings of live game by Gilpin. The dining room, a breakfast room, a sitting room, entrance hall, billiard room, and libraries are situated on the northern side; the former is 42 feet 9 inches in length and 19 feet 8 inches in width, and has a projecting bow window, which adds very materially to the convenience and comfort of this noble room; the latter is 61 feet long by 17 feet 9 inches in width, and contains in handsome cases a well chosen collection of beautifully-bound books. Over the chimney-piece is a portrait of Mr. Whitbread, the grandfather of the present worthy possessor, and over the book-cases on either side are portraits of his clerks in the Chiswell Street Brewery at that period. The centre of the south side of the building contains two beautiful drawing-rooms; the largest is 43 feet long, 23 feet wide, and lofty in proportion. Its walls are decorated by some exquisite paintings, and also full length portraits of the late Samuel and Lady Elizabeth Whitbread. There are galleries on either side, connecting on the one hand a very beautiful but simply furnished breakfast-room, 29 feet long and 17 feet wide, and on the other a superb sitting-room and boudoir, to which an elegant conservatory has lately been added.

The pleasure grounds immediately surrounding the mansion comprise an area of more than 15 acres; that portion of them on the north side is divided from the park by a handsome open balustrade fence, 400 feet in length, having elegant iron gates in the centre, supported by colossal urns, and relieved on either side by upright Cypress. The other portion of the ground is enclosed by a sunken wall or ha-ha. The width of the ground from the house to the open balustrade fence is 150 feet, in which there is a fall of 5 feet. The lower

tory of the house was earthed up after Repton's model of Welbeck, which had then just been completed. That portion however nearest the building was carried out in a style far superior to the original, inasmuch as an open balustrade fence surmounted by Maltese vases, artistically disposed, is run along the front of the building its entire length at some little distance from the walls, and instead of an upright wall being carried up to the height of the lower windows the ground is bevelled to within 3 feet of the office floors. A light balcony, too, 4 feet wide and having a handsome iron rail, projects from the stringing course of the principal floor, and these conjointly serve to screen from observation the lower or office windows, without rendering the rooms so dark and dismal as at Welbeck. But in all other matters of ground work, Mr. Holland, notwithstanding his great fame as an architect, failed here as signally as he had done at Woburn and elsewhere, and the ample space in front of this magnificent building was laid out in a wide approach, which was separated from the lower portion by an open balustrade fence, surmounted by vases, with a view to represent a terrace, and that too on ground sloping from the very base of the building at the rate of 1 foot in 30 feet. The long line of umbrella Acacias with which this so-called terrace was formerly adorned has been replaced, as at Chatsworth, by Standard Portugal Laurels, having nicely formed heads. The ground is formally laid out and planted with Rhododendrons and other dwarf groups of evergreen shrubs —a very few clumps for flowers being introduced, and these are protected by a game fence of a light colour. The whole of the vases are filled in the summer season with flowering plants, and they have an excellent effect. There is a broad walk inside the lower balustrade fence terminated at the eastern end by a handsome stone seat; at the other end the walk sweeps through the sward into the general pleasure ground walks; at either end are some very excellent specimens of Cedars of Lebanon, Magnolias, &c. On the upper Grass verge in front of the mansion there was formerly an admirable line of Arbutus, most interesting at all periods of the season, but more especially so in the autumn months, when loaded with their deep-coloured Strawberry fruit. The view from this front is a very perfect specimen of picturesque effect—the foreground gently receding being admirably adorned with specimens and groups of noble timber, amongst which cattle range at will, or repose under the ample shade of magnificent trees; in the middle distance the charming lake with its irregular and beautiful outline, a richly clothed verdant island resting on its bosom, adding materially to its effect, not only affords great variety and contrast, but also from the shadows cast across this lovely sheet of water, the silvery surface is rendered more brilliant from being reflected by the sun from behind. The beautiful Doric temple half embosomed in trees, occupying a prominent and central position on a rich glade of turf, grouped and dotted with plants of low growth, on the opposite shore, is a charming object relieving the monotony of the vast wood which rises upon the high ground beyond, in which there are some admirable drives, broad and well directed, so as to comprise the most particular objects alike of beauty and interest in this delightful domain. The south or garden front of the mansion is an object of very great beauty; its central portico and colonnades on either side, with their Ionic columns surmounted by open balustrade parapets, have an admirable effect. The colonnades too are adorned by some excellent fresco paintings. The ground in front has been raised up to nearly the height of the lower or office windows, and their tops are secured and screened by iron gratings of the same colour as the pavement. There is a low wall in front to represent a terrace, which is surmounted by vases filled with flowering plants. Unfortunately the whole of the ground beyond this wall has been raised to the same level, which has at once the effect of destroying the character such a garden ought to present, and of lessening the elevation of this magnificent building. At Trentham and other palace residences of like character such matters have been better understood, and the ground in front of some such mansions has even been excavated in order that terrace and panel gardens might be formed suitable to the style of the building to which they form so admirable an adjunct, and on which they also confer a certain degree of majesty. At a distance of 75 feet, and at right angles with the centre of the portico, there is a noble group of colossal figures elevated on a pedestal, forming a centre to the garden in front, and from which broad walks radiate at right angles with the front of the mansion, and a walk of equal width surrounds the whole, 75 feet in radius; the space thus formed between these walks is laid out in simple figures, and planted with Rhododendrons and other forms of dwarf evergreen shrubs, some simple flower beds being introduced in the angles made by the wide circular walk in front of the colonnades and wings at either end. There is in addition at the eastern end a fountain by Rowley, and a handsome cenotaph surmounted by the effigy of a reclining spaniel, there is too a font underneath dedicated to the memory of some favourite dogs of the late Lady Elizabeth Whitbread, and having an inscription on two sides from the pen of the late Mr. Samuel Whitbread as follows:—

"Boney was plain, but then his air
Was so engaging, he could spare
To other dogs their beauty spots,
Their genteel shape, and silken coats.

Ladies! good temper, neatness, sense,
To plainness make full recompense.
His wiry hair was silver white,
His pointed ears stood bolt upright;
His brilliant eye and shining nose
Were black as were the ripest sloes
His face was crooked, his legs were straight,
He had the funniest little gait,
With one foot up and three feet down
(An affectation quite his own).
If he did wrong you could not scold him,
He looked so modest when you told him
Of his misdeeds, but when you praised him
His countenance quite said you pleased him."
S. W., 1809.

Obverse:—

"The good, the constant, and the just,
Are honoured in the silent dust
Near his beloved mistress' seat,
Departed Jock such honours meet.
Ye dogs who in succession share
Your kindest lady's tender care,
Drink at this font, for see above
A model of the truest love
That ever warmed your faithful race.
His loving form you there in joy trace.
Drink at this font and humbly vie
With him in matchless constancy."
S. W., 1806.

The walk in front of the portico, and on which the colossal group of figures stands forming a centre to the garden, is produced to a distance of 770 feet; it is 15 feet in width, and is enriched with statuary elevated on pedestals on either side during its entire length; a fine figure of Sampson terminates this exquisite walk, and from which it takes its name; it is well backed by masses of Laurel and other evergreen shrubs and trees, and there is an excellent view from the mansion through this walk into a broad avenue of considerable length. From Sampson's walk too other excellent walks diverge at different points, and are judiciously led through these beautiful grounds, which contain some remarkable examples of fine trees. One in particular merits attention—a Douglas Fir, which the writer of these notes procured and planted more than 25 years ago, it is now an admirable specimen, more than 40 feet in height, and the trunk girths over 4½ feet in. circumference; it is well clothed with branches, dense and beautifulas if the foreright buds had been removed. There are also some noble specimens of Larch, Spruce, and Silver Firs, and the whole grounds are well grouped and massed with evergreen shrubs, which have of late years been further enriched by specimens of Deodars and other Conifers, which already begin to wear an air of considerable grandeur. The ground slopes considerably from either end of the mansion, at the eastern end of which there is a private garden, which was remodelled by Sir Francis Chantrey, something more than 30 years ago. It is of considerable size and symmetrically disposed, and has the advantage of a game fence protection. Until lately it contained a conservatory of some considerable size, which was connected with the mansion by a long sweeping colonnade, the whole of which was painted in sombre colour, in order that the symmetrical architecture of the mansion might not be deranged. These erections, however, have now been swept away, and a conservatory has since been attached to the eastern end of the mansion, a very pretty structure 51 feet long, 26 feet wide, and 26 feet high. The entrance is by a lobby to the boudoir, an arrangement that lessens a very material objection to plant houses being immediately attached to sitting-rooms constantly inhabited, and where the smell and damp from a large body of earth in the beds or pots are often more powerful than the fragrance of the plants. But Repton has laid it down as an axiom "that such an appendage, however it may increase its interior comfort, will never add to the external ornament of a house of regular architecture;" and certainly the structure in question, although pretty enough in itself and excellently constructed, forms no exception to the rule thus so explicitly laid down. The whole of these beautiful grounds was faultless alike in regard to keeping and management, and at the period of my visit all was gay with flowering plants distributed with no sparing hand. Passing onward by one of the traversing walks on the eastern side, one is arrested by the exquisite view of the elegant mansion with its irregular symmetrical outline and noble proportions, its extended frontage and beautiful wings, with pointed roofs, and their connections of colonnades surmounted by open balustrades, its projecting portico and open columns, a noble monument alike of the genius of Holland and the princely munificence of the great Mr. Whitbread. This walk leads onward through a considerable dell, formed by the excavations required by the earthworks round the mansion, and near the large mass of stable buildings partially hidden by planting, and under the approach bridge over which the eastern entrance passes —another copy of Repton's great work at Welbeck—in this instance, however, of a much nobler character than the original, sufficient room being provided on the bridge for effectually planting out the walks and grounds underneath. Beyond the bridge the ground is more expanded, and the leading walk has been bordered by common Laurels trained as standards; they were planted some 25 years since with a view to a more faithful representation of an Orange tree being produced than could be effected with the Portugal Laurel; they are, however, trained too flatly to be effective. A proper model would be the chaste, exquisite forms in the Crystal Palace, or the unrivalled specimens of standard variegated Hollies in the raised stone beds of the Grand Terrace at Chatsworth. In the midst of this glade of turf there is an immense mass of Portugal Laurel which covers a space of 190 feet in circumference. A Magnolia tree is also a very conspicuous object in this part of the grounds, which are well clothed with excellent Scotch Larch, Silver and other Firs; a Canadian Spruce and a Hickory are objects of much attraction. At some considerable distance from the bridge the road diverges to the right, and crosses one of the principal drives leading to the lake, to the entrance of the kitchen garden, on the right of which is the parish church, a beautiful structure; it contains a monument to Dilly, the bookseller, who lived close to the village, and whose guest the great lexicographer, Dr. Johnson, frequently was; and also a mausoleum of the Torrington family, to whom Southill proper at one time belonged, and in which there is a marble slab with the following inscription to the memory of the unfortunate Admiral Byng:—

"To the perpetual disgrace
of Publick Justice
The Honble. John Byng, Esq.,
Admiral of the Blue,
Fell a Martyr to
Political persecution
March 14th, in the year 1557,
When Bravery and Loyalty were
Insufficient securities
For the Life and Honour
of a
Naval Officer."

The kitchen garden contains something more than 6 acres of excellent land of varied character, but well adapted for fruit and vegetable culture. There is also an orchard of considerable size in close proximity, planted some 25 years since, and which usually produces excellent crops of fine fruit. The entrance is by a simple gate, and there is a broad drive through the centre of the garden; 2 acres are inclosed by brick walls, which at various periods have been well covered with Apricot, Plum, Cherry, Peach, and Pear trees, remarkable alike for health and the admirable quality of the fine fruit they have produced. Within the last 30 years the southern aspect of the south wall of this garden has been three times planted with Peach trees, and the middle planting on a border of new soil and resting on an impervious bottom: these trees rapidly covered the space assigned to them, and were for years the admiration of all beholders; but the seasons have proved too much for them, and they have been replaced by others, which will in succession most likely share the same fate. Had this wall been covered with glass when the new borders were formed, there can be but little doubt that the trees would have been in first-rate condition at this day: all expenses, too, of canvas or other spring covering with the daily labour of taking off and on, would have been saved—an item which in a series of years would go to liquidate the original expense of such an erection; and I would here observe, that in a well-constructed erection of this kind judiciously planted with sorts and in positions so to obtain a succession, a very lengthened supply may be obtained. In the last week of last September I visited many gardens of note alike in the midland and home counties; but I did not find a single Peach. "They had just been all gathered." Nor did I see a Coe's Golden Drop, save on the wall at Southill, and they were dropping off ripe, whilst here in an exposed situation in a south-western county, there was a continuous supply of Peaches for more than four weeks; and of Coe's Golden Drop and other Plums for seven weeks after that period. The Golden Drop Plums, too, were of such a character that no Grapes or Pines of whatever excellence could for a moment be compared with them. The garden walks are wide and composed of red sand, which binds well, and is firm to tread on, and they are easily kept in order. In the centre of the walled garden there are espaliers or dwarf standard Apple trees on either side of the walks, and which produce admirable crops of remarkably fine fruit —Ribstone Pippins and Nonpareils especially of an unrivalled description. There are several Walnut trees on the eastern side of the garden, and also two Mulberry trees on the southern side, which produce quantities of fine fruit.* It is now many years since the system not only of culture in these gardens was changed from a mere piece of surface digging to that of draining and deep cultivation, and with the best results, but a process was begun of effectually improving the most sterile and ungenial portion, in order that the permanent crops might be established there instead of on the lighter soil—so essential to the successful cultivation of many other crops. On one of the internal quarters a trench was dug out across its whole length, 5 feet in width and 3 feet in depth: a drain was laid in the bottom, and the excavation was filled up three-parts of its depth with Cabbage stumps and other garden refuse, on which a bed of leaves and half-decayed manure was placed and the soil was replaced on its surface, and on which ridge Cucumbers were planted—a small portion of a more genial character being placed immediately under the plants. Yet, notwithstanding the adverse character of this soil, nothing could have done better than the plants so treated. The following spring this bed was forked up and mixed, on which a crop of Asparagus was planted, and another trench was formed for Cucumbers as before, and this system has been carried on year after year with the most successful result, not only in securing good

* At the entrance of the gardens there is a border on which a row of Figs were planted 25 years since. They bore heavy crops of excellent Figs when I saw them last autumn, having escaped the severity of the season, whilst the walls and trees at Arundel had been destroyed during that year.

crops, but in permanently improving the character of the soil. On the south portion of the garden there is a range of glass structures, consisting of a lofty greenhouse and three Vineries; two of these latter are on Speechly's model, with double Pine beds in the interior, and having a depth of three lights on the roof. The whole of the Vines in these houses were taken up in the middle of last September, the impervious bottom of the border broken up, some fresh soil added, and the Vines replanted. They have broken tolerably well, and the earliest house is now ripening a fair crop of well-coloured Grapes, and of a better quality than has been produced for several years past. Near the entrance to the garden there are two inclosed squares in which a Cucumber house and several ranges of pits and frames are situated, nd used for the production of Melons and other requisites ecessary for the requirements of a large establishment. During my occasional visits to this beautiful place I ave invariably found these gardens in the best state of cultivation, and producing heavy crops alike of fruit and vegetables, reflecting much credit on Mr. Scrogie, the worthy gardener, whose management for a long series of years has constantly been a subject of favourable representation. *D.*

Home Correspondence.

Cloth of Gold and Isabella Gray Roses.—In your impression of June 18, these are spoken of as being difficult to bloom, &c.; there have been various reports of the merits of these Roses, the fair Isabella appearing to be exceedingly capricious. In June 1857 I procured a quantity of plants of the latter of Messrs. Henderson; some I worked on the Manetti stock, others on the common Briar; one of the former I am growing in a 12-inch pot. Last autumn it had made very vigorous shoots, some of them 4 to 6 feet in length, but without any prospect of bloom until I pinched off the ends of two of the principal shoots, which immediately caused laterals to break all up the principal shoots, every one of which produced a splendid bud, but too late in the season to expand freely. Early this spring I pruned the spurs back close to the main shoots, and shortened the other shoots to six or eight eyes; the plant began to grow freely in February, and in March showed 29 splendid blooms. Those shoots that were cut back to six or eight eyes did not show bloom, but after they had made a growth of about 5 feet I pinched off the points, and at the present time the laterals are again showing splendid blooms—the old shoots I have now cut out to give strength to the flowers. After the bloom is again over I intend to prune the spurs close back to the main stems, and I have but little doubt of procuring a third crop of blooms from this plant this season. A plant on the Briar stock similarly treated has also produced an excellent show of blooms, but it does not appear to bear the pruning so well as that on the Manetti stock, as the shoots are breaking weakly; the plants are both in a warm greenhouse. I have also another strong plant on its own roots of the same age as those above described, but it does not grow near so vigorous as the one on the Manetti, neither has it as yet produced a bloom. Of the Cloth of Gold, the finest specimen I ever saw was worked on the common blush China Rose; it nearly covered the entire front of the residence of C. Perkins, Esq., Picktree House, Chester-le-Street, Durham; the number of blooms and buds was enormous; it was the admiration of every one who saw it. It was a treat of no ordinary kind to be enabled to visit the beautiful grounds that surround Mr. Perkins's house. Although in the midst of collieries and coke ovens and in a cold country, it was marvellous how splendidly the Coniferæ and other ornamental plants were grown; the manner in which the grounds were laid out speak highly of the good taste of the proprietor; for a private grower his collection of Roses is unique. The pleasure grounds are thickly belted with the black Austrian Pine, one of the most useful and hardy plants for shelter in a cold and exposed country. *John Harrison, Nurseryman, Darlington.*

Bad Water.—Having remarked a very unpleasant taste in the pipe water lately, I made inquiries and was informed by one of our Corporation that it had been ascertained that both here and in London a "Spongiola" had found its way into the pipes, and to its presence there we must attribute the very unpleasant flavour of which I complained. Can you tell me anything of this "Spongiola." Londoners cannot be uninterested if any such cause has been discovered to account for the fearful impurity in the water supplied to them. *A Subscriber, Dublin, July 7.* [We have no notion what is meant. The word Spongiola signifies the young living point of the fibre of a root.]

New and Old Roses.—In your leading article of the 2d inst. on the Roses, I think you are coming rather hard upon the new ones, and it would appear that you think the old sorts are not yet surpassed or even equalled because the former did not make their appearance in large numbers at the late National Rose Show. That many of the new Roses sent out within the last three years are a decided advance there can, I think, be no question; nor can it be denied that with them have appeared too many which should never have been made public. But the sterling sorts very soon prove themselves; for instance, which of the old Roses can equal the fine new Rose Lælia, shown in Mr. Cranston's stand of 24 at the National in 1858, and has since maintained its reputation as the very finest Rose of its colour—delicate rose most beautifully shaped? I am not sure, but I should rather think, that it was not exhibited this season, as it blooms rather late. Then again take Victor Trouillard: which of the old Roses can equal it in its glowing shades of carmine and scarlet? Certainly none of them; it again blooms rather late. Thomas Rivers is a most beautiful new Rose, and I think not equalled by any of the old sorts of the same shade. Mathurin Regnier quite throws that fine old Rose William Griffiths into the shade. Then take Souvenir de la Reine d'Angleterre, which is an improvement upon La Reine; Madame Knorr is not equalled in its shade of colour, deep rose, and outer petals—light shade; Madame Vidot is far in advance of the sorts older than itself, and not equalled in beauty of form and pureness of colouring, delicate flesh; Alphonse Karr is another new Rose, most desirable; Pauline Lansezeur, Prince Leon, Lord Raglan, Lord Palmerston, and Jules Margottin are not old Roses, and yet they are not equalled in their respective shades. I do not think it is because the new Roses are not superior that they are not exhibited; it is because they are propagated to that extent there are not strong shoots to produce those perfect blooms required for exhibition; when they become more plentiful they begin to make their appearance more frequently. I have seen most of the new Roses sent out last season in bloom, but I cannot speak positively which is inferior, as they are not in a state to judge correctly. Then, again, I am quite of opinion the National Rose Show is held too early (on the 23d June), even for the south. I particularly noticed on the 23d of June I had not more than a dozen expanded blooms amongst a stock of some 30,000 plants. I think the National Rose Show held on the 23d of June cannot correctly be called national, as this is just the time my Roses are in full beauty, July 6, and it will apply to the north generally. *Henry May, The Hope Nurseries, near Bedale, Yorkshire.* [We do not see how our remarks are touched. Surely our correspondent does not suppose that when we spoke of old Roses, we referred to sorts in fashion 30 years ago.]

Covers for Vine Borders.—Have any of your readers used zinc sheeting for covering Vine borders? If so, will they say if it answers the purpose or if wooden shutters are better? What is the price of zinc per superficial yard? Which of the two should a person who can have either use? If boards are recommended what length, breadth, and thickness should they be, and should they be painted with mineral paint, or hot gastar? *G. A.*

Water Rats.—Will any of your correspondents kindly say whether or not the common water rats, which seem very injurious to the banks of a pond here, are hurtful as destructive of young waterfowl or fish, or whether their food is merely of the leaves of pond weeds or known to consist of more valuable substances? Perhaps Mr. Waterton, whose knowledge on the subject is so varied, would furnish the information required, but I have looked in vain through his "Essays" for the habits of the water rat. *M.*

Pinus nobilis.—Can any one inform me if the Pinus nobilis has yet ripened its seeds in this country? Mine, which was planted in 1834, and is now about 33 feet high, has one large erect cone upon one of its upper branches this year for the first time. *F. H. S., Whitfield.*

Budding Vines.—Having lately seen several articles in your columns relative to the propagation of the Vine, and conclusions drawn that the time will arrive when "grafted plants will be more common," I am induced to lay before your readers a system I have adopted, and which I have not seen alluded to in any treatise on the Vine; nor in conversation with most experienced Grape growers have I found they have practised it. It is certainly far preferable to grafting, as a season for fruiting is gained, and a more perfect union effected—I allude to budding in the months of July and August. On August 9, 1858, I received from a nurseryman a small 1 guinea plant of the Black Muscat Hamburgh, and having at one end of a Vinery a plant of the Golden Hamburgh and one of the Bowood Muscat, I was desirous that the Black Muscat Hamburgh should be next to them, that I may fairly test the relative merits of these three fine Grapes; but as there was a Black Hamburgh of two years planting next to the Golden Hamburgh, I did not like removing it to plant the Black Muscat Hamburgh, but resolved on trying the effect of budding the Black Muscat Hamburgh on the stock of the Black Hamburgh. On the 10th August I inserted three buds, and at the time of winter pruning cut the Black Hamburgh down to the top bud inserted. Each bud has broken quite as strong as a natural eye, and on each shoot there were three as strong and fine bunches of Grapes as could be desired. Since then the fruit from the leader has been removed, and also two bunches from each side shoot, leaving one to each bearer. This operation has been performed in a young Vinery where there are about forty Vines, and the bunches on the shoots of the inserted buds are just beginning to colour. I shall therefore fruit this season, side by side, from established plants in the border, the "Black Muscat Hamburgh," the "Golden Hamburgh," and the "Bowood Muscat." From what information I have been able to collect, I believe this to be an advance in the propagation of the Vine not before practised. If it has been, I should from any of your numerous readers like to know, and if not, it gives me gratification to lay before the Grape-growing world the result of my experience. *James Aldrige Devenish, Rodwell, Weymouth, July 4.*

Horticultural Society.

A Special General Meeting of this Society was held in the Rooms of the Society of Arts, Adelphi, on Thursday, July 7, at 11 o'clock, to consider an arrangement with her Majesty's Commissioners of the Exhibition of 1851, for Leasing to the Horticultural Society 20 acres of ground at Kensington Gore, for the purpose of constructing a magnificent Horticultural Garden upon the spot.

A more important meeting of the Society was perhaps never held. The walls were hung round with photographs and plans of proposed garden terraces and entrances.

The Right Hon. the Earl of Ducie, V.P., occupied the chair.

Previous to the commencement of proceedings the following document was circulated among the members as affording an explanation of the matter in reference to which they had been specially assembled:—

REPORT OF THE COUNCIL ON THE PROPOSED NEW GARDEN AT KENSINGTON GORE.

The Council of the Horticultural Society have thought it desirable to call the present Special Meeting of its members in order to explain the steps taken by them with a view to obtaining a locality in the immediate neighbourhood of the metropolis where some of the objects of the Society might be pursued on a large scale with great advantage. They now proceed to state their views for the future, in the confident hope that the course which they think it their duty to recommend for the future adoption of the Society, will meet with its hearty approval and concurrence.

It is scarcely necessary to recur to the reasons which led the Council to the conclusion that it was inexpedient to continue the annual exhibitions at Chiswick. Successful and attractive as those exhibitions once were, it seemed evident to the Council that it would not only be to the pecuniary advantage of the Society, but that their means of usefulness as a scientific body would be greatly extended if they could obtain sufficient space for the prosecution and development of their objects in the more immediate neighbourhood of London.

In seeking for such a situation, the attention of the Council was naturally attracted to the finely situated estate purchased by the Commissioners for the Exhibition of 1851, out of the surplus proceeds of that Exhibition; and it appeared to them that the grant by the Commissioners of a certain portion of that estate to the Society would be strictly compatible with, and might even tend largely to promote the means of encouraging Art and Science generally, the furtherance of which was known to be the object for which the Commissioners were incorporated by Royal Charter.

The Council of the Society, therefore, some time since made an application to the Commissioners of 1851, in order to ascertain how they would be disposed to regard a request from the Horticultural Society for permission to establish itself upon their estate.

The Commissioners have met this request in a liberal spirit, and it will be the duty of the Council to lay before the present Meeting the conditions on which the Commissioners have announced their readiness to comply with it.

It may be as well, however, first to point out the situation of the estate, and more particularly of that portion of it which the Commissioners are willing to place at the disposal of the Horticultural Society.

After letting on building leases certain outlying portions of their estate, the Commissioners have reserved about 50 acres for the purposes of their incorporation, forming a parallelogram between the two new roads—Prince Albert Road (100 feet wide) to the west, and Exhibition Road (80 feet wide) to the East—which two roads connect the Kensington Road on the north with the new Cromwell Road (80 feet wide) on the south. Of this parallelogram the Commissioners have reserved a portion of about 16 acres at the south end for the purposes of the Great International Exhibition, which had been projected by the Society of Arts for the year 1861—the intention of holding which has, it is hoped, been but temporarily suspended by the war now unhappily raging; also a portion at the North end, with a frontage to Hyde Park, well adapted for any public buildings which it may hereafter appear desirable to erect there; and further spaces of about 150 feet in depth along each of the parallel roads running North and South, for such buildings, public or private, as the Commissioners may hereafter, in the prosecution of their own objects, determine to erect.

It is the remainder or centre of this ground that the Commissioners, under certain conditions, have offered to place at the disposal of the Horticultural Society. This space, inclusive of a proposed Winter Garden, and also of Italian Arcades with which the Commissioners themselves propose to surround it, will contain about 20 acres available for the new Garden of the Society.

The conditions on which the Commissioners have made their liberal offer will be communicated in the course of the Meeting. The main provisions are, that the Society shall engage to lay out and maintain the Garden in a fitting style, and that it shall also erect a Conservatory, or Winter Garden—the whole at a cost estimated at 50,000*l.*, and should the offer be accepted the Commissioners will be prepared to grant the Society a lease of the ground for thirty-one years, and further, as before stated, to surround, at their own expense, the space allotted for the Garden with Italian Arcades open to the grounds and built at their own

expense at an estimated cost of 50,000*l.*; the conditions as to the payment of interest on any sum so expended not exceeding 50,000*l.*, and as to the amount of rent to be paid by the Society, being of the most liberal nature.

The great advantages of the site proposed are obvious. The Garden will be in the immediate neighbourhood of Hyde Park and Kensington Gardens, and in the very centre of a new and rapidly rising town of first-class houses which bids fair to become one of the most popular and fashionable districts in London. The shape and situation of the ground, which slopes gradually from the North to the South, admits of the formation of successive terraces on different levels, affording peculiar facilities for effective and ornamental treatment, and is well adapted besides for the effective display of sculpture; while a fine Winter Garden at the upper end, and a colonnade extending round it, will afford a promenade of three-quarters of a mile in length, sheltered from heat and cold, wind and wet. The Colonnade will also offer peculiar facilities for the display of the Flowers and Fruit at the Annual Shows, free from all those risks of weather which have not unfrequently marred the Chiswick Fêtes.

Bearing all these advantages in mind, the Council have no manner of doubt, that with the hearty support and co-operation of the Royal Commissioners which have been so liberally promised to them, they will be enabled, while keeping steadily in view the scientific objects of the Society at Chiswick, to make this garden, with the periodical exhibitions which they propose to hold in it, one of the most attractive places of popular resort in the neighbourhood of London; and they will have the satisfaction of knowing that they have provided for the metropolis a place for healthful recreation during the more inclement season of the year.

Plans and designs for the Winter Garden and for laying out of the ground, as prepared and agreed upon in conjunction with the Royal Commissioners, are now hung up in this room,* and a careful estimate of the probable cost has convinced the Council that, as at present prepared, these plans may be carried into effect for the sum named. But it should be borne in mind that the more liberal the support which the Society shall meet with, and the nobler the scale on which the designs for this garden are framed and executed, the greater will be the prospect, not to say the certainty, of a successful and remunerating result.

Should the General Meeting adopt the views of the Council, the question will then arise, as to the mode of raising so large a sum as 50,000*l.*

The Council believe that this may be effected by the issue of a certain number of Life Memberships; but as the success of the undertaking will in some measure depend upon the vigour with which it is undertaken, and it is of importance that the works should not be in any way delayed in their completion, if once determined on, it will be requisite to obtain the money immediately required for the progress of the works by the issue of debentures, bearing interest at 5 per cent., to be redeemed as the receipts from Life Memberships become available. Donations in aid of the undertaking will at the same time be thankfully accepted by the Council, and they will be prepared to extend to the donors of sums exceeding 20 guineas privileges similar to those possessed by members. Had the Council been inclined to make the project a mere commercial speculation, and to place it in the hands of a company, there is little doubt that thrice the sum now demanded would have been speedily obtained. But the Council felt that such a course would have been derogatory to the character and objects of the Society; nor would the support and co-operation of the Royal Commissioners of 1851 have been extended to such a mere money speculation. They therefore prefer resting their hopes of success in the course proposed, and in the desire which will be generally felt to promote the accomplishment of a scheme so advantageous to the Fellows and the public, and so conducive to the important objects for which the Society was chartered; and they entertain no doubt that their confidence in the support of the public will be justified by the result.

The Council propose to keep up the experimental part of Chiswick Gardens, and also as much as may be required to furnish decorative plants for the new garden at Kensington Gore.

The noble Chairman, in opening the proceedings, alluded to the decline of the Society, and the necessity that existed for its improvement, and in doing so entered into a brief recapitulation of the history of the Society from its establishment. He referred to the purpose for which they were called together, and alluded to the desirability of accepting the offer of the Royal Commissioners granting as it did upon such reasonable terms the plot of land in the vicinity of Kensington. He thought that the establishment of such gardens as those proposed would effectually tend to resuscitate the Society. There was a general endeavour on the part of the friends of horticulture to do so, and it was well known that her Majesty the Queen and H.R.H. Prince Albert took a great interest in it. The matter had been well considered by the Council, and Dr. Lindley, the secretary, would proceed to give details of what it was proposed should be done by the Society.

Dr. Lindley opened the subject, by adverting to a communication having been made by the Council to the Royal Commissioners, with a view to ascertain whether, if the Horticultural Society undertook to make a new Garden at Kensington Gore, the Royal Commissioners would treat with them, and on what terms. That communication was made in January; it was only within the last two or three days that an answer had been received, and the Council had convened the present meeting to hear the terms on which the Royal Commissioners would be willing to grant a lease of this important piece of ground. He then read the following letter:—

"Whitehall, July 4th, 1859.

"Sir,—I am directed by H.M.'s Commissioners to acknowledge the receipt of your letter of the 26th January last, inquiring on behalf of the Council of the Horticultural Society whether the Commissioners would be willing to receive a proposal from the Society for renting the central portion of the main square of the Commissioners' estate at Kensington Gore, and if so, upon what terms. H.M.'s Commissioners direct me to acquaint you in reply, for the information of the Council of the Society, that they have delayed answering this communication up to the present time because of their anxiety to give the proposal in question all the consideration which its importance deserves, and to investigate how far its adoption could be made to contribute towards the development of the general objects for which they are incorporated. The result of their inquiries has been to satisfy them that the proposal of the Society offers opportunities of realising a plan worthy of the metropolis and advantageous to the public, whereby on the one hand the special science of horticulture may be advanced, and on the other the general interest of science and art promoted. The Commissioners accordingly contemplate setting apart for this purpose the central portion of the main square of the estate as desired by the Society, to the extent of about 20 acres, and inclosing that area by arcades of an architectural character. As respects the purposes to which the above-mentioned enclosed space and arcades respectively should be applied, so far as relates to the use to be made of them by the Society, the Commissioners consider that the ground should be laid out as an ornamental garden with the necessary accompaniment of terraces, steps, fountains, &c., and with the addition of a conservatory or winter garden at the north end, the whole to be executed in conformity with plans approved by the Commission; whilst the arcades would afford at all times a protection from the weather to the visitors to the Gardens, and the upper portion of them afford a most favourable site for the Flower Shows of the Society. The arcades, whilst being complete in themselves and enclosing the Gardens, would at once serve to unite into a harmonious whole any buildings that may be hereafter erected between them and the main roads of the estate in furtherance of the general objects of the Commissioners, and to secure those Gardens against any future interference or encroachment, as the Commissioners' objects just referred to are gradually developed. The cost of executing the whole of these works, so far as it has yet been possible to estimate them, would be 100,000*l.*, a moiety of that sum representing the cost of the arcades and of the earthworks, and the other moiety the cost of erecting the conservatory and laying out the grounds as before mentioned. In the event of the Horticultural Society being willing to incur the expense of the latter, or horticultural portion of the works, and succeeding in raising the requisite amount within a period of six months from the present time, H.M.'s Commissioners will on their part be disposed to execute at their own expense the former or architectural part, together with the earthworks necessarily preparatory to the laying out of the Gardens. The Commissioners will also be prepared, in the event of the Society agreeing to the above proposed division of the contemplated works, to grant to the Society a lease of the 20 acres in question for a period of 31 years, subject to the payment by the Society to the Commissioners of an annual rental on the following basis:—The rent to be ascertained with reference to the receipts of the Society in each year (that is to say)—There shall be first deducted from the sum of the gross receipts (1) such a sum as shall be allowed by a committee hereinafter mentioned in respect of expenses; and (2) the amount which may be payable by the Society for interest of any money not exceeding 50,000*l.*, borrowed by them for the works on the land. The rent shall be in the first place a sum equal to the interest payable on any principal money not exceeding 50,000*l.*, which may be borrowed by the Commission, and expended on works on the land, or so much of this interest as the surplus receipts after the allowed deductions amount to. And if the surplus exceeds this interest, a further sum equal to a moiety of the residue. For the purpose of regulating the amount to be deducted by the Society in each year for expenses, a committee of six persons shall be annually appointed, three by the Society and three by the Commission, such committee to select the chairman from among the three nominees of the Commission, the chairman to vote on all occasions, and in case of equality of votes to have a casting vote in addition. H.M.'s Commissioners, bearing in mind their responsibility towards the Crown and their public duty, feel it incumbent upon them further to stipulate that a general veto with regard to the management of the ground leased to the Society shall be reserved to the Commission; at the same time it is to be understood that the terms above specified are subject to be modified in such manner as shall be deemed necessary by the legal advisers of the Commission to prevent the implication of a partnership between the Commission and the Society. In the event of the Horticultural Society being prepared to assent to the general principles above indicated, it will afford H.M.'s Commissioners much pleasure to confer with the Council of the Society, for the purpose of settling the details of an agreement upon that general basis.—I have the honour to be, your obedient servant,

"Dr. Lindley, F.R.S." (Signed) "E. A. Bowring."

With reference to one or two points in that letter it would be as well to direct attention to them, as they were very important, most especially with regard to that serious matter, rent. There was no fixed rent to be charged. In the first place the Society would be permitted to pay its whole expenses out of income (which expenses would include the interest on any money that might be borrowed by debenture or otherwise), before the question of rent came to be considered at all. The Royal Commissioners had stated that if the surplus of income, after the payment of all the Society's expenses, should be 2000*l.*, then that was to be the rental; they would take the 2000*l.* If it was 500*l.* only they would take that, and if it was nothing at all they would have nothing for rent. But if, on the other hand, the profits exceeded the 2000*l.*, then the Commissioners and the Society were to share what was left equally between them. This rental of 2000*l.* fixed by the Commissioners represented the interest they would have to pay upon money to be borrowed by themselves in order to join the Society in the expenditure for constructing the Gardens. They were to furnish 50,000*l.*, and the Society was to furnish 50,000*l.* Another important point was that there was to be no back rent: each year would clear itself. If the rent was 2000*l.* a year, and the Society could only pay 500*l.* out of its profits, then that was to be the rent for that year, and it was not to go on accumulating to the next. It was only on that ground that the Commissioners could justify sharing the profits beyond the 2000*l.*, when such profits arose. In the proposed Gardens it was intended to have ample promenades under arcades, where people could see the flowers and plants even in wet weather, and not be subjected to the risks they experienced at Chiswick from storms, which had so materially affected their receipts. The Commissioners claimed a veto in management on the ground that if the Gardens did not answer it should not be in the power of the Society to turn them to any use which the Commissioners could not sanction, such as Cremorne, for instance, although they were aware that no gentleman connected with the Horticultural Society would ever think of such a thing: but it was to prevent the possibility of such a question being started at any future period, however remote. He would next proceed to describe a probable plan of the Gardens from a drawing which they saw suspended over the Chairman's head.

Dr. Lindley then entered into a minute description, which could only be understood by those present at the meeting with the drawing before them; after which he continued:—It is intended that statuary at some time or other should be placed in suitable parts of the Gardens, but it was not a necessary part of the plan, nor was it anything with which they had to do, as it was not to be at the expense of the Horticultural Society, nor was it to be so placed as to crowd or in any way interfere with the general arrangements of the plants; but it would prove a great additional attraction, as there was no fitting place at present in London. The room was hung round with photographs and drawings of beautiful and magnificent designs both for entrances, arcades, and terraces, and, no doubt, the Commissioners would choose from among them that design which might be considered the best. The arcades would be 16 feet high in the clear, and access to them would be had by covered ways from more than one direction, so that carts arriving with necessary plants and materials would be able to do so without in any way disfiguring the Gardens. Another part of the Commissioners' letter stated that there would be a Winter Garden as well. It was proposed that this should be a great conservatory, 260 feet long by 75 feet wide. It was not intended to make it a hothouse, but to confine it entirely to such plants as grow in greenhouses, and only require shelter from the weather. The interior would have a high level, accessible from the terrace walk formed on the top of the arcades, while the other level, 20 feet lower, would be entered from the Garden itself, the two levels being connected by magnificent flights of steps. The grounds of the Garden itself were to be formed into three extensive terraces, and the visitor on entering the Gardens would pass from one level to another, each having a different description of plants growing on it. This would be easily effected, as the whole of the land between Kensington and Brompton slopes very fast to the southward. With respect to ornamental water, it was not intended that there should be a grand display in the shape of "waterworks," as that could be seen elsewhere. It was said there would be a great difficulty in carrying out a garden in a place like Kensington Gore, as they could not preserve certain plants there. Well, he did not believe there was half the difficulty which was stated. With respect to the alleged badness of the atmosphere, doubtless there were plants that would not grow there, but the application of the skill of modern gardening would do a great deal to overcome that. It was however intended by the Council to retain a portion of the grounds at Chiswick, where experimental operations might be carried on, and plants prepared for being sent to Kensington. The continuance of some

* Great room of the Society of Arts, Adelphi, W.C., London.

portion of the Chiswick garden would be a part of the expenses of the Society which the Royal Commissioners had consented to recognise. The next question was the *modo*—how was the expense to be defrayed? In the first place, "What is the probable cost of managing these Gardens?" He would state what they had estimated the outside cost to be, including 1000*l.* a year for the maintenance of Chiswick. It appeared to be the opinion, after due consideration by the gentlemen of the Council, that this would amount to 9400*l.* a year, which would also include 1000*l.* a year for contingent expenses. With regard to income it was difficult to form an estimate, but looking at the receipts at similar places in London and other great towns, the principal source of income would be at the doors: Fellows of the Society would, of course, be exempt from paying at the entrance. Such Gardens as those proposed would naturally excite a great desire to see them. The Royal Commissioners were of opinion that the Council should be liberal on the question of admission, and that the great mass of the public should be admitted in the most favourable manner. On Mondays the price to all persons would be 2*s.*; on Tuesdays, 6*d.*; on Wednesdays, Thursdays, and Fridays, 1*s.*; and on Saturdays, 2*s.* 6*d.* During the nine months in the year a band would play every Monday, Wednesday, and Saturday, and also during the Easter and Whitsuntide holidays. Making allowance for bad days, which in this country must be counted as one in five, and taking this as the basis for receipts at the doors it was calculated that 17,100*l.* a year might be derived. Thus there would be an outlay of 9400*l.*, and an income of 17,400*l.* Such would be the result, if that estimate could be relied upon; it had been very carefully prepared. For himself, he looked upon the income as being placed too low and the outlay as too high. If the profits were 8000*l.* a year the Royal Commissioners would have to allow out of that whatever was necessary to pay the interest on any debenture stock that may be out, and then there would be 3500*l.* a year to divide between the Royal Commissioners and Horticultural Society, which would leave 1750*l.* a year each. But the supposed income could not be taken to represent what might be expected in case the enterprise should be strenuously supported by the wealthy classes of the metropolis. Should, for instance, her Majesty take an interest in the Garden, it was needless to say what effect that would have upon the interests of the undertaking. There would also be special occasions when the Council would fix the amount of admission money at a sum commensurate with the importance of the day. In such cases the returns would no doubt be very large, and would totally change the future income of the Gardens, upon which the estimates stated had been based. As to the mode of dealing with the 50,000*l.*, the Council would obtain life subscriptions with the usual privileges of Fellows in the neighbourhood, where there would be a very large class who would be glad of free entry into such a garden and promenade as this would be. These subscriptions would be issued at 20 and 40 guineas each, giving personal admission to the ground. A considerable sum would thus be raised. Donations would also be made to a considerable extent. Upon that the Council had positive information. The residue would have to be raised by the issue of debentures. 50,000*l.* seemed a large sum, but from the information which the Council had received, it was believed there is a sufficient number of persons interested in the matter who would be content to take those debentures at 5 per cent., with some privilege attached to them. The debentures would be paid off by surplus income and life subscriptions if that should be a practicable operation. Then all new Annual subscribers would have to pay an entrance fee of two guineas, but of course the present members of the Society would be exempt from that. He felt he was justified in saying, from the offers that had already been made, that the issue of new life subscriptions would take place rapidly. And as to debentures, it was believed that subscribers would come forward, some because they would have a reasonably good investment while others would subscribe without any commercial feeling, partly on account of the pleasure they would take in the privileges of the Society, and partly from a feeling of public spirit in being connected with such an undertaking. With respect to the question of a 31 years lease, the Commissioners had not proposed what to do after that time. It was no doubt a question that would require very serious consideration; but the commissioners in their letter had announced that they were prepared to confer with the Council. Whatever arrangements might be made the Council would take care that the interests of the Society were properly attended to; indeed, the Commissioners had expressed every desire to do so in the broadest and most liberal manner.

Mr. Wilson Saunders said he had gone into the matter with a great deal of care; he felt the Society would be justified in going on with the work, and that there would be a very large income. Of course they could not fix what that would be. He was quite ready to support the plan, because he thought it was a not undesirable investment and the scheme a good one. It might be said "this is a glorious scheme; but how is it to benefit the horticulture of the country?" The income derived would enable the Society to make large importations of new plants which they have not means to do now.

Mr. C. W. Dilke said that as to the receipts, it was already useless to do more than make a guess at them. He had made it his business to communicate with the authorities connected with various institutions where payment was or was not made for admission, and he was satisfied the Council had approximated as closely as possible to the truth. The hon. gentleman then went through a variety of statistical matter bearing on this point.

Mr. Charlwood proposed that a circular should be sent round to every member with full details of the plan. He objected to the scheme *in toto*, because it was not one which went to further the objects for which the Society was originally founded. He protested against the movement in any shape whatever.

The Duke of Leinster moved the first resolution:—"That the Council be authorised to conclude the negociation with the Royal Commissioners for a lease of the ground at Kensington Gore, upon the best terms that can be made."

Sir John Ramsden seconded it. The matter was to be looked at in two aspects—as regards a decoration for the metropolis, and as regards the interest of the Horticultural Society. He was very sanguine as to the results which might be expected from the new scheme for the benefit of the Society. The Council had earnestly endeavoured to improve the Society's affairs for some years past, but unfortunately without sufficient success. He thought the Royal Commissioners had acted in a broad and liberal spirit. The resolution of the noble duke did not pledge the Society in any way, and he could say that the Council had adopted a straightforward manly course in taking no decided steps without consulting their constituents. This was a fresh claim which the Council had upon the confidence of the Society.

Mr. Henry Pownall hoped that after the resolution had been moved by such distinguished members of the Society it would not be considered discourteous of him to speak freely upon this point. He differed from the last speaker in thinking that the resolution did not pledge the Society. He thought the information which had been conveyed to the meeting was much too limited to warrant a hasty decision upon so vast an undertaking. He begged to ask first, whether their charter authorised such an undertaking? Secondly, what would be the responsibility upon the members if this measure were to be carried out? And thirdly, was the two guineas admission fee to apply generally to the public, or to old members? He thought 31 years' lease was too short a period, and if the Council was not able to say what was to be done at the end of that term, the members should not be called upon to decide on the matter till that point was arranged.

Dr. Lindley apprehended there was nothing in the charter which was opposed to this arrangement, because the object was to obtain the means of promoting the cause of horticulture. As to the responsibility of members, there was none individually, nothing beyond the corporate property of the Society represented by their corporate seal. As to admission fees to the proposed fellowships it would only apply to new Fellows. With respect to the question of the lease of 31 years it was a very serious question, and should the meeting authorise the Council to take the necessary steps, that question would be the first to engage their attention.

Mr. Frederick North thought the question should be more fully considered, and moved as an amendment, "That the consideration of this question be postponed for one fortnight, and that the details of the proposed scheme be forthwith printed and circulated."

Sir Peter Pole and several other members thought the matter should not be decided too hastily, as it was an important financial affair, and he was against disposing of it so rapidly. He complained of the shortness of the time which had been allowed for its consideration.

Mr. Dilke said it was done to save time, as the Royal Commissioners required an answer within six months, and the Council were desirous of holding the meeting before the season closed and parties went out of town.

The Duke of Leinster thought it would be best to submit the matter to another meeting, and his friend Mr. Pownall had a motion on the subject.

Mr. Pownall then proposed the following amendment:—"That the thanks of this meeting be given to the Council for the information afforded, and that they be requested to continue the negotiations, reporting progress to another meeting."

Mr. James Heywood said that in the event of the Garden being made, he would advocate that it should be opened on Sundays.

Mr. Dilke read a list of the noblemen and gentlemen in the neighbourhood, to the number of 128, who are desirous of being elected Fellows in the event of the Gardens being constructed, some of whom would also take large sums in debentures.

Mr. Holmes Godson said that part of the present gardens at Chiswick would be retained for experimental purposes. The question of terms was one of great importance to the Society, and also to those who might subscribe the debentures as to when they would get their money back. He looked upon the amendment as fatal to the plan. He thought the Council should not be fettered, but left to meet the Royal Commissioners as they best could. He trusted the Council would be enabled to save time and go to the Royal Commissioners at once.

Mr. Pownall begged to press his amendment forward. He looked upon the question of responsibility of the corporation as one that was of great import. Every member felt a moral individual responsibility beyond the legal one, and unless they did so he thought they should not ask the public to subscribe 50,000*l.* He wanted to be satisfied that there was a fair chance of people getting their money back, and then he could ask a friend to subscribe. He felt that a delay of a week or 10 days would make very little difference in the Royal Commissioners' time in treating of such an important matter.

Mr. Wrench supported the movement as an attraction to enable the Society to recover what they had lost.

The Duke of Leinster expressed his willingness to withdraw his motion in favour of Mr. Pownall.

Mr. H. G. Bohn thought they would not be in any better condition a month hence. It was simply a question whether the members who approved of the scheme would take an active part in it. For himself, he was ready to take a double subscription, and otherwise assist the movement.

Mr. North's amendment, seconded by Sir Peter Pole, was lost by a majority of 13.

Mr. Pownall's resolution was then put and carried by a majority of 2.

Mr. Cole could not understand the force of the resolution just passed. The Council had received the answer of the Royal Commissioners, and now they were being sent back to re-ask the question. He thought the meeting had got into a rut. He did not know now what the Council could possibly do under present circumstances.

The Duke of Leinster thought that some further resolution should be passed to fortify the Council.

Mr. C. W. Dilke said the Council must have the expression of feeling further than had yet been expressed. It might be all very well to send the Council back to modify their plans; but the first question which would be put by the Royal Commissioners would be, "Are you ready to carry out the arrangement?" He thought the terms were favourable, and they must have an expression from the Fellows that they would like to have the garden at Kensington Gore.

Mr. Pownall then moved:—"That this meeting approves generally the plan of the Gardens at Kensington Gore, and requests the Council to continue the negotiation with the Commissioners, and report as early as possible to the members of the Society the final proposals of the Commissioners," which having been seconded by Mr. Parker and supported by the Duke of Leinster, was carried unanimously.

Mr. C. W. Dilke said the carrying that resolution enabled him to act upon a communication which he had been entrusted with. It had been his duty to keep his Royal Highness the Prince Consort informed of all the bearings of the case. His Royal Highness had looked over the draft report, and had instructed him to say that if a resolution approving of the Gardens at Kensington Gore was passed he would assist, but at the same time H.R.H. commanded him not to express any opinion on the part of his Royal Highness or her Majesty, until after such resolution had been passed, so that there might be no appearance of wishing to lead the meeting. He had now to hand to the chairman an official communication from Colonel Sir C. B. Phipps, stating the part which her Majesty and his Royal Highness were prepared to take.

The Earl of Ducie then opened and read the following letter:—

"Buckingham Palace, July 7, 1859.

"My Lord,—I have received the commands of her Majesty the Queen, and of his Royal Highness the Prince Consort, to inform you that in the event of the plan being carried out for the establishment of the Garden of the Horticultural Society of London upon the estate at South Kensington, belonging to the Royal Commissioners of the Exhibition of 1851, it is the intention of her Majesty and of his Royal Highness to make donations towards the execution of this undertaking of one thousand pounds (1000*l.*), and five hundred pounds (500*l.*) respectively. It is also the intention of her Majesty, should it be in accordance with the rules of the Society, that parents or guardians should purchase Life Memberships for children or persons not yet of age, to place the name of his Royal Highness the Prince of Wales and the younger Princes and Princesses upon the list of Life Members. I have further the pleasure of informing your Lordship that I am authorised by her Royal Highness the Princess Frederic William of Prussia, Princess Royal of England, to announce the intention of her Royal Highness to become likewise a Life Member.—I have the honour to be, my Lord, your Lordship's most obedient humble servant,

"The Earl of Ducie, &c. &c. "C. B. Phipps."

Mr. Dilke said that H.R.H. further commanded him to say that should the meeting decide on raising money by debentures, H.R.H. would take debentures up to 1000*l.*

It was then moved by the Duke of Leinster, seconded by Mr. Frederick North, "That the thanks of the Society be respectfully tendered to her Most Gracious Majesty, H.R.H. the Prince Consort, and H.R.H. the Princess Royal of England for the interest they have been graciously pleased to express in the welfare of the Society."

The reading of the letter was received by the meeting with the most marked enthusiasm.

Mr. Pownall moved a vote of thanks to the noble chairman for the kindness and courtesy with which he presided over the meeting. There could be no doubt now that the matter would go on well, and their success was certain.

The resolution was carried unanimously and responded

to by the chairman. A vote of thanks to the Society of Arts for the use of their room was also passed, after which the proceedings terminated.

Notices of Books.

The Nature-Printed Seaweeds: a History, accompanied by Figures and Dissections, of the Alga of the British Isles. By W. G. Johnstone and Alex. Croall. *Nature-Printed by Henry Bradbury.* In four vols., vol. I., royal 8vo. With 66 plates.

The old art of Nature-printing, that is to say, of obtaining impressions of plants by using dried or even fresh leaves instead of copper-plates, rude as it was, always possessed the great advantage of really representing the object intended. Like photography, it could not err; but like that marvellous art in its infancy it laboured under the defect of only showing a portion of the object to be represented, and that imperfectly though truly. Impressions of leaves thus obtained were at the best not much more distinct than those left accidentally in the tertiary rocks, and dug up by the geologist. But modern skill has worked a wondrous change in Nature-printing; for rough outlines or confused surfaces we now have the utmost delicacy of outline, while every surface-marking is elaborately represented; and it is impossible not to feel that when flat thin bodies are to be represented, such as the leaves of plants, the human hand is wholly superseded. Those who have seen the beautiful impressions of leaves executed in Germany by Dr. v. Ettingshausen, and in this country by Mr. Henry Bradbury, will acknowledge that this is no over statement. The defect of the art consists in its being unable to represent very convex surfaces, or solid bodies, such as the stems of plants, as is seen in Ettingshausen's Celastrineæ, the footstalks and midribs of whose leaves are merely opaque lines, although the leaves themselves are admirably exact.

It is thus clear that while the new art is perfectly adapted to the representation of certain classes of plants or parts of their structure, it fails when applied to other classes and other parts. But to nothing is it more suitable than to the exquisitely graceful race of seaweeds, which are capable of so completely giving up their forms to paper, in all the most minute ramifications, that it requires a very good eye to distinguish the original from its impression. Of this property Mr. Henry Bradbury has availed himself in the work before us, which is quite a wonder in typography; for even the letterpress has the sharpness and blackness of copperplate engraving, so admirable is the practical skill that has been applied to its production.

One thing which this kind of printing cannot do is to represent those magnified dissections of the minute parts of plants, which are indispensable to scientific natural history. In the volume before us that defect is removed by the addition of engraving to the copper-plates on which the representation of the plants is impressed; and thus there is combined such accuracy as the human eye and hand can give with the unerring truth of Nature herself.

The authors, Messrs. Johnstone and Croall, announce their intention of adding to the last volume an account of the structure, uses, classification, and distribution of the British Algæ, where also will be given instructions for the cultivation, preservation in the herbarium, and preparation as microscopic objects of these interesting marine plants. In the meanwhile every plate is accompanied by full scientific description, list of synonyms, and such general observations as the subject calls for.

While the lover of books will admire this volume for its singular beauty, lovers of natural history will feel that it is indispensable to the library of all who occupy themselves with the study of the vegetation of the mighty deep.

The first volume is entirely occupied by the Rhodosperms or Red-seeded Seaweeds; the next volume will complete their history; a third volume will contain the Melanosperms, and the fourth will dispose of the Chlorosperms.

First Impressions of the New World on two Travellers from the Old in the Autumn of 1858. Longmans. Small 8vo., pp 308.

A lady forms one of a party which visited the United States, landing at New York and spending three months in travelling through the States and Canada. In a series of letters written as she went on her way she records what she saw and thought of the novel scenes before her, and we recommend her pages to the perusal of other ladies who thinks of following her route.

A fastidious critic would perhaps complain of finding nothing new in three hundred pages of feminine gossip. But that would be hardly reasonable. There is little new under the sun; and moreover such novelty as is here to be found consists in a narrative of the feelings of an inexperienced woman, who wishes her friends to know what they may expect in the western world. How far the tales that are told her are to be considered true or the contrary it is not for us to say. We add a few extracts.

American Horses at Springfield.—"We drove next to the Horse Fair, which was very well arranged. There was a circus of half a mile, forming a wide carriage road, on which horses were ridden or driven, to show off their merits. The quickest trotted at the rate of twenty miles an hour. When the horses were driven in pairs, the driver held a rein in each hand. There was a platform at one end filled with well-conducted people, and a judge's seat near it. The horses in single harness went faster even than those in pairs: one horse, called Ethan Allen, performing about 24 miles an hour; though Edward may arrive nearer than this 'about,' by calculating at the rate of two minutes and thirty-seven seconds, in which it went twice round this circle. The owner of this horse has refused 15,000 dols. or 3000*l.* for it. It is said to be the fastest horse in America, and a beautiful animal, but most of the horses were very fine."

American Helps at Albany.—"The hotel is very large and good; but, alas! instead of our dear darkies at Newport, we had some twenty pale-faced damsels to wait at table, all dressed alike in pink cottons, their bare necks much displayed in front, with large white collars, two little frills to form the short sleeves, large, bare, clean, white arms, and short white aprons not reaching to the knees. They had no caps, and such a circumference of hoops! quite Yankeeish in their style; and most careless, flirtatious-looking, and impertinent in their manners. We were quite disgusted with them; and even papa could not defend any one of them. We were naturally very badly waited upon; they sailing majestically about the room instead of rushing to get what we wanted, as the niggers at Newport did. Menservants answered the bed-room bells, and brought our hot water; the ladies being employed only as waiters."

Mr. Longworth, his Vineyards and Strawberry-beds at Cincinnati.—Mr. Longworth, among other things remarkable about him, is the proprietor of the Vineyards from which the sparkling Champagne is produced, known, from the name of the Grape, as the sparkling Catawba; but he seems no less remarkable from the immense extent of his Strawberry beds, which cover, I think he said, 60 acres of ground. He told us the number of bushels of fruit they daily produce in the season; but the number is legion, and I dare not set it down from memory. He showed papa a book he had written about his Grapes and Strawberries, and is very incredulous as to any in the world being better than his. This led to a discussion upon the relative size of trees and plants on the two sides of the Atlantic; and in speaking of the Indian Corn, he tells us he has seen it standing, in Ohio, 18 feet high, and he says it has been known, in Kentucky, to reach as high as 25 feet, and the ear 18 inches long. The old gentleman is a diminutive-looking person, with a coat so shabby that one would be tempted to offer him a sixpence if we met him in the streets; indeed a story is told of a stranger, who, going into his garden, and being shown round it by Mr. Longworth, gave him a dollar, which the latter good-humouredly put into his pocket, and it was not till he was asked to go into the house that the stranger discovered him to be the owner. He is, however, delightfully vivacious, and full of agricultural hobbies. His wife is a very pleasing, primitive-looking person. We tasted at their house some of the ham for which this city, called by the wits Porkopolis, is so remarkable. The Maple sugar is used in curing it, and improves the flavour very much. * * * The party at the Longworths was confined to the members of their large family, all of whom are very agreeable. There were two married daughters, Mrs. Flagg and Mrs. Anderson, and the grandson and his wife, Mr. and Mrs. Stettinius; and we also saw the little great-granddaughter, who is a pretty child of eighteen months. The dining room not being long enough to accommodate us all at tea, the table was placed diagonally across the room, and it was surprising to see Mrs. Longworth pouring out tea and coffee for the whole party as vigorously as if she were 18 years old, her age being 72. She is remarkably pretty, with a fair complexion, and a very attractive and gentle manner and face. We had quails and Cincinnati hams, also oysters served in three different ways — stewed, fried in butter, and in their natural state, but taken out of their shells and served *en masse* in a large dish. Our friends were astonished that we did not like these famous oysters of theirs in any form, which we did not, they being very huge in size and strong in flavour. We said, too, we did not like making two bites of an oyster; they pitied our want of taste, and lamented over our miserably small ones in England. After tea we saw some seaweed and autumnal leaves beautifully dried and preserved by Mrs. Flagg, and we also looked over an illustrated poem on the subject of Mr. and Mrs. Longworth's golden wedding, the poem being the composition of Mr. Flagg. Towards ten o'clock a table was laid out in the drawing-room with their Catawba Champagne, which was handed round in tumblers, followed by piles of Vanilla ice 1½ foot high. There were two of these towers of Babel on the table, and each person was given a supply that would have served for half a dozen in England; the cream however is so light in this country that a great deal more can be taken of it than in England; ices are extremely good and cheap all over America; even in very small towns they are to be had as good as in the large ones. Water ices or fruit ices are rare; they are almost always of Vanilla cream. In summer a stewed Peach is sometimes added."

The Prairies.—"*St. Louis, November 4th.*—We came on here on the 2nd instant, and soon after leaving Vincennes found ourselves in a prairie, but it was not till after 60 miles that we got to the Grand Prairie, which we traversed for about 60 more. The vastness, however, of this prairie consists in its length from north to south, in which it stretches through nearly the whole length of the State. These prairies are enormous plains of country, covered, at this time, by a long brown Grass, in which are the seed vessels and remains of innumerable flowers, which are said to be most lovely in their form and colour in the spring. It was disappointing only to see the dark remains of what must have been such a rich parterre of flowers. One of our party, Colonel Reilly, of Texas, who had seen our Crystal Palace gardens at Sydenham, in full flower, said that they reminded him of the prairies in the spring. The ground is so level, that the woods on the horizon had the effect that the first sight of the dark line of land has at sea. In many places near the road on each side, small farms were established, and good sized fields of Indian Corn were growing; and wherever there was a railway station, a town, or even a city with one or two churches, and an hotel, besides grocers stores and wooden buildings of various kinds, were in progress in this immense wilderness."

Slaughter-houses at Chicago.—"We afterwards drove about six miles into the country, through oceans of mud to see one of the great slaughter and packing-houses. I did not venture out of the carriage, but the proprietor took Mr. Wilkins, Lord Radstock, and papa through every part of the building. In a yard below were a prodigious number of immense oxen, and the first process was to see one of these brought into the inside of the building by means of a windlass, which drew it along by a rope attached to its horns and passing through a ring on the floor. The beast, by means of men belabouring it from behind, and this rope dragging it in front, was brought in and its head drawn down towards the ring, when a man with a sledge-hammer felled it instantaneously to the ground; and without a struggle it was turned over on its back by the side of eight or ten of its predecessors who had just shared the same fate, and were already undergoing the various processes to which they had afterwards to be subjected. The first of these was to rip up and remove the intestines of the poor beast, and it was then skinned and cut lengthways into two parts when the still reeking body was hung up to cool. The immense room was hung with some hundreds of carcases of these huge animals thus skinned and cleft in two. The process, from the time the animal leaves the yard alive till the time it is split and hung up in two pieces, occupied less than a quarter of an hour. At the end of two days they are dismembered, salted, packed in casks, the best parts to be shipped to England, and the inferior parts to be eaten by the free and enlightened citizens of this great continent. The greater number of these beasts come from Texas, and have splendid horns, sometimes 3 feet long. The next thing they saw was the somewhat similar treatment of the poor pigs; but these are animals, of which for size there is nothing similar to be seen in England, excepting, perhaps, at the cattle show. At least, one which papa saw hanging up weighed 400 lbs. and looked like a young elephant. In the yard below there was a vast herd of these, 1500 having arrived by railway the night before; the number killed and cut up daily averages about 500. It takes a very few minutes only from the time the pig leaves the pen to its being hung up, preparatory to its being cut up and salted. They first get a knock on the head like the more noble beasts already mentioned; they are then stuck, in order to be thoroughly bled; after this they are plunged headlong into a long trough of boiling water, in which they lie side by side in a quiescent state, very different to the one they were in a few minutes before, when they were quarrelling in a most unmannerly manner in the yard below. From this trough the one first put in is, by a most ingenious machine, taken up from underneath, and tossed over into an empty trough, where in less than a minute he is entirely denuded of his bristles, and passed over to be cleft and hung up. The trough holds about eight or ten thus lying side by side, and the moment one is taken out at one end another is put in at the other, and they thus all flow through the length of the trough, and are taken out in order; but so rapid is the process, that no one pig is long in; in fact, the whole business occupies only a very few minutes per pig. Every part is turned to account, the mass of bristles being converted into tooth brushes, &c. In the huge larder, in the story next above the oxen, there were about 1500 unhappy pigs hung up to cool, before being cut up, salted, packed, and sent off. There are several establishments of this nature in Chicago, but only one of equal extent to the one papa saw. About 400,000 pigs are shipped every year from Chicago. I do not know the total number of cattle, but this house alone slaughters and sends away 10,000. There were places on an enormous scale for preparing tallow and lard, and there were many other details equally surprising, which I have not now time to describe; but papa says that the smells were most offensive, and that it was altogether a very horrible sight, and it was one I was well pleased to escape."

Those who are curious about American ladies' dresses and occupations will get information upon those important subjects also.

Miscellaneous.

Gutta Percha of Surinam.—Professor Blekrood, of the Delft Academy, has recently given a notice of the Gutta Percha of Surinam. Although Gutta Percha has been known in Europe for a dozen years, and has now come into general use, yet much still remains to be done regarding it, both as respects its uses and its

sources. The Professor states that Dutch Guiana can supply Gutta Percha. This is of importance, when we consider the value of the article, and the probable exhaustion of it in the countries from which it is now supplied. The Dutch Government took measures to transplant the Isonandra Gutta and cultivate it in Guiana; but they have lately discovered in that country a species of Sapota, to which Blume gives the name of Sapota Mulleri, which yields a juice in every way equal to that of the Isonandra. It is probable that other trees of the same natural order may be found to yield a similar product. Achras Sapota, the fruit of which is known in the West Indies as Neesbery, also yields a milky juice like Gutta Percha. Sapota Mulleri of Blume is probably the tree called "Bullet-tree" by the English, and its wood is known as "horse-flesh." It is a tall tree, yielding in summer a large quantity of milky juice. It appears that under the name common Boerowe, or Bullet-tree, there have been confounded; 1, the Lucuma mammosa of Gærtner (Marmalade tree) —the Mimusops of Schomburgk; 2, the white Boerowe, which is the Dipholis salicifolia of Alph. D.C., and is known in Jamaica as Galimata; 3, the bastard Boerowe or Lowranero, which is the Bumelia nigra of Swartz; and 4, the Neesbery Bullet-tree, or Achras Siderexoylon of botanists, which yields one of the best of the Jamaica woods. Sapota Mulleri grows abundantly on slightly elevated situations. In collecting the milk the trunk is surrounded with a ring of clay, with elevated edges, and then an incision is made in the bark as far as the liber. The milky juice flows out immediately, and is collected in the clay reservoir. The juice resembles in some respects the milk of the cow. It forms a pellicle on its surface, which is renewed after removal. By the evaporation of the juice, we obtain 13 to 14 parts in 100 of pure Gutta Percha. This Surinam Gutta Percha is said to be sold at Amsterdam at the same price as the best Gutta Percha of commerce. *Edinburgh New Philosophical Journal.*

Physiognomy of Good Livers.—Gourmands by predestination are generally of the middle height: they have round or square faces (*carré*), sparkling eyes, small forehead, short nose, full lips, and round chins. The women are dimpled, pretty rather than handsome, with an inclination to *embonpoint*. Those who are especially addicted to good eating have finer features, a more refined appearance; they are more *mignonnes*, and are distinguished by a peculiar manner of their own in swallowing. Under this exterior the most amiable dinner-companions are to be found: they partake of every dish handed to them, eat slowly, and taste with reflection. They are in no hurry to leave the spot where they have been well entertained, and you have them for the rest of the evening, because they are aware what games and amusements are to follow the ordinary accessories of a gastronomic meeting. Those, on the contrary, to whom nature has denied an aptitude for the enjoyments of taste, have long faces, long noses, and long eyes; no matter what their stature, there is something longitudinal about them. They have sleek black hair, and are thin and lanky: it is they who invented trowsers. Women, whom nature has similarly afflicted, are angulous, yawn at dinner, and live upon whist and scandal. The inclination of the fair sex for good-living is a natural instinct, because it is favourable to their good looks. A series of observations has convinced me that ladies who live well remain younger much longer than others. It gives more brilliancy to the eye, more freshness to the skin, more support to the muscles; and, as physiology has proved that the depression of the muscles causes wrinkles, those dreaded enemies of beauty; it is also true, taking all on an equal footing, that the ladies who know how to eat are, comparatively, ten years younger than those who are ignorant on the subject. *Brillat-Savarin's Art of Dining.*

Calendar of Operations.

(*For the ensuing Week.*)

PLANT DEPARTMENT.

Conservatory, &c.—While out-of-door flowers are plentiful nothing should be brought here at present but what is well grown and bloomed, nor should any plants be allowed to remain here that are at all shabby; for it seems a waste of means, and certainly betrays bad management to occupy glass houses with plants of inferior interest to such as are now plentiful in the open air. It is not desirable, however, to crowd the house with flowering plants; the aim should rather be to have a moderate number of handsome specimens effectively arranged, which will yield more solid interest and pleasure than a greater amount of floral display from plants of no individual merit. A thin arrangement of the pot plants will also be advisable on account of the permanent occupants of the beds or borders, which at this season should be allowed plenty of space, in order to secure strong and well ripened wood, without which they need not be expected to bloom finely. Use every means to keep down insects, and let order and neatness be strictly observed. Stove.—Such plants as are intended for the decoration of the conservatory in autumn and early winter should now be carefully looked over, shifting such as are likely to want more pot room, with a view to getting the pots well filled with roots before they are required to be in flower. Keep also the shoots tied out rather thinly, and expose the plants to as much sunshine as they will bear without scorching their foliage, in order to keep them low and bushy. Give clear weak manure-water to young growing specimens, and repot any that are intended to have another shift this season, so as to have the pots well filled with roots before winter. Maintain a moist growing atmosphere, and syringe vigorously any plant at all infested with red spider. Orchids.—The growing season with these is now far advanced; encourage therefore backward plants with plenty of heat and moisture while that can be done safely. See that plants on blocks and in baskets are properly supplied with moisture at the root; to prevent any mistake in this matter, carefully examine every plant at least once a week, and immerse any found to be dry in tepid water until the material about the roots shall have become well soaked. Syringe lightly morning and evening, and sprinkle floors, &c., in order to keep the atmosphere thoroughly moist.

FORCING DEPARTMENT.

Pinery.—Attend carefully to growing stock, keeping the bottom-heat regular and the atmosphere warm and moist, and use every means to secure rapid vigorous growth. This will not be obtained, however, unless all is right at the root; therefore attend well to watering, and never allow any of the plants to become pot-bound. Give air moderately to young stock, and shut up early in the afternoon, giving the plants a gentle wipe with the syringe, and the house a good steaming by wetting every available surface. Continue to pot a few suckers as they can be obtained of sufficient strength, and do not allow too many to be produced by one plant, as they weaken each other. Indeed we never allow a sucker to grow to any size that is not likely to be wanted for stock, and, unless in the case of any scarce sort, never more than two on a plant. Plants growing in beds of soil must be very carefully attended to with water, giving enough at each application to moisten the whole body of soil; for unless this is attended to, the bottom of the bed will sometimes get quite dry, while the surface is moist. Vineries.—The inside borders of houses intended to furnish late supply of Grapes should be well soaked with manure water as soon as convenient, so as to allow of their becoming dry before the damp cloudy days of autumn set in, for damp will be most injurious then, and anything likely to cause it should be avoided. Muscats beginning to ripen should be assisted with fire heat, for it is hardly possible to ripen these properly at any season without artificial heat; and those for late use should be pushed on, so as to get them right by the end of next month at the latest; for those ripened later in the season are seldom of good quality, and we have always found them to hang better when ripened early in autumn than those that were ripened later in the season. Figs.—The second crop on the earliest trees will be fast advancing towards maturity; as soon as the fruit begins to ripen the atmosphere should be kept dry and rather cool, giving air freely every fine day, and using a little fire on wet cloudy days, to prevent damp and allow of a gentle circulation of air. Use every care to keep the foliage clean and healthy, and clear of insects, and do not crowd the young shoots. Melons.—Plants on which the fruit is ripening should be kept dry at the root, and freely exposed to air on fine days, avoiding moisture in the atmosphere as far as can be done without injury to the other plants. Do not allow the bottom heat to decline where the fruit is setting, which is a frequent cause of the young fruit dropping off. Keep a watchful eye on the foliage, and guard against red spider, which, if once allowed to establish itself, can hardly be removed without greatly injuring the tender foliage.

FLOWER GARDEN AND SHRUBBERIES.

Proceed soon with budding Roses, keep down all suckers, and clear the stems of wild shoots. Strong shoots of Chrysanthemums may now be layered in pots to produce dwarf compact bushes. Those in pots may soon receive their final shift. Carnations and Picotees will now be in bloom; let plants in pots be moved under an awning like that used for Tulips. Here they may be arranged on a raised platform or not according to taste. Picotees may be grouped on one side and Carnations on the other, taking care that the tallest plants are behind, and at the same time contrasting the colours as much as possible. Pipings may be put in on a gentle hot-bed. Layering may also now or very soon be proceeded with. Much of next year's success depends on this matter. All seedlings should be marked, noticing their various properties as to form, colour, and substance, &c. Ranunculuses may be taken up as soon as the foliage has turned yellow; for should wet weather set in they might emit fresh fibres, and if taken up then they are likely to be worthless.

HARDY FRUIT AND KITCHEN GARDEN.

Endive may now be planted without delay. High manuring is necessary to have it in perfection. In planting succeeding crops keep raising the beds higher as the season declines. Keep succession beds of Horn Carrots duly thinned. Let a good breadth of ground be prepared for Winter Spinach; trench it thoroughly, and let it be heavily manured. It generally succeeds best in beds slightly raised. Continue getting out Cape and other Broccoli, and also some late Cauliflowers. An autumn Mushroom bed may now be made; throw the dung together to ferment for a few days; when half dry, mix one-third of loamy soil with it to keep in check any further fermentation, and tread or beat hard while making the bed, forming the spawn holes immediately it is finished to assist in keeping down the heat. Strawberry runners should be procured for new plantations without delay. Those who cannot spare ground for a new plantation may prick them out in prepared beds about 6 inches apart, and remove them with balls in October or in the early part of February. For main crops Keens' Seedling, British Queen, Cuthill's Black Prince, Princess Royal, and Elton are invaluable.

COTTAGERS' GARDEN.

If not already done take advantage of showery weather to plant out all kinds of Winter Greens, stir the soil frequently among growing crops, and keep down weeds. Pelargoniums, if any, for window decoration may be cut down when done flowering, and cuttings made of their tops. They strike freely without bottom-heat. Water Dahlias and Hollyhocks and secure them from winds. Also guard the former as much as possible from earwigs, which are apt to disfigure their blooms. Inverted flower-pots with a little dry Moss in them make good traps; dry Bean stalks also answer the same purpose.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.
For the Week ending July 7, 1859, as observed at the Horticultural Gardens.

July.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Temperature of the Air. Min.	Temperature of the Air. Mean	Temperature of the Earth 1 foot deep.	Temperature of the Earth 2 feet deep.	Wind.	Rain.
Friday 1	1	30.089	30.050	70	52	61.5	64	63	N.E.	.00
Satur. 2	2	30.125	30.055	75	56	65.5	64	63	E.	.76
Sunday 3	3	30.114	30.001	78	53	65.5	65	63	S.W.	.04
Mon. 4	4	30.147	30.106	79	46	62.5	65	64	W.	.00
Tues. 5	5	30.300	30.257	79	48	63.5	66	64	W.	.00
Wed. 6	6	30.254	30.178	84	48	66 0	66	64	S.W.	.00
Thurs. 7	☽	30.189	30.100	82	50	66 0	66	64	S.W.	.00
Average		30.174	30.104	78.1	50.5	64.3	65.7	63.5		0.80

July 1—Light clouds; fine; overcast.
— 2—Uniform haze; very fine; severe thunder storm, almost constant sheet and forked lightning, with heavy rain.
— 3—Uniformly overcast; close and hazy; thunder and lightning, 10 P.M.
— 4—Overcast; very fine; clear at night.
— 5—Clear and fine; very fine; light clouds.
— 6—Clear; hot; very fine throughout.
— 7—Clear and very fine; hot sunshine; very clear at night.
Mean temperature of the week, 1 deg. above the average.

RECORD OF THE WEATHER AT CHISWICK.
During the last 33 years, for the ensuing Week, ending July 16, 1859.

July.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 10..	74.2	51.5	62.8	13	0.48 in.	2	2	1	1	3	13	4	1
Mon. 11..	74.5	51.7	63.1	9	1.07	4	1	3	1	4	7	8	6
Tues. 12..	74.8	51.0	62.9	12	1.10	1	2	4	1	4	10	10	2
Wed. 13..	75.3	52.0	63.6	12	0.92	—	2	5	—	1	20	4	1
Thurs. 14..	76.2	51.9	64.1	13	0.64	—	1	2	2	5	11	10	1
Friday 15..	75.9	50.6	63.2	17	1.46	1	3	3	1	4	16	3	—
Satur. 16..	76.4	50.6	63.5	13	1.60	2	3	3	—	2	16	6	1

The highest temperature during the above period occurred on the 14th, 1847—therm. 93½ deg; and the lowest on the 10th, 1851—therm. 38 deg.

Notices to Correspondents.

Books: *J M.* There is no special work on Conservatory Management. Good general instructions will be found in Glenny's Manual. As to books on Vines, their name is legion. Try Sandars on the Vine.—*J R.* Sandars on the Vine.—*R O.* Moore on the Cucumber.—*A Constant Sub.* You will find no better advice as to growing Cape Bulbs than what is contained in Miller's Gardeners' Dictionary; the old edition. You can however consult Sweet's Hothouse and Greenhouse Cultivator, and Dean Herbert's work on Amaryllidaceæ, published by Ridgway. But you will not go wrong if you manage them like Hyacinths when grown in pots. The great point is to make them push freely, to take care that the leaves are kept in perfect health, and when the leaves die to preserve the bulbs in a warm dry place until the season of growth returns.

Cucumbers: *A.* The smooth one is Carter's Champion.

Deadbody: We will tell you next week.

Diseases: *Meson.* The affection of your Melon leaves appears to be similar in character to one which frequently occurs on Vines and Geraniums. In those cases the roots are always in a bad condition, and we suspect, therefore, that such must be the case with your Melons, and we should recommend you to turn your attention in that direction.—*J F F.* We have examined your Rose-leaves carefully, and do not find any traces of Fungi. From the disposition and character of the spots, and the form of a great many of them, we feel sure that the tissue has been injured by cold, connected in some way or other with drops of moisture adherent to the leaves, and if so, nothing can be done. The ungenial spring has been very injurious in many cases to trees which were forward, and in some fatal. *M J B.*

Insects: *H E.* The insect you sent had made its escape out of your contrivance. A pill-box cut down would have brought it safely. *W.*—*Insignis.* It is the very common Hylurgus piniperda. Hand-pick your trees, and burn the pieces *immediately.*

Locust Tree: *J D.* We regret to say that we are still unable to make out what Locust tree you mean. The common Acacia is a Locust tree, the St. John's Bread is a Locust tree, and there are many more. If you mean the second sort, then you will find it too tender for this country; but this second sort is not at all like common Box.

Names of Plants: We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have or could have undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*O P.* Spiræa filipendula.—*Inquisitive.* 1, Scolopendrium vulgare; 2, Veronica speciosa; 3, Erica Bowieana; 4, Erica abietina.—*T P.* It is a Fourcræa of some sort; but the species cannot be determined without seeing the plant.—*Ravenswood.* Oreodaphne californica.—*A Y.* 2, Arenaria verna; 1, Lysimachia nemorum; 3, Potentilla anserina; 4, Lastrea filix fœmina.—*W H.* 1, Polystichum angulare; 2, Cystopteris fragilis *v.* dentata; 3, Blechnum glandulosum; 4, Lastrea Filix-mas.—*T W.* It is not Shamrock but a not uncommon variety of Potentilla reptans.—*Carter & Co.* It is not in the least like Leonotis Leonurus, which is a beautiful thing; this, on the contrary, is the weed called Leonurus sibericus. —*W Jackson.* Next week.

New Beech: *J M.* We cannot see in your specimen the variegation you speak of; but we have seen such a kind of variegation elsewhere.

Rose Fungus: *J J.* The fungus on your Rose leaves is *Asteroma Rosæ.* It is not in general fatal. No remedy has yet been discovered. *M J B.*

Vine Leaves: *Reader.* They are in a sad plight, and apparently ruined for this season. The cause of the mischief is want of ventilation and too damp an atmosphere.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

BURNARD, LACK, AND CO.'S CONCENTRATED SUPERPHOSPHATE OF LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.

CONCENTRATED TURNIP MANURE, equal in value to the preceding.

Of these Manures Dr. Voelcker says:—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."

Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to BURNARD, LACK, & Co., Sutton Road, Plymouth.

LONDON MANURE COMPANY, removed to 116, Fenchurch Street, E. C. (Established 1840), have the following MANURES ready for delivery:—

CORN MANURE for SPRING TOP-DRESSING
URATE
MANGEL MANURE
SUPERPHOSPHATE OF LIME
BLOOD MANURE
} all of guaranteed quality.

In consequence of the reduction in the price of raw material the London Manure Co. are enabled to lower the price of their Superphosphate of Lime, and to materially improve the Corn Manure and Urate.

The London Manure Co. also supply PERUVIAN GUANO (direct from Messrs. A. Gibbs and Sons), SULPHATE of AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of value. Wholesale dealers supplied.

116, Fenchurch Street, E C. EDWARD PURSER, Secretary.

REDUCTION IN PRICE OF LAWES'S MANURES.

MR. LAWES begs to announce that he has this season reduced the price of the Manures manufactured by him, viz.:—

TURNIP MANURE	from £7 to	£6	6
SUPERPHOSPHATE OF LIME ..	,, 7 to	6	6
MINERAL do. ..	,, 6 to	5	5
BARLEY MANURE..	8	0	

Prof. Way and Dr. Voelcker have sampled from a bulk of 5000 to 6000 tons at his factories, and their report and analyses are given in full in Circular to be obtained on application at his office, 1, Adelaide Place, London Bridge, E.C., or of his local Agents.

N.B. Genuine Peruvian Guano direct from Messrs GIBBS, Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures. American Cotton-seed Cake supplied.

FOOD FOR DOGS, FOWLS, ETC.

GREAVES, of Good Quality, at 5*l.* per ton, free on board at Waterford, or 6*l.* delivered in London.—Early application to J. S. RICHARDSON, Waterford.

TO PIG AND POULTRY FEEDERS AND MILLERS.

CHICKEN AND GAME RICE, 8*s.* per cwt., in bags 1¼ cwt. each. SCREENED RICE, 11*s.* per cwt., in bags 1¾ cwt. each. RICE MEAL, 6*s.* 6*d.* to 8*s.* 6*d.* per cwt. RICE for grinding. American Oilcake and Locust Beans, per Ton only.—All Sold for Cash, and an allowance per ton, by W. & R. JUPP, Rice Merchants, 6, Cross Lane, St. Mary-at-Hill, Eastcheap.

WARWICK SHOW.—STAND 70.

"SIGMA'S" AGRICULTURAL INVENTIONS will be exhibited by W. C. POWELL, of Hurstgreen, Sussex. Engravings sent on application.

ROYAL AGRICULTURAL BENEVOLENT COLLEGE FOR THE RELIEF OF DECAYED FARMERS, THEIR WIDOWS AND ORPHANS.

WARWICK MEETING OF THE ROYAL AGRICULTURAL SOCIETY.

Land-owners, Farmers, and others connected with British Agriculture, desirous of promoting the above Institution, can leave their names with either of the following eminent Firms, who have kindly consented to receive signatures. Subscriptions or Donations are not at present required:—

Messrs. Barrett, Exall and Andrewes, Reading, Stand No. 77.
Messrs Burgess & Key, London, Stand No. 5.
E. H. Bentall, Heybridge, Stand No. 105.
Messrs. Clayton & Shuttleworth, Lincoln, Stand No. 47.
J. Cornes, Barbridge, Stand No. 147.
Messrs. Garrett & Sons, Saxmundham, Stand No. 83.
Messrs. Howard & Co., Bedford.
Messrs. Hornsby & Sons, Grantham.
Messrs. Lawson & Son, The Queen's Seedsmen, Edinburgh, Stand No. 237.
Messrs. Perreaux & Co., Mark Lane, Stand No. 11.
Messrs. Ransome & Sims, Ipswich, Stand No. 176.
E. Samuelson, Banbury, Stand No. 30.
Messrs. Smith & Ashby, Stamford, Stand No. 171.
And with J. J. Mechi, Esq., Tiptree Hall, Kelvedon, Essex.

HIGHLAND AND AGRICULTURAL SOCIETY.
AGRICULTURAL EDUCATION.

THE SOCIETY'S AGRICULTURAL DIPLOMA will be granted in terms of the following Bye-Laws enacted by authority of Royal Charter:—

"That it shall be competent for the Board of Examiners from time to time to receive for examination, and to recommend for the Society's Agricultural Diploma, Candidates who shall have attained their 21st year, and who shall exhibit the vouchers, and pass an examination on the subjects hereinafter prescribed.

"That the vouchers to be exhibited shall be such as to afford satisfactory evidence to the Board—1st, That the Candidate has attended a farm, and been engaged in the practical operations thereof for a period of two years, or for two separate periods of not less than one year each. 2dly, That the Candidate has attended, for another period of two years, or for separate periods of not less than one year each, the following classes in some seminary recognised by the Board as sufficient:—Agriculture, Chemistry, Natural History, Botany, Veterinary Medicine, and Surgery.

"That the Candidate's knowledge of Practical Husbandry, and of the foregoing Branches of Study, as well as of Technology, Field Engineering and Surveying, Farm Mechanics and Architecture, and Book-keeping, shall be established to the satisfaction of the Board by means of a strict examination.

"That upon a Report made by the Board to the Council on Education, stating that a Candidate has exhibited the vouchers and passed the examination required, the Council shall issue, in favour of such Candidate, a diploma bearing the corporate seal of the Society, and certifying his proficiency in the Arts and Sciences connected with Agriculture."

Examinations are held annually towards the close of the Winter Session of the Edinburgh University. Detailed information may be had by applying to Mr. HALL MAXWELL, No. 6, Albyn Place, Edinburgh.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.

Principal—J. C. NESBIT, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

YORKSHIRE AGRICULTURAL SOCIETY.
HULL MEETING, 1859.
OPEN TO THE UNITED KINGDOM.

The TWENTY-SECOND ANNUAL MEETING will be held at Hull on WEDNESDAY, August 3, and THURSDAY, August 4, when nearly 900*l.* will be offered in prizes for Stock, Poultry, Implements, &c., including Steam Ploughs and Reapers.

Prize Lists and Certificates of Entry may be had on application to the Secretary. The Entry closes on the 20th July.

JOHN HANNAM, Secretary.

N.B.—Persons desirous of becoming members of the Society are requested to send their names immediately to the Secretary.

An Annual Subscription of 1*l.* enables a member to exhibit an unlimited number of Stock, to view all the Exhibitions, and to receive the Society's Publications free of charge.

Kirk Deighton, Wetherby, July 9

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.—WARWICK, 1859.
PROGRAMME.

TUESDAY, July 12; WEDNESDAY, 13.—The Implement Yard open from 10 o'clock in the morning till 6 o'clock in the evening on Tuesday; and from 7 o'clock in the morning till 6 o'clock in the evening on Wednesday, at an admission charge of 2*s.* 6*d.* for each person. Machinery will be shown by the Exhibitors at work on each of these days.

WEDNESDAY, 13.—The Judges to inspect the Live Stock, and to award the Prizes.

Public trials of the Steam Cultivators, on land in the neighbourhood of the city, during such hours as the Stewards may determine.

At 1 o'clock (or as soon after as all the Judges shall have delivered in their awards, of which notice will be given), the Public will be admitted into the Cattle Yard on the payment of 5*s.* each person, at the Special Entrances.

THURSDAY, 14.—The General Show Yard of Cattle, Horses, Sheep, Pigs, and Implements open to the Public from 6 o'clock in the morning till 6 in the evening; admission 2*s* 6*d.* each person.

FRIDAY, 15.—The General Show Yard open to the Public from 6 o'clock in the morning till 6 in the evening; admission 1*s.* each person.

General Meeting of the Members, in the Shire Hall, at 10 o'clock in the forenoon.

By Order of the Council, B. T. BRANDRETH GIBBS,
London, July 9. Hon. Acting Secretary, *pro tem.*

By the Regulations of the Society, all persons admitted into the Show Yard, or other places in the temporary occupation of the Society during the Meeting, shall be subject to the Rules, Orders, and Regulations of the Council.

The Agricultural Gazette.
SATURDAY, JULY 9, 1859.

MEETINGS FOR THE ENSUING WEEK.

TUESDAY,	July	12
WEDNESDAY	—	13
THURSDAY,	—	14
FRIDAY,	—	15

} Annual Meeting of the Agri. Society of England at Warwick.

—— The preparations for the Warwick Show of the Agricultural Society have at length been completed. The show-yard was delivered up by the contractors some days ago; the implement stands are already well stocked, and judges are employed this day and will be further engaged on Monday and Tuesday of the show week in testing their merits. The class of implements to receive their awards this year is the same as it was at the Chelmsford meeting—implements of tillage, among which those drawn or driven by steam power will of course occupy a prominent place; and we shall no doubt find a large advance made since 1856, the year of the Chelmsford meeting, if not in the machinery of steam cultivation, at least in the preparedness of our cultivators for its use.

The show yard at Warwick lies on the race ground, very nearly as that of Chester did, close to the town on its north western side. The trial grounds, for which ample provision has been made, lie within two miles of the town on the same side—at Hampton-on-the-Hill, and on the Stratford road. The public trial ground lies on the farm of Mr. PALMER, at Hampton, facing the city, at a distance of 1½ miles. The private trial grounds of medium soil lie on the same farm, and on the adjoining one of Mr. CANNING. They are in large 20-acre fields in second years' seeds, the former well eaten down and excepting its dryness in admirable condition for a ploughing match—the latter steeper, less perfectly eaten down, and with one or two old marl pits in it which will somewhat interfere with its otherwise perfect uniformity. The light land trial ground is in two 10-acre fields on the Stratford road, in the occupation of Mr. HINCKS, and the heavy land grounds are two 10-acre fields on the neighbouring farm of Mr. DICKENSON, in extremely foul condition, from which a poor Pea crop has recently been removed. A portion of one of these fields has been ploughed, in order to put clod crushers and rollers to the trial.

The public trials of field implements will take place on Wednesday next—those of barn and other machines will be continued in the show-yard during the days of exhibition—and ample store of corn of all kinds in sheaf is being provided. The local authorities are everywhere busily engaged in the attempt to realise an even greater success at Warwick than has been achieved at the previous annual gatherings of the Society.

—— Among the services which these annual gatherings accomplish for agriculturists, is one contingent on their July journeyings in thousands to and from the meeting—the more accurate information that is thus acquired of the probabilities and prospects of the coming harvest. In most of the southern and the midland counties we believe it will be found that the probability of a large Wheat crop has lately been considerably reduced.

Unusual injury has been suffered from recent rains, and the crop is much laid; some fields we have seen already much blighted. Barley also is a good deal laid. The complaints of the condition of the Bean crop prove to be less general than had been feared. Peas appear generally to promise well. A very heavy hay crop is being gathered safely in. Turnips are this year growing almost unmolested by the fly. There is no complaint yet general about the Potato crop, though indications of the disease have been noticed in places.

On all these points however we hope to speak more confidently during the ensuing month.

ONE of the most interesting papers in the current Number of the *Bath and West of England Society's Journal* is that in which Mr. LUSH, of Brewham House, near Bruton, Somersetshire, gives the experience of more than 20 years on a farm at Kilmington in that county. It consisted, when first taken, of 30 acres of dry pasture land, 60 of very poor pasture land, 51 of dry arable land, 52 of exceedingly poor and worked out arable land, 60 of still poorer arable thrown out of cultivation several years, 237 acres of common land uncultivated, and 10 of coppice and of waste. In October, 1837, there were 18 acres of Wheat stubble, 30 acres of Oat and Barley stubbles, 7 acres of Clover stubble, 3 of Swedes, 11 of Vetch stubble, 32 of fallows, and 300 acres barren. In October, 1857, there were 93 acres of Wheat stubble, 108 acres of Oat and Barley stubbles, 50 acres of Clover and 50 acres of Swedes, and 102 acres of Vetches, Turnips, Rape, and fallows. The process by which this remarkable change in the cropping and condition of the land was effected is detailed in the course of a dozen very interesting pages.

The crop of 1837 was valued at 20, 23, and 22 bushels per acre in the case of Wheat, Oats, and Barley respectively. "In the year 1854," says Mr. LUSH, "I grew, on 109 acres and 12 perches, 1046 sacks and 2 bushels. The crop of 1837, which I bought, and the two first crops of my own growth, did not average 120 sacks a year."

This improvement was effected thus:—Useless fences were grubbed up, and common land was grubbed and dug, and pared, and burned at a cost of sometimes 8*l.* an acre. Lime and bonedust were the dressings which produced the best effect. Ashes alone were useless. Mr. LUSH gives an illustration on this point:—

"I will state here how I was misled by a good Wiltshire farmer. I had a piece pared and burnt, and an abundance of ashes produced. I intended to have spread them, and to have drilled a small quantity of bones with the Turnip seed, but he entreated me not to waste the bones, as he would guarantee a first-rate crop of Turnips with the ashes alone, if drilled with the seed. I tried his plan on part of the field, and bones on the other part, and found the bones, 12 bushels per acre, produce a very good crop; the ashes alone (except where the fires were) produced nothing—absolutely nothing. I invited some of my neighbours to see the effect of bones, as none had been used in the parish at that time but by myself. They ridiculed the idea that 12 bushels of bones to an acre had made the difference, and for many years afterwards some looked at my crops with as little belief as ever in the virtue of bones; but now the same parties use a little artificial manure occasionally. Eighteen or 20 years have worked a change.

"After taking off the first crop of Oats on the first piece of 30 acres, I ploughed it, and found much of the turf as sound as ever, and the Fern roots so thick that I could scarcely work the drags on it. After picking up and burning hundreds of loads of roots, principally of Fern, I sowed it to Oats the second time, and had a better crop than the first—21 bushels per acre. I was now convinced that nothing could be done with it profitably without lime or some artificial manure. Wherever I used lime for corn and bones for roots, it answered admirably, so that I was encouraged to hope that it would ultimately pay. I used a

London-made manure one or two years before, and now tried it again, but was not satisfied with it. It was called 'Carbonated Humus.'

"As the practice adopted with the first piece was continued with very little variation till the whole was cleared, I will state more particularly my management of it. After the second crop of Oats was off, I fallowed it, and commenced by liming one part at the rate of 30 quarters per acre; the other part I prepared for Swedes, which I drilled with bones, about 2 quarters per acre. They were tolerably good, and were fed on the land, which was sown the following year (after being well manured from the yards) with Vetches, Rape, and Turnips. Most of the limed part was also sown to Rape and Turnips; and in the autumn the part that had been limed and sown to green crops, and had been well trodden with sheep, was sown to Wheat, and produced a good crop. The part limed, and not sown to a green crop, was very light and unfit for Wheat; I therefore sowed it to Rye, which answered remarkably well, and from that time till the whole was brought into a regular course, I have grown Rye on part of my Wheat field, if found to be loose and light, which was generally the case on the parts which had not grown Turnips or Rape. I have always found Rape after Swedes the best preparation for Wheat, and in that way I have grown upwards of 40 bushels per acre in a very good season."

At length in 1844 the tenant began to reap the reward of his labours. Till then he had not made rent or taxes off the land, having spent all in improvements, but that year he made a great breadth of corn, and the crops yielded well. Some further details of experiments he gives:—He had tried carbonate of soda for Wheat with bad results—subsoiling with no results—he had observed thin seeding and been discouraged by its results. After obtaining a lease he proceeded with fresh spirit, and ultimately reclaimed the whole land, making 403 acres arable. The process seems to have been a profitable one at length, though sometimes during the period over which the experience runs it must have presented a somewhat hopeless prospect to the tenant.

The following is an interesting account of the effects of chalking and liming:—

"Most, I suppose, know that where lime answers well, chalk or malm will also do good; but few persons, I think, have witnessed such extraordinary results as I am about to relate from the use of the latter. In 1841, I wished to try malm on a piece of land of 26 acres, which was covered with very short Heath and Fern, with a little Grass of the very coarsest kind. I agreed with a neighbouring farmer to allow me to dig some on his farm at 3*d.* per load (I have nothing of the kind on my land). I had about a mile to haul it, and I put about 35 loads per acre, at a cost of about 5*l.* After I covered about 6 acres of the worst part of the field, a circumstance occurred that prevented my continuing it; the next year it began to alter the appearance of the land, and in two or three years after, if a flock of sheep were turned into the opposite end of the field, in a few minutes three-fourths of them would be on the 6 acres malmed. In 1847, being six years after it was done, I decided on digging the whole piece, and I began with the malmed part, which turned out mellow and nice; but when the men, about 20, came on to dig on the other part, it was of quite a different colour, and such a sour and most unpleasant smell arose from it, that I could perceive it a quarter of a mile off. In fact, a gentleman walking with me at about that distance could not imagine from whence the smell came, and had to be convinced by going to the spot. The digging was taken at 2½*d.* per lug, but, when the malmed part was finished, I was obliged to advance the price to 3*d.* per lug. Some weeks after the whole field was turned, the malmed piece, and 3 acres adjoining it, was sown to Oats; the other part of the field was drilled to Swedes with dissolved bones. At harvest the Oats on the malm part were 5 feet high, and produced 3 bushels per acre; and on the adjoining 3 acres, 1½ foot high, producing 15 bushels per acre. The Swedes were not very good; I fed them on the same, and then ploughed the whole field, and found the turf but little rotted on the part not malmed. At spring I sowed it all to Oats, and the result was 59 bushels on the malm parts, and 25 bushels per acre on the remainder of the field; every drill of bones used the previous season for seeds could be easily seen by the difference in the Oats. I then folded the whole field equally over with 2000 sheep per acre, and sowed Oats again—this was the third time on 9 acres, and the second time on the other part; this crop produced 67 bushels per acre on the malmed, and 41 bushels on the other parts, showing the extraordinary difference in the average of three crops of 63 bushels against 27 bushels per acre; so that, if I had continued the malm over the whole field at first, I should have had on the three crops 1324 bushels of Oats more than I had, which, at 2*s.* 6*d.* per bushel, would be 155*l.* 10*s.* I then considered the field deserved better treatment; so I fallowed it, and limed the part not malmed with upwards of 30 qrs. per acre, brought into a regular course with my other land, and have had good crops of all kinds on it since. For at least seven years after it was dug, a person walking across it blindfolded could tell the malm part by the difference of feeling to his feet."

We have made extracts here and there without attempting to describe the whole process to which Mr. Lush's success has been owing, and these extracts will, we hope, induce a perusal of the full report which he gives in the pages of the Journal.

ON LIQUID MANURING.

No one will suspect me of being disposed to undervalue the great favours conferred on agriculturists by Dr. Voelcker; and if I have occasion to differ with a few conclusions to which he has recently given expression, it is simply in the hope of arriving at safe conclusions on points of much importance in practical agriculture.

In his paper on liquid manure Dr. Voelcker enunciates this among other doctrines:—"The liquid manures which I examined, compared with other fertilisers, are poor manures, and cannot produce any marked effect upon naturally fertile land."* And again: "If we calculate the total amount of the available fertilising substances for a depth of soil only 10 inches deep, we shall find a quantity of mineral and organic matters in comparison with which the amount of manuring constituents supplied in 50,000 gallons of liquid manure appears altogether insignificant. I believe this to be the chief reason why little benefit results from the application of liquid manure to clay soils and fertile loams."†

I must dispute these principles. Liquid manure more diluted than even any of the samples analysed by him produces very marked effects on naturally good and fertile land. I found my experience on a "fertile loam." The most approved appliances have been adopted for applying the liquid on a large experimental scale; and the following concise facts will leave little room for doubting the inaccuracy, or at all events the danger of the Professor's teaching. The past season, it is very well known, has been in many parts of the United Kingdom a very trying one. The Grass in our neighbourhood suffered very severely for want of moisture. Now, by the aid of irrigation with liquid manure we had an excellent cutting of Italian Rye-grass early in April; indeed, without this aid our cattle must have suffered like those of many others in the country. And on the day on which I write these sentences I have cut and weighed very accurately the produce of 4 perches square of the second cutting of the irrigated portion of one field, and find the acreable yield to amount to the almost incredible quantity of 17 tons 10 cwt. per imperial acre. The liquid was excessively diluted, and the land, be it remembered, is a fertile clay loam, which has been for many years generously treated and skilfully managed. The conclusion forces itself upon us, that upon this soil, which Dr. Voelcker would consider ill adapted for liquid manuring, the original cost of the underground pipes would be repaid in one season like the present.

These and similar facts have induced us to view with regret the tendency of Professor Voelcker's views on liquid manure. I believe that there is not in the United Kingdom a soil that would not be benefited by an application of this kind of manure in such a season as the past. A few years ago I experimented with river water, containing in solution a very small quantity of mineral matters, and found in one year an increase of 10 of Grass, and in another 11¾. And this leads me to comment upon a fallacy in the Professor's paper; namely, in comparing the value of liquid manures with other fertilisers, he simply estimates the commercial value of its ingredients. Now, the practical farmer in estimating the money value of liquid manure, should look to the practical results likely to emanate from its application, rather than to the price at which he can obtain from other sources the matters contained in it.

Assuming that plants receive their mineral food from the soil in solution, no comparison can be drawn between a given quantity of the elements of manure in a solid state and an equal quantity of the same elements in a liquid state. And this consideration becomes the more important if we accept the announcement made in Liebig's "Letters on Modern Agriculture," that rain water is utterly incapable of dissolving all the mineral substances required by plants. For if that view be endorsed we must further concede that we cannot obtain from the soil its maximum produce without an artificial supply of water.

It is true Liebig suggests that plants can assimilate food directly and without its being in solution; but I am far from accepting a suggestion so much at variance with recognised physiological laws, and every day practice.

Viewing Dr. Voelcker's argument that liquid manure must be inefficacious because of the extreme state of dilution of its mineral constituents in another light, it appears equally questionable. We know that water charged with carbonic acid (such as the rain water in soils, which contains not only the carbonic acid dissolved by the rain in passing through the air, but also the carbonic acid derived from the decay of the organic matter of the soil) has the power of dissolving the insoluble phosphates of the soil. Solutions of the salts of ammonia, of common salt, and nitrate of soda have the same effects on the same insoluble phosphates. Now, it is a most important fact that the solvent action of the salts just named does not increase with the strength of this solution; but on the contrary (to use the words of Liebig), "the quantity of the earthy phosphates taken up by the above solutions [of salts of ammonia, common salt, and nitrate of soda] does not rise in proportion with the amount of salts in solution, but rather with the dilution of those fluids."* I object on this ground to any comparison between liquid and solid manure based merely on the monetary value of the constituents of the farm; and in making this protest I have not relied solely on abstract scientific reasoning, nor have I been led on by practical observations, strong and convincing though they are in my own case. I have questioned the deductions of one of the ablest expounders of agricultural chemistry of our day; firstly, because they are openly at variance with attested practice; and secondly, because they are not in accordance with our own interpretation of pretty well attested scientific principles.

In the valuable paper which has suggested this notice, the author gives two suggestive chapters on the soils benefited and not benefited by liquid manure; and I cannot avoid noticing the interesting, but to my mind unsatisfactory, line of argument adopted in endeavouring to establish that liquid manure proves beneficial only on light soils, while on clayey and loamy clays it can produce no marked effect, and may prove injurious.

"All clay soils are generally more than sufficiently wet during the early part of the year; the additional quantity of water supplied in liquid manure renders them wetter still. * * In summer clay soils crack in all directions, and the liquid runs through these cracks instead of passing through the soil" in the usual way.

The first sentence in this extract presupposes that the farmer will apply liquid manure to his land when it is not wanted—when there is a sufficiency of rain to dissolve out of the soil enough of plant food; while the fact of clay land contracting and cracking, as the author truly remarks, only proves the inestimable advantage of having it in our power to create artificial showers by which those cracks and fissures would be prevented. My opinion is in this respect totally at variance with Dr. Voelcker, knowing from experience that clay land feels most grateful for a judicious application of liquid manure, be it ever so diluted, in seasons of drought.

I by no means advocate the indiscriminate or excessive use of liquid manure on heavy lands, believing that such a practice would render them more unmanageable than they are; but am equally strong in my advocacy of a judicious application of dilute liquid manure to such lands, especially when in Grass, and, as already remarked, in dry or parching seasons.

With Dr. Voelcker's views on the application of the liquid to light soils I fully concur. But when he accounts for certain "instances which have come under my [his] observation, in which considerable expense was incurred for the erection of tanks that are now doomed," by saying that "experience has shown that no good whatever was produced by the application of liquid manure to the land," I am again forced to dispute his interpretation of the facts. I have known a very remarkable instance of a nobleman who incurred a very heavy outlay in putting down iron pipes, erecting a steam-engine, &c., for the purpose of irrigation; and it is not a little singular to find that on first inquiry I was offered the explanation that is now so prominently urged by Dr. Voelcker; namely, that the land was not suited for the purpose. Being sceptical I sifted the matter, and as I suspected the case afforded a most apt illustration of the old adage of cooking the fish before it is caught; the quantity of available liquid was so insignificant that no reflecting man would have gone to a heavy outlay for applying it. The distribution of this small quantity was found exceedingly expensive; the scheme was abandoned; the iron pipes are now undergoing the work of slow oxidation and destruction; and to retrieve his own position the agent—an over sanguine and unthinking man—would fain charge the soil with the failure of his own whim.

Of course I do not advocate the indiscriminate extension of the system of liquid manure irrrigation as practised at Tiptree Hall, Glasnevin, and elsewhere. It has its advantages. When the supply of liquid is forthcoming, and when the climate is dry, and that there is adequate capital and ample security of tenure to justify the outlay, I look upon the system, and more particularly for the growth of Italian Rye-grass, as the most remunerative branch of high farming yet introduced. The return on the farm to which my remarks more particularly refer will this season amount to at least an excess of 20 tons of Italian Rye-grass per statute in favour of irrigation; a fact which is in itself quite conclusive as to the economy of the system, and to the unsoundness of the views propounded by Dr. Voelcker. This is one of those subjects which requires to be very calmly considered, not only for the mere secondary question of, will it pay? but as a new element of pro-

* Journal of the Royal Agricultural Society of England, vol. xix., p. 543.

† Ibid, p. 546.

* "Letters on Modern Agriculture," p. 63.

gress—as an agency for making two blades of Grass to occupy the place of the solitary leaf which now occupies a given surface and derives its nourishment from a given number of particles—and still more as a means of meeting the requirements of the growing population of this powerful but very limited country. *T. B., G. N.*

THE PERIOD OF ENTRY TO A FARM.

The early history and practices of our island clearly show that the customs of our forefathers were established upon practical views, and that the character of soil to be dealt with very naturally governed their period of entries upon lands that were newly taken in hand, and thus led to certain practices peculiar to each district. Amongst them the ancient usage of entering upon farming ands at certain fixed periods of the year. These usages have been handed down to us through successive generations, remodelled on their way, and now form the basis of our present customs. It would appear from early evidence, and the then desire for lands suitable to the growth of Rye and Wheat, that an autumn entry had been more generally adopted, as being the most convenient period for the sowing of these crops, and the abandonment of other lands that had just previously yielded its golden crop to the scythe. This is supported by the present custom of autumn entries, upon the oldest wheat-growing districts.

Autumn Entries.—The autumn entry usually takes place at New Michaelmas, 29th September. But in some districts it is the practice to enter at Old Michaelmas—10th October. There are also Martinmas entries, 22nd November. With autumn entries, the tenant takes to the land and houses together. This affords him the opportunity of sowing his own Wheat and Vetches, ploughing his winter fallows, and making other preparations for the spring. The outgoing tenant retains the barns for threshing his corn, and the yards for the consumption of his straw, &c., unless the incoming tenant takes them by valuation. This latter practice is objectionable, and has been revised in some districts, by an arrangement being entered into for the incoming tenant to take the hay and straw at a valuation, and with them he gets the use of the yards. As a convenient set-off against these payments, he agrees to pay for the threshing of the corn, and carts it to market, &c., a distance not exceeding the usual custom—say 10 miles—by far the best mode. By this arrangement both parties, to a certain extent, are benefited. The out-going tenant gets clear out of his old occupation (except the selling of his corn), and is set at liberty to remove to another farm; the incoming tenant has full use of the yards, hay, straw, &c., and makes his own manure. The farm valuations are made some few days previous to the day of entry. The root crops are valued, either by their apparent worth, according to the season's price, or by their cost in production, rents, rates, manures, and tillages. The valuations made for summer fallows on tenacious soils vary materially—in fact, every district appears to have its custom; the common sense view being that of valuing every required or proper act of husbandry, that has been efficiently performed upon the land since the removal of the preceding corn crop, as also the rent, rates, &c., that have been paid upon them. * The cost of the last year's Clover and Grass seed bill is paid in every district, according to the (merchant's) bill produced. The cost of sowing the Grass seeds is always allowed for.

The advantages of the preceding plan of an autumn entry are that it is calculated to simplify the process of autumn valuations upon changing tenants, that the cultivation of the farm during the ensuing season is amply provided for, the incoming tenant enters upon tolerable terms, and the outgoing tenant is set free (or nearly so) to arrange his new occupation. The disadvantage of an autumn entry, to an incoming tenant, is the long period of suspense before any return can be made for carrying on the subsequent payments of rent, rates, house-keeping, labour, &c. And to the outgoing tenant, the having his corn threshed in a distant barn amongst the incoming tenant's labourers, and carted to market by another man's servants. Such is custom—as a tenant enters, so he must quit.

Spring Entries.—The next ancient custom is the Candlemas-day entry, 2nd February. This period is still adopted in many districts, especially in the North, where they enter to the lands on Candlemas-day, and to the house and yards on 13th May. The offgoing tenant allows stabling for six or more cart-horses, as the case may be. The advantage of this entry is the facility it gives the incoming tenant for sowing his spring corn. The Wheat crop is taken by the incoming tenant. The rent and rates up to the period of entry, cost of seed and tillages, form the basis of valuation, With this entry there is no valuation for corn or hay, beyond the wish of the incoming tenant.

The chief disadvantage is that of the two tenants having their homes at distant places during this busy period of the year, the incoming tenant not having full possession of the premises at the same time, and the constant annoyance of two sets of labourers being upon the same ground—to say nothing of the clashing of interests between two opposing parties—the outgoing and incoming tenant. With the introduction of the Turnip crop a new era sprang up, which brought the light soils into more general notice as an employment for capital and the growth of roots. This subsequently led to the four-course system of cropping. The Turnip culture being the preparatory step for the succeeding Barley, seed, and Wheat crops. The period of cultivation for the Turnip being in early spring, it led to the occupation of many new lands at that season of the year, and with it grew up the extended desire for spring entries, Lady-day. New Lady-day, 25th March, and Old Lady-day, 6th April, are each adopted; according to the custom of the district. With a New Lady-day entry, a confusion in the spring seeding is experienced, it being just the busy season for sowing the Barley, &c., and the roots and straw will scarcely have been consumed. Therefore, unless some arrangement is entered into (as in the case of the Candlemas entry) for stabling an efficient number of cart-horses for the incoming tenant to get established, and prepare for the sowing of his crops, this period of entry is objectionable. Old Lady-day is a more favourite time of spring entry, and appears to be gaining strength. With it every part of the land, house, and offices, are entered upon at the same time. A valuation is agreed upon for all previous acts of husbandry. This simplifies the entry to a small and convenient compass.

The advantages of an Old Lady-day entry are many. The winter is then over, the roots are all consumed, and the straw made into manure. The yards, barns, and granaries are all clear, the cattle and fat sheep sold without a valuation. All the grain crops will have been sown, and the winter fallows ploughed up ready to receive their preparation for roots. These are great facilities on entering upon a strange farm.* It may be said that such an entry is indeed perfection, save the heavy valuation of tillages—in effect, that the incoming tenant should plant his own spring crops. If we consider the two positions of the two parties for accomplishing these acts of husbandry, it will be seen that they could not have been performed at a cheaper rate, than by a proper agreement, for valuation, &c., with the outgoing tenant. The sowing of the Wheat crop is the question now to be entertained, and if this be done by the outgoing tenant, upon the agreement that he is to be fairly paid for his tillages, half a year's rent and rates, seed Wheat, &c., there can be no doubt as to the value of a spring entry. With either of the autumn entries we have a risk of a mixed tenancy, and consequent clashing of interests, and very probably the two tenants may both have two holdings, possibly wide apart, for three or four months of the dreary period of the year. The main difficulties to be overcome are the consumption and sale of the last year's produce, and preparation of the land that falls to be cultivated for the next crops. The processes upon a farm are so mixed, that it would be difficult to name the time of year when no difficulties exist. So that the great object to be attained is that of changing the occupation in such a manner that it may suit the tillages of the farm, and give the old tenant a clearance of his farm produce without valuation or interruption before the new tenant enters upon the premises. To give the incoming tenant full possession at the same time, free of valuations beyond the tillages; and for every operation of the farm to be properly carried on (until a fixed period) by the outgoing tenant. Under all circumstances, I prefer a spring entry at Old Lady-day, especially for young farmers. With a spring entry we get the full benefit of the summer's growth before us, to reinstate our outlay at an earlier period, and provide for the forthcoming rent-day. To aid and give simplicity to the plan of spring entries I subjoin a few suggestions, which may be useful towards establishing an amicable system.

1. That the outgoing tenant shall perform every required operation upon the farm up to a fixed period in the spring (Lady-day or Candlemas) on being paid for these acts of husbandry. 2. That the outgoing tenant shall farm the lands upon the usual plan of husbandry up to the said period of his quitting, under certain forfeitures. 3. That a proper allowance for crops and manures in or on the ground be made him according to agreement. 4. That the outgoing tenant shall be paid half-a-year's rent, rates and taxes, upon all land sown with Wheat, in addition to the usual allowances for seed and tillages. 5. That the outgoing tenant shall first offer his farm implements to the incoming tenant, by valuation, before proceeding to a sale by auction. 6, That all fixtures be subject to agreements between the outgoing and incoming tenant; unless paid for by the estate. *Smith's Hints in Journal Bath and West of England Agricultural Society.*

* It is very important that the basis of this arrangement should be so laid, that an outgoing tenant is not to be better paid for bad farming than for good. As long as the Turnips are abundant and clean, what matters it to the incoming tenant how cheaply they were produced? He ought to pay their fair worth to consume on the premises, and certainly ought not to pay for five ploughings, when one would do as well if done at the right time.—Ed.

* It must be allowed that to enumerate these points as advantages is to presume much goodwill and zeal for another man's interest, on the part of the outgoer.

THE PRAIRIE LANDS OF ILLINOIS.

[We take by permission the following passages from a pamphlet issued by Mr. Caird, M.P., who has lately visited the district described, and published notes on "Prairie Farming in America," in the form of a little book under that title already reviewed in these columns, issued by Messrs. Longman. The pamphlet from which we make these extracts is procurable for the cost of its postage on application to Mr. Caird, M.P., at 6, Serjeant's Inn, Fleet Street, E.C.]

Within a fortnight's voyage and journey from Great Britain there is for sale a tract of the richest land in the world, which may be bought in large or small lots at prices from 35*s.* to 60*s.* an acre. It may be purchased either for cash, under a discount of 20 per cent., or by payments spread over seven years, the first of which is not due until the third year, by which time the settler should have reaped two crops. The climate is suitable for every kind of corn crop, and peculiarly so for fruit, including Peaches and Grapes. The natural pastures are at present almost boundless, and may be stocked with cattle or sheep by the adjoining settlers to any extent within the means of their capital, and at no cost for the use of the land so long as it remains unappropriated. Cattle are reared to great weight on these pastures, and Merino sheep in large flocks are kept most profitably upon them.

This fine country is situated in the State of Illinois, on Lake Michigan, in North America. By steam navigation across the Atlantic, and a direct railway communication from the seaboard to Chicago, the journey from this country can be made within a fortnight, and at a cost of from 7*l.* to 20*l.* So short is the journey that there need be no life-long parting between friends who go and friends who stay, as there too often must be in emigration to more distant lands. The settler here finds himself, within 14 days of leaving his old home, placed in a country provided already with all the conveniences of civilisation, with a railroad within sight of his homestead, with excellent markets for his produce, a sufficient supply of labour, and with better means of educating his family, provided at the public cost, than he was probably able to procure at home, though willing to pay for it. On all sides of him he will find farms being enclosed and cultivated:—villages, with their churches and schools, growing rapidly into towns;—steam flour-mills in active operation, and the railway train puffing across the landscape. The large towns he will find superior to most of the market towns of the old country, and the spirit of enterprise so active, that in all probability the land which he buys this year will become doubly valuable 5 years hence. The journey can be so easily and cheaply accomplished that it must be worth the while not only of men of large capital, but of most men of limited capital, with families to provide for, to take a run over and judge for themselves.

Nearly the whole of these lands are rich prairie soil, close to or within 5 miles of the railway, fresh and unexhausted, of extraordinary fertility, and ready for the plough. They have direct railway access to all the great sea-ports and centres of American trade and commerce, and water communication to the Atlantic, either by the Mississippi to New Orleans, or by the Lakes and St. Lawrence to Quebec. Chicago, which is the principal town, is the centre of more miles of railway, completed and in operation, than London. And though it is only 20 years since the first shipment of grain was made from it, the annual exports from Chicago now exceed 20,000,000 bushels. There are other Prairie States in America, but Illinois alone has the advantage, which every year will render more valuable, of being the nearest Prairie State to the Atlantic, and thus the point from which the populous Eastern markets can most cheaply draw their supplies. The advantage of being from 300 to 500 miles nearer the market is equal to the whole price of the land itself, in the diminished expense of transporting a single crop. Lands at the Government price of 5*s.* an acre, now to be had only in the remote parts of the Western States, are not to be named in point of cheapness with these, which are in the midst of population, markets, and railways. The rapid increase of the population of Illinois—now said to be 1,600,000, which is ten times what it was in 1830—is of itself a proof that this advantage of position has been fully appreciated by the Americans themselves. The fertile character of her soil is so proverbial that it has obtained for Illinois the distinctive appellation of the "Garden State of the Union." Though not a tenth of the soil is yet cultivated, it already produces more grain than both Ireland and Scotland, and possesses twice as many horses, cattle, and pigs, as the latter country.

These facts are a sufficient proof of the general fertility of the country. But an evidence not less convincing is to be found in the character of the soil itself, as sown by chemical analysis. Four samples of soil taken at different distant points from these Prairie Lands now on sale, were carefully analysed by Professor Voelcker, the Consulting Chemist of the Royal Agricultural Society of England. In almost every element of fertility, the analysis shows that these soils excel our best lands. They are especially rich in nitrogenised organic matter, that nitrogen which yields the same ammonia for which we send millions sterling annually to Peru. Professor Voelcker says: "I have never before analysed soils which contained so much nitrogen, nor do I find any record of soils richer in nitrogen than these." He adds: "In the least fertile of these four soils there is more nitrogen than in the Carse of Gowrie soil. It is the large amount of nitrogen and the beautiful state of division that impart a peculiar character to these soils, and distinguish them so favourably."

Besides the fertility of the surface, a great part of the land is underlaid with coal. Limestone is also abundant. Ironstone, lead, and other minerals are extensively wrought in this State, which thus contains within itself every element to encourage the increase of population and wealth. Each time the population doubles, wealth is said to quadruple, and land which may now be bought at 2*l.* an acre will soon be worth 8*l.*

To the capitalist seeking a safe and profitable investment, there is probably none more promising than the soil of Illinois at the present low rates of price. Money judiciously laid out there would give an immediate annual return of at least 10 per cent., and the capital would be constantly augmenting by the rapidly pro-

gressive increase in the value of the soil. An annual visit to such a property from England might be made with as much pleasure as to a Highland or Irish estate, with very little more fatigue, and with a far greater change to the mind and body in the variety of scene and character. The land could be managed as a large stock-farm, involving little risk, and, like the great sheep-grazings of Australia, requiring a very small amount of labour. The capital would in this way yield not only a regular return in the crop of wool and surplus sheep, but, while the land would year by year increase in value, the flocks would likewise become more numerous and profitable. Merino sheep in very large flocks are now kept on these prairie soils, with great profit to their owners.

The farmer, who has keen competition to contend with in this country from the constant demand for land and consequent increase of rent, might either emigrate with his family, or, if he can afford to divide his capital, might visit Illinois, and settle his elder sons there. This he might do either with a view to future emigration for his whole family, or simply to place his sons in a good position for earning for themselves an independence. A very moderate amount of spare capital will suffice for this, if advantage is taken of the credit terms on which these lands may be purchased.

For example: If an English farmer desires to place his eldest son in a farm in England of 300 acres, he must provide him with a capital of 2000*l*. But if, instead of pinching himself and the younger members of his family to make his eldest son, after all, only the tenant of another man, he resolves to give them all an equal chance of becoming, not occupiers merely, but owners of land, let him go out to Illinois along with his sons, giving them the benefit of his experience and prudence to start them, and he may select for each much larger farms, with less money than is needed to start the one in England. He fixes on a good locality, with good soil, enters into a contract for the purchase of it on the usual terms of credit, fixes also the contract terms for enclosing, breaking up part of the land for Wheat, and building a snug cottage. There he leaves his sons fairly started, and returns home to his family in England in time for his own harvest. He may visit them the second or third summer to see how they are getting on, and to make arrangements for paying the first instalment of the price, then about to become due, after the proceeds of two crops have been already realised. An intelligent prudent man, with 600*l*. at his command, may rely on finding that sum sufficient to start himself or his son successfully as the owner of 320 acres of rich Prairie Land, and the two first crops, with ordinary seasons, will do more than leave a surplus, after paying all expenses, to pay the whole price of the land.

But a large discount is allowed to those who prefer paying cash for their purchase. It is a less speculative system, and if there is no want of capital it is decidedly the most advantageous mode of making an investment. A discount of 20 per cent. is allowed for full payment in cash. A capital of 4*l*. an acre will thus suffice for the purchase of the land, with all the cost of breaking, enclosing, and putting it under crop.

The fact that land which would sell for 60*l*. to 80*l*. an acre in England, can be bought in Illinois for 40*s*. or 50*s*.—while the population of the United States, already as large as that of the British Isles, is increasing much more rapidly, and the facility of transport is equally good—ought to carry its own weight to the mind of every thinking man who has a family to provide for.

BELGIAN COLZA CULTURE.

ONE of the most striking points of Flemish husbandry is the cultivation of the oleaginous plants. If the stranger visits the various districts during early spring time, he will see around him at every turn he takes evidences of the value which the Flemish farmer sets upon them, in the numerous fields and plots golden with the yellow-flowered Colza. Nor is the cultivation of these valuable oleaginous plants confined to Flanders only; their value in an agricultural and commercial point of view, first principally established there, has been gradually appreciated in other districts and countries; and of this the traveller as he extends the sphere of his observations sees ample evidence. He will notice their cultivation in nearly every district of Belgium, among the sandy spots of the Campine, or the cleared plots amidst the forests of the Ardennes—the same Ardennes which the pen of our immortal Shakespeare has for ever rendered classic. Extending his journey he will trace them in the fields of Germany, or amidst the flat pasture fields of Holland; and in tiny patches he will see them render a tinge of golden glory to the Vine-clad banks of the Rhine, that "glorious and abounding river;" and wherever he sees them carried out to any extent, he may rest assured that there careful cultivation will be found, or at all events is about to be established, for the cultivation of the oleaginous plants—Flax included—is quite incompatible with bad or careless farming. Demanding fair preparation of the soil, and abundant supplies of manure, they carry along with them a necessity for the complete and careful display of improved modes of husbandry. The objection—which at one time was almost universally held—to these plants, namely, that they are exhausting, is being gradually exploded, and year by year loses its influence. True, they are exhausting, but of what crop cannot the same be said? Is Wheat—our great staple—not exhausting? and because it demands abundant supplies of manure to replace the fertilising materials which it withdraws from the soil, would that, or does that, form a sufficient reason for refraining from its cultivation? The same applies, and with greater force, to the cultivation of the oleaginous plants. For not only do they not exhaust the soil if wisely cultivated, but they bring advantages in their train which other crops do not, or at least in by no means so marked a degree. By the cultivation of Colza, to wit, the soil is left in a state admirably adapted for the crops which follow in the usual course of rotation. They aid also in the extension of the root crops those plants which, drawing a large supply of nourishment from the atmosphere, tend to establish a proper equilibrium of fertilising matter in the soil; but more than this—not only does the plant we are now referring to do all this, but it yields an oil of high commercial value, and this again a residue which in the form of oilcake places at the command of the farmer a highly valuable manure, which being restored to the soil gives back to it all those fertilising properties which the plant originally carried away. This last feature is of the utmost practical importance. We have in former articles shown what an important part the oilcake manure plays in Flemish farming, and in no instance does the farmer play the reckless part—so often done with us when we cultivate, or rather attempt to do so, the oleaginous plants—of throwing away the fertilising refuse of the crop produced. Many advantages follow this Flemish mode of saving this refuse and re-distributing by its means those valuable properties to the soil of which the plant robbed it. By this restoration the arable soil is greatly enriched, and rendered capable in a high degree of carrying the Cereals which form part of the rotation. Still further, the produce of the oleaginous plants is one which at all times is readily convertible into cash, and this in a variety of ways. By the establishment of oil-mills throughout all the districts, the owners of which are ready to arrange with the farmer for the disposal of the proceeds of his oil plants, he may either sell the seed—to be crushed by the owner of the mill for his own business—or he may exchange his seed for the oilcake, or for other grain; or, thirdly, he may have the seed crushed, and the oil and the oilcake both returned to him. In every way is facility offered to the farmer to dispose of his produce, and always, which to him is of the utmost importance, to retain the residue, or a portion of it, in order to restore it to the soil.

It may interest the reader to have here a short description of those oil-mills and the mode by which they express the oil, and form the oilcakes so well known to all our farmers. The oil-mills met with throughout Belgium, which act on a large scale, are generally driven by the power of wind, sometimes with water, and sometimes, but not often, with steam. Small oil-mills are sometimes adopted in large farms and worked by horse power. The machinery required for the various operations is of a simple and comparatively inexpensive kind; the first operation to be gone through is reducing the oil seed to a coarse powder. This in large mills is effected by means of two circular stones; these have a double movement; first on their axis, and secondly round a circular table. As they revolve round and roll upon the surface of this table on which the seed to be crushed lies, they gradually crush it to the desired degree of fineness. The crushed material is next taken and heated in shallow circular iron pans which rest upon heated plates, and in which the crushed seed is kept in a state of perpetual movement by the action of revolving stirrers which imitate the action of the human hands when engaged in mixing powder intimately together. To hold the seed thus heated long bags and of width equal to the well-known breadth of an oilcake, are prepared; they are in length rather more than that of the finished oilcake. These bags are suspended at the lower aperture of conical vessels placed near the heating furnaces, and into which vessels the heated seed is put, falling from thence into the bags. The bags are then laid on a board, and the crushed seed uniformly spread out in them. The bags thus prepared are placed between an envelope of felt, and then put between wedges. These are driven hard up by means of vertical stampers which receive a reciprocating movement by means of revolving cams or wipers. As the wedges are gradually driven up the pressure acts upon the bags and expresses the oil, which falls into a vessel placed beneath the press to receive it. By a simple arrangement the wedges are easily released as soon as the "expression" is finished, and the hardened oilcake or residue taken out; this, from the nature of the material of which the bag is made, gives the peculiarly ribbed or corrugated appearance to the cake so familiar to all our readers. The edges of the cake are then trimmed up with a knife, and it is really for sale.

The oil-mills used in farms are of simpler nature than the above, the crushing being effected by means of stampers, which have their lower termination shaped to fit the bottoms of circular vessels cut out in blocks of hard wood, and which act as mortars in which the seed is crushed. The shaft for working the crushing stampers and also those which act upon the wedges of the press is easily worked by horse-power.

We may now turn our attention—and we trust not unprofitably—to a few points connected with the cultivation of the oleaginous plants generally grown in Belgium, or rather of the most important of these, namely, the Colza, of which there are two kinds grown—the winter and summer, the former being the most important.

Colza may be cultivated in a wide variety of soils, rich crops being equally obtained from soils of the most contrary character. It gives the best results in a soil fresh and deep, friable, and open to the atmospheric influences. To give this character to soils not naturally possessing it, every care should be taken to give deep cultivation before the sowing or the planting. The plant being, as we said before, an exhausting one, it is necessary to manure the soil carefully and well. This may either be done directly, or the crop may succeed one for which the land has been liberally manured. It is best, however to manure the soil directly for the crop. The manures containing the greatest amount of azote are those best adapted for Colza. In this respect the sheep manure is most highly esteemed. The amount of this manure employed is a mean between that used for a Wheat and that used for a Barley crop; much of course depends upon the nature of the soil and other circumstances. Guano and oilcakes are also excellent manures; but that which enjoys the highest reputation in Flanders is a mixture of urine, oilcake, soot, human excretæ, and of columbine. This manure is applied directly in winter or in spring to the feet of the plants.

With respect to the place of Colza in the rotation, it may be stated that it follows well after almost any crop; it succeeds well after the Rye, Wheat, and Clover. It may be sown with advantage on land recently brought under cultivation from wood; on meadow land after being broken up, and on marshy land after drainage. When sown after a cereal the stubble is ploughed up shallow, so as to bury the weeds; the ground is then well harrowed; and finally deep cross ploughed. M. de Bock-Kenifeck, who has strongly advocated the cultivation of the oleaginous plants in Ireland as ameliorative crops, recommends two methods of preparing the soil adapted for that country, and which we here transcribe. The first is for undrained land—the ridge system. This he says is the best when the cultivation is carried on on a small scale. "The field should be divided into 6½ and 7 feet ridges, to suit two kinds of dibblers. * * * It should be understood that the divisions of the ridges should be made merely by a simple deviation of the plough in ploughing about 2 inches; or taking a comb of 2 inches more surface in the beginning of a second ridge, and in the forming of each following one which will form a hollow division and shape the mark of a furrow. Care should be taken to divide the combs so as to leave a free distance for the furrows between each ridge of about 1 foot. In this system the rows of the plant are only about 12 inches separate across the ridge." In drained land the drilled system consists in ploughing the field so that it may have "a flat appearance, spacing the combs so that the plants can be planted in the middle of an overturned comb, allowing the drills to be 2 feet apart, or 2½ feet if intended to receive a Potato crop afterwards; if on lea fields they should receive a first shallow ploughing and cross harrowing."

There are two methods of sowing the Colza; first, by sowing in small plots carefully prepared and transplanting the plants grown upon them to the fields destined for the permanent crop. This is the most costly mode, but it is the best, as by following it a good crop is most likely to be ensured, as more time is allowed to prepare the land which is to receive the plants by repeated workings, harrowings, and weedings. The second plan is to sow the seed as uniformly as possibly on the field destined for the crop, broadcast sometimes but less frequently in lines equi-distant from each other, the plants being afterwards thinned. We shall direct our attention to the mode of transplanting. The plot of land to receive the plants should be well manured and carefully and deeply worked, so as to insure to the young plants a rich vitality previous to being transplanted; to have them also strong the seed should not be sown too thickly. The quantity of seed for a hectare is about a kilogramme and a half, or about 3½ lbs. to the two acres. The young plants are subject to the ravages of insects, which frequently devour the leaves and rapidly destroy the hopes of the husbandman. Various methods have been introduced to prevent the ravages of these insects—earth fleas, as they are called. The best plan is to hasten by all means possible the rapid development of the plants in their early stages of growth, for the more advanced the growth the less the power of the insect. The use of guano spread either before or after the sowing, or mixing the seed with the flower of sulphur, are two plans recommended by a good authority to avoid the dangers of the insect depredation.

When the plants are ready to be transplanted, a time should be chosen for their removal when the land is moist and fresh; every care should be taken to maintain the integrity of the plants and not to destroy their organisms; to this end they should be removed by means of a spade, not plucked up by the hand. They should then be tied up in bundles or removed to the field which is to receive them in baskets. The month of September, towards the latter end, or the month of October, are the best to effect the transplanting. The land to receive the plants should be deeply worked as for a cereal crop, should receive two or three good harrowings, and the manure ploughed in shallow. The plants are placed in the ground by one of three methods, by the spade, the dibbler, and the plough. In using the first, the spade is sunk in the earth nearly up to the top; the workman then draws the handle towards

him, so as to compress the earth and form in front a species of trough; in this at each end he places a plant; withdrawing the spade the earth falls upon the plants, which are further fixed by the workman pressing in the earth with his foot. The plants are thus separated by a distance equal to the width of the spade. In planting by the dibbler, one makes the holes while another follows with the plants, placing one in each of the dibbles, and consolidating the earth round the roots by pressing upon it with the foot. In November the plants which have not taken root are replaced by others, taken from a reserve of plants which is always maintained for this purpose. Some farmers delay this operation till the early spring. The transplanting by the plough is the most expeditious and economical; although it has not always been so successful in practice as the others, it is however the plan generally adopted where the plant is cultivated on the large scale. When it is adopted some modification in the method of preparing the soil is necessary, this consists in mixing the manure as intimately as possible with the soil in place of ploughing it in shallow only, as done for the two modes of transplanting previously mentioned. The plants are placed in the furrow opened up by the plough by females who follow it during the operation; the plants are then covered by the slice of the furrow following. If the ploughing is well executed, the depth of the furrow is found pretty uniform, and of the necessary depth. To ensure uniformity however in the placing of the plants, a person goes over the rows, earthing up those which are too shallow and releasing the earth from those which are too deeply in the soil. When this method of transplanting is adopted it is necessary that the soil should be brought to as fine a tilth as possible, having no clods or lumps, which will cover the roots unequally. The plough should also be drawn by the two horses tandem fashion; when drawing abreast one of the horses is apt to destroy the roots already planted. Did space permit we should have here noticed one plan of transplanting by means of the "mechanical planter," an instrument of great ingenuity of arrangement, and which has been found in practice of the utmost value, as a quick, a certain, and an economical means of transplanting roots. The instrument and the mode of working it in the field is the invention of M. Le Docte, and deserves to be widely known. We may hereafter give a description of its construction and mode of use.

The treatment of the plant during its growth is a matter of the utmost importance; and it is here that the best cares of the farmer are demanded; for upon the retarding of the growth during winter, so as to prevent the plants from shooting up too prematurely, to be killed or nipped by the frosts, depends the success of the crop. In Flanders the system adopted is to make an open drain between the rows by means of a spade, laying the earth upon the plants. This serves to protect them from the frost, and also to provide for them new earth when spring arrives. The more frequently the soil is worked, and weeding attended to, the more vigorous is the plant, and the more certain a good harvest. We have thus traced the cultivation of the Colza up to the point of harvesting. The various points connected with this important department and the saving of the seed we propose to notice in a future paper.

Seeing then the facility with which Colza can be cultivated in almost every variety of soil, and that it can succeed almost any crop—that it moreover acts to the cereals as a fallow—that it prepares the soil favourably for other crops—that it may be succeeded by the Wheat, the Rye, or the Clover—that it produces a crop which at all times commands a ready sale, and a material of the highest value as a manure, we can understand the important place which it occupies and is destined still further to occupy in the routine of Belgian agriculture. *R. S. B.*

THE USE OF STRAW.

One of the most important and difficult problems to be solved at present in farm management is—What is the best means of economising the food of animals in the manufacture of meat and manure? We mention manure, because many agriculturists consider the fattening of cattle a necessary evil—a means of obtaining manure; in short, they look upon cattle as mere manure manufacturers. We suppose, then, that we have produced on the farm the ordinary food of the animals—viz., roots, hay, straw, grains, &c. —and that we purchase, besides, extraneous articles as food, such as cake. What is the most profitable way of using these substances as food for the animals on the farm? Mr. Mechi tells us that it is nothing else than waste to use our straw for litter—it should all be consumed as food; while others who have seen the living skeletons that have been fed on straw and water for five months, allege that there is comparatively little nourishment in straw. One party calls the Turnip a globe of water, injurious to the animal if given to it *ad libitum;* another appeals to the condition of his oxen fed on Turnips alone, and compares his profits with those of his neighbour who has been using cake largely as supplementary to the Turnip. One would prepare his animals' food by cooking; another thinks that they thrive best when the food is given in its natural state.

There is no doubt that Wheat-straw, dried naturally, contains nearly 70 per cent. of muscle, fat, and heat-producing matters; that, theoretically speaking, it is not worth more than 9*s.* 4*d.* per ton as manure, if ploughed in in its natural state—while used as food it will, if properly prepared, realise a value of 40*s.* per ton;—no doubt that what it does contain of manurial value is rendered more soluble, more available as manure, by being consumed as food, than if ploughed in in its natural unprepared state; but still the question which meets us at the very outset is, Will it pay? It it profitable to convert into its most available form all that valuable food matter stored up—we would rather say bound up, in the straw? The profits of feeding cattle are not often very encouraging; very frequently are farmers content with, what a shrewd one of their own number said, the "company and manure" of the cattle they feed. It is therefore essential that the expenses of feeding be increased as little as possible. Now, experience has proved that animals fed alone on straw in its natural state, and water, do not, after four or five months' keep, from their condition give strong evidence of a great amount of nutritive matter in the straw; and the fact of the straw being less used for food and more for litter and manure—as more nourishing articles of food, such as Turnips, have been more cultivated—may be considered also presumptive evidence of its being found to be more profitable when used for manure than for food in the modern systems of husbandry. But it may be said that it is not proposed to use the straw in its natural state as was formerly done; it is to be so prepared as to bring what is valuable in it as food into a form in which it will be more readily assimilated by the animal which partakes of it; and this will be accomplished by reducing it to chaff, by steaming or other process.

Suppose that it is determined to consume as food all the straw on the farm, the cattle being condemned to lie on bare boards. The accommodation for feeding animals on an ordinary arable farm in Scotland would require to be very largely increased, in most cases more than doubled. Here, then, is a great additional expense in the erection of the buildings, from which the annual charge against the cattle, for interest and repairs, is also much increased; to this we must add the expense of attending on the cattle, and of preparing the straw, which is often so great as to swallow up any profit that may be derived from this method of feeding; interest of capital invested in the stock, risk, and other elements which enter into all commercial transactions, must also be taken into account. It is not enough to tell a farmer who is to make his livelihood by his profession, that "science has shown us that, ploughed in and considered as manure, the worth of straw is but 9*s.* 4*d.* per ton; while used as food it will, if properly prepared, realise a value of 40*s.* per ton." You who consume all your straw and keep your cattle on boards, must show him by actual practice that you can extract more profit from your straw according to your system than he can by using it as litter; otherwise we would never blame any proprietor or tenant who should hesitate to make the increase to his steading necessary for the consumption of all his straw by stock, if he had no other reason for doing so than a mere scientific dictum.

We are inclined to challenge the statement so often made that the consumption of all the straw by animals increases the value of the manure made on the farm. One would suppose, from the manner in which this opinion is urged upon the public, science being appealed to in support of it, that it is quite a new discovery, for which we are indebted to the light of modern science. But the truth is, that it is only the revival of an old theory held by farmers of a former age. "It was at one time a prevalent notion," says Stephens, "that straw could not be converted into good manure unless it were consumed by cattle and horses; and the celebrated Bakewell carried this idea to such a height, that if he had not stock sufficient of his own to consume his straw, he took in those of others for the purpose. But he lived to see his error." Though, as we have mentioned before, what straw contains of manurial value is rendered more soluble by being first consumed as food, the excrement of the animal fed on straw and water alone does not contain, of course, all the constituents of the unconsumed straw. A great part of the carbon for instance of the straw has been made use of during the respiration of the animal, and some of the nitrogon has also been assimilated to restore the waste of the muscular tissues. We need scarcely allude to the low value of the manure made from animals fed on straw alone. "I proved by experiments," said Mr. Gray of Dilston, "many years ago, that 1 ton of manure taken from a yard in which cattle were fed on full Turnips, with a portion of oilcake and Bean-meal, was worth 3 tons of that (though apparently in equally good state) which was made in a yard where young cattle were kept on straw during the night, with a run out in the fields, getting a few Turnip tops in the day." We think that the question as to the value of straw for food and manure has not been fairly put by the advocates for the consumption of the whole of the straw on the farm as food. "Science has shown us," says Mr. Mechi, one of these advocates, "that, ploughed in and considered as manure, its worth is but 9*s.* 4*d.* per ton, while used as food it will, if properly prepared, realise a value of 40*s.* per ton." It is intended that other kinds of food are to be used with the straw. The question to be solved, which concerns the practical farmer most, should be put thus:—Given a certain quantity of cattle food and a certain quantity of straw—wanted to know whether it is more profitable to consume the whole of the straw as food, or only part of it, and use the rest as litter? We suppose, of course, that there is an abundance of straw, such as is to be found on an ordinary arable farm in Scotland. It will be found that when a part of the straw has been consumed, and the greater part used as litter, instead of a ton of it being worth 9*s.* 4*d.* as manure, it will add to the manure-pit at least five tons of good manure, worth about 6*s.* per ton, if only as much of the straw be used as litter as will admit of its being thoroughly saturated and mixed with the urine and solid excrement of the animal. We only ask the same condition in our method of using the straw which Mr. Mechi insists on in his method of using all for food—viz., that the straw be "properly prepared" in the manure-pit by fermentation.

Now, while we are in no way inclined to subscribe to the opinion of those who advocate the consumption of the whole of the straw, we are as unwilling to support those who maintain that straw possesses little feeding property, and that it should be used only as litter. We have already said that there is a considerable amount of matter contained in it valuable for its feeding qualities, which is rendered more available for the animals by different preparatory processes. We are of opinion that in Scotland generally the value of straw as food is not fully appreciated, because it has not generally been properly used. To obtain the full benefit of it, it should be cut into chaff and mixed with the other more watery and nourishing food used by the animals on the farm. By being steamed or boiled, a part of the process performed by the stomach of the animal is executed before it is presented to it for food. Mixed in the state of chaff with pulped Turnips, Vetches, Clover, it economises these valuable feeding substances, increases the efficacy of what is actually mixed with it, and prevents those attacks of illness to which all animals are liable which are fed on green food, particularly when they commence to use it. The great advantage of mixing straw with pulped Turnips is fully proved by the experiments of Mr. M'Laren as detailed in the Transactions of the Highland Society, vol. xvi., p. 160. It will be observed from these experiments that the profit from the use of the cut straw with the pulped Turnips would have been much greater had the expense of cutting the straw, pulping the Turnips, and mixing the two together not been so great. Not merely is straw valuable as containing matter which possesses considerable feeding properties, and as a corrective of the laxative effects of green food, but it is most beneficial in feeding in giving bulk to those kinds of food in which the elements of nutrition are more concentrated—the condition of bulk of food being most essential in ruminating animals. The mixing of cut straw with cut hay and bruising of Oats causes a saving of both hay and Oats, as has been proved by the London Omnibus Company. So also Mr. Croall, of Edinburgh, has been enabled to discontinue the use of hay in Middlefield stables, Edinburgh, by adopting the practice of cutting his straw and mixing it with oil-cake, Linseed, &c. Both of these cases are fully commented on in the last number of this Journal, p. 666. So much importance did the farmers in some parts of France attach to the mixing of straw and hay in equal proportions, and so favourable were the results of the mixture on work-horses, that there was a proverb in those districts where the mixture was used expressing a favourable opinion of the use of straw, viz.—"Cheval de foin, cheval de rien; cheval de paille, cheval de bataille;" which may be translated, "A horse on hay is a horse of little worth; a horse on straw is a horse fit for battle." *Journal of Agriculture.*

Societies.

ROYAL AGRICULTURAL OF ENGLAND.

At a Monthly Council, held Wednesday, July 6, 1859, his Grace the Duke of Marlborough, President, in the chair,

New members were elected.

The usual monthly report of the Finance Committee was received, with the following addition:—"The members of the Finance Committee also beg to state to the Council that they desire to set the Committee appointed to entertain and report upon the rearrangement of the system of keeping the accounts of the Society perfectly free, by the tender of their resignation."

On the motion of Lord Portman, seconded by Mr Torr, the above resignation was accepted.

On the motion of Mr. Thompson, seconded by Lord Feversham, the thanks of the Council were voted to the Finance Committee for their past services. On the motion of Mr. Torr, seconded by Mr. Shuttleworth, the Finance Committee were requested to continue to hold office until the new committee be appointed.

Mr. Thompson, chairman of the Journal Committee, reported:—

I. That in Class III., Essay on Steam Cultivation, the prize of 25*l.* is awarded to the Essay bearing the motto "Faint but pursuing," and on the seal being broken Mr. J. Algernon Clarke, of Long Sutton, was declared the author.

II. That in Class VII. none of the Essays are considered worthy of the prize.

III. The following list of subjects for Prize Essays for 1860 is recommended to the Council:—

	£	s.	d.
I. Agriculture of Berkshire	50	0	0
II. On the best period of the rotation, and the best time for applying the manure of the farm	20	0	0
III. Alterations advisable in farm management,			

	£	s.	d.
in land of different qualities, by low price of grain and high price of meat	10	0	0
IV. Late improvements in dairy practice ..	10	0	0
V. Proper office of straw in a farm	10	0	0
VI. Amount of capital required for the profitable occupation of a farm	10	0	0
VII. On the condition of seed-bed best suited to the various agricultural crops	10	0	0
VIII. On the adulteration of agricultural seeds ..	10	0	0
IX. Any other agricultural subject	10	0	0

IV. The reprint of Dr. Lang's Prize Essay on Potatoes is now laid on the table, and recommended to be sold at the following prices :—

1*d.* each, or 6*s.* per 100 to Members of the Society,

1½*d.* each, or 9*s.* per 100 to Non-Members.

Lord Leigh, chairman of the General Warwick Committee, presented the report of the Committee in reference to details connected with the Warwick meeting.

Mr. Pain was elected one of the Stewards of Show-yard receipts in place of Lord Portman, who will be unable to attend.

The report of the special Committee on the past accounts of the Society was received and adopted, and the honorary acting Secretary was authorised to take steps relative to a deed of assignment executed by the late Mr. Hudson previous to his death.

The Report of the Committee on the duties of Secretary and mode of his appointment having been read, it was resolved, on the motion of Sir John Shelley, Bart., M.P., and seconded by Sir Edward Kerrison, Bart., M.P., "That the office of Secretary and Editor shall not be combined."

It was resolved, on the motion of Lord Faversham, "That the Secretary's salary be 400*l.* per annum; the Secretary to reside in the Society's house, and have coals and lighting."

It was ordered that advertisements be inserted stating that all applications from candidates for the office of Secretary be sent to the Honorary Acting Secretary on or before the 30th of October next.

The following recommendations of the Committee were confirmed, viz. :—That the Secretary shall devote his whole time to the affairs of the Society. That he shall find approved security to the amount of 1000*l.* That it shall be considered an additional recommendation to a candidate if he possesses a competent knowledge of French and German.

Other recommendations of the Committee on minor details were also confirmed.

On the motion of Lord Portman, Mr. Brandreth Gibbs was requested to continue to undertake the duties of Honorary Acting Secretary, until a new Secretary be elected.

Mr. Raymond Barker expressed his determination to resign the office of Vice-president.

On the motion of Col. Challoner, Mr. Manning's offer to undertake on the usual terms such works as the Council may hereafter determine upon to require next year at Canterbury, was accepted.

On the motion of Mr. Fisher Hobbs permission was given to the Stewards and Judges of the Show to make arrangements for the trial of Grass mowing-machines at Warwick, and to report thereon.

Various communications were laid before the Council, and it was decided what replies should be given thereto by the Hon. Secretary.

Highland and Agricultural: *June* 30.—At the half-yearly meeting of this Society, the Duke of Athol, President, in the chair, 118 new members were admitted.

The Edinburgh Show.—Mr. Walker, of Bowland, reported the entries of stock and implements to be as follows:—Cattle, 336; horses, 192; sheep, 581; swine, 87; butter, 56; Poultry, 324; implements, 820. The arrangements for the Show are in a forward and satisfactory state.

Agricultural Education.—The Secretary reported that the examination was held on the 6th of April, 1859. Eight candidates inscribed their names for examination, and the diploma was conferred on the following:—John Milne, Mains of Lathers, Turriff; William Henry Eley, Cobham, Kent; Thomas Rome, Groundslow, Stone, Staffordshire. In addition to these Mr. Hewens Walton, Fenny Crompton, Warwickshire, passed a very creditable examination on the scientific branches, but being under 21 years of age he cannot be taken up on the practical department, nor obtain the diploma till he has attained that age.

Reviews.

The Journal of Agriculture and the Transactions of the Highland and Agricultural Society of Scotland. July 1859. W. Blackwood and Son.

The current number of this quarterly periodical is more than usually interesting, containing papers on Flemish husbandry, on Pisciculture, on English and French Agriculture, on Labourers' Cottages, on the Bean crop, on Finger and Toe, on Dunlop and Cheddar cheese, on Hill Farm Drainage, and on Laboratory experience. Some of them we have already marked for extract. The papers on French Agriculture is very explicit and full of useful matter. The following passages compares its results with those of our own farming.

"We find that in France one-fourth of the entire, and one-third of the cultivated, land is under cereal crops; whilst in the United Kingdom, one-sixth of the whole, and one-fourth of the cultivated land, is so occupied. The produce of Wheat in France is 13½ bushels per acre—that of the United Kingdom is 28 bushels. The fifteen millions of acres of Wheat in the former country produce only 25,315,500 qrs., whilst the 4,500,000 acres in the latter yield 15,750,000. The above statistics are taken from the valuable work of M. de Lavergne, who ascribes the small result in France to the occupation of so large an extent of land being devoted to cereal food for the use of man, without applying or providing those restoratives by which the land would be compensated for the exhaustion.

"The bad effects of this system of cropping are equally observable in lessening the production of animal food; the impoverishment of the soil by the excess of white crops affecting in the same proportion all others, and rendering them less productive. This is shown in France by the number of cattle and sheep kept upon a given quantity of land; and the amount of meat produced, in proportion to the number of cattle, &c., kept, as compared with those produced in the United Kingdom. The following tables show the different results:—

ANIMALS KEPT.

	United Kingdom.	*France.*
Sheep,	30,000,000, or 1 to 2½ acres.	30,000,000, or 1 to 4½ acres.
Bullocks,	8,000,000, or 1 to 9½ acres.	10,000,000, or 1 to 13 acres.

ANIMALS SLAUGHTERED.

	United Kingdom.
Sheep, ..	10,000,000, producing 80 lbs. of meat each, or 800,000,000 lbs.
Bullocks, ..	2,000,000, weighing 560 lbs. each, or a total of 1,120,000,000 lbs.
	France.
Sheep.. ..	8,000,000, producing 40 lbs. of meat each, or 320,000,000 lbs.
Bullocks, cows, and calves ..	4,000,000, weighing 220 lbs. each, or a total of 880,000,000 lbs.

"It is necessary to state here, that both oxen and milch sows are employed in France as beasts of burthen and in field labour; the next results will therefore be at once accounted for:

MILCH COWS KEPT.

	England.
3,000,000,	producing 656,250,000 gallons of milk, or 218¾ gallons each.
	France.
4,000,000,	producing 437,500,000 gallons of milk, or 109¾ gallons each.

"The cattle are kept either until they are from four to seven years old before they are slaughtered, or killed as calves at a month or six weeks old. This latter practice will in part account for the low average produce of beef per head. Out of the four millions slaughtered annually, the calves are stated to amount to 2½ millions. But the practice of working both oxen and cows to the last not only reduces the produce in meat and milk, but deteriorates also the quality of both."

Dr. Anderson calls attention among other subjects to the value of fish guano as manure. The following are remarks on the manufacture and analyses of specimens:—

"All that is requisite is to remove the water, and to reduce the dry residue to a pulverulent state. To effect this object, no complicated apparatus is necessary, all that is required being a stove or flat drying surface, heated either by a small furnace, with flues passing backwards and forwards, or by means of steam, the latter being preferable. A thin layer of the moist fish or offal being laid upon this, might be rapidly dried and converted into a proper state before putrefaction commenced, and a manure be produced which would have comparatively little smell. As regards its value, there is some difficulty in forming an opinion; but some guide may be afforded by reference to the composition of such manures of this kind as have appeared in the market, analyses of several of which have at different times been made in the laboratory. The first of them to which I shall refer are two samples made on the east coast of England, by a process, with the nature of which I am unacquainted. They were found to contain:—

	I.	II.
Water	9.77	12.15
Organic matter	53.55	55.27
Phosphates	4.72	6.44
Sulphate of lime	1.63	1.71
Common salt	26.49	22.29
Sand	3.84	2.14
	100.00	100.00
Ammonia	6.20	7.63

"If we estimate these according to the plan used for guanos, then No. I. is worth about 4*l.* 12*s.* and No. II., 5*l.* 10*s.* per ton—values which are certainly not very high. We must take into account, however, the large quantity of common salt, which materially reduces the value; and if it were possible to exclude this substance, which we shall immediately see can be done, then the value of these samples would be about 5*l.* 15*s.*, and 6*l.* 18*s.* respectively.

"Another sample, the source of which I have been unable to ascertain, but which I believe to have been offered for sale in Liverpool, contained:—

Water	7.55
Organic matter	87.45
Phosphates	0.55
Carbonate of lime	0.45
Alkaline salts	2.55
Sand	1.45
	100.00
Ammonia	7.29

"The absence of common salt in this case, except to a very small extent in the alkaline salts, shows the possibility of producing a manure without that substance; but in this case the value is somewhat lower, owing to the trifling proportion of phosphates. It does not exceed 4*l.* 16*s.* per ton. It is probable that in this case some charcoal or other organic matter had been mixed with the fish, with the view of its acting as an antiseptic during the process of manufacture; but on this point I am unable to speak positively.

"The last sample to which I shall refer was manufactured on the Portuguese coast, whence it was imported into this country. It is of a totally different nature from the others, sulphuric acid having obviously been used to some extent in the process, and sulphate of lime apparently added as a drier. For this reason its value must be estimated on the same principle as that of a superphosphate, which, indeed, it somewhat resembles in composition.

Water	14.04
Organic matter	27.77
Biphosphate of lime equivalent to 7.00 bone-earth made soluble	4.48
Insoluble phosphates	1.60
Sulphate of lime	36.17
Alkaline salts	6.14
Sand	9.80
	100.00
Ammonia	2.10

"This manure is worth only 3*l.* 16*s.* per ton, and this value is chiefly derived from the biphosphate of lime it contains.

"Fish manures have usually been offered for sale at from 8*l.* to 9*l.* per ton; and at this price there is obviously no inducement to buy them, and hence the ailure of the manufacture."

Miscellaneous.

The Cental.—The new weight has now been in use in the Liverpool corn market for some time; and as circumstances have induced some further discussion of its merits during the past month, we are enabled to estimate, with some decision, the degree of favour it has met with in the trade. We may say, then, that it has entirely superseded the "bushel" of 70 lbs., in the sale of Wheat, both foreign and home-grown; also the "bushel" of 45 lbs. for Oats, and that of 60 lbs. for Barley. So far the change is complete; and all parties agree, now that the temporary inconveniences of the change are over, that it is a good one; that it was well made, as regards this market alone; and that it will have still greater advantages when the other markets of the kingdom shall have followed the example. In the foreign trade we understand that shippers abroad generally display the utmost willingness to concur in and facilitate the new practice. In short, the difficulties at first anticipated as to these, the three principal descriptions of grain, have either not been met with, or have altogether disappeared. But as to Beans and Indian Corn, previously sold per 480 lbs., the change of practice is not yet so complete. The defects of the old system not being so great, and the obstacles to a complete introduction of the new one rather greater, it appears that the market has not yet, as to these articles, passed entirely through the transition. A large majority of the trade adopted the cental at first, and have adhered to it. Others have adopted it since. But a few still leave the choice of weight to be quoted to be settled by the will of the buyer. Here, however, everything points to a more or less speedy completion of the change, and to exclusive use of the cental at no distant date. Not so as to flour and meal; these are subject to different conditions, and as to them the trade is divided. It will be remembered that the new weight was introduced at the instance of the Corn Association, embracing nearly all who are in the wholesale trade, but not including a very large number of persons engaged in retail transactions. More than four-fifths of the members of the Association, regarding mainly the description of business they are themselves occupied with, and the relations of this market to others, have a decided and a very natural tendency to enforce, with all their influence, a complete and uniform adoption of the cental. But the rest—a minority, though including some very able and influential members of the wholesale trade—being brought, by the nature of their business, into more immediate contact with the numerous retail dealers, find the contest with such customers for the establishment of the desired uniformity, as to flour and meal, more arduous than they expected, and so involving more exertion than they think the object in view is worth. *Liverpool Paper.*

Guano.—It is almost to be feared that guano will play a momentous part in history. When it is considered that one cwt. of that manuring agent contains the effective mineral constituents of between 25 cwt. and 30 cwt. of Wheat, or of an equivalent amount of some other produce, and that, when used as manure, it produces, in a succession of crops, a corresponding quantity of elements of food, some conception may be formed of the immense value which the guano-beds of America possess, with reference to the production of corn in Europe. From the enormous increase of the population of London, and other large cities of Great Britain, the loss which the English fields sustain annually in the main conditions of their fertility is every year becoming more and more considerable; and it would appear that the obstacles which oppose the collection of the human and animal excrements are altogether insurmountable, at least as regards London. It is evident, therefore, that England, in order to remain permanently a corn-growing country, requires a free and plentiful supply of guano (even now Great Britain consumes nearly nine-tenths of all the guano brought to Europe). Fifteen years ago the American agriculturists looked down upon guano with a species of contempt; but things have greatly altered since then; and it is said that last year about eight million cwt. of that

manuring agent were imported into the United States. In the actual position of English agriculture, America, by her guano-beds, rules the prices of all the corn-markets of Europe, and more especially in England; and should circumstances ever arise to prevent the importation of guano into England, a state of things would ensue in that country of which the consequences might be incalculable. Bloody wars have sometimes sprung from causes of much less importance. *Liebig's Letters on Modern Agriculture.*

Sheep Farming in New Zealand.—We have been favoured with the following letters, which were written in the course of last year in reply to a distinguished military officer who was desirous of settling his son, also in her Majesty's service, in the colony.

The following letter was written from Nelson:—

I am very much puzzled what to advise about your son leaving such prospects as he has of getting on in the service, and entering another business of so totally an opposite character;—one is attended with comfort, luxury, and leisure, the other must be accompanied with constant anxiety and hardships. In fact, it is a rough, wild, and frequently solitary life, but at the same time offering better prospects of a good income than the more refined one; indeed, in my opinion there is no occupation which a gentleman can enter in this colony that can compare with it in point of a good return for your investment. I will instance my own case, and it is one of many. I began sheep farming about eight years ago by investing about the same capital as you say your son will have at his command, and now ——— gives me 800*l.* a year rent for the run and stock, and every one says he will make that sum, if not 1000*l.* a-year clear for himself in a short time. Then ———, who has not done so well as most people, has been offered and refused 700*l.* as rent for his run. This will prove to you that sheep farming is a lucrative business. Should you and your son determine that he should enter upon it, I am quite at a loss what to advise. If ——— were living at our station. I should say let your son come down and be with him to learn the work, but since ———'s engagement I have asked him and his wife to come and live with me, which they do when ——— leaves. I think it would be well that your son should see the life before he finally makes up his mind, and he would be gaining experience and knowledge at the same time. I shall consult with ——— on his return from the Wairau, about the best person he could go to. With respect to the province where he should ultimately settle I can say little, but I certainly advise that it should not be this one, as I cannot see any opening whatever for his getting a run for anything like the sum he has to invest, and if he could I would not advise it; so long as the waste lands are in the hands of the Provincial Government, the tenure of runs is so uncertain that I would not advise any one to commence in this province. In some of the others the case is different. These provinces are altogether pastoral; there is no other interest to clash, and therefore no act will be passed by their Councils calculated to injure the flockmasters. I should prefer the ———, but I fear there are no runs to be had there now. At Otago I learn they may still be had, and if your son would like to try his luck there and go down and look out for a run for himself, I know several young gentlemen who have gone there from Nelson to whom I would give him letters, and I have no doubt they would cheerfully afford him every assistance in their power.

The following letter is dated from Ahuriri:—

You spoke to me before leaving Auckland about making an investment in sheep for ———, and you seemed to give a preference to the Ahuriri district. The course I should advise you to adopt would be to purchase 500 or 1000 ewes and to place them with a careful person on the following terms, viz., that the party taking them should have one-third of the increase and half of the wool for taking care of them. This is all you would have to pay, except carriage of wool to port, freight, stowage, and wool bags; the persons taking them on these terms should keep them for three or five years, or until such time as a run could be obtained in some of the new districts that will be opened up here. By the end of either of those terms he would have a considerable flock as the proportion of increase, while all the original stock would still be his own. Of course the party taking the sheep could not guarantee a run, there is so much scrambling for them now-a-days; but he should use all diligence to secure one. The above terms, or else purchasing out some one's interest, are the only means by which any person could establish himself here; but there are no eligible offers of the latter kind to be met with. Good ewes might be purchased here after shearing for about 20*s.* or 25*s.*; two rams of a good breed should be purchased for every 50 ewes. If you could get one here to take on those terms it would be a safe and good investment, and I shall be most happy to aid ——— in every way towards getting a run if you really decide on his becoming an Ahuriri flock-owner. In applying for a run here, the boundaries of the place required should be distinctly stated, and in the event of one place not being purchased two or three applications might be sent in together with a deposit of 25*l.*, which would be refunded in the event of the runs not being obtainable. When I get back to Auckland I will point out the most desirable run country as yet unpurchased, and afford any other assistance I can towards furthering ———'s views; and if he would like to come here and look about for himself, if he is not getting too fat for such exertions, he can have a shake-down at my station, plenty of fat mutton, bread, and tea, with a good horse to ride when he feels disposed. I have no doubt this district would suit him as an eventual place of settlement as well as any in New Zealand, but of that he will be the best judge himself when he sees it.

Calendar of Operations.

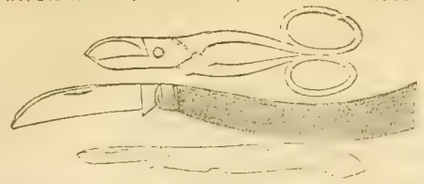
JULY.

Essex: *July* 4.—We regret to state that the fine harvest prospects pronounced last week are now sadly blighted by the late storms of Saturday and Sunday night last. Chief of the crowded and apparently best crops are prostrated, and are injured to a very great extent in this district—South Ess x. The Potato murrain has again appeared this last fortnight in its usual malignant form; but most rife in those crops highly manured. Its commencement was earlier than hitherto, which adds to its disastrous effects. Atmospheric humidity does not appear to be the sole cause of the malady, as extreme drought has prevailed here all winter and spring, and up to the present time. Former experience however reminds us that now wet weather is set in before the tubers are matured, the evil will be aggravated by it, and will be more severely felt. We have not manured ours at all this year, and have planted them in wide rows, with a view of preventing the virulence of disease, believing that if this practice was fully carried out, without any stimulants, Old Dame Nature thus left uninterrupted would play her part, and be the best restorer of this ill-fated esculent to a more perfect state of convalescence. In our remembrance of 30 years Potatoes were always of better quality grown on poor ground than those on richer soils, though of course smaller and less remunerative. *Maldon.*

Notice to Correspondents.

Land Agents: *J Fleming.* There is no better work than that "On Landed Property," by the late Professor Low.

PAXTON WORKS, SHEFFIELD, ESTABLISHED 1738.



SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.—Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

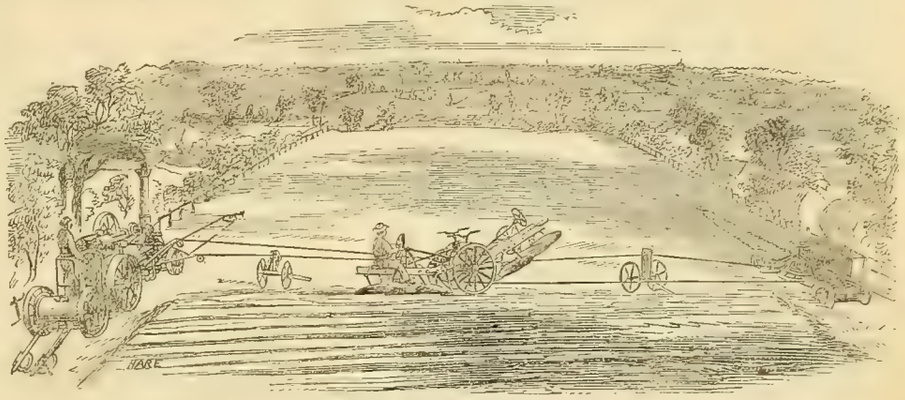
TO BE SOLD, a handsome, well-built, and finished CONSERVATORY, 30 feet long, 14 feet wide, quite new.—Apply to H. Freeman, Triangle, Hackney.

SMALL GAS APPARATUS, WITH FREEDOM FROM NUISANCE.

BOWER'S PATENT NATIONAL COAL GAS APPARATUS, for Private Residences, Farm Buildings, Churches, Chapels, Railway Stations, and all isolated places not yet lighted with Gas. The various parts are of the best materials and workmanship, are not liable to get out of order, and can be worked with a small degree of attention by a farm servant or labourer without materially interfering with his other duties. Prospectuses with testimonials, &c., may be had on application to the Proprietors and Manufacturers,

J. T. B. Porter & Co., Lincoln.

FOWLER'S PATENT STEAM PLOUGH.



The above Cut shows FOWLER'S STEAM PLOUGH at work.

ENGINES purchased for STEAM PLOUGHING can be used for any other operation the Farmer may wish. They are made to move themselves by Steam from field to field or place to place, requiring but one or two horses in the shafts to steer them.

For further particulars, prices, and Illustrated Catalogues apply to

JOHN FOWLER, JUN., 28, CORNHILL, LONDON, E.C.

Stand No. 30.—ROYAL AGRICULTURAL SOCIETY'S SHOW AT WARWICK, July, 1859.

B. SAMUELSON,

AGRICULTURAL ENGINEER AND MACHINIST,

76, CANNON STREET, WEST, LONDON; WORKS—BANBURY, OXON;

INVITES the atttention of Agriculturists to his

IMPROVED DOUBLE-ACTION HAY-MAKER (Price 13*l.* 13*s.*).

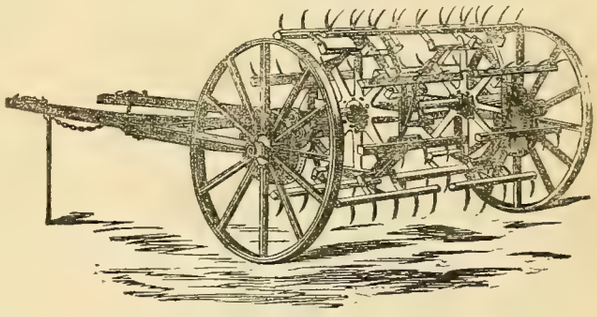
This Machine is guaranteed against breakages in fair usage.

SAMUELSON'S IMPROVED HORSE RAKES.

No. 3, extreme width, 7 feet 6 ins. £7 10 0
No. 4, ,, ,, 8 feet 6 ins. 8 0 0
Steeled Teeth, 10*s.* extra.

SAMUELSON'S PATENT BRITANNIA SELF-RAKING REAPING MACHINE, with side delivery in sheaf (requires no rakers or gatherers), price 32*l.* 10*s.* at the Works, Banbury; 34*l.* in London.

SAMUELSON'S BOYD'S PATENT LAWN MOWING AND ROLLING MACHINES. The only Machine that will cut WET as well as dry Grass. Price, from 4*l.* 17*s.* 6*d.* to 13*l.* 13*s.*



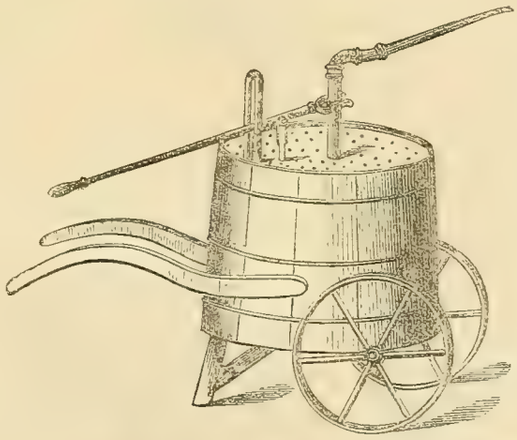
SAMUELSON'S PATENT PRIZE GARDENER'S DOUBLE ACTION TURNIP CUTTER, with the new Patent improvement for separating the dirt and small chippings from the clean and useful pieces.

SAMUELSON'S PRIZE CHAFF CUTTERS, MILLS, CAKE BREAKERS, and food-preparing Implements of every description; also HARROWS, FIELD ROLLERS, CLOD CRUSHERS, &c.

The above may be inspected at Mr. Samuelson's stand, No. 30, at the Warwick Show, where CATALOGUES and PRICE LISTS may be obtained, or at the

Works, Banbury, Oxon; London Warehouse, 76, Cannon Street, West.

DEANE & COMPANY'S
HORTICULTURAL TOOLS.



GARDEN ENGINES, Galvanized Iron
Prices 55s., 68s., 105s., 120s.
Ditto, Wood, 84s,, 105s, 130s.
Flower Stands, 4s. 6d. each.
Cast Iron Ornamental ditto, to hold 7 Vases, 27s.
Deane's Mowing Machines, with Boyd's Patented Improvements, £4 17s. 6d; £6 6s. 0d., £6 17s. 6d., £7 7s. 0d.
Green House Syringes, 8s., 10s., 18s. 6d
Garden Rollers, £1 14s. 6d., £2., £2 12s.
£3 3s., £3 18s., £4 13s., £5 12s., £7 10s.
Garden Stools, 4s. 6d.
Garden Chairs, from 30s.
Boyd's Self-adjusting Scythe, 10s. 6d.
Wire Work, 18in. 4d. per yard run.

Every Implement for Garden use on the lowest Terms.

DEANES:—Opening to the Monument, London Bridge.

WARWICK SHOW.—STAND No. 183.

MESSRS. J. B. BROWN AND CO. will exhibit at the Royal Agricultural Society's Show at Warwick on Tuesday, the 12th inst., and following days, specimens of their Iron and other Manufactures, in connection with Landed Property, particularly

IRON HURDLES, variety of specifications and prices. CONTINUOUS BAR FENCING, in flat and round bars. IRON, FIELD, and other GATES. IRON FENCING WIRE. WIRE NETTING, various meshes and degrees of strength. GARDEN SEATS, CHAIRS AND STOOLS, a great variety and novelty in design. ORNAMENTAL WIRE WORK in Garden Arches, Flower Stands, Suspending Flower Baskets, &c. GARDEN ENGINES, GARDEN ROLLERS, CAST-IRON VASES. SHANKS' NEW IMPROVED PATENT LAWN MOWING MACHINES. CAMPBELL'S NEW PATENT GRUBBING AND HARROWING LAND ROLLER AND CLOD CRUSHER (new implement). IRON CORN RICK STANDS, &c. &c.

STAND No. 183, WARWICK SHOW.

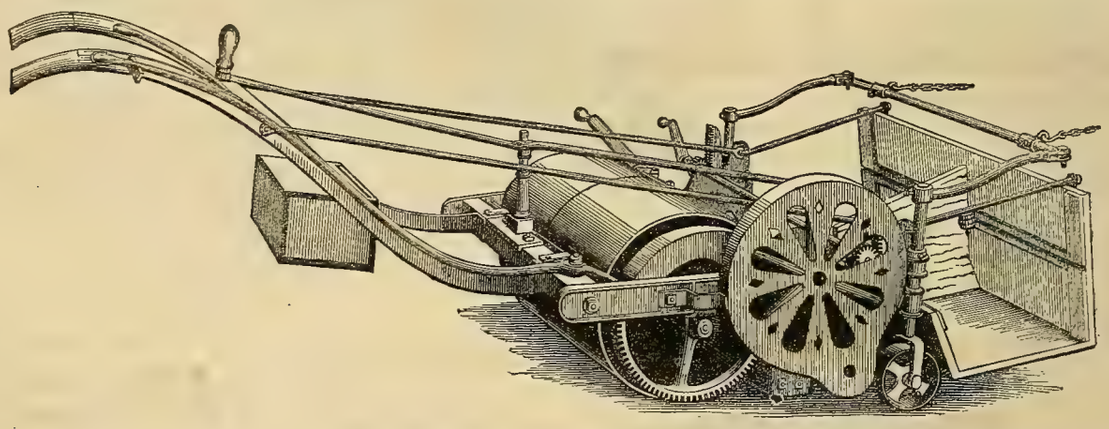
J. B. BROWN & CO., 18, CANNON STREET, CITY, LONDON, E.C.

SHANKS' PATENT LAWN MOWING MACHINES,

NOW USED IN ALL THE ROYAL GARDENS.

NEW AND IMPORTANT IMPROVEMENTS FOR MOWING, ROLLING, COLLECTING, AND DELIVERING.

HORSE POWER PATENT MOWING, ROLLING, COLLECTING, AND DELIVERING MACHINE.



THESE NEW IMPROVED MACHINES WILL BE EXHIBITED AT THE ROYAL AGRICULTURAL SOCIETY'S SHOW AT WARWICK ON TUESDAY, JULY 12, AND FOLLOWING DAYS, AT MESSRS. BROWN & CO.'S STAND, NO. 183.

PRICES

No. 1(*a*) 48-INCH MACHINE (USUALLY DRAWN BY A HORSE)	£27 0 0	No. 3.—30-INCH MACHINE (USUALLY DRAWN BY A PONY)	£17 10 0
No. 1.—42-INCH MACHINE (USUALLY DRAWN BY A HORSE)	24 0 0	No. 4.—25-INCH MACHINE (USUALLY DRAWN BY A PONY OR DONKEY)	13 10 0
No. 2.—36-INCH MACHINE (USUALLY DRAWN BY A HORSE OR PONY)	20 10 0	No. 5.—25-INCH MACHINE (MADE LIGHT FOR A SMALL PONY OR DONKEY)	9 10 0

Machines Nos. 1 (*a*), 1, 2, 3, & 4 have the Patent Delivering Apparatus attached. No. 5 can either be had with or without this improvement; if with it, 30*s.* extra.

PRICES OF THE HAND MOWING AND ROLLING MACHINE

No. 6.—22-INCH MACHINE	£7 17 6	No. 8.—16-INCH MACHINE	£6 10 0
No. 7.—19-INCH MACHINE	7 5 0	No. 9.—13-INCH MACHINE	5 15 0

TESTIMONIALS IN FAVOUR OF SHANKS' NEW HORSE MACHINE.

From Mr. T. HARLEY, *Gardener to* THOMAS CHAMBERLYNE, Esq., *Cranberry Park, near Winchester.*

"The Gardens, Cranberry Park, July 5, 1859.

"I am happy to be able to add my testimony to the high merits of the Shanks' 30-inch New Horse Lawn Mowing Machine which you sent me. I have put it to work in its trials on rough and uneven ground, which had only been once mown this year with a scythe. It surpassed all my expectations, as it likewise did my employer and other gentlemen who witnessed its working. When taken on the Lawn, where it had a better chance of showing its power, nothing could possibly excel it; after cutting, and the Grass being removed, the Lawn never before looked half so well as it did then. I am quite sure that I shall be able to pay the expense of the Machine this year in the labour saved from the use of the Scythe, and not only that, but it leaves the turf in such fine condition. My opinion is that no one should be without Shanks' Machine, as I believe it to be without exception the best I ever saw worked. *The self-acting apparatus delivering the Grass is the most complete thing invented in any Mowing Machine inventions.*"

From Mr. ALEXR. SHEARER, *Gardener to the* MARQUIS of TWEEDDALE, *Yester Garden, May* 13, 1859.

"The success of your improved Grass Cutting Machine which we got the other day—especially the delivering part—is a mechanical triumph. Having cut all our Grass with it, I must say that it acts far beyond my expectation, and it performs all you say in your prospectus. We can now go on the whole day without stopping, except to oil the parts that require it. The men are quite in love with it; a good proof of its utility."

From Mr. JAMES MACKIE, *Gardener to* His Grace the DUKE of ATHOLL, *The Gardens, Dunkeld, May* 18, 1859.

"After repeated trials with our Grass Cutting Machine, as now fitted up with your Delivering Apparatus, I have much pleasure in saying that I now consider your Machines complete. *We can now do as much work in six hours as we used to do in ten hours,* with the old plan of stopping to empty the Grass Box, *and with far greater ease both to man and horse.* His Grace is so well pleased with the working of the Apparatus, and the saving of time effected by it, that he has ordered the Machine from Blair Castle to be sent through to be fitted up in the same way as the one here."

☞ FULLY ILLUSTRATED AND DETAILED CIRCULARS ON APPLICATION.

LONDON AGENTS

MESSRS. J. B. BROWN & CO., 18, CANNON STREET, CITY, LONDON, E.C.

GLAZIERS' DIAMONDS FOR CUTTING HORTICULTURAL and other GLASS, to be had of the Wholesale Manufacturer, JOHN EDWARDS, 20, Sharp's Alley, West Smithfield, London, E.C. Prices from 10*s.* to 27*s.* 6*d.*

WARNER'S IMPROVED LIQUID MANURE OR GENERAL PORTABLE PUMP.



These Pumps are fitted with WARNER'S Patent Bucket and Valve, and cannot clog in action. The barrel is made of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure on the stand, the legs of which fold together, and may be carried with ease by one man to tank or pond.

	£.	*s.*	*d.*
Stand and Pump, with screwed tail pipe, fitted with strong brass union for suction pipe	2	15	0
If fitted with barrel of planished copper	3	4	0
Stand and Pump, with plain tail pipe, for tying on suction pipe	2	9	0
2-inch patent rubber and canvas flexible suction pipe, on wires, either 10, 12, or 15 ft., per foot	0	2	2

May be obtained of any Ironmonger or Plumber in town o country, at the above prices, or of the Patentees and Manufac turers, JOHN WARNER & SONS, 8, Crescent, Jewin St., London

WARNER'S PATENT VIBRATING STANDARD PUMPS.

PATENT CAST-IRON PUMPS for Farms, Cottages, Stable Yards, &c., where the Well does not exceed 28 feet in depth; fitted with WARNER'S Patent Metal Bucket and Valve, which cannot clog in action. These Pumps can be made right-handed, left-handed, or with handle opposite the nose by removing four screws only.



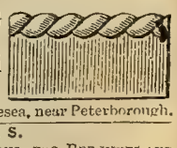
Diameter of Barrel.	Height.		£.	*s.*	*d.*
2½ in.	short	1 ft. 7 in.	Fitted for lead, gutta percha or cast iron flanged pipe as required.	1	5	0
2½ ,,	long	3 ,, 3 ,,		1	10	0
3 ,,	ditto	3 ,, 6 ,,		2	4	0
3½ ,,	ditto	3 ,, 6 ,,		2	9	0
4 ,,	ditto	3 ,, 6 ,,		2	13	0
2½ ,,	short, with 15 feet of Lead Pipe attached, ready for fixing			2	10	0
2½ in.	long	ditto ditto	ditto	2	14	0

The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.

May be obtained of any Ironmonger or Plumber in Town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

LOOMES' GARDEN EDGING —CABLE PATTERN.



Price at Peterborough. In London.
Straight .. .. .. 5*d.* — 6*d.* per yard
Bends .. .. .. 6*d.* — 7*d.* ,,
If fitted to plans .. 7*d.* — 8*d.* ,,

LOOMES & Co., Manufacturers, Whittlesea, near Peterborough.

BEE-HIVES.

PRIZE MEDAL AWARDED TO G. N. & SONS, FOR BEE-HIVES AND HONEY, AT THE PARIS EXPOSITION OF 1855.

NEIGHBOUR'S IMPROVED COTTAGE BEE-HIVE, as originally introduced by GEORGE NEIGHBOUR & SONS, with all the recent improvements, glasses, and thermometer, price 35*s.*, securely packed for the country.



This unique Hive has met with universal commendation, and may be worked with safety, humanity, and profit by the most timid; its arrangements are so perfect that the Honey may be taken at any time of the gathering season without at all injuring the Bees.

Early applications addressed to GEORGE NEIGHBOUR & SONS, 127, High Holborn, or 149, Regent Street, London, will receive prompt attention.

Their newly-arranged CATALOGUE of other Improved Hives with Drawings and Prices, sent on receipt of two stamps.

AGENTS.—Liverpool: JAMES CUTHBERT, 12, Clayton Square.
Manchester: W. WILSON, 50, King Street.
Birmingham: J. H. COTTRELL, 15, Bull Ring.
Dublin: J. EDMONDSON & Co., 61, Dame Street.

BY APPOINTMENT.

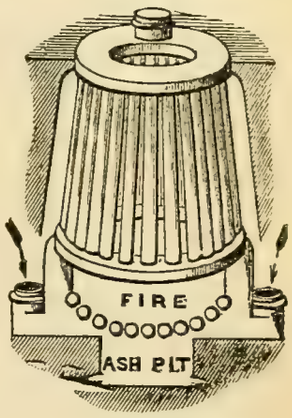
HORTICULTURAL BUILDING & HEATING BY HOT WATER.

STEAM POWER WORKS.

JOHN WEEKS & COMPANY



BEG respectfully to call the attention of the Horticultural World to the more than usual facilities at their command to offer superior Horticultural Erections of every style and description at lowest possible prices. The extensive additions to their Machinery, Workshops, Iron Foundry, and Plant now form a complete and unequalled Manufactory for the production of every branch of Horticultural Building and Heating by Hot-Water. J. Weeks & Co.'s ONE BOILER SYSTEM of heating has from its efficiency, cleanliness, and economy, rendered such unbounded satisfaction as now to become almost universally adopted. Numerous Horticultural Establishments of considerable extent formerly heated by 10 or 12 ordinary Boilers, also Churches, Chapels, Schools, Mansions, Warehouses, Hospitals, and Public Buildings are now more effectually heated at an incredible saving of labour and fuel by John Weeks & Co.'s ONE BOILER SYSTEM.



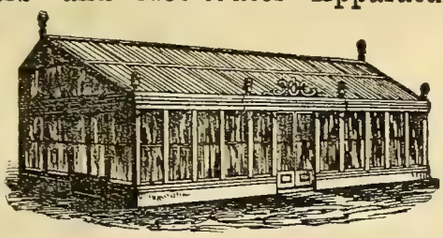
JOHN WEEKS & COMPANY, King's Road, Chelsea, London, Horticultural Buildings and Hot-water Apparatus Manufacturers, Engineers, and Iron Founders.

Plans, Estimates, and Illustrated Catalogues Free on application.

J. WATTS & CO.,

Hothouse Builders and Hot-Water Apparatus Manufacturers.

Horticultural Buildings of every description Heated on the most approved principles, combining great power with simplicity of construction. A Range of Houses containing 20,000 feet can be Heated as easily as the smallest Pit.



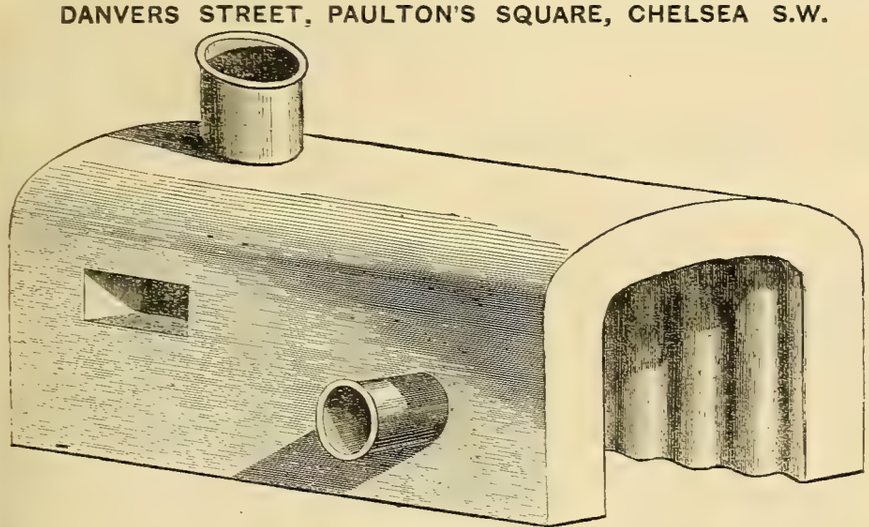
Two Hundred Cucumber Boxes and Lights, and from Three to Four Hundred Lights of all sizes kept in stock, glazed and painted complete, ready for immediate use.

References to the Nobility, Gentry, and the Trade in most of the Counties in England.

Claremont Place, Old Kent Road, London, S.E.

HORTICULTURAL WORKS,

DANVERS STREET, PAULTON'S SQUARE, CHELSEA S.W.



JAMES GRAY

RESPECTFULLY begs to inform the nobility, gentry, Nurserymen, Gardeners, and others, that he continues to carry on the business in all its branches at the above old established premises.

CONSERVATORIES, GREENHOUSES, FORCING HOUSES, VINERIES, PITS, &c.,

of every description, erected on the most approved principles.

HEATING BY HOT WATER.

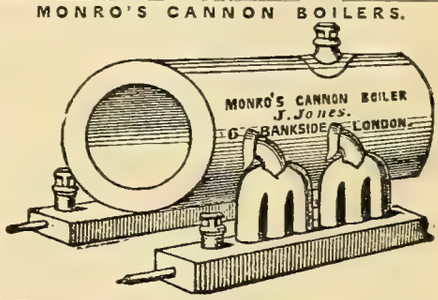
J. G. having specially devoted his attention for many years to this part of the business, is now fully prepared to Heat every description of public and private buildings, viz :—Churches, Mansions, Warehouses, &c., as well as all structures connected with Horticulture, in the most efficient manner. His system is the most simple that can be adopted—which he has found from long experience to be the best—can be constructed at less cost, and is more easily managed than those of a complicated nature which have attracted the notice of the public.

J. G. begs to call attention to his CAST-IRON CORRUGATED ARCH BOILER, which from its simplicity of construction has not the liability to fracture to which those of a more complex design are always subject. They have been extensively used for many years, and have given the greatest satisfaction.

All business is conducted at this establishment on the principle of lowest remunerative profits consistent with best materials and workmanship.

Plans and Estimates furnished on the shortest notice.

MONRO'S CANNON BOILERS.

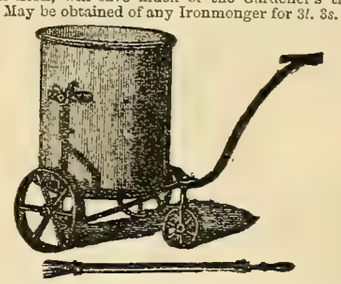


MUCH has of late been said about BOILERS for Heating by Hot Water, but these Boilers have now proved themselves to be the best at present invented. They are adapted for heating every description of building, and are made of various sizes. The Price of the

24-inch Cast Iron is	..	..	.. £5 10s. 0d. each
24-inch Wrought ditto	..	..	.. 6 10 0 ,,
36-inch Cast ditto ..	..	..	.. 8 0 0 ,,
36-inch Wrought ditto	..	..	.. 8 10 0 ,,

References to Gentlemen and Nurserymen where these Boilers are now at work. The Cannon Boilers are now kept in stock, and are to be had only of J. Jones, 6, Bankside. Also, every description of Saddle and Cylinder Boilers. Hot Water Pipes and Connections at prices lower than those of any other house in London. Estimates for Hot-water Apparatus erected complete in any part of the country, and an Illustrated Catalogue on application to J. Jones, 6, Bankside, Southwark, London.

WARNER'S SWING WATER-BARROW (To Hold Forty Gallons). Mounted on Wheels 20 inches high, will save much of the Gardener's time and labour. May be obtained of any Ironmonger for 3*l.* 3*s.*



BRASS SYRINGES, 9*s.* to 21*s.*

Also a great variety of effective Machines for Hydraulic purposes, and to supply Gardens, Hothouses, Cottages, Farms, Mansions, or Boards of Health, with every requisite connected with the conveyance and distribution of Liquids.

Fountains suitable for Conservatories, Lawns, &c.

John Warner & Sons, 8, Crescent, Jewin Street. London.

READY-MADE GREENHOUSES FOR SALE.—A Span Roof, 24 feet by 14 feet, 30*l.*; Lean-to, 23 feet by 12 feet, 28*l.*; Lean-to, 30 feet by 15 feet, with capital stage, &c., 55*l.* The above may be inspected on the premises of the builder, Joseph Smith, New Road, Hammersmith.

N.B. Houses substantially built from 1*s.* per square foot; 2-inch light four times painted, 8*d.*; unglazed, 4*d.* per square foot. A quantity ready made.

MICROSCOPES.

JOSEPH AMADIO'S Improved Compound MICROSCOPE, 2*l.* 2*s.*; Students', 3*l.* 13*s.* 6*d.*

"Both these are from Amadio, of Throgmorton Street, and are excellent of their kind, the more expensive one especially."—*Household Words*, No. 345.

A large Assortment of ACHROMATIC MICROSCOPES.

Just published, 2d edition, an ILLUSTRATED CATALOGUE, containing the names of 1500 Microscopic objects, free for 6 stamps.

PARKES' STEEL DIGGING FORKS.

BURGESS AND KEY, 95, Newgate Street, London, being the Wholesale and Retail Agents for these celebrated TOOLS have always a large Stock on hand from which their Customers may select what they may require.

ANTHONY'S PATENT AMERICAN CHURN.—The FIRST PRIZE was again awarded to this Churn in Competition with several others at the Chester Meeting of the Royal Agricultural Society; it has obtained the First Prize given by the Society at every Meeting since 1850.

Messrs. BURGESS & KEY, 95, Newgate Street, strongly recommend it as the most perfect Churn now in use. Full particulars sent on application.

BOYD'S SELF-ADJUSTING SCYTHES are the cheapest and best, and being sold adjusted, are ready for immediate use. They can be regulated in an instant to suit any person, and to cut any crop without change of Scythes. For Amateur Gardeners they are very desirable, as they afford a healthy and interesting exercise They have stood the test of public opinion for seven years, and for excellence, ease, economy, and durability, are highly recommended. Upwards of 50,000 of them have been sold. To be had of every Ironmonger, Hardwareman, and Seedsman in the United Kingdom, and wholesale of the Sole Licensed Makers, WM. DRAY & Co., at their New Agricultural Implement Warehouses, Adelaide Place, London Bridge.

PRIZE LAWN MOWERS.

16 inches, price	..	..	£5 10 0
19 ,, ,,	..	..	6 0 0
22 ,, ,,	..	..	6 10 0

Otway's PATENT SELF-ADJUSTING SCYTHE, 10s. each.
Improved GARDEN ENGINES, 3l. 3s.
Cast Steel DIGGING FORKS, and Garden Tools of all kinds.
Boîtes à Houppe for the application of Sulphur, Lime, or any other powder to the Vine, Trees, and all kinds of plants. 2s. 6d. each.
BURGESS & KEY, 95, Newgate Street, London.
PRICE LISTS sent free. ILLUSTRATED CATALOGUES on receipt of six postage stamps.

THE NEW PATENT MOWING MACHINES may be used anywhere at any time, are self-sharpening, and admit of the use of duplicate sets of cutting parts. Prices from 4l. 10s. upwards. Illustrated Circulars free by post.—Manufactured and Sold by JAMES FERRABEE & Co., the original introducers of Mowing Machines.
Several infringements of their patent having taken place, the Makers respectfully caution the public to see that the words "FERRABEE'S Patent" are cast on every Machine.
JAMES FERRABEE & Co., Phœnix Iron Works, Stroud.

SHANKS'S PATENT MOWING MACHINES.

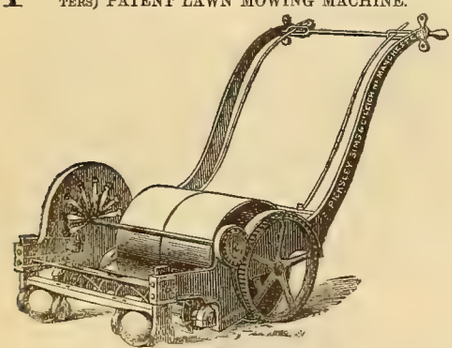
J. AND C. LEE, NURSERYMEN, Hammersmith, have great confidence in recommending these as the most complete Mowing Machines offered to the public. They have had large experience with SHANKS's Machines, and have ever found them do their work admirably, effecting a great saving in labour, and not liable to get out of order. For terms, apply to the Agents, J. & C. LEE, Nurserymen, Hammersmith.

SHANKS'S PATENT LAWN MOWERS are unquestionably the most perfect Machines for Mowing Lawns, Verges, &c., extant. SHANKS's Horse and Pony Machines are the only Machines that Mow, Roll, Collect, and Deliver the Grass.—London Agents: COTTAM & Co., 2, Winsley Street, Oxford Street, W.

LAWNS—IN USE IN THE ROYAL GARDENS.

SAMUELSON'S PATENT BOYD LAWN MOWING and ROLLING MACHINE, the only one that will cut wet as well as dry Grass, is guaranteed efficient in use, easily handled, and readily kept in working order. Doing the work of five or six men. Prices, including case and carriage to any railway station in England, from 4l. 17s. 6d. and upwards. Copies of testimonials post free on application to Mr. SAMUELSON'S London Warehouse, 76, Cannon Street West, City; Messrs. DEANE'S, London Bridge; or the Works, Banbury, Oxon.

PICKSLEY, SIMS, AND CO.'S (by ROYAL LETTERS) PATENT LAWN MOWING MACHINE.



LEIGH, LANCASHIRE.

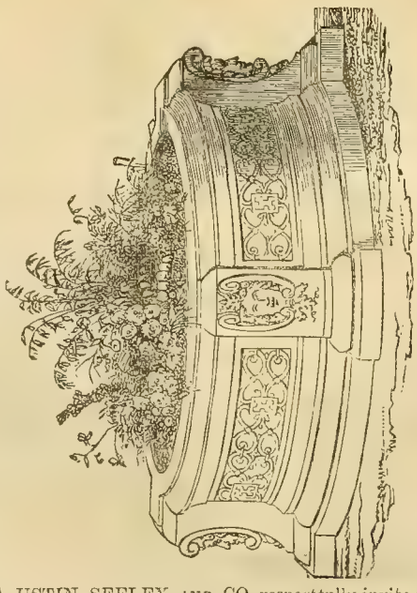
P., S., & Co., in introducing this Lawn Mowing Machine, particularly request a strict examination, or comparison and trial, for simplicity of construction, lightness, regularity of draught, adaptability for mowing every kind of plain, circular, and verge work.
Firstly, we have encased the wheels so as completely to protect from injury flower borders, shrubs, &c., whilst working the machine, at the same time not being liable to obstruction or damage.
Secondly, this machine works easily on undulated and sloping ground; it can be thrust forward or be drawn from behind, the latter being the easiest.
Thirdly, this is the only machine made that will work round quick curves; it will work easily and effectively round circular borders so small as 12 inches in diameter. This very desirable improvement has been obtained by fixing to the front part of the machine our newly-invented universal action, and self-cleaning, anti-friction spherical guiding balls. The continual revolving of these spherical guiding balls, under the most trying circumstances, never fails.
Fourthly, we have attached to this machine a rack and pinion motion, for adjusting the cutting parts (there being a rack and pinion on each side of the machine to act conjointly at the same time upon the full length of the knives), in other machines a slow, tedious, and uncertain operation, into one of quickness, ease, and certainty.

PRICES:—

				£ s.
Patent Lawn Mowing Machine		13 inches	..	5 10
Ditto	ditto	16 ,,	..	6 0
Ditto	ditto	19 ,,	..	6 10
Ditto	ditto	22 ,,	..	7 0
Patent Chaff and Gorse Cutters from		.. ..	£2 5 to	22 0
,, Bean, Oat, and Malt Mills		.. ..	3 10 to	10 10
,, Gorse and Grain Bruisers		.. ..	10 10 to	21 0
,, Bone Mills		.. ..	27 10 to	150 0
,, Mangles, various		.. .. ..	2 10 to	12 10

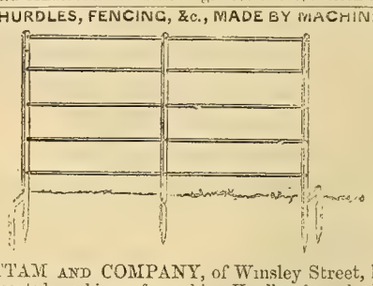
ILLUSTRATED CATALOGUES can be had gratis.

ORNAMENTAL GARDENING.



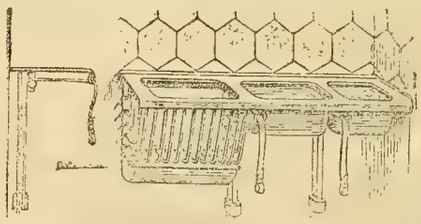
AUSTIN, SEELEY, AND CO. respectfully invite the attention of the Nobility and Gentry to their large FLOWER BASINS or "PORTE-FLEURS," of which they have now some handsome designs, from 7 to 20 feet diameter.
Fountains of every description, Vases and Figures for Gardens, and Ornamental Balustrading.—370 to 375, Euston Road.

IRON HURDLES, FENCING, &c., MADE BY MACHINERY.



COTTAM AND COMPANY, of Winsley Street, have invented machinery for making Hurdles, &c.; the bars, instead of being pointed by hand in the old fashioned style, are nipped down by the machine, leaving a shoulder so as to more effectually tighten the standards when rivetted. They are made of superior iron only, and will compete in price with those made by hand from cinder or common iron which so frequently break. Iron Fencing, Gates, and Iron Work of all kinds, both Plain and Ornamental, Conservatories, Hot Water Apparatus and Garden Implements.
Illustrated CATALOGUES free on application to COTTAM & COMPANY, Ironfounders, 2, Winsley Street, Oxford Street, W.
N.B. COTTAM & Co. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

COTTAM'S PATENT INVENTIONS FOR STABLE REQUISITES, awarded a Prize at the Paris Exhibition, and patronised by the English and French Governments.



COTTAM AND COMPANY, of Winsley Street, are the original inventors of the PATENT ENAMELLED MANGER, Water Trough, and Wrought Iron Rack, united to an iron top-plate, and forming one complete and useful fixture, having COTTAM'S patent noiseless halter guide and collar rein attached, which is taken to the back of the manger, and works with ease and freedom up or down the guide-bar.
COTTAM'S NEW PATENT SEED-BOX, an important addition to the above fittings, being simple in construction, light, and durable, promotes cleanliness, and is economical in its results.



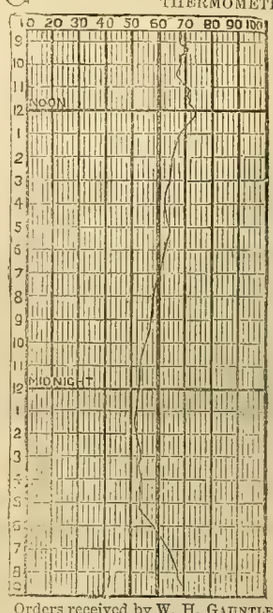
COTTAM'S PATENT SADDLE and HARNESS BRACKET combined, can be used with great advantage where space is an object, as it can be turned up out of the way when not in use.
COTTAM'S IMPROVED SURFACE GUTTER, with perforated moveable cover, the use of which prevents accidents, and can be easily cleaned out.
COTTAM'S CAST-IRON SANITARY TRAP, from its improved construction, gives a full water passage, and does not allow any smell to ascend from the drain.
PATENT LOOSE-BOX FITTINGS, and every article for the harness-room and stable, kept in stock, plain, galvanised, and enamelled. Iron gates, fencing, hurdles, &c.
The New Illustrated Catalogue and Estimates, gratis, upon application to COTTAM and COMPANY, 2, Winsley Street, Oxford Street.
N.B. COTTAM & Co. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

HORTICULTURAL VALUATIONS.

MR. ALFRED CHANDLER (of the late firm of Chandler & Sons, Vauxhall), begs to inform his friends that he is at liberty to undertake the valuation of Collections of Plants, Nursery Stock, Horticultural Buildings, &c.
Mr. A. C. is also open to engagements as Censor at Horticultural Exhibitions, in which capacity he has had long and extensive experience.—53, Priory Road, Wandsworth Road, S.

TO HORTICULTURISTS.

GAUNTLETT'S PATENT CHRONOMETRICAL THERMOMETER.

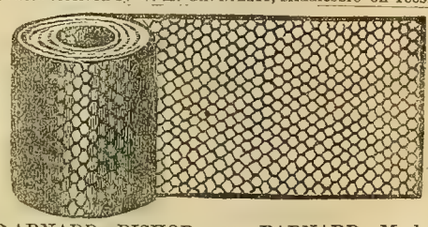


This instrument, which combines an eight-day clock of the best English make showing time, with a newly-patented Thermometer, wherein glass and quicksilver are dispensed with, writes down the temperature of the atmosphere on a slip of paper, and when placed in a Hothouse, Forcing House, or Conservatory, &c., supplies a valuable record of the temperature, with all its variations, showing the time when any change took place, and how long such change continued.

The above slip (reduced in size) exhibits the temperature of the Royal Agricultural Society's show yard at Chester, July 22, 1858, written off by one of these instruments, to which was awarded the Society's SILVER MEDAL.

This is the only instrument that registers temperature continuously and writes it down, and no horticulturist should be without it.

Orders received by W. H. GAUNTLETT, Middlesbro' on-Tees.



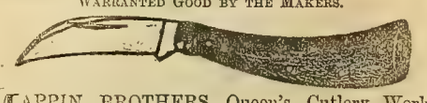
BARNARD, BISHOP, AND BARNARD, Market Place, Norwich, in consequence of improvements in their machinery for the manufacture of the above article, have been enabled to make a great reduction in the prices.

		Galvanised.	Japanned Iron.
2-inch mesh, 24 inches wide	..	5d. per yd.	4d. per yd.
2-inch ,, strong do.	.. ..	6 ,,	4½ ,,
2-inch ,, intermediate, do.	..	7 ,,	5½ ,,
2-inch ,, extra strong, do.	..	9½ ,,	7½ ,,
1¾-inch ,, 24 inches wide	..	5½ ,,	4½ ,,
1¾-inch ,, strong, do.	.. ..	6½ ,,	5¼ ,,
1¾-inch ,, intermediate, do.	..	7½ ,,	6 ,,
1¾-inch ,, extra strong, do.	..	10 ,,	8 ,,

All the above kinds can be made of any width (under 8 feet) at proportionate prices. If the upper half is of a coarser mesh than the lower, it will reduce the prices about one-fifth.
Strong Galvanised Poultry Netting, 8½d. per yard, 3 feet wide Galvanised Sparrow-proof Netting for Pheasantries, 2½d. per square foot. Delivered free of expense in London, Peterborough, Hull, or Newcastle. Manufacturers of Improved Strained Wire Cattle and Deer Fencing, Iron Hurdles, &c.
Illustrated Catalogues and Patterns forwarded by post.

MAPPIN'S PRUNING KNIVES IN EVERY VARIETY.

WARRANTED GOOD BY THE MAKERS.



MAPPIN BROTHERS, Queen's Cutlery Works Sheffield; and 67 and 68, King William Street, London.
MAPPIN'S "SHILLING" RAZORS Shave well for Twelve Months without Grinding.
MAPPIN'S 2s. RAZORS Shave well for Three Years.
MAPPIN'S 3s. RAZORS (suitable for Hard or soft Beards,) Shave well for Ten Years.
MAPPIN'S SUPERIOR TABLE-KNIVES maintain their unrivalled Superiority—handles cannot possibly become loose—the blades are all of the very first quality, being their own Sheffield manufacture.

	Tble. Kns.	Dst. Kns.	Carvers.
Ivory, 3½ in. Handle, balanced,	20s. p. doz.	16s. p. doz.	6s. p. pair
Do. 4 in. do. ..	25s. ,,	18s. ,,	9s. ,,

MAPPIN'S SILVER-PLATED DESSERT KNIVES and FORKS, in Mahogany Cases.

12 Pairs Knives and Forks, Ivory Handles, in Case	..	80s.
12 Do. Pearl Handles, do.	..	130s.
12 Do. Silver-Plated Handles, do.	..	80s.

MAPPIN'S ELECTRO-SILVER PLATE.—The MAPPIN BROTHERS, Manufacturers by Special Appointment to the Queen, are the only Sheffield makers who supply the consumers in London. Their LONDON SHOW ROOMS, 67 and 68, King William Street, London Bridge, contain by far the largest STOCK of ELECTRO-SILVER PLATE in the World, which is transmitted direct from their Manufactory, Queen's Cutlery Works, Sheffield.

	Fiddle Pattern.	Double Thread.	King's Pattern.
12 Table Forks, best quality	£1 16 0	£2 14 0	£3 0
12 Table Spoons, best quality	1 16 0	2 14 0	3 0
12 Dessert Forks, best quality	1 7 0	2 0 0	2 4
12 Dessert Spoons, best quality	1 7 0	2 0 0	2 4
12 Tea Spoons, best quality	0 16 0	1 4 0	1 7

Messrs. MAPPIN BROTHERS respectfully invite buyers to inspect their unprecedented display, which, for beauty of design, exquisite workmanship, and novelty, stands unrivalled. Their Illustrated Catalogue, which is continually receiving addition of New Designs, sent per post on receipt of 12 stamps.—MAPPIN BROTHERS, 67 and 68, King William Street, London Bridge; Manufactory, Queen's Cutlery Works, Sheffield.

RICK AND HAY CLOTHS, HAY ROPES, second-hand MARQUEES and TENTS; NETTING, new and old, for protecting fruit trees; SCAFFOLD CORD, SACK TYERS, BLIND and SASH LINES, Patent Circinate NOSEBAGS, &c., &c.
J. MORISON, Manufacturer, 25, Norton Folgate, N.E.

HAYMAKERS, possessing the best features of Nicholson's Prize Machines, with recent improvements peculiar to those supplied and manufactured only for
RICHMOND AND CHANDLER, Salford.
Branch Establishment, South John Street, Liverpool.
N.B. The celebrated Bedford and Stamford Prize HORSE RAKES always in stock, with latest Patented Improvements.

WHY NOT PRESERVE YOUR HAY?
BENJAMIN EDGINGTON respectfully informs the Nobility and Gentry that they can be supplied on the best terms with RICK CLOTHS, with Poles complete.
Early application should be made for SECOND-HAND RICK CLOTHS. MARQUEES, TENTS, and FLAGS. A great variety of Marquees and Tents may be seen erected on the premises. A quantity of SECOND-HAND TENTS from the Crimea at a greatly reduced price. An Illustrated Catalogue sent post free.
West End Establishment, 32, Charing Cross, S.W.
BENJAMIN EDGINGTON, 2, Duke Street, London Bridge, S.E.

WEDLAKE AND DENDY, AGRICULTURAL ENGINEERS, Hornchurch, Essex.
HAY MACHINES.
Small size, No. 1 .. £10 | Large size, No. 1 .. £12
Large size, No. 2 .. .. .. £13
These Machines are free from small and delicate parts, and can be easily understood by a farm labourer. They have gained several prizes at the Royal Agricultural Society's Shows.
HORSE RAKES.
No. 1 .. .. £6 10s. | No. 2 .. .. £7 10s.
WEDLAKE & DENDY'S Horse Rakes are made on the tubular principle, combining great strength and lightness. Free to all the principal Railway Stations.
WEDLAKE & DENDY, Union Foundry, Hornchurch, Essex.

HANDSOME BRASS AND IRON BEDSTEADS, —HEAL & SON'S Show Rooms contain a large assortment of Brass Bedsteads, suitable both for Home use and for Tropical Climates; handsome Iron Bedsteads with Brass Mountings and elegantly Japanned; Plain Iron Bedsteads for Servants; every description of Wood Bedstead that is manufactured, in Mahogany, Birch, Walnut-tree Woods, Polished Deal and Japanned, all fitted with Bedding and Furniture complete, as well as every description of Bedroom Furniture.

HEAL AND SON'S ILLUSTRATED CATALOGUE, containing Designs and Prices of 100 Bedsteads, as well as of 150 different articles of Bedroom Furniture, sent free by post.—HEAL & SON, Bedstead, Bedding, and Bedroom Furniture Manufacturers, 196, Tottenham Court Road, W.

BEDSTEADS, BATHS, AND LAMPS.—WILLIAM S. BURTON has SIX LARGE SHOW ROOMS devoted exclusively to the SEPARATE DISPLAY of Lamps, Baths, and Metallic Bedsteads. The stock of each is at once the largest, newest, and most varied ever submitted to the public, and marked at prices proportionate with those that have tended to make his establishment the most distinguished in this country.
Bedsteads, from .. .. .. 12s. 6d. to £20 0s. each.
Shower Baths, from .. .. 8 0 „ 6 0 „
Lamps (Moderateur), from .. 6 0 „ 7 7 „
(All other kinds at the same rate.)
Pure Colza Oil .. .. 4s. 3d. per gallon.

THE PERFECT SUBSTITUTE FOR SILVER.—The REAL NICKEL SILVER, introduced more than 20 years ago by WILLIAM S. BURTON, when PLATED by the patent process of Messrs. Elkington & Co., is beyond all comparison the very best article next to sterling silver that can be employed as such, either usefully or ornamentally, as by no possible test can it be distinguished from real silver. A small useful plate chest, containing a set, guaranteed of first quality for finish and durability, as follows:—

	Fiddle or Old Silver Pattern.	Threaded or Brunswick Pattern.	King's Pattern.	Military Pattern.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
12 Table Forks	1 18 0	2 8 0	3 0 0	3 10 0
12 Table Spoons	1 18 0	2 8 0	3 0 0	3 10 0
12 Dessert Forks	1 10 0	1 15 0	2 2 0	2 10 0
12 Dessert Spoons ..	1 10 0	1 15 0	2 2 0	2 10 0
12 Tea Spoons	0 18 0	1 4 0	1 10 0	1 18 0
6 Egg Spoons, gilt bowls..	0 12 0	0 15 0	0 18 0	1 1 0
2 Sauce Ladles	0 7 0	0 8 6	0 10 6	0 16 0
1 Gravy Spoon	0 8 0	0 11 0	0 13 6	0 16 0
2 Salt Spoons, gilt bowls..	0 4 0	0 5 0	0 6 0	0 7 6
1 Mustard Spoon, gilt bowl	0 2 0	0 2 6	0 3 0	0 3 9
1 Pair of Sugar Tongs ..	0 3 0	0 3 9	0 5 0	0 7 0
1 Pair of Fish Carvers ..	1 4 0	1 7 6	1 12 0	1 18 0
1 Butter Knife	0 3 6	0 5 9	0 7 0	0 8 0
1 Soup Ladle	0 13 0	0 17 6	1 0 0	1 1 0
1 Sugar Sifter	0 4 0	0 4 9	0 5 9	0 8 6
Total	11 14 6	14 11 3	17 14 9	21 4 9

Any article to be had singly at the same prices. An oak chest to contain the above, and a relative number of knives, &c., 2l. 15s. Tea and coffee sets, cruet and liqueur frames, waiters, candlesticks, &c., at proportionate prices. All kinds of re-plating done by the patent process.

WILLIAM S. BURTON'S GENERAL FURNISHING IRONMONGERY CATALOGUE may be had gratis, and free by post. It contains upwards of 400 Illustrations of his illimited Stock of Electro and Sheffield Plate, Nickel Silver and Britannia Metal goods, Dish Covers and Hot-water Dishes, Stoves, Fenders, Marble Chimney-pieces, Kitchen Ranges, Lamps, Gaseliers, Tea Urns and Kettles, Tea Trays, Clocks, Table Cutlery, Baths and Toilet Ware, Turnery, Iron and Brass Bedsteads, Bedding, Bed Hangings, &c., with Lists of Prices and Plans of the 16 large Show Rooms at 39, Oxford Street; 1, 1A, 2, and 3, Newman Street; and 4, 5, and 6, Perry's Place, London.—Established 1820.

IMPORTANT INFORMATION.—Mrs. Brown, of Queen Street, Kingsland, was for years severely afflicted with a scorbutic eruption, covering the back of both hands, and spreading up her arms. She was persuaded to try Dr. ROBERTS'S POOR MAN'S FRIEND and PILULÆ ANTISCROPHULÆ by a friend who had a large wound in her leg which baffled her doctor's skill, but was effectually cured by these medicines. She only took one box of the Pills, and used one pot of the Ointment, which effected a cure to the surprise of her friends, who wish it to be made public for the benefit of her suffering fellow creatures. Dr. ROBERTS'S POOR MAN'S FRIEND and PILULÆ ANTISCROPHULÆ have been proved, by 60 years' experience, successful in the cure of eruptions and wounds of every description. Price 1s. 1½d.; 2s. 9d.; 4s. 6d.; 11s.; and 22s. each.—Sold wholesale by the Proprietors, BEACH & BARNICOTT, at their Dispensary, Bridport, and by the London Houses; and retail by all respectable Medicine Vendors in the United Kingdom and the Colonies.

ONCE A WEEK.
No. 3 WILL CONTAIN
A NEW AND ORIGINAL POEM BY ALFRED TENNYSON.
With an Illustration by J. E. MILLAIS.
PRICE 3d.
OFFICE, No. 11, BOUVERIE STREET.

CHEAP AND CORRECT PRINTING FOR THE NURSERY AND SEED TRADES.—Send your orders to ROBT. EDM. TAYLOR, PRINTER, Sea Coal Lane, Skinner Street, Snow Hill, London, E. C. Estimates forwarded.

WHAT WILL THIS COST TO PRINT? is a thought often occurring to literary minds, public characters, and persons of benevolent intentions. An immediate answer to the inquiry may be obtained on application to RICHARD BARRETT, 13, Mark Lane, London. R. B. is enabled to execute every description of Printing on very advantageous terms, his office being furnished with a large and choice assortment of Types, Steam Printing Machines, Hydraulic and other Presses, and every modern improvement in the Printing Art. A Specimen Book of Types, and information for Authors, sent on application, by
RICHARD BARRETT, 13, Mark Lane, London.

FRY AND SONS' CHOCOLATES AND COCOAS. —Victoria Chocolate, Bon Bons, Soluble Cocoa, &c., in great variety. These delicious beverages are now sold at very moderate prices, and many of them are highly economical.
FRY'S HOMŒOPATHIC COCOA is an article of unexceptionable quality. FRY'S SOLUBLE COCOA, in Hexagon packets, and FRY'S PEARL COCOA, are strongly recommended.
FRY AND SONS, MANUFACTURERS TO THE QUEEN.
Liebig, the celebrated Chemist, asserts that nitrogen is essential to the healthy action of the bile, and the growth, sustenance, and invigoration of the body. No stronger recommendation of Cocoa and Chocolate can therefore be given than the following statement:—Caffeine and Theine each contain only about 29 per cent., whilst Theobromine (or essence of Cocoa) contains upwards of 35 per cent. of nitrogen.

VINEGAR.—Patronised by her Majesty's Government.
CONDY'S PATENT PURE CONCENTRATED MALT VINEGAR.—Families, by using this delicious Vinegar, insure purity, and effect a saving of 50 per cent. See Report of Dr. Letheby, City Officer of Health; Dr. Hassall of the *Lancet* Commission, and others. Six Quart Sample sent free to any Railway for 3s. 6d.—Sold by the Trade, in bottles, labelled and capsuled; wholesale, 63, King William Street, London Bridge, E.C.

GENTLEMEN'S HIGHLAND CAPES AND OVERCOATS, suited for all seasons and climates. Made of WATERPROOF SCOTCH TWEEDS in great choice.—SCOTT ADIE, 115, Regent Street, corner of Vigo Street, London.

DRESSING CASES, DRESSING BAGS, and highly finished elegancies for presentation in great variety; Ivory-handled Table Cutlery; every requisite for the Toilet and Work Tables.—MECHI & BAZIN, 112, Regent Street; 4, Leadenhall Street: and Crystal Palace, Sydenham.

PRIZE MEDAL, PARIS EXHIBITION 1855.
METCALFE, BINGLEY, AND CO.'S New Pattern and Penetrating Tooth Brushes, Penetrating unbleached Hair Brushes, Improved Flesh and Clothes Brushes, and genuine Smyrna Sponges; and every description of Brush, Comb, and Perfumery for the Toilet. The Tooth Brushes search thoroughly between the divisions of the Teeth and clean them most effectually—the hairs never come loose. M., B., and Co. are sole makers of the Oatmeal and Camphor and Orris Root Soaps—sold in Tablets (bearing their names and address) at 6d. each; of METCALFE'S celebrated Alkaline Tooth Powder, 2s. per box; and of the New Bouquets.—Sole Establishment, 130B and 131, Oxford St., 2d and 3d doors west from Holles St., London.

FOR THE TOILETTE.—OLDRIDGE'S BALM OF COLUMBIA, which has for more than 30 years been celebrated for its peculiar properties in restoring, cleansing, and beautifying the hair, promoting its growth, as well as preventing it falling off or turning grey.—C. & A. OLDRIDGE, 13, Wellington Street, North, seven doors from the Strand. Sold wholesale and retail in bottles at 3s. 6d., 6s., and 11s.; and by all Chemists and Perfumers. Its use for whiskers and moustache is invaluable.

SIXTY YEARS OF SUCCESS
HAVE PROVED BEYOND QUESTION THAT
ROWLANDS' MACASSAR OIL possesses extraordinary properties for promoting the growth and improving and beautifying the human hair. It prevents hair from falling off or turning grey, strengthens weak hair, cleanses it from scurf and dandriff, and makes it beautifully soft, pliable, and glossy. In the growth of the beard, whiskers, and mustachios, it is unfailing in its stimulative operation. For children it is especially recommended as forming the basis of a beautiful head of hair, while its introduction into the Nursery of Royalty, and the numerous testimonials constantly received of its efficacy, afford the best and surest proofs of its merits.—Price 3s. 6d. and 7s.; Family bottles (equal to four small), 10s. 6d.; and double that size, 21s.—CAUTION. On the wrapper of each bottle are the words, "ROWLANDS' MACASSAR OIL," &c., in white letters, and their signature, "A. ROWLAND & SONS," in red ink.—Sold at 20, Hatton Garden, London, and by Chemists and Perfumers.

HEALTH WITHOUT PHYSIC.—Nervousness effectually cured by a novel and most successful mode of treatment, discovered in America. The most convincing proof of the efficacy of this wonderful remedy, with other details, will be sent to any address on receipt of one stamp.—Address, Mr. HILL, 27, Alfred Place, Store Street, London, W.C.

ASTHMA.—DR. LOCOCK'S PULMONIC WAFERS give instant relief, and a rapid cure of asthma, consumption, coughs, and all disorders of the breath and lungs. They have a pleasant taste. Price 1s. 1½d., 2s. 9d., and 11s. per box. Sold by all druggists.

HOLLOWAY'S OINTMENT. DETERMINATION OF BLOOD TO THE HEAD.—Flushing, Palpitation, and Shortness of Breath are cured by these grand regulators of the heart's impulse. Under HOLLOWAY'S specifics the current of blood becomes steady and unchanged by the passing thought; hence the suffusion of chest and cheeks is avoided, and nervous embarrassment prevented. They, in like manner, remove excessive sensibility, so often the opponent to the ease and grace inherent in the healthful and strong-nerved frame, and eradicate the doubts of the nervous. In intellects declining from intense study, free living, or over-anxiety, no equal remedy is attainable. Without exaggeration, they give muscular energy to the paralysed, and ease to the pained.

NEW SPORTING WORK, ILLUSTRATED BY LEECH.
On June 30th was published, No. I of
"PLAIN OR RINGLETS?" By the Author of "Sponge's Tour," "Ask Mamma," &c.
To be completed in 13 Monthly Numbers, price 1s. each, uniform with "Handley Cross," &c. With Coloured Illustrations and Woodcuts, by JOHN LEECH.
BRADBURY & EVANS, 11, Bouverie Street.

Parts I. and II. now ready, to be completed in Eight Parts, price 2s. 6d. each, plain; 3s. 6d. each, coloured.
FARM INSECTS:
BEING THE
NATURAL HISTORY AND ECONOMY OF THE INSECTS INJURIOUS TO THE
FIELD CROPS OF GREAT BRITAIN AND IRELAND,
AND ALSO
THOSE WHICH INFEST BARNS AND GRANARIES.
WITH SUGGESTIONS FOR THEIR DESTRUCTION.
By JOHN CURTIS, F.L.S.
Honorary Member of the Ashmolean Society of Oxford, and of the Entomological Society of France;
Corresponding Member of the Imperial and Royal Georgofili Society of Florence, of the Academy of Natural Sciences of Philadelphia, &c.
ILLUSTRATED WITH MANY HUNDRED FIGURES ON STEEL AND WOOD.
BLACKIE & SON, Warwick Square, City, London; and all Booksellers.

A NEW EDITION, REVISED AND ENLARGED.
Next week will be published,
ADVANCED TEXT-BOOK OF GEOLOGY: Descriptive and Industrial. By DAVID PAGE, F.G.S.
Second Edition, with numerous Illustrations, Glossary of Scientific Terms, and Index. Crown Octavo, price 6s.
WILLIAM BLACKWOOD & SONS, Edinburgh and London;
Of whom may be had by the Same Author,
INTRODUCTORY TEXT-BOOK OF GEOLOGY. With Illustrations and Glossarial Index. Third Edition, price 1s. 6d.

TO BE SOLD (to pay 15 per cent.), the LEASE of 20 years of a good PRODUCTIVE GARDEN, with Green and Hothouses, a short distance from London.—For particulars and price, address F. G., Gregory's Tea Warehouse, 23, Shoreditch, London.

TO BE LET, BRISTOL NURSERY GROUNDS, Kemp Town, Brighton. These Gardens are now to Let for occupation with immediate possession.—Any person desirous of treating for the same may obtain particulars and permission to view the grounds on application to Mr. R. W. LUCAS, 20, Great Marlborough Street, London, W.; and of Mr. A. CHANDLER, Horticultural Valuer, 28, Priory Road, Wandsworth Road, S.

A BARGAIN.
TO BE LET, with immediate possession, a SMALL NURSERY, with Greenhouse and Pits, and well stocked with Flowers and Plants in vigorous growth, with Peat Loam, Manure, and other requisites attached, for the small sum of 20l.—Apply to B. H., 19, Powis Street, Woolwich.

TO BE DISPOSED OF, A SMALL NURSERY BUSINESS, together with Out-door Work attached. The Nursery is well stocked with Evergreens, Trees, and Shrubs suitable for Autumn Planting and everything necessary for the Trade. The Stock, Glass, and Tools can be had for a fair valuation. This is an opportunity seldom to be met with by Gentlemen's Gardeners wishing to set up in business. For all not exceeding 100l.—B. BLUMFIELD, 18, Upper North Place, Gray's-inn Road, near Guildford Street, N.

TO NURSERYMEN AND OTHERS.
TO BE DISPOSED OF, AN OLD-ESTABLISHED NURSERY, of about 8 acres, adjoining a very populous and improving town, and close to the North-Western Railway station. The Vineries, Greenhouses, Shop, &c., are of recent erection, and arranged with every convenience. The Stock is in a flourishing condition, being young, healthy, and in good saleable order, comprising a general assortment of Evergreen and Ornamental Trees, Shrubs, Fruit Trees, Greenhouse and Miscellaneous Plants. The Grounds are ornamental and most eligibly situated, having an excellent frontage on the most leading thoroughfare, and in every way suitable to carry on a very extensive business.—Address, P. G. A., Messrs. Noble, Cooper, & Bolton, Seedsmen, 152, Fleet Street.

TO SEEDSMEN, &C.
TO BE SOLD, a compact BUSINESS in the above line (several years established), with good connections, and capable, with industry and attention, of great improvement. A Nursery and Florist business is attached, which may (if desired) be purchased with it; or, to a person acquainted with its several departments, of persevering habits, and good moral character, a Partnership would not be objected to. The locality is proverbial for its health and beauty.—For further particulars apply by letter to Z. Z., 6, Trafalgar Place, Northam, Southampton.

FARM IN HAMPSHIRE TO BE LET
BY TENDER FOR A TERM OF YEARS FROM MICHAELMAS NEXT.
TO BE LET, A SHEEP AND CORN FARM, with Chalk Subsoil, containing about 657 acres, and situated within five miles of the important market towns of Winchester and Romsey. The proprietors do not bind themselves to accept the highest or any Tender.—For further particulars and to view, apply to Mr. HUGH RAYNBIRD, Land Agent, &c., Hackwood, near Basingstoke, to whom Tenders are to be addressed on or before 10th August next.

HAMPEN ANNUAL RAM SALE, 1859.
T. BEALE BROWNE, Esq., has fixed MONDAY, July 18th, for the Sale by Auction of about 60 COTSWOLD SHEARING RAMS, and Three or Four OLDER SHEEP. Mr. BEALE BROWNE will be happy to see his numerous Friends and Sheep Breeders generally upon this occasion. The Sale will commence at 4 o'Clock. JAMES VILLAR, Auctioneer.
N.B.—This Flock took 24 Prizes last year, and this year has taken Three First Prizes at Dublin, Three First Prizes at the Bath and West of England Show, and Two First Prizes at Oxford. Hampen is 8 miles from Cheltenham, 13 from Cirencester, and 2 from Andoversford.

GREEN'S Unrivalled PATENT GRASS CUTTING, COLLECTING, and ROLLING MACHINES

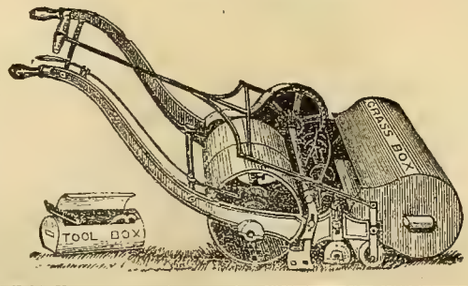
HAVE PROVED TO BE SUPERIOR BY THE APPOINTED JUDGES TO ALL OTHERS IN EVERY CASE OF COMPETITION.

GREEN'S PATENT HAND MACHINE.

LIST OF PRICES.

To cut 14 inches	£6 0 0
To cut 16 inches	6 10 0
To cut 18 inches (for one person)	7 0 0
To cut 20 inches	7 10 0
To cut 22 inches	8 0 0
To cut 24 inches (for two persons) ...	8 10 0

If with Box and Tools for sharpening and keeping the Machine in order, 5*s.* extra; with Guard for preventing accidents and keeping the wheels clean, 5*s.* extra.

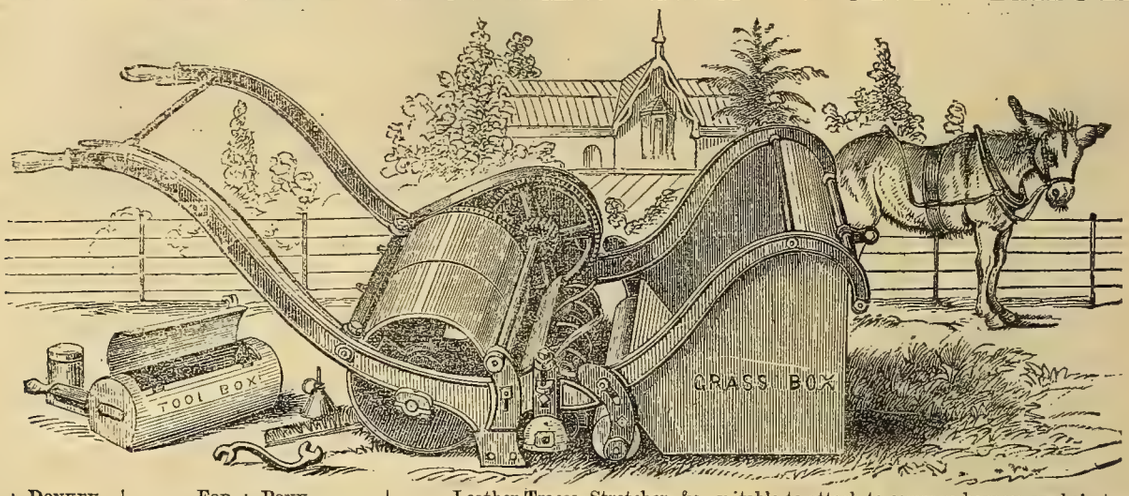


Royal Dublin Society's Horticultural Show, June 15.

Public Trial of Lawn Mowing Machines on the Grounds or the Trinity College, Dublin. The appointed Judges for the Horticultural Implement department were Sir George Hodson, Bart.; Henry L. Fry, Esq., Westmorland Street; and William Kelly, Esq., Portrane, when they unanimously declared GREEN'S PATENT to be the best in all points, and recommended a First Prize to be given for this Machine.

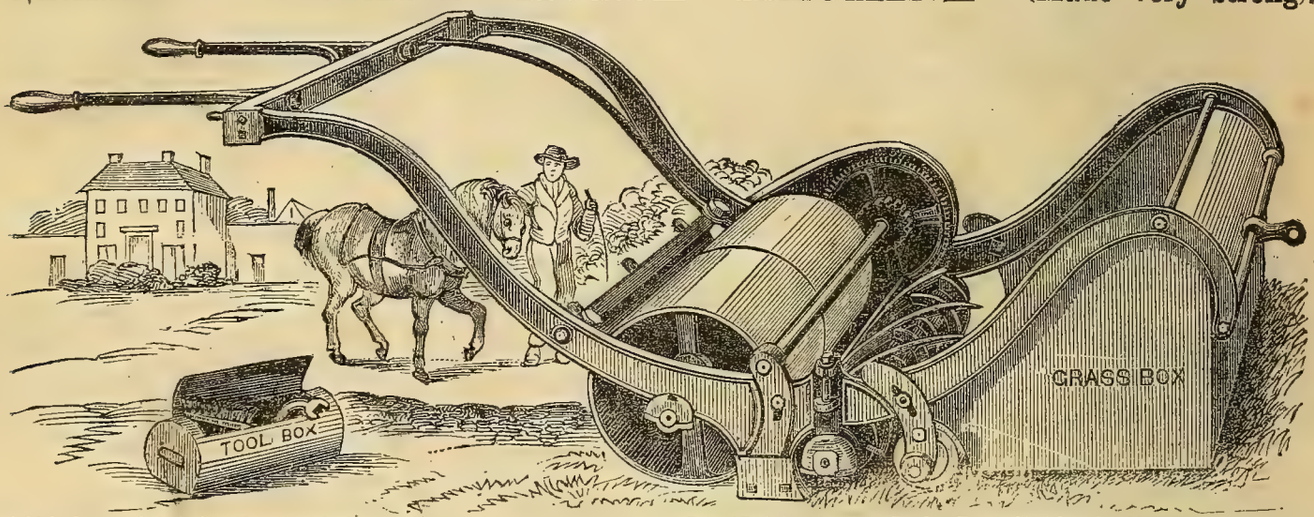
At the Leeds Horticultural Fête in the Kirkstall Abbey Grounds, June 24, a Prize of Two Pounds was awarded by the Judges, who spoke highly of the superiority of GREEN'S Patent Lawn Mowing Machine above all others, and which Machines in all cases of competition have invariably been proved the best by the appointed judges.

GREEN'S PATENT DONKEY AND PONY MACHINE.



Suitable for a Donkey.	For a Pony.	
To cut 24 inches ... £10	To cut 30 inches ... £15	Leather Traces, Stretcher, &c., suitable to attach to common harness or chain traces, 7*s.* 6*d.*
To cut 26 inches ... £11	Box, Tools, &c., 6*s.* 6*d.* extra.	Leather Boots, suitable for Donkey's feet, 16*s.*; ditto for a Pony, 20*s.* per set of four.
		Guard for covering Wheels, 5*s.* extra.

GREEN'S PATENT HORSE MACHINE (Made very strong).



To cut 30 inches ... £18	To cut 42 inches ... £24	Box of Tools 7*s.* 6*d.* extra. Leather Traces, Stretcher, &c., 10*s.*
To cut 36 inches ... £21	To cut 48 inches ... £27	Boots, per set of four, for Horses' feet, to prevent injury to Lawns, 24*s.* Guard for Wheels, 5*s.* extra.
		The above are Nett Cash prices, delivered at any of the principal Railway Stations in England.

TRIAL at the LONDON HORTICULTURAL SOCIETY'S GARDENS, CHISWICK, June 5, 1857. FOUR COMPETITORS.

First trial on level ground, second do. on undulated, third do. on intricate places around trees, &c., when GREEN'S PATENT was unanimously declared to be the best in each trial by Colonel Challoner, Dr. Lindley, and G. M'Ewen, Esq., the appointed Judges.

See the *Gardeners' Chronicle* of May 22, 1858, p. 423, under the heading of "Garden Memoranda."

"LONDON HORTICULTURAL GARDENS, CHISWICK.—The Grass in the Arboretum and elsewhere is in excellent condition; it is kept in order by means of one of GREEN'S 2-feet Mowing Machines, which does its work very satisfactorily, and, compared with the scythe, effects a saving of at least one-half."

Extract from London *Times* of June 8, and *Gardeners' Chronicle* of June 12, 1858.

"TRIAL OF MOWING MACHINES.—A considerable number of various sizes having been brought to the ground it was agreed that the trial should take place between One Hand Machine of each exhibitor, as nearly as possible of uniform size and worked by themselves, or their men. The ground to be worked was determined by lot, the pieces having been previously selected of as uniform quality as possible. After trials on level ground and round trees, the Judges, Colonel Challoner and Mr. Edward Easton, declared GREEN'S Patent to be the best.

(Signed) "C. B. CHALLONER, EDWARD EASTON, Judges."

THOS. GREEN respectfully informs the Nobility, Gentry, Gardeners, Amateurs, and others, that upwards of Six Hundred of these Machines were sold in 1857, and to show the increasing demand, above Nine Hundred were sold last season—they have proven to be the best in all cases of competition, are entirely remodelled, and all the little defects pointed out by the Judges last year are now rectified. The Patentee now considers the Machines as near perfection as possible. Although the Machines have been so much improved, at a great additional cost, no extra charge will be made, excepting for a neat Guard, which is placed over the wheels to keep them clean, and to prevent breakage or accidents, which will be 5*s.* extra to parties requiring them.

☞ The Machines are warranted to give satisfaction, or may be at once returned by the party paying the carriage back to Leeds. The Patentee has spared neither time nor expense in producing the best and cheapest Mowing, Collecting, and Rolling Machines ever brought before the public. Hundreds of Testimonials (unsolicited) may be seen, and references given with regard to the superiority of the Machines, by applying to the Patentee. GREEN'S PATENT LAWN MOWERS may be seen daily working at the Crystal Palace, Sydenham, and every information may be obtained of Mr. ROSE, Manager of the Agricultural Department; and also of

T. GREEN, Patentee and Sole Manufacturer, Smithfield Iron Works, Leeds, Yorkshire, & 2, Victoria St., bottom of Holborn, London;

or of THOMAS KENNAN AND SONS, Agents, Dublin, where all inquiries will be duly answered. Repairs done at any of these Establishments.

N.B. The Patentee having made extensive alterations, additions, and improvements in his Factory and Machinery, is now prepared to send Machines off on receipt of order.

Printed by WILLIAM BRADBURY, of 13, Upper Woburn Place, and FREDERICK MULLETT EVANS, of No. 20, Queen's Road, West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and published by them at the Office, No. 5, Upper Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—SATURDAY, July 9, 1859.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 29.—1859.] SATURDAY, JULY 16. {Price Fivepence. STAMPED EDITION, 6d.

INDEX.

Agri. Society's meeting..609 b—610 b
Beecher's Fruit, Flowers, &c., rev. ..... 607 c
Ceanothus Veitchianus..... 604 b
Crops, grain..... 610 a
— appearances of..... 610 a
Dipladenias ..... 605 b
Farfugium grande ..... 605 b
Fish and filtered water..... 606 a
Gishurst Compound ... 605 a—606 a
Grape, Golden Hamburgh .... 606 b
Insects and Gishurst Compound .....605 a—606 a
Linum grandiflorum ..... 606 a
Luminosity, plant ... . 604 c
Mealy bug and Gishurst Compound ..... 606 a
Mowing machines ..... 611 b
Muscari, new ..... 604 c
Nectarine disease ..... 604 a
Peach disease ..... 604 a
Picea nobilis ..... 605 a
Plants, new ..... 604 b
— luminosity in ..... 604 c
Ploughing, trials of ..... 611 b
Pruning ..... 608 a
Rams, Webb's ..... 610 a
Rhododendron soil ..... 605 b
Royal Bot. Society ..... 606 b
Steam cultivators ..... 610 c
Strawberries and seaweed .... 605 b
— May Queen ..... 605 c
— from seed ..... 608 c
Strawberry runners ..... 606 a
Vegetation on human bones .. 605 b
Vine borders, treatment of .... 604 c
Water, bad, ... 604 a
— spongilla in ..... 604 a
— filtered *v.* fish ..... 606 a
Weather, the..... 603 c

HORTICULTURAL SOCIETY.—Notice is hereby given that the next ORDINARY MEETING FOR ELECTION OF FELLOWS AND BALLOT FOR PLANTS will be held in the Rooms of the Society of Arts, in the Adelphi, on TUESDAY, July 19; the Chair to be taken at 11 o'clock, A.M. On this occasion a Third Ballot for Plants will take place.

LIST OF PLANTS FOR BALLOT, JULY 19.

100 "NERGALI," or HILL BAMBOO OF THE PUNJAUB. Hardy herbaceous plant.
50 CUPRESSUS MACNABIANA. Hardy tree.
50 CUPRESSUS LAWSONIANA. Hardy tree.
50 CUPRESSUS TORULOSA. Hardy tree.
50 ABIES SMITHIANA. Hardy tree.
30 PINUS PATULA. Half-hardy tree.
20 PINUS DON PEDRI. Hardy (?) tree.
20 PINUS BRUTIA. Hardy tree.
80 STATICE BRASSICÆFOLIA. Greenhouse herbaceous plant.
30 HESPEROMELES, SP. from Mexico. Half-hardy shrub.
40 BERBERIS, SP. from Pichiucha. Half-hardy shrub.
20 TECOMA LATROBEI. Greenhouse climber.
40 SPIRÆA CALLOSA. Hardy shrub.
30 SCLEROTHAMNUS DIFFUSUS. Greenhouse shrub.
30 BOUVARDIA LONGIFOLIA. Greenhouse shrub.
40 CALLISTEMON RUGULOSUM. Greenhouse shrub.
40 BUDDLEA, SP. from Peru. Greenhouse shrub.
40 PENTSTEMONS, SP. from Peru. Hardy herbaceous plants.
50 SEEDLING CAMELLIAS.
50 BAMBUSA GRACILIS. Hardy herbaceous plant.
40 CUPRESSUS GOVENIANA. Hardy tree.
30 CUPRESSUS CASHMERIANA. Hardy tree.

Fellows of the Society desirous of obtaining any of these plants are requested, if they are subscribers of 4 guineas a year, to name the *four* sorts they would prefer; or, if subscribers of 2 guineas a year, to name *two* sorts. Should there be more applications for any particular plant than the number prefixed to its name in the List, a Ballot will then take place to determine which applicants are to be supplied. The arrangements for conducting this Ballot render it necessary that the names of the plants to be drawn for, should be sent to the Office of the Society, 8, ST. MARTIN'S PLACE, W.C., at the latest by Saturday, July 16.

HORTICULTURAL SOCIETY.—Notice is hereby given, that a SPECIAL GENERAL MEETING of this Society will be held in the Rooms of the Society of Arts, John Street, Adelphi, on WEDNESDAY, July 20, at 11 o'Clock in the forenoon, for the purpose of further considering an arrangement with her Majesty's Commissioners of the Exhibition of 1851 for Leasing to the Horticultural Society 20 Acres of ground at Kensington Gore.—8, St. Martin's Place, W.C.

SAFFRON WALDEN HORTICULTURAL SOCIETY.—The Autumn Show of the above Society will take place on FRIDAY, September 9, when, in addition to the usual Prizes and Subscription Stakes, a Silver Cup, value Five Guineas, will be awarded for the best 12 Dahlias (Selfs). Open to All England.

All Competitors must enter their names and pay the entrance money (5*s.*) on or before August 12.

For further particulars apply to THOS. D. GREEN, Treasurer, London Road, Saffron Walden.

THE ASYLUM CHAPEL—A GRAND FLORAL AND HORTICULTURAL SHOW will be held at Blisworth Gardens on THURSDAY, July 28, in aid of the Funds for erecting a New Chapel at the Lunatic Asylum, Northampton, under the special patronage of

THE RIGHT HON. THE EARL SPENCER.
THE RIGHT HON. THE LORD SOUTHAMPTON.
THE HIGH SHERIFF OF THE COUNTY.
THE REV. SIR G. S. ROBINSON, BART.
THE WORSHIPFUL THE MAYOR OF NORTHAMPTON,
&c. &c.

By the permission of Colonel the Right Hon. Cecil Forester, the splendid BAND of the Royal Horse Guards Blue will perform during the Exhibition; and also by the permission of Lieut.-Colonel Lord Burghley and the Officers of the Northamptonshire Militia, the BAND of that Regiment will perform on the occasion.

The London and North-Western Railway Company having very handsomely offered to convey the Plants from the Northampton Station to Blisworth free of charge, all Plants intended for exhibition must be in the Station Yard at Northampton by half-past 6 o'clock on the morning of the Show.

Rule I. requires that every exhibitor must send in a written statement to Mr. W. J. PEIRCE, Auctioneer, Derngate, Northampton, on or before Monday, July 25, specifying the Classes and Letters he intends to exhibit in, and the probable number of square feet his Plants will occupy.

Schedules of Prizes, with the Rules and Regulations, may be had on application to Mr. PEIRCE.

Special Trains will leave the Northampton Station every half hour during the Exhibition.

Prices of admission:—From half-past 1 to half-past 3, 3*s.*; from half-past 3 to 5, 2*s.*; from 5 to 6, 1*s.*; from 6 to 7, 6*d.*

Family Tickets to admit Four may be obtained of Messrs. ABEL DORMAN, or HARRIS, Stationers; and of Mr. W. J. PEIRCE, Auctioneer, Northampton, on or before Saturday, July 23, at the following reduced prices:—From half-past 1 to half-past 3, 10*s.*; from half-past 3 to 5, 6*s.* 6*d.* each.

H. O. NETHERCOTE, Honorary Secretary.

THIRD GRAND FLORAL FETE will be held in the new Town Hall, Leeds, on SEPTEMBER 9 and 10, when PRIZES to the amount of 100*l.* will be given. Best 36 DAHLIAS, 10*l.*—Schedules may be had of
61, Briggate, Leeds. T. D. APPLEBY.

TO THE MEMBERS OF THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—HENRY MCMILLAN, on behalf of himself and MARIA SQUIBES, most respectfully returns sincere thanks for their very liberal assistance in so successfully carrying her election.—Westerham, July 16.

TO THE SUBSCRIBERS OF THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—MY LORDS, LADIES, AND GENTLEMEN,—JAMES SMITH, of Brighton, begs respectfully to return his most sincere thanks to the members of the above Society who so kindly tendered their votes in his favour on the last and former elections, of which he will ever have a grateful remembrance.

HOLLYHOCK SEED.

A. PAUL AND SON beg to offer packets of Seed, saved from their unrivalled collection, free by post at the following rates:—

	s.	*d.*
12 separate packets, saved from 12 good and distinct named sorts, containing about 500 seeds	5	0
Mixed seed, first quality	2	6
Second quality, per packet	1	0

N.B. June and July are the best months for sowing out of doors to bloom next year.—Nurseries, Cheshunt, Herts.

MAJOR'S UNRIVALLED HALF-SHRUBBY CALCEOLARIA SEED.

MR. HENRY MAJOR, Knosthorpe, near Leeds, begs to announce that his new Seed of the above (in splendid colours and of great variety) is just ripe, and may be had in packets at 2*s.* 6*d.* each, or three for 5*s.*, Post free. Penny postage stamps are respectfully requested in payment.

CHOICE CALCEOLARIA AND CINERARIA.

J. HENCHMAN is now sending out New Seed of his well-known strain of CALCEOLARIAS and CINERARIAS, in packets at 2*s.* 6*d.* each.—Edmonton, London.

CINERARIA, CALCEOLARIA, AND PRIMULA.

F. AND A. SMITH are now sending out SEED of their splendid varieties of the above in sealed packets, without which none are genuine, at 1*s.*, 1*s.* 6*d.*, 2*s.* 6*d.*, and 5*s.* each. To be had also of most respectable Nurserymen and Seedsmen in the Kingdom.—Dulwich, Surrey, S.

CINERARIA, HERBACEOUS CALCEOLARIA, AND HALF SHRUBBY DITTO SEED.—These have been saved from Turner's most beautiful varieties; in 1*s.* and 2*s.* 6*d.* packets. Primula and Hollyhock, from the newest and handsomest varieties, 1*s.* per packet. Agents for F. & A. Smith's splendid Cineraria, in 1*s.* 6*d.*, 2*s.* 6*d.*, and 5*s.* packets; also agents for Dobson & Son's splendid Calceolaria, in 1*s.* 6*d.*, 2*s.* 6*d.*, 3*s.* 6*d.*, & 5*s.* packets.—Catalogues of the newest Flower Seeds, and newest Dutch and Cape Bulbs, sent post-paid.
BUTLER & MCCULLOCH, Seedsmen, Covent Garden Market.

ROSES.

GEO. CLARKE begs to invite his friends and the public generally to an inspection of his superb Collection, extending over 10 acres of ground, and which are in great beauty.

Amateurs and others are reminded that the blooming season is the best time for orders to be given, as a better selection as to colour, form, &c., can then be made.

Fine collections of Evergreens, Fruit Trees, Greenhouse Plants, and every article in the trade.

Omnibuses from the City and West End every 10 minutes pass the Nursery.—Streatham Place, Brixton Hill, S.

DEODAR, JUNIPERUS EXCELSA, AND PINDROW CEDAR SEEDS.—A few more lbs. remaining at the following low prices:—Deodar, 2*l.* the 10 lbs. packet, or 5*s.* the single lb.; Juniperus, 10*s.* the lb.; Pindrow, 8*s.* the lb. —Apply to E. GILBERT, 110, Warwick Street, Eccleston Square.

MUSCAT HAMBURGH GRAPE.

LUCOMBE, PINCE, AND CO. have now ready to send out fine strong healthy VINES, raised from eyes, 6 to 9 feet long, of this celebrated new Grape, together with all the leading kinds in cultivation, at the undermentioned prices, and having a large experimental Vinery, they have had the opportunity for several years of proving their Stock, and can therefore warrant all the sorts true to their names:—
Strong Vines .. 5*s.* 0*d.* each | Very large extra-sized Fruiting } 10*s.* 6*d.* each
Extra strong .. 7 6 ,,
All are fit for immediate planting, and being well established in pots, can be packed securely, and safely sent to any distance.
Exeter Nursery, Exeter.

GRAPE VINES FOR PRESENT PLANTING.

MESSRS. ARTHUR HENDERSON AND CO. can now supply LARGE and SMALL plants (at reduced prices) of the
MUSCAT HAMBURGH GRAPE;
Also the
STOCKWOOD GOLDEN HAMBURGH,
and all the best leading Grape Vines of the day, suitable for planting at the present season. Prices to be had of them on application.—Pine Apple Place, Edgware Road, July 16.

BUCKLAND SWEETWATER GRAPE.

MESSRS. IVERY AND SON, of Dorking and Reigate Nurseries, feel great pleasure in introducing this fine early WHITE GRAPE, and beg to intimate that they will commence sending out Plants on October 3, in strict rotation, as the orders are received. Price 21*s.* and 31*s.* 6*d.* each.

It received the Premium offered by the Pomological Society for the best Seedling Grape not having a Muscat flavour, Sept. 9, 1858; also an Extra Prize at Crystal Palace Exhibition, Sept. 8 and 9, 1858; and it is recommended by many Gardeners who have seen it growing and tasted the fruit. For the information of those who have not seen this Grape, J. I. & SON beg to say that they have issued a Circular containing the various periodical reports, and also the names of the Gardeners by whom it is recommended, which they will be pleased to forward on application.—Dorking Nursery, July 16.

SEEDS FOR PRESENT SOWING.—SEE MESSRS. SUTTON'S ADVERTISEMENT in another page, headed "Royal Berkshire Seed Establishment."

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY LIMITED supply every requisite for the Farm and the Garden.
Registered Offices, Union Road, Plymouth.

LAWNS WITHOUT MOWING.—SPERGULA PILIFERA.

J. A. SUMMERS begs to inform the Public that he himself is now prepared to send out established plants of the above, taken from the lawn at Forest Hill, at 4*s.*, 3*s.*, 2*s.* (turned out of pots full of roots), and 1*s.* per dozen, according to their respective sizes. A specimen showing its true character post free, 1*s.*
Howard Park Nursery, Perry Hill, Sydenham.
For lawns that burn up in summer this plant is particularly recommended.

HOLCUS SACCHARATUS, or North China Sugar-Cane.—Pamphlet, "A Visit and a Plant;" the only English authority on the Cultivation of the above. Post free 6*d.* Prices of Seed on application. Samples 6*d.* Four varieties of Holcus remitted free by post on receipt of 10*s.*
JOHN W. CLARKE, Whittlesea, Cambridgeshire.

KEMP'S NEW EARLY INCOMPARABLE CABBAGE.—This excellent variety may be had in sealed packets, at 1*s.* each, of Messrs. HURST & M'MULLEN, 6, Leadenhall Street, London; Messrs. NOBLE, COOPER & BOLTON, 152, Fleet Street; Mr. G. W. DIXON, 48 A, Moorgate Street, or free by Post for 13 postage stamps of E. P. DIXON, 57, Queen St., Hull.

CABBAGE SEED.

CATTELL'S "DWARF BARNES," AND CATTELL'S "DWARF RELIANCE," may be had as usual by post for 12 penny stamps per packet; the former containing 1 oz., and the latter ½ oz. May be sown as early as the middle of July, and will not run to seed the following spring.
Seed Establishment, Westerham, Kent.

SUPERB CAPE OR GIANT AND BROMPTON STOCKS.

CHARLES ALEXANDER, SEEDSMAN, Edinburgh, can supply the following, which are highly recommended. Sow any time this month. Post free on receipt of Stamps:—
1 packet Young's Scarlet Cape or Giant Stock .. 1*s.*
1 packet Young's White Cape or Giant Stock .. 1*s.*
1 packet Young's Scarlet Brompton Stock .. 1*s.*
1 packet Young's Dark Bloody Wallflower .. .. 1*s.*

FERN CATALOGUE.

ROBERT SIM'S NEW DESCRIPTIVE AND PRICED CATALOGUE, No. 6 (62 pages) of his COLLECTION of BRITISH AND EXOTIC FERNS, can be had, post free, for 8 stamps. Gratis to all previous purchasers of Ferns.
Nursery, Foot's Cray, Kent, S.E.

AZALEA INDICA "FLOWER OF THE DAY" (IVERY'S).—This fine variety will be ready for delivery the last week in June. It is a decided improvement on Iveryana; has been exhibited only three times, and gained two Certificates and an extra Prize. For description see Catalogue, which will be sent post free on application. Price, per plant, 21*s.* each.—Dorking Nursery, July 16.

WHEELER'S "SIR COLIN CAMPBELL" FUCHSIA, the finest double Fuchsia ever offered.—Three months having elapsed since the above was first sent out, GEORGE WHEELER begs to announce he is prepared to offer to the Trade fine healthy plants about 1 foot high, bushy and showing bloom, at 30*s.* per dozen. Prepaid orders only can be executed at the forementioned low rate.
Warminster Nursery, July 16.

ARAUCARIA IMBRICATA.

YOUELL AND CO. beg to inform the Trade they have to offer a fine and healthy stock of the above in 1 year old plants.

GLADIOLUS BRENCHLEYENSIS.—An extensive stock of large flowering Bulbs of this magnificent Gladiolus, the colour of which is vermilion scarlet, the best and brightest variety known. Prices of the above on application.
Royal Nursery, Great Yarmouth.

THE MAY QUEEN STRAWBERRY—the earliest of all Strawberries.—Fine well-rooted plants can now be supplied at 12*s.* per dozen; 1*l.* per 25; 1*l.* 15*s.* per 50; 3*l.* per 100. For a full description see an article by W. Roden, Esq., M.D., Kidderminster, June 25, p. 542 of the *Gardeners' Chronicle*. —WILLIAM J. NICHOLSON, Egglescliffe, Yarm, Yorkshire.

ALL Persons having CLAIMS upon the ESTATE of THOMAS JACKSON AND SON, NURSERYMEN, &c., Kingston, Surrey, previous to May 19, 1859, are requested to forward them immediately to the Executors of the late THOMAS JACKSON, that they may be examined and discharged; and all Persons INDEBTED to the same Estate are requested to forward the amount of such Debts to the said Executors.
GEORGE JACKSON, JAMES HATT, HENRY LAMB, } Executors.
Kingston, Surrey, July 16.

HORTICULTURAL VALUATIONS.

MR. ALFRED CHANDLER (of the late firm of Chandler & Sons, Vauxhall), begs to inform his friends that he is at liberty to undertake the valuation of Collections of Plants, Nursery Stock, Horticultural Buildings, &c.

Mr. A. C. is also open to engagements as Censor at Horticultural Exhibitions, in which capacity he has had long and extensive experience.—28, Priory Road, Wandsworth Road, S.

VASES, PEDESTALS, SUNDIALS, FOUNTAINS, FLOWER BOXES, JARDINETS, FERN CASES, BALUSTRADES, EDGINGS AND CURBS FOR FLOWER BORDERS, SEATS, &c., in Imperishable Siliceous Stone, at reduced prices, for the adornment of the Villa Garden, the Mansion Grounds, or the private or public Park.

For Priced Illustrations apply to FREDERICK RANSOME, at the Show Rooms, Cannon Row, Westminster, S.W., or Patent Stone Works, Ipswich.

GLASS PRESERVE JARS.

	Without Lids.	With Lids.
3 inches diameter	.. 0 4½d. ..	0 6½d. each
4 ,, ,,	.. 0 6 ..	0 9 ,,
5 ,, ,,	.. 0 8 ..	0 11 ,,
6 ,, ,,	.. 0 10 ..	1 2 ,,
7 ,, ,,	.. 1 0 ..	1 4 ,,
8 ,, ,,	.. 1 4 ..	1 8 ,,
9 ,, ,,	.. 1 8 ..	2 2 ,,
10 ,, ,,	.. 2 0 ..	2 8 ,,

Intermediate Sizes in proportion.

CUCUMBER GLASSES.

24 inches long	.. 2s 0d.	16 inches long ..	1s. 4d.
22 ,,	.. 1 10	14 ,, ..	1 2
20 ,,	.. 1 8	12 ,, ..	1 0
18 ,,	.. 1 6	Made to any length.	

WASP TRAPS, 3s. 6d. per dozen.

AGENTS FOR
HARTLEY'S PATENT ROUGH PLATE GLASS.
PAINTS.
Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, &c.
JAMES PHILLIPS AND CO.,
130, Bishopsgate St. Without, London, E.C.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz SHEET GLASS of British Manufacture at prices varying from 2d. to 3d. per square foot for the usual sizes required, many thousands of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES, and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

HORTICULTURAL GLASS—JUNE TARIFF.

THOMAS MILLINGTON'S reduced Tariff of GLASS, &c.

6 by 4, 7 by 5, 8 by 6, 9 by 7 } 16 oz. to the foot, 11s. 6d.
6½ by 4½, 7½ by 5½, 8½ by 6½, 9½ by 7½ } per 100 feet.

In 100 boxes,—4ths quality, 12s. 6d. ; 3ds do., 14s. 4d.

10 by 8, 12 by 9, 12½ by 10¼, 14½ by 10½, 13 by 11
10½ by 8¼, 12½ by 9¼, 13 by 10, 15 by 10, 13½ by 11½
11 by 9, 13 by 9, 13½ by 10½, 12 by 11, 14 by 11
11½ by 9¼, 12 by 10, 14 by 10, 12½ by 11½ .. ..

20 by 12	per 100 feet	16 oz.	21 oz.
20 by 13	Common ..	16s. ..	24s.
20 by 14	Superior .	18s. ..	27s.
20 by 15			

All Boxes included.

Orchard House sizes as supplied to Mr. Rivers.

Hartley's improved Rough Plate Glass from ⅛ to ⅜ in thickness.

Coloured Glass in great variety, at 9d. and 1s. per foot.

Paints, Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, Lamp Glasses, &c.

87, Bishopsgate Street Without, same side as Eastern Counties Railway.

READY-MADE GREENHOUSES FOR SALE.—A Span Roof, 24 feet by 14 feet, 30l. ; Lean-to, 23 feet by 12 feet, 28l. ; Lean-to, 30 feet by 15 feet, with capital stage, &c., 55l. The above may be inspected on the premises of the builder, JOSEPH SMITH, New Road, Hammersmith.

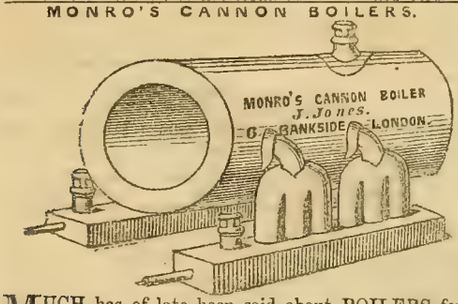
N.B. Houses substantially built from 1s. per square foot ; 2-inch light four times painted, 8d. ; unglazed, 4d. per square foot. A quantity ready made.

HORTICULTURAL BUILDINGS AND HEATING BY HOT WATER.

JOHN R. PEILL, 17, New Park Street, Southwark, Manufacturer of every description of Buildings for Horticultural purposes, and Inventor of the Improved Conical Boiler for heating the same, is prepared to undertake works of any magnitude, and refers among others to the celebrated range of FORCING HOUSES at HER MAJESTY'S GARDENS, FROGMORE, and at SIR ROBERT PEEL'S, DRAYTON MANOR, constructed under the superintendence of his Manager, MR. JOHN JONES ; and also to his BOILERS fixed at the CRYSTAL PALACE, the ROYAL BOTANIC GARDENS, REGENT'S PARK, and KEW, and at several hundreds of the Nobility's seats, Public Establishments, and Manufactories in London and the provinces. J. R. P. also manufactures every description of Iron Roofs, Iron Houses, and Iron Fencing, plain and ornamental. Strong Iron Hurdles for Sheep (6 feet long, 3 feet high, with 5 bars), 4s. 3d. each ; ditto for cattle, 4s. 9d. each.

Prices and other particulars forwarded on receipt of one postage stamp.

MONRO'S CANNON BOILERS.



MUCH has of late been said about BOILERS for Heating by Hot Water, but these Boilers have now proved themselves to be the best at present invented. They are adapted for heating every description of building, and are made of various sizes. The Price of the

24-inch Cast Iron is	..£5 10s. 0d. each
24-inch Wrought ditto	6 10 0 ,,
36-inch Cast ditto	8 0 0 ,,
36-inch Wrought ditto	8 10 0 ,,

References to Gentlemen and Nurserymen where these Boilers are now at work. The Cannon Boilers are now kept in stock, and are to be had only of J. JONES, 6, Bankside. Also, every description of Saddle and Cylinder Boilers. Hot Water Pipes and Connections at prices lower than those of any other house in London. Estimates for Hot-water Apparatus erected complete in any part of the country, and an Illustrated Catalogue on application to J. JONES, 6, Bankside, Southwark, London.

SHAW'S TIFFANY is universally acknowledged to be the best, neatest, and cheapest material for shading conservatories, and other Hothouses. Effectually securing Plants from the scorching rays of the sun, without obscuring the light. Also, for protecting the Bloom of Wall Trees from spring frosts, and Fruit from birds and wasps. Sold in pieces.

No. 1.—20 yards long, by 38 inches wide, 5s. per piece.

No. 3.—Double strength, 18 yards long, by 39 inches wide, 7s. 6d. per piece.

No. 4.—Treble strength, 18 yards long, by 39 inches wide, 9s. per piece.

A liberal allowance to the Trade when ten or more Pieces are taken.—JOHN SHAW & Co., Princess Street, Manchester.

FRUIT TREES, RIPE STRAWBERRIES, ETC.

TANNED NETTING for Protecting the above from Frost, Blight, Birds, &c. ; 2 yards wide, 3d. per yard, or 100 yards, 20s. Can be had in any quantity of EATON & DELLER, 6 and 7, Crooked Lane, London Bridge.

TANNED NETTING, for the Protection of Fruit Trees from Frost, Blight, and Birds ; also, for the security of fresh sown seeds, at 1d. per square yard ; 200 yards, 12s. ; 500 yards, 25s ; Scrim Canvas, for wall fruit ; Garden Mats.—At EDDINGTON & Co's., Rick Cloth, Tent, and Waterproof Cloth Manufacturers, 17, Smithfield Bars, City, & Old Kent Rd.

TO WATER GARDENS in the easiest way is by the BEST FLEXIBLE TUBE. Brass Hand Branches, Roses and Jets, Garden Engines, Syringes, &c.—Apply for Illustrated Price Lists to JAMES SHEATH & Co., the Patent Gutta Percha and India Rubber Factory, 35, Old Street Road, E.C.

N.B. The best articles only manufactured.

TO AGRICULTURISTS AND OTHERS.

EDWARDS'S PATENT CANVAS SUCTION AND DELIVERY HOSE are the best and cheapest in use.

EDWARDS'S PATENT CANVAS DRIVING BANDS FOR CHAFF CUTTING AND THRESHING MACHINES, &c.

C. J. EDWARDS's Leather and Canvas Hose and Band Manufactory, 32, Great Sutton Street, Clerkenwell, London, E.C.

MICROSCOPES.

J. AMADIO'S BOTANICAL MICROSCOPES, packed in mahogany case, with three powers, condenser, pincers, and two slides, will show the animalculæ in water, Price 18s. 6d.—Address JOSEPH AMADIO, 7, Throgmorton Street, A large assortment of Achromatic Microscopes.

"It is marvellously cheap, and will do everything which the lover of nature can wish it to accomplish either at home or in the open air."—*The Field*, June 6, 1857.

Just published, 2d Ed., an Illustrated Catalogue, with names of 1500 Microscopic objects, free for 6 stamps.

GENUINE TOBACCO PAPER FOR FUMIGATING.

H. APPLEBY (Foreman to Messrs. Ivery & Son, Surrey), takes this opportunity of informing his patrons and the public that he is now offering the above at a very considerably reduced price. It is now sold in packets of 4 lbs. each, at 1s. 3d. per lb. A liberal discount allowed to the Trade. For testimonials that will guarantee its quality, see *Gardeners' Chronicle*, April 16, p. 338.

Sheet Iron Pots for fumigating, 3s. 6d. each.

N.B. All orders to be accompanied with a Post-office Order, payable to HENRY APPLEBY, Dorking, Surrey.

BARBER'S POISONED WHEAT Kills Mice and Sparrows on the spot.—In 1d., 2d., 4d., and 8d. packets, with directions and testimonials. No risk nor damage in laying this Wheat about. From a single packet hundreds of Mice and Sparrows are found dead. Agents : Barclay & Sons, 95, Farringdon Street ; W. Sutton & Co., Bow Churchyard ; B. Yates & Co., 25, Budge Row, London ; and sold by all Druggists, Grocers, &c., throughout the United Kingdom.

BARBER'S Poisoned Wheat Works, Ipswich, removed from Eye.

KEATING'S PERSIAN INSECT DESTROYING POWDER.

POULTRY, DOGS, AND PLANTS are effectually freed from Fleas, and all other Vermin with which they are infested, by the above Powder, which is quite harmless to animal life. The Farmer, the Gardener, or the Sportsman, will therefore find it invaluable. Bugs, Cockroaches, Beetles, Moths in Furs, and every other species of Insect are also instantly destroyed. In packets post free, for 14, or treble size for 36 postage stamps, by THOMAS KEATING, Chemist, 79, St. Paul's Churchyard, London, E.C. Take notice each genuine packet bears the above name and address. See "THE FIELD," Oct. 2d and 9th, pp 263, 283, and 294.

GLAZIERS' DIAMONDS FOR CUTTING HORTICULTURAL and other GLASS, to be had of the Wholesale Manufacturer, JOHN EDWARDS, 20, Sharp's Alley, West Smithfield, London, E.C. Prices from 10s. to 27s. 6d.

DIANTHUS SINENSIS GIGANTEUS.

The above magnificent JAPANESE PINK can now be supplied in young plants, and in Autumn by Seeds.

GAZANIA SPLENDENS,

A very beautiful orange-yellow flowered plant for flower garden decoration, in groups and beds, will be offered for sale in August. These were exhibited by E. G. HENDERSON & SON, at the Regent's Park Show on July 6, and were universally admired as the finest decorative plants in their respective colours yet introduced.

CALCEOLARIA, CINERARIA, & PRIMULA SINENSIS FIMBRIATA,

Of first quality, in seed packets, 2s. 6d. each.

SPERGULA PILIFERA,

The admirable substitute for Grass, REQUIRING NO MOWING! Seed packets, 6d., 2s. 6d., and 5s.

E. G. HENDERSON & SON, Wellington Nursery, St. John's Wood, London.

CHOICE FLOWERS.

BUTLER & McCULLOCH'S SPRING CATALOGUE OF SEEDS,



ARRANGED on a new and original plan, with copious Descriptive and Cultural Notes, and containing many new and rare species and varieties not found in any other Catalogue, now ready and may be had free and post paid on application.

FLOWER, SHRUB, TREE, and VEGETABLE SEEDS, the crop of 1858, saved with the greatest care, by the most eminent growers.

We may also state that the Sardinian correspondent of Messrs. JAMES CARTER & Co., whose Seeds, especially Carnations and Picotees, have given such universal satisfaction, has transferred the Agency from that firm and appointed us his representative in this country. To meet the growing demand for first class flowers, particularly FLORISTS' FLOWERS, we have adopted our usual maxim of charging the lowest possible prices.

Professor LINDLEY in the *Gardeners' Chronicle* of February 5th, has the following notice of B. & McC.'s Catalogue.

"BUTLER & MCCULLOCH'S (Covent Garden) Spring Catalogue of Choice Flower, Shrub, Tree, and Vegetable Seeds. This list fills 84 closely printed 8vo pages, and is remarkably well got up. It appears that the correspondent in Sardinia, who formerly supplied one of the great London houses with seeds raised in that warm part of Europe, has now transferred what he saves to Messrs. BUTLER & MCCULLOCH. Let us add, that it yields to no Trade List in the abundance of its materials or the excellence of its arrangements."

SPLENDID DOUBLE ITALIAN-SAVED CARNATION AND PICOTEE SEED, IN SEALED PACKETS,

FROM ONE OF THE CHOICEST COLLECTIONS IN EUROPE.

The following collections of Carnations and Picotees have been saved with the greatest care by our Sardinian correspondent, a most successful and distinguished amateur, and only from the most perfect flowers of the newest and handsomest of the English stage varieties, or seedlings from them : they can be confidently recommended to the lovers of this exquisitely beautiful class of plants, as certain to produce at least 80 per cent. of fine double flowers, and with a fair chance of obtaining varieties of the greatest value. The Perpetual or Tree kind is comparatively a new class of Carnations and Picotees ; they bloom beautifully in the open ground, during the whole of the Autumn months ; and, if grown in pots, are highly ornamental in the Conservatory or Greenhouse in Winter and Spring.

CARNATION.

			s.	d.
Self or one-coloured, in 12 beautiful vars.		of 10 seeds each	5	6
Do.	do.	of 5 do.	3	0
Flake or Striped	do.	of 10 do.	6	0
Do.	do.	of 5 do.	3	6
Bizarre or three-coloured	do.	of 10 do.	6	0
Do.	do.	of 5 do.	3	6
Fancy Coloured	do.	of 10 do.	5	6
Do.	do.	of 5 do.	3	6
Yellow Bizarre and Self	do.	of 10 do.	7	0
Do.	do.	of 5 do.	4	0
Yellow Flake	do.	of 10 do.	7	0
Do.	do.	of 5 do.	4	0
Yellow Fancy	do.	of 10 do.	7	0
Do.	do.	of 5 do.	4	0

Choice Mixed, 2s. per packet.—Fine Mixed, 1s. per packet.

Perpetual Self or one-coloured, in 12 beautiful varieties		of 10 seeds each	5	6
Do.	do.	do. of 5 do.	3	0
Perpetual Flake	do.	do. of 10 do.	5	6
Do.	do.	do. of 5 do.	3	0
Pepetual Fancy	do.	do. of 10 do.	5	6
Do.	do.	do. of 5 do.	3	0

Perpetual Choice Mixed, 2s. p. packet.—Fine Mixed, 1s. p. pkt.

CRYPTOMERIA JAPONICA.—An exceedingly Ornamental Coniferous Tree, suitable for Lawns or Pleasure Grounds. Seeds sown in the open ground germinate freely, and make more handsome specimens than "worked" plants, 1s. per packet.

PICOTEE.

			s.	d.
White, margined with various colours, in 12 beautiful varieties		of 10 seeds each	6	0
Do.	do.	do. of 5 do.	3	6
Yellow	do.	do. of 10 do.	7	6
Do.	do.	do. of 5 do.	4	0

Choice Mixed, 2s. per packet.—Fine Mixed, 1s. per packet.

Perpetual, white, margined with various colours, in 12 beautiful varieties of 10 seeds each	6	0
Do. do. 5 do.	3	6
Perpetual, choice mixed, 2s. per pkt. Fine mixed, per pkt.	1	0

Dried petals from Sardinia, such as the above may be expected to produce, may be seen at our place of business.

CALCEOLARIA.

Herbaceous, saved from the choicest hybridised flowers, in packets, 1s., 1s. 6d. and	2	6
Half-Shrubby, saved from the newest and most beautiful flowers of this exceedingly interesting class. The flowers are smaller and in clusters, the habit more dwarf and compact than the herbaceous varieties, in packets, 1s., 1s. 6d., and	2	6
Agents for Dobson & Sons splendid hybridised varieties, in packets, 1s. 6d., 2s. 6d., 3s. 6d , and	5	0

CINERARIA.

Saved from a splendid collection, composed of the newest and most beautiful of this class, in packets, 1s., 1s. 6d., and	2	6
Agents for F. & H. Smith's splendid collection, in packets, 1s. 6d., 2s. 6d. and	5	0

PRIMULA.

Saved from splendid flowers, in packets, 1s., 1s. 6d., and	5	0
Agents for F. & H. Smith's, do. 1s. 6d., 2s. 6d., and	5	0

DOUBLE HOLLYHOCK.

20 packets, embracing the newest and most beautiful named prize varieties..	5	0
12 packets do do. do. ..	3	6
The same mixed	1	0

BUTLER & McCULLOCH, Covent Garden Market.

NEW AND BEAUTIFUL PLANTS.

MESSRS. VEITCH & SON,

OF THE

ROYAL EXOTIC NURSERIES, EXETER AND CHELSEA,

HAVE much pleasure in offering for the first time the following Novelties, in the selection of which they have been guided solely by the determination of submitting only such Plants as are of general usefulness and sterling merit.

PLANTS ARE NOW READY FOR DELIVERY.

CHAMÆBATES FOLIOLOSA (Bentham).

This most beautiful hardy evergreen shrub, sent by Mr. W. Lobb from California, is of a dense compact habit, with most delicately divided Fern-like foliage, almost resembling the Cheilanthes elegans. The flowers, which are white, are produced in great abundance. It has been exhibited during the present season at the Crystal Palace and Royal Botanic Society's Exhibitions, at both of which it has received prizes as a new hardy evergreen. It will certainly prove a great acquisition amongst hardy evergreen shrubs. Good established plants in pots, 2 years old, 15*s.* and 21*s.* each, according to size.

PENTSTEMON JAFFRAYANUM (Hooker).

This very lovely hardy half shrubby herbaceous plant was also sent from California by Mr. W. Lobb. It grows so compact and bushy, and produces its beautiful flowers, which are a clear bright blue with pink throat, so abundantly and continuously, that it will doubtless prove a most valuable plant for bedding; even as a single bush in the open border it is exceedingly striking and attractive. It was exhibited at the Royal Botanic Society's Show on July 6, and was awarded the First Prize for new and rare plants. It is figured by Sir Wm. Hooker in "Curtis's Botanical Magazine" for April, 1858. Strong established plants, 7*s.* 6*d.* each.

POTHOS ARGYRÆA (Lindley).

This very striking variegated plant, which was found and sent us by Mr. Thomas Lobb, from Borneo, is QUITE A GEM, of remarkably neat and compact habit, and almost rivalling in beauty some of the Anæctochili. The leaves, which are obliquely ovate in shape, are of a rich green, blotched with silvery white, with an irregular band of the latter colour running along their central ribs. It has been shown at the various Metropolitan Exhibitions during the present season, at all of which it has received prizes, and been much admired. It is adapted either for pot or basket culture, and requires the temperature of a stove, where it prefers a shady position. Strong established plants, 10*s.* 6*d.*, 15*s.*, and 21*s.* each, according to size.

PTERIS ARGYRÆA (Moore).

This is undoubtedly one of the greatest acquisitions to our now justly popular collections of Ferns. It is of noble aspect and free growth, perfectly distinct and novel in its character; the pinnæ on every frond, as well as their branches, having a broad central stripe of glistening silver, which in contrast with the bright green produces a most charming effect. It may justly be called the VARIEGATED FERN. It was exhibited at the Royal Botanic Gardens on July 6, and before the Horticultural Society's newly-appointed Floral Committee on July 7, and on both occasions received the highest prize given to such novelties, and was universally admired. Established plants, 31*s.* 6*d.* each.

COTONEASTER BUXIFOLIA, of Wallich (TRUE).

This perfectly hardy evergreen shrub is from the Neilgherry Hills, from whence it was sent us by Mr. Thomas Lobb. It was originally described and figured by Dr. Wight, in his "Icones Plantarum." It produces its white flowers most abundantly, is of a dwarf compact habit, and is an interesting pretty shrub. Strong plants, 5*s.* each.

LYGODIUM POLYSTACHYUM (Wallich).

This beautiful Fern was sent us by Mr. Thomas Lobb from Central India. In general appearance and beauty of habit it much resembles some of the lovely Gleicheuias. The fronds are branched, with a downy upper surface, and when cultivated to sufficient size, it will make a fine exhibition plant. Young plants, 31*s.* 6*d.* each; larger ditto, 42*s.* each.

SELAGINELLA ATROVIRIDIS (Spring).

This is a fine species of dwarf habit, introduced from Borneo through Mr. Thomas Lobb. The branches of the repeatedly forked stems are broad and well defined, and have a most distinct and novel appearance. It is certainly one of the finest yet introduced of the dichotomous-branched section. Price 10*s.* 6*d.* each.

SELAGINELLA LOBBI.

A most beautiful and distinct species, sent by Mr. Thomas Lobb from Borneo, partaking of the habit of *S. inæqualifolia*, but having the rich lustrous metallic hue of *S. cæsia*. It is remarkable for the Fern-like character of its branches, and no collection of these charming plants should be without this lovely addition. Price 15*s.* each.

SPRAGUEA UMBELLATA.

This is a very distinct and pretty hardy annual, sent by Mr. Thomas Lobb from California. It is at this time in great beauty at the Exeter Nursery, raised from seed sown in the open ground last autumn, having stood without any protection through last winter. It is also well adapted for pot culture, the habit is very dwarf and spreading, resembling that of Calandrinia grandiflora. The flowers, which may be styled Amaranthine, are of a beautifully shaded pink, with purple stamens. Seeds of this plant will be supplied in the autumn, and in the mean time a few spring-raised plants, in small pots, can be had, at 2*s.* 6*d.* each.

The usual allowance to the Trade, to whom special terms will be furnished when required in quantity.

CHOICE FLOWER SEEDS

FOR AUTUMN SOWING.

JAMES CARTER & CO., SEEDSMEN,

238, HIGH HOLBORN, LONDON, W.C.,

BEG leave to offer Seeds of the following, of *this year's harvesting*, saved from SEVERAL UNRIVALLED COLLECTIONS, and they can with confidence recommend them as being of first-rate quality, both for form, colour, and variety.

CALCEOLARIA, CINERARIA, PRIMULA SINENSIS FIMBRIATA, in three-sized packets, all of the same quality, 1*s.*, 2*s.* 6*d.*, and 5*s.* each.

J. C. & Co. have also selected from their general Catalogue of Seeds a few varieties of HARDY and HALF-HARDY PERENNIALS (including Seeds of Florists' Flowers of undoubted quality), also Seeds for sowing in the Greenhouse and Conservatory.

HARDY AND HALF-HARDY PERENNIALS.

	Per packet.—*s. d.*
Antirrhinum, extra choice, mixed	0 6
Aquilegia, finest mixed	0 6
Alyssum saxatile	0 3
Campanula, finest mixed	0 6
Delphinium formosum	0 6
Dianthus Veitchi	1 0
Digitalis, extra fine, mixed	0 6
Gaillardia, finest mixed	0 6
Lupinus, finest mixed	0 6
Œnothera Drummondi nana	0 6
Œnothera macrocarpa	0 6
Œnothera taraxacifolia	0 6
Pentstemon Murrayanum	1 0
Phlox, 12 newest French varieties	3 6
Phlox, finest mixed	1 0
Potentilla atrosanguinea	0 3
Potentilla pedata	0 6
Silene Schafta	0 3
Canterbury Bell, fine, mixed	0 3
Marvel of Peru, mixed	0 3
Stock, Imperial, 10 splendid varieties	2 6
Stock, Imperial, finest, mixed	0 6
Stock, Brompton, 12 splendid varieties	2 6
Stock, Brompton, finest mixed	0 6
Stock, Intermediate, scarlet	0 6
Verbena, extra choice	1 0
Wallflower, 12 finest varieties	2 6
Wallflower, finest mixed, double	1 0
Wallflower, single, blood	0 3

SEEDS OF FLORISTS' FLOWERS.

J. C. & Co. can particularly recommend the following, especially the CARNATIONS and PICOTEES; they are all saved from first-rate named flowers, and J. C. & Co. have no doubt will give the utmost satisfaction:—

Carnations .. 24 splendid vars.	12*s.* 0*d.*
Do. 12 ,,	6 0
Do. 6 ,,	3 6
Do. Yellow .. 12 ,,	7 6
Do. do. 6 ,,	4 0
Do. Perpetual, 12 ,,	6 6
Do. do. 6 ,,	3 6
Picotees, white ground, 12 vars.	6 0
Picotees, white ground, 6 varieties	3*s.* 6*d.*
Do., yellow ground, 12 ,,	7 0
Do. do. 6 ,,	4 0
Do., perpetual 12 ,,	6 6
Do. do. 6 ,,	3 6
Carnation, choicest mixed, p. pckt.	2 6
Do. perpetual ,,	2 6
Picotee, choicest mixed ,,	2 6

	Per packet.—*s. d.*
Geranium, finest varieties	1 0
Do. new French varieties	1 0
Heartsease, finest mixed	1 0
Hollyhock, 12 show varieties	5 0
Do. 8 ,,	2 6
Do. finest mixed	1 0
Polyanthus, extra fine	1 0

GREENHOUSE SEEDS.

	Per packet.—*s. d.*
Acacia longifolia	0 6
Canna, choice mixed	1 0
Chorozema, finest mixed	1 0
Clianthus magnificus	0 6
Cobæa scandens	0 6
Erica, finest mixed	2 6
Fuchsia, finest mixed	1 0
Gloxinia, choice mixed	1 0
Humea elegans	0 6
Kennedya Marryattæ	0 6
Linum grandiflorum kermesinum	0 6
Lisianthus Russellianus	1 0
Lobelia formosa	0 6
Lophospermum, finest mixed	0 6
Maurandya, finest mixed	0 6
Mimulus, finest mixed	0 6
Nierembergia gracilis	1 0
Passiflora cinnabarina	1 0
Petunia, finest mixed	0 6
Phlox Drummondi, finest mixed	0 6
Pleroma elegans	1 0
Salvia patens	1 0
Schizanthus retusus, two varieties	0 6
Swainsonia, finest mixed	0 6
Thunbergia, fine mixed	0 6
Tropæolum Lobbianum, mixed	1 0
Tropæolum speciosum	1 0
Verbena, choicest mixed	1 0

JAMES CARTER & CO., Seedsmen, 238, High Holborn, W.C.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Stove, Greenhouse, and Hardy Ferns, Miscellaneous Stove, Greenhouse, and Hardy Plants, Variegated and Ornamental foliaged Plants, Conifers, Roses, Rhododendrons, Indian Azaleas, Gloxinias, Fuchsias, Cactuses, &c., is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

CHOICE SEEDS.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that they can now supply the following choice SEEDS, all of which are warranted genuine and of the finest quality.

Per packet—*s. d.*	Per packet—*s. d.*
Calceolaria, herbaceous .. 2 6	Gaillardia grandiflora .. 0 6
Cineraria, from named vars. 2 6	Primula sinensis, mixed .. 1 6
Clianthus Dampieri .. 2 6	Pansy, from named vars. .. 1 0
Hollyhock, from named vars. 0 6	Sweet William, from extra fine vars. 0 6

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

FIRST PRIZE CALCEOLARIA, CINERARIA, AND PRIMULA.

"Shanakiel House, Cork, June, 1859.

"GENTLEMEN,—The Calceolaria Seed you sent me turned out so remarkably well, my gardener got First Prize for the plants at our recent Flower Show. You will please send me another half-crown packet, for which I enclose postage stamps.

"Messrs. Jackson & Son. "FRANCIS R. LEAHY."

Seed of the same excellence is now being supplied by post or otherwise. CALCEOLARIA, 1*s.*, 1*s.* 6*d.*, and 2*s.* 6*d.*; CINERARIA, 6*d.*, 1*s.*, and 2*s.*; and PRIMULA, 1*s.*, 1*s.* 6*d.*, and 2*s.* 6*d.* per packet.

T. JACKSON & SON, Nurserymen and Seedsmen, Kingston, S.W.

ORCHIDS.

THOMAS JACKSON AND SON having determined upon reducing their extensive collection of Orchids, have resolved to offer them at extremely low prices; for instance, they now offer 12 good plants, selected from the under-named (purchaser's selection), for 2*l.* 10*s.*, or the 20 for 4*l.*, package included:—Aerides odoratum majus, A. roseum, Barkeria spectabilis, Brassavola glauca, Calanthe vestita, Cattleya Mossiæ, Cœlogyne flaccida, Dendrobium aggregatum, D. chrysanthum, D. densiflorum, D. nobile, Epidendrum primulinum, Lycaste aromatica, Miltonia spectabilis, Odontoglossum grande, O. pulchellum, Oncidium leucochilum, O. papilio, Stanhopea oculata, S. tigrina, and the new and rare sorts at equally reduced prices. Post-office Orders to be made payable at Kingston-on-Thames, Kingston, S.W.

GEORGE WHEELER, Warminster Nursery, can supply the following, post free:—

CALCEOLARIA SEED of the finest strain in 1*s.* 6*d.* and 2*s.* 6*d.* packets.

CINERARIA SEED from the finest varieties in 1*s.* and 2*s.* 6*d.* packets.

WHEELER'S genuine IMPERIAL CABBAGE, in 6*d.* or 1*s.* packets, or by the lb.

HOLLYHOCK SEEDS from fine named kinds, in 1*s.* and 2*s.* 6*d.* packets.

DELPHINIUM FORMOSUM, 6*d.* and 1*s.* per packet.
" Chinese, fine vars., 6*d.* and 1*s.* per packet.
" cœrulescens, 6*d.* and 1*s.* per packet.
" fine mixed, 6*d.* and 1*s.* per packet

ROYAL SOUTH HANTS SEED ESTABLISHMENT,

UNDER THE PATRONAGE OF H.R.H. THE PRINCE CONSORT, THE AGRICULTURAL AND HORTICULTURAL SOCIETY OF INDIA, AND THE LEADING AGRICULTURISTS OF THE UNITED KINGDOM.

NEW TURNIP SEEDS, 6*d.* per lb.
Carriage free, parcels under 20 lbs. excepted.

PAGE AND TOOGOOD have harvested a fine stock of HARDY GREEN ROUND TURNIP, which is ready for immediate delivery. They have yet a few of their
IMPROVED SKIRVING'S SWEDES at 6*d.* per lb.
PAGE'S IMPROVED PURPLE-TOP do. at 8*d.* do.
JEFFERY'S OR SUSSEX do. at 9*d.* do.
SCOTCH HYBRIDS, 7*d.* per lb.
YELLOW TANKARD, 7*d.* do.
POMERANIAN WHITE GLOBE, 6*d.* per lb. and also
PAGE'S IMPROVED RED GLOBE, 8*d.* per lb., which W. Baker, Esq., Purewell, says is preferred by his beasts and sheep to any he has grown; it is quite hardy, and less injured by Fly than other sorts.—PAGE & TOOGOOD, Seed Growers, 37, and 38, Oxford Street, and 5*s*, Above Bar, Southampton.

SEEDS FOR PRESENT SOWING.

ROYAL BERKSHIRE SEED ESTABLISHMENT.

SEEDS DIRECT FROM THE GROWERS THE MOST CERTAIN MEANS OF PREVENTING DISAPPOINTMENT.

TRIFOLIUM INCARNATUM,
TURNIP SEEDS, GRASS SEEDS,
MUSTARD SEED, RAPE SEED,
COW CABBAGE, EARLY CABBAGE,
CINERARIA, CALCEOLARIA, AND PRIMULA.

SUTTON & SONS have a good stock of New Seeds of the above kinds which they are now sending out at very moderate prices, as see Priced List. Carriage-free to all parts, and 5 per cent. allowed for cash payment.

Address, SUTTON & SONS, Seed Growers, Reading, Berks.

The Gardeners' Chronicle.

SATURDAY, JULY 16, 1859.

A VERY curious and destructive disease has lately appeared amongst Peaches and Nectarines, which deserves a short notice. It occurred in a house where Vines are attached to the rafters, Strawberries are cultivated on shelves, and Peach and Nectarine trees are attached to trellises at the back of the house and immediately under the Vines. The house is old. The Vines have never been particularly healthy, as they were planted far too deep on the outside; the Peach and Nectarine trees on the contrary are planted inside, and for the last 30 years have succeeded pretty well, with occasional traces of mildew, but have never before exhibited the curious appearance which is now prevalent.

Nearly a month since we observed on

the Peaches little dark specks with a bleached centre. We pointed this out at the time to the gardener as unusual and likely to spoil the beauty of his fruit. Two days ago he called our attention to its present condition. The specks were prevalent on the Nectarines as well as on the Peaches, and on either fruit many of them had become more developed. From the clearness of the skin and the absence of pubescence, the progress was more evident in the Nectarine, though there was no essential difference on the Peach. It is of the disease then as developed upon the Nectarine more especially that we are speaking.

In this case it exhibited a very striking and pretty appearance. The white spot, and the dark ring round it were most beautifully defined, seated in the centre of a regular circular depression, the borders of which were pale, but not completely bleached like the centre. The whole surface of the depression was studded with little salmon-coloured warts, disposed more or less in circles, from the centre of some of which, but especially of those in the bleached cuticle, a little curled tendril of salmon-coloured spores issued, giving a very pretty appearance even to the naked eye. The spores under the microscope were oblong, and about $\frac{1}{1500}$ inch long with their contents retracted to either end. On taking off a thin slice, the portion of the succulent tissue of the fruit immediately beneath the bleached cuticle was white, and the discolouration was traceable down to the stone. On examination under the microscope the whole was found to be threaded with abundant fungus-spawn of very different degrees of fineness.

Such were the appearances in small but perfect individuals. After a time, however, the several spots run together, and form a depression an inch or more across, still teeming with the red spores, but void of every trace of former beauty. The spawn in this case had spread in every direction, and had induced thorough decomposition.

As the growth of this fungus is internal, beneath the skin, it is very evident that no external remedy is likely to be of service, nor indeed can we suggest any palliative. We should however be glad to know whether the disease has appeared elsewhere, and whether it exists in houses where there are no Vines, or in orchard houses. The black and white centre, and the salmon-coloured pustules are so characterised, that it is not difficult to recognise the precise malady.

The fungus is quite new to science, and may be characterised *Glæosporium læticolor*—maculis depressis centro candidis nigro-annulatis, pustulis circinantibus, cirrhis pallide coccineis; sporis obongis endochromate utrinque retracto.

1 A plant of the same genus, destructive to Apples, is figured and described in this Journal, 1856, p. 245. We may also refer to the very similar production on Grapes, 1854, p. 676. *M. J. B.*

OUR readers will doubtless wish to know something concerning the state of the weather near London during the present week. We have, therefore, to report that the temperature has been as follows:—In the shade over Grass on the 12th, 93°; and on the same day in the sun at the foot of a south wall, 135°. On the following day it was 91° in the shade over Grass; and against a south wall near the bottom, 125°. As to rain there has been none during the week, and the arrear is now about 12½ inches, being 1.21 inch less than it was at the beginning of April. The arrear was at that time 13¼ in. (see p. 287), and the quantity fallen since, as compared with the average, stands thus:

	April.	May.	June.	Half July.
	inches.	inches.	inches.	inches.
1859.	2.01	1.80	3.10	0.80
Average of 33 years	1.58	1.90	1.81	1.21
Difference	+0.43	—0.10	+1.29	—0.41

From the above it appears that the average has been exceeded in April and June to the amount of 1.72 inch; whilst in May and the half of July the deficiency amounts to 0.51 inch, so that on the whole the gain in moisture since April is about 1¼ inch. The underground water level near London was at its lowest in January. In an old well the water was then 9 feet 1 inch below the surface, and it is now 8 feet 7½ inches; it has therefore risen 5½ inches.

The temperature of the ground at one foot deep is at present 68°, and at 2 feet 65½°, which represents a pretty good bottom heat. The average temperature for these depths in July is respectively 62.85 and 61.71. The difference in excess this year is therefore very extraordinary indeed.

IN our last Number there appeared an inquiry from Dublin as to the cause of the BAD STATE OF WATER supplied to that city through the public water-pipes. The writer ascribed the mischief to the action of a "Spongiola," a term which signifies the young living point of the fibre of a root. Our sagacious correspondent Dr. SEEMANN having suspected that the word Spongiola should have been written Spongilla, and that the evil complained of was due to the action of some SPONGILLA, or fresh-water Sponge, consulted Mr. BOWERBANK, who has been for many years occupied with the study of the interesting group of Zoophytes, among which Spongilla is placed. In reply he received the following reply, with permission to make it public:—

"My Dear Sir,—In the short account which you read to me from the *Gardeners' Chronicle* of the occurrence of 'Spongiola' in the water pipes of Dublin, I think the writer must have meant Spongilla, probably S. fluviatilis; and if this be the case I fear the company have incurred a serious nuisance, as there is no living creature that I know which so seriously deteriorates water in which it either lives or dies, and in the latter case it renders it peculiarly fetid. Some years since my late friend Prof. BAILEY, of New York, wrote me word that the water-pipes of Boston, U.S., were sadly infested by the growth of a Spongilla within them, and that the water supplied to the city was frequently rendered very fetid in consequence. I have since received specimens of this Spongilla through the kindness of Dr. ASA GRAY, and I find it to be a new and undescribed species. What remedy the Bostonians may have adopted I do not know, but it strikes me that there is no other way of preventing the evil than that of passing the whole of the water supplied through a fine sand filter before it enters the pipes, and it is then probable, as Spongilla fluviatilis appears to be an annual production, and there is no reflux of water in the pipes, it may be entirely expelled in the course of a few years. The gemmules of Spongilla are exceedingly tenacious of life, and very shortly after their liberation from the parent they attach themselves firmly to other bodies, and are rapidly and extensively developed in the spring of the following year, and if no measures be taken to remedy the evil, it is to be feared that beside the deterioration of the water the water ways themselves will be very considerably diminished by the accumulation of Spongilla within them. If a small dried specimen, containing either some of the gemmules or a portion of the dermal membrane were sent to me by post, I should have much pleasure in determining the species that has caused this nuisance.—I remain, my dear Sir, yours most truly, W. BOWERBANK."

"3, Highbury Grove."

Let us hope that our Dublin correspondent has been misinformed as to the London water mains having been attacked by this mischievous creature. Possibly caustic lime water driven through the pipes may destroy the Spongilla now within them, and at the same time expel its remains.

We may add for the information of those unacquainted with the subject that Spongillæ or fresh-water Sponges are animal productions standing so closely on the border of the vegetable kingdom that naturalists are not absolutely agreed as to their real nature; although it appears to the majority that they really are of the nature of zoophytes. It is however curious to observe that Spongilla is influenced by light in the same manner as plants, and that it owes its green colour to that agent.

New Plants.

219. CEANOTHUS VEITCHIANUS, *Hooker*.

"For this magnificent acquisition to our hardy shrubs we are indebted to Messrs. Veitch & Sons, of the Exeter and Chelsea Nurseries, who introduced it from California through Mr. William Lobb. Though closely allied to and in many respects so similar to *Ceanothus floribundus* (Tab. 4806), *C. Lobbianus* (Tab. 4811), and *C. papillosus* (Tab. 4815), it is abundantly distinguished from them by the character of its foliage; and, beautiful as they are, it far surpasses them all in the abundance of its bright mazarine-blue flowers, and the glossy, almost varnished surface of its deep evergreen foliage. The specimen sent us by Mr. Veitch was fully 3 feet long, and the profusion of flowers was so great that the leaves were almost concealed throughout the whole length of every twig. To distinguish it accurately, attention must be paid to the perfectly glabrous branchlets, upper surface of the leaf, petiole, pedicel, and calyx, to the glossiness of that surface, to the venation beneath, which consists, besides the midrib, of about four, very stout, straight, parallel nerves, given off at an acute angle to the midrib on each side; as also to the pubescence of the minute areoles between the venules, which under the microscope is found to consist of minute, converging fimbriæ or short hairs. It does not exist in our herbaria from any North-American or European collectors."—*Botanical Magazine, t.* 5127.

This is indeed a beautiful shrub.

A NEW MUSCARI ON MOUNT IDA.

IN April 1856 a party was formed among the officers stationed at the British Hospital of Renkioi, on the Dardanelles, for the ascent of Mount Ida, about 40 miles distant, in a south-easterly direction. At first our route was over a rough country, through the villages of Renkeuy and Doumenek, as far as the old Roman aqueduct, crossing a ravine in the metamorphic rocks. This had been constructed to supply Novum Ilium with water. Many of the old clay pipes are now used as chimneys to the native hovels. The stream which flows through this ravine is named the Kemarson, and joins the River Mendere, but in the heat of summer it is lost in the sand about a quarter of a mile from its junction. Thus far the ground had been covered with brushwood of Pistacia Terebinthus, Storax, Pinus Halepensis, and dwarf Oaks of several species. A few clumps of handsome Valonia Oaks, Q. Ægilops, and Q. Cerris were seen towards the plain of Troy. In the valleys the Oriental Plane, the Poplar, and prickly Paliurus bush grew luxuriantly, festooned with Clematis cirrhosa and Vitalba, Periploca græca, Cynanchum, and wild Vine. The ground was covered with several species of Anemone, Iris, and Crocus. After having crossed the Kemav, we soon entered a Pine forest covering the high grounds as far as the plain of Beyramitsh. Next morning we followed the Mendere through a rich well-watered valley. By the road sides the Hop and Lint grew wild. Anemone appenina and Scilla bifolia were picked; they had been transported from a higher region by the waters. Between this and the foot of Ida the country was rough and barren, intersected by ravines, through which the Scammander found its way to the plains. At the village of Avjylar we had some difficulty in obtaining lodging. Early the following morning we began to ascend on foot. Proceeding in an oblique direction for some time we came to one of the sources of the Scammander, where it gushes by many powerful springs from the schist rocks. In this neighbourhood we found Saxifrages, Geraniums, Dentaria bulbifera, Ruscus Hypoglossum, and Pæonia decora among the fine timber of Pinus Pinaster which covered this region. There, too, a Muscari was picked in considerable abundance, which seems to be a new species, and which we have named, from its remarkably broad leaves, M. latifolium. It now appeared that our guides had deceived us, and taken us off the proper road, and from this point it seemed almost impossible to ascend. But, being determined to reach the top, we set off, leaving them to follow if they chose. Near the summit the forest opened out and left nothing but bare rock; we picked Crocus garganicus, Corydalis tuberosa and digitata, Viola gracilis, Scilla bifolia, Ornithogalum nanum and fimbriatum. The scanty soil had been turned up by the wild pigs in search of bulbous roots. The ascent had occupied from 7 in the morning till 3 P.M. On our return we followed a much easier path, and here we found Saxifraga sancta growing in wet boggy spots. This species had been previously discovered by Griesbach on Mount Athos. The sun had set by the time we reached the village of Avjylar, and, having enjoyed a night's rest, we set off on our return to the Hospital, where we arrived on the fifth day from our departure. Dr Kirk briefly indicated, in the following terms, the characters of the new Muscari:—Muscari latifolium; scape erect, about 12 inches in height, rising from a globose bulb, and bearing near its base a large sheathing, broadly lanceolate, rather obtuse, solitary leaf; flowers numerous, forming a raceme about two inches in length, the lower ones shortly pedicellate, the upper ones barren, sessile; perianth tubular (blue), in the fertile flowers inflated below. *Dr. Kirk in Proceedings of the Royal Society, Edinburgh.*

Home Correspondence.

Luminosity in Plants.—I see a notice in your last Number of "luminous appearances seen among living plants." The following is a copy of some observations made by me last year on the subject. "June 10, 1858. We witnessed this evening a little before 9 o'clock a very curious phenomenon. There are three scarlet Verbenas, each about 9 inches high and about a foot apart, planted in the border in front of the greenhouse. As I was standing a few yards from them and looking at them, my attention was arrested by faint flashes of light passing backwards and forwards from one plant to the other. I immediately called my gardener and several members of my family, who all witnessed the extraordinary sight, which lasted for about a quarter of an hour, gradually becoming fainter till at last it ceased altogether. There was a smoky appearance after each flash which we all particularly remarked. The ground under the plants was very dry, the air was sultry and seemed charged with electricity. The flashes had the exact appearance of summer lightning in miniature." This was the first time I had seen anything of the kind, and having never heard of such appearances I could hardly believe my eyes. Afterwards, however, when the day had been hot and the ground was dry, the same phenomenon was constantly observed at about sunset—and equally on the Scarlet Geraniums and Verbenas. This year (1859) it has again been seen. On Sunday evening last, July 10, my children came running in to say that the "lightning" was again playing on the flowers. We all saw it, and yesterday evening, July 11, I thought the flashes of light brighter than I had ever seen them before. The weather here is very sultry. *E. D. K., Nottage Court, near Bridgend, Glamorgan.*

Covering for Vine Borders.—The question of your

correspondent "G. A." as to the proper covering for Vine borders, "zinc sheeting or boards," induces me as an amateur Grape grower to offer some remarks upon the horticultural precept everlastingly inculcated,—"keep your Vine borders dry." This precept is issued without any qualification, and is so accepted by all who establish a Vinery; and, in very many instances, to their utter failure and disappointment. Four years ago I built a lean-to Vinery, heated by flues, and planted it with Muscats and Frontignans. The border was made after the plan of the late Mr. Crawshay; and I commenced my operations in a decided state of hydrophobia. I was much disappointed with the poor progress my Vines made the first year, and some gardeners who looked at them said they had not water enough. I cut them down, and the second year I watered them once a week; still they looked unhealthy, and by Midsummer I was devoured by red spider. In the autumn I cut the Vines down half way, and washed the house well with sulphur. The Vines being planted inside, and running outwards, in the following spring I watered the inside border three times a week, and the outside copiously twice a week. The result was freedom from spider, healthy foliage, and a fair crop of good Grapes. I was now cured of hydrophobia; and I am led to the conclusion that there can be no general rule as to keeping Vine borders dry, but it must in every case vary according to the nature of the soil. The Vine, as much as any plant, requires moisture; and instead of saying "Keep your borders dry," it should rather be "Let your border be well drained;" prevent water from stagnating and lodging about the roots of the Vine, whereby they canker or rot, and so produce shanking and all other evils; and if so, you need not be afraid of water. I stand upon 3 feet of reddish loam, followed by 9 feet of gravel; no water can therefore lodge about the roots of my Vines; and if good fruit be expected they must be well watered and manured. Having experimentally come to this conclusion, and observing that the roots of the Vine are in operation during winter when beyond the reach of frost, in February last I procured a quantity of strong manure consisting of good sewerage, pig and cowdung; and adding some short litter to make it hold together, I covered my borders inside and out 18 inches thick. The winter being mild I watered the borders copiously once a week, thus sending the liquid manure to the very bottom of the roots. I commenced fires on the 1st of April, and when the Vines had pushed 4 inches I watered the borders three times a week. The result is that I have as fine a crop as was ever seen; and I doubt if 10 shanked berries could be found. Such a mode of treatment will not do for one who has a subsoil of clay; but if he have secured good artificial drainage, and the eaves of his house be properly troughed, he need not be afraid of rain-water. In such a case I contend that a covering of leaves, Fern, or litter, as a protection against frost, is all that is required. *G. L.*

Picea nobilis.—In your Paper of July 9, "F. H. S." wishes to be informed whether or not this fine Conifer has ripened seeds in this country. We have a tree here that has produced cones for these last five years, but until last season the seeds were but imperfectly ripened. I have by me now a fine healthy stock amounting to many hundred plants, the produce of last year's cones. I sowed them this spring in sandy loam, and many of them have already made their second growth. *G. Archer, Finedon Hall, Northamptonshire.*

Gishurst Compound.—On the 21st of June I found a quarter of Morello Cherry trees, upwards of 1000 in number, suddenly attacked with the (well known to gardeners) black aphis. I immediately had some of the Gishurst Compound dissolved in soft water (2 oz. to the gallon) and the ends of the flexible young shoots dipped into it, being gently rubbed with the fingers while in the liquid. The shoots that were too rigid to bend were painted with the liquid, using a medium-sized painter's brush and brushing upwards. The day following I found nearly all my black friends dead and dry; a few, however, were alive, and as from experience with tobacco-water I knew that they would in the course of a week bring forth a progeny quite equal to those defunct, I gave orders for a second dipping at the proper time. On the 28th, feeling more than usual interest in my Cherry trees, I looked over those that had been dipped on the 21st, and could not find a single aphis left. Those that escaped the dipping on the 21st had languished two or three days and then died; the young shoots imbued with the Compound seemed fatal to aphis life. Some young Plum trees covered with the blue aphis peculiar to the Plum, and in my opinion the hardiest and most difficult to kill of all the race, were operated upon in the same way as the Cherry trees—not a single aphis has survived. Some shoots of Rose trees covered with Rose aphides (the shoots were young and full of sap, and I never remember to have seen a more fat and thriving batch, winged and unwinged, of these—apart from Rose culture—really interesting creatures) were dipped into the liquid used for the Cherries about 8 P.M.; they did not appear to suffer any inconvenience the first half hour, but remained on the shoots plump and quiet as usual. The next morning every aphis was dead, and most of them were brown and dry instead of being green and plump as when living the evening before. The shoots have not been syringed with pure water to wash off the dead aphides as is usual, but not one has made its appearance since. The young shoots before so tempting seem now to give out death. There are three modes of using the liquid compound: by dipping and the brush as described above, and with the syringe, which is the only way it can be used when applied to wall trees, to trees in pots in the orchard house, or to trees trained on trellises. When so applied one operation will not kill all the aphides, for in one of my houses full of Peach trees three applications were necessary before the swarm of them on every tree was destroyed. For the oidium or any other kind of mildew on Vines the Gishurst Compound is a perfect remedy. Early in June some Vines growing on a sandy slope and trained to stakes as usual in the Vineyards of the Continent, and which for many years have borne good crops of Grapes, with which wine has been made, became covered with the oidium. They were syringed once with the Compound, 4 oz. to the gallon; the remedy seemed severe, as some of the shoots appeared to be killed. They have now entirely recovered, and are full of fruit. I should recommend only 3 oz. to the gallon in preference to 4, and if one syringing did not kill the oidium to apply it twice. The Vines in question, some six or eight in a long row, were almost destroyed by the oidium last year, and sulphur failed to arrest its progress, although applied abundantly. The cheapness and efficacy of the Compound make it almost invalable. I have never yet found any remedy for the "ills" of gardening so cheap and so easily applied. *T. Rivers, Sawbridgeworth.*

Dipladenias.—I shall feel indebted to any of your correspondents, or to any one who grows Dipladenias successfully, for a few working hints. For two seasons or more mine after sending up some half dozen healthy shoots begin to look sickly, the foliage crimpling and turning yellow, spotted, and then falls off on the slightest touch, and they are now leafless except at the tips, which are beginning to die off. I wish to know the proper soil, the degree of moisture, and the temperature and atmosphere most congenial to their growth, crassinoda and Houtteana especially. And why is it that my Nepenthes ampullacea grows spindly without a single pitcher, and the Sarracenias the same? And is it right to grow the Anæctochilus without a bell glass? or the Dionæa and smaller Australian Pitcher-plants? *An Amateur.*

Rhododendron Soil.—I am about to lay in a quantity of soil for Rhododendrons, and have close at hand a peat bog that I should consider most excellent for the purpose, but it is completely saturated with iron. I may be wrong; but I have always understood that iron in a soil was held to be highly objectionable. Observation, however, has led me to believe to the contrary in the case of Rhododendrons. I have seen the silky roots penetrate and cling tenaciously to lumps of clay in which iron existed abundantly, seemingly in preference to the rest of the soil which is a soapy bog, devoid of sand. *Thos. Cannon, Hazelbeach Hall, Northampton, July* 8. [Bog earth is not injurious because of its iron but on account of the large quantity of gallic acid in its composition. The best soil is sandy peat from an upland common.]

Farfugium grande.—This beautiful foliaged Chinese plant, which during the last two years has attracted so much attention, may now be found in all gardens of any importance as well as on the stages of exhibitions. As a decorative plant for the greenhouse all the year round it cannot be surpassed, and more especially during winter, when it takes a prominent position, its bright green shining foliage blotched with beautiful yellow having an excellent effect. It thus furnishes an admirable substitute for flowers, which are generally scarce during the dreary months. When mixed with flowering plants in the open ground it produces an excellent contrast, and forms a feature new in flower gardening. As an edging its effect is most striking, and in a bed to contrast with Scarlet Geraniums it is extremely attractive. When, however, large plants become abundant, as they soon will, it will form a first-rate vase plant, and placed on balustrades, associated with Scarlet Geraniums, it will produce a charming effect highly agreeable to the eye of taste. On mounds of rock-work it thrives well, and relieves the general aspect of this kind of gardening; and it strikes me this is a natural position for it. There is one other and most important place which it must fill, and which also will induce its extensive patronage, and that is as a house plant either for halls, vestibules, corridors, windows, drawing-rooms, &c. It will stand the confinement of a close room with impunity. In the beginning of last October two plants were placed in a basket with some others in a warm room where the temperature varied from 55° to 65°. A considerable fire was maintained for five months during the winter, and although the plants are still there they present a degree of vigour undeteriorated by eight months' incarceration. This Farfugium will also obviate any objection which may be made to highly odoriferous plants, and secure it a place in every mansion and every cottager's window. *R. G.*

Strawberries.—I saw in an old monthly magazine that burnt seaweed is the best of manure for Strawberries. May I know what time of the year is the best to apply it? *J. B. H.* [We should say in the spring just before the Strawberry plants are beginning to grow.]

Remains of Vegetation, and Human Bones.—I send you some vegetable matter found adhering to a skull-bone dug up in Suffield Churchyard. The body had been buried very many years, as the bones were in an advanced stage of decay, and there was no remnant of the coffin. It is supposed to be the stuffing of a pillow used to keep the head steady. *C.* [The remains submitted to us consist of twigs of the Tree Box with leaves attached to them, and roots of some kind of herbaceous plant. The first were, we presume, employed about the corpse; the second may be supposed to have penetrated the coffin at a subsequent period.]

The May Queen Strawberry.—It was not my intention to become the champion of this Strawberry or to raise a controversy respecting it, but since two gentlemen of acknowledged experience have given their opinions of its merits, which differ considerably with my own, I feel constrained to make a few further remarks—and first I should have thought at any rate that the extended observation of such men as Mr. Rivers and Mr. Turner would have led them to have made further trials of the variety in question before hastening to conclusions, possibly to the detriment of the raiser. My small experience tells me that it frequently requires two or three seasons to develop the properties of a particular variety of Strawberry. When I first received Cuthill's Prince of Wales, for instance, the plant would scarcely grow with me, and there were not more than two or three berries on a plant, which were extremely sour, and had no good quality whatever. I persevered however, and in two or three years I had the finest crop of handsomely shaped fruit imaginable. I plant annually in well trenched, well manured ground, giving the plants plenty of room, and I have now little or no trouble with it, and the quality is such that although it is our staple preserving sort it is not discarded altogether from the dessert. Again, the first season I cultivated Mr. Rivers's seedling Eliza, I was so much disappointed with it that had I not seen the variety and tasted the fruit on Mr. R.'s own ground at Sawbridgeworth, I should most decidedly have dug it up. The second year was little better, both as regards the first and second year's plants; but ever since I have had no difficulty whatever. I have always an abundance of fine, well flavoured fruit through three-fourths of the season, and by early planting and taking the runners from marked plants (that is, from plants of the best habit and producing the finest fruit) I have an improved and improving stock, and my first year's plants are now equal in every respect to those formerly kept two years. I could adduce numerous similar instances which would only tend to show that no grower, be who he may, should pronounce definitely upon any given variety till he has given it a fair trial under different circumstances of soil and season. I have not the pleasure of a personal acquaintance with Mr. Nicholson, but I can readily imagine he would feel rather hurt at so precipitate a disposal of his efforts to prolong the Strawberry season. I think I may safely say, however, from my dealings with him, that he is not a likely man knowingly to send out a wrong sort. The May Queen I find, by a report in the "Cottage Gardener" of June 28, was exhibited by Mr. Turner at the Pomological Society on the 23d of June, and either a very indifferent specimen of the fruit must have been produced, or I must set the same value on the criticism I do with regard to some others in that report. The Filbert Pine or Myatt's Seedling (for it smacks rather of the British Queen breed), amongst all its acknowledged good properties, correctly stated, is there said to be a firm and solid fruit. Now, every one who grows this variety must have found that if it has any drawback it is that the fruit is soft and tender—an excellent variety, nevertheless, and with a flavour peculiarly its own. Sir C. Napier is reported to be cockscomb shaped, deeply furrowed, and briskly but not richly flavoured. I think Mr. Smith, the raiser of it, will bear me out when I say that there are few sorts less furrowed or less liable to the cockscomb form than this. There is perhaps no Strawberry that presents a more even, uniform surface, which with its beautiful bright scarlet colour, and I should say rich piquant flavour, render this Strawberry so unique a variety. No one I should imagine expects a first early sort like the May Queen to possess the attributes of Sir Charles Napier, or Carolina superba. I have watched the proceedings of the Pomological closely and with great pleasure, and have generally found its reports and its published Transactions to be correct as far as I can judge, and very interesting; but if the May Queen is pronounced at once (and without waiting for a further trial as in the case of other kinds) a small coarse variety, utterly destitute of flavour, either the Society must have been in error on this occasion, or fruit must have been shown which was grown under unfavourable circumstances as to soil or situation or both. As to its admissibility among a select stock, I apprehend that no one would think of growing any early variety on a large scale whether he had five or 50 sorts; but in a favourable season, and at a time when there are no other Strawberries (and we are not all blessed with hot-houses), there will be few who will be found to refuse the produce of a score May Queens. In consequence of the check which my plants received from the spring frosts, as stated in my former hurried communication, they are now in full blossom again, and I have no doubt I shall have a tolerable crop in the autumn. There is at the same time a little ripe fruit remaining, as large as those remaining on my Keens' Seedling plants, and quite as good in flavour. Since penning the above I have received a letter from Mr. Nicholson, which I have his permission to publish. He says, "I was very much hurt on opening the *Gardeners' Chronicle* this morning to find a letter from Mr. Rivers condemning the May Queen after so short and unfair a trial. I wonder that he of all men should not have known better than to plant a first early Strawberry on a strong and tenacious soil, when every one knows that the reverse is required for such a purpose. Besides

he makes no allowance for young plants and the season, neither does he know that it is better a great deal after standing two or three years. The enclosed sketch is taken from a plant two years old. I only wish Mr. Rivers and others could have seen the fruit I have had and some I have remaining. I have had trusses with from 12 to 16 and 18 fine fruit all ripe together, and the ground half covered with them, which for flavour I think ought to satisfy every unprejudiced person. Mr. R. and Mr. T. seem to expect a first early to be as large as the late sorts. Indeed Mr. Turner, in a letter I have received from him, says Sir Charles Napier is worth a thousand of it (the May Queen). Let me say, sir, that you have taken the right course with it, and what you have said is quite correct every word of it, and if you continue to grow it on the same ground next year, you will have more to say in its favour. I may add that the plants sent to Mr. Rivers and every one else were all true, and always shall be so long as I grow a Strawberry." *W. Roden, Kidderminster.*

Strawberry Runners.—Would any of your correspondents who have successful experience in Strawberry cultivation be kind enough to point out the conditions for ensuring fruitful plants in laying down runners? Out of a number of plants laid down at the same time and under similar circumstances, some will show fruit the first season, and others none, and some will not produce even the second. What is the cause of this difference? It does not seem to depend altogether on the condition of the parent plant as to fruitfulness; for I have been careful to select runners from fruitful plants only, without being able to secure a satisfactory result. *J. H. H., Portobello, July 2.*

Linum grandiflorum.—Just as the true principles by which a good physical constitution may be built up and preserved are often lost sight of by the "petting and over-much nursing" system, so I think has it been the case with this Linum. The difficulty experienced by several practical gardeners in getting up this plant within the circle of my acquaintance, as well as the desire to see a flower so much extolled, prompted me to try and raise it last year. Having no glass, and being desirous to give it as fair a trial as I possibly could, the experiment was made both in pots and in the open border. The soil of the latter is of a rather stiffish nature, and where the Linum was sown had no addition of leaf-mould or any other such help to secure success to the attempt, my object being to discover whether it would grow successfully under the most ordinary treatment. After steeping the seeds in cold water for 12 hours they were then sown with all the glutinous matter about them, and covered but very slightly; by these means I secured a speedy germination of seedlings which flourished vigorously. A similar result attended the trial made in pots (which I may mention were 6 inches across the mouth), with this difference, that the plants in the border were the strongest. This season I adopted the same method and with similar success. It is with some degree of confidence therefore that I recommend to my brother amateurs a trial of this simple method by which to cultivate this beautiful variety of the Flax tribe. I would, however, observe that while it may be grown in any good garden soil, a free soil is favourable to its development, so that should the ground be naturally clayey or stiff, an application of leaf mould and sand will prove considerably advantageous. *Scoticus.*

Filtered Water v. Fish—Well water filtered through animal charcoal has proved injurious to gold and silver fish. We have a fountain in the garden, and a basin and numbers of gold and silver fish. The latter have hitherto done well, but about a month ago I had the basin emptied and cleaned out and refilled with filtered water. I may mention however that the first supply after the filter was put in was let run away, so that the fish had the second fill of the tank. For four or five days the water was very clear; then all at once it got as if lime had been thrown into the basin among the fish, and has continued very dirty ever since, and I have found two of the fish dead, and of course floating on the surface. To-day I am having the water emptied out again—should I use this water or not? It was highly impregnated with iron before the filter was put in. *G. Wright, Sowerby.*

The Mealy Bug and Gishurst Compound.—I enclose you a list of plants on which I have tried this Compound. I find it effectually to kill mealy bug at the strength of ½ lb. to a gallon of water, and it does not hurt the plants I have named, excepting those marked *; it rather injures the very young growth of them, and quite destroys the flowers. At the strength of 2 oz. to the gallon it is sudden death to thrips and greenfly wherever it comes in contact with them; it appears to absorb the whole moisture from them, and leaves the greenfly a mass of brown dirt. Thrips it seems to rivet to the place which it attacks. No plants that I have as yet tried suffer from the effects of 2 oz. to the gallon, so that it is useless having it stronger than that for greenfly and thrips. All the plants I have tried have been thoroughly immersed in the solution and kept in for some seconds, and I find this the best remedy where it can be effected. By syringing some parts are apt to be missed, and as a friend of mine when talking to him about it told me, innocently enough, "that it did not kill where it did not touch." At the strength of 2 oz. to the gallon I do not find it hurt the flowers of Azaleas. I am not quite certain the exact strength Gloxinias will stand, but 2 oz. to the gallon does not hurt the foliage, and will kill thrips; if however bug gets on them it will not destroy it. I have not yet found what strength will kill scale such as I have enclosed—½ lb. to the gallon will not do it. This is the only scale that puzzles me. It will kill the smaller species of scale and the very young of the one in question; but the old ones it leaves unscathed. This scale infests Thyrsacanthus rutilans. I have tried it ½ lb. to the gallon on Plum and Pear trees for scale, but I cannot speak positively about it at present. It does not injure the young growth of either; I intend trying this again at greater strength in the autumn and winter months. Two ounces to the gallon will effectually kill red spider if properly applied; the great difficulty is to get the solution to properly penetrate the web. If the solution is in too much of a lather state it forms bubbles on the web or under surface of the leaves, and makes a kind of arch over certain portions; when this dries or bursts it leaves the space within and spider contained unharmed. This occurs in syringing; but if the plant is thoroughly immersed so that the surface is wholly wetted it is a "certain kill." I find this gentleman requires great perseverance. On the whole I consider the Gishurst Compound the best thing ever invented or brought before the public for the uses for which it is recommended, and I for one am pleased and thankful for the introduction. I hope I have been sufficiently explicit in my remarks. I can assure you they have been conducted with great care and exactness, weighing and measuring the whole myself for every operation, and I find it is equally as good for its purposes if made and kept bottled and corked six weeks after making. (Signed) *Daniel Judd, Althorp Gardens.*—Plants dressed with Gishurst Compound at the strength of ½ lb. to the gallon of water:—Franciscea confertiflora, Rondeletia speciosa, Begonia insignis, Ardisia crenulata, Hexacentris mysorensis, Pergularia odoratissima, Hoya carnosa, Hoya bella, Clerodendron speciosum majus, Cassia corymbosa, Cattleya Forbesii, Camarotis purpurea, Dendrobium nobile, Dipladenia crassinoda, Stephanotis floribunda, Passiflora alata, Azaleas (quite young growth), Burchellia capensis. * Rhynchospermum jasminoides; of this it rather injured the young growth, and quite damaged the flowers. * Euphorbia jacquiniflora; it quite spoiled the flowers of this plant, but did not hurt the young growth. At the strength of 2 oz. to the gallon Pteris pubescens, Luculia gratissima, Roses, Geraniums, both woolly and smooth-leaved; Fuchsia Venus de Medici, grown in a Vinery in a temperature of 90° by day and 60° at night; Young Dahlias. [With this letter we have been favoured by Mr. Wilson. Gardeners will appreciate its importance; mealy bug being their greatest enemy, along with scale and American blight. We delayed the publication until we could experimentalise personally on mealy bug, and we endorse Mr. Judd's statement that it is killed by Gishurst. Scale may perhaps be reached if the part attacked is first rubbed and then painted over with the Compound.]

Societies.

Horticultural: *July* 12.—At a meeting of the Fruit Committee held this day, Mr. Jas. Veitch's prize of 5*l*., offered for the best exhibition of Stockwood Golden Hamburgh Grape, was awarded to Mr. Spary, of Brighton, for three fine bunches of that variety. Two other exhibitions were also entered for the prize, one from Mr. Allport, gr. to H. Ackroyd, Esq., of Doddington Park, Nantwich, and the other from Mr. Crambe, gr. to the Earl of Ducie at Tortworth Court, Gloucestershire. The bunches exhibited by Mr. Spary were produced from a shoot resulting from a graft of the Golden Hamburgh which was put on in April, 1858, and which bore this season, in all, 13 bunches. The three exhibited were splendid and remarkably well grown both as regards the form of the bunch and the size of the berries composing it, all of which were well and equally swelled. The bunches exhibited by Mr. Crambe were likewise very fine. They were longer than those which gained the prize, but the berries were not quite so large. The specimens exhibited by Mr. Allport were over-ripe, the footstalks of the berries being withered. It was stated that the fruit was ripe on the 10th of June, and was larger than that of the Black Hamburgh 67 years old, on which it was worked.

Royal Botanic, Regent's Park: *July* 6.—This Society's concluding exhibition for this year took place on this occasion. The display both of fruits and flowers was good for the season, and the attendance of visitors large.

Mr. Whitbread, gr. to H. Collyer, Esq., showed as usual a beautiful collection of 16 Stove and Greenhouse Plants, all large, and for the most part well flowered. Among them were Rondeletia speciosa, Dracophyllum gracile, Phœnocoma proliferum, immense bushes of Ixora javanica and coccinea, Dipladenia crassinoda, Pleroma elegans, one of the very handsomest of autumn-blooming greenhouse plants, its beautiful deep purple blossoms, each as large and round as a five-shilling piece, being very conspicuous. The same exhibitor also sent handsome plants of Erica obbata, Leschenaultias, Vincas, and Roella ciliata, whose flowers though pretty are ill set off by the foliage, which is rusty and dead looking. Mr. May, gr. to J. Spode, Esq., again showed a charming group of 16 plants, some of which had, however, this time suffered a little from travelling, nevertheless others, as Ixora crocata and javanica, Dipladenia splendens and crassinoda, Pleroma elegans, Phœnocoma proliferum, Aphelexis Sesamoides, some Cape Heaths, and Statice imbricata were all that could be desired. The same excellent cultivator also sent a charming specimen of the white-flowered Ixora, quite a cone of blossoms from top to bottom. Among plants from Mr. Peed, who also showed in this class, were admirable examples of Erica mutabilis, Dipladenia crassinoda, Vincas, yellow and white-flowered Cape Heaths, an Azalea still in good condition, Everlastings, the white and Java Ixoras, Cyrtoceras reflexum, and the white Dracophyllum gracile. In a group of 16 from Mr. Rhodes, chiefly small plants, were pretty specimens of Pleroma, Kalosanthes, Cyrtoceras, Allamandas, and the seldom seen Bartonia ericoides.

Smaller collections of Stove and Greenhouse Plants were furnished by Messrs. Cutbush, Fraser, Green, Page, Baxendine, and Chilman. These consisted chiefly of Vincas, Everlastings, Clerodendrons, Stephanotis, Allamandas, Dipladenias, Rhynchospermums, Heaths, Tetratheca verticillata, Kalosanthes, the seldom shown Lapageria rosea, Statice Holfordi, Pavetta Caffra, and Phœnocoma proliferum. The last when well grown and flowered, though somewhat Thistle like in appearance, is nevertheless a handsome plant.

Of plants remarkable for fine foliage, magnificent collections were furnished by Messrs. Veitch, Jackson, Young, Cutbush, and Bunney. Among them were Palms, Marantas of different kinds, Coleus Blumei and pectinatus, Crotons, Rhopalas, Cissus, Tree Ferns, Dieffenbachias, Theophrasta imperialis, Calathea zebrina, Aspidistra lurida variegata, Dion edule, Dioscoreas, Farfugium grande, Caladiums, one of the handsomest of which is Chantini; variegated Yuccas, and Begonias.

Of the last named plants Mr. Barnes, of Camberwell, showed a fine collection, in which were Rex, argentea splendens, Griffithsi, Queen, Princess Alice, Waterwitch, and Prince of Wales, all large-leaved and handsomely variegated. Mr. Cole, of Manchester, also contributed a fine kind called Marshalli, with large leaves strikingly variegated with broad silvery markings.

Cape Heaths were shown in admirable condition and tolerable abundance. Among them was nothing new. We observed, however, beautiful plants of obbata, Jasminiflora alba, and Metulæflora bicolor; the last a very handsome variety with rich rosy pink flowers tipped with white. Of the Hartnelli and aristata breeds there were also some good samples.

Orchids, though not plentiful, were for the most part well flowered. Messrs. Gedney and Bullen again showed excellent collections, as did also Messrs. Woolley, Carson, Rhodes, May, and Page. In the different groups were fine plants of the handsome Cattleya superba, Cypripedium villosum, White Butterfly Plant, the singular-looking Coryanthes macrantha, White Phaius, the yellow Anguloa Clowesi, Dendrobes of different sorts, Miltonia spectabilis, Epidendrum verrucosum, Odontoglossum hastilabium, the green-tailed Dendrochilum filiforme, Saccolabium Blumei and guttatum, Aerides odoratum, and others, Stanhopea tigrina, various Oncids, Sobralia macrantha, and one or two varieties of Brassia.

Of New Plants, Messrs. Veitch sent Pentstemon Jeffreyi, a pretty blue-flowered kind from California, with a tinge of pink in it; a Bilbergia, with a large branching spike of pale pink blossoms; Calanthe Dominii, with numerous spikes of pink flowers; a small canary-blossomed Calla, the singular Ceratodactylis Osmundoides; Pteris argyræa, with large fronds striped with white; Platycerium Wallichii, from Moulmein; two kinds of Blandfordia, Clianthus Dampieri, Chamæbates foliolosa, Dichorozandra vittata discolor, with leaves striped with red; Spraguea umbellata, a pink and white woolly-flowered plant from California; Æschynanthus tricolor, Boehmeria argentea from South America, and Cyanophyllum magnificum, both remarkable for the size and beauty of their leaves; and Phi-lesia buxifolia. Messss. Parker and Williams furnished the pretty white and blue flowered Statice brassicæfolia, the double yellow Datura, a variegated Tussilago, an Anæctochilus, Tydæa, and Begonia; also some rare Ferns, Maranta fasciata, and others; and a yellow flowered grey leaved Centaurea. From Messrs. E. G. Henderson were the white Portlandia platantha, Gazania splendens, a spreading silvery-leaved plant with handsome orange flowers. Messrs. Low showed several Bornean plants, some of which were without names; others were a variegated variety of Franciscea confertiflora, Myrsine picta, Gonatanthus cupreus (?) with metallic-like foliage, Pothos argyræa, the new greenhouse shrub Chamæbates foliolosa, from California; Plocostemma lasianthum, an Asclepiad with bunches of tawny orange coloured flowers not unlike those of Cyrtoceras reflexum; Spraguea umbellata, and Gœthea strictiflora, whose naked stem was ornamented with flowers enclosed within crimson bracts, in which the chief beauty of the plant resides.

The display of Cut Roses was excellent; beautiful collections of 50 sorts were furnished by Messrs. Paul, Fraser, Francis, Lane, and Mitchell. Among the varieties were Victor Trouillard, Comte de Nanteuil, Queen Victoria, Mathurin Regnier, Charles Lawson, Madame Hector Jacquin, Kean, Gloire de Dijon, William Griffiths, Madame Vidot, General Simpson, Niphetos, Prince Leon, Paul Perras, Louis Peyrouny, Boule de Nanteuil, Crested Moss, Louise Magnan, Juno, Madame William, devoniensis, Jules Margottin, Augusta, Alphonse Karr, Baronne Prevost, Felicité Parmentier, Auguste Mie, Pius the Ninth, Duchess of Sutherland, Vicomtesse Decazes, Coupe d'Hébé, Souvenir d'un Ami, Narcisse, Duchesse d'Orléans, Marie

Thierry, Souvenir de Malmaison, Evêque de Nîmes, Mrs. Rivers, Joan of Arc, Ohl, Duchess of Buccleugh, Souvenir de la Reine d'Angleterre, La Reine, Duchess of Norfolk, Madame Knorr, I. Gray, Lord Raglan, Caroline de Sansal, Triomphe de Rennes. Of single blooms, 24 varieties, Mr. Turner of Slough sent Devoniensis, Glory of France, La Reine, Gloire de Dijon, Evêque de Nîmes, Gloire de Vitry, Cloth of Gold, Louis Peyronney, Madame Domage, Mrs. Rivers, Victor Trouillard, Madame Villermoz, Salvator Rosa, Lamarque, Enfant du Mont Carmel, Adelaide Fontaine, Niphetos, Prince Imperial, Wm. Griffiths, Lord Raglan, Madame Vidot, Ohl, General Jacqueminot, and Jules Margottin. Of bunches, 24 kinds, from private growers, Mr. Wilcox, gr. to Miss Crawshay, had Charles Lawson, Paul Perras, Gloire de Dijon, Lord Raglan, Lamarque, Jules Margottin, Madame Hector Jacquin, Madame E. Ory, Paul Ricaut, Duchess of Norfolk, Auguste Mie, Moiret, Crested Moss, Salvator Rosa, Devoniensis, Great Western, Solfaterre, H. General Jacqueminot, H. P. General Jacquemmot, Madame de Cambacérès, Coupe d'Hébé, Souvenir d'un Ami, Napoleon, Baronne de Wassenaer, and Madame de Manoel. Of Cloth of Gold we noticed a boxful from Pymms House, Edmonton. Mr. Standish had also good blooms of Eugene Appert.

Late as it was for Pelargoniums, a large number was contributed. Some were good, others very inferior. The best came from Mr. Turner, Mr. Winsor, Messrs. Dobson & Son, Mr. Gaines, and Mr. Bragg. Private growers were Mr. Bailey, Shardeloes; Mr. Shrimpton, gr. to A. J. Doxat, Esq., Putney Heath (the collections from these two very fine); Mr. Wier, gr. to — Hodgson, Esq.; Mr. Tandy, gr. to E. Saunders, Esq., Putney Heath; and Mr. Baillie, gr. to W. C. Carbonell, Esq., Harrow Road. Varieties still in good colour, and which evidently stand sunshine well, were Etna, Cynthia, R. Benyon, Prince of Prussia, Monarch, Empress Eugenie, Sir Colin Campbell, Guillaume Severyns, Madame Furlardo, Ariel, Bianca, King of Scarlets, Fairest of the Fair, Marvellous, Flora, Meteora, and the Bride. These, one and all, were good. Among Fancies the following were the best:—Bridesmaid, Acme, Mrs. Turner, Columbine, Rosabella, Zoe, delicatum, Captivator, Cloth of Silver, Celestial, and dame Sontag. Mr. Kinghorn sent Christina and Sheen Rival, and Messrs. E. G. Henderson their new kind called Imperial Crimson Nosegay.

Pinks and Pansies were getting over, but there were some remarkably fine Carnations and Picotees. Mr. Turner sent 24 varieties of each, very large and bright, namely: Carnations.—Mayor of Nottingham, Poor Tom, Mr. Tugwell, Sir G. Brown, Prince Albert, Justice Shallow, National, Mars, Christopher Sly, Seedling, Ascendant, Seedling, Antinio, Juno, Exit, Earl Stamford, Seedling, Sir H. Havelock, Garland, Tenby Rival, Mayor of Oldham, Friar Lawrence, Seedling, Admiral Curzon. Picotees.—Charlemagne, Emma, Rival Purple, Rev. A. Matthews, Mr. Hobbs, Cedo Nulli, Miss Holbeck, Prince Arthur, Mrs. Norman, Amy Robsart, Countess Alice, Mary, Mrs. May, Mrs. Drake, Eliza, Miss Charlotte, Prince of Wales, Duke of Devonshire, Mrs. Strachan, Prince Albert, Finis, Ne Plus Ultra seedling. Mr. Norman, of Woolwich, also sent a stand of each, in collections of 12 varieties, very pretty, but much less in size. Mr. Bragg sent 24 Carnations and the same number of Picotees, the latter included some pretty yellow kinds. A Certificate was awarded to a fine Scarlet Flake, named Sir H. Havelock (Puxsley); the Rev. A. Matthews and Rival Purple, two heavy-edged Picotees, were very fine.

Verbenas were shown only in a cut state; several collections were shown. The only prize awarded was to Mr. Turner, for Mrs. Pennington, Fairy, conspicua, Gem, Lord Elgin, Ajax, Nostradamus, Lady Peto, Lord Raglan, Comet, Leviathan, Earl of Shaftesbury, Novelty, Satanella, Venus, Matilda, Catherine, Lord Clyde, Verdi, Sir J. Outram, Monsieur Hardy, La Magicienne, Charles Dickens, Mrs. Maclean. Mr. C. J. Perry, of Birmingham, received a Certificate for Clara, a rose Verbena.

Fuchsias were largely contributed and in finer condition than usual. The fault was that too great a proportion of the kinds was dark. The best came from Mr. Oubridge, gr. to — Foster, Esq., Stamford Hill, Mr. Bray, of Regent's Park, being second. The best kinds were Little Bopeep, Clio, Fairest of the Fair, Venus de Medici, Gen. Williams, Souvenir de Chiswick, Peer of England, Queen of Hanover, Honeyball, Wonderful, Guiding Star, and Rose of Castile.

Of Ferns two or three collections were shown. The best came from Messrs. Baillie, Bunney, and Gedney. They contained fine plants of Gleichenias, and other favourite sorts, the names of which have been given in former reports.

Of Miscellaneous subjects Mr. Ivison, gr. to the Duke of Northumberland at Sion, showed immense leaves of Victoria Regia in shallow tanks; also the pink Nymphæa Devoniana, together with examples of the white and blue kinds, and of Nelumbium speciosum. We also noticed finely flowered specimens of Lisianthus Russellianus, a plant now rarely to be met with, and the handsome Vallota purpurea.

Calceolarias were shown in good condition by Mr. Cole, of St. Albans. Of shrubby kinds the best were Magnet, rosy crimson; Orion, yellow; aurea floribunda, Amazon, and Queen of Yellows.

Of Phloxes two handsome sorts were shown by Mr. Turner; one, a white kind, was named Blanche, the other was lilac and named Model.

Petunias, both double and striped, were exhibited by Messrs. E. G. Henderson. Among them the most striking were M. Henry Jacotot, purple blotched with white; Coquette, and Ernest Benary, the last a Carnation striped sort; M. F. Beosl, semi-double crimson; Madame de Pruins, and Virgo Maria, pale rose, very double.

The last-named firm also contributed some extremely showy varieties of Dianthus sinensis giganteus. They were of various colours, varying from deep crimson to pale pink striped or blotched, or mottled with white, each flower measuring not less than 2½ inches in diameter! The effect produced by a mass of such blossoms as we have just described may therefore easily be conceived.

Of Fruit there was a large display. Pine Apples especially were excellent, beautiful examples of this fruit being shown by Messrs. Davies, Floud, Young, and Page. Mr. Floud's Pines in particular have been very fine. A Providence, weighing 11 lbs. 4 oz., was shown by that grower at the Crystal Palace on the 8th ult., and at the exhibition held here on the 15th ult. he furnished a Queen weighing 6 lbs. 5 oz., an Enville 6 lbs. 10 oz., and a Providence 11 lbs. 9 oz. Nor were his fruit inferior on this occasion. Messrs. Povey, Davies, Young, and Oates also showed fine fruit of the last named variety. Queens came from Messrs. Dalrymple, Fryer, Page, Halliday, and Temple; and a Prickly Cayenne weighing 8½ lbs. came from Mr. Bailey, Shardeloes. We also noticed two very fine specimens of Enville.

Of Grapes, Mr. Drewitt, gr. to Mrs. Cubitt, the Denbies, near Dorking, sent admirable bunches of Black Hamburgh, and Grizzly and White Frontignan. These were each perfect of their kinds, and fully maintained the reputation for good Grape growing which this excellent grower has already attained. Not less remarkable were three bunches from Mr. Allport, gr. to H. Ackroyd, Esq., Doddington Hall, Cheshire. These were Black Hamburgh, West's St. Peters, and Golden Hamburgh. The latter was stated to have been from a bud inserted in a very old Vine on the 18th Feb. last year. The fruit exhibited was ripe on the 10th ult. and was larger than that of the sort on which it was budded. Messrs. Wortley, Frost, Page, Bousie, Wood, and Turnbull also showed well in this class. Of Black Hamburgh the best dishes came from Messrs. Young, Henderson, Little, Hill, Sawkins, Page, Harrison, Simpson, and Perkins. Beautiful bunches of West's St. Peter's came from Mr. Allport, and fine fruit of this variety also came from Messrs. Williamson, Turner, Turnbull, and Tillyard. Of Muscats the ripest and most perfect, though by no means the largest, were shown by Mr. Ingram, gr. to J. J. Blandy, Esq. Mr. Allport and Mr. Turnbull also showed very fine Muscats. Fine bunches of the Bowood variety came from Mr. Thomson of Dalkeith. The best basket of 12 lbs. was contributed by Mr. Hill, gr. to R. Sneyd, Esq. Keele Hall, Staffordshire. Messrs. Hodson, Bailey, Thomson, and Jackson also furnished good baskets, chiefly of Black Hamburgh. Of White Hamburgh, Mr. Bailey showed three very fine bunches; of Golden Hamburgh we noticed several exhibitions, but none so good as Mr. Allport's. A remarkable fact connected with this Grape is that those from budded Vines were much rounder in the berry than others from plants on their own roots. Of Pot Vines there were exhibitions from Messrs. Standish, Alderson, Ivison, and others. Mr. Standish's, both Muscats and Black Hamburghs, were extremely good, the bunches being large, and the Muscats especially well ripened, though the only places they had to grow in were, as we understood, low pits heated with dung and leaves.

Of Peaches and Nectarines beautiful exhibitions of four dishes each came from Messrs. Miller, Henderson, Thomas, Turnbull, Little, and Allen. The sorts were chiefly Royal George, Bellegarde, and Noblesse Peaches, and Violette Hâtive, Elruge, and Pitmaston Orange Nectarines. Of two dishes, the best came from Messrs. Dawson, Judd, Rutland, Sawkins, and Miller. Grosse Mignonne Peaches, large and fine, came from Mr. Taylor and Mr. Widdowson.

Of Apricots only one dish was shown. They came from Mr. Cameron, gr. to the Duke of Richmond at Goodwood.

Figs: Brown Turkey and Lee's Perpetual were contributed by Messrs. Page, Snow, Ruffett, Hutt, and Bonsie. We also noticed a dish of the Violet Fig, the fruit of which was nearly black.

Cherries came from Messrs. Bousie, Wood, Snow, and Widdowson. The sorts were Elton, May and Late Duke, and Morello.

Strawberries were furnished by Messrs. Bailey, Sage, Turner, Kimberley, and Tillyard. Among the sorts were Bicton White, British Queen, Myatt's Eleanor, and Surprise, Admiral Dundas, Sir C. Napier, Stirling Castle Pine, Carolina Superb, Filbert Pine, Crimson Queen, (large deeply-furrowed late kind), Adair (a large dark kind), and Nimrod. Of Seedlings the best was Oscar, the merits of which may now be considered established. It is certainly the best flavoured of large kinds, and being a great cropper must soon find a place in every garden. This was shown by Mr. Turner, of Slough.

Melons were numerous. The best, however, were Scarlet Gem and Orion, the latter green-fleshed. The former has been successful at every show this season.

Of Apples a dish of the variety called French Crab was again exhibited, still in an excellent state of preservation.

Miscellaneous collections of fruit came from Messrs. Turnbull, Dawson, Thomas, Ruffett, and Davies, the names being put down in the order in which the prizes were awarded. In the first lot were Pine Apples, Strawberries, West's St. Peter's and Muscat Grapes, Royal George Peaches and Elruge Nectarines, Bousie's Incomparable Melon, a handsomely netted sort; Violet Figs, and May Duke Cherries. The second group consisted of Providence and Queen Pine Apples, Black Hamburgh and Chasselas Musqué Grapes, Myatt's Surprise and Sir Harry Strawberries, Melons, Royal George Peaches, and Violet Hâtive Nectarines and Cherries. In the third lot were Queen Pines, Muscadine and Black Hamburgh Grapes, British Queen Strawberries, Violette Hâtive and Royal George Peaches, and Golden Perfection Melon. In the other two collections were Queen Pines, Black Hamburgh Grapes, Peaches, Nectarines, Strawberries, and Cherries.

Notices of Books.

Plain and Pleasant Talk about Fruits, Flowers, and Farming. By H. W. Beecher. Small 8vo. pp. 420. New York: Derby & Co.; London: Sampson, Low, Son & Co.

The author of this agreeable and instructive volume has perfectly succeeded in making it correspond with its title. Perhaps we ought rather to say that the title hardly does its justice; for it is not merely a collection of plain and pleasant talk, but of valuable facts and suggestions full of good sense about fruits, flowers, and farming—seen from an American point of view.

The history of the book is thus related by Mr. Beecher:—Twenty years ago he settled at Indianapolis, the capital of Indiana, a place then of 4000, and now of 25,000 inhabitants. At that time, and for years afterwards, there was not any other than political newspapers in the State—no educational journals, no agricultural or family papers. The *Indiana Journal* at length proposed to introduce an agricultural department.

The author having found the labour of daily preaching, extending through months, without the exception of a single day, begin to wear upon the nerves, sought for some relaxation, and accordingly he used, after each week night's preaching, to drive the sermon out of his head by some alterative reading.

"In the State Library were Loudon's works—his Encyclopedias of Horticulture, of Agriculture, and of Architecture. We fell upon them, and, for years, almost monopolised them.

"In our little one-story cottage, after the day's work was done, we pored over these monuments of an almost incredible industry, and read, we suppose, not only every line, but much of it, many times over; until, at length, we had a typographical knowledge of many of the fine English estates—quite as intimate, we dare say, as was possessed by many of their owners.

"A seedman's list, a nurseryman's catalogue, are more fascinating to us than any story. In this way, through several years, we gradually accumulated materials and became familiar with facts and principles, which paved the way for our editorial labours. Lindley's Horticulture and Gray's Structural Botany came in as constant companions. And when, at length, through a friend's liberality, we became the recipients of the London *Gardeners' Chronicle*, edited by Prof. Lindley, our treasures were inestimable. Many hundred times have we lain awake for hours, unable to throw off the excitement of preaching, and beguiling the time with imaginary visits to the Chiswick Garden, or to the more than oriental magnificence of the Duke of Devonshire's grounds at Chatsworth. We have had long discussions, in that little bedroom at Indianapolis, with Van Mons about Pears, with Vibert about Roses, with Thompson and Knight of fruits and theories of vegetable life, and with Loudon about everything under the heavens in the horticultural world."

This turn of mind led him to write for the *Western Farmer and Gardener*, the modern name of the *Indiana Journal* from whose columns the papers before us "have been dug out."

How pleasant a style Mr. Beecher employs may be gathered from his chapter "*O Dear! shall we ever be done lying.*"

"An honest old gentleman, in telling us his troubles, gave great prominence to the necessity he was frequently under of disappointing his customers, whose work could not be finished as soon as he had promised. After explaining the difficulty, he looked up with great earnestness, and exclaimed, '*O dear! shall we ever be done with this lying?*'

"We have often wondered ourselves whether such a consummation would ever take place. 'Your boots shall be done on Saturday night without fail.' Nevertheless, you have to go to church with gaping shoes for want of them. 'Your coat shall be sent home by 9 o'clock on Saturday night;' and you get it, in fact, the Wednesday after. 'Will you lend me your wheelbarrow? I will return it to-night.' You wait for it till next week, and then send for it. My carpenter solemnly agreed to finish my house by November; but it was July before I could get the key. My wood was to be split on Saturday afternoon—enough for the Sabbath; so it was—but I had to do it. My money was to be paid me the next week; and then, next week; and then, next week—and then, as soon as he could get it; he did get it and spent it; and then it should be paid when he got it again—he got it again, and paid another debt because the man treated him more savagely than I would. The strength laid out in running for

this money, if it had been economically applied to labour, would, nearly, have earned the whole debt. The fellow never paid me at last; but Death came along, and he paid him promptly. 'O dear! shall we ever get done with this lying?' It is one of the few domestic manufactures which need no protection, and flourishes without benefit either to the producer or consumer."

The dry humour of the next extract will find admirers.

"*Deep Planting.*—We saw recently a Potato which grew at the depth of 25 feet below the surface of the earth. This is an extraordinary depth. Few things planted at that depth would vegetate. The fact in this case is unquestionable. The top was terminated by a cluster of blossoms, and the Potatoes were of the size of small Hickory Nuts.

"P.S. Another fact, which like to have been omitted in this account, is, that it grew at the bottom of an open well.'

The good sense of the following notices about pruning may be commended to gardeners of home growth, as well as to those on the other side the Atlantic.

"There is another marked fault in selecting trees—a disposition to get long and handsome trees with smooth stems. This principle of selection would be excellent when one goes after a Bean-pole, or a cane. A fruit tree is not usually cultivated for such uses. In the first place, it is not wise to expose the trunk of a fruit tree to the full sun of our summers. We have seen Peach trees killed by opening the head so much as to expose the main branches to the sun. A low head, a short trunk should be sought. When land is scarce, and orchards cultivated, high trimming is employed for the sake of convenience, not of the tree, but of its owner. And in cool and humid climates, such evils do not attend the practice, as with us. Beside picking long-shanked trees, one would suppose that a leaf below the crotch would poison the tree from the assiduity with which they are trimmed off. It ought to be laid down as a fundamental rule with us, that a tree is benefited not by the amount of its wood, but by the extent of its leaf surface. Every effort should be used to make the length of the wood moderate, and the amount of its leaves abundant. The leaf does not depend for its quality on the wood, but the wood takes its nature from the leaf. Young trees ought to be grown with side brush from the roots to the fork. Water shoots from the root are to be removed, but leaves upon the trunk are to be nursed. By cutting in the brush when it tends to a long growth, it will emit side shoots, and still increase the number of leaves.

"Secondly. There is great evil in pruning too much. France and England have given us our notions upon pruning. There, their own system is wise, because it conforms to the climate and soil. But their system of pruning is totally uncongenial with our seasons and the habits of our trees. In England, for instance, the Peach will not ripen in open grounds, except, perhaps, in the extreme southern counties. In consequence, it is trained upon walls, and its wood thinned, to let light and heat upon every part of it. It is very right to husband light and heat when it is scarce, and by opening the head of a tree to carry them to all parts of the sluggish wood. But we often have more than we want. A Peach will ripen, on the lowest limb and inside of the tree, by the mere heat of the atmosphere. Even in New England, the English system of pruning proves too free. Manning says, 'From the strong growth of fruit-trees in our country and the dryness of its atmosphere, severe pruning is less necessary here than in England.' We are not giving rules for pruning; but cautions against pruning too freely. There is not a single point in fruit cultivation where more mistakes are committed than in pruning."

We hope often to return to Mr. Beecher's amusing and instructive pages.

Miscellaneous.

How Actiniæ kill their prey.—In the recent number of the Proceedings of the Royal Society is a very curious account by Dr. Waller, Professor of Physiology in Queen's College, Birmingham, of the effects produced upon their prey by these animals. After showing that the theory of their effecting their purpose by communicating an electric shock, like the torpedo, the learned author proceeds thus. "In order to elucidate the real power of the Actiniæ—after having in vain exposed the finger on which the cuticle had been softened by soaking in water—considering that the tongue was better adapted for the purpose in view, by reason of the thinness of its cuticle, I presented its apex to the tentacles of an Actinia mesembryanthemum, of about the size of a half-crown piece. The result was such as to satisfy the most sceptical respecting the offensive weapons with which it is furnished. The animal seized the organ most vigorously, and was detached from it with some difficulty after the lapse of about a minute. Immediately a pungent acrid pain commenced, which continued to increase for some minutes until it became extremely distressing. The point attacked felt inflamed and much swollen, although to the eye no change in the part could be detected. These symptoms continued unabated for about an hour, and a slight temporary relief was only obtained by immersing the tongue in cold or warm water. After this period the symptoms gradually abated, and about four hours later they had entirely disappeared. A day or two after, a very minute ulceration was perceived over the apex of the tongue, which disappeared after being touched with nitrate of silver. I have subsequently frequently repeated this experiment on myself and others, using greater precaution, and have invariably obtained similar symptoms of urtication. In only one instance has a minute ulceration been the consequence. It is very evident therefore that the Actiniæ act by means of an acrid irritant poison, similar in some respects to that of the wasp, or of snakes, which quickly spreads through the system of the Annelida, producing the above mentioned results. It remains to determine whether the poisoned weapons existing in such numbers over the surface of the Actiniæ were left in the part attacked. For this purpose I stretched a thin India-rubber membrane over a glass tube. After its seizure by the Actinia, I found that under the microscope it was studded in many points with the poison darts inserted slightly in the membrane, without their having penetrated through. In this respect my observations differ from those of Mr. Gosse, who considers that a fragment of cuticle from the hand was perforated by these darts."

Calendar of Operations.

(*For the ensuing Week.*)

PLANT DEPARTMENT.

CONSERVATORY, &c.—If there are sickly or badly rooted specimens here they must be frequently examined for red spider, or they may become a nursery for that pest, and it will soon spread to adjoining plants. See that young stock is not allowed to suffer from want of pot room, and during very hot weather like the present attend carefully to watering, giving weak liquid manure to all plants in free growth that are likely to be benefited by it. Such stove plants as may have been removed to this house while in bloom should be replaced in heat as soon as their beauty is over, in order to permit their young wood to get ripened before short days set in. Orchids must now be carefully shaded during bright days, but when the weather is at all cloudy allow them as much light as they will bear without injury. Keep the foliage clear of insects and dust by frequent syringings or spongings, as may be necessary.

FORCING DEPARTMENT.

PINERIES.—Air should now be given liberally to young stock in dung pits, in order to secure strong stocky growth. The plants should not, however, be exposed to drying winds by giving back and front air liberally on drying days, for this would not serve the end in view; but a moderate circulation should be secured at night, giving no more during the day than may be necessary to prevent the temperature getting too high. This, with careful attention to the state of the roots, keeping the bottom heat regular, the soil in a nice healthy state as to moisture, and giving a liberal supply of manure water to such as are well rooted, will be found much more conducive to strong stocky growth than exposing the plants too freely to hot drying winds, which would probably check and throw them into fruit prematurely. Use every means to afford plants swelling their fruit a thoroughly moist atmosphere, sprinkling passages, &c., frequently, and shutting up early on the afternoons of bright days, giving a gentle dewing with the syringe, and saturating the atmosphere by sprinkling every available surface; also give these plenty of clear strong manure water at the root until the fruit begins to change colour, when the soil should be kept rather dry, which will improve the flavour. VINERIES.—Attend to former directions as to thinning the fruit in houses intended to furnish a late supply, and see that the bunches are severely thinned, and also that the crop left is not too heavy in proportion to the strength of the Vines. Where the fruit is swelling, be careful to maintain a moist state of the atmosphere, and give every possible attention to the roots, keeping the border in a healthy state as to moisture, and if watering is found necessary, use good strong manure water. Give abundance of air where the fruit is colouring, and do not allow plants in pots to remain in the house to cause damp, which, despite every care in ventilating, is apt to settle on the berries and spoil the bloom. Where the fruit is ripe and expected to hang for some time, the atmosphere of the house should be kept as cool as possible; but a little fire heat will probably be necessary occasionally in order to keep the atmosphere dry.

FLOWER GARDEN AND SHRUBBERIES.

Trimming, staking, and pegging down must be well followed up at this period where neatness and order are essential. See that sufficiently strong stakes are applied to plants with heavy foliage and gross habits, such as Dahlias, Hollyhocks, Larkspurs, Phloxes, and tall growing Asters. Keep Roses as much as possible free from insects, and if time can be spared dead blooms should be removed. Budding may now be proceeded with. Let Carnations and Picotees be layered, and that in quantity; they make exceedingly useful border flowers, and are much prized in a cut state. See therefore that plenty of them are secured for next season.

HARDY FRUIT AND KITCHEN GARDEN.

Tomatoes must be regularly attended to, keeping the shoots thin and stopping them above a cluster of fruit. Shallots if left in the ground after they are ripe are apt to mildew; they should therefore be taken up as soon as the tops begin to decay, and spread out in an airy place to dry, before storing. Herbs in flower should be cut and dried for winter use. They can either be hung up in bags to keep them clean or rubbed out and bottled. Where a sufficient breadth of Celery is not yet planted out this must be attended to as speedily as possible; it must however be well attended to with water until it is established, otherwise good sized heads need not be expected. Earth up former plantings and encourage rapid growth by means of occasional waterings with liquid manure.

COTTAGERS' GARDEN.

Plant early Ulm Savoy on spare ground from which Potatoes or other crops have been removed. They may be allowed to stand a foot apart each way. A little Spinach to stand the winter may also soon be put in. Water every evening crops likely to suffer from drought.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.
For the Week ending July 14, 1859, as observed at the Horticultural Gardens.

July.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Temperature of the Air. Min.	Temperature of the Air. Mean	Temperature of the Earth. 1 foot deep.	Temperature of the Earth. 2 feet deep.	Wind.	Rain.
Friday 8	8	30.171	30.110	83	48	65.5	66	64	W.	.00
Satur. 9	9	30.209	30.109	82	52	67.0	66	64	N.W.	.00
Sunday 10	10	30.179	30.128	86	50	68.0	66½	64½	W.	.00
Mon. 11	11	30.229	30.102	87	49	68.0	67	65	S.	.00
Tues. 12	12	30.122	30.052	93	52	72.5	67	65	S.W.	.00
Wed. 13	13	30.127	30.095	91	45	68.0	68	65½	S.W.	.00
Thurs. 14	○	30.250	30.149	76	47	61 5	68	65½	N.E.	.00
Average		30.184	30.106	85.4	49.0	67.2	66.9	64.8		.00

July 8—Clear and very fine throughout.
— 9—Cloudless; very fine; partially overcast.
— 10—Cloudless and hot; very fine; clear and fine at night.
— 11—Sultry; hot and dry; clear at night.
— 12—Clear and hot; excessively hot and dry; clear.
— 13—Hot and sultry; cloudless; very fine; cool at night.
— 14—Very fine throughout.
Mean temperature of the week, 4½ deg. above the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 33 years, for the ensuing Week, ending July 23, 1859.

July.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 17..	75.7	52.3	64.0	12	0.46 in.	2	1	2	2	4	13	7	3
Mon. 18..	74.3	51.0	62.6	16	1.22	1	—	1	—	5	15	8	4
Tues. 19..	72.3	51.0	61.7	18	0.60	2	1	1	1	7	11	8	2
Wed. 20..	72.0	51.2	61.6	19	0.47	1	1	2	—	1	16	10	3
Thurs. 21..	73.0	51.1	62.0	13	0.54	2	—	1	1	3	12	10	4
Friday 22..	73.3	52.2	62.7	17	1.37	1	3	2	1	4	13	6	1
Satur. 23..	74.4	53.3	63.9	15	0.70	1	3	5	2	3	9	5	5

The highest temperature during the above period occurred on the 17th, 1834—therm. 94 deg.; and the lowest on the 17th, 1856, and 23d, 1843—therm. 40 deg.

Notices to Correspondents.

ADVERTISEMENTS: *Orion.* We are very sorry to hear that you have been so unsuccessful. A man skilful in his business, healthy, industrious, and unmarried, ought to have no difficulty in procuring a situation. Such men are always wanted. Possibly you do not mention the wages you require; or possibly you ask more than the current wages. Unless this is so we are unable to account for what is, as far as we know, quite unusual. There must be some general cause, lying with yourself, for none of your applications ever receiving a reply.

ARTIFICIAL LIGHT: *A L.* This has little effect on vegetation. A Crocus will open its flowers when exposed to the light of a lamp, and plants may be roused from their sleep in the same way; but the great function of vegetation, the decomposition of carbonic acid, cannot be set in motion by the most powerful lamp light.

BOTANY: *_* If you wish to know for certain whether the candidate for the teachership really understands the subject, ask some botanist of *known* eminence to take the gentleman into a room, and there give him some plant to name and describe botanically. Pretenders are sure to be thus discovered.

BOUQUET HOLDERS: *J J & R N.* You may obtain them at any shop for the sale of fancy articles. They are made of all sorts of materials, from gold down to wire or wicker work.

FOUL WELL: *S R F.* It will consume a good deal of time to ascertain the nature of the matter which is forming in your well. We will endeavour to give you an answer next week.

GRAPES: *H H C.* The appearance of small transparent sticky sweet globules on some of the berries of a Black Hamburgh Vine which are just beginning to colour, does not indicate honey dew, but is a symptom of high health; the minute drops being surplus saccharine matter oozing through the skin.—*J G.* Your roots are down deep in bad soil, and you must expect the rest of your crop to fall into the same condition.—*W S.* Your Grapes are attacked by RUST, a disease caused by the skin of the berry when very young having been injured—by fingering, or by cold draughts of air, or by some other cause.

NAMES OF PLANTS: *J M A.* Cattleya maxima; not very different from some varieties of C. Mossiæ.—*H.* The large Oncidium sphacelatum.—*D D.* *a*, Alopecurus agrestis; *b*, Holcus lanatus; *c*, Lolium perenne; *d*, Hordeum murinum.—*J C L.* It is Bambusa gracilis.—*E H T.* Your shrub now in full bloom, grown from a seed brought from Lycia, is Paliurus aculeatus if it has prickles; Zizyphus vulgaris if it has none.—*J G.* 1, Tecoma jasminoides; 2, Actæa racemosa; 3, Not in a state for determination, the flowers being unexpanded and unexaminable.—*Mr. Fern.* 1, Asplenium Trichomanes; 2, Woodwardia (*alias* Doodia) caudata; 3, Lastrea Filix-mas; 4, Adiantum formosum.

MEALY BUG: *Wandsworth.* You had better try to destroy this by painting, with a brush, your Vines with Gishurst Compound in the proportion of half a pound to a gallon of soft water. But it will spoil the Grapes.

MICROPHOTOGRAPHS: *R.* One of the most successful of these curious productions is "The Interview of Charles I. with his Family," just three quarters of a French line long and half a line deep. The figures when magnified are as sharply defined as in the original picture. This specimen has been executed by Mr. Amadio, of 7, Throgmorton Street, one of the best of the London philosophical instrument makers.

MONSTROUS THISTLE: *J D A.* The specimen of Carduus palustris is certainly in a very curious state, almost crested like a cock's comb, and might as well be called cock's-combed as fasciated, the name given by botanists to such appearances. The Thistles are all subject to this peculiarity, the cause of which is unknown.

ROSES: *F H S.* This is one of the curious cases of malformation on which the doctrine of morphology is based. The whole of the interior apparatus of the flower is changing into leaves, in the axils of some of which new Rose-buds are even formed.

SEPULCHRAL FLOWERS: *C P.* Before we answer this question, it is necessary to know of what sort of soil the churchyard is composed.

STRAWBERRIES FROM SEED: *Sub.* Choose a female of good properties; remove from its flowers all the anthers before they burst or shed their pollen over the stigma; about the time these would have burst collect pollen from another plant—the male; and with it touch lightly the stigma of the female when waxy, and the work is done. Cover with a handglass or gauge to keep out insects for a day or two before and after the operation has been effected. The seeds when ripe may be sown at once in pans, and raised in a cold frame.‡

THINNING: *Near York.* There is no objection to the thinning taking place now, provided it is really done *immediately.*

MISC. Full price will be given for a perfect copy of No. 25, 1858.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

BURNARD, LACK, AND CO.'S CONCENTRATED SUPERPHOSPHATE OF LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.

CONCENTRATED TURNIP MANURE, equal in value to the preceding.

Of these Manures Dr. Voelcker says:—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."

Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to BURNARD, LACK, & Co., Sutton Road, Plymouth.

LONDON MANURE COMPANY, removed to 116, Fenchurch Street, E. C. (Established 1840), have the following MANURES ready for delivery:—

CORN MANURE for SPRING TOP-DRESSING
URATE
MANGEL MANURE
SUPERPHOSPHATE OF LIME
BLOOD MANURE
} all of guaranteed quality.

In consequence of the reduction in the price of raw material the London Manure Co. are enabled to lower the price of their Superphosphate of Lime, and to materially improve the Corn Manure and Urate.

The London Manure Co. also supply PERUVIAN GUANO (direct from Messrs. A. Gibbs and Sons), SULPHATE of AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of value. Wholesale dealers supplied.

116, Fenchurch Street, E.C. EDWARD PURSER, Secretary.

REDUCTION IN PRICE OF LAWES'S MANURES.

MR. LAWES begs to announce that he has this season reduced the price of the Manures manufactured by him, viz.:—

TURNIP MANURE	from £7 to	£6	6
SUPERPHOSPHATE OF LIME ..	,, 7 to	6	6
MINERAL do. ..	,, 6 to	5	5
BARLEY MANURE..		8	0

Prof. Way and Dr. Voelcker have sampled from a bulk of 5000 to 6000 tons at his factories, and their report and analyses are given in full in Circular to be obtained on application at his office, 1, Adelaide Place, London Bridge, E.C., or of his local Agents.

N.B. Genuine Peruvian Guano direct from Messrs. GIBBS, Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures. American Cotton-seed Cake supplied.

SOFT STUFF GREAVES ARE A CAPITAL MANURE FOR WHEAT LANDS.—The undersigned have sent large quantities to Norwich, where they are highly approved.—Price 4*l.* 10*s.* per ton in tierces (no charge for casks), delivered free to any railway station in London.

JOHN WILLIAMS & SON, Soap Works, Clerkenwell, London.

TO PIG AND POULTRY FEEDERS.

RICE SWEEPINGS FOR CHICKENS, 8*s.* per cwt., in 1¼ cwt. bags. SCREENED RICE, 11*s.* per cwt., in 1¼ cwt. bags. RICE MEAL, 6*s.* 6*d.* to 8*s.* 6*d.* per cwt. OILCAKE, 10*l.* 10*s.* to 11*l.* 10*s.* per ton only. DOG BISCUIT, 14*s.* to 15*s.* per cwt.—Sold for cash only by W. & R. JUPP, 6, Cross Lane, St. Mary-at-Hill, Eastcheap, City, E.C.

TO ENGINEERS.

SUBSOIL PULVERIZER.—A premium of TWENTY GUINEAS is offered by the undersigned for an approved draught design, (accompanied by a written explanation) of a MACHINE, to consist of a series of augers, for the general pulverisation, to a depth of 3 or 4 feet, of a marly soil, free from all obstructions but occasional small pieces of limestone; to be worked by a portable steam engine of 6-horse power, the augers to admit of expeditious liberation from the soil; but their number, shape, position (whether in one or two rows), and distance from each other, are matters left to the judgment of competitors. It is almost needless to add that no existing invention (Fowler's or any other) could effect so deep a pulverisation as that considered essential to the efficient cultivation of the Vine in our Australian Colonies. Designs to be sent in on or before the 15th of August.—H. S. WILLS, 10, Queen's Terrace, Queen's Road, Bayswater.

HAY HARVEST.

NICHOLSON'S PATENT HAYMAKER, to which was awarded the First Prize of the Royal Agricultural Society of England at the last contested trial.

The celebrated STAMFORD HORSE RAKE has lately been much improved, and has obtained 26 Prizes at competitive trials.

MOWING AND REAPING MACHINES are performing their work most satisfactorily, and fully justify public expectation, cutting about 10 acres per day, at a cost of 9*d.* per acre.

Orders for the above machines should be given at once to RICHMOND & CHANDLER, Salford, Manchester.

Branch Establishment, South John Street, Liverpool.

RICK AND HAY CLOTHS, HAY ROPES, second-hand MARQUEES and TENTS; NETTING, new and old, for protecting fruit trees; SCAFFOLD CORD, SACK TYERS, BLIND and SASH LINES, Patent Circinate NOSEBAGS, &c., &c.

J. MORISON, Manufacturer, 25, Norton Folgate, N.E.

WHY NOT PRESERVE YOUR HAY?

BENJAMIN EDGINGTON respectfully informs the Nobility and Gentry that they can be supplied on the best terms with RICK CLOTHS, with Poles complete.

Early application should be made for SECOND-HAND RICK CLOTHS. MARQUEES, TENTS, and FLAGS. A great variety of Marquees and Tents may be seen erected on the premises. A quantity of SECOND-HAND TENTS from the Crimea at a greatly reduced price. An Illustrated Catalogue sent post free.

West End Establishment, 32, Charing Cross, S.W.

BENJAMIN EDGINGTON, 2, Duke Street, London Bridge, S.E.

WEDLAKE AND DENDY, AGRICULTURAL ENGINEERS, Hornchurch, Essex.

HAY MACHINES.

Small size, No. 1 .. £10 | Large size, No. 1 .. £12
Large size, No. 2 .. .. .. £13

These Machines are free from small and delicate parts, and can be easily understood by a farm labourer. They have gained several prizes at the Royal Agricultural Society's Shows.

HORSE RAKES.

No. 1 .. .. £6 10*s.* | No. 2 .. .. £7 10*s.*

WEDLAKE & DENDY'S Horse Rakes are made on the tubular principle, combining great strength and lightness. Free to all the principal Railway Stations.

WEDLAKE & DENDY, Union Foundry, Hornchurch, Essex.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.

Principal—J. C. NESBIT, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

THE LANDS IMPROVEMENT COMPANY, 2, Old Palace Yard, Westminster, S.W.

To Landowners, the Clergy, Solicitors, Estate Agents, Surveyors, &c.—The Company is incorporated by Special Act of Parliament for England, Wales, and Scotland.—Under the Company's Acts Tenants for Life, Trustees, Mortgagees in possession, Incumbents of Livings, Bodies Corporate, certain Lessees, and other landowners are empowered to charge the inheritance with the cost of improvements, whether the money be borrowed from the Company or advanced by the Landowner out of his own funds.

The Company advance money, unlimited in amount, for works of Land Improvement, the Loans and incidental expenses being liquidated by a rentcharge for a specified term of years.

No investigation of Title is required, and the Company being of a strictly commercial character do not interfere with the plans and execution of the works, which are controlled only by the Enclosure Commissioners.

The improvements authorised comprise Drainage, Irrigation, Warping, Embanking, Enclosure, Clearing, Reclaiming, Planting, Erecting and Improving Farm Houses and buildings for Farm purposes, Farm Roads, Jetties, Steam Engines, Water Wheels, Tanks, Pipes, &c.

Owners in fee may effect improvements on their Estates without incurring the expense and personal responsibilities incident to Mortgages, and without regard to the amount of existing incumbrances. Proprietors may apply jointly for the execution of Improvements mutually beneficial, such as a Common Outfall, Roads through the District, Water Power, &c. For further information and for forms of application apply to the Hon. W. NAPIER, Managing Director, 2, Old Palace Yard, Westminster, S.W.

THE BIRMINGHAM CATTLE AND POULTRY SHOW, 1859.—The ELEVENTH GREAT ANNUAL EXHIBITION OF CATTLE, SHEEP, PIGS, DOMESTIC POULTRY, AND ROOTS, will be held in Bingley Hall on MONDAY, TUESDAY, AND WEDNESDAY, November 28, 29, and 30, and THURSDAY, December 1, when Prizes, Cups, or other Articles of Silver Plate, and Gold and Silver Medals, to the amount of 1250*l.*, will be awarded.

Prize Lists and any other information may be obtained from JOHN MORGAN, Secretary.

Offices: Bingley Hall, Birmingham.

The Agricultural Gazette.

SATURDAY, JULY 16, 1859.

THE annual exhibition of the Royal Agricultural Society of England has hitherto increased in interest and extent each year; and this year's show is exceptional only in presenting an unusual progress. The catalogue of implements is now a portly volume of 440 pages, occupied with the enumeration of 5000 articles, one-half more than even Chester boasted of, and contributed by 50 or 60 additional exhibitors. The catalogue of live stock includes 1159 entries in horses, cattle, sheep, and pigs; and there are besides good displays both of wool and cheese.

The competition in some classes is unprecedentedly large. The entries for the local premiums are this year arranged separately from the others, and magnificent classes—especially of cows, heifers, and yearlings in pairs—of Shropshire sheep, and Berkshire pigs—have been attracted by them. The judges in the large short-woolled sheep, not Southdowns, have had a most laborious task, and these breeds as represented now from Hampshire, Shropshire, and Oxfordshire, which have been growing in importance ever since the Gloucester meeting, have never been surpassed. There was not a more interesting class of animals on the ground than the pairs of cows and heifers in milk or in calf, and pairs of yearlings, attracted by the local premiums. It was a good opportunity—one of the few left to us—of pitting the rival breeds against one another. But the challenge was not generally accepted, and excepting three or four entries of Herefords, one of long-horns, and one of the little Breton dairy stock presenting an absurd contrast to its neighbours, the animals were all of the Short-horn breed. A report of the show of horses, upwards of 200 in number, will be found in another page. In the Short-horn classes the prizes have in some instances been given to comparatively new names; but Colonels TOWNELEY and PENNANT, Captain GUNTER, Messrs. AMBLER, STRATTON, FLETCHER, TOD, DOUGLASS, BOOTH, are among the prize holders. "Marmaduke," which has had a career of great success ever since he has been exhibited, is only second this year in the first class. Duchess 77, shown by Captain GUNTER as a yearling heifer, is third in her class; she is the calf of Duchess 70, sold a calf for 300 guineas at the Tortworth sale, and is probably one of the most "in-and-in" bred animals in the yard; her sire and dam being by the same bull, and her grandsire and granddam being by the same bull. There is no evidence of want of constitution about her; and no lack of fecundity of late years in the particular family, nearly related as its members are, to which she belongs.

Among Herefords the well-known names as breeders of H.R.H. the PRINCE CONSORT, Lord BERWICK, and Messrs. HILL, PERRY, NAYLOR, VEVERS, and PRICE, figure in the prize list; nearly 100 animals are shown in these classes against 163 in the Short-horn classes.

There is also a good show of Devons, and with the exception of two to H.R.H the PRINCE CONSORT, the prizes go to the long established names of FOURACRE, FARTHING, QUARTLY, HOLE, POPE, and TURNER.

There is a shorter collection of the long-horned breed than, considering the locality, might have been expected.

The show of sheep is very large. There are nearly 100 entries in Leicesters, and the prizes are taken by Messrs. SANDAY and PAWLETT.

Among the Leicesters shown were rams from the flock of Mr. VALENTINE BARFORD, Foscote—shorn extraordinarily bare—and interesting from their relationship to the original Dishley flock as improved by ROBERT BAKEWELL. A paper was handed about containing a pedigree of the flock bred at Foscote since the year 1783, indicating very close relationship and persevering "in-and-in" breeding, without the production of any of those ill effects which are ascribed to it.

There are 34 entries of shearling rams in the Southdown classes, and the Duke of RICHMOND is placed first and JONAS WEBB second and third; while in the class of old rams the Duke is again first and WILLIAM RIGDEN second and third. There are 10 pens of five shearling ewes, and his Grace is here first and second, Mr. RIGDEN being third. Of course a great deal of the success of every man in this breed has long depended upon the influence of the Babraham sales, and a great improvement has no doubt been effected in this way of late years in the Duke of RICHMOND'S flock, which have acquired greater strength, thickness, and constitution. Certainly his Grace's rams exhibited this year have never been surpassed, and their place at the Sussex Exhibition a week or two ago led every one to anticipate their success here.

A very large competition in long-woolled sheep results in the award of prizes to Messrs. GARNE, FLETCHER, PORTER, and LANE, all well-known names.

For short-woolled sheep, not South Downs, Mr. HUMFREY, of Oak Ash, near Wantage, is almost as successful as he was last year at Chester: first, second, and third in shearling rams—a class of no fewer than 70 sheep; second among the old rams, where Mr. DRUCE is first, and Mr. ADNEY third; first among the pen of five shearling ewes, where Messrs. KING and CANNING are second and third; this gentleman has maintained his position as leader among the owners of what is probably the most rising breed in the country. The local prizes offered exclusively to Shropshire sheep did not allow him to compete for them.

The classes of pigs exhibited were generally commended by the judges, and well deserved the commendation, especially those classes of Berkshires exhibited for the special prizes of the Local Committee. All the classes for the local prizes were indeed exceedingly successful. The prizes for milk and dairy breeds and for cows and heifers all went to Shropshire, Messrs. AMBLER, LANGSTON, and PRICE (of Featherston) being the chief prizeholders.

Among the principal points of discussion which have arisen at the Warwick meeting is the influence of the prize system on the progress of agricultural mechanics and on the interests of machine makers and their customers generally. Mr. HORNSBY has this year carried off a large share of the prizes for ploughs. A recent maker of these tools, he has beaten the old established houses on their own ground, and it is urged by those who advocate the prize system that neither would he have exerted himself in order to such an attainment, nor could the public have become so immediately aware of the merit of his implements had there been no prize offered by the Society—no award made by their judges. Mr. HORNSBY'S ploughs did very excellent work, and they have some points in the construction of their framework that are praiseworthy; their mould-boards are convex to their work, on the plan of some Scotch ploughs, FERGUSON'S of Stirling, and other clay-land ploughs; but these distinctions—and there are greater differences among Scotch ploughs than there are amongst those of HOWARD, RANSOME, and HORNSBY—are not, we venture to say, of any such essential importance to the economy of English agriculture as to carry with them that enormous reward which an award by the Society's judges carries with it. And let it not be said that this is spoken in the interest of the old-established firms. The prizes

are as valuable to them as to any of their competitors. They have already achieved a position by years of patient labour and attention, and they have ascertained conclusively what the principles are on which a well-made plough depends for its efficiency. The prize system has made them, it is said, and now they want to throw the ladder down by which they have attained distinction. But we believe that the public verdict would have rewarded their patient perseverance as effectually as that of selected and official judges—and that the latter has done harm by giving them an undue eminence and prominence, as compared with many who are not so often named, but who differ very little from them in the merit of their implements.

—— The past week of extremely hot weather has wonderfully hastened the ripening of grain crops—the greatest progress was observable on the return journey from the Warwick show. Harvest has already commenced along the line from London to Didcot. The Wheat crop, though generally this year a puzzle to the reaping machine, being unusually laid, promises to yield well. Reports to this effect are given from some of the southern counties in another column. The Turnip crop which had escaped the fly is in many cases falling victim to the black caterpillar. An instrument shown at Warwick — a revolving brush which would travel over 5 or 6 acres a day—may perhaps be serviceable in clearing the Turnip plants when grown in rows from this voracious plague—brushing them off to the interval between the rows, where they could be dealt with by roller and drill harrow.

—— The annual letting of Mr. JONAS WEBB'S rams took place last week at Babraham, when four dozen shearling rams, 42 two-shear sheep, two dozen three-year-old sheep, and a few older rams were offered. The prices reached did not equal those of some previous years, although the average, 25*l.* 9*s.* 10*d.* for 54 sheep publicly let, was 4*l.* 10*s.* higher than that of 1858. Some of the best sheep were taken by Sussex flockmasters, Mr. WATERS, of Eastbourne, being the hirer of the highest priced tup at 70 guineas, and Mr. RIGDEN, of Brighton, of the next highest for 60 guineas. Purchasers were present from America, New South Wales, and the Continent.

APPEARANCE OF THE CROPS.

CORNWALL, *Launceston.*—Wheat, nearly an average crop, but not equal to either of the last two years. Barley and Oats suffering much from the drought, and both these crops will be light and consequently below an average. Hay, a very good crop, and secured in excellent condition. Mangels very partial, the fly in many instances damaged them exceedingly. Some fields of early sown Swedes are hoed and past all danger of the fly, but what we term the Black Jack is on them and doing considerable injury. The excessive hot dry weather prevents all green crops from making any progress; the prospect is therefore by no means cheering. Our pastures are quite burnt up, both Grass and water are likely to be very scarce. The Potato crop, although slightly affected in some instances with disease, is on the whole satisfactory. Harvest will partially commence the last week in July, and the cutting of Wheat will be general the first week in August. *John Wills, South Petherwyn, July 9.* —*Probus.* I beg to state that the Wheat crop in this neighbourhood is generally good, but the Barley crop, especially the late sown, is very thin and short, and must be much under an average crop. Oats also are likely to be under an average crop, on account of the extreme dryness of the season. The Mangel crop is generally bad, and the Turnips so backward that I cannot say much about them; the black caterpillar is making sad havoc with the early sown Turnips, as also with the Rape. The hay crop is under an average, but has been got together in beautiful order. The Wheat harvest is likely to be busy the latter part of the month. *H. Tresawne.*—Our Wheat crops are looking very favourable, although not heavy in straw. Early sown Barley and Oats are fine; late sown, thin, and short in straw. Should the fine weather continue I expect harvest will be general at the end of this month. Great complaints are made by farmers in consequence of the devastation committed on the Turnip and Rape crops by the black caterpillar. *M. Michell, Tregoose, near Truro.*

ESSEX.—Wheat, over average and well set; Barley, full average; Oats, average; Beans, average, partial failures; Mangels, good; Peas, abundant and above average; hay, abundant, over average; Potatoes, very much diseased; Turnips plant well; my own crops never so good. Harvest commences about the 18th. *J. J. Mechi, Tiptree Hall.*—Wheat generally fine and free from blight and maggot, but much lodged; will be ready for commencing harvest by the 25th, some pieces earlier will be a full crop. Barley fine, but unequal in quality; is much lodged. The early sown will be the best, malting quality, and will be a full crop generally. Oats are fine, and will be of heavier quality than usual. Common Beans good; but winter Beans for the most part very bad, and are ploughed up; they constitute a moiety of the whole crop. Hog Peas a full average crop, the autumn sown very good. White Peas below an average. Mangel Wurzel rather thin in plant, but very promising and vigorous in growth. Swede Turnips plant unusually well with little fly. Feed becoming very scarce, but the hay has been well housed. The crops of both Clover and Grass, however, below an average crop. *Robert Baker, Writtle, Essex, July 9.*

HAMPSHIRE, *Romsey.* Wheat is thin on the ground and in many places much laid by storms. There is a defect in the ear of many pieces from the causes alluded to. It is the general opinion that there will not be an average crop. I think cutting will commence about August 1. Oats and Barley appear like an average crop, Beans, Peas, and Tares in my opinion will prove above an average. Our Mangels are splendid, and a much larger breadth than usual is planted. Swedes and Turnips have come forward with great rapidity and singular exemption from the fly, but the Black Palmer is carrying them off completely in many places. The earwig and wireworm is also making sad havoc, altogether rendering flockmasters very anxious about their crops of these very valuable roots. A large breadth of Potatoes was planted and they came on most satisfactorily, but the blight has assailed them earlier than it has ever done before, and apparently with greater virulence. The gardens are in many places offensive from its effects. *J. W. Clark, Lockerby.*

KENT: *Isle of Thanet.*—On the latter part of the last and the beginning of the present month we were visited with terrific thunderstorms and torrents of rain, all our best and most luxuriant corn crops were laid flat—a thing not common in this dry locality. We have since been favoured with a week of fine dry hot forcing weather, which has been of great benefit, but still on all our best high farmed land the damage done to the corn is very great; although a much greater abundance of straw than usual, the yield must prove deficient in quantity and light and inferior in quality. The foregoing will apply to Wheat, Barley, and Oats; probably Oats (not extensively grown here) will be found to have sustained the least, and Barley (on which we Thanet farmers so much depend) the most injury. Peas are generally a good crop this season, so are spring Beans, whilst winter Beans are in most places a failure. Harvest will be about ten days earlier than usual; Barley and Oats will be commenced generally about the 18th inst., and Wheat a week later. In some few instances autumn-sown Barley is cut already. From present appearances the poor land and the bad farmer will this year have the best of it; the rain in these cases has been rather beneficial than injurious. The hay-harvest has been more than an average both in artificial and permanent Grasses, and though the rains have been very heavy, they have not been of sufficient duration to do hay much injury, or cause much delay; it is now mostly secured in fair condition. Potatoes are more diseased at this early period than they have ever been, not excepting the year 1846, the haulm on all the early varieties looks as if it were burnt, the tubers are fast rotting, and our fields and gardens actually stink so as to be annoying to persons who walk the public roads. Late sorts are not at present so seriously affected, whether they will be depends much on the weather, past experience proving (that if thunder does not cause the disease) the virulence of it is much increased when the atmosphere is highly charged with electricity. There is a much larger breadth planted this year than for many years past, and if the disease prevails all over the kingdom to the same extent as here, the loss will be severely felt by the producer and consumer. Our Mangel Wurzel has generally taken well; they are strong and healthy plants, and promise a heavy crop. Turnips are very inferior, every piece in the neighbourhood has suffered much from the black caterpillar (provincially called the nigger). We have never known the Swedes so much injured. Many remedies have been tried, but with little effect; where a person can turn ducks on the field they more effectually clear off the nigger than any means I am acquainted with. From what I have tried myself, and seen others, I believe that if as soon as the nigger first appears ducks at the rate of about four per acre are turned on the field, they will soon eat all the niggers and save the crop. We have a larger breadth of Canary sown this year than usual, and it cannot well look better. *William Manser, Dumpton, Ramsgate.*

Societies.

GREAT MEETING OF THE ROYAL AGRICULTURAL SOCIETY AT WARWICK.

THE class of implements examined by the judges of the Society this year requires a large extent of trial ground. Excepting that of the steam cultivator there were at Chester no field trials whatever; the judges were there engaged on barn machinery and implements for preparing food. This year they are employed in superintending ploughing, harrowing, cultivating, rolling—on light land, on so-called medium land, and on heavy land, and many fields are needed for the purpose.

The labour is not only proportionately heavy for those whose award is to direct the tide of custom; but it is more a personal labour. The question to be solved is not so capable of answer, independently of the judgment or the prejudice of the spectator. You can time a chaff-cutter and measure the power it has taken to cut a given weight of hay into pieces of a given length, and there is hardly an item on which the award must hinge which is not determined for you; but in the case of ploughing there is difference of opinion as to what constitutes good work, and your judgment is affected not only by the quality of the tool but by the ability of the man who holds it. The furrow-slices may be uniformly cut and laid in straight lines; the lip of the original surface, which is most liable to exposure, may be perfectly buried, and the corner of the slice taken from the bottom of the furrow immediately below that lip may stand prominently up, exposing a maximum of new surface to the air, and the dynamometer may declare the work to be inexpensively performed, but a great deal of the nature of the performance depends on what does not meet the eye, and you have to search for evidence of its quality by laborious subsequent examination. Your judgment, too, is necessarily affected by the weather. A chaff-cutter or a threshing machine is set to work on material which may be and ought to be all dry and in good order, but the soil is not only essentially different in different places, but it varies according to the weather in the same place.

A cultivator will go swimmingly through dry and clean land which would clog and choke in foul land or in wet. A revolving harrow like that of Mr. Ellis, which raised such a dust on Monday afternoon in the light land trial ground, is just the thing to shake the weeds out of the shallow tilth raised by a scarifier or paring plough over loose and dry and sandy soil, but it would be incapable of work on stiffer wetter land. Grubbers and cultivators, whether driven by horse-power or by steam, whose work may vary much on extremely dry and hard and intractable land, may, under the average circumstances of land throughout the year, differ very little in their performance.

The judgments of implements of cultivation, while thus more difficult and laborious than any, are perhaps less likely than any others to be completely satisfactory. Look at the effect of them—you perhaps have 30 ploughs upon the ground—20 are selected for trial work. Each has performed its ridge. In some of the cases the soil moved has been removed in order to see exactly what has really been cut off from the subsoil; the dynamometer has been put to two or three, and the work done, and the labour by which it has been done having been thus ascertained, the best and second best are declared—and the rest are nowhere. Not only so, but the worst are as good, as far as the Society's award is concerned, as the many who fall but a little way below the best.

We saw lying on the light land trial ground a large and somewhat heavy-looking timber-framed plough from Worcestershire. The maker had invented and applied several appliances for the more easy deflection and lateral shifting of the share or sock, and of the coulter. These are the peculiarities on which the maker prided himself; but the important thing connected with it, so far as society was concerned, was that it was the plough of its district. It looked outlandish, clumsy, and abrupt compared with the graceful curves and polished surfaces of the more "highly bred" instruments around it, and they were very probably as much superior to it as they looked; but this was not ascertained, for it was not tried. And the makers of the district which it represents go home unconvinced upon that point.

One of the most interesting sections of a national agricultural show might be made of a representative stand of implements—the ploughs and grubbers and harrows actually in general use in large districts where local peculiarities have retained most strongly their position. And awards, which should be founded upon actual trials of these machines alongside our best makers would be of even greater usefulness than those of these first-class makers among themselves, which have to determine the order of precedence among men who have achieved what is essentially a right to walk at the head of the profession abreast. Messrs. Hornsby, Howard, and Ransome probably made the best work upon the light-land ground, and it is barely possible that by dint of dust and perspiration, and labour and anxiety, the nicer distinctions on which the relative position of their tools depend may have been correctly made out; and all the anxiety and labour on the part of these makers was no doubt reasonably bestowed, because the upshot of it all is that the one stands first and the other second, and the third nowhere for merit on the lists of the Society for the next three years; but can any one believe that it will matter to the country in any appreciable manner whether the land is ploughed during those three years by Howard's ploughs or Ransome's? The economy of agriculture will not during the next three years be affected by these laborious competitions in the very least; and it is probable that the true relative merits of the competing implements would in the long run appear to the spectator if each maker were allowed his own way of exhibiting them, even though the fierceness and anxiety of the competition for the Society's award were a good deal reduced.

MONDAY: *July* 11.—STEAM PLOUGHING.—On Saturday, July 9, and to-day, the judges have been engaged on the light and medium soil trial grounds in comparing the work of ploughs, of steam cultivators, and of grubbers, paring ploughs, and harrows. On Mr. Canning's land, a somewhat steep slope of marly soil, some 10 chains wide and 20 chains long, Fowler's system of ploughs, and the same balance frame-work with cultivating apparatus, being essentially the plough frames without the regular mould-boards, with, however, share and cutter, was subjected to a very severe trial. It certainly made the best work in the field. The ploughing was excellent, of great depth, and without a slighted piece. No team of horses could have done the work. Probably 20 horses if they could have been yoked might have pulled the machine along, but 20 horses would have disfigured their own work by their trampling; and here without pressure on the subsoil, or a single hoof upon the soil once moved, the whole cultivable surface is turned over and under at least 9 inches deep, four furrows at a time, and at a rate considerably exceeding the ordinary pace of plough horses. The cultivating or grubbing was an equally thorough and perfect performance—left of course exceedingly rough, and needing many processes and much weathering before fit for seed, but more completely loosened, and disturbed at least 8 inches deep.

The performance of Coleman's steam cultivator seemed to us less perfect than that of Fowler's; and Smith of Woolston's apparatus, exhibited by the Messrs. Howard, was also in our opinion less perfect on the whole. The plot worked by this apparatus was perhaps less favourable to its operation than that which fell to the lot of the cultivator worked by Fowler; and certainly the old marl pit across which Smith's tackle had to go was as well done as any other part of his allotment. When the work up and down had been crossed too by his grubber, as it is in order to the completion of his process, the land was very much reduced and more prepared for the influence of the weather than under the rough but thorough grubbing which it received at the hands of Fowler's grubber. We quite anticipate, nevertheless, that the award of the judges will give the 50*l.* premium to the latter apparatus. In Smith's case an ordinary engine works a double vertical windlass separate from the engine. In Fowler's a horizontal windlass is attached to a powerful steam engine underneath it;

the wire rope travels round it and round an anchorage at the other end of the field, which also carries a windlass. Both the engine at one end and the anchorage at the other travel as the manager directs along their respective headlands, and that by a simple gearing or ungearing of a winding pulley into wheels connected with the windlass. The whole thing is exceedingly simply managed, and the guiding arrangement on the cultivator or plough employed is sufficient, as was seen to-day along the curved ridges up and down which they went, to take the apparatus laterally out of the straight line, and so to adapt it to the curvatures of side ridges or old lands.

In the adjoining field, occupied by Mr. Palmer, Romaine's rotating cultivator stood, after having done some very satisfactory work: not so deep as it should have been, however, owing to the lack of power in the engine, which at length proved so defective that the whole affair was stopped. The engine on its roller wheels, the large front balance wheel, the working cylinder behind, with the stage for engineer and fuel above that, and water tank atop of boiler high over all, strike one as a cumbrous and bulky affair; but it weighs only 11 tons altogether, and travelling about one-sixth the rate of a plough horse's ordinary pace, it would not take two-horse power to merely move it. It does, in fact, take about 12 lbs. pressure on the boiler to work the mere locomotion of the engine, while 70 or 80 are used when the digging apparatus is also engaged, which thus takes seven or eight times as much power as is needed to move 11 tons on large wheels at the rate of half a mile an hour over the land. The power thus estimated is probably 14 or 15 horses, used by the digging cylinder, armed with 33 cutting teeth of a form and relative position arrived at by long and expensive trial. It works in the same direction as the travelling wheels, only so much faster as to set each tooth (one-third the circumference of the cylinder apart) just 6 inches in advance of its neighbour or the one which preceded it, and as each overlaps its neighbour on either side of it, the whole land is thus broken up into fragments varying in thickness from 6 inches at the surface of the ground to nothing or a thinning out at the part where it is cut off from the subsoil.

The work on this land about 5 or 6 inches deep was very perfect. All the loose earth had been moved for a yard wide across the plot, and the floor was perfectly true and level, whereas where a grubber had been taken across the field alongside of it, the moved soil appeared by the uneven character of the floor on which it lay to have been very unequally and imperfectly disturbed.

Steam cultivation at Warwick has resolved itself this year into a comparison of Fowler, Smith, and Romaine, and, owing to the defective engine of the last, it has practically resolved itself into a comparison of the two former, and so far as judgment from a day's trial goes, the verdict is in favour of the first. We are glad to find that Mr. Fowler is now sending out his apparatus in considerable numbers, 18 or 20 having been sold during the past month, and that he is in all probability on the way to recover the large capital which during the last few years he has invested. The application of the dynamometer is said to have brought out an extraordinary difference in favour of his implement as compared with that of Smith of Woolston. The former when turning four furrow-slices 9 inches by 6 inches employed a power equal to 10 horses, and taking 40 inches with his cultivator he employed a power equal to 8 horses; whereas the latter taking a width of 30 inches and breaking up from 8 to 9 inches deep required a power equal to 11½ horses. Notwithstanding the greater depth of the latter work this appears to us extremely improbable; and we should be very much surprised if the draught of each of these implements at work upon this hard and marly soil was not much beyond either of the figures here quoted.

LIGHT LAND TRIAL GROUND.—*The Ploughing* here included a trial of nearly 30 ploughs, varying from the high, solid, and heavy-looking Scotch swing-ploughs, with their large and somewhat abrupt and comparatively short mould-boards, to the long, low, graceful curves of the lighter, more complicated, better *polished* English implements. There can be no doubt on the score of either draught or quality of work or cost of implement to which the palm is due. The Scotch plough at rest lies over on its mould-board, the side plate if held in that position when at work lies inclined from the land and towards the furrow, and the slice it cuts is not rectangular but acute along that edge which, when turned, it presents upwards; the whole slice has therefore to be shifted laterally before it can be turned, and a waste of power is the result. But the plough is generally held somewhat more upright than the position in which it naturally stands, and the edge of the share is then no longer horizontal, and the floor off which the slice is cut is no longer level; but if the moved earth were lifted off it would be found scored with deeper furrows, corresponding to the path taken by the point of the sock or share; and here ensues a loss of quality in the performance. But, indeed, a deficient quality in the work of the Scotch ploughs has not to be searched for to-day beneath the surface. It is obvious to the passer-by: crooked furrows, unburied surface, and every defect that can be named, are the result of the implement being badly set or badly held, not to speak of its being badly made. Most of the English ploughs, even when badly held, have made much better work—little good appears to have resulted from the use of the skim coulter, for the seams were often green with the uncovered Clover or Grass from end to end; but in one or two instances the work was beautifully perfect, as straight as possible—as large an extent of new surface shown, as complete a burial of the old as possible—and between Hornsby, Ransome, and Howard, amongst whom the nearest competition seemed to lie, the judges will have a difficulty in deciding. The following are notes on some of the ploughs engaged.

1. Law, of Shettleston, near Glasgow.—A heavy Scotch swing plough, work rough and broken.
2. T. C. Mason, of Stamford.—A lighter plough—2 wheels, coulter, and skim—very long and shallow mould-board with comparatively little twist in it, and hardly capable of pressing the slice home.
3. Jones, of Redditch, not tried.—A timber-framed old-fashioned plough with short and high mould-board, and contrivance for shifting share and coulter.
4. Busby, of Bedale.—One wheel, solid beam, long and taper mould-board, very good work.
5. Hornsby.—Long and taper mould-board, everywhere convex to its work, uncommonly good work.
6. Reeves, of Stratton.—Two wheels and skim and coulter, somewhat shorter mould-board, Grass not buried.
7. Wallis & Haslam.—Also shorter mould-board, highly polished, shorter beam than many of them.
8. Bruce, of Teddington.—Wide set mould board and short, two wheels, skim and coulter.
9. Goulding & Co., Leicester.—Long mould-board, patented arrangement for holding sock.
10. Page, of Bedford.—Very long and taper, and shallow mould-board.
11. Ball, of Rothwell.—Large mould-board, with coulter and skim, two wheels.
12. Hensman.—A lighter plough, long mould-board, skim coulter did not appear to have worked very well, otherwise the ploughing was good.
13. Stalker, Penrith.—Shorter and higher mould-board, more like the Scotch form, not straight work.

Ploughs were also shown by O. Maggs, of Bourton; Hitherly, of Thrussington (a wonderfully long and taper turn-furrow, making very good work); Hornsby (again and making first-rate work); Tasker with a collar and catch for retaining or releasing the rigid connection of the two wheels; Wallis & Haslam (large and long mould-boards); Warren, of Maldon (rather a long tool with a somewhat new arrangement of the frame); Goulding, of Leicester (again); Page, of Bedford (again); Busby (again, and very good and deep work); Ransome & Sims and Howards (these ploughs are well known all over England, and need no description or praise. Their work was first-rate. After repeated trials with dynamometer and without, both tools were set to travel from end to end of the furrow unheld, and made excellent work; better it appeared to us in the case of Ransome's than in that of Howard's.)

There were several turnwrest ploughs on the ground—Comins's simple and easily worked arrangement: Locock's, manufactured by Ransomes; two mould-boards end to end, with a fly common to both, and coming into operation alternately; Eddy's (Kenford, near Exeter), in which the "fly" is separate for each of the mould-boards. Comins made very poor work; Eddy's seemed to be as good as any.

Cultivators, &c.—In the adjoining field of light land Snowdon's paring-plough was at work. It is a heavy tool carried, however, not on a sole plate but on a solid iron wheel also of considerable weight. This wheel works by a crank movement an oscillating bar terminating in a knife, which passes through the mould-board and perpetually cleans the share. The share is a broad sharp edge, and the turf being cut is turned by a somewhat abrupt mould-board. There is a revolving knife in front by which the turf as it is turned is cut into 2 feet lengths. It may be worked by one horse, and will pare 2 acres of stubble per day from 1 to 3 inches thick; or for paring where roots have been pitted or removed; to destroy weeds and stop their vegetating; for sheep-fed Turnip land, to protect the manure; for raising and tailing Turnips from the rows. It is we believe the best of our paring ploughs. A revolving harrow by Mr. Ellis, of Holbeach, was doing some good work on this field after one of the cultivators. It found soil and circumstances exactly suited to its ability, but would probably clog on moist or heavy soil. The prize list below must be consulted for the awards of the judges in this department. *M. S.*

TUESDAY: *July* 12.—HEAVY LAND TRIALS.—These took place to-day.

Ploughing.—In the field adjoining the mower trial field, to which reference is made below, the general purpose ploughs and strong land ploughs were tried, the soil the strongest we have ever had these trials on before. The competition was as usual pretty close between the old standards — Howard, Ransome, Busby, and Ball. But the well-known firm of Hornsby & Sons, of Grantham, has come forward with a plough which appears to have taken the judges by surprise. These ploughs break the land up into pieces more than others, and yet resemble them in laying the furrow-slice over complete in form and laid at a perfect angle of 45 degrees, it not being easy to tell whether the furrow has been turned to the right or left. It is very strange that now we are on the eve of going into cultivation by steam, the art of making ploughs upon the best principle should be still a doubtful question. Certainly the clap-trap tale of every soil requiring a particular principle of plough has at last got its practical answer; Mr. Hornsby's implement being tried successfully on all sorts of land. We observed that Mr. Amos was taking the amount of draught required by the various ploughs. It was he who found the Society in 1848 without the means of ascertaining the power required by any of our implements or machines with anything like pretension to truth; therefore the whole of our advances were in the dark, seeing that the power required is the great element out of which we are to draw indemnification for the means expended in improvements.

The trial of strong land scarifiers took place on the field adjoining where the ploughs were tried, where it was soon proved that the competition lay between Bentall and Coleman. The extreme tenacity of the soil-baked until almost as hard as rock, testing swingle, trees, chains, horses, and implements to the utmost, soon showing the weak parts and defective points of construction. Several were so ill contrived that the framework and material sprung and twisted until the whole got into the grasshopper style of movement. Both Bentall and Coleman's implements did the work well, the lightness of draught being evidently in favour of Coleman's; but Bentall's appeared to stick the closest to its work. We were grieved to find so much fine corn land lying undrained as another monument of the ignorance of the landowners and proof that their intelligence is not yet enough to induce tenants entering upon the task of raising the land to its highest pitch of productiveness. Would to Heaven such men were bound to let their land on leases long enough to induce men of capital and enterprise to improve and cultivate it for their own and country's wealth. *P. L.*

MOWING MACHINES.—The trial of the mowing machines took place upon a field of upland meadow bearing a light crop, but thick and close at the bottom, therefore one of the most difficult for machine cutting; the land being also ridge and furrow, served to test more fully the power of the machines to combat difficulties arising from uneven surfaces. There was also a moderate quantity of soil thrown up by worms and ants, to prove how far the gritty earth affected the cutting edge of the knives, thus showing that the various circumstances were happily combined to draw out defects in the machines if such existed.

Three machines went into competition, viz., W. M. Cranston's (of 11, New Bond Street, London,) Wood's combined American reaper and mower; Burgess & Key's Grass mowing machine, invented by Mr. J. Allen, of New York, improved and manufactured by the exhibitors; and Mr. William Harwood's (of Mendlesham, near Stonham, Suffolk) combined reaping and mowing machine. These were the only machines that came into competition as Grass mowers on this occasion. Each machine had about two acres of meadow laid off to it to cut; they started by taking a cut right up the field over ridge and furrow, opening up the work for themselves round the piece, then coming back and cutting the part the horses and travelling wheels had passed over. This Burgess & Key's machine did in first-rate style; indeed, nearly as well as where the Grass had not been trodden. Wood's being unable to cope with this difficulty the judge asked B. & K.'s man to cut this part for Mr. Cranston, and so enable him to proceed with his work. They all started about half-past 10 o'clock, A.M., and finished their task in about two hours. After the machines had been at work some time a roller about 15 cwt. in weight was drawn twice over the Grass at right angles to the progress of the machines; also one width of the roller drawn as the machines went and another in the opposite direction. This was a very severe test, yet B. & K.'s mower did its work low and clean, in fact almost as well as if the roller had never passed over it, except on that part where the roller was drawn in the same direction as the machine, where it failed to cut more than two-thirds of the Grass. Leaving this bit out, the whole of B. & K.'s piece was mown both leveller and closer than any man would cut it with the scythe, completely establishing itself as a standard implement of the farm. Some mowers who witnessed the performance exclaimed that they might hang their scythes on the old Willow tree and grieve over the passing away of the days of hard work and little pay. Both Wood's and Harwood's machines failed to cut this crop close and level enough to justify their use on a thick bottom Grassed meadow, where the last inch is the most valuable of the whole, and averaging from 4 to 5 cwts. of the best hay. But for cutting artificial Grasses of the coarser descriptions both of these machines might be useful aids to the farmer when mowers could not be obtained to do their work at a moderate price.

This trial quite satisfies us that the difficulties to be overcome in combining a reaping and mowing machine are almost too great to be surmounted without greatly reducing its value for both purposes. *P. L.*

WEDNESDAY: *July* 13.—The Cattle yards were opened to the public about 1 o'clock on Wednesday at a charge of 5*s.* each person, and soon became fuller than we have ever known them so early in the week. It soon became evident that there was unusual competition and excellence in many of the classes. The separation of the classes for the local prizes was evidently a great improvement over the arrangement or want of arrangement at Chester, which made the Society's own classes the subject of two separate judgments and awards by the National and the local judges respectively. Here a large number of animals under separate shedding were drawn together by the very liberal offers of the locality, and the prizes for cows and heifers in pairs, and for Berkshire pigs and for Shropshire sheep, attracted one of the most interesting features of the whole exhibition.

Let us in the first place give the names of the judges, and then head each short report of the several sections with the awards in each.

AWARD OF PRIZES.

JUDGES OF LIVE STOCK.

Short-horn Cattle.—Topham, James; Stokes, Charles; Wright, John.
Hereford Cattle.—Franklin, E. L.; Trethewy, H.
Devon Cattle.—Franklin, E. L.; Trethewy, H.
Other Established Breeds of Cattle.—Parkinson, John; Clayden, John; Thompson, J. B.
Agricultural Horses.—Spooner, W. C.; Randell, C.; Morley, J.
Dray Horses.—Spooner, W. C.; Randell, C.; Morley, John
Other Horses.—Brooks, Thos.; Thurnall, Henry; Bland, J. H.
Leicester Sheep.—Hewitt, Richard; Stone, Nathaniel C.; Bodley, John
Southdown Sheep.—Lugar, H.; Footes, H.; Trumper, E.
Long-woolled Sheep.—Bartholomew, William; Bateman, Henry; Beevor, Henry.
Short-woolled Sheep.—Blundell, Josh.; Rawlence, James; Burgess, James.
Pigs.—Woolf, J.; James, Rev. C. T.; Turner, J. S.
Stewards of Cattle.—Mr. Robert Smith; Mr. Milward; Mr. W. Fisher Hobbs.
Implements.—Mr. Barnett; Mr. H. B. Caldwell; Mr. E. Pope. (Lord Leigh, steward elect.)
Honorary Director of the Show and General Arrangements.—Mr. B. T. Brandreth Gibbs.

—— Eight thousand five hundred and twenty persons paid for admission to the yard on Wednesday afternoon. We have to postpone a report of the Implement-yard until next week owing to want of room. Descriptions will be given of any novelties that we noticed—and general references to improvements of the more ordinary tools of the farm. Of the former a digging machine—a hammer by atmospheric pressure—a dry brick making machine—a Turnip-fly duster, &c., may be enumerated as deserving that detailed description which we cannot now give them.

THURSDAY: *July* 14.—The yard soon became exceedingly crowded, and excepting early in the morning there was little opportunity for inspecting with any care or minuteness individual animals. Up to 6 P.M. very nearly 20,000 persons had paid for admission.

The following short report on the show of Horses may be prefaced by a short conversational remark we overheard illustrative of the impossibility of obtaining unanimity of opinion on the part of the public, however unanimous the judges may have been—"A good show of cattle, is it not?"—"Yes: some mistakes, no doubt, on the part of the judges."—"The greatest mistake of the whole is of course in the entire horses—stallions for racing purposes. There is one horse there, "Sprig of Shillelagh," entirely passed over, which I confidently assert is worth all the rest in his class put together, and 500 sovereigns on the top of all!" All this said gravely, and by a man who appeared to speak from a lifetime of experience on the subject. The judges have many advantages over ordinary spectator for ensuring the justice of their awards. They can place competing animals alongside of one another—try their paces—and are undisturbed by the jostling or conversation of spectators. Their judgment is of ourse not infallibly just, but it is greatly more probable than that which any other three gentlemen in the crowd of to-day could form.

HORSES.

The following is the award of the judges of horses:—

HORSES.—AGRICULTURAL HORSES GENERALLY.

CLASS I. Stallions for Agricultural purposes, foaled before the 1st of January, 1857.—25*l.*, John Hemmant, of Thorney Fen, near Peterborough, Cambridge; 15*l.*, Samuel Clayden, of Linton, Cambridge; 5*l.*, Henry Hitchcock, of Chittern All Saints, near Heytesbury, Wilts.

CLASS II. Stallions for Agricultural purposes, foaled in 1857.—20*l.*, Edward Holland, of Dumbleton Hall, near Evesham; 10*l.*, R. H. Wrinch, of Harkstead, near Ipswich.

CLASS III. Mares and Foals for Agricultural purposes.—20*l.*, Charles Frost, of Wherstead, near Ipswich; 10*l.*, G. D. Badham, of Bulmer, near Sudbury.

CLASS IV. Two-years-old Fillies, for Agricultural purposes.—15*l.*, Leonard Wrinch, of Arwarton, near Ipswich; 10*l.*, H.R.H. the Prince Consort.

DRAY HORSES.

CLASS I. Stallions, foaled before the 1st of January, 1857.—25*l.*, Benjamin Taylor, of New Road, Peterborough; 10*l.*, J. Hemmant, of Thorney Fen.

CLASS II. Stallions foaled in 1857.—15*l.*, Thomas Hibbard, of Bishopstone, near Farringdon; 5*l.*, William Buller, of Hanwell Fields, near Banbury.

CLASS III. Mares with foal at feet.—20*l.*, William Lowrie, of Cadoxton, near Cardiff.

CLASS IV. Fillies foaled in 1857.—10*l.*, Thomas Russell, of Hodwell Manor, near Southam, Warwick.

OTHER HORSES.

CLASS I. Thorough-bred Stallions for getting hunters.—25*l.*, John Wadlow, of Shiffnal, Salop; 15*l.*, William Barnett, of Bay's Hill Lawn, near Cheltenham.

CLASS II. Brood Mares with foal at foot, or in foal, for breeding hunters.—20*l.*, John K. Fowler, of Prebendal Farm, near Aylesbury; 10*l.*, Charles Aikin Holland, of Hartford Hill, near Northwich.

CLASS III. Brood Mares for breeding hackneys.—15*l.*, Walter Coleman, of Kingsbury Hall, near Tamworth; 5*l.*, Samuel Wallis, of Barton Seagrave, near Kettering.

This portion of the Show has on the whole well sustained its previous reputation as being one of the most attractive portions of this great exhibition. In the first class, for *Agricultural Stallions*, no less than 30 contended for the honours, many of them being noble specimens of the breed. The strong and powerful breed of the Midland Counties was well represented in this as well as in the Drayhorse Classes, winning two prizes, viz., first and third in the Agricultural Class, the second prize being taken by a Suffolk, which breed was very well represented throughout the Show. A few Clydesdales were also shown; but they were not the best of the breed. The prize horse, No. 337, was a very fine and powerful bay horse with three white legs, and somewhat hairy, with fair moderate action, belonging to Mr. John Hemmant, of Peterborough; the second a chesnut, owned by Samuel Clayden. This animal was larger than the usual Suffolk horse, and had better fore legs and with very good action. The third prize was given to a cross-bred horse between Warwick and Suffolk, and if he had had better fore legs, would not have discredited either ancestry, his general frame being good. No. 322 was a fine 3-year old Suffolk belonging to Mr. Badham. Nos. 334 and 335 were also two good Suffolks belonging to Mr. Crisp, the first a promising 3-year-old, and the last an aged horse which won a commendation. No. 350 was also a very promising 3-year-old bay horse belonging to Messrs. Reed, and which received a commendation. We shall probably hear of this horse again. No. 329, belonging to Mr. Lowe, was a powerful iron grey horse, and was commended. No. 325 (Mr. Berridge, of Leicester) was a good black horse, and we rather wonder there were not more good horses of this colour shown, seeing how many very useful black carthorses are purchased in the Midland Counties.

In the two-year-old Class there were 14 shown, and some of considerable merit. The prize was given to Mr. Holland's No. 358, a very promising colt, that will no doubt again appear at the Society's Show; 353, a very good chesnut, belonging to Mr. Wrinch, gained the second prize, and has since been sold, we understand, for a very good price; 362, belonging to Mr. W. Biddell, was also a very nice animal; 366 (Mr. Rea, of Knighton), was a nice black colt.

Class 3, Agricultural Mares and Foals, was a good class. The Suffolks here had it pretty much their own way, winning the two prizes as well as the commendations. Mr. Frost, 380, was the winner of the first, and Mr. Badham of the second prize; both good and symmetrical animals, the latter perhaps the most compact and perfect, but the former, who gained the first position, having a more extended development. A still finer mare, No. 383, Mr. Barthrop's, was commended, but she was less perfect in the symmetry and action of her hind legs than the others. There were many other good useful mares, but mostly deficient in that very essential requisition, the power of supporting their offspring and retaining their own condition at the same time. The Suffolks excel more in the mares than in the stallions, their compact frame and activity appearing to equal advantage, whilst the too frequent slightness of the parts below the knee is less apparent in the lighter female than in the heavier male, which consequently has from this cause the appearance of being over-topped. Twenty mares were exhibited in this class with foals by their sides.

Class 4. Two-year-old-Fillies.—There were 13 entries, but several made no appearance. The prize was given to Mr. L. Wrinch, for No. 388, a very fine Suffolk filly, decidedly the best—a remarkably beautiful animal. The second prize filly was No. 396, belonging to the Prince Consort and got by the Chelmsford prize horse—a Clydesdale, a very promising and compact animal. The commendation was won by Mr. Frost's chesnut filly, No. 393.

Drayhorses, Class 1.—This was a very good class, 15 in number. The prize horse (No. 417, Mr. B. Taylor's "England's Glory,") was a noble animal and active withal, and very capable of getting agricultural as well as dray horses. The second prize horse, No. 409, Mr. Hemmant, was also a very fine animal, a true dray horse, with massive frame and yet active. Mr. Spence's grey horse was also well worthy of commendation, and several others, although not named.

Class 2. Two-year-old Dray Stallions.—Only six were exhibited. The prize, No. 422, belonging to Mr. Thos. Hibbard, was a very fine and powerful brown colt. Mr. Buller's red roan, No. 420, had the second prize; both were very promising animals, as well as Mr. Manning's grey, Young Matchless, No. 421.

Class 3. Mares and Foals.—Six entries. Only one was considered worthy of a prize, viz., Mr. Lowrie's brown mare, No. 425, a very good animal.

Class 4, Dray Fillies, only brought three into the lists, one only, No. 430, being worthy of a prize—a very promising filly.

The duties of the judges were much increased by having Special Prizes to determine; these prizes being given by the Local Committee for animals used or to be used in the district.

Class 1. For Agricultural Stallions.—There were eight entries. No. 983 was the prize horse, and belongs to Mr. John Manning; he was a very fine brown horse, active, and powerful. No. 981, Mr. R. Spencer's roan, was also a very superior animal. This class although not numerous was good, and several were commended.

Class 2, the 2-year old Stallions, only had three entries; but all were good. Mr. Buller's black, No. 988, was the first; Mr. Crisp's chesnut the second; and Mr. Wynn's brown was commended.

Class 3, for pairs, either Mares or Geldings for agricultural purposes, was a very good as well as interesting class. No. 994, a roan and a brown, although not a match in size or colour, were very perfect animals, possessing great strength and symmetry; they were only three years old, and gained the first prize; the second being carried away by a pair of chesnuts, a capital match, handsome and active, No. 995, belonging to Mr. Beasley; whilst a splendid pair of blacks, No. 992, belonging to Mr. E. Davies, were well worthy of a prize.

Class 4, One-year-old Fillies or Geldings, had five entries. No. 998 gained the prize—a superior animal. Mr. Badham's 999 was also a promising filly.

We must defer our observations on the lighter horses till next week.

On the whole we consider the agricultural and drayhorses above the average of previous years, although there were some better animals exhibited at Chester than were shown on the present occasion.

CATTLE.

The following is the award of the prizes:—

SHORT-HORNED CATTLE.

CLASS I. Bulls under 6 years old.—30*l.*, John H. Bradburne, of Pipe Place, near Lichfield, Staffordshire; 15*l.*, the Hon. Colonel Pennant, M.P., of Penrhyn Castle, near Bango, Carnarvon; 5*l.*, Stephen Gooch, of Honningham, near Norwich.

CLASS II. Young Bulls.—25*l.*, Lieut.-Colonel Towneley, of Towneley Park; 15*l.*, Henry Ambler, Halifax; 5*l.*, John Lynn, of Stroxton, near Grantham, Lincoln.

CLASS III. Bull Calves.—10*l.*, William Fletcher, of Radmanthwaite, near Mansfield, Nottinghamshire; 5*l.*, Richard Stratton, Swindon, Wiltshire.

CLASS IV. Cows in milk or in calf.—20*l.*, Richard Stratton; 10*l.*, Richard Eastwood, of Swinshawe, near Burnley, Lancaster; 5*l.*, William Todd, of Elphinstone Tower, near Tranent, Haddington.

CLASS V. Heifers in milk or in calf under 3 years old.—15*l.*, Lieut.-Colonel Towneley; 10*l.*, Francis Fowler, of Henlow, near Biggleswade, Bedfordshire; 5*l.*, Lieut.-Colonel Towneley.

CLASS VI. Yearling Heifers.—15*l.*, John Grundy, of The Dales, Stand, near Manchester; 10*l.*, James Douglas, of Athelstaneford Farm; 5*l.*, Captain Gunter, of the Grange, near Wetherby, York.

HEREFORD CATTLE.

CLASS I. Bulls under 6 years old.—30*l.*, Richard Hill, of Golding Hall, near Shrewsbury; 15*l.*, Lord Berwick, of Cronkhill, near Shrewsbury; 5*l.*, John Williams, of St. Mary's Kingsland, near Leominster.

CLASS II. Young Bulls.—25*l.*, John Naylor, of Leighton Hall, near Welshpool; 15*l.*, William Perry, of Cholstrey, near Leominster; 5*l.*, Thomas Edwards, of Wintercott, near Leominster.

CLASS III. Bull Calves.—10*l.*, His Royal Highness the Prince Consort; 5*l.*, Charles Vevers, of Ivington Park, near Leominster.

CLASS IV. Cows in milk or in calf.—20*l.*, Thomas Rea, of Westonbury, near Pembridge; 10*l.*, Lord Berwick; 5*l.*, Rees Keene, of Pencraig, near Caerleon.

CLASS V. Heifers in milk or in calf.—15*l.*, James Rea, of Monaughty, near Knighton;—10*l.*, Lord Berwick; 5*l.*, John Naylor, of Leighton Hall.

CLASS VI. Yearling Heifers.—15*l.*, Edward Price, of Court House, Pembridge; 10*l.*, the Rev. Archer Clive, of Whitfield, near Hereford; 5*l.*, Edmund Wright, of Halston Hall, near Oswestry.

DEVON CATTLE.

CLASS I. Bull under 6 years old.—30*l.*, Walter Farthing, of Stowey Court, near Bridgewater; 15*l.*, John Quartly, of Molland, near South Molton; 5*l.*, Thomas White Fouracre, of Durston, near Taunton.

CLASS II. Young Bull.—25*l.*, John Quartly, of Molland; 15*l.*, H.R.H. the Prince Consort; 5*l.*, William Hole, of Hannaford, near Barnstaple, Devon.

CLASS III. Bull-calves.—10*l.*, William Hole, of Hannaford; 5*l.*, George Turner, of Barton.

CLASS IV. Cows in milk or in calf.—20*l.*, James Merson, of Brinsworthy, near North Molton; 10*l.*, Walter Farthing, of Stowey Court; 5*l.*, James Quartly, of Molland House.

CLASS V. Heifers in milk or in calf.—15*l.*, James Quartly, of Molland House; 10*l.*, George Turner; 5*l.*, Edward Pope, of Great Toller, near Maiden Newton.

CLASS VI. Yearling Heifers.—15*l.*, John Quartly, of Molland; 10*l.*, H.R.H. the Prince Consort; 5*l.*, John Mildon, of Woodington Farm, near Witheridge, Devon.

OTHER ESTABLISHED BREEDS,

Not including the Short-horn, Hereford, or Devon breed.

CLASS I. Bulls under 6 years old.—10*l.*, the Hon. Col. Pennant, M.P.

CLASS II. Young Bulls.—10*l.*, John Turville, of Hartley Park, near Alton, Hants.

CLASS III. Cows in milk or in calf.—10*l.*, the Earl of Southesk, of Kinnaird Castle, near Brechin.

CLASS IV. Heifers in milk or in calf.—10*l.*, Lord Sondes, of Elmham Hall, near Thetford.

CLASS V. Yearling Heifers.—5*l.*, The Earl of Southesk.

The show of live stock at Warwick is on the whole more successful than that of last year. The Short-horns are decidedly of superior quality. Mr. Bradburne's 1st prize 4-year-old roan bull has several good points though not a first class animal. The hair is somewhat scanty. Col. Pennant's 2d prize, "Marmaduke," a 4-year-old roan, has perfect shoulders and admirably formed ribs, but is very light in the thighs. We are at a loss to comprehend how some "long" horned Short-horns in this class were commended.

In the 2d class Col. Towneley has won easily the 1st prize with "Royal Butterfly," 22 months old, an animal of great merit; the head exquisitely formed. Mr. Ambler's 2d prize animal in this class, "Prince Talleyrand," is a fine white animal. The 3d prize animal has a coarse hip and an ugly lengthy Devon-like horn.

In the next class Mr. Fletcher obtained the 1st prize for "Prince of Warwick," a roan nine months old; well formed in hip, and the shoulder well set. Mr. Stratton's 2d prize animal in this class, "Magician," handles well, but is not well filled up behind the shoulder. Colonel Towneley's "Bow Bearer," white, was highly commended in this section, and is a very promising animal. The loin is, according to our idea, rather fine. Mr. Wells was commended for "Prince Imperial," a dull-eyed roan possessing good substance.

In Class 4, Mr. Stratton, of Swindon, obtained 1st prize for "Matchless the Fourth," a roan cow seven years old, of extraordinary substance, but rather coarse in rump. Mr. Eastwood's 2d prize cow in this class, "Rosette," three years old, is also a fine animal. Mr. Todd's red cow "Volga," eight years old, which gained 3d prize, has points disguised in fat. "Ringlet," a six-year-old roan belonging to Mr. Douglas, is disfigured by a protuberance of fat near the tail.

In Class 5 Mr. Towneley is again successful with "Fidelity," a white heifer, two years and one month old, whose horn is a little long and fine. The majority of the colonel's Short-horns have their horns very fine, perhaps too much so. In this class Mr. Fowler of Bedfordshire gets the 2d prize for "Daisy," a roan 26 months old, and one of the most even animals we have ever seen. Colonel Towneley comes in for 3d prize with "Pearl," a red heifer, two years seven months old; a nice animal of no great depth. We were rather disappointed at finding Mr. Booth's

"Queen of the Isles," a beautiful roan, passed over without even a commendation in this class. Mr. Grundy got 1st prize in the yearling heifer class for "Faith," a handsome red and white animal. She is not at present sufficiently wide, but gives fair promise of filling up as she grows older. Mr. Douglas got 2d prize (the only one carried off by the Athelstaneford herd at Warwick), for the "Maid of Athelstaneford," a roan 22 months old, possessed of symmetry, and giving fair promise of still more successful competition. Capt Gunter's herd is here successful with "Duchess 77." Mr. Jonas Webb was highly commended for "Lady Alice," a thick well-shaped heifer. "Precious Stone," a very handsome white heifer belonging to Colonel Towneley, sixteen months old; "Matchless the Sixth," a small, handsome animal (17 months old), belonging to Mr. Stratton; "Victoria Regina," a roan (22 months old) belonging to Mr. Grundy; and "Orange Preserver," a roan, belonging to Rev. Mr. Hill, were highly commended in this class. "Victoria Regina" has her flesh too inelastic on the rump.

We have not seen a more select lot of Short-horns than those now in the Warwick show yard. And if proper precautions be taken to prevent these exhibitions from being converted into mere bazaars for people to advertise their stock, and to ensure the awards being always as fairly made as on the present occasion, we augur a rapid progressive improvement in the Short-horns of Britain.

The Herefords do not reach those of last year; indeed, there were animals of this breed at Chester superior to any at Warwick. Mr. Hill obtained 1st prize for his bull "Claret," 34 months old; a coarse animal, which is disfigured with useless fat. The 2d prize animal, "Severn," four and a-half years old, is a more symmetrical animal. The 3d prize bull in this section is "Sir Colin," belonging to Mr. Williams, a good even beast. In the next class, Mr. Naylor of Montgomeryshire got 1st prize for Adjutant, whose back inclines too much, and whose hind-legs are far from being perfect. The 2d prize animal belongs to Mr. Perry, and has more symmetry. In the 3d Class H. R. H. Prince Albert won the 1st prize with "Maximus," which is 11 months old, a very neat beast, but is deficient in the quantity of its bone and muscle. Mr. Rea's prize Hereford cow, "Bella," is an animal of great excellence. It has the touch and many of the points of the Short-horn. Indeed it is quite evident that the former breed is gradually approaching in some points to the latter, which is more highly prized. All the animals in this section are excellent. We do not quite concur in one or two of the adjudications. For instance, "Countess," belonging to Mr. Pitt, was only commended, while "Perfection," the property of the same gentleman, was highly commended. "Countess" is the finer animal of the two. "Perfection" is a year younger, but one or two of his points are not likely to improve with his growth. We do not think Mr. Smith's "Fatima" should have been passed over without some mark of approbation. In the yearling heifer class, "Medea," a handsome animal, belonging to H.R.H. Prince Albert, should have received some notice. All the prize animals in this class are highly commendable.

Of Devons we need not say much. They may be characterised as eminently good. Mr. Farthing's "Sir Peregrine," a two-and-a-half year old bull, got 1st prize. We have seldom seen a Devon having such a well set-on tail; the back is very even. Mr. Quartly's 2d prize animal in the same class is a very handsome bull, but has not sufficient depth. Mr. Merson's 1st prize cow, "Lively," well sustains her agreeable name. Indeed, there is scarcely room left for unfavourable criticism. The 2d prize animal in this class is somewhat coarse, and in some points not equal to the 3d prize cow, but she has youth, and may yet become a fine beast. Mr. Quartly's 1st prize yearling heifer is the most perfect little creature we have ever seen; and if her points continue to develop themselves in the same happy proportions as they have done her owner will yet obtain many prizes with this heifer.

Of the other breeds we say nothing, as we are convinced little good can emanate from the exhibition of such unsightly animals as many of those exhibited on this occasion. We regret, too, to be obliged to postpone the prize list and description of the classes of sheep and pigs. These we shall give next week. References to some of the prizes taken will be found in the leading article.

FRIDAY: *July* 15.—We hope to supplement this report with additional remarks on several departments of the Show during future weeks. It has been successful in every aspect of it, in the laborious and careful trial of field implements, in the opportunity of comparison which it afforded on an unprecedented scale as regards all classes of live stock, in the additions it will make to the Society's finances, in the instruction and amusement of an immense multitude of visitors, and in the enrichment of the town and locality. Its success has been owing first to the admirable system of arrangement now perfectly developed under Mr. Brandreth Gibbs, the Director of the Show; it has also been due to the extreme fineness of the weather, and to the very satisfactory show yard arrangements for the supply of abundant, good, and cheap refreshments.—The annual meeting of members took place at 10 o'clock this morning. Reference to the proceedings will be made at length next week.

LOOMES' GARDEN EDGING —CABLE PATTERN.



	Price at Peterborough.	In London.
Straight	5*d.*	— 6*d.* per yard
Bends	6*d.*	— 7*d.* ,,
If fitted to plans ..	7*d.*	— 8*d.* ,,

LOOMES & Co., Manufacturers, Whittlesea, near Peterborough.

WARNER'S IMPROVED LIQUID MANURE OR GENERAL PORTABLE PUMP.



These Pumps are fitted with WARNER'S Patent Bucket and Valve, and cannot clog in action. The barrel is made of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure on the stand, the legs of which fold together, and may be carried with ease by one man to tank or pond.

	£	s.	d.
Stand and Pump, with screwed tail pipe, fitted with strong brass union for suction pipe	2	15	0
If fitted with barrel of planished copper	3	4	0
Stand and Pump, with plain tail pipe, for tying on suction pipe	2	9	0
2-inch patent rubber and canvas flexible suction pipe, on wires, either 10, 12, or 15 ft., per foot	0	2	2

May be obtained of any Ironmonger or Plumber in town of country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin St., London.

WARNER'S PATENT VIBRATING STANDARD PUMPS.

PATENT CAST-IRON PUMPS for Farms, Cottages, Stable Yards, &c., where the Well does not exceed 28 feet in depth; fitted with WARNER'S Patent Metal Bucket and Valve, which cannot clog in action. These Pumps can be made right-handed, left-handed, or with handle opposite the nose by removing four screws only.



Diameter of Barrel.	Height.		£.	s.	d.
2½ in. short	1 ft. 7 in.	Fitted for lead, gutta percha or cast iron flanged pipe as required.	1	5	0
2½ ,, long	3 ,, 3 ,,		1	10	0
3 ,, ditto	3 ,, 6 ,,		2	4	0
3½ ,, ditto	3 ,, 6 ,,		2	9	0
4 ,, ditto	3 ,, 6 ,,		2	13	0
2½ ,, short, with 15 feet of Lead Pipe attached, ready for fixing			2	10	0
2½ in. long	ditto	ditto ditto	2	14	0

The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.

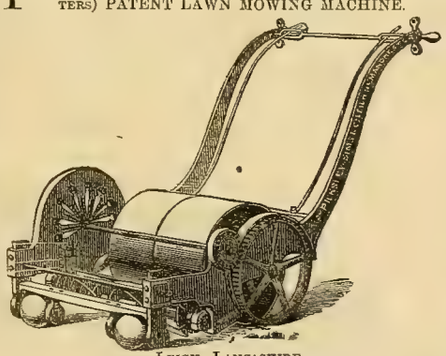
May be obtained of any Ironmonger or Plumber in Town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

SHANKS'S PATENT MOWING MACHINES.

J. AND C. LEE, NURSERYMEN, Hammersmith, have great confidence in recommending these as the most complete Mowing Machines offered to the public. They have had large experience with SHANKS's Machines, and have ever found them do their work admirably, effecting a great saving in labour, and not liable to get out of order. For terms, apply to the Agents, J. & C. LEE, Nurserymen, Hammersmith.

PICKSLEY, SIMS, AND CO.'S (by ROYAL LETTERS) PATENT LAWN MOWING MACHINE.



LEIGH, LANCASHIRE.

P., S., & Co., in introducing this Lawn Mowing Machine, particularly request a strict examination, or comparison and trial, for simplicity of construction, lightness, regularity of draught, adaptability for mowing every kind of plain, circular, and verge work.

Firstly, we have encased the wheels so as completely to protect from injury flower borders, shrubs, &c., whilst working the machine, at the same time not being liable to obstruction or damage.

Secondly, this machine works easily on undulated and sloping ground; it can be thrust forward or be drawn from behind, the latter being the easiest.

Thirdly, this is the only machine made that will work round quick curves; it will work easily and effectively round circular borders so small as 12 inches in diameter. This very desirable improvement has been obtained by fixing to the front part of the machine our newly-invented universal action, and self-cleaning, anti-friction spherical guiding balls. The continual revolving of these spherical guiding balls, under the most trying circumstances, never fails.

Fourthly, we have attached to this machine a rack and pinion motion, for adjusting the cutting parts (there being a rack and pinion on each side of the machine to act conjointly at the same time upon the full length of the knives), in other machines a slow, tedious, and uncertain operation, into one of quickness, ease, and certainty.

PRICES:—

		£	s.
Patent Lawn Mowing Machine	13 inches ..	5	10
Ditto ditto ditto	16 ,, ..	6	0
Ditto ditto ditto	19 ,, ..	6	10
Ditto ditto ditto	22 ,, ..	7	0
Patent Chaff and Gorse Cutters from	.. ..	£2 5 to 22	0
,, Bean, Oat, and Malt Mills	.. ..	3 10 to 10	10
,, Gorse and Grain Bruisers	.. ..	10 10 to 21	0
,, Bone Mills	.. ..	27 10 to 150	0
,, Mangles, various	.. .. ..	2 10 to 12	10

ILLUSTRATED CATALOGUES can be had gratis.

GREEN'S PATENT LAWN MOWERS have proved to be the best by the appointed judges in all cases of competition. Full illustrations, with particulars of improvements for the present season, will appear in this Paper next week.

THOMAS GREEN, Patentee and Sole Manufacturer, Smithfield Iron Works, Leeds, Yorkshire; and 2, Victoria Street, bottom of Holborn, London. Repairs done at either of the Establishments, where every information may be obtained.

THE NEW PATENT MOWING MACHINES may be used anywhere at any time, are self-sharpening, and admit of the use of duplicate sets of cutting parts. Prices from 4*l.* 10*s.* upwards. Illustrated Circulars free by post.—Manufactured and Sold by JAMES FERRABEE & Co., the original introducers of Mowing Machines.

Several infringements of their patent having taken place, the Makers respectfully caution the public to see that the words "FERRABEE'S Patent" are cast on every Machine.

JAMES FERRABEE & Co., Phœnix Iron Works, Stroud.

SHANKS'S PATENT LAWN MOWERS are unquestionably the most perfect Machines for Mowing Lawns, Verges, &c., extant. SHANKS's Horse and Pony Machines are the only Machines that Mow, Roll, Collect, and Deliver the Grass.—London Agents: COTTAM & Co., 2, Winsley Street, Oxford Street, W.

LAWNS—IN USE IN THE ROYAL GARDENS.

SAMUELSON'S PATENT BOYD LAWN MOWING and ROLLING MACHINE, the only one that will cut wet as well as dry Grass, is guaranteed efficient in use, easily handled, and readily kept in working order. Doing the work of five or six men. Prices, including case and carriage to any railway station in England, from 4*l.* 17*s.* 6*d.* and upwards. Copies of testimonials post free on application to Mr. SAMUELSON's London Warehouse, 76, Cannon Street West, City; Messrs. DEANE's, London Bridge; or the Works, Banbury, Oxon.

CAST-IRON GARDEN ORNAMENTS, viz.—ORNAMENTAL VASES, of various sizes, do. with pedestal, GARDEN CHAIRS and STOOLS, RUSTIC GARDEN SEATS and TABLES, both plain and bronzed, also GARDEN ROLLERS of all sizes.—Prices on application to J. JONES, Iron Merchant, 6, Bankside, London.

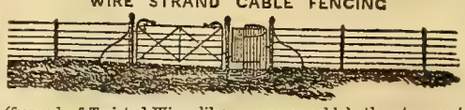
PRICES REDUCED.

H. J. MORTON AND CO., Galvanised Iron Works, 2, Basinghall Buildings, Leeds.

GALVANISED IRON ROOFING

for Farm Buildings and other Roofs; the cheapest, most durable, and neatest Roofing in use; also Spouting at 10½*d.* per yard.

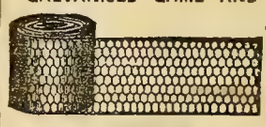
WIRE STRAND CABLE FENCING



(formed of Twisted Wires like a rope or cable), the strongest, cheapest, and neatest fence in use, will resist the largest cattle, and will not bend or get out of form by trespassing upon or over. Price, with five lines of the Galvanised Strand, iron main posts, and pronged Standards, 1*s.* 2½*d.* per yard.

This fence is far cheaper than posts and rails, or any kind of iron fencing; and possesses four times the strength of solid bars. Will not rust nor corrode. Upwards of 1200 miles of this Fencing supplied.

GALVANISED GAME AND POULTRY NETTING.



Galvanised, 24 ins. wide, 2-inch mesh, 5½*d.*, 7½*d.* and 9½*d.* per yard.

Galvanised, 24 ins. wide, 1-inch mesh, 4*d.*, 5*d.*, and 7*d.* per yard. The Netting made any width, and with openings of any size.

GALVANISED IRON CHAIN CAMP STOOLS & CHAIRS, POULTRY FOUNTAINS & FEEDERS, PRONGED DAHLIA RODS AND ROSE STAKES, &c.

Strong CATTLE HURDLES from 2*s.* per yard.

PATENT IMPROVED GAS WORKS,

of all sizes for the use of Private Houses, Mansions, Railway Stations, Mills, Collieries, Mines, Villages, &c. Works from 10 to 500 lights estimated for. The works can be entrusted to an ordinary labourer.—Apply to

HENRY J. MORTON & Co. 2, Basinghall Buildings, Leeds.

MAPPIN'S PRUNING KNIVES IN EVERY VARIETY.

WARRANTED GOOD BY THE MAKERS.



MAPPIN BROTHERS, Queen's Cutlery Works, Sheffield; and 67 and 68, King William Street, London.

MAPPIN'S "SHILLING" RAZORS Shave well for Twelve Months without Grinding.

MAPPIN'S 2*s.* RAZORS Shave well for Three Years.

MAPPIN'S 3*s.* RAZORS (suitable for Hard or soft Beards,) Shave well for Ten Years.

MAPPIN'S SUPERIOR TABLE-KNIVES maintain their unrivalled Superiority—handles cannot possibly become loose—the blades are all of the very first quality, being their own Sheffield manufacture.

	Tble. Kns.	Dst. Kns.	Carvers.
Ivory 3⅝ in. Handle, balanced,	20*s.* p. doz.;	16*s.* p. doz.;	6*s.* p. pair
Do. 4 in. do. ..	25*s.* ,,	18*s.* ,,	9*s.* ,,

MAPPIN'S SILVER-PLATED DESSERT KNIVES and FORKS, in Mahogany Cases.

12 Pairs Knives and Forks, Ivory Handles, in Case..		80*s.*
12 Do.	Pearl Handles, do. ..	130*s.*
12 Do.	Silver-Plated Handles, do. ..	80*s.*

MAPPIN'S ELECTRO-SILVER PLATE.—MAPPIN BROTHERS, Manufacturers by Special Appointment to the Queen, are the only Sheffield makers who supply the consumers in London. Their LONDON SHOW ROOMS, 67 and 68, King William Street, London Bridge, contain by far the largest STOCK of ELECTRO-SILVER PLATE in the World, which is transmitted direct from their Manufactory, Queen's Cutlery Works, Sheffield.

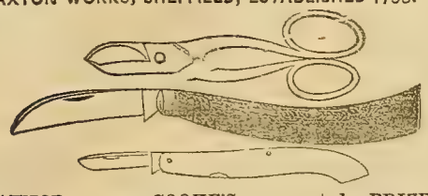
	Fiddle Pattern.	Double Thread.	King's Pattern.
12 Table Forks, best quality	£1 16 0	£2 14 0	£3 0
12 Table Spoons, best quality	1 16 0	2 14 0	3 0
12 Dessert Forks, best quality	1 7 0	2 0 0	2 4
12 Dessert Spoons, best quality	1 7 0	2 0 0	2 4
12 Tea Spoons, best quality	0 16 0	1 4 0	1 7

Messrs. MAPPIN BROTHERS respectfully invite buyers to inspect their unprecedented display, which, for beauty of design, exquisite workmanship, and novelty, stands unrivalled. Their Illustrated Catalogue, which is continually receiving addition of New Designs, sent per post on receipt of 12 stamps.—MAPPIN BROTHERS, 67 and 68, King William Street, London Bridge; Manufactory, Queen's Cutlery Works, Sheffield.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

EDWARD BECK MANUFACTURES in SLATE a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener, Sundays excepted. PRICED LISTS of PLANT TUBS and BOXES forwarded on application.

PAXTON WORKS, SHEFFIELD, ESTABLISHED 1738.



SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.—Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

JOHN WARNER AND SONS, Crescent, Jewin Street, London.—GALVANISED IRON TUB GARDEN ENGINE, with WARNER'S Registered Spreader, is strongly recommended, for durability and low price, viz., 10 gallons, 2*l.* 15*s.*; 16 gallons, 3*l.* 15*s.*; 24 gallons, 5*l.*; or in strong oak tub, 14 gallons, 5*l.* 10*s.*; 24 gallons, 6*l.* 18*s.* May be obtained of any Ironmonger or Plumber in town or country, or of the patentees and Manufacturers; as also Machinery of all kinds for raising Water from any depth to any height by Steam, Horse, or Manual Power. Prices sent on application.



Syringes of various constructions and sizes from 9*s.* upwards. Metallic String from 10*d.* to 1*s.* 2*d.* per lb.

ORNAMENTAL GARDENING.



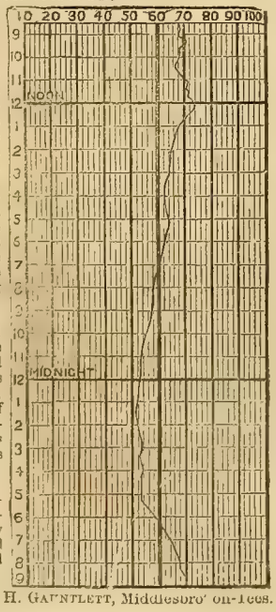
AUSTIN, SEELEY, AND CO. respectfully invite the attention of the Nobility and Gentry to their large FLOWER BASINS or "PORTE-FLEURS," of which they have now some handsome designs, from 7 to 20 feet diameter.

Fountains of every description, Vases and Figures for Gardens, and Ornamental Balustrading.—370 to 375, Euston Road.

TO HORTICULTURISTS.

GAUNTLETT'S PATENT CHRONOMETRICAL THERMOMETER.

This instrument, which combines an eight-day clock of the best English make showing time, with a newly-patented Thermometer, wherein glass and quicksilver are dispensed with, writes down the temperature of the atmosphere on a slip of paper, and when placed in a Hothouse, Forcing House, or Conservatory, &c., supplies a valuable record of the temperature, with all its variations, showing the time when any change took place, and how long such change continued.



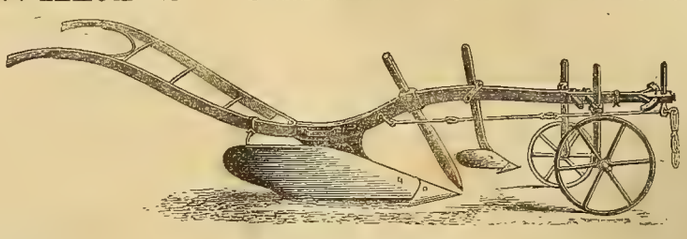
The above slip (reduced in size) exhibits the temperature of the Royal Agricultural Society's show yard at Chester, July 22, 1858, written off by one of these instruments, to which was awarded the Society's SILVER MEDAL.

This is the only instrument that registers temperature continuously and writes it down, and no horticulturist should be without it.

Orders received by W. H. GAUNTLETT, Middlesboro'-on-Tees.

WARWICK MEETING, July 1859.

HOWARD'S CHAMPION PLOUGH



HAS AGAIN RECEIVED THE

First Prize as the best Plough for General Purposes at Warwick.

Prizes awarded to J. & F. HOWARD at Warwick, being the largest number of Prizes awarded to any Exhibitor.

THE FIRST PRIZE FOR THE BEST PLOUGH FOR GENERAL PURPOSES
A PRIZE FOR THE BEST PLOUGH FOR LIGHT LAND
A PRIZE FOR THE BEST PLOUGH FOR HEAVY LAND
THE FIRST PRIZE FOR THE BEST LIGHT HARROWS
THE SECOND PRIZE ALSO FOR THE BEST LIGHT HARROWS
THE FIRST PRIZE FOR THE BEST HEAVY HARROWS.

CATALOGUES, with full particulars, sent post free on application to

J. & F. HOWARD, BRITANNIA IRON WORKS, BEDFORD.

Stand No. 30.—ROYAL AGRICULTURAL SOCIETY'S SHOW AT WARWICK, July, 1859.

B. SAMUELSON,

AGRICULTURAL ENGINEER AND MACHINIST,

76, CANNON STREET, WEST, LONDON; WORKS—BANBURY, OXON;

INVITES the atttention of Agriculturists to his IMPROVED DOUBLE-ACTION HAY-MAKER (Price 13*l.* 13*s.*).

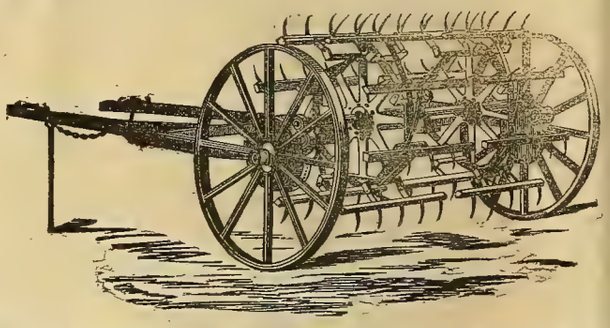
This Machine is guaranteed against breakages in fair usage.

SAMUELSON'S IMPROVED HORSE RAKES.

No. 3, extreme width, 7 feet 6 ins. £7 10 0
No. 4, ,, ,, 8 feet 6 ins. 8 0 0
Steeled Teeth, 10*s.* extra.

SAMUELSON'S PATENT BRITANNIA SELF-RAKING REAPING MACHINE, with side delivery in sheaf (requires no rakers or gatherers), price 32*l.* 10*s.* at the Works, Banbury; 34*l.* in London.

SAMUELSON'S BOYD'S PATENT LAWN MOWING AND ROLLING MACHINES. The only Machine that will cut WET as well as dry Grass. Price, from 4*l.* 17*s.* 6*d.* to 13*l.* 13*s.*



SAMUELSON'S PATENT PRIZE GARDENER'S DOUBLE ACTION TURNIP CUTTER, with the new Patent improvement for separating the dirt and small chippings from the clean and useful pieces.

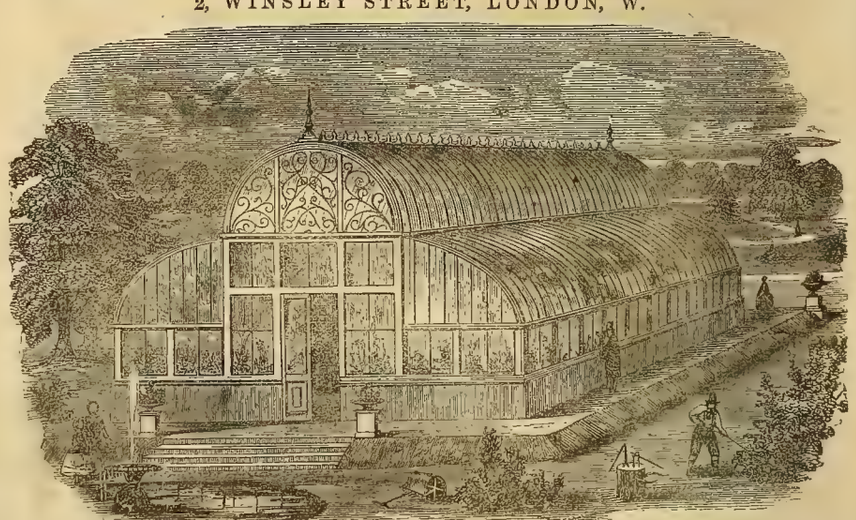
SAMUELSON'S PRIZE CHAFF CUTTERS, MILLS, CAKE BREAKERS, and food-preparing Implements of every description; also HARROWS, FIELD ROLLERS, CLOD CRUSHERS, &c.

The above may be inspected at MR. SAMUELSON'S stand, No. 30, at the Warwick Show, where CATALOGUES and PRICE LISTS may be obtained, or at the

Works, Banbury, Oxon; London Warehouse, 76, Cannon Street, West.

COTTAM & COMPY., Engineers, Founders, &c.,

2, WINSLEY STREET, LONDON, W.



A SHOW ROOM DEVOTED ENTIRELY TO ARTICLES OF HORTICULTURE.

THE NEW ILLUSTRATED CATALOGUE UPON APPLICATION.

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	,, Syringes	Garden Bordering
Hot-water Apparatus	Ornamental Wire Work	Hurdles	,, Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

Iron Hurdles, Strained Wire Fencing, Game Netting, &c.

Every description of Plain, Ornamental, Cast and Wrought Iron, and Wire Work.

EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

N.B. COTTAM AND COY. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works opposite the Pantheon.

VULCANIZED INDIA-RUBBER HOSE AND TUBING FOR WATERING GARDENS, &c.

J. L. HANCOCK supplies this article, of superior make, of any required strength or size.

BRASS SCREW JOINTS, for connecting the Hose to Cisterns, also HAND BRANCHES, TAPS, and WATER SPREADERS in great variety. Orders by post promptly executed, and Illustrated Price Catalogue on application.

JAMES LYNE HANCOCK, Vulcanized India-Rubber Works, Goswell Mews, and No. 8, Goswell Road, London, E.C.

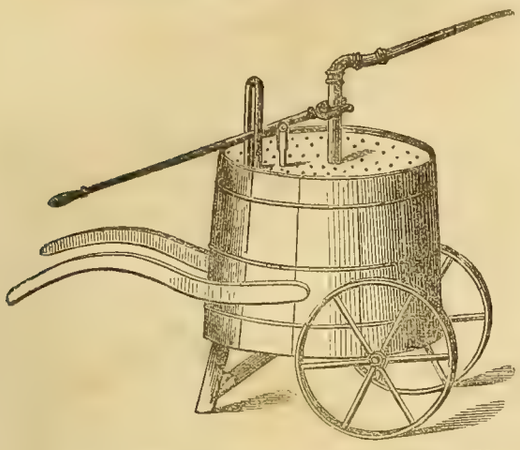
TO AMATEUR GARDENERS, NURSERYMEN, AGRICULTURISTS, AND OTHERS.

GUTTA PERCHA TUBING FOR WATERING GARDENS, from 2½*d.* per foot; Vulcanised India Rubber Tubing for Watering Gardens, from 4*d.* per foot; Brass Hand Branches, with Stopcock and Rose, and every description of Garden Tubing Fittings, sold Wholesale and Retail by W. R. WOODS, 94, Goswell Road, near the "Angel," Islington, London, E.C. Priced Lists can be had on application.

Please notice the Address—94, Goswell Road.

DEANE & COMPANY'S

HORTICULTURAL TOOLS,



GARDEN ENGINES, Galvanized Iron
Prices 55s., 63s., 105s., 120s.

Ditto, Wood, 84s,, 105s, 130s.

Flower Stands, 4s. 6d. each.

Cast Iron Ornamental ditto, to hold 7 Vases, 27s.

Deane's Mowing Machines, with Boyd's Patented Improvements, £4 17s. 6d; £6 6s. 0d., £6 17s. 6d., £7 7s. 0d.

Green House Syringes, 8s., 10s., 18s. 6d

Garden Rollers, £1 14s. 6d., £2., £2 12s. £3 3s., £3 18s., £4 13s., £5 12s., £7 10s.

Garden Stools, 4s. 6d.

Garden Chairs, from 30s.

Boyd's Self-adjusting Scythe, 10s. 6d.

Wire Work, 18in. 4d. per yard run.

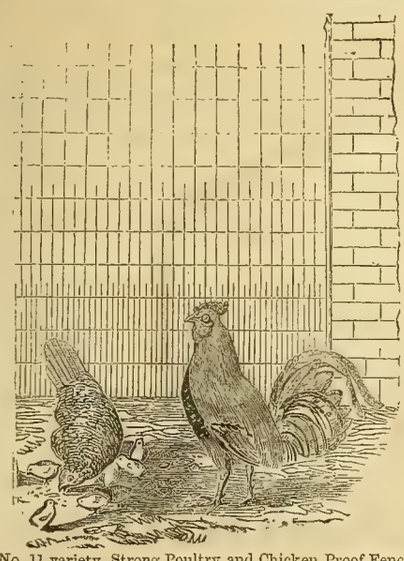
Every Implement for Garden use on the lowest Terms.

DEANES:—Opening to the Monument, London Bridge.

GREENING & COMPANY'S

PATENT WIRE FENCES.

PATRONISED BY HIS ROYAL HIGHNESS THE PRINCE CONSORT.



No. 11 variety, Strong Poultry and Chicken Proof Fence.

SPECIFICATION.—Horizontal bars of stout tough wire 6 inches apart. Meshes at the foot of fence, 1 inch apart; at the centre of fence, 2 inches; at the top of fence, 4 inches.

"By far the most elegant and durable wire fencing that has come under our notice. Below it is sufficiently fine to be proof alike against the ingress of rats and the egress of chickens, and being spiked above it affords no resting-place for the fowls, who consequently do not attempt to fly over it."—*Poultry Book.*

PRICES PER YARD:—

3 feet high,	1s. 6*d.*	japanned;	1s. 10*d.*	galvanised.	
4 ,,	1 11	,,	2 4	,,	
5 ,,	2 3	,,	2 9	,,	
6 ,,	2 6	,,	3 0	,,	

G. & CO.'S NEW ILLUSTRATED CATALOGUE is now ready.

It contains descriptions of the above and other Iron and Wire Fences for Parks, Farms, Gardens, Game Preserves, Poultry Courts, &c.

Post free on receipt of stamp.

GREENING & Co., Victoria Iron and Wire Works, 81, Oxford Street, Manchester.

ADDRESS: THE MANAGERS, ST. PANCRAS IRONWORKS.

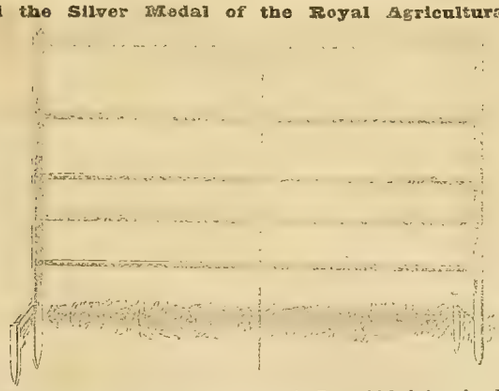
THE ST. PANCRAS IRON WORKS ARE OPPOSITE THE OLD ST. PANCRAS CHURCH, OLD ST. PANCRAS ROAD, LONDON.

IRON COLLAR BAR HURDLES.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

Obtained the Silver Medal of the Royal Agricultural Society.

ST. PANCRAS IRON WORKS,



OLD ST. PANCRAS ROAD, LONDON.

The improvement by this PATENT consists in the COLLARS on the Bars which, being placed on alternate sides of the centre upright bar, keep it in its position, confine the bars to short bearings, prevent their being strained, and give more than DOUBLE STRENGTH and RIGIDITY to the HURDLE.

PROFESSOR VARNELL'S MANGERS AND STABLE FITTINGS.

HAYMAKERS, possessing the best features of Nicholson's Prize Machines, with recent improvements peculiar to those supplied and manufactured only for RICHMOND AND CHANDLER, Salford.

Branch Establishment, South John Street, Liverpool.

N.B. The celebrated Bedford and Stamford Prize HORSE RAKES always in stock, with latest Patented Improvements.

"FRIGI DOMO."—Patronised by her Majesty, the Queen, the Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, and —Collier, Esq., of Dartford.

PROTECTION FROM THE SCORCHING RAYS OF THE SUN.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and, floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths. Two yards wide, 1*s.* 6*d.* per yard run; four, 3*s.* per yard. Also, an improved make for Shading Purposes. Three yards wide, 2*s.* 6*d* per yard run.

ELISHA THOMAS ARCHER, whole and sole manufacturer, 7, Trinity Lane, Cannon Street, City, and of all Nurserymen and Seedsmen throughout the kingdom. "It is much cheaper than mats as a covering."

TO NURSERYMAN AND OTHERS.

TO BE DISPOSED OF, a really first-rate NURSERY, including Glass, Stock, and Business, entire, on very advantageous terms, in the immediate neighbourhood of London. Might suit two or more in partnership, or any country firm requiring a London place of business. Long Lease and capitally situated. Part of the Purchase Money might remain at interest if desired.—For all further particulars apply by letter to A. B. & Co., care of Messrs. Williams & Lloyd, Stationers, 29, Moorgate Street, London.

TO NURSERYMEN AND OTHERS.

TO BE DISPOSED OF, AN OLD-ESTABLISHED NURSERY, of about 8 acres, adjoining a very populous and improving town, and close to the North-Western Railway station. The Vineries, Greenhouses, Shop, &c., are of recent erection, and arranged with every convenience. The Stock is in a flourishing condition, being young, healthy, and in good saleable order, comprising a general assortment of Evergreen and Ornamental Trees, Shrubs, Fruit Trees, Greenhouse and Miscellaneous Plants. The Grounds are ornamental and most eligibly situated, having an excellent frontage on the most leading thoroughfare, and in every way suitable to carry on a very extensive business.—Address, P. G. A., Messrs. Noble, Cooper, & Bolton, Seedsmen, 152, Fleet Street.

TO NURSERYMEN AND SEEDSMEN.

TO BE LET, and entered upon immediately, an old established BUSINESS, at Daventry, Northamptonshire, for many years carried on by the late Mr. John Wise, and since by his successor Mr. James Attfield. The Residence and Shop are situate in the principal street in the town, and the Nursery containing 10 acres or thereabouts adjoins, upon which there is a convenient Cottage with all necessary buildings, a Pump of excellent water, and a newly-erected Greenhouse, and adjoining the Nursery is a small Close of Pasture, containing 2 acres or thereabouts, with a large Inclosed Yard, Hovels, Pigstyes, and other buildings. The premises are held on a Lease for 21 years from the 25th March, 1857, at a moderate rent.—For terms and further particulars apply to Messrs. BURTON & SON, Solicitors, Daventry, or to Mr. THOMAS DARRETT, or Mr. JOHN OSBORN, Sheaf Street, Daventry.

FARM IN HAMPSHIRE TO BE LET

BY TENDER FOR A TERM OF YEARS FROM MICHAELMAS NEXT.

TO BE LET, A SHEEP AND CORN FARM, with Chalk Subsoil, containing about 657 acres, and situated within five miles of the important market towns of Winchester and Romsey. The proprietors do not bind themselves to accept the highest or any Tender.—For further particulars and to view, apply to Mr. HUGH RAYNBIRD, Land Agent, &c., Hackwood, near Basingstoke, to whom Tenders are to be addressed on or before 10th August next.

TO BE LET, BRISTOL NURSERY GROUNDS, Kemp Town, Brighton. These Gardens are now to Let for occupation with immediate possession.—Any person desirous of treating for the same may obtain particulars and permission to view the grounds on application to Mr. R. W. LUCAS, 20, Great Marlborough Street, London, W.; and of Mr. A. CHANDLER, Horticultural Valuer, 28, Priory Road, Wandsworth Road, S.

HAMPEN ANNUAL RAM SALE, 1859.

T. BEALE BROWNE, Esq., has fixed MONDAY, July 18th, for the Sale by Auction of about 60 COTSWOLD SHEARING RAMS, and Three or Four OLDER SHEEP. Mr. BEALE BROWNE will be happy to see his numerous Friends and Sheep Breeders generally upon this occasion The Sale will commence at 4 o'Clock. JAMES VILLAR, Auctioneer.

N B.—This Flock took 24 Prizes last year, and this year has taken Three First Prizes at Dublin, Three First Prizes at the Bath and West of England Show, and Two First Prizes at Oxford. Hampen is 8 miles from Cheltenham, 13 from Cirencester and 2 from Andoversford

NORFOLK POLLED COWS AND HEIFERS.

STOCK MART, EAST DEREHAM.

MESSRS. SALTER AND SIMPSON are honoured with instructions from the Right Hon. Lord Sondes to submit to public competition at the Stock Mart, on FRIDAY, July 22, 15 Blood-red NORFOLK POLLED COWS and HEIFERS (several of which have gained prizes), bred by his lordship from the noted herds of the late General Sir Edward Kerrison, Bart., Mr. G. D. Badham, Mr. Etheredge, and other eminent breeders. Sale to commence at 12 o'Clock.

LANDS OF CUNNINGPARK FOR SALE.

UPSET PRICE REDUCED.

TO BE SOLD by Public Roup, within the King's Arms Hotel, on TUESDAY, July 26, at 2 o'clock afternoon, the well-known PROPERTY OF CUNNINGPARK, extending to 27 acres 3 roods 10 poles imperial, or thereby, beautifully situated at the confluence of the River Doon with the Sea, about ½ mile from the Town of Ayr. The Land is in the highest possible state of cultivation, and has been managed for many years by the Proprietor upon the most approved system of modern husbandry There is a good House, and excellent Offices and Farm Buildings. The Lands are laid throughout with Pipes for the distribution of liquid manure.

ABERCROMBY COTTAGE, a pleasant Sea Bathing Residence, is situated on the Property, and will be included in the Sale.

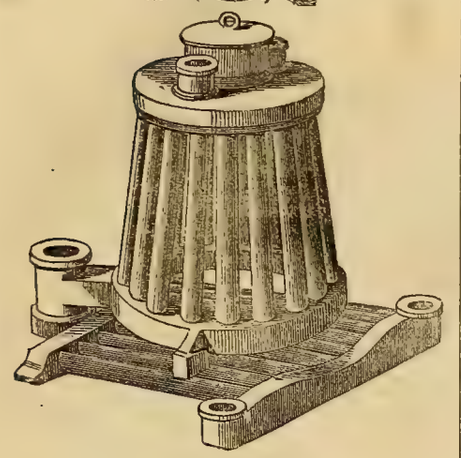
The Property will be exposed in One Lot at the Reduced Upset Price of 3250*l.*; and if not sold in One Lot it will then be exposed in Two Lots, as follows:—

1. Cunningpark .. £2900 | 2. Abercromby Cottage .. £350

Lot 2 will not be exposed unless Lot 1 is sold.

For further particulars apply to the Liquidators of the Western Bank, at Glasgow; Messrs. BANNATYNES & KIRKWOOD, Writers there; WILLIAM KILPATRICK, Writer in Ayr; or CHARLES G. SHAW, Writer, County Buildings, Ayr, in whose hands are the Title Deeds, Articles of Roup, and a Plan of the Property.—Ayr, July 16.

By Her Majesty's Royal Letters Patent.



ORMSON'S
PATENT JOINTLESS TUBULAR BOILER.

TESTIMONIALS.

"Sir,—I feel much pleasure in bearing testimony to the efficiency of your Patent Jointless Tubular Boiler which you have erected for Baron de Rothschild, at Gunnersbury Park, and from the number of hothouses and great extent of pipe you have heated from one boiler, I now feel confident it is decidedly the most powerful, economical, and safe boiler yet invented. Having had the working of the Wrought-iron Arch, and Cast-iron Corrugated Arch Boilers in these gardens, I have no hesitation in stating that your boiler is infinitely superior to either of them in every respect.—Yours truly,
"William Forsyth.
"The Gardens, Gunnersbury Park, Acton, Middlesex."

"Sir,—It is with much satisfaction I give my testimony in favour of your admirable Patent Jointless Tubular Boiler, being attached to upwards of 3000 feet of 4-inch pipe, and doing the work of four fires, and consumes little more fuel than was required for one of the fires previous to the adoption of your boiler. We can command any amount of heat, the boiler being so powerful I am confident it would with ease heat as much more. Altogether we have realised much more economy in fuel and attendance than we at first anticipated. In addition to the great power and economy of your boiler it possesses another most important advantage over all other tubular boilers which have come under my notice, in the fact of its being jointless, consequently quite safe from all danger of leakage. On referring to my coal account I find that I now only use one where I formerly used five waggon loads of coal for the arched boilers which you took out.—I am, Sir, yours respectfully, "J. Fraser.
"The Gardens, Luton Hoo, Bedfordshire.'

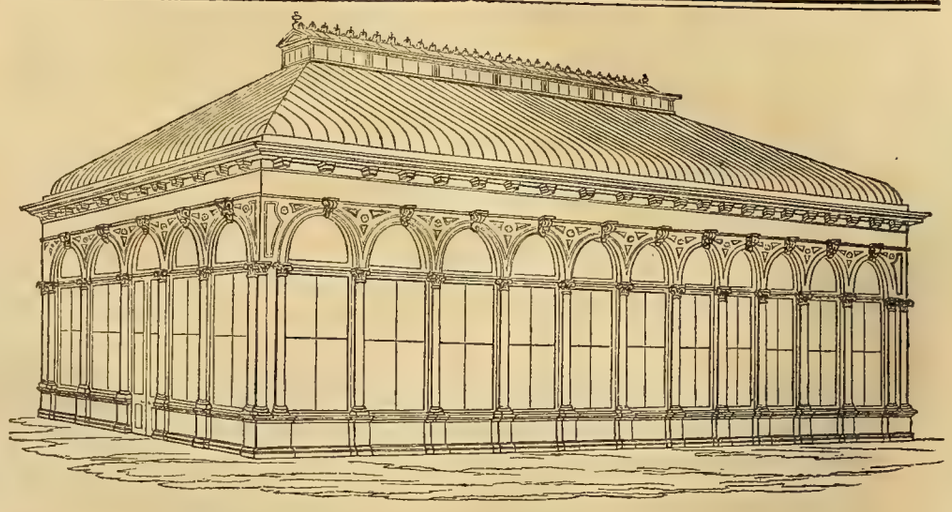
"Mr. Henry Ormson, Sir,—I beg to inform you of my entire satisfaction with your Hot-water Apparatus in general, and your Patent Jointless Tubular Boiler in particular, as fitted up in the new range of Hothouses you have recently erected for Lord Powerscourt. The Boilers I admire for three excellent reasons; they are simple in construction, effective in working, and I feel assured, from the calculation I have already made, a very great saving of fuel will be the consequence from using these Boilers. You will permit me to add if I had formed a contrary opinion of the merits of these Boilers I should have been candid enough to have told you so, but in justice to you I must distinctly state I consider them a great boon to the horticultural world.—I am, Sir, yours truly, "Alexander Robertson.
"The Gardens, Powerscourt, Ireland."

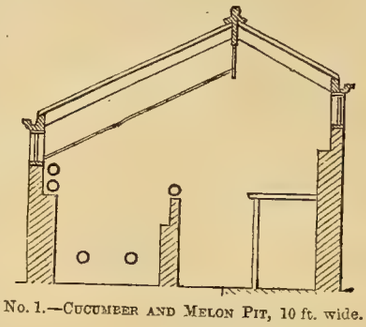
"Sir,—I have much pleasure in testifying to the excellent working of your Patent Jointless Tubular Boiler; though a small one it does the work of five fires, and is a great saving of fuel and labour.—I am, Sir, yours respectfully,
"Holland House Gardens, Kensington." "J. Scobie.

"Sir,—In regard to your Patent Jointless Tubular Boiler, it answers admirably the purpose for which it was erected. I consider it the most economical and powerful Boiler ever introduced, and am confident it will not fail to give general satisfaction.—I am, yours most respectfully,
"John Lauder.
"The Gardens, Witley Court, Worcestershire."

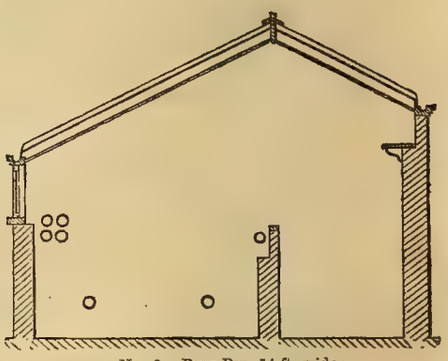
"Sir,—I have much pleasure in testifying to the efficiency of your simple but most powerful Patent Jointless Tubular Boilers. The two small boilers you put up here are doing the work of six fires, with the addition of a range of lofty coach-houses which were afterwards attached. The amount of fuel is little more, and the attention much less, than was required for one fire before these boilers were put up; there is not the least strain on them, and I am confident if required would heat a considerably greater amount of piping. I must also add that the whole of the hot-water apparatus works satisfactory, especially the ventilating boxes you put up in the Fruiting Pine Stove, which I consider a great acquisition, supplying at all seasons a constant stream of pure warm air to the plants, which are in consequence sturdy and in the most robust health.—I am, Sir, yours respectfully, "John Clark.
"The Gardens, Cobham Hall, Gravesend, Kent."

Ormson's Patent Jointless Tubular Boilers may be seen in successful operation at Mr. Veitch's, Royal Exotic Nursery, King's Road, Chelsea.

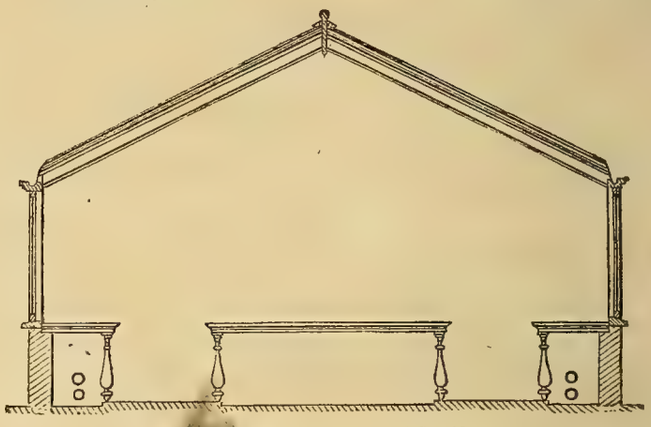




No. 1.—Cucumber and Melon Pit, 10 ft. wide.



No. 2.—Pine Pit, 14 ft. wide.



No. 3.—Greenhouse, from 18 to 20 ft. wide.

HORTICULTURAL BUILDINGS
MANUFACTURED BY STEAM POWER MACHINERY.

BEST MATERIALS AND LOWEST PRICES.

HENRY ORMSON,

HORTICULTURAL BUILDER & HOT-WATER APPARATUS MANUFACTURER,

STANLEY BRIDGE, KING'S ROAD, CHELSEA, LONDON.

Deeply grateful for the very liberal and kind patronage bestowed upon him, begs most respectfully to inform the Nobility, Gentry, Nurserymen, &c., that it being his determination to spare no pains to merit a continuance of their favours, and that he may be enabled to execute his extensive and increasing orders punctually, and at the lowest possible cost (agreeably with the best Materials and Workmanship), he has erected a most complete set of Steam Power Machines, peculiarly adapted for the purposes of his Trade.

PARTIES DESIRING INFORMATION as to prices, &c., will, by referring to the above sections, receive immediate attention.

PLANS, SPECIFICATIONS, and ESTIMATES for plain and inexpensive practical Structures, and for the most elaborate Architectural Erections, either in Wood or Iron, forwarded on application.

Printed by William Bradbury, of No. 13, Upper Woburn Place, and Frederick Mullett Evans, of No. 20, Queen's Road West, both in the Parish of St. Pancras, in the Co of Middlesex, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and published by them at the Office, No. 5, Upper Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—Saturday, July 16, 1859.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 30.—1859.] SATURDAY, JULY 23. {Price Fivepence. STAMPED EDITION, 6d.

INDEX.

Agri. Soc. of England	625 c—627 a	Peas, Turkish	620 c
Books noticed	623 c	— Dickson's Favourite	621 a
Cattle food	627 a	Picea nobilis	621 a
Cheese making	626 a	Plants, luminous	621 a
Crops, appearance of	626 b	Rat, water	620 c—621 a
Cucumbers and bottom-heat	621 a	Rose, Lælia	621 a
Flowers, sepulchral	624 c	Rose Stock, Manetti	621 b
Food, cattle	627 a	Rose insects	621 b
Gishurst Compound	621 b	Strawberry runners	621 a
Gladioli	621 a	Transplanting, Parisian mode of	620 a
Hitcham Labourers' Show	623 b	Trees, Paris Elm	620 a
Horticultural Society's meeting	619 c	Turnip caterpillar	626 a
— — — report of	621 c	Warwick meeting	625 c
Linum grandiflorum	621 a	— — report of	627 a
Luminosity	621 a	Water rat	620 c—621 a
Nettles	627 a	Well, foul	621 b
Palace of the people	620 b		

BRITISH POMOLOGICAL SOCIETY.—THE ANNUAL GENERAL MEETING of the Society will be held on THURSDAY, August 4, for the reception of FRUITS in season, and especially in classes, for which the following premiums are offered:—

Two guineas each for the best Seedling Early Peach and Early Nectarine.

Three guineas, 2 guineas, and 1 guinea for the best second and third collections of GRAPES exhibited with leaves of the varieties, and information as to their origin, &c. The object of this proposition is to bring under one view, for comparison of quality and nomenclature, as many varieties as possible; to which end it is not necessary that they have been wholly cultivated by the parties exhibiting them.

Forms, Copies of Rules, Instructions for Packing, or other information, may be obtained upon application to Mr. W. DAVIDSON, Secretary, to whom parcels, &c., should be addressed, at St. James's Hall, 69–71, Regent Street, London, W., and letters (to avoid delay), at 2, Randolph Road, Maida Hill, London, W.

TOWCESTER FLORAL AND HORTICULTURAL SOCIETY.

Patrons:—

His Grace the Duke of GRAFTON.
The Right Honourable the Earl of EUSTON.
The Right Honourable the Earl of POMFRET.
The Right Honourable the Lord SOUTHAMPTON.
RAINALD KNIGHTLEY, Esq., M.P.
Colonel HENRY CARTWRIGHT, M.P.

The ANNUAL EXHIBITION will be held on THURSDAY, September 8. Competition will not be restricted to the county.—Schedules of Prizes can be obtained of the Secretary.

The Committee have resolved on INCREASING the Premiums to be added to the following classes of Sweepstakes:—

The best Collection of 50 Roses, from 2*l.* to 5*l.*
The best Collection of 36 Dahlias, from 2*l.* to 4*l.*
The best Collection of 8 Fruit Trees, from 2*l.* to 4*l.*
And the best Collection of 12 Stove or Greenhouse Plants, Lycopodiums, or Ferns, from 2*l.* to 5*l.*

SAMUEL COOPER TITE, Towcester.

THE HORTICULTURAL SOCIETY OF EDINBURGH will hold an Exhibition, open to all Scotland, of CHRYSANTHEMUMS and other Winter Flowers and Fruit, in the Masonic Hall, George Street, on DECEMBER 6, next, when about 50*l.* value in Prizes will be awarded.

Arrangements have also been made for holding an Exhibition of HYACINTHS and other Spring Flowers in MARCH next, for which Prize Schedules will shortly be ready.

Edinburgh, July 23. ROBT. M. STARK, Secretary.

FROGMORE PROTECTING BROCCOLI, ROSEBERRY BRUSSELS SPROUTS, PERENNIAL SPINACH, new last season.—Strong plants of the above superlative Vegetables to be had of EDWARD SHENTON, Hendon Park Nurseries, Hendon, N. W.

SEEDS FOR PRESENT SOWING.

CABBAGE, SHILLING'S QUEEN	Per oz	—0s. 10d.
,, ENFIELD MARKET, large, true	0	10
,, EARLY CHAMPION	0	10
BROWN COS LETTUCE, black or white-seeded	1	0
WHITE CURLED ENDIVE	1	0
POLLEY'S NONSUCH TURNIP	0	6

The above post free.

Plants of CELERY, BRUSSELS SPROUTS, SCOTCH KALE, BROCCOLI, SAVOY, and other winter stuff.

J. MAY & Co., 1, Wellington Street, Strand, Waterloo Bridge.

KEMP'S NEW EARLY INCOMPARABLE CABBAGE.—This excellent variety may be had in sealed packets, at 1*s.* each, of Messrs. HURST & M'MULLEN, 6, Leadenhall Street, London; Messrs. NOBLE, COOPER & BOLTON, 152, Fleet Street; Mr. G. W. DIXON, 48 A, Moorgate Street, or free by Post for 13 postage stamps of E. P. DIXON, 57, Queen St., Hull.

CABBAGE SEED.

CATTELL'S "DWARF BARNES," AND CATTELL'S "DWARF RELIANCE," may be had as usual by post for 12 penny stamps per packet; the former containing 1 oz, and the latter ½ oz. May be sown as early as the middle of July, and will not run to seed the following spring.

Seed Establishment, Westerham, Kent.

SUPERB CAPE OR GIANT AND BROMPTON STOCKS.

CHARLES ALEXANDER, SEEDSMAN, Edinburgh, can supply the following, which are highly recommended. Sow any time this month. Post free on receipt of Stamps:—

1 packet Young's Scarlet Cape or Giant Stock .. 1*s.*
1 packet Young's White Cape or Giant Stock .. 1*s.*
1 packet Young's Scarlet Brompton Stock .. 1*s.*
1 packet Young's Dark Bloody Wallflower .. .. 1*s.*

HOLCUS SACCHARATUS, or North China Sugar-Cane.—Pamphlet, "A Visit and a Plant;" the only English authority on the Cultivation of the above. Post free 6*d.* Prices of Seed on application. Samples 6*d.* Four varieties of Holcus remitted free by post on receipt of 10*s.*

JOHN W. CLARKE, Whittlesea, Cambridgeshire.

CACTI.

TO BE SOLD, either the Collection or singly, SHOW PLANTS, some of the finest in England. Have been successfully exhibited this and previous seasons.—Apply to Mr. YOUNG, Mill Field Lane, Highgate, N.

SEEDS FOR PRESENT SOWING.

MESSRS. SUTTON'S ADVERTISEMENT in page 619, headed "Royal Berkshire Seed Establishment."

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY LIMITED supply every requisite for the Farm and the Garden.

Registered Offices, Union Road, Plymouth.

FERN CATALOGUE.

ROBERT SIM'S NEW DESCRIPTIVE AND PRICED CATALOGUE, No. 6 (62 pages) of his COLLECTION of BRITISH AND EXOTIC FERNS, can be had, post free, for 8 stamps. Gratis to all previous purchasers of Ferns.

Nursery, Foot's Cray, Kent, S.E.

HOLLYHOCK SEED.

A. PAUL AND SON beg to offer packets of Seed, saved from their unrivalled collection, free by post at the following rates:—

	s.	*d.*
12 separate packets, saved from 12 good and distinct named sorts, containing about 500 seeds	5	0
Mixed seed, first quality	2	6
Second quality, per packet	1	0

N.B. June and July are the best months for sowing out of doors to bloom next year.—Nurseries, Cheshunt, Herts.

HOLLYHOCKS IN BLOOM.

NURSERIES, SAFFRON WALDEN.

WILLIAM CHATER invites inspection to his new and unrivalled Seedlings of this year; also his collection of these superb Flowers. May be seen on any day, Sundays excepted.

We can still supply Seed of the choicest sorts in	*s.*	*d.*
separate packets, each	1	0
Saved from 20 best varieties, mixed, per packet	5	0
Saved from 12 best varieties, mixed, ,,	2	6
Saved from 12 good varieties, mixed, ,,	1	0

Saffron Walden Nurseries.—July 23.

FARFUGIUM GRANDE.

W. H. ROGERS can offer strong plants in pots of the above very beautiful foliaged Chinese hardy plant, at 3*s.* 6*d.* each, or 5*s.* each, or 30*s.* and 42*s.* per dozen.

ANDROMEDA FORMOSA.

W. H. ROGERS, possessing a large stock of this handsome hardy evergreen flowering shrub, can offer strong selected plants in pots 1*s.* and 1*s.* 6*d.* each, 9*s.* and 12*s.* per dozen, or 50*s.* per 100.

Red Lodge Nursery and American Grounds, Southampton.

ARAUCARIA IMBRICATA.

YOUELL AND Co. beg to inform the Trade they have to offer a fine and healthy stock of the above in 1 year old plants.

GLADIOLUS BRENCHLEYENSIS.—An extensive stock of large flowering Bulbs of this magnificent Gladiolus, the colour of which is vermilion scarlet, the best and brightest variety known. Prices of the above on application.

Royal Nursery, Great Yarmouth.

GEORGE WHEELER, Warminster Nursery, can supply the following, post free:—

CALCEOLARIA SEED of the finest strain in 1*s.* 6*d.* and 2*s.* 6*d.* packets.

CINERARIA SEED from the finest varieties in 1*s.* and 2*s.* 6*d.* packets.

WHEELER'S genuine IMPERIAL CABBAGE, in 6*d.* or 1*s.* packets, or by the lb.

HOLLYHOCK SEEDS from fine named kinds, in 1*s.* and 2*s* 6*d.* packets.

DELPHINIUM FORMOSUM, 6*d.* and 1*s.* per packet.
,, Chinese, fine vars., 6*d.* and 1*s.* per packet.
,, cœrulescens, 6*d.* and 1*s.* per packet.
,, fine mixed, 6*d.* and 1*s.* per packet.

WHEELER'S "SIR COLIN CAMPBELL" FUCHSIA, the finest double Fuchsia ever offered.—Three months having elapsed since the above was first sent out, GEORGE WHEELER begs to announce he is prepared to offer to the Trade fine healthy plants about 1 foot high, bushy and showing bloom, at 30*s.* per dozen. Prepaid orders only can be executed at the forementioned low rate.

Warminster Nursery, July 23.

THE MAY QUEEN STRAWBERRY—the earliest of all Strawberries.—Fine well-rooted plants can now be supplied at 12*s.* per dozen; 1*l.* per 25; 1*l.* 15*s.* per 50; 3*l.* per 100. For a full description see an article by W. Roden, Esq., M.D., Kidderminster, June 25, p. 542 of the *Gardeners' Chronicle*.—WILLIAM J. NICHOLSON, Egglescliffe, Yarm, Yorkshire.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Stove, Greenhouse, and Hardy Ferns, Miscellaneous Stove, Greenhouse, and Hardy Plants, Variegated and Ornamental foliaged Plants, Conifers, Roses, Rhododendrons, Indian Azaleas, Gloxinias, Fuchsias, Cactuses, &c., is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

SEEDS FOR PRESENT SOWING.

JOHN CATTELL has NEW SEEDS of the following choice articles now ready to send out, in packets post free at the annexed prices. Orders from unknown correspondents must contain a Post-office Order or Postage Stamps for the amount.

	Per packet.—*s.*	*d.*
Calceolaria, from finest large flowered varieties of the richest colours	2	6
,, second quality	1	0
Cineraria, from finest new varieties	2	6
,, from fine older varieties	1	6
,, second quality	1	0
Geranium, from extra fine new French and show vars., 12 seeds	1	0
Hovea Celsii, just gathered; if sown now will vegetate next spring	1	0
Delphinium formosum; if sown now in pans will make good plants to flower next June	0	6
Cyclamen persicum	0	6
Oxalis rosea	0	3

Nursery and Seed Establishment, Westerham, Kent.

MAJOR'S UNRIVALLED HALF-SHRUBBY CALCEOLARIA SEED.

MR. HENRY MAJOR, Knosthorpe, near Leeds, begs to announce that his new Seed of the above (in splendid colours and of great variety) is just ripe, and may be had in packets at 2*s.* 6*d.* each, or three for 5*s.*. Post free. Penny postage stamps are respectfully requested in payment.

CHOICE CALCEOLARIA AND CINERARIA.

J. HENCHMAN is now sending out New Seed of his well-known strain of CALCEOLARIAS and CINERARIAS, in packets at 2*s.* 6*d.* each.—Edmonton, London.



CALCEOLARIA, 1*s.*, 2*s.* 6*d.*, 5*s.*
CINERARIA, 1*s.*, 2*s.* 6*d.*, 5*s.*
PRIMULA SINENSIS FIMBRIATA, 1*s.*, 2*s* 6*d.*, 5*s.*
} All the same quality.

JAMES CARTER AND CO. beg leave to offer Seeds of the above of *this year's harvesting*, saved from SEVERAL UNRIVALLED COLLECTIONS, and they can with confidence recommend them as being of first-rate quality, both for form, colour, and variety.

JAMES CARTER & Co., Seedsmen, 238, High Holborn, London.

CINERARIA, HERBACEOUS CALCEOLARIA, AND HALF SHRUBBY DITTO SEED.—These have been saved from Turner's most beautiful varieties; in 1*s.* and 2*s.* 6*d.* packets. Primula and Hollyhock, from the newest and handsomest varieties, 1*s.* per packet. Agents for F. & A. Smith's splendid Cineraria, in 1*s.* 6*d.*, 2*s.* 6*d.*, and 5*s.* packets; also agents for Dobson & Son's splendid Calceolaria, in 1*s.* 6*d.*, 2*s.* 6*d.*, 3*s.* 6*d.*, & 5*s.* packets.—Catalogues of the newest Flower Seeds, and newest Dutch and Cape Bulbs, sent post-paid.

BUTLER & MCCULLOCH, Seedsmen, Covent Garden Market.

FIRST PRIZE CALCEOLARIA, CINERARIA, AND PRIMULA.

"Shanakiel House, Cork, June, 1859.

"GENTLEMEN,—The Calceolaria Seed you sent me turned out so remarkably well, my gardener got First Prize for the plants at our recent Flower Show. You will please send me another half-crown packet, for which I enclose postage stamps.

"Messrs. Jackson & Son. "FRANCIS R. LEAHY."

Seed of the same excellence is now being supplied by post or otherwise. CALCEOLARIA, 1*s.*, 1*s.* 6*d.*, and 2*s.* 6*d.*; CINERARIA, 6*d.*, 1*s.*, and 2*s.*; and PRIMULA, 1*s.*, 1*s.* 6*d.*, and 2*s.* 6*d.* per packet.

T. JACKSON & SON, Nurserymen and Seedsmen, Kingston, S.W.

HALF-SHRUBBY CALCEOLARIAS.

ROBERT ALEXANDER begs to inform his patrons and the public that carefully HYBRIDISED SEED of the above is now ready for distribution at 2*s.* 6*d.* per packet.

This celebrated and much admired collection has fully sustained its character for superiority the present season, by again carrying off the First Prizes at the Bath, Bristol, and Clifton Horticultural Exhibitions, making three successive seasons of success at each exhibition.

They have also been pronounced by the most experienced Horticulturists of the neighbourhood, as well as others from a distance officiating as Censors, as the most distinct and superior in point of habit that had come under their notice.

Lyncombe Vale, Bath.

ROSES.

GEO. CLARKE begs to invite his friends and the public generally to an inspection of his superb Collection, extending over 10 acres of ground, and which are in great beauty.

Amateurs and others are reminded that the blooming season is the best time for orders to be given, as a better selection as to colour, form, &c., can then be made.

Fine collections of Evergreens, Fruit Trees, Greenhouse Plants, and every article in the trade.

Omnibuses from the City and West End every 10 minutes pass the Nursery.—Streatham Place, Brixton Hill, S.

GOLD AND SILVER FISH.—Upwards of 100,000 on hand, at from 4*s.* to 9*s.* per dozen, 2*l.* per 100, and 18*l.* per 1000; also some very large ones full of spawn, suitable for ponds, 10*s.* per dozen.

A large collection of FOREIGN and BRITISH FERNS, and every kind of GREENHOUSE and STOVE PLANTS. ORANGE TREES, 2*s.* 6*d.* each.—ROBERT GREEN, 154, Kingsland Road, 55 doors from Shoreditch Church.

HORTICULTURAL VALUATIONS.

MR. ALFRED CHANDLER (of the late firm of Chandler & Sons, Vauxhall), begs to inform his friends that he is at liberty to undertake the valuation of Collections of Plants, Nursery Stock, Horticultural Buildings, &c.

Mr. A. C. is also open to engagements as Censor at Horticultural Exhibitions, in which capacity he has had long and extensive experience.—28, Priory Road, Wandsworth Road, S.

FRUIT TREES, RIPE STRAWBERRIES, ETC.

TANNED NETTING for Protecting the above from Frost, Blight, Birds, &c.; 2 yards wide, 3*d.* per yard, or 100 yards, 20*s.* Can be had in any quantity of EATON & DELLER, 6 and 7, Crooked Lane, London Bridge.

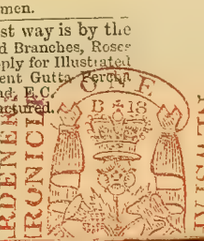
TANNED NETTING, for the Protection of Fruit Trees from Frost, Blight, and Birds: also, for the security of fresh sown seeds, at 1*d.* per square yard: 200 yards, 12*s.*; 500 yards, 25*s.*; Scrim Canvas, for wall fruit; Garden Mats.—At EDGINGTON & Co's., Rick Cloth, Tent, and Waterproof Cloth Manufacturers, 17, Smithfield Bars, City, & Old Kent Rd.

TANNED GARDEN NETTING for Preserving Fruit Trees from Frost, Blight, Birds, &c., and as a Fence for Fowls, &c. One yard wide 1½*d.*, 2 yards 3*d.*, 3 yards 4½*d.*, and 4 yards 6*d.* per yard, in any quantity, may be had at C. WRIGHT'S, 376, Strand, W.C.

A liberal allowance to Nurserymen.

TO WATER GARDENS in the easiest way is by the BEST FLEXIBLE TUBE. Brass Hand Branches, Roses and Jets, Garden Engines, Syringes, &c.—Apply for Illustrated Price Lists to JAMES SHEATH & Co., the Patent Gutta Percha and India Rubber Factory, 35, Old Street Road, E.C.

N.B. The best articles only manufactured.



GUTTA PERCHA TUBING FOR WATERING GARDENS.

THE GUTTA PERCHA COMPANY have the pleasure to acknowledge the receipt of the following

Testimonial from Mr. J. FARRAH, *Gr. to* BOSWELL MIDDLETON JALLAND, Esq., *of Holderness House, near Hull.*

"I have had 400 feet of your Gutta Percha Tubing, in lengths of 100 feet each, with union joint, in use for the last 12 months for watering these gardens, and I find it to answer better than anything I have ever yet tried. The pressure of the water is very considerable, but this has not the slightest effect on the tubing. I consider this tubing to be a most valuable invention for Gardeners, inasmuch as it enables us to water our gardens in about one-half the time, and with one-half the labour required."

Manufactured by the Gutta Percha Company, Patentees, 18, Wharf Road, City Road, London, and sold by their Wholesale Dealers in town and country.

CAST-IRON GARDEN ORNAMENTS, viz.—ORNAMENTAL VASES, of various sizes, do. with pedestal, GARDEN CHAIRS and STOOLS, RUSTIC GARDEN SEATS and TABLES, both plain and bronzed, also GARDEN ROLLERS of all sizes.—Prices on application to J. JONES, Iron Merchant, 6, Bankside, London.

VASES, PEDESTALS, SUNDIALS, FOUNTAINS, FLOWER BOXES, JARDINETS, FERN CASES, BALUSTRADES, EDGINGS AND CURBS FOR FLOWER BORDERS, SEATS, &c., in Imperishable Siliceous Stone, at reduced prices, for the adornment of the Villa Garden, the Mansion Grounds, or the private or public Park.

For Priced Illustrations apply to FREDERICK RANSOME, at the Show Rooms, Cannon Row, Westminster, S.W., or Patent Stone Works, Ipswich.

TO AGRICULTURISTS AND OTHERS.

EDWARDS'S PATENT CANVAS SUCTION AND DELIVERY HOSE are the best and cheapest in use.

EDWARDS'S PATENT CANVAS DRIVING BANDS FOR CHAFF CUTTING AND THRESHING MACHINES, &c.

C. J. EDWARDS's Leather and Canvas Hose and Band Manufactory, 32, Great Sutton Street, Clerkenwell, London, E.C.

AGRICULTURAL MACHINERY.

E. R. AND F. TURNER, Ipswich, manufacture Prize Mills for Crushing Corn, Seed, Malt, &c.; Portable Grinding Mills, Steam Engines fixed and portable from 2 horse-power and upwards; Threshing Machines, Chaff Cutter, Oilcake Breakers, Horse Gears, Saw Tables, &c., all of a superior description and adapted for Home, Colonial, and Foreign use. Illustrated Price Lists sent free on application.

BY APPOINTMENT.

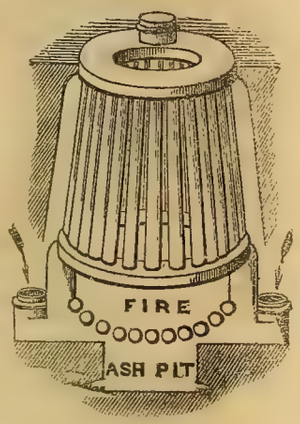
HORTICULTURAL BUILDING & HEATING BY HOT WATER.

STEAM POWER WORKS.

JOHN WEEKS & COMPANY



BEG respectfully to call the attention of the Horticultural World to the more than usual facilities at their command to offer superior Horticultural Erections of every style and description at lowest possible prices. The extensive additions to their Machinery, Workshops, Iron Foundry, and Plant now form a complete and unequalled Manufactory for the production of every branch of Horticultural Building and Heating by Hot-Water. J. WEEKS & Co.'s ONE BOILER SYSTEM of heating has from its efficiency, cleanliness, and economy, rendered such unbounded satisfaction as now to become almost universally adopted. Numerous Horticultural Establishments of considerable extent formerly heated by 10 or 12 ordinary Boilers, also Churches, Chapels, Schools, Mansions, Warehouses, Hospitals, and Public Buildings are now more effectually heated at an incredible saving of labour and fuel by JOHN WEEKS & Co.'s ONE BOILER SYSTEM.



JOHN WEEKS & COMPANY, King's Road, Chelsea, London, Horticultural Buildings and Hot-water Apparatus Manufacturers, Engineers, and Iron Founders.

Plans, Estimates, and Illustrated Catalogues Free on application.

SHANKS'

NEW IMPROVED PATENT LAWN MOWING MACHINES,

NOW USED IN ALL THE ROYAL GARDENS.

NEW AND IMPORTANT IMPROVEMENTS FOR

MOWING, ROLLING, COLLECTING, DELIVERING, AND FOR PREVENTING BREAKAGES.

THE Delivering operation enables SHANKS' Machine to do a **third** more work than any other Lawn Mowers, with **three-fourths** less labour to the man who works it. A most valuable improvement has been lately introduced into this already celebrated Machine, which **entirely prevents either the cogs of the wheels from breaking, or the cutter from sustaining injury** should it come in contact with a stone or any hard substance in mowing. These improvements give SHANKS' Mower an immense advantage over all others, and render it by far the most complete that has ever been offered to the Public.

THE NEW PATENT HAND MACHINE

possesses all the improvements of the larger sizes with the exception of the Delivering Apparatus.

TESTIMONIALS IN FAVOUR OF SHANKS' NEW HORSE MACHINE:—

From Mr. ABEL SHEARER, *Gardener to the* Marquis of TWEEDDALE, *Yester Gardens, May* 13, 1859.

"The success of your improved Grass-Cutting Machine which we got the other day—especially the delivering part—is a mechanical triumph. Having cut all our Grass with it I must say that it acts far beyond my expectation, and it performs all you say in your prospectus. We can now go on the whole day without stopping, except to oil the parts that require it. The men are quite in love with it; a good proof of its utility."

From Mr. MACKIE, *Gardener to* His Grace the Duke of ATHOLL, *The Gardens, Dunkeld, May* 18, 1859.

"After repeated trials with our Grass-Cutting Machine, as now fitted up with your Delivering Apparatus, I have much pleasure in saying that I now consider your Machine complete. We can do as much work in six hours as we used to do in ten hours, with the old plan of stopping to empty the Grass Box, and with far greater ease both to man and horse. His Grace is so well pleased with the working of the Apparatus, and the saving of time effected by it, that he has ordered the Machine from Blair Castle to be sent through to you to be fitted up in the same way as the one here."

From Mr. DELL, *Gardener to* CHRIS. TURNER, Esq., *Stoke Rochford, June* 2, 1859.

"DEAR SIRS,—I have great pleasure in bearing testimony to the great efficiency of your new Patent Apparatus for delivering the Grass without stopping the Machine. After repeated trials both in dry and showery weather I am certain we can now do as much in one hour as we used to do in one hour and a half with the old plan."

From Mr. ALLAN, *Gardener to* J. LA ZOUCH, Esq., *Harristown, Co. Kildare, Ireland, July* 5, 1859.

"I have much pleasure in testifying to the success of the Grass-Cutting Machine we had from you the beginning of this season. We have had it working less or more every week for the last four months, and nothing can exceed the manner in which it executes its work even on the most unlevel ground. Your new Delivering Apparatus is everything that can be wished for in saving of time and trouble. I think you should try and induce all your old customers to get their Machines fitted up with this economical Apparatus."

Illustrated Price Lists with further particulars forwarded on application. The Machines are warranted to give ample satisfaction; failing this they may be at once returned.

ALEXANDER SHANKS & SON, Patentees and Sole Manufacturers,

DENS IRON WORKS, ARBROATH, FORFARSHIRE.

LONDON AGENTS:

MESSRS. J. B. BROWN & CO., 18, CANNON STREET, LONDON, E.C.

CALCEOLARIA, CINERARIA,

AND

PRIMULA SINENSIS FIMBRIATA,

Of first quality, in seed packets, 2*s.* 6*d.* each.

SPERGULA PILIFERA,

The admirable substitute for Grass in forming Lawns, &c., REQUIRING NO MOWING. Seed packets, 6*d.*, 2*s.* 6*d.*, & 5*s.*

E. G. HENDERSON & SON, Wellington Nursery, St. John's Wood, London.

NEW AND BEAUTIFUL PLANTS.

MESSRS. VEITCH & SON,

OF THE

ROYAL EXOTIC NURSERIES, EXETER AND CHELSEA,

HAVE much pleasure in offering for the first time the following Novelties, in the selection of which they have been guided solely by the determination of submitting only such Plants as are of general usefulness and sterling merit.

PLANTS ARE NOW READY FOR DELIVERY.

CHAMÆBATES FOLIOLOSA (Bentham).

This most beautiful hardy evergreen shrub, sent by Mr. W. Lobb from California, is of a dense compact habit, with most delicately divided Fern-like foliage, almost resembling the Choilanthes elegans. The flowers, which are white, are produced in great abundance. It has been exhibited during the present season at the Crystal Palace and Royal Botanic Society's Exhibitions, at both of which it has received prizes as a new hardy evergreen. It will certainly prove a great acquisition amongst hardy evergreen shrubs. Good established plants in pots, 15*s.* and 21*s.* each, according to size.

PENTSTEMON JAFFRAYANUM (Hooker).

This very lovely hardy half shrubby herbaceous plant was also sent from California by Mr. W. Lobb. It grows so compact and bushy, and produces its beautiful flowers, which are a clear bright blue with pink throat, so abundantly and continuously, that it will doubtless prove a most valuable plant for bedding; even as a single bush in the open border it is exceedingly striking and attractive. It was exhibited at the Royal Botanic Society's Show on July 6, and was awarded the First Prize for new and rare plants. It is figured by Sir Wm. Hooker in "Curtis's Botanical Magazine" for April, 1858. Strong established plants, 7*s.* 6*d.* each.

POTHOS ARGYRÆA (Lindley).

This very striking variegated plant, which was found and sent us by Mr. Thomas Lobb, from Borneo, is QUITE A GEM, of remarkably neat and compact habit, and almost rivalling in beauty some of the Anæctochili. The leaves, which are obliquely ovate in shape, are of a rich green, blotched with silvery white, with an irregular band of the latter colour running along their central ribs. It has been shown at the various Metropolitan Exhibitions during the present season, at all of which it has received prizes, and been much admired. It is adapted either for pot or basket culture, and requires the temperature of a stove, where it prefers a shady position. Strong established plants, 10*s.* 6*d.*, 15*s.*, and 21*s.* each, according to size.

PTERIS ARGYRÆA (Moore).

This is undoubtedly one of the greatest acquisitions to our now justly popular collections of Ferns. It is of noble aspect and free growth, perfectly distinct and novel in its character; the pinnæ on every frond, as well as their branches, having a broad central stripe of glistening silver, which in contrast with the bright green produces a most charming effect. It may justly be called the VARIEGATED FERN. It was exhibited at the Royal Botanic Gardens on July 6, and before the Horticultural Society's newly-appointed Floral Committee on July 7, and on both occasions received the highest prize given to such novelties, and was universally admired. Established plants, 31*s.* 6*d.* each.

COTONEASTER BUXIFOLIA, of Wallich (TRUE).

This perfectly hardy evergreen shrub is from the Neilgherry Hills, from whence it was sent us by Mr. Thomas Lobb. It was originally described and figured by Dr. Wight, in his "Icones Plantarum." It produces its white flowers most abundantly, is of a dwarf compact habit, and is an interesting pretty shrub. Strong plants, 5*s.* each.

LYGODIUM POLYSTACHYUM (Wallich).

This beautiful Fern was sent us by Mr. Thomas Lobb from Central India. In general appearance and beauty of habit it much resembles some of the lovely Gleichenias. The fronds are branched, with a downy upper surface, and when cultivated to sufficient size, it will make a fine exhibition plant Young plants, 31*s.* 6*d.* each; larger ditto, 42*s.* each.

SELAGINELLA ATROVIRIDIS (Spring).

This is a fine species of dwarf habit, introduced from Borneo through Mr. Thomas Lobb. The branches of the repeatedly forked stems are broad and well defined, and have a most distinct and novel appearance. It is certainly one of the finest yet introduced of the dichotomous-branched section. Price 10*s.* 6*d.* each.

SELAGINELLA LOBBI.

A most beautiful and distinct species, sent by Mr. Thomas Lobb from Borneo, partaking of the habit of S. inæqualifolia, but having the rich lustrous metallic hue of S. cæsia. It is remarkable for the Fern-like character of its branches, and no collection of these charming plants should be without this lovely addition. Price 15*s.* each.

SPRAGUEA UMBELLATA.

This is a very distinct and pretty hardy annual, sent by Mr. Thomas Lobb from California. It is at this time in great beauty at the Exeter Nursery, raised from seed sown in the open ground last autumn, having stood without any protection through last winter. It is also well adapted for pot culture, the habit is very dwarf and spreading, resembling that of Calandrinia grandiflora. The flowers, which may be compared to Anamaranthus, are of a beautifully shaded pink, with purple stamens. Seeds of this plant will be supplied in the autumn, and in the mean time a few spring-raised plants, in small pots, can be had, at 2*s.* 6*d.* each.

The usual allowance to the Trade, to whom special terms will be furnished when required in quantity.

UNRIVALLED HYBRIDISED CALCEOLARIA SEED.

JOHN DOBSON AND SONS have again much pleasure in offering their very superior CALCEOLARIA SEED, which is acknowledged to be the very best offered to the public. The present being the best time for sowing the Seed, intending growers and admirers of really good kinds will receive great satisfaction by purchasing a Packet of this Seed, as each Packet contains a great diversity of brilliant and varied shades of colours, combined with good shape, and dwarf robust habit; this renders them especial favourites. Every year increases the large sale of the Seed; this we believe is entirely owing to our own personal inspection in hybridising and harvesting the Seed, as we pay more attention to this subject than we believe any other person in the trade does. Our collections of Calceolarias invariably take off the First Prize at the Crystal Palace and Regent's Park Exhibitions. Each Packet contains printed directions for sowing, which will tend to obviate the annoyance some persons experience in being unable to get the Seed up; each Packet is also sealed, without which none is true. May be had of the following Agents, at 1*s.* 6*d.*, 2*s.* 6*d.*, 3*s.* 6*d.*, and 5*s.* per Packet; the Seed is of one quality only:—Messrs. Butler & McCulloch, Seedsmen, Covent Garden; Messrs. Dodwell & Bailey, Bradshaw Gardens, Chadderton, near Manchester; Messrs. Fisher, Holmes, & Co., Handsworth Nursery, Sheffield; Messrs. Fraser, Richardson, & Goad, Seedsmen, 82, Bishopsgate Street Within; Messrs. Fraser, Lea Bridge Road Nursery, Essex; Messrs. Garraway, Mayes, & Co., Durdham Down Nursery, near Bristol; Mr. G. Glenny, Horticultural Agent, Fulham; Messrs. Hurst & McMullen, Seedsmen, 6, Leadenhall Street, Messrs. Rollisson & Sons, Nursery, Tooting; Mr. Scott, Merriott Nurseries, Ilminster, Somerset; Mr. C. Turner, Royal Nurseries, Slough; or of the Growers, Messrs. DOBSON & SONS, Seedsmen, Woodlands Nursery, Isleworth, and High Street, Hounslow.

Also the following Seeds may be had of J. D. & SONS only, for present sowing:—

	Per packet—*s.*	*d.*		Per packet—*s.*	*d.*
Antirrhinum	0	6	Cineraria from the finest varieties	1*s.* and 2	6
Hollyhock	1	0	Primula sinensis, finest fimbriated varieties,	1*s.* and 2	6
Fancy Geranium	1	0			
Pansy, ex.	1*s.* and 2	0			
Delphinium formosum	0	6			

Seed Establishments, Isleworth and Hounslow, W.

CHOICE SEEDS.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that they can now supply the following choice SEEDS, all of which are warranted genuine and of the finest quality.

	Per packet—*s.*	*d.*		Per packet—*s.*	*d.*
Calceolaria, herbaceous	2	6	Gaillardia grandiflora	0	6
Cineraria, from named vars.	2	6	Primula sinensis, mixed	1	6
Clianthus Dampieri	2	6	Pansy, from named vars.	1	0
Hollyhock, from named vars.	0	6	Sweet William, from extra fine vars.	0	6

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

RARE HARDY CONIFERS—PICEA (ABIES) AMABILIS, TRUE; PICEA (ABIES) GRANDIS, TRUE.

HUGH LOW AND CO. have great pleasure in announcing that they have this season been successful in obtaining from Seed imported by them direct from California a large supply of Plants of the above named most beautiful and thoroughly hardy Conifers. They are without exception two of the finest and most ornamental trees yet known to Botanists, and attain in Northern California a height of from 250 to 280 feet. Their perfect hardiness and adaptation to the climate of this country have been proved beyond a doubt, but up to the present time Seedling Plants have been rarely to be obtained. The quantity now raised being considerable, H. L. & Co. have decided on offering them by the dozen and 100 at such low prices as will induce lovers of hardy trees to plant them in large numbers. Prices can be had on application; as also of Seedling Plants of Cupressus Lawsonii, C. macrocarpa, C. Goveniana, C. M'Nabiana, Picea Pinsapo, P. Nordmanniana, P. Pindrow, P. nobilis, Abies Menziesi, A. cephalonica, A. Douglasi, both from Californian and Scotch seeds; A. Mertensiana, (taxifolia of Jeffrey), A. Williamsoni (Pattoni, Hookeriana), A. orientalis, Araucaria imbricata, Cedrus Deodara, Cedrus Atlantica (argentea), Cryptomeria japonica, C. Lobbi, Pinus Benthamiana, P. excelsa, P. insignis, P. Don Pedri, P. Pallasiana, P. Sabiniana, P. macrocarpa, P. Edgariana, P. Jeffreyi, P. Monticola, and many others; Podocarpus andina, P. nubigena, Thuja gigantea (Libocedrus decurrens); Thuja Lobbi (Menziesi), Torreya grandis, Wellingtonia gigantea, and many other fine Coniferous plants.—Clapton Nursery, London. N.E.

TRIFOLIUM INCARNATUM, 3*d.* to 4*d.* per lb.;

with hints on its successful cultivation, showing how 3 tons per acre of the most nutritious hay may be secured, the advantages of sowing it where broad Clover is thin, and its superiority to Tares as green food.

PAGE AND TOOGOOD having secured a large breadth of prime quality, offer it at the above low rate for cash.

New Turnip Seed, per lb.	0*s.* 6*d.*	Italian Rye-grass, per bush, 5*s.* to	7*s.* 0*d.*
New Rape, do.	0 4	Mustard, per lb, 4*d.* to	0 5

Calceolaria and Cineraria, in packets of 2*s.* 6*d.* and 1*s.* each, saved from one of the finest collections in Europe.

Seeds for exportation to all parts of the world.

PAGE & TOOGOOD, Seed Growers and Merchants, Oxford Street; and Above Bar, Southampton.

BUCKLAND SWEETWATER GRAPE.

MESSRS. IVERY AND SON, of Dorking and Reigate Nurseries, feel great pleasure in introducing this fine early WHITE GRAPE, and beg to intimate that they will commence sending out Plants on October 3, in strict rotation, as the orders are received. Price 21*s.* and 31*s.* 6*d.* each.

It received the Premium offered by the Pomological Society for the best Seedling Grape not having a Muscat flavour, Sept. 9, 1858; also an Extra Prize at Crystal Palace Exhibition, Sept. 8 and 9, 1858; and it is recommended by many Gardeners who have seen it growing and tasted the fruit. For the information of those who have not seen this Grape, J. I. & SON beg to say that they have issued a Circular containing the various periodical reports, and also the names of the Gardeners by whom it is recommended, which they will be pleased to forward on application.—Dorking Nursery, July 23.

J. CARTER AND CO.'S Select LIST OF CHOICE FLOWER SEEDS FOR PRESENT SOWING,

will be found on page 603 of *Gardeners' Chronicle* of July 16.

238, HIGH HOLBORN, London, W. C.

CARTER'S CHAMPION CUCUMBER

surpasses Sion House and Lord Kenyon's Favourite for winter and early spring use. Smooth, dark green, straight, and prolific; average length, 1 foot. Price per packet, 1*s.*

J. C. & Co. do not hold themselves responsible for the genuineness of the above unless obtained direct from 238, High Holborn, London, W.C.

SEEDS FOR PRESENT SOWING.

ROYAL BERKSHIRE SEED ESTABLISHMENT.

SEEDS DIRECT FROM THE GROWERS THE MOST CERTAIN MEANS OF PREVENTING DISAPPOINTMENT.

TRIFOLIUM INCARNATUM, TURNIP SEEDS, GRASS SEEDS, MUSTARD SEED, RAPE SEED, COW CABBAGE, EARLY CABBAGE, CINERARIA, CALCEOLARIA, AND PRIMULA.

SUTTON & SONS have a good stock of New Seeds of the above kinds which they are now sending out at very moderate prices, as see Priced List. Carriage-free to all parts, and 5 per cent. allowed for cash payment.

Address, SUTTON & SONS, Seed Growers, Reading, Berks.

BUSBY'S STOCKWOOD GOLDEN HAMBURGH GRAPE.

JAMES VEITCH, JUN., in again offering fine established Vines of this Splendid GRAPE at the prices noted below, begs to call attention to the Reports of the Horticultural Society's Fruit Committee in the *Gardeners' Chronicle* of the 16th and in the "Cottage Gardener" of the 19th inst. The beautiful specimens exhibited on this occasion in competition for J. V., jun.'s Prize of Five Guineas incontestably prove it to be a fruit of first-rate excellence.

Price 5*s.* to 10*s.* 6*d.* to 21*s.* each, according to size and strength.

Special terms will be furnished to the Trade when Vines are required in quantity.

Royal Exotic Nursery, Chelsea, S.W.—July 23.

MUSCAT HAMBURGH GRAPE AND OTHER CHOICE SORTS.

LUCOMBE, PINCE, AND CO. have now ready to send out fine strong healthy VINES, raised from eyes, 6 to 9 feet long, of this celebrated and much esteemed new Grape, together with all the leading kinds in cultivation, including that very superior variety

BIDWILL'S SEEDLING,

which is one of the finest Black Grapes ever raised, and being a very free bearer is especially adapted for pot culture, and several specimens of it fruiting in pots can now be seen in the Exeter Nursery; it is also perfectly hardy.

L., P., & Co. having a large experimental Vinery, have had the opportunity for several years of proving their Stock, and can therefore warrant all the sorts true to their names:—

Strong Vines	5*s.* 0*d.* each	Very large extra-sized Fruiting	10*s.* 6*d.* each
Extra strong	7 6 „		

All are fit for immediate planting, and being well established in pots, can be packed securely, and safely sent to any distance, and Plants, fully to compensate for carriage, will be presented.

Exeter Nursery, Exeter.

The Gardeners' Chronicle.

SATURDAY, JULY 23, 1859.

THE final decision of the HORTICULTURAL SOCIETY is taken. The attempt to form a grand Garden at KENSINGTON GORE was resolved upon last Wednesday, as will be seen from the report in another column. All that now remains is for the Fellows of the Society and the public to find the money, and for the Council to settle the details of the lease with the Royal Commissioners, and obtain a PLAN worthy of so noble a site and so great an undertaking.

So many have signified their intention to join the Society should the Garden be formed that there can be no doubt about its giving the Society a very

great addition of strength, for almost every person of wealth and station in the West of London must necessarily take the deepest interest in a place calculated to add so largely to their personal enjoyment, irrespective of the immense impulse it would be certain to give to the improvement of that—we should say those—arts which conduce more than anything else to the beauty and enjoyment of country homes.

Nor is there any sign of serious difficulty in completing the fund of 50,000*l.* by the issue of Debentures, which, under the new arrangement proposed by the Royal Commissioners, will afford as safe an investment as can ever be obtained in operations of the kind. Each Debenture is to be of the value of 100*l.*, carrying until paid off 5 per cent. interest payable half yearly, and giving the holder free admission, either in person, or by transferable nomination, to the gardens at all times whatsoever. The Royal Commissioners are to guarantee a sum not exceeding 20,000*l.* to all Debenture holders remaining unpaid at the end of the first term of 31 years, or else to renew the lease for 31 years more. Several members of the Council have subscribed for these Debentures in sums from 100*l.* to 500*l.*, for the purpose of showing that they are satisfied with the goodness of the investment.

The Society has wisely committed the final arrangement of all details concerning tenure to their Council, who will of course take care, for their own security as well as that of others, that the terms shall be equitable on both sides. And in this there should be no serious difficulty, seeing that the interests of the Royal Commissioners and the Horticultural Society are identical. For if the prosperity of the Society is greatly promoted by obtaining a garden at the very gates of the metropolis, so also will the objects of the Commissioners be most essentially forwarded by carrying that prosperity to the utmost.

As to the plan of the ground, it should be understood that, although sketches of some contemplated arrangements have been made public, yet they are to be regarded as suggestions, and nothing more. The form of the ground is settled, so is the position of the bounding arcades, and of the great Winter Garden; anything further is quite open to discussion. It may be looked upon indeed as a sheet of blank paper, and will demand, more than all the rest of the arrangements, the most intelligent, practical consideration. We entertain no doubt that the Council will consider whether it will not be to the interest of the Society that they should invite plans for laying out the inner area of 20 acres, as soon as they shall have ascertained that the money which is required can be raised. Earlier than that it would be premature to discuss the subject.

OUR readers will remember how, some six weeks since (see p. 403), we pointed out the extreme improbability of the story that the INSECT-BITTEN ELM TREES in Paris were being cured and restored to vigorous health by being deprived of their bark. We now find that in fact the Paris foresters never denude the trees of the *whole* of their bark, they only pare off the outer layer, leaving or at least intending to leave the inner live layer intact; that is to say they leave the liber, and merely remove the separable dead outer bark. After paring off this outer bark up to the main branches they cover the stem with Moss, binding it round with coarse sack-cloth, and at the top of this kind of swathing they place a tin funnel encircling the stem, so as to enable them to keep the Moss, and consequently the liber constantly moist.

In this way they two years ago treated a considerable number of large trees in the Champs Elysées, Place de la Concorde, &c. Hundreds of them might have been seen in that state in 1857; none were vigorous and some very sickly, but it was expected that this treatment would have restored them. The trees are now, however, as we are informed, with perhaps one or two poor exceptions, dead and gone and replaced by younger ones.

In order to fill the gaps thus produced great number of trees of a large size have been, and are still being planted. They are extracted from the soil by mechanical contrivances, and carry with them a considerable, but not remarkably large ball of earth. They are then placed in a hole filled in with rich vegetable mould, and their stems also are swathed in Moss and fitted with the funnel at the top as above described, so as to keep the bark moist as in the case of the old pared trees. Some of the trees thus planted are rather young drawn up plants from 25 to 30 feet high, but others are much older and taller. Several might have been seen the other day travelling down the Boulevards each in a machine drawn by six horses. They were Horse Chesnuts in full leaf, and must have been full 50 feet high, for their tops were nearly on a level with the roofs of the houses. Nevertheless the ball of earth round their roots could not have been above 4 feet in diameter.

As to the result of this mode of transplanting and treatment there has scarcely yet been sufficient evidence. Some say that it succeeds admirably, others that the trees make during the first year vigorous looking shoots, which, however, mostly die in the second year; so that many of the trees have to be replaced in the third year. We suppose the fact to be that some die and some succeed, whether in consequence of or in spite of the swathing we are not informed. A plantation which was made the year before last round the Bourse, and consisting of trees of considerable size, all of which are swathed, does not look unhealthy, but we understand that it has been found necessary to cut out a great deal of dead wood.

The swathing the bark of trees when in a shrivelled state with a thick mass of damp Moss is a plan recommended by Mr. ANDREW KNIGHT; and is well known to be useful when the trees to be operated on are young and dormant. But we can learn nothing that tends to encourage the adoption of the practice upon trees of large size and transplanted while in leaf. Our own large trees transplanted in winter and not swaddled seem, so far as we can learn, to be quite as successful as any in Paris, and as for sickly trees being restored to health by the process, we can hear of no instance of the kind.

PALACE OF THE PEOPLE, MUSWELL HILL.

ON Saturday the inauguration of a site for the establishment of a "Palace of the People" at Muswell Hill, was performed by Lord Brougham, in the presence of a number of patrons and patronesses of the proposed institution.

The site, which commands one of the finest views of scenery in the county of Middlesex, consists of about 500 acres, a large portion of which forms the highest ground in the county, affording extensive views of Hertford and Essex on the north and north-east, together with the beautifully wooded scenery of Woodford and Epping Forest. In a south-easterly direction the view extends along the valley of the Thames, the Kent and Surrey hills forming the background, whilst in the extreme south and south-westerly direction is obtained no indistinct view of the metropolis, with the Crystal Palace in the distance. "The Palace of the People" at Muswell Hill is to be established to effect that desideratum for the inhabitants of the northern side of the metropolis which the Crystal Palace at Sydenham already affords to the denizens of the southern side of the Thames, and it is so situate as to be readily accessible to the northern districts, containing more than one million and a half of persons, without being obliged to pass through the crowded streets of London.

Mr. John Masterman, on behalf of the committee, read an address to the following effect:—It stated that the Crystal Palace at Sydenham was established for the purpose of providing the means of intellectual improvement and physical recreation for all classes of the community, and in this respect the experiment had been eminently successful. It appeared by the report presented to the shareholders on the 15th December last, that 1,058,206 persons visited the palace during the six months ending the 30th October, 1858, being an increase of 21,541 on the corresponding six months of 1857, and 48,594 on the same period in 1856. The profits realised for the year ending the 30th April, 1858, amounted to 35,073*l.* 17*s.* 10*d.*, equivalent to 5 per cent. on a capital of 700,000*l.* The profits for the six months ending the 30th October, 1858, were 36,221*l.* 13*s.* 3*d.* The Crystal Palace, however, being situate on the southern side of the Thames, at a distance of about six miles from London Bridge, could never become a place of frequent and easy resort for the dense population resident on the northern side. A reference to the Post Office map would show that this immense population was four or five times as large as that dwelling on the southern side of London. Whilst the greater part were debarred practically from the enjoyment of the Crystal Palace, the Palace of the People at Muswell Hill would be readily accessible to all; at the same time it would possess peculiar advantages for the erection of a building devoted to general instruction and amusement. It stood on the line of the Great Northern Railway, within a quarter of an hour's journey from King's Cross, and from its elevated position commanded the most extensive and beautiful views in all directions. It was within an easy walk from all the north metropolitan suburbs, and within an hour's drive by omnibus or carriage from the City itself. The Palace of the People was projected in no spirit of opposition to the Crystal Palace at Sydenham. Experience had proved that fair competition was favourable to all sound enterprises, and although the range of local visitors which the Palace of the People would command would seem to be of itself sufficient to ensure success, the general public might expect to derive advantage from the stimulus which each undertaking would receive from the efforts of the other. In designing the Palace of the People the architect, Mr. Owen Jones, had endeavoured to secure important attractions over its predecessors in Hyde Park and at Sydenham, combined with a considerable saving of expense. A dome of 200 feet internal diameter, visible from all parts of the building, would contain a winter garden; semi-circular colonnades at each end, of 120 feet of internal diameter, would be devoted to refreshment courts, which would command the most beautiful views of the neighbourhood. A concert room or lecture theatre of 216 feet internal diameter, surrounded by corridors 24 feet wide, would project from the centre of the building on the north side. This would contain 10,000 persons comfortably, and the corridors would enable such number to take their seats without confusion, and to disperse with facility. The railway station would be so arranged that passengers would enter the building under cover, and visitors by carriage and horseback could alight under a glazed corridor. Each side of the palace would present instructive examples of landscape gardening of different styles, such as the early English, the French, Italian, the Dutch, and modern English, with their appropriate embellishments — horticulture, economic botany, arboriculture, and ornamental planting would be taught and illustrated on a scale never before attempted on one spot, ample space being provided for out-door amusements, including archery, cricket, riding, and boating. A distinctive feature of the Palace of the People would be the endeavour to render the resources of the institution subservient to the cause of popular education. In order to accomplish this object, English history, geography, astronomy, geology, mineralogy, and mining would all be illustrated in a systematic manner, and on a large scale. Provision would be made for a fund to be applied in lectures, prizes, &c., the control and disposition of such fund to be confided to a council of distinguished men, who would preside over the educational department. The estate consisted of about 450 acres, of these 150 would be appropriated to the special use of the Palace and its grounds. A reserve of 30 acres would be made in favour of benevolent institutions connected with art, science, literature, music, horticulture, and the railway interest. The remainder would be available for the benefit of the shareholders. Mr. Masterman added, that the cost of the undertaking was estimated at 500,000*l.*, and from the careful estimates made by Sir Charles Fox and Mr. Owen Jones, there was no doubt, taking the great advantages which nature itself afforded, that the entire establishment would be constructed and opened to the public below that sum.

THE WATER RAT.

THIS perennial frequenter of our brooks and ponds is always in favour here, as I consider it in the light of a little British beaver, inoffensive in its habits, and nearly innocuous in its pursuits. I say nearly innocuous, because it does a trifling damage to certain fish-ponds, by making holes in the banks. It is very partial to such ponds as have been formed parallel with a rivulet; and nothing will prevent its passing to and fro from the stagnant to the running water, except a kind of wall made of tiles or slates in the middle of the intervening bank.

I am strongly of opinion that its food consists entirely of vegetable productions. In its habits, it confines itself unremittingly to the border of its favourite element. After more than half a century of observation at intervals, I have never once detected it straying from the water's edge into the adjoining fields.

When not molested, it will sit for hours together on any stone a little elevated above the surface of the water where it affords to him who advances cautiously an excellent opportunity of beholding its fine dark fur.

When impelled by appetite, you may see it cropping the Grass and Rushes, and now and then venturing on a blade of corn, should corn grow near to its haunts.

In the spring of the present year, my tom cat Whittington brought to the house a magnificent old male water rat. As I was in want of a skull at the time, I dissected it; but I found nothing in its stomach to shake my conviction, that its ordinary food is strictly vegetable.

Although differing from the Hanoverian rat in colour, form, and feature, still it is too often mistaken for that notorious marauder, and is condemned to suffer for sins which it never committed.

The water rat is of sedentary habits, and of moderate appetite. Whereas, on the contrary, its Hanoverian congener is a rambling glutton, and would go up to the moon in quest of prog, had it but a path to walk on.

When I was a boy from school, one night as our family was going to the chapel, we surprised a huge Hanoverian at the top of the staircase. Unceremoniously, it ran up inside of the cook's petticoats, and located itself just on the spot which modern milliners have selected to support the fashionable bustle.

There, the coachman pressed it so effectually with his brawny fingers, that it fell to the ground dead as mutton, close to where I was witnessing the unusual uproar. *Charles Waterton, Walton Hall, July* 16.

Home Correspondence.

Turkish Peas.—Is the inclosed anything but a white variety of the Lathyrus sativus? The seeds came from Mark Lane, where a quantity were offered, Feb. 1859, for sale for food for cattle under the name of "Turkish Peas." Is the account given of the Lathyrus sativus

by Loudon to be depended on? *Colham.* [Yes. We do not see that the specimen forwarded offers any distinction from L. sativus. Its seeds are certainly unwholesome to man.]

Luminous Plants.—Observing that the attention of the observant is called to the luminous appearance among plants, it occurs to me that about three years since, whilst on my return from the hills after deer in the Hebrides, I noticed (when following close in the footsteps of the gillie, to avoid falling into the deep fissures of the moor) that, as he withdrew his foot from the moor the spot became immediately luminous, and this continued for about the space of a quarter of a mile. I endeavoured to preserve small portions of the Lichen, but dropped them during a very disagreeable walk in the dark. The Lichen resembled in form the antler of the red deer, and was whitish or pale grey in colour. The time of year October, nearly the last day or so of that month, and vegetation rapidly decomposing. κ. τ. λ.

Rose Lælia.—Can any Rose grower inform me in what respect this, which I see is advertised as new, is different from Louise Peyronnet. For my own part I see no difference between them. If Lælia be different then I would like to know what makes it better. *A Rose Grower.*

Bottom-heat for Cucumbers.—A good deal has been said for and against bottom-heat for Cucumbers from time to time, and Mr. Ayres to fortify his position as a cold-bottom disciple sent some leaves from his plants that were considered strong evidence in favour of the no bottom-heat system. I now send you a leaf picked at random from a span-roofed house in which we grow Cucumbers all the year round; the bottom-heat is never under 80°, and often above it; it is derived from hot-water pipes; the house is only 25 feet long and 12 feet wide, and from it we can cut a Cucumber every day of the year. The leaf sent measures 20 inches by 17 inches, the average length of the fruit at present in the house is 22 inches, the sort Sir C. Campbell. *W. Thomson, Dalkeith Gardens, July* 8. [We must take some opportunity of re-opening this question, the point of which has been completely lost sight of.]

The Water Rat.—Your correspondent need have no fear of this little animal killing his fowls, or sucking eggs, or biting his fingers. To such bad habits it is decidedly averse. But in hard winters it is a voracious consumer of the roots of trees. Some years since I saw in my shrubbery a fine Holly, 20 feet high, which had always been remarkable for its erectness, falling over to one side, and upon examination its roots were found to have been completely gnawed off by the water rats of a neighbouring ditch, from whence the rats had ingeniously constructed a gallery rising upwards from the water. The same black gentlemen entirely destroyed a fine Hawthorn hedge, 150 feet long, and in the same manner. *Jael.*

Linum grandiflorum.—I have never found any difficulty in growing this from seed, treating it in the same way as the whole class of tender annuals, but was struck lately with the appearance of two patches in my garden of unusual size and vigorous growth, and a sheet of flower; while those I had reared were only beginning to show signs of flowering, and were poor little things in comparison. On inquiry I found these beautiful specimens were from seed sown in the open ground with other hardy annuals, and no more attention. The seed had been sent to my governess, who fortunately did not know that it required any particular care, and so did not weaken or spoil it by over-kindness. *Clericus.*

Peas.—Is there any difference between the Auvergne Pea and Dickson's Favourite? Both these sorts are growing side by side in my garden, and I can see no difference whatever. I should be glad to know the peculiarity or superiority of the one over the other. For the Auvergne I paid 1*s.* a quart, and for Favourite 1*s.* 6*d.* *John Marsland, Birch Hall, Rusholme, near Manchester, July* 20.

Picea nobilis.—We have a fine specimen of this here, which has produced cones for several years. Last season I gathered from it some well ripened ones, the seeds from which were sown in the spring of this year, and they have produced more than a thousand strong healthy plants. *Richard George, Chatsworth, Derbyshire.*

Gladioli.—On the occasion of a late visit to a friend who is an enthusiastic as well as successful amateur horticulturist, among many other excellent things I noticed some fine beds of Gladioli, particularly ramosus, gandavensis, insignis, and cardinalis, but foremost among all for its beautiful effect in a mass stood cardinalis. To be seen in perfection it should be grown in a circular bed, and, if possible, on an elevated part of the lawn; then the graceful curve of the flower-stems all round and down to the Grass makes one of the most beautiful masses of scarlet, and this too without the usual defect—too much green. To be grown in perfection my friend told me it should be planted in equal parts of rich loam and peat, and about one-fourth of the whole clean sharp sand, put in about 4 inches deep early in autumn, and protected from frost by leaves, litter, or some such contrivance, and as a principal point not be disturbed more than once every three or four years. If any of your readers who have not grown these plants with the above success will try this method they will be more than compensated for the trouble by the gorgeous display produced. *J. K. C.*

Strawberry Runners (See p. 606).—Having had considerable experience in the cultivation of the Strawberry, I am quite at a loss to understand why your correspondent "J. H. H." is not able to fruit his plants the first year after laying, provided he observed the following particular; viz., to select the strongest runners as early in the season as possible. Of course if he does not lay his plants before now he cannot expect them to fruit like those laid in the early part of June, as there is not time for them to form their fruit-buds. Another point to which attention should be paid is to give plenty of water till autumn, for if left to dry up in the summer time they are not able to form their flower-buds before autumn, when they are so tender that the least frost possible kills them. If however he strictly follows the above directions, and selects the strongest and earliest runners, and keeps them in a growing state till autumn, so that they may finish growth early, then success is certain. Out of some thousands laid here every year we never have any that do not fruit, except such as are blind. Perhaps however your correspondent leaves his plants to root in the ground, five or six on a runner, till now, then takes up; if so, the mystery is explained. Success cannot attend such treatment. *William G. Gordon.*

Roses.—Would your correspondent Mr. Sheppard, of Wolverstone Park, who in your Paper of March 5th gave such a successful account of his system of growing Roses on the Manetti stock, be so kind as give the details of his management, such as the growing of the stocks, time and mode of grafting, and all after management? It would be conferring a great boon on those amateurs who cannot employ scientific men. *J. K. C.*

A Foul Well.—I should be much obliged if you could give me a word of advice concerning a well—an old well that I re-opened last year after it had been closed for not less than 25 years. The water seemed very good; the well in good condition. In the winter I had it thoroughly cleaned, and soon afterwards put down a pump. The water at first came clean enough, but soon there appeared in it what seemed to be a weed, like a very fine Seaweed, in its early state, with almost transparent colourless fibres; as it appeared to grow older it became of a dirty green colour. When I drew some water 12 months ago, I did not observe anything of the sort. I have bottled some of this weed, or whatever it may be, in a quill, which I enclose for your inspection. What is to be done? Will it profit me to pump the well out? This I can do easily, for the water does not stand in it more than 4 feet, being supplied by a spring flowing through the rock, as is usually the case hereabouts. The depth is 54 feet from the surface. The pump is of the common kind, made of green Elm; the piece above the ground Oak, also green. If you or any of your contributors can assist an original subscriber, pray do so. *S. R. F.* [A microscopical examination of the matter sent us shows that the green portion consists of clouds of Contervoid threads and mucilage, possibly belonging to the plant called Anabaina subtilissima. Mixed with this are woody fibres, possibly derived from some old rope in the well. There seems to be no remedy except pumping the well dry, thoroughly cleaning it, leaving caustic lime to act for a time, and then pumping it dry again.]

Rose Insects.—I herewith send for your inspection a caterpillar which has made terrible havoc amongst my Rose trees this season. The effects of their industry you will see by the accompanying leaves, which are in fact mere skeletons of leaves; and where the enemy exists to great extent, such is the disfigured appearance of the trees that Rose growing might be given up unless a remedy is found, either for destroying the parent of the caterpillar or the latter on its first appearance. I should be greatly obliged for any information on the subject. The first ravages I observed from this enemy appeared three years ago, when they were confined to one tree in the front of my house; last year they extended to a few standard trees near, and this year they have spread to trees at a very considerable distance. The first tree attacked, however, was the original one in the front of the house, when after finishing every leaf upon it, those of a Wistaria were commenced upon; but they proved distasteful, and so but very few were injured. I have not heard of any other garden which has been visited with this pest. I ought to remark that about three weeks ago, when at a neighbouring nursery-ground, I was advised to try "Gishurst Compound," as being very fatal to insect life, and therefore, although the nurseryman was quite unacquainted with the caterpillar in question, he said it might destroy it; and I have great pleasure in saying that I found his prophecy correct, for by syringing the trees very freely vast numbers were destroyed, though not all. I see by your last *Agricultural Gazette* that the black caterpillar is in some districts ravaging the Swedes. Would it not be well to try the effects of the Gishurst Compound? when if found to answer, probably the company might be able so far to lower the price as to make its application nearly universal. A trial, too, might next season be made against the old Turnip enemy, "the fly," whose ravages have again been much felt in this district. *W. Squire Ward, Wellow Hall, Newark, July* 19. [The insects which have committed so much injury to the Roses, as described in the above communication, are the larvæ of the Rose saw-fly (Tenthredo Æthiops), described and figured in *Gardeners' Chronicle*, 1848, p. 524. It would be serviceable to envelope the trees infested in a canvas bag, and then fumigate them with sulphur or brimstone. *W.*]

Gishurst Compound.—The following is our experience of this Compound: For stove plants 2 oz. to the gallon are enough; for greenhouse plants, 2½ oz; for out-door plants, such as Carnations, Roses, &c., 3 oz.; for Pear and all fruit trees, 4 oz. We have used it on some thousands of plants, and the effect has always been to kill the insects completely; if some escaped a second application was effectual; 1 oz. to the gallon killed with two applications every green fly on Carnations, Pinks, and Picotees, and what is more the plants have not been attacked since. Much depends upon the state of plants; if forced, and they have delicate leaves, or plants making rapid growth, 4 oz. would destroy the foliage; 1 oz. would be quite enough; a little judgment should be used in these matters; all plants out of doors are hardier, consequently they will stand a stronger dose. We apply it with loose pieces of mat tied at one end 1 foot long; one of these in each hand, dipping them both in the pot and drawing them on each side of the shoots and leaves. *A. Henderson & Co., Pine-apple Place, Edgware Road, July* 16.——If any one having Loudon's Gardeners' Magazine for 1830 to 1833 will refer to the Index under Red Spider, he will find a recipe for the destruction of this pest, which if not identical is so near an approximation to it as to warrant a strong suspicion of its forming the base of this compound. It is a system of lixiviating sulphur which I recollect using successfully for spider at the time; but which I had forgotten until a sniff of the Compound reminded me of my "ancient friend." I am using the Compound, and though it is useful, I am not at all enraptured with it. For bug, turtle, and white scale it is almost useless, unless the insects are dislodged previously to the application; and on the score of expedition it has certainly little more to recommend it than the old remedy of "catch 'em and kill 'em." For bug, the remedy sent out by Messrs. Veitch's foreman some years back is very preferable to the Compound, and I find tobacco water at 6*d.* per gallon cheaper for aphides and thrips. *Orchardleigh.*

Horticultural Society.

A SPECIAL general meeting of this Society was held in the large room of the Society of Arts, John Street, Adelphi, on Wednesday last, "for the purpose of further considering an arrangement with her Majesty's Commissioners of the Exhibition of 1851, for leasing to the Horticultural Society 20 acres of ground at Kensington Gore. The Earl of Ducie took the chair. The business of the meeting commenced by the minutes of the last meeting being read by Dr. Lindley.

The Earl of Ducie then rose and said that in discharging the duties entrusted to his charge he would endeavour to be as brief as possible. They were there to report progress as between the Council and the Royal Commissioners since the last meeting. He was happy to say that some amplifications of the proposed lease had been communicated to the Council. He could not say the terms were more liberal, where the concession had been almost all on one side, but perhaps he might say the further information would make the lease more acceptable to those likely to support them. No exertions had been yet made to raise funds, but funds had come in already to the amount of 11,000*l.*, as would be seen inscribed in a paper in the room, to which any so disposed might add their names. As to the plan of the proposed Garden, and as to its internal arrangements—that part which would fall to the Horticultural Society to perform—they were not obliged to execute it according to the plans laid before them, which had been drawn provisionally. In endeavouring to carry out the contemplated scheme they would strive to obtain the best possible advice, and exercise the greatest caution and deliberation, on which so much would obviously depend. He would now call on Dr. Lindley to enter more minutely into the matter.

Dr. Lindley commenced by adverting to a point to which considerable consideration would have to be directed—the terms of the lease in the original proposal of the Royal Commissioners. They had offered to grant a lease on certain terms for 31 years, but nothing was said about the intention of the Commissioners at the end of that term of 31 years. At any rate such intentions were not communicated to the Council of the Horticultural Society. He could now, however, lay before the meeting, in compliance with the wish of Lord Ducie, a letter which had been received from Mr. Bowring. Dr. Lindley then read the following:—

"Whitehall, July 18, 1859.

"Sir,—I am directed by her Majesty's Commissioners for the Exhibition of 1851, to acknowledge the receipt of your letter of the 14th inst., in which you inquire with reference to the proposed lease to the Horticultural Society of a portion of the Kensington Gore estate for a period of 31 years, what is the position which the Commissioners contemplate assuming at the expiration of that term, and whether they will then be willing to renew the lease to the Society, if the management shall have been satisfactory to the Commissioners and the public. In reply, I am to acquaint you for the information of the Council of the Horticultural Society, that being anxious to meet their wishes as far as possible, her Majesty's Commissioners will be prepared to add to the arrangement which the Society proposed in their letter of the 4th inst, stipulation to the following effect:—Upon the Society giving to the Commissioners two years' notice previous to the expiration of the lease the lease shall be renewed for a further period of 31 years upon the same condition as to rent, management, &c., as those already proposed by the Commissioners with reference to the original lease. Her Majesty's Commissioners, however, reserve to them-

selves a power to decline so to renew the lease upon taking upon themselves the responsibility of any of the Debentures now proposed to be issued by the Society that may be outstanding at the expiration of the 31 years, to any extent not exceeding a *maximum* of 20,000*l*. On the other hand, with a view to reducing as far as possible the Debenture debt above alluded to, the Society shall agree to devote in each year, during the continuance of the lease, not less than 50 per cent. of their moiety of the net surplus balance of receipts (after the Commissioner's claim for rent as set forth in my former letter are satisfied) to the purpose of paying off outstanding Debentures. In the event of the Society being unable for any period of five consecutive years, during the first term of 31 years or during the renewed term, if there be one, to pay the interest on the 50,000*l*. proposed to be borrowed by the Commissioners (and which interest, according to the original proposal of the Commissioners, is to be a second charge on the net receipts of the Society), the Commissioners to have the right of re-entry without payment of compensation to the Society. Her Majesty's Commissioners have lastly to stipulate that the Society shall not underlet or dispose of their leases, either during the original or the extended term, without the consent of the Commissioner being previously obtained.—I have the honour to be, sir, your obedient servant,

(Signed) "EDGAR A. BOWRING."

Such was the communication received from the Commissioners, which now stated fully and distinctly what they would do at the end of the first period of 31 years. Dr. Lindley next directed attention to a list of names already sent in as supporters of the proposed plan, some for donations, others for life memberships, and others for Debentures. This list will shortly be circulated; it is therefore only necessary now to state that it included the names of all the Royal family, H.R.H. the Prince Consort, President of the Society, Earl Granville and Countess Granville, Hon. Frederick Leveson Gower, M.P., F.H.S., and George Granville Leveson Gower, Esq., Sir John Dalberg Acton, Bart., the Duke of Newcastle, the Duke and Duchess of Manchester, Lady Ulrica Thynne, the Marquis and Marchioness of Ailesbury, the Earl of Ellesmere, the Earl of Harrowby, F.H.S., Sir J. F. Davis, Bart., F.H.S., the Duke of Leinster, F.H.S., Earl of Ducie, V.P.H.S., the Hon. Payan Dawnay, F.H.S., Sir Proby Cautley, F.H.S., Col. Long, F.H.S., Sir Richard Frederick, Bart., F.H.S., Earl of St. Germans, F.H.S., Lady Rolle, F.H.S., Sir John Cathcart, F.H.S., Earl of Cawdor, F.H.S., Sir Roderick and Lady Murchison, F.H.S., Samuel Gurney, Esq., M.P., F.H.S., Lord Ashburton, F.H.S., Miss Baring, Right Hon. Henry Labouchere, Lady Mary Labouchere and three Misses Labouchere, Sir Charles Lyell, F.R.S., Lord and Lady Overstone, Major Lindsay, Hon. Mrs. Loyd Lindsay, Colonel W. Kirkman Loyd, Miss Eliza Loyd, T. Field Gibson, Esq., Right Hon. Robert Lowe, M.P., H. T. Hope, Esq., F.H.S., Sir Joseph Paxton. M.P., F.H.S., Sir William Cubitt, Sir Charles Barry, George Wood, Esq., F.H.S., Sir Charles Lamb, Bart., Colonel Harcourt, F.H.S., Rev. Thomas Staniforth, F.H.S., Lord Boston, and a large number of other gentlemen, including various members of the Council, seven of whom had subscribed for Debentures to the amount of 2300*l*., exclusive of the 1000*l*. taken by H.R.H. the President of the Society.

Dr. Lindley continued, saying that they could not of course, ascertain the precise amount of the life-memberships, because some were of 40 guineas and others of 20 guineas value; and they did not at present know which of the two classes the subscribers would join; but they might reckon the whole amount at something beyond 11,000*l*. As to the Debentures, the Council had resolved that they should be of the value of 100*l*. each, carrying interest (half-yearly) at 5*l*. per cent., with right to free admission to the Gardens on all occasions whatsoever, that right being transferable on payment of a trifling fee for the registration of the name of the party to whom transferred.

The noble Chairman then said that if any gentleman had any remarks to make before the first resolution was put he should be glad to hear them.

Mr. Grissell asked what were the particular privileges attached to the different descriptions of life memberships?

Dr. Lindley said it was proposed that the difference between the 40-guinea and the 20-guinea should continue what it had been for some years. As to the former, in addition to the ordinary privileges of Fellows of the Society, they would have a right to a transferable ivory ticket, which conferred personal privileges; personal admission at all times to the gardens of the Society be they where they might; and this ivory ticket could be lent to a friend; the latter (the 20-guinea) had no ivory ticket; and in reference to distribution of plants by ballot, the 40-guinea had a right to twice as many chances as the 20-guinea. One great object of the Society being to promote the importation from other countries of seeds and plants valuable for horticultural purposes, this last difference in privilege became of no small importance.

Mr. Grissell asked whether he was to understand that the interest on the 50,000*l*. to be advanced by the Royal Commissioners was to be paid out of the funds of the Society, and whether if for five consecutive years that interest was not paid the Commissioners were to resume possession.

Dr. Lindley said the conditions were these:—After the Horticultural Society should have paid all its expenses, including the expenses of maintaining Chiswick (which it seemed probable they would have to do to some extent), and including any interest on Debentures issued by the Society, then the surplus was to be divided thus:—If 2000*l*. surplus, it was to pay the interest of the 50,000*l*. borrowed by the Royal Commissioners; if more, the further surplus would be divided equally between the Society and the Commissioners; if the Society could not pay the 2000*l*. interest upon the money the Commissioners had to borrow, they must pay as much as they could. There would be no accumulation of rent. The income and expenditure would be ascertained every year. Dr. Lindley concluded by again reading that portion of the letter which referred to the period of "re-entry after five consecutive years."

Mr. Grissell said it seemed then that if the income of the Society was only sufficient to pay itself and the interest of the money it raised itself, the Commissioners could come in and retake possession, and leave them minus, and they would have no security at all. He was afraid there would be some difficulty in raising the money whilst that stared them in the face.

Mr. Cole said that one year would not be affected by another. If there was a deficiency one year and it was made up the next it would make no matter. It was five *consecutive* years they had to look at.

Mr. Blandy said the estimated income of the new Winter Garden was 17,475*l*.; the expenditure 9400*l*.; leaving a surplus of 8075*l*. The first charge would be the interest on the 50,000*l*. borrowed by the Society. The second charge would be the interest on the 50,000*l*. borrowed of the Commissioners. The remainder divided between the Royal Commissioners and the Society in equal proportions. Assuming these calculations to be correct (and it had been said at the last meeting that such calculations had been duly tested), they arrived at the conclusion that there would be ample to pay the interest on the money proposed to be borrowed by way of Debentures.

Mr. G. Wood asked what was proposed to be done with Chiswick? It was to be a kind of auxiliary for the supply of plants, &c., for the Winter Garden. The whole of Chiswick Gardens was not required for that purpose. What part was to be given up? The question was whether the part not required might not be made the means of raising funds for the Horticultural Society as a means towards getting rid of its old debt?

Dr. Lindley said the Society had communicated with the Duke of Devonshire, who proposed to take such part of the Chiswick Gardens as the Society felt disposed to surrender. That would reduce the cost of maintaining them *pro tanto*. The cost of maintaining Chiswick was to form part of the current expenditure of the Horticultural Society in settling their accounts with the Royal Commissioners.

Mr. Wood asked what were the pecuniary advantages to the Horticultural Society to be derived from any portion of the grounds of Chiswick?

Dr. Lindley said they would have the right of removing all plants that were removable. There was a large iron conservatory also, which it would be necessary to dispose of. Anything there would be liable to be dealt with in the same manner. But beyond the iron conservatory there would not be much on the part of the garden that might not be required that was likely to produce money towards the discharge of the old debts of the Society. There were greenhouses, &c., in the part of the grounds which it was not proposed to give up. Those would be kept to avoid the expense of the construction of others in which to rear plants for Kensington Gore or for the Society.

Sir Philip Grey Egerton said he did not wish to interrupt receipt of valuable information, but he would take the opportunity of moving a resolution on which it would be competent for any gentleman to make remarks when it was before the meeting. He looked upon the course adopted by the last special meeting as wise and judicious. No doubt some who had attended that meeting had been let into the secret as to the proposals brought before it. But the larger portion were unprepared for so splendid a proposal as that which had been submitted. It was not unlike the astonishment produced by the cock pheasant suddenly springing up before Mr. Briggs, as caricatured by Leech; or that caused by a Catherine-wheel as suddenly fizzing away just under one's nose. The scheme was one of great magnitude, and it was not fair to it, to the Society, or to the public, to be polished off without mature consideration. As far as the feelings of that very fastidious body the British public could be ascertained, they had received it with great cordiality; and he believed it would meet with general support. If carried into effect, it would tend vastly to give a great impulse to horticulture in all its branches—floriculture, horticulture, and even scientific botany itself. It would afford healthy recreation at all times of the year and in all seasons, and also an opportunity of seeing the best productions of other climes collected and submitted for inspection. The Royal Commissioners themselves had behaved with great liberality—with wise liberality. Looking at the past, they would find in the finest productions of the sculptor and the painter—foliage. Foliage was now an accepted word in every dictionary of art. They had acted wisely therefore in bringing close to the Schools of Design those objects which could be studied from Nature better than from the works even of the ancient masters. The Society was deeply indebted to the Council for the trouble they had taken during the negotiations, and he thought a great meed of thanks was due to them. He hoped and believed they would carry on the negotiations to a successful completion if possible. The resolution he had to move was as follows:

"That this meeting approve of the steps already taken by the Council, authorise the negotiations with the Royal Commissioners to be continued, and empower the Council to proceed to raise the sum required for the construction of a Garden at Kensington Gore, and if the money shall be obtained to complete the arrangements."

His Grace the Duke of Leinster, in seconding the resolution, said that the result of a former resolution at a former meeting had created a warm and most useful discussion, which, he must add, had been carried on with every good feeling, and had elicited a great deal of information on the matters which the Society had before it. His Grace then referred to the report of the Council (dated July 7, 1859), said he was a little taken by surprise when that paper was put into his hands, and when he began to consider the locality, and the great advantages attached to it. His Grace concluded by deeming it of the highest importance that the measures proposed should be carried out, and with a view towards that end he had much pleasure in seconding the resolution which had been so well proposed by Sir Philip Egerton.

The noble Chairman having read the resolution, Mr. Grissell said no doubt the subject would receive the deepest consideration. The proposition of the Commissioners did not seem to him so favourable as the one as to the 31 years' lease. Were they liable to pay interest on the 50,000*l*. of the Royal Commissioners as well as on their own? If their income was only sufficient to keep up the Winter Garden and to pay the interest on the money they borrowed, and they had not wherewith to pay interest on the other 50,000*l*., it would seem hard that the Commissioners should be able to come in and expel them and take possession of the ground.

Dr. Lindley explained that in reality the difference between the second proposal and the first was—in the first instance the Commissioners said nothing about the renewal of the lease. Now they said they would renew the lease on certain terms, or if they did not they would find a sum of money in satisfaction of outstanding Debentures. There was, however, nothing in the first propositions of the Commissioners about the right of re-entry.

Mr. Godson said that at the last meeting many questions arose which led to the second proposal of the Commissioners, and after reviewing the whole of the matters connected with the proposals, he went on to say that in what concerned Chiswick they had been greatly relieved by the families of Devonshire and Granville. They could not deal with Chiswick, however, without knowing what they were going to do about Kensington Gore. He was not for parting with the "bird in the hand." He would not lose hold of Chiswick until they had got the Winter Garden at Kensington. He had taken 500*l*. worth of Debentures, and did not feel at all alarmed about the matter. He had every hope of success. Whatever fell from the meeting to-day he hoped that an impression would be wiped away (or he was much mistaken) that there was no security for this 50,000*l*. With proper care and prudence there would be ample; but not if they received 4000*l*. or 5000*l*. only, and then spent 9000*l*. at Chiswick. This had been done. He could not condemn the present Council for the past, however. The Council had now the means in their own hands, and they must keep within those means. It was every man's duty to do so, and the Horticultural Society must do so likewise. If they did this, whether the present scheme succeeded or not, the Society would be in a far more flourishing state. He repeated his faith in the security afforded. If it was suffered to go abroad that there was no security, they not only depreciated the character of the Society, but they paid no respect to the Council of that Society. He had a high opinion of the Royal Commissioners of 1851. They were open to conviction. They had shown themselves anxious to give the Society a fair start, by affording to it every support. He repeated that he had taken 500*l*. worth of Debentures, and in conclusion he hoped that no one would leave that room with the impression that they would not get security as well as interest for the money they might advance.

Mr. Edmonds said the horticulture of the whole world would be improved through the medium of this Society. They already knew the good which had been done to horticulture in Great Britain through it. Other societies had found their parentage in this. His conviction was that if they could only raise the funds to carry out the present scheme, they would soon see a vast advance made in horticulture. If they made the monetary—that was to say, the preliminary—arrangements satisfactory there could be no doubt of the results.

Mr. James Cole (of Ipswich) wished to know how they proposed to pay the first two years' interest on the Debentures? They could not expect the concern to be profitable for the first two years.

The Earl of Ducie said the money subscribed by way of Debentures would not be all required at once. The life-memberships would enable them to begin the work. Then the opening would be a great spectacle, and would no doubt be nobly supported and bring in large funds to the Society, thus counteracting in a great measure any deficiency during the formation of the Garden.

Sir Joseph Paxton said he could not deny that this Institution if established at Kensington would be of very great advantage to the Royal Commissioners of the Exhibition of 1851. He believed the two bodies indeed (if this scheme should proceed) would be equally indebted to each other. Therefore the terms should be carefully considered, so that the Horticultural Society should not be placed in a position from which it was unable to extricate itself in the event of its not succeeding according to the wishes that it should. Having 35 years ago had his principal education in the garden of the Horticultural Society, he naturally took a deep interest in it. There was nothing that he would not do in order to resuscitate it and place it in the position it once held. He wished to be informed what was the exact proposals of the Royal Commissioners? He asked it as a favour, as he had not been present at the commencement of the proceedings, so that he might be able to form an opinion on those proposals.

Dr. Lindley then read the letter containing the information required by Sir Joseph Paxton, who considered the new terms worse than the former. After the Society had raised 50,000*l*., if it should not be successful, they would lose all their money, and the concern would go into the hands of the Royal Commissioners without any arrangement whatever. If it went before the public that this was likely to be so how were they to raise the money? He was in favour of the meeting being postponed with a view to more satisfactory arrangements being come to in the meantime.

Mr. Cole thought it was of no use their "pottering" about the details. Why not leave it to the Council at once? He was sure they would not betray the interests of the Society. Why meet again? They might meet and meet and meet again up to Christmas, and be no better for it. Sir Joseph had viewed this scheme as a means of increasing the influence of the Horticultural Society. On that they were all agreed. And they were also agreed that horticulture itself was to be much promoted, and the public at large benefited by it. But he (Sir Joseph) also thought that in the projected arrangements the balance was on the side of the Commissioners. He (Mr. Cole) thought the Commissioners had shown a great disposition to join in benefiting the public through the Horticultural Society. That Society was in debt and difficulty, ("No, no,") and their object was to raise it out of the mire. Could they not, he repeated, have confidence in the Council, and leave the precise terms in question to be adjusted by them? Members present were going to subscribe — others were going to take life-memberships—there was confidence in the scheme; but if the public saw that there was any doubt in the matter they would not lend the money. He considered that the Commissioners gave a liberal answer. They said, "If you want the lease to be renewed you must give us two years' notice. But if we do not renew the lease we take upon ourselves the responsibility of any of the Debentures outstanding at the end of 31 years to any amount not exceeding 20,000*l*." Now if that was not security he did not know what was. Mr. Cole concluded by urging that the arrangements be left in the hands of the Commissioners and the Council to settle, without their being summoned to another meeting a fortnight hence. It was but paralysing their operations and throwing suspicion, as it were, on the Council.

The Duke of Leinster repeated his astonishment at the terms proposed by the Royal Commissioners. He deemed them most favourable. He had had a good deal of experience in leases and such matters, and he must say that—especially considering the locality—the terms proposed were extraordinarily in their favour.

Mr. Grissell had faith in the Council putting matters fairly before the Commissioners. If they failed to convince them and to induce them to reduce their terms, they must go back to the old term of 31 years.

A gentleman having expressed his readiness to support an amendment postponing the meeting for a fortnight,

The noble Chairman reminded the meeting that Sir Philip Egerton's resolution did not bind them in any way. It had reference to the continuance of the negotiations. Adjourning the meeting he thought would be tantamount to the Parliamentary plan of moving that a Bill be read that day six months. The Council would take into consideration the objections which had been urged against the five years' re-entry as pointed out by Sir Joseph Paxton and others, and the Commissioners would take into consideration the feeling expressed there through the Council, and he hoped they would be enabled to arrive at some compromise.

Sir Joseph Paxton expressed his readiness to alter the period of postponement from a fortnight to a week, though still believing that an adjournment would be of importance to the success of the undertaking. After expressing his faith in the Council of the Society, Sir Joseph concluded by hoping that terms would be adjusted more equally, viz., by doing away with the five years, and obtaining terms with regard to the renewal.

Mr. H. G. Bohn suggested that if they were to insert the words "*no* interest" instead of "the interest" in reference to this clause, it would enable them to meet the difficulty.

Mr. Cole suggested that the Council be instructed to have that part of the scheme as to re-entry at the end of five years modified. The meeting he was sure was not in favour of constant adjournments.

Mr. Dilke spoke of the difficulty of getting a meeting together, and of the further impossibility of getting an answer from the Commissioners in so short a space of time as a week. Besides people were now going away for their holidays, and altogether he could not see the utility of postponement. He should therefore oppose the amendment.

Mr. Cole and Mr. G. Wood having briefly expressed themselves adverse to postponement, Sir Joseph Paxton said there was evidently a great disposition on both sides to come to fair terms. The public was desirous of fair terms, and that the Horticultural Society should have its due share and interest and proportion in this amalgamation—for such they might term it. He would withdraw his amendment; but would add that the meeting did not approve of the five years' clause of the Commissioners, and thought that some more equitable arrangement should be made as to the termination of the 31 years.

The noble Chairman said he would urge an argument used at the last meeting—if the Horticultural Society were successful at the end of 31 years, by that time their interests would be so interwoven with those of the Commissioners that the Commissioners would only be too glad to renew the lease.

Sir Joseph Paxton said what he had to propose he would move as a substantive resolution.

The noble Chairman then put the first resolution, which was carried unanimously.

Sir Joseph Paxton then moved, "That the Council be instructed not to accept the clause about re-entry in case of failing to pay interest for five years, and that in the event of the Commissioners cancelling the lease an equitable adjustment of mutual interests be made."

Mr. Clutton seconded it, and on its being put to the meeting there was but one dissentient.

After a few words of a conversational character, his Grace the Duke of Leinster moved a vote of thanks to the Chairman, which was seconded by Mr. W. W. Saunders, the Treasurer, and carried unanimously.

The meeting then broke up, after which several sums were subscribed in the room, among which was 500*l*. from Sir Joseph Paxton.

Hitcham Labourers' and Mechanics' Horticultural Show: *July* 6.—A visit to this show would convince the most prejudiced that botany can be made a focus of the most agreeable and instructive attraction. These gatherings of all classes in the Rectory and grounds of Professor Henslow are a source of real pleasure and improvement to his visitors and to the industrious classes. The scene is a very pretty one. Flags are suspended across the lawn from tree to tree, and float on the summits of the highest trees. On the left of the house a rostrum is made for the Professor, and adjacent to it is the long booth where the exhibition takes place, and which is always tastefully decorated by the zeal of his servants. On the right there is a famous swing for the young people, and near it stands what he calls "The Marquee Museum," which he fills with objects of great interest and gives what he calls "Lecturets" on them at intervals. The decorations of this out-door museum are ingeniously formed of snail shells and mussels, and the pearly lustre of the latter makes a pleasing contrast with the brown hues of the former. At the entrance there were on this day Chinese gingalls, and round these rude implements of war several vegetable products, as Sugar Cane, Papyrus, and Jungle Grass. On entering the marquee were seen drawings and diagrams, and amongst the engravings was one of our Lord discoursing on the "Lilies of the field." With these were mingled many instructive specimens of natural history, and amongst them a stuffed cameleon, with a great variety of drawings of the creature in all the hues he was seen to assume by his owner, Miss Henslow, during life. There were also placed here an apteryx from New Zealand, and many other rarities of the animal kingdom, including bull-frogs, natter-jacks and insects. Near these were a whirling prayer brought by Dr. Hooker from Thibet, and charms against danger from the chances of war, on the folly of which and all other superstitions the Professor spoke as he lectured. Here also were exhibited the tympanic bones of a recent whale to compare with the fossil ones found in the crag, and which gave occasion to a capital explanation of the subject. The people were greatly pleased also with some beads made at Bethlehem, and with a necklace of Olive stones, Juniper berries, and cross of mother-of-pearl from Mount Tabor, with a piece of the rock of Jerusalem. There was shown also a fine specimen of the Mya margaritifera with little Chinese gods in it covered with mother-of-pearl in the shell, and used as charms, with many other instructive objects too numerous to specify. Of all these the Professor gave explanations in a pleasing and profitable strain. But it soon became time to inspect the specimens of horticultural and wild vegetables in the long booth, which was filled by them from end to end. There were numbers of Geraniums, Fuchsias, and other flowers, the produce of the window gardening of the villagers, not large nor spread out according to modern fashion, but admirably blossomed. Mixed with them were some beautiful Orchid flowers from the Rev. E. Sidney, and a fine show of Roses and Pansies from the nursery of Mr. Barnes of Stowmarket. Then came a series of cut perennials and next of cut annuals. There was also a device in sand of a cottage residence with beds of flowers and a fountain, which was greatly admired. There were besides numerous nosegays of garden flowers and a superb show of vegetables, which the judges declared to be of first-rate excellence. But the most interesting portion of the exhibition was the series of nosegays of wild flowers, of which there were two rows containing 80 examples. Forty-three were gathered by children under 8 years of age, and the rest were collected by children between this age and 14, all prettily made up and set in jugs of water. A sensation was produced by one child claiming a reward for a specimen of Chrysanthemum segetum, as a wild flower new to Hitcham; but alas for the competitor, the Professor elicited that it grew on the bank of a garden, and so the claim could not be allowed. Most wisely, a rigid investigation is made of every alleged discovery, and all must be in rule, or there can be no prize. But it was curious to witness the interest of the little village botanists, who were talking of the new specimen with the greatest eagerness. A prize was offered for honey by deprivation, but none was forthcoming, and the bees of Hitcham were pronounced to be idle or their keepers but little skilful. The Professor ascended his rostrum and declared the prizes, and made appropriate remarks on all these subjects in a playful, instructive, and happy manner. The children were all smiles, and talking in groups with their prize tickets in their hands. The style of their talk may be gathered from the following example. One said, "I gathered ever so many Bee-Orchids this summer." Another exclaimed, "That is not an Orchis, it is Ophrys apifera." "So it is," said the one corrected, "I remember." Then came the puzzle what the new flower Chrysanthemum segetum could be, and the young ones were pleased that the senior scholar did not know. "She does not know any more than we," they said laughing. If young villagers could in many places be induced to converse and compete in this way, it would cure many a mischievous gossip and much unprofitable talk amongst them. In all these wild posies the Professor insists on accuracy in naming and taste in arranging, and if any one thinks botany a dry subject, let him go to Hitcham on one of these days. Many friends among the visitors offered prizes under the influence of delight for the September show, and a more fascinating village gathering cannot be conceived. It was mentioned that Dr. Lindley had offered a cottage barometer for the next meeting as a prize, and a more judicious one could not be given. The order is excellent. Everything is ready by 1 o'clock, the children are placed in various parts of the lawn preparing their wild flower nosegays, novelties in the Marquee Museum fill up vacant moments, botanical prizes gladden the young exhibitors and the seniors also, then comes tea orderly and sociably, and all concludes with the school children and visitors singing "God save the Queen." Then the Professor says "Good night," and adds "Success to the next show." Great numbers of persons of all classes mingled this day with the Hitcham rustics, and were most hospitably welcomed at the Rectory. May these happy meetings long continue, and may they be extensively imitated. Nothing can tend more to social happiness and usefulness than rural meetings for mutual benefit and for benevolent purposes, and it is in the hope of increasing the number that this brief account is given of the Hitcham show.

Notices of Books.

We have received the following small works:—*Practical Rhine Guide* and *Practical Paris Guide* (Longmans), extremely useful travelling companions.—*Calder's Key to Lund's Mensuration* (Longmans). Questions with the answers apart; very useful to students.—*Dr. Smith's Handy Book of the Law of Husband and Wife* (Eff. Wilson), a digest of what is necessary to be known by suitors in the Divorce Court, and by married people generally.—*The Sense Denied and Lost* (Longmans) is an extremely interesting narrative of the sensations and thoughts of Dr. Bull, a medical man who became blind and remained so for eight years, edited by the Rev. B. G. Johns, chaplain of the Blind School, St. George's Fields.—*Pitt's How to Brew Good Beer* (Longmans) is a little treatise by Sir Wm. Geary's butler upon the whole art of brewing. The author says in his Preface that he "has had upwards of 20 years' experience in brewing, and he has made and preserved an accurate statement of the particulars of each brewing during the whole of that period. For the last 13 years he has had the entire management of a two-quarter brewing plant, and cellars, such as he has fully described in this work. During the first four years (as well as in his previous practice), he was unable to prevent frequent failures, but by perseverance in varying his method of brewing, and carefully examining the particulars of the processes in which the successful brewings differed from the unsuccessful, he was at length enabled, about nine years ago, to fix upon a method of brewing which has never failed during that period (though tested in about 90 brewings) to produce a pure, excellent, and sound-keeping beverage. That method is described in this work with such minuteness and accuracy, that all who exactly follow it must meet with the same successful result, however inexperienced they may be in the art of brewing." At first we thought the processes described by him were rather too extensive for small people; but upon turning over his pages we find that he descends as low as brewing from 8 bushels, or even 2½ bushels of malt. The little book is so clearly written that anybody may understand it.

Calendar of Operations.

(For the ensuing Week.)

—+—

PLANT DEPARTMENT.

CONSERVATORY, &c.—Orange trees and other plants known to be liable to the attacks of red spider must be frequently examined for this pest, and well washed with the engine immediately it is perceived, taking care not to bruise or injure the foliage, and placing the affected plants so that every leaf may be reached. Also keep a sharp look out for other insects, and spare no trouble to keep these under. Go over the twiners frequently and keep the shoots nicely regulated, cutting out where necessary, to prevent their being too thick, and shortening any that hang down so low as to interfere with other things. Attend promptly to the removal of decaying specimens before they become unsightly; and also see to having plenty coming forward with which to supply their places. COLD PITS.—The stock here will probably require rearrangement about this time, as some of the specimens, having completed their season's growth, will be better in a shady situation out of doors, and their removal will allow of giving more space to those left. Young growing stock and late flowering plants that have yet to make their season's growth should receive the most careful attention, as if well treated they will make rapid and vigorous growth at this season, and nothing in the way of good soil, careful potting, or proper accommodation will compensate for the want of this. Indeed, there is no possibility of securing free growth from hard-wooded plants in bright hot weather, except by moderate shading and maintaining a moist atmosphere by sprinkling the plants overhead morning and evening, and air must be given liberally to keep the wood strong, avoiding as much as possible exposure to drying winds. Any of the specimens which require more pot room should be shifted as soon as possible, taking care to have the ball moist, and keeping them rather closer and the atmosphere moister than usual for a fortnight after potting. Get the young shoots tied before they begin to fall on the ground and injure each other. Cut down Pelargoniums as soon as the wood is properly hardened, and keep them very sparingly supplied with water at the root until they start into growth, but sprinkle them overhead frequently, which will cause them to break more strongly. Get cuttings of favourite sorts rooted, and attend to those that were struck early in the season. Continue to pot Cinerarias as strong suckers can be obtained, placing them in a close part of a cold frame until they get established in their pots; but avoid placing them in heat, where they speedily become a prey to insects, mildew, and never do any good. Let adequate precautions be used to protect the tender greenhouse plants, placed temporarily out of doors, from the effects of frequently recurring storms of wind and rain; screens may be advantageously employed; all stakes and supports should be proved, and the pots closely examined, lest the plants suffer from defective drainage or the presence of worms. The young reserve stock for filling blanks in the stove should be sedulously encouraged by progressive potting, and a warm equable temperature. Gesnera zebrina, Plumbago rosea, and Torenia asiatica will amply repay attention bestowed on their culture; decayed Beech leaves, with a mixture of sharp sand, form a compost peculiarly suitable to the first-named plant. The stock of pot Roses should be looked over, useless wood and decayed blossoms removed, and the plants shifted; fibrous loam, night-soil, and burnt earth may be used effectually. Camellias which have matured their flower-buds may receive additional assistance either by soil or manure-water, as circumstances allow.

FORCING DEPARTMENT.

PINERIES.—Air should now be given liberally to young stock in dung pits, in order to secure strong stocky growth. The plants should not, however, be exposed to drying winds by giving back and front air liberally on drying days, for this would not serve the end in view; but a moderate circulation should be secured at night, giving no more during the day than may be necessary to prevent the temperature getting too high. This, with careful attention to the state of the roots, keeping the bottom heat regular, the soil in a nice healthy state as to moisture, and giving a liberal supply of manure water to such as are well rooted, will be found much more conducive to strong stocky growth than exposing the plants too freely to hot drying winds, which would probably check and throw them into fruit prematurely. Use every means to afford plants swelling their fruit a thoroughly moist atmosphere, sprinkling passages, &c., frequently, and shutting up early on the afternoons of bright days, giving a gentle dewing with the syringe, and saturating the atmosphere by sprinkling every available surface; also give these plenty of clear strong manure water at the root until the fruit begins to change colour, when the soil should be kept rather dry, which will improve the flavour. VINERIES.—Attend to former directions as to thinning the fruit in houses intended to furnish a late supply, and see that the bunches are severely thinned, and also that the crop left is not too heavy in proportion to the strength of the Vines. Where the fruit is swelling, be careful to maintain a moist state of the atmosphere, and give every possible attention to the roots, keeping the border in a healthy state as to moisture, and if watering is found necessary, use good strong manure water. Give abundance of air where the fruit is colouring, and do not allow plants in pots to remain in the house to cause damp, which, despite every care in ventilating, is apt to settle on the berries and spoil the bloom. Where the fruit is ripe and expected to hang for some time, the atmosphere of the house should be kept as cool as possible; but a little fire heat will probably be necessary occasionally in order to keep the atmosphere dry. PEACHES.—Expose trees freely to the air from which the fruit has been gathered, keeping the ventilators open day and night, and spare no attention which may be necessary to preserve the foliage in a clean healthy state until the young wood is well matured. Where the fruit is ripening, shading the house on the forenoons of bright days will prolong the supply, and will not injure the flavour as much as would be the case with most other fruits. FIGS.—Trees swelling their second crop must be well attended to with water, giving sufficient to moisten the whole of the border thoroughly, if this has been allowed to become dry while the first crop was ripening. Use the syringe freely on the foliage, shutting up early in the afternoon, and sprinkle paths, &c., frequently, in order to keep the atmosphere moist.

FLOWER GARDEN AND SHRUBBERIES.

After the plants have fairly covered the ground the great point will be to preserve that symmetrical appearance over the whole of the beds, which in a geometrical flower garden is absolutely necessary to render the effect pleasing. To do this will involve frequent attention and considerable labour for some time to come, as many of the plants will be inclined to grow much too strongly for others, and will also be continually encroaching upon the edgings and extending beyond their proper limits. Plants of a weakly habit of growth, as for instance the more slender growing varieties of Verbena, may be assisted in dry weather by an occasional watering with manure water; but for those that grow too strongly there is no help except thinning out and pegging down the shoots. In shortening back shoots that incline to extend beyond the edges of the beds, avoid the least appearance of formality by thinning out the under shoots and keeping all parts of the bed of equal depth or thickness, or allowing the plants, as it were, to die away at the edges according to the arrangement. Climbers on walls must be attended to as they advance in growth, keeping the young shoots neatly laid in, &c. The climbing Roses will also require to be gone over occasionally, for the purpose of cutting off decayed blooms, and any weakly old wood should be cut out at the same time, to allow of laying in the strong young shoots which will bloom much finer next season than the old wood would do. Phloxes and other herbaceous plants must be neatly tied up; but avoid huddling the shoots together, as is sometimes done even about well kept places to save time. Any of the perpetual blooming Roses that have flowered very freely should be assisted by a liberal watering with manure water from the stable or farm-yard tank; indeed, too much of this can hardly be given to any of the autumn-flowering varieties.

HARDY FRUIT AND KITCHEN GARDEN.

Select a bit of open light ground and prepare it for winter Spinach by giving it a heavy dressing of manure, and trenching or digging it deeply. This crop should be sown at once, and in drills in beds, allowing wide alleys, so as to be able to gather the crop without trampling the ground; also provide ground for winter Onions, &c. Finish planting out Broccoli and winter greens as speedily as ground can be obtained, for, unless the autumn should prove very favourable, those planted after this time will not attain much size. Get Endive planted out on very rich soil, also Lettuce, to maintain the succession, and attend to other small salad herbs. See to securing a good supply of Parsley for winter use, which is always largely in demand. A good bed should be planted in some convenient place for protecting it during severe weather in winter. The soil should be of a light texture, deep, and thoroughly drained as a preventive against damp in winter. New plantations of Strawberries should be made at once, selecting the strongest young plants and keeping them well supplied with water until they get established. Attend to Celery and all recently-planted crops with water if the weather continues dry.

COTTAGERS' GARDEN

Savoys, Green Kale, and Cabbage plants may yet be planted with every chance of success. A good breadth of Turnips might be sown, and a few rows of winter Spinach would prove remunerative. We recommend a few ridges of Celery most particularly; its value as an ingredient in soup alone should recommend it.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.
For the Week ending July 21, 1859, as observed at the Horticultural Gardens.

July.	Month's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Temperature of the Air. Min.	Temperature of the Air. Mean	Temperature of the Earth. 1 foot deep.	Temperature of the Earth. 3 feet deep.	Wind	Rain.
Friday 15	15	30.211	30.149	84	48	66.0	67½	65½	N.W.	.00
Satur. 16	16	30.215	0.107	85	53	69.5	67	65½	W.	.00
Sunday 17	17	30.073	29.857	88	48	68.0	67½	65½	S.W.	.00
Mon. 18	18	29.827	29.772	91	57	74.0	68	66	S.W.	.25
Tues. 19	19	29.869	29.815	90	54	72.0	68	66	S.W.	.01
Wed. 20	20	29.952	29.918	82	56	69.0	68	66	E.	.72
Thurs. 21	21	29.912	29.827	83	52	67.5	68	66	E	.02
Average		30.006	29.920	86.3	52.5	69.4	67.7	65.8		1.00

July 15—Fine; hot and dry; clear and fine.
" 16—Very fine; hot; clear and fine.
" 17—Cloudless and hot; clear and very fine at night.
" 18—Clear; very hot; rain with thunder and lightning at night.
" 19—Cloudy; very hot; fine.
" 20—Thunder; very heavy peal 9 A.M., sultry; thunder and heavy rain at night.
" 21—Thunder and heavy rain; overcast; very fine.
Mean temperature of the week, 7½ deg. above the average.

RECORD OF THE WEATHER AT CHISWICK.
During the last 33 years, for the ensuing Week, ending July 30, 1859.

July.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 24..	73 0	52.5	62 7	11	1.16 in.	1	7	4	2	3	12	3	2
Mon. 25..	74.0	50.5	62.2	9	0.26	2	6	3	1	2	9	10	1
Tues. 26..	73 1	51.5	62.3	17	1.22	2	1	4	2	4	12	6	2
Wed. 27..	74.5	52.1	63.3	16	0.98	1	3	5	2	3	10	6	3
Thurs. 28..	75.9	52.4	64.1	17	0.33	2	2	3	3	1	11	7	4
Friday 29..	75.5	50.6	63.1	13	1.31	1	4	4	1	3	12	5	3
Satur. 30..	74 7	51.2	62.9	16	0.83	3	3	3	1	2	9	9	3

The highest temperature during the above period occurred on the 25th, 1844—therm. 93 deg.; and the lowest on the 29th, 1838—therm. 33 deg.

Notices to Correspondents.

ARTIFICIAL LIGHT: *Alpha.* We have no recollection of the experiments by Humboldt; but will endeavour to find what they were. Much obliged.

DISEASES: *Peach.* You will find in this Journal, July 16, the information you require about your diseased Peaches and Nectarines. At least we believe the affection to be the same, but the specimens were too decayed to allow us to form a very decisive opinion.—*S W.* Your Melons are overrun with a Fungus which is often very troublesome where tan is used. Its name is Æthalium septicum. You may try unslaked lime while the Fungus is soft and frothy, but we are not sure that even this will relieve you of your enemy. *M J B.*

DOUBLE WHITE GERANIUM: *T R E.* Your blooms arrived withered up and unexaminable. Flowers will not travel in good condition by post during such hot weather as we have lately been experiencing.‡

GRAPES: *T F.* The roots of your Vines are in a deep cold border. There is no doubt of it. Therefore your gardening adviser is quite right.—*Vitis.* Your Grapes are attacked by mildew, and if you don't take care you will lose all your crop.

INSECTS: *T Z* sends a couple of leaves and says, "The inclosed *insect* made its appearance some six weeks or two months since on East India Orchids; since then it has indiscriminately spread over the house;" and he begs us if we know anything of it to give him some information. In reply, we are happy to inform him that no insect is present on his leaves, which are remarkably clean. They are suffering from want of regular and judicious ventilation.

LARCH: *Subscriber.* The best time of year to cut Larch for use, either as poles or timber, is midwinter.

MICROPHOTOGRAPHS: *Embden.* You will find full information in Mr Amadio's Catalogue, price 6*d.*, which may be had on application at 7, Throgmorton Street.

NAMES OF PLANTS: We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have or could have undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*J W G.* Calystegia pubescens.—*Cymro.* Tamarix gallica.—*P Mackenzie.* The Gall is that of the Oak bud, the commonest of all here in the South, and vulgarly named the Oak Apple. The other plant is Sempervivum villosum.—*A Lady Gardener.* Salvia Horminoides; Antirrhinum Orontium For a book for beginners use Prof. Lindley's School Botany. For mealy bug use Gishurst Compound, as directed at p. 606 of our last Number.—*A D.* Your troublesome water weed seems to be Potamogeton pectinatum.—*R B.* What you have sent appears to be Spergula saginoides; it is not S. pilifera.—*G B. Wavertree.* Atriplex hortensis, or "common" garden Orache, now become uncommon.—*N G.* 1, Euphorbia caput Medusæ, a dangerous poison; 2, a Stapelia of some sort, not to be further named without flowers; 3, Galium verum: 4, some uncommon species of Cape Heath.—*One in Distress.* Eucomis nana.—*O P.* Fuchsia microphylla.—*W S.* 1, Funkia cærulea; 2, Fuchsia globosa; 3, not in a state to be determined; 4, the Variegated Glyce (or Alyssum) maritima We do not know what ails your Onions. They are rotting, and look as if they had been pulled up before they were half ripe.—*E A.* 1, Asplenium bulbiferum; 2, A. marinum; 3, Athyrium Filix-fœmina; 4, Lastrea decurrens, sometimes called decursive-pinnata.—*R D.* Amaryllis Belladonna.—*J B. South Lambeth.*—1, Asplenium angustifolium: 2, apparently Cyrtopteris bulbifera; 3, Lastrea intermedia.—*G G.* Butomus umbellatus.—*W.* Centradenia rosea and Heterocentrum album.—*D D.* Your Grasses are over-ripe and have fallen to pieces. *e.* Phalaris arundinacea; *f.* Briza major; *g* destroyed; *h.* Agrostis alba.

NEW ZEALAND FLAX; *E D.* You must search for this in Botanic Gardens and very great Nurseries in the South of England You are not likely to find it in the North unless at Edinburgh or Glasgow.

PEAT CHARCOAL: *A Constant Sub.* We do not know whether this substance continues to be sold. We left off using it because of its high price. Any finely divided charcoal will do just as well, for making which yourself we refer you to pp. 443 and 525, of the present year.

SEPULCHRAL FLOWERS: *C P.* You will not find any one thing which will look well all the year round. But you must trust to several things at different seasons. Eranthis hiemalis and Christmas Rose in winter, Violets, Primroses, and gay bulbs in spring, and Roses, Climbing or Perpetual, in summer and autumn. Heliotropes and Mignonette will give fragrance in summer, and Russian Violets will aid in the late autumn. But all such mixtures will require taste, and constant care, without which they will form a little wilderness. If you wish to add the immortelles that the French admire so much, you had better grow Gnaphalium arenarium and dioicum.

STRAWBERRIES: *F Gloede.* Crimson Queen, the sort about which you inquire, was exhibited at the Royal Botanic Society's meeting on the 6th inst., by Mr. Turner, of Slough.‡

WALNUT LEAVES: *G F.* The specimens exhibit no trace of disease The tree may have been struck by lightning, or possibly the ground in which it grows may have become too dry to support the foliage.

WELLINGTONIA: *C C B* The cause of some shoots of this plant turning black and dying, although it is otherwise in great vigour, is unknown. The same thing occurs in other Conifers; *e. g.*, in Cryptomeria, Cupressus funebris, and Juniperus squamosa. The symptom, be it what it may, does not appear to indicate any general want of health.

VINES: *W M.* Your leaves are swarming with thrips, which can be easily removed by syringing with Gishurst Compound used in the manner that has been frequently mentioned in our columns within the last few months. But we suspect the evil to have been caused by allowing the leaves to be excessively watered or damped without proper ventilation.

ZINC LABELS: *G S.* The best ink is the nitromuriate of platinum, which may be had of dealers in chemicals.

MISC: Full price will be given for a perfect copy of No. 22, 1858.

*** As usual, many communications have been received too late, and others are detained till the necessary inquiries can be made We must also beg the indulgence of those correspondents the insertion of whose contributions is still delayed.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

BURNARD, LACK, AND CO.'S CONCENTRATED SUPERPHOSPHATE OF LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.

CONCENTRATED TURNIP MANURE, equal in value to the preceding.

Of these Manures Dr. Voelcker says:—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."

Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to BURNARD, LACK, & Co., Sutton Road, Plymouth.

LONDON MANURE COMPANY, removed to 116 Fenchurch Street, E. C. (Established 1840), have the following MANURES ready for delivery:—

CORN MANURE for SPRING TOP-DRESSING
URATE
MANGEL MANURE
SUPERPHOSPHATE OF LIME
BLOOD MANURE
} all of guaranteed quality.

In consequence of the reduction in the price of raw material the London Manure Co. are enabled to lower the price of their Superphosphate of Lime, and to materially improve the Corn Manure and Urate.

The London Manure Co. also supply PERUVIAN GUANO (direct from Messrs. A. Gibbs and Sons), SULPHATE of AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of value. Wholesale dealers supplied.

116, Fenchurch Street, E.C. EDWARD PURSER, Secretary.

REDUCTION IN PRICE OF LAWES'S MANURES.

MR. LAWES begs to announce that he has this season reduced the price of the Manures manufactured by him, viz.:—

TURNIP MANURE	from £7 to	£6 6
SUPERPHOSPHATE OF LIME ..	,, 7 to	6 6
MINERAL do. ..	,, 6 to	5 5
BARLEY MANURE..	8	0

Prof. Way and Dr. Voelcker have sampled from a bulk of 5000 to 6000 tons at his factories, and their report and analyses are given in full in Circular to be obtained on application at his office, 1, Adelaide Place, London Bridge, E.C., or of his local Agents.

N.B. Genuine Peruvian Guano direct from Messrs GIBBS, Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures. American Cotton-seed Cake supplied.

COLLEGE OF AGRICULTURE AND CHEMISTRY AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.

Principal—J. C. NESBIT, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

LAND IMPROVEMENTS.—The GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY are empowered by Act of Parliament to assist the Owners of Land in carrying into effect the following Improvements, and charging the whole outlay and expenses on the property improved.

I. All Works of Drainage, Irrigation, Warping, and Embankment.

II. The erection of Farmhouses, Cottages for Agricultural Labourers, and all kinds of Farm Buildings.

III. The construction of Roads.

IV. The Grubbing and Clearing of Old Woodlands, Enclosing, Fencing, and Reclaiming Land.

The Landowners by whom any of these Improvements may be executed are—Tenants for Life, Trustees, Mortgagees in Possession, Guardians, Committees of Incompetent persons, Married Women, Beneficial Lessees for Lives or for a Term exceeding 14 years, Corporations, Ecclesiastical or Municipal, Incumbents, Sequestrators, Charitable Trustees, &c.

The Owners of Estates not entailed, who may be desirous to avoid the expense or inconvenience of a Legal Mortgage, may also avail themselves of the powers of the Company's Act to charge their estates with an outlay in improvements.

In all cases the whole cost of the improvements, with the attendant expenses, may be charged on the Estate, the term for Building Works being limited to 31 years, but for all other improvements being capable of extension to 50 years.

No investigation of title being required, and the charge not being affected by Incumbrances, no legal expenses are incurred.

Operations under the Company's Act are divided into two principal branches; one where the Landowner designs and executes the improvements by his own Agent and merely requires a loan from the Company to charge the Estate,—the other where the Company undertake the entire responsibility of the Improvement and obtain repayment by way of Rent Charge. In the first case the plans, specifications, and estimates prepared by the Landowner's Agent are forwarded to the Company to be submitted for approval to the Inclosure Commissioners. As soon as the sanction has been given the Landowner proceeds to execute the works, and the Company having conducted the business through all the official forms, complete the charge on the estate when the works have been passed by the Commissioners, and repay the Landowner the amount agreed upon.

In no part of the business is there any control upon a Landowner except by the Inclosure Commissioners. The Company never interfere, except at the special request of the Landowner or his Agent, and only to such extent as may further the objects he has in view.

In the other case, where the Company are required to execute the works, a report and estimate of the Improvement are sent to the Landowner, and having been approved, the plans are then prepared and the works—either submitted to public competition or entrusted to their own staff—are carried on to completion, and the amount of the actual expenditure only, approved by the Inclosure Commissioners with the Company's agreed commission and the Commissioners' expenses, finally charged on the Estate for the term fixed by the Landowner.

The Company also execute Drainage and all other Works of Land Improvement on Commission for the Owners of Estates not Entailed who may wish to charge the outlay on the property through the simple and inexpensive process of the Company's Act.

Applications to be addressed to WILLIAM CLIFFORD, the Secretary, at the Offices of the Company, 52, Parliament Street, London.

WARNER'S IMPROVED LIQUID MANURE OR GENERAL PORTABLE PUMP.



These Pumps are fitted with WARNER'S Patent Bucket and Valve, and cannot clog in action. The barrel is made of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure on the stand, the legs of which fold together, and may be carried with ease by one man to tank or pond.

	£	s.	d.
Stand and Pump, with screwed tail pipe, fitted with strong brass union for suction pipe	2	15	0
If fitted with barrel of planished copper	3	4	0
Stand and Pump, with plain tail pipe, for tying on suction pipe	2	9	0
2 inch patent rubber and canvas flexible suction pipe, on wires, either 10, 12, or 15 ft., per foot	0	2	2

May be obtained of any Ironmonger or Plumber in town of country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin St., London.

WARNER'S PATENT VIBRATING STANDARD PUMPS.

PATENT CAST-IRON PUMPS for Farms, Cottages, Stable Yards, &c., where the Well does not exceed 28 feet in depth; fitted with WARNER'S Patent Metal Bucket and Valve, which cannot clog in action. These Pumps can be made right-handed, left-handed, or with handle opposite the nose by removing four screws only.



Diameter of Barrel.	Height.		£.	s.	d.
2¼ in.	short 1 ft. 7 in.	Fitted for lead, gutta percha or cast iron flanged pipe as required.	1	5	0
2½ ,,	long 3 ,,		1	10	0
3 ,,	ditto 3 ,,		2	4	0
3½ ,,	ditto 3 ,,		2	9	0
4 ,,	ditto 3 ,,		2	13	0
2½ ,,	short, with 15 feet of Lead Pipe attached, ready for fixing		2	10	0
2½ in.	long ditto	ditto	2	14	0

The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.

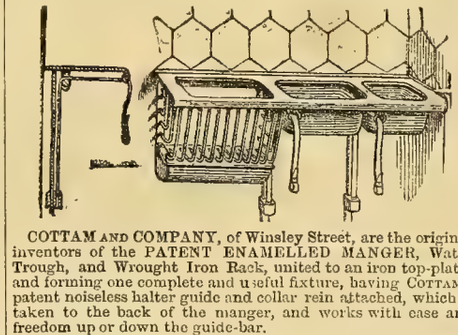
May be obtained of any Ironmonger or Plumber in Town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

TO ENGINEERS.

SUBSOIL PULVERIZER.—A premium of TWENTY GUINEAS is offered by the undersigned for an approved draft design, (accompanied by a written explanation) of a MACHINE, to consist of a series of augers, for the general pulverisation, to a depth of 3 or 4 feet, of a marly soil, free from all obstructions but occasional small pieces of limestone; to be worked by a portable steam engine of 6-horse power, the augers to admit of expeditious liberation from the soil; but their number, shape, position (whether in one or two rows), and distance from each other, are matters left to the judgment of competitors. It is almost needless to add that no existing invention (Fowler's or any other) could effect so deep a pulverisation as that considered essential to the efficient cultivation of the Vine in our Australian Colonies. Designs to be sent in on or before the 15th of August.—H. S. WILLS, 10, Queen's Terrace, Queen's Road, Bayswater.

COTTAM'S PATENT INVENTIONS FOR STABLE REQUISITES, awarded a Prize at the Paris Exhibition, and patronised by the English and French Governments.



COTTAM AND COMPANY, of Winsley Street, are the original inventors of the PATENT ENAMELLED MANGER, Water Trough, and Wrought Iron Rack, united to an iron top-plate and forming one complete and useful fixture, having COTTAM'S patent noiseless halter guide and collar rein attached, which is taken to the back of the manger, and works with ease and freedom up or down the guide-bar.

COTTAM'S NEW PATENT SEED-BOX, an important addition to the above fittings, being simple in construction, light, and durable, promotes cleanliness, and is economical in its results.



COTTAM'S PATENT SADDLE and HARNESS BRACKET combined, can be used with great advantage where space is an object, as it can be turned up out of the way when not in use.

COTTAM'S IMPROVED SURFACE GUTTER, with perforated moveable cover, the use of which prevents accidents, and can be easily cleaned out.

COTTAM'S CAST-IRON SANITARY TRAP, from its improved construction, gives a full water passage, and does not allow any smell to ascend from the drain.

PATENT LOOSE-BOX FITTINGS, and every article for the harness-room and stable, kept in stock, plain, galvanised, and enamelled. Iron gates, fencing, hurdles, &c.

The New Illustrated Catalogue and Estimates, gratis, upon application to COTTAM and COMPANY, 2, Winsley Street, Oxford Street.

N.B. COTTAM & Co. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

WHY NOT PRESERVE YOUR HAY?

BENJAMIN EDGINGTON respectfully informs the Nobility and Gentry that they can be supplied on the best terms with RICK CLOTHS, with Poles complete.

Early application should be made for SECOND-HAND RICK CLOTHS. MARQUEES, TENTS, and FLAGS. A great variety of Marquees and Tents may be seen erected on the premises. A quantity of SECOND-HAND TENTS from the Crimea at a greatly reduced price. An Illustrated Catalogue sent post free.

West End Establishment, 32, Charing Cross, S.W.

BENJAMIN EDGINGTON, 2, Duke Street, London Bridge, S.E.

HAY HARVEST.

NICHOLSON'S PATENT HAYMAKER, to which was awarded the First Prize of the Royal Agricultural Society of England at the last contested trial.

The celebrated STAMFORD HORSE RAKE has lately been much improved, and has obtained 26 Prizes at competitive trials.

MOWING AND REAPING MACHINES are performing their work most satisfactorily, and fully justify public expectation, cutting about 10 acres per day, at a cost of 9d. per acre.

Orders for the above machines should be given at once to RICHMOND & CHANDLER, Salford, Manchester.

Branch Establishment, South John Street, Liverpool.

HAYMAKERS, possessing the best features of Nicholson's Prize Machines, with recent improvements peculiar to those supplied and manufactured only for

RICHMOND AND CHANDLER, Salford.

Branch Establishment, South John Street, Liverpool.

N.B. The celebrated Bedford and Stamford Prize HORSE RAKES always in stock, with latest Patented Improvements.

RICK AND HAY CLOTHS, HAY ROPES, second-hand MARQUEES and TENTS; NETTING, new and old, for protecting fruit trees; SCAFFOLD CORD, SACK TYERS, BLIND and SASH LINES, Patent Circinate NOSEBAGS, &c., &c.

J. MORISON, Manufacturer, 25, Norton Folgate, N.E.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.—SECRETARY WANTED.

The Council of the Royal Agricultural Society of England have come to the following resolutions:—

That the Secretary shall be resident in the Society's house.

That the Salary shall be 400*l.* per annum, with Coals and Lighting.

That the Secretary shall find approved security to the amount of 1000*l.*

That it will be an additional recommendation to a Candidate if he possess a competent knowledge of French and German.

NOTE.—By the Bye-laws "The Secretary shall devote the *whole* of his time to the affairs of the Society, and shall be immediately responsible to the Council for the discharge of the various duties they require him to perform."

Gentlemen desirous of becoming candidates for the above office can obtain further particulars from the Hon. Acting Secretary *pro. tem.*

All applications (together with testimonials and other particulars) to be sent on or before October 31, addressed to

B. T. BRANDRETH GIBBS, Esq., Hon. Acting Secretary.

12, Hanover Square, London, W.

STAFFORDSHIRE AGRICULTURAL SOCIETY.

STOKE-UPON-TRENT MEETING, 1859.

The POULTRY EXHIBITION in connection with this Society will take place on WEDNESDAY, September 14.

Prize Lists and Certificates of Entry may be obtained on application to WM. TOMKINSON, Secretary.

Newcastle-under-Lyme, July 23.

MANCHESTER AND LIVERPOOL AGRICULTURAL SOCIETY.

Patrons—The Right Hon. the EARL of DERBY, K.G., and LORD EGLETON.

President for the Year—The Right Hon. the EARL of SEFTON.

The TWELFTH ANNUAL SHOW of LIVE STOCK (including POULTRY), IMPLEMENTS, &c. will take place at Liverpool on THURSDAY and FRIDAY, September 8 and 9. Premiums amounting to nearly 1100*l.* are offered for competition; and the entry will close on August 20.—Prize Lists and Regulations may be obtained by application to

THOMAS B. RYDER, Secretary.

2, Elliot Street, Clayton Square, Liverpool, July 23.

The Agricultural Gazette.

SATURDAY, JULY 23, 1859.

MEETINGS FOR THE ENSUING WEEK.

TUESDAY,	July	26	
WEDNESDAY	—	27	Meeting of the Agri. Improvement Society at Dundalk.
THURSDAY,	—	28	
FRIDAY,	—	29	
TUESDAY,	Aug.	2	
WEDNESDAY,	—	3	Meetings of the Highland Society at Edinburgh; and of the Yorkshire Agricultural Society at Hull.
THURSDAY,	—	4	
FRIDAY,	—	5	

THE general meeting of members of the Society was held on Friday, in the Shire Hall, at Warwick. It was expected that angry expression would have been given to the feelings with which the management of the Society's financial affairs, as exposed by recent events, is generally regarded. This however was prevented by the previous resignation of the Finance Committee, and Mr. SIDNEY, who was chief speaker on the occasion, confined himself to remarks upon the somewhat exclusive character of the governing Council; and on the propriety of taking stock, as it were, in the Journal, of our present agricultural position, so that we may know what progress has been made during the past 20 years of the Society's career. A short report of the proceedings will be found in another page. The show-yard receipts, notwithstanding an unprecedented attendance on the Wednesday afternoon when the entrance fee was five shillings, have fallen about 500*l.* short of the sum received at Chester. There were 1689 present on the Tuesday, 3376 present in the cattle yard on Wednesday afternoon, and 5154 present on that day in the implement yard; 19,902 paid half-a-crown apiece on Thursday; 25,446 paid one shilling each on the Friday. The falling off on this day, as compared with the 40,000 of the Chester meeting, is attributed to the absence of any extraordinary facilities in the way of excursion trains at a lower

fare, which would have attracted thousands from Birmingham, Coventry, &c.

—— A good deal of complaint is still heard of the ravages of the black caterpillar among the young Turnip plants: and numberless recipes are published for their destruction. The heavy rains of Wednesday and Thursday of this week, in so far as they have been general, will prove a better antidote than any other. Among the remedies proposed are the following:—Herd flocks of ducks in the fields attacked—do not mind the failure of the plan at first, keep them on the ground, and they will soon acquire an extraordinary appetite for the grub; mixtures of sulphur, soot, and ashes sown over the drill; children employed to gather the grub into cans; brushes to shake them on to the intervals between the rows and implements to crush them there; quick-lime and arsenic strewed on the plants, or quick-lime in larger quantity alone;—all these methods are recommended with confidence by men who speak from experience of their value.—The harvest has commenced in all the Southern Counties; and reports are given from many of them below.

One of the most interesting papers in the current Number of the Highland Society's Transactions contains a report by Mr. Fulton, of Temple Maryhill, near Glasgow, on the best mode of making Dunlop and Cheddar cheese. It appears that notwithstanding Dunlop cheese is, according to the analyses hitherto published, one of the richest descriptions manufactured, it sells for less per ton than many other sorts. In 1858 while the farmers' price for Dunlop was only from 48*l.* to 50*l.* per ton, that obtained for Cheddar by Mr. Harding (of Marlbury, near Bristol) at the same time was nearly 80*l.* per ton. In addition to this direct commercial advantage the article thus bringing in so much larger a return is made with less labour and with less waste, and when made it is a more nourishing and digestible food. It is plain that the Highland Society were right in seeking for a report on the differences of process which lead to such differences of result. For it is clearly ascertained that the quality of the cheese is determined almost entirely by the mode of manufacture, not, as has been hitherto imagined, almost entirely by the quality of the pasture. "Whilst in Ayrshire," writes Mr. Harding, "we made cheese in almost every part of the country; and whether it was from the old pastures of Cumnock, the forced Italian Rye-grass at Cumming Park, or the Heather of Corwar, the cheese was uniform in texture, quality, and flavour; if there was any sensible difference, our impression was that the best article was made at Corwar. Three of the cheeses, made at as many different places, were transferred to our own cheese-room, and were it not for the private mark upon them we could not have discovered them amongst our own."

Mr. Fulton accordingly undertakes in this report to describe the Dunlop and Cheddar processes respectively. In the former in large dairies a cheese is made morning and evening; the rennet, a large quantity, enough to effect the process of coagulation in a quarter of an hour, is added to the newly drawn milk. Even less time than that named is allowed for coagulation in some dairies.

"When the coagulum is ready for breaking up for the separation of the whey—a condition indicated by a certain firmness to the hand, and the appearance of greenish whey on a little part being broken—it is cut across, from top to bottom, with a long-bladed knife, so as to leave it in pieces of about 2 inches square, and left for about 10 minutes. It is then more minutely broken up with the dairymaid's hands, or by stirring it very gently and carefully from top to bottom with the skimming dish.

"The breaking up being finished, a few minutes are again allowed to admit of a little settling down of the curd. The dairymaid and her assistants then place themselves beside the tub, and, immersing their bared arms into the mass, assist by gentle pressure the separation of the whey and subsidence of the curd, which experienced hands do in a dexterous and efficient manner, putting down the curd evenly and firmly to the bottom of the tub."

After lading out the whey "the curd is transferred to the dreeper—a utensil in shape exactly like a cheese-vat, only of larger diameter and a greater number of holes." It there receives eight successive cuttings and changings to effect the discharge of the whey—these being given at intervals of about five minutes. The last cuttings are given in great detail, or they are effected by the curd milk. "When the milk is steeped at night, the curd, after receiving three or four cuttings, is left in the dreeper till morning, when at an early hour the process is resumed."

Salt is then sprinkled over the curd, 1 oz. to every 3 lbs. of curd, and the curd is then put in the vat, and a slight pressure given while the whole is warmed before the fire. A succession of changes at intervals of every two or three hours from cloth and vat into fresh cloths and vats under pressure then ensues for some 24 hours or more, and then the cheese is removed to the cheese-room, and turned daily for a fortnight.

The difference in the Cheddar manufacture as compared with that of Dunlop lies first in the cheese being made but once a day.

"The evening's meal of milk, as brought in from the cows, is at once strained into the steeping-tub in the dairy, where it remains until morning, when the morning's meal is added to it.

"In sultry weather, where the quantity of milk is large, part of the evening's meal is kept separate in coolers.

"If the heat of the mass, when the evening and morning meals are put together, be under 80°—the temperature at which the milk is set with the rennet—as much of the evening's milk is warmed to about 100° as will raise the temperature to the required heat, which is accurately determined by the thermometer. In cool weather the temperature is made 2° or 3° higher."

An acid reaction has set in the milk before the rennet is added—if not, then sour whey is added to it for the purpose; a weaker rennet and less of it is used so as to make the coagulation last over an hour or more; colouring matter (annatto) is used; the curd after breaking is scalded with hot whey; there is much less frequent cutting and breaking of the curd when once it is fit for placing in the vat:—

"When the curd is made up into a cheese—a stage usually reached by 2, or from 2 to 3 o'clock—it is put into the press, and there remains until morning.

"Pressure is gradually applied; no weight is put on the lever for the first half hour; a light weight is then hung on, and at 7 o'clock full pressure applied. Next morning, after the milking and setting of the milk are over, the cheese is changed, and very heavy pressure applied for 24 hours. On the following morning, a neatly-fitted slip of fine calico is put on the cheese to smooth the surface, moderate pressure being applied, and in the evening it is ready for the cheese-room.

"When withdrawn from the press, the cheese is laced into a piece of stout linen or cotton cloth called a fillet or stay, which is kept on until the cheese is ready for sale, or has become quite firm."

The advantages of the English process as compared with the Scotch are commercial, dietetic, and economical. As to the first, the process results in a cheese of higher value; as to the second, in a cheese of better flavour and more digestible; as to the third, in the employment of less labour, and the saving of considerable waste:—

"The mode in which the saving of labour is effected will readily occur to the reader. The larger quantity, as determined by experiment, probably arises from the presence of a free acid in the milk, which, acting as an additional coagulating agent, either assists or coagulates some substance in the milk not coagulable by rennet or in an alkaline or neutral condition, and thus precipitates from the milk a larger quantity of curd; at least the curd relinquishes more readily its attraction for the whey, which comes away more thin and limpid than in the Dunlop. The larger quantity also arises from the substance of the curd not being forced out in the form of white whey, as takes place in the Dunlop by the excessive manipulation and pressing in the dreeper."

APPEARANCE OF THE CROPS.

Buckinghamshire.—About a month ago we had some terrific thunderstorms; they knocked the heavy crops of Wheat down frightfully, and in some instances the Oats and Barley too. My opinion of the Wheat crop is that it is very bulky in straw, but must be very deficient in yield; Barley below an average; Oats above an average; Winter Beans a failure, many acres having been ploughed up; Spring Beans below an average; Mangel Wurzel good; Swedes full plant, but late; Potatoes rotting as fast as they can; hay crop has been very heavy, and generally well got; Peas are not much grown hereabouts—I hardly know of a field. Wheat harvest will be general about the 5th August. *W. G. Duncan, Bradwell, Stony Stratford, July* 18.

Devonshire.—Wheat, good average; Barley, early sown, good; late sown, very inferior; Oats, very plain; hay, very light crop, but good; Mangels, almost a failure. We have had a long continuance of very dry weather; rain is wanted very badly in this part of the county. *R. W. Clark, Plymouth.*—The Wheat crop is looking very well and likely to turn out a great burden; Barley and Oats not so promising, and have suffered much from the long drought. Harvest will be very early should the weather continue as it is now. The shares of Clover and meadow hay are slight; the Mangel Wurzel are very bad, and on some farms have completely failed. Turnips are now being sown, but the ground is very dry for it. *J. Michemore, Berry, Totnes.*—The Wheat crop in this neighbourhood is fine and beyond the average; some early spots will be cut in July, and the harvest will be general the first week in August. Barley, early, very fine; late sown, thin. Oats, Beans, and Peas, none; Mangel Wurzel, poor; prospect of Turnips, tolerable. *Saml. Cornish, Stancombe, near Kingsbridge, July* 16.—To form a correct opinion of crops now is difficult, for unless a very careful inspection be made, it is no easy matter to know how much is ripening properly, and how much is from drought. Wheat will be a fair average crop, but both Oats and Barley must be light, especially in land that is not in good condition. Harvest will be general next week. Turnips and Mangel Wurzel will be very bad; the former was much damaged by flea, and the drought has not allowed any chance of improvement—very few fields of either are likely to be half a crop. Potatoes still seem healthy; hay hereabouts is a light crop, but well got; straw will be very short: all Grass is burnt up, and no year since 1826 equal to this for drought and heat. We had no thunder rains to do damage, and the want of water is fearful for man and beast. *John Benson, Tavistock, July* 19.

Hampshire.—Wheat full crop on strong land, but much laid; thin on light land. Barley pretty good. Oats good. Beans partial but average. Peas good. Hay crop good and tolerably well made. Potatoes pretty good. Mangel tolerably good. Turnips good plant. Harvest will commence about third week in July. *W. C. Spooner, Eling, Southampton.*

South Essex.—Potatoes are doomed, and the best alternative is to remove the decaying blades already infected and plant Brassicas between the rows, leaving the tubers to their fate in the ground a month that are not wanted for present use. Wheat is superlatively fine and good, the late heavy rains falling just seasonably have prevented its ripening immaturely in the extreme sunny hot weather during the longest days, as was the case last year. Notwithstanding its being very much lodged, the crop will we believe on the whole even exceed that of 1857. We will not venture, however, to form this opinion of the Wheat crops in other districts which we have not witnessed or seen, and where rains did not fall before it ripened, but rather imagine contrary effects to be produced there, as its tendency this season to ripen is so extraordinarily precocious. Barley and Oats appear equally early and good, so far as our observation extends. Peas are chiefly good, and are most of them hooked. Beans are partial, crop being badly podded from extreme drought. All crops are unusually early. The chief complaint farmers are justified to make now is that corn-growing is not a remunerative business at present prices, labour being so dear and foreign competition unchecked. *Hardy & Son, Maldon, July* 14.

South Hants.—The Wheat crop may be stated as very good and very bad: the light soils were never worse, and the loamy and heavy soils never much better. Although the latter has suffered to some extent by the recent storms, yet the ears where the crop is laid seem to be filled much better than could be expected. On the whole the Wheat crop will probably reach an average. The Barley crop somewhat like the Wheat has suffered on the light land, whereas on the loams it is a bulky crop and much laid, and will also produce about an average crop of doubtful quality. Oats were never finer, and are one of the most bulky crops ever harvested and although a good deal laid by storms, yet it is likely to prove considerably over an average crop, as Oats do not generally suffer so much as other corn from this cause. Rye is also an abundant crop, and will yield over an average. Winter Tares, a good crop; Summer Tares promise well. Peas, a good crop, but much injured by hailstorms; they will, however, produce over an average. Both Winter and Spring Beans show blight to some extent, and although not so promising as a few weeks past will yet probably yield an average produce. A blight has set in earlier than usual on the haulm of the Potato crop, and it is therefore in an unusually precarious state, and not likely to yield an average quantity of sound tubers. Large breadths of Mangel have been planted this season, and although irregular in plant in many instances from the effects of wireworm, yet it is likely to yield a larger amount of food for stock than usual, owing to the extent of land under crop. Carrots have taken well and look promising; but this crop, although easily cultivated and more certain than Turnips, is very costly to raise, and does not increase in acreage. Swedes, although much injured by the fly, will prove about an average produce, except the black palmer continue to eat them, as they are now doing in some fields. Common Turnips are in many instances totally destroyed by the palmer, and the entire crop is threatened by the appearance of the palmer fly so early in the season, and in such immense numbers. *Joseph Blundell, Bursledon, Southampton, July* 11.—P.S. The harvesting of winter Oats, Rye, &c., has commenced; the Wheat will be ready on the 18th or 20th inst.

Suffolk.—Wheat: as fine a prospect as ever the earth exhibited, and will be ready in 10 days or a fortnight. Barley grew luxuriantly, and was not stiff enough in straw to resist the heavy storms; much is laid; we shall have a good crop, but various samples. Beans and Peas: both better than usual. Oats: very few grown. Clover: first crop very good; some caught in rain, but none materially injured; second crop growing well. Grass hay: generally good crop, and well secured. Mangel Wurzel promising well. Turnips: better spoken than could have been expected with such hot dry weather. The drought has been too much for the sand lands, but we have had occasional storms, giving rain plenty on our retentive soils for the demands of the growing plant. We have no injury to Wheat by storms sufficient to affect the average, and we have some Potato disease upon the Peas and Beans. Plenty of old Wheat in farmers' hands. *G. Edwards, Framlingham, July* 18.

Sussex.—I hand you a short account of the crops in this neighbourhood: Wheat, very good, over an average; Beans, Oats, Barley, and Peas, good; Potatoes, prospect good, but disease has appeared in many gardens; Mangel Wurzel, good; Swedes, some looking very well, others quite destroyed by Fly-Nigger. With regard to the harvest, reaping will no doubt be general between the 20th and 25th. They were cutting a forward piece of Talavera on Saturday at Eastbourne. A good many fields of Peas are already cut, and I expect to be mowing Winter Oats by the end of this week.—*J. Scott Hayward, Wotton, near Eastbourne.*

Wiltshire.—Wheat a fair average crop; in some places much laid; crop not so much as last year by 1 qr. to the acre. Reaping will be general about the 27th inst. Barley: a large bulk of straw (where sown after Turnips); injured by storms; symptoms of premature ripeness within the last few days; a full average. Oats: an excellent crop; above an average. Beans, Winter: a failure; Spring: a good crop. Peas considerably above an average. Potatoes: in some districts disease virulent, in others quite free. Turnips: an excellent plant; some patches carried away by black maggot, not to a very great extent; the maggot has now disappeared. A good prospect of winter keep for stock. Hay very plentiful, and well put together. *T. Chandler, Aldbourne, Hungerford, July* 19.—Wheat is good, but very much laid. Reaping will commence generally on the 1st August—in some instances three or four days earlier. Barley very good; Oats a fair average; Spring Beans do.; Peas under an average—in some instances bad. Forward Turnips in some places good, but the Black Jack (or caterpillar), as it is termed, has destroyed acres. Swedes, I think, will be good, as will the Winter Turnips. Oats and Peas being off the ground so early, will afford a great deal of winter and spring keep. That does not apply to our neighbourhood—more as to Berkshire and Oxfordshire. Hay a good crop, and got together in first-rate condition; ricks

secured. *Geo. Brown, Norbury, July* 19. —The hay has been riched well and a large bulk. The after Grass requires rain to make the feed good. Early Swedes and Turnips are doing well, although in some instances the black caterpillar has been busy and prevented hoeing taking place in proper time, much to the injury of the plants. The later ones have laid in the ground a long time for want of rain, and in some instances the land has been too dry to sow. Peas, which promise a good crop, are just now fit for cutting. Winter Beans vary very much, in many cases the blight has destroyed nearly half; where this is not the case the crop will be good. The same may be said of spring Beans, but the blight is not so general in them. Tares are well laden with corn. The Wheat crop of this district is for the most part heavy and much laid; in some of these pieces many ears are gone off prematurely, and will take from the bulk bushels per acre (a sample inclosed). The standing crop is likely to be a good quality. The general opinion of this district is that we are 4 bushels per acre short of last year; reaping will commence next week. *T. H. Redman, Swindon.*

Home Correspondence.

Nettles.—I have seen many plans attempted and perseveringly pursued against Nettles, including mowing, constant beating, and pulling up by hand, as recommended by your correspondent, Mr. H. J. Turner, of Richmond, Yorkshire. I cannot say that I have seen any of these operations attended with much success (though from the nature of the ground near the rivers he describes, it might answer in his particular case). I have arrived at the conclusion, that if you wish altogether to get rid of beds of Nettles in a less period than half a life-time, the cheapest and only effectual method is to have them carefully forked out, and the land seeded down again. The expense of this radical cure is by no means so great in ordinary cases as might be supposed, and I never hesitate to adopt this means of clearing good land (in which Nettles always luxuriate) or to recommend it to others. *George Beaumont, jun., Bridgeford Hill, near Nottingham.*

Prepared Food for Cattle. — Your comments on Concentrated Food for Cattle in a recent Number, although you do not make mention of any particular maker's name, are still calculated to some extent in injuring the sale of our "Patent Feed." As to those who have already used it—and their names are "Legion"—your remarks cannot influence them, for their own voluntary testimony of its health-restoring, work-enduring, pocket-saving qualities render their well grounded opinions proof against any attempt, either by accident or design, to cast an imputation on our much-liked preparation. You class the cattle food now before the public with those ruinous compounds too frequently used by carters and grooms without their master's knowledge, and urge as a fact that these men are the first to be led to jump at a well-told tale of the marvellous effects of the so-called "Food for Cattle." Now, sir, if you had studied the character of these men as I have, personal experience would have taught you that no argument the best salesman can use could possibly make them believe anything that the science of the times could produce was at all equal to the abominable trash their own hard-earned money had so dearly purchased. It is therefore with a view to putting a stop to such vile quackery that "—— Patent Horse and Cattle Feed" has been taken in hand by a party of gentlemen in ——, and an appeal made to the common sense of the master, instead of his man, whose intelligence at once tells him the composition is excellent, if the quality of the ingredients can be relied on, to satisfy themselves and their customers of this fact. "——'s Patent Cattle Feed Company" grind and pulverise (by the aid of powerful machinery at their steam mills at ——) each article from which the "Feed" is compounded, and so scrupulously exact are they in wishing to show their friends they render value in goods for the price charged, taking a fair profit into consideration for their time and capital employed, that they have recently published a copy of the analysis extracted from the patent, which when you have perused I shall be glad to be informed of your secret of rendering it at 7*l.* per ton to the consumer. *An Ex-Veterinary and Agricultural Chemist and Agent for "—— Patent Cattle Feed Company."* [Analyses of these cattle foods will be found in the Journals of the Agricultural Societies of England and Scotland, which entirely justify us in advising our readers to purchase cattle food in the form of Beans, Linseed, oilcake, &c., and not at four or five times the cost of these in the form of any "Patent Cattle Food."]

Societies.

GREAT MEETING OF THE ROYAL AGRICULTURAL SOCIETY AT WARWICK.

FRIDAY: *July* 15.—*The General Meeting* was presided over by Lord Walsingham, the President elect, in the absence of the Duke of Marlborough.

Mr. Sidney complained there were not more practical men in the Council, and that the important open meetings were held at times that operated least to the benefit of the Society. "The weekly meetings were held on Wednesdays, no notice was given of them, the reporters not being admitted. The annual meetings were held on a Friday, when persons had left and when there could not be sufficient discussion of anything of importance. He complained of the constitution of the Council, 21 peers, 29 sons of peers, baronets, or county members, 12 squires, 5 lawyers, 4 engineers, 1 hon. director, 12 breeders or stockholders, and 2 mayors. He complained that the Finance Committee were unwilling to afford proper information. The Council had passed a vote of thanks to the gentlemen of the Finance Committee who had so neglected their duties that they were compelled to resign. He found just about the same number of subscribers as when the Society was established 20 years ago. Since that time the farming interest had been doubled and trebled, and farmers themselves had increased in intelligence, but the number of subscribers had not increased. Why were there not more members in the Society? The Council should be representative. They did not find the practical farmers in the Council, and why not? It was not in consequence of any opposition raised by the noblemen who honoured the Society by their countenance, but just for the reason he had mentioned. The affairs of the Society were monopolised by an exclusive clique. The question was not as to what the Society had done, but as to its ability to have done a great deal more than it had done. The gentlemen who served them as Stewards didn't rise to be Vice-presidents. The Finance Committee for instance, had not been chosen for their skill in agriculture, for their literary ability, or even their social position. Gentlemen had said that farmers who might be induced to join that association could not attend to its duties. No assertion was more unfounded. The Central Farmers' Club had produced papers on agriculture which had quite as much effect as any paper in the Journal of the Society. That class was open to choose from; and it was well known how well a comparatively small committee there attended to their duties. The Wednesday's meetings should have greater publicity. He believed that, as men worked the harder for a little fame, they would get many papers from practical men, if they could be communicated to the world. He believed the time had arrived when an inquiry should be made as to what had been the progress in the several departments of implements, stock, and cultivation. They might get answers to those inquiries simultaneously, and then a report should be published as to what had been the progress since the Society was founded in 1839 till now." Thanks were voted to the Local Committee, the Railway Companies, the retiring President, the Duke of Marlborough, the Judges, the chairman of the day, Lord Walsingham, who is President for the ensuing year, and lastly, to Mr. Brandreth Gibbs, the hon. Director of the Show, who has moreover undertaken the labours of Secretary for the last month or two.—Among the speeches of the day was that of Mr. Pain, in reply to the remarks of Mr. Sidney. He said: A speech had been presented to their notice by Mr. Sidney—a speech which was annually contributed to that meeting, and which, he was sure, was always received with that deference to which that gentleman was entitled. He had very properly alluded to the Council of the Society, and he had made an observation which he (Mr. Pain) thought he was called upon to notice. He had suggested that the Council was constituted of noblemen, of some practical farmers, and of two mayors. He (Mr. Pain) had the honour of being considered as one of those mayors. He had the honour, in his humble way, of entertaining the Society at Salisbury; and he did it to the best of his ability. It might also be said that similar kindness and attention was contributed by the mayor of Chester. One of the Society's oldest members, and ablest men belonging to the Society, did think proper to remark in a jocular manner that no persons were so entitled to take the distinction awarded to the best "mares" for agricultural purposes as the mayors of Chester and Salisbury. He (Mr. Pain) was very much obliged to Mr. Sidney for condescending to notice him as a mayor. He was elected in 1857 a member of the Council, in compliment to Salisbury. He naturally retired when his term expired, and had the honour of being re-elected. And he must say in defence of himself and the mayor of Chester—that although mayors then they were not so now. They endeavoured, as members of that Council, to do their duty. It did not signify to him whether he was considered merely as mayor or member of the Council—he performed the duty of a member as an independent man, he denied that he was a member of any clique. He repeated he did his duty, and when the Council said otherwise he would resign his position. He believed his worthy friend, the late mayor of Chester, would do his duty in the same way. Lord Leigh did not see why a mayor of a town should not be conversant with agriculture. He knew for a fact that one of the best agriculturists of this county had been thrice elected mayor of Warwick.

THE CATTLE YARD.

We resume our notes of the prize animals in the Local Committee classes, which, taking them all in all, fully equalled those in the Society's prize lists. In Class I. Bulls of any pure breed, calved on or after 1st January, 1858, and not less than 12 months old on 1st July last, Mr. Ambler got 1st prize for a very handsome bull, "Royal Turk," a roan of exquisite touch, 14 months old. The second prize animal in this class is too narrow. In same class Lord Feversham's 3d prize bull, "Vice-Chancellor," has the superior feel generally possessed by his lordship's stock. We take exception to the highly commended bull of Mr. Heaword, as we see little to recommend him for such a distinction except his gay colour. "Prince Frederick," which belongs to Mr. Langston, M.P., and which was only commended, appeared to us a better animal.

In Class II., "Pairs of Cows in milk or in calf," some noble animals were exhibited. For instance, the two prize cows of Mr. Langston, M.P., could scarcely be excelled. We rather object to highly commending such fat animals as those shown in this class by Mr. Ambler. Experience and public opinion are against bringing breeding animals to such a state.

In Class III., Pairs of Heifers under three years in milk or in calf, good beasts were also shown. The 1st prize pair of Mr. Price, for instance, possesses in a high degree the true qualities of short-horns; they are beautifully marked. We saw little reason for commending Mr. Hutt's heifers.

Mr. Ambler was again most deservedly successful in the Yearling Heifer class with "Lady Florence" and "Lady Blanche," both roans, which possess, in addition to general symmetry, the true elastic touch so much desired in this breed; and in this respect they presented a marked contrast to the 2d prize yearlings in the same class belonging to Colonel Pennant, M.P. We prefer Mr. Fletcher's 3d prize heifers.

The Long-horns in the Local Committee's section were creditable.

The show of sheep of the Short-woolled, not South Down breed, in this section was exceedingly commendable. In the Class Shearling Rams Mr. Coxon, of Lichfield, stood first, with a ram which approaches very closely to perfection.

In the next class, Rams of any age, Mrs. Baker got 1st prize for a fine animal, but its head is not equal to that of the 3d prize animal of Mr. Adney.

In Class III., Pens of 5 theaves, we could not well appreciate the adjudication. Mr. Holland's 1st prize lot are not equal in symmetry or size to Messrs. Crane's 2d prize pen. The latter present a contour rarely seen, and their heads are well formed. Mr. Holland's lot have dark legs and heads, and the wool has a peculiar curly appearance; one of this lot is no doubt very handsome.

The Horses in the Committee section were nearly all commendable; and the awards pleased us. But we take exception to bringing mares and geldings into competition.

If any proof were required to sustain this view of the case it appears to present itself in Class V., Mare or Gelding of four years and upwards for hunting purposes. Mr. Coleman obtained the 1st prize for an excellent gelding, "Charles," which sold for an advanced price; but the 2d prize mare of Lord Berners is a first-class animal—ears well set, body cylindrical in the proper parts, and shoulder particularly well formed; and if we except the lower hip which is heavy, there is little room for unfavourable criticism.

In the arrangement of some of the classes of Pigs we have to compliment the Local Committee, and we again warn the Royal Agricultural Society against continuing any longer to divide pigs into the undefinable large and small breeds. The Committee give three prizes for Berkshire, and should have given the other two prizes to a named breed or breeds.

In Class I., Berkshire Boars, Mr. Hewer, of Wilts, obtained 1st prize for a pretty well formed but somewhat coarse boar. His best point is the shoulder. Mr. Bowley, of Siddington House, got 2d prize with a small compact animal.

In next class, Berkshire Sows, Mr. Hewer won 1st prize with an excellent sow. Mr. Sadler's 2d prize animal did not please us over well; her snout is too long, and the space between the eyes and ears is too small.

In Class III., Pens of 5 breeding Berkshire, Mr. Smith, of Warwick, gained 1st and 2d prizes; and the first lot was sold as we were making our examination. In the 2d prize lot the formation of the head is not what it ought to be.

Mr. Wainman, of York, came in first in Class IV. with a pen of five white pigs, 18 weeks old. This prize was won without competition. The lot was all sold at 12 guineas a head.

In the last class, Pens of fine breeding Pigs of a small breed, between three and five months old, Col. Pennant, M.P., gained 1st prize with the most commendable lot in the entire section. They are of the white breed, 19 weeks old, and fetched 14*l.* a head. We must congratulate the gallant colonel on the general excellence of his varied stock.

We have now only to add the award of the

SPECIAL PRIZES,

OFFERED BY THE WARWICK LOCAL COMMITTEE.

CATTLE BEST ADAPTED FOR DAIRY PURPOSES.

CLASS I. Yearling Bulls of any pure breed.—20*l.*, Henry Ambler, of Watkinson Hall Farm; 10*l.*, John Kay Farnworth, of the Oak Farm, Alderley Edge, near Chorley; 5*l.*, Lord Feversham, of Duncombe Park.

CLASS II. Pair of Cows, in milk or in calf.—20*l.*, J. H. Langston, M.P., of Sarsden House, near Chipping Norton; 10*l.*, the Hon. Colonel Pennant, of Penrhyn Castle; 5*l.*, Edmund Lythall, of Radford Hall, near Leamington.

CLASS III. Pair of Heifers, of a pure breed, in milk or in calf, under 3 years old.—20*l.*, Joshua Price, of Featherstone, near Wolverhampton; 10*l.*, John Hutt, of Water Eaton, near Oxford; 5*l.*, John King Tombs, of Langford, near Lechlade.

CLASS IV. Pair of Yearling Heifers, of a pure breed.—20*l.*, Henry Ambler; 10*l.*, Hon. Colonel Pennant, M.P.; 5*l.*, William Fletcher, of Radmanthwaite, near Mansfield.

LONG-HORNED CATTLE.

CLASS V. Bulls of the pure Long-horn Breed.—10*l.*, Josh. Holland Burbery, of The Chase, near Kenilworth; 5*l.*, Michael Taverner, of Upton, near Nuneaton.

CLASS VI. Pair of Cows of the pure Long-horn Breed.—10*l.*, Lieut.-Colonel Inge, of Thorpe Constantine; 5*l.*, John Godfrey, of Wigston Parva, near Nuneaton.

SHROPSHIRE SHEEP.

CLASS I. Shearling Rams.—20*l.*, John Coxon, of Freeford Farm, near Lichfield; 10*l.*, Henry Sheldon, of Braile's House, near Shipston-on-Stour; 5*l.*, Thomas Horley, jun., of The Fosse, near Leamington.

CLASS II. Rams of any other age.—20*l*., Mrs. Baker, of Grendon, near Atherstone; 10*l*., James and Edward Crane, of Shrawardine, near Shrewsbury; 5*l*., George Adney, of Harley, near Much Wenlock.

CLASS III. Pens of 5 Theaves.—15*l*., Edward Holland, of Dumbleton Hall, near Evesham; 5*l*., James and Edward Crane, of Shrawardine, Shrewsbury.

HORSES.

CLASS I. Stallions for Agricultural purposes, foaled before the 1st of January, 1857.—20*l*., John Manning, of Orlingbury, near Wellingborough; 10*l*., Robert Spencer, of Shuckburgh Lodge, near Daventry.

CLASS II. Stallions for the same purposes, foaled in 1857.—15*l*., William Buller, of Hanwell Fields, near Banbury; 5*l*., Thomas Crisp, of Butley Abbey.

CLASS III. Pairs of Agricultural Horses, Mares, or Geldings.—10*l*., John Gay Attwater, of Hallingwood Farm, Cubberley, near Cheltenham; 5*l*., John Beasley, of Chapel Brampton, near Northampton.

CLASS IV. One-year-old Fillies or Geldings for Agricultural purposes.—10*l*., William Lowrie, of Cadoxton, near Cardiff.

CLASS V. Mare or Gelding, of 4 years and upwards, for Hunting purposes.—20*l*., Walter Coleman, of Kingsbury Hall, near Tamworth; 10*l*., Lord Berners, of Keythorpe Hall.

CLASS VI. Stallion Ponies, not exceeding 14 hands high.—10*l*., Sir Pyers Mostyn, Bart., of Talacre, near Rhyl; 5*l*., James Cresswell Wall, of Redland Lodge, near Bristol.

PIGS.

CLASS I. Berkshire Boars.—10*l*., William Hewer, of Sevenhampton, near Highworth; 5*l*., Edward Bowly, of Siddington House, near Cirencester.

CLASS II. Berkshire Sows.—10*l*., William Hewer, of Sevenhampton, near Highworth; 5*l*., William James Sadler, of Bentham Calcutt, near Cricklade.

CLASS III. Pens of Five breeding Pigs, of the Berkshire breed.—15*l*., Joseph Smith, of Henley-in-Arden; 10*l*., Jos. Smith, do.

CLASS IV. Pens of Five breeding Pigs, of any other large breed.—15*l*., William B. Wainman, of Carhead, near Cross Hills, York.

CLASS V. Pens of Five breeding Pigs, of a small breed.—15*l*., the Hon. Colonel Pennant, M.P.; 10*l*., Robert H. Watson, of Bolton Park, near Wigton.

To this we add the prize lists and notices of those classes of stock exhibited for the premiums of the Society to which we were unable to draw attention last week.

SHEEP.

The following are the awards of the Judges under this head:—

LEICESTERS.

CLASS I. Shearling Rams,—20*l*., William Sanday, of Holme Pierrepont, near Nottingham; 10*l*., William Sanday; 5*l*., William Sanday.

CLASS II. Old Rams.—20*l*., T. E. Pawlett, of Beeston, near Sandy; 10*l*., T. E. Pawlett; 5*l*., William Sanday.

CLASS III. Pens of 5 Shearling Ewes —20*l*., William Sanday; 10*l*., William Sanday; 5*l*., Lieut.-Colonel Inge, of Thorpe Constantine, near Tamworth.

SOUTH DOWNS.

CLASS I. Shearling Rams.—20*l*., the Duke of Richmond; 10*l*., Jonas Webb; 5*l*., Jonas Webb.

CLASS II. Rams of any other age.—20*l*., the Duke of Richmond; 10*l*., William Rigden; 5*l*., William Rigden.

CLASS III. Pens of 5 Shearling Ewes.—20*l*., the Duke of Richmond; 10*l*., the Duke of Richmond; 5*l*., William Rigden.

LONG-WOOLLED SHEEP (not qualified to compete as Leicesters).

CLASS I. Shearling Rams.—20*l*., Robert Garne, of Aldsworth, near Northleach; 10*l*., Robert Garne; 5*l*., George Fletcher, of Shipton Sollars, near Cheltenham.

CLASS II. Rams of any other age.—20*l*., Thomas Porter, of Baunton, near Cirencester; 10*l*., Robert Garne; 5*l*., George Fletcher, of Shipton Sollars, near Cheltenham.

CLASS III. Pens of 5 Shearling Ewes.—20*l*., Thomas Walker, of Yanworth, near Northleach; 10*l*., William Lane, of Broadfield Farm, near Northleach; 5*l*., George Fletcher.

SHORT-WOOLLED SHEEP (not South Downs).

CLASS I. Shearling Rams.—20*l*., William Humfrey, of Oak Ash, Chaddleworth, near Wantage; 10*l*., William Humfrey; 5*l*., William Humfrey.

CLASS II. Rams of any other age.—20*l*., Samuel Druce, of Eynsham, near Oxford; 10*l*., William Humfrey; 5*l*., George Adney, of Harley, near Much Wenlock.

CLASS III. Pens of 5 Shearling Ewes.—20*l*., William Humfrey; 10*l*., Stephen King, of Old Hayward Farm, near Hungerford; 5*l*., William Browne Canning, of Chisledon, near Swindon.

In Leicester sheep the Show has improved upon last year's. Mr. Sanday takes the three prizes in section of yearling rams, and finer sheep have rarely, if ever, been produced. In rams of any other age, Mr. Pawlett steps in for 1st and 2d prizes, leaving Mr. Sanday 3d. In pens of 5 shearling ewes Mr. Sanday has also obtained the 1st two prizes. We have seen finer heads on shearling Leicesters than any of the lots exhibited.

In South Downs the Duke of Richmond has carried off the lion's share of the prizes, distancing Jonas Webb himself, who has again appeared to claim the post which he himself won and maintained for many years. Mr. Rigdon makes up the trio who have obtained prizes for South Downs, and it must be admitted that he has brought forward his sheep in first-rate style. In the Shearling Ram Class the proximity of the Duke's first and Mr. Webb's second prize animals afforded a good opportunity for comparison and critical examination. The Duke's excels in a marked degree Mr. Webb's in width across the rump; the Duke's is also wider elsewhere, indeed it is too flat across the shoulder; but the Babraham shearling is better framed immediately behind this part.

Of Cotswold, our old friends Messrs. Garne, Lane, and Fletcher are the principal exhibitors: there is not in the entire section an animal to which exception might be taken.

Of Shropshire and other Downs there is also a fine collection. The points of excellence are so numerous that we could not attempt an outline.

PIGS.

The pigs made as creditable an appearance as any other class of live stock. Mr. Harrison's 1st prize boar of the white large breed is a wonderful specimen of what can be done by industry, skill, and care. This pig is only 23 months old, and weighs upwards of half a ton. In the small breeds H. R. H. Prince Albert has been equally successful with "Paris," a boar of the Windsor breed, of immense size, considering its age, which is only nine months.

The following is the Prize List:—

CLASS I. Boars of a large breed.—10*l*., John Harrison, jun., of Heaton Norris, near Stockport; 5*l*., John Woodcock, of Netherhampton, near Salisbury; 3*l*., Michael Gavins, of the Fox Inn, Woodhouse, Carr.

CLASS II. Boars of a small breed.—10*l*., H.R.H. the Prince Consort; 5*l*., John Harrison, jun.; 3*l*., John Holdway, of Weston, near Bath.

CLASS III. Breeding Sows of a large breed.—10*l*., Sir R. G. Throckmorton, Bart., of Buckland, near Farringdon; 5*l*., William B. Wainman, of Carhead, near Cross Hills, York; 3*l*., John Woodcock.

CLASS IV. Breeding Sows of a small breed.—10*l*., Thomas Crisp, of Butley Abbey, near Wickham Market, Suffolk; 5*l*., George Turner, of Barton; 3*l*., Thomas Crisp.

CLASS V. Pen of 3 Breeding Sow-Pigs of a large breed.—10*l*., G. B. Morland, of Chilton Farm, near Harwell, Berks; 5*l*., William James Sadler, of Bentham Calcutt, near Cricklade.

CLASS VI. Pen of 3 Breeding Sow-Pigs of a small breed.—10*l*., H.R.H. the Prince Consort; 5*l*., Robert H. Watson, of Bolton Park, near Wigton.

IMPLEMENTS.

The following are the awards of the Judges of Implements:—JUDGES: W. Owen, C.E., Jno. Brasnett, J. Clarke, J. Druce, J. Hicken, G. M. Hipwell, J. J. Rowley, J. Thompson, W. Tindal. C. E. Amos, C.E., Consulting Engineer. STEWARDS: Mr. Barnett, Mr. Caldwell, Mr. Pope.

PRIZES.

Amount of Prizes		Name.	Kind of Implements.
£4	0	Hornsby & Sons	Light land plough
3	0	Ransomes & Sims.. ..	Light land plough
2	0	J. & F. Howard	Light land plough
1	0	Hensman & Son	Light land plough
2	0	John Eddy	Turnwrest plough
6	0	J. & F. Howard	General purpose plough
5	0	Hornsby & Sons	General purpose plough
4	0	Ransomes & Sims.. ..	General purpose plough
2	0	Busby Ag. Implement Co	General purpose plough
1	0	Hensman & Son	General purpose plough
3	0	Hornsby & Sons	Heavy land plough
2	0	J. & F. Howard	Heavy land plough
2	0	Ransomes & Sims.. ..	Heavy land plough
1	10	W. Ball	Heavy land plough
1	10	Busby Ag. Implement Co.	Heavy land plough
4	0	Messrs. J. & F. Howard..	Harrows for light land
3	0	Messrs. J. & F. Howard..	Harrows for light land
2	0	Messrs. Page & Co ..	Harrows for light land
2	0	Messrs. Mapplebeck&Lowe	Chain harrows
4	0	Messrs. J. & F. Howard..	Harrows for heavy land
3	0	Messrs. Page & Co. ..	Harrows for heavy land
2	0	Messrs. Ransomes & Sims	Harrows for heavy land
5	0	Mr. Bentall..	Cultivator for light land
3	0	Messrs. Coleman & Son .	Cultivator for light land
2	0	Mr. Clay	Cultivator for light land
5	0	Messrs. Coleman & Son ..	Cultivator for heavy land
3	0	Mr. Bentall..	Cultivator for heavy land
2	0	Messrs. Ransomes & Sims	Cultivator for heavy land
10	0	Loomes & Co. (local prize	Three sets of draining pipes
3	0	Thomas Scragg	Hand-power tile machine
2	0	John Whitehead	Hand tile machine
15	0	A. & W. Eddington ..	Draining plough and windlass
3	0	Francis Parkes & Co. ..	Bundle draining tools
2	0	Mapplebeck & Lowe ..	Bundle draining tools
10	0	John Whitehead	Brick and tile machine
5	0	Humphrey Chamberlain..	Brick and tile machine
10	0	William Torr (local prize)	Field gate
50	0	John Fowler, Jun.	Set of steam-cultivating apparatus balance four furrow plough
5	0	Trustees of Wm. Crosskill	Field roller
3	0	Messrs. Hill & Smith ..	Field roller
2	0	Messrs. Hill & Smith ..	Field roller
5	0	Messrs. A. & E. Crosskill	Clod crusher
3	0	W. Cambridge	Clod crusher
2	0	Trustees of W. Crosskill .	Clod crusher

SILVER MEDAL.

Sidney Flavel & Co. ..	For a kitchen range
Thomas Gibbs & Co. ..	For a most interesting collection of agricultural plants, seeds, and grain in great variety
Peter Lawson & Son ..	For a most interesting collection of plants, seeds, and grain
W. H. & George Dawes..	For his patent atmospheric hammer
Humphrey Chamberlain	For a dry clay brick-making machine
Humphrey Chamberlain	A plastic clay brick-making machine
Burgess & Key	Grass mowing machine

We also add here, though somewhat out of place, the awards of prizes to Cheese and Wool—both declared this day:—

CHEESE.—Judge: James Watson.

Champion prize of 30*l*. for the best four cheeses, not less than 34lbs. weight each, to John M. Baker, of Dordon Hall, Atherstone, Warwick.

CLASS I.—COLOURED CHEESES MADE IN 1858.

For the four best coloured cheeses, not less than 35 lbs. weight each, 20*l*. to John A. Beale, Brockhurst, Lutterworth.

CLASS II.—UNCOLOURED CHEESES MADE IN 1858.

For the four best uncoloured cheeses, not less than 35lbs. weight each, 20*l*. to Thos. Haddon, Hampton Lucy, Warwick.

CLASS III.—COLOURED CHEESES MADE IN 1858.

For the four best coloured cheeses not less than 25lbs. and under 35lbs. each, 15*l*. to George Thomas Spokes, Little Lawford, Rugby, Warwick; 10*l*. to Thomas Satchwell, Hernfield House, Knowle, near Birmingham.

CLASS IV.—UNCOLOURED CHEESES.

For the four best uncoloured cheeses not less than 25lbs. and under 35lbs. each, 15*l*. and 10*l*. (withheld for want of sufficient merit).

WOOL.—Judges: T. Clayton and H. B. Hughes.

CLASS I.—For the six best fleeces of Leicester wool, 10*l*. to George Reading, Priors Hardwick, Stockton, near Rugby, Warwick.

CLASS II.—For the six best fleeces of South-down wool, 10*l*. to the Duke of Richmond, Goodwood, Chichester.

CLASS III.—For the best six fleeces of Gloucester wool, 10*l*. to Samuel Pratt, Bubbenhall, near Kenilworth, Warwick.

CLASS IV.—The six best fleeces of Shropshire or mixed wool, 10*l*. to Thomas Horton, Harnage Grange, Shrewsbury, Salop.

We find on walking round the yard an unusual number of novelties, and the gathering of implements is unprecedented in other respects as well.

There has never been one so large, covering so much ground, occupying so much space in the mere catalogue, representing so great a money value, or sent by so large a number of exhibitors. There are nearly 5000 entries and 230 stands — one-third more than the Chester exhibition—and six additional rows of shedding for their accommodation; all this renders it more than ever difficult to select those points which best deserve attention. On walking round the yard we pass the following stands:—(1) Fowler, of Whitefriars; exhibits pumps and hydraulic rams. (2) Biggs, of Southwark; sheep dressing apparatus. (3) Gardner, of Banbury; chaff-cutters and Bean mills. A new idea has been carried out by which the whole width of the feed is cut at twice, and instead of 2 knives 4 are employed to give the two whole cuts per revolution of the driving wheel. No purpose of any utility is served by this. The cutting apparatus is made more complicated; and you lose the advantage of doing the cut just at those two times in the revolutions when your maximum power is being put forth. (4) Smith, of Thrapston, exhibits rollers, drills, horse-hoes, cake mills, &c. (5) Burgess & Key exhibit reaping machines and revolving horse-hoes for thinning and brushing Turnips.

The operations are as follow: It is worked by one horse, and will thin out one or two rows; on moving forward, the spindles carrying the knives and brushes are made to revolve: the latter, passing over the young growing crops, brush off the insects that may be upon them into the fallow space between the rows, and the revolving knives are used, and the crops are cut up and thinned; the ordinary hoes follow and raise the ground.

They also exhibit pumps and churns. The reaping machine is simplified in one or two particulars, and facility is acquired in turning it by making the side wheel jointed so as to enable the latter to guide the movement instead of increasing its difficulty as heretofore. (6) Hislop, of Preston Pans, has a good corn-dressing machine in which the whole is passed through a separator, and afterwards subjected to a fan, with arrangements for separating the lighter grains as well as the shrivelled ones. It appeared to be somewhat costly, though probably efficient. (7) Henton, Bridge Street, Westminster; exhibits saddlery. (8) Mr. Swaine, of Kenilworth; a field gate. (9) Kenman, Dublin; a capital set of tools for putting up fences, wire, timber and others. (10) Griffith and Burdett, Birmingham; Keevil's cheese-making apparatus, &c. (11) Perreaux, Mark Lane, E. C., pumps and valves. The patent India rubber valve invented by this exhibitor is much the best of any for half liquid stuff, such as thick sewage, &c.,—a most ingenious and effective instrument. It is manufactured of vulcanised India rubber, and takes the form of a tube, flattened at the extremity, similar to the mouthpiece of a hautbois. Semi-liquid matter, such as liquid manure, mud, sewage, pulp, &c., is passed through the valve, without deranging its action. It gives a larger discharge of water, requires less power, and is more sure in its action than any other kind of valve. (12) Read, Regent Circus; fire engine and watering engine. (13) Sawney, Beverley; corn-dressing machine. (14) Foster, of Lincoln; steam engine and threshing machine. (15) Burney and Bellamy, Mill Wall, E. C.; troughs and cattle troughs. (16) M'Neill; their well-known asphalte felt roofing. (17) Robey, Lincoln; steam cultivation apparatus consisting of 10 horse steam engine. Chandler and Oliver's patent drum windlass fixed on the engine hind travel ing axle, which is worked by gearing from the fly-wheel shaft with Chandler and Oliver's patent double snatch blocks, single snatch blocks, Porter's anchors, and 1000 yards of iron wire rope, 410*l*. (18) Maynards, Cambridge; horse rakes, chaff engines, &c. (19) Baylis & Co., Wolverhampton; sheep hurdles and fencing. (20) Boby, Bury St. Edmund's; their well-known corn screen, an oscillating screen of parallel wires with fixed separating discs or buttons in the spaces, by which these intervals are left clean for the passage of the good grain, and by which all the grain is made to shake instead of slide down the slope. (21) Coulta's, Spittlegate; seed drills and dressing machines. (22) Hancock, Pentonville; ploughs furnished with upright coulters rising from the middle of both skim and share, in order to effect the perfect pulverisation of the furrow-slice. (23) Clay, of Walton, Wakefield; good cultivators and drags. (24) A. & E. Crosskill, Beverley; cart-wheels, carts, clod-crushers, &c. (25) Boyds, Rochdale; steam-engine, &c. (27) Ransome, 31, Essex Street, E. C.; Long's sheep dressing material, washing machines, &c., a simple little earth auger to cut off the roots of weeds below the surface, &c. (28) Hart, Wantage; steam-engine and threshing-machine. (29) Martin, Fakenham; root-pulpers and cutters, in which the whole roots go inside the cylinder on the inner surface of which the cutters act—with, as we should think, greater efficiency but greater friction also. (30) Samuelson, Banbury, a self-acting and self-raking reaping machine:—

Cuts 5 feet wide, and is adapted for a pair of horses, drawing by pole on the near side. One man only (or even a boy capable of driving a pair of horses) can easily manage the whole without any assistance. The cut corn as it falls on the platform is swept away by a self-acting rake to the rear side of the machine, and deposited in neat order, ready for binding, a clear space being left for the horses in the succeeding "bout." The action of this rake is completely under the control of the driver, who by placing his foot on a lever stops its motion without suspending that of the knife; enabling the driver to leave bundles of uniform size in unequal crops.

Its motions are very simple and quiet. No opportunity was given for exhibiting reaping machines at Warwick, but we hope to report upon its powers some time during the ensuing harvest. Turnip-cutters and chaff-cutters, and both combined yielding mixed root

pulp and chaff, were exhibited here. Corn and cake breakers, churns, chain and other harrows, lawn mowers, and pumps and tools. (33) Waller, of Uddington, near Hamilton, exhibited ploughs, jointed harrows, grubbers; also common harrows, in which however the teeth are held, not by a screw to each tooth, but by lateral screws which held a whole bar of them tight together. (34) John Smith, of Coven, Wolverhampton; Fowler's steam plough and locomotive engine.

Fitted with patent adjusting boiler, which prevents priming and injury to tubes while travelling or working on unlevel ground. The outside plates are of best Staffordshire iron; fire-box of Low-moor, with copper tube plate, also fitted with outside framing, to which the engines are attached similar to railway locomotives, and has reversing gear and patent straps to actuate road wheels, so as to turn to right or left with facility; it can transport itself and ploughs, tackle, &c., where required, without horses. Price 420*l*.

(36) Hunt, Earl's Colne; a very good Clover hulling machine, corn dresser, chaff-cutter, &c. (37) Ruston & Co., Lincoln, steam engines, threshing machines, &c. (38) Hetherly, Thrussington, Leicester, ploughs of extraordinary length and taper. (39) Perry, Balston, Fencing. (40) Picksley, Sims & Co., Leigh, Manchester, chaff-cutters, &c., kneading machine.

The interior consists of a wood trough in a semi-cylindrical form; a horizontal shaft traverses its entire length; to which are attached beaters, which in their revolving action beat the flour into a perfect dough, and thoroughly incorporate the yeast, flour, and water in a far better, cleaner, regular, and more expeditious manner than human hands can perform.

(43) Brown & May, Devizes, steam engines, haymakers, &c.; Waller's cheese maker, somewhat after the fashion of Keevil's, to which it is manifestly inferior. [We shall continue our walk round the stands during weeks to come, and point out those implements of which we have taken notes. Meanwhile we refer to the following out of their order.]

Among the most striking novelties of the yard, and one to which a silver medal was awarded by the judges is a dry brick-making machine, exhibited by Mr. Chamberlain, of Worcester. The clay is ground and delivered through a hopper into the brick-shaped boxes of a revolving horizontal platform. The bottoms of these boxes are moveable pistons, and as the platform revolves the pistons pushed up by the inclined plane on which they rest below, subject the contents of the boxes to enormous pressure against the shield beneath which the boxes are at the same time carried. Egress is given throughout this pressure to the air included with the dry earth in the box, and as the latter escapes from beneath the shield just named, it receives a heavy pressure from above by a piston working up and down at that particular spot. The under piston then continuing to rise pushes out the bricks, and they are delivered hard and polished at the rate of one every two or three seconds ready for the kiln at once. The exhibitor says:—By this machine bricks are manufactured from perfectly dry clay, of a quality hitherto unprecedented in this country. It is capable of making from 15,000 to 25,000 bricks per day, at less cost than any other machine, as the bricks can be taken direct to the burning kilns. This principle of manufacture is equally well adapted to all kinds of earths suitable for brick-making. Price, including patent rights, 1000*l*.

Digging machines are exhibited by Mr. Samuelson, of Banbury, Mr. Romaine, and Mr. S. Dawes, of Smethwick. The first is the rotating fork already described in this journal as efficient on land which has been subjected to a preliminary working by the plough; the second is a revolving cylinder armed with teeth of a particular form and arrangement, and worked by a self-moving engine, to which reference was made last week in the steam-plough trials; the third is also intended to be attached to a traction engine, and by means of the peculiar action of the cranks as the machine progresses the teeth or diggers are made to enter the ground with a nearly cycloidal action, thus preparing land at one operation for the seed.

Among the most interesting contributions to the implements shown were the stable fittings exhibited by several firms. Completer accommodation for the wants of the horse, with less opportunity for injury either from accident or vice, cannot be imagined. At the St. Pancras Iron Works Company's stand pivot mangers, rack, and water-trough are exhibited, invented by Professor Varnell, of the Royal Veterinary College, and manufactured by the exhibitors. These fittings are constructed to fit compactly in the corners of the box, and are made self-closing, so that the moment the bolt is withdrawn they fall of themselves into the closed position, leaving their surface even with the boarding. For sick and restless horses or foaling mares, this invention is invaluable.

Notices to Correspondents.

Cattle Food: *J Venn.* We have had no personal experience of the sort you name. Assuming it to be of first-rate quality, does it cost over 14*l*. or 15*l*. a ton; if so, we would have nothing to do with it.

Dairy: *Young Farmer.* If you remove all old mortar and soil from mason work and floor to a sufficient depth, thoroughly cleanse with chlorine water, &c, and re-paint and plaster, we should think it would be possible to convert a stable into a dairy.

Insects: *G W.* Your cart-horses have been attacked by the bloodthirsty Tabanus bovinus, the largest of our British gadflies. *W.*

Preservation of Potatoes: *Old Subscriber.* Common salt mingled with green Swede and Mangel Wurzel leaves in a heap or pit preserves them for a certain period, *i.e.*, the mess that is thrown out some months afterwards will not, we believe, be refused by cattle. But we have never heard of the "preservation of Potatoes for a length of time in the pits by a liberal use of salt which destroys their vitality."

B. SAMUELSON,

AGRICULTURAL ENGINEER AND MACHINIST,

76, CANNON STREET, WEST, LONDON; WORKS—BANBURY, OXON;

INVITES the attention of Agriculturists to his

IMPROVED DOUBLE-ACTION HAY-MAKER (Price 13*l*. 13*s*.).

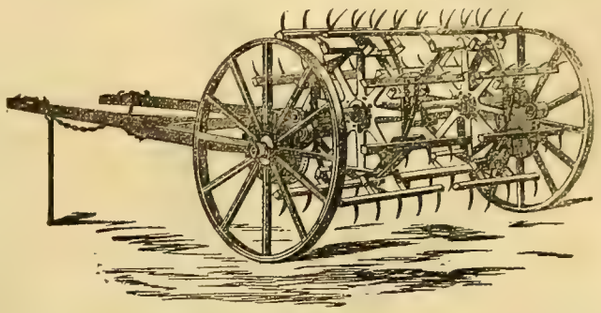
This Machine is guaranteed against breakages in fair usage.

SAMUELSON'S IMPROVED HORSE RAKES.

No. 3, extreme width, 7 feet 6 ins. £7 10 0
No. 4, ,, ,, 8 feet 6 ins. £8 0 0
Steeled Teeth, 10*s* extra.

SAMUELSON'S PATENT BRITANNIA SELF-RAKING REAPING MACHINE, with side delivery in sheaf (requires no rakers or gatherers), price 32*l*. 10*s*. at the Works, Banbury; 34*l*. in London.

SAMUELSON'S BOYD'S PATENT LAWN MOWING AND ROLLING MACHINES. The only Machine that will cut WET as well as dry Grass. Price, from 4*l*. 17*s*. 6*d*. to 13*l*. 13*s*.



SAMUELSON'S PATENT PRIZE GARDENER'S DOUBLE ACTION TURNIP CUTTER, with the new Patent improvement for separating the dirt and small chippings from the clean and useful pieces.

SAMUELSON'S PRIZE CHAFF CUTTERS, MILLS, CAKE BREAKERS, and food-preparing Implements of every description; also HARROWS, FIELD ROLLERS, CLOD CRUSHERS, &c.

The above may be inspected at Mr. Samuelson's stand, No. 30, at the Warwick Show, where CATALOGUES and PRICE LISTS may be obtained, or at the

Works, Banbury, Oxon; London Warehouse, 76, Cannon Street, West.

FOWLER'S PATENT STEAM PLOUGH.

The Prize of £50 at the Warwick Meeting of the Royal Agricultural Society
HAS BEEN AWARDED TO JOHN FOWLER FOR HIS PATENT STEAM PLOUGH.

THE FOLLOWING PRIZES HAVE ALSO BEEN GAINED BY HIM:—

The Royal Agricultural Society's Prize of £500, at Chester, July, 1858.
The Highland Society's Special Prize of £200, at Stirling, October, 1857.
And at various other Agricultural Shows in the United Kingdom Prizes amounting to £175.



[The above Cut shows Fowler's Steam Plough at work. On the left headland is the Engine, with Windlass and Water Cart attached, and directly opposite to them the anchor, and between them the Plough is pulled backwards and forwards, one end of the Plough being alternately in the air and the other in its work. The Engine and Anchor propel themselves forward along the headland as the Plough performs its work, so that they may be always opposite to the work.]

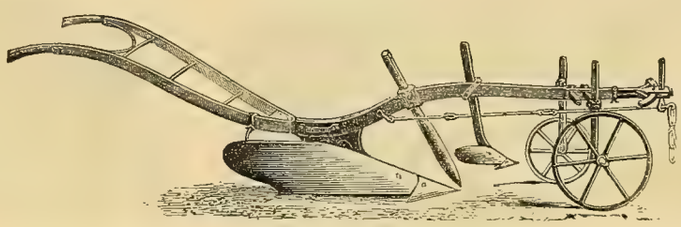
ENGINES purchased for STEAM PLOUGHING can be used for any other operation the Farmer may wish. They are made to move themselves by Steam from field to field or place to place, requiring but one or two horses in the shafts to steer them.

For further particulars, prices, and Illustrated Catalogues apply to

JOHN FOWLER, JUN., 23, CORNHILL, LONDON, E.C.

THE PLOUGH TRIALS AT WARWICK.

HOWARD'S CHAMPION PLOUGH



Gained the FIRST PRIZE as the Best Plough for General Purposes at Warwick,

BEING the CHIEF PRIZE for PLOUGHS, awarded by the Royal Agricultural Society of England, at this Meeting. The importance of this Prize will be gathered from the fact that the GENERAL PURPOSE PLOUGHS are the only ones tried on BOTH LIGHT AND HEAVY LAND, and as HOWARD'S CHAMPION PLOUGH proved itself to be the best on both soils, the FIRST PRIZE, of the HIGHEST AMOUNT given by the Society for any kind of Plough, was awarded to J. & F. Howard.

PRIZES awarded to J. & F. Howard, by the Royal Agricultural Society of England, at the WARWICK MEETING, 1859: being not only the LARGEST NUMBER of PRIZES, but the LARGEST NUMBER of FIRST PRIZES awarded to any Exhibitor,

THE FIRST PRIZE FOR THE BEST PLOUGH FOR GENERAL PURPOSES
ALSO A PRIZE FOR THE BEST PLOUGH FOR LIGHT LAND
AND A PRIZE FOR THE BEST PLOUGH FOR HEAVY LAND

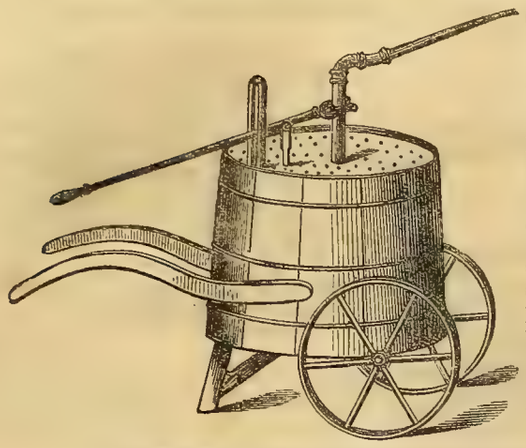
THE FIRST PRIZE FOR THE BEST LIGHT HARROWS
THE SECOND PRIZE ALSO FOR THE BEST LIGHT HARROWS
AND THE FIRST PRIZE FOR THE BEST HEAVY HARROWS.

Every one of HOWARD'S Implements, tried at Warwick, gained a Prize.

CATALOGUES, with full particulars, sent post free on application to

J. & F. HOWARD, BRITANNIA IRON WORKS, BEDFORD.

DEANE & COMPANY'S
HORTICULTURAL TOOLS.

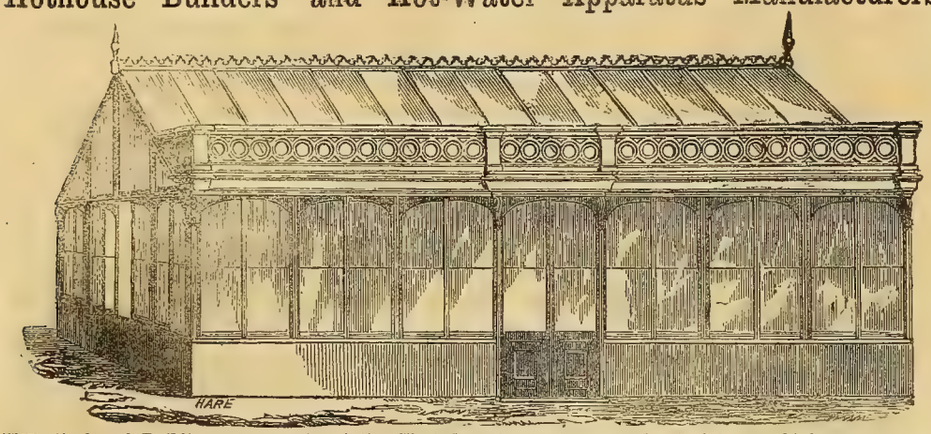


GARDEN ENGINES, Galvanized Iron
Prices 55s., 63s., 105s., 120s.
Ditto, Wood, 84s., 105s, 130s.
Flower Stands, 4s. 6d. each.
Cast Iron Ornamental ditto, to hold 7 Vases, 27s.
Deane's Mowing Machines, with Boyd's Patented Improvements, £4 17s. 6d; £6 6s. 0d., £6 17s. 6d., £7 7s. 0d.
Green House Syringes, 8s., 10s., 18s. 6d
Garden Rollers, £1 14s. 6d., £2., £2 12s. £3 3s., £3 18s., £4 13s., £5 12s., £7 10s.
Garden Stools, 4s. 6d.
Garden Chairs, from 30s.
Boyd's Self-adjusting Scythe, 10s. 6d.
Wire Work, 18in. 4d. per yard run.

Every Implement for Garden use on the lowest Terms.

DEANES :—Opening to the Monument, London Bridge.

J. WATTS & CO.,
Hothouse Builders and Hot-Water Apparatus Manufacturers.

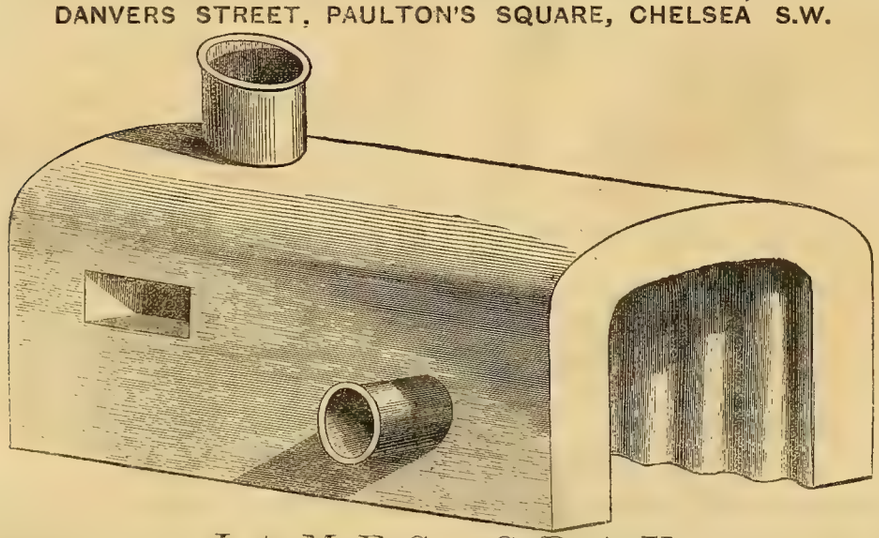


Horticultural Buildings of every description Heated on the most approved principles, combining great power with simplicity of construction. A Range of Houses containing 20,000 feet can be Heated as easily as the smallest Pit. Two Hundred Cucumber Boxes and Lights, and from Three to Four Hundred Lights of all sizes kept in stock, glazed and painted complete, ready for immediate use.

References to the Nobility, Gentry, and the Trade in most of the Counties in England.

Claremont Place, Old Kent Road, London, S.E.

HORTICULTURAL WORKS,
DANVERS STREET, PAULTON'S SQUARE, CHELSEA S.W.



JAMES GRAY

RESPECTFULLY begs to inform the nobility, gentry, Nurserymen, Gardeners, and others, that he continues to carry on the business in all its branches at the above old established premises.

CONSERVATORIES, GREENHOUSES, FORCING HOUSES, VINERIES, PITS, &c.,
of every description, erected on the most approved principles.

HEATING BY HOT WATER.

J. G. having specially devoted his attention for many years to this part of the business, is now fully prepared to Heat every description of public and private buildings, viz :—Churches, Mansions, Warehouses, &c., as well as all structures connected with Horticulture, in the most efficient manner. His system is the most simple that can be adopted—which he has found from long experience to be the best—can be constructed at less cost, and is more easily managed than those of a complicated nature which have attracted the notice of the public.

J. G. begs to call attention to his CAST-IRON CORRUGATED ARCH BOILER, which from its simplicity of construction has not the liability to fracture to which those of a more complex design are always subject. They have been extensively used for many years, and have given the greatest satisfaction.

All business is conducted at this establishment on the principle of lowest remunerative profits consistent with best materials and workmanship.

Plans and Estimates furnished on the shortest notice.

C. STEPHENSON, late STEPHENSON AND SONS, 61, Gracechurch Street, London, Manufacturer of Iron Hurdles, Fencing, &c., Improved Iron and Copper Conical Boilers and Apparatus for Warming Buildings of every description by Hot Water.

Prices and Estimates furnished upon application.

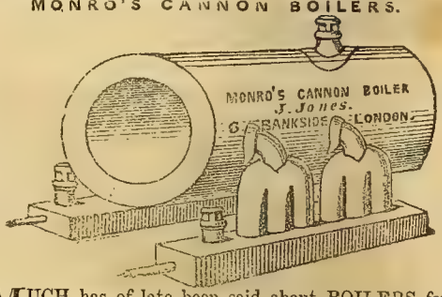
WEST OF ENGLAND HOTHOUSE AND HOT-WATER APPARATUS MANUFACTORY,
BRIDEWELL STREET, BRISTOL.



VINCENT SKINNER (late Partner in and for seven years connected with the firm of John Weeks & Co., of Chelsea), erects Conservatories, Forcing Houses, &c., of the best materials and workmanship. Hothouses, Halls, &c., heated by Hot-water Upright Tubular Boilers of all sizes, from 18 inches by 15 inches, Garden Frames, &c.

V. S. begs to remind gentlemen that labour, &c., being cheaper at Bristol, he can give Estimates lower than London houses. Plans and Estimates free.

MONRO'S CANNON BOILERS.



MUCH has of late been said about BOILERS for Heating by Hot Water, but these Boilers have now proved themselves to be the best at present invented. They are adapted for heating every description of building, and are made of various sizes. The Price of the

24-inch Cast Iron is	.. ..	.. £5 10s. 0d.	each
24-inch Wrought ditto	.. ..	.. 6 10 0	,,
36-inch Cast ditto	.. ..	.. 8 0 0	,,
36-inch Wrought ditto	.. ..	.. 8 10 0	,,

References to Gentlemen and Nurserymen where these Boilers are now at work. The Cannon Boilers are now kept in stock, and are to be had only of J. JONES, 6, Bankside. Also, every description of Saddle and Cylinder Boilers. Hot Water Pipes and Connections at prices lower than those of any other house in London. Estimates for Hot-water Apparatus erected complete in any part of the country, and an Illustrated Catalogue on application to J. JONES, 6, Bankside, Southwark, London.

T. G. MESSENGER, HORTICULTURAL BUILDER and PATENT HOT-WATER APPARATUS and GARDEN ENGINE MANUFACTURER, Loughborough.

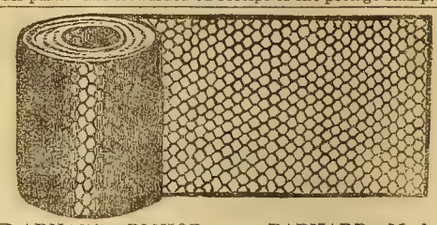
T. G. MESSENGER'S Divisionless Horticultural Erections, ventilated with screw mechanism by which the top or front lights are opened the entire length of the house momentarily, do not fail to give complete satisfaction (as numerous Testimonials can show), for the following reasons :—They are much lighter in appearance, more durable, much stronger, and cheaper than any other can possibly be.

Three years' trial has proved his PATENT BOILER to be superior to any hitherto invented; a great number of houses can be heated at once with this Boiler, with the facility of heating any separately.

Illustrated descriptions and prices of his Patent and greatly approved GARDEN ENGINES sent free upon application; also Plans, Estimates, and Testimonials for Building or Heating. See *Gardeners' Chronicle*, May 21.

HORTICULTURAL BUILDINGS AND HEATING BY HOT WATER.

JOHN R. PEILL, 17, New Park Street, Southwark, Manufacturer of every description of Buildings for Horticultural purposes, and Inventor of the Improved Conical Boiler for heating the same, is prepared to undertake works of any magnitude, and refers among others to the celebrated range of FORCING HOUSES at HER MAJESTY'S GARDENS, FROGMORE, and at SIR ROBERT PEEL'S, DRAYTON MANOR, constructed under the superintendence of his Manager, MR. JOHN JONES; and also to his BOILERS fixed at the CRYSTAL PALACE, the ROYAL BOTANIC GARDENS, REGENT'S PARK, and KEW, and at several hundreds of the Nobility's seats, Public Establishments, and Manufactories in London and the provinces. J. R. P. also manufactures every description of Iron Roofs, Iron Houses, and Iron Fencing, plain and ornamental. Strong Iron Hurdles for Sheep (6 ft. long, 3 ft. high, with 5 bars), 4s. 3d. each; ditto for cattle, 4s. 9d. each. Prices and other particulars forwarded on receipt of one postage stamp.



BARNARD, BISHOP, AND BARNARD, Market Place, Norwich, in consequence of improvements in their machinery for the manufacture of the above article, have been enabled to make a great reduction in the prices.

		Galvanised.	Japanned Iron.
2-inch mesh, 24 inches wide	.. ..	5d. per yd.	4d. per yd.
2-inch ,, strong do.	.. ..	6 ,,	4½ ,,
2-inch ,, intermediate, do.	..	7 ,,	5½ ,,
2-inch ,, extra strong, do.	..	9½ ,,	7½ ,,
1⅝-inch ,, 24 inches wide	..	5½ ,,	4½ ,,
1⅝-inch ,, strong, do.	.. ..	6½ ,,	5¼ ,,
1⅝-inch ,, intermediate, do.	..	7½ ,,	6 ,,
1⅝-inch ,, extra strong, do.	..	10 ,,	8 ,,

All the above kinds can be made of any width (under 8 feet) at proportionate prices. If the upper half is of a coarser mesh than the lower, it will reduce the prices about one-fifth.

Strong Galvanised Poultry Netting, 8½d. per yard, 3 feet wide Galvanised Sparrow-proof Netting for Pheasantries, 2½d. per square foot. Delivered free of expense in London, Peterborough, Hull, or Newcastle. Manufacturers of Improved Strained Wire Cattle and Deer Fencing, Iron Hurdles, &c.

Illustrated Catalogues and Patterns forwarded by post.

LAWNS—IN USE IN THE ROYAL GARDENS.

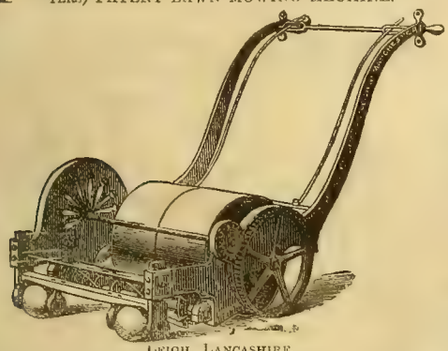
SAMUELSON'S PATENT BOYD LAWN MOWING and ROLLING MACHINE, the only one that will cut wet as well as dry Grass, is guaranteed efficient in use, easily handled, and readily kept in working order. Doing the work of five or six men. Prices, including case and carriage to any railway station in England, from 4*l.* 17*s.* 6*d.* and upwards. Copies of testimonials post free on application to Mr. SAMUELSON'S London Warehouse, 76, Cannon Street West, City; Messrs. DEANE'S, London Bridge; or the Works, Banbury, Oxon.

SHANKS'S PATENT LAWN MOWERS are unquestionably the most perfect Machines for Mowing Lawns, Verges, &c., extant. SHANKS'S Horse and Pony Machines are the only Machines that Mow, Roll, Collect, and Deliver the Grass.—London Agents: COTTAM & Co., 2, Winsley Street, Oxford Street, W.

SHANKS'S PATENT MOWING MACHINES.

J. AND C. LEE, NURSERYMEN, Hammersmith, have a great confidence in recommending those as the most complete Mowing Machines offered to the public. They have had large experience with SHANKS'S Machines, and have ever found them do their work admirably, effecting a great saving in labour, and not liable to get out of order. For terms, apply to the Agents, J. & C. LEE, Nurserymen, Hammersmith.

PICKSLEY, SIMS, AND CO.'S (by ROYAL LETTERS) PATENT LAWN MOWING MACHINE.



LEIGH, LANCASHIRE.

P., S., & Co., in introducing this Lawn Mowing Machine, particularly request a strict examination, or comparison and trial, for simplicity of construction, lightness, regularity of draught, adaptability for mowing every kind of plain, circular, and verge work.

Firstly, we have encased the wheels so as completely to protect from injury flower borders, shrubs, &c., whilst working the machine, at the same time not being liable to obstruction or damage.

Secondly, this machine works easily on undulated and sloping ground; it can be thrust forward or be drawn from behind, the latter being the easiest.

Thirdly, this is the only machine made that will work round quick curves; it will work easily and effectively round circular borders so small as 12 inches in diameter. This very desirable improvement has been obtained by fixing to the front part of the machine our newly-invented universal action, and self-cleaning, anti-friction spherical guiding balls. The continual revolving of these spherical guiding balls, under the most trying circumstances, never fails.

Fourthly, we have attached to this machine a rack and pinion motion, for adjusting the cutting parts (there being a rack and pinion on each side of the machine to act conjointly at the same time upon the full length of the knives), in other machines a slow, tedious, and uncertain operation, into one of quickness, ease, and certainty.

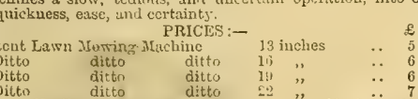
PRICES:—

				£	s.
Patent Lawn Mowing Machine			13 inches	5	10
Ditto	ditto	ditto	16 ,,	6	0
Ditto	ditto	ditto	19 ,,	6	10
Ditto	ditto	ditto	22 ,,	7	0
Patent Chaff and Gorse Cutters from				£2 5 to 22	0
,, Bean, Oat, and Malt Mills				3 10 to 10	10
,, Gorse and Grain Bruisers				10 10 to 21	0
,, Bone Mills				27 10 to 150	0
,, Mangles, various				2 10 to 12	10

ILLUSTRATED CATALOGUES can be had gratis.

MAPPIN'S PRUNING KNIVES IN EVERY VARIETY.

WARRANTED GOOD BY THE MAKERS.



MAPPIN BROTHERS, Queen's Cutlery Works Sheffield; and 67 and 68, King William Street, London.

MAPPIN'S "SHILLING" RAZORS Shave well for Twelve Months without Grinding.

MAPPIN'S 2*s.* RAZORS Shave well for Three Years.

MAPPIN'S 3*s.* RAZORS (suitable for Hard or soft Beards,) Shave well for Ten Years.

MAPPIN'S SUPERIOR TABLE-KNIVES maintain their unrivalled Superiority—handles cannot possibly become loose—the blades are all of the very first quality, being their own Sheffield manufacture.

	Tble. Kns.	Dst. Kns.	Carvers.
Ivory 3⅝ in. Handle, balanced,	20*s.* p. doz.;	16*s.* p. doz.;	6*s.* p. pair
Do. 4 in. do.	25*s.* ,,	18*s.* ,,	9*s.* ,,

MAPPIN'S SILVER-PLATED DESSERT KNIVES and FORKS, in Mahogany Cases.

12 Pairs Knives and Forks, Ivory Handles, in Case	..	80*s.*
12 Do. Pearl Handles, do.	..	130*s.*
12 Do. Silver-Plated Handles, do.	..	80*s.*

MAPPIN'S ELECTRO-SILVER PLATE.—MAPPIN BROTHERS, Manufacturers by Special Appointment to the Queen, are the only Sheffield makers who supply the consumers in London. Their LONDON SHOW ROOMS, 67 and 68, King William Street, London Bridge, contain by far the largest STOCK of ELECTRO-SILVER PLATE in the World, which is transmitted direct from their Manufactory, Queen's Cutlery Works, Sheffield.

	Fiddle Pattern.	Double Thread.	King's Pattern.
12 Table Forks, best quality	£1 16 0	£2 14 0	£3 0
12 Table Spoons, best quality	1 16 0	2 14 0	3 0
12 Dessert Forks, best quality	1 7 0	2 0 0	2 4
12 Dessert Spoons, best quality	1 7 0	2 0 0	2 4
12 Tea Spoons, best quality	0 16 0	1 4 0	1 7

Messrs. MAPPIN BROTHERS respectfully invite buyers to inspect their unprecedented display, which, for beauty of design, exquisite workmanship, and novelty, stands unrivalled. Their illustrated Catalogue, which is continually receiving addition of New Designs, sent per post on receipt of 12 stamps.—MAPPIN BROTHERS, 67 and 68, King William Street, London Bridge; Manufactory, Queen's Cutlery Works, Sheffield.

GREENHOUSES.

HENRY FREEMAN, HOTHOUSE BUILDER and HOT-WATER APPARATUS MANUFACTURER, Triangle, Hackney. Established 20 years. Good substantially built GREENHOUSES, fixed in any part of the kingdom, for cash, 42 feet long by 13 feet, 90*l.*; 21 feet by 13 feet, 50*l.*; 12½ feet by 10 feet, 30*l.* A first-rate CONSERVATORY, 30 feet by 18 feet, 130*l.* A large assortment kept. Estimates for Heating, or any branch in Wood or Iron or Park Fencing.

TO BE SOLD CHEAP, a Span-roofed GREENHOUSE, 29 feet long, and 9 feet 3 inches wide, with door at one end, the other end glass, with partition in the centre. Can be seen by applying to W. WITHAM & Co., Hot-Water Apparatus Manufacturers and Hot-house Builders, &c., 8, George Street, Camberwell Park. The cost, 10*l.*, delivered within 10 miles of London. W. W. and Co. have some good substantial second-hand Boilers, of different sizes and shapes for sale cheap.

BOYD'S SELF-ADJUSTING SCYTHES are the cheapest and best, and being sold adjusted, are ready for immediate use. They can be regulated in an instant to suit any person, and to cut any crop without change of Scythes. For Amateur Gardeners they are very desirable, as they afford a healthy and interesting exercise. They have stood the test of public opinion for seven years, and for excellence, ease, economy, and durability, are highly recommended. Upwards of 50,000 of them have been sold. To be had of every Ironmonger, Hardwareman, and Seedsman in the United Kingdom, and wholesale of the Sole Licensed Makers, WM. DRAY & Co., at their New Agricultural Implement Warehouses, Adelaide Place, London Bridge.

PARKES' STEEL DIGGING FORKS.

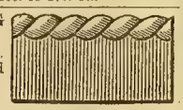
BURGESS AND KEY, 95, Newgate Street, London, being the Wholesale and Retail Agents for these celebrated TOOLS have always a large Stock on hand from which their Customers may select what they may require.

ANTHONY'S PATENT AMERICAN CHURN.—The FIRST PRIZE was again awarded to this Churn in Competition with several others at the Chester Meeting of the Royal Agricultural Society; it has obtained the First Prize given by the Society at every Meeting since 1850.

Messrs. BURGESS & KEY, 95, Newgate Street, strongly recommend it as the most perfect Churn now in use. Full particulars sent on application.

GLAZIERS' DIAMONDS FOR CUTTING HORTICULTURAL and other GLASS, to be had of the Wholesale Manufacturer, JOHN EDWARDS, 20, Sharp's Alley, West Smithfield, London, E.C. Prices from 10*s.* to 27*s.* 6*d.*

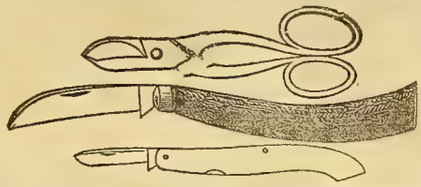
LOOMES' GARDEN EDGING —CABLE PATTERN.



Price at Peterborough. In London.
Straight .. .. .. 5*d.* — 6*d.* per yard
Bends .. .. .. 6*d.* — 7*d.* ,,
If fitted to plans .. 7*d.* — 8*d.* ,,

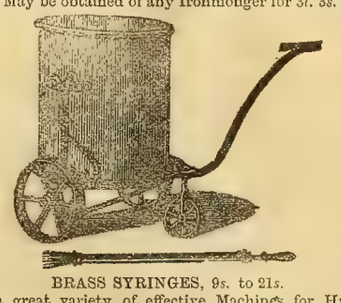
LOOMES & Co., Manufacturers, Whittlesea, near Peterborough.

PAXTON WORKS, SHEFFIELD, ESTABLISHED 1738.



SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.—Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

WARNER'S SWING WATER-BARROW (To Hold Forty Gallons). MOUNTED ON WHEELS 20 INCHES HIGH, will save much of the Gardener's time and labour. May be obtained of any Ironmonger for 3*l.* 3*s.*



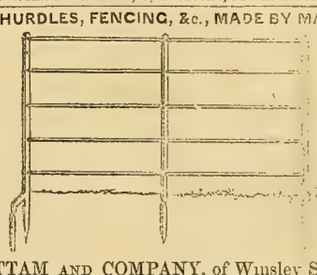
BRASS SYRINGES, 9*s.* to 21*s.*

Also a great variety of effective Machines for Hydraulic purposes, and to supply Gardens, Hothouses, Cottages, Farms, Mansions, or Boards of Health, with every requisite connected with the conveyance and distribution of Liquids.

Fountains suitable for Conservatories, Lawns, &c.

JOHN WARNER & SONS, 8, Crescent, Jewin Street, London.

IRON HURDLES, FENCING, &c., MADE BY MACHINERY.



COTTAM AND COMPANY, of Winsley Street, have invented machinery for making Hurdles, &c.; the bars, instead of being pointed by hand in the old fashioned style, are nipped down by the machine, leaving a shoulder so as to more effectually tighten the standards when rivetted. They are made of superior iron only, and will compete in price with those made by hand from cinder or common iron which so frequently break. Iron Fencing, Gates, and Iron Work of all kinds, both Plain and Ornamental, Conservatories, Hot Water Apparatus and Garden Implements.

Illustrated CATALOGUES free on application to COTTAM & COMPANY, Ironfounders, 2, Winsley Street, Oxford Street, W.

N.B. COTTAM & Co. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

TO BE LET, BRISTOL NURSERY GROUNDS, Kemp Town, Brighton. These Gardens are now to Let for occupation with immediate possession.—Any person desirous of treating for the same may obtain particulars and permission to view the grounds on application to Mr. R. W. LUCAS, 20, Great Marlborough Street, London, W.; and of Mr. A. CHANDLER, Horticultural Valuer, 28, Priory Road, Wandsworth Road, S.

FARM IN HAMPSHIRE TO BE LET

BY TENDER FOR A TERM OF YEARS FROM MICHAELMAS NEXT.

TO BE LET, A SHEEP AND CORN FARM, with Chalk Subsoil, containing about 657 acres, and situated within five miles of the important market towns of Winchester and Romsey. The proprietors do not bind themselves to accept the highest or any Tender.—For further particulars and to view, apply to Mr. HUGH RAYNBIRD, Land Agent, &c., Hackwood, near Basing-toke, to whom Tenders are to be addressed on or before 10th August next.

TO NURSERYMAN AND OTHERS.

TO BE DISPOSED OF, a really first-rate NURSERY, including Glass, Stock, and Business, entire, on very advantageous terms, in the immediate neighbourhood of London. Might suit two or more in partnership, or any country firm requiring a London place of business. Long Lease and capitally situated. Part of the Purchase Money might remain at interest if desired.—For all further particulars apply by letter to A. B. & Co., care of Messrs. Williams & Lloyd, Stationers, 29, Moorgate Street, London.

TO NURSERYMEN AND OTHERS.

TO BE DISPOSED OF, AN OLD-ESTABLISHED NURSERY, of about 8 acres, adjoining a very populous and improving town, and close to the North-Western Railway station. The Vineries, Greenhouses, Shop, &c., are of recent erection, and arranged with every convenience. The Stock is in a flourishing condition, being young, healthy, and in good saleable order, comprising a general assortment of Evergreen and Ornamental Trees, Shrubs, Fruit Trees, Greenhouse and Miscellaneous Plants. The Grounds are ornamental and most eligibly situated, having an excellent frontage on the most leading thoroughfare, and in every way suitable to carry on a very extensive business.—Address, P. G. A., Messrs. Noble, Cooper, & Bolton, Seedsmen, 152, Fleet Street.

TO SEEDSMEN, &c.

TO BE SOLD, a compact BUSINESS in the above line (several years established), with good connections, and capable, with industry and attention, of great improvement. A Nursery and Florist business is attached, which may (if desired) be purchased with it; or, to a person acquainted with its several departments, of persevering habits, and good moral character, a Partnership would not be objected to. The locality is proverbial for its health and beauty.—For further particulars apply by letter to Z. Z., 6, Trafalgar Place, Northam, Southampton.

Sales by Auction.

ORCHIDS (THE COLLECTION OF A GENTLEMAN); AND SOME FINE AND RARE FERNS AND ORNAMENTAL PLANTS.

MR. J. C. STEVENS will Sell by Auction at his Great Room, 38, King Street, Covent Garden, on TUESDAY, August 2, at half-past 12 o'Clock precisely, the collection of ORCHIDS of a gentleman, in fine health, and including—

Aerides crispum	Phalænopsis grandiflora
Cypripedium hirsutissimum	Saccolabium guttatum
,, Fairrieanum	Tricophilia suavis
Cattleya labiata	Vanda cœrulea
,, crispa	,, suavis

and numerous other good sorts. Some Fine and Rare Ferns and Foliage Plants.—May be viewed on the morning of Sale, and Catalogues had.

IMPORTANT SALE.

TO NOBLEMEN AND GENTLEMEN, HORTICULTURIST PLANT GROWERS, AND THE TRADE.

MESSRS. PROTHEROE AND MORRIS have received instructions from Mr. Epps to Sell by Auction (in consequence of the Lease of one of his Nurseries at Maidstone having expired, and immediate possession required), on WEDNESDAY, August 24, and following days, at 11 o'Clock each day, the whole of his large and valuable collection of SPECIMEN PLANTS of all sizes, amounting to upwards of 1000, consisting of the newest and best varieties of Ericas, Azaleas, Pimeleas, Aphelexes, Eriostemon, Acacia, Polygala, Statice, Tremandra, Ixoras (6 vars.), Allamanda, Stephanotis, Rhynchospermum jasminoides, Dipladenias, Medinella, Pleroma elegans (fine), Rondeletia, Vinca, Aphelandras, Ardisias, Brexia, Caladiums, Cissus, Crotons, Dracænas, Striped Yuccas, &c.; also a large quantity of his young stock, including 10,000 to 15,000 new and valuable Greenhouse and Stove Plants, comprising Ericas, Epacris, greenhouse Creepers, French Geraniums, Allamandas, Ixoras, Aphelandras, Dipladiums, Eucharis, Gardenias, Gesnerias, Gloxinias, new Tydeas, Achimenes, Stove Climbers, variegated and ornamental foliaged plants, &c.; also several ranges of newly erected Greenhouses, Pits, &c. May be viewed 14 days prior to the Sale. Catalogues had on the premises, of the principal Seedsmen in London, and of the Auctioneers, American Nursery, Leytonstone, Essex. The Nursery is situated near the Maidstone Railway Station, and about 2 hours' ride from London Bridge Station on the North Kent line.

The valuable NURSERY STOCK extending over 5 Acres (comprising very choice and large specimens of Coniferæ and Ornamental Trees and Shrubs that will remove well and calculated for immediate effect), will be sold about the middle of October next, particulars of which will be duly announced.

LANDS OF CUNNINGPARK FOR SALE.

UPSET PRICE REDUCED.

TO BE SOLD by Public Roup, within the King's Arms Hotel, on TUESDAY, July 26, at 2 o'clock afternoon, the well-known PROPERTY OF CUNNINGPARK, extending to 27 acres 3 roods 10 poles imperial, or thereby, beautifully situated at the confluence of the River Doon with the Sea, about 1½ mile from the Town of Ayr. The Land is in the highest possible state of cultivation, and has been managed for many years by the Proprietor upon the most approved system of modern husbandry. There is a good House, and excellent Offices and Farm Buildings. The Lands are laid throughout with Pipes for the distribution of liquid manure.

ABERCROMBY COTTAGE, a pleasant Sea Bathing Residence, is situated on the Property, and will be included in the Sale.

The Property will be exposed in One Lot at the Reduced Upset Price of 3250*l.*; and if not sold in One Lot it will then be exposed in Two Lots, as follows:—

1. Cunningpark .. £2900 | 2. Abercromby Cottage .. £350

Lot 2 will not be exposed unless Lot 1 is sold.

For further particulars apply to the Liquidators of the Western Bank, at Glasgow; Messrs. BANNATYNES & KIRKWOOD, Writers there; WILLIAM KILPATRICK, Writer in Ayr; or CHARLES G. SHAW, Writer, County Buildings, Ayr, in whose hands are the Title Deeds, Articles of Roup, and a Plan of the Property.—Ayr, July 23.

GREEN'S Unrivalled PATENT GRASS CUTTING, COLLECTING, and ROLLING MACHINES

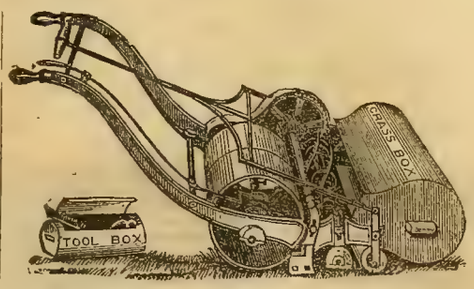
HAVE PROVED TO BE SUPERIOR BY THE APPOINTED JUDGES TO ALL OTHERS IN EVERY CASE OF COMPETITION.

GREEN'S PATENT HAND MACHINE.

LIST OF PRICES.

To cut 14 inches	£6	0	0
To cut 16 inches	6	10	0
To cut 18 inches (for one person)	7	0	0
To cut 20 inches	7	10	0
To cut 22 inches	8	0	0
To cut 24 inches (for two persons) ...	8	10	0

If with Box and Tools for sharpening and keeping the Machine in order, 5*s.* extra; with Guard for preventing accidents and keeping the wheels clean, 5*s.* extra.

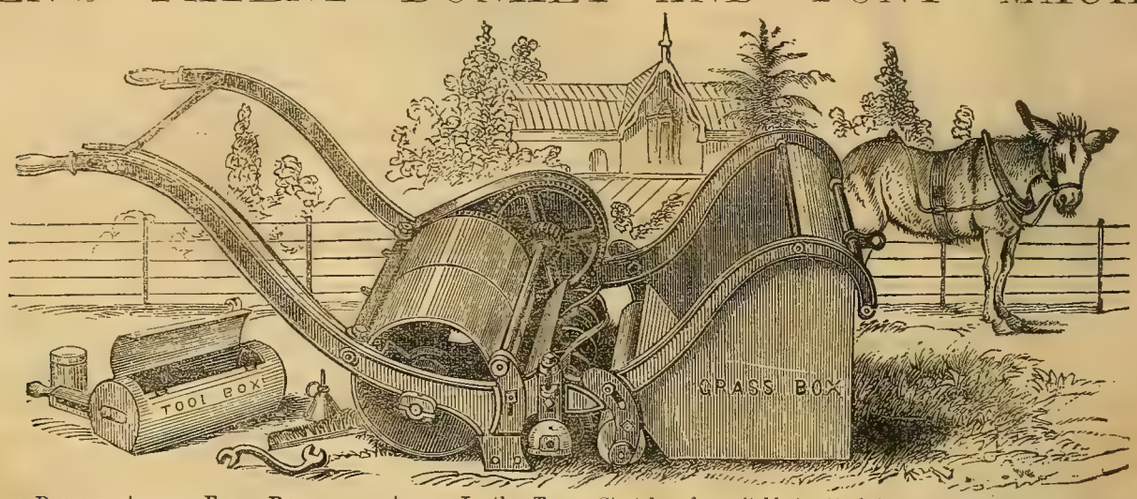


Royal Dublin Society's Horticultural Show, June 15.

Public Trial of Lawn Mowing Machines on the Grounds of the Trinity College, Dublin. The appointed Judges for the Horticultural Implement department were Sir George Hodson, Bart.; Henry L. Fry, Esq., Westmorland Street; and William Kelly, Esq., Portrane, when they unanimously declared GREEN'S PATENT to be the best in all points, and recommended a First Prize to be given for this Machine.

At the Leeds Horticultural Fête in the Kirkstall Abbey Grounds, June 24, a Prize of Two Pounds was awarded by the Judges, who spoke highly of the superiority of GREEN'S Patent Lawn Mowing Machine above all others, and which Machines in all cases of competition have invariably been proved the best by the appointed judges.

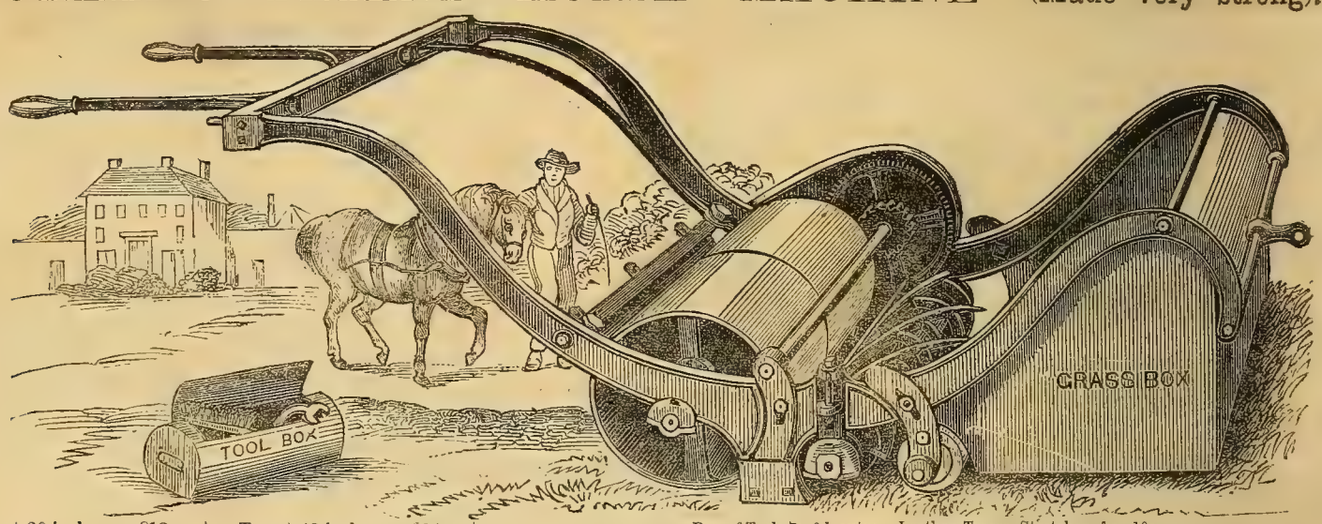
GREEN'S PATENT DONKEY AND PONY MACHINE.



SUITABLE FOR A DONKEY.	FOR A PONY.
To cut 24 inches ... £10	To cut 30 inches ... £15
To cut 26 inches ... £11	Box, Tools, &c., 6*s.* 6*d.* extra.

Leather Traces, Stretcher, &c., suitable to attach to common harness or chain traces, 7*s.* 6*d.*
Leather Boots, suitable for Donkey's feet, 16*s.*; ditto for a Pony, 20*s.* per set of four.
Guard for covering Wheels, 5*s.* extra.

GREEN'S PATENT HORSE MACHINE (Made very strong).



To cut 30 inches ... £18	To cut 42 inches ... £24
To cut 36 inches ... £21	To cut 48 inches ... £27

Box of Tools 7*s.* 6*d.* extra. Leather Traces, Stretcher, &c., 10*s.*
Boots, per set of four, for Horses' feet, to prevent injury to Lawns, 24*s.* Guard for Wheels, 5*s.* extra.
The above are Nett Cash prices, delivered at any of the principal Railway Stations in England.

TRIAL at the LONDON HORTICULTURAL SOCIETY'S GARDENS, CHISWICK, June 5, 1857. FOUR COMPETITORS.

First trial on level ground, second do. on undulated, third do. on intricate places around trees, &c., when GREEN'S PATENT was unanimously declared to be the best in each trial by Colonel Challoner, Dr. Lindley, and G. M'Ewen, Esq., the appointed Judges.

See the *Gardeners' Chronicle* of May 22, 1858, p. 423, under the heading of "Garden Memoranda."

"LONDON HORTICULTURAL GARDENS, CHISWICK.—The Grass in the Arboretum and elsewhere is in excellent condition; it is kept in order by means of one of GREEN'S 2-feet Mowing Machines, which does its work very satisfactorily, and, compared with the scythe, effects a saving of at least one-half."

Extract from London *Times* of June 8, and *Gardeners' Chronicle* of June 12, 1858.

"TRIAL OF MOWING MACHINES.—A considerable number of various sizes having been brought to the ground it was agreed that the trial should take place between One Hand Machine of each exhibitor, as nearly as possible of uniform size and worked by themselves, or their men. The ground to be worked was determined by lot, the pieces having been previously selected of as uniform quality as possible. After trials on level ground and round trees, the Judges, Colonel Challoner and Mr. Edward Easton, declared GREEN'S Patent to be the best.

(Signed) "C. B. CHALLONER, EDWARD EASTON, Judges."

THOS. GREEN respectfully informs the Nobility, Gentry, Gardeners, Amateurs, and others, that upwards of Six Hundred of these Machines were sold in 1857, and to show the increasing demand, above Nine Hundred were sold last season—they have proven to be the best in all cases of competition, are entirely remodelled, and all the little defects pointed out by the Judges last year are now rectified. The Patentee now considers the Machines as near perfection as possible. Although the Machines have been so much improved, at a great additional cost, no extra charge will be made, excepting for a neat Guard, which is placed over the wheels to keep them clean, and to prevent breakage or accidents, which will be 5*s.* extra to parties requiring them.

☞ The Machines are warranted to give satisfaction, or may be at once returned by the party paying the carriage back to Leeds. The Patentee has spared neither time nor expense in producing the best and cheapest Mowing, Collecting, and Rolling Machines ever brought before the public. Hundreds of Testimonials (unsolicited) may be seen, and references given with regard to the superiority of the Machines, by applying to the Patentee. GREEN'S PATENT LAWN MOWERS may be seen daily working at the Crystal Palace, Sydenham, and every information may be obtained of Mr. ROSE, Manager of the Agricultural Department; and also of

T. GREEN, Patentee and Sole Manufacturer, Smithfield Iron Works, Leeds, Yorkshire, & 2, Victoria St., bottom of Holborn, London,

or of THOMAS KENNAN AND SONS, Agents, Dublin, where all inquiries will be duly answered. Repairs done at any of these Establishments.

N.B. The Patentee having made extensive alterations, additions, and improvements in his Factory and Machinery, is now prepared to send Machines off on receipt of order.

Printed by WILLIAM BRADBURY, of 13, Upper Woburn Place, and FREDERICK MULLETT EVANS, of No. 20, Queen's Road, West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and published by them at the Office, No. 5, Upper Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—SATURDAY, July 23, 1859.

THE GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 31.—1859.] SATURDAY, JULY 30. { Price Fivepence. STAMPED EDITION, 6d.

INDEX.

Agri. Imp. Society, Irish	643 c	Incendiarism	641 c
Ayuho farm	641 c	Light, artificial, and vegetation	635 c
Books noticed	638 c	Manure, dry	643 c
British Pomological Society	638 a	Mowing machine	642 a
Cattle food	645 a	Orchard house	638 a
Corn, transmutation of	637 b	Plants, new	636 c
Crops, appearances of	642 a	Pond weeds	640 c
Cucumber, prolific	637 c	Rat, water	637 c
— winter	637 c	Reaping machines	642 a
Farmers' Handy Book	644 a	Rhubarb, Sangster's	637 b
Farming, Buckingham	641 c	Rose Lælia	637 a
Flower peg	637 c	Roses, Messrs. Wood's	639 b
Food, cattle	645 a	Sheep, Leicester	642 a
Gardening, town	636 a	Spraguea umbellata	636 c
Gishurst Compound	637 a	Town gardening	636 a
Hollyhocks, new	638 a	Truffles	637 b
Horticultural Society	638 a	Turnip fly	643 b
— — Kensington Gore	637 a	Vegetation and artificial light	635 c
Horses at Warwick	642 c	Water rat	637 c
Implements at Warwick	643 a	Weeds, pond	640 c
Peaks, Passes, and Glaciers, rev.	638 c	Wood's nursery, Maresfield	639 b

HORTICULTURAL SOCIETY OF LONDON.—

The FLORAL COMMITTEE, at their meeting this day, have made the following Awards:—

FIRST CLASS CERTIFICATES, to

Hollyhock Leonora, from Mr. W. Chater, Saffron Walden
Hollyhock Brunette, from Messrs. Paul & Son, Cheshunt
Selaginella Lobbii, from Messrs. Veitch & Son, Chelsea

The following were COMMENDED:—

Selaginella atroviridis, from Messrs. Veitch & Son
Panicum capillare, from Messrs. Carter & Co., Holborn
Clarkia pulchella, "round-fld. var.," from Messrs. Carter & Co.
Dahlia Miss Sarah Boyce, from Mr. Rawlings, Bethnal Green
Verbena Clara, from Mr. Perry, Birmingham
Fuchsia Solferino, from Mr. G. Smith, Islington
Hollyhock Perfection, from Messrs. Paul & Son
Hollyhock Joshua Clarke, from Mr. Chater
Hollyhock Countess Dowager Jane Somers, from Mr. Chater
Hollyhock Harriot, from Mr. Chater
Hollyhock Novelty, from Mr. Ch[illegible]
Hollyhock Exhibitor, from Mr. C[illegible]r
Hollyhock Warrior, from Mr. Chater

*** The next Meeting of the Committee will be held on August 11, at 2 P.M. Subjects for exhibition must be delivered free at the Rooms by 1 P.M. All persons may exhibit. The Regulations may be had on application to "The Secretary to the Floral Committee."—8, St. Martin's Place, W.C., July 28.

BRITISH POMOLOGICAL SOCIETY.—

THE ANNUAL GENERAL MEETING of the Society will be held on THURSDAY, August 4, for the reception of FRUITS in season, and especially in classes, for which the following premiums are offered:—

Two guineas each for the best Seedling Early Peach and Early Nectarine.

Three guineas, 2 guineas, and 1 guinea for the best second and third collections of GRAPES exhibited with leaves of the varieties, and information as to their origin, &c. The object of this proposition is to bring under one view, for comparison of quality and nomenclature, as many varieties as possible; to which end it is not necessary that they have been wholly cultivated by the parties exhibiting them.

Forms, Copies of Rules, Instructions for Packing, or other information, may be obtained upon application to Mr. W. DAVIDSON, Secretary, to whom parcels, &c, should be addressed, at St. James's Hall, 69–71, Regent Street, London, W., and letters (to avoid delay), at 2, Randolph Road, Maida Hill, London, W.

THE COLLEGE GARDENS, SALISBURY.

DAHLIAS.

B. Thirty-six Blooms (Nurserymen), 1st prize, 3*l.* 3*s.*; 2d prize, 2*l.* 2*s.*; 3d prize, 1*l.* 1*s.*

C. Twenty-four Blooms Fancy (Nurserymen), 1st prize, 2*l.* 2*s.*; 2d prize, 1*l.* 10*s.*; 3d prize, 1*l.*

D. Twenty-four Blooms (Amateurs), 1st prize, 3*l.* 3*s.*; 2d prize, 2*l.* 2*s.*; 3d prize, 1*l.* 10*s.*

E. Twelve Blooms (Amateurs), 1st prize, 1*l.* 10*s.*; 2d prize, 1*l.*; 3d prize, 15*s.*

F. Six Fancy (Amateurs), 1st prize, 1*l.*; 2d prize, 15*s.*; 3d prize, 10*s.*

OPEN TO ALL ENGLAND.—Entries to Classes B, C, and D, 10*s.*; E and F, 5*s.* each.

A Subscription-Plate for the best Six Seedling Dahlias to consist of Flowers raised by the exhibitor from seed in 1858; an affidavit to be made to that effect. Open to all growers subscribing one guinea each. Stands will be provided for these, and all entries must be made by the 20th of August. Three Silver Cups value 5*l.* 5*s.*, 3*l.* 3*s.*, and 2*l.* 2*s.*, will be given.

JOHN KEYNES, Hon. Sec.,

From whom any further particulars may be obtained, if required.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY LIMITED

supply every requisite for the Farm and the Garden.

Registered Offices, Union Road, Plymouth.

FERN CATALOGUE.

ROBERT SIM'S NEW DESCRIPTIVE AND PRICED CATALOGUE, No. 6 (62 pages) of his COLLECTION of BRITISH AND EXOTIC FERNS, can be had, post free, for 8 stamps. Gratis to all previous purchasers of Ferns.

Nursery, Foot's Cray, Kent, S.E.

DRUMHEAD CATTLE CABBAGE PLANTS

(Strong) can be obtained of E. R. GREENUS, Railway Nurseries, Watford, by the 1000, on reasonable terms.

KEMP'S NEW EARLY INCOMPARABLE CABBAGE.

—This excellent variety may be had in sealed packets, at 1*s.* each, of Messrs. HURST & M'MULLEN, 6, Leadenhall Street, London; Messrs. NOBLE, COOPER & BOLTON, 152, Fleet Street; Mr. G. W. DIXON, 48 A, Moorgate Street, or free by Post for 13 postage stamps of E. P. DIXON, 57, Queen St., Hull.

SUPERB CAPE OR GIANT AND BROMPTON STOCKS.

CHARLES ALEXANDER, SEEDSMAN, Edinburgh, can supply the following, which are highly recommended. Sow any time this month. Post free on receipt of Stamps:—

1 packet Young's Scarlet Cape or Giant Stock	..	1*s.*
1 packet Young's White Cape or Giant Stock	..	1*s.*
1 packet Young's Scarlet Brompton Stock	..	1*s.*
1 packet Young's Dark Bloody Wallflower	..	1*s.*

GRASS SEEDS FOR PRESENT SOWING.

SUTTON AND SONS, Reading, can supply at moderate prices the best kinds of GRASS SEEDS for laying down Permanent Pasture, or for mending.

YOUELL AND CO.'S GENERAL PRICED CATALOGUE is now published, and may be had post free on application.—Royal Nursery, Great Yarmouth, July 30.

ARAUCARIA IMBRICATA.

YOUELL AND Co. beg to inform the Trade they have to offer a fine and healthy stock of the above in 1 year old plants.

GLADIOLUS BRENCHLEYENSIS.—An extensive stock of large flowering Bulbs of this magnificent Gladiolus, the colour of which is vermilion scarlet, the best and brightest variety known. Prices of the above on application.

Royal Nursery, Great Yarmouth.

HOLLYHOCKS IN BLOOM.

NURSERIES, SAFFRON WALDEN.

WILLIAM CHATER invites inspection to his new and unrivalled Seedlings of this year; also his collection of these superb Flowers. May be seen on any day, Sundays excepted.

We can still supply Seed of the choicest sorts in separate packets, each .. .. 1*s.* 0*d.*
Saved from 20 best varieties, mixed, per packet .. 5 0
Saved from 12 best varieties, mixed, ,, ... 2 6
Saved from 12 good varieties, mixed, ,, ... 1 0

Saffron Walden Nurseries.—July 30.

CHOICE CALCEOLARIA AND CINERARIA.

J. HENCHMAN is now sending out New Seed of his well-known strain of CALCEOLARIAS and CINERARIAS, in packets at 2*s.* 6*d.* each.—Edmonton, London, N.

CINERARIA, CALCEOLARIA, AND PRIMULA.

F. AND A. SMITH are now sending out SEED of their splendid varieties of the above in sealed packets, without which none are genuine, at 1*s.*, 1*s.* 6*d.*, 2*s.* 6*d.*, and 5*s.* each. To be had also of most respectable Nurserymen and Seedsmen in the Kingdom.—Dulwich, Surrey, S.

THE MAY QUEEN STRAWBERRY—the earliest of all Strawberries.

—Fine well-rooted plants can now be supplied at 12*s.* per dozen; 1*l.* per 25; 1*l.* 15*s.* per 50; 3*l.* per 100. For a full description see an article by W. Roden, Esq., M.D., Kidderminster, June 25, p. 542 of the *Gardeners' Chronicle*.—WILLIAM J. NICHOLSON, Eggleseliffe, Yarm, Yorkshire.

TO THE TRADE.—A short supply of the following have been just harvested:—

MARSHALL'S SKIRVING SWEDE | GREEN-TOP SCOTCH
PURPLE-TOP SWEDE | PURPLE-TOP SCOTCH

All of which have been grown carefully from Bulbs, selected for the purpose.—Apply to the grower, WILLIAM BURGESS, Willow Farm, Iden, by Rye, Sussex.

WHEELER'S "SIR COLIN CAMPBELL" FUCHSIA, the finest double Fuchsia ever offered.—

Three months having elapsed since the above was first sent out, GEORGE WHEELER begs to announce he is prepared to offer to the Trade fine healthy plants about 1 foot high, bushy and showing bloom, at 30*s.* per dozen. Prepaid orders only can be executed at the forementioned low rate.

Warminster Nursery, July 30.

FARFUGIUM GRANDE.

W. H. ROGERS can offer strong plants in pots of the above very beautiful foliaged Chinese hardy plant, at 3*s.* 6*d.* and 5*s.* each, or 30*s.* and 42*s.* per dozen.

ANDROMEDA FORMOSA.

W. H. ROGERS, possessing a large stock of this handsome hardy evergreen flowering shrub, can offer strong selected plants in pots 1*s.* and 1*s.* 6*d.* each, 9*s.* and 12*s.* per dozen, or 50*s.* per 100.

Red Lodge Nursery and American Grounds, Southampton.

NEW HYBRID ACHIMENES.

MILNE, ARNOTT, AND CO. have the pleasure to announce that they will send out on and after the 1st of August the following set of EIGHT NEW HYBRID ACHIMENES, selected from a collection in their possession raised by Mr. Breeze, the well known hybridiser, and of whom M., A., and Co. purchased the entire stock.

Adonis	Mars	Erecta multiflora
Comet	Aurora	
Delicata	Denton Beauty	Mazeppa

These beautiful novelties, are remarkable not only as a successful instance of hybridising, but for strikingly distinct characteristics of foliage, flowers, and habit. In some the flower spikes rise nearly two feet in height, others remain quite dwarf.

The foliage of all is remarkably handsome, in some instances of a rich velvety green marked with deep brown and black, along the course of the ribs and nervures, with single leaves of very large size. The flowers are of the most brilliant and delicate tints, broken with numberless minute markings, and suffused and spotted with almost every shade of crimson, rose, lilac, orange, scarlet, and white. At a time when plants with ornamental foliage are so much and so deservedly in request, the introduction of these striking novelties will, we feel assured, be highly appreciated, especially as they possess flowers of singular beauty and produce them in the greatest possible profusion. As Autumnal and Winter blooming Plants they will be invaluable. Price 1*s.* 6*d.* each, or the eight varieties for 2*l.* 2*s.* The usual discount to the Trade.

MILNE, ARNOTT, & Co., Wandsworth Road, [illegible]don, S.

GOLD AND SILVER FISH.—Upwards of [illegible] on hand, at from 4*s.* to 9*s.* per dozen, 2*l.* per 100, and 18*l.* per 1000; also some very large ones full of spawn, suitable for ponds, 10*s.* per dozen.

A large collection of FOREIGN and BRITISH FERNS in fine condition, 6*s.*, 9*s.*, and 12*s.* per dozen; and a great quantity of CAMELLIAS and AZALEAS, established in pots, well set with flower buds, 18*s.* and 21*s.* per dozen. ORANGE TREES, 2*s.* 6*d.* to 6*s.* each. All kinds of Rustic and Wire Work 20 per cent. under any other house.

154, Kingsland Road, 55 doors from Shoreditch [illegible]. N.E.

LAWNS WITHOUT MOWING.—SPERGULA PILIFERA.

J. A. SUMMERS can supply well-rooted Plant' (taken from the Lawn at Forest Hill), at 4*s.*, 3*s.*, 2*s.*, and 1*s.* per dozen, according to size. A specimen, post free, 1*s.*

Howard Park Nursery, Perry Hill, Sydenham, S.E.

NURSERYMEN supplied with the best GENUINE TOBACCO PAPER at 4*d.* per cwt.; any less than ½ cwt, 10*d.* per lb.—Address, TOM BRYANT, Messrs. Jackson & Sons, Lady Lane, Leeds.

GENUINE TOBACCO PAPER FOR FUMIGATING.

H. APPLEBY (Foreman to Messrs. Ivery & Son, Surrey), takes this opportunity of informing his patrons and the public that he is now offering the above at a very considerably reduced price. It is now sold in packets of 4 lbs. each, at 1*s.* 3*d.* per lb. A liberal discount allowed to the Trade. For testimonials that will guarantee its quality, see *Gardeners' Chronicle*, April 16, p. 333.

Sheet Iron Pots for fumigating, 3*s.* 6*d.* each.

N.B. All orders to be accompanied with a Post-office Order, payable to HENRY APPLEBY, Dorking, Surrey.

BARBER'S POISONED WHEAT Kills Mice and Sparrows on the spot.—In 1*d.*, 2*d.*, 4*d.*, and 8*d.* packets, with directions and testimonials. No risk nor damage in laying this Wheat about. From a single packet hundreds of Mice and Sparrows are found dead. Agents: Barclay & Sons, 95, Farringdon Street, E.C.; W. Sutton & Co., Bow Churchyard, E.C.; B. Yates & Co., 25, Budge Row, London, E.C.; and sold by all Druggists, Grocers, &c. throughout the United Kingdom.

BARBER'S Poisoned Wheat Works, Ipswich, removed from Eye

FRUIT TREES, RIPE STRAWBERRIES, ETC.

TANNED NETTING for Protecting the above from Frost, Blight, Birds, &c.; 2 yards wide, 3*d.* per yard, or 100 yards, 20*s.* Can be had in any quantity of EATON & DELLER, 6 and 7, Crooked Lane, London Bridge, E.C.

TANNED NETTING, for the Protection of Fruit Trees from Frost, Blight, and Birds; also, for the security of fresh sown seeds, at 1*d.* per square yard; 200 yards, 12*s.*; 500 yards, 2*l.* 5*s.*; Scrim Canvas, for wall fruit; Garden Mats.—At EDGINGTON & Co's., Rick Cloth, Tent, and Waterproof Cloth Manufacturers, 17, Smithfield Bars, City, & Old Kent Rd

TO WATER GARDENS in the easiest way is by the BEST FLEXIBLE TUBE. Brass Hand Branches, Roses and Jets, Garden Engines, Syringes, &c.—Apply for Illustrated Price Lists to JAMES SHEATH & Co., the Patent Gutta Percha and India Rubber Factory, 35, Old Street Road, E.C.

N.B. The best articles only manufactured.

TO AGRICULTURISTS AND OTHERS.

EDWARDS'S PATENT CANVAS SUCTION AND DELIVERY HOSE are the best and cheapest in use.

EDWARDS'S PATENT CANVAS DRIVING BANDS FOR CHAFF CUTTING AND THRESHING MACHINES, &c.

C. J. EDWARDS'S Leather and Canvas Hose and Band Manufactory, 3, Great Sutton Street, Clerkenwell, London, E.C.

GLAZIERS' DIAMONDS FOR CUTTING HORTICULTURAL and other GLASS, to be had of the Wholesale Manufacturer, JOHN EDWARDS, 20, Sharp's Alley, West Smithfield, London, E.C. Prices from 10*s.* to 27*s.* 6*d.*

HAYMAKERS, possessing the best features of Nicholson's Prize Machines, with recent improvements peculiar to those supplied and manufactured only for

RICHMOND AND CHANDLER, Salford.

Branch Establishment, South John Street, Liverpool.

N.B. The celebrated Bedford and Stamford Prize HORSE RAKES always in stock, with latest Patented Improvements.

GREEN'S PATENT LAWN MOWERS have proved to be the best by the appointed judges in all cases of competition. Full illustrations, with particulars of improvements for the present season, will appear in this Paper next week.

THOMAS GREEN, Patentee and Sole Manufacturer, Smithfield Iron Works, Leeds, Yorkshire; and 2, Victoria Street, bottom of Holborn, London, E.C. Repairs done at either of the Establishments, where every information may be obtained.

LAWNS—IN USE IN THE ROYAL GARDENS.

SAMUELSON'S PATENT BOYD LAWN MOWING and ROLLING MACHINE, the only one that will cut wet as well as dry Grass, is guaranteed efficient in use, easily handled, and readily kept in working order. Doing the work of five or six men. Prices, including case and carriage to any railway station in England, from 4*l.* 17*s.* 6*d.* and upwards. Copies of testimonials post free on application to Mr. SAMUELSON'S London Warehouse, 76, Cannon Street West, City, E.C. DEANE'S, London Bridge, E.C.; or the Works, Banbury, Oxon.

SHANKS'S PATENT LAWN MOWERS are unquestionably the most perfect Machines for Mowing Lawns, Verges, &c., extant. SHANKS'S Horse and Pony Machines are the only Machines that Mow, Roll, Collect, and Deliver the Grass.—London Agents: COTTAM & Co., 2, Winsley Street, Oxford Street, W.

SHANKS'S PATENT MOWING MACHINES.

J. AND C. LEE, NURSERYMEN, Hammersmith, have great confidence in recommending these as the most complete Mowing Machines offered to the public. They have had large experience with SHANKS'S Machines, and have ever found them do their work admirably, effecting a great saving in labour, and not liable to get out of order. For terms, apply to the Agents, J. & C. LEE, Nurserymen, Hammersmith, W.

CAST-IRON GARDEN ORNAMENTS, viz.—

ORNAMENTAL VASES, of various sizes, do. with pedestal, GARDEN CHAIRS and STOOLS, RUSTIC GARDEN SEATS and TABLES, both plain and bronzed, also GARDEN ROLLERS of all sizes.—Prices on application to J. JONES, Iron Merchant, 6, Bankside, London, S.E.

SLATE WORKS, ISLEWORTH, MIDDLESEX, W.

EDWARD BECK MANUFACTURES in SLATE a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener, Sundays excepted. PRICED LISTS of PLANT TUBS and BOXES forwarded on application.

GARDENERS' CHRONICLE

LOOMES' GARDEN EDGING —CABLE PATTERN.



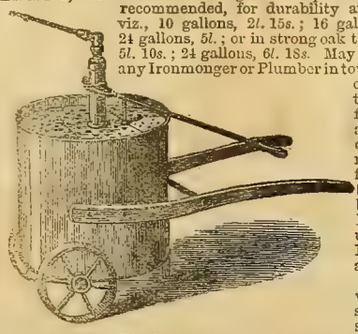
	Price at Peterborough.	In London.
Straight	5*d.* —	6*d.* per yard
Bends	6*d.* —	7*d.* ,,
If fitted to plans ..	7*d.* —	8*d.* ,,

LOOMES & Co., Manufacturers, Whittlesea, near Peterborough.

HORTICULTURAL BUILDINGS AND HEATING BY HOT WATER.

JOHN R. PEILL, 17, New Park St., Southwark, S.E, Manufacturer of every description of Buildings for Horticultural purposes, and Inventor of the Improved Conical Boiler for heating the same, is prepared to undertake works of any magnitude, and refers among others to the celebrated range of FORCING HOUSES at HER MAJESTY'S GARDENS, FROGMORE, and at SIR ROBERT PEEL'S, DRAYTON MANOR, constructed under the superintendence of his Manager, MR. JOHN JONES; and also to his BOILERS fixed at the CRYSTAL PALACE, the ROYAL BOTANIC GARDENS, REGENT'S PARK, and KEW, and at several hundreds of the Nobility's seats, Public Establishments, and Manufactories in London and the provinces. J. R. P. also manufactures every description of Iron Roofs, Iron Houses, and Iron Fencing, plain and ornamental. Strong Iron Hurdles for Sheep (6 ft. long, 3 ft. high, with 5 bars), 4*s.* 3*d.* each; ditto for cattle, 4*s.* 9*d.* each. Prices and other particulars forwarded on receipt of one postage stamp.

JOHN WARNER AND SONS, Crescent, Jewin St., London, E.C.—GALVANISED IRON TUB GARDEN ENGINE, with WARNER'S Registered Spreader, is strongly recommended, for durability and low price, viz., 10 gallons, 2*l.* 15*s.*; 16 gallons, 3*l.* 15*s.*; 24 gallons, 5*l.*; or in strong oak tub, 14 gallons, 5*l.* 10*s.*; 24 gallons, 6*l.* 18*s.* May be obtained of any Ironmonger or Plumber in town or country, or of the patentees and Manufacturers; as also Machinery of all kinds for raising Water from any depth to any height by Steam, Horse, or Manual Power. Prices sent on application.



Syringes of various constructions and sizes from 9*s.* upwards. Metallic String from 10*d.* to 1*s.* 2*d.* per lb.

GREENHOUSES.

HENRY FREEMAN, HOTHOUSE BUILDER and HOT-WATER APPARATUS MANUFACTURER, Triangle, Hackney, N.E. Established 20 years. Good substantially built GREENHOUSES, fixed in any part of the kingdom, for cash, 42 feet long by 13 feet, 90*l.*; 21 feet by 13 feet, 50*l.*; 12½ feet by 10 feet, 30*l.* A first-rate CONSERVATORY, 30 feet by 18 feet, 130*l.* A large assortment kept. Estimates for Heating, or any branch in Wood or Iron or Park Fencing.

GUTTA PERCHA TUBING FOR WATERING GARDENS.

THE GUTTA PERCHA COMPANY have the pleasure to acknowledge the receipt of the following *Testimonial from* Mr. J. FARRAH, *Gr. to* BOSWELL MIDDLETON JALLAND, Esq., *of Holderness House, near Hull.*

"I have had 400 feet of your Gutta Percha Tubing, in lengths of 100 feet each, with union joint, in use for the last 12 months for watering these gardens, and I find it to answer better than anything I have ever yet tried. The pressure of the water is very considerable, but this has not the slightest effect on the tubing. I consider this tubing to be a most valuable invention for Gardeners, inasmuch as it enables us to water our gardens in about one-half the time, and with one-half the labour required."

Manufactured by the Gutta Percha Company, Patentees, 18, Wharf Road, City Road, London, E.C., and sold by their Wholesale Dealers in town and country.

BY APPOINTMENT.

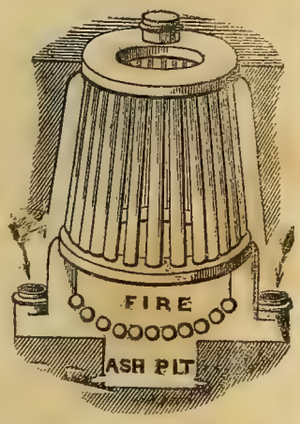
HORTICULTURAL BUILDING & HEATING BY HOT WATER.

STEAM POWER WORKS.

JOHN WEEKS & COMPANY



BEG respectfully to call the attention of the Horticultural World to the more than usual facilities at their command to offer superior Horticultural Erections of every style and description at lowest possible prices. The extensive additions to their Machinery, Workshops, Iron Foundry, and Plant now form a complete and unequalled Manufactory for the production of every branch of Horticultural Building and Heating by Hot-Water. J. WEEKS & Co.'s ONE BOILER SYSTEM of heating has from its efficiency, cleanliness, and economy, rendered such unbounded satisfaction as now to become almost universally adopted. Numerous Horticultural Establishments of considerable extent formerly heated by 10 or 12 ordinary Boilers, also Churches, Chapels, Schools, Mansions, Warehouses, Hospitals, and Public Buildings are now more effectually heated at an incredible saving of labour and fuel by JOHN WEEKS & Co.'s ONE BOILER SYSTEM.



JOHN WEEKS & COMPANY, King's Road, Chelsea, London, S.W., Horticultural Buildings and Hot-water Apparatus Manufacturers, Engineers, and Iron Founders.

Plans, Estimates, and Illustrated Catalogues Free on application.

SHANKS'

NEW IMPROVED PATENT LAWN MOWING MACHINES,

NOW USED IN ALL THE ROYAL GARDENS.

NEW AND IMPORTANT IMPROVEMENTS FOR

MOWING, ROLLING, COLLECTING, DELIVERING, AND FOR PREVENTING BREAKAGES.

THE Delivering operation enables SHANKS' Machine to do a **third** more work than any other Lawn Mowers, with **three-fourths** less labour to the man who works it. A most valuable improvement has been lately introduced into this already celebrated Machine, which **entirely prevents either the cogs of the wheels from breaking, or the cutter from sustaining injury** should it come in contact with a stone or any hard substance in mowing. These improvements give SHANKS' Mower an immense advantage over all others, and render it by far the most complete that has ever been offered to the Public.

THE NEW PATENT HAND MACHINE

possesses all the improvements of the larger sizes with the exception of the Delivering Apparatus.

PRICES OF THE HORSE MACHINE.

No. 1(*a*).—43-INCH MACHINE (USUALLY DRAWN BY A HORSE)	£27	0	0	No. 3.—30-INCH MACHINE (USUALLY DRAWN BY A PONY)	£17	10	0
No. 1.—42-INCH MACHINE (USUALLY DRAWN BY A HORSE)	24	0	0	No. 4.—25-INCH MACHINE (USUALLY DRAWN BY A PONY OR DONKEY)	13	10	0
No. 2.—36-INCH MACHINE (USUALLY DRAWN BY A HORSE OR PONY)	20	10	0	No. 5.—25-INCH MACHINE (MADE LIGHT FOR A SMALL PONY OR DONKEY)	9	10	0

Machines Nos. 1 (*a*), 1, 2, 3, & 4 have the Patent Delivering Apparatus attached. No. 5 can either be had with or without this improvement; if with it, 30*s.* extra.

PRICES OF THE HAND MOWING AND ROLLING MACHINE

No. 6.—22-INCH MACHINE	£7	17	6	No. 8.—16-INCH MACHINE	£6	10	0
No. 7.—19-INCH MACHINE	7	5	0	No. 9.—13-INCH MACHINE	5	15	0

TESTIMONIALS IN FAVOUR OF SHANKS' NEW HORSE MACHINE:—

From Mr. T. HARLEY, *Gardener to* THOMAS CHAMBERLYNE, Esq., *Cranberry Park, near Winchester.*

"The Gardens, Cranberry Park, July 5, 1859.

"I am happy to be able to add my testimony to the high merits of the Shanks' 30-inch New Horse Lawn Mowing Machine which you sent me. I have put it to work in its trials on rough and uneven ground, which had only been once mown this year with a scythe. It surpassed all my expectations, as it likewise did my employer and other gentlemen who witnessed its working. When taken on the Lawn, where it had a better chance of showing its power, nothing could possibly excel it; after cutting, and the Grass being removed, the Lawn never before looked half so well as it did then. I am quite sure that I shall be able to pay the expense of the Machine this year in the labour saved from the use of the Scythe, and not only that, but it leaves the turf in such fine condition. My opinion is that no one should be without Shanks' Machine, as I believe it to be without exception the best I ever saw worked. *The self-acting apparatus delivering the Grass is the most complete thing brought out in any Mowing Machine inventions.*"

From Mr. ALEXR. SHEARER, *Gardener to the* MARQUIS of TWEEDDALE, *Yester Garden, May* 13, 1859.

"The success of your improved Grass Cutting Machine which we got the other day—especially the delivering part—is a mechanical triumph. Having cut all our Grass with it, I must say that it acts far beyond my expectation, and it performs all you say in your prospectus. We can now go on the whole day without stopping, except to oil the parts that require it. The men are quite in love with it; a good proof of its utility."

☞ FULLY ILLUSTRATED AND DETAILED CIRCULARS ON APPLICATION.

LONDON AGENTS

MESSRS. J. B. BROWN & CO., 18, CANNON STREET, CITY, LONDON, E.C.

TRIFOLIUM INCARNATUM, 3*d.* to 4*d.* per lb.; with hints on its successful cultivation, showing how 3 tons per acre of the most nutritive hay may be secured, the advantages of sowing it where broad Clover is thin, and its superiority to Tares as green food.

PAGE AND TOOGOOD having secured a large breadth of prime quality, offer it at the above low rate for cash.

New Turnip Seed, per lb... .. .. 0*s.* 6*d.*	Italian Rye-grass, per bush, 5*s.* to .. .. 7*s.* 0*d.*
New Rape, do... .. 0 4	Mustard, per lb, 4*d.* to 6 5

Calceolaria and Cineraria, in packets of 2*s.* 6*d.* and 1*s.* each, saved from one of the finest collections in Europe.

Seeds for exportation to all parts of the world.

PAGE & TOOGOOD, Seed Growers and Merchants, Oxford Street; and Above Bar, Southampton.

BUCKLAND SWEETWATER GRAPE.

MESSRS. IVERY AND SON, of Dorking and Reigate Nurseries, feel great pleasure in introducing this fine early WHITE GRAPE, and beg to intimate that they will commence sending out Plants on October 3, in strict rotation, as the orders are received. Price 21*s.* and 31*s.* 6*d.* each.

It received the Premium offered by the Pomological Society for the best Seedling Grape not having a Muscat flavour, Sept. 9, 1858; and also an Extra Prize at Crystal Palace Exhibition, Sept. 8 and 9, 1858; and it is recommended by many Gardeners who have seen it growing and tasted the fruit. For the information of those who have not seen this Grape, J. I. & SON beg to say that they have issued a Circular containing the various periodical reports, and also the names of the Gardeners by whom it is recommended, which they will be pleased to forward on application.—Dorking Nursery, July 30.

HALF-SHRUBBY CALCEOLARIAS.

ROBERT ALEXANDER begs to inform his patrons and the public that carefully HYBRIDISED SEED of the above is now ready for distribution at 2*s.* 6*d.* per packet.

This celebrated and much admired collection has fully sustained its character for superiority the present season, by again carrying off the First Prizes at the Bath, Bristol, and Clifton Horticultural Exhibitions, making three successive seasons of success at each exhibition.

They have also been pronounced by the most experienced Horticulturists of the neighbourhood, as well as others from a distance officiating as Censors, as the most distinct and superior in point of habit that had come under their notice.

Lyncombe Vale, Bath.

CUTHILL'S STRAWBERRY PLANTS will be sent out on and after August 16.

CUTHILL'S EARLY BLACK PRINCE, 5*s.*; selected, 7*s.* 6*d.* per 100.

CUTHILL'S PRINCESS ROYAL OF ENGLAND.—Good size, fine colour, Pine-apple flavour, great bearer, very hardy, good forcer. Per 100, 7*s.* 6*d.*; selected, 10*s.*

CUTHILL'S PRINCE OF WALES.—Good size, rich colour, cone shape, tremendous bearer, first rate for table and preserving. It is earlier and later than Elton on account of its numerous trusses, 7*s.* 6*d.* per 100; selected, 10*s.*

Dr. Lindley told J. C. that he never could depend upon having a Strawberry until he had his breed.

From Charles Hillhouse, Esq.—"Your 100 baskets of Strawberries have given great satisfaction.—June 30."

Best Mushroom Spawn.

CUTHILL'S Pamphlet on the Potato, with 20 more Articles, on the Strawberry, Asparagus, Sea Kale, &c., 2*s.*

CUTHILL on Market Gardening round London, &c., 1*s.* 6*d.*

CUTHILL on the Cultivation of the Mushroom, Killing of Woodlice, &c., 1*s.*

CUTHILL on the better Cultivation of the Vine, 1*s.*

Vegetable Meeting Paper gratis.

Post-Office Orders to be made payable to JAMES CUTHILL, Camberwell, London, S.

SEEDS FOR PRESENT SOWING.

JOHN CATTELL has NEW SEEDS of the following choice articles now ready to send out, in packets post free at the annexed prices. Orders from unknown correspondents must contain a Post-office Order or Postage Stamps for the amount.

	Per packet.—*s. d.*
Calceolaria, from finest large flowered varieties of the richest colours	2 6
,, second quality	1 0
Cineraria, from finest new varieties	2 6
,, from fine older varieties	1 6
,, second quality	1 0
Geranium, from extra fine new French and show vars., 12 seeds	1 0
Hovea Celsii, just gathered; if sown now will vegetate next spring	1 0
Delphinium formosum; if sown now in pans will make good plants to flower next June	0 6
Cyclamen persicum	0 6
Oxalis rosea	0 3

Nursery and Seed Establishment, Westerham, Kent.

CHOICE SEEDS.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that they can now supply the following choice SEEDS, all of which are warranted genuine and of the finest quality.

Per packet—*s. d.*	Per packet—*s. d.*
Calceolaria, herbaceous .. 2 6	Primula sinensis, mixed.. 1 6
Cineraria, from named vars. 2 6	Pansy, from named vars . 1 0
Hollyhock, from named vars. 0 6	Sweet William, from extra fine vars. 0 6

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Stove, Greenhouse, and Hardy Ferns, Miscellaneous Stove, Greenhouse, and Hardy Plants, Variegated and Ornamental foliaged Plants, Conifers, Roses, Rhododendrons, Indian Azaleas, Gloxinias, Fuchsias, Cactuses, &c., is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.



J. CARTER AND CO.'S Select LIST OF CHOICE FLOWER SEEDS FOR PRESENT SOWING,

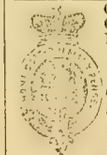
will be found on page 603 of *Gardeners' Chronicle* of July 16.

238, HIGH HOLBORN, London, W. C.



CARTER'S CHAMPION CUCUMBER surpasses Sion House and Lord Kenyon's Favourite for winter and early spring use. Smooth, dark green, straight, and prolific; average length, 1 foot. Price per packet, 1*s.*

J. C. & Co. do not hold themselves responsible for the genuineness of the above unless obtained direct from 238, High Holborn, London, W.C.



CALCEOLARIA, 1*s.*, 2*s.* 6*d.*, 5*s.*
CINERARIA, 1*s.*, 2*s.* 6*d.*, 5*s.*
PRIMULA SINENSIS FIMBRIATA, 1*s.*, 2*s* 6*d*, 5*s.*
} All the same quality.

JAMES CARTER AND CO. beg leave to offer Seeds of the above of *this year's harvesting*, saved from SEVERAL UNRIVALLED COLLECTIONS, and they can with confidence recommend them as being of first-rate quality, both for form, colour, and variety.—JAMES CARTER & CO., Seedsmen, 238, High Holborn, London, W.C.

GEORGE WHEELER, Warminster Nursery, can supply the following, post free:—

CALCEOLARIA SEED of the finest strain in 1*s.* 6*d.* and 2*s.* 6*d.* packets.

CINERARIA SEED from the finest varieties in 1*s.* and 2*s.* 6*d.* packets.

WHEELER'S genuine IMPERIAL CABBAGE, in 6*d.* or 1*s.* packets, or by the lb.

HOLLYHOCK SEEDS from fine named kinds, in 1*s.* and 2*s.* 6*d.* packets.

DELPHINIUM FORMOSUM, 6*d.* and 1*s.* per packet.
,, Chinese, fine vars., 6*d.* and 1*s.* per packet.
,, cœrulescens, 6*d.* and 1*s.* per packet.
,, fine mixed, 6*d.* and 1*s.* per packet.

FIRST PRIZE CALCEOLARIA, CINERARIA, AND PRIMULA.

"Shanakiel House, Cork, June, 1859.

"GENTLEMEN,—The Calceolaria Seed you sent me turned out so remarkably well, my gardener got First Prize for the plants at our recent Flower Show. You will please send me another half-crown packet, for which I enclose postage stamps.

"Messrs. Jackson & Son. "FRANCIS R. LEAHY."

Seed of the same excellence is now being supplied by post or otherwise. CALCEOLARIA, 1*s.*, 1*s.* 6*d.*, and 2*s.* 6*d.*; CINERARIA, 6*d.*, 1*s.*, and 2*s.*; and PRIMULA, 1*s.*, 1*s.* 6*d.* and 2*s.* 6*d.* per packet.

T. JACKSON & SON, Nurserymen and Seedsmen, Kingston, S.W

CINERARIA, HERBACEOUS CALCEOLARIA, AND HALF SHRUBBY DITTO SEED.—These have been saved from Turner's most beautiful varieties; in 1*s.* and 2*s.* 6*d.* packets. Primula and Hollyhock, from the newest and handsomest varieties, 1*s.* per packet. Agents for F. & A. Smith's splendid Cineraria, in 1*s.* 6*d.*, 2*s.* 6*d.*, and 5*s.* packets; also agents for Dobson & Son's splendid Calceolaria, in 1*s.* 6*d.*, 2*s.* 6*d.*, 3*s.* 6*d.*, & 5*s.* packets.—Catalogues of the newest Flower Seeds, and newest Dutch and Cape Bulbs, sent post-paid.—BUTLER & MCCULLOCH, Seedsmen, Covent Garden Market, W.C.

MUSCAT HAMBURGH GRAPE AND OTHER CHOICE SORTS.

LUCOMBE, PINCE, AND CO. have now ready to send out fine strong healthy VINES, raised from eyes, 6 to 9 feet long, of this celebrated and much esteemed new Grape, together with all the leading kinds in cultivation, including that very superior variety

BIDWILL'S SEEDLING,

which is one of the finest Black Grapes ever raised, and being a very free bearer is especially adapted for pot culture, and several specimens of it fruiting in pots can now be seen in the Exeter Nursery; it is also perfectly hardy.

L., P., & Co. having a large experimental Vinery, have had the opportunity for several years of proving their Stock, and can therefore warrant all the sorts true to their names:—

Strong Vines .. 5*s.* 0*d.* each	Very large extra-sized Fruiting } 10*s.* 6*d.* each
Extra strong .. 7 6 ,,	

All are fit for immediate planting, and being well established in pots, can be packed securely, and safely sent to any distance, and Plants, fully to compensate for carriage, will be presented.

Exeter Nursery, Exeter.

CALCEOLARIA, CINERARIA,

AND

PRIMULA SINENSIS FIMBRIATA,

Of first quality, in seed packets, 2*s.* 6*d.* each.

SPERGULA PILIFERA,

The admirable substitute for Grass in forming Lawns, &c., REQUIRING NO MOWING. Seed packets, 6*d.*, 2*s.* 6*d.*, & 5*s.*

E. G. HENDERSON & SON, Wellington Nursery, St. John's Wood, London, N.W.

NEW STRAWBERRY, "OSCAR."

CHARLES TURNER,

HAVING purchased the entire stock of this fine Strawberry, is prepared to receive orders for the same at 42*s.* per 100. Strong plants will be ready on the 20th August.

"Oscar" was submitted to the Fruit Committee of the Horticultural Society, July 5, 1858, accompanied by the following statement:—"The plant is strong and healthy, and bears better than the British Queen in our soil, which is very strong. The fruit will attain a larger size than those sent, the best having been gathered about a week ago. The fruit appears ripe several days before it actually is so. I cannot exactly state its parentage, as I gathered seed of British Queen, Keens' Seedling, and Alice Maud, and saved all together." The Committee reported on its merits as follows:—"Fruit large, ovate, frequently flattened on the sides, or cockscomb shaped; shining dark red, flesh firm, flavour superior, remarkably sweet, with a brisk aroma; it was considered a valuable variety worthy of cultivation."

A silver medal was awarded to it by the Royal Botanic Society, June 15, 1859. It was again exhibited at the last exhibition of this Society, July 6. The *Gardeners' Chronicle* thus speaks of it:—"Of seedlings the best was 'Oscar,' the merits of which may now be considered established. It is certainly the best flavoured of the large kinds, and being a great cropper, must soon find a place in every garden."

It received the prize given for the best seedling Strawberry by the Pomological Society, June 23. In the report of this excellent Society it is thus described:—The premium of One Guinea was awarded to a dish of 'Oscar,' exhibited by Mr. Bradley (the raiser), Gardener to W. F. N. Norton, Esq., of Elton Manor, near Nottingham, in very fine condition. This fruit is very large, ovate, angular, and frequently cristate, but rarely flat or wedge-shaped; seeds rather large and deeply imbedded; colour very dark, becoming deep mulberry when fully matured; flesh red throughout, solid, firm, and juicy; flavour very rich and fine when quite ripe, apparently near in affinity to Sir Harry, on which it was considered an improvement. Particular notice was taken of its firm and solid qualities, which augured well for its powers of enduring package and carriage. The above dish afforded good evidence of this, as the fruit itself was firm, plump, and uninjured, although it had travelled from Nottinghamshire; and, in consequence, the footstalks and calices were dry and withered. It was reported to be a great cropper, next in earliness to Cuthill's Black Prince, and some days earlier than Keens' Seedling."

In a collection of Strawberries exhibited by C. TURNER at the same meeting, it is thus further alluded to in the Society's report:—"The most remarkable variety in the collection was 'Oscar,' a seedling exhibited for the first time last year, when high encomiums were passed on it; and this year's examination has fully borne out the former impression. It was however exhibited by the raiser (who is understood to have supplied plants to Mr. TURNER only) in the seedling class, in which place it will be fully described."

It also received the First Prize for best dish of Strawberries at Nottingham, June 30. It will be seen from the above that it is a Strawberry of long duration, having been shown this season from June 15 till July 6. It was however in fine condition, June 10.

"Oscar" is strongly recommended, and will be found to be one of the best for early forcing.

A Coloured Plate, by Andrews, may be had free by post for 12 postage stamps.

The following most successful Fruit Growers have already ordered Plants:—

Bailey, Mr. Thomas, Shardiloes Gardens, Amersham
Bailey, Mr. H., Nuneham Park
Bousie, Mr., Stoke Park Gardens
Beale, Mr. T., Walton Wood Hall Gardens, Ware
Constantine, Mr. H., Hillingdon Court Gardens
Dodds, Mr., the Gardens of Col. Baker, Salisbury
Dodds, Mr. Geo., Cooper's Hill Gardens, Englefield Green
Drewitt, Mr. J., Denbies, Dorking
Elsworthy, Mr., the Gardens of R. J. Gilman, Esq., Bishopstoke
Forsyth, Mr., Gunnersbury Park Gardens, Acton
Frost, Mr., Preston Hall Gardens, Maidstone
Hill, Mr., Keele Hall Gardens
Ingram, Mr., the Royal Gardens, Frogmore
Ingram, Mr., the Gardens of J. J. Blandy, Esq., Reading
Judd, Mr., Althorp Park Gardens, Northampton
Knight, Mr., the Gardens of H.R.H. the Duchess of Kent, Frogmore
Lawrence, Mr., Farnham Castle Gardens
Little, Mr., the Gardens of A. Darby, Esq., Stoke
Parsons, Mr., Danesbury Park Gardens, Welwyn
Spencer, Mr., Bowood Gardens, Calne
Snow, Mr., Wrest Park, Ampthill
Watt, Mr., the Gardens of J. J. Colman, Esq., Cannon House, Norwich
Whiting, Mr. J. B., the Deepdene
Widdowson, Mr., Rickmansworth

C. TURNER can also supply the following Select Varieties:—

Adair (Elphinstone).—Handsome fruit, second class in flavour
Admiral Dundas (Myatt).—Large fruit, heavy crop, second class in flavour
Black Prince (Cuthill).—Early, small, but good cropper
British Queen (Myatt).—Fine
Carolina superba (Kitley).—Extra fine
Crimson Queen (Myatt).—Very large, great cropper, and fine late variety
Elton Pine.—Late
Filbert Pine (Myatt).—Extra fine flavour and heavy cropper, not large, but good late variety
Prince of Wales (Ingram).—Fine flavour and handsome fruit
Sir C. Napier (Smith).—Large, very heavy crop, good for general purposes
Sir Harry (Underhill).
Wonderful (Jeyes).—Remarkably heavy cropper, second quality; also many other varieties.

THE ROYAL NURSERIES, SLOUGH.

The Gardeners' Chronicle.

SATURDAY, JULY 30, 1859.

MEETINGS FOR THE FOLLOWING WEEK.
THURSDAY, Aug. 4—Pomological..... 2 P.M.

THERE has lately appeared in the *Manchester Guardian* a letter signed "A Gardener," containing the following statement:—

"Twenty years ago I read in HUMBOLDT's works about some experiments he had made with artificial light on vegetation. He planted some Peas in a box, and placed it in a dark room, and when grown up they were of a yellow colour. He

also placed some in a room where daylight was entirely excluded, and suspended a lamp so that the rays of light from it would fall upon them; they grew up as green as though they had been exposed to sunlight.

"This year I have tried experiments on the same subject. I planted vegetables in a place daylight could not penetrate, over which I suspended a paraffine oil lamp, with a reflector to throw the light upon the plants. They have grown up a beautiful dark green. I also lighted a greenhouse with lamps every night, and find it not only increases vegetation, but gives a beautiful deep tinge to the plants."

It is to be regretted that the writer did not authenticate his statement by giving his real name and address; for the subject to which it relates is one of considerable interest.

A good many experiments on the action of artificial light on vegetation are to be found scattered through the writings of physiologists, but they cannot be said to have had any practical application. DE CANDOLLE exposed Sensitive Plants to the light of six lamps, equal to about 5-6ths of diffused daylight, and he found that after a time, having been kept in the dark during the day and been only thus illuminated at night, they changed their hours of "sleep" as it is termed, expanding their leaves at night, and closing them by day. It is also well known that Crocuses will open their flowers under the influence of a good candle.

The same able physiologist was led by his experiments to infer that "artificial light acts on plants like natural light," and hence he supposed that during the long dark winters of northern regions, conservatories might be so artificially illuminated as no longer to suffer from want of sunlight. (See his *Phys. Veg.*, p. 1087.) Nevertheless in another place DE CANDOLLE maintains the doctrine that carbonic acid, which is so immediately resolved into its elements by the feeblest daylight, cannot be decomposed by the most powerful artificial light. It is needless to say how entirely these two statements are opposed to each other. We have therefore always regarded artificial light as having little or no effect upon the functions of vegetation.

It would appear, however, from the statement in the *Manchester Examiner*, that physiologists are wrong. Should this memorandum chance to meet the eye of the writer we trust that he will favour us with some further information upon this curious subject, and also mention in what work of HUMBOLDT the experiments referred to by him are to be found. We are aware that that philosopher's *Flora Friburgensis*, a very scarce book which we never saw, is sometimes referred to for experiments on light,* but we presume that the correspondent of the *Manchester Examiner* has derived his information from some more accessible source.

Should he favour us with the particulars of his own experiments we would ask him to accompany them with a few of the leaves that have acquired their "beautiful green colour" under the sole influence of lamplight.

IT is a fixed idea with some persons that OUTDOOR GARDENING is impossible in LONDON, and almost as much so in its immediate neighbourhood. Our dingy ill-kept squares are pointed at as proofs of this rather disagreeable fact, or we are referred to dirty Geraniums and boxes of starved Mignonette, to be found easily enough by those who care to look for them.

Against this notion we have always protested. One of the earliest objects of the *Gardeners' Chronicle* was to disabuse the metropolitan mind upon a subject which so nearly concerns the enjoyment of people doomed to live amidst vast masses of brickwork overshadowed by the smoke of myriads of coal fires. The question, in fact, resolved itself into one of cleanliness. If the good folks who throng the streets of London were never to wash themselves they would find the place as unwholesome as do unwashed plants. Both have skins, and both require that skin to be continually deprived of the impurities that collect upon it. If there is any difference plants have greater need than ourselves of a clean skin, because they breathe and feed through it. That ordinary care will ensure the health of most plants in London was sufficiently proved 40 years ago by a little garden in the sunken "area" of a building within the quadrangle of Somerset House, about as smoky a place as could well be found. In that "area" might be seen for many years Aucubas, Laurels, Tree Box, and even Rhododendrons, as fine and healthy as at Bagshot. The whole secret of their health consisted in their being frequently washed. It was manifest that what could be done at Somerset House could be done in any other place.

It is not without satisfaction that we perceive here, as in so many other instances, truth ultimately prevailing. Green leaves, gay flowers, and graceful forms of vegetation are evidently increasing in a remarkable degree among even the worst parts of London, as well as in districts more favourably situated. Nothing is more common than to see baskets and pots gaily decorated with brilliant flowers suspended in the kitchen "areas" of streets which ten years ago could not boast a single break to the dismal monotony of a dusty sooty surface.

That improved horticultural skill has brought this about cannot be doubted; the metropolitan Exhibitions, the Temple Gardens, the well kept parks on the West of London, the superb Botanic Garden at Kew, and the Crystal Palace grounds, have not only much increased the love for flowers, but taught people how to preserve and enjoy them at home. The hundreds of thousands of weary, street-sick holiday makers who swarm in these places gradually contract a fondness for plants, which they are eager to foster; and when they find that the cheapest and commonest species will afford as much decoration as the most precious, there remains no reason why their passion should not be gratified. Some Scarlet Runners, Convolvulus majors, or the common Bind weed of the hedgerows, Pelargoniums, Pinks, Moneywort, a cheap evergreen or two, a little water, and as much care as the idle minutes of necessary leisure place within the reach of all, will, without further aid, convert the dirtiest nook in Bloomsbury into a pretty summer garden.

This is no exaggeration. The taste of the general public is unmistakeably improving. Flowers are no longer confined in London to the balconies of the wealthy, but are becoming common in the "areas" of the kitchen. So fast, indeed, is this change operating, that in another 10 years we may expect to find some parts of London in the summer time one universal garden.

By way of illustrating this statement, the following examples are given of gardening in places where it was formerly not thought of. They prove conclusively that care and skill have their usual reward.

In an "area" between Nos. 27 and 28, Bloomsbury Street, is a Grape Vine loaded with fruit, at present the size of Peas. The bunches promise to be of fair average size, and if judiciously thinned there is no good reason why the berries should not swell properly and ripen perfectly. Dust seems to be the only enemy with which the plant has to contend, and a good syringing night and morning from time to time would clear it of that. Of soil it appears to have very little, the roots being boxed up against the wall in very small compass; nevertheless the plant is perfectly healthy, and covers the house front, which faces east, as high as the first floor. The windows of No. 23, nearly opposite, contain boxes full of flowering plants intermixed with Aucubas and even Arbor-vitæ, and below the "area" is full of Geraniums and other gay though inexpensive flowers.

In Bedford Square and Gower Street gardening is chiefly confined to the kitchen windows, which are in some cases, as at Nos. 27 and 36, ornamented with Convolvuluses, Geraniums, and common Moneywort, vulgarly called "Creeping Jenny," hanging down from pots suspended from the top of the windows. Let us observe that this Moneywort or Lysimachia nummularia is one of the handsomest evergreen window trailers; its little fleshy roundish leaves are arranged on its branches with the greatest neatness and regularity, the latter often extending to 2 or 3 feet in length. Its appearance is at all times clean and healthy, and when decorated as it is everywhere at present with pretty yellow flowers, it is one of the most charming plants that can be employed.

In Dudley Street, St. Giles, a locality remarkable for its filth and rags, its old clothes, iron and boot shops, there is an evident desire to catch a glimpse of green herbage. In this street and neighbourhood are numerous bird fanciers, the tops of whose shops melodious with song generally contain a few Geraniums, Chrysanthemums, Moneywort, and even Scarlet Runners. At No. 44, a bootmaker's nearly in the very centre of St. Giles, the windows really look very pretty. Not only is the sill of those of the first floor filled with plants, but a neat green painted miniature railing about half a foot or so below the window also contains a gay assortment of flowering plants, the tops of which cover the pots of the upper set with excellent effect.

Considerably the most attractive little "area" garden we have seen, however, is at No. 37, Holywell Street, Westminster. This faces St. John's burial ground, and though not more than 6 yards square, and sunk some 3 feet below the level of the street, is so full of flowers and other plants as to be extremely ornamental. First of all a raised mound is thrown against the wall, from which it extends in three points over the greater portion of the "area." Its summit and sides are then shelved for the accommodation of plants in pots, and what is not occupied by the latter is covered with large white flints and shells. From the sill of the window hangs the hairy variety of Campanula garganica, and below that arranged in the neatest possible manner are Scarlet Geraniums, Fuchsias, yellow shrubby Calceolarias, Dahlias in pots, Musk, and numerous examples of little trailing white Lobelias. In the corner may be seen Moneywort winding about stones half hid with yellow blossoms, and bounding all are nice little plants of Aucubas and Box. In the arrangement much taste is displayed, and the plants appeared to be all in the highest health. Other examples of a similar kind may be found in the same street, but by no means so striking as this.

In the aristocratic neighbourhood of Belgravia are a few brilliant examples of balcony gardening. One of the best is at No. 22, Grosvenor Place, where a balcony running the entire length of the frontage, as well as the top of a noble portico, is at present a blaze of floral beauty. Among other decorative plants employed here we noticed white and purple Petunias, Geraniums, yellow Calceolarias, and plants of that description; and scrambling over the railings are Nasturtiums and Convolvuluses, the whole producing a fine effect. Over the front of No. 15 was a series of arches covered with Virginian Creeper, and from the centre of each arch hung baskets of flowers, an arrangement at once effective and striking. Virginian Creepers, Vines, and Laburnums frequently occur on house fronts in this neighbourhood—the latter at present badly mildewed.

At No. 98, Sloane Street, is a tolerably gay display of flowers. Round the windows are led Convolvuluses and Virginian Creepers, and in boxes Fuchsias, pink and white Petunias, white Ivy-leaf and other Geraniums, and Moneywort, the effect of which *en masse* is excellent.

At No. 177, Great College Street, Euston Square, is a beautiful box of Mignonette and Geraniums, which we learned was obtained as follows:—Having some Tom Thumb Geraniums three were placed in the box, one at each end and one in the middle, and between them were introduced carefully, without breaking the ball, Mignonette from pots, filling the boxes up with light rich soil, and finishing with a good watering to settle the earth down about the balls. The after treatment consisted in keeping the boxes watered always when they required it; for be it remembered if Mignonette is ever allowed to flag it seldom succeeds well afterwards. In this way a very fine box has been obtained, the Geraniums giving gaiety of colour while the Mignonette yields scent.

At a public-house in the corner of Nutford Place, Edgware Road, the landlord has shown much taste in decorating his premises with flowers, not only in the balcony, but also in suspended baskets similar to those used in the Crystal Palace. The baskets are crammed full of Fuchsias, Geraniums, and Nasturtiums, the latter festooning over the sides. The balcony is also so full of Scarlet Geraniums and Nasturtiums as to be highly effective, and here and there at certain distances apart are Irish Yews, which make not only a good background, but from their sombre appearance serve to vary the colour. Early in the season the balcony is filled with Stocks, which when out of flower give place to the kind of plants just mentioned. Aucubas, Myrtles, and Arbor-vitæ are also grouped on the ground along the sides of the walls within the railings.

New Plants.

219. SPRAGUEA UMBELLATA.

Torrey in Plant. Fremont., p. 4, *t.* 1.

"The root of this remarkable plant is short and tapering, soon dividing into a tuft of thick fleshy fibres. The caudex is short and thick, throwing up from its summit from one to five or six simple scape-like branches, which are from 3 inches to a span high, and somewhat diverging. All the proper leaves are situated at the crown of the caudex, forming a dense rosulate cluster. They are from an inch to nearly 2 inches in length, of a fleshy consistence, obovate-spatulate, with a long tapering base, obtuse, and perfectly entire. The scapes are furnished with several lanceolate distant scales, which

* In some Chemico-physiological Aphorisms placed at the end of the *Flora Friburgensis*, HUMBOLDT says (we quote Arago) that young plants in a state of germination become sensibly green, if, being surrounded by atmospheric air, they are exposed to very intense artificial light.

are scarious on the margin. Spikes 6 to 12 in a terminal spreading umbel, at first conspicuously scorpioid, and gradually unfolding from the base upwards. The peduncles are about half an inch long, and the ovate bracts at their base form an involucrum. Flowers closely imbricated, on short pedicels. The calyx consists of two persistent hyaline sepals, which are right and left of the axis; they are nearly orbicular, emarginate, undulate on the margin, obscurely veined, and of a pale rose colour, except the broad green midrib. Petals four, obovate, rose colour, much shorter than the calyx, two of them nearly opposite the sepals, the others alternate with them, gelatinous-colliquescent after flowering, as in many other Portulacaceæ, and in a withered state, remaining attached to the summit of the young fruit like an indusium. The stamens are constantly but three, and are inserted opposite three of the petals; the fourth (belonging to a lateral petal) wanting: filaments longer than the petals: anthers ovate, fixed by the middle, two-celled, opening longitudinally. The ovary is globose-ovoid, much compressed, one-celled, and contains from 8 to 10 ovules, on conspicuous stalks, which arise from a basilar placenta. Style slender, as long as the stamens, undivided; the stigma minute and three-lobed. Capsule membranaceous, much compressed, two-valved; the valves parallel with the persistent sepals. Seeds lenticular, black and shining, with a crustaceous testa. Embryo hippocrepiform, embracing mealy albumen.

"This remarkable plant undoubtedly belongs to the family of the Portulaceæ; and judging from the description, it seems to be a near ally of the Chilian genus Monocosmia of Fenzl. In the latter, however, there is but a single stamen; the ovules are only from two to four in number; the style is very short as well as two-cleft, and the habit is different.

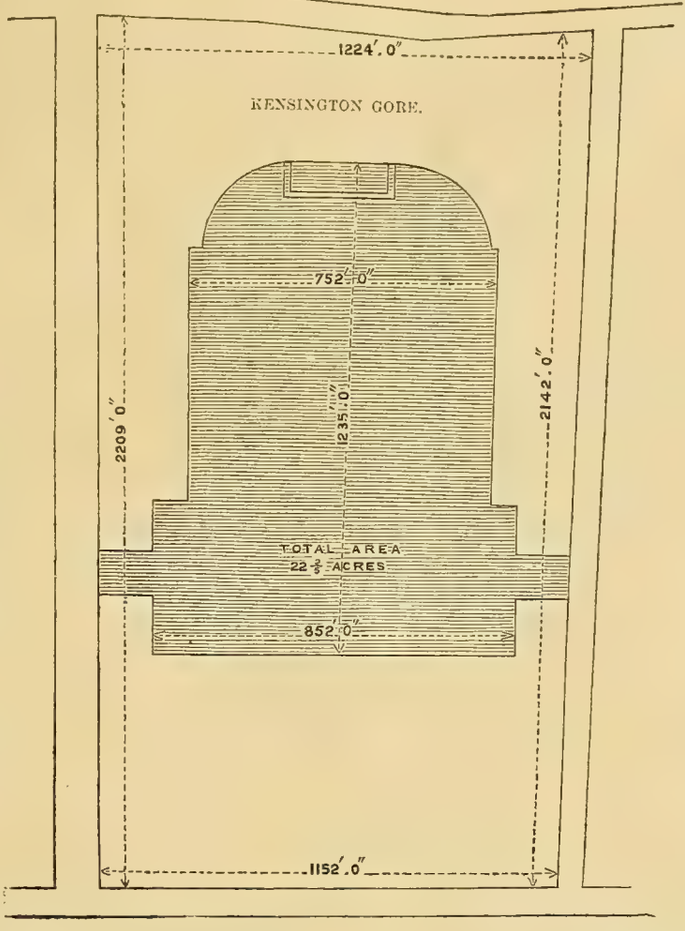
"I have dedicated this genus to Mr. Isaac Sprague, of Cambridge, Massachusetts, so well known as a botanical draughtsman, and especially for the admirable illustrations of the Genera of the Plants of the United States, by himself and Dr. Gray."

The plant occurs at the forks of the Nozah river, in the foot-hills of the Sierra Nevada of Northern California. In flower and fruit, May 22.

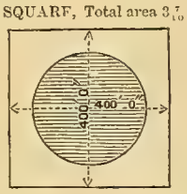
We borrow from Dr. Torrey the foregoing account of this curious and very pretty little plant, lately exhibited by Messrs. Veitch. The delicate transparent bivalve calyx opens just enough to reveal the presence between them of four brilliant amethystine petals, three of which embrace by their involute base one stamen each; while the fourth is left without a stamen.

KENSINGTON GORE.

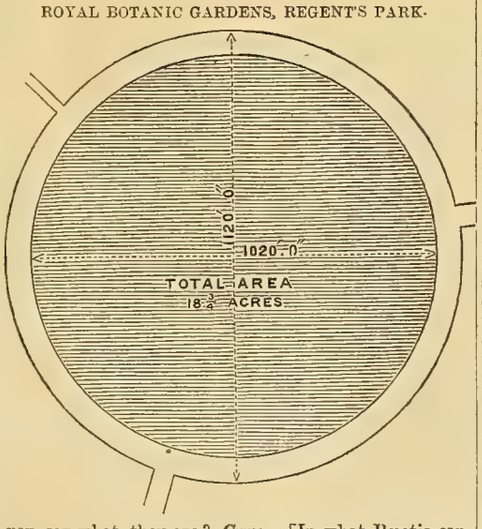
As it may be interesting to contrast the ground on which it is proposed to form the new Horticultural Society's Garden with other open spaces near London, we have caused the accompanying ground plans to be prepared, in which a well-known London square, the Royal Botanic Gardens in the Regent's Park, and the Kensington Gore ground are represented by shaded spaces, each drawn to the same scale.



CAVENDISH SQUARE, Total area 3 7/10 acres, nearly.



ROYAL BOTANIC GARDENS, REGENT'S PARK.



Home Correspondence.

Gishurst Compound.—This seems pretty unanimously voted a good thing, and only requires experience to determine the right proportions and *modus operandi*. I have a greenhouse with six Vines in it and mixed plants below them; and observing signs of mildew on the berries, now swelling fast, determined to try the Compound in the proportions recommended by Mr. Rivers (3 oz. to the gallon). My experience is that this is rather too strong. I mixed it myself and applied it myself. It has injured the tops of the young shoots, and discoloured (like burning) spots are visible on the berries where the liquid found a settlement or hung in drops. No great harm is done, and if the mildew reappears I shall try it again 2 oz. to the gallon. It is rather odd that the above application did no injury to any plants below the Vines, except perhaps the blooms of the Hoya carnosa. Should not the Grapes be well syringed with water the following day to remove the stickiness left by the Compound? *Clericus.* [They should be syringed immediately after application of the Compound.]

Rose Lælia.—If "A Rose Grower" will wait until the weather has become cooler he will find that Lælia is not only different from, but quite superior to, Louise Peyronnet. Its colour during hot weather is pale rose, and somewhat resembles that of the latter kind; but at other times it is much deeper and quite distinct. Its flowers are larger, not so long in the bud, and quite full in the centre, which those of the latter are not. The habit too of Lælia is free and good, which alone would be sufficient to recommend it to all who are acquainted with the wretched and bad growth of Louise Peyronnet. *John Cranston, Nurseries, King's Acre, Hereford.*

Transmutation of Corn.—Walking through a field of Oats with a farmer, my attention was drawn by him to the enclosed seeds which he did not know the name of, but he told me that he thought the Oats had turned into them, which I consider could not well be. Will you say what they are? *Cuvo.* [In what Bœotia can this farmer live? The seeds belong to the common worthless Bromus secalinus. He might as well fancy that his hens were turned into Guinea fowls, because he found one of the latter in his poultry yard.]

Truffles.—Is the enclosed the true Truffle and fit to eat? It grows under Lime trees and Beech trees at this place. *C. E. W., Newnham Paddock, July* 25. [It is Tuber æstivum, not T. cibarium. In quality it is inferior to the latter, but may be substituted for it.]

Sangster's Prince of Wales Rhubarb.—I have forwarded for your inspection a variety of Rhubarb which in my opinion deserves to be better known than it is. With me it is far superior to any other. I would rather have one plant of it than six of "Salt's Crimson Perfection," and the latter is advertised by the most respectable nurserymen in the kingdom, whereas I have not seen this sort advertised for I think five years. Perhaps I ought to say that I cultivate all the new varieties of late years, such as Maclean's Early Scarlet Nonpareil, Salt's Crimson Perfection, Champagne, Anderson's Princess Royal, beside those of earlier date, such as Prince Albert, Victoria, Grey Eagle, &c. I think you will pronounce its flavour as well as fine red colour to be excellent; I sell it at a higher price than any other variety. Although I have no doubt that like other vegetables and fruits, it varies under certain circumstances, yet I think it well deserves a trial by every gardener. *George Lee, Market Gardener, Clevedon.* [This is one of the many forms of the Red Rhubarb, called Buck's, the produce of Rheum undulatum. It is very good, but not superior to others of the same breed that we can see.]

Water Rat.—I have not been so long an observer of the habits of this rat as your correspondent Mr. Waterton, but I can claim an acquaintance with him for nearly 40 years, and my experience does not lead me to give him the character of being "nearly innocuous in his pursuits." On the contrary, I have found him a great enemy to the cultivators of Vines, of which I have been one for many years, and in some seasons have suffered severely, not only from having the wands barked but the roots also devoured. I am sorry to speak ill of him, as I think him an interesting little animal, but it is right that this part of his pursuits should be known. *B., Norfolk.* [This confirms the tale of "Jael," see p. 621.]

Winter Cucumbers.—I have a hothouse in which I can command a moist heat of 75° I have had it arranged on purpose to grow Cucumbers, and should feel obliged to any of your correspondents who would inform me which two sorts are the best to grow in the winter months, and the proper time to sow the seed to enable me to have good Cucumbers at Christmas. I have been told that some sorts are better than others for winter forcing, and should much regret meeting with disappointment through sowing the wrong seed. *De l'Orme.*

Flower Pegs.—As I wanted a great number of these this season for Verbenas I was anxious to obtain something more durable than wood and cheaper than ladies' hairpins; I therefore thought I would make some of zinc wire, which I find answers perfectly. They have hooked heads, and are 3 inches in length. They are also well adapted for all kinds of layering, adding length and strength where desirable. I can make 100 in five minutes myself. They might however be made much quicker, and sold very cheaply. *J. Prior, Gardener, Alton.*

Cucumbers.—Permit me to submit to your inspection a branch of my Improved Prolific Early Cucumber, bearing four fully grown fruit and five in embryo. Let me observe that the specimen sent is not a chance production, nor has it had particular attention for a special purpose. On the contrary I can truly affirm that I have not only had many equal to it but superior during the last two months, during which time I have cut from a pit 30 feet in length (in which I have 21 of the earliest approved fruit-ripening seeds), 375 fruit, on an average considerably superior to those on the branch sent. As regards the history of the variety, I may state that early in my career as a Cucumber grower I found the want of a really useful variety—one that could be depended upon for general purposes, but more particularly for early forcing. At that time "Sion House" was the gardener's sheet anchor for earliness and productiveness; and for size and quality the "Smyrna" was unequalled. I cultivated both these kinds, the former an abundant bearer but deficient in length and solidity, and the latter a robust plant with fruit of ample length, solidity, and flavour, but a notoriously shy bearer; it therefore occurred to me that if I could obtain a cross between these two, embodying the free bearing properties of the one, and the strength, solidity, flavour, &c., of the other, I should have a Cucumber which would give universal satisfaction; and after many fruitless attempts eventually succeeded in obtaining the desired "cross," namely, a robust plant enduring any degree of forcing, bearing early and abundantly all the year round handsome fruit of intermediate length, not liable to warp, and possessing great solidity and superiority of flavour. All who have grown it are satisfied with it, but I think it has sometimes fallen into bad company as I have frequently met with it in a deteriorated state; of late years, however, it has been my constant endeavour to improve it by every means that I knew of, and the improved variety is that which I now send you. *Jas. Craig, Hope Nurseries, Lawrence Street, York.* [It is extremely difficult, if not impossible, to say what is new and what not among Cucumbers. Yours is

evidently, as you state, bred from the Smyrna, and is pronounced by a person at our elbow to be undistinguishable from Munro's Prolific. It seems to be a prodigious bearer.]

Orchard Houses.—On the 1st May, 1858, you did me the favour to insert in your Journal the particulars of my newly-built orchard house. Please be good enough for the information of many of my friends, your readers, to record the success of that undertaking. My Peach and Nectarine trees are trained on a back wall 15 feet high, and have made prodigious growth, filling every space with nice young fruiting wood, which ripens well, and are at this moment loaded with fine fruit. Peaches—Royal George, Grosse Mignonne, and Barrington; Nectarines—Elruge and Violet Hâtive. My trees in pots, plunged to rim, are abundantly fruitful and healthy. My Vines—on rafters 6 feet apart—Black Hamburgh, Royal Muscadine, and Busby's Golden Hamburgh, give the best evidence that good forest loam, with a small quantity of rotted dung, well drained, is not to be equalled by any other compound for Vine borders. On the vexed question of sulphur and lime, permit me to state that I have used it most successfully, and consider it a very excellent mode of disposing of red spider. Gardeners, when they use it, must recollect it is the vapour they require and not the fumes of the sulphur. The first is sure death to the spider, the other kills the plant. Constant syringing with fresh water I really find the best remedy against these pests, as well as green and black fly; and no orchard house can, in my opinion, remain healthy long without at least two liberal washings daily. In short, this house 70 feet long by 10 wide, costing under 50*l.*, will this year produce at least 80 dozen Peaches and Nectarines, 50 dozen Plums, and 25 lbs. of Grapes—a very good return for outlay for the second year. The fruit ripened splendidly last year, with flavour unexceptionable. *J. Green, Burlington Mills.*

Societies.

HORTICULTURAL.—At an ordinary meeting of this Society, held on the 19th inst. in the rooms of the Society of Arts, John Street, Adelphi, the Right Hon. the Earl of Ducie, V.P., in the chair, the following members were balloted for and elected, viz.:—

James Campbell, Esq., the Grove, Hendon
H. White, Esq., Harrold House, Lansdowne Road
Mrs. Pocock, Pucrup Hall, near Tewkesbury
Miss Clendinning, Queen Anne Street, Cavendish Square
Edward Hibbert, Esq., Leyton, Essex
J. Greenwood, Esq., Swarcliffe, Ripley, York
Ashton Wentworth Dilke, Esq., 76, Sloane Street.

A third distribution of plants took place on this occasion, when the following were balloted for, namely:—20 Pinus Don Pedri, for which there were 48 applicants; 20 Tecoma Latrobei, 26 applicants; and 30 Cupressus Cashmeriana, for which there were 55 applicants. The names of Fellows successful in drawing the above will appear in the next number of the "Proceedings of the Society." It was announced that the other plants advertised for distribution, and for which application had been made, were in sufficient quantity to render the Ballot needless, and would shortly be forwarded from the Garden to the respective parties.

July 28.—A meeting of the Floral Committee of the Society was held on this occasion at No. 8, St. Martin's Place, the Rev. Mr. Dix in the chair. Hollyhocks, both in the shape of spikes and cut blooms, were shown in beautiful condition by Messrs. Paul and Chater. Of new kinds the best were Leonora (Chater), deep rose shaded with buff, distinct and beautiful; Brunette (Paul), deep claret; Perfection (ditto), mottled lilac, fine form; Countess Dowager Jane Summers (Chater), fine yellow; Harriet (ditto), lilac; Novelty (ditto), dark purple crimson ground, edged and mottled with blush; Warrior (ditto), brilliant crimson; and Exhibitor and Joshua Clarke, both good kinds. Of Verbenas, several cut blooms of which were shown, Clara (Perry) was the only one selected by the judges for a reward. It is large, both in pip and truss, delicate pink with a green eye, distinct and showy. Of Dahlias, Miss Sarah Boyce (Rawlings) appeared to be a promising kind, which we hope to see again later in the season. Among Miscellaneous Plants was Maschia Wollastoni, bearing a great branched panicle of dull brown and yellow flowers, from Messrs. Veitch. Though not possessed of striking colours yet the fine foliage and stately appearance of this plant will always command attention. The same firm also sent the pretty Selaginella Lobbi and S. atroviridis. From Mr. Macintosh, of Hammersmith, came Lantanas, Plumbago capensis, and a very beautiful specimen of the now seldom seen Gomphocarpus salicifolius, which deserves to be again brought into notice. From Messrs. Parker & Williams were some Gloxinias and Larkspurs; and from Mr. Turner a hybrid Geranium, crimson with a white eye, which promises to be a good bedding kind.

BRITISH POMOLOGICAL: *May 5th.*—Mr. Hogg in the chair. This was the day appointed for competing for the prize of One Guinea, offered by Mr. Spencer, of Bowood, for the best Seedling Late Kitchen Apple. That to which the prize was awarded was raised by Mr. Samuel Bradley, gr. to W. F. N. Norton, Esq., Elton Manor, near Nottingham, and was raised from seed of Dumelow's Seedling in 1850, since which time it has been allowed to grow naturally without grafting. The variety has been named Baron Ward. It is below medium size, and of an ovate shape; the skin is of a fine golden yellow colour, quite smooth and shining; eye slightly open, and stalk short; flesh very tender, crisp, and fine-grained, with a nice, subdued and very agreeable acid, not unlike in flavour that of the Gooseberry Apple. Its acid is less rough and severe than the Dumelow's Seedling, against which it was tested; and it is considered a very valuable culinary Apple for this late season of the year, as it appears to keep well without shrivelling, having been gathered in October. It is reported to be growing on strong adhesive loam, over the lias, in the Vale of Belvoir. The habit of the tree is described as vigorous and healthy; inclined to spread horizontally; and retaining the foliage at the point of the shoots until late in the winter, although ripening its wood perfectly; the young wood is not speckled like Dumelow's Seedling.

Rev. J. Bramhall, of St. John's near Lynn, again sent specimens of Clissold's Seedling, or Lodgemore Nonpareil, a seedling which he submitted to the Society at the meeting of May 6th last year. A very high opinion was then expressed regarding it, and which, this year, was fully sustained. It is a most valuable dessert Apple at this late season.

Mr. Horton, Post Office, Toddington, Bedfordshire, sent a seedling Apple (raised by a friend), and also a variety which had been sent in 1857, on which occasion the Meeting desired to see it again. This year the sender considered the crop inferior to last, when it was reported to have kept sound until the new crop was gathered. The fruit is about the medium size, greenish yellow on the shaded side, and dull red next the sun. A month ago it would have been in good condition, as it had the remains of a good flavoured Apple, something like that of London Pippin, but it had now become mealy. Mr. E. Simpson, gr. to Lord Wrottesley, Wrottesley Hall, Wolverhampton, sent a dish of very beautiful Dumelow's Seedling, large, firm, and heavy. They have been beautifully kept. The Rev. H. Manton, of Sleaford, sent a dish of Scarlet Nonpareil, which were considerably shrivelled, but well flavoured, and were also well kept for that variety. The Rev. Adam Fitch, Thornton Stewart, Bedale, sent a dish of Aromatic Russet, still good in flavour although shrivelled.

June 23*d.*—Mr. Hogg in the chair. The premiums offered at this meeting were a Guinea and Half-a-Guinea, for the best collections of Strawberries, the object being to draw together as many as possible of the varieties in cultivation, that the Society might compare them, test them, and decide upon their respective merits and correctness of nomenclature. Only one collection came within their intentions, and was exhibited by Mr. Turner, of Slough; the first premium was unanimously awarded it. The most remarkable variety in the collection was Oscar, a seedling exhibited for the first time last year, when high encomiums were passed on it; and this year's examination has fully borne out the former impression. For further particulars see notes on seedlings below.

In the following remarks the varieties are arranged according to size; and those nearly allied are brought together. Oscar (Bradley) is after the way of Sir Harry (Underhill), which was also exhibited very ripe and good-flavoured. The last-mentioned variety has not found universal favour; probably because it is not generally known that the fruit requires to be very ripe, and its great firmness permits it to be gathered, packed, and carried long distances without injury. Hooper's Seedling is another of this class, very highly coloured, but inferior to either of the above in flavour. Sir Charles Napier (Smith), bright scarlet, pectinate, and very handsome; very refreshing and juicy, brisk, but not richly flavoured. Doubleday's No. 3, or Crimson Queen (Myatt), is large, coarse, irregular, very pectinate, and deeply furrowed. Colour bright cerise-scarlet. Flesh red throughout, brisk, acid, not rich. It is reported to be a great cropper. British Queen (Myatt) needs no description as it is always good where it succeeds, which is generally on strong soils; as also on light soils, or in dry localities, is its near relative Carolina superba (Kitley), which is now equally well known. Very nearly allied to British Queen is Doubleday's No. 2 (Myatt), both in colour and flavour, but scarcely equal in the latter. It does not, therefore, appear in what point this variety is desirable. Omar Pacha (Ward), was not distinguishable from Rival Queen (Tiley), large, regular, and handsome, pale scarlet, somewhat cristate, with a refreshing flavour, after the way of British Queen. Reported to be a good cropper. Surprise (Myatt), pale scarlet, very cristate, very soft, acid, and deficient in flavour. Wonderful (Jeyes), similar to the above, but longer in form, very corrugate, seeds more numerous, firmer in flesh, juicy, and briskly acid, with a medium flavour. Adair (Elphinstone) is handsome and highly coloured, brisk, but not highly flavoured; reported to be a strong grower and medium cropper. Nimrod (Pince) was so nearly like Adair both in fruit and foliage, that the meeting were unable to distinguish them. Admiral Dundas (Myatt) is large, conoid, somewhat cristate, very rugged, and irregular; colour pale red; flesh white, very juicy, brisk, and fine flavoured. Prince of Wales (Ingram); this kind, now well known, is a favourite for forcing purposes; it was exhibited in good condition; flavour rich and juicy. Elton Pine (Myatt); this was scarcely ripe, but well grown. Filbert Pine (Myatt); this variety deserves to be more known; pale-coloured, very regular in form, medium size, conical, and handsome; flesh pale, with a pink core, firm and solid, with a rich nutty flavour. Eliza (Rivers) was small, and not equal to its average quality. Incomparable (Continental). Mr. Turner reported that he had selected this as the best out of a large number of continental varieties; it was pale in colour, regular in form, and distinct, but soft in flesh, and worthless in flavour. Quinquefolia (Myatt), is a medium sized, elongated fruit; not a good grower, nor first-class in flavour. Black Prince (Cuthill), not any better in quality than when reported on last year; the only merit this variety possesses is earliness, and a slightly perpetual habit, which makes it also a late variety. May Queen (Nicholson), a small, round, and coarse variety, very acid, utterly worthless. Mr. Jones, gr. to E. Rosher, Esq., of Hamilton Terrace, St. John's Wood, exhibited a remarkably fine dish of British Queen, as evidence of what may be done within London in the way of Strawberry growing; they were large, well coloured, and very fine flavoured.

For Seedling Strawberries the premium of One Guinea, offered by Mr. Turner, was awarded to a dish of Oscar, exhibited by Mr. Bradley, gr. to W. F. N. Norton, Esq., of Elton Manor, near Nottingham, in very fine condition. This fruit is very large, ovate, angular, and frequently cristate, but rarely flat, or wedge-shaped; seeds rather large and deeply imbedded; colour very dark, becoming deep mulberry when fully matured; flesh red throughout, solid, firm, and juicy; flavour very rich and fine when quite ripe, apparently near in affinity to Sir Harry, on which it was considered an improvement. Particular notice was taken of its firm and solid qualities, which augured well for its powers of enduring package and carriage. The above dish afforded good evidence of this, as the fruit itself was firm, plump, and uninjured, although it had travelled from Nottinghamshire; and, in consequence, the footstalks and calices were dry and withered. It was reported to be a great cropper, next in earliness to Cuthill's Black Prince, and some days earlier than Keens' Seedling.

July 7.—Mr. Hogg in the chair. An interesting dish of Doubleday's No. 3, or Crimson Queen (Myatt), was exhibited by Mr. Turner, to show its qualities as a late Strawberry. The fruit were even finer than those in the collection last Meeting; but the Meeting did not attribute to it a higher place amongst midseason varieties than would accrue to it from the opinion above expressed; its continuing to produce large fruit later than other kinds may be a point in its favour, but this will be more satisfactorily seen a fortnight hence.

Notices of Books.

Peaks, Passes, and Glaciers. A Series of Excursions by Members of the Alpine Club. Edited by John Ball, M.R.I.A. 8vo, Longmans. Pp. 516.

Now that the tide of war has rolled away from the Swiss frontier, and travellers are beginning to bethink themselves once more of glaciers and mountains, it is time to mention this extremely interesting volume. It appears that a number of gentlemen familiar with mountain travel and fond of scientific adventure, have formed themselves into a club, called the Alpine, where kindred minds can associate for the purpose of communicating information as to past excursions and planning "new achievements." Out of this very agreeable association has grown the work before us, which consists of 18 well written narratives of Alpine adventures and observations, by as many gentlemen well known to be familiar with the world of ice. Among these the names of Tyndall, Ball, and Ramsay are more especially familiar to the general reader. The work is copiously illustrated with chromo-lithographs, excellent maps, and wood engravings.

One of the most adventurous of the club, Mr. Wills, gives a very picturesque account of his passage of the Fenêtre de Salena, from the Col de Balme to the Val Ferret, by the Glacier du Tour, the Glacier de Trient, and the Glacier de Salena, a route that is almost unknown to Swiss explorers. In the course of the excursion a little event served to show the pleasant danger to which the adventurous tourist is exposed. "A steep scramble, not unlike the descent of the rocks of La Tête, in the valley of Fée, conducted us to the edge of the Glacier de Salena. I had for some time past abandoned all hope of sleeping under a roof that night, and was much relieved by finding on the lower part of these rocks a quantity of dwarf Rhododendrons. 'A présent,' I said to Balmat, 'nous sommes sauvés; le feu, au moins, ne nous manquera pas ce soir.' Balmat, with whom the wish was father to the thought, still hoped to reach Orsières, and would not admit the necessity of a bivouac. But R.'s lameness was increasing, and this rough descent tried him severely, and we had entered the ascending shadow of the opposite peaks long before we reached the foot of the rocks. The descent ended in an abrupt precipice, down the face of which we had considerable difficulty in finding any passage at all. Balmat and I pressed on ahead, in order to explore the way, and, while doing so, I was nearer making an end of my expeditions than was at all pleasant. My companions were still entangled in a mass of broken débris which we had quitted, when a large stone dislodged by one of them came bounding after me. I heard it coming, and, as I thought, leaped aside from its path, when suddenly it struck against a rock not many yards from me, and was hurled with a frightful velocity right at my head. There was a boy mentioned

in Drinkwater's 'Siege of Gibraltar' who possessed the useful faculty of seeing the cannon balls coming, and was able to call out to the soldiers in time for them to save themselves; but I doubt whether his skill would have availed him much if the battery had been within a hundred yards of him, and I cannot ascribe it to any dexterity on my part that the missile passed within an inch or two of my head, instead of striking it. I mention the circumstance as an illustration of the great caution that is necessary in ascending or descending steep and stony *arêtes*, where any one is likely to be beneath you. I had in this instance a most narrow escape, and yet the danger was not of a kind that one would have thought much of beforehand." But bounding stones were not the only enemies to be feared in these Alpine solitudes. Mr. Wills and his party, after a desperate but vain attempt to escape from the glacier region by daylight, were obliged to pass the night *al fresco* as they best could. Of this an entertaining account is given; the travellers were half starved, and to add to their discomforts the slope on which they were encamped was so steep "that no one who was not fortunate enough to find a hole in which to nestle could keep himself from slipping, especially as the Bilberry bushes on which we lay were soaking wet with the heavy dew." However, by dividing the night into five watches of 1½ hour each, they managed to get over their difficulty and even to enjoy themselves. "It was a night," writes Mr. Wills, "I would not have missed, with all its inconveniences. The stars shone bright and clear out of the sky of jet: not a wreath of vapour could be seen; the solemn glacier far beneath us showed dimly through the gloom with a dead and spectral white, as if it had been some mighty giant lying in his shroud. The crags beyond it were sombre as a funeral pall, and, in the darkness, seemed to rise to such an enormous height, that the eye grew weary of wandering upwards, before their massive ebony was relieved by the liquid and transparent blackness of the sky, with its thousand glittering points of light. Not a sound broke the awful stillness of the scene, except the faint dashing of the distant torrent, which we had sought so unsuccessfully, and the crackling of the fire as R. heaped upon it fresh armfuls of Bilberries and Rhododendrons. Occasionally, by the fitful glare of the flames, I could see his form moving slowly and noiselessly about, now in bold relief against the ruddy light, now half hidden by the curling smoke, now illuminated by the blaze, as he passed round to the other side in search of fuel, quite unconscious of how much he was adding to the picturesqueness of the scene. I could not help thinking of home, and of those who not improbably were at that very moment thinking of me, little dreaming that I was lying out on the side of the glacier, many a thousand feet above the sea, with nothing between me and the blue vault of heaven. It was a pleasant thought, and led me gently back to another bivouac beneath a rock by the Lac de Tacul, and thence to many an Alpine wandering enjoyed in the same good company; and at length I was passing gently from reverie to sleep, when, alas! the inexorable voice of R. proclaimed that a quarter-past 11 was come, and that it was my turn to feed the fire, instead of indulging in the pleasures of memory or the luxuries of imagination. * * * Had I had much time for reflecting, I think I should have been impressed with the solemnity of the scene even more than when I was contemplating it from my den beneath the rock, for now I had a more uninterrupted view of the dark prospect on every hand, and, as I walked about amongst the prostrate motionless forms of my companions, I felt as if I was the only living thing within sight or ken. There was not, however, much time for such thoughts, for it was full occupation for one man to feed the fire. The Bilberry bushes that one tore up by handfuls were gone in no time. There was a hissing, a little cloud of smoke, and a crackling blaze, and then there was an end of them. The Rhododendron twigs burnt with a bright and cheerful glow, and threw quite a flood of light over our little encampment; but they hardly lasted so long even as the Bilberries. The Junipers had rather more substance, but were full of prickles, and hurt the hands; so that it was really hard work to keep the fire up to the mark; and I found it continually necessary to widen the area of search. I was lucky enough to fall in with a very respectable Alder tree, which I was able to cut in pieces with the saw blade of a large knife; and this was the best *pièce de résistance* I met with; but I cannot say I was sorry when half-past 12 was fairly come and past."

Still more striking is Prof. Tyndall's description of an avalanche, which he witnessed among the *séracs* of the Glacier du Géant:—

"The vast mass of snow collected on the plateau of the Col du Géant, and compressed to ice by its own weight, reaches the throat of the valley, which stretches from the rocks called Le Rognon, to the promontory of the Aiguille Noire. Through this defile it is forced, falling steeply, and forming one of the grandest ice cascades in the Alps. At the summit it is broken into transverse chasms of enormous width and depth; the ridges between these break across again, and form those castellated masses to which the name of *séracs* has been applied. In descending the cascade the ice is crushed and riven; ruined towers, which have tumbled from the summit, cumber the slope, and smooth vertical precipices of ice rise in succession out of the ruins. At the base of the fall the broken masses are again squeezed together, but the confusion is still great, and the glacier is here tossed into billowy shapes, scooped into caverns, and cut into gorges by torrents which expand here and there into deep green lakes.

"Across this portion of the glacier we proceeded westward, purposing to attempt the ascent at the Rognon side. Our work soon commenced in earnest, and perils and difficulties thickened round us as we advanced. The confusion of ice-pinnacles, crags, and chasms, amid which we hewed our way, was very bewildering. Plates of ice jutted from the glacier like enormous fins, along the edges of which we had to walk; and often, while perched upon these eminences, we were flanked right and left by crevasses, the depth of which might be inferred from their impenetrable gloom. At some places forces of extreme complexity had acted on the mass; the ridges were broken into columns, and some of these were twisted half round, as if with a vertical motion; while the chasms were cut up into shafts which resembled gigantic honeycombs, round the edges of which we crept tortuously. Our work was very difficult, sometimes disheartening; nevertheless, our inspiration was, that what man has done man may do, and we accordingly persevered. My fellow-traveller was silent for a time: the brandy had its effect upon him, and he confessed it; but I knew that a contact with the cold ice would soon cause this to disappear, and I resolved that when restored to his normal condition I would not influence his judgment in the least.

"Looking now to the right, I suddenly became aware that high above us, a multitude of crags and leaning columns of ice, on the stability of which we could not for an instant calculate, covered the precipitous incline. We were not long without an illustration of the peril of our situation. We had reached a position where massive ice cliffs protected us on one side, while in front of us was a space more open than any we had yet passed; the reason being that the ice avalanches had chosen it for their principal path. We had just stepped upon this space when a peal above us brought us to a stand. Crash! crash! crash! nearer and nearer, the sound becoming more continuous and confused, as the descending masses broke into smaller blocks. Onward they came! boulders half a ton and more in weight, leaping down with a kind of maniacal fury, as if their sole mission was to crush the *séracs* to powder. Some of them on striking the ice rebounded like elastic balls, described parabolas through the air, again madly smote the ice, and scattered its dust like clouds in the atmosphere. Some blocks were deflected by their collision with the glacier, and were carried past us within a few yards of the spot where we stood. I had never before witnessed an exhibition of force at all comparable to this, and its proximity rendered that fearful which at a little distance would have been sublime.

"My companion held his breath for a time, and then exclaimed, '*C'est terrible! il faut retourner.*' In fact, while the avalanche continued we could not at all calculate upon our safety. When we heard the first peal we had instinctively retreated to the shelter of the ice bastions: but what if one of these missiles struck the tower beside us! would it be able to withstand the shock? We knew not. In reply to the proposal of my companion, I simply said, 'By all means, if you desire it: but let us wait a little.' I felt that fear was just as bad a counsellor as rashness, and thought it but fair to wait until my companion's terror had subsided. We waited accordingly, and he seemed to gather courage and assurance. I scanned the heights and saw that a little more effort in an upward direction would place us in a much less perilous position, as far as the avalanches were concerned. I pointed this out to my companion, and we went forward. Once, indeed, for a minute or two, I felt anxious. We had to cross in the shadow of a tower of ice, of a loose and threatening character, which quite overhung our track. The freshly broken masses at its base, and at some distance below it, showed that it must have partially given way some hours before. 'Don't speak, or make any noise,' said my companion: and, although rather sceptical as to the influence of speech in such a case, I held my tongue and escaped from the dangerous vicinity as fast as my legs and alpenstock could carry me."

Those who are ambitious to follow in the track of the Alpine Club will now know what they have to expect. Let us add that Prof. Ramsay's comparison of the old glaciers of Switzerland and Wales forms by no means the least interesting chapter in the volume, which concludes with suggestions for Alpine travellers by Mr. Ball, and a table of the heights of the chief mountains in the chain of the Alps.

Among other matters the past week has brought us another of Messrs. Longmans' useful Travelling Companions called the *Practical Swiss Guide* (2*s.* 6*d.*), and the following small Natural History works. *A Manual of Protozoa*, by J. R. Greene, B.A. (Longmans), a very good guide to those obscure productions, such as sponges and their allies, that stand on the very frontier of the Animal and Vegetable Kingdoms (2*s.*). A reprint of *Beecher's Pleasant Talk about Fruits, Flowers*, &c. (Strachan, Edinburgh; and Simpson Low, London), already noticed in our columns at p. 607.

Messrs. Ivery have also forwarded their Descriptive *Catalogue of Azalea Indica*, containing 162 varieties, varying in price from 1*s.* 6*d.* to 5*l.*, the latter sum being asked for Criterion.

Garden Memoranda.

Messrs. Wood & Son's Nursery, Woodlands, near Maresfield, Sussex.—The fine collection of Roses which this nursery is well known to contain is now in full bloom, and well worth inspection. The new line of railway from Lewes to the pretty little village of Uckfield now sets the visitor down within some three miles of the nursery, a great advantage compared with travelling 14 miles by road as formerly from Hayward's Heath.

As regards Roses, many of the high coloured kinds have been planted in large masses and in that way are extremely effective. Indeed 20 acres of land are said to be occupied with Roses alone. One bed of standards, consisting chiefly of Géant des Batailles, Lord Raglan, General Jacqueminot, and Duchess of Norfolk, occupied nearly an acre of ground, and rose-coloured and lighter kinds have been planted in equal abundance, and when in full bloom as they are at present are scarcely less conspicuous. A Banksian which covers the walls of Mr. Charles Wood's house has been rendered highly attractive, by budding on it various kinds of summer and autumn Roses, some of which are nearly always in bloom, the Banksian itself being the first. In this way considerable variety not only of foliage but of flowers may be given to this favourite Rose, and a long succession of beautiful flowers of various colours be secured.

Of now comparatively well known varieties none were more striking than Lord Raglan, a brilliant scarlet, large and double. This is said to have been raised from seeds saved from Géant des Batailles; but its flowers are higher coloured and even more dazzling than those of that variety. Of that glowing Rose General Jacqueminot, the majority of its blooms are more double this year than usual, and on the Manetti stock they are said to be even more so than on the Briar. The Manetti also is said to throw unusual vigour into the charming Tea Rose Gloire de Dijon, and others of that class. This stock for some kinds of Roses is therefore a favourite here. Souvenir de Leveson Gower, crimson, very double, and possessing a beautiful Rose scent, is a variety which all must admire and cannot be too largely grown, and of the glorious Jules Margottin too much cannot be said. It is incomparably the finest Rose of its colour, producing its magnificent flowers in the greatest possible abundance. Adelaide Fontaine, deep pink, with a form not unlike that of Louise Peyronnet, is a handsome variety, which must become a favourite; Bacchus is a crimson kind beautifully cupped, which deserves to be better known than it is; Caroline de Sansalles, pale blush, very large and double, is a showy and excellent kind; Comte de Nanteuil is deep rose, large and full, and nearly equal in form to Coupe d'Hébé; Docteur Rushpler, rich deep rose, large and double, looked as if it would make an excellent show Rose—it is one of the few Hybrid Perpetuals which grows sufficiently strong to make a good pillar Rose; Duchess of Norfolk, a rich crimson nearly spineless, has bloomed beautifully this season; Duke of Cambridge, bright rose, appears to be an improvement on Madame Fremion—it cannot therefore fail to be a favourite; Evêque de Nîmes, deep vivid crimson, with petals charmingly disposed in the form of a rosette, is certainly a first class variety, and may be regarded as an acquisition in its class. Scarcely less beautiful, though in a different way, is General Brea, a rich deep pink with large full flowers; General Simpson too, a bright carmine with something of the look and form of Louise Odier, is also a promising Rose; Lord Palmerston, light crimson, is a variety of good shape and will doubtless be a favourite: and of Madame Masson too much can hardly be said, its doubleness and deep purplish crimson colour must ensure it a place in every collection; Madlle. Alice Leroy, delicate pink, is a good addition to its class, and so is Mathurin Regnier, a valuable sort in the way of Wm. Griffiths: Monsieur de Montigny, Queen of Denmark, and Thomas Rivers complete our selection from among the newer kinds of Hybrid Perpetuals. The last is in the way of, but a decided improvement on, Col. Foissy, being larger and in other respects superior to that variety. Of delicate pink Hybrid Perpetuals, none surpassed Mrs. Rivers and Madame Vidot, both of which are excellent in shape, free flowering and truly beautiful.

Among really new Roses the best are Altesse Impériale, a glowing crimson of good form; Anna Alexieff, a pretty kind in the way of Jules Margottin, and a free grower; Anna de Diesbach, like Louise Peyronnet but brighter, a little coarse but certainly one of the largest Roses we have yet seen; Armide: this somewhat resembles President Mououx, but is a better grower; Empereur de Maroc belongs to the Lord Raglan class, but is a stronger grower; Virginal, pure white, a loose but apparently a good grower, which Dr. Henon and others are not. A new white Bourbon, called Octavie Fontaine, has also been added to the list; of its merits, however, little can be said at present. It appears to be a free grower. Cornelie (Noisette), bright rose shaded with lilac, looked as if it would be a good pillar rose. To Tea Roses have been added Madam Damaizin, salmon rose, large, vigorous, and free flowering; Madam Joseph Halphen, pale rose shaded with fawn, and very distinct; and Sterelle, deep shaded rose. The last is one of the most fragrant of Roses. Madame Falcôt is also worthy of notice; when just opening it is even a deeper yellow than Safranot, and in that state is very handsome. [We are of opinion that no safe judgment can be pronounced at present upon these novelties. They must be first tested by exposure to public competition. *Ed. G. C.*]

For bedding purposes the following may be recommended—viz., Auguste Mie, Baronne Prevost, Cardinal

Patrizzi, a very dark kind; Comte de Nanteuil, Duchess of Norfolk (this also makes a good pot Rose), Evêque de Nimes, Géant des Batailles, Général Castellane (this is not apt to mildew, but does not succeed on all soils), Gen. Jacqueminot on the Manetti, Gen. Simpson, Jacques Lafitte, Jules Margottin, Lion des Combats, Louise Peyronnet, Pæonia, M. de Cambacères, M. Knorr, M. Masson, Mrs. Elliott, Prince Leon, Souvenir de la Reine d'Angleterre, Souvenir de Leveson Gower, Bourbon Queen, Sir Jos. Paxton, Souvenir de Malmaison, Mrs. Bosanquet, Fabvier, Crimson and Common China, Aimée Vibert, and some of the hardier Teas, as Gloire de Dijon and Melanie Willermoz.

Charred garden refuse is used largely here in the cultivation of Roses. Messrs. Wood say, however, when Roses are placed out singly on lawns, or in beds amongst other plants, a hole should be made about 18 inches deep, and large enough to contain half a wheel-barrowful of compost; two-thirds of this should be strong turfy loam (if it can be procured from an old pasture it is preferable), and one-third well-decomposed animal manure. The latter should only be used on light hungry soils; on naturally rich ground leaf-mould should be substituted for it. These should be thoroughly mixed together: should the ground be dry at the time of planting, or if it is done in spring, a liberal watering should be given before the soil is all filled in around the plants, and Standards should be securely staked to prevent the winds from moving them, which is very injurious. When beds are planted, the ground should be deeply trenched, and afterwards a good dressing of manure should be applied; a small quantity of the compost recommended above may also be added around each plant. As Roses seldom thrive well in soils that have previously grown them for a number of years, it is advisable that when old beds are renewed, the soil should be removed to the depth of 18 inches, and its place supplied with the above mixture. When a piece of ground is set apart for the exclusive cultivation of Roses, the most open situation that is available should be selected; if wet, it should be drained; if it is inconvenient to use tiles, a layer of from 4 to 6 inches deep of broken stones, or any other coarse material, will answer the purpose; this done, the ground should be trenched as deeply as the nature of the soil will admit; the beds may then be formed according to taste or circumstances, and the planting may be proceeded with as recommended above. November is the best month for transplanting, but it may be safely done from October to March: it is not advisable to prune at the time of, nor immediately after, planting; the first season the plants should all be headed back to two or three buds upon each shoot: this will ensure a vigorous growth. With respect to pruning, this general rule should be borne in mind—that all strong growing Roses should be pruned very moderately, while those of weak growth can scarcely be pruned too severely; the flowering season may be greatly prolonged by pruning a portion of the collection at intervals from December to March.

The stock of young Roses in pots and planted out into open quarters is this season larger than ever it has been in any previous year, a fact sufficiently indicative of the degree of popularity the Queen of flowers continues to enjoy. The young plants have made fine growth and appeared to be clear of mildew and insects. For the extirpation of both the Gishurst Compound has been found successful. For the first it is used mixed with soft water in the proportion of 2 oz. to the gallon, and for red spider and aphides we were informed that ¼ lb. to the gallon is sufficient. It is applied with the syringe, and if the first application is not wholly effectual, recourse is had to a second, which is generally all that is required.

Among Conifers, of which Messrs. Wood have a few choice specimens, was a beautiful example of Libocedrus chilensis, bushy, quite hardy, and about 9 feet in height. The best Cryptomeria here now measures upwards of 30 feet in height, in addition to which were some noble Araucarias, Picea Nordmanniana, Cephalotaxus Fortuni, and Deodars. Of small plants of Thuja gigantea and Cupressus Lawsoniana there were large plantations, as well as some thriving single specimens. Indeed, portions of ground have been set apart exclusively for the growth of fine examples of the above and of other ornamental trees, of which this nursery contains large numbers.

Among fruit trees, to the culture of which great attention is paid, was a variegated-leaved Apricot, which if it should turn out to be useless as a fruit tree may nevertheless be useful for out-door decoration.

Tropæolum speciosum covering the S. side of a verandah deserves notice. Every year about this time it is covered for months with scarlet flowers. To effect this no extra care whatever is required beyond that given to ordinary hardy plants—it stands during winter without protection, and in the summer, as has been stated, it affords a rich profusion of scarlet flowers for months. The only difficulty experienced with it is in its propagation, and that even is in a great measure obviated, since Messrs. Wood have adopted the plan of potting the little suckers which proceed from the roots of the parent plant. These may be found occasionally in great numbers, some as far from the parent stem as 4 and 5 feet. When noticed they are taken off and potted, and ultimately they make vigorous plants. Having at various times tried seed and cuttings, and as often failed to effect their purpose, Messrs. W. now resort wholly to the root plan of increase, which they find requires less care, and is at the same time the surer method of procuring a stock. Associated with it were Clematis Sieboldi and C. azurea grandiflora. The latter comes into flower early, and is therefore now out of bloom. It has, however, been very handsome.

Tall Phloxes, several beds of which were in full bloom, were extremely showy. Among them were many new kinds, some account of the merits of which we hope to give hereafter.

Calendar of Operations.

(For the ensuing Week.)

PLANT DEPARTMENT.

CONSERVATORY, &c.—Let shading be used less frequently as the weather becomes cooler and the season advances. As plants should now be ripening their young wood, they want as much light and even moderate sunshine as possible. In the case of Orchids this is especially necessary, in order that the young leaves and pseudo-bulbs may be thoroughly matured. Plants already in this condition, or nearly so, should be removed forthwith to a cool house, and care taken not to induce them at present to push again, as a fresh start would interfere with their flowering next year. Dendrobium nobile and others of that class sufficiently advanced in growth should also be moved to a house where they could have a moderate and steady temperature, abundance of air, and little water till their stems are ripe and their flower buds formed. Those Orchids which are still in a growing state should be placed in the most favourable positions and encouraged by a nice growing temperature, while the weather continues favourable for ripening and hardening any growths which they may yet make. Afterwards let them be put gradually to rest.

FORCING DEPARTMENT.

PINERY.—Attend carefully to growing stock, keeping the bottom-heat regular, and the atmosphere warm and moist, and use every means to secure rapid vigorous growth. This will not be obtained, however, unless all is right at the root, therefore attend well to watering, and never allow any of the plants to become pot-bound. Give air moderately to young stock, and shut up early in the afternoon, giving the plants a gentle wipe with the syringe, and the house a good steaming by wetting every available surface. Continue to pot a few suckers, as they can be obtained of sufficient strength, and do not allow too many to be produced by one plant, as they weaken each other. Indeed, we never allow a sucker to grow to any size that is not likely to be be wanted for stock, and unless in the case of any scarce sort, never more than two on a plant. Plants growing in beds of soil must be very carefully attended to with water, giving enough at each application to moisten the whole body of soil; for unless this is attended to, the bottom of the bed will sometimes get quite dry, while the surface is moist. VINERIES.—The inside borders of houses intended to furnish a late supply of Grapes should be well soaked with mauure water as soon as convenient, so as to allow of their becoming dry before the damp cloudy days of autumn set in, for damp will be most injurious then, and anything likely to cause it should be avoided. Muscats beginning to ripen should be assisted with fire-heat, for it is hardly possible to ripen these properly at any season without artificial heat; and those for late use should be pushed on, so as to get them ripe by the end of next month at the latest; for those ripened later in the season are seldom of good quality, and we have always found them to hang better when ripened early in autumn than those that were ripened later in the season. FIGS.—The second crop on the earliest trees will be fast advancing towards maturity; as soon as the fruit begins to ripen the atmosphere should be kept dry and rather cool, giving air freely every fine day, and using a little fire on wet cloudy days, to prevent damp and allow of a gentle circulation of air. Use every care to keep the foliage clean and healthy, and clear of insects, and do not crowd the young shoots. MELONS.—Plants on which the fruit is ripening should be kept dry at the root, and freely exposed to air on fine days.

FLOWER GARDEN AND SHRUBBERIES.

Cuttings of Roses may now be taken, and planted in a close cold frame in a northern aspect. In about a month they will have shown a disposition to strike root, when they may be taken up carefully, potted, and plunged in a slight bottom heat. Treated thus they make nice plants in a short time, and if kept under slight protection during winter will fill their pots with roots and be ready for planting out next May. Pink pipings put in early will now be ready for transplanting, and if so this should be done at once, as they will require time to fully establish themselves, so as to prevent frost from injuring them. If the situation ultimately intended for them is vacant they may be planted there at once; but if occupied at present by something else, let the young Pinks be planted 4 inches apart on reserved beds in an open situation, the soil of which should consist chiefly of light loam, to which may be added some charcoal-dust or charred refuse. The rotten manure from an old Mushroom bed answers very well for Pinks, as it encourages a mass of fibres, and produces a healthy but not over gross development of top. As regards bedding plants some memoranda respecting their arrangement next season should now be made. Of the flower garden a rough plan should be made, the beds on which should be numbered and correspond with an accompanying list of plants with which it may be intended to fill them, and along with this should be the quantity required for each bed. In this way accurate information is at once obtained of the quantity of plants which must be propagated immediately by cuttings, and both by these and seed in spring. Disappointment is thus prevented on the one hand, and waste of time and labour on the other. Whilst half hardy plants are in full beauty, a tasteful eye will easily discover the weak and improvable points, and by closely observing the more satisfactory part, will readily perceive the most desirable future arrangement.

HARDY FRUIT AND KITCHEN GARDEN.

The main breadth of Spinach for furnishing the winter supply should be sown at once; also prepare ground for winter Onions. Get a good breadth of Lettuce and Endive planted out for the autumn supply, and sow some hardy sort of Lettuce for planting out against south walls, or in frames, to come in after the frost cuts off the out-door supply. Dig down exhausted plantations of Strawberries, and get the ground planted with winter stuff, if there is not already sufficient of this planted; and make a further sowing of Turnips, if these are likely to be scarce before the winter is over. Attend to cutting and drying herbs as they are ready, and do not allow Shallots to remain in the ground after the tops die down, as, in the event of wet weather, they will make fresh roots, which prevents their keeping. Get a good breadth of Cabbage planted thickly in rich ground to furnish Winter Greens.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.
or the Week ending July 23, 1859, as observed at the Horticultural Gardens.

July.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Temperature of the Air. Min.	Temperature of the Air. Mean	Temperature of the Earth 1 foot deep.	Temperature of the Earth 2 feet deep.	Wind.	Rain.
Friday 22	21	29.876	29.799	82	54	68.0	68	66	S.W.	.07
Satur. 23	"	29.920	29.818	80	52	66.0	68	66	N.E.	.06
Sunday 24	23	30.084	30.052	63	52	60.0	68	66	N.	.90
Mon. 25	24	30.126	30.086	80	41	60.5	68½	65½	W.	.00
Tues. 26	25	30.080	30.009	81	59	70.0	69	65	S.W.	.00
Wed. 27	26	30.059	29.983	82	60	71.0	68½	65½	S.W.	.00
Thurs. 28	27	30.073	29.976	82	61	71.5	69	66	W.	.00
Average		30.031	29.960	79.3	54.1	66.7	68.3	65.7		.13

July 22—Fine; hot; overcast; rain.
— 23—Thunder; rain; hazy; overcast at night.
— 24—Fine throughout; clear.
— 25—Very fine; overcast; lightning at night.
— 26—Clear; quite cloudless; hot; overcast.
— 27—Partially overcast; very fine; cloudy.
— 28—Very fine; cloudy and fine; overcast and hot.
Mean temperature of the week, 3½ deg. above the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 33 years, for the ensuing Week, ending August 6, 1859.

July and August.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 31..	75.0	51.0	63.0	13	0.66 in.	2	4	2	1	4	10	8	2
Mon. 1..	76.0	51.6	63.8	16	1.23	1	2	6	2	3	12	6	1
Tues. 2..	75.9	52.9	64.4	15	1.03	1	4	3	—	7	11	4	3
Wed. 3..	74.8	51.2	63.0	16	0.50	3	4	3	2	5	11	4	1
Thurs. 4..	75.6	51.9	63.8	16	0.85	2	3	4	3	3	14	3	1
Friday 5..	73.7	52.0	62.9	15	0.88	1	4	4	2	4	12	3	3
Satur. 6..	72.9	51.3	62.1	14	0.58	—	6	3	1	5	9	7	2

The highest temperature during the above period occurred on the 1st 1846, and 2d, 1856—therm. 92 deg.; and the lowest on the 1st, 1858—therm. 34 deg.

Notices to Correspondents.

BOOKS: *Young Gardener.* Lindley's School Botany may possibly answer your purpose.—*J Brown.* There is no agricultural account of Grasses better than Sinclair's Hortus Gramineus Woburnensis, the 8vo edition. There is only one edition. Loudon's Hortus Britannicus has been completed by a Supplement, including all other supplements, published in 1850, and the last.

EMIGRATION: *H L.* We apprehend that British Columbia is one of the most promising of our colonies for active hard-working young men. But whether gardeners are in request there we do not know. Probably market gardening might pay. Labour is worth from 12*s.* to 20*s.* a day, according to the last accounts, but provisions are very dear.

INSECTS: *J F M.* Your young Deodars have been attacked by the weevil, of which you have sent a specimen (Hylobius Abietis), the well-known scourge of the Fir tribes. Lay sheets under the trees, and then visit them at midnight, when the weevils are in full activity, shake the trees over the sheets, when the insects will fall and may easily be collected and burnt. All loose rubbish under the trees should also be cleared away and burnt.—*E G.* The insects which have got into the food-drawer of your larks are a minute Acarus or mite allied to the cheese mite. We have not been able to determine the species, as you do not m ntion the nature of the food. Scalding repeatedly will certainly destroy them; also washing the drawers with turpentine or strong gas-tar water. *W.* But you must not put your larks back again till the drawer is quite sweetened.

MORELLO CHERRY: *Alpha.* They are devoured by the larvæ of one of the sawflies. These larvæ are now snug underground undergoing their transformation. Watch for their appearance next year, and destroy them by hand; they will be chiefly found on the under side of the leaves.

NURSERY STOCK: *A Constant Reader* shall have a reply next week.

POND WEEDS: *Ignoramus.* Many statements on this subject have been made in our columns from time to time. But they all amount to this, that such weeds as you have sent can only be extirpated by continued cleaning by drags, or subaqueous scythes, or by any other mechanical method. What you have sent are Potamogeton natans and Iris Pseudacorus, neither of which is formidable. But you must remove the Potamogeton before it comes into flower. Why not turn off the water and fork out all the roots this very autumn?

ROYAL BOT. SOCIETY: In the award of prizes at the Society's Exhibition on the 15th ult. there is an error, viz., Silver Gilt Medal to Mr. G. Sage, gr. to Earl Howe. This is incorrect and should be printed thus:—Silver Gilt Medal to Mr. G. Sage, gr. to Earl Brownlow, Atherstone, for a dish of Peaches.

TACSONIA IGNEA: *A P B.* No such name is known to botanists; and we are quite unacquainted with the plant itself. T. manicata is fiery red; T. mollissima is rose coloured.

THE SCOTCH FIR: *A Constant Sub.* Consult Messrs. Lawsons, Edinburgh.

TRANSPLANTING: *South Derby.* Don't think of moving Currant bushes before next November. The sprig belongs to Cotoneaster microphylla, which may be transplanted in the end of August or beginning of September. With ordinary care it will do very well. Mahonia comes from Oregon; its berries have been made into jam, and very bad jam it is.

MISC.: *N K.* Fisher & Son, Publishers, Blomfield Street, Kingsland, London, N.W.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London, S. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

BURNARD, LACK, AND CO.'S CONCENTRATED SUPERPHOSPHATE OF LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.

CONCENTRATED TURNIP MANURE, equal in value to the preceding.

Of these Manures Dr. Voelcker says:—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."

Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to BURNARD, LACK, & Co., Sutton Road, Plymouth.

LONDON MANURE COMPANY, removed to 116, Fenchurch Street, E. C. (Established 1840), have the following MANURES ready for delivery:—

CORN MANURE for SPRING TOP-DRESSING
URATE
MANGEL MANURE
SUPERPHOSPHATE OF LIME
BLOOD MANURE
} all of guaranteed quality.

In consequence of the reduction in the price of raw material the London Manure Co. are enabled to lower the price of their Superphosphate of Lime, and to materially improve the Corn Manure and Urate.

The London Manure Co. also supply PERUVIAN GUANO (direct from Messrs. A. Gibbs and Sons), SULPHATE of AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of value. Wholesale dealers supplied.

116, Fenchurch Street, E.C. EDWARD PURSER, Secretary.

REDUCTION IN PRICE OF LAWES'S MANURES.

MR. LAWES begs to announce that he has this season reduced the price of the Manures manufactured by him, viz.:—

TURNIP MANURE	from £7 to	£6 6
SUPERPHOSPHATE OF LIME ..	,, 7 to	6 6
MINERAL do. ..	,, 6 to	5 5
BARLEY MANURE..		8 0

Prof. Way and Dr. Voelcker have sampled from a bulk of 5000 to 6000 tons at his factories, and their report and analyses are given in full in Circular to be obtained on application at his office, 1, Adelaide Place, London Bridge, E.C., or of his local Agents.

N.B. Genuine Peruvian Guano direct from Messrs. GIBBS, Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures. American Cotton-seed Cake supplied.

SOFT STUFF GREAVES ARE A CAPITAL MANURE FOR WHEAT LANDS.—The undersigned have sent large quantities to Norwich, where they are highly approved.—Price 4*l.* 10*s.* per ton in tierces (no charge for casks), delivered free to any railway station in London.

JOHN WILLIAMS & SON, Soap Works, Clerkenwell, London, E.C.

TO PIG AND POULTRY FEEDERS.

RICE SWEEPINGS FOR CHICKENS, 8*s.* per cwt., in 1½ cwt. bags. SCREENED RICE, 11*s.* per cwt., in 1½ cwt. bags. RICE MEAL, 6*s.* 6*d.* to 8*s.* 6*d.* per cwt. OILCAKE, 10*l.* 10*s.* to 11*l.* 10*s.* per ton only. DOG BISCUIT, 14*s.* to 15*s.* per cwt.—Sold for cash only by W. & R. JUPP, 6, Cross Lane, St. Mary-at-Hill, Eastcheap, City, E.C.

TO ENGINEERS.

SUBSOIL PULVERIZER.—A premium of TWENTY GUINEAS is offered by the undersigned for an approved draft design, (accompanied by a written explanation) of a MACHINE, to consist of a series of augers, for the general pulverisation, to a depth of 3 or 4 feet, of a marly soil, free from all obstructions but occasional small pieces of limestone; to be worked by a portable steam engine of 6-horse power, the augers to admit of expeditious liberation from the soil; but their number, shape, position (whether in one or two rows), and distance from each other, are matters left to the judgment of competitors. It is almost needless to add that no existing invention (Fowler's or any other) could effect so deep a pulverisation as that considered essential to the efficient cultivation of the Vine in our Australian Colonies. Designs to be sent in on or before the 15th of August.—H. S. WILLS, 10, Queen's Terrace, Queen's Road, Bayswater, W.

BOYD'S SELF-ADJUSTING SCYTHES are the cheapest and best, and being sold adjusted, are ready for immediate use. They can be regulated in an instant to suit any person, and to cut any crop without change of Scythes. For Amateur Gardeners they are very desirable, as they afford a healthy and interesting exercise. They have stood the test of public opinion for seven years, and for excellence, ease, economy, and durability, are highly recommended. Upwards of 50,000 of them have been sold. To be had of every Ironmonger, Hardwareman, and Seedsman in the United Kingdom, and wholesale of the Sole Licensed Makers, WM. DRAY & CO., at their New Agricultural Implement Warehouses, Adelaide Place, London Bridge, E.C.

SHAW'S TIFFANY is universally acknowledged to be the best, neatest, and cheapest material for shading Conservatories, and other Hothouses. Effectually securing Plants from the scorching rays of the sun, without obscuring the light. Also, for protecting the Bloom of Wall Trees from spring frosts, and Fruit from birds and wasps. Sold in pieces.

No. 1.—20 yards long, by 38 inches wide, 5*s.* per piece.

No. 3.—Double strength, 18 yards long, by 39 inches wide, 7*s.* 6*d.* per piece.

No. 4.—Treble strength, 18 yards long, by 39 inches wide, 9*s.* per piece.

A liberal allowance to the Trade when ten or more Pieces are taken.—JOHN SHAW & Co., Princess Street, Manchester.

"FRIGI DOMO."—Patronised by her Majesty, the Queen, the Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, and —Collier, Esq., of Dartford.

PROTECTION FROM THE SCORCHING RAYS OF THE SUN.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and, floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths. Two yards wide, 1*s.* 6*d.* per yard run; four, 3*s.* per yard. Also, an improved make for Shading Purposes. Three yards wide, 2*s.* 6*d.* per yard run.

ELISHA THOMAS ARCHER, whole and sole manufacturer, 7, Trinity Lane, Cannon St., City,, E.C., and of all Nurserymen and Seedsmen throughout the kingdom. "It is much cheaper than mats as a covering."

WARNER'S IMPROVED LIQUID MANURE OR GENERAL PORTABLE PUMP.



These Pumps are fitted with WARNER'S Patent Bucket and Valve, and cannot clog in action. The barrel is made of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure on the stand, the legs of which fold together, and may be carried with ease by one man to tank or pond.

	£	s.	d.
Stand and Pump, with screwed tail pipe, fitted with strong brass union for suction pipe	2	15	0
If fitted with barrel of planished copper	3	4	0
Stand and Pump, with plain tail pipe, for tying on suction pipe	2	9	0
2-inch patent rubber and canvas flexible suction pipe, on wires, either 10, 12, or 15 ft., per foot	0	2	2

May be obtained of any Ironmonger or Plumber in town of country, at the above prices, or of the Patentees and Manufacturers, J. WARNER & SONS, 8, Crescent, Jewin St., London, E.C.

WARNER'S PATENT VIBRATING STANDARD PUMPS.

PATENT CAST-IRON PUMPS for Farms, Cottages, Stable Yards, &c., where the Well does not exceed 28 feet in depth; fitted with WARNER'S Patent Metal Bucket and Valve, which cannot clog in action. These Pumps can be made right-handed, left-handed, or with handle opposite the nose by removing four screws only.



Diameter of Barrel.	Height.		£.	s.	d.
2½ in.	short 1 ft. 7 in.	Fitted for lead, gutta percha or cast iron	1	5	0
2½ ,,	long 3 ,, 3 ,,		1	10	0
3 ,,	ditto 3 ,, 6 ,,		2	4	0
3½ ,,	ditto 3 ,, 6 ,,	flanged pipe	2	9	0
4 ,,	ditto 3 ,, 6 ,,	as required.	2	13	0
2½ ,,	short, with 15 feet of Lead Pipe attached, ready for fixing		2	10	0
2½ in.	long ditto ditto	ditto	2	14	0

The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.

May be obtained of any Ironmonger or Plumber in Town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin Street, London, E.C.

Every description of Machinery for Raising Water by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

PRICES REDUCED.

H. J. MORTON AND CO., Galvanised Iron Works, 2, Basinghall Buildings, Leeds.

GALVANISED IRON ROOFING

for Farm Buildings and other Roofs; the cheapest, most durable, and neatest Roofing in use; also Spouting at 10½*d.* per yard.

WIRE STRAND CABLE FENCING



(formed of Twisted Wires like a rope or cable), the strongest, cheapest, and neatest fence in use, will resist the largest cattle, and will not bend or get out of form by trespassing upon or over. Price, with five lines of the Galvanised Strand, iron main posts, and pronged Standards, 1*s.* 2½*d.* per yard.

This fence is far cheaper than posts and rails, or any kind of iron fencing; and possesses four times the strength of solid bars. Will not rust nor corrode. Upwards of 1200 miles of this Fencing supplied.

GALVANISED GAME AND POULTRY NETTING.



Galvanised, 24 ins. wide, 2-inch mesh, 5½*d.*, 7½*d.* and 9½*d.* per yard.
Galvanised, 24 ins. wide, 3-inch mesh, 4*d.*, 5*d.*, and 7*d.* per yard. The Netting made any width, and with openings of any size.

GALVANISED IRON CHAIN CAMP STOOLS & CHAIRS, POULTRY FOUNTAINS & FEEDERS, PRONGED DAHLIA RODS AND ROSE STAKES, &c.

Strong CATTLE HURDLES from 2*s.* per yard.

PATENT IMPROVED GAS WORKS,

of all sizes for the use of Private Houses, Mansions, Railway Stations, Mills, Collieries, Mines, Villages, &c. Works from 10 to 500 lights estimated for. The works can be entrusted to an ordinary labourer.—Apply to

HENRY J. MORTON & Co. 2, Basinghall Buildings, Leeds.

THE LANDS IMPROVEMENT COMPANY, 2, Old Palace Yard, Westminster, S.W.

To Landowners, the Clergy, Solicitors, Estate Agents, Surveyors, &c.—The Company is incorporated by Special Act of Parliament for England, Wales, and Scotland.—Under the Company's Acts Tenants for Life, Trustees, Mortgagees in possession, Incumbents of Livings, Bodies Corporate, certain Lessees, and other landowners are empowered to charge the inheritance with the cost of improvements, whether the money be borrowed from the Company or advanced by the Landowner out of his own funds.

The Company advance money, unlimited in amount, for works of Land Improvement, the Loans and incidental expenses being liquidated by a rentcharge for a specified term of years.

No investigation of Title is required, and the Company being of a strictly commercial character do not interfere with the plans and execution of the works, which are controlled only by the Enclosure Commissioners.

The improvements authorised comprise Drainage, Irrigation, Warping, Embanking, Enclosure, Clearing, Reclaiming, Planting, Erecting and Improving Farm Houses and buildings for Farm purposes, Farm Roads, Jetties, Steam Engines, Water Wheels, Tanks, Pipes, &c.

Owners in fee may effect improvements on their Estates without incurring the expense and personal responsibilities incident to Mortgages, and without regard to the amount of existing incumbrances. Proprietors may apply jointly for the execution of Improvements mutually beneficial, such as a Common Outfall, Roads through the District, Water Power, &c. For further information and for forms of application apply to the Hon. W. NAPIER, Managing Director, 2, Old Palace Yard, Westminster, S.W.

LAND IMPROVEMENTS.—The GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY are empowered by Act of Parliament to assist the Owners of Land in carrying into effect the following Improvements, and charging the whole outlay and expenses on the property improved.

I. All Works of Drainage, Irrigation, Warping, and Embankment.

II. The erection of Farmhouses, Cottages for Agricultural Labourers, and all kinds of Farm Buildings.

III. The construction of Roads.

IV. The Grubbing and Clearing of Old Woodlands, Enclosing, Fencing, and Reclaiming Land.

The Landowners by whom any of these Improvements may be executed are—Tenants for Life, Trustees, Mortgagees in Possession, Guardians, Committees of Incompetent persons, Married Women, Beneficial Lessees for Lives or for a Term exceeding 14 years, Corporations, Ecclesiastical or Municipal, Incumbents, Sequestrators, Charitable Trustees, &c.

The Owners of Estates not entailed, who may be desirous to avoid the expense or inconvenience of a Legal Mortgage, may also avail themselves of the powers of the Company's Act to charge their estates with an outlay in improvements.

In all cases the whole cost of the improvements, with the attendant expenses, may be charged on the Estate, the term for Building Works being limited to 31 years, but for all other improvements being capable of extension to 50 years.

No investigation of title being required, and the charge not being affected by Incumbrances, no legal expenses are incurred.

Operations under the Company's Act are divided into two principal branches; one where the Landowner designs and executes the improvements by his own Agent and merely requires a loan from the Company to charge the Estate,—the other where the Company undertake the entire responsibility of the Improvement and obtain repayment by way of Rent Charge. In the first case the plans, specifications, and estimates prepared by the Landowner's Agent are forwarded to the Company to be submitted for approval to the Inclosure Commissioners. As soon as the sanction has been given the Landowner proceeds to execute the works, and the Company having conducted the business through all the official forms, complete the charge on the estate when the works have been passed by the Commissioners, and repay the Landowner the amount agreed upon.

In no part of the business is there any control upon a Landowner except by the Inclosure Commissioners. The Company never interfere, except at the special request of the Landowner or his Agent, and only to such extent as may further the objects he has in view.

In the other case, where the Company are required to execute the works, a report and estimate of the Improvement are sent to the Landowner, and having been approved, the plans are then prepared and the works—either submitted to public competition or entrusted to their own staff—are carried on to completion, and the amount of the actual expenditure only, approved by the Inclosure Commissioners with the Company's agreed commission and the Commissioners' expenses, finally charged on the Estate for the term fixed by the Landowner.

The Company also execute Drainage and all other Works of Land Improvement on Commission for the Owners of Estates not Entailed who may wish to charge the outlay on the property through the simple and inexpensive process of the Company's Act.

Applications to be addressed to WILLIAM CLIFFORD, the Secretary, at the Offices of the Company, 52, Parliament Street, London.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, London, S.

Principal—J. C. NESBIT, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.

The next SESSION commences on MONDAY, August 8. Early application to the Principal, the Rev. JOHN CONSTABLE, M.A., for admission should be made, as only those Students are admitted whose papers are satisfactory, and for whom there is accommodation.

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.

Patron—His Royal Highness the PRINCE CONSORT.
President—The Right Hon. Earl BATHURST.
Principal—The Rev. JOHN CONSTABLE, M.A., Trin. Coll., Camb.
Professors, &c.
Chemistry and Chemical Manipulation—J. A. C. VOELCKER, Ph. D., F.C.S., Consulting Chemist to the Royal Agricultural Society of England.
Geology, Zoology, and Botany—JAMES BUCKMAN, F.G.S., F.L.S., F.A.S., &c.
Veterinary Medicine and Surgery—G. T. BROWN, M.R.C.V.S.
Practical Agriculture—Farm Manager—J. COLEMAN, M.R.A.C.
Surveying, Civil Engineering, and Mathematics—J. M. GRINDROD, C.E.
Assistant to Chemical Professor—A. SIBSON.

In-Students, 84*l.*; Out-Students, 40*l.* per annum. For admission application must be made to the Principal. The next Session commences on MONDAY, August 8.

MANCHESTER AND LIVERPOOL AGRICULTURAL SOCIETY.

Patrons—The Right Hon. the EARL of DERBY, K.G., and LORD EGERTON.
President for the Year—The Right Hon. the EARL of SEFTON.

The TWELFTH ANNUAL SHOW of LIVE STOCK (including POULTRY), IMPLEMENTS, &c. will take place at Liverpool on THURSDAY and FRIDAY, September 8 and 9. Premiums amounting to nearly 1100*l.* are offered for competition; and the entry will close on August 20.—Prize Lists and Regulations may be obtained by application to

THOMAS B. RYDER, Secretary.

2, Elliot Street, Clayton Square, Liverpool, July 30.

The Agricultural Gazette.

SATURDAY, JULY 30, 1859.

MEETINGS FOR THE ENSUING WEEK.

TUESDAY,	Aug. 2	Meetings of the Highland Society at Edinburgh; and of the Yorkshire Agricultural Society at Hull.
WEDNESDAY,	— 3	
THURSDAY,	— 4	
FRIDAY,	— 5	

THE difficulty of finding new subjects for discussion in agricultural journals is itself an agricultural subject of some importance, now that journals of agriculture are so numerous and so widely read. An agriculturist referring to it

lately said to us—"I wonder that no writer upon agriculture has bethought him of the LUCIFER MATCH as the subject of an agricultural essay. It is a matter in which farmers are as much interested now-a-days as they are in rotations of cropping or in manures or in plant cultivation. For if by these means he does get a harvest garnered safely, what does it profit him after it has been destroyed by the incendiary?"

That accidental fires in the rick-yard are more frequent since flint and steel went out and lucifers came in no one will deny. That, other things being equal, wilful incendiarism will be in some degree proportioned to the facilities afforded for it is equally certain. The assize reports with which our newspapers are now filled contain ample testimony to the mischievous facility with which lucifers are to be had. Hawkers give them as presents to children, who thus play everywhere with one of the most dangerous weapons that folly could put into the hands of thoughtlessness. The consequences are what might have been expected. There is hardly an assize court in the kingdom where charges of incendiarism have not been laid; where these lucifer matches have not figured in the report—and where the proved probability of accident from their use has not been made a cloak under which rogues have hoped to gratify their malice unpunished. Will any of our fire insurance companies relate their experience on this point? There must be a multitude of facts illustrative of their increasing risk, and our correspondents would do good service by collecting and relating them; thus proving the agricultural importance of the lucifer match.

—— THE trial of reaping machines, of which notice was given some weeks ago in our columns, took place last week near Paris, and M'CORMICK'S reaper as manufactured by Messrs. BURGESS & KEY received the first prize (40*l.* and a gold medal) among English-made machines, as well as the prize of the day (a great gold medal) among all the machines tried. A prize of 20*l.* and a silver medal were awarded to Mr. CRANSTON for Mr. WOOD'S reaper, and a prize of 12*l.* and a bronze medal were awarded to Messrs. ROBERTS & Co., of Paris, for MANNING'S reaper. The trial was conducted on a good crop of Wheat and Oats, and during a portion of the time in the presence of the EMPEROR. The superiority of BURGESS & KEY'S reaper appears to have been unquestionable.

In this country we may add that no harvest for many years has proved such a puzzle for the reaper as the present. Corn crops generally are unusually laid; and in many instances machines even in the hands of energetic sanguine men have been useless except for a comparatively small portion of the crop. In the neighbourhood from which we write, where Wheat is now (July 28) half cut down, the crop generally has proved impracticable for reaping machines. The machine (CROSSKILL'S BELL) is let to the labourers for 30*s.* a day, and they gladly avail themselves of its services where possible; but excepting a trial here and there it has been found impossible to use it on the twisted, laid, and heavy crops which everywhere have to be gathered in.

—— In the *North British Agriculturist* of this week Mr. WILSON, of Edington Mains, Berwickshire, gives a very satisfactory report of a newly-imported American mowing machine, which, worked by a pair of horses, on the afternoon of the first day, 16 hours of the second day, and until 4 P.M. on the third day, *i.e.*, in 32 hours altogether, cut down 30 acres of Red Clover and Italian Ryegrass in mixture, estimated at 50 cwt. of hay per acre. He says, "on getting the ground cleared I was exceedingly gratified to find the quality of the work all that could be desired. Indeed I never saw a field so well mowed." This machine is imported by Messrs. BRIGHAM & BICKERTON, of Tweedmouth.

—— Mr. SANDAY'S sale of Leicester sheep at Holme-Pierrepoint last week resulted in the very high average of 31*l.* 13*s.* for 40 lots disposed of. Twenty-two shearling rams fetched 721 guineas, 10 two-shear sheep realised 286 guineas, and the remaining older sheep brought 199 guineas. The highest priced obtained 90 guineas, and was taken to Ireland.

—— A preliminary report of the meeting of the Agricultural Improvement Society at Dundalk will be found in another page.—The meetings of the ensuing week include the Yorkshire Agricultural Society at Hull, and the Highland Society's at Edinburgh.—Among the most interesting incidents of the Warwick meeting was a meeting of the former pupils of the Royal Agricultural College, when arrangements were made for an annual gathering of the kind, and a permanent standing in the showyard of the National Society.

APPEARANCE OF THE CROPS.

BERKSHIRE.—The intense heat of the weather has forced the crops here to an unusual state of forwardness. Wheat, Barley, and Oats are now being cut. The crops generally assume the appearance of a good yield and also a fair quality. The green crops promise well but want rain. *John Adnams, Thatcham, Newbury.*——The corn on the hill district varies very much according to soil and management. On 2d July in the evening we had a violent storm of rain accompanied with lightning and thunder, which I am sorry to add laid the Wheat and Barley very much, and has made a great difference to the yield, wherever the wind whipped it, so as to prevent it rising again; until this untoward event the district had nothing to complain of. I have looked over some thousands of acres; my parish (Chieveley) is upwards of 5000, the adjoining parishes of Thatcham, Peasemore, Stanmore, Beedon, Ashridge, East and West Ilsley, Bothamsted, Langley, Flamsted Norris, &c., all fine corn producing land. On the light brackish soils this hot and dry time has not suited, producing premature ripening causing small troughy grain. The hay and Clover was made without rain and at little expense, a very heavy crop in most places. The Mangel Wurzel is much planted; my next neighbour has 40 acres, with very few blots, on some farms I see it is patchy. Swedes with few exceptions a little backward, but showing a straight and full drill; the horse-hoe in constant requisition. One of my friends had 10 acres of Swedes attacked by the black maggot Negro (after being hoed and thought safe) and were fast being devoured, when to the great joy of the owner of the soil, a flight of plovers settled upon the land, and in the course of two days cleared the pests away. Carrots look well where planted. Turnip just put into the soil. Have had storms this week every day, with sufficient moisture to start the seeds. Oats and Peas being cut general. The harvest commenced on Monday last, the 25th; some intended 21st or 22d, but this opportune rain will retard it for a day or two. Wheat an average; Barley an average; Oats in some places very good; Peas, fair, four in a pod, some very good; Winter Beans a failure; Spring Beans very good; Clover a heavy crop and well made; meadow, some light, but generally good; Carrots good where planted; Mangel Wurzel a good and fair plant; Swede a good plant but backward; Turnips just put into the ground; Potatoes great complaint of disease and scab, some places very good in light land. *Thomas Fordham, Snelsmore Hill East, near Newbury, July* 22.

LINCOLNSHIRE.—In this immediate neighbourhood we have a bulky crop of Wheat generally, which is very much laid, and must be bad to reap. The crop, however, is ripening very unkindly, and we have both blight and mildew manifesting themselves to a fearful extent; complaints are universal, and to the mere casual observer the evidences are most palpable and unequivocal. We must, therefore, anticipate considerable deficiency both in quantity and quality, although we have a heavy crop of straw. On all our early soils Wheat cutting will be general towards the middle or end of next week. Oats are a good crop in most instances, and promise a large yield, although the quality will probably be injured through their being laid a good deal. Beans (spring) are better than was expected. The top blossoms have set well, and we have every prospect of an average crop. Peas are good, and will doubtless yield well. Potatoes are good on the high lands, but bad in the Fens. No symptoms of disease apparent yet. *Alfred S. Ruston, Aylesby House, Chatteris, July* 21.

MONMOUTH.—Wheat above average; Barley good, ripens unevenly; Oats good; Carrots improving but late; Wurzels good but late *T. Dyke, Monmouth.*

GLOUCESTERSHIRE.—I have much pleasure in forwarding you a report of our harvest prospects on the Cotswold Hills. Wheat about an average crop, certainly not equal to last year, which was one of the largest crops ever known on the Cotswold Hills. It is fortunately but little laid, and may therefore turn out better than some of the better Wheat land. Harvest will be general this week. Barley, where planted early and uninjured by the storms, is a very promising crop, and I think the yield will be fully equal and in many cases superior to last year. The weather in June was very favourable for this crop. Oats but little grown; appear quite a good crop. Winter Beans a deficient crop, owing to the late frost whilst blossoming. Spring Beans are generally good. Mangels and Turnips are good; the latter far more promising than last year, except for partial visits of the nigger or Black Jack caterpillar there is a regular plant everywhere. Potatoes at present but little affected with disease. The hay crop was large and well put together. *John Coleman, Royal Agricultural College, Cirencester.*

NORTHAMPTON.—Harvest commenced in this district this week with Peas and Oats, and on Monday Barley and Winter Bean harvest will begin. But we shall not have general harvest before the end of this month. This will be a most expensive harvest to the farmer, and except the weather turns out very fine, harrassing and disheartening, seeing that all the flattering hopes held out by the extraordinary luxuriance of his crops, and the prospect of the most favourable weather, have been blasted by the superabundance of straw, thunderstorms, and blight. The Wheat crops are excessively long in the straw, and laid and twisted about more than has been known for the last 20 years. During the past 8 days a serious blight has blasted the hopes of the farmer to such an extent that it is believed that this year's Wheat crop will fall at least 2 quarters short of last year, and the quality at least 5*l.* per bushel. The Barley crops are very long in the straw and much laid, yet they are generally healthy and promise abundant yields of fair average quality. Spring Beans are an average crop, but Winter Beans were nearly all blighted and ploughed down, and Turnips sown on the land; those worth leaving have recovered and mended into fair half crops. Oats are abundant in straw, but very much laid and damaged, so that the quality will be but middling, though the yield must be a good average. Peas are a good average crop. Potatoes are a good crop, with a moderate amount of disease among them. Turnips and Mangel Wurzel are both promising to be good crops, especially where a moderate quantity of genuine artificial manure has been applied. Hay is a most abundant crop and well got. *P. L.*——A more difficult question to answer than "What is the state of the crops?" could not be well put. In all my experience of 40 years I do not remember to have seen them so beat down as at the present time. Consequently blight and all the accompaniments of a laid crop must detract from the produce. The Wheat crops that are standing, which is the exception, appear to ripen kindly, and will soon be ready; but I cannot think that the Wheat crop, although the bulk is large, can be an average. Barley about an average, but the yield of that grain seems to diminish very fast. Oats are a full crop, the acreage large and the bulk heavy; a full average. Winter Beans where not ploughed up, half a crop. Peas very good. Beans a doubtful crop. Potatoes very much diseased. Harvest just commencing; general by August 1. *W. Gray, Courteen Hall.*

NORTH HANTS.—The prospect of abundant crops in this district is upon the whole better than an average. Upon poor soils there are instances of failure of the Wheat plant, and hence occur indifferent crops, much overgrown with weeds. Generally speaking, however, the Wheat crop is a very heavy one, but partially injured by the recent severe tempests and hail-storms. Barley is an abundant crop, but a portion will be of indifferent quality. Oats are tolerably extensively grown, and are much better than usual. Winter Beans are blighted, but Spring Beans and Peas promise well. The hay crop is much above an average and well secured. Turnips Mangel, and other green crops are a good plant. Reaping is now become general, but from the heavy crops being much laid, the labour of harvesting will be increased at least 25 per cent. *H. R., Basingstoke.*

ROMFORD.—In reply to yours we are in a most dangerous position. Wheat more laid than I have ever seen before; the heads in many fields very deficient, and in some few cases the crop will hardly pay the expenses of getting in. We fear weather will be most destructive, being so stormy, wet, and hot. We have made a beginning. The straw nearly double, but the corn, I think, will not equal an average. Beans and Oats good. Barley much laid. Mangels and Turnips capital. Potatoes bad. It is now raining, and continually for the last two days. *Collinson Hall, Havering Bower.*

SOUTH LINCOLNSHIRE.—The Wheat crop in this district is in the roughest condition seen for many years, so storm broken and dashed down by winds and rains; many fields are sadly blighted, and many more look very unpromising, showing symptoms of mildew. The sample will be a rough and varied one. The Barley crop is good, and Oats are heavy and likely to be a productive crop. Beans are a fair average crop except Winter Beans, which are a total failure. Peas have by no means suffered from the aphides as was anticipated, and will now prove an average crop. Potatoes all right yet, and a large breadth under this crop. Mangels are a splendid crop and plenty of it. Swedes a scanty breadth, and the crop has suffered from the black caterpillar. Common Turnips and Coleseed are likely to be very productive. Hay in great abundance and well got. Pastures are very rough but the stock do well. Our Clover eddishes are beautiful. *John Clarke, Long Sutton, July* 25.

WEST DORSET.—The Wheat in this neighbourhood, although in many cases much laid, promises well. It has gone off very quickly and reaping is now commencing. Close to the sea at the end of another week, should the weather prove favourable, it will be harvested. Barley appears to be ripening in patches, or as here described as "twi ripe;" I hear rumours of bad samples. Oats are nothing like as good as they were last year. Peas are cut and are well podded and good. The Turnip crop of course irregular. Mangel better than could be expected. Potatoes until the present time have almost reminded us of former days, but the stalks are now decaying. The crops of hay have been light, and the pastures are worse than they have been for years past, consequently stock of any description not doing so well. Dairymen cry out lustily. *W. P.*

WORCESTERSHIRE.—A copious report of the condition of the crops in different parts of this county appeared in the *Worcester Journal* of the 23d inst., taking the results of which in aid of my own somewhat limited observation I may record as under. Wheat, Barley, Oats, Beans, and Peas are generally promising average crops, especially Wheat. The Wheat crop is a good deal laid in places by heavy thunderstorms, and there is a general opinion that the yield will be rather deficient, the number of corns to an ear being in many cases found less than usual. There has been a remarkable absence of the fly on Swedes, but a general complaint of black caterpillar, in some cases almost destroying the crop. Recent rains have probably saved this crop (which had suffered from drought) and a favourable result may be expected. Mangels are well spoken of. Hay crop light but well got in. Potatoes nearly free from disease at present. *F.*

YORKSHIRE.—The Wheat crop is generally light of straw, the bulky crops much laid from thunder rains; from the late extreme heat there are a great deal of blind ears, no corn of value in those ears. Barley generally heavy and lodged; on the lighter soils many blind ears from the same cause as in the Wheat crop. Oats a light crop. Beans tolerable but affected with black aphis. Mangels, Swedes, yellow and white Turnips very various; some good but generally bad, have improved since the late rains. Hay crop light but well got. Harvest commences about August 1. *Peter Stevenson, Rainton, Thirsk.*

THE LIGHT HORSES SHOWN AT WARWICK.

ALTHOUGH at the meetings of the National Society the number and importance of the agricultural horses ever will, as they ever should, exceed the lighter horses, yet the number and quality of the latter were sufficient at Warwick, as at several preceding shows, to render this a very interesting as well as useful part of the live stock exhibition. Thus, whilst of the heavy horses, foals included, no less than 170 animals were submitted to the criticism of the judges, in the lighter classes there were no less than 70, special classes of course in each case included. Although it is a matter of some little doubt whether any real utility is accomplished by having a class for Thorough-bred Stallions, seeing that the turf affords every possible encouragement to the breeding of these animals, and the race-course a good opportunity for studying and comparing their form, yet they certainly afford a very attractive part of the horse exhibition, and serve to gratify the eye of the admirers of breed. Whilst we should therefore be sorry to see this class discontinued we think it is of the utmost importance that a most valuable class of animals should be recognised and encouraged, and it would be truly the province of a National Society to carry out such a purpose of national utility. There should be a class for Stallions, not thorough-bred, calculated for getting Hunters. Encouragement would then be given to the preservation of such horses as that shown by Sir W. W. Wynn last year at Chester, which was debarred from receiving a prize by there being no proper class in which he could be fairly shown. At present the Society by their prizes advocate the doctrine that all hunters should be got by thorough-bred stallions, which we believe is a fallacy, holding as we do the opinion that provided sufficient breeding is secured, it matters little whether it comes by the sire or the dam, but it is somewhat preferable that it should come in tolerably equal proportions from both sides. There is no royal law existing, either in Nature or otherwise, imposing the necessity of always using a thorough-bred male in the getting of hunters. Although extremely desirable in very many instances, yet the almost universal practice of so doing shuts out from breeding a large number of small but good three parts bred mares, that would if put to a thorough-bred horse breed weeds or animals of trivial value, but if put to horses of bone and substance half or three parts bred would unquestionably breed animals of value and profitable ones to the breeder. It is evident that beginning with a blood horse and a half-bred mare, and using a blood horse as sire for three generations with the female progeny, we have an animal $\frac{15}{16}$ths thorough-

bred, and no doubt a weed; whilst by using a three parts bred horse at the second generation, we retain all the breeding we demand and with all the substance we require for a weight-carrying hunter. We intrude these remarks for the purpose of supporting our opinion that there ought to be a distinct class for stallions (not thorough-bred), calculated for getting hunters.

To return to our subject, the animals shown as Thorough-bred Stallions were worthy of prizes and commendations. Not quite so good as the Salisbury horses, they were better, we thought, than the Chester animals. The prize thorough-bred horse "Hunting Horn" was a dark brown horse of great size, power, and substance. As he stood in his box we scarcely liked his shoulders, but if his slow action was good enough he was well worthy of a prize, for his back and hind quarters were undeniable.

The second prize horse, "Sir Peter Lawrie," was more perfect as regards some of his points, but with less size and substance than his competitor. The "Ugly Buck" and the "Sprig of Shillelagh" added to the attractions of this class very much, particularly the latter, and we thought were well worthy of commendation.

The class for Hunting Brood Mares brought out some very good animals. The best of the lot was disqualified, from disease of the eye. It should be known that there are few diseases more hereditary than those of the eye, and there is no great difficulty in ascertaining by proper examination whether blindness, wholly or partially, is caused by disease or by accident. The attendant too frequently searches his imagination for his facts when accounting for a disease of the eye, and a blow, a flip of the whip, or a hay seed affords him a ready answer to all inquiries on the subject. It is however somewhat difficult to prove the origin of such a disease when it occurred on the other side of the Channel. Most of the mares were good, and had good foals by their sides, particularly Mr. Shaw's second prize mare by "Mundig."

The Mares for breeding Hackneys were not very good. Why there should be a class for the hack mares and not for the stallions we cannot imagine. The latter we conceive is of the greatest importance, seeing that he may be the sire of fourscore animals in one year, whilst the mare is rarely the parent of more than one. Mr. W. Coleman was the winner of the first, and Mr. S. Wallis of the second prize.

The Local Committee added to the list by giving two prizes to the light horses as well as four to the agricultural classes. The first of the former was for Hunting Mares or Geldings. This was a very good as well as a very interesting class, and well competed. It opened up as it were the equine riches of the district, but at the same time elicited considerable difference of opinion, some fancying one animal, some another. "A very good animal," said an excellent judge in speaking of one of the prize winners, "for 100*l*., but I would rather give 200*l*., for my own riding to her neighbour." We hope the judges before they ventured to decide had the animals saddled and mounted. A four-year-old by "Drayton," belonging to Mr. Coleman, won the first, and Lord Berners the second prize, whilst several others were commended. The Pony class was good but scarcely equal to the show of last year. The prize stallion was a beautiful animal belonging to Sir Pyers Mostyn, Bart. The second was won by a strong Welsh pony, also successful at Barnstaple last month. Mr. Wall, the owner, had also his little brown pony, a prize winner there, but commended here, as was the class generally. *W. C. S.*

THE IMPLEMENTS AT WARWICK.

WE pursue our wander round the yard:—At stand 46 the trustees of Mr. Crosskill exhibited a number of well-known implements—their clod crushers, the Uley cultivator, the Norwegian harrow, carts and wheels, the Archimedian root washer, a capital tool; as well as a patent portable railway, somewhat on Boydell's principle, but differing from it; it is invented by Mr. Romaine—

Its peculiarity consists in having the iron rails longer instead of shorter than the circumference of wheels that roll over the rails, thereby preserving the ends from being battered down by the wheels; also in having the wood sleepers (which carry the iron rails) about double the length of such rails, equalising the pressure of the load on the whole length of the sleepers, breaking joint, and having a minimum bearing surface of never less than three-fourths or two-thirds the whole bearing of the surface.

(47) Clayton & Shuttleworth exhibited a number of their well-known portable and fixed steam-engines, threshing-machines, mills, saw-mills, and straw elevators.—(49) J. Fowler, jun., exhibited 8 and 10-horse steam cultivating apparatus, together with windlass and balance ploughs, and scarifier. We add the prices and lists of the articles specified:—

An 8-horse Set of Steam-cultivating Apparatus, consisting of an 8-horse engine (single cylinder), with reversing gear and windlass, anchor, 700 yards of steel rope, headland ropes, water tub, 16 rope porters, 2 snatch blocks, and field tools, complete. Price 455*l*. 10*s*. This tackle is adapted to be worked in combination with Articles Nos. 6, 7, 8, 9, and 10. Also an 8 horse Set of Steam-cultivating Apparatus, consisting of an 8-horse engine (double cylinder), with self-moving and reversing gear and windlass, anchor, 800 yards steel rope, headland ropes, water-cart, 16 rope porters, 2 snatch blocks, and field tools, complete. Price 527*l*. 10*s*. Is adapted to be worked with Nos. 6—10, as follows, a Balance Two-furrow Plough, a Balance Three-furrow Plough, a Balance Four-furrow Plough, all fitted with Scarifier Irons; a Balance Three-furrow Plough, fitted as two-furrow Cotgreave and subsoiler and scarifier; a Scarifier—prices 52*l*. 10*s*., 61*l*. 10*s*., 81*l*., 105*l*., and 29*l*. respectively.

(51) Loomes & Co., Whittlesea, exhibited draining pipes, which received the prize for the best quality in the yard.—(52) Hayes, of Elton, near Oundle, showed his portable straw elevator which takes the straw off the end of shaker when working with the threshing machines, and carries it up 22 feet or more on to the stack. It is made with two octagon drums, diameter of which is 20 inches, and thereon is worked a chain with tines, driven by strap from threshing machine to carry up the straw; and the slow motion of the elevator absorbing but very little power, the wear and tear is reduced to the lowest amount.—(53) Mr. Nalder, of Wantage, exhibited a clever corn separator and blower. —(58) Snowden's paring plough was shown here. It is a very effective implement capable of paring 1 and 2 acres a day by horse-power at one-fourth the cost of manual labour. Reference has been already made to it here.—Churns and milk buckets are exhibited by Heel, of Warwick, at stand 61.—Mills and mill stones, at 62, by Hughes & Son, of Great Dover Street, Borough, S.E.—Dairy implements and washing machines, at 63, by Mr. Kent, of 199, Holborn. (64.) Thomas Lyne, of Malmesbury, exhibited his patent field stile, remarkably effective and cheap.

It consists of a cast iron box, with legs to steady it in the ground, and sockets into which are placed stationary posts, forming an opening somewhat like the letter V; between these posts are two moveable uprights received by metal sockets (centred upon ¾ inch bolts or pins), having balance weights attached, with projections on them, terminating in teeth, which work into each other, causing both levers, when pressure is applied, to move sideways, allowing the passage of a person, and closing immediately the pressure is removed. There is a simple contrivance to act as a fastening, which prevents its being accidentally opened; it is not liable to get out of repair. Price, without extra work at the side, 2*l*.

At stand 66 Messrs. Hornsby exhibited steam engines, threshing machines, drills, &c., and, a new thing with them, first on their list, ploughs. We give their description. They were successful in obtaining prizes both on light and on heavy land.

The beam handles and frame are one solid piece of wrought-iron work, obtaining the greatest lightness with immense strength. The share is attached to an improved lever neck of wrought iron, on R. H. & Sons' patented principle. Capable of being adjusted so as to give it more or less pitch or land as the share wears, or as may be required by the nature of the work. Price with two wheels, 4*l*. 7*s*. 6*d*.; skim coulter and drag chain, 7*s*.; steel breast, 6*s*. extra.

(67) Mr. Humphries, of Pershore, exhibits his portable combined threshing, shaking, riddling, Barley horning, winnowing, and sacking machine, to prepare the grain fit for market; to be worked by steam power. Fitted with all the latest improvements; one of the most important is an improved iron whitecoater or smut machine, which perfectly separates any extraneous matter from the grain before passing into the second blower, where it is effectually dressed fit for market. (70) Mr. Powell, of Ticehurst, shows "Sigma's" well-known implements "Multum in Parvo,—a horse plough, parer, hoe, and ridger all in one—a manure distributor, exceedingly simple, promising, and ingenious, capable of distributing a large quantity or a small with perfect regularity, and in our opinion well deserving use in these days, when the efficiency of a manuring of 1 or 2 cwt. per acre wholly depends on its even distribution—and "Sigma's" well known dibbles and hoes.—(72) The St. Pancras Iron Works Company exhibited a long range of stalls and stable apparatus—very attractive and useful—showing all costs and styles, and stable furniture and accommodation. There was also here a foot gate capable of conversion into gateway for a horse in a very simple and effective manner.—(73) Smyth & Son, of Peasenhall, the fathers of the Suffolk drill, exhibited a great variety and number of their well-known machines. At 74, Turner of Ipswich, grinding and crushing mills, oilcake breakers, &c., were the chief machines exhibited.—(76) Williamson, of Kendal, among other articles showed an improved straw shaker, cheap, and easily packed away, adapted for working with the above threshing machine. The straw, after leaving the machine, is discharged upon a traversing frame, formed entirely of wrought iron, and a vibratory motion is given to it, the effect of which is to shake out the loose grain from amongst the straw, and to carry forward and discharge the latter at a considerable elevation. The addition of the shaker increases but very slightly the strain upon the horses; and when the work is done, it can be separated from the machine and rolled into a small compass. Price 6*l*.

(To be continued).

Home Correspondence.

How to Insure Turnip Plants.—My attention is attracted to this subject by a paper in your Number of July 2d, emanating from Mr. B. Clarke, F.L.S., &c., headed "Proposal of a new remedy for the ravages of the Turnip fly, and the failure of crops from the dryness of the weather." Mr. Clarke suggests a coating of oil, wax, gum, or turpentine, to keep the seed from rotting till rain comes, and has given himself much trouble in preparing a tabular statement of various kinds of dressing used upon the seed and the effects visibly produced by each process. Without entering on the further consideration of what appears to me to have been a careful and elaborate, but by no means a practically useful experiment, I venture to suggest as a remedy for the evils in question a thorough examination and alteration of the usual practice of preparing the ground for the deposit of the seed. I will presume that the seed of the Turnip possesses at least an average amount of vitality. I have known it to grow after two years, and to require hoeing out of Beans grown on Barley stubbles after a failing crop of Turnips. Moreover the seed of the Charlock (a very similar plant) is generally thought to be almost imperishable, and I am satisfied that if Turnip seed be properly deposited in the land under proper conditions, its growth is a matter of certainty, and the young plant has little to fear from the fly. I assert from observation that the majority of Turnip crops fail in the early stages of their growth from the same cause as the seed in the parable which fell among stony ground, and perished for lack of underground moisture. The land is perhaps ridged, manure is put directly under the seed, and keeps the land open; it is then delicately rolled before the drill, and perhaps raked up again by the spout of a dry artificial manure drill passing immediately under the seed, and the soil falling in upon the artificial manure is scarcely compressed at all by the light roll following the drill. The consequence is that the seed "lies hollow," comes up languidly, and perishes in detail under the constant attacks of the fly; and having no firm hold of the ground, the scorching rays of the sun soon penetrate the loose open soil down to the very roots of the young plant, leaving it entirely destitute of moisture from below and quite dependent upon fitful and uncertain showers for its support; consequently if, according to old Moore's prediction, "rain interveneth not," the plant is utterly unable to maintain itself, and at the same time resist a persevering attack of the fly. These remarks apply equally to drilling on the flat into loose, newly ploughed, freshly manured land. In such cases I advise the Crosskill roller to be freely used till the land treads firmly; then drill the seed; harrow with ordinary seed harrows, to fill up the troughs left by the drill, and roll down with a heavy roller. This system, if properly carried out, ensures a firm seed bed, always fed with moisture of attraction from below, as is the case in a stale furrow, and against such plants the fly will be found comparatively powerless. I usually sow my artificial manure broadcast upon the land immediately after the last ploughing, and mix it with the soil by the operations of the Crosskill rolling, drilling, and harrowing. I use 3 lbs. per acre of the best seed, and for the last six years I have never once failed in obtaining a vigorous plant, capable of resisting the attacks of the fly, and soon out of the reach of injury, and I have arrived at the conclusion that with proper care Turnips may be grown with the same facility and certainty of plant as Wheat, Oats, or Barley. *George Beaumont, jun., Bridgeford Hill, near Nottingham.*

What Value has Dry Manure unaided by Rain or Moisture?—Professor Voelcker has evidently made a mistake in estimating my tank manure at its *dry* value, ignoring altogether the 50,000 gallons of water or 2-inch rain-fall which accompany it. If the principle of dry valuation of manure were carried out, ignoring the presence or absence of rain-fall, it is quite clear that without rain or moisture a ton of guano would have no value for a crop. Professor Voelcker estimates the cost of putting on so much water, but ignores its value or result! Many of my friends think with me that he has made a great mistake in such a valuation, so disparaging to irrigation. Every one sees the effect of a thunderstorm in its almost magical stimulus to vegetation. Excessive drought, despite dry guano, is in its result equally obvious. As a Grass farmer said to me the other day: "If we get no water we get no Grass;" and he was right. *J. J. Mechi, Tiptree, July 25.*

Societies.

ROYAL AGRICULTURAL IMPROVEMENT OF IRELAND.

MEETING AT DUNDALK.—That Ireland is making steady progress in agricultural improvement is fully proved by her annual agricultural exhibitions, which are on a scale of steady and most gratifying progression. One means of judging of undertakings of this kind is by comparison; and accordingly it will be found in this way that at this meeting, compared with that of last year, there is of implements a considerable increase. There is also a numerical excess in the Short-horns, agricultural horses, and all classes of sheep, as well as pigs. We have, however, a falling off in the entries of Kerry cattle, Herefords, Ayrshires, thorough-bred horses, and a marked deficiency in farm produce.

From the programme of proceedings our readers will have learnt that the Society has abandoned the implement prize system; and this year competition in this department is limited to the handsome prize (Cup) offered last year for the first time by the *Farmers' Gazette* for the best collection of implements suited to the circumstances of Irish farming. Now, whatever difference of opinion may be entertained regarding the prize system in England, where manufacturers are extremely wealthy and equally intelligent, few who reflect upon the subject will say that it is not desirable to encourage the Irish manufacturer to increased vigour and more useful action. He is in point of intelligence very far indeed behind the Howards, Ransomes, Garretts, Hornsbys, &c., of England, and we see no more immediate or efficacious means of taxing his ingenuity and skill than by a liberal scale of prizes.

Of new inventions we have not much to record; but a great many improvements and modifications have been made in old and established articles. We present our notes in the order in which we took them, and if they are too cursory it is accounted for by our appearance on the show ground before all the exhibitors had displayed their goods. Mr. Miller, of Dunbar, and other makers, have added an ingenious yet simple index to the drill plough for the purpose of

setting the boards at any required width. We may remark that in these machines (as in many others known to our readers) both boards are simultaneously acted upon by a screw handle, and attached to this is the index referred to. Mr. Miller's threshing mill, however, with its antiquated revolving shaker, feeding rollers, and power spending conical wheels, is certainly behind the times.

Richmond & Chandler exhibit in addition to their usual admirable machines, Nicholson's haymaker, in which they have, with the original maker's permission, effected some alterations.

Mr. Shackleton, of Dundalk, shows an ingenious and novel collection of steam-engines, &c. Great credit is due to him for his self-propelling steam-engine, the first of the sort made in Ireland. It has been several years in use, and is in good working order. In some of his engines Mr. Shackleton has introduced vertical boilers resting on a water cistern, the whole running on wheels.

Messrs. Turner, of Ipswich, show a fine collection of mills, a well finished 3-horse power steam-engine, shown at Warwick and purchased there by Major St. Quentin, of Old Court, Waterford, price 130*l.*, inclusive of appendages. We were pleased with the corresponding 3-horse power threshing-machine. The beater—Coulson's patent—is an interesting one, and somewhat similar in principle to Goucher's. The groove is in three separate parts, turned in alternate directions. The shakers and riddle are driven by one crank. The corn is only half dressed.

Mr. Gray, of Uddingstone, has exhibited a still finer collection of implements than the one of which we said so much in our report of the Derry show last year. Mr. Gray, of Belfast, shows another well-finished collection of ploughs, grubbers, &c. In some of the former he has introduced a modification of the English mould-board; we wish he would fully adopt a recognised principle. His farm cart is a well mounted article; the arrangement for tilting is the best in the show, being a modification of the spring "tilt," with two vertical spring bars for raising the cart to any desired degree. We are also pleased with Mr. Gray's barrow: the tine is securely fixed, at a sacrifice of much workmanship. He also makes good chaff cutters, using Picksley, Sims and Co.'s castings. Adverting to farm carts we have to mention that nearly all the makers adopt the patent principle of having a wide groove (about 3 inches) in the axle arm for retaining the grease. The groove is of course transverse, and about the middle of the arm. No doubt the part of the arm below the groove will be effectually oiled; but as sure as a drain carries away moisture from the surrounding height so will this groove (and especially when the arm "creeps" or "dips" to any appreciable extent) dry the upper part of the axle arm. Messrs. Hornsby exhibited the Warwick prize plough. An acute turned-up edge may appear very neat, but it does not give the same body of earth for covering a rectangular furrow-slice; and in this respect it must afford a very imperfect seed bed after a heavy fall of rain.

Of mowing machines we had an interesting trial very close to the town of Dundalk on Wednesday. The rivals on the occasion were Burgess & Key and Mr. Cranston, who exhibited Wood's combined mower and reaper. Both machines were set in trim so as to commence work at the same time; but owing to the horses turning restive some time was lost before Mr. O'Neil, the agent for Burgess & Key, could commence operations. Both machines cut a field of old pasture, not very productive, very creditably; but the general feeling prevalent among the spectators—a feeling in which we shared—was that Mr. O'Neil did the better work, cutting lowest and cleanest. The machines take the same width of cut; and differ in general construction as well as in the knives.

Mr. Samuelson's Britannia Reaper excited no small amount of interest. We regret not having seen a practical test of the self-acting rake, which is an exceedingly ingenious contrivance; if its success be equal to its ingenuity, it cannot be too well known.

We cannot add more this week in continuation of our report of the implement show, and our notes upon the cattle shown must be postponed. The first prize old bulls, among Short-horns, belonged to Mr. Todd, of East Lothian; as did also the first prize cow in calf or in milk. Mr. Douglas, of Athelstaneford, received the second prize in the classes of Short-horn heifers. Mr. Eastwood, of Lancashire, took the Purcell Challenge Cup for the best animal in cattle classes, viz., the first prize heifer (calved in 1856). The Waterford Challenge Cup for the best lot of three horned-animals (bulls and heifers) was awarded to Mr. Thomas Ball. The remainder of the prize list will be given next week.

Notices of Books.

Handy Book for Young Farmers. Pp. 102. By Charles Lawrence, Member of the Council of the Royal Agricultural Society of England.

Mr. Lawrence has here seized the opportunity given by a very popular title for issuing a useful little work the fruit of his own lengthened and very carefully recorded experience. It is a farmers' calendar of operations supplemented by chapters on Manure, Cattle-feeding, Implements, and tabular statements illustrative for the most part of the processes of feeding.

Mr. Lawrence limits himself in his preface to the instruction of the young farmer, and in order still further to hedge his meaning and his object, he states the circumstances under which the experience which he describes and on which his instructions are formed was acquired. He says:—

"We do not presume to offer any counsel, or to be able to afford any information which would be new to the experienced agriculturist, in the calendarial division of our subject, that will be to him the mere A B C of the science; these observations are intended for the exclusive use of those who are about to enter the portals of agriculture. For that purpose, we know how necessary is that minute detail of operations which would be tiresome to the adept.

"To enable the reader to judge to what extent our observations may be applicable to his particular case, we may state that our farm comprises 260 acres; of which 64 are pasture and 196 are arable. The nature of the latter is very variable. Ten acres consist of a deep black loam with a slight mixture of sand, resting upon a strong clay. About 90 acres are what would be usually styled light land, the subsoil stonebrash, resting on the Oolite. The remainder is a retentive, aluminous soil, lying chiefly on clay, which requires careful management in wet seasons, but is useful, productive land when the weather admits of its reduction to a fine tilth.

"We shall carry our young friends with us through the monthly operations in the first place, and reserve our observations on manuring and the feeding of stock for separate consideration. To these latter divisions, and the tables appended, we venture to invite the attention of the more advanced agriculturists. We start with the month of March, as the more common period of entry on farms, though we should much prefer a Michaelmas taking, with the privilege of entering immediately after harvest, to sow Wheat and prepare for the next root crops.

"In order to a convenient arrangement of our calendarial observations, we have assumed a four-field division of a farm, as by far the most common, but we must not be understood as recommending any adherence to that particular course. On the contrary, we very much doubt whether it can be profitably and economically adhered to for any length of time, as respects the green crops, whether of artificial Grasses or roots. These cannot be so often repeated on the same ground successfully. The failure of the Clovers under such an arrangement is universally acknowledged, and there exists a general impression that Swedes and Turnips have degenerated of late years from too frequent repetition."

The following describes the operations of the present season, and is given as a further illustration of Mr. Lawrence's performance.

"For any sowing of Turnips after Vetches later than July, we recommend the Red Nottingham, as attaining a large size in a short time, and as being hardier than most of the quick-growing sorts. We have had the ground well covered by this Turnip even after harvesting Wheat in an average season. The crop was sound and good at spring for ewes and lambs.

"Just before the Swedes and Mangels cover the ground, when a horse can tread up the furrows without damaging the plants, we strongly advise you to finish the operations by an effectual stirring up the interval between the ridges, some 4 or more inches in depth. For this purpose we recommend the common triangular iron Scotch expanding horse-hoe, described under the head of Implements, used for the first horse-hoeing, to be so constructed, that the hoes being fixed into the frame by a wedge, are easily removed; and in lieu of them tines are introduced, slightly curved forward, with hardened points like a common cultivator or grubber. If the ground is very firm, we put on two horses at length, and stir the ground 4 or 5 inches deep between the rows. If you have thus treated a portion of a field, and have been obliged to leave the work for three or four days, you can see from the increased luxuriance of the plants where you left off, without going into the field. Furthermore, this process leaves the ground in the most favourable state for the absorption of moisture and other atmospheric influences, and in a state in which it retains moisture.

"We shall now be in the middle of harvest, and will therefore consider the various modes of severing the corn.

"Wheat, until of late years, was generally reaped. The go-ahead farmers of the present day, impatient at this slow operation, adopted the plan of mowing to the corn, and then tying up. This also saved the subsequent mowing of the stubbles. Considering this simply as a mere field operation, an acre of Wheat can be mowed and stooked in one-third less time than it can be reaped by the same number of hands. Supposing we set on four mowers, the party would require, in addition, eight women; one to follow each mower to remove his swathe, and another to tie—one man to stook the sheaves, and another to rake, and tie up rakings after the stooker; in all six men and eight women. We find these hands would get over six acres a day, taking one crop with another; and that the same hands would reap and tie up four acres per diem. The cost per acre of the mowing we find to be eight shillings, and the cost of the reaping twelve shillings, including the mowing and raking the stubble afterwards, without beer.

"On these data we adopted the mowing system, much to the disgust of sportsmen; but we soon found there were other elements affecting the computation, both as respects economy of time and money. When Wheat has been mowed, we have one-fourth more in quantity to stack; consequently, a much larger surface to thatch. Reaped Wheat is more easily and regularly disposed in the stack, more easily trimmed, and with much less waste of corn in that operation. It is threshed with at least one-fourth less power than mown Wheat, and with less waste of grain. In those cases in which the improved practice of cutting up the straw for litter is adopted, there is a saving of power to the extent of the stubble; and where that is not adopted for want of power, the stubble makes the best manure, as being the most ready absorbent of the urine of the animals. Taking all these matters into consideration, we are advocates for reaping in preference to mowing, with the exception of the small portion of the Wheat quarter on which it may be intended to take Vetches for spring feed before the Turnip crop. This will require to be cleared as soon as possible, and ploughed.

"We have not yet seen any reaping machine by means of which, all things considered, we are convinced that the crop can be harvested more economically and satisfactorily than by ordinary mowing or reaping, assuming hands to be readily obtainable when required at the usual rate of wages, otherwise no doubt the best machines of the present day are useful and economical auxiliaries.

"Barley and Oats, of ordinary growth of straw, we mow to the corn, and tie and stack the same as mown Wheat. If very short, after an unusually dry season, it must be mowed out in the ordinary way. The mowing to, and tying up the Barley and Oats, as compared with the cost of mowing it out in the usual mode, is so much more expensive, looking only to the mere severance of the crop, that we can hardly anticipate the general adoption of the practice. That, however, is a limited view of the question. When the crop is once set up, there is an end of the expense, be the weather what it may. It is carried and stacked in half the time by the same hands, and is delivered to the threshing machine with much less waste. In either a dripping season, or in the event of occasional storms, more or less frequent turnings are avoided, and the consequent staining, and, in the former case, sprouting of the greater portion of the grain. If carefully mowed, gathered, and tied, we have had it, in an unfavourable season, standing set up for some weeks without injury, with the exception of a few heads tied in beneath, or under the band. In fine settled weather, when no rain occurs between the mowing and the stacking, the ordinary plan of mowing out and harvesting is rather the cheapest; but taking one season with another, we believe the other system to be the most economical.

"Peas should never be mowed, but gathered together, just above the roots, by a stick with a curved end, and cut with a sickle, and left in small heaps; and this before the pods are over ripe. After autumn-sown winter Peas, and indeed after Peas of an early sort sown early in the spring, a good crop of the red Nottingham Turnip, or other quick-growing hardy sort, may be obtained in favourable seasons, if the land be clean and in good condition. When the Peas have been sown in the spring, it will be expedient to cart them off, as soon as cut, on to a pasture to dry, to admit of sowing the Turnips as early as possible; as on a few days at this season may depend the success or otherwise of the Turnip crop. If the land be very clean, and in a mild open state, nothing more will be required than taking the scarifier over it to secure a good seedbed. If there be much annual weed, it would be proper to take the harrows over after the scarifier, and gather and burn the vegetable matter before the drill. In some states of the land a light ploughing may be necessary.

"Beans are severed in the same mode in all districts, and the only observation we have to make is, that they are generally allowed to stand too long before they are cut, which leads to great waste of the grain. Nothing is more common than to see the ground strewed with Beans, on the mere cutting them, sufficient to seed the ground, to say nothing of the further waste before they arrive on the stack. It is true, the scattered Beans may be picked up by pigs, but they may be fed, at that season, more economically."

Farm Memoranda.

THE FARM AT AYNHO.—With a view to impress the tenants of an estate in Buckinghamshire with the progress making in farming and the improvements open to them from the use of modern machinery, permission had been obtained from Mr. T. R. B. Cartwright to see his farms at Aynho. His successful sale of Short-horns in 1858 will have made his name familiar to many of your readers; and on Thursday the 14th the party had the pleasure of viewing his fine crops and making their observations upon them. The first crop they saw was a field of Winter Beans sown at Michaelmas, which, although suffering from the blight that has this year so generally destroyed this description of Bean in that neighbourhood, still had its bottom pods well filled and will afford a fair crop. The Beans were drilled at Michaelmas in rows 30 inches asunder, 1½ bushel of seed per acre, and to the extra air and light this greater width and small quantity of seed have let into them their comparative healthiness is attributed. The land between the drills has been made a perfect fallow by the cultivation it has undergone in the spring, in horse-hoeing and scarifying it has had, and it presents a finely pulverised clean bed open for the Wheat seed in the autumn without any

ploughing. This crop although damaged is sufficiently good to lead those who saw it to guess its yield at from 4 to 5 quarters per acre. The next field seen was Barley drilled 1 bushel and ½ a gallon per acre on the 16th and 26th of December, and although the two sowings were made so near to each other and at a season of the year when vegetation is supposed to be at a stand-still, the difference between them is very marked, the first being several days forwarder, and so forward that Mr. Wilson, Mr. Cartwright's bailiff, has since informed me he began cutting it the following day, and the first sowing was carried on Monday and Tuesday. The crop must have been an extraordinary one before the late storms, as although much laid the general opinion was that it would still be found to yield over 7 quarters an acre; and the superior quality it presents, notwithstanding that it is so much damaged, shows much in favour of such early sowing. The early crop last year yielded nearly 9 qrs. an acre and realised 43s. per quarter. The next field was half in Mangel Wurzel and half Swedes, in drills 30 inches apart, with the plants set out the Mangels at 2 feet and the Swedes at 18 inches. The leaves already meet. These crops were pronounced to be the most forward and best the party had seen this season. After this came a field of Wheat drilled 12 inches apart and from rather less than 3 pecks of seed per acre. This too is a surprising crop, and although it is much laid, was generally considered as likely to yield 30 bushels per acre. Following this they came to two fields of Oats also drilled 12 inches apart, the quantity of seed planted being only 7 pecks an acre, which were pronounced to promise not less than 10 quarters to the acre; they likewise saw the Clover, a fine plant, from 7 lbs. of seed per acre drilled 12 inches apart; and although it had yielded a crop of hay the drills were no longer visible. In this way might the whole of the two farms be spoken of, for the fields varied very little, but enough has been said to show your readers that with the important advantages from wide drilling in keeping the land clean, and with the economy of fewer ploughings and thinner seedings, the largest crops of corn may be grown. Their attention was then given to the implements by means of which the cultivation is made so perfect and so economical, and they noticed particularly two Scotch hoes in use in the Turnip ground. These are best described in the words of one of the party as being made for first shaving the land and so getting rid of surface weeds, and afterwards for combing it to eradicate Couch, Thistles, Docks, and all root weeds. The action of these two implements has left the ground between the drills of the wide sown crops of Beans, Peas, and roots perfectly clean, with 7 or 8 inches deep of clean dust acted on by the atmosphere and prepared for the next crop. They were then shown Garratt's drill and horse-hoe to match, Finlayson's harrow, Coleman's cultivators, Bentall's scarifiers, and other modern implements that cheaply eradicate weeds and do so much to economise labour; but I will not trespass farther than to say that they all admitted the lesson they had received would be of considerable value to them, and they left with the determination to drill wider, sow less seed, and have recourse more generally to horse-hoes and modern cultivators to keep their land clean and prepare it for the succeeding crop. *Hewitt Davis*, 3, *Frederick's Place, Old Jewry.*

Calendar of Operations.

JULY.

Western Rose: *July 25.*—Some eight days after I wrote my plaintive report for last month we had a heavy and continuous fall of rain for 12 hours, which greatly revived the face of Nature and cheered the farmer's heart; and since that time we have had repeated refreshing showers. A large proportion of the growing crop was so far advanced before the rain came that so far as the lengthening of the straw was concerned very little could be done, but, in this respect even, all the later fields have been materially advantaged. Pasture Grass although still very scarce is again becoming green, and Turnips are progressing delightfully. The bulk in our stack-yards will be very small—perhaps one-third less than it has been for several years, and greatly less than it now appears on the ground. The heat was so great, and the drought so protracted that the stalks having hurriedly grown up are small and feckless, and when cut and gathered together will occupy very little room. Admirable crops they are altogether for the reaping machine, for throughout the whole district there is scarcely a bit of lodged corn to be seen. Wheat, though far from bulky, is yet the more bulky crop, and will, we believe, according to its bulk thresh out satisfactorily. Having passed the blooming season without any damage, and being now well filled, all the grain it will harvest would be of fine quality. Barley and Oats are far below an average, and will prove very unsatisfactory. The earlier fields are rapidly changing colour, and harvest will commence in the course of three weeks. Potatoes are still looking well, having no appearance of disease. Turnip-hoeing is progressing with all rapidity, and the singling will be completed in a few days. There is abundance of work at this season for every woman, old and young, who can handle a hoe.

Notices to Correspondents.

CATTLE FOOD: *London Agents.* We have not named any manufacturer in our attack upon these costly foods, and you have no claim in justice to be named in any defence of them. The name was purposely cancelled in the paragraph referred to. We cannot recommend our readers to buy any cattle food at £2 a ton, while oilcake, Beans, and Linseed are about one quarter of this price.—In all the letters on this subject which we have received there has been inclosed what is called an analysis of these foods, but it is no such thing. An analysis not only states what things are present in the compound analysed, but how much of each. And it is plain that without information on this point it is impossible to say whether the charge for the article is excessive or not.

TRIFOLIUM INCARNATUM: *N.* You must not cultivate the land deeply for this crop. The shallowest scarifying is all that you need. Mere harrowing if the ground is moist is indeed enough. We would apply the guano and ashes in wet weather after the plants is up.

JAMES PHILLIPS AND CO.'S PRICES of GLASS for the present month.

HORTICULTURAL GLASS, Stock Sizes, in 100 feet boxes.

	3rds.	4ths
12 by 9, 12 by 9, 13 by 9, 14 by 9 ..	14s. 6d.	12s. 6d.
12 „ 10, 13 „ 10, 14 „ 10, 15 „ 10 ..		
13 „ 11, 14 „ 11, 15 „ 11, 16 „ 11 ..		
14 „ 12, 15 „ 12, 16 „ 12, 17 „ 12 ..		
18 „ 12, 19 „ 12, 16 „ 13, 17 „ 13 ..	16s. 6d.	14s. 6d.
18 „ 13, 19 „ 13, 20 „ 13, 21 „ 13 ..		
16 „ 14, 17 „ 14, 18 „ 14		
19 „ 14, 20 „ 14, 21 „ 14		

Boxes included and not returnable.

PACKED IN CASES.

200 feet	£2 2 0	16 oz.
300 feet	3 3 0	
200 feet	2 18 0	21 oz.

ORCHARD HOUSE SIZES, as supplied by us to Mr. Rivers.

		16 oz.	21 oz.
20 in. by 12 in.	Common	14s. 0d. ..	£1 1s.
20 in. by 13 in.	Superior do. ..	16 6 ..	1 5
20 in. by 14 in.	English Glass ..	18 0 ..	1 9
20 in. by 15 in.			

Boxes included and not returnable.

SMALL SQUARES.—Per 100 feet. s. d.

6 by 4	6½ by 4½	7 by 5	7½ by 5½	11 6
8 „ 6	8½ „ 6½	9 „ 7	9½ „ 7½	
12 „ 8	10½ „ 8½ ..	.. ..	.. ..	12 6

JAMES PHILLIPS AND CO.,

139, Bishopsgate St. Without, London, E.C.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz SHEET GLASS of British Manufacture at prices varying from 2*d.* to 3*d.* per square foot for the usual sizes required, many thousands of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES, and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London, W.

See *Gardeners' Chronicle* first Saturday in each month.

HORTICULTURAL GLASS—JUNE TARIFF.

THOMAS MILLINGTON'S reduced Tariff of GLASS, &c.

6 by 4, 7 by 5, 8 by 6, 9 by 7 } 16 oz. to the foot, 11s. 6*d.*
6½ by 4½, 7½ by 5½, 8½ by 6½, 9½ by 7½ } per 100 feet.

In 100 boxes,—4ths quality, 12s. 6*d.*; 3rds do., 14s. 6*d.*

10 by 8,	12 by 9,	12½ by 10½,	14½ by 10½, 15 by 11
10½ by 8½,	12½ by 9½,	13 by 10,	15 by 10, 13½ by 11½
11 by 9,	13 by 9,	13½ by 10½,	12 by 11, 14 by 11
11½ by 9½,	12 by 10,	14 by 10,	12½ by 11½ .. ..

20 by 12	per 100 feet	16 oz.	21 oz.
20 by 13	Common ..	16s. ..	24s.
20 by 14	Superior .	18s. ..	27s.
20 by 15			

All Boxes included.

Orchard House sizes as supplied to Mr. Rivers.

Hartley's improved Rough Plate Glass from ¼ to ¾ in thickness.

Coloured Glass in great variety, at 9*d.* and 1*s.* per foot.

Paints, Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, Lamp Glasses, &c.

87, Bishopsgate Street Without, E.C., same side as Eastern Counties Railway.

AGRICULTURAL MACHINERY.

E. R. AND F. TURNER, Ipswich, manufacture Prize Mills for Crushing Corn, Seed, Malt, &c.; Portable Grinding Mills, Steam Engines fixed and portable from 2 horse-power and upwards; Threshing Machines, Chaff Cutter, Oilcake Breakers, Horse Gears, Saw Tables, &c., all of a superior description and adapted for Home, Colonial, and Foreign use. Illustrated Price Lists sent free on application.

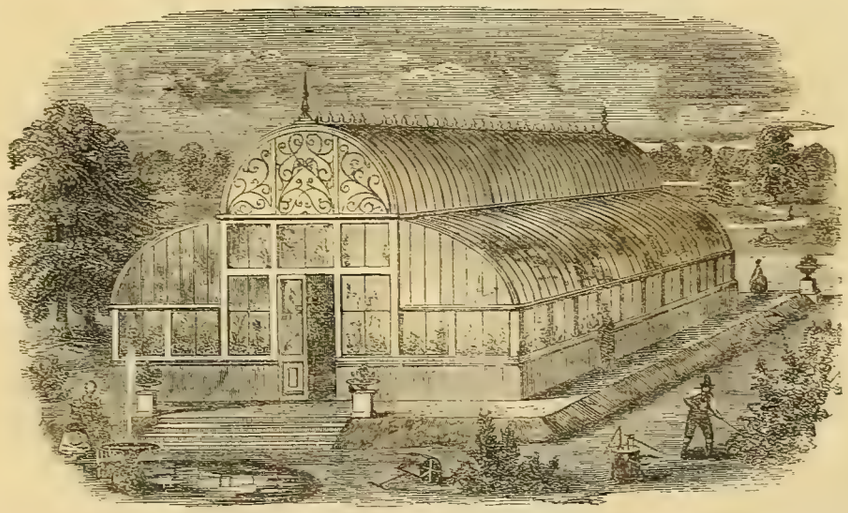
SMALL GAS APPARATUS, WITH FREEDOM FROM NUISANCE.

BOWER'S PATENT NATIONAL COAL GAS APPARATUS, for Private Residences, Farm Buildings, Churches, Chapels, Railway Stations, and all isolated places not yet lighted with Gas. The various parts are of the best materials and workmanship, are not liable to get out of order, and can be worked with a small degree of attention by a farm servant or labourer without materially interfering with his other duties. Prospectuses with testimonials, &c., may be had on application to the Proprietors and Manufacturers,

J. T. B. PORTER & Co., Lincoln.

COTTAM & COMPY., Engineers, Founders, &c.,

2, WINSLEY STREET, LONDON, W.



A SHOW ROOM DEVOTED ENTIRELY TO ARTICLES OF HORTICULTURE.

THE NEW ILLUSTRATED CATALOGUE UPON APPLICATION.

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	„ Syringes	Garden Bordering
Hot-water Apparatus	Ornamental Wire Work	Hurdles	„ Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

Iron Hurdles, Strained Wire Fencing, Game Netting, &c.

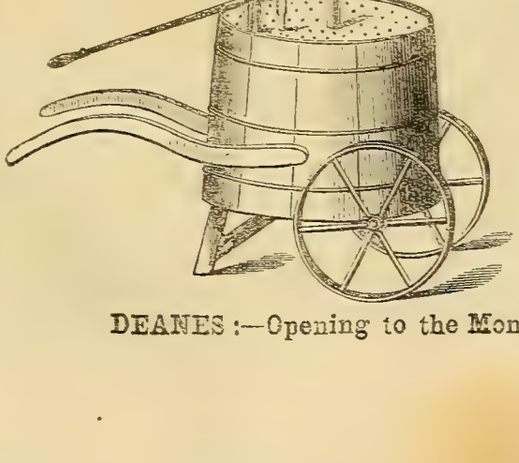
Every description of Plain, Ornamental, Cast and Wrought Iron, and Wire Work.

EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

N.B. COTTAM AND COY. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works opposite the Pantheon.

DEANE & COMPANY'S

HORTICULTURAL TOOLS.



GARDEN ENGINES, Galvanized Iron
Prices 55s., 63s., 105s., 120s.

Ditto, Wood, 84s,, 105s, 130s.

Flower Stands, 4s. 6d. each.

Cast Iron Ornamental ditto, to hold 7 Vases, 27s.

Deane's Mowing Machines, with Boyd's Patented Improvements, £4 17s. 6d; £6 6s. 0d., £6 17s. 6d., £7 7s. 0d.

Green House Syringes, 8s., 10s., 18s. 6d

Garden Rollers, £1 14s. 6d., £2., £2 12s. £3 3s., £3 18s., £4 13s., £5 12s., £7 10s.

Garden Stools, 4s. 6d.

Garden Chairs, from 30s.

Boyd's Self-adjusting Scythe, 10s. 6d.

Wire Work, 18in. 4d. per yard run.

Every Implement for Garden use on the lowest Terms.

DEANES:—Opening to the Monument, London Bridge.

ORNAMENTAL GARDENING.



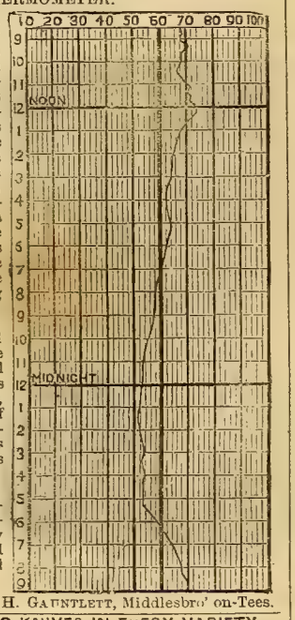
AUSTIN, SEELEY, AND CO. respectfully invite the attention of the Nobility and Gentry to their large FLOWER BASINS or "PORTE-FLEURS," of which they have now some handsome designs, from 7 to 20 feet diameter.

Fountains of every description, Vases & Figures for Gardens, and Ornamental Balustrading.—370 to 375, Euston Road, N.W.

TO HORTICULTURISTS.

GAUNTLETT'S PATENT CHRONOMETRICAL THERMOMETER.

This instrument, which combines an eight-day clock of the best English make showing time, with a newly-patented Thermometer, wherein glass and quicksilver are dispensed with, writes down the temperature of the atmosphere on a slip of paper, and when placed in a Hothouse, Forcing House, or Conservatory, &c., supplies a valuable record of the temperature, with all its variations, showing the time when any change took place, and how long such change continued.



The above slip (reduced in size) exhibits the temperature of the Royal Agricultural Society's show yard at Chester, July 22, 1858, written off by one of these instruments, to which was awarded the Society's SILVER MEDAL.

This is the only instrument that registers temperature continuously and writes it down, and no horticulturist should be without it.

Orders received by W. H. GAUNTLETT, Middlesbro' on-Tees.

MAPPIN'S PRUNING KNIVES IN EVERY VARIETY.
WARRANTED GOOD BY THE MAKERS.



MAPPIN BROTHERS, Queen's Cutlery Works, Sheffield; and 67 & 68, King William St., London, E.C.

MAPPIN'S "SHILLING" RAZORS Shave well for Twelve Months without Grinding.

MAPPIN'S 2s. RAZORS Shave well for Three Years.

MAPPIN'S 3s. RAZORS (suitable for Hard or soft Beards,) Shave well for Ten Years.

MAPPIN'S SUPERIOR TABLE-KNIVES maintain their unrivalled Superiority—handles cannot possibly become loose—the blades are all of the very first quality, being their own Sheffield manufacture.

	Tble. Kns.	Dst. Kns.	Carvers.
Ivory 3½ in. Handle, balanced,	20s. p. doz.	16s. p. doz.	6s. p. pair
Do. 4 in. do.	25s. ,,	18s. ,,	9s. ,,

MAPPIN'S SILVER-PLATED DESSERT KNIVES and FORKS, in Mahogany Cases.

12 Pairs Knives and Forks,	Ivory Handles, in Case..	80s.
12 Do.	Pearl Handles, do. ..	130s.
12 Do.	Silver-Plated Handles, do. ..	80s.

MAPPIN'S ELECTRO-SILVER PLATE.—MAPPIN BROTHERS, Manufacturers by Special Appointment to the Queen, are the only Sheffield makers who supply the consumers in London. Their LONDON SHOW ROOMS, 67 and 68, King William Street, London Bridge, E.C., contain by far the largest STOCK of ELECTRO-SILVER PLATE in the World, which is transmitted direct from their Manufactory, Queen's Cutlery Works, Sheffield.

	Fiddle Pattern.	Double Thread.	King's Pattern.
12 Table Forks, best quality	£1 16 0	£2 14 0	£3 0
12 Table Spoons, best quality	1 16 0	2 14 0	3 0
12 Dessert Forks, best quality	1 7 0	2 0 0	2 4
12 Dessert Spoons, best quality	1 7 0	2 0 0	2 4
12 Tea Spoons, best quality	0 16 0	1 4 0	1 7

Messrs. MAPPIN BROTHERS respectfully invite buyers to inspect their unprecedented display, which, for beauty of design, exquisite workmanship, and novelty, stands unrivalled. Their Illustrated Catalogue, which is continually receiving addition of New Designs, sent per post on receipt of 12 stamps.—MAPPIN BROTHERS, 67 & 68, King William Street, London Bridge, E.C; Manufactory, Queen's Cutlery Works, Sheffield.

B. SAMUELSON,

AGRICULTURAL ENGINEER AND MACHINIST,

76, CANNON STREET, WEST, LONDON; WORKS—BANBURY, OXON;

INVITES the attention of Agriculturists to his IMPROVED DOUBLE-ACTION HAY-MAKER (Price 13*l.* 13*s.*).

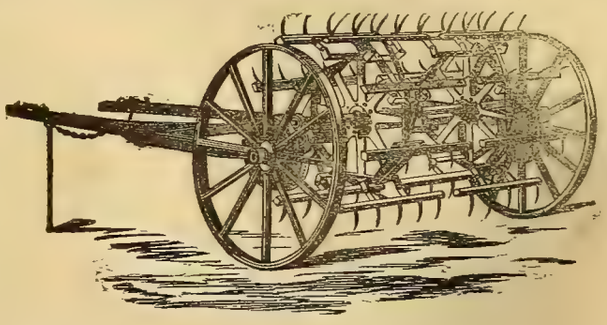
This Machine is guaranteed against breakages in fair usage.

SAMUELSON'S IMPROVED HORSE RAKES.

No. 3, extreme width, 7 feet 6 ins. £7 10 0
No. 4, ,, ,, 8 feet 6 ins. £8 0 0
Steeled Teeth, 10*s.* extra.

SAMUELSON'S PATENT BRITANNIA SELF-RAKING REAPING MACHINE, with side delivery in sheaf (requires no rakers or gatherers), price 32*l.* 10*s.* at the Works, Banbury; 34*l.* in London.

SAMUELSON'S BOYD'S PATENT LAWN MOWING AND ROLLING MACHINES. The only Machine that will cut WET as well as dry Grass. Price, from 4*l.* 17*s.* 6*d.* to 13*l.* 13*s.*



SAMUELSON'S PATENT PRIZE GARDENER'S DOUBLE ACTION TURNIP CUTTER, with the new Patent improvement for separating the dirt and small chippings from the clean and useful pieces.

SAMUELSON'S PRIZE CHAFF CUTTERS, MILLS, CAKE BREAKERS, and food-preparing Implements of every description; also HARROWS, FIELD ROLLERS, CLOD CRUSHERS, &c.

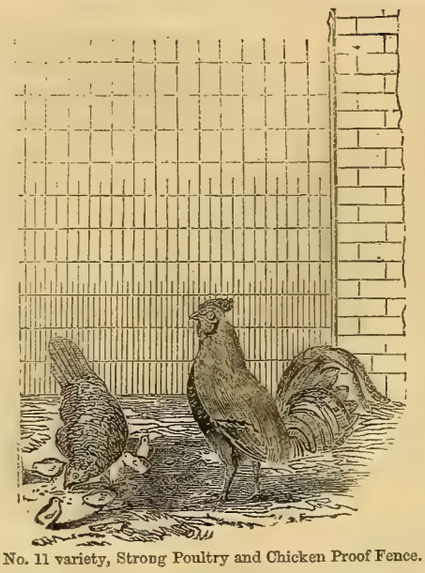
The above may be obtained at

B. SAMUELSON'S Works, Banbury, Oxon; London Warehouse, 76, Cannon Street, W.

GREENING & COMPANY'S

PATENT WIRE FENCES.

PATRONISED BY HIS ROYAL HIGHNESS THE PRINCE CONSORT.



No. 11 variety, Strong Poultry and Chicken Proof Fence.

SPECIFICATION.—Horizontal bars of stout tough wire 6 inches apart. Meshes at the foot of fence 1 inch apart; at the centre of fence, 2 inches; at the top of fence, 4 inches.

"By far the most elegant and durable wire fencing that has come under our notice. Below it is sufficiently fine to be proof alike against the ingress of rats and the egress of chickens, and being spiked above it affords no resting-place for the fowls, who consequently do not attempt to fly over it."—*Poultry Book.*

PRICES PER YARD:—

3 feet high,	1*s.* 6*d.*	japanned;	1*s.* 10*d.*	galvanised.	
4 ,,	1 11	,,	2 4	,,	
5 ,,	2 3	,,	2 9	,,	
6 ,,	2 6	,,	3 0	,,	

C. & CO.'S NEW ILLUSTRATED CATALOGUE

is now ready.

It contains descriptions of the above and other Iron and Wire Fences for Parks, Farms, Gardens, Game Preserves, Poultry Courts, &c.

Post free on receipt of stamp.

GREENING & Co., Victoria Iron and Wire Works, 81, Oxford Street, Manchester.

ST. PANCRAS IRON WORKS,

OLD ST. PANCRAS ROAD, N.W.

IRON HURDLES, FENCING, AND GATES.

THE PROPRIETORS OF THE ST. PANCRAS IRON WORKS, OLD ST. PANCRAS ROAD, LONDON,

WERE AWARDED THE

SILVER MEDAL of the Royal Agricultural Society for their IRON HURDLES & GATES,

which, by their peculiar construction, are more than twice as strong and durable as those in ordinary use.

Lists per post on application. Gates from 30*s.* to 500*l.*

The Hurdles can be seen in process of Manufacture at the Works.

GAME WIRE NETTING.

Professor Varnell's Enamelled and Wrought-iron Stable Fittings.

These Patent Mangers and Stable Fittings obtained the Commendation and the Silver Medal of the Royal Agricultural Society of England and the Royal Agricultural Society of Ireland, are adopted by the Royal Veterinary College, and Professor Spooner of that Institution states that they should be used by all who value the health and comfort of their horses. They can be had plain, galvanised, or enamelled.

A Show Room is devoted entirely to every description of Stable Furniture, and full-sized stalls and loose boxes are erected for inspection at St. Pancras Iron Works.

ADDRESS—THE MANAGERS,

ST. PANCRAS IRON WORKS, OLD ST. PANCRAS ROAD, LONDON, N.W.,

OPPOSITE OLD ST. PANCRAS CHURCH.

HORTICULTURAL VALUATIONS.

MR. ALFRED CHANDLER (of the late firm of Chandler & Sons, Vauxhall), begs to inform his friends that he is at liberty to undertake the valuation of Collections of Plants, Nursery Stock, Horticultural Buildings, &c.

Mr. A. C. is also open to engagements as Censor at Horticultural Exhibitions, in which capacity he has had long and extensive experience.—28, Priory Road, Wandsworth Road, S.

RICK AND HAY CLOTHS, HAY ROPES, second-hand MARQUEES and TENTS; NETTING, new and old, for protecting fruit trees; SCAFFOLD CORD, SACK TYERS, BLIND and SASH LINES, Patent Circinate NOSEBAGS, &c., &c.

J. MORISON, Manufacturer, 25, Norton Folgate, N.E.

HAY HARVEST. NICHOLSON'S PATENT HAYMAKER, to which was awarded the First Prize of the Royal Agricultural Society of England at the last contested trial.

The celebrated STAMFORD HORSE RAKE has lately been much improved, and has obtained 26 Prizes at competitive trials.

MOWING AND REAPING MACHINES are performing their work most satisfactorily, and fully justify public expectation, cutting about 10 acres per day, at a cost of 9*d.* per acre.

Orders for the above machines should be given at once to RICHMOND & CHANDLER, Salford, Manchester.

Branch Establishment, South John Street, Liverpool.

VASES, PEDESTALS, SUNDIALS, FOUNTAINS, FLOWER BOXES, JARDINETS, FERN CASES, BALUSTRADES, EDGINGS AND CURBS FOR FLOWER BORDERS, SEATS, &c., in Imperishable Siliceous Stone, at reduced prices, for the adornment of the Villa Garden, the Mansion Grounds, or the private or public Park.

For Priced Illustrations apply to FREDERICK RANSOME, at the Show Rooms, Cannon Row, Westminster, S.W., or Patent Stone Works, Ipswich.

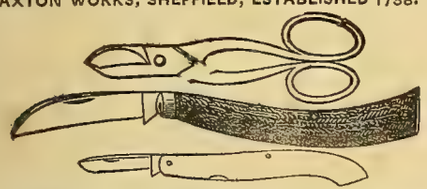
VULCANIZED INDIA-RUBBER HOSE AND TUBING FOR WATERING GARDENS, &c.

J. L. HANCOCK supplies this article, of superior make, of any required strength or size.

BRASS SCREW JOINTS, for connecting the Hose to Cisterns, also HAND BRANCHES, TAPS, and WATER SPREADERS in great variety. Orders by post promptly executed, and Illustrated Price Catalogue on application.

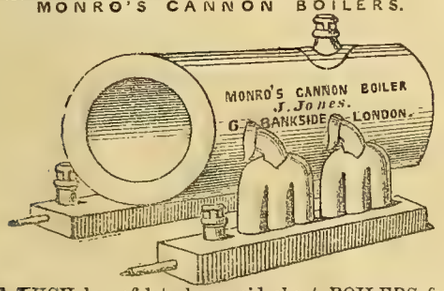
JAMES LYNE HANCOCK, Vulcanized India-Rubber Works, Goswell Mews, and No. 8, Goswell Road, London, E.C.

PAXTON WORKS, SHEFFIELD, ESTABLISHED 1738.



SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.—Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

MONRO'S CANNON BOILERS.



MUCH has of late been said about BOILERS for Heating by Hot Water, but these Boilers have now proved themselves to be the best at present invented. They are adapted for heating every description of building, and are made of various sizes. The Price of the

24-inch Cast Iron is	..	..	.. £5 10*s.* 0*d.*	each
24-inch Wrought ditto	..	..	.. 6 10 0	,,
36-inch Cast ditto	..	..	.. 8 0 0	,,
36-inch Wrought ditto	..	..	.. 8 10 0	,,

References to Gentlemen and Nurserymen where these Boilers are now at work. The Cannon Boilers are now kept in stock, and are to be had only of J. JONES, 6, Bankside. Also, every description of Saddle and Cylinder Boilers. Hot Water Pipes and Connections at prices lower than those of any other house in London. Estimates for Hot-water Apparatus erected complete in any part of the country, and an Illustrated Catalogue on application to J. JONES, 6, Bankside, Southwark, London, S.E.

MICROSCOPES.

J. AMADIO'S BOTANICAL MICROSCOPES, packed in mahogany case, with three powers, condenser, pincers, and two slides, will show the animalculæ in water, Price 18*s.* 6*d.*—Address JOSEPH AMADIO, 7, Throgmorton Street, E.C.—A large assortment of Achromatic Microscopes.

"It is marvellously cheap, and will do everything which the lover of nature can wish it to accomplish either at home or in the open air."—*The Field*, June 6, 1857.

Just published, 2d Ed., an Illustrated Catalogue, with names of 1500 Microscopic objects, free for 6 stamps.

KEATING'S PERSIAN INSECT DESTROYING POWDER.

POULTRY, DOGS, AND PLANTS are effectually freed from Fleas, and all other Vermin with which they are infested, by the above Powder, which is quite harmless to animal life. The Farmer, the Gardener, or the Sportsman, will therefore find it invaluable. Bugs, Cockroaches, Beetles, Moths in Furs, and every other species of Insect are also instantly destroyed. In packets post free, for 14, or treble size for 36 postage stamps, by THOMAS KEATING, Chemist, 79, St. Paul's Churchyard, London, E.C. Take notice each genuine packet bears the above name and address. See "THE FIELD," Oct. 2d and 9th, pp. 263, 283, and 294.

WHAT WILL THIS COST TO PRINT? is a thought often occurring to literary minds, public characters, and persons of benevolent intentions. An immediate answer to the inquiry may be obtained on application to RICHARD BARRETT, 13, Mark Lane, London. R. B. is enabled to execute every description of Printing on very advantageous terms, his office being furnished with a large and choice assortment of Types, Steam Printing Machines, Hydraulic and other Presses, and every modern improvement in the Printing Art. A Specimen Book of Types, and information for Authors, sent on application, by

RICHARD BARRETT, 13, Mark Lane, London, E.C.

Ready this day, the First Number, price 8d., Illustrated,

RECREATIVE SCIENCE:

A MONTHLY RECORD AND REMEMBRANCER OF INTELLECTUAL OBSERVATION.

CONTENTS.

THE ENDEAVOUR.
SCIENCE AND THE BOY.
THE PLANETS. By E. J. LOWE, of Highfield Observatory.
HOW TO GATHER DIATOMS. By TUFFEN WEST.
WAYSIDE WEEDS AND THEIR TEACHINGS. By SPENCER THOMSON, M.D.
TAME FISHES.
HUMBOLDT. By HAIN FRISWELL.
WATER GLASS IN PHOTOGRAPHY. By T. A. MALONE.
NIGHT FLYING MOTHS. By H. NOEL HUMPHREYS.
SCIENCE ON THE SEA-SHORE. By SHIRLEY HIBBERD.
THE KEY TO A BIRD'S HEART. By WM. KIDD, of Hammersmith.
THINGS OF THE SEASON.
FLINTS IN THE DRIFT.
HOW TO OBSERVE THE HABITS OF BIRDS.
THE GYRANSCOPE. By E. G. WOOD.
MINIATURE ROCK WORK.
NEW SOLVENT AND CEMENT.
METEOROLOGICAL OBSERVATIONS.
ASTRONOMICAL PHENOMENA OF AUGUST.

LONDON: GROOMBRIDGE AND SONS, 5, PATERNOSTER ROW;

Dublin: WILLIAM ROBERTSON, 23, Upper Sackville Street; Edinburgh: J. MENZIES, 2, Hanover Street; Glasgow: MURRAY & SON, 42, Buchanan Street; and sold by all Booksellers and at Railway Stations.

A GUIDE TO THE QUADRUPEDS AND REPTILES OF EUROPE; with Descriptions of all the species. By LORD CLERMONT. Post 8vo, 7*s.* cloth.

JOHN VAN VOORST, 1, Paternoster Row, E.C.

Complete in Two Vols., fcp. 8vo, cloth, price 10*s.*,

A MANUAL OF BRITISH BUTTERFLIES AND MOTHS. By H. T. STAINTON, Editor of "The Entomologist's Annual."

This work contains descriptions of nearly 2000 species, interspersed with observations on their peculiarities and times of appearance, &c., and is illustrated with more than 200 woodcuts.

JOHN VAN VOORST, 1, Paternoster Row, E.C.

Lately Published, Volumes I. and II., complete, in cloth, Vol I., price 28*s.*, Vol. II., price 30*s.*, or any of the separate Parts may be had of

SPECIES FILICUM; being Descriptions of all Known Ferns. Illustrated with Plates. By Sir WILLIAM JACKSON HOOKER, K.H., D.C.L, Oxon., F.R.S., F.A.S., F.L.S., &c. and Director of the Royal Gardens of Kew.

London: WILLIAM PAMPLIN, 45, Frith Street, Soho Square, W.

Now ready, Part IX., or Vol. III., Part I., price 10*s.*,

SPECIES FILICUM; being Descriptions of all Known Ferns. Illustrated with Plates. By Sir WILLIAM JACKSON HOOKER, K.H., D.C.L. Oxon., F.R.S., F.A.S., F.L.S., &c. and Director of the Royal Gardens of Kew.

London: WILLIAM PAMPLIN, 45, Frith Street, Soho Square, W.

GLENFIELD PATENT STARCH, used in the Royal Laundry, and pronounced by Her Majesty's Laundress to be the finest Starch she ever used. When you ask for Glenfield Patent Starch, see that you get it, as inferior kinds are often substituted. Sold by all Chandlers, Grocers, &c.

WOTHERSPOON & Co., Glasgow and London.

THE BEST SHOW OF IRON BEDSTEADS IN THE KINGDOM IS WILLIAM S. BURTON'S.—He has FOUR LARGE ROOMS devoted to the exclusive show of Iron and Brass Bedsteads and Children's Cots, with appropriate Bedding and Bed Hangings. Portable Folding Bedsteads, from 11*s.*; Patent Iron Bedsteads, fitted with dovetail joints and patent sacking from 14*s.* 6*d.*; and Cots, from 15*s.* 6*d.* each; handsome Ornamental Iron and Brass Bedsteads, in great variety, from 2*l.* 13*s.* 6*d.* to 20*l.*

THE PERFECT SUBSTITUTE FOR SILVER.—The REAL NICKEL SILVER, introduced more than 20 years ago by WILLIAM S. BURTON, when PLATED by the patent process of Messrs. Elkington & Co., is beyond all comparison the very best article next to sterling silver that can be employed as such, either usefully or ornamentally, as by no possible test can it be distinguished from real silver. A small useful plate chest, containing a set, guaranteed of first quality for finish and durability, as follows:—

	Fiddle or Old Silver Pattern.	Thread or Brunswick Pattern.	King's Pattern.	Military Pattern.
	£ *s.* *d.*	£ *s.* *d.*	£ *s.* *d.*	£ *s.* *d.*
12 Table Forks	1 18 0	2 8 0	3 0 0	3 10 0
12 Table Spoons	1 18 0	2 8 0	3 0 0	3 10 0
12 Dessert Forks	1 10 0	1 15 0	2 2 0	2 10 0
12 Dessert Spoons	1 10 0	1 15 0	2 2 0	2 10 0
12 Tea Spoons	0 18 0	1 4 0	1 10 0	1 18 0
6 Egg Spoons, gilt bowls ..	0 12 0	0 15 0	0 18 0	1 1 0
2 Sauce Ladles	0 7 0	0 8 6	0 10 6	0 16 0
1 Gravy Spoon	0 8 0	0 11 0	0 13 6	0 16 0
2 Salt Spoons, gilt bowls ..	0 4 0	0 5 0	0 6 0	0 7 6
1 Mustard Spoon, gilt bowl	0 2 0	0 2 6	0 3 0	0 3 9
1 Pair of Sugar Tongs ..	0 3 0	0 3 9	0 5 0	0 7 0
1 Pair of Fish Carvers ..	1 4 0	1 7 6	1 12 0	1 18 0
1 Butter Knife	0 3 6	0 5 9	0 7 0	0 8 0
1 Soup Ladle	0 13 0	0 17 6	1 0 0	1 1 0
1 Sugar Sifter	0 4 0	0 4 9	0 5 9	0 8 6
Total	11 14 6	14 11 3	17 14 9	21 4 9

Any article to be had singly at the same prices. An oak chest to contain the above, and a relative number of knives, &c., 2*l.* 15*s.* Tea and coffee sets, cruet and liqueur frames, waiters, candlesticks, &c., at proportionate prices. All kinds of re-plating done by the patent process.

CUTLERY, WARRANTED. — The most varied assortment of TABLE CUTLERY in the world, all warranted, is on SALE at WILLIAM S. BURTON'S, at prices that are remunerative only because of the largeness of the sales. 3½-inch Ivory-handled Table Knives, with high shoulders, 12*s.* 6*d.* per doz.; Desserts to match, 10*s.* 0*d.*; if to balance, 6*d.* per doz. extra; Carvers, 4*s.* 3*d.* per pair; larger sizes, from 20*s.* to 27*s.* 6*d.* p. doz.; extra fine Ivory, 33*s.*; if with silver ferrules, 40*s.* to 50*s.*; white bone Table Knives, 6*s.* 0*d.* per doz.; Desserts, 5*s.* 0*d.*; Carvers, 2*s.* 3*d.* per pair; black-horn Table Knives, 7*s.* 4*d.* per doz.; Desserts, 6*s.*; Carvers, 2*s.* 6*d.*; black wood-handled Table Knives and Forks, 6*s.* per doz.; Table Steels, from 1*s.* each. The largest stock in existence of Plated Dessert Knives and Forks, in cases and otherwise, and of the new plated Fish Carvers.

WILLIAM S. BURTON'S GENERAL FURNISHING IRONMONGERY CATALOGUE may be had gratis, and free by post. It contains upwards of 400 Illustrations of his illimited Stock of Electro and Sheffield Plate, Nickel Silver and Britannia Metal goods, Dish Covers and Hot-water Dishes, Stoves, Fenders, Marble Chimney-pieces, Kitchen Ranges, Lamps, Gaseliers, Tea Urns and Kettles, Tea Trays, Clocks, Table Cutlery, Baths and Toilet Ware, Turnery, Iron and Brass Bedsteads, Bedding, Bed Hangings, &c., with Lists of Prices and Plans of the 16 large Show Rooms at 39, Oxford Street; 1, 1A, 2, and 3, Newman Street; and 4, 5, and 6, Perry's Place, London.—Established 1820.

TO BE LET, BRISTOL NURSERY GROUNDS, Kemp Town, Brighton. These Gardens are now to Let for occupation with immediate possession. — Any person desirous of treating for the same may obtain particulars and permission to view the grounds on application to Mr. R. W. LUCAS, 20, Great Marlborough Street, London, W.; and of Mr. A. CHANDLER, Horticultural Valuer, 28, Priory Road, Wandsworth Road, S.

FARM IN HAMPSHIRE TO BE LET

By Tender for a Term of Years from Michaelmas next.

TO BE LET, A SHEEP AND CORN FARM, with Chalk Subsoil, containing about 657 acres, and situated within five miles of the important market towns of Winchester and Romsey. The proprietors do not bind themselves to accept the highest or any Tender.—For further particulars and to view, apply to Mr. HUGH RAYNBIRD, Land Agent, &c., Hackwood, near Basingstoke, to whom Tenders are to be addressed on or before 10th August next.

TO NURSERYMEN AND OTHERS.

TO BE DISPOSED OF, a really first-rate NURSERY, including Glass, Stock, and Business, entire, on very advantageous terms, in the immediate neighbourhood of London. Might suit two or more in partnership, or any country firm requiring a London place of business. Long Lease and capitally situated. Part of the Purchase Money might remain at interest if desired.—For all further particulars apply by letter to A. B. & Co., care of Messrs. Williams & Lloyd, Stationers, 29, Moorgate Street, London, E.C.

Sales by Auction.

ORCHIDS (THE COLLECTION OF A GENTLEMAN); AND SOME FINE AND RARE FERNS AND ORNAMENTAL PLANTS.

MR. J. C. STEVENS will Sell by Auction at his Great Room, 38, King Street, Covent Garden, W.C., on TUESDAY, August 2, at half-past 12 o'Clock precisely, the collection of ORCHIDS of a gentleman, in fine health, and including—

Aerides crispum	Phalænopsis grandiflora
Cypripedium hirsutissimum	Saccolabium guttatum
,, Fairrieanum	Tricophilia suavis
Cattleya labiata	Vanda cœrulea
,, crispa	,, suavis

and numerous other good sorts. Some Fine and Rare Ferns and Foliage Plants.—May be viewed on the morning of Sale, and Catalogues had.

CLAPHAM PARK.—STOVE & GREENHOUSE PLANTS.

MR. J. C. STEVENS will Sell by Auction, on the Premises, No. 2, South Road, Clapham Park, on TUESDAY, August 9, at 12 for 1 o'Clock precisely, the Collection of STOVE and GREENHOUSE PLANTS of a Gentleman leaving the residence, comprising Camellias, Azaleas, Rhododendrons, Orange Trees, Ferns, many of which are choice; a few Orchids, Achimenes, Gloxinias, &c.; and 60 Fruiting and Succession Pines (Queens).—May be viewed on the day prior and morning of Sale, and Catalogues had of the Gardener on the Premises, and of Mr. J. C. STEVENS, 38, King Street, Covent Garden, W.C.

IMPORTANT SALE.

To Noblemen and Gentlemen, Horticulturist Plant Growers, and the Trade.

MESSRS. PROTHEROE AND MORRIS have received instructions from Mr. Epps to Sell by Auction (in consequence of the Lease of one of his Nurseries at Maidstone having expired, and immediate possession required), on WEDNESDAY, August 24, and following days, at 11 o'Clock each day, the whole of his large and valuable collection of SPECIMEN PLANTS of all sizes, amounting to upwards of 1000, consisting of the newest and best varieties of Ericas, Azaleas, Pimeleas, Aphelexes, Eriostemon, Acacia, Polygala, Statice, Tremandra, Ixoras (6 vars.), Allamanda, Stephanotis, Rhynchospermum jasminoides, Dipladenias, Medinella, Pleroma elegans (fine), Rondeletia, Vinca. Aphelandras, Ardisias, Brexia, Caladiums, Cissus, Crotons, Dracænas, Striped Yuccas, &c.; also a large quantity of his young stock, including 10,000 to 15,000 new and valuable Greenhouse and Stove Plants, comprising Ericas, Epacris, greenhouse Creepers, French Geraniums, Allamandas, Ixoras, Aphelandras, Dipladiums, Eucharis, Gardenias, Gesnerias, Gloxinias, new Tydeas, Achimenes, Stove Climbers, variegated and ornamental foliaged plants, &c.; also several ranges of newly erected Greenhouses, Pits, &c. May be viewed 14 days prior to the Sale. Catalogues had on the premises, of the principal Seedsmen in London, and of the Auctioneers, American Nursery, Leytonstone, Essex, N.E. The Nursery is situated near the Maidstone Railway Station, and about 2 hours' ride from London Bridge Station on the North Kent line.

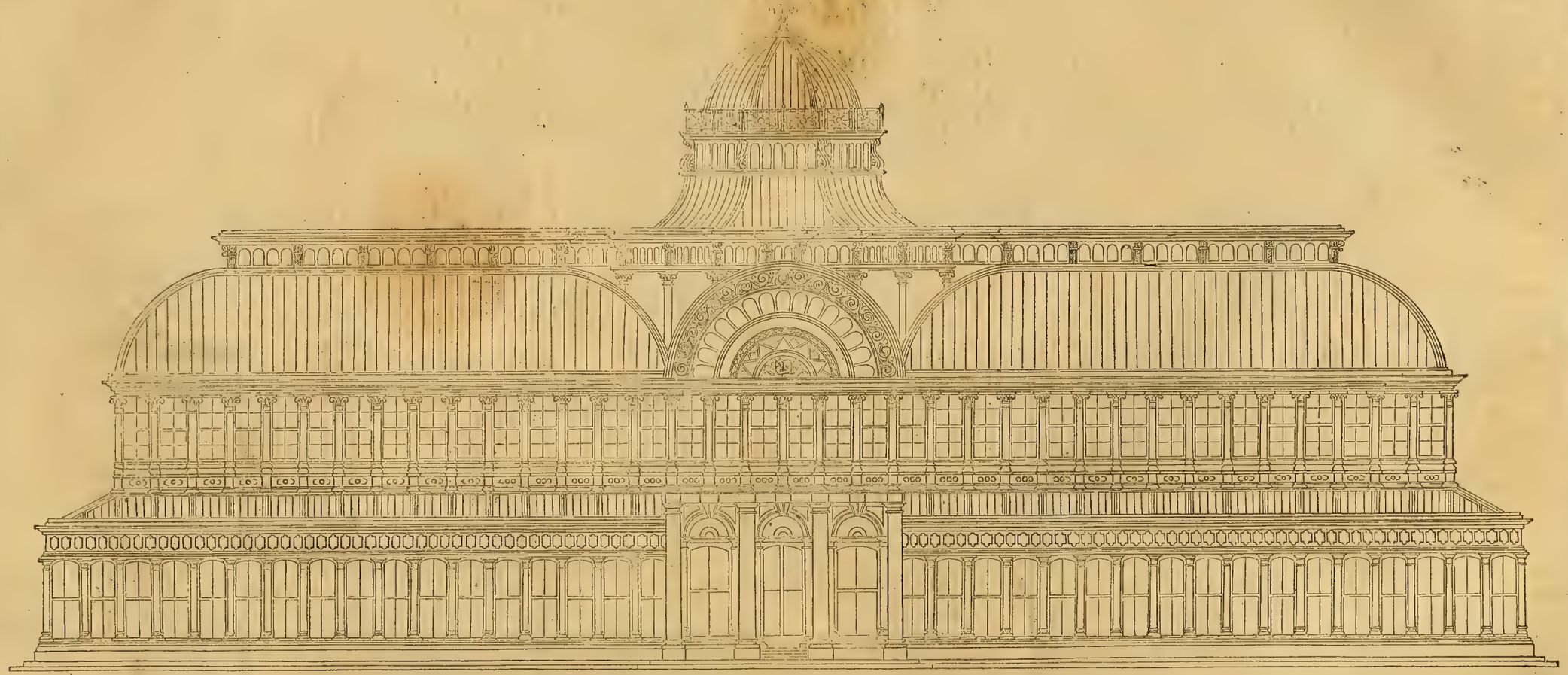
The valuable NURSERY STOCK extending over 5 Acres (comprising very choice and large specimens of Coniferæ and Ornamental Trees and Shrubs that will remove well and calculated for immediate effect), will be sold about the middle of October next, particulars of which will be duly announced.

IMPORTANT SALE AT ARMAGH.

MR. BELL will Sell by Auction, on the premises, on WEDNESDAY, August 10, at 12 o'clock, if not previously disposed of by private sale, of which due notice would be given, the valuable NURSERY of the late Mr. James Skead, with all the Stock on it. A deposit of 50*l.* will be required on the purchaser being declared. This Nursery has been established for upwards of 30 years, and has an extensive trade with all parts of the North of Ireland. It contains about 30 acres of valuable Land adjoining the city, and is now well stocked with Forest and Fruit Trees, Thorn Quicks, Shrubs, Flowers, &c. There is a comfortable Dwelling House and Offices on the premises. Armagh has Railway communication with all parts of Ireland. A large portion of the purchase money may remain in the hands of the purchaser, on satisfactory security.—Further information may be had by applying to Mrs. SKEAD, at the Nursery, or to Mr. SAMUEL GARDNER, Armagh.

HORTICULTURAL BUILDINGS MANUFACTURED BY STEAM-POWER MACHINERY.

LOWEST PRICES AND BEST MATERIALS.



HENRY ORMSON, Stanley Bridge, King's Road, Chelsea, London, S.W.,

HORTICULTURAL BUILDER AND HOT-WATER APPARATUS MANUFACTURER,

BEGS most respectfully to call the attention of the Nobility, Gentry, Nurserymen, &c., to his superior manner of erecting every description of Horticultural Building, and he trusts by unremitting personal attention to the details of his business, by using only the very best materials, by employing the most skilful and efficient workmen, and by the most moderate possible charges to merit a continuance of the patronage so kindly and so liberally bestowed on him for many years past.

In the BUILDING DEPARTMENT his object will be to adapt all erections to the particular purposes for which they are required. He will devote equal attention to the plain, inexpensive, practical erections of Pits, Orchard Houses, Greenhouses, Vineries, &c., as to the more elaborate and architectural erections of Conservatories, Winter Gardens, &c., either in wood or iron.

The HEATING DEPARTMENT always engages his especial personal attention, and he feels justified in saying that in simplicity, safety, durability, and economy of fuel, combined with thorough effectiveness, his system cannot be surpassed.

VENTILATION.—Knowing the absolute necessity for thorough ventilation, he makes it a matter of first consideration.

See SECTIONS, &c., of Horticultural Buildings in former Numbers of the *Gardeners' Chronicle.*

PLANS, SPECIFICATIONS, and ESTIMATES free on application.

ORMSON'S PATENT JOINTLESS TUBULAR BOILERS have now from *practical tests* established for themselves the highest standing reputation for power, efficiency, and economy of fuel.

H. O. *particularly wishes to call attention to the fact of his having fixed a great number of these excellent Boilers, and to the fact of not one of them having failed, fractured, leaked, or given way in any respect.*

See Testimonials in former Numbers.

Printed by WILLIAM BRADBURY, of 13, Upper Woburn Place, and FREDERICK MULLETT EVANS, of No. 20, Queen's Road, West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and published by them at the Office, No. 5, Upper Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—SATURDAY, July 30, 1859.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 32.—1859.] SATURDAY, AUGUST 6. {Price Fivepence. {Stamped Edition, 6d.

INDEX.

Agri. Soc. of England	658 c	Pig keeping	661 a
Alpine vegetation	653 b	Plants, new	652 b
Aquarium, the	652 b	— Alpine	653 b
Books noticed	655 a	Pyrenees, Weld on the	655 a
Botanical questions	656 c	Rainfall in Surrey	653 b
Chamæbatia foliolosa	652 b	Rat, water	654 a
Cherry grub	654 b	Rose, Manetti	655 a
Cows	658 b	Sheep feeding	658 b
— dairy	658 b	Soil, heat of mountain	653 b
Crops, appearances of	657 c	Succulents	654 c
Cucumbers, calyx and corolla of	654 a	Syphon watering	656 c
— winter	655 a	Temperature, ground	651 b
Everlastings	656 c	— of mountain soil	653 c
Fruits, wall	656 c	Trade lists	656 a
Gishurst Compound	654 c	Transplanting, August	651 c
— v. bugs	654 c	Wall fruits	656 c
Gourds, calyx and corolla of	654 a	Watering, syphon	656 a
Gowran Castle Gardens	656 a	Water rat	654 a
Guano, Jarvis Island	659 a	Wheat mildew	657 c
Pear grub	654 b	York Agricultural meeting	657 b
		— — report of	659 a

BRITISH POMOLOGICAL SOCIETY.—The next Meeting will be held at St. James's Hall, 69 to 71, Regent Street, on THURSDAY, August 18, on which day the following premiums are offered:—Two Guineas, One Guinea, and Half a Guinea for best, second best, and third collections of FIGS.

Two Guineas, for the best Seedling GRAPE, having a Muscat flavour.

Two Guineas, for the best Seedling GRAPE of any other description, and not having a Muscat flavour.

Two Guineas, for the best GRAPE, not a Seedling raised in this country, and not in general commerce.

Forms, Copies of Rules, Instructions for Packing, or other information, may be obtained upon application to Mr. W. DAVIDSON, Secretary *pro tem.*, to whom parcels, &c., should be addressed, at St. James's Hall, 69 to 71, Regent Street, London, W.; and letters (to avoid delay), at 2, Randolph Road, Maida Hill, London, W.

HUNTINGDONSHIRE HORTICULTURAL SOCIETY.

Patron—The Right Hon. the Earl of SANDWICH.
President—E. FELLOWS, Esq.

The AUTUMNAL EXHIBITION will be held, by the kind permission of D. VEASEY, Esq., in the grounds of Castle Hill House, Huntingdon, on TUESDAY, Sept. 6, when in addition to the usual Prizes, TWO SILVER CUPS will be given for DAHLIAS.

By permission of Colonel Lord FREDERIC PAULETT, C.B., the celebrated BAND of the Coldstream Guards, conducted by C. Godfrey, Esq., Band Master, will perform during the day.

The Schedule of Prizes and further particulars may be obtained on application to Mr. G. M. FOX, Secretary.

Arrangements are in progress with the different railway companies, of which due notice will be given.

GAINSBOROUGH HORTICULTURAL SOCIETY.
AUTUMN SHOW, September 7.

A SILVER CUP will be given for the best 18 DAHLIAS shown, dissimilar blooms. Notice to be given by Exhibitors to the Secretary, and Entrance Fee (to Non Subscribers) of 5*s.* to be paid before August 22. Open to all England.

WM. AMCOATS, Secretary.

THE COLLEGE GARDENS, SALISBURY.
DAHLIAS.

B. Thirty-six Blooms (Nurserymen), 1st prize, 3*l.* 3*s.*; 2d prize, 2*l.* 2*s.*; 3d prize, 1*l.* 1*s.*

C. Twenty-four Blooms Fancy (Nurserymen), 1st prize, 2*l.* 2*s.*; 2d prize, 1*l.* 10*s.*; 3d prize, 1*l.*

D. Twenty-four Blooms (Amateurs), 1st prize, 3*l.* 3*s.*; 2d prize, 2*l.* 2*s.*; 3d prize, 1*l.* 10*s.*

E. Twelve Blooms (Amateurs), 1st prize, 1*l.* 10*s.*; 2d prize, 1*l.*; 3d prize, 15*s.*

F. Six Fancy (Amateurs), 1st prize, 1*l.*; 2d prize, 15*s.*; 3d prize, 10*s.*

OPEN TO ALL ENGLAND.—Entries to Classes B, C, and D, 10*s.*; E and F, 5*s.* each.

A Subscription Plate for the best Six Seedling Dahlias to consist of Flowers raised by the exhibitor from seed in 1858; an affidavit to be made to that effect. Open to all growers subscribing one guinea each. Stands will be provided for these, and all entries must be made by the 20th of August. Three Silver Cups value 5*l.* 5*s.*, 3*l.* 3*s.*, and 2*l.* 2*s.*, will be given.

JOHN KEYNES, Hon. Sec.,

From whom any further particulars may be obtained, if required.

THE HEIRS of the late MR. BERNARD SAUNDERS, NURSERYMAN, &c., Jersey, respectfully request that all CLAIMS in; and they also solici[t] inst deceased's estate may be sent due to the estate.—Cæs[ar] e early settlement of all accounts u Nurseries, Jersey, Aug. 6.

AUSTRALIAN W[heat] the above having [quan]tity true and fit for SEED, will oblige by communicatin[g] vith GEORGE GIBBS & Co., Seedsmen, 26, Down Street, Picca[dilly], London, W.

CACTI TO BE SOLD CHEAP.—Some of the finest varieties and specimens in England, first class show plants.—Apply to Mr. YOUNG, Millfield Lane, Highgate, Middlesex, N.

TRIFOLIUM INCARNATUM, 3*d.* to 4*d.* per lb.; with hints on its successful cultivation, showing how 3 tons per acre of the most nutritive hay may be secured, the advantages of sowing it where broad Clover is thin, and its superiority to Tares as green food.

PAGE AND TOOGOOD having secured a large breadth of prime quality, offer it at the above low rate for cash.

New Turnip Seed, per lb.	0*s.* 6*d.*	Italian Rye-grass, per bush., 5*s.* to	7*s.* 0*d.*
New Rape, do.	0 4	Mustard, per lb., 4*d.* to	0 5

Calceolaria and Cineraria, in packets of 2*s.* 6*d.* and 1*s.* each, saved from one of the finest collections in Europe.

Seeds for exportation to all parts of the world.

PAGE & TOOGOOD, Seed Growers and Merchants, Oxford Street; and Above Bar, Southampton.

GEORGE GIBBS AND CO.,
SEEDSMEN,
26, DOWN STREET, PICCADILLY,
LONDON, W.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY LIMITED supply every requisite for the Farm and the Garden.
Registered Offices, Union Road, Plymouth.

HYACINTHS AND OTHER BULBS.

WM. CUTBUSH AND SON'S DESCRIPTIVE CATALOGUE of the above is published, and can be had post free on application.
Highgate Nurseries, London, N.

FERN CATALOGUE.

ROBERT SIM'S NEW DESCRIPTIVE AND PRICED CATALOGUE, No. 6 (62 pages) of his COLLECTION of BRITISH AND EXOTIC FERNS, can be had, post free, for 8 stamps. Gratis to all previous purchasers of Ferns.
Nursery, Foot's Cray, Kent, S.E.

TO THE TRADE.

RARE FERNS.—PTERIS ARGENTEA, NOTHOCHLÆNA HOOKERI, ATHYRIUM CORYMBIFERUM, ADIANTUM TENERUM, CHEILANTHES TENUIS, &c. PRICED LIST free on application to EDWIN COOLING, Mile Ash Nurseries, Derby.

STRAWBERRY PLANTS AND CATALOGUE.—Plants of the pretty little Bush Alpine, both Red and White, without runners, suitable for edgings to walks, beds, &c., 10*s.* per 100 sets.

A DESCRIPTIVE CATALOGUE of upwards of 130 sorts is just published. To all who wish to purchase plants it will be sent by applying to the grower, WILLIAM JAS. NICHOLSON, Egglescliffe, Yarm, Yorkshire.

MR. EPPS begs to state that he has, and is about harvesting, the following SEEDS, grown on his farm, Romney Marsh, from the finest selected stocks possible:—

YELLOW and ORANGE GLOBE MANGEL	WHITE CARROT
LONG RED DO.	ALTRINGHAM DO.
	SURREY DO.

All the above from selected bulbs.

Superior CRIMSON BEET. Sample roots sent if required.

PEAS.—British Queen, Monarch, Champion, Hairs' Mammoth, Burbidge's Eclipse, Dickson's Early Favourite, Sangster's No. 1. These are an extraordinary fine sample, grown principally on sticks. Purchasers sending the quantity they require of each will receive special offers at very low prices.
Seed Warehouse, High Street, Maidstone.

CINERARIA, CALCEOLARIA, AND PRIMULA.

F. AND A. SMITH are now sending out SEED of their splendid varieties of the above in sealed packets, without which none are genuine, at 1*s.*, 1*s.* 6*d.*, 2*s.* 6*d.*, and 5*s.* each. To be had also of most respectable Nurserymen and Seedsmen in the Kingdom.—Dulwich, Surrey, S.

FIRST PRIZE CALCEOLARIA, CINERARIA, AND PRIMULA.

"Shanakiel House, Cork, June, 1859.

"GENTLEMEN,—The Calceolaria Seed you sent me turned out so remarkably well, my gardener got First Prize for the plants at our recent Flower Show. You will please send me another half-crown packet, for which I enclose postage stamps.

"Messrs. Jackson & Son. "FRANCIS R. LEAHY."

Seed of the same excellence is now being supplied by post or otherwise. CALCEOLARIA, 1*s.*, 1*s.* 6*d.*, and 2*s.* 6*d.*; CINERARIA, 6*d.*, 1*s.*, and 2*s.*; and PRIMULA, 1*s.*, 1*s.* 6*d.* and 2*s.* 6*d.* per packet.

T. JACKSON & SON, Nurserymen and Seedsmen, Kingston, S.W.

SEEDS FOR PRESENT SOWING.

JOHN CATTELL has NEW SEEDS of the following choice articles now ready to send out, in packets post free at the annexed prices. Orders from unknown correspondents must contain a Post-office Order or Postage Stamps for the amount.

	Per packet.—*s.*	*d.*
Calceolaria, from finest large flowered varieties of the richest colours	2	6
,, second quality	1	0
Cineraria, from finest new varieties	2	6
,, from fine older varieties	1	6
,, second quality	1	0
Geranium, from extra fine new French and show vars., 12 seeds	1	0
Hovea Celsii, just gathered; if sown now will vegetate next spring	1	0
Delphinium formosum; if sown now in pans will make good plants to flower next June	0	6
Cyclamen persicum	0	6
Oxalis rosea	0	3

Nursery and Seed Establishment, Westerham, Kent.

CINERARIA, HERBACEOUS CALCEOLARIA, AND HALF SHRUBBY DITTO SEED.—These have been saved from Turner's most beautiful varieties; in 1*s.* and 2*s.* 6*d.* packets. Primula and Hollyhock, from the newest and handsomest varieties, 1*s.* per packet. Agents for F. & A. Smith's splendid Cineraria, in 1*s.* 6*d.*, 2*s.* 6*d.*, and 5*s.* packets; also agents for Dobson & Son's splendid Calceolaria, in 1*s.* 6*d.*, 2*s.* 6*d.*, 3*s.* 6*d.*, & 5*s.* packets.—Catalogues of the newest Flower Seeds, and newest Dutch and Cape Bulbs, sent post-paid.—BUTLER & MCCULLOCH, Seedsmen, Covent Garden Market, W.C.

HALF-SHRUBBY CALCEOLARIAS.

ROBERT ALEXANDER begs to inform his patrons and the public that carefully HYBRIDISED SEED of the above is now ready for distribution at 2*s.* 6*d.* per packet.

This celebrated and much admired collection has fully sustained its character for superiority the present season, by again carrying off the First Prizes at the Bath, Bristol, and Clifton Horticultural Exhibitions, making three successive seasons of success at each exhibition.

They have also been pronounced by the most experienced Horticulturists of the neighbourhood, as well as others from a distance officiating as Censors, as the most distinct and superior in point of habit that had come under their notice.

Lyncombe Vale, Bath.

CUTHILL'S STRAWBERRY PLANTS will be sent out on and after August 15.

CUTHILL'S EARLY BLACK PRINCE, 5*s.*; selected, 7*s.* 6*d.* per 100.

CUTHILL'S PRINCESS ROYAL OF ENGLAND.—Good size, fine colour, Pine-apple flavour, great bearer, very hardy, good forcer. Per 100, 7*s.* 6*d.*; selected, 10*s.*

CUTHILL'S PRINCE OF WALES.—Good size, rich colour, cone shape, tremendous bearer, first rate for table and preserving. It is earlier and later than Elton on account of its numerous trusses, 7*s.* 6*d.* per 100; selected, 10*s.*

Dr. Lindley told J. C. that he never could depend upon having a Strawberry until he had his breed.

From Charles Hillhouse, Esq.—"Your 100 baskets of Strawberries have given great satisfaction.—June 30."

Best Mushroom Spawn.

CUTHILL'S Pamphlet on the Potato, with 20 more Articles, on the Strawberry, Asparagus, Sea Kale, &c., 2*s.*

CUTHILL on Market Gardening round London, &c., 1*s.* 6*d.*

CUTHILL on the Cultivation of the Mushroom, Killing of Woodlice, &c., 1*s.*

CUTHILL on the better Cultivation of the Vine, 1*s.*

Vegetable Meeting Paper gratis.

Post-Office Orders to be made payable to JAMES CUTHILL, Camberwell, London, S.

ARAUCARIA IMBRICATA.

YOUELL AND Co. beg to inform the Trade they have to offer a fine and healthy stock of the above in 1 year old plants.

GLADIOLUS BRENCHLEYENSIS.—An extensive stock of large flowering Bulbs of this magnificent Gladiolus, the colour of which is vermilion scarlet, the best and brightest variety known. Prices of the above on application.
Royal Nursery, Great Yarmouth.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Stove, Greenhouse, and Hardy Ferns, Miscellaneous Stove, Greenhouse, and Hardy Plants, Variegated and Ornamental foliaged Plants, Conifers, Roses, Rhododendrons, Indian Azaleas, Gloxinias, Fuchsias, Cactuses, &c., is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

LAWNS WITHOUT MOWING.—SPERGULA PILIFERA.

J. A. SUMMERS can supply well-rooted Plants (taken from the Lawn at Forest Hill), at 4*s.*, 3*s.*, 2*s.*, and 1*s.* per dozen, according to size. A specimen, post free, 1*s.*
Howard Park Nursery, Perry Hill, Sydenham, S.E.

SUPERB CAPE OR GIANT AND BROMPTON STOCKS.

CHARLES ALEXANDER, SEEDSMAN, Edinburgh, can supply the following, which are highly recommended. Sow any time this month. Post free on receipt of Stamps:—

1 packet Young's Scarlet Cape or Giant Stock	1*s.*
1 packet Young's White Cape or Giant Stock	1*s.*
1 packet Young's Scarlet Brompton Stock	1*s.*
1 packet Young's Dark Bloody Wallflower	1*s.*

KEMP'S NEW EARLY INCOMPARABLE CABBAGE.—This excellent variety may be had in sealed packets, at 1*s.* each, of Messrs. HURST & M'MULLEN, 6, Leadenhall Street, E.C., London; Messrs. NOBLE, COOPER & BOLTON, 152, Fleet Street, E.C.; Mr. G. W. DIXON, 48 A, Moorgate Street, E.C., or free by Post for 13 postage stamps of E. P. DIXON, 57, Queen Street, Hull.

GRIFFIN'S ALMA LETTUCE.

J. GRIFFIN feels great pleasure in again offering this fine variety, which he can confidently recommend as the most useful sort in cultivation. In addition to its being very hardy, it is an excellent summer Lettuce, growing to an immense size, and not requiring to be tied up. Many who have tried it state that it stands the hot dry weather better than any other variety. In sealed packets, 1*s.* and 2*s.* 6*d.* each. Price to the trade on application.
Weston Road, and 2, New Bond Street, Bath.

BEGONIA QUEEN OF ENGLAND.

WILLIAM BARNES has much pleasure in stating that he is now prepared to send out plants of this most beautiful Begonia, it being a hybrid between B. splendida and B. rex, partaking of the former in the splendid colour of its foot-stalks and under side of its leaves, with the markings of the latter upon the top of the leaf, but larger and more distinct in its colourings, having a belt round each leaf, finely dotted over the green part with white spots. It is of fine vigorous growth, and expands its leaves more perfectly than either of its parents. It has been exhibited at the Crystal Palace and Royal Botanic Flower Shows this season, and obtained a Prize at each place, where it was pronounced by the most competent judges to be one of the most beautiful and distinct varieties they had seen. Fine strong plants at 10*s.* 6*d.* each. The usual discount to the trade.
Camden Nursery, Camberwell, S.

TO THE TRADE.—The Subscriber, who has ample facility, is desirous of contracting to supply any given quantity of SCARLET GERANIUMS or other BEDDING-OUT PLANTS to be delivered as per arrangement in the spring of 1860.—W. C. WATSON, East Barnet, N.

KING GEORGE'S SOUND, W. AUSTRALIA.

JUST RECEIVED, 1800 DRIED PLANTS, in 800 species—many are new. An offer for the Collection will be gladly received by W. CUTTER, Naturalist's Agent, Crystal Palace, Sydenham, S.

GOLD AND SILVER FISH.—Upwards of 100,000 on hand, at from 4*s.* to 9*s.* per dozen, 2*l.* per 100, and 18*l.* per 1000; also some very large ones full of spawn, suitable for ponds, 10*s.* per dozen.

A large collection of FOREIGN and BRITISH FERNS, 6*s.*, 9*s.*, and 12*s.* per dozen. CAMELLIAS and AZALEAS, well set with bloombuds, 18*s.* and 21*s.* per dozen.

A great variety of FOREIGN BIRDS, many very rare kinds, and the largest stock of FANCY CAGES in England, 20 per cent. under any other house.—ROBT. GREEN, 154, Kingsland Road, N.E. No connection with any other house.

THE ONE PENNY

WARNER'S SWING WATER-BARROW (HOLDING ABOUT 35 GALLONS). MOUNTED ON WHEELS 20 INCHES HIGH, will save much of the Gardener's time and labour. May be obtained of any Ironmonger for 3 . 3s.



BRASS SYRINGES, 9s. to 21s.

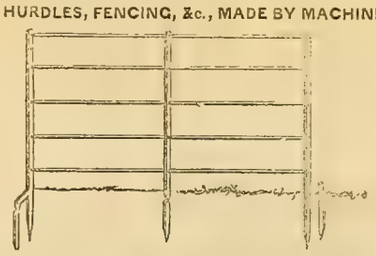
Also a great variety of effective Machines for Hydraulic purposes, and to supply Gardens, Hothouses, Cottages, Farms, Mansions, or Boards of Health, with every requisite connected with the conveyance and distribution of Liquids.

Fountains suitable for Conservatories, Lawns, &c.

JOHN WARNER & SONS, 8, Crescent, Jewin Street, E.C., London.

GLAZIERS' DIAMONDS FOR CUTTING HORTICULTURAL and other GLASS, to be had of the Wholesale Manufacturer, JOHN EDWARDS, 20, Sharp's Alley, West Smithfield, London, E.C. Prices from 10s. to 27s. 6d.

IRON HURDLES, FENCING, &c., MADE BY MACHINERY.

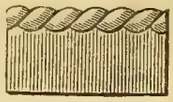


COTTAM AND COMPANY, Winsley Street, W., have invented machinery for making Hurdles, &c.; the bars, instead of being pointed by hand in the old fashioned style, are nipped down by the machine, leaving a shoulder so as to more effectually tighten the standards when rivetted. They are made of superior iron only, and will compete in price with those made by hand from cinder or common iron which so frequently break. Iron Fencing, Gates, and Iron Work of all kinds, both Plain and Ornamental, Conservatories, Hot Water Apparatus and Garden Implements.

Illustrated CATALOGUES free on application to COTTAM & COMPANY, Ironfounders, 2, Winsley Street, Oxford Street, W.

N.B. COTTAM & Co. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

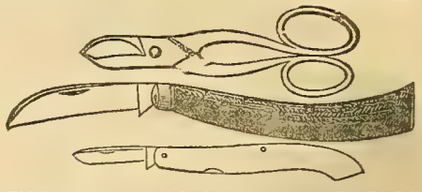
LOOMES' GARDEN EDGING —CABLE PATTERN.



	Price at Peterborough.	In London.
Straight	5d.	— 6d. per yard
Bends	6d.	— 7d. ,,
If fitted to plans ..	7d.	— 8d. ,,

LOOMES & Co., Manufacturers, Whittlesea, near Peterborough.

PAXTON WORKS, SHEFFIELD, ESTABLISHED 1738.



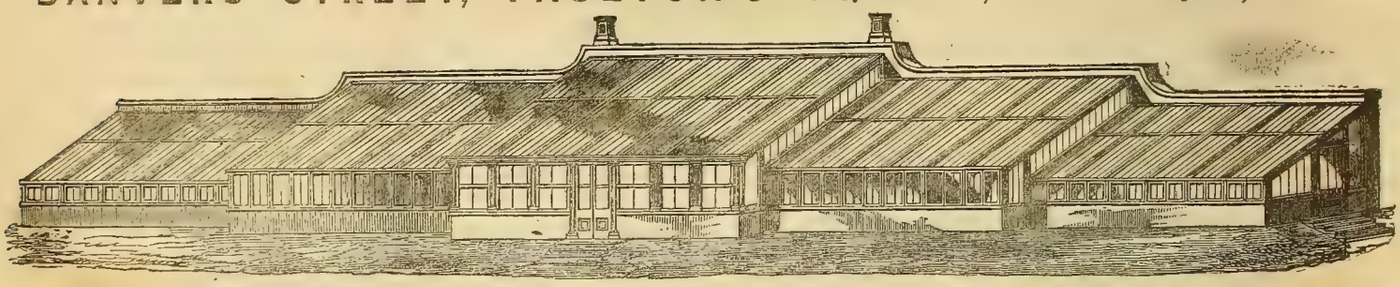
SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.—Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

C. STEPHENSON, late STEPHENSON AND SONS, 61, Gracechurch Street, London, Manufacturer of Iron Hurdles, Fencing, &c., Improved Iron and Copper Conical Boilers and Apparatus for Warming Buildings of every description by Hot Water.

Prices and Estimates furnished upon application.

HORTICULTURAL WORKS,

DANVERS STREET, PAULTON'S SQUARE, CHELSEA, S.W.



JAMES GRAY

RESPECTFULLY BEGS TO INFORM THE NOBILITY, GENTRY, NURSERYMEN, GARDENERS, AND OTHERS, THAT HE CONTINUES TO CARRY ON THE BUSINESS IN ALL ITS BRANCHES AT THE ABOVE OLD ESTABLISHED PREMISES.

CONSERVATORIES, GREENHOUSES, FORCING HOUSES, VINERIES, PITS, &c.,

OF EVERY DESCRIPTION, ERECTED ON THE MOST APPROVED PRINCIPLES.

HEATING BY HOT WATER.

J. G. having specially devoted his attention for many years to this part of the business, is now fully prepared to Heat every description of public and private buildings, viz.:—Churches, Mansions, Warehouses, &c., as well as all structures connected with Horticulture, in the most efficient manner. His system is the most simple that can be adopted—which he has found from long experience to be the best—can be constructed at less cost, and is more easily managed than those of a complicated nature which have attracted the notice of the public.

J. G. begs to call attention to his CAST-IRON CORRUGATED ARCH BOILER, which from its simplicity of construction has not the liability to fracture to which those of a more complex design are always subject. They have been extensively used for many years, and have given the greatest satisfaction.

All business is conducted at this establishment on the principle of lowest remunerative profits consistent with best materials and workmanship.

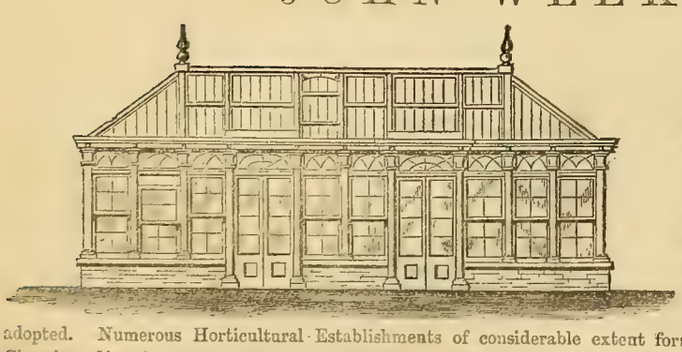
PLANS AND ESTIMATES FURNISHED ON THE SHORTEST NOTICE.

BY APPOINTMENT.

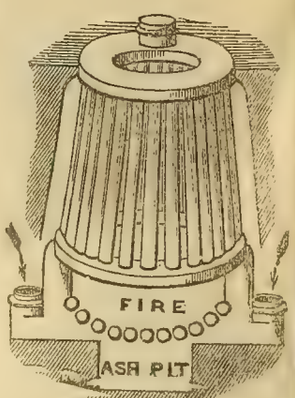
HORTICULTURAL BUILDING & HEATING BY HOT WATER.

STEAM POWER WORKS.

JOHN WEEKS & COMPANY



BEG respectfully to call the attention of the Horticultural World to the more than usual facilities at their command to offer superior Horticultural Erections of every style and description at lowest possible prices. The extensive additions to their Machinery, Workshops, Iron Foundry, and Plant now form a complete and unequalled Manufactory for the production of every branch of Horticultural Building and Heating by Hot-Water. J. WEEKS & Co.'s ONE BOILER SYSTEM of heating has from its efficiency, cleanliness, and economy, rendered such unbounded satisfaction as now to become almost universally adopted. Numerous Horticultural Establishments of considerable extent formerly heated by 10 or 12 ordinary Boilers, also Churches, Chapels, Schools, Mansions, Warehouses, Hospitals, and Public Buildings are now more effectually heated at an incredible saving of labour and fuel by JOHN WEEKS & Co.'s ONE BOILER SYSTEM.



JOHN WEEKS & COMPANY, King's Road, Chelsea, London, S.W., Horticultural Buildings and Hot-water Apparatus Manufacturers, Engineers, and Iron Founders.

Plans, Estimates, and Illustrated Catalogues Free on application.

BUCKLAND SWEETWATER GRAPE.

MESSRS. IVERY AND SON, of Dorking and Reigate Nurseries, feel great pleasure in introducing this fine early WHITE GRAPE, and beg to intimate that they will commence sending out Plants on October 3, in strict rotation, as the orders are received. Price 21*s.* and 31*s.* 6*d.* each.

It received the Premium offered by the Pomological Society for the best Seedling Grape not having a Muscat flavour, Sept. 9, 1858; also an Extra Prize at Crystal Palace Exhibition, Sept. 8 and 9, 1858; and it is recommended by many Gardeners who have seen it growing and tasted the fruit. For the information of those who have not seen this Grape, J. I. & SON beg to say that they have issued a Circular containing the various periodical reports, and also the names of the Gardeners by whom it is recommended, which they will be pleased to forward on application.—Dorking Nursery, Aug. 6.

RARE HARDY CONIFERS—PICEA (ABIES) AMABILIS, TRUE; PICEA (ABIES) GRANDIS, TRUE.

HUGH LOW AND CO. have great pleasure in announcing that they have this season been successful in obtaining from Seed imported by them direct from California a large supply of Plants of the above named most beautiful and thoroughly hardy Conifers. They are without exception two of the finest and most ornamental trees yet known to Botanists, and attain in Northern California a height of from 250 to 280 feet. Their perfect hardiness and adaptation to the climate of this country have been proved beyond a doubt, but up to the present time Seedling Plants have been rarely to be obtained. The quantity now raised being considerable, H. L. & Co. have decided on offering them by the dozen and 100 at such low prices as will induce lovers of hardy trees to plant them in large numbers. Prices can be had on application; as also of Seedling Plants of Cupressus Lawsonii, C. macrocarpa, C. Goveniana, C. M'Nabiana, Picea Pinsapo, P. Nordmanniana, P. Pindrow, P. nobilis, Abies Menziesi, A. cephalonica, A. Douglasi, both from Californian and Scotch seeds; A. Mertensiana, (taxifolia of Jeffrey), A. Williamsoni (Pattoni, Hookeriana), A. orientalis, Araucaria imbricata, Cedrus Deodara, Cedrus Atlantica (argentea), Cryptomeria japonica, C. Lobbi, Pinus Benthamiana, P. excelsa, P. insignis, P. Don Pedri, P. Pallasiana, P. Sabiniana, P. macrocarpa, P. Edgariana, P. Joffreyi, P. Monticola, and many others; Podocarpus andina, P. nubigena, Thuja gigantea (Libocedrus decurrens); Thuja Lobbi (Menziesi), Torreya grandis, Wellingtonia gigantea, and many other fine Coniferous plants.—Clapton Nursery, London, N.E.



J. CARTER AND CO.'S Select LIST OF CHOICE FLOWER SEEDS FOR PRESENT SOWING,

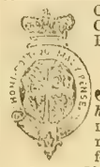
will be found on page 603 of *Gardeners' Chronicle* of July 16.

238, HIGH HOLBORN,
London, W. C.



CARTER'S CHAMPION CUCUMBER surpasses Sion House and Lord Kenyon's Favourite for winter and early spring use. Smooth, dark green, straight, and prolific; average length, 1 foot. Price per packet, 1*s.*

J. C. & Co. do not hold themselves responsible for the genuineness of the above unless obtained direct from
238, High Holborn, London, W.C.



CALCEOLARIA, 1*s.*, 2*s.* 6*d.*, 5*s.*
CINERARIA, 1*s.*, 2*s.* 6*d.*, 5*s.*
PRIMULA SINENSIS FIMBRIATA, 1*s.*, 2*s* 6*d.*, 5*s.*
} All the same quality.

JAMES CARTER AND CO. beg leave to offer Seeds of the above of *this year's harvesting*, saved from SEVERAL UNRIVALLED COLLECTIONS, and they can with confidence recommend them as being of first-rate quality, both for form, colour, and variety.—JAMES CARTER & Co., Seedsmen, 238, High Holborn, London, W.C.

CHOICE SEEDS

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that they can now supply the following choice SEEDS, all of which are warranted genuine and of the finest quality.

Per packet—*s. d.*		Per packet—*s. d.*	
Calceolaria, herbaceous	2 6	Primula sinensis, mixed	1 6
Cineraria, from named vars.	2 6	Pansy, from named vars.	1 0
Hollyhock, from named vars.	0 6	Sweet William, from extra fine vars.	0 6

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

CALCEOLARIA, CINERARIA,

AND

PRIMULA SINENSIS FIMBRIATA,

Of first quality, in seed packets, 2*s.* 6*d.* each.

SPERGULA PILIFERA,

The admirable substitute for Grass in forming Lawns, &c., REQUIRING NO MOWING. Seed packets, 6*d.*, 2*s.* 6*d.*, & 5*s.*

E. G. HENDERSON & SON, Wellington Nursery, St. John's Wood, London, N.W.

NEW STRAWBERRY, "OSCAR."

CHARLES TURNER,

HAVING purchased the entire stock of this fine Strawberry, is prepared to receive orders for the same at 42*s.* per 100. Strong plants will be ready on the 20th August.

"Oscar" was submitted to the Fruit Committee of the Horticultural Society, July 5, 1858, accompanied by the following statement:—"The plant is strong and healthy, and bears better than the British Queen in our soil, which is very strong. The fruit will attain a larger size than those sent, the best having been gathered about a week ago. The fruit appears ripe several days before it actually is so. I cannot exactly state its parentage, as I gathered seed of British Queen, Keens' Seedling, and Alice Maud, and saved all together." The Committee reported on its merits as follows:—"Fruit large, ovate, frequently flattened on the sides, or cockscomb shaped; shining dark red, flesh firm, flavour superior, remarkably sweet, with a brisk aroma; it was considered a valuable variety worthy of cultivation."

A silver medal was awarded to it by the Royal Botanic Society, June 15, 1859. It was again exhibited at the last exhibition of this Society, July 6. The *Gardeners' Chronicle* thus speaks of it:—"Of seedlings the best was 'Oscar,' the merits of which may now be considered established. It is certainly the best flavoured of the large kinds, and being a great cropper, must soon find a place in every garden."

It received the prize given for the best seedling Strawberry by the Pomological Society, June 23. In the report of this excellent Society it is thus described:—The premium of One Guinea was awarded to a dish of 'Oscar,' exhibited by Mr. Bradley (the raiser), Gardener to W. F. N. Norton, Esq., of Elton Manor, near Nottingham, in very fine condition. This fruit is very large, ovate, angular, and frequently cristate, but rarely flat or wedge-shaped; seeds rather large and deeply imbedded; colour very dark, becoming deep mulberry when fully matured; flesh red throughout, solid, firm, and juicy; flavour very rich and fine when quite ripe, apparently near in affinity to Sir Harry, on which it was considered an improvement. Particular notice was taken of its firm and solid qualities, which augured well for its powers of enduring package and carriage. The above dish afforded good evidence of this, as the fruit itself was firm, plump, and uninjured, although it had travelled from Nottinghamshire; and, in consequence, the footstalks and calices were dry and withered. It was reported to be a great cropper, next in earliness to Cuthill's Black Prince, and some days earlier than Keens' Seedling."

In a collection of Strawberries exhibited by C. TURNER at the same meeting, it is thus further alluded to in the Society's report:—"The most remarkable variety in the collection was 'Oscar,' a seedling exhibited for the first time last year, when high encomiums were passed on it; and this year's examination has fully borne out the former impression. It was however exhibited by the raiser (who is understood to have supplied plants to Mr. TURNER only) in the seedling class, in which place it will be fully described."

It also received the First Prize for best dish of Strawberries at Nottingham, June 30. It will be seen from the above that it is a Strawberry of long duration, having been shown this season from June 15 till July 6. It was however in fine condition, June 10.

"Oscar" is strongly recommended, and will be found to be one of the best for early forcing.

A Coloured Plate, by Andrews, may be had free by post for 12 postage stamps.

The following most successful Fruit Growers have already ordered Plants:—

Bailey, Mr. Thomas, Shardiloes Gardens, Amersham
Bailey, Mr. H., Nuneham Park
Bousie, Mr., Stoke Park Gardens
Beale, Mr. T., Walton Wood Hall Gardens, Ware
Constantine, Mr. H., Hillingdon Court Gardens
Dodds, Mr., the Gardens of Col. Baker, Salisbury
Dodds, Mr. Geo., Cooper's Hill Gardens, Englefield Green
Drewitt, Mr. J., Denbies, Dorking
Elsworthy, Mr., the Gardens of R. J. Gilman, Esq., Bishopstoke
Forsyth, Mr., Gunnersbury Park Gardens, Acton
Frost, Mr., Preston Hall Gardens, Maidstone
Hill, Mr., Keele Hall Gardens
Ingram, Mr., the Royal Gardens, Frogmore
Ingram, Mr., the Gardens of J. J. Blandy, Esq., Reading
Judd, Mr., Althorp Park Gardens, Northampton
Knight, Mr., the Gardens of H.R.H. the Duchess of Kent, Frogmore
Lawrence, Mr., Farnham Castle Gardens
Little, Mr., the Gardens of A. Darby, Esq., Stoke
Parsons, Mr., Danesbury Park Gardens, Welwyn
Spencer, Mr., Bowood Gardens, Calne
Snow, Mr., Wrest Park, Ampthill
Watt, Mr., the Gardens of J. J. Colman, Esq., Cannon House, Norwich
Whiting, Mr. J. B., the Deepdene
Widdowson, Mr., Rickmansworth

C. TURNER can also supply the following Select Varieties:—

Adair (Elphinstone).—Handsome fruit, second class in flavour
Admiral Dundas (Myatt).—Large fruit, heavy crop, second class in flavour
Black Prince (Cuthill).—Early, small, but good cropper
British Queen (Myatt).—Fine
Carolina superba (Kitley).—Extra fine
Crimson Queen (Myatt).—Very large, great cropper, and fine late variety
Elton Pine.—Late
Filbert Pine (Myatt).—Extra fine flavour and heavy cropper, not large, but good late variety
Prince of Wales (Ingram).—Fine flavour and handsome fruit
Sir C. Napier (Smith).—Large, very heavy crop, good for general purposes
Sir Harry (Underhill).
Wonderful (Jeyes).—Remarkably heavy cropper, second quality; also many other varieties.

THE ROYAL NURSERIES, SLOUGH.

NEW HYBRID RHODODENDRONS.

ISAAC DAVIES, LARKFIELD NURSERY, Wavertree, near Liverpool, begs respectfully to draw the attention of the admirers of Winter and Early Spring blooming Plants to the undermentioned handsome and novel HYBRID RHODODENDRONS, which were raised by him five years ago from R. atrovirens, hybridised with ciliatum, and which have proved perfectly hardy, having been grown two years in the open ground without being in the smallest degree injured by frost. The Plants form beautiful bushes, with dark green leaves, about the size of the Myrtle; in the open ground the flowers, which are produced in great abundance, expand about the end of March, and are as large as a moderate sized Indian Azalea, and of the colours given below. These Plants will be found invaluable for forcing, from the fact that they may be got in flower at any time desired in the winter months, merely by placing them in a greenhouse or cold frame. The flowers last more than three weeks after expansion, and from the peculiar odour of its foliage, which it inherits from the mother parent, not a green fly will live upon it. A plant in flower was sent to London, where it was seen by Messrs. H. Low & Co., Waterer & Godfrey, and other leading Nurserymen, from whom I received very flattering opinions of its merits, which are sanctioned by the Certificates of that distinguished Rhododendron grower and raiser, Mr. George Cunningham, and Mr. James Grant, who saw the entire stock in bloom, of which the following are correct copies:—

"Oak Vale Nursery, Old Swan, near Liverpool,
"March 12, 1859.

"Dear Sir,—You wish to have my opinion of your Hybrid Rhododendron, raised between atrovirens and ciliatum, and which you call Precox. I have much pleasure in saying that I think it a handsome and successful cross, showing both parents very distinctly; its compact habit of growth, and its blooming so abundantly at this season of the year will make it an attractive acquisition to our early flowering plants, whether for the open ground or the conservatory.

"I am, dear Sir, yours faithfully,
"Mr. Isaac Davies. "GEORGE CUNNINGHAM."

"Olive Mount, Wavertree, March 10, 1859.

"Dear Sir,—I consider your Rhododendron Precox and its varieties the most novel and handsome hardy hybrids that have been raised for many years. They will be invaluable as Forcing Plants for winter blooming, and the most attractive early spring Flowers out of doors.—I am, dear Sir, yours respectfully, "JAMES GRANT, Gr. to A. S. Gladstone, Esq.
"Mr. Isaac Davies."

Well-established Small Plants, on own roots, will be ready for delivery early in September next, at the prices given below, under the following names:—

	s. d.
RHODENDRON PRECOX, rosy lilac	10 6
" ROSEUM, pale rose	15 0
" SUPERBUM, rose, shaded with pink	15 0
" RUBRUM, deep pink	21 0

The Trade will be allowed one plant over with every three taken of the same variety. A few larger plants of all except rubrum can be supplied at proportionately higher prices.

A Drawing, by Mr. James Andrews, of the variety superbum, which differs very little from the others except in colour, may be seen at the Nurseries of Messrs. H. Low & Co., Upper Clapton, N.E.; Waterer & Godfrey, Knap Hill, Woking; E. G. Henderson & Son, St. John's Wood, N.W.; Rollisson & Sons, Tooting; William Wood & Son, Marcsfield; Fisher, Holmes, & Co., Sheffield, and at the Nurseries of all extensive Rhododendron growers.

A CATALOGUE of all the best proved kinds of RHODODENDRONS and HARDY HEATHS is now ready and may be had on application.

SPLENDID NEW VARIEGATED FERN, PTERIS ARGYRÆA (MOORE).



JAMES VEITCH AND SON have peculiar satisfaction in calling attention to the above-named most striking novelty, which is undoubtedly one of the greatest acquisitions of recent introduction to our now justly popular collections of Ferns.

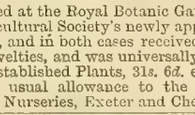
It is of *noble aspect* and free growth, perfectly distinct and novel in its character, the pinnæ on every frond as well as their branches having a broad central stripe of glistening silver, which, in contrast with the bright green, produces a most charming effect. It may justly be called

THE VARIEGATED FERN.

It was exhibited at the Royal Botanic Garden on July 6, and before the Horticultural Society's newly appointed Floral Committee on July 7, and in both cases received the highest Prizes given to such novelties, and was universally admired.

Established Plants, 31*s.* 6*d.* each.
The usual allowance to the Trade.
Royal Exotic Nurseries, Exeter and Chelsea.—August 6.

BUSBY'S STOCKWOOD GOLDEN HAMBURGH GRAPE.



JAMES VEITCH, JUN., in again offering fine established Vines of this Splendid GRAPE at the prices noted below, begs to call attention to the Reports of the Horticultural Society's Fruit Committee in the *Gardeners' Chronicle* of the 16th and in the "Cottage Gardener" of the 19th inst. The beautiful specimens exhibited on this occasion in competition for J. V., jun.'s Prize of Five Guineas incontestably prove it to be a fruit of first-rate excellence.

Price 5*s.* to 10*s.* 6*d.* to 21*s.* each, according to size and strength.

Special terms will be furnished to the Trade when Vines are required in quantity.

Royal Exotic Nursery, Chelsea, S.W.—August 6.

The Gardeners' Chronicle.

SATURDAY, AUGUST 6, 1859.

SEVERAL communications have lately reached us inquiring whether it is safe to make some alterations, including the removal of shrubs, during the month of August. Probably the best answer that can be returned is the statement of a case that occurred last August, a very hot, dry, dusty month, during which the heat of the earth at 2 *feet below the surface* was never lower than 62° and was sometimes as high as 63½°.

It then chanced that a gentleman, wearied with London, sought refuge in a little garden not a hundred miles from Hyde Park Corner. He found there a lawn, which he desired to rearrange, some American plants in ill health and ill placed, some

bushes that were in the way of all improvement, and some ground that good taste claimed as the site of a new plantation. Being a man of action, and knowing the value of time to one who might be any day recalled from a vacation holiday he summoned his gardener, explained his intentions, ordered labourers to be engaged, and the work to proceed on the following Monday. The gardener, a man of sense without conceit, not having experience in August planting, raised no objection (he knew indeed that it would be useless to do so), and was ready at the time appointed.

Down went old bushes; up went old roots; Thorns, the glory of the place, but which would allow nothing to be seen except themselves, fell before the axe and mattock. All worked bravely on and ground was cleared. Then came the pinch. A great bed of Rhododendrons and similar plants had to be rearranged. To do this it was necessary to dig them up, and keep them waiting till their new bed could be prepared. The sun seemed to blaze hotter and hotter, not a shower would lend its assistance, even dews denied themselves, and no better shade for the exposed roots than mats and other bushes could be found. Nevertheless the master was resolved; the ground, he said, from which they were taken was already baked, and a little more drying would do the roots no harm. So up came Rhododendrons and Azaleas, and there they stood like criminals waiting for execution, for two long days. At the same time turf was pared, rolled up, and carried off till time could be found to relay it.

While this was going on an ancient gardener of great practical knowledge chanced to pass. "Aha!" cried the experimentalist, "What do you say to this, Mr. Tuber? You see we are not afraid of the sun in this part of the country."—"Say, sir!" answered the old man; "I should say that every plant will die. How can you expect them to live after transplanting in weather like this? And as for the turf, it is of no use to lay that down again; why, it's dead already, or as good." Cold comfort this for our London friend! But he was a man who had learnt while a schoolboy not to tie his belief to the coatskirts of even his schoolmaster; and as he grew to manhood he became more and more addicted to forming an opinion for himself. So, his only reply to Mr. Tuber was, "Well, my good friend, we shall see."

The new ground was at last made ready and soaked with water. The Rhododendrons and Azaleas were replaced on the damp bottom; earth was thrown loosely over their roots till they were thoroughly covered, and then another soaking was given. For this purpose the water was fetched from a warm, stagnant, and not quite fragrant ditch. No treading was allowed; but over the earth, when soaked for the second time, 3 or 4 inches of finely-sifted peat and burnt clay were loosely scattered.

Then came the relaying of the turf. Dry enough it was, and spoiled in appearance. But turf is like a body corporate, its vitality is wonderful, and soon aroused, though it looks like death. So the ground was levelled, well watered, just dressed with a sprinkling of guano, and the turf unrolled; after which the turf was itself watered, and covered with old mats for the next few days. Here and there, where it did not seem to lie comfortably, it was fastened down with wooden pegs.

As soon as this work was over a new bed for Roses and small flowering shrubs was prepared, of nothing but burnt clay and charred rubbish, well sifted and mixed. Into this went stumps of Yuccas just cut off, little Pampas Grasses out of pots, Roses from cutting pots, and things of a similar nature. By the end of August all was over. Mats were withdrawn from the turf, water withheld from the Rhododendrons, and the future left to nature.

We have been looking at the result; and quite regret that our ancient friend was not with us. Not an inch of turf died; on the contrary, it has grown faster than ever. Of all the Rhododendrons and Azaleas, now vigorous enough to satisfy a Bagshot man, one only is dead, and of that the head was cut off before being put into his August bed. The Pampas Grasses are 4 feet in diameter, and the only loss has been among some Roses bought in a neighbouring nursery, the roots of which had grown through their pots and been broken off in removal. Of these some are just alive, and some doing pretty well, but several have been thrown away by our impatient experimental friend, who would not wait till they recovered, but replaced them long since with healthy specimens.

We learn with very great pleasure that the Parliament of the Cape Colony has just granted the sum of 300*l.* *as a first instalment* towards defraying the expenses of Dr. Harvey's valuable Flora Capensis (see our last volume p. 543); and it is understood that the grant will be extended, as the work advances, at the rate of 150*l.* per volume. The wise liberality of acts like this will be appreciated by men of science in all old countries, and will, we trust, be imitated in all new colonies, to whose prosperity nothing more conduces than an accurate knowledge of their vegetable productions. Governor Sir George Grey, and the chief Colonial Secretary Mr. Rawson Rawson, have thus, as by many another act of political wisdom, shown how worthy they are to be intrusted with the destinies of so vast and important a region as that which now lies under the control of the South African Government.

Upon inquiry yesterday at the office of the Horticultural Society, we were informed that the subscriptions to the proposed new garden at Kensington Gore already amount to something more than 23,000*l.*

New Plants.

220. Chamæbatia foliolosa. *Bentham in Plantæ Hartwegianæ, p.* 308.

Of this pretty little novelty lately introduced by Messrs. Veitch, we find the following account by Dr. Torrey in his *Plantæ Fremontianæ*, where there is a figure:—

"Hab.—Higher parts of the Sierra Nevada, as well as on the sides of the foothills; in great abundance: Colonel Frémont. Mountains of the Sacramento: Mr. Hartweg and Mr. Shelton.

"A shrub, growing from 2 to 3 feet high, of agreeable balsamic odour, with very smooth bark, and numerous upright branches; the young twigs clothed with a glandularly pubescent epidermis, which easily separates. The leaves are broadly ovate in outline, about 2 inches long, tripinnately dissected; the ultimate segments oval and obtuse, scarcely half a line long, hispidulous-pubescent, each tipped with a minute gland. Stipules minute, adnate to the petiole. The cymes are four-five-flowered, and terminate the young shoots: each pedicel is subtended by a foliaceous bract, which is toothed or pinnatifid. The flowers are about $\frac{3}{4}$ of an inch in diameter. Externally the calyx is glandularly pubescent, and the inside of the tube is densely woolly. The petals are white, obovate, emarginate, with a very short claw. There are 50 or more stamens, the filaments of which are inserted in several series in the throat of the calyx. The pollen is obtusely triangular. The ovary is ovoid; one-celled, with two collateral and erect ovules, which arise from the base of the cell; style as long as the stamens, nearly straight, and with a longitudinal stigmatose fissure or groove on the inside (as in Cercocarpus). Achenium oblong, compressed, almost wholly enclosed in the persistent and membranaceous calyx, apiculate with the base of the style. The seed is erect, with amygdaloid cotyledons, and a short inferior radicle.

"The foliage of this plant is so different from that of most other Rosaceæ, that it was at first taken for a Mimosa or Acacia. It clearly belongs to the subtribe Cercocarpeæ, *Torr. & Gr.*, although it differs in its valvate calyx. The æstivation of Cercocapus is difficult to determine, as the calyx is open in the very young flower-bud, and the teeth are very short; it seems, however, to be imbricated. The characters of the subtribe Eudryadeæ must be altered, for the calyx in Cowania (described by Don, Endlicher, and Zuccarini as valvate) is certainly imbricate in all the species. Dr. Engelman noticed this character in his genus Greggia (which is Cowania plicata, *Don*, and C. purpurea, *Zucc.*) There will be nothing therefore to distinguish the subtribes, as they now stand, but the number of ovaries in the flower, which being a character of no great importance, they may be united; and then Cowania will stand next to Purshia, to which it is very nearly allied in habit."

THE AQUARIUM.

We lately received the following question from a fair correspondent:—"How am I to make an Aquarium? Some people tell me nothing is easier, and when I ask how do they manage to get a change of water, they answer, 'We have not changed ours for two years.' The only experience I ever had was anything but successful; for what with the difficulty of getting the Sea Anemones off the rock without tearing them, carrying home large stones and pieces of rock, and a plentiful supply of water, and then establishing them in their new home, it was no easy matter. Being a novice and not knowing the right way (for they say there is a right and a wrong way of doing everything), the water quickly became thick and disagreeable, and the animals closed and looked very sick and ill; supposing them to be dead or dying, I weeded them out one by one, and trudged a mile and a half for a fresh supply of water. I watched them in the most careful manner, but despite all my endeavours, the water again became so offensive and unsightly that instead of being a pleasure, they became a perfect nuisance, and in disgust I threw them all away. I bought a little book highly spoken of, which professed to teach any one and every one a simple way of making an Aquarium, but alas! the directions were so tiresome and tedious, I abandoned the idea in despair. For instance, it advised pieces of rock being cemented together and then left many weeks in order to get rid of any smell there might be; such tedious preparations quite disheartened me—surely there must be a simpler method of making an Aquarium."

To this another lady, deeply skilled in the mystery of the matter, and who does not know what failure is, has supplied the following really valuable practical reply.

I am one of a large family party, who in common with all the London world, *i.e.*, with all who have the means, leisure, and opportunity so to do, have taken refuge from London heat and dust at the sea-side, and are now in the enjoyment of cooler and purer air, and more healthful and natural sources of pleasure than the crowded metropolis can afford at this season of the year to the most energetic pleasure-seeker.

At a quiet little fishing town on our north-eastern coast, the attractions of which, though long appreciated and enjoyed by the inhabitants of this northern county, have but recently become known to those of London, the days of our summer holiday pass pleasantly and not unprofitably in the observation and enjoyment of nature, and of life in all its forms. Whether we look out over the blue waters of the bay to the distant horizon, and watch the ever-varying aspect of sea and sky, as we breathe the fresh air which comes to us cooled and purified by its passage across the German Ocean—or wander sketchbook in hand amongst the picturesque groups that gather around the fishing boats on the sands below, or pick our way along yon reef of rocks that stretches far away into the sea, forming the northern extremity of the bay, and search for the marine treasures hidden low down amongst its nooks and crevices, or enriching the pools left by the retreating tide—objects of interest surround us on every side, and reward our patient search. It is true this northern shore cannot boast of the rarities which attract the naturalist to the coast of South Devon, but marine animals of the commoner sort are to be found here, with a rich variety of sea-weeds. We have already replenished our Aquarium with Anemones, Periwinkles, tiny Crabs, and some of those beautiful little jelly-like Medusæ so delicate and ornamental in their form, and so delicious in flavour, if we may judge by the avidity with which the Crabs seize and devour them when placed within reach of their greedy claws. This Aquarium has been to us a never-failing source of amusement and interest ever since the difficulties attending its first establishment have been successfully surmounted, and it has been suggested to us that a simple record of facts with regard to its formation, with some account of our failures and subsequent success, might not be uninteresting to your readers. But first I must premise, that the small amount of knowledge we possess being rather practical than technical, we write for the uninitiated. We are as yet but students of the alphabet of marine science, very cautious experimental philosophers, who have as yet taken but the first step in the inductive process—that of collecting materials for observation and experiment. We have hitherto made no startling discoveries, nor thrown light upon any remarkable phenomena previously unexplained; but our success as far as we have gone has been most encouraging to ourselves, and may perchance prove equally so to others.

In the month of January, 1857, a friend passing through London left a small Aquarium in our charge, the materials for which had been collected at Sandgate, and consisted of a few specimens of the common Sea Anemone (Actinia Mesembryanthemum), a small Hermit Crab, two Periwinkles, and three or four fragments of rock, on which were growing plants of the green Ulva and of the common Coralline, all contained in a small bell glass, the bottom of which was well covered with carefully washed shingle stones. For some weeks, plants and animals grew and flourished; when suddenly suspicious black stains appeared upon one of the rocks, and the Seaweed seemed to be rotting away from its surface; the water became thick and muddy, and the aspect of things appeared altogether most discouraging. No time was to be lost, so out went all the rocks on to a tray, the animals having been safely deposited in a basin, and all set to work cleaning and scrubbing and scraping, till the decayed parts had been completely removed, and then rocks and shingle were left exposed to the air until all traces of the fatal presence of sulphuretted hydrogen had disappeared; and the water having been well filtered and syringed to restore its lost purity, we started afresh, hoping all our troubles were at an end, and that such a disturbance might not again occur. Soon afterwards having added a few new specimens to our collection—amongst others, two of Actinia Bellis and an Actinia Dianthus—we purchased for the reception of our increased stock a larger glass with flat bottom and cylindrical sides, and returned the bell glass to its owner, who had kindly transferred to us all right to its original contents. This new glass we filled with fresh sea-water from Dover—and with varying success, and several repetitions of the cleansing process above described, the necessity for which made us almost despair of ever reaching a state of permanent prosperity, we persevered until the summer of 1857, when on going down to Dover for a visit of three months, we removed thither our whole apparatus, taking down our rocks and glass in a hamper, our sea-water in a keg, and our animals in a covered jar. They were somewhat shaken by the journey, but with a little care in allowing the water to settle before replacing the live stock, our miniature sea was soon in its former flourishing condition. Two Gobies were here added to our stock, a small Hermit Crab in a trochus shell, a brown

Serpula, some common Anemones, with a fresh supply of Ulva, and a piece of chalk rock in which a Pholas had made its habitation, and things prospered until having left our Aquarium at Dover during a tour on the Continent, something occurred to corrupt the water, and its guardians becoming alarmed, renewed the supply and placed it once again on a fresh footing, September 5, 1857.

From that day to this, having resolved to persevere in endeavouring to discover the right balance of animal and vegetable life, so as to ensure the healthy development of both, and convinced that this cannot be fairly ascertained as long as the supply of water is periodically renewed, we have never again changed it, although on two occasions we have found it necessary to add to it owing to the diminution of its quantity from external causes. The loss caused by evaporation is supplied by the occasional addition of a glass of spring water. We took however a keg-full of sea water with us to London in case of emergency; but having considerably added to our collection, used it to fill a glass milk pan for the reception of those of our specimens which seemed to prefer shallow water. Soon after our return we purchased at Bohn's in Essex Street, Strand, two Actinia Gemmaceæ which are still in full vigour and beauty, a small Dianthus, since dead, and a fine specimen of Serpularia contortuplicata which came to an untimely end, having been devoured by an ungrateful Crab taken in by us out of pure compassion when in a crippled state owing to the loss of all its legs but two. This ill-disposed individual has since recovered its missing limbs, has four times changed its shell, and finally has been restored to its native ocean on account of the mischievous propensities which have grown with its growth, and made it too dangerous to remain any longer an inhabitant of our peaceful Aquarium. From this time no event of any importance occurred, except the addition of some handsome Serpulæ and a fresh stock of Periwinkles to mow down the young growth fast covering the rocks, and likely to increase to too great an extent; when in July 1858 we again removed with our live stock to Dover, where our Aquaria after recovering from the upsetting influence of the journey, soon resumed their pristine condition, the water becoming again crystalline in its clearness, the animals lively and healthy as before. When lo! a dimness was one day observed upon the sides of the larger glass, the water appeared faintly tinged with a greenish hue, which increased in intensity until at length it began to present the unpleasant appearance of a stagnant pond. This was the first time such a disaster had occurred, and although we had been prepared for such unexpected disagreement, and had learnt from Mr. Gosse's interesting work on the Aquarium that no injury to the animals was to be apprehended from the presence of this microscopic vegetable growth, yet so unsightly was the green muddy appearance of the water, that it was decided that something must immediately be done to remedy it. But what remedy could we adopt? Some were for at once changing the green slimy-looking fluid for pure water from the Channel, and thus cutting the knot of our perplexity without further trouble, and much was said as to the folly of taking any pains to preserve a few gallons of dirty water in the very sight of that mighty reservoir with its pure and inexhaustible supply ready for immediate use. Others—and these far-sighted ones were in the minority—maintained that a little present pains and trouble might save much future annoyance, with a repetition of all the difficulties attendant upon the first establishment of an Aquarium; besides it would be ignominious to give up our determination of persevering with the same water in spite of all discouragements, and there was something exciting in the idea of overcoming what seemed likely to prove a serious obstacle to our success. So these pertinacious few persisted in their intention and gained their point, and it was at length resolved that the whole liquid contents of the Aquarium should be well filtered through powdered charcoal. This tedious process having been successfully accomplished with the exception of the loss of some part of the water (owing to the upsetting of the awkward kind of filter which had been extemporised for the occasion), the purified water was restored to the Aquarium, and all were pleased and satisfied with the result of the experiment.

On this occasion some kind friends at Dover supplied us with a few Prawns and Gobies, which proved useful as well as lively and ornamental additions to our stock. Three of these Prawns are still alive and very active; the unfortunate Gobies fell a prey to their voracious appetite after living with them for months in perfect harmony. Throughout the past year, our Aquaria have been in a most thriving condition, and they have again travelled with us to the place of our summer sojourn. Not that they needed change of air, for they have hitherto given us less trouble in town than at the sea-side, but that we might enjoy the pleasure of watching them, and avoid the risk of their being neglected in our absence.

Now for an account of their present condition—Glass No. 1 contains 6 common Sea Anemones (Actinia Mesembryanthemum), of different colours; 1 Gem, (Actinia Gemmacea); 3 Prawns (Palæmon Squilla); a common Cockle (Cardium edule); an Oyster within a cockle shell; several of the sand-burrowing bivalves, Venus, &c., and plenty of Periwinkles. Every now and then, adhering to the sides of the glass or darting through the water with quick and graceful motion, appear numbers of little bell-like Medusæ, which as quickly disappear. The centre ornament is a scallop shell crowned by the tubes of Serpularia contortuplicata, whose elegant scarlet fan is constantly expanded, and the length of whose tube has considerably increased since its first introduction to our Aquarium. Not long ago one of our mischievous Prawns bit off the scarlet cork-like tentacle which serves as a stopper to its tube, but it was soon reproduced, and its owner does not appear to have suffered from the accident. Glass No. 2 contains the same number of common Actiniæ, one of them a fine Strawberry; 1 Actinia Gemmacea, 2 Daisy Anemones (Actinia Bellis), 1 Scarlet Madrepore (Balanophylla regia), 1 Pholas candida (?) which may or may not have ceased to exist, as it has long been lost to view, having penetrated too far into the rock to admit of its looking abroad upon the world any more; 2 Chitons, several Periwinkles, a group of Mussels, and 3 small sand Crabs, not to mention the Infusoria on which they subsist. Most of the animals above mentioned are old inhabitants of the Aquarium, who have survived many of later introduction. With regard to vegetation a few plants of the Sea Lettuce (Ulva latissima), with an abundance of young Confervoid growth and Sea Lichens of every hue which have gradually overspread the rocks, imparting to them a richness and variety of colour that a painter might admire, are all we can boast of at present; but these are abundantly sufficient to keep up a constant supply of oxygen, which they give off in abundance.

And now I must add a few words as to the mode of treatment which has contributed to our success. Many are deterred from setting on foot an Aquarium through dread of the trouble and difficulty supposed to be attendant on its management. We can assure such that ours has long ceased to give us any trouble at all, beyond the five or ten minutes' daily attention required either to rub the glasses clean, to remove anything like decayed matter likely to corrupt the water, or occasionally to feed the Anemones, Crabs, and Prawns. In so doing we are guided by circumstances, sometimes leaving the Anemones for weeks without food, when they appear to find it in the water, and look healthy and flourishing, but as soon as they present a starved and shrivelled aspect, a timely morsel of dried meat (or small shell fish when they can be procured) seems to revive and invigorate them, and they again expand into full beauty. In London we find it necessary to cover our vessels with a sheet of glass, so as to protect them from the soot, which is of course highly injurious, but this is not needful elsewhere. Difficulties will of course attend the first establishment of an Aquarium, but these may be overcome by a little patience and perseverance, and a firm determination not to yield to the temptation which often arises to change the water. This is never needful if the quantities of growing Sea-weed be sufficient to supply it with oxygen. It is very desirable that an equal temperature should if possible be maintained, *i.e.*, that the sun should never be allowed to heat the water, nor the cold to affect it too much in winter. Our Aquarium thrives well in a northern aspect close to the window, in a room constantly inhabited.

This simple account of our proceedings may, we trust, prove useful and encouraging to beginners, although operations conducted on so very humble a scale might otherwise appear unworthy of record. After all that can be said upon the subject, we must return to the oft repeated saying, that experience is the best teacher—not the experience of others alone, although we may thereby hope to avoid the mistakes into which others have fallen, gaining at the same time many a useful hint for our own guidance, yet inasmuch as circumstances are seldom identical in the case of two individuals, there is always much that can only be learnt from one's own experience. Hence the danger of making that of others a substitute for the patient observation and reflection by which alone we can hope to gain real pleasure and profit from the study of Nature, learning "in these his lowest works" to admire and adore the wisdom and goodness of their great Creator and ours. Energy and perseverance is in this, as in every other kindred pursuit, the real secret of success, and the motto of every lover of science should be that by which I subscribe myself Sir, your obedient servant, *Nil desperandum*.

QUANTITY OF RAIN AND SNOW FALLEN INTO HOWARD'S RAIN GAUGE,

12 INCHES ABOVE THE GRASS AT COBHAM LODGE, COBHAM, SURREY.

	1825	1826	1827	1828	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	1839	1840	1841
January .	1.12	.43	.90	4.69	.75	2.12	1.21	1.25	.59	4.08	.89	1.93	2.34	.26	1.32	2.57	2.50
February	.63	2.09	.38	1.24	1.09	.95	2.53	.29	4.09	.37	2.54	2.00	2.47	1.65	1.37	2.08	1.07
March ..	1.26	1.94	2.72	1.01	.40	.24	2.50	1.49	1.43	.73	2.50	3.58	.74	1.16	1.28	.32	1.30
April ..	1.56	.45	1.12	2.47	5.63	2.57	2.25	1.60	2.52	.53	.98	3.10	.85	.73	.93	.21	2.58
May ..	2.03	2.42	1.76	2.13	.85	3.03	2.97	1.71	.69	1.35	2.31	.92	.94	.74	1.13	1.58	2.39
June ..	1.16	.48	.75	1.96	2.58	3.18	1.27	2.25	2.44	1.90	2.58	1.58	1.17	2.65	2.10	.93	1.74
July ..	.23	2.44	1.07	5.07	4.63	1.86	2.71	.60	1.35	5.47	.30	2.04	1.53	1.56	3.48	1.97	1.93
August ..	2.87	1.34	1.97	2.34	4.14	3.35	1.37	2.59	.83	3.50	1.16	1.56	2.86	1.09	1.36	2.04	2.61
Septemb.	2.21	5.17	3.62	2.56	3.48	3.14	3.85	.63	2.91	.98	4.57	2.61	1.00	2.60	5.74	2.88	4.13
October..	3.16	1.69	4.16	1.42	1.48	.75	4.68	3.41	1.78	.24	4.77	4.44	1.65	1.84	1.84	1.38	5.51
Novemb.	3.77	3.33	1.31	1.01	1.61	3.10	1.44	1.62	2.67	1.77	1.83	2.81	1.60	3.77	3.94	3.84	3.69
Decemb.	2.85	1.81	3.46	2.22	.42	1.50	3.48	1.69	3.53	.79	.28	2.12	1.38	1.64	2.86	.55	2.38
Total ..	22.85	23.59	23.22	28.12	27.06	25.79	30.26	19.13	24.74	21.71	24.71	28.69	18.53	19.69	27.35	20.35	31.83

	1842	1843	1844	1845	1846	1847	1848	1849	1850	1851	1852	1853	1854	1855	1856	1857	1858
January .	.83	1.68	3.25	2.83	2.96	1.33	1.42	1.44	.84	2.93	2.36	2.60	1.72	.46	1.22	2.57	.78
February	1.37	2.05	2.22	1.07	1.28	1.28	2.71	1.47	1.28	.73	.65	.80	.87	1.07	.99	.14	1.68
March ..	1.79	.83	2.41	1.10	1.04	.62	3.39	.88	.19	3.36	.20	1.29	.26	1.37	.72	.88	.55
April ..	.32	1.82	.31	.83	1.89	1.43	4.01	3.15	2.73	1.53	.46	2.56	.22	.27	2.35	1.39	2.34
May ..	1.78	5.99	.44	3.08	1.50	1.65	.11	2.78	2.21	.75	1.77	1.65	3.24	1.88	3.55	.76	1.83
June ..	.56	1.68	1.43	.73	.97	1.30	3.08	.42	1.17	.98	4.64	1.83	1.17	1.11	1.07	3.42	1.39
July ..	1.62	2.13	1.02	2.82	2.17	1.48	2.36	3.66	3.39	2.09	3.36	5.15	1.39	6.39	.73	1.23	2.47
August ..	3.00	3.20	2.18	2.56	2.91	1.02	3.44	.69	1.56	1.35	4.89	2.16	1.61	1.02	3.17	2.70	2.60
Septemb.	3.58	.71	1.18	1.69	2.07	1.52	2.26	2.42	1.14	.20	3.68	2.10	.70	1.15	2.01	3.77	.86
October..	1.25	3.75	4.26	1.56	5.73	2.44	3.50	2.47	1.43	2.20	4.41	3.68	2.63	5.21	2.85	4.83	1.48
Novemb.	4.65	3.29	2.76	2.70	1.42	1.82	1.31	1.00	2.02	.74	5.54	.93	1.37	1.95	1.07	1.45	.82
Decemb.	.62	.30	.29	1.61	1.26	2.63	2.77	1.87	1.51	.52	2.23	.44	1.40	1.44	1.98	.48	1.67
Total ..	21.37	27.43	21.75	22.58	25.20	18.52	30.36	22.25	19.47	17.38	34.19	25.19	16.58	23.32	21.21	23.62	17.87

The gauge is placed on the Grass about 40 feet north of the north corner of Miss Molesworth's house, Cobham Lodge, Cobham, Surrey. The top of the funnel is about 12 inches from the Grass and 100 feet above the level of the Thames at high water mark. The soil is about 1½ foot loam on clay, above the London clay.

ON THE HEATING OF THE SOIL OF HIGH MOUNTAINS,

AND ITS INFLUENCE UPON THE LIMIT OF ETERNAL SNOW AND ALPINE VEGETATION.

By Charles Martins.

Theory indicates, and experience proves, that the atmosphere absorbs a notable proportion of the heat transmitted by the sun to the earth. M. Pouillet estimates this quantity at ·4 of the total heat transmitted by the sun to the earth at any given moment. As the calorific ray which falls upon an elevated summit traverses a less considerable thickness of the atmosphere than that which arrives at the level of the sea, it ought to heat the summit of the mountain more than that which penetrates as far as the plain; but the rarefied air surrounding the summit does not become so much heated as that of the plain; hence it should follow that the soil at the surface and for about a foot deep, upon a high mountain, should become more heated than the air, while the contrary would take place in plains little elevated above the sea. Now this is fully confirmed by experience, as I show in this notice, through observations made in August 1842 on the Faulhorn by MM. Bravais and Peltier, and in September 1844 by M. Bravais and myself, compared with corresponding ones made at Brussels by M. Quetelet, and with those made in Spitzbergen in 1839 by the Meteorological commission attached to the expedition of "La Recherche."

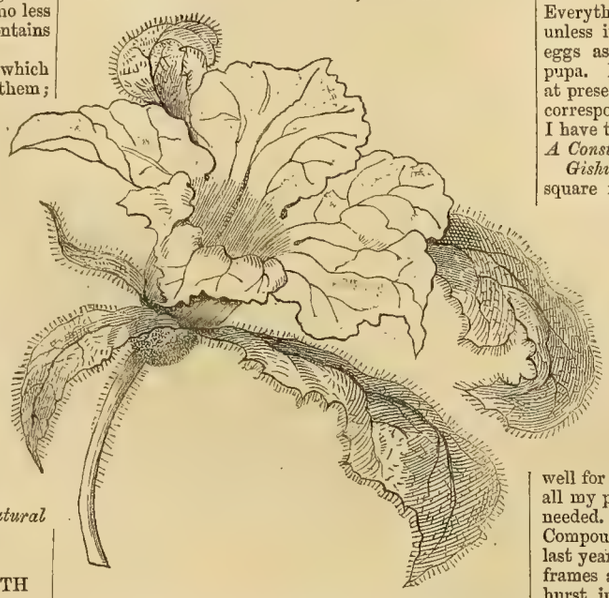
This relatively considerable heating of the surface of the soil exerts a powerful influence upon the physical geography of the high Alps: it is this which moves upward the line of eternal snow, the melting of which is principally due to the heat of the subjacent ground. All travellers who have ascended these elevated regions know that in the Alps the snows melt underneath in consequence of the heat of the soil. Often, when the foot is placed on the edge of a snow-field, the weight of the body breaks a superficial crust which does not rest on the soil. Sometimes we perceive with astonishment underneath these icy vaults Soldanellas in flower (Soldanella alpina, L., and S. Cludii, Thom.), with tufts of the leaves of the Dandelion. It is likewise the melting of the snow in contact with the soil which causes the sliding of the snow-fields which form the spring avalanches of turfy declivities. Finally, it is this heating which explains the variety of species of plants, and the number of individuals which cover the soil at the very limit of the eternal snows: thus, upon the terminal cone of the Faulhorn, the height of which is about 250 feet, the superficies about 11 acres, and the altitude nearly 9000 feet, I have gathered 131 species of flowering plants. On the Grands-Mulets (needles of laminated protogene rising in the midst of the glaciers of Mont Blanc, at 10,000 feet above the sea), I have noted 19 Phanerogamia,—viz., Draba vladinensis, Wulff., Cardamine bellidifolia, L., Silene acaulis, L., Potentilla frigida, Vill., Phyteuma hemisphæricum, L., Erigeron uniflorum, L., Pyrethrum alpinum, Willd., Saxifraga bryoides, L., S. grœnlandica, Lap., S. muscoides, Auct., Androsace

helvetica, Gaud., Avena pubescens, DC., Gentiana verna, L., Luzula spicata, DC., Festuca Halleri, Vill., Poa laxa, Haencke, P. cæsia, Sm., Agrostis rupestris, All., Carex nigra, All.; but then, on the 28th of July, 1846 (the temperature of the air in the shade being 48°.9 Fahr., in the sun 52°.5 Fahr.), the schistose gravel of the rock in which these plants vegetated indicated a temperature of 84°.2. As a contrast, I will again cite Spitzbergen. This archipelago, whose shores may equally be regarded as touching the limits of eternal snows, occupies no less than 4½° of latitude by 12° of longitude, and yet contains no more than 82 Phanerogamia.

In the Alps, the plants are heated by the soil which bears them more than by the air which surrounds them; a vivid light favours their respiratory functions; and even when the temperature descends to the freezing-point during the day, a layer of recent snow preserves them even in summer from the accidental chills which always accompany bad weather on high mountains. Equally sensitive to cold and heat, they can only bear temperatures between about 32° and 59°; constantly moistened by clouds or irrigated by the water flowing from the melting snow, they require the utmost care to make them prosper in the plains; for the gardener must defend them against the cold of winter and the heats of summer, yet without keeping them from the influence of light. At Spitzbergen, on the contrary, in spite of the perpetual day of summer, the vegetation is poor and scattered, because the rays of the sun being for the most part absorbed by the great thickness of the atmosphere and the continual fogs, can neither heat nor illuminate this frozen country. *Annals and Magazine of Natural History.*

HAVE GOURDS AND CUCUMBERS BOTH CALYX AND COROLLA?

Botanists are aware that the great Jussieu was of opinion that the brilliant yellow cup which in Melons, Gourds, and Cucumbers forms so conspicuous a part of the flowers of such plants, was a calyx and not a corolla. The five green processes external to this cup, and occupying the place of a calyx, that eminent systematist pronounced to be merely appendages; comparing them possibly to the small bracts that adhere to the calyx of a Strawberry. Him has followed Auguste de St. Hilaire, and probably others, though not in this country. Hitherto the true nature of these parts has been a matter of opinion rather than a point incontestably established. But no doubt can longer remain after considering such cases as those here represented, for which we are obliged to our sharp-sighted correspondent Mr. Cuthill, of Camberwell. The figures demonstrate that the apparent calyx is really such, the sepaline lobes having grown into true leaves, while in the smaller figure, which represents a male flower, the corolla remains absolutely unaltered. The specimens sent us exhibited several intermediate conditions of structure; but nothing more instructive than what our artist has represented. The monstrosity occurred in a common Cucumber.

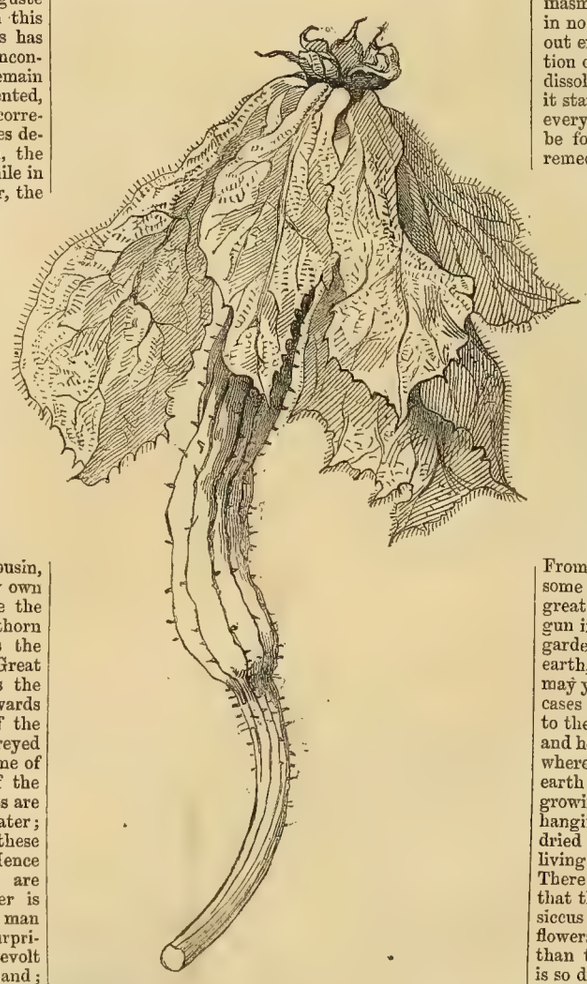


Home Correspondence.

The Water Rat.—As I shall be off for the Continent in the course of the day, I have not time just now to say much on the supposed vices and virtues of my dark little pet. No doubt, "Jael" has had a fine Holly tree and a handsome Hawthorn hedge most unmercifully punished by the water rat; and no doubt, "B., Norfolk" has most just reason to consider the same quadruped an "enemy to the cultivators of Vines." By the way, the water rat with us is a solitary animal, and of course it is not gregarious like its pilfering cousin, the audacious Hanoverian. So far as regards my own property, really I cannot in conscience denounce the water rat as an enemy to Vines, and to Hawthorn hedges. I have here at Walton Hall perhaps the most magnificent Hawthorn hedge in all Great Britain, growing on the very bank itself which is the constant abode of the water rat. This hedge is upwards of 160 yards long, and is open to the inspection of the public. Its roots and bark have never yet been preyed upon by the water rat; and I can affirm the same of many fine Holly trees growing on the banks of the brook. Within 50 yards of the water rat's haunts are two flourishing Grape plants. One is the Sweet Water; the other is the Black Hamburgh. Neither of these have ever been gnawed by the water rat. Hence I venture to draw the conclusion that there are different tastes in different water rats. Neither is this to be wondered at, when we reflect that in man himself, and in many other animals, there is a surprising diversity of appetites. For example, I always revolt at the very sight of the half-roasted beef in England; but I actually fatten on the beef which is boiled to rags in France. My grandmother (Heaven rest her soul) could not tolerate the yolk of eggs on her stomach. I once saw a man tear to pieces and eat up an old raw hen with all her guts and feathers; and I was very intimate with a gentleman who was uncommonly fond of puppy pie when he could procure it. I never can coax my tom-cat Whittington to eat fat or gristle; and I have seen him vomit, after he had eaten a common house mouse. But he will take for his supper every night a hard and dry biscuit. I know many young ladies who are struck with horror at the idea of dining on fricasseed frogs and stewed snails; still I myself find such dishes very palatable. Having all these things in view, I flinch not from what I have lately written on the habits of the water rat. But it is time to bid a temporary farewell to the indulgent readers of Dr. Lindley's far-famed *Gardeners' Chronicle*. So I will conclude with the old remark, somewhat in a new dress: De variis, variorum animalium gustibus, disputare nequeo. *Charles Waterton, Walton Hall, Aug* 1.

——In your Number of the 30th ult. your printer has made me say I have found the water rat a great enemy to the cultivators of "Vines." It should have been the cultivators of "Osiers." *Old Subscriber.*

Pear and Cherry Grub.—I am rather surprised at not finding in your columns more complaints of the amazing quantity and variety of blight this year. I



believe there never was a season when the gardens, in this part of England at least, suffered so much from the ravages of every description of insect life. Here Peaches, Nectarines, Plums, Apples, Pears, Cherries, Currants, are a failure. Of Peaches and Nectarines I have lost many trees, completely burnt up, in spite of syringing, Gishurst Compound, &c. But the particular annoyance I beg to call attention to, and to ask for information upon, is the caterpillar which attacks the leaves of Pears and Cherries, the slimy grub, I believe it is—"Selandria Æthiops." This year for the first time after eating up every leaf on the trees, it has fallen upon the fruit, and completely destroyed the outer skin, leaving it to dry up and perish. There is the inconvenience of a constant litter from the fallen leaves, whilst the trees themselves, instead of being an ornament, are an eyesore, and something worse. The irregular action produced by the check to the whole tree causes the spurs which should fill up for bloom next year to burst into watery spray, puzzling the pruner altogether. Everything I have tried for their destruction has failed, unless it could be effected either by a search for the eggs as soon as laid, or still better, perhaps, for the pupa. I do not know enough of the habit of the insect at present for this; but in the hope that some of your correspondents might give me the needful information, I have taken the liberty of laying my case before them. *A Constant Reader, Newbury.*

Gishurst Compound.—I have usually about 3300 square feet of Cucumber plants growing under glass. Towards the end of June last year they became so infested with red spider and thrips as to be worthless; had they remained healthy they would have borne me nearly 100*l.* worth of Cucumbers by the end of the season. This year I have tried the Gishurst Compound with complete success, beginning about three weeks ago, and using at first 4 oz. per gallon; this is too strong—2 oz. per gallon destroys the pests without injuring the Cucumbers. Some of the leaves were thinned out and the remainder and the young fruit and shoots were dipped into the solution, and now they are breaking into fresh healthy growth and looking well for fruiting. Four 1*s.* 6*d.* boxes are sufficient to dip all my plants once; but a second dipping is sometimes needed. I feel sure that the timely application of the Compound has saved me from a loss equal to that of last year. I propose early this winter to wash all my frames and lights with a very strong solution of Gishurst in the hope of destroying all insects and eggs. *James Steel, Market Gardens, Plough Lane, Battersea.*

Gishurst Compound v. *House Bugs.*—This institution (County Lunatic Asylum, Bedford) has been infested for years with bed bugs, and to such an extent as to aggravate the anxieties of my charge for its inmates. About three months ago I purchased a large box of the Gishurst Compound for use in my greenhouse, and it occurred to me that what would destroy insect life in one instance might do so in another; and I am gratified, inasmuch as after a series of trials, my attempts have in no case been fruitless; indeed the Compound is without exception the most effective means for the destruction of these pests. The best mode of using it is by dissolving about 4 ounces in a gallon of water, letting it stand for about 48 hours, then applying it freely to every part of the furniture or room where bugs are to be found. I must remark that almost all the known remedies for the purpose have been tried here at a great expense, and failed; in this the small cost is a great desideratum. *Wm. Denne, F.R.C.S., Medical Superintendent.*

Tenacity of Life in Succulents.—About six months ago a branch was taken from a Sempervivum villosum and thrown aside as useless; but instead of withering like most branches that are treated in a similar manner, it continued its greenness nearly as much as the plant from which it was taken. In order to try how long it would live without earth or water it was hung up in a greenhouse head downwards, but still it would not die. We are often told that cats have nine lives, but this Sempervivum appears to have ninety and nine, for every shoot curved beautifully upwards, and had some resemblance to a chandelier in miniature. In the spring of the year the shoots threw up flower-stalks, and for two months past there has been an abundance of flowers, but how long they will continue I cannot tell. From this simple affair I began to think of revolutions in some departments of gardening, which might be of as great importance to some of your readers as Armstrong's gun in modern warfare. Only think of Sempervivum gardens—plants living and flowering without pots, earth, or water. Both inside and outside of windows may yet be greatly adorned in such a way, and Wardian cases with their misty atmosphere may yet be turned to the left; and a great boon it will be to housekeepers and housemaids, and a saving to carpets and crumcloths, where window gardening can be accomplished without earth or water. A pleasure it will be to many to look upon growing plants in flower, placed in a bouquet stand, or hanging in any convenient place, and not any of the dried and dyed French "Immortelles" either, but real living productions. Others might be added to the list. There are the Sedums or Stonecrops so tenacious of life that they can scarcely be kept from growing in a hortus siccus; and there is the Sempervivum tectorum: the flowers of this well-known plant are no less beautiful than they are curious in their structure, and the plant is so difficult to kill, that it almost requires cooking before it can be well dried; and if the mountains of herbariums that have accumulated in and about London were turned over, there may be found some plants trying to make their escape from their long confinement that may yet adorn the windows of the metropolis. Those of your readers who have plenty of plants belonging to Crassulaceæ and Ficoideæ may try some of them, and observe how long they will endure hanging before they die. I may observe that the Sempervivum villosum growing in a pot in the greenhouse has not flowered this season, although growing and healthy

enough, while the branch taken from it and hung up by the heels has flowered abundantly. *P. Mackenzie.*

Roses on the Manetti Stock.—In reply to your correspondent "J. K. C.," I beg to say that the details of my management are as follows:—The cuttings of Manetti are taken off stools kept for the purpose any time in November. They should be strong and well ripened, about 1 foot long, and all buds should be cut out, except the two top ones; they are then inserted deeply in rows in nursery beds, and taken up the following November or December for grafting; I now cut back to 4 or 5 inches of stem, and insert the graft, which should be of strong well ripened wood. I tie with bast, and put low in moist soil to avoid watering till a callus is formed; the grafts are sure to turn black if water touches their pith. The plants are then placed in any close frame on a gentle bottom-heat, and kept dark till a union is effected, which generally occurs in about a fortnight or three weeks from the time of grafting. After this any place free from frost will suit them, but if convenience admits of keeping them gently growing so much the better; they may then be "potted on" to form strong flowering plants by May, or kept in the same pots for turning out in April if properly hardened, always bearing in mind to keep the Manetti stock about an inch below the surface. If stopped before turning out they form fine bushes, flower well in June, and continue to bloom all the season. *J. Sheppard, Woolverstone Park.*

Cucumbers intended for winter forcing should be sown immediately, for by getting them planted out whilst the sun is powerful, and giving plenty of air and a night temperature of 60°, a strong and vigorous growth is secured. Use every means to keep clear of greenfly and thrips. Should they appear fumigate two or three evenings successively and there will be but little difficulty in getting plenty of fruit during the winter months. Lord Kenyon and Sion House Improved are two favourite kinds for winter use. They may also be propagated by cuttings, of 5 or 6 inches in length, taken from the tops of bearing branches of vigorous plants, planted in pots of rich mould in September, plunged in a hotbed, and water regularly. They will take root in about a fortnight, when they may be planted out for fruiting. The fruit will be in perfection before Christmas. *M. A., Chartham Deanery.*

Notices of Books.

The Pyrenees West and East. By C. R. Weld. 8vo. Longmans. Pp. 410.

A charming book which, unlike so many travellers' journals, may be read and re-read with undiminished pleasure. No one knows better than Mr. Weld how to fix upon the salient points of what he sees and hears. A ready pen, a skilful pencil, much knowledge of the world as it is as well as of old world things, and a thoroughly English turn of mind, are combined advantages that very few observers possess in an equal degree. He is thus enabled to carry the reader along with him so completely that we rise from the perusal of one of his chapters with a half belief that we have really been present at the scenes described.

On this occasion he proceeds by way of Rouen to Tours, Poitiers, and Bordeaux, thence crosses the Landes to Bayonne, sees Biaritz, Dax, Orthez, and reaches Pau. After here describing the valleys, the mountains, the peasants, he travels to Cauterets and Luz, explores their neighbourhood, then reaches the fashionable Bagnères de Bigorre, makes his way to Luchon, and at last pulls up in Toulouse. After some stay in this famous town he dashes into the Eastern Pyrenees, explores their most remarkable scenes, Ussat, Cabannes, Ax, Val d'Andorre, Puicerda, Olette, Thuez, and many more, discusses the heady wines of Roussillon, is delighted with the "rare nectar" called Bagnol or Rivesaltes, pushes on for Canigou, doubles back to Prades, and finally dismounts in Perpignan. Such a guide is worthy of such a route, and Pyrenean travellers will be wise if they follow exactly in Mr. Weld's footsteps.

One of the most interesting of the author's sketches is that of the sandy wilderness near Bordeaux, called the Pays des Landes. We quote his two descriptions:—

"Nothing more dreary than these apparently interminable wastes. Your passage across them suggests ideas of the ocean, with this great difference however, that whereas the latter is rarely at rest, the vast tract of the Landes, comprising 600,000 hectares, equal to 1,482,600 acres, except when swept by hurricanes, presents a still and monotonous surface. The soil is sand—endless sand—vertically as well as superficially. Artesian wells have been sunk to the depth of nearly 1000 feet, and then a scanty supply of wretched yellow water has been the only result. As may be supposed, the lives of the inhabitants of this unpromising region are short, feverish, and sickly. The Landais have a proverb,

"'Tant que Lande sera Lande
La pellagre te demande;'

said pellagre being a fatal disease occasioned by malaria and bad water. Amidst these wastes, lying to the east of the Pine forests which fringe the sea coast, the Landais, who are, with few exceptions, shepherds, spend the long summer days with their flocks of sheep, each animal being as well known to them as their dogs. The Landais shepherd is a primitive being, fond of solitude, rarely venturing near the railway; when he does, he gazes wonderingly at the rushing train—so to see him you must penetrate into his wilderness. There, amidst the great wastes, clothed in sheep skins and wearing the Navarre cap, you will find him mounted on tall stilts, become, from long habit, like a second pair of legs, for he has been accustomed to them from childhood; probably knitting while his flock crop the scanty herbage. There he stands, resting against his pole, a strange tripod-looking figure — stranger still when he strides across the Landes in hot haste after a wandering sheep. He has a small hut, sometimes a wife, who aids him in cultivating a small patch of ground, from which he obtains a little corn and a few vegetables. A miserable existence is this, but the dawn of brighter days has, we may hope, appeared for the poor Landais. After innumerable futile attempts to reclaim and fertilise portions of this desert, two joint-stock companies (Compagnie des Landes and Compagnie d'Arcachon) have succeeded in reclaiming a considerable tract of the Plaine de Cazaux. Sheltered from the prevailing west winds by the great maritime Pine forest, of which we shall have something to say presently, the Plaine de Cazaux, situated to the east or leeward, as may be said of that forest, is not so liable to the destructive effects of the great sand storms as other parts of the Landes. Rice, Tobacco, and the *topinambour*, or Jerusalem Artichoke, for which the soil is admirably adapted, are the chief crops. The improvements are, in a great measure, due to a M. Pierre, an agricultural genius, who, having studied agriculture, and particularly drainage under scientific teachers, devised a system of reclaiming and husbandry which has been very successful.

"Prosperity is rapidly following these improvements, and, what is better, malaria no longer poisons the reclaimed districts. The peasantry enjoy better health, and M. Pierre firmly believes that the terrible pellagre will be soon unknown in the Landes. His system has been approved by the Emperor, who has lately extended his patronage to M. Pierre by purchasing a large tract of the Landes, which is to be cultivated according to his method. The Imperial estate lies to the east of Labouheyre station, and the Landais have marked their sense of his Majesty's advent among them as a landowner by erecting a pillar, surmounted by a gilt eagle, on the spot where the Emperor first entered the Landes."

"The great Pine forest of the Landes, locally called Pignadas, extends from the Adour to the Gironde, and is an extraordinary monument of man's skill and perseverance.

"Prior to 1789 this vast forest area was—

"'A bare strand
Of hillocks heaped from ever-shifting sand,
Matted with Thistles and amphibious weeds,
Such as from earth's embrace the salt ooze breeds.'

The sand was so fine as to be wafted by the faintest breeze, whilst the great sea storms raised huge sand waves, which overwhelmed vegetation, and rolling inland frequently carried desolation and destruction among far distant villages and fields. Such was the state of this part of the country when M. Bremontier, an officer in the Government department of the Administration of the Forests of France, conceived the idea of erecting wattled hurdles and boards near the sea, so as to break the storms; and sowing in narrow zones, leeward and at right angles to the prevailing wind, seeds of the Pinus Pinaster and common Broom, in the proportion of 5 lbs. of the former to 2 lbs. of the latter per acre. The area sown was then covered or thatched with Pine branches, care being taken to prevent these being blown away by pinning them to the ground. In about six weeks the Broom seeds produced plants 6 inches high, which attained the height of 2 feet at the close of the year. These now afforded excellent shelter to the Pine plants, which were but 4-inch striplings, and under their fostering protection the Pines grew and flourished, until at length with an ingratitude not, unhappily, confined to the vegetable world, they suffocated their infantine protectors, and rose high, defiant of the raging sand storms.

"So effective was M. Bremontier's process, that in 1811 a commission appointed by government to examine the Landes reported that 12,500 acres were covered with thriving and profitable Pines; and the Landais, who had lived to see their howling wastes clothed with far-stretching forests, were enabled to gain a livelihood less precarious and perilous than that obtained by fishing in the stormy waters of the Biscayan bay.

"Twenty-five years passed, and then the hand of man was busy among the Pines. Good as the Pinaster is for domestic purposes, La Fontaine says:

"'Sera-t-il Dieu, table, ou cuvette?'

It is far more valuable for the great quantity of resin, tar, and lampblack which it produces. As you ride through the Pines you will meet the resin-gatherers, *résiniers*, as they are called, who during the summer months live in the forest; for the most part a rude set of men, speaking a strange *patois*, from which, however, you may glean some information. When the resin harvest is at hand the *résinier* goes forth provided with a short ladder and a curved axe. His manner of testing the fitness of a tree to be tapped is by throwing his arms round it. If the trunk be so thick that he cannot see his finger ends, the Pine is ripe for the operation. This is performed with great quickness and dexterity. A longitudinal cut or groove is made in the trunk, down which the resin flows, and is caught at the bottom of the scar in a little trough, fashioned in a few moments from the bark removed by the cut. Weekly the wound is reopened, but not widened; and the operation is renewed yearly until the entire trunk is scored in such a manner as to make you wonder how the maimed bole can support the superincumbent weight. But, stranger still, the Pine is not injured by this scoring process: for if the operation be judiciously performed, by the time that the *résinier* has gone round the tree the first wound has healed, and the trunk is ready to be bled again. Wonderful too is the quantity of resin which exudes from these bountiful trees. You may know where the *résiniers* have lately been, by the balsamic odour proceeding from the wounded Pines. A resin-gatherer told me that after a season's practice—from the 1st of May to the end of September—a good hand could score 2100 trees, scrape the *résine molle*, which incrusts the trunks, into the troughs with small iron rakes, and carry the resin to the pits where it is boiled. I saw a *résinier* frequently score a tree to the height of 15 feet, and make a trough in two minutes and a quarter. Such a proficient earns 25 francs weekly, a high wage in this part of France. Indeed the *résinier* is far better off now than the small vineyard proprietor, who, generally destitute of capital, is ruined by a failure of his crop. 'How can a Kentish labourer be a Hop-grower?' asked Arthur Young; and now that the Vine is smitten by disease, we may ask, 'How can a small landed proprietor who is little above an English labourer with a good wage, succeed as a Vine-grower?

"When the Pines have been scored and rescored, those destined to make tar—called *pins perdus*—are cut down. The tar, commercially known as *goudron des Landes*, not so good, however, as that derived from the Scotch Pine, is made by burning the roots and thick portion of the trunk very slowly in cavities made in sloping ground, and the tar is caught in cast-iron pans and run into barrels. An inferior kind of lampblack is deposited by the smoke of the wood, but a better description is obtained by burning the straw used in straining the resin.

"Besides these products, the resin of the Pinus Pinaster yields common turpentine, and is used extensively for pills. Glaring placards and advertisements at Arcachon further inform the visitor that 'Sève de Pin Maritime est recommandée contre les affections de poitrine, catarrhes, bronchites,' &c., by the French faculty—a revival, by the way, in another form, of tar-water, whose virtues were extolled by Bishop Berkeley long ago in his curious book entitled 'Siris.'

"And even now the economical uses of resin are not exhausted; so the Frenchman did not exaggerate when he asserted that 'résine est l'or en barriques.'

"Many and delightful were the hours that I spent in the Pignadas, generally on horseback; for the country around Arcachon is very favourable for riding, and the small Landais horses are excellent; Arab blood runs in their veins. Hear the first stanza of 'Le Chanson du Cheval Landais:'—

"'Le voyez-vous, fringant et leste,
Parcourir la grande forêt?
Avec lui, de Dax à Teste.
En un jour je fais le trajet.
Le sang arabe est dans ses veines;
Son trot est ferme et chaleureux,
Car il franchit dunes et plaines
Sans perdre son air courageux.'"

As it may be useful to tourists entering Spain to know how to comport themselves with the grim Douaniers that guard the frontier, we add Mr. Weld's account of what befel him on his road to Puicerda without a passport:—

"We had ridden about six miles when our guides, pointing to a small stone pillar on the left of our path, announced that we had entered Spain. Excepting this pillar, which might easily be overlooked, there is nothing to mark the boundary between the two kingdoms. How different to the grand dividing natural walls, which awe by their sublimity, at the Brèche de Roland, or the Port de Venasque. However, we were in Spain, and if any doubt had lingered in our minds it would have been dispelled by the Spanish custom house and police station which were before us. The sight of these establishments was not agreeable, for although our passports were good for France, they had not been visé for Spain. I had omitted, by some strange neglect, to obtain this at Bayonne, and my companion, not purposing to enter Spain, had no authority to enter that country. What was to be done? We could, of course, if not allowed to proceed to Puicerda, retrace our steps to Corbassil, or sleep at Bourg-Madame within the French territory; but one does not like to be foiled, and we had made up our minds to sup in Spain. Taking council with the guides, they thought that we should not meet with any opposition provided we had no objection to paying our footing—in other words, bribing the two officers, who they felt sure would, for a fee of five francs each, allow us to pass, but not otherwise. To this we made reply that we would willingly pay the money and see whether a five-franc piece would be as effective as the visa of the Spanish Consul. It was arranged that my guide, who spoke Spanish, was to be the bribing agent, and having provided him with the money we assumed a bold face and pushed on.

"Our approach to the police station had not been unobserved. The officer and his custom-house colleague were out, and when we drew near challenged us. The one demanded our passports, the other expressed a strong desire to see the contents of our bags. My guide

now stepped forward and assured the officers that we were gentlemen travelling merely for our pleasure, that our bags contained only the necessary articles for a tour, and that we did not propose proceeding farther into Spain than Puicerda. The information did not satisfy them, for they again desired to see passports and bags, upon which my guide drew them aside, spoke gentle words, slipped the broad silver pieces into their hands, and we were free to go where we pleased. 'Recent travellers,' says the last edition of the Spanish Handbook, 'report that bribery is now out of fashion in Spain, and that no money should be offered to *resguardos*, or custom-house officers;' 'but,' adds the late Mr. Ford, 'in my time the grandest panacea was cash, the Oriental backshish, and those who preferred peace to *pesetas*, paid with both hands.' Money is, I apprehend, still the *primum mobile* in Spain. 'The first thing,' said the Duke of Wellington, 'that the Spanish invariably want is money; their worship of the Virgin is second to their adoration of Mammon.'

"My experience at the threshold of Spain confirms these opinions, and I have no doubt that a very sad condition of 'moral ophthalmia' may be still induced among Spanish officials by a judiciously administered *gratifica cioncita*—vulgarly a tip."

Trade lists received.—*Youell & Co.'s* (Great Yarmouth) *Catalogue for* 1859 *and* 1860 *of Plants, Conifers, Shrubs, &c.* A list of a considerable collection of useful plants, among which, in addition to the usual stock of a large country nursery, are included a good many herbaceous plants not often now-a-days cultivated for sale. The whole occupy 57 pages.

Garden Memoranda.

Gowran Castle, Kilkenny.—We learn from Mr. Miller, the intelligent gardener here, that he gathered ripe Peaches from the open wall on the 10th ult. They consisted of the variety called Nutmeg, which was not ripe last year before the 24th of July, thus making the present season in this instance 14 days earlier than that of 1858. The gardens here, like those in other places, having suffered greatly from drought this season, every available means of administering water were put in operation, and among others the syphon plan has been used with great success. Mr. Miller says: "It has become the favourite of both the men and myself, as well as every one who has seen it work. The syphon is made of Gutta Percha and is about an inch in diameter. The lengths vary, according to the ground to be operated upon. To water the borders of the kitchen garden, which are about 16 feet in width, the syphons are inserted in a large water cart, drawn by a horse, on each side of which the syphons work, having a person to each directing the tube, which is fitted with a rose and stop-cock. The tube can be thus kept full, and conveniently brought from place to place without waste of water or delay in again setting it to work. In endeavouring to water too far off, the operator is apt to draw the suction end out of the water, which as a matter of course immediately stops the action. This is easily remedied by attaching a weight to the end in the water, thus preventing it from being so readily lifted out."

In this way the operator is enabled to water considerable surfaces with little trouble, except that of filling the water cart. Without resorting to this system, Mr. M. adds, the large surface of flower garden here, together with that of a large kitchen garden, would have been altogether burnt up.

Liquid manure may also be administered in the same way with equal success; but, if from the farm-yard tank, precaution must be taken to have it well strained before entering the cart; sediment soon stops the rose, but the tube itself will pass a large amount. So strong is the suction that pebbles, nearly equalling the diameter of the pipe, will pass freely. The syphon is so well known that the only wonder is it has not been more frequently applied to practical purposes. By means of its use the gardens here, instead of appearing like an arid plain, have become as it were an oasis in the desert, for the neighbouring farm and other crops have suffered greatly from drought. We are not informed by what means the air is exhausted from the Gutta Percha tube.

Calendar of Operations.

(*For the ensuing Week.*)

PLANT DEPARTMENT.

Conservatory, &c.—Attention must now be paid to late growing plants in borders; for while in active growth they require a good deal of water, and insects are more troublesome than in the case of plants at rest. Give Luculias especially plenty of water at the root, and an occasional supply of clear weak manure-water to old plants that may not be growing freely until they have made sufficient wood to ensure a good display of flower. As has been previously stated, however, manure-water must not be given to young specimens in vigorous health, as in that case it would only induce too gross a growth, a condition in which they seldom flower profusely. In order to secure fine heads of bloom from this plant it should be allowed a few weeks of comparative rest, after, say about the middle of next month, keeping the roots rather dry, and exposing the plants as freely to air as can be done without injury to the foliage or the health of their neighbours. Brugmansia sanguinea is also a useful plant for winter and early spring flowering when managed so as to have it pruned, rested, and started into growth about this time. See that large specimens of Camellias are not allowed to get too dry at the root after they have set their buds, for shedding of the latter is often due to this cause. Young and vigorous plants however frequently require to be watered rather sparingly at this period to prevent their making a second growth. Cinerarias for early flowering should now be growing freely, and should be shifted when necessary, for if they are to form large specimens for flowering in winter they must not be permitted to sustain any check. Remove suckers whenever they can be obtained, and pot them for spring flowering. Calceolarias will now be beginning to demand attention. Get cuttings of favourite sorts rooted as soon as possible. Seed may also now be sown in pans placed on a gentle hot-bed.

FORCING DEPARTMENT.

Pineries.—Those who intend commencing the culture of Pines on the open bed system cannot begin at a more favourable season than the present. The bed should be from 18 inches to 2 feet deep, and should consist principally of good rich mellow turfy loam, well broken up, and carefully intermixed with a liberal sprinkling of clean sand, and a small proportion of leaf soil or good rich fibry peat; for when rough turfy soil is used and the bed is ever from any cause allowed to get thoroughly dry it is very difficult to moisten it again, as the water passes off through the lumps without penetrating them. But if the loam is well broken up and mixed with some leaf soil, or peat and sand, it will be found to take water freely enough, and the roots will be almost as much under command as when the plants are grown in pots. Persons commencing this method of growing Pines should also endeavour to avoid planting of pot-bound plants, as these, whether young or old, seldom strike freely into the fresh soil, and are very apt to fruit prematurely; but if such plants must be turned out, then care should be used to make the soil firm about the balls, so as to prevent the water passing off without moistening the balls. Vineries.—Every possible attention must be afforded young Vines planted this spring where strong rods are expected. Let a vigorous root action be secured, and endeavour to get the wood well ripened. Give air freely and early on fine days, so as to avoid any risk of scorching the foliage, but shut up early in the afternoon, sprinkling the floors, &c., so as to cause a genial moisture in the atmosphere, which will be of great service in strengthening the Vines. If plants are grown in the house, see that they are not infested with black thrips, and on no account be induced to regulate the temperature, &c., of the house for the plants, but remove these to other quarters, or make them succumb to the treatment most suitable for the Vines. Keep a sharp look-out for the appearance of red spider in houses where the fruit is ripening, and coat the pipes or flues with sulphur on the first appearance of this enemy. Indeed it is well to do this occasionally by way of a preventive, which, in this case as in most others, is vastly preferable to a cure. Vines in pots intended for early forcing will require attention to get the wood properly ripened.

FLOWER GARDEN AND SHRUBBERIES.

Propagation of stock for next season must now soon be commenced and carried on with expedition so as to secure strong well established plants before winter and without the necessity of keeping them so close or warm as to induce weakly and watery growth. It cannot be too often repeated that to be able to winter bedding stock safely with ordinary care, the cuttings should be put in sufficiently early in the autumn to allow of having them well established and fit to be exposed to the open air by the end of next month. Begin with such as are found to be the most tedious to propagate and prepare for winter. Hollyhocks are general favourites, but they do not afford cuttings freely, and are in general not over plentiful about most places. These should therefore be examined often in search of any cuttings which they may afford, as those rooted about this time will make strong plants for next season. Attend to the tying up of these and Dahlias, and go over the masses of Verbenas, &c., frequently for the purpose of regulating the growth, so as to keep it orderly and neat. Sow Ten-week or Intermediate Stocks for spring flowering. Transplant Brompton and Queen Stocks, and if the situations in which they are to flower are not at liberty, prick them out in nursery beds, allowing them plenty of room to prevent weakly growth.

HARDY FRUIT AND KITCHEN GARDEN.

Winter Onions may now be sown; also Cauliflowers for the early crop next season, a small bed of pickling Cabbage, Brown Cos, and some hardier sorts of Lettuce to stand the winter. The tops of the main crops of Onions had better be laid down if they are inclined to be too rank, going over the bed with a wooden-headed rake and pressing the tops down sufficiently to check further growth. Plant out a good breadth of Endive on well enriched soil of a light dry nature. Also see to providing a good supply of Lettuce for autumn use. Attend to Celery, keeping it well supplied with water in dry weather, giving it as much manure water as can be spared for it, and keep the early crop rather closely earthed up. Vacant ground, or that which can be cleared of early crops, may be still planted with winter stuff, first giving it a good dressing of manure and a good deep digging. Stir the surface of the soil among growing crops. This has a highly beneficial effect. Cut Box edgings, and keep every corner clean and neat.

COTTAGERS' GARDEN.

Let Scarlet Runners be topped once more, if not already done. A few Cabbage plants got in now will be found useful. Green Kale may still be got in where blanks exist, and a few Dutch Turnips might yet be sown; also a little of the Bath Cos Lettuce, a little American Cress and a few Turnip Radishes.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.
For the Week ending August 4, 1859, as observed at the Horticultural Gardens.

July and August.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Temperature of the Air. Min.	Temperature of the Air. Mean	Temperature of the Earth 1 foot deep.	Temperature of the Earth 2 feet deep.	Wind.	Rain.
Friday 29	●	29.997	29.960	78	58	68.0	69	66	N.	.12
Satur. 30	1	29.899	29.727	79	61	70.0	69½	66½	N.W.	.13
Sunday 31	2	29.703	29.591	78	51	64.5	69	66½	S.W.	.00
Mon. 1	3	29.913	29.850	78	44	61.0	68½	66	W.	.00
Tues. 2	4	30.051	29.993	76	42	59.0	67	66	S.W.	.00
Wed. 3	5	29.992	29.865	77	57	67.0	66½	65½	S.W.	.16
Thurs. 4	6	29.925	29.816	78	43	60.5	68	65	S.W.	.00
Average		29.925	29.829	77.7	50.8	64.2	68.2	65.9		.41

July 29—Cloudy and fine; densely overcast; rain.
— 30—Light clouds and fine; exceedingly fine; overcast.
— 31—Clouds in strata; fine; clear and fine at night.
Aug. 1—Vine; very fine; clear.
— 2—Very fine; cloudy and fine; clear at night.
— 3—Quite cloudless; very fine; overcast; rain in the night.
— 4—Slight rain; fine; very clear and fine at night.
Mean temperature of the week, 1 deg. above the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 33 years, for the ensuing Week, ending August 13, 1859.

August.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 7..	74.6	50.4	62.5	10	0.57 in.	1	4	2	—	5	19	2	—
Mon. 8..	75.1	49.6	62.3	12	0.50	2	5	2	—	4	15	5	—
Tues. 9..	75.0	50.5	62.7	12	0.40	1	5	1	—	5	13	8	—
Wed. 10..	75.8	53.0	64.4	14	1.06	1	3	2	1	2	14	8	2
Thurs. 11..	75.7	52.0	63.8	16	0.78	1	—	2	1	5	15	8	1
Friday 12..	75.0	51.0	63.0	12	0.47	2	2	1	1	5	12	6	4
Satur. 13..	73.9	50.2	62.0	16	1.14	1	3	2	4	5	11	2	5

The highest temperature during the above period occurred on the 11th, 1835—therm. 92 deg.; and the lowest on the 11th, 1833, and 6th, 7th, 8th, 1853—therm. 37 deg.

Notices to Correspondents.

Artificial Light: *Observer.* If you refer to our remarks on this subject you will find that they have anticipated, or rather include, the information you have been so good as to communicate.

Books: *Stockport.* If you want figures of English plants procure Sowerby's small edition of English Botany, or his diminished figures now publishing in numbers. If you want figures of Exotic plants, you must have the Botanical Magazine, which appears in monthly numbers, 3*s.* 6*d.* each.

Botanical Examinations: *Peterborough.* The following were the questions put to the senior class in the Faculty of Medicine of University College, London, by Dr. Lindley:—1, Describe fully, in technical language and in the prescribed order, Rubus fruticosus. 2, Describe briefly, in technical language and in the prescribed order, Phlox decussata: N.B. In the replies to these two questions it is required that precision be observed, and prolixity avoided. 3, Describe fully the torus, and all its modifications. 4, If an unsymmetrical petaloid Endogen, with an inferior ovary, and a vitellus round the embryo, were before you, to what natural order would you refer it? 5, Mention the natural orders that are most nearly allied to Rosa, and state their distinctions. 6, Mention the natural orders that are most nearly related to Solanum, and state their distinctions. 7, Distinguish Cyperaceæ from Graminaceæ. 8, What is the difference between septicidal, septifragal, and loculicidal dehiscence? 9, Can an orthotropal ovule produce an embryo with its radicle directed to the hilum? 10, Which of the elementary organs furnishes the thread used in textile fabrics? and what part of a plant yields such thread most abundantly? 11, Describe fully the structure of epidermis, and the functions it performs. 12, When seeds begin to germinate they form carbonic acid, which they expel; whence is the oxygen derived?

Buckland Sweetwater Grape: *Preston.* We have not seen this fruit, and are therefore unable to offer any opinion upon it. You are yourself aware that it is well spoken of by competent judges.

Emigration: *H L.* We cannot assume so serious a responsibility as that of advising a man where he should go. All we can do is to inform him respecting such matters as he inquires about. Industry and activity, with patience in addition, will secure success in every English colony. For ouselves we should take our chance in British Columbia.

Fine Foliaged Plants: *Vix incertus.* Cyanophyllum magnificum is a fine thing; so is Caladium argyrites. When equally well grown they may be called equal. When one is better grown than the other the best grown should win.

Fruits for a South Wall: *H T.* Peaches ought to succeed against a south wall in Essex if the subsoil is drained and the trees properly managed. You have only to protect the blossoms from frost, keep the foliage clear of insects, and adopt such means in pruning and training as will prevent the branches at the top and in the centre of the tree from growing too strong, and the others from becoming too weak. However, if you resolve to plant Pears instead the following will be suitable:—Marie Louise, Beurré Diel, Winter Nelis, Glou Morceau, Passe Colmar, Beurré Rance, Gansel's Bergamot, Easter Beurré. They may be planted 20 feet apart.‖

Handsome Flowering Everlastings: *C B.* All the species of Aphelexis, Ozothamnus, Helichrysum, Helipterum, Gnaphalium (except the weeds), and Xeranthemum. Many of the latter are hardy. Your only way is to inquire for them at some great establishment. Some are purple, some white, some yellow.

Landscape Gardening: *Staffordshire.* Consult Mr. Kemp's book, *How to Lay Out a Small Garden.* The author's address is Birkenhead.

Names of Plants: *W D.* We do not recognise your plant, and not being in flower it cannot be determined. That it is forming flowers is clear, and they will doubtless expand as soon as the plant is strong enough.—*G F.* The Lastrea does not seem different from a sterile Filix-mas. The other plant is so much withered as to be quite unexaminable. It looks like some species of Heliotropium, and is certainly no native of this country.—*E G.* 1, Calamintha Acinos; 2, Athyrium Filix-fœmina; 3, Lastrea Filix-mas.—*E A.* 1, Asplenium fontanum; 2, Polystichum Lonchitis; 3, Pteris tremula; 4, Adiantum formosum.—*D.* Common Melilot.—*Cork.* Santolina Chamæcyparissias or Lavender Cotton.—*W Fuller.* Chenopodium ambrosioides, and Cynodon Dactylon—*A M.* Your Hay-green is Senecio Jacobæa; you may preserve it by dividing the roots and potting them now in a nice damp shady place.—*D D.* L, Cynosurus cristatus; M, Carex remota; J, Phalaris arundinacea; Æ, Aira cæspitosa. Why not number the specimens?

Nursery Stock: *A Constant Reader.* The agreement is valid though not stamped. It can now be stamped on payment of a penalty. There being an agreement you had better take it to your solicitor and consult him as to your rights under it.

Verbena: *A Q Z.* Your seedling is handsome, but not more so than many having the same colour already in cultivation.‡

Vines: *T H H.* Too much moisture somewhere, and too little ventilation, are the cause of the "blistering."

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, London, S.
Principal—J. C. NESBIT, F.G.S., F.C.S., &c.
The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.
Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London, S. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

BURNARD, LACK, AND CO.'S CONCENTRATED SUPERPHOSPHATE OF LIME: guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.
CONCENTRATED TURNIP MANURE, equal in value to the preceding.
Of these Manures Dr. Voelcker says:—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."
Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to BURNARD, LACK, & Co., Sutton Road, Plymouth.

LONDON MANURE COMPANY, removed to 116, Fenchurch Street, E. C. (Established 1840), have the following MANURES ready for delivery:—

CORN MANURE for SPRING TOP-DRESSING URATE MANGEL MANURE SUPERPHOSPHATE OF LIME BLOOD MANURE	all of guaranteed quality.

In consequence of the reduction in the price of raw material the London Manure Co. are enabled to lower the price of their Superphosphate of Lime, and to materially improve the Corn Manure and Urate.
The London Manure Co. also supply PERUVIAN GUANO (direct from Messrs. A. Gibbs and Sons), SULPHATE of AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of value. Wholesale dealers supplied.
116, Fenchurch Street, E.C. EDWARD PURSER, Secretary.

REDUCTION IN PRICE OF LAWES'S MANURES.
MR. LAWES begs to announce that he has this season reduced the price of the Manures manufactured by him, viz.:—

TURNIP MANURE	from £7 to £6	6
SUPERPHOSPHATE OF LIME ..	,, 7 to 6	6
MINERAL do. ..	,, 6 to 5	5
BARLEY MANURE..	8	0

Prof. Way and Dr. Voelcker have sampled from a bulk of 5000 to 6000 tons at his factories, and their report and analyses are given in full in Circular to be obtained on application at his office, 1, Adelaide Place, London Bridge, E.C., or of his local Agents.
N.B. Genuine Peruvian Guano direc. from Messrs GIBBS, Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures. American Cotton-seed Cake supplied.

HENRY J. MORTON AND CO., 2, Basinghall Buildings, Leeds.
GALVANISED IRON WATER CISTERNS
for Cottage Houses, &c., to contain 50 gallons, 25s.; 80 gallons, 30s. each; and 140 gallons, 36s., and fitted with tap, keeping the water perfectly sweet and clean; will not rust or corrode. Cisterns of all sizes.
GALVANISED IRON PUMPS
for Liquid Manure or Domestic Use, 3 inches diameter, 30s. and 32s. 6d. each; Tail Pipe for same at from 10d. per foot.
GALVANISED IRON SWING WATER BARROWS
for Garden or Farm use, containing about 20 gallons, entirely formed of iron, 32s. 6d. each.

GUTTA PERCHA TUBING FOR WATERING GARDENS.
THE GUTTA PERCHA COMPANY have the pleasure to acknowledge the receipt of the following
Testimonial from Mr. J. FARRAH, *Gr. to* BOSWELL MIDDLETON JALLAND, Esq., *of Holderness House, near Hull.*
"I have had 400 feet of your Gutta Percha Tubing, in lengths of 100 feet each, with union joint, in use for the last 12 months for watering these gardens, and I find it to answer better than anything I have ever yet tried. The pressure of the water is very considerable, but this has not the slightest effect on the tubing. I consider this tubing to be a most valuable invention for Gardeners, inasmuch as it enables us to water our gardens in about one-half the time, and with one-half the labour required."
Manufactured by the Gutta Percha Company, Patentees, 18, Wharf Road, City Road, London, E.C., and sold by their Wholesale Dealers in town and country.

SHAW'S TIFFANY is universally acknowledged to be the best, neatest, and cheapest material for shading Conservatories, and other Hothouses. Effectually securing Plants from the scorching rays of the sun, without obscuring the light. Also, for protecting the Bloom of Wall Trees from spring frosts, and Fruit from birds and wasps. Sold in pieces.
No. 1.—20 yards long, by 38 inches wide, 5s. per piece.
No. 3.—Double strength, 18 yards long, by 39 inches wide, 7s. 6d. per piece.
No. 4.—Treble strength, 18 yards long, by 39 inches wide, 9s. per piece.
A liberal allowance to the Trade when ten or more Pieces are taken.—JOHN SHAW & Co., Princess Street, Manchester.

"FRIGI DOMO."—Patronised by her Majesty, the Queen, the Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, and —Collier, Esq., of Dartford.
PROTECTION FROM THE SCORCHING RAYS OF THE SUN.
"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and, floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths. Two yards wide, 1s. 6d. per yard run; four, 3s. per yard. Also, an improved make for Shading Purposes. Three yards wide, 2s. 6d. per yard run.
ELISHA THOMAS ARCHER, whole and sole manufacturer, 7, Trinity Lane, Cannon St., City, E.C., and of all Nurserymen and Seedsmen throughout the kingdom. "It is much cheaper than mats as a covering."

THE LANDS IMPROVEMENT COMPANY.—Incorporated by Special Act of Parliament in 1853.—2, Old Palace Yard, Westminster, S.W. To Landowners, the Clergy, Estate Agents, Surveyors, &c., in England and Wales and in Scotland.
The Directors beg leave to announce that the Company's Amendment Bill, 1859, has received the sanction of the Legislature. The Company now advance money, unlimited in amount, for the following works of Agricultural Improvement, the whole outlay and expenses in all cases being liquidated by a rentcharge for 25 years.
1. Drainage, Irrigation and Warping, Embanking, Inclosing, Clearing, Reclamation, Planting for any beneficial purpose, Engines or Machinery for Drainage or Irrigation.
2. Farm Roads, Tramways and Railroads for agricultural or farming purposes.
3. Jetties or Landing places on the sea coast or on the banks of navigable rivers or lakes.
4. The erection of Farm Houses, Labourers' Cottages, and other Buildings required for Farm purposes, and the improvement of and additions to Farm houses and other buildings for farm purposes.
Landowners assessed under the provisions of any Act of Parliament, Royal Charter, or Commission, in respect of any public or general works of drainage or other improvements, may borrow their proportionate share of the cost, and charge the same with the expenses on the lands improved.
No investigation of title is required, and the Company being of a strictly financial character do not interfere with the plans and execution of the Works, which are controlled only by the Government Enclosure Commissioners.
Under the Company's Acts, tenants for life, trustees, mortgagees in possession, incumbents of livings, bodies corporate, certain lessees, and other landowners are empowered to charge the inheritance with the cost and expenses of the above improvements, whether the money be borrowed from the Company or advanced by the Landowner out of his own funds, and owners in fee may effect these improvements of their Estates without incurring the expense and personal responsibilities incident to mortgagees, and without regard to the amount of existing incumbrances.
For further information, and for forms of application, apply to the Honourable WILLIAM NAPIER, Managing Director, 2, Old Palace Yard, Westminster, S.W.

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.
The next SESSION commences on MONDAY, August 8. Early application to the Principal, the Rev. JOHN CONSTABLE, M.A., for admission should be made, as only those Students are admitted whose papers are satisfactory, and for whom there is accommodation.

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.
Patron—His Royal Highness the PRINCE CONSORT.
President—The Right Hon. Earl BATHURST.
Principal—The Rev. JOHN CONSTABLE, M.A., Trin. Coll., Camb.
Professors, &c.
Chemistry and Chemical Manipulation—J. A. C. VOELCKER, Ph. D., F.C.S., Consulting Chemist to the Royal Agricultural Society of England.
Geology, Zoology, and Botany—JAMES BUCKMAN, F.G.S., F.L.S., F.A.S., &c.
Veterinary Medicine and Surgery—G. T. BROWN, M.R.C.V.S.
Practical Agriculture—Farm Manager—J. COLEMAN, M.R.A.C.
Surveying, Civil Engineering, and Mathematics—J. M. GRINDROD, C.E.
Assistant to Chemical Professor—A. SIBSON.
In-Students, 84*l.*; Out-Students, 40*l.* per annum. For admission application must be made to the Principal. The next Session commences on MONDAY, August 8.

STAFFORDSHIRE AGRICULTURAL SOCIETY.
STOKE-UPON-TRENT MEETING, 1859.
The POULTRY EXHIBITION in connection with this Society will take place on WEDNESDAY, September 14.
Prize Lists and Certificates of Entry may be obtained on application to WM. TOMKINSON, Secretary.
Newcastle-under-Lyme, July 23.

The Agricultural Gazette.

SATURDAY, AUGUST 6, 1859.

—— A REPORT of the Yorkshire Agricultural Society's meeting at Hull during the past week will be found in another page. A short account is also given of the meeting of the Highland and Agricultural Society at Edinburgh. It is note-worthy that at neither was there any trial exhibition of steam cultivation. It would seem that the manufacturers interested in this subject are satisfied with the progress already made, and believe that the general public is already fully convinced of the practicability of the methods already sanctioned and adopted.

The two societies meet during the same week, in spite of obvious public interest to the contrary. For, admitting that there are few who would care to be present with both as spectators, it is plain that there are many who would help both as exhibitors if they could. The implement department and the live stock department of these shows would both of them be more capable of instructing and of benefiting spectators if the undivided attention of exhibitors in each could be given to both of them, as at present it cannot be. The remedy manifestly is that one of these two associations should postpone the ordinary period of its meeting until that of the other has elapsed. And if in the case of one society the period of meeting has on many past occasions and for various reasons been shifted to and fro, while that of the other has throughout its history been invariable—if in the case of one the annual show is but one of many objects to which the attention of the society is directed, while in that of the other it is the sole effort of the year, the main source of its income, and the whole occasion of its expenditure, there cannot be a doubt as to which should yield. This is we believe the history of the two societies respectively, and we therefore venture to express a hope in the interest of the public that in the year 1860 the Highland Society will allow the meeting of the Yorkshire Association to elapse before holding its own. Besides what has been stated, it would by delaying its annual gathering obtain in ordinary years the additional advantage of being able to provide suitable trial ground for the show of reaping machines at work, which is generally a difficulty so far north as early as the first week in August.

—— Harvest is now general all through the midland and even the northern counties of England, and it is nearly completed in the south. We hope next week to give the report of crops with which our correspondents all over the island usually favour us. Their statements have however to a certain extent already been forestalled by the communications which during several past weeks we have published in our columns.

IT is a very general complaint that the Barley this autumn is thin and meagre, but farmers do not in general seem to be acquainted with a very prevalent cause. They may be right in attributing the evil in part to deficiency of moisture, and cold nights alternating with hot days; but there is an enemy which seems to have escaped their notice, which is at least as much to blame. Scarcely a leaf or leaf-sheath is free from mildew, and in many cases the parasite extends to the stem; and doubtless had the weather been warm and moist, both the Barley and Wheat crops would have suffered very seriously. Mildew is very rare in general on Barley, and assumes rather a different form on that plant from what it does on Wheat. The spots are much shorter, and the spores are shorter. In other respects, however, it is precisely the same and has doubtless equal powers of exhaustion, especially when seated on the stem.

As regards Wheat, there is also a prevalent notion that it is much affected by some blight, and though somewhat exaggerated, it is not entirely without foundation. It was very evident soon after the Wheat had blossomed, and appeared on the chaff in the shape of dark lines or blotches penetrating deep into the tissue without any trace of mould, even of the common *Cladosporium*, which so often gives a black tint to standing corn in damp weather without very materially affecting the grain. The affection is in fact very similar to one which was very prevalent in Hungary last year, and which was described in this Journal. It arises, as we believe, from heavy dew settling upon the ear while the tissues are yet tender, and inducing a degree of cold which is injurious to them in consequence of its rapid evaporation.

Here and there the stalk immediately beneath the ear is blackened, the stain extending upwards amongst the spikelets. This is a far more formidable condition, and ends, in bad weather, in complete decay, the hollow of the stem being stuffed with the spawn of some fungus. The affection is not, however, common, and may probably escape general observation.

Though some diminution of weight will doubtless attend on the prevalent blight, there is clearly no cause for general uneasiness, but on the contrary, the produce in most parts of England will probably be above the average, provided the weather does not take an unfavourable turn and encourage the growth of mildew. *M. J. B.*

APPEARANCE OF THE CROPS.

BERKSHIRE.—Wheat crop barely an average in consequence of storms: ripening too rapidly. Barley good, but quality variable. Oats full crop. Beans vary; some very good, others almost a failure. Hay crop abundant and well harvested. Mangel Wurzel promising; plant in some places irregular. Swedes and Turnips very promising; aftermath very short. Corn harvest commenced pretty generally about the 23d. Labour short: generally regretted that the militia should have been called out at this important season. *E. W. Moore, Coleshill, Highworth, July* 29.

BUCKS.—Wheat heavy, much laid, good average. Barley full fair crop. Oats good. Spring Beans fair crop. Winter Beans very bad. Hay full crop, well secured. Potatoes somewhat doubtful as to soundness. Turnips promising. Harvest will be general in a week. *Alex. Fraser, Steeple Claydon. July* 21.

CHESHIRE.—It would be difficult in the present season to form a very correct estimate of the growing crops, many of them having suffered from the dry hot weather, and others from the effect of heavy thunder-showers, which in many localities have laid prostrate fields, and portions of fields, of Wheat, Barley, and Oats; and we observed nearly a fortnight ago several fields which had a very spotted appearance of green and white, almost a certain indication of premature ripeness. Our impression however is, that a great portion of the Wheat crop, and also of early sown Barley and Oats is well fed, and will prove productive, although we cannot imagine that there will be an average of the last two years. The harvest is just commencing, having seen both Wheat and Oats cut; but we cannot calculate upon harvest being general before the end of next week. We have neither seen or heard much of disease in the Potato crop. Mangel Wurzel has greatly improved by the late rains, and many crops which at one time were considered worthless bid fair to being above, rather than below, an average; Swedes too are also improved where they have escaped the ravages of black caterpillar, which pest has been unusually destructive in many parts of the county. In one field which came under our notice about a fortnight ago, we observed detached portions literally covered with the grub, and the plants reduced to mere skeletons; in another field not more than 200 yards off, they made their

appearance in very formidable numbers, but fortunately the crop had not been hoed, and the plants being very thick in the row, but little injury was done, and the whole tribe left the field in a very sudden and mysterious way; we suspect a flock of starlings had discovered and feasted upon them, as we know from experience their usefulness in this way. The hay crops (excepting upon very hot land) have been very good and well secured, and pastures too, where not overstocked, have been full of Grass until within the last fortnight, when the dry weather began to tell upon them, and also upon the quantity of milk from the cattle. *W. Palin, Tarvin, July* 27.

DORSETSHIRE.—The crops are generally good, and harvest is nearly in full work. *William Foss, West Bucknowle, Corfe Castle, July* 21.

EAST NORFOLK.—I have delayed till this moment sending you an account of the appearance of the crops in this district. A fortnight since they bid fair to be all the most sanguine could wish (I allude especially to the loamy soils along the coast), but this unprecedented drought is telling daily upon them. The Wheat is ripening prematurely, and many fields are more or less affected with mildew; the crop is not likely to exceed an average. Barley was a most promising crop, and excepting here and there a field injured by wireworm is bulky and much laid. Mildew has attacked it, and the sample will be coarse and thin, and much of it unfit for malting. Oats and Beans are not extensively grown here, but promise an average crop. On the light and sandy soils which predominate in this county, the crops are seriously injured by the drought and must fall short of an average. The root crop is various, Mangel Wurzel a larger breadth than usual, and promising; Turnips not doing so well, injured by wireworm and caterpillar, many fields patchy and some resown. Potatoes diseased; hay a fair crop and well secured, but little or no aftermath, indeed pastures of all kinds scorched and bare, and water getting scarce. Harvest will be general about the end of first week in August. *W. Cubitt, North Walsham, July* 27.

GLOUCESTERSHIRE.—Wheat, average produce, variable in quality; Barley not average; Oats not average; Beans good; Peas average; Potatoes, disease appearing, otherwise have looked very well; Mangel, below average; Swedes, below average. Harvest general on the 26th July, and weather permitting will be rapidly brought to a close. *Josiah Hunt, Almondsbury, Gloucestershire.*

KENT.—There may at present be one-third of the Wheat in sheaf, but not 1 per cent secured. We have not had so short a crop of Wheat since 1816, when I was 36 years of age. We are so short of hands that even with dry weather I cannot imagine when the harvest can be finished. The bulk of straw is nearly double of last year, and consequently increases the expense and time in carting. Wheat not half the crop of last year; Barley as various in quantity and quality as can be; Peas an exceeding good crop; Beans a good average; Oats very good; Potatoes worse than for many years; Swedes particularly good. *Robert Motson, Wingham.*

LINCOLNSHIRE.—The Wheat crops in this neighbourhood are generally thin and light; where the crops are laid they are mildewing; altogether I should say that the Wheat crops are below an average. The Barley crops are about average, but much laid and in many cases mildewed. The Oats are about average crops. On the whole Turnips are looking well, but there are complaints of wireworm and Black Jack. Mangel Wurzel every year becomes more cultivated, and is now looking well. The disease has made its appearance in the Potato crops in this neighbourhood. No Beans and Peas are grown in this immediate vicinity. The hay and Clover crops were more than average ones. *Edward Darby, Grantham, Horncastle, July* 26.

NORTH LINCOLNSHIRE.—I am sorry to say we have not the same prospect for a good crop of Wheat as last year. Good well farmed land is again a good crop, the contrary is much lighter than last year, but the worst feature is that this last 10 days the mildew has made its appearance on the light soils to a considerable extent, and the heavy crops are very much beaten down with the heavy rains, which will very much injure the quality as well as lessen the quantity. Barley is a good crop; Oats I think an average. Turnips and Mangels are now doing well. Harvest will be pretty general in this neighbourhood about August 8. *F. Sowerby, Aylesby, July* 29.

NOTTINGHAM.—My opinion of the crops on the light sand land near this is briefly as follows: Wheat and Barley, very fair; Oats, not good at all; Peas, bad poor crop; Turnips, doing very well, first rate; Mangels look very well, but not much grown; Potatoes look well, no disease yet. *Henry J. Wilson, Sherwood Hall, Mansfield, July* 27.

SOMERSET.—The crops generally in the eastern part of the county of Somerset look well. The Wheat promises an average return, as is the case with Oats and Barley. The hay-harvest over, crop good, and in beautiful order. Late-sown Turnips and Mangel Wurzel, a failure, but the early sown crops good. Very little Potato blight. Keep for cattle exceedingly scarce from the long continued drought. Peas and Beans an average crop.. *J. W. Eastment, July* 28.

SUSSEX.—The Wheat crop in this neighbourhood is very good, much over an average crop. Oats will be rather short in straw but still quite an average crop. Peas very good indeed, much over an average. Beans good in most places where land is farmed well. Barley but little sown in this part, but what there is looks promising. Hops improving very fast, and bid fair for a great crop. Harvest commenced the latter end of last month, but in some parts of Sussex not till this week. Hay crop good, and has been a most favourable time to get it up with little expense to the farmer. Prices of store stock very high and likely to continue so. *Henry Bristowe, Rose Hill, Brightling.*

WEST SUSSEX.—We are now into harvest with all hands: some began on the 18th. Nearly all had begun on the 20th, and it has got ripe so fast that every hand is fully employed to get it down with all possible speed, and some are complaining of shortness of hands. In some places the Wheat is very much down, and will be more expensive to cut, and as this is the case in some localities more than others, extra hands go where it is easiest to do even at less money, and this being the case we hear of hands being numerous in some places and scarce in others. I do not think that the reaping machines have made much advance in favour this season. I have not heard of any new ones hereabout, though I suppose those that had them last year are using them this. The Wheat crop has ripened too fast, but still it is a good crop. Barley has also ripened a little too soon, but where it was early sown it will be of good quality and a fair crop. Oats, where sown in fair time, are rather over average. Of Beans the reports are various, what I have seen are good. Peas I believe are generally good. We have lately had some very heavy thunderstorms, which, though they have done some damage to the corn, have done immense benefit to the pastures, which were getting much burnt up, and Swedes and Turnips have been much assisted by them, as they were previously doing very badly, and even now are not what they generally are; but as it is still early they may yet come up to an average crop. Potatoes are a fair crop; there is a little disease in some places, but not to the usual extent. Our corn market is more than usually full and sales proceed slowly. Beef in short supply, and but little in demand; mutton in large supply, and a fair sale; lambs more in demand, the supply beginning to fall off. *G. S., July* 26.

WILTSHIRE.—Reaping became general July 25, although a few began two or three days earlier. The Wheat crop is a bulky one as regards straw, and much of it laid rather early; but whether laid or standing it has not ripened so kindly as one would have expected from so warm and dry a season, the corn being thin and several pounds per bushel under last year. Still, I am inclined to think there will be nearly the average number of bushels per acre. Barley is a heavy crop of straw, but not sufficiently early to judge what the quality will be. Oats are also a heavy crop. Winter Beans where left are turning out better than at one time was expected, still they are a short crop. Spring Beans and Peas are a good crop and well corned, but the hot season is not unlikely to make the corn small in size. The hay crop has been the most bulky one we have had for several years, and it has been well got in. Turnips and Swedes are very promising, although it has not been free from the attacks of its usual enemies. There is not much corn harvested in the neighbourhood and the weather is rather unsettled to-day. *Thomas Arkell, Pen Hill Farm, Swindon, August* 1.

WORCESTERSHIRE.—Wheat crop average; Barley full average; Beans average; Oats average; Peas full average; Swedes good; Mangels good; Turnips good. Harvest commenced the latter end of last week and will be general the latter end of this week. Grain ripening fast but reapers scarce. *Henry Hudson, Wick, near Pershore, July* 29.

YORKSHIRE.—Up to Monday the 18th inst. there had been no heavy rains to lodge the corn in the northern counties, but on that evening and since we have had violent storms of wind and rain, and much grain has been laid perfectly flat. As, however, it was generally pretty well filled before this disagreeable weather came, the sample will not be much worse if the season should continue moderately fine up to harvest. The Wheat crop has shot into ear quite as well as could have been expected, and although it will be inferior to the heavy yielding crop of last year, yet on the whole I think it will prove a full average one. The same may be said of Barley. Oats are unequal; on the whole, perhaps, barely an average. Beans short. Peas good. Potatoes so far promising, though not so strong in the haulm as in some years. Turnips patchy, with here and there a splendid field; the whole crop is not so promising as one could wish. Hay harvest is nearly over; it has been a moderate crop, exceedingly well got and at unusually small expense. I think corn harvest may commence in a few favoured spots in a fortnight, and will be general in three weeks in the North Riding of Yorkshire. *H. J. Turner, Richmond, July* 25.

Home Correspondence.

Sheep Feeding.—I observed in your Number for July 2 some Notes on Sheep Farming by Charles W. Hamilton, and although readily agreeing as to the value of the information contained in it, yet think it right to point out a mistake of great practical importance, which if not corrected would be a fertile source of error. Mr. Hamilton in comparing the analysis of the urine of a ewe and wether states—"Urine of ewe, sp. grav. 1.009; it was strongly acidulated with muriatic acid and then evaporated down, until upon cooling it was converted into a solid, the residuum was weighed and found to constitute 2.609 per cent. of the urine; such amount of it (2.609 lbs.) was then burned with soda lime, and in this way was found to yield 0.542 lbs. of ammonia = 0.390 lbs. nitrogen. Urine of wether, sp. grav. 1.057, treated in the same way it gave a much larger residuum, consisting of 25.43 per cent. of the urine, and this when burnt with soda lime gave 9.165 lbs. of ammonia = 7.45 nitrogen. The comparison gives—

	Sp. gr.	Ammonia.	Nitrogen.
Urine of ewe .. .	1.009	0.542	0.390
Urine of wether ..	1.057	9.165	7.486

We then arrive at the conclusion that the urine of the wether yields very nearly 17 times as much ammonia as that of the ewe, and that using the ammonia as a guide the value of the urine of the wether is to that of the best Peruvian guano in the ratio of 9 to 17." What an extraordinary amount of ammonia this urine is made to contain, more even than in the oilcake itself from which it was derived; how is this to be accounted for? If, however, we look close into the subject, a little more light begins to dawn upon our minds, since it appears highly probable that Mr. Hamilton has mistaken the per centage of ammonia in the solid matter of the urine of the wether for the per centage of ammonia in the whole bulk of the urine. Supposing this to be the case, we find that the urine of the wether contains, instead of 9.165 per cent. of ammonia, merely 2.33, and instead of yielding nearly 17 times as much ammonia as that of the ewe, it yields merely about four times as much. It must be remembered also that it would be impossible that feeding sheep on oilcake should pay, were it not that the value of the nitrogen as contained in the form of mutton so much exceeds the same constituent as contained in oilcake. *W. Spooner, jun., Eling, July* 7.

Renting Dairy Cows.—You will oblige some readers of your excellent *Gazette* by procuring full information upon the subject of letting milch cattle to dairymen, the rates charged, the amount of food stipulated for, to whom belongs calves and manure, and all particulars which would instruct in the system. Believing it to be of great value to note the different produce of dairies, and that the present season is that in which results can be best noted, I hope you will invite information on the subject, to which I will contribute if you will permit. *C. M. E., Co. Armagh, Ireland.* [We shall be glad to hear from you.]

The Cow.—We find in the cow species numerous breeds of various qualities, induced by climate, selection of man, and other influential causes. In the moist climate of Ayrshire and adjoining western counties of Scotland, Kerry in Ireland, Devonshire, Holland, and the Danish peninsula and islands from the mouth of the Elbe northward, we find breeds of cows extremely well suited for dairy purposes, and consequently these districts are chiefly devoted to the production of butter and cheese. In these districts the moist climate and abundance of the Grasses are the disposing causes. The moist air does not exhaust or dry up the fluids of the body of the cow by respiration or perspiration; while the herbage, also moist and succulent, is suited to produce by assimilation a large quantity of milk. Here a rather curious fact occurs. When the climate is peculiarly moist and not too hot, as in Ayrshire, the milk contains, in proportion, more butter material than cheese; hence cheese is made in preference to butter. The excess of butter in the milk causes the cheese made from it to be of the richest quality, and the consequent increase of value more than compensates for the defect in quantity of cheese, or worth of the butter. In these dairy countries the figure of the cow is as much as possible of a wedge shape, commencing with a fine long nose, comparatively slight fore-quarters, fine bone, horn, skin, and pile, very large hind-quarters, with good size of tail; the hind-quarters broad and deep, completing the thick end of the wedge, both in the horizontal and perpendicular section. The Ayr, Kerry, and Devon breeds of cows, by habit of race and bodily proportions peculiarly adapted to milk production (a character of race induced as well by climate as by man's selection for numberless ages), continue for several generations to retain the same character though removed to drier climates, and but gradually yield to change of circumstances. In Spain, and other hot arid portions of Europe, the cow, as a milk-producing animal, is of small account, and is chiefly used for draught purposes. From the dry unsucculent herbage and searching dry hot atmosphere during the greater part of the season, not producing but exhausting the animal juices, the cow is scarcely able to give milk sufficient to support her own calf. Spain therefore looks to the pig for a butter supply, and terms the melted fat of the pig white butter. This the pig affords in considerable quantity, getting fat upon the Chesnuts, Acorns, and reptiles, and upon the numerous herbs which take the place of the Grasses in Spain, the Grasses becoming more scant as we approach the tropics. In the central and eastern districts of England, where the climate is drier than in the west, and now also pretty well scattered over the British Islands, we find the Short-horn, a breed of a very different figure and character from the dairy cow, a massive meat-producing animal, got up by the beef-loving Saxons of the eastern counties. This animal is of a square figure, the fore-quarters and hind-quarters forming each nearly a cube, the trunk of the animal presenting a double cube, with a comparatively small head, neck, and legs, the body as much as possible resembling a short thick log of mahogany a little rounded at the edges. This cubic object has a fine head, straight outline, mild eye, with the skin and pile soft and yielding. It has the further quality, as we have already stated, of early maturity and early disposition to fatten to great weight; and is perhaps the most interesting object that can meet the eye of an Englishman. I have thus briefly sketched the two extreme classes of the cow—the most perfected milk giver and beef giver. There are many breeds intermediate in character, partaking to some extent the valuable qualities of both; but an incompatibility of combining the highest excellence in both seems to exist. The British Islands are especially favoured with a climate capable of affording the finest pastures in the world. In the south of England and Ireland the Grass continues growing more months in the year than in any other country (New Zealand excepted). Continental countries, in the colder portion of the temperate zones, lose more months' growth by their long-continued winter, while in the warmer portion of these zones, continental vegetation is completely parched up by the drought and heat, and vegetation is dormant for about as long a portion of the year as in the colder. In consequence of these natural continental disabilities to excellence in cow culture, and the peculiar adaptation to it of the British Islands, aided by the superior intellect and energy of the British farmer, these islands incomparably excel in this branch of rural economy, as much in breeds of the cow as in the cognate produce—incomparable beauty in the milkmaids. *A Farmer of 50 years' practice, Carse of Gowrie, July* 18.

Societies.

ROYAL AGRICULTURAL OF ENGLAND.

AT a MONTHLY COUNCIL held Wednesday, August 3, the Right Hon. Lord Walsingham, President, in the chair, several new members were elected. The usual monthly report of the Finance Committee was received, by which it appeared that the current cash balance in the hands of the bankers was 2464*l.* 18*s.* 2*d.* The report of the House Committee was received and adopted.

A deputation having attended from Canterbury relative to the site proposed for the Society's show in 1860, it was resolved on the motion of Col. Challoner, seconded by Sir John Shelley, "That the deputation be informed that the whole of the guarantees for the lower sites (No. 2 called Hale's Place), for the show yard and trial yard, must be guaranteed by the Corporate Seal of Canterbury during the present month, subject to Mr. Fisher Hobbs and Mr. Brandreth Gibbs visiting the above sites and deciding that there is a sufficient quantity of ground adapted to the requirements of the Society, and that the said guarantees should include the completion of the sidings, suitable to the wants of the Society previous to the 1st of May, 1860.

Reports were received from the stewards of live stock at the Warwick meeting.

On the motion of Mr. Barnett, seconded by Mr.

Milward, the thanks of the Council were voted to Lord Leigh and the county magistrates for the use of the judges' lodgings at Warwick.

The following were elected as the new Finance Committee: Mr. Barnett, the Hon. Col. Hood, Mr. Fisher Hobbs, Mr. Milward, and Mr. Bramston.

On the motion of Mr. Wilson the resignation of Mr. Raymond Barker as a Vice-President was withdrawn.

A communication transmitted from the Foreign Office by order of Lord John Russell, together with copies of despatches relative to guano deposits on Jarvis Island, was laid before the Council. From a despatch from Captain Montreser, of H.M.S. Calypso, to Rear-Admiral Baynes, it appears that on Jarvis Island, situated in lat. 0° 22′ S., long. 159° 50′ W., deposits of guano exist to an extent estimated (by measurement) at 1,000,000 tons. Of this 6000 tons have been exported since the American Guano Company of New York (to whom it belongs) first commenced regular shipments in May 1858. The shipments already made have been exclusively in American vessels. The deposit is from 4 feet to 10 inches in depth, and it contains a maximum of 80 per cent of phosphate of lime but little or no ammonia. It appears that there is also a deposit on Fanning's Island, but that none of this has been exported, and a further deposit is said to exist on Johnson's Island.

Communications were received from Mr. Smith of Woolston, and the Hon. Secretary was instructed as to the reply to be given to the one of these letters which was addressed directly to the Council.

Other communications and matters of detail were laid before the Council, and instructions given relative thereto.

The Council granted the usual vacation to the Society's clerks during the autumn recess, subject to the exact dates being arranged by the Hon. Secretary.

The Council then adjourned to its Monthly Meeting in November.

YORKSHIRE AGRICULTURAL.

Hull: *Monday, August* 1.—Although Tuesday, as far as the public are concerned, is the first day of this important agricultural gathering, yet a good deal of interest was taken in many things that fell to be done this day. Towards 10 o'clock the judges made the round of the yard, selecting such implements as appeared deserving of trial in the field, under the heads of reaping machines, ploughs, and harrows. These being immediately despatched to the farm of Mr. John Clarke, at a distance of four miles west of Hull, were followed by the gentlemen appointed to ascertain their relative merits. The first work to be done was to clean a large field of Beans in readiness for the plough on the following day. Eight different reapers appeared upon the ground.

(1) Crosskill's Bell (42*l.*), with its buttoned-strap side delivery and evenly balanced cutting apparatus driven by two horses from behind—(2) Burgess & Key's (42*l.* 10*s.*) with its spiral roller side delivery, drawn by two horses from the side—(3) Wood's (Cranston's) (35*l.*) combined mower and reaper, drawn by two horses from the side, with side delivery by hand—(4) Samuelson's automaton reaper, with self-acting rake, and delivery at the side in sheaves—(5) Wray's one-horse (16*l.*) (Hussey), drawn from the side and delivered by hand in sheaves from behind—(6) Cuthbert's (22*l.*) one-horse reaper with delivery by hand from behind.—(7) The same reaper (24*l.* 10*s.*) with an additional leaf behind, needing an additional horse, and carrying an additional man with an additional rake by which an excellent side delivery is effected; and (8) C. W. Eddy's (25*l.*) (Kegworth, Derby), with what may be called a central delivery, also driven by two horses from the side. The prices are affixed as constituting an important element in the adjudication of merit.

The field of Beans on which they were first tried was a heavy crop, as clean as possible. Bell's machine (Crosskill, maker), first went around it and across it, so as to divide it out into the eight plots, and the machines were very soon all at work. The following are our notes of their performance:—

In Wray's machine the speed is got up by a toothed wheel working into a worm upon the shaft carrying the crank movement for the cutter, and so making it revolve and giving it its speed. Nothing could be simpler and nothing therefore can be cheaper than this way of accomplishing the object; but unfortunately nothing can be more wasteful of power, and on this mechanical ground alone the award of merit could not be granted to Mr. Wray, who made creditable work, requiring, however, the attendance of men to pick up the sheaves and bind them out of the way in order to enable its continuous work.

Burgess & Key's well-known reaper made very fair work in the Bean field, delivering the produce on one side in continuous swathes.

Cuthbert's machine did excellent cutting—no better in the field—and the sheaves, thrown on one side by two men with rakes riding on the machine, were easily gathered together and bound. There was no better work than this in the field.

Samuelson's Automaton reaper was shown by the North of England Company. It cuts about 4 feet wide: the operation of its self-acting rake is to some extent influenced by the man carried on the machine, who can put it out of gear and into gear with his foot, according to the rapidity with which a sheaf is gathered; but even at its best the sheaf was very clumsily laid. The spasmodic rapidity with which the rake is made to change its position at its turning places is such as to fling or flirt out the straw, so that on a windy day it would be carried to some distance. The method in which the rake is worked is extremely simple; but the necessary looseness of its parts makes the works rattle with considerable noise, suggestive of rapid wear of those parts.

Wood's reaper made capital cutting; but the delivery by one man perched at the end of the machine was not very even or effective. Cuthbert's one-horse machine, with delivery in the wake of the machine, made capital work, but was of course subject to the same objection laid to the work of Wray's machine—that it involved immediate attendance of labourers. Crosskill's, to which we were indebted for opening up the field, as being the only one which can charge standing corn, did not do very good work—did not cut so well as Cuthbert's or as Wood's, and did not deliver so well as Burgess & Key's. The buttons on the India rubber straps, of which by the way there are now only two, did not stand out sufficiently to catch the straw and carry it forwards, and yet stood out sufficiently to rub corn out of the straw underwhich it passed.

Dr. Eddy's reaper, which attempts to carry out an ingenious idea, failed entirely. It unites cutters and a series of vertical saw edges with five or six large teeth apiece in one; they all move together, and as the straw is cut it falls on an inclined receiving board upon these teeth, which, going to and fro, push it to the one side of the receiving board, where there is a large enough opening through which it falls on to the ground. Unfortunately this opening was *not* large enough, and so the corn did *not* fall, but accumulated and choked. This was attributed to the bulk and wetness of the crop, but on being afterwards tried on Barley the failure was *almost* equally great, and an award of merit to it was thus out of the question. It appears to us that either hand delivery, or web delivery, or spiral roller delivery, as in Cuthbert's, Bell's, and Burgess & Key's respectively, is superior to the idea which in this roughly patched trial machine has been unsuccessfully attempted to be carried out.

The award for excellence of work in the Bean field seemed to us almost equally due to Cuthbert's, Burgess & Key's, and Wood's, though the last was inferior to the others in the form in which his sheaves are delivered.

Showers fell during this trial which rendered the work both disagreeab e and inferior.

Tuesday, Aug. 2.—This was the principal day for the trial of implements.

The Trial of Reapers attracted most attention, and considering that fields of Beans, Barley, Wheat, and Oats were provided for the judges, the trial was a very effective one. The Barley field, standing tolerably well, and carrying a good and clean crop, was first cut down, the same machines as were yesterday at work starting on their respective plots, and were timed to their several performances. Wood's and Cuthbert's cut pretty evenly together. Burgess & Key's was much the most rapid in its performance in the field; its cutting was hardly so perfect as that of either Wood's machine or Cuthbert's, but its delivery left little to be desired. Samuelson's Automaton was greatly delayed and injured by restive horses. The delivery of Cuthbert's machine effected by two men is superior to that of Wood's. The excellent performance of Cuthbert's one-horse machine, leaving the corn in sheaves in its wake, excited the greatest interest in the field. Wray's cheap one-horse machine made very good work. Dr. Eddy's failed this day as on the previous. The reel of Crosskill's reaper, set too low, caught the corn as it was cut, and acted as a haymaker, contributing no doubt to the delay and injury of its performance. After the Barley was all cut down we were again indebted to Crosskill's reaper to open up the Wheat field—and here the performance of the several machines tended to confirm the judgment which had already been generally formed. Burgess & Key's, though cutting hardly so well as either Cuthbert's or Wood's, was much the first in the field for efficient delivery and rapid performance. Cuthbert's cut admirably well and delivered by hand in well formed sheaves. Wood's cut well but did not deliver in good sheaves. Dr. Eddy's implement did not leave the Barley field. Samuelson's Automaton did better in the Wheat than had been expected. Wray's worked satisfactorily. As a last trial Burgess, Cuthbert, and Wood followed one another round some laid and heavy Wheat at the lower end of the field, and this sufficed to determine the award which had been already pretty nearly arrived at before. The first prize would have been awarded to Burgess & Key's machine had the conditions under which the judges were placed permitted them to award a nearly equal sum to Cuthbert's reaper from the extra fund placed at their disposal; and failing their ability to do this—the fitness of the latter for farms of moderate size, its cheapness, and its excellent performance as a cutter, and its creditable performance in delivering the sheaves, although this was done by hand, induced an equal division of the 20*l.* offered for the best reaper between Cuthbert and Burgess & Key—a commendation being given to Wood's combined mower and reaper.

The Trial of Tillage Implements took place on a level field of exceedingly hard and stiff alluvial clay, covered with old seeds imperfectly eaten off, and very foul. A large number of ploughs and harrows were gathered in this field, and had horses been available the office of judge would have been comparatively easy and agreeable. By-and-bye the ploughs for 6-inch work were got to work, and Howards' took the first prize with comparative facility, while Busby's took the second. Messrs. Hornsby, whose ploughs were in the yard, declined to allow them to compete on the score of unpreparedness. An injury to Howards' plough hindered it from competing for the deep-work prize, which was awarded to Busby of Bedale, the second going to Cooke of Lincoln.

A very interesting performance in the field was made by Hancock's (Glo'ster) pulverising plough, which takes its full depth by means of three shares, each higher than the one behind it, the two former armed with upright coulters in the middle of their width, and the last and lowest being of great width. A mould-board is placed, but may be removed, by which the land may be turned as well as distributed if desirable. It is a very heavy tool, but seems very perfectly available, either as a shallow parer or for deep and thorough fallowing, and in both ways on this extremely heavy land it made such excellent work that orders for it were given by some of the judges, who awarded it an extra prize of 3*l.*

The harrows were tried on the ploughed land as soon as it was ready for them. Busby's Northumbrian harrow, a hybrid of harrow and cultivator, with curved teeth, made good work and secured a commendation. Howards' heavy harrow of the common form seemed to be the best of those tried, including Busby's and Bentall's, and received the prize, Bentall's being highly commended. Bentall again got the first prize for light harrows, and Busby was highly commended. Howards' harrows of this class were of the lightest kind, and the ground was unusually hard and heavy. Bentall's success and commendations were achieved owing as much perhaps to the quality of their make (of double angle iron with special arrangements for fixing the teeth) as to any obvious superiority in their performance. Bentall's will probably outlive any other harrows made—an advantage, however, gained at the expense of a somewhat additional cost.

Wednesday, Aug. 3.—The earlier part of this day was occupied by the inspection both of stock and of a large remainder of implements by the Society's judges. The public were however admitted at an early hour, and had the advantage in many cases of watching the process of adjudication in the cattle and sheep classes, the horses not being judged till the last morning of the show. It is an advantage to see a whole class of animals brought out and placed neck and neck for examination alongside of one another.

The Classes of Drills and Manure Distributors, as well as the award of extra premiums, still remained to be adjudicated by the implement judges, and their examination resulted in the award of the prize for manure distributors to Mr. Reeves, of Westbury, who also received the prize for Turnip and manure drill on the ridge—the advantage of simplicity and of not aiming at the accomplishment of too much by a variety of ingenious contrivances being thus asserted. For, at Coultas's (Grantham) stand and at Clarke's, of Lincoln, there were extremely ingenious machines by which the delivery of bulky manures along with the seed was effected, and rows of seed might be deposited a little to one side of the rows of manure, and the alteration of the supply of manure and interval of row was ingeniously effected. Reeves's machine, however, adapted to the uniform supply of a very small quantity of manure and with much fewer parts about it, took the prize. It appeared to us to be less cheap than it ought to be considering its simplicity. We should have been glad too to have seen "Sigma's" manure distributor (Powell, of Hurstgreen) in competition with Reeves's manure distributor which took the prize. The prize for Turnip drill on the flat was given to Messrs. Coultas, of Grantham; the superiority in his case as compared with Reeves's lying mainly in the ability to carry a larger supply of manure, which where five rows instead of two are being thus fed is an essential matter. The prize for general corn drill was given to J. Coultas, Jun., of Grantham, and J. Clarke's (Lincoln) drill was highly commended. The best liquid manure drill (Chandler's) was declared to be that of Watkinson (Louth), which differed in some commendable particulars from that of Reeves, who was the original manufacturer.

Among the other awards by the judges were 2*l.* for Lambert's (Hull) metallic horse collar, combining harness and collar at less weight and cost and equal strength in one. It was somewhat bold to give a premium of this kind where none of the judges had had personal experience of the fitness of a rigid metallic surface as a horse collar, but there was sufficient testimony on the subject to induce them thus to commend a new contrivance. 1*l.* was given to a combination of seed drill with Cambridge roller, exhibited by Marshall of York; and 1*l.* to Busby's "crowbar" steel-pointed plough.

The silver medal of the Society was awarded to Isaac Spight, of Briggs, for a remarkably clever, efficient, and cheap corn horse hoe, to which reference will be made hereafter. It is a great improvement in many important particulars, and among others in cheapness on Garrett's horse hoe. Beyond sundry commendations we have now gone over the awards of the Society's judges; the gentlemen acting in that capacity being Messrs. Barugh, John Clarke, J. Chalmers Morton, Riley, and Wheatley.

We may however refer to one or two other implements in the yard deserving notice. Mr. Patch, of

Driffield, showed an ingenious contrivance in front of the pole of a two-horse waggon, for retaining hold of the draught chains. Mr. Clarke's (Lincoln) drills exhibit great ingenuity in contrivances for altering intervals of rows, inclination of manure box, and quantity of material sowed.

Mr. Grantham's (Louth) blower, with endless chain for filling sacks and weighing machine combined, deserves notice. A self-cleaning bar-roller, showed by Marshall, of York, is ingenious. Mr. Winder's (Sheffield) rotary pumps deserved and received commendation. Mr. Sawney's (Beverley) sack weigher and lifter combined is a useful tool. Mr. Kittmer's (Louth) corn-dressing machine received a high commendation. The Crosskills had a good stand of implements. An ingenious hand drop drill (Wailes, of Easingwold) exhibited a simple arrangement for delivering Turnip seed in bunches. Bentall, of Maldon, showed an ingenious addition to Gardner's Turnip cutter, by which the earth off the roots is delivered apart from the cut slices.

The Cattle Yards of the Yorkshire Agricultural Society exhibit a good average entry of live stock in most of the classes, more especially of course in Short-horn cattle, Leicester sheep, and horses. Among them are many animals which have been already prize-takers at other agricultural meetings. Mr. Wetherall's Short-horn bull "Statesman," some of Colonel Towneley's cattle, Captain Gunter's yearling heifer, "Duchess 77" and other Short-horn cattle, are well known by visitors at Chester, Warwick, &c. And among the entire horses are some with entire necklaces of trophies carried off at previous shows. We can do little more this week than enumerate some of the chief prize animals in the several classes:—

Short-horn Bulls: 1. *Bulls of any age.*—11 entries, including "Statesman" (Mr. Wetherall), "Prince Imperial" (Lord Feversham), "Master Butterfly 5," Colonel Towneley. The first and second prizes went to "Stateman" and "Prince Imperial," white and roan respectively.—In (2) *Yearling Bulls* there were 10 entries contributed by many of our best breeders—Towneley, H. Smith, Ambler, &c. Col. Towneley's "Royal Butterfly" (roan), carried away the first prize easily, and Mr. Ambler took the second with "Prince Talleyrand."—Among (3) *Bull Calves*—14 entries — Col. Towneley carried away both the prizes by two calves, both by "Baron Hopewell."—Among (4) *old Cows* the prizes went to Col. Towneley and Mr. Ambler, and the order of merit was here somewhat doubtful, Col. Towneley being, however, placed first by the judges. —Of (5) *Three-year-old Cows*, the first prize animal (excessively fat) was "Queen Mab," the property of R. Booth, of Warlaby; the second prize went to Mr. Middleborough, of Milford.—The first prize (6) *Two-year-old Heifer*, an animal of extraordinary length and beauty, was shown by Col. Towneley.—In (6) *Yearling Heifers* there were 17 entries — a very remarkably beautiful show. The first prize went to Captain Gunter, for "Duchess 77," which took the third prize in the same class at Warwick, and the second went to Colonel Towneley.—Of (8) *Heifer Calves*, 11 were exhibited, and the first and second prizes stood side by side, both roan, nearly of one age; the smallest, shown by Mr. Torr, took the second prize; the other, first prize animal, was the property of Sir C. H. Tempest.

There were classes for fat oxen and fat cows—only one entry, we were glad to see, in the latter—a wonderfully fine white cow, only three years old, "Beauty's Butterfly," that ought to have been worth much more than beef.

A capital show of *Dairy Cows* was exhibited in Classes 11 and 12, the latter containing five entries of six cows each, all of them first-class animals of wonderful size.

We shall merely name the prize-takers in the classes of *Leicester Sheep*, premising that the awards are in every case given to the more delicate and highly bred sheep, rather than to the coarser, longer, stronger long-woolled sheep.

Shearling Rams (14 entries).—1st, W. Torr; 2d, J. Borton.
Old Rams (18 entries).—1st, W. Sanday; 2d, J. Borton.
Pens of 5 Ewes (9 entries).—1st, J. Simpson; 2d, W. Gofton.
Shearling Ewes (11 entries).—1st, F. Jordan; 2d, J. Simpson.

There was a very short entry of short-woolled sheep and of cross-breds. A considerable entry in *Swine*, both the large and small classes being well represented. The awards were not known when we left.

A capital show in the *Horse Classes*, both of sporting and farming, completes the contents of the Yorkshire show-yard. A dozen agricultural stallions made a capital feature in it. "Champion," a Clydesdale horse, Douglass, and Lord Raglan, black horses, are among the best. What the award of the judges is will be given in our next.

We may congratulate the secretary, J. Hannam, Esq., and the office-bearers generally of the Society, on the unquestionable success of an unusually good meeting.

MEETING OF THE HIGHLAND AND AGRICULTURAL SOCIETY AT EDINBURGH.

August 1st, 2d, 3d, 4th, and 5th.

Edinburgh: Monday, August 1.—This meeting, which bids fair to surpass its predecessors in interest from the variety and extent of its productions, is held in a city which in itself possesses attractions sufficient to draw numerous visitors from all parts of the kingdom; held, too, at a season when the "travelling fever" is at its height, we may fully expect the largest and most influential gathering of visitors which has yet graced the Society's exhibitions. The site, chosen with admirable good taste for the locality of the show yard, affords perhaps the best and most characteristic view of the town "Edina, Scotia's darling seat." As you turn from it to wend your way townwards, a view unmatched anywhere for romantic beauty meets your delighted eye.

As those acquainted with the routine of proceedings of the national meetings of England and Scotland well know, two modes of arrangement of implements and machines in the show yard, very different in principle and details, are adopted. At the gigantic gatherings of the Royal Agricultural Society of England, the implements are all arranged according to the rotation of the stands, each exhibitor having all his articles of whatever class or kind, no matter how diverse in character or mode of application, under his own shedding. At the meetings of the Scottish Society on the contrary, the various implements and machines are arranged according to a system of classification having reference to their special uses in the field or the farm buildings; thus if one exhibitor exhibits ploughs, harrows, and threshing machines, these are placed under three divisions or classes. However admirable in a scientific point of view this system of classification may be, it is doubtless productive of much inconvenience to exhibitors, inasmuch as it involves the trouble of looking after separate detachments of articles—taking their attention from one while attending at the other—and thus lessening the chances of having conferences with intending purchasers of different classes of machines. By dividing his attention thus, his "Order-book" may not display so satisfactory a condition at the end of the show as it might do, could he have all his articles under his immediate inspection and that of intending purchasers.

Tuesday, Aug. 2.—*The Trials of the Steam Threshing Machines* took place this morning at Myreside Farm, near Merchiston Castle. The weather was as fine as could be desired in every respect but one, namely, a wind which, blowing pretty hard, added not a little to the discomfiture of those who were judging and witnessing the trials, by blowing about and mixing the products. The machines entered for trial were only five in number: those of Messrs. Robey & Co., of Lincoln; Mr. Wm. Foster, of same place; and of Messrs. Williamson of Kendal and Mr. Haywood, jun., of Derby, representing the English makers; Messrs. Smith, of Glasgow, the Scotch. There was to one accustomed to the displays of the English shows, a marked absence of the fine machines of the leading English firms, as the Hornsby's, the Garrett's, Ransome's and Sims, or Clayton & Shuttleworth's. This, however, may be attributed to the agreement, which, we believe, has been recently entered into by the leading houses not to compete for prizes at the provincial shows, of which the Highland Society, although the parent of all our agricultural societies nearly, has been classed as one.

Each of the threshing machines in the trial yard above noted was accompanied by portable steam-engines, which for compactness and high finish were very noticeable. The result of the trials was in every way satisfactory; but we refrain from entering into particulars till the publication of the judges' report. The four-horse power machine of Mr. Haywood attracted considerable attention from its adaptability to small holdings.

Mowing Machines.—In the afternoon the trial of the field implements began with the exhibition of "mowing machines." Here, as at Warwick, the machine (Allen's Patent) of Messrs. Burgess & Key, brought forward in this instance by Mr. J. Shaw, of Whiterigg, made good its claim to be considered *the* machine of the day. The work performed by it gave good hopes that the farmer had now a machine upon the good services of which he could depend in the important season of haymaking. The other mowing machines exhibited were two by Messrs. Gardner & Lindsay, of Stirling, and one of Wood's (American Patent). Immediately after the mowing a number of stubble and hay rakes were tried. On a piece of ground roughly ploughed the clod-crushers and Norwegian harrows, &c., were put to trial, and displayed their capabilities upon the whole very favourably. The preliminary trial of the "ploughs" excited great interest; amongst those entered for competition Howards' excited, we need scarcely say, a great deal of attention. The names of the principal competitors in this department are Law, of Shettleston, near Glasgow; Miller, of Arntelly; Sellar & Son, of Huntly; Howard, of Bedford; Ponton, of Linlithgow; Grieve, of Tranent; Kirkwood, of Tranent; M'Gregor & Sons, of Keith. It is to be regretted that owing to a misunderstanding—of which more hereafter—Hornsby does not compete with his new plough. We do not remember of ever having seen so large and influential an assemblage at "implement trials" as was drawn together on this occasion. We may remark in passing that not the least interesting feature of the display to an agriculturist was the number of splendid horses in the field retained to do the work of ploughing, &c. The Scotch Shows have for long been famous for this "display." Yet on this occasion it excelled we think all previous ones. Much to the disappointment of many there was no steam ploughing apparatus at work as at the Show at Aberdeen last year. This is cause for regret, for we believe that it would have interested not a few to have had an opportunity of examining the improvements which Mr. Fowler has effected in his apparatus since its exhibition at Aberdeen last season.

Wednesday, Aug. 3.—*The trial of the field implements* was renewed this morning at 7 o'clock. The Show Yard (admission 2*s.* 6*d.*) opened at 2 o'clock. It was highly satisfactory to notice the great number of people who flocked to the admission gates. Doubtless not a few of the fashionable people there assembled, and who it must be confessed possessed apparently but little in common with those whose "talk is of oxen," were drawn together as to a fashionable promenade, with the additional attraction of "Royalty." For it was publicly announced that his Royal Highness the Prince of Wales would grace the show-yard with his presence this afternoon, which in due course he did; and appeared to examine the various novelties with exemplary patience and affability.

We were glad to see a few of our well-known English firms well represented. Amongst these we may name Hornsby, Clayton & Shuttleworth, Richmond & Chandler (a firm which has booked the lion's share of praise for those machines, as straw cutters, &c., for which they are so distinguished), Howard, Robey, Foster, Coleman & Sons, Crosskill, Reeves, Samuelson, Bentall, and Turner & Co.

The following taken at random from notes on the show yard will show the "first prize" takers in a few of the leading sections. In our next we hope to make the list complete, adding thereto a few notes on the novelties exhibited. For two horse ploughs for general purposes, the first prize of 3*l.* has been taken by Howard of Bedford, the same taking the first prize for trench or deep furrow ploughs. For subsoil ploughs for two horses, first prize taken by Mr. J. Kirkwood, of Tranent, R. Law, of Shettleston, taking the first prize for a subsoil plough for three or four horses. For double mould-board ploughs for forming drills or balking, with attachment for lifting Potatoes, the first prize was taken by Mr. George Ponton, of Linlithgow. Of Norwegian harrows, the first prize was awarded to Mr. David Young, of Haxenden, Kelso. For consolidating land rollers, the first prize was given to the trustees of William Crosskill, Messrs. Smith Brothers & Co., Glasgow, taking the first prize for the land pressers for preparing seed-bed for grain. Of harrows for covering Grass seeds, the first prize was taken by Howard, of Bedford. Of drill sowing machines the first prize was awarded to Messrs. Hunter & Samuelson, of Haddington. Of sowing machines for Grass seeds the first prize was given to Mr. Andrew Tyrie, Errol; sowing machines for Mangel Wurzel to J. and S. Young, Ayr; do. for Carrots, the first to Mr. Shireff, Dunbar. Liquid manure distributing machines, first to the trustees of William Crosskill.

At the threshing machine trial yesterday morning there was a keen competition, the trial mainly resting between Mr. Foster, of Lincoln, and Messrs. Robey of the same place. So nicely balanced, indeed, were the respective claims of the competitors that the judges deemed it best to divide the prize of 50*l.*; each party was thus left standing on equality of merit.

Of fanners for cleaning Grass seeds the first prize was awarded to Mr. Richardson, of Carlisle. Of straw cutters for "hand," also for "power," Messrs. Richmond & Chandler took the first prize; the same firm taking the first prizes for Linseed and oilcake breakers and for grain bruisers for power. Of Turnip cutters for sheep the first prize was awarded to Picksley, Sims, & Co., Leigh, near Manchester; for ditto attachable to a cart, the first prize was taken by Mr. Shireff, of Dunbar. Messrs. Smith, Brothers, & Co., of Glasgow, took the first prize for steaming apparatus for food. Of churns worked by hand, the first prize was taken by R. Tinkler, of Penrith; for ditto worked by power, Wm. Lindsey, of Edinburgh; Messrs. J. & T. Young, of Ayr, taking the first prizes for cheese presses.

We must defer our concluding remarks till our next Number.

AGRICULTURAL IMPROVEMENT OF IRELAND.

Dundalk: *Annual Meeting.*—We omitted the prize list last week, and now supply it.

The judges on this occasion were:—

Short-horns.—R. Holmes, Ballycumber; T. Parkinson, Southwell; W. Ladds, Ellington, Hants.
Other Breeds.—H. Watson, Keillor, N.B.; S. Anston, Manavilly Farm, Cornwall; D. Hastings, Belfast.
Horses: Farm.—Hon. R. G. Talbot, Dalkey; S. Rait, Rathmoyle; Hon. W. Arbutnoth, Blackrock.
Thoroughbreds.—H. Thurnal, Royston, Herts.
Sheep.—G. Brown, Marlborough; C. Going, Nenagh; A. Wright, Corstophine, N.B.
Swine.—H. Thurnal; Hon. W. Arbutnoth; W. Harris, Highfield.
Poultry.—G. A. Pollock, Navan; J. Dombraine, Dublin; Dr. Madden, Dublin.
Flax and Cereals.—H. Halett, Newtownlimavady; G. Martin, Belfast.
Butter.—J. M'Donnell, Carlow; G. Burrowes, Carrickfergus; S. M'Connell, Belfast.
Implements.—R. C. Wade; C. G. Grey; J. Clarke, Lincolnshire.

The following is the Prize List:—

CLASS A.—SHORT-HORNED.

Section 1. Old Bulls, 1st, Mr. William Todd, commended at Warwick, East Lothian; 2d, Lord Talbot de Malahide, first at Royal Dublin Society. 2. Young Bulls, 1st, Mr. Jeffry, Barcroft; 2d, Mr. Thomas Barnes. 3. Yearling Bulls, 1st, Mr. J. P. Tynte, Clydesdale; 2d, Mr. F. Lindsay, Killybeagh, 4. Old Cows, 1st, Mr. W. Todd; 2d, Mr. J. Douglas. 5. 3-year Heifers, 1st, Mr. Richard Eastwood, Lancashire; 2d, Mr. James Douglas. 6. 2-year Heifer, 1st, Mr. T. Ball, Malahide; 2d, Mr. J. Douglas. 7. Yearling Heifers, 1st, Mr. R. Eastwood; 2d, Mr. T. Ball.

CLASS B.—OTHER BREEDS.

Section 1, Old Hereford Bull, John E. L. Hewer, Hereford; 2. Old Devon Bull, R. Quinn Alexander, Acton; 3, Polled

Angus or Galloway Bull, Lord Talbot de Malahide; 4, Ayrshire Bull, H. Harrison, Holywood House; 5, West Highland Bull, Earl of Charlemont; 6, Kerry Bull, Charles Reilly; 7, Hereford, Sussex, or Long-horned Leicester Cow, J. E. L. Hewer; 8, Hereford Heifer, J. E. L. Hewer; 9, Hereford Heifer (young), J. E. L. Hewer; 10, Devon Cow, Henry L. Prentice, Caledon; 11, Devon Heifer, Sir Allan C. Bellingham; 12, do. (young), H. L. Prentice; 13, Polled Angus or Galloway Cow, Lord Talbot de Malahide; 14, do. (young), Sir F. Heygate; 15, do. (yearling), Lord Talbot de Malahide; 16, Ayrshire Cow, M. Chambre, Esq.; 17, do. (young), Lord Clermont; 18, do. (yearling), Lord Clermont; 19, West Highland Cow, Sir F. Heygate, M.P.; 21, do. (yearling), Lord Charlemont; 22, Kerry Cow, Sir E. McDonnell; 23, do. (young), Model Farm, Glasnevin; best prize Bulls, the Gold Medal, Mr. Wm. Todd, Elphinstone Tower, East Lothian; best prize Cow and Heifer, the Gold Medal, Mr. Richard Eastwood.

The Purcell Challenge Cup, value 100*l.*—Founded by the late Peter Purcell, for the best animal in the Neat Cattle classes, possessing most merit of its kind in the estimation of the judges. (Mr. Eastwood, for section V., Short-horns.)

Waterford Challenge Cup, value 100*l.*—For the best lot of three horned animals (Bulls or Heifers), but not in mixed lots, not exceeding 20 months old, having been bred by exhibitor, and *bonâ fide* his property, Mr. Thomas Ball.

CLASS C.—HORSES.

Section 1. Stallion for agricultural purposes, Messrs. Moore, Raheny, Dublin; 2d, John Mill, Donabate, Dublin; best Stallion, the Medal, Messrs. Moore. 2. Draft Mare in foal, or with a foal, Sir F. Heygate, M.P.; 2d, N. M. Archdall. 3. Draught Filly, Lord Clermont. 4. Draught Filly (2 years old), Mr, A. Steele, Londonderry.

BEST THOROUGH-BRED STALLIONS.

30*l.*, and the Croker Challenge Cup, value 50*l.*, Mr. Hugh Morrow.

CLASS D.—SHEEP.—LEICESTERS.

Section 1, Shearling Ram, Mr. George Thunder, Navan; 2d, do. 2. Old Ram, Mr. Owen; 2d, Thomas Marris. 3. five Shearling Ewes, Thomas Roberts; 2d, William Owens. 4. Pen of five Ewes, Thomas Roberts; 2d, Thomas Marris. 5. Five Ewe Lambs, C. P. Leslie.

CLASS E.—OTHER LONG WOOLLED SHEEP.

Section 1, Shearling Ram, W. H. Carroll, Tulla House, Nenagh; 2d, W. H. Carroll. 2. Old Ram, T. B. Browne, of Gloucester; 2d, N. W. Roche, M.D., Fermoy. 3. Five Shearling Ewes, W. Brown; 2d, do.

CLASS F.—CHEVIOTS.

Section 1. Ram, Lord Clermont; 2d, do. 2. Shearling Ewes, Marquis Conyngham; 2d, do. 3. Five Ewes, Marquis Conyngham; 2d, do.

CLASS G.—BLACK FACES.

Section 1. Ram, Lord Clermont; 2d, Sir F. Heygate. 2. Shearing Ewes, Sir F. Heygate: 2d, Lord Clermont. 3. Ewes, Sir F. Heygate; 2d, Lord Clermont.

CLASS H.—DOWNS.

Section 1. Shearling Ram, C. W. Hamilton. 2. Old Ram, R. Scott, Stirling. 3. Shearling Ewes, Thomas Marris. 4. Ewes, C. W. Hamilton. For the best Ram in classes, the medal. Mr. George Thunder.

CLASS K.—SWINE.

BLACK.

Section 1. Young Boar, R. G. Glen, Londonderry; 2d, Mr. W. Joyce, Waterford. 2. Old Boar, Lord Clermont; 2d, Mr. R. G. Glen; the best Boar, Mr. George Glen. 3. Young Breeding Sow, Lord Clermont; 2d, R. G. Glen. 4. Old Breeding Sow, W. Joyce; 2d, H. S. M'Clintock, Randalstown.

WHITE.

5. Young Boar, J. Wilkinson; 2d, Lord Clermont. 6. Old Boar, J. Wilkinson; 2d, W. Prendergast; best Boar, Mr. Joseph Wilkinson. 7. Young Breeding Sow, H. L. Prentice, Caledon; 2d, Lord Clermont. 8. Old Breeding Sow, H. L. Prentice; 2d, R. Pattison, Dundalk.

Miscellaneous.

Wash your Pigs.—Pigs are not dirty when they have any encouragement to be clean. Ours is washed every week, in warm soap and water, and well scrubbed behind the ears and everywhere, to its great ease and comfort. A highly economical remark of my man about this part of his work was, that he scrubbed the pig on washing days, because the soapsuds did just as well for manure after the pig had done with them, "and that," said he, "makes the soap serve three times over." *Once a Week.*

Calendar of Operations.

AUGUST.

South Essex: *August* 1.—Since sending our last report violent storms of rain have intercepted and marred the prospects of the very fine and abundant harvest that was fully expected a fortnight back. Although the storms have not been so destructive here by hail as in adjacent counties, yet many thick seeders' crops fell never to rise any more, and are deteriorated in a much greater degree from blight and various other causes, than those crops more rationally seeded, which although they could not fully resist the force of the tempests, yet were able to rise upon their stout footstalks again, and will produce more than an average crop. Of about 28 acres of our own Wheat planted at one bushel and at five pecks per acre, not more than five acres was prostrated so as not to be able to hover up again, and that was on land too highly enriched by artificial stimulants. On the whole we have reason to thank Almighty God that rain did come, or more serious consequences might have been occasioned by a premature ripening of the grain, in the extreme heat and absence of shade during so many of the longest days.—*Maldon, Essex.*

Notices to Correspondents.

Grass: *A B.* The Grass sent is not Alopecurus pratensis (Meadow Foxtail) but A. agrestis (slender Foxtail), which is a highly pernicious weed, and if its seed has really been supplied for the Meadow Foxtail it is a very serious affair, as it not only involves injury to the present crop but introduces a most baneful weed to the farm, which without great care will take years to eradicate. We should like to know if the species sent is the general Grass of the crop, and the nature of the soil. *J B.*

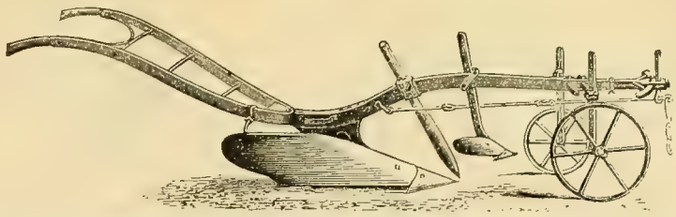
Mangel Wurzel: *R L.* This is the usual English spelling. It is founded on a whimsical application of the German word Mangel—scarcity or want.

Thistles: *J H.* Perseverance in spudding and draining will ultimately destroy them.

*** As usual, many communications have been received too late, and others are detained till the necessary inquiries can be made. We must also beg the indulgence of those correspondents the insertion of whose contributions is still delayed.

THE PLOUGH TRIALS AT WARWICK.

HOWARD'S CHAMPION PLOUGH



Gained the FIRST PRIZE as the Best Plough for General Purposes at Warwick,

BEING the CHIEF PRIZE for PLOUGHS, awarded by the Royal Agricultural Society of England, at this Meeting. The importance of this Prize will be gathered from the fact that the GENERAL PURPOSE PLOUGHS are the only ones tried on BOTH LIGHT AND HEAVY LAND, and as HOWARD'S CHAMPION PLOUGH proved itself to be the best on both soils, the FIRST PRIZE, of the HIGHEST AMOUNT given by the Society for any kind of Plough, was awarded to J. & F. Howard.

PRIZES awarded to J. & F. Howard, by the Royal Agricultural Society of England, at the WARWICK MEETING, 1859, being not only the LARGEST NUMBER of PRIZES, but the LARGEST NUMBER of FIRST PRIZES awarded to any Exhibitor.

THE FIRST PRIZE FOR THE BEST PLOUGH FOR GENERAL PURPOSES
ALSO A PRIZE FOR THE BEST PLOUGH FOR LIGHT LAND
AND A PRIZE FOR THE BEST PLOUGH FOR HEAVY LAND
THE FIRST PRIZE FOR THE BEST LIGHT HARROWS
THE SECOND PRIZE ALSO FOR THE BEST LIGHT HARROWS
AND THE FIRST PRIZE FOR THE BEST HEAVY HARROWS.

Every one of HOWARD'S Implements, tried at Warwick, gained a Prize.

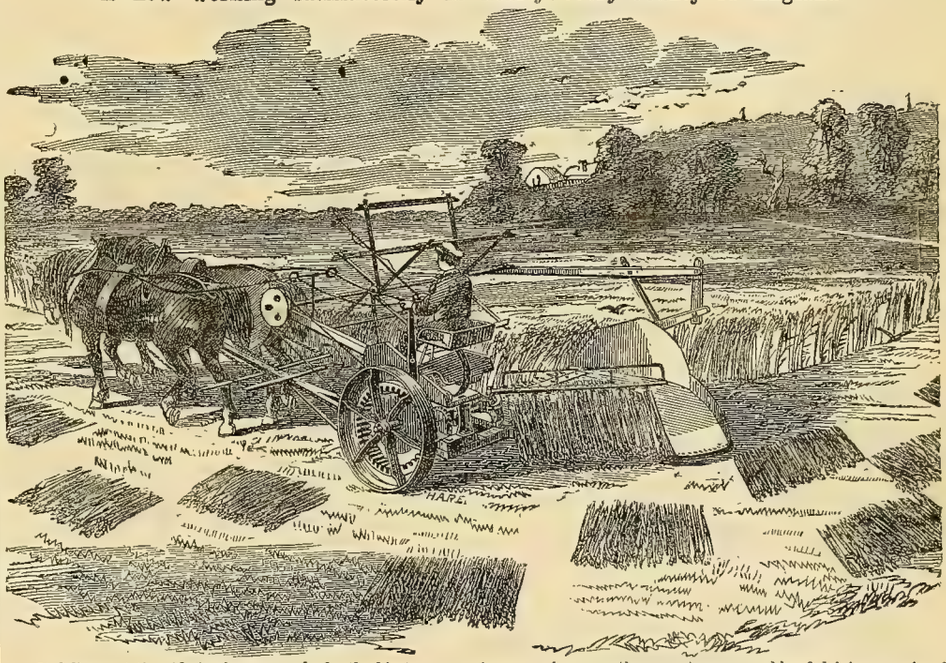
CATALOGUES, with full particulars, sent post free on application to

J. & F. HOWARD, BRITANNIA IRON WORKS, BEDFORD.

SAMUELSON'S

PATENT SELF-RAKING REAPER

is now working satisfactorily in nearly every County in England.



It delivers at the side in sheaves ready for the binders; requires no raker or gatherer. A man capable of driving a pair of horses can easily manage it, and can cut from 12 to 15 acres per day. Orders can be only received for 1860. The above and

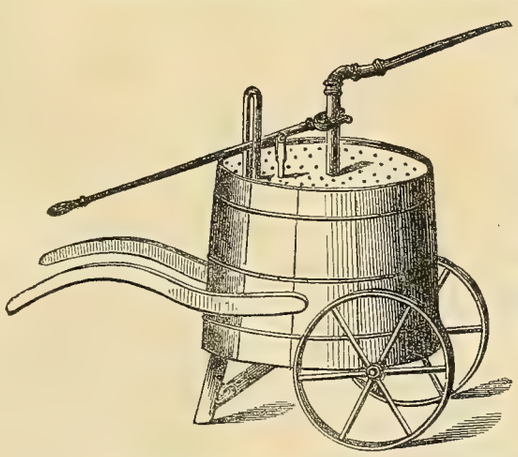
SAMUELSON'S IMPROVED HORSE RAKES, &c.,

and all approved Implements of the day by Barrett, Clayton, Howard, Hornsby, Nicholson, Richmond, Smith & Ashby, Tuxford & Sons, may also be inspected at

76, Cannon Street West, London, E.C. Manufactory: Banbury, Oxon.

DEANE & COMPANY'S

HORTICULTURAL TOOLS,

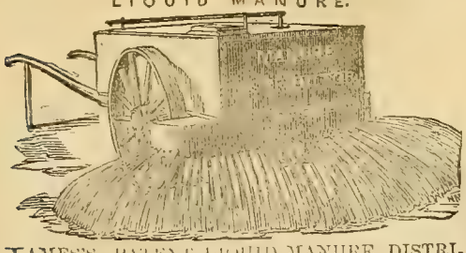


GARDEN ENGINES, Galvanized Iron
Prices 55s., 63s., 105s., 120s.
Ditto, Wood, 84s,, 105s, 130s.
Flower Stands, 4s. 6d. each.
Cast Iron Ornamental ditto, to hold 7 Vases, 27s.
Deane's Mowing Machines, with Boyd's Patented Improvements, £4 17s. 6d; £6 6s. 0d., £6 17s. 6d., £7 7s. 0d.
Green House Syringes, 8s., 10s., 18s. 6d
Garden Rollers, £1 14s. 6d., £2., £2 12s.
£3 3s., £3 18s., £4 13s., £5 12s., £7 10s.
Garden Stools, 4s. 6d.
Garden Chairs, from 30s.
Boyd's Self-adjusting Scythe, 10s. 6d.
Wire Work, 18in. 4d. per yard run.

Every Implement for Garden use on the lowest Terms.

DEANES:—Opening to the Monument, London Bridge.

LIQUID MANURE.



JAMES'S PATENT LIQUID MANURE DISTRIBUTOR OR WATER-CART, warranted not to choke up or otherwise get out of order. It is thoroughly adapted for Drill Crops, or Pasture Land, or for Watering Streets; has been awarded SIX FIRST PRIZES.

Full Particulars and Testimonials may be obtained of the Patentee, ISAAC JAMES, Tivoli Waggon Works, Cheltenham.

Improved LIQUID MANURE PUMPS supplied.

WARNER'S IMPROVED LIQUID MANURE OR GENERAL PORTABLE PUMP.



These Pumps are fitted with WARNER'S Patent Bucket and Valve, and cannot clog in action. The barrel is made of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure on the stand, the legs of which fold together, and may be carried with ease by one man to tank or pond.

	£	s.	d.
Stand and Pump, with screwed tail pipe, fitted with strong brass union for suction pipe	2	15	0
If fitted with barrel of planished copper	3	4	0
Stand and Pump, with plain tail pipe, for tying on suction pipe	2	9	0
2-inch patent rubber and canvas flexible suction pipe, on wires, either 10, 12, or 15 ft., per foot	0	2	2

May be obtained of any Ironmonger or Plumber in town of country, at the above prices, or of the Patentees and Manufacturers, J. WARNER & SONS, 8, Crescent, Jewin St., London, E.C.

WARNER'S PATENT VIBRATING STANDARD PUMPS.

PATENT CAST-IRON PUMPS for Farms, Cottages, Stable Yards, &c., where the Well does not exceed 28 feet in depth; fitted with WARNER'S Patent Metal Bucket and Valve, which cannot clog in action. These Pumps can be made right-handed, left-handed, or with handle opposite the nose by removing four screws only.



Diameter of Barrel.	Height.		£.	s.	d.
2½ in. short	1 ft. 7 in.	Fitted for lead, gutta percha or cast iron flanged pipe as required.	1	5	0
2½ ,, long	3 ,, 3 ,,		1	10	0
3 ,, ditto	3 ,, 6 ,,		2	4	0
3½ ,, ditto	3 ,, 6 ,,		2	9	0
4 ,, ditto	3 ,, 6 ,,		2	13	0
2½ ,, short, with 15 feet of Lead Pipe attached, ready for fixing			2	10	0
2½ in. long	ditto	ditto ditto	2	14	0

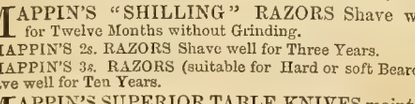
The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.

May be obtained of any Ironmonger or Plumber in Town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin Street, London, E.C.

Every description of Machinery for Raising Water by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

MAPPIN'S PRUNING KNIVES IN EVERY VARIETY.

WARRANTED GOOD BY THE MAKERS.



MAPPIN BROTHERS, Queen's Cutlery Works, Sheffield; and 67 & 68, King William St., London, E.C.

MAPPIN'S "SHILLING" RAZORS Shave well for Twelve Months without Grinding.

MAPPIN'S 2s. RAZORS Shave well for Three Years.

MAPPIN'S 3s. RAZORS (suitable for Hard or soft Beards,) Shave well for Ten Years.

MAPPIN'S SUPERIOR TABLE-KNIVES maintain their unrivalled Superiority—handles cannot possibly become loose—the blades are all of the very first quality, being their own Sheffield manufacture.

	Tble. Kns.	Dst. Kns.	Carvers.
Ivory 3½ in. Handle, balanced,	20s. p. doz.;	16s. p. doz.;	6s. p. pair
Do. 4 in. do. ..	25s. ,,	18s. ,,	9s. ,,

MAPPIN'S SILVER-PLATED DESSERT KNIVES and FORKS, in Mahogany Cases.

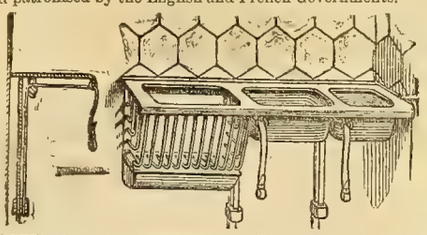
12 Pairs Knives and Forks,	Ivory Handles, in Case..	80s.
12 Do.	Pearl Handles, do. ..	130s.
12 Do.	Silver-Plated Handles, do. ..	80s.

MAPPIN'S ELECTRO-SILVER PLATE.—MAPPIN BROTHERS, Manufacturers by Special Appointment to the Queen, are the only Sheffield makers who supply the consumers in London. Their LONDON SHOW ROOMS, 67 and 68, King William Street, London Bridge, E.C., contain by far the largest STOCK of ELECTRO-SILVER PLATE in the World, which is transmitted direct from their Manufactory, Queen's Cutlery Works, Sheffield.

	Fiddle Pattern.	Double Thread.	King's Pattern.
12 Table Forks, best quality	£1 16 0	£2 14 0	£3 0
12 Table Spoons, best quality	1 16 0	2 14 0	3 0
12 Dessert Forks, best quality	1 7 0	2 0 0	2 4
12 Dessert Spoons, best quality	1 7 0	2 0 0	2 4
12 Tea Spoons, best quality	0 16 0	1 4 0	1 7

Messrs. MAPPIN BROTHERS respectfully invite buyers to inspect their unprecedented display, which, for beauty of design, exquisite workmanship, and novelty, stands unrivalled. Their Illustrated Catalogue, which is continually receiving addition of New Designs, sent per post on receipt of 12 stamps.—MAPPIN BROTHERS, 67 & 68, King William Street, London Bridge, E.C.; Manufactory, Queen's Cutlery Works, Sheffield.

COTTAM'S PATENT INVENTIONS FOR STABLE REQUISITES, awarded a Prize at the Paris Exhibition, and patronised by the English and French Governments.



COTTAM AND COMPANY, Winsley Street, W., are the original inventors of the PATENT ENAMELLED MANGER, Water Trough, and Wrought Iron Rack, united to an iron top-plate, and forming one complete and useful fixture, having COTTAM'S patent noiseless halter guide and collar rein attached, which is taken to the back of the manger, and works with ease and freedom up or down the guide-bar.

COTTAM'S NEW PATENT SEED-BOX, an important addition to the above fittings, being simple in construction, light, and durable, promotes cleanliness, and is economical in its results.



COTTAM'S PATENT SADDLE and HARNESS BRACKET combined, can be used with great advantage where space is an object, as it can be turned up out of the way when not in use.

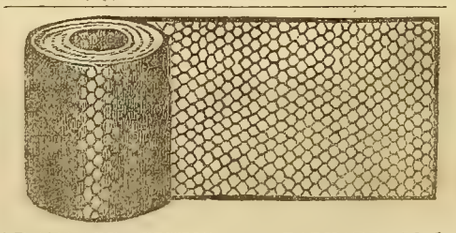
COTTAM'S IMPROVED SURFACE GUTTER, with perforated moveable cover, the use of which prevents accidents, and can be easily cleaned out.

COTTAM'S CAST-IRON SANITARY TRAP, from its improved construction, gives a full water passage, and does not allow any smell to ascend from the drain.

PATENT LOOSE-BOX FITTINGS, and every article for the harness-room and stable, kept in stock, plain, galvanised, and enamelled. Iron gates, fencing, hurdles, &c.

The New Illustrated Catalogue and Estimates, gratis, upon application to COTTAM and COMPANY, 2, Winsley Street, Oxford Street, W.

N.B. COTTAM & Co. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.



BARNARD, BISHOP, AND BARNARD, Market Place, Norwich, in consequence of improvements in their machinery for the manufacture of the above article, have been enabled to make a great reduction in the prices.

			Galvanised.		Japanned Iron.
2-inch mesh,	24 inches wide ..	..	5d. per yd.		4d. per yd.
2-inch ,,	strong do. ..	..	6 ,,		4½ ,,
2-inch ,,	intermediate, do.	..	7 ,,		5½ ,,
2-inch ,,	extra strong, do.	..	9½ ,,		7½ ,,
1⅝-inch ,,	24 inches wide ..	..	5½ ,,		4½ ,,
1⅝-inch ,,	strong, do.	..	6½ ,,		5½ ,,
1⅝-inch ,,	intermediate, do.	..	7½ ,,		6 ,,
1⅝-inch ,,	extra strong, do.	..	10 ,,		8 ,,

All the above kinds can be made of any width (under 8 feet) at proportionate prices. If the upper half is of a coarser mesh than the lower, it will reduce the prices about one-fifth.

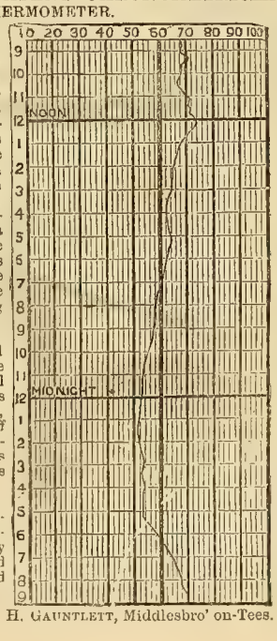
Strong Galvanised Poultry Netting, 8½d. per yard, 3 feet wide Galvanised Sparrow-proof Netting for Pheasantries, 2½d. per square foot. Delivered free of expense in London, Peterborough, Hull, or Newcastle. Manufacturers of Improved Strained Wire Cattle and Deer Fencing, Iron Hurdles, &c.

Illustrated Catalogues and Patterns forwarded by post.

TO HORTICULTURISTS.

GAUNTLETT'S PATENT CHRONOMETRICAL THERMOMETER.

This instrument, which combines an eight-day clock of the best English make showing time, with a newly-patented Thermometer, wherein glass and quicksilver are dispensed with, writes down the temperature of the atmosphere on a slip of paper, and when placed in a Hothouse, Forcing House, or Conservatory, &c., supplies a valuable record of the temperature, with all its variations, showing the time when any change took place, and how long such change continued.



The above slip (reduced in size) exhibits the temperature of the Royal Agricultural Society's show yard at Chester, July 22, 1858, written off by one of these instruments, to which was awarded the Society's SILVER MEDAL.

This is the only instrument that registers temperature continuously and writes it down, and no horticulturist should be without it.

Orders received by W. H. GAUNTLETT, Middlesbro' on-Tees.

TANNED GARDEN NETTING for Preserving Fruit Trees from Frost, Blight, Birds, &c., and as a Fence for Fowls, &c. One yard wide 1½d., 2 yards 3d., 3 yards 4½d., and 4 yards 6d. per yard, in any quantity, may be had at C. WRIGHT'S, 376, Strand, W.C.

A liberal allowance to Nurserymen.

TANNED NETTING, for the Protection of Fruit Trees from Frost, Blight, and Birds; also, for the security of fresh sown seeds, at 1d. per square yard; 200 yards, 12s.; 500 yards, 25s.; Scrim Canvas, for wall fruit; Garden Mats.—At EDGINGTON & Co's., Rick Cloth, Tent, and Waterproof Cloth Manufacturers, 17, Smithfield Bars, City, & Old Kent Rd.

PEACHES, NECTARINES, PLUMS.—WORSTED NET to effectually protect the above from Wasps and Flies and the blossoms in the spring, 7d. per square yard, in widths of 2 yards, very much approved. New GARDEN NET, 1½d. per yard, TANNED NETS, 6s. 3d. per 100 yards.—R. RICHARDSON, White Horse Factory, Bidborough Street, Judd Street, W.C.; Office: 99, Euston Road, London, N.W.

N.B.—All kinds of FISHING NETS cheap.

WASPS.—THE WASPS ARE COMING.—Gentlemen who have Gardens or Hothouses are invited to transmit their address to Mr. HAYTHORN, Nottingham, who will forward free by post patterns, testimonials, and prices of HAYTHORN'S HEXAGON and CHISWICK NETS, warranted to protect all kinds of Fruit from Wasps, Flies, Birds, &c., now used and recommended by all the principal gardeners.

SMALL SPAN-ROOFED GREENHOUSE WANTED.—Any party having a Span-roofed House from 12 to 20 feet in length, in good condition for sale, is requested to send a full description with lowest price to A. B. FLETCHING, Uckfield, Sussex.

GREENHOUSES.

HENRY FREEMAN, HOTHOUSE BUILDER and HOT-WATER APPARATUS MANUFACTURER, Triangle, Hackney, N.E. Established 20 years. Good substantially built GREENHOUSES, fixed in any part of the kingdom, for cash, 42 feet long by 13 feet, 90l.; 21 feet by 13 feet, 50l.; 12½ feet by 10 feet, 30l. A first-rate CONSERVATORY, 30 feet by 18 feet, 130l. A large assortment kept. Estimates for Heating, or any branch in Wood or Iron or Park Fencing.

HORTICULTURAL BUILDINGS AND HEATING BY HOT WATER.

JOHN R. PEILL, 17, New Park St., Southwark, S.E., Manufacturer of every description of Buildings for Horticultural purposes, and Inventor of the Improved Conical Boiler for heating the same, is prepared to undertake works of any magnitude, and refers among others to the celebrated range of FORCING HOUSES at HER MAJESTY'S GARDENS, FROGMORE, and at SIR ROBERT PEEL'S, DRAYTON MANOR, constructed under the superintendence of his Manager, MR. JOHN JONES; and also to his BOILERS fixed at the CRYSTAL PALACE, the ROYAL BOTANIC GARDENS, REGENT'S PARK, and KEW, and at several hundreds of the Nobility's seats, Public Establishments, and Manufactories in London and the provinces. J. R. P. also manufactures every description of Iron Roofs, Iron Houses, and Iron Fencing, plain and ornamental. Strong Iron Hurdles for Sheep (6 ft. long, 3 ft. high, with 5 bars), 4s. 3d. each; ditto for cattle, 4s. 9d. each. Prices and other particulars forwarded on receipt of one postage stamp.

GARDEN POTS AND PANS, in quantities of not less than 20 casts, delivered to the London Stations at the following prices:—Nos. Thbs. 60, 160, 54, 48, 40, 32, 28, 24, 16, per cast, 2s. respectively. 12, 3s.; 8, 3s. 6d.; 6, 5s.; 4, 5s.; 3, 5s.; 2, 5s.; 1, 5s. On lesser quantities, 6d. per mile, for delivery to the Station, charged. The usual discount to the Trade. Square Propagating Pans, Kale and Plunging Pots, Strawberry and Border Tiles, &c., made to order.

J. & W. ADAMS, Kilns, Belle Isle, York Road, King's Cross, N.

LAWNS—IN USE IN THE ROYAL GARDENS.

SAMUELSON'S PATENT BOYD LAWN MOWING and ROLLING MACHINE, the only one that will cut wet as well as dry Grass, is guaranteed efficient in use, easily handled, and readily kept in working order. Doing the work of five or six men. Prices, including case and carriage to any railway station in England, from 4l. 17s. 6d. and upwards. Copies of testimonials post free on application to Mr. SAMUELSON'S London Warehouse, 76, Cannon Street West, City, E.C.; DEANE'S, London Bridge, E.C.; or the Works, Banbury, Oxon.

FOWLER'S PATENT STEAM PLOUGH has gained the following prizes:—

The Royal Agricultural Society's Prize, at Warwick, July 1859, 50l.

The Royal Agricultural Society's Prize, at Chester, July 1858, 500l.

The Highland Society's Special Prize at Stirling, Oct. 1857, 200l.

And at other Agricultural Meetings in the United Kingdom, Prizes amounting to 175l.

For further particulars, prices, and Catalogues apply to JOHN FOWLER, JUN., 28, Cornhill, London, E.C.

AGRICULTURAL MACHINERY.

E. R. AND F. TURNER, Ipswich, manufacture Prize Mills for Crushing Corn, Seed, Malt, &c.; Portable Grinding Mills, Steam Engines fixed and portable from 2 horse-power and upwards; Threshing Machines, Chaff Cutter, Oilcake Breakers, Horse Gears, Saw Tables, &c., all of a superior description and adapted for Home, Colonial, and Foreign use. Illustrated Price Lists sent free on application.

HAYMAKERS, possessing the best features of Nicholson's Prize Machines, with recent improvements peculiar to those supplied and manufactured only for RICHMOND AND CHANDLER, Salford.

Branch Establishment, South John Street, Liverpool.

N.B. The celebrated Bedford and Stamford Prize HORSE RAKES always in stock, with latest Patented Improvements.

HAY HARVEST.

NICHOLSON'S PATENT HAYMAKER, to which was awarded the First Prize of the Royal Agricultural Society of England at the last contested trial.

The celebrated STAMFORD HORSE RAKE has lately been much improved, and has obtained 26 Prizes at competitive trials.

MOWING AND REAPING MACHINES are performing their work most satisfactorily, and fully justify public expectation, cutting about 10 acres per day, at a cost of 9d. per acre.

Orders for the above machines should be given at once to RICHMOND & CHANDLER, Salford, Manchester.

Branch Establishment, South John Street, Liverpool.

CAST-IRON GARDEN ORNAMENTS, viz.—ORNAMENTAL VASES, of various sizes, do. with pedestal, GARDEN CHAIRS and STOOLS, RUSTIC GARDEN SEATS and TABLES, both plain and bronzed, also GARDEN ROLLERS of all sizes.—Prices on application to J. JONES, Iron Merchant, 6, Bankside, London, S.E.

VASES, PEDESTALS, SUNDIALS, FOUNTAINS, FLOWER BOXES, JARDINETS, FERN CASES, BALUSTRADES, EDGINGS AND CURBS FOR FLOWER BORDERS, SEATS, &c., in Imperishable Siliceous Stone, at reduced prices, for the adornment of the Villa Garden, the Mansion Grounds, or the private or public Park.

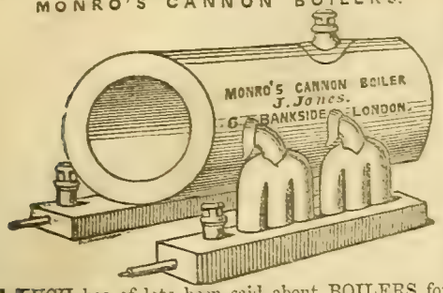
For Priced Illustrations apply to FREDERICK RANSOME, at the Show Rooms, Cannon Row, Westminster, S.W., or Patent Stone Works, Ipswich.

VOKINS AND HURD,
Jubilee Place, King's Road, Chelsea, S.W.



HORTICULTURAL BUILDERS and HOT-WATER APPARATUS MANUFACTURERS. Estimates forwarded on the shortest notice. BOILERS of all sizes on sale.

MONRO'S CANNON BOILERS.



MUCH has of late been said about BOILERS for Heating by Hot Water, but these Boilers have now proved themselves to be the best at present invented. They are adapted for heating every description of building, and are made of various sizes. The Price of the

24-inch Cast Iron is	..	..	..	£5 10s. 0d. each
24-inch Wrought ditto	..	..	..	6 10 0 ,,
36-inch Cast ditto	..	..	..	8 0 0 ,,
36-inch Wrought ditto	..	..	..	8 10 0 ,,

References to Gentlemen and Nurserymen where these Boilers are now at work. The Cannon Boilers are now kept in stock, and are to be had only of J. JONES, 6, Bankside. Also, every description of Saddle and Cylinder Boilers. Hot Water Pipes and Connections at prices lower than those of any other house in London. Estimates for Hot-water Apparatus erected complete in any part of the country, and an Illustrated Catalogue on application to J. JONES, 6, Bankside, Southwark, London, S.E.

T. G. MESSENGER, HORTICULTURAL BUILDER and PATENT HOT WATER APPARATUS and GARDEN ENGINE MANUFACTURER, Loughborough.

T. G. MESSENGER'S Divisionless Horticultural Erections, ventilated with a new mechanism by which the top or front lights are opened the entire length of the house momentarily, do not fail to give complete satisfaction (as numerous Testimonials can show), for the following reasons:—They are much lighter in appearance, more durable, much stronger, and cheaper than any other can possibly be.

Three years' trial has proved his PATENT BOILER to be superior to any hitherto invented; a great number of houses can be heated at once with this Boiler, with the facility of heating any separately.

Illustrated descriptions and prices of his Patent and greatly approved GARDEN ENGINES sent free upon application; also Plans, Estimates, and Testimonials for Building or Heating. See *Gardeners' Chronicle*, May 21.

PARKES' STEEL DIGGING FORKS.

BURGESS AND KEY, 95, Newgate St., E.C., London, being the Wholesale and Retail Agents for these celebrated TOOLS have always a large Stock on hand from which their Customers may select what they may require.

ANTHONY'S PATENT AMERICAN CHURN.—The FIRST PRIZE was again awarded to this Churn in Competition with several others at the Chester Meeting of the Royal Agricultural Society; it has obtained the First Prize given by the Society at every Meeting since 1850.

Messrs. BURGESS & KEY, 95, Newgate Street, E.C., strongly recommend it as the most perfect Churn now in use. Full particulars sent on application.

HOLLOWAY'S PILLS AND OINTMENT. NO FAILURE.—The debilitated and aged always find the summer a trying season; their delicate appetites fail; their sleep subsides into mere restlessness, the digestion becomes disordered, and if the right means be not promptly taken, fever sets in and their fate is uncertain. All persons at this season should, when well, occasionally take some cooling medicine; and none before presented to the public ever had the natural and pharmaceutical virtues of HOLLOWAY'S preparations. Known and valued everywhere, HOLLOWAY'S Ointment supersedes everything for external ailments. Its healing, soothing action, aided by his purifying Pills, cures alike the external or internal ailment; for which are substituted sound and healthy functions, and the corrupted blood becomes wholesome.

HORTICULTURAL VALUATIONS

MR. ALFRED CHANDLER (of the late firm of Chandler & Sons, Vauxhall) begs to inform his friends that he is at liberty to undertake the valuation of Collections of Plants, Nursery Stock, Horticultural Buildings, &c.

Mr A. C. is also open to accept engagements as Clerk at Horticultural Exhibitions, in which capacity he has had long and extensive experience.—28, Priory Road, Wandsworth Road, S.

NURSERYMEN supplied with the best GENUINE TOBACCO PAPER at 1s. per doz.; any less than ½ cwt., 10d. per lb.—Address, TOM EDWARDS, Messrs. Jackson & Sons, Lady Lane, Leeds.

GENUINE TOBACCO PAPER FOR FUMIGATING.

H. APPLEBY (Foreman to Messrs. Ivery & Son, Surrey), takes this opportunity of informing his patrons and the public that he is now offering the above at a very considerably reduced price. It is now sold in packets of 4 lbs. each, at 1s. 3d. per lb. A liberal discount allowed to the Trade. For testimonials that will guarantee its quality, see *Gardeners' Chronicle*, April 16, p. 363.

Sheet Iron Pots for fumigating, 7s. 6d. each.

N.B. All orders to be accompanied with a Post-office Order, payable to HENRY APPLEBY, Thames, Surrey.

KEATING'S PERSIAN INSECT DESTROYING POWDER.

POULTRY, DOGS, AND PLANTS are effectually freed from Fleas, and all other Vermin with which they are infested, by the above Powder, which is quite harmless to animal life. The Farmer, the Gardener, or the Sportsman, will therefore find it invaluable. Bugs, Cockroaches, Beetles, Moths in Furs, and every other species of Insect are also instantly destroyed. In packets post free, for 14, or treble size for 36 postage stamps, by THOMAS KEATING, Chemist, 79, St. Paul's Churchyard, London, E.C. Take notice each genuine packet bears the above name and address. See "THE FIELD," Oct. 24 and 9th, pp. 263, 284, and 294.

FREEHOLD LAND FOR SALE.—Nearly 5½ acres, at 30*l.* per acre, together or separate, about 2 miles from a market town and station, and 40 from London.—Particulars of Mr. STANNAM, 2, Albert Terrace, Station Road, Guildford, Surrey.

TO NURSERYMEN AND OTHERS.

TO BE DISPOSED OF, a really first-rate NURSERY, including Glass, Stock, and Business, entire, on very advantageous terms, in the immediate neighbourhood of London. Might suit two or three in partnership, or any country firm requiring a London place of business. Long Lease and capitally situated. Part of the Purchase Money might remain at interest if desired.—For all further particulars apply by letter to A. B. & Co., care of Messrs. Williams & Lloyd, Stationers, 20, Mongate Street London, E.C.

TO BE LET, BRISTOL NURSERY GROUNDS, Kemp Town, Brighton. These Gardens are now to Let for occupation with immediate possession.—Any person desirous of treating for the same may obtain particulars and permission to view the grounds on application to Mr. R. W. LUCAS, 20, Great Marlborough Street, London, W.; and of Mr. A. CHANDLER, Horticultural Valuer, 28, Priory Road, Wandsworth Road, S.

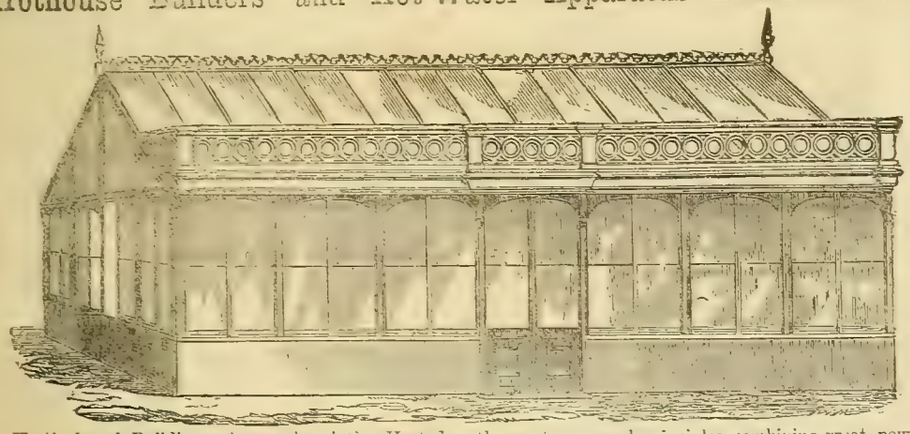
FARM IN HAMPSHIRE TO BE LET

BY TENDER FOR A TERM OF YEARS FROM MICHAELMAS NEXT.

TO BE LET, A SHEEP AND CORN FARM, with Chalk Subsoil, containing about 657 acres, and situated within five miles of the important market towns of Winchester and Romsey. The proprietors do not bind themselves to accept the highest or any Tender.—For further particulars and to view, apply to Mr. HUGH RAYNBIRD, Land Agent, &c., Hackwood, near Basingstoke, to whom Tenders are to be addressed on or before 15th August next.

J. WATTS & CO.,

Hothouse Builders and Hot-Water Apparatus Manufacturers,



Horticultural Buildings of every description Heated on the most approved principles, combining great power with simplicity of construction. A Range of Houses containing 20,000 feet can be Heated as easily as the smallest Pit. Two Hundred Cucumber Boxes and Lights, and from Three to Four Hundred Lights of all sizes kept in stock, glazed and painted complete, ready for immediate use.

References to the Nobility, Gentry, and the Trade in most of the Counties in England.

Claremont Place, Old Kent Road, London, S.E.

CARSON'S

ORIGINAL ANTI-CORROSION PAINT,

PATRONISED BY

THE BRITISH GOVERNMENT,	HON. EAST INDIA COMPANY,	RAILWAY AND CANAL COMPANIES,
THE FRENCH GOVERNMENT,	MOST OF THE NOBILITY AND GENTRY,	THE PRINCIPAL COLLIERIES,
THE RUSSIAN GOVERNMENT,	NEW RIVER COMPANY,	MILL OWNERS,
H.R.H. THE PRINCE CONSORT,	THE DOCK COMPANIES,	IRON MASTERS, &c. &c.

The **ANTI-CORROSION PAINT** is now used extensively for all kinds of

OUT-DOOR WORK,

Such as Iron, Wood, Stone, Brick, Compo, Cement, &c., and has been proved, after a practical test of 70 years, to surpass any other Paint; *and being peculiarly adapted for Conservatories, Hothouses, and Frames of all descriptions, is constantly used by Noblemen, Gentlemen, as also many eminent Horticulturists, for such purposes.* It is much lower in Price, and lasts twice as long as the best White Lead, and can be easily applied by any Labourer, being sent in various Colours, requiring simply to be mixed (no grinding is needed). The Anti-Corrosion is a powder, and will keep any length of time.

COLOURS:—

White Stone	.. ..	34s. per cwt.	
Light do.	.. ..		
Drab or Portland	.. ..	32s. ,,	
Bath do.	.. ..		
Light and Dark Yellow do.	.. ..		
Copper	.. ..	30s. ,,	
Light and Dark Oak	.. .. ..		
Light and Dark Lead	.. ..	28s. per cwt.	
Light and Dark Chocolate	.. ..		
Bright Red	.. ..		
Dark do. (or Brick Colour)	.. ..		
Black	.. ..		
Invisible Green	.. ..	42s. ,,	
Bright and Deep Green	.. .. ..	50s. ,,	
Blue (for Carts and Waggons)	.. ..	56s. ,,	

OIL, TURPENTINE, AND BRUSHES,

A Copy of Testimonials (700), will be sent upon application to

WALTER CARSON & SONS, (Successors to the Inventors), 9, Great Winchester Street, near the Royal Exchange), London, E.C.

NO AGENTS THROUGHOUT THE UNITED KINGDOM.

Sales by Auction.

CLAPHAM PARK.—STOVE & GREENHOUSE PLANTS.

MR. J. C. STEVENS will Sell by Auction, on the Premises, 2, South Road, Clapham Park, S., on TUESDAY, August 9, at 12 for 1 o'Clock precisely, the Collection of STOVE and GREENHOUSE PLANTS of a Gentleman leaving the residence, comprising Camellias, Azaleas, Rhododendrons, Orange Trees, Ferns, many of which are choice; a few Orchids, Achimenes, Gloxinias, &c.; and 60 Fruiting and Succession Pines (Queens).—May be viewed on the day prior and morning of Sale, and Catalogues had of the Gardener on the Premises, and of Mr. J. C. STEVENS, 38, King Street, Covent Garden, W.C.

IMPORTANT SALE.

To NOBLEMEN AND GENTLEMEN, HORTICULTURIST PLANT GROWERS, AND THE TRADE.

MESSRS. PROTHEROE AND MORRIS have received instructions from Mr. Epps to Sell by Auction (in consequence of the Lease of one of his Nurseries at Maidstone having expired, and immediate possession required), on WEDNESDAY, August 24, and following days, at 11 o'Clock each day, the whole of his large and valuable collection of SPECIMEN PLANTS of all sizes, amounting to upwards of 1000, consisting of the newest and best varieties of Ericas, Azaleas, Pimeleas, Aphelexes, Eriostemon, Acacia, Polygala, Statice, Tremandra, Ixoras (6 vars.), Allamanda, Stephanotis, Rhynchospermum jasminoides, Dipladenias, Medinella, Pleroma elegans (fine), Rondeletia, Vinca, Aphelandras, Ardisias, Brexia, Caladiums, Cissus, Crotons, Dracænas, Striped Yuccas, &c.; also a large quantity of his young stock, including 10,000 to 15,000 new and valuable Greenhouse and Stove Plants, comprising Ericas, Epacris, greenhouse Creepers, French Geraniums, Allamandas, Ixoras, Aphelandras, Dipladiums, Eucharis, Gardenias, Gesnerias, Gloxinias, new Tydeas, Achimenes, Stove Climbers, variegated and ornamental foliaged plants, &c.; also several ranges of newly erected Greenhouses, Pits, &c. May be viewed 14 days prior to the Sale. Catalogues had on the premises, of the principal Seedsmen in London, and of the Auctioneers, American Nursery, Leytoustone, Essex, N.E. The Nursery is situated near the Maidstone Railway Station, and about 2 hours' ride from London Bridge Station on the North Kent line.

The valuable NURSERY STOCK extending over 5 Acres (comprising very choice and large specimens of Coniferæ and Ornamental Trees and Shrubs that will remove well and calculated for immediate effect), will be sold about the middle of October next, particulars of which will be duly announced.

FREEHOLD ESTATE, NORTHUMBERLAND.

MR. SAMUEL DONKIN will Sell by Auction, on TUESDAY, September 6, at 2 o'Clock, at the Central Station Hotel, Newcastle-on-Tyne, the ESTATE of RITTON, in the Chapelry of Netherwitton, in the County of Northumberland, comprising 1029 acres, of which about 100 acres are Woodland. Lime and Coal are abundant, and easily worked. The property is situated about 12 miles from the market town of Morpeth, and the Station of the North-Eastern Railway, 6 miles from the line of the proposed Wansbeck Railway, which will afford means of access to both the East and West Coasts of England and Scotland, and 6 miles from the town of Rothbury and the river Coquet, and is intersected by the Alnmouth, Rothbury, and Hexham Turnpike Roads. Game is plentiful upon the Estate, and Trout Fishing may be had in the river Font, which forms part of its southern boundary.—Plans and conditions of Sale may be had at the Offices of Mr. CROSBY, 3, Church Court, Old Jewry, London, E.C.; and of Messrs. WM. & BENJ. WOODMAN, Solicitors, Morpeth.

GREEN'S Unrivalled PATENT GRASS CUTTING, COLLECTING, and ROLLING MACHINES

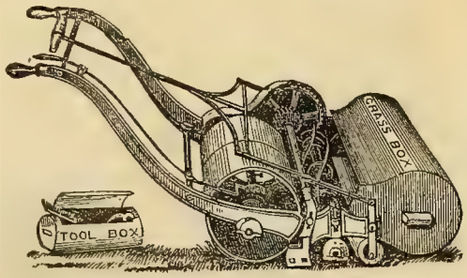
HAVE PROVED TO BE SUPERIOR BY THE APPOINTED JUDGES TO ALL OTHERS IN EVERY CASE OF COMPETITION.

GREEN'S PATENT HAND MACHINE.

LIST OF PRICES.

To cut 14 inches	£6 0 0
To cut 16 inches	6 10 0
To cut 18 inches (for one person)	7 0 0
To cut 20 inches	7 10 0
To cut 22 inches	8 0 0
To cut 24 inches (for two persons) ...	8 10 0

If with Box and Tools for sharpening and keeping the Machine in order, 5*s.* extra; with Guard for preventing accidents and keeping the wheels clean, 5*s.* extra.



Royal Dublin Society's Horticultural Show, June 15.

Public Trial of Lawn Mowing Machines on the Grounds of the Trinity College, Dublin. The appointed Judges for the Horticultural Implement department were Sir George Hodson, Bart.; Henry L. Fry, Esq, Westmorland Street; and William Kelly, Esq., Portrane, when they unanimously declared GREEN'S PATENT to be the best in all points, and recommended a First Prize to be given for this Machine.

At the Leeds Horticultural Fête in the Kirkstall Abbey Grounds, June 24, a Prize of Two Pounds was awarded by the Judges, who spoke highly of the superiority of GREEN'S Patent Lawn Mowing Machine above all others, and which Machines in all cases of competition have invariably been proved the best by the appointed judges.

GREEN'S PATENT DONKEY AND PONY MACHINE.

SUITABLE FOR A DONKEY.	FOR A PONY.
To cut 24 inches ... £10	To cut 30 inches ... £15
To cut 26 inches ... £11	Box, Tools, &c., 6*s.* 6*d.* extra.

Leather Traces, Stretcher, &c., suitable to attach to common harness or chain traces, 7*s.* 6*d.*
Leather Boots, suitable for Donkey's feet, 16*s.*; ditto for a Pony, 20*s.* per set of four.
Guard for covering Wheels, 5*s.* extra.

GREEN'S PATENT HORSE MACHINE (Made very strong).

To cut 30 inches ... £18	To cut 42 inches ... £24
To cut 36 inches ... £21	To cut 48 inches ... £27

Box of Tools 7*s.* 6*d.* extra. Leather Traces, Stretcher, &c., 10*s.*
Boots, per set of four, for Horses' feet, to prevent injury to Lawns, 24*s.* Guard for Wheels, 5*s.* extra.
The above are Nett Cash prices, delivered at any of the principal Railway Stations in England.

TRIAL at the LONDON HORTICULTURAL SOCIETY'S GARDENS, CHISWICK, June 5, 1857. FOUR COMPETITORS.

First trial on level ground, second do. on undulated, third do. on intricate places around trees, &c., when GREEN'S PATENT was unanimously declared to be the best in each trial by Colonel Challoner, Dr. Lindley, and G. M'Ewen, Esq., the appointed Judges.

See the *Gardeners' Chronicle* of May 22, 1858, p. 423, under the heading of "Garden Memoranda."

"LONDON HORTICULTURAL GARDENS, CHISWICK.—The Grass in the Arboretum and elsewhere is in excellent condition; it is kept in order by means of one of GREEN'S 2-feet Mowing Machines, which does its work very satisfactorily, and, compared with the scythe, effects a saving of at least one-half."

Extract from London *Times* of June 8, and *Gardeners' Chronicle* of June 12, 1858.

"TRIAL OF MOWING MACHINES.—A considerable number of various sizes having been brought to the ground it was agreed that the trial should take place between One Hand Machine of each exhibitor, as nearly as possible of uniform size and worked by themselves, or their men. The ground to be worked was determined by lot, the pieces having been previously selected of as uniform quality as possible. After trials on level ground and round trees, the Judges, Colonel Challoner and Mr. Edward Easton, declared GREEN'S Patent to be the best.

(Signed) "C. B. CHALLONER, EDWARD EASTON, Judges."

THOS. GREEN respectfully informs the Nobility, Gentry, Gardeners, Amateurs, and others, that upwards of Six Hundred of these Machines were sold in 1857, and to show the increasing demand, above Nine Hundred were sold last season—they have proven to be the best in all cases of competition, are entirely remodelled, and all the little defects pointed out by the Judges last year are now rectified. The Patentee now considers the Machines as near perfection as possible. Although the Machines have been so much improved, at a great additional cost, no extra charge will be made, excepting for a neat Guard, which is placed over the wheels to keep them clean, and to prevent breakage or accidents, which will be 5*s.* extra to parties requiring them.

☞ The Machines are warranted to give satisfaction, or may be at once returned by the party paying the carriage back to Leeds. The Patentee has spared neither time nor expense in producing the best and cheapest Mowing, Collecting, and Rolling Machines ever brought before the public. Hundreds of Testimonials (unsolicited) may be seen, and references given with regard to the superiority of the Machines, by applying to the Patentee. GREEN'S PATENT LAWN MOWERS may be seen daily working at the Crystal Palace, Sydenham, and every information may be obtained of Mr. ROSE, Manager of the Agricultural Department; and also of

THOMAS GREEN, Patentee and Sole Manufacturer, Smithfield Iron Works, Leeds, Yorkshire, and 2, Victoria Street, Bottom of Holborn, E.C., London,

or of THOMAS KENNAN AND SONS, Agents, Dublin, where all inquiries will be duly answered. Repairs done at any of these Establishments.

N.B. The Patentee having made extensive alterations, additions, and improvements in his Factory and Machinery, is now prepared to send Machines off on receipt of order.

SHANKS'

NEW IMPROVED PATENT LAWN MOWING MACHINES,

NOW USED IN ALL THE ROYAL GARDENS.

NEW AND IMPORTANT IMPROVEMENTS FOR

MOWING, ROLLING, COLLECTING, DELIVERING, AND FOR PREVENTING BREAKAGES.

THE Delivering operation enables SHANKS' Machine to do a **third** more work than any other Lawn Mowers, with **three-fourths** less labour to the man who works it. A most valuable improvement has been lately introduced into this already celebrated Machine, which **entirely prevents either the cogs of the wheels from breaking, or the cutter from sustaining injury** should it come in contact with a stone or any hard substance in mowing. These improvements give SHANKS' Mower an immense advantage over all others, and render it by far the most complete that has ever been offered to the Public.

THE NEW PATENT HAND MACHINE

possesses all the improvements of the larger sizes with the exception of the Delivering Apparatus.

PRICES OF THE HORSE MACHINE.

No. 1(*a*) 48-INCH MACHINE (USUALLY DRAWN BY A HORSE)	£27 0 0
No. 1.—42-INCH MACHINE (USUALLY DRAWN BY A HORSE)	24 0 0
No. 2.—36-INCH MACHINE (USUALLY DRAWN BY A HORSE OR PONY)	20 10 0
No. 3.—30-INCH MACHINE (USUALLY DRAWN BY A PONY)	£17 10 0
No. 4.—25-INCH MACHINE (USUALLY DRAWN BY A PONY OR DONKEY)	13 10 0
No. 5.—25-INCH MACHINE (MADE LIGHT FOR A SMALL PONY OR DONKEY)	9 10 0

Machines Nos. 1 (*a*), 1, 2, 3, & 4 have the Patent Delivering Apparatus attached. No. 5 can either be had with or without this improvement; if with it, 30*s.* extra.

PRICES OF THE HAND MOWING AND ROLLING MACHINE

No. 6.—22-INCH MACHINE	£7 17 6
No. 7.—19-INCH MACHINE	7 5 0
No. 8.—16-INCH MACHINE	£6 10 0
No. 9.—13-INCH MACHINE	5 15 0

☞ FULLY ILLUSTRATED AND DETAILED CIRCULARS ON APPLICATION.

ALEXANDER SHANKS & SON, Patentees and Sole Manufacturers,

DENS IRON WORKS, ARBROATH, FORFARSHIRE.

LONDON AGENTS

MESSRS. J. B. BROWN & CO., 18, CANNON STREET, CITY, LONDON, E.C.

Printed by WILLIAM BRADBURY, of 13, Upper Woburn Place, and FREDERICK MULLETT EVANS, of No. 20, Queen's Road, West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and published by them at the Office, No. 5, Upper Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—SATURDAY, August 6, 1859.

THE GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 33.—1859.] SATURDAY, AUGUST 13. {Price Fivepence. {Stamped Edition, 6d.

INDEX.

Agri. Soc. of England	684 c	Horticultural Society	672 c
— — Insp. of Ireland	683 c	Lucifer matches	682 a
— progress, Irish	681 b	Molucca seed	672 c
— meetings	682 b	Pen, Dickson's Favourite	672 b
Beans, diseased winter	677 b	Peach, Bourdine	672 c
Books noticed	673 b	Pear grub	672 a
Botanical prizes, Edinburgh	671 c	Plants, latex in	675 b
Calceolaria disease	672 a	— sale of dried	676 a
Cattle foods	677 b	Puffballs, large	672 b
Cherry grub	672 a	Redbreast, female	675 c
Crops, returns respecting	678 a	Roots, structure of	669 b
— Berkshire	682 c	Roses, attar of	671 c
— Cheshire	682 c	Rose Eugene Appert	670 a
Dahlias, new	672 c	Royal Bot. Garden, Kew	674 a
Entomological Society	673 a	Royal Bot. Soc. anniversary	673 a
Evergreens, transplanting	672 a	Scale and its enemy	670 b
Farming, Essex	681 a	Seeds, exporting	676 c
Ferns, new garden	671 b	Sewage	685 a
Foods, cattle	677 b	Smoking	682 b
Fruit, prices of	669 c	Steam racing	678 a
Grain, fecundity of	682 a	Strawberry, Elton	672 b
Grape, Golden Hamburgh	672 a	— in America	670 b
— Buckland Sweetwater	672 c	Sunflower, large	672 a
Hemp, narcotic from	675 a	Water rat	672 b
Highland and Agri. Society	682 c	Yarrow, bulbiferous	672 b

HORTICULTURAL SOCIETY OF LONDON.—The FLORAL COMMITTEE have this day made the following Awards:—

FIRST CLASS CERTIFICATES TO

Dahlia William Dodds, from Mr. Keynes, Salisbury
Dahlia Lady Douglass Pennant, from Mr. Keynes
Athyrium Filix-fœmina, var., from Messrs. Veitch & Son

COMMENDED.

Dahlia Rev. Joshua Dix, from Mr. Keynes
Dahlia Sir G. Douglass, from Mr. W. Dodds, Salisbury
Dahlia Mrs. Col. Vyse, from Mr. C. Turner, Slough
Dahlia Splendid, from Mr. Green, High Cross, Ware
Hollyhock Alfred, from Mr. W. Chater, Saffron Walden
Pelargonium (zonale) Blackheath Beauty, from Mr. Hally
Yellow Tom Thumb Nasturtium, from Messrs. Carter & Co.
Odontoglossum sp. n., from Messrs. Veitch & Son
Hybrid Cattleyas (Nos. 1 and 4), from Messrs. Veitch & Son

The next Meeting will be held on August 25. The subjects for examination must be entered by 1 P.M.

8, St. Martin's Place, Trafalgar Square, W.C.—Aug. 11.

THE COLLEGE GARDENS, SALISBURY.—An EXHIBITION OF DAHLIAS will take place on WEDNESDAY, August 24.

B. Thirty-six Blooms (Nurserymen), 1st prize, 3*l.* 3*s.*; 2d prize, 2*l.* 2*s.*; 3d prize, 1*l.* 1*s.*
C. Twenty-four Blooms Fancy (Nurserymen), 1st prize, 2*l.* 2*s.*; 2d prize, 1*l.* 10*s.*; 3d prize, 1*l.*
D. Twenty-four Blooms (Amateurs), 1st prize, 3*l.* 3*s.*; 2d prize, 2*l.* 2*s.*; 3d prize, 1*l.* 10*s.*
E. Twelve Blooms (Amateurs), 1st prize, 1*l.* 10*s.*; 2d prize, 1*l.*; 3d prize, 15*s.*
F. Six Fancy (Amateurs), 1st prize, 1*l.*; 2d prize, 15*s.*; 3d prize, 10*s.*

OPEN TO ALL ENGLAND.—Entries to Classes B, C, and D, 10*s.*; E and F, 5*s.* each.

A Subscription Plate for the best Six Seedling Dahlias to consist of Flowers raised by the exhibitor from seed in 1858; an affidavit to be made to that effect. Open to all growers subscribing one guinea each. Stands will be provided for these, and all entries must be made by the 20th of August. Three Silver Cups value 5*l.* 5*s.*, 3*l.* 3*s.*, and 2*l.* 2*s.*, will be given.

JOHN KEYNES, Hon. Sec.,

From whom any further particulars may be obtained, if required.

TOWCESTER FLORAL AND HORTICULTURAL SOCIETY.—*President:* The Earl of POMFRET.

The ANNUAL EXHIBITION OF FLOWERS, PLANTS, FRUITS, & VEGETABLES, will take place in the Grounds of T. W. Gurney, Esq., Towcester, on THURSDAY, Sept. 8, under the patronage of—

The Duke of Gratton,	Sir Charles Knightley, Bart.
The Earl of Euston,	Rainald Knightley, Esq., M.P.
The Earl of Pomfret,	Colonel Cartwright, M.P.
Lord Southampton,	&c. &c. &c.

The Exhibition will be on a larger scale than that of last year, 374 Prizes being offered for competition open to all England. There will be distinct Classes for Nurserymen, Gardeners, Amateurs, Under Gardeners and Cottagers. There will also be a Class for Agricultural Roots.

The Committee wish to direct attention to the following Sweepstakes, the Premiums for which have been increased since the Schedule was printed. The Sweepstakes are open to all classes upon payment of the entrance fee before August 31.

	Entrance Fee.	Premium added.
	s. d.	£ *s. d.*
For the best Collection of 50 Roses, in varieties, 3 trusses of each as gathered	10 0	5 0 0
For the best Collection of 36 Dahlias, in varieties	10 0	4 0 0
For the best Collection of 8 Fruit Trees, grown in pots or boxes, in fruit	10 0	4 0 0
For the best Collection of 12 Stove or Greenhouse Plants, Lycopodiums, or Ferns	10 0	5 0 0

The Full BAND of the her Majesty's 2d Life Guards will perform during the Exhibition.

All Entries must be made in writing to the Secretary on or before the 31st of August. All productions entered for exhibition which may arrive by rail at Blisworth Station will be conveyed to and from Towcester free of charge, if previous notice has been given to the Secretary. Any exhibitor can send in his productions on the previous day, and the greatest possible care will be taken of them. Schedules can be obtained of

SAMUEL COOPER TITE, Secretary.

ARAUCARIA IMBRICATA.

YOUELL AND Co. beg to inform the Trade they have to offer a fine and healthy stock of the above in 1-year-old plants.

GLADIOLUS BRENCHLEYENSIS.—An extensive stock of large flowering Bulbs of this magnificent Gladiolus, the colour of which is vermilion scarlet, the best and brightest variety known. Prices of the above on application.

Royal Nursery, Great Yarmouth.

BANBURY HORTICULTURAL SOCIETY.—OPEN PRIZES.—The THIRTEENTH ANNUAL EXHIBITION of this Society is fixed for TUESDAY, August 30, when, in addition to the usual number of Prizes to be competed for by Members, the following are offered, open to all England, on payment of an entrance fee of 2*s.* 6*d.*:—

For the best 6 Stove or Greenhouse Plants, either in flower or ornamental, of at least four different genera, but not Fuchsias or Annuals, 1st prize, 3*l.*; 2d prize, 2*l.*

For the best 24 Dahlias, 24 varieties, 1st prize, 3*l.*; 2d do., 2*l.*

For the best 18 Hollyhocks, 2 blooms of each, 1st prize, 3*l.*; 2d prize, 2*l.*

Intended Exhibitors must give notice to the Secretary before 3 P.M. on Monday, August 29. The Society will, if requested, convey the productions from and to the Railways.

The full BAND of the Royal Horse Guards will attend and play during the day.

High Street, Banbury, Aug. 13. HENRY STONE, Sec.

GERANIUMS, HERBACEOUS PLANTS, ETC.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their new PRICED and DESCRIPTIVE CATALOGUE of the above, to which are added Supplemental Lists of Stove, Greenhouse, and Hardy Plants, Fruit Trees, &c. (which include all the best new plants of the season), is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

HUGH LOW AND CO. have now ready for distribution the PRICED CATALOGUE for present season of their extensive collection of PLANTS, TREES, &c. It extends to 76 pages, and contains Stove, Greenhouse, Orchidaceous, Hardy, Herbaceous, and New and Rare Plants; Camellias, Azaleas, Ferns (of this interesting tribe the collection is very complete), Conifers, Rhododendrons, Ericas, Fruit Trees, Florists' Flowers, and Bedding Plants of all kinds.

The Catalogue will be sent prepaid on application.

Clapton Nursery, London, N.E.

FERN CATALOGUE.

ROBERT SIM'S NEW DESCRIPTIVE AND PRICED CATALOGUE, No. 6 (62 pages) of his COLLECTION of BRITISH AND EXOTIC FERNS, can be had, post free, for 8 stamps. Gratis to all previous purchasers of Ferns.

Nursery, Foot's Cray, Kent, S.E.

TO THE TRADE.

RARE FERNS.—PTERIS ARGENTEA, NOTHOCHLÆNA HOOKERI, ATHYRIUM CORYMBIFERUM, ADIANTUM TENERUM, CHEILANTHES TENUIS, &c. PRICED LIST free on application to EDWIN COOLING, Mile Ash Nurseries, Derby.

CINERARIAS.

F. AND A. SMITH are now sending out strong seedling plants from their unrivalled stock of the above at 4*s.* per dozen. Prices to the Trade on application.—Dulwich, Surrey, S.

SUPERB BALSAMS.

F. AND A. SMITH'S collection of the above are now in bloom, presenting a display of colour, form, and variety unequalled in this country.

Trains leave London Bridge to Lower Norwood (Crystal Palace Line) every hour, the Nursery being about ten minutes' walk from the station. Omnibuses from Fenchurch Street every hour.

Specimens may also be seen at most of the London Seed Establishments during the week.—Dulwich, Surrey, S.

HYACINTHS AND OTHER BULBS.

WM. CUTBUSH AND SON'S DESCRIPTIVE CATALOGUE of the above is published, and can be had post free on application.

Highgate Nurseries, London, N.

DUTCH AND OTHER BULBS.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their CATALOGUE of the above is now ready, and will be forwarded post free on application. Early orders are solicited, as their successful cultivation depends in a great measure on early planting.

Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

DUTCH FLOWER ROOTS.

HUGH LOW AND CO. have now ready for distribution their CATALOGUE for present season of HYACINTHS, TULIPS, NARCISSUS, and other Winter and Spring flowering Bulbs. All the varieties best adapted for Forcing will be found in the List, and in GLADIOLI the collection is very complete. The List will be sent pre-paid on application.—Clapton Nursery, London, N.E.

FRUIT TREES.—Intending purchasers are respectfully invited to inspect the extensive stock growing at the Nursery of the Subscribers. The quality is this season unusually good.

HUGH LOW & Co., Clapton Nursery, London, N.E.

TO THE TRADE.—The Subscriber, who has ample facility, is desirous of contracting to supply any given quantity of SCARLET GERANIUMS or other BEDDING-OUT PLANTS to be delivered as per arrangement in the spring of 1860.—W. C. WATSON, East Barnet, N.

NEW STRAWBERRIES.

STEWART AND NEILSON have now ready to send out good plants of their three first class STRAWBERRIES,

PRINCE OF WALES, | ROYAL VICTORIA,
SIR COLIN CAMPBELL.—Each 10*s.* per 100.

Descriptions will be sent on application enclosing a postage stamp.—Liscard, Cheshire.

STRAWBERRY PLANTS AND CATALOGUE.—Plants of the pretty little Bush Alpine, both Red and White, without runners, suitable for edgings to walks, beds, &c., 10*s.* per 100 sets.

A DESCRIPTIVE CATALOGUE of upwards of 130 sorts is just published. To all who wish to purchase plants it will be sent by applying to the grower, WILLIAM JAS. NICHOLSON, Eggleschiffe, Yarm, Yorkshire.

EARLY SIX WEEKS' TURNIP.

SUTTON'S SIX WEEKS' TURNIP may be sown with success until the first week of September. Price 10*d.* per lb, 5*s.* per gallon, or cheaper by the bushel. Carriage free, except small parcels.—Reading, August 13.

GRIFFIN'S ALMA LETTUCE.

J. GRIFFIN feels great pleasure in again offering this fine variety, which he can confidently recommend as the most useful sort in cultivation. In addition to its being very hardy, it is an excellent summer Lettuce, growing to an immense size, and not requiring to be tied up. Many who have tried it state that it stands the hot dry weather better than any other variety. In sealed packets, 1*s.* and 2*s.* 6*d.* each. Price to the trade on application.

Weston Road, and 2, New Bond Street, Bath.

KEMP'S NEW EARLY INCOMPARABLE CABBAGE.—This excellent variety may be had in sealed packets, at 1*s.* each, of Messrs. HURST & M'MULLEN, 6, Leadenhall Street, E.C., London; Messrs. NOBLE, COOPER & BOLTON, 152, Fleet Street, E.C.; Mr. G. W. DIXON, 48A, Moorgate Street, E.C., or free by Post for 13 postage stamps of E. P. DIXON, 57, Queen Street, Hull.

EAST NEUK OF FIFE CABBAGE.—This conc-shaped solid Cabbage, distinct in quality and appearance from all other Cabbage, which comes in use in August from autumn-sown Seed, has met with universal approval. Seed forwarded on receipt of 12 postage stamps.

C. HOWIE, Nurseryman and Seedsman, St. Andrew's.

SUPERB CAPE OR GIANT AND BROMPTON STOCKS.

CHARLES ALEXANDER, SEEDSMAN, Edinburgh, can supply the following, which are highly recommended. Sow any time this month. Post free on receipt of Stamps:—

1 packet Young's Scarlet Cape or Giant Stock	.. 1*s.*
1 packet Young's White Cape or Giant Stock	.. 1*s.*
1 packet Young's Scarlet Brompton Stock	.. 1*s.*
1 packet Young's Dark Bloody Wallflower	.. 1*s.*

LAWNS WITHOUT MOWING.—SPERGULA PILIFERA.

J. A. SUMMERS can supply well-rooted Plants (taken from the Lawn at Forest Hill), at 4*s.*, 3*s.*, 2*s.*, and 1*s.* per dozen, according to size. A specimen, post free, 1*s.*

Howard Park Nursery, Perry Hill, Sydenham, S.E.

TO THE TRADE.—A short supply of the following have been just harvested:—

MARSHALL'S SKIRVING SWEDE	GREEN-TOP SCOTCH
PURPLE-TOP SWEDE	PURPLE-TOP SCOTCH

All of which have been grown carefully from Bulbs, selected for the purpose.—Apply to the grower, WILLIAM BURGESS, Willow Farm, Iden, by Rye, Sussex.

MR. EPPS begs to state that he has, and is about harvesting, the following SEEDS, grown on his farm, Romney Marsh, from the finest selected stocks possible:—

YELLOW and ORANGE GLOBE MANGEL	WHITE CARROT
LONG RED DO.	ALTRINGHAM DO.
	SURREY DO.

All the above from selected bulbs.

Superior CRIMSON BEET. Sample roots sent if required.

PEAS.—British Queen, Monarch, Champion, Hairs' Mammoth, Burbidge's Eclipse, Dickson's Early Favourite, Sangster's No. 1. These are an extraordinary fine sample, grown principally on sticks. Purchasers sending the quantity they require of each will receive special offers at very low prices.

Seed Warehouse, High Street, Maidstone.

CROPS FOR EARLY SPRING FEED.

MESSRS. RAYNBIRD AND HARVEY are now supplying fine new WINTER TARES, WINTER BARLEY, WINTER OATS, fine new ITALIAN RYE-GRASS, and new TRIFOLIUM, the best crops for spring feed.

GIANT RYE very early and productive, and the new RACER TARE, a much earlier variety than the common sort.

Samples and prices on application.

Address RAYNBIRD & HARVEY, Basingstoke, or 89, Seed Market, Mark Lane, London, E.C.

SEED WHEAT FROM THE CHALK.—Selected samples of CHIDHAM, WHITE TURNIP, ROUGH CHAFF, HUNTER'S WHITE, RED-CHAFF WHITE, GRACE'S WHITE, TALAVERA, RED BROWICK, RED NURSERY, GOLDEN DROP, and all the best kinds of Wheat, supplied by RAYNBIRD & HARVEY, of Basingstoke, and 89, Seed Market, Mark Lane, London, E.C. Samples and prices on application.

CAMELLIAS WANTED.

WANTED TO PURCHASE, 6 or 8 fine large CAMELLIAS, of good sorts, from 8 to 9 feet.—Apply, stating price, to T. SURMAN, Nurseryman, Lavender Hill, Wandsworth, S.W.

BEGONIA QUEEN OF ENGLAND.

WILLIAM BARNES has much pleasure in stating that he is now prepared to send out plants of this most beautiful Begonia, it being a hybrid between B. splendida and B. rex, partaking of the former in the splendid colour of its foot-stalks and under side of its leaves, with the markings of the latter upon the top of the leaf, but larger and more distinct in its colourings, having a belt round each leaf, finely dotted over the green part with white spots. It is of fine vigorous growth, and expands its leaves more perfectly than either of its parents. It has been exhibited at the Crystal Palace and Royal Botanic Flower Shows this season, and obtained a Prize at each place, where it was pronounced by the most competent judges to be one of the most beautiful and distinct varieties they had seen. Fine strong plants at 10*s.* 6*d.* each. The usual discount to the trade.

Camden Nursery, Camberwell, S.

THE HEIRS of the late MR. BERNARD SAUNDERS, NURSERYMAN, &c., Jersey, respectfully request that all CLAIMS against deceased's estate may be sent in; and they also solicit the early settlement of all accounts due to the estate.—Cæsarean Nurseries, Jersey, Aug. 6.

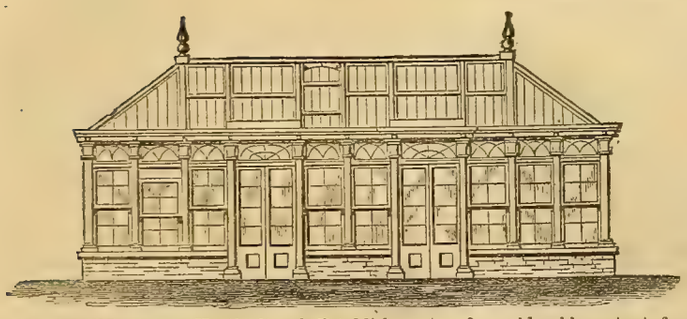
GARDENERS' CHRONICLE PENNY

BY APPOINTMENT.

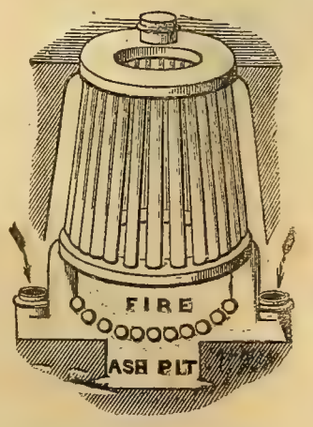
HORTICULTURAL BUILDING & HEATING BY HOT WATER.

STEAM POWER WORKS.

JOHN WEEKS & COMPANY



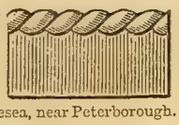
BEG respectfully to call the attention of the Horticultural World to the more than usual facilities at their command to offer superior Horticultural Erections of every style and description at lowest possible prices. The extensive additions to their Machinery, Workshops, Iron Foundry, and Plant now form a complete and unequalled Manufactory for the production of every branch of Horticultural Building and Heating by Hot-Water. J. Weeks & Co.'s ONE BOILER SYSTEM of heating has from its efficiency, cleanliness, and economy, rendered such unbounded satisfaction as now to become almost universally adopted. Numerous Horticultural Establishments of considerable extent formerly heated by 10 or 12 ordinary Boilers, also Churches, Chapels, Schools, Mansions, Warehouses, Hospitals, and Public Buildings are now more effectually heated at an incredible saving of labour and fuel by John Weeks & Co.'s ONE BOILER SYSTEM.



JOHN WEEKS & COMPANY, King's Road, Chelsea, London, S.W., Horticultural Buildings and Hot-water Apparatus Manufacturers, Engineers, and Iron Founders.

Plans, Estimates, and Illustrated Catalogues Free on application.

LOOMES' GARDEN EDGING —CABLE PATTERN.

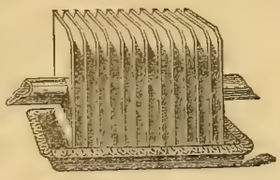


Price at Peterborough.	In London.
Straight .. .. .. 5*d.*	— 6*d.* per yard
Bends .. .. .. 6*d.*	— 7*d.* ,,
If fitted to plans .. 7*d.*	— 8*d.* ,,

Loomes & Co., Manufacturers, Whittlesea, near Peterborough.

IMPROVED HOT-WATER PIPE.

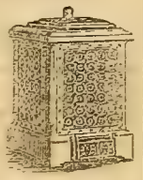
THE HORTICULTURIST will find herein an inexpensive instrument of new and very important powers. An atmosphere may be produced at will either perfectly dry, partially damp, or saturated with moisture. A space of 10 inches by 12 inches contains the power of 25 feet of 4-inch pipe and other numerous advantages.



The London Warming and Ventilating Company (Limited), 26, Great George Street, Westminster, S.W.

IMPROVEMENTS IN HEATING, &c.

MUSGRAVE'S PATENT SLOW-COMBUSTION STOVE, for Warming Public Buildings, Hall, Shops, Conservatories, Factories, Drying Rooms, &c. Will burn in Churches from Saturday till Sunday evening, avoiding attention during the hours of worship. In Halls will burn day and night for weeks, with little care. Capable of warming a large apartment for 24 hours, at a cost of 3*d.*; and deserving of special attention, because of its safety, healthfulness, durability, and extreme simplicity. This Stove is the nearest approach to warming by hot water.

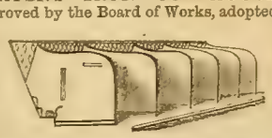


MUSGRAVE'S PATENT STABLE FITTINGS AND HARMLESS LOOSE BOXES have obtained the award of a large Council Medal from the R. I. A. Society for the following improvements:—1st, The Horse cannot injure himself or others in the same stable if he breaks loose in his stall. 2d, He cannot waste the hay. 3d, He can have cut or uncut hay at pleasure 4th, He has clean water always before him. 5th, A pure and wholesome atmosphere is secured. 6th, The whole fittings are stronger than usual, without increase in price, and there is no risk of infection.



The Loose Box is really what its name denotes, and the most spirited Horse may be turned into it without danger.

MUSGRAVE'S PATENT IRON COW-HOUSE FITTINGS, as approved by the Board of Works, adopted in the Ulster Model Farm, and by many of the most eminent Stock Breeders in the Kingdom, are made wholly of iron, very durable, cleanly, and attractive in appearance. The fodder is always fresh, being freely exposed to the air, removed from the breath of the animal, and separated from the roots or damp food. The range of Troughs can be quickly filled with water for the use of the Cows, or for washing out in case of epidemic, and the cost is very moderate.



These inventions being distinguished for strength, simplicity, and practical usefulness will repay public inquiry.

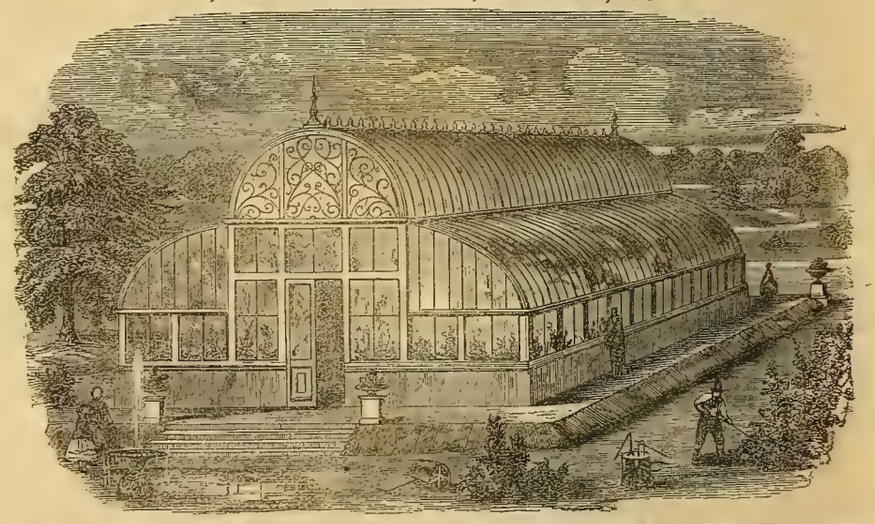
Musgrave Brothers are also Makers of Wire Fencing, Hurdles, Field and Entrance Gates, Corn Rick Stands, Conservatories, Hot-water Apparatus, Verandahs, Rural Bridges, &c.; and their works being favourably placed for cheap labour and materials, they can offer corresponding advantages in price.

Musgrave's Patent Field Gates have gained the 1st Prize from the R. I. A. Society for strength, durability, and cheapness.

For particulars address Musgrave Brothers, Ann Street Iron Works, Belfast.

COTTAM & COMPY., Engineers, Founders, &c.,

2, WINSLEY STREET, LONDON, W.



A SHOW ROOM DEVOTED ENTIRELY TO ARTICLES OF HORTICULTURE.

THE NEW ILLUSTRATED CATALOGUE UPON APPLICATION.

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	,, Syringes	Garden Bordering
Hot-water Apparatus	Ornamental Wire Work	Hurdles	,, Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

Iron Hurdles, Strained Wire Fencing, Game Netting, &c.

Every description of Plain, Ornamental, Cast and Wrought Iron, and Wire Work.

EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

N.B. COTTAM and Coy. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

WARNER'S PATENT VIBRATING STANDARD PUMPS.

PATENT CAST-IRON PUMPS for Farms, Cottages, Stable Yards, &c., where the Well does not exceed 28 feet in depth; fitted with Warner's Patent Metal Bucket and Valve, which cannot clog in action. These Pumps can be made right-handed, left-handed, or with handle opposite the nose by removing four screws only.



Diameter of Barrel.	Height.		£.	s.	d.
2½ in. short	1 ft. 7 in.	Fitted for lead,	1	5	0
2½ ,, long	3 ,, 3 ,,	gutta percha	1	10	0
3 ,, ditto	3 ,, 6 ,,	or cast iron	2	4	0
3½ ,, ditto	3 ,, 6 ,,	flanged pipe	2	9	0
4 ,, ditto	3 ,, 6 ,,	as required.	2	13	0
2½ ,, short, with 15 feet of Lead Pipe attached, ready for fixing			2	10	0
2½ in. long ditto	ditto	ditto	2	14	0

The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.

May be obtained of any Ironmonger or Plumber in Town or country, at the above prices, or of the Patentees and Manufacturers, John Warner & Sons, 8, Crescent, Jewin Street, London, E.C.

Every description of Machinery for Raising Water by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

GLAZIERS' DIAMONDS FOR CUTTING HORTICULTURAL and other GLASS, to be had of the Wholesale Manufacturer, John Edwards, 20, Sharp's Alley, West Smithfield, London, E.C. Prices from 10*s.* to 27*s.* 6*d.*

WARNER'S IMPROVED LIQUID MANURE OR GENERAL PORTABLE PUMP.



These Pumps are fitted with Warner's Patent Bucket and Valve, and cannot clog in action. The barrel is made of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure on the stand, the legs of which fold together, and may be carried with ease by one man to tank or pond.

	£.	s.	d.
Stand and Pump, with screwed tail pipe, fitted with strong brass union for suction pipe	2	15	0
If fitted with barrel of planished copper	3	4	0
Stand and Pump, with plain tail pipe, for tying on suction pipe	2	9	0
2-inch patent rubber and canvas flexible suction pipe, on wires, either 10, 12, or 15 ft., per foot	0	2	2

May be obtained of any Ironmonger or Plumber in town of country, at the above prices, or of the Patentees and Manufacturers, J. Warner & Sons, 8, Crescent, Jewin St., London, E.C.

GUTTA PERCHA TUBING FOR WATERING GARDENS.

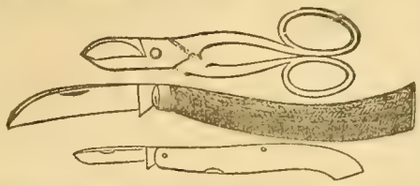
THE GUTTA PERCHA COMPANY have the pleasure to acknowledge the receipt of the following

Testimonial from Mr. J. FARRAH, *Gr. to* BOSWELL MIDDLETON JALLAND, Esq., *of Holderness House, near Hull.*

"I have had 400 feet of your Gutta Percha Tubing, in lengths of 100 feet each, with union joint, in use for the last 12 months for watering these gardens, and I find it to answer better than anything I have ever yet tried. The pressure of the water is very considerable, but this has not the slightest effect on the tubing. I consider this tubing to be a most valuable invention for Gardeners, inasmuch as it enables us to water our gardens in about one-half the time, and with one-half the labour required."

Manufactured by the Gutta Percha Company, Patentees, 18, Wharf Road, City Road, London, E.C., and sold by their Wholesale Dealers in town and country.

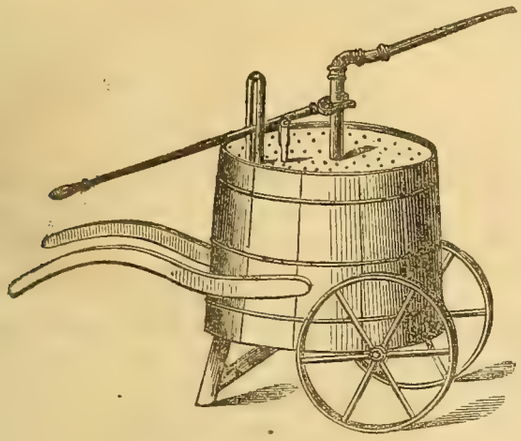
PAXTON WORKS, SHEFFIELD, ESTABLISHED 1738.



TAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.—Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

DEANE & COMPANY'S

HORTICULTURAL TOOLS.



GARDEN ENGINES, Galvanized Iron Prices 55s., 63s., 105s., 120s.
Ditto, Wood, 84s,, 105s, 130s.
Flower Stands, 4s. 6d. each.
Cast Iron Ornamental ditto, to hold 7 Vases, 27s.
Deane's Mowing Machines, with Boyd's Patented Improvements, £4 17s. 6d; £6 6s. 0d., £6 17s. 6d., £7 7s. 0d.
Green House Syringes, 8s., 10s., 18s. 6d
Garden Rollers, £1 14s. 6d., £2., £2 12s. £3 3s., £3 18s., £4 13s., £5 12s., £7 10s.
Garden Stools, 4s. 6d.
Garden Chairs, from 30s.
Boyd's Self-adjusting Scythe, 10s. 6d.
Wire Work, 18in. 4d. per yard run.

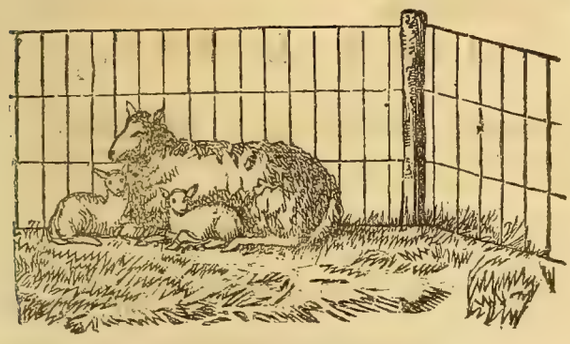
Every Implement for Garden use on the lowest Terms.

DEANES :—Opening to the Monument, London Bridge.

GREENING & COMPANY'S

PATENT WIRE FENCES.

PATRONISED BY HIS ROYAL HIGHNESS THE PRINCE CONSORT.



No. 7 B VARIETY.—PATENT SHEEP-FOLDING FENCE.

SPECIFICATION.—Height 3 feet; four horizontal bars of strong, tough, pliable fencing wire, intersected by vertical bars of lighter wire, woven firmly on at regular intervals of 4 inches.

9d. per lineal yard.

From "Report of the Judges" on the Exhibition and Trial of Implements at the Salisbury Meeting, 1857. Royal Agricultural Society of England.

"The Iron Wire Sheep-fold Fence of Messrs. GREENING was cheap and excellent. It can be very easily fixed, and was well coated with a bright and durable-looking varnish." (High commendations were awarded.)

G. & Co.'s NEW ILLUSTRATED CATALOGUE is now ready. It contains descriptions of the above, and other IRON and WIRE FENCES for PARKS, FARMS, GARDENS, GAME PRESERVES, POULTRY COURTS, &c., also of IRON GATES, IRON HURDLES, &c.
Post free on application.

GREENING & Co., Victoria Iron and Wire Works, 81, Oxford Street, Manchester.

ST. PANCRAS IRON WORKS,

OLD ST. PANCRAS ROAD, N.W.

IRON HURDLES, FENCING, AND GATES.

THE PROPRIETORS OF THE ST. PANCRAS IRON WORKS, OLD ST. PANCRAS ROAD, LONDON, WERE AWARDED THE

SILVER MEDAL of the Royal Agricultural Society for their IRON HURDLES & GATES,

which, by their peculiar construction, are more than twice as strong and durable as those in ordinary use.

Lists per post on application. Gates from 30*s.* to 500*l.*

The Hurdles can be seen in process of Manufacture at the Works.

GAME WIRE NETTING.

Professor Varnell's Enamelled and Wrought-iron Stable Fittings.

These Patent Mangers and Stable Fittings obtained the Commendation and the Silver Medal of the Royal Agricultural Society of England and the Royal Agricultural Society of Ireland, are adopted by the Royal Veterinary College, and Professor Spooner of that Institution states that they should be used by all who value the health and comfort of their horses. They can be had plain, galvanised, or enamelled.

A Show Room is devoted entirely to every description of Stable Furniture, and full-sized stalls and loose boxes are erected for inspection at St. Pancras Iron Works.

ADDRESS—THE MANAGERS,

ST. PANCRAS IRON WORKS, OLD ST. PANCRAS ROAD, LONDON, N.W.,

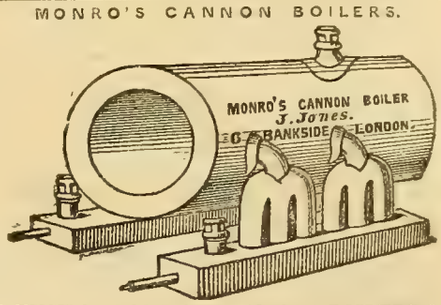
OPPOSITE OLD ST. PANCRAS CHURCH.

JOHN WARNER AND SONS, Crescent Jewin St., London, E.C.—GALVANISED IRON TUB GARDEN ENGINE, with WARNER'S Registered Spreader, is strongly recommended, for durability and low price, viz., 10 gallons, 2*l.* 15*s.*; 16 gallons, 3*l.* 15*s.*; 24 gallons, 5*l.*; or in strong oak tub, 14 gallons, 5*l.* 10*s.*; 24 gallons, 6*l.* 18*s.* May be obtained of any Ironmonger or Plumber in town or country, or of the patentees and Manufacturers; as also Machinery of all kinds for raising Water from any depth to any height by Steam, Horse, or Manual Power. Prices sent on application.



Syringes of various constructions and sizes from 9*s.* upwards. Metallic String from 10*d.* to 1*s.* 2*d.* per lb.

MONRO'S CANNON BOILERS.



MUCH has of late been said about BOILERS for Heating by Hot Water, but these Boilers have now proved themselves to be the best at present invented. They are adapted for heating every description of building, and are made of various sizes. The Price of the

24-inch Cast Iron is	..	..	.. £5 10*s.* 0*d.*	each
24-inch Wrought ditto	..	..	.. 6 10 0	,,
36-inch Cast ditto	..	..	.. 8 0 0	,,
36-inch Wrought ditto	..	..	.. 8 10 0	,,

References to Gentlemen and Nurserymen where these Boilers are now at work. The Cannon Boilers are now kept in stock, and are to be had only of J. JONES, 6, Bankside. Also, every description of Saddle and Cylinder Boilers. Hot Water Pipes and Connections at prices lower than those of any other house in London. Estimates for Hot-water Apparatus erected complete in any part of the country, and an Illustrated Catalogue on application to J. JONES, 6, Bankside, Southwark, London, E.S.

GREENHOUSES.

HENRY FREEMAN, HOTHOUSE BUILDER and HOT-WATER APPARATUS MANUFACTURER, Triangle, Hackney, N.E. Established 20 years. Good substantially built GREENHOUSES, fixed in any part of the kingdom, for cash, 42 feet long by 13 feet, 90*l.*; 21 feet by 13 feet, 50*l.*; 12½ feet by 10 feet, 30*l.* A first-rate CONSERVATORY, 30 feet by 18 feet, 130*l.* A large assortment kept. Estimates for Heating, or any branch in Wood or Iron or Park Fencing.

HORTICULTURAL BUILDINGS AND HEATING BY HOT WATER.

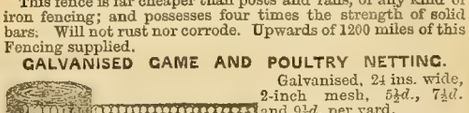
JOHN R. PEILL, 17, New Park St., Southwark, S.E, Manufacturer of every description of Buildings for Horticultural purposes, and Inventor of the Improved Conical Boiler for heating the same, is prepared to undertake works of any magnitude, and refers among others to the celebrated range of FORCING HOUSES at HER MAJESTY'S GARDENS, FROGMORE, and at SIR ROBERT PEEL'S, DRAYTON MANOR, constructed under the superintendence of his Manager, MR. JOHN JONES; and also to his BOILERS fixed at the CRYSTAL PALACE, the ROYAL BOTANIC GARDENS, REGENT'S PARK, and KEW, and at several hundreds of the Nobility's seats, Public Establishments, and Manufactories in London and the provinces. J. R. P. also manufactures every description of Iron Roofs, Iron Houses, and Iron Fencing, plain and ornamental. Strong Iron Hurdles for Sheep (6 ft. long, 3 ft. high, with 5 bars), 4*s.* 3*d.* each; ditto for cattle, 4*s.* 9*d.* each. Prices and other particulars forwarded on receipt of one postage stamp.

PRICES REDUCED.

H. J. MORTON AND CO., Galvanised Iron Works, 2, Basinghall Buildings, Leeds.

GALVANISED IRON ROOFING for Farm Buildings and other Roofs; the cheapest, most durable, and neatest Roofing in use; also Spouting at 10½*d.* per yard.

WIRE STRAND CABLE FENCING



(formed of Twisted Wires like a rope or cable), the strongest cheapest, and neatest fence in use, will resist the largest cattle and will not bend or get out of form by trespassing upon or over. Price, with five lines of the Galvanised Strand, iron main posts, and pronged Standards, 1*s.* 2½*d.* per yard.

This fence is far cheaper than posts and rails, or any kind of iron fencing; and possesses four times the strength of solid bars. Will not rust nor corrode. Upwards of 1200 miles of this Fencing supplied.

GALVANISED GAME AND POULTRY NETTING.



Galvanised, 24 ins. wide, 2-inch mesh, 5½*d.*, 7½*d.* and 9½*d.* per yard.
Galvanised, 24 ins. wide, 3-inch mesh, 4*d.*, 5*d.*, and 7*d.* per yard. The Netting made any width, and with openings of any size.

GALVANISED IRON CHAIN CAMP STOOLS & CHAIRS, POULTRY FOUNTAINS & FEEDERS, PRONGED DAHLIA RODS AND ROSE STAKES, &c.
Strong CATTLE HURDLES from 2*s.* per yard.

PATENT IMPROVED GAS WORKS,

of all sizes for the use of Private Houses, Mansions, Railway Stations, Mills, Collieries, Mines, Villages, &c. Works from 10 to 500 lights estimated for. The works can be entrusted to an ordinary labourer.—Apply to

HENRY J. MORTON & Co. 2, Basinghall Buildings, Leeds

CUTHILL'S STRAWBERRY PLANTS will be sent out on and after August 15.

CUTHILL'S EARLY BLACK PRINCE, 5s.; selected, 7s. 6d. per 100.

CUTHILL'S PRINCESS ROYAL OF ENGLAND.—Good size, fine colour, Pine-apple flavour, great bearer, very hardy, good forcer. Per 100, 7s. 6d.; selected, 10s.

CUTHILL'S PRINCE OF WALES.—Good size, rich colour, cone shape, tremendous bearer, first rate for table and preserving. It is earlier and later than Elton on account of its numerous trusses, 7s. 6d. per 100; selected, 10s.

Dr. Lindley told J. C. that he never could depend upon having a Strawberry until he had his breed.

From Charles Hillhouse, Esq.—"Your 100 baskets of Strawberries have given great satisfaction.—June 30."

Best Mushroom Spawn.

CUTHILL'S Pamphlet on the Potato, with 20 more Articles, on the Strawberry, Asparagus, Sea Kale, &c., 2s.

CUTHILL on Market Gardening round London, &c., 1s. 6d.

CUTHILL on the Cultivation of the Mushroom, Killing of Woodlice, &c., 1s.

CUTHILL on the better Cultivation of the Vine, 1s.

Vegetable Meeting Paper gratis.

Post-Office Orders to be made payable to JAMES CUTHILL, Camberwell, London, S.

CINERARIA, HERBACEOUS CALCEOLARIA, AND HALF SHRUBBY DITTO SEED.—These have been saved from Turner's most beautiful varieties; in 1s. and 2s. 6d. packets. Primula and Hollyhock, from the newest and handsomest varieties, 1s. per packet. Agents for F. & A. Smith's splendid Cineraria, in 1s. 6d., 2s. 6d., and 5s. packets; also agents for Dobson & Son's splendid Calceolaria, in 1s. 6d., 2s. 6d., 3s. 6d., & 5s. packets.—Catalogues of the newest Flower Seeds, and newest Dutch and Cape Bulbs, sent post-paid.—BUTLER & MCCULLOCH, Seedsmen, Covent Garden Market, W.C.

BUCKLAND SWEETWATER GRAPE.

MESSRS. IVERY AND SON, of Dorking and Reigate Nurseries, feel great pleasure in introducing this fine early WHITE GRAPE, and beg to intimate that they will commence sending out Plants on October 3, in strict rotation, as the orders are received. Price 21s. and 31s. 6d. each.

It received the Premium offered by the Pomological Society for the best Seedling Grape not having a Muscat flavour, Sept. 9, 1858; also an Extra Prize at Crystal Palace Exhibition, Sept. 8 and 9, 1858; and it is recommended by many Gardeners who have seen it growing and tasted the fruit. For the information of those who have not seen this Grape, J. I. & SON beg to say that they have issued a Circular containing the various periodical reports, and also the names of the Gardeners by whom it is recommended, which they will be pleased to forward on application.—Dorking Nursery, Aug. 13.

TRIFOLIUM INCARNATUM, 3d. to 4d. per lb.; with hints on its successful cultivation, showing how 3 tons per acre of the most nutritive hay may be secured, the advantages of sowing it where broad Clover is thin, and its superiority to Tares as green food.

PAGE AND TOOGOOD having secured a large breadth of prime quality, offer it at the above low rate for cash.

New Turnip Seed, per lb...	0s. 6d.	Italian Rye-grass, per bush., 5s. to	7s. 0d.
New Rape, do... ..	0 4	Mustard, per lb., 4d. to	0 5

Calceolaria and Cineraria, in packets of 2s. 6d. and 1s. each, saved from one of the finest collections in Europe.

Seeds for exportation to all parts of the world.

PAGE & TOOGOOD, Seed Growers and Merchants, Oxford Street; and Above Bar, Southampton.

NEW HYBRID ACHIMENES.

MILNE, ARNOTT, AND CO. have the pleasure to announce that they will send out on and after the 1st of August the following set of EIGHT NEW HYBRID ACHIMENES, selected from a collection in their possession raised by Mr. Breeze, the well known hybridiser, and of whom M., A., and Co. purchased the entire stock.

Adonis	Mars	Erecta multiflora
Comet	Aurora	
Delicata	Denton Beauty	Mazeppa

These beautiful novelties, are remarkable not only as a successful instance of hybridising, but for strikingly distinct characteristics of foliage, flowers, and habit. In some the flower spikes rise nearly two feet in height, others remain quite dwarf.

The foliage of all is remarkably handsome, in some instances of a rich velvety green marked with deep brown and black, along the course of the ribs and nervures, with single leaves of very large size. The flowers are of the most brilliant and delicate tints, broken with numberless minute markings, and suffused and spotted with almost every shade of crimson, rose, lilac, orange, scarlet, and white. At a time when plants with ornamental foliage are so much and so deservedly in request, the introduction of these striking novelties will, we feel assured, be highly appreciated, especially as they possess flowers of singular beauty and produce them in the greatest possible profusion. As Autumnal and Winter blooming Plants they will be invaluable. Price 7s. 6d. each, or the eight varieties for 2l. 2s. The usual discount to the Trade.

MILNE, ARNOTT, & Co., Wandsworth Road, London, S.

REIGATE SILVER SAND.—Best quality for Florists, 16s. per ton; less quantities, 1s. 6d. per bushel, delivered to any London wharf or railway. Sacks for sand, 1s. 6d. each, or on hire 6d. each (five hold a ton).

JOHN KENNARD, Purveyor to her Majesty, Swan Place, Old Kent Road, London, S.E.

TO PIG AND POULTRY FEEDERS.

RICE SWEEPINGS FOR CHICKENS, 8s. per cwt., in 1½ cwt. bags. SCREENED RICE, 11s. per cwt., in 1½ cwt. bags. RICE MEAL, 6s. 6d. to 8s. 6d. per cwt. OILCAKE, 10l. 10s. to 11l. 10s. per ton only. DOG BISCUIT, 14s. per cwt.—Sold for cash only by W. & R. JUPP, 6, Cross Lane, St. Mary-at-Hill, Eastcheap, City, E.C.

HORTICULTURAL VALUATIONS

MR. ALFRED CHANDLER (of the late firm of Chandler & Sons, Vauxhall), begs to inform his friends that he is at liberty to undertake the valuation of Collections of Plants, Nursery Stock, Horticultural Buildings, &c.

Mr. A. C. is also open to engagements as Censor at Horticultural Exhibitions, in which capacity he has had long and extensive experience.—28, Priory Road, Wandsworth Road, S.

NURSERYMEN supplied with the best GENUINE TOBACCO PAPER at 4d. per cwt.; any less than ½ cwt., 10d. per lb.—Address, TOM BRYANT, Messrs. Jackson & Sons, Lady Lane, Leeds.

KEATING'S PERSIAN INSECT DESTROYING POWDER.

POULTRY, DOGS, AND PLANTS are effectually freed from Fleas, and all other Vermin with which they are infested, by the above Powder, which is quite harmless to animal life. The Farmer, the Gardener, or the Sportsman, will therefore find it invaluable. Bugs, Cockroaches, Beetles, Moths in Furs, and every other species of Insect are also instantly destroyed. In packets post free, for 14, or treble size for 36 postage stamps, by THOMAS KEATING, Chemist, 79, St. Paul's Churchyard, London, E.C. Take notice each genuine packet bears the above name and address. See "THE FIELD," Oct. 2d and 9th, pp. 263, 283, and 294.

NEW STRAWBERRY, "OSCAR."

CHARLES TURNER,

HAVING purchased the entire stock of this fine Strawberry, is prepared to execute orders for the same at 42s. per 100. The plants are very strong, and will produce a fine crop of Fruit next season.

"Fruit large, colour shining dark red, flesh firm, flavour superior, remarkably sweet, with a brisk aroma; it was considered a valuable variety."—Fruit Committee of the Horticultural Society, July 5, 1858.

"'Oscar' is certainly the best flavoured of the large kinds, and being a great cropper, must soon find a place in every garden."—*Gardeners' Chronicle*, July 6, 1859.

"This fruit is very large, solid, firm, and juicy, flavour very rich and fine when quite ripe. Particular notice was taken of its firm and solid qualities."—Pomological Society, June 23, 1859.

"Oscar" received the Prize given for the best Seedling Strawberry by the Pomological Society, June 23, 1859.

It also received the First Prize for the best Dish of Strawberries at Nottingham, June 30.

"Oscar" is strongly recommended. It will be found one of the best for early forcing, a great cropper, and fine strong grower.

A Coloured Plate, by Andrews, may be had free by post for 12 postage stamps.

C. TURNER can also supply fine plants of the best older kinds. In addition to many Noblemen and Gentlemen, Market Gardeners and the Trade, the following most successful Fruit Growers have ordered plants of "Oscar:"—

Aiton, Mr., the Gardens, Enville Hall, by Stourbridge
Bailey, Mr. Thomas, Shardiloes Gardens, Amersham
Bailey, Mr. H., Nuneham Park, Oxon
Bousie, Mr., Stoke Park Gardens
Beale, Mr. T., Walton Wood Hall Gardens, Ware
Brown, Mr. J., Wilton House Gardens, Salisbury
Barron, Mr. W., Elvaston Castle Gardens, Derby
Constantine, Mr. H., Hillingdon Court Gardens
Dodds, Mr., the Gardens of Col. Baker, Salisbury
Dodds, Mr. Geo., Cooper's Hill Gardens, Englefield Green
Drewitt, Mr. J., Denbies, Dorking
Dawkins, Mr., the Gardens of the Countess Dowager of Craven, Hampstead Marshall, by Newbury
Dawson, Mr., Panshanger, Hertford
Duncan, Mr., the Gardens, Basing Park, Alton, Hants
Elsworthy, Mr., the Gardens of R. J. Gilman, Esq., Bishopstoke
Edmonds, Mr., the Gardens, Chiswick House, Middlesex, W.
Forsyth, Mr., Gunnersbury Park Gardens, Acton, W.
Frost, Mr., Preston Hall Gardens, Maidstone
Hardie, Mr., the Gardens of the Most Noble the Marquis of Northampton, Castle Ashby, Northampton
Hill, Mr., Keele Hall Gardens
Ingram, Mr., the Royal Gardens, Frogmore
Ingram, Mr., the Gardens of J. J. Blandy, Esq., Reading
Judd, Mr., Althorp Park Gardens, Northampton
Knight, Mr., the Gardens of H.R.H. the Duchess of Kent, Frogmore
Lawrence, Mr., Farnham Castle Gardens
Little, Mr., the Gardens of A. Darby, Esq., Stoke
Malleson, Mr., the Royal Gardens, Claremont
Parsons, Mr., Danesbury Park Gardens, Welwyn
Peel, Mr., the Gardens of H. Bevan, Esq., Cambridge House, Twickenham, S.W.
Rutland, Mr., the Gardens of Capt. Peploe, Garnston Castle, Hereford
Spencer, Mr., Bowood Gardens, Calne
Snow, Mr., Wrest Park, Ampthill
Scott, Mr. A., the Gardens, Leigh Park, Havant, Hants
Shearer, Mr. A., the Gardens of the Most Noble the Marquis of Tweedale, Yester House, Haddingtonshire
Sharpe, Mr., Eglinton Gardens, Irvine, N.B.
Taylor, Mr., the Gardens of C. A. Hanbury, Esq., Willenhall, East Barnet, N.
Thompson, Mr., Stanstead Park Gardens
Tillyard, Mr. G., the Gardens of Viscount Eversley, Heckfield
Whiting, Mr. J. B., the Deepdene
Widdowson, Mr., Rickmansworth
Wyness, Mr. G., the Gardens of G. Keith, Esq., Usan, N.B.
Ward, Mr., the Gardens of James Morrell, Esq., Headington Hill, Oxford
Williamson, Mr., the Palace Gardens, Ripon

THE ROYAL NURSERIES, SLOUGH.

NEW AND BEAUTIFUL PLANTS.

MESSRS. VEITCH & SON,

OF THE

ROYAL EXOTIC NURSERIES, EXETER AND CHELSEA,

HAVE much pleasure in offering for the first time the following Novelties, in the selection of which they have been guided solely by the determination of submitting only such Plants as are of general usefulness and sterling merit.

PLANTS ARE NOW READY FOR DELIVERY.

CHAMÆBATES FOLIOLOSA (Bentham).

This most beautiful hardy evergreen shrub, sent by Mr. W. Lobb from California, is of a dense compact habit, with most delicately divided Fern-like foliage, almost resembling the Cheilanthes elegans. The flowers, which are white, are produced in great abundance. It has been exhibited during the present season at the Crystal Palace and Royal Botanic Society's Exhibitions, at both of which it has received prizes as a new hardy evergreen. It will certainly prove a great acquisition amongst hardy evergreen shrubs. Good established plants in pots, 15s. and 21s. each, according to size.

PENTSTEMON JAFFRAYANUM (Hooker).

This very lovely hardy half shrubby herbaceous plant was also sent from California by Mr. W. Lobb. It grows so compact and bushy, and produces its beautiful flowers, which are a clear bright blue with pink throat, so abundantly and continuously, that it will doubtless prove a most valuable plant for bedding; even as a single bush in the open border it is exceedingly striking and attractive. It was exhibited at the Royal Botanic Society's Show on July 6, and was awarded the First Prize for new and rare plants. It is figured by Sir Wm. Hooker in "Curtis's Botanical Magazine" for April, 1858. Strong established plants, 7s. 6d. each.

POTHOS ARGYRÆA (Lindley).

This very striking variegated plant, which was found and sent us by Mr. Thomas Lobb, from Borneo, is QUITE A GEM, of remarkably neat and compact habit, and almost rivalling in beauty some of the Anæctochili. The leaves, which are obliquely ovate in shape, are of a rich green, blotched with silvery white, with an irregular band of the latter colour running along their central ribs. It has been shown at the various Metropolitan Exhibitions during the present season, at all of which it has received prizes, and been much admired. It is adapted either for pot or basket culture, and requires the temperature of a stove, where it prefers a shady position. Strong established plants, 10s. 6d., 15s., and 21s. each, according to size.

PTERIS ARGYRÆA (Moore).

This is undoubtedly one of the greatest acquisitions to our now justly popular collections of Ferns. It is of noble aspect and free growth, perfectly distinct and novel in its character; the pinnæ on every frond, as well as their branches, having a broad central stripe of glistening silver, which in contrast with the bright green produces a most charming effect. It may justly be called the VARIEGATED FERN. It was exhibited at the Royal Botanic Gardens on July 6, and before the Horticultural Society's newly-appointed Floral Committee on July 7, and on both occasions received the highest prize given to such novelties, and was universally admired. Established plants, 31s. 6d. each.

COTONEASTER BUXIFOLIA, of Wallich (TRUE).

This perfectly hardy evergreen shrub is from the Neilgherry Hills, from whence it was sent us by Mr. Thomas Lobb. It was originally described and figured by Dr. Wight, in his "Icones Plantarum." It produces its white flowers most abundantly, is of a dwarf compact habit, and is an interesting pretty shrub. Strong plants, 5s. each.

LYGODIUM POLYSTACHYUM (Wallich).

This beautiful Fern was sent us by Mr. Thomas Lobb from Central India. In general appearance and beauty of habit it much resembles some of the lovely Gleichenias. The fronds are branched, with a downy upper surface, and when cultivated to sufficient size, it will make a fine exhibition plant Young plants, 31s. 6d. each; larger ditto, 42s. each.

SELAGINELLA ATROVIRIDIS (Spring)

This is a fine species of dwarf habit, introduced from Borneo through Mr. Thomas Lobb. The branches of the repeatedly forked stems are broad and well defined, and have a most distinct and novel appearance. It is certainly one of the finest yet introduced of the dichotomous-branched section. Price 10s. 6d. each.

SELAGINELLA LOBBI.

A most beautiful and distinct species, sent by Mr. Thomas Lobb from Borneo, partaking of the habit of S. inæqualifolia, but having the rich lustrous metallic hue of S. cæsia. It is remarkable for the Fern-like character of its branches, and no collection of these charming plants should be without this lovely addition. Price 15s. each.

SPRAGUEA UMBELLATA.

This is a very distinct and pretty hardy annual, sent by Mr. Thomas Lobb from California. It is at this time in great beauty at the Exeter Nursery, raised from seed sown in the open ground last autumn, having stood without any protection through last winter. It is also well adapted for pot culture, the habit is very dwarf and spreading, resembling that of Calandrinia grandiflora. The flowers, which may be compared to an Amaranthus, are of a beautifully shaded pink, with purple stamens. Seeds of this plant will be supplied in the autumn, and in the mean time a few spring-raised plants, in small pots, can be had, at 2s. 6d. each.

The usual allowance to the Trade, to whom special terms will be furnished when required in quantity.

CALCEOLARIA, CINERARIA,

AND

PRIMULA SINENSIS FIMBRIATA,

Of first quality, in seed packets, 2*s.* 6*d.* each.

SPERGULA PILIFERA,

The admirable substitute for Grass in forming Lawns, &c., REQUIRING NO MOWING. Seed packets, 6*d.*, 2*s.* 6*d.*, & 5*s.*

E. G. HENDERSON & SON, Wellington Nursery, St. John's Wood, London, N.W.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY LIMITED supply every requisite for the Farm and the Garden.
Registered Offices, Union Road, Plymouth.

J. CARTER AND CO.'S Select LIST OF CHOICE FLOWER SEEDS FOR PRESENT SOWING, will be found on page 603 of *Gardeners' Chronicle* of July 16.

238, HIGH HOLBORN,
London, W. C.

CARTER'S CHAMPION CUCUMBER surpasses Sion House and Lord Kenyon's Favourite for winter and early spring use. Smooth, dark green, straight, and prolific; average length, 1 foot. Price per packet, 1*s.*

J. C. & Co. do not hold themselves responsible for the genuineness of the above unless obtained direct from
238, High Holborn, London, W.C.

CALCEOLARIA, 1*s.*, 2*s.* 6*d.*, 5*s.*
CINERARIA, 1*s.*, 2*s.* 6*d.*, 5*s.*
PRIMULA SINENSIS FIMBRIATA, 1*s.*, 2*s* 6*d.*, 5*s.*
} All the same quality.

JAMES CARTER AND CO. beg leave to offer Seeds of the above of *this year's harvesting*, saved from SEVERAL UNRIVALLED COLLECTIONS, and they can with confidence recommend them as being of first-rate quality, both for form, colour, and variety.—JAMES CARTER & Co., Seedsmen, 238, High Holborn, London, W.C.

NEW SEEDS.

TRIFOLIUM INCARNATUM
ITALIAN RYE-GRASS
NATURAL GRASS SEEDS FOR PERMANENT PASTURE LAWNS, &c.

PETER LAWSON AND SON, the QUEEN'S SEEDSMEN, &c., are prepared to supply all kinds of SEEDS for AUTUMN SOWING of the best quality.
27, Great George Street, Westminster, S.W.

NEW HYBRID RHODODENDRONS.

ISAAC DAVIES, LARKFIELD NURSERY, Wavertree, near Liverpool, begs respectfully to draw the attention of the admirers of Winter and Early Spring Blooming Plants to the undermentioned handsome and novel HYBRID RHODODENDRONS, which were raised by him five years ago from R. atrovirens, hybridised with ciliatum, and which have proved perfectly hardy, having been grown two years in the open ground without being in the smallest degree injured by frost. The Plants form beautiful bushes, with dark green leaves, about the size of the Myrtle; in the open ground the flowers, which are produced in great abundance, expand about the end of March, and are as large as a moderate-sized Indian Azalea, and of the colours given below. These Plants will be found invaluable for forcing, from the fact that they may be got in flower at any time desired in the winter months, merely by placing them in a greenhouse or cold frame. The flowers last more than three weeks after expansion, and from the peculiar odour of its foliage, which it inherits from the mother parent, not a green fly will live upon it. A plant in flower was sent to London, where it was seen by Messrs. H. Low & Co., Waterer & Godfrey, and other leading Nurserymen, from whom I received very flattering opinions of its merits, which are sanctioned by the Certificates of that distinguished Rhododendron grower and raiser, Mr. George Cunningham, and Mr. James Grant, who saw the entire stock in bloom, of which the following are correct copies:—

"Oak Vale Nursery, Old Swan, near Liverpool,
"March 12, 1859.

"Dear Sir,—You wish to have my opinion of your Hybrid Rhododendron, raised between atrovirens and ciliatum, and which you call Precox. I have much pleasure in saying that I think it a handsome and successful cross, showing both parents very distinctly; its compact habit of growth, and its blooming so abundantly at this season of the year will make it an attractive acquisition to our early flowering plants, whether for the open ground or the conservatory.

"I am, dear Sir, yours faithfully,
"Mr. Isaac Davies. "GEORGE CUNNINGHAM."

"Olive Mount, Wavertree, March 10, 1859.

"Dear Sir,—I consider your Rhododendron Precox and its varieties the most novel and handsome hardy hybrids that have been raised for many years. They will be invaluable as Forcing Plants for winter blooming, and the most attractive early spring Flowers out of doors.—I am, dear Sir, yours respectfully, "JAMES GRANT, Gr. to A. S. Gladstone, Esq.
"Mr. Isaac Davies."

Well-established Small Plants, on own roots, will be ready for delivery early in September next, at the prices given below, under the following names:—

	s.	*d.*
RHODODENDRON PRECOX, rosy lilac	10	6
,, ROSEUM, pale rose	15	0
,, SUPERBUM, rose, shaded with pink	15	0
,, RUBRUM, deep pink	21	0

The Trade will be allowed one plant over with every three taken of the same variety. A few larger plants of all except rubrum can be supplied at proportionately higher prices.

A Drawing, by Mr. James Andrews, of the variety superbum, which differs very little from the others except in colour, may be seen at the Nurseries of Messrs. H. Low & Co., Upper Clapton, N.E.; Waterer & Godfrey, Knap Hill, Woking; E. G. Henderson & Son, St. John's Wood, N.W.; Rollisson & Sons, Tooting; William Wood & Son, Maresfield; Fisher, Holmes, & Co., Sheffield, and at the Nurseries of all extensive Rhododendron growers.

A CATALOGUE of all the best proved kinds of RHODODENDRONS and HARDY HEATHS is now ready and may be had on application.

SEEDS FOR PRESENT SOWING.

ROYAL BERKSHIRE SEED ESTABLISHMENT.

SEEDS DIRECT FROM THE GROWERS THE MOST CERTAIN MEANS OF PREVENTING DISAPPOINTMENT.

TRIFOLIUM INCARNATUM,
SIX WEEKS' TURNIP, | GRASS SEEDS,
MUSTARD SEED, | RAPE SEED,
COW CABBAGE, | EARLY CABBAGE,
CINERARIA, CALCEOLARIA, AND PRIMULA.

SUTTON & SONS have a good stock of New Seeds of the above kinds which they are now sending out at very moderate prices, as see Priced List. Carriage-free to all parts, and 5 per cent. allowed for cash payment.
Address, SUTTON & SONS, Seed Growers, Reading, Berks.

SPLENDID NEW VARIEGATED FERN,
PTERIS ARGYRÆA (MOORE).

JAMES VEITCH AND SON have peculiar satisfaction in calling attention to the above-named most striking novelty, which is undoubtedly one of the greatest acquisitions of recent introduction to our now justly popular collections of Ferns.

It is of *noble aspect* and free growth, perfectly distinct and novel in its character, the pinnæ on every frond as well as their branches having a broad central stripe of glistening silver, which, in contrast with the bright green, produces a most charming effect. It may justly be called

THE VARIEGATED FERN.

It was exhibited at the Royal Botanic Garden on July 6, and before the Horticultural Society's newly appointed Floral Committee on July 7, and in both cases received the highest Prizes given to such novelties, and was universally admired.

Established Plants, 31*s.* 6*d.* each.
The usual allowance to the Trade.
Royal Exotic Nurseries, Exeter and Chelsea.—August 13.

The Gardeners' Chronicle.

SATURDAY, AUGUST 13, 1859.

It is not a little remarkable that a part of the economy of vegetation which is to cultivators of far more importance than any other should usually meet with the least attention. Infinite pains are bestowed on the stem, the leaves, the flowers, the fruit of a plant. These parts are the objects of the most minute care; they are washed and fumigated, sunned and shaded, damped and dried, kept close and ventilated, cooled and heated, in a multitude of ways. Their structure is studied, their symptoms are watched, and what books may say about them is carefully read. No man indeed thinks himself a gardener without possessing what is, in his own opinion, a competent knowledge of the nature of what appears above ground. Not that all who imagine themselves well up in this kind of knowledge really are so; it is too often much the contrary; but they certainly do what they think necessary to acquire such knowledge.

These parts are above ground; they are seen by everybody, at all times and under all circumstances. If they become ill the evil is visible. The stem cankers, the leaf blisters, the flower drops or refuses to appear, the fruit shrivels, or cracks or rots upon its stalk. They are facts visible to the most unobservant. So visible indeed that eyes travel no further. A Vine leaf is blistered; the blistering is ascribed to the leaf. The Camellia flower falls off; it is the flower that is in fault. A Peach tree casts its young fruit without stoning; it is a disease in the fruit that produces the mischief. The Vine berries shank, or remain colourless or crack; who looks beyond the berries? A forest tree dies at the extremities; it is something in the air that makes it stagheaded. A Cherry tree is ulcerated, and gum oozes from the sores in its stem; it is the stem that wants a doctor. Such ideas are prevalent among the majority of gardeners as well as amateurs. Nothing can be seen beyond the edge of the well in which such ideas are content to stagnate. It is not imagined that there is something at the bottom of the well itself, which is of far more importance than what is seen above.

The world should look downwards as well as upwards.

The first great cause of all the evils that plants are heirs to is least understood. It is not seen, and therefore its existence is unsuspected. If half the study that has been given to the parts of a plant that live above ground had been bestowed upon what is under ground, cultivation would make greater progress and horticultural misfortunes would very sensibly diminish. It is on the root that attention should be fixed, and upon the innumerable accidents to which it is subject from its peculiar manner of life. Great gardeners are of course aware of this, at least to a certain extent; but are all their neighbours? and do they themselves always appreciate the full importance of the fact? This we think may well be doubted. At all events it may be asserted, without fear of any contradiction deserving notice, that botanists, to whom cultivators ought to look for their guidance, have so little studied the nature of this all-important organ, that the physiology of the root still remains to be written.

How do roots grow? what is their structure and what the limits to its variation? how do they act? what conduces to their health? and what to their disease? All these are very large questions, each demanding a separate inquiry, and to this day quite imperfectly answered. Nor is a reply to be given by the microscopist alone, or the physiologist alone, or the chemist alone, still less by the cultivator alone. A really good history of the root will only be prepared when all these classes of observers shall combine, or be themselves combined in one person.

Nothing more strongly confirms the justice of the observation just made, however little it may be complimentary to science, than the appearance of two memoirs that have lately proceeded independently from an English and a French source. Professor HENFREY, on the one hand, has commenced a paper on the structure of roots in the *Journal of the Royal Agricultural Society*, and Messrs. GARREAU and BRAUWERS have a memoir on the manner of growth of rootlets, just published in the *Annales des Sciences*. Attention having been thus awakened to the subject, it is to be hoped that at last it will be examined to some practical purpose in all its bearings. One thing seems to have been already made out by these careful observers, namely, that the growing point of a young root is always protected from injury by a natural guard.

It has long been known that in certain plants the end of the roots is covered by a kind of cap or hood, within which the process of growth is carried on. Of this the common Duckweed offers a familiar example, which any one may see with the aid of a pocket lens. Another, on a far larger scale, is to be found at the end of the stout aerial roots of the Screw Pine (*Pandanus*), in which it looks like a great brown cup. It now appears that the structure in question is general, not exceptional. Mr. HENFREY finds that "the growing point of a root is not at its absolute extremity, which is covered by a cap-shaped or hood-like portion of epidermis of its own, continuous likewise behind with the cambial structure. This cap-like sheath of the point of the root may be compared with the head of an arrow, forming a firm body, which can be pushed forward by the growing force behind, to penetrate through the resisting soil. This cap is subject to destruction and decomposition by external agencies, and is less distinctly seen in roots growing in earth than in those of aquatic plants. In all cases it is constantly undergoing renewal by cell-development at the back-part; and when it remains undissolved, as in many water-plants, it becomes very large; when it undergoes decomposition in proportion as it is renewed behind, it presents an irregular ragged appearance, which probably gave rise to the idea of a spongy structure at the ends of the rootlets."

In like manner Messrs. GARREAU and BRAUWERS find that the ends of roots undergo a process of exfoliation, the rapidity of which depends upon the idiosyncrasy of the species and the temperature and moisture to which it is exposed. This exfoliation is connected with the formation of new tissue in the midst of a viscous matter, beneath skins or hoods of epidermis which are eventually thrown off.

We cannot, on the present occasion, point out the practical value of this apparently small fact, but we shall seize the first opportunity of doing so.

NOW that HARDY FRUITS are becoming common in our markets and the results of a most remarkable season are about to be realised, some account of the prices they fetch may not be uninteresting. After some sharp frosts last November we had no winter to speak of. December, January, February, and the greater part of March were unusually mild, and fruit prospects were most promising till the end of the last named month, when it will be

remembered that severe frosts, accompanied by a snowstorm, greatly diminished our expectations. Apricots, then about the size of Nuts, were killed in many places, even although protected; Peaches were partly set and suffered more or less, and the blossoms of Plums and Pears were in many instances killed. In short, many regarded the fruit crop as entirely ruined. Matters are, however, not quite so bad as was anticipated; but that our hardy fruits suffered to a serious extent from the frosts which occurred on the 30th and 31st of March and during part of April, there can be no reasonable doubt.

As prices of fruit not less than of other goods convey a pretty accurate idea of the abundance or scarcity of the supply, we have prepared the following tabular statement, by which the prices obtained in Covent Garden market in the first week in August this season may be compared with those of the same week in the years indicated, beginning with 1841.

	1841.	1845.	1850.	1855.	1859.
	s. d.	s. d.	s. d.	s. d.	s. d.
Apples, per doz.	3 0	2 0	2 0	3 0	3 0
,, per half sieve ..	6 0	7 0	4 0	5 0	5 0
Pears, per doz.	4 0	6 0	3 0	4 0	6 0
,, per half sieve ..	6 0	10 0	8 0	7 0	12 0
Plums, per punnet	3 0	3 6	2 0	1 6	2 6
,, per half sieve ..	5 0	5 0	4 0	3 6	8 0
Cherries (Morello), per lb. ..	4 0	5 0	3 0	2 0	4 0
Currants, Black, p. half sieve	6 0	7 0	6 0	6 0	7 0
,, Red do.	5 0	5 0	5 0	5 0	6 0
,, White do.	4 0	5 0	5 0	5 0	6 0
Gooseberries, per half sieve	5 0	5 0	3 0	4 0	5 0
Raspberries, per lb.	0 4	0 6	0 4	0 3	0 9
Apricots, per doz.	3 0	2 6	2 6	3 0	4 0

From the above it will be seen that with few exceptions prices range higher than those of any of the years with which they are compared, and that they agree best with those of 1845, the spring of which was very severe. The inference therefore is clear, even if we had no other data to go by, that fruit this season is scarce. That is however the case to a greater extent than the above return indicates; for in addition to that of home growth we have weekly importations from Portugal, Spain, and France, all of which tend to keep down prices. Apples come from Lisbon large and fine, and generally higher coloured than fruit of English growth. Greengage Plums are also largely supplied from France, and we have some foreign Pears, but the latter are not good. The varieties in season now are Jargonelles, Beurré d'Amanlis, and Williams's Bon Chrétien; and of Apples Kerry Pippin, Early Julian, Quarrenden, and Nonesuch. The famous Newtown Pippin, which was wont to make its appearance in the market soon after this time, now seldom arrives until about Christmas. Earlier than that there is little demand for it.

We may add that an ordinary sieve contains about 5 pecks, and a Currant sieve 2½ pecks. A punnet is a round flat basket that holds from 12 to 18 good-sized Plums.

THE EUGENE APPERT ROSE.

It will doubtless be remembered that in recording the last National Rose Show in London, very favourable mention was made by us of this undoubted novelty. We are happy to find our opinion confirmed by the greatest authority among Roses, "S. R. H.," who thus speaks of it in the last number of the "Florist."

"Now, what must have been the feelings of a bashful young Rose suddenly introduced into such an august society? Young ladies at their first ball, young gentlemen in their first tailed coat, may form some feeble conjecture—feeble, because they have had some previous knowledge of the world; but in the case to which I refer there existed no such experience. No, it is a fact that Master Eugene Appert had actually never left the nursery until his worthy guardian, Mr. Standish, introduced him, with many a kind word of praise and encouragement, into the midst of this dazzling scene, this glorious assemblage des Beautés. Well might he petition for that place in an obscure corner of the room, from which he never stirred throughout the day, blushing vividly in his nervous excitement, and longing but not daring to speak to those lovely ladies in white close to him, resting gracefully upon their mossy couch, after their long journey from pleasant Devon.

"And who shall attempt to describe his painful state of trepidation, when, wishing that, if it were possible, he might sink into his tube of zinc, and be for ever hidden, he saw the censors draw near to scrutinise? Or who, on the other hand, shall essay to tell of all his pride and ecstacy, when kindly words of recognition and of praise were spoken pleasantly to his listening ear, when he heard the judges say that they knew his papa, the celebrated Géant des Batailles: that they were intimately acquainted with his dear old French master, M. Victor Trouillard, and had recently seen his near relations, his sisters Alice Leroy, Rebecca, and Stephanie Beauharnais; his brothers Patrizzi, François Arago and François Premier, and his uncle, Doctor Bretonneau. How must his delight have culminated and overflowed, when they expressed their positive opinion that he would prove himself 'a better man than his father;' declared him to be 'a decided addition to the Rosarium,' and finally inscribed upon a card above him, 'much admired and approved by the censors.'

"Eugene Appert (to leave off metaphor) is a very beautiful new Rose, raised by M. Victor Trouillard, and having much of the gorgeous colouring which enriches the flower of that name. To those who saw the three blooms of Victor Trouillard, in the collection of Mr. Cant of Colchester, at the National Rose Show, this resemblance will sound as no mean compliment: but we may, I think, indulge in still higher eulogy, and assert, that both in arrangement of its petals, in the beauty of its foliage, and the robust healthfulness of its vigorous growth, the Rose Eugene Appert is superior to Victor Trouillard. This combination of strength and beauty is to be especially commended at a time when so many of our new Roses are sadly defective in constitution—like dolls, beautiful in face, but with nothing to support their bodies of bran but those thin, distorted ricketty legs, which cannot be induced to stand at any price. But Eugene Appert is hale as handsome, not glowing with that hectic flush which foretells a rapid decline, but with the enduring bloom of perfect health—health which keeps the flowers beautiful for some days after they have been severed from the tree, and this makes the Rose especially valuable to those who grow for exhibition."

CULTIVATION OF THE STRAWBERRY IN N. AMERICA.

There are but two distinct systems of cultivation—the one may be called the hilling, and the other the bedding system. In both systems, so far as garden culture is concerned, the deepest and warmest soil it affords should be selected, and the plants set out in rows 12 to 15 inches wide, and a foot apart in the row, with a narrow walk between every third and fourth, or fourth and fifth row.

In the hilling system the beds thus formed are kept perfectly clear of weeds, and all runners from the plants are cut off as soon as they start.

Under this course of treatment the plants, instead of overrunning the bed, form large branched or multiplied crowns, from which, in its season, the fruit is produced —finest and most abundantly in the first full-bearing year, afterward gradually declining, until in four or five years, at most, the beds must be replaced by others. An annual top-dressing of compost is applied after the crop is gathered, being lightly dug in with the spade-fork.

After the spring hoeing of such beds they are carefully mulched by laying straw, or litter, or tan, or Moss between the rows, so that the fruit, when bent down by its own weight or from dashing rains, will not become dirty and unfit for use. For this purpose a coat of cut straw, such as is commonly fed to horses, &c., will be found excellent and easily applied.

In the bedding system less labour and care are required, provided they be given at the proper time. The beds should be annually renewed in the following manner:—At the ends of the rows, when first planted, set a small Locust, or Chesnut, or Cedar stick, thrust into the ground to the depth of a foot or more. If your bed is planted in early spring, or even at any time before the middle of June, and well tended, being hoed often and carefully till they begin to run, and afterward hand-weeded if requisite, and all runners that would spread themselves into the paths cut off or turned in, the whole surface of the bed will be covered before winter with strong young plants; the crowns of the parent plant, instead of branching immediately around itself, as in the hilling system, will have spread and planted themselves at a distance in independent positions. In the following spring the bed will yield its crop in season, and the mat of leaf-growth upon it will keep the fruit clean.

As soon as the crop is gathered, begin on one side and find by your mark-sticks where the old rows stand, and stretch a line exactly midway between the first two of them from end to end of the bed; then, with a spade or Grass-edger, cut along each side of the line so stretched, at 2 inches distance from it, proceeding thus until you have gone over the bed, dividing it into four strips of about 11 inches width, in which the old plant rows stand, and three strips of 4 inches, occupied exclusively by young plants. If, on looking at it, you think you would prefer to have five rows in your new bed rather than three, though the latter is generally preferable, make another cut along just outside of each old outside row, and you will have a narrow rim of young plants standing on each side of your bed.

If you wish plants for enlarged plantings you may pare off with your spade an inch or two deep all the wide intervals, and can choose out the young plants for resetting as you may desire, or the plants on the wide spaces, instead of being pared off, may be dug under if they are not needed for use, thus retaining them in the bed as specific manure for their successors, adding compost also in the process. If pared off, fill up the spaces with leaf-mould or compost, and either dig them with the spade-fork or hook them over deeply with a Potato-hook; then let the narrow strips of young plants be well hoed and perfectly cleaned from weeds and Grass, and you will leave the whole bed as clean and loose as when it was just planted, but with a better stock of plants, and these undisturbed and ready to grow right on. Place your mark-sticks at the centre of the ends of your new rows, and keep the bed clean as before until the runners cover it again preparatory to your next crop; and so alternate from year to year, manuring with compost, &c., as may be needful, at the annual renewal of the bed.

This mode, though it may at first appear complicated, is really a simple and efficient process for securing a clean and, with proper precautions, a full cropping Strawberry bed at a small expense of labour.

Dress your bed repeatedly through the summer and fall with leached ashes and liquid manure. Give it a very light winter covering of straw or evergreen. Let it have at least one liberal application of liquid manure at the opening of spring; and if drought occur while the plants are in blossom or fruit, water them often and heavily to such a degree as will prevent their becoming sensible of want of moisture.

Upon beds so treated the fruit will prove to be almost uniformly fine; plants seldom yield fruit equalling, and never surpassing, the product of their second year, and by this system every bearing plant in your bed comes within this class.

In large operations for marketing the Strawberry crop is sometimes brought into the system of farm rotation upon this alternating or renewal principle. New acres are planted every spring, at from 2 to 3 feet distance each way, the land being well manured and furrowed as for corn, and the plants set at the crossing; they are kept clean with the cultivator, or with the plough and corn harrow, and a little hoeing until they begin to run. Before winter they cover the ground; and as soon as the crop is marketed in the following spring, the whole patch is ploughed under, and a fall crop of vegetables planted on the land. If the plantings are made in the fall, which is undesirable, the patch runs over to the spring of the third year for its main crop. *Weston's American Home Garden.*

NORTH AMERICAN SCALE INSECTS AND THEIR ENEMY.

[We extract the following interesting account from Dr. Asa Fitch's valuable Entomological Report to the State Agricultural Society of New York. Although the particular species of Aspidiotus or "Scale" insect mentioned is not known in this country, nevertheless the facts connected with it will certainly be read with both pleasure and profit.]

In those sections of our country where it is not common as a native of the forests there is scarcely any tree which is more esteemed for ornamenting the grounds around a dwelling than the white Pine. Especially is it a favourite, and strenuous attempts are making to cultivate it, about houses upon the prairies of the west; its tall growth and perennial foliage adapting it so well for a shelter from the winds of winter which sweep over those vast plains with such piercing severity; whilst by many of the residents there it is further prized as having been associated with the scenes of their early life, and thus reviving pleasant remembrances of their childhood's home.

But when it is transplanted the Pine appears to be much more subject to the attacks of insects than when it is growing spontaneously. At least we meet with some kinds of these depredators upon cultivated Pines, which we have never been able to discover upon these trees when growing wild in our forests. One of these, a species of coccus infesting the bark, and named the Pine blight, was described in my first Report. We come now to treat of another insect of the same family Coccidæ, which fixes itself upon the leaves, exhausting them of their juices and thus causing them to perish and fall, and the ends of the limbs to die when thus defoliated. These insects pertain to the genus Aspidiotus. No species of this genus has hitherto been discovered infesting any tree of the Pine or Fir family. I infer this to be different, therefore, from anything which has been as yet described, and accordingly name it the Pine-leaf scale insect, Aspidiotus Pinifolii. In size and shape these scales bear a marked resemblance to those of the Apple-bark louse (A. conchiformis) (see *Gard. Chron.* for 1843, p. 745), except that they are not curved as those are. Thus their form is like that of a muscle shell (Mytilus) rather than that of an oyster. Their colour moreover distinguishes them from any of the other kinds of scale insects which are known to me, it being pure white, with a small pale yellow spot upon the pointed end, which spot is readily discerned by the naked eye.

The leaves of the Pine are three-sided or shaped like a prism, and it is along one of the sides of these leaves that the scales are mostly placed, a few scattering ones, however, frequently being stationed on one of the other sides. In the specimens sent me they are crowded as closely as they can stow themselves, and frequently one scale overlaps the end of the next one. They are arranged lengthwise in a row, extending the whole length of the leaf, their width being just equal to that of the leaf. The small end in some is towards the base, in others towards the apex of the leaf.

When examined with a magnifier, those scales which are fully grown appear externally to be composed of three distinct scales, representing seemingly the head, thorax, and abdomen of the living insect—each being of an oval form with rounded ends, and overlapping each other like the tiles of a roof. The largest of these three segments is of a pure white colour, and of a somewhat waxy lustre, resembling in its appearance a small oblong drop of spermaceti tallow. Numerous parallel curved lines are sometimes perceptible across its surface. Overlapping the end of this is a pale dull yellow scale, a third or fourth of its size, and having a raised line along its middle. To this succeeds another, half the size of the preceding, this third segment being subhyaline, yellowish, and obtusely striated transversely. Beneath, this scale is white its whole

length, without any indication of those divisions which appear upon its upper side. It is the tenth of an inch in length. Specimens but half grown are interspersed with the others, and all the scales on some of the leaves are of this small size. These show a raised line or slightly elevated keel along the middle of the white portion. Other specimens still are merely minute oval dull yellow scales, without any whiteness at the end.

The scales which we have now described are the relics of the dead bodies of the female insects, forming a shield for covering and protecting their eggs. At the time the specimens before me were gathered the eggs had not become developed. Consequently on elevating one and another of these scales with the point of a needle, nothing is found beneath them except a small shapeless mass of dried black matter, the remains of the viscera of the insect. But at any time during the winter season the little cavity under these scales will undoubtedly be found filled with minute round eggs. And the transformations of this species will be similar to those narrated of the Apple-bark louse.

It is evident that an insect of the pernicious character of the one under consideration, when so abundant as this appears to have been upon the Pines from which the specimens before me were gathered, would soon cause the leaves to perish and the trees to die, if permitted to proceed unchecked in its career. But fortunately Nature has in this, as in most other analogous instances, provided means for restraining these creatures from becoming unduly numerous. A minute worm which feeds upon the eggs of the Apple-bark louse was noticed in our account of that species. Another insect, a species of lady-bird, or Coccinella, common throughout the United States, devours both the Apple-bark lice and those of this species. I have repeatedly met with this Coccinella upon Apple trees, but had not ascertained which particular kind of vermin it was in pursuit of upon those trees. For authentic information upon this interesting topic we are indebted to Mr. Kennicott, who has observed the larvæ of this lady-bird preying with tiger-like ferocity upon the Apple-bark lice, and who met with the same larvæ and also the pupæ and perfect insects upon the Pines on which the scale insects of which we are speaking occurred. Specimens of the insects and their pupæ which he sent me, enable me to present an account of the preparatory states of this species. The habits of the group of insects to which this belongs were narrated in my last report. The lice upon which this species feeds are so exceedingly minute that a large number of them will no more than suffice it for a single meal; and therefore, in the course of its life, each individual probably slaughters and devours such a multitude as can scarcely be computed. They thus render us a service of great value, and it is to be hoped that no one will fall into the enormous mistake of supposing that these lady-birds breed the lice among which they are found, and therefore undertake to exterminate them, as was once done where a similar species occurred upon Currant bushes.

In allusion to its habits this species may be named the Bark-louse Lady-bird. It pertains to the genus Chilocorus of the family Coccinellidæ and order Coleoptera. It was noticed more than a century ago by the Swedish naturalist Kalm, when travelling through this country, who supposed it to be identical with the European C. bipustulata. It was afterwards for a long time confounded with C. Cacti, Linn., a Mexican species closely related to it, which feeds upon the Cochineal insect (Coccus Cacti). We accordingly find it entered under this name in Dr. Harris's "Catalogue of the Insects of Massachusetts." Mr. Say corrected this error in an article in the "Boston Journal of Natural History" (vol. i., p. 202), published in 1835, in which he thus speaks of this subject: — "C. Cacti, Fabr. This species occurs abundantly in Mexico; it certainly resembles very closely the stigma, Nobis, so common in this country, and the renipustulata, Mull., of Europe; but it is more than twice the size of either of those insects, and may also be distinguished from the former by the superior magnitude of the rufous spot, of which the form is transversely oval, whilst that of the stigma is orbicular." Two years after this this same species was named bivulnerus in the third edition of "Dejean's Catalogue," and in 1851 Mulsant (Coleopt. Trimer. Securip., p. 460) published a description of it under this latter name, which is also the name under which it is entered in Dr. Melsheimer's Catalogue (p. 130) published by the Smithsonian Institution. Although the name stigma is but incidentally given by Mr. Say in the extract above quoted, it still is a published name, accompanied with such a description as makes it perfectly clear to what species this name is applied. This is all that is requisite, in my view, to establish Mr. Say's claim in the premises. In how many instances have authors bestowed names accompanied with no other description than a mere statement of one or two points in which the species designated differed from another known species. I consequently regard the correct scientific designation of this insect to be Chilocorus stigma.

The larvæ are of a dull white colour, with black shining heads, black legs and six rows of long black thorn-like spines running the whole length of the body, one spine of each of the rows arising from each segment. The spines are branched, sending off numerous small slender sharp points on every side. Covered thus formidably with prickles, it is probable that these little alligator-like animals are never devoured by birds, and are able to pursue their useful labours incessantly and without molestation from enemies.

At almost every step when studying this department of the works of Nature, we are meeting with phenomena which excite our astonishment and admiration. These lady-birds are destined to remain dormant and motionless in their pupa state, for a period of about two weeks, in the middle of summer, when all Nature around them is full of life and activity. We should expect they would at this time select some obscure retreat where they would not be apt to be noticed and devoured by birds or annoyed by any other creature.

We have already observed that the leaves of the Pine which are infested by the scale insect perish and fall, and that the twigs thus denuded become withered and dry. We should suppose that these dead leafless twigs, where it will be so conspicuously exposed, would be especially avoided by the lady-bird when seeking a place to repose during its pupa state. But, to our surprise, we find these insects at this time all crowding together upon the ends of these naked twigs. And they here fix themselves by their tails, and become motionless pupæ, retaining around them the prickly skins of their larva state. The appearance which they now present is truly remarkable, the twig thus covered bearing the most perfect resemblance to a stem covered with burrs or thorny seeds, like the ripened spikes of the Hound's Tongue (Cynoglossum officinale), or some more prickly plant. No bird will be disposed to approach anything having such a *noli-me tangere* aspect. And how curious it is that the scale insect by killing the leaves and making the twigs bare should be adapting them for the abode of its mortal foe. With such a discriminating eye has the Author of Nature planned the economy of these useful little creatures, making it on the one hand their especial work to destroy a pernicious family of insects, and on the other hand shielding them from being destroyed in their turn. They would thus appear to be under the special protection of Providence, and it is remarkable that long ago, in a superstitious age, and when the habits of this tribe of insects could have been but vaguely if at all known, they were regarded in this same light, and in different countries, and are supposed to have thus obtained in France the name of "God's cows" and "The Virgin's cattle," and in England "Our Lady's birds," and children were incited to regard them with kindness and leave them at liberty by chanting to them to "fly away home, your house is on fire, your children will burn."

In this family, as stated in my last Report, the pupæ remain partly enveloped in the prickly skin of the larvæ. In some species, however, the larva skin is thrown entirely off, as I stated it to be in the 15-spotted or Apple-tree lady-bird; and I observe Mr. Westwood (Introduction, vol. i., p. 396) describes the C. bipustulata as throwing off its skin in the same manner. In the species now under consideration the pupa appears from the empty skins to be almost entirely enveloped in the skin of the larva, with the rows of spines and their prickles protecting it in every direction, and the head and legs of the larva retaining their natural form, the latter being on the side towards the twig from which the pupa is suspended. The empty pupa skin is glassy and of a dull yellow colour with blackish clouds. It remains partly protruded from the lower or anterior part of the cleft in the back of the larva skin.

In its perfect state the Bark-louse lady-bird is 0.17 or 0.20 long, very convex, and almost hemispheric, highly polished and shining, covered with numerous very minute punctures. It is black, with a round red or reddish yellow spot on the middle of each wing-cover. Beneath it is black with the abdomen red or yellow, its basal segment black except upon each side.

It is probable that the scale insect of the Pine can be destroyed by thoroughly showering the leaves with a solution of soap or with tobacco-water immediately after the young larvæ have hatched from the eggs. Could we be so fortunate as to devise some mode by which we could multiply the lady-bird at pleasure, it would undoubtedly be the most effectual mode of ridding the Pine and also the Apple tree of these minute vermin, which are so pernicious to them.

NEW GARDEN FERNS.

37. Pteris (pyrophylla) argyræa, *T. Moore.*

Fronds pedately bipinnatifid, *i.e.*, pinnate with pinnatifid pinnæ, the basal ones producing one or two posterior branches; segments bluntly linear falcate (1½ in. long), spinulose on the rachides above, the terminal ones caudate; bases of the segments grayish-white, forming a broad central silvery stripe down the centre of the pinnæ.

This is the first well-marked variegated Fern which has been introduced to cultivation; and it is at once remarkable for its beauty, and for its entirely distinct and novel character, the latter resulting from the presence of a broad well-defined and conspicuous band or stripe of silvery gray along the centre of every pinna, and occupying both sides of the central rib or rachis. The plant, which is of vigorous habit, producing fronds 5 feet or more in length, forms an erect short caudex, from which the fronds arch out on all sides, as in several allied Pteridæ — quadriaurita, nemoralis, felosma, and others, from all which, however, it differs, not only in its marking, which is its chief peculiarity, but in the larger size of its parts; in this latter respect it very much resembles P. longipinnula, but the basal segments of the pinnæ are not diminished as in that species. On the whole we think there can be little doubt it belongs to those enlarged forms related to P. quadriaurita, which some botanists unite with that species, but which probably may be regarded as fairly distinct, and to which the name pyrophylla seems to belong. The stipes is long and stout, scaly towards the base. The fronds are ovate in outline, about 2½ feet wide at the top of the stipes, and about the same in length from the upper end of the stipes to their point; they are pedately bipinnatifid, the two lowermost pairs of pinnæ usually, and sometimes the third also having a posterior basal branch, which is pinnatifid like the pinnæ themselves; the elongated segments, which are slightly wavy, are obtusely linear-falcate in outline, and their costa or midrib bears little spinulose points along its upper side. The pinnæ and branches terminate in a longish narrow tail-like point. The chief beauty of this entirely new Fern consists in its marking, but it is at the same time elegant both in form and habit. The base of each segment for a quarter of an inch or more of its length is silvery, the colour at this part on each side blending with the midrib into a broad longitudinal white stripe, about ¼ of an inch in breadth. It was rewarded among the new ornamental plants at the Royal Botanic Society's recent exhibition, and received a First Class Certificate of Merit from the Floral Committee of the Horticultural Society. It is a native of Central India, and was introduced by Messrs. Veitch & Son, by whom it was exhibited.

38. Lygodium polystachyum, *Wallich.*

Primary branches in opposite pairs, ovate, sometimes with a smaller lateral basal branchlets; branches pubescent ovate, pinnato-pinnatifid, the segments of the sterile fronds obtuse oblong; fertile segments pyramidally attenuated with dorsal fructification, scarcely distinct and spike-like.

This is a very distinct-habited and elegant Fern, belonging to a genus of which the other known species are climbing plants. We are not aware if this also will ultimately attain the climbing habit of its congeners, but it hardly appears likely to do so, for the well-grown plants of Messrs. Veitch & Son, by whom it has been introduced from Moulmein, though of vigorous growth, show no tendency to assume a scandent character, the fronds rather consisting of superposed pairs of lateral branches, resembling in this mode of growth (not in form or other characters) some species of Gleichenia or Davallia aculeata. It is a very ornamental species, quite unlike all other known Lygodiums, the downy primary branches being ovate in outline, with or without a smaller lateral basal branch, and divided in a pinnate-pinnatifid manner, the ultimate lobes when sterile being oblong and obtuse. When fertile the segments are somewhat pyramidally attenuated, and prettily decorated at the back with the scarcely imbricating bracts of the fructification, these bracts or bractiform indusia being dorsal and more distinct than usual. It has been exhibited before the Royal Botanic Society and the Floral Committee of the Horticultural Society, and in both cases was rewarded for its ornamental character. Mr. Lobb found it in Moulmein at an elevation of 1000 feet, and it also occurs in Penang. *T. M.*

ATTAR OF ROSES.

Mr. Lawrence Smith, Professor of Chemistry a the University of Louisville, in a paper published in the American "Journal of Pharmacy," informs us that the attar of Roses is produced at Kisanlik, a city situated in a valley of the Balkan Mountains, about 60 miles north-west from Adrianople. The Rose cultivated in this valley, which consists of an extensive plain, shut in by elevated ridges, is a full red variety suited to the climate, and of such great fragrance as to be peculiarly adapted for the production of the oil. It is allowed to attain the height of from 4 to 6 feet, and sometimes more.

The Roses are gathered in the months of May and June; the time occupied in getting in the crops being generally about six weeks. They are gathered with the calyx at the dawn of day when the flowers are half-expanded, and the yield from each bush averages about 1½ lb. of leaves. The leaves are immediately sent to the distillers, as they cannot be advantageously kept more than a day, in consequence of their liability to fermentation, by which the oil is lost.

The Roses are placed in copper stills of about 30 gallons' capacity, in the proportion of 60 lbs. of Rose leaves to 15 gallons of water, and the still is immediately heated. One-half of the water is distilled over into several large bottles. The product is then placed in a second still, and about one-fifth passed over, on the surface of which all the oil is found to float, and is collected with a spoon.

The water remaining in the still with the leaves is strained off and added to a fresh supply of Roses, and what is distilled over with the oil is sold under the name of Rose water.

The quantity of Rose leaves required to produce one metical, or about 1½ drachm of the oil, varies, according to the weather, from 30 to 60 lbs. If the Roses open in wet weather, and flower slowly, the yield is at its maximum; but when the weather is hot and the bush blossoms vigorously, the yield diminishes, and unless the flowers are picked at an early stage they produce scarcely anything. In an experiment conducted under Mr. Smith's direction, 10,000 fresh Rose leaves produced 36 oz. of oil, at a cost of nearly 3*l.*, or about 18*s.* 10*d.* per oz.

The quantity of attar manufactured in this district is estimated at from 28,000 to 33,000 oz. per annum, but it is adulterated to more than double that quantity by the addition of Geranium oil. To such an extent is this adulteration carried, that it is next to impossible to procure the attar pure, and the oil of Geranium is

even itself sold for attar of Roses in very large quantities. The Rose is likewise cultivated for its perfume in many other parts of the world, but the produce of Kisanlik stands unrivalled, both for quantity and quality, while the Roses grown in the South of France yield scarcely any trace of oil by distillation. *Literary Gazette.*

Home Correspondence.

Golden Hamburgh Grape.—Experience enables me to state that this new seedling is quite equal to all that has been said in its favour; gardeners are therefore unquestionably under an obligation to Mr. Veitch for bringing it so prominently before the public. When its true character shall have become better known, it cannot fail to take a high position among our standard varieties. Mr. Busby informed me that it is the result of a cross between the Black Hamburgh and Stillward's Sweetwater, but independent of any such information, persons at all acquainted with the habit of these two kinds would have no difficulty in determining its parentage. The Golden Hamburgh possesses a strong vigorous habit, the leaves have less substance than those of the Black Hamburgh, and are more transparent in colour. The length of a medium-sized bunch averages from 9 to 10 inches, the width of the shoulders a little less, and it should weigh about 2 lbs. The berries are round, and when well grown, measure from 3⅜ to 3½ inches in circumference. Such is the general character of this Grape as produced at Tortworth during the present season, from a plant propagated from an eye during the spring of 1858. With the exception of the Muscat of Alexandria, we have no White Grape in which are combined so many desirable properties, the flavour being all that the most fastidious could desire—the flesh firm, juicy, and saccharine. It submits to early forcing in pots with the greatest facility, but requires a temperature of from 68° to 70° to set the berries thickly, and a rather dry atmosphere. During the present year I have ripened two successional crops in pots, one on the 24th of April, the second towards the end of June, and in each case the crop has been most satisfactory. I also observed the Golden Hamburgh exhibited at the last June show of the Stroud Horticultural Society, grown in pots by J. Biddell, Esq., Stratford Abbey, where it also produced large bunches with finely swelled berries. This therefore may be regarded as additional testimony in favour of its uniform character. My knowledge is not sufficiently extensive to enable me to state its qualities as a late Grape, but judging from the delicacy and thinness of the skin there is not resistance enough to overcome the foggy days of autumn and winter. *A. Cramb, The Gardens, Tortworth Court.*

Calceolaria Disease.—I should feel obliged if any of your correspondents could tell me the reason why my yellow Calceolarias are all dying. At first I thought the soil was at fault; but I obtained fresh plants from a nursery in large pots, which I plunged in the beds, and the result is just the same; in a short time they die off. In the evening they look in good health, next morning their leaves hang down, and before night they may be said to be dead, every part of them, root and branch. It is vexing, because it spoils the general effect of my flower beds and borders. *W. F. S.*

Pear and Cherry Tree Grub.—I have found strong lime-water a perfect cure on their first appearance for the slimy grub on Pear trees and Cherry trees. I had been for several years annoyed by the destruction of the foliage of my Pear trees by the caterpillars when I tried lime-water on the foliage, applying it with a painter's brush, and repeating its application afterwards by means of a common garden syringe. The result was a great diminution in the numbers and ravages of the insect in the first year, and its entire disappearance the following season. *W. D., Dereham.*——If your correspondent will mix some fresh slacked lime with water till it assumes the consistency of London milk, and will syringe his trees with it, he will find it kill the "slimy grub;" at least it has most effectually done so here this season. Apply the mixture in the evening, and wash it off with the engine the following morning. *D. Buchanan, Dyrham Park.*

Large Sunflower.—I beg to send you an outline sketch of a Sunflower, the exact dimensions it was on the 7th of August last. The diameter is now 16½ inches, and is beginning to diminish; on the 31st of July there were three leaves of the size represented by the white paper—they are now considerably less. The flower above referred to is in my garden at 24, Wellington Villa, Brighton. *Hy. Wright, War Department.* [The diameter of the representation of the flower sent was 15 inches; the leaf exclusive of footstalk measured 17 inches one way and 14 inches the other.]

Transplanting Evergreens in Summer.—The following is my experience in this matter. In the very hot weather of July, 1856, I set to work 10 men to remove old evergreens; viz., Yews, Junipers, Arbutus, Laurestinus, and Portugal and common Laurels. These were from 4 to 10 feet high. The plan I adopted was to make a hole first, not too deep, but sufficiently wide to allow all the roots to be laid out straight, then to prepare the shrub for removal, caring but little for the ball of earth, but getting all the small roots possible. Then move the plant into its new home, cover the roots with fine soil, tread a little to make the plant stand upright. Then fill up the hole with water as it sinks down, which it will soon do; fill in the soil all round the hole carefully as the water sinks away, never allowing it to run out, which it will do if the hole is filled up too fast. Next day tread the soil somewhat firmly, after which make a ridge all round the edge of the ball, in order, as it were, to form a dish; fill this with water three times during three successive days, then level the ridge down, covering the mud over with soil. After this no more water is required at the roots; if the weather be dry, syringe the shrubs over head three or four evenings. Nothing more will be required but to look at them now and then. The following spring they will grow away and be quite at home in their new situations. This July I have planted a young Laurel bank facing the west; the plants now look well, and there is not one dead among them. The young Laurels are treated the same as the large shrubs, except that they get no syringing. In my opinion the months of July and August are the very best for removing valuable large evergreens. Treated carefully as above they are sure to grow, and they get hold of the soil immediately, for the earth is like a hot-bed into which the young roots soon enter. I have removed deciduous trees in the summer months on dull days. Some have not grown; those that have now look well. The long branches are shortened in one half. During removal the sun causes the leaves to flag, but they soon recover. *Francis Lamb, Steward, &c., Oxburgh, Norfolk.*

Water Rat.—There have been several interesting communications in your Paper of late by Mr. Waterton, "Jael," and "B." respecting the animal called usually a water rat. It seems a pity that the group to which this belongs should continue to be classed with rats and mice, after they have been so long separated by naturalists from them, and when they so evidently differ from both. In Rev. Leonard Jenyns's "Manual of British Vertebrate Animals," and all other recent works on natural history, they are put in a genus by themselves after the true rats, under the head of Arvicola, and the three species we possess form a most natural little family. Every child that catches a "short-tailed field mouse" sees it is not a mouse at all, just as any one catching "the water rat" sees at once that it is no rat. I did not, however, mean to enlarge upon this point, but to add my mite to the contributions above mentioned. Was it really Arvicola amphibia, the water rat, which ate "B.'s" Vine roots and bark, or was it A. agrestis, the field one? I have known the latter destroy Vines several times in winter. Generally Vines are too far from water for A. amphibia to get to them. [It has now been explained that Osiers not Vines were destroyed.] Last winter A. agrestis ate two long rows of Celery in a garden at Hampstead. The gardener informed me, when I remarked upon the extraordinary appearance of his Celery, "that it was destroyed by wireworms," but upon applying a spade I found a gallery going its whole length, and all the white part eaten off by this little marauder. Both species (and the third also, the Bank Campagnol, which swarms in banks on the Continent, but is rare here) feed upon all roots and tender plants. In winter the field one often does much harm in gardens by destroying Broccoli and Cabbage plants by barking them, and in spring is very destructive to Peas. Mr. Waterton says the water one never strays from the water-side. I caught a very fine one last year three fields' length from its pond. The field Arvicola is often very destructive to young plantations. If it was not such a favourite with cats, owls, &c., which prefer it to any of its kind, we should soon be overrun by it, as it increases wonderfully. I think your correspondents will find that it is the smaller field species—the short-tailed field mouse, as it is usually called—which does the mischief generally, and that A. amphibia, the water rat, does little or no harm beyond boring through banks, in which it often becomes a sad pest. *W. D. Fox.*

Bulbiferous Yarrow.—I pulled the accompanying plant of Yarrow this afternoon, and observing at the axils of two of the leaves what appeared to me to resemble the bulblets in Lilium bulbiferum, I thought it best to send it to you before I had pulled it to pieces, lest I should first spoil the plant for further observation, and thus discover (I do not say that you will find it so) that the matter was worthy of a more practised observer than myself. If it prove to be the work of an insect, or a matter of daily occurrence, pray excuse me. I have never noticed such a thing before. *Diss, August* 5. [The axillary bodies are true bulblets. We have not before seen such a formation in either Yarrows or other Composite weeds. They do sometimes appear in the axils of the Jerusalem Artichoke.]

Elton Strawberry.—In your report of the meetings of the Pomological Society, at p. 638, this Strawberry is represented as being one of Mr. Myatt's seedlings. This is a mistake, as that useful late variety was raised by Mr. A. Knight, at Downton Castle. Mr. Myatt once sent out a Strawberry of the same class, named the "Deptford Pine," which I believe is not now much cultivated. *J. B. Whiting.* [Certainly the Elton was a seedling raised by Mr. Knight. The report was that of the Pomological Society itself.]

Dickson's Early Favourite Pea.—One of your correspondents asks, in a late Number, for information concerning the identity of the Auvergne and this Pea, but his question does not appear to have been answered. I can state that the two varieties are distinct, although much alike in quality and general characters. The pod of the Early Favourite is much less curved than that of the Auvergne; it also comes into use a few days earlier. They are both useful second-early sorts and good croppers, but not equal in quality to the Marrowfat section. *J. B. Whiting.*

Buckland Sweetwater Grape.—Allow me to inform "Preston" (see p. 656) that from the knowledge I have of the merits of this variety after two seasons' fruiting, I consider it to be a decided improvement on the old Sweetwater, and I think it a variety that should be added to every collection of good Grapes. *Jas. Drewett, Denbies, August* 10.

Molucca Balm.—Can any one inform me where I can procure seed of this Balm, a hardy annual now I believe very old-fashioned? There are two species, viz., Moluccella lævis and M. spinosa. It is wanted in order to obtain the seed vessel for skeletonising. *M. S.*

Gigantic Puffball.—There have sprung up in the garden of which I have charge some specimens of round Fungus balls, white and smooth on the surface, and of such enormous size as to astonish all who have seen them. I put a string round one, and found it over 4 feet in circumference, and it weighs nearly 11 lbs. If you care to see one pray let me know, and I will forward it to your office. *W.* [Pray do not. It is the common Bovista giganteum.]

Societies.

Horticultural: *Aug.* 10.—At a meeting of the *Fruit Committee* of this Society held this day, Mr. Edmonds in the chair, Mr. Rivers exhibited a dish of Bourdine Peaches gathered from a tree growing in a pot. This was quite different from the Late Admirable, with which what is known as the Bourdine is usually classed. The flesh of the variety shown by Mr. Rivers was delicious in flavour, very juicy, and streaked with purple next the stone. From Mr. Turner, of Slough, came a Scarlet Gem Melon, which is universally admitted to be one of the very best of Scarlet-fleshed kinds. Mr. Turner likewise sent examples of a new Runner Bean, the majority of the pods of which measured 9 inches in length; also examples of what is called the New Zealand Running Bean with which the former was contrasted and very much to the disadvantage of the latter, whose pods only measured 4 inches in length.

August 11.—The Rev. J. Dix in the chair. At a meeting of the *Floral Committee* held on this occasion, various subjects of considerable interest were produced. Among new Dahlias, the best were Lady Douglas Pennant from Mr. Keynes, a bright primrose coloured kind. The same exhibitor also had 12 beautiful blooms of William Dodds, a golden yellow sort of fine form; likewise examples of Rev. Joshua Dix, a purple variety blotched and mottled with crimson. Mr. Turner sent Mrs. Col. Vyse, a promising white ground kind strongly tipped with purple; Mr. Dodds, Sir G. Douglas, and Mr. Green, a kind called Splendid. Mr. Chater sent a Seedling Hollyhock named Alfred, which promises to become a favourite. Messrs. Veitch furnished a very curious Odontoglossum, like Bictoniense, but quite distinct, some most remarkable hybrid Cattleyas, between C. Loddigesii and granulosa, and a handsome variety of the Fern Athyrium Filix-fœmina. Messrs. Carter sent a plant of yellow Tom Thumb Nasturtium, which was considered valuable for its dwarfness and free flowering habit, and a supposed new Nigella, which proved to be one of the forms of N. hispanica. A Pelargonium named Blackheath Beauty came from Mr. Halley. It is a dwarf zonale variety, with pale salmon flowers. Mr. Laing of Twickenham also sent a promising scarlet Geranium with horseshoe leaves. Of other subjects exhibited on this occasion a full report will appear hereafter.

The following Floral Regulations have been framed for the guidance both of the Committee and of exhibitors:—1. The Floral Committee of the Horticultural Society has before it the following objects: To examine and to report upon the merits of such New Plants and Flowers, whether imported species or seedling florists' varieties, as may be submitted for that purpose. 2. These objects the Committee will carry out by holding Meetings for the examination of flowers and plants, and by publishing reports of its Transactions as speedily as possible, in the monthly "Proceedings" of the Society. 3. The necessary expenses incurred in carrying out these objects shall be defrayed from a fund provided by the Council, and placed at the free disposal of the Committee. 4. The Committee will meet at the Society's rooms (8, St. Martin's Place, Trafalgar Square, London, W.C.), on the second and fourth Thursdays in the months of April, May, June, July, August, and September, and on the second Thursday in the months of January, February, March, October, November, and December, unless otherwise appointed. The chair to be taken at 2 P.M. Extra Meetings may be held if necessary at the discretion of the Chairman and Secretary. 5. The business of the Meetings shall be transacted in the manner and order following:—1. Minutes of previous Meeting read and confirmed; 2. Letters addressed to Chairman or Secretary, including notices of motion, read; 3. Motions of which notice has been given at a previous meeting, considered; 4. New plants and flowers examined, and reported on. 6. All persons, whether Fellows of the Society or not, are invited to send their new plants and flowers for examination. A report containing an announcement of the awards made at the several Meetings, to be sent to the respective exhibitors as soon as it appears in the Society's "Proceedings." 7. All subjects for the consideration of the

Committee are to be delivered free at the place of meeting, not later than 1 P.M. on the respective meeting days; and all necessary particulars respecting them are to be forthwith communicated, in writing, to the Secretary. *Note.*—The name and post address of the exhibitor; the name of the flower if a seedling; and that of the native country if an importation, will be considered essential particulars. Exhibitors are invited to communicate such further details of the origin or introduction or peculiarities of their plants or flowers as they may think interesting for publication. 8. The merits of the subjects exhibited shall not be discussed or decided on in the presence of the owners, or interested exhibitors thereof. 9. Sufficient examples of every subject exhibited, to enable the Committee to form a fair opinion of its qualities, are to be produced. In all practicable cases, the growing plant will be required. 10. The subjects of exhibition will be entered by the Secretary in the order in which the particulars mentioned under Rule VII. are furnished to him, and they will be examined by the Committee in the same order. Each kind will have to be separately numbered; and all seeding flowers must be named, as a means of future recognition. If not named, they will be passed over. 11. Newly imported or other new species of plants, not florists' varieties, will have to be submitted to the botanical advisers of the Committee, that they may be correctly named. Exhibitors of this class of plants will greatly facilitate the operations of the Committee by forwarding, whenever practicable, previous to the day of meeting, materials for this purpose; such materials to be sent to the Society's rooms, addressed to "The Botanical Advisers of the Floral Committee." If not so done, provision must be made for this object at the time of meeting. 12. Honorary Certificates of the first class, and Commendation Cards will be awarded, at the discretion of the majority of the members present, to such of the subjects exhibited before them as may be thought deserving thereof. 13. All new plants flowered in the Society's garden are to be submitted to the Floral Committee, for its opinion on their merits. 14. All packages of plants or flowers must be delivered carriage free, and must be forwarded at the risk of the sender. The subjects, whether plants or cut flowers, will be delivered up at the close of the Meeting to the owners thereof, or to such persons as may be duly authorised to receive them. If left, it will be at the entire risk of the senders. 15. The Committee will hold the power of examining with all necessary minuteness the subjects submitted for its opinion. 16. Exhibitors of seedling florists' flowers, and others, will facilitate the working of the Committee by the production of specimens and collections of known varieties to serve as references, and for comparison with new flowers.

Royal Botanic, Regent's Park.—The 20th anniversary meeting of this society was held yesterday, Mr. David Jardine in the chair. The report from the council stated that the affairs of the society continued in the most prosperous condition. The total receipts of the year had been 12,254*l.* 14*s.* 10*d.*, and the expenditure, including 1050*l.* of the old debt paid off, 9352*l.* 7*s.* 1*d.*, leaving a balance in hand of 2902*l.* 7*s.* 9*d.* The total number of fellows elected since the last anniversary is 163; the number now on the books of fellows and members being 2277. The early spring exhibitions attempted for the first time during the past spring, and instituted for the introduction of new and rare plants, which come into flower in the early spring months, had met with the greatest success, and given general satisfaction. Although the old debt of the society was now so small as to be of no consequence, yet the council do not consider it expedient to undertake any expensive works of improvement until the whole of this debt has been extinguished. The reports from the secretary and curator stated that the gardens and conservatory had during the past year been in a higher state of cultivation than for several seasons past. The facilities afforded to students and artists had been enjoyed by 115 persons, beyond those attending the lectures of Professor Bentley and Dr. Lankester. The total number of visitors to the gardens during the past year was 155,951. The thanks of the society were voted to his Royal Highness the President, the Vice-Presidents, and other members of the council, and the auditors and executive officers of the society; and the proceedings terminated with thanks to the Chairman for his able superintendence of the business of the meeting. *Times.*

Entomological, *July* 4.—The President in the chair Mr. Jeakes exhibited a specimen of a North American species of Brenthus, lately taken flying in a garden at Camden Town, supposed to have been bred on the stem of a shrub from that country. Mr. F. Bond exhibited various Lepidoptera, taken at Freshwater in the Isle of Wight, including Setina irrozella, an apparently new species of Coleophora, Cochylis flaviciliana, &c.; also a beautiful living specimen of Calosoma sycophanti found on the coast of Freshwater a few days previous to the meeting. Mr. Shepherd exhibited specimens of Deleaster dichroa, taken near London; and Mr. A. F. Sheppard specimens of Erastria venustula taken near Loughton, in Essex. Mr. Janson exhibited Stenus opticus, a new British species from Horning Fen; and Mr. Milford a fine series of Psyche fusca, lately reared from the larva, and Carabus intricatus from the neighbourhood of Bath. Mr. Stevens exhibited various beautiful Australian Microlepidoptera collected by Mr. Diggles, and a charming species of Gastrophasia, with a drawing of its curious larva; also some splendid butterflies, just received from Mr. Wallace, taken in the island of Balchiam, near New Guinea. Mr. Gorham exhibited Anchomenus livens found near Eltham. Mr. F. Smith read some remarks on the economy of the Ichneumon—genus Pezomachus, of which he had reared specimens from the egg-nests of spiders. Mr. Waterhouse read a memoir on the British species of the genus Cis. Mr. Westwood read the description of a butterfly received, brought from New Caledonia by Mr. M'Gillivray, which he was induced to regard as a local and permanent variety of Papilio Ulysses, and to which he applied the name of P. (Ulysses) Ulyssinus. The same gentleman also exhibited a very beautiful new Spectre insect just sent from the Upper Amazon by Mr. Bateson.

Notices of Books.

A Guide to the Food Collection in the South Kensington Museum. By E. Lankester, M.D., F.R.S.

When the Potato disease had arrived at its height and every one was speculating upon the possibility of procuring a substitute for the moribund esculent, it occurred to Professor Henslow that it would be useful to show to the eye itself of what constituents the tuber really consisted. He therefore ingeniously separated the more important substances, placed them side by side, and publicly exhibited them for the first time in this country. So happy a suggestion was not destined to fall on barren ground. Dr. Lyon Playfair, who had been long occupied with investigations of the kind, was not slow to perceive the interest that would attach to an extension of the Henslovian idea by applying it to all articles of food in the great museum of South Kensington. Before quitting his office in that important institution for the chair of Chemistry in Edinburgh he had formed a very large collection of the substances constituting food, and separated their constituents from each other by chemical processes; and his successor, Dr. Lankester, following in the same path, has at last brought the exhibition of articles of food at South Kensington to such a state of completeness that he has been able to publish what is modestly called a Guide to it, but what is in reality a good scientific catalogue, although costing no more than sixpence.

"All food," he observes, "is found to be composed of the same materials or elements as the human body. The necessity of the supply of food from day to day depends on the fact that the elements of the human body are daily wasted by the processes of life. As a fire cannot *burn* without a supply of *fuel*, neither can the human body *live* without its daily supply of food."

He then proceeds to show the elements and their quantities existing in a human body weighing 154 lbs., after which he analyses all articles of food, and shows how far they are capable of contributing to the maintenance of those elements in due proportion. From water he passes to salt and minerals, then takes up the carbonaceous or heat-giving substances, following which are the nitrogenous or flesh-forming substances, the whole concluding with a description of auxiliary foods considered under the heads of *stimulants*, such as spirits; *alteratives*, such as alkaloids and acids; *narcotics*, like tobacco and opium; and finally *accessories*, including gum, gelatine, &c.

The volume consists of 96 pages, forming not only a companion to a part of the S. Kensington Museum, but a valuable guide to the reader who wishes to know the actual value of the food he consumes. It is a pity that its utility should be diminished by the absence of a good index. The letter-press also demands here and there a more careful correction.

A Guide to the Town of Berne (Longmans) is a carefully written pamphlet, describing all that is most interesting in this famous old city; and is accompanied by a good map. We extract the following rather important postscript:—

"Strangers desirous of residing at Berne will find some difficulty in procuring either houses or apartments; both are at present very scarce, and, as a matter of course, rents are exceedingly high. During the winter season, *i. e.*, from November to April or May, the proprietors of many of the hotels are willing to let suites of apartments, with kitchens, on moderate terms, and families engaging them are at liberty to provide for themselves just the same as if dwelling in their own houses. Excellent apartments may be had at the Villette Boarding House on reasonable terms. Every Tuesday and Saturday there is a well-supplied market; the one on Tuesday is more like a fair, every description of article being offered for sale, and country people attend by hundreds for the sake of business or pleasure. Provisions are not dear, as the following prices will prove:—Meat 4*d.* to 5½*d.* per lb., poultry, fowls, and ducks 2*s.* a couple; eggs 5*d.* a dozen, hares 3*s.* each; vegetables moderate in price; wild Strawberries abundant; grocery cheap; tea 3*s.* 4*d.* to 4*s.* 6*d.* per lb., sugar 6*d.* per lb., bread 1½*d.* to 2*d.* per lb.; wine at every price; beer 3*d.* per bottle. The Bernese are not remarkably hospitable to strangers; they visit a great deal among themselves; continual tea parties, *soirées dansantes*, and even card parties. The young ladies have their weekly receptions, to which they invite their friends, and even receive as well as entertain them without the assistance of papa or mamma. The aristocracy live excluded from the other classes, satisfied to mourn over their former greatness, and proud of the influence they once possessed; unlike the English nobility, they do not attempt to march with the times, but silently allow new and unknown men to take possession of every post of trust and power. It is to be hoped, for the welfare of the country, that the young generation will see the folly of this short-sighted policy, and will come forward to compete with the mass for official honours, and endeavour to regain by their talents and industry the respect and admiration of their countrymen, and so add new lustre to names which already shine bright in the page of history."

Hawker on Shooting; or Instructions to Young Sportsmen in all that relates to Guns and Shooting. By Lieut.-Colonel Hawker, edited by his son, Major Hawker. Large 8vo, pp. 548. Longmans.

The shooting season is usefully introduced by the eleventh edition of this popular work, which all young sportsmen seem to consider as indispensable as a powder flask and shot bag. Of a work so well known to the public it is needless to say more than that it treats amply of everything relating to sporting firearms, except the rifle, of which very little is said, and to dogs, dresses, punts, decoys, &c. In this new edition the only novelty consists of a chapter on breech-loaders, the topic of the day. Major Hawker seems to prefer upon the whole the contrivance by Lang, although he speaks guardedly upon the subject, as a judicious writer must do when dealing with an invention at present so little known. He also thinks that for rifles, Prince's breech-loader has some advantage over Terry's; but he does not seem to be acquainted with Westley Richards's very ingenious and simple plan.

A Guide to the Quadrupeds and Reptiles of Europe, with Descriptions of all the Species, compiled from the latest writers. By Lord Clermont. Van Voorst. Small 8vo. Pp. 277.

The noble lord has done good service by publishing this little work, which will doubtless become the travelling companion of all lovers of natural history. Struck by the absence of any decent scientific manual of those European animals called Vertebrates, excepting birds, Lord Clermont has supplied the deficiency by a careful, well arranged, well digested, well indexed series of descriptions, derived from the best authorities, of all that are found on this side the Caspian Sea and its affluents. Beginning with the Solitary Monkey of Gibraltar he proceeds to Bats, Insectivores, Carnivores, Rodents, Ruminants, Cetaceans, and Reptiles. Of each are given the principal modern names and synonyms, the description, measurement, habits of life, and geographical distribution. About 260 species in all are thus treated of.

Illustrations of the Nueva Quinologia of Pavon, with coloured plates, by W. Fitch, F.L.S., and Observations on the Barks described. By John Eliot Howard, F.L.S., &c. Part I. Folio. Reeve.

"The present work is intended to illustrate those species of Cinchona which are described in the Nueva Quinologia of the celebrated Spanish botanist Don José Pavon. The MS. thus named was left unpublished at the decease of its author, and has recently been acquired by purchase (together with a collection of more than 40 specimens of Bark accompanying the above descriptions) by the author of the present 'Illustrations.' These are designed to extend over 8 to 10 parts, and the arrangement will be given when the whole is complete. The drawings are made from original sources, found in the Royal Museum at Madrid, and in this country." In these words Mr. Howard introduces a work which promises to be second to none in the literature of medical botany. The plates are in the best style of art; and the letterpress consists of minutely elaborate descriptions of varieties and samples of those "Jesuits" or "Peruvian Barks," which have for so long a time stood at the head of the remedial agents of their class.

There is probably no medico-botanical question so greatly in need of illustration as this; and it is understood that Mr. Howard brings to its discussion very great experience in the discrimination of the "Barks" of commerce, as well as the authentic materials above alluded to.

No one who is not at once a botanist and a connoisseur in drugs can pretend to offer any critical remarks on a work of this sort. We therefore only venture to suggest that Mr. Howard's Cinchona coccinea is the same species as the C. hirsuta of the *Flora Peruviana*, as it certainly is of Lindley's *Flora Medica*.

The first Number of the third volume of Sir Wm. Hooker's valuable *Species Filicum* (Pamplin) has reached us. Another number, "to be published shortly," will complete the volume. That before us is entirely occupied by Lomaria and Blechnum, and has some excellent figures from the hand of Mr. Wm. Wilson.

We have also on our table the 10th livraison of Mr. Weddell's admirable *Chloris andina*, with figures by Riocreux, who, if possible, excels himself. This Part begins with Asclepiadeæ and ends with Polemoniaceæ.

The second Part of *Mr. Curtis's Farm Insects* (Blackie & Son) is chiefly occupied by the enemies of the Turnip crop.

Of *Le Jardin Fruitier du Muséum*, by M. Decaisne, Parts 22, 23, and 24, No. 22 is occupied by the

Princesse Royale and Sir Harry Strawberries; 23 by the Marquise, Fondante des Bois, Epargne, and Bassin Pears; 24 by Mouille Bouche (one of the sorts called Verte longue), and Jalousie Pears, and the Washington and Royale de Tours Plums. (No. 17 of this beautiful book has not reached us.)

Nature and her Agents (Pitman, a pamphlet) is a preposterous tirade against medical men, written in very bad taste.—*Once a Week*, the new and successful weekly rival of *Household Words*, is to be also published in monthly numbers. We are glad to see that science holds a place in its columns. Articles like that of Alpha on Man among the Mammoths, and Philœnus on Wine, are especially noteworthy. The latter indeed is the only common-sense examination of the question "shall the duties on French wines be reduced?" that we have seen. No one really acquainted with English habits believes that French wines would be drunk by the multitude, even if they could be had for nothing. Why, they *are* had for nothing by the guests at middle-class dinner tables, and who drinks them?

Trade Lists received. — *Messrs. Syme, Simms, & Smith's* (Glasgow) *Autumn List of Flowering Bulbs.* A useful list of the best sorts that can be recommended to buyers, accompanied by short notes upon colour, &c.

Garden Memoranda.

Royal Botanic Garden, Kew.—Our readers will be pleased to learn that Government has at last granted to this establishment what has been so long wanted in it—viz. a conservatory capable of holding the noble Araucarias, Eucalypti, Acacias, and other "hard-wooded," half-hardy plants, for which the old Orangery and other houses in which they have hitherto been accommodated are so ill adapted. What precise form this new building may take is as yet uncertain; but the ground plan for it exhibits three parallelograms, divided by two octagons, each of the latter being 50 feet in diameter. The centre parallelogram is to be 212 feet in length and 137 feet in width, and the two end ones each 112 feet in length and 62 wide. It will thus be seen that the extreme length of the building will be 536 feet. As regards position, it is to be placed in the pleasure ground, between the great Palm-house and the Pagoda, a little to the right of the vista leading to the latter. A lake several acres in extent is also in course of formation on the left side of the Sion Vista; two important new features may therefore soon be expected to be added to this highly interesting portion of this great national establishment. The ornamental trees planted here during the last few years also begin to be attractive, more especially the Conifers, all of which have thriven remarkably well. In some of the large Elm trees with which this extensive portion of the grounds is decorated, we however regret to state that we observed symptoms of decay, an evil which the unusually dry summer we have just experienced may have served to accelerate.

In the Botanic Garden itself the grounds are at present extremely gay with flowering plants, especially the little garden in front of the large Palm-house, the vases, charmingly filled with scarlet Geraniums, which surround the little lake there, and the beds along the sides of the principal walks. The arrangements in regard to bedding plants observed last season, and fully reported at p. 687 of our volume for 1858, have proved so satisfactory that with one or two trifling exceptions they have been employed again this year, and even with better effect than last. Nothing in its way could possibly be more brilliant than the dwarf scarlet Geranium called Punch, which is even preferred here to Tom Thumb. Fine beds of it may be seen at the termination of the principal walk near the lake. Other masses of Geraniums, Verbenas, Calceolarias, Roses, Fuchsias, and Mignonette are also in great perfection; and of the purplish black-leaved Perilla nankinensis we observed some charming little circular beds, which when judiciously introduced as they are here into gay floral combinations are really very effective. For edgings to beds nothing appeared to be better than variegated Balm and Cerastium tomentosum. In the herbaceous ground there is also a tolerable amount of plants in flower, and the Grass, though here and there exhibiting signs of having been greatly burnt up, has very much improved in appearance since the late rains.

Lagerstrœmia indica, a shrub of extraordinary beauty, has flowered here this season in great perfection in a cool greenhouse. Although not uncommon in collections yet it is rare that one finds this in blossom, and for the following reason: it is usually treated as a stove plant and subjected to continual excitement all the year round, when in fact it is all but hardy and wants a season of rest. It is decidedly an autumn-blooming plant and will not flower well at any other time. It should be wintered dry and cool, and started in spring, when a brisk growing heat will be of service to it. Managed in this way it may be had in blossom every year; and when in that condition its beauty is unsurpassed by that of any other greenhouse shrub whatever.

Greenhouse plants being now for the most part out of doors their places are occupied by autumn flowering and fine-foliaged plants, among which we observed two handsome specimens of the tree Ferns Dicksonia antarctica and squarrosa. In the principal Fern-house itself are some fine examples of Platyceriums, Phymatodes, Gleichenias in square wooden boxes, and other rare genera; also some interesting Trichomanes. Among the latter were muscoides, the West Indian kind called Krausii, Bancrofti, reptans, radicans, and the New Zealand reniforme. Attempts have been made to introduce living plants of this class of Ferns into this country for years, but they have hitherto failed; it however now looks as if they might succeed. These Trichomanes are all under little hand glasses, having the form of ordinary Wardian cases, shaded and surrounded with Lycopod to keep them cool and moist. They are planted in square earthenware pans, which are said to suit them better than anything else. In a cool Fern-house facing the north there is now a rich and luxuriant vegetation tastefully set off by an edging of Lycopod, which gives to the whole a green and refreshing appearance. Here we noticed the climbing Ferns Platyloma flexuosum and cordatum, and a fine plant of Neottopteris australasica, probably the parent of all other plants of the kind in this country. This plant was introduced by Cunningham from the neighbourhood of Sydney in 1825.

Among Selaginellas one called serpens possesses a singular peculiarity in regard to colour. In the morning it is as green as a toothed Lycopod, but as evening approaches it assumes a peculiar white appearance which increases until darkness, when it again becomes green. This is the only species of the genus in which shifting colours of this kind have as yet been observed.

In the succulent house a young American Aloe is about to open its blossoms. Its flower stem, with candelabra-like top, is already 18 feet in height. Agave striata has also been in blossom; and we observed, what is somewhat uncommon in a cool house like this, Passiflora racemosa cærulea in fruit, the latter being about half the size of Coe's Golden Drop Plum, and in the greatest abundance. The Brazilian Dyckia rariflora is also in flower; the latter is produced on the end of long slender stems, rich orange in colour and rather handsome. Associated with these was an example of a kind of South African Water Rush, now called Prionium Palmita, a fibre-yielding plant which it is expected may some day form an important article of commerce. Fibre produced from this, white and every way good of quality, may be seen in the Museum.

Novelties are at present chiefly confined to plants the produce of the Niger Expedition, and of most of which mention has already been made in our columns. We however noticed some new Palms from the Mauritius and small islands in its neighbourhood, which appear to be different from any at present in cultivation. Of Borassus flabelliformis there is also a thriving plant, which it is to be hoped may continue in that condition. Many years have been spent in trying to get this to succeed at Kew; but hitherto without effect. While speaking of Palms we may mention that the great Palm of India (Corypha umbraculifera) has taken 35 years to acquire a height of little more than a foot. Of roots it makes plenty, but it seems impossible to get it to form a top, while in its native country the latter often arrives at a great size; of its trunk specimens exist in the Museum measuring nearly 3 feet in diameter.

In the Palm-house, which for these last two or three years has been undergoing progressive improvement in its arrangement, some important alterations are about to be made. Many of its noble occupants have already become all but too high for the house, lofty though it is, and therefore with the view of affording more head room as well as of saving the trouble and expense of frequent shifting, the huge masses of earth in which they are growing, tubs and all, are to be "let down" into a bed of soil prepared for them below the flooring. This will involve much labour; but when once accomplished no after disturbance will be necessary. We may add, that not only are the magnificent Cycads, Palms, and Musas in the most luxuriant health, but that other kinds of vegetation which the house contains are also in excellent condition. The gigantic Ensete of Bruce, or Abyssinian Plantain tree, although little more than five years old, now measures about 30 feet in height, and at the base of the trunk its girth is 7 or 8 feet. From whatever point of view this is looked at it is really a wonderful production. Several Palms have flowered here this season—a circumstance doubtless in some degree attributable to the unusually warm summer which we have just experienced, and among them the Ensete just mentioned; it is now decaying, but young ones are pushing on to take its place. Three or four Cycads have also flowered.

Scrambling over a portion of the interior of the back wall of a house, filled chiefly with Arads and Bromeliads, is a plant of Cereus MacDonaldiæ which this season has produced between three and four dozen blossoms, creamy white in colour, and each measuring some 14 inches in diameter. So fine a variety as this therefore surely deserves to be much better known than it is. It is one of the night-flowering kinds. Some of the species of the handsome genus Pitcairnia were also in flower here, and extremely showy they were, especially P. Olfersi, whose fine spikes of crimson blossoms are unequalled in brilliancy by any of its class. The singular-looking Arad Monstera deliciosa, whose large leaves are so grotesquely holed and divided into broad straps at the edge, has again produced fruit. Of the latter a woodcut representation will be found in our Volume for last year, p. 883.

Orchids, though still in an unsatisfactory state, appear to be slowly improving, especially those on blocks and baskets. We also observed indications of amendment in the genera Cattleya, Vanda, and Aerides in pots; most of them have been moved back to a lean-to house near the herbaceous ground, which was formerly their old quarters, and in which it is thought they will succeed better than anywhere else. But we cannot say that their revival is what was expected from the present foreman.

The Victoria house, which has been found to be altogether unfitted for the Royal Water Lily from which it derives its name, has been converted into a tropical swamp filled with Caladiums, large Ferns, Dracænas, and other plants remarkable for the beauty of their foliage, and the cultivation of the Victoria itself is now and has for the last year or two been wholly confined to a comparatively small slate tank in another house. Here it grows and blooms admirably; this season it has thrown up great rimmed leaves, but as yet it has not flowered. This, however, it may be expected soon to do. A fine specimen of the Madagascar Lattice plant (Ouvirandra fenestralis) used to occupy a corner of this tank, but lately it has fallen into ill health. Its roots have, however, been examined and some new soil added, and since that has been done it appears to be pushing afresh, and to be gradually recovering. A collection of Pitcher plants in pots placed here not only adds interest but variety. On the roof are trained Cissus discolor and other handsome-leaved climbers.

A fine stick of Douglas Fir brought from Vancouver's Island, and intended for a flag-staff, has unfortunately been broken in the hoisting, owing to the bungling of the workpeople employed by the Woods and Forests. It measured 119 feet in length and 14 inches in diameter at the base.

It may not be generally known that two nurseries exist in connection with this establishment—one for supplying the public parks with Elms and Chesnuts—the other for furnishing the Botanic Garden itself with hardy trees and shrubs of an ornamental character. Both appear to be skilfully managed; in the latter especially we found the produce of the most healthy and flourishing description.

We may add, in conclusion, that the 4-inch hot-water pipes with which the large Fern-house is heated having become furred up, the incrustation has been cleared out of them by forcing water through them from a fall of 60 feet. This plan has proved effectual, and might be adopted in other places where a fall of this kind can be obtained.

Miscellaneous.

University of Edinburgh. Botanical Class—Prize List. Summer Session 1859:—I. For Herbarium collected within 20 miles of Edinburgh.—1. John Linton, Edinburgh (Silver Medal). This Herbarium contained 464 species and varieties, collected between 18th July 1858 and 18th July 1859. 2. William P. Drummond, Stirling. This Herbarium contained 282 species and varieties, collected between 18th May and 18th July 1859. II. Prize offered by Professor Simpson for Experiments on the Effects of Anæsthetic Agents on Sensitive Plants.—1. William Coldstream, Edinburgh (Silver Medal). Additional Prizes given by Professor Balfour.—2. John S. Livingston, Edinburgh; 3. Stephen James Meintjes, junior, Cape of Good Hope. III. Prize for Experiments on the Effects of Narcotic and Irritant Gases on Plants.—John S. Livingston, Edinburgh. IV. Prize given by Dr. W. A. F. Browne for an Essay on the Comparative Merits of the Linnean and Natural Systems of Classification.—1. Robert O. Cunningham, Prestonpans; 2. David Murray, Montrose. Additional Prizes given by Professor Balfour.—3. Robert Brown, Caithness; 4. William Broughton Davies, M.D., Sierra Leone. Certificate of Merit.—5. Thos. K. Renwick, Edinburgh. V. Prize given by Messrs. P. Lawson & Son for Dissections of 10 named varieties of Cultivated Oats. — 1. Archibald Hamilton, Edinburgh (Three Guineas); 2. William Coldstream, Edinburgh (One Guinea). Additional Prizes given by Professor Balfour.—3. John Drummond, Melbourne, Australia; 4. Peter White, Haddington. VI. Prize given by Messrs. P. Lawson & Son for Dissections illustrating the Structure and Germination of 10 named Species of Grasses.—John S. Livingston, Edinburgh (One Guinea and a Half); Peter White, Haddington (One Guinea and a Half), equal. Additional Prize given by Professor Balfour. — 3. John W. Brown, Glasgow. VII. For Monthly Competitive Examinations, conducted by Written Exercises in the Class Room, without the aid of Books or Notes. — Senior Division. (Number of competitors, 12; total value of answers, 246.) — Archibald Dickson, Edinburgh (value 236). Junior Division.—(Number of competitors, 58; total value of answers, 226.)—1. Kenneth M'Leod, M.A., Inverness-shire (value 206); 2. William C. M'Intosh, St. Andrews (196); 3. William Pringle Dickson, Bengal (194); 4. Thomas Brisbane, Dumfries (170); 5. David Ross, Portree, Skye (162); 6. Alexander Dewar, Kincardine-on-Forth (155). Certificates of Merit.—7. John Nairne, Perthshire (147); 8. Arthur G. Reid, Fochabers (143); 9. Colville Brown, Northumberland (141); 10. Robert B. Finlay, Edinburgh (115); 11. Robert O. Cunningham, Prestonpans (110); 12. John Wallace, Aberdeenshire (100). VIII. For a Series of Dried Specimens illustrating the Conformation and Venation of Leaves, with a Tabular View of their arrangement.—1. Colin S. Valentine, Brechin; 2. Kenneth M'Leod, M.A., Inverness-shire; 3. William James Dickson, Fifeshire. IX. For Assistance in conducting the Duties of the Class, more especially in the

Histological part of the Course.—1. R. J. B. Cunynghame, Edinburgh. Certificates of Merit.—2. S. H. Ramsbotham, Leeds; 3. Colin S. Valentine, Brechin; 4. Richard Lord, Cheshire; 5. David Murray, Montrose; 6. James Middleton, Edinburgh; 7. John Anderson, Colinsburgh; 8. Archibald Hamilton, Edinburgh; 9. James Africanus Beale Horton, Sierra Leone. X. Certificate of Merit for a Collection of Plants gathered during the Weekly Excursions.—William Sinclair, Leith.

University of Edinburgh. Botanical Class—Prize List. Prizes offered in Summer Session 1860.—I. Gold Medal for the best and approved Herbarium of Phanerogamous Plants and Ferns collected within 20 miles of Edinburgh. II. A Prize of Two Guineas is offered by Dr. W. A. F. Browne for the best and approved Essay on the Relations of Insects and Plants, illustrated by the connection of the Lepidoptera with species of Salix, Populus, Alnus, Corylus, and Urtica, in the district round Edinburgh. The Essay to be accompanied by specimens. III. A Prize will be given for the best and approved Essay on the Spontaneous Movements which take place in Plants, such as those observed in sensitive plants of various kinds, in cells, in the reproductive organs of some Cryptogams, in Oscillatoria, and in Diatoms. The author is expected to make original observations on the subject. Experiments may be conducted in the Botanic Garden. For references, see Class-Book of Botany, pages 321, 356, 493 to 500. IV. A Prize will be given for the best and approved Analysis of the British Plants in the natural order Rosaceæ, illustrated by specimens and dissections. V. A Prize will be given for the best and approved Essay on the Formation of the Placenta in Plants, mens or models. All these Essays to be sent to the illustrated by microscopic dissections, and by other speci- Botanic Garden on or before 1st July, 1860, and to be accompanied by mottoes and sealed notes as usual. VI. A Prize is offered by Dr. Gilchrist, Dumfries, for the best and approved Collection of Fossil Plants from Mid-Lothian. (To be given in on or before 1st July, 1860.) VII. A Prize will be given for Large Models illustrating the Composition of the Seed, with its coverings and contents; also the relation between the Cotyledons and the Radicle in the Embryo of Cruciferæ. (To be given in on or before 1st July, 1860.) VIII. A Book or Books of the value of Three Guineas will be given by Messrs. B. Lawson & Son for the best and approved Dissections of 10 named varieties of Cultivated Wheats. Specimens of Wheats for dissection may be had from Messrs. Lawson. IX. A similar Prize is offered by Messrs. P. Lawson & Son for Dissections illustrating the Structure and Germination of the following Grasses:—Festuca pratensis, Triticum repens, Briza media, Lolium italicum, Holcus lanatus, Bromus sterilis, Glyceria aquatica, Psamma arenaria, Aira cæspitosa, and Arrhenatherum avenaceum. These two sets of Dissections to be given in about the middle of June, 1860. It is understood that the successful collections shall be placed at the disposal of Messrs. Lawson. The specimens to be fastened on paper similar to that used in the dissections exhibited in the Museum at the Botanic Garden. Complete specimens of the Grasses to be shown along with the dissections. The Latin names and authorities to be given along with the English names. X. A Medal is offered by John M'Nab, M.D., Bunessan, near Oban, for the best and approved collection of British Marine Algæ, accompanied with remarks on their economical and medicinal properties. (To be given in at the end of June, 1860.) XI. A Prize will be given to the Pupil in the Senior Division of the Class who shall acquit himself best at the Monthly Competitive Examinations, which are to be conducted in the Class-room by means of written questions and answers, without any aid from books or notes. XII. A similar Prize will be given in the Junior Division of the Class. XIII. A Prize will be given in the Junior Division of the Class for Dissections executed during the Course. The nature of the Dissections to be intimated in May or June 1860. N.B. It is understood that the successful Essays, Models, Preparations, and Dissections (unless otherwise specified) shall be added to the public collection at the Botanic Garden.

Effects of the narcotic called Hachisch, prepared from Hemp.—Prof. Schroff, having obtained from Bucharest a form of this drug called Birmingi, said to produce laughter, gives the following account. Of this "Birmingi," Dr. Heinrich—who had fully tried most narcotics, and in my former experiments on Cannabis indica had taken several preparations of this drug without manifesting any particular susceptibility of them, but rather always served as a check if more violent effects had occurred from narcotics in other individuals when a steady excitability constantly manifested itself in him—took 10 grains at half-past 5 in the afternoon of the 6th of May, in the present year. He chewed this quantity for about an hour, during which it gradually dissolved and was swallowed; only the insoluble solid residuum, amounting to about two grains, was spit out. Irritation of the throat, eructation, and slight nausea ensued. The attempt to smoke a cigar in the open air had to be given up, on account of dryness and roughness in the throat. Dr. Heinrich took a walk in the town, and inspected the print-shops and play-bills without perceiving any change in himself. At the end of an hour and a half, that is, about 7 o'clock, he met an acquaintance, to whom he talked all kinds of nonsensical trash, and made the most foolish comparisons; from this, everything he looked at seemed to him ridiculous. This condition of excitement—in which his face and eyes got redder and redder, the subjective heat of the body considerably increased, and the feeling of facility of motion became constantly more distinct—lasted about 20 minutes. Suddenly a great degree of sadness came over him; everything was too narrow for him, he acquired a disturbed appearance, became pale; his sadness increased to a feeling of anxiety, accompanied by the sensation as if his blood was flowing in a boiling state to his head; the feeling as if his body was raised aloft, and as if he was about to fly up, was particularly characteristic. With the oppression of the chest was combined a sensation of compression and tightness in the præcordial region. His anxiety and weakness overcame him to such a degree that he was obliged to collect all the power of his will, and his companion had to seize him firmly under the arm, in order to bring him on, which was done in all haste, as he feared a new attack, and wished, if possible, first to reach a place where he could be taken care of; but in the course of three minutes, while he was still walking, the attack set in with increased violence. It was only with great difficulty he reached the Pharmacological Institute; here he immediately drank two pints of cold water, and washed his head, neck, and arms with fresh water, on which he became somewhat better. The improvement, however, lasted only about five minutes. He sat down on a chair, and unfortunately (as he observes in his Report) felt his pulse, which he found to be very small and slow, with very long intervals. He was no longer in a state to take out his watch to ascertain more exactly the frequency of his pulse, for the feeling of anxiety came over him again, and with it he traced the premonitory symptoms of a new and violent attack. He was brought into the adjoining chamber, stripped himself partly of his clothes, and gave over his things, directed what was to be done with them after his death, for he was firmly convinced that his last hour had struck, and continually cried out, "I am dying; I shall soon be undergoing dissection in the dead-room." The new attack was more violent than the former were, so that the patient retained only an imperfect degree of consciousness, and at the height of the paroxysm even this disappeared. After the fit, too, consciousness returned but imperfectly; only so much remained in his recollection that the images which rose within him constantly increased in ghastliness until they gave way to the unconscious state, and that gradually, with returning consciousness, less formidable figures appeared in their stead. Subsequently he stated that it appeared to him as if he were transported from the level surface to a hill, thence to a steep precipice, thence to a bare rock, and lastly to the ridge of a hill, with an immense abyss before him. From this time he could no longer control the current of ideas following one another with impetuous haste, and he could not avoid speaking uninterruptedly until a fresh attack came on, which quite deprived him of consciousness for some minutes. The patient recovered, and gave an account of his own sensations while under the influence of this dangerous narcotic, for which the reader is referred to the *Pharmaceutical Journal for August, p.* 127.

Latex is present in the Spiral, Reticulated, Barred, and Dotted Vessels of Plants.—Observers have hitherto looked upon latex as contained only in laticiferous vessels. Trécul, on the other hand, maintains that this fluid is found also in spiral, reticulated, barred, and dotted vessels. These vessels, according to him, elaborate the fluid, and distribute it through all parts of the plant. The latex assumes different colours; sometimes it is white or milky, at other times yellow or orange, at other times colourless. Trécul has selected plants with yellow or orange-coloured latex as subjects of experiment, such as Chelidonium majus, C. quercifolium, Agemone ochroleuca and A. grandiflora. This coloured latex is not found in all the vessels at once, nor even in all parts of the same vessels. There are great varieties in this respect. The coloured juice seems to be modified by the physiological action of the vascular tissues. The latex at certain times, as late in autumn, disappears from the spiral vessels, and becomes collected in the laticiferous vessels. Similar results were observed in plants with milky latex, as Ficus Carica, Morus alba, Euphorbia Characias, E. prunifolia, &c. He thinks that the latex is secreted by the spiral vessels and their modifications, and is afterwards received as an excretion by the laticiferous vessels. At the same time it appears that starchy matter is formed in the latter vessels, and is from them transferred into the other vessels in immediate contact with them. In Carica Papaya, he shows that small ramifications of the laticiferous vessels are prolonged to the surface of the reticulated vessels and terminate there. He is disposed to look upon the laticiferous vessels as analogous to the venous system of animals. He is confirmed in this view, by considering the place which the laticiferous vessels occupy in the midst of tissues where the greatest vital activity prevails,—the chief constituents of this juice being formed of substances little fitted for immediate assimilation, since they are carbo-hydrogen (caoutchouc), or slightly oxygenated products (resins, alkaloids, morphia, narcotine, codeine, &c.), which are produced from a sap already used for the purposes of nutrition. He thinks that thus carbo-hydrogen, and resins, and alkaloids, may be oxidated or more fully elaborated in the vessels, in order to return and take part in the production of starch, sugar, albuminous matter, and cells. These observations, he says, explain certain phenomena which have puzzled physiologists, viz., why plants absorb carbonic acid during the day and reject it during the night. There is a constant passage into the vessels, and there takes place during day and night, among other chemical reactions, a true oxidation in their interior. Plants take the oxygen of the air for the purposes of this combustion, and they reduce it to the state of carbon during day as well as night; but during the night the carbonic acid is exhaled, whilst during the day it is decomposed by the influence of light before being sent out, its carbon being fixed, and its oxygen only eliminated. The respiration of plants thus consists of two phenomena:—1. An absorption of carbonic acid during the day with the emission of oxygen. 2. An oxidation in the vessels at the expense of the oxygen of the air, with the formation of carbonic acid during the day as well as during the night, but with the exhalation of this acid during the night only, because during the day it is decomposed in passing through the leaves. Thus respiration and circulation in animals and plants have a greater analogy than is usually supposed. The laticiferous vessels represent the venous system, and the vessels properly so called the arterial system. Hence M. Trécul calls the former venous vessels, while the spiral, reticulated, barred, and dotted vessels are denominated arterial vessels. In the case of plants which have laticiferous vessels and no true vessels, it would appear that the cells take the place of the latter; and in cellular plants, having neither laticiferous nor other vessels, the cells perform the functions of both. *Edinburgh New Philosophical Journal.*

Is the Female Redbreast Migratory?—We have a notion that in Scotland the female redbreast is migratory. At least, in the vicinity of Edinburgh, we recognise her not throughout the long-enduring winter. All the individuals then about our gardens sing and fight, till, in the month of March, some strangers show themselves, but do not sing, and are immediately followed and fed by the resident males, at which time they (the supposed females) utter a low hissing note, and flutter their wings like young dependent birds. This we have often seen, and vouch for. *From the Encyclopædia Britannica—New Edition.*

Aid to Science Instruction.—The following Minute has been recently passed by the Committee of Council on education:—My Lords proceed to revise the Minutes which have been passed in the Science and Art department for the encouragement of scientific instruction among the industrial classes of this country who have already received primary education. I. All former Minutes relating to Science or Trade Schools, and Scientific class-instruction, except those referring to Navigation, Public Lectures, and the training of Teachers (as hereafter appended), are hereby cancelled, and the following regulations are substituted in their place. II. The Science and Art Department will hereafter assist the industrial classes of this country in supplying themselves with instruction in the rudiments of—1. Practical and Descriptive Geometry, with Mechanical and Machine Drawing, and Building Construction. 2. Physics. 3. Chemistry. 4. Geology and Mineralogy (applied to Mining). 5. Natural History. By augmentation grants in aid of salary to competent teachers, and by payments and prizes on successful results, and grants for apparatus, &c. III. Any School or Science Class, either existing or about to be established, and duly approved by the Science and Art Department, may apply, through its managers, for a certificated teacher, or for the certification of any teacher, in any one or more of the above named branches of Science. IV. Examinations for certificates of three grades of competency to teach any of the above-named Sciences will be held annually by the Department, in the last week of November, in the Metropolis: as follows:—Nos. 1, 2, and 5, at South Kensington; No. 3, at the Royal College of Chemistry, Oxford Street; No. 4, at the School of Mines, Jermyn Street. V. Annual Grants, in augmentation of salaries of Teachers so certified to teach in any of the above-mentioned Sciences, will be given as follows:—For the 1st Grade of Competency, 20*l.*; 2nd, 15*l.*; 3rd, 10*l.* Any teacher holding a certificate of competency to give primary instruction will receive, from the Science and Art Department, a sum equal to the augmentation grant which has been attached to such certificate, in addition to the grants above mentioned. VI. Such grants will only be made while the teacher is giving instruction in a School or Science Class for the industrial classes, approved by the Department. VII. The Department will require that suitable premises shall be found and maintained at the cost of the locality where the School or Class is held; that the names of ten students shall be entered whose fees for half a year shall have been paid in advance; and that the local managers shall guarantee, for the support of the Schools and Teachers, from fees or local funds, a sum at least equal to the grants so long as they shall be paid. If at any time neither fees of pupils nor local funds cover the requisite amount, it must be inferred that there is no demand for instruction in the above-named Sciences, in that locality, which the Government is justified in aiding; and the assistance of the Department will be withdrawn. VIII. Every School or Class having a certified teacher will be inspected and examined once a year by the Department, and Queen's prizes of an honorary kind will be awarded to successful students. IX. Payments will be made to the teacher on each first-class Queen's prize obtained by the student, 3*l.*; on each second class, 2*l.*; and on each third class, 1*l.* X. A grant towards the purchase of apparatus, fittings, diagrams, &c., of 50 per cent on

the cost of them, will continue to be afforded to Schools and Classes in Mechanics and similar Institutions.

Sale of Dried Plants, Specimens and Sections of Woods, &c.—The following, which were the property of the late Dr. Robert Brown, were sold the other day by Mr. Stevens. The prices they fetched per lot were as follows:—New Zealand plants, collected by Sir E. Home, Bart., 8*s.*; ditto, collected by Richard and Allan Cunningham, 10*s.*; ditto, from various collectors, 11*s.*; Norfolk Island, from Ferdinand Bauer, Backhouse, and others, 1*l.* 10*s.*; Congo, from C. Smith, 1*l.* 10*s.*; Equinoctial Africa, from Dickson, Wilford, Whitfield, and others, 16*s.*; Carolina, from Fraser, 5*s.*; California and North-west coast of America, collected by Douglas, 9*s.*; British Guiana and Berbice, collected by Schomburgk; and Cayenne, from Martin, 11*s.*; Extra-tropical South America, Straits of Magellan and Chili, from Capt. King, 3*l.* 5*s.*; Java, collected by Horsfield, Blume and Lobb, 2*l.* 6*s.*; West Indies, from Caley and others, 13*s.*; Brazil, from various collectors, 11*s.*; ditto, collected by Gardner, 1*l.* 1*s.*; South Sea Islands, from Barclay, Sir E. Home, and others, 2*l.*; Germany, from Hoppe and Hornschuch, 10*s.*; China, from Fortune and others, 6*s.*; South America, collected by Cuming, 5*l.*; Peru and Chili, collected by Bridges, 10*s.*; Russia, from the Imperial Academy of Sciences, Professor Fischer and others, 2*l.* 2*s.*; Canada, &c., collected by Pursh, 6*s.*; Philippine Islands, collected by Cuming, 14*s.*; South Africa, collected by Wallich, 2*l.* 10*s.*; Ferns, chiefly from various regions and collectors, 6*l.* 15*s.*; Isle of France and Madagascar, 1*l.* 16*s.*; plants received at different times from various foreign botanists, 2*l.* 1*s.*; North American, Arctic, &c., from Richardson, Franklin, Drummond, and others, 1*l.* 16*s.*; miscellaneous plants, from different quarters and from different collectors, 18*s.*; the Herbarium of Dr. Lightfoot, author of the "Flora Scotica," 17*s.*; South Africa, from various collectors, 1*l.* 12*s.*; Nubia and Egypt, collected by Kotschy; and Abyssinia, by Kohr, &c., 2*l.*; East coast of Africa, from various collectors, 19*s.*; East Indies, from Dr. Wallich, at various times, 14*s.*; ditto, collected by Griffith, 1*l.* 5*s.*; ditto, collected by Wight and others, 1*l.* 16*s.*; [Ceylon, collected by Gardner, 1*l.* 1*s.*; Brazil, collected by Claussen, 8*s.*; ditto, collected by Sellow, 1*l.* 10*s.*; Peru, collected by Matthews, 13*s.*; Chili and Sandwich Islands, collected by McRae, 2*l.* 4*s.*; Peru and Chili, from Dombey's Herbarium, 1*l.* 18*s.*; South America, from various collectors, 5*s.*; European plants, from various collectors, 6*s.*; a Mahogany cabinet, with 16 slides, enclosed by folding panelled doors, containing a collection of plants from the East Indies and Nepaul, partly named by Don, 5*l.*; six small Deal cabinets, with shelves, containing a collection of Ferns made by the late Mr. Stokes, 6*l.* 6*s.*; 18 boxes containing a collection of Lichens, Mosses, and Jungermanniæ, 10*s.*; Schimper's Bryologia Europea, specimens, parts 1 and 2, 6*s.*; Drummond's North American Mosses, specimens, 6*s.*; Wyatt's Algæ Danmonienses, 5 parts, specimens, 2*l.* 2*s.* It will thus be seen that the lots were almost given away—a circumstance due to the deplorably sooty condition of the parcels, which rendered them unexaminable. A trunk of Kingia australis, R. Br., with a longitudinal section of the same, 8*s.*; large specimens of Thyrsopteris elegans, Kunze, and of several New Zealand and other Ferns, 4*s.*; a trunk of the Wax Palm of Brazil (Copernicia cerifera), with a section, 10*s.*; a trunk of a Tree Fern (Alsophila contaminans), with a section of Cyathea medullaris, 8*s.*; longitudinal sections of Dicksonia antarctica and another Tree Fern, 4*s.*; a stem of Bamboo, of a species of Clematis, from New Zealand, and a longitudinal section of a species of Xanthorrhæa, 5*s.*; a superb transverse section of the base of a Borassus Palm, 2*l.* 8*s.*; two transverse sections of Phytolacca dioica, from Gibraltar, and a section of the Gigantic Nettle (Urtica ferox) of New South Wales, 13*s.*; the heads of two large specimens of Kingia australis, R. Br., with three sections of the trunk, 8*s.*; a trunk and several sections of species of Xanthorrhæa, 8*s.*; longitudinal section of a branched trunk of a species of Xanthorrhæa and base of the stem of ditto and section, 8*s.*; two sections of species of Cycas, 12*s.*; two sections of Cork-tree and of the bark of Wellingtonia gigantea, 8*s.*; various Monocotyledonous stem and sections, 6*s.*; Coniferous and other woods, from the North-West Coast of America, collected by Dr. Gairdner, 11*s.*; Woods of New Holland, collected by Caley and others, 7*s.*; numerous sections of Tree Ferns, 5*s.*; numerous sections of Cycadeæ, 16*s.*; wood of Widdringtonia, 2 sections, 4*s.*; miscellaneous woods, 3*s.*; sections of Monocotyledonous stems, 6*s.*; section of Yarura wood (Aspidospernum excelsum), Lignum Aloes and other woods, 1*l.* 1*s.*; the contents of a drawer, full of miscellaneous woods, 5*s.*; ditto, chiefly Malpighiaceæ and Sapindaceæ, 4*s.*; ditto, Bignoniaceæ, &c., 4*s.*; ditto, 38 specimens of woods of New Zealand, 10*s.*; ditto, chiefly species of Bauhiniæ, 4*s.*; ditto, chiefly Menispermeæ, 4*s.*; ditto, miscellaneous, 4*s.*; ditto, ditto, 3*s.*; ditto, ditto, 5*s.*; ditto, specimen of disease or abnormal growth, 12*s.*; ditto, miscellaneous Australian woods, 8*s.*; ditto, timber trees of Australia and Norfolk Island, collected by Cunningham, 4*s.*; ditto, miscellaneous woods, Bergmehl and infusory animalcula, 16*s.*; ditto, miscellaneous woods, 4*s.*; ditto, miscellaneous climbers, 3*s.*; ditto, miscellaneous woods and climbers, 4*s.*; the contents of a drawer, miscellaneous climbers, from the Philippines, collected by Cuming, 7*s.*; ditto, miscellaneous climbers, Sapindaceæ, Malpighiaceæ, &c., 10*s.*; ditto, containing numerous specimens of Cactus, 4*s.*; ditto, miscellaneous seeds and seed vessels, 5*s.*; two double Cocoanuts and sundries. The whole of the lots, which amounted to 98, realised little more than 130*l.* For microscopes the following are some of the more important prices; viz., small microscope, by Carey, and an opera glass, 1*l.* 14*s.*; microscope, by Henkel, of Bonn, with two powers, &c., in case, 2*l.* 2*s.*; small microscope, in mahogany case, 2*l.*; a microscope, by Chevalier & Son, of Paris, with two powers, in ditto, 3*l.* 3*s.*; small microscope, with 6 eye pieces, in ditto, 2*l.*; microscope, by Chevalier, with 6 eye pieces, in ditto, 1*l.* 18*s.*; microscope, with 4 eye pieces, in ditto, 1*l.* 10*s.*; ditto, by Banks, with various powers, in mahogany case, 2*l.* 4*s.*; capital microscope, by Dollond, with two powers, eye pieces, objects and other apparatus, in mahogany case, 8*l.* 15*s.*; small silver microscope, in case, 3*l.* 15*s.*

Calendar of Operations.

(For the ensuing Week.)

PLANT DEPARTMENT.

Conservatory, &c. — All kinds of soil used in potting and shifting should now be laid in without delay before the ground gets sodden with autumn rains. Store them up neatly in narrow ridges so as to be safe from wet and yet exposed as much as possible to the action of the air; and as success in plant growing very much depends upon having suitable soil for potting, no trouble or expense that may be necessary to procure this should be spared where well grown specimens are expected. Loam of moderately good quality may be obtained in most neighbourhoods, but good peat is not so easily got; this is absolutely necessary, however, for the growth of choice hard-wooded plants, and should be procured at the proper season so as to have it in a fit state for use at the right time. Stove plants flowering in the conservatory will require attention, especially Achimenes and things of that sort, which should be gone over every day in cloudy weather, carefully picking off decayed flowers, &c. Any of the twiners on the roof which have done flowering may be thinned out, so as to prevent their shading the house too much, for after this season permanent shade should be avoided as much as possible. Young stock in cold pits intended to flower next season should be exposed to sunlight in order to ripen the wood, taking care however not to do this so rashly as to injure the foliage.

FORCING DEPARTMENT.

Pineries.—Those who intend commencing the culture of Pines on the planting out system cannot begin at a more favourable season than the present. The bed should be from 18 inches to 2 feet deep, and should consist principally of good rich mellow turfy loam, well broken up, and carefully intermixed with a liberal sprinkling of clean sand, and a small proportion of leaf soil or good rich fibry peat; for when rough turfy soil is used and the bed is ever, from any cause, allowed to get thoroughly dry it is very difficult to moisten it again, as the water passes off through the lumps without penetrating them. But if the loam is well broken up and mixed with some leaf soil, or peat and sand, it will be found to take water freely enough, and the roots will be almost as much under command as when the plants are grown in pots. Persons commencing this method of growing Pines should also endeavour to avoid planting out pot-bound plants, for these, whether young or old, seldom strike freely into the fresh soil, and are very apt to fruit prematurely; but if such plants must be turned out, then care should be used to make the soil firm about the balls, so as to prevent the water passing off without moistening the balls. Vineries.—Every possible attention must be afforded young Vines planted this spring where strong rods are expected. Let a vigorous root action be secured and endeavour to get the wood well ripened.

FLOWER GARDEN AND SHRUBBERIES.

Go over the flower beds frequently and remedy any defects that may be perceptible without loss of time, for the bedding-out plants are enjoyed but for a comparatively short season; and now that they are in beauty every means should be used to render them as effective as possible by maintaining the most perfect order and neatness. Where the stock is clean and growing vigorously this will involve considerable labour, and it will be necessary to go over the beds, frequently pegging down where necessary, and cutting back such of the shoots as may incline to encroach upon the edging of the beds. Take advantage of leisure hours to put in cuttings, and use every possible dispatch with this work until there is a good stock in a fair way for rooting of such things as are known to be difficult to winter except in the shape of well established plants. Keep gravel walks perfectly clean and smooth by weeding, sweeping, and rolling as may be necessary. Keep climbers on walls within due limits.

HARDY FRUIT AND KITCHEN GARDEN.

It may be advisable to go over such trees as are overluxuriant, and stop about half the shoots, beginning of course with the strongest, for a general stopping at this time would probably be of little further service than to induce the production of a mass of useless spray, whereas stopping the stronger shoots or those which incline to grossness will divert the sap into the weaker ones, which will be strengthed while the buds on the shoots that have been stopped will become full and pump without starting into growth. Should it be found that the roots after stopping incline to start into growth it will be advisable as soon as the fruit is gathered to open a trench at a moderate distance from the stem of the tree, cutting the stronger roots. This will be of the greatest service in checking growth, and will probably do more towards securing ripe wood than anything else that could be adopted. Get the Strawberry plantation intended to stand for next season trimmed as soon as convenient, cutting off and clearing away the runners so as to afford the leaves plenty of room. Attend to providing plenty of Lettuce, Endive, &c., for winter salads; also see that there is a good bed of Parsley secured in some sheltered spot where it can be readily protected in severe weather.

COTTAGERS' GARDEN.

A few Cabbage plants got in now will be found useful. Green Kale may still be got in where blanks exist, and a few Dutch Turnips might yet be sown; a little of the Bath Cos Lettuce, a little of the American Cress, and a few Turnip Radishes. If a cow is kept it is an excellent plan to sow Rye and winter Vetches on spare ground intended for green crops next year. This at cutting will leave a fibre in the ground almost amounting to turf, and moreover will help in a great measure to keep down weeds.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.
For the Week ending August 11, 1859, as observed at the Horticultural Gardens.

August.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Min.	Mean	Temperature of the Earth 1 foot deep.	2 feet deep.	Wind.	Rain.
Friday 5	7	30.015	29.995	78	41	59.5	66	65	S.W.	.01
Satur. 6	8	30.077	29.937	79	57	63.5	65	65	S.W.	.01
Sunday 7	9	29.843	29.725	77	61	69.0	66	65	S.W.	.21
Mon. 8	10	29.802	29.732	76	54	65.0	65	64½	S.W.	.22
Tues. 9	11	29.939	29.926	68	53	60.5	66	65	N.E.	.19
Wed. 10	12	29.979	29.959	71	54	62.5	64½	64	N.E.	.03
Thurs. 11	13	29.997	29.921	72	47	59.5	64	64	E.	.00
Average		29.950	29.913	73.1	52.4	62.7	65.2	64.6		.67

Aug. 5—Clear; fine; very clear and fine at night.
— 6—Fine; slight shower; overcast.
— 7—Cloudy; overcast; rain at night.
— 8—Showery; very heavy shower in forenoon; overcast.
— 9—Rain; cloudy; cold easterly wind; showery.
— 10—Overcast; showery; overcast at night.
— 11—Overcast; hazy; clear and fine.
Mean temperature of the week, ½ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK.
During the last 33 years, for the ensuing Week, ending August 20, 1859.

August.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 14..	72.0	51.0	61.5	11	0.68 in.	—	6	6	1	2	10	6	2
Mon. 15..	72.9	50.2	61.5	12	0.61	4	4	4	1	3	6	6	5
Tues. 16..	73.7	52.0	62.8	13	0.88	—	3	5	2	4	7	8	4
Wed. 17..	73.6	50.8	62.2	17	1.12	5	2	1	2	4	5	12	2
Thurs. 18	73.8	52.1	62.9	11	0.28	1	6	5	2	4	7	7	1
Friday 19..	73.0	52.3	62.6	16	0.42	2	5	2	1	1	9	10	3
Satur. 20..	72.4	51.8	62.1	15	0.45	2	3	1	1	5	8	11	2

The highest temperature during the above period occurred on the 15th and 18th, 1842—therm. 92 deg.; and the lowest on the 15th, 1838—therm. 39 deg.

Notices to Correspondents.

Heating: *H W B.* Don't use glazed drain-pipes. They do not answer.

Insects: *G E.* The little cells on your twig are the eggs of some kind of moth, arranged longitudinally, from most of which the young larvæ have escaped, leaving the egg-cases empty, resembling cells.—*J J.* The caterpillars on the Weeping Willow are the young brood of the Poplar hawk moth (Smerinthus Populi). Stainton's Manual is a cheap and good work on English moths, with woodcuts. Westwood and Humphreys give coloured figures of the moths and their caterpillars when known.—*Observing Eye.* The little mounds of sand are the mouths of the burrows formed by some species of sand wasp, and the flies of all kinds [? ?] which the wasp-like flies bury are destined for the food of the young grubs of the sand wasp. *W.*

Names of Fruits: *T Leslie.*—Your Plum is the Myrobalan or Cherry Plum, Prunus cerasifera, a native of North America.

Names of Plants: We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have or could have undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*Cobham.* Dioscorea alata is so called from its stem having *alæ* or wings; yours seems to be the male Dioscorea Batatas.—*H M G.* It is not possible to name bulbs unless they are in flower. If yours should be Ixiolirion montanum, and it is very like it, it is a fine thing and great rarity.—*G.* 1, some Desmodium, apparently canescens; 2, Hypericum foliosum; 3, H. Kalmianum; 4, Buddlea globosa.—*J K.* 1, Dactylis glomerata; 2, Gloxinia tubiflora; 3, indeterminable; flowers gone; 4. Thalictrum minus.—*W B S.* Apparently fragments of Andropogon Schœnanthus.—*C L.* 1, Ononis spinosa, without spines; 2, An unspotted state of Chærophyllum temulentum.

Seeds for Exportation: *W.* You may send out the seeds of the Horse Chesnut by packing them in clay or loam, or sand, *made perfectly dry*, as soon as they are ripe, having first thoroughly dried the seeds themselves in the sun. Poplars must go out as cuttings; long rods of two or three-year-old wood, packed in chests with damp Moss rammed tight.

The Income Tax. "*X* is the owner and occupier of a freehold nursery ground, he also occupies three farms; he pays income tax under Sch. A. for the property, and Sch. B. for the occupancy or profits. Is he liable under Sch. D.? The nursery is about 20 acres, and the trade consists in the sale of the stock produced in this nursery." In answer to this inquiry we reply that we imagine that he is; we must however beg our correspondents to consult their solicitors upon legal points; for we cannot assume the responsibility of advising them in such matters.

Vines: *T O G.* As far as any opinion can be formed without personally examining the Vinery, we should say that there is something wrong at the roots. The symptoms are those of suffering from want of moisture within reach of the roots.

Water: *An Old Sub.* You cannot make hard pump water fit for watering plants.

*** As usual, many communications have been received too late, and others are detained till the necessary inquiries can be made. We must also beg the indulgence of those correspondents the insertion of whose contributions is still delayed.

CONSERVATIVE LAND SOCIETY.— Investment of Savings and Capital for all classes. The rate of interest on completed shares and shares paid a year in advance and upwards is now five per cent. per annum. The rate of interest on Deposits has been raised from three to four per cent. per annum. Prospectuses sent free.—CHARLES LEWIS GRUNEISEN, Secretary, 33, Norfolk Street, Strand, W. C.

THE LANDS IMPROVEMENT COMPANY.— Incorporated by Special Act of Parliament in 1853.— 2, Old Palace Yard, Westminster, S.W. To Landowners, the Clergy, Estate Agents, Surveyors, &c., in England and Wales and in Scotland.

The Directors beg leave to announce that the Company's Amendment Bill, 1859, has received the sanction of the Legislature. The Company now advance money, unlimited in amount, for the following works of Agricultural Improvement, the whole outlay and expenses in all cases being liquidated by a rentcharge for 25 years.

1. Drainage, Irrigation and Warping, Embanking, Inclosing, Clearing, Reclamation, Planting for any beneficial purpose, Engines or Machinery for Drainage or Irrigation.
2. Farm Roads, Tramways and Railroads for agricultural or farming purposes.
3. Jetties or Landing places on the sea coast or on the banks of navigable rivers or lakes.
4. The erection of Farm Houses, Labourers' Cottages, and other Buildings required for Farm purposes, and the improvement of and additions to Farm houses and other buildings for farm purposes.

Landowners assessed under the provisions of any Act of Parliament, Royal Charter, or Commission, in respect of any public or general works of drainage or other improvements, may borrow their proportionate share of the cost, and charge the same with the expenses on the lands improved.

No investigation of title is required, and the Company being of a strictly financial character do not interfere with the plans and execution of the Works, which are controlled only by the Government Enclosure Commissioners.

Under the Company's Acts, tenants for life, trustees, mortgagees in possession, incumbents of livings, bodies corporate, certain lessees, and other landowners are empowered to charge the inheritance with the cost and expenses of the above improvements, whether the money be borrowed from the Company or advanced by the Landowner out of his own funds, and owners in fee may effect these improvements of their Estates without incurring the expense and personal responsibilities incident to mortgagees, and without regard to the amount of existing incumbrances.

For further information, and for forms of application, apply to the Honourable WILLIAM NAPIER, Managing Director, 2, Old Palace Yard, Westminster, S.W.

ARTIFICIAL MANURES, &c.— Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London, S. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, London, S.

Principal—J. C. NESBIT, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

MANCHESTER AND LIVERPOOL AGRICULTURAL SOCIETY.

Patrons—The Right Hon. the EARL of DERBY, K.G., and LORD EGERTON.

President for the Year—The Right Hon. the EARL of SEFTON.

The TWELFTH ANNUAL SHOW of LIVE STOCK (including POULTRY), IMPLEMENTS, &c. will take place at Liverpool on THURSDAY and FRIDAY, September 8 and 9. Premiums amounting to nearly 1100*l.* are offered for competition; and the entry will close on August 20.—Prize Lists and Regulations may be obtained by application to

THOMAS B. RYDER, Secretary.

2, Elliot Street, Clayton Square, Liverpool, Aug. 13.

The Agricultural Gazette.

SATURDAY, AUGUST 13, 1859.

THE "Crop Returns" in the following pages present a very different picture of the present harvest from that of previous years. Probably more food for man was never grown in the United Kingdom than it produced last year; and the contrast presented by previous abundance may have unreasonably deepened the disappointment which this year's appearances produce. We must not forget, however, that since the most of these returns were written several days of wet and steamy weather throughout southern, western, and midland England have done a good deal of injury, especially to the Barley crop, much of which was lying in swathe; and of this no mention could be made in the account now given.

It will be seen that an exceedingly rapid ripening in July has injured most of the grain crops in the south, and a dilatory harvest owing to want of hands has since exposed them to injury by wet and stormy weather. In the north and in Ireland Oats, which are there the most valuable crop, are unusually unpromising; all over the country Barley is a very uneven crop and of inferior quality; and Wheat where heaviest and best is more injured by being laid than has perhaps ever been known before.

The prospect as regards "food for beast" is equally unfavourable. There never was so little food in our pastures as during the past July. The Emerald Isle" is everywhere reported as being scorched, and barren, and bare; throughout Scotland and the north there never was so great a failure in the Turnip crop; and even in the south, where green crops look better and where Mangel Wurzels are good, great injury is being done in the Turnip fields by grubs and caterpillars. As to the other crops—Peas are unusually good, Spring-sown Beans are also good, Winter Beans have generally failed. Potatoes are as yet generally healthy—very promising indeed in the north—small but sound in the south. The disease is spoken of as yet only in a few places, and hardly mentioned in Ireland.

The following is a numerical abstract of the grain crop returns:—

	Wheat.	Barley.	Oats.	Beans.	Peas.
Over average ..	17	8	24	6	21
Average	114	93	76	50	52
Under average ..	55	67	89	63	19
Total	186	168	188	119	90

WE lately made some remarks upon the disease which has been so prevalent amongst Winter Beans. We have since had an opportunity of examining it more minutely and extending our observations to the same disease as occurring on spring-sown Beans, in which it assumes in general a milder form, though occasionally taking such firm possession of the plant as to induce rapid decay, especially where the crop is thick, and consequently the haulm is not easily dried after heavy rains or dew. In either case it commences with a red, tolerably defined spot, which is pale in the centre. These spots often remain of a small size, though occasionally spreading far and wide, especially when occurring on the stem. Though, however, the red spots remain of small size, and therefore comparatively innoxious, the disease does not always cease entirely. Other spots of a brown tinge occur, irregular in outline but extending in concentric rings, so as frequently to leave slight traces behind, and involving in their course the smaller patches. Though the growth is evidently concentric the strictest search does not detect any fungoid growth, as might at first be suspected. If the brown patch extend to the stem decay rapidly ensues. This is not however always the case, but though the crop looks miserable the fruit may still be perfected, though not without exhibiting here and there traces of the disease in the shape of irregular brown spots affecting the subjacent tissues. The disease figured in this Journal, 1851, p. 531, is probably of a similar nature.

Supposing the disease to be arrested by weather unfavourable to its growth another enemy now steps in, completing the exhaustion of the plant. We have now before us specimens in which not only are the leaves covered with the red and brown blotches, but in which a third set of spots occurs, snuff-coloured in the centre, and white or pale in the circumference, the central mass consisting of perfectly smooth sub-globose brown stemless spores. These are in fact due to *Uredo Fabæ*, D.C. When possessed by the three kinds of blotches at once, the crop wears a very wretched aspect, and the prospect of the farmer is by no means encouraging.

It is well, however, that proper caution should be exercised before the crop is utterly condemned. We have this year seen a crop of Winter Beans which seemed in an utterly hopeless state, and which were accordingly destined one fixed day to be ploughed in. Happily, however, the farmer, who is very intelligent, thought that there were signs of the disease yielding, and he determined to let the crop stand a little longer. His neighbours all believed that he was losing time; but a few days showed that he was perfectly right, and the result is that he has an abundant crop, the Beans in general being large and well coloured, with a small admixture only of blotched or speckled individuals. An ordinary cultivator would undoubtedly have followed the example of others. This is but one amongst hundreds of examples which prove the necessity of close observation in agricultural and horticultural pursuits, where it is too often utterly neglected. *M. J. B.*

IN commenting upon the new manufacture of the so-called cattle foods, we have confined ourselves to the broad and general principles, that any idea of a concentration of feeding properties in them is to say the least a mistake, and that the immense advance in the price of the compound over the cost of the materials of which it is composed is not fair dealing.

In saying thus much however we would have it understood that there is one element in all these nostrums in favour of which much might be said, which element is a gently stimulating and palatable flavouring matter, which may give a taste to otherwise vapid materials. This however is by no means a new idea; we have advocated the same thing in this Journal some years since, and we would now simply point out how we may at least infer the desirability of imparting flavour to the food for our cattle, and having so done we would glance at the means by which this end may be simply and cheaply attained.

As a starting point in this inquiry we are aware how the sense of smell is employed to distinguish the flavour of hay, and it is interesting to know that the sample which is usually selected by the horsekeeper, and which is found to be the best for the animal as being the most nutritious qualities is ever found to contain a Grass which is rich in a highly aromatic principle. This Grass is the *Anthoxanthum odoratum* or Sweet Vernal Grass, the perfume of which is said to depend upon a peculiar organic compound to which the name of "*Coumarin*" has been applied by the chemist; this substance is found in several plants, and the following is a translation of the remarks of a German chemist upon its nature:—

"Coumarin, C_{18} H_6 O_4, is found in Tonka Beans, in which it sometimes appears in the shape of crystals, in the flowers and whole plant of Melilotus, in Asperula odorata, and *Anthoxanthum odoratum*, and probably in other aromatic plants." *

The peculiarities of the Vernal Grass are thus recognised by Prof. BUCKMAN in "The Natural History of the British Grasses:"—"It is the presence of this Grass which imparts most of the grateful smell and flavour to meadow-hay, and which in all probability renders it not only more palatable but also more nutritious than 'seeds' or artificial hay." This odour resides to a very considerable extent in the common Melilot (*Melilotus officinalis*) and also the white Melilot (*M. leucantha*), on which account it has been recommended for admixture with Clovers and Grasses, or "seeds," in order to impart that flavour in which these are so deficient; and if the principle be once admitted, there will be no difficulty in rendering seeds as highly flavoured as meadow Grasses.

Here then is at least presumptive evidence that fodder is improved by the presence of a flavouring plant, and if we inquire into those foods the basis of which are farinaceous, we shall probably have that evidence more strongly corroborated.

It is well known that the faster a pig can be got to feed the more profitable he becomes, and hence it is not at all uncommon to mix Bean-meal with the ordinary food as a *stimulant*; it is, say the farmers, a "warmer food;" it does in fact contain a large proportion of a stimulating principle probably identical with Coumarin, which doubtless renders it grateful as well as feeding. But of all the matters in vogue for mixing with hogs' food, the seeds of the Fenugræc is the most constant, of which plant the following is an account from the "Flora Medica."—"It is a native of the south of France, Greece, Egypt, Barbary, and several other warm climates; and is occasionally cultivated in this country. It flowers from June to July.

"This plant was frequently employed for culinary purposes by the Egyptians, Greeks, and Romans; the seeds have been roasted as coffee, and are said to afford a yellow dye. The meal obtained from the seeds is used by grooms and farriers for horses, both as food and medicine, and for fattening rabbits.

"The odour of the seeds is fragrant, resembling that of Melilot; when bruised they are disagreeable, and have an unctuous farinaceous taste, accompanied with a slight bitterness. They contain so large a quantity of mucilage that an ounce boiled in a pint of water renders that liquid very thick and slimy." Here then is very important evidence of the fact we would now contend for, namely, that some aromatic admixture has long been in use in the food of our domestic animals, and it is interesting to observe that in all cases they contain a greater or less quantity of Coumarin as the flavouring ingredient. Now, as regards this Fenugræc, it may with great confidence be asserted that it forms the chief ingredient in the flavouring element of the so-called cattle foods. It is one of the cheapest of the dry seeds, though its recent extended use for cattle foods has caused a slight advance in its price; but its home cultivation is extremely simple, as we have at this moment a plot of great promise in our

* SCHLOSBERGER'S Organic Chemistry.

experimental garden, which was thinly sown in drills of about 7 inches apart.

Now, we happen to know that the Fenugræc seed is being used by some of the manufacturers of cattle foods, for most important agricultural districts now contain a person of this sort, and a few pounds of these seeds ground with inferior Pulse, grain, or both, impart a flavour which it would seem is highly relished by cattle; and if experience should really confirm their use—and the principles which we have endeavoured to explain are those upon which their success depend—it will be no difficult matter to apply it with economy. The word concentrated however as applied to mixtures of this kind is a serious misnomer, for th most that can be said is that there is reason to believe that food judiciously flavoured is as favourably received by the lower animals as the higher, and in all probability it is as much more digestible and nutritious in the one case as in the other.

RACING BY STEAM.

Let me describe, as nearly as I can, what I saw at my friend's factory.

In a large and convenient building to which I was introduced, there stood some new and beautiful steam-engines; these having been completed a few days previously in the shops, had been removed to this "Experimental Shed," as it was called, where they now awaited the trial of their capabilities. As the method of trial in each case was precisely similar, I shall speak only of the experiments made upon one of them, which may stand as the type of all the others. The boiler was first filled with water from pipes conveniently laid in the building for this purpose; the engine was then carefully oiled and cleaned down. A pair of scales stand by the wall of the shed; in these are weighed out first 20 lbs. of wood and then 1 cwt. of Welsh coal. The stoker (a young man in over-alls and jaunty cap, with wonderfully white hands for his calling) takes his wood and coal, and having first broken up the latter into pieces about the size of a walnut, handling each atom the while as if it were a thing of priceless value, proceeds to light his fire and get up the steam. Of the skill which he displays in this, as well as in firing, throughout the experiment, more hereafter. Meanwhile, an apparatus called a "friction-break," is adjusted to the fly-wheel of the engine.

As it will be needful to offer some explanation of the nature and uses of this friction-break, let us take the opportunity of the delay caused by raising steam to say a few words on the matter, which will involve some slight interpretation of the whole philosophy of a "trial."

The first desideratum in an engine being economy of fuel, it becomes necessary in the comparison of the performances of two competing engines to determine which of the two has done the greater amount of work with a given quantity of fuel, and this is ascertained thus:

The capability or strength of an engine is generally stated in horses' power. Now a "horse power" is only a technical mode of expression, representing a certain amount of weight lifted a certain height in a certain time. The unit of a horse power is fixed by general consent at 33,000 lbs. raised 1 foot high in 1 minute. It follows, then, that an engine able to raise 33,000 lbs. 1 foot high in 1 minute is of one-horse power.

The friction-break is an instrument for determining the horse power of an engine; without describing it too fully in detail, it will be sufficient to say that by means of the friction it produces on the fly-wheel of the engine, the weight due to the horses' power of such engine is practically lifted. Supposing, for example, that a "racer" be entered for trial as of eight horses' power, the friction-break will be applied in such a manner as to compel it to lift a weight equal to eight times 33,000 lbs. 1 foot high per minute; if, while this is being done, notice be taken of the time occupied in the consumption of 1 cwt. of coal, it is evident that we shall have as the result the length of time during which 112 lbs. of coal will produce a power equal to that of eight horses. It is, then, a matter of simple division to find the quantity of coal required to produce a power of one horse for the same time, and finally discover the quantity of coal required by the engine to enable it to give out a power equal to that of one horse for one hour. Thus, then, all engines may be brought to one standard, and the friction-break is the means by which we may discover how much coal per horse power per hour each competing engine requires, the lowest in consumption naturally standing first in the rank.

But the steam is up, and our friend in the over-alls, who has explained all this to us, opens the starting-valve and turns round to note upon a ruled memorandum sheet nailed to the wall, beside which hangs his watch, the precise time occupied in getting up steam—"25 minutes"—not bad to begin with.

The engine is off, the "break" compelling her to lift the weight due to her power, and the "trial" has fairly begun. Now, look at that little heap of coal beside the fire box; a most scanty morsel it seems; every energy has to be exhausted and every ingenuity to be resorted to, to make that little scuttleful of coals last as long as possible. She runs steadily along for 15 minutes, then the needle of the sensitive pressure gauge begins to tell of a slight fall in the pressure of the steam; more fuel must go on the fire. Now if you imagine that our friend the fireman is about to open that door and heave on his coal by the shovelful you are vastly mistaken. He first peeps through a small talc window about 2 inches in diameter, set like an eye in the furnace door, marks where the fire is thinnest, opens a tiny circular door immediately below the eye aforesaid, and with a hooked "pricker" gently spreads the fuel evenly over the fire bars; then, in an instrument of about the bigness of a good sized tablespoon, he takes a supply of coals and—hey presto—in the twinkling of an eye, while you were lost in astonishment at the smallness of the dose about to be administered, the fire door is opened, the infinitesimal shovelful "exhibited," and the door closed with a "cling," all with the quickness of light; in goes the hooked "pricker" again through the little circular door, spreading the fuel evenly; and he writes down "15 minutes to first firing"—very good indeed. The hand of the pressure gauge soon begins moving upwards again, and is slowly crawling beyond the appointed 45 lbs. per square inch, when the damper is closed in a moment and the combustion slightly checked. But the water in the boiler is getting lower and lower; it is time to put the pump to work.

A huge bucket stands beside the engine, to which the suction pipe of the pump is attached; into this bucket, which is kept supplied with cold water, a large portion of the waste steam is admitted, and the water thereby heated; the pump therefore on being set to work throws water already nearly at the boiling point into the boiler; after a few trials the quantity delivered is regulated to supply as nearly as possible the same amount as the constant evaporation converts into steam, and the pump is fairly at work. But this feed water, warm though it be, is cold in comparison with the heated water within the boiler, and a very few minutes suffice to show the cooling effect, and to indicate by the pressure gauge that the steam is again falling. Quick as thought, the damper is opened, and the increased draught soon brings the needle to its place again. Still the admission of the cold feed water makes itself felt, and this time the operation of administering the tiny scoopful of coals has to be repeated at an interval of ten minutes from the last; this, however is not bad. Up goes the damper again, after a few moments, and ten or twelve minutes pass, during which friend "Overalls" wipes and oils every working part of the engine, and surveys the tiny fire within the furnace through the little talc window with the deepest solicitude. Again the steam falls, and again the damper is opened; the needle crawls weakly and uncertainly upwards for a few moments, then begins slowly falling; then comes another infinitesimal dose of coal, followed by another ten minutes or so of rest. So it goes on now, coal being administered about every ten or twelve minutes. The pump is working well, keeping the water exactly at the required level, and everything goes smoothly on; the most noticeable thing being our fireman's anxious face, as he peers through the little window, and rakes his fuel smooth, or as he looks with lingering eyes on the lessening heap of coals by his side. Half an hour has passed, and "Overalls" takes advantage of a few minutes' rest to sweep away every atom of cinder fallen from the furnace, carefully into his remaining stock of coal; he mixes them as carefully together, and seeing a visible increase in his resources, looks bright and hopeful. An hour passes thus in a series of repetitions of all these processes, still there seems but little diminution of the tiny heap of coals, and you begin to wonder when they *will* shrink. Another half-hour, and the little heap has grown visibly less. "Overalls" tries hard to make up the deficiency with ashes, but evidently feels his failure. All the while the engine goes monotonously on, till presently a second hour is completed, and now the heap is indeed lessened. Will she run another hour? In the interest of this question, you forget everything, and find comfort only in our young fireman's steadfast face as he goes on quietly trying every dodge he knows to husband his resources. Half-an-hour, three-quarters, an hour go slowly and anxiously by, and there is fuel still; another quarter of an hour, and there looks but a handful remaining. Again the brush goes carefully round the ash-pan, and every particle of carbon is treasured like gold. One more regretful look at the fire through the little window, and a glance at the falling hand of the steam gauge, and "Overalls" goes to the pump and stops the feed—there will be no need of more water now, and it will give him a few minutes more to live. Another scoopful of coals brings us on 15 minutes more; in all, three hours and a half since starting. Can it last another quarter-hour? Steadily and quietly, as at first, our fireman goes about his work, and holds now his last shovelful of coals waiting the next fall of the steam. There! it is all in now, and there is no more to be done but wait the result. The "pricker" is in again levelling the fire, the last fragment of cinder is thrown in at the fire door and now, watch in hand, we note the needle as it creeps for the last time up the dial, wavers a moment, then slowly drops lower and lower. Three hours 42 minutes and still she runs, lifting her weight steadily; 43 minutes, the weight begins to drag and oscillate; 44 minutes! 45! 46! 47!—"Stop her!"

It is all over, and you are wandering at your own excitement, and discovering, too late, that your enthusiasm has kept you for four hours in an atmosphere so terribly prejudicial to cleanliness, that you would be as pleased as I was to hear Plummer's cheery voice.

"Well, old fellow, it's not a bad run; let's go in-doors and have a wash and some lunch."

Half-an-hour afterwards we were deep in cold beef and bitter beer, when in came "Overalls" with his detailed memoranda of the trial,—no longer the grimed and silent fireman of the morning, but a most well favoured and intelligent young gentleman, pupil of the Messrs. Block and Bolt, who, out of sheer love for the work, was only too happy to don the shop-dress and fire for experiments.

"Well, James," said Plummer, "what was the exact time run with one cwt. of coal?"

"Three hours 47 minutes," said James. "I dare say we shall get another five minutes out of her at the next trial."

"Then you will have other experiments with this engine," I said, "before she is exhibited at Warwick?

"Oh dear, yes," he replied, "this is only the first; I dare say we shall have from 20 to 30 experiments with her in all, and at each we hope for some little improvement." *D. P. in "Once a Week."*

HARVEST PROSPECTS.

FROM CORRESPONDENTS WRITING ON THE 9th OF AUGUST.

COUNTIES.	WHEAT.	BARLEY.	OATS.	BEANS.	PEAS.	TURNIPS.	MANGEL.	POTATOES.	PASTURE.	HARVEST GENERAL.	NAME AND ADDRESS.
SCOTLAND.											
CAITHNESS ..	Average	Average	Full average	....	....	Average	....	Excellent	Good	Middle Sept.	J. S MacIvor, Wick
INVERNESS ..	Light	Light	Very light	....	....	Late; promising	....	Good	Miserable	August 20	J. Mackenzie, M.D., Eilenach
PERTHSHIRE	.... Very good crop	Good Light	Average Light	.... Failure	.... Failure	Thin Very backward	.... Very light	Good Good	Good Improving	Sept. 1 August 20	H. Ainslie, Fort W —, Dumblane
ELGIN	Much under average	One-third under average	Half an average	Bad	Bad	Look well	....	Small	Very bare	August 8	—, Forres
	Much under average	Hardly average	Very inferior	....	....	Fair	....	Promising	Very bad	Begun	J. Hamilton, Forres
	Far under average	Under average	Not half a crop	....	....	Late	....	Look well	Very scanty	August 10	J. Grigor, Forres Nurseries
BANFF	Much under average	Thin and not average	Not half a crop	Not good	Light	Fair; late	....	Promising	Very short	August 8	J. Barclay, Fochabers
ABERDEEN ..	Fair crop	Average	One-quarter deficient	....	....	Late	....	Good	Scorched	August 15	J. Macdonald, Huntley
	....	Under average	Not half a crop	....	....	Very late	....	Very fine	Very bare	August 6	J. Nicoll, Turriff
	Average	Much under average	Half an average	Nearly average	....	Miserable	....	Excellent	Very poor	Sept. 1	J. Laing, Peterhead
	Under average	Not average	Never known so bad	....	....	Very late	....	Fair	Very bad	August 20	J. Davidson, Ellon
FORFAR	Spring sown under average	One quarter under average	One-quarter under average	Half a crop	....	Unpromising	....	Very good	Fair	August 15	W. Smith, jun., Brechin
	Under average	Under average	Under average	Indifferent	....	Very bad	....	Promising	....	August 20	A. Bell, Ferryden
	Under average	Hardly average	Under average	Over average	Over average	Under average	....	An average	Under average	August 16	—, Arbroath

HARVEST PROSPECTS—*Continued.*

COUNTIES.	WHEAT.	BARLEY.	OATS.	BEANS.	PEAS.	TURNIPS.	MANGEL.	POTATOES.	PASTURE.	HARVEST GENERAL.	NAME AND ADDRESS.
FIFE	Under average	Regular but small	Under average; improved	Light	Light	Various	....	Very promising	Bare; fresh	August 15	G. Edin, King's Kettle
	Under average	Under average	Light; improved	Bad	Light	Not promising	....	Very good	Bare; fresh	August 15	G. Edie, Abernethy
	Sound; under average	Under average	Much under average	Very short	....	Very late	Failure	Average	Bare	August 20	W. Veitch, Kinghorn
HADDINGTON	Full average	Average	Under average	Under average	....	Late; bad	Failure	Over average	Good	August 10	G. Hope, Drem
	Good; sound; upright	Average in quality and quantity	Light, but good	Average	Average	Late and light	....	Good	Injured, but improving	August 8	J. Steele, N. Berwick
MID-LOTHIAN	Under average	Much under	Very deficient	Very deficient	....	Late and unpromising	Failure	Look well	Done ill	August 15	J. Finnie, Swanston
	Nearly average	Under average	Light	Inferior	....	Unpromising	Improving	Fair	Moderate	August 15	J. Melvin, Ratho
	Rather under average	Average	Under average	Under average	....	Late, but improving	....	Over average	Improving	August 20	J. Hislop, Mid Calder
	Under average	Nearly average	Under average	Very poor	....	Very poor	Inferior	Good	Improved	August 25	J. Morton, Dalkeith
STIRLING	Nearly average	Half to two-thirds of a crop	Very poor	Not half a crop	....	Late	....	Excellent	Various	August 15	A. Buchanan, Stirling
RENFREW	Fair average	Under average	Under average	Bad	....	Very bad	Bad	Average	Very poor	August 16	G. Boyd, Renfrew
	About average	Under average	Under average	Under average	Under average	Much under average	Bad	Abundant	Scanty	August 20	J. Gardner, Neilston
ARGYLE	Nearly average	Below average	Below average	Below average	....	Under average	Failure	Very good	Improving	August 17	D. Stewart, Campbel-
AYR	Average	Average	Under average	Under average	....	Late and inferior	Under average	Good	Short	August 20	W. Orr, Beith [town
	Various	Light	Under average	....	....	Generally bad	Half a crop	Various	Improving	August 16	W. M'Jannet, Irvine
PEEBLES	....	Under average	About average	....	....	Late, but improving	....	Good	Very poor	Middle Aug.	J. Lyle, Inverleithen
ROXBURGH ..	Under average	Under average	One-third under average	Under average	Under average	Late	....	Well	Good	August 8	P. Brodie, Clarilaw
	Average	Rather deficient	Much under average	Very poor	Hardly average	Very late	...	Average	Not good	August 14	J. Thomson, Whitelee
DUMFRIES....	Light	Very light	Very light	....	....	Too late	Nearly failure	Look well	Bare	August 10	J. Little, Langholm
	Average	Under average	Under average	Under average	....	Under average	Average	Full average	Under average	August 9	W. Watts, Craigs
WIGTOWN	Short, but fine	....	Very light	Middling	....	Under average	Thriving	Good	Very poor	August 9	A. H. McClean, Stranraer
BERWICK	Average	Average	Two-thirds of a crop	Half a crop	Average	Not half a crop	Failure	Average	Bare	August 9	W. Hewett, Edrom
	Average	Not average	Not average	....	....	Bad	Bad	Good	Middling	August 15	G. Logan, Stitchel
ENGLAND											
NORTHUMBERLAND	Average	Full average	Very light	Under average	Good	Great failure	Pretty good	Promising	Deficient	August 10	J. Grey, Dilston
	Probably average	Full average	Deficient	Average	Good	Scanty	Good	Good	Short	August 12	W. Glover, Newcastle
	Good	Light	Good	Good	Good	Indifferent	....	Good	Bad	August 8	W. Deans, Cornhill
	Average	Average	Very light	Good	Good	None	Few	Very good	Burnt	August 1	T. P. Dods, Hexham
DURHAM	Good average	Good	Fair	Good	Good	Fair	Good	Good	Droughty	August 13	R. B. Dixon, Darlington
	Good	Good	Poor	Not average	....	Very bad	Bad	Good	Bad	August 20	G. Bell, Durham
CUMBERLAND	Average	Under average	Light	....	....	Very poor	Few	Average	Very poor	August 20	T. Wilson, Ullswater
	Average	Under average	Poor	Failure	....	Failure	Total failure	Various	Bad	August 1	T. Gibbon, Longtown
	Good	Light	Very light	....	....	Very bad	Failure	Not good	Bad	August 10	T. Donald, Linstock
	Average	Not average	Not average	Not average	Not average	Not average	Not average	Not average	Bad	August 8	J. Rigg, Wigton
	Average	Not average	Not average	....	....	Various	Bad	Various	Inferior	August 10	—, Penrith [Thure
WESTMORELAND	Nearly average	Deficient	Poor	....	....	Very bad	Total miss	Short	Burnt	August 8	J. Crosby, Kirkby
	Good	Very light	Very poor	Very poor	....	Very bad	Very bad	Look well	Burnt	August 13	W. Key, K. Lonsdale
	Average	Average	Under average	....	....	Not average	....	Not average	Dried up	August 10	J. Robinson, Warcop
YORK	Full average	Over average	Average	Good	Good	Very bad	Bad	Moderate	Very bad	August 8	T. Parrington, Middlesboro'
	Good average	Good	Fair	Fair	....	Unpromising	Injured	Healthy	Very good	August 1	H. Briggs, Wakefield
	Not average	Good	Fair	Bad	....	Not good	Fair	Good	Various	August 6	P. Stevenson, Thirsk
	Average	Average	Hardly average	Under average	Average	Various	....	Average	Bare	August 10	H. J. Turner, Richmond
	Average	Tolerably good	Bad	Under average	Very good	Inferior	Good; late	Good	Bad	August 1	—, Doncaster
	4 qrs.	5 qrs.	6 qrs.	Failure	3 qrs.	Promising	Promising	Small	Bad	July 28	—, Bawtry
LANCASHIRE	Thin generally	Very light	Very light	....	....	Bad	Fair	Good	Very poor	August 6	G. Drewry, Holker
	Full average	Not average	Thin	Short	....	Late; poor	Late; poor	Full average	Scanty	August 11	R. Robinson, Garstang
	Not average	Average	Average	....	....	Under average	Not average	Good; small	Very short	August 6	G. W. Fowler, Liverpool
	Good	Good	Good	Bad	....	Bad	Bad	Excellent	Bad	July 30	M. Saul, Lancaster
	Average	Average	Light	Good	....	Uneven	Uneven	Healthy	Short	August 4	F. Twining, Wigan
DERBYSHIRE	....	....	Very good	....	Good	Very good	Fair	Full	Bare	Mid. Aug.	B. Swaffield, Ashbourne
	Middling & laid; bulky; coarse	Not good	Good	Good	Good	Good	Good	Good; doubtful	Light	August 9	J. Parkin, Wirksworth
LINCOLNSHIRE	Under average	....	Good	Average	Average	....	Good	Fair; diseased	Great crop	August 3	T. Aitken, Deeping, St. Nicholas
	Not average	Not average	Not average	Bad	Not average	Good	Good	Diseased	Good	August 4	E. Darby, Horncastle
	Various	Indifferent	Good	Average	....	Good	Good	Good	Good	August 8	Croft Sharpley, Louth
	One-fifth under last year; roughest crop	Heavy crop	Average	....	....	Good	Good	....	....	August 2	F. Sowerby, Aylesby
	One-fifth under average	Fair average	Average	Spring sown average	Fair	Fair, but injured	First-rate crop	Fair, but diseased	Very rough	August 1	J. Clarke, Long Sutton
CHESHIRE ..	Very good	Average	Good	Good	....	Not good	Promising	Well	Very short	August 10	H. Tipping, Northwich
	Fair average	Average	Average	Over average	....	Various	Promising	Fair crop	Bare, but improving	August 9	W. Palin, Tarvin
SHROPSHIRE	Good	Good	Good	Average	Average	Very good	Good	Good	Very bad	August 4	J. Aston, M. Drayton
	Full average	Full average	Good	....	....	Very good	....	Diseased	Very short	August 7	E. Bowen, Bromfield
LEICESTER ..	Average	Average	Over average	Spring good	....	Good	Very good	Good get	Very good	August 10	T. Spencer, Knossington
	Light	Inferior	Not average	Not average	....	Average	Average	Diseased	Bare	July 28	J. Buckley, Normanton Hill
NOTTINGHAM	4 qrs.; inferior	5 qrs.; thin	8 to 10 qrs.	3 to 4 qrs.	4 to 6 qrs.	Good	Good	Diseased	Burnt up	August 1	T. Stafford, Marnham
	Average	Under average	Not average	Not average	Average	Unpromising	Good	Good	Very bad	August 1	C. Walton, Newark
	Fair	Light	Light	Very fair	Good	Promising	Very good	Light	Very bad	August 1	J. Young, Coddington
RUTLAND ..	Average	Over average	Full average	Average	Over average	Good	Good	Full crop	Good	August 1	W. Fancourt, Empingham
NORTHAMPTONSHIRE	Average in quantity	Average quantity	Good	Spring sown good	Good	Very promising	Promising	Good	Dry	August 1	P. Love, Northampton
	Not average	Not average	Over average	Not average	Good	Good	Good	Bad	Good	August 1	W. Gray, Courteen Park
	Laid & damaged	Average	Full average	Various	Fair	Good	Good	Good	Dry	August 1	J. B. Smeeton, Welford
WARWICK ..	Average	Heavy	Very good	Various	Very good	Good	Tolerable	Indifferent	Very bare	July 26	J. Ford, Newbold Pacey
	Average	Average	Average	Not average	Average	Good	Good	Good	Want rain	August 6	J. H. Burbery, Kenilworth
	Average	Average	....	Not average	Average	Various	Good	Various	Bad	August 1	W. Gibbs, Stratford-on-Avon
	Average	Average	Average	Under average	Deficient	Various	Good	Good	Deficient	August 1	W. Aitcheson, Bakewell
WORCESTERSHIRE	Average; inferior quality	Very good	....	Average	Good	Caterpillars	Very good	Small	Burnt up	August 3	C. Randell, Evesham
	Fair	Middling	....	Various	Various	Indifferent	Fair	Good	Very bare	July 30	R. Smith, Droitwich
HEREFORD ..	Good	Average	Average	Over average	Not average	Various	Fair	....	Under average	August 8	P. N. Edwards, Brinsop Court
	Average	Various	....	Good	Failure	Fair	Various	Deficient	Light	August 8	W. Price, Ross
	Average	Average	....	....	Good	Good	Good	Diseased	Short	August 8	J. Mathews, Blakemore
	....	Good	Good	Blighted	....	Good	Good	Blighted	Bare	August 8	H. Pride, Monmouth
MONMOUTHSHIRE	Average; promises well	Good	Good	....	....	Fair	Good	Good	Short	August 8	W. H. Little, Abergavenny
	Good	Light	Good	Average	Good	Good	Good	Good	Very short	August 1	T. Beckenham, May Hill
	Full average	Average	Light	....	....	Even; late	Good; late	Promising	Very short	August 8	G. R. G. Relph, Uske
CAMBRIDGESHIRE	Bulky; blighted	....	Heavy	Average	Very good	....	Very promising	Various	Burned up	August 1	A. S. Ruston, Isle of Ely
HERTFORDSHIRE	Deficient	Laid; thin	Average	Fair	Fair	Average	Under average	Diseased	Bare	August 1	—, St. Albans
NORFOLK	Barely average	Various	Over average	Barely average	Prolific	Various	Good	Indifferent	Drought	August 1	W. H. Taylor, Wymondham
	Not so good	Very bad	Average	Hardly average	....	Various	Good	Diseased	Scorched	August 1	W. Cubitt, N. Walsham
	Not average	Average	Average	Not average	Average	Various	Good	Fair	Short	August 1	T. Brown, Downham
SUFFOLK	Average	Short	....	Not average	Average	Good	Very good	Diseased	Various	July 30	H. Edwards, Woodbridge
	Average	Under average	....	Fair	Good	Various	Very good	Going off	....	July 30	C. Welton, W. Market
	Good; various	Good; injured	....	Good	Good	Promising	Good	Diseased	Good	July 30	G. Edwards, Framlingham
	Average	Under average	Average	Not average	Average	Good	Very good	Diseased	Good	July 29	L. O. Cottingham, Saxmundham

HARVEST PROSPECTS—*Continued.*

COUNTIES.	WHEAT.	BARLEY.	OATS.	BEANS.	PEAS.	TURNIPS.	MANGEL.	POTATOES.	PASTURE.	HARVEST GENERAL.	NAME AND ADDRESS.
BUCKINGHAMSHIRE	Very bulky	Under average	Good	Various	....	Promising	Fair	Good	Short	August 2	A. Fraser, Claydon
	Well per acre	Well	Very well	Middling	Fair	Well	Very well	Fair	Well	August 2	E. Evans, Windsor
	Under average	Average	Good	Various	....	Good	Very good	Rotting	First rate	August 1	W. G. Duncan, Stony Stratford
BEDFORDSHIRE	Tolerably good; not as last year	Very variable: but improved	Good crop	Good	Good	Excellent	Excellent	Improved; but diseased	Very fair	August 1	—, Silsoe
HUNTINGDONSHIRE	Under average	Various	Good	Various	Not average	Good	Good	Diseased	Good	August 1	— , ——
GLOUCESTERSHIRE	Under average	Quality various	Good	Various	Over average	Very good	Excellent	Small; sound	Now short	August 1	J. Coleman, Cirencester
	Average	Various	Good	Partial	Very good	Partial	Good	Good	Short	August 1	G. M. Hulbert, Cirencester
	Average	Over average	Very good	Good	Very good	Average	Very good	Very good	Good	August 1	C. L. Denton, St. Briavels
	Average; but one-quarter under 1858	Full average	Abundant	Good	Excellent	Promising	Patchy	Good	Short now	August 5	J. F. Peacey, Cheltenham
SOMERSETSHIRE	Rather over average	Average	Very good	Under average	....	Injured	Not so good	Partial	Dry	August 1	J. W. Eastment, Wincanton
	Very good	Good	Average	Under average	Bad	Good	Very good	Partial	Good	August 1	C. P. Collyer, Dulverton
WILTS	Bad and blighted	Good	Good	Average	Average	Good	Good	Average	Average	August 15	G. Brown, Avebury
	Blighted and down	Average	Good	Average	Very bad	Good	Good	Bad	Very short	August 10	J. R. Maskelyne, Calne
	Much under last year	Quality bad	Over average	Various	Good	Very good	Irregular	Diseased in places	Good	July 27	T. Chandler, Aldbourne
	Average	Good	Good	Various	Good	Promising	Fair	Diseased	Heavy	July 25	T. Arkell, Swindon
BERKSHIRE	Injured by midge & storms	Over average	Promising	Injured	Good	Successful	Good	Various	Hay good	August 1	E. J. Lance, Reading
	Various	Quality bad	Good	Average	Good	Good	Good	Good	Parched	July 25	J. Williams, Abingdon
	Average, laid	Average	Very good	Various	Good	Good	Excellent	Complaint	Good	August 1	T. Fordham, Newbury
	Average	Average	Over average	Average	Average	Good	Good	Diseased	Short	July 21	J. Adnam, Thatcham
OXFORDSHIRE	Indifferent	Average	Good	Partial	Good	Good	Good	Partial	....	July 30	R. Page, North Newington
ESSEX	Full average	Average	Average	Average	Average	(Black jack)	Very good	Abundant; injured	Good	July 22	J. J. Mechi, Tiptree
	Average; coarse	Average; light	Over average	Average	Average	(Black jack)	Good	Diseased	Short	July 20	W Hutley, Witham
	Average	Average	Good	Good	Good	Good	Good	Blighted	Good	August 1	C. Hall, Romford
	About average	Average; light	Average	Not average	Quite average	Looking well	Good	Half a crop	Average	August 1	A. Barfield, Dunmow
	About average; inferior quality	Average; inferior	Good	Partial	Good	Partial	Very good	Very bad	Plentiful	July 20	W. F. Hobbs, Colchester
KENT	Average, coarse	Average; coarse	Very good	Average	Over average	Very inferior	Good	Diseased	Average	July 25	W. Manser, Ramsgate
	Half last year's crop	Various	Very good	Good	Excellent	Various	Very good	Very bad indeed	Very good	August 1	R. Matson, Wingham
	Much injured	Inferior	Good	Good	Very good	Injured	Good	Improved	....	August 1	M. Sandford, Dover
SUSSEX	A little over average	Under average	Average	Under average	Average	Very bad	Average	Sound; small	Very short	July 20	H. S. Hayward, Folkington [green
	Over average	Not average	Not average	Not average	Fair	Suffering	Fair	Small	Fair	July 26	J. Brotherton, Hurstmonceux
HANTS	Bulky, laid	Bulky; coarse	Over average	Various	Average	Injured	Average	Diseased	Good	July 25	H. Raynbird, Basingstoke
	Average	Average; thin	Over average	Average	Average	Promising	Good	Not much hurt	Average	July 20	J. Twynam, Winchester
	Average quantity	Average quantity	Good	Average	Average	Injured	Very good	Diseased	Short	August 1	J. W. Clark, Romsey
	Average	Average	Over average	Average	Average	Good	Good	Good	Average	July 25	J. Blundell, Bursledon
DORSETSHIRE	Under average	Various	Under average	....	....	Bad	Various	Pretty free	Barren	July 28	R. Damen, Dorchester
	Good crop	Various	Light	Blighted	Good	Fair	Good	Promising	Improving	August 1	W. J. Pope, Bridport
	Deficient	Deficient	Deficient	Deficient	....	Good	Good	Diseased	Dry	August 1	J. Furmedge, Beaminster
	Average	Average	Average	....	....	Injured	Average	Blight	Bare	August 1	W. J. Voss, Corfe Castle
DEVONSHIRE	Various	Average	Thin sample	....	Under average	Bad	Pretty good	Small	Burnt up	August 1	G. Turner, Exeter
	Average	Under average	Under average	....	....	Inferior	Very inferior	Good	Injured	August 1	——, Totnes
	Under average	Under average	Very bad	....	....	Improving	Bad	No disease	Dry	August 1	S. Cornish, Stancombe
	Average	Under average	Under average	....	....	Very bad	Very bad	Promising	Very bare	August 1	J. Benson, Tavistock
	Good average	Various	Under average	....	....	Various	Half a crop	Light	Dry	July 20	R. W. Clark, Plymouth
CORNWALL	Quality good; quant. inferior	Uneven	Very bad	....	....	Very poor	Good	Fair	Burnt up	July 21	J. Wills, Launceston
	Average	Under average	Full average	....	....	Various	Various	Diseased	....	August 1	J. Michell, Truro
WALES.											
CARNARVON	Average	Good	Good	Tolerable	Tolerable	Partial	Fair	Yet good	Scarce	August 10	J. Williams, Llandudno
BRECKNOCK	Good	Average	Light	....	....	Injured	Good	Short	Very short	August 2	J. Muscott, jun., Brecon
CAERMARTHEN	Very good	Fair	Light	....	....	Half crop	Not good	Very good	Bare	August 9	J. Burnell, Llanelly
IRELAND.											
DOWN	Good	....	Bad	Very good	Bad	Bad	Bad	Good yet	Very bad	August 1	W. Cleary, Portaferry
DERRY	Good	Average	One-quarter deficient	....	....	Very bad	....	Good	Bad	August 25	S. Orr, Coleraine
	Good	Good	Under average	....	....	Doubtful	Good	Doubtful	Very bare	August 25	C. Pollock, Magherafelt
ARMAGH	Fair	....	Light	Blighted	....	Missed	Very bad	Very good	Very bad	August 6	R. B. Hardy, Tandragee
DONEGAL	Thin	Light	Thin and short	Average	....	Light	Good	Very good	Very bad	Sept. 1	T. J. Atkinson, Ballyshannon
WESTMEATH	Good	Light	Very light	....	....	Promising	Not average	Very good	Very poor	August 18	G. Bagnall, Killucan
	Good	Light	Short	....	....	Very good	Middling	Good	Light	August 15	W. Newburn, Mullingar
FERMANAGH	Good	....	Very good	Good	Very good	Very bad	Good	Very good	Very bad	August 25	A. Mair, Brookeboro'
ROSCOMMON	Good	Light	Very light	....	....	Middling	Middling	Very good	Very bare	Sept. 10	J. Kelly, Roscommon
	....	....	Not average	....	....	Late	Late	Scarcely average	Half an average	Sept. 8	D. Boyd, Springfield
LEITRIM	....	Good	Promising	....	....	Healthy	Good	Good; blighted	Improved	Sept. 1	J. Lindsay, Lurgan Bay
MONAGHAN	....	....	Average	Very good	Very good	Very good	Very good	Excellent	Very bad	Sept. 1	J. Smith, Castleblaney
	....	....	Light	....	....	Pretty good	Pretty good	Good	Very poor	August 20	Rev. T. Middlemiss, Castleblaney
TYRONE	Good	....	One-third deficient	....	....	Very bad	Very bad	Good	Very bad	August 14	W. Paterson, Newtwon Stewart
MAYO	Average	Average	Good	....	....	Excellent	Excellent	Indifferent	Fair	End August	G. Hildebrand, Westport
GALWAY	Good	....	Short	....	....	Good	Various	Diseased	Bare	Sept. 1	G. Lamb, Mountbellew
QUEEN'S	Good	Middling	Bad	....	....	Late	Good	Uncertain	Bare	August 7	M. Dunne, Stradbally
KING'S	Average	....	Under average	....	....	Under average	Under average	Good	Under average	August	E. Bewley, M.D., Clara
CLARE	Two-thirds of a crop	Two-thirds of a crop	Two-thirds of a crop	....	....	Average	Not average	Destroyed in places	Burned up	August 15	E. Bennett, Newmarket on Fergus
LOUTH	Good	Middling	Very deficient	Deficient	....	Very bad	Very bad	Good	Short	August 8	W. M'Culloch, Dundalk
LONGFORD	Very fine	....	Very short	....	....	Bad and few	Good; few	Fine	Burned up	August 10	J. M. Goodiff, Granard
	Good	....	One-fifth	....	....	Good	Good	Good	Quarter under average	August 15	E. Morgan, Lisnana
CAVAN	Good	....	Short; good	....	....	Bad	Fine	Very fine	No Grass	August 15	J. H. Nesbitt, Belturbet
CLARE	Bare average	Very bad	Very light	....	....	Bad	Bad	Abundant	Bad	August 10	W. Digan, Killaloe
WICKLOW	Very good	Good	Various	....	....	Late	Good	Good	Very short	August 1	J. Daly, Enniskerry
CARLOW	Good	Very bad	Very short	Middling	....	Very bad	Good	Healthy	Very bad	August 15	P. J. Mosse, Carlow
	Very good	Very good	Very good	....	....	Very bad	Very bad	Good	Very bad	August 5	J. De Renzy, Clonegal
LIMERICK	Very good	Very good	Very short	....	....	Various	Good	Very good	Brown	August 5	——, Bruff
MAYO	Very good	Superior	Good	....	....	Average	Average	Diseased	Very good	End of Aug.	A. S. Perkins, Killallee
TIPPERARY	Well	....	Middling	....	....	Pretty good	Bad	Abundant	Very bare	August 1	J. Fennell, Cahir
	Good	Good	Good	....	....	Good	Good	Good	Good	August 3	W. Ryall, Cashel
	Very good	Good	Very good	....	....	Indifferent	....	Good yet	Suffering	Very early	J. B. Massy, jun., Ballywire
KERRY	Good	Good	Good	....	....	Good	....	Well	Now good	Middle Aug.	J. Creagh, Tarbert
	Very good	Good	Very good	....	....	Good	Good	Fair	A famine of hay	August 18	J. O'Sullivan, P. P. and V. G., Kenmare
KILKENNY	Good	Inferior	Very bad	....	....	Improved	Very bad	Very good	Bad	August 1	D. A. Milward, New Ross
WEXFORD	Under average	Very bad	Very light	Light	Light	Failure	Failure	Poor	Very poor	August 6	P. Grace, Freshford
	Very good	Good	Various	....	....	Failure	Wretched	Very good	Very bad	August	G. Glasscott, Camolin
	Very good	Not average	Various	....	....	Failure	Bad	Moderate	Very bad	August	H. Preston, Enniscorthy
CORK	Good	Good	Short	....	....	Not good	Good	Good	Dry	August 20	S. Piddell, Kildorrery
	Good	Good	Fair	....	....	Not average	Average	Slight blight	Short	August 8	H. Longfield, Doneraile
	Good	Middling	Bad	....	....	Bad	Bad	Good	Bad	August 8	D. Clanochy, D. L., Charleville
	Over average	Good	Thin	....	....	Good	Fair	Partial	Very short	August 12	F. H. Twinam, Kanturk
	Fair	Not average	Light	....	....	Good	Good	Pretty good	Light	August 8	D. Barclay, Blarney

GOOD FARMING IN ESSEX.

I have been so much interested and pleased with my friend Mr. H. Davis's account of the farming operations at Aynho, that I cannot resist the inclination it has excited in me to give you an account also of some doings in my parish of Wix.

Some of your present readers will probably recollect the sharp controversies I some years since held with some anonymous correspondents on the subject of farming, I contending that the modern practice was far behind what it ought to be considering the great advantages English farmers now have over those of other nations, they having more capital, better workmen, and far better implements, better roads and better markets, and I may add, a better climate than most, and I may further add, equal or better land; and my opponents on the contrary contending that farming and farmers were now all perfect, because—and this was the burden of their arguments—in some few instances they had improved upon the practice of their forefathers, but in general adhered resolutely to it. One gentleman I recollect of this kind being like the rest, as I supposed he would be, ashamed of his name, dated his letter from a parish near the renowned city of Coventry, into which it will be remembered I precipitately sent him.

This pink of a farmer and champion of his class in reply to my contending for deep and thorough draining, deep and complete cultivation, and above all rational seeding, replied that he had sown his land twice, putting on 4½ bushels in the two sowings, but got no produce, not even fit for fowls, and then he innocently—like an innocent as he certainly was—asked me what would have been his produce if he had sown less! I recall to mind this champion of the stand-still race of farmers to show what materials my opponents were made of, for it will be recollected he had backers amounting almost to a legion.

But within the last two or three years another opponent rose up against me in the columns of the *Mark Lane Express*, who also like his compeers was ashamed of his own name, and so substituted for it that of the jealous goddess Juno's drowsy-headed servant Argus. This man wrote plausibly, and to gain credit to what he stated, said he had examined my bit of glebe, and learned from some persons he met with on his road, that my accounts of my doings were all fables. Now to show the animus which acted upon this champion's mind, I state that my bit of glebe as he termed it consists of 78 acres, and from his statements, should he read this article, I hereby tell him he never saw a rood of it; I would not however have made this statement had he handsomely shown wherein he disagreed with my farming practices and appended his own name to what he wrote, and not skulked under a fictitious one borrowed from an ancient mythological fable.

But, Mr. Editor, time has rolled on, and I have been pushed on with it; but it has not changed but confirmed the views I have for so many years held about farming. Your readers will recollect that I advocated nothing but what was within every farmer's reach, or that if from a want of means it was not within every one's reach, he ought not to have been the master but a labourer on his farm. But I said, to do justice to the land, insure good crops wherever required, it must be deeply and scientifically drained, completely and deeply cultivated, and not scratched over as it generally was, and is—3 or 4 inches deep only; it must be kept also as a wise and generous man always keeps his horse, in good heart and thorough working order; and above all, for without this all the rest would be of no avail, I added, the land, to make sure of a good crop, must be thinly and rationally seeded.

This, Mr. Editor, was my advocacy, and it brought down upon my devoted head much severe castigation, sometimes much misrepresentation, and even insult; but I freely forgive all my enemies, and hope by this time there is a little more wisdom in their brain-cases, that they are giving up their cherished prejudices, and in some way are taking advantage of the improved sciences of the age in at least some of their farming operations.

But it is time I come to the nearer object of this letter, which I must not spin out too long.

Of Wheat I never planted more than 2 pecks of seed per acre, and sometimes less; of Barley 2 pecks, and Oats 3, but I shall reduce the quantity of Oats.

Of produce I had on one field Wheat four years in succession, averaging 44 bushels an acre from 2 pecks of seed, or 176 bushels in four years from 2 bushels of seed. The crops were threshed by machine in the field in the presence of several persons, and three sceptical parties measured the land.

Of Barley from 2 pecks of seed I had 7⅞ths quarters which the maltster said was the finest he ever saw, and I sold it for 46*s.* a quarter; the Wheat also was always sold at the highest price of the market. I have now being reaped a field of Oats, half the field put in by the drill I invented and made, and the other half was dibbled to satisfy my neighbours in the common way, they being prejudiced in favour of their way of dibbling. The drilled Oats, which were below 3 pecks of seed an acre, are the finest I ever saw, they astonish every beholder; the dibbled were too thick, and consequently are much lodged, the straw being dark and brittle, and the grain miserably light.

But, dropping my own doings, I ask my readers to accompany me mentally to a farm in my parish, an account of which I give as a sequel to that of my friend Davis's at Aynho. My parish has in it about 3000 acres of arable land, the farm I am alluding to is in the centre. Until the last 10 or 12 years this farm was in the hands of the proprietor, who told me that the average growth of Wheat crops on it was about 32 or 33 bushels from 2 to 2¼ bushels of seed. The farm is about the size of the one at Aynho, and 10 or 12 years since it was let to the present tenant, who formerly had been a gardener, at an enormously high rent, full 18*s.* an acre higher than the average of my parish. Of course, all the farmers and others said the gardener was insane, and predicted his speedy ruin. But he is standing his ground, and I do not hesitate to say that he has made more money than any other farmer in this county in the same time and from the same quantity of land.

But he was a gardener, and though his farm had been under the proprietor's occupation, it was very foul, and consequently the first thing he did was to free it from all weeds, and so effectually he did this that now, and for several years, there has scarcely been a weed on it, in fact, no gentleman's garden is cleaner. He is also the best cultivator I have ever seen; he keeps also a great deal of stock; and to crown all he sows thin his seed for Wheat, being about 1 bushel an acre, and I have no hesitation in stating, and confirming what he himself states, namely, that one year with another, if not every year, his Wheat crops average 6 quarters an acre, and his other crops are equally as great; and an inquiry in the markets would show, as a miller told me, that his Wheats always fetch the highest market price there.

Last Thursday I went over his farm just as the Wheat fields were being cut, and I state without fear of refutation that this year also his Wheat crops will average 6 quarters or more of very fine Wheat, indeed, the grain must be plump and good where this quantity is obtained. But a part of his Wheat was put in with "Sigma's Dibbles," as my quantity of seed, viz., 2 pecks per acre, and the crops of which are as beautiful samples as I ever before saw, and so certain am I that the dibbled crops will be 6 quarters an acre, that I hereby publish that I myself will take them at the highest price in the market on a day to be named, except for Talavera, at that quantity. And all his other crops, roots and all, are equally as good as his Wheats, and the roots, Mangel, Swedes, and Potatoes, the last being the only ones I have seen not diseased this year, are as fine and regularly set out and as free from weeds as it would be possible to have a root of each in any pet garden. My parishioner also manages his stock, of which he has always a large quantity, and his manure, in exactly the same judicious way; of the latter not a quart of the liquid is wasted, and hence, without bird-dung from nobody knows where, his land is in the highest possible heart, and hence his crops are so fine. My readers also will perceive that the predictions about his coming to the hammer have not been realised, and I can inform them moreover that he has four fine daughters and a son at expensive boarding schools, and that his bankers smile upon him, and ask after his health, and the health of his family, and stretch out their hands over the counter to give him a hearty shake whenever he enters their bank to pay in or take out cash; and with such an index I need, I presume, Mr. Editor, say no more in favour of employing brains and hands for successful land cultivation, but subscribe myself your old friend and humble servant, *George Wilkins, Rectory, Wix, August 4.*

IRISH AGRICULTURAL PROGRESS.

[The following are the remarks on this subject of the Lord-Lieutenant at the late annual meeting of the Irish Agricultural Society.]

It is rightly assumed that I must feel great pleasure in finding myself again among the members of your flourishing and vigorous society, and especially to have had the privilege of being present at an exhibition which in all respects has been so entirely worthy of their past renown and of their advancing usefulness. Nearly all the points connected with the present show and with the immediate condition of the society's affairs, I clearly shall do best to leave to those who from their familiar acquaintance with the whole subject of Irish agriculture, and from their having been, unlike myself, enabled by continuous and unbroken residence to keep their attention directed to the transactions of the society, will be thus qualified to speak with weight and authority on an occasion like the present. I may permit myself to say in passing that the spot for the exhibition appears to me to have been this year most happily chosen. Under these umbrageous glades in which we have clustered to-day, within reach of railway communication, close to an important town, whose very name shows its ancient origin—Dundalgan—the old fort of Dalgan, which, as far back as the year 1001, witnessed the battles of the great Brian Boirhoim; and even then the surrounding district was no stranger to agriculture, because it is specially recorded that the army destroyed the corn and tillage of the plain. Then afterwards, as the border land of the vale, it was ever a scene of exploit, in which Scot and Dane were mixed; and though we cannot precisely boast at the present day that feuds, and wars, and bloodshed have disappeared from the earth—witness the gigantic carnage of Magenta and Solferino—yet we may thankfully acknowledge that the show-yard of Dundalk, as we saw it to-day, with its long lines of stalled cattle, and its well-filled squares of peaceful implements, afforded a gratifying and delightful contrast, both to the barbarous broils of the old septs, and as to the more scientific yet the still deadlier massacres of modern warfare. Gentlemen, as our interest to-day is mainly centred on our Irish soil, perhaps you will allow me for a very short time to occupy the sort of vantage-ground which these annual meetings of the Royal Agricultural Society present to us, and glance at one or two of the leading features of the prospect we may thus take in of the general condition of the country. Now, in looking into authentic documents, I find that the land under tillage in Ireland in the first year when those returns were collected, in the year 1847—12 years ago—amounted to 5,238,575 acres, and in the year which has just elapsed—in the year 1858—they had increased to 5,882,152 acres, being an increase in those 12 years of 643,000 acres, or at a rate of 12 per cent. in 11 years. Now, the climate and circumstances connected with it have, with the true spirit of economy, produced that result in the different kinds of culture. The grain crops have given way in a great degree to those more succulent and humid vegetables which are classed as green crops, and accordingly I find in the same period to which I have referred that the cereal crops have diminished by not less than 565,000 acres, or 17 per cent. of the whole amount. The green crops have increased at nearly the same proportion. The live stock in Ireland, which was valued in 1841 at 19,375,000*l.* is valued now in the last year at 34,616,000*l.* With respect to the size of farms, the farms under 5 acres in 1841 amounted to 310,000. In 1858, instead of 310,000 they have decreased to 83,000. The farms above 30 acres in 1841 were 48,000, and in 1858 they have amounted to upwards of 156,000. Now, the absorption of small holdings I know well is considered by some in this country as injurious, by others it is looked upon as a step in advance; but it is a fact. The application of capital to land necessarily leads to this result, just as in manufactures. We see the factories draw to themselves the labour that was formerly expended upon cottage looms, I take this to be according to the inevitable course of events, and whatever we may think of it, surely it is our duty to watch all such tendencies, and to adapt our measures to them. Among other improvements in our country, I believe progress has been nowhere more remarkable than in the dwellings of the working classes. The subject is now under immediate consideration of the Imperial legislature, a bill having been brought in on the matter by an excellent gentleman of a neighbouring county, Sir William Somerville. I know that the subject has largely engaged the attention of another gentleman from the same country, whom I have the happiness of seeing at this board, Mr. Naper, and I find with great satisfaction that the Royal Agricultural Society of Ireland, which is particularly qualified by its position and its objects to take the lead on such a subject, announces it as one of the constituent and primary objects to promote improvement in the dwellings and domestic condition of the people of Ireland; and they have founded prizes for the best cottages. Equally, if not still more gratifying, has been the rapid diminution of pauperism in this country. It appears that in the Dundalk workhouse—in the town where we are now assembled—in the last 10 years the inmates have fallen from 1264 to 263. From 107 able-bodied males they have decreased to 31. The commissioners for inquiring into the condition of the poorer classes in Ireland, in the final report made in the year 1836, estimated the number of persons out of work and in distress during 30 weeks of the year, or upwards of half the year, as 585,000, and the persons depending on them to 1,800,000, or nearly one-third of the whole population. There are now in all the workhouses in Ireland only 37,000 inmates, with only 14,000 persons receiving out-door relief. Mendicancy is nearly completely extinct and wages are very nearly doubled. Now, the last element to which I will refer in this rapid contrast is crime. I do not seek, gentlemen, to deny that our ears are sometimes startled, and our minds shocked, by the occurrence of some fearful agrarian outrage, deepening occasionally into the darkest shade of guilt; but looking at the general amount of crime, and embracing in our view the country at large, the change is as remarkable of late years as it is a blessed one. In this county of Louth the criminal calendar this year has been, I believe, marvellously light. The system of reporting outrages by the constabulary is singularly full and complete, and it is a point in which we are far a-head here of anything of the kind in England. Now, take the period of the last 10 years. The outrages reported in Ireland in the year 1848 were 14,000; in 1858 they had sunk 3492. Those of an agrarian nature in 1848 were 795; in 1858, no more than 225. Now, taking all these various items that enter so largely into the condition of the country as a whole, surely we must feel that it presents a picture which may still to some extent be of a chequered character, and upon parts of which the shadows of scattered clouds may still be resting, but still in all its broader spaces it is bright with all the hues of hope, and has the sunlight of heaven to gild it and to gladden. I feel that this is not the time or place to pause upon such matters as these remarkable demonstrations which have of late excited much attention, and much anxiety, and much, I would fain believe, of hope in the northern districts of this island. This I am sure of, that the old anniversaries of the present month have passed off with less of mutual provocation and bitterness—with more of Christian calmness and consideration—than ever had been the case before. And if I may have appeared to some to have been too minute in thus summing up the

signs and omens of the present and future good before a company who are mainly brought together to promote the pursuits of agriculture, and to pay attention to what may at first sight seem only the national wealth and progress of the country, yet I do feel that this great pursuit of the science of agriculture acts with rapid and immediate contact upon all the fibres of Ireland's happiness and Ireland's glory; and that I have been addressing those who, besides the stake and interest which they feel, which they possess, in her green soil, are further keenly alive to all the yet even higher impulses which add to her just renown, and advance her in the scale of nations.

Home Correspondence.

Lucifer Matches.—In corroboration of your remarks respecting the dangerous misuse of lucifer matches might be mentioned a trial at Winchester, not long since—A. B. against the South-Western Railway Co., for setting fire to certain farm properties, the real plaintiffs being one of the insurance offices. The cost of this trial was considered by the judge to be about 1000*l.*—a verdict was not given. Some short time after the clearest evidence, to the satisfaction, I believe, of all parties, was obtained showing that the fire had arisen from some children playing with lucifer matches. Allow me to ask through your Journal whether the increased charge for fire insurance on farm stock arises from these matches? In the war, when all expenses were considered at the highest, the insurance on farm stock I think was 1*s.* 6*d.* per 100*l.* paid to the office, and 1*s.* 6*d.* per 100*l.* paid as duty to Government, total 3*s.* per 100*l.* Now the duty is off the charge is raised from 1*s.* 6*d.* to 5*s.* per 100*l.*, just 33.3 per cent. more paid to the insurance offices than used to be. Or is a portion of this marked increase in the charge (which denotes the increase in the chances of fire) to be attributed only to the lucifer match, the other portion to be accounted for by the modern and dangerous custom of collecting the whole of the year's produce of the farm at the homestead, putting the ricks, &c., so close that if a fire occurs it becomes all but impossible to save any portion of the stock? Would it not be to the benefit of a fire insurance office to charge less premium and insist on some specific distance being maintained between each rick when built? It would appear to me that such a suggestion made through any fire insurance office would meet with immediate attention on the part of the insurer, and be consonant with the best interests of the public. *Correspondent.*

Fecundity of Grain.—The fecundity of grain' whether Wheat, Barley, or Oats, when Nature's laws during its growth are strictly observed and left uninterrupted appears to be beyond belief for want of experimental knowledge; and not unfrequently are faithful descriptions of specimen roots grown and produced from single grains 100 to 1000 and 4000 fold, (whilst average productions are not 20 where planted in clusters, and which is the general rule) pronounced as downright falsehoods, absurdities, and impossibilities, though ocular demonstration and statistical calculations and statements bear witness to the truth of it. Such specimens, say they, are not produced from single grains but from two, three, or more planted close together, and by a scheme of the cultivator ingeniously contrived to entwine the roots and shoots, so as to appear only the production of one grain. Sceptics however may rest assured that such palming upon the public mind is not the case, and is foreign to our wishes; moreover it cannot possibly be so, inasmuch as the laws of Nature defy it, and we challenge anybody to gain as much produce from two or any number more grains planted close together, as we ourselves or they themselves can grow from one planted singly. Our own frequent experience and (to remove arrogance) common sense will convince any one that neither two nor 20 grains planted in one small hole, will yield so much as one planted by itself, no more than as many Apple trees, Turnips, Mangel Wurzels, Potatoes, or anything else will produce as much measure or weight as if they had been planted separately—with this proviso however, that due time and space be allowed and allotted for each plant to perform its natural capabilities. August and September is the time directed by Nature for planting Wheat, when it will shed or sow itself, nicely separating and distributing it when wafted by the winds, each grain in an isolated manner, as if allwise Providence had intended it for the imitation of man. Accordingly this is the time we have adopted for sowing Wheat, and October the best season for sowing Barley and Oats in order to produce extraordinary results. Hence the idea and utility of sowing grain singly, uniformly, and early, whatever quantity we or any other people may think proper to plant on any given space of land. Incredulous interested persons will do well to experience for themselves (for we do not desire to be arrogant in the matter) the truth of all such statements bearing on this point, by planting single grains, strictly adhering to proper time and space as here directed, in order to obtain satisfactory results, not placing dependence so much on ground highly manured for the purpose, (this may prove fallacious), as land thoroughly cultivated in the true sense of the word, and kept free from weeds. Surface solidity also after such thorough deep stirring of the soil will prove of more avail than continual loosening it around the plants during their summer's growth, which causes them to tiller unseasonably. Our own specimens for competition in 1860 are already planted and germinated, and to give fair play to nature, we have chosen some of our poorest land, which has not been stirred for a twelvemonth and has not had a particle of manure for four years since we have had it, nor we know not how long before. It is an old saying and a true one, "Solid ground for Wheat"—true, but it should be explained *surface* solidity, after perfect cultivation of the soil below; and not a rocklike under pan, trodden by horses for ages past, which prevent an essential point, the absorption and percolation or filtration of the rains, and which causes so much fuss about draining now-a-days. But the Steam Plough will no doubt eventually and we hope speedily set this argument at rest, and effect wonders in agricultural science never before achieved. Since our friend Bentall's Broad Share has been brought into general use, great wonders have already been performed by it in extricating weeds or Vetches in summer, preparatory for deep ploughing in autumn, in such a complete style as ordinary implements and manual labour could never have accomplished; but with all due difference to our neighbour Bentall's Broad Share, which may be faithfully declared an invention *pro bono publico*, Mr. Fowler's Steam Machine being on the advance may reasonably be expected ere long to supersede it, and every art and contrivance which human thought and ingenuity ever suggested to effect the perfect cultivation of the soil, and will no doubt ultimately annihilate all land cultivation by the present plans. All hail then to the all-powerful steam engine!—the masterpiece of human skill!—the most valuable present that philosophy has yet given to the arts of man!—approaching to the nature of an animal of leviathan power, incapable of pain or lassitude, yet can be put into the most rapid motion, even by the delicate finger of a child!—the noblest and most obedient and willing drudge that ever was employed for the benefit of man! *Hardy and Sons, Seedgrowers, Maldon, Essex.*

Smoking.—I was gratified by your observations on lucifer matches, and you have perhaps seen in the *Times* of this morning accounts of two sad fires originating in the thoughtless pastime of children. I wish you would have an article on the detestable and dangerous habit of smoking, which every farmer should strictly forbid. *Surriensis.* ["Surely smoke becomes a kitchen farre better than a dining chamber; and yet it makes a kitchen oftentimes in the inward parts of men, soyling and infecting with an unctuous and oyly kind of soote, as hath been found in some great tobacco takers that after death were opened. A custom loathsome to the eye, harmfull to the braine, dangerous to the lungs, and in the black stinking fume thereof nearest resembling the horrible Stygian smoke of the pit that is bottomless." *Counterblaste by King James I.*]

The Meetings of the Highland and the Yorkshire Agricultural Societies.—I have just read your observations in reference to the concurrence of our Show with that of the Yorkshire Society. The interference of the one meeting with the other is undoubted, and has, I understand, led to repeated correspondence between the Societies, as yet without success. I think however that it is easy to show that the object in view is to be attained not by the postponement of the Highland Society's meeting, but by antedating the other by 10 days. 1st. The narrowest view of the matter is precedency. There are three national societies, and it is not too much to expect that, when arrangements clash, other associations should yield to them. 2d. A far more important one is the interests of the public. Your proposal would force an exhibitor to show at the Royal English, jump down to Scotland, and return to York. Ours would enable him to work northwards, taking York between the English and the Scotch, and in the end going over to Ireland. You will observe that there is time enough for the York to meet between the English and the Scotch. 3d. A week earlier could do York no harm, while a week or a month later ruins us. A week would throw us into the grouse. The *Times* lately quoted the 12th of August as an unconquerable difficulty in the way of protracting the sitting of Parliament. With us it is insuperable. A month would land us in the harvest. Of this the evil was demonstrated last year at Aberdeen. A longer period of postponement—say till October—involves short days and the greater risks of bad weather for work which commences at 4.30 A.M., and depends materially for its success on the state of the weather. 4th. You are wrong in supposing that the period of the Highland Society's meeting has "on many past occasions and for various reasons been shifted to and fro." There has, on the contrary, been but one such shift for many years, namely, that of last year at Aberdeen, when the Prince Consort was expected, and the results of that postponement were inconvenient and most unsatisfactory. 5th. It is no reason for the Highland Society's yielding that they have many objects besides a show. That only proves them to be the more important and greater body, and, after all, the show you would postpone is in reference to premiums and exhibitions on a much greater scale than that in whose favour you say it should succumb. 6th. The last inducement you offer, that of being able to try reapers, is conclusive against your conclusions. Ability to do so infers the prevalence of harvest, and last year's proceedings proved that harvest is inconsistent with success. It is reported that the Royal English talk of meeting a week earlier. If so, this makes the arrangement proposed all the easier for York. Something should certainly be done, and the three bodies ought mutually to accommodate each other and the public. *A Member of the Highland Society.*

Berkshire Crops.—The Wheat presented promise of a great crop, but the succession of storms sadly beat it down, and seriously injured the value of it. On the light lands a good average is obtained, but on the Wheat-growing lands a great bulk of straw, attended with heavy cost in harvesting, has seriously affected its value, and I fear it will prove much less than an average in quantity, with poor quality, on such soils. The Barley also is much injured in its quality by the rain blacking the ends, and some of it is very thin, having been housed up prematurely. The quantity will exceed that of last year. The Beans and Peas are about an average. Green crops are looking well. Great progress has been made in the harvest, having had much fine weather. Burgess & Key's reaper has helped to meet the scarcity of labour where it was used; I have found it a most valuable implement the two past harvests, cutting Wheat, Barley, Oats, and Beans with it to great advantage, even that which was much laid. The withdrawing the Berkshire militia just the three busiest weeks of harvest seems a most unaccountable error in the officials, to the country at large, the farmer and the worker. Surely this demands explanation. *James Williams, Northcourt, Abingdon.*

Crops in Cheshire.—As respects the harvest, cutting of Oats commenced in Speke on the 22d July. Saw Oats cut near Lymm, Warburton, Dunham, Altrincham, and Bowdon on the 26th, and saw many fields of Wheat ready for cutting in both Lancashire and Cheshire in the latter end of the week. Two fields near Tarporley were in reaping on the 22d. Mr. W. Longton, Rainhill, commenced cutting Oats to-day (August 1st). Several farmers about Newton, Kenyon, and Croft have commenced; in short, the harvest will be general this week, except the farmers neglect their business, which is sometimes the case from a wrong notion of what is maturity in their crops. Wheat, on the aggregate, will be above an average crop, and there is a full average breadth. Many fields are not so thick a crop as last year, but then there is very little lodged this season. All, or nearly all the crops are well fed, and will be a prime sample if well harvested. In the hilly districts this crop is well fed, although in many cases thin on the ground. Barley, on proper Barley soils, and where early sown, will be above an average, but where late sown, or not suitable soils, will be under an average. Perhaps an average in the aggregate. Oats will be below an average in Lancashire, but in Cheshire they are a full crop. They are far more extensively grown than Barley, or even Wheat, taking the whole of both counties. On light soils, sown early, this crop is a good one, but in nearly all other cases it is thin and unkindly, and will no doubt meal very badly. On account of the wet spring many fields were not sown before May. The hot weather will have injured these crops in their yield of well-fed corn. In the higher districts and on poor stiff clays the Oats are miserably poor and thin. Beans will be a little below an average crop. There are a few good crops, and but a few. The hot weather in the blooming season caused the bloom to fall off too soon, and the best part of the stalk is deficient in pods. The drilled crops at 27 inches are the best crops. Straw of all the corn crops is much shorter than last year, but it will be excellent in quality. Oat straw will be far better fodder. Clover of the first year and first cuttings has been generally light, but the hay excellent in quality. The second cuttings will be light in all cases where left to be cut, but many fields are pastured as not worth cutting. Upon very well cultivated farms the first cuttings were heavy. Old meadows have been light, but the hay good. I scarcely ever saw the hay so generally good throughout both counties. Very little spoiled in the making or in the stack. In some parts of Cheshire the farmers were engaged in hay-making last week on the old meadows. In one or two cases I saw it spoiled or spoiling in the making. Potatoes at the beginning of July, in very many cases, looked very bad, but they have wonderfully improved in appearance, at least the winter varieties. There is every prospect at present of a good crop in these. Swedes generally are an irregular crop. They may yet do well. Mangels will be a full crop where there are plenty of plants, and they are not so deficient in this respect as the Swedes. Mangel likes hot weather. Its growth appears to be on the increase. I have seen some very fine crops of this valuable root this season. Pastures are exceedingly bare everywhere, and in many cases the cattle have a great difficulty in getting water. *W. Rothwell, Rainhill.*

Societies.

HIGHLAND AND AGRICULTURAL.

(*Concluded from p.* 661.)

Edinburgh: *Thursday, August 4th.*—This, the shilling day, attracted an immense number of visitors; some 28,000 to 30,000 having, we believe, been admitted; the proceeds of the two days (Wednesday 2*s.* 6*d.*, 7000) amounting to somewhere about 2000*l.* The Prince of Wales again visited the show-yard and remained a considerable time. The weather during the early part of the day was good, but towards the closing hour heavy showers fell, which not a little added to the discomfort of the visitors, and to the inconvenience of exhibitors who had highly finished machines on the ground; the absence of all "shedding"

in the implement department being a marked and by no means a very business-like or creditable feature at the Highland Society's show.

Friday: August 5th.—The trial of the reaping machines took place this day at a field near Liberton. The state of the crop—unripe, thin, and badly laid, and twisted—was admirably adapted to show what the machines could *not* do as well as what they could—a very important point, be it noted. For adverse circumstances, which in this climate are as commonly met with as favourable, in the working of a machine bring out the deficiencies and show the necessity of obviating them. A crop which is all favourable to the working of a machine we do not look upon as the best for testing its capabilities; that machine is best which is calculated to work in unfavourable as well as favourable circumstances. A perfect reaping machine, or to use the American term which best conveys the notion of what is desiderated, a "harvesting machine," capable of doing its work in all the states in which crops are generally found in this country, is yet to be invented. Our farmers want machines which can meet all circumstances, and not only one, and that the most favourable to their mode of working which can be met with in practice.

Of the 11 machines entered for competition, Burgess & Key's took the first prize of 10*l.* for two-horse reapers; Bell (Inchmichael, Gowrie), the Bronze Medal. Of one-horse reaping machines, Gardner & Lindsay, Stirling, took the first prize of 10*l.* The difference of working when cutting the grain the reverse way was very observable; thus, while some cut well while going against the grain, that is, in the direction in which it was inclined, they cut very indifferently when going the opposite way.

The Horse Rakes were tried in the same field. Kirkwood, of Tranent, obtained the first prize of 2*l.*; Page, of Bedford, the Bronze Medal.

A trial of the Potato-raising machines was also entered upon. Much diversity of opinion exists amongst practical men as to their real utility and economy of working. Their high price will always act prejudicially and oppose their very wide introduction into practice. More can be said, we think, in favour of the mode of raising Potatoes by means of the double mould-board ploughs with graip or apparatus attached behind, many examples of which were exhibited in the show-yard. This apparatus is very simple in character, and consists of bars which are attached to the hinder part of the sole and are inclined upwards. The bars are generally three in number, of which the central one is straight or in a direction with the line of draught, the outer ones branching out at determinate angles. The central bar is usually round, the outer ones being flat with sharpened edges. The share of the mould-board passes under the drills, and splitting them the earth and Potatoes pass up the inclined bars; the former falling through leaves the Potatoes on the surface. The action of this implement is much more gentle and resembles more closely the processes of hand labour than the violent digging up and energetic throwing aside of the Potato-digging machines *à la* Hanson.

In concluding our notice of the "trials," we would draw attention to the necessity which exists for a modification of the classification now adopted by the Society so far as the "ploughs" and "reaping machines" are concerned. The trials would be much facilitated and the decision of the judges less perturbated by conflicting circumstances were the ploughs divided into two classes, "wheel" and "swing," and the reaping machines into "self-acting delivering" and "hand delivering." These two classes of implements and machines are sufficiently diverse in operation to justify this division of classification; and the want of it was sufficiently obvious during the trials at the Society's show this year.

The following are the awards of the judges:—

CLASS I.—CATTLE.

Short-horns.—Section 1. Old Bulls, 1st, George Shepherd, Tarnes, 20*l.*; 2d, James Gulland, Newton of Wemyss, Kirkcaldy; 3d, William Tod, Elphinstone Tower, Tranent. 2. Young Bulls, 1st, John Hunter, Fochabers; 2d, Thomas Rome, Annan; 3d, Alexander Bethune of Blebo. 3. Yearling Bulls, Lord Kinnaird; 2d, C. Smith & Co., Ardersier; 3d, G. H. Binning Home of Argaty, Doune. 4. Old Cows, James Douglas, Athelstaneford; 2d, William Tod, Elphinstone Tower; 3d, James Douglas. 5. Yearling Heifers, James Douglas; 2d, ditto; 3d, the Duke of Montrose. 6. Heifer Calves, Messrs. Turnbull, Dumbarton; 2d, the Duke of Montrose; 3d, Archibald C. Brodie, Haddington.

Polled (Angus or Aberdeen).—7. Old Bulls, the Earl of Southesk; 2d, Trustees of the late Robert Scott, Balwylo, Brechin; 3d, Lord Talbot de Malahide, S. Young Bulls, Robert Walker, Mountblettton, Banff; 2d, Alexander Bowie, Mains of Kelly, Arbroath; 3d, James Leslie, Thorn, Blairgowrie. 9. Bull Calves, Trustees of the late R. Scott; 2d, George Brown, Westertown, Fochabers; 3d, Sir James Graham, Bart. 10. Old Cows, John Collie, Ardgay, Forres; 2d, do.; 3d, Wm. M'Combie, Tillyfour. 11. Yearling Heifers, Wm. M'Combie; 2d, George Brown, Westertown; 3d, Trustees of the late R. Scott. 12. Heifer Calves, Trustees of the late R. Scott; 2d, William M'Combie; 3d, John Collie.

Polled (Galloway).—13. Old Bulls, W. & J. Shennan, Balig, Kirkcudbright; 2d, Sir James Graham; 3d, George Riddick, Greenhillhead, Lochmaben. 14. Young Bulls, Samuel Thomson, Blaiket, Dumfries; 2d, Alexander Jardine, Lockerby. 15. Bull Calves, John Cunningham, Kirkpatrick, Durham; 2d, do; 3d, James Graham, Dalbeattie. 16. Old Cows, John Cruickshank, Cloves, Forres; 2d, John Cunningham, Whitecairn; 3d, do. 17. Yearling Heifers, W. & J. Shennan, Balig; 2d, do. 18. Heifer Calves, Samuel Cunningham, Kirkcudbright; 2d, W. & J. Shennan, Balig; 3d, do.

Ayrshire.—19. Old Bulls, Sir James Colquhoun, of Luss; 2d, John Parker, Irvine; 3d, George Paton, Partick. 20. Young Bulls, John Parker; 2d, George Paton; 3d, Alex. Crighton, Dreghorn. 21. Old Cows in Milk, Lawrence Drew, Hamilton; 2d, John Marshall, Dalziel; 3d, George Pender, Kylsyth. 22. Old Cows in Calf, Lawrence Drew; 2d, Robert Kirkwood, Kilmaurs; 3d, Alexander Murdoch, Cambuslang. 23. Yearling Heifers, George Pender; 2d, do.; 3d, H. D. B. Hyslop, Kirkconnel. 24. Heifer Calves, John Parker; 2d, George Pender; 3d, James Robertson, Beith.

Highland.—25. Old Bulls, Allan Pollock of Broom, Mearns; 2d the Marquis of Breadalbane; 3d, G. and J. G. Smith, Glenlivet. 26. Young Bulls, R. D. Campbell, of Jura; 2d, Allan Pollock; 3d, R. D. Campbell. 27. Old Cows, Allan Pollock; 2d, M'Laren, Kirriemuir; 3d, the Marquis of Breadalbane. 28. Heifers, R. D. Campbell; 2d, the Marquis of Breadalbane; 3d, Allan Pollock. 29. Yearling Heifers, the Marquis of Breadalbane; 2d, do.; 3d, do.

Medals for Extra Stock.—30. Cross-bred Cows, Ainslie, Blackshiels, the Medium Gold Medal; 2d, Robert Hunter, Lasswade, the Silver Medal; 3d, do. 31. Cross-bred Heifers, John Hunter, Fochabers, the Medium Gold Medal; 2d, James Stewart, Aberdeen, the Silver Medal; 3d, do., the Bronze Medal. 32. 3-year-old Cross-bred Ox, J. & W. Martin, Aberdeen, the Medium Gold Medal; 2d, John Balfour of Balbirnie, the Silver Medal; 3d, James Stewart, Aberdeen, the Bronze Medal. 33. 2-year-old Cross-bred Ox, calved after 1st January, 1857, James Stewart, Aberdeen, the Medium Gold Medal; 2d, George Brown, Cupar-Fife, the Silver Medal; 3d, Robert Husband, Dunfermline, the Bronze Medal. 34. 3-year-old Polled Ox, William M'Combie, Medium Gold Medal; 2d, do., the Silver Medal. 35. 2-year-old Polled Ox, William M'Combie, the Medium Gold Medal; 2d, do., the Silver Medal. 36. Highland Ox, James Stewart, Aberdeen, the Medium Gold Medal; 2d, J. & W. Martin, the Silver Medal; 3d, Allan Pollock, the Bronze Medal. 37. 3-year-old Highland Ox, John Armstrong, Dumfries, the Medium Gold Medal; 2d, James Stewart, the Silver Medal; 3d, Allan Pollock, the Bronze Medal.

CLASS II.—HORSES.

For Agricultural Purposes.—1. Stallions, C. Graham, Inch Farm, Longtown; 2d, Alex. Sim, Keithhall; 3d, James Lawrie, Slateford, the Bronze Medal. 2. 3-year old Entire Colts, P. Crawford, Strathblane; 2d, D. Riddell, Duntocher; 3d, P. Wilson, Lesmahagow. 3. 2-year old Entire Colts, A. Logan, Kilbarchan; 2d, S. Clark, Kilbarchan; 3d, Colonel Ferguson, of Raith. 4. Yearling Entire Colts, J. Brown, Biggar; 2d, P. Crawford; 3d, John W. J. Paterson, Langholm. 5. Best Mare (with Foal at foot), J. Coubrough, Campsie; 2d, R. Morton, West Kilpatrick; 3d, T. Smith, jun., Dumfries. 6. Best Mare (in Foal), W. Jamieson, Liberton; 2d, W. Stirling of Keir, M.P.; 3d, R. Walker, Aberdeen. 7. 3-year-old Filly, J. Adam, Stirling; 2d, James Salmon, Johnstone; 3d, J. Kerr, Midcalder. 8. 2-year old Filly, M. Gilmour, Paisley; 2d, W. Muir, Biggar; 3d, W. Stirling of Keir. 9. Yearling Filly, W. Aitkenhead, Pollockshaws; 2d, W. Park, Dumbarton; 3d, J. Kerr.

CLASS III.—SHEEP.

Leicester.—Section 1. Tups, T. Cockburn, Dunse; 2d, do; 3d, S. Wyley, Brandsby, York. 2. Shearling Tups, T. Cockburn; 2d, do.; 3d, S. Wyley. 3. Five Ewes, J. Collie, Ardgay, Forres; 2d, Thomas Watson, Gorebridge; 3d, D. Wallace, Loven. 4. Five Shearling Ewes, S. Wyley; 2d, T. Cockburn; 3d, the Duke of Richmond.

Cheviot.—5. Tups, T. Elliot, Jedburgh; 2d, C. Borthwick, Langholm; 3d, do. 6. Shearling Tups, J. Johnstone, Moffat; 2d, R. Turnbull, Hawick; 3d, J. Johnston. 7. Five Ewes, J. Brydon, Langholm; 2d, T. Elliot; 3d, S. Swan, Jedburgh. 8. Five Shearling Ewes, T. Elliot; 2d, T. C. Borthwick; 2d, J. Brydon.

Blackfaced.—9. Tups, J. Watson, Biggar; 2d, T. Murray, Eastside; 3d, W. Murray, Penicuik. 10. Shearling Tups, White, Biggar; 2d, T. Murray; 3d, J. Watson. 11. Five Ewes, J. Drife, Sanquhar; 2d, Allan Pollock; 3d, J. Maclaren, Blair-Athole. 12. Five Shearling Ewes, Allan Pollock; 2d, T. Murray; 3d, John Wilson, Roslin.

Southdown.—13. Tups, the Duke of Richmond; 2d, do.; 3d, J. Aitchison, Haddington. 14. Shearling Tups, the Duke of Richmond; 2d, J. Aitchison; 3d, the Duke of Richmond. 15. Five Ewes, John Hutchison, Peterhead; 2d, do.; 3d, R. Scot Skirving. 16. Five Shearling Ewes, the Duke of Richmond; 2d, J. Hutchison; 3d, the Duke of Richmond.

Long-woolled Sheep other than Leicester.—17. Tups, Lord Kinnaird; 2d, E. Handy, Sierford, Cheltenham; 3d, E. Handy. 18. Shearling Tups, E. Handy; 2d, Lord Kinnaird; 3d, E. Handy. 19. Five Ewes, the Duchess of Gordon; 2d, Lord Kinnaird; 3d, R. Scot Skirving. 20. Five Shearling Ewes, the Duchess of Gordon; 2d, Lord Kinnaird; 3d, R. Scot Skirving.

CLASS IV.—SWINE.

Section 1. Boars of large breed, J. Harrison, jun., Stockport; 2d, W. Jamieson, Straiton; 3d, J. Gordon, Cathcart. 2. Boars of small breed, J. Dickson, Saughton Mains; 2d, G. Mangles, Ripon; 3d, J. Harrison, jun. 3. Sows of large breed, G. Robinson, Alnwick; 2d J. Harrison, jun.; 3d, John M'Kay, Barrhead. 4. Sows of small breed, G. Mangles; 2d, do.; 3d, John M'Kay. 5. Three Boar Pigs, G. Mangles; 2d, Miss Bell, Woodhouselees, Canonbie; 3d, J. Harrison, jun. 6. Three Sow Pigs, James Skinner, Aberdeen; 2d, J. Brown, Aspatria; 3d, Miss Bell.

CLASS VII.—IMPLEMENTS AND MACHINES.

Section 1. Two-horse Ploughs, J. & F. Howard; 2d, George Sellar & Son, Huntly. 2. Deep-furrow Plough, G. Sellar & Son; 2d, J. & F. Howard. 3. Subsoil Plough for Two Horses, J. Kirkwood, Tranent; 2d, G. Sellar & Son. 4. Subsoil Plough for Three or Four Horses, R. Law, Shettleston; 2d, J. Kirkwood. 5. Double Mould-board Plough, with attachment for lifting Potatoes, G. Ponton, Woolston, Linlithgow; 2d, J. Kirkwood. 6. Ribbing Plough, J. Kirkwood; 2d, Peter Macgregor & Sons, Keith. 7. Two-horse Grubber, Coleman & Sons, Chelmsford; 2d, J. Kirkwood. 8. Norwegian Harrow or other Pulverising Land-roller, D. Young, Kelso; 2d, Alex. Jack & Son, Maybole. 9. Consolidating Land-roller, R. Wright, Prestonpans; 2d, the Trustees of Wm. Crosskill. 10. Land-presser for preparing Seed-bed, Smith, Brothers, & Co., Kinning Street, Glasgow; 2d, Young, Peddie, & Co., Edinburgh. 11. Ribbing-machine, Mrs. Thomas Sherriff, Westbarns, Dunbar; 2d, J. Kirkwood. 12. Harrows for Heavy Land, J. & F. Howard; 2d, J. Kirkwood. 13. Harrows for Light Land, E. Page & Co., Bedford; 2d, J. & F. Howard. 14. Harrows for covering Grass Seeds, J. & F. Howard; 2d, E. Page & Co. 15. Draught-bars for Two Horses, W. Grey, Wishaw; 2d, G. Ponton, Linlithgow. 16. Equalising Draught-bars for more than Two Horses, W. Grey, Cambusnethan; 2d, G. Ponton. 17. Broadcast Sowing Machine, G. Finlayson, Arbroath; 2d, A. Dick, Liberton. 18. Drill Sowing Machine for Grain, W. & J. Hunter, Haddington; 2d, Mrs. Sheriff, Dunbar. 19. Sowing Machine for Grass Seeds, G. Finlayson; 2d, A. Tyrie, Errol. 20. Sowing Machine for Turnips, G. Finlayson; 2d, A. Jack & Son. 21. Sowing Machine for Turnips with Manure, R. & J. Reeves, Bratton Iron Works, Westbury; 2d, N. Smith, Thrapston. 23. Sowing Machines for Mangel, J. & T. Young, Newton Green, Ayr; 2d, Charles Hay, Ratho. 24. Sowing Machine for Carrots, Mrs. Sheriff, Westbarns. 25. Three-row Sowing Machine for Beans, Mrs. Sheriff; 2d, G. Hunter, Kippielaw-Dalkeith. 26. One-row Sowing Machine for Beans, Jack & Son; 2d, A. Tyrie. 27. Machine for Pulverising Guano, &c., J. Thomson, Stow; 2d, J. Mitchell, Fisher's Tryst. 28. Machine for Distributing Guano in drill or broadcast, R. & J. Reeves, Westbury; 2d, Mrs. Sheriff. 29. Liquid Manure Distributing Machine, W. Crosskill; 2. I. James, Cheltenham. 30. Liquid Manure Pump, W. Crosskill; 2d, Smith & Co., Glasgow. 31. Horse-hoe for Drilled Grain Crops, W. & J. Hunter, Haddington; 2d, Trustees of W. Crosskill. 32. Horse-hoe for Green Crops, W. Gray, Cambusnethan; 2d, J. Kirkwood. 33. Machine for Singling Turnips, P. M'Gregor & Sons, Keith; 2d, J. Eaton, Kettering. 34. Machine for Raising Potatoes, Smith & Co., Glasgow; 2d, R. Law, Shettleston. 35. Scythe, J. Smith, Lawhill, Auchterarder; 2d, J. Payne, Kirkcudbright. 39. Hand-stubble or Hay Rake, W. Kirkwood, Portobello; 2d, Young, Peddie, & Co. 40. Threshing Machine for Two or more Horses, William Brothers, Kendal. 41. Threshing Machine, with Steam-power, W. Foster, Lincoln; 2d, R. Ridley & Co., Lincoln. 42. Machine for Winnowing Grain, J. Richardson, Carlisle; 2d, J. Grant, Corstorphine. 44. Machine for Cleaning Grass Seeds, J. Richardson, Carlisle; 2d, R. Read, Arbroath. 44. Weighing Machine for Grain, Heriot & Co., Graeme Street, Glasgow; 2d, D. & J. Thomson, Edinburgh. 45. Weighing Machine from 1 lb. to 2 tons, A. & W. Smith & Co., Glasgow; 2d, R. Forshaw & Co., Liverpool. 46. Straw Cutter for Hand Labour, Richmond & Chandler, Manchester and Liverpool; 2d, Picksley, Sims, & Co. 47. Straw Cutter for Power, Richmond & Chandler; 2d, Picksley, Sims, & Co. 48. Turnip Cutter for Cattle, Picksley, Sims, & Co.; 2d, J. Wingate, Alloa. 49. Turnip Cutter for Sheep, Picksley, Sims, & Co. 50. Turnip Cutter for Sheep, attachable to a cart, Mrs. Sheriff, Westbarns; 2d, J. Kirkwood, Tranent. 52. Root Washer, Trustees of W. Crosskill; 2d, G. Porteous, Haddington. 53. Linseed Bruiser for Hand Labour, Richmond & Chandler. 54. Oil-cake Bruiser, for Hand Labour, Richmond & Chandler; 2d, Smith & Ashby, Stamford. 55. Grain Grinder or Bruiser for Power, Richmond & Chandler, Manchester; 2d, Smith Brothers & Co., Glasgow. 56. Steaming Apparatus for Food, Smith Brothers & Co., Glasgow; 2d, Richmond & Chandler. 57. Feeding Troughs for Byres, P. B. Muir Macrae, of Perceton; 2d, J. Robson, Glasgow. 58. Feeding Troughs for Sheep, W. Kirkwood, Duddingston; 2d, J. Robson. 59. Sheep Fodder Rack, James Kirkwood; 2d, Young, Peddie, & Co. 60. Churn worked by Hand, R. Tinkler, Penrith; 2d, P. Hunter, Edinburgh. 61. Churn worked by Power, W. Lindsay, Edinburgh. 62. Cheese Press, J. & T. Young, Ayr; 2d Smith Brothers & Co., Glasgow. 63. Curd-cutter for Dairy Purposes, J. & T. Young. 64. General Set of Dairy Utensils, W. Lindsay, Edinburgh; 2d, P. Hunter, Edinburgh. 65. One-horse Cart, with Harvest Frame, R. Law, Shettleston; 2d, the Trustees of W. Crosskill, Beverley. 66. Harvest Cart, the Trustees of W. Crosskill; 2d, R. Law. 67. Light Spring Cart, the Trustees of W. Crosskill; 2d, do. 69. Divisions, Rack, and Manger, for Farm Stables, Adam Jack & Co.; 2d, Young, Peddie, & Co. 70. Farm Harness, H. Downie, Corstorphine; 2d, M. Berry, Leith. 71. Stone or Iron Stack Pillars, Young, Peddie, & Co.; 2d, J. Robson. 72. Field Gate, constructed entirely of Iron, J. M. Watson & Co., Edinburgh; 2d, do. 74. Dunghill Gate, to open at different elevations, James Denholm, Morningside, Edinburgh.

ROYAL AGRICULTURAL IMPROVEMENT SOCIETY OF IRELAND, Meeting at Dundalk (*see p. 641*).

We proceed to take a cursory review of the principal classes of live stock exhibited, beginning with Short-horns. In section I., Bulls calved from January 1, 1854, to January 1, 1857, "Young Heir-at-law," a very handsome animal, obtained 1st prize. He was commended at Warwick, and stood first in his class at the Derry show last year. "Priam," a large bull calved June 30, 1855, got 2d prize. He is not thick enough behind the shoulders for an animal of such size, nor is he very handsome looking, but he makes up for these and some other deficiencies in the quality of his flesh. There are several animals in this section whose career has been so far marked by strange vicissitudes of fortune. Thus we have "Orpheus," which gained 2d prize at Derry in 1858, where he beat "Priam," which was not even commended; the "Beau of Kilbogget," which gained 2d prize in his class at the last spring meeting of the Royal Dublin Society, and has been only commended at Dundalk; and "Comet," a very handsome white bull bred by Viscount Monck, which got 1st prize at the spring show just named.

Section II., best Short-horn Bull calved in 1857.—1st, Mr. Barcroft, with "Sir Colin," a rich roan which obtained first prize at Derry in the yearling bull class. He continues to handle well, but the defect of his fore-legs which we pointed out last year continues. "Sir Colin" was bred by Mr. Tynte, of the County Wicklow. Mr. Barnes gained 2d prize with "Dr. M'Hale," a very handsome white animal got by Monk (11824), dam by Hopewell (10332). In this section we find "Bridegroom," which got 2d prize in his class at Derry, and we could wish his finely developed breast and other commendable points had been better appreciated.

Section III., best Bull calved in 1858.—1st prize, Mr. Tynte, County Wicklow, for "Clydesdale," a yearling of enormous size, and very fine quality; has the same defect in the fore-legs as "Sir Colin." If "Clydesdale" fills up as we anticipate (and at present he is not in high condition) we augur for him a good career. Mr. Lyndsay, who we understand is a tenant farmer, got 2d prize in this class with "Mystery," which does great credit to his owner.

Section IV., best Short-horn Cow of any age in Calf or in Milk.—1st prize, Mr. Tod, East Lothian, with "Volga," which got 2d prize in her class at Warwick, where Mr. Eastwood's cow "Rosette" beat her. Mr. Douglas, of Athelstaneford, exhibited two remarkable and well-known cows in this section—"Ringlet" and the "Rose of Sharon." The latter won for Mr. Douglas 2d prize, and is like all his exhibited stock, possessed of great width and symmetry.

Section V., best Heifer in Calf or in Milk, calved in 1856.—1st, Mr. Richard Eastwood, of East Lothian, with "Rosette," calved June 26, 1856. "Rosette" also gets the Gold Medal and the Purcell Challenge Cup, value 50 sovereigns. She has lost little, if any, of that unnatural fat which disfigured her at Warwick. It does appear strange that Mr. Eastwood's two cows—"Volga" (which is 8 years old) and "Rosette" (which is 5 years old) should have been exhibited in the same class at Warwick, and in two different classes in the same month at Dundalk. We desire to see greater uniformity of action, if not greater unity of purpose amongst our national agricultural societies, and certainly pervading their official documents. 2d prize, Mr. Douglas, with "Venus de Medicis," which got 2d prize at Derry. "Venus" was bred by Mr. Booth, of Killerby; has a tapering muzzle, a small bony head, a loin unusually full, and a back well covered with elastic flesh, but is not quite perfect at the setting on of the tail.

Section VI., best Heifer in Milk or in Calf, calved in 1857.—1st prize, Mr. Thomas Bail, for "Peahen 8th,"

which has a long quarter, and uncommonly good hair and general quality; 2d prize, Mr. James Douglas, with the "Maid of Athelstane," an animal of rare substance, has a round carcase, and stands "square." Mr. Douglas was highly commended for the "Lady of Athelstane," which has a well arched rib and an extraordinary sirloin. At Derry "Peahen 8th" was not commended, the "Maid of Athelstane" was highly commended, and the "Lady of Athelstane" won 1st prize—another instance of the vicissitudes of Short-horn exhibitions.

Section VII., best Heifer calved in 1858.—1st prize, Mr. Eastwood, for "Souvenir," a pretty well formed animal, but not of first quality; 2d prize, Mr. Thomas Ball, with "Letitia," whose most commendable point is her well-formed neck and head. This heifer together with "Josephine," which was highly commended, and "Agatha," won for Mr. Ball the Waterford Challenge Cup, value 100*l*.

On the whole the show of Short-horns at Dundalk is creditable to the improved state of agriculture in Ireland. We question very much if the Irish breeders are not bringing out their stock in a style of symmetry equal, if not superior, to our English breeders.

The Hereford Class was not as prominently represented as we could desire, and this is the more to be regretted as there are many strong lands in Ireland well suited to this fine breed. We do not look upon the Hereford breed as even comparable with the Durham in aptitude to fatten at an early age, nevertheless they form an excellent race of stock. Mr. Hewer, of Vern House, near Hereford, exhibited "Van Tromp," a 4-year old bull, for which he got the prize. His "Nelly," a 2-year old heifer, and "Penelope," a year old, obtained the prizes in their respective sections. We must caution their owners from again exhibiting one or two Herefords shown at Dundalk, which are not fair specimens of the breed, and can command attention only from the owners of curiosity shops.

In Section Devon Bulls calved on and after 1st January, 1854, Mr. R. Q. Alexander won the prize with "Inkerman," an animal of greater substance than we are accustomed to see in Ireland.

Of Devon Heifers in Calf or Milk, on or since 1st January, 1856, the prize was given to Sir Alan Bellingham, for "Marchioness the Third," a fair Devon. Mr. Prentice's "Moss Rose" got the prize in the Devon yearling Heifer Class. The show of Devons was far in advance of the Herefords.

In Class Angus or Galloway Bulls, "Lucullus," calved January, 1856, and belonging to Lord Talbot de Malahide, got the prize. "Lucullus" is a noble animal and has already gained many prizes for his noble owner. In substance and quality he ranks next to the Short-horns. His lordship took two other prizes with the "Maid of Angus," a 5-year-old cow, and "Grace," a well-shaped heifer, calved February, 1858. Sir F. Heygate obtained the running prize offered for Polled Cattle with "Moorhen," a Galloway heifer calved in 1856. The show of Ayrshires ranked next to the Short-horns in number and merit.

In Section 1, best Ayrshire Cow of any age in Calf or in Milk, the prize was awarded to Mr. Chambre, of Flurrybridge, for "Mabdia," which is as thin in the fore part as an Ayrshire ought to be.

Lord Clermont got the prize in next section for a most beautiful heifer calved April, 1856. His lordship's yearling also gained the prize in her class.

In Section Devon Bulls calved on or after January 1, 1854, Mr. Henry Harrison got the prize for "Madman," calved June, 1857. "Madman" has a more even back than we usually meet with among Devons in Ireland.

The show of Kerries somewhat disappointed us. "Ned of the Hills," the prize Kerry bull, is a handsome creature, which has been noticed on former occasions. We had expected, however, to find more than four Kerry bulls entered in the one section devoted to them.

In Section best Kerry Cow of any age in Calf or in Milk, Sir Edward Macdonnell got 1st prize for "Mealy Mouth," a nice animal, calved in 1856.

In the next Section the prize was awarded to the Commissioners of National Education for the Kerry heifer, "Norah," bred at the Albert Model Farm, Glasnevin. "Norah" has a quarter of uncommon substance for an animal of the size.

Horses.—Section I., best Stallion of any breed foaled from 1st January 1852 to 1st January, 1857.—1st prize and Medal, Messrs. Moon, of Raheny, County Dublin, for "Sir William Wallace," foaled in 1849; 2d prize, Mr. Mill, Donabate, County Dublin, for "Royal Charter," a nice animal, foaled May 1854. Both these animals are Clydesdale. "Sir William" got 1st prize at Derry, for his then owner, Lord Dufferin; is a thick animal, of no remarkable quality, and too fat for a useful size. On the whole the Section was commendable, and contained a couple of fine Suffolk horses—"Caledonia," a fine Clydesdale, belonging to Mr. Hatch, Ardee, has a noble crest; "The Czar," which belongs to Mr. Wellesley Prendergast, and which was bred by Mr. Crisp, has excellent action, and should have at all events been highly commended.

Section II., best Draught Mare in Foal, or with a Foal, or having reared a Foal in 1859.—1st prize, Sir F. Heygate, with a thickset short-legged mare, possessed of little action; 2d prize, Mr. Archdale, for "Jessie," whose prize-taking qualities we have not been able to discover. We should prefer Mr. Sherrard's handsome mare "Jessie," which has gained several prizes before now, and whose action is light and free. Section generally indifferent.

Section III., best Draught Filly foaled in 1856.—1st prize, Lord Clermont, for "Victoria," a strong well-built 3-year old.

Section IV., best Draught Filly foaled in 1857.—1st prize, Mr. Steele, Co. Derry, for "Jess," foaled May 1857, a stout well-formed filly, of free action. Lord Clermont was commended in this class for an animal which we would also say was indifferent.

For the best Weight-carrying Thorough-bred Stallion.—1st prize, Mr. Morrow, of Tashinny, for "Young Colwick," foaled in 1851. "Young Colwick" got the Gold Medal and the Croker Cup, value 50*l*. This animal has good action, a well-formed shoulder, but his quarter does not indicate any remarkable breeding. This section contained three good racers.

Leicester Sheep.—Section I., best Shearling Ram.—1st prize, Mr. Thunder, for a very fine animal, said to have been recently purchased of Mr. Sandy, for 90 guineas. To this ram was deservedly awarded the Gold Medal as the best of all the prize rams. The 2d prize was also carried off by Mr. Thunder, with another fine animal. We have once more to congratulate Mr. Thunder on the excellent flock which he has collected. This section was most creditably filled.

Section II., best Ram of any other age not exceeding 3 years.—1st prize, Mr. William Owen, of Blesinton, for an animal bred by Mr. Owen himself, with a full chest and a well-formed neck; 2d prize, Mr. Marris, of Lincolnshire, for a heavy two-shear Ram, somewhat wanting in that handsome appearance which an even contour gives. Mr. Owen was highly commended for another ram in this section; Mr. Garde was also deservedly commended.

Section III., best pen of five Shearling Ewes.—1st prize, Mr. Thomas Roberts, of the farm, near Strokestown, for a particularly nice lot, which must have a neck-and-neck competition with the second prize lot, which belong to Mr. Owen.

Section IV., best pen of five Ewes, not exceeding 5 years old, that have reared lambs up to June 1, 1859.—1st prize, Mr. Roberts, for a lot whose palmy days belong to the past. Mr. Marris gets 2d prize. Mr. Owen commended.

Section V., best pen of five Ewe Lambs.—1st prize, Mr. Leslie, M.P., for a pen of promising lambs.

The show of Leicesters was very fair. The rams particularly good, but the pens of five ewes and five lambs might have been better.

Of *Cotswolds* there were some splendid specimens; Mr. Thomas Beale Brown's best Shear Rams being beaten by those of Mr. Carroll, of Nenagh, County Tipperary, which we believe were purchased at Warwick. Mr. Beale Brown got 1st prize for a Three-shear Ram; a second prize in the same section having been awarded to Dr. Rorke, of Fermoy Mr. Brown got 1st and 2d prize for two excellent pens (of five each) of Shearling Ewes.

In the other Sections of Cotswolds there was no competition. We would suggest to Irish flock-masters the propriety of giving this valuable breed, which has a more robust constitution than the Leicesters, a fair trial on the fine pastures of the Emerald Isle.

Lord Clermont got 1st and 2d prizes for Cheviot Rams; and the Marquis of Conyngham obtained 1st and 2d prizes in the Section devoted to pens of five Shearling Cheviot Ewes; and his lordship was equally successful in the class devoted to pens of five Ewes not exceeding 5 years old.

Of Black-faced Sheep there was no great display. Of the six prizes awarded, Sir F. Heygate took two 1st and one 2d; and Lord Clermont got two 2d and one 1st.

The show of Down Sheep was very much superior; indeed, fully in keeping with the most successful department of the Show. Might we raise our voice against the absurdity of grouping into one section for competition Southdown and Shropshire sheep? If such a grouping be correct all our ideas of distinctions between classes are worth very little.

In Section I., Shearling Rams, Mr. C. W. Hamilton, of Ham Wood, Dunboyne, got 1st prize for a very fine Shropshire, which has a good head and spacious chest, and excellent quality. Mr. Skirving, of Drem, N.B., gets 2d prize for a prime Southdown.

In the next Section, Rams of any other age not exceeding five years, Mr. Skirving got 1st prize for a good Southdown; and Mr. Hamilton 2d prize for a very fine two-shear sheep.

Mr. Marris won the prize with his nice pen of five-shearling Southdown ewes; and Mr. Hamilton the prize in the next Section with an excellent pen of five Shropshires.

We now approach the *Swine*, which for many years past have mustered in great numbers at the Irish exhibitions. At Dundalk there was scarcely a pig which was not fit for exhibition, while the great majority of them were highly commendable.

We have frequently had occasion to remark upon the classification of swine adopted by the Irish societies, namely, white and black breeds—a classification which is much more intelligible than that adopted by the Royal Agricultural Society of England.

Black Breeds.—Section I. Boars under 18 months old.—1st prize and the gold medal to Mr. Robert Glen, near Londonderry, for a handsome square Berkshire, "Young Balaclava," farrowed 24th November last. To Mr. Joyce, of Abbey Farm, Waterford, was awarded 2d prize for a promising young Boar 4 months old.

Section II. Boars from 18 to 36 months old (only three entries).—1st, Lord Clermont, with a well-shaped Berkshire which had previously got prizes; 2d, Mr. Glen, for another good Berkshire.

Section III. Breeding Sows under 18 months.—1st, Lord Clermont, for a handsome pig; 2d, Mr. Glen.

Section IV. Breeding Sows over 18 months old.—1st, Mr. Joyce; 2d, Major McClintock.

White Breeds.—Section V. Boars under 18 months old.—1st prize, Mr. Wilkinson, Roundhay, Leeds, with "Wonder," one of his remarkably well-formed animals; 2d, Lord Clermont, for a Cumberland whole; tail is not nicely set on, but is otherwise excellent.

Section VI. Boars from 18 to 36 months old.—1st prize and medal awarded to Mr. Wilkinson for "Cato;" 2d, Mr. Wellesley Prendergast, for "Prince Ernest," a Cumberland, pigged August, 1857; drops a little at the tail, but is of immense size for his age.

Section VII. Breeding Sow under 18 months old.—Mr. Prentice, for a Cumberland, bred by Mr. Allen Pollok; Lord Clermont got second place in this Section with a Yorkshire. Mr. Wilkinson exhibited one of his small breed in this Section, to whom life must be a burthen; her eyes are completely encased in wrinkles of fat.

Section VIII. Breeding Sows over 18 months old.—1st prize, Mr. Prentice, for a very fine 2-year old Cumberland; 2d prize, Mr. Russell Patteson, of Dundalk, for a fine 3-year old Yorkshire.

Of Poultry there was a small collection at Dundalk; and we regret to say that the collection of Farm and Dairy produce was still more limited.

YORKSHIRE AGRICULTURAL.

Hull: *Aug.* 5.—The following particulars of the Prize List are added to our last week's report:—

CATTLE OF ANY BREED.

Best Cow for Dairy Purposes, roan, T. Tutin, Winestead, Patrington; 2d, roan, W. Stead, Owlerton, Sheffield. Class generally commended. The best six Dairy Cows, the property of one owner, S. Beecroft, Anlaby Road, Hull; commended, J. Galloway, Southcoates, Hull.

EXTRA STOCK.

1st, Diadem, roan, Lieut.-Col. Towneley, Towneley Park, Burnley (bred by him); 2d, Fat Ox, roan, H. Lambert, Wauldby, Brough (bred by him).

HORSES.

Best Stallion for Hunters, J. Batty, Bishop Monkton, Ripon; 2d, T. Manfield, Thirkleby Bridge, Thirsk. Best Stallion for Coach Horses, William Burton, Murton, York; 2d, J. Stockdale, Skerne, Driffield. Best Stallion for Roadsters, L. Hodgson, Highthorne, Easingwold; 2d, K. B. Ridsdale, Watergate, Ripley. Best Stallion for Agricultural Purposes, B. Taylor, Peterborough; 2d, W. Simpson, jun., Burton Agnes, Bridlington. Best Mare and Foal for Hunting, C. Harrison, Melton, Brough. Best Mare and Foal for Coaching, J. Todd, Harland, Cottingham. Best Roadster Mare and Foal, F. Jordan, Eastburn, Driffield. Best Mare and Foal for Agricultural Purposes, S. W. Duggleby, Cotham, Driffield. Best 3-year-old Hunting Gelding, J. Walker. Danes Hill, Thetford. Best 3-year-old Hunting Filly, C. Harrison, Melton, Brough. Best 2-year-old Coaching Gelding, J. Maw, Howden. Best 3-year-old Gelding or Filly for Agricultural Purposes, W. Gofton, Pockthorpe, Driffield. Best 2-year-old Coaching Gelding, H. Savage, Hessle Grange, Hull. Best 2-year-old Coaching Filly, J. B. Thompson, Anlaby. Best 2-year-old Agricultural Gelding or Filly, T. Upton, Pallathorpe, Tadcaster. Best Yearling Gelding or Filly for Agricultural Purposes, H. Grantham, Scawby, Brigg. Best Pair of Horses, of either sex, for Agricultural Purposes, worked during the season, W. Angas, Neswick, Driffield. Best Hackney Gelding or Mare, not less than four years' old, nor exceeding six, J. T. Robinson, Leckley, Thirsk. Best 4-year-old Hunter, Gelding or Mare, G. Holmes, Beverley.

EXTRA STOCK HORSES.

Coaching Mare, — Jordison, Boreas Hill, Hedon. Coaching Mare, G. Holmes, Beverley.

SPECIAL PRIZE.

A Silver Cup, given by the Right Hon. Lord Hotham, E. R. Harrison, Cottingham.

LEICESTER, OR LONG-WOOLLED SHEEP.

Best Shearling Ram, W. Torr, Aylesbury, Grimsby (bred by W. Sanday); 2d, J. Borton, Barton House, Malton (bred by him). Best Ram of any age, W. Sanday, Holme Pierrepoint, Nottingham (two shear, bred by him); 2d, J. Borton, Barton House, Malton (two shear, bred by him). Best pen of five Ewes, J. Simpson, Spofforth Park, Wetherby (bred by him); 2d, W. Gofton, Pockthorpe, Driffield (three and four shear, bred by him). Best pen of five Shearling Wethers, F. Jordan, Eastburn, Driffield (bred by him); 2d, W. Lovel, Nafferton Grange, Driffield (bred by him). Best pen of five Shearling Gimmers, F. Jordan, Eastburn, Driffield (bred by him); 2d, J. J. Simpson, Pilmoor House, Hunmanby (bred by him).

SHORT-WOOLLED SHEEP.

Best pen of five Shearling Gimmers, T. Marris, the Chase, Ulceby; 2d, Hon A. Duncombe, Kilnwick Percy, Pocklington (bred by him).

SHORT-WOOLLED OR CROSS-BRED SHEEP.

Best pen of five Shearling Wethers, J. Wells, Booth Ferry House, Howden (bred by him). Extra Stock prize, J. Hall, Kiveton Park, Worksop (ewe, aged, bred by him). Extra do., F. Jordan, Eastburn, Driffield (a fat ewe, six shear, bred by him).

Miscellaneous.

Royal Agricultural Society of England.—There is one important arrangement connected with the country meetings of this Society to which, we think, attention should be directed at once, in order that the views of exhibitors thereon may be made known to the Council before the plans for next year are finally settled. We refer to the days on which the exhibition is held, and, of course, to the arrival of stock and its despatch at the close of the meeting. It is, we believe, the opinion of many persons who have given considerable attention to the subject, and who, from their position and experience, are enabled to arrive at a satisfactory conclusion, that a change in this respect is imperatively called for, and that it might be made with great advantage not only to those for whom the claim is first raised, but to the permanent interest of the Society. The suggestion we have to offer is this: that in future all the stock should be on the show ground on Friday evening; that the prizes should be awarded on Saturday—the whole

of that day being given up for the purpose—and that the complete exhibition, stock and implements, should be opened on Monday morning, and closed on Wednesday evening. Were this suggestion adopted, we do not think the stock shown would be kept from home longer than it has, in many instances, hitherto been. It is, we need scarcely say, impossible that the whole of the animals can, in all cases, if in any, be sent back in one day; and as the second day after the close of the meeting, under present arrangements, is Sunday, the evil becomes one of still greater magnitude—every person in charge striving for the first opportunity to get away. Indeed, we believe that the system now carried out involves Sunday travelling both ways, at least to some extent. Exhibitors at Warwick had painful experience of the truth of what we are now stating; and they will neglect a duty which they owe to themselves and to each other if they fail to urge upon the Council a much-needed reformation. Some consideration is at the same time called for on account of the animals exhibited, for there can be no one so careless in this respect as not to make all possible efforts to prevent unnecessary suffering. The change now recommended would further, it is believed, have considerable influence upon the receipts of the show week, for on Tuesday the company is usually very limited, there were not 1700 persons on the ground at Warwick on this day; and Wednesday, from the uncertainty as to the time at which the cattle yard will be open, produces by no means so good a return as it would under the amended scheme. There are good grounds, also, for the opinion, that the manufacturers of implements would be greatly benefited by the change, as their yard might be open on Saturday at a small charge, as well as on the three days of the complete exhibition. It appears that at present the great mass of visitors are found on the grounud on Thursday and Friday. Of the 55,567 at Warwick, only 10,219 were admitted on Tuesday and Wednesday; and it can scarcely be doubted that more business would be done amongst the implement sheds if the attendance were spread more equally over the three days. There are many other advantages which would arise from the proposed change to which we need not now more particularly refer; but we may add that it would be most agreeable to those gentlemen who are officially connected with the meeting to have a quiet Sabbath day's rest after the labour they have undergone in filling the show yard. If for once small things may be compared with great, we would mention that the altered arrangements at Birmingham, by which everything is required to be in Bingley Hall on Friday, and the show is closed on the following Thursday, has been found to work in all respects most satisfactorily, and is considered one of the most useful changes which the Council has ever made. What is approved at Birmingham would, we are sure, be still more valuable at the meetings of the Royal Agricultural Society; and we shall be gratified if some practical results shall arise from our having become the exponents of what we believe to be the opinions of many of the exhibitors and other members of the Society. *Midland Counties Herald.*

Sewage.—If we ask the opinions of different persons on the question of "sewage," we receive contradictory answers. All manufacturers of superphosphate of lime are quite agreed on the point, that only the fluid portions of sewage, or the matters dissolved in sewage water, are valuable in agriculture. They do not, in giving this opinion, deny the good effect of the solid matters, but only mean to say that they are not worth the trouble of being collected for manure, because they are ready to deliver from their manufactories these matters to agriculturists. The manufacturers of ammonia salts and the dealers in guano take an entirely opposite view. These hold that only the solid sewage matters are to be looked upon as important. There can, however, be no doubt that both the fluid and solid matters are valuable for agriculture. "The use of these fertilising matters is not confined to the estates and farms in the immediate vicinity of the centres of population and consumption. Our peasants go long journeys with their wretched carts to seek substitutes for the deficient quantity of their farm-yard manure. The industrious peasant of Lucca is worthy of ranking with the Chinese coolie. Enjoying the blessings of irrigation within a circle of 28 miles (English), the former, who has never even heard of the name of guano, manages to reap two crops in the year; and yet never allows his land to lie fallow. He goes, however, with his cart, not only to the neighbouring town of Lucca, but even as far as Pisa and Leghorn, to collect the contents of the sewers, with the aid of which he produces, by indefatigable labour, marvellous crops, and raises food sufficient for the most dense population of the old duchy. The boats of Viarreggio carry from this port the goats' dung of the Maremma, to manure the Olive trees of the Apuan coast. From the peculiar circumstances in which our Maremmas are placed, they are debarred from the benefit of a like restitution of the conditions of fertility. Cultivation slowly improves, and the amount of produce rapid increases every year; but the scanty and migratory population of a soil, deserted on account of the mismatic exhalations, cannot yield an amount of fertilising matter in proportion to the quantity carried off from the land. The gradual introduction of the system of the rotation of crops might slowly lead to the same impoverishment of the soil which has resulted in other places from the "high system of farming." The apprehension lest this should in reality be the result of it, has by no means escaped the attention of the proprietors and cultivators of the soil in the Grand Duchy, who are so earnestly endeavouring to make agriculture flourish in these parts. The barrenness and desolation which has so long been the fate of the Maremma may, perhaps, be partly attributable to the spoliation system of farming pursued by the ancient Romans and Etruscans. Agriculture in Tuscany, then, is based upon the principle of restoring to the soil those elements which science points out to be the most efficacious for the growth of plants; and in this respect it is far ahead of the system pursued in other countries," &c.—(*Sei nuove lettere chimiche sull' agricultura di Giusto Liebig, compendiate et annotate de Gustavo Dalgas, Dr. Philosoph. Firenze, Felice Paggi*, 1858, p. 93.) *Liebig's Letters on Modern Agriculture.*

Calendar of Operations.

AUGUST.

ISLE OF ELY.—Absence from home has prevented our report appearing at the proper time, but the delay occasioned thereby affords some advantages, as it enables us to give a more full and accurate statement respecting the harvest and its probable results. Reaping on our warm gravelly soils was very general on the 25th and 26th ult., and most of the Wheats on these lands are already cut, and the hands are working down to the black soils which are just getting ready for the sickle. Notwithstanding the abundance of hands we have had, and still have, we can scarcely keep pace with the work. The weather has been so warm and forcing that the Wheats appear to ripen much faster than was anticipated, and consequently require an immense supply of labour. But with fine weather we hope no loss will be sustained. Should we however have showers to occasion much interruption and delay, the consequences must be serious. We have a very bulky crop of Wheat, but by no means a promising one. Mildew and blight are prevalent, and will deteriorate the quality as well as lessen the quantity. We shall assuredly see many very inferior samples throughout the season. Oats are a heavy crop generally and cut up well. The quality will scarcely be fine as the crop is too bulky, but we think the yield will be good. Beans are an average crop and promise better than was expected. The top blossoms have set well and we have no fly to injure them. Peas have cut up well; are thickly podded, and indicate an abundant yield. Potatoes are not suffering largely from disease at present, but the time has now arrived when its ravages are generally apparent. A heavy rain would doubtless occasion great loss. Mangels are a good crop and flourish admirably. Grass-keeping from the heat of the weather is becoming scarce. Coleseeds grow as well as could be expected, the weather has been too hot for them. Showery weather and bad prospects of the Wheat crop have occasioned an advance in the price of Wheat. *Fen Reporter, August* 1.

WARWICKSHIRE: *August* 2.—Oats and Peas were cut early, some of them before the middle of July, and Wheat was pretty generally commenced last week. To a considerable extent, though perhaps not to the same extent as last year, the crops have ripened simultaneously, and several fields at once are thus demanding the husbandman's attention. This occasions a scarcity of labour, which even the late Show, and Burgess & Key's reaping machines, have been unable duly to meet. Bands of reapers from the other side the Channel, too, are not so readily met with as was the case 10 years ago. The Wheat crop is about an average, though under last year's extraordinary produce. Clay soils, where drained, and stiff land, have the greatest comparative yield, and in more than one case that we have seen, the additional produce would bear the expense of three-fourths of last season's drainage. In some instances, especially where lodged, the weight per bushel will be light. Spring sown varieties will be deficient in this respect, and the finest Wheats will probably be Golden Drop among red, and Rough Chaff White among white. Both are excellent varieties for Warwickshire, being stiff strawed, and not so likely to get lodged as the good old Red-Lammas, and other old-fashioned standard sorts. Of Barley we must also write a full average, with some prime samples, but a greater proportion of grinding qualities than farmers generally like to see. This simply arises from the quantity lodged at an early period of the season, a complaint which gets worse and worse each year. Surely this points to the adoption of another mode of culture, either by way of prevention or cure. Some fields of Barley are already in the rick, and more will be so in the course of the next few days. Beans are a variable crop, some of the winter sown being very good, and others equally indifferent. Spring varieties are generally good, and will probably all be harvested before the end of the month. Peas have escaped remarkably from many of their natural enemies, and being off early, have thus secured the advantage of an early opening for brush Turnips. For the past two years, these Turnips have done even better than where grown after a spring fallow, in the usual manner. White Peas are rather more in fashion this year than usual, a taste which we are glad to see on the increase, for several reasons that will readily suggest themselves. Towards the confines of the county bordering on Leicestershire, where our best Oats are mostly grown, one of the largest buyers informs us that a considerable deficiency will be seen. Those crops, on the other hand, which have come under our personal notice, both Polands and Black Tartarians, will be equal to last year, or nearly. And for the past four years our crop of the former has never been under 8 quarters per acre. If we turn to root crops the prospects are at present good. Mangels planted well, and look almost better than they have ever done at the end of July. Swedes were later sown, and thus escaped the fly, which last year proved so destructive. Of black caterpillar we have heard nothing, although many other districts have experienced their ravages. Field Potatoes continue good so far, and only in a few gardens, or highly cultivated allotments, is disease at present complained of. Carrots are good, and Cabbages also promising. Having grown half an acre of Holcus saccharatus by way of experiment, we take this opportunity of adding our testimony as to its general luxuriance, and the fondness of all domestic animals for it. But it is long in starting and makes little progress for a long time. *T. B., in Coventry Standard.*

Notices to Correspondents.

FOREIGN PERIODICALS: *F.* We know of no weekly French agricultural journal. The "Journal d'Agriculture Pratique," edited by M. J. A. Barral, and which may be ordered of M. F. R. de la Trehonnais, at 39, New Bridge Street, Blackfriars, is published once a fortnight, and is a first class agricultural periodical.

GAS LIME: *Walthamstow.*—About 2 or 3 tons per acre may be spread, after lying in compost for a few months with mould, road scrapings, &c., and being turned there once or twice. Its causticity is not due to what ammonia may be present in it. Or it may be applied over arable land in the quantity named, spread broadcast, and ploughed or cultivated in afterwards.

GRASS SEEDS: *Anon.* We will give particulars of management next week.

ROTATION OF CROPS: *Cor.* Another week.

BURNARD, LACK, AND CO.'S CONCENTRATED SUPERPHOSPHATE OF LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.

CONCENTRATED TURNIP MANURE, equal in value to the preceding.

Of these Manures Dr. Voelcker says:—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."

Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to BURNARD, LACK, & Co., Sutton Road, Plymouth.

LONDON MANURE COMPANY, removed to 116, Fenchurch Street, E. C. (Established 1840), have the following MANURES ready for delivery:—

CORN MANURE for SPRING TOP-DRESSING
URATE
MANGEL MANURE
SUPERPHOSPHATE OF LIME
BLOOD MANURE
} all of guaranteed quality.

In consequence of the reduction in the price of raw material the London Manure Co. are enabled to lower the price of their Superphosphate of Lime, and to materially improve the Corn Manure and Urate.

The London Manure Co. also supply PERUVIAN GUANO (direct from Messrs. A. Gibbs and Sons), SULPHATE of AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of value. Wholesale dealers supplied.

116, Fenchurch Street, E.C. EDWARD PURSER, Secretary.

REDUCTION IN PRICE OF LAWES'S MANURES.

MR. LAWES begs to announce that he has this season reduced the price of the Manures manufactured by him, viz.:—

TURNIP MANURE	from £7	to £6	6
SUPERPHOSPHATE OF LIME ..	,, 7	to 6	6
MINERAL do. ..	,, 6	to 5	5
BARLEY MANURE..	8	0	

Prof. Way and Dr. Voelcker have sampled from a bulk of 5000 to 6000 tons at his factories, and their report and analyses are given in full in Circular to be obtained on application at his office, 1, Adelaide Place, London Bridge, E.C., or of his local Agents.

N.B. Genuine Peruvian Guano direct from Messrs. GIBBS, Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures. American Cotton-seed Cake supplied.

SOFT STUFF GREAVES ARE A CAPITAL MANURE FOR WHEAT LANDS.—The undersigned have sent large quantities to Norwich, where they are highly approved.—Price 4*l.* 10*s.* per ton in tierces (no charge for casks), delivered free to any railway station in London.

JOHN WILLIAMS & SON, Soap Works, Clerkenwell, London, E.C.

AGRICULTURAL MACHINERY.

E. R. AND F. TURNER, Ipswich, manufacture Prize Mills for Crushing Corn, Seed, Malt, &c.; Portable Grinding Mills, Steam Engines fixed and portable from 2 horse-power and upwards; Threshing Machines, Chaff Cutter, Oilcake Breakers, Horse Gears, Saw Tables, &c., all of a superior description and adapted for Home, Colonial, and Foreign use. Illustrated Price Lists sent free on application.

THE PATENT BRITANNIA SELF-RAKING REAPING MACHINE is at work daily in the neighbourhood of Banbury, and in almost every County in England. Particulars on application.—B. SAMUELSON, Banbury, Oxon.

HAYMAKERS, possessing the best features of Nicholson's Prize Machines, with recent improvements peculiar to those supplied and manufactured only for RICHMOND AND CHANDLER, Salford.
Branch Establishment, South John Street, Liverpool.
N B. The celebrated Bedford and Stamford Prize HORSE RAKES always in stock, with latest Patented Improvements.

HAY HARVEST.
NICHOLSON'S PATENT HAYMAKER, to which was awarded the First Prize of the Royal Agricultural Society of England at the last contested trial.

The celebrated STAMFORD HORSE RAKE has lately been much improved, and has obtained 26 Prizes at competitive trials.

MOWING AND REAPING MACHINES are performing their work most satisfactorily, and fully justify public expectation, cutting about 10 acres per day, at a cost of 9*d.* per acre.

Orders for the above machines should be given at once to RICHMOND & CHANDLER, Salford, Manchester.
Branch Establishment, South John Street, Liverpool.

VULCANIZED INDIA-RUBBER HOSE AND TUBING FOR WATERING GARDENS, &c.

J. L. HANCOCK supplies this article, of superior make, of any required strength or size.

BRASS SCREW JOINTS, for connecting the Hose to Cisterns, also HAND BRANCHES, TAPS, and WATER SPREADERS in great variety. Orders by post promptly executed, and Illustrated Price Catalogue on application.

JAMES LYNE HANCOCK, Vulcanized India-Rubber Works, Goswell Mews, and No. 8, Goswell Road, London, E.C.

SHAW'S TIFFANY is universally acknowledged to be the best, neatest, and cheapest material for shading Conservatories, and other Hothouses. Effectually securing Plants from the scorching rays of the sun, without obscuring the light. Also, for protecting the Bloom of Wall Trees from spring frosts, and Fruit from birds and wasps. Sold in pieces.

No. 1.—20 yards long, by 38 inches wide, 5*s.* per piece.
No. 3.—Double strength, 18 yards long, by 39 inches wide, 7*s.* 6*d.* per piece.
No. 4.—Treble strength, 18 yards long, by 39 inches wide, 9*s.* per piece.

A liberal allowance to the Trade when ten or more Pieces are taken.—JOHN SHAW & Co., Princess Street, Manchester.

"FRIGI DOMO."—Patronised by her Majesty, the Queen, the Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, and —Collier, Esq., of Dartford.

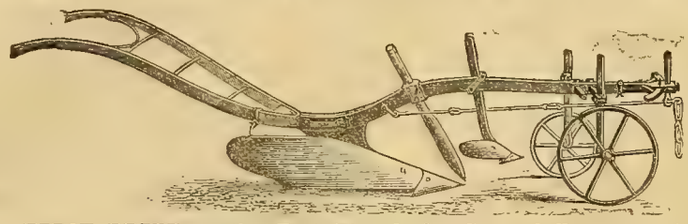
PROTECTION FROM THE SCORCHING RAYS OF THE SUN.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and, floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths. Two yards wide, 1*s.* 6*d.* per yard run; four, 3*s.* per yard. Also, an improved make for Shading Purposes. Three yards wide, 2*s.* 6*d.* per yard run.

ELISHA THOMAS ARCHER, whole and sole manufacturer, 7, Trinity Lane, Cannon St., City,, E.C., and of all Nurserymen and Seedsmen throughout the kingdom. "It is much cheaper than mats as a covering."

THE PLOUGH TRIALS AT WARWICK.

HOWARD'S CHAMPION PLOUGH



Gained the FIRST PRIZE as the Best Plough for General Purposes at Warwick,

BEING the CHIEF PRIZE for PLOUGHS, awarded by the Royal Agricultural Society of England, at this Meeting. The importance of this Prize will be gathered from the fact that the GENERAL PURPOSE PLOUGHS are the only ones tried on BOTH LIGHT AND HEAVY LAND, and as HOWARD'S CHAMPION PLOUGH proved itself to be the best on both soils, the FIRST PRIZE, of the HIGHEST AMOUNT given by the Society for any kind of Plough, was awarded to J. & F. HOWARD.

PRIZES awarded to J. & F. HOWARD, by the Royal Agricultural Society of England, at the WARWICK MEETING, 1859, being not only the LARGEST NUMBER of PRIZES, but the LARGEST NUMBER of FIRST PRIZES awarded to any Exhibitor.

THE FIRST PRIZE FOR THE BEST PLOUGH FOR GENERAL PURPOSES, ALSO A PRIZE FOR THE BEST PLOUGH FOR LIGHT LAND, AND A PRIZE FOR THE BEST PLOUGH FOR HEAVY LAND; THE FIRST PRIZE FOR THE BEST LIGHT HARROWS, AND THE FIRST PRIZE FOR THE BEST HEAVY HARROWS.

Every one of HOWARD'S Implements, tried at Warwick, gained a Prize.

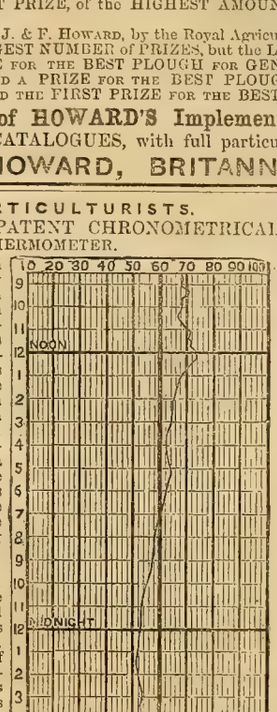
CATALOGUES, with full particulars, sent post free on application to

J. & F. HOWARD, BRITANNIA IRON WORKS, BEDFORD.

TO HORTICULTURISTS.

GAUNTLETT'S PATENT CHRONOMETRICAL THERMOMETER.

This instrument, which combines an eight-day clock of the best English make showing time, with a newly-patented Thermometer, wherein glass and quicksilver are dispensed with, writes down the temperature of the atmosphere on a slip of paper, and when placed in a Hothouse, Forcing House, or Conservatory, &c., supplies a valuable record of the temperature, with all its variations, showing the time when any change took place, and how long such change continued.

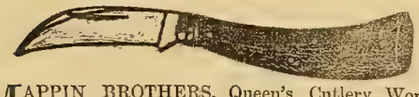


The above slip (reduced in size) exhibits the temperature of the Royal Agricultural Society's show yard at Chester, July 22, 1858, written off by one of these instruments, to which was awarded the Society's SILVER MEDAL.

This is the only instrument that registers temperature continuously and writes it down, and no horticulturist should be without it.

Orders received by W. H. GAUNTLETT, Middlesbro' on-Tees.

MAPPIN'S PRUNING KNIVES IN EVERY VARIETY.
WARRANTED GOOD BY THE MAKERS.



MAPPIN BROTHERS, Queen's Cutlery Works, Sheffield; and 67 & 68, King William St., London, E.C.

MAPPIN'S "SHILLING" RAZORS Shave well for Twelve Months without Grinding.

MAPPIN'S 2s. RAZORS Shave well for Three Years.

MAPPIN'S 3s. RAZORS (suitable for Hard or soft Beards,) Shave well for Ten Years.

MAPPIN'S SUPERIOR TABLE-KNIVES maintain their unrivalled Superiority—handles cannot possibly become loose—the blades are all of the very first quality, being their own Sheffield manufacture.

	Tble. Kns.	Dst. Kns.	Carvers.
Ivory 3½ in. Handle, balanced,	20s. p. doz.;	16s. p. doz.;	6s. p. pair
Do. 4 in. do. ..	25s. ,,	18s. ,,	9s. ,,

MAPPIN'S SILVER-PLATED DESSERT KNIVES and FORKS, in Mahogany Cases.

12 Pairs Knives and Forks, Ivory Handles, in Case.. 80s.
12 Do. Pearl Handles, do. .. 130s.
12 Do. Silver-Plated Handles, do. .. 80s.

MAPPIN'S ELECTRO-SILVER PLATE.—MAPPIN BROTHERS, Manufacturers by Special Appointment to the Queen, are the only Sheffield makers who supply the consumers in London. Their LONDON SHOW ROOMS, 67 and 68, King William Street, London Bridge, E.C., contain by far the largest STOCK of ELECTRO-SILVER PLATE in the World, which is transmitted direct from their Manufactory, Queen's Cutlery Works, Sheffield.

	Fiddle Pattern.	Double Thread.	King's Pattern.
12 Table Forks, best quality	£1 16 0	£2 14 0	£3 0
12 Table Spoons, best quality	1 16 0	2 14 0	3 0
12 Dessert Forks, best quality	1 7 0	2 0 0	2 4
12 Dessert Spoons, best quality	1 7 0	2 0 0	2 4
12 Tea Spoons, best quality	0 16 0	1 4 0	1 7

Messrs. MAPPIN BROTHERS respectfully invite buyers to inspect their unprecedented display, which, for beauty of design, exquisite workmanship, and novelty, stands unrivalled. Their Illustrated Catalogue, which is continually receiving addition of New Designs, sent per post on receipt of 12 stamps.—MAPPIN BROTHERS, 67& 68, King William Street, London Bridge, E.C Manufactory, Queen's Cutlery Works, Sheffield.

GLENFIELD PATENT STARCH, used in the Royal Laundry, and pronounced by Her Majesty's Laundress to be the finest Starch she ever used. When you ask for Glenfield Patent Starch, see that you get it, as inferior kinds are often substituted. Sold by all Chandlers, Grocers, &c.
WOTHERSPOON & Co., Glasgow and London.

JAMES PHILLIPS AND CO.'S PRICES of GLASS for the present month.

HORTICULTURAL GLASS, STOCK SIZES, in 100 feet boxes.

	3rds.	4ths.
11 by 9, 12 by 9, 13 by 9, 14 by 9 .. / 12 ,, 10, 13 ,, 10, 14 ,, 10, 15 ,, 10 ..	14s. 6d.	12s. 6d
13 ,, 11, 14 ,, 11, 15 ,, 11, 16 ,, 11 .. / 14 ,, 12, 15 ,, 12, 16 ,, 12, 17 ,, 12 .. / 18 ,, 12, 19 ,, 12, 16 ,, 13, 17 ,, 13 .. / 18 ,, 13, 19 ,, 13, 20 ,, 13, 21 ,, 13 .. / 16 ,, 14, 17 ,, 14, 18 ,, 14 .. .. / 19 ,, 14, 20 ,, 14, 21 ,, 14	16s. 6d.	14s. 0d.

Boxes included and not returnable.

PACKED IN CASES.

200 feet	£2 2 0	16 oz.
300 feet	3 3 0	
200 feet	2 18 0	21 oz.

ORCHARD HOUSE SIZES, as supplied by us to Mr. Rivers.

20 in. by 12 in.		16 oz.	21 oz.
20 in. by 13 in.	Common	14s. 0d. ..	£1 1s.
20 in. by 14 in.	Superior do.	16 6 ..	1 5
20 in. by 15 in.	English Glass	18 0 ..	1

Boxes included and not returnable.

SMALL SQUARES.—Per 100 feet.

				s.	d.
6 by 4	6½ by 4½	7 by 5	7½ by 5½	11	6
8 ,, 6	8½ ,, 6½	9 ,, 7	9½ ,, 7½		
10 ,, 8	10½ ,, 8½ ..	..	..	12	6

JAMES PHILLIPS AND CO.,
180, Bishopsgate St. Without, London, E.C.

HORTICULTURAL GLASS—JUNE TARIFF.

THOMAS MILLINGTON'S reduced Tariff of GLASS, &c.

6 by 4, 7 by 5, 8 by 6, 9 by 7 } 16 oz. to the foot, 11s. 6d.
6½ by 4½, 7½ by 5½, 8½ by 6½, 9½ by 7½ } per 100 feet.

In 100 boxes,—4ths quality, 12s. 6d.; 3ds do., 14s. 4d.

10 by 8, 12 by 9, 12½ by 10½, 14½ by 10½, 13 by 11
10½ by 8½, 12½ by 9½, 13 by 10, 15 by 10, 13½ by 11½
11 by 9, 13 by 9, 13½ by 10½, 12 by 11, 14 by 11
11½ by 9½, 12 by 10, 14 by 10, 12½ by 11½ .. ..

20 by 12 / 20 by 13 / 20 by 14 / 20 by 15	per 100 feet Common .. Superior .	16 oz. 16s. .. 18s. ..	21 oz. 24s. 27s.

All Boxes included.

Orchard House sizes as supplied to Mr. Rivers.
Hartley's improved Rough Plate Glass from ⅛ to ? in thickness.
Coloured Glass in great variety, at 9d. and 1s. per foot.
Paints, Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, Lamp Glasses, &c.
87, Bishopsgate Street Without, E.C., same side as Eastern Counties Railway.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz SHEET GLASS of British Manufacture at prices varying from 2d. to 3d. per square foot for the usual sizes required, many thousands of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES, and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London, W.

See *Gardeners' Chronicle* first Saturday in each month.

LAWNS—IN USE IN THE ROYAL GARDENS.

SAMUELSON'S PATENT BOYD LAWN MOWING and ROLLING MACHINE, the only one that will cut wet as well as dry Grass, is guaranteed efficient in use, easily handled, and readily kept in working order. Doing the work of five or six men. Prices, including case and carriage to any railway station in England, from 4l. 17s. 6d. and upwards. Copies of testimonials post free on application to Mr. SAMUELSON'S London Warehouse, 76, Cannon Street West, City, E.C.; DEANE'S, London Bridge, E.C.; or the Works, Banbury, Oxon.

SLATE WORKS, ISLEWORTH, MIDDLESEX, W.

EDWARD BECK MANUFACTURES in SLATE a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener, Sundays excepted. PRICED LISTS of PLANT TUBS and BOXES forwarded on application.

GARDEN POTS AND PANS, in quantities of not less than 20 casts, delivered to the London Stations at the following prices:—Nos. 7lbs. 60, 1, 50, 54, 48, 40, 32, 28, 24, 16, per cast, 2s. respectively. 12, 3s.; 8, 3s. 6d.; 6, 5s.; 4, 5s.; 3, 5s.; 2, 5s.; 1, 5s. On lesser quantities, 6d. per mile, for delivery to the Station, charged. The usual discount to the Trade. Square Propagating Pans, Kale and Plunging Pots, Strawberry and Border Tiles, &c., made to order.
J. & W. ADAMS, Kilns, Belle Isle, York Road, King's Cross, N.

VASES, PEDESTALS, SUNDIALS, FOUNTAINS, FLOWER BOXES, JARDINETS, FERN CASES, BALUSTRADES, EDGINGS AND CURBS FOR FLOWER BORDERS, SEATS, &c., in Imperishable Siliceous Stone, at reduced prices, for the adornment of the Villa Garden, the Mansion Grounds, or the private or public Park.

For Priced Illustrations apply to FREDERICK RANSOME, at the Show Rooms, Cannon Row, Westminster, S.W., or Patent Stone Works, Ipswich.

TANNED NETTING, for the Protection of Fruit Trees from Frost, Blight, and Birds: also, for the security of fresh sown seeds, at 1d. per square yard; 200 yards, 12s.; 500 yards, 25s.; Scrim Canvas, for wall fruit; Garden Mats.—At EDGINGTON & Co's., Rick Cloth, Tent, and Waterproof Cloth Manufacturers, 17, Smithfield Bars, City, & Old Kent Rd

WASPS.—THE WASPS ARE COMING.—Gentlemen who have Gardens or Hothouses are invited to transmit their address to Mr. HAYTHORN, Nottingham, who will forward free by post patterns, testimonials, and prices of HAYTHORN'S HEXAGON and CHISWICK NETS, warranted to protect all kinds of Fruit from Wasps, Flies, Birds, &c., now used and recommended by all the principal gardeners.

PEACHES, NECTARINES, PLUMS.—WORSTED NET to effectually protect the above from Wasps and Flies and the blossoms in the spring, 7d. per square yard, in widths of 2 yards, very much approved. New GARDEN NET, 1½d. per yard, TANNED NETS, 6s. 3d. per 100 yards.—R. RICHARDSON, White Horse Factory, Bidborough Street, Judd Street, W.C.; Office: 99, Euston Road, London, N.W.

N.B.—All kinds of FISHING NETS cheap.

CAST-IRON GARDEN ORNAMENTS, viz.—ORNAMENTAL VASES, of various sizes, do. with pedestal, GARDEN CHAIRS and STOOLS, RUSTIC GARDEN SEATS and TABLES, both plain and bronzed, also GARDEN ROLLERS of all sizes.—Prices on application to J. JONES, Iron Merchant, 6, Bankside, London, S.E.

MICROSCOPES.

J. AMADIO'S BOTANICAL MICROSCOPES, packed in mahogany case, with three powers, condenser, pincers, and two slides, will show the animalculæ in water. Price 18s. 6d.—Address JOSEPH AMADIO, 7, Throgmorton Street, E.C.—A large assortment of Achromatic Microscopes.

"It is marvellously cheap, and will do everything which the lover of nature can wish it to accomplish either at home or in the open air."—*The Field*, June 6,-1857.

Just published, 2d Ed., an Illustrated Catalogue, with names of 1500 Microscopic objects, free for 6 stamps.

SMALL GAS APPARATUS, WITH FREEDOM FROM NUISANCE.

BOWER'S PATENT NATIONAL COAL GAS APPARATUS, for Private Residences, Farm Buildings, Churches, Chapels, Railway Stations, and all isolated places not yet lighted with Gas. The various parts are of the best materials and workmanship, are not liable to get out of order, and can be worked with a small degree of attention by a farm servant or labourer without materially interfering with his other duties. Prospectuses with testimonials, &c., may be had on application to the Proprietors and Manufacturers,
J. T. B. PORTER & Co., Lincoln.

ALLEN'S PATENT PORTMANTEAUS AND TRAVELLING BAGS, with SQUARE OPENING; Ladies' Dress Trunks, Dressing Bags, with Silver Fittings; Despatch Boxes, Writing and Dressing Cases, and 500 other articles for Home or Continental Travelling, illustrated in their New Catalogue for 1859. By post for two stamps. J. W. & T. ALLEN, Manufacturers of Officers' Barrack Furniture and Military Outfitters (see separate Catalogue), 18 & 22, Strand, W.C.

PRIZE MEDAL, PARIS EXHIBITION 1855.

METCALFE, BINGLEY, AND CO.'S New Pattern and Penetrating Tooth Brushes, Penetrating unbleached Hair Brushes, Improved Flesh and Clothes Brushes, and genuine Smyrna Sponges; and every description of Brush, Comb, and Perfumery for the Toilet. The Tooth Brushes search thoroughly between the divisions of the Teeth and clean them most effectually—the hairs never come loose. M., B., and Co. are sole makers of the Oatmeal and Camphor and Orris Root Soaps—sold in Tablets (bearing their names and address) at 6d. each; of METCALFE'S celebrated Alkaline Tooth Powder, 2s. per box; and of the New Bouquets.—Sole Establishment, 130B and 131, Oxford St., 2d and 3d doors west from Holles St., London, W.

DRESSING CASES, DRESSING BAGS, and highly finished elegancies for presentation in great variety; Ivory-handled Table Cutlery; every requisite for the Toilet and Work Tables.—MECHI & BAZIN, 112, Regent St., W.; 4, Leadenhall Street, E.C.; and Crystal Palace, Sydenham, S.

TOURISTS AND TRAVELLERS, VISITORS TO THE SEASIDE, and others exposed to the scorching rays of the sun, and heated particles of dust, will find ROWLAND'S KALYDOR a most refreshing preparation for the complexion and skin, dispelling the cloud of languor and relaxation, allaying all heat and irritability, and immediately affording the pleasing sensation attending restored elasticity and healthful state of the skin. Freckles, tan, spots, pimples, flushes, and discoloration are eradicated by the application. Price 4s. 6d. and 8s. 6d. per bottle. The heat of the summer also induces a dryness of the hair, and a tendency to its falling off, which may be completely obviated by the use of ROWLAND'S MACASSAR OIL, a delightfully fragrant and transparent preparation for the hair, and as an invigorator and beautifier, beyond all precedent. Price 3s. 6d.; 7s.; family bottles (equal to four small), 10s. 6d.; and double that size, 21s. ROWLAND'S ODONTO, or PEARL DENTIFRICE, bestows on the teeth a pearl-like whiteness, frees them from tartar, and imparts to the gums a healthy firmness, and to the breath a grateful purity and fragrance. Price 2s. 9d. per bottle.—Sold by A. ROWLAND & SONS, 20, Hatton Garden, London, E.C.; and by Chemists and Perfumers.—Beware of Spurious Imitations.

FRY AND SONS' CHOCOLATES AND COCOAS.—Victoria Chocolate, Bon Bons, Soluble Cocoa, &c., in great variety. These delicious beverages are now sold at very moderate prices, and many of them are highly economical.

FRY'S HOMŒOPATHIC COCOA is an article of unexceptionable quality. FRY'S SOLUBLE COCOA, in Hexagon packets, and FRY'S PEARL COCOA, are strongly recommended.

FRY AND SONS, MANUFACTURERS TO THE QUEEN.

Liebig, the celebrated Chemist, asserts that nitrogen is essential to the healthy action of the bile, and the growth, sustenance, and invigoration of the body. No stronger recommendation of Cocoa and Chocolate can therefore be given than the following statement:—Caffeine and Theine each contain only about 2p per cent., whilst Theobromine (or essence of Cocoa) contains upwards of 35 per cent. of nitrogen.

HEALTH WITHOUT PHYSIC.—Nervousness effectually cured by a novel and most successful mode of treatment, discovered in America. The most convincing proof of the efficacy of this wonderful remedy, with other details, will be sent to any address on receipt of one stamp.—Address, Mr. HILL, 27, Alfred Place, Store Street, London, W.C.

HOLLOWAY'S PILLS.—SLIGHT AND SEVERE DISEASES. It is comforting and satisfactory to know that the operation of these famous pills is not limited to the cure of those violent internal distempers for which they are successfully administered in England and foreign countries. They act also as an immediate corrective in the lesser ailments incident to both sexes. Nothing excels them for curing the diseases of children, such as colic, constipation, headache, worms, and all diseases of the skin; they likewise regulate the digestion and stimulate every organ to healthy action. To diseases of the liver, kidneys, and spleen they invariably afford immediate relief and ultimate cure. In fact, in all complaints to which mankind is liable no medicine is so efficient.

THE HEART OF THE ANDES. By Frederick E. Church (Painter of the Great Fall, Niagara), is being EXHIBITED daily by Messrs. DAY & SON, Lithographers to the Queen, at the German Gallery, 168, New Bond Street, W. Admission One Shilling.

GOVERNMENT SCHOOL OF MINES AND OF SCIENCE APPLIED TO THE ARTS.

Director.

Sir Roderick Impey Murchison, D.C.L., M.A., F.R.S., &c.

During the Session 1859-60, which will commence on October 3, the following COURSES of LECTURES and PRACTICAL DEMONSTRATIONS will be given:—

1. Chemistry. By A. W. Hofmann, LL.D., F.R.S., &c.
2. Metallurgy. By John Percy, M.D., F.R.S.
3. Natural History. By T. H. Huxley, F.R.S.
4. Mineralogy. } By Warington W. Smyth, M.A., F.R.S.
5. Mining. }
6. Geology. By A. C. Ramsay, F.R.S.
7. Applied Mechanics. By Robert Willis, M.A., F.R.S.
8. Physics. By G. G. Stokes, M.A., F.R.S.

Instruction in Mechanical Drawing, by Mr. Binns.

The fee for Matriculated Students (exclusive of the laboratories) is 30*l.* in one sum, on entrance, or two annual payments of 20*l.*

Pupils are received in the Royal College of Chemistry (the laboratory of the School), under the direction of Dr. Hofmann, at a fee of 10*l.* for the term of three months. The same fee is charged in the Metallurgical Laboratory, under the direction of Dr. Percy. Tickets to separate courses of Lectures are issued at 1*l.*, 1*l.* 10*s.*, and 2*l.* each. Officers in the Queen's service, her Majesty's Consuls, acting mining agents and managers, may obtain Tickets at reduced charges.

Certified schoolmasters, pupil teachers, and others engaged in education, are also admitted to the Lectures at reduced fees.

His Royal Highness the Prince of Wales has granted two Exhibitions, and others have also been established.

For a prospectus and information, apply at the Museum of Practical Geology, Jermyn Street, London, S. W.

Trenham Reeks, Registrar.

WHAT WILL THIS COST TO PRINT? is a thought often occurring to literary minds, public characters, and persons of benevolent intentions. An immediate answer to the inquiry may be obtained on application to Richard Barrett, 13, Mark Lane, London. R. B. is enabled to execute every description of Printing on very advantageous terms, his office being furnished with a large and choice assortment of Types, Steam Printing Machines, Hydraulic and other Presses, and every modern improvement in the Printing Art. A Specimen Book of Types, and information for Authors, sent on application, by

Richard Barrett, 13, Mark Lane, London, E.C.

TO TUTORS, SURGEONS, THE HEADS OF SCHOOLS, &c.—The above can be supplied with Collections for practically Illustrating the Natural Orders, also Physiological and Medical Botany, by Fredk. Y. Brocas, who has been eight years in the medical profession, and has attended the Lectures of Professors Lindley, Lankester, Henfrey, and Forbes, and the Botanic Gardens in the vicinity of the Metropolis. Collections named, arranged, and mounted, and desiderata supplied by Fredk. Y. Brocas, Botanist, 85, St. Martin's Lane, London, W.C.

PROFESSOR LINDLEY'S INTRODUCTION TO BOTANY, 4th Edition, with Corrections and Additions, now ready, in 2 vols. 8vo, with Six Copper Plates and numerous Wood Engravings. Price 24*s.* cloth.

London: Longman, Brown, & Co.

NEW WORK ON POPULAR ASTRONOMY.

On Friday next will be published, in 16mo, illustrated with Woodcuts and a Map of the Moon, 12 inches in diameter, engraved on Steel,

CELESTIAL OBJECTS FOR COMMON TELESCOPES. By the Rev. T. W. Webb, M. A., F. R. S., Incumbent of Hardwick, Herefordshire.

London: Longman, Green, Longman, & Roberts.

New and Cheaper Edition of

HAWKER ON SHOOTING.

Eleventh Edition, in One Volume, square crown 8vo, with several Plates and Woodcuts, price 18*s.* half-bound,

INSTRUCTIONS TO YOUNG SPORTSMEN, in all that relates to GUNS AND SHOOTING. By the late Lieut.-Col. P. Hawker. Revised and corrected by his Son.

"Colonel Hawker expounds with clearness, fullness, and the whole *rationale* of shooting with vivacity."—*Edinburgh Review.*

London: Longman, Green, Longman, & Roberts.

NEW EDITION OF YOUATT ON THE HORSE.

Just published in One Vol. 8vo, price 10*s.* 6*d.* cloth,

THE HORSE. By William Youatt. With a Treatise on Draught. With numerous Woodcut Illustrations, chiefly from Designs by W. Harvey. New Edition, revised and enlarged by E. N. Gabriel, M.R.C.S., C.V.S.; Secretary to Royal College of Veterinary Surgeons.

YOUATT ON THE DOG, 8vo, Woodcuts, 6*s.*, may also be had.

London: Longman, Green, Longman, & Roberts.

NEW WORK ON THE DOG BY STONEHENGE.

Just published, in square crown 8vo, with about 70 Illustrations engraved on Wood, price 15*s.* half bound,

THE DOG IN HEALTH AND DISEASE: Comprising the various modes of Breaking and using him for Hunting, Coursing, Shooting, &c.; and including the Points or Characteristics of Toy Dogs. By Stonehenge, Author of "The Greyhound," &c.

London: Longman, Green, Longman, & Roberts.

This day, Part the Sixth, Price 1*s.*,

INDEX FILICUM: a Synopsis, with characters, of the Genera, and an enumeration of the Species of Ferns, with Synonyms, References, &c. By Thomas Moore, F.L.S., F.H.S., Author of "The Handbook of British Ferns;" "The Ferns of Great Britain and Ireland, Nature Printed," &c.; Curator of the Chelsea Botanic Garden.

London: William Pamplin, 45, Frith Street, Soho Square, W.

RECREATIVE SCIENCE. The First Number, price 8*d.*, contains: The Endeavour—Science and the Boy—The Planets, by E J. Lowe—How to Gather Diatoms, by Tuffen West—Wayside Weeds and their Teachings, by Spencer Thomson, M.D.—Tame Fishes—Humboldt, by Hain Friswell—Water Glass in Photography, by T. A. Malone—Night-Flying Moths, by H. Noel Humphreys—Science on the Sea-shore: Flints and Sponges, by Shirley Hibberd—The Key to a Bird's Heart, by William Kidd, of Hammersmith—The Gyrascope, by E G Wood—Astronomical Observations for August—Things of the Season—Meteorology for August—Mr. Noteworthy's Corner, How to Observe the Habits of Birds—Miniature Rockwork—Flints in the Drift—New Solvent and Cement.

London: Groombridge & Sons, 5, Paternoster Row, E.C.

This day is published, price 2*s.* 6*d.*,

FOLIA ORCHIDACEA, Part IX. Containing the conclusion of Pleurothallis.

Parts I. to VIII., price 2*s.* 6*d.* each, may still be had.

James Matthews, 5, Upper Wellington St., Covent Garden, London, W.C.

Price 1*s.* 6*d.*, free by post, 1*s.* 7*d.*

LABELS FOR THE HERBARIUM, CONSISTING OF THE NAMES OF THE CLASSES, ALLIANCES, ORDERS, AND SUB-ORDERS, OF PROFESSOR LINDLEY'S "VEGETABLE KINGDOM." So printed in large type, that they can be cut out and pasted into The Herbarium.

J. Matthews, 5, Upper Wellington Street, Covent Garden, London W.C

Third Edition, considerably enlarged, price 5*s.* 6*d.*, free by post, 5*s.* 10*d.*,

RURAL CHEMISTRY. By Edward Solly, F.R.S., F.L.S., F.G.S.

Honorary Member of the Royal Agricultural Society of England, Professor of Chemistry to the Horticultural Society of London, Lecturer on Chemistry in the Hon. E. I. Co.'s Military Seminary at Addiscombe, &c., &c.

J. Matthews, 5, Upper Wellington St., Covent Garden,

In consequence of the new postal arrangements, parties in the country who desire it can have two copies sent by post for one stamp, five for two stamps, or eleven for four, in addition to the cost of the numbers.

Price 3*d.* each, or 5*s.* for 25 copies for distribution among Cottage Tenantry, delivered anywhere in London, on a Post office Order being sent to the Publisher, James Matthews, at the Office of the *Gardeners' Chronicle.*

THE COTTAGER'S CALENDAR OF GARDEN OPERATIONS. By Sir Joseph Paxton, M.P. Reprinted from the Gardeners' Chronicle. Upwards of 140,000 have already been sold.

CONTENTS:—

African Lilies
Agapanthus
Anemones
Annuals
Apples
Apricot
Auriculas
Beans
Beet
Biennials
Black Fly
Books for Cottagers
Borage
Borecole
Box Edgings
Broccoli
Brussels Sprouts
Budding
Bulbs
Cabbage
Cactus
Calceolarias
Californian Annuals
Campanulas
Carnations
Carrots
Cauliflowers
Celery
Cherries
China Asters
China Roses
Chrysanthemums, Chinese
Chives
Clarkias
Clematis
Collinsias
Colewort
Cress
Creepers
Crocus
Crown Imperials
Cucumbers
Cultivation of flowers in windows
Dahlias
Daisies
Dog's-tooth Violets
Exhibitions, preparing articles for
Felts, as protection for borders
Fuchsias
Gentianella
Gilias
Gooseberries
Grafting
Green-fly
Heartsease
Herbs [nials
Herbaceous Perenn-
Heliotrope
Hollyhocks
Honeysuckle
Horse-radish
Hyacinths
Hydrangeas
Hyssop
Indian Cress
Iris
Kidney Beans
Lavender
Layering
Leeks
Leptosiphons
Lettuce
Lobelias
London Pride
Lychnis, double
Marigold
Marjoram
Manures
Marvel of Peru
Mesembryanthemums
Mignonette
Mint
Mustard
Narcissus
Nemophilas
Œnothera bifrons
Onions
Pæonies
Parsnip
Parsley
Peaches
Pea-haulm
Pears
Peas
Pelargoniums
Perennials
Persian Iris
Petunias
Phlox
Pigs
Pinks
Planting
Plums
Polyanthus
Potatoes
Pruning
Privet [tings
Propagation by cut-
Pyracantha
Radishes
Ranunculus
Raspberries
Rhubarb
Rockets
Roses
Rue
Rustic Vases
Sage
Salvias
Savoys
Saxifrage
Scarlet Runner Beans
Seeds
Sea Daisy or Thrift
Sealale
Select Flowers
Select Vegetables and Fruit
Snails and Slugs
Snowdrops
Spinach
Spruce Fir
Spur Pruning
Stocks
Strawberries
Summer Savory
Sweet William
Thorn Hedges
Thyme
Tigridia Pavonia
Transplanting
Tree Lifting
Tulips
Turnips
Vegetable Cookery
Venus's Looking Glass
Verbenas
Vines
Virginian Stocks
Wallflowers
Willows
Zinnias

J. Matthews, 5, Upper Wellington Street, Covent Garden, London, W.C.

GLENNY'S GARDENERS' EVERY-DAY BOOK. —Price 5*s.*; free by post, 5*s.* 6*d.* Containing plain instructions for the cultivation of all classes of Flowers, Fruits, and Vegetables, and for the practical management of every department of Horticulture and Floriculture.

Houlston & Wright, 65, Paternoster Row, E.C.

HOLCUS SACCHARATUS (Pamphlet).

"A VISIT AND A PLANT." A few copies only are left. Post free, 7*d.*

John Willding Clarke, Whittlesea, Cambs.

POPULAR NATURAL HISTORIES.

In square 12mo, price 7*s.* 6*d.* each, cloth gilt, every Volume illustrated with 20 Coloured Plates,

LOVELL REEVE'S POPULAR NATURAL HISTORIES.

1. British Birds' Eggs. Laishley
2. British Crustacea. Adam White
3. Greenhouse Botany. Catlow
4. Field Botany. A. Catlow
5. Geography of Plants. Dr. Daubeny
6. British Mosses. R. M. Stark
7. Palms. Dr. B. Seemann, F.L.S.
8. British Sea Weeds. Dr. Landsborough
9. British Conchology. G. B. Sowerby
10. British Ornithology. Gosse
11. Mammalia. Adam White
12. Mineralogy. H. Sowerby
13. The Aquarium. G. B. Sowerby, F.L.S.
14. The Mollusca. Mary Roberts
15. Garden Botany. A. Catlow
16. Economic Botany. Archer
17. British Ferns. T. Moore
18. British Lichens. Lindsay
19. Physical Geology. J. B. Jukes [borough
20. Zoophytes. Dr. Landsborough
21. British Entomology. M. E. Catlow
22. Birds. Adam White
23. Scripture Zoology. M. E. Catlow
24. The Woodlands. Mary Roberts

"A popular series of scientific treatises, which, from the simplicity of their style, and the artistic excellence and correctness of their numerous illustrations, has acquired a celebrity beyond that of any other series of modern cheap works."—*Standard.*

London: Routledge, Warne, & Routledge, Farringdon Street, E C.

WORKS ON BOTANY, BY DR. LINDLEY.

THE VEGETABLE KINGDOM; OR, THE STRUCTURE, CLASSIFICATION, AND USES OF PLANTS. Illustrated upon the Natural System. In One Volume, 8vo, cloth, price 36*s.*, with upwards of 500 Illustrations.

THE ELEMENTS OF BOTANY, Structural and Physiological. With a Glossary of Technical Terms. In One Volume, 8vo, cloth, with numerous Illustrations, price 12*s.*

*** The Glossary may be had separately, price 5*s.* cloth.

MEDICAL AND ŒCONOMICAL BOTANY. With numerous Illustrations. A New Edition, in One Volume, 8vo, cloth, price 7*s.* 6*d.*

SCHOOL BOTANY; OR, THE RUDIMENTS OF BOTANICAL SCIENCE. In One Volume, 8vo, half-bound, with 400 Illustrations, price 5*s.* 6*d.*

DESCRIPTIVE BOTANY; OR, THE ART OF DESCRIBING PLANTS correctly, in Scientific Language, for Self-Instruction and the Use of Schools. Price 1*s.*

Bradbury & Evans, 11, Bouverie Street.

BIRDS OF EUROPE, AND THEIR EGGS.

Now Ready, price 17*s.*, containing Fifty-nine Coloured Plates, The first Volume of

THE BIRDS OF EUROPE, not observed in the British Isles. By C. R. Bree, Esq.

London: Groombridge & Sons, 5, Paternoster Row, E.C.

LANDSCAPE GARDENING AND GARDEN ARCHITECTURE.

MR. DAVIDSON, 2, Randolph Road, Maida Hill, London (W.), continues to prepare Designs and Working Drawings, and direct the execution of all Park and Garden formations and improvements. His past experience enables him to give most satisfactory references in almost every part of the kingdom.

TO BE SOLD, by Private Contract, a large Span-roof CONSERVATORY, with a 75 feet circular sash front; it is 18 feet in width, with a division for Exotic Plants. The whole is heated with about 300 feet of 4-inch pipes and troughs (by Weeks of London). It was erected a few years since for the late George Thomas, Esq., of Woodbridge, and will be Sold with Stages and Hot-water Apparatus as it now stands.—For price, &c., apply to Messrs. Page & Girling, Melton Foundry, Woodbridge, Suffolk.

TO NURSERYMEN AND OTHERS.

TO BE DISPOSED OF, a really first-rate NURSERY, including Glass, Stock, and Business, entire, on very advantageous terms, in the immediate neighbourhood of London. Might suit two or more in partnership, or any country firm requiring a London place of business. Long Lease and capitally situated. Part of the Purchase Money might remain at interest if desired.—For all further particulars apply by letter to A. B. & Co., care of Messrs. Williams & Lloyd, Stationers, 29, Moorgate Street, London, E.C.

TO FLORISTS.

TO BE SOLD, the STOCK, GOOD-WILL, and FIXTURES of a FLORIST (with Jobbing connection). Rent 20*l.* per annum, held on lease. Satisfactory reasons for leaving.—Apply to T. A., Brunswick Nursery, Cold Harbour Lane, Camberwell, S.

TO BE SOLD, the LEASE and STOCK of SION NURSERY, Croydon, situate in a pleasant and greatly improving neighbourhood, within a few minutes' walk of the new great central Railway Station at Norwood, and ½ mile from Croydon, one of the best and most compact Nurseries near London. It contains 7 acres of ground (fine sandy loam), well stocked with Shrubs, Fruit Trees in full bearing, Greenhouses, Pits, good Dwelling House, and every convenience for carrying on a large trade. Part of the purchase money can remain on security if required, and satisfactory reasons given for disposing of it.—Particulars to be had on the premises, or of Mr. Buck, Centre Avenue, Covent Garden.

IMPORTANT SALE.

To Noblemen and Gentlemen, Horticulturist Plant Growers, and the Trade.

MESSRS. PROTHEROE AND MORRIS have received instructions from Mr. Epps to Sell by Auction (in consequence of the Lease of one of his Nurseries at Maidstone having expired, and immediate possession required), on WEDNESDAY, August 24, and following days, at 11 o'Clock each day, the whole of his large and valuable collection of SPECIMEN PLANTS of all sizes, amounting to upwards of 1000, consisting of the newest and best varieties of Ericas, Azaleas, Pimeleas, Aphelexis, Eriostemon, Acacia, Polygala, Statice, Tremandra, Ixoras (6 vars.), Allamanda, Stephanotis, Rhynchospermum jasminoides, Dipladenias, Mcdinella, Pleroma elegans (fine), Rondeletia, Vinca, Aphelandras, Ardisias, Brexia, Caladiums, Cissus, Crotons, Dracænas, Striped Yuccas, &c.; also a large quantity of his young stock, including 10,000 to 15,000 new and valuable Greenhouse and Stove Plants, comprising Ericas, Epacris, greenhouse Creepers, French Geraniums, Allamandas, Ixoras, Aphelandras, Dipladiums, Eucharis, Gardenias, Gesnerias, Gloxinias, new Tydeas, Achimenes, Stove Climbers, variegated and ornamental foliaged plants, &c.; also several ranges of newly erected Greenhouses, Pits, &c. May be viewed 14 days prior to the Sale. Catalogues had on the premises, of the principal Seedsmen in London, and of the Auctioneers, American Nursery, Leytonstone, Essex, N.E. The Nursery is situated near the Maidstone Railway Station, and about 2 hours' ride from London Bridge Station on the North Kent line.

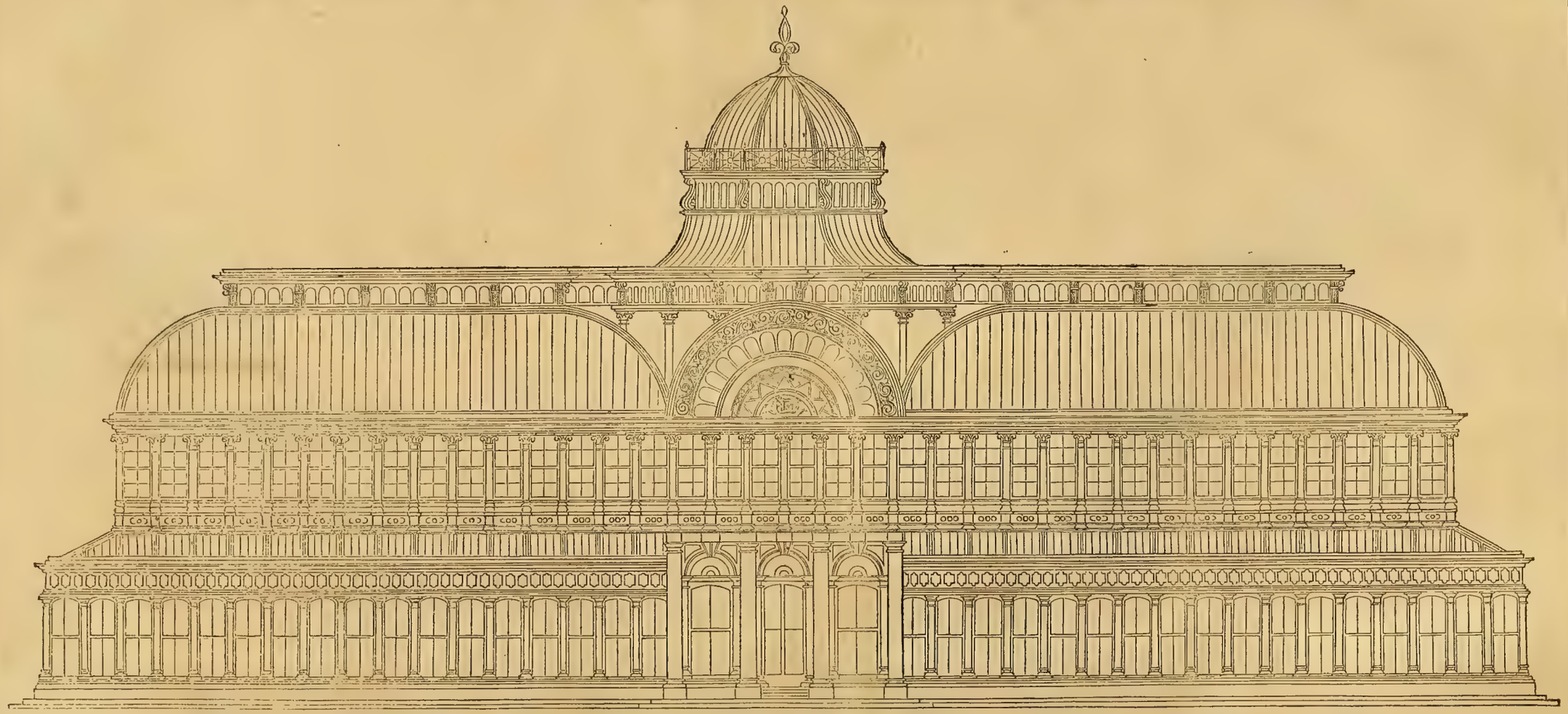
The valuable NURSERY STOCK extending over 5 Acres (comprising very choice and large specimens of Coniferæ and Ornamental Trees and Shrubs that will remove well and calculated for immediate effect), will be sold about the middle of October next, particulars of which will be duly announced.

FREEHOLD ESTATE—BOXTED, ESSEX.

MR. R. G. CRASKE will sell by Auction, by direction of the Executors of the late Mr. George Morten, at the Waggon and Horse Inn, Colchester, on WEDNESDAY, August 31, at 3 for 4 o'clock, in Two Lots. Lot 1. A very valuable Freehold Estate, situated at Boxted, within 4 miles of the important market town of Colchester, and abutting upon the public road; comprising a Messuage divided into two tenements; good Barn and other Out-buildings, and about 17 acres more or less of rich Arable Land, under cultivation as a Seed and Fruit Garden, for which the soil and situation are extremely well adapted. It is planted with upwards of 400 choice Fruit Trees, now in full bearing; and the various enclosures are divided by capital young Quick hedges in full growth. Lot 2. A Plot of Three Acres of very productive Arable Land, also cultivated as a Seed Garden, lying near to Lot 1, being also divided therefrom by the Public Road. Outgoings:—Land tax, 14*s.* 8*d.* to be apportioned. The auctioneer has great confidence in calling attention to the foregoing Property as highly desirable for investment or occupation; and, both lots being in hand, possession can be given at Michaelmas upon completion of the purchase. Particulars and conditions of Sale may be had of Mr. W. G. Blatch, North Street; of Mr. F. B. Philbrick, Church Lane; and of the Auctioneer, Observatory House, Colchester.

HORTICULTURAL BUILDINGS MANUFACTURED BY STEAM-POWER MACHINERY.

LOWEST PRICES AND BEST MATERIALS.



HENRY ORMSON, Stanley Bridge, King's Road, Chelsea, London, S.W.,

HORTICULTURAL BUILDER AND HOT-WATER APPARATUS MANUFACTURER,

BEGS most respectfully to call the attention of the Nobility, Gentry, Nurserymen, &c., to his superior manner of erecting every description of Horticultural Building, and he trusts by unremitting personal attention to the details of his business, by using only the very best materials, by employing the most skilful and efficient workmen, and by the most moderate possible charges to merit a continuance of the patronage so kindly and so liberally bestowed on him for many years past.

In the BUILDING DEPARTMENT his object will be to adapt all erections to the particular purposes for which they are required. He will devote equal attention to the plain, inexpensive, practical erections of Pits, Orchard Houses, Greenhouses, Vineries, &c., as to the more elaborate and architectural erections of Conservatories, Winter Gardens, &c., either in wood or iron.

The HEATING DEPARTMENT always engages his especial personal attention, and he feels justified in saying that in simplicity, safety, durability, and economy of fuel, combined with thorough effectiveness, his system cannot be surpassed.

VENTILATION.—Knowing the absolute necessity for thorough ventilation, he makes it a matter of first consideration.

See SECTIONS, &c., of Horticultural Buildings in former Numbers of the *Gardeners' Chronicle.*

PLANS, SPECIFICATIONS, and ESTIMATES free on application.

ORMSON'S PATENT JOINTLESS TUBULAR BOILERS have now from *practical tests* established for themselves the highest standing reputation for power, efficiency, and economy of fuel.

H. O. *particularly wishes to call attention to the fact of his having fixed a great number of these excellent Boilers, and to the fact of not one of them having failed, fractured, leaked, or given way in any respect.*

See Testimonials in former Numbers.

Printed by WILLIAM BRADBURY, of 13, Upper Woburn Place, and FREDERICK MULLETT EVANS, of No. 20, Queen's Road, West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard Ct., Precinct of Whitefriars, City of London, and published by them at the Office, No. 5, Upper Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—SATURDAY, August 13, 1859.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 34.—1859.] SATURDAY, AUGUST 20. {Price Fivepence. Stamped Edition, 6d.

INDEX.

Agriculture, Theory of	698 c	Hydrangeas, blue	694 b
American Home Garden	695 b	Liverpool Agri. Journal	700 b
Battersea Park	694 a	Lucifer matches	698 a
Bees	694 b	Mangel culture	700 a
Books noticed	695 b	Manuring, cheapest	697 c
Botanical Soc. of Edinburgh	694 b	Nasturtium, dwarf yellow	693 c
Catterpillar, black	701 a	Orchard houses	691 c
Cattle food	701 a	Pea, Veitch's Perfection	693 c
Crops, rotation of	701 a	Picea nobilis	692 c
Cucurbits as models	694 b	Rabbit plague	698 b
Cuthill's garden	695 c	Rootlets	692 a
Farm, Whichwood forest	700 c	Rhubarb forcing	694 a
Foods, cattle	701 a	Ship railway	695 c
Gosliurst Compound	694 a	Steam culture	700 a
Gladiolus, pronunciation of	694 a	Strawberries	693 a
— Brenchleyensis	694 b	Sunflower, large	694 a
Grape, Golden Hamburgh	693 c	Trade lists	695 c
— Bowood Muscat	693 c	Turnips, singling	699 b
Hornets, sting of	696 a	Watering, syphon	694 a

THE BRITISH POMOLOGICAL SOCIETY, St. James's Hall, 69—71, Regent Street, W.—The next Meeting will be held on THURSDAY, September 1, when the following premiums are offered for Fruit exhibited according to the Society's printed regulations:—

Two Guineas for the best Seedling Late STRAWBERRY.

One Guinea for the best bunch of GOLDEN HAMBURGH GRAPE.

Two Guineas and one Guinea for the best and second best collections of any kinds of FRUIT, comprising not less than two dishes, to be exhibited by the Growers.

The Meeting next following will be on THURSDAY, September 22. Lists of the premiums offered at the remaining Meetings of the year, with Rules, Forms, and other information, may be obtained on application to Mr. W. DAVIDSON, Secretary *pro tem.*, 2, Randolph Road, Maida Hill, London, W.

Private Gentlemen who desire to encourage the production of good Fruit, and Nurserymen, Practical Gardeners, and Fruit Growers generally, are respectfully invited by the Council to aid the Society by forwarding for examination such interesting Fruits as are in season, and by becoming Members.—Entrance fee, 10s.; subscription to Private Gentlemen, Nurserymen, and Fruiterers, 20s.; professional Gardeners, 10s.

STOKE NEWINGTON FLORICULTURAL SOCIETY'S DAHLIA, ASTER, HOLLYHOCK, AND MISCELLANEOUS EXHIBITION will be held in the Grounds of Mr. James Lewis, adjoining Abney Park, Stamford Hill, on TUESDAY, August 30. ARTHUR WORTLEY, Hon. Sec.
Stoke Newington Common.

CRYSTAL PALACE. — FLOWER SHOW.—THE THIRD and LAST GRAND EXHIBITION OF FRUITS AND FLOWERS this season will take place on WEDNESDAY and THURSDAY, Sept. 7 and 8. At this Exhibition separate Prizes will be given to Amateurs and Cottagers. Schedules may be had on application, and also for the Chrysanthemum Show which will be held in November.
By Order, GEORGE GROVE, Secretary.

LEICESTER AND LEICESTERSHIRE FLORAL AND HORTICULTURAL SOCIETY.—The THIRD EXHIBITION of this Society will be held on the Leicestershire Race Course on WEDNESDAY, September 7, when a large number of PRIZES will be awarded for FRUITS and CUT FLOWERS. The Midland Railway will convey visitors for one fare to and fro from the principal stations.—For particulars, apply to the Hon. Sec., 15, Newark Street, Leicester.

FLORAL AND HORTICULTURAL EXHIBITION at Wellingborough on THURSDAY, September 29, in connection with the annual Ploughing Matches and exhibition of Farming Stock of the Northamptonshire Agricultural Society. The Band of the Coldstream Guards will perform during the Exhibition. Special Trains and cheap fares on the lines of Railway running by Wellingborough. Premiums to the amount of about 100*l.* will be offered for open competition.
Separate classes for Cottagers, Gardeners, Amateurs, and Nurserymen. Schedules can be obtained of
Mr. T. S. CURTIS, Mr. N. P. SHARMAN, } Honorary Secretaries.

HAILSTORM ON WHITSUNDAY.

ISAAC BRETT, of Vale Nursery, King's Road, Chelsea, who suffered considerable damage from the effects of the storm above named, begs to return his grateful thanks to the nobility and gentry who so kindly contributed to his appeal, through the kind intercession of his friend and neighbour, Mr. Parry, who has handed him over an amount of subscriptions which will materially assist him towards repairing his serious loss.

THE HEIRS of the late MR. BERNARD SAUNDERS, NURSERYMAN, &c., Jersey, respectfully request that all CLAIMS against deceased's estate may be sent in; and they also solicit the early settlement of all accounts due to the estate.—Cæsarean Nurseries, Jersey, Aug. 20.

HORTICULTURAL VALUATIONS

MR. ALFRED CHANDLER (of the late firm of Chandler & Sons, Vauxhall), begs to inform his friends that he is at liberty to undertake the valuation of Collections of Plants, Nursery Stock, Horticultural Buildings, &c.
Mr. A. C. is also open to engagements as Censor at Horticultural Exhibitions, in which capacity he has had long and extensive experience.—28, Priory Road, Wandsworth Road, S.

EAST NEUK OF FIFE CABBAGE.—This cone-shaped solid Cabbage, distinct in quality and appearance from all other Cabbage, which comes in use in August from autumn-sown Seed, has met with universal approval. Seed forwarded on receipt of 12 postage stamps.
C. HOWIE, Nurseryman and Seedsman, St. Andrew's.

SUPERB CAPE OR GIANT AND BROMPTON STOCKS.

CHARLES ALEXANDER, SEEDSMAN, Edinburgh, can supply the following, which are highly recommended. Sow any time this month. Post free on receipt of Stamps:—
1 packet Young's Scarlet Cape or Giant Stock .. 1s.
1 packet Young's White Cape or Giant Stock .. 1s.
1 packet Young's Scarlet Brompton Stock .. 1s.
1 packet Young's Dark Bloody Wallflower .. .. 1s.

SUTTON'S AUTUMN CATALOGUE is now ready, and will be sent to their Customers gratis and post free on application.—Royal Berkshire Seed Establishment, Reading.

SEEDS FOR PRESENT SOWING.—Primula sinensis, very fine, per packet, 1s. & 2s. 6d.; Cineraria, extra fine, 1s. & 2s.; Delphinium formosum, 6d.; Mignionette, per oz., 8d.; Pansy, choice, per packet, 1s. & 2s.; Fancy Geranium, 1s. Post free.
J. DOBSON & SONS, Seedsmen, Isleworth and Hounslow, W.

DUTCH FLOWER ROOTS.

HUGH LOW AND CO. have now ready for distribution their CATALOGUE for present season of HYACINTHS, TULIPS, NARCISSUS, and other Winter and Spring flowering Bulbs. All the varieties best adapted for Forcing will be found in the List, and in GLADIOLI the collection is very complete. The List will be sent pre-paid on application.—Clapton Nursery, London, N.E.

HUGH LOW AND CO. have received their first consignment of DUTCH BULBS in excellent condition, and solicit the favour of early commands.
Clapton Nursery, London, N.E.—Aug. 20.

HYACINTHS AND OTHER BULBS.

WM. CUTBUSH AND SON'S DESCRIPTIVE CATALOGUE of the above is published, and can be had post free on application.
Highgate Nurseries, London, N.

DUTCH AND OTHER BULBS.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their CATALOGUE of the above is now ready, and will be forwarded post free on application. Early orders are solicited, as their successful cultivation depends in a great measure on early planting.
Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

SUPERB BALSAMS.

F. AND A. SMITH'S collection of the above are now in bloom, presenting a display of colour, form, and variety unequalled in this country.
Trains leave London Bridge to Lower Norwood (Crystal Palace Line) every hour, the Nursery being about ten minutes' walk from the station. Omnibuses from Fenchurch Street every hour.—Dulwich, Surrey, S.

CINERARIAS.

F. AND A. SMITH are now sending out strong seedling plants from their unrivalled stock of the above at 4s. per dozen. Prices to the Trade on application.—Dulwich, Surrey, S.

FINE PRIMULA SEED.

F. AND A. SMITH have now ready SEED of their fine fringed PRIMULA, red and white, separate or mixed, in sealed packets, 1s. 6d. and 2s. 6d. each. May be had also of most respectable Seedsmen.—Dulwich, Surrey, S.

CAMELLIAS, fine sorts, with flower-buds, from 120s. to 240s. and upwards per 100.
LOUIS VAN HOUTTE'S Nursery, at Ghent.

CAMELLIAS.

LOUIS VAN HOUTTE, Ghent, Belgium, calls attention to his extensive LIST of CAMELLIAS (novelties and old ones). Select lists on application.

DIANTHUS SINENSIS HEDDEWIGII.
(VAN HOUTTE'S "Flore," XIII, page 11.)
Each Plant .. 1s. 6d. | Per dozen .. 14s. 6d.
LOUIS VAN HOUTTE, Ghent, Belgium.

DWARF GLADIOLUSES, extra for pot culture.—Extremely fine new kinds of the most delicate colours in all hues, and all striped flowers, are to be had from L. VAN HOUTTE'S Nursery at the following rates (free to London):—
50 sorts, 1*l.* 12s.; 25 ditto, 16s.; 12 ditto, 8s.

FERN CATALOGUE.

ROBERT SIM'S NEW DESCRIPTIVE AND PRICED CATALOGUE, No. 6 (62 pages) of his COLLECTION of BRITISH AND EXOTIC FERNS, can be had, post free, for 8 stamps. Gratis to all previous purchasers of Ferns.
Nursery, Foot's Cray, Kent, S.E.

TO THE TRADE.

RARE FERNS.—PTERIS ARGENTEA, NOTHOCHLÆNA HOOKERI, ATHYRIUM CORYMBIFERUM, ADIANTUM TENERUM, CHEILANTHES TENUIS, &c. PRICED LIST free on application to EDWIN COOLING, Mile Ash Nurseries, Derby.

TO THE TRADE.—A fine he[illegible]y Stock of GENTIANELLA, 10s. per 100; ALPI[illegible] AURICULAS, 10s. per 100.
J. SMITH, Sen., Tansley Nursery, Matlo[illegible]erbyshire.
Unknown correspondents will please to [illegible]se a reference, to save delay in the execution of their orders.

ONOPORDUM ACANTHIUM; OR COTTON THISTLE.—Amongst Ornamental Plants this is one of the very best; grows 6 to 8 feet high; leaves 2 to 3 feet by 1, covered with fine white Cotton. Single specimens, admirably adapted for Lawns or any open compartment, particularly recommended; perfectly hardy. A packet of Seed, with instructions, post free for 12 postage stamps.
HARDY & SONS, Seed Growers, Maldon, Essex.

BUCKLAND SWEETWATER GRAPE.

Report of Pomological Meeting, August 4, 1859, copied from the "Cottage Gardener," August 9.

MESSRS. IVERY, of Dorking, produced a noble bunch of their BUCKLAND SWEETWATER GRAPE, weighing certainly not less than 2 lbs., broadly shouldered, and remarkably well set. The berries were roundish, inclining to oval, and were just beginning to assume their amber tinge. They were very richly flavoured and vinous. Altogether this variety has stamped itself as one of particular excellence, and a valuable addition to the collection of White Grapes, which ripen perfectly in an ordinary Vinery.—Dorking, August 20.

GEORGE GIBBS AND CO., SEEDSMEN, 26, DOWN STREET, PICCADILLY, LONDON, W.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY LIMITED supply every requisite for the Farm and the Garden.
Registered Offices, Union Road, Plymouth.

STRAWBERRY PLANTS.—ELTON PINE and KEENS' SEEDLING at 2s., BRITISH QUEEN, ELEANOR, and ADMIRAL DUNDAS at 2s. 6d. per 100.
GEORGE CORNWELL, Barnet, N.

NEW STRAWBERRIES.

STEWART AND NEILSON have now ready to send out good plants of their three first class STRAWBERRIES, PRINCE OF WALES, | ROYAL VICTORIA, SIR COLIN CAMPBELL.—Each 10s. per 100.
Descriptions will be sent on application enclosing a postage stamp.—Liscard, Cheshire.

STRAWBERRY PLANTS AND CATALOGUE.—Plants of the pretty little Bush Alpine, both Red and White, without runners, suitable for edgings to walks, beds, &c., 10s. per 100 sets.
A DESCRIPTIVE CATALOGUE of upwards of 130 sorts is just published. To all who wish to purchase plants it will be sent by applying to the grower, WILLIAM JAS. NICHOLSON, Egglescliffe, Yarm, Yorkshire.

TO THE TRADE.—The Subscriber, who has ample facility, is desirous of contracting to supply any given quantity of SCARLET GERANIUMS or other BEDDING-OUT PLANTS to be delivered as per arrangement in the spring of 1860.—W. C. WATSON, East Barnet, N.

GRIFFIN'S ALMA LETTUCE.

J. GRIFFIN feels great pleasure in again offering this fine variety, which he can confidently recommend as the most useful sort in cultivation. In addition to its being very hardy, it is an excellent summer Lettuce, growing to an immense size, and not requiring to be tied up. Many who have tried it state that it stands the hot dry weather better than any other variety. In sealed packets, 1s. and 2s. 6d. each. Price to the trade on application.
[illegible] Road, and 2, New Bond Street, Bath.

TO THE TRADE.—A short supply of the following have been just harvested:—
MARSHALL'S SKIRVING SWEDE | GREEN-TOP SCOTCH
PURPLE-TOP SWEDE | PURPLE-TOP SCOTCH
All of which have been grown carefully from Bulbs, selected for the purpose.—Apply to the grower, WILLIAM BURGESS, Willow Farm, Iden, by Rye, Sussex.

MR. EPPS begs to state that he has, and is about harvesting, the following SEEDS, grown on his farm, Romney Marsh, from the finest selected stocks possible:—
YELLOW and ORANGE GLOBE MANGEL | WHITE CARROT
LONG RED DO. | ALTRINGHAM DO.
SURREY DO.
All the above from selected bulbs.
Superior CRIMSON BEET. Sample roots sent if required
PEAS.—British Queen, Monarch, Champion, Hairs' Mammoth, Burbidge's Eclipse, Dickson's Early Favourite, Sangster's No. 1. These are an extraordinary fine sample, grown principally on sticks. Purchasers sending the quantity they require of each will receive special offers at very low prices.
Seed Warehouse, High Street, Maidstone.

EARLY SIX WEEKS' TURNIP.

SUTTON'S SIX WEEKS' TURNIP may be sown with success until the first week of September. Price 10*d.* per lb., 5s. per gallon, or cheaper by the bushel Carriage free, except small parcels.—Reading, August 20.

GRASS SEEDS FOR PRESENT SOWING.

SUTTON AND SONS have a good supply of fresh Seeds of all the best kinds of permanent GRASS SEEDS. Prices and other particulars will be forwarded on application.
Royal Berkshire Seed Establishment, Reading.

SUTTON'S IMPROVED ITALIAN RYE-GRASS SEED SHOULD NOW BE SOWN.
SUTTON & SONS, Seed Growers, Reading, have fine new Seed now ready. Quantity required per acre, 3 bushels. Price 7s. per bushel, or cheaper in large quantities, carriage free. Terms cash.

DICKINSON'S ITALIAN RYE-GRASS SEED is now ready for delivery. Sold only by himself, and for present payment, 48s. per quarter, or 7s. per bushel.
New Park, Lymington, Hants.

LAWNS WITHOUT MOWING.—SPERGULA PILIFERA.

J. A. SUMMERS can supply well-rooted Plants (taken from the Lawn at Forest Hill), at 4s., 3s., 2s., and 1s. per dozen, according to size. A specimen, post free, 1s.
Howard Park Nursery, Perry Hill, Sydenham, S.E.

CROPS FOR EARLY SPRING FEED.

MESSRS. RAYNBIRD AND HARVEY are now supplying fine new WINTER TARES, WINTER BARLEY, WINTER OATS, fine new ITALIAN RYE-GRASS, and new TRIFOLIUM, the best crops for spring feed.
GIANT RYE very early and productive, and the new RACER TARE, a much earlier variety than the common sort. Samples and prices on application.
Address RAYNBIRD & HARVEY, Basingstoke, or 80, Seed Market, Mark Lane, London, E.C.

SEED WHEAT FROM THE CHALK.—Selected samples of CHIDHAM, WHITE TRUMPER, ROUGH CHAFF, HUNTER'S WHITE, RED-CHAFF WHITE, GRACE'S WHITE, TALAVERA, RED BROWICK, RED NURSERY, GOLDEN DROP, and all the best kinds of Wheat, supplied by RAYNBIRD & HARVEY, of Basingstoke, and 80, Seed Market, Mark Lane, London, E.C. Samples and Prices on application.

VAN HOUTTE'S NEW PRICE LIST.

LOUIS VAN HOUTTE, NURSERYMAN & SEEDSMAN, Ghent, Belgium, begs to announce that his NEW PRICE LIST OF PLANTS is to be had on application (prepaid), at Mr. R. SILBERRAD'S office, 5, Harp Lane, Great Tower Street, London, E.C.

☞ Steamers start every fortnight from Ghent direct for London.

L. VAN HOUTTE delivers all goods carriage free to London; but he charges 5s. on account for freight, Custom-house expenses, &c.

NEW HARDY RHODODENDRON—PRESIDENT VANDEN HECKE (VERVAENE).

LOUIS VAN HOUTTE, NURSERYMAN, Ghent, begs to call attention to his very fine hardy RHODODENDRONS; fine foliage, fine shape, of rich rosy colour, very large black spot. One shoot, 12s.; grafts, two to three branches, 20s.; large bushy, with flower buds, 42s.

NEIGE and CERISE is an exceedingly fine Rhododendron, not quite hardy in Belgium; pure silvery white, with a dark Poppy-red margin, 12s. to 20s.

VAN HOUTTE'S CALCEOLARIAS, 4s. each sealed packet, to be had of Mr. R. SILBERRAD, 5, Harp Lane, London, E.C.

LOUIS VAN HOUTTE'S Nursery has been known for 20 years for the care he takes in the growth of CALCEOLARIAS.

The following letter, among others, arrived lately at Mr. R. SILBERRAD'S:—

"Greys Rectory, near Henley-on-Thames, August 6.

"Sir,—When you write again to Mr. Van Houtte, will you be so kind as to order me another packet of his 4s. Calceolaria Seed, and tell him that the last seed he sent me produced a set of flowers that all England could not exceed for size, variety, and beauty. There was not a single duplicate among them. He well deserves this compliment.—Yours obediently,

"Mr. Silberrad." "J. SMITH."

THE BEST OF ALL THE HARDY AZALEAS. WITH FULL FLOWERS.

AZALEA VAN HOUTTEI fl. pleno. See VAN HOUTTE'S "Flore," No. 139 (Volume XIII page 13)—"Rosy red and golden yellow." Plants, with 4 to 6 branches, 7s. 6d.

AZALEA DIAMOND (VAN HOUTTE).—pure white, with a carmine spot. Grafts, 6 to 10 branches, 7s. 6d.

HARDY GHENT AZALEAS, with flower buds, 12 varieties, 12s. to 15s.; 25 varieties, 24s. to 30s.

LOUIS VAN HOUTTE'S Nursery, Ghent, Belgium.

INDIAN AZALEAS, Set with flower-buds.

No. 1. ALEXANDRE II. (VAN HOUTTE), 7s. 6d.
,, 2. COMTE DE HAINAUT (VERVAENE), 21s.
,, 3. PETUNIEFLORA (VERVAENE), 2s. 6d. to 4s.
,, 4. PRESIDENT IS. CLAEYS (V. D. CRUYSSE), 7s. 6d. to 10s 6d.
,, 5. ROI LEOPOLD (V. D. CRUYSSE), 2s. 6d.

No. 1, perfect form, petals all curled at the circumference, pure white, beautifully striped, very good substance.

No. 2, quite the flower of a good spotted Rhododendron, velvet rose, fine leaves.

No. 3, fine shape, shaded rose.

No. 4, just as Iveryana albo-cincta, but with salmon ground.

No. 5, very fine salmon, rosy flower, model for shape.

☞ All VAN HOUTTE'S advertised Azaleas may be considered to be first-rate.—LOUIS VAN HOUTTE, Ghent, Belgium.

DUTCH BULBS.

LOUIS VAN HOUTTE, NURSERYMAN and SEEDSMAN, Ghent, Belgium, begs to call attention to his NEW PRICED LIST. To be had at his Agent's office, Mr. R. SILBERRAD, 5, Harp Lane, London.

Extract from L. V. H.'s PRICE LIST:—

HAARLEM HYACINTHS.—The department of the Hyacinth culture in this Establishment is directed by Mr. Jacob Vanden Berg from Heemstede, Haarlem. This practical Gardener offers a special guarantee of knowledge acquired by his 30 years' experience in this part of gardening. M. Vanden Berg visits every year the bulb growers in Holland, looks out and buys the bulbs while just in flowering state; he afterwards directs their displanting and brings his acquisitions to Belgium. An immense stock of Hyacinths enables this year the establishment to meet with almost any order.

A trial would convince my correspondents that, by the excellence of varieties, fine condition of bulbs and respective moderation of prices, L. V. H. offers to his numerous customers advantages which even but few firms can offer.

L. V. H. invites all connoisseurs to favour his establishment by a visit at the time of flowering of the forced Hyacinths, as well as of those in the open ground, about the 15th of April.

The Hyacinths and generally all sorts of bulbs are ready for sending out from the 1st August until the 15th November.

VAN HOUTTE'S ROSE NURSERY, at Ghent, Belgium.

Extract from his Price List.—"In this Establishment THE ROSE forms a distinct department, under the special direction of a foreman perfectly conversant with that plant, and whose special knowledge and incessant researches are exclusively devoted to this section, giving a sure guarantee to purchasers, as well for the identity of the name, as the care and attention with which their orders will be attended to. This Establishment being in possession of one of the most important collections of Roses existing in Europe, has created a NURSERY OF MORE THAN 3000 SORTS, from which all the synonyms and the least attractive flowers are excluded each year."

N.B. The very best HYBRID PERPETUALS are marked with a G (guaranteed).

HYBRID PERPETUAL ROSES.—Strong Plants.

12 varieties, own roots	5s. 0d.	12 vars., half standards	8s. 0d.
25 ,, ,, ,, ..	9 0	25 ,, ,, ,, ..	14 6
12 varieties, dwarfs ..	5 0	50 ,, ,, ,, ..	28 0
25 ,, ,, ..	9 0	12 vars., standards ..	14 6
50 ,, ,, ..	16 0	25 ,, ,, ,, ..	24 0
100 ,, ,, ..	32 0		

The new HYBRID PERPETUAL, ISOLINE (VAN HOUTTE), extremely fine shape, quite full, quite constant, purplish red, shaded amaranth, first rate, at 8s. (half standard, dwarf, or own root). The stock is very limited.

☞ The leading sorts of the HYBRID PERPETUALS can be furnished per dozen or per hundred.

LOUIS VAN HOUTTE, Ghent, Belgium.

JEAN VERSCHAFFELT, NURSERYMAN, Ghent, Belgium, begs respectfully to announce that he has a fine stock of the undermentioned healthy well grown Plants, which he offers at the following prices:—

CAMELLIAS, with flower-buds (including the best leading kinds) .. .. .. per 100 £5 0 0
Do. do. .. .. ,, £6 0 0
Do. do. stronger Plants, 2s., 3s., 4s., & 5s. each and upwards.

AZALEA INDICA, with flower-buds (including the best leading kinds), at from 1s. to 4s. and 5s. each and upwards.

AZALEA INDICA, his seven new Seedling varieties, including three double-flowering ones at 3l. the set.

ARUNDO DONAX VERSICOLOR; fine grown plants at from 3s. to 5s. each.

ERYTHRINA CRISTA-GALLI; strong plants at 1s.

50 sorts of GLADIOLI GANDAVENSIS, from 1s. to 2s. each.

DAPHNE DAUPHIN, 1s. | DAPHNE CNEORUM MAX.. 1s.

Advertiser invites all persons to send their orders directly to JEAN VERSCHAFFELT, Nurseryman, Ghent, Belgium.

GERANIUMS, HERBACEOUS PLANTS, ETC.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their new PRICED and DESCRIPTIVE CATALOGUE of the above, to which are added Supplemental Lists of Stove, Greenhouse, and Hardy Plants, Fruit Trees, &c. (which include all the best new plants of the season), is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

CUTHILL'S STRAWBERRY PLANTS will be sent out on and after August 15.

CUTHILL'S EARLY BLACK PRINCE, 5s.; selected, 7s. 6d. per 100.

CUTHILL'S PRINCESS ROYAL OF ENGLAND.—Good size, fine colour, Pine-apple flavour, great bearer, very hardy, good forcer. Per 100, 7s. 6d.; selected, 10s.

CUTHILL'S PRINCE OF WALES.—Good size, rich colour, cone shape, tremendous bearer, first rate for table and preserving. It is earlier and later than Elton on account of its numerous trusses, 7s 6d. per 100; selected, 10s.

Dr. Lindley told J. C. that he never could depend upon having a Strawberry until he had his breed.

From Charles Hillhouse, Esq.—"Your 100 baskets of Strawberries have given great satisfaction.—June 30."

Best Mushroom Spawn.

CUTHILL'S Pamphlet on the Potato, with 20 more Articles, on the Strawberry, Asparagus, Sea Kale, &c., 2s.

CUTHILL on Market Gardening round London, &c., 1s. 6d.

CUTHILL on the Cultivation of the Mushroom, Killing of Woodlice, &c., 1s.

CUTHILL on the better Cultivation of the Vine, 1s.

Vegetable Meeting Paper gratis.

Post-Office Orders to be made payable to JAMES CUTHILL, Camberwell, London, S.

RARE HARDY CONIFERS—PICEA (ABIES) AMABILIS, TRUE; PICEA (ABIES) GRANDIS, TRUE.

HUGH LOW AND CO. have great pleasure in announcing that they have this season been successful in obtaining from Seed imported by them direct from California a large supply of Plants of the above named most beautiful and thoroughly hardy Conifers. They are without exception two of the finest and most ornamental trees yet known to Botanists, and attain in Northern California a height of from 250 to 280 feet. Their perfect hardiness and adaptation to the climate of this country have been proved beyond a doubt, but up to the present time Seedling Plants have been rarely to be obtained. The quantity now raised being considerable, H. L. & Co. have decided on offering them by the dozen and 100 at such low prices as will induce lovers of hardy trees to plant them in large numbers. Prices can be had on application; as also of Seedling Plants of Cupressus Lawsonii, C. macrocarpa, C. Goveniana, C. M'Nabiana, Picea Pinsapo, P. Nordmanniana, P. Pindrow, P. nobilis, Abies Menziesi, A. cephalonica, A. Douglasi, both from Californian and Scotch seeds; A. Mertensiana, (taxifolia of Jeffrey), A. Williamsoni (Pattoni, Hookeriana), A. orientalis, Araucaria imbricata, Cedrus Deodara, Cedrus Atlantica (argentea), Cryptomeria japonica, C. Lobbi, Pinus Benthamiana, P. excelsa, P. insignis, P. Don Pedri, P. Pallasiana, P. Sabiniana, P. macrocarpa, P. Edgariana, P. Jeffreyi, P. Monticola, and many others; Podocarpus andina, P. nubigena, Thuja gigantea (Libocedrus decurrens); Thuja Lobbi (Menziesi), Torreya grandis, Wellingtonia gigantea, and many other fine Coniferous plants.—Clapton Nursery, London, N.E.

HUGH LOW AND CO. have now ready for distribution the PRICED CATALOGUE for present season of their extensive collection of PLANTS, TREES, &c. It extends to 76 pages, and contains Stove, Greenhouse, Orchidaceous, Hardy, Herbaceous, and New and Rare Plants; Camellias, Azaleas, Ferns (of this interesting tribe the collection is very complete), Conifers, Rhododendrons, Ericas, Fruit Trees, Florists' Flowers, and Bedding Plants of all kinds.

The Catalogue will be sent prepaid on application.

Clapton Nursery, London, N.E.

CRAIG'S IMPROVED PROLIFIC EARLY CUCUMBER should be grown wherever a certain supply of first-rate Cucumbers are required either in winter or summer, for her Majesty's table or for the Million Average length 14 inches. For description see the *Gardeners' Chronicle* for July 30.

New seed now ready and sent free for 1s. 6d. per packet.

JAMES CRAIG, Hope Nursery, Lawrence Street, York.

NURSERYMEN supplied with the best GENUINE TOBACCO PAPER at 4d. per cwt.; any less than ½ cwt., 10d. per lb.—Address, TOM BRYANT, Messrs. Jackson & Sons, Lady Lane, Leeds.

RED SPIDER, THRIPS, SCALE, MEALY BUG, AMERICAN BLIGHT, ANTS, &c., prevented and got rid of by the PATENT GISHURST COMPOUND, which should also be applied when dressing Fruit Trees in autumn and winter. Price 1s. 6d. and 6s. per box, exclusive of carriage, with directions for use, and testimonials from the most eminent professional and amateur gardeners in the country. Where the consumption is not large the small-sized boxes are recommended.

Nearly 100 of the principal Nurserymen and Seedsmen in England, Scotland, and Ireland have taken in their supplies, most of the Nurserymen in the first instance for their own use, and are prepared to sell single boxes. A list of their names is occasionally advertised in the *Gardeners' Chronicle*, "Cottage Gardener," &c.

Extract from Leading Article in Gardeners' Chronicle, April 9, 1859.

"That it really kills red spider, aphides, mealy bug, thrips, and scale, it is impossible to doubt, in the face of reports of practical men, among whom we may mention Mr. D. Judd, of Althorp Gardens." Then follows a caution against the use of a too strong solution.

A new List of Testimonials stating the strength of solution and mode of application in the different cases has been printed and is now issued with the boxes.

Nurserymen and Seedsmen supplied by PRICE'S Patent Candle Company (Limited), Belmont, Vauxhall, London, S.

KEATING'S PERSIAN INSECT DESTROYING POWDER.

POULTRY, DOGS, AND PLANTS are effectually freed from Fleas, and all other Vermin with which they are infested, by the above Powder, which is quite harmless to animal life. The Farmer, the Gardener, or the Sportsman, will therefore find it invaluable. Bugs, Cockroaches, Beetles, Moths in Furs, and every other species of Insect are also instantly destroyed. In packets post free, for 14, or treble size for 36 postage stamps, by THOMAS KEATING, Chemist, 79, St. Paul's Churchyard, London, E.C. Take notice each genuine packet bears the above name and address. See "THE FIELD," Oct. 2d and 9th, pp. 263, 283, and 294.

CALCEOLARIA, CINERARIA,

AND

PRIMULA SINENSIS FIMBRIATA,

Of first quality, in seed packets, 2s. 6d. each.

SPERGULA PILIFERA,

The admirable substitute for Grass in forming Lawns, &c., REQUIRING NO MOWING. Seed packets, 6d., 2s. 6d., & 5s.

E. G. HENDERSON & SON, Wellington Nursery, St. John's Wood, London, N.W.

NEW STRAWBERRY, "OSCAR."

CHARLES TURNER,

HAVING purchased the entire stock of this fine Strawberry, is prepared to execute orders for the same at 42s. per 100. The plants are very strong, and will produce a fine crop of Fruit next season.

"Fruit large, colour shining dark red, flesh firm, flavour superior, remarkably sweet, with a brisk aroma; it was considered a valuable variety."—Fruit Committee of the Horticultural Society, July 5, 1858.

"'Oscar' is certainly the best flavoured of the large kinds, and being a great cropper, must soon find a place in every garden."—*Gardeners' Chronicle*, July 6, 1859.

"This fruit is very large, solid, firm, and juicy, flavour very rich and fine when quite ripe. Particular notice was taken of its firm and solid qualities."—Pomological Society, June 23, 1859.

"Oscar" received the Prize given for the best Seedling Strawberry by the Pomological Society, June 23, 1859.

It also received the First Prize for the best Dish of Strawberries at Nottingham, June 30.

"Oscar" is strongly recommended. It will be found one of the best for early forcing, a great cropper, and fine strong grower.

A Coloured Plate, by Andrews, may be had free by post for 12 postage stamps.

C. TURNER can also supply fine plants of the best older kinds. In addition to many Noblemen and Gentlemen, Market Gardeners and the Trade, the following most successful Fruit Growers have ordered plants of "Oscar:"—

Aiton, Mr., the Gardens, Enville Hall, by Stourbridge
Bailey, Mr. Thomas, Shardiloes Gardens, Amersham
Bailey, Mr. H., Nuneham Park, Oxon
Bousie, Mr., Stoke Park Gardens
Beale, Mr. T., Walton Wood Hall Gardens, Ware
Brown, Mr. J., Wilton House Gardens, Salisbury
Barron, Mr. W., Elvaston Castle Gardens, Derby
Constantine, Mr. H., Hillingdon Court Gardens
Dodds, Mr., the Gardens of Col. Baker, Salisbury
Dodds, Mr. Geo., Cooper's Hill Gardens, Englefield Green
Drewitt, Mr. J., Denbies, Dorking
Dawkins, Mr., the Gardens of the Countess Dowager of Craven, Hampstead Marshall, by Newbury
Dawson, Mr., Panshanger, Hertford
Duncan, Mr., the Gardens, Basing Park, Alton, Hants
Elsworthy, Mr., the Gardens of R. J. Gilman, Esq., Bishopstoke
Edmonds, Mr., the Gardens, Chiswick House, Middlesex, W.
Forsyth, Mr., Gunnersbury Park Gardens, Acton, W.
Frost, Mr., Preston Hall Gardens, Maidstone
Hardie, Mr., the Gardens of the Most Noble the Marquis of Northampton, Castle Ashby, Northampton
Hill, Mr., Keele Hall Gardens
Ingram, Mr., the Royal Gardens, Frogmore
Ingram, Mr., the Gardens of J. J. Blandy, Esq., Reading
Judd, Mr., Althorp Park Gardens, Northampton
Knight, Mr., the Gardens of H.R.H. the Duchess of Kent, Frogmore
Lawrence, Mr., Farnham Castle Gardens
Little, Mr., the Gardens of A. Darby, Esq., Stoke
Malleson, Mr., the Royal Gardens, Claremont
Parsons, Mr., Danesbury Park Gardens, Welwyn
Peel, Mr., the Gardens of H. Bevan, Esq., Cambridge House, Twickenham, S.W.
Rutland, Mr., the Gardens of Capt. Peploe, Garnston Castle, Hereford
Spencer, Mr., Bowood Gardens, Calne
Snow, Mr., Wrest Park, Ampthill
Scott, Mr. A., the Gardens, Leigh Park, Havant, Hants
Shearer, Mr. A., the Gardens of the Most Noble the Marquis of Tweedale, Yester House, Haddingtonshire
Sharpe, Mr., Eglinton Gardens, Irvine, N.B.
Taylor, Mr., the Gardens of C. A. Hanbury, Esq., Willenhall, East Barnet, N.
Thompson, Mr., Stanstead Park Gardens
Tillyard, Mr. G., the Gardens of Viscount Eversley, Heckfield
Whiting, Mr. J. B., the Deepdene
Widdowson, Mr., Rickmansworth
Wyness, Mr. G., the Gardens of G. Keith, Esq., Usan, N.B.
Ward, Mr., the Gardens of James Morrell, Esq., Headington Hill, Oxford
Williamson, Mr., the Palace Gardens, Ripon

THE ROYAL NURSERIES, SLOUGH.

CINERARIA, HERBACEOUS CALCEOLARIA, AND HALF SHRUBBY DITTO SEED.—These have been saved from Turner's most beautiful varieties; in 1*s.* and 2*s.* 6*d.* packets. Primula and Hollyhock, from the newest and handsomest varieties, 1*s.* per packet. Agents for F. & A. Smith's splendid Cineraria, in 1*s.* 6*d.*, 2*s.* 6*d.*, and 5*s.* packets; also agents for Dobson & Son's splendid Calceolaria, in 1*s.* 6*d.*, 2*s.* 6*d.*, 3*s.* 6*d.*, & 5*s.* packets.—Catalogues of the newest Flower Seeds, and newest Dutch and Cape Bulbs, sent post-paid.—BUTLER & McCULLOCH, Seedsmen, Covent Garden Market, W.C.

DOBSON'S SPLENDID HYBRIDISED CALCEOLARIA SEED.

JOHN DOBSON AND SONS beg to offer the above, which they feel no hesitation in saying is unrivalled for its superior quality, being all hybridised under their own personal inspection, and warranted to produce a splendid collection of first-rate flowers. Lovers of this interesting and beautiful class of plants should not fail to possess a packet of this seed, as it may be relied upon to give satisfaction. In addition to our agents we have supplied most of the leading firms with seed for own growing, and hundreds of amateurs throughout the country; also in America, France, and Holland. In sealed packets with printed directions for sowing, 1*s.* 6*d.*, 2*s.* 6*d.*, 3*s.* 6*d.*, and 5*s.* each, all of one quality. For list of agents see *Gardeners' Chronicle* of July.

Woodlands Nursery, Isleworth, W.; and High Street, Hounslow, W.

BEGONIA QUEEN OF ENGLAND.

WILLIAM BARNES has much pleasure in stating that he is now prepared to send out plants of this most beautiful Begonia, it being a hybrid between B. splendida and B. rex, partaking of the former in the splendid colour of its foot-stalks and under side of its leaves, with the markings of the latter upon the top of the leaf, but larger and more distinct in its colourings, having a belt round each leaf, finely dotted over the green part with white spots. It is of fine vigorous growth, and expands its leaves more perfectly than either of its parents. It has been exhibited at the Crystal Palace and Royal Botanic Flower Shows this season, and obtained a Prize at each place, where it was pronounced by the most competent judges to be one of the most beautiful and distinct varieties they had seen. Fine strong plants at 10*s.* 6*d.* each. The usual discount to the trade.

Camden Nursery, Camberwell, S.

ARAUCARIA IMBRICATA.

YOUELL AND Co. beg to inform the Trade they have to offer a fine and healthy stock of the above in 1-year-old plants.

GLADIOLUS BRENCHLEYENSIS.—An extensive stock of large flowering Bulbs of this magnificent Gladiolus, the colour of which is vermilion scarlet, the best and brightest variety known. Prices of the above on application.

Royal Nursery, Great Yarmouth.

TRIFOLIUM INCARNATUM, 5*d.* to 6*d.* per lb.; with hints on its successful cultivation, showing how 3 tons per acre of the most nutritive hay may be secured, the advantages of sowing it where broad Clover is thin, and its superiority to Tares as green food.

PAGE AND TOOGOOD having secured a large breadth of prime quality, offer it at the above low rate for cash.

New Turnip Seed, per lb.	0*s.* 6*d.*	Italian Rye-grass, per bush., 5*s.* to ..	7*s.* 0*d.*
New Rape, do. ..	0 4	Mustard, per lb., 4*d.* to 6	5

Calceolaria and Cineraria, in packets of 2*s.* 6*d.* and 1*s.* each, saved from one of the finest collections in Europe.

Seeds for exportation to all parts of the world.

PAGE & TOOGOOD, Seed Growers and Merchants, Oxford Street; and Above Bar, Southampton.

NEW HYBRID RHODODENDRONS.

ISAAC DAVIES, LARKFIELD NURSERY, Wavertree, near Liverpool, begs respectfully to draw the attention of the admirers of Winter and Early Spring Blooming Plants to the undermentioned handsome and novel HYBRID RHODODENDRONS, which were raised by him five years ago from R. atrovirens, hybridised with ciliatum, and which have proved perfectly hardy, having been grown two years in the open ground without being in the smallest degree injured by frost. The Plants form beautiful bushes, with dark green leaves, about the size of the Myrtle; in the open ground the flowers, which are produced in great abundance, expand about the end of March, and are as large as a moderate-sized Indian Azalea, and of the colours given below. These Plants will be found invaluable for forcing, from the fact that they may be got in flower at any time desired in the winter months, merely by placing them in a greenhouse or cold frame. The flowers last more than three weeks after expansion, and from the peculiar odour of its foliage, which it inherits from the mother parent, not a green fly will live upon it. A plant in flower was sent to London, where it was seen by Messrs. H. Low & Co., Waterer & Godfrey, and other leading Nurserymen, from whom I received very flattering opinions of its merits, which are sanctioned by the Certificates of that distinguished Rhododendron grower and raiser, Mr. George Cunningham, and Mr. James Grant, who saw the entire stock in bloom, of which the following are correct copies:—

"Oak Vale Nursery, Old Swan, near Liverpool,
"March 12, 1859.

"Dear Sir,—You wish to have my opinion of your Hybrid Rhododendron, raised between atrovirens and ciliatum, and which you call Precox. I have much pleasure in saying that I think it a handsome and successful cross, showing both parents very distinctly; its compact habit of growth, and its blooming so abundantly at this season of the year will make it an attractive acquisition to our early flowering plants, whether for the open ground or the conservatory.

"I am, dear Sir, yours faithfully,
"Mr. Isaac Davies. "GEORGE CUNNINGHAM."

"Olive Mount, Wavertree, March 10, 1859.

"Dear Sir,—I consider your Rhododendron Precox and its varieties the most novel and handsome hardy hybrids that have been raised for many years. They will be invaluable as Forcing Plants for winter blooming, and the most attractive early spring Flowers out of doors.—I am, dear Sir, yours respectfully, "JAMES GRANT, Gr. to A. S. Gladstone, Esq.
"Mr. Isaac Davies."

Well-established Small Plants, on own roots, will be ready for delivery early in September next, at the prices given below, under the following names:—

	s. d.
RHODODENDRON PRECOX, rosy lilac	10 6
,, ,, ROSEUM, pale rose	15 0
,, ,, SUPERBUM, rose, shaded with pink	15 0
,, ,, RUBRUM, deep pink	21 0

The Trade will be allowed one plant over with every three taken of the same variety. A few larger plants of all except rubrum can be supplied at proportionately higher prices.

A Drawing, by Mr. James Andrews, of the variety superbum, which differs very little from the others except in colour, may be seen at the Nurseries of Messrs. H. Low & Co., Upper Clapton, N.E.; Waterer & Godfrey, Knap Hill, Woking; E. G. Henderson & Son, St. John's Wood, N.W.; Rollisson & Sons, Tooting; William Wood & Son, Maresfield; Fisher, Holmes, & Co., Sheffield, and at the Nurseries of all extensive Rhododendron growers.

A CATALOGUE of all the best proved kinds of RHODODENDRONS and HARDY HEATHS is now ready and may be had on application.

MUSCAT HAMBURGH GRAPE AND OTHER CHOICE SORTS.

LUCOMBE, PINCE, AND CO. have now ready to send out fine strong healthy VINES, raised from eyes, 6 to 9 feet long, of this celebrated and much esteemed new Grape, together with all the leading kinds in cultivation, including that very superior variety

BIDWILL'S SEEDLING,

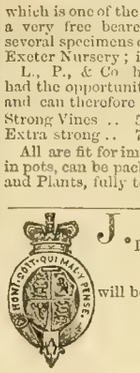
which is one of the finest Black Grapes ever raised, and being a very free bearer is especially adapted for pot culture, and several specimens of it fruiting in pots can now be seen in the Exeter Nursery; it is also perfectly hardy.

L., P., & Co having a large experimental Vinery, have had the opportunity for several years of proving their Stock, and can therefore warrant all the sorts true to their names:—

Strong Vines ..	5*s.* 0*d.* each	Very large extra-sized Fruiting	10*s.* 6*d.* each
Extra strong ..	7 6 ,,		

All are fit for immediate planting, and being well established in pots, can be packed securely, and safely sent to any distance, and Plants, fully to compensate for carriage, will be presented.

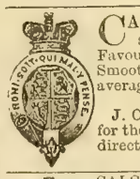
Exeter Nursery, Exeter.



J. CARTER AND CO.'S Select LIST OF CHOICE FLOWER SEEDS FOR PRESENT SOWING,

will be found on page 603 of *Gardeners' Chronicle* of July 16.

238, HIGH HOLBORN,
London, W. C.



CARTER'S CHAMPION CUCUMBER surpasses Sion House and Lord Kenyon's Favourite for winter and early spring use. Smooth, dark green, straight, and prolific; average length, 1 foot. Price per packet, 1*s.*

J. C. & Co. do not hold themselves responsible for the genuineness of the above unless obtained direct from

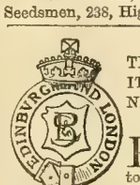
238, High Holborn, London, W.C.



CALCEOLARIA, 1*s.*, 2*s.* 6*d.*, 5*s.*
CINERARIA, 1*s.*, 2*s.* 6*d.*, 5*s.*
PRIMULA SINENSIS FIMBRIATA, 1*s.*, 2*s* 6*d.*, 5*s.*
} All the same quality.

JAMES CARTER AND CO. beg leave to offer Seeds of the above of *this year's harvesting*, saved from SEVERAL UNRIVALLED COLLECTIONS, and they can with confidence recommend them as being of first-rate quality, both for form, colour, and variety.—JAMES CARTER & Co., Seedsmen, 238, High Holborn, London, W.C.

NEW SEEDS.



TRIFOLIUM INCARNATUM
ITALIAN RYE-GRASS
NATURAL GRASS SEEDS FOR PERMANENT PASTURE LAWNS, &c.

PETER LAWSON AND SON, the QUEEN'S SEEDSMEN, &c., are prepared to supply all kinds of SEEDS for AUTUMN SOWING of the best quality.

27, Great George Street, Westminster, S.W.

ROYAL BERKSHIRE SEED ESTABLISHMENT.

SUTTON AND SONS have just received a very unique Collection of HYACINTHS, ANEMONES, JONQUILS, CROCUSES, and numerous other Bulbous Flower Roots, direct from one of the most celebrated Florists in Haarlem. Prices very moderate. Lists gratis and post free.

SEEDS FOR PRESENT SOWING.

ROYAL BERKSHIRE SEED ESTABLISHMENT.

SEEDS DIRECT FROM THE GROWERS THE MOST CERTAIN MEANS OF PREVENTING DISAPPOINTMENT.

TRIFOLIUM INCARNATUM,
SIX WEEKS' TURNIP, MUSTARD SEED, COW CABBAGE, | GRASS SEEDS, RAPE SEED, EARLY CABBAGE,
CINERARIA, CALCEOLARIA, AND PRIMULA.

SUTTON & SONS have a good stock of New Seeds of the above kinds which they are now sending out at very moderate prices, as see Priced List. Carriage-free to all parts, and 5 per cent. allowed for cash payment.

Address, SUTTON & SONS, Seed Growers, Reading, Berks.

DUTCH FLOWER ROOTS.

JAMES VEITCH, JUN., ROYAL EXOTIC NURSERY, Chelsea, S.W., begs to announce that he has received his annual supply of BULBOUS ROOTS from Holland, and is pleased to say that they are PARTICULARLY FINE and in EXCELLENT CONDITION. Catalogues are now ready and will be forwarded on application.

J. V., Jun., desires to impress upon those who patronise him the great advantage of giving him their ORDERS EARLY, as the successful cultivation of Bulbs depends in a great measure upon their BEING PLANTED EARLY IN THE SEASON.

SPLENDID NEW VARIEGATED FERN,
PTERIS ARGYRÆA (MOORE).



JAMES VEITCH AND SON have peculiar satisfaction in calling attention to the above-named most striking novelty, which is undoubtedly one of the greatest acquisitions of recent introduction to our now justly popular collections of Ferns.

It is of *noble aspect* and free growth, perfectly distinct and novel in its character, the pinnæ on every frond as well as their branches having a broad central stripe of glistening silver, which, in contrast with the bright green, produces a most charming effect. It may justly be called

THE VARIEGATED FERN.

It was exhibited at the Royal Botanic Garden on July 6, and before the Horticultural Society's newly appointed Floral Committee on July 7, and in both cases received the highest Prizes given to such novelties, and was universally admired.

Established Plants, 31*s.* 6*d.* each.
The usual allowance to the Trade.
Royal Exotic Nurseries, Exeter and Chelsea.—August 20.

THE ORIGINAL STOKE NEWINGTON FLORICULTURAL SOCIETY.—THE DAHLIA, ASTER HOLLYHOCK, AND MISCELLANEOUS EXHIBITION, open to all England, will be held in the Floral Hall, Hare and Hounds Tavern, Stoke Newington Road, N., on TUESDAY, August 30, when Prizes will be awarded to two-thirds of the Exhibitors, including a Five Guinea Silver Cup. Extra Prizes and Certificates will be given for Seedling Dahlias.

Treasurer, Mr. HURRELL; Chairman, Mr. J. H. BIRD, F.H.S.; Secretary, Mr. J. NICHOLLS, sen., 7, Myrtle Street, Dalston, N.E.

Further particulars can be had of the Secretary, or of Mr. ALLEN, at the above Tavern.

The Exhibition will Open to the Public at 1 o'clock. Admission 1 to 4 o'clock, 1*s.*; after 4, 6*d.* Omnibuses from the Elephant and Castle, S., and Flower Pot, Bishopsgate Street, E.C., every five minutes to Kingsland Gate, N.E., being within five minutes' walk of the Society's House. Fare 2*d*

BANBURY HORTICULTURAL SOCIETY.—OPEN PRIZES.—The THIRTEENTH ANNUAL EXHIBITION of this Society is fixed for TUESDAY, August 30, when, in addition to the usual number of Prizes to be competed for by Members, the following are offered, open to all England, on payment of an entrance fee of 2*s.* 6*d.*:—

For the best 6 Stove or Greenhouse Plants, either in flower or ornamental, of at least four different genera, but not Fuchsias or Annuals, 1st prize, 3*l.*; 2d prize, 2*l.*

For the best 24 Dahlias, 24 varieties, 1st prize, 3*l.*; 2d do., 2*l.*

For the best 18 Hollyhocks, 2 blooms of each, 1st prize, 3*l.*; 2d prize, 2*l.*

Intended Exhibitors must give notice to the Secretary before 3 P.M. on Monday, August 29. The Society will, if requested, convey the productions from and to the Railways.

The full BAND of the Royal Horse Guards will attend and play during the day.

High Street, Banbury, Aug. 20. HENRY STONE, Sec.

TOWCESTER FLORAL AND HORTICULTURAL SOCIETY.—*President:* The Earl of POMFRET.

The ANNUAL EXHIBITION OF FLOWERS, PLANTS, FRUITS, & VEGETABLES, will take place in the Grounds of T. W. Gurney, Esq., Towcester, on THURSDAY, Sept. 8, under the patronage of—

The Duke of Gratton,	Sir Charles Knightley, Bart.
The Earl of Euston,	Rainald Knightley, Esq., M.P.
The Earl of Pomfret,	Colonel Cartwright, M.P.
Lord Southampton,	&c. &c. &c.

The Exhibition will be on a larger scale than that of last year, 374 Prizes being offered for competition open to all England. There will be distinct Classes for Nurserymen, Gardeners, Amateurs, Under Gardeners and Cottagers. There will also be a Class for Agricultural Roots.

The Committee wish to direct attention to the following Sweepstakes, the Premiums for which have been increased since the Schedule was printed. The Sweepstakes are open to all classes upon payment of the entrance fee before August 31.

	Entrance Fee.	Premium added.
	s. d.	£ *s. d.*
For the best Collection of 50 Roses, in varieties, 3 trusses of each as gathered	10 0	5 0 0
For the best Collection of 36 Dahlias, in varieties	10 0	4 0 0
For the best Collection of 8 Fruit Trees, grown in pots or boxes, in fruit ..	10 0	4 0 0
For the best Collection of 12 Stove or Greenhouse Plants, Lycopodiums, or Ferns	10 0	5 0 0

The Full Band of her Majesty's 2d Life Guards will perform during the Exhibition.

All Entries must be made in writing to the Secretary on or before the 31st of August. All productions entered for exhibition which may arrive by rail at Blisworth Station will be conveyed to and from Towcester free of charge, if previous notice has been given to the Secretary. Any exhibitor can send in his productions on the previous day, and the greatest possible care will be taken of them. Schedules can be obtained of SAMUEL COOPER TITE, Secretary.

HUNTINGDONSHIRE HORTICULTURAL SOCIETY.

Patron—The Earl of SANDWICH.
President—F. FELLOWES, Esq., M.P.

A GRAND AUTUMNAL OPEN-AIR SHOW will take place on TUESDAY, September 6, by the kind permission of D. VEASEY, Esq., in the grounds of Castle Hill House, Huntingdon. In addition to the usual Prizes (a List of which may be obtained of the Secretary) TWO SILVER CUPS will be given for DAHLIAS; open to all England. A GOLD PENCIL CASE will be given for the most tastefully arranged BOUQUET, made by a Lady. The Band of the Coldstream Guards will attend, under the sanction of Colonel Lord Frederic Paulett, C.B.; conducted by C. Godfrey, Esq., Band Master, affording the enjoyment of A PROMENADE CONCERT. A Programme of the Music may be obtained on the Grounds. The Rooms of the Literary Institution will be open to Visitors. Refreshments:—Ices and Confectionary may be obtained in the Grounds. Admission Tickets may be had of the SECRETARY, and of Mr. EDIS and Mr. WOOD, Printers. The Doors will be opened at Half-past 1 o'Clock, Tickets, 2*s.* 6*d.*, until 3 o'Clock; from 3 until Half-past 4 o'Clock, 1*s.*; from Half-past 4 until 7 o'Clock, 6*d.*; when the exhibition will be closed to enable competitors to remove their productions. Children under 12 years of age and Schools admitted at half-price until Half-past 4 o'Clock. Subscribers will have Tickets forwarded to them. Cottagers exhibiting will be admitted at 6 o'Clock, Free. Notice in writing will be required to be sent to the Secretary by 10 o'Clock the day previous to the Show, by all Competitors for the Cups for Dahlias, and Collections of Plants. Entrance at the Gate near the Common, in St. Mary's Street. Railway Arrangements:—The Great Northern Railway Company will issue First and Second Class Tickets for a Single Fare for the Double Journey, from Hitchin, and also from Stamford, Peterborough, and intermediate Stations to Huntingdon. The Eastern Counties Railway Company will issue First and Second Class Tickets for a Single Fare for the Double Journey, from Wisbeach, and also from Cambridge, and intermediate Stations to Huntingdon. Subscriptions in aid of the Society will be received by G. M. FOX, Secretary.

The Gardeners' Chronicle.

SATURDAY, AUGUST 20, 1859.

"TIME telleth truth." What then has Time to say to ORCHARD HOUSES? This is a subject upon which we trust that our correspondents will enlighten each other. How do Orchard Houses best answer? What are the circumstances, that is to say, that have been found to cause one Orchard House to be more productive than another. Why do they fail, if indeed they have failed? That is to say, what have been the circumstances that have

led to failure and disappointment? That cases of each kind can be easily found is not to be doubted.

By way of commencement we may relate something of the history of a famous building of the kind constructed by "Sigma," of horticultural and mechanical fame. Three or four years ago this gentleman built an Orchard House on Mr. Rivers's plan, of the dimensions he recommended, and 75 feet long. It answered so well, except being too small, that he determined to enlarge it, and at first proposed to do so by adding another of the same size parallel with it and forming a part of it. Had this been done he would have had two span-roofs to one house. But it occurred to him that if one span were constructed for the two houses no more glass would be required, and not much more timber: so by a little alteration of uprights, and the addition of some diagonal braces, the breadth was doubled and the height in the centre so very greatly increased, that if we suppose the cubical contents of the first house to have been 6, those of the house as altered became 16, instead of 12, a very important circumstance as afterwards appeared. In its altered condition it has a walk 3 feet wide running all round, leaving a border next the side and a bed in the middle, as is usual; a door being provided at one end, and the side sashes, which are made of glass, hinged at their lower edge and falling outwards when open, which they have been day and night since the beginning of May. Other ventilation there is none except a narrow slit below the ridge of the roof.

In this place there has been this year a prodigious crop of Peaches, Nectarines, Plums, and Strawberries, all of the highest excellence; we doubt indeed whether Jeffreson Plums have ever before attained such an admirable condition. Even while we are writing a good deal of fruit remains to be gathered. What is most especially noteworthy is that this house received the full effects of the snowstorm of April, which destroyed the hopes of so many amateurs. Although unheated by artificial means not a blossom perished, nor at a later period did one refuse to stone. This shows that not only was the direct influence of the cold effectually warded off the blossoms, but the sap was not forced back towards the roots and that the earth itself retained warmth enough to ensure the stoning.

If we look for an explanation of this most important fact, it seems to be found in the presence of the very great volume of air previously heated by the sun, which had not lost its temperature before the snow arrived. In a smaller house the temperature would certainly have fallen too low, as it did in so many places. It could scarcely have been owing to any difference in the surface of glass exposed to the cold, for in "Sigma's" large single span house the glass surface is the same as if it had been low with a double span.

In consequence of the height that was gained it became possible to plant standard Peaches and Nectarines in the middle border of "Sigma's" house as well as trees in pots; and nothing could be more satisfactory than the result. The trees in pots are plunged in the earth among the standards, so that one would suppose them all to be growing in the open border. This has doubtless contributed to the success of the house. These standards are untrained; their pruning is of the slightest kind; their wood would be the consternation of some gardeners, for it is "gross" in the highest degree, one of the shoots made this year by a Peach tree measuring 8 feet in length. Yet this gross wood is precisely what is most fertile; for it is perfectly ripened, gorged with organisable matter, mucilage, sugar, starch, all secured within it for the food of the succeeding crop. Of course it is well ripened, for there is not an hour from the time when frosts are gone that this wood is not exposed to the full glare of the sun, and to perpetual currents of air. No shades are wanted here; there is no burning, no scorching, no mildew. In fact the house reminds us of those famous Virginian Peach orchards where pigs are required to consume the fruit that falls.

That Orchard Houses, when skilfully treated, most amply repay their cost is thus placed beyond all doubt. We hope one day to see them 20 feet high.

Some may wonder how the fact announced in last week's *Chronicle* can have any practical importance. That rootlets form a skin at their points beneath which the process of growth is carried on may be an anatomical fact, but what is its application? Of what consequence can it be to a gardener to know what a microscope and a microscope only can reveal? As this has been already suggested to us by our correspondent *Lusor*, we answer it by asking him whether the invisible processes of digestion in the human stomach need not be understood because they cannot be seen? or whether it is perfectly indifferent to a gardener to know where the equivalent of a stomach is to be found in the plants he grows because it is impossible for him to view either the processes of assimilation themselves or the minute places in which they go on? Surely it must be admitted that if we are to understand the mode of treating plants properly we cannot learn too much about their ways of life and growth.

It is well known that the roots of plants increase in length solely by the continual addition of new matter to their points. Were it otherwise they would be bent and turned and distorted by the resistance of the soil itself, if indeed they could ever penetrate it at all. This will be easily seen by any one who endeavours to force a piece of twine through the loosest and softest earth that can be found. Hence the well understood fact that the youngest part of a rootlet is its tip, a part which is incessantly renewed during the period of growth; and which, acting like a sponge in absorbing whatever the earth can give up, had acquired at one time the name of Spongiole, Spongelet, or little sponge. But there always remained these questions: how does the soft young delicate nascent tissue of the rootlet manage to exist in contact with the earthy particles that it is perpetually displacing? and why does it never catch up such particles and entangle them in its substance? To this an answer is now returned; it is not, it is never, in absolute contact with the earth, but is screened from the earliest moment of its second life by an old skin, which it pushes forward, and gradually renews, forming its own matter of growth in security beneath it. Mr. Henfrey compares the skin to the *head of an arrow*, which can be pushed forward by the growing force behind. We would rather compare it to a screen or mantlet such as troops sometimes employ in their advance towards an enemy.

We may safely assume that this cap, hood, coif, screen, or whatever else it is called, is necessary to the root, and that its removal must be injurious, inasmuch as the forward growth of the root will be prevented by its removal. That being so, of what immense importance it must be to secure, with the utmost care, this delicate organisation on the safety of which so much depends. In the rude hands of ignorant persons, who transplant a bush by pulling it up, as if they were "pulling a Turnip," all this important structure must necessarily be destroyed. It is no wonder then if so many plants perish under the hands of common labourers. Only see how they "prick out" Cabbage plants or Celery, or any of the seedling taprooted crops; it is no wonder if they find great gaps in their rows. Instead of wreaking their anger on "the grub" they should blame their own ungentle ways.

But it may be said that plants are dealt with well enough in the rude mode that is so common, and that the care required by theory is not really demanded by practice. Winter-moved shrubs, or those which bear to be lifted in August without much care, may be pointed to in support of this notion. But these instances do not really affect the question. In the dry weather of August such plants as the Rhododendron and its allies are not growing; their roots are ripened, hard, and tough to the points of the fibres; and they will bear much rough usage without damage; moreover, a large part of their most delicate fibres is so firmly imbedded in earth that they come up with a "ball," and are not at all disturbed. So in winter, when trees are removed, the rootlets are hard and torpid. Nor is it to be forgotten that some plants have a wonderful power of repairing injury, if they have once acquired their woody organisation, and time is given them. When the roots of a winter-moved tree are broken the wounded ends may close up, and on the sides of the roots new rootlets with the requisite hood will gradually form before the period of vernal growth recurs. Others are constitutionally able to reproduce roots at all seasons, and under all circumstances, owing to what is called their strong vitality: as we see in the Willow, whose wands grow when stuck into the earth, although they neither have nor ever had a root.

It is not to cases such as these that rational gardeners will look. The skull of a negro will resist a blow that would smash that of a European; but no one would form an opinion of the general power of resistance by the skull from the case of a negro. We once knew a man who ate Belladonna berries with impunity; that was his constitutional peculiarity; his stomach was able to resist that dangerous poison; but we cannot infer from such a case that Belladonna berries may be eaten. So with the roots of plants; we are not justified in saying that the utmost care is not required to preserve their young points from injury because some plants succeed perfectly well without care.

But it is not merely on account of the extreme delicacy and importance of their points that roots require to be handled with the utmost gentleness. Another microscopical fact has been ascertained within the last few years and is of hardly less interest. When you look with the naked eye at the skin of a young root-fibre, nothing is seen except an apparently level uninterrupted surface. But in many cases there are present infinite multitudes of little hairs, through which food is imbibed; they are the mouths of the root. Through their agency the sucking or feeding power of the rootskin is very considerably augmented; to remove them is to diminish or destroy that power. But they are so delicate that any ungentle treatment of the root must destroy them. In the words of Prof. Henfrey, "they are mostly invisible to the naked eye, and their presence is chiefly betrayed by the adhesion of the soil to them. When young roots are carefully washed and placed under a magnifying glass their fibrils (root-hairs) are seen very clearly; and on such roots as those of Barley, for instance, they exist in enormous numbers."

We recommend all unsuccessful cultivators to turn these important facts over in their minds, and to consider well whether they have always thought about them. They have a very large application, to some points of which we must hereafter address ourselves.

PICEA NOBILIS.

This, which is still the most beautiful of all the Californian Firs, has for many years past been much admired and sought after by lovers of Conifers. From the small number of seedlings raised when it was first introduced to this country by the lamented Douglas, good trees are scarce, and only in the hands of a few growers. Since its first introduction to Europe until very lately no good seeds have been imported, and notwithstanding the many plants which have been raised from cuttings or grafts, yet, from the barbarous custom of growing them in pots, good plants are still very expensive and difficult to be met with.

The gentleman who a few weeks ago inquired through the medium of your Journal whether any one besides himself had up to that time raised any cones, has been answered to the effect that two of your correspondents have young plants now raised from cones produced last year. I need not have added to the above, as many of the constant readers of the *Gardeners' Chronicle* are aware, that five years ago I advertised plants at that time three years old from seed of my own growth.

I think without egotism I may venture to add, that having been the most extensive grower of Picea nobilis, I have also been the most successful. One reason for my obtruding upon you and your readers is to correct an erroneous report, which I find rather extensively circulated, viz., that "seedlings of Picea nobilis have been raised by me, which are not true; but hybrids between nobilis and the Silver Fir, or some other species." Seeing that few people like to acknowledge mistakes, and that the author of this blunder may not favour us with his name, allow me to say that it is untrue, as I never did myself nor allow any one else to fertilise the cones of P. nobilis except with pollen gathered from the same tree.

The same year (1851) in which I raised my first cones of P. nobilis, I had cones on Pinus monticola, but no male catkins. Having at the same time catkins on P. Lambertiana and P. Ayacahuite, I impregnated the cones on P. monticola with pollen gathered from these trees; and I had as the result three small trees distinct from each other, and from their respective parents. This experiment has been mentioned to several, and the plants have also been shown; whether this may have been confounded with P. nobilis or not I cannot say.

It is generally admitted, both in the animal and vegetable economy, that unhealthy parents generate a diseased progeny. But I think few have hitherto recognised the possibility of decidedly healthy parents bringing forth a diseased or debilitated offspring. Nevertheless this is the case when certain conditions are not fulfilled, which are indispensable for the production of a healthy progeny. I have long been convinced of the existence of this law in the vegetable, and I believe it equally applies to the animal economy. Having had cones on the Douglas Fir for some years before I could succeed in getting good seeds, I was convinced that either the cones or catkins, or both, were injured by our late spring frosts; consequently, about 14 or 15 years ago I had an awning raised over a fine healthy tree of Drummond's variety (a much deeper green than the one collected by Douglas*), and at the

* These plants are very distinct and of great value as a contrast to those who plant for pictorial effect. Douglas's variety is of a warm or yellow green, with cones when in a young state with dingy purple scales and bracts. Drummond's variety is of a deep yew green, and silvery under the leaf, with cones having their scales and bracts always green and free from the purple tinge.

right time I impregnated the cones, and was repaid by a few hundreds of young plants. Amongst these plants I soon observed a certain number much debilitated, and I found this as time went on to be constitutional debility. The same plants, though now 14 years old, are dwarf stunted unhealthy bushes; whilst those which showed constitutional vigour from the first are now healthy fine trees.

And amongst my first seedlings of Picea nobilis I had about the same per centage of plants which from the first manifested a constitutional weakness; by a stunted growth, and at a certain period of growth, the leaves became brown at the margins and tips. I have continued to grow those plants under the most favourable circumstances, and like the Douglas Firs before mentioned they remain unchanged, when those which were healthy, vigorous, and a good colour from the first, continued so. In a batch subsequently raised I have also a certain number which, from an early stage of growth, have shown the exact appearance already describe. These plants are now three years old.

Having some time ago discovered the true cause of this debility, viz., defective impregnation, I adopted means to secure a more certain and general distribution of good pollen, and now I have a magnificent lot two years old, free from all debility, without a single exception; some of which I send for your inspection. Be it understood, that in all the other lots I had from the same trees (other circumstances being equal) healthy and vigorous plants, also debilitated and diseased ones. This, I think, solves a problem for arborists, and at the same time explodes a pernicious theory now gaining ground, viz., "that trees raised from seeds of Douglas Firs of home growth are worthless compared with imported seeds." P. nobilis has exceeded 3 feet in growth with me this year, and in an avenue composed of Cedars of Lebanon, Araucarias, and Cryptomeria, the large plants of P. nobilis, with their very silvery hue, stand out in bold, and I may say enchanting relief. *William Barron, Elvaston Castle, Aug.* 15. [We endorse this statement. Some seedlings of Abies nobilis which have been submitted to us by Mr. Barron are perfectly genuine and in vigorous health.]

STRAWBERRIES.

At Egglescliffe, near Yarm, Mr. W. Nicholson cultivates a most extensive collection of varieties of this fine fruit, a Catalogue of which is before us. Mr. Nicholson observes that in this Catalogue are many without having any observations appended to them. These may be divided into two sections: one, such as the Old Pine, Hautboy, Alpine, &c., because their qualities are so well known to cultivators as to render any remarks unnecessary; the other, being recently raised or introduced; and—although each has its circle of advocates and admirers—there has not been sufficient time, or circumstances have been unfavourable for testing their worth, as the rule observed has been, when the character of a variety is given, that it is either the result of personal experience, or from the most satisfactory evidence. He also points out that, in attempting to describe the properties of Strawberries, it must always be borne in mind that no fruit is more influenced by soil, locality, and climate, the difference between the produce of a dry and sunny season, compared with that of a wet and comparatively sunless one, being so great as to give it quite a different character. Mr. Nicholson, in order to prove the effect of difference of soil and climate as regards the kinds contained in his list, adds, under the signature of G., the results of the experience of a distinguished amateur cultivator, residing at Sablons, in France. The characters given of almost all the others have been, by the same gentleman, found to correspond with his own observations in the cultivation of the same sorts in that fine and warm climate. This Catalogue is so remarkable that we reproduce it without curtailment.

Ambrosia (Nicholson).—A very superior variety; fruit fine rich Mulberry flavoured, and remarkably juicy. Too much cannot be said of it. G.

Ajax (Nicholson).—When well grown the fruit is very large and fine, beautiful shape and very dark colour. At Egglescliffe it has been grown very large. One fruit weighing 3¼ ounces; measuring 9 inches round it; nine of them weighed 1 lb.

Admiral Dundas (Myatt).—Fruit very large; flavour flat.

Adair (Elphinstone).—Fruit large, firm, fine in shape and colour, and middling flavoured; plant strong and healthy.

Amazon (Salter).—Fruit of middle size, flavour bad. G.

Athlete (Salter).—Late, large, but not good.

Alpine [Monsieur Gloede].—Fine dark red colour, and flavour very good.

Alpine.—Lettuce-leaved. Fruit large and good: a great bearer.

Alpine.—White. Monsieur Gloede's new seedling; large and extra good.

Alpine.—Red Bush. Alpine.—White Bush. (The two preceding having the peculiar property of not producing runners, but forming compact bushy plants, and the foliage being very neat, they are admirably adapted for edgings to garden walks, beds, &c.)

British Queen (Myatt).—Of universally acknowledged excellence when properly cultivated.

Black Prince, or Malcolm's Seedling.—Early.

Beeche's Queen (Query, British Queen).—Fruit large and fine.

Belle de Paris (French).—Fruit very large, acid, but good. Forces well; in warm places, good. G.

Black Scarlet (Pitmaston).—Fruit medium size, of good flavour; plant of straggling habit and shy bearer.

Bicton Pine (Barnes).—Fruit white and large; plant a vigorous grower and prolific.

Birmingham (Query).—Fruit a deep red colour, good, irregular in shape; fruits a long time.

Bee-hive (Matthewson).—Very fruitful, fruit small; a good preserver. Very early and vigorous. G.

Boston Pine (American).—Early, prolific, and good. G.

Brighton Pine (American).

Bonté de St. Julian (Carre). — Of medium growth, good bearer; fruit very dark coloured, red throughout; fine form and superior flavour; a first-rate sort.

Belle Bordelaise.—Of exquisite flavour; a good forcer; allied to the Alpine.

Comtesse Kicka (French).—Fruit good; a vigorous grower.

Cremont's (French).—Fruit good size; plant prolific and healthy.

Comte de Paris (Pelvilain, French).—Fruit large; plants healthy and prolific; a good market sort.

Captain Cook (Nicholson).—A good bearer; fruit large; musky flavour.

Carolina superba (Kitley).—Very superior; plant tender and subject to canker in the North of England. Does well for pot culture. G.

Comtesse de Marne (Graindorge, French).—Fine, early, a good bearer and healthy.

Cook's Hybrid.—Late. Good for a late sort. G.

Chili.—The Old. Only good in warm situations. G.

Crystal Palace (believed to be Nimrod or Eleanor).—Very late. Resembles Nimrod or Eleanor. G.

Coles' Prolific.—Fruit dark coloured; a good sort. A seedling after Keens', but here preferable. G.

Champion (American). | Crimson Queen (Myatt).

Delices d'Automne (Belgian).—Fruit good, rather like Rivers' Eliza. A good bearer. By no means autumnal, as first stated. G.

Downton (Knight).—An old sort.

Deptford Pine (Myatt) —A good old sort. [And early. G.]

Duke de Malakoff (Gloede).—Fruit extremely large, sometimes cockscomb and angular shaped; colour light red or scarlet; early; plant very vigorous and healthy; a first-rate sort; excellent.

Duchesse de Trevisse (French).—Fruit small, round, deep red; good.

Eliza (Rivers).—Fruit round, and very good; plant healthy and a good bearer.

Emperor (Taylor).

Exhibition. — Very productive. [See Prince Albert and Prince Alfred.]

Excellente (Loris, Belgian).—Really excellent; a good bearer, of dwarf habit, and quite hardy; fruit large, red, and handsome.

Eleanor (Myatt).—Large and good; one of the best very late kinds.

Elton Pine.—A good late sort; acid.

Ewbank's Seedling.—A little known old sort, very hardy and prolific.

Fill-Basket (Nicholson).—Fruit large and good; an excellent sort for market gardeners.

Filbert Pine (Myatt).—Said to be good in the South of England, but very subject to canker in the North. The plants do only well the first year, then decay. G.

Goliath (Kitley).—Fruit large and pretty good; a free grower.

Gelineau (French).—Late and good. G.

General Havelock (Tiley).—Fruit red throughout.

Hendries' Seedling.—Fruit very fine; flavour after Myatt's British Queen.

Hudson Bay.

Hovey's Seedling (American). — Useful sort for market growers; very productive. G.

Henriette. | Hooper's Seedling.

Hautboy.—The original genuine. Esteemed on account of its musky flavour. G.

Hautboy (Monstreuse).—Large and excellent.

Hautboy.—Prolific. [Prince.

Improved Black Prince.—An improvement on the Black

Improved Black Prince (Toynes).—Not distinguishable from Ne Plus Ultra.

Incomparable (Blake).—Fruit light coloured, almost white; flavour very good, after the old Chilian race; healthy habit, but at Egglescliffe a shy bearer.

Jacunda (Salter).—Fruit large and handsome; hollow at the core; flavour not good; a noble fruit.

Jung Bahadoor (Nicholson).—Fruit well flavoured; remarkably hardy, and bears well; a very nice useful sort. I like this very much. G.

Jenny Lind (American).

Keens' Seedling.—One of the best of the old sorts; first-rate

Kaminski. [for forcing.

La Constante (De Jonghe, Belgian) —The shape of the fruit always fine and even; large, firm, and compact; flavour first-rate; a splendid sort; one of the very best. Too much cannot be said in its praise.

L'Imperiale (Duval, French).—Very like Kitley's Goliath; questionable whether so good.

La Reine (De Jonghe, Belgian).—Fruit very long; white, shaded with pink; flavour exquisite; perfectly hardy.

La Chalonaise (Dr. Niceuse, French).—Excellent, of the Myatt's British Queen race.

La Delicieuse (Belgian).—Peculiar colour; flesh yellowish, rich, buttery; late. G.

La Perle (De Jonghe, Belgian).—Very good; fine flavoured.

La Liegoise.—Fruit like the Old Roseberry—of the Black Prince race.

Leopold (Belgian).—Fruit very dark coloured, very juicy, and deliciously flavoured; plant strong and bears well; one of the very best.

Le Baron (American).—Early and good. G.

Lucida (Californian) —Fruit too small, but of very vinous flavour; extremely curious, botanically speaking.

Marquise de Latour Maubourg (French).—A very good sort, remarkably healthy; very prolific and fine flavour.

Mrs. D. Neilson (Stewart & Neilson).

Magnum Bonum (Barratt).—Good; very similar to Myatt's

Morris' New. [British Queen.

Monstrous Hautboy (Rivers').—Fruit large; flavour splendid.

Malcolm's Aberdeen Seedling (Query, Black Prince).

Monstreuse de Robine (French).—Fruit very large; flavour flat; plant hardy, dwarf, and productive.

Marylandica (American).

McAvoy's Superior (American).

Munroe's Scarlet (American).

Madame Eliza Vilmorin (Gloede, French).—A strong grower; fruit remarkably fine; flavour after Myatt's British Queen.

May Queen. — Very early; superior forcer. One of the earliest of all its race.—Horticultural Society's Gardens.

Nimrod (Pince).—Difficult to say whether it is different from Myatt's Eleanor.

Ne Plus Ultra (De Jonghe, Belgian).—Fruit nearly black; very large and firm; plant very healthy and a great bearer; flavour flat; first-rate for preserving whole.

Naimette (Belgian).—Fruit of irregular shape, rather musky flavour; colour dark red; plant beautiful; very hardy, low habit, good bearer; a very useful sort.

Omer Pacha (Ward).—Like Rival Queen. Fruit good, but a shy bearer. G.

Old Scarlet.—Fruit small, bright scarlet; very early.

Old White (Query, Old White Carolina).—Fruit nice round shape, juicy, rather acid, good size; its deep rich-coloured seeds make the fruit look very beautiful; the flesh pure white.

Oscar (Bradley).

Prince of Wales (Toyne).—Fruit round, dark coloured, and good flavoured; plant hardy.

Prince of Wales (Stewart and Neilson).—Early and good. G.

Prince of Wales (Cuthill).—Fruit a pretty conical shape, very acid, excellent for preserving; a good bearer.

Prince of Wales (Ingram).—A very good and useful sort.

Princess Royal of England (Cuthill).—Fruit good, a vigorous grower, but shy bearer and bad setter. G.

Princess Frederick William (Niven).—The flavour and perfume of the fruit peculiarly delicious: its colour scarlet; plant very healthy and a good bearer: first-rate as an extra early fruit, and one of the very best for forcing, filling the house with its grateful perfume. This will soon prove itself to be one of the very best out-door and forcing sorts ever introduced. (Not sent out till next year.)

Princess Alice Maud (Myatt).—Good shape, colour fine, and good bearer.

Prince Albert (Myatt).—The flavour of the fruit flat; very productive.

Prince Alfred (Scholfield).—Extremely like Exhibition, and Myatt's Prince Albert; pretty fruit.

Prince Alfred (Ingram).—Fruit large and good; plant very dwarf; leaves deep green.

Prince Imperiale (Graindorge, French).—Early and good.

Princesse Royale (French).—Very early and prolific. Rather acid, beautiful shape and colour. G.

Pine.—The Old.

Perde de Rastede (Haage, Prussin).—Difficult to distinguish from Sir W. Scott, Wonderful, and Myatt's Prolific.

Patrick's Seedling.—A strong grower; fruit fine flavoured.

Prolific (Myatt).— Resembles Sir Walter Scott. Fruit rather larger than it, but not quite so high flavoured; beautiful fruit.

Queen Victoria (Myatt) —Early and good.

Quinquefolia (Myatt).—Scarce. Of the British Queen race; useful for pot culture. G.

Royal Victoria (Stewart and Neilson).

Roseberry.—Early, but flat.

Ruby (Nicholson).—Fruit fine; shape and colour good; a great bearer.

Rival Queen.—See Scarlet Pine and Omar Pacha. Here a very shy bearer. G.

Sir Harry (Underhill).—Subject to canker, and only good in some localities; recommended to be grown as an Annual, or disbudded the first year. Forces well, and No. 1 with me. G.

Sir Charles Napier (Smith).—Fruit a beautiful vermillion colour; a good and hardy sort, and forces well; rather acid.

Stirling Castle Pine.—Fruit good size and finely flavoured; plant strong and hardy.

Scarlet Pine.—An old sort, so named by Dr. Roden; very similar to, if not Rival Queen. Fruit excellent flavour, and bears packing well for sending to a distance; a good bearer at Egglescliffe.

Surprise (Myatt).—Fruit very large, but flat in flavour, and sickly in colour.

Swainstone Seedling.—Fruit very large and excellent.

St. Lambert (Belgian).

Sir Walter Scott.—A sort raised in Scotland, very like Myatt's Prolific; and, although more prolific than it, not so robust a grower; a good late forcer; fruit fine; Pine flavoured.

Scarlet Nonpareil (Patterson).—In the North of England subject to canker.

Sir Colin Campbell (Stewart & Neilson).

Scott's Seedling (American).

Triumph (American).—A most abundant bearer, is very early, forces well, and is very hardy; best on damp ground.

Triomphe de Liege (Lorio, Belgian).

Victoria (Trollope).—Superior shape; very good in some localities. No. 1, on account of shape. G.

Versaillaise. — So similar to Myatt's Prolific that it is difficult to perceive any difference; and although a good variety is not equal in flavour and bearing to the Scotch seedling Sir Walter Scott.

Unique Scarlet (American).—Creeping habit; free grower; fruit very fine flavoured; seeds deeply imbedded. Good, but fruit not large. G.

Wellington.—A great favourite with the Market Garden Fruit Cultivators in Scotland, for its productive and other desirable qualities.

Wilson's Albany (American).

Wizard of the North (Query, Sir Walter Scott).

Wonderful.—(Joyce). Query, Sir Walter Scott, so like in every particular, but not so good perhaps.

Wilmot's Superb.—Late. Very fine and tolerably good, but not very productive. G.

Home Correspondence.

Golden Hamburgh and Bowood Muscat Grapes.—The testimony borne by so able a horticulturist as Mr. Cramb to the excellence of the Golden Hamburgh Grape must be very gratifying to both Mr. Busby and Mr. Veitch; but without in the least detracting from the merits of that variety I must differ from Mr. Cramb when he says, "With the exception of the Muscat of Alexandria, we have no white Grape in which are combined so many desirable qualities." My own opinion is, judging from my present experience, that the best new Grape that has come before the public for the last quarter of a century is the Bowood Muscat, raised by Mr. Spencer. I grow it and the Golden Hamburgh in the same house. They were both planted in August, 1857, and this year I had five bunches on a rod of the Bowood Muscat, and the same number on one of the Golden Hamburgh; the bunches of the former weighed on an average 2 lbs., the latter 1 lb. The berries of the Bowood Muscat were very fine; they set as freely as Hamburghs, and had not a shanked berry amongst them. I exhibited three bunches of it at the July show at Regent's Park, and though not quite ripe they got the 1st prize in the class "any new sort." The Bowood Muscat ripens at least 14 days earlier than the common Muscat, sets much better, and has every good quality belonging to the Muscat family, such as being a good keeper and having the same high brisk flavour. I believe it is destined to displace both the common and Cannon Hall Muscats, which is saying a great deal in its favour. It has all their good qualities and none of their bad ones. *W. Thomson, Dalkeith.*

Tom Thumb Nasturtium.—I was glad to learn from your report at p. 672 that the floral censors in connection with the Horticultural Society had conferred on a variety of this Nasturtium a label of commendation. I am sure that no one who has grown the true Tom Thumb will regret allotting to it a small space of ground. To the amateur and cottage gardener it is a valuable acquisition, supplying a scarlet which, at a certain distance from it, resembles that of a Tom Thumb Geranium, and everybody knows how easy it is to grow a Nasturtium. I have five varieties at this place blooming most profusely; every one who sees them admires them; they are all quite dwarf; one or two intense scarlets resemble in compactness of growth a plant of the common hedgerow Primrose. *J. Edlington, Winch House, Seacombe.*

Veitch's Perfection Pea.—It would be obliging if some of your readers who have this year grown this Pea would report their opinion of its merits, and wherein it is considered to differ from Hair's Mammoth or Lord Raglan. I have myself had three different

sowings of all the three, treated all exactly alike, and for the life of me, I have not up to this hour been able to trace the least superiority of the one over the other. That they are all excellent I admit, nay more, they are probably the best late Peas in cultivation, but if my trial is corroborated by the experience of others, why have three named in our already overburdened seed lists when one might suffice? and that one should be the good old original Hair's "Mammoth." It would be an important addition to our stock of Peas to possess a variety equal to the one just named, and two weeks earlier. I ought to have stated that the Perfection Pea was procured direct from the Messrs. Veitch. *A Provincial Seedsman.*

Battersea Park.—On Sunday last I took an evening's walk to this park, and while wandering there was much struck with the appearance of a most extraordinary looking flower, but no names are affixed to the flowers or shrubs in this park, and of course no one could be found to tell me what it was. I will therefore attempt to describe it, in the hope that some of your correspondents may be able to tell me the name. The leaf was that of the Lilium lancifolium, throwing out a stem about the length and thickness of a Bulrush, with a head very much in shape and size like a spear head, the bloom formed of small pendent bells thickly studded; the upper part, about half way down, being of a bright crimson, and the lower half a deep yellow. I have never seen anything like it before, and should much like to know what it is. At the same time perhaps you could inform me the right pronunciation of the Gladiolus, whether the *i* is long or short. *Rus in Urbe.* [The *i* is sounded long, although really short, the *o* itself being also short. Whenever the last syllable but one of a Latin word is short the accent should be thrown on the previous syllable (the antepenultimate) whether that syllable is long or short.]

Large Sunflower. — Permit me to inform your Brighton correspondent that Sunflowers with leaves such as he describes may be found in nearly every cottage garden in this village. One in front of my window measures 9 feet 2 inches in height; circumference of stem 5 feet; from ground 6½ inches; leaf 18½ inches by 15½ inches. The flowers have not yet expanded. *P. Fry, Addington, Kent.*

Hot-water Pipes for Forcing Rhubarb.—I am about to lay down some hot-water pipes for forcing early Rhubarb. Will some of your correspondents inform me at what depth they should be laid, and what would be proper to put on them? Whether it would be best to put any stones or only soil? *An Old Subscriber, Gloucester.*

Gishurst Compound.—My men have just been using some of this in the conservatory in the proportion of 2 oz. to the gallon, and whether it has destroyed the insects or not I find that it has played havoc with the paint and varnish. The paint (stone-coloured anti-corrosion) it has changed to the colour of iron rust, and the varnish (the best carriage) put on 12 months back is either washed off completely or so dulled as to be quite an eyesore. We tried to correct the evils by immediate washing with clean soft water and a scrubbing brush, but that was quite useless, and there is now no remedy but to repaint the parts injured and revarnish the woodwork. *Judex.* —— Green-fly had attacked our Muscle Stocks, 12,000. We tried a solution of ½ lb. to the gallon of this Compound on 500 Stocks as an experiment, and found that it surpassed our expectations. *Geo. Jackman & Son, Woking.* ——Having caused the Gishurst Compound to be thoroughly tested in the different departments of my establishment as a means for the destruction of green-fly and black fly, thrips, &c., I am now enabled to speak most confidently and satisfactorily as to its results. Amongst my fruit trees and fruit tree stocks, which are so frequently severely injured during the spring by the black and green fly, it has been most successfully used in the proportion of 2 oz. to the gallon, and the total absence at this moment of any insect or curl on the leaf incontestably proves how sure a remedy it is. In my plant houses, where it has been used in the proportion of from 2 to 4 oz. to the gallon, according to the judgment of the foreman, it has also proved equally successful. It therefore affords me much pleasure in thus adding my testimony to that of others, as to its good qualities. *James Veitch, Jun., Royal Exotic Nursery, Chelsea.* [We think enough has now been said on this subject.]

Syphon Watering (see p. 656).—Exhausting the air in the tube is accomplished very easily. After insertion in the barrel the delivering end is held a little lower than that in the water. The operator then applies his mouth to the tube, and keeps sucking until he feels the air rushing into his mouth. This is a sign to immediately desist, as the water is now coming along the tube, and to remain longer there would subject the operator to a mouthful of water and probably a wet face. If liquid manure is being used it is not so pleasant to apply the mouth. In that case we generally fill the syphon with water, keeping both ends stopped until one end is inserted in the barrel and the other in the position for delivery. This produces action just the same as if the mouth were employed. We brought the water-cart along some of our terraces, and with a tube 40 feet long watered successfully the beds beneath. With this length no diminution in the force of the water took place. That a syphon need not be confined to a bent tube having a long and a short end is evident from the many turns our Gutta Percha tubing took whilst in operation. In watering with the long tube near the cart at the bottom of slopes, we coiled the tube round the neck of the operator, without interfering in the least with the flow of water, the operator throwing off the coils at pleasure as he required to recede. Watering from a cart on this principle has many advantages to recommend it. One is, that it admits of as many syphons as it may be thought necessary to work, and being on the top of the cart they are kept clear and safe from the action of the wheels. Where gardens have not the advantage of a system of piping supplied from a high pressure, the syphon will be found a most invaluable acquisition. *William Miller, Gowran Castle Gardens, Kilkenny.*

Gladiolus Brenchleyensis.—We have forwarded to you a box of blooms of this Gladiolus, the bulbs of which when planted in March on our black sandy soils were not larger than swan shot. *Youell & Co., Royal Nursery, Yarmouth.* [The flower stalks sent measured on an average 20 inches in length, and were each ornamented with from eight to 12 blooms of most brilliant orange scarlet. This must certainly be regarded as one of the most showy and beautiful of the class to which it belongs.]

Bees.—The following account of the increase of honey in a hive suspended from a spring balance may be interesting to some of your readers:—

June 7	.. ..	0 lbs.	July 19 .. .. 27 lbs.
,, 14	.. ..	3 ,,	,, 26 .. .. 28 ,,
,, 21	.. ..	7 ,,	Aug. 6 .. .. 29 ,,
,, 28	.. ..	10 ,,	,, 13 .. .. 27 ,,
July 5	.. ..	12 ,,	,, 15 .. .. 27 ,,
,, 12	.. ..	18 ,,	

On which day the honey was taken. *W. W. Spicer, Itchen Abbas.*

Blue Hydrangeas.—In one of the houses in the Horticultural Society's Garden are a number of Hydrangeas in full bloom; part of these are of a fine pink, part of them of a pure blue, all equally healthy. The gardener who has charge of them says that he mixed some old nails and iron filings with the earth from which the blue flowers are produced. I have taken some of the pure pink flowers and applied to them a strong solution of sulphate of iron (with a little nitric acid to peroxidise the iron) and find that this turns them blue, as you will see by the enclosed specimens. Hence there seems to be no doubt that the blue colour may be produced by iron. I placed a cut bunch of pink blossoms with the stem in a weak solution of sulphate of iron, renewing the absorbing surface from time to time by slicing a piece off, but in the course of two days no alteration of colour has taken place; however, when the pedicels are crushed they assume a blue tint. Some of the flowers infused with boiling water had their pink colour discharged, and on adding sulphate of iron and allowing them to stand for some hours, they became coloured of a pale blue tint, darkest near the centre. The flowers generally when treated externally with the iron solution do not appear to become coloured unless the cellular tissue is crushed or otherwise injured. These facts seem to settle the vexed question of the production of blue Hydrangeas; it remains for the chemist to explain them. *Arthur Henfrey, Turnham Green, August* 13.

Societies.

Botanical of Edinburgh: *July* 14.—The President in the chair. Dr. Aitken of the Inverness Asylum sent specimens of Hottonia palustris, and of Hydrocharis Morsus Ranæ, from Mordan Carrs, county Durham. The following donations to the museum were announced:—From A. Hewan, Esq., Old Calabar, stick made of African Teak; hats and mats made from the leaves of Pandanus odoratissimus; fibres, cloth, and musical instrument, made from Palm leaves; Sasswood or Krooman's Ordeal Bark; ornamented cupping Gourd (Cucurbitula), and other larger carved Gourds used by the natives of Old Calabar for domestic purposes; bird's nest, formed from the leaves of Elais guineensis, the Oil-palm, portion of pod of Entada scandens, and another large pod used as a varnish in Old Calabar. From A. Murray, Esq., root, showing natural grafting. From Mrs. Knapp, specimen of wood of Garrya elliptica. From T. C. Davies, Esq., a large collection of woods, fruits, extracts, and other materials used in the Lancashire cotton manufactory as dyes, arranged in glass cases. From J. G. Reid, Esq., dried Peaches from Cape of Good Hope. From H. Cowan, Esq., seeds of the Wax plant of Japan. From Dr. Oswald, Indian Service, specimen of Bamboo Rice and of Tabasheer, from India. From Dr. A. Hunter, Madras School of Industrial Arts, specimens of dyed cloths from Mangalore in India; also specimens of papers from India, with the fibres from which they are manufactured. From Mr. Sang and Mr. W. M'Nab, a series of stereoscopic representations of plants. From Miss M. Frome, large specimen of the fruit of Urania speciosa, or "Traveller's Tree," from Madagascar. The following communications were read:—I. "Statistics of Botanical Class in the University of Edinburgh from 1777 till 1859 inclusive." By Prof. Balfour. From this it appeared that the number of students had varied from 54 in 1777 to 115 in 1807, 180 in 1817, 200 in 1827, 227 in 1837, 199 in 1847, 192 in 1857, and in 1859 had amounted to 253. The largest number on record was 280 in 1828. —II. "On the Fruits of the Cucurbitaceæ and Crescentiaceæ, as the original Models of various Clay, Glass, Metallic, and other Hollow or Tubular Vessels and Instruments employed in the Arts." By Prof. Wilson. The author commenced by drawing a contrast between the plan of procedure of an animal artist, such as a bird or an insect, and that which guides a human workman when each is executing a design. Both classes of artists agree in eschewing chance, and following in their work a prearranged plan. They differ in this, that the human artist carries out his own conception, realising an idea which has arisen in his own mind, or at least a scheme which has been wrought out there; whilst the animal artist carries out a conception which is not its own, but a divinely implanted instinct, in other words, a thought of God's. Each animal instinct is thus equivalent to an infallible recipe or formula of guidance, furnished by God to the creature which follows it; and the instinctive workmanship which results, for example, in the exquisite cell of the bee, the geometric web of the spider, the caterpillar's resurrection-shroud, and the swallow's nest, is as truly the copy of a God-given pattern as were the mercy-seat or the golden candlestick of the Hebrew tabernacle which Moses constructed after the perfect models shown him on the Mount. However inferior, accordingly, the animal may be to the human workman, the work of the former, as an example of divine design, may serve the latter better as a pattern for his own work than anything he could devise himself. A conviction of this kind has always dwelt in the minds of the intelligent men of all ages, and has induced them to admire and to copy both the workmanship and the organs or tools of the lower animals, as in many cases not admitting of being surpassed or even equalled by human devices. From the animal it is but a step to the plant, and if we miss consciousness, and cannot assure ourselves of even the smallest amount of intelligence, we are still certain of the presence of a manifold energetic subtile life, which gives to each vegetable organism powers of transforming matter, still more marvellous in some respects than those of the animal. If, for example, the animal is more wonderful as a mechanician, the plant is more wonderful as a chemist. Nor do we fail to realise that the inner vegetable life which invests the plant with energies so far transcending those of the mineral on the one hand, and of the animal on the other, may be traced back from seedling to parent-plant through thousands of years, whilst we find for this life no beginning except in the will of God, and perceive that he is behind it guiding and controlling it wherever it appears. The flowers, fruits, leaf-appendages, and other organs of plants which have in all ages been resorted to by mankind as patterns, are thus, though in a different sense, as truly Divine patterns as the organs or workmanship of animals. Whilst thus to plants is given the unconscious realisation of Divine designs, and to animals the spirit of conscious and delightful obedience to perfect plans of work, to man has been granted the God-like power to create what in its degree shall bear his stamp as its maker, even as the universe shows everywhere the finger-touch of the Almighty. The human industrialist has thus plainly in his choice two modes of work; he may either fall back entirely upon his creative or inventive faculty and devise novel instruments, or he may imitate in whole or in part vegetable or animal organisms (including animal workmanship), accepted as Divine patterns ready to his hand. In reality, industrial man has constantly been following both modes, sometimes inventing, sometimes copying, often combining both. It is to certain of his imitative proceedings that reference will now be specially made; with, however, the proviso that those proceedings can in no case, from the difference of tool and material with which man works, be absolutely imitated, but only partly so. In endeavouring to ascertain what human instruments are copies of natural objects, we must not forget that certain forms are so common that mere similarity in shape, between a particular industrial instrument or vessel, and a natural object, is not enough to show that the one has been imitated from the other. Thus a very familiar form of wine cup recalls closely the configuration of a truncated polished Cocoa-nut, but not more than it does an ostrich egg similarly treated; or the lower part of a Bottle Gourd. It also resembles the capsule of some species of Poppy, and also the theca or spore case of certain Mosses, whilst the calyx of the Rose gives the perfect contour of our wine cup. It might then have been modelled after any one of those patterns, and it may have been after none of them, for among the ovals of the mathematician would be found outlines which would exactly give the form we have been describing. Similarity, then, or even identity, of form, especially in the case of simple shapes, is no certain proof of the one having been copied from the other, but it is an important guide to the derivation of an artificial shape from a natural one. In seeking for further means of certifying the relation of similar forms to each other, it will be found that the name by which an industrial instrument or vessel is known often points to the form or material of its prototype, which it has long ceased to resemble in most particulars. Thus the brewer offers his visitor a horn of ale. If the offer is accepted, the horn makes its appearance in the shape of a tin mug, still indicating by its shape and name that the original drinking-vessel was made from the wider part of a cow's horn. A hunting horn again is now a brass trumpet, which in its more elaborate forms, completely conceals from us that it is but a lengthened many-coiled and very wide-mouthed horn of brass. So, also, a shoe-horn is often a scoop of metal. We have in the same way the Latin name *tibia* applied to a musical pipe or flute, preserving the fact that it was originally made from the leg bone of an animal; and the name *avena*, applied to the pastoral pipe, recalling that it was

at first a straw or Reed. So also the Greek *alabastron*, primarily limited to a perfume box made of alabaster, came latterly among the ancient Orientals to signify any kind of box employed to contain a fragrant oil or ointment of high price. In addition to the name, we have an important means of identifying the originals of modern and familiar vessels which have been long in use among highly civilised nations, in observing the mode in which nations of another type of civilisation than ourselves, or little advanced in civilisation at all, supply the absence of such vessels as we use. Keeping those points in view, it would appear that our modern hollow and tubular vessels have been mainly modelled on three distinct types:—1st, the stems, leaves, flowers, and fruits of plants; 2dly, the bones, including the hollow horns, of the mammalia; 3dly, the shells of external skeletons of the mollusca. Omitting all reference to the two last heads, and limiting attention solely to fruits under the first, the relations of the Cucurbitaceæ and Crescentiaceæ may now be considered. No tribe of plants appears to have yielded so many different hollow vessels as the Cucurbitaceæ or Gourd family, with which, however, it will be convenient to include the Crescentiaceæ or Calabash trees, yielding the Calabash. This has apparently arisen—1st, from their wide distribution over the globe, which is so extensive that in all its hotter regions members of this family are indigenous, and they are easily cultivated in the warmer temperate regions; 2d, they yield fruits of great diversity of form, but possessed in certain varieties of firm, hard rinds; 3d, they are easily deprived of their pulp and rendered hollow; 4th, they can, whilst growing, be to some extent moulded in form, and though their rinds when dry are hard, they are easily cut and perforated. Next to the hollow horn of the mammalia, the Gourd, representing all the Cucurbitaceæ and the Calabashes, yields the greatest variety of vessels. In illustration, the following examples, along with others bearing on different references in the paper, were laid on the table, the specimens being taken from the Botanical and Industrial Museums:—An elaborately carved ovoid work-box; a basket with and one without a handle; various South and West African snuff bottles or boxes, plates, plate-covers, cups, bowls, water-jug, water jar, cooking pot, spoon or ladle, scoop or skimmer, vessel, with suction-tube and strainer, answering as teapot, cup and saucer in one (used by South American Indians for maté tea), funnel used for medical purposes by Africans at Old Calabar, flask-like bottle, constricted or hour-glass, pilgrim's bottle, cupping instrument as used at Old Calabar. Besides these, reference was made, on the authority of Dr. A. Hunter, of Madras, to the construction by the natives of India of a musical instrument resembling the guitar from a large flask-like Gourd; and to their conversion of a similar but much smaller Gourd into a suckling-bottle for children. Allusion was also made, on the authority of the same gentleman, and also on that of Mr. A. Hewan, of the Old Calabar mission, to the employment in India and Africa of empty Calabashes as floats, or the components of rafts, by means of which men, animals, and baggage were ferried across rivers. A single Calabash, it was stated, was quite sufficient to float a man, and the Africans contrived to balance themselves on one in a very adroit but, to white men, inimitable way. The author further reminded his audience that, according to an authority in whom they had much faith in their early days, Cinderella's friend the fairy made her a splendid coach out of a Pumpkin or immense Gourd. He was afraid this was a lost art, at least at this season. It can apparently be practised only at Christmas time, when the pantomime is in vogue. Nevertheless, it might be that Cinderella's pleasant story contains, besides much else, a cognition of the manifold uses to which a Gourd may be industrially applied. Without insisting on this, the Gourd might with confidence be regarded as having been in both hemispheres the precursor and natural model of the cup or bowl afterwards fashioned in clay and metal. In particular, however, it was the prototype of three hollow vessels. The first is the long-necked bottle, with an egg-shaped body, which has been imitated in clay from a Cucurbitaceous fruit by the Chinese, the natives of India, the ancient Egyptians, and various African tribes, as well as by the ancient Persians, to mention no others. The similarity of the clay bottles of these nations to Gourds has struck all observers, and the botanist, by the term Bottle-Gourd applied to the fruit of one particular plant, has implied his recognition of that species, as the best marked vegetable prototype of the artificial liquor flask. Recently Minton has produced a graceful copy of the Bottle-Gourd, in yellow majolica ware, with curling tendrils and leaves in green, as if in the name of the ceramic art to do homage to a natural model which it has followed in all countries for thousands of years. From clay the transition is ready to glass, in which the Bottle-Gourd, either as first or second-hand, has been constantly imitated. Secondly, the constricted or hour-glass Gourd is the accepted or traditional pilgrim's bottle, drawn by our artists as slung by its narrow waist over the shoulder of the wayfarer in their illustrated "Pilgrim's Progress" and "Palmer's Crusading Journeys." The Gourd is supposed by some to owe its constriction and hour-glass form to the effect of a ligature tied round it while growing, but such a process is certainly not necessary. Plants grown abroad under the eyes of botanists, as well as several raised in the Botanic Garden here by Mr. M'Nab, spontaneously produced fruit with the useful constriction which enables it to be hung by a string across the shoulder. In Europe this form of bottle is now little seen, but it is otherwise in the east, where it is copied in clay and porcelain as a convenient water vessel. For actual pilgrims the hollow Gourd itself has the advantage of being less fragile than its clay copies. Both, however, are used, in illustration of which two small porcelain figures of Chinese wandering beggars were shown, each with his hour-glass Gourd or its fac-simile in clay. The third, and perhaps the most curious, as certainly it is the most novel, relation of the Gourd to hollow vessels, is as the prototype of the cupping glass. The author was led to suspect this in consequence of receiving a year ago the gift of a small Gourd for the Industrial Museum. It had been sent to Dr. Greville by Mr. Hewan, the mission surgeon of Old Calabar, and was stated to have been used by the natives for cupping. The author was led to recall the fact that the Latin name for the cupping-glass was "Cucurbitula cruenta," and to surmise that the name was a standing memorial of the earliest cupping instrument having been a Gourd. This summer he had the opportunity of meeting Mr. Hewan, who is on a visit to this country, and from him he learned that the practice of cupping with Gourds is common in Western Africa, as well as among the negroes in Jamaica. Lexicographers have explained the Latin name of the cupping glass as referring to the resemblance in shape of the latter to a Gourd; but it does not more resemble a Gourd than various other objects. Moreover, a cupping instrument as ancient as the "Cucurbitula" was the tip of a cow's horn, perforated at the apex, so as to allow the air to be sucked out by the lips after the base had been applied to the scarified skin; yet no two shapes are more dissimilar than those of the egg-like Gourd and the conical horn. The author accordingly infers that alike the Latin Cucurbita, or Cucurbitula, and the Greek *Sicyos* were applied to the cupping-glass mainly because originally it was a Gourd, although unquestionably the permanency of the term was secured by the instrument retaining the Gourd form after it parted with the Gourd substance. The Gourd was thus in a twofold way the prototype of the cupping instrument. In illustration of these points the author showed three African cupping Gourds; a Shetland "Blude horn," or cupping horn as used at the present day; and drawings of the Gourd-shaped bronze Cucurbitulæ, found in the ruins of Herculaneum and Pompeii. A brief allusion was made to the cupping Gourd and cupping horn, as the earliest artificial vacuum producers and precursors of the air-pump; but this subject was reserved for a special investigation. Remarks were made on the paper by Mr. Hewan, of Old Calabar, who was present at the meeting.—Mr. M'Nab placed on the table a series of living Alpine plants, including 15 or 20 collected by Dr. Balfour's party in Switzerland. Also a specimen of Sabbatia stellaris, showing a peculiarity in the style, which lies at first flat on the corolla with the two stigmas close to each other, and after the pollen is applied becomes erect, with the stigmas separate.—Mr. M'Nab exhibited specimens of Helleborus niger or Christmas Rose in full flower; also a Hawthorn branch with the fruit of last year and of the present year attached to it.—Mr. Hewan exhibited a specimen of the flower of Aristolochia gigantea from Africa.

Notices of Books.

The American Home Garden, by Alex. Watson. 8vo. Sampson Low & Co. Pp. 531.

A long account of the American way of Strawberry growing was lately transferred from this volume to our columns. It will therefore have been inferred that we find the book one in which gardeners may gather information. And so we do, when the way of cultivating plants in the United States requires to be considered. But it is chiefly calculated for the peculiar climate of that part of the world, and must not be taken as a certain guide on this side the Atlantic. Not but what its pages contain plenty of horticultural precepts which all may follow in all places; and therefore it may be recommended to those who can afford to buy many books on gardening. About 150 pages are filled by an account of American fruit trees, and are abundantly illustrated by outline figures. Here we get information regarding the orchard fruit of the States, and to this part the English reader will most frequently turn. A good deal of space is occupied by descriptions of insects, there is a well prepared index, and an abundance of woodcuts, some of which have, however, been engraved from extremely bad drawings. The following is Mr. Watson's advice upon a very common operation:—

"*Hoeing.*—The directions so often repeated in this work, to 'hoe frequently and deeply,' may seem to the inexperienced superfluous; it may be thought that hoeing is useful only for the purpose of killing weeds. The cultivator of a garden could scarcely make a greater mistake. It is admitted as a demonstrated fact in vegetable physiology that plants receive their food principally, if not entirely, by the spongioles, or extreme vessels of their root-fibres. Now in the deep hoeing of crops, the extending roots of the plant are cut, and every tender growing root thus cut will in a few hours throw out several new ones, pushing in various directions, and some of these being cut by subsequent hoeings, the ramifications of the roots are greatly increased, and in an equal, or perhaps even in a greater ratio, their spongioles or mouths are multiplied.

"Again: modern science has shown that ammonia is the great quickener and an essential supporter of vegetable life, and that it is absorbed from the reservoir or chief source for supplying it. By deep hoeing the soil is most thoroughly pulverised; it is so loosened that the young roots can seek their food with facility; it is opened to the air and dews of night, which bring with them at once the ammonia which furnishes the material of their food, and the moisture, combination with which is probably essential to its reception by the plant. This, however, like all other garden operations, may be performed wisely or unwisely. No set of rules will allow the cultivator to lay aside his judgment and common sense, and go on blindly to success; but the following suggestions will be found useful in practice:—

"1st. In the early stages of their growth, all garden crops should be frequently and deeply hoed; that is, in fruit or seed-bearing plants, as Cucumbers, Beans, &c., until the blossoms are about to appear; in heading vegetables, until the heads are about to form; and in root crops, until they are about to swell, or until they attain from ½ to ¾ of an inch diameter. Most crops, too, will be greatly benefited by being ploughed or dug through between the rows, wherever this is practicable, at least once during their growth.

"2d. Crops, when nearing maturity, if hoed at all, should be hoed shallow, unless it be at such a distance as will leave the larger roots entirely undisturbed. For this purpose, the thrust hoe may be used to advantage."

Messrs. Brunlees & Webb, civil engineers, struck with the manifest impossibility of either executing Mons. de Lesseps' plan of uniting the Mediterranean and Red Seas by a ship canal, or of maintaining it if executed, propose to substitute a railway on which ships may travel from sea to sea. They purpose erecting at each port a pier upon either disk or screw piling, running out far enough to obtain the necessary depth of water. When this position has been reached, a small harbour will be constructed containing one or more hydraulic lifts. The vessels will be raised on cradles by the lifts to the level of the railway, and lowered by the same means at the termination of their transit. Whilst on their cradles the ship's hulls can be examined, even during the passage from one sea to the other; and if repairs are needed, the vessels on their cradles can be taken to repairing yards on the main land. The railway will be practically level throughout, and they anticipate that a speed of 20 miles per hour will be maintained with ease and safety, especially since a ship would be able to make use of her sails on the railway. It is calculated that the cost of the works will amount to the sum of 4,800,000*l.*; while De Lesseps' projected canal, although it is impossible to frame a correct estimate for so precarious an undertaking, cannot be less than 30,000,000*l.* The details of the new scheme are given in a *Proposed Ship Railway across the Isthmus of Suez*, a pamphlet published by Reed & Pardon, Paternoster Row.

Trade Lists Received.—Hugh Low & Co.'s (Clapton) *Catalogue of Plants, Trees, Shrubs, &c.*, fills 76 pages of matter closely printed in double columns, and certainly forms one of the most remarkable of our English trade lists, whether we regard its extent or the great variety of fine things that it includes in every class, from Herbaceous and Alpine plants up to Ferns and Orchids.—Vilmorin & Co. (Paris), a List of seeds for field crops which can be sown at the present season (*Liste de quelques graines de grande culture, qu'il convient de semer en cette saison*), contains several new and improved varieties of Trifolium incarnatum, Rape, &c., of which mention will be made in our agricultural columns.

Garden Memoranda.

Mr. Cuthill's, Denmark Hill, Camberwell.—Strawberries have been good here this season. The Black Prince suffered to some extent from the long continued cold north-east wind which prevailed in spring; but still bore a fair crop. Cuthill's Princess Royal proved hardier than the last-named sort, and bore abundantly. It is a general favourite on account of its fine flavour, and deserves to be better known than it is. His Prince of Wales, however, is the kind on which he most depends; it suffered less than any other this spring, and as a proof of its productiveness Mr. Cuthill informed us that he gathered several hundred lbs. weight from it in one week; 100 lbs. of it he sent one morning (30th of June) to the Wanstead Institution, in addition to that he gathered 20 lbs. more on the same day, and all from a very small plot of ground. Of Seedlings Mr. Cuthill has two, both of which he thinks may take a first-class place among Strawberries. Of one which he calls Highland Mary some account appeared in our Number of the 3d July last year. Richard the Second is the name given to the second sort. What fruit we saw of it was above the medium size, of a rich dark colour and good flavour; it is also reported to be very hardy, and a great bearer—both stand forcing well.

In March this ground resembles, as Mr. Cuthill says, a large manure heap, every inch being covered with plants, over which is put a layer of half-rotten horse-dung to the depth of from 1 to 2 inches; through this the plants gradually force their way, and it helps to keep weeds down, while during every shower of rain that falls it enriches the ground and feeds the plants at a time when they most want support. This plan is greatly superior to the old system of putting clean straw or Grass between the

rows, and it is more easily carried out, the straw being troublesome to apply after the plants have grown, besides, it is a bad conductor of heat. Grass is equally objectionable, and it gives a musty flavour to the fruit. The dung even during the heaviest storms effectually prevents grit from spoiling the fruit. Several hundred plants put out in April last have thriven remarkably well and borne fruit; these were planted with a trowel. Mr. C. never uses the dibble, which crams the roots into a small hole, thereby preventing the plants from pushing vigorously. His plan of making strong runners quickly is worth attention. As soon as the crop is gathered and the runners begin to meet between the rows, he throws a quantity of light mould over them; into this they strike root immediately, and make fine plants in a very short time.

In the culture of the Mushroom Mr. Cuthill is very successful. He has two old Vineries 45 feet in length, with a pathway along the centre, and beds on each side 4 feet wide, and about 16 inches deep. These are made up of dung and surfaced with mould. He has also a low span-roofed house with beds on each side, in which manure is laid to the same depth. In this he manages to keep the beds long in bearing during summer, by putting a covering of straw over the roof, which is of glass. During hot weather the straw is well watered every night, which helps to keep the inside comparatively cool, and in this way beautiful Mushrooms are obtained all summer, and singularly free from insects.

We noticed two rows of Asparagus grown by way of experiment. For this the ground was merely trenched and the manure dug in afterwards. The plants stood a foot apart in the rows, and the latter were 4 feet asunder, with a row of Seakale in the centre. Both Asparagus and Seakale received good soakings of manure-water in spring and summer. Plenty of salt was put on in March, and with a hoe soil was drawn up so as to cover the Asparagus to the depth of about 4 inches. The Seakale was also covered with mould, which is all that was done. This of course is for late Seakale, but Mr. C. is of opinion that large plantations of both these esculents might be made and managed cheaply enough on this plan to bring them within the reach of everybody. While Asparagus and Seakale beds are made as they usually are with enormous quantities of rich material to a great depth, the produce must of necessity remain dear. The culture of these, Mushrooms and other things mentioned in this report is very fully given in the form of pamphlets which are published by Mr. Cuthill.

Now that Cucumbers are being brought into our markets from Bedfordshire and Huntingdonshire, from 10 inches to a foot in length, straight, green, and solid, and sold by the growers at from a penny to twopence a dozen, frame Cucumbers are little sought after; but as in winter and spring the latter can only be had, some account of Mr. Cuthill's plan of growing them may not be uninteresting. He attributes failures generally to the application of too much, both of top and bottom heat, during the dark months. He states that when he took the ground he now occupies some 20 years ago he was "quickly brought to his senses in this matter by having no one's pocket to go to but his own." He found that a 4-inch hot-water pipe for top heat and a 3-inch one for bottom-heat was all he could afford. These kept all safe during many a cold and stormy night when he grew Cucumbers for Covent Garden market. Often in the morning his thermometer stood at 50°; but still the plants did well. He also found that short Cucumbers, and plenty of them, paid him better than long ones which took longer time to grow; he therefore cultivated exclusively his Black Spine, whose fruit is about 1 foot in length, and his more recent kinds, the White Spine and Highland Mary, also belong to what he calls "the cut-and-come-again breed." Of the latter, 300 Cucumbers are stated by Mr. Cuthill to have been cut from a 12-light pit in 15 days, and that without any artificial heat whatever. He therefore uses at all times as little of the latter as possible. In the case of early Cucumbers the plants are planted out into the soil over a slight bottom heat, four being put under each light; a short time suffices to show which of these is likely to take the lead when the weaker ones are removed. A stick thrust into the soil serves to conduct the young plants to a trellis which is placed about 3 feet above them. Mr. Cuthill grows wholly on trellises, which he says answers better than any other plan. As soon as the plants reach the trellis their points are nipped off, which causes them to branch and cover its surface, after which little more artificial management is required. Liquid manure is freely applied when the plants are in active growth and in full bearing, and woodlice are kept down by watering round the walls of the pit inside with boiling water. In this way excellent crops of fine fruit are secured, wholly free from speck or blemish.

Miscellaneous.

Death from Sting of Hornets. (?)—In a letter by an Indian gentleman, living near Jubbulpore, it is stated that two European gentlemen belonging to the Indian Railway Company—viz., Messrs. Armstrong and Boddington—were surveying a place called Bundar Coode, for the purpose of throwing a bridge across the Nerbudda, the channel of which, being in this place from 10 to 50 yards wide, is fathomless, having white marble rocks rising perpendicularly on either side from 100 to 150 feet high, and beetling fearfully in some parts. Suspended in the recesses of these marble rocks are numerous large hornets' nests, the inmates of which are ready to descend upon any who may venture to disturb their repose. As the boats of these European surveyors were passing up the river, a cloud of these insects overwhelmed them; the boatman as well as the two gentlemen jumped overboard, but Mr. Boddington, who swam, and had succeeded in climbing to a marble block, was again attacked, and being unable any longer to resist the assaults of the countless hordes of his infuriated winged foes, threw himself into the depths of the water never to rise again. On the fourth day his corpse was discovered floating on the water, and was interred with every mark of respect. The other gentleman, Mr. Armstrong, and his boatmen, although very severely stung, are out of danger. *Pharmaceutical Journal.*

Calendar of Operations.

(*For the ensuing Week.*)

PLANT DEPARTMENT.

Conservatory, &c.—It is now time to provide and encourage an assortment of flowers adapted for blooming late in autumn and early winter. Camellias, if forced into wood, will be tolerably forward. They should be kept out of doors in a good place on cool flags or cool ashes to prevent worms from deranging the drainage. Chrysanthemums should now receive their last shift if possible, using chiefly sound fibrous loam for the purpose with plenty of charcoal. This is the best way to keep them stiff in habit and to preserve their lower leaves. Any necessary amount of strength may be imparted to them when the flower buds are formed by good liquid manure. Successions of Brugmansias, Clerodendrons, Euphorbias, Poinsettias, &c., should receive a last shift in order that they may produce a rich display in the conservatory. Climbers on ornamental trellises should be occasionally cut back with the view of having a succession late in the season when flowers become scarce. A batch of such things as Thunbergias, Ipomœas, Jasmines, Stephanotis, Passifloras, &c., should be got up ornamental trellises without delay; Clematis bicolor and C. azurea grandiflora force well in early spring; rest them behind a shady wall in June and July, and they will flower again in October and November. These latter plants although perfectly hardy are well adapted for conservatory trellises. Orchids.—Continue to top up late growth and to keep the plants at the warmest end of the house. Give air liberally in the early part of the day, and on very fine mornings syringe occasionally the whole of the stock.

FORCING DEPARTMENT.

Pineries.—Plants growing in dung pits must be freely supplied with air to prevent their getting drawn, and they should also be kept near the glass and not allowed to stand too closely together, for strong robust plants need hardly be expected unless this is attended to, and weakly drawn ones seldom or never yield fine fruit. Give careful attention to such as are swelling; afford them plenty of warmth and moisture, and as much manure-water at the root as the soil will bear. Remove useless suckers and gills as soon as they are perceived, which, if left, only rob the fruit and weaken the sucker which it may be necessary to leave on the plant for keeping up the stock. Do not allow young stock in free growth in the succession pits to stand too closely together, nor to sustain any check through neglect in watering, or the want of pot room. Plants growing in beds of soil must also be carefully attended to with water, keeping the soil in a nice moist state. Where rapid growth is required keep as warm and moist as can be done without drawing the foliage, and give plenty of strong clear manure water at the root, and the plants will make rapid progress for the next two months. Vineries.—See that Vines from which the fruit has just been cut are free from insects, giving the foliage an occasional washing with the engine if red spider is at all troublesome; and use every precaution to keep the leaves in health as long as possible. Prevent the growth of laterals, which only shade and injure the principal foliage. Late Grapes colouring should be assisted with slight fires in cloudy weather, especially Muscats, which, after this season, where they are not already all but ripe, will require gentle fires, unless the weather should prove unusually fine.

FLOWER GARDEN AND SHRUBBERIES.

In some neighbourhoods green fly has been troublesome to Verbenas, &c. Where such is the case tobacco-water and soap-suds may be used with advantage. The strength of the mixture should be tested by dipping some of the shoots worst affected into it and using it sufficiently strong to kill the insects, but not so much so as to injure the leaves. It should be applied in the evening when there is a prospect of a dry night, using a fine syringe or finely rosed watering-pot, and giving enough to moisten the whole of the foliage. Go over the beds frequently and remedy any defect that may be perceptible without loss of time, for bedding plants are enjoyed only for a comparatively short season, and now that they are in beauty every means should be used to render them as attractive as possible by maintaining the most perfect order and neatness. Where the stock is clean and growing vigorously this will involve considerable attention, and it will be necessary to go over the beds frequently, pegging down where necessary, removing decayed flowers, and cutting back such of the shoots as may incline to encroach upon the edging of the beds. Keep herbaceous plants neatly tied up, and cut off the flower stems of any that are becoming unsightly. Take advantage of leisure hours to put in cuttings, and use every possible despatch with this work until there is a good stock in a fair way for rooting of such things as are known to be difficult to winter, except in the shape of well-established plants. Keep gravel walks perfectly smooth and neat by weeding, sweeping, and rolling, as may be necessary. Keep climbers on walls within due limits.

HARDY FRUIT AND KITCHEN GARDEN.

It may be advisable to go over such trees as are over luxuriant and stop about half the shoots, beginning of course with the strongest; for a general stopping at this time would probably be of little farther service than to induce the production of a mass of useless spray, whereas stopping the stronger shoots or those which incline to grossness will divert the sap into the weaker ones, which will be strengthened, while the buds on the shoots that have been stopped will become full and plump without starting into growth. The only effectual method, however, of curing a gross habit of growth when this is the case in ordinary seasons is root pruning, or keeping the roots within proper limits by means of shallow, well drained borders. Should it be found that the shoots after stopping incline to start into growth, it will be advisable as soon as the fruit is gathered to open a trench at a moderate distance from the stem of the tree, cutting the stronger roots. This will be of the greatest service in checking growth and will probably do more towards securing ripe wood. than anything else that could be adopted. Get the Strawberry plantations intended to stand for next, season trimmed as soon as convenient, cutting off and clearing away the runners so as to afford the leaves plenty of room. Attend to providing plenty of Lettuce, Endive, &c., for winter salads; also see that there is a good bed of Parsley provided in some sheltered spot, where it can be readily protected in severe weather

COTTAGERS' GARDEN.

As observed in former Calendars, let all spare ground from Potatoes or otherwise be followed up with winter crops of some kind. Amongst the most valuable stand the old Green Kale and Cottagers' Kale. The early Ulm Savoy is also very useful, provided it is got in sufficiently early and on well manured ground. A sloping bank may also be sown with winter Spinach.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.
For the Week ending August 18, 1859, as observed at the Horticultural Gardens.

August.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Temperature of the Air. Min.	Temperature of the Air. Mean	Temperature of the Earth 1 foot deep.	Temperature of the Earth 2 feet deep.	Wind.	Rain.
Friday 12	13	29.993	29.920	77	47	62.0	65	64	S.W.	.00
Satur. 13	○	29.991	29.847	79	57	68.0	67	64½	S.W.	.00
Sunday 14	15	29.817	29.812	74	53	63.5	67	64½	S.W.	.42
Mon. 15	16	29.906	29.640	69	41	55.0	65½	64½	S.W.	.00
Tues. 16	17	30.126	30.034	74	48	61.0	65	64	S.W.	.04
Wed. 17	18	30.151	30.051	71	54	62.5	64	64	W.	.01
Thurs. 18	19	30.064	29.991	74	52	63.0	65	64	S.E.	.00
Average		30.007	29.905	74.0	50.2	62.1	65.5	64.2		.47

Aug. 12—Foggy, and heavy dew; very fine; clear and fine.
— 13—Heavy dew; very fine; clear at night.
— 14—Overcast; rain; fine; overcast.
— 15—Rain; fine; clear and fine at night.
— 16—Very fine; partially clouded; clear and fine.
— 17—Slight drizzle; uniformly overcast; hazy.
— 18—Foggy; thick uniform haze; close and warm; overcast.
Mean temperature of the week, 1.5th deg. below the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 33 years, for the ensuing Week, ending August 27, 1859.

August.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 21..	72.1	50.3	61.2	11	0.62 in.	3	2	2	1	8	7	8	2
Mon. 22..	71.3	50.6	60.9	12	0.67	2	2	4	—	4	10	10	1
Tues. 23..	71.6	49.5	60.5	17	0.95	2	3	3	1	3	10	9	2
Wed. 24..	71.4	48.2	59.8	15	0.23	1	6	3	—	5	8	7	3
Thurs. 25..	71.0	50.6	60.8	13	0.30	2	2	1	1	6	13	4	4
Friday 26..	72.5	48.7	60.6	10	0.51	2	2	3	—	6	8	8	4
Satur. 27..	72.8	50.1	61.5	9	1.32	1	2	4	—	1	9	7	9

The highest temperature during the above period occurred on the 21st, 1835—therm. 88 deg.; and the lowest on the 22d, 1850—therm. 32 deg.

Notices to Correspondents.

Books: *Enquirer.* We do not recommend the book you mention. What is it you want to learn from such a book?—*T C.* Loudon's Arboretum Britannicum.

Game Laws: *Bond Fide* must consult his master.

Heating: *D.* We fear you will not find any portable hot-water apparatus suitable to your purpose unless you can manage to work it by the flame of gas. In that case such a contrivance might be constructed of copper. You had better consult some of the great hothouse heating firms.

Names of Plants: We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have or could have undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*D J.* Anchusa paniculata.—*Midge.* It is impossible to name such a plant until it is in flower.—*D D.* 1, Carex vulpina; 2, Hordeum pratense; 3, Bromus sterilis, drawn up and very young; 4, Poa pratensis.—*Tidenham.* Camptosorus rhizophyllus.—*Alpha.* 1, 3, and 4 are Mesembryanthemums, but no human being can name such morsels; 2, Gazania rigens.—*B D.* 1, Illecebrum argenteum; 2, Zamia horrida; 3, Galega officinalis; 4, some Cassia, apparently marilandica. Keep your Berberis Darwinii seed in damp silver sand till the spring, and then sow it in pans in a little heat.—*Lord M.* Pavia macrostachya.

Science and Practice: *Philopirus.* Will you allow us to reply in the words of a very sensible man, and in his own Latin—"Uti ratio sine experimentis mendax, ita experientia sine ratione fallax."

To Our Correspondents. Let us beg of you not to ask for answers through the post. With every wish to oblige our friends, we really cannot undertake the duty of private correspondence.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London, S. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

LONDON MANURE COMPANY
(ESTABLISHED 1840),
Have the following MANURES ready for delivery:—
CORN MANURE FOR AUTUMN SOWING.
BLOOD MANURE FOR AUTUMN SOWING.
URATE.
SUPERPHOSPHATE OF LIME.
SUPERPHOSPHATE MINERAL.
The London Manure Company also supply PERUVIAN GUANO (direct from Messrs. Gibbs & Sons), SULPHATE OF AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of known value, all of which they warrant strictly genuine. Wholesale dealers supplied.
116, Fenchurch Street, E.C. EDW. PURSER, Secretary.

BURNARD, LACK, AND CO.'S CONCENTRATED SUPERPHOSPHATE OF LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.
CONCENTRATED TURNIP MANURE, equal in value to the preceding.
Of these Manures Dr. Voelcker says:—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."
Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to BURNARD, LACK, & Co., Sutton Road, Plymouth.

REDUCTION IN PRICE OF LAWES'S MANURES.
MR. LAWES begs to announce that he has this season reduced the price of the Manures manufactured by him, viz.:—

TURNIP MANURE	from £7 to	£6 6
SUPERPHOSPHATE OF LIME ..	,, 7 to	6 0
MINERAL do. ..	,, 6 to	5 5
BARLEY MANURE..		8 0

Prof. Way and Dr. Voelcker have sampled from a bulk of 5000 to 6000 tons at his factories, and their report and analyses are given in full in Circular to be obtained on application at his office, 1, Adelaide Place, London Bridge, E.C., or of his local Agents.
N.B. Genuine Peruvian Guano direct from Messrs. GIBBS, Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures. American Cotton-seed Cake supplied.

THE PATENT BRITANNIA SELF-RAKING REAPING MACHINE is at work daily in the neighbourhood of Banbury, and in almost every County in England. Particulars on application.—B. SAMUELSON, Banbury, Oxon.

FOWLER'S PATENT STEAM PLOUGH has gained the following prizes:—
The Royal Agricultural Society's Prize, at Warwick, July 1859, 50*l.*
The Royal Agricultural Society's Prize, at Chester, July 1858, 500*l.*
The Highland Society's Special Prize at Stirling, Oct. 1857, 200*l.*
And at other Agricultural Meetings in the United Kingdom, Prizes amounting to 175*l.*
For further particulars, prices, and Catalogues apply to JOHN FOWLER, JUN., 28, Cornhill, London, E.C.

LAND IMPROVEMENTS.—The GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY are empowered by Act of Parliament to assist the Owners of Land in carrying into effect the following Improvements, and charging the whole outlay and expenses on the property improved.
I. All Works of Drainage, Irrigation, Warping, and Embankment.
II. The erection of Farmhouses, Cottages for Agricultural Labourers, and all kinds of Farm Buildings.
III. The construction of Roads.
IV. The Grubbing and Clearing of Old Woodlands, Enclosing, Fencing, and Reclaiming Land.
The Landowners by whom any of these Improvements may be executed are—Tenants for Life, Trustees, Mortgagees in Possession, Guardians, Committees of Incompetent persons, Married Women, Beneficial Lessees for Lives or for a Term exceeding 14 years, Corporations, Ecclesiastical or Municipal, Incumbents, Sequestrators, Charitable Trustees, &c.
The Owners of Estates not entailed, who may be desirous to avoid the expense or inconvenience of a Legal Mortgage, may also avail themselves of the powers of the Company's Act to charge their estates with an outlay in improvements.
In all cases the whole cost of the improvements, with the attendant expenses, may be charged on the Estate, the term for Building Works being limited to 31 years, but for all other improvements being capable of extension to 50 years.
No investigation of title being required, and the charge not being affected by Incumbrances, no legal expenses are incurred.
Operations under the Company's Act are divided into two principal branches; one where the Landowner designs and executes the improvements by his own Agent and merely requires a loan from the Company to charge the Estate,—the other where the Company undertake the entire responsibility of the Improvement and obtain repayment by way of Rent Charge. In the first case the plans, specifications, and estimates prepared by the Landowner's Agent are forwarded to the Company to be submitted for approval to the Inclosure Commissioners. As soon as the sanction has been given the Landowner proceeds to execute the works, and the Company having conducted the business through all the official forms, complete the charge on the estate when the works have been passed by the Commissioners, and repay the Landowner the amount agreed upon.
In no part of the business is there any control upon a Landowner except by the Inclosure Commissioners. The Company never interfere, except at the special request of the Landowner or his Agent, and only to such extent as may further the objects he has in view.
In the other case, where the Company are required to execute the works, a report and estimate of the Improvement are sent to the Landowner, and having been approved, the plans are then prepared and the works—either submitted to public competition or entrusted to their own staff—are carried on to completion, and the amount of the actual expenditure only, approved by the Inclosure Commissioners with the Company's agreed commission and the Commissioners' expenses, finally charged on the Estate for the term fixed by the Landowner.
The Company also execute Drainage and all other Works of Land Improvement on Commission for the Owners of Estates not Entailed who may wish to charge the outlay on the property through the simple and inexpensive process of the Company's Act.
Applications to be addressed to WILLIAM CLIFFORD, the Secretary, at the Offices of the Company, 52, Parliament Street, London.

THE LANDS IMPROVEMENT COMPANY.—Incorporated by Special Act of Parliament in 1853.—2, Old Palace Yard, Westminster, S.W. To Landowners, the Clergy, Estate Agents, Surveyors, &c., in England and Wales and in Scotland.
The Directors beg leave to announce that the Company's Amendment Bill, 1859, has received the sanction of the Legislature. The Company now advance money, unlimited in amount, for the following works of Agricultural Improvement, the whole outlay and expenses in all cases being liquidated by a rentcharge for 25 years.
1. Drainage, Irrigation and Warping, Embanking, Inclosing, Clearing, Reclamation, Planting for any beneficial purpose, Engines or Machinery for Drainage or Irrigation.
2. Farm Roads, Tramways and Railroads for agricultural or farming purposes.
3. Jetties or Landing places on the sea coast or on the banks of navigable rivers or lakes.
4. The erection of Farm Houses, Labourers' Cottages, and other Buildings required for Farm purposes, and the improvement of and additions to Farm houses and other buildings for farm purposes.
Landowners assessed under the provisions of any Act of Parliament, Royal Charter, or Commission, in respect of any public or general works of drainage or other improvements, may borrow their proportionate share of the cost, and charge the same with the expenses on the lands improved.
No investigation of title is required, and the Company being of a strictly financial character do not interfere with the plans and execution of the Works, which are controlled only by the Government Enclosure Commissioners.
Under the Company's Acts, tenants for life, trustees, mortgagees in possession, incumbents of livings, bodies corporate, certain lessees, and other landowners are empowered to charge the inheritance with the cost and expenses of the above improvements, whether the money be borrowed from the Company or advanced by the Landowner out of his own funds, and owners in fee may effect these improvements of their Estates without incurring the expense and personal responsibilities incident to mortgagees, and without regard to the amount of existing incumbrances.
For further information, and for forms of application, apply to the Honourable WILLIAM NAPIER, Managing Director, 2, Old Palace Yard, Westminster, S.W.

WARNER'S IMPROVED LIQUID MANURE OR GENERAL PORTABLE PUMP.



These Pumps are fitted with WARNER'S Patent Bucket and Valve, and cannot clog in action. The barrel is made of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure on the stand, the legs of which fold together, and may be carried with ease by one man to tank or pond.

	£	s.	d.
Stand and Pump, with screwed tail pipe, fitted with strong brass union for suction pipe	2	15	0
If fitted with barrel of planished copper	3	4	0
Stand and Pump, with plain tail pipe, for tying on suction pipe	2	9	0
2-inch patent rubber and canvas flexible suction pipe, on wires, either 10, 12, or 15 ft., per foot	0	2	2

May be obtained of any Ironmonger or Plumber in town of country, at the above prices, or of the Patentees and Manufacturers, J. WARNER & SONS, 8, Crescent, Jewin St., London, E.C.

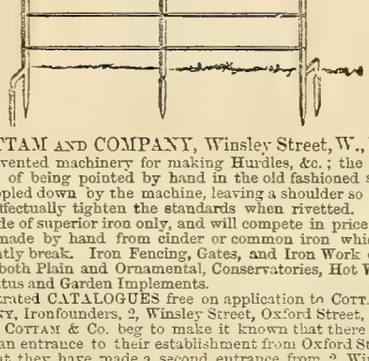
WARNER'S PATENT VIBRATING STANDARD PUMPS.
PATENT CAST-IRON PUMPS for Farms, Cottages, Stable Yards, &c., where the Well does not exceed 28 feet in depth; fitted with WARNER'S Patent Metal Bucket and Valve, which cannot clog in action. These Pumps can be made right-handed, left-handed, or with handle opposite the nose by removing four screws only.



Diameter of Barrel.	Height.		£.	s.	d.
2½ in.	short 1 ft. 7 in.	Fitted for lead, gutta percha or cast iron	1	5	0
2½ ,,	long 3 ,, 3 ,,		1	10	0
3 ,,	ditto 3 ,, 6 ,,		2	4	0
3½ ,,	ditto 3 ,, 6 ,,	flanged pipe	2	9	0
4 ,,	ditto 3 ,, 6 ,,	as required.	2	13	0
2½ ,,	short, with 15 feet of Lead Pipe attached, ready for fixing		2	10	0
2½ in.	long ditto ditto	ditto	2	14	0

The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.
May be obtained of any Ironmonger or Plumber in Town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin Street, London, E.C.
Every description of Machinery for Raising Water by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

IRON HURDLES, FENCING, &c., MADE BY MACHINERY.



COTTAM AND COMPANY, Winsley Street, W., have invented machinery for making Hurdles, &c.; the bars, instead of being pointed by hand in the old fashioned style, are nipped down by the machine, leaving a shoulder so as to more effectually tighten the standards when rivetted. They are made of superior iron only, and will compete in price with those made by hand from cinder or common iron which so frequently break. Iron Fencing, Gates, and Iron Work of all kinds, both Plain and Ornamental, Conservatories, Hot Water Apparatus and Garden Implements.
Illustrated CATALOGUES free on application to COTTAM & COMPANY, Ironfounders, 2, Winsley Street, Oxford Street, W.
N.B. COTTAM & Co. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

AGRICULTURAL MACHINERY.
E. R. AND F. TURNER, Ipswich, manufacture Prize Mills for Crushing Corn, Seed, Malt, &c.; Portable Grinding Mills, Steam Engines fixed and portable from 2 horse-power and upwards; Threshing Machines, Chaff Cutter, Oilcake Breakers, Horse Gears, Saw Tables, &c., all of a superior description and adapted for Home, Colonial, and Foreign use. Illustrated Price Lists sent free on application.

HAYMAKERS, possessing the best features of Nicholson's Prize Machines, with recent improvements peculiar to those supplied and manufactured only for
RICHMOND AND CHANDLER, Salford
Branch Establishment, South John Street, Liverpool.
N.B. The celebrated Bedford and Stamford Prize HORSE RAKES always in stock, with latest Patented Improvements.

HAY HARVEST.
NICHOLSON'S PATENT HAYMAKER, to which was awarded the First Prize of the Royal Agricultural Society of England at the last contested trial.
The celebrated STAMFORD HORSE RAKE has lately been much improved, and has obtained 26 Prizes at competitive trials.
MOWING AND REAPING MACHINES are performing their work most satisfactorily, and fully justify public expectation, cutting about 10 acres per day, at a cost of 9*d.* per acre.
Orders for the above machines should be given at once to RICHMOND & CHANDLER, Salford, Manchester.
Branch Establishment, South John Street, Liverpool.

QUEEN'S COLLEGE, BIRMINGHAM.
INCORPORATED BY ROYAL CHARTER.
The WINTER SESSION of the Faculties of ARTS, MEDICINE, ENGINEERING, AND AGRICULTURE, will commence on MONDAY, October 3. The system of study pursued at the College constitutes a complete Course of Education (with Collegiate discipline) in Arts, Science, Medicine, Law, and Theology, without residence elsewhere; and the Courses of the different faculties are recognised in the Universities of London and Durham, with which the College is in connection; by the different Medical Examining Boards, and by those of Her Majesty's Army, Navy, and Indian Services.
The College is empowered by Royal Charter to confer a Diploma in Engineering.
Agricultural Students are prepared by a special course of study for the Examination of the Royal Highland Agricultural Society.
Students in the Junior department of Medicine are prepared for the Matriculation Examinations of the University of London, College of Surgeons, Apothecaries' Hall, &c. Those who reside in the College may receive Indentures of Apprenticeship without premium.
For further information and Prospectuses, application may be made to the Dean of the Faculty; or to Dr. BOND, Hon. Sec. to the Medical Faculty, Queen's College.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, London, S.
Principal—J. C. NESBIT, F.G.S., F.C.S., &c.
The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.
Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

SHORT-HORN COWS AND HEIFERS FROM MELTON AND HORNCASTLE FAIRS.
MESSRS. JOHNSON, of the Manor Farm, Highgate, near London, beg to inform gentlemen and the Trade that they will show on TUESDAY next, August 23, from 200 to 300 first-class COWS and HEIFERS, together with a few YEARLINGS from the above noted Fairs. Exporters will here find some pure blood for breeding purposes.

STAFFORDSHIRE AGRICULTURAL SOCIETY.
STOKE-UPON-TRENT MEETING, 1859.
The POULTRY EXHIBITION in connection with this Society will take place on WEDNESDAY, September 14. The Entries will close September 1.
Prize Lists and Certificates of Entry may be obtained on application to WM. TOMKINSON, Secretary.
Newcastle-under-Lyme, Aug. 20.

The Agricultural Gazette.

SATURDAY, AUGUST 20, 1859.

ONE of the most important subjects on which the English Agricultural Society asked for the experience of its members in its last year's essay prize list, was the CHEAPEST WAY OF MANURING THE FARM—whether by direct purchases of fertilisers, or by feeding the cattle and sheep of the farm on purchased food. Of course the answer to such a question depends on the relative prices of cattle food with live stock and of manures respectively. It depends also on the judgment used in purchasing live stock, and in adapting the food given them to both their character and their condition. There would be excessive waste in giving rich food to ill-bred stock, and there would be great folly in refusing well-bred cattle the food which would enable them the most quickly to exhibit their precocity and rapidity of growth. It is to an error of one or other of these two kinds that we attribute Mr. MECHI's account of the live stock of the farm as a necessary evil—necessary because, after all, the manure of the farm is required, whatever the facilities for the purchase of mineral and imported manures may be—but an evil because of the loss attending the manufacture of meat. There is however as a general rule no unavoidable loss in the manufacture of meat—it has often proved the largest source of the farmer's profit even without taking the value of the manure made at the same time into account, and in such a case there is of course no difficulty in determining whether the manure so provided or that procured directly from the market is the cheaper of the two.

It is, however, as giving general experience, and as comparing the enhanced value of the manure to be obtained by the use of an increased quantity of cattle food, with the cost of so much additional guano, used in its place, that the information sought would be so valuable. And this is what the essayists of the English Agricultural Society, judging from the report of the Journal Committee, have failed to give. It is a subject to which we should be glad if our correspondents would direct their attention; and as a contribution to it we here append an extract from a very interesting letter which appeared some months ago in the columns of the *Mark Lane Express*, and which we had hoped would have raised that discussion of the subject which is so desirable.

A correspondent writing from Kent asks—Ought we to make or to purchase our manures? Can we make farmyard dung at such a price, when compared with guano, rape-dust, or superphosphate, as to render it worth our while to undertake the task? He adds: "I bought in January last four Dutch beasts for 45*l.*, forward in flesh, and two years old. They were fed exactly three months (13 weeks) at a cost of exactly 36*l.*, without labour, interest of money, or value of litter. The food, which rather increased in quantity as they would bear it, averaged about 9 lbs. Linseed-cake, half a gallon Bean-meal, half a gallon crushed foreign Barley, half a bushel pulped Wurzel or Swedes, 1 bushel chopped hay and straw, with a handful of long hay occasionally, per head per day. They were sold out, one by weight at 5*s.*, another by weight at 4*s.* 8*d.*, and two in the market, for a gross sum of 75*l.*, leaving a loss of 6*l.* on the cost of food and purchase, or, with attendance and shed rent very moderately reckoned, a loss of 7*l.* 10*s.*

"Can any one tell me, clearly and certainly, whether this transaction did involve a loss or not? In other words, is there any formula of reasonable accuracy, whereby I may determine what portion of the 36*l.* spent upon them in food was left behind in their excreta alone, in my sheds and dung pit?

"In one of my drawers is a pamphlet of Mr. Mechi's, in which he endeavours to prove, and does assert, that 1*l.* given to pigs in Beans will produce 20*s.* worth of pork. If true, who then could not make a fortune? But, unluckily, it is not true by a long way. On the table before me lies a pamphlet on guano, by Mr. Nesbit, wherein is written, 'It appears to be clear that, unless the oilcake affords a profit by the beef or mutton, a more expensive system (than making dung by cattle) of manuring could not well be pursued.' Mr. Mechi's chief object, if I remember right, in more than one publication, is to affirm the principle that success in farming varies directly with the amount of stock kept. On the other hand, we are told by an unanimous resolution of the Botley Farmers' Club, 'That where there is not sufficient dung for the Wheat (?) crop, it is more profitable to purchase concentrated manures than dung; and that an equal amount of money expended in the purchase of concentrated manures will raise more Wheat than the same amount expended in the purchase of oilcake or corn, and converted into dung by feeding cattle.' As it stands, the resolution means nothing, and involves a fallacy, as no one ever supposed that 12*l.* worth of oilcake would, after giving 8*l.* or 10*l.* worth of beef, still afford an increase in manure equal to 1 ton of guano; if it did even half this, the transaction would be largely profitable.

"While the bullock feeding above alluded to was going on, I commenced another experiment, by purchasing for the benefit of 2½ acres of light poor land intended for Wurzel, 54 two-year-old Kent sheep, and feeding them very liberally in folds upon it. The sheep cost 93*l.*, and they consumed in three months cake, Maize, Beans, Barley, and Turnips, with hay and straw chaff to the amount of 44*l.* 4*s.*, making a total cost, without hurdles and attendance, of 137*l.* 4*s.* I sold them out, chiefly at 5*s.* 8*d.* per stone in the wool, for 135*l.*; thus sinking 2*l.* 4*s.*, besides interest, &c., for the manure obtained. It is very probable that both with the bullocks and the sheep rather better results might have been obtained, especially at the present excellent prices, had the total cost for feeding been spread over a rather longer period of time, but that does not affect my present object, which is to elicit if possible an accurate and trustworthy estimate of the value per week of the actual droppings of a medium-sized bullock and sheep while being liberally fed on cake and corn."

Can any of our readers favour us with information on this subject?

A few weeks ago we called attention to the danger of allowing lucifer matches in the hands of children, and to the extraordinary fact that they are now the commonest playthings of the children of our villages and cottages. Take the following from the *Times* of August 16 as an illustration of the risks thus run.

"Fire and Loss of Property.—*Woodford*, Monday, 6 P.M.—During the last 24 hours this town has been the scene of a destructive fire, which, during its progress, has reduced to ashes several thousand pounds worth of property. The premises in which the misfortune arose belonged to Mr. Macnamara, farmer, &c., and comprised a long range of stabling, a spacious farm-house, a row of cottages, a number of cart-houses, several cow-lodges, a spacious range of barns filled with grain, a row of timber sheds filled with agricultural implements. There were also standing on the ground several ricks of Wheat and other farming produce, the whole covering some acres of ground. The fire commenced shortly before 6 o'clock last night, and when the first discovery was made the flames were raging near or in the farmhouse, but the general supposition is that the misfortune commenced in one of the cottages, as some children had been seen a short time previously playing with lucifer matches. The moment the existence of the disaster became known the parish engine was sent for, and a telegraphic message was despatched to London for the aid of the fire brigade. The parish engine was soon on the spot, and the instant the news arrived in town Mr. Braidwood despatched Engineer Bridges with a body of firemen and a powerful engine to the scene. Unfortunately, the only supply of water that could be procured was from a pond, and that was found inadequate to subdue such a vast body of flame as then existed. The firemen, however, laboured the best way they could under the circumstances, but the flames continued to rage, and finally seized upon other property, including the dairy-house, the barns, the agricultural implement sheds, the cart and coach houses, two large stacks of Wheat and one of Clover, the whole of which were entirely consumed."

THE RABBIT PLAGUE.

[The following correspondence is taken from the *Monmouthshire Beacon*.]

(1). Let me be understood to write this letter from Yorkshire or any other county distant from yours. The plague complained of is probably pretty general, and therefore no particular locality and no particular persons need be called in question. Suffice it to say that such a plague exists, and that, like what was said of the power of the Crown in the days of George III., "it has increased, is increasing, and ought to be diminished." The depredations committed by game are an old topic of complaint, but never reached any great height in this neighbourhood. The preserving pheasants, hares, and partridges, is, too, far more intelligible and therefore excusable, than that of the semi-vermin I am speaking of; which are alike the most worthless and the most mischievous creatures which squires encourage the breed of as victims prepared for their guns. They eat up acres and acres of corn, which sometimes belongs to tenants of the lord of the rabbits, sometimes to neighbours. This happens frequently without any compensation; and when compensation has been offered, it is, I think, generally inadequate and unsatisfactory. Unsatisfactory it would be if fully equal to the damage, for scarcely any one could feel much pleasure in farming if he knew that the fruit of the labour of his hands would be destroyed. The sport (!) of shooting rabbits is dangerous from their quick turns and dodges; and their merits as an article of cookery are such that they are hardly producible on a handsomely supplied table. In point of fact I have reason to believe that country gentlemen are in most cases now willing to put an end to this pest, but I am told their "keepers" for reasons of their own, find means to frustrate their masters' wishes. With this hint, however, and my earnest assurance that this subject is one of great discontent to some worthy and respectable tenant-farmers, I hope that landed proprietors may be induced to take effective measures. *A. N.*

(2). The thanks of all rabbit-ridden occupiers are most justly due to "A. N." for his temperate and well-timed letter on a subject which he so truly terms "rabbit-plague." The public are often led to poohpooh the complaints of farmers (and far be it from me to justify an habitual grumbling spirit,) but it is only now and then that they are made acquainted with some of the real evils with which agriculturists have to contend, and not only to contend, but with the heaviest odds against them too—this is just one of those evils. I verily believe the rabbit to be one of the greatest curses which infests a neighbourhood: it is this "semi-vermin" (rightly so called) that first pops across his path to tempt the crow-boy: it is the first bait which that poor child has thrown in his way, and woe to him if he has not the strength to resist the temptation, for it will lead him on and on to poaching and sheep-stealing, crime, and misery. It is this "semi-vermin" that sows dissension between friends and neighbours, breeding suspicion and distrust where nought but amity and union should prevail. It is this "semi-vermin" which is at this moment rendering thousands and thousands of acres of valuable produce throughout England blank and desolate, produce which would save many and many a family from the debasing influence of Union pay. Wherever a rabbit feeds or haunts, the spot is actually poisoned and rendered profitless, and I believe all farmers will concur in this remark. "Very well," say the public, "destroy them, they are not game." No, Mr. Editor, I am happy to say that the term game no longer includes such worthless trash, but let a tenant try the experiment, and unless he rents under a liberal-minded and upright landlord his chances of quiet opposition to the insinuations of his landlord's underlings are poor indeed, and it is not a light thing for a man to change his farm upon which he has spent money, labour, and, perhaps, the best part of his life, and also brought up an honest and respectable family! If rabbits abound in Yorkshire as they do in parts of Monmouthshire, I pity our north countrymen. But you will ask "Where is the remedy?" I reply, make the matter public, and if the "plague" is not abated, let a few independent men throw up their tenancies; the evil will thus cure itself, and it may then be found perhaps more profitable to employ respectable game-preservers upon liberal wages, as respectable landlords generally do, than to give inferior servants low wages and allow them to consider rabbits as their perquisites, which is the very best recipe for making bad tenants and dishonest servants. A landlord will find that he can make his tenants as good game-preservers, ay, and much better, than many of the so-called game-keepers, by trusting to their honour, and, what is more, he will gain the respect, the esteem, and the regard of a class of men with whom, if treated with proper consideration, he may consider it an honour to be connected—and these are things as much worth possessing as a long rent-roll or a tattered pedigree! To both sides the poet's words are applicable:—

"Worth makes the 'man,' the want of it the 'fellow,'
The rest is nought but 'leather' and 'prunella.'"

An Admirer of A. N.

THE THEORY OF AGRICULTURE.

By Dr Evan Pugh.

(*See page* 451).

Letter IV.—On what Science has Done and may yet do for Agriculture.

Few things are more difficult than is the task of tracing to their ultimate courses all the various elements of progress that are operating upon the human race at any particular epoch, and to assign to each the proper circumstances in which it originated. And yet few subjects are fraught with more interest to humanity than those which relate to the ultimate causes by which man is gradually developed from the state of the untutored savage to that of an enlightened civilisation. The student of every particular branch of human inquiry will see in his own individual sphere of mental activity more than has tended to produce this result than he can discern in those spheres of thought to which he has not so specially devoted himself.

The politician and the statesman who have to deal with the active present in human affairs, and who themselves are the children of causes, which they need not even stop to consider, may look upon those proximate causes which have operated immediately anterior to some great amelioration in the condition of our race as the ultimate causes to which we are now referring. They may feel that the world is only making substantial progress in such proportion as that progress becomes engraved on the statute-books of its several countries.

The philanthropist and the moralist may take a higher view, and feel that humanity owes its progress to the advocacy of great principles, embracing ideals of right and justice, which, at the time are considered by the politician as impracticable visionary notions, and which perhaps can never be developed into law, or at most only after a lapse of generations.

The political economist may look at the more material aspect of the question. Throwing aside the logic of the statesman and the eloquence of the philanthropist he sits down to a table of dry statistics, and calculates the value of the various courses which have tended, and which still tend, to the accumulation of wealth. In contemplating the origin of human progress, he sees as ultimate causes all those proximate forces which have tended to the development of the internal and external resources of a country—to the creation of commerce, the extension of trade, and the formation of powerful colonies upon soil trod before only by savages. The entire question of human progress, morally and materially, resolves itself into that of the best means of securing and making the most profitable use of the immortal dollar.

Amidst all this assumed importance, on the part of different orders of mind, for the particular sphere of activity to which they have devoted their thoughts, the influence of those efforts by which men are made acquainted with the facts of the material world is almost entirely overlooked.

Sir Humphrey Davy, with that clear intuition so characteristic of his great genius, maintained that the permanent progress of the world was dependent upon the progress of its knowledge of material things. A fact with regard to the material world once discovered was so much acquisition to human knowledge, and as such could not be lost; but must ever after continue to exert its influence upon the human race. A moral truth might be pointed out, or a grand system of human government conceived; but this could not practically contribute to the development of the human race until the development of a knowledge of material things made it possible to do so. The man who first discovered that salt would preserve meat conferred a greater blessing upon his race than the man who first taught that steam would move the piston of an engine, and both these elements of human knowledge were destined to do more towards bringing the human race to its present stage of progressive development than were the efforts of the first man who conceived the idea of a just legislation amongst men.

The student of science who has not examined the ultimate bearings of discovered facts upon the progress of the world, no less than the politician and the philanthropist who have only studied events as they influence the living present, may not see the full force of the

remarks of the philosopher and sage, whose name we have just referred to.

It is the misfortune of science, and of all those efforts by which our knowledge of material things is extended, that they are not, and cannot be, fully appreciated until the knowledge they afford has been so long before the world that it is almost forgotten that they were ever discovered at all, or that they did not descend from an original legacy left to the race at its origin. And even where history records the discovery of an original fact on a principle, so varied and so complicated are the relations of the original discovery to its multifarious applications, that those who enjoy the latter seldom think of their relation to the former. We seldom think, when revelling in the luxury of lighted houses and "Crystal Palaces," and enjoying all the mental pleasure of that extension of our knowledge which is afforded by the telescope and microscope, of the vast importance of that discovery which first taught that an opaque constituent of common ashes when fluxed with a common opaque mineral substance would yield a transparent compound which can be used for all the purposes to which glass is now applied. It is not, however, until we come to contemplate such little discoveries in the full value of their bearing upon the human race, that we are capable of seeing what scientific and experimental research has done for all departments of human progress. It is in the spirit of such contemplation that we must examine what science has done for agriculture, and hope for what she may yet do.

In such contemplation it is not enough, as is usually done, to dwell simply upon the last stroke of a series of efforts which may have discovered a principle and reduced it to practice; when this is done we not unfrequently hear of the names of men not particularly known to the scientific world for great ability in research, associated with certain great results, which are pre-eminently the consequence of a vast deal of scientific research, which such men would have been incompetent to have gone through with. Thus, in the science of electricity, while the student will meet with the able researches of such profound investigators as Ampere, Oersted, Ohm, Faraday, and Gauss, who have made very few discoveries of the practical application of this subject, he will find the name of such practical minds as those of Steinheil, Morse, Wheatstone, House, and others most intimately associated with the discovery of the electric telegraph.

The first class of men have spent long lives devoted to able research into fundamental principles, which when developed the more practical character of the second class enabled them to apply. Each has performed an essential and an important part; but the importance of the former is vastly greater than that of the latter, yet the more practical phase of the latter causes the general eye almost entirely to lose sight of the former in its admiration of the latter.

In like manner, agriculture owes much to scientific research that does not appear to the casual observer. Much that science has conferred upon it does not stand out more clearly as advantages to the practical farmer, than do the researches of Ampere and Oersted to the merchant who uses the electric telegraph. We need not here dwell upon the question in its most general form, or that in which we would be obliged to consider the aid afforded by science to all those departments of human industry, that have tended to the development of agricultural practice by creating a demand for agricultural produce. We have but to mention this to show the magnitude of our question. Nor need we dwell at length upon the various stages of the development of our means of scientific research by which science has been made available for the purpose of solving many questions of practical agriculture. All the various processes afforded by the science of chemistry of analysing manures, soils, cattle foods, Rape-cakes, grains, &c., are the result of prolonged and purely scientific investigation. The farmer can readily appreciate the importance of a method by which he discovers a poisonous oil in a Rape-cake that might destroy a few hundred pounds' worth of stock, but he cannot with equal clearness see of what use to him are such purely scientific investigations as are those by which only the methods to discover such poisons are made known. Nothing is more easy for him than to discern the value of a method to estimate the amount of soluble phosphate of lime in a manure; and yet the combined interest of the Royal Agricultural Society of England in this question is doubtless not sufficient to induce them to invest money in investigations to discover reliable and easy methods for the estimation of phosphoric acid. Nor can we boast of greater consistency upon our side of the Atlantic until we have done more than has yet been done for science as applied to agriculture.

But passing by all the advantages afforded to agriculture by science, which are here suggested, there still remains the question of the supply, the discovery, and the manufacture of artificial manures.

This involves the question of the phosphates, the guanos, the saltpetres, the ashes, and a vast number of residual products of the various processes in the art, which chemistry, like a prudent housewife, has prevented from going to waste by collecting and pointing out their value to the agriculturist. The consideration of these questions would enable us to see why England is the first agricultural country in the world—why she has gone on developing and extending her agricultural resources upon a limited territory, in the face of a free trade which brings the products of her soil into competition with those of the cheap land of Russia and America. Science not only has pointed out all this source of wealth to agriculture but she guards it now. Spurious manures, quack "cattle foods," poisonous oil-cakes, &c., are all in turn allowed to flourish only amongst those who are too ignorant or too prejudiced to avail themselves of her teachings. The latter will have to learn wisdom as Ben. Franklin hoped George III. might, when he would not adopt the theory of pointed electrical conductors, because a Tory courtier and opponent of the republican philosopher contended that obtuse points were better than sharp ones for the upper end of lightning rods to protect buildings from the electric fluid.

It is true that there have been many questions in agriculture that science has not yet been able to answer—many that she has not at first answered correctly; and doubtless she has yet many corrections to make in her established notions. And here lies the direction for her future progress.

But aside from the practical question, the development of science as it relates to agriculture has done and is doing another service of vast importance. It is supplying important material for thought, in most intimate association with the daily labour of him who cultivates the soil. It is supplying material which must teach the agriculturist to think and cultivate his powers of thought, and thus develope the entire resources of his own mind, without giving him a distaste for an occupation, which, without this aid of science, would be so purely mechanical as to weary out an active mind.

It is a well-known fact, which our superior system of popular education in America has more fully demonstrated than could be possible under the very indifferent system of Great Britain, that the son of the labouring farmer (and all our farmers are such), who is a successful student at our schools, soon becomes a worthless boy at home, or rather he soon refuses to remain at home, but enters upon a professional career better suited to the active powers of his mind than the dull, monotonous, stupid exercises of an occupation so purely mechanical as that of the farmer, if he pay no regard to the principles involved in his art. These principles can only be studied with profit and pleasure as they are developed by science. As yet they are scarcely sufficiently developed to constitute a subject for close and connected thought, upon which the mind may receive that disciplinary training which will enable it to control its own powers; still, enough has been done to show what may be done, and how vastly important it is to the farmer that more should be done.

We want a science of agriculture so developed as to be taught in our schools, a system as rigidly scientific as that which is taught in our schools of engineering.

At present the farmer's son who attends our schools is, if he be at all a successful student, obliged to throw his mind so far out of all the associations of the occupation of his father that he creates a taste for a profession, not that he is qualified for it, but because he has been obliged to throw himself out of his natural sphere of activity, to find material for thought. If he return to that sphere he is disgusted with all its associations, because they are so purely mechanical and so wholly devoid of any theme for the exercise of his active thoughts. In leaving it agriculture loses a mind well calculated to develope her resources, the natural property succession from father to son is deranged, and some over-crowded profession receives a new accession to her numbers, not so much because of its attractions for him as in consequence of the repulsive character of the position upon which he had turned his back. Entering upon a career foreign to the associations of his family, with at most a talent slightly above mediocrity, he meets with but partial success or absolute failure, while the old farm at home, with an anxious parent, is called upon to foot the bills of his bad success or his unfortunate prodigality.

This is no forced sketch or extreme case; it is too painfully true, longer to be neglected in our system of education. And it is here that we may hope for science to yet do much for agriculture. And it is to this phase of the question that we would invite the serious attention of those farmers who do not see the importance of scientific agricultural research independent of the mere dollar and cent view of its value.

SINGLING OF TURNIPS.

The singling or thinning of Turnips is an operation of greater importance than farmers are often inclined to attach to it. We do not require to enter into any calculations to prove that we will get from a field of soil in good condition much larger bulbs when they are thinned 12 inches apart than when they are thinned only 6. Some, however, will doubt whether we will get a larger crop upon the whole, seeing that in the latter case there will be nearly double the number of bulbs. Nothing but experiment will satisfy most farmers on this point; and therefore eschewing all mathematical calculations, we appeal at once to experiment for confirmation of the statement we now make,—that on soils of ordinary quality and in an average condition, a larger crop of Turnips will be obtained by singling out the plants to 12 inches than to 8 inches, if the manure has been liberally applied.

Mr. M'Lagan of Pumpherston said, in a paper which he read before the Highland Society some years ago:—"From an extensive correspondence which I have had with friends who take an interest in this question, I have arrived at the following conclusion, that in low-lying shaded localities, with the soil in high condition or liberally manured, the Swedish Turnip should never be singled less than 12 inches apart, and generally it will be found advantageous to do it about 15 inches. The largest Swedes ever I saw were some that had been accidentally thinned 18 inches; unfortunately they were not weighed in comparison with the rest of the field. In high exposed districts, where the land is in good heart, or has received a good allowance of the light manures, 12 inches will also be found a good width. I performed a small experiment this season, but I am sorry that from some accidental circumstance I cannot authenticate the produce of the widest thinned portion. In a field not yet in high condition, nor very highly manured, I obtained at a width of 8 inches 2 tons 4 cwt. of shaws, and 15 tons 12 cwt. of bulbs per imperial acre, and at 9 inches I got 2 tons 1 cwt of shaws, and 16 tons 1 cwt. of bulbs, or 9 cwt. per acre in favour of the part thinned 9 inches wide. The produce of the portion thinned 12 inches was not weighed." Mr. M'Lagan in a succeeding year obtained 2½ tons more per acre from a portion thinned 12 inches wide than from one beside it thinned 9 inches wide.

It should be observed that wide thinning should be practised only where the soil is in good condition and the manure has been liberally applied. In such a case 14 or 15 inches will be found the most profitable width for Swedes, while for whites and yellows the plants may be left much closer. For in the latter case very large roots are not considered so nourishing as those of ordinary size, while it is said that the larger we grow Swedes the more nourishing the roots are. It has been found, after repeated trials regarding the comparative weights and sizes respectively attained by various Turnips, that "sound green-top yellows of 7 or 8 lbs. weight gave as their highest average 32 cubic inches per pound, which may be assumed as a medium standard of solidity or density, and being compared with the actual weight, will afford a just criterion of their value, and a correct idea of their sizes." Upon this principle, and after various trials with different varieties of Turnips, it was found that, "contrary to other sorts, greater size in the Swedish Turnip indicates also greater solidity, which agrees with the products which it has been found to afford of nutritive matter—being full 6 per cent. and in the largest roots nearly 7 per cent. of their whole weight; while the white varieties have afforded 4 per cent. and in the largest roots only 3½ per cent. of their whole weight." This agrees with the results obtained by Mr. G. Sinclair, as mentioned in the Hortus Gramineus Woburnensis, that 64 drachms of the largest roots of the Swedish Turnip produced 110 grains of nutriment, and the same weight of the small roots produced 99 grains of nutriment, and 64 drachms of the "common loaf variety, measuring 7 inches in diameter, gave only 72½ grains, while the same quantity of a root measuring only 4 inches afforded 80." This subject has been investigated by Professor Anderson, and particularly by Drs. Sullivan and Apjohn in Ireland, who have also determined that small Turnips contain more nutriment than large ones. But as we have not the particulars of these gentlemen's investigations before us at present, we will not allude farther to them, but will proceed to inquire as to the advantage of growing large Turnips when small ones contain more nourishment. Is the farmer a loser or a gainer by thinning wide, so as to grow large Turnips?

In the following remarks we do not allude to Swedes, for we are of opinion that the larger the bulb is the more nutriment it contains. Assuming then that the estimate of the relative proportions of nutriment in large and small Turnips mentioned before is correct, viz., that small Turnips contain on an average a ninth part more of nutriment than large ones, and taking as the basis of our calculations the results of Mr. M'Lagan's experiments, viz., that Turnips thinned 12 inches apart produced 2½ tons per acre more than those thinned only 9 inches apart, we arrive at the following conclusions. We find from the Agricultural Statistics Report for Scotland that the average crop of Turnips for the four years during which the inquiry was carried on was about 15 tons 10 cwt. per acre for the whole of Scotland. Now by the above estimate of nutriment contained in large and small Turnips, 20 cwt. of small Turnips will contain as much as 22⅝ cwt. of large ones. Supposing 15 tons 10 cwt. per acre, the average of the whole country, to have been the produce of a crop thinned 9 inches wide, then the produce, according to Mr. M'Lagan, would have been 18 tons if the width had been 12 inches. But the 15 tons 10 cwt. of small Turnips, we have seen, is equal to 17 tons 4 cwt. of large ones, or about 16 cwt. per acre less than is actually obtained by thinning 12 inches wide and growing large Turnips. Hence the farmer is a gainer in weight of nutriment by growing large instead of small Turnips. In addition to this, he is a considerable gainer in the ordinary operations connected with the management of the crop, such as thinning, topping and tailing, and filling the carts before carting home. We do not consider the results stated by Mr. M'Lagan to be extraordinary; on the contrary, we have heard of a much greater difference in produce between crops close and wide thinned; and we believe that the larger the crop is—that is, the higher the condition of the land—and the more liberal the application of the manure, the greater will be the difference in the produce between wide and close-thinned crops. The terms large and small are rather indefinite, and must vary according to the nature of the soil; thus a Turnip

grown on good clay-land will be more solid, or contain more nutriment, than one of the same size grown on light sandy soil. But on an average we find that a Turnip, say of 2 or 3 lbs. in weight, though more solid, will be much harder, containing more woody fibrous matter—will be more bitter and acrid to the taste, from the comparatively large proportion of skin or rind on it, and consequently will be less relished by the animals than a Turnip, say 8 or 9 lbs. in weight, which will be sweet and juicy, and more palatable to the animals. When the Turnips are of an extra size they are apt to become spongy in the heart, and not so sweet as those of a large medium size; but still we would infinitely prefer a crop of them to a crop of the smallest size mentioned first, though scientific men tell us that they are not individually so nourishing as the small ones. *Quarterly Journal of Agriculture.*

Home Correspondence.

Steam Cultivation.—For many years you have kindly allowed the *Agricultural Gazette* to become the repository for my views on the steam tillage question; perhaps you will yet continue the privilege. It is 12 years or more since I projected my circular, or cellular system of steam agriculture—a system to which no agricultural experimenter has yet given trial. In the above period all manner of schemes have been tried, but not one has equalled or come up to public expectation. Out of the series, only two or three plans for steam ploughing are before the public; even these do not recommend themselves, but are obliged to be strongly puffed by the several projectors. This is not right, or rather, they are not right. When rendered in practice there was no necessity for enforcing the advantage of railway travelling over coaching, or electro-telegraphy over signboard-telegraphy. It should be the same with steam tillage. A really superior invention recommends itself at once — is bruited abroad —is spoken of by every tongue, and where possible adopted by every man whose business it affects. Steam culture may still be considered an unsolved problem. Since I invented my circular, or cellular, system of agriculture, upwards of 50,000*l.* has been expended by my brother inventors on the subject. As statistics of expenditure on steam cultivation may be useful to some now unborn historian, I will give him the benefit of my observations during a period of 13 years. The man who first attracted my attention was Mr. Osborn, he expended some 2000*l.*; Lord Willoughby d'Eresby, assisted by Mr. Gooch, railway engineer, 5000*l.*; Usher, 5000*l.*; Fowler, 15,000*l.*; Hoskyns, 1000*l.*; Romaine and friends, 12,000*l.*; Ricketts, 2000*l.*; Smith, of Woolston, 4000*l.*; Halkett, 6000*l.* Upwards of 50,000*l.* expended in futile efforts to unravel the knotty problem of steam culture. I have not included in the above list the outlay of Boydell, Williams of Baydon, or Collinson Hall: they must speak for themselves of their great sacrifices on the shrine of agricultural invention. Of all these inventor since 1846, the only person who approached my own system of agriculture was Mr. Halkett, but he broke down because he insisted upon saddling its really good points with an unnecessary and fatal expenditure—he will have a railway. It is in vain I have impressed upon him that his iron railroad would be all very well to carry a lot of ploughs from London to Birmingham and back several times a day, but it had no more to do with carrying a plough up and down a field, that is, in doing cheap work at short distances and after long intervals of time, than, as Talpa says, "a horse had to do with a spade." It was all in vain I told him that a cheap business like farming, with a cheap product like a Turnip, wouldn't stand it; that Cabbages and Carrots would not pay for an iron railway. He resisted, persisted, and I understand now retires from the field utterly discomfited.

"The railway ploughman homeward plods his way,
And leaves the farm to darkness and to me."

Really good inventions, like good trees, may be of slow growth; still I have been blamed by some for not making a bolder push to get my own plans tried. I do not wish for an ephemeral reputation or profit, as some do. Whenever my method invades the farm it will revolutionise British agriculture, and must succeed. I consider no time is lost by my allowing my competitors to exhaust their inventions, themselves, their possessions, and their prejudices: it will render the advent of my own system of circular agriculture more easy. It will be curious, and point an oft-repeated moral, if after such long waiting, that which has been rejected by the "master" builders, should yet become the chief corner stone with the "men." *C. Burcham, London.*

Mangel Cultivation.—It is reasonable to suppose that a stranger in this country venturing to offer a suggestion to British farmers on culture of any kind will excite smiles on the bland countenances of many of that fraternity; but at the risk of that not very improbable result, I will, with your permission, be bold enough to affirm that I am disappointed with your general mode of Mangel culture. The country of which I am a native has for some time been reduced to the sad alternative—Mangels or nothing. There the Cabbage and the Turnip have disappeared, I may say, before an aphis of whose destructive power Englishmen can have but a faint conception; consequently, as I said before, there it is—Mangels or nothing. But under our mode of cultivation Mangels are something. Now the difference in that mode and yours is simply this: you, judging from what I have seen, sow on the flat; we generally on the ridge. You thickly: we thinly. Our ridges are 27 inches apart; our plants 18 inches; but I have found the Long Red variety do better at 2 feet. Our climate is hotter and drier than yours; but by the ridge system and thin sowing we are successful cultivators. You will perhaps permit me to give another hint to those of your farmers who are "behind" in this matter. I have found the Mangel do well on very poor soils by hand dibbling the seed and covering in with a large handful of some light but generous manuring substance. Experience teaches me that in such cases light manures so applied have far greater effect than when dispersed and wasted in the usual way. It may be also serviceable to state that those who near my farm, on soil precisely alike, have attempted Mangel culture on the flat have signally failed; and whilst my crops have laughed and flourished theirs have drooped and died. *An Old Foreign Subscriber.*

Notices of Books.

Journal of the Manchester and Liverpool Agricultural Society. Secretary, T. B. Ryder, Esq., 2, Elliot Street, Clayton Square.

We have long considered this as one of the most useful and efficient of our provincial Agricultural Societies. Their annual report exhibits energetic effort in so many useful directions that we have more than once commended it to the attention of those engaged in the establishment of similar associations as a model deserving very close imitation.

The pamphlet before us contains the rules of the Institution—a list of prizes for 1859 to be awarded at the forthcoming meeting at Liverpool next month—the report of the committee for 1858 (intimating that at Manchester the entries were double those of any previous year, and the show-yard receipts much more than double)—a general report of the inspection of farms —a table of meteorological observations—accounts, showing a large balance in favour of the Society—and a long list of awards of prizes during the past year. To many of these awards and the reports on which they were founded we shall hereafter direct attention. They include prizes for farms, for draining, subsoiling, irrigating, marling, liquid manure tanks, hedges, green crops, farm servants, implements, and live stock. For all these classes no less than 1209*l.* were last year offered as prizes in the Society's name.

We add here, as referring to one of the most important sections of the Society's proceedings, the report of the judges and inspectors of farms:—

"In making our report for this year the inspectors have, in the first place, to notice the influence of this Society in exciting the great exertions now made within the Society's range, in the spirited improvement of the land and farming generally. This fact is shown by the inspectors having travelled considerably more than 2000 miles in the present year in the fulfilment of their duties.

"The inspectors again feel called upon to remark upon the very inefficient draining on some estates and on many farms which came under our observation, from the circumstance as noticed in our general report of last year—viz., the inefficient draining of cohesive soils lying on a close textured subsoil—and beg to refer again to their last year's report, wherein is detailed a very simple practice for proving and showing beyond any doubt the great deficiency here noticed. One of the inspectors is in the occupation of a field which was drained in 1854. About one-half of the field in question is good loam on a broken subsoil of sand and clay; the other portion of the field is a more strong loam and recumbent on a subsoil less broken and more clayed and cohesive. The drains on this whole field are laid down on one general practice of 30 feet apart. Trial holes were opened equidistant between the drains in different parts of the field about three weeks ago; the holes so opened on the porous subsoil part are at present dry, showing clearly that drains 24 to 30 feet apart will effectually drain land of such open character. The trial holes, however, are on the other portion of the field filled with water to within 18 inches of the surface, and are still at the same depth of water, though there has been an unusually dry November, and also up to this time of the present month. All the drains are from 4 to 5 feet deep, and the facts here detailed—facts, we beg to observe that could be multiplied to almost any extent—pointing out the most unmistakable evidence that one uniform system of draining is not adapted to all lands, and also that depth of drains are in some degree inoperative in a close-textured subsoil, as compared with drains being laid down at nearer distances, say 12 to 18 feet apart, according to circumstances, and at about 3 feet deep.

"As regards the productive character of the year, the inspectors have seen great diversity in some crops and in the same localities.

"The hay crop under an average, except in particular cases. A great breadth of hay, however, was well got with such farmers as commenced hay harvest early. Some great first crops of Clover, but second crops light generally, unless cutting was put off late.

"Wheat generally a great produce and of good quality, except on the east and north-east parts of the county, those being higher range of Lancashire and Cheshire within the Society's limits. Oats, with exceptional cases, generally deficient in sample, and on many fields under an average crop. Barley, where the soil was well prepared and seed sown early, both a good yield and nice quality.

"Turnips generally under an average crop. Mangel more than average produce, and in some cases where carefully collected seed has been sown and the soil properly managed, this root has yielded most abundantly; the inspectors have this year weighed, in a few instances, more bulk, &c., of the best roots than at any former time in their experience.

"*Potatoes.*—This crop generally small in the roots; the quality however has everywhere within the Society's range been most superior.

"We never recollect pastures more luxuriant than this year up to the end of June. However, some cold nights soon in July put a stop, or very nearly so, to the growth in both meadows and pastures for a few weeks. There is nothing particularly requiring notice in the disease of the lungs in cattle. Still, we heard of some cases occasionally throughout the summer; also, of the epidemic foot complaint. We have had remarkably fine weather for autumnal and early winter operations, but though the temperature has generally been favourable, except a few days of frost about the middle of November, we never recollect October and November-sown Wheat being so long in showing itself above ground. *James Dixon, W. Rothwell, December* 21, 1858."

Farm Memoranda.

Whichwood Forest.—The following account of the disafforestation of Whichwood Forest, in the county of Oxford, is abridged from the *Midland Counties Herald.* At the commencement of this work the forest comprised an area of 3778a. 2r. 31p., and was subject to the rights of the Crown, the hereditary ranger, and the commoners, the ranger being Lord Churchill, of Cornbury Park, Charlbury. The Act for disafforestation was passed in 1853, which appointed Commissioners to carry it into effect. The survey shows that there were—

	A.	R.	P.
Nineteen coppices, containing ..	1804	1	27
Open forest much covered with timber and brushwood	1766	3	12
The lodges, with their enclosures ..	195	3	33
And a few encroachments	11	1	39
Total	3778	2	31

The timber upon the forest was valued by Mr. Clutton at nearly 44,000*l.*, and all realised, except a small quantity left for ornament. The award of the Commissioners was executed on the 13th of June, 1857, by which the Crown acquired an allotment of 2543a. 1r. 15p., which was subsequently increased by purchase and otherwise to 2937a. 0r. 6p., of which about 1970 acres were unreclaimed forest land. The clearing of this land commenced in October, 1856, and was completed in January, 1858, having been in progress about one year and four months, at a cost of 5815*l.* The outlay for reclamation and conversion was as under:—

Clearing	£5815
Fencing	1135
Water supply	350
New farm houses and buildings ..	11,000
Management	700
Contingencies	1000
Total	£20,000

including maintenance of roads and sundry small items of expenditure; making the cost, in respect of the 1970 acres converted to arable cultivation, little more than 10*l.* an acre. The new roads, about 10 miles in length, were made and fenced by the disafforesting Commissioners at a cost of 6985*l.*, which sum was provided out of a fund raised by the sale of portions of the forest lands. The entire estate is conveniently arranged in seven farms, which were let by tender, on leases for 31 years from the 10th of October, 1857, at an average rent of about 28*s.* per acre for the land, and an additional sum of 6*l.* per cent. on the cost of new houses and homesteads, which are built of the oolitic stone of the district. The members of the Land Surveyors' Club, which comprises gentlemen from every part of England, inspected this great work on the 13th of July last, upon the invitation of the Crown Surveyor, Mr. John Clutton, who accompanied them. They were much pleased with their visit, and derived considerable advantage from what they saw. The buildings are conveniently arranged, and constructed without any other ornament than they derive from excellent proportion, and the sites are judiciously selected in reference both to the occupation of the land and the beauty of the prospects; but the most extraordinary part of the scheme has been the marvellous rapidity of its execution. In the incredibly short space of 16 months nearly 2000 acres of wood were effectively converted into farming land; the timber cleared, the roots and underwood stocked and grubbed, the division fences made, the land prepared for cultivation, and the holdings arranged and let, and within 9 months afterwards the first corn crop harvested and the first rent paid. For promptitude of execution and quality of work this conversion of Whichwood Forest has hitherto been unequalled in this country; and whether it is regarded as an undertaking of interest or a lesson of instruction it is equally worthy of inspection by the landowner or the professional surveyor.

Calendar of Operations.

AUGUST.

Berwickshire Merse Farm: *Aug.* 8.—Bad as were the prospects of our Turnip crop at this time last year, they are we believe still worse at present. The soil was completely dessic-

cated by the cold winds of May, and the Swede seed lay six weeks, until brairded by the rains of the end of June. The yellow and white Turnips being more recently sown are generally a good plant and growing vigorously; but the deficiency of Swedes promises badly for spring food. Mangels were sown for the first time on many farms, but unfortunately for the trial few have obtained a plant. Turnips are mostly thinned now, but there will be little time for further hoeing before harvest. Some pieces of Barley will be ready this week, and reaping will be general in 8 days. Winter Beans are short of straw and corn too, but spring sown are quite a failure. Oats are uncommonly thin and light and ripen fast. Barley where strong, is much laid and twisted by the storms of last month. Wheat will be a bulky crop, but much later than the other cereals. Pastures were quite burnt up but have improved since the rains three weeks ago. Lambs, however, are falling in price, although the produce of the ewe flocks was much below an average. *J. B.*

South Dorset: *Aug.* 8.—The harvest began with us some time before July was out, the continuance of dry sunny weather having enabled us to begin fully a fortnight earlier than usual, and there remains little more to be cut. What is left is chiefly Barley, although much even of this was harvested with the other corn, as this crop is now sown much earlier than it used to be, sometimes as early as February, instead of in March or April. I hear no complaints here of the mildew, which I see in this week's *Gazette* has attacked the above-named and other crops, but accounts seem generally favourable. Those Turnips and Mangels which are up look pretty well, and we are taking advantage of the gentle rain fallen last night to catch a crop of stubble Turnips (on light land) after Peas. The latter succeed very well here, but Beans we never grow, for they require a much heavier soil. There are not as yet many symptoms of the Potato disease. There is a good deal of green caterpillar in our flower gardens; this is probably to be attributed to the mild winter, and the little frost in consequence. The general accounts of the great heat this summer in the metropolis and elsewhere do not so much apply here, as with the exception of about a week or 10 days early last month when thunderstorms were so prevalent (though to no great extent here), the summer has been cool, certainly cooler than last year or the year before. We are however within only five miles of the sea, the air from which, wafted over our breezy heaths, contributes to make our summers generally very enjoyable.

Notices to Correspondents.

Australia: *Mr Wells'* offer of "Report" is declined with thanks.

Black Caterpillar: *W Graham.* There are machines for brushing up caterpillars and for choking them with poisonous dust (Priest & Woolnough, Kingston, Surrey.) You may employ children to shake them off and trample on them, and ducks to devour them. Lord Cottenham says that five ducks per acre are the remedy! If you merely take ducks on the field you will be disappointed; but we are told that if you keep them on it long enough, and until they are forced to attack the caterpillar, they acquire an extraordinary voracity for them.

Cattle Food: *Cor.* The so-called Henri's meal mixture for cattle professes to be compounded as follows, the following being an extract from the specification of the invention claimed:—"I employ finely dried meal and powder obtained from the following vegetable matters, the husks being removed therefrom; namely, of—

Kidney Beans, about	200	parts, or	20	per cent.
Barley	200	,,	20	,,
Oats	200	,,	20	,,
Rice	100	,,	10	,,
Linseed	200	,,	20	,,

The above ingredients are highly nutritious, containing on an average from 75 to 90 per cent. of nutriment. To these I add, of—

Peruvian bark, about 10	parts, or	7-10ths	per cent.
Gentian	15 ,,	1 5-10ths	,,
Galingal	4 ,,	4 7-10ths	,,

The above ingredients are employed for their tonic properties. To these I add, of—

Nitre, about 14	parts, or	1 4-10ths	per cent.
Sulphur	28 ,,	2 8-10ths	,,
Resin	10 ,,	1	,,

The above ingredients, with the exception of the resin, are employed for their diuretic and deobstruent properties, and for their action upon the skin; the resin as being both diuretic and tonic. To these I add of the salt of commerce about 10 parts, or 1 per cent. To the above ingredients I add, of—

Liquorice root, about 7	parts, or	7-10ths	per cent.
Carraway seed	10 ,,	1	,,

The above ingredients are employed for their carminative properties, useful in dispelling flatulency, and for gently stimulating the stomach and digestive organs to healthy action. The whole of the above ingredients should be perfectly dry before mixing them together. The grain being placed in any convenient receptacle for that purpose, I prefer employing coke fires for drying the grain, as being well calculated to evaporate the moisture from the meal, thereby enabling it to be packed tightly without heating. When the grain is thoroughly dried it is sifted in an ordinary sieve to separate dust and other extraneous matters or substances therefrom. The ingredients are then thoroughly mixed and incorporated together in a vessel convenient for the purpose. The above mixture is then left in a heap for about 48 hours to ensure the absorption of the tonics, antacids, and carminatives by the meal, which, being effected, the mixture may then be made up into convenient packages ready for commercial purposes. I would here remark, that under certain circumstances I have found it desirable in practice to vary the proportions of the ingredients composing the above mixture; I do not therefore limit or confine myself to the precise proportions set forth, but vary them as found desirable, according to the constitution of the horse; for example, for a horse in low condition I prefer adding to the above mixture about 20 per cent of the tonic, carminative, and nutritious ingredients; and for a horse of weakly constitution, I use 1-5th part less of the tonic, diuretic, antacid ingredients, and increase the quantity of the carminative and nutritious ingredients 1-5th." Of course such a mixture must possess considerable value; the question for purchasers of it, as of all other cattle food, is whether or not it is worth the price demanded for it, while Barley and are Beanmeal to be had for about one-quarter the cost. We do not believe it.

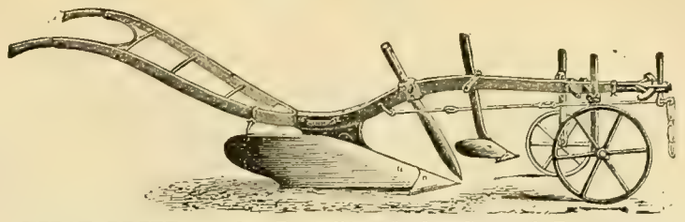
Rotation of Crops: *Tyro.* If only Oats, Barley, Turnips, and Vetches are needed you might grow them in a four-course rotation as for 100 acres, thus:—1, 25 acres of Barley. 2, 5 acres of Winter Vetches sown on the manured Barley stubble in autumn; 5 acres Spring Vetches sown in March, 5 acres Vetches sown in end of April. Of course if more Vetches are wanted you can divide the whole 25 acres of Barley stubble in three parts, so as to have a succession of green food, bnt if 15 acres suffice the remaining 10 may be planted with Potatoes or Mangel Wurzel for sale. 3, 25 acres Oats. 4, 25 acres in Turnips and Swedes to be fed off previous to the Barley crop.

Erratum: For "18s." in the tenth line from top of col. *b* to page 681, read "8s." The word "root" in the 50th line should have been "crop."

*** As usual, many communications have been received too late, and others are detained till the necessary inquiries can be made. We must also beg the indulgence of those correspondents the insertion of whose contributions is still delayed.

THE PLOUGH TRIALS AT WARWICK.

HOWARD'S CHAMPION PLOUGH



Gained the FIRST PRIZE as the Best Plough for General Purposes at Warwick,

BEING the CHIEF PRIZE for PLOUGHS, awarded by the Royal Agricultural Society of England, at this Meeting. The importance of this Prize will be gathered from the fact that the GENERAL PURPOSE PLOUGHS are the only ones tried on BOTH LIGHT AND HEAVY LAND, and as HOWARD'S CHAMPION PLOUGH proved itself to be the best on both soils, the FIRST PRIZE, of the HIGHEST AMOUNT given by the Society for any kind of Plough, was awarded to J. & F. Howard.

PRIZES awarded to J. & F. Howard, by the Royal Agricultural Society of England, at the WARWICK MEETING, 1859, being not only the LARGEST NUMBER of PRIZES, but the LARGEST NUMBER of FIRST PRIZES awarded to any Exhibitor.

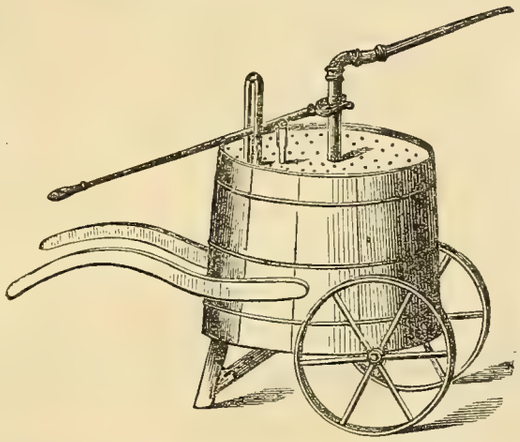
THE FIRST PRIZE FOR THE BEST PLOUGH FOR GENERAL PURPOSES, ALSO A PRIZE FOR THE BEST PLOUGH FOR LIGHT LAND, AND A PRIZE FOR THE BEST PLOUGH FOR HEAVY LAND; THE FIRST PRIZE FOR THE BEST LIGHT HARROWS, THE SECOND PRIZE ALSO FOR THE BEST LIGHT HARROWS, AND THE FIRST PRIZE FOR THE BEST HEAVY HARROWS.

Every one of HOWARD'S Implements, tried at Warwick, gained a Prize.

CATALOGUES, with full particulars, sent post free on application to

J. & F. HOWARD, BRITANNIA IRON WORKS, BEDFORD.

DEANE & COMPANY'S
HORTICULTURAL TOOLS,

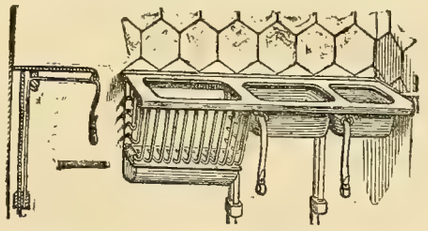


GARDEN ENGINES, Galvanized Iron
Prices 55s., 63s., 105s., 120s.
Ditto, Wood, 84s,, 105s, 130s.
Flower Stands, 4s. 6d. each.
Cast Iron Ornamental ditto, to hold 7 Vases, 27s.
Deane's Mowing Machines, with Boyd's Patented Improvements, £4 17s. 6d; £6 6s. 0d., £6 17s. 6d., £7 7s. 0d.
Green House Syringes, 8s., 10s., 18s. 6d
Garden Rollers, £1 14s. 6d., £2., £2 12s. £3 3s., £3 18s., £4 13s., £5 12s., £7 10s.
Garden Stools, 4s. 6d.
Garden Chairs, from 30s.
Boyd's Self-adjusting Scythe, 10s. 6d.
Wire Work, 18in. 4d. per yard run.

Every Implement for Garden use on the lowest Terms.

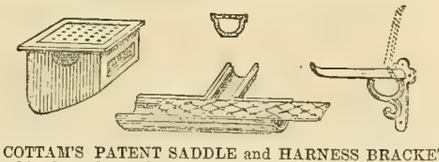
DEANES:—Opening to the Monument, London Bridge.

COTTAM'S PATENT INVENTIONS FOR STABLE REQUISITES, awarded a Prize at the Paris Exhibition, and patronised by the English and French Governments.



COTTAM AND COMPANY, Winsley Street, W., are the original inventors of the PATENT ENAMELLED MANGER, Water Trough, and Wrought Iron Rack, united to an iron top-plate, and forming one complete and useful fixture, having COTTAM'S patent noiseless halter guide and collar rein attached, which is taken to the back of the manger, and works with ease and freedom up or down the guide-bar.

COTTAM'S NEW PATENT SEED-BOX, an important addition to the above fittings, being simple in construction, light, and durable, promotes cleanliness, and is economical in its results.



COTTAM'S PATENT SADDLE and HARNESS BRACKET combined, can be used with great advantage where space is an object, as it can be turned up out of the way when not in use.

COTTAM'S IMPROVED SURFACE GUTTER, with perforated moveable cover, the use of which prevents accidents, and can be easily cleaned out.

COTTAM'S CAST-IRON SANITARY TRAP, from its improved construction, gives a full water passage, and does not allow any smell to ascend from the drain.

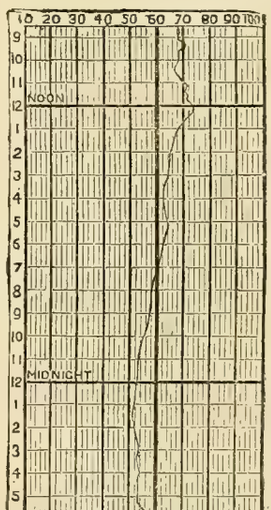
PATENT LOOSE-BOX FITTINGS, and every article for the harness-room and stable, kept in stock, plain, galvanised, and enamelled. Iron gates, fencing, hurdles, &c.

The New Illustrated Catalogue and Estimates, gratis, upon application to COTTAM and COMPANY, 2, Winsley Street, Oxford Street, W.

N.B. Cottam & Co. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

TO HORTICULTURISTS.

GAUNTLETT'S PATENT CHRONOMETRICAL THERMOMETER.



This instrument, which combines an eight-day clock of the best English make showing time, with a newly-patented Thermometer, wherein glass and quicksilver are dispensed with, writes down the temperature of the atmosphere on a slip of paper, and when placed in a Hothouse, Forcing House, or Conservatory, &c., supplies a valuable record of the temperature, with all its variations, showing the time when any change took place, and how long such change continued.

The above slip (reduced in size) exhibits the temperature of the Royal Agricultural Society's show yard at Chester, July 22, 1858, written off by one of these instruments, to which was awarded the Society's Silver Medal.

This is the only instrument that registers temperature continuously and writes it down, and no horticuturist should be without it.

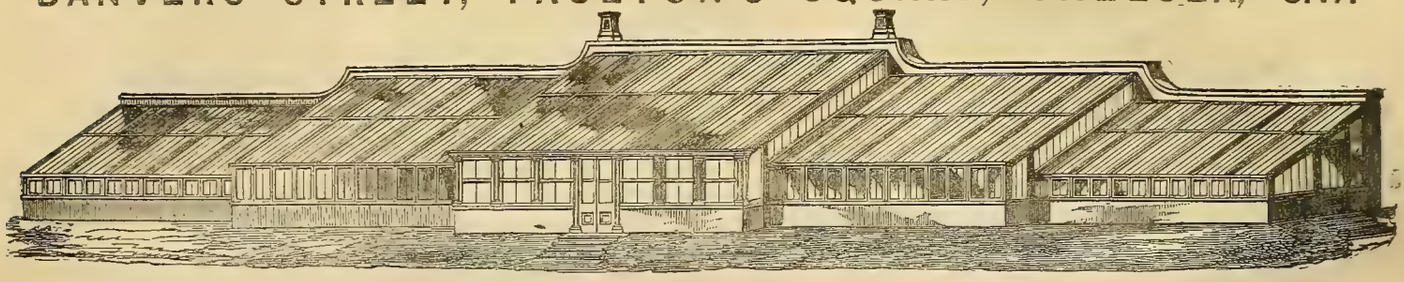
Orders received by W. H. Gauntlett, Middlesbro' on-Tees.

HOW TO BREW SPLENDID STRONG ALE, at 7*d.* per Gallon, fine as Sherry, and an aroma equal to Burton Tenpenny. This new Practical Treatise is by a Derbyshire man of 28 years' attendance at the spigot and tun in the best brewery in the county. No brewing utensils required, only those for household use. This is guaranteed to be the best and cheapest mode to produce fine Ale ever made public. The above beautifully printed in large type can be had of the sole publishers for 12 Penny Post stamps. Sent post free to any address. Direct to Fisher & Son, Publishers, Kingsland, London, N.E. Established 1847.

Notice.—Just appended to this universally prized Book, all the methods to make the improved Ærated Unfermented Ginger Beer, Soda Water, Lemonade, all the Cordials and Nectars, together with the Penny French Ices, the Delightful Summer Cooling Beverages, and all the French, American, and English cheap fruit drinks.

HORTICULTURAL WORKS,

DANVERS STREET, PAULTON'S SQUARE, CHELSEA, S.W.



JAMES GRAY

RESPECTFULLY BEGS TO INFORM THE NOBILITY, GENTRY, NURSERYMEN, GARDENERS, AND OTHERS, THAT HE CONTINUES TO CARRY ON THE BUSINESS IN ALL ITS BRANCHES AT THE ABOVE OLD ESTABLISHED PREMISES.

CONSERVATORIES, GREENHOUSES, FORCING HOUSES, VINERIES, PITS, &c.,

OF EVERY DESCRIPTION, ERECTED ON THE MOST APPROVED PRINCIPLES.

HEATING BY HOT WATER.

J. G. having specially devoted his attention for many years to this part of the business, is now fully prepared to Heat every description of public and private buildings, viz :—Churches, Mansions, Warehouses, &c., as well as all structures connected with Horticulture, in the most efficient manner. His system is the most simple that can be adopted—which he has found from long experience to be the best—can be constructed at less cost, and is more easily managed than those of a complicated nature which have attracted the notice of the public.

J. G. begs to call attention to his CAST-IRON CORRUGATED ARCH BOILER, which from its simplicity of construction has not the liability to fracture to which those of a more complex design are always subject. They have been extensively used for many years, and have given the greatest satisfaction.

All business is conducted at this establishment on the principle of lowest remunerative profits consistent with best materials and workmanship.

PLANS AND ESTIMATES FURNISHED ON THE SHORTEST NOTICE.

VOKINS AND HURD,
Jubilee Place, King's Road, Chelsea, S.W





HORTICULTURAL BUILDERS and HOT-WATER APPARATUS MANUFACTURERS. Estimates forwarded on the shortest notice.
BOILERS of all sizes on sale.

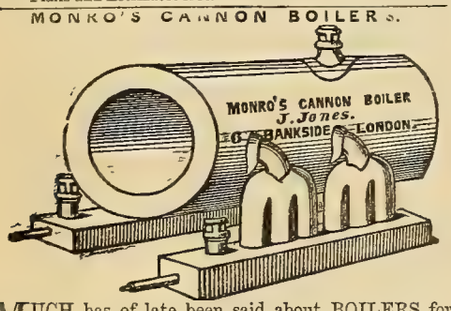
WEST OF ENGLAND HOTHOUSE AND HOT-WATER APPARATUS MANUFACTORY,
BRIDEWELL STREET, BRISTOL.

VINCENT SKINNER (late Partner in and for seven years connected with the firm of John Weeks & Co., of Chelsea), erects Conservatories, Forcing Houses, &c., of the best materials and workmanship. Whole Establishments heated on the ONE BOILER SYSTEM, and each division effectually regulated by his *improved valve*.

Upright Pipe Boilers of all sizes, from 18 inches diameter by 15 inches high. Garden Frames, &c.
Plans and Estimates free.



MONRO'S CANNON BOILERS.

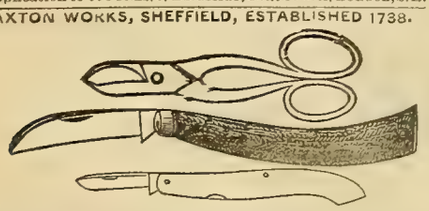


MUCH has of late been said about BOILERS for Heating by Hot Water, but these Boilers have now proved themselves to be the best at present invented. They are adapted for heating every description of building, and are made of various sizes. The Price of the

24-inch Cast Iron is	..	..	.. £5 10s. 0d.	each
24-inch Wrought ditto	..	..	.. 6 10 0	,,
36-inch Cast ditto	..	..	.. 8 0 0	,,
36-inch Wrought ditto	..	..	.. 8 10 0	,,

References to Gentlemen and Nurserymen where these Boilers are now at work. The Cannon Boilers are now kept in stock, and are to be had only of J. JONES, 6, Bankside. Also, every description of Saddle and Cylinder Boilers. Hot Water Pipes and Connections at prices lower than those of any other house in London. Estimates for Hot-water Apparatus erected complete in any part of the country, and an Illustrated Catalogue on application to J. JONES, 6, Bankside, Southwark, London, S.E.

PAXTON WORKS, SHEFFIELD, ESTABLISHED 1738.



SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.—Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

WEEKS' ONE BOILER SYSTEM.

BY APPOINTMENT.

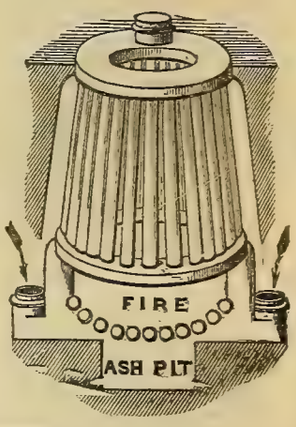
JOHN WEEKS & COMPANY,

KING'S ROAD, CHELSEA, S.W.,

CHALLENGE THE WORLD to produce a Boiler not made in imitation of their Upright Tubular Boiler that will produce anything like the same effect with the same quantity of fuel in a given time.

The following unequalled statistics fully justify the challenge:—

	Area of Houses in feet.	Total length of Piping.
Messrs. E. G. Henderson & Co., Wellington Nursery	1,200	5,500
Messrs. F. A. Smith, Dulwich	...	11,000
M. Van Houtte, Belgium	3,300	13,000
Our own Fruit Forcing Show Establishment ...	1,000	7,000



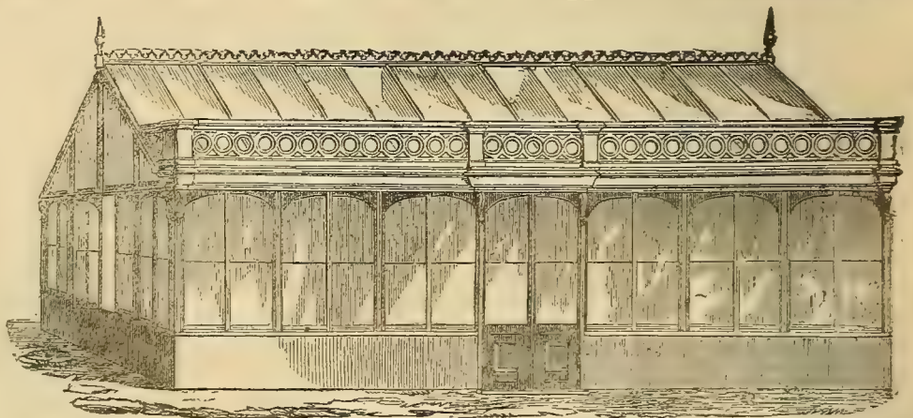
Also the Nurseries of Mr. Woodroffe, Harrow Road, N.W.; Messrs. Rollisson, Tooting, S.; Messrs. Wood & Ingram, Huntingdon; Messrs. Wood & Son, Maresfield; together with numerous Public Buildings and Establishments of the Nobility and Gentry far too numerous for insertion.

J. WEEKS & CO., Horticultural Builders and Hot-Water Apparatus Manufacturers, King's Road, Chelsea, S.W.

PLANS AND ESTIMATES FREE ON APPLICATION.

J. WATTS & CO.,

Hothouse Builders and Hot-Water Apparatus Manufacturers.



Horticultural Buildings of every description Heated on the most approved principles, combining great power with simplicity of construction. A Range of Houses containing 20,000 feet can be Heated as easily as the smallest Pit. Two Hundred Cucumber Boxes and Lights, and from Three to Four Hundred Lights of all sizes kept in stock, glazed and painted complete, ready for immediate use.

References to the Nobility, Gentry, and the Trade in most of the Counties in England.

Claremont Place, Old Kent Road, London, S.E.

MAPPIN'S PRUNING KNIVES IN EVERY VARIETY.
WARRANTED GOOD BY THE MAKERS.



MAPPIN BROTHERS, Queen's Cutlery Works, Sheffield; and 67 & 68, King William St., London, E.C.

MAPPIN'S "SHILLING" RAZORS Shave well for Twelve Months without Grinding.

MAPPIN'S 2s. RAZORS Shave well for Three Years.

MAPPIN'S 3s. RAZORS (suitable for Hard or soft Beards,) Shave well for Ten Years.

MAPPIN'S SUPERIOR TABLE-KNIVES maintain their unrivalled Superiority—handles cannot possibly become loose—the blades are all of the very first quality, being their own Sheffield manufacture.

	Tble. Kns.	Dst. Kns.	Carvers.
Ivory 3⅞ in. Handle, balanced,	20s. p. doz.	16s. p. doz.	6s. p. pair
Do. 4 in. do. ..	25s. ,,	18s. ,,	9s. ,,

MAPPIN'S SILVER-PLATED DESSERT KNIVES and FORKS, in Mahogany Cases.

12 Pairs Knives and Forks,	Ivory Handles, in Case..	80s.
12 Do.	Pearl Handles, do. ..	130s.
12 Do.	Silver-Plated Handles, do. ..	80s.

MAPPIN'S ELECTRO-SILVER PLATE.—MAPPIN BROTHERS, Manufacturers by Special Appointment to the Queen, are the only Sheffield makers who supply the consumers in London. Their LONDON SHOW ROOMS, 67 and 68, King William Street, London Bridge, E.C., contain by far the largest STOCK of ELECTRO-SILVER PLATE in the World, which is transmitted direct from their Manufactory, Queen's Cutlery Works, Sheffield.

	Fiddle Pattern.	Double Thread.	King's Pattern.
12 Table Forks, best quality	£1 16 0	£2 14 0	£3 0
12 Table Spoons, best quality	1 16 0	2 14 0	3 0
12 Dessert Forks, best quality	1 7 0	2 0 0	2 4
12 Dessert Spoons, best quality	1 7 0	2 0 0	2 4
12 Tea Spoons, best quality	0 16 0	1 4 0	1 7

Messrs. MAPPIN BROTHERS respectfully invite buyers to inspect their unprecedented display, which, for beauty of design, exquisite workmanship, and novelty, stands unrivalled. Their Illustrated Catalogue, which is continually receiving addition of New Designs, sent per post on receipt of 12 stamps.—MAPPIN BROTHERS, 67 & 68, King William Street, London Bridge, E.C.; Manufactory, Queen's Cutlery Works, Sheffield.

HANDSOME BRASS AND IRON BEDSTEADS, —HEAL & SON'S Show Rooms contain a large assortment of Brass Bedsteads, suitable both for Home use and for Tropical Climates; handsome Iron Bedsteads with Brass Mountings and elegantly Japanned; Plain Iron Bedsteads for Servants; every description of Wood Bedstead that is manufactured, in Mahogany, Birch, Walnut-tree Woods, Polished Deal and Japanned, all fitted with Bedding and Furniture complete, as well as every description of Bedroom Furniture.

HEAL AND SON'S ILLUSTRATED CATALOGUE, containing Designs and Prices of 100 Bedsteads, as well as of 150 different articles of Bedroom Furniture, sent free by post.—HEAL & SON, Bedstead, Bedding, and Bedroom Furniture Manufacturers, 196, Tottenham Court Road, W.

THE PERFECT SUBSTITUTE FOR SILVER.—The REAL NICKEL SILVER, introduced more than 25 years ago by WILLIAM S. BURTON, when PLATED by the patent process of Messrs. Elkington & Co., is beyond all comparison the very best article next to sterling silver that can be employed as such, either usefully or ornamentally, as by no possible test can it be distinguished from real silver. A small useful plate chest, containing a set, guaranteed of first quality for finish and durability, as follows:—

	Fiddle or Old Silver Pattern.	Thread or Brunswick Pattern.	Lily Pattern.	King's or Military Pattern.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
12 Table Forks	1 13 0	2 4 0	2 10 0	2 15 0
12 Table Spoons	1 13 0	2 4 0	2 10 0	2 15 0
12 Dessert Forks	1 4 0	1 12 0	1 15 0	1 17 0
12 Dessert Spoons ..	1 4 0	1 12 0	1 15 0	1 17 0
12 Tea Spoons	0 16 0	1 2 0	1 5 0	1 7 0
6 Egg Spoons, gilt bowls..	0 10 0	0 13 6	0 15 0	0 15 0
2 Sauce Ladles	0 6 0	0 8 0	0 9 0	0 9 6
1 Gravy Spoon	0 6 6	0 10 0	0 11 0	0 12 0
2 Salt Spoons, gilt bowls..	0 3 4	0 4 6	0 5 0	0 5 0
1 Mustard Spoon, gilt bowl	0 1 8	0 2 3	0 2 6	0 2 6
1 Pair of Sugar Tongs ..	0 2 6	0 3 6	0 4 0	0 4 6
1 Pair of Fish Carvers ..	1 4 0	1 7 6	1 10 0	1 12 0
1 Butter Knife	0 2 6	0 5 6	0 6 0	0 7 0
1 Soup Ladle	0 10 0	0 17 0	0 17 0	1 0 0
1 Sugar Sifter	0 3 3	0 4 6	0 5 0	0 5 6
Total	9 19 9	13 10 3	14 19 6	16 4 0

Any article to be had singly at the same prices. An oak chest to contain the above, and a relative number of knives, &c., 2*l.* 15*s.* Tea and coffee sets, cruet and liqueur frames, waiters, candlesticks, &c., at proportionate prices. All kinds of re-plating done by the patent process.

WILLIAM S. BURTON'S GENERAL FURNISHING IRONMONGERY CATALOGUE may be had gratis, and free by post. It contains upwards of 400 Illustrations of his illimited Stock of Electro and Sheffield Plate, Nickel Silver and Britannia Metal goods, Dish Covers and Hot-water Dishes, Stoves, Fenders, Marble Chimney-pieces, Kitchen Ranges, Lamps, Gaseliers, Tea Urns and Kettles, Tea Trays, Clocks, Table Cutlery, Baths and Toilet Ware, Turnery, Iron and Brass Bedsteads, Bedding, Bedroom Furniture, &c., with Lists of Prices and Plans of the 16 large Show Rooms at 39, Oxford Street, W.; 1, 1A, 2, and 3, Newman Street, W.; and 4, 5, and 6, Perry's Place, W., London.—Established 1820.

TOURISTS AND TRAVELLERS, VISITORS TO THE SEASIDE, and others exposed to the scorching rays of the sun, and heated particles of dust, will find ROWLAND'S KALYDOR a most refreshing preparation for the complexion and skin, dispelling the cloud of languor and relaxation, allaying all heat and irritability, and immediately affording the pleasing sensation attending restored elasticity and healthful state of the skin. Freckles, tan, spots, pimples, flushes, and discoloration are eradicated by the application. Price 4*s.* 6*d.* and 8*s.* 6*d.* per bottle. The heat of the summer also induces a dryness of the hair, and a tendency to its falling off, which may be completely obviated by the use of ROWLAND'S MACASSAR OIL, a delightfully fragrant and transparent preparation for the hair, and as an invigorator and beautifier, beyond all precedent. Price 3*s.* 6*d.*; 7*s.*; family bottles (equal to four small), 10*s.* 6*d.*; and double that size, 21*s.* ROWLAND'S ODONTO, or PEARL DENTIFRICE, bestows on the teeth a pearl-like whiteness, frees them from tartar, and imparts to the gums a healthy firmness, and to the breath a grateful purity and fragrance. Price 2*s.* 9*d.* per bottle.—Sold by A. ROWLAND & SONS, 20, Hatton Garden, London, E.C.; and by Chemists and Perfumers.—Beware of Spurious Imitations.

THE CENTRAL TRAINING SCHOOL OF ART at South Kensington, for Male and Female Students, and METROPOLITAN SCHOOLS OF ART at 37, Gower Street, W.C., for Female Classes only, and at Spitalfields, Crispin Street, N.E.; Finsbury, William Street, Wilmington Square, W.C.; St. Thomas Charterhouse, Goswell Street, E.C.; Rotherhithe, Grammar School, Deptford Road, S.E.; St. Martin's-in-the-Fields, Castle Street, Long Acre, W.C.; Lambeth, St. Mary's, Princess Road, S.; Hampstead, Dispensary Building, N.W.; Christchurch, St. George's-in-the-East, Cannon Street, E., will reopen on October 1.

Application for admission, prospectuses, or any other information, to be made at the Schools in each district, and at South Kensington, W.

By authority of the Committee of Council on Education.

GOVERNMENT SCHOOL OF MINES AND OF SCIENCE APPLIED TO THE ARTS.

Director.

Sir RODERICK IMPEY MURCHISON, D.C.L., M.A., F.R.S., &c.

During the Session 1859-60, which will commence on October 3, the following COURSES of LECTURES and PRACTICAL DEMONSTRATIONS will be given:—

1. Chemistry. By A. W. HOFMANN, LL.D., F.R.S., &c.
2. Metallurgy. By JOHN PERCY, M.D., F.R.S.
3. Natural History. By T. H. HUXLEY, F.R.S.
4. Mineralogy. } By WARINGTON W. SMYTH, M.A., F.R.S.
5. Mining. }
6. Geology. By A. C. RAMSAY, F.R.S.
7. Applied Mechanics. By ROBERT WILLIS, M.A., F.R.S.
8. Physics. By G. G. Stokes, M.A., F.R.S.

Instruction in Mechanical Drawing, by Mr. BINNS.

The fee for Matriculated Students (exclusive of the laboratories) is 30*l.* in one sum, on entrance, or two annual payments of 20*l.*

Pupils are received in the Royal College of Chemistry (the laboratory of the School), under the direction of Dr. Hofmann, at a fee of 10*l.* for the term of three months. The same fee is charged in the Metallurgical Laboratory, under the direction of Dr. Percy. Tickets to separate courses of Lectures are issued at 1*l.*, 1*l.* 10*s.*, and 2*l.* each. Officers in the Queen's service, her Majesty's Consuls, acting mining agents and managers, may obtain Tickets at reduced charges.

Certified schoolmasters, pupil teachers, and others engaged in education, are also admitted to the Lectures at reduced fees.

His Royal Highness the Prince of Wales has granted two Exhibitions, and others have also been established.

For a prospectus and information, apply at the Museum of Practical Geology, Jermyn Street, London, S. W.

TRENHAM REEKS, Registrar.

BANK OF DEPOSIT,
ESTABLISHED A. D. 1844; 3, PALL MALL EAST, LONDON, S.W.
CAPITAL STOCK 100,000*l.*

PARTIES desirous of INVESTING MONEY are requested to examine the Plan of THE BANK OF DEPOSIT, by which a high rate of Interest may be obtained with ample security. Deposits made by Special Agreement may be withdrawn without notice. The Interest is payable in January and July. PETER MORRISON, Managing Director.

Forms for opening Accounts sent free on application.

WHAT WILL THIS COST TO PRINT? is a thought often occurring to literary minds, public characters, and persons of benevolent intentions. An immediate answer to the inquiry may be obtained on application to RICHARD BARRETT, 13, Mark Lane, London. R. B. is enabled to execute every description of Printing on very advantageous terms, his office being furnished with a large and choice assortment of Types, Steam Printing Machines, Hydraulic and other Presses, and every modern improvement in the Printing Art. A Specimen Book of Types, and information for Authors, sent on application, by

RICHARD BARRETT, 13, Mark Lane, London, E.C.

In consequence of the new postal arrangements, parties in the country who desire it can have two copies sent by post for one stamp, five for two stamps, or eleven for four, in addition to the cost of the numbers.

Price 3*d.* each, or 5*s.* for 25 copies for distribution amongst Cottage Tenantry, delivered anywhere in London, on a Post office Order being sent to the Publisher, JAMES MATTHEWS, at the Office of the *Gardeners' Chronicle.*

THE COTTAGER'S CALENDAR OF GARDEN OPERATIONS. By Sir JOSEPH PAXTON, M.P.

Reprinted from the GARDENERS' CHRONICLE. Upwards of 40,000 have already been sold.

J. MATTHEWS, 5, Upper Wellington Street, Covent Garden, London, W.C.

This day, Part the Sixth, Price 1*s.*,

INDEX FILICUM: a Synopsis, with characters, of the Genera, and an enumeration of the Species of Ferns, with Synonyms, References, &c. By THOMAS MOORE, F.L.S., F.H.S., Author of "The Handbook of British Ferns;" "The Ferns of Great Britain and Ireland, Nature Printed," &c.; Curator of the Chelsea Botanic Garden.

London: WILLIAM PAMPLIN, 45, Frith Street, Soho Square, W.

THE BEST POPULAR WORK ON FERNS.
In square 16mo, price 7*s.* 6*d.*, cloth extra,

BRITISH FERNS. By T. MOORE, F.L.S. A New Edition, revised, with additions, and Illustrated with 22 pages of Plates, printed in Colours by Evans.

London: ROUTLEDGE, WARNE, & ROUTLEDGE, Farringdon St., E.C.

COUNTRY BOOKS, WITH COLOURED ILLUSTRATIONS.
Price 3*s.* 6*d* each, cloth; or with gilt edges, 4*s.*,

1. OUR WOODLANDS, HEATHS, AND HEDGES. By W. S. COLEMAN. Illustrated by the Author.
2. WOOD'S (Rev. J. G.) COMMON COUNTRY OBJECTS. Illustrated by COLEMAN.
3. WOOD'S (Rev. J. G.) COMMON SEA-SHORE OBJECTS. Illustrated by SOWERBY.
4. THOMSON'S (SPENCER) WILD FLOWERS: How to See and Gather them. Illustrated by NOEL HUMPHREYS.

Cheap Editions are published of Nos. 1, 2, and 3, with the plates plain, in boards, price 1*s.*; No 4, 2*s.*

London: ROUTLEDGE, WARNE, & ROUTLEDGE, Farringdon St., E.C.

EPPS'S HOMŒOPATHIC COCOA.—Produced, in 1839, specially for the use of Homœopathic Patients, to provide them with a beverage highly nutritious and free from those effects of Coffee and Tea which to many persons are pernicious. Rendered attractive to the taste by its delicious aroma and grateful smoothness, it has become adopted by the public generally for breakfast, luncheon, and supper. It is sold by the principal Grocers at 1*s.* 6*d.* per lb., in 1 lb., ½ lb., and ¼ lb. packets. Each packet is labelled, "JAMES EPPS, Homœopathic Chemist, London."

BILIOUS AFFECTIONS induced by unusual atmospheric heat or a too liberal diet, if not really checked, are often attended with serious consequences. When any one finds his ideas less clear than usual, his eyesight dimmed, and his head dizzy, while he is indisposed to all exertion, physical or mental, he may be quite sure that he is in immediate need of some cooling and purifying medicine. Let him send at once for a box of HOLLOWAY'S Pills. After a few doses of these inestimable Pills his head will be clear again, his spirits elevated, and all his energies restored. These Pills are composed of rare balsams, without the admixture of one grain of mercury or any deleterious substance whatever.

HEALTH WITHOUT PHYSIC.—Nervousness effectually cured by a novel and most successful mode of treatment, discovered in America. The most convincing proof of the efficacy of this wonderful remedy, with other details, will be sent to any address on receipt of one stamp.—Address, Mr. HILL, 27, Alfred Place, Store Street, London, W.C.

SHEEP.—FOOT-ROT OINTMENT, an original preparation, by JOHN OLDHAM, of Mansfield, a certain and safe remedy, having invariably cured when other remedies have failed. It is equally efficacious in Foul in Cows, Grease, Cracked Heels, and Thrush in Horses.

Numerous parties at a distance being inconvenienced in procuring it, the proprietor has appointed Messrs. SUTTON & Co., 10, Bow Churchyard, E.C., his London Agents, and it can now be procured through any respectable Chemist or Patent Medicine Dealer.

SHORT-HORN BULL & PURE SOUTHDOWN EWES.

FOR SALE (or Hire), "DUKEDOM," bred by Mr. Tanqueray, calved June 10, 1854, by "Earl of Derby" (10177), dam, "Duchess 24," by "Earl Fitzwilliam" (8016), with pedigree as far back as Mr. T. Wetherell's Bull (690). Also FOR SALE, from the Coleshill Flock, 150 PURE SOUTHDOWN EWES, and 30 PRIME RAM LAMBS, bred from the best blood in the country.—Apply for particulars, &c., to Mr. MOORE, Colesbill, Highworth.

TO RETIRED GARDENERS.

A SHARE in a well-established SEED and NURSERY BUSINESS in one of our most populous country towns may now be obtained by an eligible person who requires profitable employment for himself and a small capital.—Address, with real name only, to Mr. PERRINS, 30, Westgate Street, Gloucester.

TO NURSERYMEN AND OTHERS.

TO BE DISPOSED OF, a really first-rate NURSERY, including Glass, Stock, and Business, entire, on very advantageous terms, in the immediate neighbourhood of London. Might suit two or more in partnership, or any country firm requiring a London place of business. Long Lease and capitally situated. Part of the Purchase Money might remain at interest if desired.—For all further particulars apply by letter to A. B. & Co., care of Messrs. Williams & Lloyd, Stationers, 29, Moorgate Street, London, E.C.

Sales by Auction.

ORCHIDS AND FERNS,
IMPORTED AND ESTABLISHED PLANTS.

MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, W.C., on FRIDAY, September 9, at half-past 12 precisely, a Collection of ORCHIDS and FERNS, including several fine Imported Plants in good health of the magnificent ANGRÆCUM SESQUIPEDALE from Madagascar, the largest white flowered Orchid known; LÆLIA XANTHINA, a new species with the habit of Lælia purpurata and deep yellow flowers. Also LÆLIA PRÆSTANS, L. purpurea gigantea, CATTLEYA TRIANÆI, C. RANGELII, and numerous other fine Lælias and Cattleyas. Also a collection of Ferns, including Alsophila excelsa, A. ferox, A. aurea major, and others rare and interesting. Catalogues are preparing.

IMPORTANT SALE.—TO NOBLEMEN AND GENTLEMEN, HORTICULTURIST PLANT GROWERS, AND THE TRADE.

MESSRS. PROTHEROE AND MORRIS have received instructions from Mr. Epps to Sell by Auction (in consequence of the Lease of one of his Nurseries at Maidstone having expired, and immediate possession required), on WEDNESDAY, August 24, and following days, at 11 o'Clock each day, the whole of his large and valuable collection of SPECIMEN PLANTS of all sizes, amounting to upwards of 1000, consisting of the newest and best varieties of Ericas, Azaleas, Pimeleas, Aphelexis, Eriostemon, Acacia, Polygala, Statice, Tremandra, Ixoras (6 vars.), Allamanda, Stephanotis, Rhynchospermum jasminoides, Dipladenias, Medinella, Pleroma elegans (fine), Rondeletia, Vinca, Aphelandras, Ardisias, Brexia, Caladiums, Cissus, Crotons, Dracænas, Striped Yuccas, &c.; also a large quantity of his young stock, including 10,000 to 15,000 new and valuable Greenhouse and Stove Plants, comprising Ericas, Epacris, greenhouse Creepers, French Geraniums, Allamandas, Ixoras, Aphelandras, Dipladiums, Eucharis, Gardenias, Gesnerias, Gloxinias, new Tydeas, Achimenes, Stove Climbers, variegated and ornamental foliaged plants, &c.; also several ranges of newly erected Greenhouses, Pits, &c. May be viewed 14 days prior to the Sale. Catalogues had on the premises, of the principal Seedsmen in London, and of the Auctioneers, American Nursery, Leytonstone, Essex, N.E. The Nursery is situated near the Maidstone Railway Station, and about 2 hours' ride from London Bridge Station on the North Kent line.

The valuable NURSERY STOCK extending over 5 Acres (comprising very choice and large specimens of Coniferæ and Ornamental Trees and Shrubs that will remove well and calculated for immediate effect), will be sold about the middle of October next, particulars of which will be duly announced.

GUANO.

TO BE SOLD BY AUCTION, at the New Corn Exchange Tavern, on MONDAY, August 29, at half-past 2, the newly-arrived Cargo of CALIFORNIAN GUANO, per John A. Parks. The following is Prof. J. P. Way's Analysis:—

Moisture	25.11
Organic matter * and salts of ammonia.	16.69
Sand	5.21
Phosphates of lime and magnesia ..	44.52
Alkaline salts	8.47
	100
*Containing nitrogen	2.81
Equal to ammonia	3.42

For further particulars apply to DIPNALL, PHARE, & Co., Brokers, 18, Mincing Lane, E.C.

HAMPEN, GLOUCESTERSHIRE.

HIGHLY IMPORTANT SALE OF 700 PURE-BRED COTSWOLD SHEEP.

JAMES VILLAR has the honour to announce his instructions from T. Beale Browne, Esq., of Salperton Park (who is parting with his flock in consequence of the continued illness in his family), to Sell by Auction, at Hampen, on TUESDAY, September 6, the whole of his far-famed and matchless FLOCK of COTSWOLD SHEEP, comprising 225 splendid Ewes, 162 extraordinary Theaves, 140 matchless Ewe Lambs, 130 superior Ram Lambs, and 43 Rams of various ages, amongst which are several Prize Sheep and some of the finest specimens of this class of Sheep to be found in any Flock in England. The numerous Prizes awarded to this Flock in England, Ireland, Scotland, and France, warrants the Auctioneer in asserting that a finer lot of Cotswold Sheep than the above described has never been offered to the public; he therefore trusts to be honoured with the attendance and patronage of Noblemen, Gentlemen, and Sheep Breeders generally who may want First class Stock. Also, 30 HEAD of CATTLE. Luncheon will be on the table at 11, and the Sale will commence punctually at 12 o'Clock. Hampen is 8 miles from Cheltenham, 11 from Addlestrop Station on the O. W. & W. Railway, 9 from Stow-on-the-Wold, 6 from Northleach, and 13 from Cirencester. Cheltenham is in direct communication with the Great Western and Midland Railways.—Catalogues may be obtained at place of Sale, or upon application to the Auctioneer, Cheltenham.

GREENHOUSES.

HENRY FREEMAN, HOTHOUSE BUILDER and HOT-WATER APPARATUS MANUFACTURER, Triangle, Hackney, N.E. Established 20 years. Good substantially built GREENHOUSES, fixed in any part of the kingdom, for cash, 42 feet long by 13 feet, 90*l.*; 21 feet by 13 feet, 50*l.*; 12½ feet by 10 feet, 30*l.* A first-rate CONSERVATORY, 30 feet by 18 feet, 130*l.* A large assortment kept. Estimates for Heating, or any branch in Wood or Iron or Park Fencing.

C. STEPHENSON, late STEPHENSON AND SONS, 61, Gracechurch St., London, E.C., Manufacturer of Iron Hurdles, Fencing, &c., Improved Iron and Copper Conical Boilers and Apparatus for Warming Buildings of every description by Hot Water.

Prices and Estimates furnished upon application.

HOT-WATER PIPES at wholesale prices, with Elbows, Syphons, Tee Pipes, and every other connection. Wrought and cast iron Boilers, Saddle, Conical, Cylinder, and Elliptic, from 24*s.* each. Boilers and Iron Stands to use without brickwork. Valves from 12*s.* each. Coil Boxes, Furnace Doors, Furnace Bars, Supply Cisterns, and Builders' Castings of every description in stock, at Mr. LYNCH WHITE'S Iron Wharf, Upper Ground Street, Blackfriars Bridge, London, S.

HORTICULTURAL BUILDINGS AND HEATING BY HOT WATER.

JOHN R. PEILL, 17, New Park St., Southwark, S.E, Manufacturer of every description of Buildings for Horticultural purposes, and Inventor of the Improved Conical Boiler for heating the same, is prepared to undertake works of any magnitude, and refers among others to the celebrated range of FORCING HOUSES at HER MAJESTY'S GARDENS, FROGMORE, and at SIR ROBERT PEEL'S, DRAYTON MANOR, constructed under the superintendence of his Manager, MR. JOHN JONES; and also to his BOILERS fixed at the CRYSTAL PALACE, the ROYAL BOTANIC GARDENS, REGENT'S PARK, and KEW, and at several hundreds of the Nobility's seats, Public Establishments, and Manufactories in London and the provinces. J. R. P. also manufactures every description of Iron Roofs, Iron Houses, and Iron Fencing, plain and ornamental. Strong Iron Hurdles for Sheep (6 ft. long, 3 ft. high, with 5 bars), 4*s.* 3*d.* each; ditto for cattle, 4*s.* 9*d.* each. Prices and other particulars forwarded on receipt of one postage stamp.

VASES, PEDESTALS, SUNDIALS, FOUNTAINS, FLOWER BOXES, JARDINETS, FERN CASES, BALUSTRADES, EDGINGS AND CURBS FOR FLOWER BORDERS, SEATS, &c., in Imperishable Siliceous Stone, at reduced prices, for the adornment of the Villa Garden, the Mansion Grounds, or the private or public Park.

For Priced Illustrations apply to FREDERICK RANSOME, at the Show Rooms, Cannon Row, Westminster, S.W., or Patent Stone Works, Ipswich.

VULCANIZED INDIA-RUBBER HOSE AND TUBING FOR WATERING GARDENS, &c.

J. L. HANCOCK supplies this article, of superior make, of any required strength or size.

BRASS SCREW JOINTS, for connecting the Hose to Cisterns, also HAND BRANCHES, TAPS, and WATER SPREADERS in great variety. Orders by post promptly executed, and Illustrated Price Catalogue on application.

JAMES LYNE HANCOCK, Vulcanized India-Rubber Works, Goswell Mews, and No. 8, Goswell Road, London, E.C.

GUTTA PERCHA TUBING FOR WATERING GARDENS.

THE GUTTA PERCHA COMPANY have the pleasure to acknowledge the receipt of the following

Testimonial from Mr. J. FARRAH, *Gr. to* BOSWELL MIDDLETON JALLAND, Esq., *of Holderness House, near Hull.*

"I have had 400 feet of your Gutta Percha Tubing, in lengths of 100 feet each, with union joint, in use for the last 12 months for watering these gardens, and I find it to answer better than anything I have ever yet tried. The pressure of the water is very considerable, but this has not the slightest effect on the tubing. I consider this tubing to be a most valuable invention for Gardeners, inasmuch as it enables us to water our gardens in about one-half the time, and with one-half the labour required."

Manufactured by the Gutta Percha Company, Patentees, 18, Wharf Road, City Road, London, E.C., and sold by their Wholesale Dealers in town and country.

HENRY J. MORTON AND CO., 2, Basinghall Buildings, Leeds.

CALVANISED IRON WATER CISTERNS

for Cottage Houses, &c., to contain 50 gallons, 25*s.*; 80 gallons, 30*s.* each; and 140 gallons, 36*s.*, and fitted with tap, keeping the water perfectly sweet and clean; will not rust or corrode. Cisterns of all sizes.

GALVANISED IRON PUMPS

for Liquid Manure or Domestic Use, 3 inches diameter, 30*s.* and 32*s.* 6*d.* each; Tail Pipe for same at from 10*d.* per foot.

GALVANISED IRON SWING WATER BARROWS

for Garden or Farm use, containing about 20 gallons, entirely formed of iron, 32*s.* 6*d.* each.

SHAW'S TIFFANY is universally acknowledged to be the best, neatest, and cheapest material for shading Conservatories, and other Hothouses. Effectually securing Plants from the scorching rays of the sun, without obscuring the light. Also, for protecting the Bloom of Wall Trees from spring frosts, and Fruit from birds and wasps. Sold in pieces.

No. 1.—20 yards long, by 38 inches wide, 5*s.* per piece.

No. 3.—Double strength, 18 yards long, by 39 inches wide, 7*s.* 6*d.* per piece.

No. 4.—Treble strength, 18 yards long, by 39 inches wide, 9*s.* per piece.

A liberal allowance to the Trade when ten or more Pieces are taken.—JOHN SHAW & Co., Princess Street, Manchester.

"FRIGI DOMO."—Patronised by her Majesty, the Queen, the Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, and —Collier, Esq., of Dartford.

PROTECTION FROM THE SCORCHING RAYS OF THE SUN.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and, floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths. Two yards wide, 1*s.* 6*d.* per yard run: four, 3*s.* per yard. Also, an improved make for Shading Purposes. Three yards wide, 2*s.* 6*d.* per yard run

ELISHA THOMAS ARCHER, whole and sole manufacturer, 7, Trinity Lane, Cannon St., City,, E.C., and of all Nurserymen and Seedsmen throughout the kingdom. "It is much cheaper than mats as a covering."

MICROSCOPES.

JOSEPH AMADIO'S Improved Compound MICROSCOPE, 2*l.* 2*s.*; Students', 3*l.* 13*s.* 6*d.*

"Both these are from Amadio, of Throgmorton Street, and are excellent of their kind, the more expensive one especially."—*Household Words*, No. 345.

A large Assortment of Achromatic Microscopes.

Just published, 2d ed., an Illustrated Catalogue, with the names of 1500 Microscopic objects, free for 6 stamps.

TANNED GARDEN NETTING for Preserving Fruit Trees from Frost, Blight, Birds, &c., and as a Fence for Fowls, &c. One yard wide 1½*d.*, 2 yards 3*d.*, 3 yards 4½*d.*, and 4 yards 6*d.* per yard, in any quantity, may be had at C. WRIGHT'S, 376, Strand, W.C.

A liberal allowance to Nurserymen.

TANNED NETTING, for the Protection of Fruit Trees from Frost, Blight, and Birds; also, for the security of fresh sown seeds, at 1*d.* per square yard; 200 yards, 12*s.*; 500 yards, 25*s.*; Scrim Canvas, for wall fruit; Garden Mats.—At EDGINGTON & Co's., Rick Cloth, Tent, and Waterproof Cloth Manufacturers, 17, Smithfield Bars, City, E.C., and Old Kent Road, S.E.

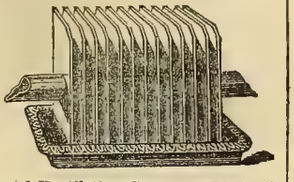
RIPE PEACHES, NECTARINES, AND PLUMS.—WORSTED NET to effectually protect ripe fruit from Wasps and Flies, and Protect Blossom in the spring, 2 yards wide, 7*d.* per square yard. Will last 10 years. Very much improved.—R. RICHARDSON, 99, Euston Road, London, N.W.

N.B. New Garden Net, 1½*d.* per yard; Tanned Fishing Nets, 6*s.* 3*d.* per 100 yards.

300 YARDS WIRE FENCING, 4 feet high, mesh 5 inches, for sale second hand. It weighs 4 lbs. per yard; price 1*s.* 4*d.* per yard. Is effectual against Sheep, Pigs, Dogs, and Cattle; also a quantity of Wrought-Iron Palisading, at 9*s.* per cwt. Galvanised Poultry Wire Net, 6*d.* per square yard; do. not galvanised, 4½*d.* per square yard. Agent for Baker's new Patent Diamond Mesh Wire Work without tying, for ornamental purposes, and as cheap as the Hexagon Mesh; some made of very thick wire in stock.—R. RICHARDSON, White Horse Factory, Bidboro' Street, Judd Street, W.C.; Office: 99, Euston Road, London, N.W.

IMPROVED HOT-WATER PIPE.

THE HORTICULTURIST will find herein an inexpensive instrument of new and very important powers. An atmosphere may be produced at will either perfectly dry, partially damp, or saturated with moisture. A space of 10 inches by 12 inches contains the power of 25 feet of 4-inch pipe and other numerous advantages.



The London Warming and Ventilating Company (Limited), 26, Great George Street, Westminster, S.W.



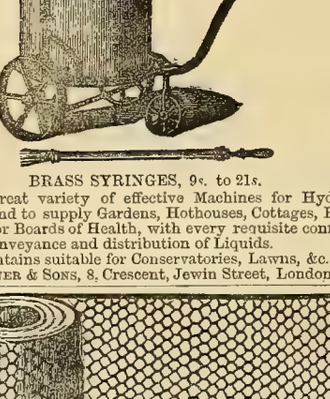
T. G. MESSENGER, HORTICULTURAL BUILDER and PATENT HOT-WATER APPARATUS and GARDEN ENGINE MANUFACTURER, Loughborough.

T. G. MESSENGER'S Divisionless Horticultural Erections, ventilated with screw mechanism by which the top or front lights are opened the entire length of the house momentarily, do not fail to give complete satisfaction (as numerous Testimonials can show), for the following reasons:—They are much lighter in appearance, more durable, much stronger, and cheaper than any other can possibly be.

Three years' trial has proved his PATENT BOILER to be superior to any hitherto invented; a great number of houses can be heated at once with this Boiler, with the facility of heating any separately.

Illustrated descriptions and prices of his Patent and greatly approved GARDEN ENGINES sent free upon application; also Plans, Estimates, and Testimonials for Building or Heating. See *Gardeners' Chronicle*, May 21.

WARNER'S SWING WATER-BARROW (HOLDING ABOUT 35 GALLONS). MOUNTED ON WHEELS 20 INCHES HIGH, will save much of the Gardener's time and abour. May be obtained of any Ironmonger for 3*l.* 3*s.*

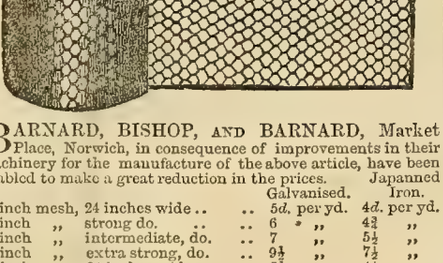


BRASS SYRINGES, 9*s.* to 21*s.*

Also a great variety of effective Machines for Hydraulic purposes, and to supply Gardens, Hothouses, Cottages, Farms, Mansions, or Boards of Health, with every requisite connected with the conveyance and distribution of Liquids.

Fountains suitable for Conservatories, Lawns, &c.

JOHN WARNER & SONS, 8, Crescent, Jewin Street, London, E.C.



BARNARD, BISHOP, AND BARNARD, Market Place, Norwich, in consequence of improvements in their machinery for the manufacture of the above article, have been enabled to make a great reduction in the prices.

		Galvanised.	Japanned Iron.
2-inch mesh,	24 inches wide	5*d.* per yd.	4*d.* per yd.
2-inch ,,	strong do.	6 ,,	4½ ,,
2-inch ,,	intermediate, do. ..	7 ,,	5½ ,,
2-inch ,,	extra strong, do. ..	9½ ,,	7½ ,,
1⅝-inch ,,	24 inches wide	5½ ,,	4½ ,,
1⅝-inch ,,	strong, do.	6½ ,,	5½ ,,
1⅝-inch ,,	intermediate, do. ..	7½ ,,	6 ,,
1⅝-inch ,,	extra strong, do. ..	10 ,,	8 ,,

All the above kinds can be made of any width (under 8 feet) at proportionate prices. If the upper half is of a coarser mesh than the lower, it will reduce the prices about one-fifth.

Strong Galvanised Poultry Netting, 8½*d.* per yard, 3 feet wide Galvanised Sparrow-proof Netting for Pheasantries, 2½*d.* per square foot. Delivered free of expense in London, Peterborough, Hull, or Newcastle. Manufacturers of Improved Strained Wire Cattle and Deer Fencing, Iron Hurdles, &c.

Illustrated Catalogues and Patterns forwarded by post.

GLASS PRESERVE JARS.

	Without Lids.	With Lids.
3 inches diameter	.. 0 4½*d.* ..	0 6½*d.* each
4 ,, ,,	.. 0 6 ..	0 9 ,,
5 ,, ,,	.. 0 8 ..	0 11 ,,
6 ,, ,,	.. 0 10 ..	1 2 ,,
7 ,, ,,	.. 1 0 ..	1 4 ,,
8 ,, ,,	.. 1 4 ..	1 8 ,,
9 ,, ,,	.. 1 8 ..	2 2 ,,
10 ,, ,,	.. 2 0 ..	2 8 ,,

Intermediate Sizes in proportion.

CUCUMBER GLASSES.

24 inches long	.. 2*s* 0*d.*	16 inches long	.. 1*s.* 4*d.*
22 ,,	.. 1 10	14 ,,	.. 1 2
20 ,,	.. 1 8	12 ,,	.. 1 0
18 ,,	.. 1 6	Made to any length.	

WASP TRAPS, 3*s.* 6*d.* per dozen.

AGENTS FOR

HARTLEY'S PATENT ROUGH PLATE GLASS.

PAINTS.

Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, &c.

JAMES PHILLIPS AND CO.,

180, Bishopsgate St. Without, London, E.C.

NO CONNECTION WITH ANY OTHER HOUSE IN TOWN.

HORTICULTURAL GLASS—JUNE TARIFF.

THOMAS MILLINGTON'S reduced Tariff of GLASS, &c.

6 by 4, 7 by 5, 8 by 6, 9 by 7 } 16 oz. to the foot, 11*s.* 6*d.*
6½ by 4½, 7½ by 5½, 8½ by 6½, 9½ by 7½ } per 100 feet.

In 100 boxes,—4ths quality, 12*s.* 6*d.*; 3ds do., 14*s.* 4*d.*

10 by 8, 12 by 9, 12½ by 10½, 14½ by 10½, 13 by 11
10½ by 8½, 12½ by 9½, 13 by 10, 15 by 10, 13½ by 11½
11 by 9, 13 by 9, 13½ by 10½, 12 by 11, 14 by 11
11½ by 9½, 12 by 10, 14 by 10, 12½ by 11½

20 by 12	per 100 feet	16 oz.	21 oz.
20 by 13	Common ..	16*s.* ..	24*s.*
20 by 14	Superior .	18*s.* ..	27*s.*
20 by 15			

All Boxes included.

Orchard House sizes as supplied to Mr. Rivers.

Hartley's improved Rough Plate Glass from ⅛ to ⅜ in thickness.

Coloured Glass in great variety, at 9*d.* and 1*s.* per foot.

Paints, Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, Lamp Glasses, &c.

87, Bishopsgate Street Without, E.C., same side as Eastern Counties Railway.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz SHEET GLASS of British Manufacture at prices varying from 2*d.* to 3*d.* per square foot for the usual sizes required, many thousands of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES, and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London, W.

See *Gardeners' Chronicle* first Saturday in each month.

GLAZIERS' DIAMONDS FOR CUTTING HORTICULTURAL and other GLASS, to be had of the Wholesale Manufacturer, JOHN EDWARDS, 20, Sharp's Alley, West Smithfield, London, E.C. Prices from 10*s.* to 27*s.* 6*d.*

DAVIS'S WIREWORK MANUFACTORY, 135, King's Road, Chelsea, S.W. (Established 40 years).—The nobility and gentry are respectfully informed that the Executors of the late Mr. JOHN DAVIS continue to carry on the above extensive works as heretofore, where every article of WIREWORK is manufactured in the very best manner; also every description of Wire and Iron Fences, Pheasantries, Aviaries, and Roseries on the most approved principles, fixed and erected by competent workmen in every part of the Kingdom. Every article requisite for Lawn, Conservatory, Drawing-room, and Garden supplied at the lowest prices possible. Orders attended to with punctuality and dispatch.

CAST-IRON GARDEN ORNAMENTS, viz.—ORNAMENTAL VASES, of various sizes, do. with pedestal, GARDEN CHAIRS and STOOLS, RUSTIC GARDEN SEATS and TABLES, both plain and bronzed, also GARDEN ROLLERS of all sizes.—Prices on application to J. JONES, Iron Merchant, 6, Bankside, London, S.E.

GARDEN POTS AND PANS, in quantities of not less than 20 casts, delivered to the London Stations at the following prices:—Nos. Thbs. 60, L60, 54, 48. 40, 32, 28, 24, 16, per cast, 2*s.* respectively. 12, 8*s.*; 8, 3*s.* 6*d.*; 6, 5*s.*; 4, 5*s.*; 3, 5*s.*; 2, 5*s.*; 1, 5*s.* On lesser quantities, 6*d.* per mile, for delivery to the Station, charged. The usual discount to the Trade. Square Propagating Pans, Kale and Plunging Pots, Strawberry and Border Tiles, &c., made to order.

J. & W. ADAMS, Kilns, Belle Isle, York Road, King's Cross, N.

PARKES' STEEL DIGGING FORKS.

BURGESS AND KEY, 95, Newgate St., E.C., London being the Wholesale and Retail Agents for these celebrated TOOLS have always a large Stock on hand from which their Customers may select what they may require.

ANTHONY'S PATENT AMERICAN CHURN.—The FIRST PRIZE was again awarded to this Churn in Competition with several others at the Chester Meeting of the Royal Agricultural Society; it has obtained the First Prize given by the Society at every Meeting since 1850.

Messrs. BURGESS & KEY, 95, Newgate Street, E.C., strongly recommend it as the most perfect Churn now in use. Full particulars sent on application.

IMMEDIATE ORDERS WILL PREVENT DISAPPOINTMENT.

"SIGMA'S" UNIVERSAL SEED PLANTERS (Dibbles), vastly improved since the Prize of the Royal Agricultural Society was awarded them. The "MULTUM IN PARVO," forming eight perfect implements, highly commended, see testimonials. The Manure Distributor carried off the Prize Medal in 1851, recently much improved, see *Gardeners' Chronicle*, July 30 and August 6th. "Simple, promising, and ingenious." The STEEL DRAW SHAVE HOE clears a row between Turnips at one sweep. Engravings sent.—C. POWELL, Hurstgreen, Sussex. All Patented.

PRIZE MEDAL, PARIS EXHIBITION 1855.

METCALFE, BINGLEY, AND CO.'S New Pattern and Penetrating Tooth Brushes, Penetrating unbleached Hair Brushes, Improved Flesh and Clothes Brushes, and genuine Smyrna Sponges; and every description of Brush, Comb, and Perfumery for the Toilet. The Tooth Brushes search thoroughly between the divisions of the Teeth and clean them most effectually—the hairs never come loose. M., B., and Co. are sole makers of the Oatmeal and Camphor and Orris Root Soaps—sold in Tablets (bearing their names and address) at 6*d.* each; of METCALFE'S celebrated Alkaline Tooth Powder, 2*s.* per box; and of the New Bouquets.—Sole Establishment, 130B and 131, Oxford St., 2d and 3d doors west from Holles St., London, W.

Printed by WILLIAM BRADBURY, of 13, Upper Woburn Place, and FREDERICK MULLETT EVANS, of No. 20, Queen's Road, West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard St, Precinct of Whitefriars, City of London, and published by them at the Office, No. 5, Upper Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—SATURDAY, August 20, 1859.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 35.—1859.] SATURDAY, AUGUST 27. {Price Fivepence. {Stamped Edition, 6*d*.

INDEX.

Australian medical plants .... 709 *c*
Battersea Park ..... 710 *c*
Beans, New Zealand running . 709 *c*
— Locust..... 712 *c*
Botanical excursion, Glasgow ..... 709 *a*
British Pomological Society.. 711 *a*
Climate of Scotland ..... 715 *c*
Crops, reports of ..... 716 *a*
Cucumbers, field ..... 707 *c*
Dictators, Dawes's ..... 714 *c*
Dublin, new ..... 710 *c*
Elm-in Champs Elysees..... 709 *a*
Entomological Society ..... 711 *a*
Fern, Inglismaldie ..... 716 *c*
Farming, Norfolk ..... 715 *b*
Farmers and gardeners, &c. .. 716 *b*
Gardens, Irish ..... 710 *a*
Grapes, diseased ..... 710 *a*
— and tartaric acid ..... 710 *b*
— Lowood Muscat and Golden Hamburgh.... 710 *b*
— remarks on..... 711 *b*
Grapes, Mr. Berrenger's ..... 712 *a*
Horse, the ..... 716 *b*
Hort. Society's new garden .. 708 *c*
— — floral committee.. 710 *a*
Locust Bean..... 712 *c*
Lucifer match ..... 714 *b*
Mildew, Swede..... 714 *a*
Morphology ..... 708 *b*
Nasturtium, Tom Thumb .... 710 *c*
Orchard houses..... 710 *a*
Oxfordshire Downs ..... 715 *a*
Plants, new ..... 708 *c*
— Australian medical..... 709 *c*
Poppy, monstrous ..... 708 *b*
Rifle, the..... 711 *b*
Scotland, climate of ..... 715 *c*
Swede mildew ..... 714 *a*
Trifolium incarnatum ..... 713 *c*
Tritoma Uvaria ..... 710 *c*
Tropæolum Lobbianum elegans 710 *b*
Walls, to trellis ..... 710 *c*
Watering, underground ..... 710 *c*
Water pipes, earthenware lined 710 *c*

ERRATUM.—In Messrs. Weeks' Advt. last week, for "Area of houses in feet," *read* "length of houses."

HORTICULTURAL SOCIETY OF LONDON.—The FLORAL COMMITTEE have this day made the following awards:—

FIRST-CLASS CERTIFICATE.

Verbena Dr. Sankey, from Mr. C. Edmonds, Great Ormsby.
Dahlia Flower of the Day, from Mr. Turner, Slough.
Dahlia (fancy) Apollo, from Mr. Turner.
Dahlia Mrs. Bailhasche, from Mr. Keynes, Salisbury.
Dahlia Mrs. Wellesley Pigott, from Mr. Keynes.

COMMENDED.

Dahlia Neville Keynes, from Mr. Keynes, Salisbury.
Dahlia George Grapes, from Mr. Turner, Slough.
Dahlia (fancy) Pluto, from Mr. Turner.

The next Meeting will be held on September 8, at 2 P.M. Subjects for examination must be delivered free by 1 P.M. All persons may exhibit.—S. St. Martin's Place, W.C., Aug. 27.

THE BRITISH POMOLOGICAL SOCIETY, St. James's Hall, 69—71, Regent Street, W.—The next Meeting will be held on THURSDAY, September 1, when the following premiums are offered for Fruit exhibited according to the Society's printed regulations:—

Two Guineas for the best Seedling Late STRAWBERRY.
One Guinea for the best bunch of GOLDEN HAMBURGH GRAPE.
Two Guineas and one Guinea for the best and second best collections of any kinds of FRUIT, comprising not less than two dishes, to be exhibited by the Growers.

The Meeting next following will be on THURSDAY, September 22. Lists of the premiums offered at the remaining Meetings of the year, with Rules, Forms, and other information, may be obtained on application to Mr. W. DAVIDSON, Secretary *pro tem.*, 2, Randolph Road, Maida Hill, London, W.

Private Gentlemen who desire to encourage the production of good Fruit, and Nurserymen, Practical Gardeners, and Fruit Growers generally, are respectfully invited by the Council to aid the Society by forwarding for examination such interesting Fruits as are in season, and by becoming Members.—Entrance fee, 10*s*.; subscription to Private Gentlemen, Nurserymen, and Fruiterers, 20*s*.; professional Gardeners, 10*s*.

STOKE NEWINGTON FLORICULTURAL SOCIETY'S DAHLIA, ASTER, HOLLYHOCK, AND MISCELLANEOUS EXHIBITION will be held in the Grounds of Mr. James Lewis, adjoining Abney Park, Stamford Hill, on TUESDAY, August 30. ARTHUR WORTLEY, Hon. Sec.

CRYSTAL PALACE.—FLOWER SHOW.—THE THIRD AND LAST GRAND EXHIBITION OF FRUITS AND FLOWERS this season will take place on WEDNESDAY and THURSDAY, Sept. 7 and 8. At this Exhibition separate Prizes will be given to Amateurs and Cottagers. Schedules may be had on application, and also for the Chrysanthemum Show which will be held in November.

By Order, GEORGE GROVE, Secretary.

CRYSTAL PALACE.—POULTRY SHOW.—The Summer Show of POULTRY, PIGEONS, and RABBITS will take place on ONDAY, TUESDAY, WEDNESDAY, and THURSDAY next, August 29, 30, 31, and September 1, in the North Wing, adjoining the Tropical Department.

The GREAT FOUNTAINS and entire series of Waterworks will be displayed on Monday, the first day of the Show. Admission each day, 1*s*.; children under 12, 6*d*.

HEREFORD HORTICULTURAL SOCIETY.—The Second Exhibition for this season will be held on TUESDAY, September 6, open to all Subscribers of not less than 5*s*.; in addition to other Prizes there will be awarded to Stove and Greenhouse Plants (nine): 1st prize, 5*l*.; 2d, 3*l*. Ornamental Plants (12): 1st, 3*l*.; 2d, 2*l*. Dahlias (selfs, 18): 1st, 3*l*.; 2d, 2*l*.; 3d, 1*l*. Ditto (fancy, nine): 1st, 2*l*.; 2d, 1*l*.; 3d, 10*s*. Collection of Fruit (six dishes): 1st, 2*l*.; 2d, 1*l*.; 3d, 10*s*. For Prize Lists, &c., apply to W. Smith, Florist, &c., Hereford. J. EDWARDS, Esq., F.H.S., Censor, WM PHILLIPS, Hon. Sec.

THE GRAND NATIONAL DAHLIA SHOW for 1859, at Aston Hall, Birmingham, September 20.

Upwards of ONE HUNDRED GUINEAS to be Awarded in PRIZES. Particulars to be had of

C. TURNER, Slough, or } Honorary
J. KEYNES, Salisbury, } Secretaries.

FLORAL AND HORTICULTURAL EXHIBITION at Wellingborough on THURSDAY, September 29, in connection with the annual Ploughing Matches and exhibition of Farming Stock of the Northamptonshire Agricultural Society. The Band of the Coldstream Guards will perform during the Exhibition. Special Trains and cheap fares on the lines of Railway running by Wellingborough. Premiums to the amount of about 100*l*. will be offered for open competition.

Separate classes for Cottagers, Gardeners, Amateurs, and Nurserymen. Schedules can be obtained of

Mr. T. S. CURTIS, } Honorary Secretaries.
Mr. N. P. SHARMAN, }

LEICESTER AND LEICESTERSHIRE FLORAL AND HORTICULTURAL SOCIETY.—The THIRD EXHIBITION of this Society will be held on the Leicestershire Race Course on WEDNESDAY, September 7, when a large number of PRIZES will be awarded for FRUITS and CUT FLOWERS. The Midland Railway will convey visitors for one fare to and fro from the principal stations.—For particulars, apply to the Hon. Sec., 15, Newark Street, Leicester.

GRAND HORTICULTURAL FETE AT LEEDS, SEPTEMBER 9 and 10, to be held in the New Town Hall, under the patronage of her Most Gracious Majesty the Queen, and his Royal Highness the Prince Consort. Liberal Prizes will be given for PLANTS, FLOWERS, &c. First Class Certificates will be given for SEEDLINGS. Schedules can be obtained from T. D. APPLEBY, the Secretary, Leeds.

DUTCH AND CAPE BULBS.

BUTLER AND M'CULLOCH'S DESCRIPTIVE AND PRICED CATALOGUE OF DUTCH AND CAPE BULBS will be published in a few days, and forwarded free and post paid on application. Practical Cultural directions for the use of Amateurs will be prefixed to each class of Bulbs.
Covent Garden Market, W.C.

DUTCH AND OTHER FLOWER ROOTS.

HOOPER AND CO.'S PRICED CATALOGUE OF DUTCH AND OTHER FLOWER ROOTS, with Hints on Cultivation, is now ready, and may be had free by post on application. The first consignment of Bulbs has just arrived in excellent condition, and of the usual first class quality.
Covent Garden Market, London, W.C.

SELECT BULB LIST.

J. DOBSON AND SONS' LIST of the above may be had free on application.—Woodlands Nursery, Isleworth, W.; and High Street, Hounslow, W.

HYACINTHS AND OTHER BULBS.

WM. CUTBUSH AND SON'S DESCRIPTIVE CATALOGUE of the above is published, and can be had post free on application.
Highgate Nurseries, London, N.

DUTCH FLOWER ROOTS.

CHARLES TURNER has received his first consignment of these valuable roots, comprising Hyacinths, Crocuses, Tulips, Narcissus, Anemones, Ranunculuses, Liliums, &c., in great variety. They are of first quality and in excellent condition. Early orders are respectfully solicited. A Descriptive Priced Catalogue is in publication, and will be forwarded post free on application.—The Royal Nurseries, Slough.

DUTCH FLOWER ROOTS.

HUGH LOW AND CO. have now ready for distribution their CATALOGUE for present season of HYACINTHS, TULIPS, NARCISSUS, and other Winter and Spring flowering Bulbs. All the varieties best adapted for Forcing will be found in the List, and in GLADIOLI the collection is very complete. The List will be sent pre-paid on application.—Clapton Nursery, London, N.E.

DUTCH AND OTHER BULBS.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their CATALOGUE of the above is now ready, and will be forwarded post free on application. Early orders are solicited, as their successful cultivation depends in a great measure on early planting.
Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

DUTCH FLOWER ROOTS.

CHARLES ALEXANDER, 30, West Register Street, Edinburgh, has received his first importation of the above in fine condition. The Bulbs are large and sound. Early orders solicited.
DESCRIPTIVE PRICED CATALOGUES on application.

SUPERB BALSAMS.

F. AND A. SMITH'S collection of the above are now in bloom, presenting a display of colour, form, and variety unequalled in this country.

Trains leave London Bridge to Lower Norwood (Crystal Palace Line) every hour, the Nursery being about ten minutes' walk from the station. Omnibuses from Fenchurch Street every hour.—Dulwich, Surrey, S.

GRAPE VINES FROM EYES.—All the best varieties of VINES, new and old, in strong plants, are now ready for sending out. They may be relied upon as true to name, the eyes being taken from Vines fruited on the premises. Prices and Lists on application. R. GLENDINNING.
Chiswick Nursery, London, W.

LARGE CAMELLIAS ON SALE.—About six fine trees, 8 to 10 feet, full of buds, and well adapted for the Conservatory—Double White corallina, imbricata, &c. Prices and kinds on application.—R. ERRINGTON, Oulton Park, Tarporley.

CAMELLIAS, fine sorts, with flower-buds, from 120*s*. to 240*s*. and upwards per 100.
LOUIS VAN HOUTTE'S Nursery, at Ghent.

CAMELLIAS.

LOUIS VAN HOUTTE, Ghent, Belgium, calls attention to his extensive LIST of CAMELLIAS (novelties and old ones). Select lists on application.

DIANTHUS SINENSIS HEDDEWIGII.
(VAN HOUTTE'S "Flore," XIII, page 11.)
Each Plant .. 1*s*. 6*d*. | Per dozen .. 14*s*. 6*d*.
LOUIS VAN HOUTTE, Ghent, Belgium.

DWARF GLADIOLUSES, extra for pot culture.—Extremely fine new kinds of the most delicate colours in all hues, and all striped flowers, are to be had from L. VAN HOUTTE'S Nursery, Ghent, Belgium, at the following rates (free to London):—50 sorts, 1*l*. 12*s*.; 25 ditto, 16*s*.; 12 ditto, 8*s*.

BEGONIA REX LEOPARDINA (VAN HOUTTE'S) will soon appear in VAN HOUTTE'S "Flora." Same size of leaves as B. Rex, but distinct silver white zone, and the whole margin marbled with large and small silver-white spots. Strong plants, 8*s*.—LOUIS VAN HOUTTE, Ghent, Belgium.

SUTTON'S AUTUMN CATALOGUE is now ready, and will be sent to their Customers gratis and post free on application.—Royal Berkshire Seed Establishment, Reading.

GRASS SEEDS FOR PRESENT SOWING.

SUTTON AND SONS have a good supply of fresh Seeds of all the best kinds of permanent GRASS SEEDS
Prices and other particulars will be forwarded on application.
Royal Berkshire Seed Establishment, Reading.

SUTTON'S IMPROVED ITALIAN RYE-GRASS SEED SHOULD NOW BE SOWN.

SUTTON & SONS, Seed Growers, Reading, have fine new Seed now ready. Quantity required per acre, 3 bushels. Price 7*s*. per bushel, or cheaper in large quantities, carriage free. Terms cash.

TRIFOLIUM INCARNATUM (ITALIAN CRIMSON CLOVER).—New Seed may now be obtained on application to SUTTON & SONS, Seed Growers, Reading. This should be sown upon the corn stubble. Quantity required per acre, 24 lbs.

DICKINSON'S ITALIAN RYE-GRASS SEED is now ready for delivery. Sold only by himself, and for present payment, 48*s*. per quarter, or 7*s*. per bushel.
New Park, Lymington, Hants.

LAWNS WITHOUT MOWING.—SPERGULA PILIFERA.

J. A. SUMMERS can supply well-rooted Plants (taken from the Lawn at Forest Hill), at 4*s*., 3*s*., 2*s*., and 1*s*. per dozen, according to size. A specimen, post free, 1*s*.
Howard Park Nursery, Perry Hill, Sydenham, S.E.

COTTAGER'S KALE (TRUE).—Just harvested, in first-rate condition, a beautiful quantity of the above. Price to the Trade on application.
CHARLES TURNER, the Royal Nurseries, Slough.

WILLIAM BURGESS, Willow Farm, Iden, by Rye, Sussex, offers to the Trade only, GREEN-TOP SCOTCH TURNIP, PURPLE-TOP SCOTCH, MARSHALL'S IMPROVED SKIRVING'S SWEDE, OLD PURPLE SWEDE (very fine), all saved from roots carefully selected, and just harvested, in good condition.

WANTED, in OCTOBER, THREE 5 FEET STANDARD PEACH TREES, viz., Noblesse, Royal George, and Bellegarde; also THREE NECTARINES, two Elruge, and one Violette Hâtive, suitable for a Peach House.—Apply, stating size, &c., to EDWARD BENNETT, Osberton Gardens, Worksop, Notts.

FRUIT TREES.—Intending purchasers are respectfully invited to inspect the extensive stock growing at the Nursery of the Subscribers. The quality is this season unusually good.—HUGH LOW & CO., Clapton Nursery, London, N.E.

TO BE SOLD, A BARGAIN, a very choice Collection of FOREIGN FERNS, containing upwards of 100 varieties, many of which are rare. The specimens are fine, and in remarkably good health.—For further particulars apply to Mr. DAVID BROWNE, 41, London Street, Norwich.

FERN CATALOGUE.

ROBERT SIM'S NEW DESCRIPTIVE AND PRICED CATALOGUE, No. 6 (62 pages) of his COLLECTION of BRITISH AND EXOTIC FERNS, can be had, post free, for 8 stamps. Gratis to all previous purchasers of Ferns.
Nursery, Foot's Cray, Kent, S.E.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY LIMITED supply every requisite for the Farm and the Garden.
Registered Offices, Union Road, Plymouth.

CINERARIAS.

F. AND A. SMITH are now sending out strong seedling plants from their unrivalled stock of the above at 4*s*. per dozen. Prices to the Trade on application.—Dulwich, Surrey, S.

DOBSON'S SPLENDID HYBRIDISED CALCEOLARIA SEED, unequalled for its fine quality, in sealed packets, 1*s*. 6*d*., 2*s*. 6*d*., 5*s*., and 7*s*. each is now being sent out by Messrs. DOBSON & SONS, Seedsmen, Isleworth, W.; and Hounslow, W.

OSCAR STRAWBERRY.

CHARLES TURNER can still supply strong plants, warranted to fruit next season, at 42*s*. per 100.
For full particulars of this fine early variety see previous Advertisements.—The Royal Nurseries, Slough.

STRAWBERRY PLANTS.—ELTON PINE and KEENS' SEEDLING at 2*s*., BRITISH QUEEN, ELEANOR, and ADMIRAL DUNDAS at 2*s*. 6*d*. per 100.
GEORGE CORNWELL, Barnet, N.

NEW STRAWBERRIES.

STEWART AND NEILSON have now ready to send out good plants of their three first class STRAWBERRIES,
PRINCE OF WALES, | ROYAL VICTORIA,
SIR COLIN CAMPBELL.—Each 10*s*. per 100.
Descriptions will be sent on application enclosing a postage stamp.—Liscard, Cheshire.

STRAWBERRY PLANTS AND CATALOGUE.—Plants of the pretty little Bush Alpine, both Red and White, without runners, suitable for edgings to walks, beds, &c., 10*s*. per 100 sets.
A DESCRIPTIVE CATALOGUE of upwards of 130 sorts is just published. To all who wish to purchase plants it will be sent by applying to the grower, WILLIAM JAS. NICHOLSON, Egglescliffe, Yarm, Yorkshire.

HAILSTORM ON WHITSUNDAY.

ISAAC BRETT, Vale Nursery, King's Road, Chelsea, S.W., who suffered considerable damage from the effects of the storm above named, begs to return his grateful thanks to the nobility and gentry who so kindly contributed to his appeal, through the kind intercession of his friend and neighbour, Mr. Pavy, who has handed him over an amount of subscriptions which will materially assist him towards repairing his serious loss.

VAN HOUTTE'S NEW PRICE LIST.

LOUIS VAN HOUTTE, NURSERYMAN & SEEDSMAN, Ghent, Belgium, begs to announce that his NEW PRICE LIST OF PLANTS is to be had on application (prepaid) at Mr. R. SILBERRAD'S office, 5, Harp Lane, Great Tower Street, London, E.C.

☞ A Steamer starts every fortnight from Ghent direct for London.

L. VAN HOUTTE delivers all goods carriage free to London; but he charges 5s. on account for freight, Custom-house expenses, &c.

FERNS.—See VAN HOUTTE'S List, Catalogue No. 77, pp. 38, 40, 99, 100, and 101.

SHORT EXTRACT FROM CATALOGUE.

Davallia acuta, 3s. to 20s.
Blechnum Patersoni, 5s. 6d.
Brainea insignis, strong, 4s. to 10s. 6d.
Angiopteris pruinosa, 4s. to 30s.
Polypodium vestitum, 5s.
Do. musæfolium, 2s 6d. to 5s.
Asplenium simulatum, 5s. to 7s. 6d.
Lindsæa cultrata, 7s. 6d. to 15s.
Pteris decurrens, 7s. 6d.
Selaginella Lyalli, 2s. 6d.
Gymnogramma Stetzleri, 25s. (Only a few are left of this most interesting hybrid).
Asplenium decussatum, 3s. 6d. to 7s. 6d.
Drynaria coronans, 2s. 6d. to 5s.

☞ The lot of 13 species, 3l. 10s.

LOUIS VAN HOUTTE, Nurseryman, Ghent, Belgium.

NEW HARDY RHODODENDRON—PRESIDENT VANDEN HECKE (VERVAENE).

LOUIS VAN HOUTTE, NURSERYMAN, Ghent, begs to call attention to his very fine hardy RHODODENDRONS; the foliage, fine shape, of rich rosy colour, very large black spot. One shoot, 12s.; grafts, two to three branches, 20s.; large bushy, with flower buds, 42s.

NEIGE and CERISE is an exceedingly fine Rhododendron, not quite hardy in Belgium; pure silvery white, with a dark Poppy-red margin, 12s. to 20s.

VAN HOUTTE'S CALCEOLARIAS, 4s. each sealed packet, to be had of Mr. R. SILBERRAD, 5, Harp Lane, London, E.C.

LOUIS VAN HOUTTE'S Nursery has been known for 20 years for the care he takes in the growth of CALCEOLARIAS.

The following letter, among others, arrived lately at Mr. R. SILBERRAD'S:—

"Greys Rectory, near Henley-on-Thames, August 6.

"Sir,—When you write again to Mr. Van Houtte, will you be so kind as to order me another packet of his 4s. Calceolaria Seed, and tell him that the last seed he sent me produced a set of flowers that all England could not exceed for size, variety, and beauty. There was not a single duplicate among them. He well deserves this compliment.—Yours obediently,

"Mr. Silberrad." "J. SMITH."

THE BEST OF ALL THE HARDY AZALEAS. WITH FULL FLOWERS.

AZALEA VAN HOUTTEI fl. pleno. See VAN HOUTTE'S "Flore," No. 139 (Volume XIII page 13)—"Rosy red and golden yellow." Plants, with 4 to 6 branches, 7s. 6d.

AZALEA DIAMOND (VAN HOUTTE).—pure white, with a carmine spot. Grafts, 6 to 10 branches, 7s. 6d.

HARDY GHENT AZALEAS, with flower buds, 12 varieties, 12s. to 15s.; 25 varieties, 24s. to 30s.

LOUIS VAN HOUTTE'S Nursery, Ghent, Belgium.

INDIAN AZALEAS, Set with flower-buds.

No. 1. ALEXANDRE II. (VAN HOUTTE), 7s. 6d.
,, 2. COMTE DE HAINAUT (VERVAENE), 21s.
,, 3. PETUNIÆFLORA (VERVAENE), 2s. 6d. to 4s.
,, 4. PRESIDENT IS. CLAEYS (V. D. CRUYSSE), 7s. 6d. to 10s. 6d.
,, 5. ROI LEOPOLD (V. D. CRUYSSE), 2s. 6d.

No. 1, perfect form, petals all curled at the circumference, pure white, beautifully striped, very good substance.

No. 2, quite the flower of a good spotted Rhododendron, velvet rose, fine leaves.

No. 3, fine shape, shaded rose.

No. 4, just as Iveryana albo-cincta, but with salmon ground.

No. 5, very fine salmon, rosy flower, model for shape.

☞ All VAN HOUTTE'S advertised Azaleas may be considered to be first-rate.—LOUIS VAN HOUTTE, Ghent, Belgium.

DUTCH BULBS.

LOUIS VAN HOUTTE, NURSERYMAN and SEEDSMAN, Ghent, Belgium, begs to call attention to his NEW PRICED LIST. To be had at his Agent's office, Mr. R. SILBERRAD, 5, Harp Lane, London.

Extract from L. V. H.'s PRICE LIST:—

HAARLEM HYACINTHS.—The department of the Hyacinth culture in this Establishment is directed by Mr. Jacob Vanden Berg from Heemstede, Haarlem. This practical Gardener offers a special guarantee of knowledge acquired by his 30 years' experience in this part of gardening. M. Vanden Berg visits every year the bulb growers in Holland, looks out and buys the bulbs while just in flowering state; he afterwards directs their dispanting and brings his acquisitions to Belgium. An immense stock of Hyacinths enables this year the establishment to meet with almost any order.

A trial would convince my correspondents that, by the excellence of varieties, fine condition of bulbs and respective moderation of prices, L. V. H. offers to his numerous customers advantages which even but few firms can offer.

L. V. H. invites all connoisseurs to favour his establishment by a visit at the time of flowering of the forced Hyacinths, as well as of those in the open ground, about the 15th of April.

The Hyacinths and generally all sorts of bulbs are ready for sending out from the 1st August until the 15th November.

VAN HOUTTE'S ROSE NURSERY, at Ghent, Belgium.

Extract from his Price List.—"In this Establishment THE ROSE forms a distinct department, under the special direction of a foreman perfectly conversant with that plant, and whose special knowledge and incessant researches are exclusively devoted to this section, giving a sure guarantee to purchasers, as well for the identity of the name, as the care and attention with which their orders will be attended to. This Establishment being in possession of one of the most important collections of Roses existing in Europe, has a NURSERY OF MORE THAN 2000 SORTS from which all the synonyms and the least attractive flowers are excluded each year."

N.B. The very best HYBRID PERPETUALS are marked with a G (guaranteed).

HYBRID PERPETUAL ROSES.—Strong Plants.

2 varieties, own roots			5s. 0d.	12 vars., half standards			8s. 0d.
25	,,	,,	,, .. 9	0	25	,,	,, ,, .. 14	6
12 varieties, dwarfs ..			5	0	50	,,	,, ,, .. 28	0
25	,,	,,	.. 9	0	12 vars., standards ..		14	6
50	,,	,,	.. 16	0	25	,,	,, ,, .. 24	0
100	,,	,,	.. 32	0				

The new HYBRID PERPETUAL, ISOLINE (VAN HOUTTE), extremely fine shape, quite full, quite constant, purplish red, shaded amaranth, first rate, at 8s. (half standard, dwarf, or own root). The stock is very limited.

☞ The leading sorts of the HYBRID PERPETUALS can be furnished per dozen or per hundred.

LOUIS VAN HOUTTE, Ghent, Belgium.

CALCEOLARIA, CINERARIA,

AND

PRIMULA SINENSIS FIMBRIATA,

Of first quality, in seed packets, 2s. 6d. each.

SPERGULA PILIFERA,

The admirable substitute for Grass in forming Lawns, &c., REQUIRING NO MOWING. Seed packets, 6d., 2s. 6d., & 5s.

E. G. HENDERSON & SON, Wellington Nursery, St. John's Wood, London, N.W.

CINERARIA, HERBACEOUS CALCEOLARIA, AND HALF SHRUBBY DITTO SEED.—These have been saved from Turner's most beautiful varieties; in 1s. and 2s. 6d. packets. Primula and Hollyhock, from the newest and handsomest varieties, 1s. per packet. Agents for F. & A. Smith's splendid Cineraria, in 1s. 6d., 2s. 6d., and 5s. packets; also agents for Dobson & Son's splendid Calceolaria, in 1s. 6d., 2s. 6d., 3s. 6d., & 5s. packets.—Catalogues of the newest Flower Seeds, and newest Dutch and Cape Bulbs, sent post-paid.—BUTLER & MCCULLOCH, Seedsmen, Covent Garden Market, W.C.

CRAIG'S IMPROVED PROLIFIC EARLY CUCUMBER should be grown wherever a certain supply of first-rate Cucumbers are required either in winter or summer, for her Majesty's table or for the Million Average length 14 inches. For description see the *Gardeners' Chronicle* for July 30.

New seed now ready and sent free for 1s. 6d. per packet.

JAMES CRAIG, Hope Nursery, Lawrence Street, York.

ONOPORDUM ACANTHIUM; OR COTTON THISTLE.—Amongst Ornamental Plants this is one of the very best; grows 6 to 8 feet high; leaves 2 to 3 feet by 1, covered with fine white Cotton. Single specimens, admirably adapted for Lawns or any open compartment, particularly recommended; perfectly hardy. A packet of Seed, with instructions, post free for 12 postage stamps.

HARDY & SONS, Seed Growers, Maldon, Essex.

CROPS FOR EARLY SPRING FEED.

MESSRS. RAYNBIRD AND HARVEY are now supplying fine new WINTER TARES, WINTER BARLEY, WINTER OATS, fine new ITALIAN RYE-GRASS, and new TRIFOLIUM, the best crops for spring feed.

GIANT RYE very early and productive, and the new RACER TARE, a much earlier variety than the common sort. Samples and prices on application.

Address RAYNBIRD & HARVEY, Basingstoke, or 89, Seed Market, Mark Lane, London, E.C.

SEED WHEAT FROM THE CHALK.—Selected samples of CHIDHAM, WHITE TRUMP, ROUGH CHAFF, HUNTER'S WHITE, RED-CHAFF WHITE, GRACE'S WHITE, TALAVERA, RED BROWICK, RED NURSERY, GOLDEN DROP, and all the best kinds of Wheat, supplied by RAYNBIRD & HARVEY, of Basingstoke, and 89, Seed Market, Mark Lane, London, E.C. Samples and prices on application.

EARLY SHEEP FEED.

SUTTON'S IMPROVED ITALIAN RYE-GRASS has proved the best kind for general cultivation, being the most productive and hardy, growing freely in all soils.

From JOHN BALDWIN, Esq., *Luddington, April* 11, 1859.

"It is certainly delightful to stroll about and witness the sheep up to their knees in your beautiful Italian Rye-grass."

From FREDERICK F. HALLETT, Esq., *the Manor House, Brighton, March* 15, 1858.

"I mowed your Italian Rye-grass at Christmas, 1856, within three months after sowing; again April 12, 1857; three times since, and am mowing it again now (March 15). The cut on April 12 was 4 feet high, and a perfect mass of Grass."

Messrs. SUTTON have some seed of this sort now on sale; also new TRIFOLIUM INCARNATUM. Sow in August and September. Quantities to be sown per acre, 3 bushels.

Priced Lists post free.—Address SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

CUTHILL'S STRAWBERRY PLANTS will be sent out on and after August 15.

CUTHILL'S EARLY BLACK PRINCE, 5s.; selected, 7s. 6d. per 100.

CUTHILL'S PRINCESS ROYAL OF ENGLAND.—Good size, fine colour, Pine-apple flavour, great bearer, very hardy, good forcer. Per 100, 7s. 6d.; selected, 10s.

CUTHILL'S PRINCE OF WALES.—Good size, rich colour, cone shape, tremendous bearer, first rate for table and preserving. It is earlier and later than Elton on account of its numerous trusses, 7s. 6d. per 100; selected, 10s.

Dr. Lindley told J. C. that he never could depend upon having a Strawberry until he had his breed.

From Charles Hillhouse, Esq.—"Your 100 baskets of Strawberries have given great satisfaction.—June 30."

Best Mushroom Spawn.

CUTHILL'S Pamphlet on the Potato, with 20 more Articles, on the Strawberry, Asparagus, Sea Kale, &c., 2s.

CUTHILL on Market Gardening round London, &c., 1s. 6d.

CUTHILL on the Cultivation of the Mushroom, Killing of Woodlice, &c., 1s.

CUTHILL on the better Cultivation of the Vine, 1s.

Vegetable Meeting Paper gratis.

Post-Office Orders to be made payable to JAMES CUTHILL, Camberwell, London, S.

GENERAL HAVELOCK STRAWBERRY now ready for sending out.—20,000 plants of the above superb Strawberry, which was sent out for the first time last season.

EDWARD TILEY can with confidence recommend this variety as being the hardiest of all known kinds; it ripens as early as the Black Prince, the fruit is as large as Keens' Seedling, very firm and red throughout, first-rate flavour and very heavy cropper, and will colour well in the most unfavourable weather. Fruit of this variety will realise more than double the value of any other Strawberry in cultivation, as it comes in a fortnight earlier than Alice Maud, Keens' Seedling, Prince of Wales, or any of the larger sorts, which is a great advantage to parties growing for sale or requiring very early fruit. 20 lbs. of it grown last season realised a greater value than 50 lbs. of any other in consequence of its earliness and growing in less than half the quantity of ground. This is certainly the most superb Strawberry in cultivation. Plants, 10s. per 100: 6s. for 50; 4s. for 25. Postage free. The best of the older varieties can also be supplied at the usual low prices.

LORD KENYON'S CUCUMBER (true), the best winter variety in cultivation, 1s. per packet.

BATH COSS LETTUCE for winter sowing, 1s. per packet.

HOLLYHOCK SEED, saved from all the choicest and most distinct named varieties, 1s. per packet.

A remittance must accompany all orders either by cash or 1d. postage stamps.

EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Church-yard, Bath.

NEW HARDY GHENT RHODODENDRON, "JEAN VERSCHAFFELT."

This superb Rhododendron, that was so much admired by all who saw it in flower last year, is to be sent out before the 15th of October next. Price 20, 30, and 50 francs per plant. Each Subscriber will receive post free a coloured plate of said Rhododendron. All orders to be addressed direct to

JEAN VERSCHAFFELT, Nurseryman, Ghent, Belgium.

GRIFFIN'S ALMA LETTUCE.

J. GRIFFIN feels great pleasure in again offering this fine variety, which he can confidently recommend as the most useful sort in cultivation. In addition to its being very hardy, it is an excellent summer Lettuce, growing to an immense size, and not requiring to be tied up. Many who have tried it state that it stands the hot dry weather better than any other variety. In sealed packets, 1s. and 2s. 6d. each. Price to the trade on application.

Weston Road, and 2, New Bond Street, Bath.

BEGONIA QUEEN OF ENGLAND.

WILLIAM BARNES has much pleasure in stating that he is now prepared to send out plants of this most beautiful Begonia, it being a hybrid between B. splendida and B. rex, partaking of the former in the splendid colour of its foot-stalks and under side of its leaves, with the markings of the latter upon the top of the leaf, but larger and more distinct in its colourings, having a belt round each leaf, finely dotted over the green part with white spots. It is of fine vigorous growth, and expands its leaves more perfectly than either of its parents. It has been exhibited at the Crystal Palace and Royal Botanic Flower Shows this season, and obtained a Prize at each place, where it was pronounced by the most competent judges to be one of the most beautiful and distinct varieties they had seen. Fine strong plants at 10s. 6d. each. The usual discount to the trade.

Camden Nursery, Camberwell, S.

THE HEIRS of the late MR. BERNARD SAUNDERS, NURSERYMAN, &c., Jersey, respectfully request that all CLAIMS against deceased's estate may be sent in; and they also solicit the early settlement of all accounts due to the estate.—Cæsarean Nurseries, Jersey, Aug. 27.

LANDSCAPE GARDENING AND GARDEN ARCHITECTURE.

MR. DAVIDSON, 2, Randolph Road, Maida Hill, London, W., continues to prepare Designs and Working Drawings, and direct the execution of all Park and Garden formations and improvements. His past experience enables him to give most satisfactory references in almost every part of the kingdom.

HORTICULTURAL VALUATIONS

MR. ALFRED CHANDLER (of the late firm of Chandler & Sons, Vauxhall), begs to inform his friends that he is at liberty to undertake the valuation of Collections of Plants, Nursery Stock, Horticultural Buildings, &c.

Mr. A. C. is also open to engagements as Censor at Horticultural Exhibitions, in which capacity he has had long and extensive experience.—28, Priory Road, Wandsworth Road, S.

GENUINE TOBACCO PAPER FOR FUMIGATING.

H. APPLEBY (Foreman to Messrs. Ivery & Son, Nurseryman, Dorking, Surrey), supplies the above in 4-lb. packets at 1s. 3d. per lb. A liberal discount allowed to to the Trade. Testimonials too numerous for insertion, but may be had on application.

SHEET IRON POTS FOR FUMIGATING, 3s. 6d. each.

N.B. All orders to be accompanied with a Post-office Order payable to HENRY APPLEBY, Dorking, Surrey.

RED SPIDER, THRIPS, SCALE, MEALY BUG, AMERICAN BLIGHT, ANTS, &c., prevented and got rid of by the PATENT GISHURST COMPOUND, which should also be applied when dressing Fruit Trees in autumn and winter. Price 1s. 6d. and 6s. per box, exclusive of carriage, with directions for use, and testimonials from the most eminent professional and amateur gardeners in the country. Where the consumption is not large the small-sized boxes are recommended.

Nearly 100 of the principal Nurserymen and Seedsmen in England, Scotland, and Ireland have taken in their supplies, most of the Nurserymen in the first instance for their own use, and are prepared to sell single boxes. A list of their names is occasionally advertised in the *Gardeners' Chronicle*, "Cottage Gardener," &c.

Extract from Leading Article in Gardeners' Chronicle, April 9, 1859.

"That it really kills red spider, aphides, mealy bug, thrips, and scale, it is impossible to doubt, in the face of reports of practical men, among whom we may mention Mr. D. Judd, of Althorp Gardens." Then follows a caution against the use of a too strong solution.

A new List of Testimonials stating the strength of solution and mode of application in the different cases has been printed and is now issued with the boxes.

Nurserymen and Seedsmen supplied by PRICE'S Patent Candle Company (Limited), Belmont, Vauxhall, London, S.

KEATING'S PERSIAN INSECT DESTROYING POWDER.

POULTRY, DOGS, AND PLANTS are effectually freed from Fleas, and all other Vermin with which they are infested, by the above Powder, which is quite harmless to animal life. The Farmer, the Gardener, or the Sportsman, will therefore find it invaluable. Bugs, Cockroaches, Beetles, Moths in Furs, and every other species of Insect are also instantly destroyed. In packets post free, for 14, or treble size for 36 postage stamps, by THOMAS KEATING, Chemist, 79, St. Paul's Churchyard, London, E.C. Take notice each genuine packet bears the above name and address. See "THE FIELD," Oct. 2d and 9th, pp 263, 283, and 294.

GARDEN POTS AND PANS, in quantities of not less than 20 casts, delivered to the London Stations at the following prices:—Nos. Thbs. 60, 160, 54, 48, 40, 32, 28, 24, 16, per cast, 2s. respectively. 12, 3s.; 8, 3s. 6d.; 6, 5s.; 4, 5s.; 3, 5s.; 2, 5s.; 1, 5s. On lesser quantities, 6d. per mile, for delivery to the Station, charged. The usual discount to the Trade. Square Propagating Pans, Kale and Plunging Pots, Strawberry and Border Tiles, &c., made to order.

J. & W. ADAMS, Kilns, Belle Isle, York Road, King's Cross, N.

SELAGINELLA RUBRICAULIS (New).

ROBERT SIM is now prepared to supply, at 10*s.* 6*d.* each, very nice plants of this distinct and very pretty novelty, of which he possesses the entire stock. Its stems are coral red, its leaves small, and of a shining variable green. In habit it resembles some elegant little Thuja Libocedrus or Abies. It will form a very compact and handsome smallish specimen for exhibition.—Nursery, Foot's Cray, S.E.

BUCKLAND SWEETWATER GRAPE.

Report of Pomological Meeting, August 4, 1859, copied from the "Cottage Gardener," August 9.

MESSRS. IVERY, of Dorking, produced a noble bunch of their BUCKLAND SWEETWATER GRAPE, weighing certainly not less than 2 lbs., broadly shouldered, and remarkably well set. The berries were roundish, inclining to oval, and were just beginning to assume their amber tinge. They were very richly flavoured and vinous. Altogether this variety has stamped itself as one of particular excellence, and a valuable addition to the collection of White Grapes, which ripen perfectly in an ordinary Vinery.—Dorking, August 27.

TO THE TRADE.—The Subscriber, who has ample facility, is desirous of contracting to supply any given quantity of SCARLET GERANIUMS or other BEDDING-OUT PLANTS to be delivered as per arrangement in the spring of 1860.—W. C. Watson, East Barnet, N.

TO THE TRADE.—A fine healthy Stock of GENTIANELLA, 10*s.* per 100; ALPINE AURICULAS, 10*s.* per 100.

J. Smith, Sen., Tansley Nursery, Matlock, Derbyshire.

Unknown correspondents will please to enclose a reference, to save delay in the execution of their orders.

TO THE TRADE.

THOMAS JACKSON and SON solicit an inspection of their Stock generally, and particularly their AZALEAS, ERICAS, EPACRIS, and POT PLANTS, which are this season they believe unequalled in their fine healthy condition. Good flowering plants of Azaleas, Ericas, and Epacris, 75*s.* per 100. T. J. & Son possess many large specimens of Stove and Greenhouse Plants, from 1 to 5 feet in diameter, suited for exhibition, prices according to size and kind. Berberis Beali, B. japonica, and Eugenia Ugni, good plants in 3-inch pots, 60*s.* per 100.—Nurseries, Kingston, S.W.

TO THE TRADE.

S. PONSFORD would call the attention of all extensive planters to his stock of EVERGREEN and DECIDUOUS SHRUBS, particularly in Common Laurel, Aucuba, Arbutus, Evergreen Oak, Striped Holly, &c. Also, Standard Apples and Mulberries (these very fine), Pears, Plums, &c. Dwarf-trained Peaches, Nectarines, &c. A large stock of Red, White, and Black Currants, Gooseberries, &c. Fine Standard and Dwarf Roses, Limes in large quantities of all sizes.—Loughborough Park Nurseries, Brixton, Surrey, S.

GERANIUMS, HERBACEOUS PLANTS, ETC.

MESSRS. PARKER and WILLIAMS beg to inform their friends and patrons that their new PRICED and DESCRIPTIVE CATALOGUE of the above, to which are added Supplemental Lists of Stove, Greenhouse, and Hardy Plants, Fruit Trees, &c. (which include all the best new plants of the season), is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

HUGH LOW and CO. have now ready for distribution the PRICED CATALOGUE for present season of their extensive collection of PLANTS, TREES, &c. It extends to 76 pages, and contains Stove, Greenhouse, Orchidaceous, Hardy, Herbaceous, and New and Rare Plants; Camellias, Azaleas, Ferns (of this interesting tribe the collection is very complete), Conifers, Rhododendrons, Ericas, Fruit Trees, Florists' Flowers, and Bedding Plants of all kinds.

The Catalogue will be sent prepaid on application.

Clapton Nursery, London, N.E.

ARAUCARIA IMBRICATA.

YOUELL and Co. beg to inform the Trade they have to offer a fine and healthy stock of the above in 1-year-old plants.

GLADIOLUS BRENCHLEYENSIS.—An extensive stock of large flowering Bulbs of this magnificent Gladiolus, the colour of which is vermilion scarlet, the best and brightest variety known. Prices of the above on application.

Royal Nursery, Great Yarmouth.

TRIFOLIUM INCARNATUM, 5*d.* to 6*d.* per lb.; with hints on its successful cultivation, showing how 3 tons per acre of the most nutritive hay may be secured, the advantages of sowing it where broad Clover is thin, and its superiority to Tares as green food.

PAGE and TOOGOOD having secured a large breadth of prime quality, offer it at the above low rate for cash.

New Turnip Seed, per lb...	0*s.* 6*d.*	Italian Rye-grass, per bush., 5*s.* to	7*s.* 0*d.*
New Rape, do... ..	0 4	Mustard, per lb., 4*d.* to	0 5

Calceolaria and Cineraria, in packets of 2*s.* 6*d.* and 1*s.* each, saved from one of the finest collections in Europe.

Seeds for exportation to all parts of the world.

Page & Toogood, Seed Growers and Merchants, Oxford Street; and Above Bar, Southampton.

NEW PANSIES.

DICKSONS and CO. will be prepared to offer the following NEW PANSIES on October 1, viz.:—

	s.	*d.*
SERAPH.—White ground, with rich deep purple belt and top petals; a decided improvement on the Countess of Rosslyn	5	0
LAVINIA.—White and light purple, a large bold flower, fine form, and great substance	5	0
CONQUEROR.—Gold and rich deep chocolate, large and fine form; a first-class show flower	5	0
SIRIUS.—Yellow and maroon, medium size, constant, and fine quality	5	0
KING of PURPLES.—A rich dark self. This will prove one of the finest show flowers yet out	5	0
GARIBALDI.—A dark self, exquisite form and texture ..	5	0

The usual discount to the Trade.—Edinburgh, August 27.

JEAN VERSCHAFFELT, Nurseryman, Ghent, Belgium, begs respectfully to announce that he has a fine stock of the undermentioned healthy well grown Plants, which he offers at the following prices:—

CAMELLIAS, with flower-buds (including the best leading kinds) .. .. .. per 100 £5 0 0

Do. do. .. .. ,, £6 0 0

Do. do. stronger Plants, 2*s.*, 3*s.*, 4*s.*, & 5*s.* each and upwards.

AZALEA INDICA, with flower-buds (including the best leading kinds), at from 1*s.* to 4*s.* and 5*s.* each and upwards.

AZALEA INDICA, his seven new Seedling varieties, including three double-flowering ones at 3*l.* the set.

ARUNDO DONAX VERSICOLOR; fine grown plants at from 3*s.* to 5*s.* each.

ERYTHRINA CRISTA-GALLI; strong plants at 1*s.*

50 sorts of GLADIOLI GANDAVENSIS, from 1*s.* to 2*s.* each.

DAPHNE DAUPHIN, 1*s.* | DAPHNE CNEORUM MAX.. 1*s.*

LILIUM LANCIFOLIUM RUBRUM, strong bulbs, p. 100, £4.

Do. do. ALBUM ,, £3.

Do. do. ATROSANGUINEUM MACULATUM ,, £2.

Advertiser invites all persons to send their orders directly to Jean Verschaffelt, Nurseryman, Ghent, Belgium.

JAMES CARTER and CO., OF 238, HIGH HOLBORN, W.C., beg leave to inform their Customers that on and after the 1st of September next, their present Establishment will be enlarged by the addition of the adjoining House, "No. 237," and their staff of Assistants will be materially increased, so that all Orders with which they may in future be favoured will be executed with immediate despatch.—238, High Holborn, London, W.C.

CARTER'S CHAMPION CUCUMBER surpasses Sion House and Lord Kenyon's Favourite for winter and early spring use. Smooth, dark green, straight, and prolific; average length, 1 foot. Price per packet, 1*s.*

J. C. & Co. do not hold themselves responsible for the genuineness of the above unless obtained direct from

238, High Holborn, London, W.C.

CALCEOLARIA, 1*s.*, 2*s.* 6*d.*, 5*s.*
CINERARIA, 1*s.*, 2*s.* 6*d.*, 5*s.*
PRIMULA SINENSIS FIMBRIATA, 1*s.*, 2*s* 6*d.*, 5*s.*
} All the same quality.

JAMES CARTER and CO. beg leave to offer Seeds of the above of *this year's harvesting*, saved from several unrivalled collections, and they can with confidence recommend them as being of first-rate quality, both for form, colour, and variety.—James Carter & Co., Seedsmen, 238, High Holborn, London, W.C.

J. CARTER and CO. beg leave to state that their TWENTY-FOURTH ANNUAL CATALOGUE OF DUTCH and CAPE BULBS will be published on September 1, when it will be forwarded gratis and post free on application.

238, High Holborn, London, W.C.

J. CARTER and CO. are now in receipt of their First Consignment of HYACINTHS, CROCUS, TULIPS, and other DUTCH BULBS, all of which are very fine and in good condition.

238, High Holborn, London, W.C.

DUTCH FLOWER ROOTS.

PETER LAWSON and SON, The Queen's Seedsmen, &c., respectfully announce the arrival of a fine Stock of DUTCH FLOWER ROOTS, and they are now prepared to execute orders for the same.

27, Great George Street, Westminster, S.W.

NEW SEEDS.

TRIFOLIUM INCARNATUM
ITALIAN RYE-GRASS
NATURAL GRASS SEEDS for PERMANENT PASTURE LAWNS, &c.

PETER LAWSON and SON, the Queen's Seedsmen, &c., are prepared to supply all kinds of SEEDS for AUTUMN SOWING of the best quality.

27, Great George Street, Westminster, S.W.

BUSBY'S STOCKWOOD GOLDEN HAMBURGH GRAPE.

JAMES VEITCH, Jun., begs to intimate that as before announced he offers a PRIZE OF FIVE GUINEAS for the THREE BEST BUNCHES of the above Grape to be exhibited at the Crystal Palace Show, September 7 and 8.

Royal Exotic Nursery, Chelsea, S.W.—August 27.

DUTCH FLOWER ROOTS.

JAMES VEITCH, Jun., Royal Exotic Nursery, Chelsea, S.W., begs to announce that he has received his annual supply of BULBOUS ROOTS from Holland, and is pleased to say that they are particularly fine and in excellent condition. Catalogues are now ready and will be forwarded on application.

J. V., Jun., desires to impress upon those who patronise him the great advantage of giving him their orders early, as the successful cultivation of Bulbs depends in a great measure upon their being planted early in the season.

SPLENDID NEW VARIEGATED FERN,
PTERIS ARGYRÆA (Moore).

JAMES VEITCH and SON have peculiar satisfaction in calling attention to the above-named most striking novelty, which is undoubtedly one of the greatest acquisitions of recent introduction to our now justly popular collections of Ferns.

It is of *noble aspect* and free growth, perfectly distinct and novel in its character, the pinnæ on every frond as well as their branches having a broad central stripe of glistening silver, which, in contrast with the bright green, produces a most charming effect. It may justly be called

THE VARIEGATED FERN.

It was exhibited at the Royal Botanic Garden on July 6, and before the Horticultural Society's newly appointed Floral Committee on July 7, and in both cases received the highest Prizes given to such novelties, and was universally admired.

Established Plants, 31*s.* 6*d.* each.

The usual allowance to the Trade.

Royal Exotic Nurseries, Exeter and Chelsea.—August 27.

Royal Berkshire Seed Establishment.

SUTTON and SONS have just received a very unique Collection of HYACINTHS, ANEMONES, JONQUILS, CROCUSES, and numerous other Bulbous Flower Roots, direct from one of the most celebrated Florists in Haarlem. Prices very moderate. Lists gratis and post free.

THE ORIGINAL STOKE NEWINGTON FLORICULTURAL SOCIETY.—The DAHLIA, ASTER, HOLLYHOCK, and MISCELLANEOUS EXHIBITION, open to all England, will be held in the Floral Hall, Hare and Hounds Tavern, Stoke Newington Road, N., on TUESDAY, August 30, when Prizes will be awarded to two-thirds of the Exhibitors, including a Five Guinea Silver Cup. Extra Prizes and Certificates will be given for Seedling Dahlias.

Treasurer, Mr. Hurrell; Chairman, Mr. J. H. Bird, F.H.S., Secretary, Mr. J. Nicholls, sen., 7, Myrtle Street, Dalston, N.E.

Further particulars can be had of the Secretary, or of Mr. Allen, at the above Tavern.

The Exhibition will Open to the Public at 1 o'clock. Admission 1 to 4 o'clock, 1*s.*; after 4, 6*d.* Omnibuses from the Elephant and Castle, S., and Flower Pot, Bishopsgate Street, E.C., every five minutes to Kingsland Gate, N.E., being within five minutes' walk of the Society's House, Fare 2*d.*

TOWCESTER FLORAL AND HORTICULTURAL SOCIETY.—*President:* The Earl of Pomfret.

The ANNUAL EXHIBITION of FLOWERS, PLANTS, FRUITS, & VEGETABLES, will take place in the Grounds of T. W. Gurney, Esq., Towcester, on THURSDAY, Sept. 8, under the patronage of—

The Duke of Gratton,	Sir Charles Knightley, Bart.
The Earl of Euston,	Rainald Knightley, Esq., M.P.
The Earl of Pomfret,	Colonel Cartwright, M.P.
Lord Southampton,	&c. &c. &c.

The Exhibition will be on a larger scale than that of last year, 374 Prizes being offered for competition open to all England. There will be distinct Classes for Nurserymen, Gardeners, Amateurs, Under Gardeners and Cottagers. There will also be a Class for Agricultural Roots.

The Committee wish to direct attention to the following Sweepstakes, the Premiums for which have been increased since the Schedule was printed. The Sweepstakes are open to all classes upon payment of the entrance fee before August 31.

	Entrance Fee.	Premium added.
	s. *d.*	£ *s.* *d.*
For the best Collection of 50 Roses, in varieties, 3 trusses of each as gathered	10 0	5 0 0
For the best Collection of 36 Dahlias, in varieties	10 0	4 0 0
For the best Collection of 8 Fruit Trees, grown in pots or boxes, in fruit ..	10 0	4 0 0
For the best Collection of 12 Stove or Greenhouse Plants, Lycopodiums, or Ferns	10 0	5 0 0

The Full Band of her Majesty's 2d Life Guards will perform during the Exhibition.

All Entries must be made in writing to the Secretary on or before the 31st of August. All productions entered for exhibition which may arrive by rail at Blisworth Station will be conveyed to and from Towcester free of charge, if previous notice has been given to the Secretary. Any exhibitor can send in his productions on the previous day, and the greatest possible care will be taken of them. Schedules can be obtained of Samuel Cooper Tite, Secretary.

HUNTINGDONSHIRE HORTICULTURAL SOCIETY.

Patron—The Earl of Sandwich.
President—E. Fellowes, Esq., M.P.

A GRAND AUTUMNAL OPEN-AIR SHOW will take place on TUESDAY, September 6, by the kind permission of D. Veasey, Esq., in the grounds of Castle Hill House, Huntingdon. In addition to the usual Prizes (a List of which may be obtained of the Secretary) TWO SILVER CUPS will be given for DAHLIAS; open to all England. A GOLD PENCIL CASE will be given for the most tastefully arranged BOUQUET, made by a Lady. The Band of the Coldstream Guards will attend, under the sanction of Colonel Lord Frederic Paulett, C.B.; conducted by C. Godfrey, Esq., Band Master, affording the enjoyment of A PROMENADE CONCERT. A Programme of the Music may be obtained on the Grounds. The Rooms of the Literary Institution will be open to Visitors. Refreshments:—Ices and Confectionary may be obtained in the Grounds. Admission Tickets may be had of the Secretary, and of Mr. Edis and Mr. Wood, Printers. The Doors will be opened at Half-past 1 o'Clock, Tickets, 2*s.* 6*d.*, until 3 o'Clock; from 3 until Half-past 4 o'Clock, 1*s.*; from Half-past 4 until 7 o'Clock, 6*d.*; when the exhibition will be closed to enable competitors to remove their productions. Children under 12 years of age and Schools admitted at half-price until Half-past 4 o'Clock. Subscribers will have Tickets forwarded to them. Cottagers exhibiting will be admitted at 6 o'Clock, Free. Notice in writing will be required to be sent to the Secretary by 10 o'Clock the day previous to the Show, by all Competitors for the Cups for Dahlias, and Collections of Plants. Entrance at the Gate near the Common, in St. Mary's Street. Railway Arrangements:—The Great Northern Railway Company will issue First and Second Class Tickets for a Single Fare for the Double Journey, from Hitchin, and also from Stamford, Peterborough, and intermediate Stations to Huntingdon. The Eastern Counties Railway Company will issue First and Second Class Tickets for a Single Fare for the Double Journey, from Wisbeach, and also from Cambridge, and intermediate Stations to Huntingdon. Subscriptions in aid of the Society will be received by G. M. Fox, Secretary.

The Gardeners' Chronicle.

SATURDAY, AUGUST 27, 1859.

MEETINGS FOR THE FOLLOWING WEEK.

Thursday, Sept. 1 —Pomological..... 2 P.M.

THE culture of the CUCUMBER in open fields is a subject which has hitherto received but comparatively little attention. Market gardeners in the neighbourhood of London have attempted it; but we believe most of them have now abandoned it, the result not having proved sufficiently encouraging for them to persevere in the matter. Cuthill, in his pamphlet on "Market Gardening Round London," says—"I have seen 14 acres of ridge Cucumbers in one man's ground; they are grown under glass, and hardened off, and planted out 6 feet asunder, and 10 feet row from row; hand-glasses are put over them. When they

begin to grow the ground is well mulched with straw, to keep the earth moist and the fruit clean. Gurkens are sown in the open air at once, in well-prepared ground at the above distances; and I have known one party to cut in one day 200,000 fruit, which were all bespoke by pickle merchants. Ever since the commencement of the Potato disease, however, Cucumbers will not grow round London." This was written in 1855, exactly 10 years after the first outbreak of the malady just alluded to.

That Cucumbers form a somewhat uncertain crop in open fields all must admit, and that some localities are unsuited to their culture must also be conceded; but while their produce is in so much demand as it is not only in London but in all large towns, even among the working classes, we are of opinion that their culture might be profitably extended. At present it is confined to comparatively small spots in one or two counties, the soil and climate of which seem unusually well adapted for their growth. Small, however, as the area at present under Cucumber cultivation is, it is reported to furnish to the London markets not less than 600 tons a week. Of these upwards of 100 tons have been known to be sent to Covent Garden in a single day.

Passengers by the Great Northern Railway on reaching the station at Sandy, in Bedfordshire, or that of St. Neot's, in Huntingdonshire, cannot have failed to have remarked light carts laden with square baskets piled one above the other arriving at these stations as the train approached. These baskets are full of Cucumbers about to be conveyed to the London and other markets. In the neighbourhood of the stations just named Cucumbers are grown by the acre in the open field, many cultivators having as many as 10 acres at one time under this description of crop. The soil in the neighbourhood just indicated is for the most part a warm, lightish loam or gravel, in every way suited to the growth of this esculent. The ground to be planted is well prepared during winter, and again deeply stirred and otherwise put in good order in spring. The seed is then sown about the beginning of May, where the plants are intended to grow in rows some 4 feet apart, and the plants stand nearly 2 feet asunder in the row. In favourable seasons they soon push into active growth and cover the ground with Vines, which during the latter end of May, the whole of June, and beginning of July, spread in all directions and come into bearing. During their growth weeding and thinning the superfluous shoots are well attended to, and if the plants should not entirely cover the ground, or wherever blanks occur, Mangel Wurzel is planted in the vacant spaces. At certain distances apart are also rows of Onions, which being allowed to run to seed serve in some measure both for shade and shelter. Where Onions are not used for this purpose, Rye is employed instead. In this way the ground is induced to produce two or three kinds of crops at the same time, and if one should happen to fail, one or more of the others, as the case may be, to a certain extent takes its place.

By the middle of July or earlier according to the season, the crop is ready for a first gathering, and from that time to the end of September fruit varying in length from 10 inches to a foot, green, straight and solid, is continually being cut, sometimes to the extent of 3 tons at a time, and that from little more than as many acres. What an acre of Cucumbers realises in the way of money we are unable to say with certainty; but they are stated to yield a good profit to the grower, even if he should get no more than 1*d.* or 2*d.* a dozen for them. At these prices sums varying from 20*l.* to 60*l.* an acre according to the season are said to have been obtained for them. When gathered they undergo the process of sorting, the best being generally sent to London, second-rate kinds to the provincial markets, and what are small, crooked, or discoloured are given to pigs. Ripe ones are saved for seed, so that little or no waste is ever experienced with crops of this kind.

The baskets in which Cucumbers are sent to market are called "pads." In shape they resemble those used by wine merchants, *i. e.*, square with hinged lids, and they generally hold about 2 bushels. On Thursday last the wholesale price of such baskets filled with excellent Cucumbers was 3*s.* each in Covent Garden Market.

It has often surprised people who think Cucumbers cannot be grown without a frame, how cottagers were able to produce such fine specimens of them as they frequently do at local exhibitions. There is, however, no difficulty in the matter; indeed, the wonder ought to be that Cucumbers are not more extensively cultivated out of doors during summer than they are. The cottager selects the warmest corner of his garden for them. When the spot has been fixed on two or three circular holes are made 3 feet across and about 18 inches deep. These are filled with garden refuse mixed with some rough manure and covered about 8 or 10 inches deep with some of the richest and best of the soil that was thrown out of the holes. In the centre are sown four or five seeds an inch deep, and they are protected by a flower pot until they have vegetated. In the fields above alluded to, however, no such trouble is taken. The ground is merely, as we have stated, well stirred and worked, thrown into slight ridges, and the seed sown without any bottom-heat or artificial protection whatever.

Thus it will be seen how easy it is to have plenty of Cucumbers, and with comparatively how little expense in the way of preparation or labour; and that as a crop they are remunerative is evident from the fact that ground which would grow Cereals or root crops in perfection is devoted to Cucumbers even by large cultivators of grain crops. M.

It is not every day that examples occur to demonstrate the truths of Morphology; and in the absence of such demonstration incredulity is not only pardonable but praiseworthy. We are no advocates of the bad habit of taking for granted that everything which science announces is true; what are called scientific facts are sometimes scientific dreams, and it is only when the most irresistible evidence has been collected that the world is called upon to embrace the doctrines of teachers. If ever there was a startling proposition it was the famous one that all the various organs of which a flower consists are formed by modifications of that part of the structure named a leaf; and that all the parts of the floral apparatus were interchangeable. That those exterior parts named by botanists calyx and corolla should be modified leaves was intelligible enough, but that a stamen and even the young seed-vessel itself should be a leaf was at first thought no less a fancy than the transformation of a Pumpkin into a carriage for the use of Cinderella. To say that a ripe Peach was only a Peach leaf transformed was equally incredible, and it was not to be wondered at that it was ridiculed by sophistical logicians.

Nevertheless these assertions were perfectly true, as all well informed persons now know. To



gardeners more especially they have become familiar through the instrumentality of these columns, which have been repeatedly employed to explain the strange facts now alluded to. Those facts have so direct a bearing upon practical horticulture that no intelligent cultivator can afford to be found unacquainted with them. So long as the forms and parts of a flower were believed to be as fixed and unchangeable as those of the human frame, no precautions to preserve them were thought needful or to alter them seemed possible. But as soon as it became known that very slight disturbances in the processes of development were followed by an entire change in the parts about, in their nascent state, to undergo those processes, the necessity of paying the utmost attention to maintaining vegetation in an undisturbed and perfectly natural condition became manifest. Rapid growth is most especially fruitful in the unnatural change of one part of a flower into another, especially in the formation of the fruit-parts as leaves instead of fruit; hence the necessity of checking exuberant growth while a plant is forming its flowers.

Nothing perhaps is more striking among morphological phænomena than the formation of pieces of the young seed-vessel (*carpels*) outside of the customary consolidated centre (or *pistil*). Of this many cases are known, especially among double Wallflowers and Oranges;* but we have seen nothing more remarkable than the instance here figured, for which we are indebted to our learned friend Dr. Seemann. That gentleman received it from Mr. John Groenland at Paris, with the assurance that most of the plants raised from the seeds of this sport will again produce seed-vessels in the same state. We have heard a similar statement made with reference to the Oriental Poppy, but have seen no instance of it. The perpetuation of such a monster by seed is one of those curious facts of which the ingenious author of the *Vestiges* will know how to make use.

The instance before us is that of an opium Poppy which has produced, in addition to the seed-vessel which such a plant always bears, a brood of smaller seed-vessels around the first on every side. These latter represent the separate parts that are blended together into the globose seed-vessel in the middle; about 13 are so blended; between 70 and 80 separate ones stand around. But even these are not all single; many on the contrary are triple, or double, or even quadruple, in every conceivable state of deformity. They appear to have had no relation to the stamens, the scars left by the fall of which are clearly visible at the base of the additional seed-vessels. These last are therefore a swarm, as it were, thrown off by the hive in the middle. They all have long stalks, which have grown together into an irregular cup. Had the stalks been longer and the same kind of junction been effected among them as in the middle, a second Poppy-head would have buried the first in its own interior as sometimes happens in the fruit of the Orange.

* A case of the kind is figured in *Bulfour's Class-book of Botany*, p. 294.

The proposed new Garden at Kensington Gore is now pretty certain to become a reality. The Council of the Horticultural Society have made a final arrangement with H.M. Commissioners for a lease of the land, upon terms that are perfectly satisfactory. Subscriptions are coming in rapidly, and the Council are beginning to think of plans for laying out the ground. Messrs. Cundall have announced their intention of publishing a volume of photographs of the most celebrated ornamental gardens in the kingdom for the purpose of showing how such places are formed elsewhere; among which will be included, by Royal permission, the terraces of Osborne. Names have moreover been mentioned in connection with the management of the new Garden; and everything up to the present time seems to indicate that operations may be commenced in the ensuing autumn. One of our correspondents has even suggested that the interest upon debentures taken after some fixed day should be reduced from 5 per cent. to 4 per cent.

All this shows the Garden to be a public want; and that being so it would be sure to find ample support, even if it required a hundred thousand pounds instead of fifty thousand.

New Plants.

221. Aristolochia Sinarum.

A. caule ramosissimo, foliis cordatis isosceli triangularibus atro-viridibus glaberrimis apice angulisque rotundatis, floribus solitariis: tubo clavato limbo ovato acuminato recto intus hirto.

We received this from Mr. Glendinning, to whom it had been sent from China by Mr. Fortune. It is a hardy perennial with long branching scrambling stems, deep green leaves a little glaucous beneath, and dull green flowers about 2 inches long, with a dark dull purple stain at the mouth of the tube. The whole plant when bruised has the heavy oppressive smell of the genus.

Although the flowers have no beauty, the manner of growth is so graceful that it would be found extremely useful by those who know how to set off to the most advantage the flowers wanted for decorating the dinner table or drawing-room. In this respect it is more useful than Ferns, because the firm leaves do not wither very soon.

222. Antirrhinum majus (*var.* Peloria).

A correspondent whose signature we cannot decipher, but which looks like *Henry Berhinn*, has forwarded this most curious sport, which he intends to send into the market under the name of Antirrhinum "Wonder." It was raised, he says, from seed in 1857. The flowers are dull rose colour, rather less than an inch long, with a nearly cylindrical tube a quarter of an inch in diameter. The limb (or end) of the tube is perfectly regular, without the slightest tendency to be ringent; it is divided into 6 (we do not find 5) short, round, concave, dark purple lobes, corresponding with which is the same number of bright yellow projections. The stamens are 6 in number, and alike in size and direction. The sepals are, moreover, 6 in number. In the pistil there is nothing unusual. Here, then, we have a sudden conversion of a most irregular unsymmetrical flower into one of perfect regularity and symmetry. It is quite analogous to the common Peloria of Linaria vulgaris; and is a very pretty novelty.

223. Odontoglossum Uroskinneri (hybrid?).

Messrs. Veitch, of the Exotic Nursery, have lately flowered this remarkable plant, which was sent them by

Mr. Skinner from Guatemala. After that indefatigable traveller it is named; but we refrain from giving it any specific character, because we have a strong conviction that it is really a wild mule between *O. Bictoniense* and some such species as *O. Cervantesii* or *O. Rossii*. In habit it is very like the first; and the general aspect of the tall slender spike of flowers is the same; but the flowers are larger, the sepals and petals are roundish oblong, and the lip is nearly circular, deeply cordate, distinctly toothed, and most delicately dotted with deep rose colour upon a paler ground of the same. As to the column and the appendages of the stalk of the lip, they are the same as in O. Bictoniense; but it is a much finer plant.

THE ELM TREES IN THE CHAMPS ELYSÉES.

The mode of treatment adopted by the French foresters for curing the sickly Elm trees in the Champs Elysées, as described in a late number of the *Gardeners' Chronicle*, p. 620, is rather different from the one I saw them practise some two or three years ago. At that time I happened to be in Paris, and while walking through the Champs Elysées my attention was drawn to the odd appearance which many of the trees presented by having one or two dark stripes painted on them from top to bottom of their stems. On closer examination I found the bark had been removed from each of the stripes, which were for the most part about 2 inches wide, and the space it occupied filled up with a peculiar dark coloured composition resembling a mixture of tar, soap, and resin or wax. I could not conceive for what purpose this had been done, and the friend who was with me, although a Parisian, was unable to enlighten me on the subject. He however made inquiry of one of the workmen engaged in taking down the dead trees, and was informed that it was a recent discovery for checking the progress of the disease with which the trees were affected, and gradually restoring them to health. The experiment appeared not to have been attended with the good results that were anticipated from it, and early in the spring (1857) the one you have noticed of denuding the trees altogether of their outer bark was adopted. It was not simply a portion of the rough outer bark that was chopped off—but large masses of the entire bark—which, in justice to the operators, it is but fair to say they could scarcely avoid removing, as in numerous instances the myriads of destructive little pests with which the trees were infested had so bored and eaten away the portion of the bark next the wood, that hardly any more of it remained than was sufficient to keep it on the tree. It was very evident that the disease had gone too far for any one to entertain the hope of arresting it; and even if such had not been the case, it appeared to me that the means resorted to were more calculated to hasten the death of the trees than be of the slightest benefit towards restoring them to health. The result was exactly what I anticipated. As the season advanced the trees made an effort to put forth leaves, which soon withered, and by the month of June every one of those which had been disbarked were dead. In no instance did I see the stems covered with Moss and bound round with sack-cloth; but this plan was probably adopted afterwards on finding that it answered so well when applied to the trees that were planted to fill the vacancies occasioned by the removal of the Elms which had died the previous season.

If the French were unsuccessful in their attempt to renovate the Elms infected with scolyti, I am bound to say they deserve great credit for the manner in which they transplant large trees. I know that our friend Mr. McGlashan had been sent for some years ago to teach them how to use his transplanting machines; and here I had an excellent opportunity of seeing them in operation and forming an opinion as to their utility. A large vacant space adjoining the Place la Concorde was marked out in lines according to the French fashion; holes were dug at proper distances, and over each the machine with its load was drawn and the latter gradually lowered into the place it was intended to occupy. The ease with which this operation was performed seemed to astonish every one who witnessed it. In the course of rather more than a fortnight a grove of Horse Chesnuts was formed which could not possibly have been obtained under any other circumstances within a period of 25 or 30 years. Had the same sort of trees been planted in England it would have been thought quite sufficient to fill in the earth carefully about their roots, and afterwards perhaps to give them a good watering; but the French adopt another plan, which in some cases might be resorted to with advantage in this country, especially where there was a doubt of any particular tree surviving the operation of transplanting. They begin at the ground and bind the stem round with hay-bands to the height of 8 or 9 feet, and on the top a sort of funnel is formed of zinc, into which water is occasionally poured in order to keep the hay-bands moist. With this treatment during the first season after removal scarcely a tree ever fails, and forms a striking contrast to some examples of transplanting large trees, which I have seen in England. *B.*

ANNUAL BOTANICAL EXCURSION OF THE STUDENTS AT THE ALBERT MODEL FARM, GLASNEVIN.

On Thursday, 4th inst. a party of about 60 of the young men of the Model Farm made their usual annual botanical excursion, under the guidance of their lecturer, D. Moore, Esq., Curator of the Royal Dublin Society's Botanical Garden, Glasnevin.

Before entering on the details of the ramble, it is, perhaps, well to remark, for the benefit of those who are unacquainted with the above institution, that there are two courses of lectures on botany delivered annually—the first, on the structure and growth of plants; the second (or summer course), on systematic botany. Towards the close of the latter, and when the young men have been taught the principal methods of modern classification, and have had numerous examples shown them of the natural orders best adapted for illustrating the system of Jussieu, De Candolle, and Lindley, they are taken out to the field for the purpose of enabling them to exercise the knowledge they have already acquired, among plants in their natural habitats, as well as to collect and name specimens of the ordinary wayside and field plants, such as are likely constantly to occur to them in after life.

The natural orders selected for demonstration afford the lecturer an excellent opportunity to supply a large amount of really useful practical information, which any youth, intending to make agriculture or horticulture the profession by which he is to live, ought to know, though few do. For example, the natural order, Rosaceæ, contains the original species from which most of our cultivated fruits have sprung, including the Apple, Pear, Peach, Plum, Cherry, Strawberry, Raspberry, &c., as well as the numerous varieties of the Rose. This alone opens a wide field for showing the successes which have been achieved in the improvement of these fruits, and the means used to procure them. Again, among the Cruciferæ, we have the originals of the Cabbage and Turnip, garden Stocks, Wallflowers, &c., which serve further to illustrate the improvements made by careful attention to the development and fixing of the varieties which have been obtained from the wild plants in this order. So, again, the order Umbelliferæ, with its cultivated products—the Carrot, Parsnip, Celery, &c.; and Leguminosæ, containing the Pea, Bean, Vetch, Clover, &c. In the Endogenous section of plants, Mr. Moore selects the natural order, Gramineæ, as it includes the originals of all our cereal grains; and although the early history of some of these is not well known, it is highly instructive to trace the progress which has been made in the improvement of the varieties themselves in modern times.

It may be easily imagined, then, with what anxiety the advanced portion of the class look forward to the excursion day, as it enables them to see, in their natural habitats, many of the plants whose acquaintance they have made in the lecture-room.

Having arrived at Bray (selected this year), we strolled along the beach, and picked up, among other commoner plants, Trifolium striatum, Erodium moschatum, and some good specimens of the pretty Cruciferous plant, Cakile maritima (Purple Sea Rocket). After a refreshing bathe, we wended our way across Bray Common to the far-famed Dargle. The way-side plants from Bray are both numerous and varied. Among the rarer species were Fœniculum officinale (common Fennel), Origanum vulgare (pot Marjoram), Reseda luteola (Dyer's Rocket), Saponaria officinalis (Soapwort), of which we passed a fine habitat, the plant, too, being in its normal or single state, which Mr. Moore observed is seldom the case, it being mostly found with double flowers.

The Dargle, after so long a drought, was not rich in plants, though we collected some Grasses which are usually found in woods, Melica uniflora, Festuca gigantea, and others. We were delighted with the appearance of the dell of the Dargle from the top of the Lover's Leap. At this spot we had the advantage of seeing the two British species of Oaks, Quercus sessiliflora and Q. pedunculata, and of having the chief points of difference between them explained.

After emerging from the Dargle woods we headed straight across the country, over hill and dale, through Brake and Furze (of which latter plant we have some very lively impressions), for the Sugar Loaf Mountains. On the slope of the river we noticed Erythræa centaureum and Linum catharticum; and in the rocky valley before the ascent to the Sugar Loaf we came on a fine nest of Anthemis nobilis (common Chamomile), growing truly wild, and in great abundance.

As we had determined on gaining the summit of the Sugar Loaf, and had, therefore, over 1800 feet of elevation to climb under a burning sun, and on slippery Grass for a considerable way, we gave little heed to botanising, and gradually the unsocial feelings which generally attend mountain travelling stole over us. Each struck out a path for himself, and no one seemed to have much breath to waste on his neighbour. How some of us envied the bold adventurous fellow who was waving his hat from the topmost pinnacle, to which we had at least 200 feet yet to mount. And when we reached the top with what unmingled pleasure did we watch others slowly toiling up the rugged path where we were half an hour before.

As the day was remarkably clear, we enjoyed, probably, the most extensive and beautiful prospect which is to be had in the county Wicklow. Facing the west we had a bird's-eye view of the Powerscourt Waterfall, and onwards, in the same direction, the mountains which encircle Lough Bray; to the north, we looked directly through the Scalp; on the north-east Killiney Bay, and on to Howth and Ireland's Eye, appeared as a panorama. Then we had before us, towards the south, the beautiful glen of the Downs; and gazing over the great expanse of sea in the direction of Wales, some of those whose visual organs were most acute considered that they saw the Welsh mountains, which are said to be sometimes distinctly visible from this point.

As soon as we had rested, and refreshed ourselves, we began to descend. It was rather remarkable to notice the universal attention that was paid to Vaccinium myrtillus (Bilberry), and more especially to its black glaucous berries. Some were fortunate in lighting on some specimens of the pretty filmy Fern, Hymenophyllum Wilsoni, though suffering from the extreme dryness, and lower down, on the margin of a little rill, we observed Drosera rotundifolia (Round-leaved Sundew), and abundance of Lastrea oreopteris (Sweet Mountain Fern), and L. Fœnisecii (?), with some commoner Ferns and marsh plants.

We cannot close without expressing how much we owe to the Dublin and Wicklow Railway Company on the present, and to the Drogheda Railway Company on past occasions, for the liberality evinced in giving tickets to our party at very reduced fares.

NOTES ON SOME RARE MEDICINAL PLANTS OF AUSTRALIA.

By Ferdinand Mueller, M.D., Ph.D.

(Abridged from the *Victorian Pharmaceutical Journal.*)

On a former occasion I alluded to the medicinal and chiefly diuretical properties of the numerous Diosmaceous plants, which ornament so many parts of this country. Lately, in a journey performed to the south-western portion of the Australian Alps, I noticed, at an elevation of more than 3000 feet, a species producing the essential oil (to which the medicinal virtues of these plants is to be attributed) in a very high degree, and, since it is unknown to botanical science, I thought a brief characteristic notice of it might be acceptable; and I have the less hesitation in furnishing it, as this plant will undoubtedly endure the British climate, and is, therefore, probably destined to be a future occupant of the home gardens.

Eriostemon lamprophyllus.—Branchlets tubercled, slightly downy; leaves numerous, small, thin, coriaceous, oblong-lanceolate, acute, glabrous, entire, or in front slightly notched-repand, on short stalks, shining and of equal colour on both sides, flat on the margin; peduncles terminal, and below the apex of the branches, one-flowered, or bearing a few-flowered umbel; teeth of the minute calyx deltoid, somewhat acuminate and ciliate; carpels rhomboid-ovate, beaked; seeds olive-black, polished.—On the rocky summits of some mountains, at the M'Allister River, Gipps Land. A widely-spreading shrub, a few feet high. Leaves mostly between 3 and 5 lines long, 1—1½ line broad. Carpels, with addition of their rostrum, 2 lines long. Seeds ovate, oblong, hardly longer than 1 line. Strophiole half as long as the seed.

I may add, on this occasion, that the Australian species of this family require, in part, an altered generical disposition. Zieria lanceolata, which might be called Boronia arborescens, being the only arborescent species we possess, and all its congeners ought to be transferred to the genus Boronia, both genera being clearly connected by those Western Australian species, which produce four fertile and four sterile stamens, and also habitually united by intermediate forms. Cyanothammus has to be reduced to the same genus, whilst numerous late discoveries have proved that all the species of Phebalium, and also of Asterolasia, have to be subordinated to the genus Eriostemon.

Amongst some plants recently collected by Walter Hill, Esq., the Director of the Botanic Garden of Brisbane, a gentleman who deserves the greatest praise for his zealous investigations into the botany of subtropical Western Australia, I noticed an Anopterus, of which genus the only species is acknowledged as endemic in Tasmania.

Anopterus Macleayana.—Leaves chartaceous, large, long, lanceolate, blunt, serrate, with a teethless acumen, on rather long stalks; teeth of the calyx 6—9; ovary grey, tomentose; capsule of great size, with 8—11 very large seeds.—On the summit of Mount Lindsay, at an elevation of 4000 or 5000 feet, accompanied by high-stemmed trees of Todea africana, by Bursaria spinosa, and other southern plants.—A tree 30 feet high. Leaves longer and, in comparison to their length, narrower than in the Tasmanian species, sometimes fully a foot long, giving to the tree a most noble appearance; their gland-bearing teeth similar in both. Racemes 6 inches long, or shorter. Corolla unknown. Pedicles often an inch long. Bracteoles narrow-lanceolate, acuminate, 1½—2½ lines long, deciduous. Teeth of the calyx delta-shaped, acuminate, about 1 line long, with imbricate base. Style deeply two-cleft, 2 lines long; its base, together with the ovary, covered with a white velvet. Capsule not seen mature; in an unripe state already more than an inch long, and like that of Anopterus glandulosa, while in an immature state, almost perfectly above the calyx. Seeds and their wing together 6—9 lines long.

Mr. Hill having expressed a wish that some remarkable and ornamental species in his collection should be distinguished with the name of the Hon. William Sharp Macleay, his friend and patron, it has given me very great pleasure to respond to the request, and to give thereby also a public testimony of the great esteem in which that celebrated philosopher is held by myself.

Anopterus glandulosa (*La Billiardière, Nov. Holl. spec. I.*, 86 *tab.* 112) may readily be recognised by the following diagnosis:—Leaves coriaceous, broad, lanceolate, to the very apex bluntly-serrate, on rather short petioles; calyx with 6 teeth; ovary glabrous; cap-

Sules not of large size, with numerous small seeds.—It occupies only the colder mountain regions of Van Diemen's Land.

Amongst the plants constituting part of the Brigalow scrubs in the depressed interior of New South Wales occurs a small tree, which on account of its spotted bark attracted the attention of Sir Thomas Mitchell when tracing the course of the Maranoa River; and the squatters on the Darling have very appropriately applied to it the name of "Spotted Tree."

It attains a height of about 20 feet. Its bark is irregularly areolate, the grey epiphlaeum separates in small pieces, thus uncovering partially the livid or cinnamon-coloured inner stratum of the bark, and thereby renders it singularly spotted. The wood is pale. Professor Lindley in describing this tree, evidently from flowering specimens only, referred it to the genus Elæodendron, among Spindleworts, and inserted it with a brief diagnosis as Elæodendron maculosum in Sir Thomas Mitchell's work on tropical Australia. p. 384.

The Rev. Mr. Goodwin and Mr. Dallachy, on travelling lately over the Darling Plains, towards Mount Murchison, noticed the same tree, which is stated to make its appearance first above Moninda, and specimens with young fruit collected on those localities being communicated, I ascertained that this curious plant belongs to that subgenus of Flindersia, which I have on account of habitual difference and its hard woody fruits separated as Strzeleckia in Sir William Hooker's Journal of Botany for 1857, p. 308 and 309, whilst with a more conservative view I united the only known Strzeleckia in the "Fragmenta Phytographiæ Australiæ," I. 4, 65 and 66, to Flindersia.

Although I have failed in finding any clear distinction in the flowers or in fruits of Strzeleckia dissosperma and Elæodendron maculosum, of which I examined original specimens in Sir Thomas Mitchell's collection, I have at present no hesitation in regarding these two plants as distinct on account of their foliage, until it is proved that, as in certain Boroniæ, simple and pinnate-leaved plants are produced by the genus Flindersia, all the specimens from near the Darling and its tributaries showing simple, all the tropical, compound leaves.

The following diagnosis would characterise sufficiently the Darling plant:— Flindersia maculata (Strzeleckia).—Leaves opposite, rather small, simple, oblong, with cuneate base, with blunt or emarginate apex, and with short petioles; with pellucid dots; branches of the panicle opposite; lobes of the calyx almost orbicular, ciliolate; sterile stamens, five or less; stigma pellate, hemispherical; capsule small, ellipsoid, echinately acute tubercles, glabrous; its sub-cells generally two-seeded, seeds around winged. The leaves are minutely dotted, but the dots rather concealed and not transparent. The capsules deserve notice for the strong aromatic scent by which they are pervaded.

Home Correspondence.

Large Orchard Houses.—I have seen and much admire the Orchard House of "Sigma," described in your leading article of last week. The standards planted in the central border will have a grand effect, for in two or three years they will form large spreading trees. The idea of walking under the shade of one's Peach trees is most agreeable. I am, however inclined to think that much loss of space will ensue, just as we find now if we plant standard trees in small kitchen gardens. In a few years two or three standard trees overshadow the whole garden, and only then we find how much more advantageous it is to plant espaliers, pyramids, or bushes. In like manner the beautiful central border in Sigma's house if planted with pyramidal Apricots, Peaches, and Nectarines, pinched in regularly during the summer and allowed to reach a height of 10 or 12 feet, would give a much larger quantity of fruit than standards—for five can be planted in the space allowed for one standard—and of finer quality owing to the full exposure of the fruit to sun and air, and the size of fruit is much increased by the constant summer pinching, as I have found this summer. Standard trees with large heads will be found inconvenient to prune, and more so to thin a large crop of fruit. *T. R.*

Gardens in Ireland.—Tourists, more especially those who take an interest in horticulture, would do well not to omit to see (amongst the various natural charms connected with the scenery of the demesne of the noble lord of Powerscourt), the beautiful gardens and new range of glass erected some short time since by Mr. Ormson of Chelsea. One could scarcely have believed that in so short a time so complete a transformation could have been brought about. I shall leave it to those more conversant with the subject to enter into the minutiæ of the parterres tastefully arranged by Mr. Robinson, the gardener, my object being merely to invite the attention of those who really take an interest in the improvement of the science of horticulture. The gardens are not open to the public generally, but to any one desiring to view them from motives of practical concern I have no doubt the same courtesy will be extended as that which I received. The tourist whilst in this neighbourhood would also be well rewarded by seeing the gardens at Hollybrook, (Sir George Hudson's), where by inquiry for Mr. Gardener, it will be found that the name he bears is not unworthy of the post he fills. *E. A. M., Dublin.*

Diseased Grapes.—I should be much obliged if you could say what the peculiar disease is which has attacked the inclosed Grapes, and the remedy for it, if any. My gardener, a clever, intelligent man, does not know it, and never saw an instance of it before. Only one Vine in a house of 12 is affected by it, and only two bunches on that Vine; the other bunches are quite good. The Vine is strong and healthy, and about three years old. None of the common Vine disease has shown itself in the house this year. The border is a very good one, on a sunny slope, concreted and drained, and protected by tarpaulin in cold or wet weather. I may add that the gardener is a very careful man and has been accustomed to Vines before he came to me, and appears to understand their management thoroughly well. *W. D., Bath.* [The berries are attacked by internal decay, which is not produced by external injury. Cases of the kind are abundantly common; and we never yet saw one that was not traceable to something wrong with the roots. The Frontignans are most especially liable to it.]

Grapes and Tartaric Acid.—"Bunches of Grapes inclosed, at the beginning of autumn, in paper bags steeped in a solution of tartaric acid, and exposed to the light of the sun, will be ripened much more quickly, and the quantity of sugar in the fruit will be greatly increased." My master has cut this out of the *Illustrated London News* of July 23d, 1859. Is the statement true? and if true how strong is the solution of tartaric acid? and in what way does the solution act? and is the advantage owing to the paper bag or the tartaric acid? *L. D. J.*——I should like to know the wherefore of this alleged discovery. *Rispo.*

Tropæolum Lobbianum elegans.—I believe this to be the true Crystal Palace Nasturtium, although a variety closely resembling Cattell's Dwarf Scarlet Nasturtium has by some been so called. T. Lobbianum elegans creeps along the ground, is very short-jointed, and a profuse bloomer. Here in the north I believe it will be found a most useful bedding plant, and it is easily propagated by cuttings. In the south it must bloom most abundantly. Very few plants will soon fill a good-sized bed, for it grows freely although of compact habit. *W. D., Bradford.*

The Golden Hamburgh and Bowood Muscat Grapes.—It is most important that those who test new varieties of fruits should publish their opinion of their merits; it is not every one who is placed in a position to exhibit their productions before the public, but their opinions nevertheless would be a valuable addition to those promulgated from time to time by the fruit committees of the Horticultural and Pomological Societies. It is an indisputable fact that great caution is now everywhere manifested by purchasers of new fruits, and much discontent prevails at the disappointment which in many instances has occurred, arising doubtless however in some cases from indifferent management; the concurrent testimony therefore of a majority of cultivaters would form a safe guide to buyers. It is well known that when an individual succeeds in raising anything new, in his opinion it is sure to be a black swan. This may be a weakness common to us all, we should therefore endeavour to control and limit all exaggerations, the result of which would be an unquestionable public benefit, and the trade would likewise escape many a castigation from their customers and be gainers, for after all in the end truth will prevail. I have been led to make these remarks from reading Mr. Thomson's article in your last Number, headed as above, where some opinions are advanced on White Grapes. I can quite endorse Mr. T.'s statement, that "the best new Grape that has come before the public for the last quarter of a century is the Bowood Muscat raised by Mr. Spence." Mr. Thomson's experience and success as a gardener renders his opinion one to be relied upon, and I believe with him that as far at least as the Cannon Hall Muscat is concerned it will eventually disappear, as all gardeners who cultivate this variety know the great difficulty they have in producing perfect bunches of it, to say nothing of the high temperature required to sustain and ripen the fruit. Then with regard to the Golden Hamburgh, if Hamburgh it is, when Mr. Busby first exhibited it at Chiswick he kindly gave me a berry. I confess that neither the taste of the berry nor the fruit exhibited by him left a favourable impression with me; I really thought that Golden must be a nickname, for they were as green as half-ripened Muscats. I think that the exhibitions of it last year did not produce the most favourable impressions of the high character given to it. This season I have been unavoidably prevented from attending any London show, and am not therefore in a position to offer an opinion on the merits of those produced. Not being however deterred myself from what I had seen or from what I had heard, I determined to give this Grape a trial. I therefore inarched a spindly plant on a duplicate Vine I had in my house. This year it presented me with three bunches, the last of the three while I write lies before me. In my Vinery is cultivated a collection only of the best varieties of Grapes, and amongst them the Black Hamburgh. The temperature and treatment (if treatment they had) as may be inferred were identical; I mention the temperature in particular as illustrating the force of my experiment. About the end of July two or three good and experienced judges of Grapes happened to drop in, when I cut a bunch of each, black and golden, for their opinion. The black were well coloured with berries above the average size. The bunch of the golden was small; the berries average size; the colour not that of a green Gooseberry, but of a deep amber and worthy of the name of Golden. The flavour of the former excellent; of the latter highly charged with most luscious sugary juice; so much so that during my experience I have tasted nothing that approaches it. With me the pulp is different from that of the Black Hamburgh, being softer and more juicy, and hence the doubt I have ventured to throw out as to its name. This Grape will eventually take a high position, and be found in all collections. I will now leave your readers to draw their own inferences from my "unvarnished" statement. Having read thus much about new white Grapes, can none of your readers enlighten us upon the comparative merits of new black ones? *R. Glendinning.*

Tom Thumb Nasturtium.—Will some of your correspondents be so obliging as to say whether or not this variety is the same as Cattell's Dwarf Scarlet? The last-named kind is not so deep in colour as the Tom Thumb Geranium, but is of a very dwarf compact habit, and blooms abundantly, throwing its flowers well up above the foliage; it is an excellent plant for a bed or riband. *W. D.*

Underground Watering.—Making some Strawberry beds last autumn I adopted a system of underground watering, and the results have been so satisfactory that the system only requires to be known to be generally used. I have endeavoured to give a plain description of my process, but first let me state the results—1st, a fine growth of plant; 2d, an abundance of fruit large in size and of fine flavour, and well coloured Plants put out in October, 1858, were supposed by Mr. Turner, of the Royal Nursery, to be two years old in June last; in fact every person who saw them was surprised. My beds are 4 feet 6 inches wide, with three rows of plants 18 inches distant in the rows down the middle of each bed, and 6 inches below the surface I laid a row of 2-inch drain pipes upon a dead level, with one pipe fixed upright at each end in which to insert a funnel, into which I pour the water or liquid manure, which I used very freely when the plants were first put in, and also when they were in blossom, and until they had done fruiting; the cost is very trifling, being only 4*s.* for 100 feet. The pipes are merely laid end to end without mortar at the joints, so that the water can easily distribute itself under and amongst the roots of the plants. The upright pipes are set in brickwork to keep them firm, and the number of pipes laid longitudinally of course depends upon the length of the bed, as they reach from a few inches at each end the whole length. I have now some square wooden tanks made 12 inches long to serve as receivers, and find them much less trouble to fix; but for beds of 14 or 16 feet long I use only the drain-pipes, laying one pipe at each end at a sufficient angle to be above the ground, so that the water may be poured in. Where the inclined pipe meets the level the joints are made good with clay, so that the water cannot escape. *G. Kersland, Upton Cottage, Slough, Bucks.*

Adhesive Composition v. *Nails.*—Is there any composition that will secure shreds to walls, instead of using nails, for the purpose of fastening trees, leading climbers, holding Ivy, &c. My particular case is that I have Ivy planted round the house, but the fibrils will not adhere to the stuccoed walls, owing to their having been painted and washed over, and we cannot use nails or the stucco would be broken. I seek therefore some means of keeping the young Ivy shoots pressed against the wall, to allow the fibrils to form and gain strength, so as to eventually sustain itself. The composition ought to be of easy application, and to set so soon as applied, which glue fails to do. Loudon says: "The golden-leaved variety (of Ivy), when it thrives, is a splendid plant, appearing in spring after it has made its new leaves, like an immense mass of yellow flowers." Is this Loudon's foliis aureis, the Golden-striped Ivy, and is it to be procured in London? *H.* [No doubt. You should trellis your wall with wire.]

Earthenware-lined Pipes.—A year or more ago some account was given in your columns of the introduction of iron pipes lined with earthenware for the purpose of conveying water. Could any of your readers inform me whether the invention has been found to answer in practice, and where I might apply for information. The invention, if found to answer in practice, would certainly be invaluable in many cases. *Sub. Vet.*

Kidney Beans.—The so-called "New Zealand Running Bean" of which I send you a sample, is I find the Haricot Boulot or Coco of the Paris cornchandlers. *Antihumbug.* [The Beans sent exactly agree both as regards size and appearance with those formerly submitted to us by Mr. Cuthill.]

Battersea Park.—The plant your correspondent describes as flowering here is probably Tritoma uvaria, which is blooming profusely at present in the borders in Battersea Park. On each side the Tritoma are beds of Lilium lancifolium album, and rubrum. *An Original Subscriber.*

Societies.

Horticultural: *August* 25.—Rev. J. Dix in the chair. At a meeting of the Floral Committee, which took place this day, a considerable number of Dahlias was produced. Of new kinds the following were the best, viz., Apollo (Turner), a medium-sized crimson fancy kind, tipped with white; Flower of the Day (Turner), and Mrs. Wellesley Pigott (Keynes), both white; Mrs. Bailhasche (Keynes), pale peach; Pluto (Turner), purple, irregularly tipped with white; George Grapes (ditto), yellow, suffused with buff; and Neville (Keynes). To the first four of these First Class Certi-

ficates were awarded, and the last three were commended by the judges. A Verbena named Dr. Sankey (Edmonds), received a First Class Certificate. It is a large rosy puce kind, with a lemon eye. A handsome Phlox, white with a well defined rosy eye, named Mrs. Standish, came from Mr. Standish, of Bagshot, as did also some charming cut spikes of new kinds of Gladioli. We also noticed a Seedling Scarlet Geranium, named Victor Emmanuel, a robust-growing, plain-leaved sort, apparently not different from others already in cultivation.

Entomological: *August* 1.—J. O. Westwood, Esq., M.A., in the chair. Mr. MacLachlan exhibited several rare and interesting species of British Lepidoptera, which he had recently reared, including one species which inhabits the stem of the wild Carrot. Dr. Wallace also exhibited other species of the same order from Waterford and Killarney, together with a specimen of Deilephila lineata, taken at Tremore, in 1856; and Mr. Mitford exhibited Timandra petraria and other moths recently captured. Mr. F. Bond exhibited the larva of the curious genus of beetles, Drelus flavescens, taken on the Isle of Wight, crawling upon sand; its natural habit is however that of a parasite with the shells of the common snail, where also the large unwieldy female destitute of organs of flight is also to be met with. Mr. Lewis exhibited specimens of the rare beetle Chlænius Schrankii, from Luccombe, in the Isle of Wight. Mr. Westwood exhibited portions of the mass of cocoons of the social moth, Hithyra sociella, taken out of the stomach of a cow. As the caterpillars of this moth infest the nests of the moss-carder humble bees, it was supposed that the cow had taken the mass of cocoons into her mouth with her ordinary food, beneath which the bees had made their nest. He also mentioned a remarkable instance of the power of scent possessed by the Rose beetle, of which insect he had recently seen hundreds upon the trunk of a young Ash tree in a dying state, of which the exhausted sap was exuding, the scent of which had attracted the beetles. Mr. Bates, who has for nine years past been sojourning in the interior of Brazil for the purpose of collecting insects, was admitted a member on his return to England, and complimented by the Chairman on the benefits which he had rendered to entomology during his residence abroad. Mr. Tegetmeier described an interesting process in bee-keeping, recently practised for obtaining a hive of pure honey unmixed with brood, in the month of July. This was effected by driving the queen and half the bees out of the hive about the 25th June, when the remaining bees immediately set to work and reared a new queen from the brood comb, by which time all the remaining brood was hatched. The bees still remaining in the hive with the new queen were then driven into another hive, leaving the honey cells in the old hive full, and the brood cells empty.

British Pomological: *July* 21.—Mr. Hogg in the chair. The Secretary read a letter from Mr. W. J. Ward, of Headington Hill, near Oxford, concerning the identity of his Strawberry Omar Pacha with Rival Queen and Eliza. He affirmed his variety to have been raised from seed at Prospect Hill in 1851 from Caroline Pine impregnated with British Queen; sown in a pan as soon as ripe and planted out the following spring; that his late employer, W. Stephens, Esq., and he watched them with great interest, and selected Omar Pacha for its superior flavour: that he had sufficient stock in 1854 to gather from and exhibit, which he did at Regent's Park, Chiswick, Ashford, and Bath, sending fruit also to those whom he considered the best authorities of the day. He accompanied this letter by a copy of the circular which contained their opinions, to show that it was not sent out without a character. He further stated that he does not know Myatt's Eliza, being quite sure that it was never cultivated at Prospect Hill during the 14 years he was there. Also that he knows nothing of Rival Queen, and that Mr. Tiley bought Omar Pacha of him. It was further reported by a member present that Omar Pacha had been carefully compared with Eliza in a private garden at Winchester, where it had been obtained directly from Mr. Ward. Mr. Ward's letter was considered by the meeting sufficient to clear him from any knowledge of the mistake. Mr. Spary, of Brighton, sent a good and well-ripened bunch of Golden Hamburgh Grape, the fourth which he had cut from a graft inserted on the young wood last year.

August 4th.—Annual General Meeting. Mr. Hogg in the chair. The accounts for the past year were laid before the meeting and unanimously approved. They showed the receipts to have been 200*l.* 1*s.* 11*d.*, and the expenditure 194*l.* 19*s.* 2*d.*, which showed a balance to the credit of the Society of 5*l.* 2*s.* 9*d.* The secretary reported that, notwithstanding the loss of four members by death and resignation during the past year, the number now upon the list was 232, being 80 more than the corrected number reported at the last annual meeting. With reference to office-bearers, F. J. Graham, Esq., of Cranford, and H. Webb, Esq., of Redstone Manor, Reigate, were elected new Vice-Presidents; and the following names were added to the Council, viz., E. W. Cox, A. Scrutton, R. Frankum, R. Stains, and J. B. Haig, Esquires; Messrs. J. Fraser, S. Mart, G. Paul, J. Spencer, J. Cutbush, W. Davidson, E. Spary, G. Gordon, J. Ivison, J. Peel, and J. Milne. Messrs. J. Fraser, W. Paul, and R. A. Arnott, were elected auditors. This being the meeting on which premiums were offered for collections of Grapes, a very large and interesting collection was contributed by Mr. Newton, gr. to G. J. Graham, Esq., Enfield Chase, and which was awarded the first premium of Three Guineas. In the Muscat section the following varieties were contributed:—Muscat of Alexandria, a good bunch, well ripened, which served for comparing and testing other varieties: Muscat of Eschcolata: this variety in the Horticultural Society's catalogue has been confounded with the former one. It is, however, unquestionably distinct, as it appears to set better, and evidently ripens in much lower temperature, a bunch of Merrick's Victoria Hamburgh from the same house being scarcely so ripe; in every other respect the varieties are very similar. A Seedling Muscat, raised from White Syrian and Muscat of Alexandria appeared very similar to the last-mentioned variety, and from the evidence adduced, appeared suited to a cool house; the berries were very sweet and good, and the exhibitor affirmed it to be a better setter than the other kinds. The meeting, however, desired more conclusive evidence before they would express an opinion upon its merits. In this class should be mentioned Uva Tröggin, a kind bearing some resemblance to Cornichon Blanc, but in form of berry about half-way between that and Muscat. It was a variety imported from Italy, and, although sweet, was thick-skinned and of no value. Allied to the Muscats was a fine and well-ripened bunch of the White or Genuine Tokay. This Grape is a free grower, great bearer, good sitter, hangs well, and is very hardy: as it is also a sweet and thin-skinned Grape, it is worthy of being more usually grown where an assortment is desired. In the Black Hamburgh section there was a bunch of the usual variety; also one called Coventan, which was too nearly similar to be considered distinct. Wilmot's Black Hamburgh, which is distinguished by the berries being much elongated, and having the appearance commonly called hammered. It is generally more compact in bunch than the original variety. And Meyrick's Victoria Hamburgh, which is generally very large in berry, and more round than the last mentioned, but is frequently less highly coloured. It approaches very nearly, if it is not identical, with the Mill Hill Hamburgh. A fine and well-set bunch of the Black Morocco included in the collection was not quite ripe. Of the St. Peter's section was a bunch of the original variety, quite ripe and very sweet; and one of Black Prince, in good condition but less ripe. A large bunch of that peculiar variety, Gros Gromier du Cantal, partaking of the qualities of Sweetwater and Hamburgh, with the colour of Grizzly Frontignan, had been cut some days, but was ripe, sweet, and very juicy. Of the White Frontignan, a bunch remarkably large and handsome, though scarcely ripe, was included in the collection. Of the Muscadine section were a bunch of the true Royal, mis-named White Sweetwater; also, one called Griffin's Royal Muscadine, which was undistinguishable save in the bunch being smaller. In the Sweetwater section were a good bunch of the Old Dutch, and one called Diamond Drop, which appeared to be a better setter, but was thicker skinned and inferior in flavour. A variety something like Esperione, but smaller and inferior, was not recognised. A Black Seedling, said to have been raised between Black Cluster and White Sweetwater, described as a great bearer, was straggling in bunch, small in berry, full of seeds, very thick skinned, and utterly worthless. Mr. Ivery exhibited a very fine bunch of his Buckland Sweetwater. The meeting was much gratified to find that it so fully maintained the high opinion which the Society had previously passed on it; the only peculiarity noted regarding it, which differed from the description given last year, was that the berries had reassumed the bluntly ovate form under which it had first been presented.

Notices of Books.

The Rifle and How to Use it, &c. By Hans Busk, First Lieutenant Victoria Rifles. Routledge; 12mo. Fourth Edition.

Mr. Busk, the author of this little work, possesses the merit of perfectly understanding the rifle question in all its bearings. He therefore stands before the public as an authority upon a subject that is much engrossing the attention of thinking men at the present moment. Notwithstanding the general belief that Government was not in earnest in sanctioning the formation of dismounted yeomanry corps in the shape of Rifle volunteers, and the doubt still felt upon the subject, there is very sufficient proof that among the middle classes a strong conviction exists that our home defences are by no means such as to secure our coasts even from hostile insult. And, notwithstanding the unfairness of calling upon men in discharge of a great public duty to volunteer to do at their own cost what should be paid for by the entire population, it seems evident that a large body of riflemen will soon be more or less completely organised. With fair encouragement from Government half a million men would answer to an appeal to arm and organise. As it is we may still expect that many thousands will fall into the ranks of this volunteer corps.

To such men a cheap, plain, practical manual like the present is most useful. They are not like common military recruits, content to be made into a machine, without understanding more than the routine of parade on an occasional field day. The persons who are now coming forward belong to the intelligent class, and the privates desire to understand what they are about as well as their officers. In this will consist their value should it ever be necessary to send them into action. They will be masters of a most formidable weapon, the effectiveness of which however greatly depends upon the individual skill with which it is used. To Mr. Busk's pages we may refer for all that relates to this essential matter. He explains the faults of the old musket and the advantages of the rifle: he points out what in his opinion are the best kinds of rifled firearms; examines the various breech-loading arrangements, which will unquestionably by degrees put an end to muzzle-loading; then enters into minute details as to the manner in which rifles are to be used, and concludes with valuable practical observations on drilling and training. Upon the last subject we must allow Mr. Busk to speak for himself.

"At the present important crisis when the whole population of these islands is preparing to arm, any work on the rifle would be incomplete, which did not furnish simple, yet precise instructions, whereby the young volunteer may be taught the new manual and platoon exercise, as now practised by all British light infantry corps.

"It is a great mistake to suppose that proficiency at the target is all that is required to constitute an efficient volunteer. It is absolutely essential that he should, in addition, act with precision in concert with others; should learn that implicit obedience to his officers without which no man has any pretension to be considered a soldier, for without it he is worse than useless in the field.

"Any body of men, whatever their skill as shots might be, who should venture upon active service, under the supposition that each individual would be at liberty to act independently as might seem best to himself, would soon find, though too late, that their zeal and valour were wholly misplaced, that they would be continually in the way, without much chance of doing good, and would, perhaps, not unfrequently suffer as severely from the fire of their friends as their foes.

"Rifle clubs and rifle associations are invaluable institutions in their way, but their members must not imagine that, even after months of mere practice at the target, they can be deemed useful soldiers.

"They have, it is true, learnt an important branch of their duty, but they are then only fit to be drafted into a rifle corps. In fact, until they are so enrolled, and have taken the prescribed oath, all drilling and training is illegal, and subjects those concerned in it to serious penal consequences.

"All drill for volunteers should be as simple and as little irksome as possible. The great object is:—

"1st. That each individual should have sufficient knowledge of every part of his rifle to enable him to take it to pieces and put it together again when requisite.

"2d. That he should know how to load his gun properly.

"3d. That he should know the manner of regulating his aim according to the distance of the object to be hit.

"4th. That he should be practised in estimating distances within the ordinary range of his rifle.

"5th. That he should be able on all occasions to take up a position in which he will be enabled,

"To aim with facility;

"To keep his body steady without constraint;

"To be careful above all not to allow his sights to incline to one side or the other;

"To support the recoil.

"6th. When pressing or 'pinching' the trigger in the act of firing, to be particularly careful not to derange his aim.

"These few simple rules are all that are really necessary to enable any man to attain the maximum effect with his rifle."

We must however remark that one point, although of the first importance, is far too slightly dismissed by Mr. Busk. We allude to the preparation of ammunition. Unless bullets are properly adapted to the firelock no accuracy in firing is possible. Spherical balls being now obsolete the errors belonging to them may be passed by; but elongated bullets require to be made with the greatest care. Unless the hollow at the base is in proper proportion; or if the bullet mould is not made perfectly true, firing must necessarily be wild. Not long ago moulds were sold so carelessly turned that the bullet when placed on its end instead of being perpendicular stood leaning to one side, owing to the base not being at right angles with the sides; such bullets would deviate from a right line a full yard in 100 yards. Another cause of inaccurate firing is the use of *culots* or iron cups placed in the hollow of the base of the bullet. These ought never to be employed; if they stand ever so little obliquely in the hollow, the line of fire corresponds with the obliquity and the bullets will upset, that is, rise or fall or fly to the right or left, according to the position of the cup. There is no possibility of insuring the accurate insertion of such cups. A jolt in the cartridge box will of itself disturb them, to say nothing of errors in inserting them at first. If they are pressed forcibly into the hollow so as to fix them truly and steadily then the base of the bullet spreads and they become too large for the muzzle of the firelock. This indeed is what happens with the wooden plugs now used in government ammunition. As far as our experience goes there is nothing equal to a Pritchett bullet carefully cast, and used without a plug. We once saw a cupped bullet fired from a rest at the distance of only 100 yards by a practised shot, strike four-

teen paces to the right of the bull's-eye. Rather dangerous work.

Mr. Busk's advice respecting the relative value of rifles cannot be too strongly impressed upon the minds of those who mean to procure arms independently of the Government. The superiority of the Lancaster rifle to the Enfield had been on other occasions sufficiently proved; but in August, 1858, in Chatham marshes a final and, we should think, conclusive trial was made:—

"The arms made use of on the occasion were Lancaster's elliptical rifle, of the same construction as that used by the Royal and East India Company's Engineers, and the ordinary Enfield rifle in use by the troops of the line and the School of Musketry, Hythe. The persons selected to make the trial were several non-commissioned officers belonging to the Royal Engineers and an equal number of non-commissioned officers chosen from the depôts of the East India Company's regiments attached to the 2d Battalion, each of whom had undergone a regular course of instruction in the theory and practice of the rifle. Twenty rounds of ball cartridge were supplied to each. The practice commenced at 350 yards, the distance being gradually increased to 600 yards. The result of the trial again proved most conclusively the superior accuracy of the Lancaster over the Enfield rifle, although the skill of the contending parties was as nearly matched as possible. The practice of the non-commissioned officers was allowed to be very good, the target at 500 and 600 yards being repeatedly struck, and the general accuracy of the firing such as to elicit unqualified admiration. At the termination of the trial it was ascertained that the non-commissioned officers of the Royal Engineers, with the Lancaster rifle, had gained the large number of 17 out of 20 'points,' while the number of 'points' made by the non-commissioned officers of the 2d Battalion, with the Enfield rifle, was only 13.88. The finest practice which took place during the trial was that made by Colour-Sergeant Barrow, Royal Engineers, and Colour-Sergeant Gosling, 52d Light Infantry, each of whom made the astonishing number of 21 'points.'"

"A few days later than the experiments above recorded the final trial between the Lancaster and Enfield rifles took place at Chatham.

"A number of skilled non-commissioned officers from the 3d battalion of the line were provided with the Enfield, and a like number of non-commissioned officers belonging to the Engineers with the rifle arm.

"Each man had 20 rounds of ammunition. The targets were fixed at different distances varying from 350 to 600 yards.

"The Lancaster evinced its superiority from the first, and maintained it throughout the trial; at the close of which it was found that, out of the 20 rounds, the average number of 'points' made by the Royal Engineers was 15.66, the non-commissioned officers of the line only averaging 8.0. Sergeant Cann, R.E., made the finest practice of the day, gaining the unprecedented number of 23 'points.'

"The result of the whole series of experiments is, that the Lancaster rifle gained 15.88 'points,' the Enfield rifle only 12.62; showing a very decided superiority in favour of the Lancaster weapon."

With such evidence before us we cannot believe that Government intends to call upon volunteers who have Lancasters of their own to substitute Enfields in case of invasion. The nipples and calibre of each being the same Government ammunition should fit them equally well, which is all that the efficiency of the service demands.

As to the Whitworth rifles, respecting which such very favourable reports have been made, it is useless at present to inquire into their history, seeing that there has been no trial of them in the hands of soldiers under fire, and moreover that it must be a long time before they can come into the military market.

Garden Memoranda.

Mr. Berrenger's, St. Neot's, Huntingdonshire.—Visitors to this pretty little country village should not leave it without inspecting Mr. Berrenger's Graperies. Although a baker by trade he grows Grapes in great perfection, both indoors and out. His garden though small is a model of its kind. At present it literally glows with Scarlet Geraniums and other gay bedding plants, while the walls and adjoining roofs are clothed with Vines now loaded with fruit somewhat more than half swelled and perfectly free from mildew or other disease. From these Mr. Berrenger makes English champagne, in the manufacture of which he is considered very skilful. His best, however, is prepared from hothouse Grapes in a ripe state, of which he has great quantities. Immediately behind his house is a large Vinery, every rod in which is loaded with Grapes, chiefly black kinds, but more especially Black Hamburgh, some bunches of which weighed as much as 2½ lbs.; they were as black as Sloes, and covered with a beautiful bloom. These Vines, which are by no means young, have borne heavy crops without failure for years. They are close pruned on the spur system, and on the fruit-bearing branches more leaves are allowed to grow beyond the bunches than is usual; these Mr. Berrenger finds tend to make the colour of the fruit more perfect than would otherwise be the case. The border, which was made very deep in the first instance with rich material, is evidently not nearly exhausted; but in order to preserve its fertility unimpaired as long as possible, it receives copious waterings of liquid manure at all times during the summer, but more especially while the Vines are in active growth.

Being on gravel and the situation comparatively dry, the border was not bottomed. The Vines are planted inside the house. Another Vinery contiguous to the one just mentioned is managed in the same way and with equal success. Indeed Mr. Berrenger has acquired a more than local fame for his skilful Grape growing, and is consulted in cases of failure even by ladies and gentlemen who keep "practical" gardeners. Here then is an instance of Vine growing of the most successful description being carried on by an amateur who is daily actively engaged in another trade. He is fond of his garden, and does everything in it with his own hands. "It furnishes him," he says, "with profitable amusement for what leisure hours he may have to spare."

Calendar of Operations.

(For the ensuing Week.)

PLANT DEPARTMENT.

Conservatory, &c.—No time should be lost in completing the repairs of the various structures devoted to the growth of plants, before the latter are put under the protection of glass. Continue to keep the house gay by a selection from the reserve houses of the showiest plants in bloom; carefully tie out, before they reach the blooming state, the different varieties of Lilium lancifolium; two other good autumn-flowering plants should likewise have the like attention; viz., Crowea saligna and Plumbago capensis, which are invaluable at this season. Attend to the proper regulation of climbers, and give weak liquid manure to plants in bloom, to maintain them in vigorous health, and assist the late flower-buds to open. After greenhouse plants have been placed under protection, whether of a permanent or merely temporary character, an unlimited supply of air must be given them day and night. Finish the potting of Chrysanthemums, and stake them securely as they advance. The stock of autumn and winter flowering plants should not be stopped after this, but have every encouragement to assist in ripening their wood early, that no difficulty may arise in getting them into bloom at the time wanted. Daphnes, Oranges (of different kinds), Myrtles, and Gardenias intended for forcing should be removed to a cool airy house to rest.

FORCING DEPARTMENT.

Vinery.—Ripe Grapes should be occasionally looked over, to remove decayed berries. Wasps at this season are troublesome, and, to prevent their entrance, tack hexagonal or other netting on slight frames, and place them over the sliding sashes and ventilators; extra growths after this should be stopped back, but preserve the principal leaves untouched, until they die naturally. We allude to this, as we have seen large leaves frequently removed, to admit the sun to the ripening fruit. Pinery.—Finish off potting, both of the fruiting and succession plants, as soon as circumstances permit, that time may be allowed them to finish their growth before the dull days of winter. In re-plunging them allow plenty of room between the plants for their growth during the next three months, and keep them as near the glass as the form of the pit or house will permit. Keep up a steady bottom heat at 80°, to facilitate a quicker growth of the root after potting; it may gradually decline a few degrees as the plants advance. Syringing should be discontinued (unless in dry airy houses) as the days shorten, and the external air becomes moister, except to plants swelling their fruit, which will require a moist atmosphere. Air should be freely given the fore part of the day; but the plants will enjoy being closed up early in the afternoon at a temperature of 90° or 95° for three or four hours, giving as much air afterwards as will produce a gentle circulation through the night. Water fruiting plants with liquid manure when dry; where the fruit is cut from those kinds which do not produce suckers freely, the stools should be shaken out of their pots and repotted in deep and less-sized pots, plunging them in a brisk bottom heat; this will generally induce them to produce a supply.

FLOWER GARDEN AND SHRUBBERIES.

Cuttings of choice herbaceous plants, Carnations, Picotees, &c., put in early, should be pricked out or potted immediately they are struck, to get established. Early struck Pansies may be planted out for autumn blooming. Young seedling Wallflowers, Brompton Stocks, Sweet Williams, and other biennials, should either be planted out into reserve beds, or where they are to flower. Continue the propagation of bedding out plants, making notes of desirable new things. The present w[illegible] prove a favourable time to propagate by cuttings most kinds of Roses. Choose the ends of the shoots for the purpose, with the bottom part partly ripened. Noisettes, Bourbons, Chinas, and many Perpetuals will strike freely in sandy soil by the above means. Now, and during the whole of September and October, is the best season of the year for transplanting evergreens.

HARDY FRUIT AND KITCHEN GARDEN.

Potatoes on wet soils should be taken up wherever the haulm is decayed, to prevent the sound ones from rotting. Where the tops show any appearance of vitality the crop may remain for a time, to stand the chance of becoming better ripened. Store the sound part of the crop in small quantities in sheds, lofts, &c., to dry, before attempting to pit them; for probably many will still turn diseased. If not already sown, lose no time in getting in the spring Cauliflower, Lettuce, &c. A bed of Onions may likewise be sown thickly, to stand the winter. A crop of dwarf French Beans should be sown under a south wall, for the chance of a late supply; and an empty Melon pit may be planted at the same time, keeping the sashes off till frosty nights come on. Prune off superfluous shoots from Tomatoes against walls, that they may not shade the ripening fruit. The leading shoots may be pinched out when sufficient fruit is set, which will assist to ripen the crop. Chilies, in pots or frames, should be kept free from green-fly; a little manure water will keep those in pots. Earth up Celery and Cardoons on dry days. The last crop of Peas will require sticking, and any appearance of mildew checked by dusting them with lime and sulphur.

COTTAGERS' GARDEN.

Where a row or two of Celery has been planted let them be earthed up when the plants are dry. A few Cabbages may still be planted 9 inches apart, every alternate one to be drawn for greens, the rest to stand through the winter for late spring use. If a little Parsley has been sown during summer let it be thinned out so as to afford what remains strength to stand the winter. Fruit, if any, should be stored in a cool dry airy place, and be handled as little and tenderly as possible. It should not be laid on either hay, straw or Moss, all of which spoil its flavour; on a clean, dry, wooden shelf is best.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.
For the Week ending August 25, 1859, as observed at the Horticultural Gardens.

August.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Min.	Mean	Temperature of the Earth. 1 foot deep.	2 feet deep.	Wind.	Rain.
Friday 19	20	30.106	30.068	82	50	66.0	65	64	S.E.	.00
Satur. 20	21	30.153	30.070	83	48	65.5	66	64	E.	.00
Sunday 21		30.223	30.147	82	42	62.0	67	65	N.W.	.00
Mon. 22	23	30.302	30.173	81	44	62.5	66	64½	N.W.	.00
Tues. 23	24	30.176	30.036	82	46	64.0	66	64½	W.	.60
Wed. 24	25	30.014	29.836	85	48	66.5	66	64½	E.	.00
Thurs. 25	26	29.776	29.718	89	60	74.5	66½	64½	S.W.	.62
Average		30.107	30.009	83.4	48 3	65.8	66.0	64 4		.62

Aug. 19—Foggy; very fine; clear at night.
" 20—Foggy; exceedingly fine; hazy.
" 21—Fine; very fine throughout; cool at night.
" 22—Slight fog; exceedingly fine; quite cloudless.
" 23—Fine; very fine throughout.
" 24—Very fine; hot with bright sunshine; very fine at night.
" 25—Fine; very hot; thunder, lightning, with some hail at night.
Mean temperature of the week, 4·2 3ds deg. above the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 33 years, for the ensuing Week, ending Sept. 3, 1859.

August and Sept.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 28..	72.7	50.2	61.4	14	0.20 in.	2	7	3	—	4	7	7	1
Mon. 29..	71.5	48.3	59.9	11	0.58	4	5	4	1	2	9	5	3
Tues. 30..	72.1	48 5	60.3	6	0.92	2	5	4	—	5	7	7	3
Wed. 31..	71.1	48.6	59.8	15	1.31	2	6	4	2	2	5	7	5
Thurs. 1..	70.8	48.0	59.1	17	1.59	2	4	3	3	3	9	4	4
Friday 2..	70.4	47.4	58.9	12	0.44	2	5	2	1	2	5	9	2
Satur. 3..	70.3	48.3	59.3	12	0.49	2	7	3	1	6	6	6	2

The highest temperature during the above period occurred on the 1st, 1843—therm. 85 deg.; and the lowest on the 29th 1850—therm. 32 deg.

Notices to Correspondents.

Books: *Old Sub.* Dr. Lankester's book on food can be had at the museum at South Kensington, price 6*d*. We suppose it can also be obtained through the booksellers.

Greenhouse: *Quite a Beginner.* Shades must be outside. We received the other day a sample of a very nice material for the purpose from Mr. W. Hill, Builder, Brixton Hill, London. It is sold in pieces 50 yards long by 70 inches wide, at the rate of 1*s*. 2*d*. a yard. If you have shelter for only three materials for potting, let those materials be peat, loam, and sand. We see no objection to the place you propose to keep them in.

Griffin's Alma Lettuce.—Mr. Griffin has sent us three fine specimens of this Lettuce for this season of the year. At first sight it looks like the Brown Cos; but in reality it is very different from that variety. The specimens sent were a little "run" and very bitter.

Hollies: *W C.* Top dress them in the end of November, just forking in the manure.

Insects: *E S.* Your insect is the Humming-bird Hawk moth (Macroglossa stellatarum).—*J C.* Your caterpillars are those of the common Vapourer Moth. It is very unusual for them to appear in such numbers; but their size will allow them easily to be seen, and they will fall to the ground if the trees are well shaken, and may be caught on sheets.—*Miss E O.* Quite right. It is Asitus crabroniformis.—*Cantal.* Your beautiful blue beetle is the common continental Hoplia farinosa. We have several allied species in England; but not this. *W.*

Names of Fruits: *F K.* 2, Nonesuch; 3, English Codlin; 5, Kerry Pippin; 7, Blenheim Pippin; 8, Golden Russet; 9, Reinette du Canada; 11, Scarlet Nonpareil; 12, Keswick Codlin; 13, Kentish Codlin; 16, Easter Pippin; 18, decayed; 20, Yorkshire Greening; 22, Beauty of Kent; 23, Dutch Codlin. The Plum is the Orleans. Pears not known, one of them decayed. ‖

Names of Plants: *J Luff.* Nicotiana cerinthifolia, sent to N Zealand from Europe.—*Devonian.* As far as we can judge from mere buds your Chinese plant is Pardanthus chinensis; the Pentstemon is P. Gairdneri.—*J E.* It is some Chenopodium, and apparently C. Quinoa, but it is impossible to make out species of this genus with certainty unless the specimens are very complete with all the forms of leaves which the stem bears perfectly preserved. Yours reached us in the state of a wisp of hay.—*A Subscriber.* Leycesteria formosa.—*Delamen.* 1, Spiræa callosa, out of flower; 2, Saxifraga hypnoides; 3, leaves, apparently of Cephalotaxus Fortuni; 4, Pinus Gerardiana—very rare.—*W Wilson* Some weed we suppose. The fragments in your letter, mashed in the post office, look like pieces of Charlock.—*A J.* 1, Physalis Alkekengi; 2, Lotus tetragonolobus; 3, Monarda didyma.—*Kingussie.* Lysimachia vulgaris.

New Zealand: *Brecon.* No such letter has reached us. You shall have a answer next week.

Squashes: *J H.* Very little is known about them here. We never saw yours before. If it is the best you have ever eaten pray let us have a seed or two for trial.

The Locust Bean of Syria: *J Redwood.* This is the pod of Ceratonia Siliqua, a great tree. The sweet pulp is eaten by man; but the pods and seeds are the food of cattle, especially of horses, who thrive on them. Under the name of Algarobas they were used by the English cavalry in Spain during the Peninsular war; and are sometimes imported as cattle food, but they are we believe in little favour here.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London, S. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

LONDON MANURE COMPANY
(ESTABLISHED 1840),
Have the following MANURES ready for delivery:—
CORN MANURE FOR AUTUMN SOWING.
BLOOD MANURE FOR AUTUMN SOWING.
URATE.
SUPERPHOSPHATE OF LIME.
SUPERPHOSPHATE MINERAL.
The London Manure Company also supply PERUVIAN GUANO (direct from Messrs Gibbs & Sons), SULPHATE OF AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of known value, all of which they warrant strictly genuine. Wholesale dealers supplied.
116, Fenchurch Street, E.C. EDW. PURSER, Secretary.

BURNARD, LACK, AND CO.'S CONCENTRATED SUPERPHOSPHATE OF LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.
CONCENTRATED TURNIP MANURE, equal in value to the preceding.
Of these Manures Dr. Voelcker says:—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."
Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to BURNARD, LACK, & Co., Sutton Road, Plymouth.

REDUCTION IN PRICE OF LAWES'S MANURES.
MR. LAWES begs to announce that he has this season reduced the price of the Manures manufactured by him, viz.:—

TURNIP MANURE	from £7 to	£6 6
SUPERPHOSPHATE OF LIME ..	,, 7 to	6 6
MINERAL do. ..	,, 6 to	5 5
BARLEY MANURE..		8 0

Prof. Way and Dr. Voelcker have sampled from a bulk of 5000 to 6000 tons at his factories, and their report and analyses are given in full in Circular to be obtained on application at his office, 1, Adelaide Place, London Bridge, E.C., or of his local Agents.
N.B. Genuine Peruvian Guano direct from Messrs GIBBS, Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures. American Cotton-seed Cake supplied.

REIGATE SILVER SAND.—Best quality for Florists, 16s. per ton; less quantities, 1s. 6d. per bushel, delivered to any London wharf or railway. Sacks for sand, 1s. 6d. each, or on hire 6d. each (five hold a ton).
JOHN KENNARD, Purveyor to her Majesty, Swan Place, Old Kent Road, London, S.E.

SOFT STUFF GREAVES ARE A CAPITAL MANURE FOR WHEAT LANDS.—The undersigned have sent large quantities to Norwich, where they are highly approved.—Price 4l. 10s. per ton in tierces (no charge for casks), delivered free to any railway station in London.
JOHN WILLIAMS & SON, Soap Works, Clerkenwell, London, E.C.

TO PIG AND POULTRY FEEDERS.
RICE SWEEPINGS FOR CHICKENS, 8s. per cwt., in 1½ cwt. bags. SCREENED RICE, 11s. per cwt., in 1½ cwt. bags. RICE MEAL, 6s. 6d. to 8s. 6d. per cwt. OILCAKE, 10l. 10s. to 11l. 10s. per ton only. DOG BISCUIT, 14s. per cwt.—Sold for cash only by W. & R. JUPP, 6, Cross Lane, St. Mary-at-Hill, Eastcheap, City, E.C.

SHEEP.—FOOT-ROT OINTMENT, an original preparation, by JOHN OLDHAM, of Mansfield, a certain and safe remedy, having invariably cured when other remedies have failed. It is equally efficacious in Foul in Cows, Grease, Cracked Heels, and Thrush in Horses.
Numerous parties at a distance being inconvenienced in procuring it, the proprietor has appointed Messrs. SUTTON & Co., 10, Bow Churchyard, E.C., his London Agents, and it can now be procured through any respectable Chemist or Patent Medicine Dealer.

GUTTA PERCHA TUBING FOR WATERING GARDENS.
THE GUTTA PERCHA COMPANY have the pleasure to acknowledge the receipt of the following
Testimonial from Mr. J. FARRAH, *Gr. to* Boswell Middleton Jalland, Esq., *of Holderness House, near Hull.*
"I have had 400 feet of your Gutta Percha Tubing, in lengths of 100 feet each, with union joint, in use for the last 12 months for watering these gardens, and I find it to answer better than anything I have ever yet tried. The pressure of the water is very considerable, but this has not the slightest effect on the tubing. I consider this tubing to be a most valuable invention for Gardeners, inasmuch as it enables us to water our gardens in about one-half the time, and with one-half the labour required."
Manufactured by the Gutta Percha Company, Patentees, 18, Wharf Road, City Road, London, E.C., and sold by their Wholesale Dealers in town and country.

SHAW'S TIFFANY is universally acknowledged to be the best, neatest, and cheapest material for shading Conservatories, and other Hothouses. Effectually securing Plants from the scorching rays of the sun, without obscuring the light. Also, for protecting the Bloom of Wall Trees from spring frosts, and Fruit from birds and wasps. Sold in pieces.
No. 1.—20 yards long, by 38 inches wide, 5s. per piece.
No. 3.—Double strength, 18 yards long, by 39 inches wide, 7s. 6d. per piece.
No. 4.—Treble strength, 18 yards long, by 39 inches wide, 9s. per piece.
A liberal allowance to the Trade when ten or more Pieces are taken.—JOHN SHAW & Co., Princess Street, Manchester.

"FRIGI DOMO."—Patronised by her Majesty, the Queen, the Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, and —Collier, Esq., of Dartford.
PROTECTION FROM THE SCORCHING RAYS OF THE SUN.
"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths. Two yards wide, 1s. 6d. per yard run; four, 3s. per yard. Also, an improved make for Shading Purposes. Three yards wide, 2s. 6d. per yard run
ELISHA THOMAS ARCHER, whole and sole manufacturer, 7, Trinity Lane, Cannon St., City, E.C., and of all Nurserymen and Seedsmen throughout the kingdom. "It is much cheaper than mats as a covering."

WARNER'S IMPROVED LIQUID MANURE OR GENERAL PORTABLE PUMP.



These Pumps are fitted with WARNER'S Patent Bucket and Valve, and cannot clog in action. The barrel is made of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure on the stand, the legs of which fold together, and may be carried with ease by one man to tank or pond.

	£	s.	d.
Stand and Pump, with screwed tail pipe, fitted with strong brass union for suction pipe	2	15	0
If fitted with barrel of planished copper	3	4	0
Stand and Pump, with plain tail pipe, for tying on suction pipe	2	9	0
2-inch patent rubber and canvas flexible suction pipe, on wires, either 10, 12, or 15 ft., per foot	0	2	2

May be obtained of any Ironmonger or Plumber in town or country, at the above prices, or of the Patentees and Manufacturers, J. WARNER & SONS, 8, Crescent, Jewin St., London, E.C.

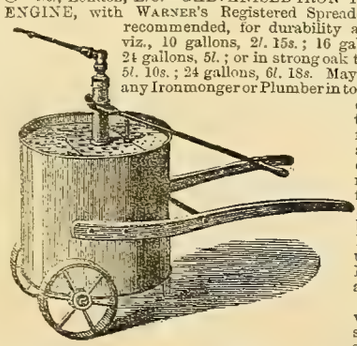
WARNER'S PATENT VIBRATING STANDARD PUMPS.
PATENT CAST-IRON PUMPS for Farms, Cottages, Stable Yards, &c., where the Well does not exceed 28 feet in depth; fitted with WARNER'S Patent Metal Bucket and Valve, which cannot clog in action. These Pumps can be made right-handed, left-handed, or with handle opposite the nose by removing four screws only.



Diameter of Barrel.	Height.		£.	s.	d.
2¼ in.	short 1 ft. 7 in.	Fitted for lead, gutta percha or cast iron flanged pipe as required.	1	5	0
2¾ ,,	long 3 ,, 3 ,,		1	10	0
3 ,,	ditto 3 ,, 6 ,,		2	4	0
3½ ,,	ditto 3 ,, 6 ,,		2	9	0
4 ,,	ditto 3 ,, 6 ,,		2	13	0
2½ ,,	short, with 15 feet of Lead Pipe attached, ready for fixing		2	10	0
2½ in.	long ditto	ditto ditto	2	14	0

The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.
May be obtained of any Ironmonger or Plumber in Town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin Street, London, E.C.
Every description of Machinery for Raising Water by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

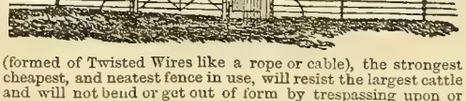
JOHN WARNER AND SONS, Crescent, Jewin St., London, E.C.—GALVANISED IRON TUB GARDEN ENGINE, with WARNER'S Registered Spreader, is strongly recommended, for durability and low price, viz., 10 gallons, 2l. 15s.; 16 gallons, 3l. 15s.; 24 gallons, 5l.; or in strong oak tub, 14 gallons, 5l. 10s.; 24 gallons, 6l. 18s. May be obtained of any Ironmonger or Plumber in town or country, or of the patentees and Manufacturers; as also Machinery of all kinds for raising Water from any depth to any height by Steam, Horse, or Manual Power. Prices sent on application.



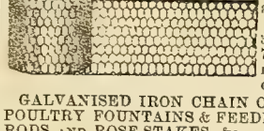
Syringes of various constructions and sizes from 9s. upwards. Metallic String from 10d. to 1s. 2d. per lb.

CAST-IRON GARDEN ORNAMENTS, viz.—ORNAMENTAL VASES, of various sizes, do. with pedestal, GARDEN CHAIRS and STOOLS, RUSTIC GARDEN SEATS and TABLES, both plain and bronzed, also GARDEN ROLLERS of all sizes.—Prices on application to J. JONES, Iron Merchant, 6, Bankside, London, S.E.

PRICES REDUCED.
H. J. MORTON AND CO., Galvanised Iron Works, 2, Basinghall Buildings, Leeds.
GALVANISED IRON ROOFING
for Farm Buildings and other Roofs; the cheapest, most durable, and neatest Roofing in use; also Spouting at 10½d. per yard.
WIRE STRAND CABLE FENCING



(formed of Twisted Wires like a rope or cable), the strongest cheapest, and neatest fence in use, will resist the largest cattle and will not bend or get out of form by trespassing upon or over. Price, with five lines of the Galvanised Strand, iron main posts, and pronged Standards, 1s. 2½d. per yard.
This fence is far cheaper than posts and rails, or any kind of iron fencing; and possesses four times the strength of solid bars. Will not rust nor corrode. Upwards of 1200 miles of this Fencing supplied.
GALVANISED CAME AND POULTRY NETTING.



Galvanised, 24 ins. wide, 2-inch mesh, 5½d., 7½d. and 9½d. per yard.
Galvanised, 24 ins. wide, 3-inch mesh, 4d., 5d., and 7d. per yard. The Netting made any width, and with openings of any size.
GALVANISED IRON CHAIN CAMP STOOLS & CHAIRS, POULTRY FOUNTAINS & FEEDERS, PRONGED DAHLIA RODS AND ROSE STAKES, &c.
Strong CATTLE HURDLES from 2s. per yard.

PATENT IMPROVED GAS WORKS,
of all sizes for the use of Private Houses, Mansions, Railway Stations, Mills, Collieries, Mines, Villages, &c. Works from 10 to 500 lights estimated for. The works can be entrusted to an ordinary labourer.—Apply to
HENRY J. MORTON & Co. 2, Basinghall Buildings, Leeds.

AGRICULTURAL MACHINERY.
E. R. AND F. TURNER, Ipswich, manufacture Prize Mills for Crushing Corn, Seed, Malt, &c.; Portable Grinding Mills, Steam Engines fixed and portable from 2 horse-power and upwards; Threshing Machines, Chaff Cutter, Oilcake Breakers, Horse Gears, Saw Tables, &c., all of a superior description and adapted for Home, Colonial, and Foreign use. Illustrated Price Lists sent free on application.

HAYMAKERS, possessing the best features of Nicholson's Prize Machines, with recent improvements peculiar to those supplied and manufactured only for
RICHMOND AND CHANDLER, Salford.
Branch Establishment, South John Street, Liverpool.
N B. The celebrated Bedford and Stamford Prize HORSE RAKES always in stock, with latest Patented Improvements.

HAY HARVEST.
NICHOLSON'S PATENT HAYMAKER, to which was awarded the First Prize of the Royal Agricultural Society of England at the last contested trial.
The celebrated STAMFORD HORSE RAKE has lately been much improved, and has obtained 26 Prizes at competitive trials.
MOWING AND REAPING MACHINES are performing their work most satisfactorily, and fully justify public expectation, cutting about 10 acres per day, at a cost of 9d. per acre.
Orders for the above machines should be given at once to RICHMOND & CHANDLER, Salford, Manchester.
Branch Establishment, South John Street, Liverpool.

THE LANDS IMPROVEMENT COMPANY.—Incorporated by Special Act of Parliament in 1853.—2, Old Palace Yard, Westminster, S.W. To Landowners, the Clergy, Estate Agents, Surveyors, &c., in England and Wales and in Scotland.
The Directors beg leave to announce that the Company's Amendment Bill, 1859, has received the sanction of the Legislature. The Company now advance money, unlimited in amount, for the following works of Agricultural Improvement, the whole outlay and expenses in all cases being liquidated by a rentcharge for 25 years.
1. Drainage, Irrigation and Warping, Embanking, Inclosing, Clearing, Reclamation, Planting for any beneficial purpose, Engines or Machinery for Drainage or Irrigation.
2. Farm Roads, Tramways and Railroads for agricultural or farming purposes.
3. Jetties or Landing places on the sea coast or on the banks of navigable rivers or lakes.
4. The erection of Farm Houses, Labourers' Cottages, and other Buildings required for Farm purposes, and the improvement of and additions to Farm houses and other buildings for farm purposes.

Landowners assessed under the provisions of any Act of Parliament, Royal Charter, or Commission, in respect of any public or general works of drainage or other improvements, may borrow their proportionate share of the cost, and charge the same with the expenses on the lands improved.
No investigation of title is required, and the Company being of a strictly financial character do not interfere with the plans and execution of the Works, which are controlled only by the Government Enclosure Commissioners.
Under the Company's Acts, tenants for life, trustees, mortgagees in possession, incumbents of livings, bodies corporate, certain lessees, and other landowners are empowered to charge the inheritance with the cost and expenses of the above improvements, whether the money be borrowed from the Company or advanced by the Landowner out of his own funds, and owners in fee may effect these improvements of their Estates without incurring the expense and personal responsibilities incident to mortgagees, and without regard to the amount of existing incumbrances.
For further information, and for forms of application, apply to the Honourable WILLIAM NAPIER, Managing Director, 2, Old Palace Yard, Westminster, S.W.

EDINBURGH NEW VETERINARY COLLEGE.—Her Majesty has been graciously pleased, under her Royal Sign Manual, to place the New Veterinary College under the operation of the Charter of the Royal College of Veterinary Surgeons, and to "will and declare that the persons who now are and may hereafter become Students of the New Veterinary College of Edinburgh, and shall pass the Examination prescribed by the said Royal Charter, shall be Members of the Royal College of Veterinary Surgeons, and shall be entitled to all the privileges given to such Members by the said Charter."
Moreover, at the last General Meeting of the Highland and Agricultural Society, it was resolved that Students educated in any Veterinary College in Scotland, authorised by Government, shall be eligible for Examination for the Highland and Agricultural Society's Veterinary Certificate.
The WINTER SESSION for 1859–60 commences on November 2, on which day Professor JOHN GAMGEE will deliver an INAUGURAL LECTURE, at 2 o'Clock precisely.
Prospectuses may be obtained, and particulars as to Fees, &c., may be learned on application to Professor JOHN GAMGEE, New Veterinary College, Edinburgh.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, London, S.
Principal—J. C. NESBIT, F.G.S., F.C.S., &c.
The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.
Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

ROYAL AGRICULTURAL BENEVOLENT COLLEGE FOR THE RELIEF OF DECAYED FARMERS, THEIR WIDOWS AND ORPHANS.
Noblemen and gentlemen interested in Agriculture, desirous of promoting this object, will please fill up and forward a Form, as annexed.
450 influential names are enrolled to this date.
Tiptee Hall, August 27.
Sir,—I hereby request you to place my name on the list of the Promoters of the Royal Agricultural Benevolent College, provided no pecuniary responsibility (beyond a subscription or donation) attaches to such Association. Name.....
Address.....
Date .....
To J. J. MECHI, Esq, Tiptree Hall, near Kelvedon. Essex.

The Agricultural Gazette.

SATURDAY, AUGUST 27, 1859.

THE reports of seedsmen will, we believe, indicate a more rapid increase in the growth of Trifolium incarnatum than in that of almost any other recent addition to the plants of English farmers. Cultivated with hardly any labour and almost without risk, and yielding a very bulky and early

growth of green food of first-rate quality both for the stable and the feeding stall, it deserves the character it has so generally acquired; and there is now hardly any arable district of any extent in the southern and midland counties where during the next few weeks a portion of this Trifolium will not be sown for use next May and June.

Twenty pounds of seeds per acre sown broadcast now over a clean corn stubble and harrowed in after rain has fallen will, without further trouble, thus produce a valuable crop. If the land is foul with surface weeds it must of course be pared and cleaned; but this should be as much a merely surface operation as possible. If the land is well fallowed and loose, the seed sown does not vegetate so regularly as if sown upon a hard surface with hardly any tilth provided it be moist enough to let the harrow cover the seed.

The fault of the crop is that it is good only during a very short period of its growth. Just before fully in bloom it may be cut; but comparatively soon afterwards it becomes rough and coarse and hard, and if still carried in as food the half of it will be wasted. A comparatively small extent thus suffices on the largest farms. It makes coarse hay, and is, indeed, useful only as a forage crop. The shortness of the time during which it is available for this purpose is therefore a serious drawback from its value; and one which is hardly capable of being met by any attempt by various seed times through the autumn at obtaining a succession of crops. For it is right that you should sow so early as to obtain a thoroughly established plant before the winter, and if that be done the probability is that the latest sown may come as early to scythe as that which before winter frosts set in was more advanced. The only remedy must be to obtain varieties of the plant distinguished by a varying habit of growth in this respect. And we are glad to find that Messrs. Vilmorin-Andrieux & Co., of Paris,* announce two varieties of this *Trèfle incarnat* characterised by a later growth.

Their *Trèfle incarnat tardif* is characterised by flowering a fortnight later than the ordinary variety, thus offering a second crop of forage at a time when during hot summers it is sometimes difficult to provide it. Their other variety is also a *Trèfle tardif*, but distinguished by its white flower—being specified in Vilmorin's Seed List as *Trèfle incarnat tardif à fleur blanche!*

M. Lejeune, to whom this variety is due, speaks of it as yielding an enormous quantity of forage of a finer quality, and capable of being cut at least eight days later than the ordinary Trifolium incarnatum. On both of these accounts it well deserves the attention of English farmers.

There are few difficulties with which the farmer has to contend more tantalising to his feelings than the appearance of mildew amongst his Swedes. The crops which have been the most promising throughout the early part of the season are those which generally suffer most severely. Various opinions are entertained in different localities as to the cause of this diseased condition of the crop. Whatever may be the cause, still this undeniable result is frequently forced upon our notice, and thus the bright hopes of the cultivator are doomed to be disappointed. The mildew is caused by the growth of Fungi upon the leaves of the crop, and it has been frequently observed that those crops which have grown most rapidly under the stimulating influence of artificial manures suffer more from it than any other. On the other hand, those crops which are grown under the slower agency of farm-yard manure are generally much more exempt from it. At first view it would almost appear as if a high system of farming proved to be undesirable for the growth of Swedes. We are not, however, justified in accepting this view of the case, for other facts give evidence somewhat conflicting in its character. If, for example, the artificial manure were used for Swedes and these were sown late whilst the farmyard manure had been applied to a crop sown very early, it is more than probable that the latter would suffer and the former crop might be entirely free.

If a crop is examined which is attacked by mildew it will in all probability be found that it has in a great measure ceased to grow—not as a consequence of the attack but as a predisposing condition to it. We are well aware of the extended distribution of the germs of Fungi, and when we have either animal or vegetable matter in a condition favourable for their development they rapidly establish themselves upon any infirm and decrepid frame. When from any cause we have the growth of the Swede crop checked and its further development interrupted—whatever may be the agency—the vital energy of the plant fails to guard it against the establishment of these Fungi, and consequently the crop becomes a passive sufferer from the mildew. Such being the character of the disease it is evident that if we can avoid these checks in the growth of the crop there will be less opportunity for the Fungi establishing themselves.

There are various circumstances which have a tendency to check the growth. The maturity of the crop is one of these. This will be materially influenced by the time of sowing, for those which are sown early must necessarily have greater opportunities for coming to maturity before the cold weather of winter commences than another crop sown at a later period. This is observable in the practice of different districts, and no doubt the peculiarity of the soil or climate of the neighbourhood, combined with the general system of management there practised, renders a departure from the accepted time a source of disappointment. We must however combine these local influences with the general practice of the neighbourhood, for it is thus only that the circumstances are truly represented. Wherever a system of deep cultivation for the root crop is practised, there an earlier sowing may be safely ventured upon, even in districts where under the generally imperfect method of preparing the land an early sowing is sure to be followed by mildew. We do not presume by this entirely to ignore the influence of climate upon the time of sowing; we are, however, firmly convinced that the more imperfect the tillage of the soil may be the later the crop must be sown to avoid the mildew. Another important circumstance, namely, the weight of the crop, is also influenced by the same course of procedure. Thus we see the system which is adopted upon land that has been insufficiently worked to avoid the mildew causes an inferior crop of roots, and it brings one to the conclusion that to a considerable extent the freedom from mildew, as well as the weight of the crop, depends upon the land receiving a thoroughly deep and sufficient tillage — not being content with 4 inches of worked soil but rather securing double the depth. It will be evident on a moment's consideration that when the roots of the crop cannot penetrate beneath the 4 inches of soil which may have been worked out for them, the supplies of food must limit the weight of the crop, and the influence of hot weather being so much more operative under these circumstances than upon a deeper soil, we have the naturally languid growth soon checked and the mildew forthwith appears. When the soil has been thoroughly worked there is a good opportunity for the roots to spread through the land. The heat on the surface, which is so unfavourable in the case of a shallow soil, here causes the roots to strike more deeply into the ground; a more rapid growth is the result, and so long as this can be maintained there need be no fear of mildew injuring the crop. Other circumstances influence this disease, and to these we must refer on some future occasion. *T.*

* 30, Quai de la Megisserie, Paris.

THE LUCIFER MATCH.

Having seen in your Paper of the 30th ult. some allusions to the lucifer match I am induced to offer a few remarks upon it, although to many it may appear of too insignificant a character to bring before the public notice, but I think those ideas will soon vanish when its true character is seriously considered. I have always been a great advocate for improvement of every kind, and whether it be the change from the four-horse stage coach to the locomotive on the line of railway, the sailing vessel to steam navigation, or the old tinder box with flint and steel attached to the lucifer match—they are all greatly to be admired, and their inventors are fully entitled to the highest commendations that have or can be bestowed upon them. Referring, however, to the lucifer match, the subject of these remarks, I wish to call your attention to some of its abuses, and endeavour to show what I conceive the necessity of guarding against its increasing dangers, and of making it contribute to the revenue by imposing upon it a duty equivalent to its importance. Previous to March 25th last, the day on which the generality of premiums on fire insurances became due, circulars were issued from different offices informing parties that in consequence of the increased number of fires arising principally from incendiarism, smoking, and lucifer matches, the premium would be raised from 4 to 5 per cent.

This clearly shows the opinion of insurance companies respecting the lucifer match, and there is scarcely a week, I may say a day, without hearing through the papers of serious damage or a dreadful calamity by fire in consequence of the incautious use of the lucifer match. What I wish particularly to call your attention to is the great facilities placed within the reach of all persons, whether grown up or children, of doing serious injury to property or endangering the lives of whole families either from accident or design, by the cheapness and easy mode of obtaining the lucifer match. Boxes containing 80 or 90 of these matches may be bought for the small sum of 3*d.* per dozen, about 80 costing one farthing. Such being the case it is not to be wondered at that they find their way in great numbers, not only into every cottage but into the hands of every child, many of whom scarcely know the use of them, much less the danger, excepting that they blaze and cause a great deal of fun. Facts innumerable may be related of children (innocently enough on their part) setting fire to stacks with the lucifer match. Two such cases in Cheshire have recently come under my notice, and it is a notorious fact that hawkers give them to children as an inducement to spend a penny or twopence in the purchase of some toy. Under the head "assize intelligence" which I have just read in the last week's papers, there are no less than eight cases of arson in the Home Circuit, one at Chester, and one at Oxford; all the parties charged (with the exception of one) were committed and sentenced to penal servitude, and in the case where the person was acquitted it was looked upon by the jury as accidental, a lucifer match having been dropped out of the pocket of the accused. It would be tedious to relate any more cases in support of my argument, therefore I will briefly lay before you my scheme for checking the fearfully increasing abuse of the lucifer, the fusee, and any of their kindred.

In the first place no person should be allowed to sell them without a special license. I would also impose a duty that would raise the price 300 or 400 per cent. above their present value, and hawkers should be prohibited selling them under a very severe penalty. In fact they should be dealt with as with a deadly poison, for an evil disposed or even a thoughtless person might accomplish in a few minutes without the least suspicion what it would take weeks to accomplish by the use of strychnine or other poisons.

Such cases as the following are of frequent occurrence: a lad is corrected by his master for some offence, he takes the first opportunity of avenging himself by thrusting into a stack or building a lucifer match; he is suspected and examined, and in his pocket are found lucifers, but there being no other proof the case falls to the ground, as almost every urchin above 12 years old carries with him lucifer matches, and it might have been purely accidental. *W. P.*

DAWES' MACHINE FOR CULTIVATING LAND.

Among the entries at the Warwick Implement Yard was one for cultivating or digging land, a model of which was to be seen, though the full-sized implement did not appear. Mr. Dawes claims as his invention, first a new machine for cultivating land:—"That is to say, a machine consisting of a series of teeth, tines, forks, prongs, cutting blades, or diggers supported upon frames, the said frames being carried by cranked axles, by the motion of which, as the machine is drawn over the land, the said teeth, tines, prongs, or cutters are made to enter and rise again from the land by a nearly cycloidal motion. Secondly, actuating my new or improved agricultural machine, and other agricultural machines, by means of condensed air, the condensation of which is effected in convenient reservoirs, filled at any suitable source of power, the same being transferred as required to the agricultural machine to be actuated."

The following is an extract from his specification:—

"The said machine for cultivating land consists of one or more rows of teeth, tines, prongs, or cutters, fixed in an oblong or other suitably shaped frame, made of wood or iron. The said frame is made to work freely within a second strong frame, made either of wood or iron. The machinery by which the inner frame carrying the teeth is driven is fixed on the outer frame. The cultivator or inner moveable framework of teeth has such a motion given to it as hereinafter explained, that the teeth enter the ground with a back movement, the driving carriage at the same time progressing slowly forward. The rows of teeth at every revolution of the wheels driving them are caused to strike and enter the ground at a point in advance of that at which the former stroke commenced. By a suitable arrangement of the depth and number of teeth in each row the land may be properly prepared by this one operation for the reception of the seed; the motion of the teeth is cycloidal or nearly cycloidal, and is obtained in the following manner:—The frame carrying the teeth is supported and moved by four cranks attached to spur wheels connected with the driving power. Two of the said cranks work in journals on each side of the frame carrying the teeth, which sides of the frame answer the purpose of connecting rods between each pair of cranks, exactly as the driving wheels of a luggage locomotive are generally coupled together. The motion of the frame carrying the teeth resembles the motion of the connecting rods of the wheels of a luggage locomotive. By varying the form, length, and number of the teeth or prongs, or substituting cutters in place of the teeth or prongs, the machine described may be used as a hoe, or a skim, or for cutting turf or peat.

"My new or improved method of actuating the machine herein-before described, and other machines used for like operations, consists in the use of condensed air, which said condensed air I use in place of steam. I condense air in portable reservoirs, which can readily be transported from the place where the condensation is effected to the machine to be actuated, and the reservoirs being suitably coupled or connected with the machine, the condensed air is allowed to act on

the machine in a manner essentially similar to the action of steam.

"The machine is constructed and works as follows:—a series of teeth or fork tines, prongs, cutting teeth, or diggers, marked *a*, are arranged in one, two, or more rows, the said rows of teeth being carried by an oblong or other suitably shaped frame, or two or more frames *b*. The teeth *a* may be made of iron or steel, or of steeled iron, and the frame *b* may be made of wood or iron. The frame or frames *b* work freely within another strong frame of wood or iron *c*, which said frame *c* either forms part of the traction carriage by which the machine is drawn along, or is attached underneath or thereto. The frame *b* carrying the rows of teeth *a* are carried by cranked shafts or axles *d*, *d*, which said cranked shafts or axles work in journals or bearings in, on, or under the frame *c*. The cranked shafts or axles *d*, *d*, are coupled together on the outer sides of the machine; and the cranks *e* on one side of the machine are at right angles to the cranks *f* on the other side of the said machine. The size or throw of the cranks will depend upon the depth to which it is desired to cultivate the land. A length of 7 inches to a foot in the throw of the crank is sufficient for general purposes. As the machine is moved over the land to be cultivated, and motion given to the cranked axles by which the series or frames of teeth or tines are carried, the said teeth or tines enter the ground, and on rising again out of it throw the soil outwards. As the traction carriage by which the machine is drawn over the land progresses slowly forward, the teeth or prongs *a*, after leaving the ground, are caused to re-enter it at a short distance in advance of the point at which they previously entered. By different arrangements of the rows of teeth or tines, and by varying the length and form of the said teeth or tines, prongs or diggers, according to the nature of the soil to be operated upon, and the depth to which it may be desirable for the teethor tines to penetrate the soil, almost any description of land may be completely prepared for the reception of seed by one operation of the machine. Some of the forms of teeth which are preferred are drawn. A drill may be conveniently attached to the machine preceded by a revolving harrow, and followed by a light roll if desired. The motion of the teeth being compounded of the progressive motion of the machine, and the motion of the cranked axles *d*, *d*, is of a cycloidal nature. The manner in which the machine is connected with the locomotive power by which it is drawn over the land, and by which motion is given to the cranked shafts or axles *d*, *d*, is illustrated in figures representing in side elevation an agricultural compressed air or traction engine with my new or improved machine connected therewith. The machine may be somewhat wider than the engine, so as to act upon a width of land rather broader than that over which the engine passes. At the after part of the machine a piston, to be acted upon by steam or condensed air, or any other convenient apparatus may be applied for raising the machine or cultivator out of the ground, but as the construction of such apparatus, and also the requisite appliances for turning the machine at the headlands are well understood, and form no part of my invention, it is not requisite further to describe or allude to them. By varying the form and arrangement of the teeth or fork tines, cutting teeth, or diggers, the machine may be used for various operations on the farm, such as hoeing or skimming the surface, forking up Switch or Potatoes, digging out turves or peat. In the latter operations, and when broad cutters or diggers are required, it is convenient to turn such cutters or diggers on leaving the ground, which is readily effected by the crank motion. And also where such turves are required to be cut, it will be requisite that a row of fixed coulters, arranged according to the breadth of the turves to be cut, should precede the machine. Although I have represented the machine actuated by a traction engine, yet the said machine may be worked by any other means that may be found suitable."

These extracts, referring to figures which we are unable to give, will to some extent explain the idea of the inventor.

THE OXFORDSHIRE DOWNS.

At the last Oxford Monthly Cattle Market there was such a display of rams of the Oxfordshire Down and long-woolled breed as is rarely to be seen. The first sales consisted of 40 Oxfordshire Down rams, belonging to Messrs. Druce, of Eynsham, which were offered for sale by Messrs. T. Mallam & Son. For many years the Messrs. Druce have ranked very high as breeders of this class of sheep. The fact, however, that they obtained at the Warwick Meeting a first prize of 20*l*., and high commendations for their rams, gave the sale this year additional interest, and induced many breeders from a long distance to attend to it. The highest price obtained was 20½ gs., and the average of the whole sale was 9*l*. 8*s*. 6*d*.; the highest price which Messrs. Druce made last year was 17 gs., and the average was 7*l*. 6*s*. 5*d*.

Messrs. Mallam next submitted 20 Oxfordshire Down rams from the flock of Mr. John Hitchman, of Little Milton. The rams were unquestionably of a high character. The biddings were spirited, and the prices realised ranged from 10 gs. to 5 gs., the average of the sale being 7*l*. 5*s*. 6*d*. Messrs. Mallam's sales closed with 18 Oxfordshire Down rams, belonging to Mr. C. Hobbs, of Maiseyhampton near Cricklade. The highest price which these made was 17 gs., and the average was 6*l*. 17*s*. 10*d*. Mr. Jonas Paxton, of the firm of Messrs. J. & T. Paxton, of Bicester, then commenced the sales entrusted to them. The first lot consisted of 43 from the well-known Oxfordshire Down flock of Mr. Joseph Roberts, of Caswell, near Witney, which attracted much attention, and, after an active competition, were disposed of at prices yielding an average of 7*l*. 14*s*. 10*d*. per head. These were followed by 22 Oxfordshire Down shearlings, owned and bred by Mr. Charles Gillett, of Cote House, near Bampton. These sheep were much sought for, and produced an average of 10*l*. 10*s*. Next came 35 long-woolled shearlings, bred by Mr. R. Lord, of Stanton Harcourt, near Ensham, which, after a very spirited competition, were all sold at an average of 8*l*. 17*s*. 3*d*. These were succeeded by 40 Cotswold ram lambs, the property of Mr. William Gillett, of Southleigh, the prices of which averaged 5*l*. 5*s*. A draft of 14 Oxfordshire Down shearlings, from the celebrated flock of the Duke of Marlborough, were now introduced and produced an average of 8*l*. 15*s*. 6*d*., the last being disposed of for 17*l*. 17*s*. Following these were 19 Oxfordshire Down shearlings from the old established flock of Mr. William Gillett, of Brize-Norton. This gentleman succeeded in taking the first and second prizes for shearlings at the recent Oxford Cattle Show, in addition to a prize for the best pen of sheep in the class; they realised an average of 6*l*. 15*s*. 3*d*. only, which may be accounted for by the fact of ten having been previously disposed of by private sale at an average of upwards of 17*l*.

The Oxfordshire Down shearling ram, which Mr. Gillett exhibited at the recent show of the Oxfordshire and Banbury Agricultural Societies, and to which the second prize was awarded, has been sold for 50 gs. Mr. John Bryan, of Southleigh, who succeeded the late Mr. W. Gillett, of the same place, and who has usually submitted a very choice lot from his celebrated flock, was unable to do so this year, having disposed of by private contract no less than 55, some of which were let for the season at 20 gs. each, and others were sold at the same price.

After the above sales a few Oxfordshire Down shearlings bred by H. L. Gaskell, Esq., of Kiddington Hall, were submitted, and yielded an average of 9*l*. 2*s*. The next lot consisted of 32 Oxfordshire Down ram lambs from the flock of Mr. Jas. Walker, of Begbroke Hill, near Oxford. The lambs were of extraordinary size, combined with fine quality, and produced the high average of 7*l*. 3*s*. The sales concluded with a small draft from the celebrated Cotswold grey flock of Mr. W. Smith, of Bibury, which realised an average of 6*l*. 18*s*. 3*d*. We have the assurance of the Messrs. Paxton that such is the *bonâ fide* character of these sales that, of 216 rams submitted by them, 213 were absolutely sold to the parties to whom they were knocked down, and 3 only were passed without prices being offered for their possession. After this statement, who will deny that the Oxford August Ram Market deservedly claims to be the first of its kind in the kingdom? *Abridged from Oxford Journal.*

Home Correspondence.

Gardeners, Farmers, and Labourers.—To show the practical knowledge of the cultivation of the soil, take the gardeners as a body; their knowledge demonstrates they are reading men and men of study, the different soils required to cultivate so many varieties of plants keep them continually trying experiment. Are the gardeners paid for their energy and great perseverance? How often do we see wanted, gardeners to do this, that, and the other, wages 15*s*. a week? How can it be expected for a gardener to show any ability for 15*s*. a week, what all labourers ought at present time to have for his week's wages. Give a gardener according to ability from 21*s*. to 40*s*. a week, and few gentlemen will have to complain of bad managed gardens. The farmer (with some exceptions) how different a character to the gardener; the generality of farmers are not reading men, do not care for improvements; they will say "I shall not bother about new-fangled ways." The sons of farmers rarely talk but of shooting, coursing, trotting, cricketing, billiards, and preaching down labourers' wages, and the poor labourers are ground down to the lowest poverty with 9*s*. and 10*s*. a week for a man to support himself and his wife, and perhaps young family, and house rent. Reflect on this you who can afford to enter into the above sports and pastimes. I see in this county men eating dry bread and an onion for breakfast and dinner too. Let me remind all oppressors of labourers that if the labourers are not soon to be better paid and more cared for, the British farmers will soon know the want of men to do their work. Treat the hard working man well and he will in return be grateful and do you justice. *F. L. O.*

Good Farming in Norfolk.—In a late impression Mr. Wilkins speaks of the good farming of a certain gardener. Will you allow me to say that I believe there are many gardeners now farming for their respective employers who would be glad to send you their experience, but they are afraid of being thought presumptuous. I, like many more, believe that the writers in the *Gardeners' Chronicle* have done much for the improvement of agriculture. By the experience of practical men others learn: will you allow me to say a few words on what a gardener can accomplish by perseverance? It will be ten years ago next January I engaged to my present employer as gardener and bailiff, and to superintend the estate buildings, &c. In the month of February I was shown over the property by my employer. I expressed my disappointment to see in this county such moderate farming as on this estate "Can you get the tenants to improve?—times are low, and the rents not easily paid?" was the question. I answered, "There are two things can be done to benefit both landlord and tenant—fell the Ash timber on the arable lands, and keep down the game." The Ash timber still stands, but the game was immediately got down to a moderate stock. It is now the remark of all who have known this property for many years, they see nowhere more improvements. The stimulant to these improvements was thus accomplished: I inspected every field upon each farm yearly in the months of July and August, gave a correct report to my employer of each crop, the state of the farming, the appearance of the stock, and also the premises. The tenants immediately begun to stir themselves—artificial for Turnips, salt for Mangels, guano for Wheat used, the weeds looked after and destroyed; and now these farms are not like the same, the rents higher, and the same tenants satisfied and doing well. Looking over the estate at that time we came to a track of 500 acres of Fen land, partly under water. My employer said, "Look here, can you do anything with this, for I often wish I was without this track of miserable land," then let for 2*s*. 6*d*. and 7*s*. 6*d*. per acre, but so often were the crops washed away, the landlord got but little rent. I got consent, and immediately set to work, put up an embankment over a mile in length next to a river, the high-water mark of which is higher than the level of the land, put down a 6-horse power fixed engine, to pump the water out of the drains when required—this costs working upon an average 20*l*. a year. The final of this improvement is the 500 acres now lets readily for 20*s*. per acre, and now grows fine crops of Wheat, Oats, Beans, Mangels, and this season I have four acres of good Flax thereon, —total cost, 1300*l*. Another tract of 150 acres was shown me full of pit holes and covered with stunted trees and brushwood of but little value except for cover for game. This land I said was a disgrace to this county, and as regards game it will be equally as good cover when cultivated. I got consent to reclaim 50 acres of this. It has been under cultivation six years, and produces fine crops at the rent of 18*s*. per acre, the cost of reclaiming the trees, &c., paid for. Again I was to go into farming, which I did not object to, but was to farm some very bad land, black sandy soil, the very worst of land to cultivate profitably; the rent I was to clear 10*s*. an acre, 2*s*. an acre more than formerly. Suffice it to say the first year I took a prize at the Root Club for white Turnips, the second year sold the Barley to the maltster at the top price; four years afterwards my employer was offered 20*s*. per acre for the home farm, which I reluctantly gave up. The same tenant has it now and is very well satisfied with his bargain. During the time these things were carried out I had to superintend large kitchen and flower gardens, hot-houses, &c. I fear I have written what some people may think to extol myself, but my object is to show what a gardener can do taken by the hand of his employer, and I humbly beg to say that gardeners are the very men to improve bad land, and show farmers how land should be cultivated. In my opinion farms ought to be, as some in almost every county now are, managed like a good cultivated gentleman's garden. *F. L. O.*

Climate of Scotland.—The following remarks by Mr. Milne Home at a recent meeting of the Scottish Meteorological Society appear to me to deserve publication in your Paper:—He said that after ascertaining the mean temperature at 26 stations over Scotland, the average over the whole of Scotland for the whole year was found to be 47°, which agreed very nearly with Humboldt's isothermal line of 47°, which passed through the south of Scotland, but, according to these returns, it would pass a little more to the north. With regard to the means of months, the coldest month appeared to be January. In England, France, and other countries the extreme of cold appeared to be attained in the second week of January; in Scotland it was the last week of January, and last year it was the first week of February. The warmest month would appear to be August, thus differing from other countries where the warmest month was July. The mean range of temperature between the coldest and warmest month was 22°, being considerably less than it was in England and other countries. A marked difference was observable between the stations on the sea coast and those in the interior. In the coast stations the temperature was 1° or 2° warmer than the inland stations in winter, and 1° or 2° colder in summer. The average temperature of the whole was 46.4 in the inland and 46.9 in the coast stations. The progress of the seasons was also greater in the inland than in the coast stations, and the change of temperature was much more rapid. In winter, the warmest part of the country was the northern, and the coldest was the southern, as, for instance, in winter their warmest station was Sandwick in Orkney, and the coldest was Bowhill in Selkirkshire, the mean temperature in winter of the one being 39.5, and of the other 32.5. In summer the warmest place was Dalkeith, where the mean was 61.2, and the coldest was Sandwick, where the mean was 55.7. Sandwick was the station therefore which showed the smallest mean range of temperature, being only 16.2. The chief circumstance that affected the temperature of Scotland was its large proportion of sea coast in comparison to the area of the country, and the consequent proximity of that area to the sea. The atmosphere of Scotland derived its temperature from two causes—namely, from its contact with the sea, and

from the vapours communicated to it from the sea. The sea attained its greatest heat in August and September, and its greatest cold in March—thus showing that it was proximity to the sea which retarded the periods of greatest heat and cold in Scotland. It was found that the sea was warmer in winter on the west than on the east of Scotland, and still warmer on the north of Ireland—thus bearing out the theory of Humboldt and others as to the Gulf Stream striking on our west coast. The mean range at the inland stations was 21.1; at the coast stations, 20.5; and in the temperature of the sea, 14.2. The state of the soil also contributed in an important degree to the state of the temperature; and he need only refer to the fact that it had been found on their noble Chairman's estate that the effect of drainage and deep ploughing was to raise the temperature of the land about 3° to 4° at a height of about 700 feet above the level of the sea. They were aware that the temperature had an important bearing on the tables of the Registrar General—that in a severe winter, for instance, the mortality increased. There was also many ailments for which an equable climate was required, and invalids were frequently sent to Torquay, Hastings, and the Isle of Wight for the sake of warmth and an equable climate. If physicians were desirous of ascertaining where these benefits might be best enjoyed in Scotland, they ought to consult the tables of Mr. Everett. He had mentioned Sandwick as a place remarkable for an equable temperature, and here the temperature of winter was slightly higher than at Hastings or Torquay, and the range of temperature was much less, being only 16°. But the most important subject on which this had a bearing was agriculture. A theory was started some years since by continental writers, that it was only necessary to ascertain the amount of heat required to ripen any plant, and the temperature of any given locality, to know whether it would grow in that locality. That theory was to a certain extent proved by the circumstance that in the south of England, with a temperature of 60° during the four summer months, Wheat ripened in about 120 days. In Yorkshire, where the temperature was lower, it took a longer time, and in Scotland still longer, owing to the deficiency of heat; but, by multiplying the days and degrees of heat, they were able to ascertain whether in any given country it would be possible to introduce new cereals with advantage. There were several anomalies in this matter which could be explained by the investigations of Mr. Everett. It was said by the writer of an English agricultural journal that in the south of England, Wheat would not grow at 700 feet above the level of the sea, as the mean temperature at that height, 57.5, was too low; but in East Lothian the average summer temperature was below 57°, and the only way in which they could account for Wheat ripening there at a temperature which did not ripen it in the south of England, was that in East Lothian the day was longer in Midsummer by one hour and twenty minutes than it was in the south of England; and that in Inverness, where Wheat grew at a still lower temperature, the day was nearly two hours longer, and the plant had therefore a longer continuance of solar heat. As he already stated, their noble Chairman had been enabled to grow Wheat at 700 feet above the level of the sea, having raised the temperature of the soil several degrees by draining and deep-soil ploughing. *M. S.*

Harvest Prospects.—The following paragraphs were received too late to publish with the other reports:—

Bedfordshire.—Wheat, under average; Barley, average quantity, but thin grain; Oats, good; Beans, average; Peas, average; Turnips, good; Mangels, good; Potatoes, very bad; pasture, good. *William Lavender, Biddenham, Bedford.*

Berwick.—Wheat, average; Barley, average; Oats, part good but general crop under average; Beans, poor crop; Turnips late and unpromising; Mangels, good in the few cases where a plant was obtained; Potatoes good, taint just showing; pasture generally deficient. *John Wilson, Edington Mains, Chirnside, Berwickshire.*

County Down.—Wheat barely an average in quantity, quality fine. Barley under an average. Oats not more than two-thirds of an average. Beans scarcely an average. Peas little grown here. Turnips have suffered much from drought, but have recovered beyond expectation since we had rain; can scarcely become a fine crop. Mangels, same report as of Turnips. Potatoes good beyond all expectation; disease is attacking the haulm, but has not yet reached the tubers. Pasture wretched.

County Tyrone.—Wheat, one-fifth below the usual average; Oats, one-third below, or less than the anticipated or expected average; Turnips, one-third less than the ordinary average yield; Potatoes, one-fifth less than the expected yield, the word average not applying fully from the ravages of "blight" in former years being so variable; pasture, generally defective and dried up on all high lands; hay, one-quarter less than average. All the above deficiency arises in my humble opinion from the excessive drought we experienced in the spring and summer. *James Knox, Strabane, Tyrone.*

Essex.—The Wheat will be a full average crop; the quality will however be very variable, most of it is housed well, and great bulk of straw. Barley is a heavy crop, but the malting quality is sprouted and very thin. Oats a full crop, and quality good. The Winter Beans defective were prematurely cut down, many pieces that were left producing an average crop. Common Beans are good. Grey and Dun Peas a good crop and well secured. Turnips plant well and are healthy, save where attacked by caterpillars. The Mangel Wurzel is generally very good, and a larger breadth than usual. Potatoes all diseased more or less, but for the most part slightly, and does not appear to increase. Pastures very bare from absence of rain; second math of Clover slight. *Robt. Baker, Brattle.*

Northampton.—Wheat, bulky in the fens, much of light quality, average; Barley, ripened prematurely, not much of first quality, full average; Oats, good quality, above average; Beans: winter Beans blighted, spring Beans average; Peas, full average; Turnips, good plant; Mangels, good plant; Potatoes, not much disease, very promising; pasture, hay a large crop, pastures getting scanty from dry weather. *John Whitwell, Peterborough.*

Oxford.—Wheat, fair average; Barley fair average, but thin in berry; Oats, fair average; Beans, good; Peas, good; Turnips, good; Mangels, good; Potatoes, small, and show symptoms of disease; pasture, very much burnt up. N.B. A vast amount of all kinds of corn wasted on the ground owing to the shortness of labourers. *Samuel Druce, jun., Abbey Farm, Eynsham, Oxford.*

Notices of Books.

The Form of the Horse, as it lies open to the Inspection of the ordinary Observer. By James C. L. Carson, M.D. W. Robertson, 23, Upper Sackville Street, Dublin.

The substance of this small octavo volume appeared originally in a series of letters to the *Londonderry Standard* 10 years ago. With the exception of a few pages at the end on Breeding, the book is exactly described by its title; each chapter and section is a detailed examination of the right shape, position, and dimensions of the different parts of the animal in succession.

The following passages illustrate the manner in which the task is performed.

"*The Chest.*—Let it be particularly observed, moreover, that even in the draught-horse the chest should be deep as well as round, in order to afford sufficient space for lungs of the proper magnitude. Depth of chest is not so much sought after as it should be in the cart-horse; and hence it is no unusual thing to see people breeding from animals which are very faulty in this particular. A horse with a shallow chest is not desirable for any purpose.

"The reason of all this is very obvious, for, as Mr. Youatt observes, 'the circular chest could not expand, but every change of form would be a diminution of capacity,' because 'the circle is a figure which contains more than any other of equal girth and admeasurement.'"

"*The Fore-Leg.*—The part included between the knee and the pastern is called the leg. It is composed entirely of bone, skin, sinew, and ligament. There are no muscles attached to it, and, consequently, it acts merely as a lever for the support and propulsion of the machine. I have already alluded to the erroneous opinion which connects the idea of strength in the entire limb with the thickness of the bone under the knee. I might even go farther, and assert that a moderate-sized shank-bone is the best, provided its extremities are sufficiently expanded for the attachment of ligaments.

"Large muscles and moderate-sized bones are a sure indication of an active temperament, and *vice versa*. The tissue of the small bone is dense and firm, whereas in the large one it is light and spongy. Does any person ever think of comparing the ideas which he entertains regarding the proper size and proportion of the leg in the man and the horse? Are large bones immediately above the ankle and wrist-joints ever taken as indications of the strength and mettle of the man? Certainly not. They are generally found largest in men of soft, flabby constitutions. Let any person take a look at the likeness of some of the pugilistic champions of England, and he will certainly admire the smallness of his bones, when compared with the enormous muscles of his legs and arms. Has it not always been thought a point of great beauty that the bone above the ankle-joint should be small, and the ball of the leg large? And is not this conformation generally found in persons of tight, wiry, active, and indomitable constitutions? What reason is there, then, for wishing to see a fine shank-bone in the man, and a thick one in the horse? On what principle could we argue for the difference? I confess I never could see the advantage of having the body of this bone large in the horse; and there are not many, I imagine, who would admire the human leg, with the thick end of it next the ground."

We conclude with a passage on *Breeding*:—"There is not the slightest foundation for the strong prejudice which exists in the public mind against in-and-in breeding. Many of the best horses, as well as the best short-horned cattle, we have ever had, were very much and closely in-bred. To a certain extent this was unavoidable, when the studs and herds were first formed; but it makes little difference whether it was the result of necessity, or of choice. It has fully established the immense advantages of breeding in-and-in, when the stock is of the right sort; indeed, I can see no other possible way of retaining the perfections of any particular strain than that of returning frequently to the same blood.

"We must be careful, however, to observe that the individuals we select to breed from are as near perfection as possible, both in themselves and their ancestors. We will thus secure the transmission of their good qualities. On the other hand, if there is any special defect, it will be sure to pass down, when it is thrown in-and-in, and will hardly ever be got rid of. I think it is owing, in a great measure, to want of attention to this rule, that there is so much prejudice against close breeding. It will succeed only when the good qualities bear an immense preponderance over the bad ones.

"Experienced breeders very properly place great reliance on blood. In short, this just amounts to the fact, that good and bad qualities are all hereditary. "Like begets like." No person ever saw a Clydesdale foal got by a blood-horse out of a blood mare, or a short-horned calf by a long-horned bull out of a long-horned cow. Such a thing is never expected. If, then, these general characteristics are invariably transmitted, have we not some reason at least to conclude, that all things are hereditary. In fact, that the offspring will inherit, either in whole or in part, the most trifling peculiarities of their ancestors, sometimes taking more after the one parent, and sometimes more after the other, or being a mixture of both, as the case may be. Whatever the peculiarities are—whether soundness, disease, form, temper, softness, strength, durability, speed, wind, or any other thing—they pass down from generation to generation.

"We should, by all means, keep to the good blood; but, at the same time, we must be careful to select the best specimens of that blood, if we wish to attain to high success. It is owing to a strict perseverance in this plan that Mr. Booth now occupies an unrivalled position as a breeder of short-horned cattle. He not only kept to the right strain, but he also invariably selected the best specimens of that blood for his own use, and refused to part with them at any price. This was a wise course, and the consequence is, his stock is now so highly prized, that he can command the market as he pleases. The fact of its having been bred by Booth is now sufficient to create a demand for any animal."

Farm Memoranda.

Inglismaldie, Kincardineshire.—We (*Banffshire Journal*) had the pleasure of being shown by the tenant a farm-stead in Kincardineshire, lately erected by the Earl of Kintore on his property at Inglismaldie. We should think it is one of the most extensive and commodious in Scotland. It is capable of accommodating from 230 to 250 cattle, 130 of which can be tied up. We saw upwards of 100 fat cattle in it—many of them very superior—feeding upon Potatoes and a little bruised grain. We were told that upwards of 1200 bolls of Potatoes had been used for feeding cattle during the season. The steading covers an imperial acre of ground, the whole extent being roofed in, and slated with Welsh slates. There is a covered dung pit 7 feet below the level of the floors, and 100 feet by 90 in extent, into which all the liquid from the cattle falls, and is retained amongst the manure. The steading is intersected by six lines of railway, on which waggons are used for carrying Turnips from the sheds to the cattle. A waggon runs along a line in front of each two rows of tied beasts, loaded with wooden boxes containing Turnips or other food. It is very easily pushed along by the cattleman, when he empties the boxes before the cattle as he proceeds. Another line of rails passes behind each two rows of cattle where waggons are also used for carrying the manure to the dung-pit. In all, there are 600 yards of double rails for feeding, and 300 yards for removing the dung. There is very little mason-work in the shape of internal divisions in the steading, the roof being all supported by wooden and iron pillars. The state of temperature and ventilation can easily be made manifest by the fact, that, by taking a position in one of the doors between the stalled and court cattle, without shifting, a view can be got of the whole stock. So convenient is the arrangement that one man could easily attend to 100 beasts. The stable for the work horses is a most magnificent affair. It is 18 feet wide, a great height, with no lofting, contains 20 stalls fully 6 feet wide each, a hay barn in the centre; and a harness-room, 6½ feet wide, runs along the whole length behind the horses, where all the harness is kept, and also horse corn chests. The horses are a splendid lot, having cost from 50*l.* to 70*l.* each. The manure from the stable is moved along one of the lines behind the cattle to the dung-pit. There is also 130 feet by 16 of Turnip houses; and a straw house 120 by 20 feet in extent. Then there are a Potato house, artificial manure store, riding horses' stable, gig house, cow byre, calves' house, also a very complete steaming apparatus by Smith & Co., Glasgow, said to do its work in 20 minutes. There is 240 feet of grain lofts, 20 feet wide. On one side is a splendid row of 14 cart sheds, all neatly arched. We were told this magnificent steading was erected at a cost of 3030*l.*, exclusive of carriages. There was lately erected one of Clayton & Shuttleworth's improved threshing and dressing fixed machines. The engine is a most complete and finished piece of workmanship, the cost being upwards of 400*l.* The whole steading was planned by the enterprising tenant, D. Dickson, Esq., Laurencekirk, and does great credit to his skill, ingenuity, and intelligence. We had likewise the pleasure of visiting another steading, also erected by Lord Kintore, on an out-farm of about 300 acres, tenanted by Mr. Scroggie, Auchcairnie. It is not nearly so extensive as the former, but is built on the same principle—is very neat and commodious—cost about 1000*l.* There is a dung-pit also covered, 4 feet deep. The steading is divided into parts by a broad space, which is used as a Turnip shed; it forms two large and comfortable courts for loose cattle; the feeding cattle are very conveniently tied up around the sides of the dung-pit; there is a passage in front of the cattle for feeding them; and, in cleaning them, the cattleman has nothing to do but go along and throw the manure over a railing about three feet high. Mr. S. told us that, after some experience, he was convinced that, by having his manure tramped down by the loose cattle, with all the liquids retained, and freed from rain, snow, and the effects of the atmosphere, it was worth 50*l.* a year additional. Is there not a hint here to the intelligent and enterprising farmers of Aberdeen and Banff shires, who, we think,

are in general very much behind in the management of their manures?

Miscellaneous.

Sheep Breeding.—There are few persons, perhaps, aware of the circumstance that this is a branch, looking at it relatively, looking at it positively, which is of immense importance to our country. Permit me to state, upon the authority of one of the most able writers we have met with in this country—I mean the celebrated statist, Mr. Macqueen—that there are not less than 48,000,000 head of sheep in the United Kingdom. Just fancy the importance in a national point of view of carrying to the highest possible point of perfection the improvement of these 48,000,000 of sheep, yielding 246,700,000 lbs. of wool. And remember again, gentlemen, for it appears almost incredible, that the capital invested in this stock amounts to 66,573,335*l.*, according to Mr. Macqueen. Permit me also to state that the value of the wool grown in this country, leaving out fractions, is not less than 14,000,000*l.* per annum. Permit me further to state that the importation of foreign wool does not amount to more than 4,000,000*l.* So that out of the 18,000,000*l.* sterling worth of wool used by this country, which employs no less than 1,250,000 manufacturers and operatives, the large proportion of 14,000,000*l.* worth is provided by our agriculturists, thus affording means for the employment of labour, the investment of capital, and the increase of the wealth of this country. Allow me to say that we are deeply indebted to the sheep breeders of England, and to them is due every honour for thus adding to the common wealth of the United Kingdom. Well then, gentlemen, you have in that class such names as the Duke of Richmond, Mr. Jonas Webb, Mr. Rigden, our excellent friend Mr. Harding, and our honourable friend on my left, who has lately come with all his honours blushing about him, Mr. Wood. When, again, I look at the Vice-president, whose shelf is not wide enough for the number of cups he has won, I ask permission, honestly and conscientiously, to say that I do believe such men are not merely entitled to the passing thanks of the present moment—they are not merely entitled to those honours that old Dorset can offer, but I do believe they ought to be considered as benefactors to their country. *N. Yeatman, at Mr. Harding's Sale of Southdowns.*

Calendar of Operations.

AUGUST.

South Essex: *Aug.* 22.—The gleaning of Wheat is chiefly ended, and the threshing results are satisfactory, which augurs well for the main crop. Since the more general destruction of predatory birds and rats and mice in this district, where they have become a pest, the poor gleaner's prospects have been much more encouraging; and we find it necessary to have our Barley and Oat edishes gleaned where Clover is sown, as since the partial annihilation of birds, &c., Clover crops in spring have proved too much choked with self-sown corn, so as to render the stover unsaleable except at too reduced a price. This, however, pays well, and finds employment for workmen's wives and children after their Wheat gleaning is over. A half acre a day is considered a fair stint for one woman to glean over at half a bushel of corn for her employer. All this would otherways be lost where sufficient stock cannot be conveniently kept to stack it. A few more days and harvest operations will be completed hereabouts, and we shall, if fine weather continues, immediately set about in good earnest Bentalling (broadsharing), or shallow ploughing our foul Wheat and stubbles and burning them. This is a most important work on heavy lands at this season whilst it is dry. *Maldon, Essex.*

Notices to Correspondents.

Alopecurus: *A B.* If the mixture, as we gather from your note, is to renovate an old but poor pasture, the *Alopecurus agrestis* will ultimately be of little importance, provided you adopt such expedients as rolling, harrowing, and manuring, as then it can hold no way in a good and matted turf—whatever therefore tends to better the turf will kill this Grass from it. In arable land too whatever tends to good farming overcomes this Grass in a short time. *J B.*

Drill Ploughs: *W H.* Drill ploughs containing in the framework behind the mould-board a hoe and drill for sowing Beans, or Beans in their wake are not uncommon. A very good one was shown at the Hull meeting of the York Society, by Charles Lambert, Sunk Island, Hull.

Flock of Lambs: *J Desfarges.* The mischief probably arises from impure water and perhaps too great deprivation of it at first, and too great profusion afterwards, or from impure or damaged food. You cannot do better than give them oil of turpentine and Linseed-oil; the former sparingly, the latter more freely. Linseed-cake may also be given as food. *W.C.S.*

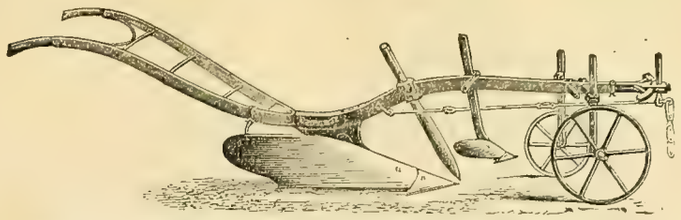
Food for Cattle: *J G., Bury St Edmunds.* We quite agree with you that there can be no profit in buying cattle food at 40*s.* to 56*s.* per cwt. We have repeatedly during this year called attention to the enormous charges thus made for what as food we believe to be worth no more than mixed Beans and Linseed-meal.

Grass Land: *Subscriber* says: "I have about 20 acres of arable land 10 miles from London in three fields, upon which I think of building a house, but wish first to have them in permanent Grass. No. 1 (gravel), Potatoes, 3 acres; 2 (clay), Clover and Turnips, half of each, 12 acres; 3, Wheat, 5 acres. I wish to know the best mode and proper time to carry out my views and the probable cost per acre for each field. Nos. 2 and 3 are not pipe drained, but lie well for drainage." You should drain the land first, which may cost 4*l.* or 5*l.* an acre. Feed your Turnips over the stubble, and plough all up and clean it thoroughly, and then sow with a light crop seeding, say 1 bushel per acre of Barley. In the spring the following mixture: For clay land—Aira cæspitosa lutescens, 1 lb.; Alopecurus pratensis, 3 lbs.; Dactylis glomerata, 5 lbs.; Festuca duriuscula, 2 lbs.; F. heterophylla and F. elatior, 2 lbs.; F. loliacea, 2 lbs.; F. pratensis, 3 lbs.; Lolium perenne, 6 lbs.; L. natura, 4 lbs.; Phleum pratense, 3 lbs.; Poa trivialis, 3 lbs.; P. nemoralis, 2 lbs.; Medicago lupulina, 1 lb.; Trifolium pratense perenne, 4 lbs.; T. repens, 5 lbs. On the lighter soil leave out Aira, Arrhenatherum, Festuca elatior and loliacea, and Phleum, and sow one-half the quantity of Alopecurus, and add 2 lbs. of Festuca rubra. You had better read Lawson's pamphlet, "Agrostographia," and Mr. Thompson's paper on Grass land management in the last volume of the English Agri. Society's Journal.

Microscopic Investigations: *Micrometer.* The offer has been made by the Society for two years, and no Essay has been forthcoming. Mr. Curtis is the person you suppose.

THE PLOUGH TRIALS AT WARWICK.

HOWARD'S CHAMPION PLOUGH



Gained the FIRST PRIZE as the Best Plough for General Purposes at Warwick,

BEING the CHIEF PRIZE for PLOUGHS, awarded by the Royal Agricultural Society of England, at this Meeting. The importance of this Prize will be gathered from the fact that the GENERAL PURPOSE PLOUGHS are the only ones tried on BOTH LIGHT AND HEAVY LAND, and as HOWARD'S CHAMPION PLOUGH proved itself to be the best on both soils, the FIRST PRIZE, of the HIGHEST AMOUNT given by the Society for any kind of Plough, was awarded to J. & F. Howard.

PRIZES awarded to J. & F. Howard, by the Royal Agricultural Society of England, at the WARWICK MEETING, 1859, being not only the LARGEST NUMBER of PRIZES, but the LARGEST NUMBER of FIRST PRIZES awarded to any Exhibitor.

THE FIRST PRIZE FOR THE BEST PLOUGH FOR GENERAL PURPOSES, ALSO A PRIZE FOR THE BEST PLOUGH FOR LIGHT LAND, AND A PRIZE FOR THE BEST PLOUGH FOR HEAVY LAND; THE FIRST PRIZE FOR THE BEST LIGHT HARROWS, THE SECOND PRIZE ALSO FOR THE BEST LIGHT HARROWS, AND THE FIRST PRIZE FOR THE BEST HEAVY HARROWS.

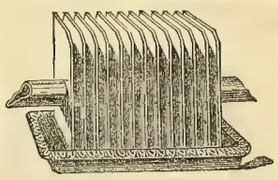
Every one of HOWARD'S Implements, tried at Warwick, gained a Prize.

CATALOGUES, with full particulars, sent post free on application to

J. & F. HOWARD, BRITANNIA IRON WORKS, BEDFORD.

IMPROVED HOT-WATER PIPE.

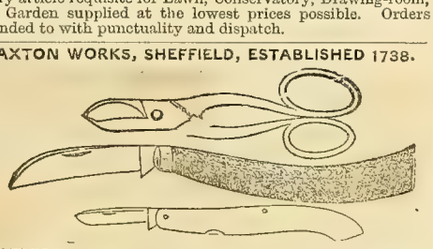
THE HORTICULTURIST will find herein an inexpensive instrument of new and very important powers. An atmosphere may be produced at will either perfectly dry, partially damp, or saturated with moisture. A space of 10 inches by 12 inches contains the power of 25 feet of 4-inch pipe and other numerous advantages.



The London Warming and Ventilating Company (Limited), 26, Great George Street, Westminster, S.W.

DAVIS'S WIREWORK MANUFACTORY, 135, King's Road, Chelsea, S.W. (Established 40 years).—The nobility and gentry are respectfully informed that the Executors of the late Mr. John Davis continue to carry on the above extensive works as heretofore, where every article of WIREWORK is manufactured in the very best manner; also every description of Wire and Iron Fences, Pheasantries, Aviaries, and Roseries on the most approved principles, fixed and erected by competent workmen in every part of the Kingdom. Every article requisite for Lawn, Conservatory, Drawing-room, and Garden supplied at the lowest prices possible. Orders attended to with punctuality and dispatch.

PAXTON WORKS, SHEFFIELD, ESTABLISHED 1738.



SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.—Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

MAPPIN'S PRUNING KNIVES IN EVERY VARIETY.
WARRANTED GOOD BY THE MAKERS.



MAPPIN BROTHERS, Queen's Cutlery Works, Sheffield; and 67 & 68, King William St., London, E.C.

MAPPIN'S "SHILLING" RAZORS Shave well for Twelve Months without Grinding.

MAPPIN'S 2*s.* RAZORS Shave well for Three Years.

MAPPIN'S 3*s.* RAZORS (suitable for Hard or soft Beards,) Shave well for Ten Years.

MAPPIN'S SUPERIOR TABLE-KNIVES maintain their unrivalled Superiority—handles cannot possibly become loose—the blades are all of the very first quality, being their own Sheffield manufacture.

	Tble. Kns.	Dst. Kns.	Carvers.
Ivory 3⅝ in. Handle, balanced,	20*s.* p. doz.;	16*s.* p. doz.;	6*s.* p. pair
Do. 4 in. do. ..	25*s.* ,,	18*s.* ,,	9*s.* ,,

MAPPIN'S SILVER-PLATED DESSERT KNIVES and FORKS, in Mahogany Cases.

12 Pairs Knives and Forks, Ivory Handles, in Case..		80*s.*
12	Do. Pearl Handles, do. ..	130*s.*
12	Do. Silver-Plated Handles, do. ..	80*s.*

MAPPIN'S ELECTRO-SILVER PLATE.—MAPPIN BROTHERS, Manufacturers by Special Appointment to the Queen, are the only Sheffield makers who supply the consumers in London. Their LONDON SHOW ROOMS, 67 and 68, King William Street, London Bridge, E.C., contain by far the largest STOCK of ELECTRO-SILVER PLATE in the World, which is transmitted direct from their Manufactory, Queen's Cutlery Works, Sheffield.

	Fiddle Pattern.	Double Thread.	King's Pattern.
12 Table Forks, best quality	£1 16 0	£2 14 0	£3 0
12 Table Spoons, best quality	1 16 0	2 14 0	3 0
12 Dessert Forks, best quality	1 7 0	2 0 0	2 4
12 Dessert Spoons, best quality	1 7 0	2 0 0	2 4
12 Tea Spoons, best quality	0 16 0	1 4 0	1 7

Messrs. Mappin Brothers respectfully invite buyers to inspect their unprecedented display, which, for beauty of design, exquisite workmanship, and novelty, stands unrivalled. Their Illustrated Catalogue, which is continually receiving addition of New Designs, sent per post on receipt of 12 stamps.—Mappin Brothers, 67 & 68, King William Street, London Bridge, E.C.; Manufactory, Queen's Cutlery Works, Sheffield.

GLASS FOR ORCHARD HOUSES & CONSERVATORIES.

JAMES PHILLIPS AND CO. beg to submit their prices of GLASS for the present month.

SHEET GLASS, in Crates, of superior quality, 16 oz. to the foot.

	Best.	Seconds.	Thirds.	Fourths.
	5¼*d.*	3¾*d.*	2½*d.*	2¼*d.*
21 oz.	Best.	Seconds.	Thirds.	Fourths.
	7¼*d.*	5*d.*	3½*d.*	3¼*d.*

Packed in 200 feet cases, 16 oz. £2 2 0
Packed in 300 feet cases, 16 oz. 3 0 0
Packed in 200 feet cases, 21 oz. 2 18 0

ORCHARD HOUSE SIZES, as supplied by us to Mr. Rivers.

		16 oz.	21 oz.
20 in. by 12 in. / 20 in. by 13 in. / 20 in. by 14 in. / 20 in. by 15 in.	Common	14*s.* 0*d.* ..	£1 1*s.*
	Superior do.	16 6 ..	1 5
	English Glass	18 0 ..	1 9

Boxes included and not returnable.

SMALL SQUARES.—Per 100 feet. *s. d.*

6 by 4	6½ by 4½	7 by 5	7½ by 5½	11 6
8 ,, 6	8½ ,, 6½	9 ,, 7	9½ ,, 7½	
10 ,, 8	10½ ,, 8½ ..	.. ..	.. ..	12 6

HORTICULTURAL GLASS, in Squares, cut to specific sizes.

16 oz. per foot, from 2*d.* to 3½*d.* | 26 oz. per foot, from 3*d.* to 7½*d.*
21 oz. ,, ,, 3 ,, 5 | 32 oz. ,, ,, 4 ,, 9½

Special prices quoted for large or specific quantities.

AGENTS FOR
HARTLEY'S PATENT ROUGH PLATE GLASS.
PAINTS.

Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, &c.

JAMES PHILLIPS AND CO.,
180, Bishopsgate St. Without, London, E.C.
No Connection with any other House in Town.

HORTICULTURAL GLASS—JUNE TARIFF.

THOMAS MILLINGTON'S reduced Tariff of GLASS, &c.

6 by 4, 7 by 5, 8 by 6, 9 by 7 } 16 oz. to the foot, 11*s.* 6*d.*
6½ by 4½, 7½ by 5½, 8½ by 6½, 9½ by 7½ } per 100 feet.

In 100 boxes,—4ths quality, 12*s.* 6*d.*; 3ds do., 14*s.* 4*d.*

10 by 8, 12 by 9, 12½ by 10¼, 14½ by 10½, 13 by 11
10½ by 8½, 12½ by 9¼, 13 by 10, 15 by 10, 13½ by 11½
11 by 9, 13 by 9, 13½ by 10½, 12 by 11, 14 by 11
11½ by 9½, 12 by 10, 14 by 10, 12½ by 11½

20 by 12 / 20 by 13 / 20 by 14 / 20 by 15	per 100 feet	16 oz. 21 oz.
	Common ..	16*s.* .. 24*s.*
	Superior .	18*s.* .. 27*s.*

All Boxes included.

Orchard House sizes as supplied to Mr. Rivers.
Hartley's improved Rough Plate Glass from ⅛ to ⅜ in thickness.
Coloured Glass in great variety, at 9*d.* and 1*s.* per foot.
Paints, Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, Lamp Glasses, &c.
87, Bishopsgate Street Without, E.C., same side as Eastern Counties Railway.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz SHEET GLASS of British Manufacture at prices varying from 2*d.* to 3*d.* per square foot for the usual sizes required, many thousands of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES, and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to James Hetley & Co., 35, Soho Square, London, W.

See *Gardeners' Chronicle* first Saturday in each month.

GLAZIERS' DIAMONDS FOR CUTTING HORTICULTURAL and other GLASS, to be had of the Wholesale Manufacturer, John Edwards, 20, Sharp's Alley, West Smithfield, London, E.C. Prices from 10*s.* to 27*s.* 6*d.*

TANNED NETTING, for the Protection of Fruit Trees from Frost, Blight, and Birds; also, for the security of fresh sown seeds, at 1*d.* per square yard; 200 yards, 12*s.*; 500 yards, 25*s.*; Scrim Canvas, for wall fruit; Garden Mats.—At Edgington & Co's., Rick Cloth, Tent, and Waterproof Cloth Manufacturers, 17, Smithfield Bars, City, E.C., and Old Kent Road, S.E.

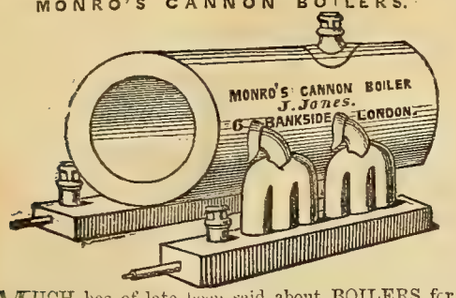
SLATE WORKS, ISLEWORTH, MIDDLESEX, W.

EDWARD BECK Manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener, Sundays excepted. PRICED LISTS of PLANT TUBS and BOXES forwarded on application.

VASES, PEDESTALS, SUNDIALS, FOUNTAINS, FLOWER BOXES, JARDINETS, FERN CASES, BALUSTRADES, EDGINGS AND CURBS FOR FLOWER BORDERS, SEATS, &c., in Imperishable Siliceous Stone, at reduced prices, for the adornment of the Villa Garden, the Mansion Grounds, or the private or public Park.

For Priced Illustrations apply to Frederick Ransome, at the Show Rooms, Cannon Row, Westminster, S.W., or Patent Stone Works, Ipswich.

MONRO'S CANNON BOILERS.



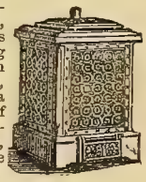
MUCH has of late been said about BOILERS for Heating by Hot Water, but these Boilers have now proved themselves to be the best at present invented. They are adapted for heating every description of building, and are made of various sizes. The Price of the

24-inch Cast Iron is	..	..	.. £5 10s. 0d.	each
24-inch Wrought ditto	..	..	.. 6 10 0	,,
36-inch Cast ditto	..	..	.. 8 0 0	,,
36-inch Wrought ditto	..	..	.. 8 10 0	,,

References to Gentlemen and Nurserymen where these Boilers are now at work. The Cannon Boilers are now kept in stock, and are to be had only of J. JONES, 6, Bankside. Also, every description of Saddle and Cylinder Boilers. Hot Water Pipes and Connections at prices lower than those of any other house in London. Estimates for Hot-water Apparatus erected complete in any part of the country, and an Illustrated Catalogue on application to J. JONES, 6, Bankside, Southwark, London, S.E.

IMPROVEMENTS IN HEATING, &c.

MUSGRAVE'S PATENT SLOW-COMBUSTION STOVE, for Warming Public Buildings, Hall, Shops, Conservatories, Factories, Drying Rooms, &c. Will burn in Churches from Saturday till Sunday evening, avoiding attention during the hours of worship. In Halls will burn day and night for weeks, with little care. Capable of warming a large apartment for 24 hours, at a cost of 3d.; and deserving of special attention, because of its safety, healthfulness, durability, and extreme simplicity. This Stove is the nearest approach to warming by hot water.



MUSGRAVE'S PATENT STABLE FITTINGS AND HARMLESS LOOSE BOXES have obtained the award of a large Council Medal from the R. I. A. Society for the following improvements:—1st, The Horse cannot injure himself or others in the same stable if he breaks loose in his stall. 2d, He cannot waste the hay. 3d, He can have cut or uncut hay at pleasure. 4th, He has clean water always before him. 5th, A pure and wholesome atmosphere is secured. 6th, The whole fittings are stronger than usual, without increase in price, and there is no risk of infection.



The Loose Box is really what its name denotes, and the most spirited Horse may be turned into it without danger.

MUSGRAVE'S PATENT IRON COW-HOUSE FITTINGS, as approved by the Board of Works, adopted in the Ulster Model Farm, and by many of the most eminent Stock Breeders in the Kingdom, are made wholly of iron, very durable, cleanly, and attractive in appearance. The fodder is always fresh, being freely exposed to the air, removed from the breath of the animal, and separated from the roots or damp food. The range of Troughs can be quickly filled with water for the use of the Cows, or for washing out in case of epidemic, and the cost is very moderate.



These inventions being distinguished for strength, simplicity, and practical usefulness will repay public inquiry.

MUSGRAVE BROTHERS are also Makers of Wire Fencing, Hurdles, Field and Entrance Gates, Corn Rick Stands, Conservatories, Hot-water Apparatus, Verandahs, Rural Bridges, &c.; and their works being favourably placed for cheap labour and materials, they can offer corresponding advantages in price.

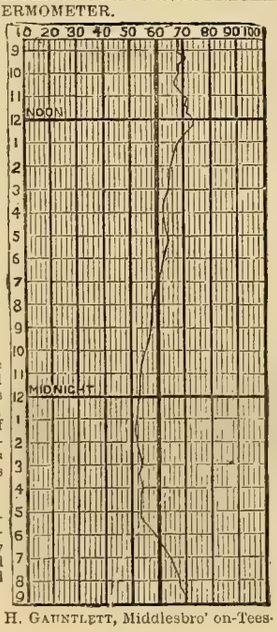
MUSGRAVE'S Patent Field Gates have gained the 1st Prize from the R. I. A. Society for strength, durability, and cheapness.

For particulars address MUSGRAVE BROTHERS, Ann Street Iron Works, Belfast.

TO HORTICULTURISTS.

GAUNTLETT'S PATENT CHRONOMETRICAL THERMOMETER.

This instrument, which combines an eight-day clock of the best English make showing time, with a newly-patented Thermometer, wherein glass and quicksilver are dispensed with, writes down the temperature of the atmosphere on a slip of paper, and when placed in a Hothouse, Forcing House, or Conservatory, &c., supplies a valuable record of the temperature, with all its variations, showing the time when any change took place, and how long such change continued.



The above slip (reduced in size) exhibits the temperature of the Royal Agricultural Society's show yard at Chester, July 22, 1858, written off by one of these instruments, to which was awarded the Society's SILVER MEDAL.

This is the only instrument that registers temperature continuously and writes it down, and no horticulturist should be without it.

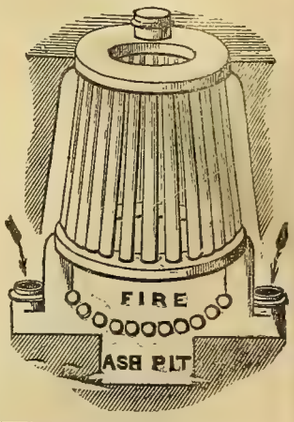
Orders received by W. H. GAUNTLETT, Middlesbro' on-Tees.

WEEKS' ONE BOILER SYSTEM.

BY APPOINTMENT.

JOHN WEEKS & COMPANY,

KING'S ROAD, CHELSEA, S.W.,



CHALLENGE THE WORLD to produce a Boiler not made in imitation of their Upright Tubular Boiler that will produce anything like the same effect with the same quantity of fuel in a given time.

The following unequalled statistics fully justify the challenge:—

Mark the enormous length of Houses and Piping heated by One Boiler.	Length of Houses in feet	Total length of Piping.
Messrs. E. G. Henderson & Co., Wellington Nursery	1,200	5,500
Messrs. F. A. Smith, Dulwich	...	11,000
M. Van Houtte, Belgium	3,300	13,000
Our own Fruit Forcing Show Establishment ...	1,000	7,000

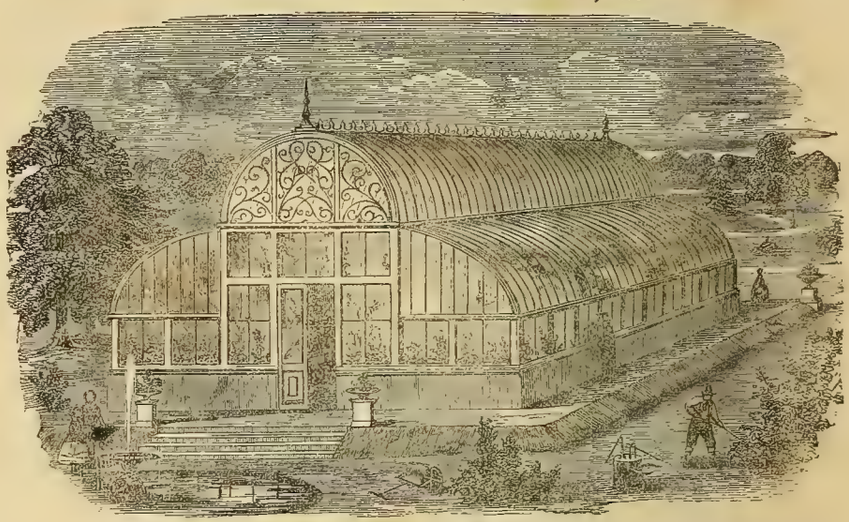
Also the Nurseries of Mr. Woodroffe, Harrow Road, N.W.; Messrs. Rollisson, Tooting, S.; Messrs. Wood & Ingram, Huntingdon; Messrs. Wood & Son, Maresfield; together with numerous Public Buildings and Establishments of the Nobility and Gentry far too numerous for insertion.

J. WEEKS & CO., Horticultural Builders and Hot-Water Apparatus Manufacturers, King's Road, Chelsea, S.W.

PLANS AND ESTIMATES FREE ON APPLICATION.

COTTAM & COMPY., Engineers, Founders, &c.,

2, WINSLEY STREET, LONDON, W.



A SHOW ROOM DEVOTED ENTIRELY TO ARTICLES OF HORTICULTURE.

THE NEW ILLUSTRATED CATALOGUE UPON APPLICATION.

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	,, Syringes	Garden Bordering
Hot-water Apparatus	Ornamental Wire Work	Hurdles	,, Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

Iron Hurdles, Strained Wire Fencing, Game Netting, &c.

Every description of Plain, Ornamental, Cast and Wrought Iron, and Wire Work.

EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

N.B. COTTAM AND COY. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

ST. PANCRAS IRON WORKS,

OLD ST. PANCRAS ROAD, N.W.

IRON HURDLES, FENCING, AND GATES.

THE PROPRIETORS OF THE ST. PANCRAS IRON WORKS, OLD ST. PANCRAS ROAD, LONDON,

WERE AWARDED THE

SILVER MEDAL of the Royal Agricultural Society for their IRON HURDLES & GATES,

which, by their peculiar construction, are more than twice as strong and durable as those in ordinary use.

Lists per post on application. Gates from 30s. to 500l.

The Hurdles can be seen in process of Manufacture at the Works.

GAME WIRE NETTING.

Professor Varnell's Enamelled and Wrought-iron Stable Fittings.

These Patent Mangers and Stable Fittings obtained the Commendation and the Silver Medal of the Royal Agricultural Society of England and the Royal Agricultural Society of Ireland, are adopted by the Royal Veterinary College, and Professor Spooner of that Institution states that they should be used by all who value the health and comfort of their horses. They can be had plain, galvanised, or enamelled.

A Show Room is devoted entirely to every description of Stable Furniture, and full-sized stalls and loose boxes are erected for inspection at St. Pancras Iron Works.

ADDRESS—THE MANAGERS,

ST. PANCRAS IRON WORKS, OLD ST. PANCRAS ROAD, LONDON, N.W.,

OPPOSITE OLD ST. PANCRAS CHURCH.

THE PATENT BRITANNIA SELF-RAKING REAPING MACHINE is at work daily in the neighbourhood of Banbury, and in almost every County in England. Particulars on application —B. SAMUELSON, Banbury, Oxon.

GREENHOUSE CHEAP.

JAMES SMITH, GREENHOUSE BUILDER, has a well-built lean-to GREENHOUSE for Sale; 23 ft. 8 inches long, and 12 feet 4 inches wide. To be seen erected on his Premises, Creek Cottage, King Street, Hammersmith, W.

GREENHOUSES.

HENRY FREEMAN, HOTHOUSE BUILDER and HOT-WATER APPARATUS MANUFACTURER, Triangle, Hackney, N.E. Established 20 years. Good and substantially built GREENHOUSES, fixed in any part of the Kingdom, for cash, 42 feet long by 13 feet, 9*l.*; 21 feet by 11 feet, 5*l.*; 12s. feet by 10 feet, 30*l.* A first-rate CONSERVATORY, 8 feet by 18 feet, 12*l.* A large assortment kept. Estimates for Heating, or any branch in Wood or Iron or Park Fencing.

HOT-WATER PIPES at wholesale prices, with Elbows, Syphons, Tee Pipes, and every other connection. Wrought and cast iron Boilers, Saddle, Conical, Cylinder, and Elliptic, from 12s. each. Boilers and Iron Stands to use without brickwork. Valves from 12s. each. Coil Boxes, Furnace Doors, Furnace Bars, Supply Cisterns, and Builders' Castings of every description in stock, at Mr. LYNCH WHITE'S Iron Wharf, Upper Ground Street, Blackfriars Bridge, London, S.

HORTICULTURAL BUILDINGS AND HEATING BY HOT WATER.

JOHN R. PEILL, 17, New Park St., Southwark, S.E, Manufacturer of every description of Buildings for Horticultural purposes, and Inventor of the Improved Conical Boiler for heating the same, is prepared to undertake works of any magnitude, and refers among others to the celebrated range of FORCING HOUSES at HER MAJESTY'S GARDENS, FROGMORE, and at SIR ROBERT PEEL'S, DRAYTON MANOR, constructed under the superintendence of his Manager, MR. JOHN JONES; and also to his BOILERS fixed at the CRYSTAL PALACE, the ROYAL BOTANIC GARDENS, REGENT'S PARK, and KEW, and at several hundreds of the Nobility's seats, Public Establishments, and Manufactories in London and the provinces. J. R. P. also manufactures every description of Iron Roofs, Iron Houses, and Iron Fencing, plain and ornamental. Strong Iron Hurdles for Sheep (6 ft. long, 3 ft. high, with 5 bars), 4s. 3d. each; ditto for cattle, 4s. 9d. each. Prices and other particulars forwarded on receipt of one postage stamp.

SMALL GAS APPARATUS, WITH FREEDOM FROM NUISANCE.

BOWER'S PATENT NATIONAL COAL GAS APPARATUS, for Private Residences, Farm Buildings, Churches, Chapels, Railway Stations, and all isolated places not yet lighted with Gas. The various parts are of the best materials and workmanship, are not liable to get out of order, and can be worked with a small degree of attention by a farm servant or labourer without materially interfering with his other duties. Prospectuses with testimonials, &c., may be had on application to the Proprietors and Manufacturers,

J. T. D. PORTER & Co., Lincoln.

HANDSOME BRASS AND IRON BEDSTEADS. —HEAL & SON'S Show Rooms contain a large assortment of Brass Bedsteads, suitable both for Home use and for Tropical Climates: handsome Iron Bedsteads with Brass Mountings and elegantly Japanned: Plain Iron Bedsteads for Servants; every description of Wood Bedstead that is manufactured, in Mahogany, Birch, Walnut-tree Woods, Polished Deal and Japanned, all fitted with Bedding and Furniture complete, as well as every description of Bedroom Furniture.

HEAL AND SON'S ILLUSTRATED CATALOGUE, containing Designs and Prices of 100 Bedsteads, as well as of 150 different articles of Bedroom Furniture, sent free by post —HEAL & SON, Bedstead, Bedding, and Bedroom Furniture Manufacturers, 196, Tottenham Court Road, W.

PRIZE MEDAL, PARIS EXHIBITION 1855.

METCALFE, BINGLEY, AND CO.'S New Pattern and Penetrating Tooth Brushes. Penetrating unbleached Hair Brushes. Improved Flesh and Clothes Brushes, and genuine Smyrna Sponges; and every description of Brush, Comb, and Perfumery for the Toilet. The Tooth Brushes search thoroughly between the divisions of the Teeth and clean them most effectually—the hairs never come loose. M., B., and Co. are sole makers of the Oatmeal and Camphor and Orris Root Soaps—sold in Tablets (bearing their names and address) at 6*d.* each; of METCALFE'S celebrated Alkaline Tooth Powder, 2s. per box; and of the New Bouquets.—Sole Establishment, 130B and 131, Oxford St., 3d and 4d doors west from Holles St., London, W.

TOURISTS AND TRAVELLERS, VISITORS TO THE SEASIDE, and others exposed to the scorching rays of the sun, and heated particles of dust, will find ROWLAND'S KALYDOR a most refreshing preparation for the complexion and skin, dispelling the cloud of languor and relaxation, allaying all heat and irritability, and immediately affording the pleasing sensation attending restored elasticity and healthful state of the skin. Freckles, tan, spots, pimples, flushes, and discoloration are eradicated by the application. Price 4s. 6d. and 8s. 6d. per bottle. The heat of the summer also induces a dryness of the hair, and a tendency to its falling off, which may be completely obviated by the use of ROWLAND'S MACASSAR OIL, a delightfully fragrant and transparent preparation for the hair, and as an invigorator and beautifier, beyond all precedent. Price 3s. 6d.; 7s.; family bottles (equal to four small), 10s. 6d.; and double that size, 21s. ROWLAND'S ODONTO, or PEARL DENTIFRICE, bestows on the teeth a pearl-like whiteness, frees them from tartar, and imparts to the gums a healthy firmness, and to the breath a grateful purity and fragrance. Price 2s. 9d. per bottle.—Sold by A. ROWLAND & SONS, 20, Hatton Garden, London, E.C.; and by Chemists and Perfumers.—Beware of Spurious Imitations.

COOL AND REFRESHING BALM.—Among the many luxuries of the present age, none can be obtained possessing the manifold virtues of OLDRIDGE'S BALM OF COLUMBIA. If applied to the roots and body of the hair, it imparts the most delightful coolness, with an agreeable fragrance of perfume. It also at this period of the season prevents the hair from falling off, or if already too thin or turning grey, will stop its further progress, and soon restore it again. Those who really desire to have beautiful hair, either with wave or curl, should use it daily. It is also celebrated for strengthening the hair, freeing it from scurf, and producing new hair, whiskers, and moustaches. Established upwards of 30 years. No imitative wash can equal it. Price 3s. 6d., 6s., and 11s. only.—C. & A. OLDRIDGE, 13, Wellington Street North, Strand, W.C.

HOLLOWAY'S PILLS AND OINTMENT.—For all skin diseases, however inveterate, these medicines are a sovereign remedy. While the Ointment passes through the pores of the skin, as water saturates the soil, or as salt penetrates meat, the Pills act upon the blood, which they correct and purify. The whole physical machinery is thus rendered healthy, regular, and vigorous. The cure thus effected is not partial and temporary; the disease is entirely and for ever driven from the system, and the patient need not be apprehensive of its return. As these medicines have no violent action, they do not necessitate any interruption of ordinary vocations. They are composed of rare balsams, and may safely be given to young children and delicate females.

MICROSCOPES.

J. AMADIO'S BOTANICAL MICROSCOPES, packed in mahogany case, with three powers, condenser, pincers, and two slides, will show the animalcule in water. Price 1*l.* 5*s.*—Address JOSEPH AMADIO, 7, The Charlton Strand, E.C.—A large assortment of Achromatic Microscopes.

"It is marvellously cheap, and I will do everything which the lover of nature can wish it to accomplish either at home or in the open air."—*The Field*, June 6, 1857.

Just published, 2*d.* ed., an Illustrated Catalogue, with names of 150 Microscopic objects, free for 6 stamps.

DRESSING CASES, DRESSING BAGS, and highly finished cleanicies for presentation in great variety: Ivory-handled Table Cutlery; every requisite for the Toilet and Work Tables.—MR. HOLE & BAZIN, 112, Regent St., W.; 4, Leadenhall Street, E.C.; and Crystal Palace, Sydenham, S.

ALLEN'S PATENT PORTMANTEAUS AND TRAVELLING BAGS, with SQUARE OPENING; Ladies' Dress Trunks, Dressing Bags, with Silver Fittings; Despatch Boxes, Writing and Dressing Cases, and 500 other articles for Home or Continental Travelling, illustrated in their New Catalogue for 1859. By post for two stamps. J. W. & T. ALLEN, Manufacturers of Officers' Barrack Furniture and Military Outfitters (see separate Catalogue), 18 & 22, Strand, W.C.

GLENFIELD PATENT STARCH, used in the Royal Laundry, and pronounced by Her Majesty's Laundress to be the finest Starch she ever used. When you ask for Glenfield Patent Starch, see that you get it, as inferior kinds are often substituted. Sold by all Chandlers, Grocers, &c.

WOTHERSPOON & Co., Glasgow and London.

EPPS'S HOMŒOPATHIC COCOA.—Produced, in 1839, specially for the use of Homœopathic Patients, to provide them with a beverage highly nutritious and free from those effects of Coffee and Tea which to many persons are pernicious. Rendered attractive to the taste by its delicious aroma and grateful smoothness, it has become adopted by the public generally for breakfast, luncheon, and supper. It is sold by the principal Grocers at 1s. 6d. per lb., in 1 lb., ½ lb., and ¼ lb. packets. Each packet is labelled, "JAMES EPPS, Homœopathic Chemist, London."

HEALTH WITHOUT PHYSIC.—Nervousness effectually cured by a novel and most successful mode of treatment, discovered in America. The most convincing proof of the efficacy of this wonderful remedy, with other details, will be sent to any address on receipt of one stamp.—Address, Mr. HILL, 27, Alfred Place, Store Street, London, W.C.

WHAT WILL THIS COST TO PRINT? is a thought often occurring to literary minds, public characters, and persons of benevolent intentions. An immediate answer to the inquiry may be obtained on application to RICHARD BARRETT, 18, Mark Lane, London. R. B. is enabled to execute every description of Printing on very advantageous terms, his office being furnished with a large and choice assortment of Types, Steam Printing Machines, Hydraulic and other Presses, and every modern improvement in the Printing Art. A Specimen Book of Types, and information for Authors, sent on application, by

RICHARD BARRETT, 18, Mark Lane, London, E.C.

GAME.—WEBB'S IMPROVED GAME BOOK.—The Sportsman's Daily Register of Game killed, and how disposed of, with Weekly, Monthly, and Annual Totals. Octavo Edition price 2s. 6d. Duodecimo Enlarged Edition, Quarto size, to suit larger Establishments, 5s. Double, 10s. Free by Post.—B. W. GARDINER & SON, Princes Street, Cavendish Square, London, W.

Just published, price 5s.,

THE CAUSATION AND PREVENTION OF DISEASE: With an Appendix, showing that the Sewage of Towns may be employed as a Manure, without Risk or Injury to the Health. By JOHN PARKIN, M.D.

London: JOHN CHURCHILL, New Burlington Street, W.

NEW AND CHEAPER EDITION OF

HAWKER ON SHOOTING.

Eleventh Edition, in One Volume, square crown 8vo, with several Plates and Woodcuts, price 15s. half-bound,

INSTRUCTIONS TO YOUNG SPORTSMEN, in all that relates to GUNS AND SHOOTING. By the late Lieut.-Col. P. HAWKER. Revised and corrected by his Son.

"Colonel Hawker expounds with clearness, fullness, and the whole rationale of shooting vivacity."—*Edinburgh Review.*

London: LONGMAN, GREEN, LONGMAN, & ROBERTS.

NEW EDITION OF YOUATT ON THE HORSE.

Just published in One Vol. 8vo, price 10s. 6d. cloth,

THE HORSE. By WILLIAM YOUATT. With a Treatise on Draught. With numerous Woodcut Illustrations, chiefly from Designs by W. Harvey. New Edition, revised and enlarged by E. N. GABRIEL, M.R.C.S., C.V.S.; Secretary to Royal College of Veterinary Surgeons.

YOUATT ON THE DOG, 8vo, Woodcuts, 6s., may also be had.

London: LONGMAN, GREEN, LONGMAN, & ROBERTS.

On September 1, with 400 Original Illustrations, price 3s. 6d. cloth gilt.

THE FAMILY CYCLOPÆDIA, a complete TREASURY OF USEFUL INFORMATION on all subjects bearing upon the Common Interests and Daily Wants of Mankind, comprising a Second and entirely New Series of

I.—THINGS NOT GENERALLY KNOWN
II.—THINGS THAT OUGHT TO BE KNOWN
III.—THINGS WORTH KNOWING

with Full Instructions, Drawings, and Specifications for the Construction of Cottages, Dwelling Houses, and Villas, the whole forming a Dictionary of Social and Domestic Economy copiously illustrated and carefully written under supervision of the Editors of the "Family Friend."

London: WARD & LOCK, 158, Fleet Street, E.C.

TO NURSERYMEN AND OTHERS.

TO BE DISPOSED OF, a really first-rate NURSERY, including Glass, Stock, and Business, entire, on very advantageous terms, in the immediate neighbourhood of London. Might suit two or more in partnership, or any country firm requiring a London place of business. Long Lease and capitally situated. Part of the Purchase Money might remain at interest if desired.—For all further particulars apply by letter to A. B. & Co., care of Messrs. Williams & Lloyd, Stationers, 29, Moorgate Street, London, E.C.

TO NURSERYMEN, GARDENERS, AND OTHERS.

TO BE DISPOSED OF, by Private Contract, WESTBOURNE NURSERY, Denbigh Road, Westbourne Grove, W., price 800*l.*, containing six Greenhouses, Showhouse, and a new Pit for Early Forcing, fitted with Hot-water Apparatus; also 40 lights of Brick Pitting. The whole being newly painted and in thorough working order, well situated for and doing a first-rate jobbing business. Lease 89 years unexpired. In offering the above for sale Mrs. WM. GILL (sole proprietor) is willing to take part of purchase money down, remainder being left on moderate terms, to whom applications for further particulars, &c., are to be made on the premises.

NURSERY BUSINESS FOR SALE, at valuation only, of Evergreen Trees and Shrubs (about 60*l.*); good House, walled-in Garden. Rent 30*l.* Subject of town surrounded with gentry. Good-paying business. Is worth three times the amount.—E. BUTTERMAN, 18, Upper North Place, Gray's Inn Road, near Guildford Street, W.C.

TO MARKET GARDENERS AND OTHERS.

TO BE LET, and entered on at Michaelmas, ORULTON GARDEN, consisting of about 4 acres of garden enclosed by brick walls, with dwelling-house and a number of Vineries and Pine-houses. The house is situate near Pembroke and within an easy distance of Pembroke Dock and Tenby. Some Grass land can be let if required.—For further particulars apply to Mr. BRADSHAW, Pembroke.

MIDDLESEX.

TO BE LET, from Michaelmas next, WHITTON FARM, Twickenham, containing 156 acres of excellent Land, chiefly Arable, and a capital Residence. A Lease will be granted at a moderate rent.—For particulars and cards to view apply to Messrs. CHINNOCK & GALSWORTHY, Auctioneers and Land Agents, 11, Waterloo Place, Pall Mall, S.W.

FARM TO BE LET WITHIN 12 MILES OF LONDON.

MESSRS. GREEN, STANSBY, AND GREEN are instructed to LET, with immediate possession, a very eligible FARM of nearly 500 Acres (in a ring fence) of first-rate land, of which about 100 Acres are Arable and the remainder part Meadow and Pasture, and bearing a great reputation for its Stock and Produce. There is a capital Farm House, with every requisite building. Never-failing Water supply. Capital Roads and Markets. The land has been under most liberal cultivation for several years, as is (together with the buildings) in the highest condition.—Apply personally to Messrs. GREEN, STANSBY, & GREEN, Estate Agents, 28, Old Bond Street, W.

Sales by Auction.

ORCHIDS AND FERNS,
IMPORTED AND ESTABLISHED PLANTS.

MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, W.C., on FRIDAY, September 9, at half-past 12 precisely, a Collection of ORCHIDS and FERNS, including several fine Imported Plants in good health of the magnificent ANGRÆCUM SESQUIPEDALE from Madagascar, the largest white flowered Orchid known; LÆLIA XANTHINA, a new species with the habit of Lælia purpurata and deep yellow flowers. Also LÆLIA PRÆSTANS, L. purpurea gigantea, CATTLEYA TRIANÆI, C. RANGELII, and numerous other fine Lælias and Cattleyas. Also a collection of Ferns, including Alsophila excelsa, A. ferox, A. aurea major, and others rare and interesting. May be viewed on the morning of Sale, and Catalogues had.

CRYSTAL PALACE—IMPORTANT SALE.

To NOBLEMEN, GENTLEMEN, NURSERYMEN, FLORISTS, & OTHERS.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions (by order of the Crystal Palace Company) to submit to public competition by Auction, on the premises near the Railway Station, about the third week in SEPTEMBER, the surplus stock of Plants, consisting of very large Orange Trees Standard Bays, Araucaria excelsa, Bidwillii, and Cunninghamii, Cupressus torulosa, Pinus excelsa, Standard and Dwarf Rhododendrons, fine choice Double Camellias, beautifully furnished with bloom buds; also about 60 plants of the Branching Pine Apple, of Penang.—May be viewed two days prior to the Sale; Catalogues had on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

GUANO.

TO BE SOLD BY AUCTION, at the New Corn Exchange Tavern, on MONDAY, August 29, at half past 2, the newly-arrived Cargo of CALIFORNIAN GUANO, per John A. Parks. The following is Prof. J. P. Way's Analysis:—

Moisture	.. ..	15·11
Organic matter and salts of ammonia		36·60
Sand	..	7·21
Phosphates of lime and magnesia	..	44·62
Alkaline salts	..	1·47
		100
Containing nitrogen		2·81
Equal to ammonia		3·42

For further particulars apply to DIPNALL, PHARE, & Co., Brokers, 18, Mincing Lane, E.C.

FREEHOLD ESTATE—BOXTED, ESSEX.

MR. R. G. CRASKE will sell by Auction, by direction of the Executors of the late Mr. George Morten, at the Waggon and Horse Inn, Colchester, on WEDNESDAY, August 31, at 3 for 4 o'clock, in Two Lots. Lot 1. A very valuable Freehold Estate, situated at Boxted, within 4 miles of the important market town of Colchester, and abutting upon the public road; comprising a Messuage divided into two tenements; good Barn and other Out-buildings, and about 17 acres more or less of rich Arable Land, under cultivation as a Seed and Fruit Garden, for which the soil and situation are extremely well adapted. It is planted with upwards of 400 choice Fruit Trees, now in full bearing; and the various enclosures are divided by capital young Quick hedges in full growth. Lot 2. A Plot of Three Acres of very productive Arable Land, also cultivated as a Seed Garden, lying near to Lot 1, being also divided therefrom by the Public Road. Outgoings:—Land tax, 14s. 8*d.* to be apportioned. The auctioneer has great confidence in calling attention to the foregoing Property as highly desirable for investment or occupation; and, both lots being in hand, possession can be given at Michaelmas upon completion of the purchase. Particulars and conditions of Sale may be had of Mr. W. G. BLATCH, North Street; of Mr. F. B. PHILBRICK, Church Lane; and of the Auctioneer, Observatory House, Colchester.

HAMPEN, GLOUCESTERSHIRE.

HIGHLY IMPORTANT SALE OF 700 PURE-BRED COTSWOLD SHEEP.

JAMES VILLAR has the honour to announce his instructions from T. Beale Browne, Esq., of Salperton Park (who is parting with his flock in consequence of the continued illness in his family), to Sell by Auction, at Hampen, on TUESDAY, September 6, the whole of his far-famed and matchless FLOCK of COTSWOLD SHEEP, comprising 225 splendid Ewes, 162 extraordinary Theaves, 140 matchless Ewe Lambs, 130 superior Ram Lambs, and 43 Rams of various ages, amongst which are several Prize Sheep and some of the finest specimens of this class of Sheep to be found in any Flock in England. The numerous Prizes awarded to this Flock in England, Ireland, Scotland, and France, warrants the Auctioneer in asserting that a finer lot of Cotswold Sheep than the above described has never been offered to the public: he therefore trusts to be honoured with the attendance and patronage of Noblemen, Gentlemen, and Sheep Breeders generally who may want First class Stock. Also, 30 HEAD OF CATTLE. Luncheon will be on the table at 11, and the Sale will commence punctually at 12 o'Clock. Hampen is 8 miles from Cheltenham, 11 from Addlestrop Station on the O. W. & W. Railway, 9 from Stow-on-the-Wold, 6 from Northleach, and 13 from Cirencester. Cheltenham is in direct communication with the Great Western and Midland Railways.—Catalogues may be obtained at place of Sale, or upon application to the Auctioneer, Cheltenham.

Printed by WILLIAM BRADBURY, of 13, Upper Woburn Place, and FREDERICK MULLETT EVANS, of No. 20, Queen's Road, West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their office, Lombard St., Precinct of Whitefriars, City of London, and published by them at the Office, No. 5, Upper Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—SATURDAY, August 27, 1859.

HORTICULTURAL BUILDINGS MANUFACTURED BY STEAM-POWER MACHINERY.

LOWEST PRICES AND BEST MATERIALS.



HENRY ORMSON, Stanley Bridge, King's Road, Chelsea, London, S.W.,

HORTICULTURAL BUILDER AND HOT-WATER APPARATUS MANUFACTURER,

BEGS most respectfully to call the attention of the Nobility, Gentry, Nurserymen, &c., to his superior manner of erecting every description of Horticultural Building, and he trusts by unremitting personal attention to the details of his business, by using only the very best materials, by employing the most skilful and efficient workmen, and by the most moderate possible charges to merit a continuance of the patronage so kindly and so liberally bestowed on him for many years past.

In the BUILDING DEPARTMENT his object will be to adapt all erections to the particular purposes for which they are required. He will devote equal attention to the plain, inexpensive, practical erections of Pits, Orchard Houses, Greenhouses, Vineries, &c., as to the more elaborate and architectural erections of Conservatories, Winter Gardens, &c., either in wood or iron.

The HEATING DEPARTMENT always engages his especial personal attention, and he feels justified in saying that in simplicity, safety, durability, and economy of fuel, combined with thorough effectiveness, his system cannot be surpassed.

VENTILATION.—Knowing the absolute necessity for thorough ventilation, he makes it a matter of first consideration.

See SECTIONS, &c., of Horticultural Buildings in former Numbers of the *Gardeners' Chronicle.*

PLANS, SPECIFICATIONS, and ESTIMATES free on application.

ORMSON'S PATENT JOINTLESS TUBULAR BOILERS have now from *practical tests* established for themselves the highest standing reputation for power, efficiency, and economy of fuel.

H. O. *particularly wishes to call attention to the fact of his having fixed a great number of these excellent Boilers, and to the fact of not one of them having failed, fractured, leaked, or given way in any respect.*

See Testimonials in former Numbers.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 36.—1859.] SATURDAY, SEPTEMBER 3. {Price Fivepence. Stamped Edition, 6d.

INDEX.

Agri. Society, Irish	729 c—732 a	Machines	731 a
Analyses of fish	733 a	Milner, Mr.	724 c
Books not ced	727 b	Morphology	725 c
Blending and grafting	724 b	Museum, Kew	723 c
Butterflies, Stainton's, rev.	727 a	New Zealand, seeds for	728 c
Cattle food	731 a	Orchard houses	725 a
— poisoning	730 a	Orchids, supposed new	728 c
Common things, teaching	733 a	Parks, flowers in	726 b
Cottage garden, Belgian	725 b	Peas, what to do with hard	728 c
Crops, agri.	731 a	Peas, new	726 b
Cucumbers, out-door	725 c	Pipes, earthenware l'ned	726 b
Dog, the	732 c	Plants, new	724 c
Fish analyses	733 a	Poppy, monstrous	725 c—726 a
Grafting and budding	724 b	Poultry show	733 a
Grapes, Muscat	725 c	Rape-cake, spurious	730 a
— Bowood Muscat	726 b	Steam culture	731 b
Grape growing	728 a	Stoke Newington, exhibitions	726 c
Hampton Court Gardens	727 c	Trade lists	727 c
Hollyhock, the	728 c	Wexford and Waterford	730 b
Kew Museum	723 c	Woods, various	724 a
Law respecting cattle poisoning	730 a	Water pipes, earthenware lined	725 b

CRYSTAL PALACE. — FLOWER SHOW.—THE THIRD AND LAST GRAND EXHIBITION OF FRUITS AND FLOWERS this season will take place on WEDNESDAY and THURSDAY, Sept. 7 and 8. At this Exhibition separate Prizes will be given to Amateurs and Cottagers. Schedules may be had on application, and also for the Chrysanthemum Show which will be held in November.

For the convenience of Gardeners, a Special Train will leave London Bridge Station at 6 o'clock on Wednesday morning.

By Order, GEORGE GROVE, Secretary.

THE GRAND NATIONAL DAHLIA SHOW for 1859, at Aston Hall, Birmingham, September 20.

Upwards of ONE HUNDRED GUINEAS to be Awarded in PRIZES. Particulars to be had of

C. TURNER, Slough, or } Honorary
J. KEYNES, Salisbury, } Secretaries.

LEICESTER AND LEICESTERSHIRE FLORAL AND HORTICULTURAL SOCIETY.—The THIRD EXHIBITION of this Society will be held on the Leicestershire Race Course on WEDNESDAY, September 7, when a large number of PRIZES will be awarded for FRUITS and CUT FLOWERS. The Midland Railway will convey visitors for one fare to and fro from the principal stations.—For particulars, apply to the Hon. Sec., 15, Newark Street, Leicester.

SUTTON'S AUTUMN CATALOGUE is now ready, and will be sent to their Customers gratis and post free on application.—Royal Berkshire Seed Establishment, Reading.

YOUELL AND CO.'S GENERAL PRICED CATALOGUE is now published, and may be had post free on application.—Royal Nursery, Great Yarmouth, Sept. 3.

FERN CATALOGUE.

ROBERT SIM'S NEW DESCRIPTIVE AND PRICED CATALOGUE, No. 6 (62 pages) of his COLLECTION of BRITISH AND EXOTIC FERNS, can be had, post free, for 8 stamps. Gratis to all previous purchasers of Ferns.

Nursery, Foot's Cray, Kent, S.E.

TO BE SOLD, A BARGAIN, a very choice Collection of FOREIGN FERNS, containing upwards of 100 varieties, many of which are rare. The specimens are fine, and in remarkably good health.—For further particulars apply to Mr. DAVID BROWNE, 41, London Street, Norwich.

TO THE TRADE.—Fine bushy young stuff of ERICAS of the leading kinds, 50s. per 100; 20l. per 1000.

Epps's Nurseries, Maidstone.

ERICAS.

F. AND A. SMITH'S Stocks of the above are this season unusually fine, comprising most of the leading winter and spring-flowering varieties. Prices on application.

Dulwich, Surrey, S.

CINERARIAS.

F. AND A. SMITH are now sending out strong seedling plants from their unrivalled stock of the above at 4s. per dozen. Prices to the Trade on application.—Dulwich, Surrey, S.

CINERARIA, CALCEOLARIA, AND PRIMULA.

F. AND A. SMITH are now sending out SEED of their splendid varieties of the above in sealed packets, with out which none are genuine, at 1s., 1s. 6d., 2s. 6d., and 5s. each. To be had also of most respectable Nurserymen and Seedsmen in the Kingdom.—Dulwich, Surrey, S.

CAMELLIAS AND AZALEA INDICA.

F. AND A. SMITH beg to offer the above well set with flower buds, dwarf, bushy, and thoroughly ripened off. Having been grown in this country they are most suitable for packing, and are strongly recommended to country Amateurs and the Trade in general. An inspection invited. Prices on application.—Dulwich, Surrey, S.

TO THE TRADE.—A fine healthy Stock of GENTIANELLA, 10s. per 100; ALPINE AURICULAS, 10s. per 100.

J. SMITH, Sen., Tansley Nursery, Matlock, Derbyshire.

Unknown correspondents will please to enclose a reference, to save delay in the execution of their orders.

SELAGINELLA RUBRICAULIS (New).

ROBERT SIM is now prepared to supply, at 10s. 6d. each, very nice plants of this distinct and very pretty novelty, of which he possesses the entire stock. Its stems are coral red, its leaves small, and of a shining variable green. In habit it resembles some elegant little Thuja Libocedrus or Allies. It will form a very compact and handsome smallish specimen for exhibition.—Nursery, Foot's Cray, S.E.

HUGH LOW AND CO. have now ready for distribution the PRICED CATALOGUE for present season of their extensive collection of PLANTS, TREES, &c. It extends to 76 pages, and contains Stove, Greenhouse, Orchidaceous, Hardy, Herbaceous, and New and Rare Plants; Camellias, Azaleas, Ferns (of this interesting tribe the collection is very complete), Conifers, Rhododendrons, Ericas, Fruit Trees, Florists' Flowers, and Bedding Plants of all kinds.

The Catalogue will be sent prepaid on application.

Clapton Nursery, London, N.E.

DUTCH AND CAPE BULBS.

BUTLER AND M'CULLOCH'S DESCRIPTIVE AND PRICED CATALOGUE OF DUTCH AND CAPE BULBS will be published in a few days, and forwarded free and post paid on application. Practical Cultural directions for the use of Amateurs will be prefixed to each class of Bulbs.

Covent Garden Market, W.C.

DUTCH AND OTHER FLOWER ROOTS.

HOOPER AND CO.'S PRICED CATALOGUE OF DUTCH AND OTHER FLOWER ROOTS, with Hints on Cultivation, is now ready, and may be had free by post on application. The first consignment of Bulbs has just arrived in excellent condition, and of the usual first class quality.

Covent Garden Market, London, W.C.

HYACINTHS AND OTHER BULBS.

WM. CUTBUSH AND SON'S DESCRIPTIVE CATALOGUE of the above is published, and can be had post free on application.—Highgate Nurseries, London, N.

DUTCH AND OTHER BULBS.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their CATALOGUE of the above is now ready, and will be forwarded post free on application. Early orders are solicited, as their successful cultivation depends in a great measure on early planting.

Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

DUTCH FLOWER ROOTS.

HUGH LOW AND CO. have now ready for distribution their CATALOGUE for present season of HYACINTHS, TULIPS, NARCISSUS, and other Winter and Spring flowering Bulbs. All the varieties best adapted for Forcing will be found in the List, and in GLADIOLI the collection is very complete. The List will be sent pre-paid on application.—Clapton Nursery, London, N.E.

DUTCH FLOWER ROOTS.

TIMOTHY BRIGDEN, SEEDSMAN and FLORIST, 10, Railway Arcade, London Bridge, London, E.C., begs most respectfully to inform his Friends and the Public generally that he has just returned from Holland with his unrivalled collection of HYACINTHS, CROCUS, TULIPS, NARCISSUS, JONQUILS, &c., of which a PRICED LIST may be had upon application. T. B. further begs to state that, having selected them from the best growers in Holland himself, he can guarantee them finer than any other house in London.

A large assortment of Aquaria, Wardian Cases, and Gold and Silver Fish always on sale.

DUTCH FLOWER ROOTS.

CHARLES TURNER has received his first consignment of these valuable roots, comprising Hyacinths, Crocuses, Tulips, Narcissus, Anemones, Ranunculuses, Lilliums, &c., in great variety. They are of first quality and in excellent condition. Early orders are respectfully solicited. A Descriptive Priced Catalogue is in publication, and will be forwarded post free on application.—The Royal Nurseries, Slough.

DUTCH FLOWER ROOTS.

CHARLES ALEXANDER, 30, West Register Street, Edinburgh, has received his first importation of the above in fine condition. The Bulbs are large and sound. Early orders solicited.

DESCRIPTIVE PRICED CATALOGUES on application.

GRAPE VINES FROM EYES.—All the best varieties of VINES, new and old, in strong plants, are now ready for sending out. They may be relied upon as true to name, the eyes being taken from Vines fruited on the premises. Prices and Lists on application. R. GLENDINNING.

Chiswick Nursery, London, W.

FRUIT TREES.

J. AND J. FRASER, Lea Bridge Road Nurseries, Essex, N.E., beg to invite purchasers of Fruit Trees to an inspection of their stock, which is this year unusually fine. PRICED CATALOGUES can be had on application.

GERANIUMS, HERBACEOUS PLANTS, ETC.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their new PRICED and DESCRIPTIVE CATALOGUE of the above, to which are added Supplemental Lists of Stove, Greenhouse, and Hardy Plants, Fruit Trees, &c. (which include all the best new plants of the season), is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

GRIFFIN'S ALMA LETTUCE.

J. GRIFFIN feels great pleasure in again offering this fine variety, which he can confidently recommend as the most useful sort in cultivation. In addition to its being very hardy, it is an excellent summer Lettuce, growing to an immense size, and not requiring to be tied up. Many who have tried it state that it stands the hot dry weather better than any other variety. In sealed packets, 1s. and 2s. 6d. each. Price to the trade on application.

Weston Road, and 2, New Bond Street, Bath; can also be had of MINIER, NASH, & Co., Seedsmen, 60, Strand, London, W.C.

CROPS FOR EARLY SPRING FEED.

MESSRS. RAYNBIRD AND HARVEY are now supplying fine new WINTER TARES, WINTER BARLEY, WINTER OATS, fine new ITALIAN RYE-GRASS, and new TRIFOLIUM, the best crops for spring feed.

GIANT RYE very early and productive, and the new RACER TARE, a much earlier variety than the common sort.

Samples and prices on application.

Address RAYNBIRD & HARVEY, Basingstoke, or 89, Seed Market, Mark Lane, London, E.C.

SEED WHEAT FROM THE CHALK.—Selected samples of CHIDHAM, WHITE TRUMP, ROUGH CHAFF, HUNTER'S WHITE, RED-CHAFF WHITE, GRACE'S WHITE, TALAVERA, RED BROWICK, RED NURSERY, GOLDEN DROP, and all the best kinds of Wheat, supplied by RAYNBIRD & HARVEY, of Basingstoke, and 89, Seed Market, Mark Lane, London, E.C. Samples and prices on application.

GEORGE GIBBS AND CO., SEEDSMEN,

26, DOWN STREET, PICCADILLY, LONDON, W.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY LIMITED supply every requisite for the Farm and the Garden.

Registered Offices, Union Road, Plymouth.

GRASS SEEDS FOR PRESENT SOWING.

SUTTON AND SONS have a good supply of fresh Seeds of all the best kinds of permanent GRASS SEEDS. Prices and other particulars will be forwarded on application.

Royal Berkshire Seed Establishment, Reading.

TRIFOLIUM INCARNATUM (ITALIAN CRIMSON CLOVER).—New Seed may now be obtained on application to SUTTON & SONS, Seed Growers, Reading. This should be sown upon the corn stubble. Quantity required per acre 24 lbs.

LAWNS WITHOUT MOWING.—SPERGULA PILIFERA.

J. A. SUMMERS can supply well-rooted Plants (taken from the Lawn at Forest Hill), at 1s., 3s., 2s., and 1s. per dozen, according to size. A specimen, post free, 1s.

Howard Park Nursery, Perry Hill, Sydenham, S.E.

DICKINSON'S ITALIAN RYE-GRASS SEED is now ready for delivery. Sold only by himself, and for present payment, 48s. per quarter, or 7s. per bushel.

New Park, Lymington, Hants.

WILLIAM BURGESS, Willow Farm, Iden, by Rye, Sussex, offers to the Trade only, GREEN-TOP SCOTCH TURNIP, PURPLE-TOP SCOTCH, MARSHALL'S IMPROVED SKIRVING'S SWEDE, OLD PURPLE SWEDE (very fine), all saved from roots carefully selected, and just harvested, in good condition.

SCARLET RHODODENDRONS, IRISH YEWS, &c.

L. T. DAVIS begs to offer the following, in quantity, SCARLET and CRIMSON RHODODENDRONS, IRISH YEWS, LAURUSTINUS, HARDY HEATHS, PERNETTYAS, &c. These can be had of various sizes, and are in the best possible condition for safe removal, having been recently transplanted. Prices on application (carriage free to Belfast).—Ogle's Grove Nursery, Hillsborough, County Down.

TO THE TRADE, ETC.

L. T. DAVIS has a very large stock of 1 and 2-year SEEDLING THORN QUICKS, which he offers at moderate prices; also a large quantity of 3-year SEEDLING ASH. Prices, &c., on application. Carriage free to Belfast.

Ogle's Grove Nursery, Hillsborough, County Down.

ARAUCARIA IMBRICATA.

YOUELL AND CO. beg to inform the Trade they have to offer a fine and healthy stock of the above in 1-year-old plants.

GLADIOLUS BRENCHLEYENSIS.—An extensive stock of large flowering Bulbs of this magnificent Gladiolus, the colour of which is vermilion scarlet, the best and brightest variety known. Prices of the above on application.

Royal Nursery, Great Yarmouth.

GREAT SCARCITY OF FRUIT.

STRONG ROOTS OF THE LINNÆUS RHUBARB, from division, can be supplied in any quantity at 12s. per 100, or 5l. per 1000, by WALTER PENNINGTON, Nurseryman, South Redfern, Nottinghamshire.

OSCAR STRAWBERRY.

CHARLES TURNER can still supply strong plants, warranted to fruit next season, at 42s. per 100.

For full particulars of this fine early variety see previous Advertisements.—The Royal Nurseries, Slough.

STRAWBERRY PLANTS AND CATALOGUE.—Plants of the pretty little Bush Alpine, both Red and White, without runners, suitable for edgings to walks, beds, &c., 10s. per 100 sets.

A DESCRIPTIVE CATALOGUE of upwards of 130 sorts is just published. To all who wish to purchase plants it will be sent by applying to the grower, WILLIAM JAS. NICHOLSON, Eggleseliffe, Yarm, Yorkshire.

"WONDERFUL" STRAWBERRY, 7s. 6d. per 100.

"MAY QUEEN" STRAWBERRY, ripe a fortnight earlier than Black Prince or any other sort; form and size like Keens' Seedling. Price 3l. per 100.

"BLACK PRINCE," "BRITISH QUEEN," and all old established sorts at 2s. 6d. per 100.

Address JOHN JEYES, Northampton.

STRAWBERRIES.—BLAKE'S "INCOMPARABLE."—Well-rooted runners of the above prolific Strawberry, now to be had at the reduced price of 2l. per 100. No garden should be without them.

Apply to R. BLAKE, Esq., Birdham Parsonage, Chichester.

TO THE TRADE.

THOMAS JACKSON AND SON solicit an inspection of their Stock generally, and particularly their AZALEAS, ERICAS, EPACRIS, and POT PLANTS, which are this season they believe unequalled in their fine healthy condition. Good flowering plants of Azaleas, Ericas, and Epacris, 75s. per 100. T. J. & Son possess many large specimens of Stove and Greenhouse Plants, from 1 to 5 feet in diameter, suited for exhibition, prices according to size and kind. Berberis Beali, B. japonica, and Eugenia Ugni, good plants in 3-inch pots, 60s. per 100.—Nurseries, Kingston, S.W.

TO THE TRADE.

S. PONSFORD would call the attention of all extensive planters to his stock of EVERGREEN and DECIDUOUS SHRUBS, particularly in Common Laurel, Aucuba, Arbutus, Evergreen Oak, Striped Holly, &c. Also, Standard Apples and Mulberries (these very fine), Pears, Plums, &c. Dwarf-trained Peaches, Nectarines, &c. A large stock of Red, White, and Black Currants, Gooseberries, &c. Fine Standard and Dwarf Roses. Limes in large quantities and all sizes.—Loughborough Park Nurseries, Brixton, Surrey, S.

GARDENERS' CHRONICLE NEWSPAPER DENNY

NEW LARGE-FLOWERED PINKS FROM JAPAN.

DIANTHUS CHINENSIS HEDDEWIGII, 1s. & 2s. 6d. per packet.

We have great pleasure in introducing the above to the notice of our Customers. The following is an extract from the *Gardeners' Chronicle* of September 18, 1858, containing descriptions by the raiser, M. Heddewig:—

"DIANTHUS CHINENSIS HEDDEWIGII.—This splendid variety is no doubt the most beautiful of all. The whole plant is scarcely 1 foot high, and very bushy; the leaves broad and bluish green; whilst always 30 to 40 flowers are at once in blossom, and every one measures nearly 3 inches in diameter—the little bush is totally covered with them. I have already now, in the second year, a great number of variations in colour, and it is expected that in time they shall show still more. We can endorse all that M. Heddewig says in its favour, as we have grown and flowered them ourselves during the past summer, and on one plant taken indiscriminately we counted upwards of 60 blooms and buds."

DIANTHUS CHINENSIS MONSTROSUS, 1s. & 2s. 6d. p. packet.

We have also purchased the stock of another Continental grower of the above, a new variety raised from Heddewigii, the flowers of which are considerably larger.

Seeds sown during September and October in pans, and afterwards pricked out in 48-pots and kept in Greenhouse during the winter, will flower early in the summer.

☞ PRICE TO THE TRADE UPON APPLICATION.

JAMES CARTER & CO., Seedsmen, 237 and 238, High Holborn, W.C.

SPLENDID JAPAN PINK,

DIANTHUS HEDDEWIGII.

MESSRS. E. G. HENDERSON & SON

OFFER for Sale SEED of this truly splendid flowering plant, which far surpasses all other species of the genus for neatness and freedom of growth, the extraordinary size of its flowers, brilliancy of colour, and beautiful effect. The plant is of a dwarf, compact, branching habit, from 6 to 12 inches in height, producing large closely-lobed blossoms, much exceeding the diameter of a five-shilling piece; including in colours the richest conceivable shades of crimson and scarlet-crimson, blending into self-violet, and intense violet-red. In other seminal varieties they are picturesquely marbled and blotched with white upon crimson grounds, elegantly fringed on the margin, whilst the lustrous tints of the darkest velvet-like petals are exquisitely relieved by the clear silvery-white anthers in the centre.

Some of the plants at present in bloom at the Wellington Nursery (of summer planting) are under 12 inches in height, and nearly the same in diameter, with from 80 to 100 flower buds upon them. These plants form part of the fine Collection exhibited by MESSRS. HENDERSON, at the Royal Botanic and London Horticultural Exhibitions, where they formed special attractions, and for which a Medal and Honorary Certificate were awarded for distinguished merit. Amongst the present selection in bloom are the greatest variety yet offered of proved kinds. In addition to the magnificent self crimson, and scarlet, are particoloured ones, having exceedingly rich dark centres with broad margins of stained violet-rose, others with violet-crimson centres, with upper black zone-like belt and broad outer margin of white, mottled and barred with rich claret, and amongst the finest appears one with a massive rich inner crimson belt, and a broad outer margin of dark rose, stained with violet.

MESSRS. HENDERSON having proved that the DIANTHUS GIGANTEUS advertised by them some time ago is but the same as D. Heddewigii, and that when grown from seed it only produces varieties in no essential feature distinct from the last named one; it is therefore certain, from practical evidence, which confirms Dr. Lindley's opinion, that there is yet but one species introduced, and must as such be recognised by the name now recorded. From the seminal varieties of D. Heddewigii will often be produced flowers of a monstrous size, varying from 2 to 3 inches in width, of most gorgeous tints in their combination of colour, but all hitherto agreeing in one uniform and distinct dwarf branching habit of growth, the permanence of any single variety requiring, like the Calceolaria or any similar plant, to be perpetuated by cuttings.

MESSRS. HENDERSON having purchased the whole STOCK from M. Heddewig, they are prepared to offer it from their own proved plants and from the original introducer. It is admirably adapted for pot-culture in the Conservatory and Greenhouse Decoration during the early spring and summer months, and equally so for the open Flower Garden throughout the season.

Seed Packets, 1s., 2s. 6d., and 5s. each.

NEW BULB CATALOGUE.

E. G. HENDERSON & SON will forward on application, postage free, the above, in 80 pages, containing a full description of the most ornamental classes and varieties of BULBOUS FLOWERS AND PLANTS for the Conservatory and House decoration; also a very Select List of those adapted for Garden ornament in spring, summer, and autumn, with elaborate and practical remarks on their general merit and adaptation.

The Perennial, Herbaceous and Alpine Plant List for the Garden will also be included, containing one of the most extensive Collections in the kingdom.

E. G. HENDERSON & SON, Wellington Nursery, St. John's Wood, London, N.W.

CARSON'S

ORIGINAL ANTI-CORROSION PAINT,

PATRONISED BY

THE BRITISH GOVERNMENT,	HON. EAST INDIA COMPANY,	RAILWAY AND CANAL COMPANIES,
THE FRENCH GOVERNMENT,	MOST OF THE NOBILITY AND GENTRY,	THE PRINCIPAL COLLIERIES,
THE RUSSIAN GOVERNMENT,	NEW RIVER COMPANY,	MILL OWNERS,
H.R.H. THE PRINCE CONSORT,	THE DOCK COMPANIES,	IRON MASTERS, &c. &c.

The ANTI-CORROSION PAINT is now used extensively for all kinds of OUT-DOOR WORK,

Such as Iron, Wood, Stone, Brick, Compo, Cement, &c., and has been proved, after a practical test of 70 years, to surpass any other Paint; *and being peculiarly adapted for Conservatories, Hothouses, and Frames of all descriptions, is constantly used by Noblemen, Gentlemen, as also many eminent Horticulturists, for such purposes.* It is much lower in Price, and lasts twice as long as the best White Lead, and can be easily applied by any Labourer, being sent in various Colours, requiring simply to be mixed (no grinding is needed). The Anti-Corrosion is a powder, and will keep any length of time.

COLOURS:—

White Stone	34s. per cwt.	Light and Dark Lead	28s. per cwt.
Light do.	32s. ,,	Light and Dark Chocolate	
Drab or Portland		Bright Red	
Bath do.		Dark do. (or Brick Colour)	
Light and Dark Yellow do.		Black	
Copper	30s. ,,	Invisible Green	42s. ,,
Light and Dark Oak		Bright and Deep Green	50s. ,,
		Blue (for Carts and Waggons)	50s. ,,

OIL, TURPENTINE, AND BRUSHES,

A Copy of Testimonials (700), will be sent upon application to

WALTER CARSON & SONS, (Successors to the Inventors), 9, Great Winchester Street, near the Royal Exchange), London, E.C.

NO AGENTS THROUGHOUT THE UNITED KINGDOM.

GENUINE TOBACCO PAPER FOR FUMIGATING.

H. APPLEBY (Foreman to Messrs. Ivery & Son, Nurseryman, Dorking, Surrey), supplies the above in 4-lb. packets at 1s. 3d. per lb. A liberal discount allowed to to the Trade. Testimonials too numerous for insertion, but may be had on application.

SHEET IRON POTS FOR FUMIGATING, 3s. 6d. each.

N.B. All orders to be accompanied with a Post-office Order payable to HENRY APPLEBY, Dorking, Surrey.

RED SPIDER, THRIPS, SCALE, MEALY BUG, AMERICAN BLIGHT, ANTS, &c., prevented and got rid of by the PATENT GISHURST COMPOUND, which should also be applied when dressing Fruit Trees in autumn and winter. Price 1s. 6d. and 6s. per box, exclusive of carriage, with directions for use, and testimonials from the most eminent professional and amateur gardeners in the country. Where the consumption is not large the small-sized boxes are recommended.

Nearly 100 of the principal Nurserymen and Seedsmen in England, Scotland, and Ireland have taken in their supplies, most of the Nurserymen in the first instance for their own use, and are prepared to sell single boxes. A list of their names is occasionally advertised in the *Gardeners' Chronicle*, "Cottage Gardener," &c.

Extract from Leading Article in Gardeners' Chronicle, April 9, 1859.

"That it really kills red spider, aphides, mealy bug, thrips, and scale, it is impossible to doubt, in the face of reports of practical men, among whom we may mention Mr. D. Judd, of Althorp Gardens." Then follows a caution against the use of a too strong solution.

A new List of Testimonials stating the strength of solution and mode of application in the different cases has been printed and is now issued with the boxes.

Nurserymen and Seedsmen supplied by PRICE'S Patent Candle Company (Limited), Belmont, Vauxhall, London, S.

KEATING'S PERSIAN INSECT DESTROYING POWDER.

POULTRY, DOGS, AND PLANTS are effectually freed from Fleas, and all other Vermin with which they are infested, by the above Powder, which is quite harmless to animal life. The Farmer, the Gardener, or the Sportsman, will therefore find it invaluable. Bugs, Cockroaches, Beetles, Moths in Furs, and every other species of Insect are also instantly destroyed. In packets post free, for 14, or treble size for 36 postage stamps, by THOMAS KEATING, Chemist, 79, St. Paul's Churchyard, London, E.C. Take notice each genuine packet bears the above name and address. See "THE FIELD," Oct. 2d and 9th, pp 263, 283, and 294.

TANNED GARDEN NETTING for Preserving Fruit Trees from Frost, Blight, Birds, &c., and as a Fence for Fowls, &c. One yard wide 1½*d.*, 2 yards 3*d.*, 3 yards 4½*d.*, and 4 yards 6*d.* per yard, in any quantity, may be had at C. WRIGHT'S, 376, Strand, W.C.

A liberal allowance to Nurserymen.

TANNED NETTING, for the Protection of Fruit Trees from Frost, Blight, and Birds; also, for the security of fresh sown seeds, at 1*d.* per square yard; 200 yards, 12s.; 500 yards, 25s.; Scrim Canvas, for wall fruit; Garden Mats.—At EDGINGTON & Co's., Rick Cloth, Tent, and Waterproof Cloth Manufacturers, 17, Smithfield Bars, City, E.C., and Old Kent Road, S.E.

CAST-IRON GARDEN ORNAMENTS, viz.—ORNAMENTAL VASES, of various sizes, do. with pedestal, GARDEN CHAIRS and STOOLS, RUSTIC GARDEN SEATS and TABLES, both plain and bronzed, also GARDEN ROLLERS of all sizes.—Prices on application to J. JONES, Iron Merchant, 6, Bankside, London, S.E.

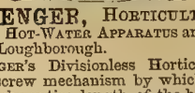
GREENHOUSES.

HENRY FREEMAN, HOTHOUSE BUILDER and HOT-WATER APPARATUS MANUFACTURER, Triangle, Hackney, N.E. Established 20 years. Good substantially built GREENHOUSES, fixed in any part of the kingdom, for cash, 42 feet long by 13 feet, 90*l.*; 21 feet by 13 feet, 50*l.*; 12½ feet by 10 feet, 30*l.* A first-rate CONSERVATORY, 30 feet by 16 feet, 130*l.* A large assortment kept. Estimates for Heating, or any branch in Wood or Iron or Park Fencing.

C. STEPHENSON, late STEPHENSON AND SONS, 61, Gracechurch St., London, E.C., Manufacturer of Iron Hurdles, Fencing, &c., Improved Iron and Copper Conical Boilers and Apparatus for Warming Buildings of every description by Hot Water.

Prices and Estimates furnished upon application.

HOT-WATER PIPES at wholesale prices, with Elbows, Syphons, Tee Pipes, and every other connection. Wrought and cast iron Boilers, Saddle, Conical, Cylinder, and Elliptic, from 24s. each. Boilers and Iron Stands to use without brickwork. Valves from 12s. each. Coil Boxes, Furnace Doors, Furnace Bars, Supply Cisterns, and Builders' Castings of every description in stock, at Mr. LYNCH WHITE'S Iron Wharf, Upper Ground Street, Blackfriars Bridge, London, S.



T. G. MESSENGER, HORTICULTURAL BUILDER, and PATENT HOT-WATER APPARATUS and GARDEN ENGINE MANUFACTURER, Loughborough.

T. G. MESSENGER'S Divisionless Horticultural Erections, ventilated with screw mechanism by which the top or front lights are opened the entire length of the house momentarily, do not fail to give complete satisfaction (as numerous Testimonials can show), for the following reasons:—They are much lighter in appearance, more durable, much stronger, and cheaper than any other can possibly be.

Three years' trial has proved his PATENT BOILER to be superior to any hitherto invented; a great number of houses can be heated at once with this Boiler, with the facility of heating any separately.

Illustrated descriptions and prices of his Patent and greatly approved GARDEN ENGINES sent free upon application; also Plans, Estimates, and Testimonials for Building or Heating. See *Gardeners' Chronicle*, May 21.

HORTICULTURAL BUILDINGS AND HEATING BY HOT WATER.

JOHN R. PEILL, 17, New Park St., Southwark, S.E., Manufacturer of every description of Buildings for Horticultural purposes, and Inventor of the Improved Conical Boiler for heating the same, is prepared to undertake works of any magnitude, and refers among others to the celebrated range of FORCING HOUSES at HER MAJESTY'S GARDENS, FROGMORE, and at SIR ROBERT PEEL'S, DRAYTON MANOR, constructed under the superintendence of his Manager, Mr. JOHN JONES; and also to his BOILERS fixed at the CRYSTAL PALACE, the ROYAL BOTANIC GARDENS, REGENT'S PARK, and KEW, and at several hundreds of the Nobility's seats, Public Establishments, and Manufactories in London and the provinces. J. R. P. also manufactures every description of Iron Roofs, Iron Houses, and Iron Fencing, plain and ornamental. Strong Iron Hurdles for Sheep (6 ft. long, 3 ft. high, with 5 bars), 4s. 3d. each; ditto for cattle, 4s. 9d. each. Prices and other particulars forwarded on receipt of one postage stamp.

EARLY SHEEP FEED.

SUTTON'S IMPROVED ITALIAN RYE-GRASS has proved the best kind for general cultivation, being the most productive and hardy, growing freely in all soils.

From JOHN BALDWIN, Esq., *Luddington, April* 11, 1859.

"It is certainly delightful to stroll about and witness the sheep up to their knees in your beautiful Italian Rye-grass."

From FREDERICK F. HALLETT, Esq., *the Manor House, Brighton, March* 15, 1858.

"I mowed your Italian Rye-grass at Christmas, 1856, within three months after sowing; again April 12, 1857; three times since, and am mowing it again now (March 15). The cut on April 12 was 4 feet high, and a perfect mass of Grass."

Messrs. SUTTON have some seed of this sort now on sale; also new TRIFOLIUM INCARNATUM. Sow in August and September. Quantities to be sown per acre, 3 bushels.

Priced Lists post free.—Address SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

CINERARIA, HERBACEOUS CALCEOLARIA, AND HALF SHRUBBY DITTO SEED.—These have been saved from Turner's most beautiful varieties; in 1s. and 2s. 6d. packets. Primula and Hollyhock, from the newest and handsomest varieties, 1s. per packet. Agents for F. & A. Smith's splendid Cineraria, in 1s. 6d., 2s. 6d., and 5s. packets; also agents for Dobson & Son's splendid Calceolaria, in 1s. 6d., 2s. 6d., 3s. 6d., & 5s. packets.—Catalogues of the newest Flower Seeds, and newest Dutch and Cape Bulbs, sent post-paid.—BUTLER & MCCULLOCH, Seedsmen, Covent Garden Market, W.C

STRONG ESTABLISHED PLANTS of the following:—

ACHIMENES Meteora, carminata, splendens, Parsonii, Gem, and other leading varieties, strong tubers and flowering plants, 6s. to 9s. per doz.

New TYDÆAS of VERSCHAFFELT, 6s. to 9s. per doz.

" VAN HOUTTE, do. do.

" GLOXINIAS, strong bulbs, do. do.

" BEGONIA Rex, picta, miniata, hydrocotylifolia, Madame, Rayner, argentea, &c., very strong plants, 12s.

VARIEGATED PLANTS.—Croton, Hoya variegata, Dracæna, &c., 12s. to 18s.

Choice STOVE PLANTS, strong.—Allamandas, Ixoras, Æschynanthus bicolor, Stephanotis, &c., all the leading kinds, 12s. to 18s. per doz.

ERICAS, very healthy, of the leading and best, 9s. to 12s. per doz. List sent on application.

GREENHOUSE PLANTS.—Pimeleas, Dillwynias, Chorozemas, Aphelexis, Polygalas, &c., strong plants, 9s. to 12s., inclusive of the best creepers.

SEEDLING ERICAS, not flowered, raised from the finest variety, pretty bushy plants, 18s. per doz.

YOUNG SPECIMEN ERICAS AND AZALEAS, from 2 feet over and upwards. Sorts and specimens sent on application.

Also some noble specimens of Greenhouse and Stove Plants, Variegated Plants, Acacias, Camellias, &c.

EPPS's Nurseries, Maidstone and Ashford.

CUTHILL'S STRAWBERRY PLANTS will be sent out on and after August 15.

CUTHILL'S EARLY BLACK PRINCE, 5s.; selected, 7s. 6d. per 100.

CUTHILL'S PRINCESS ROYAL OF ENGLAND.—Good size, fine colour, Pine-apple flavour, great bearer, very hardy, good forcer. Per 100, 7s. 6d.; selected, 10s.

CUTHILL'S PRINCE OF WALES.—Good size, rich colour, cone shape, tremendous bearer, first rate for table and preserving. It is earlier and later than Elton on account of its numerous trusses, 7s. 6d. per 100; selected, 10s.

Dr. Lindley told J. C. that he never could depend upon having a Strawberry until he had his breed.

From Charles Hillhouse, Esq.—"Your 100 baskets of Strawberries have given great satisfaction.—June 30."

Best Mushroom Spawn.

CUTHILL'S Pamphlet on the Potato, with 20 more Articles, on the Strawberry, Asparagus, Sea Kale, &c., 2s.

CUTHILL on Market Gardening round London, &c., 1s. 6d.

CUTHILL on the Cultivation of the Mushroom, Killing of Woodlice, &c., 1s.

CUTHILL on the better Cultivation of the Vine, 1s.

Vegetable Meeting Paper gratis.

Post-Office Orders to be made payable to JAMES CUTHILL, Camberwell, London, S.

GENERAL HAVELOCK STRAWBERRY now ready for sending out.—20,000 plants of the above superb Strawberry, which was sent out for the first time last season.

EDWARD TILEY can with confidence recommend this variety as being the hardiest of all known kinds; it ripens as early as the Black Prince, the fruit is as large as Keens' Seedling, very firm and red throughout, first-rate flavour and very heavy cropper, and will colour well in the most unfavourable weather. Fruit of this variety will realise more than double the value of any other Strawberry in cultivation, as it comes in a fortnight earlier than Alice Maud, Keens' Seedling, Prince of Wales, or any of the larger sorts, which is a great advantage to parties growing for sale or requiring very early fruit. 20 perches of it grown last season realised a greater value than 50 perches of any other in consequence of its earliness and growing in less than half the quantity of ground. This is certainly the most superb Strawberry in cultivation. Plants, 10s. per 100; 6s. for 50; 4s. for 25. Postage free. The best of the older varieties can also be supplied at the usual low prices.

LORD KENYON'S CUCUMBER (true), the best winter variety in cultivation, 1s. per packet.

BATH COSS LETTUCE for winter sowing, 1s. per packet.

HOLLYHOCK SEED, saved from all the choicest and most distinct named varieties, 1s. per packet.

A remittance must accompany all orders either by cash or 1d. postage stamps.—EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Church-yard, Bath.

RARE HARDY CONIFERS—PICEA (ABIES) AMABILIS, TRUE: PICEA (ABIES) GRANDIS, TRUE.

HUGH LOW AND CO. have great pleasure in announcing that they have this season been successful in obtaining from Seed imported by them direct from California a large supply of Plants of the above named most beautiful and thoroughly hardy Conifers. They are without exception two of the finest and most ornamental trees yet known to Botanists, and attain in Northern California a height of from 250 to 280 feet. Their perfect hardiness and adaptation to the climate of this country have been proved beyond a doubt, but up to the present time Seedling Plants have been rarely to be obtained. The quantity now raised being considerable, H. L. & Co. have decided on offering them by the dozen and 100 at such low prices as will induce lovers of hardy trees to plant them in large numbers. Prices can be had on application; as also of Seedling Plants of Cupressus Lawsonii, C. macrocarpa, C. Goveniana, C. M'Nabiana, Picea Pinsapo, P. Nordmanniana, P. Pindrow, P. nobilis, Abies Menziesi, A. cephalonica, A. Douglasi, both from Californian and Scotch seeds; A. Mertensiana, (taxifolia of Jeffrey), A. Williamsoni (Pattoni, Hookeriana), A. orientalis, Araucaria imbricata, Cedrus Deodara, Cedrus Atlantica (argentea), Cryptomeria japonica, C. Lobbi, Pinus Benthamiana, P. excelsa, P. insignis, P. Don Pedri, P. Pallasiana, P. Sabiniana, P. macrocarpa, P. Edgariana, P. Jeffreyi, P. Monticola, and many others; Podocarpus andina, P. nubigena, Thuja gigantea (Libocedrus decurrens); Thuja Lobbi (Menziesi), Torreya grandis, Wellingtonia gigantea, and many other fine Coniferous plants.—Clapton Nursery, London, N.E.



CARTER'S CHAMPION CUCUMBER surpasses Sion House and Lord Kenyon's Favourite for winter and early spring use. Smooth, dark green, straight, and prolific; average length, 1 foot. Price 1s per packet, 1s.

J. C. & Co. do not hold themselves responsible for the genuineness of the above unless obtained direct from

238, High Holborn, London, W.C.



J. CARTER AND CO. beg leave to state that their TWENTY-FOURTH ANNUAL CATALOGUE OF DUTCH AND CAPE BULBS is now ready, and will be forwarded gratis and post free on application.

238, High Holborn, London, W.C.



J. CARTER AND CO. are now in receipt of their First Consignment of HYACINTHS, CROCUS. TULIPS, AND OTHER DUTCH BULBS, all of which are very fine and in good condition.

238, High Holborn, London, W.C.



DUTCH FLOWER ROOTS.

PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN, &c., respectfully announce the arrival of a fine Stock of DUTCH FLOWER ROOTS, and they are now prepared to execute orders for the same.

27, Great George Street, Westminster, S.W.



NEW SEEDS.

TRIFOLIUM INCARNATUM

ITALIAN RYE-GRASS

NATURAL GRASS SEEDS FOR PERMANENT PASTURE LAWNS, &c.

PETER LAWSON AND SON, the QUEEN'S SEEDSMEN, &c., are prepared to supply all kinds of SEEDS for AUTUMN SOWING of the best quality.

27, Great George Street, Westminster, S.W.

ROYAL BERKSHIRE SEED ESTABLISHMENT.

SUTTON AND SONS have just received a very unique Collection of HYACINTHS, ANEMONES, JONQUILS, CROCUSES, and numerous other Bulbous Flower Roots, direct from one of the most celebrated Florists in Haarlem. Prices very moderate. Lists gratis and post free.

DUTCH BULBS.



MILNE, ARNOTT, AND CO. are now sending out, in the best possible condition, HYACINTHS, NARCISSUS, TULIPS, CROCUS, and other Flower Roots, imported direct from some of the most celebrated growers in Holland.

A PRICED and DESCRIPTIVE CATALOGUE just published will be forwarded free upon application.

Finest Hyacinths, by name, 5s., 6s., 7s. 6d., & 9s. per dozen.

Select Collections of Bulbs from 10s. 6d. upwards.

The Nursery, Wandsworth Road, London, S.

DUTCH FLOWER ROOTS.



JAMES VEITCH, JUN., ROYAL EXOTIC NURSERY, Chelsea, S.W., begs to announce that he has received his annual supply of BULBOUS ROOTS from Holland, and is pleased to say that they are PARTICULARLY FINE and in EXCELLENT CONDITION. Catalogues are now ready and will be forwarded on application.

J. V., Jun., desires to impress upon those who patronise him the great advantage of giving him their ORDERS EARLY, as the successful cultivation of Bulbs depends in a great measure upon their BEING PLANTED EARLY IN THE SEASON.

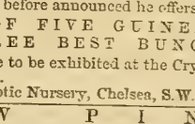
NEW PLANT CATALOGUE.



JAMES VEITCH, JUN., begs to intimate that his GENERAL PLANT CATALOGUE for the present season, including a DESCRIPTIVE LIST of NEW and RARE PLANTS is now ready and will be forwarded post free on application.

Royal Exotic Nursery, Chelsea, S.W.—Sept. 3.

BUSBY'S STOCKWOOD GOLDEN HAMBURGH GRAPE.



JAMES VEITCH, JUN., begs to intimate that as before announced he offers a PRIZE OF FIVE GUINEAS FOR THE THREE BEST BUNCHES of the above Grape to be exhibited at the Crystal Palace Show, September 7 and 8.

Royal Exotic Nursery, Chelsea, S.W.—Sept. 3.

NEW PINKS.

CHARLES TURNER (MACLEAN).—Dark purple, fine; 5s. per pair.

ELEANOR (TURNER).—Rose, fine; 5s. per pair.

EDITH (MACLEAN).—Reddish purple; 3s. 6d. per pair.

LITTLE GEM (MACLEAN) —Red; 3s 6d. per pair.

MILLIE (MACLEAN).—Dark, fine; 5s. per pair.

MISS GLOVER (TURNER).—Purple; 3s. 6d. per pair.

CHARLES TURNER can strongly recommend the above as first-class Pinks, and great acquisitions for exhibition purposes.

C. TURNER'S general stock of Pinks are very healthy and strong, and are now ready for sending out at 9s., 12s., and 18s. per dozen.—The Royal Nurseries, Slough.

TRIFOLIUM INCARNATUM, 5d. to 6d. per lb.; with hints on its successful cultivation, showing how 3 tons per acre of the most nutritive hay may be secured, the advantages of sowing it where broad Clover is thin, and its superiority to Tares as green food.

PAGE AND TOOGOOD having secured a large breadth of prime quality, offer it at the above low rate for cash.

New Turnip Seed, per lb...	0s. 6d.	Italian Rye-grass, per bush., 5s. to	7s. 0d.
New Rape, do... ..	0 4	Mustard, per lb., 4d. to	0 5

Calceolaria and Cineraria, in packets of 2s. 6d. and 1s. each, saved from one of the finest collections in Europe.

Seeds for exportation to all parts of the world.

PAGE & TOOGOOD, Seed Growers and Merchants, Oxford Street; and Above Bar, Southampton.

DUTCH FLOWER ROOTS. HYACINTHS, best quality, to name, 6s. per dozen; second do., mixed, 4s.; third do., 3s.; CROCUS and SNOWDROPS, 1s. 6d. per 100; Double VAN THOL TULIPS, 3s.; TOURNESOL, 5s.; NARCISSUS, large bulbs, 2s. per dozen; and all other kinds, best quality, equally cheap. Also a quantity of CAMELLIAS and AZALEAS, well set with flower buds, English grown, 18s. and 21s. per dozen; ORANGE TREES, 2s. 6d. to 5s. each; FOREIGN and BRITISH FERNS, 6s., 9s., and 12s. per dozen, &c.—R. GREEN, 154, Kingsland Road, N.E. No connection with any other house.

THE BRIGHTON AND SUSSEX FLORICULTURAL AND HORTICULTURAL SOCIETY will hold their GRAND EXHIBITION at the Royal Pavilion Grounds, on WEDNESDAY and THURSDAY, September 14 and 15. Nearly 350*l.* in PRIZES are offered for Plants, Cut Flowers and Fruits, including the RAILWAY CUP, value 10 Guineas, for the best 24 Dissimilar Dahlia Blooms for Amateurs and Gentlemen Gardeners.

Schedules of Prices can be had on application to E. SPARY, Queen's Graperies; or E CARPENTER, 96, St. James's Street, Brighton.

By permission of Lord Frederick Paulet, C.B., the celebrated BAND of the Coldstream Guards, under the direction of Mr. GODFREY; also the BAND of the 4th Royal Irish Dragoon Guards under the direction of Mr. JAMES will attend each day.

Through the liberality of the Directors of the South Coast Railway, the Committee have the pleasure to announce to Exhibitors that Plants, &c., for Exhibition, will be conveyed to Brighton from all Stations, and back whence they came, FREE OF CHARGE. The Plants, &c., from London must be delivered at Bricklayers' Arms Station, Willow Walk, Bermondsey, not later than 8 P.M. on the day preceding the Show, to be delivered up to the Exhibitors early on the following morning at the Brighton Station. Where plants are loaded in the owners' vans and carriages, trucks are required, of which notice should be given to the Superintendent at London Bridge or Bricklayers' Arms, at least 24 hours before to prevent disappointment. No van for transit on a carriage-truck must be loaded more than 9 feet from the ground.

N.B. Vans will be in readines at the Brighton Station on the morning of the Show to convey Plants, &c., to the Pavilion at moderate charges.

P.S. Exhibitors accompanying their boxes of Fruits, Cut Flowers, &c., if such exceed the weight allowed, will, by booking them at the London Bridge Booking Office, have their productions conveyed to and fro Carriage Free.

By Order of the Committee.

THOS. ATTREE, Esq., Chairman of Committee.
E. SPARY, General Superintendent of Exhibitions.
E. CARPENTER, Secretary.

MR. EDWARD MILNER having constructed and laid out the Crystal Palace Gardens and Park, Sydenham, under the direction of Sir Joseph Paxton, and having managed them for the Company till last Midsummer (when owing to the pressure of other professional duties his engagement terminated), desires to express his acknowledgments to those Noblemen and Gentlemen who have honoured him with their patronage, and to state that he continues to undertake the execution of works of a similar character.

An active experience of upwards of 20 years enables Mr. MILNER to offer his services in the formation and improvement of Parks, Gardens, and Ornamental Grounds, also in preparing designs for Conservatories and other Horticultural Buildings; in establishing and thinning Plantations and Woods, with special reference to the trees most suitable for particular soils and aspects, the valuation of Timber, Draining, Road-making, &c.

Mr. MILNER is permitted to refer to Sir Joseph Paxton and to several Noblemen and Gentlemen for whom he has done work.—Address, EDWARD MILNER, "Oxford House," Anerley Road, Norwood, S.

The Gardeners' Chronicle.

SATURDAY, SEPTEMBER 3, 1859.

MEETINGS FOR THE ENSUING WEEK.

WEDNESDAY, Sept 7 } Crystal Palace ..... Noon.
THURSDAY, — 8 }

OUR contemporary, *The Builder*, suggests that it would much improve the MUSEUM OF ŒCONOMIC BOTANY at Kew, if the contents were arranged commercially as well as scientifically. The idea is a good one. If all the gums, and spices, and oils, and narcotics, and stimulants, and textile plants, and timber, and so on were collected under their separate heads, a visitor who desired to consult the collection for mercantile purposes would find it more convenient to go at once to the class containing the commodity in which he deals than to search for it in a scientific arrangement.

The *Builder* illustrates his meaning by a reference to the class of timber; and we beg to quote his words:—

"Timber, which is far the most extensive of all vegetable products, would admit of several commercial subdivisions, such as ornamental woods, those used in naval architecture, those employed in buildings, dye-woods, medicinal woods, &c. The group of ornamental woods comprising the numerous fine specimens from Australia and New Zealand would be particularly interesting. At present these are scattered through a great many different families, and are necessarily located in separate and often distant parts of the building. A very curious and instructive group might be

formed of the ornamental woods of the ancients, from which we should learn that long before the introduction of Rosewood and Mahogany all the requirements of luxury were answered by woods of European or Mediterranean growth. This is more likely to be admitted now than would have been the case previously to the modern fashion for Walnut-wood, which was the old-fashioned standard furniture wood of the Romans, as we learn from JUVENAL, Sat. xi. 117:—

"'Tables made here at home those times beheld
Of our own wood: old Walnut that was fell'd
By some kind tempest, when the wind lay east.
Now our rich gourmands value not a feast
Unless the meats be served on Citrus board
Whose ample width rests on some rampant pard.'

"In ancient times much more attention seems to have been paid to the qualities possessed by certain parts of a tree than to the species of tree used. From PLINY we learn that the burrs produced by certain trees, on account of the variety of figure which they displayed, were chiefly sought after for ornamental purposes. It is only recently that this quality of wood has been turned to any account in modern cabinet-work. The Walnut furniture of the present day is an instance of the revival in favour of burr wood. Notwithstanding the important part which burr Walnut-wood plays in modern upholstery, it is somewhat surprising that no samples of it whatever, except a very insignificant piece of veneer, are to be found in the Kew Museum. This is a want which could be readily supplied from the Faubourg St. Antoine in Paris, where very curious and beautiful specimens are to be seen in the warehouses of the dealers.

"Many of our native trees produce extremely handsome burr woods, such as the Elm, Poplar, Yew, Oak, Willow, Ash, and Alder, which, when duly chosen and properly opened, furnish wood very much superior for effect to the ordinary run of foreign wood. Our country gentlemen, if possessed of the requisite information, could often produce, from their own estates, ornamental materials for furniture that would far surpass in beauty the wood usually furnished by their upholsterers. A collection formed to illustrate the ornamental woods of PLINY would exhibit some of our English trees, in certain circumstances, to possess many fine qualities. The Alder, for instance, ordinarily considered fit only for stakes in wet ground, when old and burry would appear to great advantage, bearing out the ancients in placing it among the veneer woods. In reference to this wood, Sir T. D. LAUDER, in his edition of 'GILPIN'S Forest Scenery,' observes—'The old Alder trees which are full of knots, cut up into planks, have all the beautiful figure of curled Maple, with the advantage of presenting a deep, rich, reddish tint, and in this state they make very handsome tables.' This is almost an amplification of PLINY'S words:—'Dat et alnus tuber sectile, sicut citrus, acerque.'

"Some of the other Plinian ornamental woods, of more southern growth, which are now rarely or never met with in this country, would, no doubt, likewise prove worthy of their ancient reputation. Among these are the Ilex, Palm, and Terebinth—Pistacia terebinthus. Only the latter figures at Kew, in the shape of a small sample of Plane wood, among the Anacards in case 21. It would be very interesting to have a specimen of burr Terebinth, which was a wood much esteemed by the Romans for small work. PETRONIUS mentions it:—'Sequebatur puer cum tabulâ terebinthinâ et crystallinis tesseris,'—a boy followed him with a draught-board of Terebinth wood, and crystal dice."

He goes on to point out the importance of the Citrus wood, yielded by *Callitris quadrivalvis*, and mentioned by us at p. 446 of the present year,* while noticing a small pamplet that originally appeared in the columns of our able contemporary, and thus proceeds:—

"The wood of the genus *Callitris* ought to have a special interest for us, on account of the great number of species which occur in some of our colonies; as, for instance, Australia, where no fewer than 20 are found. In the Museum are specimens of the wood of *Callitris robusta*, which exhibit, so far as plain wood can, many of the fine qualities of the North African Callitris. It is reported that none of the Australian species produce burrs; but we are inclined to think that an experienced '*loupeur*' or burr-finder would be able to discover them where an ordinary woodman would fail. The discovery of burr wood in the Australian Callitris would be of very great importance, because it is evident, from the qualities found in the plain wood of Callitris robusta, that it would probably closely resemble that of Callitris quadrivalvis, which, in the present condition of the Barbary States, it is almost impossible to procure."

With much of this we wholly agree. Indeed, in the early part of this century a great quantity of exquisitely beautiful furniture was manufactured by BULLOCK from Oak burrs, sliced into thin veneers, and it is certainly worth showing the capabilities of other British timber.

It so happens that the use of a commercially arranged Museum has been lately shown in another way. Some cattle at Wells having been poisoned by what was called Rape-cake an action was brought against the salesman, from whom the value of the cattle was recovered. It appeared that this Rape-cake was made of Mustard seed, sold under the name of Indian Rape. Nobody seemed at the trial to have known what Indian Rape-seed is. A collection of Indian Cruciferous seeds would have easily settled the question; and had they been accessible in any public Museum they might have been employed on the trial. But no such collection exists, as far as we are informed.†

But how is this object to be accomplished? That Sir WM. HOOKER would gladly carry it out there can be no doubt, but where is the building? The present mean and ill-contrived structure is full and more than full; so is the old museum. To form a new commercial classification would demand at least as much more space, and we doubt whether Parliament, liberal as its grants for Kew have always been, would at present look with favour upon a proposal to expend any considerable sum upon another Museum, however desirable it may be.

IF one principle in gardening is fixed upon a more solid foundation than another it is that a bud or graft will always reproduce the variety from which it is taken, with all its peculiarities of whatever kind. M. CARRIÈRE, a justly distinguished French horticulturist, is however of a somewhat different opinion. The case upon which he takes his stand is the following.

It appears that under the name of *Cratægus digyna* M. LEROY grows in his nursery at Angers a sort of Whitethorn, remarkable for producing spines which branch so repeatedly that they at last become a most formidable defence, with an appearance absolutely murderous (*on pourrait même dire meurtrier*). The value of such a singular peculiarity, in forming hedges, is obvious, and we should be glad to see this sort of Whitethorn in England. M. CARRIÈRE having set about propagating a specimen which had been bought for the purpose, was surprised to find that his budded plants lost the peculiarity of their parent. Out of 30 plants, worked near the ground, and more than 9 feet high, every one proved to be like the common Whitethorn, without a trace of the strange complex spines of their parent. How was that?

It appears that the manner in which the buds were taken off was this: there was no obtaining buds from any part except the end of the young wood (*bourgeon*), where the spines were very little formed, and it was moreover necessary to cut away the spines themselves, in order to get the bud below the bark of the stock. M. CARRIÈRE therefore conjectures that the cause of his worked plants losing the habit of their race was to be ascribed to the buds not having acquired their natural character, and having been weakened moreover by the removal of the spines themselves, and he infers that in grafting, as in other operations, it is necessary to take certain precautions in the absence of which quite a different result may follow from what might have been expected.

It is doubtless true that in grafting or budding some judgment must be exercised if the operation is to succeed; as, for example, in taking care that the eye of the bud is fully organised, that the wood of a graft is of sufficient age, that there is proper contact between liber and wood, and so on. But these precautions only go to securing the success of the operation; and not to preserving the quality of the scion, which if it takes preserves all the peculiarities of its parent. For ourselves we would suggest a different explanation of M. CARRIÈRE'S failure, and one which we submit is more consistent with other facts. The original *Cratægus digyna* must have gained its habit of complicating its spines in consequence of having remained in a stunted condition so long that the condition became constitutionally fixed. In order to preserve that peculiarity it is necessary to avoid everything capable of infusing new vigour into its system or that of its offshoots. Spiny grafts worked upon slow-grown stocks would probably effect that object. But M. CARRIÈRE took an entirely opposite course. He selected young vigorous buds, and must have inserted them on young vigorous stocks or his plants would not have been 10 feet high. The effect of this was necessarily to concentrate the whole force of vegetation upon a single eye, destroying all that tendeney to become dwarfed and stunted which had by degrees brought on the peculiar marks of M. LEROY'S *Cratægus digyna*. No change of nature was therefore produced, but a slow-growing branch was forced to grow quickly. That, we take it, was all that happened; and if so it is probable that the branches of the spineless robust plants obtained by M. CARRIÈRE will in time fall back into the dwarfed condition of that from which they were derived. It is the same as if a puny, diminutive, half-starved child were to shoot up into a giant under the influence of abundant wholesome food.

IT will be seen in our advertising columns that Mr. MILNER has left the Crystal Palace, and is undertaking professional work on his own account. The skill of Mr. MILNER as a landscape gardener is loudly proclaimed by the great operation of laying out the grounds of the Crystal Palace, which, although executed under the general direction of Sir JOSEPH PAXTON, also owe much of their beauty to his own taste and skill. If the Crystal Palace has sustained a serious loss, it is satisfactory to feel that the public will be greatly benefited by the change.

New Plants.

224. ODONTOGLOSSUM UROSKINNERI (see p. 708).

We have been favoured by Mr. Skinner with the following memorandum respecting this plant:—"Seeing in the *Gardeners' Chronicle* of 27th inst. the publication of an Odontoglossum in which you honour me, I may be allowed to satisfy you that it is no hybrid. It is a very distinct species found on rocks near the village of Santa Catarina in the district of Solola, 28 leagues from Guatemala. I sent it to Mr. Veitch in 1854 in quantity, but from its habit, the size of pseudo-bulb and form, as well as leaf, then believed it to be the Oncidium ionosmum (?) On, however, flowering it I sent the enclosed drawing of three distinct colourings of the labellum, and mentioned that it varied almost in every plant; it proves a very difficult plant to get over alive, but in several attempts a few survived, and I saw the one at Chelsea the other day, but very late and superficially, a very imperfect example. When fine, examples such as I have flowered in Guatemala have borne 12 and 14 flowers of the size shown in the drawing, and had a sweet scent of a honeyish character. The bulbs are large, flat, and the rhizoma running, while O. Bictonense has them oblong, with narrow leaves, and no rhizoma, but massed and always terrestrial, half buried in mossy banks. I almost feel certain you have dried specimens, and I was surprised to hear it was the first time it had flowered at Chelsea. The inclosed drawing I found among some old papers here, having taken it from my communication to Mr. Veitch when last in England in 1857 to show Mr. Bateman or Lady Dorothy Nevill, who had specimens sent them the year before."

We confess that our suspicion of the hybrid origin of the plant remains undisturbed. We never intended to suggest that it was a hybrid of home manufacture; but that it was one naturally produced in Guatemala; *as we strongly suspect is the case with many more reputed species.* Indeed the variety observable among the wild flowers, to which Mr. Skinner alludes, and of which his coloured sketches furnish an illustration, itself point to such a conclusion. Those sketches represen

---

* We take this opportunity of correcting an error we there made in saying that a table of the famous Citrus wood was to be found in the Museum at Kew; our memory misled us; the Callitris table there is made from the Australian not Barbary tree. On the same occasion we ventured to say that the Greek name of the Citrus was θύϊον or θυιά, not θύον, as the author of the pamphlet wrote it. The editor of the *Builder* questions the justice of this remark, and refers to a passage in the Odyssey (5. 60) to show that the wood was really θύον. If, however, he will refer to THEOPHRASTUS (Hist. 5. 5.) he will find that instead of being "utterly wrong" we were perfectly right. The Citrus tree was θυία or θυίον, according to that ancient writer on trees. What HOMER'S θύον was is quite uncertain; VOSSIUS, indeed, thought it meant Citrus wood; but the word is quite as likely to have signified Thus, or Frankincense, or indeed any fragrant wood not Cedar of Lebanon.

† Upon the subject of Indian seed resembling Rape, we find the following statement by ROYLE, in his Botany of the Himalaya Mountains:—"From the medicinal and dietetic uses, as well as from the Arabic and Persian synonymes of this plant (*Lepidium sativum*, or Garden Cress), it is probable that it was introduced into India from Caubul or Persia, where also we must look for the route by which the Cabbage, Radish, and Turnip have found their way into India, as all were known and cultivated there long before they could have been introduced by Europeans. I have received the seeds of all from Cashmere, and grown them in the Botanic Garden of Saharunpore. The Turnips, moreover, in Kynawar, are described as being remarkably fine. Besides these, which are confined to gardens or the neighbourhood of villages, there are other species of this family, which form very extensive agricultural crops, but, like the former, only during the cold weather months. *The majority of these have been referred to the genus Sinapis* (Mustard), and one species, which agrees very closely with Brassica erucastrum, to both Brassica and Eruca; this is called *tira*; a variety apparently of the same is cultivated in the hills. The species or varieties referred to Sinapis still require careful revision. Sinapis ramosa of Dr. ROXBURGH appears to be the species whichis called *raee, Indian Mustard*, and is much used as a condiment. S. glauca may be the *toria*, S. dichotoma the *Ralee-surson*, and S. juncea the *bunga-surson*; the three latter, as well as *tira* and Sesamum orientale, being extensively cultivated for the oil which is afforded by their seeds, as the natives of the greater part of India depend upon them chiefly for oil for burning in lamps, as well as for that necessary for dietetical purposes."

three sepals; in the first the sepals and petals are oblong, acute, and blotched with brown on a yellow ground, the lip being sparingly marked with deep rose-coloured veins on a whole coloured ground of the same; in the second the sepals and petals are shorter, greener, less blotched, and the rose-coloured veins are both deeper and more numerous; in the third, which is evidently that flowered by Messrs. Veitch, the veins of the lip are scarcely visible, but the surface is speckled with rose. It is a charming thing, whether a wild hybrid or not.

THE ORCHARD HOUSE AT AUDLEY END.

In a recent visit to this charming seat nothing struck me so vividly as the perfect success of the orchard-house culture. The orchard house under the management of Mr. Young, who has been head gardener at Audley End many years, is indeed a picture of fertility and beauty. It is one of the large span-roofed houses with a fixed roof, glazed with 16 oz. sheet glass in pieces 20 inches by 12, the rafters being 20 inches asunder. Its dimensions are as follows:—length 90 feet, width 20 feet, height 11 feet in the centre, 5 feet at the sides. In the centre is a bed of earth 7 feet wide and 20 inches high, supported by 4-inch brick walls. The side beds are each 3½ feet wide, and of the same height. The paths between the central and side beds are 3 feet wide and neatly paved. It is ventilated by side lights 2½ feet by 3 feet, fixed on pivots in their centres so that when swung open to their full extent they admit abundance of air; both ends are glazed with large glass. At each end is an aperture over the door for the exit of the heated air, and no roof or any other mode of ventilating is employed. The trees are all in the most perfect health, and never in the course of my experience have I seen exemplified the great superiority of low side ventilation to the old-fashioned mode of pulling down sliding lights to let in and let out air.

The kitchen garden here is in a low and sheltered situation, the soil light and warm, resting on a gravelly substratum; in spite of these favourable circumstances there is literally no fruit; the walls, the standards, and pyramids are alike bare. On entering the orchard house, what a charming contrast! It is, to speak poetically, overflowing with fruit; the Apricots are over, but Peaches, Nectarines, and Plums are in the different stages of ripeness and ripening, and the whole house is full of beauty. Standing *on* the central border—for none of the pots are plunged—is a row of very fine trees, from six to eight years old, in 18-inch pots (18 inches deep and the same in diameter); among them are some most charming umbrageous trees—5 to 6 feet high, and 4 to 5 feet in diameter—of Elruge, Violette Hâtive, and Murray Nectarines. The crops on these were nicely arranged in thinning the fruit, so that although each tree is bearing from seven to nine dozen they do not seem crowded or overloaded with fruit.

In this central row are some fine Peach trees of the same age and dimensions as the Nectarines. Among these are good specimens of Early Grosse Mignonne, Grosse Mignonne, Galanole, and other kinds; these with the exception of the former variety, which is an excellent early sort, are full of fine fruit. Among the central trees Mr. Young pointed out to me three large pyramid Plums, stout trees, well furnished with branches and 6 feet high, in 18-inch pots; these were removed from the open ground last November and potted. The Early Prolific, one of the kinds potted, had borne a plentiful crop. The Reine Claude de Bavay is now full of remarkably fine fruit; the Jefferson had shed its blossoms and is fruitless; not so however with two or three young trees of the Jefferson only two years old and 2 feet high—on these were from seven to eight dozen of very nice fruit. There is perhaps no Plum that better repays the orchard-house cultivation than the Jefferson, it bears so abundantly and gives such fine large fruit.

The late black Orleans Plum is in great favour with Mr. Young. Its deep purple bloom speckled with—with—well, perhaps amber, gives it a charming appearance; it is very late, but always rich and juicy, in fact a perfect orchard-house Plum which does not require to be removed out of doors to ripen its fruit, as is the case with the earlier sorts of Plums, if it is desired to have them high flavoured.

Among the Peach trees placed on the side borders I noticed with much interest a tree of the Mountaineer in an 18-inch pot, one of the sorts raised by the late T. A. Knight, and a good melting Peach, with 10 dozen good fair sized fruit on it. From this tree Mr. Young's foreman told me he had taken from 13 to 14 dozen when thinning, and I think I learned from the foreman that 400 dozen of Peaches and Nectarines had been taken from the trees in thinning.

The Apricot trees had not borne so large a crop this season as in 1858, but the fruit was remarkably fine, the Peach Apricots were like good-sized Oranges, so regularly and perfectly had they ripened. Some large robust bushes of this kind in 18-inch pots, and from 7 to 8 years old, are nearly 4 feet high, the same in diameter, and owing to their having been pinched in during the summer, they are like sturdy Oaks, every spur is full of blossom buds. Some of these trees are capable of bearing a peck of fruit; I have rarely seen such robust well grown specimens.

Mr. Young mentioned the Alberge de Montgarnet Apricot as a most delicious early kind, not large, but rich and excellent. The flavour he thought was much improved by placing the tree out of doors in the sun just as the fruit began to colour. With some kinds of Apricots this is good practice, but the Peach Apricot is so extraordinarily rich and good when ripened under glass that no further improvement can take place—in short the fruit is perfect.

Although the fruit trees of all kinds in this house are in the most luxuriant growth, and although many trees are growing in 10-inch and 12-inch pots only, scarcely any of them are rooted through; this is owing to their having been abundantly top-dressed with manure and manure water occasionally used, so that they have had abundance of food at home. Top-dressing twice or thrice in summer is one of the great essentials to success in the pot culture of fruit trees. Some quasi-gardeners are however inclined not to use it, only because it has been written in a book, and such persons call themselves "practical," making it a point to follow the too often foolish impulses of their own noddles to the great injury of their employers. I knew one gardener of this sort who would not give his Peach trees any water "till they asked for it," *i.e.*, till their leaves withered. He used to grow a rare crop of red spiders, but could not manage to get any Peaches; of course he found fault with the system.

Mr. Young believes that his complete escape from the effects of the frost of the 1st of last April was owing to his having shut up his house early in the day of March 31, so that the large body of warm air and the radiation from the warm borders of the earth resisted the frost. In some of the small orchard houses near Saffron Walden, the blossoms of Peach Nectarine and the fruit already set of the Apricots were all entirely killed by the frost of that night. In these houses the pan of charcoal for *one* night only would have saved the crop. This is mentioned as being occasionally necessary in p. 102 of the 6th edition of the "Orchard House," yet how few I fear attended to it on that fatal to fruit night above alluded to.

The history of the Audley End orchard house has some little interest attached to it. In 1850-1 when such houses began to be talked about, written about, praised and abused, as usual under such circumstances, Mr. Young, a good sound gardener "frae the canny north" of a respectable amount of years, *i. e.* a little above the two-score and ten, heard about them and saw some of his neighbours building them. I think he now laughingly acknowledges to having looked at the mode of culture as childish, Chinese-like, playing at fruit tree culture, boshish, unfit for a respectable garden, &c., and fit only for very poor parsons and still poorer doctors and lawyers. In the autumn of 1855 the late estimable Lord Braybrook, his employer, expressed his wish to have an orchard house, to serve not only to grow fruit in but as a promenade house in the spring and autumn months, his health being delicate.

Mr. Young immediately threw his whole heart and mind into the matter. The house was built in the course of the autumn by Mr. Dixon, the builder attached to the estate; some extra-sized trees of four or five years' growth were purchased, and in the summer of 1856 a nice crop of fruit was gathered. Every season since the success has been perfect, and at this moment no sight can be more gratifying, for not a diseased leaf exists in the house and Mr. Young derives real pleasure from the successful results of his intelligence and perseverance. I may add that the house is remarkably well constructed, and has a light and finished appearance. If it were 12 feet high instead of 11 feet it would be an improvement.

I ought to add that Mr. Young uses his house in autumn for striking cuttings of his bedding plants in pots under the shade of the trees, and in early spring for placing the young plants to harden them off before planting them out. In winter the fruit trees alone occupy the house. *O. H.*

A BELGIAN'S NOTION OF A COTTAGE GARDEN.

We reproduce from the Journal d'Horticulture Pratique the following, which serves to show the difference between our own notions of arrangement and those of some of our Continental friends:—

"It does not matter whether your piece of ground be square, oval, or round; plant in the centre a strong plant of Pyracantha. Its handsome red berries standing out against the white snow in winter will supply the place of flowers in the early part of the year.

In May surround your Pyracantha with a row of Phlomis Leonurus, which towards the end of the year blooms as freely as its flowers are handsome.

Canna indica, with its different varieties, should form your third row; for their beautiful foliage and magnificent flowers are charming objects to look at.

Follow up these plants with a collection of red Geraniums, zonale, roseum, and album, and they will afford you an abundance of flowers during many months of the year.

A row of Dielytra spectabilis, a charming Fumaria, should be placed next to the Geraniums, for the lovely clusters of pink flowers contrast well with the delicate glaucous green of its leaves. It is impossible to give an idea of the beauty of a large specimen of this plant.

A good many small patches of Deutzia gracilis should be arranged round the clusters of Dielytra.

Corydalis formosa produces its flowers in May and June, and its delicate foliage is seen to advantage against the deeper green of the other plants.

In January and February the amateur will be satisfied with a row of Hellebores. (Qu. Christmas Roses or Eranthis?)

Finally all round this flower bed, full as it is, plant a circle of Hepaticas, Snowdrops, and Primroses. In this manner you will have from the 1st of January to the 31st of December, without much expense and with very little labour, a spot of ground always covered with flowers.

The principal part in your flower bed will be played by Phlomis Leonurus, a superb Labiate, whose rich golden flowers arranged in whorls will furnish you with beautiful blossoms for the autumn. The flower spikes of this plant grow from 24 to 30 inches high. In November remove it with balls of earth round its roots into a greenhouse, a sitting room, or even into a cellar where vegetables are kept, provided it is protected from damp and from a very low temperature. This plant, considering the very little care it requires, deserves to be much more generally cultivated. It should be well cut in in the month of May before being planted in the open border. It may be propagated by cuttings or easily raised from seeds, which may be procured cheaply enough in the south of France.

"I admired," says Mr. Michel Kenens, "the Phlomis Leonurus* for the first time in October, 1857, at the chateau of Walbourg (in Dutch Limburg), the property of the Baroness de Bredeesel d'Eisenbach; and I was not a little surprised at the extraordinary effect produced by this plant. I must however, add, that the wonderful effect was quite accidental, and not owing to its having been grown according to rule; for instead of being planted in open ground it was placed in little flower pots, through the hole in which the strong roots had forced their way so as to derive abundant nourishment from the soil beneath, and thus produced the magnificent vegetation I was so much struck with." *Horticultural Academy of Ghent.*

Home Correspondence.

Out-door Cucumbers.—I am glad you have called attention to the growth of Cucumbers on a large scale for the London and other markets. There is no crop (when they hit) which realises so much money. This season the produce has been enormous, and many will make upwards of 100*l.* per acre, or more than the land is actually worth, and leave it in good heart for any other crop. The Rye is sown in the autumn for shelter, and cut as soon as the Vines cover the ground. The Onions for seed and shelter stand 2, 3, or 4 yards apart; they are set early in the spring, and a good coat of manure not much decomposed is dug or ploughed in. Sometimes Peas are sown and stuck. The Rye is sown 3, 4, or 5 yards apart, and the land ploughed in small furrows by two horses single; men follow with iron rakes, and leave the ground fine and level for sowing. The drills are made by a hoe about 1½ inch deep, a man follows the sower and shuffles the mould over the seed lightly. They sow a second time in a week or ten days, and again, if they are fearful of not securing a plant; much wet after sowing will rot the seed, and frost occasionally kills the first plants. Those who get the earliest Cucumbers make the most money. The last week in April or first in May is the usual time for sowing. The manure is put on when the weather is suitable, but the best plan is to watch for a frost in March, get it on, then cover the heaps with a little mould till you plough it in for sowing. Cucumbers are not near the expense of a crop of Onions, make double the money, and leave the land, as I have stated, in first-rate order for any crop. What I state as to the value of the crop may be doubted by some, but it is the truth. *One in the Secret but not a Grower.*

Cannon Hall Muscat Grape.—My object in forwarding the enclosed bunch of this Grape is to show that under the most ordinary treatment it sets tolerably well. The bunch I have sent was grown in a house along with not less than twelve other kinds, and received exactly the same treatment as the others from the time the Vines broke until now. My system of pruning the Cannon Hall is probably not generally adopted. For the last five years however I have generally succeeded in securing a good crop of tolerably well set bunches; at the same time I confess that this Grape is the cause of much trouble amongst some of our most practical men, and I understand that many first class gardeners have given up its cultivation entirely. I am, however, of opinion that notwithstanding its numerous drawbacks it really deserves attention. I find it to thrive best when grown in a border inside the house, in fact, it does not succeed well when planted outside, as a plant here abundantly testifies, it never sets freely and it shanks more or less, producing unsightly bunches unfit for table. The enclosed was grown in a house 60 feet long by 20 feet wide, and from the time the Vines broke until now not more than 1½ ton of coal have been consumed, which will explain the cause of the bunch sent not being quite up to the mark in colour. I can scarcely concur in Mr. Glendinning's opinion with regard to the Cannon Hall requiring such a high temperature. I think that it is just too much heat which ruins it. *John Edlington, Winch House, Seacombe, Cheshire.* [The bunch sent was an excellent example of Grape growing; a foot long, perfectly thinned and regular; but it was not ripe. We should say it wanted to hang a month longer.]

Morphological Cases.—I have just read in your last week's Paper a notice of a remarkable "monstrosity"

* Phlomis Leonurus is more properly called, at the present time, Leonotis Leonurus, and is a Cape plant introduced into Europe about 1712.

of an Opium Poppy, and it is mentioned that "a similar statement has been made with reference to the Oriental Poppy," but of this the writer says he has seen no instance. By referring to the "Pharmaceutical Journal," vol. xv, p. 398, a description of a somewhat similar monstrosity by myself will be found. In the account I think I stated (but I have no means of referring to it here) that I observed a similar monstrosity for two years in succession, and that I should seek for it in future years. I have done so, but without success. This monstrosity was also exhibited at the Linnean Society's meeting, and is noticed in its Proceedings. *Robert Bentley, Prof. of Botany, &c., to Pharmaceutical Society.* [The case referred to by our correspondent occurred in Papaver bracteatum, a variety of P. orientale; and exhibited, what Mr. Groenland's did not, a curious transition from stamens to carpels.] ——Since writing the above I have found in my father's garden at Hitchin a monstrosity of the Common Honeysuckle (Lonicera Periclymenum). Probably such a monstrosity may be common, but of this you will be the best judge. I am not aware that the specimen is of any especial importance beyond its morphological interest, but to you, with your most extended knowledge of affinities in the vegetable kingdom, it may possibly prove of some value; I have therefore forwarded it. Upon a general examination I find the flowers vary somewhat; but in two of them which I examined the following characters might be noted:—1st flower: calyx and corolla as usual. Within the proper irregular corolla there were five ligulate petals inserted upon and alternate with the lobes of the corolla, distinct, green above, yellow below; within these three ligulate bodies, of a green colour and distinct; then another whorl composed of three green ligulate bodies united below into a tube, from which five more or less imperfect stamens arose, and in the centre of the latter there was a filiform style divided irregularly above. 2d flower: calyx and corolla as above. Within the corolla and inserted upon it five somewhat ligulate yellow petaloid appendages, of which one was distinct, and the remaining four united in pairs; within these three ligulate petaloid bodies united below into a tube; then another whorl of four somewhat ligulate bodies united below into a tube, from which five staminal bodies arose, and in the centre of these a filiform style divided above into three stigmas. *Robert Bentley, Tilehouse Street, Hitchin.*

White Muscat Grape.—I am glad to see a report at page 672, respecting the Golden Hamburgh Grape, from Mr. Cramb, and a reply (which I expected) page 693, from Mr. Thomson of Dalkeith calling the attention of cultivators of Grapes to the Bowood Muscat and Golden Hamburgh varieties. I am induced to send you a few remarks of a crop which Mr. Biddard calls White Muscat. I think it is the sort called, 50 years ago, "Passeque Muscat of Alexandria," a very superior Muscat. Mr. Biddard's, Gardener at Tehidy Park, near Redruth, Cornwall, the seat of J. F. Bassett, Esq., house of Muscats is only three years old, and nearly covers the rafters of 18 feet long with immense bunches from 2½ to 3½ lbs. weight. It is not the size of the bunches only, but the uniform large size of each berry, as if they had been cast in a mould, without one inferior berry; and not one shanked, which Muscats are very liable to do. I have been a Grape grower for upwards of 40 years, but never saw such a crop of Muscats before. If the Bowood Muscat can be grown superior to this Muscat it will be a most valuable variety. Particularly, his report says, the variety is earlier and more hardy, and sets well. I noticed in the second house a fine crop of West's Black St. Peter's Grape. Mr. Biddard does not think the Barbarossa worth cultivating. In the third house I observed the Bowood Muscat, planted alternately with Cannon Hall Grape, to try the merits of each. They are making extraordinary large rods—we may expect to see some extra-sized fruit next year. If I am spared next season I will give you a report of the crop. I am desirous of hearing from some of your correspondents how the Muscat Hamburgh proves; if equal to the strong recommendation given it; also Lady Downe's and the White Hamburgh Grapes. Does any of your readers know the Grape I had some years ago by the name of "Obie?" I fear this is a very tender, shy bearing Vine. *Alex. Pontey, F.H.S., Plymouth Nursery.*

Orchard Houses.—During the summer of 1847 my employer erected one of these useful appendages to a garden of the following dimensions, viz., back wall, 12 feet; front, 3 feet 4 inches; width, 8 feet 6 inches; length, 280 feet (in the clear). The ventilation and arrangement of the trees differ from most other houses of the kind. The result, however, has proved most satisfactory. We have a passage in the centre and front and back doors which divide the house into two parts. In each half both in front and back walls are ventilators, which being connected by means of small iron rods run on iron rails enables one to stand at the doors, and in less than five minutes to ventilate the whole building. The walk or footpath is 27 inches wide, and consists of 9-inch tile resting on Oak bearers, which in bad weather affords a comfortable path. Trees are trained on the back wall; but those in front are placed at right angles to the wall, thus allowing the sun to shine on both sides of them, and also on the back wall from top to bottom and nearly the whole floor. These constitute the main features of the house; and I may add that the fruit is of the best description both as regards size and quality. *Samuel Bray, Court Cot Gardens, Stoodleigh, near Tiverton, Devon.*——I shall be much obliged to Mr. J. Green, of Burlington Villa, if he will state when he pots his orchard-house trees, and what treatment they receive after potting; with any other particulars of his management which he may be disposed to give. The report of his orchard house was very valuable. What kind of sulphur is best for gardening purposes, black or yellow? *W. C.* [The only sulphur fit for garden purposes is "flowers of sulphur."]

Earthenware lined Pipes.—I beg to inform your correspondent who inquires about these that about three years ago, finding the spring water which was conveyed from my pump from a well to the house (a considerable distance) was impregnated strongly with iron from the pipes of that material through which it was conveyed, I took them up and substituted vitrified iron pipes which I had from the Birmingham Patent Tube Company. The pipes in question are always charged with water, but I have found them excellent and quite effective. They are iron pipes of any desired bore, which are dipped in a kind of liquid glass, and are therefore coated both inside and out with that material. *C. Wilkinson.*

Bowood Muscat Grape.—I am glad to see Mr. Thomson's testimony to the many good qualities of this Muscat; but he has omitted one, which in my opinion enhances its value as much as any, viz., its property of setting well in a low temperature. This, in establishments like those at Dalkeith, may not be a consideration, but with a very large class of Grape growers it is a very material one. We well know how many persons are deterred from growing the Muscat of Alexandria from the expense which must be incurred to ensure success. The Bowood Muscat, however, as I can testify, needs no costly structure, and any one possessing a Vinery of the most ordinary pretensions may grow it with as certain assurance of success as he does the common Hamburgh or Sweetwater, by ordinary attention and the least possible amount of artificial heat. *Henry Manton, Sleaford.*——I beg to assure Mr. Thomson that he has not by any means over-rated the good qualities of this Grape, and that I quite agree with all he has said in its favour. In giving my experience of the properties of the Golden Hamburgh, I was led to use the expression, "With the exception of the Muscat of Alexandria we have no White Grape in which are combined so many desirable qualities" in a general way; I did not mean to compare it with the Alexandrian Muscat any more than others of its class, such as Bowood Muscat, Tottenham Muscat, Money's Muscat, and Muscat Escholata. I have thought it necessary to offer Mr. Thomson this explanation, as it is very desirable that we should endeavour at all times to make ourselves understood. The Golden Hamburgh belongs to an entirely different section; its parentage is distinct from the Muscat; hence it is impossible to institute a comparison where none exists. Its advent fills up a blank that has long existed, whether we value it for early forcing, or as a mid-season variety, and will at no distant period throw the whole race of Muscadines and Sweetwater out of cultivation, in the same proportion as the Bowood Muscat will displace other varieties of the same class. The Bowood Muscat does not possess a superiority in flavour above that of the Muscat of Alexandria, at least I have not been able to distinguish any difference. Its real merits consist in the larger size of the bunch and berries, and the accidental property of setting its fruit with as much freedom and as little care as the Black Hamburgh—qualities, let it be observed, of the first importance in so valuable a Grape. During a conversation I had with Mr. Spencer about the Bowood Muscat, he said that "reports say that it is a feeble grower." This I feel certain is wholly incorrect, as no Vine could show a more vigorous habit than it does here; true, it may grow weakly under unfavourable circumstances, but it would be wrong to affirm that the habit is uniform. *A. Cramb, Tortworth Court, Gloucester.*

New Peas (see p. 693).—I have not grown Veitch's Perfection. I have however grown Hairs' Dwarf Mammoth and also Lord Raglan, true to kind; both are excellent but quite different from one another. Dwarf Mammoth only grows from 1½ to 2 feet in height, while Lord Raglan grows not less than 3 feet; its pods are also even larger than those of Dwarf Mammoth. It is not very uncommon for some London seedsmen to substitute one for the other; there are however exceptions. Last year I received Hairs' Dwarf Mammoth for Lord Raglan from a seedsman, and from another Royal Green Marrow for Prizetaker, thinking I suppose that we countrymen knew no better, and that so long as we get a crop we would be satisfied; but not so with all of us, we sow for succession, and if we get a late Pea for a early one, it throws us out of supply for our customers, causing a serious inconvenience. I could mention numerous instances of this kind. It is a good plan to procure a new thing from the grower or raiser. I had a traveller called upon me some time since; I asked him about Sangster's No. 1 Pea, he said he had plenty of it, or at least he had plenty of Warner's Emperor, and that was the same thing; this satisfied me he knew nothing about them, as they are as different as light from dark. I have been in the habit of growing 15 or 20 sorts of Peas in one year side by side, sown on the same day on purpose to test their merits for my own satisfaction—one year I had almost an acre in this way. *Countryman.*

Flowers in the Public Parks.—In passing through Hyde Park and Kensington Gardens the other day I noticed that a great improvement has taken place this year with respect to the introduction of summer-flowering plants into our parks. No fewer than from 30,000 to 40,000 bedding plants have been planted in various parts of them this season, and all have done remarkably well. They appear to give great satisfaction to the public; many have spoken to me on the subject, and have expressed how pleased they were at the great change that has taken place, and how glad they were to find that the working classes could see a display of summer flowers without going to Kew. The Wellington grounds have looked beautiful all the summer; there has also been a good show of different varieties of flowers along a slip on the east end of the principal drive, consisting of Geraniums, Calceolarias, Verbenas, &c. On the south side of Kensington Palace are a great many beds, some of which are exceedingly effective; all of them exhibit a blaze of bloom all the summer, and round the east end of a lodge near the bridge of the Serpentine there is a perfect mass of summer flowers. Nothing could look better than that spot does; the turf is completely worn bare by the public walking round the fence to look at them. This shows that under skilful management all summer bedding plants will succeed as well in the smoke of London as at a small distance from town. Now that gay flowering plants have succeeded so well in Hyde Park, we may hope to see a better display in St. James's Park than there has been this season. *Samuel Broome.*

Societies.

THE ORIGINAL STOKE NEWINGTON FLORICULTURAL.—The usual autumn show of this Society took place at the Floral Hall, Stoke Newington Road, on Tuesday last, the 30th ult., and as far as can be judged proved highly successful. There was no want of flowers to sustain the reputation of the Society, and the placing and disposition of them seemed very satisfactory. The place of exhibition was well suited for the purpose, being a kind of conservatory, but it was found quite incapable of accommodating the quantity of plants and flowers shown, and the assistance of a large room contiguous had to be secured, in which to display the surplus productions. On entering the room the first stand that attracted attention was that of Dahlias by Mr. Perry, of Castle Bromwich, Birmingham (Class 8, Amateurs); this gained the Silver Cup. In it were certainly some magnificent blooms, including Touchstone, Miss Watts, Perfection, Lady Popham, and others. The 2d prize in this class was awarded to Mr. Pope for Mrs. Seldon, Sir J. Paxton, Bathurst, and other fine blooms. The 3d prize was given to Mr. Green for Miss Foresby, Sir Henry Havelock, &c. The 4th to Mr. Burgess for Lollipop, Duke de Malakoff, Dr. Lully, &c. The 5th was gained by Mr. Hunter for a very handsome stand. The 6th by Mr. Le May for beautiful blooms of Amazon, Admiral, Goldsmith, and Beauty of the Grove. The 7th by Mr. Cook for Pandora, Sir J. Paxton, Village Gem, and others. In the Nurserymen's Class of Fancies, Mr. Legge, Lower Edmonton, was the most successful; he had Cleopatra, Butterfly, Miss Frampton, &c., while Mr. Shenton gained the second prize for an excellent stand. In Class 9 (Amateurs, 12 dissimilar blooms of Dahlias, fancies) Mr. Perry gained the 1st prize for Oliver Twist, Charles Perry, Comus, Enchanter, and others. In Class 6 (Nurserymen), Mr. Legge, of Lower Edmonton, received the first prize for Sidney Herbert, Lord Palmerston, Lady Raglan, Edward, and Mrs. Trotter, while the second was awarded to Mr. Shenton for Duke of Marlborough, Lady Mildmay, Chance, and Mrs. Turner. We now come to Asters. In Class 12 (Amateurs, 12 dissimilar, German), Mr. Smith gained the 1st prize for a beautiful stand. In Class 4 (open to all, 6 pots), Mr. Hayes exhibited a beautiful group. In Class 10 (Amateurs, French), the prizes were given to Mr. Ward and Mr. Hayes for really beautiful specimens. In Class 11 (Nurserymen, French Asters), Messrs. Francis took the lead for 24 blooms, all exceedingly handsome. Miscellaneous articles consisted of some beautiful Fuchsias from Mr. C. E. Allen (1st prize); some very fine foliaged plants from J. Harker, Esq., though not for competition; some Verbenas in pots, which gained the 1st prize in Class 5, from Mr. Hayes; some Cockscombs gaining 1st prize in Class 3 from Mr. King, and others; a new seedling Dahlia, "Chancellor," gaining 1st prize and 1st class certificate, came from Mr. Shenton; ditto "Mayflower," 2d prize and 1st class certificate, from Mr. Rawlings; some Verbenas gaining 1st prize in Class 16 came from Mr. Shenton; and above all a basket of Grapes sent by Mr. Bird, of the Green Lanes, weighing 15 lbs. The same gentleman also gained the 1st prize in Class 18 (Cut Flowers), and a splendid stand it was, consisting of Blue Hydrangeas, Mignonette, Roses, Verbenas, Asters, Fuchsias, Hollyhocks, and Dahlias, in all 56 sorts. Of Cut Roses, Messrs. Francis exhibited some beautiful bouquets. A Mammoth Gourd was also shown, 6 feet in circumference. A splendid Fuchsia was exhibited by Mr. Allen, named Venus de Medicis. It was struck in February last, and now measures 18 feet in circumference, grown in a 15-inch pot. This gained the extra "Challenge Cup."

NEW STOKE NEWINGTON FLORICULTURAL.—The exhibition of this Society was held on the same day as the one above, in grounds adjoining Abney Park, Stamford Hill. There were Dahlias from Mr. Legge, of Edmon-

ton, consisting of Princess Charlotte, Comet, Parpaillette, Annie Salter, Fanny, and Fearless; some by Messrs. Fraser named the Flirt, Comus, Duchess of Kent, and Dandy; others from Mr. Greening, High Cross, Herts, were Orb of Day and Miss Priestley. There were Asters from Mr. Radley, Stamford Hill, and Mr. George, which were excellent, as well as a stand not for competition; some from Mr. Wortley, Stoke Newington, also beautiful; others came from Mr. Hodson and Mr. Batten, who exhibited some excellent Anemone sorts. Mr. James and Mr. Batten gained the 1st and 2d prizes for Asters. Messrs. Fraser had some splendid kinds, and there were some good sorts from Mr. Butcher, of Upper Clapton. Messrs. Fraser, of Lea Bridge Road, also sent a handsome collection of Cut Roses, consisting of three cases, and one case of Dahlias, all good. They also gained an extra prize for a stand of Gladiolus, named Hebe, Neptune, Edith, and Mons. Vinchon. In the way of Fuchsias Mr. Rhodes was the most successful, showing Fairest of the Fair, Rose of Castille, Alpha, Duchess of Lancaster, Autocrat, and Wonderful; all excellent plants. The 2d prize was gained by Mr. Kendall, whose plants were very good; the 3d by Mr. James, and the 4th by Mr. Batten. Among miscellaneous plants were six Balsams sent by Mr. James, which were good; also plants remarkable for fine foliage from Mr. Rhodes, of Stamford Hill; Liliums from Mr. James, of Stoke Newington, forming one of the handsomest features of the show; seven stove and greenhouse plants from Mr. Rhodes; of Ferns Mr. Chitty, of Stamford Hill, sent a collection. A case of honey, weighing about 22 lbs., came from Shirley Hibberd, Esq.; three bunches of Grapes from Mr. James, and half a dozen Gourds from Mr. Meredith. We must also notice the plants grouped for effect from Mr. Rhodes; they were very handsome. There were also excellent Verbenas sent by Mr. Hodson, of Leyton, and Mr. Batten, as well as 12 bunches of cut flowers from Mr. J. George, of Stamford Hill, consisting of Liliums, Pelargoniums, Roses, and Calceolarias. A label of commendation was awarded to Miss Sarah Boyce.

Notices of Books.

A Manual of British Butterflies and Moths. By H. T. Stainton. 2 vols., 12mo. Van Voorst.

The reproach that has been so often conveyed to English entomologists that they have not produced a systematic account of the insects of this kingdom in the same way as is done by botanists with plants, no longer applies to the Lepidopterous class. In the two excellent volumes now before us, we have a complete systematical account of all the butterflies and moths that inhabit Great Britain, clearly stated in scientific language, and illustrated by a considerable number of extremely well executed engravings on wood. We have always looked to Mr. Stainton, one of the most zealous, active, and distinguished entomologists of the day, to set an example, and we are happy to see that the manner in which he has done so calls for unqualified praise. Let us hope that he may take up other classes of insects in the same manner, and by degrees provide what is certainly the great desideratum in the Natural History of Great Britain. As matters now stand, the young entomologist must provide himself with a library before he can ascertain the name of a Curculio or a wild bee.

Mr. Stainton's first volume is occupied by an account of butterflies and stout-bodied moths; the second is devoted to the slender-bodied and small moths. The descriptions of the species are made as short as is consistent with exactness, and the characters of the various groups under which the species stand are so analysed and tabulated that the young student can scarcely fail to find his way through the Lepidopterous labyrinth, if he has but a reasonable amount of perseverance and intelligence. In these respects the manual before us is a scientific model; but it sadly wants an alphabetical index, the absence of which those whose time is valuable will find an inconvenience.

As an example of the skilful manner in which the author handles his subject, we take the first words of his first volume, which fairly represent the method adopted throughout the work:—

"'Butterflies and Moths' are insects; but bees and wasps, beetles and flies are likewise insects. How, then, are butterflies and moths distinguished from other insects? *By the wings being clothed with scales.* The wings of a butterfly are not transparent like those of a bee, a fly, or a dragon-fly, nor are they horny like the elytra or wing-cases of a beetle; but both surfaces are thickly covered with small scales, which, if removed, would leave the membrane of the wing colourless. It is therefore the colour of these scales which imparts the beauty to these insects which compels our admiration. It is from the two Greek words, λεπις, a scale, and πτερον, a wing, that the scientific term Lepidoptera, used to denote 'Butterflies and Moths,' is derived. Butterflies and moths have always four wings (the exceptions of undeveloped hind-wings, or of specimens entirely wingless, being comparatively rare). The mouth is furnished with a long spiral sucker, or tubular tongue, by means of which these insects imbibe the nectar of flowers. All butterflies and moths have, previous to their appearance in that state, been successively eggs, caterpillars or larvæ, and chrysalides or pupæ. It is only while in the caterpillar state that they grow: from their first exclusion from the egg to their becoming full-fed caterpillars they increase vastly in bulk; and the caterpillars are therefore very voracious eaters. When the caterpillars have attained their full size they seek some secluded corner, or penetrate into the earth, and then change to the chrysalis state. The chrysalis has no power of locomotion, having no legs, and being generally firmly attached to some solid substance, or enclosed in a cocoon of silk. If handled it testifies its annoyance by a wriggling of the hinder part of the body. After the insect has remained in the chrysalis state a determinate time, varying according to the species, or to the time of year, the butterfly or moth, as the case may be (then called the perfect insect or imago), appears, with all its parts fully developed, except the wings, which are at first short and limp. The insect crawls to some convenient place, so as to rest with its wings hanging down; and, in a short time, rarely (except in large species) exceeding an hour, the wings are fully expanded, but still limp; in a little while, however, they become stiff and fit for flight, and the insect wings its way to the woods and fields.

"Having thus briefly sketched the various changes through which each of these insects passes, the next point to which our attention is drawn is—

"How do we distinguish a Butterfly from a Moth?

"*The antennæ* (or horns) *of a butterfly have always a knob or club at the tip;* those of a moth have not. It is a common notion that butterflies are more gaily coloured than moths; and many imagine that the Tiger Moths on that account are butterflies; but it is not so: many butterflies are of dull colours, and many moths are adorned with most beautiful and varied markings. All butterflies (with one or two exceptions) repose with the wings meeting over the back; very few moths repose in this position.

"All butterflies fly by day; the great bulk of moths fly by night, though many fly by day, some species flying both night and day.

"The caterpillars of butterflies may also in most instances be distinguished at first sight; for, except the caterpillars of the first family of butterflies, all the others are of peculiar forms, either spiny or with two projecting horns at the head, one on each side, or with two short tails, or fat and short (like a woodlouse), or with the head much larger than the segments behind it. They feed on a variety of plants, from the Oak to the Cabbage of our market gardens.

"When we first have our attention attracted to a beautiful insect we naturally want to know something about it; *but there is the difficulty:* we see the insect, we admire its beauty; but, unless some kind friend who is acquainted with the insect would introduce us, we are at a loss to obtain a more intimate acquaintance. It is a trite saying, *everything has a name*; but how am I to ascertain the name of this butterfly which I have caught? That is the important question: if I could ascertain its name I might refer to some book, and learn something of its habits and history. Now, the question, so far as relates to a British butterfly, is not a difficult one to answer, if we set about it *determined* to ascertain the name of the species. The British butterflies are only 66 in number, and, considering their variety in form, colour, marking and size, it cannot be very difficult to point out in a short-hand way the distinctive characters of each species.

"For instance, they may be roughly tabulated thus:—

† Distance between the insertion of the antennæ one-fourth the width of the head.

A. Hind-wings with a long tail. Genus Papilio.

AA. Hind-wings with no tail.

B. Wings yellow. Genera Gonepteryx, Colias.

BB. Wings white. Genera Aporia, Pieris, Anthocharis, Leucophasia.

BBB. Under side of the anterior wings with a small eye-like spot near the tip. Genera Arge, Lasiommata, Hipparchia, Erebia, Cœnonympha.

BBBB. Under side of the anterior wings with no small eye-like spots near the tip.

C. A pale band across the middle of the dark posterior wings. Genera Limenitis, Apatura.

CC. Anterior wings more or less angulated. Genera Cynthia, Vanessa, Grapta.

CCC. Wings rich tawny, with black streaks and spots.

D. Under side of posterior wings with silvery streaks or spots. Genus Argynnis.

DD. Under side of posterior wings with no silvery streaks or spots. Genera Melitæa, Nemeobius.

CCCC. Wings coppery red. Genus Chrysophanus.

CCCCC. Wings blue or brown, beneath with numerous small eye-like spots. Genus, Polyommatus.

AAA. Hind-wings with a short tail. Genus Thecla.

†† Distance between the insertion of the antennæ fully one-half the width of the head. Genera Thymele, Thanaos, Steropes, Pamphila.

"Having ascertained in this way to which genus the species we have caught *must* belong, or at least that it belongs to one of three or four genera, we have but to glance at the table of species for that genus or those genera, and our difficulty is removed."

The following minor works have lately reached us. *The New Zealand Handbook* (5th edition, Stanford) is a full and reliable account of the colony, prepared for the use of emigrants. The author ought, however, to have given the botanical names of the trees he speaks of. What is Tutu, what Puriri, what the White Pine, rata, pohutukawa, Karaka, Nikau, ngaio, and the like. Such words convey no ideas whatever. The botanical names are perfectly intelligible, and therefore useful.—*Catechism of Photography; How to colour a Photograph* (Cassell), little treatises, reprinted from the "Photographic News," and useful as instructions to amateurs.

Trade Lists received.—L. Van Houtte (Ghent) *Catalogue No. 77 of Bulbs, and other plants.* Although Hyacinths, Tulips, Crocuses, and other bulbs stand first in this list, as the season requires, yet it is chiefly occupied by a complete list of plants of all kinds, hardy and tender, which Mr. Van Houtte has now to offer for sale; 106 pages are thus occupied.—Cutbush & Sons (Highgate) *Bulb Catalogue for* 1859 contains descriptions of all the best bulbs which it is worth the while of amateurs to grow. It is announced that in March next there will be a free exhibition for a week in the Highgate nursery.—Parker & Williams (Holloway), *A Catalogue of Hyacinths and Bulbous Roots;* also *A Catalogue of Pelargoniums, Herbaceous and Alpine Plants,* &c., deserves to be consulted by all buyers of such things. There is a long descriptive list of Geraniums, in which this nursery abounds.—Francis and Arthur Dickson & Sons (Chester) *Catalogue of Flower Roots* is strictly limited to such plants. We are glad to see the nurserymen all urging their customers to get their bulbs immediately; and buyers, if wise, will take the advice.—Transon-Forteau & Son (Orleans) *Trade List for* 1859-60, is only suited to the purposes of nurserymen, who will find fruit trees, fruit tree stocks, and a few other articles worth their attention.

Garden Memoranda.

Palace Gardens, Hampton Court.—In no previous season do we recollect having seen these in better condition than they are at the present time; and that their noble avenues, broad gravel walks, closely mown verdant lawn, and shady retreats are appreciated by the public is evident from the number of visitors who daily frequent them. The flower beds are just now at their best, and having been within these last three years very greatly increased in numbers, upwards of 100 having been added to them, make a grand display which is well worth seeing.

All round the fountain and in front of the Palace, borders which formerly consisted of little else than rubbish, that was not only offensive to the eye but which was literally destroying the old Yew trees, with the exception of about 50 yards, which yet remain, have all been converted into beds, and are now planted with gay flowering plants. The size of these and all other beds is regulated by the distance between the trees, and is apparently 13 feet by 15 feet. It will thus be seen that they are nearly square. Between each bed is a Grass alley, 4 feet wide, throughout the whole garden. The greater part of the beds, except where trees are, was trenched 2½ feet deep last winter, the result of which has been most satisfactory. During such a dry season as the past, and in such a dry place as Hampton Court, had it not been for the trenching which helped to retain moisture things would have been all but burnt up, whereas every bed so treated and planted early enough has succeeded excellently during the whole season. The following plants, each of which fills a bed, are now in beautiful condition, viz.: Verbenas:—Impératrice Elizabeth (Maonetti), striped; Lord Raglan, scarlet; Gen. Simpson, scarlet; Purple King and Ariosto, Andre and Rougeri, Mrs. Holford, Conqueror of Europe, lilac; Rose Souvenir de la Malmaison, three-year-old plants, transplanted in trenched ground this season, now blooming a second time; Glyce maritima-variegata, white; Calceolaria Kayii, mixed with Tagetes nana; Vinca elegantissima, mixed with Mangles's variegated Geranium; Calceolaria integrifolia and C. angustifolia. These are all full of flower and extremely showy.

The following have not succeeded so well, viz., Verbena Miss Trotter, planted late; Boule de Neige, white, also planted late, after yellow Alyssum; Géant des Batailles; this failed entirely, as did also Victory planted after Arabis; Pentstemon purpureum, died after flowering; Salvia patens is also unsatisfactory and the same may be said of Verbena Matchless and Calceolaria amplexicaulis. Delphinium formosum has been very gay, and is now blooming a second time This bids fair to displace the blue Salvia, which it resembles in colour.

Of colours and their arrangement the following is the order observed round the large semicircle in front of the palace, viz.:—1. Glyce maritima variegata; 2. Purple King Verbena; 3. Calceolaria angustifolia; 4. Heliotrope; 5. Tom Thumb Geranium; 6. Mangles's variegated Geranium; 7. Andre Verbena; 9. Calceolaria amplexicaulis mixed with Tagetes; 9. Conqueror of Europe Verbena; 10. Lord Raglan Verbena; 11. Glyce variegata and Purple King Verbena; 12. Tagetes nana. This arrangement is also repeated throughout the whole garden.

That which must be gratifying to every one who visits this fine old place is the recovery of the Yew trees which line the borders. These had evidently fallen into ill health. Many, however, which had become quite brown, except where they were clothed with Ivy and apparently dead, are now assuming a dark green colour and promise to be as good as ever. This has been effected by clearing away the tall plants and

rubbish from under them, forking in leaf mould and planting only such things as Geraniums, which do not impoverish the soil to the same extent as has been done. It may be worthy of remark too that these succeed better under Yews than under Hollies. Under the latter they make little progress compared with what they do under the former, although in both cases the soil is equally suitable.

The noble walks with which this garden is embellished are in excellent order and beautifully clean. This is effected by never giving weeds a chance of appearing, which in the end saves much labour. In dry weather salt is put on dry; in moist weather handpicking is resorted to, regularly rolling to keep down stones. The walk parallel with the east front of the Palace is 39 feet wide and half a mile in length; formerly it was 2½ feet wider at one end than at the other, but this is now rectified. The most striking improvement perhaps in this respect is the re-adjustment of the large semicircular walk in front of the Palace. This had got very much out of position and was put right last winter. This walk, which is now 20 feet wide (2 inches wider than it had originally been), had in several places become 28 feet in width, while in others it was only 16 feet. Having to contend with so many trees these defects could not be remedied without actual measurement, which proved that the semicircle had a radius of 410½ yards, and that it had at first been laid down with great accuracy. The alterations in question have now restored it to its original position, and very much enhanced its appearance.

In the Wilderness, too, evident improvements are in actual operation. Old walks which through time had become more like ditches than walks are being filled up with brick rubbish and surfaced with gravel, and the shrubs along their sides are being rearranged. Wild flowers might also be introduced with advantage to this part of the garden, which in spring and summer is by no means uninteresting. It will thus be seen that Mr. Donald has not been idle since he was appointed to the superintendence of the place, although much has yet to be accomplished before all is finished.

The great Vine, for which this place has so long been celebrated, is producing a heavy crop of fruit, which is spread over the house with wonderful regularity. The bunches are, however, we think scarcely so good as they were last year, being apparently smaller and the berries not so well swelled. They are for the most part nearly coloured, but not quite ripe. No fire-heat, we believe, is ever employed; but a little of it now would evidently do no harm. This Vine at the present time is well worth inspection.

Miscellaneous.

Grape Growing.—The *Stockport Advertiser* gives the following account of a Vinery in that borough, measuring 20 feet long and 10 feet wide, belonging to Mr. George Hayward, market gardener. Five years ago a young Vine, of the Black Hamburgh kind, was planted, and for four years it fruited in an ordinary manner, but this year there are now upon it 200 bunches, which are expected to average 1 lb. each when ripe. It should also be stated that 100 bunches were taken off in the early stage of their growth, and that the bunches now growing have been lately thinned by at least one-third of the berries.

Calendar of Operations.

(For the ensuing Week.)

PLANT DEPARTMENT.

CONSERVATORY, &c.—It will hardly be safe to depend upon a continuance of fine weather after this time, therefore preparations should be made at once for protecting all plants of any value from heavy rains or slight frosts at night. Where there is proper accommodation for plants under glass there certainly is no utility in keeping greenhouse stock out of doors as late in autumn as can be done without positive danger from frost, but in cases where many plants have to be wintered in Vineries it is often necessary to make every possible shift to keep the plants out of doors until the state of the Vines, &c., allows of managing the houses with something like regard to the well-being of the plants. And with the aid of skeleton frames or pits, constructed so that they will ward off a few degrees of frost, and a waterproof cloth, old sashes, or anything for covering that will throw off heavy rains, most greenhouse plants may be kept safely enough for some time yet, unless the weather should prove more unfavourable than ordinary, and will be found to do much better under such shelter than crowded too thickly together in a greenhouse, or in houses where fire heat must be used. Indeed where plants have to be wintered under make-shift circumstances, as in forcing-houses, &c., which cannot always be had in a fit state for their reception at the proper time, some temporary shelter is indispensable to save the plants from drenching rains and cold winds in autumn; and a very suitable one would cost but little and would be found useful at most seasons. Should heavy rains occur before the plants can be afforded any protection, be careful to prevent their getting too wet at the root. Luculias and other winter flowering things growing in the border of the conservatory must be freely exposed to light and air, in order to get the growth well ripened and insure a fine display of bloom. Also see that all plants are clear of thrips, for this pest is particularly active at this season wherever it is allowed to gain a footing, especially on Luculias and such things as are in a growing state.

STOVE.—Where there is but one house for the accommodation of tropical plants, considerable care and attention are necessary to properly manage these at this season, as some having completed their season's growth require to be kept cool and rather dry, in order to ripen the wood, while others in free growth require to be encouraged with warmth and moisture. If there is no convenience for removing to a cooler house such things as have made their growth, these should be placed together at one end of the stove, keeping them sparingly supplied with water at the root, and giving air rather freely, which will generally serve to prevent any attempt at a second growth; those requiring to be kept warm and moist should also be placed together at the opposite end of the house, where very little air should be given, using every care to keep the atmosphere about them moist, &c. Allamandas, Clerodendrons, &c., which have done blooming, may be removed to a Vinery where the Grapes are ripe or ripening, for as these will require very little water, they will not do much mischief in the way of causing damp, and their room will be found very useful for other things. See that everything is free from insects, and keep the foliage of such things as Ixoras, &c., clean by washing with a sponge and soapy water when necessary.

FORCING DEPARTMENT.

PINERIES.—Take advantage of favourable weather while it continues, to encourage free growth where this is desirable, giving the plants a liberal supply of water at the root, using manure water for such as are moderately well rooted, and keeping the atmosphere warm and moist. Shading will of course be dispensed with by this time—at least it should be, as growing plants will require exposure to all the light possible, in order to induce fine strong foliage and a dwarf stocky habit. See that the succession stock is properly supplied with water at the root, as any neglect in this respect while the weather continues bright would be liable to cause some of the plants to fruit prematurely. Also keep the atmosphere moist by frequently sprinkling the paths, &c., and syringe them lightly over-head, and shut up early in the afternoon, so as to husband the solar heat as much as possible: be careful, however in syringing to spare plants in flower, as syringing these over-head would probably cause deformed fruit. Give plants swelling their fruit plenty of clear strong manure water, and young plants growing in open beds will enjoy an occasional soaking of the same. VINERIES.—If bright weather continues, it will be advisable to shade fruit that is thoroughly ripe and expected to hang for a considerable time; for although the quality of the fruit may be rather improved by warmth, &c., some sorts soon lose their fresh plump appearance. Give air freely, and keep the house as cool and dry as circumstances will admit. Stop laterals in the late house, and keep the foliage regularly exposed to light, so as to have it as healthy and vigorous as possible. Fruit beginning to colour should be encouraged with plenty of warmth and air, as Grapes ripened during this fine weather will be very superior in quality, and more like to hang well than such as have to be ripened by artificial means late in the season, when there will be comparatively little sunshine. Keep thrips in check where at all troublesome by repeated fumigations, and use every means to preserve the foliage from red spider. Vines planted this season, and which are growing freely, will probably be found to be getting too dry at the root; and where this is found to be the case, if it is desirable to encourage free growth for some time longer, give the border two or three slight waterings to moisten it about the surface roots, but by no means give it a soaking.

FLOWER GARDEN AND SHRUBBERIES.

That the present month is a favourable time for transplanting large sized shrubs and trees is seldom disputed, nevertheless, it annually happens that a great amount of this kind of work is put off until so late that the plants have no chance of pushing a few fresh roots to enable them to resist the cold drying winds of March; we would therefore strongly advise all who intend to move shrubs or trees to commence as soon as circumstances will admit, and they will find that things shifted during this month will require but little attention in the way of watering next spring and summer, compared with others transplanted in winter and spring. Also get ground intended to be planted with young stock from the nursery turned up as soon as possible, especially in the case of strong adhesive soils, which are quite unfit for planting until they have been some considerable time exposed to the mellowing influence of sun and air. Give diligent attention to the propagation of bedding out stock, and get cuttings that are sufficiently rooted potted off at once, keeping them close and moist until they become established. Those that have been potted off some time and have got established in their pots should be gradually inured to exposure to the open air, stopping the shoots to keep them dwarf. But plants that are not very strong should be shaded from bright sunshine for a few hours in the middle of the day, or placed in a shady situation out of doors. If any of the beds appear to be suffering from want of water, give a good soaking at once, and see that late Hollyhocks are afforded a liberal supply, which will greatly assist in prolonging their beauty.

HARDY FRUIT AND KITCHEN GARDEN.

Any of the Peach or Nectarine trees which are observed to be growing too freely should be gone over, stopping all the stronger shoots, and those that were treated in this way a few weeks ago should also be looked over again, stopping a further portion of the shoots if this appears necessary, to prevent the formation of gross strong wood. Pear, and indeed, all trained fruit trees should also be gone over, removing all superfluous wood, so as to expose the trees to sun and air as fully as possible, which will be of service towards getting the fruit spurs and bearing wood well matured before winter. Pears that are so unripe as to be unfit to eat should be treated as directed below in our "Notices to Correspondents." Where mulching has been used for Peach and Nectarine trees, this should be removed at once, if not already done, for the fruit seldom flavours well if the roots are excluded from the action of sun and air.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the Week ending Sept. 1, 1859, as observed at the Horticultural Gardens.

August and Sept	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Temperature of the Air. Min.	Temperature of the Air. Mean	Temperature of the Earth 1 foot deep.	Temperature of the Earth 2 feet deep.	Wind.	Rain.
Friday 26	28	29.726	29.687	75	52	63.5	67	65	S.W.	.00
Satur. 27	29	29.809	29.793	77	49	63.0	67	65	S.W	.20
Sunday 28	●	29.918	29.771	72	42	57.0	66	64½	S.W.	.01
Mon. 29	1	29.860	29.547	72	45	58.5	65	64½	S.W	.16
Tues. 30	2	29.553	29.349	63	43	53.0	66	63½	S.W	.20
Wed. 31	3	29.608	29.546	62	49	50 5	62	63	S.W.	.00
Thurs. 1	4	29.618	29 573	65	42	53.5	61	62	S.W.	.00
Average		29.727	29.638	69.4	44 6	57.0	64.5	63 7		.57

Aug. 26—Cloudy and warm; calm and overcast; fine.
— 27—Uniformly overcast; very fine; rain.
— 28—Partially overcast; very fine; slight rain.
— 29—Very fine; partially overcast; rain.
— 30—Partially overcast; fine; thunder in afternoon; lightning at night.
— 31—Overcast; cloudy; cold at night.
Sept. 1—Fine; partially clouded; fine but cool.
Mean temperature of the week, 3½ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 33 years, for the ensuing Week, ending Sept 10, 1859.

Sept.	Average highest Temp.	Average lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 4..	70.2	47.0	58.6	14	0.58 in.	5	7	4	1	4	6	3	3
Mon. 5..	69.7	47.1	58.4	14	0.30	3	6	8	—	5	5	4	2
Tues. 6..	69.9	45.8	57 8	14	0.70	1	9	4	—	1	11	6	1
Wed. 7..	69.5	47.6	58.5	16	0.55	1	5	5	2	4	12	3	1
Thurs. 8..	68.6	47.2	57.9	13	0 64	3	6	2	2	3	12	1	2
Friday 9..	68.7	48 9	58.8	14	1.09	—	5	2	3	5	9	7	2
Satur. 10..	69 7	47.3	58.5	18	1.27	—	4	4	1	6	8	5	3

The highest temperature during the above period occurred on the 5th, 1848, and 7th, 1843 and 1846—therm. 88 deg.; and the lowest on the 4th and 6th, 1850—therm. 30 deg.

Notices to Correspondents.

BOOKS: *Yeovil.* Paxton's Botanical Dictionary.

FLOWER GARDEN: *W F.* We cannot possibly give plans for flower gardens. Consult Mr. Lovell's papers published this year in the *Gardeners' Chronicle.*

HARD PEARS: *Guinever.* If Beurré Diels or other Pears too unripe to eat raw are properly treated they become quite as good as if ripened—perhaps better. Send them to the oven, in jars closed with lids, *without water or sugar,* and there let them remain all night or longer. They will stew in their own juice, and form not only an excellent dish for dessert, but a wholesome and delicious food for children. Try the experiment and tell us what you find the result to be.

HEATING: *A Constant Reader.* If you employ the flue of your present chimney to heat your pit you must have the means of stopping the passage of warm air when that is necessary: otherwise you will bring your bedding plants forward at a time when they should be at rest. With this proviso, the plan is a good one.

NAMES OF PLANTS: We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have or could have undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*Robin Hood.* Artemisia pontica.—*Rochford.* Brunsvigia multiflora.—*Cobham.* There is no difference between your seedling Lavender from Hyères and the common kind.—*F H M.* The flowers are withered, and nothing remains to show what your plant is. We suspect it to be a Ferraria of some sort.—*M.* The common small-leaved silver blotched Ivy and Hedera Rögneriana.

NEW ZEALAND. *F J, Ireland.* Take to Port Lyttelton all such seeds as you would grow in your garden in Wales. Add the seeds of all sorts of fruit trees, and of as many forest trees as you can get—Acorns, Hazel Nuts, Chesnuts, Whitethorn, Ash, Sycamore, and the like. You should read the New Zealand Handbook (price 6*d*.), published by Stanford.

ORCHARD HOUSES: *C M.* Rivers's pamphlet relating to these will furnish you with the information you seek. You will also find the dimensions of one given in our "Home Correspondence" of to-day.‡

SUPPOSED NEW ORCHIDS: *Morsus.* Lælia xanthina is quite new and very handsome. Of Cattleya Rangelii we know nothing, that name not being in any work of authority that we have seen. As for C. Trianæi it is said to be identical with Reichenbach's C. Warczewitzii, a very fine thing, totally different from the plants sold under the latter name at Mr. Stevens's sale of Feb. 6, 1852, which were C. Luddemanniana, also a very fine species, but one that we believe has not yet flowered.

THE HOLLYHOCK: *S Freeman.* The following are "Suggestions for the guidance of Exhibitors," printed by the committee of the Grand Hollyhock Show held at the Surrey Zoological Gardens, in August 1855, as given in Mr. Wm. Paul's pamphlet on this flower. 1. Quality, rather than the size of individual flowers or length of spike, should be the first point of consideration. 2. The petals of the flowers should be of a thick substance, the edges smooth and even. 3. The florets forming the centre or ball should be compact, closely set, rising in the middle to the form of half a globe, with a stiff guard petal extending about half an inch around the base, or in proportion to the size of the centre ball, so that the different parts of the flower may have a uniform appearance. 4. The arrangement of the flowers on the spike should be regular, not crowded together in a confused mass, nor loosely hanging with open spaces between them, but so disposed that the shape of each may be distinctly seen. 5. When the spike is fully blown, the uppermost flower should crown or cover the top. 6. A few small green leaves projecting between the flowers increases the beauty of the spike. 7. As a last point, it is highly important that the colours be bright, strong, and distinct.

TREE ONION: *A Subscriber.* It is very common for the Alliums to produce bulbs among the flowers or instead of them. This, which is commonly called the Tree Onion, is a variety of Allium Cepa.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London, S. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

LONDON MANURE COMPANY
(ESTABLISHED 1840),
Have the following MANURES ready for delivery :—
CORN MANURE FOR AUTUMN SOWING.
BLOOD MANURE FOR AUTUMN SOWING.
URATE.
SUPERPHOSPHATE OF LIME.
SUPERPHOSPHATE MINERAL.
The London Manure Company also supply PERUVIAN GUANO (direct from Messrs. Gibbs & Sons), SULPHATE OF AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of known value, all of which they warrant strictly genuine. Wholesale dealers supplied.
116, Fenchurch Street, E.C. EDW. PURSER, Secretary.

BURNARD, LACK, AND CO.'S CONCENTRATED SUPERPHOSPHATE OF LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.
CONCENTRATED TURNIP MANURE, equal in value to the preceding.
Of these Manures Dr. Voelcker says :—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."
Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to BURNARD, LACK, & Co., Sutton Road, Plymouth.

REDUCTION IN PRICE OF LAWES'S MANURES.
MR. LAWES begs to announce that he has this season reduced the price of the Manures manufactured by him, viz. :—

TURNIP MANURE	from £7 to	£6 6
SUPERPHOSPHATE OF LIME ..	„ 7 to	6 6
MINERAL do. ..	„ 6 to	5 5
BARLEY MANURE..	..	8 0

Prof. Way and Dr. Voelcker have sampled from a bulk of 5000 to 6000 tons at his factories, and their report and analyses are given in full in Circular to be obtained on application at his office, 1, Adelaide Place, London Bridge, E.C., or of his local Agents.
N.B. Genuine Peruvian Guano direct from Messrs. GIBBS, Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures. American Cotton-seed Cake supplied.

SHEEP.—FOOT-ROT OINTMENT, an original preparation, by JOHN OLDHAM, of Mansfield, a certain and safe remedy, having invariably cured when other remedies have failed. It is equally efficacious in Foul in Cows, Grease, Cracked Heels, and Thrush in Horses.
Numerous parties at a distance being inconvenienced in procuring it, the proprietor has appointed Messrs. SUTTON & Co., 10, Bow Churchyard, E.C., his London Agents, and it can now be procured through any respectable Chemist or Patent Medicine Dealer.

HAYMAKERS, possessing the best features of Nicholson's Prize Machines, with recent improvements peculiar to those supplied and manufactured only for
RICHMOND AND CHANDLER, Salford.
Branch Establishment, South John Street, Liverpool.
N B. The celebrated Bedford and Stamford Prize HORSE RAKES always in stock, with latest Patented Improvements.

HAY HARVEST.
NICHOLSON'S PATENT HAYMAKER, to which was awarded the First Prize of the Royal Agricultural Society of England at the last contested trial.
The celebrated STAMFORD HORSE RAKE has lately been much improved, and has obtained 26 Prizes at competitive trials.
MOWING AND REAPING MACHINES are performing their work most satisfactorily, and fully justify public expectation, cutting about 10 acres per day, at a cost of 9d. per acre.
Orders for the above machines should be given at once to RICHMOND & CHANDLER, Salford, Manchester.
Branch Establishment, South John Street, Liverpool.

HENRY J. MORTON AND CO.,
2, Basinghall Buildings, Leeds.
GALVANISED IRON WATER CISTERNS
for Cottage Houses, &c., to contain 50 gallons, 25s. ; 80 gallons, 30s. each ; and 140 gallons, 36s., and fitted with tap, keeping the water perfectly sweet and clean ; will not rust or corrode. Cisterns of all sizes.
GALVANISED IRON PUMPS
for Liquid Manure or Domestic Use, 3 inches diameter, 30s. and 35s. 6d. each ; Tail Pipe for same at from 10d. per foot.
GALVANISED IRON SWING WATER BARROWS
for Garden or Farm use, containing about 20 gallons, entirely formed of iron, 32s. 6d. each.

"FRIGI DOMO."—Patronised by her Majesty, the Queen, the Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, and —Collier, Esq., of Dartford.
PROTECTION FROM THE SCORCHING RAYS OF THE SUN.
"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and, floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths. Two yards wide, 1s. 6d. per yard run ; four, 3s. per yard. Also, an improved make for Shading Purposes. Three yards wide, 2s. 6d per yard run.
ELISHA THOMAS ARCHER, whole and sole manufacturer, 7, Trinity Lane, Cannon St., City., E.C., and of all Nurserymen and Seedsmen throughout the kingdom. "It is much cheaper than mats as a covering."

GUTTA PERCHA TUBING FOR WATERING GARDENS.
THE GUTTA PERCHA COMPANY have the pleasure to acknowledge the receipt of the following
Testimonial from Mr. J. FARRAH, *Gr. to* BOSWELL MIDDLETON JALLAND, Esq , *of Holderness House, near Hull.*
"I have had 400 feet of your Gutta Percha Tubing, in lengths of 100 feet each, with union joint, in use for the last 12 months for watering these gardens, and I find it to answer better than anything I have ever yet tried. The pressure of the water is very considerable, but this has not the slightest effect on the tubing. I consider this tubing to be a most valuable invention for Gardeners, inasmuch as it enables us to water our gardens in about one-half the time, and with one-half the labour required."
Manufactured by the Gutta Percha Company, Patentees, 18, Wharf Road, City Road, London, E.C., and sold by their Wholesale Dealers in town and country.

ROYAL AGRICULTURAL BENEVOLENT COLLEGE FOR THE RELIEF OF DECAYED FARMERS, THEIR WIDOWS AND ORPHANS.
Noblemen and gentlemen interested in Agriculture, desirous of promoting this object, will please fill up and forward a Form, as annexed.
450 influential names are enrolled to this date.
Tiptree Hall, Sept. 3.
Sir,—I hereby request you to place my name on the list of the Promoters of the Royal Agricultural Benevolent College, provided no pecuniary responsibility (beyond a subscription or donation) attaches to such Association. Name.....
Address.....
Date .....
To J. J. MECHI, Esq, Tiptree Hall, near Kelvedon, Essex.

WEST OF ENGLAND AND SOUTH WALES LAND DRAINAGE AND INCLOSURE COMPANY.
Established in 1844.
INCORPORATED BY ACT OF PARLIAMENT IN 1848.
Draining, Inclosing, Irrigating, Warping, Road Making, and all kind of Land Improvements, executed on Entailed, Mortgaged, or other Properties, and the whole cost can be made a Permanent Charge on the Lands, or redeemable in a certain number of years. BIDWELL & BRODIE, Secretaries.
Offices : Exeter ; and 30, Parliament Street, London, S.W.

THE LANDS IMPROVEMENT COMPANY.—Incorporated by Special Act of Parliament in 1853.—2, Old Palace Yard, Westminster, S.W. To Landowners, the Clergy, Estate Agents, Surveyors, &c., in England and Wales and in Scotland.
The Directors beg leave to announce that the Company's Amendment Bill, 1859, has received the sanction of the Legislature. The Company now advance money, unlimited in amount, for the following works of Agricultural Improvement, the whole outlay and expenses in all cases being liquidated by a rentcharge for 25 years.
1. Drainage, Irrigation and Warping, Embanking, Inclosing, Clearing, Reclamation, Planting for any beneficial purpose, Engines or Machinery for Drainage or Irrigation.
2. Farm Roads, Tramways and Railroads for agricultural or farming purposes.
3. Jetties or Landing places on the sea coast or on the banks of navigable rivers or lakes.
4. The erection of Farm Houses, Labourers' Cottages, and other Buildings required for Farm purposes, and the improvement of and additions to Farm houses and other buildings for farm purposes.
Landowners assessed under the provisions of any Act of Parliament, Royal Charter, or Commission, in respect of any public or general works of drainage or other improvements, may borrow their proportionate share of the cost, and charge the same with the expenses on the lands improved.
No investigation of title is required, and the Company being of a strictly financial character do not interfere with the plans and execution of the Works, which are controlled only by the Government Enclosure Commissioners.
Under the Company's Acts, tenants for life, trustees, mortgagees in possession, incumbents of livings, bodies corporate, certain lessees, and other landowners are empowered to charge the inheritance with the cost and expenses of the above improvements, whether the money be borrowed from the Company or advanced by the Landowner out of his own funds, and owners in fee may effect these improvements of their Estates without incurring the expense and personal responsibilities incident to mortgagees, and without regard to the amount of existing incumbrances.
For further information, and for forms of application, apply to the Honourable WILLIAM NAPIER, Managing Director, 2, Old Palace Yard, Westminster, S.W.

LAND IMPROVEMENTS.—The GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY are empowered by Act of Parliament to assist the Owners of Land in carrying into effect the following Improvements, and charging the whole outlay and expenses on the property improved.
I. All Works of Drainage, Irrigation, Warping, and Embankment.
II. The erection of Farmhouses, Cottages for Agricultural Labourers, and all kinds of Farm Buildings.
III. The construction of Roads.
IV. The Grubbing and Clearing of Old Woodlands, Enclosing, Fencing, and Reclaiming Land.
The Landowners by whom any of these Improvements may be executed are—Tenants for Life, Trustees, Mortgagees in Possession, Guardians, Committees of Incompetent persons, Married Women, Beneficial Lessees for Lives or for a Term exceeding 14 years, Corporations, Ecclesiastical or Municipal, Incumbents, Sequestrators, Charitable Trustees, &c.
The Owners of Estates not entailed, who may be desirous to avoid the expense or inconvenience of a Legal Mortgage, may also avail themselves of the powers of the Company's Act to charge their estates with an outlay in improvements.
In all cases the whole cost of the improvements, with the attendant expenses, may be charged on the Estate, the term for Building Works being limited to 31 years, but for all other improvements being capable of extension to 50 years.
No investigation of title being required, and the charge not being affected by Incumbrances, no legal expenses are incurred.
Operations under the Company's Act are divided into two principal branches; one where the Landowner designs and executes the improvements by his own Agent and merely requires a loan from the Company to charge the Estate,—the other where the Company undertake the entire responsibility of the Improvement and obtain repayment by way of Rent Charge. In the first case the plans, specifications, and estimates prepared by the Landowner's Agent are forwarded to the Company to be submitted for approval to the Inclosure Commissioners. As soon as the sanction has been given the Landowner proceeds to execute the works, and the Company having conducted the business through all the official forms, complete the charge on the estate when the works have been passed by the Commissioners, and repay the Landowner the amount agreed upon.
In no part of the business is there any control upon a Landowner except by the Inclosure Commissioners. The Company never interfere, except at the special request of the Landowner or his Agent, and only to such extent as may further the objects he has in view.
In the other case, where the Company are required to execute the works, a report and estimate of the Improvement are sent to the Landowner, and having been approved, the plans are then prepared and the works—either submitted to public competition or entrusted to their own staff—are carried on to completion, and the amount of the actual expenditure only, approved by the Inclosure Commissioners with the Company's agreed commission and the Commissioners' expenses, finally charged on the Estate for the term fixed by the Landowner.
The Company also execute Drainage and all other Works of Land Improvement on Commission for the Owners of Estates not Entailed who may wish to charge the outlay on the property through the simple and inexpensive process of the Company's Act.
Applications to be addressed to WILLIAM CLIFFORD, the Secretary, at the Offices of the Company, 52, Parliament Street, London.

AGRICULTURAL MACHINERY.
E. R. AND F. TURNER, Ipswich, manufacture Prize Mills for Crushing Corn, Seed, Malt, &c. ; Portable Grinding Mills, Steam Engines fixed and portable from 2 horse-power and upwards ; Threshing Machines, Chaff Cutter, Oilcake Breakers, Horse Gears, Saw Tables, &c., all of a superior description and adapted for Home, Colonial, and Foreign use. Illustrated Price Lists sent free on application.

IMMEDIATE ORDERS WILL PREVENT DISAPPOINTMENT.
"SIGMA'S" UNIVERSAL SEED PLANTERS (Dibbles), vastly improved since the Prize of the Royal Agricultural Society was awarded them. The "MULTUM IN PARVO," forming eight perfect implements, highly commended, see testimonials. The Manure Distributor carried off the Prize Medal in 1851, recently much improved, see *Gardeners' Chronicle*, July 30 and August 6th. "Simple, promising, and ingenious." The STEEL DRAW SHAVE HOE clears a row between Turnips at one sweep. Engravings sent.—C. POWELL, Hurstgreen, Sussex. All Patented.

FOWLER'S PATENT STEAM PLOUGH has gained the following prizes :—
The Royal Agricultural Society's Prize, at Warwick, July 1859, 50*l.*
The Royal Agricultural Society's Prize, at Chester, July 1858, 500*l.*
The Highland Society's Special Prize at Stirling, Oct. 1857, 200*l.*
And at other Agricultural Meetings in the United Kingdom, Prizes amounting to 175*l.*
For further particulars, prices, and Catalogues apply to JOHN FOWLER, JUN., 28, Cornhill, London, E.C.

SHAW'S TIFFANY is universally acknowledged to be the best, neatest, and cheapest material for shading Conservatories, and other Hothouses. Effectually securing Plants from the scorching rays of the sun, without obscuring the light. Also, for protecting the Bloom of Wall Trees from spring frosts, and Fruit from birds and wasps. Sold in pieces.
No. 1.—20 yards long, by 38 inches wide, 5*s.* per piece.
No. 3.—Double strength, 18 yards long, by 39 inches wide, 7*s.* 6*d.* per piece.
No. 4.—Treble strength, 18 yards long, by 39 inches wide, 9*s.* per piece.
A liberal allowance to the Trade when ten or more Pieces are taken.—JOHN SHAW & Co., Princess Street, Manchester.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, London, S.
Principal—J. C. NESBIT, F.G.S., F.C.S., &c.
The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.
Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

EDINBURGH NEW VETERINARY COLLEGE.—Her Majesty has been graciously pleased, under her Royal Sign Manual, to place the New Veterinary College under the operation of the Charter of the Royal College of Veterinary Surgeons, and to "will and declare that the persons who now are and may hereafter become Students of the New Veterinary College of Edinburgh, and shall pass the Examination prescribed by the said Royal Charter, shall be Members of the Royal College of Veterinary Surgeons, and shall be entitled to all the privileges given to such Members by the said Charter."
Moreover, at the last General Meeting of the Highland and Agricultural Society, it was resolved that Students educated in any Veterinary College in Scotland, authorised by Government, shall be eligible for Examination for the Highland and Agricultural Society's Veterinary Certificate.
The WINTER SESSION for 1859–60 commences on November 2, on which day Professor JOHN GAMGEE will deliver an INAUGURAL LECTURE, at 2 o'Clock precisely.
Prospectuses may be obtained, and particulars as to Fees, &c., may be learned on application to Professor JOHN GAMGEE, New Veterinary College, Edinburgh.

MANCHESTER AND LIVERPOOL AGRICULTURAL SOCIETY.
The ANNUAL SHOW of HORNED CATTLE, HORSES, SHEEP, PIGS, POULTRY, VEGETABLES, SEEDS, ROOTS, IMPLEMENTS, &c., will take place at Liverpool on THURSDAY, the 8th, and FRIDAY, the 9th September. Premiums amounting to nearly 1100*l.* will be competed for. (Entries close on August 20.)
On WEDNESDAY, the 7th inst., there will be a PUBLIC TRIAL of COMBINED REAPING and MOWING MACHINES, and of CULTIVATORS, &c., on Farms near Liverpool; commencing with the Reapers, at 11 A.M.
T. B. RYDER, Secretary.
2, Elliot Street, Liverpool, September 3.

STAFFORDSHIRE AGRICULTURAL SOCIETY.
STOKE-UPON-TRENT MEETING, 1859.
The POULTRY EXHIBITION in connection with this Society will take place on WEDNESDAY, September 14.
Prize Lists and Certificates of Entry may be obtained on application to WM. TOMKINSON, Secretary.
Newcastle-under-Lyme, Sept. 3.

The Agricultural Gazette.

SATURDAY, SEPTEMBER 3, 1859.

MEETINGS FOR THE FOLLOWING WEEK.
THURSDAY, Sept. 8 } Manchester and Liverpool Agricultural
FRIDAY, — 9 } Society at Liverpool.

A SERIES of questions relating mainly to the value of agricultural labour in Ireland has been issued by the Royal Dublin Society, answers to which are requested from any who may be able and disposed to state experience on the several subjects specified. There can be no doubt of the value of the information sought; and we cordially hope for the success of this effort to obtain it. The questions may be obtained by an application to the Society, and the answers must be returned before the end of October to Dr. STEELE, Secretary.
Though convinced with the Society that the information desired will be of advantage to the community, we are bound to add that we do not expect it will be thus obtained. Having had considerable experience in procuring and tabulating information on agricultural experience obtained by means of circular inquiries, we know that unless the questions put admit of the simplest and shortest

possible answer—unless they be few and direct, needing no calculation or research, they will not be answered. But here are nearly 200 questions, and many of them most difficult and abstruse, relating too, not directly to the case of the farmer questioned, but to his experience per 100 acres, and needing lengthened thought and calculation and research. We do not hesitate to say that the time of any one who is competent to answer all these questions is worth at least three guineas a day, and it would take him a week to treat them with any kind of justice.

Let us not however add, by any further objection, to the undoubted difficulty of the undertaking. The Society would in our opinion have done better, if they had directed the attention of their correspondents to one section at a time of the large field on which they have entered; and the questions on it should have been both simpler and fewer; but if any one is disposed to help them in the execution of the plan they have adopted, he can do so by applying for the questions issued at the office of the Society, Dublin.

GRENVILLE *v.* BRIGGS & Co.—This action, which was lately tried at Wells Assizes, is so full of interest that we are induced to lay before our readers an abstract of the proceedings with a view to a few comments upon the whole matter.

It would appear from the evidence that the Messrs. BRIGGS & Co. have sold to Mr. GRENVILLE a quantity of Rape-cake as FOOD for cattle, the result of using which is that four cows partaking of it all die or are obliged to be killed in the short space of 24 hours. The veterinary surgeon who examines the beasts pronounces that they have all died of inflammation, and the chemist (Dr. VOELCKER) who analyses the cake finds it to consist almost entirely of Mustard, and indeed is so pungent as to have blistered his assistant's arm by the application of it in the shape of a poultice. The Professor's evidence is confirmed by Mr. HERAPATH, who states that having examined the cake under the microscope he found it to be composed almost, if not entirely, of Mustard.

Scientific evidence of this kind is further strengthened by the information of an eminent practical farmer who informs the jury that four years ago he had two bullocks killed by Rape-cake (?) which also proved to be full of Mustard, and that the party who supplied it paid a compensation for his loss.

For the defence it is stated by Mr. BRIGGS that the cake in question was made from Indian Rape, which contains the same volatile oil as Mustard, and he considered it good as a stimulant. On cross-examination he admits that Mustard-cake is made upon the same premises, but kept up stairs separate. He has never had any complaint, although he has sold many hundred tons of Indian Rapecake. This evidence is fully confirmed by other seed-crushers, all of whom admitted that a large amount of Indian Rape-cake is sold as cattle food.

From testimony of a like kind from Prof. WAY and others it was thus attempted to show that the article sold was Rape-cake, but with the prefix of *Indian*, from which we suppose the defendant would have it inferred that if Indian Rape did not act the same as other Rape the fault was none of his.

The ruling of the Court was that if the jury thought that the animals died of the cake the plaintiff had reasonable grounds for a verdict as the defendant had not fulfilled his contract, but if the jury were of opinion that the animals died from any other cause then the verdict must be for the defendant.

That the verdict was for the plaintiff will not excite surprise, and in a legal point of view the result of this trial is of great importance.

We would now, however, glance at the evidence as to the nature of the cake in dispute and upon it we would remark that there can be but little doubt of the fact that honest Rape-cake is a really wholesome feeding material and does not contain the stimulating qualities of the so-called Indian Rape; the question, therefore, is—what is this Indian Rape? We have reviewed it before in this Journal as having been offered—a common commercial article—as "good for mixing." Yes, good for mixing with, *i.e.*, adulterating Turnip seed. We have procured some of it in order to make out what kind of plant such seed might develope, but NOT ONE SEED COULD BE GOT TO GERMINATE. Indian Rape then is *prepared* for the seedsman. It seems to be an article of extensive commerce with the seed-crusher, and its cake is proved both by a microscopic examination, as well as by its peculiar pungent qualities, to be that of a Mustard, a circumstance which can readily be demonstrated by making a paste of some of the seeds themselves or of a portion of the cake by means of a little luke-warm water, when in a short time, varying from a few minutes to two or three hours, the peculiar pungent odour of Mustard is fully developed.

We incline from these facts to a belief that to call this Rape is a misnomer, which, if expressed with a guilty knowledge, is simply a lie purposely to defraud.

We have shown that Charlock, which is far too much grown with English crops, now finds its way into the market and is an article of commerce with the dishonest seedsman, who finds this also *good for mixing!*—no less than with the equally culpable and disreputable seed-crusher, and though the cake resulting from this may possibly be kept in a separate room we may safely predict that it does not stay there always. Again, that it is simply put aside in this separate room merely to occasionally add its quota to the pollution of the Thames is hardly tenable, or why go to the trouble of storing it at all?

But no, it can be turned to a profit. Farmers, good trusting men, don't examine these matters critically. A cow or two may occasionally die, but then, as the traditional doctor is made to say if they die, Nature kills them. That deaths often take place from improper food we have little doubt, and we can easily see how an isolated case may occur, if we suppose that some of the cakes from the separate room are *got off* by putting a few of them with even an otherwise genuine lot of Rape-cake.

That the article under the name of Indian Rape is one in great and constant demand by the seed-crusher the evidence on this trial has fully established; that the cake made from it is much used, not however with the avowal that it is anything but really good Rape, there can be no doubt. We believe this Indian Rape seed to be trash, very different in its species and in its effects from genuine Rape seed, and therefore the conclusion is obvious that in purchasing the immense quantities of this, which farmers are reported to do, they have an inferior or fictitious article palmed upon them for a genuine one, with a like result in this as in other cases of adulteration, viz., an increase of profit to the vendor. It therefore behoves the consumer to look well about him in this matter, and so to be cautious how he makes his purchases of Rape-cake; for although there may be a remedy by an action at law, yet we know that this is at best a tedious and unsafe, because uncertain satisfaction.

WEXFORD AND WATERFORD.

FROM the end of April to the end of July, 1859, no rain has fallen, excepting some of a few hours' duration on the 20th June, and a light shower on the 2d of July, in the south-east portion of the county of Wexford. Since the year 1826 no such drought has occurred in the district to which I am referring, and it must be added the want of moisture throughout the adjoining coast line has been subject of lamentation; in no quarter within my knowledge has the want of rain been so remarkable as here. In the interior of the county within the influence of the mountain range some fertilising showers have dropped at seasonable periods, but this—the best Barley district within a very extended area—has not been so favoured by Providence. Neither Mangels, nor Swedes, nor Carrots have even germinated on our farms. Potatoes could not be generally planted until May, from the bad condition of the heavy loams saturated with the previous long prevailing rain—and the subsequent drought has in many instances prevented their free vegetation. Late sown Barley has miserably failed, and generally the straw will be short, even though the cast of grain may prove reasonably good, which it probably will be on favourable soils, and after early sowing.

The Tawny or Dun Winter Oats have succeeded marvellously on all sorts of soils, though the spring sorts have failed. Wheat promises well; Beans likewise—seldom better. The hay crop has been short. Pasturage is dried up. Cattle and sheep are in present difficulties, and seem to be ruminating seriously as to the results to them of what is likely to be a general failure of green crops. Water is very scarce in many places, and lambs are said to have died from want of drink, and I know that some have frequently rushed to a pond in order to satisfy their thirst. Violent thunderstorms have occurred elsewhere in Ireland, but none here. May not this fact be assigned as the presumptive cause of the uncommon healthfulness of our Potato crop? We have not heard of or seen this season even a single case of plague-stricken haulm, ear, or tuber. Although the amount of produce will be greatly below that of last year, the quality of the tubers will be excellent. Potato sets planted early and on dry friable soil properly treated in all respects will be however of more than average yield; but neither our soil nor the spring season favoured my locality (with some exceptions) with the necessary facilities. The variety generally cultivated here attains an early maturity, and the season is now too far advanced to allow ground for hoping that future showers will cause the tubers to become much larger than they now are.

The Turnip crop has totally failed, and very few Mangels are to be seen. I had sown some of the latter between the 17th and 20th May, the seed did not vegetate at all. On the 25th June, I sowed Purple-topped Turnip seed on the same drills, and with the aid of a mechanical friend I constructed a watering machine. The old hind-wheels of a worn-out mail coach, an axle, a whiskey puncheon pronounced unfit for service in a distillery, and a 10 foot treble Deal, with a few trifling pieces of timber, were the nearly entire materials.

The shafts are 10 feet by 3 inches thick, the bolsters (3 feet 9 × 5 × 3 inches) rest on the axle casing. A pair of transom pieces 6 feet by 3 feet 4 inches long, are hollowed to fit the curvature of the puncheon; 4 iron bolts ½ inch square, with screw nuts (under) secure the transoms; and 4 other bolts of the same thickness secure the shafts and bolsters on the axle. A small trough pierced with holes (burnt out to keep them clear for the liquid) to suit the distances at which the drills and plants are apart, extends across behind, suspended from the shafts by slips of timber. The bottom of this trough is divided by a cross-board in the centre, and inclined from the middle to each end; each division has its own wooden cock or spigot supplying the liquid to it.

When the riders, as commonly is the case, are placed on the top of the shafts instead of being, as here, under them, the height of the barrel is dangerously high for such concentrated weight, and inconvenient as regards the labour of lifting water to fill it. By lowering the bolsters this work is lightened, and with ordinary care there is no danger of upsetting the vessel on surface inequalities.

The waterings, though given at a late hour in the evening, and applied three or four times, proved useless. The moisture was soon evaporated, the surface dried up; the work of re-sowing (with some late sort) must be recommenced whenever we shall be favoured with rain. Ordinary watering, though copiously and frequently in my garden, has proved almost a failure also. I have not obtained thereby even a dish of Turnips. In one respect the cart has I believe been serviceable; I have used it for watering Potato drills 120 yards long. Four cart-loads of water easily watered 32 drills in each evening (from half-past 6 to 9 o'clock). Thus the entire piece was watered in two evenings; by repeating the process the crop has been watered twice in the week. The most decided effect was observable after watering, when the moulding plough immediately followed the water-cart. By this means the water falling from the machine was prevented from sudden evaporation, and in a great measure absorbed by the plants.

Desirous of examining the state of the crops and the general aspect of the interior of the county of Wexford on the west, I drove across the range of rocky hills termed the mountain of Ferth, from some geological reasons beyond my depth, though it is barely 500 feet above the sea level.

Reaching the poor and bleak hilly country about Adamstown, I was surprised to see that Oats and Potatoes were looking so well; they had evidently had some rain; but unless where a "bit" of undrained bog land in some valley presented pools or dykes of water, the cattle were in a pitiable state; the owners not compassionating their sufferings under a scorching sun, with tormenting flies buzzing about and stinging them, and keeping them under a shed or some protection. This however would increase the hungry sensations of the poor animals, for whom there was no green fodder to be obtained. Immediately about Clonroche, if the soil be light, it is not infertile, owing to the care bestowed upon it. Many of the tenants of Lord Carew hold large farms, and till and keep stock on a corresponding scale. From the condition of some of these farms it may be inferred that the occupiers have beneficial interests in them, and are, as they deserve to be, sufficiently independent. Two or three Scotch farmers have settled near Clonroche, and are among the best examples of good farming. This part of the country is extremely interesting from the extent of woodland, the respectable appearance of farmers' homesteads, and especially from the grandeur of scenery about Lord Carew's beautiful grounds and mansion-house, and the newly created demesne and architecturally tasteful house of F. Bruen, Esq., on a mountain slope.

The fertilising properties of calcined limestone are fully appreciated in the districts through which I was then passing. The quarried stone is frequently carried from the vicinity of New Ross to farms at a considerable distance, on which small kilns are built to calcine the lime on the farms to which it is to be applied. This obviates the difficulty of carting the calcined lime in rainy weather, when its causticity and tendency to expand in bulk are such inconvenient and even dangerous impediments to its conveyance from place to place. By far the greater portion, however, is calcined at the numerous kilns of Ballyanne. This village is but a short distance from the bridge at Ferrymount Garret, and within two miles of New Ross; and also on the high road leading from this beautifully situated and thriving town to Newtown Barry there are 16 boats of 15 tons burthen constantly employed in bringing the stone from quarries between New Ross and Waterford. The average quantity of limestone annually delivered by them at the Ballyanne Quay, to which a very short canal from the river Barrow gives approach, is about 30,000 tons. This, however, is an inconsiderable portion of the whole quantity used. Much is

brought into the north-west part of the county of Wexford from Ballyellin and other contiguous parts of the county of Carlow by heavy land carriage. One of the anticipated benefits derivable from the extension of the railway from Bagnalstown through Borris in the latter county by Ballywilliam in the other, and onwards to Wexford, will be free railway access to the inexhaustible limestone quarries of Ballyellin, from a very large and poor district on the western side of the county of Wexford, stretching from 15 to 20 miles east and north of Ballyanne. At the southern extremity of the mountain range separating these two counties, at the elevation of 300 feet above the Barrow, the line of railway communication is being made. When this shall be extended towards Wexford there will be a two-fold supply of lime, viz., from the county of Waterford—by water as at present—on the south, and from Carlow on the north, readily available to the bleak and poor parts of the barony of Bantry. The railway station for this object will be about five miles north of Ballyanne. The very large estate of Lord Carew, and some minor not unimportant properties will be much benefited by this railway.

Passing along the hilly tracts and very inferior soil about Adamstown, and from Clonroche to Ballyanne by an excellent coach road, of which eight miles of the 13 intervening between Clonroche and New Ross are very dreary, and dispiriting to the eye of a farmer, or of a traveller in search of the picturesque, I was surprised to see the winter Oat crop in such good condition. Some was being reaped, and the quality of the grain unobjectionable as in any previous year.

From Ross to Waterford a steamer leaving at 8 A.M. bore me along the beautiful, and in some parts very deep and widely expanded river, which has a course of 24 miles downwards. This boat plies every day, Sundays excepted, and leaves Waterford on the return trip at 4 P.M. It carries to Waterford large supplies of cattle, sheep, pigs, and poultry. That city is not only the soul of Waterford county but in a great measure that of the counties of Wexford and Tipperary also. It receives from Clonmel vast quantities of grain and other food for human consumption, and the manufactured calicoes from the vast establishment of the Messrs. Malcolmson at Portland, on the banks of the Suir, a manufactory to which I shall in my next communication more particularly advert. For the present it is enough to state that the export trade from Waterford in agricultural produce during the year ending April 30, 1859, has been as follows:—Bacon, 87,091 bales; firkins of butter, 240,181; Oats, 203,233 bushels; pigs, 87,881; cows, 5225; sheep, 23,277.

An increase will appear in the ensuing year, if we may judge from the exports from May 1st to July 9th of the present year:—Pigs, 11,698; cows, 6221; sheep, 8337; boxes of fish, 1159; packages of poultry, 1372; cases of eggs (2 cwt. each), 2994. *M. D.*

MACHINES, CROPS, AND CATTLE FOOD.

AT the late annual meeting of the Yorkshire Agricultural Society, the President, Lord Herries, referring to the progress of the past 20 years during which the Society has been at work, referred to the implements of the show-yard—"Twenty years ago the tile machine was the most attractive part of the implement yard; while it worked its way, and by cheapening the price of tiles, this machine has been the cause of draining a vast extent of country which would not have been drained. Again, the engineer's skill introduced the portable steam-engine; what benefit has that not been for the country at large? The machine we have seen in the show-yard which has come rapidly into use—the reaping machine—what advantage will it not be on crops where labourers are difficult to be procured, and where bushels and bushels would have been wasted? The same may be said with respect to all others, but there are too many for me to name. There is everything in these show-yards which would tend to the improvement of agriculture in every way, and the increase of the engineering department of the country. I am sure when we look back to the past we must feel gratified and satisfied that we have done our utmost to promote the interests of agriculture."

Mr. H. S. Thompson, of Kirby Hall, said: "Those who, like myself, have been present at the earlier meetings of this society, can recollect the very wonderful changes that have taken place, and to the best part of them Lord Herries has called your attention. I believe, however, that we are on the eve of improvements quite equal to those which have taken place since the time when Turnips and Clovers were introduced, and turned light blow-away lands into the most fertile sort of agricultural lands. Now I believe that the great clay districts, the great expanse of clay in the middle of which Hull stands, eastward into Holderness and northwards towards York, are about to be improved. I believe that we are on the eve of as much improving as we were when we changed from growing sands into the most fertile sheep farms. The great drawback to the cultivation of clays is the difficulty of growing sufficient food to keep the stock upon it. Now we have, by finding out the right way of growing Mangel Wurzel, at the same time found out to grow a large quantity almost unfailingly. I have been trying for some years past this cultivation, and last winter on clay land, with only three nights' frost—which was all we had last winter—we got a very good crop with only one ploughing, which I have done, and I think I have a right to show that this is the turning point in our being able to grow Mangel Wurzel upon a stiff clay. In ploughing up clay we sometimes meet with this difficulty—that it has to be done in a very short time—and upon farms which chiefly consist of clay hat cannot be done by the ordinary force of the farms. Then comes to the rescue that great power of steam, and I believe that upon these level tracts we shall very shortly see steam brought into regular use in the autumn ploughing of clay. I don't like prophesying, but I do not hesitate to express my entire conviction that, in a very few years, you will see almost universally the use of steam cultivators, perhaps not in the hands of each farmer, but hired and used upon all clay farms for the autumn ploughing of these lands. By this means I believe that most crops may be grown the following year, and that, too, effectually and economically; and, as I said before, I do believe that we are going to effect a great revolution in the cultivation of strong clays. In regard to light lands, I may mention a small point, which is the introduction of a new plant for blowing sands. It is but one of many which we are now making in the best beginnings of improvement. Where I find Clovers will not grow, I grow Lupin, which is an exceedingly good sheep feed, and of which I can grow a sufficient crop after the roots have failed. The Lupins then produce a crop for sheep food, and nothing is a better preparative for corn. This is a very valuable crop for what is almost a hopeless sort of soil."

Mr. Heneage, of Lincolnshire, said: He had been very much gratified with the very splendid show of stock in the yard, and he thought it had been well said by Mr. Thompson that they were on the eve of great improvements. He was also of opinion that clay lands might be made to pay, and he trusted that before many years had elapsed there would be a very small portion of strong lands in which Turnips might not be grown as well as Mangel Wurzel. With regard to reaping machines, he considered that Burgess and Key's would suit the large farmers, and that manufactured by Mr. Cuthbert, of Bedale, the small farmers. As to drainage, it had not yet been sufficiently applied all over the kingdom, but they had ascertained the depth at which land could properly be drained. All, however, could not drain land exactly in the same manner; but in order to do it properly, according to the locality, a farmer must make use of his own eyes and his own experience. He thought it advisable, in drainage, to cut off the water from the springs; and with regard to food, he had been told by a practical farmer that cake made of the seeds collected from the Cotton plant would fatten stock very nearly as well as oilcake.

Mr. Alderman Blundell, as a seed crusher and manufacturer of oilcake, wished to make a few observations upon what had fallen from Mr. Heneage. He quite agreed with that gentleman that Cotton seed, when they could get it in a certain state, was very fair food for cattle. He had spent nearly three years in the backwoods of North and South Carolina, and had become intimately acquainted with the use of the Cotton seed. Where they had that seed in excess, they were in the habit of using it in winter, when the cattle are starving and scarcely sufficient food can be found for them, even with Maize. The seed was boiled in water, and given with the leaves of the Maize. They are mixed up together, and given to the cows, which are kept in a tolerable state of health in the winter. The seed had the effect of causing heat, and where there is not a proper supply of water, cattle suffer from too large a use of Cotton seed. Where it is grown, it is of a very different character to that collected in Egypt, where it lies in heaps and loses those mucilaginous and nutritious properties which it inherits in its pure state. He thought that when tried it would be found that 1 lb. of Linseed-cake would do far more good than 3 or 4 lbs. of Cotton-seed cake. It was not a very safe thing to keep on their premises, for if it was left in a moist place it was liable to ignite.

Mr. H. S. Thompson said that, with respect to the Cotton seed, he might state the experience he had had with it for feeding purposes, He had used Cotton-seed cake and the best Linseed-cake in the feeding of from 70 or 80 head of cattle, during the last winter, namely, cows, feeding beasts, and store cattle, and he used a good many tons of the Cotton-seed cake during the period he had mentioned. Those cattle which had been fed with Cotton-seed cake and those which had been kept upon Linseed-cake in equal quantity were equally good for the butcher. He was, however, only speaking from his own experience when he said that the Cotton-seed cake was available for feeding cattle, and it was only good when a fine sample of it could be obtained. The cake should not be made from the whole Cotton seeds, because the husk of the Cotton seed is hard and woody, and dangerous to feed cattle upon; many deaths of animals have occurred in consequence of its use. Farmers, in using Cotton-seed cake for their cattle, must be careful in procuring a proper description—the shelled Cotton-seed cake; but he hoped they would not purchase it in very large quantities, because he would perhaps not be able to buy it for his cattle next winter.

Home Correspondence.

Steam Cultivation.—In your publication of the 20th inst. there is a letter from Mr. C. Burcham on steam ploughing, in which he mentions a plan of his own, the nature of which is not sufficiently explained by him to render it comprehensible to a stranger. I am led however to think from what he does state, that his plan like all the others, with one exception, embraces ploughing only, and in that case, whatever may be its merits, in other respects it will like the rest prove a failure, so far as economy is concerned, and also as not approaching that comprehensive mission which steam power has to fulfil in husbandry, as well as in every other industrial employment. The writer has also referred to the "Halkett guideway" system, which, after praising, or rather "damning with faint praise," he condemns with the rest for that which constitutes the essence of the system, and upon which its utility entirely hinges, viz., the railway. Having paid a great deal of attention to the subject of steam culture (although not an engineer nor in any way whatever connected with either Mr. Halkett or any other patentee), and having particularly made myself thoroughly acquainted with the practical bearing of Mr. Halkett's invention, I have arrived at a totally different opinion from Mr. Burcham, and if you will oblige me with a sufficient space in your pages, will tell you upon what grounds it is formed. The question now in course of solution, I conceive, is, whether the processes of husbandry are or can be made amenable to the same laws of mechanical power, and especially steam power, as are applied in manufactures and other branches of industry. In determining this question it will be necessary to divide the industries into two distinct classes, the first of which embraces those in which the raw material is brought to the power, the second in which the power is brought to the raw material. Under the first class we place every kind of manufacture, whether textile, such as cotton, silk, linen, woollen, &c., or mechanical, as turning, nail, pin, needle, &c., making, with a hundred other operations formerly done by hand, and in all of which the steam power is fixed, and the material brought under its influence by the working machinery. The second class embraces those branches of industry in which the power becomes locomotive and is brought to the material that is to be worked upon, as the road, the water, and the land. It is with this class only that we have at present to do. The application of steam power in the first and second of these branches has now for many years been successfully carried out, as it has also in every branch of industry in the first class; and it is only in the case of the land that any difficulty now remains, although, before the railway system was adopted, a similar obstacle presented itself but was sooner overcome. The only question, therefore, that remains to be solved is, what obstacles present themselves to the application of steam power to the land on the same principle as has been applied to the road? So far as I can judge by Mr. Burcham's letter, he objects to the Halkett system on account of the expense of laying down the rails; but the system is an impossibility without them, and therefore he concludes the plan is withdrawn, or has broken down. I believe he will find himself mistaken in this; but that is not the question. I ask him what was it that induced the projectors of railways to expend from 10,000*l.* to 50,000*l.* per mile upon railways, and to carry out the system until the whole country is intersected with a network of rails at an outlay of 400 millions sterling? He will reply, because the projectors and shareholders were convinced that it would reduce the expense of travelling, and eventually pay them for the outlay. The result has proved that, in the main, they were right, although some lines have been attended with a loss; not however because of the failure of the system, but from the extravagance and cupidity of those concerned in their construction. Now the Halkett system will involve an outlay of 20*l.* per acre for laying down the rails; and when the facility this will afford for performing all the operations of husbandry at an average cost of only one-third of the present outlay of a farm, I ask what is to prevent its answering the purpose to carry out the system? I can find no difference whatever between the condition of the roads and that of the land. Both are the raw material to which the power of steam must be brought before it can be applied. Gurney's & Hancock's steam carriages for the common roads and the various steam ploughs now before the public are upon a par, and are both, in my opinion, mistakes. The railroad which fulfils every operation that was formerly carried on upon the old turnpike roads, at less than one-third the expense, is now the almost exclusive mode of locomotion, whether for men and women, cattle or goods; and when the full mission of steam power in agriculture is accomplished, it will embrace every operation of husbandry, and not, as in the case of the steam coaches of Gurney & Co., one only. But the expense; ay, there's the rub, or rather the bugbear. Does Mr. Burcham know that many farmers expend as much as 10*l.* per acre on drainage, which does not cheapen a single operation of husbandry? But it increases the produce and renders the land workable at times when it would not otherwise be possible. Now the Halkett system will not only do this to a far greater extent, but it will cheapen every branch of labour that is done on the farm, besides enabling the husbandman to do the work, upon a press, by night as well as by day, and thus concentrate the power upon any given operation. Why a "lot of ploughs" cannot be carried on a rail over a farm, as well as "on a railroad to Birmingham," I am at a loss to conceive. Has Mr. Burcham ever seen the guideway at Kensington? His opinion is certainly at variance with that of a great number of the first engineers and other scientific gentlemen in this kingdom, as well as out of it

Whether he is an engineer or not I cannot gather from his letter; but I am quite sure that if his own system embraces only one operation of husbandry, like those now before the public, it will go "to the tomb of all the Capulets" before the Halkett system. To conclude: I believe it may be laid down as an axiom, that no system of steam agriculture that does not, like the railway, supersede every other power and perform every operation of husbandry, can be rendered economic, or will ever become general; and that, at whatever expense, this can only be provided by adopting the rail, by which a basis is obtained that will enable steam-power to fulfil that mission it has so universally accomplished in every other branch of industry. *Agricola, London.*

Societies.

ROYAL AGRICULTURAL OF ENGLAND.

[We resume our reference to some of the stands of implements at the Warwick meeting.]

At Stand 77 Messrs. Barrett & Exall, of Reading, exhibited steam engines, horse power chaff-cutters, grain mills, hay-making machines, horse rakes, and broadcast sowing machines, endless saws, &c. Their patent safety horse gear has all its working parts inclosed in a cylinder, so that no harm can come *of* it or come *to* it. Upwards of 3000 have been sold. Their drum beaters for threshing machines are perforated at an angle of 45° from the spindle, enabling, so it is said, the air drawn in by its revolution to escape the more easily, and thus avoiding waste of power.

A farm gate was exhibited (78) by Mr. Betteridge, of Wellsbourne, near Warwick, made of Oak, the top hanging so placed that the back and the top bar each take a portion of the weight, and so made that by turning this top hanging it can be raised or sunk at pleasure.

— (79.) Messrs. Clarke, of Sheffield, showed another gate.

The improvements of this gate consist in making those parts which are known as the head and heel in two pieces each instead of one. The bars are placed between the pieces which form the head and heel, and are fastened with screw-pins: the object of this plan is—if in case a bar gets broken, a new one can easily be replaced, by removing the pins on that bar, without removing the head and heel, which has to be done in other gates. It is also fitted with an improved bottom hinge, so as to prevent the gate from dragging, which is frequently the case after hanging some time. It can be easily raised by any labourer by shifting the nuts, so as to increase the length of the hinge and prevent the head wearing away. Price 1*l.* 2*s.* 6*d.*

— Cooch of Harleston exhibited (80) his well-known seed-dressing machine. A great display of articles of domestic economy appeared at the next stands—Roberts of Northampton, and Flavel & Co., of Leamington. At stand 83 Messrs. Garrett, of Saxmundham, exhibited clod-crushers, threshing machines, mills, steam engines, corn-drills. Their threshing machine is unusually compendious and compact, owing to one winnower instead of three as heretofore being used to throw a blast in the three different places where it is required.

This machine is intended for being worked by a 5-horse power engine, and is fitted with drum 54 inches long; the winnowing and screening apparatus in this machine is on an entirely novel principle, whereby the size and weight of the machine are reduced more than one-third; and only one-third of the ordinary spindles, bearings, and pulleys is required for the efficient performance of the various operations. The pressure of the blast employed for chaffing and winnowing the corn is regulated by valves, under the direct control of the attendant, and readily adjusted to the different kinds and conditions of grain. Price 85*l.*

There is a large competition in farm gates owing to the offer of a special prize by the Local Committee. Mr. Palmer, of Hargrave, Hunts, exhibits a very long and effective one.

Very light and strong, 11 feet long, to admit Burgess & Key's reaper; constructed on the lattice or diagonal principle, each piece acting in the direction of its length, there is consequently no cross strain on any of the timber, and the usual heavy wood, with mortise-holes which admit the weather, is dispensed with. The upper eye is furnished with a screw, by which the gate can be raised or lowered as the spring fastening requires. It is stiffened laterally by the capping which surrounds it. Price, with posts, fastenings, and lock, complete, 1*l.* 4*s.*

Bray's traction engine was exhibited at stand 85. It is manufactured to go at two speeds, 2½ and 5 miles an hour respectively, costs from 678*l.* to 875*l.*, and is capable of drawing 20 to 40 tons on common roads.—Heywood, of Derby, exhibited (86) steam engines, threshing machines, &c.—Holmes, of Norwich, showed drilling machines, manure distributors, saw benches, &c.—(90) D. Prosser, of Harescomb, near Stroud, Gloucestershire, exhibited an iron pig trough.

Instead of being open from end to end, or fitted with immoveable partitions, this trough has moveable partitions, which can be shifted at pleasure, to give more or less room between each, as may be desired. It is convertible into three different sets of spaces, whereby each class of animals can have a special area provided so as to suit its requirements exactly, which prevents them putting their feet in the trough. By this arrangement the food is economised to a considerable extent, and enables nearly double the quantity to feed together. Price 16*s.*

Messrs. Reeves, of Bratton, showed (95) their drills for dry and liquid manure: the latter will drill any thick manure from cattle sheds, &c., or any artificial manure mixed with water. The quantity can be varied from 2 to 10 hogsheads per acre. It is fitted with three of Chambers's patent drop levers, for dropping the seed and manure in bunches at different distances, or running it continuous. Price of drill without the droppers, 26*l.*; Chambers's patent drop levers, 2*l.* 15*s.* each.

Richmond & Chandler exhibit (96) their well-known chaff-cutter with newly patented improvements. The steel mouth-piece is an improvement deserving attention; being harder than the knives it is not, as in other machines, worn away by friction, but offers always a straight sharp edge for the knives to cut against. The rollers have been improved, and the whole machine remodelled and simplified—every movement being obtained in the most direct and mechanical manner. (97) Smith of Kettering shows winnowing machines and horse-hoes.—Tasker, of Andover, shows threshing machines, steam engines, &c.; and ploughs, with their arrangement for allowing independent motion to the wheels at the plough beam.—Wallis & Haslam, of Basingstoke, exhibit steam engines, threshing machines, straw elevators, corn screens (Boby's patent), Barley hummellers, &c.—Ball, of Rugby (101), exhibits the ploughs invented by W. Ball of Rothwell.—Bentall, of Maldon, exhibits a great variety of tillage implements, including of course his harrows and his broadshare.

The former are made of iron rolled especially for the purpose, and which is of the description known as double-angle iron. The object obtained by this is, that, with the exception of pointing the teeth and rounding for the screw, these harrows are made entirely by machinery; precision of make and ease of duplication are thus ensured, and which could not be obtained on the ordinary hammer-and-tongs principle. This set covers 8 feet. A point of great importance in the construction of harrows is that the teeth should exactly fit the hole in the beam—that the nut should fit the thread of the screw, and that when the nut is screwed down it should always remain tight; this is effectually accomplished by the addition of a keep or guard riveted through the beam close to the nut. This set covers 8 feet. Price 3*l.* 13*s.*

—Cambridge, of Bristol (108) exhibits ploughs, his well-known roller, steam engine, and threshing machine.—Coleman, of Chelmsford (110) exhibits clod-crushers, cultivators, and Hanson's Potato digger, which is adapted for taking up Potatoes and other root crops grown in drills. The share passes under the roots, and at the same time the revolving forks throw the tubers on the surface ready for the pickers. With two horses it will raise from 3 to 4 acres per day without injury to the crop. Price 17*l.* 10*s.*—Comins, of Southmolton, exhibits his simple turnwrest plough and other tillage implements.—Cranston, of 11, New Road, London, exhibits Wood's well-known combined reaper and mower.

At stand 113 Messrs. Eddington, of Chelmsford, exhibited Mr. Fowler's draining plough, and received the Society's prize for it.—Goulding, of Leicester (117), showed their ploughs and cultivators, harrows, drills, and pulpers, &c.

At stand 126 Mr. Monday, of Carton Denham near Sherbourne, exhibited a clever but somewhat dear straw fabricating machine.

Combines straw or other fibres of any desirable thickness upon two or more longitudinal wires, and if saturated with liquid bitumen, makes a cheap and durable tile for sheds, &c.; or simply with galvanised wire, is a most economical material for expeditiously thatching ricks. Well adapted for brickyards and horticultural purposes, and forms an inexpensive and superior matting for omnibuses, damp floors, &c. Price, including royalty, 25*l.*

Hill and Smith, Dudley (128), exhibited tillage implements of all kinds, including their efficient paring skim, also mills and chaff-cutters and a great quantity of iron fencing and wirework.

Tuxford & Sons, of Boston (131), exhibited many steam engines, threshing machines, saw tables, and mills.

Mr. Williams, of Baydon, exhibited a 3-furrow one-way plough for steam cultivation.

Consists of a frame carried on two large wheels in the centre, and one small one at each end. Three right-hand and three left-handed lever ploughs are attached to the frame, each set with their heads towards the centre of the frame; a windlass is placed over the centre, so that when one set of ploughs is let down to their work, the other is taken up. Price 50*l.*

Messrs. Woods, of Stowmarket (138), exhibit mills, pulpers (4000 have been sold during the last four years), rakes, carts, &c.—Ball, of Bothwell, has a stand for his well-known ploughs.

— Barnards, of Norwich, show a root pulper.

The cutting parts are formed of cast-iron rasps, which (barring accidents) sharpen themselves by use, and can be replaced at a trifling cost. These machines are now so simplified that no gear-work is necessary. This size is adapted for one man, and will pulp a bushel of Mangel in 80 revolutions; or can be adjusted to be worked by one lad, or man and lad. Price 4*l.* 10*s.*

— The Busby Agricultural Implement Company, Bedale, show ploughs, horse-hoes, Turnip cutters, &c.—Cornes, of Nantwich, shows his well-known chaff-cutters, &c.—Eddy's (Exeter) turn-wrest plough at stand 152 gained the Society's prize for the best of its class — Ferrabee, of Stroud (154), exhibits steam engines, chaff-cutters, and mowing machines in large numbers. — Kensmare, of Leighton Buzzard, show threshing machines (159), corn drills, ploughs &c.—Romaine's steam rotary cultivator is exhibited at stand 162. It is stated to travel over the land and perform perfect spade husbandry, digging at the rate of about 6 acres per day, at a cost of about 7*s.* per acre. It turns in its own length, requires no assistance from horses, and only two men to work it, besides a man with horse and water-cart to fetch water. Price 800*l.*

Rickett's (Buckingham) steam cultivator is exhibited at 168.

It has two 8-inch cylinders, 22-inch stroke; the engines are placed beneath the boiler, propelling on both sides by pinion-wheels. The cultivator is driven direct from the crank-shaft by connecting rods, and has independent wheels or sledges for maintaining a uniform depth on uneven ground; it is raised and lowered at the end of the land by an hydrostatic piston, worked by a steam pump; and is arranged to cultivate to 10 inches deep, 2½ yards wide, 1 acre per hour. Is carried by small wheels, working within an elastic metal roadway, which increases the convexity and extent of the bearing surface, as to prevent any injurious compression of the soil. The cultivator is detached at pleasure. Price 750*l.*

Smith & Ashby, of Stamford (171), exhibit their hay-makers, rakes, chaff-cutters, &c.—Ransome & Sims, Ipswich, exhibit Fowler's steam ploughs, their ordinary ploughs, harrows, scarifiers, rollers, chaff-cutters, mills, root-cutters, &c. A very large assortment of implements.

Messrs. Howard, of Bedford (128), exhibit their well-known ploughs. We extract their description of one of them:—

"It is on the same principle as No. 1, but somewhat smaller, and recommended as a light two-horse plough, but strong enough for four horse. The handles and beams are made throughout in one piece, which effectually prevents their shaking loose, rendering them less expensive to keep in repair, and the accumulation of soil in the hinder part of the plough is avoided. The wheel fixings are strong and durable; the land wheel may be expanded as well as the furrow wheel, and the slides being now tightened in a line with the beam (a plan recently patented by the exhibitors), all objection to the wheel fixings becoming loose through wear is removed. Price 4*l.* 2*s.* 6*d.*; skim-coulter, 5*s.* 6*d.*; drag-chain, 2*s.*; if fitted with steel breast 7*s.* extra

A great variety of other tillage implements are shown at this stand. At the next stand Smith of Woolston's steam cultivator is shown by the same exhibitor.

At stand 193 H. Pain, of Bedford, exhibits a patent cattle fastening, invented by G. W. Baker, of Woburn, and manufactured by the exhibitor. The object of this invention is to facilitate the release of cattle in case of fire. By its means a single person, without even entering the building, has the power of releasing a whole shed of animals at one and the same time. This is done by means of a lever at the end of the building outside, which, when pulled, opens all the fastenings simultaneously, being connected with each one continuously by ordinary iron gas piping of ¾-inch diameter. Price 4*s.* 6*d.*; lever for outside of building, 7*s.* 6*d.* extra.

Priest & Woolnough, of Kingston-on-Thames, show (205) corn drills, horse hoes, and Rowley's fly destroyer and Turnip duster.—W. Torr, of Aylesby, near Grimsby, exhibits (207) the field gate which received the prize in its class.

A waggon gate made of red wood deal bars, and Oak heads with six bars, one support bar and two upright bars, and a cap on top bar, put together with small bolts and screws, at fixed points, the whole combining lightness and strength. These gates have been for some years in use at Aylesby, and have been much copied. Price 1*l.*; gate and irons under 24*s.* as required for prize. Irons at will.

Models of Halkett's system of guideway steam agriculture were shown (210) by E. Weir, of 296, Euston Road, London.—Nicholson, of Newark, shows a hay-making machine capable of conversion to a number of other uses.

A patent combined revolving harrow, weed extirpator, Thistle cutter, manure spreader, and haymaker; invented, improved, and manufactured by the exhibitor. Is on the principle of Nicholson's well-known prize haymaker, which by a different and extended arrangement of tines, and addition of blades, is made available for a variety of other important farm uses, such as bringing weeds and Twitch to the surface after broadsharing; raking and pulverising; spreading manure improving growing crops; Poppy, Hariff, and weed extirpating; and cutting, bruising, and breaking Thistles, Nettles, &c., &c. It can be altered in a very short time to a double-action haymaker, of extra strength, and all improvements. Price, with Thistle-blades, &c., complete, 19*l.*

E. Cockey & Sons, of Frome, Selwood, exhibit a quantity of dairy apparatus; among others—

A patent cheesemaking apparatus, consists of an improved boiler, which, in ordinary cases, is set in brickwork. A cast-iron cistern to contain water for dairy use. A patent cheese tub, having a double bottom, forming a chamber beneath, through which a circulation of hot or cold water may be made to flow, and the temperature of the milk or whey thereby raised or lowered without removal from the cheese tub. The boiler, cistern, and cheese tub are connected by pipes, provided with taps, by which the flow of hot or cold water may be regulated as required. The pipes may also serve for warming the cheese room if required. Price 35*l.*

Mr. Chamberlain, of Kempsey, Worcester, exhibits his brick-making machine, which has been already described.—An atmospheric hammer, which by its energetic and somewhat boisterous action, created more notice and attention than anything else in the yard, was shown by Messrs. Dawson, of Barnsley. It appeared to be cleverly under control.

The blow of this hammer is given by atmospheric pressure, which can be increased or diminished as required; peculiarly adapted to the forging of iron work connected with portable engines and agricultural implements generally.

AGRICULTURAL IMPROVED SOCIETY OF IRELAND.—At the late monthly meeting of this Society, arrangements were made for carrying out the next annual meeting (1860) at Cork. Suggestions were considered for increasing the number of members; the resignation of the secretary, Mr. Wm. Royse, who has been appointed agent over Mr. La Touche's property, was accepted; and it was—

"Resolved — That in consequence of the resignation of Mr. Royse, our present secretary, he be directed to advertise in the usual papers, stating the Council will take into consideration the election of a secretary, on the 19th October, and requesting that candidates will forward their testimonials."

The testimonial which has been procured for the late secretary, Captain Croker, by members of the Society was then presented to him, and was gratefully acknowledged by him.

Notices of Books.

The Dog in Health and Disease. By Stonehenge. Longman, Green, & Co.

This is a portly octavo volume, handsomely illustrated with capital woodcuts of the various breeds described. It treats of the natural history of the animal, and of the character, treatment, and performances of the various domesticated breeds. Stonehenge is a well-known

authority, especially on Coursing, and his chapter on the Greyhound is interesting and full, but not in more detail than those on other hounds. A large portion of the book is on the diseases of the dog and their treatment. It is thus a very useful as well as an elegant and ornamental work.

Miscellaneous.

Teaching Common Things.—Mr. Nockolds, at the late meeting of the Farmers' Club, said:—The power of observing and recording facts and phenomena was a most valuable portion of a farmer's education. He remembered that when he quitted school, and was placed to learn his business, his master would, as opportunities occurred, point out particular trees, explain their distinctive characteristics, the purposes to which the timber might be applied, and make other observations, relative to familiar objects, which he could not fail to treasure up in his mind; and he believed that he had acquired more information by these practical means than he could have done by any amount of mere theoretical teaching. He had two sisters, who exercised a sort of double Queen Victoria power over him. They were very clever, and were well versed in chronology, from the days of Adam down to the present time. In short, they knew everything. On one occasion, the conversation happening to turn upon Henry the Eighth's wives, he had forgotten what was their number, and could only recollect that he was brute enough to cut off the heads of one or two of them. "Don't you know how many wives he had?" was the question. "No, I don't," he replied, "but do you see that little bird?"—"Yes."—"Do you know what it is?" The young ladies confessed they did not. "That," he rejoined, in triumph, "that is a hen chaffinch; and, I think, my dears, you had better make the acquaintance of the common things by which you are surrounded, than trouble yourselves about Henry the Eighth and his wives."

Calendar of Operations.

AUGUST.

WESTER ROSS: *August* 29.—We are now in the very midst of the hurry and bustle of harvest operations, and weather more seasonable could not be desired. The crop is falling so rapidly before the scythe, the sickle, and the reaping machine, that already two-thirds of the whole crop is cut; but behind these implements the fields are presenting a very different appearance from what they have done for many years. Of all kinds of grain the stooks are unusually few, and the sheaves are unusually diminutive. Wheat is under an average, Barley greatly under an average, and Oats are little, if anything, more than half a crop. This is literally true in regard to the bulk, and we believe it will not be far from the truth in regard to the quantity realised. After all has been gathered in our stackyards will present a deserted appearance. Straw has already become a very precious commodity. At all our public sales of corn and straw the price obtained this year is some 75 per cent. beyond the price reached last year. Our Turnips are now making good progress, but will apparently fall far short of a full crop. Potatoes continue quite sound, and are now abundantly partaken of. Meanwhile we must cast the pen aside, and betake ourselves to more pressing avocations.

Notices to Correspondents.

FARM BOOK-KEEPING: *Bailiff.* Blackwoods have published a set of books by Mr. Stephens, author of the "Book of the Farm," and Relph Brothers, of Aldersgate Street, are publishing a set by Mr. Coleman, of the Cirencester College. Perhaps you had better apply to the latter.

FISH MANURE: *N.* The following analyses of Osler's fish manure far exceed in richness any other published analyses we have seen:—

ANALYSES FROM VARIOUS DESCRIPTIONS OF FRESH AND SALTED FISH.

	By Professor Way, 10, Wellbeck Street, Cavendish Square.	By Dr. Stockhardt, of College, Tharand, Dresden.	By Dr. Medlock, Great Marlborough Street.	By Dr. Voelcker, Agricultural College, Cirencester.	By Messrs. Skinner & Haussmann, 17, Eastcheap.	By Mr. Noble, Kennington.
Moisture	11.22	11.09	14.28	13.11	8.21	8.00
Organic matter ..	78.48	77.35	76.60	64.59	80.73	81 00
Silica	0.72	1.21	0.53	1.56	1.51	1.65
Phosphate of lime .	7.55	6.73	6.24	6.86	5.94	3.95
Sulphate of lime ..	....	0.77	....	.40	3.61	3.96
Alkaline salts ..	2 03	..	....	13.48	....	....
Chloride of sodium	....	2.85	2.35	....	....	....
	100.	100.	100.	100.	100.	100.
Containing Nitrogen	12.76	10.59	10.07	9.11	8.09	7.68
Equal to Ammonia	15.50	13 06	12.02	11.56	10.58	9.32

Average:—Nitrogen 9.72, Ammonia 12.01.

POULTRY SHOW AT THE CRYSTAL PALACE: *Cor.* The Show has been held during the past week. The present exhibition, being the usual summer show, consists of this year's birds. There are upwards of 100 pens of birds more than in any previous summer show. Among the best are the Spanish breed. The Cochin Chinas are also very good, and of such a size and height as renders it exceedingly difficult to believe that they can really be chickens of 1859. The different classes of Hamburg, gold and silver, pencilled and spangled, contain some admirable young birds, some of them so forward as to have actually commenced moulting. The several classes of game fowl are pronounced to be as near perfection as they can possibly be. There is a very fine show of bantams, and some beautiful birds of the fine old-fashioned Dorking breed. Among the ducklings is one pen of three of the Rouen class, which weigh 18lb., while another three birds of the Aylesbury breed weigh no less than 23lb., though only a few weeks old. Near them are three goslings in one pen which weigh upwards of 48lb. The judges pronounce the rabbit show to contain some of the finest specimens of the long-eared class which have ever been brought together. Among them is one which weighs over 18lb. There is a fair show of turkeys, and a numerous and most valuable collection of pigeons of every variety known to the fancy.

LIQUID MANURE.



JAMES'S PATENT LIQUID MANURE DISTRIBUTOR OR WATER-CART, warranted not to choke up or otherwise get out of order. It is thoroughly adapted for Drill Crops, or Pasture Land, or for Watering Streets; has been awarded SIX FIRST PRIZES.

Full Particulars and Testimonials may be obtained of the Patentee, ISAAC JAMES, Tivoli Waggon Works, Cheltenham.

Improved LIQUID MANURE PUMPS supplied.

WARNER'S IMPROVED LIQUID MANURE OR GENERAL PORTABLE PUMP.



These Pumps are fitted with WARNER'S Patent Bucket and Valve, and cannot clog in action. The barrel is made of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure on the stand, the legs of which fold together, and may be carried with ease by one man to tank or pond.

	£	s.	d.
Stand and Pump, with screwed tail pipe, fitted with strong brass union for suction pipe	2	15	0
If fitted with barrel of planished copper	3	4	0
Stand and Pump, with plain tail pipe, for tying on suction pipe	2	9	0
2-inch patent rubber and canvas flexible suction pipe, on wires, either 10, 12, or 15 ft., per foot	0	2	2

May be obtained of any Ironmonger or Plumber in town or country, at the above prices, or of the Patentees and Manufacturers, J. WARNER & SONS, 8, Crescent, Jewin St., London, E.C.

WARNER'S PATENT VIBRATING STANDARD PUMPS.

PATENT CAST-IRON PUMPS for Farms, Cottages, Stable Yards, &c., where the Well does not exceed 28 feet in depth; fitted with WARNER'S Patent Metal Bucket and Valve, which cannot clog in action. These Pumps can be made right-handed, left-handed, or with handle opposite the nose by removing four screws only.



Diameter of Barrel.	Height.		£	s.	d.
2¼ in. short	1 ft. 7 in.	Fitted for lead, gutta percha or cast iron flanged pipe as required.	1	5	0
2¼ ,, long	3 ,, 3 ,,		1	10	0
3 ,, ditto	3 ,, 6 ,,		2	4	0
3½ ,, ditto	3 ,, 6 ,,		2	9	0
4 ,, ditto	3 ,, 6 ,,		2	13	0
2½ ,, short, with 15 feet of Lead Pipe attached, ready for fixing			2	10	0
2½ in. long	ditto	ditto ditto	2	14	0

The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.

May be obtained of any Ironmonger or Plumber in Town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin Street, London, E.C.

Every description of Machinery for Raising Water by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

MAPPIN'S PRUNING KNIVES IN EVERY VARIETY.
WARRANTED GOOD BY THE MAKERS.



MAPPIN BROTHERS, Queen's Cutlery Works, Sheffield; and 67 & 68, King William St., London, E.C.

MAPPIN'S "SHILLING" RAZORS Shave well for Twelve Months without Grinding.

MAPPIN'S 2*s.* RAZORS Shave well for Three Years.

MAPPIN'S 3*s.* RAZORS (suitable for Hard or soft Beards,) Shave well for Ten Years.

MAPPIN'S SUPERIOR TABLE-KNIVES maintain their unrivalled Superiority—handles cannot possibly become loose—the blades are all of the very first quality, being their own Sheffield manufacture.

	Tble. Kns.	Dst. Kns.	Carvers.
Ivory 3⅞ in. Handle, balanced,	20*s.* p. doz.;	16*s.* p. doz.;	6*s.* p. pair
Do. 4 in. do. ..	25*s.* ,,	18*s.* ,,	9*s.* ,,

MAPPIN'S SILVER-PLATED DESSERT KNIVES and FORKS, in Mahogany Cases.

12 Pairs Knives and Forks, Ivory Handles, in Case..	80*s.*	
12 Do. Pearl Handles, do. ..	130*s.*	
12 Do. Silver-Plated Handles, do. ..	80*s.*	

MAPPIN'S ELECTRO-SILVER PLATE.—MAPPIN BROTHERS, Manufacturers by Special Appointment to the Queen, are the only Sheffield makers who supply the consumers in London. Their LONDON SHOW ROOMS, 67 and 68, King William Street, London Bridge, E.C., contain by far the largest STOCK of ELECTRO-SILVER PLATE in the World, which is transmitted direct from their Manufactory, Queen's Cutlery Works, Sheffield.

	Fiddle Pattern.	Double Thread.	King's Pattern.
12 Table Forks, best quality	£1 16 0	£2 14 0	£3 0
12 Table Spoons, best quality	1 16 0	2 14 0	3 0
12 Dessert Forks, best quality	1 7 0	2 0 0	2 4
12 Dessert Spoons, best quality	1 7 0	2 0 0	2 4
12 Tea Spoons, best quality	0 16 0	1 4 0	1 7

Messrs. MAPPIN BROTHERS respectfully invite buyers to inspect their unprecedented display, which, for beauty of design, exquisite workmanship, and novelty, stands unrivalled. Their Illustrated Catalogue, which is continually receiving addition of New Designs, sent per post on receipt of 12 stamps.—MAPPIN BROTHERS, 67& 68, King William Street, London Bridge, E.C.; Manufactory, Queen's Cutlery Works, Sheffield.

GLASS FOR ORCHARD HOUSES & CONSERVATORIES.

JAMES PHILLIPS AND CO. beg to submit their prices of GLASS for the present month.

SHEET GLASS, in Crates, of superior quality, 16 oz. to the foot.

	Best.	Seconds.	Thirds.	Fourths.
	5½*d.*	3½*d.*	2½*d.*	2¼*d.*
21 oz.	Best.	Seconds.	Thirds.	Fourths.
	7¼*d.*	5*d.*	3½*d.*	3¼*d.*

Packed in 200 feet cases, 16 oz. £2 2 0
Packed in 300 feet cases, 16 oz. 3 0 0
Packed in 200 feet cases, 21 oz. 2 18 0

ORCHARD HOUSE SIZES, as supplied by us to Mr. Rivers.

		16 oz.	21 oz.
20 in. by 12 in.			
20 in. by 13 in.	Common	14*s.* 0*d.* ..	£1 1*s.*
20 in. by 14 in.	Superior do.	16 6 ..	1 5
20 in. by 15 in.	English Glass	18 0 ..	1 9

Boxes included and not returnable.

SMALL SQUARES.—Per 100 feet. *s. d.*

6 by 4	6½ by 4½	7 by 5	7½ by 5½	11 6
8 ,, 6	8½ ,, 6½	9 ,, 7	9½ ,, 7½	
10 ,, 8	10½ ,, 8½ ..	.. ..	.. ..	12 6

HORTICULTURAL GLASS, in Squares, cut to specific sizes.

16 oz. per foot, from 2*d.* to 3½*d.* | 26 oz. per foot, from 3*d.* to 7½*d.*
21 oz. ,, ,, 3 ,, 5 | 32 oz. ,, ,, 4 ,, 9½

Special prices quoted for large or specific quantities.

AGENTS FOR
HARTLEY'S PATENT ROUGH PLATE GLASS.
PAINTS.

Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, &c.

JAMES PHILLIPS AND CO.,
130, Bishopsgate St. Without, London, E.C.
NO CONNECTION WITH ANY OTHER HOUSE IN TOWN.

HORTICULTURAL GLASS—JUNE TARIFF.

THOMAS MILLINGTON'S reduced Tariff of GLASS, &c.

6 by 4, 7 by 5, 8 by 6, 9 by 7 } 16 oz. to the foot, 11*s.* 6*d.*
6½ by 4½, 7½ by 5½, 8½ by 6½, 9½ by 7½ } per 100 feet.

In 100 boxes,—4ths quality. 12*s.* 6*d.*; 3ds do., 14*s.* 4*d.*

10 by 8, 12 by 9, 12½ by 10¼, 14½ by 10½, 13 by 11
10½ by 8½, 12½ by 9¼, 13 by 10, 15 by 10, 13½ by 11½
11 by 9, 13 by 9, 13½ by 10½, 12 by 11, 14 by 11
11½ by 9½, 12 by 10, 14 by 10, 12½ by 11½

	per 100 feet	16 oz.	21 oz.
20 by 12			
20 by 13	Common ..	10*s.* ..	24*s.*
20 by 14	Superior .	18*s.* ..	27*s.*
20 by 15			

All Boxes included.

Orchard House sizes as supplied to Mr. Rivers.

Hartley's improved Rough Plate Glass from ⅛ to ¾ in thickness.

Coloured Glass in great variety, at 9*d.* and 1*s.* per foot.

Paints, Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, Lamp Glasses, &c.

87, Bishopsgate Street Without, E.C., same side as Eastern Counties Railway.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

HETLEY AND CO. are supplying 16-oz. Sheet Glass of British Manufacture, packed in boxes, containing 100 square feet each, at the following REDUCED PRICES for cash. A reduction made on 1000 feet.

Sizes.—Inches.		Inches.		Per foot.		Per 10 feet.
Under 6	by	4	at	1½*d.*	is	£0 12 6
From 6 by 4	,,	7	,,	2*d.*	,,	0 16 8
,, 7 ,, 5	,,	8	,,	2½*d.*	,,	0 18 9
,, 8 ,, 6	,,	10	,,	2¾*d.*	,,	1 0 10
,, 10 ,, 8	,,	12	,,	3¾*d.*	,,	1 2 11

Larger sizes, not exceeding 40 inches long.

16 oz. from 3*d.* to 3½*d.* per square foot, according to size.
21 oz. ,, 3¼*d.* to 5*d.* ,, ,, ,,
26 oz. ,, 3¼*d.* to 7½*d.* ,, ,, ,,

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS, for Horticultural purposes, at reduced prices, by the 100 square feet.

GLASS TILES AND SLATES made to any size or pattern, either in Sheet or Rough Plate Glass.

Propagating Glasses, Beehive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in Glass.

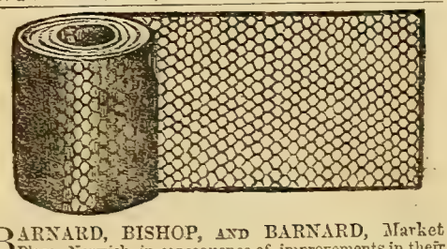
PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.

GLASS SHADES, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the excise duty, reduced one-half. List of Prices and Estimates forwarded on application to

JAMES HETLEY & Co., 35, Soho Square, London, W.

GARDEN POTS AND PANS, in quantities of not less than 20 casts, delivered to the London Stations at the following prices:—Nos. Thbs. 60, 1LO, 54, 48, 40, 32, 28, 24, 16, per cast, 2*s.* respectively. 12, 3*s.*; 8, 3*s.* 6*d.*; 6, 5*s.*; 4, 5*s.*; 3, 5*s.*; 2, 5*s.*; 1, 5*s.* On lesser quantities, 6*d.* per mile, for delivery to the Station, charged. The usual discount to the Trade. Square Propagating Pans, Kale and Plunging Pots, Strawberry and Border Tiles, &c., made to order.

J. & W. ADAMS, Kilns, Belle Isle, York Road, King's Cross, N.



BARNARD, BISHOP, AND BARNARD, Market Place, Norwich, in consequence of improvements in their machinery for the manufacture of the above article, have been enabled to make a great reduction in the prices.

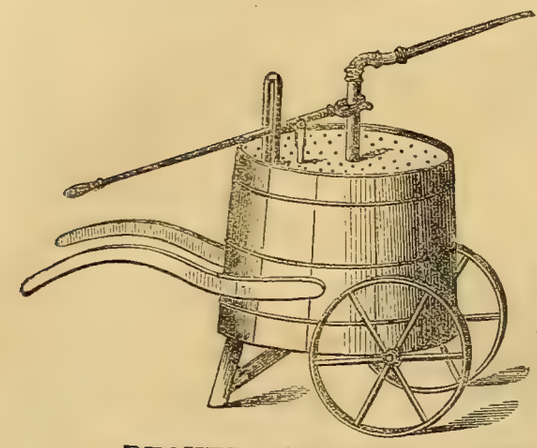
		Galvanised.	Iron.
2-inch mesh, 24 inches wide ..	..	5*d.* per yd.	4*d.* per yd.
2-inch ,, strong do. ..	..	6 ,,	4¾ ,,
2-inch ,, intermediate, do.	..	7 ,,	5½ ,,
2-inch ,, extra strong, do.	..	9½ ,,	7½ ,,
1⅝-inch ,, 24 inches wide ..	..	5½ ,,	4½ ,,
1⅝-inch ,, strong, do. ..	..	6½ ,,	5¼ ,,
1⅝-inch ,, intermediate, do.	..	7½ ,,	6 ,,
1⅝-inch ,, extra strong, do.	..	10 ,,	8 ,,

All the above kinds can be made of any width (under 8 feet) at proportionate prices. If the upper half is of a coarser mesh than the lower, it will reduce the prices about one-fifth.

Strong Galvanised Poultry Netting, 2*d.* per yard, 3 feet wide Galvanised Sparrow-proof Netting for Pheasantries, 2½*d.* per square foot. Delivered free of expense in London, Peterborough, Hull, or Newcastle. Manufacturers of Improved Strained Wire Cattle and Deer Fencing, Iron Hurdles, &c.

Illustrated Catalogues and Patterns forwarded by post.

DEANE & COMPANY'S
HORTICULTURAL TOOLS.



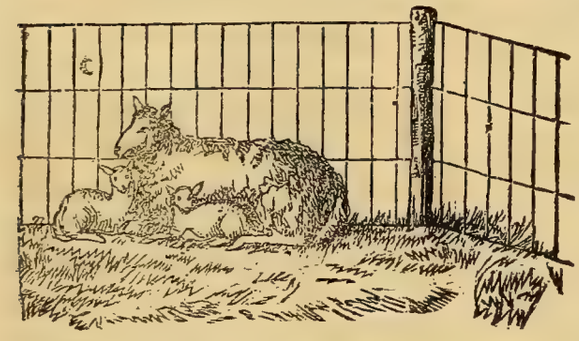
GARDEN ENGINES, Galvanized Iron
Prices 55s., 63s., 105s., 120s.
Ditto, Wood, 84s., 105s, 130s.
Flower Stands, 4s. 6d. each.
Cast Iron Ornamental ditto, to hold 7 Vases, 27s.
Deane's Mowing Machines, with Boyd's Patented Improvements, £4 17s. 6d; £6 6s. 0d., £6 17s. 6d., £7 7s. 0d.
Green House Syringes, 8s., 10s., 18s. 6d
Garden Rollers, £1 14s. 6d., £2., £2 12s.
£3 3s., £3 18s., £4 13s., £5 12s., £7 10s.
Garden Stools, 4s. 6d.
Garden Chairs, from 30s.
Boyd's Self-adjusting Scythe, 10s. 6d.
Wire Work, 18in. 4d. per yard run.

Every Implement for Garden use on the lowest Terms.

DEANES:—Opening to the Monument, London Bridge.

GREENING & COMPANY'S
PATENT WIRE FENCES.

PATRONISED BY HIS ROYAL HIGHNESS THE PRINCE CONSORT.



No. 7 B VARIETY.—PATENT SHEEP-FOLDING FENCE.

SPECIFICATION.—Height 3 feet; four horizontal bars of strong, tough, pliable fencing wire, intersected by vertical bars of lighter wire, woven firmly on at regular intervals of 4 inches.

9d. per lineal yard.

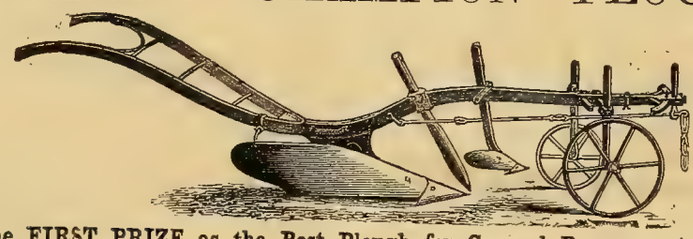
From "Report of the Judges" on the Exhibition and Trial of Implements at the Salisbury Meeting, 1857. Royal Agricultural Society of England.

"The Iron Wire Sheep-fold Fence of Messrs. GREENING was cheap and excellent. It can be very easily fixed, and was well coated with a bright and durable-looking varnish." (High commendations were awarded.)

G. & Co.'s NEW ILLUSTRATED CATALOGUE is now ready. It contains descriptions of the above, and other IRON and WIRE FENCES for PARKS, FARMS, GARDENS, GAME PRESERVES, POULTRY COURTS, &c., also of IRON GATES, IRON HURDLES, &c.
Post free on application.

GREENING & Co., Victoria Iron and Wire Works, 81, Oxford Street, Manchester.

THE PLOUGH TRIALS AT WARWICK.
HOWARD'S CHAMPION PLOUGH



Gained the FIRST PRIZE as the Best Plough for General Purposes at Warwick,

BEING the CHIEF PRIZE for PLOUGHS, awarded by the Royal Agricultural Society of England, at this Meeting. The importance of this Prize will be gathered from the fact that the GENERAL PURPOSE PLOUGHS are the only ones tried on BOTH LIGHT AND HEAVY LAND, and as HOWARD'S CHAMPION PLOUGH proved itself to be the best on both soils, the FIRST PRIZE, of the HIGHEST AMOUNT given by the Society for any kind of Plough, was awarded to J. & F. HOWARD.

PRIZES awarded to J. & F. HOWARD, by the Royal Agricultural Society of England, at the WARWICK MEETING, 1859, being not only the LARGEST NUMBER of PRIZES, but the LARGEST NUMBER of FIRST PRIZES awarded to any Exhibitor.

THE FIRST PRIZE FOR THE BEST PLOUGH FOR GENERAL PURPOSES, ALSO A PRIZE FOR THE BEST PLOUGH FOR LIGHT LAND, AND A PRIZE FOR THE BEST PLOUGH FOR HEAVY LAND; THE FIRST PRIZE FOR THE BEST LIGHT HARROWS, THE SECOND PRIZE ALSO FOR THE BEST LIGHT HARROWS, AND THE FIRST PRIZE FOR THE BEST HEAVY HARROWS.

Every one of HOWARD'S Implements, tried at Warwick, gained a Prize.

CATALOGUES, with full particulars, sent post free on application to

J. & F. HOWARD, BRITANNIA IRON WORKS, BEDFORD.

PARKES' STEEL DIGGING FORKS.

BURGESS AND KEY, 95, Newgate St., E.C., London, being the Wholesale and Retail Agents for these celebrated TOOLS have always a large Stock on hand from which their Customers may select what they may require.

ANTHONY'S PATENT AMERICAN CHURN.—The FIRST PRIZE was again awarded to this Churn in Competition with several others at the Chester Meeting of the Royal Agricultural Society; it has obtained the First Prize given by the Society at every Meeting since 1850.

Messrs. BURGESS & KEY, 95, Newgate Street, E.C., strongly recommend it as the most perfect Churn now in use. Full particulars sent on application.

MICROSCOPES.

JOSEPH AMADIO'S Improved Compound MICROSCOPE, 2*l.* 2*s.*; Students', 3*l.* 13*s.* 6*d.*

"Both these are from Amadio, of Throgmorton Street, and are excellent of their kind, the more expensive one especially."—*Household Words*, No. 345.

A large Assortment of Achromatic Microscopes.

Just published, 2d ed., an Illustrated Catalogue, with the names of 1500 Microscopic objects, free for 6 stamps.

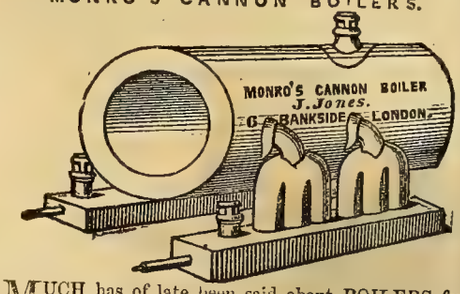
GLAZIERS' DIAMONDS FOR CUTTING HORTICULTURAL and other GLASS, to be had of the Wholesale Manufacturer, JOHN EDWARDS, 20, Sharp's Alley, West Smithfield, London, E.C. Prices from 10*s.* to 27*s.* 6*d.*

VASES, PEDESTALS, SUNDIALS, FOUNTAINS, FLOWER BOXES, JARDINETS, FERN CASES, BALUSTRADES, EDGINGS AND CURBS FOR FLOWER BORDERS, SEATS, &c., in Imperishable Siliceous Stone, at reduced prices, for the adornment of the Villa Garden, the Mansion Grounds, or the private or public Park.

For Priced Illustrations apply to FREDERICK RANSOME, at the Show Rooms, Cannon Row, Westminster, S.W., or Patent Stone Works, Ipswich.

EPPS'S HOMŒOPATHIC COCOA.—Produced, in 1839, specially for the use of Homœopathic Patients, to provide them with a beverage highly nutritious and free from those effects of Coffee and Tea which to many persons are pernicious. Rendered attractive to the taste by its delicious aroma and grateful smoothness, it has become adopted by the public generally for breakfast, luncheon, and supper. It is sold by the principal Grocers at 1*s.* 6*d.* per lb., in 1 lb., ½ lb., and ¼ lb. packets. Each packet is labelled, "JAMES EPPS, Homœopathic Chemist, London."

MONRO'S CANNON BOILERS.



MUCH has of late been said about BOILERS for Heating by Hot Water, but these Boilers have now proved themselves to be the best at present invented. They are adapted for heating every description of building, and are made of various sizes. The Price of the

24-inch Cast Iron is	..	..	.. £5 10*s.* 0*d.* each
24-inch Wrought ditto	..	..	.. 6 10 0 ,,
36-inch Cast ditto	..	..	.. 8 0 0 ,,
36-inch Wrought ditto	..	..	.. 8 10 0 ,,

References to Gentlemen and Nurserymen where these Boilers are now at work. The Cannon Boilers are now kept in stock, and are to be had only of J. JONES, 6, Bankside. Also, every description of Saddle and Cylinder Boilers. Hot Water Pipes and Connections at prices lower than those of any other house in London. Estimates for Hot-water Apparatus erected complete in any part of the country, and an Illustrated Catalogue on application to J. JONES, 6, Bankside, Southwark, London, S.E.

IMPROVEMENTS IN HEATING, &c.

MUSGRAVE'S PATENT SLOW-COMBUSTION STOVE, for Warming Public Buildings, Hall, Shops, Conservatories, Factories, Drying Rooms, &c. Will burn in Churches from Saturday till Sunday evening, avoiding attention during the hours of worship. In Halls will burn day and night for weeks, with little care. Capable of warming a large apartment for 24 hours, at a cost of 3*d.*; and deserving of special attention, because of its safety, healthfulness, durability, and extreme simplicity. This Stove is the nearest approach to warming by hot water.

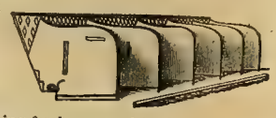


MUSGRAVE'S PATENT STABLE FITTINGS AND HARMLESS LOOSE BOXES have obtained the award of a large Council Medal from the R. I. A. Society for the following improvements:—1st, The Horse cannot injure himself or others in the same stable if he breaks loose in his stall. 2d, He cannot waste the hay. 3d, He can have cut or uncut hay at pleasure. 4th, He has clean water always before him. 5th, A pure and wholesome atmosphere is secured. 6th, The whole fittings are stronger than usual, without increase in price, and there is no risk of infection.



The Loose Box is really what its name denotes, and the most spirited Horse may be turned into it without danger.

MUSGRAVE'S PATENT IRON COW-HOUSE FITTINGS, as approved by the Board of Works, adopted in the Ulster Model Farm, and by many of the most eminent Stock Breeders in the Kingdom, are made wholly of iron, very durable, cleanly, and attractive in appearance. The fodder is always fresh, being freely exposed to the air, removed from the breath of the animal, and separated from the roots or damp food. The range of Troughs can be quickly filled with water for the use of the Cows, or for washing out in case of epidemic, and the cost is very moderate.



These inventions being distinguished for strength, simplicity, and practical usefulness will repay public inquiry.

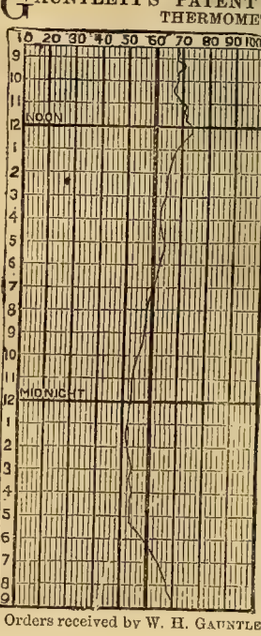
MUSGRAVE BROTHERS are also Makers of Wire Fencing, Hurdles, Field and Entrance Gates, Corn Rick Stands, Conservatories, Hot-water Apparatus, Verandahs, Rural Bridges, &c.: and their works being favourably placed for cheap labour and materials, they can offer corresponding advantages in price.

MUSGRAVE'S Patent Field Gates have gained the 1st Prize from the R. I. A. Society for strength, durability, and cheapness.

For particulars address MUSGRAVE BROTHERS, Ann Street Iron Works, Belfast.

TO HORTICULTURISTS.

GAUNTLETT'S PATENT CHRONOMETRICAL THERMOMETER.



This instrument, which combines an eight-day clock of the best English make showing time, with a newly-patented Thermometer, wherein glass and quicksilver are dispensed with, writes down the temperature of the atmosphere on a slip of paper, and when placed in a Hothouse, Forcing House, or Conservatory, &c., supplies a valuable record of the temperature, with all its variations, showing the time when any change took place, and how long such change continued.

The above slip (reduced in size) exhibits the temperature of the Royal Agricultural Society's show yard at Chester, July 22, 1858, written off by one of these instruments, to which was awarded the Society's SILVER MEDAL.

This is the only instrument that registers temperature continuously and writes it down, and no horticulturist should be without it.

Orders received by W. H. GAUNTLETT, Middlesbro' on-Tees.

WARNER'S SWING WATER-BARROW (HOLDING ABOUT 35 GALLONS). MOUNTED ON WHEELS 20 INCHES HIGH, will save much of the Gardener's time and labour. May be obtained of any Ironmonger for 3*l.* 3*s.*



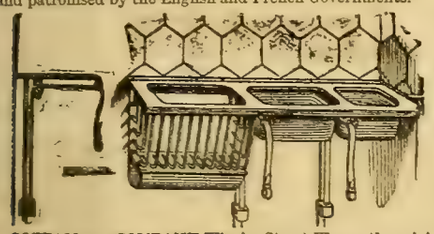
BRASS SYRINGES, 9*s.* to 21*s.*

Also a great variety of effective Machines for Hydraulic purposes, and to supply Gardens, Hothouses, Cottages, Farms, Mansions, or Boards of Health, with every requisite connected with the conveyance and distribution of Liquids.

Fountains suitable for Conservatories, Lawns, &c.

JOHN WARNER & SONS, 8, Crescent, Jewin Street, London, E.C.

COTTAM'S PATENT INVENTIONS FOR STABLE REQUISITES, awarded a Prize at the Paris Exhibition, and patronised by the English and French Governments.



COTTAM AND COMPANY, Winsley Street, W., are the original inventors of the PATENT ENAMELLED MANGER, Water Trough, and Wrought Iron Rack, united to an iron top-plate, and forming one complete and useful fixture, having COTTAM'S patent noiseless halter guide and collar rein attached, which is taken to the back of the manger, and works with ease and freedom up or down the guide-bar.

COTTAM'S NEW PATENT SEED-BOX, an important addition to the above fittings, being simple in construction, light, and durable, promotes cleanliness, and is economical in its results.



COTTAM'S PATENT SADDLE and HARNESS BRACKET combined, can be used with great advantage where space is an object, as it can be turned up out of the way when not in use.

COTTAM'S IMPROVED SURFACE GUTTER, with perforated moveable cover, the use of which prevents accidents, and can be easily cleaned out.

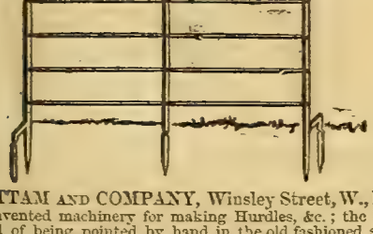
COTTAM'S CAST-IRON SANITARY TRAP, from its improved construction, gives a full water passage, and does not allow any smell to ascend from the drain.

PATENT LOOSE-BOX FITTINGS, and every article for the harness-room and stable, kept in stock, plain, galvanised, and enamelled. Iron gates, fencing, hurdles, &c.

The New Illustrated Catalogue and Estimates, gratis, upon application to COTTAM and COMPANY, 2, Winsley Street, Oxford Street, W.

N.B. COTTAM & Co. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

IRON HURDLES, FENCING, &c., MADE BY MACHINERY.



COTTAM AND COMPANY, Winsley Street, W., have invented machinery for making Hurdles, &c.; the bars, instead of being pointed by hand in the old fashioned style, are nipped down by the machine, leaving a shoulder so as to more effectually tighten the standards when rivetted. They are made of superior iron only, and will compete in price with those made by hand from cinder or common iron which so frequently break. Iron Fencing, Gates, and Iron Work of all kinds, both Plain and Ornamental, Conservatories, Hot Water Apparatus and Garden Implements.

Illustrated CATALOGUES free on application to COTTAM & COMPANY, Ironfounders, 2, Winsley Street, Oxford Street, W.

N.B. COTTAM & Co. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

TO MARKET GARDENERS AND OTHERS.

TO BE LET on LEASE, about 4 Acres of MARKET GARDEN GROUND, in good condition, with a neat modern detached Residence, Stable, and Cart Lodge, conveniently situate seven miles from London and a short distance from Forest Hill and Catford Hill Railway Stations.—Apply to Messrs. DICKSON & DAVENPORT, Estate Agents, 32, Bucklersbury, City, E.C.

TO MARKET GARDENERS AND OTHERS.

TO BE LET, and entered on at Michaelmas, ORULTON GARDEN, consisting of about 4 acres of garden enclosed by brick fruit walls 14 feet high. A Dwelling-house and a number of Vineries and Peach-houses. The above is situated near Pembroke and within an easy distance of Pembroke Dock and Tenby. Some Grass land can be had if required.—For further particulars apply to Mr. BRAVENDER, Pembroke.

TO NURSERYMEN, GARDENERS, AND OTHERS.

TO BE DISPOSED OF, A NURSERY, containing about 4 Acres, with numerous Greenhouses, Plants, Stock in Ground, &c., situated in a favourite suburb south of London, on the high road, and with an increasing business.—Full particulars will be given on application to Mr. A. CHANDLER, Horticultural Valuer, 28, Priory Road, Wandsworth Road, S.

TO NURSERYMEN, GARDENERS, AND OTHERS.

TO BE DISPOSED OF, by Private Contract, WESTBOURNE NURSERY, Denbigh Road, Westbourne Grove, W., price 800*l.*, containing six Greenhouses, Show-house, and a new Pit for Early Forcing, fitted with Hot water Apparatus; also 40 lights of Brick Pitting. The whole being newly painted and in thorough working order, well situated for and doing a first rate jobbing business. Lease 89 years unexpired. In offering the above for sale Mrs. WM. GILL (sole proprietor) is willing to take part of purchase money down, remainder being left on moderate terms, to whom applications for further particulars, &c., are to be made on the premises.

TO NURSERYMEN AND OTHERS.

TO BE DISPOSED OF, AN OLD-ESTABLISHED NURSERY, of about 8 acres, adjoining a very populous and improving town, and close to the North-Western Railway station. The Vineries, Greenhouses, Shop, &c., are of recent erection, and arranged with every convenience. The Stock is in a flourishing condition, being young, healthy, and in good saleable order, comprising a general assortment of Evergreen and Ornamental Trees, Shrubs, Fruit Trees, Greenhouse and Miscellaneous Plants. The Grounds are ornamental and most eligibly situated, having an excellent frontage on the most leading thoroughfare, and in every way suitable to carry on a very extensive business.—Address, P. G. A., Messrs. Noble, Cooper, and Bolton, Seedsmen, 152, Fleet Street, E.C.

TO NURSERYMEN AND OTHERS.

TO BE DISPOSED OF, a really first-rate NURSERY, including Glass, Stock, and Business, entire, on very advantageous terms, in the immediate neighbourhood of London. Might suit two or more in partnership, or any country firm requiring a London place of business. Long Lease and capitally situated. Part of the Purchase Money might remain at interest if desired.—For all further particulars apply by letter to A. B. & Co., care of Messrs. Williams & Lloyd, Stationers, 29, Moorgate Street, London, E.C.

TO BE SOLD, an old established NURSERY and SEED BUSINESS, in the Midland Counties, in a good Market Town, and immediately contiguous to a first-class Railway Station. The STOCK at present is low, but good, and may be taken to at valuation or by private treaty. Is parted with solely on account of the death of the late proprietor.—Apply to Messrs. NOBLE, COOPER, & Co., 152, Fleet Street, E.C.; or Messrs. Low & Co., 7, Upper Clapton, London, N.E.

TO NURSERYMEN, GENTLEMEN, GARDENERS, ETC.

TO BE SOLD, on advantageous terms, with immediate possession, a NURSERY and SEED BUSINESS, capable of great extension, in the midland counties, and in the immediate neighbourhood of a large and rapidly increasing town. The Nursery contains about 18 acres of most valuable land (rental only 3*l.* per acre); it slopes to the south, and at the top are two unceasing springs, which are partially carried over the grounds, and can be altogether by an extension of piping. Sand, clay, and stone are all on the premises. The whole nursery has been made within the last four years. All the stock is young and in the finest possible health. Every facility will be given to any thoroughly respectable person disposed to negotiate.—Apply to Mr. PROTHEROE, Leytonstone, Essex, N.E.

TO FLORISTS AND OTHERS.

TO BE SOLD, the FIXTURES and GOODWILL of a FLORIST (with Jobbing). Good trade done in a main thoroughfare and improving neighbourhood. Terms moderate. Rent 28*l.*; Let off, 18*l.* 10*s.* Satisfactory reasons for leaving.—Apply T. A., Florist, Brunswick Nursery, Camberwell, S.

Sales by Auction.

HAMPEN, GLOUCESTERSHIRE.

HIGHLY IMPORTANT SALE OF 700 PURE-BRED COTSWOLD SHEEP.

JAMES VILLAR has the honour to announce his instructions from T. Beale Browne, Esq., of Salperton Park (who is parting with his flock in consequence of the continued illness in his family), to Sell by Auction, at Hampen, on TUESDAY, September 6, the whole of his far-famed and matchless FLOCK of COTSWOLD SHEEP, comprising 225 splendid Ewes, 162 extraordinary Theaves, 140 matchless Ewe Lambs, 130 superior Ram Lambs, and 43 Rams of various ages, amongst which are several Prize Sheep and some of the finest specimens of this class of Sheep to be found in any Flock in England. The numerous Prizes awarded to this Flock in England, Ireland, Scotland, and France, warrants the Auctioneer in asserting that a finer lot of Cotswold Sheep than the above described has never been offered to the public; he therefore trusts to be honoured with the attendance and patronage of Noblemen, Gentlemen, and Sheep Breeders generally who may want First class Stock. Also, 30 HEAD of CATTLE. Luncheon will be on the table at 11, and the Sale will commence punctually at 12 o'Clock. Hampen is 8 miles from Cheltenham, 11 from Addlestrop Station on the O. W. & W. Railway, 9 from Stow-on-the-Wold, 6 from Northleach, and 13 from Cirencester. Cheltenham is in direct communication with the Great Western and Midland Railways.—Catalogues may be obtained at place of Sale, or upon application to the Auctioneer, Cheltenham.

ORCHIDS.—THE SPECIMEN PLANTS OF A NOBLEMAN WHO IS DISCONTINUING EXHIBITING.

MR. J. C. STEVENS is honoured with instructions to Sell by Auction, at his Great Room, 38, King Street, Covent Garden, W.C., on WEDNESDAY, September 21, at Half-past 12 precisely, without any reservation, the valuable collection of ORCHIDS which has been most successfully exhibited during past years, and is well known to growers as containing some of the finest specimens in the country of the choicest varieties. Further particulars will appear in future Advertisements.

ORCHIDS AND FERNS, AND A SMALL COLLECTION OF ORNAMENTAL FOLIAGE PLANTS.

IMPORTED AND ESTABLISHED PLANTS.

MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, W.C., on FRIDAY, September 9, at half-past 12 precisely, a Collection of ORCHIDS and FERNS, including several fine Imported Plants in good health of the magnificent ANGRÆCUM SESQUIPEDALE from Madagascar, the largest white flowered Orchid known; LÆLIA XANTHINA, a new species with the habit of Lælia purpurata and deep yellow flowers. Also LÆLIA PRÆSTANS, L. purpurea gigantea, CATTLEYA TRIANEI, C. RANGELII, and numerous other fine Lælias and Cattleyas. Also a collection of Ferns, including Alsophila excelsa, A. ferox, A. aurea major, and others rare and interesting. May be viewed on the morning of Sale, and Catalogues had.

ENGLEFIELD GREEN, SURREY.

Highly important Sale of Specimen Stove and Greenhouse Plants the property of a Nobleman who has ranked amongst the most successful exhibitors during past years.

MR. J. C. STEVENS is honoured with instructions to submit to public competition, without the least reservation, on the premises, Cooper's Hill, Englefield Green, Staines, on TUESDAY, September 27, at 1 o'Clock precisely, the Collection of SPECIMEN PLANTS of AZALEAS, ERICAS, STOVE and GREENHOUSE PLANTS, of a nobleman who is giving up exhibiting. Amongst the Azaleas will be found some extraordinarily fine plants of

Glory of Sunning Hill, 4 feet	Gladstanesii, 5 feet by 6
Variegata, 4 do, by 6 [by 4	Lateritia, 5 do. by 7
Optima, 6 do. by 5	Alba magna, 4 do. by 4
Murrayana, 4 do. by 4	And numerous others.

Amongst the Stove Plants will be found

Genetyllis macrostigna, 2½ feet by 2½	Bowmia serrulata, 4 do. by 4
Acrophyllum venosum, 4 do. by 3	Tetratheca ericoides, 2½ do. by 3
	Epacris miniata grandiflora, 6 do. by 7

And numerous other fine plants, which have formed a leading feature in the various metropolitan exhibitions during several past years.—May be viewed on the day prior and morning of sale, and Catalogues had on the premises; at the principal Inns in the neighbourhood, and of Mr. J. C. STEVENS, 38, King Street, Covent Garden, W.C.

*** Cooper's Hill is about one mile from the Egham station on the London and South-Western Railway.

CRYSTAL PALACE—IMPORTANT SALE.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, FLORISTS, & OTHERS.

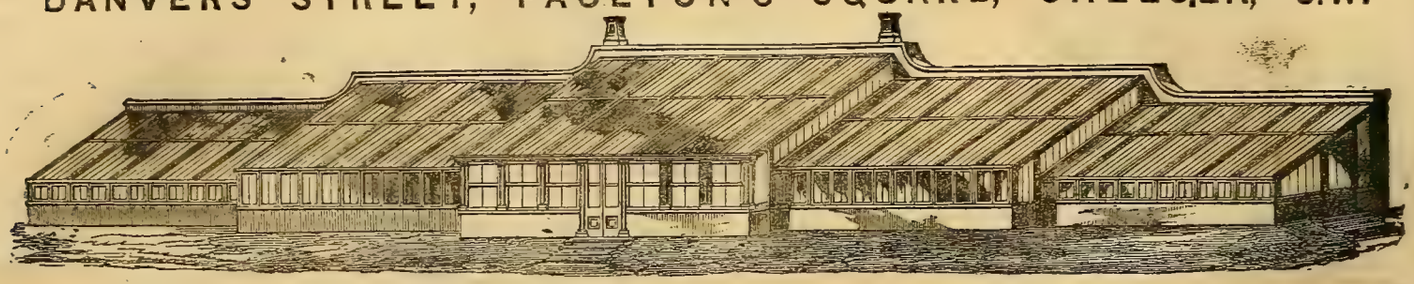
MESSRS. PROTHEROE AND MORRIS are favoured with instructions (by order of the Crystal Palace Company) to submit to public competition by Auction, on the premises near the Railway Station, on THURSDAY, Sept. 22, at 11 o'clock, the surplus stock of Plants, consisting of very large Orange Trees Standard Bays, Araucaria excelsa, Bidwellii, and Cunninghamii, Cupressus torulosa, Pinus excelsa, Standard and Dwarf Rhododendrons, 500 choice Double Camellias, beautifully furnished with bloom buds; also about 60 plants of the Branching Pine Apple, of Penang.—May be viewed two days prior to the Sale; Catalogues may be had on the premises (6*d.* each returned to purchasers): of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

HITCHIN, HERTS, ON THE GREAT NORTHERN RAILWAY, WITHIN 1 MILE OF THE STATION.

MR. GEORGE JACKSON will Sell by Auction at the Sun Inn, Hitchin, on THURSDAY, September 15, at 2 for 3 o'Clock precisely, in two lots, by order of the Proprietor, a compact detached RESIDENCE, with handsome Lawn and walled-in Fruit Garden and Shrubberies, valuable Grapery, and Paddock Orchard, containing, with the site of the House, &c., about 5 acres, a great portion of which is also eligible for Building Purposes, having an extensive frontage to the road; and is known by the name of GROVE HOUSE, immediate possession of which might be had. There is a good supply of Spring Water, and also a Chalybeate Spring on the Estate. On the opposite side of the road is an enclosed FARM YARD, with DWELLING HOUSE (now used as two Cottages), and Garden, extending to the junction of the rivers Purwell and Hiz; substantially brick-built and slated Stabling for three Horses; Coach House with Lofts over: substantially brick built and slated range of Buildings, easily converted into Loose Boxes for Hunters (formerly used as a Bakehouse); large five bayed open Cart Shed; a lean-to Shed; Cart Horse Stabling; Cow House; range of Sheds with Lofts over; a large timber-built Barn; handsome Paddock Orchard well stocked with thriving Trees, Walled-in Garden and Greenhouse, containing, with the site of the Buildings, about 2 acres; also a Common Right. The above property is admirably adapted for a Hunting Box, being within easy distance of the meets of the Right Hon. Lord Dacre's, the Cambridgeshire, and Mr. Parry's packs of fox-hounds, two or three packs of harriers, and near to the Baldock Coursing Meetings. The compact detached Residence is of modern elevation, substantially brick built, with projecting roof, on good dry soil, in excellent condition, painted and papered throughout, is approached by a Carriage Drive through a tastefully laid out lawn, and contains six Bed Rooms and a large Attic (easily converted into more Bed Rooms): on the Ground Floor is an Entrance Hall, 8 feet wide; wainscoat Oak Staircase; well proportioned Drawing Room with marble mantel-piece, 21 ft. 6 in. by 15 ft. 6 in., with folding plate glass doors, opening on to the Lawn; Dining Room, 16 ft. by 15 ft. 6 in. with marble mantel-piece and folding plate glass doors; Breakfast Room, 13 ft. 6 in. by 11 ft., with marble mantel-piece and folding plate glass doors; Writing Office; Bath Room, fitted up with apparatus for hot and cold water; two Water Closets; Butler's Pantry; Lavatory; capital Kitchen; Washhouse; lean-to Laundry; excellent dry Cellerage; stone pitched Court Yard; Wood and Coal House; and other Offices; an excellent sunk Cellar; and soft water tanks. An enclosed Fruit Garden, stocked with choice trees; a valuable Grapery containing a selection of the choicest Vines (the produce of which last year realised about 100*l.*), with span-roof, 48 ft. 6 in. long and 15 ft. wide, with heating apparatus: Coke and Potting Shed; soft water Tank and Pump; together with the handsome Lawn, Pleasure Grounds and Shrubbery Walks; Paddock Orchard; a good supply of spring water and also a Chalybeate Spring on the Estate; the whole containing, with the site of the House, &c., about 5 acres. The above Lot will be sold without the slightest reserve. Near to this Lot, on the opposite side of the road, is a detached substantially brick and slated three stall Stable with Carriage House and Lofts over; stone pitched Yard; a Farm House, now used as two Cottages, with large piece of Garden Ground extending to the river; a large enclosed Farm Yard with a range of substantial brick and slated buildings, 72 feet long and 18 feet wide (formerly used as Bakehouses), but easily convertible into Loose Boxes, if required; large five bayed open Cart Shed, at the back of which is a lean-to Cattle Shed or Cow House; range of Stabling for Cart Horses, and Barn; a timber and slated open Cart Shed with Lofts over Chaise House; timber built Barn, 45 ft. 6 in. by 23 ft.; an enclosed Fruit and Vegetable Garden with Greenhouse and Furnace; Tool House; and productive Paddock Orchard; containing, with the site of the Buildings, &c., about 2 Acres; possessing a frontage to the road of 470 feet. The whole of this Property, which is Copyhold of the Manor of Hitchin Portman and Foreign, and considered nearly equal to Freehold, it being fine certain, is extremely valuable as a HUNTING BOX, being within an easy distance of the meets of several Packs of Hounds, and is within one mile of the Hitchin Station on the Great Northern Railway (about 40 minutes' ride from London), also the Midland Counties and Hitchin, Royston, and Cambridge Railway Station, and is situate about one mile from the important market town of Hitchin, but in the Hamlet of Walsworth, consequently free from the town rates.—May be viewed by Cards only; and particulars with Conditions and Lithograph Plans may be had at the Auction Mart, London; of Messrs. HAWKINS & Co., Solicitors, Hitchin; of Messrs. JACKSON & SON, Auctioneers and Estate Agents, Hertford and Ware; and of Mr. GEORGE JACKSON, Auctioneer and Appraiser, Hitchin and Baldock, Herts.

HORTICULTURAL WORKS,

DANVERS STREET, PAULTON'S SQUARE, CHELSEA, S.W.



JAMES GRAY

RESPECTFULLY BEGS TO INFORM THE NOBILITY, GENTRY, NURSERYMEN, GARDENERS, AND OTHERS, THAT HE CONTINUES TO CARRY ON THE BUSINESS IN ALL ITS BRANCHES AT THE ABOVE OLD ESTABLISHED PREMISES.

CONSERVATORIES, GREENHOUSES, FORCING HOUSES, VINERIES, PITS, &c.,

OF EVERY DESCRIPTION, ERECTED ON THE MOST APPROVED PRINCIPLES.

HEATING BY HOT WATER.

J. G. having specially devoted his attention for many years to this part of the business, is now fully prepared to Heat every description of public and private buildings, viz :—Churches, Mansions, Warehouses, &c., as well as all structures connected with Horticulture, in the most efficient manner. His system is the most simple that can be adopted—which he has found from long experience to be the best—can be constructed at less cost, and is more easily managed than those of a complicated nature which have attracted the notice of the public.

J. G. begs to call attention to his CAST-IRON CORRUGATED ARCH BOILER, which from its simplicity of construction has not the liability to fracture to which those of a more complex design are always subject. They have been extensively used for many years, and have given the greatest satisfaction.

All business is conducted at this establishment on the principle of lowest remunerative profits consistent with best materials and workmanship.

PLANS AND ESTIMATES FURNISHED ON THE SHORTEST NOTICE.

WEEKS' ONE BOILER SYSTEM.

BY APPOINTMENT.

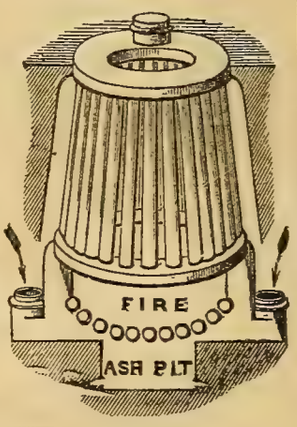
JOHN WEEKS & COMPANY,

KING'S ROAD, CHELSEA, S.W.,

CHALLENGE THE WORLD to produce a Boiler not made in imitation of their Upright Tubular Boiler that will produce anything like the same effect with the same quantity of fuel in a given time.

The following unequalled statistics fully justify the challenge:—

Mark the enormous length of Houses and Piping heated by One Boiler.	Length of Houses in feet	Total length of Piping.
Messrs. E. G. Henderson & Co., Wellington Nursery	1,200	5,500
Messrs. F. A. Smith, Dulwich	3,000	11,000
M. Van Houtte, Belgium	3,300	13,000
Our own Fruit Forcing Show Establishment ...	1,000	7,000



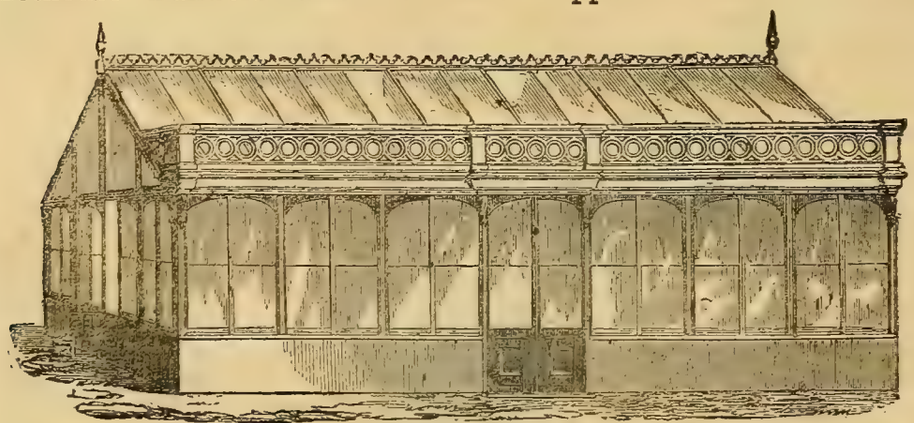
Also the Nurseries of Mr. Woodroffe, Harrow Road, N.W.; Messrs. Rollisson, Tooting, S.; Messrs. Wood & Ingram, Huntingdon; Messrs. Wood & Son, Maresfield; together with numerous Public Buildings and Establishments of the Nobility and Gentry far too numerous for insertion.

J. WEEKS & CO., Horticultural Builders and Hot-Water Apparatus Manufacturers, King's Road, Chelsea, S.W.

PLANS AND ESTIMATES FREE ON APPLICATION.

J. WATTS & CO.,

Hothouse Builders and Hot-Water Apparatus Manufacturers.



Horticultural Buildings of every description Heated on the most approved principles, combining great power with simplicity of construction. A Range of Houses containing 20,000 feet can be Heated as easily as the smallest Pit. Two Hundred Cucumber Boxes and Lights, and from Three to Four Hundred Lights of all sizes kept in stock, glazed and painted complete, ready for immediate use.

References to the Nobility, Gentry, and the Trade in most of the Counties in England.

Claremont Place, Old Kent Road, London, S.E.

VOKINS AND HURD,

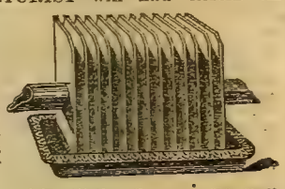
Jubilee Place, King's Road, Chelsea, S.W.



HORTICULTURAL BUILDERS and HOT-WATER APPARATUS MANUFACTURERS. Estimates forwarded on the shortest notice. BOILERS of all sizes on sale.

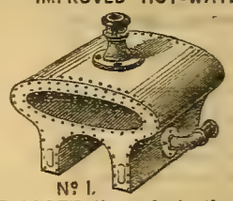
IMPROVED HOT-WATER PIPE.

THE HORTICULTURIST will find herein an inexpensive instrument of new and very important powers. An atmosphere may be produced at will either perfectly dry, partially damp, or saturated with moisture. A space of 10 inches by 12 inches contains the power of 25 feet of 4-inch pipe and other numerous advantages.



The London Warming and Ventilating Company (Limited), 26, Great George Street, Westminster, S.W.

IMPROVED HOT-WATER APPARATUS.



Nº 1.



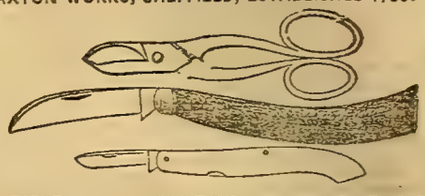
Nº 2.

T. SCOTT (formerly in the employ of Messrs. John Penn & Son), having lately fixed several of these BOILERS (No. 1), which are giving great satisfaction, can confidently recommend them as particularly adapted for Heating Churches, Chapels, Schools, extensive Ranges of Forcing Houses, &c., efficiently, and with great economy of fuel; also the PORTABLE BOILER (No. 2), requiring no brickwork, for Small Conservatories, Pits, Baths, &c.

T. SCOTT manufactures Improved Stop Valves and Thermometers. Bath and Kitchen Apparatus of every description.

Estimates, references, &c., on application to THOMAS SCOTT, Blackheath Road, Greenwich, S.E.

PAXTON WORKS, SHEFFIELD, ESTABLISHED 1738.



SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.—Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

Editorial Communications should be addressed to "The Editor"—Advertisements and Business Letters to "The Publisher"—at the Office, 5, Upper Wellington Street, Covent Garden, London, W.C.

Printed by WILLIAM BRADBURY, of 13, Upper Woburn Place, and FREDERICK MULLETT EVANS, of No. 20, Queen's Road, West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and published by them at the Office, No. 5, Upper Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—SATURDAY, September 3, 1859.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 37.—1859.] SATURDAY, SEPTEMBER 10. {Price Fivepence. STAMPED EDITION, 6*d*.

INDEX.

Barley v. sheep	748 *b*	Horticultural Society	741 *b*
Budder, wall tree	740 *c*	— — garden	743 *c*
Caladium Veitchii	740 *c*	Insect-killing agents	740 *b*
Caterpillars and grubs	740 *c*	Lime and salt	748 *a*
Cattle fair, Barnet	748 *c*	Lucifer match	748 *a*
Cheadle Farmers' Club	748 *a*	Manures, pamphlet on	748 *c*
Dianthus Dumpieri	744 *a*	Mildew and drought	744 *b*
Collodion and wounds	740 *c*	Nasturtium, Tom Thumb	741 *b*
Crystal Palace Hort. Show	741 *b*	Paris and its environs	741 *c*
Cucumber growing	741 *a*	Plants, arsenic in	739 *c*
Dielytra, white	740 *b*	— new	740 *c*
Dodder	748 *c*	Plumbago Larpentæ	741 *b*
Dye, Sophora	740 *c*	Reaping machines	747 *a*
Egg plant	744 *c*	Salt and lime	748 *a*
Flax culture	747 *a*	Seeding, thin	747 *c*
Fool plants, arsenic in	739 *c*	Scolytus	741 *b*—744 *c*
Gardens, Belgian	741 *a*	Sophora, dye from	740 *c*
Glass, care for burning by	740 *c*	Trade lists	743 *c*
Grapes, sulphuring	740 *c*	Tree wounds and collodion	740 *c*
Henfrey (Prof.) death of	741 *a*	Vines, select	744 *c*
Hitcham Labourers' Soc.	741 *c*	Wellingtonia	744 *c*

HORTICULTURAL SOCIETY OF LONDON.—The next Meeting of the FRUIT COMMITTEE will be held at the Garden of the Society, Chiswick, on TUESDAY, Sept. 20, at 2 P.M. The carriage of Packages of Fruit will be paid.

THE GRAND NATIONAL DAHLIA SHOW for 1859, at Aston Hall, Birmingham, September 20.
Upwards of ONE HUNDRED GUINEAS to be Awarded in PRIZES. Particulars to be had of
C. TURNER, Slough, or J. KEYNES, Salisbury, } Honorary Secretaries.

LANDSCAPE GARDENING AND GARDEN ARCHITECTURE.

MR. DAVIDSON, 2, Randolph Road, Maida Hill, London, W., continues to prepare Designs and Working Drawings, and direct the execution of all Park and Garden formations and improvements. His past experience enables him to give most satisfactory references in almost every part of the kingdom.

PINE APPLES, GRAPES, &c.

PINE PLANTS, Fruiting and Succession.
GRAPE VINES, from Eyes, for Fruiting in Pots or Planting.
JOHN WEEKS AND CO. can now supply any quantity of very fine strong healthy Pine Plants, either Fruiting or Succession; also remarkably fine strong Grape Vines from Eyes, all the best sorts.
JOHN WEEKS & Co.'s Horticultural Show Establishment is now entirely devoted to the Growing and Forcing of Fruits in great variety, thereby showing the most improved plans of construction, and the most superior system of Hot-water Apparatus.
JOHN WEEKS & Co., Horticultural Builders and Hot-water Apparatus Manufacturers, King's Road, Chelsea, London, S.W.

OSCAR STRAWBERRY.

CHARLES TURNER can still supply strong plants, warranted to fruit next season, at 42*s*. per 100.
For full particulars of this fine early variety see previous Advertisements.—The Royal Nurseries, Slough.

STRAWBERRY PLANTS.—ELTON PINE and KEENS' SEEDLING at 2*s*.; BRITISH QUEEN, ELEANOR, and ADMIRAL DUNDAS at 2*s*. 6*d*. per 100.
GEORGE CORNWELL, Barnet, N.

CUTHILL'S STRAWBERRY PLANTS.
EARLY BLACK PRINCE, per 100, 5*s*.; selected, 7*s*. 6*d*.
Do. PRINCESS ROYAL of ENGLAND, do. 7*s*. 6*d*.; do. 10*s*.
LATE PRINCE of WALES .. .. do. 7*s*. 6*d*.; do. 10*s*.
Will bear next year. See former Advertisements.
HIGHLAND MARY CUCUMBER (Winter), 1*s*. per packet.
Pamphlets, &c. Best Mushroom Spawn.
JAMES CUTHILL, Camberwell, London, S.

STRAWBERRY PLANTS AND CATALOGUE.—Plants of the pretty little Bush Alpine, both Red and White, without runners, suitable for edgings to walks, beds, &c., 10*s*. per 100 sets.
A DESCRIPTIVE CATALOGUE of upwards of 130 sorts is just published. To all who wish to purchase plants it will be sent by applying to the grower, WILLIAM JAS. NICHOLSON, Egglescliffe, Yarm, Yorkshire.

STANDARD ROSES.—All the leading kinds in cultivation at prices scarcely ever offered before.
CHARLES NOBLE, Bagshot, Surrey.

GREAT SCARCITY OF FRUIT.

STRONG ROOTS OF THE LINNÆUS RHUBARB, from division, can be supplied in any quantity at 12*s*. per 100, or 5*l*. per 1000, by WALTER PENNINGTON, Nurseryman, South Retford, Nottinghamshire.

FRUIT TREES.

J. AND J. FRASER, Lea Bridge Road Nurseries, Essex, N.E., beg to invite purchasers of Fruit Trees to an inspection of their stock, which is this year unusually fine. PRICED CATALOGUES can be had on application

FRUIT TREES.—Intending purchasers are respectfully invited to inspect the extensive Stock growing at the Nursery of the Subscribers. The quality is this season unusually good.—HUGH LOW & Co., Clapton Nursery, London, N.E.

SELAGINELLA RUBRICAULIS (NEW).

ROBERT SIM is now prepared to supply, at 10*s*. 6*d*. each, very nice plants of this distinct and very pretty novelty, of which he possesses the entire stock. Its stems are coral red, its leaves small, and of a shining variable green. In habit it resembles some elegant little Thuja Libocedrus or Allies. It will form a very compact and handsome smallish specimen for exhibition.—Nursery, Foot's Cray, S.E.

ARAUCARIA IMBRICATA.

YOUELL AND Co. beg to inform the Trade they have to offer a fine and healthy stock of the above in 1-year-old plants.
GLADIOLUS BRENCHLEYENSIS.—An extensive stock of large flowering Bulbs of this magnificent Gladiolus, the colour of which is vermilion scarlet, the best and brightest variety known. Prices of the above on application.
Royal Nursery, Great Yarmouth.

DUTCH AND CAPE BULBS.

BUTLER AND M'CULLOCH'S DESCRIPTIVE AND PRICED CATALOGUE OF DUTCH AND CAPE BULBS will be published in a few days, and forwarded free and post paid on application. Practical Cultural directions for the use of Amateurs will be prefixed to each class of Bulbs.
Covent Garden Market, W.C.

DUTCH AND OTHER FLOWER ROOTS.

HOOPER AND CO.'S PRICED CATALOGUE OF DUTCH AND OTHER FLOWER ROOTS, with Hints on Cultivation, is now ready, and may be had free by post on application. The first consignment of Bulbs has just arrived in excellent condition, and of the usual first class quality.
Covent Garden Market, London, W.C.

HYACINTHS AND OTHER BULBS.

WM. CUTBUSH AND SON'S DESCRIPTIVE CATALOGUE of the above is published, and can be had post free on application.—Highgate Nurseries, London, N.

DUTCH FLOWER ROOTS.

JOSEPH MAY AND CO. beg to offer the following Collection of BULBS on receipt of a Post-office Order for 20*s*., or reference:—

12 fine named Hyacinths	100 named Crocus
12 fine mixed Hyacinths	100 mixed Crocus
12 fine Narcissus	6 Crown Imperials
12 Early Tulips	12 Jonquils
12 Double Van Thol Tulips	Half the above for 10*s*.

A PRICED CATALOGUE forwarded on application.
1, Wellington Street, Strand, Waterloo Bridge, W.C.

NEW DUTCH FLOWER ROOTS.

CHARLES TURNER'S CATALOGUE of these valuable spring flowers is now ready, and may be had free on application.
The Hyacinths, Tulips, Crocus, &c., have been selected with the greatest care from the best growers, and have arrived in fine condition.
C. T. will be able to execute any orders intrusted to him with punctuality.—The Royal Nurseries, Slough.

DUTCH AND OTHER BULBS.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their CATALOGUE of the above is now ready, and will be forwarded post free on application. Early orders are solicited, as their successful cultivation depends in a great measure on early planting.
Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

DUTCH BULBS, FLOWER ROOTS, ETC.

JAMES FAIRHEAD AND SON, SEED GROWERS and MERCHANTS, Borough Market, London, S.E., beg leave to inform purchasers of the above that their WHOLESALE CATALOGUE is now ready and may be had post free on application.
Their selections are from the most eminent growers in Holland. Prices the lowest consistent with first-class quality. Also splendid sample of Double SNOWDROPS.

DUTCH AND OTHER BULBS.

THOMAS JACKSON AND SON respectfully announce that their PRICED DESCRIPTIVE LIST OF BULBS is ready for distribution, and will be forwarded post free on application.
T. J. & SON import only the finest kinds and largest Roots; dependence consequently can be placed on receiving the finest Bulbs.—Nurseries, Kingston, S.W.

DUTCH FLOWER ROOTS.

TIMOTHY BRIGDEN, SEEDSMAN and FLORIST, 10, Railway Arcade, London Bridge, London, E.C., begs most respectfully to inform his Friends and the Public generally that he has just returned from Holland with his unrivalled collection of HYACINTHS, CROCUS, TULIPS, NARCISSUS, JONQUILS, &c., of which a PRICED LIST may be had upon application. T. B. further begs to state that, having selected them from the best growers in Holland himself, he can guarantee them finer than any other house in London.
A large assortment of Aquaria, Wardian Cases, and Gold and Silver Fish always on sale.

DUTCH AND OTHER FLOWER ROOTS.

JAMES WHOMES has received his first importation of the above in fine condition. Early orders are solicited. A PRICED CATALOGUE pre-paid on application.
Windsor Nursery.

DUTCH FLOWER ROOTS.

CHARLES ALEXANDER, 30, West Register Street, Edinburgh, has received his first importation of the above in fine condition. The Bulbs are large and sound. Early orders solicited.
DESCRIPTIVE PRICED CATALOGUES on application.

GRAPE VINES FROM EYES.—All the best varieties of VINES, new and old, in strong plants, are now ready for sending out. They may be relied upon as true to name, the eyes being taken from Vines fruited on the premises. Prices and Lists on application. R. GLENDINNING.
Chiswick Nursery, London, W.

TO THE TRADE.—A fine healthy Stock of GENTIANELLA, 10*s*. per 100; ALPINE AURICULAS, 10*s*. per 100.
J. SMITH, Son., Tansley Nursery, Matlock, Derbyshire.
Unknown correspondents will please to enclose a reference, to save delay in the execution of their orders.

WANTED, a pair of IRISH YEWS, from 8 to 10 feet high. They must be a good match, and well-grown handsome Trees.—Send price and particulars to Mr. J. H. OLDROYD, Nurseryman, Shrewsbury.

LARGE CACTI, ALOES, YUCCAS, &c., CHEAP.

CACTI MALISONII, SPECIOSISSIMA, FOXII, JENKINSONII, 4 to 5 feet; ALOE SAPONARIA, large, and others; YUCCA GLORIOSA, in pots, and others, for sale cheap; ORNAMENTAL FERNS, &c.—J. BRAY, Florist, &c., Hope Cottage Nursery, South Lambeth, Vauxhall, London, S.

GEORGE GIBBS AND CO., SEEDSMEN,
26, DOWN STREET, PICCADILLY, LONDON, W.

SUTTON'S AUTUMN CATALOGUE is now ready, and will be sent to their Customers gratis and post free on application.—Royal Berkshire Seed Establishment, Reading.

FERN CATALOGUE.

ROBERT SIM'S NEW DESCRIPTIVE AND PRICED CATALOGUE, No. 6 (62 pages) of his COLLECTION of BRITISH AND EXOTIC FERNS, can be had, post free, for 8 stamps. Gratis to all previous purchasers of Ferns.
Nursery, Foot's Cray, Kent, S.E.

YOUELL AND CO.'S GENERAL PRICED CATALOGUE is now published, and may be had post free on application.—Royal Nursery, Great Yarmouth, Sept. 10.

NEW FUCHSIAS, VERBENAS, ETC., OF 1859.

WILLIAM RUMLEY AND SONS' NEW DESCRIPTIVE AUTUMN CATALOGUE of New Fuchsias, Verbenas, Cinerarias, Chrysanthemums, Geraniums, &c., of 1859, at very reduced prices, is now ready and may be had on application.—Gilling, near Richmond, Yorkshire.

A. VAN GEERT'S NEW CATALOGUE OF PLANTS.

A. VAN GEERT, NURSERYMAN, Ghent, Belgium, begs to announce that his new PRICED CATALOGUE of PLANTS just published, containing many of the choicest and leading plants of the day, may be had on application from his Agent, Mr. R. SILBERRAD, 5, Harp Lane, Great Tower Street, London, E.C.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY LIMITED supply every requisite for the Farm and the Garden.
Registered Offices, Union Road, Plymouth.

DICKINSON'S ITALIAN RYE-GRASS SEED is now ready for delivery. Sold only by himself, and for present payment, 48*s*. per quarter, or 7*s*. per bushel.
New Park, Lymington, Hants.

GRASS SEEDS FOR PRESENT SOWING.

SUTTON AND SONS have a good supply of fresh Seeds of all the best kinds of permanent GRASS SEEDS Prices and other particulars will be forwarded on application.
Royal Berkshire Seed Establishment, Reading.

TRIFOLIUM INCARNATUM (ITALIAN CRIMSON CLOVER).—New Seed may now be obtained on application to SUTTON & SONS, Seed Growers, Reading. This should be sown upon the corn stubble. Quantity required per acre, 24 lbs.

EARLY SHEEP FEED.

SUTTON'S ITALIAN RYE-GRASS SEED sown in September will produce a heavy crop in April and May next; also several successive cuttings during the summer. Quantity required per acre, 3 bushels; price 7*s*. per bushel.
Carriage free if cash with the order.
Royal Berkshire Seed Establishment, Reading.

PAMPAS GRASS.—The present is the most favourable time for planting out this inimitable Plant. No one can imagine the grand effect of a mass of its silvery plumes unless they see it, nor is its value confined to the ornamental, but is likely to become useful as Cover for Game. It grows in any soil or situation, attaining the height of from 6 to 10 feet.—Any quantity can be supplied by C. NOBLE, Bagshot, Surrey.

CATTELL'S EARLY BARNES & RELIANCE CABBAGES; ALSO DEPTFORD, EAST HAM, HIGHAM, KING, &c.

JOHN CATTELL has now ready BEDDED PLANTS of the above well known best kinds for early spring cutting at 5*s*. 6*d*. per 1000. No charge for crates, baskets, or packing.
Packages of 5000 or more are delivered to the Edenbridge Station of the South Eastern Railway carriage free. A remittance or reference to accompany orders from unknown correspondents.—Nurseries, Westerham, Kent.

MAGNIFICENT SPECIMEN PLANTS.—Ixoras, Rhynchospermums, Medinillas, Euphorbias, Dendrobiums, Ardisia.
VARIEGATED PLANTS, viz., Caladiums, Dracænas, Marantas, Crotons, Aphelandras; 2 pair of very fine variegated YUCCAS, and specimen AZALEAS. The above are to be sold very cheap. To be inspected on application to
Mr. W. J. EPPS, Maidstone.

RHODODENDRONS "of every hue," Scarlet, White, Rose, Crimson, and every intermediate shade, nearly all sizes and at all prices, according to quality, can also be supplied by CHARLES NOBLE, Bagshot, Surrey.

NEW HARDY GHENT RHODODENDRON, "JEAN VERSCHAFFELT"
This superb Rhododendron, that was so much admired by all who saw it in flower last year, is to be sent out before the 15th of October next. Price 20, 30, and 50 francs per plant. Each Subscriber will receive post free a coloured plate of said Rhododendron. All orders to be addressed direct to
JEAN VERSCHAFFELT, Nurseryman, Ghent, Belgium.

ERICAS.

F. AND A. SMITH'S Stocks of the above are this season unusually fine, comprising most of the leading winter and spring-flowering varieties. Prices on application.
Dulwich, Surrey, S.

CINERARIA, CALCEOLARIA, AND PRIMULA.

F. AND A. SMITH are now sending out SEED of their splendid varieties of the above in sealed packets, without which none are genuine, at 1*s*., 1*s*. 6*d*., 2*s*. 6*d*., and 5*s*. each. To be had also of most respectable Nurserymen and Seedsmen in the Kingdom.—Dulwich, Surrey, S.

CAMELLIAS AND AZALEA INDICA.

F. AND A. SMITH beg to offer the above well set with flower buds, dwarf, bushy, and thoroughly ripened off. Having been grown in this country they are most suitable for packing, and are strongly recommended to private Amateurs and the Trade in general. An inspection invited. Prices on application.—Dulwich, Surrey, S.

GARDENERS' CHRONICLE NEWSPAPER

NEW LARGE-FLOWERED PINKS FROM JAPAN.

DIANTHUS CHINENSIS HEDDEWIGII, 1s. & 2s. 6d. per packet.

We have great pleasure in introducing the above to the notice of our Customers. The following is an extract from the *Gardeners' Chronicle* of September 18, 1858, containing descriptions by the raiser, M. Heddewig, from whom we obtained our stock of Seed:—

"DIANTHUS CHINENSIS HEDDEWIGII.—This splendid variety is no doubt the most beautiful of all. The whole plant is scarcely 1 foot high, and very bushy; the leaves broad and bluish green; whilst always 30 to 40 flowers are at once in blossom, **and every one measures nearly 3 inches in diameter**—the little bush is totally covered with them. I have already now, in the second year, a great number of variations in colour, and it is expected that in time they shall show still more. *We can endorse all that M. Heddewig says in its favour, as we have grown and flowered them ourselves during the past summer, and on one plant taken indiscriminately are counted upwards of 60 blooms and buds.*"

DIANTHUS CHINENSIS MONSTROSUS, 1s. & 2s. 6d. p. packet.

We have also purchased the stock of another Continental grower of the above, a new variety raised from Heddewigii, the flowers of which are considerably larger.

Seeds sown during September and October in pans, and afterwards pricked out in 48-pots and kept in Greenhouse during the winter, will flower early in the summer.

☞ PRICE TO THE TRADE UPON APPLICATION.

JAMES CARTER & CO., Seedsmen, 237 and 238, High Holborn, W.C.

SPLENDID JAPAN PINK,

DIANTHUS HEDDEWIGII.

MESSRS. E. G. HENDERSON & SON

OFFER for Sale SEED of this truly beautiful dwarf-flowering plant for the Greenhouse and Flower-garden, surpassing all others of its tribe, and for the exhibition of which a Medal and Certificate for Distinguished Merit was awarded to E. G. HENDERSON AND SON, the former at the Exhibition in the Royal Botanic Gardens, Regent's Park, and the latter by the London Horticultural Society. A full description of this species is given at p. 722 (*Gardeners' Chronicle*).

Seed Packets, 1s., 2s. 6d., and 5s. each.

SPERGULA PILIFERA,

Clumps for Planting, 1s., 2s., and 3s., per dozen.

Full particulars for the Sowing and Planting of this admirable substitute for Grass in making Lawns, &c., and REQUIRING NO MOWING, is given in the

NEW BULB CATALOGUE,

which will be forwarded on application, postage free, containing 80 pages, including the most ornamental sections and varieties of BULBOUS FLOWERS AND PLANTS for bloom in the Conservatory and Drawing-room, by Pot, Glass, or Vase culture, in their respective months from January to November; and also a very select and extensive List of the kinds best adapted for every department of the Flower-garden in early spring, summer, and autumn, with numerous practically-descriptive remarks upon their merit and adaptation. This CATALOGUE also contains notices of the following

NEW PLANTS.

GAZANIA SPLENDENS.

A very beautiful, dwarf, free-flowering bedding Plant, for beds, borders, or vases, of first-class merit, with large, brilliant, golden-yellow blossoms, having a picturesque dark centre, blooming from June to October and November, and for which E. G. HENDERSON AND SON received a Medal at the Botanic Garden's Exhibition, and a Certificate of Commendation from the London Horticultural Society. See Mr. Beaton's opinion in the "Cottage Gardener," pages 316, 331.

SALVIA TRICOLOR.

This distinct and highly interesting species, the entire stock of which was purchased from Mr. Verschaffelt, of Ghent, who introduced it from Mexico, is a very neat, bushy, odoriferous Greenhouse Shrub, with racemes of pure white flowers, elegantly tipped with carmine-scarlet and violet-crimson.

CAMELLIA TRICOLOR IMBRICATA PLENA.

This fine variety will be sold out when the fixed number of orders have been received. The colour is clear blush white, uniformly flaked with rich rose and carmine, equal to the finest bizarre Carnation, the petals of good substance, and of a permanently cup-shaped outline.

DIPTERACANTHUS AFFINIS.

A handsome Laurel-leaved Greenhouse Shrub, with brilliant scarlet well expanded salver-shaped blossoms, vieing in colour with Verbena melindres or Salvia splendens.

The three first-mentioned Plants will be figured in Part VII. of "THE ILLUSTRATED BOUQUET," and the last-mentioned in Part VI.

CALCEOLARIA, CINERARIA, AND PRIMULA SINENSIS FIMBRIATA,

Also of **SHRUBBY BEDDING CALCEOLARIAS**, in Seed Packets (first-class quality), 2s. 6d. each.

An extensive and Select Collection of Herbaceous and Alpine Plants is attached to the above Catalogue.

E. G. HENDERSON & SON, Wellington Nursery, St. John's Wood, London, N.W.

COMMON HOLLIES, FROM 1 TO 2½ FEET.

WHITEHOUSE AND WHITTAKER having a large stock of common HOLLIES, fine bushy plants, with good fibrous roots, are prepared to supply them at very moderate prices, and strongly recommend the present as a good time for planting them. Large purchasers and the Trade liberally dealt with.

W. & W.'s general NURSERY STOCK is large and in fine healthy condition; intending purchasers would do well to inspect it. The Nursery is situated conveniently for Railway communication to all parts, being about two miles from the Rugeley Station, on the Trent Valley Railway.

Brereton, Rugeley, Staffordshire.

STRONG ESTABLISHED PLANTS of the following carriage paid to London. Special offers to the Trade.

ACHIMENES.—Meteor, carminata splendens, Parsonii, Gem, &c., 6s. to 9s. per dozen.

Verschaffelt's and Van Houtte's new TYDÆAS, 6s. to 9s. per doz.

VARIEGATED FOLIAGE PLANTS, such as Crotons, Dracænas, Caladiums, &c., 12s. to 24s. per dozen.

STOVE PLANTS.—Ixoras, Allamandas, Stephanotis, Æschynanthus Lieder, Gardenias, Pleromas, &c., 12s. to 18s. p. doz.

GREENHOUSE PLANTS.—Epacris, Pimeleas, Leschenaultias, Ruellia, Gompholobiums, Chorozemas, Polygalas, creepers, of all kinds, &c., 12s. to 18s. per dozen.

ERICAS, very fine, 9s., 12s., to 18s. per dozen.

SEEDLING ERICAS, not flowered, crossed with the best kinds, 18s. to 3 0s. per dozen.

Young specimens of AZALEAS AND ERICAS, from 18 inches over and upwards. List and prices sent on application.

Eagle Nurseries, Maidstone and Ashford.

SEED WHEAT FROM THE CHALK.—Selected samples of CHIDHAM, WHITE TRUMP, ROUGH CHAFF, HUNTER'S WHITE, RED-CHAFF WHITE, GRACE'S WHITE, TALAVERA, RED BROWICK, RED NURSERY, GOLDEN DROP, and all the best kinds of Wheat, supplied by RAYNBIRD & HARVEY, of Basingstoke, and 89, Seed Market, Mark Lane, London, E.C. Samples and prices on application.

JEAN VERSCHAFFELT, NURSERYMAN, Ghent, Belgium, begs respectfully to announce that he has a fine stock of the undermentioned healthy well grown Plants, which he offers at the following prices:—

CAMELLIAS, with flower-buds (including the best leading kinds) .. .. .. per 100 £5 0 0
Do. do. .. .. ,, £6 0 0
Do. do. stronger Plants, 2s., 3s., 4s., & 5s. each and upwards.
AZALEA INDICA, with flower-buds (including the best leading kinds), at from 1s. to 4s. and 5s. each and upwards.
AZALEA INDICA, his seven new Seedling varieties, including three double-flowering ones at 3l. the set.
ARUNDO DONAX VERSICOLOR; fine grown plants at from 3s. to 5s. each.
ERYTHRINA CRISTA-GALLI; strong plants at 1s.
50 sorts of GLADIOLI GANDAVENSIS, from 1s. to 2s. each.
DAPHNE DAUPHIN, 1s. | DAPHNE CNEORUM MAX., 1s.
LILIUM LANCIFOLIUM RUBRUM, strong bulbs, p. 100, £4.
Do. do. ALBUM ,, £3.
Do. do. ATROSANGUINEUM MACULATUM ,, £2.

Advertiser invites all persons to send their orders direct to JEAN VERSCHAFFELT, Nurseryman, Ghent, Belgium.

CROPS FOR EARLY SPRING FEED.

MESSRS. RAYNBIRD AND HARVEY are now supplying fine new WINTER TARES, WINTER BARLEY, WINTER OATS, fine new ITALIAN RYE-GRASS, and new TRIFOLIUM, the best crops for spring feed.

GIANT RYE very early and productive, and the new RACER TARE, a much earlier variety than the common sort.

Samples and prices on application.

Address RAYNBIRD & HARVEY, Basingstoke, or 89, Seed Market, Mark Lane, London, E.C.

CONIFERÆ.—All transplanted this last spring:—

Abies Deodara	Pinus Benthamiana
,, Menziesii	,, Cembra
,, Nordmanniana	,, insignis
Cupressus Lawsonii	,, Sabiniana, &c.
Cephalotaxus Fortunii, male and female	Taxus fastigiata
Juniperus sphærica	Thuja gigantea
Libocedrus chilensis	Thujopsis borealis
Pinus austriaca	Wellingtonia gigantea,

and nearly every other hardy Conifer worthy of cultivation. Many of the above are fine specimens from 1 to 10 feet high.

These are a few things selected from the general stock, which CHARLES NOBLE flatters himself will bear comparison with any in the kingdom. Gentlemen wishing to inspect the above will find the Nursery only a few minutes' walk from the Sunningdale Station, South-Western Railway, which is one hour's ride from London.—Inquiries answered by

CHARLES NOBLE, Bagshot, Surrey.

GENUINE TOBACCO PAPER FOR FUMIGATING.

H. APPLEBY (Foreman to Messrs. Ivery & Son, Nurseryman, Dorking, Surrey), supplies the above in 4-lb. packets at 1s. 3d. per lb. A liberal discount allowed to to the Trade. Testimonials too numerous for insertion, but may be had on application.

SHEET IRON POTS FOR FUMIGATING, 3s. 6d. each.

N.B. All orders to be accompanied with a Post-office Order, payable to HENRY APPLEBY, Dorking, Surrey.

RED SPIDER, THRIPS, SCALE, MEALY BUG, AMERICAN BLIGHT, ANTS, &c., prevented and got rid of by the PATENT GISHURST COMPOUND, which should also be applied when dressing Fruit Trees in autumn and winter. Price 1s. 6d. and 6s. per box, exclusive of carriage, with directions for use, and testimonials from the most eminent professional and amateur gardeners in the country. Where the consumption is not large the small-sized boxes are recommended.

Nearly 100 of the principal Nurserymen and Seedsmen in England, Scotland, and Ireland have taken in their supplies, most of the Nurserymen in the first instance for their own use, and are prepared to sell single boxes. A list of their names is occasionally advertised in the *Gardeners' Chronicle*, "Cottage Gardener," &c.

Extract from Leading Article in Gardeners' Chronicle, April 9, 1859.

"That it really kills red spider, aphides, mealy bug, thrips, and scale, it is impossible to doubt, in the face of reports of practical men, among whom we may mention Mr. D. Judd, of Althorp Gardens." Then follows a caution against the use of a too strong solution.

A new List of Testimonials stating the strength of solution and mode of application in the different cases has been printed and is now issued with the boxes.

Nurserymen and Seedsmen supplied by PRICE'S Patent Candle Company (Limited), Belmont, Vauxhall, London, S.

GLASS FOR ORCHARD HOUSES, as supplied by us to Mr. Rivers.

		16 oz.	21 oz.
20 in. by 12 in.	Common	14s. 0d. ..	£1 1s.
20 in. by 13 in.	Superior do. ..	16 6 ..	1 5
20 in. by 14 in.	English Glass ..	18 0 ..	1 9
20 in. by 15 in.			

Boxes included and not returnable.

JAMES PHILLIPS AND CO.,

180, Bishopsgate St. Without, London, E.C.

NO CONNECTION WITH ANY OTHER HOUSE IN TOWN.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz SHEET GLASS of British Manufacture at prices varying from 2d. to 3d. per square foot for the usual sizes required, many thousands of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES, and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London, W.

See *Gardeners' Chronicle* first Saturday in each month.

HORTICULTURAL GLASS—JUNE TARIFF.

THOMAS MILLINGTON'S reduced Tariff of GLASS, &c.

6 by 4, 7 by 5, 8 by 6, 9 by 7 } 16 oz. to the foot, 11s. 6d.
6½ by 4½, 7½ by 5½, 8½ by 6½, 9½ by 7½ } per 100 feet.

In 100 boxes,—4ths quality, 12s. 6d.; 3ds do., 14s. 4d.

10 by 8, 12 by 9, 12½ by 10½, 14½ by 10½, 13 by 11
10½ by 8½, 12½ by 9½, 13 by 10, 15 by 10, 13½ by 11¼
11 by 9, 13 by 9, 13½ by 10½, 12 by 11, 14 by 11
11½ by 9½, 12 by 10, 14 by 10, 12½ by 11½

20 by 12	per 100 feet	16 oz. 21 oz.
20 by 13	Common ..	16s. .. 24s.
20 by 14	Superior .	18s. .. 27s.
20 by 15		

All Boxes included.

Orchard House sizes as supplied to Mr. Rivers.

Hartley's improved Rough Plate Glass from ¼ to ⅜ in thickness.

Coloured Glass in great variety, at 9d. and 1s. per foot.

Paints, Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, Lamp Glasses, &c.

87, Bishopsgate Street Without, E.C., same side as Eastern Counties Railway.

GARDEN POTS AND PANS, in quantities of not less than 20 casts, delivered to the London Stations at the following prices:—Nos. 1hbs. 60, 1.60, 54, 48, 40, 32, 28, 24, 16, per cast, 2s. respectively. 12, 3s.; 8, 3s. 6d.; 6, 5s.; 4, 5s.; 3, 5s.; 2, 5s.; 1, 5s. On lesser quantities, 6d. per mile, for delivery to the Station, charged. The usual discount to the Trade. Square Propagating Pans, Kale and Plunging Pots, Strawberry and Border Tiles, &c., made to order.

J. & W. ADAMS, Kilns, Belle Isle, York Road, King's Cross, N.

VASES, PEDESTALS, SUNDIALS, FOUNTAINS, FLOWER BOXES, JARDINETS, FERN CASES, BALUSTRADES, EDGINGS AND CURBS FOR FLOWER BORDERS, SEATS, &c., in Imperishable Siliceous Stone, at reduced prices, for the adornment of the Villa Garden, the Mansion Grounds, or the private or public Park.

For Priced Illustrations apply to FREDERICK RANSOME, at the Show Rooms, Cannon Row, Westminster, S.W., or Patent Stone Works, Ipswich.

CINERARIA, HERBACEOUS CALCEOLARIA, AND HALF SHRUBBY DITTO SEED.—These have been saved from Turner's most beautiful varieties: in 1s. and 2s. 6d. packets. Primula and Hollyhock, from the newest and handsomest varieties, 1s. per packet. Agents for F. & A. Smith's splendid Cineraria, in 1s. 6d., 2s. 6d., and 5s. packets; also agents for Dobson & Son's splendid Calceolaria, in 1s. 6d., 2s. 6d., 3s. 6d., & 5s. packets.—Catalogues of the newest Flower Seeds, and newest Dutch and Cape Bulbs, sent post-paid.—BUTLER & McCULLOCH, Seedsmen, Covent Garden Market, W.C.

TO THE TRADE.

THOMAS JACKSON AND SON solicit an inspection of their Stock generally, and particularly their AZALEAS, ERICAS, EPACRIS, and POT PLANTS, which are this season they believe unequalled in their fine healthy condition. Good flowering plants of Azaleas, Ericas, and Epacris, 75s. per 100. T. J. & Son possess many large specimens of Stove and Greenhouse Plants, from 1 to 5 feet in diameter, suited for exhibition, prices according to size and kind. Berberis Beali, B. japonica, and Eugenia Ugni, good plants in 3-inch pots, 60s. per 100.—Nurseries, Kingston, S.W.

NEW PINKS.

CHARLES TURNER (MACLEAN).—Dark purple, fine; 5s. per pair.
ELEANOR (TURNER).—Rose, fine; 5s. per pair.
EDITH (MACLEAN).—Reddish purple; 3s. 6d. per pair.
LITTLE GEM (MACLEAN).—Red; 3s. 6d. per pair.
MILLIE (MACLEAN).—Dark, fine; 5s. per pair.
MISS GLOVER (TURNER).—Purple; 3s. 6d. per pair.
CHARLES TURNER can strongly recommend the above as first-class Pinks, and great acquisitions for exhibition purposes.
C. TURNER'S general stock of Pinks are very healthy and strong, and are now ready for sending out at 9s., 12s., and 18s. per dozen.—The Royal Nurseries, Slough.

GERANIUMS, HERBACEOUS PLANTS, ETC.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their new PRICED and DESCRIPTIVE CATALOGUE of the above, to which are added Supplemental Lists of Stove, Greenhouse, and Hardy Plants, Fruit Trees, &c. (which include all the best new plants of the season), is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

TO THE TRADE.

SPONSFORD would call the attention of all extensive planters to his stock of EVERGREEN and DECIDUOUS SHRUBS, particularly in Common Laurel, Aucuba, Arbutus, Evergreen Oak, Striped Holly, &c. Also, Standard Apples and Mulberries (these very fine), Pears, Plums, &c. Dwarf-trained Peaches, Nectarines, &c. A large stock of Red, White, and Black Currants, Gooseberries, &c. Fine Standard and Dwarf Roses, Limes in large quantities of all sizes.—Loughborough Park Nurseries, Brixton, Surrey, S.

T. LOCKHART, FLORIST, Fulham, London, S.W., begs to offer his celebrated collection of EARLY TULIPS, in 50 sorts, of the brightest and most varied colours, for 36 postage stamps per dozen, or 21s. per 100; also the Scotch collection of RANUNCULUS, in 50 splendid sorts, for 30 postage stamps per dozen, or 17s. per 100. The above are perfectly unique and warranted.
LOCKHART'S IMPROVED WHITE COS LETTUCE, this year's seed, free by post for 13 postage stamps per packet. The largest and finest variety in cultivation.
Roots of SCILLA PRÆCOX, 3s. 6d. per dozen.

THE BRISTOL NURSERY, KEMP TOWN, BRIGHTON.

ALEX. McKENZIE, for some time Gardener, &c., at Woodlands, Blackheath, begs to inform his friends and the public that he has taken the above Nursery on Lease, and hopes by strict attention to his business to obtain a share of the patronage so liberally bestowed on the late Mr. Mitchell.
Having taken the whole Stock, he will be prepared to execute orders at once, and begs to offer the following, which are in fine condition:—VINES, from Eyes, fit for forcing or planting.
FRUIT TREES, trained and in pots.
Extra large RHUBARB, for immediate forcing.
FIGS, in pots, fit for forcing.
STOVE and GREENHOUSE PLANTS.
And a very superior collection of TULIPS.—September 10.

GENERAL HAVELOCK STRAWBERRY now ready for sending out.—20,000 plants of the above superb Strawberry, which was sent out for the first time last season.
EDWARD TILEY can with confidence recommend this variety as being the hardiest of all known kinds; it ripens as early as the Black Prince, the fruit is as large as Keens' Seedling, very firm and red throughout, first-rate flavour and very heavy cropper, and will colour well in the most unfavourable weather. Fruit of this variety will realise more than double the value of any other Strawberry in cultivation, as it comes in a fortnight earlier than Alice Maud, Keens' Seedling, Prince of Wales, or any of the larger sorts, which is a great advantage to parties growing for sale or requiring very early fruit. 20 perches of it grown last season realised a greater value than 50 perches of any other in consequence of its earliness and growing in less than half the quantity of ground. This is certainly the most superb Strawberry in cultivation. Plants, 10s. per 100; 6s. for 50; 4s. for 25. Postage free. The best of the older varieties can also be supplied at the usual low prices.
LORD KENYON'S CUCUMBER (true), the best winter variety in cultivation, 1s. per packet.
BATH COS LETTUCE for winter sowing, 1s. per packet.
HOLLYHOCK SEED saved from all the choicest and most distinct named varieties, 1s. per packet.
A remittance must accompany all orders either by cash or 1d. postage stamps.—EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Church-yard, Bath.

NEW STRAWBERRIES.

ROBERTSON'S WIZARD OF THE NORTH AND NONSUCH.

DANIEL ROBERTSON, Linside Nursery, Paisley, is now sending out the above-named superb varieties, at 63s. per 100 plants, or 9s. per dozen. The Wizard of the North is a magnificent large variety, of superior quality, of very fine colour and shape, and an immense bearer. Succeeds Keens' Seedling and continues long in production. It is exceedingly hardy both in growth and in blossom. It was named in 1857, when a Certificate of Merit was awarded to it by the Paisley Horticultural Society; and a drawing made of the plant then exhibited is in the hands of the lithographer, copies of which when ready will be sent to the principal Seed shops in the country.
Nonsuch is an early Strawberry, of fine size and colour, a great bearer, juicy and rich in flavour, swelling off its later berries well.
These fine varieties were raised by Mr. John Robertson, at Linside, and their high character has been most satisfactorily established by several years' cultivation. They are confidently recommended as a valuable acquisition to Strawberry growers, whether they cultivate on a large or small scale. Strong plants are now ready and orders will be promptly executed.
Testimonials in favour of these fine Strawberries from the most eminent cultivators in the west of Scotland, who have seen them in bearing here, will be supplied on application.
Having a large stock of the Wizard of the North, Nurserymen and Market Gardeners ordering in quantity will be dealt with on favourable terms. A remittance or reference required.—DANIEL ROBERTSON, Linside Nursery, Paisley, N.B.

CARTER'S CHAMPION CUCUMBER surpasses Sion House and Lord Kenyon's Favourite for winter and early spring use. Smooth, dark green, straight, and prolific; average length, 1 foot. Price per packet, 1s.
J. C. & Co. do not hold themselves responsible for the genuineness of the above unless obtained direct from
238, High Holborn, London, W.C.

J. CARTER AND CO. beg leave to state that their TWENTY-FOURTH ANNUAL CATALOGUE OF DUTCH AND CAPE BULBS is now ready, and will be forwarded gratis and post free on application.
238, High Holborn, London, W.C.

J. CARTER AND CO. are now in receipt of their First Consignment of HYACINTHS, CROCUS, TULIPS, AND OTHER DUTCH BULBS, all of which are very fine and in good condition.
238, High Holborn, London, W.C.

DUTCH FLOWER ROOTS.

PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN, &c., respectfully announce the arrival of a fine Stock of DUTCH FLOWER ROOTS, and they are now prepared to execute orders for the same.
27, Great George Street, Westminster, S.W.

NEW SEEDS.

TRIFOLIUM INCARNATUM
ITALIAN RYE-GRASS
NATURAL GRASS SEEDS FOR PERMANENT PASTURE LAWNS, &c.
PETER LAWSON AND SON, the QUEEN'S SEEDSMEN, &c., are prepared to supply all kinds of SEEDS for AUTUMN SOWING of the best quality.
27, Great George Street, Westminster, S.W.

ROYAL BERKSHIRE SEED ESTABLISHMENT.

SUTTON AND SONS have just received a very unique Collection of HYACINTHS, ANEMONES, JONQUILS, CROCUSES, and numerous other Bulbous Flower Roots, direct from one of the most celebrated Florists in Haarlem. Prices very moderate. Lists gratis and post free.

DUTCH FLOWER ROOTS.

JAMES VEITCH, JUN., ROYAL EXOTIC NURSERY, Chelsea, S.W., begs to announce that he has received his annual supply of BULBOUS ROOTS from Holland, and is pleased to say that they are PARTICULARLY FINE and in EXCELLENT CONDITION. Catalogues are now ready and will be forwarded on application.
J. V., Jun., desires to impress upon those who patronise him the great advantage of giving him their ORDERS EARLY, as the successful cultivation of Bulbs depends in a great measure upon their BEING PLANTED EARLY IN THE SEASON.

NEW PLANT CATALOGUE.

JAMES VEITCH, JUN., begs to intimate that his GENERAL PLANT CATALOGUE for the present season, including a DESCRIPTIVE LIST of NEW and RARE PLANTS is now ready and will be forwarded post free on application.
Royal Exotic Nursery, Chelsea, S.W.—Sept. 10.

DUTCH BULBS.

MILNE, ARNOTT, AND CO. are now sending out, in the best possible condition, HYACINTHS, NARCISSUS, TULIPS, CROCUS, and other Flower Roots, imported direct from some of the most celebrated growers in Holland.
A PRICED and DESCRIPTIVE CATALOGUE just published will be forwarded free upon application.
Finest Hyacinths, by name, 5s., 6s., 7s. 6d., & 9s. per dozen.
Select Collections of Bulbs from 10s. 6d. upwards.
The Nursery, Wandsworth Road, London, S.

TRIFOLIUM INCARNATUM, 5d. to 6d. per lb. with hints on its successful cultivation, showing how 3 tons per acre of the most nutritive hay may be secured, the advantages of sowing it where broad Clover is thin, and its superiority to Tares as green food.
PAGE AND TOOGOOD having secured a large breadth of prime quality, offer it at the above low rate for cash.

New Turnip Seed, per lb... .. .. 0s. 6d.	Italian Rye-grass, per bush., 5s. to .. .. 7s. 0d.
New Rape, do... .. 0 4	Mustard, per lb, 4d. to 0 5

Calceolaria and Cineraria, in packets of 2s. 6d. and 1s. each, saved from one of the finest collections in Europe.
Seeds for exportation to all parts of the world.
PAGE & TOOGOOD, Seed Growers and Merchants, Oxford Street; and Above Bar, Southampton.

FLOWER GARDENS AND GARDENERS.

MR. GLENNY will present every reader (who will send him a directed envelope to Dungannon House, Fulham, S.W.), with a packet of Seed of the true DELPHINIUM FORMOSUM, the most handsome of all hardy perennials; intense blue. BALSAMS, mixed, acknowledged to be the finest ever offered, 50 seeds, 13 stamps, and any single colour; 12 seeds, 7 stamps; a new tricolor, 12 seeds, 13 stamps.
GLENNY'S GARDENERS' GAZETTE for September, most important to Gardeners of all classes, 3d., or by post 4d.

THE BRIGHTON AND SUSSEX FLORICULTURAL AND HORTICULTURAL SOCIETY will hold their GRAND EXHIBITION at the Royal Pavilion Grounds, on WEDNESDAY and THURSDAY, September 14 and 15. Nearly 350l. in PRIZES are offered for Plants, Cut Flowers and Fruits, including the RAILWAY CUP, value 10 Guineas, for the best 24 Dissimilar Dahlia Blooms for Amateurs and Gentlemen Gardeners.
Schedules of Prices can be had on application to E. SPARY, Queen's Graperies; or E. CARPENTER, 96, St. James's Street, Brighton.
By permission of Lord Frederick Paulet, C.B., the celebrated BAND of the Coldstream Guards, under the direction of Mr. GODFREY; also the BAND of the 4th Royal Irish Dragoon Guards under the direction of Mr. JAMES will attend each day.
Through the liberality of the Directors of the South Coast Railway, the Committee have the pleasure to announce to Exhibitors that Plants, &c., for Exhibition, will be conveyed to Brighton from all Stations, and back whence they came, FREE OF CHARGE. The Plants, &c., from London must be delivered at Bricklayers' Arms Station, Willow Walk, Bermondsey, not later than 8 P.M. on the day preceding the Show, to be delivered up to the Exhibitors early on the following morning at the Brighton Station. Where plants are loaded in the owners' vans and carriages, trucks are required, of which notice should be given to the Superintendent at London Bridge or Bricklayers' Arms, at least 24 hours before to prevent disappointment. No van for transit on a carriage-truck must be loaded more than 9 feet from the ground.
N.B. Vans will be in readines at the Brighton Station on the morning of the Show to convey Plants, &c., to the Pavilion at moderate charges.
P.S. Exhibitors accompanying their boxes of Fruits, Cut Flowers, &c., if such exceed the weight allowed, will, by booking them at the London Bridge Booking Office, have their productions conveyed to and fro Carriage Free.
By Order of the Committee.
THOS. ATTREE, Esq., Chairman of Committee.
E. SPARY, General Superintendent of Exhibitions.
E. CARPENTER, Secretary.

CONTENTS OF THE 24TH ANNUAL EDITION OF JAMES CARTER AND CO.'S CATALOGUE OF DUTCH AND CAPE BULBS, &c.

	Page		Page
Achimenes ..	21	Gesneria	21
Agapanthus	15	Gladioli	22
Aletris ..	15	Gloriosa	18
Allium ..	15	Gloxinia	22
Alstræmeria	15	Guernsey Lily	21
Amaryllis	15	Habranthus	18
Anemones, double ..	9	Hæmanthus	18
Anemones, for clumping	10	Hyacinths, for borders ..	2
Anemones, single	11	Hyacinths, named ..	2
Anemones, various ..	11	Hypoxis	18
Anemones, various ..	15	Iris, English	6
Anomatheca	15	Iris, Spanish	8
Anthericum	15	Iris, various	8
Antholyza	15	Ismene	18
Apios	16	Ixia	18
Arum	16	Jonquil's	4
Asclepias	16	Lachenalia	18
Asphodelus	16	Leucojum	18
Babiana	16	Lilies	14
Bella Donna Lily	21	Lily of the Valley ..	19
Bobartia	16	Morœa	19
Bravoa	16	Muscari	19
Brodiæa	16	Narcissi, double Border ..	3
Bulbocodium	16	Narcissi, single Border ..	4
Calla	16	Narcissus Polyanthus ..	3
Calliprora	16	Nerine	19
Calystegia	16	Orchis	19
Camassia	16	Ornithogalum	19
Carter's Champion Cucumber	31	Oxalis	19
Carter's Floral Illustrations	Wrapper	Pancratium	19
Chlidanthus	16	Pelargonium	19
Chrysanthemums	28	Phædranassa	19
Coburghia	16	Plants of all kinds ..	25
Commelina	17	Ranunculus, double Persian	11
Corydalis	17	Ranunculus, new Scotch	12
Crinum	17	Ranunculus, Turban ..	13
Crocus	4	Rigidella	19
Crown Imperials	14	Sanguinaria	19
Cultural Hints on Town Gardens	Wrapper	Scilla	19
Cumminghia	17	Seeds for Autumn sowing	32
Cyanella	17	Sisyrinchium	20
Cyclamen	17	Snowdrops	20
Cypella	17	Sparaxis	20
Cypripedium	17	Tigridia	20
Dielytra	17	Trichonema	20
Dog's-tooth Violets ..	17	Trillium	20
Eucharis	17	Tritelia	20
Eucomis	17	Tritoma	20
Ferraria	18	Tritonia	20
Fritillaries	18	Tropæolum	20
Galaxia	18	Tuberoses	20
Geissorhiza	18	Tulips	5
Gelatine	18	Vallota	21
Geranium	18	Wachendorfia	21
		Winter Aconites	21
		Zephyranthes	21
New large-flowered Pinks from Japan		.. Wrapper	
Parmenter's preparation for destroying mildew on Vines, &c.			31

237 and 238, High Holborn, W.C.

The Gardeners' Chronicle.

SATURDAY, SEPTEMBER 10, 1859.

SOME startling statements respecting THE PRESENCE OF ARSENIC IN PLANTS CULTIVATED FOR FOOD have been lately made by Dr. EDMUND DAVY, Professor of Agriculture and Agricultural Chemistry to the R. Dublin Society, which, if they should be confirmed, will most seriously affect all medico-legal evidence in cases of suspected poisoning. It is well known that plants will absorb anything fluid that may be presented to their roots, and hence gardeners are always anxious that the soil in which their plants are growing should be perfectly free from contamination by poisonous substances. Solutions of lead, of zinc, of mercury, of copper, even in minute doses, are regarded with the utmost apprehension. Even lime itself is a notorious poison to some plants—such, for example, as Heaths, Rhododendrons, and their allies. It would however appear from

Dr. Davy's statement that arsenic must be regarded as an exception.

"Knowing that sulphuric acid containing arsenic was so largely employed in making superphosphate and other artificial manures, and that they therefore must contain variable quantities of that substance, I have for some time thought that it was not improbable that plants grown with such manures might imbibe or take up from the soil where those substances had been employed, a certain quantity of arsenic, and in this way be rendered more or less unwholesome as articles of food.

"As a preliminary experiment to ascertain if plants had the power of taking up arsenic when it was presented to their roots in the soil, I transplanted into a flower-pot in June, 1857, three small plants of Peas, and when they had recovered the transplanting, I commenced watering them every second or third day with a saturated aqueous solution of arsenious acid; and this treatment was continued for more than a week without its appearing to exercise any immediate injurious effects on the plants. At this time, however, I was obliged to leave home for some months, so that I was unable to continue longer the watering with the arseniacal solution, or to observe further its effects on those plants. On my return I found that they had grown to about their full size, had flowered, and produced seed, showing that arsenic, though so very destructive a substance to animal life, had not apparently exercised any decided injurious effects on those plants."

To this very unexpected result we shall advert presently.

The crop thus obtained was at a later period examined chemically, and Dr. Davy found that arsenic could be readily detected in it, and was present even in the seeds, showing clearly that arsenic had been freely taken up, and that every portion of the plants had imbibed the poison.

He then proceeds to relate the result of another trial:—

"This experiment having shown me that arsenic might be taken up in considerable quantity by plants without its destroying their vitality, or appearing even to interfere with their proper functions, I proceeded to ascertain if the arsenic, as it existed in different artificial manures (such as the superphosphate), would in like manner be taken up by plants growing where those manures had been applied. To determine this, I transplanted, last April, a small Cabbage plant into a flower-pot in which I had previously put a mixture of one part of superphosphate to four parts of garden mould. The Cabbage after a short time appeared to recover the transplanting, and when it had been growing in the mixture for three weeks, I cut off the top of the plant, which looked perfectly green and healthy. On examining it for arsenic, I obtained the most distinct indications of the presence of that substance, though only a very small amount of Cabbage, viz., 113 grains, was used in the experiment. This result was therefore perfectly conclusive as to the power possessed by some plants, at least, of taking up arsenic from manures containing that substance. As in this experiment I was aware that I had placed the plant in a most favourable condition for absorbing the poison, and that a larger proportion of superphosphate had been employed than was used in practice, my last experiments were to ascertain if the presence of arsenic could be detected in our crops grown with superphosphate in the ordinary way."

Turnips taken from fields in which superphosphate had been used were next examined, and still gave the most unmistakeable evidence of having been arseniated. The facts thus collected appear to Dr. Davy "to have some important bearings, for though the quantity of arsenic which occurs in such manures is not large when compared with their other constituents, and the proportion of that substance which is thus added to the soil must be small, still plants may during their growth, as in the case of the alkaline and earthy salts, take up a considerable quantity of this substance, though its proportion in the soil may be but very small. Further, as arsenic is well known to be an accumulative poison, by the continued use of vegetables containing even a minute proportion of arsenic, that substance may collect in the system till its amount may exercise an injurious effect on the health of man and animals." See for further particulars the London Dublin and Edinburgh Philosophical Magazine, in which the original paper is to be found.

That these statements deserve the name of startling will hardly be denied. They lead to the following important inferences:—1st, that plants, or at least Peas and Turnips, are not injured by arsenic in the soil; 2d, that they absorb this dangerous substance; 3d, that they detain in their tissues what they absorb; 4th, that arsenic may thus be introduced into the animal system with daily food; and 5th, that it may accumulate there till dangerous consequences ensue.

Is this really so? Is there no error in Dr. Davy's experiments, which are quite opposed in their results to the evidence obtained by others? It is known, indeed, that the Potato crops near the smelting houses at Swansea remain healthy although the atmosphere is said to be contaminated by arseniacal fumes; but no exact experiments have been recorded on the subject; on the other hand, it is certain that vegetation perishes round the arsenic works of Cornwall.

Dr. Davy watered his Pea plants with a *saturated aqueous solution* of arsenic; and it did them no harm. Therefore it was not the minuteness of the dose of arsenic that failed to produce an injurious effect. Yet we have the evidence of others that very small doses are fatal to vegetable life. Marcet found that when the shoot of a Kidney Bean was dipped in water containing only two grains of arsenic in two ounces of water it perished in 36 hours. Jäger, when he watered plants with an arseniacal solution, killed them; nor could he or Humboldt or Carradori induce seeds to grow when sprinkled with arseniated water; Link found even that a whole plant was killed by only dipping a branch in arseniated water. Others have found that these injurious effects diminished as the dose of arsenic was reduced. There is a case of the kind mentioned in *Poggendorf's Annals* (1830, p. 488), where Vetches were treated with infinitesimal doses, even, as is asserted, with some advantage! (See *Decandolle's Physiologie végétale.*)

The last mentioned cases may be analogous to the poisoning by ill-made superphosphate of lime described by Dr. Davy; but our difficulty lies in comprehending how it should be possible for Peas to bear such a dose of arsenic as must exist in the "saturated aqueous solution" employed by that gentleman; and we cannot but think that some explanation might be found that would be consistent with the experience of others.

Still remains the other alarming fact that food crops raised with manure containing minute doses of arsenic may both directly and indirectly cause injurious effects upon the animal system; directly, as when vegetables are taken into the stomach; indirectly, when animals that have fed on such vegetables become the food of man.

This seems to be a matter deserving—let us rather say demanding—immediate and rigorous examination.

We collect anew from the French Horticultural Journals such small items as only require a passing notice.

—— The Paris Horticultural Society has been occupied by a short discussion of the real value of certain *insect-killing agents*. A M. Willemot having complained that he did not receive a medal in acknowledgment of his having introduced the Pyrethrums that furnish the flea powder of Caucasus and the Levant, was in the first place very properly informed that such an introduction did not deserve such a reward; and secondly, that his powder did not kill green-fly as was asserted. The President, M. Payen, said that if the powder was properly applied the insects dropped no doubt, but after a short time reappeared. M. Willemot was not satisfied with this report, and rejoined that his powder did kill insects, such even as the caterpillars of the slug Tenthredo (Selandria Æthiops?) as well as green-fly. M. Payen maintained that this could not be, because the aphides had been found to be quite lively when put into a bottle of the powder. Others thought that they were merely knocked off, and falling to the ground were unable to get back, and so perished of hunger; what good was done might therefore be reasonably ascribed to mere mechanical action, and might have been effected just as well by syringing with mere water. A gentleman upon this remarked that birds were of more use in killing green-flies than all the insect powders that had ever been proposed; and he quoted the instance of a tame sparrow, which a friend of his had once fed with them, and which soon cleared all the plants in his garden. Another member extolled the virtues of syringing with a cold decoction of tobacco. A third observed that 10 or 12 scruples of Aloes dissolved in a quart of water wholly destroyed the green-fly after twice syringing the trees. Some other gentlemen were of opinion that tobacco and Aloes must be excellent because they remained sticking to trees, at least for some time, and so prevented the return of the insects.

—— It appears that a *Dielytra spectabilis* with white flowers has been obtained by M. Rolland, a gardener at Meaux.

—— It has been found that *Grapes sulphured* in very hot weather and very hot places become burnt as it were by the sulphur, but that this never happened elsewhere or at other times.

—— M. Payen proposes to drive off *caterpillars* and grubs attacking fruit by means of a weak preparation of oil dashed upon the trees. He mixes a few scruples of whale oil in a quart of water, adding some drops of ammonia; the mixture is beaten up into an emulsion, which is thrown upon the trees by a garden engine.

——A M. Galfin, a gardener at Nantes, uses *collodion* to cover the wounds in fruits that have been bitten or wounded by insects or otherwise, and that are beginning to spread in a state of decay. For this purpose he scrapes away carefully with a silver knife all the injured part, and then gently paints the place with collodion applied with a camel's-hair pencil. He assures us that the decay of injured fruit is thus effectually arrested. Collodion, which is merely gun-cotton dissolved in ether, may be prepared in the following manner:—Put into a glass or porcelain vessel 150 grammes of sulphuric acid and 75 grammes of saltpetre reduced to powder; stir the mixture with a glass rod, and when it is cold add little by little 5 grammes of cotton wool. At the end of a quarter of an hour the cotton is taken out and washed in plenty of water till there is not the slightest trace of an acid taste. It then is dried on blotting paper in the sun, and afterwards dissolved in a well-stoppered bottle in a mixture of 50 grammes of ether and 5 grammes of alcohol. This solution is what is called collodion.

——An amateur wishing to destroy the *transparency* of the glass roof of his greenhouse hit upon the following plan. He melted a tallow candle over a gentle fire, poured the liquid grease into a pot, and let it stand till it became unctuous—neither too soft nor too hard. On a warm day, when the condensation on the glass was all dried up, he smeared the glass in the *inside* with the grease applied by a cotton dabber. He rubbed and daubed the glass until he brought the grease to a uniform surface. After which he gently passed the same dabber of cotton linen over the glass perpendicularly, which gave the glass the appearance of being finely furrowed. The roof thus prepared so completely prevented the direct rays of the sun from passing that nothing in the inside could be seen from the outside, although when in the inside the light was clear and bright without the least glare. We are assured that this is an effectual prevention of all burning or scorching which so much disfigures plants kept under glass in summer.

——When you have to *bud a shoot* laid close into a wall there is no difficulty in raising the bark of the cut next the wall, but there is no getting the straight handle of the budding knife under the bark on the side next the operator. So M. Fortin, who had a good deal of this work to do on old trees, has contrived a curved instrument like a button hook, but broad and flat, and with the end at right angles to the shank instead of being hooked. This he found an extremely handy instrument.

—— Beautiful a tree as is the hardy *Sophora japonica*, it is little cultivated either in this country or elsewhere; and yet it does well in all sorts of soils except those which are cold, heavy, and undrained. It appears that its buds have great importance in dyeing. The Chinese use them for a pure yellow, or with the addition of Indigo for one of their greens. The yellow is particularly valuable for dark orange yellow. The flowers may be used in the same way, and indeed are richer in colouring matter; but the tint they give is browner than that of the buds. What is very remarkable is, that neither the bark, nor the wood, and scarcely the leaves, are capable of yielding this dye. (For further particulars see the *Rev. Hort.* 1859, No. 16.)

New Plants.

225. Caladium (?) Veitchii.

When Mr. Thomas Lobb was in Borneo he sent Messrs. Veitch an Araceous plant of singularly beautiful foliage, a specimen of which was exhibited at the Horticultural Society's rooms last Thursday? It is stemless like Colocasia esculenta; the stalks of the leaves are 2 feet long, green, slightly scratched with purple; the leaf itself is a foot long, peltate, arrow-headed, of a firm texture, rich deep purple on the under side, dark green above, with a white border and white diagonal veins. It is a beautiful example of a "fine foliaged" plant; but not having flowered there is no saying whether it is a Caladium or not. Nevertheless, a name has become necessary to it, and we venture to propose for it that which is here given.

DEATH OF PROFESSOR HENFREY.

It is our melancholy duty to record the death of this gentleman, at his residence at Turnham Green, on the morning of the 7th inst. Prof. Henfrey has long been known as an excellent histologist and sound vegetable physiologist. Especially conversant with the botanical literature of the Germans, it has been to his pen that we owe many valuable dissertations upon subjects little attended to in England. The papers in the *Micrographic Dictionary* of himself and his friend Dr. Griffith are justly celebrated for their accuracy as well as skilful condensation. The physiological part of his *Elementary Course of Botany*, and the papers on Vegetable Structure now in course of publication in the *Journal of the Royal Agricultural Society*, will always be regarded as the productions of one who was not only familiar with the truths of science, but able to render them attractive to those who are little accustomed to think upon such subjects. In private life he was endeared to his friends by the gentleness of his manners and the genuine kindness of his nature; while to his young family his loss is irreparable. Professor Henfrey was a Fellow of the Royal and Linnean Societies, a Member of the Council of the Horticultural Society, Professor of Botany in King's College, London, and Examiner in Natural Science to the Royal Military Academy and the Society of Arts. He died in the 39th year of his age.

BELGIAN GARDENS.

No. I.—The collections of Baron De Man de Lennick have a European reputation. What amateur is there, Belgian or foreign, who does not know the beautiful estate of Bierbais, the turrets of which may be seen close to the railway station of Mont-Saint-Guibert; with its modern chateau built upon an eminence in the midst of a park full of fine old trees; its magnificent conservatories and ranges of fruit-houses, where the finest Grapes, Strawberries, Pine Apples, Apricots, and Peaches, thrive and bear spontaneously, and at all seasons, side by side with the most beautiful specimens of Asiatic, African, and American vegetation.

The principal conservatories of Baron De Man de Lennick form a continuous parallelogram of nearly 50 yards long by 10 in height and width. The body of the building has a glazed roof, with upright sashes on the south side, and is divided into three compartments, the first of which serves as a greenhouse, and contains a collection of the rarest Conifers and other plants belonging to this class. Among them are specimens of the most beautiful species of Podocarpus and Araucaria, amongst others A. excelsa and Cunninghamii, large enough to bear cones; of exotic Pinus, Cupressus, Taxodium, and Cryptomeria, perfectly cultivated and of grand dimensions. The centre compartment contains collections of such Camellias and Azaleas as even our greatest Ghent growers might envy. Choice collections of Fuchsias, Ericas, and Sikkim Rhododendrons decorate the front of this conservatory, the uniform appearance of which is relieved by magnificent greenhouse Palms and Tree Ferns. Extremely rare species of Chamærops, Balantium, and Marattia, in the form of gigantic specimens, extend their long fronds above the smaller plants, which thus expand their flowers beneath the shadow that plays above them. The third and easterly compartment is devoted to Orchids, and to plants which inhabit hot regions and love great heat and a damp atmosphere. But there are none of those stages or wooden boxes which destroy all effect, and are such an eyesore in our conservatories. Here we have a perfect flower garden, intersected by paths and ornamented with basins, rockwork, and jets of water, which play amongst the green verdure. This is the place in which to see Orchids, Tillandsias, Æchmeas, Heliconias, Caladiums, Aroids, and Ferns as they really appear amidst the strange and magnificent variety of the most luxuriant vegetation of the tropics.

The collection of Orchids, although not extensive, is composed of the most beautiful genera and species, and is especially remarkable for the unequalled health and vigour of the specimens. Let us mention more particularly a Sobralia macrantha, which measured 4 feet in diameter at the base, and whose stems rose more than 2 yards high, occupying a space of 12 yards in circumference; Aërides crispum and odoratum majus; Cattleya crispa, purpurata and Mossiæ, with a Lælia superbiens, and Grammatophyllum speciosum, of uncommon vigour. Between the rocks are placed numbers of rare Orchids, now alternating with Tillandsias and Ferns, now with Caladiums, or species of Pothos and Philodendron; amongst them were most especially remarkable Cattleya Trianæi and elegans; Odontoglossum nebulosum, Pescatorei, and grande; Cœlogyne maculata and Wallichii, Saccolabium violaceum and retusum, Schomburgkia crispa and marginata; Huntleya meleagris, Vanda Batemanni, Oncidium Lanceanum, and many other striking species. Two beautiful Heliconias and a Rhopala Jonghii, 3 yards high, furnished with leaves down to the very bottom; magnificent Tree Ferns, and great numbers of plants, with either ornamental foliage or beautiful flowers, make of this place a perfect paradise. *From the Journal d'Horticulture Belge.*

Home Correspondence.

Cucumbers.—While out-door Cucumber growing is fresh in the minds of so many growers, I would call attention to a system practised here, and with very good results. I start a three-light frame on a dung bed early enough to cut the Cucumbers in March, and continue to do so until the middle of June, when the plants get a liberal supply of guano water; in a few days afterwards the frame is taken away and the plants left to the mercy of the weather—the sort grown is the Sion House. In a very short time the Cucumbers came on the plants as if by magic. I am sorry I did not keep an account of the quantity cut, but it would have been thought incredible as it was immense; after supplying the wants of the kitchen they were given to the labourers and to all comers by the half dozen. I counted over threescore on the plants at one time and the most of them straight fruit averaging from 8 to 12 inches in length. For the last few days in August the weather was very cold and the nights damp, so that the plants lost some of their vigour, but they are now doing good work. Ridge Cucumbers I have not grown successfully for several years. They die off just when they come to a bearing state without any appearance of disease in the Vines. *Thorp Perrow.*

Tom Thumb Nasturtium.—Being the raiser of this Nasturtium, I beg to inform your correspondent (see p. 693) that it is in every respect superior to Cattell's Dwarf Scarlet kind, both as regards brilliancy of colour, shape, and substance. It also possesses the good quality of throwing its blooms well up above the foliage. This season I grew a plot of Cattell's Dwarf Scarlet near my Tom Thumb, in order that London seedsmen might have an opportunity of comparing the respective merits of the two, and their decision has been unanimously in favour of Tom Thumb. *W. H. Dunnett, East House Farm, Dedham, Essex.* —— In your Number of August 27 "W. D." asks "whether or not Tom Thumb Nasturtium and Cattell's Dwarf Scarlet are the same?" Both last season and this I have seen the two varieties growing side by side at Mr. Dunnett's. I have carefully examined the flowers of each, and can assure "W. D." that Tom Thumb is very superior in every respect to Cattell's. *P. Barr, Covent Garden Market.*

Plumbago Larpentæ.—I should be glad to know from some of your readers whether this Plumbago would do as a bedding-out plant, and if so, when should cuttings of it be struck, and would it flower well? Permit me also to inquire whether or not the Tom Thumb Nasturtium will come true from seeds? *S. H. F.*

[It will not do for bedding out, in our opinion.]

Scolytus in Elm Trees.—Does the woodpecker feed on this vermin, and could it be domesticated in this populous locality? *C. R., Hampstead.*

Societies.

Horticultural: *Sept.* 8.—A meeting of the Floral Committee of this Society took place this day. The subjects of exhibition consisted chiefly of Dahlias, most of which are noticed in another column. The best were Neville Keynes, Beauty, George Elliott, compacta, Rev. J. Dix, and Mrs. Howard Vyse. Fuchsia Marquis of Bath from Mr. Wheeler, of Warminster, was recommended as the finest of double-flowered varieties, which had come under the notice of the committee. A pretty rose-salmon coloured Verbena, with a yellowish green eye, surrounded with crimson, also came from the same grower. Caladium Veitchii, described in another column, was furnished by Mr. Veitch; and Messrs. Backhouse, of York, sent an extremely handsome variety of Cattleya Schilleriana. The sepals and petals have a green ground colour, richly spotted and barred with reddish brown. The labellum is purple, fringed with white, showy and beautiful.

Crystal Palace Horticultural Exhibition.—The third great display of flowers, fruits, and vegetables for the season, held under the auspices of this Company, took place on Wednesday and Thursday last, and was tolerably well attended. The exhibition itself was scarcely so good as it was last year, owing doubtless to the peculiar season we have just experienced. Collections of flowering plants were scarce, but there were some very good lots of plants remarkable for fine foliage, Ferns, and Lycopods. Of Orchids a very few were shown. Dahlias and Asters were good and plentiful, and of Fuchsias and Japan Lilies there were some fine banks. Pine Apples were scarce, but of Grapes, Peaches and Nectarines, Apples, and Pears exhibitions were numerous. As this part of the show was the most attractive, we will begin with it.

Collections of fruit were tolerably numerous. The best came from Mr. Frost, gr. to E. L. Betts, Esq. and was in every way well deserving of the first prize which was awarded it. It consisted of a Queen Pine Apple, excellent Black Hamburgh and Muscat Grapes, Ickworth Imperatrice and Coe's Golden Drop Plums, King's Green-fleshed Melon, Morello Cherries, Barrington Peaches, Elruge Nectarines, and Williams's Bon Chrétien Pear. The next lot in point of merit came from Mr. Page, gr. to W. Leaf, Esq. Streatham. It contained an Otaheite and smooth-leaved Cayenne Pine Apple, Greengage Plums, Golden Perfection and Incomparable Melon, Barrington Peaches, and Elruge Nectarines, Muscat and Black Hamburgh Grapes, and Brown Ischia Fig. A third collection came from Mr. Kaile, gr. to Lord Lovelace. It contained Black Hamburgh and Muscat Grapes, a Queen Pine Apple, Improved Green-fleshed Melon, Williams's Bon Chrétien Pears, Brown Turkey Figs, Denyer's Victoria Plum, Chancellor and Noblesse Peaches, and Pitmaston Orange Nectarine. Another collection arranged for artistic effect came from Messrs. Wortley. It consisted of a basket of fruit, out of the midst of which shot up a long glass tube filled with cut flowers nicely put together, and altogether very pretty. Exhibitions of this kind deserve encouragement.

Of collections of 8 dishes the best was contributed by Mr. Dawson, gr. to Earl Cowper. It contained two very good Pine Apples, Black and White Grapes, Pears, Peaches, Nectarines, and Figs. Scarcely inferior to that just named was a collection from Mr. Bailey, gr., Shardeloes; it consisted of Black Hamburgh Grapes, three bunches of which weighed 8 lbs., White Muscadine Grapes, a Queen Pine Apple weighing 4 lbs., Noblesse Peaches and Elruge Nectarines, Bailey's Green-fleshed Melon, Williams's Bon Chrétien Pears, and Lee's Perpetual Figs. A third lot from Mr. Eckford, Highworth, Wilts, contained a smooth-leaved Cayenne Pine Apple, Black Hamburgh and Muscat Grapes, Brown Turkey Figs, Kensington and Royal George Peaches, Pitmaston Orange Nectarine, and Williams's Bon Chrétien Pear. Mr. Ingram, gr. to J. J. Blandy, Esq., Reading, also contributed a nice exhibition, in which were Royal Muscadine and Black Hamburgh Grapes, Cocoa-nut Melon, Barrington Peach and Elruge Nectarine, Morello Cherries, Coe's Golden Drop Plum, and White Doyenne Pear.

Of Pine Apples fine fruit came from Mr. Dawson, gr. to Earl Cowper, and Mr. Bailey, Shardeloes; the latter sent a Black Jamaica, weighing 5 lbs. Messrs. Page & Davies also showed good fruit of the last-named variety. The best Queen came from Mr. Rattray, gr. to J. Back, Esq., Cobham—it weighed 4 lbs. 10 ozs. The next in point of merit came from Mr. Solomon's garden at Peckham Rye.

Of Grapes in baskets of 12 lbs. each, the best was contributed by Mr. Solomon, and consisted of Black Hamburgh finely ripened and well coloured, and Muscats. Messrs. Kay, Spary, Harrison, and Jackson also exhibited good baskets of Black Hamburgh and Muscats

In the class of 2 dishes of Black Grapes, the best were sent by Mr. Hill, gr. to R. Sneyd, Esq.; they consisted of Black Prince and Black Hamburgh, beautiful bunches, more especially the former. The next best fruit, finely grown but a little deficient in colour, came from Mr. Frost, and good bunches also came from Messrs. Kay & Sage.

For White Grapes a first prize was awarded to Mr. Drewitt, gr. at the Denbies, near Dorking, for admirable bunches of Cannon Hall Muscat. They indicated unusual vigour; there was no evidence of bad setting, and each berry was stated to measure above 2 inches in circumference, while the bunches themselves were quite a foot in length. They were, we understand, from Vines grown on a chambered border heated with hot-water pipes. Scarcely inferior, and evidently rather riper, were some very finely grown bunches of the same kind of Grape from Mr. Frost, of Preston Hall. The latter had also beautiful bunches of Muscat of Alexandria. Mr. Frost, gr., Chigwell, and Mr. Smith, gr., Liscard Hall, likewise furnished very good examples of Muscats.

The heaviest bunch of Grapes came from Mr. Strachan, gr. to Captain Senhouse, Northampton. It appeared to be Black Hamburgh badly coloured. The next best, also a Black Hamburgh, came from Mr. Snow, gr. to Earl de Grey, at Wrest Park, and weighed 4½ lbs. Mr. Summers, gr. to A. Mongredien, Esq., showed White Nice.

The prize offered by Mr. Veitch for the best Golden Hamburgh Grapes produced some magnificent specimens which cannot have failed to dispel all doubt concerning the great excellence of this variety. They came from Mr. A. Scott, gr. to Lord Sherborne. One bunch weighed 3¾ lbs., and the three together weighed 9 lbs. Other bunches were shown by Mr. Kay, of Finchley, and others; but not so good as those just mentioned. This Grape may therefore now be expected to take a prominent place in every collection.

Of Vines in pots two collections were shown.

Peaches and Nectarines were present in abundance; but for the most part small in size. The best in the class of 4 dishes came from Mr. Hazell, of Denmark Hill. The sorts were Late Admirable, very fine, and Noblesse Peaches and Newington and Elruge Nectarines. Mr. Turner, gr. to J. Hill, Esq., of Streatham, sent fine specimens of Bellegarde and Grosse Mignonne Peaches and Violet Hâtive and Murray Nectarines. Mr. Little, gr. to A. Darby, Esq., of Slough, had Late Gallande and Admirable Peaches, and Pitmaston Orange and Oldaker's Black Nectarine. From Mr. Kaile came Noblesse and Barrington Peaches, and Elruge and Violet Hâtive Nectarines.

In the class of 2 dishes of Peaches and Nectarines the most successful exhibitor was Mr. Little, who contributed Elruge Nectarines and Walburton Admirable Peaches. Mr. Dawson and Mr. Eckford both showed well in this class. The latter had Murray Nectarines and Royal George Peaches. Mr. Wortley, gr. to Mrs. Maubert, had Noblesse Peaches and Elruge Nectarines. Some Peach trees in pots were also shown.

Beautiful examples of the Brunswick Fig came from Mr. Rust, gr. to the Right Hon. L. Sulivan, of Broome House, Fulham; and Mr. Goldsmith, gr. to Sir W. Farquhar, Bart., Dorking, also sent a good dish of Figs.

Cherries, consisting of Morellos, were exhibited in very fine condition by Messrs. Betteridge, Snow, and Leslie. We also noticed a dish of Carnation Cherry, small, but still plump and good.

The best Plums came from the neighbourhood of Margate. They consisted of Magnum Bonum, Washing-

ton, Jefferson, Black Diamond, Coe's Golden Drop, and last, "though not least," Greengage.

Apples, notwithstanding that most growers this year have only dozens instead of bushels, were tolerably numerous. The best 6 dessert sorts came from Mr. Whiting, the Deepdene, near Dorking. They consisted of Adams' Pearmain, Ribston Pippin, Sweeney Nonpareil, Yellow Ingestrie, Franklin's Golden Pippin, Old Golden Pippin, and Fearns's Pippin. These were one and all fine specimens, not very large; but there was a cleanness and beauty about them which was quite remarkable. The next lot in point of merit came from Mr. Mortimore, gr., Carshalton; the sorts were Celina, Ribston and Downton Pippins, Nonpareil, Nonesuch, and Claygate Pearmain. A third lot came from Mr. Holder, of Reading, who furnished King of the Pippins, Golden, Ribston, and Fearns's Pippins, and old and Scarlet Nonpareil.

In the class of Kitchen Apples, Mr. Mortimore had the best exhibition, which consisted of Golden Noble, Celina, Gloria Mundi, Hoary Morning, Codlin, and Flower of Kent. From Mr. Frost, of Preston Hall, came beautiful specimens of Hawthornden, Northern Greening, Alfriston, Gloria Mundi, Wellington, and Celina. Mr. Newton, gr. to G. Graham, Esq., of Enfield Chase, sent Emperor Alexander, Dutch Codlin, Kentish Fillbasket, Gravenstein, Brabant Bellefleur, and Hollandbury. From Mr. Turner, gr. to J. Hill, Esq., came Blenheim Pippin, Wellington, Alfriston, Flower of Kent, Yorkshire Greening, and Golden Noble.

Of Pears, Mr. Harrison, of Oatlands, had magnificent specimens of Williams's Bon Chrétien, Chaumontel, Marie Louise, Passe Colmar, Beurré Diel, and Duchesse d'Angoulême. Mr. Holder, of Reading, sent smaller fruit of Williams's Bon Chrétien, Brown Beurré, Beurré Rance, Duchesse d'Angoulême, Louise Bonne of Jersey, and Marie Louise. Mr. Hally, Blackheath, sent Williams's Bon Chrétien, Marie Louise, Duchesse d'Angoulême, Beurré Clairgeau, B. Diel, and Grosse Calebasse. From Mr. Whiting came Marie Louise, Beurré d'Amanlis, Brown Beurré, and other well known kinds.

In the class of three dishes of Pears, Mr. Rattray contributed fine fruit of Dunmore, Williams's Bon Chrétien, and Marie Louise. Mr. Park, gr. to G. H. Vernon, Esq., of East Retford, and Mr. Mortimore also showed good dishes in this class.

For single dishes of Pears for weight, the first prize was awarded to Mr. Harrison, of Oatlands, who sent 6 fruit of Duchesse d'Angoulême, weighing together 5 lbs. 2 oz. Mr. Hally had 12 fruit of the same variety, whose united weight was 8 lbs. 8½ oz. Mr. Park showed Williams's Bon Chrétien.

Of single dishes of Pears shown for flavour, the best was Williams's Bon Chrétien, contributed by Mr. Elliott, gr. to C. Davidson, Esq., Sydenham. The next best was Beurré d'Amanlis from Mr. Hutcheson, gr. to H. P. Cotton, Esq. Margate, and Williams's Bon Chrétien, over ripe, from Mr. Harrison, of Oatlands.

Among miscellaneous fruits we observed a well fruited plant in a pot of Eugenia Ugni; and some skilfully managed dwarf Orange trees in pots from Mr. Waters, gr. to A. F. Moore, Esq. of Sydenham.

As regards miscellaneous stove and greenhouse plants, collections came from Messrs. Baxendine, Kaile, Page, Green, Peed, Rhodes, Reid, and Chilman. These collections consisted chiefly of Allamandas, Vincas, Ixoras, Cyrtoceras, Croweas, the handsome Pleroma elegans, and Cape Heaths. Of Vallota purpurea there was a grand specimen from Mr. Carson. It had eight flower spikes, each of which was surmounted by from three to five lovely scarlet blossoms, measuring quite 3 inches in diameter. We also noticed in Mr. Green's group a plant of the beautiful, but now seldom grown Lisianthus Russellianus.

Plants remarkable for the beauty of their leaves were shown in good condition by Messrs. Young, Rhodes, Oubridge, Nicholson, Jackson, Colgate, Bunney, and Summers. Among these we observed little new. There were, however, some well grown examples of Palms, intermixed with such plants as Monstera pertusa, with singularly pierced leaves; Cycas revoluta, Dasyliriums, the finer-leaved varieties of Berberis, Dracænas, Tillandsias, Cissus discolor, Dioscoreas, Dieffenbachias, Crotons, variegated Hydrangeas, Sansevieras, Marantas, variegated Yuccas, Caladiums, Aspidistrums, Coleus Blumei, Rhopalas, and Begonias. Among the last was a noble-looking kind called Marshalli, with large silvery blotched leaves.

Of Orchids one collection only was furnished. It came from Mr. Carson, gr. to W. F. G. Farmer, Esq., of Nonesuch Park. It consisted of some good Cattleyas, Dendrobium Farmeri, an Aerides, and other plants.

Among Cape Heaths we noticed nothing requiring special remark.

Ferns were generally good as well as plentiful. Exotic kinds were contributed by Messrs. Baillie, Lavey, Summers, and Oubridge, and in the Nurserymen's Class, by Messrs. Bunney, Woolley, Milne, Arnott, & Co., and Hally. Among these were beautiful plants of different sorts of Gleichenia, Cyathea medullaris and microlepis, Dicksonia antarctica, Nephrolepis davallioides, some good Cheilanthes, Aspleniums, Davallias, Adiantums, Gymnogrammas, Cænopteris fabiana, Hypolepis Dicksonioides, and others.

British Ferns came from Messrs. Sim, Lavey, and Baillie. Among them were some charming varieties but little different from what has been recorded by us in former reports.

The remark just made also applies to Lycopods, among which there were, however, several splendidly grown specimens measuring not less than 3 feet across. The best came from Mr. Higgs, gr. to Mrs. Barchard.

Novelties were chiefly contributed by Messrs. Veitch. Among them were the Hybrid Cattleyas raised between C. granulosa and intermedia, formerly noticed by us; the hardy evergreen shrub Chamæbatia foliolosa, Pothos argyræa, and Pteris argyræa, fully described the other day at p. 671; Spraguea umbellata, a hardy pretty annual; and two handsome Selaginellas—one atroviridis, a dwarf-growing species from Borneo, with singularly forked branches; the other Lobbi, also a beautiful Bornean kind, partaking of the habit of S. inæqualifolia, but possessing the rich metallic lustre of cæsia. It is also remarkable for the Fern-like character of its branches. These form charming additions to this now deservedly favourite class of plants.

Of new Hybrid Achimenes Messrs. Milne, Arnott, & Co. sent an interesting collection, chiefly with rosy pink-coloured flowers charmingly spotted with brilliant crimson. Of some of the best of these a full account has already been given in our pages.

Fuchsias were contributed in excellent condition by several growers. The best came from Messrs. Cannell, Elliott, Oubridge, and Rhodes. They were for the most part in the form of pyramids, and beautifully covered with bloom.

Scarlet Geraniums were exhibited in considerable numbers from the neighbourhood of Sydenham, Croydon, Dulwich, and Hampstead. Among them there was nothing new. They consisted of Brilliant, Punch, Tom Thumb, Cerise, Unique, Trentham Hybrid, Lady Middleton, Kingsbury Pet, and one or two other pink and salmon sorts.

Of Balsams there was an extensive display. They were generally well grown, with flowers large and double, and of all shades of colour. The best came from Mr. Brown, of Dulwich.

Some good Cockscombs came from the neighbourhood of Edmonton. Their combs, though fine, were, however, scarcely so large as we have seen them.

Of Japan Lilies there was a noble bank; but owing to want of variety among them they made but little display. They were however all fine plants, and tolerably well matched as to height.

Some handsome varieties of Gladioli and Phloxes came from Mr. Standish, of Bagshot.

Dahlias both from amateurs and professional growers were excellent. The three first stands in each class contained blooms above the average in size and general merit. Fancies were also good and in great variety. Of 50 blooms the best came from Mr. Turner, Royal Nursery, Slough. They consisted of Robert Bruce, Seedling, Flower of the Day, Pioneer, Commander, Sir Jos. Paxton, Sidney Herbert, Midnight, Mrs. Church, The Flirt, Constancy, Seedling, Deutsche, Duchess of Kent, Mentor, Chairman, Triomphe de Secq, three very pretty Seedlings, Pre-eminent, Hon. Mrs. Trotter, Emperor, Col. Wyndham, Enchantress, Seedling, Miss Watts, Bravo, Goldfinder, Mr. Charles Waters, Seedling, Disraeli, Lady Popham, King, Standard Bearer, Cherub, Adam Bede, Yellow Beauty, Purple Standard, Mrs. H. Vyse, Lollipop, Lord Palmerston, Lady Franklin, Miss Pressley, Touchstone, Seedling, Lord Eversley, Seedling, Lady Taunton, George Elliott. Mr. Kimberley, of Stoke, Coventry, and Mr. J. Keynes, of Salisbury, also showed in this class. Of 24 Dahlias the best came from the Rev. C. Fellowes, of Shottesham near Norwich. They consisted of Pre-eminent, Wallace, Miss Caroline, Touchstone, Miss Watts, Satirist, Lord Palmerston, Rosebud, Pandora, Chairman, Duchess of Marlborough, Fanny Keynes, Deutsche Würde, Mentor, Golden Drop, Robert Bruce, Standard Bearer, Lady Franklin, Goldfinder, Emperor, Dr. Gully, Lady Popham, Mr. Critchett, Purple Standard. From Mr. W. Dods, of Salisbury, came Duke of Roxburgh, Pandora, Chairman, Lord Bath, Royal Lilac, Lord Clyde, Golden Drop, Cherub, Dr. Simpson, Emperor, Mrs. Church, Sidney Herbert, King, Lord Derby, Hon. Mrs. Trotter, Sir H. Havelock, Venus, Miss Pressley, Lord Palmerston, Seedling, Sir G. Douglas, Touchstone, Lady Franklin, Mr. Critchett.

In the class of Fancy Dahlias the best came from Mr. C. Turner, of Slough. The sorts were Ethel, Tiger, Elizabeth, Pluto, Madame Alboni, Butterfly, Comus, Jessie, the Flirt, Duchesse de Brabant, Queen Mab, Charles Perry. From the Rev. Charles Fellowes came Souter Johnny, Madame Alboni, Charles Perry, Triomphe de Roubaix, Countess of Bective, the Flirt, Jupiter, Oliver Twist, Jessie, Conqueror, Mark Antony, Elizabeth. Mr. J. Keynes and others also showed in this class.

Of Seedling Dahlias there was a large collection, and in most instances several blooms of each variety were shown. The judges selected 11 kinds for certificates, namely, George Elliot, light purple, of fine build; Mrs. Howard Vyse, white, with rosy purple edge or tip; Beauty, pale cream, shaded; Queen Mab, a fancy, scarlet and white; Pluto, a dark fancy, of great depth and fine form, and Harlequin, a large striped fancy. These were shown by Mr. C. Turner. Mr. Keynes had Wm. Dodds, a deep yellow of good shape; Lady Douglass Pennant, primrose; Wellesley Piggot, fine white; Neville Keynes, pale yellow, edged with purple, fine; and Sir Geo. Douglass, yellow, deeply tipped with red, very showy. There were some promising kinds, however, to which no awards were made, viz., Miss Boyce, white, tipped with crimson purple; Purple Standard, deep, finely-formed purple; Mr. Boshel, salmon; and Lady Taunton, white, edged with crimson.

Among Cut Flowers, in addition to Dahlias were Roses, Hollyhocks, Verbenas, and Asters. Of the latter, both German and French, there were some fine blooms. In the garden the French are the greatest favourites; but on the show-boards at exhibitions the German sorts appear to be most admired.

Among miscellaneous subjects were some dwarf Cacti, and we observed some Sunflowers from Mr. Bragg very double and of great size.

The Amateurs' and Cottagers' department was highly satisfactory. The whole of the collections contained fruits, flowers, and vegetables, and in some of them the flowers were neatly arranged in the form of bouquets.

In the class of Amateurs employing two gardeners, the best collection came from Mr. Ellis, of Edmonton. It contained good Black Hamburgh Grapes, Peaches, Plums, Apples and Pears, fruit of the Egg Plant, very fine Onions, Shallots, Turnips, Carrots, Parsnips, Beet, French Beans, Rhubarb, Red Cabbage, Vegetable Marrows, Radishes and pot herbs, and among plants in pots some good Achimenes, Balsams and Geraniums. Mr. Nicholson, of Stamford Hill, and Mr. Lee, of Eltham, also showed in this class.

Where one gardener only was kept, Mr. Bennett, of Upper Tulse Hill, had the best group. It contained a collection of pot herbs, some very good Potatoes, Globe Onions, Shallots, Carrots, Parsnips, Custard Vegetable Marrow, Forty-fold, Regent and Early-frame Potatoes, Capsicums, and some well-grown plants in pots. Mrs. Sweetlove, of Maidstone, also showed a good collection. Mr. Smith, of Basingstoke, with the assistance of a gardener one day in the week, had a nice group, in which were various cut flowers, Figs, Apples, Pears, Plums, French Beans, Cucumbers, Vegetable Marrows, Onions, Potatoes, Parsnips, Carrots, and Turnips.

Among Cottagers the most successful was Mr. Downing, of Merton, in whose group were Apples, Pears, Plums, red and white Kidney Potatoes, Onions, Turnips, Carrots, Parsnips, Beet, Celery, and some tastefully arranged cut flowers. In other collections were Red and White Currants, Warrington Gooseberries, and among vegetables some very fine specimens of Parsnips, Carrots, and Mushrooms.

Onions were chiefly White Lisbon and Spanish. Among Cabbages there was nothing remarkable. Of Savoys there were good specimens of Early Ulm, and we noticed some very fine large Flag Leek.

Among Potatoes was a large fine-looking kind called Stafford Hall. This is reported to be one of the best Potatoes in existence. Also very fine Lapstones.

HITCHAM LABOURERS' AND MECHANICS' HORTICULTURAL SHOW.—Programme for Sept. 14.—8 to 10 A.M. Specimens for competition received at the Rectory.—12. Marquee Museum ready for inspection. N.B. Lecturets as opportunities may occur. Among novelties observe—*Animal:* Skulls of Albatross, Condor, Toucan; Whales'-Food. Vertical Wasp-comb from Mexico. *Vegetable:* Grater and Sieve for Manihot, with Cassava, from Brazil. Palmite Brushes from S. Africa. Chinese Sugar-grass grown at Hitcham. Skeleton leaves from China. *Mineral:* Iron Pyrites (from Essex, by H. Fisher), changing to Green Vitriol. Lava from Monah Rowah, Owyhee. *Miscellaneous:* Jamaica Rat-trap. A Glass Pebble found at Ringshall. Stereoscopic Photographs on a stand near the Museum.—1 P.M. Show-booth ready for inspection.—2½ P.M. Prizes to Village Botanists for—(1) Wild-fruit Posies. The species not to exceed 20, and to be named and classed. (2) Dried Grass Posies. The species to be named and classed. (3) Herbarium Specimens prepared since last year. Any one who has been in the First Class, whether resident or not in Hitcham, may compete for this prize. School Report.—3 P.M. Allotment Report; the prizes awarded for—(1) Superior Allotment Culture. (2) Hatcher Sweepstakes. (3) Specimens exhibited at this day's Show. (4) The Cottage Barometer (by Dr. Lindley), and a Metal Teapot (by G. Knight, Esq.), to the two Members of the Society who shall have obtained the greatest and next greatest number of marks for all prizes during the year. Thanks to the Judges, Donors of Prizes, and to all others aiding and abetting our proceedings.—4 P.M. No specimens to be removed from the Show-booth before 4 P.M. Short memories are then to remind their owners to return all Check and Prize Tickets to one of the Stewards. Short days necessitate sharp movements, or we shall not have time by—5 P.M. To take our tea orderly and sociably. Rules for "ticketless babies" (0 to 2 years) and for "ticketed ditto" (2 to 4 years) continue as heretofore.—6 P.M. God save the Queen. Good night. May every one present at the Show rise to-morrow with a conscience void of offence towards God and Man, in respect to any thing said or done during a day devoted to innocent and rational recreation.

Notices of Books.

Paris and its Environs: an Illustrated Handbook. Edited by Thomas Forester. Bohn. Small 8vo, pp. 448.

A really good guide to the infinite number of objects contained in Paris must always be acceptable to the traveller, whether the ancient churches, or the modern architecture, the antiquities in which it is so rich, the military establishments, the noble palaces, the public gardens, the social habits, or any other of the thousand peculiarities of the great city are an object of inquiry. Working upon a foundation skilfully laid by Mrs. Gore, the author of the work before

us has produced a volume which seems to fulfil every reasonable purpose; while some thirty well-executed copperplate engravings add a real embellishment to his pages.*

Mr. Forester takes the traveller to Paris by way of both Havre and Dieppe, dwelling long upon the old magnificence of Rouen; he moreover includes all the environs of Paris as far as even Fontainebleau, adds the particulars of an excursion to Troyes, and Epernay and Rheims, and closes his book with useful advice about passports, hotels, domiciles, and other miscellaneous matter.

In a volume containing something about everything we ought not perhaps to expect much gardening information; nor do we find much. We however extract a few passages which may serve as useful indications to horticulturists about to visit Paris.

Jardin des Plantes.—"Closely adjoining is the Jardin des Plantes, founded by Louis XIII. in 1635, at the suggestion of his two physicians, Hérouard and De la Brosse. Tournefort, Vaillant, Jussieu, and many other naturalists contributed to the early prosperity of the institution; and in 1739 the great Buffon became its superintendent. In our own time, the name of Cuvier has imparted almost equal distinction to the appointment. When the universities and other learned bodies were suppressed, during the Reign of Terror, it was apprehended that the name of Jardin du Roi would be fatal to the interests of natural history. But the populace, on being assured that the botanical garden was devoted to medicinal purposes, and the laboratory to a saltpetre manufactory, satisfied themselves with declaring them national property. Under the reign of Napoleon, the establishment was restored to more than its original importance; and immense additions were made to the collections of the museum, by purchase, as well as by foreign conquest. The establishment of the Jardin des Plantes is under the control of the Minister of the Interior, and contains a botanical garden with superb conservatories, a gallery of anatomy, a series of collections illustrating the three grand departments of natural history, a gallery of botany, a menagerie of living animals, and a succession of laboratories and lecture-rooms for every branch of national science. The menagerie was originally added to the Jardin du Roi on the removal of Louis XVI. from Versailles; when the animals contained in the Royal collection being neglected, it was proposed that shelter should be afforded to them in the Jardin des Plantes, and a large portion of the collection was eventually lodged in enclosures and sheds provided for the purpose, and are now the principal attraction of the place. Near them are steam conservatories for the reception of tropical plants. On a rising ground stands a fine Cedar of Lebanon, the first grown in France, presented by Dr. Collinson in 1734. The conical hill on the side of which the tree is planted commands a beautiful view of the city of Paris and the surrounding landscape. Two fine Palm trees, 26 feet high, which stand on either side the door of the botanical amphitheatre, were sent from Sicily to Louis XIV., more than a century ago. It must be admitted that the Jardin des Plantes has not kept pace with the other improvements which have recently shed so much lustre on the capital of France. It is very inferior to the Gardens at Kew, and, indeed, to many of the private gardens within a few miles of London. Neither in the extent or variety of *the menagerie*, nor in the laying out and keeping of the ground devoted to the public recreation, has this Jardin any pretensions to vie with the Zoological Gardens in the Regent's Park; but it is understood that the Emperor, among his various plans for the embellishment of Paris, entertains the design of rescuing this fine establishment from its somewhat neglected state, and raising it to the position which it ought to assume among the other creations of his genius for great and artistic works."

The changes here alluded to consist, we believe, in extension of the garden over the *Rue Copeau*, and present *Halle aux vins*, which latter is to be re-established in some other place.

Gardens of the Luxembourg.—"Adjoining the palace are the noble gardens of the Luxembourg, the *bel respiro* of the Faubourg Saint Germain, originally planted by Desbrosses, at the time of the erection of the palace. In 1792 the finest trees were cut down, and the ground was materially encroached upon by the construction of cafés and restaurants during the utilising period of the Revolution, when, by order of the Convention, a large portion of the gardens was ploughed up and sown with corn. The ground thus cleared remained waste till 1801; since when great improvements have been made. Near the entrance, opposite to the Rue Soufflot, a new parterre has been constructed and decorated with a fountain, built by Catherine de Médicis after the designs of Jacques Desbrosses. It is surmounted by a naïad, and has received a new basin of large dimensions. In the adjoining parterre is a beautiful marble group of Cain and his family after the death of Abel, sculptured by Garrand. The old statues and ornaments, which were of a peculiarly graceful and elegant nature, as if expressly intended for the gratification of the princesses, by whom, for upwards of a century, the palace was inhabited, and which had been mutilated during the first revolution, have been replaced by new works of the best Parisian masters, and distributed along the eastern and western terraces. A new charm was conferred on the gardens of the Luxembourg during the first Empire, as the fountain-head of all the Roseries in Europe. For the gratification of Josephine, a portion of the gardens was devoted to this interesting branch of horticulture, and many of the finest modern Roses have had their origin at the Luxembourg, where, from May till October, a succession of these beautiful flowers will be found in bloom. Hardy, the celebrated horticulturist, is head gardener here, and resides on the spot, surrounded by upwards of 2000 varieties of the queen of flowers—from the double-thorned and single-leaved monophylla, which some people mistake for a Barberry bush, to standards of perpetual Roses, 30 feet high. In consideration, however, of the large portion of experimental ground subjoined to the gardens, the Government instituted on the spot a school more important to the interests of the country than the cultivation of Roses, which, nevertheless, forms a thriving branch of national commerce. The Ecole des Vignes is devoted to experiments on the growth and amelioration of the vintage of France; and if the same admirable results are to be expected which have manifested themselves in the floral school, serious advantages will reconcile the grumbling horticulturists to the loss of a portion of the funds and territory they formerly monopolised. Nothing, meanwhile, can exceed the beauty of the gardens adjoining the palace, at the period of the blossoming of its celebrated Lilacs and Standard Rose trees."

We regret to add that Mr. Hardy, mentioned in this extract, has resigned his office.

"The *Bois de Boulogne* is now the Hyde Park of Paris, where the most splendid equipages and finest horses of the capital are displayed. The fortifications which pass along its eastern side have caused the destruction of one of its finest avenues. This delightful plantation, which, by order of the present Emperor, has been receiving considerable embellishments, at the cost of 1,400,000 fr., is best entered from the Porte Maillot, situated at a short distance from the Barrière de l'Etoile. From this gate there are two principal avenues: the one to the right is the Allée de Longchamp, whence secondary avenues branch out to Bagatelle and Madrid. This part of the Bois de Boulogne, intersected as it is with numerous cross-roads and alleys, offers delightful rides. But the visitor who is pressed for time should at once take the avenue to his left, when a delicious half-hour's walk under the cool shade of thickly-studded, though not magnificent, trees will bring him to the scene of the improvements now in progress. Here an artificial lake, 1200 metres in length, and 250 in breadth at its centre, stocked with fish, extends between groves of Fir and Beech trees, while rocks, tastefully scattered along its banks, form an agreeable contrast with the green turf. In the middle of the lake are two wooded islands connected by a bridge. On one of these a sort of promontory forms a belvidere, commanding a view of the whole lake, the banks of which on either side are intersected with gravel-walks. On the other stands an ornamental Swiss cottage. Opposite the promontory are two artificial cascades, feeding the lake. The water falls from a considerable height over rocks picturesquely arranged, between which a rustic flight of steps descends to the level of the water. An esplanade separates this lake from a smaller one, 430 metres in length and about 100 in breadth, where boats await the visitor desirous of navigating these still waters. Both these lakes are encircled by a spacious carriage-way, meeting at the Rond Mortemart, now transformed into an elevated mound graced with a Cedar, and bearing the rather pompous name of Mont Saint Bernard. The lakes are fed by the reservoirs of Chaillot, through an iron pipe 16 inches in diameter, which passes under the Porte de la Muette. From the Mont Saint Bernard, commanding a good view of the whole, seven walks or avenues branch out in as many directions. The avenue leading to Longchamp passes the beautiful villa of Bagatelle, which became the property, by purchase, of the Marquis of Hertford, having belonged before to the Comte d'Artois, for whom it was erected, before the Revolution, by Bélanger, in less than two months, in consequence of a wager between the Comte and the Prince Regent of England that the house could not be built in 60 days. It was finished in 58."

Mr. Forester should have added something about the new Zoological Garden established here under the direction of Mr. Mitchell; the whole account indeed of this place, in its present state, is far too meagre, considering the fondness of us Englishmen for park scenery. It strikes us that they would have been far more interested in knowing what to look for in the new Bois de Boulogne, than in the hacknied description of Versailles, on which every old guide-book expatiates.

Fontainebleau.—"If you understand what you are about, you will not leave Fontainebleau without going through the forest, which is one of the most beautiful and most picturesque in France. You ought to see the forest of Fontainebleau in the morning at a very early hour, when the bird sings, when the sun shines, when all the points of view extend themselves to infinity before your delighted eyes, when all these stones heaped up beneath these aged trees take a thousand fantastic forms, and give to the forest the appearance of the plain on which the Titans fought against heaven. The forest of Fontainebleau is full of mystery, of noises, of byways, of light, of obscurity; there are profound caverns, there are little paths which sweetly wind beneath the shade upon the flowery turf; there are waves of sand which escape at the half-opened rock, there is a drop of dew which falls with a soft murmur from an inert hill; there are a thousand strange forms as there must have been many on the earth after the Deluge, when the waters had disfigured at pleasure everything in creation; at each step you take in these mysteries you meet some of these novelties, as old as the world, but the effect of which is all-powerful. The artists, the poets, the romancers, the lovers—those great poets—have, from time immemorial, made the forest of Fontainebleau the empire of their dreams. It is composed of nearly 40,000 acres of ancient and majestic trees; it is bounded on the west by the Seine, on the south by the canal de Briare, and is no less than 28 leagues in circumference.

"In the midst of this admirable confusion of rocks, and lawns, and old Oaks, several of which are called Saint Louis, Charlemagne, or Clovis; in the thick groves at the bottom of these deep defiles, in the depth of these caverns, on the summit of these aërial palaces, far from the scene which sparkles at a distance, or on its very borders; beneath the shadow of the Pines or the Birch trees, the Maple or the Beech, the Firs or the Elms; upon the Heath, among the Rose trees, on the Moss, or the gravel; by the cry of the ravens, the joyous songs of the lark, the plaintive notes of the nightingale; whether the adder displays in the sun its varied colours, or whether the deer vanishes with a bound, after having thrown upon you one animated and curious glance—do not forget to seek the favourite sites of the princes and poets, the famous rocks, the Repos de Chasse, the very sight of which recals so many old legends. There is a certain art in visiting Fontainebleau, without which all is chance and confusion. Go then, step by step, from the Table du Roi to the Vallée de la Solle; from the Rocher de Saint Germain to the Mare aux Evées; from the Carrefour de Belle Vue to the Gorge aux Loups. Among all these magnificent horrors, covered with beautiful shadow, do not fail to visit Franchard, the most romantic of all these picturesque valleys. At Franchard they will tell you legends; they will show you the ruins of a monastery; you will hear the history of the monks; then, by coasting a little lake, upon which floats a young Oak of some 20 years of age, overturned by the wind, you will soon behold with delight the Roche qui Pleure. The Roche qui Pleure is a hill naturally placed amongst several others of smaller height. Around it all is desolation, silence, and aridity; you feel thirsty at the mere fact of finding yourself upon these sands, amongst these rocks, beneath this burning sun. But listen! Do you hear the silvery sound of a drop of water, which falls from the sky into a nacre shell? It is strange—this pearl which detaches itself from this vast rock, this drop of pure water which falls with a murmur from this immense granite! At all times, in all seasons, beneath the hottest sun, in the coldest winter, the same rock eternally gives the same drop of pure and unalterable water, never more, never less! There are still, among the renowned places, the Mont de Henri IV., the Rocher d'Avon, the Mont Aigu, the Ventes de la Reine, the Erables, the Table du Grand Veneur, the spectre huntsman who leads the midnight chase to the barking of his ghostly dogs; the Grande Taille, the Village d'Avon, the Pressoirs du Roi, the Bouquet du Roi Henri IV. et Sully, two old Oaks admirable amongst all the Oaks, and the Rocher des Deux Sœurs. Oh! what terrible and touching histories—stories of hunting and of love, of treason and of vengeance—this aged forest has covered with its shadow, an ancient, silent, profound shadow, reached by no other noise than the stag braying, the bird singing, the horn resounding through the wood!"

For this last clever sketch Mr. Forester acknowledges his obligation to the author of *The American in Paris.*

* We must, however, remark that the "View of the Tuileries from the *Place du Carrousel*" is in truth a mere view of the latter; and that "A Scene at Versailles" conveys no idea at all except that of an actor and actress before some footlights.

Trade List received.—Carter & Co.'s (High Holborn) *Autumn Catalogue of a choice collection of Dutch and Cape flowering Bulbs.* This very large and well arranged list is not confined to bulbs, but includes a great variety of hardy perennials and ornamental shrubs. Excellent instructions for management are prefixed to the list of each kind of bulb.

Garden Memoranda.

Horticultural Society's Garden, Turnham Green.—The great conservatory at this place is now well worth inspection. It will be remembered that about two years ago the ornamental plants which it contained were removed, and that it was planted with Vines, which were intended to cover the inside of the roof, and produce a profitable return, it having been determined that the garden should be made as much as possible self-supporting. For this purpose Vine borders were constructed both inside the house and out all round it. Those inside merely consisted of good Wimbledon loam mixed with charred turfy soil from the orchard, and some dung laid over the old stone pathway to the depth of about a foot, with bricks set on end in front to keep the earth in its place. In this one set of Vines was planted. The others were put outside in a border consisting of the same material but made 20 inches deep, and at first only 4 feet in width, it being the intention to widen it from time to time as the roots appeared to require more room. These Vines were introduced into the house through holes in the low wall all round the house, and have grown with such vigour that they now cover three-fourths of the roof, which is nearly 30 feet high. This season they have made young

wood measuring 2 inches in circumference, hard and well ripened, and at the same time many of them are producing a crop of fruit averaging 10 bunches to a Vine. The sorts are chiefly Black Hamburgh, some bunches of which look as if they might weigh upwards of 2 lbs., and though not yet quite ripe are, nevertheless, as black as Sloes, and beautifully covered with bloom. Those inside the house were planted much later than those outside, and though not quite so strong, are also bearing fruit. The border for the latter being shallow, (not more than a foot deep), drain pipes set on end and open at top have been inserted into it down to the bottom at certain distances apart. These from time to time as may be required are filled with water which, reaching the bottom of the border, at once keeps the roots there in a proper state as to moisture, and liquid manure can be supplied in the same way when wanted. From what has been stated it will be seen that most satisfactory results have followed the attempt to grow Grapes on a large scale in this house, and that with inexpensively made borders consisting of no richer materials than those above-mentioned.

In the old curvilinear Vinery there is also a good crop of Grapes now ripening. Among them a kind called Raisin de Calabre deserves notice. It is a good looking white Grape, somewhat resembling the White Hamburgh in size and form of bunch, and is reported to hang long on the Vine without shrivelling. Another sort named Hubshee, an amber-coloured Indian variety, with oblong berries flat at the points, and in the form of a bunch presents a very singular appearance.

Peaches and Nectarines in the orchard house have borne a good crop this season. The trees are now placed out of doors to harden their wood. Plums have also done well; one tree of Reine Claude de Bavay is now loaded with fruit nearly ripe. This is an excellent Plum, but though larger is not equal to the old Greengage in flavour.

With the exception of the curvilinear stove, a greenhouse, and the old Orchid-house, the different glass houses here are now nearly all turned into places for fruit growing. The few Orchids which were left after the sale are looking remarkably well, as do also some good specimens of Ferns which are associated with them in the same house.

The different pits are filled with Cucumbers, young Vines in pots, and plants coming forward for distribution; of the last there appears to be a considerable number. A great many seeds, principally of New Holland plants, have also just been received from Dr. Mueller, and we noticed some excellent varieties of Balsams, from which seeds are about to be saved.

A plant of Clianthus Dampieri planted out of doors against a south wall about the middle of June last has thriven remarkably well; it is now in flower and is expected to produce seeds. A little mulching put over the roots during the very hot weather, and an occasional watering constitute all the attention it has received until lately when, the nights having become colder, a sash has been put over it; it has however been left open at the sides, and as yet nothing could possibly look better.

Out-door fruit here as elsewhere has been a deficient crop this year. Peaches on walls however have been good and plentiful. In the case of orchard trees standards have suffered less than dwarfs. On some Pears, as the Eyewood, there is a good sprinkling on most trees, and among Apples Court Pendu Plat has suffered the least. It is a late flowering kind, and thus doubtless escaped the spring frosts.

The pyramidal Pear trees planted along the sides of the walks in the old experimental garden are now from 10 to 14 feet in height, and very handsome. On some of them where they were a little sheltered there is also a few good fruit.

Of Pears on walls there is a fair crop on Beurré Diel, Glou Morceau, Duchesse d'Angoulême, and Beurré Rance. The fruit is, however, scarcely so large as usual; the first and strongest blooms got killed in spring, which left only the secondary or weaker ones to produce the crop.

The kitchen garden is well stocked with vegetables, both for a crop and with new things for trial. Of the latter full reports will be published in the Society's Journal. Of two beds of Dioscorea, one had the stems led up stakes like Peas, while those of the other were allowed to scramble over the ground. The result of these different ways of growing it will also be recorded. In the meantime we may, however, state that the stakes, which were 3 feet in height and literally a thicket of shoots and leaves, are little more than half high enough. It might therefore be a good plant for placing at certain distances apart among other crops for the purpose of shelter.

The following important fact in connection with mildew is worthy of notice. Of three Apricot trees growing against the same wall, and every way alike circumstanced, two are nearly divested of their leaves by mildew; but the third is perfectly green and healthy. This last received the following treatment:—Early in the season a trench was cut lengthwise along the border as far as the branches extended about 3 feet out from the trunk of the tree and down to the roots, or as deep as the latter would permit it to be cut without injuring them. This trench was well supplied with water all through the season, so as to thoroughly moisten the subsoil, and the result has been as has just been stated. This tree has remained healthy while the others have suffered severely from mildew. Drought, therefore, is clearly the cause of the evil in this instance, for no mere surface watering could possibly reach the subsoil under the trees which have suffered; on the contrary, it has been ascertained that all below them is as dry as bone, and so hard that it would take a pick to break the soil in pieces.

In the Arboretum a great many trees are having their roots cut round preparatory to removal to the proposed new Garden at Kensington Gore.

Calendar of Operations.

(For the ensuing Week.)

PLANT DEPARTMENT.

CONSERVATORY, &c.—The decline of summer flowering plants will point out the necessity of looking more closely to those which are intended to supply a floral display during the autumn and winter. Let the stock of Begonias have another shift if not already in pots sufficiently large. Keep the plants thin that their foliage may be kept from injury. Crowea saligna and Plumbago capensis are both valuable autumn-blooming plants, the latter almost indispensable for cut flowers. Attend to Chrysanthemums, water freely with liquid manure; good specimens should be aimed at rather than fine blooms. The earliest started winter flowering Heaths and Epacrises should now be placed under glass, as it will forward their blooming; give air, however, freely. The potting of Hyacinths, Narcissus, &c., for forcing, should now be done at once; about equal portions of good soft loam and decayed leaf-mould with silver sand will be the best soil for potting the bulbs if for forcing, but well-decomposed cow-dung must be substituted for the leaf-soil when the bulbs are intended for late flowering. After potting place them on a dry bottom and cover the pots 2 or 3 inches deep with old tan or ashes, preserving them at the same time from heavy rains; under this treatment they will fill their pots with roots, and will be in readiness for forcing when wanted.

FORCING DEPARTMENT.

PINERIES.—A rather dry state of the soil about the roots and also of the atmosphere is essential during the ripening of the fruit where high flavour is an object, therefore be careful not to over-water plants on which the fruit is approaching maturity, and it will be advisable to use slight fires on dull days, so as to allow of giving sufficient air to prevent a stagnant state of the atmosphere, for fruit of first-rate quality cannot be expected from plants growing in a sodden soil or a damp unhealthy atmosphere. Endeavour to afford growing stock a steady bottom-heat of about 85°, and keep it well supplied with manure-water at the root, but avoid getting the soil too wet. As fire-heat will now be necessary to a considerably larger extent than has been the case during the summer, care must be exercised to secure a properly moist state of the atmosphere, keeping the evaporating pans or troughs regularly supplied with water, and moistening the floors, &c., frequently, as any sudden change from a moist to a dry state of the atmosphere would be most injurious to growing stock, and also to plants swelling their fruit. Be as sparing of fire-heat, however, as circumstances will allow, and shut up early on the afternoons of bright days, so as to husband the sun's influences as much as possible. Where young stock is grown in dung-pits care must be exercised after this season not to get the plants weakly through keeping too close and warm, giving air freely on every favourable opportunity, and sufficient command of warmth should be secured from the linings to allow of giving a little air at night and on cloudy days.

FLOWER GARDEN AND SHRUBBERIES.

As the season is now considerably advanced, the propagation of all the more important bedding-out plants should be brought to a close as quickly as possible; late struck cuttings are bad to keep through the winter through having an insufficient number of roots and ill-matured wood. Let Scarlet and other Geraniums struck in the open ground be taken up and potted immediately they have made roots; they will require a close frame for a week or two, when they should be placed on a dry bottom in a southern exposure to harden them for the winter. For the same purpose Verbenas, Petunias, &c., struck in pans and intended to be kept in them through the winter, should be placed in a similar situation, at the same time stopping the points of the shoots. It should in fact be a point to keep them as hardy as possible by fully exposing them, until they are placed in their winter quarters. Mignonette for winter and spring flowering may yet be sown. Asters, Phloxes, &c., will now be making a fine show, and should have care bestowed on them. Let the borders be cleaned and neatly raked over, filling up vacant places with spare Chrysanthemums, spring struck Pansies, or spring flowering bulbs. In our last week's Calendar large-sized shrubs and trees were recommended to be moved as soon as circumstances would permit the operation to be performed; this advice was intended to apply to evergreens only, although that word was inadvertently omitted. Deciduous shrubs and trees, as a matter of course, should not be transplanted until they have shed their leaves. The roots may, however, now be cut round preparatory to removal.

HARDY FRUIT AND KITCHEN GARDEN.

The earliest Apples and Pears should be gathered as they ripen. Early fruit more particularly is the better for being gathered a few days before it ripens on the tree, as in the latter case it usually turns mealy directly. Protect late Peaches, Nectarines, Plums, and Figs from wasps. Peaches and Nectarines should likewise be gathered a day or so before they are quite ripe.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.
For the Week ending Sept. 8, 1859, as observed at the Horticultural Gardens

Sept.	Moon's Age	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Temperature of the Air. Min.	Temperature of the Air. Mean	Temperature of the Earth. 1 foot deep.	Temperature of the Earth. 2 feet deep.	Wind.	Rain.
Friday 2	5	29.790	29.575	65	54	59.5	61	61½	S.W.	.18
Satur. 3	6	29.908	29.806	70	39	54.5	62	61½	N.W.	.00
Sunday 4	7	29.995	29.921	71	41	56.0	63	61½	N.W.	.00
Mon. 5	8	30.130	29.994	70	48	59.0	62	61½	E.	.00
Tues. 6	9	29.858	29.697	65	45	55.0	61½	62½	S.W.	.30
Wed. 7	10	29.878	29.839	67	54	60.0	62	61½	S.W.	.00
Thurs. 8	11	29.975	29.922	71	57	64.0	63	61½	S.W.	.01
Average		29.933	29.822	68.5	48.1	58.3	61.9	61 5		4.9

Sept. 2—Lightly overcast; rain; rather boisterous at night.
— 3—Light clouds and fine; very fine; clear; cold at night.
— 4—Fine; sultry; cloudy.
— 5—Clear; very fine; overcast.
— 6—Uniformly overcast, rain; thunder and heavy rain in afternoon; clear.
— 7—Cloudy and fine; very fine throughout.
— 8—Fine; very fine; cloudy; slight rain.
Mean temperature of the week, ½ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK.
During the last 33 years, for the ensuing Week, ending Sept 17, 1859.

Sept.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 11..	68.4	45.8	57.1	10	0.68 in.	2	5	1	3	4	6	8	4
Mon. 12..	68.6	45.2	56.9	13	0.49	4	5	1	4	1	6	11	1
Tues. 13..	67.9	46 0	57.0	14	0.40	2	3	6	2	2	6	8	4
Wed. 14..	67.4	46.5	56.9	16	0.84	1	4	6	4	4	6	6	2
Thurs. 15..	67.2	46.6	56.9	15	0.63	—	8	4	2	7	4	6	3
Frida 16..	68.5	48.2	58.4	13	0.50	3	5	4	1	9	3	7	1
Satur 17..	69 1	46.9	58.0	12	0.90	1	4	6	1	2	11	5	3

The highest temperature during the above period occurred on the 12th, 1858—therm. 86 deg.; and the lowest on the 12th, 1848—therm. 31 deg.

Notices to Correspondents.

BOOKS: *Maria.* Perhaps a child of 12 years old will find Coleman's Woodlands, Heaths, and Hedges (Routledge), or Tyas's Wild Flowers (Houlston & Wright) suitable.—*H H.* The publishers of the best editions, not abridged, of Loudon's Encyclopædia of Trees and Shrubs, and Arboretum et Fruticetum Britannicum, are Messrs. Longmans. Gordon's Pinetum published by Bohn is a very useful book.—*J L.* Those you name may be recommended. Add Paxton's Botanical Dictionary.—*A W.* Quite right. You could not have made a wiser choice.

DISEASED GRAPES: *Homerton.* Either the roots are in cold damp soil, or too deep. It also seems as if there had been no proper ventilation.

EGG PLANT: *Ireland.* The common plant known by this name is useless, its fruit being too bitter and ill flavoured to be eaten. But if under this name you grow the Brinjal or Aubergine, a large succulent fruited Egg Plant, then with good cooking, which it deserves and must have, the fruit is a great delicacy.

ELM TREES: *C R.* Scolytus attacks your trees because they are out of health. Were it possible to restore the vigour of the trees you would probably get rid of the pest. The subject has very often been discussed in our columns, especially at p. 342, 1857; 192, 1858; 709, 1859. The woodpecker feeds on such insects, but we do not know whether it could be domesticated at Hampstead.

GRAPES: *J M.* The Grape which you suppose to be new because you are unacquainted with it is the Black Morocco. Never imagine that what is unknown to yourself is equally so to others.

KENSINGTON GORE: *Ardens.* No one will be taken on until a plan is settled and a superintendent appointed, which will not be at present. Then apply to the superintendent.

LAURELS: *J C Y.* We perceive no insects. The leaves will be reported on next week.

MILDEWED PEACH TREES: *Enquirer.* They ought to have been sulphured long ago—or well washed with Gishurst Compound. All you can now do is to cut them back at the proper time and destroy the mildew as soon as it reappears on the young wood. Also wash the shoots in the winter with Gishurst—4 lbs. to the gallon of water. Are not the roots dried up?

MORPHOLOGY: *J E.* In the case of the Composite flower head you have forwarded, although it appears as if the florets of the disc had been here and there converted into leaves resembling those of the involucre, yet, in reality the change is of another kind. Round the base of each floret there grows a minute cup forming a socket or alveola; that cup is a rudimentary floral leaf or bract. What has happened in your specimen is that these rudimentary leaves have acquired length and breadth and colour, and are in truth approaching the state of the common leaves of the plant.

NAMES OF PLANTS: *M C.* Solidago canadensis.—*H S.* 1, Anigozanthus rufa; 2, requires careful examination. We will name it next week.—*A T.* Blitum virgatum, the Strawberry Blite.—*G T M.* Angræcum arcuatum, a fine and very rare plant. We never before saw it alive.

PRIVATE PUPIL: *Exeter.* Enquiries of this nature are quite out of our way. Since however you are desirous that your son should be placed where he may become acquainted with Natural History, we may say that there are two clergymen who take pupils, and who are eminently qualified to make that subject a part of the education. One lives in Sussex, the other in Northamptonshire. We can give you their addresses privately, but not otherwise.

VINE LEAVES: *Garstang.* Your Frontignan leaves have all the appearance of suffering from too cold or too wet. a bed for the roots. It should never be forgotten that Frontignans are more susceptible of injury from such a cause than any other common sorts.

VINES FOR NORTH OF SCOTLAND: *A H F C.* In your greenhouse 12 feet by 12 you may plant two Royal Muscadines *inside*, and one Black Hamburgh outside. For these in the north of Scotland you may collect sun heat enough in your very long summer days to raise the thermometer to 90° or more; but in dull weather, and when the nights are cold, you ought to give the assistance of a little fire heat. Rich turfy loam, partly charred and mixed with farmyard manure, will prove suitable for the border in which the Vines are intended to be planted.

WELLINGTONIA: *Gloucester.* Notwithstanding the many niblings of scientific and unscientific gentlemen this name will surely stand. It is as idle to call it Sequoia as Washingtonia; unless indeed Abies is jumbled with Pinus, Cryptomeria and Arthrotaxis with Cupressus, Sequoia with Taxodium, and Torreya with Taxus. Do that and you may add to the hash Wellingtonia itself under the name of Sequoia; but nobody will look at such a mess after it is made. Objectors who treat of Wellingtonia scientifically assume that the differences between the genera of what are termed *incomplete* plants like Conifers depend upon characters of the same nature as those which separate plants like Rosaceæ. And yet they adopt without scruple the numerous genera now introduced among Ferns, Mosses, and other low forms of vegetation, although what are called the "characters" of such plants are as slippery as those of certain classes among our own race. Naturalists, or those who wish to be thought so, should be consistent.

ARTIFICIAL MANURES, &c. — Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London, S. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

LONDON MANURE COMPANY
(ESTABLISHED 1840),
Have the following MANURES ready for delivery :—
CORN MANURE FOR AUTUMN SOWING.
BLOOD MANURE FOR AUTUMN SOWING.
URATE.
SUPERPHOSPHATE OF LIME.
SUPERPHOSPHATE MINERAL.
The London Manure Company also supply PERUVIAN GUANO (direct from Messrs. Gibbs & Sons), SULPHATE OF AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of known value, all of which they warrant strictly genuine. Wholesale dealers supplied.
116, Fenchurch Street, E.C. EDW. PURSER, Secretary.

BURNARD, LACK, AND CO.'S CONCENTRATED SUPERPHOSPHATE OF LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.
CONCENTRATED TURNIP MANURE, equal in value to the preceding.
Of these Manures Dr. Voelcker says :—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."
Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to BURNARD, LACK, & Co., Sutton Road, Plymouth.

REDUCTION IN PRICE OF LAWES'S MANURES.
MR. LAWES begs to announce that he has this season reduced the price of the Manures manufactured by him, viz. :—

TURNIP MANURE	from £7 to	£6 6
SUPERPHOSPHATE OF LIME ..	,, 7 to	6 6
MINERAL do. ..	,, 6 to	5 5
BARLEY MANURE..		8 0

Prof. Way and Dr. Voelcker have sampled from a bulk of 5000 to 6000 tons at his factories, and their report and analyses are given in full in Circular to be obtained on application at his office, 1, Adelaide Place, London Bridge, E.C., or of his local Agents.
N.B. Genuine Peruvian Guano direct from Messrs GIBBS, Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures. American Cotton-seed Cake supplied.

PERUVIAN GUANO.—The present price of this valuable Manure is 12*l.* per ton for 30 tons and upwards; 13*l.* 5*s.* per ton for 1 ton up to 30 tons.
And, in order to protect themselves against the purchase of adulterated mixtures and of inferior Guanos purporting to produce results equal to Peruvian, consumers are recommended to apply either to ourselves, to our Agents Messrs. GIBBS, BRIGHT, & Co. of Liverpool and Bristol; or to Dealers of established character, in whose honesty and fair dealing they can place implicit confidence. ANTY. GIBBS & SONS.
15, Bishopsgate Street Within, London, E.C.

TO PIG AND POULTRY FEEDERS.
RICE SWEEPINGS FOR CHICKENS, 8*s.* per cwt., in 1½ cwt. bags. SCREENED RICE, 11*s.* per cwt., in 1½ cwt. bags. RICE MEAL, 6*s.* 6*d.* to 8*s.* 6*d.* per cwt. OILCAKE, 10*l.* 10*s.* to 11*l.* 10*s.* per ton only. DOG BISCUIT, 14*s.* per cwt.—Sold for cash only by W. & R. JUPP, 6, Cross Lane, St. Mary-at-Hill, Eastcheap, City, E.C.

REIGATE SILVER SAND. — Best quality for Florists, 16*s.* per ton; less quantities, 1*s.* 6*d.* per bushel, delivered to any London wharf or railway. Sacks for sand, 1*s.* 6*d.* each, or on hire 6*d.* each (five hold a ton).
JOHN KENNARD, Purveyor to her Majesty, Swan Place, Old Kent Road, London, S.E.

SMITH'S STEAM CULTIVATOR. — Gentlemen who may be desirous of seeing this Machine at work may learn the days on which it will be in use on Mr. SMITH'S Farm, by applying to him. His Turnips and Mangels may be viewed.
Woolston, Bletchley Station.

AGRICULTURAL MACHINERY.
E. R. AND F. TURNER, Ipswich, manufacture Prize Mills for Crushing Corn, Seed, Malt, &c.; Portable Grinding Mills, Steam Engines fixed and portable from 2 horse-power and upwards; Threshing Machines, Chaff Cutter, Oilcake Breakers, Horse Gears, Saw Tables, &c., all of a superior description and adapted for Home, Colonial, and Foreign use. Illustrated Price Lists sent free on application.

HAYMAKERS, possessing the best features of Nicholson's Prize Machines, with recent improvements peculiar to those supplied and manufactured only for
RICHMOND AND CHANDLER, Salford.
Branch Establishment, South John Street, Liverpool.
N B. The celebrated Bedford and Stamford Prize HORSE RAKES always in stock, with latest Patented Improvements.

HAY HARVEST.
NICHOLSON'S PATENT HAYMAKER, to which was awarded the First Prize of the Royal Agricultural Society of England at the last contested trial.
The celebrated STAMFORD HORSE RAKE has lately been much improved, and has obtained 26 Prizes at competitive trials.
MOWING AND REAPING MACHINES are performing their work most satisfactorily, and fully justify public expectation, cutting about 10 acres per day, at a cost of 9*d.* per acre.
Orders for the above machines should be given at once to RICHMOND & CHANDLER, Salford, Manchester.
Branch Establishment, South John Street, Liverpool.

"FRIGI DOMO."—Patronised by her Majesty, the Queen, the Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, and —Collier, Esq., of Dartford.
PROTECTION FROM THE SCORCHING RAYS OF THE SUN.
"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and, floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths. Two yards wide, 1*s.* 6*d.* per yard run; four, 3*s.* per yard. Also, an improved make for Shading Purposes. Three yards wide, 2*s.* 6*d.* per yard run.
ELISHA THOMAS ARCHER, whole and sole manufacturer, 7, Trinity Lane, Cannon St., City,, E.C., and of all Nurserymen and Seedsmen throughout the kingdom. "It is much cheaper than mats as a covering."

WARNER'S IMPROVED LIQUID MANURE OR GENERAL PORTABLE PUMP.



These Pumps are fitted with WARNER'S Patent Bucket and Valve, and cannot clog in action. The barrel is made of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure on the stand, the legs of which fold together, and may be carried with ease by one man to tank or pond.

	£	s.	d.
Stand and Pump, with screwed tail pipe, fitted with strong brass union for suction pipe	2	15	0
If fitted with barrel of planished copper	3	4	0
Stand and Pump, with plain tail pipe, for tying on suction pipe	2	9	0
2-inch patent rubber and canvas flexible suction pipe, on wires, either 10, 12, or 15 ft., per foot	0	2	2

May be obtained of any Ironmonger or Plumber in town or country, at the above prices, or of the Patentees and Manufacturers, J. WARNER & SONS, 8, Crescent, Jewin St., London, E.C.

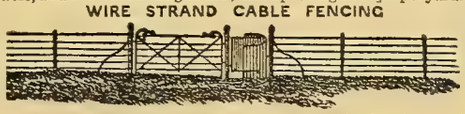
WARNER'S PATENT VIBRATING STANDARD PUMPS.
PATENT CAST-IRON PUMPS for Farms, Cottages, Stable Yards, &c., where the Well does not exceed 28 feet in depth; fitted with WARNER'S Patent Metal Bucket and Valve, which cannot clog in action. These Pumps can be made right-handed, left-handed, or with handle opposite the nose by removing four screws only.



Diameter of Barrel.	Height.		£.	s.	d.
2¼ in.	short 1 ft. 7 in.	Fitted for lead, gutta percha or cast iron flanged pipe as required.	1	5	0
2½ ,,	long 3 ,, 3 ,,		1	10	0
3 ,,	ditto 3 ,, 6 ,,		2	4	0
3½ ,,	ditto 3 ,, 6 ,,		2	9	0
4 ,,	ditto 3 ,, 6 ,,		2	13	0
2½ ,,	short, with 15 feet of Lead Pipe attached, ready for fixing		2	10	0
2½ in.	long ditto ditto	ditto	2	14	0

The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.
May be obtained of any Ironmonger or Plumber in Town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin Street, London, E.C.
Every description of Machinery for Raising Water by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

PRICES REDUCED.
H. J. MORTON AND CO., Galvanised Iron Works, 2, Basinghall Buildings, Leeds.
GALVANISED IRON ROOFING
for Farm Buildings and other Roofs; the cheapest, most durable, and neatest Roofing in use; also Spouting at 10½*d.* per yard.
WIRE STRAND CABLE FENCING



(formed of Twisted Wires like a rope or cable), the strongest cheapest, and neatest fence in use, will resist the largest cattle and will not bend or get out of form by trespassing upon or over. Price, with five lines of the Galvanised Strand, iron main posts, and pronged Standards, 1*s.* 2½*d.* per yard.
This fence is far cheaper than posts and rails, or any kind of iron fencing; and possesses four times the strength of solid bars. Will not rust nor corrode. Upwards of 1200 miles of this Fencing supplied.
GALVANISED GAME AND POULTRY NETTING.



Galvanised, 24 ins. wide, 2-inch mesh, 5½*d.*, 7½*d.* and 9½*d.* per yard.
Galvanised, 24 ins. wide, 3-inch mesh, 4*d.*, 5*d.*, and 7*d.* per yard. The Netting made any width, and with openings of any size.
GALVANISED IRON CHAIN CAMP STOOLS & CHAIRS, POULTRY FOUNTAINS & FEEDERS, PRONGED DAHLIA RODS AND ROSE STAKES, &c.
Strong CATTLE HURDLES from 2*s.* per yard.
PATENT IMPROVED GAS WORKS,
of all sizes for the use of Private Houses, Mansions, Railway Stations, Mills, Collieries, Mines, Villages, &c. Works from 10 to 500 lights estimated for. The works can be entrusted to an ordinary labourer.—Apply to
HENRY J. MORTON & Co. 2, Basinghall Buildings, Leeds.
PAXTON WORKS, SHEFFIELD, ESTABLISHED 1738.



SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.—Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.
GUTTA PERCHA TUBING FOR WATERING GARDENS.
THE GUTTA PERCHA COMPANY have the pleasure to acknowledge the receipt of the following
Testimonial from Mr. J. FARRAH, *Gr. to* BOSWELL MIDDLETON JALLAND, Esq., *of Holderness House, near Hull.*
"I have had 400 feet of your Gutta Percha Tubing, in lengths of 100 feet each, with union joint, in use for the last 12 months for watering these gardens, and I find it to answer better than anything I have ever yet tried. The pressure of the water is very considerable, but this has not the slightest effect on the tubing. I consider this tubing to be a most valuable invention for Gardeners, inasmuch as it enables us to water our gardens in about one-half the time, and with one-half the labour required."
Manufactured by the Gutta Percha Company, Patentees, 18, Wharf Road, City Road, London, E.C., and sold by their Wholesale Dealers in town and count

ROYAL AGRICULTURAL BENEVOLENT COLLEGE FOR THE RELIEF OF DECAYED FARMERS, THEIR WIDOWS AND ORPHANS.
Noblemen and gentlemen interested in Agriculture, desirous of promoting this object, will please fill up and forward a Form, as annexed.
450 influential names are enrolled to this date.
Tiptree Hall, Sept. 10.
Sir,—I hereby request you to place my name on the list of the Promoters of the Royal Agricultural Benevolent College, provided no pecuniary responsibility (beyond a subscription or donation) attaches to such Association. Name.....
Address.....
Date .....
To J. J. MECHI, Esq, Tiptree Hall, near Kelvedon, Essex.

WEST OF ENGLAND AND SOUTH WALES LAND DRAINAGE AND INCLOSURE COMPANY.
Established in 1844.
INCORPORATED BY ACT OF PARLIAMENT IN 1848.
Draining, Inclosing, Irrigating, Warping, Road Making, and all kind of Land Improvements, executed on Entailed, Mortgaged, or other Properties, and the whole cost can be made a Permanent Charge on the Lands, or redeemable in a certain number of years. BIDWELL & BRODIE, Secretaries.
Offices: Exeter; and 30, Parliament Street, London, S.W.

THE LANDS IMPROVEMENT COMPANY.—Incorporated by Special Act of Parliament in 1853.—2, Old Palace Yard, Westminster, S.W. To Landowners, the Clergy, Estate Agents, Surveyors, &c., in England and Wales and in Scotland.
The Directors beg leave to announce that the Company's Amendment Bill, 1859, has received the sanction of the Legislature. The Company now advance money, unlimited in amount, for the following works of Agricultural Improvement, the whole outlay and expenses in all cases being liquidated by a rentcharge for 25 years.
1. Drainage, Irrigation and Warping, Embanking, Inclosing, Clearing, Reclamation, Planting for any beneficial purpose, Engines or Machinery for Drainage or Irrigation.
2. Farm Roads, Tramways and Railroads for agricultural or farming purposes.
3. Jetties or Landing places on the sea coast or on the banks of navigable rivers or lakes.
4. The erection of Farm Houses, Labourers' Cottages, and other Buildings required for Farm purposes, and the improvement of and additions to Farm houses and other buildings for farm purposes.
Landowners assessed under the provisions of any Act of Parliament, Royal Charter, or Commission, in respect of any public or general works of drainage or other improvements, may borrow their proportionate share of the cost, and charge the same with the expenses on the lands improved.
No investigation of title is required, and the Company being of a strictly financial character do not interfere with the plans and execution of the Works, which are controlled only by the Government Enclosure Commissioners.
Under the Company's Acts, tenants for life, trustees, mortgagees in possession, incumbents of livings, bodies corporate, certain lessees, and other landowners are empowered to charge the inheritance with the cost and expenses of the above improvements, whether the money be borrowed from the Company or advanced by the Landowner out of his own funds, and owners in fee may effect these improvements of their Estates without incurring the expense and personal responsibilities incident to mortgagees, and without regard to the amount of existing incumbrances.
For further information, and for forms of application, apply to the Honourable WILLIAM NAPIER, Managing Director, 2, Old Palace Yard, Westminster, S.W.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, London, S.
Principal—J. C. NESBIT, F.G.S., F.C.S., &c.
The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.
Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

SMITHFIELD CLUB CATTLE SHOW, 1859.—The ANNUAL SHOW of FAT CATTLE, SHEEP, and PIGS will take place on the 6th, 7th, 8th, and 9th December, at the Bazaar, King Street, Portman Square.
The Prize List contains separate classes for Devons, Herefords, Short-horns, Sussex, Norfolk or Suffolk polled, Long-horns, Scotch horned, Scotch polled, Irish, Welch, and cross or mixed breeds. Also Long-woolled Sheep, cross breeds, Short-wools, and Pigs. In addition to the large amount offered in money prizes, there are also 50 Silver and 5 Gold Medals. The following forms of Certificates are now ready, and intending Exhibitors in applying for them need only quote the letters and state how many of each they require.

CATTLE.	SHEEP.
Form A. Ox or Steer.	Form D. Pen of 3 Wethers.
,, B. Cow or Heifer.	
,, C. Ox or Cow in Extra Stock.	,, E. One Wether or Ewe in Extra Stock.
PIGS.	
Form F. Pen of 3 Pigs.	Form G. One Pig in Extra Stock

The Entries finally close on November 1.
Prize Lists with rules and regulations and Forms of Certificates to be obtained of B. T. BRANDRETH GIBBS, Hon. Sec., corner of Half Moon Street, Piccadilly, London, W.
N.B. All communications on the Club's business should have the words "Smithfield Club" outside, to distinguish them from private letters.

The Agricultural Gazette.
SATURDAY, SEPTEMBER 10, 1859.

MEETINGS FOR THE FOLLOWING WEEK.
WEDNESDAY, Sept. 14 { Staffordshire Agricultural Society at Stoke-on-Trent.

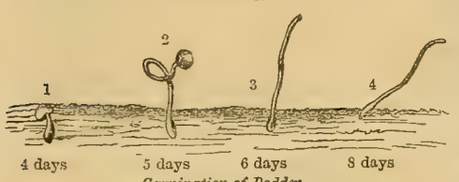
THE natural history of the parasitic plants belonging to the genus *Cuscuta* (Dodder), which attack our Flax and Clover crops, is a subject of no less practical importance than scientific interest; and as of late years some species of this plant are much on the increase, we purpose in the present paper to detail some experiments and observations more especially upon the two following species :—*Cuscuta Epilinum*, WEIHE (Flax Dodder), and *Cuscuta Trifolii*, BAB. (Clover Dodder). These are both of them very injurious to the Flax or Clover crop which may be infested by its peculiar species; and the following notes

upon them give such results of experiments upon their growth and habits as lead to deductions for their destruction.

The quantity of Dodder which is grown in Flax may be gathered from a note in an early Number of the *Agricultural Gazette* for the present year, to the effect that one grower had separated as much as 70 bushels of Dodder seed from his Flax. Of this a sample of somewhat over a bushel was sent to Dr. VOELCKER, at the Royal Agricultural College, for analysis and experiment, and of this sample we procured a quantity for the purpose of sowing, with a view to observe its method of growth, the observations upon which are now to be detailed as preliminary to remarks upon its agricultural history.

Experiment 1.—On sowing some seeds in a saucer with fine mould, the following appearances presented themselves. (Diagram 1.)

DIAGRAM 1.



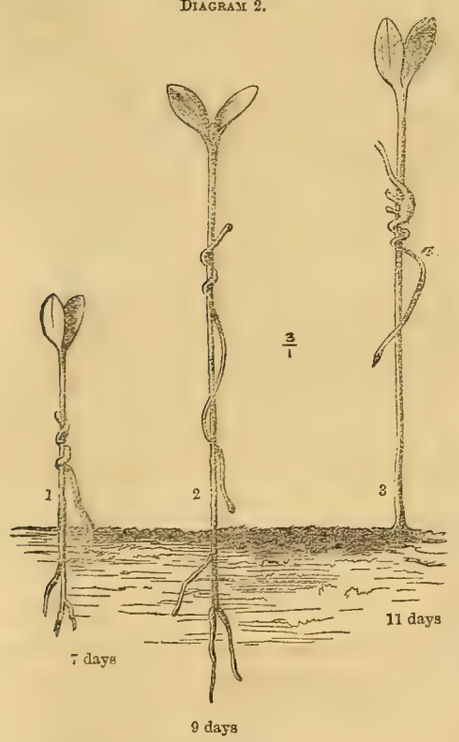
Germination of Dodder.

Fig. 1. Dodder seed with its radicle extruded.
Fig. 2. The germ elevated above the soil bearing the testa or seed-covering on its apex.
Fig. 3. The young thread like plant as it were on the look out for a foster parent.
Fig. 4. Not finding a foster parent it emerges from the soil and dies.

Thus, then, all the plants, which germinated freely, died in a few days, the thread-like germs gradually becoming elevated out of the soil amd withering away. However, on planting young examples of Flax, Chickweed, Tomato, and others among them, the later germinated seeds immediately directed their threads towards them, and commenced that parasitic mode of growth which was so fully shown in the next case.

Experiment 2.—A saucer was sown with a mixture of Flax and Dodder; in a few days both germinated, and the Dodder-threads were attracted to the stems of the young Flax, their history and progress being explained in the following diagram (2).

DIAGRAM 2.



Mode of attachment and progress of Dodder on the young Flax Plant.

Fig. 1. The Dodder has just clasped a Flax plant.
Fig. 2. Both the Dodder and the Flax have grown, the elevation of the Flax stem having now lifted the firmly attached Dodder out of the soil.
Fig. 3, The Dodder is now throwing out buds for new shoots, and the lower unattached part dies away.

Here, then, we have the method explained by which the Dodder first becomes attached to the plant upon which it grows. It makes one or two tight coils around its future support, and as during the time these coils are progressing the foster parent is increasing in size the compression of the former around the latter becomes tighter, thus causing the bark of the foster parent to be more delicate, while the parasite is preparing a series of aërial roots to penetrate it, and having done this its position is firmly established, its own natural root dies quite away, and thenceforward its true parasitic growth is astonishingly rapid.

Now it is not our present object to trace the further growth of the plant until it again produces its seeds, but it is important to note that when once firmly attached it appropriates the juices of the plant upon which it grows to the augmentation of the new structure, which sends out new tendrils in every direction, each of which clings to the plant near it as the first single tendril had done before; and soon a hundred arms are clasping the surrounding plants in every direction. If left alone the plant rapidly produces its clusters of delicately formed flowers which progress to seed, and these on being scattered again germinate, and if any young plants be near them they attack them as they had done the first crop, but if not they die soon after germination in the manner explained in our first experiment; and it would appear that so far there is an end of the pest, for there seems no reason to think that the seeds lie dormant in the soil ready to attack the same kind of crop when sown in another rotation, although we have heard it asserted that some land is "natural" to it.

The question then arises—whence is the Dodder derived? and the simple answer is, it is sown with the crop; and this assertion is proved by the following facts:—The two forms of Dodder we have under consideration are neither of them natives of Great Britain, they have both of them been introduced with Clover or Flax seed; and though so common now, a friend assures us that at one of Mr. MECHI's agricultural gatherings some 10 years since, the whole party collected around some patches of the Cuscuta trifolii which had made its appearance in the Clover crop, and only one in a party of about 300 was able to explain its nature; and as these gentlemen had come from all parts of England, that is sufficient evidence of its comparative rarity at that time.

Again, the Cuscuta epilinum was not heard of in this country until the commencement of Flax cultivation. Some few years since this crop was introduced to the farm of the Royal Agricultural College by the sowing of a few acres of foreign Flax seed. In this we observed some small patches of Dodder, and as the seed of this crop was afterwards sown in another part of the farm without the separation of the accompanying Dodder seeds, we need not wonder that this second crop of Flax was comparatively worthless, a presumption which has been fully proved as follows:—

Experiment 3.—One of our experimental plots has been this year occupied by a pure Flax seed, and by its side another bed has been sown with the same kind of seed, purposely intermixed with a sprinkling of Flax Dodder seed, whilst a third plot has been added of Flax seed unseparated from its usual weeds. The difference in the growth and produce of these has been as follows:—

Plot 1. *Flax Seed.*—Came up regularly, and now at seeding time is of the average height of 36 inches. The stems are clean and uninjured, and three of the best selected plants yielded 600 well-formed seeds.

Plot 2. *Flax Seed and Dodder.*—The Flax cotyledonous (first) leaves and the thread-like embryos of the Dodder made their appearance simultaneously. The Dodder soon embraced the young Flax plants, and the result is that it has been completely choked; the stems are dirty, the bark pierced with the aerial roots of the Dodder, their average height is 30 inches. Three of the best plants yielded 315 comparatively poor seeds. The whole crop now in the middle of August is rotting on the ground.

Plot 3. *Dirty Flax Seed.*—This is now scarcely half a crop of Flax, and even that has been injured by being choked up with Charlock, Black Mustard, Gold of Pleasure, Climbing Buckwheat, and a plant or two of Dodder, which are the usual attendants upon a sample of dirty Flax seed.

We may remark upon these results that in all probability the fibre of dirty and especially of Dodder Flax is decidedly inferior, but this is a matter which we only infer; one thing however is quite certain, namely, that its quantity will be considerably less than that of clean-grown samples.

As regards the growth of seed we may remark that the capsules of the Dodder Flax will uniformly be found to be thinner as being less developed, and as containing an average of fewer seeds than those of the clean samples, and besides there is usually a smaller number of seeds, as thus—

	Capsules:		Seeds to each Capsule.		Seeds.
Plot 1. Three selected plants of clean-grown Flax, have	75	×	8	=	600
Plot 2. Three selected plants of Dodder Flax, have	45	×	7	=	315

So that the produce of seed in Dodder Flax is scarcely half that of the clean sample, as many plants are so badly mauled by their parasitic enemy as to be all but seedless.

If we now refer to the Clover Dodder we find that this crop is often so injured as that the Clover is scarcely perceptible, but the Dodder is seen in matted tangled masses, occupying circular spots of varied magnitude, which when looked upon has much the sickly aspect which the sward presents when Clover hay has lain in heaps upon it during a long spell of wet weather. In this case the first crop is considerably lessened in quantity and injured in quality, and after mowing so great is the injury done to the plant by the parasite that those which have been attacked die out gradually, leaving bald spaces for the next season.

This plant, like the Flax Dodder, is introduced with the seed, and foreign Clover seed is seldom entirely free from it. It makes the most rapid progress in strong deep soils such as those of the lias and London clay; light or thin soils seldom encourage its growth to the same extent.

Now, as regards the keeping in check so great an enemy as Dodder, either in Flax or Clover, two modes of action as usual are open to us, namely, one which aims at curing the evil when it exists, and the other which succeeds in preventing its existence. Young crops of Flax and Clover should always be carefully gone over with a view of cutting off Thistles, creeping Crow-foot, and other weeds common in these crops; and wherever the thread-like fibres of Dodder are observed every plant to which it adheres should be removed from the field; a sharp eye will soon detect it, and stopped now it is done for for ever. This is easy, because it is seldom universally distributed over the crop, but usually starts from distant centres. As respects Flax it should always be drilled, as a little weeding which is then practicable greatly improves the amount of the crop itself and the absence of weeds in the straw much facilitates its profitable conversion.

If, however, Dodder has fully established its clusters in Clover, the best plan is to mow these down and burn them. A trench of a foot or so wide around them will completely isolate it so that it cannot spread any further; or these may be burnt. Of course prevention can best be carried out by carefully selecting your seed. On no account should a Clover or Flax sample be sown from an infected field: however in so far as Dodder or Clover is concerned it cannot be too widely known that crops containing weeds, and especially Dodder, are often seeded because of the damage which has by their means been done to the herbage; hence it is considered more profitable to get a dirty seed than a poor crop, as in these cases dirt and all sells. Farmers who are so stupid as to buy dirty seed are usually of that class who believe that weeds don't come from seed but are the natural and spontaneous generation of the soil. Dodder seeds are less in size than either Clover or Flax seeds, but they are more easily separated from the latter than the former because the difference is greater; still in a sample of Flax which has lately come before our observation we detected no less than 100 seeds of the Dodder in a pint, a quantity quite sufficient to occupy the soil, so that its presence is a matter not difficult to understand if a crop infested with the parasite be not cleaned; for on a single plant of Flax now before us we make out the sum of 28 clusters of capsules of Dodder seed having an average of seven capsules to a cluster each of two seeds ($28 \times 7 \times 2 = 392$); and as the same plant had before been estimated as producing only 315 seeds of the crop (Flax), we see that the parasite produces seed more prolifically than the plant upon which it feeds.

The presence of Dodder in Flax seed may easily be determined by any one who has ever examined separate seeds of the parasite, but such as have not will perhaps find it easier to separate every foreign kind of seed from the Flax or Lint seed. Place a few of the suspected seeds in some moist soil in a hothouse or any warm corner, and the thread-like plants will peep up in two or three days, and will soon attach themselves to any of the flax plants which may come up at the same time.

That looking into seeds or crops in the manner indicated presupposes that some care and trouble is to be expended on this subject is quite true, still the importance of the matter renders it worthy of any amount of time and observation, and the intelligent agriculturist should moreover be desirous of acquiring information upon such valuable points connected with his profession, not merely from this cause but because it is education and knowledge which distinguish a man from his fellows.

FLAX CULTURE IN IRELAND, 1859.

THE following returns show in statute acres the extent under Flax in Ireland in 1858 and 1859, compiled from returns obtained by the Irish Constabulary.

Counties and Provinces.	Extent of land under Flax.		Difference between 1858 and 1859.	
	1858	1859	Increase.	Decrease.
ULSTER.	Acres.	Acres.	Acres.	Acres.
Antrim	3,675	7,630	3,955	
Armagh	10,409	15,098	4,689	
Cavan	3,252	5,690	2,438	
Donegal	16,480	22,272	5,792	
Down	12,266	21,305	9,039	
Fermanagh ..	1,719	3,214	1,495	
Londonderry ..	12,665	17,529	4,864	
Monaghan	10,812	14,498	3,686	
Tyrone	15,107	23,022	7,915	
Total of Ulster ..	86,385	130,258	Increase 43,873 acres	
MUNSTER.				
Clare	612	518	..	94
Cork	368	428	60	
Kerry	476	521	45	
Limerick	196	130	..	66
Tipperary	86	98	12	
Waterford	35	38	3	
Total of Munster ..	1,773	1,733	Decrease 40 acres.	
LEINSTER.				
Carlow	53	8	..	45
Dublin	1	1		
Kildare	3	2	..	1
Kilkenny	41	28	..	13
King's	247	262	15	
Longford	274	359	85	
Louth	349	523	174	
Meath	185	229	44	
Queen's	29	25	..	4
Westmeath ..	172	278	106	
Wexford	148	74	..	74
Wicklow	1	4	3	
Total of Leinster ..	1,503	1,793	Increase, 290 acres.	
CONNAUGHT.				
Galway	317	326	9	
Leitrim	503	850	347	
Mayo	593	726	133	
Roscommon ..	266	383	117	
Sligo	306	247	..	59
Total of Connaught	1,985	2,532	Increase, 547 acres.	

	1858	1859
Total acreage under Flax in Ireland	91,646 acres	136,316 acres
Increase in 1859	44,670 acres.	

Extent of Flax growing in Ireland in each of the following years:—

1851.	1852.	1853.	1854.	1855.
Acres.	Acres.	Acres.	Acres.	Acres.
140,536	137,008	174,579	151,403	97,075

1856.	1857.	1858.	1859.
Acres.	Acres.	Acres.	Acres.
106,311	97,721	91,646	136,316

Wm. Donnelly, Registrar-General, Agricultural Statistics Office, 5, Henrietta Street, Dublin, Aug. 20.

REAPING MACHINE COMPETITIONS.

(1) *Inchture.*—Eight machines were entered for the competition, including four of Lord Kinnaird's, three of Mr. Bell's, and one of Burgess & Key's; and they were all set to work on a field of Wheat. The work done was in nearly every case first-class, the grain being even and clean cut, and laid out with the greatest regularity and order. The only exception to this was in the case of the Burgess & Key's screw machine, which, owing to the heaviness of the grain, was several times obstructed in its working, and did not give such satisfaction as the others. There was also on the spot, though not for competition, a M'Cormack machine, which can be driven by a boy, while a man is stationed behind with a rake, and removes the grain in quantities sufficient for sheaves. This machine attracted considerable attention from those on the field, and its working was very satisfactory. The following is the list of prizes:—1st prize, Highland Society's Medal, Peter M'Donald, servant of Mr. Bell, Inchmichael; 2d, David Galloway, servant to Lord Kinnaird; 3d, John Bruce, servant to Mr. Brough, West Mains, Inchture, a Bell's machine; 4th, James Sharp, servant to Peter Constable, Esq., Ballindean, a Lord Kinnaird's machine; 5th, Peter Bruce, servant to Mr. Suttie, a Lord Kinnaird's machine; 6th, Robert Hutton, servant to Lord Kinnaird; 7th, Wm. Anderson, servant to Colonel R. Knox Trotter, a Burgess and Key's machine. An extra prize to James Crichton, 10 years of age, for driving a M'Cormack machine.—*Dundee Courier.*

(2) *Hexham.*—The weather, though cloudy in the morning, fortunately cleared up towards the middle of the day. The situation of the ground was in every way favourable to a fair and equal competition, being a large flat field of standing Wheat. Ten machines were entered for trial, but only seven arrived upon the ground. They were as follows:—One of Burgess & Key's, belonging to Mr. Freeman, Carlisle; another of Burgess & Key's, belonging to Mr. Dods, Anick Grange; a third of Burgess & Key's, belonging to Mr. Stephenson, Fourstones; Bell's machine, belonging to Mr. Freeman, Carlisle; Trotter's ditto, belonging to and invented by Mr. William Trotter, Bywell; Cuthbert's ditto, belonging to Mr. Gregory, Westoe; Samuelson's Britannia self-raking Reaper, belonging to Mr. Dixon, Newcastle, agent to the North of England Implement Company. Mr. Dods has had his machine for two years, and during that time it has done the work of his farm to his entire satisfaction. Both last year and the year preceding, it had awarded to it the first prize offered by the Hexham Farmers' Club. Mr. Stephenson's is of precisely the same description as Mr. Dods's; he also has had it for two years, and during that time it has regularly done his reaping on the farm, and Mr. Stephenson is well satisfied with the way in which it is done. Mr. Freeman's Burgess & Key's is two year's older than that of Mr. Dods, and consequently is not furnished with the conical side screw in dividing the corn, and assisting on heavy Wheat crops and on Barley crops the action of the Archimedian screws on the platform, which deliver the crops. Mr. Trotter's machine was designed by himself, and was executed by his direction by the village blacksmith. It was a competitor last year for the Hexham Club's prize, but owing to an accident it did not finish its work. Since last year it has been improved in the workmanship, but the principle is in every respect the same as before. It has also been in daily operation on Mr. Trotter's farm during the present season. It can be worked with one or two horses, and lays the corn in sheaves. Mr. Bell's machine differed from the others in being driven from behind. It is too well known to require any further description. The Britannia competed on the previous Thursday at Bilton, and seems to be a favourite in the north. Two were sold to gentlemen in the neighbourhood of Bilton at the close of the trial there, and the company's Berwick agent has sold nearly a dozen this season. Its special peculiarity is that, while it is self-delivering, it deposits the grain in sheaf and not in swathe. Mr. Cuthbert's can be worked with one or two horses, and can be so adapted that either side or end delivery can be obtained. Mr. Wright, Southwaite, Carlisle; Mr. Anderson, Hetton House, Wooler; and Mr. Bleckett, Esh, Durham, acted as judges. The reapers were each tried, first upon an acre of Wheat, and afterwards upon some Barley. The following is the time which each machine took to cut its acre; and the price of each machine:—

	Minutes.	Price.
Mr. Dods's	42 ..	£42 0 0
Mr. Trotter's	45 ..	22 0 0
Mr. Freeman's (Bell's) ..	— ..	42 0 0
Mr. Freeman's (Burgess & Key's)	48 ..	42 0 0
Mr. Stephenson's	49 ..	42 0 0
Mr. Dixon's	— ..	32 10 0
Mr. Gregory's	38 ..	24 0 0

Samuelson's machine, by an unfortunate breakage, was prevented from finishing its work. This machine is furnished with a self-acting rake, which is intended to descend and take off the corn when sufficient has accumulated for one sheaf. The principle is good, but it will require many improvements before it will become of much practical use to the farmer. Bell's machine, by a similar misfortune to Samuelson's, was prevented from completing its work. After due consideration the judges arrived at the following decisions, which were read by Mr. Lee, the secretary, at half-past 2 P.M.:—

Mr. Stephenson, first	£15 0 0
Mr. Gregory, second	7 0 0
Mr. Trotter, third	3 0 0

The day was very pleasantly spent and all parties seemed satisfied with the very interesting spectacle which they had witnessed. *North British Agriculturist.*

(3) *North Northumberland.*—The trial took place close to Bilton Station for the accommodation of exhibitors. Sixteen machines had been entered, and at 10 A.M. nine of them commenced their labours in a field of Wheat. There appeared to be two distinct classes of machines—the one adaptations of M'Cormack's American reaper, and the other—the most numerous—those on Hussey's principle. Of the former, there were two constructed with Burgess & Key's latest improvements, which more especially arrested the attention of the spectator, the one belonging to Mr. Wilson of Woodhouse, and the other to Mr. Pearson, Low Moor, Durham. They both were fitted up with a set of fanners for laying the corn on to the machine and an Archimedian screw for delivering it in swathe, and both did their work beautifully—cutting clean, low, and regular, and leaving an elegant and symmetrical swathe. They began with two horses, but afterwards were furnished with a third, the labour requiring additional power. There was another, the property of Messrs. Thompson & Wright of Alnwick, manufactured by B. Samuelson, Britannia Works, Banbury, which also was a splendid machine, one peculiarity of which was that by a beautiful mechanical contrivance a self-acting rake had been introduced, which, by a motion similar to that of the human hand, laid the bundles outside of the track of the horses, delivering it in sheaves, ready for binding, in contradistinction to the swathe delivery. One of the conditions of the competition was that each exhibitor was to provide a sufficient staff to work his machine; but though there was sufficient for this purpose, provision had not been made by the exhibitors of labourers to build and set up the corn for this machine, and from this cause its peculiar action was not seen to sufficient advantage. The next class of machines, as we are informed, are all to some extent different modifications of Hussey's principle. Among these was one manufactured by R. Cuthbert & Co., Newton-le-Willows, Bedale, worked by one horse, and did its business well, delivering its corn regularly, and leaving a clean level stubble. Mr. Wilkinson, of Boston, had a machine manufactured by Messrs. James Stoke & Sons, Newton, Stocksfield, which distinguished itself by the rapidity, regularity, and cleanness with which it performed its various operations. Mr. John Turner, of Alnwick, exhibited one of his own manufacture, which was much commended. There were several other machines on the field of Mr. Turner's manufacture. Messrs. Wilkin & Dickman also exhibited one of their own manufacture; it is equally available for the cutting of corn or Grass. Under the direction of Mr. Robert Donkin, who managed it, it went through its work in excellent style. It may be observed that nearly all failed in cutting satisfactorily where the corn was either lodged or inclined in an opposite direction to the course of the machine. Taking the exhibition as a whole, the quantity of work done, and style in which the machines generally went through the operations, it must have been gratifying to the exhibitors, and not less so to the enterprising gentlemen of the society. The following was the award of the judges: The first prize of 20*l.* to be equally divided between Mr. Wilson and Mr. Pearson (Burgess & Key) 10*l.* each, their machines being considered of equal merit; the second prize of 10*l.* between Mr. Stoke and Mr. Cuthbert, 5*l.* each, for the same reason. The judges also highly commended other machines. *Berwick Warder.*

(4) *Blackburn.*—At the meeting of the Lancashire Agricultural Society three reaping machines were put in competition. The crop selected for the trial was a field of Oats, short and thin (indeed, it is a poor season for Oats), and sadly too full of Grass and Weeds. Last year, at Ulverston, the machines were tried upon a crop of Wheat, one most admirably chosen for proving their adaptability; this year the crop was the reverse, and was more suitable for the scythe than the reaping-machine—indeed, as is proved, it was only those machines that were able to cut Grass as well as corn that showed to advantage. The three machines tested on Wednesday were—one belonging to Mr. R. Cookson, of Layton Hawes, and formerly the property of Mr. Billington, of the Bull Hotel, Preston. The inventor of Mr. Cookson's machine is a Mr. Wood; the maker, Mr. Clayton, of London. Next, we had a machine from Miss Ffarington, of Worden Hall, Leyland, It is Hussey's, improved by Mr. Dray, of London, and is similar to the one tried last year at Ulverston. The third, "Crosskill's Improved Reaping Machine," was exhibited by the makers, the trustees of Mr. W. Crosskill, of the Beverley Iron Works, Beverley. The machines were set at work in the following order:—1st, Wood's; 2d, Hussey's; 3d, Crosskill's. Previous to commencing operations, Crosskill's was put into motion down the furrows to cut a way through for the other two to commence working. Both Wood's and Hussey's succeeded in cutting the extent allotted to them in very fair style, and the very superior form in which the latter left the cut corn was much noticed. We heard several farmers remark that it was left in far better form for binding up than could have been accomplished by either scythe or sickle. Crosskill's machine did not succeed on Wednesday; it made far more frequent stoppages than the others, left a portion of the corn in several places uncut, did not deliver neatly, and the appearance of the plot which it cut, when compared with that gone over by the other machines, was somewhat slovenly. Crosskill's is strictly a reaping machine, and the other two are not intended for mowing; they were, however, tested, but the Grass was too short, so that the result proved nothing as to their capabilities for cutting Clover or Rye-grass.

The prize was awarded to Dray's Hussey—medal and 20*l.*—Miss Ffarington, Worden Hall.

Home Correspondence.

Thin Seeding.—Since you published my last article in your valuable Journal I have received several kind and friendly letters (four in one day), asking for further information on the points of husbandry which I for many years have endeavoured to impress upon agriculturists. I wish also to correct several mistaken notions which many persons have fallen into respecting what I have often publicly stated and written. The first and principal of these is that I consider thin seeding alone to be a panacea for all kinds of farming, bad and good, and for everything connected with farming; but the reverse exactly has been the case; for, on the contrary, I have for a thousand and one times stated and published that I considered no kind of seeding, neither thick nor thin, would compensate for slovenly and imperfect cultivation. From my first advocacy, now very many years since, of agricultural improvements, I have said to farmers and gentlemen. Deeply and thoroughly drain your lands wherever there is stagnant water in them; then completely cultivate them wherever the soil will permit, at least twice as deeply as you now let your ploughs go. Keep your lands free from weeds also, and let them grow nothing but what you intend they should, and thus take care they are in good heart; then greatly diminish the quantity of your seed of every kind." But I have never advocated a uniform quantity of any kind of seed; I have shown what quantities I myself put into the ground, and the produce they produced; and also the quantities my friends, who think as I do on these points, put in, and their products; but I have never advocated the same quantities for all kinds of lands, nor for all kinds of tillage, nor of all sorts of the same kinds of grain. Of Wheat, for example, there are short-strawed sorts and long-strawed sorts, and there are sorts neither one nor the other, just as there are of Peas, &c.; to plant dwarf Peas as wide apart in the rows as the tallest kinds ought to be everybody would say would be absurd; and it is the same with Wheat and everything else exactly. Some lands also, that is, deep stapled kinds, produce very luxuriant grain with very tall

straw, and here also the seeds throw out more branches; whilst light lands always produce short straw, nor does the seed tiller and throw up so many branches as it does in the deep staples and rich land; and hence my opinion always has been that on light and poor land more seed should be sown than on deep stapled and rich land; but some farmers think differently: but this is my opinion. But on all kinds of land and of all kinds of seed, I should be a thin-seeder, in no case putting in half the seed that is generally sown. Having, Mr. Editor, so far cleared away this objection to my system or the system of the thin-seeders, I will just add that in my neighbourhood and many others the winter Bean crops and the Barley crops are very indifferent, and some of them very bad; the Beans having been very badly podded, and the Barley crops laid flat on the ground and some much grown, and the grain generally very thin—and why has this been? The cause entirely was over-seeding; and I may add, that had Providence sent wet instead of this unusually fine weather nine-tenths of these crops would have been fit only for dung; but the goodness of Almighty God counteracts so frequently the obstinacy, the prejudices, and shall I say the ignorance of men; and he has singularly shown his mercy towards them in this way this year. The crops of Beans were so thick that neither sun nor air could reach the blossoms, and so they fell off, and of course had no pods. The Barley crops also were the same as to thickness, and consequently so weak in the straw that the most balmy zephyrs laid them flat on the ground, where the Clover and Grass grew through them, causing the grain to sprout, and in some cases spoil, or fit only for grinding for hogs. But I merely touch upon these points in my present letter; and now I go to another matter, though not exactly agricultural, yet I hope I shall be excused for drawing attention to it. In my last article, kindly published August 13, I touched upon the opposition I had met with from farmers or their advocates; but they have not been my only opponents, for men of my own profession have risen against me and brought to my charge things that I knew not. Among others some short time since, a bigot, professing to be a clergyman, dated a letter to me from the Athenæum, stating how shocked he was that I, a clergyman, should write such letters about farming, and last week another narrow-minded man sent me a long rhapsody of the same kind, to which, after his feigned name, he added "D.D." This man is surprised that my diocesan has not long since interfered and called me to account for spending so much time on secular matters, and "talking and writing about things I can know nothing about," or if I "do know anything about them the knowledge must have been obtained at the expense of my spiritual duties." [Our correspondent proceeds to argue at considerable length and with unquestionable force the propriety of a clergyman taking a part in all true human and social interests; but this is not likely to be questioned by readers of the *Agricultural Gazette*, and we have therefore taken the liberty to publish the former portion only of his letter.] *G. Wilkins, Wix Rectory, Manningtree.*

The Lucifer Match.—Apropos of this, which is now receiving attention in your columns, a young girl of 14 has just died here, and it has been proved before a coroner's jury that she poisoned herself with eating the ends off a box and a half of lucifer matches. *J. N. D., Cumberland, Sept.* 1.

Caution about Winter Barley for sheep.—Last spring a farmer in Hants fed his sheep on this dry plant, after it was in ear, and his flock have not recovered the effects of it yet. In August it first scoured them, and he has lost some 23 ewes and several lambs; they dwindle away, and the shepherd says when they die they have not drop a of blood in their veins. * * *

Farmers' Clubs.

CHEADLE: *Salt and Lime.*—At the annual meeting of this society Mr. Cargey said he had been in the habit of dressing land that was to be sown with Wheat in autumn with a manure made of a ton of lime to half a ton of salt, well mixed together some weeks before it was used. Lord Harrowby had sent him the recipe down from London, and it had been applied to summer fallow for a long period with invariable success. Whenever he was afraid of a crop of Wheat going down he always applied a dressing of lime and salt, and the same dressing had always secured a good crop of Clover. Generally ploughed the land and then applied the manure to the surface. The lime and salt should be mixed some time before they were used, for the more completely they were amalgamated the better. The largest crop he ever grew was in a field which had been manured in this manner. The Wheat was sown broadcast in autumn, and produced, according to the Staffordshire measure, 16 bags per acre, and there was not one bit of it that was lodged, nor did the lime and salt make the land stiff, as some persons had predicted. He had never dissolved the salt but once. They generally laid a load of lime down and then shovelled the salt upon it and turned it over. If the weather was dry they put water upon it, but if not they let the rain fall upon it and turned it over three or four times. He did not know that any chemical change was thereby produced, but the lime and salt were well amalgamated. He had found this plan invariably a preventive of the great plague of falling Wheat. When he first went to Sandon he was troubled a great deal with falling Wheat, but now he never had any.

Mr. Knight had applied lime and salt on his light land, and found them answer. The Vice-Chairman said he had done the same on his farm, and had found it succeed admirably. He had also found that it saved the Clover from the attacks of the slug. In Wheat it strengthened the straw, and thus prevented it from going down. If to one part of a field the lime and salt were applied, and not to the other, it would be found that the straw in that part of the field to which they had been applied would be of a brighter and better colour than that which grew where they had not been applied. He had applied them in the same proportion as Mr. Cargey.

Mr. Cargey said he had recommended the application to many of his neighbours, but they were afraid to use the same quantity of salt as he had done, so that they had not tried the experiment in its integrity. He had seen Wheat mildew both on land to which the lime and salt had been applied and on land to which it had not been applied. In the latter case the Wheat had suffered permanently, but in the former it had ripened off as bright as possible. Many of his neighbours had used 4 or 5 cwt. of salt, but he had never known the proportion he had named make the land stiffer.

Mr. B. Bond said the farmers had had a very early harvest this year, and he strongly recommended them to have an autumnal cultivation by working the lands during that season, and endeavouring to get it cleared preparatory to the next spring crop. They would find that course one of immense advantage. He was strongly opposed to the sale of straw. If a man kept upon his farm a fair amount of stock he would have no straw to sell, though if he lived within a mile or a mile and a-half of the Potteries he might be able to sell his straw to advantage.

The Vice-Chairman differed from Mr Bond. He was a tenant farmer, and he was proud of it; but let them give him his liberty, without any nonsensical restrictions, to cultivate his farm in a manner most conducive to his own interests, and then it would be cultivated to the best advantage for the landlord. As a tenant farmer he was not fond of seeing a 10*l.* penalty for this thing and a 20*l.* penalty for the other. He would ask, how was a man, who grew a large quantity of straw, to consume it upon his farm? His cattle could not consume it; and perhaps he might not have the means of converting it into manure. Then what is he to do with it? Why, it was to remain in the stackyard until it rotted down, when there was a market for it at his very doors, where he might turn it into money. He would appeal to them whether it would not be very much better to convert it into money with which to enrich the land for succeeding crops. A gentleman had handed to him a slip of paper, on which it was written that bone was the best manure for pastures. Probably that gentleman was a bone merchant, but he was quite right, for he had used it for many years. But bone manure was very expensive, and how could they buy artificial manures if restrictions like that to which he had referred were placed upon them? They had to contend with foreign growers who were under no restrictions, and with wheat 1*d.* per lb. and guano 13*l.* 10*s.* a ton, vexations restrictions ought to be abolished. It was very hard upon the poor farmer that when he had spent a large sum of money upon bone or guano, the landlord should step in and say, "Not one straw shall you remove, though you have a market at your own door."

The Chairman said the information they had received from Mr. Cargey would be most valuable to the farmers of that neighbourhood, and he was not sorry that the feelings which existed in the breasts of many present on another subject had been shown. Every man ought to be allowed to carry on his calling with the least possible restriction, and if a landlord got a bad tenant or a tenant a bad landlord, the sooner they separated the better. He read over the agreements when his tenants and he signed them, but he knew perfectly well that they would not be enforced. It would be utterly impossible to enforce them all, for the tenants would not stand it, but would rather leave their farms. Then with regard to the particular question of selling the straw, he thought it fully deserved consideration. He was not quite sure that the restriction might not be sound as a general rule, but what he had said was that in that peculiar locality it appeared to be highly injudicious to maintain the restriction with regard to the sale of straw. In the Potteries 3*l.* a ton might be got for Oat straw; and by what process—chemical, natural, or physical—could they get the same money for it any other way? Three pounds worth of artificial manure would be worth 3 or 4 tons of Oat straw manure. Then how could they consume Wheat straw, unless like him they had six sons who kept a number of hunters? There was much force in Mr. Adamthwaite's remarks, for to throw straw into the yards was a most miserable and wasteful way of disposing of most valuable produce,

The Rev. J. K. Dunne thought the man who was able to consume all that he grew upon his farm was likely to be the most successful farmer, but he agreed with Mr. Adamthwaite that in the present age it was perfectly ridiculous to bind men to trample down straw, which they could sell at 3*l.* or 3*l.* 10*s.* a ton; when trampled down it would, perhaps, not be worth 10*s.* If such a thing was narrated of Russia, they would say that it could only happen in a nation of serfs: and if it had happened in Austria, it would have been attributed to Austrian misrule; but that it should continue in this enlightened country he did think a kind of disgrace. *Abridged from the Staffordshire Gazette.*

Notices of Books.

A Word of Advice to the Farmer in Selecting, Analysing, and Buying Guano and Artificial Manures; with tables showing the money value of the respective constituents. By Lonsdale Bradley, M.R.A.C., F.G.S. Routledge.

This pamphlet contains in a simple form the information which the agriculturist needs before he can understand the precise meaning of any tabular statement of the composition of a manure.

It contains the money value at given rates of valuation of every proportion of nitrogen, ammonia, superphosphate, gypsum, salt, &c. from 0.5 to 100 per cent., rising by increments of .5 in the more valuable substances, and by additions of 1. in other cases.

We are bound to add that the author could have done all this quite as effectively though he had not quoted the speech of an ignorant man as characteristic of the intelligence of the class whom he addresses, or flippantly spoken of them as "descendants of Cain." He might have really liberated their minds from prejudice, without parading the inferiority he believed himself about to remove.

The following memoranda are given for the guidance of the man who would understand the analyses given by the manure dealers.

"*Of Manures.*—1. That all manures are compounds, or contain more than one substance. 2. That these substances exist in different proportions. 3. That each of these several substances possesses different fertilising powers. 4. That, according to their fertilising properties, they have each distinct commercial values. 5. From the proportions in which these ingredients exist, so is it a good or a bad, a dear or a cheap manure, at the price at which it is offered for sale.

"*Of Analyses.*—1. On the left-hand side is a tabulated form of the substances which the chemist in his investigations discovered in the manure. 2. On the right hand side, opposite each substance, is recorded in decimals, the proportions in which these substances were found to exist. 3. In accordance with the proportions of the good or bad substances, so it indicates a good analysis or a bad analysis, *i.e.* a good manure or bad manure, one worth purchasing or the contrary. 4. An analysis of itself, therefore, is no guarantee, no warrant as to the goodness of a manure, unless it is rightly read, and its value understood by the purchaser.

"*The application.*—5. There is one way left, however, which I think may be useful for your guidance: that in buying manures, you should obtain an analysis from the dealer, and examine it by the tables. 6. If you are satisfied with the result, then purchase your manure under a guarantee from the dealer, that he will supply you with a manure equal to that analysis. 7. On obtaining your purchase, take an average sample from the bulk, and send that sample to some analytical chemist of known accuracy; upon the receipt of his examination, compare it with the analysis produced by the dealer; if they do not correspond, the dealer, of course, has not fulfilled his contract."

Miscellaneous.

Barnet Cattle Fair, September 5.—The great annual fair at Barnet was opened for the sale of cattle, nearly all counties were represented by the principal stock breeders and dealers. The counties of Hereford and Devon contributed some of their best grazing beasts, and were the principal suppliers of cattle to the demands. Yorkshire was fully represented by a field of excellent and choice bred milch cows. Ireland imported some large droves of well-bred stock to the fair; Scotland gave an additional importance to this great mart by its production of choice polled Scots and well-bred steers; Wales sent some large herds of black cattle, which occupied a large portion of the fair. There was a good demand for best description of grazing stock; and, notwithstanding the high prices asked, an active business commenced early and continued throughout the day, so that money to a very large amount changed hands, Stock prices were as follows:—Hereford beasts.—Well-bred bullocks for stall feeding, 16*l.* to 18*l.*; useful grazing steers, 11*l.* to 14*l.*; stock heifers, 10*l.* to 11*l.* Devon steers.—Well grazed beasts, 15*l.* to 18*l.*, plain ditto, 12*l.* to 15*l.*, and cross-bred ditto, 9*l.* to 11*l.* Durham beasts made 15*l.* to 17*l.*; ditto, cows, 13*l.* to 15*l.*; Lincolns and half-breds varied in price from 11*l.* to 16*l.*, and well-grazed steers 20*l.* Sussex beasts.—Well-conditioned steers for stall-feeding, 14*l.* to 15*l.*; aged beasts accustomed to the yoke and agricultural work, 18*l.* to 20*l.* each. Irish cattle.—Well-grown steers, 11*l.* to 13*l.*; choice selections 15*l.*; and useful heifers, 8*l.* to 10*l.*; yearlings, 4*l.* to 5*l.* Scotch cattle.—This description of stock met buyers very quickly; best quality of polled Scots in high condition made 20*l.* to 22*l.* a head; ditto for feeding up, 15*l.* to 17*l.*; and small steers, 13*l.* to 14*l.* Runts.—These Lilliputian beasts, fresh from the Highlands, were in active request; those fresh from grazing quarters made 5*l.* to 9*l.*, and well-conditioned ditto, 10*l.* to 12*l.* Welch cattle.—Many large herds of black stock sold off at 7*l.* to 9*l.* a head; three-year-old bullocks fetched 9*l.* to 13*l.*; heifers, 7*l.*; and Welch cows in full milk, 8*l.* to 11*l.* Milch cows.—This class of stock was in high demand, in consequence of the eagerness of London milkmen to

secure them; choice-bred Short-horn cows in full milk and a calf by their side made from 17*l.* to 20*l.*; large-framed Yorkshire cows in full profit, 20*l.* to 23*l.*; and selections of choice beasts, 25*l.*; cows down calving, 14*l.* to 18*l.*; country bred cows for dairying purposes, 11*l.* to 15*l.*; Alderney cows in full milk, 18*l.*; half-bred and aged ditto, 8*l.* to 10*l.*; well-bred Short-horn heifers (in calf), 8*l.* to 12*l.*; stock ditto, 7*l.* to 10*l.* Bulls.—Well-bred young bulls, York or Short-horn, 15*l.* to 18*l.*; ditto, for home purposes, 11*l.* to 14*l.*; ditto, steers, 16*l.* to 18*l.*

Calendar of Operations.

AUGUST.

ISLE OF ELY: *Aug.* 30.—The fine weather of the last two weeks has enabled nearly all our farmers to complete their harvest operations. The dreaded 20th and 21st passed over without those teeming rains and violent electrical displays which some of our meteorologists had predicted, and our fears were the more largely excited from the fact that so many of these meteorological assertions have on previous occasions been so fully verified. Happily in this instance some of these prognosticators miscalculated, and the result has been a continuance of beautiful and brilliant harvest weather, without interruption from either storm or tempest. Very little corn now remains in the fields, and nearly the whole has been secured in good condition. This has been one of the most anxious and exciting harvests we remember, considering it commenced in July and terminated before the end of August. The crop has been so bulky and so much laid and twisted, and generally so bad to cut, that it has taken nearly five men to do the work of three in many instances. This combined with a scarcity of labourers in many of our off-lying fen districts, so largely dependent upon strangers, and the fact of the intensely hot weather of July occasioning nearly all the corn to ripen together, has compelled exorbitant prices to be paid for reaping, and has occasioned an immense amount of disagreeable and vexatious annoyance, and has made the present one of the most, if not *the* most expensive harvest of modern times. But all these inconveniences and unwonted anxieties would soon be forgotten were the produce and quality of the grain at all comparable to the quantity and bulk of the straw. But here, alas! we have a much more painful tale to unfold. The threshing machine makes terrible revelations in many, perhaps we should say in all, our fen districts. We yesterday saw a sample of Wheat which had been sold, and the following particulars were given to us, namely, that it represented 50 quarters, which was the produce of 16 acres, and had been sold at 32*s.* per quarter, and had cost about 1*l.* per acre cutting. Our own observation leads us to believe that this is by no means a solitary case; but will find a parallel on many a fen farm. We have ourselves threshed one field of Wheat from our high lands to test the yield on this description of soil, and found the produce from one-fourth to one-fifth less than could have been reasonably expected from the appearance of the crop. We therefore arrive at the conclusion that the yield throughout this entire district will be very bad indeed, and the quality in the majority of cases miserably inferior. Several samples in fine condition now weigh only between 16 stone and 17 stone per coomb, and what they will be when damp in the winter we dread to contemplate. The price, too, of the new Wheat seems as unsatisfactory to the producer at present as the yield and the quality. Much is selling at 1*s.* and 1*s.* 1*d.* per stone—32*s.* to 34*s.* per quarter. If these prices continue, this must be one of the worst years fen farmers have known lately; and we fear the labourers who have demanded such exorbitant wages during the weeks of harvest will find but little employment during the winter, and it will be well for them if they possess foresight and discretion enough to prompt them to husband some of those excessive earnings against the coming day of adversity. The Oat crop is in most instances as bulky as the Wheat, but whether it will give a more satisfactory yield remains to be proved by the threshing-machine. We have not ascertained this fact at present; but from general appearances should conceive there will be a good average quantity, but of light and inferior quality. Beans are scarcely as good as we anticipated; but will probably afford an average yield; but the corn will be small, being dried up so rapidly by the hot weather in July. Potatoes are diseased a good deal in some instances, and we have heard of one farmer beginning to take them up for immediate use for feeding purposes before they become soft and useless. An examination of three of our own fields to-day shows fully one-third to be already diseased. Mangels are looking well, and with occasional showers during the next month, promise to be one of the best crops we have known for some years. The showers during the present month have imparted new vigour to our pastures, and they once more look green and fruitful. Beef and mutton sell well, and are not liberally supplied. Store sheep and lambs keep advancing in price; and from the favourable reports we receive of the Norfolk and Lincolnshire Turnip crops, we think they are not likely to be cheaper, but rather dearer. Our Coleseeds this year are more promising than usual. We have just had sufficient rain to keep them thriving thoroughly. We forbear to say one word more about the corn trade, it is so bad. *Your Fen Reporter.*

Notices to Correspondents.

AGRICULTURAL EDUCATION: *A B.* The high reputation of Scottish agriculture and Scottish agriculturists has justly arisen out of the intelligence, skill, wealth, enterprise, and character of those farming certain districts in Scotland, as compared with the general run of English farmers and English farming. You can however find in England districts of a great extent as well farmed. You can find almost in any county men capable of teaching their profession: and there is no need of sending a young man into Scotland to learn it. Scotch bailiffs are generally better educated than men of the same class in England; and after three or four years of English experience they are to be preferred.

FLAX: *J N D* says—"An Irish drover from the county Down told me the other day that he had two acres of this crop last year, which he sold for 35*l.* per Irish acre, grown on land for which he pays 30*s.* per acre rent." It might answer as far north as Cumberland. It requires much labour and manure in its cultivation.

GRAZING CATTLE: *J N D.* We have no doubt that it is better to change from pasture to pasture rather than give the whole range at once; but as you ask the opinion of our correspondents, perhaps they will say "whether they have found it better to allow a herd of grazing cattle the full range of all the pastures at once during summer, or to confine them for a certain time in each field, changing them periodically out of one field into another."

LAWS OF PARTNERSHIP: *Stockwell.* Partnership in a farm is a very rare arrangement; but we presume that an agreement between two or more, whether contributing shares of capital, or skill and capital respectively, can be drawn explicitly enough to insure the avoidance of dispute. As to the law of such matters, we imagine the question for decision, if ever it arises, must hinge on the interpretation of a written agreement; and will therefore apply alike to commercial and agricultural partnerships.

ST. PANCRAS IRON WORKS,

OLD ST. PANCRAS ROAD, N.W.

IRON HURDLES, FENCING, AND GATES.

THE PROPRIETORS OF THE ST. PANCRAS IRON WORKS, OLD ST. PANCRAS ROAD, LONDON,

WERE AWARDED THE

SILVER MEDAL of the Royal Agricultural Society for their IRON HURDLES & GATES,

which, by their peculiar construction, are more than twice as strong and durable as those in ordinary use.

Lists per post on application. Gates from 30*s.* to 500*l.*

The Hurdles can be seen in process of Manufacture at the Works.

GAME WIRE NETTING.

Professor Varnell's Enamelled and Wrought-iron Stable Fittings.

These Patent Mangers and Stable Fittings obtained the Commendation and the Silver Medal of the Royal Agricultural Society of England and the Royal Agricultural Society of Ireland, are adopted by the Royal Veterinary College, and Professor Spooner of that Institution states that they should be used by all who value the health and comfort of their horses. They can be had plain, galvanised, or enamelled.

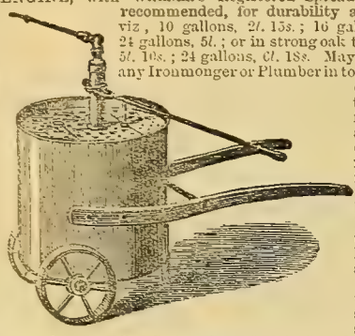
A Show Room is devoted entirely to every description of Stable Furniture, and full-sized stalls and loose boxes are erected for inspection at St. Pancras Iron Works.

ADDRESS—THE MANAGERS,

ST. PANCRAS IRON WORKS, OLD ST. PANCRAS ROAD, LONDON, N.W.,

OPPOSITE OLD ST. PANCRAS CHURCH.

JOHN WARNER AND SONS, Crescent, Jewin St, London, E.C.—GALVANISED IRON TUB GARDEN ENGINE, with WARNER'S Registered Spreader, is strongly recommended, for durability and low price, viz, 10 gallons, 2*l.* 15*s.*; 16 gallons, 3*l.* 15*s.* 24 gallons, 5*l.*; or in strong oak tub, 14 gallons, 5*l.* 10*s.*; 24 gallons, 6*l.* 18*s.* May be obtained of any Ironmonger or Plumber in town or country, or of the patentees and Manufacturers; as also Machinery of all kinds for raising Water from any depth to any height by Steam, Horse, or Manual Power. Prices sent on application.



Syringes of various constructions and sizes from 9*s.* upwards. Metallic String from 10*d.* to 1*s.* 2*d.* per lb.

CAST-IRON GARDEN ORNAMENTS, viz.—ORNAMENTAL VASES, of various sizes, do. with pedestal, GARDEN CHAIRS and STOOLS, RUSTIC GARDEN SEATS and TABLES, both plain and bronzed, also GARDEN ROLLERS of all sizes.—Prices on application to J. JONES, Iron Merchant, 6, Bankside, London, S.E.

TRANSPARENT WAXED SHEETING, nearly 2 yards wide, 1*s.* per yard run; Thick Canvas do., quite 2 yards wide, 1*s.* per square yard; Waterproof Tarpaulings, Aprons, Loin Cloths, Waggon Covers, &c.—R. RICHARDSON, White Horse Factory, Bidborough Street, Judd Street; Office: 99, Euston Road, London, N.W.—N.B. Large size Gardeners' Capes, 3*s.* each. Second-Hand Police Capes from 18*s.* to 24*s.* per dozen.

GREENHOUSES.

HENRY FREEMAN, HOTHOUSE BUILDER and HOT-WATER APPARATUS MANUFACTURER, Triangle, Hackney, N.E. Established 20 years. Good substantially built GREENHOUSES, fixed in any part of the kingdom, for cash, 42 feet long by 13 feet, 90*l.*; 21 feet by 13 feet, 50*l.*; 12½ feet by 10 feet, 30*l.* A first-rate CONSERVATORY, 30 feet by 16 feet, 130*l.* A large assortment kept. Estimates for Heating, or any branch in Wood or Iron or Park Fencing.

HOT-WATER PIPES at wholesale prices, with Elbows, Syphons, Tee Pipes, and every other connection. Wrought and cast iron Boilers, Saddle, Conical, Cylinder, and Elliptic, from 21*s.* each. Boilers and Iron Stands to use without brickwork. Valves from 12*s.* each. Coil Boxes, Furnace Doors, Furnace Bars, Supply Cisterns, and Builders' Castings of every description in stock, at Mr. LYNCH WHITE'S Iron Wharf, Upper Ground Street, Blackfriars Bridge, London, S.

HORTICULTURAL BUILDINGS AND HEATING BY HOT WATER.

JOHN R. PEILL, 17, New Park St., Southwark, S.E., Manufacturer of every description of Buildings for Horticultural purposes, and Inventor of the Improved Conical Boiler for heating the same, is prepared to undertake works of any magnitude, and refers among others to the celebrated range of FORCING HOUSES at HER MAJESTY'S GARDENS, FROGMORE, and at SIR ROBERT PEEL'S, DRAYTON MANOR, constructed under the superintendence of his Manager, Mr. JOHN JONES; and also to his BOILERS fixed at the CRYSTAL PALACE, the ROYAL BOTANIC GARDENS, REGENT'S PARK, and KEW, and at several hundreds of the Nobility's seats, Public Establishments, and Manufactories in London and the provinces. J. R. P. also manufactures every description of Iron Roofs, Iron Houses, and Iron Fencing, plain and ornamental. Strong Iron Hurdles for Sheep (6 ft. long, 3 ft. high, with 5 bars), 4*s.* 3*d.* each; ditto for cattle, 4*s.* 9*d.* each. Prices and other particulars forwarded on receipt of one postage stamp.

HOW TO BREW SPLENDID STRONG ALE, at 7*d.* per Gallon, fine as Sherry, and an aroma equal to Burton Tenpenny. This new Practical Treatise is by a Derbyshire man of 28 years' attendance at the spigot and tun in the best brewery in the county. No brewing utensils required, only those for household use. This is guaranteed to be the best and cheapest mode to produce fine Ale ever made public. The above beautifully printed in large type can be had of the sole publishers for 12 Penny Post stamps. Sent post free to any address. Direct to FISHER & SON, Publishers, Kingsland, London, N.E. Established 1847.

NOTICE.—Just appended to this universally prized Book, all the methods to make the improved Aerated Unfermented Ginger Beer, Soda Water, Lemonade, all the Cordials and Nectars, together with the Penny French Ices, the Delightful Summer Cooling Beverages, and all the French, American, and English cheap fruit drinks.

MICROSCOPES.

J. AMADIO'S BOTANICAL MICROSCOPES, packed in mahogany case, with three powers, condenser, pincers, and two slides, will show the animalculæ in water. Price 18*s.* 6*d.*—Address JOSEPH AMADIO, 7, Throgmorton Street, E.C.—A large assortment of Achromatic Microscopes.

"It is marvellously cheap, and will do everything which the lover of nature can wish it to accomplish either at home or in the open air."—*The Field*, June 6, 1857.

Just published, 2d Ed., an Illustrated Catalogue, with names of 1500 Microscopic objects, free for 6 stamps.

ALLEN'S PATENT PORTMANTEAUS AND TRAVELLING BAGS, with SQUARE OPENING; Ladies' Dress Trunks, Dressing Bags, with Silver Fittings; Despatch Boxes, Writing and Dressing Cases, and 500 other articles for Home or Continental Travelling, illustrated in their New Catalogue for 1859. By post for two stamps. J. W. & T. ALLEN, Manufacturers of Officers' Barrack Furniture and Military Outfitters (see separate Catalogue), 18 & 22, Strand, W.C.

GLENFIELD PATENT STARCH, used in the Royal Laundry, and pronounced by Her Majesty's Laundress to be the finest Starch she ever used. When you ask for Glenfield Patent Starch, see that you get it, as inferior kinds are often substituted. Sold by all Chandlers, Grocers, &c.

WOTHERSPOON & Co., Glasgow and London.

HANDSOME BRASS AND IRON BEDSTEADS.—HEAL & SON'S Show Rooms contain a large assortment of Brass Bedsteads, suitable both for Home use and for Tropical Climates; handsome Iron Bedsteads with Brass Mountings and elegantly Japanned; Plain Iron Bedsteads for Servants; every description of Wood Bedstead that is manufactured, in Mahogany, Birch, Walnut-tree Woods, Polished Deal and Japanned, all fitted with Bedding and Furniture complete, as well as every description of Bedroom Furniture.

HEAL AND SON'S ILLUSTRATED CATALOGUE, containing Designs and Prices of 100 Bedsteads, as well as of 150 different articles of Bedroom Furniture, sent free by post.—HEAL & SON, Bedstead, Bedding, and Bedroom Furniture Manufacturers, 196, Tottenham Court Road, W.

THE PERFECT SUBSTITUTE FOR SILVER.—The REAL NICKEL SILVER, introduced more than 25 years ago by WILLIAM S. BURTON, when PLATED by the patent process of Messrs. Elkington & Co., is beyond all comparison the very best article next to sterling silver that can be employed as such, either usefully or ornamentally, as by no possible test can it be distinguished from real silver. A small useful plate chest, containing a set, guaranteed of first quality for finish and durability, as follows:—

	Fiddle or Old Silver Pattern.	Thread or Brunswick Pattern.	Lily Pattern.	King's or Military Pattern.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
12 Table Forks	1 13 0	2 4 0	2 10 0	2 15 0
12 Table Spoons	1 13 0	2 4 0	2 10 0	2 15 0
12 Dessert Forks	1 4 0	1 12 0	1 15 0	1 17 0
12 Dessert Spoons ..	1 4 0	1 12 0	1 15 0	1 17 0
12 Tea Spoons .. .	0 16 0	1 2 0	1 5 0	1 7 0
6 Egg Spoons, gilt bowls..	0 10 0	0 13 6	0 15 0	0 15 0
2 Sauce Ladles	0 6 0	0 8 0	0 9 0	0 9 6
1 Gravy Spoon	0 6 6	0 10 0	0 11 0	0 12 0
2 Salt Spoons, gilt bowls..	0 3 4	0 4 6	0 5 0	0 5 0
1 Mustard Spoon, gilt bowl	0 1 8	0 2 3	0 2 6	0 2 6
1 Pair of Sugar Tongs ..	0 2 6	0 3 6	0 4 0	0 4 6
1 Pair of Fish Carvers ..	1 4 0	1 7 6	1 10 0	1 12 0
1 Butter Knife	0 2 6	0 5 6	0 6 0	0 7 0
1 Soup Ladle	0 10 0	0 17 0	0 17 0	1 0 0
1 Sugar Sifter	0 3 3	0 4 6	0 5 0	0 5 6
Total	9 19 9	13 10 3	14 19 6	16 4 0

Any article to be had singly at the same prices. An oak chest to contain the above, and a relative number of knives, &c., 21*l.* 15*s.* Tea and coffee sets, cruet and liqueur frames, waiters, candlesticks, &c., at proportionate prices. All kinds of re-plating done by the patent process.

WILLIAM S. BURTON'S GENERAL FURNISHING IRONMONGERY CATALOGUE may be had gratis, and free by post. It contains upwards of 400 illustrations of his illimited Stock of Electro and Sheffield Plate, Nickel Silver and Britannia Metal goods, Dish Covers and Hot-water Dishes, Stoves, Fenders, Marble Chimney-pieces, Kitchen Ranges, Lamps, Gaseliers, Tea Urns and Kettles, Tea Trays, Clocks, Table Cutlery, Baths and Toilet Ware, Turnery, Iron and Brass Bedsteads, Bedding, Bedroom Furniture, &c., with Lists of Prices and Plans of the 16 large Show Rooms at 39, Oxford Street, W.; 1, 1a, 2, and 3, Newman Street, W.; and 4, 5, and 6, Perry's Place, W., London.—Established 1820.

WEEKS' ONE BOILER SYSTEM.

BY APPOINTMENT.

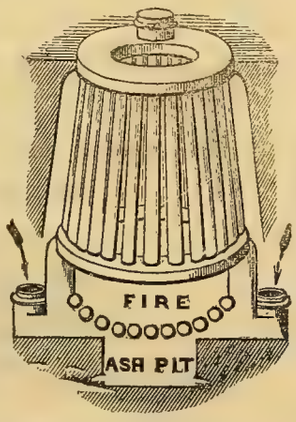
JOHN WEEKS & COMPANY,

KING'S ROAD, CHELSEA, S.W.,

CHALLENGE THE WORLD to produce a Boiler not made in imitation of their Upright Tubular Boiler that will produce anything like the same effect with the same quantity of fuel in a given time.

The following unequalled statistics fully justify the challenge:—

Mark the enormous length of Houses and Piping heated by One Boiler.	Length of Houses in feet	Total length of Piping.
Messrs. E. G. Henderson & Co., Wellington Nursery	1,200	5,500
Messrs. F. A. Smith, Dulwich	3,000	11,000
M. Van Houtte, Belgium	3,300	13,000
Our own Fruit Forcing Show Establishment ...	1,000	7,000



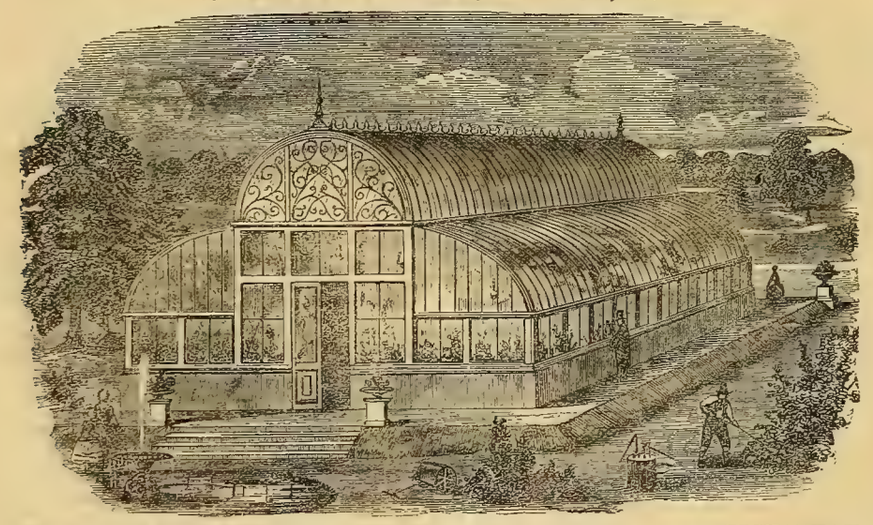
Also the Nurseries of Mr. Woodroffe, Harrow Road, N.W.; Messrs. Rollisson, Tooting, S.; Messrs. Wood & Ingram, Huntingdon; Messrs. Wood & Son, Maresfield; together with numerous Public Buildings and Establishments of the Nobility and Gentry far too numerous for insertion.

J. WEEKS & CO., Horticultural Builders and Hot-Water Apparatus Manufacturers, King's Road, Chelsea, S.W.

PLANS AND ESTIMATES FREE ON APPLICATION.

COTTAM & COMPY., Engineers, Founders, &c.,

2, WINSLEY STREET, LONDON, W.



A SHOW ROOM DEVOTED ENTIRELY TO ARTICLES OF HORTICULTURE.

THE NEW ILLUSTRATED CATALOGUE UPON APPLICATION.

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	,, Syringes	Garden Bordering
Hot-water Apparatus	Ornamental Wire Work	Hurdles	,, Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

Iron Hurdles, Strained Wire Fencing, Game Netting, &c.

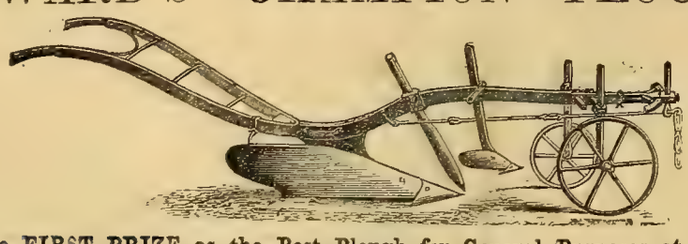
Every description of Plain, Ornamental, Cast and Wrought Iron, and Wire Work.

EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

N.B. COTTAM AND COY. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

THE PLOUGH TRIALS AT WARWICK.

HOWARD'S CHAMPION PLOUGH



Gained the FIRST PRIZE as the Best Plough for General Purposes at Warwick,

BEING the CHIEF PRIZE for PLOUGHS, awarded by the Royal Agricultural Society of England, at this Meeting. The importance of this Prize will be gathered from the fact that the GENERAL PURPOSE PLOUGHS are the only ones tried on BOTH LIGHT AND HEAVY LAND, and as HOWARD'S CHAMPION PLOUGH proved itself to be the best on both soils, the FIRST PRIZE, of the HIGHEST AMOUNT given by the Society for any kind of Plough, was awarded to J. & F. HOWARD.

PRIZES awarded to J. & F. HOWARD, by the Royal Agricultural Society of England, at the WARWICK MEETING, 1859, being not only the LARGEST NUMBER of PRIZES, but the LARGEST NUMBER of FIRST PRIZES awarded to any Exhibitor.

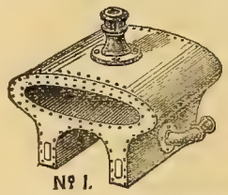
THE FIRST PRIZE FOR THE BEST PLOUGH FOR GENERAL PURPOSES, ALSO A PRIZE FOR THE BEST PLOUGH FOR LIGHT LAND, AND A PRIZE FOR THE BEST PLOUGH FOR HEAVY LAND; THE FIRST PRIZE FOR THE BEST LIGHT HARROWS, THE SECOND PRIZE ALSO FOR THE BEST LIGHT HARROWS, AND THE FIRST PRIZE FOR THE BEST HEAVY HARROWS.

Every one of HOWARD'S Implements, tried at Warwick, gained a Prize.

CATALOGUES, with full particulars, sent post free on application to

J. & F. HOWARD, BRITANNIA IRON WORKS, BEDFORD.

IMPROVED HOT-WATER APPARATUS.



No. 1.



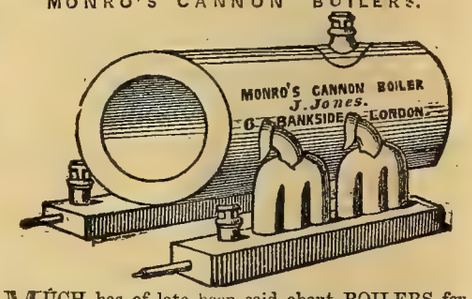
No. 2.

T. SCOTT (formerly in the employ of Messrs. John Penn & Son) manufactures and fits up complete Apparatus for Heating Buildings by Hot Water, also Bath and Kitchen Apparatus of every description.

T. SCOTT manufactures Improved Hot-water Boilers, Stop Valves, Thermometers, &c., and having lately fixed several of the Boilers (No. 1), can confidently recommend them as particularly adapted for Heating Churches, Chapels, Schools, extensive Ranges of Forcing Houses, &c., efficiently, and with great economy of fuel; also the PORTABLE BOILER (No. 2), requiring no brickwork, for Small Conservatories, Pits, Baths, &c.

Estimates, references, &c., on application to THOMAS SCOTT, Blackheath Road, Greenwich, S.E.

MONRO'S CANNON BOILERS.



MUCH has of late been said about BOILERS for Heating by Hot Water, but these Boilers have now proved themselves to be the best at present invented. They are adapted for heating every description of building, and are made of various sizes. The Price of the

24-inch Cast Iron is	..	..	.. £5 10s. 0d.	each
24-inch Wrought ditto	..	..	.. 6 10 0	,,
36-inch Cast ditto ..	..	..	.. 8 0 0	,,
36-inch Wrought ditto	..	..	.. 8 10 0	,,

References to Gentlemen and Nurserymen where these Boilers are now at work. The Cannon Boilers are now kept in stock, and are to be had only of J. JONES, 6, Bankside. Also, every description of Saddle and Cylinder Boilers. Hot Water Pipes and Connections at prices lower than those of any other house in London. Estimates for Hot-water Apparatus erected complete in any part of the country, and an Illustrated Catalogue on application to J. JONES, 6, Bankside, Southwark, London, S.E.

IMPROVEMENTS IN HEATING, &c.

MUSGRAVE'S PATENT SLOW-COMBUSTION STOVE, for Warming Public Buildings, Hall, Shops, Conservatories, Factories, Drying Rooms, &c. Will burn in Churches from Saturday till Sunday evening, avoiding attention during the hours of worship. In Halls will burn day and night for weeks, with little care. Capable of warming a large apartment for 24 hours, at a cost of 3d.; and deserving of special attention, because of its safety, healthfulness, durability, and extreme simplicity. This Stove is the nearest approach to warming by hot water.



MUSGRAVE'S PATENT STABLE FITTINGS AND HARMLESS LOOSE BOXES have obtained the award of a large Council Medal from the R. I. A. Society for the following improvements:—1st, The Horse cannot injure himself or others in the same stable if he breaks loose in his stall. 2d, He cannot waste the hay. 3d, He can have cut or uncut hay at pleasure. 4th, He has clean water always before him. 5th, A pure and wholesome atmosphere is secured. 6th, The whole fittings are stronger than usual, without increase in price, and there is no risk of infection.



The Loose Box is really what its name denotes, and the most spirited Horse may be turned into it without danger.

MUSGRAVE'S PATENT IRON COW-HOUSE FITTINGS, as approved by the Board of Works, adopted in the Ulster Model Farm, and by many of the most eminent Stock Breeders in the Kingdom, are made wholly of iron, very durable, cleanly, and attractive in appearance. The fodder is always fresh, being freely exposed to the air, removed from the breath of the animal, and separated from the roots or damp food. The range of Troughs can be quickly filled with water for the use of the Cows, or for washing out in case of epidemic, and the cost is very moderate.



These inventions being distinguished for strength, simplicity, and practical usefulness will repay public inquiry.

MUSGRAVE BROTHERS are also Makers of Wire Fencing, Hurdles, Field and Entrance Gates, Corn Rick Stands, Conservatories, Hot-water Apparatus, Verandahs, Rural Bridges, &c.; and their works being favourably placed for cheap labour and materials, they can offer corresponding advantages in price.

MUSGRAVE'S Patent Field Gates have gained the 1st Prize from the R. I. A. Society for strength, durability, and cheapness.

For particulars address MUSGRAVE BROTHERS, Ann Street Iron Works, Belfast.

SHAW'S TIFFANY is universally acknowledged to be the best, neatest, and cheapest material for shading Conservatories, and other Hothouses. Effectually securing Plants from the scorching rays of the sun, without obscuring the light. Also, for protecting the Bloom of Wall Trees from spring frosts, and Fruit from birds and wasps. Sold in pieces.

No. 1.—20 yards long, by 38 inches wide, 5s. per piece.

No. 3.—Double strength, 18 yards long, by 39 inches wide, 7s. 6d. per piece.

No. 4.—Treble strength, 18 yards long, by 39 inches wide, 9s. per piece.

A liberal allowance to the Trade when ten or more Pieces are taken.—JOHN SHAW & Co., Princess Street, Manchester.

GLAZIERS' DIAMONDS FOR CUTTING HORTICULTURAL and other GLASS, to be had of the Wholesale Manufacturer, JOHN EDWARDS, 20, Sharp's Alley, West Smithfield, London, E.C. Prices from 10s. to 27s. 6d.

THE NEW WINTER LINSEY WOOLSEYS are now on View at HER MAJESTY'S ROYAL TARTAN WAREHOUSE, LONDON. SCOTT ADIE, 115, Regent Street, Corner of Vigo Street, W. Patterns sent Free.

DRESSING CASES, DRESSING BAGS, and highly finished elegancies for presentation in great variety; Ivory-handled Table Cutlery; every requisite for the Toilet and Work Tables.—MECHI & BAZIN, 112, Regent St., W.; 4, Leadenhall Street, E.C.; and Crystal Palace, Sydenham, S.

WHAT WILL THIS COST TO PRINT? is a thought often occurring to literary minds, public characters, and persons of benevolent intentions. An immediate answer to the inquiry may be obtained on application to RICHARD BARRETT, 13, Mark Lane, London. R. B. is enabled to execute every description of Printing on very advantageous terms, his office being furnished with a large and choice assortment of Types, Steam Printing Machines, Hydraulic and other Presses, and every modern improvement in the Printing Art. A Specimen Book of Types, and information for Authors, sent on application, by

RICHARD BARRETT, 13, Mark Lane, London, E.C.

PRIZE MEDAL, PARIS EXHIBITION 1855.

METCALFE, BINGLEY, AND CO.'S New Pattern and Penetrating Tooth Brushes, Penetrating unbleached Hair Brushes, Improved Flesh and Clothes Brushes, and genuine Smyrna Sponges; and every description of Brush, Comb, and Perfumery for the Toilet. The Tooth Brushes search thoroughly between the divisions of the Teeth and clean them most effectually—the hairs never come loose. M., B., and Co. are sole makers of the Oatmeal and Camphor and Orris Root Soaps—sold in Tablets (bearing their names and address) at 6d. each; of METCALFE'S celebrated Alkaline Tooth Powder, 2s. per box; and of the New Bouquets.—Sole Establishment, 130B and 131, Oxford St., 2d and 3d doors west from Holles St., London, W.

FINE HEAD OF HAIR.

THE BEARD, WHISKERS, AND MOUSTACHIOS.

ROWLANDS' MACASSAR OIL is universally in high repute as the most successful article ever known in the growth, restoration, and in improving and beautifying the human hair, proved beyond question by its unprecedented results for more than half a century past, and when every other specific has failed. It prevents it from falling off or turning grey, strengthens weak hair, cleanses it from scurf and dandriff, and makes it beautifully soft, curly, and glossy. For children it is especially recommended, as forming the basis of a beautiful head of hair. Its invaluable properties have obtained the patronage of Royalty and the aristocracy throughout Europe; while its introduction into the nursery of Royalty, and the high esteem in which it is universally held, with numerous testimonials constantly received of its efficacy, afford the best and surest proofs of its merits. Price 3s. 6d. and 7s.; family bottles (equal to four small), 10s. 6d.; and double that size, 21s.—CAUTION: on the wrapper of each bottle are the words, ROWLANDS' MACASSAR OIL, &c., in white letters; and their signature, "A. ROWLAND & SONS," in red ink.—Sold at 20, Hatton Garden, London, E.C.; and by Chemists and Perfumers.

COOL AND REFRESHING BALM.—Among the many luxuries of the present age, none can be obtained possessing the manifold virtues of OLDRIDGE'S BALM OF COLUMBIA. If applied to the roots and body of the hair, it imparts the most delightful coolness, with an agreeable fragrance of perfume. It also at this period of the season prevents the hair from falling off, or if already too thin or turning grey, will stop its further progress, and soon restore it again. Those who really desire to have beautiful hair, either with wave or curl, should use it daily. It is also celebrated for strengthening the hair, freeing it from scurf, and producing new hair, whiskers, and moustaches. Established upwards of 30 years. No imitative wash can equal it. Price 3s. 6d., 6s., and 11s. only.—C. & A. OLDRIDGE, 13, Wellington Street North, Strand, W.C.

EPPS'S HOMŒOPATHIC COCOA.—Produced, in 1839, specially for the use of Homœopathic Patients, to provide them with a beverage highly nutritious and free from those effects of Coffee and Tea which to many persons are pernicious. Rendered attractive to the taste by its delicious aroma and grateful smoothness, it has become adopted by the public generally for breakfast, luncheon, and supper. It is sold by the principal Grocers at 1s. 6d. per lb., in 1 lb., ½ lb., and ¼ lb. packets. Each packet is labelled, "JAMES EPPS, Homœpathic Chemist, London."

DR. DE JONGH'S

(KNIGHT OF THE ORDER OF LEOPOLD OF BELGIUM)

LIGHT-BROWN COD LIVER OIL, administered with the greatest success in cases of CONSUMPTION, GENERAL DEBILITY, RHEUMATISM, INFANTILE WASTING, AND ALL THE DISORDERS OF CHILDREN ARISING FROM DEFECTIVE NUTRITION,

is the most efficacious, the most palatable, and, from its rapid curative effects, unquestionably the most economical of all kinds. Its immeasurable therapeutic superiority over every other variety is attested by innumerable spontaneous testimonials from Physicians and Surgeons of European reputation.

OPINION OF EDWIN LANKESTER, ESQ., M.D., F.R.S., Late Lecturer on the Practice of Physic at St. George's Medical School, Superintendent of the Food Collection at the South Kensington Museum, &c.

"I believe that the purity and genuineness of this Oil is secured in its preparation by the personal attention of so good a Chemist and intelligent a Physician as Dr. DE JONGH, who has also written the best medical treatise on the Oil with which I am acquainted. Hence I should deem the Cod Liver Oil sold under his guarantee to be preferable to any other kind as regards genuineness and medical efficacy."

Sold ONLY in IMPERIAL half pints, 2s. 6d.; pints, 4s. 9d.; quarts, 9s., capsuled, and labelled with Dr. DE JONGH'S stamp and signature, WITHOUT WHICH NONE IS GENUINE, in the provinces by respectable Chemists,

IN LONDON BY HIS SOLE AGENTS,

ANSAR, HARFORD, AND CO., 77, Strand, W.C.

CAUTION.—Strenuously resist proposed substitutions.

HOLLOWAY'S PILLS AND OINTMENT.—In these two preparations are found reliable remedies for all complaints caused by climate, irregularity, over exertion, or accident. Internal or external disorders are subjugated by these incomparable Medicines, which never fail to relieve if cure be impossible. They act physically by removing impurities and establishing regularity of functions, extracting all impurities from the blood, stimulating every secretion, and causing each organ to act healthfully. No disease in the body can long resist the combined action of these remedies, which invariably harmonise every corporeal function, and on the brain reflect a happy state of mind, removing low spirits, lassitude, and hypochondriacism, for which they substitute cheerfulness and contentment, and render pure our physical and moral being.

HOLCUS SACCHARATUS (Pamphlet).

"A VISIT AND A PLANT." A few copies only are left. Post free, 7d.

JOHN WILLDING CLARKE, Whittlesea, Cambs.

GLENNY'S GARDENERS' EVERY-DAY BOOK.—Price 5s.; free by post, 5s. 6d. Containing plain instructions for the cultivation of all classes of Flowers, Fruits, and Vegetables, and for the practical management of every department of Horticulture and Floriculture.

HOULSTON & WRIGHT, 65, Paternoster Row, E.C.

TWENTIETH ANNUAL PUBLICATION.

TO AGRICULTURAL IMPLEMENT MAKERS AND OTHERS.

JOHNSON AND SHAW'S FARMERS' ALMANAC FOR 1860 will be published as usual on the 1st of November. Advertisements intended for insertion must be sent not later than the 10th of October.

JAMES RIDGWAY, 169, Piccadilly, W.

ZADKIEL'S ALMANAC FOR 1860 is now ready, 84 pages, price 6d., with a large Hieroglyphic of a warlike description, the Nativity of Louis Napoleon for some years to come, &c.—GEORGE BERGER, Holywell St. Strand, London, W.C.

BROWN'S FARMER'S ACCOUNT BOOK is considered the most simple and consequently the most useful Farmer's Account Book yet published. Price 6s. Sold in Tring by E. C. BIRD; and may be obtained of Mr. HENRY POPE, 17, Queen Street, Cheapside; SIMPKIN, MARSHALL & Co., Stationers' Court, and RIDGWAY, Piccadilly, London; of any Country Bookseller; or by post of the Author, Mr. W. BROWN, Tring, Herts.

This day, foolscap 8vo, 5s.,

ENGLISH PHRASEOLOGY: a Series of Practical Exercises to be Translated into French, and intended as the Sequel to the "Colloquial Exercises on the most Familiar Idioms of the French Language." (Sixth Edition, 2s. 6d.) By F. J. WATTEZ, French Master in King's College School, and Examiner to the Royal College of Preceptors.

London: JOHN W. PARKER & SON, West Strand.

This day is published, price 2s. 6d.,

FOLIA ORCHIDACEA, Part IX. Containing the conclusion of Pleurothallis.

Parts I. to VIII., price 2s. 6d. each, may still be had.

JAMES MATTHEWS, 5, Upper Wellington St., Covent Garden. London, W.C.

Third Edition, considerably enlarged, price 5s. 6d., free by post, 5s. 10d.,

RURAL CHEMISTRY.

By EDWARD SOLLY, F.R.S., F.L.S., F.G.S.

Honorary Member of the Royal Agricultural Society of England, Professor of Chemistry to the Horticultural Society of London, Lecturer on Chemistry in the Hon. E. I. Co.'s Military Seminary at Addiscombe, &c., &c.

J. MATTHEWS, 5, Upper Wellington St., Covent Garden,

CLEIG'S SCHOOL SERIES. NATURAL HISTORY.

Now ready, in 18mo, with 78 Woodcuts, price 2s. cloth; or in Two PARTS, price 9d. each, sewed,

NATURAL HISTORY FOR BEGINNERS. MAMMALIA; or, an Introduction to the Study of Animated Nature, adapted to the capacity of Youthful Readers. Containing a popular descriptive account of the appearance, habits and instincts, uses and classification of Mammiferous Animals; interspersed with entertaining Anecdotes, and accompanied by an etymological GLOSSARY of Scientific Terms.

By JAMES OWEN, Author of "The Stepping-Stone to Natural History." Forming part of the new School Series in course of publication edited by the Rev. G. R. GLEIG, M.A., Chaplain-General to the Forces.

London: LONGMAN, GREEN, LONGMAN, & ROBERTS.

NEW GIFT BOOK.

Now ready, Illustrated with 100 Engravings, crown 8vo, pp. 428, extra cloth, richly gilt back, sides, and edges. Price 5s.

THE BOY'S BIRTH-DAY BOOK: an entirely original collection of Tales, Essays, and Narratives of Adventures, by Mrs. S. C. HALL, WILLIAM HOWITT, AUGUSTUS MAYHEW, THOMAS MILLER, GEORGE AUGUSTUS SALA, WILLIAM BROUGH, and SUTHERLAND EDWARDS.

London: HOULSTON & WRIGHT, 65, Paternoster Row, E.C.

Now ready, with 400 Original Illustrations, price 3s. 6d., cloth gilt,

THE FAMILY CYCLOPÆDIA, a complete TREASURY OF USEFUL INFORMATION on all subjects bearing upon the Common Interests and Daily Wants of Mankind, comprising a Second and entirely New Series of

I.—THINGS NOT GENERALLY KNOWN
II.—THINGS THAT OUGHT TO BE KNOWN
III.—THINGS WORTH KNOWING

with Full Instructions, Drawings, and Specifications for the Construction of Cottages, Dwelling Houses, and Villas, the whole forming a Dictionary of Social and Domestic Economy, copiously illustrated and carefully written under supervision of the Editors of the "Family Friend."

London: WARD & LOCK, 158, Fleet Street, E.C.

BRETONNE COWS.

MESSRS. BAKER (PURVEYORS OF LIVE BIRDS TO HER MAJESTY and H.R.H. PRINCE CONSORT), Importers of BRETONNE CATTLE, beg to call attention to another arrival of these beautiful small Cows. Their hardy nature, and superior quality of Milk, render them as useful as they are ornamental.—*Vide Illustrated London News*, July 5, 1859. As the supply is limited, an early inspection is solicited.—On view at the Pheasantry, Beaufort Street, King's Road, Chelsea, S.W.

SHEEP.—FOOT-ROT OINTMENT, an original preparation, by JOHN OLDHAM, of Mansfield, a certain and safe remedy, having invariably cured when other remedies have failed. It is equally efficacious in Foul in Cows, Grease, Cracked Heels, and Thrush in Horses.

Numerous parties at a distance being inconvenienced in procuring it, the proprietor has appointed Messrs. SUTTON & Co., 10, Bow Churchyard, E.C., his London Agents, and it can now be procured through any respectable Chemist or Patent Medicine Dealer.

KEATING'S PERSIAN INSECT DESTROYING POWDER.

POULTRY, DOGS, AND PLANTS are effectually freed from Fleas, and all other Vermin with which they are infested, by the above Powder, which is quite harmless to animal life. The Farmer, the Gardener, or the Sportsman, will therefore find it invaluable. Bugs, Cockroaches, Beetles, Moths in Furs, and every other species of Insect are also instantly destroyed. In packets post free, for 14, or treble size for 36 postage stamps, by THOMAS KEATING, Chemist, 79, St. Paul's Churchyard, London, E.C. Take notice each genuine packet bears the above name and address. See "THE FIELD," Oct. 2d and 9th, pp. 263, 283, and 294.

TO MARKET GARDENERS AND OTHERS.

TO BE LET on LEASE, about 4 Acres of MARKET GARDEN GROUND, in good condition, with a neat modern detached Residence, Stable, and Cart Lodge, conveniently situate seven miles from London and a short distance from Forest Hill and Catford Hill Railway Stations.—Apply to Messrs. DICKSON & DAVENPORT, Estate Agents, 32, Bucklersbury, City, E.C.

TO BE DISPOSED OF, THE LEASE OF A SMALL NURSERY, containing about 4 acres, well stocked with fine healthy Shrubs, in neighbourhood of Sunninghill, Berks.—For further particulars apply to Mr. WHOMES, Nurseryman, Windsor.

TO BE LET, the OFFHAM NURSERY, near Lewes, Sussex, in consequence of the death of the Proprietor. The Nursery is close to Cooksbridge Station, and about nine miles from Brighton. Has been established upwards of 60 years, and consists of about 8 acres, with a good General Stock, terms for which will be moderate. For further particulars apply to Messrs. CHAUNDY & Co., Nurserymen, Lewisham, Kent; Messrs. HUGH LOW & Co., Clapton, London; or Mr. HENRY ALDRICH, at the Nursery, N.B. Possession may be had immediately, but none need apply but persons of capital.

TO NURSERYMEN & GENTLEMEN'S GARDENERS, &c.

TO BE SOLD, on advantageous terms, with immediate possession, a NURSERY and SEED BUSINESS, capable of great extension, in the midland counties, and in the immediate neighbourhood of a large and rapidly increasing town. The Nursery contains about 18 acres of most valuable land (rental only 3l. per acre); it slopes to the south, and at the top are two unceasing springs, which are partially carried over the grounds, and can be altogether by an extension of piping. Sand, clay, and stone are all on the premises. The whole nursery has been made within the last four years. All the stock is young and in the finest possible health. Every facility will be given to any thoroughly respectable person disposed to negotiate.—Apply to Mr. PROTHEROE, Leytonstone, Essex, N.E.

TO NURSERYMEN, GARDENERS, AND OTHERS.

TO BE DISPOSED OF, a NURSERY, containing about 4 Acres, with numerous Greenhouses, Plants, Stock in Ground, &c., situated in a favourite suburb south of London, on the high road, and with an increasing business.—Full particulars will be given on application to Mr. A. CHANDLER, Horticultural Valuer, 28, Priory Road, Wandsworth Road, S.

TO NURSERYMEN AND OTHERS.

TO BE DISPOSED OF, a really first-rate NURSERY, including Glass, Stock, and Business, entire, on very advantageous terms, in the immediate neighbourhood of London. Might suit two or more in partnership, or any country firm requiring a London place of business. Long Lease and capitally situated. Part of the Purchase Money might remain at interest if desired.—For all further particulars apply by letter to A. B. & Co., care of Messrs. Williams & Lloyd, Stationers, 29, Moorgate Street, London, E.C.

Sales by Auction.

SPECIMEN PLANTS.

ORCHIDS, FINE AND RARE FERNS, &c.

MR. STEVENS will Sell by Auction at his Great Room, 38, King Street, Covent Garden, W.C., on WEDNESDAY, September 21, at Half-past 12 o'Clock precisely, without any reserve, a collection of ORCHIDS, in fine health, and including—

Saccolabium guttatum	Phalænopsis grandiflora
,, Blumei major	Lælia superbiens
,, retusum	Calanthe masuca
Ærides Fieldingii	Epidendrum verrucosum
,, virens	Cattleya labiata
,, crispum	Miltonia Morelii
Vanda suavis	Cœlogyne Lowii, &c.
,, tricolor	

May be viewed on the morning of Sale, and Catalogues had of Mr. STEVENS, 38, King Street, Covent Garden, W.C.

ENGLEFIELD GREEN, SURREY.

Highly important Sale of Specimen Stove and Greenhouse Plants the property of a Nobleman who has ranked amongst the most successful exhibitors during past years.

MR. STEVENS is honoured with instructions to submit to public competition, without the least reservation, on the premises, Cooper's Hill, Englefield Green, Staines, on TUESDAY, September 27, at 1 o'Clock precisely, the Collection of SPECIMEN PLANTS of AZALEAS, ERICAS, STOVE and GREENHOUSE PLANTS, of a nobleman who is giving up exhibiting. Amongst the Azaleas will be found some extraordinarily fine plants of

Glory of Sunning Hill, 4 feet	Gladstanesii, 5 feet by 6
Variegata, 4 do. by 6 [by 4	Lateritia, 5 do. by 7
Optima, 6 do. by 5	Alba magna, 4 do. by 4
Murrayana, 4 do. by 4	And numerous others.

Amongst the Stove Plants will be found

Genetyllis macrostigna, 2½ feet by 2½	Boronia serrulata, 4 do. by 4
Acrophyllum venosum, 4 do. by 3	Tetratheca ericoides, 2½ do. by 3
	Epacris miniata grandiflora, 6 do. by 7

And numerous other fine plants, which have formed a leading feature in the various metropolitan exhibitions during several past years.—May be viewed on the day prior and morning of sale, and Catalogues had on the premises; at the principal Inns in the neighbourhood, and of Mr. STEVENS, 38, King Street, Covent Garden, W.C.

*** Cooper's Hill is about one mile from the Egham station on the London and South-Western Railway.

CRYSTAL PALACE.—IMPORTANT SALE.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, FLORISTS, & OTHERS.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions (by order of the Crystal Palace Company) to submit to public competition by Auction on the premises, near the Railway Station, on THURSDAY, Sept. 22, at 11 o'Clock, the SURPLUS STOCK OF PLANTS, including many of their renowned and magnificent Orange Trees and Standard Bays, ranging from 9 to 12 feet high and 5 to 9 feet through; Araucaria excelsa, Bidwelli and Cunninghami, Cupressus torulosa, Pinus excelsa, Standard and Dwarf Rhododendrons; about 60 plants of the Branching Pine Apple, of Penang, together with 500 choice Double Camellias from 4 to 9 feet, beautifully set with bloom buds.—May be viewed two days prior to the Sale. Catalogues may be had (6d. each, returnable to purchasers) on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex, N.E.

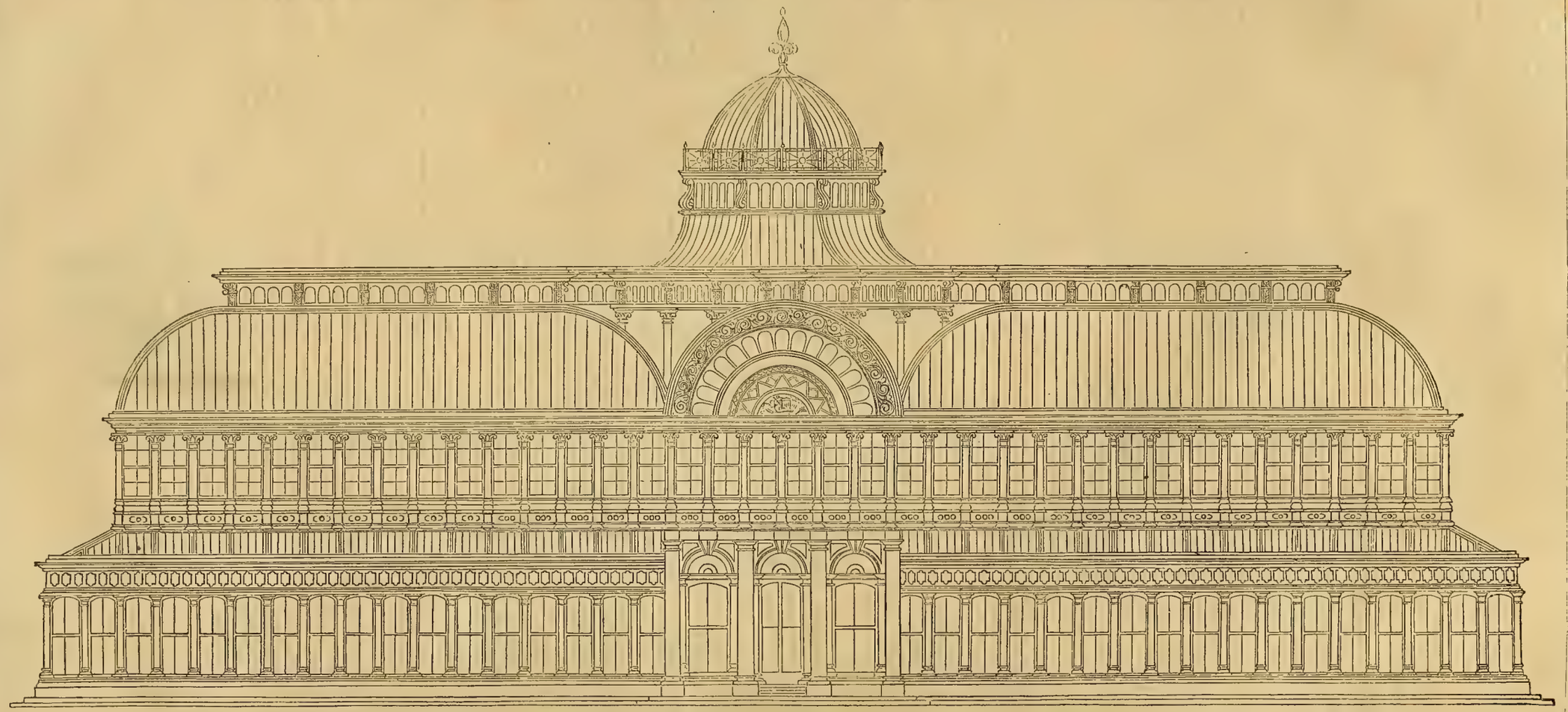
TO MARKET GARDENERS, NURSERYMEN AND FLORISTS.

MR. W. T. ATTWOOD is instructed by Mr. Harwood to Sell by Auction on the Premises, near the Swan Inn, Walham Green, Fulham, S.W., the LIVE AND DEAD STOCK, comprising capital Spring Market Van, Waggon Carts, Horse, 48 Boxes and Lights, Hand Glasses, Brick Pit, the erection of two Forcing Houses, Implements, Baskets, and other articles of the trade of a Market Gardener.—May be viewed the day before and morning of Sale. Catalogues had on the premises; Inns, Covent Garden, W.C.; and of Mr. ATTWOOD, Auctioneer and Land Agent, Mortlake, Surrey, S.W.

Printed by WILLIAM BRADBURY, of 13, Upper Woburn Place, and FREDERICK MULLETT EVANS, of No. 20, Queen's Road, West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and published by them at the Office No 5, Upper Wellington St., Parish of St. Paul's, Covent Garden, in the said County.—SATURDAY, September 10, 1859.

HORTICULTURAL BUILDINGS MANUFACTURED BY STEAM-POWER MACHINERY.

LOWEST PRICES AND BEST MATERIALS.



HENRY ORMSON, Stanley Bridge, King's Road, Chelsea, London, S.W.,

HORTICULTURAL BUILDER AND HOT-WATER APPARATUS MANUFACTURER,

BEGS most respectfully to call the attention of the Nobility, Gentry, Nurserymen, &c., to his superior manner of erecting every description of Horticultural Building, and he trusts by unremitting personal attention to the details of his business, by using only the very best materials, by employing the most skilful and efficient workmen, and by the most moderate possible charges to merit a continuance of the patronage so kindly and so liberally bestowed on him for many years past.

In the BUILDING DEPARTMENT his object will be to adapt all erections to the particular purposes for which they are required. He will devote equal attention to the plain, inexpensive, practical erections of Pits, Orchard Houses, Greenhouses, Vineries, &c., as to the more elaborate and architectural erections of Conservatories, Winter Gardens, &c., either in wood or iron.

The HEATING DEPARTMENT always engages his especial personal attention, and he feels justified in saying that in simplicity, safety, durability, and economy of fuel, combined with thorough effectiveness, his system cannot be surpassed.

VENTILATION.—Knowing the absolute necessity for thorough ventilation, he makes it a matter of first consideration.

See SECTIONS, &c., of Horticultural Buildings in former Numbers of the *Gardeners' Chronicle.*

PLANS, SPECIFICATIONS, and ESTIMATES free on application.

ORMSON'S PATENT JOINTLESS TUBULAR BOILERS have now from *practical tests* established for themselves the highest standing reputation for power, efficiency, and economy of fuel.

H. O. *particularly wishes to call attention to the fact of his having fixed a great number of these excellent Boilers, and to the fact of not one of them having failed, fractured, leaked, or given way in any respect.*

See Testimonials in former Numbers.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 38.—1859.] SATURDAY, SEPTEMBER 17. {Price Fivepence. Stamped Edition, 6d.

INDEX.

Agricultural statistics	765 a	Mildew and drought	755 c
Books noticed	760 a	Myosotidium nobile	756 c
Brighton Hort. Society	759 a	Nasturtium, Tom Thumb	759 a
Cattle breeding	762 b	Pampas Grass	759 a
Cricketer, to kill	760 c	Plants, new	756 c
Farm at Vincennes	764 b	Ploughs, rival	761 c
Food and manure	762 c	Plumbago Larpentæ	759 a
Goodwood	756 c	Reaping machines	764 a
Grapes, shanking	760 c	Season, warmth of	759 a
— Bowood Muscat	758 c	Snake and toad	760 a
Harvest home	762 b	Statistics, agri.	765 a
Hort. Society's new garden	760 a	Steam culture	763 b
Labourers' wages	762 a	Thistles, to eradicate	763 c
Lucifers	762 a	Toad v. snake	760 a
Manchester Agri. Society	764 a	Trade lists	760 a
Manure, wool dressings as	756 b	Tropæolum Lobbianum	758 c
— and food	762 c	Wages, labourers'	762 a

HORTICULTURAL SOCIETY OF LONDON.—The next Meeting of the FRUIT COMMITTEE will be held at the Garden of this Society, Chiswick, on TUESDAY, Sept. 20, at 2 P.M. The carriage of Packages of Fruit will be paid.

THE GRAND NATIONAL DAHLIA SHOW for 1859, at Aston Hall, Birmingham, September 20.
Upwards of ONE HUNDRED GUINEAS to be Awarded in PRIZES. Particulars to be had of
C. Turner, Slough, or J. Keynes, Salisbury, } Honorary Secretaries.

PINE APPLES, GRAPES, &c.
PINE PLANTS, Fruiting and Succession.
GRAPE VINES, from Eyes, for Fruiting in Pots or Planting.
JOHN WEEKS AND CO. can now supply any quantity of very fine strong healthy Pine Plants, either Fruiting or Succession; also remarkably fine strong Grape Vines from Eyes, all the best sorts.
John Weeks & Co.'s Horticultural Show Establishment is now entirely devoted to the Growing and Forcing of Fruits in great variety, thereby showing the most improved plans of construction, and the most superior system of Hot-water Apparatus.
John Weeks & Co., Horticultural Builders and Hot-water Apparatus Manufacturers, King's Road, Chelsea, London, S.W.

TO THE TRADE.
J. TROTMAN begs to offer well-grown plants of the following:—Dwarf Trained and Untrained PEACHES, NECTARINES, and APRICOTS. Dwarf Untrained PEARS, PLUMS, APPLES, and CHERRIES. Fine well-furnished Trees for Orchard House or Pot cultivation of Peaches, Nectarines, and Apricots. Prices moderate on application.—New Road, Hammersmith, W.

MUSCAT GRAPES WANTED.—PINE-APPLES (not under 2 lbs.) WANTED.
PEACHES (large size) WANTED.
Forward immediately to GEORGE TAYLOR, Choice Fruit Salesman, St. John's Market, Liverpool.

STANDARD ROSES.—All the leading kinds in cultivation at prices scarcely ever offered before.
Charles Noble, Bagshot, Surrey.

FERN CATALOGUE.
ROBERT SIM'S NEW DESCRIPTIVE AND PRICED CATALOGUE, No. 6 (62 pages) of his COLLECTION of BRITISH and EXOTIC FERNS, can be had, post free, for 8 stamps. Gratis to all previous purchasers of Ferns.
Nursery, Foot's Cray, Kent, S.E.

SUTTON'S AUTUMN CATALOGUE is now ready and will be sent gratis and post free on application.
Royal Berkshire Seed Establishment, Reading.

YOUELL AND CO.'S GENERAL PRICED CATALOGUE is now published, and may be had post free on application.—Royal Nursery, Great Yarmouth, Sept. 17.

A. VAN GEERT'S NEW CATALOGUE OF PLANTS.
A. VAN GEERT, Nurseryman, Ghent, Belgium, begs to announce that his new PRICED CATALOGUE of PLANTS just published, containing many of the choicest and leading plants of the day, may be had on application from his Agent, Mr. R. Silberrad, 5, Harp Lane, Great Tower Street, London, E.C.

ERICAS.
F. AND A. SMITH'S Stocks of the above are this season unusually fine, comprising most of the leading winter and spring-flowering varieties. Prices on application.
Dulwich, Surrey, S.

CINERARIA, CALCEOLARIA, AND PRIMULA.
F. AND A. SMITH are now sending out SEED of their splendid varieties of the above in sealed packets, without which none are genuine, at 1s., 1s. 6d., 2s. 6d., and 5s. each. To be had also of most respectable Nurserymen and Seedsmen in the Kingdom.—Dulwich, Surrey, S.

CAMELLIAS AND AZALEA INDICA.
F. AND A. SMITH beg to offer the above well set with flower buds, dwarf, bushy, and thoroughly ripened off. Having been grown in this country they are most suitable for packing, and are strongly recommended to country Amateurs and the Trade in general. An inspection invited. Prices on application.—Dulwich, Surrey, S.

GUERNSEY LILIES, fine blooming bulbs, 4s. per dozen. Price to the Trade same as charged in the island.
TRIFOLIUM INCARNATUM (English), 5d. to 6d. per lb.
RYE, WINTER OATS, WINTER TARES, ITALIAN RYE-GRASS, MIXED PASTURE and LAWN GRASSES.
DUTCH BULBS just imported.
Page & Toogood, Royal Seed Establishment, Southampton.

TO THE TRADE.—A fine healthy Stock of GENTIANELLA, 10s. per 100; ALPINE AURICULAS 10s. per 100.
J. Smith, Sen., Tansley Nursery, Matlock, Derbyshire.
Unknown correspondents will please to enclose a reference, to save delay in the execution of their orders.

DUTCH FLOWER ROOTS.
JOSEPH MAY AND CO. beg to offer the following Collection of BULBS on receipt of a Post-office Order for 20s., or reference:—

12 fine named Hyacinths	100 named Crocus
12 fine mixed Hyacinths	100 mixed Crocus
12 fine Narcissus	6 Crown Imperials
12 Early Tulips	12 Jonquils
12 Double Van Thol Tulips	Half the above for 10s.

A PRICED CATALOGUE forwarded on application.
1, Wellington Street, Strand, Waterloo Bridge, W.C.

DUTCH AND CAPE BULBS.
BUTLER AND McCULLOCH'S PRICED AUTUMN CATALOGUE of Hyacinths, Gladioli, the finest hybrid varieties, Amaryllis, Chinese Pæonies, Oxalis, Lilium lancifolium, giganteum, and many other beautiful varieties; Tulips, Ranunculus, Anemones, Polyanthus, Narcissus, Crocus, Ixias, Sparaxis, &c., is now ready, and sent post paid on application.
Covent Garden Market, W.C.

DUTCH AND OTHER FLOWER ROOTS.
HOOPER AND CO.'S PRICED CATALOGUE OF DUTCH AND OTHER FLOWER ROOTS, with Hints on Cultivation, is now ready, and may be had free by post on application. The first consignment of Bulbs has just arrived in excellent condition, and of the usual first class quality.
Covent Garden Market, London, W.C.

HYACINTHS AND OTHER BULBS.
WM. CUTBUSH AND SON'S DESCRIPTIVE CATALOGUE of the above is published, and can be had post free on application.—Highgate Nurseries, London, N.

DUTCH BULBS, FLOWER ROOTS, ETC.
JAMES FAIRHEAD AND SON, Seed Growers and Merchants, Borough Market, London, S.E., beg leave to inform purchasers of the above that their WHOLESALE CATALOGUE is now ready and may be had post free on application.
Their selections are from the most eminent growers in Holland. Prices the lowest consistent with first-class quality.

DUTCH AND OTHER BULBS.
MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their CATALOGUE of the above is now ready, and will be forwarded post free on application. Early orders are solicited, as their successful cultivation depends in a great measure on early planting.
Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

DUTCH FLOWER ROOTS.
TIMOTHY BRIGDEN, Seedsman and Florist, 10, Railway Arcade, London Bridge, London, E.C., begs most respectfully to inform his Friends and the Public generally that he has just returned from Holland with his unrivalled collection of HYACINTHS, CROCUS, TULIPS, NARCISSUS, JONQUILS, &c., of which a PRICED LIST may be had upon application. T. B. further begs to state that, having selected them from the best growers in Holland himself, he can guarantee them finer than any other house in London.
A large assortment of Aquaria, Wardian Cases, and Gold and Silver Fish always on sale.

DUTCH FLOWER ROOTS.
HYACINTHS, best quality, to name, 6s. per dozen; second do., mixed, 4s.; third do., 3s.; CROCUS and SNOWDROPS, 1s. 6d. per 100; Double VAN THOL TULIPS, 3s.; TOURNESOL, 5s.; NARCISSUS, large bulbs, 2s. per dozen; and all other kinds, best quality, equally cheap. Also a quantity of CAMELLIAS and AZALEAS, well set with flower buds, English grown, 18s. and 21s. per dozen; ORANGE TREES, 2s. 6d. to 5s. each; FOREIGN and BRITISH FERNS, 6s., 9s., and 12s. per dozen, &c.—R. Green, 154, Kingsland Road, N.E. No connection with any other house.

DUTCH AND OTHER BULBS.
THOMAS JACKSON AND SON respectfully announce that their PRICED DESCRIPTIVE LIST OF BULBS is ready for distribution, and will be forwarded post free on application.
T. J. & Son import only the finest kinds and largest Roots; dependence consequently can be placed on receiving the finest Bulbs.—Nurseries, Kingston, S.W.

DUTCH AND OTHER FLOWER ROOTS.
JAMES WHOMES has received his first importation of the above in fine condition. Early orders are solicited.
A PRICED CATALOGUE pre-paid on application.
Windsor Nursery.

NEW DUTCH FLOWER ROOTS.
CHARLES TURNER'S CATALOGUE of these valuable spring flowers is now ready, and may be had free on application.
The Hyacinths, Tulips, Crocus, &c., have been selected with the greatest care from the best growers, and have arrived in fine condition.
C. T. will be able to execute any orders intrusted to him with punctuality.—The Royal Nurseries, Slough.

DUTCH FLOWER ROOTS.
CHARLES ALEXANDER, 30, West Register Street, Edinburgh, has received his first importation of the above in fine condition. The Bulbs are large and sound. Early orders solicited.
DESCRIPTIVE PRICED CATALOGUES on application.

RHODODENDRONS "of every hue," Scarlet White, Rose, Crimson, and every intermediate shade, nearly all sizes and at all prices, according to quality, can also be supplied by Charles Noble, Bagshot, Surrey.

NEW HARDY GHENT RHODODENDRON, "JEAN VERSCHAFFELT."
This superb Rhododendron, that was so much admired by all who saw it in flower last year, is to be sent out before the 15th of October next. Price 20, 30, and 50 francs per plant. Each Subscriber will receive post free a coloured plate of said Rhododendron. All orders to be addressed direct to
Jean Verschaffelt, Nurseryman, Ghent, Belgium.

GEORGE GIBBS AND CO., SEEDSMEN,
26, DOWN STREET, PICCADILLY, LONDON, W.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY LIMITED supply every requisite for the Farm and the Garden.
Registered Offices, Union Road, Plymouth.

TRIFOLIUM INCARNATUM (Italian Crimson Clover).—New Seed may now be obtained on application to Sutton & Sons, Seed Growers, Reading. This should be sown upon the corn stubble. Quantity required per acre, 24 lbs.

EARLY SHEEP FEED.
SUTTON'S ITALIAN RYE-GRASS SEED sown in September will produce a heavy crop in April and May next; also several successive cuttings during the summer. Quantity required per acre, 3 bushels; price 7s. per bushel.
Carriage free if cash with the order.
Royal Berkshire Seed Establishment, Reading.

PAMPAS GRASS.—The present is the most favourable time for planting out this inimitable Plant. No one can imagine the grand effect of a mass of its silvery plumes unless they see it, nor is its value confined to the ornamental, but is likely to become useful as Cover for Game. It grows in any soil or situation, attaining the height of from 6 to 10 feet.—Any quantity can be supplied by C. Noble, Bagshot, Surrey.

GREAT SCARCITY OF FRUIT.
STRONG ROOTS OF THE LINNÆUS RHUBARB, from division, can be supplied in any quantity at 12s. per 100, or 5l. per 1000, by Walter Pennington, Nurseryman, South Retford, Nottinghamshire.

TO THE TRADE.
J. AND J. FRASER, The Nurseries, Lea Bridge Road, Essex, N.E., beg to offer a large Stock of Maiden FRUIT TREES, including all the best sorts of Apricots, Peaches, &c. The prices, which are very moderate, may be had on application.

FRUIT TREES.
J. AND J. FRASER, Lea Bridge Road Nurseries, Essex, N.E., beg to invite purchasers of Fruit Trees to an inspection of their stock, which is this year unusually fine. PRICED CATALOGUES can be had on application.

ORCHARD HOUSE.
WANTED, established bearing PEACH TREES in pots, &c.; also two or three 5 or 6 year old PEACH TREES, for wall.—Apply, post paid, to B. L., Widenham's, Clock Maker, Lombard Street, E.C.

REAL DWARF BOX FOR EDGING.—A large Lot of fine quality to be sold VERY CHEAP, as it is on grounds to be cleared.
James Dickson & Sons, the "Newton" Nurseries, Chester.

GREEN HOLLIES, &c.—100,000 fine and repeatedly Transplanted, 1 to 3 feet, clean grown and full of roots. Price very moderate on application. Also all other Sorts of Evergreens.
James Dickson & Sons, the "Newton" Nurseries, Chester.

TO THE TRADE, ETC.
L. T. DAVIS has a very large stock of 1 and 2-year SEEDLING THORN QUICKS, which he offers at moderate prices; also a large quantity of 3-year SEEDLING ASH. Prices, &c., on application. Carriage free to Belfast.
Ogle's Grove Nursery, Hillsborough, County Down.

SCARLET RHODODENDRONS, IRISH YEWS, &c.
L. T. DAVIS begs to offer the following, in quantity, SCARLET and CRIMSON RHODODENDRONS, IRISH YEWS, LAURUSTINUS, HARDY HEATHS, PERNETTYAS, &c. These can be had of various sizes, and are in the best possible condition for safe removal, having been recently transplanted. Prices on application (carriage free to Belfast).—Ogle's Grove Nursery, Hillsborough, County Down.

OSCAR STRAWBERRY.
CHARLES TURNER can still supply strong plants, warranted to fruit next season, at 42s. per 100.
For full particulars of this fine early variety see previous Advertisements.—The Royal Nurseries, Slough.

CUTHILL'S STRAWBERRY PLANTS.
EARLY BLACK PRINCE, per 100, 5s.; selected, 7s. 6d.
Do. PRINCESS ROYAL of ENGLAND, do. 7s. 6d.; do. 10s.
LATE PRINCE of WALES .. .. do. 7s. 6d.; do. 10s.
Will bear next year. See former Advertisements.
HIGHLAND MARY CUCUMBER (Winter), 1s. per packet.
Pamphlets, &c. Best Mushroom Spawn.
James Cuthill, Camberwell, London, S.

STRAWBERRY PLANTS.—ELTON PINE and KEENS' SEEDLING at 2s.; BRITISH QUEEN, ELEANOR, and ADMIRAL DUNDAS at 2s. 6d. per 100.
George Cornwell, Barnet, N.

STRAWBERRY PLANTS AND CATALOGUE.—Plants of the pretty little Bush Alpine, both Red and White, without runners, suitable for edgings to walks, beds, &c., 10s. per 100 sets.
A DESCRIPTIVE CATALOGUE of upwards of 130 sorts is just published. To all who wish to purchase plants it will be sent by applying to the grower, William Jas. Nicholson, Egglescliffe, Yarm, Yorkshire.

MAGNIFICENT SPECIMEN PLANTS.—Ixoras, Rhynchospermums, Medinillas, Euphorbias, Dendrobiums, Ardisia.
VARIEGATED PLANTS, viz., Caladiums, Dracænas, Marantas, Crotons, Aphelandras; 2 pair of very fine variegated YUCCAS, and specimen AZALEAS. The above are to be sold very cheap. To be inspected on application to
Mr. W. J. Epps, Maidstone.

CINERARIA, HERBACEOUS CALCEOLARIA, AND HALF SHRUBBY DITTO SEED.—These have been saved from Turner's most beautiful varieties; in 1s. and 2s. 6d. packets. Primula and Hollyhock, from the newest and handsomest varieties, 1s. per packet. Agents for F. & A. Smith's splendid Cineraria, in 1s. 6d., 2s. 6d., and 5s. packets; also agents for Dobson & Son's splendid Calceolaria, in 1s. 6d., 2s. 6d., 3s. 6d., & 5s. packets.—Catalogues of the newest Flower Seeds, and newest Dutch and Cape Bulbs, sent post-paid.—BUTLER & MCCULLOCH, Seedsmen, Covent Garden Market, W.C.

STRONG ESTABLISHED PLANTS of the following carriage paid to London. Special offers to the Trade.
ACHIMENES.—Meteor, carminata splendens, Parsonii, Gem, &c., 6s. to 9s. per dozen.
Verschaffelt's and Van Houtte's new TYDÆAS, 6s. to 9s. per doz.
VARIEGATED FOLIAGE PLANTS, such as Crotons, Dracænas, Caladiums, &c., 12s. to 24s. per dozen.
STOVE PLANTS.—Ixoras, Allamandas, Stephanotis, Æschynanthus bicolor, Gardenias, Pleromas, &c., 12s. to 18s. p. doz.
GREENHOUSE PLANTS.—Epacris, Pimeleas, Leschenaultias, Ruella, Gompholobiums, Chorozemas, Polygalas, creepers of all kinds, &c., 12s. to 18s. per dozen.
ERICAS, very fine, 9s, 12s., to 18s. per dozen.
SEEDLING ERICAS, not flowered, crossed with the best kinds, 18s. to 30s. per dozen.
Young specimens of AZALEAS AND ERICAS, from 18 inches over and upwards. List and prices sent on application.
EPPS's Nurseries, Maidstone and Ashford.

NEW AND CHOICE GERANIUMS.

GEORGE SMITH offers strong plants of the following, selected from those sent out in the Autumn of 1858. The plants are remarkably healthy and fine, and now require potting out. Price 30s. per dozen, stronger plants at 36s. per dozen, viz:—(Hoyle's) Belle of the Season, Excellent, Lady Canning, Leviathan, Monarch, Prince of Wales, Rajah, Star, Tom Brown; (Foster's) Criterion, Golden Hue; (Turner's) Excelsior, Fisherman, Guido, Jung Bahadoor, Osiris, Picnic, Peacock, The Belle; (Fraser's) Echo; (Beck's) Fairest of the Fair, The Bride, Vestal; (Dobson's) Ringleader, Spotted Pet; (Fellowes') Ariel, Desdemona, and (White's) Blink Bonny. Fancies: (Turner's) Beauty, Captivator, Circle, formosum, Marchioness of Tweeddale, modestium, Negro, and Othello.

G. S. has also a splendid stock of all the leading kinds of former years, of Show, Fancy, and Spotted.

A DESCRIPTIVE CATALOGUE will be forwarded in exchange for one postage stamp.

Tollington Nursery, Hornsey Road, Islington, London, N.

JEAN VERSCHAFFELT, NURSERYMAN, Ghent, Belgium, begs respectfully to announce that he has a fine stock of the undermentioned healthy well grown Plants, which he offers at the following prices:—

CAMELLIAS, with flower-buds (including the best leading kinds) .. .. .. per 100 £5 0 0
Do. do. .. .. ,, £6 0 0
Do. do. stronger Plants, 2s., 3s., 4s., & 5s. each and upwards.
AZALEA INDICA, with flower-buds (including the best leading kinds), at from 1s. to 4s. and 5s. each and upwards.
AZALEA INDICA, his seven new Seedling varieties, including three double-flowering ones at 3l. the set.
ARUNDO DONAX VERSICOLOR; fine grown plants at from 3s. to 5s. each.
ERYTHRINA CRISTA-GALLI; strong plants at 1s.
50 sorts of GLADIOLI GANDAVENSIS, from 1s. to 2s. each.
DAPHNE DAUPHIN, 1s. | DAPHNE CNEORUM MAX., 1s.
LILIUM LANCIFOLIUM RUBRUM, strong bulbs, p. 100, £4.
Do. do. ALBUM ,, £3.
Do. do. ATROSANGUINEUM MACULATUM ,, £2.

Advertiser invites all persons to send their orders direct to JEAN VERSCHAFFELT, Nurseryman, Ghent, Belgium.

"WONDERFUL" STRAWBERRY, RAISED BY JOHN JEYES, NURSERYMAN, Northampton.

Price 10s. 6d. per 100.

The above Strawberry is a week later than British Queen, and perfectly hardy. The fruit is produced in such abundance that it is necessary to place a stick near the centre of each plant, and from it support the long clusters of fruit from covering the surrounding ground. The plant is naturally a small grower. The following testimonials from three of the most eminent cultivators of fruit are respectfully referred to:—

"Althorp Park, October 6, 1857.

"Sir,—Your Seedling Strawberry is by far the greatest bearer I ever saw. I cannot speak too highly of it for colour, size, flavour, and productiveness. I was delighted with the wonderful crops of ripe fruit I saw in your nursery. Send me 100 plants as early as you can.—Your obedient servant,

"DANIEL JUDD, Gr. to the Right Hon. Earl Spencer.'

"Castle Ashby, October 6, 1857.

"Sir,—I beg to acknowledge the receipt of 100 plants of your 'Wonderful' Strawberry. I am very pleased that you have been able to increase it so as to send it out this season, as I think it a very extraordinary fruit, so good in flavour, fine colour, and wonderfully productive.—I am, Sir, yours respectfully,

"WM. HARDIE,

"Gardener to the Most Noble the Marquis of Northampton."

"Moulton Grange, July 31.

"Sir,—In justice to you as the raiser I must affirm that your Strawberry is the best extant. Its productiveness is, as its name implies, really wonderful, whilst its flavour partakes of a fine-flavoured sugary Pine Apple, heightened with that of the old British Queen Strawberry. This variety will supersede all others, and become our leading and main cropper when its high merits become better known, which time and its own qualities will assuredly accomplish. "J. RANSLEY TANTON,

"Gardener to H. O. Nethercote, Esq., F.H.S."

NEW STRAWBERRIES.

ROBERTSON'S WIZARD OF THE NORTH AND NONSUCH.

DANIEL ROBERTSON, Linside Nursery, Paisley, is now sending out the above named superb varieties, at 6s. per 100 plants, or 9s. per dozen. The Wizard of the North is a magnificent large variety, of superior quality, of very fine colour and shape, and an immense bearer. Succeeds Keens' Seedling and continues long in production. It is exceedingly hardy both in growth and in blossom. It was named in 1857, when a Certificate of Merit was awarded to it by the Paisley Horticultural Society; and a drawing made of the plant then exhibited is in the hands of the lithographer, copies of which when ready will be sent to the principal Seed shops in the country.

Nonsuch is an early Strawberry, of fine size and colour, a great bearer, juicy and rich in flavour, swelling off its later berries well.

These fine varieties were raised by Mr. John Robertson, at Linside, and their high character has been most satisfactorily established by several years' cultivation. They are confidently recommended as a valuable acquisition to Strawberry growers, whether they cultivate on a large or small scale. Strong plants are now ready and orders will be promptly executed.

Testimonials in favour of these fine Strawberries from the most eminent cultivators in the west of Scotland, who have seen them in bearing here, will be supplied on application.

Having a large stock of the Wizard of the North, Nurserymen and Market Gardeners ordering in quantity will be dealt with on favourable terms. A remittance or reference required.—DANIEL ROBERTSON, Linside Nursery, Paisley, N.B.

FIRST-CLASS HYACINTHS, NARCISSUS, TULIPS, CROCUSES, ANEMONES, RANUNCULUS, AND OTHER DUTCH BULBS.

JAMES CHARTRES, SEEDSMAN, &c., 74, King William Street, City, London, E.C., can strongly recommend his 40s. Collections of the above, which have for many years given universal satisfaction. Half Collections if desired, 20s. Carriage paid.

Purchasers who wish to make their own selections can have a PRICED CATALOGUE free on application.

DUTCH FLOWER ROOTS.

PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN, &c., respectfully announce the arrival of a fine Stock of DUTCH FLOWER ROOTS, and they are now prepared to execute orders for the same.

27, Great George Street, Westminster, S.W.

NEW SEEDS.

TRIFOLIUM INCARNATUM
ITALIAN RYE-GRASS
NATURAL GRASS SEEDS FOR PERMANENT PASTURE LAWNS, &c.

PETER LAWSON AND SON, the QUEEN'S SEEDSMEN, &c., are prepared to supply all kinds of SEEDS for AUTUMN SOWING of the best quality.

27, Great George Street, Westminster, S.W.

CATTELL'S EARLY BARNES & RELIANCE CABBAGES; ALSO DEPTFORD, EAST HAM, HIGHAM, KING, &c.

JOHN CATTELL has now ready BEDDED PLANTS of the above well known best kinds for early spring cutting at 5s. 6d. per 1000. No charge for crates, baskets, or packing.

Packages of 5000 or more are delivered to the Edenbridge Station of the South Eastern Railway carriage free. A remittance or reference to accompany orders from unknown correspondents.—Nurseries, Westerham, Kent.

CROPS FOR EARLY SPRING FEED.

MESSRS. RAYNBIRD AND HARVEY are now supplying fine new WINTER TARES, WINTER BARLEY, WINTER OATS, fine new ITALIAN RYE-GRASS, and new TRIFOLIUM, the best crops for spring feed.

GIANT RYE very early and productive, and the new RACER TARE, a much earlier variety than the common sort. Samples and prices on application.

Address RAYNBIRD & HARVEY, Basingstoke, or 89, Seed Market, Mark Lane, London, E.C.

SEED WHEAT FROM THE CHALK.—Selected samples of CHIDHAM, WHITE TRUMP, ROUGH CHAFF, HUNTER'S WHITE, RED-CHAFF WHITE, GRACE'S WHITE, TALAVERA, RED BROWICK, RED NURSERY, GOLDEN DROP, and all the best kinds of Wheat, supplied by RAYNBIRD & HARVEY, of Basingstoke, and 89, Seed Market, Mark Lane, London, E.C. Samples and prices on application.

ARAUCARIA IMBRICATA.—The finest lot of trees in the world of this noble plant, from 1 to 10 feet high, are to be seen at H. LANE & SON'S Nurseries, Great Berkhampstead, and they strongly recommend gentlemen and planters to view them. This forms the most noble tree for Avenues and Plantations. There is a most beautiful specimen at Dropmore, which the intelligent gardener, Mr. Frost, feels great pleasure in showing.

They also have a fine stock of CEDRUS DEODARA, ABIES DOUGLASII, IRISH YEW, from 5 to 10 feet high, for immediate effect, &c.

ARAUCARIA IMBRICATA.

YOUELL AND CO. beg to inform the Trade they have to offer a fine and healthy stock of the above in 1-year-old plants.

GLADIOLUS BRENCHLEYENSIS.—An extensive stock of large flowering Bulbs of this magnificent Gladiolus, the colour of which is vermilion scarlet, the best and brightest variety known. Prices of the above on application.

Royal Nursery, Great Yarmouth.

CONIFERÆ.—All transplanted this last spring:—

Abies Deodara	Pinus Benthamiana
,, Menziesii	,, Cembra
,, Nordmanniana	,, insignis
Cupressus Lawsonii	,, Sabiniana, &c.
Cephalotaxus Fortunii, male and female	Taxus fastigiata
Juniperus sphærica	Thuja gigantea
Libocedrus chilensis	Thujopsis borealis
Pinus austriaca	Wellingtonia gigantea,

and nearly every other hardy Conifer worthy of cultivation. Many of the above are fine specimens from 1 to 10 feet high.

These are a few things selected from the general stock, which CHARLES NOBLE flatters himself will bear comparison with any in the kingdom. Gentlemen wishing to inspect the above will find the Nursery only a few minutes' walk from the Sunningdale Station, South-Western Railway, which is one hour's ride from London.—Inquiries answered by

CHARLES NOBLE, Bagshot, Surrey.

RARE HARDY CONIFERS—PICEA (ABIES) AMABILIS, TRUE; PICEA (ABIES) GRANDIS, TRUE.

HUGH LOW AND CO. have great pleasure in announcing that they have this season been successful in obtaining from Seed imported by them direct from California a large supply of Plants of the above named most beautiful and thoroughly hardy Conifers. They are without exception two of the finest and most ornamental trees yet known to Botanists, and attain in Northern California a height of from 250 to 280 feet. Their perfect hardiness and adaptation to the climate of this country have been proved beyond a doubt, but up to the present time Seedling Plants have been rarely to be obtained. The quantity now raised being considerable, H. L. & Co. have decided on offering them by the dozen and 100 at such low prices as will induce lovers of hardy trees to plant them in large numbers. Prices can be had on application; as also of Seedling Plants of Cupressus Lawsonii, C. macrocarpa, C. Goveniana, C. M'Nabiana, Picea Pinsapo, P. Nordmanniana, P. Pindrow, P. nobilis, Abies Menziesi, A. cephalonica, A. Douglasi, both from Californian and Scotch seeds; A. Mertensiana, (taxifolia of Jeffrey), A. Williamsoni (Pattoni, Hookeriana), A. orientalis, Araucaria imbricata, Cedrus Deodara, Cedrus Atlantica (argentea), Cryptomeria japonica, C. Lobbi, Pinus Benthamiana, P. excelsa, P. insignis, P. Don Pedri, P. Pallasiana, P. Sabiniana, P. macrocarpa, P. Edgariana, P. Jeffreyi, P. Monticola, and many others; Podocarpus andina, P. nubigena, Thuja gigantea (Libocedrus decurrens); Thuja Lobbi (Menziesi), Torreya grandis, Wellingtonia gigantea, and many other fine Coniferous plants.—Clapton Nursery, London, N.E.

WINTER BLOOMING PLANTS.

CAMELLIAS, CHINESE AZALEAS, EPACRIS, ERICAS, of various sizes and all in unusually fine condition. Many thousands of these plants can be seen at the Nursery of the Subscribers.

DWARF OTAHEITE ORANGES in fruit.

CATALONIAN JASMINE (Jasminum grandiflorum).—Fine plants, grafted on short stems, and full of flower buds.

SPRAGUEA UMBELLATA, introduced by H. L. & Co. from California, is now finely in flower in the open ground.

Inspection respectfully invited.

HUGH LOW & Co., Clapton Nursery, London, N.E.

SPLENDID NEW ORNAMENTAL FOLIAGED PLANT—CONATANTHUS, OR CALADIUM CUPREUS.

HUGH LOW AND CO. have now in their Nursery a magnificent specimen of the above-named new plant, which was imported by them from Borneo. It was exhibited at the July Show of the Royal Botanic Society, where a Certificate was awarded to it, but the plant was then newly imported, and was consequently small. It has now developed itself, and proves to be the finest ornamental foliaged plant introduced up to the present time. No description can convey an adequate conception of its surpassing beauty, and therefore H. L. & Co. invite an inspection. They will have pleasure in showing it to any gentleman who may favour them with a visit.—Clapton Nursery, London, N.E.

TO THE TRADE.

S. PONSFORD would call the attention of all extensive planters to his stock of EVERGREEN and DECIDUOUS SHRUBS, particularly in Common Laurel, Aucuba, Arbutus, Evergreen Oak, Striped Holly, &c. Also, Standard Apples and Mulberries (these very fine), Pears, Plums, &c. Dwarf-trained Peaches, Nectarines, &c. A large stock of Red, White, and Black Currants, Gooseberries, &c. Fine Standard and Dwarf Roses, Limes in large quantities of all sizes.—Loughborough Park Nurseries, Brixton, Surrey, S.

COMMON HOLLIES, FROM 1 TO 2½ FEET.

WHITEHOUSE AND WHITTAKER having a large stock of common HOLLIES, fine bushy plants, with good fibrous roots, are prepared to supply them at very moderate prices, and strongly recommend the present as a good time for planting them. Large purchasers and the Trade liberally dealt with.

W. & W.'s general NURSERY STOCK is large and in fine healthy condition; intending purchasers would do well to inspect it. The Nursery is situated conveniently for Railway communication to all parts, being about two miles from the Rugeley Station, on the Trent Valley Railway.

Brereton, Rugeley, Staffordshire.

THE BRISTOL NURSERY, KEMP TOWN, BRIGHTON.

ALEX. McKENZIE, for some time Gardener, &c., at Woodlands, Blackheath, begs to inform his friends and the public that he has taken the above Nursery on Lease, and hopes by strict attention to his business to obtain a share of the patronage so liberally bestowed on the late Mr. Mitchell.

Having taken the whole Stock, he will be prepared to execute orders at once, and begs to offer the following, which are in fine condition:—VINES, from Eyes, fit for forcing or planting.
FRUIT TREES, trained and in pots.
Extra large RHUBARB, for immediate forcing.
FIGS, in pots, fit for forcing.
STOVE and GREENHOUSE PLANTS.
And a very superior collection of TULIPS.—September 17.

TO THE TRADE.

THOMAS JACKSON AND SON solicit an inspection of their Stock generally, and particularly their AZALEAS, ERICAS, EPACRIS, and POT PLANTS, which are this season they believe unequalled in their fine healthy condition. Good flowering plants of Azaleas, Ericas, and Epacris, 75s. per 100. T. J. & Son possess many large specimens of Stove and Greenhouse Plants, from 1 to 5 feet in diameter, suited for exhibition, prices according to size and kind. Berberis Beali, B. japonica, and Eugenia Ugni, good plants in 3-inch pots, 60s. per 100.—Nurseries, Kingston, S.W.

NEW PINKS.

CHARLES TURNER (MACLEAN).—Dark purple, fine; 5s. per pair.
ELEANOR (TURNER).—Rose, fine; 5s. per pair.
EDITH (MACLEAN).—Reddish purple; 3s. 6d. per pair.
LITTLE GEM (MACLEAN).—Red; 3s. 6d. per pair.
MILLIE (MACLEAN).—Dark, fine; 5s. per pair.
MISS GLOVER (TURNER).—Purple; 3s. 6d. per pair.

CHARLES TURNER can strongly recommend the above as first-class Pinks, and great acquisitions for exhibition purposes.

C. TURNER'S general stock of Pinks are very healthy and strong, and are now ready for sending out at 9s., 12s., and 18s. per dozen.—The Royal Nurseries, Slough.

GERANIUMS, HERBACEOUS PLANTS, ETC.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their new PRICED and DESCRIPTIVE CATALOGUE of the above, to which are added Supplemental Lists of Stove, Greenhouse, and Hardy Plants, Fruit Trees, &c. (which include all the best new plants of the season), is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

FLOWER GARDENS AND GARDENERS.

MR. GLENNY will present every reader (who will send him a directed envelope to Dungannon House, Fulham, S.W.), with a packet of Seed of the true DELPHINIUM FORMOSUM, the most handsome of all hardy perennials; intense blue. BALSAMS, mixed, acknowledged to be the finest ever offered, 50 seeds, 13 stamps, and any single colour; 12 seeds, 7 stamps; a new tricolor, 12 seeds, 13 stamps.

GLENNY'S GARDENERS' GAZETTE for September, most important to Gardeners of all classes, 3d., or by post 4d.

CAMELLIAS AND INDIAN AZALEAS, WITH FLOWER-BUDS, AND OTHER USEFUL PLANTS.

A. VAN GEERT, NURSERYMAN, Ghent, Belgium, begs to offer the following:—
Fine CAMELLIAS, with flower-buds of the best and showiest varieties, 5l. to 6l. per 100.
Fine INDIAN AZALEAS, with flower-buds, of the choicest varieties, 4l. to 6l. per 100.
New French and Belgian Herbaceous PÆONIES, 25 vars., for 1l.
LILIUM LANCIFOLIUM RUBRUM, strong bulbs, 4l. per 100.
,, ,, ALBUM ,, 3l. per 100.
,, ,, PUNCTATUM, 3s. 6d. each.
,, JAPONICUM (TRUE), 5s.
,, CORDIFOLIUM, 5s.
ASCLEPIAS TUBEROSA, flowering roots, 1l. 1s. per 100.
GLADIOLUS GANDAVENSIS, strong roots, 10s. 6d. per 100.
,, ,, a collection of 25 new distinct varieties, for 1l. 5s.
Ghent and English Hardy RHODODENDRONS, fine young plants grafted, 6l. per 100.
GHENT AZALEAS, with flower-buds, 4l. to 5l. per 100.
The new MEXICAN PINES, 50 varieties, 5l.
PINUS VEITCHI, 5s. each.
,, DON PEDRO, 5s. each.
TILLIA EUROPEA foliis variegatis (NEW), 15s. each.

JAMES CARTER & CO.

BEG LEAVE TO OFFER THE FOLLOWING

NEW LARGE-FLOWERED PINKS FROM JAPAN:-

DIANTHUS CHINENSIS HEDDEWIGII, 1s. and 2s. 6d. per packet.

DIANTHUS CHINENSIS MONSTROSUS, 1s. and 2s. 6d. per packet.

Seeds sown during September and October in pans, and afterwards pricked out in 48-pots and kept in Greenhouse during the winter, will flower early in the summer.

☞ PRICE TO THE TRADE UPON APPLICATION.

GUERNSEY LILIES, per dozen .. .. .. 5s. 0d. | BELLADONNA LILIES, per dozen .. .. 5s. 0d.

BULBS FOR FORCING.

HYACINTHS, best named vars.	Per doz.—6s., 8s., 10s. 12s. 0d.	JONQUILS, single, sweet-scented	Per doz.—1s. 6d.
POLYANTHUS NARCISSUS	8 best sorts, 1 root each 2 9	DUC VAN THOL TULIPS, single	,, 0 9
JONQUILS, largest double	Per doz. 2 0	,, ,, double	,, 0 6

BULBS FOR OPEN BORDERS.

HYACINTHS, Single or Double, from named varieties, suitable for forming large masses of colours in beds.

Crimson	Per doz.—4s. 0d.	Dark blue	Per doz.—4s. 0d.
Pink	,, 4 0	Light blue..	,, 4 0
Purple	,, 4 0	Pure white	,, 4 0

MIXED VARIETIES, Single or Double.

Red	Per 100—21s. 0d. Per doz.—3s. 0d.	Blue	Per 100—21s. 0d. Per doz.—3s. 0d.
White	.. Per 100 21s. 0d. Per doz. 3s. 0d.		

CROCUS, Large Dutch Varieties.

Blue	Per 1000—12s. 0d.	Per 100—1s. 4d.	Variegated	Per 1000—15s. 0d.	per 100—1s. 8d.
Blue, light	,, 12 0	,, 1 4	Versicolor	,, 18 0	,, 2 0
Cloth of Gold	,, 15 0	,, 1 8	White	,, 18 0	,, 2 0
Purple	,, 12 0	,, 1 4	Yellow	,, 18 0	,, 2 0
Scotch	,, 21 0	,, 2 6	Very fine mixed	,, 12 0	,, 1 4
Striped..	,, 15 0	,, 1 8	100 of each of the above 10 sorts	17 0	

TULIPS.

Very fine mixed EARLY ..	Per 1000 50s. Per 100 6s. 0d.	REX RUBRORUM, double scarlet	Per 100—7s. 6d.
,, ,, DOUBLE ..	,, 50s., ,, 6s. 0d.	TOURNESOL, red and yellow	,, 7s. 6d.

For other varieties see CATALOGUE, *which will be forwarded gratis, and post free upon application to*

237 & 238, HIGH HOLBORN, LONDON, W.C.

SPLENDID JAPAN PINK,

DIANTHUS HEDDEWIGII.

MESSRS. E. G. HENDERSON & SON

OFFER for Sale SEED of this truly beautiful dwarf-flowering plant for the Greenhouse and Flower-garden, surpassing all others of its tribe, and for the exhibition of which a Medal and Certificate for Distinguished Merit was awarded to E. G. HENDERSON AND SON, the former at the Exhibition in the Royal Botanic Gardens, Regent's Park, and the latter by the London Horticultural Society. A full description of this species is given at p. 722 (*Gardeners' Chronicle*).

Seed Packets, 1s., 2s. 6d., and 5s. each.

NEW BULB CATALOGUE,

which will be forwarded on application, postage free, contains 80 pages, including the most ornamental sections and varieties of BULBOUS FLOWERS AND PLANTS for bloom in the Conservatory and Drawing-room, by Pot, Glass, or Vase culture, in their respective months from January to November; and also a very select and extensive List of the kinds best adapted for every department of the Flower-garden in early spring, summer, and autumn, with numerous practically-descriptive remarks upon their merit and adaptation.

An extensive and Select Collection of Herbaceous and Alpine Plants is attached to the above Catalogue.

E. G. HENDERSON & SON, Wellington Nursery, St. John's Wood, London, N.W.

SUTTON'S COLLECTIONS OF FLOWER BULBS

CARRIAGE AND PACKAGE FREE.

FOR OPEN GROUND.

COLLECTION No. 1 ... ... £2 2s.

24 Mixed Hyacinths	6 Crown Imperials
50 Scarlet Ranunculus	300 Crocuses, in 6 colours
24 Double Anemones	100 Mixed Ranunculus
12 Mixed Narcissus	24 Single Anemones
24 Duc Van Thol Tulips	12 Dble White Narcissus
12 Double Scarlet Tulips	12 Parrot Tulips
24 Fine Mixed Tulips	12 Double Yellow Tulips
12 Choice Irises	12 Gladiolus
100 Snowdrops	12 Jonquils

COLLECTIONS No. 2 and No. 3.

The above choice sorts in quantities proportionately reduced,

21s. and 10s. 6d.

FOR POTS AND GLASSES.

COLLECTION No. 4 ... ... £2 2s.

12 Hyacinths, by name	12 Double Sweet Jonquils
12 Polyanthus Narcissus	12 Sweet Persian Irises
12 Tournesol Tulips	24 Dble Duc Van Thols
12 Single Duc Van Thols	12 Rex Rubrorum Tulips
6 dozen named Crocuses	6 Gladiolus, by name
2 Lilium lancifolium	12 Ixias, choice sorts
1 Amaryllis formosissima	6 Dog's-tooth Violets
1 Cyclamen Persicum	

COLLECTIONS No. 5 and No. 6.

The above choice sorts in quantities proportionately reduced,

21s. and 10s. 6d.

SUTTON'S AUTUMN CATALOGUE

is now ready and will be sent post free on application. In this Catalogue prices are affixed to every article.

The best 12 HYACINTHS for pots or glasses, 9s. | Mixed Double HYACINTHS for beds or borders, 3s. 6d. per dozen.

☞ *None but fresh imported Bulbs kept on the premises.*

ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.

DUTCH BULBS.

MILNE, ARNOTT, AND CO. are now sending out, in the best possible condition, HYACINTHS, NARCISSUS, TULIPS, CROCUS, and other Flower Roots, imported direct from some of the most celebrated growers in Holland.

A PRICED and DESCRIPTIVE CATALOGUE just published will be forwarded free upon application.

Finest Hyacinths, by name, 5s., 6s., 7s. 6d., & 9s. per dozen.
Select Collections of Bulbs from 1 s. 6d. upwards.
The Nursery, Wandsworth Road, London, S.

NEW PLANT CATALOGUE.

JAMES VEITCH, JUN., begs to intimate that his GENERAL PLANT CATALOGUE for the present season, including a DESCRIPTIVE LIST of NEW and RARE PLANTS is now ready and will be forwarded post free on application.

Royal Exotic Nursery, Chelsea, S.W.—Sept. 17.

SPLENDID NEW VARIEGATED FERN,
PTERIS ARGYRÆA (MOORE).

JAMES VEITCH AND SON have peculiar satisfaction in calling attention to the above-named most striking novelty, which is undoubtedly one of the greatest acquisitions of recent introduction to our now justly popular collections of Ferns.

It is of *noble aspect* and free growth, perfectly distinct and novel in its character, the pinnæ on every frond as well as their branches having a broad central stripe of glistening silver, which, in contrast with the bright green, produces a most charming effect. It may justly be called

THE VARIEGATED FERN.

It was exhibited at the Royal Botanic Garden on July 6, and before the Horticultural Society's newly-appointed Floral Committee on July 7, and in both cases received the highest Prizes given to such novelties, and was universally admired.

Established Plants, 31s. 6d each. The usual allowance to the Trade.—Royal Exotic Nurseries, Exeter and Chelsea.

BRITISH POMOLOGICAL SOCIETY.—NOTICE.—The next Meeting will be held on THURSDAY, September 22, when the following Premiums are offered for Fruit exhibited according to the Society's regulations:—

Two Guineas, One Guinea, and Half a Guinea, for Collections of GRAPES, in dishes of one bunch of each variety. It is desired in this exhibition to bring under one view, for comparison and classification, as many varieties as possible; therefore it is not necessary that they be all grown by the exhibitor.

The following must be exhibited by the growers:—

One Guinea and Half a Guinea for the best and second best dishes of six SECKEL PEARS.

One Guinea and Half a Guinea for the best and second best dish of six DESSERT PEARS of any other kinds in season.

One Guinea and Half a Guinea for the best and second best dish of six DESSERT APPLES of any kinds in season.

One Guinea and Half a Guinea for the best and second best Culinary varieties of APPLE, fit for present use, exhibited in tens.

At the following Meeting to be held on THURSDAY, Oct. 6, Premiums are offered as follows:—

Two Guineas for the best Late Seedling APRICOT.
Two Guineas for the best Late Seedling PEACH.
Two Guineas for the best Late Seedling NECTARINE.

The following must be exhibited by the growers:—

One Guinea and Half a Guinea for the best and second best dishes of six MARIE LOUISE PEAR.

Similar premiums are also offered for fruit in season of other kinds of Dessert Pears, and for Dessert and Culinary Apples, in the same manner as at the meeting of September 22.

Copies of rules, regulations for exhibitors, forms to be filled up, or other information, may be obtained of

Mr. W DAVIDSON, Secretary *pro tem.*
2, Randolph Road, Maida Hill, London, W.

MR. EDWARD MILNER having constructed and laid out the Crystal Palace Gardens and Park, Sydenham, under the direction of Sir Joseph Paxton, and having managed them for the Company till last Midsummer (when owing to the pressure of other professional duties his engagement terminated), desires to express his acknowledgments to those Noblemen and Gentlemen who have honoured him with their patronage, and to state that he continues to undertake the execution of works of a similar character.

An active experience of upwards of 20 years enables Mr. MILNER to offer his services in the formation and improvement of Parks, Gardens, and Ornamental Grounds, also in preparing designs for Conservatories and other Horticultural Buildings; in establishing and thinning Plantations and Woods, with special reference to the trees most suitable for particular soils and aspects, the valuation of Timber, Draining, Road-making, &c.

Mr. MILNER is permitted to refer to Sir Joseph Paxton and to several Noblemen and Gentlemen for whom he has done work.—Address, EDWARD MILNER, "Oxford House," Anerley Road, Norwood, S.

The Gardeners' Chronicle.

SATURDAY, SEPTEMBER 17, 1859.

MEETINGS FOR THE ENSUING WEEK.

TUESDAY, Sept. 20 { Horticultural (Fruit Committee at the Garden, Chiswick) .. 2 P.M.

"THE following important fact in connection with MILDEW is worthy of notice. Of three Apricot trees growing against the same wall, and every way alike circumstanced, two are nearly divested of their leaves by mildew, but the third is perfectly green and healthy. This last received the following treatment:—Early in the season a trench was cut lengthwise along the border as far as the branches extended about 3 feet out from the trunk of the tree and down to the roots, or as deep as the latter would permit it to be cut without injuring them. This trench was well supplied with water all through the season, so as to thoroughly moisten the subsoil, and the result has been as has-

just been stated. This tree has remained healthy while the others have suffered severely from mildew. Drought, therefore, is clearly the cause of the evil in this instance, for no mere surface watering could possibly reach the subsoil under the trees which have suffered; on the contrary, it has been ascertained that all below them is as dry as bone, and so hard that it would take a pick to break the soil in pieces."

We reproduce this statement respecting an experiment tried by Mr. THOMPSON in the Garden of the Horticultural Society, because of its great importance. Never was mildew with its attendant evils more mischievous than during the present season; first of all fruit trees, Roses, and similar plants were attacked by incredible numbers of aphides and grubs, which could only be subdued by incessant attention; and now their leaves and very branches are becoming hoary with the common white mildew of autumn. Both these affections are probably referable to the same cause; a want of vigour sufficient to enable trees to resist such attacks or to outgrow their consequences. This, at least, is the inference to be drawn from the experiment before us. All round London that part of the soil in which the roots of trees extend has been in a state of dryness quite unprecedented. Rainfall is enormously in arrear; no snow has fallen in sufficient quantities to saturate the ground when thawed; and what rain does fall is largely and rapidly drained away in consequence of the inability of the hardened soil to absorb it. When ground is opened deeper than a few inches it is found to be beyond the action of the spade. The earth which is loosening round the roots of trees preparing for removal in another year must be broken up by pickaxes, even in worked garden ground. The inevitable effect of this is to deprive trees of their needful food; for water is that food; and it is unnecessary to say that when food is withheld plants become feeble and exhausted as well as animals.

This is no new doctrine, although very little thought of.

The late Mr. ANDREW KNIGHT long ago stated that the causes of common white mildew appeared to him to be the want of a sufficient supply of moisture from the soil at the same time attended with excess of humidity in the air, especially where plants are exposed to a temperature below that to which they have been accustomed. When damp and cold weather in July succeeds that which has been warm and bright, without the intervention of sufficient rain to moisten the ground to some depth, the Wheat crop is generally much injured by mildew. He suspected that, in such cases, an injurious absorption of moisture by the leaves and stems took place. Under such circumstances much water would be absorbed by leaves and carried downwards through their alburnum; although the sap rises through this substance under other circumstances. He thought that in this way a retrograde motion of the fluids might be produced, and the ascent of the true sap or organisable matter so retarded as to become the food of parasitical Fungi, rendering them unusually luxuriant and injurious.

This view of the subject, whether true or false, led him to the following method of cultivating the Pea late in the autumn, by which his table was always as abundantly supplied during the months of September and October as in June and July; and his plants were very nearly as free from mildew. "The ground," he said, "is dug in the usual way, and the spaces which will be occupied by the future rows are well soaked with water. The mould upon each side is then collected, so as to form ridges 7 or 8 inches above the previous level of the ground, and these are well watered; after which the seeds are sowed, in single rows, along the tops of the ridges. The plants very soon appear above the soil, and grow with much vigour, owing to the great depth of the soil, and abundant moisture. Water is given rather profusely once in every week or nine days, even if the weather proves showery; but if the ground be thoroughly drenched with water by the autumnal rains, no further trouble is necessary. Under this mode of management the plants will remain perfectly green and luxuriant till their blossoms and young seed vessels are destroyed by frost; and their produce will retain its proper flavour, which is always taken away by mildew."

By adopting this plan he rarely failed in having his table well supplied till the end of October, unless indeed a severe frost in the beginning of that month proved fatal to his later crops.

Mr. KNIGHT's long experience led him to the opinion that the mildew of the Peach and other fruit trees originates in the same causes as the mildew of the Pea, and might be prevented by similar means. When the roots, which penetrate most deeply into the soil, and are consequently best adapted to supply the tree with moisture in the summer, are destroyed by a noxious subsoil, or by excess of moisture during the winter, he often observed the mildew to become a formidable enemy. When, on the contrary, a deep and fertile dry loam permitted the roots to extend to their proper depth, and where the situation was not so low as to be much infested with fogs, he found little of the disease: and in a forcing-house he found it equally easy, by appropriate management, to introduce or prevent the appearance of it. When he kept the mould very dry, and the air in the house damp and unchanged, the plants soon became mildewed; but when the mould had been regularly and rather abundantly watered, not a vestige of the disease appeared.

These are great practical truths, whatever may be the true value of the explanations that have been given of them. They prove to demonstration in what way the common white autumn mildew may be prevented, or at least mitigated. It must not, however, be supposed that the Vine mildew and the Potato blight will yield to the same remedial measures.

One thing, however, must be remembered by those who carry out the experiment standing at the head of this article. The water employed must be of the same temperature or nearly so as that of the roots. In the spring the heat of the water of wells and that of the soil are much the same, and therefore any water may be used to soak the ground; but as the season advances the temperature of the soil is much higher than that of wells, and then it becomes necessary to draw water from ditches, or ponds, or tanks. Cold water in July and August will do more harm to roots than the absence of water.

A NEW KIND OF MANURE is coming into the market which seems to deserve the serious attention of gardeners. It consists of *wool-combers' dressings*, and is so favourably spoken of by Mr. Scott of Crouch End, Hornsey, an experienced and trustworthy amateur, that we are induced to give his letter on the subject as prominent a place as we can find.

"Mr. J. SMITH, the gentleman who recently forwarded you a sack of manure, the combings or dressings of wool, has forwarded me your letter requesting to be informed the quantity required per rod of ground. I have made no exact experiment, but should say that a third of a cwt. would be ample. Whilst writing on the subject I may as well state that my experience of this stuff, either as a manure mixed with the ordinary compost for the growth of Vines, the borders being either in or out of the Vinery and in pots, is most satisfactory. Its use as a manure is twofold: firstly, as a manure; and secondly, and by far the most important, it is a most excellent mulching material—being a non-conductor, it keeps the warmth within the border, and prevents to a *very* considerable extent the evaporation which it is almost impossible to prevent in other materials used also as manures. I have this summer top-dressed all my Vines in pots with the exception of a few omitted by way of experiment, and the contrast in favour of those mulched was most marked—the effect of the mulching being to keep the entire soil in the pot warm and moist, and to encourage to an incredible extent the growth of rootlets on the surface of the mould, the roots forcing themselves up into the shoddy, and having the appearance of bristles, so thick and compact were the roots under the surface of the stuff. In a Vinery of 60 feet, the Vines of which are planted inside the house, I have hitherto found a difficulty in getting the borders into a sufficiently moist state; I now find no difficulty by giving them a good dressing of this stuff, 3 inches deep, water being required only once, where, without the material, I should have had to have watered at least three or four times. It is also very serviceable in the growth of Scarlet Runners, and I should say any kind of crop where the roots are of a fibrous character and keep close at home. My own experience however goes no further than its application to Vines. I have however no hesitation in believing that it would be equally applicable to fruit trees in pots generally."

We have no personal experience of the action of this substance, which we understand may be had for about 4*l.* a ton; but a sample sack that we have lately received from Messrs. HAYTER & Co., of Bromley-by-Bow, under the name of "Bromley Stercus," leads us to think that the action of woolcombers' refuse must be advantageous, and that it will probably act in the same way as woollen rags, so largely and advantageously employed in our Hop gardens. Similar substances, such as horn, hair, shavings of horn, have peculiar value, not only because of their richness in nitrogen, amounting to as much as 17 per cent. on an average, but because they decompose slowly, and thus maintain land in a permanent state of fertility. Moreover they keep the soil open, and this makes them preferable to blood. We conceive that this new manure may be particularly useful as a mulching in autumn, to be forked into the ground in spring.

New Plants.

226. MYOSOTIDIUM NOBILE, *Hooker, Bot. Mag., t.* 5137.

"This very lovely Borageineous plant, which cannot fail to call to mind the favourite Forget-Me-Nots of Europe, is an inhabitant of Chatham Islands, off New Zealand, S. lat. 44°, whence it was introduced to Europe through the medium of Mr. Watson, of St. Alban's, by whom a living flowering plant was exhibited at a meeting of the Horticultural Society of London, in March, 1858, and attracted much attention. With the inflorescence of a Myosotis, it has a fruit which, in the state of ovary, induced Dr. Hooker to refer the plant to Cynoglossum: but the fruit is quite different from the characters of both, approaching Omphalodes in the winged achenia or nuts, yet differing in the nature of that wing, not being in any way introflexed, nor are the nuts attached to the style, as in that genus. Its foliage is quite unlike any species of those genera, and we think it may justly be considered a new genus, ranking very near the Forget-Me-Nots. The whole stock of this choice plant is (we believe) in the possession of Mr. Standish, who sent the plant here figured to us in April, 1859.

"*Descr.*—Root perennial. Stem herbaceous, a foot to a foot and a half high, stout, succulent, terete, simple, leafy, glabrous below, pubescent above. Root-leaves numerous, very large (as large as a small Cabbage, *J. D. H.*), cordate, very obtuse and even retuse, quite glabrous, succulent, glossy, parallelo-venose, on very long thick petioles, which are grooved on the upper side, sometimes tinged with purple: upper leaves gradually smaller, at length sessile and obovato-spathulate. Corymb terminal, large, 4 inches across, compound, leafless. Calyx deeply cut into five, oblong lobes, hispid on the outside. Corolla with a short tube and large spreading limb, more than half an inch across, of five rounded lobes, of a blue colour, gradually becoming paler and almost white towards the margin, the disc with a dark-purple ray. Five yellow glandular scales (as in Myosotis, &c.) close the mouth of the tube. Stamens included, on very short filaments, arising from near the mouth of the tube. Ovary 4-lobed, depressed and quite flattened at the top. Style very short. Stigma two-lobed. Fruit of four, dorsally-compressed, nearly erect, sub-cordate, broadly-winged nuts or achenia, attached to a quadrangular receptacle, which is terminated by the short remains of the style. Seed ovate, acuminate, laterally attached."

This is the handsome perennial provisionally named *Cynoglossum nobile* by Dr. Hooker in our last year's volume, p. 240. It is quite deserving all the encomiums that have been passed upon it.

GOODWOOD.

FOUR miles north-east of the city of Chichester, and on the southern slopes of the South Downs, is situated the princely demesne of Goodwood, containing as it does the beautiful classic structure, one of the principal residences of his Grace the Duke of Richmond. The road is over a flat and fertile country, highly cultivated, and yielding crops of no ordinary character, from which some delightful peeps are obtained of the noble mansion—its domes and parapets peering over the magnificent trees in which it is so gorgeously embosomed.

The park comprises an area of 2300 acres of a highly varied character, the background extending over the top of the Downs—a chain of hills which skirts the south coast of Sussex—the mean altitude of which according to "Mantell" is 500 feet above the level of the sea; they are covered with a beautiful description of turf, composed of the finer Grasses, and for which the mountain masses of the chalk formation are so remarkable. It is magnificently wooded. The summits of some of the hills are well clothed with native Beech and Oaks; that on the eastern side is admirably covered with excellent specimens of Scotch Fir, which at this period of the season wear a decidedly glaucous and silvery hue, and are at all times exceedingly interesting by reason of the striking contrast they present to the large masses of deciduous native wood. The foreground is admirably broken into groups and masses of remarkably fine trees; many of the former are bordered with evergreen Oaks, which here form famous nursing trees and thrive remarkably well. The hoary under-surface of its beautiful leaves, too, contrasts admirably with the varied foliage of the other trees, producing a kind of neutral tint, which has a very pleasing effect. There are also many exquisite specimens of single trees distributed in commanding positions through the park, among which may be named in particular some enormous forms of Cedars of Lebanon, of the history of which Peter Collinson has left the following MSS. memorandum in his copy of "Miller's Dictionary."

"I paid John Clarke (a butcher, at Barnes, who was

very successful in raising Cedars and other exotics) for 1000 Cedars of Lebanon, June 8, 1761, 79*l.* 6*s.* in behalf of the Duke of Richmond. These 1000 Cedars were planted at five years old, in my 67th year, in March and April, 1761. I was at Goodwood in September, 1761, and saw these Cedars in a thriving state. This day, October 20, 1762, I paid Mr. Clarke for another large portion of Cedars for the Duke of Richmond. The Duke's father was a great planter, but the young duke much exceeds him, for he intends to clothe all the naked lofty hills above him with evergreen woods; great portions are already planted, and he annually raises for that purpose infinite numbers of Pines, Firs, and Cedars." (*MSS. notes communicated by Mr. Lambert to the Linn. Soc. Transactions*, vol x., p. 275.)

There is also a MSS. memorandum on the title-page of Miller's "Gardeners' Dictionary," in the library at Goodwood, to nearly the same effect, but adding the *locale* in the park and grounds where the trees were planted, and which was also probably inserted by Collinson's own hand. It is also recorded by Loudon in the "Arboretum et Fruticetum Britannicum," vol. iv., p. 2414, "Of the Cedars at Goodwood, the present Duke of Richmond informed us, in 1837, that 139 remain." Of these there are now some noble examples, and from the above record it would appear that they were raised from seeds 103 years, and planted in their present position 98 years since. In a low part of the park and near one of the carriage drives there are three beautiful specimens of somewhat formidable dimensions; one which had apparently lost its leader at the height of 5 feet, and from which have proceeded 80 other leaders; the whole is of a pyramidal character and forms as it were a clump of itself; it girths 24 feet and covers an area of 315 feet in circumference; it is named the sheep-shearing tree from the circumstance of the Duke's prize sheep being annually shorn under the ample shade of its magnificent branches. Another noble example girths 26 feet, and covers an area of 324 feet in circumference. The third is a singularly beautiful specimen, of a glaucous and silvery hue, contrasting admirably with the dense and deep green foliage of its noble compeers, in close proximity; it girths 22 feet, and covers with its spreading branches and massive foliage an area of 300 feet in circumference! Many other splendid examples of these magnificent trees are scattered about the park and pleasure ground, producing with their dark and densely covered horizontal forms a very decided and exquisite contrast to the vast masses and groups of noble trees with which this noble park and grounds are so richly adorned. Of late years many Deodars have also been planted in prepared ground on well-chosen spots, where they are sheltered and protected by fencing and nurse plantations; they are thriving well, and will soon wear an air of grandeur; their upright and weeping forms, densely covered with foliage of a pale green colour, will present a very striking contrast to the other trees, whether of a deciduous or evergreen character. On the left of the principal approach road, and immediately in front of the mansion, there is an admirable group of Cork trees, nearly 40 feet in height, the largest of which girths 10 ft. 6 inches, and the diameter of the space covered with its branches is 60 feet, thus rivalling in size the celebrated Cork trees of Spain. One of these trees had been earthed up the trunk some 3 or more feet on the formation of the road; it however got into ill health. The ground has since been removed from the bole, and the tree stands as it were in a well; the foliage again assuming the same healthy colour and appearance as the other trees. It is an interesting group, the dark green luxuriant foliage contrasting finely with the frosted fungous character of the swellings and rifts of the deeply furrowed rind.

The principal approach is that from Chichester, which enters the park on the south side by a simple gate and neat lodge, the latter constructed of dressed flints. This has a very clean appearance, set off as it is by the profuse way in which all about is gaily decorated with beautiful flowering plants. There are two other approaches from the eastern and western sides respectively, the gates and lodges of which are of the same useful and enlivened character as the other. The roads are broad and well directed; they unite immediately in front of the mansion at the southern and entrance point; the eastern approach is bordered on the right hand, a considerable length of its course, by a line of thriving Lime trees; and on the other by a wood which screens the northern side of the kitchen garden. From this approach an exquisite view is obtained, not only of the park itself and its highly varied surface, tastefully adorned as it is with gorgeous masses and noble forms of stately trees; but also of the whole frontage of the magnificent mansion, which is situated in the very lowest position in the park, in front of which there is a wide expanse of beautiful turf, which since I last saw it had been very much improved. I have seen the Duke of Richmond, with his distinguished visitors on a "Goodwood morning," inspecting his inimitable flock of Southdown ewes on this noble lawn, and that too with the dried Bents reaching nearly to their knees. A better management has since obtained, and under the direction of Mr. Clark, the present bailiff, the whole is now mown, an operation which not only produces a more dressed and suitable appearance, but also improves the quality of the pasture. From the entrance point the road winds across the open space, and bearing to the left is led by an easy ascent towards the summit of the Downs, at a considerable elevation. On the left hand side is situated the pheasantry, a relinquished chalk pit which had been formed on the side of the hill; it is of considerable dimensions, and is now enclosed by lofty flint walls. In the lowest part of the chalk excavation a pond has been formed, which is well stocked with gold and silver fish; the remaining portion has been turfed, and walks are led towards the summit, which is crowned with a noble specimen of Lebanon Cedar; the internal walls are well screened with evergreen shrubs, and the whole is interspersed with numerous examples of fine trees. At the northern end is the keeper's house, a very pretty building, and in an open space a little to the left is a long aviary, in which are numerous specimens of foreign birds remarkable for gay plumage, whilst white and green peafowl, gold and silver pheasants, with other glittering species, range or congregate at will, and give animation to this enchanting spot. A little further up the ascent, and near the top of the hill, is situated a very striking belvidere, locally known as "Cairney's seat," in the classic style of Venetian Italian architecture; it is built of Portland stone, and has an open portico or colonnade in front, and a banqueting room of considerable size on the second floor; it stands on a broad Grass terrace enclosed by a sunken wall. By the special kindness of the Duke of Richmond this beautiful building is placed at the disposal of the public, and is much resorted to by pleasure parties. From this spot a very extensive view of the coast of Sussex, as well as a portion of that of Hampshire, is obtained—a glorious panorama in a delicious climate—the vast intervening highly cultivated and well wooded plain beneath being studded on either side with towns, villages, substantial homesteads, and cheerful cottages with well-cultivated gardens; these latter nestle almost in every nook as well as along the line of every bay. In the centre the pointed spire of Chichester Cathedral rises up majestically over all, a noble object in this lovely scene. On the distant right lie the well-clothed islands of Hayling and Thorney, in their irregular and beautifully fringed outlines, severed as it were from the mainland by strips of ocean, brilliant by the reflection of the southern sun; beyond these the bare headlands of the Isle of Wight towering above the tide form the harmonising boundary. Looking onwards to the far east the whole is encircled by the blue waters of the English Channel, softening into sky, and lost in the horizon.

"And there the stately vessels come and go,
Spangling the waves, and spreading wings of snow."

Within this inclosure there is a shell grotto of architectural design and admirable workmanship; its length including an alcove or recess is 15 feet 6 inches, its breadth is 10 feet 6 inches, and the height to the top of the coved ceiling is nearly 11 feet. The lines of its cornices and plinths, as well as those of the pilasters, arches, and niches are of a purely Grecian character; the whole is covered with myriads of shells, of various colours and sizes, and all is arranged so as to preserve intact not only the severe geometric lines, but also to form panels of colouring on the walls, from which vases, wreaths, and cornucopias of flowers project—exquisitely formed of the same beautiful material, and conferring a certain degree of taste and finish on the whole apartment. The niches are filled with mirrors, and the floor is composed of black and white marble with panelling of horses' teeth. The whole was executed previously to the year 1750 by the delicate hands of Sarah the second Duchess of Richmond and those of her two daughters, exhibiting a degree of patient skill and untiring industry altogether unequalled, and one sees with regret the inroads that the silent hand of Time has already worked on this unique and superbly finished structure. From here the road ascends somewhat more rapidly, and is clothed on either side with masses of native wood until it reaches the top of another hill on which is situated the unrivalled racecourse, the embankments and levellings of which over the summit of these Downs have been formed at an enormous expense. The turf is of the most beautiful kind, and is kept in the most perfect order. The grand stand was built for the present Duke of Richmond about the year 1830, and is a very beautiful and appropriate erection capable of containing 3000 spectators; it is situated on an elevated and enclosed turfed terrace; it is 120 feet long, 70 feet wide, and 50 feet high. The refreshment rooms and offices are on the lower floor; a beautiful Doric colonnade adorns the front and ends of the building, and the principal floor as well as the roof are formed of a series of raised benches, from which without the least obstruction the most perfect view of the whole course is obtained. Near here is St. Roche's Hill, a conical Down, the summit of which is some 700 feet above the level of the sea, and is surmounted by a large circular encampment of unknown date. It has a deep fosse, with an inner and outer vallum, raised to the height of several feet, and inclosing an area of something like 5 acres in extent. There are also numerous barrows or tumuli to be met with on the range of these Downs, as well as the remains of an ancient British village, the pits and excavations of which had at a former period, when covered with turves or branches of trees, afforded shelter and habitation to some primitive race.

The mansion stands in a position altogether unmarked, and, as already noted, in almost the lowest situation in the park—a dead level. It is a noble pile erected at various periods, and in different forms of the classic style. It forms four sides of an irregular hexagon, the angles of the three principal fronts being terminated with circular towers, carried up to the height of the roof, and surmounted with hemispherical domes, which has an exceedingly good effect, adding a degree of dignity and elegance to the whole mass. The south or entrance front presents a façade of 160 feet; it has a projecting portico of Doric columns, supporting another of equal number of Ionic of Portland stone, and surmounted by an open balustraded parapet, over which, when in residence, the flag of his Grace the Lord-Lieutenant of the great county of Sussex flutters in the breeze. The other principal fronts extend on either side to a distance of 106 feet each; that on the western side was built by Sir William Chambers for the first Duke of Richmond. It is of Portland stone with a pediment in the centre. The south and eastern fronts were erected from the designs and under the superintendence of Mr. James Wyatt, for the third Duke of Richmond about the year 1800. They are built of squared flints, the corners are without bond of stone or bricks, and the whole being of the very best workmanship, has a very clean and beautiful appearance. The eastern front has a projecting centre surmounted by an open balustraded parapet.

The stables are situated at right angles to the western front, and with other offices unite in the general mass of building. They form a very handsome quadrangular structure, erected from a design of Sir William Chambers, by the third Duke of Richmond, of dressed flints with brick facings. The entrance is on the south side, under a noble pediment, supported on either side by Doric columns of Portland stone. The eastern side is surmounted by a cupola, with clock and sun-dial. These stables are admirably fitted up, and contain sufficient room for 54 horses. Before the windows of the western front of the house there is a very beautiful flower garden—the design of which is copied from the ceiling of the large library. It is well filled with the usual description of bedding plants, and the colours are in excellent contrast with each other. This garden is bounded on the right by the long line of stable buildings and offices, on the left by a lofty Holly hedge from the middle of the tower, the direction being in a straight line from the centre of the hexagon, of which the external walls of the mansion are the figure. The other side is separated from the approach road and the park by a substantial iron fence. The garden of the eastern front is bounded on the north by a range of conservatories, and by a lofty hedge and iron fence as on the western side. This garden is laid out in simple figures of considerable size, with ample Grass space between, and has in addition several raised baskets of different form and character, and all was exceedingly gay with choice flowering plants, and in the very best style of keeping and management.

The interior of the house is admirably arranged and fitted up; it contains an excellent suite of apartments alike noble in their proportions and superbly furnished; exceedingly rich in articles of *virtù* and taste; the walls of many of the rooms, galleries, and corridors are profusely adorned with beautiful paintings by celebrated masters, and many of the subjects are of the greatest historical interest and nature. The entrance is from the Doric portico on the south into a hall of noble proportions, 38 feet in length, 35 feet in width, and 18 feet high; it is divided by six Corinthian columns of Guernsey granite, the shaft of each being 13 feet high and 18 inches in diameter, the plinths being of black and white marble and the capitals of bronze. It contains many busts and other works of art, as well as the colours of the Royal Sussex Light Infantry Militia, of which his Grace is colonel, presented by his late Majesty William IV.; a tri-coloured banner with the inscription "Champ de Mai," taken after the capture of Paris in 1815, and also a banner of the great Gordon Clan with its motto "Animo non Astutia;" its walls are also adorned with many admirable paintings, amongst which are portraits of Robert Bruce and Charles I. and II.

The dining room and drawing room are apparently of the same size, 45 feet in length, 24 feet in width, and 18 feet in height. The walls of the former room are of scagliola, resembling polished Sienna marble and adorned with classical ornaments in bronze; there is an alcove at one end, in which are four busts by Nollekens. The walls of the latter room are hung with amber-coloured silk, striped, the curtains of the three windows, ottomans, sofas, chairs, &c., are of the same beautiful material, and the woodwork and cornices are gilt, producing an effect of a singularly magnificent character. There are four brilliant plate glasses of noble proportions, and two splendid highly polished Sienna marble tables, supported by florid carved work, finely gilt, the whole being replete with articles of great value, alike of interest and taste; conspicuous amongst which, under a glass shade, was an embroidered shirt of Charles I., the collar pointed and open. The room is lighted by two superb chandeliers suspended from the roof, as well as candelabra on the marble tables. The music room is a plain but elegant apartment, the walls of which are closely covered with some of the choicest productions of the old masters. In this room there is also a striking full length portrait of the present Duchess of Richmond, by Sir Thos. Lawrence. The libraries are beautiful rooms; the smallest contains a well selected collection of books, especially rich in volumes of prints, illustrated works, and foreign literature; they are arranged on open shelves, with a light staircase and gallery to obtain access to the books. The large

library is 35 feet long and 25 feet wide; the ceiling formed into compartments, which are filled with paintings by Riley, the subjects being taken from those discovered in the baths of Titus at Rome. A superb lamp is suspended from the ceiling; the walls are of salmon-colour, ornamented with gold medallions in bas-relief; and the drapery to the windows and furniture is composed of the richest silk of the same colour. This library contains 9000 volumes, and the books are arranged in lofty cases, inclosed in front by doors filled with light brass wire-work; the panels of the closet doors beneath them are painted with subjects taken from Sir William Hamilton's vases found in Herculaneum, and executed by the artist who painted the ceiling. These two rooms are also profusely ornamented with articles of taste and historical interest, as well as busts and many family portraits and miniatures. The billiard room is of noble proportions and replete with works of art, among which is the celebrated "Darnley picture." The tapestry drawing room is 35 ft. long and 23 ft. wide, the ceiling with the cornice and moulding are richly carved and gilt; the walls are hung with magnificent Gobelin tapestry, representing four scenes in the history of Don Quixote, admirably executed, and in excellent preservation. In this room under a glass case is a plaster cast by Nollekens from the face of William Pitt, taken a few hours after death. From here there is an excellent view through a vista to the dog kennels, a beautiful stone building, presenting a façade of 148 feet, having a massive centre with wings and connections on either side; the height of the centre portion of the building is 28 feet and that of the wings 18 feet. The duke's study and the duchess's boudoirs are neat rooms, and filled with works of art; the latter is circular, and contains a cabinet of the choicest agates set in gold, and amongst other beautiful pictures with which the walls are adorned there is an admirably executed cabinet-specimen of the present Duke of Richmond.

The supper room is a noble apartment, lighted by ormolu chandeliers from the roof; it is simply yet magnificently fitted up, the drapery of yellow satin, edged with gold, and the cornices are also gilt. The banqueting or ball room is a very magnificent room, and truly grand in its proportions, being 90 feet in length, 30 feet in width, and 25 feet in height; in the centre of the eastern side there is a recess, carried out for several feet, to nearly half its length, in which there are five large windows from which the room is lighted; in the centre of this recess, on an elevated stand, and under a lofty glass shade, is the trophy presented to the Duke of Richmond by the Peninsular veterans, as an acknowledgment of his services in advocating in his place in Parliament their claims to the war medal—a magnificent work of art executed in frosted silver, the subscription to which was restricted to the amount of 1*l.* to the officers, and to that of 1*d.* to the non-commissioned officers and privates. The entablature over the open space thus obtained is supported by four beautiful granite columns, the shaft of each being 13 feet high and 18 inches in diameter, the plinths and tori are of statuary and veined marble, and the Corinthian capitals of white scagliola. Pilasters corresponding with these terminate the walls on either side; they support a highly enriched entablature, which is carried round the room forming the cornice, the mouldings and enrichments of which are superbly gilt; the mouldings of the base of the columns are also continued round the room to form the skirting, and are gilded to correspond with the cornice. The orchestra gallery is at the lower end of the room, the railings in front of which are of a scroll pattern, also richly gilt. Four splendid mirrors adorn the apartment, one over each of the two chimney pieces, which are of statuary marble with Corinthian columns and cornice; another is in the centre of the room on the same side; and the fourth is placed at the upper end between the two doors opening into the drawing-room—a noble plate, with its massive frame nearly 16 feet in height, reaching from the marble step on which it rests to the lower member of the cornice. The drapery is white satin damask edged with gold. The dining table when laid out to its greatest extent for the visitors during the races, is decorated with gold and china vases—the former won at various periods by the duke's horses, the latter filled with choice plants in flower. All this has an exquisite effect, contrasting admirably with masses of crystal and silver with which the whole table is profusely adorned, and producing a scene of wonderful magnificence. The dinner on these occasions is served from the sideboard in the Russian style. Three magnificent ormolu chandeliers, each bearing 12 lamps, are suspended from the ceiling, and when lighted up the effect of the room is said to be exceedingly chaste and brilliant.

A door opens into the adjoining turret room, which is fitted up in a corresponding style, and leads into the conservatories, which extend eastward a distance of 137 feet, being half-span roofed, 14 feet 6 inches in width, and in three divisions; that compartment nearest the house is devoted chiefly to flowering plants or others remarkable for fine form or beautiful foliage, of which the Duchess of Richmond is said to be passionately fond. A row of beautiful china vases occupies the front of this house, and when I saw it in the early part of July, they were filled with excellent specimens of such plants as Dipladenia crassinoda, Croton pictum, Achimenes, sp., Ardisia crenulata, Cattleya Mossiæ, &c., and the stage behind was profusely covered with nice plants of Rhynchospermum, Farfugium, Cloves, Carnations, Pteris, Adiantum, Knight's Brugmansia, and Achimenes, with a host of other graceful plants in beautiful condition. The other two houses are principally devoted to the cultivation of Oranges, Camellias, &c., chiefly growing in the free soil, and in rude health; the back walls were densely covered with Heliotrope, the pillars with Luculia, Jasminum, Fuchsias, Clematis, &c., and baskets of Countess of Ellesmere Petunia, suspended from the roof, had a very good effect. There is a large stock of Azaleas, Camellias, Cytisus, Primula, and other winter-flowering plants, specially cultivated for the decoration of these houses during the winter and spring months. In an inclosed square a little distance behind these conservatories are to be found some very nicely constructed glass erections. An Orchid-house 30 feet in length and 15 feet in width is replete with some very nice specimens in excellent health, and in the early part of July I found many specimens of Aërides, Brassias, Stanhopeas, Oncidiums, Cattleyas, Saccolabiums, &c., finely in flower. A large pit used for forcing purposes in winter, and several ranges of frames and other pits were filled with excellent specimens of Heaths and other hard-wooded plants.

The mansion is well backed by a magnificent wood of 40 acres in extent, containing many noble examples of highly interesting trees, interspersed along the glades, drives, and avenues by which it is broken. A Turkey Oak, 95 feet in height, 8 feet 6 inches in girth, covering with its spreading branches and beautifully laciniated foliage and prickly fruit an area of 162 feet in circumference, is a splendid specimen. A Tulip tree is 90 feet in height, 8 feet in girth, and covers with its branches an area of 171 feet, densely and beautifully clothed with saddle-shaped leaves. An Evergreen Oak is 45 feet in height, 9 feet in girth, and the spread of its branches is 162 feet; there is also a remarkable growth of American Oaks, nearly 90 feet in height, the largest of which at 4 feet from the ground girths 10 feet; their beautiful broad shining foliage contrasts admirably with other Oaks, and they would no doubt have attained much greater dimensions had they been planted less closely together. An Oriental Plane in an open space in the park is also an object of great beauty; it girths 12 feet at some distance from the ground, and covers with its picturesque spreading branches an area of great extent. The whole of these beautiful trees have been planted 120 years. A number of Magnolia grandiflora, Sassafras, and Service trees were planted 100 years ago; but only one of the former remains, a mere wreck; the last of the Sassafras was destroyed by a storm three years since. A considerable portion of the eastern angle of this wood is fenced by a brick wall, which is covered with Roses and other climbing plants; the outside is screened from the park by beautiful specimens of Evergreen Oak; in the interior are the remains of an orchard, the centre of which is gay with flowers in symmetrically disposed clumps, and the other portion has been planted with ornamental trees, chiefly of an evergreen character. Here Pinus filifolia has attained a height of 26 feet, and is an admirable specimen; its beautiful branches prostrate to the turf. A large healthy plant of Paulovnia has flowered here freely for several years past. I also observed in this portion of the ground fine plants of Wellingtonia, Sequoia, Cupressus, Juniperus, &c. A little to the south of this spot there is an opaque roofed Orangery, 65 feet in length and 18 feet in width; a rectangular portion of ground in front being neatly arranged in symmetrical beds and gay with flowers. The Orange trees are also arranged in this garden during the summer months. A little onward to the right, and in an excavation of considerable size, subterranean passages have been formed, and the whole of the hollow surface covered with blocks of stone in confused arrangement, intended to represent the scene of an earthquake, but showing unmistakably how puerile are the efforts of man in imitating the effects and desolations of the great convulsions of nature. On the edge of this excavation there is a small thatched building intended to represent a hermitage, and also the side wall of a chapel or abbey in ruins—a simple abortion, producing no other image on the mind than that of mere stage trick. In this wood are also situated a temple and a few works of art. The outskirt is nicely broken towards the house on a beautiful ogee ground line, and has an admirable effect. At the head of a valley within the park, on the eastern side, is situated Molecomb, a very pretty villa or secondary residence in the classic style, occupied by the Earl of March, the view from which is terminated at a considerable distance by the new buildings of the dairy farm near the eastern entrance.

The kitchen garden, as already noted, is favourably situated on the southern side of the eastern approach road, and at some considerable distance from the mansion. The entrance is by wide doors, on the right of which is the gardener's house, a commodious building, the walls of which are slightly covered with nicely trained flowering plants, amongst which are Myrtles, Roses, Clematis, Golden Jessamine, and Passionflower. It contains 7 acres of excellent land of irregular surface and form, the ground sloping to the middle alike from the south and northern sides; it is surrounded by lofty brick walls tolerably well covered with excellently trained and highly productive trees. The south aspect borders are kept well mulched during summer, an operation from which the very best results are obtained. The garden is well sheltered by plantations on the north and western sides, and is bounded on the east by a noble tennis court, and the stables and loose boxes of the inn at Waterbeach, so well known to the frequenters of Goodwood Races. The walks are broad and firm; they are bordered by lines of dwarf standards and pyramidal fruit trees, alike of Plums, Pears, and Apples, in excellent condition, and kept in a fruitful state by frequent removal. Coe's Golden Drop Plums were a heavy crop, and, in this fine climate, usually ripen well. On the eastern side, in front of the tennis court, there was an admirable row of Fig trees laden with fruit. A little distance from the entrance there is an excellent building, containing an office, seed rooms, Mushroom house, root cellars, and fruit rooms. A little onward is an excellently constructed range of glass in two divisions, each 50 feet long and 16 feet wide, skilfully heated by hot-water pipes—the first house, a Vinery, was loaded with an excellent crop of beautifully coloured and well ripened Grapes. In a Peach house, the trees of considerable size, planted in March, had notwithstanding a tolerable crop, and were making short-jointed strong wood. In an enclosed square immediately in front of these houses is the Pine ground; it contains a span-roofed fruiting pit, 40 feet long and 7 feet wide, heated by hot water in brick gutters running round its entire length, with 2-inch return pipes under the beds; it has also the advantage of an external dung lining. This pit contained some remarkable specimens of good cultivation; the plants were growing in large-sized pots. Amongst others I observed a seedling Pine just then ready, which was described as being an excellent sort ripening equally well in the winter or summer months. In appearance it bears a striking resemblance to the Stubton Seedling, described in the Transactions of the Horticultural Society. There are several other ranges of pits, pigeon-holed and heated by dung linings from without and filled with admirable plants, clean and of a robust character. There is also a Cucumber house the same length as the other pits, heated by brick gutters and 2-inch return pipes, which answers exceedingly well. In the lower part of the garden on the right hand side there are two ranges of pits, 150 feet long each and of considerable width. One of these ranges was about to be repaired and remodelled with a span roof and improved heating apparatus. In front of these there are two houses of span-roofed construction—one a Vinery having an excellent crop of well ripened Grapes; the other a Peach house, in which the fruit was then ripening on a tree planted in the latter part of December. It had produced a heavy crop of beautiful fruit, remarkable in being a seedling equal in size and appearance to the best Noblesse. The colour appeared to me to be of a somewhat yellow tinge. These houses also contained several pots of Vines; they were well laden with very good well coloured and ripened fruit. A large open reservoir occupies the centre of the garden, supplied by rain-water from the ample roof of the tennis court.

There are two pieces of ground of some 4 acres in extent, which have of late years been reclaimed from a waste condition, and are now used as a nursery for raising trees and underwood, for supplying deficiencies in this portion of the estate. During the last 24 years I have made frequent visits to this delightful place, and have invariably found the gardens and grounds in the best style of keeping and management, and they have during the greater portion of this lengthened period been under the able superintendence of Mr. Cameron, under whose unwearied exertions they have been much improved; and of late years since the finer fruits and choice pot plants have been grown at Goodwood, he has produced many admirable examples of skill and perseverance. *D.*

Home Correspondence.

Tropæolum Lobbianum elegans.—Your correspondent "W. D." of Bradford, speaking of this Tropæolum, says he believes it to be the true Crystal Palace Nasturtium. I saw it in those grounds last year; it took my fancy much, and I was greatly at a loss how to obtain it. This spring I saw it advertised in your paper at a cheap rate, under the name of Tropæolum elegans, the true Crystal Palace variety. I lost no time in ordering two dozen, which arrived in due time, and truly pleased I am with it, for it well merits a place in every flower garden. Its brilliant flowers are seen at a great distance in mass. "W. D." is quite correct in his observations as to its habit. I may here add that it blooms abundantly with me. *J. Robertson, Holderness.*

Bowood Muscat Grape.—I was much disappointed at not seeing this Muscat at the Crystal Palace Show the other day, more especially as so much has been said about its being so superior to any other White Grape grown. One of your correspondents says, at page 726, that it needs no costly structure, and that any one possessing a Vinery of the most ordinary pretensions may grow it with as certain assurance of success as he does the common Hamburgh or Sweetwater, by ordinary attention and the least possible amount of artificial heat. Now, if that had been universally known, surely some growers would have exhibited it in opposition to the Golden Hamburgh. I think from what was seen of the Golden Hamburgh that it cannot fail to become a great favourite. The bunches shown, fine, however, as they were, were not so good as specimens of this Grape I have grown this year; my bunches were not quite so large certainly, but the berries were larger and better coloured. *J. B., Lincolnshire.*

Tom Thumb Nasturtium. — In your Number of Sept. 10, "S. H. F." asks whether or not this Nasturtium will come true from seed. As the raiser of it I beg to say that it will come true from seed, and I believe this to be the only successful way of propagating it. It

requires no more care than the common kind. The best way is to sow the seed where it is intended it should bloom. I am sorry to have to remark that some that was sold under this name last season was not the true variety. *W. H. Dunnett, East House Farm, Dedham.*

Warmth of the Season.—We spread some ashes (from a grocer's house) over part of the garden here; the ashes contained seeds of Orange, Citron, Lemon, and Vine, all of which have vegetated in numbers in the open air. *Winscombe, Somerset, Sept.* 8.

Pampas Grass.—When a plant of the Pampas Grass developes a host of flowering stems is it advisable to reduce the number, with a view to invigorate those that remain? Can anything be done to accelerate the flowering? *T.* [We do not think there would be any advantage in the first plan; and we do not see how the second object could be attained unless the plant is grown in a greenhouse. Give every plant a barrow of manure in autumn as a mulching.]

Plumbago Larpentæ.—Some years ago this was stated to be a half-hardy bedding plant, and was cultivated as such, but soon became generally discarded. It may however not be universally known that the plant is perfectly hardy, and that its beauty depends on its being long established in one spot. Two large clumps on rockwork at our nursery have stood for years; they commence flowering early in August, and continue to bloom abundantly till stopped by the winter frosts, presenting a dense mass of beautiful blue, admired by every one who passes. *Stephen Brown, Sudbury, Suffolk*

Societies.

BRIGHTON HORTICULTURAL.—The sixth annual exhibition of this Society took place in the Pavilion on Wednesday and Thursday last, and although the weather was somewhat unfavourable was well attended. The show itself was in every respect all that could be desired. Collections of flowering plants and of others remarkable for fine foliage were numerous; cut flowers were plentiful, and there was a good display of fruit. The great bulk of the plants was accommodated in the Pavilion itself, but others for which there was not room indoors were staged in tents on the neatly kept lawn which surrounds it.

Fine foliaged Plants were furnished by Messrs. Scougall & Miles of Brighton, Young of Dulwich, and others. Among them were fine specimens of Dracænas, Rhopalas, Palms, Araucarias, Cissus, Caladiums, variegated Hydrangeas, Aspidistra, Marantas, Crotons, Dieffenbachias, Farfugium, variegated Begonias, among which was the handsome B. Rex, Graptophyllum, and others.

Among Miscellaneous Stove and Greenhouse Plants were some well-grown specimens. They were contributed by Messrs. Miles, Parsons, Atkins, Gilbert, and Cameron. They consisted chiefly of Vincas, Rondeletias, Ixora coccinea and aurantiaca, Allamanda Schotti and cathartica, Cyrtoceras reflexum, the handsome Meyenia erecta, with large violet and white Gloxinia-like flowers; Crowea saligna, different varieties of Cape Heath, Clerodendron splendens, Dipladenia crassinoda and splendens, the latter remarkably well flowered; and Begonias.

Cape Heaths were contributed, but not in first-rate condition. The best came from Mr. Rhodes, of Stamford Hill. They consisted of Irbyana, verticillata, retorta major, M'Nabiana, exsurgens, and one of the better varieties of ampullacea. Mr. Young sent large plants of Ewerana, retorta major, M'Nabiana, tricolor rubra, Templeana, and Irbyana.

Orchids were confined to a collection from Mr. Cameron, gr. to the Duke of Richmond at Goodwood. It contained a nice specimen of Cattleya Harrisoniæ, loaded with beautiful lilac and white blossoms; Peristeria elata, Miltonia Clowesii, a good Stanhopea saccata, and Gongora aurea.

Of Fuchsias there were several extremely well-grown collections. That to which the prize was deservedly awarded came from Messrs. Balchin & Nell. They were conical plants about 4 feet in width at the base, and as much in height. The sorts were Queen of Hanover, Souvenir de Chiswick, Fairest of the Fair, Little Bo-Peep, Snowball, and Wonderful. The same firm also furnished a handsome plant of Venus de Medici, which was shown as a single specimen. Mr. Winton sent Fairest of the Fair, Wonderful, Rose of Castile, Tristram Shandy, and V. de Medici. From Mr. Gilbert came Banks's Glory, Venus de Medici, Souvenir de Chiswick, Pearl of England, Autocrat, and Silver Queen. Among other lots were some very tall plants, which being well furnished with bloom produced a fine effect.

Of Begonias there was a fine bank, the only fault of which was that the colours were too much alike. The plants were, however, well grown and beautifully flowered, especially those from Messrs. Scougall, to which a first prize was awarded.

Of Achimenes there were several collections, the best of which came from Mr. Holman. The sorts, which consisted wholly of well-known kinds, were literally masses of flower, and therefore unusually effective.

Gloxinias were also present. The best came from Mr. Miles, in whose group were fine plants of rubra, imperialis, white blotched with blue; Marie Van Houtte, white blotched with crimson; and cærulea.

Of Verbenas the best came from Mr. Evans. They were trained over flat wire trellises fixed on the rims of the pots, and when well flowered, as these were, had a fine effect. Contrasted with the upright system of growing them it was evident that this is the most natural way of managing them.

Among single specimens was a noble one of Cyanophyllum magnificum. It was some 4 feet in height, and had leaves not less than 2½ feet in length and 16 inches across. This was furnished by Mr. Miles, gr. to Messrs. Hannington & Sons, of Brighton, who were, as will be seen, large contributors to this show.

Dahlias were shown in admirable condition by Messrs. Turner, Keynes, Hopkins, Perry, Cook, Kimberley, and others. Seldom have been shown finer blooms than those contained in Mr. Turner's first stand of 36 varieties, and being well arranged as to colour they had a fine effect. The sorts on the whole were not very different from those shown at the Crystal Palace on the 7th inst. and therefore their names need not be repeated here. The following seedlings were shown in good condition, viz. Conqueror, Flower of the Day, Pluto, Queen Mab, Sir George Douglas, Dr. Boshell, delicata, Earl of Shaftesbury, Mrs. W. Piggott, J. Edwards, Neville Keynes, Wm. Dodds, Mrs. P. Bailliache, Lady Douglas Tennant, Salamander, Leopard, and the Rev. J. Dix. Of most of these descriptions have already appeared, and we were glad to see the good character formerly given them fully maintained on the present occasion.

Of Cut Roses there was a fine display. The best came from Mr. Mitchell, of Piltdown. Among his sorts were — HYBRID PERPETUALS: Auguste Mie, Cardinal Patrizzi, Comte de Nantouil, Comtesse de Chabrillan, Evêque de Nîmes, General Jacqueminot, Gustave Coraux, Jacques Lafitte, Jules Margottin, La Reine, Lord Raglan, Louise Odier, Madame Domage, Madame Knorr, Madame Rivers, Madame Vidot, Mathurin Regnier, Monsieur Montigny, Pauline Lansezeur, Prince Léon, Souvenir de la Reine d'Angleterre, Triomphe de l'Exposition, Victor Trouillard, William Griffiths. TEA SCENTED: Auguste Vacher, Comte de Paris, Gloire de Dijon, Louise de Savoie, Madame de Vitry, Souvenir d'Elise. NOISETTES: Cloth of Gold, Lamarque, Miss Gray, Narcisse, Solfaterre, and Triomphe de Rennes.

Messrs. Paul also showed fine blooms of most of the leading sorts of Roses.

Hollyhocks, both spikes and cut blooms, were exhibited, but neither were first-rate. It was evident that their season was past.

Of German Asters there were two charming collections, and of French kinds the display was equally good. Some of the blooms of the latter were as large and fine as those of Chrysanthemums shown in a cut state at exhibitions, and quite as double and showy.

Scarlet Geraniums made, as they always do, a grand display. The plants were both well grown and bloomed. Among the sorts there was nothing new. There were, however, some very fine specimens of Brilliant, and of the variegated varieties of Lady Plymouth and Prince of Orange.

Ferns were not sufficiently different from those mentioned in former reports to render a record of their names here desirable. They were, however, mostly finely grown plants, and served to add increased variety and interest to the exhibition.

The prizes offered for designs for flower gardens produced some five or six model gardens, some of them on a tolerably large scale. None of them, however, showed much skill in the art of designing. That to which the first prize was awarded consisted of beds on gravel arranged in a parallelogram. The second in addition to the usual flower garden had in connection with it miniature lakes, bridges, fountains, and rockery work. The third was what is termed a sunk panel, octagonal in shape, with Grassy sides and having flower beds on gravel in the bottom, which was reached by flights of stone steps in the banks. About the rest there was nothing worthy of remark, except perhaps that one designer had in his hurry forgotten to leave any entrance at all to the garden he had formed. Its boundary was circular and without opening! Hung up against the walls we noticed a tastefully executed plan of a terrace garden from Mr. Sanders, of Tedworth, who had also a perspective view of the interior of the fine conservatory at that place.

Fruit, both from the county of Sussex and from other quarters, was good. Pine Apples were however scarce; the best was a Queen, weighing upwards of 4 lbs., finely swelled and ripened, from Mr. Cameron, of Goodwood. Of Grapes there was a fair display. A beautiful basket of 12 lbs. of Black Hamburgh came from Messrs. Balchin & Nell, and Messrs. Lucas & Parsons also showed fine fruit of the same variety. Mr. Gilbert produced three beautiful bunches of Black Hamburgh, and the same kind of Grape was also shown in good condition by Mr. Fillery. The best Muscats were furnished by Mr. Gilbert, and we also noted some fair fruit of this description from others. On the whole however the best were very inferior to those shown the other day at the Crystal Palace by Messrs. Drewitt and Frost. Of Royal Muscadine good bunches came from Mr. Fowler, and of Barbarossa there were three good bunches.

Peaches were good for the season. Among them were fair examples of Kirke's & Walburton Admirable, Barrington, and Noblesse. Of the first-named sort beautiful specimens were shown by Messrs. Lambert and Daniels. Nectarines were scarce; the best was Pitmaston Orange.

Of Plums, good fruit of Coe's Golden Drop came from Mr. Lambert, and we also noticed Greengage, Jefferson, and Magnum Bonum in fine condition from other growers.

Cherries were wholly confined to the Morello, of which several fine dishes were shown.

Figs, for which Brighton and its neighbourhood are celebrated, were but scantily shown; but what were produced were really fine. Unusually large and fine fruit of the Brown Turkey came from Messrs. Dennis & Sharpe.

Melons were plentiful. Among them the best were Golden Perfection, Bromham Hall, and Beechwood.

Of Miscellaneous collections of fruit there were four. They came from Messrs. Kaile, Young, Barnet, and Gadd & Son. Mr. Kaile sent Coe's Golden Drop Plum, Walburton Admirable and Barrington Peaches, Black Hamburgh and Muscat Grapes, the latter unripe; Imperial Scarlet Melon, a Queen Pine Apple, and Williams's Bon Chrétien Pears. From Mr. Young came Late Admirable Peaches, Coe's Golden Drop Plum, Muscat and Black Hamburgh Grapes, a Queen Pine Apple, Brown Ischia Figs, Golden Perfection Melon, and Gansel's Bergamot Pear. In the other collections were Black Jamaica and Queen Pine Apples, Muscat and Black Hamburgh Grapes, Late Admirable Peaches, Golden Drop and Beechwood Melons, Morello Cherries, Blue Impératrice Plums, Williams's Bon Chrétien Pears, and Brown Turkey Figs.

Of out-door fruit considerably the best were some Ribston Pippin Apples from Mr. Cameron, of Goodwood. These were unusually large and fine. Other fruit of this variety, with a beautiful warm yellow ground colour suffused with red, were shown by Mr. Starr, of Brighton. Among kitchen Apples the best was a dish of Knight's Grange, a large and fine-looking variety, from Mr. Cameron. Others consisted principally of Alfriston, Hawthornden, and Emperor Alexander.

Pears were chiefly Williams's Bon Chrétien, of which we observed some fine fruit. Marie Louise was likewise shown in good condition, as was also Louise Bonne of Jersey.

Red and white Currants were furnished in excellent condition by Messrs. Lambert and Evans, and we also noticed a few Warrington Gooseberries. From Mr. Cameron came a dish of Guavas.

We must add that the award of the judges, a very important point in these meetings, was made public inconveniently late.

Notices of Books.

The Young Lady's Book. Bohn, 12mo, pp. 581. We are informed in the preface that this is a new edition of a work which it had become necessary to revise "in accordance with the improved condition of science." Without pausing to inquire how far costume, embroidery, writing, archery, riding, dancing, and similar subjects belong to the domain of science, we turn to science itself. Botany is one of the subjects revised "in accordance with the improved condition of science;" and done it is in a rather extraordinary way. It opens with an account of the Linnean classes and orders of plants, a subject belonging to the obsolete "condition of science;" and these are accompanied by woodcuts which certainly do not represent any improved condition of art or any extraordinary advance in scientific knowledge; for we find in the very first page the anther of some Heath (?) drawn as that of a Potato, another of a Salvia called Ginger, and that of some Laurus given for the stamen of a Berberry! The meaning of the word pistil is illustrated by two styles! Then at page the second the order *Monogynia* is said to be characterised by having only one pistil, while *Digynia* has two pistils!!—and so the learned gentleman proceeds in his task of revising Botany "in accordance with the improved condition of science." Can blundering go further? Let us hope that other subjects have fallen into better hands. A young lady at our elbow says: "I think the part about embroidery is very nice." Upon that point we willingly surrender our judgment.

Flora of Tasmania, Part IX. (Reeve), will, with one more part, complete this most important scientific work. The letter-press extends from Fungi into Algæ; the former from the pen of Mr. Berkeley, the latter from that of Dr. Harvey. The exquisite plates consist of Grasses, Ferns, Mosses, and Jungermannias. Of Fungi, out of 275 species no fewer than 133 are either British or European, while 95 others, although Tasmanian, belong to European types, thus leaving only 47 extra European forms. The common Mushroom (*Agaricus campestris*) is wild in the island.

Part 2 of Mr. Howard's *Illustrations of the Nueva Quinologia* (see page 673) contains figures of Cinchona micrantha, villosa (in fruit only), and macrocalyx, with a most elaborate examination of the commercial "barks" supposed to be produced by those species.

We have before us *Walpers' Annales Botanices Systematicæ*, vol. v. fasc. 3, in which will be found a long account of the classifications of Gesneraceous plants by Hanstein and by Oerstedt. It goes as far as Ebenaceæ. —Maximovicz's *Primitiæ Floræ Amurensis*, a thick 4to extracted from the Memoirs of the St. Petersburgh Academy. To this we shall advert hereafter.—Routledge's *Illustrated Natural History*, Part VI., chiefly occupied by Dogs.—*A Catalogue of the Libraries of Varnhagen v. Ense and Dr. Ernest Meyer*, (Williams and Norgate), which will be sold by auction at Leipzig on October 3, 1859. These are very rich in works on Natural History, Gardening, Forestry, and Rural

Economy. It is also announced that Dr. Meyer's Herbarium of about 19,000 species is to be disposed of for 300*l.* It is rich in plants from the Cape of Good Hope and Eastern Siberia.—*Celestial Objects for Common Telescopes.* By the Rev. T. W. Webb (Longmans), an extremely useful guide to inexperienced astronomers by one whose experience is considerable. It is accompanied by a capital map of the moon.—*Reminiscences of Scottish Life and Character.* By Dean Ramsay, 3d edition, (Edmonston & Douglas). One of the most amusing as well as interesting volumes that have been published in illustration of the peculiarities of the Scotch. No one acquainted with the nation can fail to enjoy the venerable author's lively, racy, capital anecdotic style. The book is a treasure to those who love quiet harmless fun.

TRADE LISTS RECEIVED.—Jas. Veitch, Jun. (Royal Nursery, King's Road) *Plant Catalogue.* Fifty-one pages of names closely printed in double columns sufficiently show the extent to which the collections in Mr. Veitch's nursery are carried. We believe we are right in saying that there is not a species among newly introduced hothouse or greenhouse or hardy plants that it does not include. We observe that Chamæbatia foliolosa, Pentstemon Jaffrayanus, Pothos argyræa, Spraguea umbellata, Abies (Picea) bracteata, and Thujopsis dolabrata are now procurable. The catalogue has also a Thuja Lobbii, said to be distinct from T. gigantea; but with that we are unacquainted.—Vilmorin and Cie. (Paris) *Catalogue des Ognons de Fleurs, et Fraisiers.* A large list of bulbs and bulb-like plants, to which is added a list of Strawberry plants, with brief descriptions. Madame Vilmorin is known to have made the varieties of Strawberry her special study, which renders this part of the list particularly interesting.—Edward Taylor (Malton), *Catalogue of Dutch Flower Roots and other Plants.* A nice little collection of good useful things.—Charles Turner (Slough), *Catalogue of Imported Bulbous Flower Roots and Tulips.* Mr. Turner's established reputation as a florist is a guarantee of the goodness of the sorts here selected. —Sutton & Sons (Reading), *Catalogue of Fresh Imported Bulbous Roots and other Sorts for Autumn Planting.* In addition to Dutch bulbs this list includes Pelargoniums, Carnations, Roses, and other things now likely to be wanted.—Dickson's and Brown (Manchester) *Catalogue of Flower Roots.* In addition to the usual lists of Dutch roots for autumn planting we find here many miscellaneous articles not always offered for sale, as well as some annual flower seeds. The Catalogue contains practical instructions for growing Hyacinths and Gladioli. Tye's Hyacinth glasses are recommended, and they deserve to be so.

Miscellaneous.

New Horticultural Garden at Kensington Gore.—A model showing how the grounds will be laid out in terraces for the garden of the Horticultural Society has just been placed in the South Kensington Museum, at the north end, near the entrance to the ornamental art rooms. Between the Kensington Road and Cromwell Road the ground falls about 40 feet, and using this fact in aid of a general effect, the ground has been divided into three principal levels. The entrances to the gardens will be on the lower level, in Exhibition and Prince Albert's Roads, and the central pathway upwards of 75 feet wide, ascending through terraces to the third great level, will lead to the winter garden. The whole garden will be surrounded by Italian arcades, each of the three levels having arcades of a different character. The upper or north arcade, where the boundary is semi-circular in form, will be a modification of the arcades of the Villa Albani at Rome. The central arcade will be almost wholly of Milanese brickwork, interspersed with terra cotta, majolica, &c., while the design for the south arcade has been adapted from the beautiful cloisters of St. John Lateran at Rome. None of these arcades will be less than 20 feet wide and 25 feet high, and they will give a promenade sheltered from all weathers more than three-quarters of a mile in length. The arcades and earthworks will be executed by the Commissioners for the Exhibition of 1851, at a cost of 50,000*l.*, while the laying out of the gardens and construction of the conservatory or winter garden will be executed by the Horticultural Society, and will cost about the same sum, the greater part of which has been already raised. *Times, September* 13.

Toad versus *Snake.*—On the gardener of a gentleman living at Runcton going to work a few mornings ago he was surprised to find a snake lying in one of the paths, wriggling about in a very uneasy manner, and evidently, to use a familiar phrase, "in a fix." He quickly got an implement, and without difficulty despatched the intruder, which was above 3 feet in length. But the singular part of the affair is to come. On examining the dead snake, his jaws and the parts which "there adjacent lie" were found to be enormously distended, and the cause of this was soon ascertained to be a large toad—still alive—which, in order to prevent the unpleasant operation (to it) of being swallowed by the snake, had evidently resorted to its well-known power of blowing itself out, and thus at the time the gardener came upon the scene there was a deadly conflict going on between snake and toad, the former exerting its faculty of almost unlimited distension of the jaw, the latter its almost unlimited power of bodily expansion. The snake, at the moment of the gardener's interference, was clearly in a very uncomfortable position; it had got more than it could eat The toad, too, could not have been easy in its feelings, finding itself gradually going down, down. However, it survived the contest, and was extricated and set at liberty by its good friend the gardener. *Brighton Herald.*

Calendar of Operations.

(For the ensuing Week.)

PLANT DEPARTMENT.

CONSERVATORY, &c.—As formerly recommended pay particular attention to plants for autumn blooming; they should be placed in a favourable position to perfect growth, when they may be gradually brought into bloom. In addition to Aphelandras, Justicias, Eranthemums, Poinsettias, and other winter blooming plants, a good stock of Begonias should be pushed on, as scarcely any plants are more useful for the purpose. A few Oranges, Gardenias, and Francisceas, which have been a long time at rest, may be removed to warmer quarters for an early bloom. Let everything be done slowly, or a start into growth will be the result, without bloom. A few dozens of Calceolarias, Salvia patens and gesneræflora, and the tall scarlet Lobelias, should now be shifted into their blooming pots. They will add much to the display in the conservatory during the late autumnal months. In addition to the above the scarlet and pink-flowered Horse-shoe Geraniums in pots should be removed under cover and kept growing. Water Chrysanthemums with liquid manure. Where dwarf blooming plants are wanted a quantity may be layered in 3-inch pots; for this purpose plant the old stools in the open border, when the layering can be easily managed. The potting of Hyacinths, Tulips, and Narcissus for forcing should now be proceeded with; select firm, well-ripened bulbs; after potting plunge them in ashes behind a north wall, and place a frame over them. Guernsey Lilies should now be obtained and potted forthwith, keeping them cool till the blooms are fairly open. Make a good sowing of Mignonette for the winter and early spring supply.

FORCING DEPARTMENT.

VINERY.—Grapes ripe, or approaching that state, will require abundance of air. If the weather should prove wet make fires by day, and allow free ventilation during night. Means for ventilation should be contrived independent of the sashes, and when such is the case a thorough circulation of air can be maintained in all weathers; the advantages of this will be known by those who are obliged to keep Grapes through the damp dark weather of November and December, which in houses imperfectly ventilated is difficult. The apertures should also be protected by copper-wire netting or some material which, while it will admit air freely, will prevent the admission of insects. Bunches of ripe Grapes should be frequently looked over, to remove decayed berries. Where very early Grapes are desired, and the wood is perfectly ripened, means should be taken to throw the Vines into a state of rest; to assist this the Vines should be tied together and protected from the sun by mats or a temporary framing of boards, exposing them at night to the coolness of the atmosphere. Vines to be started in October may be pruned at once. For the above reasons Vines in pots for early forcing, which have well ripened their wood, should be removed to the shade of a north wall; the practice applies equally to Peaches, Nectarines, or Cherries in pots, intended to be started early. The trees in the early Peach houses should be lightly brushed over with a small bunch of spray, to remove any ripe leaves from the shoots, that the sun and air may get free access to the wood. Pay every attention to the last crop of Melons; let the walls be washed once or twice with sulphur wash, to keep down red spider. As the fruit will be set, fresh growths should be pinched out, that the energies of the plant may not be uselessly diverted from the swelling fruit. Keep up the bottom-heat to 85°, and allow air liberally in fine weather; those in frames must have the top-heat kept up by linings, to guard against checks by rain or cold weather.

FLOWER GARDEN AND SHRUBBERIES.

The usual routine to insure good keeping in every department must be continued; leaves now begin to fall, and daily attention will alone serve to keep everything in order; as most of the new things on trial are in bloom and have grown sufficiently for their habit to be ascertained, notes of such as appear worthy of future notice should be made, and their propagation at once proceeded with. Phloxes, Pentstemons, Delphiniums, Pansies, and similar things struck early should now be transferred to nursery beds, to wait till the regulation of the herbaceous ground and borders; make memoranda of the height, colour, time of flowering, &c., of each new plant in this way that comes under notice, that in re-arranging them a proper admixture of colours may be planted; and at the same time regard can be paid to the time when the borders are expected to look the most gay, by selecting kinds accordingly. Beds for early spring bulbs should now be got in readiness; a mixture of sandy loam and decomposed leaves or cow-dung will form a good compost, adding sharp sand where the loam is at all strong; in this Hyacinths, Narcissus, Tulips, Gladiolus, Anemones, &c., will thrive. Obtain some of the spring-flowering varieties of Scilla; the blue of these charming little plants is very striking in early spring. This is a good time to divide and plant out Pansies for spring bloom. Polyanthuses, too, will require some care. Dahlias are now in full glory, consequently will require considerable attention; shading blooms for exhibition, trapping vermin, watering, &c., with a sharp look-out for those blossoms from which it is intended to gather seed; early flowers, provided they are well formed, are the most desirable, and as they die off the decayed petals should be removed. Look well after Carnation and Picotee seed; when well swelled, the calyx may be slit down on one side, to allow the escape of moisture, which otherwise would prove injurious.

HARDY FRUIT AND KITCHEN GARDEN.

Proceed with gathering the more early kinds of Apples and Pears as they ripen, and see that the fruit rooms are properly cleaned for their reception. Peaches, &c., should be gone over each morning, and those gathered that appear getting ripe. The above, and the better sorts of Plum, are always higher in flavour when gathered and kept in the fruit room a day or two before being sent to table. In the Kitchen Garden the principal work will consist in carrying out the culture of growing crops, directions for which will be found in former Calendars. Endive, Bath Cos, and one or two sorts of hardy Cabbage Lettuce should be still planted on south slopes to afford a supply for winter. A good plot should likewise be planted with Cabbage plants.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.
For the Week ending Sept. 15, 1859, as observed at the Horticultural Garden.

Sept.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Min.	Mean	Temperature of the Earth 1 foot deep.	Temperature of the Earth 2 feet deep.	Wind.	Rain.
Friday 9	12	29.876	29.805	69	42	55.5	63	61½	S.W.	.00
Satur. 10	13	30.181	30.054	69	33	51.0	61	62	W.	.00
Sunday 11	14	30.290	30.222	68	34	51.0	60	61	W.	.00
Mon. 12	○	30.238	29.959	71	47	59.0	60	60½	S.W.	.04
Tues. 13	16	29.748	29.614	61	40	50.5	61	60½	W.	.42
Wed. 14	17	29.550	29.477	62	43	52.5	59	60	N.E.	.02
Thurs. 15	18	29.596	29.459	66	41	53.5	59	59½	N.	.01
Average		29.925	29.789	66.6	40 0	53.3	60.4	60 7		.49

Sept 9—Cloudy; fine; very fine.
— 10—Quite clear; fine; dry air; cold at night.
— 11—Clear; fine; cold; nearly freezing at night.
— 12—Foggy; very fine; rain at night.
— 13—Overcast; cloudy and fine; heavy rain.
— 14—Rain; showery; fine at night.
— 15—Fine; very fine throughout.
Mean temperature of the week, 4 deg. below the average.

RECORD OF THE WEATHER AT CHISWICK.
During the last 35 years, for the ensuing Week, ending Sept. 24, 1859.

Sept.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 18..	66.6	44.9	55 7	15	0.81 in.	2	7	2	1	2	9	5	5
Mon. 19..	66.6	45.9	56.3	15	0.60	3	8	3	1	5	6	4	3
Tues. 20..	66.9	44.0	55.5	14	0.45	3	6	3	1	3	6	6	6
Wed. 21..	66.9	45.1	56.0	16	0.50	2	4	6	2	6	5	6	3
Thurs. 22..	67.2	46.2	56 7	15	0.40	1	11	9	2	3	7	5	2
Friday 23..	66.5	46.7	56.6	16	1.21	1	6	7	2	6	6	5	1
Satur. 24..	65.7	45.3	55.5	15	0.75	2	7	2	1	4	10	6	1

The highest temperature during the above period occurred on the 20th, 1843, and 24th, 1832—therm. 81 deg.; and the lowest on the 20th, 1856—therm. 29 deg.

Notices to Correspondents.

BOOKS: *Pool.* Certainly; Lindley's School Botany.—*H B.* There are some useful gardening articles introduced into Knight's excellent and very cheap English Cyclopædia of Arts and Sciences, of which vol. 2, with 1018 pages, is just completed up to the word "Cohort."

CLOVER SEED: *H V.* It is the Cuscuta trifolii or Clover Dodder, the subject of a leading article last week on the Agricultural side of this Paper.

CRICKETS: *Sub.* Trap them by means of wide-mouthed pickle bottles baited with a little treacle and water; the bottles being so sunk or placed that the crickets can get into them. Penny's paste has also been used for destroying them with complete success. See p. 154 of our volume for 1856.‡

DISEASES: *J C Y.* Your Laurel leaves in an early stage of growth were affected by spots of water settling upon them, and chilling the tender tissue beneath. We have seen many similar cases. There is no insect on your specimens. *M J B.*

FUCHSIAS: *W Green.* Your seedlings are handsome; but not more so than others possessing the same colours already in cultivation.‡

GISHURST COMPOUND.—When wood is hard and leaves are off as is the case *in winter*, 4 oz. to a gallon is not too strong. It was an accidental oversight to say 4 lbs.

GRAPES: *J O W* says—Some of my Black Hamburgh Grapes, not yet ripe, are beginning to shrivel and become sour. And he asks, what this is owing to? The shanking spoken of is brought on by the roots being unable to feed the Grapes from some cause or other. Probably the roots are in deep cold subsoil, or have been.

INSECTS: *A R.* The little caterpillar found on the Scabious is that of one of the smaller Geometrideous moths, most probably an Eupithecia or pug moth; we doubt whether its colours are modified by its food. It is one of the many interesting cases of deception produced by similarity with the food of the insect. *W.*

MR. VAN HOUTTE'S SCHOOL OF HORTICULTURE. We shall take an early opportunity of adverting to this important establishment.

NAMES OF PLANTS: We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have or could have undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*E S.* Potamogeton compressum. You can only keep it down by frequently harrowing the bed of the river, and so tearing it up by the roots. But it is surely not a great eyesore, and remember that it feeds water-fowl and keeps the water sweet.—*H S.* No. 2 is Phytolacca heptandra, a rare weed.—*Henry Jephson.* 1, Acer cretieum; 2, Quercus pubescens; 3, Quercus Ægilops, the Valonia Oak.—*Bêche.* New! on the contrary the plant is one of the oldest in our gardens; it is Moluccila lævis.—*Ambergate.* Corylus rostrata —*C P* and *R D.* Next week.—*H R.* Chenopodium Botrys; this is marked No. 2, but was not accompanied by No. 1.

SCARLET GERANIUM: *A Z.* Apparently a fine kind; but not in sufficiently good condition to judge accurately of its merits.

TYDÆAS: *Plymouth.* Very few of the plants thus named are worth growing. For the most part they are mere rubbish, and the best are too much alike. One sort is as much as any one will care to grow.

*** As usual, many communications have been received too late, and others are detained till the necessary inquiries can be made. We must also beg the indulgence of those correspondents the insertion of whose contributions is still delayed.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kensington, London, S. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

REDUCTION IN PRICE OF LAWES'S MANURES.

MR. LAWES begs to announce that he has this season reduced the price of the Manures manufactured by him, viz.:—

TURNIP MANURE	from £7 to £6	6
SUPERPHOSPHATE OF LIME	„ 7 to 6	6
MINERAL do.	„ 6 to 5	5
BARLEY MANURE	„ 8	0

Prof. Way and Dr. Voelcker have sampled from a bulk of 5000 to 6000 tons at his factories, and their report and analyses are given in full in Circular to be obtained on application at his office, 1, Adelaide Place, London Bridge, E.C., or of his local Agents.

N.B. Genuine Peruvian Guano direct from Messrs. GIBBS, Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures. American Cotton-seed Cake supplied.

LONDON MANURE COMPANY
(ESTABLISHED 1840),
Have the following MANURES ready for delivery:—
CORN MANURE FOR AUTUMN SOWING.
BLOOD MANURE FOR AUTUMN SOWING.
URATE.
SUPERPHOSPHATE OF LIME.
SUPERPHOSPHATE MINERAL.

The London Manure Company also supply PERUVIAN GUANO (direct from Messrs. Gibbs & Sons), SULPHATE OF AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of known value, all of which they warrant strictly genuine. Wholesale dealers supplied.

116, Fenchurch Street, E.C. EDW. PURSER, Secretary.

BURNARD, LACK, AND CO.'S CONCENTRATED SUPERPHOSPHATE OF LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.

CONCENTRATED TURNIP MANURE, equal in value to the preceding.

Of these Manures Dr. Voelcker says:—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."

Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to BURNARD, LACK, & Co., Sutton Road, Plymouth.

PERUVIAN GUANO.—The present price of this valuable Manure is 12*l.* per ton for 30 tons and upwards; 13*l.* 5*s.* per ton for 1 ton up to 30 tons.

And, in order to protect themselves against the purchase of adulterated mixtures and of inferior Guanos purporting to produce results equal to Peruvian, consumers are recommended to apply either to ourselves, to our Agents Messrs. GIBBS, BRIGHT, & Co., of Liverpool and Bristol; or to Dealers of established character, in whose honesty and fair dealing they can place implicit confidence. ANTY. GIBBS & SONS.

15, Bishopsgate Street Within, London, E.C.

FOWLER'S PATENT STEAM PLOUGH has gained the following prizes:—

The Royal Agricultural Society's Prize, at Warwick, July 1859, 50*l.*

The Royal Agricultural Society's Prize, at Chester, July 1858, 500*l.*

The Highland Society's Special Prize at Stirling, Oct. 1857, 200*l.*

And at other Agricultural Meetings in the United Kingdom, Prizes amounting to 175*l.*

For further particulars, prices, and Catalogues apply to JOHN FOWLER, JUN., 23, Cornhill, London, E.C.

HAYMAKERS, possessing the best features of Nicholson's Prize Machines, with recent improvements peculiar to those supplied and manufactured only for
RICHMOND AND CHANDLER, Salford.
Branch Establishment, South John Street, Liverpool.

N.B. The celebrated Bedford and Stamford Prize HORSE RAKES always in stock, with latest Patented Improvements.

HAY HARVEST.
NICHOLSON'S PATENT HAYMAKER, to which was awarded the First Prize of the Royal Agricultural Society of England at the last contested trial.

The celebrated STAMFORD HORSE RAKE has lately been much improved, and has obtained 26 Prizes at competitive trials.

MOWING AND REAPING MACHINES are performing their work most satisfactorily, and fully justify public expectation, cutting about 10 acres per day, at a cost of 9*d.* per acre.

Orders for the above machines should be given at once to RICHMOND & CHANDLER, Salford, Manchester.
Branch Establishment, South John Street, Liverpool.

SHAW'S TIFFANY is universally acknowledged to be the best, neatest, and cheapest material for shading Conservatories, and other Hothouses. Effectually securing Plants from the scorching rays of the sun, without obscuring the light. Also, for protecting the Bloom of Wall Trees from spring frosts, and Fruit from birds and wasps. Sold in pieces.

No. 1.—20 yards long, by 38 inches wide, 5*s.* per piece.
No. 3.—Double strength, 18 yards long, by 39 inches wide, 7*s.* 6*d.* per piece.
No. 4.—Treble strength, 18 yards long, by 39 inches wide, 9*s.* per piece.

A liberal allowance to the Trade when ten or more Pieces are taken.—JOHN SHAW & Co., Princess Street, Manchester.

"FRIGI DOMO."—Patronised by her Majesty, the Queen, the Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, and —Collier, Esq., of Dartford.

PROTECTION FROM THE SCORCHING RAYS OF THE SUN.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and, floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths. Two yards wide, 1*s.* 6*d.* per yard run; four, 3*s.* per yard. Also, an improved make for Shading Purposes. Three yards wide, 2*s.* 6*d.* per yard run.

ELISHA THOMAS ARCHER, whole and sole manufacturer, 7, Trinity Lane, Cannon St., City, E.C., and of all Nurserymen and Seedsmen throughout the kingdom. "It is much cheaper than mats as a covering."

WARNER'S IMPROVED LIQUID MANURE OR GENERAL PORTABLE PUMP.



These Pumps are fitted with WARNER'S Patent Bucket and Valve, and cannot clog in action. The barrel is made of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure on the stand, the legs of which fold together, and may be carried with ease by one man to tank or pond.

	£	s.	d.
Stand and Pump, with screwed tail pipe, fitted with strong brass union for suction pipe	2	15	0
If fitted with barrel of planished copper	3	4	0
Stand and Pump, with plain tail pipe, for tying on suction pipe	2	9	0
2-inch patent rubber and canvas flexible suction pipe, on wires, either 10, 12, or 15 ft., per foot	0	2	2

May be obtained of any Ironmonger or Plumber in town or country, at the above prices, or of the Patentees and Manufacturers, J. WARNER & SONS, 8, Crescent, Jewin St., London, E.C.

WARNER'S PATENT VIBRATING STANDARD PUMPS.

PATENT CAST-IRON PUMPS for Farms, Cottages, Stable Yards, &c., where the Well does not exceed 28 feet in depth; fitted with WARNER'S Patent Metal Bucket and Valve, which cannot clog in action. These Pumps can be made right-handed, left-handed, or with handle opposite the nose by removing four screws only.



Diameter of Barrel.	Height.		£	s.	d.
2¼ in.	short 1 ft. 7 in.	Fitted for lead, gutta percha or cast iron flanged pipe as required.	1	5	0
2½ „	long 3 „ 3 „		1	10	0
3 „	ditto 3 „ 6 „		2	4	0
3½ „	ditto 3 „ 6 „		2	9	0
4 „	ditto 3 „ 6 „		2	13	0
2½ „	short, with 15 feet of Lead Pipe attached, ready for fixing		2	10	0
2½ in.	long ditto ditto	ditto	2	14	0

The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.

May be obtained of any Ironmonger or Plumber in Town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin Street, London, E.C.

Every description of Machinery for Raising Water by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

TO MILLERS AND OTHERS.

BOVILL'S PATENTS FOR GRINDING CORN INTO MEAL AND FLOUR.—A Bill in Chancery for an injunction to restrain the Patentees, their inspectors, mortgagees, and those claiming under them, from receiving any royalties or other payments from licencees and other persons using the inventions protected by the above letters patent, was on the 26th day of August inst. filed by me, the undersigned JAMES PONSFORD, and such injunction will be moved for as early as practicable. A receiver and manager will also be applied for to collect all royalties and premiums due, and to become due, from licencees, and all other persons in any way using the said inventions. All persons using the said inventions and liable to pay royalties, premiums, and other monies, in respect of the said letters patent, are hereby required not to pay the same to the Patentees, or to the inspectors of their estate, mortgagees, or incumbrancers, but to keep an account of such monies, to abide the result of the said suit.

Dated the 29th day of August, 1859.

JAMES PONSFORD, 66, Queen's Gardens, Paddington.

WEST OF ENGLAND AND SOUTH WALES LAND DRAINAGE AND INCLOSURE COMPANY.
Established in 1844.
INCORPORATED BY ACT OF PARLIAMENT IN 1848.

Draining, Inclosing, Irrigating, Warping, Road Making, and all kinds of Land Improvements, executed on Entailed, Mortgaged, or other Properties, and the whole cost can be made a Permanent Charge on the Lands, or redeemable in a certain number of years. BIDWELL & BRODIE, Secretaries.

Offices: Exeter; and 30, Parliament Street, London, S.W.

THE LANDS IMPROVEMENT COMPANY.—Incorporated by Special Act of Parliament in 1853.—2, Old Palace Yard, Westminster, S.W. To Landowners, the Clergy, Estate Agents, Surveyors, &c., in England and Wales and in Scotland.

The Directors beg leave to announce that the Company's Amendment Bill, 1859, has received the sanction of the Legislature. The Company now advance money, unlimited in amount, for the following works of Agricultural Improvement, the whole outlay and expenses in all cases being liquidated by a rentcharge for 25 years.

1. Drainage, Irrigation and Warping, embanking, Inclosing, Clearing, Reclamation, Planting for any beneficial purpose, Engines or Machinery for Drainage or Irrigation.
2. Farm Roads, Tramways and Railroads for agricultural or farming purposes.
3. Jetties or Landing places on the sea coast or on the banks of navigable rivers or lakes.
4. The erection of Farm Houses, Labourers' Cottages, and other Buildings required for Farm purposes, and the improvement of and additions to Farm houses and other buildings for farm purposes.

Landowners assessed under the provisions of any Act of Parliament, Royal Charter, or Commission, in respect of any public or general works of drainage or other improvements, may borrow their proportionate share of the cost, and charge the same with the expenses on the lands improved.

No investigation of title is required, and the Company being of a strictly financial character do not interfere with the plans and execution of the Works, which are controlled only by the Government Enclosure Commissioners.

Under the Company's Acts, tenants for life, trustees, mortgagees in possession, incumbents of livings, bodies corporate, certain lessees, and other landowners are empowered to charge the inheritance with the cost and expenses of the above improvements, whether the money be borrowed from the Company or advanced by the Landowner out of his own funds, and owners in fee may effect these improvements of their Estates without incurring the expense and personal responsibilities incident to mortgagees, and without regard to the amount of existing incumbrances.

For further information, and for forms of application, apply to the Honourable WILLIAM NAPIER, Managing Director, 2, Old Palace Yard, Westminster, S.W.

LAND IMPROVEMENTS.—The GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY are empowered by Act of Parliament to assist the Owners of Land in carrying into effect the following Improvements, and charging the whole outlay and expenses on the property improved.

I. All Works of Drainage, Irrigation, Warping, and Embankment.

II. The erection of Farmhouses, Cottages for Agricultural Labourers, and all kinds of Farm Buildings.

III. The construction of Roads.

IV. The Grubbing and Clearing of Old Woodlands, Enclosing, Fencing, and Reclaiming Land.

The Landowners by whom any of these Improvements may be executed are—Tenants for Life, Trustees, Mortgagees in Possession, Guardians, Committees of Incompetent persons, Married Women, Beneficial Lessees for Lives or for a Term exceeding 14 years, Corporations, Ecclesiastical or Municipal, Incumbents, Sequestrators, Charitable Trustees, &c.

The Owners of Estates not entailed, who may be desirous to avoid the expense or inconvenience of a Legal Mortgage, may also avail themselves of the powers of the Company's Act to charge their estates with an outlay in improvements.

In all cases the whole cost of the improvements, with the attendant expenses, may be charged on the Estate, the term for Building Works being limited to 31 years, but for all other improvements being capable of extension to 50 years.

No investigation of title being required, and the charge not being affected by Incumbrances, no legal expenses are incurred.

Operations under the Company's Act are divided into two principal branches; one where the Landowner designs and executes the improvements by his own Agent and merely requires a loan from the Company to charge the Estate,—the other where the Company undertake the entire responsibility of the Improvement and obtain repayment by way of Rent Charge. In the first case the plans, specifications, and estimates prepared by the Landowner's Agent are forwarded to the Company to be submitted for approval to the Inclosure Commissioners. As soon as the sanction has been given the Landowner proceeds to execute the works, and the Company having conducted the business through all the official forms, complete the charge on the estate when the works have been passed by the Commissioners, and repay the Landowner the amount agreed upon.

In no part of the business is there any control upon a Landowner except by the Inclosure Commissioners. The Company never interfere, except at the special request of the Landowner or his Agent, and only to such extent as may further the objects he has in view.

In the other case, where the Company are required to execute the works, a report and estimate of the Improvement are sent to the Landowner, and having been approved, the plans are then prepared and the works—either submitted to public competition or entrusted to their own staff—are carried on to completion, and the amount of the actual expenditure only, approved by the Inclosure Commissioners with the Company's agreed commission and the Commissioners' expenses, finally charged on the Estate for the term fixed by the Landowner.

The Company also execute Drainage and all other Works of Land Improvement on Commission for the Owners of Estates not Entailed who may wish to charge the outlay on the property through the simple and inexpensive process of the Company's Act.

Applications to be addressed to WILLIAM CLIFFORD, the Secretary, at the Offices of the Company, 52, Parliament Street, London.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, London, S.
Principal—J. C. NESBIT, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

ROYAL AGRICULTURAL BENEVOLENT COLLEGE FOR THE RELIEF OF DECAYED FARMERS, THEIR WIDOWS AND ORPHANS.

Noblemen and gentlemen interested in Agriculture, desirous of promoting this object, will please fill up and forward a Form, as annexed.

450 influential names are enrolled to this date.

Tiptree Hall, Sept. 17.

Sir,—I hereby request you to place my name on the list of the Promoters of the Royal Agricultural Benevolent College, provided no pecuniary responsibility (beyond a subscription or donation) attaches to such Association. Name.....
Address.....
Date .....

To J. J. MECHI, Esq, Tiptree Hall, near Kelvedon, Essex.

SMITHFIELD CLUB CATTLE SHOW, 1859.—The ANNUAL SHOW of FAT CATTLE, SHEEP, and PIGS will take place on the 6th, 7th, 8th, and 9th December, at the Bazaar, King Street, Portman Square.

The Prize List contains separate classes for Devons, Herefords, Short-horns, Sussex, Norfolk or Suffolk polled, Long-horns, Scotch horned, Scotch polled, Irish, Welch, and cross or mixed breeds. Also Long-woolled Sheep, cross breeds, Short-wools, and Pigs. In addition to the large amount offered in money prizes, there are also 50 Silver and 5 Gold Medals. The following forms of Certificates are now ready, and intending Exhibitors in applying for them need only quote the letters and state how many of each they require.

CATTLE.	SHEEP.
Form A. Ox or Steer.	Form D. Pen of 3 Wethers.
„ B. Cow or Heifer.	
„ C. Ox or Cow in Extra Stock.	„ E. One Wether or Ewe in Extra Stock.
PIGS.	
Form F. Pen of 3 Pigs.	Form G. One Pig in Extra Stock

The Entries finally close on November 1.

Prize Lists with rules and regulations and Forms of Certificates to be obtained of B. T. BRANDRETH GIBBS, Hon. Sec., corner of Half Moon Street, Piccadilly, London, W.

N.B. All communications on the Club's business should have the words "Smithfield Club" outside, to distinguish them from private letters.

The Agricultural Gazette.

SATURDAY, SEPTEMBER 17, 1859.

AN angry discussion has been proceeding during the past month, chiefly between two of our leading agricultural implement makers, though others have taken part with one or other of the disputants—the relative merit of rival ploughs being the point of disagreement. Messrs. HORNSBY, conceiving themselves hindered by the terms of a bond

under which the principal agricultural machine makers had voluntarily placed themselves, could not compete at Edinburgh for the prize offered by the Highland Society for the best plough, and accusing Messrs. HOWARD, who did compete, and who won the prize, of disregarding the bond in question, they challenge them for 100*l.* to submit the two ploughs to the judgment of three gentlemen well qualified as judges whom they name. Messrs. HOWARD in their reply point out that the terms which bound Messrs. HORNSBY and themselves were no hindrance to the Edinburgh competition, and they very reasonably decline submitting their plough to judges nominated by their opponents.

No advertisement of the plough-making capabilities of the two firms could be devised better calculated to draw the attention of agriculturists to the particular merits of this or the other implements of their construction than a controversy into which the correspondents of the Agricultural Journals should be drawn, and about which the interest of their readers should be thus excited. We believe, however, that the columns of this and other journals set apart especially for advertisements are sufficiently well adapted for their purpose, and feeling certain that whatever its importance to any new competitor for custom, the discussion has had little real importance for the agriculturist, we have left those interested to take the usual way of obtaining any publicity they might desire.

—— Another unusually severe illustration of the extreme danger of allowing children the use of lucifer matches as playthings has lately occurred at Willingham, in Cambridgeshire, where houses, cottages, barns, and the rickyards of six or eight farms were destroyed to the amount in all it is estimated of 10,000*l.* The following is the report:—

"It now appears, from the inquiries instituted, that the disaster, which originated on the premises of Mr. R. READ, was caused through the carelessness of a lad nine years of age, his son. This boy, on the morning of the fire, left home to tend some pigs in the field, and took a box of matches with him, telling his mother that he intended to light a fire in the field. He did not do so, but on his return put the pigs into the stye, assisted by his grandmother, who then left him and proceeded into the house. The boy then went down the stackyard, intending to get some Pears from the orchard, and when near one of the stacks he foolishly struck a match on a stone and threw it in a burning state on the ground. Some loose straw unfortunately ignited, the flames spread to the stacks, and the whole village in a few hours was in a blaze. The hapless author of all the mischief went in and told his grandmother, and, what he had done being strongly suspected by the police, he was taken before one of the local magistrates. The facts stated having been elicited, he was discharged on his father's entering into recognisances that he should appear for judgment when called upon. The offices which have suffered by the fire are the Unity, Suffolk, County, Manchester and Liverpool, Yorkshire, Norwich Union, and Alliance."

—— A letter in the *Times* of September 12 revives the question as to the lowness of farm wages in Dorsetshire. The writer quotes a paragraph to the effect that a labourer in the harvest field, on whom a fine had been inflicted for having a hare in his possession, was allowed a fortnight in which to pay the same because his wages were only 8*s.* a week. And on this he adds:—

"It cannot be denied that other cases might be found of wages even at 7*s.* or 6*s.* a week in this county, and some of them cases of great injustice. But a question, nevertheless, should, in all instances, be asked on each of these points:—

"Whether the man be an able-bodied labourer?

"Whether he be a diligent and honest one?

"Whether his children living with him do not earn nearly or entirely their own maintenance?

"And whether his wages be calculated on the basis of ten or eight hours' labour in the course of the day?

"It is evident that the answers to the first two questions will determine the adequacy or otherwise of the remuneration. The answer to the third will show what are the aggregate earnings of the family (three children, for instance, at 4*s.*, 5*s.*, or 6*s.* a week each, adding greatly to the common stock), and a reply to the fourth is of particular importance, because a system has existed from time immemorial in several parts of our southern counties of making engagements at so much a week for eight, and not for ten hours of daily work.

"This last is one cause of the lowness of wages; yet the labourers are so attached to the system that when my principal tenant in the parish in which I reside, being desirous to put his arrangements on the footing of those to which he had been accustomed, offered an increase of wage in proportion to the increase of work, his offer was universally rejected.

"It should, moreover, be asked whether the 8*s.* or 7*s.* a week, or whatever it may be, represent the full receipts of the labourer; because we have a system in these parts—a bad one, it is true—of giving part in money and part in assistance of fuel, Potatoes, &c."

It is evident that only the 1st, 2d, and 4th of the above questions will help to ascertain the value of labour in Dorsetshire—the third is entirely irrelevant, and the cases subsequently quoted in which the family of "G. P." earns 1*l.* 6*s.* 7*d.* weekly, and that of "W. F." 15*s.* 1*d.* a week do not throw any light on the remuneration given by the master for a certain period or quantity of labour. The allotments, too, which the labourers receive cannot, unless indeed these plots be given free of rent, be considered as remuneration given for labour done upon the farm.

It is plain from the letter in the *Times*, and from the way in which it there appears that wages in Dorsetshire are paid only partly in money and partly in the form of perquisites, as cottage, fuel, Potatoes, &c., that labourers there are more liable to treatment according to the will of the master and the personal feeling which he bears towards his servants individually than is generally the case. Of course there are two opinions of the merits of such a condition of things. One will say: "And a very fortunate thing for them, too. Merit is thus sure to be rewarded; a man is not so able to waste his means at the public-house, and the quiet, steady workman and good parishioner is certain to get on." Another will reply: "Poor fellows, in any case it makes and keeps them children more or less. They are more completely under the control of a sort of patriarchal master. Certainly, if he be an intelligent and kind-hearted man nothing can be better than their lot; but if he be a selfish, hard, and good-for-nothing fellow, nothing can be worse."

We must add we sympathise with the latter view of the case rather than with the former. The condition of the labourer is, we believe, in more favourable circumstances for ultimate growth and improvement where they are less dependent on the will and character of their master—where, owing to this independence, they have more perfectly their remedy against the "injustice" of which the *Times* correspondent speaks—where it depends upon themselves alone, and in no degree on partiality or favouritism how they succeed. It is plain that in no way—by no such device as making the condition of the labourer dependant on the will and judgment of any one "above" him (whether the foreman, the master, or the clergyman)—can you get rid of the defect that after all it hinges on the character and will of imperfect human nature. Better accept at once the natural inevitability and let it hinge where, along with this defect, the greatest responsibility (a man's responsibility for the use of his own powers and opportunities) and the strongest motive (personal self-interest) exist as the guides of conduct. The more a labourer—the more that any one sees that his prosperity depends upon himself and GOD alone, the more likely, other things being equal, is he to act aright and obey those great laws on which the well-being of his own and every other rank alike depends. To make prosperity, on the other hand, depend upon the favour of a master, whether he be the owner of the property or the head of the parish, is to encourage what is called "eye service"—it is to direct the man to a code or model for guidance or for imitation, which is good only in so far as it resembles that one to which his less dependant neighbour appeals or goes direct.

—— Let us confess again, however, that nothing can be more delightful than the effect of a patriarchal rule where the head of the parish or the property is a right-minded man. And it is well that the same county which does, we think, fairly give occasion for the above remarks should repeatedly illustrate the bright side of the picture which patriarchal rule presents.

The *Dorset County Chronicle* again reports the enjoyments and success of a harvest home at Symondsbury,* where we cannot doubt that the hearty and universal mutual goodwill displayed was the genuine fruit of the best possible understanding amongst all classes in the locality. This was well shown by the address of Mr. POPE, the principal tenant of land in the parish, who was spokesman on its behalf on the occasion. "They were all assembled together as one family, having for a time dispensed with those distinctions which were doubtless essential to the order, regularity, and well-being of society; and he especially felt gratified at that moment, because on looking around he was reminded of the great pleasure he had felt in directing those willing hearts and hands during the past year, and the pride with which he had witnessed those strong arms gathering a bountiful crop of corn. He felt that they were thus promoting that good understanding, that mutual confidence which exists and ever ought to exist between master and man, between the employer and the employed."

IT is by no means unfrequent for us to hear at this season of the year serious complaints from breeders of cattle as to the great difficulty experienced in keeping their cows and heifers in calf. Day after day brings fresh instances of this kind, in some cases where the animal has been supposed to have been in calf for two, three, or even four months. Various and mysterious are the causes which may produce these results, but they are worthy our observation; indeed their importance demands an inquiry. The peculiar speed with which this evil spreads is too well known, and the pecuniary losses to many of our breeders are so heavy that we have no deficiency of evidence in support of our statements in almost every part of England. The loss of the calf (or fœtus) in its early period of growth is often unaccompanied even by indications which excite our doubts, and the instances are exceedingly rare in which we have direct ocular proof of the loss of the fœtus. The result however still appears, and by the necessity of the cow again being put to the bull we have proof of the loss which has arisen. Some of the causes are of a secondary character, being communicated from other animals. During the period of pregnancy the senses are peculiarly excitable, and the rapidity with which abortion spreads through a herd is so well known that it is almost unnecessary to give an illustration of its apparently contagious character. A cow or heifer which by some accident has from purely mechanical injuries suffered abortion, has been the cause of disseminating the same evil, and other cows of the same herd have consequently follow the example. Thus we have proof that when once abortion has made its appearance in a herd there is great danger of its spreading. In overcoming this serious evil we have to adopt preventative as well as remedial measures.

We have especially referred to this subject because it is important that one cause, which is exceedingly powerful, but we regret to say very much overlooked, should receive greater attention. The cause to which we refer is the diseased herbage of our pastures. All are familiar with the fact that much of our Grass land, however carefully it may have been fed, will throw up seed stems during the summer months, which the stock refuse to eat, and these consequently remain after the green and fresh Grass has been consumed, presenting the appearance of small straws, or, as they are frequently called, Bents. Thus far the Grasses follow the growth of our cereal Grasses or corn crops, in throwing up a seed stem of a strawy character; but the similarity does not end here, for these straws carry the seed of the Grass, and these seeds, like corn, are subject to disease. The Rye furnishes us with the most familiar illustration of this diseased character in the Ergot of Rye, which is produced upon it. This Ergot is a variety of fungus which establishes itself upon the seed and produces an action upon the animal system of most important character. Rye-grass bears a similar Ergot, and most, if not all, other Grasses have their peculiar ergotised forms.

The circumstances which predispose the Rye to produce its Ergot, act with even greater energy upon our Grasses. The seed when it approaches maturity, and is then exposed to the action of moisture, is liable to become the passive agent in producing the ergot. Thus we find that the Grass seeds ripened by the summer warmth, and subsequently exposed to the rains become ergotised, and thereby rendered injurious to stock. Although stock avoid the tough-grown seed stem they are quite disposed to consume the seed it bears, and in this manner this injurious matter is introduced into the system, there to work most prejudicially upon the health of the animal and the welfare of the herd, causing loss, difficulty, and disappointment to the breeder, and materially retarding the increase of many of our best herds.

RELATIONS OF FOOD AND MANURE.

THE following is an estimate of the quantity of food for stock which may be produced on a farm of 300 acres, and the quantity of manure which the stock will make from the consumption of the food. The farm to consist of 240 acres of arable land and 60 acres of good rich productive pasture, capable of fattening a 100-stone ox or seven sheep per acre during the summer months. The whole of the land to be deeply and perfectly drained, and the 240 acres of arable land to be subsoil ploughed from 16 to 18 inches deep, and the arable land to be cultivated under the alternate system of grain for sale, and of root and fodder crops for beasts and sheep, bred and kept on the farm in boxes or stalls till they are fat and sold to the butcher, the oxen to be sold before they are 4 years old, and the sheep before they are 2 years old.

The kinds of Crops produced under the Alternate System.—It has been found that when the same kind of plants are grown on the same ground at short intervals of time they do not produce such good and heavy crops as they do when there is a longer time between the first and second planting on the same land; and some plants, such as Turnips and Clover, are subject to disease if

* See p. 757, *Agricultural Gazette*, 1858.

they are repeated on the same land every four years, but if those plants are grown on the same ground every eight years they are not subject to the same disease, and they produce as large and good crops as at the first.

We have therefore adopted the following alternate system of cropping:—1st, Mangel; 2dly, Barley; 3dly, Clover and Italian Rye-grass; 4thly, Wheat; 5thly, Swedes; 6thly, Oats; 7thly, Beans, Potatoes, and Carrots; 8thly, Wheat. By this system Wheat is planted on the same ground once every four years, but all the other crops once every eight years; we thus secure good and large crops of Turnips and Clover as well as of all kinds of grain.

The Value and Weight of each Crop: The first Crop is Mangel.—It is the best of all the fodder crops grown on the farm, and all kinds of stock are fond of it. The produce of this crop is not only the greatest per acre, but it is the most nutritious, and it may be kept without any deterioration for double the length of time of any other roots which are produced on the farm. We may begin to use it in August (when food is scarce) by taking off the two lowest leaves from each plant, and this may be repeated in September and in October. In the east of Essex I have seen lambs and old toothless ewes folded in the Mangel field eating off the whole of the leaves in the month of November, before the roots were lifted and taken to the store. The bulbs may be given in September to all kinds of stock, and may be continued till the Clover be ready to be cut; the proper time is to give the Mangel after the Swedes are all consumed, but the longer the Mangel is kept it becomes richer and more nutritive, during summer it becomes drier and lighter, the watery part being evaporated, but not the saccharine matter; it becomes sweeter and the stock are fonder of it, and the same weight of it is more nutritive than at harvest. It never becomes dry and woody as the Turnips become in the spring.

The weight of a crop of Mangel has been stated at 40, 50, and even 60 tons per acre by persons who have estimated the weight of an acre from the weight of the roots grown on a perch or two; but we have never been able to grow 40 tons of roots per acre, although we have grown 30, 33, and once 37 tons of bulbs, and 8 tons of leaves; but we shall take 30 tons as an average crop of roots and 8 tons for the leaves; 30 tons per acre over 30 acres gives 2,016,000 lbs. of nutritious food for stock during the eight winter months from September till June.

The second Crop is Barley, after the Mangel; and as the land has been under deep and continued cultivation for the last 12 months, first in preparing it for the crop, and in deep horse-hoeing during the growth of the Mangel, we have it in our power to plant the Barley early in the spring—in January or February—so that by early planting there is less risk of an over abundance of straw, and less risk of the Clover and Rye-grass seeds being choked by the Barley crop, and the Barley will be early harvested, and the quantity and quality of the Barley much better. We may estimate the average produce of the crop at 50 bushels per acre, and the weight of straw at 1½ ton. The 30 acres of straw at 1½ ton will give 100,800 lbs. of straw as litter for the stock.

The third Crop is Clover and Italian Rye-grass.—If we have 20 acres of Clover and Rye-grass and 10 acres entirely of Italian Rye-grass, we have had three cuttings of Clover and Rye-grass, and I have seen five cuttings of Italian Rye-grass; from these 30 acres of Clover and Rye-grass cut green we have no difficulty in getting 16 tons per acre of rich nutritive food for the stock. The 30 acres at 16 tons per acre will give 1,065,200 lbs. of food during the summer months, from May till October.

The fourth Crop is Wheat.—We are justified in estimating the Wheat crop at 38 bushels, and 2 tons of straw per acre; this gives 134,400 lbs.; one-half, or 67,200 cut into chaff as food for the stock, the other half, 67,200 lbs., cut into 4-inch chaff as litter. The straw is given to the stock as food while they are eating the roots during winter, and the litter to be used daily in the boxes or stalls throughout the year.

The fifth Crop is Swedes.—The land must be deeply ploughed before winter, and repeatedly cultivated before it is planted, and repeatedly horse-hoed during the growth of the crop. Large crops of Swedes have been grown by some farmers 30, 35, and even 40 tons per acre; but we have never been able to grow 30 tons, although we have often grown 20 tons, and once 28 tons per acre over a 10-acre field. I take this crop to average 20 tons over 30 acres, which gives 1,344,000 lbs. as food for stock during the eight winter months; but as they get dry and weedy in the spring, and the stock refuse them, they should be all consumed by the 1st of March, and the Mangel will supply their place.

The sixth Crop is Oats.—The land left by the Swedes is in excellent condition; should be ploughed as soon as it can be after the Swedes have been lifted and taken to the store, for it to get firm before seed time, as the Oat, like the Wheat, require a firm and rather solid bed to root in. The Oat should be sown early in the spring, the first fine weather when the land is in a proper state of dryness; January or February is a much better time than in March. We have had 90 and once 113 bushels of Tartarian Oats after Swedes; we may take the average of the Oat crop at 72 bushels per acre, and the straw at 2 tons over the 30 acres. This is equal to 134,400 lbs. of straw cut into chaff as winter food for the stock.

The seventh Crop is Beans, 10, *and Potatoes,* 15 *acres, and* 5 *acres of Carrots.*—The 10 acres of Beans we average at 50 bushels per acre, and 1½ ton of straw per acre, which is 33,600 lbs. of excellent food for stock when boiled.

The 15 *acres of Potatoes* may average 8 tons or 70 sacks per acre (9 tons or 80 sacks per acre was the average crop on Mr. Dimmery's farm for 20 years). This crop may either be consumed by the beasts or sold, and cake or Linseed purchased, the price which would buy 36 tons of cake, or the whole may be sold if the market price is the most profitable of disposing of this crop.

The 5 *acres of Carrots* we estimate at 18 tons per acre; this is 201,600 as food for the horses and milk cows—this will give 50 lbs. daily to each of 16 beasts for 240 days.

The eighth crop is Wheat.—After the Beans, Potatoes, and Carrot, we average as before at 38 bushels and 2 tons of straw, being 67,200 lbs. as food, and 67,200 lbs. as litter.

The 60 acres of good rich pasture, such as will fatten a 100-stone ox or 7 sheep per acre, will produce 5 tons of fattening food for 4 months. This is equal to 672,000 lbs. of fattening food for four summer months. *J. M.*

(To be continued).

STEAM CULTIVATION.

The letter of "Agricola," in your Paper of Sept. 3 on this subject, requires notice on my part. Steam culture must be well ventilated before as a science it can shine by its own light. Now that the field is clear of all competitors (who have each had a fair trial) I shall proceed more fully to explain my doctrines and my circular system of agriculture to your readers. In this I must only beg space enough to touch upon certain points of "Agricola's" letter. He seems to be well acquainted with all those plans for steam-ploughing and steam culture which have recently been tried.

He asks me to repeat my plan, and say whether it be an entire system of field practice, or only intended to fulfil the operation of ploughing? To a discerning mind it is only necessary to hand over main principles, since from these can be deduced the consequences, whether they affect details or practice. The main principles of any system, practice, or proceeding like the main operations of Nature are, or should be simple, however complex the variations may be. Nature's variations are innumerable, her governing principles few and simple, although we sometimes find it difficult to discover this simplicity. My circular or cellular agriculture introduces a system to be applied to the whole practice of the field; and the system involves a machine through which every operation of tillage is to be performed from cultivation to irrigation. It is the only plan for steam culture (with the exception of Halkett's of more recent date) which has involved a system properly so called; all others have been mere ploughing plans invented expressly to gear on to the present system of agriculture, not to supersede it.

Mine would alter the whole economy of our field practice; Mr. Halkett's would do the same, but not in so complete a manner. On the score of economy in first application, and continuous after working, mine will be found as superior to Mr. H.'s as a railway would be, without the expensive permanent way, over one which rejoiced in sleepers and disunited bridge rails. "Agricola" writes: "So far as I can judge by Mr. Burcham's letter, he objects to the Halkett system on account of the expense of laying down the rails, but the system is an impossibility without them." Now I hope to show "Agricola" that results equal to Mr. H.'s system can be obtained without the expensive rails.

My circular or cellular system of agriculture may be thus stated: I propose to divide any given number, or let us say for an example, 200 acres of arable land into 400 parts, each part to be a circular plot; we thus get a congeries of circles touching each other, on which to grow in alternate circles (or otherwise) corn and roots. In the centre of each circle I place a post, or which is far more economical dig a hole, permanently retained. I then build a gallery cultivating machine, in length a semi-diameter of the circle; it is roofed in with canvas or asphalt, so that all hands work under cover in unfavourable weather. One end of the machine has several wheels, the other only two (carrying wheels). At this, the carrying wheel end, an Archimedean screw can be protruded, which enters the hole mentioned as being dug in the middle of each circle. One end thus becomes a fixture, and the power of steam (or horses) being applied to the outer end, it revolves around a fixed axis, thus tilling the land by what may be termed a horizontally-circular movement.

Now to draw a picture to the mind's eye, the agricultural result of this mode of operating would be thus: our fields would appear as if composed of a congeries of circular allotments, and a hillside would resemble "the diamond cut with facets." This sub-division of land into minute parts (like so many mole-hills) and the using a tillage machine equal to only one of those parts at one time, would introduce the allotment system, the most productive of all systems, to our large farmers.

Now let me compare in economy and mechanical superiority the advantages of my circular system over Mr. Halkett's guideway. I am obliged to allude to him because, whilst his plan is superior to all the others, it is also the only one which has resemblance to or affords a sufficient standard of comparison by which my own can be estimated. In examining the problem to my great delight Mr. Halkett found out, what I had so long known, that machinery could not be worked on a plane surface like the soil with efficiency or economy without a "guide." So important did he evidently consider this that he entitled his plan Guideway Agriculture, to indicate its nature and value. But to obtain this necessary guide, as "Agricola" knows, Mr. H. is obliged to lay down a double line of rails, which costs 20*l.* per acre. Now it will at once be observed that the post which I place, or the hole dug in the middle of my circle, is a guide—a permanent guideway—from which when at work there can be no deviation by machinery, and it would not cost 20*s.* per acre. Here is Mr. H.'s grand result of a guideway obtained at a minimum expenditure by my more simple mode of proceeding! Of course a cultivator could be worked by night as well by my plan as by his.

The next point to be alluded to is this. I am inclined to think "Agricola," in common with divers engineers, attaches very great value to Mr. Halkett's plan, because it includes a railway, upon which it is easy to run heavy loads. Yes; but heavy loads, unless they are moved at considerable velocity, or the price obtained for them artificial and exclusive, will not alone pay for an iron roadway.

Now, there are not, or ought not to be, heavy loads in farming: 2 to 4 tons is generally the outside weight, and what is that? Will that pay for an iron roadway? Again, even a railway would not pay, unless the road were comparatively level. Finally, however paradoxical it may appear, velocity, whilst it is the source of destruction, is also the very basis of profit to an iron roadway; but agricultural operations resemble those of the parent they attempt to aid, viz., Nature's, in which, except on rare occasions, there is not, nor ever need be, velocity.

"Agricola" will see I possess the power of providing a good natural roadway around every one of my circles for the moderately broad wheels of a steam cultivator; it may be in the form of a firm green sward, or layer of concrete material. The rim of the circle will not be broken up every year. However, it will be seen my system provides the fixed guideway, as well as the permanent roadway for steam-culture, without the vast expenditure required by Halkett's.

It is a main point with Mr. Halkett that by his railway he can do the cartage of a farm. Now, by my system of field practice I can, comparatively speaking, prevent cartage altogether, and everybody will allow that prevention is better than cure.

"Agricola" will observe there are blank spaces left, where three of my circles conjoin, thus: ○○○. On these I store all crops in the field, and manufacture manures, both solid and liquid, thus saving cartage. In truth, as the chief result of my investigation of the steam-culture problem, I may here state that it will be surprising what an immense number of expensive labours on the farm steam power will prevent; it will prevent cartage, it will prevent wholesale manuring, it will prevent "ploughing" by preventing consolidation and weeds, it will prevent cattle fattening on layers of straw or rafters of wood at the homestead, it will prevent droughts in the soil through its reservoirs of water, it will prevent flooding over the soil by its intercepting drains; in fact, it will prevent subsoil drainage in a measure, as well as all expensive homestead construction. Instead of being destined to encounter and overcome the present heavy labours as they stand, as other inventors have supposed, I find it will vanquish them by anticipation, that is, by rendering them light, manageable, and co-equal. "Agricola" seems inclined to stick up for the railway on arable land. I do not deny the merit of the iron rail for certain purposes, but I repeat that on a farm it is not necessary, since there is neither excessive weight to be carried, nor extreme velocity to be attained. I should like to hear from him again on this subject. *C. Burcham, London.*

Home Correspondence.

Extirpation of Thistles.—Various suggestions have lately been offered by several correspondents for the destruction of the Nettle, for which many thanks are due. May we ask advice through the same channel for the extirpation of that much more formidable king of weeds the Thistle? It appears from our observations that certain seasons are congenial to its growth; and that the two last years have been most remarkable for this. No one perhaps has had more to do in battling with the Thistle than the writer, who is ready at any time to wage war in an army of bayonetted Thistles with any man for a sovereign, without gloves or any other defence save his hands. For many years he regarded the Thistle as a biennial, and to annihilate it recommended the constant cutting off its tops and roots for two years as often as it appeared, and not allowing it to seed, as a specific means of destroying it. So far good, as is illustrated by the following circumstance: "A breadth of land which had been badly farmed by predecessors, was laid down with Lucerne three years ago after common ploughing (it ought to have been double-trenched); it was in consequence completely smothered with Sow-thistles, Gut-weed, Nettles, Colt's-foot, Cat's-tail, Docks, and other monster and deep-rooted weeds during the first and second years; but by cutting them off, or bleeding them, as it were, three or four times every year with the Lucerne during summer, when flowering, all such trash now in the third year have ceased to make their appearance, except Grass, which is no detriment to the Lucerne, but more serviceable for cattle; and it would have been better if a select kind of Grass had been intro-

duced the second year or after the Lucerne had established itself." Broadcasting Lucerne equally we find to be more profitable than by sowing it thicker in rows, which like crops of corn, &c., huddles the plants together too much and renders them weak and sickly, too often to be killed from various casualties, and by the hoe when keeping them clean, which, too, is altogether unnecessary and too expensive. We know of no better plan to expunge those monster Thistles than by repeatedly drawing them with the hands, or to Bentall them up at all convenient seasons when they are most luxuriant in growth, which bleeds and weakens them to a certain degree so that they will not rally to do much more mischief for several years afterwards, though their stools or roots we believe are still alive and ready to shoot again in full vigour in after years when favourable opportunities offer amongst crops, where they cannot be eradicated without too much damage, expense, and valuable time. The steam plough, however, may yet effect wonders in breaking up their stools, which have stood it may be for generations past. A contemporary writing on the same subject has declared that to extirpate them entirely is impossible, since a Scriptural prophet has foretold that "Thorns, Thistles, and Briars, shall for ever spring out of the earth." This passage we think is figurative, and applies to weeds generally and not to Thorns and Thistles particularly, since many gardens and fields are as perfectly free from them as of other weeds when perseverance and assiduity in eradicating them is at all times observed, and where they spontaneously spring up alike. *Hardy & Son, Seedgrowers, Maldon, Essex.*

Societies.

MANCHESTER AND LIVERPOOL.—The annual meeting of this Society took place last week (Friday) at Liverpool, too late for a report to be given in last week's Number of our Journal. The following prizes have been awarded for the best cultivated farms:—Mr. R. Birch, Netherton, near Liverpool (one claimant), 12*l.*; T. Williamson, Linacre (near Liverpool, (three claimants), 8*l.*; S. Cook, Linacre (two claimants), 5*l.*; Joseph Gorst, Garston, near Liverpool (one claimant), 4*l.*; C. Musker, Bootle, near Liverpool (one claimant), 3*l.*; Samuel Davies, Eardswick Hall, Cheshire (one claimant), 10*l.*; J. Birch, Sefton, near Liverpool (five claimants), 12*l.*; Gilbert Halsall, Halewood (six claimants, one withdrawn and one ineligible), 8*l.* The Silver Medals for farms were not awarded, the claimant for the first having withdrawn, and there being no claimant for the second. The prizes for draining were then awarded as follows:—Silver Medal (two claimants), the Right Hon. Edward Cardwell, Ellerbeck; 8*l.*, Thomas Bebbington, Oulton Lane, Tarporley; 4*l.*, J. Aspinall, Kenyon, near Manchester (one claimant). There was no claimant for the Silver Medal for subsoiling; and of the two claimants for the 3*l.* prize, one was disqualified, the prize being awarded to Messrs. James Longton & Son, Woolton Mills, near Liverpool. The Silver Medal for irrigation was not claimed; but the 4*l.* prize was awarded to Mr. Silas Dorning, of Little Wardley, Swinton, near Manchester, the only claimant. The Silver Medal for laying down land to Grass was awarded to Mr. T. W. Dutton, Northenden, near Manchester; the 5*l.* prize (two claimants) to Mr. Thomas Atherton, Speke, near Liverpool; the 4*l.* prize (three claimants) to Mr. James Langshaw, Speke; the 3*l.* prize (two claimants) to Mr. Thomas Langshaw, Speke. A 3*l.* prize for marling was awarded to Mr. W. Palm, Stapleford Hall, near Chester. A 3*l.* prize for eradicating old hedges was awarded to Mr. James Kerr, Woodchurch, near Birkenhead; a 4*l.* prize to Mr. John Kilshaw, Great Sankey, near Warrington; 5*l.*, Messrs. James Longton & Son, Woolton. The following prizes were awarded to farm servants and labourers:—3*l.* to James Bond, of Mr. G. Alker, Upholland, near Wigan; 4*l.* to Josiah Owen, Dunham, 36 years' service; 4*l.* to William Eaton, Much Woolton, near Liverpool, for bringing up the greatest number of legitimate children (12) without parochial relief; Mary Bailey, at Mrs. Mary Mee's, Withington, near Manchester, 27 years' service.

Reaping Machine Competition.—A trial of reaping and mowing machines took place at the farm of Mr. Tipping, near Smithdown Lane, on Wednesday last. There were five machines on the ground; namely, four of Woods' (American) combined reaping and mowing machines, and one of Dray's Champion reaping machines. The grain selected for trial was Barley, in a very ripe condition, thus rendering the mowing more difficult, as the stems, instead of being hard or erect, were nearly half rotten or very pliable. Wood's machine cut very clean—in some places the stubble were not more than ½ inch high, while the corn was laid close and ready for binders. Dray's machine, though a new one, did its work very well. After some hours had been spent in testing the machines as reapers, they were removed to a Clover field, to be tested as mowers: it was evident that here they differed in their success, probably from the state of the knives. Some cut close and clean, whilst one or two left rather a thick crop behind. The machine of Richmond & Chandler (Woods's) seemed to give general satisfaction. The mowers were not tied to time, the quality of the cutting was the object sought.

The Show of Stock and Implements took place on Thursday, in a field in Wavertree Road, near the Edge Hill station. A large sum had been collected in subscriptions and donations for the purpose of giving special prizes, the total amount distributed in premiums being 1100*l.* The horned cattle numbered 96 entries, and could scarcely have been surpassed for quality in any district. The horses were numerous. The multiplication of special prizes out of the local fund produced too much division, and it would have been better had the general prizes been increased in amount, so as to have concentrated the competition. There was a large show of implements, comprising various novelties in this branch of manufacture. There were 50 exhibitors, whose stands comprised about 600 different articles. Among the prizes taken were:—For horned cattle—1, Viscount Hill, of Hawkstone, 10*l.*; and 2, Thomas Forrest, Tarporley, 5*l.*, for Short-horn bulls. For Short-horn cows: 1, James Dickinson, of Wigan, 5*l.*; 2, James Parr, Warrington, 2*l.* 10*s.* For Short-horn heifers: 1, Captain Gunter, Wetherby, 5*l.*; 2, R. C. Lowndes, Anfield, Liverpool, 2*l.* 10*s.* Three entries. For Short-horn yearling heifer: 1, Captain Gunter, 3*l.*; 2, George Stone, Fairfield, Liverpool, 1*l.* 10*s.* Extra Stock: Medal to Captain Gunter, for red heifer, "Red Blossom."—Considerable confusion and disorder prevailed owing to the unfinished condition of the arrangements for receiving the stock. This appears to have been owing to the entire inexperience of the General Director of the show, on whom the responsibility of making these arrangements does, we understand, exclusively rest. That portion of the confusion which was due to the frequent repetition of prizes offered for the same class of animals arose out of the fact that the prizes offered by the Local Committee were made known after the list of the Society had been published. The authors of the original list are not to be blamed for repetitions over which they had no control.

At the dinner in the course of the evening of Thursday, the toast of "the Judges" was proposed by the Earl of Sefton, the Chairman, who humorously observed that when a boy at Eton, being a light weight, he was put down to steer, and a judge was like a steersman; if the boat won, no thanks to the steersman, but it was his fault if it lost; and if an exhibitor won a prize, no thanks to the judge, but if he did not, it was the judge's fault. Mr. Grey, in responding, said: It was the cultivation of stock which he conceived the British farmer was now peculiarly called upon to look after—not only that he should have a certain amount of stock on his ground, but that he should have that description of stock which his ground was capable of keeping, and which would turn him over his money to the greatest advantage. Two things were necessary to the profitable feeding of cattle; first of all, to get the best description of animals they could, and when they had got those animals they must combine it with that good cultivation which would produce all the year round a good, nutritious food to bring those animals to maturity and to perfection. It was evident now that the production of butcher's meat and wool was to be the most remunerative production of the British farmer's produce. They could be brought into competition with many countries in the production of grain. Some countries were better calculated to mature Wheat than ours was; but no country in the world was better calculated than ours was to produce butcher's meat. It was a happy thing that the operatives in our day were fed with beef and mutton, and that a butcher's shop met us everywhere. Long might that continue. It was therefore the duty of farmers, individually and nationally, to feed and maintain the dense and ever-increasing population of the country on the produce of the country itself. He had observed that sheep were not much cultivated in this part of the country, and that the land was not prepared for them. Sheep would not thrive upon Rushes, nor did they like damp beds. They required the land to be drained; and he was sorry to see in this district several fields still luxuriating in tall Rushes. Those farms which were most productive were those farms which were well stocked with sheep; and he was quite sure that no country could compete with us in our oxen and our sheep. He was equally sure that if more attention were paid to stock and to the production of nutritious roots for their support, it would put more money into the pocket of the farmer and effect a national good.

Among the prizes offered for implements the following awards were made:—For the best cultivator, or grubber, capable of being worked by two horses, 5*l.*—Messrs. Coleman & Sons, of Chelmsford; for the best combined mowing and reaping machine, 10*l.*—Messrs. Richmond, Chandler, & Norton, 62, South John Street, Liverpool; for the best two-horse cart, not exceeding 18 cwt., with shelvings complete; not painted, and the price to be stated, 5*l.*—Messrs. Richmond, Chandler, & Norton, 62, South John Street, Liverpool; for the best one-horse cart, not exceeding 13 cwt., with thrippers or shelvings, complete; not painted, and the price to be stated, 5*l.*—Henry Gibbons, of Greenbank Farm, Toxteth Park, near Liverpool.

Farm Memoranda.

IMPERIAL FARM AT VINCENNES.—The *North British Agriculturist* recently described some of the government farms near Paris, and the following is an abridgment of its account of one near the castle of Vincennes and the forts of Toinville and Graville. The distance from the barrier of Paris is about two miles. Previous to October 1858 the whole was a comparative waste, used as parade ground. The farm consists of about 600 acres; of this 169 acres are cultivated, the remainder in Grass. It has only been formed since October last. From October to April the whole was reclaimed at an expense of about 4*l.* per acre. The outlay was incurred in digging up and removing large stones, the roots of trees, and other obstacles to the progress of the plough. The lands in Grass were levelled in parts by the spade and handbarrow. The lands are generally of a very inferior description. The whole farm is consequently extremely liable to injury from drought. The buildings are constructed for a dairy and sheep farm. They appeared to us to be admirably adapted for this purpose. The whole were erected and finished for the stock between the 20th of February and the 29th of April. They are durable erections, the walls of stone and lime, the roofing the best materials—wood and slate—the work finished in the best manner. The byres appeared the most perfect cowhouses we had examined. The temperature was much below that without, while there was an absence of nearly all offensive smells so frequently felt in byres. The arrangements for facilitating feeding the stock, milking the cows, and cleaning the byres, are so perfect that one man superintends 26 cows, performing all the labour connected with feeding, milking, and cleaning.* No part of these duties are lightly passed over. All is performed regularly and with due regard to cleanliness. The sheep houses and stable are equally well arranged for the stock kept. The dairy stock consists of cows of the Schwitz breed; the stock was obtained direct from Switzerland, for the Emperor, and purchased from the most celebrated breeders. The price paid averaged from 16*l.* to 20*l.* each; the bulls 20*l.* to 24*l.* The herd was for a time kept on other two farms, and was removed to Vincennes at the end of April last. There are at present 92 cows, two bulls, 18 young cattle, and several calves in the byres. The calves are generally sold when dropped—those of the best cows being kept to supply the vacancies which will occur in the herd. It is intended to keep 100 cows. Of sheep, there are 250 of all ages—Southdown. The herd was purchased from M. Allier, obtained nearly all from Mr. Jonas Webb of Babraham. There are six work horses, and one for conveying the milk from the farm to the Imperial Laiterie in the Rue de Richelieu, near to the Palais Royal, Paris. Besides conveying the milk in the morning in a spring carriage, this horse is at the service of the farm manager. The number of persons constantly employed on the farm is as follows:—Four cattle men, three ploughmen, one shepherd with two boys, and one farm steward. The whole are boarded on the farm, and sleep on the premises. The shepherd's wife furnishes and cooks the food. The payment is at the rate of about 1*s.* 2*d.* a day. The men have four meals daily, are allowed animal food twice, and one litre quart of wine per day. The average wages are equal to between 16*l.* and 17*l.* per annum. Shepherd, without food, equal to 40*l.*; boys, about 1*l.* per month, with food; the Dutch cattle man, with his wife, receives with food, 84*l.*; the labourers generally 3*s.* 4*d.* a day, without food. The manager receives about 100*l.* a year. The cattle men have a sleeping apartment over the place in which the forage is placed for the stock; the room is reached by a trap ladder. The cattle men while in bed can hear and see what is going forward in that part of the byre in which the stock they have in charge are kept. An opening in the wall enables them to overlook the row of cows, the bed being placed beside the opening. The cows are milked twice in the 24 hours. As the milk is taken from the cows it is seethed into large white iron vessels. These as they are filled are placed in a large stone tank containing water to reduce the temperature as speedily as possible to prevent a change in the milk. This change is rapid when the milk is not speedily cooled down as it is taken from the cow, when the temperature of the atmosphere exceeds 75 deg., F. The sheep are kept in four houses, and on the same forage as the cows—a mixture of plants, Sorgho, Oats, Beans, Tares, and Barley. In addition they are supplied with bran and Oats at the rate of ½ lb. per day, or an equal weight of cake. The temperature of the houses is regulated by openings in the walls and roofs. The flock is in fair condition; there are no pigs nor poultry kept on the farm. The cropping of the land is so arranged as to supply green food for the stock during summer and autumn, and dry forage during winter and spring. It is intended to lay down pipes to irrigate a portion of the lands. Tanks are constructed to contain liquid manure from the byre. A full command of water is obtained from a conduit which supplies the lakes in the park of Vincennes. In addition to the manure of the farm, the barracks supply a considerable quantity; this is in a liquid form. During the winter about 4000 tons of liquid manure was put upon the lands, applied at the rate of 15 to 18 tons per acre. The cultivated portion was first ploughed, afterwards the manure was applied, and incorporated with the surface soil by the use of a grubber. Seeding the land followed, when the harrow and roller completed the mixing of the manure with the soil. The expense of conveying and applying the manure was at the rate of 2*s.* 11*d.* per ton. The following is the cropping of the arable lands:—In November, 10 acres were seeded with Rye—this for early green cutting; by the first week of March, the same quantity was seeded with a mixture of Barley, Tares, Peas, and Beans; a second portion seeded by the third week of March. In April, two sowings of a mixture of Maize, Beans, Tares, Peas, and Oats. In May, two sowings of

[* He would be six hours a day in milking these.]

40-days' Maize, Sorgho, Peas, Beans, and Rape. In June, two sowings of 40-days' Maize, Rape, Buckwheat, Moha (Hungarian Grass). In July, upon the removal of the first crop, a second is sown, the land being ploughed, reduced, and manured. The following mixture is sown in summer—40-days' Maize, Rape, white Mustard, and Sorgho. The forage from a mixture of plants is very superior to that from any one of the plants singly, both as to quantity and quality. The British cultivator has here a hint as to the growing of forage. The supply has been ample from the end of April until August, and would have continued, but the army from Italy is now encamped on the farm. The number of men is stated to be about 60,000. There were this season 62 acres of Oats, one of the varieties being Avoine de Brie, grain black, in very common cultivation in France. The other portion was a variety known as Russian Oat. The land was broken up for the first time during last winter. The crop was bulky, but the grain had evidently been injured by the heat and drought of the season. Two plots of Mangel, consisting of about 25 acres—plants irregular, but generally large for the period of the year; 12 acres of Potatoes, a full crop, and quite free from the blight. In addition to the straw of the cereals to furnish fodder, there are stacked between 200 and 300 tons of hay. This cut early in the season, from parts of the lands in Grass. When pipes for irrigating part of the land are laid and in use, a large supply of green food will doubtless be obtained from the application of the liquid manure. The weight of the Mangel crop will also be greatly increased; consequently, a regular and full supply of succulent food for the stock will be secured during the whole year—a condition very essential for the profitable results from a dairy farm.

Calendar of Operations.

SEPTEMBER.

BERWICKSHIRE MERSE FARM: *Sept.* 10.—The labours of an early harvest are now brought to a close in this district. Reaping was general about the 12th August, and quite kept pace with the ripening of the crops, though retarded at times by showery weather. Attracted by the high wages of last year, the Irish came over in great numbers, and the moderate rates consequent on this influx diminish the comparative economy of machine work. In the prospect, however, of a less liberal immigration in future years, the various reaping machines are viewed with increasing favour, which is only limited by the too frequent want of substantiality of construction—a quality that may be reasonably demanded in a high-priced implement. During the dry breezy days of last week a large part of the crop was carted in fine condition; and the remainder, being secured in the early part of this week, is now safe under "thack and rape." This does not apply to the Lammermuir district, where the earliest places only are all cut, and but little in stack. A strong gale too blew all yesterday, and has (we understand) caused serious loss by shaking in exposed situations Little has yet been done in the way of testing the yield of the new crop. To judge from appearances, one would expect the various grains to be of good quality in general. Considerable portions of White Wheats, however, are mildewed, and of Winter Beans prematurely decayed from the root. We would estimate the Wheat and Barley at a good average yield per acre; but Oats, and especially Beans, as light. Swedes have recovered considerably during harvest, stimulated by occasional showers and moderate temperature; they have as yet escaped the mildew which is devastating neighbouring counties, but are certainly too backward to be anything like a full crop. Pastures, too, are by no means equal to the acquirements of well-conditioned stock; nor have they done much all summer. The Potato haulm is withering rapidly, and the disease has appeared in many places. Our great district meeting at Kelso, for the sale of rams by auction, was held yesterday; and the numbers shown being some hundreds fewer than for several years past, all the best flocks experienced an animated competition, and realised high averages. *J. T.*

Notices to Correspondents.

BARRENNESS IN MARES: *A Subscriber.* The fault most probably is with the horse. The mare should be in good condition, but not too fat, the horse vigorous and not too old. *W C S.*

BLINDNESS IN CALVES: *F Hale.* Bleeding from the eye vein or neck, the same side as the affected eye, and warm fomentation in the first instance and cold applications afterwards are the proper remedies. The mischief is probably occasioned by some external irritant. *W C S.*

GORSE: *A Constant Reader* says: "I have lately broken up some acres of old Gorse and turned it into permanent Grass. In spite of three or four crops and the necessary intermediate ploughings the Gorse comes up as thick as ever. Can any of your readers suggest a remedy for this?" [Break up the Grass and give it a course of cropping and lay it down again.]

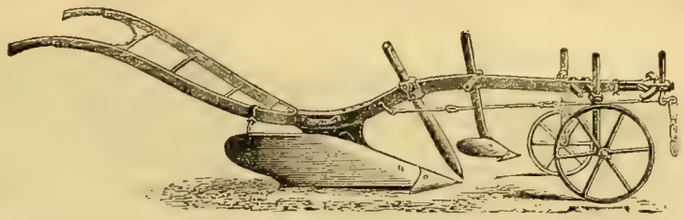
MANGEL SEEDING: *A Learner.* The later you sow the less liable are plants to run to seed. Seed from transplanted bulbs should be used. Deep tillage and rich soils are less likely to provoke seeding than hard and poor ground. Probably at Montrose your climate is at fault.

PIGS: *A Victim.* Your remedy is to send stray animals to the pound, to be released only on paying the damage. Of course if the fence is insufficient a herd boy should be employed. All farmers will admit that.—*Southsea.* The pigs are too much confined, and probably the litter becomes very much heated. We have known the effect complained of where straw chaff at the usual length has been used as litter, fermentation being kept up in the manure by the disturbance of the pigs' feet. The chaff, if cut, should be as long as possible, or if for other objects cut short, a separate space without litter should be given to the pigs. The litter ought either to be removed daily, or otherwise remain consolidated and undisturbed till the pigs are fatted. The shortest remedy will be to give more space and more exercise. *W C S.*

PRODUCE OF ENGLAND: *W H, Oriental Club,* says:—"Liebig, in his last work of 1859, on 'Modern Agriculture,' states, p. 197, that the *Times* commission obtained information (quoted by an American writer) that in the year 1850 there were two millions of quarters of corn less produced than in the year 1774. The census of population first took place in 1801; but I know that in the year 1850 (just before the census of 1851) the population must have been double that of 1774. Now, though England was at one time to a certain extent an agricultural exporting country, still it was not so (except in partial cases) in 1850. We, I believe, have brought more land into cultivation since 1774, and with the increase of population must have produced more corn; besides the guano manure and other manures would cause an increase of produce. I simply wish to know the fact whether the produce of corn could, by any possibility, have been less in 1850 than in 1774." [The statement must be mistaken.]

THE PLOUGH TRIALS AT WARWICK

HOWARD'S CHAMPION PLOUGH



Gained the FIRST PRIZE as the Best Plough for General Purposes at Warwick,

BEING the CHIEF PRIZE for PLOUGHS, awarded by the Royal Agricultural Society of England, at this Meeting. The importance of this Prize will be gathered from the fact that the GENERAL PURPOSE PLOUGHS are the only ones tried on BOTH LIGHT AND HEAVY LAND, and as HOWARD'S CHAMPION PLOUGH proved itself to be the best on both soils, the FIRST PRIZE, of the HIGHEST AMOUNT given by the Society for any kind of Plough, was awarded to J. & F. HOWARD.

PRIZES awarded to J. & F. HOWARD, by the Royal Agricultural Society of England, at the WARWICK MEETING, 1859, being not only the LARGEST NUMBER of PRIZES, but the LARGEST NUMBER of FIRST PRIZES awarded to any Exhibitor.

THE FIRST PRIZE FOR THE BEST PLOUGH FOR GENERAL PURPOSES, ALSO A PRIZE FOR THE BEST PLOUGH FOR LIGHT LAND, AND A PRIZE FOR THE BEST PLOUGH FOR HEAVY LAND; THE FIRST PRIZE FOR THE BEST LIGHT HARROWS, THE SECOND PRIZE ALSO FOR THE BEST LIGHT HARROWS, AND THE FIRST PRIZE FOR THE BEST HEAVY HARROWS.

Every one of HOWARD'S Implements, tried at Warwick, gained a Prize.

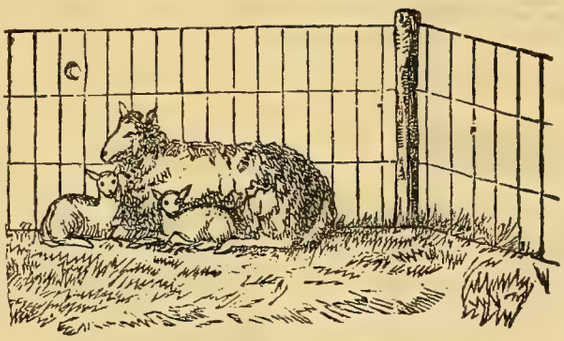
CATALOGUES, with full particulars, sent post free on application to

J. & F. HOWARD, BRITANNIA IRON WORKS, BEDFORD.

GREENING & COMPANY'S

PATENT WIRE FENCES.

PATRONISED BY HIS ROYAL HIGHNESS THE PRINCE CONSORT.



No. 7 B VARIETY.—PATENT SHEEP-FOLDING FENCE.

SPECIFICATION.—Height 3 feet; four horizontal bars of strong, tough, pliable fencing wire, intersected by vertical bars of lighter wire, woven firmly on at regular intervals of 4 inches.

9d. per lineal yard.

From "Report of the Judges" on the Exhibition and Trial of Implements at the Salisbury Meeting, 1857. Royal Agricultural Society of England.

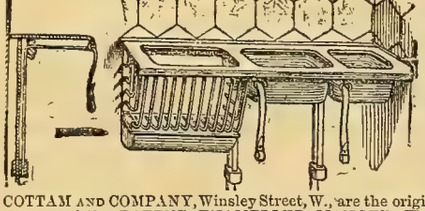
"The Iron Wire Sheep-fold Fence of Messrs. GREENING was cheap and excellent. It can be very easily fixed, and was well coated with a bright and durable-looking varnish." (High commendations were awarded.)

G. & Co.'s NEW ILLUSTRATED CATALOGUE is now ready. It contains descriptions of the above, and other IRON and WIRE FENCES for PARKS, FARMS, GARDENS, GAME PRESERVES, POULTRY COURTS, &c., also of IRON GATES, IRON HURDLES, &c. Post free on application.

GREENING & Co., Victoria Iron and Wire Works, 81, Oxford Street, Manchester.

TO BE SOLD, Bargains, SAW TABLE and BORING MACHINE for TIMBER, and TWO IRRIGATING or FORCE PUMPS, on Wheels, with Hose Pipes. Also a few first-class Agricultural Implements equal to new at about half price.—EDWARD WEIR, 296, Euston Road, London, N.W.

COTTAM'S PATENT INVENTIONS FOR STABLE REQUISITES, awarded a Prize at the Paris Exhibition, and patronised by the English and French Governments.



COTTAM AND COMPANY, Winsley Street, W., are the original inventors of the PATENT ENAMELLED MANGER, Water Trough, and Wrought Iron Rack, united to an iron top-plate, and forming one complete and useful fixture, having COTTAM'S patent noiseless halter guide and collar rein attached, which is taken to the back of the manger, and works with ease and freedom up or down the guide-bar.

COTTAM'S NEW PATENT SEED-BOX, an important addition to the above fittings, being simple in construction, light, and durable, promotes cleanliness, and is economical in its results.



COTTAM'S PATENT SADDLE and HARNESS BRACKET combined, can be used with great advantage where space is an object, as it can be turned up out of the way when not in use.

COTTAM'S IMPROVED SURFACE GUTTER, with perforated moveable cover, the use of which prevents accidents, and can be easily cleaned out.

COTTAM'S CAST-IRON SANITARY TRAP, from its improved construction, gives a full water passage, and does not allow any smell to ascend from the drain.

PATENT LOOSE-BOX FITTINGS, and every article for the harness-room and stable, kept in stock, plain, galvanised, and enamelled. Iron gates, fencing, hurdles, &c.

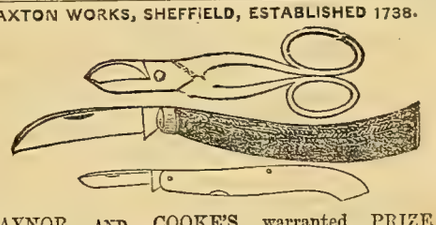
The New Illustrated Catalogue and Estimates, gratis, upon application to COTTAM and COMPANY, 2, Winsley Street, Oxford Street, W.

N.B. COTTAM & Co. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

GARDEN POTS AND PANS, in quantities of not less than 20 casts, delivered to the London Stations at the following prices:—Nos. Thbs. 60, L60, 54, 48, 40, 32, 28, 24, 16, per cast, 2*s.* respectively. 12, 8*s.*; 8, 3*s.* 6*d.*; 6, 5*s.*; 4, 5*s.*; 3, 5*s.*; 2, 5*s.*; 1, 5*s.* On lesser quantities, 6*d.* per mile, for delivery to the Station, charged. The usual discount to the Trade. Square Propagating Pans, Kale and Plunging Pots, Strawberry and Border Tiles, &c., made to order.

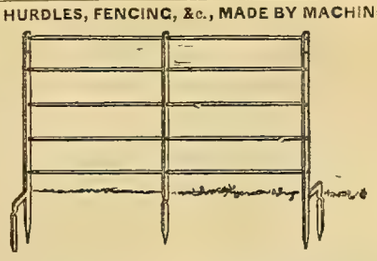
J. & W. ADAMS, Kilns, Belle Isle, York Road, King's Cross, N.

PAXTON WORKS, SHEFFIELD, ESTABLISHED 1738.



SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.—Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

IRON HURDLES, FENCING, &c., MADE BY MACHINERY.



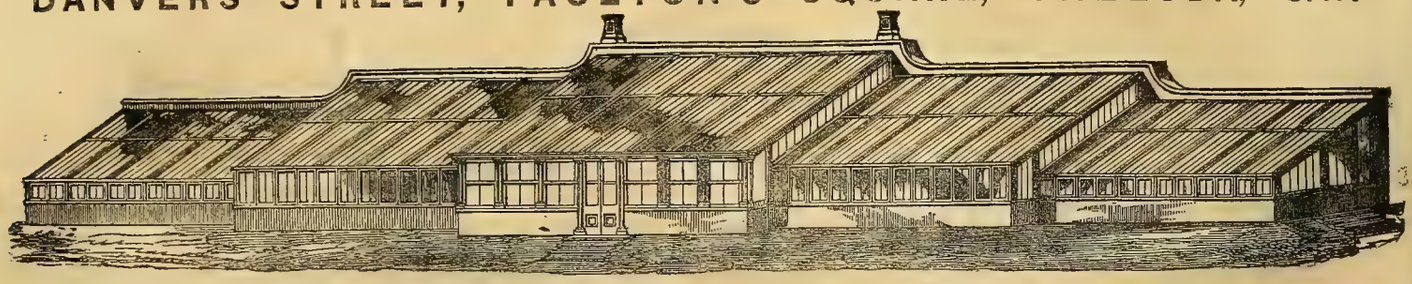
COTTAM AND COMPANY, Winsley Street, W., have invented machinery for making Hurdles, &c.; the bars, instead of being pointed by hand in the old fashioned style, are nipped down by the machine, leaving a shoulder so as to more effectually tighten the standards when rivetted. They are made of superior iron only, and will compete in price with those made by hand from cinder or common iron which so frequently break. Iron Fencing, Gates, and Iron Work of all kinds, both Plain and Ornamental, Conservatories, Hot Water Apparatus and Garden Implements.

Illustrated CATALOGUES free on application to COTTAM & COMPANY, Ironfounders, 2, Winsley Street, Oxford Street, W.

N.B. COTTAM & Co. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

HORTICULTURAL WORKS,

DANVERS STREET, PAULTON'S SQUARE, CHELSEA, S.W.



JAMES GRAY

RESPECTFULLY BEGS TO INFORM THE NOBILITY, GENTRY, NURSERYMEN, GARDENERS, AND OTHERS, THAT HE CONTINUES TO CARRY ON THE BUSINESS IN ALL ITS BRANCHES AT THE ABOVE OLD ESTABLISHED PREMISES.

CONSERVATORIES, GREENHOUSES, FORCING HOUSES, VINERIES, PITS, &c.,

OF EVERY DESCRIPTION, ERECTED ON THE MOST APPROVED PRINCIPLES.

HEATING BY HOT WATER.

J. G. having specially devoted his attention for many years to this part of the business, is now fully prepared to Heat every description of public and private buildings, viz. :—Churches, Mansions, Warehouses, &c., as well as all structures connected with Horticulture, in the most efficient manner. His system is the most simple that can be adopted—which he has found from long experience to be the best—can be constructed at less cost, and is more easily managed than those of a complicated nature which have attracted the notice of the public.

J. G. begs to call attention to his CAST-IRON CORRUGATED ARCH BOILER, which from its simplicity of construction has not the liability to fracture to which those of a more complex design are always subject. They have been extensively used for many years, and have given the greatest satisfaction.

All business is conducted at this establishment on the principle of lowest remunerative profits consistent with best materials and workmanship.

PLANS AND ESTIMATES FURNISHED ON THE SHORTEST NOTICE.

WEEKS' ONE BOILER SYSTEM.

BY APPOINTMENT.

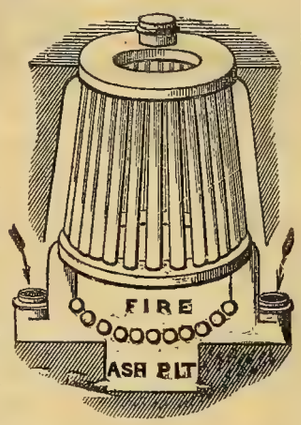
JOHN WEEKS & COMPANY,

KING'S ROAD, CHELSEA, S.W.,

CHALLENGE THE WORLD to produce a Boiler not made in imitation of their Upright Tubular Boiler that will produce anything like the same effect with the same quantity of fuel in a given time.

The following unequalled statistics fully justify the challenge:—

Mark the enormous length of Houses and Piping heated by One Boiler.	Length of Houses in feet	Total length of Piping.
Messrs. E. G. Henderson & Co., Wellington Nursery	1,200	5,500
Messrs. F. A. Smith, Dulwich	3,000	11,000
M. Van Houtte, Belgium	3,300	13,000
Our own Fruit Forcing Show Establishment ...	1,000	7,000



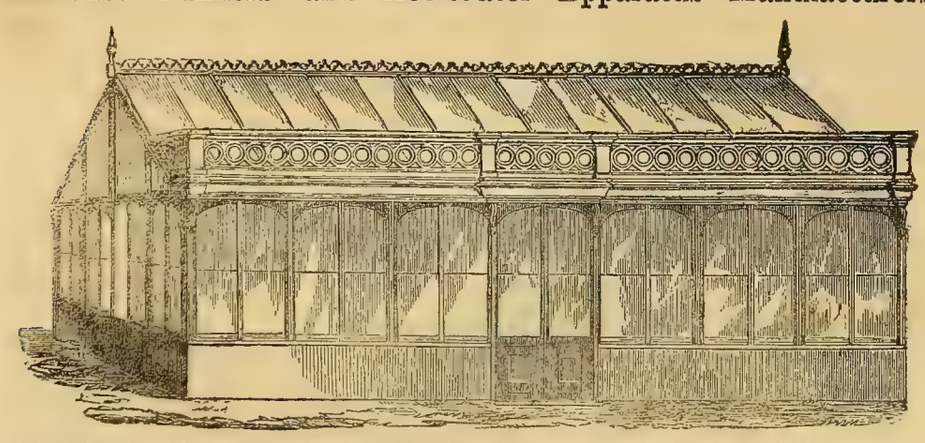
Also the Nurseries of Mr. Woodroffe, Harrow Road, N.W.; Messrs. Rollisson, Tooting, S.; Messrs. Wood & Ingram, Huntingdon; Messrs. Wood & Son, Maresfield; together with numerous Public Buildings and Establishments of the Nobility and Gentry far too numerous for insertion.

J. WEEKS & CO., Horticultural Builders and Hot-Water Apparatus Manufacturers, King's Road, Chelsea, S.W.

PLANS AND ESTIMATES FREE ON APPLICATION.

J. WATTS & CO.,

Hothouse Builders and Hot-Water Apparatus Manufacturers.



Horticultural Buildings of every description Heated on the most approved principles, combining great power with simplicity of construction. A Range of Houses containing 20,000 feet can be Heated as easily as the smallest Pit. Two Hundred Cucumber Boxes and Lights, and from Three to Four Hundred Lights of all sizes kept in stock, glazed and painted complete, ready for immediate use.

References to the Nobility, Gentry, and the Trade in most of the Counties in England.

Claremont Place, Old Kent Road, London, S.E.

IMPROVEMENTS IN HEATING, &c.

MUSGRAVE'S PATENT SLOW-COMBUSTION STOVE, for Warming Public Buildings, Hall, Shops, Conservatories, Factories, Drying Rooms, &c. Will burn in Churches from Saturday till Sunday evening, avoiding attention during the hours of worship. In Halls will burn day and night for weeks, with little care. Capable of warming a large apartment for 24 hours, at a cost of 3d.; and deserving of special attention, because of its safety, healthfulness, durability, and extreme simplicity. This Stove is the nearest approach to warming by hot water.



MUSGRAVE'S PATENT STABLE FITTINGS AND HARMLESS LOOSE BOXES have obtained the award of a large Council Medal from the R. I. A. Society for the following improvements:—1st, The Horse cannot injure himself or others in the same stable if he breaks loose in his stall. 2d, He cannot waste the hay. 3d, He can have cut or uncut hay at pleasure. 4th, He has clean water always before him. 5th, A pure and wholesome atmosphere is secured. 6th, The whole fittings are stronger than usual, without increase in price, and there is no risk of infection.



The Loose Box is really what its name denotes, and the most spirited Horse may be turned into it without danger.

MUSGRAVE'S PATENT IRON COW-HOUSE FITTINGS, as approved by the Board of Works, adopted in the Ulster Model Farm, and by many of the most eminent Stock Breeders in the Kingdom, are made wholly of iron, very durable, cleanly, and attractive in appearance. The fodder is always fresh, being freely exposed to the air, removed from the breath of the animal, and separated from the roots or damp food. The range of Troughs can be quickly filled with water for the use of the Cows, or for washing out in case of epidemic, and the cost is very moderate.



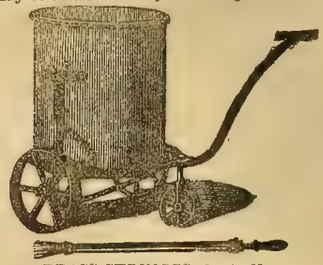
These inventions being distinguished for strength, simplicity, and practical usefulness will repay public inquiry.

MUSGRAVE BROTHERS are also Makers of Wire Fencing, Hurdles, Field and Entrance Gates, Corn Rick Stands, Conservatories, Hot-water Apparatus, Verandahs, Rural Bridges, &c.; and their works being favourably placed for cheap labour and materials, they can offer corresponding advantages in price.

MUSGRAVE'S Patent Field Gates have gained the 1st Prize from the R. I. A. Society for strength, durability, and cheapness.

For particulars address MUSGRAVE BROTHERS, Ann Street Iron Works, Belfast.

WARNER'S SWING WATER-BARROW (HOLDING ABOUT 35 GALLONS), MOUNTED ON WHEELS 20 INCHES HIGH, will save much of the Gardener's time and labour. May be obtained of any Ironmonger for 3l. 3s.



BRASS SYRINGES, 9s. to 21s.

Also a great variety of effective Machines for Hydraulic purposes, and to supply Gardens, Hothouses, Cottages, Farms, Mansions, or Boards of Health, with every requisite connected with the conveyance and distribution of Liquids.

Fountains suitable for Conservatories, Lawns, &c.

JOHN WARNER & SONS, 8, Crescent, Jewin Street, London, E.C.

GREENHOUSES.

HENRY FREEMAN, HOTHOUSE BUILDER and HOT-WATER APPARATUS MANUFACTURER, Triangle, Hackney, N.E. Established 20 years. Good substantially built GREENHOUSES, fixed in any part of the kingdom, for cash, 42 feet long by 13 feet, 90*l.*; 21 feet by 13 feet, 50*l.*; 12½ feet by 10 feet, 30*l.* A first-rate CONSERVATORY, 30 feet by 16 feet, 130*l.* A large assortment kept. Estimates for Heating, or any branch in Wood or Iron or Park Fencing.

HOT-WATER PIPES at wholesale prices, with Elbows, Syphons, Tee Pipes, and every other connection, Wrought and cast iron Boilers, Saddle, Conical, Cylinder, and Elliptic, from 24*s.* each. Boilers and Iron Stands to use without brickwork. Valves from 12*s.* each. Coil Boxes, Furnace Doors, Furnace Bars, Supply Cisterns, and Builders' Castings of every description in stock, at Mr. LYNCH WHITE'S Iron Wharf, Upper Ground Street, Blackfriars Bridge, London, S.

C. STEPHENSON, late STEPHENSON AND SONS, 61, Gracechurch St., London, E.C., Manufacturer of Iron Hurdles, Fencing, &c., Improved Iron and Copper Conical Boilers and Apparatus for Warming Buildings of every description by Hot Water.

Prices and Estimates furnished upon application.

STEELL'S PATENT WROUGHT-IRON DOUBLE-BACKED DOUBLE BOILER, for HEATING CHURCHES, HORTICULTURAL BUILDINGS, WAREHOUSES, &c., is the most powerful, most economical, and quickest actioned Boiler in existence, and may now be seen ready for use at their Nurseries, Richmond, Surrey, S.W., the only place where they can be procured. TESTIMONIAL.

"Rectory, Barnes, Sept 10, 1859.

"Gentlemen,—I can readily bear my testimony to the excellence of your Boiler; indeed to that of the whole heating apparatus which you have supplied for our church. It combines great heating power with economy of fuel and facility of management.—I am, Gentlemen, yours faithfully,

"Messrs. G. & W. Steell." "R. E. COPLESTON."



T. G. MESSENGER, HORTICULTURAL BUILDER and PATENT HOT-WATER APPARATUS and GARDEN ENGINE MANUFACTURER, Loughborough.

T. G. MESSENGER'S Divisionless Horticultural Erections, ventilated with screw mechanism by which the top or front lights are opened the entire length of the house momentarily, do not fail to give complete satisfaction (as numerous Testimonials can show), for the following reasons:—They are much lighter in appearance, more durable, much stronger, and cheaper than any other can possibly be.

Three years' trial has proved his PATENT BOILER to be superior to any hitherto invented; a great number of houses can be heated at once with this Boiler, with the facility of heating any separately.

Illustrated descriptions and prices of his Patent and greatly approved GARDEN ENGINES sent free upon application; also Plans, Estimates, and Testimonials for Building or Heating. See *Gardeners' Chronicle*, May 21.

HORTICULTURAL BUILDINGS AND HEATING BY HOT WATER.

JOHN R. PEILL, 17, New Park St., Southwark, S.E., Manufacturer of every description of Buildings for Horticultural purposes, and Inventor of the Improved Conical Boiler for heating the same, is prepared to undertake works of any magnitude, and refers among others to the celebrated range of FORCING HOUSES at HER MAJESTY'S GARDENS, FROGMORE, and at SIR ROBERT PEEL'S, DRAYTON MANOR, constructed under the superintendence of his Manager, Mr. JOHN JONES; and also to his BOILERS fixed at the CRYSTAL PALACE, the ROYAL BOTANIC GARDENS, REGENT'S PARK, and KEW, and at several hundreds of the Nobility's seats, Public Establishments, and Manufactories in London and the provinces. J. R. P. also manufactures every description of Iron Roofs, Iron Houses, and Iron Fencing, plain and ornamental. Strong Iron Hurdles for Sheep (6 ft. long, 3 ft. high, with 5 bars), 4*s.* 3*d.* each; ditto for cattle, 4*s.* 9*d.* each. Prices and other particulars forwarded on receipt of one postage stamp.

TO NURSERYMEN, FLORISTS, AND OTHERS.

TO BE SOLD IMMEDIATELY, the LIGHTS and WOODWORK of THREE GREENHOUSES, about 400 Feet of 3-Inch HOT-WATER PIPING, Two BOILERS, and 100 Feet of 2-Inch PIPING; they have been made about three years. Will be sold very cheap.—Apply to Mr. JOHN LODGE, Mill Hill, Hendon, Middlesex, N.W.

PARKES' STEEL DIGGING FORKS.

BURGESS AND KEY, 95, Newgate St., E.C., London, being the Wholesale and Retail Agents for these celebrated TOOLS have always a large Stock on hand from which their Customers may select what they may require.

ANTHONY'S PATENT AMERICAN CHURN.—The FIRST PRIZE was again awarded to this Churn in Competition with several others at the Chester Meeting of the Royal Agricultural Society; it has obtained the First Prize given by the Society at every Meeting since 1850.

Messrs. BURGESS & KEY, 95, Newgate Street, E.C., strongly recommend it as the most perfect Churn now in use. Full particulars sent on application.



BARNARD, BISHOP, AND BARNARD, Market Place, Norwich, in consequence of improvements in their machinery for the manufacture of the above article, have been enabled to make a great reduction in the prices.

		Galvanised.	Japanned Iron.
2-inch mesh,	24 inches wide	5*d.* per yd.	4*d.* per yd.
2-inch ,,	strong do.	6 ,,	4¾ ,,
2-inch ,,	intermediate, do. ..	7 ,,	5½ ,,
2-inch ,,	extra strong, do. ..	9½ ,,	7½ ,,
1⅝-inch ,,	24 inches wide	5½ ,,	4½ ,,
1⅝-inch ,,	strong, do.	6½ ,,	5¼ ,,
1⅝-inch ,,	intermediate, do. ..	7½ ,,	6 ,,
1⅝-inch ,,	extra strong, do. ..	10 ,,	8 ,,

All the above kinds can be made of any width (under 8 feet) at proportionate prices. If the upper half is of a coarser mesh than the lower, it will reduce the prices about one-fifth.

Strong Galvanised Poultry Netting, 8½*d.* per yard, 3 feet wide Galvanised Sparrow-proof Netting for Pheasantries, 2½*d.* per square foot. Delivered free of expense in London, Peterborough, Hull, or Newcastle. Manufacturers of Improved Strained Wire Cattle and Deer Fencing, Iron Hurdles, &c.

Illustrated Catalogues and Patterns forwarded by post.

TO NURSERYMEN, GARDENERS, AND OTHERS.

TO BE DISPOSED OF, A NURSERY, containing about 4 Acres, with numerous Greenhouses, Plants, Stock in Ground, &c., situated in a favourite suburb south of London, on the high road, and with an increasing business.—Full particulars will be given on application to Mr. A. CHANDLER, Horticultural Valuer, 28, Priory Road, Wandsworth Road, S.

TO NURSERYMEN AND OTHERS.

TO BE DISPOSED OF, a really first-rate NURSERY, including Glass, Stock, and Business, entire, on very advantageous terms, in the immediate neighbourhood of London. Might suit two or more in partnership, or any country firm requiring a London place of business. Long Lease and capitally situated. Part of the Purchase Money might remain at interest if desired.—For all further particulars apply by letter to A. B. & Co., care of Messrs. Williams & Lloyd, Stationers, 29, Moorgate Street, London, E.C.

TO NURSERYMEN AND OTHERS.

TO BE DISPOSED OF, AN OLD-ESTABLISHED NURSERY, of about 8 acres, adjoining a very populous and improving town, and close to the North-Western Railway station. The Vineries, Greenhouses, Shop, &c., are of recent erection, and arranged with every convenience. The Stock is in a flourishing condition, being young, healthy, and in good saleable order, comprising a general assortment of Evergreen and Ornamental Trees, Shrubs, Fruit Trees, Greenhouse and Miscellaneous Plants. The Grounds are ornamental and most eligibly situated, having an excellent frontage on the most leading thoroughfare, and in every way suitable to carry on a very extensive business.—Address, P. G. A., Messrs. Noble, Cooper, & Bolton, Seedsmen, 152, Fleet Street, E.C.

TO BE DISPOSED OF, THE LEASE OF A SMALL NURSERY, containing about 4 acres, well stocked with fine healthy Shrubs, in neighbourhood of Sunninghill, Berks. —For further particulars apply to Mr. WHOMES, Nurseryman, Windsor.

SUDBURY, SUFFOLK.

To NURSERYMEN AND MARKET GARDENERS.

TO BE LET ON LEASE, A NURSERY, containing about five acres, late in the occupation of Messrs. BASS & BROWN, and in consequence of their assignment, there is a first-rate opening for a respectable man. The Nursery is well situate, within five minutes' walk of the Market Hill and Railway station, and on a high road and sloping to the south. A Nursery containing seven acres has recently been broken up, the land being required for a cemetery. With a population of upwards of 8300 there is not a Nursery in the town nor within 12 miles. No valuation to be taken, and good residence on the property.—For further particulars and to view, apply by letter to Mr. CHARTRES, Seedsman, 74, King William St., London, E.C.

TO BE LET, the OFFHAM NURSERY, near Lewes, Sussex, in consequence of the death of the Proprietor. The Nursery is close to Cooksbridge Station, and about nine miles from Brighton. Has been established upwards of 60 years, and consists of about 8 acres, with a good General Stock, terms for which will be moderate. For further particulars apply to Messrs. CHAUNDY & Co., Nurserymen, Lewisham, Kent; Messrs. HUGH LOW & Co., Clapton, London; or Mr. HENRY ALDRICH, at the Nursery. N.B. Possession may be had immediately, but none need apply but persons of capital.

HERTFORDSHIRE.

TO BE LET, A FARM, 14 miles from London, 3 from the Great Northern, with immediate possession, 159 acres of excellent old Meadow Land, in a ring fence (except 7½ acres arable), a good modern ornamental Farm House, and every requisite Building, beautifully situate on high healthy ground, with never-failing supply of fine water, excellent roads. The Land has been kept in high condition for many years. None need apply unless they are decided in their religious views.—Apply to Mr. RUMBALL, Land Agent, &c., St. Albans, Herts.

Sales by Auction.

CRYSTAL PALACE—IMPORTANT SALE.

To NOBLEMEN, GENTLEMEN, NURSERYMEN, FLORISTS, & OTHERS.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions (by order of the Crystal Palace Company) to submit to public competition by Auction, on the premises near the Railway Station, on THURSDAY, Sept. 22, at 11 o'clock, the surplus stock of Plants, consisting of very large Orange Trees, Standard Bays, Araucaria excelsa, Bidwellii, and Cunninghamii, Cupressus torulosa, Pinus excelsa, Standard and Dwarf Rhododendrons, 500 choice Double Camellias, beautifully furnished with bloom buds; also about 60 plants of the Branching Pine Apple, of Penang.—May be viewed two days prior to the Sale; Catalogues may be had on the premises (6*d.* each returned to purchasers); of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

PRELIMINARY ADVERTISEMENT.

MESSRS. PROTHEROE AND MORRIS have received instructions from Mr. Epps to offer, about the last week in OCTOBER next, at the Bower Nursery, Maidstone, in consequence of the Land being sold for Building, a very valuable Collection of Coniferæ, Ornamental Trees and Shrubs of all sizes, Roses, Standard and trained Fruit Trees, Ash, Chesnut, &c. Among the Coniferæ will be found 500 noble specimens of insignis, macrocarpa, Sabiniana, excelsa, Douglasii, Nordmanniana, Cedrus Deodara, Wellingtonia gigantea, Cedars, Juniperus, Cupressus, Taxus, &c. The whole of the Stock being every year transplanted will remove safely. Further particulars will be given in future advertisements.—American Nursery, Leytonstone, Essex.

WALHAM GREEN, FULHAM.

SANDS END LANE, NEAR THE SWAN INN.

MR. ATWOOD will Sell by Auction, on the premises, on WEDNESDAY, September 21, at 1 o'clock, the LIVE and DEAD STOCK belonging to Mrs. Harwood, comprising 48 3-light Boxes and Lights, Greenhouses, Forcing Pits, and capital Horse, Market Van on Springs, Carts, Waggon, Baskets, Tools, and other articles.—May be viewed the day before and morning of Sale.

GRAINTHORPE, NEAR LOUTH.

MR. T. MASON will Sell by Auction, on FRIDAY, Sept. 23, at the Bricklayers' Arms Inn, in Grainthorpe, at 3 for 4 o'Clock, about 18 ACRES OF FLUKE POTATOES, in half-acre lots, as now staked out, now growing in the Rowe Field, upon the farm of Mr. Edward Merrikin, at Grainthorpe aforesaid. The Seed was brought from the South of England; and the Potatoes, having grown upon a rich Loam, will prove most desirable for Potato Merchants and others. Mr. Merrikin will be glad to find graving room for those parties who may be desirous of that accommodation. Credit will be given until November 1, 1859. The field is situated within 1½ mile of the Louth Navigation, whereby purchasers can have their lots conveyed to any part of the Kingdom.—Bridge St., Louth, Sept. 17.

SPECIMEN PLANTS.

ORCHIDS, FINE AND RARE FERNS, &c.

MR. J. C. STEVENS will Sell by Auction at his Great Room, 38, King Street, Covent Garden, W.C., on WEDNESDAY, September 21, at Half-past 12 o'Clock precisely, without any reserve, a collection of ORCHIDS, in fine health, and including—

Saccolabium guttatum	Phalænopsis grandiflora
,, Blumei major	Lælia superbiens
,, retusum	Calanthe masuca
Ærides Fieldingii	Epidendrum verrucosum
,, virens	Cattleya labiata
,, crispum	Miltonia Morelii
Vanda suavis	Cologyne Lowii, &c.
,, tricolor	

May be viewed on the morning of Sale, and Catalogues had of Mr. STEVENS, 38, King Street, Covent Garden, W.C.

ENGLEFIELD GREEN, SURREY.

Highly important Sale of Specimen Stove and Greenhouse Plants the property of a Gentleman who has ranked amongst the most successful exhibitors during past years.

MR. J. C. STEVENS is honoured with instructions to submit to public competition, without the least reservation, on the premises, Cooper's Hill, Englefield Green, Staines, on TUESDAY, September 27, at 1 o'Clock precisely, the Collection of SPECIMEN PLANTS of AZALEAS, ERICAS, STOVE and GREENHOUSE PLANTS, of a nobleman who is giving up exhibiting. Amongst the Azaleas will be found some extraordinarily fine plants of

Glory of Sunning Hill, 4 feet	Gladstanesii, 5 feet by 6
Variegata, 4 do. by 6 [by 4	Lateritia, 5 do. by 7
Optima, 6 do. by 5	Alba magna, 4 do. by 4
Murrayana, 4 do. by 4	And numerous others.

Amongst the Stove Plants will be found

Genetyllis macrostigna, 2½ feet by 2½	Boronia serrulata, 4 do. by 4
	Tetratheca ericoides, 2½ do. by 3
Acrophyllum venosum, 4 do. by 3	Epacris miniata grandiflora, 6 do. by 7

And numerous other fine plants, which have formed a leading feature in the various metropolitan exhibitions during several past years.—May be viewed on the day prior and morning of sale, and Catalogues had on the premises; at the principal Inns in the neighbourhood, and of Mr. STEVENS, 38, King Street, Covent Garden, W.C.

*** Cooper's Hill is about one mile from the Egham station on the London and South-Western Railway.

ORCHIDS.

MR. J. C. STEVENS will Sell by Auction at his Great Room, 38, King Street, Covent Garden, on FRIDAY, September 30, at ½ past 12 precisely, a collection of Orchids in fine health, and including

Aerides Lindleyanum	Phalænopsis grandiflora
,, suavissimum	Arpophyllum giganteum
,, affine superbum	Cattleya Regnelli
Angræcum virens	,, Lemoniana
Cypripedium hirsutissimum	Vanda tricolor superbum
Saccolabium guttatum superbum	,, suavis (Rollisson)

and numerous other fine sorts.

Also a Collection of Rare Ferns and Foliage Plants.—May be viewed on the morning of sale, and Catalogues had of Mr. J. C. STEVENS, 38, King Street, Covent Garden, W.C.

LIVE AND DEAD FARMING STOCK

STAINES, MIDDLESEX.

MESSRS. DAVIS AND VIGERS will Sell by Auction, on the premises, Gresham Farm, Knowle Green, Staines, close to the Railway Station, on TUESDAY, Sept. 20, at 11 for 12 o'Clock, the LIVE and DEAD FARMING STOCK, IMPLEMENTS, &c., comprising four Cart Horses, a Cleveland Filly, 3 years old, and a ditto Colt, two Steers, a Short-horned Cow in Calf, a Guernsey ditto in Calf, two Heifers, two Yorkshire and Berkshire Sows, two Bacon Hogs, and 30 Store Pigs, two Cotswold Rams, Turkeys, and other Poultry. A 2-horse Threshing Machine by Barrett & Exall, and a Chaff-cutting Machine, fitted to same gear, Weighing Machine, Turnip-cutter by Gardner, a Blowing Machine; Light, Heavy, and Drag Harrows; Ploughs, a Barley Hummelling Machine, Turnip-sower, a 2-row and a 3-row Drill, a Hand-threshing Machine, two Horse Hoes by Passingham, Reaping Machine by McCormick & Co., a Spring Van, Dung Carts, Light and Heavy Land and Meadow Rollers, Sieves, Tools, &c. Two Stacks of prime Meadow Hay, a Stump of ditto, a Stack of Mixed Clover, Flax, and Pea Straw, Potatoes, &c.—The property may be viewed the day before and morning of Sale. Catalogues to be had on the Premises; at the principal Inns in Staines; at the Castle Hotel, Windsor; the Crown, Chertsey; the King's Head, Richmond, S.W.; the Catherine Wheel, Egham; and at the Auctioneers' Offices, 3, Frederick's Place, Old Jewry, E.C.

WEST FLEXFORD AND CHRISTMAS-PIE FARMS,

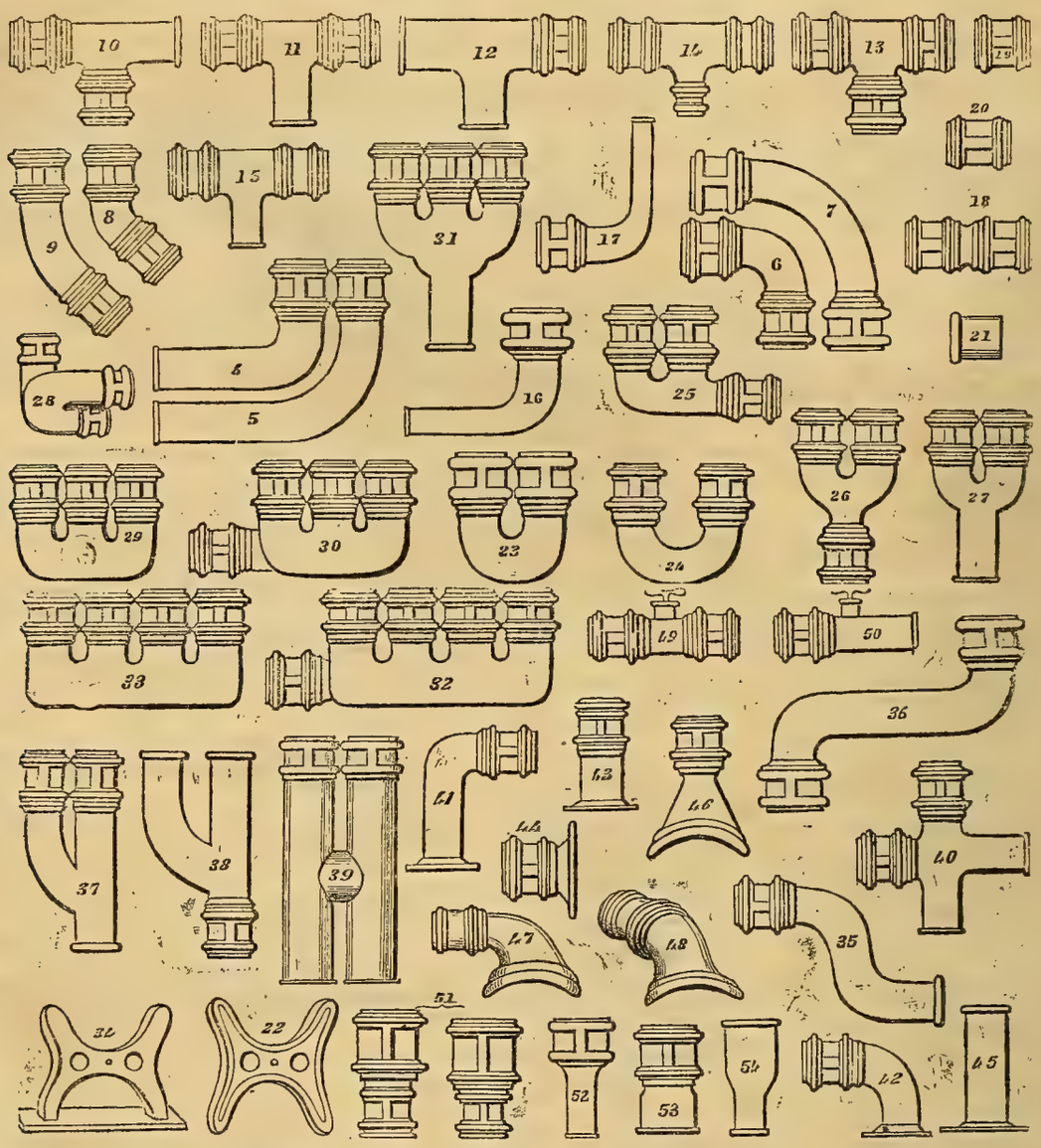
WANBOROUGH, NEAR GUILDFORD SURREY, within two miles of the Ash Station on the South-Eastern and South-Western Railway, and four miles of Guildford.

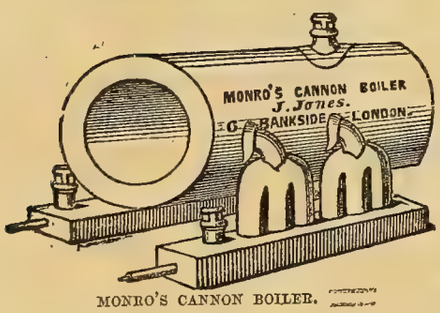
MR. THOMSON will Sell by Auction, on TUESDAY and WEDNESDAY, Sept. 20 and 21, at 12 o'Clock each day, by order of the Proprietor, who has let the Farm, LIVE and DEAD FARMING STOCK, comprising 10 Capital Cart Horses, Two Ponies, 19 Working Oxen, 60 Fat Wether Sheep, 37 Fatting Hogs. The Dead Stock consists of 10 Scotch and other Carts, excellent New Pair-Horse Van, with Tilt complete; Two Light Carts; New Reaping Machine, Two Winnowing Machines, with blowers; Bentall's Patent Scarifier, Six Scarifiers, Seed Machine, Plant Regulator, Cabbage Mincer, by Gill & Co.; Two Gardner's Patent Turnip Cutters, Burgess & Key's Patent Root Cutter, Gardner's Patent Root Cutter, Hand Turnip Cutter, and Root Slicer; 6 Horse Power Engine, by Barrett & Exall; Threshing Machine, by Burrell; 2-Horse Corn, Seed, and Manure Drill, by Chambers; Crosskill's Liquid Manure Cart; Suffolk Drill; Patent Horse Hoe, by Garrett & Son; 2-Horse Double Iron Roll, 4-Horse Press Roll, 1-Horse Roll, 2-Horse Wooden Roll, 3 Horse Hoes; Sheep Dipping Machine; Seven Iron Ploughs, by Ransome; Two Wooden Ploughs, Strike Furrow Plough, Two Skim Ploughs; Three Drag Harrows, with long Whippances, complete; Pair of Clasp Drags, Set of Four Wood Harrows, Two Bush Harrows, Two Sets of Large Iron Horse Harrows, Two Sets of small ditto; Four Iron Rakes; 16 Sets of Bullock Harness, complete; Six Pairs of Trace Harness, Collars and Bridles; 11 Pairs of Thill Harness, Collars, and Bridles, Eight Pairs of Plough Traces, Three Pairs of Foot Harness, Eight Nose Bags, Eight Leather-headed Halters, Two Sets of Light Cart Harness, Saddle and Bridle; 18 Iron Sheep Racks and Covers, 10 Sheep Racks, Eight Bullock Troughs, Quantity of Iron and Wooden Hog Troughs; Chaff Waggon, Corn Bins, various; Quantity of large Casks and Bins for mixing Food for Stock; Rick-stage for Rick-building; Four Wheelbarrows; Five Ladders; 500 Yards of Moveable Railway with Two Turntables; Six Railway Trucks to ditto. Barn Implements; 400,000 Bricks, together with a small portion of Household Furniture and other Effects.—Catalogues to be had on the Premises, at the principal Inns in the Neighbourhood, and of the Auctioneer, Guildford and Wonersh, Surrey. Luncheon will be provided at 11 o'clock.

☞ A Train will leave London at 9.40 A.M., and stop at the Siding, within five minutes' walk of the Farm, and a Special Train will start at 6.30 P.M. from Mr. Coussmaker's siding to Guildford.

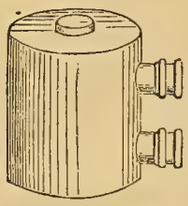
TO NURSERYMEN, GARDENERS, AND OTHERS.

HOT-WATER APPARATUS.

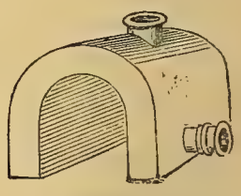




MONRO'S CANNON BOILER.



CYLINDER BOILERS OF VARIOUS SIZES.



SADDLE BOILERS OF WROUGHT AND CAST IRON, OF ALL SIZES.

THE LARGEST STOCK OF

HOT-WATER PIPES, CONNECTION BOILERS, ETC.,

OF THE BEST QUALITY.

THE WHOLE OF THE ABOVE KEPT IN STOCK READY FOR IMMEDIATE DELIVERY.

PRICES WILL BE SENT ON APPLICATION, OR ESTIMATES FOR

HOT-WATER APPARATUS

ERECTED COMPLETE IN ANY PART OF THE COUNTRY.

J. JONES, 6, BANKSIDE, SOUTHWARK, LONDON, S.E.

Printed by WILLIAM BRADBURY, of 13, Upper Woburn Place, and FREDERICK MULLETT EVANS, of No. 20, Queen's Road, West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and published by them at the Office No. 5, Upper Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—SATURDAY, September 17, 1859.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 39.—1859.] SATURDAY, SEPTEMBER 24. {Price Fivepence. Stamped Edition, 6d.

INDEX.

Abortion	777 c	Grapes, Black Hamburgh	774 b
Acacia, sick	774 c	Hitcham village meetings	771 c
Agriculture, Theory of	778 b	Ireland, tour in	775 a
Agricultural Soc. of England, Journal of	780 c	Kelso Farmers' Club	780 c
Annamallay mountains	773 a	Kingscote Farmers' Club	780 a
Aubergines, to cook	776 c	Land Company	778 a
Books noticed	775 a	Lomaria chilensis	774 a
British Pomological Society	774 c	Manure, wool	774 a
Cattle, abortion in	777 c	— and food	779 a
Cheshire Agri. Society	780 b	Photographs	772 b
Copomey, wall	776 c	Plants, how to grow Lilliputian	773 c
Dodder	780 a	Rams, sale of Leicester	780 a
Elm tree, Scolytus in	772 c	School, Ghent Horticultural	772 a
Evergreens, to transplant	774 a	Tealing House	776 a
Food and manure	779 a	Trade lists	776 a
Fruit tree protector	776 c	Transplanting evergreens	774 a
Gardeners and their employers	774 b	Village show, Hitcham	771 c
Garden basins, Portland stone	774 c	Wexford and Waterford	780 a
Ghent Horticultural School	772 a	Wheat, experiments with	780 a
		Wool manure	774 a

BRITISH POMOLOGICAL SOCIETY.
HANOVER SQUARE ROOMS, LONDON, W.

IMPORTANT NOTICE.—The attention of members and the public generally is respectfully called to the above change of address, to which all parcels should be directed in future; but letters as heretofore to WILLIAM DAVIDSON, Secretary.
2, Randolph Road, Maida Hill, London, W.

SCOTTISH ARBORICULTURAL SOCIETY.—The ANNUAL GENERAL MEETING of this SOCIETY will be held in the Society's Rooms, 6, York Place, Edinburgh, on WEDNESDAY, October 5, at 2 P.M., for the ELECTION of Office Bearers and other business.
Edinburgh, Sept. 24. JAMES ALEXANDER, Secretary.

PINE APPLES, GRAPES, &c.
PINE PLANTS, Fruiting and Succession.
GRAPE VINES, from Eyes, for Fruiting in Pots or Planting.
JOHN WEEKS AND CO. can now supply any quantity of very fine strong healthy Pine Plants, either Fruiting or Succession; also remarkably fine strong Grape Vines from Eyes, all the best sorts.
JOHN WEEKS & CO.'S Horticultural Show Establishment is now entirely devoted to the Growing and Forcing of Fruits in great variety, thereby showing the most improved plans of construction, and the most superior system of Hot-water Apparatus.
JOHN WEEKS & CO., Horticultural Builders and Hot-water Apparatus Manufacturers, King's Road, Chelsea, London, S.W.

WHOLESALE CATALOGUE.
GEORGE JACKMAN AND SONS' PRICED and DESCRIPTIVE CATALOGUE for 1859, & SPRING 1860, can be had on application.—Woking Nursery, Surrey.

YOUELL AND CO.'S GENERAL PRICED CATALOGUE is now published, and may be had post free on application.—Royal Nursery, Great Yarmouth, Sept. 24.

FERN CATALOGUE.
ROBERT SIM'S NEW DESCRIPTIVE AND PRICED CATALOGUE, No. 6 (62 pages) of his COLLECTION of BRITISH and EXOTIC FERNS, can be had, post free, for 8 stamps. Gratis to all previous purchasers of Ferns.
Nursery, Fort's Cray, Kent, S.E.

AZALEAS FOR FORCING.
T. GAINES begs to inform those parties that grow Azaleas for Early Forcing, he has a large stock both of large and small plants to dispose of at low prices. Persons wishing to see them admitted any day (Sundays excepted).

ERICAS.
F. AND A. SMITH'S Stocks of the above are this season unusually fine, comprising most of the leading winter and spring-flowering varieties. Prices on application.
Dulwich, Surrey, S.

RHODODENDRONS "of every hue," Scarlet, White, Rose, Crimson, and every intermediate shade, nearly all sizes and at all prices, according to quality, can be supplied by CHARLES NOBLE, Bagshot, Surrey.

NEW HARDY GHENT RHODODENDRON, "JEAN VERSCHAFFELT."
This superb Rhododendron, that was so much admired by all who saw it in flower last year, is to be sent out before the 15th of October next. Price 20, 30, and 50 francs per plant. Each Subscriber will receive post free a coloured plate of said Rhododendron. All orders to be addressed direct to
JEAN VERSCHAFFELT, Nurseryman, Ghent, Belgium.

TO BE DISPOSED OF, Six large CAMELLIAS, fine healthy and bushy plants, of good sorts, well set with flower buds, and varying from 4 to 8 feet high.—For particulars apply to RICHARD PRITCHARD, Gardener to Hon. W. O. Stanley, M.P., Penrhos, Holyhead.

TO BE SOLD, by Private Contract, a choice collection of ORCHIDS, viz.:—Ærides, Vandas, Saccolabiums, Phalænopsis, Cypripediums, Cymbidiums, Dendrobiums, &c., the property of THOMAS CROSS, Esq., Mortfield, Bolton-le-Moors, Lancashire.—For further particulars inquire of J. H. COLLENS, Gardener.

MAGNIFICENT SPECIMEN PLANTS.—Ixoras, Rhynchospermums, Medinillas, Euphorbias, Dendrobiums, Ardisia.
VARIEGATED PLANTS, viz., Caladiums, Dracænas, Marantas, Crotons, Aphelandras; 2 pair of very fine variegated YUCCAS, and specimen AZALEAS. The above are to be sold very cheap. To be inspected on application to
Mr. W. J. EPPS, Maidstone.

ARAUCARIA IMBRICATA.—The finest lot of trees in the world of this noble plant, from 1 to 10 feet high, are to be seen at H. LANE & SON'S Nurseries, Great Berkhampstead, and they strongly recommend gentlemen and planters to view them. This forms the most noble tree for Avenues and Plantations. There is a most beautiful specimen at Dropmore, which the intelligent gardener, Mr. Frost, feels great pleasure in showing.
They also have a fine stock of CEDRUS DEODARA, ABIES DOUGLASII, IRISH YEW, &c., from 5 to 10 feet high, for immediate effect.

DUTCH AND OTHER FLOWER ROOTS.
HOOPER AND CO.'S PRICED CATALOGUE OF DUTCH AND OTHER FLOWER ROOTS, with Hints on Cultivation, is now ready, and may be had free by post on application. The first consignment of Bulbs has just arrived in excellent condition, and of the usual first class quality.
Covent Garden Market, London, W.C.

DUTCH AND CAPE BULBS.
BUTLER AND McCULLOCH'S PRICED AUTUMN CATALOGUE of Hyacinths, Gladioli, the finest hybrid varieties, Amaryllis, Chinese Pæonies, Oxalis, Lilium lancifolium, giganteum, and many other beautiful varieties; Tulips, Ranunculus, Anemones, Polyanthus, Narcissus, Crocus, Ixias, Sparaxis, &c., is now ready, and sent post paid on application.
Covent Garden Market, W.C.

HYACINTHS, &c., FOR PRESENT PLANTING.—The following collection (H) for 21s.;—12 Superior named Hyacinths, 6 mixed Hyacinths, 6 Polyanthus Narcissus, 50 Border Narcissus, 25 Sweet Scented Tulips, 50 Double Tulips, 100 Crocus, 100 Double Snowdrops, 12 beautiful Iris, 25 Ranunculus, 12 Double Anemones, half of the above for 10s. 6d. All orders amounting to 21s. and upwards sent carriage paid.—BUTLER & MCCULLOCH, Covent Garden Market, W.C.

DUTCH BULBS, FLOWER ROOTS, ETC.
JAMES FAIRHEAD AND SON, SEED GROWERS and MERCHANTS, Borough Market, London, S.E., beg leave to inform purchasers of the above that their WHOLESALE CATALOGUE is now ready and may be had post free on application.
Their selections are from the most eminent growers in Holland. Prices the lowest consistent with first-class quality.

HYACINTHS AND OTHER BULBS.
WM. CUTBUSH AND SON'S DESCRIPTIVE CATALOGUE of the above is published, and can be had post free on application.—Highgate Nurseries, London, N.

DUTCH AND OTHER BULBS.
MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their CATALOGUE of the above is now ready, and will be forwarded post free on application. Early orders are solicited, as their successful cultivation depends in a great measure on early planting.
Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

DUTCH AND CAPE BULBS.
W. CULLINGFORD'S CATALOGUE of the above, post free, on application. The Hyacinths, Crocuses, Tulips, Narcissuses, Anemones, Ranunculuses, and Lilies, are unusually fine, and very low in price. Named Hyacinths, 3s. and 4s. per dozen; Crocuses, 1s. 6d. per 100; Duc Van Thol Tulips, 2s. per 100; Anemones, 1s. per dozen; Ranunculuses, 2s. per 100; Lilium lancifolium rubrum, 1s. each; album ditto, 6d. Having double his usual supply, the Trade and extensive purchasers will be liberally treated. Chrysanthemums, fine strong Plants, named, 3s. per dozen. All the new ones of 1859 at 1s. each.—W. CULLINGFORD, 1, Edmund Terrace, Ball's Pond Road, Islington, N.

DUTCH FLOWER ROOTS.
TIMOTHY BRIGDEN, SEEDSMAN and FLORIST, 10, Railway Arcade, London Bridge, London, E.C., begs most respectfully to inform his Friends and the Public generally that he has just returned from Holland with his unrivalled collection of HYACINTHS, CROCUS, TULIPS, NARCISSUS, JONQUILS, &c., of which a PRICED LIST may be had upon application. T. B. further begs to state that, having selected them from the best growers in Holland himself, he can guarantee them finer than any other house in London.
A large assortment of Aquaria, Wardian Cases, and Gold and Silver Fish always on sale.

DUTCH AND OTHER BULBS.
THOMAS JACKSON AND SON respectfully announce that their PRICED DESCRIPTIVE LIST OF BULBS is ready for distribution, and will be forwarded post free on application.
T. J. & SON import only the finest kinds and largest Roots; dependence consequently can be placed on receiving the finest Bulbs.—Nurseries, gston, S.W.

NEW [illegible] CH FLOWER ROOTS.
CHARLES [illegible]RNER'S CATALOGUE of these valuable s[illegible] flowers is now ready, and may be had free on applicat[illegible]
The Hyacinths, [illegible]s, Crocus, &c., have been selected with the greatest care [illegible]e best growers, and have arrived in fine condition.
C. T. will be [illegible]cute any orders intrusted to him with punctuality [illegible]al Nurseries, Slough.

D[illegible] FLOWER ROOTS.
E. P. DIX[illegible] ll supply the following Collection of Bulbs, [illegible]age included, on receipt of a Post-office Order for 21s.

12 choice Polyan[illegible]s Narcissus	12 choice named Hyacinths
1 col. Crocus, 2[illegible]ieties	100 Turban Ranunculus
12 Tournesol dou[illegible] Tulips	12 Rex Rubrorum Tulips
12 Yellow Rose ,,	12 Pæony Gold ,,
12 Parrot Tulips	12 sweet-scented Jonquils
50 Double Snowdrops	50 Winter Aconites

CATALOGUES gratis on applicati[illegible]n.
Seed Establishment, 57, Queen Street, Hull.

DUTCH FLOWER ROOTS.
CHARLES ALEXANDER, 30, West Register Street, Edinburgh, has received his first importation of the above in fine condition. The Bulbs are large and sound. Early orders solicited.
DESCRIPTIVE PRICED CATALOGUES on application.

TO THE TRADE.—A fine healthy Stock of GENTIANELLA, 10s. per 100; ALPINE AURICULAS, 10s. per 100.
J. SMITH, Sen., Tansley Nursery, Matlock, Derbyshire.
Unknown correspondents will please to enclose a reference, to save delay in the execution of their orders.

GOOD SEEDS. CARRIAGE FREE.
SUTTON AND SONS,
SEED GROWERS AND MERCHANTS,
ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.

GEORGE GIBBS AND CO.,
SEEDSMEN,
26, DOWN STREET, PICCADILLY,
LONDON, W.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY LIMITED supply every requisite for the Farm and the Garden.
Registered Offices, Union Road, Plymouth.

GREAT SCARCITY OF FRUIT.
STRONG ROOTS OF THE LINNÆUS RHUBARB, from division, can be supplied in any quantity at 12s. per 100, or 5l. per 1000, by WALTER PENNINGTON, Nurseryman, South Retford, Nottinghamshire.

FRUIT TREES.—Intending purchasers are respectfully invited to inspect the extensive Stock growing at the Nursery of the Subscribers. The quality is this season unusually good.—HUGH LOW & Co., Clapton Nursery, London, N.E.

FRUIT TREES.
J. AND J. FRASER, Lea Bridge Road Nurseries, Essex, N.E., beg to invite purchasers of Fruit Trees to an inspection of their stock, which is this year unusually fine. PRICED CATALOGUES can be had on application.

TO THE TRADE.
J. AND J. FRASER, The Nurseries, Lea Bridge Road, Essex, N.E., beg to offer a large Stock of Maiden FRUIT TREES, including all the best sorts of Apricots, Peaches, &c. The prices, which are very moderate, may be had on application.

WANTED, Three 5-feet STANDARD PEACH TREES, viz., Noblesse, Royal George, and Bellegarde. Also Three NECTARINES, two Elruge and one Violette Hâtive, suitable for bearing a crop next season in a Peach-house.—Apply, stating size, age, and price, to EDWARD BENNETT, Osberton Gardens, Worksop, Notts.

WILLOW CUTTINGS.
WANTED, FIFTY THOUSAND CUTTINGS of HUNTINGDON and BEDFORD WILLOW, one-half of each sort.—Address G. A. HAIG, 59, Mark Lane, London, E.C.

MUSCAT GRAPES WANTED.—
PINE-APPLES (not under 2 lbs.) WANTED.
PEACHES (large size) WANTED.
Forward immediately to GEORGE TAYLOR,
CHOICE FRUIT SALESMAN,
St. John's Market, Liverpool.

OSCAR STRAWBERRY.
CHARLES TURNER can still supply strong plants, warranted to fruit next season, at 42s. per 100.
For full particulars of this fine early variety see previous Advertisements.—The Royal Nurseries, Slough.

STRAWBERRY PLANTS.—ELTON PINE and KEENS' SEEDLING at 2s.; BRITISH QUEEN, ELEANOR, and ADMIRAL DUNDAS at 2s. 6d. per 100.
GEORGE CORNWELL, Barnet, N.

STRAWBERRIES.
CHARLES TURNER can supply good strong healthy plants of the following most approved and favourite kinds:—

Adair	British Queen
Carolina superba	Crimson Queen
Filbert Pine	Prince of Wales
Sir C. Napier	Wonderful

The Royal Nurseries, Slough.

CUTHILL'S STRAWBERRY PLANTS.
EARLY BLACK PRINCE, per 100, 5s.; selected, 7s. 6d.
Do. PRINCESS ROYAL of ENGLAND, do. 7s. 6d.; do. 10s.
LATE PRINCE of WALES .. .. do. 7s. 6d.; do. 10s.
Will bear next year. See former Advertisements.
HIGHLAND MARY CUCUMBER (Winter), 1s. per packet.
Pamphlets, &c. Best Mushroom Spawn.
JAMES CUTHILL, Camberwell, London, S.

STRAWBERRY PLANTS AND CATALOGUE.—Plants of the pretty little Bush Alpine, both Red and White, without runners, suitable for edgings to walks, beds, &c., 10s. per 100 sets.
A DESCRIPTIVE CATALOGUE of upwards of 130 sorts is just published. To all who wish to purchase plants it will be sent by applying to the grower, WILLIAM JAS. NICHOLSON, Egglescliffe, Yarm, Yorkshire.

MUSHROOM SPAWN of first-rate quality, in any quantity. Price on application.—J. REEVES, Ladbroke Nursery, Notting Hill, W.

TO FLORISTS AND SEEDSMEN.
SAMUEL CHEESE, who has stood unrivalled upwards of 50 years as a Mushroom Grower, begs to inform his numerous patrons that his NEW MUSHROOM SPAWN is now quite ready.—231, Oxford Street, London, W.

CINERARIA, CALCEOLARIA, AND PRIMULA.
F. AND A. SMITH are now sending out SEED of their splendid varieties of the above in sealed packets, without which none are genuine, at 1s., 1s. 6d., 2s. 6d., and 5s. each. To be had also of most respectable Nurserymen and Seedsmen in the Kingdom.—Dulwich, Surrey, S.

STANDARD ROSES.—All the leading kinds in cultivation at prices scarcely ever offered before.
CHARLES NOBLE, Bagshot, Surrey.

ROSES IN BLOOM.
JAMES MITCHELL begs to announce to the nobility and gentry that his unrivalled collection is now in fine Bloom. Two and a half miles from the Uckfield Station, the London, Brighton, and South Coast Railway.
J. M.'s New CATALOGUE will be ready early in October.
The Nurseries, Piltdown, Maresfield, Sussex, Sept. 24.

GUERNSEY LILIES, fine blooming bulbs, 4*s.* per dozen. Price to the Trade same as charged in the island.

TRIFOLIUM INCARNATUM (English), 5*d.* to 6*d.* per lb. RYE, WINTER OATS, WINTER TARES, ITALIAN RYE-GRASS, MIXED PASTURE and LAWN GRASSES.

DUTCH BULBS just imported.

PAGE & TOOGOOD, Royal Seed Establishment, Southampton.

CINERARIA, HERBACEOUS CALCEOLARIA, AND HALF SHRUBBY DITTO SEED.—These have been saved from Turner's most beautiful varieties; in 1*s.* and 2*s.* 6*d.* packets. Primula and Hollyhock, from the newest and handsomest varieties, 1*s.* per packet. Agents for F. & A. Smith's splendid Cineraria, in 1*s.* 6*d.*, 2*s.* 6*d.*, and 5*s.* packets; also agents for Dobson & Son's splendid Calceolaria, in 1*s.* 6*d.*, 2*s.* 6*d.*, 3*s.* 6*d.*, & 5*s.* packets.—Catalogues of the newest Flower Seeds, and newest Dutch and Cape Bulbs, sent post-paid.—BUTLER & MCCULLOCH, Seedsmen, Covent Garden Market, W.C.

CATTELL'S EARLY BARNES & RELIANCE CABBAGES; ALSO DEPTFORD, EAST HAM, HIGHAM, KING, &c.

JOHN CATTELL has now ready BEDDED PLANTS of the above well known best kinds for early spring cutting at 5*s.* 6*d.* per 1000. No charge for crates, baskets, or packing.

Packages of 5000 or more are delivered to the Edenbridge Station of the South Eastern Railway carriage free. A remittance or reference to accompany orders from unknown correspondents.—Nurseries, Westerham, Kent.

JOSEPH FRYER, CLARENDON NURSERIES, Cumberwell New Road, S., has a large STOCK of the undermentioned, which he offers in large or small quantities at low prices:—Standard and Trained Fruit Trees of all sorts, Mulberries, Figs, and Grape Vines, Limes, Poplars, Scarlet Thorns, Lilacs, Evergreen Oaks, Privet, Laurels, Euonymus japonica and variegata, Garryas, Althæas, Aucubas, Box, Irish Ivies, Virginian Creepers, Passionflowers, Periplocas, Menispermums, Bignonias, Sweet-scented and other Clematis, Glycine sinensis, Jasmines, Rhododendrons, Azaleas, Hardy Heaths, Magnolia grandiflora, Exmouth, and all other General Nursery Stock; also Greenhouse, Herbaceous and Alpine Plants, Ferns and Lycopods, Dutch Roots, Loam, Peat and Bog Mould, Silver Sand, Turf, Gravel, Manure, &c. A large quantity of Tiger Lilies, 12*s.* per 100.

BEGONIA MARSHALLI.

WILLIAM COLE begs to announce that he will send out the above beautiful variety, raised by Mr. Franklin, Gardener to J. G. Marshall, Esq., Headingley, near Leeds, on and after the 26th inst. It has been exhibited at the Regent's Park, Kirkstall, Halifax, Shipley, and other Exhibitions, and Certificates have been awarded to it. It is universally admitted to be by far the handsomest of all the Begonias, and will be invaluable for Exhibition purposes.

For further particulars see *Gardeners' Chronicle* of July 16, page 666; also Sept. 10, page 742; also "Cottage Gardener" of July 19 and Sept. 13.

Strong plants 15*s.* each, with the usual discount to the Trade. Post-office Orders payable at Manchester.

Nursery, Withington, near Manchester.—Sept. 24.

COMMON HOLLIES, FROM 1 TO 2½ FEET.

WHITEHOUSE AND WHITTAKER having a large stock of common HOLLIES, fine bushy plants, with good fibrous roots, are prepared to supply them at very moderate prices, and strongly recommend the present as a good time for planting them. Large purchasers and the Trade liberally dealt with.

W. & W.'s general NURSERY STOCK is large and in fine healthy condition; intending purchasers would do well to inspect it. The Nursery is situated conveniently for Railway communication to all parts, being about two miles from the Rugeley Station, on the Trent Valley Railway.

Brereton, Rugeley, Staffordshire.

THE BRISTOL NURSERY, KEMP TOWN, BRIGHTON.

ALEX. MCKENZIE, for some time Gardener, &c., at Woodlands, Blackheath, begs to inform his friends and the public that he has taken the above Nursery on Lease, and hopes by strict attention to his business to obtain a share of the patronage so liberally bestowed on the late Mr. Mitchell.

Having taken the whole Stock, he will be prepared to execute orders at once, and begs to offer the following, which are in fine condition:—VINES, from Eyes, fit for forcing or planting.

FRUIT TREES, trained and in pots.
Extra large RHUBARB, for immediate forcing.
FIGS, in pots, fit for forcing.
STOVE and GREENHOUSE PLANTS.
A d a very superior collection of TULIPS.—September 24.

STRONG ESTABLISHED PLANTS of the following carriage paid to London. Special offers to the Trade.

ACHIMENES.—Meteor, carminata splendens, Parsonii, Gem, &c., 6*s.* to 9*s.* per dozen.
Verschaffelt's and Van Houtte's new TYDÆAS, 6*s.* to 9*s.* per doz.
VARIEGATED FOLIAGE PLANTS, such as Crotons, Dracænas, Caladiums, &c., 12*s.* to 24*s.* per dozen.
STOVE PLANTS.—Ixoras, Allamandas, Stephanotis, Æschynanthus Lucolor, Gardenias, Pleromas, &c., 12*s.* to 18*s.* p. doz.
GREENHOUSE PLANTS.—Epacris, Pimeleas, Leschenaultias, Ruella, Gompholobiums, Chorozemas, Polygalas, creepers of all kinds, &c., 12*s.* to 18*s.* per dozen.
ERICAS, very fine, 9*s.*, 12*s.*, to 18*s.* per dozen.
SEEDLING ERICAS, not flowered, crossed with the best kinds, 18*s.* to 30*s.* per dozen.
Young specimens of AZALEAS AND ERICAS, from 18 inches over and upwards. List and prices sent on application.

EPPS's Nurseries, Maidstone and Ashford.

NEW STRAWBERRIES.

ROBERTSON'S WIZARD OF THE NORTH AND NONSUCH.

DANIEL ROBERTSON, Linside Nursery, Paisley, is now sending out the above named superb varieties, at 63*s.* per 100 plants, or 9*s.* per dozen. The Wizard of the North is a magnificent large variety, of superior quality, of very fine colour and shape, and an immense bearer. Succeeds Keens' Seedling and continues long in production. It is exceedingly hardy both in growth and in blossom. It was named in 1857, when a Certificate of Merit was awarded to it by the Paisley Horticultural Society; and a drawing made of the plant then exhibited is in the hands of the lithographer, copies of which when ready will be sent to the principal Seed shops in the country.

Nonsuch is an early Strawberry, of fine size and colour, a great bearer, juicy and rich in flavour, swelling off its later berries well.

These fine varieties were raised by Mr. John Robertson, at Linside, and their high character has been most satisfactorily established by several years' cultivation. They are confidently recommended as a valuable acquisition to Strawberry growers, whether they cultivate on a large or small scale. Strong plants are now ready and orders will be promptly executed.

Testimonials in favour of these fine Strawberries from the most eminent cultivators in the west of Scotland, who have seen them in bearing here, will be supplied on application.

Having a large stock of the Wizard of the North, Nurserymen and Market Gardeners ordering in quantity will be dealt with on favourable terms. A remittance or reference required.—DANIEL ROBERTSON, Linside Nursery, Paisley, N.B.

NEW SEEDS.

TRIFOLIUM INCARNATUM
ITALIAN RYE-GRASS
NATURAL GRASS SEEDS FOR PERMANENT PASTURE LAWNS, &c.

PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN, &c., are prepared to supply all kinds of SEEDS for AUTUMN SOWING of the best quality.

27, Great George Street, Westminster, S.W.

DUTCH FLOWER ROOTS.

PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN, &c., respectfully announce the arrival of a fine Stock of

DUTCH FLOWER ROOTS,

and they are now prepared to execute orders for the same.

27, Great George Street, Westminster, S.W.

DUTCH BULBS.

MILNE, ARNOTT, AND CO. are now sending out, in the best possible condition, HYACINTHS, NARCISSUS, TULIPS, CROCUS, and other Flower Roots, imported direct from some of the most celebrated growers in Holland.

A PRICED and DESCRIPTIVE CATALOGUE just published will be forwarded free upon application.

Finest Hyacinths, by name, 5*s.*, 6*s.*, 7*s.* 6*d.*, & 9*s.* per dozen.
Select Collections of Bulbs from 10*s.* 6*d.* upwards.
The Nursery, Wandsworth Road, London, S.

DUTCH FLOWER ROOTS.

JAMES VEITCH, JUN., ROYAL EXOTIC NURSERY, Chelsea, S.W., begs to announce that he has received his annual supply of BULBOUS ROOTS from Holland, and is pleased to say that they are PARTICULARLY FINE and in EXCELLENT CONDITION. Catalogues are now ready and will be forwarded on application.

J. V., Jun., desires to impress upon those who patronise him the great advantage of giving him their ORDERS EARLY, as the successful cultivation of Bulbs depends in a great measure upon their BEING PLANTED EARLY IN THE SEASON.

NEW PLANT CATALOGUE.

JAMES VEITCH, JUN., begs to intimate that his GENERAL PLANT CATALOGUE for the present season, including a DESCRIPTIVE LIST of NEW and RARE PLANTS is now ready and will be forwarded post free on application.

Royal Exotic Nursery, Chelsea, S.W.—Sept. 24.

SPLENDID NEW VARIEGATED FERN,
PTERIS ARGYRÆA (MOORE).

JAMES VEITCH AND SON have peculiar satisfaction in calling attention to the above-named most striking novelty, which is undoubtedly one of the greatest acquisitions of recent introduction to our now justly popular collections of Ferns.

It is of *noble aspect* and free growth, perfectly distinct and novel in its character, the pinnæ on every frond as well as their branches having a broad central stripe of glistening silver, which, in contrast with the bright green, produces a most charming effect. It may justly be called

THE VARIEGATED FERN.

It was exhibited at the Royal Botanic Garden on July 6, and before the Horticultural Society's newly-appointed Floral Committee on July 7, and in both cases received the highest Prizes given to such novelties, and was universally admired.

Established Plants, 31*s.* 6*d.* each. The usual allowance to the Trade.—Royal Exotic Nurseries, Exeter and Chelsea.

ROYAL BERKSHIRE SEED ESTABLISHMENT.

SUTTON AND SONS have just received a very unique Collection of HYACINTHS, ANEMONES, JONQUILS, CROCUSES, and numerous other Bulbous Flower Roots, direct from one of the most celebrated Florists in Haarlem.

The best HYACINTHS, imported by SUTTON & SONS, can be supplied at 9*s.* per dozen, by name. Also mixed DUTCH HYACINTHS (all Double) for Beds and Borders, at 3*s.* 6*d.* per dozen, and every other kind of Bulbous Flower Roots at low prices, as see Catalogue, which may be had gratis.

NEW EARLY PEAS, RADISH, HORN CARROTS, &c., now ready.

GRASS SEEDS FOR PRESENT SOWING.—SUTTON & SONS can supply at moderate prices the best kinds of GRASS SEEDS for laying down Permanent Pasture, or for mending.

SUTTON AND SONS,
Royal Berkshire Seed Establishment, Reading.

DUTCH FLOWER ROOTS.—The undersigned begs to offer the following Collection, on receipt of Post-office Order for 20*s.*, basket included:—

12 fine named Hyacinths	12 finest mixed Anemones
12 fine mixed ,,	12 Pheasant's-eyed Narcissus
12 Polyanthus Narcissus	12 Jonquils
12 Tournesol Double Tulips	50 Double Snowdrops
12 Duc Van Thol ,,	100 Crocuses mixed colours
12 finest mixed ,, ,,	100 ,, in 4 separate colours

Half the above, 10*s.*

Also the following, very fine:—

David Rizzio, dark purple Crocus	per 100	4*s.* 0*d.*
Sir Walter Scott, finest striped Crocus	,,	4 0
New Great Golden, yellow ,,	,,	3 6
Queen Victoria, pure white ,,	,,	3 0
Rex Rubrorum, double crimson Tulips	per doz.	1 0
La Candeur, double white ,,	,,	2 0
Double Yellow ,,	,,	1 0
Finest late mixed border ,,	per 100	6 0

And all other Bulbs of first quality at lowest prices. Catalogues gratis and post-paid, upon application to THOMAS SHERMAN, Seedsman, &c., Newington Butts, London, S.

EARLY SHEEP FEED.

SUTTON'S ITALIAN RYE-GRASS SEED sown in September will produce a heavy crop in April and May next; also several successive cuttings during the summer.

From JOHN BALDWIN, Esq., *Lyddington, April* 11, 1859.

"It is certainly delightful to stroll about and witness the sheep up to their knees in your beautiful Italian Rye-grass."

Quantity required per acre, 3 bushels; price 7*s.* per bushel. Carriage free if cash with the order.

Royal Berkshire Seed Establishment, Reading.

PAMPAS GRASS.—The present is the most favourable time for planting out this inimitable Plant. No one can imagine the grand effect of a mass of its silvery plumes unless they see it, nor is its value confined to the ornamental, but is likely to become useful as Cover for Game. It grows in any soil or situation, attaining the height of from 6 to 10 feet.—Any quantity can be supplied by C. NOBLE, Bagshot, Surrey.

NEW AND CHOICE GERANIUMS.

GEORGE SMITH offers strong plants of the following, selected from those sent out in the Autumn of 1858. The plants are remarkably healthy and fine, and now require potting out. Price 30*s.* per dozen, stronger plants at 36*s.* per dozen, viz:—(Hoyle's) Belle of the Season, Excellent, Lady Canning, Leviathan, Monarch, Prince of Wales, Rajah, Star, Tom Brown; (Foster's) Criterion, Golden Hue; (Turner's) Excelsior, Fisherman, Guido, Jung Bahadoor, Osiris, Picnic, Peacock, The Belle; (Fraser's) Echo; (Beck's) Fairest of the Fair, The Bride, Vestal; (Dobson's) Ringleader, Spotted Pet; (Fellowes') Ariel, Desdemona, and (White's) Blink Bonny. Fancies: (Turner's) Beauty, Captivator, Circle, formosum, Marchioness of Tweeddale, modestium, Negro, and Othello.

G. S. has also a splendid stock of all the leading kinds of former years, of Show, Fancy, and Spotted.

A DESCRIPTIVE CATALOGUE will be forwarded in exchange for one postage stamp.

Tollington Nursery, Hornsey Road, Islington, London, N.

CONIFERÆ.—All transplanted this last spring:—

Abies Deodara	Pinus Benthamiana
,, Menziesii	,, Cembra
,, Nordmanniana	,, insignis
Cupressus Lawsonii	,, Sabiniana, &c.
Cephalotaxus Fortunii, male and female	Taxus fastigiata
Juniperus sphærica	Thuja gigantea
Libocedrus chilensis	Thujopsis borealis
Pinus austriaca	Wellingtonia gigantea,

and nearly every other hardy Conifer worthy of cultivation. Many of the above are fine specimens from 1 to 10 feet high.

These are a few things selected from the general stock, which CHARLES NOBLE flatters himself will bear comparison with any in the kingdom. Gentlemen wishing to inspect the above will find the Nursery only a few minutes' walk from the Sunningdale Station, South-Western Railway, which is one hour's ride from London.—CHARLES NOBLE, Bagshot, Surrey.

CAMELLIAS AND INDIAN AZALEAS, WITH FLOWER-BUDS, AND OTHER USEFUL PLANTS.

A. VAN GEERT, NURSERYMAN, Ghent, Belgium, begs to offer the following:—

Fine CAMELLIAS, with flower-buds of the best and showiest varieties, 5*l.* to 6*l.* per 100.
Fine INDIAN AZALEAS, with flower-buds, of the choicest varieties, 4*l.* to 6*l.* per 100.
New French and Belgian Herbaceous PÆONIES. 25 vars., for 1*l.*
LILIUM LANCIFOLIUM RUBRUM, strong bulbs, 4*l.* per 100.
,, ,, ALBUM ,, 3*l.* per 100.
,, ,, PUNCTATUM, 3*s.* 6*d.* each.
,, JAPONICUM (TRUE), 5*s.*
,, CORDIFOLIUM, 5*s.*
ASCLEPIAS TUBEROSA, flowering roots, 1*l.* 1*s.* per 100.
GLADIOLUS GANDAVENSIS, strong roots, 10*s.* 6*d.* per 100.
,, ,, a collection of 25 new distinct varieties, for 1*l.* 5*s.*
Ghent and English Hardy RHODODENDRONS, fine young plants grafted, 6*l.* per 100.
GHENT AZALEAS, with flower-buds, 4*l.* to 5*l.* per 100.
The new MEXICAN PINES, 50 varieties, 5*l.*
PINUS VEITCHI, 5*s.* each.
,, DON PEDRO, 5*s.* each.
TILLIA EUROPEA foliis variegatis (NEW), 15*s.* each.

JEAN VERSCHAFFELT, NURSERYMAN, Ghent, Belgium, begs respectfully to announce that he has a fine stock of the undermentioned healthy well grown Plants, which he offers at the following prices:—

CAMELLIAS, with flower-buds (including the best leading kinds) .. .. .. per 100 £5 0 0
Do. do. .. .. ,, £6 0 0
Do. do. stronger Plants, 2*s.*, 3*s.*, 4*s.*, & 5*s.* each and upwards.
AZALEA INDICA, with flower-buds (including the best leading kinds), at from 1*s.* to 4*s.* and 5*s.* each and upwards.
AZALEA INDICA, his seven new Seedling varieties, including three double-flowering ones at 3*l.* the set.
ARUNDO DONAX VERSICOLOR; fine grown plants at from 3*s.* to 5*s.* each.
ERYTHRINA CRISTA-GALLI; strong plants at 1*s.*
50 sorts of GLADIOLI GANDAVENSIS, from 1*s.* to 2*s.* each.
DAPHNE DAUPHIN, 1*s.* | DAPHNE CNEORUM MAX., 1*s.*
LILIUM LANCIFOLIUM RUBRUM, strong bulbs, p. 100, £4.
Do. do. ALBUM ,, £3.
Do. do. ATROSANGUINEUM MACULATUM ,, £2.

Advertiser invites all persons to send their orders direct to JEAN VERSCHAFFELT, Nurseryman, Ghent, Belgium.

R. H. VERTEGAN, LANDSCAPE GARDENER, &c., Chad Valley Nursery, Harborne Road, Edgbaston, Birmingham. Removed from Ladywood Lane.

LANDSCAPE GARDENING & GARDEN ARCHITECTURE.

MR. DAVIDSON, 2, Randolph Road, Maida Hill, London, W., continues to prepare Designs and Working Drawings, and direct the execution of all Park and Garden formations and improvements. His past experience enables him to give most satisfactory references in almost every part of the kingdom.

TREE TRANSPLANTING BY MACHINE, Landscape Gardening, Ornamental Planting, Land Draining, Lakes, and Road-making, &c. Plans and Estimates. W. H. RUMBOLD, Grange, Tunbridge Wells.

TO BE SOLD, Bargains, SAW TABLE and BORING MACHINE for TIMBER, and TWO IRRIGATING or FORCE PUMPS, on Wheels, with Hose Pipes. Also a few first-class Agricultural Implements equal to new at about half price.—EDWARD WEIR, 296, Euston Road, London, N.W.

HOT-WATER PIPES at wholesale prices, with Elbows, Syphons, Tee Pipes, and every other connection. Wrought and cast iron Boilers, Saddle, Conical, Cylinder, and Elliptic, from 21*s.* each. Boilers and Iron Stands to use without brickwork. Valves from 12*s.* each. Coil Boxes, Furnace Doors, Furnace Bars, Supply Cisterns, and Builders' Castings of every description in stock, at Mr. LYNCH WHITE'S Iron Wharf, Upper Ground Street, Blackfriars Bridge, London, S.

JAMES CARTER & CO.

BEG LEAVE TO OFFER THE FOLLOWING

NEW LARGE-FLOWERED PINKS FROM JAPAN:—

DIANTHUS CHINENSIS HEDDEWIGII, 1s. and 2s. 6d. per packet.

DIANTHUS CHINENSIS MONSTROSUS, 1s. and 2s. 6d. per packet.

Seeds sown during September and October in pans, and afterwards pricked out in 48-pots and kept in Greenhouse during the winter, will flower early in the summer.

☞ PRICE TO THE TRADE UPON APPLICATION.

GUERNSEY LILIES, per dozen .. .. .. 5s. 0d. | BELLADONNA LILIES, per dozen .. .. 5s. 0d.

BULBS FOR FORCING.

HYACINTHS, best named vars. Per doz.—6s., 8s., 10s. 12s.0d.
POLYANTHUS NARCISSUS 8 best sorts, 1 root each 2 9
JONQUILS, largest double .. .. .. Per doz. 2 0

JONQUILS, single, sweet-scented .. .. Per doz.—1s. 6d.
DUC VAN THOL TULIPS, single .. .. „ 0 9
„ „ double .. .. „ 0 6

BULBS FOR OPEN BORDERS.

HYACINTHS, Single or Double, from named varieties, suitable for forming large masses of colours in beds.

Crimson .. .. Per doz.—4s. 0d.
Pink .. .. „ 4 0
Purple .. .. „ 4 0

Dark blue .. .. Per doz.—4s. 0d.
Light blue.. .. .. „ 4 0
Pure white .. .. „ 4 0

MIXED VARIETIES, Single or Double.

Red .. .. .. Per 100—21s. 0d. Per doz.—3s. 0d.
White .. .. Per 100 21s. 0d. Per doz. 3s. 0d.

Blue .. .. .. Per 100—21s. 0d. Per doz.—3s. 0d.

CROCUS, Large Dutch Varieties.

Blue .. .. Per 1000—12s. 0d. Per 100—1s. 4d.
Blue, light .. .. .. „ 12 0 „ 1 4
Cloth of Gold .. .. „ 15 0 „ 1 8
Purple .. .. „ 12 0 „ 1 4
Scotch .. .. „ 21 0 „ 2 6
Striped.. .. .. .. „ 15 0 „ 1 8

Variegated .. .. .. Per 1000—15s. 0d. per 100—1s. 8d.
Versicolor .. .. .. „ 18 0 „ 2 0
White .. .. „ 18 0 „ 2 0
Yellow .. .. „ 18 0 „ 2 0
Very fine mixed .. .. „ 12 0 „ 1 4
100 of each of the above 10 sorts 17 0

TULIPS.

Very fine mixed EARLY .. Per 1000 50s. Per 100 6s. 0d.
„ „ DOUBLE .. „ 50s., „ 6s. 0d.

REX RUBRORUM, double scarlet .. .. Per 100—7s. 6d.
TOURNESOL, red and yellow .. .. „ 7s. 6d.

For other varieties see CATALOGUE, *which will be forwarded gratis, and post free upon application to*

237 & 238, HIGH HOLBORN, LONDON, W.C.

SPLENDID JAPAN PINK,

DIANTHUS HEDDEWIGII.

MESSRS. E. G. HENDERSON & SON

OFFER for Sale SEED of this truly beautiful dwarf-flowering plant for the Greenhouse and Flower-garden, surpassing all others of its tribe, and for the exhibition of which a Medal and Certificate for Distinguished Merit was awarded to E. G. HENDERSON AND SON, the former at the Exhibition in the Royal Botanic Gardens, Regent's Park, and the latter by the London Horticultural Society. A full description of this species is given at p. 722 (*Gardeners' Chronicle*).

Seed Packets, 1s., 2s. 6d., and 5s. each.

NEW BULB CATALOGUE,

which will be forwarded on application, postage free, contains 80 pages, including the most ornamental sections and varieties of BULBOUS FLOWERS AND PLANTS for bloom in the Conservatory and Drawing-room, by Pot, Glass, or Vase culture, in their respective months from January to November; and also a very select and extensive List of the kinds best adapted for every department of the Flower-garden in early spring, summer, and autumn, with numerous practically-descriptive remarks upon their merit and adaptation.

An extensive and Select Collection of Herbaceous and Alpine Plants is attached to the above Catalogue.

E. G. HENDERSON & SON, Wellington Nursery, St. John's Wood, London, N.W.

TO THE TRADE.

THOMAS JACKSON AND SON solicit an inspection of their Stock generally, and particularly their AZALEAS, ERICAS, EPACRIS, and POT PLANTS, which are this season they believe unequalled in their fine healthy condition. Good flowering plants of Azaleas, Ericas, and Epacris, 75s. per 100. T. J. & Son possess many large specimens of Stove and Greenhouse Plants, from 1 to 5 feet in diameter, suited for exhibition, prices according to size and kind. Berberis Beali, B. japonica, and Eugenia Ugni, good plants in 3-inch pots, 60s. per 100.—Nurseries, Kingston, S.W.

WINTER BLOOMING PLANTS.

CAMELLIAS, CHINESE AZALEAS, EPACRIS, ERICAS, of various sizes and all in unusually fine condition. Many thousands of these plants can be seen at the Nursery of the Subscribers.

DWARF OTAHEITE ORANGES in fruit.

CATALONIAN JASMINE (Jasminum grandiflorum).—Fine plants, grafted on short stems, and full of flower buds.

SPRAGUEA UMBELLATA, introduced by H. L. & Co. from California, is now finely in flower in the open ground.

Inspection respectfully invited.

HUGH LOW & Co., Clapton Nursery, London, N.E.

SPLENDID NEW ORNAMENTAL FOLIAGED PLANT—CONATANTHUS, OR CALADIUM CUPREUS.

HUGH LOW AND CO. have now in their Nursery a magnificent specimen of the above-named new plant, which was imported by them from Borneo. It was exhibited at the July Show of the Royal Botanic Society, where a Certificate was awarded to it, but the plant was then newly imported, and was consequently small. It has now developed itself, and proves to be the finest ornamental foliaged plant introduced up to the present time. No description can convey an adequate conception of its surpassing beauty, and therefore H. L. & Co. invite an inspection. They will have pleasure in showing it to any gentleman who may favour them with a visit.—Clapton Nursery, London, N.E.

GERANIUMS, HERBACEOUS PLANTS, ETC.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their new PRICED and DESCRIPTIVE CATALOGUE of the above, to which are added Supplemental Lists of Stove, Greenhouse, and Hardy Plants, Fruit Trees, &c. (which include all the best new plants of the season), is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

RHODODENDRONS.

JOHN WATERER'S CATALOGUE OF HARDY, SCARLET, and other choice RHODODENDRONS, as annually exhibited at the Royal Botanic Gardens, Regent's Park, is now published and will be forwarded on application. Faithful descriptions of all the esteemed varieties will be found detailed, with a list of the popular kinds of AZALEAS and other AMERICAN PLANTS, as well as a selection of CONIFEROUS TREES, with height and prices.

The American Nursery, Bagshot, Surrey, near Sunningdale Station, South-Western Railway.

ARAUCARIA IMBRICATA.

YOUELL AND CO. beg to inform the Trade they have to offer a fine and healthy stock of the above in 1-year-old plants.

GLADIOLUS BRENCHLEYENSIS.—An extensive stock of large flowering Bulbs of this magnificent Gladiolus, the colour of which is vermilion scarlet, the best and brightest variety known. Prices of the above on application.

Royal Nursery, Great Yarmouth.

HOLLYHOCK SEED of the finest quality, saved from Bragg's new set of this year and other new varieties, at 1s. and 2s. 6d. per packet. Also new CALIFORNIAN SUNFLOWER, PANSY, AND CINERARIA SEED, of the finest quality, at 1s. the packet. Also a large quantity of double HOLLYHOCKS, at 2l. 10s. per 100.

FRUIT TREES of all the leading varieties trained at the lowest prices. Carriage paid to London.—E. SHENTON, Hendon Park Nursery, N. W.

BOX EDGING.

MR. JAMES VEITCH, JUN., of the ROYAL EXOTIC NURSERY, Chelsea, S.W., being again in want of 2000 or 3000 yards of BOX EDGING, will be glad to receive offers stating quantity and price from such persons as have any to part with. It must be dwarf and good, and warranted to plant at least 3 yards for 1. The terms to include delivery into a railway truck at the nearest station. To expedite the transaction, parties replying to this advertisement may send 1 yard as sample, carriage paid to London, to be forwarded by Parcels Delivery.—Sept. 24.

CAMELLIAS AND AZALEA INDICA.

F. AND A. SMITH beg to offer the above well set with flower buds, dwarf, bushy, and thoroughly ripened off. Having been grown in this country they are most suitable for packing, and are strongly recommended to country Amateurs and the Trade in general. An inspection invited. Prices on application.—Dulwich, Surrey, S.

SELLING OFF.

THE VALUABLE NURSERY AND PLANT STOCK OF BASS AND BROWN, SUDBURY, SUFFOLK, is offered at a very large reduction on the usual prices for cash, in order to the discontinuance of that part of the business.

The stock is in the finest possible condition, and the Fruits, of which there is a large collection, consist of none but the choicest and most esteemed.

A VERY FINE IMPORTATION OF DUTCH BULBS has been received, and are also offered very low.

CATALOGUES OF BULBS, with the Nursery and Plant Stock, furnished on application to STEPHEN BROWN, Seed and Nursery Establishment, Sudbury, Suffolk.

NEW PINKS.

CHARLES TURNER (MACLEAN).—Dark purple, fine; 5s. per pair.

ELEANOR (TURNER).—Rose, fine; 5s. per pair.
EDITH (MACLEAN).—Reddish purple; 3s. 6d. per pair.
LITTLE GEM (MACLEAN).—Red; 3s. 6d. per pair.
MILLIE (MACLEAN).—Dark, fine; 5s. per pair.
MISS GLOVER (TURNER).—Purple; 3s. 6d. per pair.

CHARLES TURNER can strongly recommend the above as first-class Pinks, and great acquisitions for exhibition purposes.

C. TURNER'S general stock of Pinks are very healthy and strong, and are now ready for sending out at 9s., 12s., and 18s. per dozen.—The Royal Nurseries, Slough.

BRITISH POMOLOGICAL SOCIETY,

HANOVER SQUARE ROOMS, LONDON, W.

The next Meeting will be held on THURSDAY, October 6, when the following Premiums are offered for special subjects, exhibited according to the Society's regulations:—

Two Guineas each for the best Late Seedling APRICOT, Late Seedling PEACH, and Late Seedling NECTARINE.

The following must be exhibited by the growers:—

One Guinea and Half a Guinea for the best and second best dishes of six MARIE LOUISE PEAR.

The like for the best and second best dish of six DESSERT PEARS of any other kinds in season; for the best and second best dish of six DESSERT APPLES of any kinds in season; and for the best and second best Culinary varieties of APPLE, fit for present use, exhibited in tens.

The Meeting next succeeding will be held on THURSDAY, October 27, when the following premiums are offered:—

One Guinea for the best dish of six SALWAY PEACHES, and One Guinea and Half a Guinea for the best dish of six SUFFOLK THORN PEAR.

Premiums are also offered for other kinds of DESSERT PEARS and APPLES in the same manner as at the meeting of October 6.

The Carriage of Parcels is paid by the Society. The Room will be open at 2 o'clock, and the Chair taken punctually at half-past 2. It is requested that Fruit intended for examination may be sent, if possible, not later than 12 o'clock.

Gentlemen desiring to become Members are respectfully invited to intimate their wish previous to the Meeting. Entrance, 10s.; Annual Subscription, 10s. Copies of the Rules and further information can be obtained from

WILLIAM DAVIDSON, Secretary.

2, Randolph Road, Maida Hill, London, W.

HORTICULTURAL SOCIETY OF LONDON.—

The FLORAL COMMITTEE, at its meeting on Sept. 8, made the following awards:—

FIRST-CLASS CERTIFICATE.

Caladium Veitchii, from Messrs. Veitch & Son, Chelsea.
Cattleya Schilleriana, var., from Messrs. Backhouse & Son, York.
Dahlia Neville Keynes, from Mr. J. Keynes, Salisbury.
Dahlia Beauty, from Mr. C. Turner, Slough.

COMMENDED.

Dahlia compacta, from Mr. G. Rawlings, Bethnal Green.
Dahlia George Elliot, from Mr. Turner, Slough.

At its Meeting on Sept. 22d, the Committee made the following awards:—

FIRST-CLASS CERTIFICATE.

Gonatanthus (Caladium) cupreus, from Messrs. Low & Co. Clapton.
Sphærostema sp., from Messrs. Low & Co.
Anæctochilus (Macodes) petola, from Messrs. Low & Co.
Begonia Lowii, from Messrs. Low & Co.
Begonia blanda, from Messrs. Parker & Williams, Holloway.
Dahlia Miss Sarah Boyce, from Mr. G. Rawlings, Bethnal Green.

COMMENDED.

Begonia Gem, from Messrs. Low & Co.
Begonia Zebra, from Messrs. Low & Co.
Scarlet Pelargonium Sheen Rival, from Mr. Kinghorn, Richmond.

The next meeting of the Committee will take place on Oct. 13, at 2 P.M. Subjects for examination must be at St. Martin's Place by 1 P.M. Any person may exhibit. New plants and flowers of all kinds are invited.

8, St. Martin's Place, Trafalgar Square, W.C.—Sept. 24.

The Gardeners' Chronicle.

SATURDAY, SEPTEMBER 24, 1859.

THE subject of VILLAGE HORTICULTURAL SHOWS is so full of interest to many readers that the following account of one of the most successful cannot fail to be highly suggestive. On the 14th of this month the autumn show of the Hitcham Society was held in the grounds of the rector, the Rev. Prof. HENSLOW. On this occasion there were no fewer than 97 exhibitors, many of whom sent several different kinds of produce, principally vegetables, all of which were excellent, and many first-rate. They were ranged along each side of a very long booth, which was flanked by 30 large Gourds, of various sizes, one

weighing 98 lbs. forming the most striking feature in the scene. Next to these were especially remarkable four baskets of vegetables. By the rules each basket should contain "not less than six kinds," but every one much exceeded this number; and the largest, which was arranged with great taste, contained nearly 40 different sorts. To this was allotted the highest money prize of the day, viz., 3*s*. 6*d*. This sum is especially deserving of mention, because it shows that satisfactory results are not obtained in our villages through the stimulus of mere money reward. It is found, indeed, that a great number of small prizes are more successful in arousing a spirit of emulation than a few large ones; which, in fact, tacitly act as a discouragement to the majority of those who show.

It is the practice at Hitcham, twice in the season, to inspect the cottagers' allotments, and to award some gardening implements to the owners of those best cultivated. Here too the improvement is steady and marked; year by year the inspectors find less fault, while the best are like neatly kept gardens. The first prizeman had 46 crops on his allotment, yet of this variety none were neglected, as was proved by his also taking 10 prizes for different articles.

But these horticultural shows are not confined to mere exhibitions by the villagers themselves. There is added at Hitcham a very noticeable feature, the "Marquee Museum," where various interesting and attractive objects are arranged, on which Prof. Henslow gives "lecturets," whenever he has a half hour to spare from the more immediate business of the day. With this assistance the visitors are at no loss to fill up the time until 6 o'clock, by which hour the members of the Society to the number of 300, each of whom pays sixpence annually, have replaced the Wheat and Potatoes in a long booth; and tea, bread and butter, and cake are served out to them. "God save the Queen" closes the entertainment, and the lawn is soon cleared in a quiet and orderly manner.

Frequently these shows are enlivened by the presence of numerous visitors from the neighbourhood, but on the late occasion the day was unfortunately thoroughly rainy, consequently few beyond the villagers made their appearance. But their spirit was so little damped by the fear of wet jackets that upwards of 400 thronged the booth and marquee, remarking on the various objects with much interest. All behaved admirably, as they always do, and save in the weather not a *contretemps* occurred.

It is, we think, impossible to overrate the good effects produced on a village population by a well organised system like this of allotments and horticultural shows; it furnishes a never-failing subject of interest, and at least two pleasant days in the year to look forward to and to talk over. It gives the men and women a common occupation and enjoyment, and tends not only to wean the former from the public-house, but to throw them into the society of the most industrious set.

All however depends upon the tact and perseverance with which such associations are managed. Not only is a little zeal necessary, but a good deal of knowledge of human nature, especially village nature. And as more is to be learned in a couple of hours' inspection of such a gathering than by all the reading in the world, we strongly recommend any one who may be endeavouring to establish a similar horticultural society to go to Hitcham and investigate the working of that which has now, for so many years, proved to be so thoroughly successful.

In the neighbourhood of Ghent, in the village of Gendbrugge, there exists a Horticultural School, of which little or nothing is known in this country, but which appears to deserve some description, especially since we have nothing of the sort in England. Our attention having been drawn to it by an advertisement in our columns a fortnight ago we have obtained the necessary information, of which what follows is the substance.

The Belgian Government, in its desire to foster the art and science of gardening, made an agreement in the year 1849 with Mr. Van Houtte, the celebrated nurseryman at Ghent, under which the Government pays certain expenses, such as the salaries of professors, the construction of buildings, &c., and provides 12 scholarships (*bourses*) of 500 francs each, which may be divided into half scholarships (*demibourses*), the pupil in that case paying half his expenses. M. Van Houtte on the other hand provides board and lodging, fire, lighting, washing, &c. The pupils on their part work gratis in the cultivation of the place, gradually learning all departments of gardening, including forestry and market gardening. It is however arranged that no one shall be put to work beyond his strength, and that plenty of time shall be allowed for teaching in the class rooms.

The nature of the education thus provided is arranged in great detail and with much minuteness. In the first place no pupil can be admitted who cannot pass a fair examination in French, the elements of arithmetic, decimals, the metrical system, and the elements of geography. A health certificate, and a certificate of good conduct (from the proper communal officer) are also required, and no one can be admitted on the establishment who is under the age of 15 years.

There are five kinds of punishment: 1, private admonition; 2, confinement during play hours; 3, confinement on holydays; 4, public reprimand; and 5, expulsion; but no one can be expelled without the express authority of the Minister (of State) of the Interior, to whose department the school belongs.

The subjects taught in the school are these:—

In the first year, Botany and the Theory of Horticulture, including botanical geography; physical geography, especially the nature of climate; inorganic chemistry; the elements of natural philosophy, mineralogy and zoology; mathematics and arithmetic.

In the second year, Anatomy and Vegetable Physiology, including the germination of seeds, and all the important phenomena connected with it; the main facts belonging to the growth of plants, especially timber; the nature and use of leaves, and all that relates to fruit; botanical geography; inorganic chemistry, including the properties of metals; natural philosophy in higher branches; meteorology, or the phenomena of weather; mineralogy, that is to say the different properties of soil in its relation to horticulture; zoology, as to useful or injurious animals, insects, &c.; and mathematics, as regards arithmetic and plane geometry.

In the third year, the Theory of Horticulture as it relates to soils, nutrition, working land, sowing, planting, propagation in all its branches, and the diseases of plants; organic chemistry, especially what concerns manures; natural philosophy, including heat, light, electricity, and the use of philosophical instruments; meteorology; geology; zoology; elements of algebra, and solid geometry.

It is thus seen that during the three years which pupils are expected to pass at this school they may be thoroughly grounded in a good practical education applicable to other matters besides gardening.

In addition to this, what are called theoretico-practical subjects are studied, such as drying plants and forming herbaria, chemical operations, philosophical experiments, linear drawing, land surveying and mapping, garden architecture, heating, the management of water supplies, and other matters, to which is added drawing plants from nature.

Then there is trade horticulture, such as gathering, preserving, and packing up seeds or living plants; buying and selling, letter writing and book-keeping.

Finally Practical Garden Work is continually attended to in Mr. Van Houtte's extensive nursery grounds, as has been already stated. This includes kitchen gardening, the management of trees and shrubs, corn and forage crops, annual and herbaceous plants, greenhouse and hothouse plants, with every department of forcing. Add to this all methods of propagating, improvement of breeds by crossing, muling, &c., and experiments upon new plants expected to prove of general utility, and it must be confessed that those who leave the establishment with all the knowledge they *may* have gained in their three years' study must be as well grounded in the theory and practice of cultivation as is in the nature of things possible.

We fear there is little chance of such an establishment being formed in this country.

It appears from a statement in the *Photographic News* that there is at last a probability that sun pictures on copper plates may be so treated as to acquire the condition required for printing purposes. In other words the sun is to become not only our painter but our engraver; and the slow, difficult work of the engraver is to be reduced to instantaneous action. Impressions so obtained are to be called Photoglyphs; they are to have the accuracy of photographs combined with the cheapness of woodcuts. Our active contemporary says that "a most important consideration in estimating the value of this discovery is the extreme comparative cheapness with which, by its means, perfectly stable photographs of paintings or other works of art may be produced. A photograph at present is a somewhat costly article, which necessarily follows from the expensive nature of some of the chemicals employed, and the time and labour involved in its production; but when photographs can be printed with printers' ink, with the same facility as from a metal plate engraved in the ordinary manner, without the preliminary cost of engraving, there can be no reason why the most beautiful prints should not be sold at a price but little above the cost of the paper on which they are printed. Not only has this method of engraving a vast advantage over the ordinary process as regards cheapness, but it has the additional and most important advantage of giving a perfectly faithful reproduction of the scene or object without omitting the most minute details." In confirmation of this opinion the *Photographic News* has given to its subscribers a photoglyphic engraving of the Tuileries, as a specimen of the result now obtained.

We have been long aware that Mr. Fox Talbot was directing his attention to the possibility of effecting what has now been accomplished up to a certain point. In May, 1853, he favoured us with copperplate engravings of Grasses, Ferns, leaves, and other things produced by the process in question; and as examples of the dawn of a new art nothing could be more interesting. They led to the probability that plants, the most intractable of subjects in the hands of the photographer, would be some day delivered up to the public with every feature impressed upon copper and ready for the printer's use. But they were not in that condition at that time; all that could be said of them was that they were shadows of some great coming event. The *Photographic News* thinks that the event has arrived. We regret our inability to acquiesce in that judgment. The photoglyph circulated by our able contemporary is a prodigious advance upon the attempts of 1853; some parts of it indeed are exquisitely minute and perfect, such as the face of the clock over the central arch, and some of the window-frames of the building; but as a whole it is what an engraver would call blurred.

We cannot however doubt that the scientific knowledge of Mr. Fox Talbot, aided by the practical skill of some of our artists, will in the long run bring photoglyphy up to photography, and when that happens we may expect to have acquired "the power of producing an unlimited number of photographs of an object at an exceedingly small cost, and of undoubted permanency." But not till then.

THE SCOLYTUS IN ELM TREES.

(See *Gardeners' Chronicle*, Sept. 10, 1859.)

"C. R.," Hampstead, asks: "Does the woodpecker feed on this vermin, and could it be domesticated in this populous locality?" Woodpeckers not being fly-catchers, do not feed on the Scolytus, when this insect is in its flying state; and they cannot get at it when it is a grub. You shall see why. The Scolytus makes its oval hole in the living tree, and deposits its eggs at the bottom of the hole. Now, as the wood which intervenes betwixt these oval holes is hard and solid, the woodpecker never attempts an entrance through it; and thus, the grub of the Scolytus lies in safety at the bottom of its snug cradle.

The woodpecker only seeks for food, and forms its nest in holes and branches of trees already in a state of decomposition. To be convinced of this, we have merely to examine the ground, after the woodpecker has been hammering on the tree above it. There we shall find chips of diseased wood, soft, and somewhat spongy. They will show that the woodpecker has been exercising its usual calling at the proper place. I am quite satisfied in my own mind that the woodpecker does not prey upon the Scolytus at all, when it is in its flying state; and that when in its grub state, it cannot.

As to the remainder of "C. R.'s" question, viz., could the woodpecker be domesticated in this populous district of Hampstead? I answer, it might possibly be domesticated; but the odds would be fearfully against it. This charming bird has cruel enemies on every side. In order to advance the desired object, "C. R." must manage to get every gamekeeper hanged within fifty miles of the chosen spot; and then whip, twice a week, with a new birch rod, those pilfering boys who are everlastingly persecuting our poor harmless denizens of air.

Whilst I mourn over the disappearance (I fear for ever) of the kite, the buzzard, the raven, and the woodpecker from this part of Yorkshire, I cannot refrain from drawing the reader's attention to a modern preparation of frightful import. Druggists are in the habit of selling poisoned corn to kill the noisy sparrows. This dangerous experiment must bring ruin and destruction on poultry yards, wherever it is used. It would be no easy task to prevent pigeons, ducks, and fowls from partaking of the treacherous repast. *Charles Waterton, Walton Hall, Sept.* 17.

VEGETATION AND CLIMATE OF THE ANAMALLAY MOUNTAINS IN THE MADRAS TERRITORY.

[We extract the following interesting account of this almost unknown country from a report made to Government by Dr Cleghorn, Conservator of Forests. The party consisted of J. W. Cherry, Esq., Acting Collector of Coimbatore, Drs. Macpherson and Cornish, Major D. Hamilton, 21st N.I., Captain Fane, Lieut. R. H. Beddome, 42d N.I., T. B. French, S. L. Koe, W. Fraser, civil engineer, and O. B. Irvine, Esq., Assistant Collector, accompanied with seven elephants. Anamallay lies in north latitude 10° 27., east longitude 77°. They started at 4 A.M., Sept. 15, 1858, and arrived at the Anamallay river at 20 minutes past 5 o'clock.]

"By the light of early dawn, we distinguished the Candelabrum-like stems of Euphorbia antiquorum, and the drooping foliage of Salvadora indica, which in habit resembles the Weeping Willow, and here attains a large size, the trunk being 10 inches in diameter.

"After crossing the river, which was deep and rapid, in leaky basket boats, we traversed a number of Paddy fields, and entered the Bamboo and tree jungle, which lies in the hollow between the river and the ascent to Poonachy. The bluff rock overhanging the Tooracoodoo river is reddish porphyrite. The hills, like the Neilgherries and the Coimbatore district generally, consist of gneiss, and belong to the 'metamorphic rocks,' veins of felspar and quartz were common, some of them very large, crossing the foliated gneiss at right angles. The gneiss was generally of a grey colour, but in some places it was reddish. No crystalline limestone such as is found associated with the gneiss in Coimbatore was observed.

"The Khaders had prepared three huts and stabling for us. These huts were admirably constructed, very much superior to their own dwellings, and quite watertight; the uprights were made of jungle trees tied together by strips of bark, the cots of Bamboo, and the thatch of the glabrous leaves of a species of Saccharum.

"Teak occurred for the first time on some undulating knolls, 2 or 3 miles before reaching the village, and on the slopes of the basin leading to the river. Being in flower, the white cross-armed panicles formed a striking feature in the landscape. We saw further up the valley much Vengay (Pterocarpus marsupium) and Blackwood, which became more abundant as the elevation increased. These trees seem to prefer an altitude somewhat greater than Teak, whilst the Vellah Naga (Conocarpus latifolius), of great size, occurs with the Teak or prefers a lower range. The sholas (jungles) near Poonachy, between 3000 and 4000 feet above the sea, are very dense and rich in their Flora. The following are a few remarkable forms observed—Solenocarpus indicus; a tree called by the Khaders Palle-ille, the leaves of which are eaten; Elæocarpus monoceros; a new species of Cookia (Moor Kooringee), with a delicious fruit; Glycosmis pentaphylla; Pierardia macrostachya, with an edible fruit; Scepa, a new species, a good sized tree (Walle); Mesua, with very large fruit; Calophyllum, a species with narrow lanceolate leaves; Orophea, a new species; Unona pannosa, and two other Anonaceous trees; Garcinia; Pterospermum obtusifolium; Sterculia guttata; Machilus; Casearia, a new species; Euonymus, two apparently new forms, one with downy leaves and the other much like a Lime tree; Agrostemma, three species, one with very handsome large blue flowers; Ophioxylon, a new species, with falcate bracts; and Pothomorphe subpeltata. Many of the trees in the dark sholas are covered with beautiful Epiphytes, especially the Hoya pauciflora, Æschynanthus Ceylanicus, and Sarcanthus filiformis; the dripping rocks with Klugia, two species, Epithema, &c. Cardamoms with rich aroma, and the true Ginger plant abound in these sholas. The rocks in the beds of all the rivers from 3000 to 4500 feet are quite covered with a showy orange-coloured Balsam (Impatiens verticillata). It often forms a fringe at the line of watermark, or appears in patches between the forks of a cascade. At a higher elevation other species seemed to take its place, especially one to be figured in the Madras Journal of Science, 'Impatiens Tangachee,' of Beddome.

"16th.—Started at 8 A.M.; after two miles came to a river. There is a large body of water 100 feet wide, 1½ to 2 feet deep. Immediately below the ford is a chucklers' village. Much time was lost in crossing on elephants and afterwards in cutting a road through tangled brushwood, each man being furnished with a billhook or shikaree knife. In the bed of the river was observed Entada Pursætha and Adelia neriifolia. At 4 P.M. we agreed to bivouac and rigged up temporary huts. About two miles after crossing the river we made a detour to avoid a mass of rocks which descend to the water edge. Here we found few Bamboos and no Saccharum, and had to look for other hutting materials. Some gigantic Crotalaria and Indigofera stems were largely used for the walls, the stems being interwoven between the uprights, and the thatch was made of Andropogon Schœnanthus, L. (Ginger Grass). Opposite our bivouac was a remarkable rock called Coondita-mullay, apparently 200 feet in height, on the precipitous scarp of which was a Rattan cable 80 feet long securely fixed above. This chain was formed of large rings of the Calamus stem, connected by another straight Rattan which passed down through the centre of the loops; by means of this the Khaders descend the face of the rock to collect honey, &c.

"17th. Started at a quarter to 8, and reached the huts near the Tooracoodoo waterfall at half-past 9, which are picturesque, and very beautiful. About two miles below these falls, Captain Hamilton discovered an ancient cairn or cromlech, a quarter of a mile to the left of the path, similar to those found in other parts of Coimbatore, and consisting of four immense stones, the upright slabs about 5½ feet high, and the covering stone 11 feet by 5 feet. Opposite the encampment is an Erooler village of 8 or 10 houses, with a patch of Raggee (Cynosurus Coracanus, L.) cultivation. The day was fine, sometimes rather hot at night. Blankets were necessary, as it became cold towards morning. Very little dew fell and at 6 A.M. there was none.

"18th, 9 A.M. We now ascended a steep rugged hill, impassable for horses on account of the immense masses of detached rocks; one, in particular, resembling a haystack, about 40 feet high, from the summit of which a Rattan chain similar to that described was suspended. We proceeded through dense sholas for three miles, in the middle of which we crossed the river by a temporary bridge formed of a large tree felled by the Khaders for the purpose. Rubus (Bramble) first seen here. After walking six miles round the base of the Tungachee, we emerged from the woods, in which were traces of elephants, upon a steep open Grass hill. The Rhododendron was first seen here, the elevation ascertained by Mr. Fraser to be about 5000 feet. We continued to ascend the steep side of the hill till we arrived at the huts. Thick mist and violent rain came on soon afterwards.

"Sunday, 19th. Nothing seen. Thermometer 54° minimum, 60° maximum. Elevation calculated to be 5600 feet. Cold wind whistled freely through the Grass huts, the stakes were loosened, and the temporary erection nearly came down.

"Monday, 20th. It rained all morning. The Khaders were unwilling to proceed. However, we started at 10 A.M., and in an hour reached a beautiful ridge, shooting out from the base of Ukka-mullay; there was short sweet pasture and numerous indications of Bison. The weather continued unfavourable, and so misty, that excepting during a few gleams of sunshine we did not see much of the country. The previous afternoon some of the party ascended the shoulder of the Ukka, which was very considerably higher; unfortunately, owing to the mist being dense, they were not rewarded by a good view of the surrounding country. The rocky Ukka mountain, which is probably upwards of 8000 feet, is quite covered near its summit with several new species of Impatiens. The only other new form observed was a curious Crassulaceous plant with fleshy peltate leaves, growing in sheltered moist nooks of the rock. Balsams are very abundant on these hills. Impatiens Balsamina, dasysperma, albida, maculata, campanulata, fasciculata, tomentosa, verticillata, oppositifolia, Kleinii, filiformis, tenella, and rivalis. Having proceeded several miles along this range, the summit of which was hidden in mist, we turned to the south east. The mist suddenly cleared and we got a glimpse of numerous Ibex on the rocks above, and saw a valley which appeared to be five miles long and two broad, with large sholas on the other side. The wind and rain increased as we proceeded. The weather having been very unfavourable, our attendants fatigued, and our provisions exhausted, it was necessary to retrace our steps. Some of the herbaceous plants observed adorning the higher hillside pastures were:—Flemingia procumbens, Phaseolus Puliensis, Anemone Wightiana, Lysimachia Leschenaultii, deltoidea, Utricularia, Ranunculus reniformis, Gentiana pedicellata. This list might be extended, but the examples are sufficient to show the similarity of the Flora to that around Ootacamund.

"Tuesday, 21st. We left early; a favourable change took place, and we much regretted our inability to remain another day.

"Wednesday, 22d. Major Hamilton and Messrs. Koe and Fraser descended into the gorge to examine the entrance to the hills by the valley of the Tooracoodoo river. The day of our departure was fine and bright, and we obtained a clear view of the higher ranges from the lower valley of the Tooracoodoo. (About a month after, 8th November, Lieut. Beddome rode up in one day to the higher ranges and had a clear fine view of the summit. He writes: 'I ascended the Tungachee Peak, which is very different in character from the Ukka; the ascent lies through dense sholas till within half a mile of the summit; thence the mountain is covered with almost impenetrable brushwood 6 to 10 feet in height, consisting chiefly of Rhodomyrtus, Dodonæa, Rubus, Litsæa, and Atylosia.' Again, under date 25th February, 1859, Lieutenant Beddome writes, 'that the highest peak of the Anamallays below which there appears to be table land is at least 25 miles beyond the valley, and seems to be very difficult of access. *We had white frost in the valley.*')

The following are Dr. Macpherson's views on the eligibility of this range for a sanatarium and for future colonisation:—"The general appearance and character of these high lands resemble very much that found on the Neilgherries. Here are the same rounded eminences and dense sholas, extending continuously for miles, their edges fringed and ceasing abruptly; conical hills and slopes covered with short rich Grass abounding with medicinal plants, such as the Exacum and Ophelia elegans (Gentians), and Hymenodictyon excelsum, a species of the Cinchona family, and other productions precisely similar to that found there. Heavy rains, evidently the breaking up of the south-west monsoon, fell continuously during the period of our stay on these upper regions. Three distinct tribes inhabit the Anamallay hills; they are denominated Khaders, Paliars, and Mulcers. The Khaders will perform no menial labour; as their name implies, they are the lords of the hills; they will carry a gun, and load also as a favour, and are expert at stalking game, but are deeply offended if they are called coolies. They are a truthful, trustworthy, and obliging tribe, and exercise some influence over the Paliars and Mulcers. Small in stature, their features resemble the African; they have his curly hair tied in a knot behind, and they file the four front teeth of the upper jaw to a point as a marriage ceremony. The Paliars are chiefly herdsmen and merchants, while the Mulcers are cultivators of the soil. None of these tribes reside at a higher elevation than 4000 to 5000 feet above the sea. All deal in the rich produce of these hills, and barter with the people in the plains their Cardamoms, Turmeric, Ginger, honey, wax, resins, Millets, Soap-nuts, Gall-nuts, &c., &c., for Rice, tobacco, &c. They are very expert in climbing trees, and the precipitous face of rocks in search of honey. To accomplish the former, where there are no boughs, they drive short Bamboo spikes into the tree, and thus form a ladder by means of which they ascend the highest forest trees; and they reach the latter by means of chains formed by rings made with Rattan, which being secured to a point above, drop down the face of the rock. We observed some of these chains full 50 and 80 feet in length. The upper ranges are in undisturbed possession of wild beasts; we saw a herd of bison, elk, and ibex in numbers, and also traces of wild elephants. The soil on the summit of these fine mountains is many feet in depth, and covered with rich short Grass. Streams of water are numerous, and appear as if they flowed throughout the year. From the extent and altitude of these hills, I believe they are suitable for the cultivation of Coffee on a large scale, and for colonisation of small communities of Englishmen, a measure which would be attended with the happiest results, as it adds at once to our military strength, and in course of time would give us the means to a certain extent of recruiting our army."

Captain J. Michael, superintendent of the Anamallay Forests, further reports—"that he explored the high range of the Anamallay Hills above Poonachy, and that there is a large extent of high mountain land, similar in appearance and height to some parts of the Neilgherries. The vegetation and climate was precisely like that on the Neilgherries, the Rhododendron growing to a large size, at by no means the greatest elevation, and *the cold at night being very intense.*"

A beautiful valley about 6000 feet above the level of the sea the same intelligent officer found covered with slopes of short Grass, full of flowers of the same description as are usually found on the Neilgherries, or rather at Coonoor. A stream ran through small swamps, and was fringed with the Rhododendrons, Ferns, &c. Anemone, Pedicularis, Exacum, Salep Misree, and large white Lilies were in great abundance; the thermometer stood at 56° in the morning, and *at night the cold was very intense.*

[The coldness of the nights referred to in these extracts is especially noteworthy by gardeners, who will also see what the climate is in which Tree Rhododendrons delight to dwell.]

HOW TO GROW LILLIPUTIAN PLANTS.

From the Journal de la Société Impériale et Centrale d'Horticulture.

Chinese gardeners are famed for the skill with which they reduce plants which are naturally of some considerable size, and even large forest trees to the very smallest dimensions. Dwarf plants are in great demand all over the Celestial Empire, and are generally very expensive. The custom of keeping in sitting rooms little stages ornamented with different things, and even with living plants, induced the gardeners of Europe to imitate the Chinese gardeners, although at a great distance, and to raise plants in tiny pots, generally choosing succulents, of which it is easy enough to obtain very small specimens. As experiments in this mode of cultivation increased, different kinds of plants were taken, and in Germany they at last succeeded in reducing hard-wooded plants and even forest trees themselves to a dwarf state. Thus, this art of the Chinese gardeners is transferred to Europe, and though the result is of no great importance, yet in a general horticultural point of view it is very curious.

The first gardener in Germany who cultivated Lilliputian plants, that is to say, plants with all their parts reduced to the smallest dimensions, was M. Boekel, from whose account we borrow the description of the method by which he attained this curious result. As examples of what he produced, he mentions a plant of Ivy, with 22 leaves, which together with its pot, might be covered by a large leaf of common Ivy; also an Oak (Quercus robur) 13 inches high, whose head formed a ball 6 inches in diameter. The details of his mode of operation are as follows:—

He had pots made of a very porous clay, the proper material for which was obtained by mixing equal portions of the clay used in making red and white pots, and adding 4 per cent. of ashes and 1 per cent. of sulphur. For woody plants such as Oaks or others, the pots are very shallow, from about 2 to 2½ inches high, and 6 to 6½ wide; for other plants he used pots from 1 to 2 inches high and broad. These pots he filled with soil or earthy mixtures such as are used in common cultivation; only he adds a third part of very small flinty gravel. The pots are filled up to the brim, and watered from below, by placing them in a dish containing water, or in a tin vessel made expressly for that

purpose, with a tap, by means of which the water that is not absorbed is drawn off.

In order to make dwarfs of such plants as Oaks, Elms, &c., it is best to take one-year seedlings. In the spring their ends should be pinched off, to make them form laterals; then when these have grown about 2 inches long, they are to be served in the same way, and the ends of all those which come afterwards are continually pinched off; the plants are then put into a cool place to prevent their shoots becoming too much drawn up; otherwise, in general, they like a sunny situation best. From herbaceous plants cuttings are taken and treated in the same manner. Climbing plants cannot be thus cultivated. To all plants which can bear this sort of treatment liquid manure should be given every 3 or 4 weeks; but care must be taken in administering this powerful stimulant, otherwise you may kill your plants.

Home Correspondence.

Lomaria chilensis.—Having cultivated this with I believe more than usual success, I am tempted to send you its dimensions:—Length of fronds, both fertile and barren, 4 feet 2 inches; number of leaflets on barren fronds, 28 pair; breadth, 1 foot; diameter of plant, 5 feet; growing in an 18-inch pot. The whole appearance of the plant is rather that of some strong growing Zamia than of a Fern, and it is a magnificent thing for adorning any shady forecourt in summer. I treat it as a greenhouse Fern; but I have a strong plant out of doors of whose success I am as yet unwilling to speak, as it has only been planted out about three months. I fear it may lose its fronds in winter. I did not appreciate my own plant until I inquired for the same species at Kew, where Ferns are grown so successfully, but I found that their best specimen was not so large as the small offset of mine which is growing out of doors. In fact the specimen I saw there would convey no idea of the beauty of the plant when well grown. It is unquestionably hardy as it grows out of doors with Mr. Sim, but from what I saw of his specimen, I doubt whether it will attain full beauty without protection in spring. It would be a glorious thing in the Crystal Palace, where Dicksonia antarctica flourishes so nobly, as it is scarcely less conspicuous than that species. *J. R., Sevenoaks.*

Wool Manure.—Having observed your article on shoddy or wool manure, I take the liberty to say that I shall be happy, at any time, to supply you with large samples for any experiments you may wish to make with it, or any of the readers of the *Gardeners' Chronicle*, as I am in the habit of supplying large quantities from abroad at much lower prices than those mentioned by you. *Wm. Lorberg, 34, St. Mary at Hill, London, E.C.*

Transplanting Evergreens.—As great diversity of opinion exists as to the best time for removing evergreens, and having read your article in the *Chronicle* of the 6th ult, on removing Rhododendrons, &c., perhaps the following facts may not be uninteresting to your readers. I have long been of opinion that summer was the best time for the operation, but never having had the opportunity until the last few years of testing it to any extent, it merely remained an opinion. During the last three years I have tested it most thoroughly, and have no hesitation in saying that the months of June, July, and August are the best three months in the year for the operation. We have transplanted many hundreds at the time named, and mostly of a large size, Hollies for instance more than 20 feet high; Pinuses (generally bad to manage) from 15 to 20 feet high—not lost one; Deodars, 15 feet; Araucarias, 5 feet; Hemlock Spruces, 10 feet; common Spruces, 20 feet; many plants of Arborvitæ 10 feet, Yews 15 feet, very many Portugal Laurels from 7 to 8 feet high, and 10 feet through; Berberis, many 7 feet high; Phillyreas, Arbutus, Irish Yews, &c., of rather smaller sizes. Our loss has never in any of the three years exceeded one in fifty, and in almost every case the cause of failure could be easily explained. With the majority of the plants not the least sign was visible of their having been transplanted; the very young growth of some removed earliest in the season would sometimes droop during very hot sunshine, but a good sprinkling with water over head from the garden engine soon put all right again. Our practice has been to give a thorough watering at the time of planting, both to the roots and leaves, and to continue watering the foliage every evening for a week or ten days; by that time the plant is perfectly safe, and will require little further attention with the exception perhaps of one or two good waterings at the root should the weather prove very dry. At the season named, when a plant does fail, it is generally within a week from being planted, and can consequently be easily replaced, whilst the operation is in hand, thus making any after disturbance of the ground unnecessary, a great point generally where the plants have to be removed a considerable distance, thus necessitating their being out of the ground for a considerable time (more than a day and a night for instance); perhaps rather later in the season, say September, might be safer, as the roots would be less liable than during the hotter months to get dried sufficiently to injure the plants. Nearly the whole of the evergreens planted at this place during the last three years have been merely removed from one part of the grounds to another; in nearly every instance they have been planted the same day as they were taken up, and so little do they show any sign of having been removed, that a stranger would never for an instant suppose that such had been the case. In fact several who have seen them lately could scarcely believe that plants of such a size had been so recently planted. We have removed plants of a similar size at nearly all times of the year; but at no other period can anything like the same amount of success be obtained—at no other time do they appear to "push away" with the same "freeness." Many of the large Yews, Deodars, and similar things, removed this summer, have made a beautiful growth since being planted; and on baring down to the roots two or three weeks after planting, we have found thousands of "rootlets" actively at work, leaving little room to doubt that the plants would soon be in a more robust state of health than they would have been, had they never been moved. As to Rhododendrons, we have planted many hundreds at nearly all times in the year, very many of a large size this last June, and I do not recollect ever having lost one. Should any of your readers doubt these facts, they are at liberty to come and see for themselves. So fully am I satisfied of the three months named being the best time for removing evergreens of every description, that I have no hesitation in predicting that in a very short time it will become general to transplant at that season. *Henry Groom, Gardener to Sir John H. Lowther, Bt., Swillington House, Woodlesford, near Leeds.*

Black Hamburgh Grapes.—I take the liberty of inquiring through your columns what is the cause of Black Hamburgh Grapes not stoning. For three years the defect has progressed annually, about one-third each year of a house 35 feet long. *A Constant Subscriber.* [Pinus excelsa, after being stationary 12 years, having outgrown its position, and being 30 feet high, cannot be moved without great risk. All you can do is to cut round the roots now, at 6 feet from the stem, and then wait till next August or September to make the trial.]

Gardeners and their Employers, &c.—I have been much gratified with the very judicious remarks of "F. L. O." upon gardeners, farmers, and labourers, and also upon his successful experience in farming. I feel quite certain that were employers to act upon what he has said, they would find it conducive to their interests. Unfortunately the gardener appears very often to be the one in whom the employer places the least amount of confidence, and yet I dare affirm that there is no class of men more intelligent or trustworthy, or who study more their employers' interest if fair play be given them. There are many reasons that might be adduced to show that it would generally prove to be to the interest of employers were the offices of gardener and steward combined. The antagonism that frequently exists between the two would be destroyed, for gardeners and stewards seldom act in concert with each other. This arises from the steward exercising his authority in an undue manner, and frequently (as I have known, and could show) in a way inimical to the well conducting of the gardening operations. Employers are sometimes "penny wise and pound foolish." I have known cases of positively useless expenditure on the farm, or elsewhere, while at the same time the gardener has been so closely dealt with as to render it impossible for him to keep up the place in a way creditable to his employer. This is not right. All men wish to obtain credit, and therefore a gardener; but how can he do this if he is not allowed means sufficient to keep in order the garden, &c., intrusted to his charge? Employers must of course consider their means and act accordingly, but how to do this judiciously is not always understood. Employers would be better advised if they reduced in extent their gardens and pleasure grounds, so that what they retained might be kept in due order as well as within their means. This seems to me the rational view of the matter, and there are many places where it would be a highly judicious proceeding to adopt it. I know a gardener of great experience, who when engaging himself to a gentleman who intended making extensive improvements and additions, candidly told him that he could not enter his service except with the assurance that whatever he took in hand should be kept up properly afterwards. Common sense tells us that the gardener was right, and his candour was appreciated by the gentleman. I know a first class gardener who after many years' service in his present situation is leaving because he cannot keep up the place with about two-thirds of the means that it demands. Another gardener will be engaged, who will attempt to execute with four men what demands the labour of six, and ultimately another change will be tried. It is surely deplorable to see so many changes as occur in some establishments—a fresh gardener perhaps every 12 or 18 months, in others perhaps every two or three years. Now, is it likely that a gardener will take any deep interest in a place where his employer never, as it were, takes him by the hand, and where he soon finds that he has no prospect of remaining with any degree of comfort, or credit to himself? Permit me just to relate as a fact my own experience in the service of a worthy baronet, now gone to his account. The place was very susceptible of improvements, but any proposal of mine to my employer was referred to the steward—a person wholly incompetent to judge; nevertheless he invariably overruled my proposals, which all fell to the ground, although frequently of a trifling nature as regards expense, for I knew it would be positively useless to allow my views of improvement to assume any magnitude. Now if I ceased to make any proposals at all, who was to blame? Yet I know of a truth that her ladyship complained that I never proposed anything. Every one can draw his own inference from such a contradictory state of things. *R. A. W. D.*

Portland Stone Garden Basins.—Will one of your correspondents kindly inform me if a basin finished inside with Portland cement would be injured by frost? If so, if any and what precaution is necessary as a preventive? It is in the open ground and contains fish and a fountain. *A very old Subscriber.*

Sick Acacia.—I have an Acacia measuring 7 feet in circumference at 3 feet from the ground, and branches from outside to outside, 45 feet. Till the heavy storms two months since it flourished with its usual luxuriance. About a month afterwards I observed a strip say 5 or 6 feet in width through the centre of the branches begin to fade, the leaves dropped, and a second crop appeared which also faded and fell. Since then the whole tree has shed its leaves, and has the appearance of a dying tree. Qy. Is the tree dying? Was it struck by lightning, or has it been destroyed wilfully? I have examined the bark and can find no appearance of decay, nor any insects. Two years since I cut away the lowest limb and painted the wound; could this have done mischief? *W. C., Dartford.* [We suspect your tree to have been struck by lightning. There was a most remarkable case of the kind this year with an Acacia in the garden of Mr. Banting, of Kensington. Only in his case the tree was shivered to pieces. We hope some day to give an account of that remarkable occurrence.]

Societies.

BRITISH POMOLOGICAL: *September* 1.—Mr. Hogg in the chair. The Lord Chief Baron Pollock, D. C. Thompson, Esq., Mr. T. Osborne, Mr. J. Scobie, and Mr. McBey, gr. to R. Ellison, Esq., Sudbrooke Holme, Lincoln, were elected members. A donation of 10*l.*, to be used in such a manner as might seem most desirable, in stimulating the raising of improved varieties of Grapes, was given to the society by R. Ellison, Esq., of Sudbrooke Holme, Lincoln. At this meeting the following premiums were offered for special subjects; but there was no exhibition in the first or second class. Two Guineas for the best seedling late Strawberry. This premium has been offered for several years without calling forth anything worth of the award. It will, however, be continued at about the same period in future years, until a variety sufficiently good is produced. One Guinea for the best bunch of Golden Hamburgh Grape, to be exhibited by the grower. Two Guineas and one Guinea for the best and second best collections of fruit, comprising not less than two dishes, to be exhibited by the grower. In the third class, the prizes for which were offered by Messrs. Bohn and Frazer, the first was awarded to Mr. Whiting, of the Deepdene, for a collection comprising Trebbiana and Raisin de Calabre Grapes; Bellegarde and Noblesse Peaches; Violette Hâtive and Elruge Nectarines; Belgian Purple, Cooper's Large Red, and Imperial Diadem Plums. The second premium was awarded to Mr. Newton, of East Lodge, Enfield Chase, for a collection containing Black Hamburgh and Black Morocco Grapes; Grosse Mignonne Peaches; Violette Hâtive Nectarine; Williams's Bon Chrétien Pears; Kirke's and Jefferson Plums; Red Quarrenden and Kerry Pippin Apples; and Red Dutch Currants. A large and interesting collection, not for competition, was exhibited by Mr. E. Spary, of Brighton, comprising Grapes, Peaches, Apples, and Pears.

Mr. Rivers, of Sawbridgeworth, again brought the Seedling Peach he exhibited last year, and which he at present distinguishes as No. 6; it was raised from the largest of all the Pavies—namely, the Pavie de Pompone, a late clingstone variety. The flowers (large) and leaves (with small round glands) are like the parent, but the flesh is red near the stone, from which it parts freely, and is melting and delicious; its season being intermediate between the Royal George series and the later October kinds. Mr. Rivers reported that it ripens about a fortnight after the Grosse Mignonne, a tree of which stood beside it in the same house. Last year it was pronounced promising, and at this examination it was considered to have sustained the favourable impression formed of it; Mr. Rivers, however, expressed his determination to give it a further trial, and bring it again before the Society. Mr. Rivers also brought a Seedling Peach raised from the Pitmaston Orange Nectarine; the fruit was very juicy, and possessed in a great degree the flavour of the parent. He exhibited these fruits to show the interesting results which sometimes occur in raising seedling Peaches and Nectarines. The tree from which the specimens were gathered is now five years old, and has borne a fine crop. Like its parent, it has large, bright, pink flowers, but differs in its glands, which are reniform. It is strange to find that a Nectarine with bright orange-coloured flesh should give a tree like itself in habits and flowers, but producing a Peach without the least tint of orange in colour, and with all the qualities of a good melting Peach. Mr. Rivers stated that he had in bearing this season a white Peach raised from the White Nectarine, but it unfortunately ripened between the meetings of the Society. Mr. Pye, gr. to G. S. Wintle, Esq., of Hucclecote, near Gloucester, exhibited a Seedling Peach which had been raised by the late Mr. Holbert, of that town. It was a large, melting fruit, but rather too ripe for critical examination; leaves serrated without glands; having been grown on an open wall, and in a cold locality, it evinced great earliness,

and the flavour appeared so good, that a desire was expressed to see it again.

On the subject of Peaches, Nectarines, and Apricots, Mr. Pye desired to call attention to an old but almost forgotten method by which he had retarded and protected the blossoms of the trees on walls for several years past. About the middle or end of January, he selected the longest of the untrimmed brushwood intended for Pea sticks, such as Hazel or Elm; the thick end thereof being sharpened the same as if intended for Peas; he had them fixed in the ground in front of the trees, about 18 inches from the bottom of the wall, and leaning against it at top; affording a partial shade to the trees, preventing the blossoms from expanding too early in spring, and remaining until the fruit begins to swell. Under such treatment the blossom is about three weeks later than if uncovered, and during and after flowering a slight protection is afforded; and by these means he had secured this year a fair average crop, while his neighbours had lost all. When the sticks are taken from the wall they are cut up for Pea sticks, so that nothing is lost. This is, of course, a very cheap method, and may be used with a chance of advantage in ordinary seasons; but is not to be compared to glass or a covering fixed on rollers, of light sheeting, frigi domo, or some similar material; as they not only furnish a more perfect shade or shelter respectively, as the case requires, but they admit of full exposure to cold when retarding is desired, and to warm spring sunshine when it is beneficial.

Mr. Pye exhibited a specimen of a variety of Melons which was laid before the Society, August 6th, 1857, under the name of Hucclecote Prolific, but now called Comet. He stated that the fruit sent was grown out of doors, the plant having been treated the same as a Vegetable Marrow; planted out under a hand-light about the middle of May on a mound formed with two barrow loads of hot dung, and covered with about 4 inches of prepared soil. The first week in June the hand-lights had been taken quite away, and since that time the plants had produced 32 fruits, four of which had been cut. The specimen sent was not fully ripe, and was, therefore, thick-skinned; but for a Melon grown in the open air was considered of very fair quality, and the variety was deemed worthy of trial, with a view to the origination of a hardier race of the Persian type.

Of Grapes, Mr. Whiting exhibited Trebbiana, a variety of the Syrian or Tokay section, not much known, but worthy of cultivation, as it produces a large, handsome, well-shouldered and compact bunch, is moderately hardy, sets well, and keeps good without shrivelling or becoming spotted until March. The berry is of full medium size, and oval; colour pale amber; skin rather thick; flesh melting, very juicy, and sweet; seeds very few, frequently none. He also exhibited Raisin de Calabre from the same house as the above, over ripe, and somewhat shrivelled; the berry was watery, and the flavour very deficient in comparison with the preceding. Mr. Scrutton brought a bunch of Sweetwater nearly ripe, from a very old tree which appeared almost exhausted a few years ago, but which he had revived and brought into a healthy, bearing state, under Hoare's system. Mr. Swinerd, gr. to J. Swinford, Esq., Minster Abbey, Ramsgate, sent Royal Muscadine from a greenhouse, and from an open wall, the latter well swelled, and very ripe for the time of year. F. G. Graham, Esq., of Cranford, brought a seedling raised between White Sweetwater and White Muscat from the back wall of an orchard house. It proved to be the same as Chasselas Musqué, which reproduces itself very constantly from seed or from the original cross. This bunch was very nice in flavour, though not quite ripe in colour, and showed no tendency to split. It has been remarked in former reports that this variety is rarely or never subject to this defect, except when grown in a temperature which is really too great for a Grape of its hardy character. Mr. Graham also exhibited some well ripened Black Hamburghs from the same orchard house. Both varieties were growing in a common border against a wall, to which a glass lean-to roof was fixed in April last: no fire heat had been used. Mr. Newton, gr. to G. J. Graham, Esq., Enfield Chase, again exhibited the Black Morocco from a very old tree. On this occasion they were riper than before; but the fruit had not acquired the vinous, Raisin-like flavour which they attain when fully matured.

Notices of Books.

A Little Tour in Ireland, being a visit to Dublin, Galway, Connamara, Athlone, Limerick, Killarney, Glengariff, Cork, and elsewhere. By an Oxonian. With Illustrations by John Leech. Square 8vo. (Bradbury & Evans.) This capital volume is introduced by a picture of the market-place of Galway and its inhabitants which we should say was worthy of Frith, if Leech had not shown himself to be even more skilful in the delineation of character. Nowhere else in this world is to be found such a collection of pigs and poultry, ragged urchins sprawling in the mud, and good-looking peasant girls dancing among it, crones and countrymen, cabins without chimneys, women without stockings, hens without feathers, a market-place without pavement. A girl putting the spout of a teakettle into an old woman's mouth, and a boy beating a pig with the remains of a broom, are capital examples of quiet drollery. Nor are the numerous other cuts that accompany the letter-press in any way inferior to the best works of this our modern Hogarth. As to the letter-press, it is all sparkle and fun—but the sparkle and quiet fun of a gentleman. Silly sentiment and crabbed criticism, nonsensical admiration of the barbarous descendants of barbarous ancestors, and snobbish complaints that travelling and living in Connamara are not like those of Camberwell or Islington are equally absent from the pages of our Oxonian, who went to Ireland to enjoy himself, did enjoy himself thoroughly, and returned to tell the world how to go and do likewise.

We are tempted to extract what is said of the last Irish famine as an example of the serious style of our lively author, who was about to quit Galway for Connamara.

"As schoolboys, to whom 'next half' begins to-morrow—sailors on the eve of a voyage—invalids, expecting a physician, who, they know, will prescribe an unwelcome diet—yea, even as criminals before execution,—amplify their meals, and, from their dreary expectations, educe a keener relish,—so we, awfully anticipating the *cuisine* of Connamara, made a mighty dinner at Galway. It was brought to us, moreover, by a dear old waiter, who evidently had a proud delight in feeding us, as though he were some affectionate sparrow, and we his callow young, taking off the covers with a triumphant air, like a conjuror sure of his trick, and pouring out our Drogheda ale, with quite as much respect and care as Ganymede could have shown for the Gods.

"'Was the salmon caught this morning, waiter?'

"'It was, sir. Faith, it's not two hours since that fish was walking round his estates, wid his hands in his pockets, never draming what a pretty invitashun he'd have to jine you gintlemen at dinner.'

"This was followed by a small saddle of 'Arran mutton, y'r onner;' and 'what can mortals wish for more,' except a soupçon of cheese?

"Ah, but we felt almost ashamed of being so full and comfortable, when our conversational attendant began to talk to us about the Great Famine. 'That's right, good gintlemen,' he said, 'niver forget, when ye've had yer males, to thank the Lord as sends them. May ye niver know what it is to crave for food, and may ye niver see what I have seen here in the town o' Galway. I mind the time when I lived yonder' (and he pointed to Kilroy's Hotel), 'and the poor craturs come crawling in from the country with their faces swollen, and grane, and yaller, along o' the arbs they'd been ating. We gave them bits and scraps, good gintlemen, and did what we could (the Lord be praised!), but they was mostly too far gone out o' life to want more than the priest and pity. I've gone out of a morning, gintlemen,' (his lip quivered as he spake), 'and seen them lying dead in the square, with the green Grass in their mouths.' And he turned away (God bless his kind heart!), to hide the tears which did him so much honour.

"Can history or imagination suggest a scene more awfully impressive than that which Ireland presented in the times of the Great Famine? The sorrows of that visitation have been recorded by eloquent, earnest men; but they come home to us with a new and startling influence, when we hear of them upon Irish ground. Most vividly can we realise the wreck, when he, who hardly swam ashore and escaped, points to the scene of peril; and while the storm-clouds still drift in the far horizon, and the broken timbers float upon the seething wave, describes, with an exactness horrible to himself, that last amazement and despair.

"In the beautiful land of the merry-hearted, 'all joy was darkened—the mirth of the land was gone.' In the country of song, and dance, and laughter, there was not heard, wherever that Famine came, one note of music, nor one cheerful sound—only the gasp of dying men, and the mourners' melancholy wail. The green Grass of the Emerald Isle grew over a nation's grave. The crowning plague of Egypt was transcended here, for not only in some districts was there in every house 'one dead,' but there were homes in which there was but one living—homes, in which one little child was found, calling upon father, mother, brothers, and sisters to wake from their last long sleep—homes from which the last survivor fled away in wild alarm from those whom living he had loved so well. Fathers were seen vainly endeavouring (such was their weakness) to dig a grave for their children, reeling and staggering with the useless spade in their hands. The poor widow, who had left her home to beg a coffin for her last, lost child, fell beneath her burden upon the road and died. The mendicant had now no power to beg. The drivers of the public cars went into cottages, and found all dead, or Rachel weeping for her children, and praying that die she might. By the sea side, men seeking shell-fish fell down upon the sands, and impotent to rise, were drowned. First they began to bury corpses, coffinless, then could not bury them at all. Of indignities and mutilations which then befel, I will not, for I cannot, speak.

"Indeed, it may be asked, wherefore should we repeat at all these sad, heart-rending details? Because the oftener they are had in painful remembrance the less likely they are to recur in terrible reality; because—

> 'Never did any public misery
> Rise of itself; God's plagues still grounded are
> On common stains of our humanity;
> And to the flame which ruineth mankind
> Man gives the matter, or at least the wind;'

and because, when we know the cause and the symptoms, we can the more readily prevent and prescribe."

We wish we could give the Oxonian's droll account of the Blarney stone; but its fun would be lost without Leech's sketch, and we must be contented with the following little supplement to it—

"In these grounds the portly old gardener showed us one of those cromlechs, which were used by the Druids for sacrificial or sepulchral purposes, and in which, I am ashamed to say, we professed an all-absorbing interest, though, on my asking Frank, as we left the gardens, 'what a cromlech was?' he replied that, prior to inspection, his idea had always been that it was a species of antediluvian buffalo!

"Then we saw the lake

> 'That is stored with perches,
> And comely eels in the verdant mud;
> Besides the leeches, and groves of Beeches,
> All standing in order for to guard the flood.'

"They say that from this lake enchanted cows, snow-white and of wondrous beauty, come forth in the summer mornings, and wander among the dewy meads, to the intense astonishment and admiration, doubtless, of the celebrated Irish bulls.

"And they say, moreover, that beneath these waters (which we ventured to designate Cowes Harbour, in allusion to the mysterious kine), lies the plate-chest of the Macarthys, about the size of a gasometer, and never to be raised until once again a Macarthy shall be lord of Blarney. It will be a busy day for the butler, and a happy one for those who deal in plate-powder, whenever this restoration shall occur.

"Our driver gave us, as we returned, a taste of his autobiography. I wish that I could repeat it *verbatim*, for Irish humour loses its bloom if it is not faithfully rendered; but my memory only retains the incidents, and, here and there, a phrase of his story.

"He was in England several years ago, at the time of harvest, travelling, sickle in hand, with a dozen of 'the boys,' and looking out for employment in the neighbourhood of, or, as he termed it, 'contagious to th'ould castle of Newark-upon-Trent.' A hot wind blew the dust along the road, for 'the good people were a-going their journeys;' and they were resting awhile, and looking at a fine crop of Wheat, by the wayside, when two young men on horseback stopped, and asked them 'whether they wanted work?'

"Now, it seems that there lived in these parts, at the period of our history, one of those unhappy malcontents whose counsel, like Moloch's, is for open war with everything and everybody about them; who can believe no good of their neighbours, because they find none in themselves; who murmur at the rich, and are mean and merciless to the poor; who go to meeting-house to spite the parson, and to church to vex the preacher; who attend parish-meetings to stir up quarrels, and to set one class against another; who poison foxes, and put their great ugly boots into partridge-nests; and sedulously devote themselves in every way to promote the misery of mankind.

"A bear of this calibre, calling himself a farmer, was tenant of the field on which the Irishmen gazed; and a plan occurred to the merry young gentlemen, by which they might amuse themselves, occupy the reapers, and annoy 'that mangy old hunks.' Accordingly, they at once retained our friend the car-driver, and his company, to cut the crop before them, giving them particular directions to get it down as quickly as they could, and agreeing to pay them liberally by the acre, as 'their father was anxious to get it stacked, and would not mind their doing the work a bit slovenly, if only they lost no time.' And then, having warned them 'not to take any notice of a half-witted fellow, who lived near, and who, fancying that all the land about was his own, might possibly try to interrupt their proceedings,' the horsemen wished them 'good-day.'

"They had been at work for nearly an hour, and had left behind them, in their anxious haste, such an untidy example of sheaf and stubble as would have broken Mr. Mechi's heart, when a loud bellowing in the distance announced the arrival of the unhappy lunatic. He came on, roaring and raving, shaking his fist, and foaming at the mouth. He actually danced with rage among the sickles, until the reapers fearing the excision of his legs forcibly removed him, and with twisted strawbands secured him to his own gate. There, trussed and pinioned, he sent forth such howlings through the 'alarmed air' as scared every crow from the parish, and very speedily attracted the surprised attention of the British public travelling upon the Great North Road.

"The reapers eventually found it expedient to retire with considerable agility, much disgusted and discomfited at being 'sich a distance on the wrong side of the wage, bedad,' until they were met by their delighted employers, who not only presented them with a couple of sovereigns, but introduced them, with the anecdote, to a jolly old gentleman hard by from whom they had employment until the end of harvest."

But to enjoy this book it must be read throughout.

Trade Lists Received. — Butler & McCulloch's (Covent Garden) *Autumn Catalogue of a choice collection of Dutch and Cape flowering bulbs, &c.* An excellent list with abundant practical instruction for the inexperienced, telling them how to grow every class of bulbs and bulb-like plants included in the catalogue.—E. G. Henderson & Son's (Wellington Road) *List of bulbs and other flower roots.* Another very long and useful list with directions for cultivation. The amateur should compare the instructions in these trade catalogues; the task would be both interesting and profitable. We

doubt, however, whether the winter Achimenes called Tydæas will satisfy purchasers. They are not very handsome, and the varieties are so much alike that few would care for having more than one at a time in his greenhouse.

Garden Memoranda.

TEALING HOUSE, NEAR DUNDEE.—What a change 30 years make! It was only the other day I had again the pleasure of visiting this fine old place, now the property of Mrs. Yemon. The garden is nearly square, consisting of about 2 acres, surrounded by a high stone wall, well covered inside with Apple, Pear, and Plum trees, all in excellent health and bearing. There are also a Vinery and Greenhouse, both in good keeping. Like all old-fashioned kitchen gardens in that part of Scotland every walk is verged with a narrow flower border. In former days this was planted with herbaceous plants, such as Celandine, Marsh Mallow, Golden Rod, Meadow Rue, &c., and many a specimen have I got from this border for my herbarium with names as long as my arm, and which I have not yet been able to pronounce. I knew the gardener; he was a tall man and wore a black velveteen surtout with four large outside pockets, and when in full dress a drab waistcoat and a blue shalloon apron put on in such a way as to unmistakeably indicate his trade. It was generally believed that this old-fashioned functionary knew every plant in the garden, and that he had instructed old Tommy Greeves, the herb doctor, many a time, although Tommy had got Culpepper pretty well "by heart:" be that as it might, it is not my intention to dispute the point; suffice it to say that both men are dead; peace to their memory. In looking round this once famous border I could see here and there an old residenter peeping out from the background as if ashamed to show its face; and well it might; for here were Verbenas, Calceolarias, Petunias, &c., all of first-rate quality, not fettered with pegs, but growing away as if they were at home. What a change! On leaving the garden by the south door, we came to what I had forgotten all about, viz., a south border of about 18 or 20 feet in width, which runs all the length of the garden. If I recollect rightly, when I was a boy this border was partly under crop, partly fallow, and partly flowers; now the latter have full possession. It is at present a mixed border, in which the plants are arranged according to height. Along the back is a line of first-class Dahlias trained on wires, then come Salvias, Delphiniums, among which D. formosum was conspicuous; Calceolarias, Ageratums, Geraniums, &c., and next the Box-edging a line of Stocks, which I considered the best I ever saw in my life. Among the latter were Verbenas, planted to fill the ground when the Stocks came off. Talk about ribbon-borders, why this bank of flowers put them all in the shade. On leaving this we passed on to the pleasure-grounds. What a change was also observable here! Irish Yews, which at one time I might have jumped over, are now apparently 20 feet high; Variegated Hollies growing as if for timber; Horse Chesnuts in huge masses, some of them with branches 6 inches in diameter, hanging down and rooting into the ground, and thus forming one of the most handsome trees for a lawn imaginable; Portugal Laurels, too, were numerous, and I may add magnificent. One plant which I measured was 32 yards round, a perfect model in shape; another (a little one-sided) had a stem 3 feet in diameter, about 2 feet from the ground. I also noticed a splendid Weeping Ash, but too much crowded by other trees to be seen to advantage; indeed the only fault one can find with this place is, that good things are by far too near each other, and if one-half were cut down, those left, would be better and even look better than they do at present. If this were done, what a change another 30 years might make! But perhaps these noble ornaments by that time may be cut down, and the ground replanted with quite a different race of things, among which Wellingtonia may be raising its majestic head. The verge too round the kitchen garden may in that time be changed also. Geraniums, which the present gardener may consider the zenith of perfection, may all be swept away. Verbenas too, with high-sounding names such as Defiance, Matchless, Incomparable, Eclipse, Victory, Pre-eminent, &c., may all be buried in oblivion, and something more fashionable occupying their places. As for Golden Rods and Meadow Rues, floral generals of the 18th century, they too might as well be ranked in the same group with Sigillaria and Lepidodendron, extinct genera of the carboniferous era, for what use they are now or ever will be in the decoration of flower gardens. Their day has gone by. *An Old Showman.*

Calendar of Operations.

(For the ensuing Week.)

PLANT DEPARTMENT.

CONSERVATORY, &c.—A little fire-heat will soon be indispensable here during damp and cold weather, in order to allow of admitting a little fresh air to carry off superfluous moisture without lowering the temperature too much; this should, however, be applied during the day, and all watering should be done in the morning, so that the atmosphere may get moderately dry before night, when a damp stagnant atmosphere is especially injurious to flowers. But although some care is necessary at this season to preserve plants in bloom from being injured by damp, it is easy enough to fall into the opposite extreme, and as excessive dryness is much more injurious to plants generally than the amount of damp which would ruin flowers, this must also be guarded against. Unless where fire-heat is used too freely, however, there is little danger to be apprehended from the want of sufficient moisture in the atmosphere at present.

FORCING DEPARTMENT.

PINERIES.—The plants expected to show fruit early next year will be greatly benefited by being kept in a comparatively dry state for a few weeks previous to subjecting them to a warm moist temperature. The atmosphere should be kept dry, also allowing the soil about the roots to become as dry as can be done with safety; do not, however, subject the plants to a very low temperature, but keep this at from 60° to 65° by artificial means, for although the plants will bear a considerably lower temperature without any apparent injury, those not subjected to any unnecessary extremes will produce the finest fruit; and a short period of comparatively dry treatment will ripen the growth, and just as effectually induce a tendency to show fruit as checking the energies of the plants by an unnaturally low temperature, and without any of the ill effects of the latter method. No dependence can be placed on the weather after this time, therefore see to plants in pits with insufficient means of heating being protected by means of covering at night, and maintain the command of a rather high temperature by frequently renewing the linings, &c., so as to be prepared for any sudden decrease of the external temperature; avoid anything approaching excess of atmospheric moisture among young stock, whether in pits heated by linings, or in better arranged structures, which only tends to promote a too free rate of growth for the amount of light, and weakly blanched foliage is the result.

VINERIES.—Where early forcing is intended, follow previous directions as to keeping the atmosphere moist, as there will be some difficulty in getting Vines to break freely after this season except this is attended to. If circumstances allow of having a bed of fermenting manure inside the house, this will be found the best means of keeping the atmosphere regularly moist, but if this cannot be used the house must be sprinkled with the syringe frequently, and the evaporating troughs kept full. Also see that the roots are afforded a steady gentle warmth until the buds are fairly swelled; keep the temperature about 50° by fire-heat at night, and 60° by day, letting it rise to 70° on the forenoons of sunny days. Get succession houses cleaned, the Vines pruned, painted, and put into order for work, and see that the heating apparatus is in perfect order, as if this or anything else requires repairs this should be done while the house is idle.

FLOWER GARDEN AND SHRUBBERIES.

Except where alterations are in hand, there will be little requiring attention here at present beyond the clearing up of leaves and putting the borders, &c., into neat order for the winter. Get this done, however, with the least possible delay, in order that the place may be rendered trim and neat and as enjoyable as the season will admit; also sweep and roll walks frequently, so as to keep them clean and smooth, for without hard dry walks pleasure ground is next to useless at this period of the year. Turf will also require rolling frequently to keep it smooth and firm, and to prevent its being disfigured by worm casts. If any of the turf requires levelling take advantage of any leisure time which may occur to get this done.

HARDY FRUIT AND KITCHEN GARDEN.

Continue to gather Pears and Apples as they become ready, and give careful attention to the fruit room, which should be kept as cool as possible at this season, with just sufficient top ventilation to carry off the exhalation from the fruit. Some varieties of Pears may be had considerably later in season than their ordinary period of ripening, by allowing them to hang on the trees after the usual time of gathering; but they should be covered with a net, to protect them from birds and to catch any fruit that may fall and prevent their being bruised. If there is not already a good breadth of Cabbage planted out this should be seen to at once, choosing a piece of deep heavily manured land. Also see to planting Cauliflowers where they can be protected from frost, and a bed might be tried under the shelter of a west or south-west wall. A good stock may be safely wintered this way, but the plants should not be allowed to grow too freely in the autumn, and should be transplanted as often as may be necessary to keep them dwarf and hard. This checks growth, and prevents the plants being so soft and sappy as if they were allowed to grow unmolested throughout autumn, and with the protection of a mat or a waterproof cloth thrown over them in severe weather, plants, treated in this way, will do as well as those under glass, and they often grow more freely after planting out in spring. Lettuces treated in the same way will withstand the severest winter if the soil is not too damp.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.
For the Week ending Sept. 22, 1859, as observed at the Horticultural Gardens

Sept.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Temperature of the Air. Min.	Temperature of the Air. Mean	Temperature of the Earth. 1 foot deep.	Temperature of the Earth. 2 feet deep.	Wind.	Rain.
Friday 16	19	29.478	29.439	66	50	58.0	59½	59½	N.E.	.07
Satur. 17	20	29.848	29.662	66	36	51.0	60	59½	N.E.	.00
Sunday 18	21	30.012	29.924	66	49	57.5	59	59	W.	.28
Mon. 19	0	29.869	29.825	65	35	50.0	59½	59	N.	.06
Tues. 20	23	29.896	29.724	66	49	57.5	59	59	N.W.	.22
Wed. 21	24	29.458	29.348	61	43	52.0	59½	59	S.W.	.18
Thurs. 22	25	29.703	29.566	64	46	55.0	58½	58½	S.W.	.11
Average		29.758	29.642	64.8	44.0	54.4	59.3	59.1		.87

Sept. 16—Fine; shower; cloudy and fine; boisterous.
— 17—Flying clouds; low white clouds; boisterous; clear and fine.
— 18—Fine; very fine; overcast; rain.
— 19—Very fine; clear; cold at night.
— 20—Slight fog; very fine; overcast; rain.
— 21—Rain; cloudy; overcast.
— 22—Clear; rather boisterous; rain at night.
Mean temperature of the week, 2½ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK.
During the last 33 years, for the ensuing Week, ending Oct. 1, 1859.

Sept. and Oct.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 25..	65.9	44.4	55.2	15	0.30 in.	2	4	3	2	5	10	6	1
Mon. 26..	65.3	44.9	55.1	16	0.72	—	5	6	1	8	9	1	3
Tues. 27..	65.1	45.3	55.7	19	0.57	—	2	4	2	5	10	7	3
Wed. 28..	64.7	44.4	54.6	16	0.80	—	4	4	1	9	8	4	3
Thurs. 29..	65.2	45.2	55.2	21	0.46	1	3	3	3	6	11	3	3
Friday 30..	64.4	43.4	53.9	20	0.58	3	2	3	3	5	8	8	1
Satur. 1	63.1	44.9	54.0	17	0.53	2	3	2	2	6	12	4	2

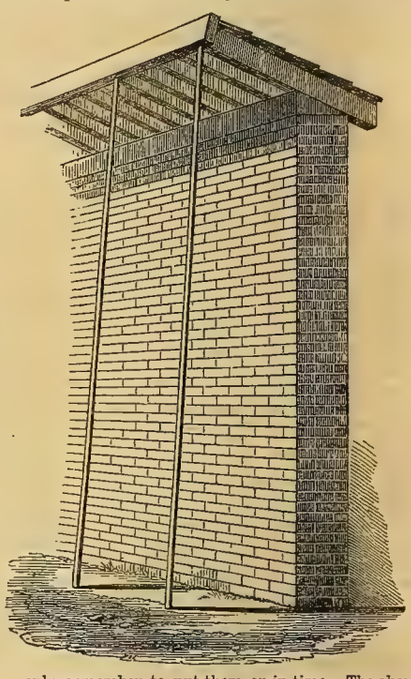
The highest temperature during the above period occurred on the 25th, 1832—therm. 82 deg.; and the lowest on the 27th, 1828—therm. 24 deg.

Notices to Correspondents.

BOOKS: *G N A F.* Sanders's Practical Treatise on the Vine, price 5*s*.

BOTANY: *E J F.* Make yourself master of Lindley's School Botany, and when you have done that inquire again.

COPING: *T N.* Let it project 9 inches if you can. Many use 9-inch boards placed temporarily on sloping iron brackets let into the top of the wall: and they answer quite as well if you



can only remember to put them on in time. The above is another excellent plan of making a coping for Apricots. It is described at p. 389 of our volume for 1854.

HOW TO COOK AUBERGINES: *J Gadd.* They must be perfectly ripe. Split them; take out the stalk; leave on the shell or skin; sprinkle them with pepper and fine salt; add enough salad oil; then leave them in this sauce for half an hour, the cut side downwards. Then grill them on a gridiron, basting them all the time with the oil, pepper, and salt. When done serve them plain or with Tomato sauce. Another and more skilful way is this. Cut them in two; scoop out the inside, which is to be chopped fine, with the addition of Parsley and minced Shallots; put the whole into a saucepan with a bit of butter; let them stew. Then put your Aubergine shells in a dish; fill them with the mince prepared as above, and let them cook in an oven, or in an iron kettle with fire above and below. Make them look neat and serve. We prefer the last, as they are sent to table in Paris.

NAMES OF PLANTS: We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have or could have undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*R D.* Two different plants have been called Isolepis gracilis. One is an Indian plant with the spikelets in heads; the other is a South American plant belonging to the genus Fimbristylis. Yours is neither; but a real Isolepis, allied to Isolepis setacea.—*C P.* 1, Nepeta micrantha; 2, Felicia tenella; 3, some Gypsophila, and apparently G. elegans.—*W.* Chenopodium Botrys, once grown in gardens as a hardy annual.—*Ciro.* Phytolacca icosandra, a common hothouse herbaceous plant, and much more worth growing than half the things found in hothouses.

ORCHARD HOUSES: *An Inquirer.* It requires a dissertation on this subject to answer your inquiries properly. All you want to know has been repeatedly explained and is to be found collected in *Rivers on Orchard Houses*, a little work to be had of any bookseller.

PEACH BORDER: *H J.* The front wall of your house should be on arches. Remove the mould to the depth of 2½ feet, and concrete the bottom, which must be well drained and slope to the front; over the drainage place a layer of turves with the Grassy side downwards, and then fill in with good fibry loam. In planting see that the roots are well spread out, and do not cover them in too deeply.†

RUNNING KIDNEY BEAN: *J C.* Yours seem to be exactly the same as the New Zealand one. We find your seeds white marked with red, as in that sort, and not white as you mention.

THE HORTICULTURAL SOCIETY: The Secretary begs to acknowledge the receipt of 3*s*. in postage stamps from "M. O." "as conscience money for fruit, &c., purchased in 1839 and after."

TWISTED STEM: *Cobham.* All stems are more or less twisted. We cannot find any bulbs. If present they would be axillary tubers which Dioscoreas have the habit of producing. Such an arrangement as you suggest would be interesting, but impracticable without much more ground and money. You will find something approaching it at Kew.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London, S. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

REDUCTION IN PRICE OF LAWES'S MANURES.

MR. LAWES begs to announce that he has this season reduced the price of the Manures manufactured by him, viz.:—

TURNIP MANURE	from £7 to	£6 6
SUPERPHOSPHATE OF LIME ..	,, 7 to	6 6
MINERAL do. ..	,, 6 to	5 5
BARLEY MANURE..		8 0

Prof. Way and Dr. Voelcker have sampled from a bulk of 5000 to 6000 tons at his factories, and their report and analyses are given in full in Circular to be obtained on application at his office, 1, Adelaide Place, London Bridge, E.C., or of his local Agents.

N.B. Genuine Peruvian Guano direct from Messrs. GIBBS, Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures. American Cotton-seed Cake supplied.

LONDON MANURE COMPANY
(ESTABLISHED 1840),
Have the following MANURES ready for delivery:—
CORN MANURE FOR AUTUMN SOWING.
BLOOD MANURE FOR AUTUMN SOWING.
URATE.
SUPERPHOSPHATE OF LIME.
SUPERPHOSPHATE MINERAL.

The London Manure Company also supply PERUVIAN GUANO (direct from Messrs. Gibbs & Sons), SULPHATE OF AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of known value, all of which they warrant strictly genuine. Wholesale dealers supplied.
116, Fenchurch Street, E.C. EDW. PURSER, Secretary.

NEW MANURE "BROMLEY STERCUS."—See *Gardeners' Chronicle*, Sept. 17, 1859.—Sample Bags of 1 cwt. each, price 5*s*., or per ton, 4*l*. Can be obtained only of HAYTER & Co., Imperial Works, Bromley-by-Bow, London, E., who will forward testimonials on application.

BURNARD, LACK, AND CO.'S CONCENTRATED SUPERPHOSPHATE OF LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.
CONCENTRATED TURNIP MANURE, equal in value to the preceding.
Of these Manures Dr. Voelcker says:—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."
Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to BURNARD, LACK, & Co., Sutton Road, Plymouth.

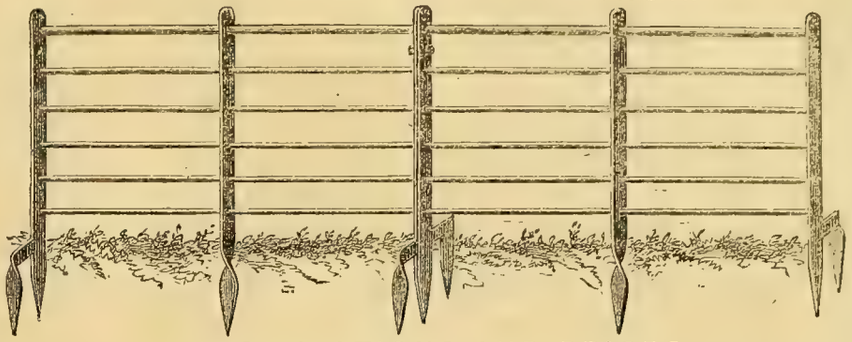
PERUVIAN GUANO.—The present price of this valuable Manure is 12*l*. per ton for 30 tons and upwards; 13*l*. 5*s*. per ton for 1 ton up to 30 tons.
And, in order to protect themselves against the purchase of adulterated mixtures and of inferior Guanos purporting to produce results equal to Peruvian, consumers are recommended to apply either to ourselves, to our Agents Messrs. GIBBS, BRIGHT, & Co. of Liverpool and Bristol; or to Dealers of established character, in whose honesty and fair dealing they can place implicit confidence. ANTY. GIBBS & SONS.
15, Bishopsgate Street Within, London, E.C.

THE PATENT NITRO-PHOSPHATE OR BLOOD MANURE COMPANY (LIMITED).
Trustees:—
ABEL SMITH, Jun., Esq., Walton House, Ware, Herts.
CHARLES DIMSDALE, Esq., Essendon Place, Herts.
EDWARD BALL, Esq., M.P., 8, Belgrave Road, Pimlico, S.W.
GENERAL HALL, Weston Colville, Linton, Cambridge.
JOHN BRADY, Esq., M.P., Warwick Terrace, Belgrave Square, W.
Directors:—
Chairman—JONAS WEBB, Esq., Babraham, Cambridgeshire.
Deputy-Chairman:—
JOHN COLLINS, Esq., Myddleton Square, Pentonville, E.C.
EDWARD BELL, Esq., Tottenham, Middlesex, N.
JOHN CLAYDEN, Esq., Littlebury, Essex.
RICHARD HUNT, Esq., Stanstead Abbot, Herts.
THOMAS KNIGHT, Esq., Edmonton, Middlesex, N.
ROBERT LEEDS, Esq., West Lexham, Norfolk.
ROBERT MORGAN, Esq., 72, Camden Villas, Camden Town, N.W.
GEORGE SAVILL, Esq., Ingthorpe, near Stamford.
WILLIAM COLLINS, Esq., 105, St. John Street Road, E.C.
Bankers—Messrs. BARNETT, HOARE & Co., Lombard Street, E.C.
Solicitors:—
Messrs. KINGSFORD & DORMAN, 23, Essex Street, Strand, W.C.
Auditor—J. CARTER JONAS, Esq., Cambridge.
Manager—Mr. JAMES ODAMS. | *Secretary*—Mr. C. T. MACADAM.
Offices: 109, Fenchurch Street, London, E.C.; Manufactory, Plaistow Marshes, Essex, E.
ODAMS'S BLOOD MANURE FOR WHEAT,
Price 7*l*. 10*s*. per Ton, delivered Free to any WHARF or RAILWAY in London.

TO PIG, POULTRY, AND GAME FEEDERS.
JUPP'S RICE FOOD, POULTRY AND GAME. RICE SWEEPINGS, 7*s*. 6*d*. per cwt. in 1¼ cwt. bags; SCREENED RICE, 10*s*. per cwt. in 1¾ cwt. bags; DOG BISCUITS, 14*s*. per cwt.; OIL-CAKE, per ton only; RICE MEAL for Pigs, 6*s*. and 8*s*. per cwt. in 1 cwt. bags, at the mill. Orders must be accompanied by a remittance to ensure delivery.—W. & R. JUPP, 6, Cross Lane, Eastcheap, E.C.

"FRIGI DOMO."—Patronised by her Majesty, the Queen, the Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, and —Collier, Esq., of Dartford.
PROTECTION FROM THE SCORCHING RAYS OF THE SUN.
"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and, floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths. Two yards wide, 1*s*. 6*d*. per yard run; four, 3*s*. per yard. Also, an improved make for Shading Purposes. Three yards wide, 2*s*. 6*d*. per yard run.
ELISHA THOMAS ARCHER, whole and sole manufacturer, 7, Trinity Lane, Cannon St., City, E.C., and of all Nurserymen and Seedsmen throughout the kingdom. "It is much cheaper than mats as a covering."

MESSRS. J. B. BROWN & CO.'S
IMPROVED WROUGHT IRON HURDLES
OF
BEST STAFFORDSHIRE IRON.



SPECIFICATIONS AND PRICES.

No. 1.—Very useful for general purposes, combining strength with good appearance. 3 feet 6 inches high, six bars round iron, top bar ⅝ inch diameter, five under bars ½ inch diameter; two side uprights flat iron, 1¼ inch by ¼ inch, and middle upright 1½ by ¼ inch. Weight about 48 lbs. Present price delivered in London and at most of the principal Railway Stations, 2*s*. 5*d*. per yard, or about 5*s*. 3*d*. each hurdle of 6 feet 6 inches long.

No. 3.—Stronger and more suitable for heavy stock. 3 feet 9 inches high, five bars, top bar ¾ inch diameter, four under bars ⅝ inch, end standards 1¼ inch by ⅜ inch, centre standard 1½ inch by ¼ inch. Weight about 63 lbs.; price 6*s*. 9*d*., 6 feet 6 inches long, delivered as above.

No. 6.—Extra strong and high for heaviest stock. 4 feet high, six bars, top bar ¾ inch diameter, five under bars ⅝ inch, end and two centre standards 1½ inch by ⅜ inch. The weight of this strong Hurdle is about 84 lbs.; and the price 8*s*. 10*d*., 6 feet long.

No. 7.—Light Hurdle for sheep and lambs. 3 feet 4 inches high, five bars ½ inch diameter, standards 1¼ inch by ¼ inch. Weight about 39 lbs.; price 4*s*., 6 feet long.

No. 8.—Light Sheep Hurdle. 2 feet 6 inches high, three bars ½ inch diameter, standards 1¼ inch by ¼ inch. Weight about 24 lbs.; price 2*s*. 9*d*., 6 feet long.

Fully Detailed and Illustrated Catalogues of Iron and Wire Fencing, Hurdles, Gates, Wire Netting, Garden Rollers and Engines, Ornamental Vases, &c., on application.

J. B. BROWN & CO., 18, CANNON STREET, CITY, LONDON, E.C.

HAYMAKERS, possessing the best features of Nicholson's Prize Machines, with recent improvements peculiar to those supplied and manufactured only for
RICHMOND AND CHANDLER, Salford.
Branch Establishment, South John Street, Liverpool.
N.B. The celebrated Bedford and Stamford Prize HORSE RAKES always in stock, with latest Patented Improvements.

HAY HARVEST.
NICHOLSON'S PATENT HAYMAKER, to which was awarded the First Prize of the Royal Agricultural Society of England at the last contested trial.
The celebrated STAMFORD HORSE RAKE has lately been much improved, and has obtained 26 Prizes at competitive trials.
MOWING AND REAPING MACHINES are performing their work most satisfactorily, and fully justify public expectation, cutting about 10 acres per day, at a cost of 9*d*. per acre.
Orders for the above machines should be given at once to RICHMOND & CHANDLER, Salford, Manchester.
Branch Establishment, South John Street, Liverpool.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, London, S.
Principal—J. C. NESBIT, F.G.S., F.C.S., &c.
The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.
Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

THE LANDS IMPROVEMENT COMPANY.—Incorporated by Special Act of Parliament in 1853.—2, Old Palace Yard, Westminster, S.W. To Landowners, the Clergy, Estate Agents, Surveyors, &c., in England and Wales and in Scotland.
The Directors beg leave to announce that the Company's Amendment Bill, 1859, has received the sanction of the Legislature. The Company now advance money, unlimited in amount, for the following works of Agricultural Improvement, the whole outlay and expenses in all cases being liquidated by a rentcharge for 25 years.
1. Drainage, Irrigation and Warping, embanking, Inclosing, Clearing, Reclamation, Planting for any beneficial purpose, Engines or Machinery for Drainage or Irrigation.
2. Farm Roads, Tramways and Railroads for agricultural or farming purposes.
3. Jetties or Landing places on the sea coast or on the banks of navigable rivers or lakes.
4. The erection of Farm Houses, Labourers' Cottages, and other Buildings required for Farm purposes, and the improvement of and additions to Farm houses and other buildings for farm purposes.

Landowners assessed under the provisions of any Act of Parliament, Royal Charter, or Commission, in respect of any public or general works of drainage or other improvements, may borrow their proportionate share of the cost, and charge the same with the expenses on the lands improved.
No investigation of title is required, and the Company being of a strictly financial character do not interfere with the plans and execution of the Works, which are controlled only by the Government Enclosure Commissioners.
Under the Company's Acts, tenants for life, trustees, mortgagees in possession, incumbents of livings, bodies corporate, certain lessees, and other landowners are empowered to charge the inheritance with the cost and expenses of the above improvements, whether the money be borrowed from the Company or advanced by the Landowner out of his own funds, and owners in fee may effect these improvements of their Estates without incurring the expense and personal responsibilities incident to mortgagees, and without regard to the amount of existing incumbrances.
For further information, and for forms of application, apply to the Honourable WILLIAM NAPIER, Managing Director, 2, Old Palace Yard, Westminster, S.W.

WEST OF ENGLAND AND SOUTH WALES LAND DRAINAGE AND INCLOSURE COMPANY.
Established in 1844.
INCORPORATED BY ACT OF PARLIAMENT IN 1848.
Draining, Inclosing, Irrigating, Warping, Road Making, and all kind of Land Improvements, executed on Entailed, Mortgaged, or other Properties, and the whole cost can be made a Permanent Charge on the Lands, or redeemable in a certain number of years. BIDWELL & BRODIE, Secretaries.
Offices: Exeter; and 30, Parliament Street, London, S.W.

AGRICULTURAL IMPROVEMENTS, LAND DRAINAGE, ROAD MAKING, & FARM BUILDINGS.
MR. BAILEY DENTON maintains a large staff for the execution of these works by commission or contract. He also prepares Working Plans to enable Landowners to carry out such improvements themselves.—52, Parliament Street, S.W.

THE BIRMINGHAM CATTLE AND POULTRY SHOW, 1859.—The ELEVENTH GREAT ANNUAL EXHIBITION OF CATTLE, SHEEP, PIGS, DOMESTIC POULTRY, AND ROOTS, will be held in Bingley Hall on MONDAY, TUESDAY, and WEDNESDAY, November 28, 29, and 30, and THURSDAY, December 1, when Prizes, Cups, or other Articles of Silver Plate, and Gold and Silver Medals, to the amount of 1250*l*. will be awarded.
Prize Lists and Certificates of Entry are now ready, and may be obtained at the Offices, or by letter to
JOHN MORGAN, Secretary.
Offices: Unity Buildings, Upper Temple Street, Birmingham.

SMITHFIELD CLUB CATTLE SHOW, 1859.—The ANNUAL SHOW of FAT CATTLE, SHEEP, and PIGS will take place on the 6th, 7th, 8th, and 9th December, at the Bazaar, King Street, Portman Square.
The Prize List contains separate classes for Devons, Herefords, Short-horns, Sussex, Norfolk or Suffolk polled, Long-horns, Scotch horned, Scotch polled, Irish, Welch, and cross or mixed breeds. Also Long-woolled Sheep, cross breeds, Short-wools, and Pigs. In addition to the large amount offered in money prizes, there are also 50 Silver and 5 Gold Medals. The following forms of Certificates are now ready, and intending Exhibitors in applying for them need only quote the letters and state how many of each they require.

CATTLE.	SHEEP.
Form A. Ox or Steer.	Form D. Pen of 3 Wethers.
,, B. Cow or Heifer.	
,, C. Ox or Cow in Extra Stock.	,, E. One Wether or Ewe in Extra Stock.
PIGS.	
Form F. Pen of 3 Pigs.	Form G. One Pig in Extra Stock

The Entries finally close on November 1.
Prize Lists with rules and regulations and Forms of Certificates to be obtained of B. T. BRANDRETH GIBBS, Hon. Sec., corner of Half Moon Street, Piccadilly, London, W.
N.B. All communications on the Club's business should have the words "Smithfield Club" outside, to distinguish them from private letters.

The Agricultural Gazette.
SATURDAY, SEPTEMBER 24, 1859.

THE existence of Ergot on many varieties of Grass has been proved beyond all doubt, and in like manner we have strong evidence of its influence upon breeding cattle. Two conditions appear necessary for its production: first, the formation of the seed; and secondly, that peculiar condition of climate which predisposes the seed to favour the development of the Ergot. In the

western climate of this kingdom, the existence of this disease in the Grasses of our pastures is by no means uncommon in the autumn of the year. An examination of the seed stems of our meadows will generally give evidence of this disease, but it is only when it is abundant that its influence is so manifest. Unfortunately much of the Grass land in the moist climate of the West is too frequently the cause of trouble and loss by causing the abortion of the cows fed thereon. The disease is seldom found upon Grass land which has been mown in the same season, and even when it is found its appearance is so casual as to be of little importance. The land which has been grazed during the summer is that upon which the ergotised Grass is found to exist most abundantly, because the stock having avoided the seed stems these have been enabled to fulfill their special functions and produce seed which has subsequently become diseased. It is clear that if prevention is the object to be aimed at, this will be best attained by keeping breeding stock from land thus bearing a diseased produce. This may be accomplished on the majority of farms by removing the breeding cows and heifers from their summer pasturage, say in July and keeping them afterwards upon land which had been mown that season. The removal of the stock should not be delayed until any case of abortion has positively occurred, because having once commenced it rapidly spreads through any herd and often in opposition to every care. As soon as there is seed formed upon the seed stems of the Grass, the prudent breeder may take notice of danger, and his wisest policy will undoubtedly be to put his cows and heifers upon the after Grass. There are very many districts where the climate from being dry does not render this precaution necessary, but at the same time there are numerous tracts of land where the moisture of the climate acts upon the Grass seeds, and favours the growth of ergotised Grass, and such land is noted for the difficulty experienced in keeping the stock in proper breeding order. The age of the fœtus appears to be a matter of small importance, for it varies from two months upwards at the time when the abortion takes place. Some stock are much more sensitive to its influence than others, and this is doubtless dependant upon their health and vigour; and thus stock which are well bred, *i.e.*, nearly related, are more liable to injury in this way than those which are inferior in this respect: for although by judicious breeding we improve the general character of an animal, yet at the same time this altered character is generally accompanied by diminished vigour.

This explains how the best bred cows and heifers will often throw their calves, whilst some common stock about which the breeder is indifferent will frequently escape, although their treatment and food may be similar, and each may have partaken of this ergotised Grass. Knowing as we do the action of this diseased form of Grass seed, it becomes highly important that we should avoid a cause so prolific of trouble and loss to many of our best breeders. The preventive treatment is simple and readily available, and we trust that attention having been drawn to this very much overlooked cause of abortion, it may help our readers to avoid a recurrence of the losses and disappointments which we regret to know have been so frequent.

IT is no part of our business to urge the formation of companies, whether on "limited liability" or any other principle, for the prosecution of agricultural improvement. The profitableness of that, if it can be shown, will quicken individual owners and occupiers of land to effort in this direction quite as much as the national interest demands; and facilitated as their operations are by land improvement companies which will give money, advice, and skill in exchange for a rent-charge for a term of years upon the land improved, one does not see what more than individual effort can be desired. There will nevertheless always be men sanguine enough, and with energy sufficient to seek to gather all the profits reaped during this process of improvement into their own lap—and so at once enjoy the benefit of owning, cultivating, and lending money upon land themselves.

The data upon which their expectations of success are based are of general interest, although their scheme be aimed, as of course it is, merely at the attainment of personal gain.

Here then are "Suggestions for the Formation of a Limited Liability Company for the Use and Improvement of land!" Whatever the difficulties in the way of such a scheme, whether legal or otherwise, it is at any rate of general interest to examine the grounds on which it is believed to command success, and to expose them for general criticism and discussion for the sake of their influence on individual effort. The idea is—to raise among shareholders a sum of money with a view to the purchase, cultivation (for a term of years), and ultimate re-sale, of a considerable tract of land, if a sufficient quantity, say 3000 to 5000 acres of improvable quality and favourably placed, can be found lying together and bought advantageously, in any part of England. The principle of the project is stated thus:—"Land poor and out of condition, though perhaps intrinsically good, is usually to be had in the market at a price even lower than its poverty would necessitate: *i.e.*, it is relatively at a discount; at the same time, where the staple is right and the management judicious and liberal, the expenditure requisite to bring such land into first-rate order, even including the erection of buildings, may be pretty certainly repaid by annual returns during a short term of cultivation, leaving the enhanced value of the property itself (often amounting to 100 per cent. on the cost price) as pure profit." This we are bound to say is not our valuation of risks and returns, but that of the projector. It is nevertheless well urged that while agriculture is not a largely lucrative branch of national industry, the reason, probably, why accumulations of money are not more commonly made by the holding or the using of landed property, is this: that a sufficient breadth is not usually held, or sufficiently developed by one individual to support adequately the domestic and social claims of the position in which such holding places him. The owner of 1500 acres (let at 1*l.* an acre) in any of the cultivated districts of England is a man of some mark; and even should it happen, which it almost never does, that he holds the property free of mortgage, charges and collateral claims (deriving from it a clear income of 3½ per cent. upon the value) he is by no means so easily off cash, in proportion to the exigencies of his county station, as the individual who draws his 1500*l.* a year from the Funds or similar sources. So again with the tenant farmer who often bewails the pressure of low prices and adverse times, declaring emphatically, and in one sense truly, that farming does not pay. If he be an occupier of, say 200 acres, worth in the market 6000*l.*, out of which he coaxes and coerces 7 per cent. per annum, half for his landlord and half for himself, his income would be 200 guineas a year. Now, if in a semi-unconscious way he allows the domestic expenditure in goods and money to reach 300*l.*, a very moderate figure for his standing in life, his position is of course a losing one directly. Hence the great advantage therefore that would arise in the case of a large non-resident firm or society using a tract of land; they would receive singly the returns usually divided between distinct parties, the landlord and the tenant; and such returns would escape being taxed before they appeared as profits, by an inevitable and sometimes large consumptive expenditure; this being limited, in the case we suppose, to the salary of one first-rate manager and a few bailiffs, while even such salaries would be spread over an extent of business vastly exceeding the average amount. Other considerations are urged in favour of the extensive style of business in agriculture, such as the profits allowed as discount on large dealings in the manure and other markets, and the consideration that land of all sorts, whether bettered or not, must increase in price every few years in this densely populated and rigidly circumscribed island of ours.

We give these memoranda publication here as claiming consideration, whatever their intended application may be, and as deserving criticism and discussion by our correspondents. They will not fail to notice that against all the advantages of conducting operations on a large scale there must be placed the great disadvantage of the want of interested superintendence in detail which is given in smaller farms, with no doubt great advantage to their productiveness.

THEORY OF AGRICULTURE.

By Dr. E. Pugh.

(*See page* 698).

LETTER V.—ON AGRICULTURAL EDUCATION.

SOME views upon this subject have been enunciated in the preceding letter, and as we expect before very long to publish in another form a somewhat extended work upon it in connection with the subject of the present state of agricultural education in Europe and America, we shall not attempt to give it more than a general review here.

Agricultural science when fully developed must embrace within itself all that the several other sciences can bring to explain the facts or develope the resources of agriculture. It must draw largely upon the resources of the natural sciences, and the sciences of political and national economy. And the science thus developed must constitute the subject of education in our agricultural schools and colleges.

As yet both the natural and political sciences, in regard to agriculture, are in such an infantile state of development, that taken together they do not yet constitute a complete course of instruction, upon which the mind in youth can receive that mental training, and contract those habits of application so essential to clear thought upon all subjects in after life.

It is difficult to decide which of the two great divisions of science which bear upon agriculture is in the most unsettled state. The student of political economy in England, who has only looked at the subject from the English point of view, has no difficulty in satisfying himself that the doctrine of free trade embraces a fundamental principle applicable to all nations, as well as to England, and good for all times as well as for the present. In France and Germany, where the people have manufacturing towns surrounded by agricultural districts, and where the distance between the producer of grain and the consumer in the manufactory is thus shortened, the advantages of protection appear more manifest, while those of our iron manufacturers in America who were ruined by the introduction of foreign iron, on the reduction of the tariff of 1842, are strongly impressed with the importance of protection, and quite recently an able political economist in America has attempted to show that the late panic was due in part to the influence of free trade. We need not stop to discuss here which of these views is the correct one, but it must be remarked that these subjects embrace principles worthy of a higher place than amongst the category of things which opposing parties adopt in their "platforms," with a view of defeating one another for some ulterior purpose. They should be taught in our schools, not as political creeds, but as fundamental principles of national economy, to be understood by every man who exercises the elective franchise.

A consideration of the differences of opinion upon many important points in the natural sciences with regard to agriculture would show how very unsettled many things, about which our knowledge is quite extended, are in the minds of those who have given their attention to the subject, while, as has been before observed, our total ignorance upon a great number of points is most marked.

While such a state of things exists it is by no means easy to decide what should constitute the course of instruction in agricultural institutions of learning. A question may well arise as to whether or not the science of agriculture is yet sufficiently developed to constitute a subject worthy the organisation of special institutions for its promulgation. If we look about us for books on this subject we certainly will be at a loss to find such as the importance of the subject demands; and if we examine amongst the researches of scientific men we find only incomplete and imperfect material from which to construct books or lectures for our classes. If we turn to the agricultural investigation stations which have for their object the development of the scientific principles which must ultimately constitute the subject of tuition in our schools, we find them patiently and slowly working away, but their importance is not appreciated, and consequently they are not adequately supplied with funds, and therefore do not enlist a sufficient amount of talent in the cause to which they are devoted.

In our last we alluded to the practical phase of the agricultural mind. This peculiar quality has given rise to several attempts in different parts of the world to organise institutions for the purpose of teaching the practical duties of the farm, and for combining such teaching with tuition in such branches as constitute an ordinary education without foreign languages. In such institutions the material taught is valued more as a source of practical knowledge to the mind than as a means of the development of its powers, and more as source of facts than of principles. In this respect agricultural science has been passing through the same stages that nearly every human effort must pass. Chemistry was once only viewed as a means of manufacturing gold. Astronomy owes much of the labours that it has received to the practical results that were expected from astrological calculations, and of so great importance were these calculations in the minds of the patrons of this science, that even Kepler was not allowed to devote his time to the development of the great laws which now bear his name, but was obliged to waste his efforts upon such practical questions as astrology proposed. Electricity when first discovered in connexion with the Leyden jar was viewed only in its supposed direct relations to the practical necessities and luxuries of life. Geometry, as the name of the science implies, was originally looked upon simply as a means of neighbours fixing their landmarks, and determining the amount of land which they possessed, while the science of mechanics was considered valuable as enabling men like Archimedes to construct engines for the protection of cities and the destruction of their fellows. But as time has left the anticipations and aspirations of these practical men far back upon the pages of history, we are now prepared to see how far their hopes have been realised, and how far the struggle for the practical, to the neglect of the principle which lies at the bottom of that which is to be made practical, has tended to the final results which afford such incalculable sources of wealth and power to the present age. The chimeras of the alchemist are almost forgotten;

the Egyptian geometer is only remembered for the principles he taught; and the great mathematician of Syracuse is more honoured for having first penetrated the subtle relations involved in the spiral which bears his name, than for having taught others that his goldsmith was a rogue.

And while we admire the beauty of those laws which point out the course of planets in the heavens, and show the relation between the areas over which the radius vector sweeps, and the time in which a planet moves, we pity the immortal Kepler for having been obliged by the gross ignorance of the time in which he lived to waste his time with the barbarian considerations of astrology. Although the science of electricity has not yet taught us how to "heal the sick, to give sight to the blind, and restore the lame," to the extent that the practical mind hoped it would at its origin, yet the cultivation of its principles has done more than this, in affording a means of communication between different nations and races of men, which by bringing them nearer together must give rise to more mutual good-will and thus bring our race one step nearer to that universal brotherhood which corresponds to our highest conceptions of human relations.

Experience has taught that the study of chemical principles has developed chemical science, and that a knowledge of these principles is conferring a thousandfold greater blessings upon the human race than could possibly have been done by the most potent philosopher's stone that ever entered into the conceptions of the alchemist's brain; and in the absence of that fully developed science which the labours of the agricultural investigation stations must ultimately bring forth, different agricultural schools throughout the world must adopt different substitutes, embracing more or less of scientific instruction, accordingly as the teachers place a higher or lower estimate upon what science has already done for agriculture.

But he is hardly worthy the name of a philosopher who expects that the human mind has made so much progress that it can yet appreciate the full value of principles in contradistinction to the practical application of them. Although no more astrological calculations are required by the practical mind, it is not to be supposed that corresponding efforts may not be demanded in such sciences as are yet in their infancy.

It is not to be expected that the future student when in the possession of a fully developed science of agriculture can look back upon the history of its development, and see that it formed an exception to the development of those we have just been considering.

The fact that agricultural education is demanded, and that agricultural institutions to correspond to this demand are springing up in all parts of the civilised world, together with the fact that the science of agriculture is not yet fully developed, would indicate that a state of things necessarily must exist in our agricultural schools and colleges, which will not correspond to our highest ideal of what is desirable. Yet if those who have the control of these institutions are but sufficiently impressed with the importance of agricultural principles, and if a proper spirit of investigation pervade the minds of these professors, and this spirit meet with the sympathy and support of those who control the pecuniary affairs of the institutions, we may expect much progress in the development of the subjects to be taught in our agricultural schools.

Perhaps the man who has been in the habit of looking upon agriculture simply as the art by which he could secure the greatest and most certain profit to himself by farming land upon a yearly rent, and who perchance is obliged to reckon amongst the elements of success or failure the Quixotic tendencies of some crotchety landlord, may not see the full force of the importance which we have attached to the subject of agricultural education. And equally obtuse must be any landlord, if there be any such left, who looks upon agriculture as an art by which a tenantry are secured as "his own," to be used for political purposes as he "may please to use them."

But we have insisted upon the importance of agricultural education as the turning point upon which the future success of agricultural practice depends.

If we cannot teach the farmer the principles of agricultural practice, the efforts of science for agriculture must be to a great extent paralysed.

In order before leaving Europe to get a general idea of the state of agricultural education in England, France, and Germany, I visited the principal agricultural educational establishments upon the Continent, and having had the pleasure of exchanging opinions with several persons interested in this subject, I purpose to devote a few letters to the result of this visit. They shall relate principally to the subject of agricultural education, though several other allied subjects may at times be touched upon.

RELATIONS OF FOOD AND MANURE.

(*Concluded from p.* 763.)

THE following is a recapitulation of the estimates of the food for live stock produced upon our farm, as given last week:—

Winter food for 245 days.	Lbs.
Mangel, 30 acres	2,016,000
Swedes, 30 acres	1,344,000
Carrots, 5 acres	201,600
	3 561,600 lbs.

Thus we have 3,561,660 lbs. of roots daily for 245 days to 726 sheep.

Summer food for 120 days, from the middle of May to the middle of September:—

	Lbs.
30 acres of Clover and Italian Rye-grass	1,065,200
60 ,, of pasture	672,000
Thus we have	1,737,200 lbs.

of Clover and pasture, which will give 20 lbs. daily for 120 days to each of 726 sheep.

The quantity of straw as food for the stock for 240 days during winter:—

	Lbs.
Wheat straw, half of 30 acres	67,200
Oat straw, 30 acres	134,400
Bean straw, 5 acres	33,600
Wheat straw, half of 30 acres	67,200
Thus, when cut into chaff, we have	302,400 lbs.

This will give daily 726 sheep 1¼ lbs. daily for 240 days.

The quantity of straw for litter is—

	Lbs.
Wheat straw, half of 30 acres	67,200
Do. do. half of 30 acres	67,200
	134,400 lbs.

This quantity of straw cut into 4-inch lengths will give ½ lb. of litter to 726 sheep daily throughout the year.

From an estimate of the food required by the various ages of our breeding stock and sheep, it has been ascertained that a cow requires as much food as seven sheep (weighing 100 lbs. of mutton each when fat); a calf will require as much as two sheep, a year-old as much as four sheep, a two-year-old as much as six sheep, a three-year-old as much as six sheep, and a horse as much as six sheep.

Adopting this principle we may have as our stock:—

10 milch cows..	each equal to 7 sheep, say	70 sheep
10 calves	,, 2 ,, ,,	20 ,,
Buy 10 Short-horn year-olds		
20 year-old Short-horns, equal to	4,, ,,	80 ,,
20 two-year-old do.	,, 6 ,, ,,	120 ,,
20 three-year-old do.	,, 6 ,, ,,	120 ,,
8 horses	,, 6 ,, ,,	48 ,,
88	These will require as much food as	458 ,,

We may therefore have a flock of Sheep, say,
- 80 ewes
- 94 lambs
- 94 wethers sold fat

268

726 sheep

The kinds of food given daily to the various ages of our stock—

	Lbs. of Roots daily.	Lbs. of Straw daily.	Lbs. of Litter daily.
A cow	140	10½	3½
A sheep	20	1½	½
A calf	40	3	1
A year-old	80	6	2
A two-year-old	120	9	3
A three-year-old	120	9	3
A horse	120	9	3

The crop of Beans from the 10 acres at 50 bushels is 500 bushels, at 64 lbs. per bushel gives us 32,000 lbs. This will give 1 lb. of Bean meal daily for 160 days to each of our 94 fattening sheep, and 6 lbs. daily for 160 days to each of our 20 fattening oxen. It has been ascertained by experiment with an ox which consumed 112 lbs. of Swedes daily, that when 4½ lbs. of Bean-meal were given to him he only consumed 67 lbs. of Swedes, so that while the stock for the last 160 days of their fattening, there is a saving of half the quantity of the Swedes they previously consumed; thus 4½ lbs of Beans as food for fatting stock is equal to 65 lbs. of Swedes.

The probable return from the sale of the 20 fat beasts and 10 cows may be, say—

20 fat beasts nearly 4 years old, say 25*l.* each		£500
10 cows, with returns from pigs and offal		100
		£600
From 94 fat wethers, say 57*s.* each	£267	
188 fleeces at 6 lbs. each = 1128 lbs., at 1*s.* 3*d.*	70	
		337
		£937
Add to this the value of Potatoes, 120 tons, at 3*l.*		360
Money value of the fodder crop of 120 acres		£1297

The probable return from the Wheat, Barley, and Oats:—

60 acres of Wheat, at 38 bush. = 2280 bush., at 6*s.*		£684
30 ,, Barley, at 50 bush. = 1500 bush., at 4*s.*		300
30 ,, Oats	= 2160 bush., at 3*s.*	324
		£1308

The following is an estimate of the quantity of animal and vegetable manure which may be produced on a farm of 240 acres of arable land from the consumption of the root and fodder crops, and the straw as food and litter for the stock, and the proper care of all the refuse leaves, &c., of the crop, also of the excrements, dung and urine.

There is a certain proportion between the excrements of animals and the kind of food they consume; thus dry food, such as straw, hay, Beans, Oats, and meal, produce a greater proportion of excrement, because the animal must have a greater quantity of water daily with his dry food, and the excrements being moist will weigh much more than the dry food which the animal consumed; but the excrements from moist food, such as roots, green Clover, and pasture, will bear a less proportion to the weight of this moist food. If an animal in a given time consume a certain weight of food, including the water drunk, and if the animal be of the same weight at the end of the period as it was when it began, then the excrements it has voided must be of the same weight as the food and water it consumed, *minus* the perspiration through the skin and the exhalation through the lungs which carries off the watery vapours and other gases which have been formed during the consumption of the food in the animal system.

Boussingault has in a very satisfactory way ascertained by experiment this proportion, and has shown the quantity of the several matters it takes to balance the account between the food and water taken into the system and the dung and urine voided, a ...nis balance has been exhaled by the pulmonary and cutaneous transpiration. In the tables which he has given us, we find in the excrements of the animal the elements which the food contained; but as part of it has been exhaled, we can only calculate on the quantity which is to be found in the dung and urine of the animal. The most valuable practical result from these tables is that from 100 lbs. of dry fodder, the horse and the cow having water to drink, will give 216 lbs. of fresh manures, and the sheep 128 lbs.; that Mangel, Turnips, and Carrots give about half this weight of moist manure; and that Potatoes and green Clover give more than half their weight of moist manures.

From these facts we may estimate the quantity of manures produced from the consumption of dry food at 200 per cent. of the food consumed, and from the Mangel, Swedes, Clover, or other green food, we may estimate the manure at 50 per cent. of the food consumed. The manures produced from the litter given to stock we may reckon at 400 per cent.; from its being cut into 4-inch lengths it imbibes the urine more readily, and holds it firmer than when the straw is used in its full length.

On these facts we have made the following calculation to ascertain the quantity of manure which this farm of 240 acres of arable land may produce by the consumption of the root and fodder crops by stock kept in boxes or in stalls:—

All the dry food consumed by the Stock.

	Tons.	Tons.
500 bushels of Beans	9	
30 acres of Oat straw, 2 tons	60	
30 acres of Wheat straw, 2 tons	60	
10 acres Bean straw, 2 tons	20	
	149 tons, which will give	
us 200 per cent. of manure		298

Straw for litter.

Wheat straw, 30 acres, at 2 tons	60	
Barley straw, 30 acres, at 1½ ton	45	
	105 tons, which will give	
us 400 per cent. of manure		420
Manure from dry food		718

Roots and green food given to the stock.

Mangel, 30 acres at 30 tons	900	
Swedes, 30 ,, 20 ,,	600	
Clover, 30 ,, 16 ,,	480	
Carrots 5 ,, 18 ,,	90	
	2070 tons, which at 50 per	
cent. will give		1035

The leaves of roots.

	Tons.	Tons.
30 acres of Mangel leaves at 8 tons per acre	240	
30 acres of Swede leaves at 7 tons per acre	210	
5 acres of Carrot leaves, at 5 tons per acre	25	
15 acres of Potatoes at 1 tons per acre	15	
	490 of leaves will give us 50 per	
cent. of manure		245
Of moist manures		1993

This estimate is about the quantity which was made on Whitfield Farm of 240 acres of arable land. From 2220 to 2850 cubic yards of dung once turned was the quantity yearly made from the consumption of the root and Clover crops by stock and sheep in box.

With respect to the relative value of the natural manure from the consumption of the root and fodder crops produced on the farm and of mercantile manure we take bonedust, as we have a good experiment with them.

I find in the fifth report of the East Lothian Agricultural Society that Mr. James Allan gives the result of an experiment made by him in 1834 with farmyard manure and bone-dust in the production of Swedish Turnips, the particulars of which are the following:—

"First, 1 acre with very fine home-made dung 12 double cartloads, at say, 7*s.* 6*d.* per load . . £4 10
The weight of the Turnips 27 tons 14 cwt.
Second, 1 acre with 5 quarters of bone-dust, at 18*s.* per quarter 4 10
The crop weighed 26 tons 7 cwt."

By this experiment the crop was in favour of the 12 double cartloads (say 12 tons) of fine home-made manure charged at 7*s.* 6*d.* per load. But these 1998 tons of manure are fresh, and if it be fermented and turned twice it will lose one-fourth of its quantity, but its value will thereby be greatly increased and become equal in value to Mr. Allan's.

"Very fine home-made dung," say 1500 tons or double cartloads which at the value of manure in East Lothian, say 7*s.* 6*d.*, is 562*l.* 0*s.* 0*d.*, the money value of the natural manure of an arable farm of 240 acres; and it has been found to be equal to 562*l.* 10*s.* 0*d.* worth of bone-dust in the production of Swedes. This is equal to 4*l.* 13*s.* 0*d.* worth of manure to each of our 120 acres of root or green crops.

The expense of cultivating the 120 acres of root or fodder crop is necessarily much greater than that of the 120 acres of grain, but every farmer agrees that part of the expense of his Turnips must be charged to the corn crop. I think it right to charge one-half of the expense of the cultivation of the whole farm to the grain crop and the other half to the root and fodder crop, so that the expense attending either crop of grain or roots is not taken into account. *J. M.*

Home Correspondence.

Wexford and Waterford.—In the brief report which I wrote at the very commencement of this harvest of my limited tour through parts of the counties of Wexford and Waterford, I hazarded some anticipations of the qualities and quantities of the crops then being in course of harvesting or advancing to maturity. At that time it was impossible to foresee when the drought would end, and what would be the results of the later rain falling on the area of country to which my inspection referred. In the Barley district of Skilmore and its vicinity the produce is about two-fifths under a good average. Much excellent malting grain has been sold in market at a good price, but the acreable produce has in most cases much disappointed the farmer. In some instances the straw was so short that the labourers pulled it out of the ground with the roots. Deficiency in Beans in the same ratio is also complained of. Wheat and Oats, winter especially, have been abundant. As usual at this season, the eye is offended by the vast quantities of tall weeds and Couch Grass in the Bean stubbles. Even farmers on a large scale and very wealthy are apathetic on the important matter of destroying weeds, though a very insignificant amount of time and labour would suffice for at least removing Docks and Thistles before seed time: they are left to ripen on the land in frequent instances. The early Potatoes have proved to be generally good in all respects, though a few cases of slight malady are noticed. In the late sort, called here Scotch Downs, a second growth of tubers commenced when the rain fell, and the result is as yet unascertained; whether these secondary tubers will arrive at sound maturity will depend on the condition of the weather during the ensuing two or three weeks. The market price of Potatoes is unusually high at this season. The great failure in Mangels and Turnips will, under any conditions of the Potato crop, render this a valuable one, if only for pig feeding with the small and inferior tubers. Turnip seed, of the later sorts, has been sown after rain fell, where the Swede had failed to grow, and fields are green with young plants, now being thinned out; but with little prospect of becoming serviceable unless we shall be favoured with two or three months of very mild weather.* *M. D.*

Experiments with Wheat.—Mr. Pawlett, of Beeston, has again given his experiments publication in *Bell's Messenger*; you generally quote them, and I think they are this year as interesting as ever. *M. S.* [The following is the letter referred to:—

"Having during the last few years tried the relative value of a great many kinds of Wheat, I have latterly selected only the most approved sorts to confirm my opinion which are the most profitable varieties to grow. I therefore selected the following, and drilled them on the 20th of October last, on an old white Clover lea, at the rate of about 2 bushels per acre of seed, in rows 8 inches asunder, the result of which is as follows:—

	Quantity per Acre.	Present Value per Quarter.	Value per Acre.
	bus. pk. gal	*s.*	£ *s.* *d.*
Grace's White..	39 1 1	43	10 11 6
Tibbald's Wonder Red ..	36 3 1	41	9 6 6
Hunter's White	35 3 0	43	9 12 0
Rough Chaff, whits	33 3 1	45	9 10 0
Davis Red	29 0 1	40	7 5 6

"The yield of Wheat this year is likely to be very indifferent. Indeed, my produce is not near so much as formerly, owing to the very dry weather, which set in just as the Wheat was getting ripe, and dried it up prematurely, so that the quality is very inferior to former years. Prices being so very low it will, I fear, be a very bad year for farmers. T. E. PAWLETT.

"Beeston, Sandy, Beds, Sept. 7."

"P. S. The Browick red was tried against the above sorts of Wheat, but having lost plant much through some unknown cause I do not think it proper to give it a place with the others in the account, lest it might mislead. This kind of Wheat having for many years proved for me the most profitable sort of red to grow, I do not intend to give it up for not having done so well for me this year."]

Dodder.—I have enclosed a specimen of a plant which is troubling me sadly; it grows numerously on a piece of Lucerne, which I have for my cattle. It is getting so plentiful that it is totally destroying my plant of Lucerne. I can discover no way of destroying it, neither can I find that it has any roots, or that it is in any way bred in the soil. It seems to derive all its nourishment from the Lucerne, to which it is closely connected. If you could oblige me with the name and means of destroying it I should feel greatly obliged. *G. H., Sept.* 20. [It is Dodder. We must beg to refer you to the very full account of such plants given in our columns only a fortnight ago.]

Farmers' Clubs.

KINGSCOTE: *Sept* 9 (*Second Annual Meeting*).—There is no question but that this and similar societies have a great tendency not only to improve the cultivation of the soil by applying those implements which the progress of science has made practical, but they have a still greater tendency to bring together and thereby to unite in their social relationship the capitalist, the farmer, and the labourer. Such an effect is being produced in the neighbourhood of Kingscote. There is every probability from the powerful influence which is being afforded to the association by the landed proprietors, principal farmers of the neighbourhood, and many warm advocates of the improvement of the land, that this association will at no distant day become one of the most valuable of its class in the county. There is one feature connected with the association which does infinite credit to the individual who introduced it, and that is, prizes for improving the mental and moral condition of agricultural servants. The society originated in a plain and almost accidental manner. The subject was talked of by two or three of the neighbourhood, and as the thing became mooted abroad a desire seemed to exist that such an experiment should be tried. Much of its success is due to Mr. E. Drew, of Calcot, the present secretary. Monthly meetings are held at which subjects of a scientific and useful character are introduced and discussed by the members, and every facility is afforded for promoting the objects of the association. The annual ploughing match took place in a field of 35 acres of old lea in the occupation of Mr. E. Drew, of Calcot; 50 ploughs had entered, 47 of which started. The competition was exceedingly good. The annual dinner was held the same day. Prizes were awarded (1) to the best ploughman more than 18 years of age with a pair of horses and no driver; (2) to the best ploughman with a team of oxen and a driver; (3) to the shepherd who from a flock of not less than 50 ewes shall rear the greatest number of lambs and save the greatest number of ewes in proportion to the number put to the ram, the lambs and ewes being alive on June 1; (4) farm servants, for long servitude; (5 & 6) for written passages from Scripture bearing on given subjects, accompanied with remarks!

The Right Hon. S. Estcourt presided at the annual dinner. He said that in the course of his life he had known something of agricultural associations, and he must say that these associations depended so much on the superintendence and continual support of gentlemen in the neighbourhood, that if that support was withdrawn—if gentlemen looked coldly on the society, did not pay regularly their subscriptions, or neglected to attend these anniversaries, these associations were failures. They must, as he had, have heard a great deal of criticism on small local meetings of this kind. "What good are they?" some people ask; "if we are to have anything of the sort, let us have it on a grand scale." If he was not mistaken, the object of the members of this society was principally by means of a ploughing match to induce their servants to take more pains with their work than they had hitherto done, and to give to give to those who could write a little, and knew a little about practical agriculture, an opportunity of imparting information to their neighbours, and reaping knowledge in return. He understood that meetings were held by this association during the winter evenings, at which gentlemen read essays, or spoke upon some useful subject, out of which the most stupid man might pick up something. Great good was brought about in this manner, and according to the best of his judgment he believed the projectors of this society had pursued a useful, sensible, and moderate course of management. He sincerely hoped that the society would continue to flourish, dispensing those benefits to which it had already given rise, encouraging industry and honest service, and keeping up that good feeling which he was sure united everybody here this day.

Mr. Harrison, of Frocester Court, was elected chairman for next year. He spoke in the course of the evening, and contended that it was necessary that tenants should also be encouraged to improve their land. It was a great injury to the landlords, to the tenants, and to the country that the tenants had no greater tenure on their land than they had at present. It was of importance that the position of the tenant should be improved, and by making their tenancy more certain raise them to one of comparative independence.

CHESHIRE.—At the late annual meeting of this Society, Mr. Tollemache said he could see that to carry on large and extensive agricultural improvements, it was necessary for the landlord and tenant to work together, as they were important parts of a whole that was for the benefit of the public. It was the duty of the landlord to provide his tenants with a good house, with press house, cheese-house, milk-house, and store-room, so that the dairy proceedings may be carried on in the most efficient and economical manner. The milk-house should be large enough to enable the tenant, if he pleased, to give up the practice of Sunday cheese-making. He believed also that it was the duty of the landlord to give agreements containing clauses for compensation to tenants in the case of unexhausted improvements, and he believed no improvements on a large scale could be carried on without such agreements or leases. With the extraordinary fluctuations to which the Wheat and grain markets were liable—70 to 80 per cent.—and not being able to tell what the effect of the construction of railways on the continent and in America would be, he was in favour of annual agreements, containing clauses for compensating tenants for unexhausted improvements. He had tried them, and knew that they worked well, giving every satisfaction to tenants who had been accustomed to leases. Without such agreements he did not think it possible for extensive improvements to be carried on.

Mr. Humberston, M.P., referred to the agricultural meeting at Chester last year:—

"He believed that a great stimulus had been given to the farming interest by that exhibition. The Cheshire farmers then had the opportunity of seeing specimens of the best stock brought from every part of the country; and upon that occasion also was brought together one of the most interesting and extensive collections of agricultural implements that ever were enclosed within the walls of a show-yard. From that occasion he thought they might date one of the most valuable improvements to agriculture, viz., the application of steam-power to the cultivation of land. At Chester the first prize for the successful application of steam-power to agriculture was awarded, and now that our threshing machines by steam will turn out 300 measures a day threshed, winnowed, and bagged, fit to send to the mill out of the stack-yard, who would say that such power applied to the plough or cultivator would not bring about a speedy revolution in farming? But one of the most interesting features of that great show at Chester was the unexampled exhibition of cheese, upon which Mr. Wright, of Warrington, who acted as steward of that department, had written a most valuable report, which every dairy farmer ought to read. He would quote from the report a few extracts peculiarly worthy of observation, as forming the results that had been obtained from the inquiries that had been made, and the information that had been elicited on that occasion. First, Mr. White states, 'as to whether Cheshire cheese is better or worse now than it was 20 years ago, I feel incompetent to decide: but I am persuaded that, on the whole, it is not so good as it ought to be, and that thousands of pounds are lost annually by farmers in Cheshire and the adjoining counties, in consequence of their making it of an inferior quality, which compels them to submit to an inferior price.' Again, as to the effect of bone manure on cheese:—'There is an impression on the minds of many cheesefactors and others that Cheshire cheese has deteriorated in quality ever since, if not in consequence of, the very general application of bone manure to the Grass lands; and there is, I believe, no doubt that the superior herbage which this application induces does render more care necessary in the management of the produce of the cows, when converted into cheese. But if any proof be wanted that good cheese of the first quality can be made on farms on which bone manure has been freely applied, we have it in the fact that Ridley Hill Farm, where the champion cheese was made, and most, if not all, the farms on which the other prize cheeses were made, are bone manured. All, therefore, that is required is, that more care, skill, and intelligence should be exercised in the manufacture; with these, and proper utensils and offices, good cheese may be made on any Cheshire farm.' Lastly, with reference to a most important subject, the application of scientific knowledge to the manufacture of cheese, Mr. White states as follows: 'At the same time I think that the importance of cheese-making is such as to demand more scientific investigation than has hitherto been bestowed upon it; and I hope ere long that either the Royal Agricultural Society, or some other, will cause that investigation to be made.'"

KELSO.—After the award of prizes for sheep, the great sale of Leicester Rams took place. The number entered for public auction amounted to 1518—of which 681 were in the ring presided over by Mr. Fairbairn, auctioneer, Kelso; 467 in that presided over by Mr. Donkin, auctioneer, Bywell; and 370 in that of Mr. Embleton, auctioneer, Broomhouse, and Mr. Oliver, auctioneer, Hawick. The sales commenced very soon after 9 o'clock, and continued without intermission until the whole were disposed of, and so great was the number of purchasers in attendance, that not a single sheep was taken back unsold. It was the briskest sale we have yet had at this meeting, and prices generally were considerably higher than those of last year, ranging from 3*l.* to 38*l.* a head; the latter price being reached by one of Lord Polwarth's sheep. When Mr. Fairbairn got through his large lot, the bidders were as prompt as ever; in short, towards the end of the day prices were rather improving, thus showing that great as the number of sheep was it was not equal to the demand. Mr. Fairbairn finished his lot soon after 5 o'clock, and in a very short time afterwards the show-ground was completely cleared. We may safely affirm that this market for Leicester rams is unequalled in any part of the kingdom, and consequently the attendance of purchasers from all quarters is most numerous; otherwise it would be impossible to dispose of so large a lot. The following are the average prices of many of the lots:—

No. of Tups.	Name.	Average. £ *s.* *d.*
44	Right Hon. Lord Polwarth	11 4 0
50	Mr. Stark, Mellendean	12 14 8
40	Mr. Thomas, Rutherford	6 0 0
40	Mr. Roy, Nenthorn	5 10 0
80	Mr. Purves, Linton Burnfoot	8 4 6
50	Mr. Nisbet, of Lambden	6 17 4
52	Mr. Thomson, Mindrum	5 17 9½
36	Mr. Cockburn, Sisterpath..	10 12 2
50	Mr. Simpson, Courthill	7 11 8
65	Mr. Robeson, Springwells..	6 6 2
24	Mr. Wellbank, Keighley	4 7 3½
15	Mr. Nisbet, Elwick (long wools)	5 3 0
19	Mr. Peake, Craigend (half-bred)	6 6 6

The number of tups sold by Mr. Fairbairn was 670, and the average of the whole was 6*l.* 1*s.* 2¾*d.*

Notices of Books.

Journal of the Royal Agricultural Society. Vol. XX. Part I. John Murray.

The first part of this volume for the year should have appeared nearly two months earlier than it has. Gentlemen are supposed to take it with them to the moors after the London season, and to meet the second part on their return to town before Parliament meets. It seems to us that it would be a better arrangement if the first part should be presented to the Society annually at their annual meeting held during the month of May, and that the second part should be published at this time of the year, or even later if that be necessary, in order to the publication in it of the results of the annual meeting in the country. Certainly it is a disappointment to those who take up the part which has just appeared to find that it contains no reference, beyond the mere award of the judges, to the Warwick meeting. There are a number of interesting and valuable papers given in its pages, but the absence of all reference to what is of paramount and immediate interest spoils the reader for their enjoyment, however valuable they may be.

Among the subjects new to the work are a Report on the Preservation of Timber, by Dr. Richardson, to the South-Eastern Railway Company; Beetroot Distil-

* By misprints caused no doubt by the indistinctness of my penmanship in my former communication, the city of Waterford was stated to be the "soul" instead of the "port" of the counties of Waterford and Tipperary; and Portlaw was named "Portland."

lation, discussed by Mons. Tréhonnais; and American Agricultural Implements, by Dr. Edly. The papers by Mr. Clarke on Steam Cultivation; by Mr. Russell, on Climates; by Dr. Voelcker, on Liquid Manure; by Messrs. Lawes & Gilbert, on Grass Land Manure; and by C. P. le Cornu, on the Agriculture of Jersey and Guernsey will be read with interest, though the volume does not appear to us to exceed the average merit of the series.

Calendar of Operations.

SEPTEMBER.

SOUTH ESSEX: *Sept.* 12.—We are now very busy crossing and paring our Beans, Peas, and seed eddishes for Wheat and Winter Beans, which we trust to be able to get sowed by the end of this month; but for harvest work these operations might and ought to have been accomplished four weeks ago, and enabled us to have sown our Wheat and Winter Beans at the beginning of the present month, instead of being obliged to defer it to the end, when probably it may be wet, and we shall be necessitated to defer it to a still later period, and to hurry it in disadvantageously by hook or by crook, as thousands of acres often are in this country, when it is too late for it to tiller, and to take firm root hold of the subsoil before winter. It may not be generally known, neither believed, nor will it be credited now by sceptics and those who are prejudiced to "new-fangled notions," as they are often sarcastically called, that Wheat and Beans sown rationally as to thickness, equally, singly, and early in September, will penetrate their main roots 3 feet into the subsoil before Christmas, in search of alimentary winter food or sustenance when the earth is warm below, though freezing and covered with snow on the surface; whereas if the sowing is deferred till November they will scarcely germinate or lay hold of the iron like pan at all till March or April, when it is too late for them to perform their natural capabilities. Every plant then makes a grand effort to form blades and seed stalks by respiration of the atmosphere, and cannot from the dryness and hardness of the subsoil then form sufficiently deep roots to enable them to fully mature, and stand erect, and so bid defiance to storm and other incidents towards their final developement. We are also very busy as dry days permit, burning our Wheat stubbles, with the weeds, and portions of the clotty earth, on our heaviest land, for our root and seed crops the ensuing season, which we "Bentall" or "broadshare" up a day or two previous. This could, and ought to have been done a month ago, when the weather was hot and dry, and the days long, and as profitably then as now, even at harvest wages, dear as they were, if the manual labour could have been spared. Had the corn not been so dreadfully laid and twisted, so as to prevent the use of the reaping machine, labourers could have been spared to have done this important work timely, which in former ages has been unforeseen and neglected. Another season we trust it will be otherwise, when we must be watchful to get our stubbles burned earlier, before many of the weeds have shed their seeds, and insects have deposited their eggs and larvæ deep in the soil. On light lands where burning the earth is useless, many acres of stubbles, with the weeds, seeds, and insects, and in short, everything that has life on the surface animate and inanimate from the grasshopper to the snail, and no doubt the larvae of the insect that destroys the Turnip may be burned up in one dry and calm day (not windy) by the following expedient. First, strew the land all over with a small quantity of chaff or other dry short material, (we use coulder or seed pods), next, dash a small quantity of gas or Stockholm tar, (the former is the cheapest), or any other inflammable liquid, or gunpowder over the surface with exactness; and lastly, a small quantity of loose dry haulm or other litter uniformly over the stubble; then, by setting fire to the field in divers parts with a piece of paper and lucifer match, the whole field will exhibit a sheet of wildfire in a jiffy [!!], leaving the ashes very regularly all over the surface, and not extending beyond its due limits, if buildings are not contiguous. More litter will answer the purpose instead of any tar; but it is more expensive. This is the very best month to plant the true dwarf Russian Winter Beans, that have been most successfully grown of late years, for if they are planted early they will get firm rooting in the subsoil, and will stand any winters, when if they should be cut down by frosts a foot high, so as not a vestige of them can be seen, save their stumps, yet in spring they will sprout again, and branch in full vigour more than if the frost had not smitten them. It ought to be distinctly understood however, that they are subjected to other disasters in winter, as are cereals, if they are planted in November or October, such as stagnant wet, rooks, pigeons, partridges, rats, mice, birds, snails, &c., common to all the infant vegetable family in winter; yet in point of frost, early crops are safe for the most part, being constitutionally inured to the cold, and wet, and other casualties by degrees during the autumn months. *Maldon, Essex.*

WEST SUSSEX: *Sept.* 13.—We have now got to a rather dull part of the year, harvest all over, and as yet little done in the way of preparing for Wheat sowing. The ground is so hard and dry that it is nearly impossible to plough the leas, and some may wait a little longer to see if we get a shower. All kind of food is now quite dried up with us, and the hay must already come in to help to keep the cattle from losing flesh, and it is well that there is a good supply of it. Swedes and Turnips are suffering from the drought, and will be a very light crop, unless we have a change soon. There has been already a good supply of new Wheat in our market, and the quality, upon the whole, is good, but all say that the quantity per acre is one-fourth or even one-third below last year. Barley begins to come in, but as was expected the quality varies, and the price from 30*s.* to 42*s.* The supply of beef and mutton has not been so good lately, and anything good sold off at a high price; and beef especially is not likely to be plentiful for some time, at least good beef, as stock have hardly maintained their own lately, and it will take some time to get stall-fed ones into the market. But though we have had the weather very much against our stock, it has not been so on the higher lands, where there is plenty of Grass still, and the effect will be that ewes at Weyhill fair will cost more than we in this neighbourhood ought to give. *G. S.*

Notices to Correspondents.

HOLCUS SACCHARATUS: *H C.* The fullest published account of it is in the pamphlet advertised in our columns, and called "A Visit and a Plant." You should procure that, and learn the best English experience of the plant. Perhaps some of our correspondents may say what has been their practice and experience regarding it.

ITALIAN RYEGRASS: *Subsoil.* It will soon die out after once seeding, and is of little service after the second year.

WEEDS: *A R C.* In pastures weeds are discouraged by drainage, close pasturage, and artificial top-dressings, and by perseverance in spudding or pulling large plants at all seasons of the year, especially in the spring and summer, and before their seed time. If these means will not avail, the land must be ploughed up, well fallowed, and laid down again.

*** As usual, many communications have been received too late, and others are detained till the necessary inquiries can be made. We must also beg the indulgence of those correspondents the insertion of whose contributions is still delayed.

ST. PANCRAS IRON WORKS,

OLD ST. PANCRAS ROAD, N.W.

IRON HURDLES, FENCING, AND GATES.

THE PROPRIETORS OF THE ST. PANCRAS IRON WORKS, OLD ST. PANCRAS ROAD, LONDON,

WERE AWARDED THE

SILVER MEDAL of the Royal Agricultural Society for their IRON HURDLES & GATES,

which, by their peculiar construction, are more than twice as strong and durable as those in ordinary use.

Lists per post on application. Gates from 30*s.* to 500*l.*

The Hurdles can be seen in process of Manufacture at the Works.

GAME WIRE NETTING.

Professor Varnell's Enamelled and Wrought-iron Stable Fittings.

These Patent Mangers and Stable Fittings obtained the Commendation and the Silver Medal of the Royal Agricultural Society of England and the Royal Agricultural Society of Ireland, are adopted by the Royal Veterinary College, and Professor Spooner of that Institution states that they should be used by all who value the health and comfort of their horses. They can be had plain, galvanised, or enamelled.

A Show Room is devoted entirely to every description of Stable Furniture, and full-sized stalls and loose boxes are erected for inspection at St. Pancras Iron Works.

ADDRESS—THE MANAGERS,

ST. PANCRAS IRON WORKS, OLD ST. PANCRAS ROAD, LONDON, N.W.,

OPPOSITE OLD ST. PANCRAS CHURCH.

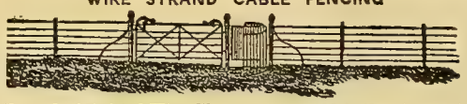
PRICES REDUCED.

H. J. MORTON AND CO., Galvanised Iron Works, 2, Basinghall Buildings, Leeds.

GALVANISED IRON ROOFING

for Farm Buildings and other Roofs; the cheapest, most durable, and neatest Roofing in use; also Spouting at 10½*d.* per yard.

WIRE STRAND CABLE FENCING



(formed of Twisted Wires like a rope or cable), the strongest cheapest, and neatest fence in use, will resist the largest cattle and will not bend or get out of form by trespassing upon or over. Price, with five lines of the Galvanised Strand, iron main posts, and pronged Standards, 1*s.* 2½*d.* per yard.

This fence is far cheaper than posts and rails, or any kind of iron fencing; and possesses four times the strength of solid bars. Will not rust nor corrode. Upwards of 1200 miles of this Fencing supplied.

GALVANISED GAME AND POULTRY NETTING.



Galvanised, 24 ins. wide, 2-inch mesh, 5½*d.*, 7½*d.* and 9½*d.* per yard.
Galvanised, 24 ins. wide, 2-inch mesh, 4*d.*, 5*d.*, and 7*d.* per yard. The Netting made any width, and with openings of any size.

GALVANISED IRON CHAIN CAMP STOOLS & CHAIRS, POULTRY FOUNTAINS & FEEDERS, PRONGED DAHLIA RODS AND ROSE STAKES, &c.

Strong CATTLE HURDLES from 2*s.* per yard.

PATENT IMPROVED GAS WORKS,

of all sizes for the use of Private Houses, Mansions, Railway Stations, Mills, Collieries, Mines, Villages, &c. Works from 10 to 500 lights estimated for. The works can be entrusted to an ordinary labourer.—Apply to

HENRY J. MORTON & CO. 2, Basinghall Buildings, Leeds.

CAST-IRON GARDEN ORNAMENTS, viz.—ORNAMENTAL VASES, of various sizes, do. with pedestal, GARDEN CHAIRS and STOOLS, RUSTIC GARDEN SEATS and TABLES, both plain and bronzed, also GARDEN ROLLERS of all sizes.—Prices on application to J. JONES, Iron Merchant, 6, Bankside, London, S.E.

FRUIT TREES, POULTRY, RABBIT NETS, and CATTLE FENCING.—WOOL NETTING to Protect the Bloom of Peach, Nectarine, and other Trees, Flower or Seed Beds from Frost, Blight, and Birds, 40 inches wide, 8*d.* per yard. NEW TWINE NETTING, ½-inch mesh, 2 yards wide, 8*d.* per yard. ELASTIC HEXAGON GARDEN NET and SCRIM CANVASS, 4½*d.* per square yard. COCOA-NUT FIBRE, or Hemp Sheep-folding Net, of superior quality, 4 feet high, 4*d.* to 6*d.* per yard. Rabbit Net, 4 feet wide, 2*d.*; 6 feet wide, 3*d.*; 8 feet wide, 4*d.* per yard. Each edge corded ½*d.* per yard extra, suitable for Poultry Fencing. Galvanised Wire Netting, 2 feet wide, 5*d.* per yard. Batt-folding Nets, with Bamboo Poles, 20 feet long, 20*s.*, at W. CULLINGFORD'S, 1, Edmund Terrace, Ball's Pond Road, Islington, London, N.

SHAW'S TIFFANY is universally acknowledged to be the best, neatest, and cheapest material for shading Conservatories, and other Hothouses. Effectually securing Plants from the scorching rays of the sun, without obscuring the light. Also, for protecting the Bloom of Wall Trees from spring frosts, and Fruit from birds and wasps. Sold in pieces.

No. 1.—20 yards long, by 38 inches wide, 5*s.* per piece.
No. 3.—Double strength, 18 yards long, by 39 inches wide, 7*s.* 6*d.* per piece.
No. 4.—Treble strength, 18 yards long, by 39 inches wide, 9*s.* per piece.

A liberal allowance to the Trade when ten or more Pieces are taken.—JOHN SHAW & Co., Princess Street, Manchester.

GUTTA PERCHA TUBING FOR WATERING GARDENS.

THE GUTTA PERCHA COMPANY have the pleasure to acknowledge the receipt of the following

Testimonial from Mr. J. FARRAH, *Gr. to* BOSWELL MIDDLETON JALLAND, ESQ., *of Holderness House, near Hull.*

"I have had 400 feet of your Gutta Percha Tubing, in lengths of 100 feet each, with union joint, in use for the last 12 months for watering these gardens, and I find it to answer better than anything I have ever yet tried. The pressure of the water is very considerable, but this has not the slightest effect on the tubing. I consider this tubing to be a most valuable invention for Gardeners, inasmuch as it enables us to water our gardens in about one-half the time, and with one-half the labour required."

Manufactured by the Gutta Percha Company, Patentees, 18, Wharf Road, City Road, London, E.C., and sold by their Wholesale Dealers in town and country.

GLASS FOR ORCHARD HOUSES, as supplied by us to Mr. Rivers.

ORCHARD HOUSE SIZES, as supplied by us to Mr. Rivers.

		16 oz.	21 oz.
20 in. by 12 in. to 20 in. by 13 in.	Common	14*s.* 0*d.* ..	£1 1*s.*
20 in. by 14 in. to 20 in. by 15 in.	Superior do.	16 6 ..	1 5
	English Glass	18 0 ..	1 9

Boxes included and not returnable.

JAMES PHILLIPS AND CO.,

180, Bishopsgate St. Without, London, E.C.

NO CONNECTION WITH ANY OTHER HOUSE IN TOWN.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz SHEET GLASS of British Manufacture at prices varying from 2*d.* to 3*d.* per square foot for the usual sizes required, many thousands of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES, and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London, W.

See *Gardeners' Chronicle* first Saturday in each month.

HORTICULTURAL GLASS—JUNE TARIFF.

THOMAS MILLINGTON'S reduced Tariff of GLASS, &c.

6 by 4, 7 by 5, 8 by 6, 9 by 7, 6½ by 4½, 7½ by 5½, 8½ by 6½, 9½ by 7½ } 16 oz. to the foot, 11*s.* 6*d.* per 100 feet.

In 100 boxes,—4ths quality, 12*s.* 6*d.*; 3ds do., 14*s.* 4*d.*

10 by 8, 12 by 9, 12½ by 10½, 14½ by 10½, 13 by 11
10½ by 8½, 12½ by 9½, 13 by 10, 15 by 10, 13½ by 11¼
11 by 9, 13 by 9, 13½ by 10½, 12 by 11, 14 by 11
11½ by 9½, 12 by 10, 14 by 10, 12½ by 11½

	16 oz.	21 oz.
20 by 12, 20 by 13, 20 by 14, 20 by 15 — Common ..	16*s.*	24*s.*
Superior .	18*s.*	27*s.*

per 100 feet

All Boxes included.

Orchard House sizes as supplied to Mr. Rivers.

Hartley's improved Rough Plate Glass from ⅛ to ⅜ in thickness.

Coloured Glass in great variety, at 9*d.* and 1*s.* per foot.

Paints, Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, Lamp Glasses, &c.

87, Bishopsgate Street Without, E.C., same side as Eastern Counties Railway.

GLAZIERS' DIAMONDS FOR CUTTING HORTICULTURAL and other GLASS, to be had of the Wholesale Manufacturer, JOHN EDWARDS, 20, Sharp's Alley, West Smithfield, London, E.C. Prices from 10*s.* to 27*s.* 6*d.*

GARDEN POTS AND PANS, in quantities of not less than 20 casts, delivered to the London Stations at the following prices:—Nos. Thbs. 60, 160, 54, 48, 40, 32, 28, 24, 16, per cast, 2*s.* respectively. 12, 3*s.*; 8, 3*s.* 6*d.*; 6, 5*s.*; 4, 5*s.*; 3, 5*s.*; 2, 5*s.*; 1, 5*s.* On lesser quantities, 6*d.* per mile, for delivery to the Station, charged. The usual discount to the Trade. Square Propagating Pans, Kale and Plunging Pots, Strawberry and Border Tiles, &c., made to order.

J. & W. ADAMS, Kilns, Belle Isle, York Road, King's Cross, N.

VASES, PEDESTALS, SUNDIALS, FOUNTAINS, FLOWER BOXES, JARDINETS, FERN CASES, BALUSTRADES, EDGINGS AND CURBS FOR FLOWER BORDERS, SEATS, &c., in Imperishable Siliceous Stone, at reduced prices, for the adornment of the Villa Garden, the Mansion Grounds, or the private or public Park.

For Priced Illustrations apply to FREDERICK RANSOME, at the Show Rooms, Cannon Row, Westminster, S.W., or Patent Stone Works, Ipswich.

MICROSCOPES.

J. AMADIO'S BOTANICAL MICROSCOPES, packed in mahogany case, with three powers, condenser, pincers, and two slides, will show the animalculæ in water. Price 18*s.* 6*d.*—Address JOSEPH AMADIO, 7, Throgmorton Street, E.C.—A large assortment of Achromatic Microscopes.

"It is marvellously cheap, and will do everything which the lover of nature can wish it to accomplish either at home or in the open air."—*The Field*, June 6, 1857.

Just published, 2d Ed., an Illustrated Catalogue, with names of 1500 Microscopic objects, free for 6 stamps.

STEELL'S PATENT WROUGHT-IRON DOUBLE-BACKED DOUBLE BOILER, for HEATING CHURCHES, HORTICULTURAL BUILDINGS, WAREHOUSES, &c., is the most powerful, most economical, and quickest actioned Boiler in existence, and may now be seen ready for use at their Nurseries, Richmond, Surrey, S.W., the only place where they can be procured.

TESTIMONIAL.

"Rectory, Barnes, Sept 10, 1859.

"Gentlemen,—I can readily bear my testimony to the excellence of your Boiler; indeed to that of the whole heating apparatus which you have supplied for our church. It combines great heating power with economy of fuel and facility of management.—I am, Gentlemen, yours faithfully,

"Messrs. G. & W. Steell." "R. E. COPLESTON."

WEEKS' ONE BOILER SYSTEM.

BY APPOINTMENT.

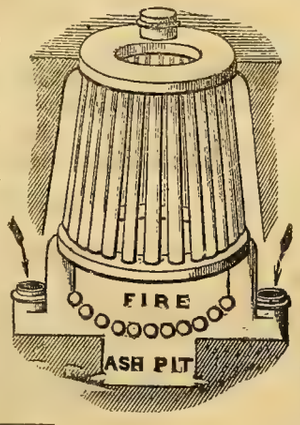
JOHN WEEKS & COMPANY,

KING'S ROAD, CHELSEA, S.W.,

CHALLENGE THE WORLD to produce a Boiler not made in imitation of their Upright Tubular Boiler that will produce anything like the same effect with the same quantity of fuel in a given time.

The following unequalled statistics fully justify the challenge:—

Mark the enormous length of Houses and Piping heated by One Boiler.	Length of Houses in feet	Total length of Piping.
Messrs. E. G. Henderson & Co., Wellington Nursery	1,200	5,500
Messrs. F. A. Smith, Dulwich	3,000	11,000
M. Van Houtte, Belgium	3,300	13,000
Our own Fruit Forcing Show Establishment ...	1,000	7,000



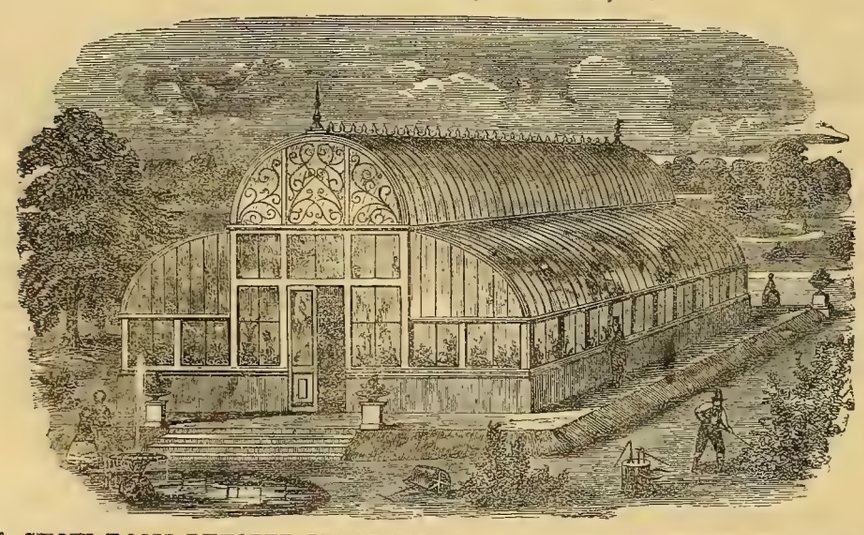
Also the Nurseries of Mr. Woodroffe, Harrow Road, N.W.; Messrs. Rollisson, Tooting, S.; Messrs. Wood & Ingram, Huntingdon; Messrs. Wood & Son, Maresfield; together with numerous Public Buildings and Establishments of the Nobility and Gentry far too numerous for insertion.

J. WEEKS & CO., Horticultural Builders and Hot-Water Apparatus Manufacturers, King's Road, Chelsea, S.W.

PLANS AND ESTIMATES FREE ON APPLICATION.

COTTAM & COMPY., Engineers, Founders, &c.,

2, WINSLEY STREET, LONDON, W.



A SHOW ROOM DEVOTED ENTIRELY TO ARTICLES OF HORTICULTURE.

THE NEW ILLUSTRATED CATALOGUE UPON APPLICATION.

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	,, Syringes	Garden Bordering
Hot-water Apparatus	Ornamental Wire Work	Hurdles	,, Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

Iron Hurdles, Strained Wire Fencing, Game Netting, &c.

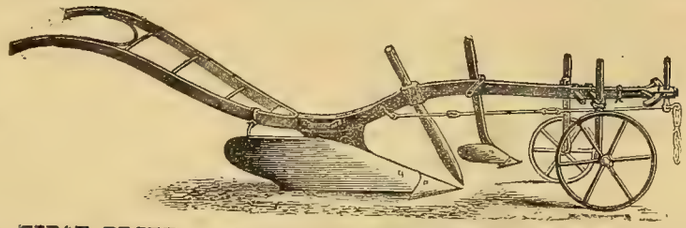
Every description of Plain, Ornamental, Cast and Wrought Iron, and Wire Work.

EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

N.B. COTTAM AND COY. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

THE PLOUGH TRIALS AT WARWICK.

HOWARD'S CHAMPION PLOUGH



Gained the FIRST PRIZE as the Best Plough for General Purposes at Warwick,

BEING the CHIEF PRIZE for PLOUGHS, awarded by the Royal Agricultural Society of England, at this Meeting. The importance of this Prize will be gathered from the fact that the GENERAL PURPOSE PLOUGHS are the only ones tried on BOTH LIGHT AND HEAVY LAND, and as HOWARD'S CHAMPION PLOUGH proved itself to be the best on both soils, the FIRST PRIZE, of the HIGHEST AMOUNT given by the Society for any kind of Plough, was awarded to J. & F. HOWARD.

PRIZES awarded to J. & F. HOWARD, by the Royal Agricultural Society of England, at the WARWICK MEETING, 1859, being not only the LARGEST NUMBER of PRIZES, but the LARGEST NUMBER of FIRST PRIZES awarded to any Exhibitor.

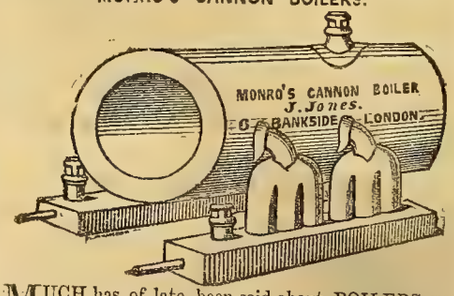
THE FIRST PRIZE FOR THE BEST PLOUGH FOR GENERAL PURPOSES, ALSO A PRIZE FOR THE BEST PLOUGH FOR LIGHT LAND, AND A PRIZE FOR THE BEST PLOUGH FOR HEAVY LAND; THE FIRST PRIZE FOR THE BEST LIGHT HARROWS, THE SECOND PRIZE ALSO FOR THE BEST LIGHT HARROWS, AND THE FIRST PRIZE FOR THE BEST HEAVY HARROWS.

Every one of HOWARD'S Implements, tried at Warwick, gained a Prize.

CATALOGUES, with full particulars, sent post free on application to

J. & F. HOWARD, BRITANNIA IRON WORKS, BEDFORD.

MONRO'S CANNON BOILERS.

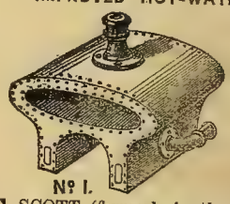


MUCH has of late been said about BOILERS FOR HEATING BY HOT WATER, but these Boilers have now proved themselves to be the best at present invented. They are adapted for Heating every description of Building, and are made of various sizes. The price of the

24-inch Cast Iron is	£5	10s.	each.
24-inch Wrought Iron is	6	10	,,
36-inch Cast Iron is	8	0	,,
36-inch Wrought Iron is	8	10	,,

References to Gentlemen and Nurserymen where these Boilers are now at work. The Cannon Boilers are now kept in stock, and are to be had only of J. JONES, 6, Bankside, S.E. Also, every description of Saddle and Cylinder Boilers. Hot-water Pipes and Connections at prices lower than those of any other house in London. Estimates for Hot-water Apparatus erected complete in any part of the country, and an Illustrated Catalogue on application to J. JONES, 6, Bankside, Southwark, London, S.E.

IMPROVED HOT-WATER APPARATUS.



Nº 1.



Nº 2.

T. SCOTT (formerly in the employ of Messrs. John Penn & Son) manufactures and fits up complete Apparatus for Heating Buildings by Hot Water, also Bath and Kitchen Apparatus of every description.

T. SCOTT manufactures Improved Hot-water Boilers, Stop Valves, Thermometers, &c., and having lately fixed several of the Boilers (No. 1), can confidently recommend them as particularly adapted for Heating Churches, Chapels, Schools, extensive Ranges of Forcing Houses, &c., efficiently, and with great economy of fuel; also the PORTABLE BOILER (No. 2), requiring no brickwork, for Small Conservatories, Pits, Baths, &c.

Estimates, references, &c., on application to THOMAS SCOTT Blackheath Road, Greenwich, S.E.

VOKINS AND HURD,

Jubilee Place, King's Road, Chelsea, S.W.





HORTICULTURAL BUILDERS and HOT-WATER APPARATUS MANUFACTURERS. Estimates forwarded on the shortest notice.

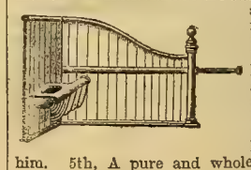
BOILERS of all sizes on sale.

IMPROVEMENTS IN HEATING, &c.

MUSGRAVE'S PATENT SLOW-COMBUSTION STOVE, for Warming Public Buildings, Hall, Shops, Conservatories, Factories, Drying Rooms, &c. Will burn in Churches from Saturday till Sunday evening, avoiding attention during the hours of worship. In Halls will burn day and night for weeks, with little care. Capable of warming a large apartment for 24 hours, at a cost of 3d.; and deserving of special attention, because of its safety, healthfulness, durability, and extreme simplicity. This Stove is the nearest approach to warming by hot water.



MUSGRAVE'S PATENT STABLE FITTINGS AND HARMLESS LOOSE BOXES have obtained the award of a large Council Medal from the R. I. A. Society for the following improvements:—1st, The Horse cannot injure himself or others in the same stable if he breaks loose in his stall. 2d, He cannot waste the hay. 3d, He can have cut or uncut hay at pleasure. 4th, He has clean water always before him. 5th, A pure and wholesome atmosphere is secured. 6th, The whole fittings are stronger than usual, without increase in price, and there is no risk of infection.



The Loose Box is really what its name denotes, and the most spirited Horse may be turned into it without danger.

MUSGRAVE'S PATENT IRON COW-HOUSE FITTINGS, as approved by the Board of Works, adopted in the Ulster Model Farm, and by many of the most eminent Stock Breeders in the Kingdom, are made wholly of iron, very durable, cleanly, and attractive in appearance. The fodder is always fresh, being freely exposed to the air, removed from the breath of the animal, and separated from the roots or damp food. The range of Troughs can be quickly filled with water for the use of the Cows, or for washing out in case of epidemic, and the cost is very moderate.



These inventions being distinguished for strength, simplicity, and practical usefulness will repay public inquiry.

MUSGRAVE BROTHERS are also Makers of Wire Fencing, Hurdles, Field and Entrance Gates, Corn Rick Stands, Conservatories, Hot-water Apparatus, Verandahs, Rural Bridges, &c.; and their works being favourably placed for cheap labour and materials, they can offer corresponding advantages in price.

MUSGRAVE'S Patent Field Gates have gained the 1st Prize from the R. I. A. Society for strength, durability, and cheapness.

For particulars address MUSGRAVE BROTHERS, Ann Street Iron Works, Belfast.

GREENHOUSES.

HENRY FREEMAN, HOTHOUSE BUILDER and HOT-WATER APPARATUS MANUFACTURER, Triangle, Hackney, N.E. Established 20 years. Good substantially built GREENHOUSES, fixed in any part of the kingdom, for cash, 42 feet long by 13 feet, 90*l.*; 21 feet by 13 feet, 50*l.*; 12½ feet by 10 feet, 30*l.* A first-rate CONSERVATORY, 30 feet by 16 feet, 130*l.* A large assortment kept. Estimates for Heating, or any branch in Wood or Iron or Park Fencing.

HORTICULTURAL BUILDINGS AND HEATING BY HOT WATER.

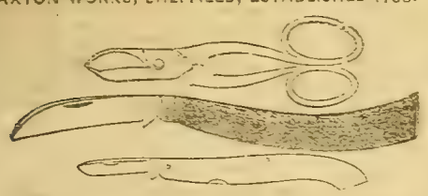
JOHN R. PEILL, 17, New Park St., Southwark, S.E., Manufacturer of every description of Buildings for Horticultural purposes, and Inventor of the Improved Conical Boiler for heating the same, is prepared to undertake works of any magnitude, and refers among others to the celebrated range of FORCING HOUSES at HER MAJESTY'S GARDENS, FROGMORE, and at SIR ROBERT PEEL'S, DRAYTON MANOR, constructed under the superintendence of his Manager, Mr. JOHN JONES; and also to his BOILERS fixed at the CRYSTAL PALACE, the ROYAL BOTANIC GARDENS, REGENT'S PARK, and KEW, and at several hundreds of the Nobility's seats, Public Establishments, and Manufactories in London and the provinces. J. R. P. also manufactures every description of Iron Roofs, Iron Houses, and Iron Fencing, plain and ornamental. Strong Iron Hurdles for Sheep (6 ft. long, 3 ft. high, with 5 bars), 4*s.* 3*d.* each; ditto for cattle, 4*s.* 9*d.* each. Prices and other particulars forwarded on receipt of one postage stamp.

JOHN WARNER AND SONS, Crescent, Jewin St., London, E.C.—GALVANISED IRON TUB GARDEN ENGINE, with WARNER'S Registered Spreader, is strongly recommended, for durability and low price, viz., 10 gallons, 2*l.* 15*s.*; 16 gallons, 3*l.* 15*s.*; 24 gallons, 5*l.*; or in strong oak tub, 14 gallons, 5*l.* 10*s.*; 24 gallons, 6*l.* 18*s.* May be obtained of any Ironmonger or Plumber in town or country, or of the patentees and Manufacturers; as also Machinery of all kinds for raising Water from any depth to any height by Steam, Horse, or Manual Power. Prices sent on application.



Syringes of various constructions and sizes from 9*s.* upwards. Metallic String from 10*d.* to 1*s.* 2*d.* per lb.

PAXTON WORKS, SHEFFIELD, ESTABLISHED 1738.



SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.—Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

WARNER'S IMPROVED LIQUID MANURE OR GENERAL PORTABLE PUMP.

These Pumps are fitted with WARNER'S Patent Bucket and Valve, and cannot clog in action. The barrel is made of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure on the stand, the legs of which fold together, and may be carried with ease by one man to tank or pond.



	£	s.	d.
Stand and Pump, with screwed tail pipe fitted with strong brass union for suction pipe	2	15	0
If fitted with barrel of planished copper	3	4	0
Stand and Pump, with plain tail pipe, for tying on suction pipe	2	9	0
2-inch patent rubber and canvas flexible suction pipe, on wires, either 10, 12, or 15 ft., per foot	0	2	2

May be obtained of any Ironmonger or Plumber in town or country, at the above prices, or of the Patentees and Manufacturers, J. WARNER & SONS, 8, Crescent, Jewin St., London, E.C.

WARNER'S PATENT VIBRATING STANDARD PUMPS.

PATENT CAST-IRON PUMPS for Farms, Cottages, Stable Yards, &c., where the Well does not exceed 28 feet in depth; fitted with WARNER'S Patent Metal Bucket and Valve, which cannot clog in action. These Pumps can be made right-handed, left-handed, or with handle opposite the nose by removing four screws only.

Diameter of Barrel. Height.		£	s.	d.
2½ in. short 1 ft. 7 in.	Fitted for lead,	1	5	0
2½ ,, long 3 ,, 3 ,,	gutta percha	1	10	0
3 ,, ditto 3 ,, 6 ,,	or cast iron	2	4	0
3½ ,, ditto 3 ,, 6 ,,	flanged pipe	2	9	0
4 ,, ditto 3 ,, 6 ,,	as required.	2	13	0
2½ ,, short, with 15 feet of Lead Pipe attached, ready for fixing		2	10	0
2½ in. long ditto ditto	ditto	2	14	0

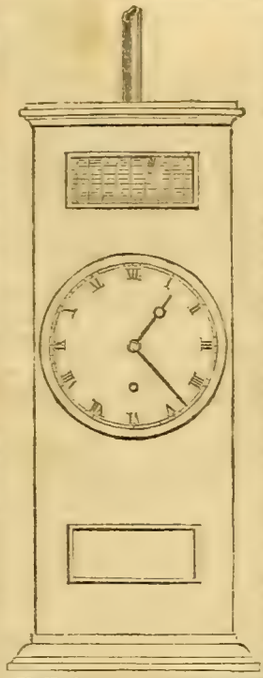


The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.

May be obtained of any Ironmonger or Plumber in Town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin Street, London, E.C.

Every description of Machinery for Raising Water by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

GAUNTLETT'S PATENT THERMOMETRIC CLOCK, FOR KEEPING A PERMANENT RECORD OF ATMOSPHERIC TEMPERATURE, &c.



An excellent Eight-day Clock, of the best English workmanship, may be had with Gauntlett's Patent Thermometric attachment, whereby the temperature of the apartment is written off on a slip of paper.

EXTRACTS FROM THE PRESS.

"We awarded a Silver Medal to a Patent Chronometriced Thermometer, invented by Mr. Gauntlett. This instrument is extremely clever and invaluable for horticultural purposes, hospitals, &c."—*Royal Agricultural Society's Journal for 1858.*

"For some months past an instrument has been in use at the Samaritan Hospital, which deserves to be more generally known, as it serves to keep a permanent record of the temperature of a ward or sick room, day and night. We shall be glad to hear that it is brought into general use in hospitals."—*Medical Journal*, March 12, 1859.

"Every proprietor of a greenhouse or stove should possess one of these invaluable articles. We unhesitatingly recommend it to the gardening public."—*Florists' Magazine*, March, 1859.

W. H. GAUNTLETT, Southbank, Middlesbro'-on-Tees; and B. SAMUELSON, 76, Cannon Street West, London, E.C.

MECHI AND BAZIN'S DISPATCH BOX AND WRITING CASES in Russia and Morocco leather are made in 20 different forms and sizes, fitted with real Bramah and Chubb Locks. Also others of a cheaper description. Prices vary from 1*l.* to 50*l.* Portable writing and dressing cases, brush cases, courier bags, pic-nic cases, wicker luncheon baskets, sporting knives, wine and spirit flasks, &c.—112, Regent Street, W., and 4, Leadenhall Street, E.C., London.

PRIZE MEDAL, PARIS EXHIBITION 1855.

METCALFE, BINGLEY, AND CO.'S New Pattern and Penetrating Tooth Brushes. Penetrating unbleached Hair Brushes. Improved Flesh and Clothes Brushes, and genuine Smyrna Sponges: and every description of Brush, Comb, and Perfumery for the Toilet. The Tooth Brushes search thoroughly between the divisions of the Teeth and clean them most effectually—the hairs never come loose. M., B., and Co. are sole makers of the Oatmeal and Camphor and Orris Root Soaps—sold in Tablets (bearing their names and address) at 6*d.* each; of METCALFE'S celebrated Alkaline Tooth Powder, 2*s.* per box; and of the New Bouquets.—Sole Establishment, 130B and 131, Oxford St. 2d and 3d doors west from Holles St., London, W.

ALDERNEY COW, and several SOWS with PIGS FOR SALE.—A gentleman wishing to diminish his stock has an Alderney Cow in her prime, having calved about three weeks, to dispose of, warranted to give on Grass from 10 lbs. to 12 lbs. of Butter a week. Some Sows also of Fisher Hobbs breed, some with 10, some with 12 Pigs a few days old. Price of Cow, 18*l.*; of the Sows and Pigs from eight to 10 Guineas.—The Sows and Litters to be seen by applying to the Bailiff at Biggin Farm, Crown Hill, Upper Norwood, S.

TO NURSERYMEN, GARDENERS, AND OTHERS.

TO BE DISPOSED OF, A NURSERY, containing about 4 Acres, with numerous Greenhouses, Plants, Stock in Ground, &c., situated in a favourite suburb south of London, on the high road, and with an increasing business.—Full particulars will be given on application to Mr. A. CHANDLER, Horticultural Valuer, 28, Priory Road, Wandsworth Road, S.

TO NURSERYMEN AND OTHERS.

TO BE DISPOSED OF, a really first-rate NURSERY, including Glass, Stock, and Business, entire, on very advantageous terms, in the immediate neighbourhood of London. Might suit two or more in partnership, or any country firm requiring a London place of business. Long Lease and capitally situated. Part of the Purchase Money might remain at interest if desired.—For all further particulars apply by letter to A. B. & Co., care of Messrs. Williams & Lloyd, Stationers, 20, Moorgate Street, London, E.C.

TO BE LET, the OFFHAM NURSERY, near Lewes, Sussex, in consequence of the death of the Proprietor. The Nursery is close to Cooksbridge Station, and about nine miles from Brighton. Has been established upwards of 60 years, and consists of about 8 acres, with a good General Stock, terms for which will be moderate.—For further particulars apply to Messrs. CHAUNDY & CO., Nurserymen, Lewisham, Kent; Messrs. HUGH LOW & CO., Clapton, London; or Mr. HENRY ALDRICH, at the Nursery. N.B. Possession may be had immediately, but none need apply but persons of capital.

TO GENTLEMEN, GARDENERS, FLORISTS, & OTHERS.

TO BE LET, or the LEASE SOLD, of a WALLED-IN GARDEN of nearly an Acre of good Garden ground, with large Greenhouse, Propagating House, Pits, &c., within a short distance of Covent Garden Market.—For Terms, &c., apply to A. C., Post Office, King Street, Covent Garden, London, W.C.

MARKET GARDEN, TWICKENHAM, MIDDLESEX.

TO BE LET, by Tender, on Lease for 10 years, an eligible MARKET GARDEN, of about 12 acres, situated at Twickenham, and in the present occupation of Mr. William Goswell. It adjoins the South-Western Railway, by which it is parted, and over which there is a right of crossing and it is distant about a quarter of a mile from the Twickenham Station. The land is in a good state of cultivation; is well stocked with Fruit Trees, and has a convenient Residence upon it. The taker will be required to pay all rates and taxes, except Land Tax and Landlord's Income Tax.—Can be viewed by application to the present tenant, and further particulars known of the owner, Mr. NETTLESHIP Wembworthy, Devon, to whom Tenders in Registered Letters are to be addressed on or before the 1st November next. The owner does not bind himself to accept the highest nor any unsuitable Tender.

NURSERY AND PLANT BUSINESS, SUDBURY, SUFFOLK.—A fine opportunity offers immediately, as this part of the Business of BASS & BROWN is for disposal. The stock of Fruit Trees, Ornamental Shrubs, Roses, &c., is first rate, standing on a superior soil, an unfailing supply of water on the spot, conspicuously situated between the Railroad and the public road, at a short distance from the Station. Also the whole or part of the Greenhouses, Pits, &c., with the Greenhouses, Pits, &c., with the excellent stock contained therein.—Particulars of BLUNDEN & SQUIRE, Agents; or of STEPHEN BROWN, at the Seed Establishment, Sudbury, Suffolk.

TO NURSERYMEN, GARDENERS, AND OTHERS.

TO BE DISPOSED OF, A SMALL NURSERY in the Wandsworth Road. Houses and Stock in good condition, with a good Jobbing Business.—Apply to Mr. A. CHANDLER, Horticultural Valuer, 28, Priory Road, Wandsworth Road, S.

Sales by Auction.

MR. J. C. STEVENS begs to announce that his MONTHLY POULTRY and PIGEON SALES will recommence on TUESDAY, October 4, and will be continued on the first Tuesday in every month during the season, with occasional extra sales.—38, King Street, Covent Garden, W.C.

MONTHLY POULTRY SALE.

MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, W.C., on TUESDAY, October 4, at 12 o'Clock precisely, 200 LOTS OF CHOICE POULTRY AND PIGEONS, including Buff and White Cochins, Brahmas, Dorkings, Game, Malays, Silver Spangled Hamburghs, Guinea Fowls, Aylesbury Ducks, &c., from the yards of the Rev. G. Gilbert, A. G. Brooke, Esq., F. Manning, Esq., and others. The Pigeons are remarkably choice and include Carriers from W. W. Hayne, Esq., Pouters from S. Bull, Esq., and other varieties from celebrated breeders. —May be viewed on the morning of Sale and Catalogues had of Mr. J. C. STEVENS, 38, King Street, Covent Garden, W.C.; if for the country by enclosing two stamps.

ENGLEFIELD GREEN, SURREY.

Highly important Sale of Specimen Stove and Greenhouse Plants the property of a Gentleman who has ranked amongst the most successful exhibitors during past years.

MR. J. C. STEVENS is honoured with instructions to submit to public competition, without the least reservation, on the premises, Cooper's Hill, Englefield Green, Staines, on TUESDAY, September 27, at 1 o'Clock precisely, the Collection of SPECIMEN PLANTS of AZALEAS, ERICAS, STOVE and GREENHOUSE PLANTS, of a gentleman who is giving up exhibiting. Amongst the Azaleas will be found some extraordinarily fine plants of

Glory of Sunning Hill, 4 feet	Gladstanesii, 5 feet by 6
Variegata, 4 do, by 6 [by 4	Lateritia, 5 do, by 7
Optima, 6 do. by 5	Alba magna, 4 do. by 4
Murrayana, 4 do. by 4	And numerous others.

Amongst the Stove Plants will be found

Genetyllis macrostigna, 2½ feet by 2½	Boronia serrulata, 4 do. by 4
Acrophyllum venosum, 4 do. by 3	Tetratheca ericoides, 2½ do. by 3
	Epacris miniata grandiflora, 6 do. by 7

And numerous other fine plants, which have formed a leading feature in the various metropolitan exhibitions during several past years.—May be viewed on the day prior and morning of sale, and Catalogues had on the premises; at the principal Inns in the neighbourhood, and of Mr. J. C. STEVENS, 38, King Street, Covent Garden, W.C.

*** Cooper's Hill is about one mile from the Egham station on the London and South-Western Railway.

ORCHIDS.

MR. J. C. STEVENS will Sell by Auction at his Great Room, 38, King Street, Covent Garden, on FRIDAY, September 30, at ½ past 12 precisely, a collection of Orchids in fine health, and including

Aerides Lindleyanum	Phalænopsis grandiflora
,, suavissimum	Arpophyllum giganteum
,, affine superbum	Cattleya Regnelli
Angræcum virens	,, Lemoniana
Cypripedium hirsutissimum	Vanda tricolor superbum
Saccolabium guttatum superbum	,, suavis (Rollisson)

and numerous other fine sorts.

Also a Collection of Rare Ferns and Foliage Plants.—May be viewed on the morning of sale, and Catalogues had of Mr. J. C. STEVENS, 38, King Street, Covent Garden, W.C.

PLANTING SEASON.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, BUILDERS, AND PUBLIC COMPANIES ENGAGED IN PLANTING.

MESSRS. PROTHEROE AND MORRIS most respectfully invite the public to inspect their valuable NURSERY STOCK, extending over 20 acres, and in the highest state of cultivation, consisting of FRUIT, FOREST, and ORNAMENTAL TREES of every description, and in considerable quantities; also a large and rich assortment of AMERICAN PLANTS, fine EVERGREENS, ranging all sizes, including many magnificent specimens which will give immediate effect, and from the adhesive nature of the soil and being continually transplanted will incur no risk from removal.

The following include a portion of their stock.

These are fine bushy plants and beautifully furnished with bloom buds:—

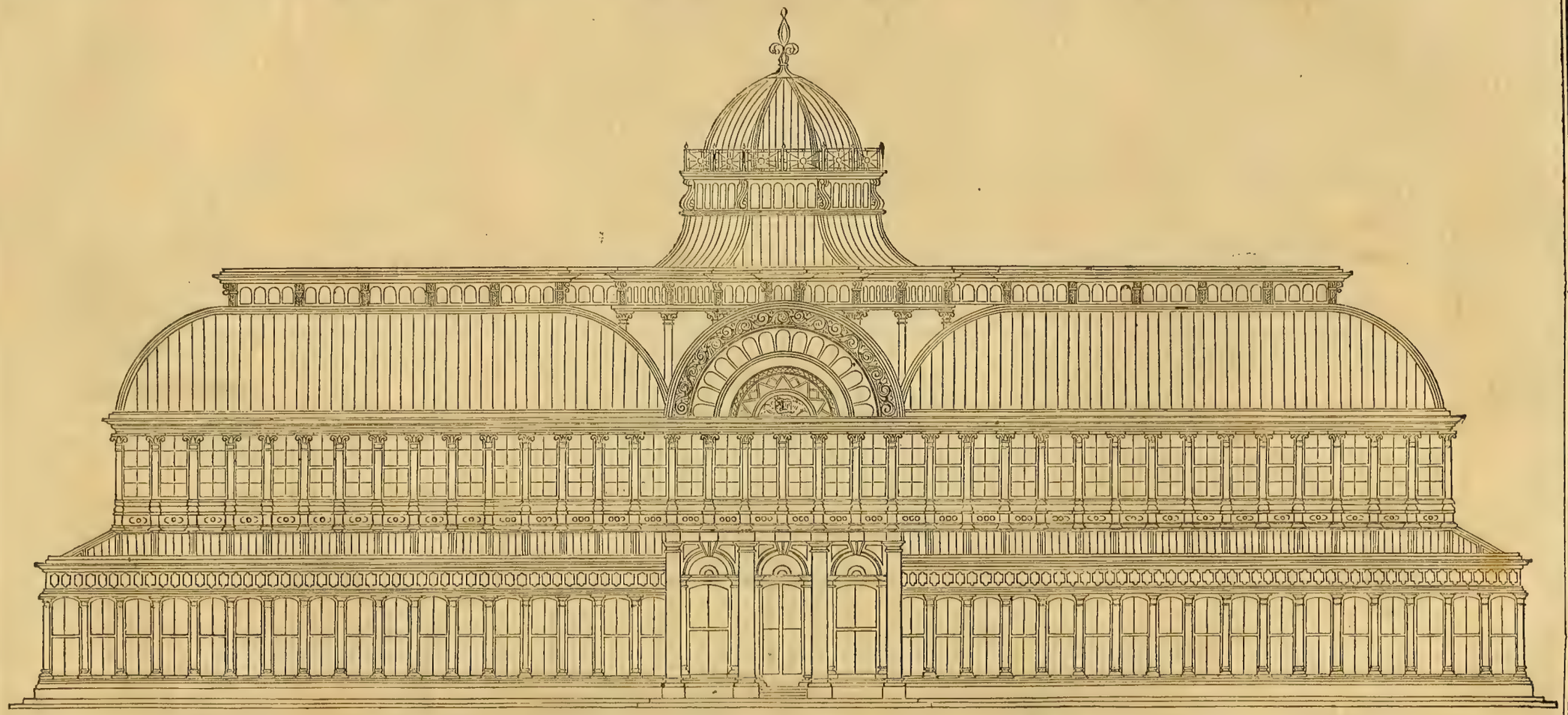
30,000 Hybrid Scarlet Catawbiense, ponticum, and other Rhododendrons.	improved varieties, with clean straight stems and full bushy heads.
20,000 Ghent and other Azaleas.	50,000 Laurels, 18 inches to 10 feet.
4000 Kalmia latifolia.	3000 very handsome Fan Yews, 5 to 12 feet.
3000 Andromeda floribunda.	2000 bushy Aucubas, 2 to 5 ft.
6000 extra fine Dwarf trained Peaches, Nectarines, and Apricots.	Also green and variegated Hollies, Box trees, Cedrus Deodara, Cedar of Lebanon, Pinus excelsa, Hemlock Spruce, Laurustinus, Sweet Bays, Phillyreas, Irish Yews, Privet, Arbor-vitæ, Berberis, China Privet, &c.
6000 Standard Apples, all sizes.	
6000 Limes, 5 to 12 feet, Laburnums, Chesnuts, Birch Maples, Poplars, Mountain Ash, Acacias.	
20,000 fine Standard Roses, including the newest and most	

The Nursery is accessible by Railway in 20 minutes from Fenchurch and Bishopsgate Streets, whence trains leave 12 times daily to Leytonstone Station, which adjoins the Nursery.—American Nursery, Leytonstone, N.E.

MR. E. T. ARCHER, Westbourne Road, Forest Hill, Kent, S.E., begs to inform Amateurs and Breeders of Fancy Pigeons and Poultry that he intends, at the kind solicitations of many friends and first-rate breeders, to hold Periodical Sales by Auction of FANCY PIGEONS AND POULTRY during the season, the first of which will be held on THURSDAY, October 13, at the Auction Mart, near the Bank of England. Mr. ARCHER places his claims to patronage on the ground that he has been a Breeder of rare and good Birds for upwards of 40 years, and one of the promoters and still a member of the Philo-Peristeron and other Societies.—Application for entry of lots to be made at his Temporary Offices, 314, Strand, W.C., the north side of the new Church.

HORTICULTURAL BUILDINGS MANUFACTURED BY STEAM-POWER MACHINERY.

LOWEST PRICES AND BEST MATERIALS.



HENRY ORMSON, Stanley Bridge, King's Road, Chelsea, London, S.W.,

HORTICULTURAL BUILDER AND HOT-WATER APPARATUS MANUFACTURER,

BEGS most respectfully to call the attention of the Nobility, Gentry, Nurserymen, &c., to his superior manner of erecting every description of Horticultural Building, and he trusts by unremitting personal attention to the details of his business, by using only the very best materials, by employing the most skilful and efficient workmen, and by the most moderate possible charges to merit a continuance of the patronage so kindly and so liberally bestowed on him for many years past.

In the BUILDING DEPARTMENT his object will be to adapt all erections to the particular purposes for which they are required. He will devote equal attention to the plain, inexpensive, practical erections of Pits, Orchard Houses, Greenhouses, Vineries, &c., as to the more elaborate and architectural erections of Conservatories, Winter Gardens, &c., either in wood or iron.

The HEATING DEPARTMENT always engages his especial personal attention, and he feels justified in saying that in simplicity, safety, durability, and economy of fuel, combined with thorough effectiveness, his system cannot be surpassed.

VENTILATION.—Knowing the absolute necessity for thorough ventilation, he makes it a matter of first consideration.

See SECTIONS, &c., of Horticultural Buildings in former Numbers of the *Gardeners' Chronicle.*

PLANS, SPECIFICATIONS, and ESTIMATES free on application.

ORMSON'S PATENT JOINTLESS TUBULAR BOILERS have now from *practical tests* established for themselves the highest standing reputation for power, efficiency, and economy of fuel.

H. O. *particularly wishes to call attention to the fact of his having fixed a great number of these excellent Boilers, and to the fact of not one of them having failed, fractured, leaked, or given way in any respect.*

See Testimonials in former Numbers.

Printed by WILLIAM BRADBURY, of 13, Upper Woburn Place, and FREDERICK MULLETT EVANS, of No. 20, Queen's Road, West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and published by them at the OFFICE, No. 5, Upper Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—SATURDAY, September 24, 1859.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 40.—1859.] SATURDAY, OCTOBER 1. {Price Fivepence. Stamped Edition, 6d.

INDEX.

Abies Douglasii	789 b	Manures, valuing	794 c
Arsenic in superphosphate	794 c	Melon, large	792 a
Aubergines, to cook	792 c	Mildew, cure for	789 b
Aylesbury Manor Farm	796 b	Moss on walks	790 a
Bailiff and implicit obedience	796 a	Moth, Death's Head	790 a
Books noticed	791 a	Mulberry	789 a
British Association	790 b	Mushroom, large	790 b
Broughton Hall	791 b	Mushrooms on lawns	790 a
Calla oculata	788 b	Pears, large	790 b
Conifers, remarkable	789 a	Pigs, cinders for	796 a
Cow keeping, small	797 a	Plants, new	788 a
Crystal Palace bedding plants	788 c	— sales of	791 e
— — sale of plants at	791 c	— arsenic in	794 c
Cultivation, autumn	795 a	Potato, Melley's Manifold	789 c
Dibble, Sigma's	796 a	Rabbit nuisance	796 a
Dog, wild	792 a	Rams, sale of	797 a
Evergreens, to move	790 a	Ripley Farmers' Club	796 b
Fish, gold	790 a	Root crop	794 a
Fodder, inferior	794 a	Stock feeding	795 c
Gardeners and employers	789 b	Superphosphate, arsenic in	794 c
Geology in the Garden	791 a	Tasmanian horticulture	787 c
Grape, Bowood Muscat	789 a	Vine disease	788 a
— Chasselas Musqué	790 a	Walks, Moss on	790 a
Horticulture, Tasmanian	787 c	Wellingtonias	789 c
Horticultural Society	790 b	Wheat, changing	793 c

BRITISH POMOLOGICAL SOCIETY,
HANOVER SQUARE ROOMS, LONDON, W.
The next Meetings for the Examination of FRUITS will be held on THURSDAYS, October 6 and 27.
For further particulars see Advertisement in last week's Paper, or apply to WILLIAM DAVIDSON, Secretary.
2, Randolph Road, Maida Hill, London, W.

ROSES IN BLOOM.
WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.
WM. WOOD AND SON have much pleasure in announcing that their AUTUMNAL ROSES are now in fine bloom. They would especially wish to direct attention to their magnificent stock of TEA-SCENTED ROSES, covering an acre of ground, now in full flower.—October 1.

NEW CATALOGUES.
WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.
WM. WOOD AND SON have now forwarded Copies of their New CATALOGUE OF ROSES, together with LISTS OF NURSERY STOCK and TRADE CATALOGUES, to their respective Customers, and will be happy to furnish Copies to other applicants gratis on application.—October 1.

ROSE CATALOGUE.
A. PAUL AND SON have just published their ROSE CATALOGUE for the present season, which they will be happy to forward in return for one postage stamp. The quality of the stock is very superior, and prices unprecedentedly low.—Nurseries, Cheshunt, Herts.

ROSES.
THOMAS RIVERS has just published the 26th Edition of his DESCRIPTIVE CATALOGUE of ROSES, which will be sent post free on application.
Nurseries, Sawbridgeworth, Herts.

STANDARD ROSES.—All the leading kinds in cultivation at prices scarcely ever offered before.
CHARLES NOBLE, Bagshot, Surrey.

ROSES IN BLOOM.
JAMES MITCHELL begs to announce to the nobility and gentry that his unrivalled collection is now in fine Bloom. Two and a half miles from the Uckfield Station, the London, Brighton, and South Coast Railway.
J. M.'s New CATALOGUE will be ready early in October.
The Nurseries, Piltdown, Maresfield, Sussex, Oct. 1.

ROSES.
EDWIN HOLLAMBY begs most respectfully to inform the nobility and gentry that his superb collection of Autumnal ROSES is now in bloom, the stock of which is in the finest condition.
E. H.'s NEW CATALOGUE will be ready for distribution in a few days.
Strawberry Hill Nurseries and the Parade, Tunbridge Wells.

DESCARTE'S STOCKS FOR PERPETUAL ROSES.
J. FOSTER, of Edgware, is now prepared to supply the Trade and Amateurs with this PROVED first-rate dwarf Stock on the following low terms:—1000 Stocks for 50s.; 500 for 28s.; 250 for 15s., or 7s. 6d. per 100; and 3s. per two dozen. Early purchases best secure the establishment of the plants. EVERGREENS and all NURSERY STOCK on moderate terms.

STRAWBERRIES.
CHARLES TURNER can supply good strong healthy plants of the following most approved and favourite kinds:—

Adair (Elphinstone)	British Queen (Myatt)
Carolina superba (Kitley)	Crimson Queen (Myatt)
Filbert Pine (Myatt)	Prince of Wales (Ingram)
Sir C. Napier (Smith's)	Wonderful (Jeyes)

The Royal Nurseries, Slough.

OSCAR STRAWBERRY.
CHARLES TURNER can still supply strong plants, warranted to fruit next season, at 42s. per 100.
For full particulars of this fine early variety see previous Advertisements.—The Royal Nurseries, Slough.

CUTHILL'S STRAWBERRY PLANTS.
EARLY BLACK PRINCE, per 100, 5s.; selected, 7s. 6d.
Do. PRINCESS ROYAL of ENGLAND, do. 7s. 6d.; do. 10s.
LATE PRINCE of WALES .. .. do. 7s. 6d.; do. 10s.
Will bear next year. See former Advertisements.
HIGHLAND MARY CUCUMBER (Winter), 1s. per packet.
Pamphlets, &c. Best Mushroom Spawn.
JAMES CUTHILL, Camberwell, London, S.

STRAWBERRY PLANTS AND CATALOGUE.—Plants of the pretty little Bush Alpine, both Red and White, without runners, suitable for edgings to walks, beds, &c., 10s. per 100 sets.
A DESCRIPTIVE CATALOGUE of upwards of 130 sorts is just published. To all who wish to purchase plants it will be sent by applying to the grower, WILLIAM JAS. NICHOLSON, Egglescliffe, Yarm, Yorkshire.

HYACINTHS AND OTHER BULBS.
WM. CUTBUSH AND SON'S DESCRIPTIVE CATALOGUE of the above is published, and can be had post free on application.—Highgate Nurseries, London, N.

DUTCH AND CAPE BULBS.
BUTLER AND McCULLOCH'S PRICED AUTUMN CATALOGUE of Hyacinths, Gladioli, the finest hybrid varieties, Amaryllis, Chinese Pæonies, Oxalis, Lilium lancifolium, giganteum, and many other beautiful varieties; Tulips, Ranunculus, Anemones, Polyanthus, Narcissus, Crocus, Ixias, Sparaxis, &c., is now ready, and sent post paid on application.
Covent Garden Market, W.C.

HYACINTHS, &c., FOR PRESENT PLANTING.—The following collection (H) for 21s.;—12 Superior named Hyacinths, 6 mixed Hyacinths, 6 Polyanthus Narcissus, 50 Border Narcissus, 25 Sweet Scented Tulips, 50 Double Tulips, 100 Crocus, 100 Double Snowdrops, 12 beautiful Iris, 25 Ranunculus, 12 Double Anemones, half of the above for 10s. 6d. All orders amounting to 21s. and upwards sent carriage paid.—BUTLER & McCULLOCH, Covent Garden Market, W.C.

DUTCH FLOWER ROOTS.
JOSEPH MAY AND CO. beg to offer the following Collection of BULBS on receipt of a Post-office Order for 20s., or reference:—

12 fine named Hyacinths	100 named Crocus
12 fine mixed Hyacinths	100 mixed Crocus
12 fine Narcissus	6 Crown Imperials
12 Early Tulips	12 Jonquils
12 Double Van Thol Tulips	Half the above for 10s.

A PRICED CATALOGUE forwarded on application.
1, Wellington Street, Strand, Waterloo Bridge, W.C.

DUTCH AND OTHER FLOWER ROOTS.
HOOPER AND CO.'S PRICED CATALOGUE OF DUTCH AND OTHER FLOWER ROOTS, with Hints on Cultivation, is now ready, and may be had free by post on application. The first consignment of Bulbs has just arrived in excellent condition, and of the usual first class quality.
Covent Garden Market, London, W.C.

DUTCH AND OTHER BULBS.
MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their CATALOGUE of the above is now ready, and will be forwarded post free on application. Early orders are solicited, as their successful cultivation depends in a great measure on early planting.
Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

DUTCH BULBS, FLOWER ROOTS, ETC.
JAMES FAIRHEAD AND SON, SEED GROWERS and MERCHANTS, Borough Market, London, S.E., beg leave to inform purchasers of the above that their WHOLESALE CATALOGUE is now ready and may be had post free on application.
Their selections are from the most eminent growers in Holland. Prices the lowest consistent with first-class quality.

DUTCH AND OTHER BULBS.
THOMAS JACKSON AND SON respectfully announce that their PRICED DESCRIPTIVE LIST OF BULBS is ready for distribution, and will be forwarded post free on application.
T. J. & SON import only the finest kinds and largest Roots; dependence consequently can be placed on receiving the finest Bulbs.—Nurseries, Kingston, S.W.

NEW DUTCH FLOWER ROOTS.
CHARLES TURNER'S CATALOGUE of these valuable spring flowers is now ready, and may be had free on application.
The Hyacinths, Tulips, Crocus, &c., have been selected with the greatest care from the best growers, and have arrived in fine condition.
C. T. will be able to execute any orders intrusted to him with punctuality.—The Royal Nurseries, Slough.

PINE APPLES, GRAPES, &c.
PINE PLANTS, Fruiting and Succession.
GRAPE VINES, from Eyes, for Fruiting in Pots or Planting.
JOHN WEEKS AND CO. can now supply any quantity of very fine strong healthy Pine Plants, either Fruiting or Succession; also remarkably fine strong Grape Vines from Eyes, all the best sorts.
JOHN WEEKS & Co.'s Horticultural Show Establishment is now entirely devoted to the Growing and Forcing of Fruits in great variety, thereby showing the most improved plans of construction, and the most superior system of Hot-water Apparatus.
JOHN WEEKS & Co., Horticultural Builders and Hot-water Apparatus Manufacturers, King's Road, Chelsea, London, S.W.

TO GENTLEMEN AND THE TRADE requiring large Trees of all the leading kinds of ORNAMENTAL TREES, SHRUBS, and FOREST STUFF for planting Cemeteries, Parks, or New Grounds, for immediate effect at low prices.—Apply to EPPS's Nurseries, Maidstone and Ashford.
All orders exceeding 2l. will be carriage paid to London.

AZALEAS ON SALE.—Six large specimen AZALEAS for sale.—Apply to Messrs. DAVIES & SON, Nurserymen, Wavertree, Liverpool.

CARNATIONS AND PICOTEES.
CHARLES TURNER can supply these in great variety, strong plants of the finest kinds, 18s., 24s., and 30s. per dozen pairs.—The Royal Nurseries, Slough.

CINERARIAS.
CHARLES TURNER is now sending out the 10 fine new varieties so successfully exhibited by him last spring. Price of the set, 50s. Strong plants of all the best named kinds at moderate prices.
If procured and repotted at once these will make fine specimens for early spring decoration.—The Royal Nurseries, Slough.

RHODODENDRONS "of every hue," Scarlet, White, Rose, Crimson, and every intermediate shade, nearly all sizes and at all prices, according to quality, can be supplied by CHARLES NOBLE, Bagshot, Surrey.

GEORGE GIBBS AND CO.,
SEEDSMEN,
26, DOWN STREET, PICCADILLY,
LONDON, W.

GOOD SEEDS. CARRIAGE FREE.
SUTTON AND SONS,
SEED GROWERS AND MERCHANTS,
ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.

R. H. VERTEGAN, LANDSCAPE GARDENER, &c.,
Chad Valley Nursery, Harborne Road,
Edgbaston, Birmingham.
Removed from Ladywood Lane.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY LIMITED supply every requisite for the Farm and the Garden.
Registered Offices, Union Road, Plymouth.

AUSTRALIAN GARDEN CRESS, just harvested (the true broad-leaved sort). Price on application.
ARTHUR HENDERSON & Co., Pine-apple Place, Edgware Road, London, W.

YOUELL AND CO.'S GENERAL PRICED CATALOGUE is now published, and may be had post free on application.—Royal Nursery, Great Yarmouth, Oct. 1.

FERN CATALOGUE.
ROBERT SIM'S NEW DESCRIPTIVE AND PRICED CATALOGUE, No. 6 (62 pages) of his COLLECTION of BRITISH AND EXOTIC FERNS, can be had, post free, for 8 stamps. Gratis to all previous purchasers of Ferns.
Nursery, Foot's Cray, Kent, S.E.

WHOLESALE CATALOGUE.
GEORGE JACKMAN AND SONS' PRICED and DESCRIPTIVE CATALOGUE for 1859, & SPRING 1860, can be had on application.—Woking Nursery, Surrey.

MESSRS. ROEZL AND BESSERER, of Mexico, will execute orders from their CATALOGUE of last year through their Agent Messrs. B. A. GRANTOFF & Co., 4, Lime Street Square, London, E.C.

TO BE SOLD, by Private Contract, a choice collection of ORCHIDS, viz.:—Ærides, Vandas, Saccolabiums, Phalænopsis, Cypripediums, Cymbidiums, Dendrobiums, &c., the property of THOMAS CROSS, Esq., Mortfield, Bolton-le-Moors, Lancashire.—For further particulars inquire of J. H. COLLENS, Gardener.

MUSCAT GRAPES WANTED.—PINE-APPLES (not under 2 lbs.) WANTED.
PEACHES (large size) WANTED.
Forward immediately to GEORGE TAYLOR,
CHOICE FRUIT SALESMAN,
St. John's Market, Liverpool.

LARGE RED GRAPE CURRANT.—Five Thousand Plants, from 1 to 3 years old; also FALSTAFF RASPBERRY CANES to any extent, to be sold remarkably cheap by taking a quantity.—Apply to Mr. MITTON, Lampton, near Isleworth and Hounslow, W.

GREAT SCARCITY OF FRUIT.
STRONG ROOTS OF THE LINNÆUS RHUBARB, from division, can be supplied in any quantity at 12s. per 100, or 5l. per 1000, by WALTER PENNINGTON, Nurseryman, South Retford, Nottinghamshire.

FRUIT TREES.
J. AND J. FRASER, Lea Bridge Road Nurseries, Essex, N.E., beg to invite purchasers of Fruit Trees to an inspection of their stock, which is this year unusually fine. PRICED CATALOGUES can be had on application.

TO THE TRADE.
J. AND J. FRASER, The Nurseries, Lea Bridge Road, Essex, N.E., beg to offer a large Stock of Maiden FRUIT TREES, including all the best sorts of Apricots, Peaches, &c. The prices, which are very moderate, may be had on application.

MAIDEN AND CUT-BACK FRUIT TREES.
STANDARD AND PYRAMID FRUIT TREES.
EXTRA FINE TRAINED FRUIT TREES.
RICHARD SMITH has this season 23 acres of the above. Price on application.
St. John's Nurseries, Worcester.

PYRAMID PEARS, PLUMS, APPLES, TRAINED PEACHES AND NECTARINES.
W. J. EPPS respectfully offers the above. They are particularly fine healthy young stuff and well furnished, and of the best kinds, at very moderate prices.
Nurseries, Maidstone and Ashford.

TO THE TRADE.
ERICAS, of the leading and best varieties, in 50 sorts, very bushy and healthy, 5os. per hundred, free to London. Also Greenhouse Plants.—EPPS's Nursery, Maidstone.

ERICAS.
F. AND A. SMITH'S Stocks of the above are this season unusually fine, comprising most of the leading winter and spring-flowering varieties. Prices on application.
Dulwich, Surrey, S.

CAMELLIAS.—A Collection of large and small, to be sold cheap; also a small SADDLE BOILER, with about 40 feet of Pipes, Brickwork, and all fittings complete.—Apply at Stone House, Philip Street, Kingsland Road, N.

HARDY HEATHS.—A Collection of 20 sorts, by name, of the above favourite autumnal flowers, in good plants, at 30s. per 100, or 12l. 10s. per 1000.
JOHN WATERER, The American Nursery, Bagshot, Surrey.

LOMBARDY POPLARS WANTED.—Any one having a few hundred LOMBARDY POPLARS to dispose of, from 15 to 20 feet high, and good plants, may hear of a purchaser by stating price and applying to JAMES CAMPBELL, Overseer, Polloc, Glasgow.

GARDENERS' CHRONICLE NEWSPAPER STAMP PENNY

TO THE TRADE.

THOMAS JACKSON AND SON solicit an inspection of their Stock generally, and particularly their AZALEAS, ERICAS, EPACRIS, and POT PLANTS, which are this season they believe unequalled in their fine healthy condition. Good flowering plants of Azaleas, Ericas, and Epacris, 7s. per 100. T. J. & Son possess many large specimens of Stove and Greenhouse Plants, from 1 to 5 feet in diameter, suited for exhibition, prices according to size and kind. Berberis Beali, B. japonica, and Eugenia Ugni, good plants in 3-inch pots, 60s per 100.—Nurseries, Kingston, S.W.

PAMPAS GRASS.—The present is the most favourable time for planting out this inimitable Plant. No one can imagine the grand effect of a mass of its silvery plumes unless they see it, nor is its value confined to the ornamental, but is likely to become useful as Cover for Game. It grows in any soil or situation, attaining the height of from 6 to 10 feet.—Any quantity can be supplied by C. NOBLE, Bagshot, Surrey.

NEW PANSY.

ROBERT REA, NURSERYMAN, &c., Ipswich, begs to announce that he intends sending out fine strong established plants in pots of his unrivalled Seedling Pansy JOHN HINES the second week in October. Colour deep orange yellow, top petals very rich puce, lower petals evenly margined with the same colour, a perfectly round, smooth, full-sized flower with very dense eye. Received First-class Certificates at the Ipswich Horticultural and Whitton Floral Societies, and pronounced by the most competent Judges in this locality to be the best flower in its numerous class. Plants 5s. each, with the usual discount to the Trade; by post 6d. extra.

CHOICE CONIFERS,

ALL SEEDLING PLANTS GROWN IN POTS.

Per dozen.—s. d.	Per dozen.—s. d.
Pinus Don Pedri, 2 years 60 0	Pinus Lerdoi, 2 years .. 18 0
,, Veitchii, 2 years .. 60 0	,, resinosa, 2 years .. 18 0
,, Pepe nepethi, 2 years 60 0	,, corvea, 2 years .. 18 0
,, macrocarpa, fine, 9 in. 24 0	,, patula, 2 years .. 9 0
,, Llaveana, 2 years .. 18 0	,, Ehrenbergii, 2 years.. 12 0
,, tuberculata, 2 years.. 18 0	,, popelini, 2 years, each 1 6
,, Benthamiana, 2 years 9 0	,, insignis, fine, 2 feet . 18 0

Abies religiosa, 2 years, 24s. per dozen
Cupressus McNabiana, true, 6 inches, 9s. per dozen.
,, macrocarpa, 2 feet, fine, 6s. per dozen.
Taxodium sempervirens, very fine, 2 feet, 24s. per dozen.
Wellingtonia gigantea, fine specimen plants, in 24 pots, 2 feet high, 21s each.

J. HENCHMAN, Edmonton, London.

CUPRESSUS MACROCARPA.

WM. FOSTER, NURSERYMAN and SEEDSMAN, Stroud, offers splendid Specimens of the above, 5, 6, and 7 feet bushy and well grown, and being transplanted every season will remove with safety. Also Plants of the true CUPRESSUS MACROCARPA, var. LAMBERTIANA, quite distinct from macrocarpa.

PINUS AUSTRIACA, 4 and 5 feet, frequently transplanted.

JUNIPERUS VIRGINIANA BARBADENSIS, syn. BEDFORD CEDAR, 4 to 5 feet, bushy, transplanted every season.

A General CATALOGUE of FOREST and FRUIT TREES, EVERGREEN and DECIDUOUS FLOWERING SHRUBS, &c., with prices on application.

PEACHES and NECTARINES for Walls and Orchard Houses, particularly fine and true to name.

Fine dwarf trained Pears in a bearing state.

JOHN STEWART, (of the late firm of Mackie and Stewart,) NURSERYMAN and SEEDSMAN, begs respectfully to inform his friends and the public generally that he opened his new premises at 6, Exchange Street, Norwich, two doors from the Corn Hall, in the last week in September, with an entire NEW STOCK of everything connected with the trade.

JOHN STEWART'S DUTCH BULBS have arrived, having been selected especially for him by some of the first houses in Haarlem. A List is now ready, and will be franked to any address upon application. He solicits the favour of early orders for the same, so as to secure Roots of the best quality; and pledges himself that every order entrusted to his care shall receive his personal attention. All Bulb orders to the amount of 20s. will be sent, carriage paid, to the nearest Railway Station.

THE NORWICH NURSERY AND BRACONDALE HORTICULTURAL ESTABLISHMENT. LATE MACKIE & STEWART.—"We have this day disposed of our business to Mr. JOHN BELL, including all book debts due to us up to this date; and we therefore authorise him to receive all such debts and to give discharges for the same. { ARTHUR MACKIE, JOHN STEWART."
"March 16.

JOHN BELL having purchased the good-will and interest of the Nursery and Seed business of Messrs. MACKIE & STEWART, earnestly solicits a continuation of the patronage so liberally bestowed on his predecessors, and begs to say that the greatest care and attention will be given to every order intrusted to him.

J. B. begs to call attention to his large and well selected Stock of EVERGREENS and FLOWERING SHRUBS, ORNAMENTAL TREES, AMERICAN PLANTS, FRUIT and FOREST TREES, GRAPE VINES, FRUIT TREES in pots for Orchard Houses, &c.

J. BELL'S importation of DUTCH HYACINTHS and other Bulbs has arrived in excellent condition, early orders for which are respectfully solicited. CATALOGUES may be had at his Seed Warehouse, Nos. 10 & 11, Exchange Street, Norwich.

THE BRISTOL NURSERY, KEMP TOWN, BRIGHTON.

ALEX. McKENZIE, for some time Gardener, &c., at Woodlands, Blackheath, begs to inform his friends and the public that he has taken the above Nursery on Lease, and hopes by strict attention to his business to obtain a share of the patronage so liberally bestowed on the late Mr. Mitchell.

Having taken the whole Stock, he will be prepared to execute orders at once, and begs to offer the following, which are in fine condition:—VINES, from Eyes, fit for forcing or planting.

FRUIT TREES, trained and in pots.

Extra large RHUBARD, for immediate forcing.

FIGS, in pots, fit for forcing.

STOVE and GREENHOUSE PLANTS.

Also a very superior collection of TULIPS.—October 1.

AMBROISE VERSCHAFFELT, NURSERYMAN, Ghent, Belgium, begs to offer the following plants:—

	£ s. d.
BEGONIA CHARLES WAGNER (finer than Begonia Rex)	0 6 0
LAPORTEA CRENULATA, splendid ornamental plant	0 8 0
MYRISTICA GHIESBREGHTII, fine foliage	0 14 0
CIBOTIUM PRINCEPS, one of the finest Tree Ferns yet introduced	3l. to 8 0 0
ALSOPHYLLA AUSTRALIS, Tree Fern for greenhouse	0 10 0
CLEMATIS SOPHIA FLORE PLENO	0 4 0
MUSSCHIA WOLLASTONII	0 4 0
LILIUM GIGANTEUM, FLOWERING BULBS	2 0 0
PÆONIA ARBOREA, ALEXANDRE II., one of the finest dark Tree Pæonias	1 0 0
New Pear GENERAL TOTLEBEN, of which a drawing can be obtained	0 8 0
RHODODENDRON BYLSIANUM	0 8 0
ROSE hyb. rem. IMPERATRICE EUGENIE, splendid white flower	0 3 6

A. VERSCHAFFELT'S NEW CATALOGUE, No. 66, is just printed, and may be obtained free of Mr. R. SILBERRAD, 5, Harp Lane, Great Tower Street, London, E.C.

CARTER'S LIST OF NEW ANNUALS FOR SEASON 1860.

JAMES CARTER & CO.

BEG leave to call the attention of the Trade to the subjoined LIST of NEW ANNUALS, the entire stock of which, excepting the new varieties of Dianthus, are exclusively in their possession:—

CLARKIA PULCHELLA, VAR. INTEGRIPETALA.—This is the first of what might almost be called an entirely new class of Clarkias, which we shall have the pleasure of offering a succession of varieties of during the next few years; the flowers are nearly double the size, colour more brilliant, and the petals whole instead of being three-lobed like the old pulchella varieties, thus forming an apparently circular instead of a crueiform flower. This variety was "commended" by the Floral Committee of the Horticultural Society in July last, and described by them as "an improvement on the older kind in respect to its ornamental qualities."

CAPTAIN CLARKE'S NEW HYBRID BLUE SWEET PEA.—This beautiful variety is the result of a hybridisation between Lord Anson's and Painted Lady Sweet Pea, by Captain Trevor Clarke, F.H.S., well known to the floricultural world as a successful hybridiser of plants. The upper petals are of a delicate rose-colour, and the lower white, with a deep blue edge.

CALLIRHOE DIGITATA.—A very elegant plant, strongly resembling the scarlet Linum; colour rich violet purple, with white eye; height from 2 to 3 feet, commences to bloom when about 6 inches high, and presents a mass of blossom during the entire summer. This is the same plant as that referred to under the name of Nuttallia by Mr. Beaton in the "Cottage Gardener," as follows:—"Among other novelties was a bed of new Nuttallia, a genus that is little known. The old Nuttallia grandiflora is one of the best old border plants, and one of the most difficult to keep; but this will be an easy thing, as it seeds freely, and is not more than a biennial. The plants were a yard high, very branchy, and full of blooms—violet and crimson colour, with a white bottom. If the flowers of Chironia frutescens were cupped, and dashed with a tinge of purple, they would give some idea of this beautiful thing; but it will be best to prove it in patches, like patches of Coreopsis.

ŒNOTHERA BIENNIS, VAR HIRSUTISSIMA (Asa Grey).—A new variety of the Evening Primrose from California, very distinct from the common biennis; height 2 feet, colour crimson orange.

LOBELIA GRACILIS ROSEA.—A very graceful little plant, of a good rose colour, especially adapted for edgings.

DIANTHUS CHINENSIS LACINIATUS.—We have purchased part of the stock of seed of this unprecedented novelty from the raiser, Mr. Heddewig, who describes it as follows:—Grows 2 feet high, very hardy; flowers about 4 inches in diameter, each petal consisting of a long delicate fringe, some double, others single; blossoms from the end of May till the beginning of frost; the colours are pure white, flesh-rose, various shades of red, carmine, violet, purple, and rich maroon, some being selfs, other striped and spotted.

DIANTHUS CHINENSIS HEDDEWIGI.—Of this splendid annual Dianthus we have also purchased part of the stock of seed from the raiser. The plants are scarcely 1 foot high, very bushy, and covered with a profusion of flowers, which measure nearly 3 inches in diameter; the colours are various, consisting of different shades of rose, crimson, violet, &c., some delicately marbled, others entirely self colour. This plant has received the highest awards from the Horticultural and Botanic Society, Regent's Park.

ANAGALLIS GRANDIFLORA, VAR. EUGENIE } Two beautiful new French varieties of the well-known
ANAGALLIS GRANDIFLORA, VAR. NAPOLEON III. } Anagallis grandiflora, but the flowers are much larger. They will be found highly ornamental as half hardy bedding plants, as they continue a long time in bloom, and contrast effectively. Var. Eugenie light blue, shading from the centre to pure white at the border. Var. Napoleon III. rich maroon crimson.

NIGELLA HISPANICA ALBA } Two varieties
NIGELLA HISPANICA ATROPURPUREA } of great merit, of erect habit, the one a clear rich purple and the other a pure white, can be recommended as being decidedly the best of their class.

NEMOPHILA DISCOIDALIS MARGINATA.—A pretty variety of the discoidalis, having a white edge, which shows well on the black ground.

NEW DWARF BEDDING TROPÆOLUMS.

TOM THUMB YELLOW.—A new variety in colour, particularly adapted for bedding, and also for growing in pots and ornamental vases, and the flowers are well thrown up above the foliage; very dwarf and compact in habit. Colour pure yellow without any marking; was "commended" by the Floral Committee of the Horticultural Society in July last, and described by them as "a compact free blooming rich yellow annual, likely to become useful for beds."

TOM THUMB BEAUTY.—An elegant variety with Lobbianum-shaped flowers, raised by Mr. Melville, gardener to the Earl of Roseberry, Dalmeny Park, near Edinburgh. The flower is yellow flamed and blotched with bright crimson. A plant was sent to the Editors of the "Cottage Gardener," in October, 1858, who speak of it as follows;—"No. 11, a dwarf yellow, tinged with crimson; would be a good bedding plant we think.

*** *Price of the above to the Trade on application. Coloured Drawings are in progress, and our Artist (Mr. Andrews) promises copies early in October.*

JAMES CARTER & CO., 237 & 238, HIGH HOLBORN, LONDON, W.C.

BUTLER & McCULLOCH'S

Descriptive and Priced Catalogue of Dutch and Cape Bulbs,

SENT FREE AND POST PAID ON APPLICATION.

CONTENTS OF CATALOGUE:—

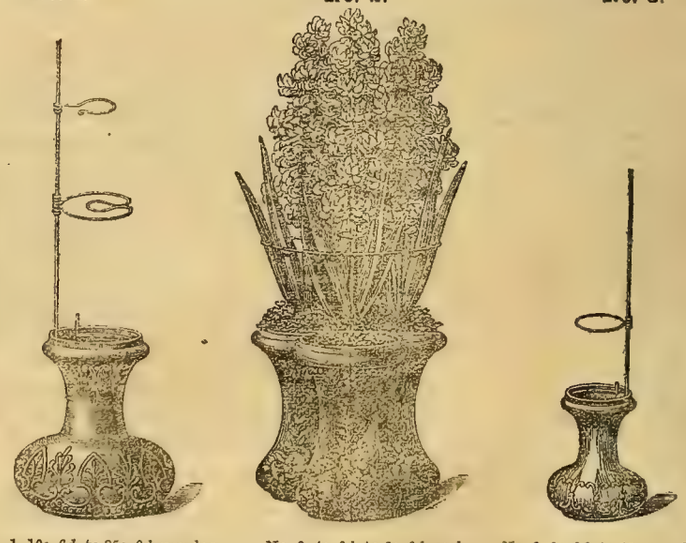
Agapanthus
Allium
Alstrœmeria
Amaryllis
Anemone
Antholyza
Arum
Babiana
Belladonna Lily
Books
Bravoa
Brodiæa
Bulbocodium vernum
Calla
Camassia
Carnation Plants
Clidanthus
Coburghia
Colchicum
Commelina
Crinum
Crocus
Crown Imperials
Cummingia
Cyclamen
Cypella
Dielytra
Dog-tooth Violets
Eucomis
Ferraria
Flower seeds
Fritillarias
Geranium
Gladioli
Guernsey Lily
Herb Plants
Hyacinths to name
,, for Miniature Glasses
,, for Borders
Iris, English
,, Spanish, dwarf
,, ,, medium
,, ,, tall
,, various
Ismene
Ixias
Jonquils
Lachenalia
Leucogum
Lilies
Muscari
Narcissus, Polyanthus
,, single for borders
,, double ,,
Ornithogalum
Oxalis
Ranunculus, double Persian
,, ,, Turban
Scillas
Seeds, Flower, for Autumn sowing
Do., Vegetable, for Autumn sowing
Snowdrops
Sparaxis
Tigridia
Tritoma
Tritonia
Tropæolum
Tulips
Vallota
Vegetable Seeds
Watsoni
Winter Aconites

CULTURAL DIRECTIONS.
Hyacinth, culture of, in glasses
,, ,, Moss and sand
,, ,, pots
,, ,, open border
Tulip, culture of
Crocus ,,
Snowdrop ,,
Narcissus ,,
Jonquils ,,
Ranunculus ,,
Anemone ,,
Iris ,,
Fritillaria ,,
Crown Imperial, culture of
Lilium lancifolium
Gladioli, hybrid of ramosus, culture of
Do., hybrid of gandavensis, culture of
Ixia, culture of
Sparaxis ,,
Amaryllis ,,
Pæonies ,,

[Gardens On Management of Town

AGENTS FOR TYE'S REGISTERED HYACINTH GLASSES.

No. 1. No. 2. No. 3.



No. 1, 10s. 6d. to 25s. 6l. per doz. No. 2, 4s. 6d. to 6s. 6d. each. No. 3, 3s. 6d. to 12s. per doz.

COVENT GARDEN MARKET, W.C.

RHODODENDRONS.

JOHN WATERER'S CATALOGUE OF HARDY, SCARLET, and other choice RHODODENDRONS, as annually exhibited at the Royal Botanic Gardens, Regent's Park, is now published and will be forwarded on application. Faithful descriptions of all the esteemed varieties will be found detailed, with a list of the popular kinds of AZALEAS and other AMERICAN PLANTS, as well as a selection of CONIFEROUS TREES, with height and prices.

The American Nursery, Bagshot, Surrey, near Sunningdale Station, South-Western Railway.

GERANIUMS, HERBACEOUS PLANTS, ETC.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their new PRICED and DESCRIPTIVE CATALOGUE of the above, to which are added Supplemental Lists of Stove, Greenhouse, and Hardy Plants, Fruit Trees, &c. (which include all the best new plants of the season), is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

CHOICE GERANIUMS.

JOHN DOBSON AND SONS' Annual DESCRIPTIVE LIST of all the leading kinds of SHOW, FANCY, and SPOTTED GERANIUMS, together with a SELECT LIST of CINERARIAS and FUCHSIAS, is now ready, and may be had post free on application; it includes several new varieties now offered for the first time.

Woodlands Nursery, Isleworth, and High Street, Hounslow.

CINERARIA, HERBACEOUS CALCEOLARIA, AND HALF SHRUBBY DITTO SEED.—These have been saved from Turner's most beautiful varieties; in 1s. and 2s. 6d. packets. Primula and Hollyhock, from the newest and handsomest varieties, 1s. per packet. Agents for F. & A. Smith's splendid Cineraria, in 1s. 6d., 2s. 6d., and 5s. packets; also agents for Dobson & Son's splendid Calceolaria, in 1s. 6d., 2s. 6d., 3s. 6d., & 5s. packets.—Catalogues of the newest Flower Seeds, and newest Dutch and Cape Bulbs, sent post-paid.—BUTLER & MCCULLOCH, Seedsmen, Covent Garden Market, W.C.

ARAUCARIA IMBRICATA.—The finest lot of trees in the world of this noble plant, from 1 to 10 feet high, are to be seen at H. LANE & SON'S Nurseries, Great Berkhampstead, and they strongly recommend gentlemen and planters to view them. This forms the most noble tree for Avenues and Plantations. There is a most beautiful specimen at Dropmore, which the intelligent gardener, Mr. Frost, feels great pleasure in showing.

They also have a fine stock of CEDRUS DEODARA, ABIES DOUGLASII, IRISH YEW, &c., from 5 to 10 feet high, for immediate effect.

BEGONIA MARSHALLI.

WILLIAM COLE begs to announce that he will send out the above beautiful variety, raised by Mr. Franklin, Gardener to J. G. Marshall, Esq., Headingley, near Leeds, on and after the 26th inst. It has been exhibited at the Regent's Park, Kirkstall, Halifax, Shipley, and other Exhibitions, and Certificates have been awarded to it. It is universally admitted to be by far the handsomest of all the Begonias, and will be invaluable for Exhibition purposes.

For further particulars see *Gardeners' Chronicle* of July 16, page 606; also Sept. 10, page 742; also "Cottage Gardener" of July 19 and Sept. 13.

Strong plants 15s. each, with the usual discount to the Trade. Post-office Orders payable at Manchester.

Nursery, Withington, near Manchester.—Oct. 1.

CINERARIA, CALCEOLARIA, AND PRIMULA.

F. AND A. SMITH are now sending out SEED of their splendid varieties of the above in sealed packets, without which none are genuine, at 1s., 1s. 6d., 2s. 6d., and 5s. each. To be had also of most respectable Nurserymen and Seedsmen in the Kingdom.—Dulwich, Surrey, S.

CAMELLIAS AND AZALEA INDICA.

F. AND A. SMITH beg to offer the above well set with flower buds, dwarf, bushy, and thoroughly ripened off. Having been grown in this country they are most suitable for packing, and are strongly recommended to country Amateurs and the Trade in general. An inspection invited. Prices on application.—Dulwich, Surrey, S.

NEW HARDY GHENT RHODODENDRON "JEAN VERSCHAFFELT."

This superb Rhododendron, that was so much admired by all who saw it in flower last year, is to be sent out before the 15th of October next. Price 20, 30, and 50 francs per plant. Each Subscriber will receive post free a coloured plate of said Rhododendron. All orders to be addressed direct to

JEAN VERSCHAFFELT, Nurseryman, Ghent, Belgium.

DUTCH FLOWER ROOTS.

E. P. DIXON will supply the following Collection of Bulbs, package included, on receipt of a Post-office Order for 21s.

12 choice Polyanthus Narcissus	12 choice named Hyacinths
1 col. Crocus, 20 varieties	100 Turban Ranunculus
12 Tournesol double Tulips	12 Rex Rubrorum Tulips
12 Yellow Rose ,,	12 Paeony Gold ,,
12 Parrot Tulips	12 sweet-scented Jonquils
50 Double Snowdrops	50 Winter Aconites

CATALOGUES gratis on application.

Seed Establishment, 57, Queen Street, Hull.

DUTCH FLOWER ROOTS.

TIMOTHY BRIGDEN, SEEDSMAN AND FLORIST, 10, Railway Arcade, London Bridge, London, E.C., begs most respectfully to inform his Friends and the Public generally that he has just returned from Holland with his unrivalled collection of HYACINTHS, CROCUS, TULIPS, NARCISSUS, JONQUILS, &c., of which a PRICED LIST may be had upon application. T. B. further begs to state that, having selected them from the best growers in Holland himself, he can guarantee them finer than any other house in London.

A large assortment of Aquaria, Wardian Cases, and Gold and Silver Fish always on sale.

NEW AND CHOICE GERANIUMS.

GEORGE SMITH offers strong plants of the following, selected from those sent out in the Autumn of 1858. The plants are remarkably healthy and fine, and now require potting on. Price 30s. per dozen, stronger plants at 36s. per dozen, viz:—(Hoyle's) Belle of the Season. Excellent, Lady Canning, Leviathan, Monarch, Prince of Wales, Rajah, Star, Tom Brown; (Foster's) Criterion, Golden Hue; (Turner's) Excelsior, Fisherman, Guido, Jung Bahadoor, Osiris, Picnic, Peacock, The Belle; (Fraser's) Echo; (Beck's) Fairest of the Fair, The Bride, Vestal; (Dobson's) Ringleader, Spotted Pet; (Fellowes') Ariel, Desdemona, and (White's) Blink Bonny. Fancies: (Turner's) Beauty, Captivator, Circle, formosum, Marchioness of Tweeddale, modestium, Negro, and Othello.

G. S. has also a splendid stock of all the leading kinds of former years, of Show, Fancy, and Spotted.

A DESCRIPTIVE CATALOGUE will be forwarded in exchange for one postage stamp.

Tollington Nursery, Hornsey Road, Islington, London, N.

WINTER BLOOMING PLANTS.

CAMELLIAS, CHINESE AZALEAS, EPACRIS, ERICAS, of various sizes and all in unusually fine condition. Many thousands of these plants can be seen at the Nursery of the Subscribers.

DWARF OTAHEITE ORANGES in fruit.

CATALONIAN JASMINE (Jasminum grandiflorum).—Fine plants, grafted on short stems, and full of flower buds.

SPRAGUEA UMBELLATA, introduced by H. L. & Co. from California, is now finely in flower in the open ground.

Inspection respectfully invited.

HUGH LOW & Co., Clapton Nursery, London, N.E.

ARAUCARIA IMBRICATA.

YOUELL AND CO. beg to inform the Trade they have to offer a fine and healthy stock of the above in 1-year-old plants.

GLADIOLUS BRENCHLEYENSIS.—An extensive stock of large flowering Bulbs of this magnificent Gladiolus, the colour of which is vermilion scarlet, the best and brightest variety known. Prices of the above on application.

Royal Nursery, Great Yarmouth.

SELLING OFF.

THE VALUABLE NURSERY AND PLANT STOCK OF BASS AND BROWN, SUDBURY, SUFFOLK, is offered at a very large reduction on the usual prices for cash, in order to the discontinuance of that part of the business.

The stock is in the finest possible condition, and the Fruits, of which there is a large collection, consist of none but the choicest and most esteemed.

A VERY FINE IMPORTATION OF DUTCH BULBS has been received, and are also offered very low.

CATALOGUES OF BULBS, with the Nursery and Plant Stock, furnished on application to STEPHEN BROWN, Seed and Nursery Establishment, Sudbury, Suffolk.

SORGHUM, OR HOLCUS SACCHARATUS.

ROYAL BERKSHIRE SEED ESTABLISHMENT.

SUTTON AND SONS having introduced this useful plant to their customers five years ago, and having confidently recommended it in their "Amateur's Guide," have great satisfaction in observing the very general cultivation of the crop this season. SUTTON & SONS will be obliged by any communications from their customers containing particulars of their success in cultivating the Sorghum this season, including the kind of soil, manure, time of sowing and cutting, weight of crop per acre, &c.—Reading, October 1.

DUTCH BULBS.

MILNE, ARNOTT, AND CO. are now sending out, in the best possible condition, HYACINTHS, NARCISSUS, TULIPS, CROCUS, and other Flower Roots, imported direct from some of the most celebrated growers in Holland.

A PRICED and DESCRIPTIVE CATALOGUE just published will be forwarded free upon application.

Finest Hyacinths, by name, 5s., 6s., 7s. 6d., & 9s. per dozen.

Select Collections of Bulbs from 10s. 6d. upwards.

The Nursery, Wandsworth Road, London, S.

DUTCH FLOWER ROOTS.

PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN, &c., respectfully announce the arrival of a fine Stock of DUTCH FLOWER ROOTS, and they are now prepared to execute orders for the same.

27, Great George Street, Westminster, S.W.

NEW SEEDS.

TRIFOLIUM INCARNATUM

ITALIAN RYE-GRASS

NATURAL GRASS SEEDS FOR PERMANENT PASTURE LAWNS, &c.

PETER LAWSON AND SON, the QUEEN'S SEEDSMEN, &c., are prepared to supply all kinds of SEEDS for AUTUMN SOWING of the best quality.

27, Great George Street, Westminster, S.W.

MR. EDWARD MILNER having constructed and laid out the Crystal Palace Gardens and Park, Sydenham, under the direction of Sir Joseph Paxton, and having managed them for the Company till last Midsummer (when owing to the pressure of other professional duties his engagement terminated), desires to express his acknowledgments to those Noblemen and Gentlemen who have honoured him with their patronage, and to state that he continues to undertake the execution of works of a similar character.

An active experience of upwards of 20 years enables Mr. MILNER to offer his services in the formation and improvement of Parks, Gardens, and Ornamental Grounds, also in preparing designs for Conservatories and other Horticultural Buildings; in establishing and thinning Plantations and Woods, with special reference to the trees most suitable for particular soils and aspects, the valuation of Timber, Draining, Road-making, &c.

Mr. MILNER is permitted to refer to Sir Joseph Paxton and to several Noblemen and Gentlemen for whom he has done work.—Address, EDWARD MILNER, "Oxford House," Anerley Road, Norwood, S.

SPLENDID JAPAN PINK,

DIANTHUS HEDDEWIGII.

MESSRS. E. G. HENDERSON & SON

OFFER for Sale SEED of this truly beautiful dwarf-flowering plant for the Greenhouse and Flower-garden, surpassing all others of its tribe, and for the exhibition of which a Medal and Certificate for Distinguished Merit was awarded to E. G. HENDERSON AND SON, the former at the Exhibition in the Royal Botanic Gardens, Regent's Park, and the latter by the London Horticultural Society. A full description of this species is given at p. 722 (*Gardeners' Chronicle*).

Seed Packets, 1s., 2s. 6d., and 5s. each.

NEW BULB CATALOGUE,

which will be forwarded on application, postage free, contains 80 pages, including the most ornamental sections and varieties of BULBOUS FLOWERS AND PLANTS for bloom in the Conservatory and Drawing-room, by Pot, Glass, or Vase culture, in their respective months from January to November; and also a very select and extensive List of the kinds best adapted for every department of the Flower-garden in early spring, summer, and autumn, with numerous practically-descriptive remarks upon their merit and adaptation.

An extensive and Select Collection of Herbaceous and Alpine Plants is attached to the above Catalogue.

E. G. HENDERSON & SON, Wellington Nursery, St. John's Wood, London, N.W.

SUTTON'S COLLECTIONS OF FLOWER BULBS.

N.B.—ALL GOODS CARRIAGE FREE TO ALL PARTS EXCEPT VERY SMALL PARCELS.

FOR OPEN GROUND.

COLLECTION No. 1 ... ... £2 2s.

24 Double Hyacinths	300 Crocuses, in 6 colours
50 Scarlet Ranunculus	100 Mixed Ranunculus
24 Double Anemones	24 Single Anemones
12 Pheasant Eye Narcissus	12 Dble White Narcissus
24 Van Thol Tulips	12 Parrot Tulips
12 Double Scarlet Tulips	12 Double Yellow Tulips
12 Choice Irises	12 Gladiolus
100 Double Snowdrops	12 Campernelle Jonquils
6 Crown Imperials	24 Fine Mixed Tulips

COLLECTIONS No. 2 and No. 3.

The above choice sorts in quantities proportionately reduced,

21s. and 10s. 6d.

FOR POTS AND GLASSES.

COLLECTION No. 4 ... ... £2 2s.

12 Hyacinths, by name	12 Double Sweet Jonquils
12 Polyanthus Narcissus, do.	12 Sweet Persian Irises
12 Tournesol Tulips	24 Dble Van Thol Tulips
12 Single Van Thol Tulips	12 Rex Rubrorum Tulips
6 dozen named Crocuses	6 Gladiolus, by name
1 Lilium lancifolium speciosum	12 Ixias, choice sorts
1 ,, ,, album	6 Dog's-tooth Violets
1 Amaryllis formosissima	3 Fritillarias
1 Cyclamen persicum	3 Achimenes

COLLECTIONS No. 5 and No. 6.

The above choice sorts in quantities proportionately reduced,

21s. and 10s. 6d.

SUTTON'S AUTUMN CATALOGUE

is now ready and will be sent post free on application. In this Catalogue prices are affixed to every article.

The best 12 HYACINTHS, by name, for pots or glasses, 9s. The second best 12 ditto, 6s. Mixed Double HYACINTHS for beds or borders, 3s. 6d. per dozen.

☞ *None but fresh imported Bulbs are kept on the premises.*

ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.

The Gardeners' Chronicle.

SATURDAY, OCTOBER 1, 1859.

MEETINGS FOR THE ENSUING WEEK.

THURSDAY, Oct. 6—Pomological ..... 2 P.M.

IT is generally admitted that the true progress of a nation in prosperity is to be measured better by the condition of such arts as bear upon domestic comfort than by reference to any amount of fiscal evidence. Assuming this to be true, then we must feel that the once sinking Colony of TASMANIA is rising rapidly to the same level as its parent. The Exhibition of all nations in 1851 in Hyde Park bore powerful testimony to its abundant resources in all that Nature produces without the aid of man.

An Exhibition of another kind on its own soil, in the month of April last, shows us distinctly that the skill of our countrymen in their antipodean homes is rapidly bringing out the capabilities of the Colony to bear the productions imported from the old world.

We perceive from the *Launceston Examiner* of April 12, that the Autumn Show of the Gardeners' and Amateurs' Horticultural Society took place in that month, simultaneously with an exhibition of the Northern Agricultural Society. The attendance of visitors in the afternoon, owing to the presence of country people, was unusually large, and in the evening there was a perfect crush. Besides 400 subscribers, admitted by tickets, 250 shillings were received for admission. The show of fruit is described as having been very superior; and the varieties to be more numerous every season.

The list of prizes tells us that an autumn show at Launceston in April is very like an autumn country show in England in September or October, except that it includes a few things which unreasoning fashion is driving out of the field with us. Thus we have Petunias, Fuchsias, Roses, Dahlias, China Asters, and Hollyhocks, with the addition of African and French Marigolds, Salpiglotts, Calceolarias, and Cockscombs. But as if to show that after all Tasmania will not become too much like old England, we find Heartsease there holding up their heads when with us they are drooping or gone.

Fruits were represented by Grapes, Apples, and Pears in profusion, Plums, Damsons, Mulberries, Peaches, Medlars, Quinces, Melons, Nuts, and Walnuts—and for these no fewer than 92 prizes were awarded. As to the sorts, they were such as would be found in the highest ranks of English exhibitions—Marie Louise, Winter Nelis, Napoleon, and Knight's Monarch Pears; Wellington, Dutch Mignonne, Court Pendu Plat, Kirke's Incomparable, Golden Harvey, Ribston Pippin, Nonpareil, Reinette du Canada and Margil Apples; Black Hamburgh, White Sweetwater, Muscat of Alexandria, and Black Frontignan Grapes. What more can the garden of an English nobleman produce, with the exception of Pine Apples, which are not mentioned? It may also be noted, in passing, that there is not in the list one single example of any native fruit having been taken into domestication. Is there really no plant in all Tasmania whose fruit can be amended by patience and skill?

Vegetables consisted of Cabbages, Turnips, Carrots, Parsnips, Onions, Potatoes, Peas, Kidney Beans, Gourds and Vegetable Marrows, Tomatoes, Capsicums, Lettuces, Celery, Spinach, Cardes Beet, and common Beet, Rhubarb (in autumn!), Artichokes, and Radishes. Oddly enough however there were no Cucumbers. Judging from the names the very best varieties of all these esculents are now in the gardens of Tasmania; so that the English correspondents of the colonists keep them well supplied.

We observe that, as has been already stated, 92 prizes were given for fruit; to which must be added 24 for flowers, and 90 for esculents—in all 206. It may interest their friends in England to know that of these prizes 16 were won by W. Johnstone, 21 by — Frazer, 10 by Mrs. Mackenzie, and 5 by Archdeacon Reibey; besides whom Hutchins, Bryant, Horne, Hurst, and Whatmore, seem to have particularly distinguished themselves.

Surely we cannot have been wrong in adducing this little event as a very gratifying proof of increasing Tasmanian prosperity.

No one has yet forgotten the outbreak of the Vine disease; how it seized upon the produce of our English Vineries, and rapidly spread over all the wine countries of Europe, covering the Vines and the berries with its snow white dust, and destroying the hopes of the cultivator. Nor have we ceased to remember how like it was in its action to the dreaded Potato disease, corroding the foliage, and corrupting the juices till the wine makers were actually driven from the wine press by the intolerable smell of putrid fermentation.

If the symptoms attending these two calamities were the same, so was the treatment of the cases by the public. In both instances, theories sprang up like Mushrooms from the spawn of perverted imagination. All sorts of causes were assigned to that whose cause no rational being ever attempted to explain. The less men knew of the subject the more eagerly they pretended to understand it. From the learned gentleman who solved the mystery by giving a new name to a well-known insect, just created as he seemed to think for the purpose of biting Potato leaves, down to the ignorant rustic who everywhere smelt out "that new-fangled stuff" called guano at the bottom of the mischief, we had quite a little squad of philosophers, each with his own notion of what made the Potatoes rot, and what would cure them. Even the medical ranks did not furnish a greater contingent to quarrel about the cause and cure of cholera.

We had hoped that this rage for explaining the inexplicable had burnt out, extinguished in its own ashes. But we see that the Vine disease has brought forth a new philosopher, to whose opinions we presume that our scientific friends on the other side of the Channel must attach some importance, since they have received a place in the Journal of the Horticultural Society of Paris.

A M. Casterat has discovered that the Vine disease is caused by poverty of soil, owing to the exhaustion of its mineral constituents, and especially of potash; or to the perspiration of the Vine being too active; or else to its being too sluggish; or else, or in addition, to the bad quality of the manure used in Vineyards. He thinks that soil may be exhausted by the Vine abstracting yearly from the soil more potash than the soil receives back; and he points out the Vineyards of Chablis and the Beaujolais as places where this occurs. In the Vineyards of Bordeaux moreover are Vine stocks more than a hundred years old, and they must have exhausted the soil. Then if the leaves of the Vine are so placed that they are badly ventilated and kept unduly damp, then, says M. Casterat, "perspiration is little or nothing, and *the result* of this is the commencement of decomposition"—a kind of logic which we do not often find in the intelligent writings of the French school.

We wonder that it should never have occurred to this ingenious gentleman that Vines have been exhausting land every hour since the day when Noah began to be a husbandman and planted a Vineyard. And yet the Vine disease is but six or seven years old. So that it is only after a lapse of some thousand years that soil has become deprived of its potash.

Or it might have occurred to him that Vine leaves have been unventilated and their perspiration checked for an equally long period; so that according to M. Casterat it has taken some thousand years to render them susceptible of such influences. In this respect, however, he would have learned something from a visit to an English Vinery, forcing in the month of February, for he would there have found that in an ill-ventilated atmosphere, damp enough to cause the tissue of leaves to rise up in blisters, Vines are not peculiarly liable to disease, perhaps less liable than elsewhere. The gardener, too, would have informed him that in such a forcing house neither he nor his forefathers ever saw the disease till it came down everywhere a few years since.

Did M. Casterat's notion rest upon any foundation it would lead to the inference that putting sulphur on the leaves and berries of a Vine is equal to putting potash into the soil, and to the most exquisite management of atmospheric humidity—rather an odd conclusion it must be owned. It is a fact, not a notion, that one of the worst cases of Vine disease in this country occurred to the late John Wilmot, of Isleworth, one of our most experienced market gardeners. His Vines, perfectly well managed, on a south wall, in thoroughly unexhausted land, became in a few days as white as if a miller had been covering them with flour. What had that to do with a deficiency of potash, or obstructed perspiration?

New Plants.

227. Calla? oculata.

C. oculata; acaulis, foliis oblongis cordatis obtusè sagittatis setaceo-acutis scapo brevioribus, spathâ erectâ cucullatâ campanulatâ apiculatâ basi subapertâ, spadice incluso undique floribus omninò nudis tecto superioribus masculis inferioribus fœmineis, antheris sessilibus inordinatim sparsis carnosis cuneatis poro duplici dehiscentibus vertice cereo dilatato, ovariis depressis basi mutuâ pressione angulatis bilocularibus ovulis utroque loculo geminis telâ spongiosâ crystallinâ immersis, stigmate sessili circulari simplici.

To what modern "genus" of the great order of Arads this plant may be referable it passes our skill to determine. With none of the characters assigned to their genera by Schott & Endlicher does it wholly agree, and it will possibly be regarded as another new type of structure, almost every species of Arad now being looked on as a "genus." For ourselves we prefer to place it in the old genus Calla, leaving it to be transferred elsewhere by others if they think it advisable. In foliage it resembles Richardia africana, except that it is smaller; colour and texture are the same. The spathe which rises above the leaves is about 3 inches long, and 1½ across the mouth; in form it is bell-shaped, with an oblique limb; in colour a clear, rich, yellowish green, with a deep purple eye like that of a Bladder Ketmia. Messrs. Veitch & Co. received it from Natal in 1857 with the following remarks:—"I send you bulbs of a yellow Calla, which, from its smallness and beauty, and being also hardy, will be much prized. You must not give too much water; it grows here in stiff marl and sand on high ground under shade, consequently merely damp soil, whilst the white grows in bogs." The plant exhibited was one taken up from the open ground in a west border, where it stood last winter without any shelter; it was a second flower, the first being larger; a plant also which bloomed in a pot produced a larger flower.

BEDDING PLANTS AT THE CRYSTAL PALACE.

Out of doors the grounds belonging to this establishment have been extremely gay this season. Both vases and beds in the terrace garden, though now somewhat tarnished by the weather, are nevertheless still highly attractive, the Scarlet Geraniums being extremely brilliant and showy. The vases, too, on account of their large size, have a truly noble appearance, and they are sufficiently numerous to be highly effective; they are filled with Trentham Scarlet, Commander-in-Chief, and Punch Geraniums, arranged in such a manner as to form perfect bouquets of flower. Round the two large semicircles on the terrace the beds are planted with Cottage Maid, a pretty horseshoe-leaved scarlet Geranium; Trentham Scarlet Geranium, which is excellent both for early and late display; edged with Flower of the Day Geranium and variegated Alyssum. The little circular mounds round the bases of the Araucarias and Deodars, which have been so liberally planted in this part of the garden, are occupied by the dwarf-growing Lobelia ramosoides grandiflora, whose dense masses of charming blue flowers are admired by all who see them, and harmonise well with the gay scarlet beds with which they are associated. Beds in straight lines, 100 yards in length along the sides of the principal terrace walk, are planted as follows:—In the centre is Trentham Scarlet Geranium, with a broad belt of Purple King Verbena round it, and edged with Tropæolum Lobbianum grandiflorum, or what is usually called Crystal Palace Nasturtium. These form beautiful masses, which are varied and broken up here and there to advantage by little circular beds round Deodars and Standard Acacias filled with white Alyssum, variegated Geraniums, such as Flower of the Day, Alma, and Brilliant, and Verbenas. The effect of the chain beds round the sunken panels at each end of the terrace garden has been greatly impaired by the failure of the yellow Calceolarias, which here as elsewhere has occurred to a very considerable extent. The centre consists of Scarlet Geraniums surrounded by a belt of Yellow Calceolarias and edged with Mangles's Variegated Geranium. On the raised ground in the neighbourhood of this chain are square masses of Flower of the Day Geranium mixed with variegated Alyssum. Others consist of Tropæolum Lobbianum grandiflorum edged with variegated Alyssum and Flower of the Day Geranium. A third is occupied by Lady Mary Fox Pelargonium edged with the two last-named plants. A fourth is filled with Lucia rosea Geranium, and edged with white Alyssum and Flower of the Day Geranium. The clumps of Rhododendrons on the terrace have also all been bordered with Geraniums and Calceolarias, which serve to beautify and "light them up," as it were, a little at this season of the year. The robustness and beauty of the Geraniums in the terrace garden especially have been the subject of general remark. They were planted in well prepared soil in the first instance, but in addition to that great attention has been paid to pinching in the leading shoots and removing all decayed flowers and stalks as soon as their beauty is over. This has tended greatly to invigorate and improve their appearance. To give some idea of the time expended in this kind of work, we may state that the entire gardens contain about 150,000 plants, and that these have all to be gone over and examined in the manner just mentioned not less than twice a week.

The more effective beds on either side of the main walk leading from the terrace towards the water temples are planted as follows:—1, a square, has Crystal Palace Scarlet Dahlia, Purple Zelinda Dahlia surrounded with blue Ageratum, yellow Calceolaria, Trentham Scarlet Geraniums, and edged with the grey Cerastium tomentosum. The effect of this arrangement is in every way excellent. 2, a circle, is filled with Lady Mary Fox Pelargonium, Calceolaria amplexicaulis, Shrubland Rose Petunia, Heliotrope, and is edged with blue Lobelia. 3, likewise a circle, is planted with Boule de Neige Geranium is edged with blue Lobelia, and is also very striking. Another white bed consisted of Nierembergia gracilis. We noticed that some of the circular beds in this part of the garden were edged with variegated Ageratum, which, when pinched in as this was so as not to allow it to flower, forms as compact an edging as that of Box. Other beds had their centres filled with it pinched in in the same manner, and surrounded with an edging of flowering plants. In large places like this such beds may be admirable for the sake of variety; but the propriety of introducing them into smaller places might be questionable. One of the most brilliant masses in the whole grounds was one of Cottage Maid Geranium, edged with Cerastium. Another with the same kind of edging, filled with the old compactum Geranium, was however equally good, and literally covered with fine trusses of flowers. A bed of Dahlia Zelinda was literally a mass of purple flowers. This had been allowed to grow upright in its natural way;

when pegged down it does not seem to bloom so freely. Another bed of the Crystal Palace Scarlet Dahlia was also in beautiful condition; the same remark also applies to this variety.

Round the Rosery the banks are literally masses of flowering plants, which however in some places showed the ill effects of the dry weather to which they have been subjected this season. Some of the circles dotted about this part of the grounds are also very pretty. One of the best of them was filled with Tropæolum Lobbianum grandiflorum. This, when pegged down and kept neatly within bounds, makes a capital bed whose colour is that of a pleasing orange scarlet, striking, but still by no means oppressive to the eye. Another consisted of white Alyssum and Flower of the Day Geranium edged with pink Ivy-leaved Geranium. A third had the centre filled with yellow Calceolarias, edged with Tom Thumb Geraniums. A fourth filled with Mangles's Variegated Geranium has been fine, but its beauty is now over. A fifth contained some hybrid variety of Veronica speciosa, which, though a good late blooming plant for many purposes, is too sombre in a bed to be effective. It was edged with V. angustifolia. Inside the Rosery the beds have been excellent; one of the best had a mass of Purple Nosegay Geranium in the centre, then a belt of yellow Calceolarias, round which were broad bands of Trentham Scarlet Geranium, Blue Bonnet Verbena, and Lucia rosea Geranium, the whole being edged with the white Verbena called Mrs. Holford. Beds of Salvia patens, though a charming blue, have proved unsatisfactory, and will probably not be tried again.

Near the railway station was an admirable mass of Purple Nosegay Geraniums edged with Cerastium. The heads of bloom on this Geranium were unusually large and the effect good. A good Verbena bed consisted of Robinson's Scarlet Defiance in the centre, edged with Blue Bonnet and Mrs. Holford, which is one of the best of whites. The large round Dahlia clumps to the left when passing from the railway station to the centre transept have succeeded well this season. They are edged with yellow Calceolarias and Scarlet Geraniums, and are very effective. The freshness and beauty of these, however, as well of many of the other beds, is somewhat impaired by the wet and stormy weather we have lately experienced; nevertheless, on account of the grounds here lying so high in ordinary seasons, the plants generally look well even as late as the end of October or beginning of November.

The different trees and shrubs throughout the grounds have thriven remarkably well. Most of the Conifers, especially the Deodars, have made great progress. Among others we noticed an excellent Wellingtonia not less than 7 feet high, growing in great luxuriance. The Araucarias also seem now to have got quite established though their progress in growth is but slow.

Inside the Palace two plants of Dicksonia antarctica opposite the Sheffield Court have acquired a size and vigour which is quite remarkable. They are both truly noble specimens, and would indicate that other Ferns might be introduced more liberally into the beds and borders here than they are, and with evident advantage. The various Musas and other plants in the warm department have acquired considerable size, and their large leaves add richness and beauty to that part of the building. The Aquaria, both warm and temperate, are really charming. The different Water Lilies with which they are well stocked grow with a vigour which is quite astonishing, and go when one will some of them, either red, white, or blue, are almost always in flower.

We may add that the keeping and general management of the place, both out-doors and in, reflects the highest credit on Mr. Eyles, whose skill as one of the most successful of our cultivators is universally acknowledged. *M.*

Home Correspondence.

Remarkable Conifers.—Few persons I imagine have had the opportunity of beholding finer specimens of the Cembra Pine and of Abies canadensis (the Hemlock Spruce) than those now growing in the pleasure grounds at Osberton Hall. The Pinus Cembra is nearly 50 feet in height, and measures at 20 feet from the ground 60 feet in circumference, and the trunk at bottom girths 8 feet. Few of the Pinus tribe are more beautiful than this; its handsome conical shape, and short rigid horizontal branches, combined with its colour, render it particularly attractive. It certainly deserves more extensive cultivation than it receives, for planted as a single specimen it is really magnificent. Opposite this tree stands the Hemlock Spruce above alluded to; its height is nearly equal to that of Cembra, and it measures at 1 yard from the ground 160 feet in circumference; its graceful boughs bending down to the ground and forming one of the most delightful objects I ever saw. Both specimens are in the best of health and growing vigorously. The soil these trees are in is very light, and the subsoil sand and gravel. *Edward Bennett, Gr. to G. S. Foljambe, Esq., Osberton Hall, near Worksop, Notts.*

Bowood Muscat Grape.—Equally with "J. B." I feel some surprise that there was no exhibition of this Muscat at the late Crystal Palace Horticultural Show. Perhaps it has not been sufficiently long before the public, or come into general cultivation. No doubt both Mr. Spencer and Mr. Thompson are in a position to show fine specimens, but there are many establishments like those of Bowood and Dalkeith, from which fruit is never publicly exhibited. When I expressed my opinion that the Bowood Muscat might be grown with Hamburghs in an ordinary Vinery I only spoke from my own experience. Three years since I inarched it upon a Hamburgh, and this being the first of its fruiting I have allowed it to bear one bunch. All I can say is that at the time of its flowering, which was, I think, in April, when we had little sun, and the weather was cold and foggy, notwithstanding I had no fire-heat, and the temperature of the house was quite low, it set all its berries exceedingly well, much better than a White Muscat of Alexandria, upon which I bestowed all the heat I could command. It promises to ripen well with natural sun heat, aided by a little fire at night, and as far as I can judge seems much less disposed to shank than its congener the Muscat of Alexandria. I have no doubt in my own mind that it will fully realise the expectations of those who will give it a trial. There is another new Grape, of which much has been said, and of which there was a flattering drawing in the "Florist"—the Muscat Hamburgh. It has not that I know of been exhibited this summer. Perhaps however to sustain the high character which has been given of it, and to make assurance doubly sure, it will yet make its appearance, and so dispel all doubt respecting it. An inquiry is made about another Grape, the Lady Downe's seedling. I have it fruiting with me this year, and if I may venture to give an opinion about it, it is a noble Grape, of excellent flavour, and in regard to keeping long yielding to none, whilst it is greatly superior to some in being a certain bearer and free setter. *H. M., Sleaford.*

Cure for Mildew.—Five years ago I erected a greenhouse, 32 feet by 16 feet, and planted a Vine to every rafter. These grew vigorously, but without, I would observe, the application of animal matter to the border, and bore fruit in due course. The year before last mildew appeared, but not to a great extent. Last year, however, it came with such virulence as to baffle the repeated applications of sulphur, to tire the patience of myself as well as my gardener, and ultimately, in spite of all our efforts, to spoil two-thirds of the crop. Up to this point the house had been kept stocked with flowers; in the spring Camellias and Azaleas in the centre pit, and Geraniums and other things on the front shelf, after which the pit was filled with Fuchsias and the shelf with Balsams. This year the disease again made its appearance, but in addition to sulphur only once used and that dry, a small increase was made to the fire-heat, the flowers were removed from the front shelf, but the pit remained full, and quick lime was freely strewed about and left under the front shelves by the pipes. The result has been most satisfactory—not a berry has been injured and a fine and good crop is now hanging. Whether the combination of remedies has effected the cure, or any one alone, I am at a loss to decide; the facts of the case, however, may be useful to some of your readers. I should remark that there is a strip of earth between the tiled walk in front and the pipes, which induces me to attribute a large portion of the agency to the lime in destroying the stagnant atmosphere created in the early part of the summer before the fires were lighted. *A. M., Dorsetshire.*

Gardeners and their Employers.—There is a great deal of good sense in the remarks of your correspondent "H. A. M. D." respecting gardeners and their employers. I differ from him entirely as to its being desirable to combine the offices of steward and gardener. A friend of mine who had a large establishment said to me many years ago, when I was asking his advice about a gardener, "At all events don't have your steward and gardener in one, for it is the worst thing you can do." I have often thought of his words and how sound his advice was; for I fancied I knew better than he did, and made the same man gardener and steward; it would not work. I have seen others try it, and in no one case have I known it to answer. "No man can serve two masters." The farm must either be neglected for the garden or the garden for the farm. But while I differ from your correspondent in this point I agree with him entirely in his other remarks. It very often happens that gardeners have not fair play. Their employers expect "bricks without finding the straw," and then say "ye are idle," or "ye are ignorant." When flowers and fruit are required in abundance and in succession, there must be houses in proportion to what is demanded, and no lack of hands. And again, when a large extent of garden and pleasure ground is expected to be kept in first-rate order, how utterly impossible is this without a large staff of men. It is the "first-rate order" which takes up the time and the labour. A large breadth of ground may be kept after a fashion with few hands; but I quite agree with your correspondent that if a gentleman has a garden larger than he has the means to keep up thoroughly well, the sooner he reduces it to the level of his means the more satisfactory for all parties concerned. *An Employer.*

Abies Douglasii.—Notwithstanding Mr. Barron's experience and with every respect for his opinion on all matters Coniferous, I think he is at fault in making more than one variety of Abies Douglasii (see your Number for August 20). Sixteen years ago I had charge of two plants from Douglas's first consignment, one answering Mr. Barron's description of Drummond's and the other that of Douglas's variety, viz., dark green and silvery, and a "warm yellow green," but this "warm yellow green" must have arisen from the less favourable locality in which it was planted, the dark variety being in a rich free soil with plenty of natural moisture, but not too much, the "warm yellow green" on an abrupt rise or bluff, such as would apparently carry off the rains before the roots had time to satisfy themselves, and the soil in the immediate vicinity of the plant wearing a sort of hardened appearance, and of that nature that would not readily allow the rains to permeate or the roots to spread. The consequence was that the tint of this tree compared with others was a sort of sickly or "warm yellow green," with no silvery hue under the leaf, but now that the roots have in all probability got beyond this unfavourable zone or belt it is assuming the dark green hue and bright silver on the under side of the leaf like the others, a proof that both are the same variety. I may add that the seeds from each tree produce plants bearing the characteristics of both, the dark variety furnishing plenty of the "warm yellow green," and *vice versâ*. No plans have been tried to induce fertility, as we consider them fertile enough, one tree in 1853 having yielded 2000 cones, which produced 5½ lbs. of good seed, and last year 1300 cones and 2¼ lbs. of good seed. The other tree, "the warm yellow green," produced about a tithe of that quantity, and a much larger per centage of fertile seeds. There being a great many trees of all ages from 1 to 30 or 33 years, of all sizes from 6 ins. to nearly 60 feet, of all shades from the dense green to the almost sere and yellow, of every rate of growth from not more than ½ inch to 3 feet per annum, in every description of soil from the poorest moorland to the richest alluvial deposits—below the coal measures—in every situation from the most exposed to the most sheltered, the most open to the most crowded; on every density of level from the bank of 40° to the level plain, from the lowest sandy soil to the stiffest clay, and on every altitude from 20 to 30 feet to 200 or 600 feet, and every aspect from the cold north to the sunny south; and wherever a free vigorous growth is obtained the dark green tints prevail, and where a stunted or less free growth exists they invariably assume the "warm yellow green." *Knollibus.*

Melley's Manifold Potato.—This is confidently expected by Mr. Robertson, of Powerscourt, to prove one Potato yet capable of resisting disease. It certainly presents a striking contrast in the fields and gardens around here. While the stalks of all others are quite dead weeks ago, this variety stands up in full luxuriance, blooming and seeding, and to all appearance equal to what the Potato was in its most vigorous and healthful days. Its keeping and cooking properties have yet to be tested. It is evidently a new and distinct variety, with every appearance of proving valuable, and I think this may be a favourable time for calling attention to it. *J. Buckham, Thornhill Bray, Dublin.*

Mulberry.—It is stated in Loudon's "Encyclopædia of Gardening," p. 927, that "any branch of a Mulberry firmly inserted in the ground like a post will grow." In the autumn of 1858, and again in the spring of this year, I had branches sawn off a Mulberry tree and placed firmly in the ground, and made fast to stout poles to prevent the wind disturbing them. There is however no appearance of growth in either case. Can any of your correspondents give me any information on the subject beyond what Loudon gives as to the time when the branches should be taken off, or the mode of cutting them; or can any one suggest the probable cause of my failure. I may add that one of the branches had water given it from time to time, through the dry weather of the past summer. *A Subscriber, Bath.*

Wellingtonia.—We have here many Wellingtonias varying from 1½ to nearly 10½ feet in height. To me this season it has been an interesting employment to watch their daily and weekly growth, their periodical rests, the turns which their leading shoots take when starting to grow again, and the remarkably vigorous growth of some of our largest and most uniform specimens. When I walk through the Pinetum and observe such plants as Pinus insignis, excelsa, and Lambertiana, Abies Douglassi, Pinsapo, and the delicate forms and varied hues of some of the lower growing kinds of Conifers, I am led to wonder what is to become of those graceful ornaments if we allow our little family of Wellingtonias to stand and make their annual strides, and fear lest in a few years we shall be obliged to cut them away in order to allow the giants of the forest to extend their noble branches upward and outward unimpeded by their neighbours who vie with them in colour and form, but not in altitude and strength. One plant of the many we possess which I consider deserves special notice is the eldest of the family; it was a seedling 6 inches high when planted in January, 1854, and when measured September 20, 1858, was 8 feet 1 inch high, 6 feet was its greatest diameter, with 1 foot 6 inches girth, and when measured September 20, 1859, its height was 10 feet 5 inches, its greatest diameter 10 feet 3 inches, and girth 2 feet 3 inches. In the second week of July last the leading shoot grew at the rate of ¼ inch a day, and then took eight days rest, and started to grow again. But what is most remarkable the growth of this plant is unlike that of all the others we possess, the point of the leading shoot is always 6 inches in advance of the branches, and when growing makes a bend, which affords the tender tip a little protection. During its resting period it gradually becomes erect, but not quite straight, and on the whole length of the bole can easily be seen those curves or bends made when the plant was growing fast, so that if the stock was perfectly straightened it would stand many inches higher than it does at present. It presents no symptom of disease. It is growing in a very rich sandy loam, and fully exposed to wind and weather

from every quarter. Would your correspondents who possess Wellingtonias be good enough when forwarding their dimensions to say if anything remarkable has been noticed in their growth during the past summer? *J. Moon, Gardener to R. E. Thompson, Esq., Kenfield Hall, near Canterbury.*

Chasselas Musqué Grape.—In the report of the proceedings of the British Pomological Society at p. 775, it is stated that this Grape seldom or never cracks except from too much heat. This statement certainly surprises me; I attribute the cracking to a sudden accession of moisture, particularly after a season of drought. The same cause produces the same effect on other fruits, as Greengages, Figs, and Gooseberries. The obvious mode of cure is to supply sufficient moisture both to the roots and atmosphere while the Grapes are swelling, and as soon as they begin to ripen, to dry them off. In order to do this effectually artificial warmth is necessary in our climate. I had a Chasselas Musqué in a Vinery without heat. Its roots unfortunately were outside, and the Grapes split. I placed a framework of boards over the roots, but the damp must have got in laterally, and the Grapes still split. I then destroyed the Vine, and planted another inside the house. This year I have not seen a single split Grape, as the roots are kept dry, but from the atmospheric moisture, which I am unable to control, the berries, after ripening and showing an amber colour, often rot at the point where they are connected with the footstalk. Some years' experience in the growth of other Grapes in the same Vinery has led me to form an opinion as to the cause of shanking. I believe it commonly to arise from a sudden reduction of temperature. At least I have observed, year after year, that when the Frontignans are ripening, if the wind veers to the north with rain, they shank immediately. We must suppose that the footstalks are peculiarly sensitive during the ripening period, and the weaker the vitality of the plant, the less is it able to resist deleterious influences. Hence, if a Hamburgh or other hardy Grape be planted in an ill drained or otherwise unhealthy border, the plant will be liable to suffer from a reduction of temperature which it could, under more favourable circumstances, have withstood. I find that bunches of Frontignans excessively thinned are more liable to shank, probably from want of the protection afforded by the berries. *G. S.*

Culture of Mushrooms on Lawns.—Some months ago there was a discussion in your paper as to the impossibility of growing Mushrooms on Loudon's plan of inoculating lawns with spawn. If done simply as Loudon directs it has always failed with me. But if a square of turf be lifted, and a few inches of the soil removed, and old manure rammed down in its place, then the spawn put into this manure and covered over with the turf will, in ordinary seasons, produce a crop. But I cannot recommend the plan on a well-kept lawn, for the Grass will grow rank and coarse for several years afterwards. *G. S.*

Transplanting Evergreens.—I can bear practical testimony to Mr. Groom's statement respecting transplanting evergreens in summer. In the middle of last July I had moved a quantity of evergreen Oaks from 4 to 7 feet in height; these trees had grown without lifting in the same place five years. On being removed the young shoots drooped for a day or two, but with twice sprinkling and four times watering they got upright, and every plant succeeded. I need not say that this is one of the worst trees to move, and I believe that if the operation had been performed at the usual time, scarcely one of the plants would have lived. I also had planted three years since a quantity of Pinus austriaca, large trees, in the latter end of June. These succeeded better than any I ever had planted before, either in the autumn or in the spring, though some died, principally through there not being any water to water them with. I intend giving the principle a more extended trial in my nursery next summer. *George Davison, Hereford.*

Gold Fish.—I should feel greatly obliged if any of your readers would kindly advise me on the following points. I have a basin holding about 1200 gallons of water in an exposed situation containing gold fish. These have lately spawned, and the youngsters are now about an inch long, some smaller. Are they subject to the attack of the old fish? Do they require feeding? and what food? Will they live in the pond (which is always frozen over, although the ice is kept broken) during the winter? Or if taken out, where and how can they be kept? *Old Subscriber, Maidstone.*

The Acherontia Atropos, or Death's Head Moth.—This season has produced in this locality many specimens of this very interesting insect, both in the larva and pupa state, many of which are now forming their last stage of metamorphosis, the imago. The place sought for them was a Potato field, having previously met with the larvæ there. I have now six or eight perfect insects. The most curious act in their natural history is a faint noise they make like unto a young mouse, if interfered with by moving them. The specimens are beautiful, and in this part of the country rare. *T. F., near Newbury, Sept.* 28.

Large Pears.—Although the past summer has not been of the most favourable character for the growth of fruits in general, a few have been of unusual size; this however has been the exception. In point of flavour I should say such fruits as Peaches, Nectarines, Figs, &c., have been unsurpassed. The crop of Pears is a very partial one, but our neighbours tell us we possess more than a neighbour's sprinkling; many are pretty large. The following are the weights of two or three which I gathered to-day:—Duchesse d'Angoulême, 1 lb 10 oz.; Napoleon, 10 oz.; Passe Colmar, 8 oz. The Duchesse d'Angoulême was gathered from a small tree on the Quince stock trained against a dwarf wall, with a S.W. aspect. The Napoleon was also from a wall, but the tree is large, and for some years had grown strongly, bearing but little fruit, most of which were either badly spotted or cracked. Two years ago it was root-pruned, and the roots which had gone deep were raised, by placing old bricks under them; this year it has borne a tolerable crop, many of which are equal to the one weighed, and beautifully clean. *W. S. Symons, Carclew, Sept.* 28. [The weight of this Duchesse d'Angoulême was surprising. The heaviest of which we have any record weighed 21½ oz. and was grown in Guernsey. The heaviest Chaumontel was also Guernsey born, and weighed only 24 oz. Greater weights than these have only been gained with Kitchen Pears, such as the Catillac and Uvedale's St. Germain.]

Large Mushroom.—On Tuesday September 27, I cut a Mushroom in one of my fields at Loughton, Essex, measuring 11 inches in diameter, of perfectly circular form, the underside being quite level and the top domed; it weighed 1 lb. 10 oz. A similar one weighing 1 lb. 5 oz. was cut from the same field a few days previously. When cooked they were found excellent. *John Hill, 3, Bartholomew Lane, E.C*

Moss on Walks.—In one of the early Numbers in your Vol. for 1841, page 36, there is a letter from Prof. Henslow, recommending the use of sulphate of copper for destroying Moss on gravel walks, and in page 753 of the same volume, it is recommended for preventing the growth of Moss on soft sandstone. Can any one say what proportions of water should be added to the saturated solution of the sulphate? *An Original Subscriber, Tonbridge Wells.*

Societies.

Horticultural: *Sept.* 22.—At a meeting of the Floral Committee which was held on this occasion several highly interesting new plants were exhibited by Messrs. Low, of Clapton. Among these, Gonatanthus, or Caladium cupreus was remarkable for its strikingly handsome bronzy-tinted leaves, and its dwarf though vigorous growth. A species of Sphærostema, a climbing plant with fine grey mottled leaves, was also very handsome. Myrsine picta had lance-shaped, serrated leaves, purplish, with a white central rib. These were all recent importations from Borneo. A beautiful gold-veined Anæctochilus (Macodes petola), from Java, quite new, was also exhibited by the same firm, who had, moreover, several interesting Ferns, which as they were not fully developed we shall probably see again. Along with these came a group of dwarf hybrid variegated Begonias, into which the fresh blood of B. Thwaitesii had been infused with good effect; of these the varieties called Lowii, Gem, and Zebra, all smaller growing than the now abundant varieties of Rex, were particularly beautiful. Messrs. Parker & Williams, of Holloway, also had a batch of seedling Begonias, among which blanda was the most novel in character and the most beautiful in marking. Several seedling Dahlias were exhibited, but the only award made was to Miss Sarah Boyce, shown by Mr. G. Rawlings, which had been commended at one of the early meetings of the season. A good dwarf, sturdy, horse-shoe-leaved, cerise-scarlet Pelargonium was shown by Mr. Kinghorn, of Sheen Nursery, Richmond.

British Association at Aberdeen.—[We condense the following scraps of information likely to interest our readers from the full and admirable report in the columns of the *Athenæum*.]

Arrangement.—A large and pleasant meeting began on Wednesday September 14, at Aberdeen, under the immediate auspices of the Prince Consort, whose speech occupied the evening, and whose presence was rendered still more gracious by an invitation of the members to an excursion and lunch at Balmoral during the week. The old Scottish loyalty broke out in the counties adjoining Aberdeenshire and Kincardineshire. Two thousand tickets were speedily sold, and by Tuesday morning every available nook in the Music Hall being filled, the sale of associate tickets had to be stopped. Here was a flush of prosperity! The local arrangements were admirable,—reviving dreams of that old Scottish hospitality so amusingly celebrated by Ben Jonson and Taylor the Water Poet. The Clubs and News Rooms were generally thrown open to the scientific visitors. Non-resident members of the Association got admission to the Northern Club, and the Union Club, Market Street, without the forms of introduction. The committees of the Athenæum News Rooms and of the News Rooms, Corn Exchange, opened their rooms to all members of the Association on producing their tickets. A crowd of exhibitions also were open to members on producing their tickets, such as the Exhibition of Historical Portraits and Objects of Antiquity, in the Music Hall Buildings; the Photographic Exhibition, in the Music Hall Buildings; Collections illustrating the Geology of the North of Scotland, in the Museum of Marischal College; and the Horticultural Exhibition. King's College, Marischal College, Free Church College, Advocates' Hall, Medico-Chirurgical Society's Library and Hall, and the various prisons, reformatories, and asylums were likewise opened, as were also most of the great manufactories. The company from a distance was large and brilliant; the papers promised of scientific importance. Nothing was wanting to make the meeting at Aberdeen pleasant and memorable. Before the opening of the doors of the Music Hall the number of tickets issued to the public amounted to more than 2500.

The Nature of Inductive Science.—To define the nature of science, to give an exact and complete definition of what that science, to whose service the Association is devoted, is and means, has, as it naturally must, at all times occupied the metaphysician. He has answered the question in various ways, more or less satisfactorily to himself or others. To me, science, in its most general and comprehensive acceptation, means the knowledge of what I know,—the consciousness of human knowledge. Hence, to know is the object of all science; and all special knowledge, if brought to our consciousness in its separate distinctiveness from, and yet in its recognised relation to the totality of our knowledge, is scientific knowledge. We require, then, for science—that is to say, for the acquisition of scientific knowledge—those two activities of our mind which are necessary for the acquisition of any knowledge—analysis and synthesis: the first, to dissect and reduce into its component parts the object to be investigated, and to render an accurate account to ourselves of the nature and qualities of these parts by observation; the second, to recompose the observed and understood parts into a unity in our consciousness, exactly answering to the object of our investigation. The labours of the man of science are therefore at once the most humble and the loftiest which man can undertake. He only does what every little child does from its first awakening into life, and must do every moment of its existence; and yet he aims at the gradual approximation to divine truth itself. If, then, there exists no difference between the work of the man of science and that of the merest child, what constitutes the distinction? Merely the conscious self-determination. The child observes what accident brings before it, and unconsciously forms its notion of it; the so-called practical man observes what his special work forces upon him, and he forms his notions upon it with reference to this particular work. The man of science observes what he intends to observe, and knows why he intends it. The value which the peculiar object has in his eyes is not determined by accident, nor by an external cause, such as the mere connection with work to be performed, but by the place which he knows this object to hold in the general universe of knowledge, by the relation which it bears to other parts of that general knowledge. To arrange and classify that universe of knowledge becomes therefore the first, and perhaps the most important, object and duty of science. It is only when brought into a system, by separating the incongruous and combining those elements in which we have been enabled to discover the internal connection which the Almighty has implanted in them, that we can hope to grapple with the boundlessness of His creation, and with the laws which govern both mind and matter. The operation of science then has been systematically to divide human knowledge, and raise, as it were, the separate groups of subjects for scientific consideration into different and distinct sciences. The tendency to create new sciences is peculiarly apparent in our present age, and is perhaps inseparable from so rapid a progress as we have seen in our days; for the acquaintance with and mastering of distinct branches of knowledge enables the eye, from the newly gained points of sight, to see the new ramifications into which they divide themselves in strict consecutiveness and with logical necessity. But in thus gaining new centres of light, from which to direct our researches, and new and powerful means of adding to its ever-increasing treasures, science approaches no nearer to the limits of its range, although travelling further and further from its original point of departure. For God's world is infinite; and the boundlessness of the universe, whose confines appear ever to retreat before our finite minds, strikes us no less with awe when, prying into the starry crowd of heaven, we find new worlds revealed to us by every increase in the power of the telescope, than when the microscope discloses to us in a drop of water, or an atom of dust, new worlds of life and animation, or the remains of such as have passed away. * * * * I will not weary you by further examples, with which most of you are better acquainted than I am myself, but merely express my satisfaction that there should exist bodies of men who will bring the well-considered and understood wants of science before the public and the Government, who will even hand round the begging-box and expose themselves to refusals and rebuffs to which all beggars are liable, with the certainty besides of being considered great bores. Please to recollect that this species of bore is a most useful animal, well adapted for the ends for which Nature intended him. He alone, by constantly returning to the charge, and repeating the same truths and the same requests, succeeds in awakening attention to the cause which he advocates, and obtains that hearing which is granted him at least for self-protection, as the minor evil compared to his importunity, but which is requisite to make his cause understood. This is more particularly the case in a free, active, enterprising, and self-determining people like ours, where every interest works for itself, considers itself the all-important one, and makes its way in the world by its own efforts. Is it, then, to be wondered at, that the interests of science, abstract as

science appears, and not immediately showing a return in pounds, shillings, and pence, should be postponed, at least, to others which promise immediate tangible results? Is it to be wondered at, that even our public men require an effort to wean themselves from other subjects in order to give their attention to science and men of science, when it is remembered that science, with the exception of mathematics, was until of late almost systematically excluded from our school and university education;—that the traditions of early life are those which make and leave the strongest impression on the human mind, and that the subjects with which we become acquainted, and to which our energies are devoted in youth, are those for which we retain the liveliest interest in after years, and that for these reasons the effort required must be both a mental and a moral one? A deep debt of gratitude is therefore due to bodies like this Association, which not only urges the wants of science on the Government, but furnishes it at once with well-matured plans how to supply them with the greatest certainty and to the greatest public advantage. We may be justified in hoping, however, that by the gradual diffusion of science, and its increasing recognition as a principal part of our national education, the public in general, no less than the Legislature and the State, will more and more recognise the claims of science to their attention; so that it may no longer require the begging-box, but speak to the State, like a favoured child to its parent, sure of his parental solicitude for its welfare; that the State will recognise in science one of its elements of strength and prosperity, to foster which the clearest dictates of self-interest demand. *Opening Speech of his Royal Highness Prince Albert, President of the Association.*

Humboldt.—If the activity of this Association, such as I have endeavoured to describe it, ever found or could find its personification in one individual—its incarnation, as it were—this had been found in that distinguished and revered philosopher who has been removed from amongst us in his 90th year, within these last few months. Alexander von Humboldt incessantly strove after dominion over that universality of human knowledge which stands in need of thoughtful government and direction to preserve its integrity; he strove to tie up the *fasces* of scientific knowledge to give them strength in unity. He treated all scientific men as members of one family, enthusiastically directing, fostering, and encouraging inquiry, where he saw either the want of, or the willingness for it. His protection of the young and ardent student led many to success in their pursuit. His personal influence with the courts and governments of most countries in Europe enabled him to plead the cause of science in a manner which made it more difficult for them to refuse than to grant what he requested. All lovers of science deeply mourn for the loss of such a man. Gentlemen, it is a singular coincidence that this very day on which we are here assembled, and are thus giving expression to our admiration of him, should be the anniversary of his birth. *The Prince's Opening Speech.*

(To be continued).

Notices of Books.

Geology in the Garden, or Fossils in the Flint Pebbles. By the Rev. Henry Eley, M.A. Bell & Daldy, 1859. 12mo. Pp. viii and 212. Tab. lith. xii.

This is a very pleasing little book and one which will repay a perusal to such persons as are not deeply read in Geology. It contains in fact far more than it promises at first sight. Flint pebbles may be expected to turn up in the garden in some of our eastern, southern, and midland counties alone, but the interest of the book is not confined to the fossils which may chance to be imprisoned in the flint stones or to surround them in the form of a chalky powder. The author in his desire to give a complete history of his favourite minerals enters into geological questions relative to their formation, the strata in which they are contained, the manner in which they have been drifted or transported over the surface of the soil, which are directly or indirectly applicable to other minerals, and which contain a large portion of the general facts presented by geology. Indeed had he entered upon the subject of the formation of the primitive and volcanic rocks, little would be wanting to make the work an excellent introduction to geology.

Such observers of nature indeed as may chance to live in districts where flints abound may find employment for years in the study of the various organisms, whether animal or vegetable, which flints have preserved in a greater or less degree of perfection. We suspect however that the members of the vegetable world are few in comparison. Desmidiaceæ are scarcely found in salt water at all, and as most of the fossils which flints contain are marine, unless we suppose that the habits of those curious Algæ in ancient days were different from what they are now, we must assign to the Xanthidia some different origin from that of the spores of Algæ. This however is a mere matter of opinion, and there are high authorities for either view.

Mr. Eley touches with much good sense upon the theological questions which are involved in geology, and we wish that he had gone a little deeper into the subject. It would be a great advantage to have the real difficulties attendant on geological consideration fairly stated. The day is past when any attempt to reconcile the Scripture account of the Creation and subsequent Deluge with the appearances presented to the geologist, can bring conviction to any mind already disposed to doubt. The wisest course we are convinced is to state the case plainly, and then to show that the difficulties involved in it are not such as ought to disturb any sensible mind in its reliance on the great truths of Christianity. There is no fear for truth, but distortion of truth is always dangerous, as it leaves an impression that there is a want of simple confidence on the part of those who distort it. No one is disturbed because Scripture contains statements contrary to our present state of knowledge of the planetary system to which we belong. A person who should be turned aside from his faith by such considerations would justly be thought a simpleton, and the same argument applies to the difficulties of geology. We should feel much gratified if these remarks should lead our author to take up the subject as an especial matter for future instruction. Meanwhile we recommend his little book to our readers, as one whose principles are sound, and from which, however unpretending it may be, a good deal of instruction and entertainment may be derived. *M.*

Natural History for Beginners. By James Owen. (Longmans.) Parts 1 & 2. These form a portion of the Rev. G. R. Gleig's school series. They are abundantly illustrated with small woodcuts, and have not only a useful glossary, explaining the meaning of technical words, but a good index. We suppose they will be found in most schoolrooms.

The Biblical Reason Why (Houlston & Wright) is one of those question and answer compilations which find favour with a certain class of readers. There are 324 pages of this kind of matter upon subjects mentioned in the Bible, and a good many woodcuts.

We have before us the fourth volume of Mr. Stainton's *Natural History of the Tineina* (Van Voorst), in which, with the assistance of Professors Zeller and Frey, and Mr. Douglas, we have the commencement of the descriptions of the tiny moths called Coleophorans, whose grubs live in the interior of leaves or seeds into which they mine their way in the most extraordinary manner, eventually cutting out the two skins of a leaf and sewing them together with a degree of accuracy which nothing but unerring instinct renders possible. Twenty-four of these little creatures are minutely described in English, French, German, and Latin, and illustrated by excellent coloured engravings. In all respects this is a publication that does honour to even the admirable series of works on British Natural History produced by the intelligent enterprise of Mr. Van Voorst.

Trade Lists Received.—John Cattell's (Westerham) *Catalogue No. 7 of Dutch and other Bulbs.* In addition to bulbs, of which this is a nice selection, we have here some very good things for forcing and early flowering, among which we now find Berberis Darwinii, quite a new feature in the forcing line.—Jackman & Son's (Woking) *Wholesale Catalogue of Plants.* This establishment is too well known to the trade, for whom alone the catalogue is intended, to require any description. Nurserymen will find in it plenty of things worth their attention.—Wm. Chater's (Saffron Walden) *List of Superb New Double Hollyhocks* consists of eleven pages of names, with a full description of the colour of each sort, and concludes with excellent practical instructions for cultivation.—Samuel Yates's (Manchester) *Catalogue of Flower Roots imported.* A good strong list of useful things.—J. Linden's (Brussels) *Supplément et extrait du Catalogue No.* 14. On two 4to leaves we have the novelties of 1859, whether stove or greenhouse; and also fine foliaged plants, ornamental plants, tropical fruit trees, among which are two species of Parinarium which deserve a trial, and an Adansonia and Lecythis, which do not belong to the class, if by fruit is meant something good to eat; useful plants, new and rare Ferns, Orchids, and Palms and their allies, of which there is a great many. Buyers of rare plants should always consult Mr. Linden's lists.

Garden Memoranda.

Broughton Hall, near Skipton, Yorkshire.—Few who travel up the valley of the Aire on their way to Scotland dream that one of the brightest and most beautiful of gardens in the north of England lies embosomed amongst magnificent Beeches and time-honoured specimens of Yews, away, quite out of sight of those to whom the spot is unknown.

Broughton Hall, the seat of Sir Charles R. Tempest, Bart., forms a spacious mansion with a handsome portico in front, and close to it on the east side is a beautiful scroll-patterned garden designed by Nesfield, in which various coloured gravels, blue and purple slate, play a conspicuous part. This garden occupies an area of 43 by 27 yards, is sunk in the hill side, and has a handsome stone pavilion at the north-east corner.

This style of gardening is particularly suited to the north of England where the summers are so short, because it forms the nucleus of a winter garden, and only requires the additional aid of variegated and evergreen dwarf shrubs to make up a telling and highly interesting decorative garden for the winter months. Such plants as striped Hollies, Juniperus prostrata, Aucubas, Rhododendrons, &c., move readily in autumn and spring, and can easily be made available for winter gardening. On the occasion of our visit the garden just alluded to was brilliant with gay flowers, the outside beds were planted alternately with Tom Thumb Geraniums and aurea floribunda Calceolarias, and it is impossible to estimate too highly the value of this variety of yellow Calceolaria for the north of England. The beds were literally dense masses of flower.

The interior of the design consists chiefly of parti-coloured walks and Box edging. The beds or rather divisions that require floral decoration were filled chiefly with Flower of the Day Geranium, Saponaria calabrica, Prince of Orange Calceolaria, blue Lobelia, Purple King Verbena, and other Verbenas of different colours. This style of gardening it may be remarked severely taxes the ingenuity of the gardener, inasmuch as he is necessarily restricted to a very limited choice of plants. A portion of the design is filled up with the pretty white spar obtainable from the lead mines to be found at Lothersdale, a district of close proximity to Broughton, and this necessarily excludes white Verbenas and other flowers of the same colour. The blue and purple slate also interfere with the use of purple Verbenas, and the yellow and red gravel divisions plainly intimate that care must be exercised in contrasting colours so as to create harmony. Another difficulty arises in the necessity for preserving the outlines of the beds in this style of gardening, without which the effect is more or less lost. Dwarf-growing plants are therefore indispensable, and of course the range of colours available more contracted. Mr. Daniels, the head gardener here, has however surmounted all difficulties of this description in a most creditable manner.

On the south side, close to the mansion, is a second flower garden immediately in front of a very handsome and commodious conservatory, flanked by a fountain and steps rising to a terrace, on which is to be found one of the most beautiful and telling ribands we have ever met with. It is planted thus: 1st row, Variegated Balm; 2d do., Geranium Tom Thumb; 3d do., Calceolaria amplexicaulis; 4th do., Dahlia Zelinda, the purple variety; 5th do., blue Ageratum. These colours formed, as we have said, one of the brightest of ribands, in which the purple Zelinda Dahlia played a conspicuous part. This plant should be universally cultivated, being dwarf in habit, an abundant bloomer, and standing as it does quite alone in its peculiarly rich shade of colour. Nothing could be more beautiful than it was at Broughton Hall; all that is necessary is to get it forward early and to keep it from "drawing" when the plants are young. Rising above the riband which extends along the east and south terraces are banks of Rhododendrons and other shrubs gaily ornamented with autumn-blooming plants, forming altogether a gay and most effective flower garden.

Not the least conspicuous feature of this fine place is the elegant and spacious conservatory. By means of a crank and lever easily worked, full and ample ventilation can be given both at top and sides. Here, rambling freely across the roof and hanging in festoons, were Passifloras and Tacsonias of various kinds, and Habrothamnus elegans was blooming profusely. This plant deserves to be more generally cultivated than it is. Abutilon striatum was also in great beauty, and Orange and Citron trees were clothed with abundance of blossoms. This conservatory is a modern structure 75 feet in length, 29 feet in width, and 20 feet in height, the dome rising to a height of 30 feet.

Not far from the mansion is a kitchen garden with flued walls, on which a moderate but still enviable crop of Peaches and Nectarines was to be seen, and in a range of frames was a capital crop of "Orion" Melon, a variety which Mr. Daniels esteems very highly. In one of the greenhouses was a plant of Eugenia Ugni in full fruit, large and deliciously flavoured. The colour was nearly white; but notwithstanding this the flavour was unexceptionable. The new Golden Hamburgh, Bowood Muscat, and Muscat Hamburgh Vines are all under trial here. On a border devoted to the trial of new bedding plants and annuals a fine patch of the beautiful Linum grandiflorum rubrum was in full beauty. Mr. Daniels stated that the seed of this had been soaked for 24 hours in water and then sown in the open ground.

Miscellaneous.

Sale of Plants at the Crystal Palace, Sydenham.—A considerable quantity of Camellias and other plants, belonging to the Company, was sold here the other day by Messrs. Protheroe & Morris. Of the Camellias, which varied from 4 ft. to 6 ft. in height, a large portion consisted of Double White kinds, well furnished with bloom buds. They realised from 1*l.* to 2*l.* 15*s.* per lot of from two to six plants each. Araucaria excelsa, 9 feet high in a pot, fetched 3*l.* 10*s.*; others from 3 feet to 6 feet in height fetched from 1*l.* 15*s.* to 2*l.* 10*s.* each. Araucaria Bidwilli, 8 feet in height, fetched 4*l.* 10*s.*; other lots of smaller plants from 1*l.* 10*s.* to 2*l.* per lot. Hybrid Rhododendrons fetched from 7*s.* 6*d.* to 13*s.* a dozen; choice varieties, 21*s.* a dozen; and some large hardy hybrid kinds in tubs, from 35*s.* to 2*l.* 10*s.* each. Standard Bay trees in tubs, good specimens, fetched from 37*s.* to 3*l.* 10*s.* each. The total number of lots was 214. We understand the Orange trees were not sold.

Important Sale of Plants at Cooper's Hill, Englefield Green.—The first portion of a magnificent collection of Azaleas and other stove and greenhouse plants was brought to the hammer here on Tuesday last by Mr. Stevens. Of Azaleas, Glory of Sunning Hill, 3 feet 6 inches high and as much through, fetched 11*l.*; Mur-

rayana, 9*l.*; Perryana, 7*l.* 10*s.*; optima, 6*l.* 10*s.*; Gladstanesi, 5*l.* 15*s.*; variegata, 6*l.*; lateritia, 5*l.* 5*s.*; alba magna, 5*l.* 15*s.*; sinensis, 5*l.*; and other lots from 2*l.* 2*s.* to 3*l.* 10*s.* Of other plants, Acrophyllum venosum, 3 feet high and about as much through, fetched 7*l.* 10*s.*; the Willow-leaved Ixora, 6*l.*; Genetyllis macrostegia, 5*l.* 10*s.*; Aphelexis macrantha rosea, one of the finest plants in the country, 9*l.*; A. m. purpurea, 5*l.* 10*s.*; A. m. grandiflora, 4*l.* 15*s.*; Rondeletia speciosa, 4*l.* 10*s.*; Tetratheca ericoides, 3*l.* 7*s.* 6*d.*; Erica jubata, 2*l.* 4*s.*; Maranta zebrina, 2*l.* 10*s.*; Pandanus javanicus variegatus, 3*l.* 10*s.*; Epacris miniata grandiflora, 3*l.* 10*s.*; E. m. splendens, 2*l.* 6*s.*; Pimelea mirabilis, 2*l.*; P. Hendersoni, 2*l.* 6*s.*; Eriostemon buxifolium, 2*l.* 2*s.*; and Adenandra speciosa, 2*l.* 6*s.* Other lots, of which there were in all 202, fetched from 10*s.* to 30*s.* per lot; and the produce of the whole sale amounted to upwards of 300*l.* A second portion will, we understand, be sold on Thursday the 13th inst.

Large Melon.—At a late meeting of the Paris Horticultural Society a Cantaloup Melon was exhibited, weighing 2¼ lbs. It was produced by a M. Pageot, a market gardener at Vannes. This is the largest Melon we have any account of except one mentioned by the Rev. T. Phillpotts of Porthgwidden, near Truro, near where it was grown, which weighed 32 lbs.

The Buansuah, or Wild Dog.—In the Wild Dog, which ranges Nepal and the whole of Northern India, the primitive type of the dog was thought to be found. This animal, the Buansuah, presents many points of similarity to the Dhole, and is said to rival the latter creature in its tiger-killing propensities. Like the Dhole, it is a shy animal, and never willingly permits itself to be seen, preferring to take up its residence in the thickest coverts which are afforded by the luxuriant vegetation of its native land. It hunts in packs, but unlike the preceding animal, gives tongue continually as it runs, uttering a curious kind of bark, which is quite distinct from the voice of the domestic dog, and yet has nothing in common with the prolonged howl of the wolf, the jackal, or the foxes. The number of individuals in each pack is not very great, from eight to twelve being the usual average. They are possessed of exquisite powers of scent, and follow their game more by the nose than by the eye. When captured young, the Buansuah readily attaches itself to its keeper, and, under his tuition, becomes a valuable assistant in the chase. Unfortunately, the dog will too often refuse its confidence to any one except its keeper, and therefore is not so useful as it might otherwise be rendered. It is probable that the keeper himself has some hand in this conduct, and wilfully teaches his charge to repel the advances of any person save himself. In the chase of the wild boar, the peculiar character of the Buansuah exhibits itself to great advantage, as its wolf-like attack of sudden snap is more destructive to its prey than the bite of an ordinary hound. For other game this creature is but an uncertain assistant, as it will often give up a chase just at the critical moment, and is too apt to turn aside from its legitimate quarry for the purpose of immolating a tame sheep or goat. *Routledge's Illustrated Natural History.*

Calendar of Operations.

(*For the ensuing Week.*)

PLANT DEPARTMENT.

Conservatory, &c.—Many of the stove plants which have lately been the principal ornaments of the conservatory will now be getting out of bloom, and foresight must be exercised, to be prepared with specimens in flower to supply their places. Some of the most forward Camellias should, if necessary, be placed in a rather close house, to induce them to open their buds, giving them a regular supply of manure-water; and the most forward Epacrises may be placed in a close part of the greenhouse, where they will soon open their blossoms; as also Daphnes and many other plants, provided their flower-buds are prominent. Aim at keeping the atmosphere of this house rather dry, using just sufficient fire-heat on damp cold nights to allow of giving sufficient air to keep the atmosphere in motion, so as to prevent damp being injurious. Stove.—The twiners on the roof should now be more than ever kept within bounds, cutting back all shoots that have done flowering, and tying the others so as to obstruct the light as little as possible. Place specimens ripening their wood in the coolest part of the house, and water sparingly at the root. Achimenes, Gloxinias, Gesneras, &c., that are properly ripened off may be stored away in any dry place where they will be secure from frost, but take care to place them where they will be free from damp, and they should not be exposed to a lower temperature than about 45° to 50°; many valuable plants of this kind have been lost through storing them in dry sheds, &c. Hard-wooded plants, such as Ixoras, &c., that have not made their wood after flowering, should be encouraged with a warm moist temperature, syringing them lightly overhead, and shutting up the house early in the afternoon. Get any growing plants that require more pot room shifted as soon as convenient, in order to get them well rooted into the fresh soil before winter. Keep a sharp look out for insects, especially thrips, which are often very troublesome at this season on such plants as Ixoras, &c., growing in a close warm house, and either fumigate the house or remove the affected plants and thoroughly clean them immediately this pest is perceived, for if left to its own way with growing tender-foliaged plants, it soon disfigures the finest specimens.

FORCING DEPARTMENT.

Pineries.—Plants showing fruit at this season are so valuable as to be well worth any amount of necessary care, for they will afford ripe fruit at a season when the best-furnished gardens cannot supply much variety in the way of fresh fruit. While favourable weather continues, they will however require no particular attention; but in the event of cold damp weather setting in, the shows must be carefully protected from damp, and should be kept rather warm and dry until after blooming, when they will not be readily injured by a damp rather low temperature. Those who grow their Pines in pots should gather all those showing fruit together, so as to be able to treat them more judiciously than can be done when they are scattered throughout the whole stock. Plants that have been kept cool and dry for some time past, in order to prepare them for fruiting, should now be placed in a brisk heat, taking care to thoroughly moisten the soil about their roots, so as to get the fruit fairly set and safe before the sunless days of November. Continue to afford young growing stock a warm moist temperature, with plenty of manure water at the root; but use fire-heat sparingly, and avoid drawing the plants by a high night temperature. With proper management and convenience, 70° will be quite safe while the present favourable weather lasts. Successful growers, our forefathers, recommended a low temperature and dry atmosphere, in order to prevent growth after this season, and under their circumstances this was the most judicious practice, but tan beds and dung linings have given place to hot-water tanks and pipes, and the small squares of glass, with their wide black laps and heavy timbers, have been replaced by roofs which hardly intercept a ray of light, and to adopt the practice of former days would be an unpardonable waste of means. It is hardly too much to say that with modern facilities we ought to produce two crops of fruit in the time that was necessary to produce one under the old regime of houses and heating, but this cannot be done by those who are afraid to keep their plants growing after the decline of the season. Those, however, who have still to contend with the disadvantages of dung pits, will do well to regulate the temperature so as to avoid weakly growth, and this must also be attended to under any circumstances. Vineries.—Take advantage of fine weather while it lasts for getting the wood of young Vines well ripened: use moderate fires with a free circulation of air, and where the object is to ripen the wood keep the atmosphere as dry as possible. Late Grapes not yet ripe should also be assisted with fire-heat and a free circulation of air, in order to forward the ripening as much as possible while the weather is favourable. Keep ripe fruit cool with plenty of air, to prevent any injury from damp, and cut out any decaying berries directly they are perceived. Houses in which the wood is thoroughly ripe can hardly be kept too cool, and the ventilators of these should be left open night and day in dry weather. This will prevent the continuance of growth, and is the best means of getting the Vines into a dormant state ready for pruning. The border of the early house should be covered with something to protect it from wet; for although there is no immediate necessity for this it will be better done while the border is in a dry, healthy state.

FLOWER GARDEN AND SHRUBBERIES.

Those who have many scarce plants in the borders which they intend to pot must be careful observers of the weather; and to ensure being safe, must cover when there is the slightest appearance of frost. Give careful attention to the young stock, and recollect that sturdy, well-rooted plants are much easier to winter than large plants with long-jointed soft wood, therefore keep the stock cool and exposed to the sun and air as soon as it is well established after shifting into the pots in which it is to be wintered. With good convenience late-rooted cuttings may still be potted off; but unless they are very thick in the cutting pots we would prefer wintering them in these to shifting at this season, for they occupy much less space in the cutting pots, and having more space for their roots, they are frequently more healthy and require less attention in winter than those that are potted singly. Square 12-inch wide and 5-inch deep pans are very suitable for wintering cuttings of Verbenas, Lobelias, and other plants which can be kept in a small state. One of these will hold some 20 good plants, and with care, to prevent their being injured by damp, they will winter quite as well treated in this way as if potted singly in 4-inch pots, and a vast quantity may be wintered in a small space. Where things of this kind have to be wintered in cold frames or pits, the plants should be potted singly, as they would be very liable to damp off, despite every care, if placed thickly together in pans, and placed where it may be impossible to give air for weeks together. Let us, however, protest against the system of wintering bedding stock in such unsuitable places. This practice is generally adopted from some mistaken notion of economy; but if a fair calculation of the time required to attend to plants wintered in this way could be made, and all the losses, &c., taken into account, it would be found to greatly overbalance the trifling cost of fixing a proper heating apparatus and a few bushels of coke or coal annually. To the majority of the parties concerned the outlay would be unworthy of consideration, and would be repaid in one season by the saving of labour, &c., and the economising of space which would be effected. Where alterations are projected or in hand, these should be proceeded with in the most expeditious manner.

HARDY FRUIT AND KITCHEN GARDEN.

Take advantage of the first dry state of the ground to get Celery earthed up. On heavy soils it is sometimes necessary to surround the plants with sand or sifted ashes to prevent their rotting off in winter, which they are apt to do if surrounded with soil that holds much water. Thin young crops of Turnips, Spinach, &c., before they become weakly and drawn through standing too closely together. Stir the surface of the soil deeply among growing crops to admit air to the roots, and keep down weeds. Recently planted Strawberries will be benefited by occasional applications of manure-water. Get spare ground manured and dug or trenched for another crop, whenever time can be spared for that kind of work.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.
For the Week ending Sept. 29, 1859, as observed at the Horticultural Gardens

Sept.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Min.	Mean	Of the Earth. 1 foot deep	2 feet deep.	Wind	Rain.
Friday 23	26	29.751	29.578	70	51	60.5	58½	58½	S.W.	.00
Satur. 24	27	29.836	29.773	78	51	64.5	61	59	S.	.00
Sunday 25	28	29.842	29.787	69	51	60.0	62	60	S.	.08
Mon. 26	●	30.076	29.831	68	51	59.5	62	60	S.W.	1.68
Tues. 27	1	30.001	29.894	65	45	55.0	61	60	S.	.01
Wed. 28	2	29.809	29.625	66	42	54.0	61	60	S.	.19
Thurs. 29	3	29.730	29.638	65	44	54.5	60½	60	S.W.	.01
Average		29.863	29.732	68.7	47.9	58.3	60.8	59.6		1.89

Sept. 23—Foggy; overcast; cloudy; boisterous at night
— 24—Densely overcast and warm; exceedingly fine throughout.
— 25—Partially overcast; rather boisterous; overcast; fine; Aurora borealis.
— 26—Fine; densely overcast; constant and very heavy rain.
— 27—Cloudy and fine; hazy; foggy.
— 28—Slight fog; fine; very fine; lightning at night; rain.
— 29—Clear; low white clouds; slight shower; very clear at night.
Mean temperature of the week, 2·45ths deg. above the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 33 years, for the ensuing Week, ending Oct 8, 1859.

October.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 2..	63.9	43.6	53.7	17	0.48 in.	2	4	1	—	7	9	6	4
Mon. 3..	63.1	44.5	53.8	16	1.01	2	3	1	1	10	10	4	2
Tues. 4..	63.6	43 0	53.3	18	1.06	—	6	2	—	6	15	3	1
Wed. 5..	62.6	40.9	51.7	17	0.82	4	3	2	1	6	10	6	1
Thurs. 6..	61.1	43.6	52.4	19	0.78	1	3	4	3	4	10	6	2
Friday 7..	61.9	43.9	52.9	16	0.58	1	5	2	3	5	13	3	1
Satur. 8..	60.4	41.5	50.9	16	0.55	1	5	3	3	5	7	7	2

The highest temperature during the above period occurred on the 5th, 1834—therm. 80 deg.; and the lowest on the 8th, 1858—therm. 26 deg.

Notices to Correspondents.

Aubergines: We are reminded that this vegetable should be scored and rubbed with salt before being prepared for cooking. This is we believe necessary in this country because it does not ripen well; but it is not done in France and ought not to be needed after such a summer as this. If, however, the dish is found to be bitter the application of salt will draw out the bitter juice.

Common Ivy: *An Irish Subscriber* inquires from what nurseryman he would be likely to obtain good plants, in pots, of the common Ivy, Hedera Helix. He has hitherto tried in vain to procure this plant, as nobody seems to think it worth keeping.

Gardeners: *Eyes.* It is impossible to answer your inquiry satisfactorily. In rough reckoning it is usual to say that a garden requires a man to each acre, but then if an acre of land is covered with forcing houses it may be necessary to allow 20 men for it. On the other hand, if a place consists largely of rough plantation, one man may manage several acres.

Grapes: In our report of the late exhibition at the Crystal Palace it was inadvertently stated that the berries of Mr. Drewitt's fine Cannon Hall Muscat Grapes could not measure less than 2 inches in circumference. A berry has since been sent us by Mr. Drewitt, and we find its actual measurement to be 3¼ inches in girth one way, and 4 inches the other. It was also added that this berry was not one of the largest.‡

Mildewed Grapes: *B G.* All that you can do with your late Grapes attacked with mildew is to smother the bunches with flowers of sulphur. After the fruit is cut, and the leaves off, wash the Vines well with Gishurst Compound mixed with water in the proportion of 4 oz. to the gallon. See also some remarks on the destruction of mildew in our Home Correspondence of to-day.‡

Names of Fruits: *F Kelly.* 64, Cockle Pippin; 66, Brown Kenting.—*J Bradshaw.* 1, Belle et Bonne; 2, Doyenné Blanc; 3, Dunmore; 5, Hessel; 6, 8, 9, Jersey Gratioli; 7, Franc Real d'Hiver.—*Dobbs.* 16, King of the Pippins; 3, Wyken Pippin; 4, Northern Greening; 5. Dutch Codlin.—*J C.* Uvedale's St. Germain. It is not a perfect specimen, although of fair size. The young fruit has probably received a check from frost in spring.‖

Names of Plants: We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have or could have undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*Abergele.* Not the Olive tree; it looks like a bit of Cratægus prunifolia.—*Rim Castle Cary.* Arauja sericifera—a Brazilian plant.—*Derwent.* Not Oxalis corniculata, but a leaf of Perilla nankinensis now cultivated among bedding plants, where a purplish black is required.—*G.* Phygelius capensis. A hardy perennial from the Cape of Good Hope, and one of the handsomest of all bedding plants, where a crimson red, 2 feet high, is required. It stands all weather, but requires peat.—*Anonymous.* It is the Male Pampas Grass.—*J F J.* Cyanotis vittata.—*Rabon.* Roccella tinctoria, the Orchall plant.—*Josephus.* The true Colchicum Byzantinum.—*York.* Eugenia apiculata, not E. Ugni, although like it. The fruit is worthless.

Nymphæas: *M Whitby.* Nymphæa cœrulea, stellata, Devoniensis, rubra, and odorata; Richardia africana, Aponogeton distachyon.

Vines: *Homerton.* We thought our opinion would be confirmed. When the leaves are off you must lift the roots up very carefully, so as not to break any that remain; and then replace them carefully by spreading them over the surface of the border. Then throw over them 6 inches of good soil, and finally cover the whole with a mulching of good stable litter or woolcombers' refuse.

*** As usual, many communications have been received too late, and others are detained till the necessary inquiries can be made. We must also beg the indulgence of those correspondents the insertion of whose contributions is still delayed.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London, S. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

MR. J. B. LAWES manufactures the following MANURES:—

TURNIP MANURE	£6 6
SUPERPHOSPHATE OF LIME	6 6
MINERAL SUPERPHOSPHATE OF LIME	5 5
BARLEY MANURE	8 0

N.B. Genuine PERUVIAN GUANO direct from Messrs. Gibbs, NITRATE OF SODA, SULPHATE OF AMMONIA, and other Chemical Manures.

WHEAT MANURE.—PERUVIAN GUANO is proved to be the best and cheapest Artificial Manure for Wheat, at Autumn sowing.

American decorticated Cotton-seed Cake of best quality supplied at the market price.

Offices: 1, Adelaide Place, London Bridge, E.C.

LONDON MANURE COMPANY
(ESTABLISHED 1840),
Have the following MANURES ready for delivery:—
CORN MANURE FOR AUTUMN SOWING.
BLOOD MANURE FOR AUTUMN SOWING.
URATE.
SUPERPHOSPHATE OF LIME.
SUPERPHOSPHATE MINERAL.

The London Manure Company also supply PERUVIAN GUANO (direct from Messrs. Gibbs & Sons), SULPHATE OF AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of known value, all of which they warrant strictly genuine. Wholesale dealers supplied.

116, Fenchurch Street, E.C. EDW. PURSER, Secretary.

BURNARD, LACK, AND CO.'S CONCENTRATED SUPERPHOSPHATE OF LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.

CONCENTRATED TURNIP MANURE, equal in value to the preceding.

Of these Manures Dr. Voelcker says:—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."

Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to BURNARD, LACK, & Co., Sutton Road, Plymouth.

PERUVIAN GUANO.—The present price of this valuable Manure is 12*l.* per ton for 30 tons and upwards; 13*l.* 5*s.* per ton for 1 ton up to 30 tons.

And, in order to protect themselves against the purchase of adulterated mixtures and of inferior Guanos purporting to produce results equal to Peruvian, consumers are recommended to apply either to ourselves, to our Agents Messrs. GIBBS, BRIGHT, & Co. of Liverpool and Bristol; or to Dealers of established character, in whose honesty and fair dealing they can place implicit confidence.

ANTY. GIBBS & SONS.
15, Bishopsgate Street Within, London, E.C.

THE PATENT NITRO-PHOSPHATE OR BLOOD MANURE COMPANY (LIMITED).

Trustees:—
ABEL SMITH, Jun., Esq., Walton House, Ware, Herts.
CHARLES DIMSDALE, Esq., Essendon Place, Herts.
EDWARD BALL, Esq., M.P., 8, Belgrave Road, Pimlico, S.W.
GENERAL HALL, Weston Colville, Linton, Cambridge.
JOHN BRADY, Esq., M.P., Warwick Terrace, Belgrave Square, W.

Directors:—
Chairman—JONAS WEBB, Esq., Babraham, Cambridgeshire.
Deputy-Chairman:—
JOHN COLLINS, Esq., Myddleton Square, Pentonville, E.C.
EDWARD BELL, Esq., Tottenham, Middlesex, N.
JOHN CLAYDEN, Esq., Littlebury, Essex.
RICHARD HUNT, Esq., Staunstead Abbot, Herts.
THOMAS KNIGHT, Esq., Edmonton, Middlesex, N.
ROBERT LEEDS, Esq., West Lexham, Norfolk.
ROBERT MORGAN, Esq., 72, Camden Villas, Camden Town, N.W.
GEORGE SAVILL, Esq., Ingthorpe, near Stamford.
WILLIAM COLLINS, Esq., 105, St. John Street Road, E.C.
Bankers—Messrs. BARNETT, HOARE & Co., Lombard Street, E.C.
Solicitors:—
Messrs. KINGSFORD & DORMAN, 23, Essex Street, Strand, W.C.
Auditor—J. CARTER JONAS, Esq., Cambridge.
Manager—Mr. JAMES ODAMS. | *Secretary*—Mr. C. T. MACADAM.

Offices: 109, Fenchurch Street, London, E.C.; Manufactory, Plaistow Marshes, Essex, E.

ODAMS'S BLOOD MANURE FOR WHEAT,
Price 7*l.* 10*s.* per Ton, delivered Free to any WHARF or RAILWAY in London.

SHAW'S TIFFANY is universally acknowledged to be the best, neatest, and cheapest material for shading Conservatories, and other Hothouses. Effectually securing Plants from the scorching rays of the sun, without obscuring the light. Also, for protecting the Bloom of Wall Trees from spring frosts, and Fruit from birds and wasps. Sold in pieces.

No. 1.—20 yards long, by 38 inches wide, 5*s.* per piece.
No. 3.—Double strength, 18 yards long, by 39 inches wide, 7*s.* 6*d.* per piece.
No. 4.—Treble strength, 18 yards long, by 39 inches wide, 9*s.* per piece.

A liberal allowance to the Trade when ten or more Pieces are taken.—JOHN SHAW & Co., Princess Street, Manchester.

"FRIGI DOMO."—Patronised by her Majesty, the Queen, the Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, and —Collier, Esq., of Dartford.

PROTECTION FROM THE SCORCHING RAYS OF THE SUN.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and, floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths. Two yards wide, 1*s.* 6*d.* per yard run; four, 3*s.* per yard. Also, an improved make for Shading Purposes. Three yards wide, 2*s.* 6*d.* per yard run.

ELISHA THOMAS ARCHER, whole and sole manufacturer, 7, Trinity Lane, Cannon St., City., E.C., and of all Nurserymen and Seedsmen throughout the kingdom. "It is much cheaper than mats as a covering."

WARNER'S IMPROVED LIQUID MANURE OR GENERAL PORTABLE PUMP.

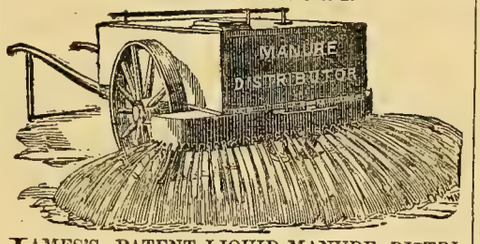


These Pumps are fitted with WARNER'S Patent Bucket and Valve, and cannot clog in action. The barrel is made of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure on the stand, the legs of which fold together, and may be carried with ease by one man to tank or pond.

	£	s.	d.
Stand and Pump, with screwed tail pipe, fitted with strong brass union for suction pipe	2	15	0
If fitted with barrel of planished copper	3	4	0
Stand and Pump, with plain tail pipe, for tying on suction pipe	2	9	0
2-inch patent rubber and canvas flexible suction pipe, on wires, either 10, 12, or 15 ft., per foot	0	2	2

May be obtained of any Ironmonger or Plumber in town or country, at the above prices, or of the Patentees and Manufacturers, J. WARNER & SONS, 8, Crescent, Jewin St., London, E.C.

LIQUID MANURE.



JAMES'S PATENT LIQUID MANURE DISTRIBUTOR OR WATER-CART, warranted not to choke up or otherwise get out of order. It is thoroughly adapted for Drill Crops, or Pasture Land, or for Watering Streets; has been awarded SIX FIRST PRIZES.

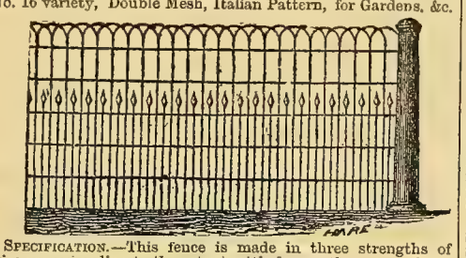
Full Particulars and Testimonials may be obtained of the Patentee, ISAAC JAMES, Tivoli Waggon Works, Cheltenham.

Improved LIQUID MANURE PUMPS supplied.

GREENING AND COMPANY'S PATENT WIRE FENCES.

Patronised by His Royal Highness the Prince Consort.

No. 16 variety, Double Mesh, Italian Pattern, for Gardens, &c.



SPECIFICATION.—This fence is made in three strengths of wire corresponding to the patent cattle fences, the patent sheep fences, and the patent rabbit fences.

Prices: For Cattle—3 feet 10 inches high, 2*s.* 6*d.* per yard.
" 3 feet 4 inches high, 2*s.* 3*d.* "
For Sheep—2 feet 10 inches high, 2*s.* 0*d.* "
For Game—2 feet 4 inches high, 1*s.* 9*d.* "
" 1 foot 10 inches high, 1*s.* 6*d.* "

The Silver Medals of the Royal Dublin and the Manchester Botanical Societies have been awarded to GREENING & Co. for the application of their patent to horticultural purposes.

From RICHARD BURTON PHILLIPSON, Esq., *Dunstan House, Penkridge.*

"Your fence for my flower garden is everything I could have desired, and has met with the commendation of all that have seen it. I am perfectly content with the price, and enclose you a cheque for the amount."

G. & Co.'s Illustrated Catalogue contains descriptions of the above and other Iron and Wire Fences for Parks, Farms, Gardens, Game Preserves, Poultry Courts, &c., also of Iron Gates, Iron Hurdles, &c. Post free on application.

GREENING & Co., Victoria Iron and Wire Works,
81, Oxford Street, Manchester.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, London, S.

Principal—J. C. NESBIT, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

WEST OF ENGLAND AND SOUTH WALES LAND DRAINAGE AND INCLOSURE COMPANY.
Established in 1844.
INCORPORATED BY ACT OF PARLIAMENT IN 1848.

Draining, Inclosing, Irrigating, Warping, Road Making, and all kind of Land Improvements, executed on Entailed, Mortgaged, or other Properties, and the whole cost can be made a Permanent Charge on the Lands, or redeemable in a certain number of years. BIDWELL & BRODIE, Secretaries.

Offices: Exeter; and 30, Parliament Street, London, S.W.

HIGHLAND AND AGRICULTURAL SOCIETY.

EDINBURGH VETERINARY COLLEGE.—The Committee of the Highland and Agricultural Society of Scotland, appointed to superintend the Veterinary College, hereby intimate that the SESSION will commence on WEDNESDAY, November 2, at 4 P.M.

The Course of Study includes the following Classes:—

1. Zoiatrics, Veterinary Medicine and Surgery	Professor DICK.
2. Zootomy, or Veterinary Anatomy, and Anatomical Demonstrations	Mr. STRANGEWAYS.
3. Chemistry, embracing Veterinary Materia Medica, and Pharmacy	Dr. ALLEN DALZELL.
4. Practical Chemistry	Dr. ALLEN DALZELL.
5. Microscopic Zootomy, Physiological and Pathological	Dr. YOUNG.
6. Practical Pharmacy and Clinical Instruction	Prof. DICK, assisted by Mr. WORTHINGTON, V.S.

Edinburgh, October 1. JN. HALL MAXWELL.

AGRICULTURAL IMPROVEMENTS, LAND DRAINAGE, ROAD MAKING, & FARM BUILDINGS.

MR. BAILEY DENTON maintains a large staff for the execution of these works by commission or contract. He also prepares Working Plans to enable Landowners to carry out such improvements themselves.—52, Parliament Street, S.W.

LAND IMPROVEMENTS.—The GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY are empowered by Act of Parliament to assist the Owners of Land in carrying into effect the following Improvements, and charging the whole outlay and expenses on the property improved.

I. All Works of Drainage, Irrigation, Warping, and Embankment.

II. The erection of Farmhouses, Cottages for Agricultural Labourers, and all kinds of Farm Buildings.

III. The construction of Roads.

IV. The Grubbing and Clearing of Old Woodlands, Enclosing, Fencing, and Reclaiming Land.

The Landowners by whom any of these Improvements may be executed are—Tenants for Life, Trustees, Mortgagees in Possession, Guardians, Committees of Incompetent persons, Married Women, Beneficial Lessees for Lives or for a Term exceeding 14 years, Corporations, Ecclesiastical or Municipal, Incumbents, Sequestrators, Charitable Trustees, &c.

The Owners of Estates not entailed, who may be desirous to avoid the expense or inconvenience of a Legal Mortgage, may also avail themselves of the powers of the Company's Act to charge their estates with an outlay in improvements.

In all cases the whole cost of the improvements, with the attendant expenses, may be charged on the Estate, the term for Building Works being limited to 31 years, but for all other improvements being capable of extension to 50 years.

No investigation of title being required, and the charge not being affected by Incumbrances, no legal expenses are incurred.

Operations under the Company's Act are divided into two principal branches; one where the Landowner designs and executes the improvements by his own Agent and merely requires a loan from the Company to charge the Estate,—the other where the Company undertake the entire responsibility of the Improvement and obtain repayment by way of Rent Charge. In the first case the plans, specifications, and estimates prepared by the Landowner's Agent are forwarded to the Company to be submitted for approval to the Inclosure Commissioners. As soon as the sanction has been given the Landowner proceeds to execute the works, and the Company having conducted the business through all the official forms, complete the charge on the estate when the works have been passed by the Commissioners, and repay the Landowner the amount agreed upon.

In no part of the business is there any control upon a Landowner except by the Inclosure Commissioners. The Company never interfere, except at the special request of the Landowner or his Agent, and only to such extent as may further the objects he has in view.

In the other case, where the Company are required to execute the works, a report and estimate of the Improvement are sent to the Landowner, and having been approved, the plans are then prepared and the works—either submitted to public competition or entrusted to their own staff—are carried on to completion, and the amount of the actual expenditure only, approved by the Inclosure Commissioners with the Company's agreed commission and the Commissioners' expenses, finally charged on the Estate for the term fixed by the Landowner.

The Company also execute Drainage and all other Works of Land Improvement on Commission for the Owners of Estates not Entailed who may wish to charge the outlay on the property through the simple and inexpensive process of the Company's Act.

Applications to be addressed to WILLIAM CLIFFORD, the Secretary, at the Offices of the Company, 52, Parliament Street, London.

THE BIRMINGHAM CATTLE AND POULTRY SHOW, 1859.—The ELEVENTH GREAT ANNUAL EXHIBITION OF CATTLE, SHEEP, PIGS, DOMESTIC POULTRY, AND ROOTS, will be held in Bingley Hall on MONDAY, TUESDAY, and WEDNESDAY, November 28, 29, and 30, and THURSDAY, December 1, when Prizes, Cups, or other Articles of Silver Plate, and Gold and Silver Medals, to the amount of 1250*l.* will be awarded.

Prize Lists and Certificates of Entry are now ready, and may be obtained at the Offices, or by letter to

JOHN MORGAN, Secretary.

Offices: Unity Buildings, Upper Temple Street, Birmingham.

SMITHFIELD CLUB CATTLE SHOW, 1859.—The ANNUAL SHOW of FAT CATTLE, SHEEP, and PIGS will take place on the 6th, 7th, 8th, and 9th December, at the Bazaar, King Street, Portman Square.

The Prize List contains separate classes for Devons, Herefords, Short-horns, Sussex, Norfolk or Suffolk polled, Long-horns, Scotch horned, Scotch polled, Irish, Welch, and cross or mixed breeds. Also Long-woolled Sheep, cross breeds, Short-wools, and Pigs. In addition to the large amount offered in money prizes, there are also 50 Silver and 5 Gold Medals. The following forms of Certificates are now ready, and intending Exhibitors in applying for them need only quote the letters and state how many of each they require.

CATTLE.	SHEEP.
Form A. Ox or Steer.	Form D. Pen of 3 Wethers.
" B. Cow or Heifer.	
" C. Ox or Cow in Extra Stock.	" E. One Wether or Ewe in Extra Stock.

PIGS.
Form F. Pen of 3 Pigs. | Form G. One Pig in Extra Stock

The Entries finally close on November 1.

Prize Lists with rules and regulations and Forms of Certificates to be obtained of B. T. BRANDRETH GIBBS, Hon. Sec., corner of Half Moon Street, Piccadilly, London, W.

N.B. All communications on the Club's business should have the words "Smithfield Club" outside, to distinguish them from private letters.

The Agricultural Gazette.

SATURDAY, OCTOBER 1, 1859.

A CORRESPONDENT wants a change of seed. He has asked advice from one of his neighbours, who recommends him to go to the north and obtain from a colder climate the change he needs: he has asked another of his neighbours, and by him he is recommended to go to the south and obtain his seed from Surrey, Kent, or Sussex, where the harvest is three weeks earlier than it is in Scotland. Whose recommendation is he to adopt?

Let it, in the first place, be admitted that a healthily grown, thoroughly ripened seed is perfect of its kind, and that, these conditions being fulfilled, it matters nothing whether it be grown on chalk, or

clay, or sand. A "change" from one geological formation to another, or from one farm to another, is not, as some seem to think it, necessarily an advantage. But you can obtain healthily grown and thoroughly ripened Wheat in any county in the kingdom, and if, having it, you have that which is perfect of its "kind" it is plain that you need not travel for a "change." The question, however, is —what of the character of a grain is involved in this term "kind;" and the answer we presume to be—all that it inherited or can transmit. Now nothing is more certain in agricultural experience than that besides those characters of plants which botanists admit as the permanent distinctions of species, there are other habits or features of greater or less permanence which plants acquire by the constant treatment of the cultivator or the constant influence of habitat and climate, and which though capable of alteration and ultimate extinction by other treatment, are yet not altogether transient, but will re-appear in subsequent seasons in greater or less degree according as the circumstances of the locality or season are favourable or otherwise. Thus we doubt not that a "kind" distinguished for several years under good cultivation for extraordinary productiveness will be more likely than one of inferior character in this respect to yield well even under inferior cultivation. And the advice which we should offer to our correspondent would be, simply to look out for seed of a sort which has been known for many years to yield most bushels per acre of good grain. If he can get it from his neighbour then he will be saved the trouble of sending to either end of the island for it.

There are, however, characters which grain from Sussex and from Aberdeen respectively are likely to bring with them in addition to the quantity or quality of the produce; and if a choice must be made between the two it must hinge upon the relative value of those characteristics which the respective climates of those counties are likely to have encouraged, and as it were imprinted. Is hardiness and ability to withstand severity of winter and spring especially desired, then seed from the northern county will probably be preferred. Is earliness of ripening desired, then though this is probably a less certain character than the other, yet it is more likely to be found in grain from Sussex than in that from Aberdeen. It is probable that the latter is generally in this country the most valuable character of the two, and that if our correspondent cannot get what he wants at hand he had better apply to some Wheat grower in the south.

The following is from Inverness-shire:—"You will have noticed from Scotch agricultural reports that we are very short of straw, and that it is doubtful if Turnips will come up to half an average crop in weight, while mildew has set in, which of course will deteriorate their *feeding* qualities. Our resource is to diminish at any sacrifice our live stock, which of course will react on future years' fertility. Could you not bring out the saving of Turnips and fodder from pulping the former and chaffing the latter? Against either operation there is a very strong feeling even among the crack men of the Lothians, and I do not believe there is one establishment in Scotland in which these operations are systematically followed out—a contrast to your Norfolk and Lincolnshire feeders."

We commend this subject to the attention of those of our readers whose experience will throw light upon it. There can be no doubt that the use of pulping machines and chaff-cutters does enable the more complete consumption of inferior fodder, and does economise the Turnips consumed. Perhaps some of our readers may be able to state from their experience what is the average consumption daily by cattle and sheep of straw and Turnip and other richer food under this method of preparing food, and under circumstances such as our correspondent describes, where it is necessary to save both straw and Turnip as much as possible; adding what information they can on the labour involved in this additional work to be done.

The healthy growth of our root crops appears to be much influenced by the physical condition of the soil. A careless and imperfect tillage of the land gives evidence of its unsatisfactory influence not only by a small crop but also by its liability to mildew. In fact we have already shown that where the condition of the soil is favourable to the growth of the crop less injury arises from this disease, but we may with some advantage examine more fully other circumstances which also influence this result. The great point to be attained is to keep Swedes growing up to the commencement of winter so that neither the hot weather of autumn, nor indeed any other cause, shall stop their growth and thus give the Fungi an opportunity of establishing themselves upon the tissues of the plant. A deep bed of soil through which the roots can traverse and gain the required supplies of food is a necessary condition, and this must be secured not only by good cultivation before the seed is sown, but by the repeated use of the horse hoe afterwards. The passage of the rain through the soil, and its natural gravitating powers, tend to consolidate the soil, and to overcome this we must disturb its repose even when the soil may be free from surface weeds. If these are present there is a double necessity for the work, but after a shallow hoeing the soil must be moved deeply. It is the deep stirring which favours the growth of the crop, and it may be confidently relied upon as one of the results of the more perfect cultivation of land by steam power that we shall secure the soil in such superior working order that the growth of our root crops will be far less liable to be impeded than even upon our best farmed land when worked by horse labour.

The influence of manure is also very important, and the results are almost as dependent upon the mode of its use as upon its composition. You may employ farmyard manure or its substitutes in the form of our various artificial manures and thus supply nourishment in an equally desirable condition; but the result will be materially influenced by the mode in which the plants gain their supplies from it. If for example the farmyard manure were spread between ridges, and thus distributed over only half the ground, it is clear that although the crop may have free access to the manure thus presented to it, still its powers of search are seriously impeded. There is no inducement for the roots to strike out into the soil around and draw therefrom additional supplies. This is a decided objection to this mode of using such manure. If the manure were spread upon the land and more generally distributed through the soil, the roots in following after the manure secure portions of the soil which would not otherwise come within their reach. Thus we more fully realise the advantages of stimulating manures, or in other words, manures which give energy to the plant to take up other matter in addition to the excitant itself. The advantages of a general distribution through the soil are very evident in those cases in which the manure is applied in the autumn and ploughed in before winter. Here the spring tillage causes it to be generally distributed throughout the soil, and the manure thus exerts its stimulating powers to the greatest advantage, because the excitant action is accompanied by supplies of food ready to be used. We do not pretend to say that this condition—important though it be—is sufficient to set aside the use of manure in ridges; but its influence is decidedly objectionable, and therefore we are not surprised to find many farmers opposed to this system of applying dung when the peculiar advantages of the practice are not necessary.

In the use of artificial manures we observe similar results equally at our disposal. How frequently do we see—in cases where no dung remains for the root crop—the whole of the manure applied to consist of a narrow and thin line of artificial manure drilled immediately under the seed. As soon as the plant gains access to it, it makes a rapid development, and the early period of growth is generally satisfactory. After a time, much to the regret of the cultivator, the growth becomes more slow, ultimately it becomes quite sluggish, and the appearance of the mildew endorses the final result, for further growth ceases. The rootlets of such plants, extending somewhat in proportion to the growth of the plant, as they increase in length so they become more distant from the supply of food, for as they strike into the soil they become dependent upon it in its unmanured condition. The result is that as soon as the artificial manure is used up so the growth gradually diminishes; and at the very time when you need a vigorous circulation and an active growth to defend the crop from the mildew you have the plants in a feeble state, quite unprepared to do battle with the enemy. This results not only from a deficiency of food but more especially from the fact of its supervening upon a period of rapid growth. A corresponding example is seen in those cases where farmyard manure has been liberally employed; but in consequence of a defective tillage of the soil the early luxuriant growth has been succeeded by a check which has enabled the mildew to gain the day. In like manner the moist and humid air in some districts favours a rapid growth of roots; these when checked by frosty nights coming between hot days, such as are by no means uncommon in the autumn, have a tendency to produce a similar result, and even under good management certainly favour the mildew. It may be very well when farm-yard manure has been well intermixed with the soil to drill the artificial manure, because then you push forward the early growth, and there is enough distributed in the soil to continue its later and more complete development. If, however, artificial manure is solely relied upon it would appear desirable to drill only a portion of it—sufficient to push forward its early growth—and spread the residue over the land. To avoid mildew you should maintain a continued growth until the winter weather commences, and this will be most satisfactorily done by combining a thorough and long-continued working of the soil with a general distribution of the manure used. *T.*

A valuable paper by Dr. Macadam, read before the chemical section of the British Association at Aberdeen, calls attention to the need of simplifying the reports of the composition of manures, so as to confine the attention of the purchaser to those items on which alone the value of his purchase depends. Thus instead of speaking of soluble phosphates, insoluble phosphates, hydrated sulphate of lime, alkaline salts, silica, organic matters, water, and ammonia—let the analysis name ammonia, insoluble and soluble phosphates alone.

In valuing the ingredients again, ammonia, put at 56*l.* a ton, is so valuable only in the forms of organic matter which yield it easily. Some kinds yield it so slowly, by so tedious a putrefactive process, that their value is proportionally smaller. Soluble phosphates are fairly worth 28*l.* per ton, and insoluble phosphates, if derived from bones, are worth 7*l.* a ton, while that of mineral origin is of very little value.

Dr. Macadam referred further to the sale of adulterated manures. He said:—"During the last season I have had forwarded to me for analysis and valuation a considerable number of samples of guano which had been sold as Peruvian guano, which were of so inferior quality that they contained in the average 50 per cent. of unmistakable sand; and a calculation of these manures showed their average value to be about 2*l.* per ton, instead of 12*l.*, which they were sold at. Now, it would be manifestly incorrect to regard 6 tons of the inferior guano as equal to 1 ton of the superior; for, though possessing the same money value of manurial ingredients, yet the question of carriage from the market town or seaport to the farm, cartage from the farmer's store to his fields, and distribution thereon, are all multiplied six times over, to get the same manurial value and probable effects. In such circumstances it is my common practice to calculate the value of all very inferior manures according to the rates previously referred to, but with proviso, that at the 2*l.* or other low figure, the manure must be delivered to the farmer carriage paid; in other words, that the manure is only worth that sum to the farmer when it is delivered on his premises."

ARSENIC IN SUPERPHOSPHATES.

The alleged discovery of arsenic in superphosphates and in the produce raised with it, as referred to in the *Gardeners' Chronicle* of the 10th inst., being likely to excite unnecessary apprehension, or at least to rekindle the prejudice but scarcely extinguished in the minds of some persons against the above-named invaluable manures, I venture to offer some additional evidence on this matter.

That arsenic is likely to be present in superphosphates will be admitted by every one who is acquainted with the sources whence the manures are prepared; but that its presence in these substances is rare, and that its quantity when present is generally exceedingly small, may not be so well known as to render its announcement unproductive of satisfaction.

With the view of ascertaining to what extent we are likely to suffer from the presence of arsenic in manures of this description, I made some experiments, the results of which may perhaps be interesting, and may possibly tend to allay any anxiety which the mere announcement of such an apparently startling fact as that above-mentioned is not unlikely to create.

I first examined for arsenic several samples of white and brown sulphuric acid, the material most likely to contaminate superphosphate with arsenic. These samples were taken from different sources, and although this acid not unfrequently contains arsenic, none of these samples contained any. As is well known sulphuric acid is prepared not only from sulphur, but also from iron pyrites, a mineral that often contains arsenic, and which is therefore likely to impart this substance to the acid prepared from it. But the iron pyrites commonly used for this purpose do not contain so much arsenic as is generally supposed; indeed of

many samples I have analysed for manure makers (many of whom, I need scarcely say, prepare the acid they require in the manufacture of superphosphate), and others, several have contained no arsenic, others but traces, and few more than .50 per cent.

I next examined for arsenic several samples of superphosphate obtained at different times from some of the largest makers; the samples used in two or three cases had been taken from very large quantities of this article. Of eight samples examined seven contained *no* arsenic; the eighth contained faint traces. In order to check the correctness of these negative results I prepared a solution of arsenious acid of known strength, by means of which small quantities of the poison might be added to the materials employed in the experiments.

I may remark that the means I used for testing these manures was the test known as "Marsh's," but should have proceeded to employ other tests had the results obtained by this one been positive, or seemed to require further evidence. I should also have examined a larger number of samples had the results obtained from a few been different to what is above stated.

By using the solution of arsenic above noticed, strong reactions for arsenic were obtained from quantities considerably smaller than $\frac{1}{1000}$ of a grain, and this in the presence of superphosphates, so that any objection that might be raised from the possible occurrence of materials in superphosphates which prevent or retard the elimination of arsenic by this test might be overcome. But in order still further to be secure on this point some arseniate of lime was prepared (the compound of arsenic that would probably occur in superphosphates) and minute quantities tested in the same manner in the presence of superphosphate, and with equally good results.

The sample of superphosphate which contained arsenic was made at a manure works where pigments occasionally containing arsenic are known to be used, but the quantity of arsenic present was far beyond the limits of a quantitative determination, and must have been exceedingly minute. Even supposing it to be as much as .01 per cent. (although the comparative experiments above described showed it to be much less), and assuming that plants are capable of taking up arsenious acid in the same ratio as they do phosphoric acid (a matter that certainly requires to be further investigated), we may calculate that the quantity of arsenic likely to be present in a Turnip crop is by no means formidable. Supposing an acre of land to yield 20 tons of Swedes, and that 3 cwt. of superphosphate, containing 33 per cent. of phosphate of lime and .01 per cent. of arsenious acid have been used, each cwt. of roots would contain about half a grain of arsenic—a proportion of not more than .00006 per cent. *Alfred Sibson, Royal Agricultural College, Cirencester.*

ON AUTUMN CULTIVATION.

By autumn cultivation that change in soils which must precede restoration to fertility is begun at once, and this change—call it transformation, pulverisation, disintegration, or "mellowing"—is more efficiently accomplished in the months of September and October than at any other time of the year. Thus while the soil is better tilled by this practice, many months of time are gained. If soils by being broken in the autumn can be made in better order by Christmas than they would otherwise be by the following Midsummer, two restorative, or green crops, as Rape and Turnips, or one slower growing but more largely producing crop, as Mangel, may be sown wherever this method is impracticable.

I practice autumn cultivation because I have found that no amount of harrowing, rolling, scarifying, and ploughing in the spring will compensate for neglecting to break land subsequently to harvesting. My governing rule is, when fields have been subjected to a course of cropping, to break them up at once; in August if I can; but if the season and ordinary machinery of a farm will not allow that advantage, I make the best of September. I break these soils too as deeply as it is intended to plough them during the year of tillage and green cropping, for I do not like to have the fresh vegetable substances contained in the roots of the last crop exposed to the heat of the autumn sun, and made as tough as whipcords, but I turn them a few inches down, when they remain moist and quickly exercise whatever organic qualities of a fermentative kind they may possess. In most cases I harrow directly after the plough, and if the soil be light and the season dry, I follow up with a middle sized roller. I find that this plan facilitates that decomposition of the roots of the last crop which is necessary to produce rapid and perfect tillage. It is not "rest" that restores soils to fertility, or to a condition that will produce restorative crops, but it is a change or transformation of what vegetable substances may remain in them, and their action on the soils they are blended with, when again brought up and exposed to free air. If a piece of land be sown with Rye and Tares, and these be fed off in April, and the land be ploughed after feeding, then harrowed and rolled lightly, and left so for a fortnight or three weeks, that land will become in better order after another ploughing or two with harrowings, than a neighbouring piece would be by the end of May or beginning of June, after a winter ploughing and much labour in spring cultivation. This shows the pulverising efficiency of turning the roots of the last corn crop in when fresh, and the greater pow r of green roots to produce that chemical change which brings about a state of perfect tillage. The process of that chemical change is absorption of oxygen from the atmosphere. It is well known that decomposition and disintegration of any object is the result of exposure to free air under conditions that will admit of its being a prey to oxygenation. Earth in that pure form found in "subsoils" is but little affected, chemically considered, by exposure to free air. Its physical arrangement when brought up is deranged by the action of sun, wind, and rains, and frosts and thaws, but the chemical change produced in it is little more than would take place in the still, or non-fermentative, carbonaceous substances called coals and chalk, if these were simply exposed to atmospheric changes. An introduction of some fresh vegetation is required to make earth of a character to absorb oxygen, when rapid absorption of it, and that disintegration which produces a fine tilth, ensue on its re-exposition to free air.

On the strength of these views, I make a point of breaking all my exhausted land once, in preference to expending a month's labour on half of it, and leaving the remainder untouched till after Wheat sowing. I do not mind seeing ploughed fields get green in October, from the growth of shelled corn and what annual weeds may then grow, for I know that whatever vegetable substances were turned in are decomposing and charging the earth with organic acids, for absorbing oxygen when exposed in the spring to free air. I know also that the germinating and living plants are collecting carbon and elaborating additional volumes of organic acid, which will be yielded, as the plants decompose in the winter time, after the next ploughing. This deposit will act in a similar way, and equally if there be much shelled corn, to the roots left in the soil after a crop of green Rye has been removed.

There are exceptions to be made to the above method; as, for example, where soils or fields are, what is commonly called, sour. The more these cases are exposed to the autumn sun by rough tillage the better, as they already possess enough organic acid for the absorption of large volumes of oxygen, and therefore for having their mineral atoms or crude substances liberated, or made soluble, which is all they require to restore them, or make them physically conditioned for producing carbon-collecting or restorative crops. Where land is very foul, too, the system of deep ploughing at once is objectionable, but as land is not expected to be in this condition at the present time nothing further need be said on this point.

On clay or heavy land autumn cultivation is especially necessary, for green crops cannot be grown here if its chemical disintegration or pulverisation be left to take place in the spring; and there is no method of restoring clay lands so effectual and economical as producing carbon-collecting crops, such as Rape, Mustard, and white Turnips, and ploughing them in. By introducing vegetation it absorbs oxygen, which disintegrates it, makes it active or soluble in water, when it is fitting food for domestic plants. The staple soil, as it is called, of a field is that portion of the surface which has been deprived of the proportion of crude carbon that now exists in the subsoil, and which has been partly displaced by decayed vegetation, that mostly exists there in the form of humus, giving to this staple that darker colour by which it is distinguished. When this surface was left in its last geological position, it was of the same character even to the top. Living vegetation made the staples or soils that now rest on the crude earths commonly called "sub-soils." Thin-skinned clays are so for two reasons; the first is, they are composed of an earth that has a small proportion of calcareous or carbonaceous matters in them; the second is, they have had no artificial means bestowed on them to make them "thick-skinned," or of a deeper friable staple. Autumn cultivation, the growth of green crops, and ploughing them in, constitutes a method for producing a soil or staple of a deeper and darker, and therefore more corn-productive character than they now possess. When it will be more profitable to feed summer crops on the soil with sheep, than to plough them in, must depend on the manner they are forced and the weight they will grow.

I have pressed the above point, because there is evidently some great misconception by practical men, as to the process whereby clay soils are restored, or their latent constituents developed; and no scientific writer that I am aware of has done full justice to this part of our subject.

If autumn cultivation be practised on mixed soils, or lands more especially employed for growing Swedes, much of the cause for recent failures of this valuable crop may be obviated. But something more than autumn cultivation is now required for this end. As the best Swedes may be grown after a crop of green Rye—that is, where a collection of fermentative organic matter has recently existed in the soil—it has been made clear that this system must be extended. Autumn cultivation is the first step, applying farmyard manures in the winter, or artificials in the spring, and sowing a crop of Rape and Mustard for ploughing in or feeding off young, is the next part, for the reasons previously given; or to fold the land over while feeding sheep with Mangel, will supply that organic acid to the soil which will have the present desired end. Stubble Turnips, too, sown in the autumn, where the land is clean, is good practice, and the land will be more developed and better fertilised than it would be by all the bare mechanical action that could be bestowed.

With light sandy or gravelly soils the practice necessary is quite different. These are naturally sterile because they contain no fixed carbonaceous substances or compounds in them. All they require is to have vegetable substances and organic acids imparted to or deposited in them. By these means are the mineral and metallic constituents that they can supply to plants made soluble. They are naturally porous—too porous—and air is circulated freely through them with every fall of rain and return to dryness. Therefore, the less they are exposed to free air by barren tillage the better. A succession of green crops is the only method whereby these soils can be economically restored. Rye-grass, followed by white Turnips, or stubble Turnips, followed by summer Rape, and then by "green round;" or winter Tares, followed by spring Tares or summer Rape, and then white Turnips: these are some of the methods that can make these soils fertile, and which partake largely of what is meant by the term autumn cultivation.

When I, or any one else, shall be able to hire a steam cultivator from near by, one and all of the advantages attempted to be set forth above may be practised much more readily and efficiently, with more telling results, and at a less direct cost. *W. G.*

IS NOT LIVE STOCK A NECESSARY EVIL?

I am at issue with you when you say in your leading article of August 20, "There is, however, as a general rule no unavoidable loss in the manufacture of meat; it has often proved the largest source of the farmer's profit, even without taking the value of the manure made at the same time into account."—Will live stock pay the market price for their food?

To simplify the matter—did you ever know of any person "keeping stock only as a matter of profit and purchasing *all* their food?" If so, such person would certainly tell you that the balance was sadly on the wrong side. This fairly settles the question. I remember a correspondent writing to me that he intended to keep pigs as a matter of profit on a large scale, and wishing to know my opinion as to the best mode of proceeding. I told him that there would be no profit, but on the contrary, he would lose 10 per cent. on the purchased food besides shelter and attendance. I need hardly say he gave up the idea of pig-feeding as a profitable undertaking. If we farm we must have manure, and I am sure there is no way of obtaining it so cheaply and effectively as by feeding stock, and therefore I am a strong advocate for keeping a great deal, but we must look for our profit indirectly in the increased quantity of produce resulting from increased manure. Valuers only charge two-thirds of the market price of hay, &c., to the incoming tenant who is to consume it with stock, knowing full well that the stock will hardly pay him that amount.

Mr. John C. Morton in his able paper, "On Increasing our Supplies of Animal Food," says at page 359, vol. x., Royal Agricultural Society's Journal, "There was thus on the whole 4 years a profit on the oxen of 322*l.*, on a cost of 2916*l.*, or 11 per cent.; sheep 103*l.*, on a cost of 2476*l.*, or 4½ per cent.; pigs 253*l.*, on a cost of 751*l.*, or 33 per cent. Do not let me be mistaken, however, these sums are not net profit. It is merely the cost of purchase, of attendance, and of bought food (a very large item), with which these accounts are debited, the expense of cultivating the green crops on which the animals were fed has not been charged on them at all; had that been accounted for here a great apparent loss would have been exhibited instead of this apparent profit." He then goes to say—"This 678*l.* is all that we have got for 4000 tons of green food. This is about 3*s.* 4*d.* per ton, a result singularly similar to some other tolerably extensive and very trustworthy specimens of experience given hereafter."

It requires no conjuror to prove that we cannot grow green food and roots at 3*s.* 4*d.* per ton—10*s.* is a nearer estimate. Therefore, Mr. Morton himself proves indubitably that stock are necessary evils profitable only by their manure. Farmers of Grass lands must of course depend upon stock for their returns, and as an average derive a profit on their capital invested either in meat, butter, milk, or cheese; but Mr. Morton's paper tends to show the advantages of a mixed husbandry. Mr. Morton's account singularly confirms my statement (see my book, page 237) that no animals lose so little money as pigs.

Turn again to Mr. Lawes' "Experiments on Fattening Sheep," Society's Journal, vol. xii., page 440. He says, "From these balance tables it appears that the prices of the fat sheep and their wool covered within a few shillings their cost and that of their purchased food, &c. In both cases we have therefore the manure of this food and of the Turnips consumed to pay for those Turnips and for attendance on the animals."

In conclusion I say, keep plenty of stock; get it well bred, and feed it well, but consider its manure as very costly and worth taking every care of as a means of growing corn and seed crops for market, but do not delude yourself that you can get from your animals the same price for the food they consume as though you sold it to go off the farm. Having proved my case I hope there will be no mistake about the question for the future. *J. J. Mechi, Sept.* 22.

P.S. The most profitable mode of feeding cattle is decidedly that pursued by Mr. Horsfall, viz., by a large consumption of steamed straw with a moderate proportion of roots, cake, bran, and malt-combs. We fancy, even in Essex, that we can distinguish between an ill bred and a well bred animal. Oddly enough farmers consider pigs the least profitable of their stock when

they have to buy food for them, or give them their own corn at a well-known market price. In this opinion I quite differ from them. I hope that your correspondents will furnish ample facts on the feeding question.

Home Correspondence.

Implicit obedience in a Bailiff.—A sensible farmer will not object to hear the opinions of his labourers; for myself I am convinced farming is never learnt, and I confess I have been often guided by the notions of my men, and occasionally saved from loss. The following incident occurred to the writer's knowledge. Mr. Brook, a wealthy merchant of London, had an estate in North Hants, and farmed it on his own account; on hiring a bailiff he promised good wages on one condition: "implicit obedience" to any and every order sent him; no reply, "would not this or that be better?" In the autumn of the year 18—, Mr. Brook visited his farm and saw two trips of pigs, one three months old, and the other five. In about two months after his return to London he sent orders to have two of the youngest trip in the yard killed for bacon, dried, and sent up to town. It seems the sow had had another fallow of pigs, now about six weeks old, which of course was the youngest trip in the yard. What was the man to do? No remonstrance, "implicit obedience;" which he followed out to the letter, and in due course sent up the four sides of bacon, which he might have packed in a good sized office envelope. The landlord henceforward relaxed a little, and gave the bailiff liberty in such a case "to drop him a line," convinced as all the world was before, that there is no rule without an exception. * * *

The Rabbit Nuisance.—I fully concur in all that has been written on this subject; but when gentlemen think it is impossible to extirpate rabbits they are certainly in error. A few years back I went to a situation where rabbits abounded so plentifully that I could at any time stand at my cottage door in the evening and count them by the hundred. The same autumn the proprietor (a non-resident one) gave the rabbits to his keeper, and a few weeks afterwards the same personage had six months' notice to quit. This set the man of guns, and traps, and nets and snares, so busily to work, that a war of extermination was waged with such vengeance, that in the following season a party of six or eight guns might be at the woods and traverse 4000 acres of land for a whole day without seeing a brace of the vermin. In this case the keeper for the purpose of annoyance hunted out the breeding burrows up to the following midsummer and destroyed both old and young, sometimes boasting that he had a stew or hash of 40 or 50 young rabbits for his dinner. Speaking of dinners reminds me of the droll story told by Charles Lamb of an eastern Prince who, first tasting roast pig from the ruins of a burnt house, used frequently to sacrifice a house for the sake of the delicacy; and I have no doubt there are hundreds of tenant farmers who would equally rejoice if their landlords would occasionally sacrifice a keeper for the purpose of exterminating the rabbits. Rabbits are a plague in the fullest sense of the word; and if put to my choice I would rather keep the same quantity of hares, as they, instead of foraging constantly upon my land, would occasionally take a bite with my neighbours. There is, however, a condition upon a large estate in this neighbourhood where the winged game is preserved for the landlord, rabbits and hares go to the tenants; and the steward of the property told me a short time back that the birds being liberally distributed among the tenants, the hares and rabbits sent in return to the landlord were more than sufficient for the supply of a large family. Here the keeper has his house and 5*l.* per month, finding his own ammunition and certificate. He has also the privilege of breeding and selling dogs. The tenants are the watchers, and thus for a mere trifle the establishment is well supplied with game, all cause for grumbling on the part of the tenant is removed, and all go on amicably and comfortably together. Gentlemen are frequently very remiss in the distribution of game; the game feeder ought to be a game eater; but for a gentleman to tax his tenants by feeding a large quantity of game for the purposes of sale, as is the case on some estates, is neither honest nor honourable. *Judex.*

"Sigma's Dibble."—I have just threshed out my Wheat, "Red Straw White," planted with this implement, and find it averages 48 bushels per acre throughout. I sold immediately 10 quarters for seed. I believe the average yield here will not be more than 32 bushels. I shall certainly adopt the same plan of planting in future, but I should use only 3 pecks of seed instead of 4, which I did last year. *Senex, Weald of Kent.*

Cinders for Pigs.—A long experience has taught me that pigs are very fond of coal ashes or cinders, and that you can hardly fat pigs properly on boarded floors without giving them a moderate supply daily or occasionally. In the absence of coal ashes burned clay or brick dust is a good substitute. If you do not supply ashes they will gnaw or eat the brick walls of their sheds. I leave to science to explain the cause of this want. It is notorious that coal dealers, where pigs have access to the coals, are generally successful pig feeders. Those who find that their pigs when shut up do not progress favourably will do well to try this plan; a neighbour of mine found that a score of fat pigs consume quite a basket of burned clay ashes daily; we know that there is abundance of alkali in ashes. I wish some of your practical correspondents would communicate their experience on this matter, and I also want them to state how many lb. of Barley meal it takes to make 1st. of pork, not dead weight. It will tend to elucidate the question of profit on feeding stock as raised in your leading article of the 20th August. *J. J. Mechi, Tiptree.*

Farmers' Clubs.

Ripley, Yorkshire.—At the annual show of this society, Mr. I. D. Dent proposed "Success to the Ripley Agricultural Society," in doing which he congratulated the company on the fact that these meetings were for mutual interchange of thought, and the communication of practical knowledge as to agricultural operations. It was a most important and interesting inquiry to ascertain how far English farmers were supplying the wants of the English people as to food and clothing, and the figures he should quote as bearing on this question would surprise those who had not before directed their attention to the subject. In the articles of butter and cheese alone they were paying the foreigner, according to the returns of 1857, three millions per annum; for bacon, hams, lard, and pork, they were paying 1,800,000*l.*; and for eggs, poultry, and quills, 390,000*l.* Now, he thought it would be well if greater attention were paid to these productions on the small farms throughout that district, which were well adapted for the purpose. With these facts before them, and the knowledge of this large expenditure for foreign produce, it was surely worth their while to try whether their means of production as to butter, cheese, bacon, and eggs could not be increased. This, however, was not the only expenditure on account of agricultural imports, and he found on reference to the same return that they were paying annually for foreign manures 396,496*l.* in the form of bones, and 3,613,074*l.* for guano; and for cattle food and seeds nearly 2,000,000*l.*, making a total of more than 6,000,000*l.* for agricultural produce and manure imported into this country. There was no doubt that English farmers were paying as much at home for manures, cattle food, and seeds, so that at a moderate estimate they might put down 12 millions a year as the amount expended for the articles required to augment the productive power of the soil alone. This showed that farmers had manfully taken the position in which they were placed by the abolition of the corn laws, and were prepared to maintain their ground, but still there was scope for further improvement. He had recently had an opportunity of examining the farms in the East Riding of Yorkshire and in Lincolnshire, and he must say that in this part of the country they were much behind. He congratulated them on the mutual confidence which existed between the landlord and tenant throughout Yorkshire and which led to results equally as satisfactory as the Midlothian system of leasing, and said that when he saw tenant farmers introducing the steam plough, the reaper, the steam threshing machine, and the various mechanical means for facilitating their operations, he felt that the spirit there manifested was as enterprising as was to be found in their manufacturing districts.

Farm Memoranda.

Aylesby, near Great Grimsby.—Mr. Wm. Torr occupies several farms, inall covering an area of 2100 acres, and supporting, among other objects of interest, a most extensive and valuable herd of Shorthorns, and a thrifty flock of Leicester sheep.

The land he occupies varies considerably in character, but is generally rather strong, underlaid by clay or chalk, and capable of yielding quite remarkable crops under good management. The system followed is, generally speaking, the four-course shift, although Mr. T. does not bind himself to it, and varies it by occasionally putting some fields in Wheat that would naturally come under a Barley crop, thus increasing the area covered by the former, without ever taking two white crops in succession.

Upon his land he finds that to manure for the Wheat causes frequently too much luxuriance of growth, and he consequently prefers to manure mainly or entirely for the root crop. Not only is the immense bulk of straw which he converts into fertilising wealth thus employed, but he also spends liberally for oilcake, guano, and superphosphates—buying to a great extent, in lieu of the two latter, a kind of "blood manure," which seems to be now in quite general esteem—and his bill, he told me, for the past year for these materials was near 2000*l.*

The wool he clipped this spring, however, would have sufficed to cover no immaterial proportion of this large sum, for he sheared no less than 2000 sheep. The extent of business incurred in the management of such a farm may also be estimated from the disposition of the land and the crops it returns. There are about 500 acres in permanent Grass, and the other 1600 are divided into Wheat 500, Barley 250, Oats 100, roots 415, and seeds 335. Last year the Wheat crop was a very good one, and averaged throughout this large surface nearly 40 bushels per acre; Mr. T. estimates his average, bad years with good, not far below this figure—perhaps at 36 or 38, while he considers the average of all Lincolnshire as varying from 30 to 32. Two adjoining fields of his best Wheat aggregating 67 acres averaged all through full 48 bushels, and of the Barley there were 28 acres which produced 183 quarters, that is, six and a-half (52 bushels) to each.

Mr. T. annually shears about the number of sheep mentioned above, but they do not comprise his whole flock at this time, which includes about 1000 breeding ewes, the same number each of yearlings and of lambs, and perhaps 100 tups. He is to have his Annual Show and Letting on the 7th of September, and will probably reduce his stock before winter about to the usual numbers. Having so much land in permanent Grass, he is enabled to graze through the summer to almost any desired extent. He generally disposes of about 400 fat sheep per year, and the rest of those he breeds are sold I presume to other breeders who require them, or some perhaps to other farmers simply for feeding purposes. In the summer he also grazes a few bullocks, but does not feed beasts to any extent in winter, because generally his Short-horn herd is large enough to consume, with the sheep, all the hay and straw he has to give them.

The mode of applying the manure to the Turnips is to open a furrow where each row is to grow; in this the "muck" or farm-yard manure is thrown, and, upon it, from 1½ to 2 cwt. to the acre of guano; after a covering of earth has been turned over this with the plough, the seed is drilled—the machine dropping at the same time with it from 4 to 8 bushels of ground bones per acre, as the case is thought to require, mixed to a bulk of about 24 bushels per acre with sod ashes. These sod ashes or charred earth play a most important part in Lincolnshire agriculture, and appear to be in almost universal use upon the root crop, whatever other applications it may or may not receive. Between 50 and 60 tons of guano were used last year, at a cost of 12*l.* to 14*l.* per ton; and 330 quarters (8 bushels each) of bones ground, I was given to understand, to what is called the half-inch size, and costing about 1*l.* per quarter.

The cost of labour in the country generally is about 2*s.* sterling per day; the men who care for the horses are taken under a different way from other labourers, and are generally what is called "confined" hands; perhaps they have a cottage furnished, and receive a further part of their wages in kind,—altogether, at any rate, getting a considerably higher sum than others, partly because their services are necessary, more or less, all seven days in the week, and partly because they occupy a position of more responsibility. One such a man is engaged to every four horses, and if my memory serves me, there are employed upon the place 40 or 50 horses—it may be rather above the latter figure even.

Mr. T.'s land, with probably the sole exception of the "Riby farm," is situated similarly to, if not actually included in what is called the "fen district"—a district not requiring here the machinery of wind-mills and steam to effect its drainage, as it does on some parts lying lowest and nearest the sea; but much the better for a judicious under-ground dressing of pipe tile. Indeed, my host looked upon the introduction of deep drainage as one of the greatest agricultural improvements the last few years have seen; while in early times of draining, 2½ feet was considered ample, 4 feet is now reached wherever circumstances admit, and Mr. T. has on one of his farms about 300 acres, all underlaid at this depth, at a cost of about 1500*l.* sterling. It is such fen lands, when well drained and properly managed, that will return, in a fair season, the largest Wheat crops compatible with standing straw—they may be allowed to get into such a condition that the straw will never stand, and, of course, the great end is to hit that medium which runs between too great luxuriance of growth and too little fertilising material to admit of the fullest and thickest heads of grain. Two cwt. of salt per acre may be applied to strengthen the straw, and if thought best, 1½ cwt. of guano—or if the land will bear it, 2 cwt. of guano and a proportionably larger amount of salt—either put in at the time of seeding in the autumn, or sometimes sown broadcast in spring.

Mr. Torr took the prize at Warwick, for a farm gate "not to cost with the irons above 24 shillings sterling"—the prize 10*l.* Its dimensions, as made by him, are as follow:—outside length at top, 8 feet 9 inches; ditto at bottom, 8 feet 11 inches; heads, 4 feet 8 inches high, that at the hinge end 6 by 4 inches, and the other 3½ by 2½ inches; six bars, a fraction over an inch thick, and 3 inches wide, except the highest one, which is 4½ wide, and then topped with a cap bar 3 inches in width, bevelled slightly on the upper side to produce a neat finish. There are two uprights of the same stuff and size as the bars, and a support, or sag bar, passing from the lower corner at the heel towards the higher corner opposite, 1½ by 3 inches in size, and 8 feet 3 inches long. In making the gate, the top and bottom bars are parallel, and at right angles to the smaller head, but the bottom bar being 1½ inch the longer, the other head which supports the gate is of course thrown a little out of an exact perpendicular and in hanging the gate, which is done on the face, and not on the side of the heel post, the butt of the lower hinge is put enough further back than that of the upper one to let the gate stand horizontally when shut; of course the end rises when opened, and this just far enough to make the gate close itself with certainty. The bars are all of them inserted in mortices through the heads—the mortice being of the full size of the bar; pins here, and a wrought nail where each upright intersects a bar, make the whole as firm as possible. Although rather a heavier gate than we should often want, it could be made lighter on the same principle, and certainly seems to be one of the best for use I have met with, although my description may not be perfect enough to carry the same idea to the mind of the

reader. Bolts, I think, are employed to fasten the sag bar to the horizontal ones. This gate has been some time in use at Aylesby Manor, and often imitated by those who have seen it there; and, as it has now taken a prize for which there was considerable competition, its "make" must at least "look right" to practical Englishmen.

Mr. Torr's predecessor at Aylesby Manor was Philip Skipworth, who established the flock of Leicestershire sheep, having obtained some Dishley bred ewes it is said; and, about 1810 or 1812, such was the fame of this highly improved breed—having given the extravagant price of 600 gs. for the use of a single ram—an awful figure, indeed, but exceeded by the combination of four of his neighbours to make up a thousand guineas for the hire of another ram "of the same sort." It is now about 70 years since the flock was commenced, and its breeders have successfully manifested a similar determination not to be outdone in securing the best, and as constantly exercised their own judgment in preventing its deterioration. The farm came into Mr. Torr's hands in 1848. This year at Holme Pierrepont he was the hirer of the 70 guinea ram, the only one which went higher having been taken to Ireland. As we stroll from paddock to paddock where the rams are grazing, we shall find that they are generally a little larger in frame than the Sanday flock, as though the air of Lincolnshire, or perhaps a touch in the foundation blood three or four score years ago, had brought them a little nearer to the style of sheep indigenous to the country. The sheep of Lincolnshire as they now exist are doubtless almost universally tinged with Leicester blood, and this in a greater degree I observed on the low than on the high lands—the latter preferring to adhere more to the old type, and inclined to think it the only one at all suited to their wants.

As to Short-horns, Mr. Torr is entitled to precedence for extent of herd, while he has not many rivals in its character. He numbers at present 120 females, and 26 bulls, young and old. He is disposed to swear by Mr. Booth in all Shorthorn matters, and thinks the cow "Bracelet," and bull "Duke of Northumberland," never surpassed in all the pedigreed members of this now widely-spread breed, There is a noticeable proportion of handsome roans in this herd, and not a few of them fully able to back their colour with all desirable style and substance. It is fifteen years since Mr. T. began, in 1844, to hire exclusively from Warlaby; paying for the services of the bulls from 60 up to 200 guineas each, and including among them "Leonard," "Baron Warlaby," "Vanguard," and other good stock-getters. The last was in use for seven seasons, and 40 or 50 out of the 180 calves he bred still bear witness to their parentage. A half-dozen of noble bovine matrons are left among the best fruits of the Warlaby blood, their sire having been the "Baron" of that ilk. Indeed, of all the cows and heifers there are but eleven which do not trace back their origin to Booth bulls, and not one of them not included in the trio mentioned above. "Hopewell," by name, is the father of a tribe of twenty or thirty daughters, and several particularly nice young sons. Take, as an example of the latter, his breeder's especial pride, "Booth Royal" and "Golden Hope," both 14 months old, and "Gay Hope," still younger, his blood particularly precious to the initiated in geneological mysteries, for in it are mingled that of a whole quartet of Boothian bulls. *Albany Country Gentleman.*

Notices to Correspondents.

Cheviot Rams: *M S.* At Mr. Brydou's Cheviot sale at Beattock the total proceeds were as follow:—

8 five-year-old rams	.. ..	£117	0s. 0d.
14 four-year-old do.	.. .. ..	131	5 0
65 three-year-old do.	.. .. ..	559	0 0
55 two-year-old do.	.. .. ..	435	15 0
28 one-year-old do.	.. .. ..	99	15 0
35 tup lambs	.. ..	49	18 6
205 Total	.. .. ..	£1392	13 6

The average of 170 rams is 7*l.* 16*s.* 9½*d.*; in 1857 the average of 169 was 10*l.* 2*s.* 9*d.*; and in 1855, 7*l.* 17*s.*

Clamp for Roots: *Hardy & Son.* We do not see in what way your clamp, requiring some degree of skill to erect and more expense to cover, is better than simply a large circular heap of roots left piled on the ground for a month before being finally covered over with straw and earth.

Cow Keeping on a Small Scale: *Paterfamilias* has "about 100 stone of hay, straw for the asking, half an acre of kitchen garden, with some good Carrots, and a few good Cabbages cutting and to cut (a quarter sown with Rye and Vetches for spring, as your *Chronicle* advised a fortnight ago), bran and oilcake for purchasing, a straw cutting machine, and a boiler."—He has ample provision for a cow. She must be fed well while giving milk, and must depend on the straw and a handful of hay daily when dry. We do not know when she is to calve again, and can hardly advise in detail without that knowledge. If the calf does not come till the Rye and Vetches are ready then the garden stuff may all be used in the autumn and January, and towards the end of February the cow may run dry; about 20 stones of the hay may be used for the 70 or 80 days during which she will give no milk; with this and straw *ad lib.* and water she will do very well while dry. Till the end of February, *i e*, about 140 days, 8 or 9 lbs. of hay may be given daily, and if the supply of green food is as much as 3 or 4 tons altogether, as probably it is, she can have 40 or 50 lbs. of green food daily, using the most perishable sort first. In addition to this if 20 or 30 lbs. of clean straw be cut up daily into chaff, and (buying 3 cwt. of oilcake, *i.e.*, about 140 cakes) one cake be boiled daily in as much saltish water as this 30 lbs. of straw chaff will take up, there will be a capital supply. Of course towards the end of her milking, the richer food must be diminished gradually, and she must be put gradually on the hay and straw, which may as well continue to be cut into chaff. When she calves some oilcake and straw should be given in addition to her green food, so as to let changes of food come gradually.

NEW PINKS.

CHARLES TURNER (Maclean).—Dark purple lacing, large and fine; 5*s.* per pair.
ELEANOR (Turner).—Rose, fine; 5*s.* per pair.
EDITH (Maclean).—Reddish purple; 3*s.* 6*d.* per pair.
LITTLE GEM (Maclean).—Red; 3*s.* 6*d.* per pair.
MILLIE (Maclean).—Dark, fine; 5*s.* per pair.
MISS GLOVER (Turner).—Purple; 3*s.* 6*d.* per pair.
Charles Turner can strongly recommend the above as first-class Pinks, and great acquisitions for exhibition purposes.
C. Turner's general stock of Pinks are very healthy and strong, and are now ready for sending out at 9*s.*, 12*s.*, and 18*s.* per dozen pairs.—The Royal Nurseries, Slough.

FLOWER GARDENS AND GARDENERS.

MR. GLENNY will present every reader (who will send him a directed envelope to Dungannon House, Fulham, S.W.), with a packet of Seed of the true DELPHINIUM FORMOSUM, the most handsome of all hardy perennials; intense blue. BALSAMS, mixed, acknowledged to be the finest ever offered, 50 seeds, 13 stamps, and any single colour; 12 seeds, 7 stamps; a new tricolor, 12 seeds, 13 stamps.
Glenny's GARDENERS' GAZETTE for September, most important to Gardeners of all classes, 3*d.*, or by post 4*d.*

HYBRID SWEET WILLIAMS.—Seedling Plants from the magnificent collection exhibited by James Ewen this last summer, the admiration and astonishment of private and eminent professional growers, colours varying from most delicate white, pink, and purple to the darkest crimson and black, beautifully laced in each colour, and spotted; clear cut edge of dwarf habit with dark broad foliage (the great acquisitions to Dianthus, and qualities possessed by these offered in perfection), 2*s.* 6*d.* per dozen. A limited quantity of seed, 1*s.* per packet (sown now for bloom next season), free by post on receipt of stamps or Post-office Order, payable to James Ewen, Springfield Watercress Ground, Wandsworth Road, London, S. The Trade supplied.

TO THE TRADE.—

	Per doz.	*s.*	*d.*
Begonia Miranda	..	12	0
,, Reichenamii	..	12	0
,, splendida argentea	.. .. ..	12	0
Begonia Madame Wagner	.. ..	12	0
Begonia Rex, strong, per 100	.. .. ..	50	0
Begonia umbelica	..	6	0
,, ricinifolia maculata	.. .. ..	6	0
Begonia grandis, each	..	5	0
,, Virginia, each	..	5	0
,, Isis, each	..	5	0
,, nebulosa, each		5	0
Ligustrum ovalifolium, per 100	.. .. ..	25	0
Ligustrum japonicum, per 100	.. .. ..	75	0
Weigela rosea, p. 100		16	0
,, amabilis. p. 100		16	0
Ash, weeping, and Elm		18	0

	Per doz.	*s.*	*d.*
Pears, standards, p. 100		75	0
Plums, ditto ditto		75	0
Graptophyllum pictum		9	0
Gesneria cinnabarina, p. 100, 40*s.* per doz.	..	6	0
Pittosporum variegatum		12	0
Croton discolor	.. ..	12	0
Cissus discolor	.. ..	6	0
Torenia pulchella	..	6	0
New Bouvardias	..	6	0
Vines in pots, leading kinds	.. 12*s.* to	30	0
Lobelia fulgens, per 100		16	0
Arbor-vitæ, China, 9 to 18 inches, per 100	..	25	0
Cedar, red, 9 to 12 ins.		25	0
Laurustinus	.. 16*s.* to	40	0
Laurel, common, per 1000	.. .. 16*s.* to	120	0
Viburnum, strong, p. 100		25	0
Currants, red Dutch, superior kind, p. 1000		60	0
Apples, standards, p 100		50	0

MARTIN and SONS, Cottingham and Hull.

"WONDERFUL" STRAWBERRY, raised by JOHN JEYES, Nurseryman, Northampton. Price 10*s.* 6*d.* per 100.

The above Strawberry is a week later than British Queen, and perfectly hardy. The fruit is produced in such abundance that it is necessary to place a stick near the centre of each plant, and from it support the long clusters of fruit from covering the surrounding ground. The plant is naturally a small grower. The following testimonials from three of the most eminent cultivators of fruit are respectfully referred to:—

"Althorp Park, October 6, 1857.

"Sir,—Your Seedling Strawberry is by far the greatest bearer I ever saw. I cannot speak too highly of it for colour, size, flavour, and productiveness. I was delighted with the wonderful crops of ripe fruit I saw in your nursery. Send me 100 plants as early as you can.—Your obedient servant,

"Daniel Judd, Gr. to the Right Hon. Earl Spencer."

"Castle Ashby, October 6, 1857.

"Sir,—I beg to acknowledge the receipt of 100 plants of your 'Wonderful' Strawberry. I am very pleased that you have been able to increase it so as to send it out this season, as I think it a very extraordinary fruit, so good in flavour, fine colour, and wonderfully productive.—I am, Sir, yours respectfully,

"Wm. Hardie,

"Gardener to the Most Noble the Marquis of Northampton."

"Moulton Grange, July 31.

"Sir,—In justice to you as the raiser I must affirm that your Strawberry is the best extant. Its productiveness is, as its name implies, really wonderful, whilst its flavour partakes of a fine-flavoured sugary Pine Apple, heightened with that of the old British Queen Strawberry. This variety will supersede all others, and become our leading and main cropper when its high merits become better known, which time and its own qualities will assuredly accomplish. "J. Ransley Tanton,

"Gardener to H. O. Nethercote, Esq., F.H.S."

"Blisworth Gardens, Northampton, Sept. 28, 1859.

"I have grown your 'Wonderful' Strawberry for two years, and for flavour, size, and colour it is quite equal to anything out, and for productiveness it far surpasses anything I have ever grown or seen. This last season my plants were very fine, and I repeatedly gathered one gallon from a single plant, and I can truly say I never was so proud of anything in my life as with my crop of your Strawberries.—I am, dear Sir, yours truly, "William Bawcutt."

NEW STRAWBERRIES.

ROBERTSON'S WIZARD of the NORTH and NONSUCH.

DANIEL ROBERTSON, Linside Nursery, Paisley, is now sending out the above-named superb varieties, at 63*s.* per 100 plants, or 9*s.* per dozen. The Wizard of the North is a magnificent large variety, of superior quality, of very fine colour and shape, and an immense bearer. Succeeds Keens' Seedling and continues long in production. It is exceedingly hardy both in growth and in blossom. It was named in 1857, when a Certificate of Merit was awarded to it by the Paisley Horticultural Society; and a drawing made of the plant then exhibited is in the hands of the lithographer, copies of which when ready will be sent to the principal Seed shops in the country.

Nonsuch is an early Strawberry, of fine size and colour, a great bearer, juicy and rich in flavour, swelling off its later berries well.

These fine varieties were raised by Mr. John Robertson, at Linside, and their high character has been most satisfactorily established by several years' cultivation. They are confidently recommended as a valuable acquisition to Strawberry growers, whether they cultivate on a large or small scale. Strong plants are now ready and orders will be promptly executed.

Testimonials in favour of these fine Strawberries from the most eminent cultivators in the west of Scotland, who have seen them in bearing here, will be supplied on application.

Having a large stock of the Wizard of the North, Nurserymen and Market Gardeners ordering in quantity will be dealt with on favourable terms. A remittance or reference required.—Daniel Robertson, Linside Nursery, Paisley, N.B.

SPLENDID NEW ORNAMENTAL FOLIAGED PLANT—CONATANTHUS, OR CALADIUM CUPREUS.

HUGH LOW and CO. have now in their Nursery a magnificent specimen of the above-named new plant, which was imported by them from Borneo. It was exhibited at the July Show of the Royal Botanic Society, where a Certificate was awarded to it, but the plant was then newly imported, and was consequently small. It has now developed itself, and proves to be the finest ornamental foliaged plant introduced up to the present time.

The Floral Committee of the Horticultural Society of London in awarding it a First-class Certificate appended to it the following remark:—"One of the most strikingly beautiful of Ornamental Foliaged Plants." No description can convey an adequate conception of its surpassing beauty, and therefore H. L. & Co. invite an inspection. They will have pleasure in showing it to any gentleman who may favour them with a visit.—Clapton Nursery, London, N.E.

CONIFERÆ.—All transplanted this last spring:—

Abies Deodara	Pinus Benthamiana
,, Menziesii	,, Cembra
,, Nordmanniana	,, insignis
Cupressus Lawsonii	,, Sabiniana, &c.
Cephalotaxus Fortunii, male and female	Taxus fastigiata
Juniperus sphærica	Thuja gigantea
Libocedrus chilensis	Thujopsis borealis
Pinus austriaca	Wellingtonia gigantea,

and nearly every other hardy Conifer worthy of cultivation. Many of the above are fine specimens from 1 to 10 feet high.

These are a few things selected from the general stock, which Charles Noble flatters himself will bear comparison with any in the kingdom. Gentlemen wishing to inspect the above will find the Nursery only a few minutes' walk from the Sunningdale Station, South-Western Railway, which is one hour's ride from London.—Charles Noble, Bagshot, Surrey.

CAMELLIAS AND INDIAN AZALEAS, with flower-buds, AND OTHER USEFUL PLANTS.

A. VAN GEERT, Nurseryman, Ghent, Belgium, begs to offer the following:—

Fine CAMELLIAS, with flower-buds of the best and showiest varieties, 5*l.* to 6*l.* per 100.
Fine INDIAN AZALEAS, with flower-buds, of the choicest varieties, 4*l.* to 6*l.* per 100.
New French and Belgian Herbaceous PÆONIES, 25 vars., for 1*l.*
LILIUM LANCIFOLIUM RUBRUM, strong bulbs, 4*l.* per 100.
,, ,, ALBUM ,, 3*l.* per 100.
,, ,, PUNCTATUM, 3*s.* 6*d.* each.
,, JAPONICUM (true), 5*s.*
,, CORDIFOLIUM, 5*s.*
ASCLEPIAS TUBEROSA, flowering roots, 1*l.* 1*s.* per 100.
GLADIOLUS GANDAVENSIS, strong roots, 10*s.* 6*d.* per 100.
,, ,, a collection of 25 new distinct varieties, for 1*l.* 5*s.*
Ghent and English Hardy RHODODENDRONS, fine young plants grafted, 6*l.* per 100.
GHENT AZALEAS, with flower-buds, 4*l.* to 5*l.* per 100.
The new MEXICAN PINES, 50 varieties, 5*l.*
PINUS VEITCHI, 5*s.* each.
,, DON PEDRO, 5*s.* each.
TILLIA EUROPEA foliis variegatis (new), 15*s.* each.

FRUIT TREES.

THOMAS RIVERS begs to submit to the public the following synopsis of his FRUIT TREE CULTURE, which he flatters himself will be found on inspection most complete and extensive.

The DESCRIPTIVE CATALOGUE of FRUITS, which is so arranged as to point out the most select varieties to those commencing fruit culture, is now ready for delivery. It contains 32 pages of original and useful matter, and will be sent free on receipt of six stamps; to customers gratis on application. Carriage of all packages paid to London.

APPLES on CRAB STOCKS.—Standards for orchards, dwarfs, dwarfs horizontally trained for espaliers, and pyramids in a bearing state.

APPLES on PARADISE STOCKS, for GARDENS.—Pyramids, dwarf bushes, dwarfs horizontally trained for espaliers, and dwarf bushes in pots.

APRICOTS.—Standards, standards trained, half standards trained, half standards in pots, dwarfs, dwarf bushes for potting, dwarfs trained for walls, and dwarfs in a bearing state in pots, for orchard houses; pyramids in pots, bearing trees.

CHERRIES on BLACK CHERRY STOCKS.—Standards, standards trained, dwarfs, dwarfs trained, strong pyramids in a bearing state, and dwarfs in pots, bearing trees.

CHERRIES on the MAHALEB STOCK.—Dwarf bushes for potting and culture as bushes, dwarfs trained for walls, dwarfs and pyramids in pots, bearing trees, and pyramids in a bearing state.

CURRANTS.—Dwarf bushes, including some new and fine varieties.

FIGS in pots in a bearing state, and trained trees for walls.

GOOSEBERRIES.—Small, high-flavoured, old sorts, and all the large new Lancashire varieties.

GRAPES for VINERIES, from Eyes, in Pots.—Strong plants, 2 and 3 years old, 8 to 9 feet high; ditto in pots, dwarf bushes for orchard houses; ditto hardy sorts from the open ground for walls.

MEDLARS.—Standards, pyramids, and dwarfs.

MULBERRIES.—Standards and dwarfs trained for walls.

NECTARINES and PEACHES.—Standards, standard trained, half standards trained, half standards in pots, dwarfs, dwarfs trained, dwarfs trained from walls, and dwarfs in a fruiting state in pots for orchard houses or for forcing; pyramidals in pots, bearing trees.

NUTS and FILBERTS.—Dwarf bushes, and standards 4 feet high, grafted on the Hazel-nut.

PEARS on PEAR STOCKS.—Standards, standards trained, dwarfs, dwarfs horizontally trained for espaliers and walls, pyramids six years old (twice or thrice removed), in a bearing state; these are well adapted for gravelly and chalky soils unfavourable to pyramids on the Quince stock.

PEARS on QUINCE STOCKS.—Standards trained for walls, pyramids, pyramids root-pruned in a bearing state, dwarf bushes in a bearing state for potting or for culture as bushes, dwarf bushes and pyramids in pots in a bearing state for orchard-houses, dwarfs horizontally trained, and dwarfs upright trained, bearing trees.

PLUMS.—Standards, standards trained, dwarfs, dwarf bushes for potting or for garden culture, dwarfs trained for espaliers and walls, dwarf bushes, bearing trees in pots for orchard-houses, and pyramidal trees.

QUINCES.—Standards of the common Quince, and pyramids and standards of the large Portugal Quince.

RASPBERRIES.—Canes of the finest varieties.

STRAWBERRIES.—Runners of the finest varieties.

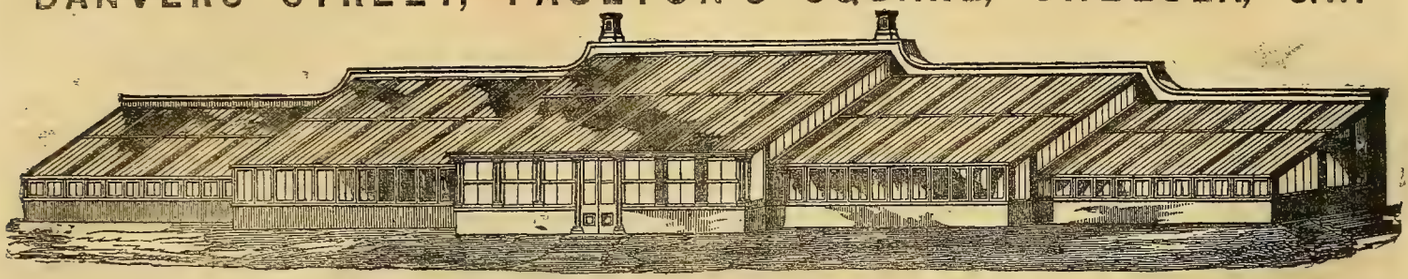
WALNUTS.—Dwarfs for gardens of the Dwarf Prolific, other sorts as standards for orchards.

Nurseries, Sawbridgeworth, Herts.—October 1.

REIGATE SILVER SAND.—Best quality for Florists, 16*s.* per ton; less quantities, 1*s.* 6*d.* per bushel, delivered to any London wharf or railway. PEAT, LOAM, and LEAF MOULD, in large or small quantities. Sacks for Sand, 1*s.* 6*d.* each, or on hire 6*d.* each (five hold a ton).
John Kennard, Purveyor to her Majesty, Swan Place, Old Kent Road, London, S.E.

HORTICULTURAL WORKS,

DANVERS STREET, PAULTON'S SQUARE, CHELSEA, S.W.



JAMES GRAY

RESPECTFULLY BEGS TO INFORM THE NOBILITY, GENTRY, NURSERYMEN, GARDENERS, AND OTHERS, THAT HE CONTINUES TO CARRY ON THE BUSINESS IN ALL ITS BRANCHES AT THE ABOVE OLD ESTABLISHED PREMISES.

CONSERVATORIES, GREENHOUSES, FORCING HOUSES, VINERIES, PITS, &c.,

OF EVERY DESCRIPTION, ERECTED ON THE MOST APPROVED PRINCIPLES.

HEATING BY HOT WATER.

J. G. having specially devoted his attention for many years to this part of the business, is now fully prepared to Heat every description of public and private buildings, viz :—Churches, Mansions, Warehouses, &c., as well as all structures connected with Horticulture, in the most efficient manner. His system is the most simple that can be adopted—which he has found from long experience to be the best—can be constructed at less cost, and is more easily managed than those of a complicated nature which have attracted the notice of the public.

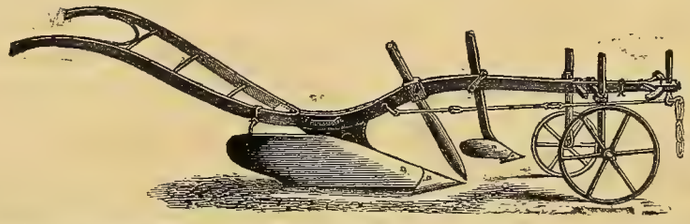
J. G. begs to call attention to his CAST-IRON CORRUGATED ARCH BOILER, which from its simplicity of construction has not the liability to fracture to which those of a more complex design are always subject. They have been extensively used for many years, and have given the greatest satisfaction.

All business is conducted at this establishment on the principle of lowest remunerative profits consistent with best materials and workmanship.

PLANS AND ESTIMATES FURNISHED ON THE SHORTEST NOTICE.

THE PLOUGH TRIALS AT WARWICK.

HOWARD'S CHAMPION PLOUGH



Gained the FIRST PRIZE as the Best Plough for General Purposes at Warwick,

BEING the CHIEF PRIZE for PLOUGHS, awarded by the Royal Agricultural Society of England, at this Meeting. The importance of this Prize will be gathered from the fact that the GENERAL PURPOSE PLOUGHS are the only ones tried on BOTH LIGHT AND HEAVY LAND, and as HOWARD'S CHAMPION PLOUGH proved itself to be the best on both soils, the FIRST PRIZE, of the HIGHEST AMOUNT given by the Society for any kind of Plough, was awarded to J. & F. HOWARD.

PRIZES awarded to J. & F. HOWARD, by the Royal Agricultural Society of England, at the WARWICK MEETING, 1859, being not only the LARGEST NUMBER of PRIZES, but the LARGEST NUMBER of FIRST PRIZES awarded to any Exhibitor.

THE FIRST PRIZE FOR THE BEST PLOUGH FOR GENERAL PURPOSES, ALSO A PRIZE FOR THE BEST PLOUGH FOR LIGHT LAND, AND A PRIZE FOR THE BEST PLOUGH FOR HEAVY LAND; THE FIRST PRIZE FOR THE BEST LIGHT HARROWS, THE SECOND PRIZE ALSO FOR THE BEST LIGHT HARROWS, AND THE FIRST PRIZE FOR THE BEST HEAVY HARROWS.

Every one of HOWARD'S Implements, tried at Warwick, gained a Prize.

CATALOGUES, with full particulars, sent post free on application to

J. & F. HOWARD, BRITANNIA IRON WORKS, BEDFORD.

C. STEPHENSON, late STEPHENSON AND SONS, 61, Gracechurch St., London, E.C., Manufacturer of Iron Hurdles, Fencing, &c., Improved Iron and Copper Conical Boilers and Apparatus for Warming Buildings of every description by Hot Water.

Prices and Estimates furnished upon application.

T. G. MESSENGER, HORTICULTURAL BUILDER and PATENT HOT-WATER APPARATUS and GARDEN ENGINE MANUFACTURER, Loughborough.

T. G. MESSENGER'S Divisionless Horticultural Erections, ventilated with screw mechanism by which the top or front lights are opened the entire length of the house momentarily, do not fail to give complete satisfaction (as numerous Testimonials can show), for the following reasons :—They are much lighter in appearance, more durable, much stronger, and cheaper than any other can possibly be.

Three years' trial has proved his PATENT BOILER to be superior to any hitherto invented; a great number of houses can be heated at once with this Boiler, with the facility of heating any separately.

Illustrated descriptions and prices of his Patent and greatly approved GARDEN ENGINES sent free upon application; also Plans, Estimates, and Testimonials for Building or Heating. See *Gardeners' Chronicle*, May 21.

HORTICULTURAL BUILDINGS AND HEATING BY HOT WATER.

JOHN R. PEILL, 17, New Park St., Southwark, S.E., Manufacturer of every description of Buildings for Horticultural purposes, and Inventor of the Improved Conical Boiler for heating the same, is prepared to undertake works of any magnitude, and refers among others to the celebrated range of FORCING HOUSES at HER MAJESTY'S GARDENS, FROGMORE, and at SIR ROBERT PEEL'S, DRAYTON MANOR, constructed under the superintendence of his Manager, Mr. JOHN JONES; and also to his BOILERS fixed at the CRYSTAL PALACE, the ROYAL BOTANIC GARDENS, REGENT'S PARK, and KEW, and at several hundreds of the Nobility's seats, Public Establishments, and Manufactories in London and the provinces. J. R. P. also manufactures every description of Iron Roofs, Iron Houses, and Iron Fencing, plain and ornamental. Strong Iron Hurdles for Sheep (6 ft. long, 3 ft. high, with 5 bars), 4*s.* 3*d.* each; ditto for cattle, 4*s.* 9*d.* each. Prices and other particulars forwarded on receipt of one postage stamp.

GREENHOUSES.

HENRY FREEMAN, HOTHOUSE BUILDER and HOT-WATER APPARATUS MANUFACTURER, Triangle, Hackney, N.E. Established 20 years. Good substantially built GREENHOUSES, fixed in any part of the kingdom, for cash, 42 feet long by 13 feet, 90*l.*; 21 feet by 13 feet, 50*l.*; 12½ feet by 10 feet, 30*l.* A first-rate CONSERVATORY, 30 feet by 16 feet, 130*l.* A large assortment kept. Estimates for Heating, or any branch in Wood or Iron or Park Fencing.

HOT-WATER PIPES at wholesale prices, with Elbows, Syphons, Tee Pipes, and every other connection. Wrought and cast iron Boilers, Saddle, Conical, Cylinder, and Elliptic, from 24*s.* each. Boilers and Iron Stands to use without brickwork. Valves from 12*s.* each. Coil Boxes, Furnace Doors, Furnace Bars, Supply Cisterns, and Builders' Castings of every description in stock, at Mr. LYNCH WHITE'S Iron Wharf, Upper Ground Street, Blackfriars Bridge, London, S.

STEELL'S PATENT WROUGHT-IRON DOUBLE-BACKED DOUBLE BOILER, for HEATING CHURCHES, HORTICULTURAL BUILDINGS, WAREHOUSES, &c., is the most powerful, most economical, and quickest actioned Boiler in existence, and may now be seen ready for use at their Nurseries, Richmond, Surrey, S.W., the only place where they can be procured.

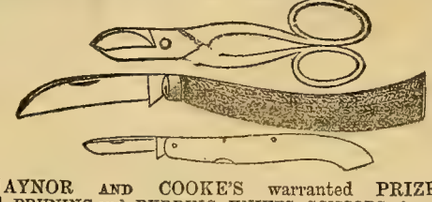
TESTIMONIAL.

"Rectory, Barnes, Sept 10, 1859.

"Gentlemen,—I can readily bear my testimony to the excellence of your Boiler; indeed to that of the whole heating apparatus which you have supplied for our church. It combines great heating power with economy of fuel and facility of management.—I am, Gentlemen, yours faithfully,

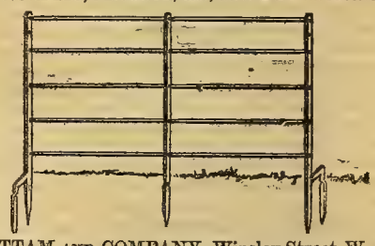
"Messrs. G. & W. Steell." "R. E. COPLESTON."

PAXTON WORKS, SHEFFIELD, ESTABLISHED 1738.



SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.—Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

IRON HURDLES, FENCING, &c., MADE BY MACHINERY.

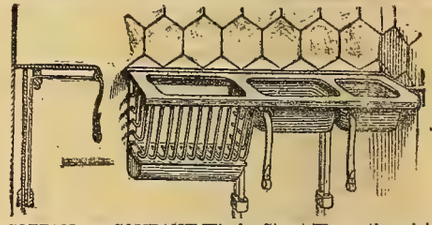


COTTAM AND COMPANY, Winsley Street, W., have invented machinery for making Hurdles, &c.; the bars, instead of being pointed by hand in the old fashioned style, are nippled down by the machine, leaving a shoulder so as to more effectually tighten the standards when rivetted. They are made of superior iron only, and will compete in price with those made by hand from cinder or common iron which so frequently break. Iron Fencing, Gates, and Iron Work of all kinds, both Plain and Ornamental, Conservatories, Hot Water Apparatus and Garden Implements.

Illustrated CATALOGUES free on application to COTTAM & COMPANY, Ironfounders, 2, Winsley Street, Oxford Street, W.

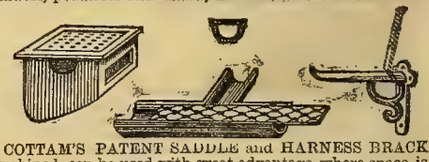
N.B. COTTAM & Co. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

COTTAM'S PATENT INVENTIONS FOR STABLE REQUISITES, awarded a Prize at the Paris Exhibition, and patronised by the English and French Governments.



COTTAM AND COMPANY, Winsley Street, W., are the original inventors of the PATENT ENAMELLED MANGER, Water Trough, and Wrought Iron Rack, united to an iron top-plate, and forming one complete and useful fixture, having COTTAM'S patent noiseless halter guide and collar rein attached, which is taken to the back of the manger, and works with ease and freedom up or down the guide-bar.

COTTAM'S NEW PATENT SEED-BOX, an important addition to the above fittings, being simple in construction, light, and durable, promotes cleanliness, and is economical in its results.



COTTAM'S PATENT SADDLE and HARNESS BRACKET combined, can be used with great advantage where space is an object, as it can be turned up out of the way when not in use.

COTTAM'S IMPROVED SURFACE GUTTER, with perforated moveable cover, the use of which prevents accidents, and can be easily cleaned out.

COTTAM'S CAST-IRON SANITARY TRAP, from its improved construction, gives a full water passage, and does not allow any smell to ascend from the drain.

PATENT LOOSE-BOX FITTINGS, and every article for the harness-room and stable, kept in stock, plain, galvanised, and enamelled. Iron gates, fencing, hurdles, &c.

The New Illustrated Catalogue and Estimates, gratis, upon application to COTTAM and COMPANY, 2, Winsley Street, Oxford Street, W.

N.B. COTTAM & Co. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

GARDEN POTS AND PANS, in quantities of not less than 20 casts, delivered to the London Stations at the following prices:—Nos. Thbs. 60, 60, 54, 48, 40, 32, 28, 24, 16, per cast, 2s. respectively. 12, 3s.; 8, 3s. 6d.; 6, 5s.; 4, 5s.; 3, 5s.; 2, 5s.; 1, 5s. On lesser quantities, 6d. per mile, for delivery to the Station, charged. The usual discount to the Trade. Square Propagating Pans, Kale and Plunging Pots, Strawberry and Border Tiles, &c., made to order.

J. & W. Adams, Kilns, Bello Isle, York Road, King's Cross, N.

PARKES' STEEL DIGGING FORKS.

BURGESS AND KEY, 95, Newgate St., E.C., London, being the Wholesale and Retail Agents for these celebrated TOOLS have always a large Stock on hand from which their Customers may select what they may require.

ANTHONY'S PATENT AMERICAN CHURN.—The FIRST PRIZE was again awarded to this Churn in Competition with several others at the Chester Meeting of the Royal Agricultural Society; it has obtained the First Prize given by the Society at every Meeting since 1850.

Messrs. Burgess & Key, 95, Newgate Street, E.C., strongly recommend it as the most perfect Churn now in use. Full particulars sent on application.

HAYMAKERS, possessing the best features of Nicholson's Prize Machines, with recent improvements peculiar to those supplied and manufactured only for

RICHMOND AND CHANDLER, Salford.

Branch Establishment, South John Street, Liverpool.

N.B. The celebrated Bedford and Stamford Prize HORSE RAKES always in stock, with latest Patented Improvements.

HAY HARVEST.

NICHOLSON'S PATENT HAYMAKER, to which was awarded the First Prize of the Royal Agricultural Society of England at the last contested trial.

The celebrated STAMFORD HORSE RAKE has lately been much improved, and has obtained 26 Prizes at competitive trials.

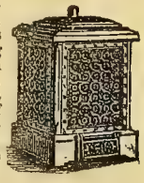
MOWING AND REAPING MACHINES are performing their work most satisfactorily, and fully justify public expectation, cutting about 10 acres per day, at a cost of 9d. per acre.

Orders for the above machines should be given at once to Richmond & Chandler, Salford, Manchester.

Branch Establishment, South John Street, Liverpool.

IMPROVEMENTS IN HEATING, &c.

MUSGRAVE'S PATENT SLOW-COMBUSTION STOVE, for Warming Public Buildings, Hall, Shops, Conservatories, Factories, Drying Rooms, &c. Will burn in Churches from Saturday till Sunday evening, avoiding attention during the hours of worship. In Halls will burn day and night for weeks, with little care. Capable of warming a large apartment for 24 hours, at a cost of 3d.; and deserving of special attention, because of its safety, healthfulness, durability, and extreme simplicity. This Stove is the nearest approach to warming by hot water.



MUSGRAVE'S PATENT STABLE FITTINGS AND HARMLESS LOOSE BOXES have obtained the award of a large Council Medal from the R. I. A. Society for the following improvements:—1st, The Horse cannot injure himself or others in the same stable if he breaks loose in his stall. 2d, He cannot waste the hay. 3d, He can have cut or uncut hay at pleasure. 4th, He has clean water always before him. 5th, A pure and wholesome atmosphere is secured. 6th, The whole fittings are stronger than usual, without increase in price, and there is no risk of infection.



The Loose Box is really what its name denotes, and the most spirited Horse may be turned into it without danger.

MUSGRAVE'S PATENT IRON COW-HOUSE FITTINGS, as approved by the Board of Works, adopted in the Ulster Model Farm, and by many of the most eminent Stock Breeders in the Kingdom, are made wholly of iron, very durable, cleanly, and attractive in appearance. The fodder is always fresh, being freely exposed to the air, removed from the breath of the animal, and separated from the roots or damp food. The range of Troughs can be quickly filled with water for the use of the Cows, or for washing out in case of epidemic, and the cost is very moderate.



These inventions being distinguished for strength, simplicity, and practical usefulness will repay public inquiry.

Musgrave Brothers are also Makers of Wire Fencing, Hurdles, Field and Entrance Gates, Corn Rick Stands, Conservatories, Hot-water Apparatus, Verandahs, Rural Bridges, &c.; and their works being favourably placed for cheap labour and materials, they can offer corresponding advantages in price.

Musgrave's Patent Field Gates have gained the 1st Prize from the R. I. A. Society for strength, durability, and cheapness.

For particulars address Musgrave Brothers, Ann Street Iron Works, Belfast.

TREE TRANSPLANTING BY MACHINE, Landscape Gardening, Ornamental Planting, Land Draining, Lakes, and Road-making, &c. Plans and Estimates. W. H. Rumbold, Grange, Tunbridge Wells.

GENUINE TOBACCO PAPER FOR FUMIGATING.

H. APPLEBY (Foreman to Messrs. Ivery & Son, Nurserymen, Dorking, Surrey), supplies the above in 4-lb. packets at 1s. 3d. per lb. A liberal discount allowed to to the Trade. Testimonials too numerous for insertion, but may be had on application.

SHEET IRON POTS FOR FUMIGATING, 3s. 6d. each.

N.B. All orders to be accompanied with a Post-office Order, payable to Henry Appleby, Dorking, Surrey.

NURSERYMEN SUPPLIED WITH THE BEST GENUINE TOBACCO PAPER at 4l. per cwt.; any quantity less than ½ cwt., 10d. per lb. The above article is warranted genuine.—Address Tom Bryant, Messrs. Jackson & Son, Lady Lane, Leeds.

TO PIG, POULTRY, AND GAME FEEDERS.

JUPP'S RICE FOOD, POULTRY AND GAME.—RICE SWEEPINGS, 7s. 6d. per cwt., in 1½ cwt. bags; SCREENED RICE, 10s. per cwt., in 1¾ cwt. bags; DOG BISCUITS, 14s. per cwt.; OIL-CAKE, per ton only; RICE MEAL for PIGS, 6s. and 8s. per cwt., in 1 cwt. bags, at the mill. Orders must be accompanied by a remittance to insure delivery.—W. & R. Jupp, 6, Cross Lane, Eastcheap, E.C.

TO BREEDERS OF BERKSHIRE PIGS.

FOR SALE, two very superior pure bred BERKSHIRE SOWS (sisters), 12 months old, one of them a prize Pig. Price 10l. 10s., delivered to any Railway Station.—Apply to H. K., *Gardeners' Chronicle* Office.

TO NURSERYMEN, GARDENERS, AND OTHERS.

TO BE DISPOSED OF, A SMALL NURSERY in the Wandsworth Road. Houses and Stock in good condition, with a good Jobbing Business.—Apply to Mr. A. Chandler, Horticultural Valuer, 28, Priory Road, Wandsworth Road, S.

TO NURSERYMEN, GARDENERS, AND OTHERS.

TO BE DISPOSED OF, A NURSERY, containing about 4 Acres, with numerous Greenhouses, Plants, Stock in Ground, &c., situated in a favourite suburb south of London, on the high road, and with an increasing business.—Full particulars will be given on application to Mr. A. Chandler, Horticultural Valuer, 28, Priory Road, Wandsworth Road, S.

TO NURSERYMEN AND OTHERS.

TO BE DISPOSED OF, a really first-rate NURSERY, including Glass, Stock, and Business, entire, on very advantageous terms, in the immediate neighbourhood of London. Might suit two or more in partnership, or any country firm requiring a London place of business. Long Lease and capitally situated. Part of the Purchase Money might remain at interest if desired.—For all further particulars apply by letter to A. B. & Co., care of Messrs. Williams & Lloyd, Stationers, 29, Moorgate Street, London, E.C.

TO NURSERYMEN, FLORISTS, AND OTHERS.

TO BE DISPOSED OF, a First-Class LONDON NURSERY, long Lease and Good Will, the Vendor having been in occupation for 16 years. Extensive frontage, stands well for business, Omnibuses to all parts of London. There are 12 Greenhouses, besides Pits, &c., part heated by Hot Water, and adapted to the Propagation and Culture of Hard-wooded and Miscellaneous Plants. The usual Ground Stock includes American Plants, choice young Fruit Trees, &c., in fine condition. Good Residence, Seed Shop, and Offices separate; two Stall Stable, Cart and Packing Sheds, front and back entrance, and every convenience to carry on a large business.—Apply to Messrs. Brooks & Beal, Estate Agents and Auctioneers, 209, Piccadilly, W.

NURSERY AND PLANT BUSINESS, SUDBURY, SUFFOLK.—A fine opportunity offers immediately, as this part of the Business of Bass & Brown is for disposal. The stock of Fruit Trees, Ornamental Shrubs, Roses, &c., is first rate, standing on a superior soil, an unfailing supply of water on the spot, conspicuously situated between the Railroad and the public road, at a short distance from the Station. Also the whole or part of the Greenhouses, Pits, &c., with the Greenhouses, Pits, &c., with the excellent stock contained therein.—Particulars of Blunden & Squire, Agents; or of Stephen Brown, at the Seed Establishment, Sudbury, Suffolk.

Sales by Auction.

MR. J. C. STEVENS begs to announce that his MONTHLY POULTRY and PIGEON SALES will recommence on TUESDAY, October 4, and will be continued on the first Tuesday in every month during the season, with occasional extra sales.—38, King Street, Covent Garden, W.C.

MONTHLY POULTRY SALE.

MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, W. C., on TUESDAY, October 4, at 12 o'Clock precisely, 260 LOTS of CHOICE POULTRY and PIGEONS, including Buff and White Cochins, Brahmas, Dorkings, Game, Malays, Silver Spangled Hamburghs, Guinea Fowls, Aylesbury Ducks, &c., from the yards of the Rev. G. Gilbert, A. G. Brooke, Esq., F. Manning, Esq., and others. The Pigeons are remarkably choice and include Carriers from W. W. Hayne, Esq., Pouters from S. Bult, Esq., and other varieties from celebrated breeders.—May be viewed on the morning of Sale and Catalogues had of Mr. J. C. Stevens, 38, King Street, Covent Garden, W. C.; if for the country by enclosing two stamps.

ENGLEFIELD GREEN, SURREY.

MR. J. C. STEVENS is honoured with instructions to Sell by Auction, on the premises, Cooper's Hill, Englefield Green, Staines, on THURSDAY, October 13, at 1 o'Clock precisely, without reserve, The Remaining Portion of Specimen Stove and Greenhouse Plants of Sir John Cathcart, Bart., who is discontinuing exhibiting. The Azaleas are very fine, and include

Double Red ..	6 feet by 5	Symmetry	3 feet by 3
Variegata ..	3 „ 4	Coronata	5 „ 3
Vivicans ..	4 „ 4	Semi-duplex maculata	5 „ 4

And others from 1 to 6 feet high.

Amongst the Stove Plants will be found strong healthy Plants of Ixora alba and acuminata, Caladium Chantini and argyrites, Plocostenum lasianthum, &c. A choice collection of Camellias well set with buds, a few Orchids and Ferns, and numerous other fine and rare plants which have formed leading features in the various metropolitan exhibitions during several past years.—May be viewed on the day prior and morning of Sale. Catalogues had on the premises; and of Mr. J. C. Stevens, 38, King Street, Covent Garden, W.C.

*** Cooper's Hill is about 1 mile from the Egham Station on the London and South-Western Railway.

ORCHIDS, FERNS, AND FOLIAGE PLANTS.

MR. J. C. STEVENS will Sell by Auction at his Great Room, 38, King Street, Covent Garden, W.C., on TUESDAY, Oct. 11, at half-past 12 o'Clock precisely, a Collection of ESTABLISHED ORCHIDS in excellent health, and including the following choice sorts:—

Vanda cœrulea	Cypripedium hirsutissimum
„ suavis (Veitch's)	„ Fairrieanum
„ tricolor	Lycaste Skinnerii, fine dark
Aerides Warnerii (true	Cœlogyne cristata [variety
„ virens superba	Saccolabium Blumei major
„ Foxbrush	„ retusum

and numerous other good sorts.

A Collection of RARE FERNS, STOVE and GREENHOUSE PLANTS, and about 60 lbs. of CEDRUS DEODARA and other Seed just imported.—May be viewed on the morning of sale and Catalogues had.

VALUABLE AND EXTENSIVE HERBARIUM AND LIBRARY OF BOOKS.

MR. J. C. STEVENS has the honour to announce that he will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on FRIDAY, Oct. 21, at half-past 12 o'clock precisely, A most Valuable, Extensive, and Arranged HERBARIUM, containing more than 38,000 species of Phænogamous Plants, being more than one half the known number of that division of the Vegetable Kingdom, mostly in the finest possible condition, and forming the most extensive and Valuable Collection ever offered for Sale. Also some smaller Collections of Plants, all named together, with the very Choice Library of Books, which include the works of Bateman, Andrews, Duhamel, Humboldt, Jacquin, St. Hilaire, Thornton, Wight, Griffiths, Palisot, Blume, Martius, De Candolle, Pohl, Reichenbach, Roxburgh, Royle, Lindley, Don, Horsfield, Ellis, and other eminent authors, most elegantly bound, and in the finest possible condition, the property of a Nobleman.—May be viewed the day prior and morning of Sale, and Catalogues had at the Rooms, or sent by Post on receipt of two stamps.

CAMELLIAS, AZALEAS, RHODODENDRONS, AND OTHER PLANTS FROM GHENT.

MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on FRIDAY, November 4, at Half past 12 o'Clock precisely, 500 CAMELLIAS of various heights, well set with bloom; 450 Dwarf, Standard, and Indian Azaleas (some new); 50 Rhododendrons, 100 Lilium lancifolium rubrum (true), and 100 Gladioli gandavensis; 8 Laurustinus, 50 Roses, and 150 various Greenhouse Plants.—May be viewed on the morning of Sale, and Catalogues had.

EXMOOR PONIES.

THE Annual Sale by Auction of 50 EXMOOR PONIES, COBS, and GALLOWAYS, will take place at Bampton Fair, near Tiverton, Devon, on THURSDAY, October 27. Every particular may be had of Mr. Smith, Emmett's Grange (Exmoor), Southmolton, Devon.—Emmett's Grange, Oct. 1.

SALE OF PIGEONS AND POULTRY.

MESSRS. ARCHER AND SON will Sell by Auction at the Auction Mart, on THURSDAY, October 13, about 160 lots of choice PIGEONS AND POULTRY from the following gentlemen—F. Esquilont, Esq., J. Percival, Esq., G. Crocker, Esq., W. Towse, Esq., S. Ridley, Esq., W. Colson, Esq., J. Master, Esq., — Evans, Esq., — Allison, Esq., and many other amateurs. Also at the same Sale, a brace of first-rate RETRIEVER DOGS, in high condition, which may be viewed the morning of the Sale.—Catalogues may be had at the Auction Mart; the United States Tavern, at the corner of Mark Lane, Fenchurch Street, E. C.; and of the Auctioneers, at their temporary office, 314, Strand, W. C.

HUCCLECOTE GARDENS, 2½ MILES FROM GLOUCESTER—HIGHLY IMPORTANT SALE OF SPECIMEN STOVE AND GREENHOUSE PLANTS.

MR. WILLIAM KNOWLES is favoured with instructions from G. S. Wintle, Esq. (who is leaving the neighbourhood), to Sell by Auction, upon the premises, on TUESDAY, WEDNESDAY, THURSDAY, and FRIDAY, October 18, 19, 20, and 21, commencing each day at 12 o'Clock, the whole of his very valuable Collection of Specimen ORCHIDS, STOVE, GREENHOUSE, and ORNAMENTAL-FOLIAGED PLANTS, among which will be found the

Cossignea borbonica, 5 by 4 ft.	Azalea alba grandiflora, 4 by 4 ft.
Colea Commersonii, 5 by 4 ft.	„ amœna, 2 ft. by 2 ft. 6 in.
Aralia farinifera, 4 by 3 ft.	„ juliana, 2 ft. by 2 ft. 6 in.
Latania borbonica, 4 by 6 ft.	Phœnocoma prolifera Barnesii, 3 by 3 ft.
Cycas revoluta, 4 by 6 ft.	Erica Savileana major, 3 by 3 ft.
Attalea Cohune, 7 by 5 ft.	Erica tricolor Wilsonii, 2 ft. 6 in. by 2 ft. 6 in.
Monsteria Adansonia, in fruit, 4 by 7 ft.	Erica jasminiflora alba, 2 ft. by 2 ft. 6 in.
Croton variegatum, 4 by 4 ft.	
„ longifolium crispifolium, 4 by 3 ft.	

And numerous other fine and rare Plants, which have gained the principal prizes at the various Horticultural Exhibitions.—May be viewed on Monday, October 17, and mornings of Sale, by Catalogues only (price 6d. each), to be obtained at the office of the Auctioneer, St. Mary's Square, Gloucester.

TO BE LET, the above capital Walled-in GARDENS (containing about 4 acres), with House, Farmyard Buildings, Orchard, and Land adjoining, containing in the whole about 16 acres, with Greenhouses, Propagating Houses, Vineries, Pits, &c. Extent of Grass, 5770 feet.—For particulars apply to Mr. Knowles, Auctioneer, Gloucester.

VERY IMPORTANT SALE AT HORNBY CASTLE, CATTERICK, YORKSHIRE.

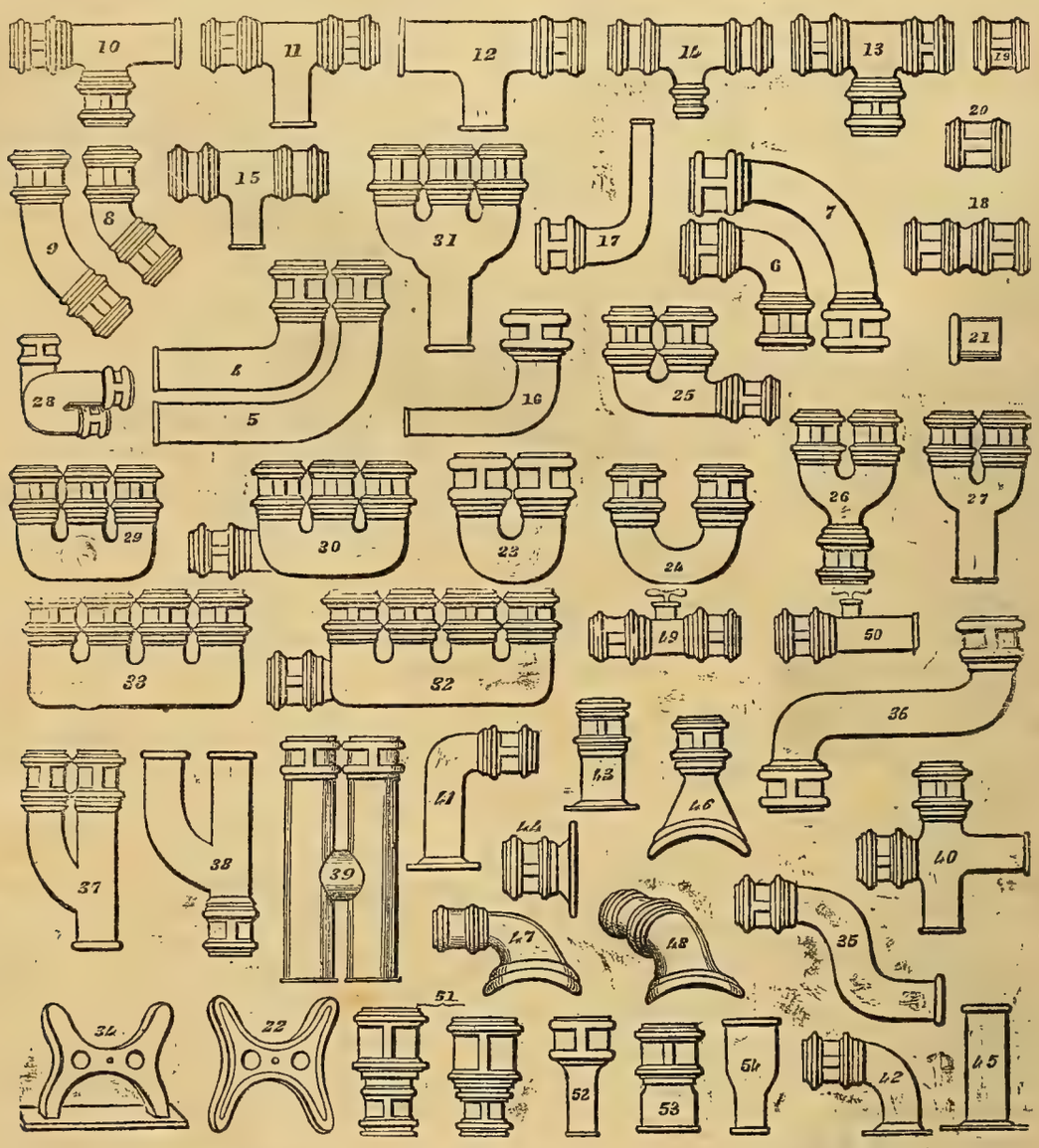
MESSRS. T. MASTERMAN AND SON have the honour to announce that they have received instructions to Sell by Auction without reserve, on THURSDAY, October 13, all the valuable large stock of Hunting Saddles and Bridles, Ladies' Saddles and Bridles, complete sets of Carriage Harness, Horse Clothing, together with all the other Hunting and Carriage Stable requisites, &c.; Four-wheeled Dog Cart, very good, by Pullen; Break fitted up as a Carriage with Cushions, and Snow Sledge, all as used by the late Duke of Leeds. Also, on FRIDAY and SATURDAY, October 14 and 15, the whole of the most costly and rare collection of STOVE, GREENHOUSE, and ORCHIDACEOUS PLANTS, consisting of Musas, Dracænas, Caladiums, Begonias, Heliconias, Marantas, &c., Tree and other rare Ferns, including some very fine specimens; Fruiting and Succession Pines; Apple, Pear, Plum, Cherry, Peach, Nectarine, and Apricot Trees, in Pots; also a quantity of Untrained Fruit Trees; a large quantity of Vines for forcing in Pots; Apple, Pear, Plum, and Quince Stocks; a large number of young Red, White, and Black Currant, and Gooseberry Trees; a very large collection of Strawberry Plants, of the finest sorts; also a quantity in Pots for forcing; Roses in Pots—Standards and Dwarfs; scented and variegated Geraniums; Carnations, Pinks, Hollyhocks, Dahlias, and Bedding Plants—all in great variety; a large quantity of Cuttings in Pots. Also a large quantity of Onions, Parsnips, Carrots, Beet, Celery, Rhubarb in variety; Salsify, Scorzonera, and Potatoes of different sorts, &c.; 9 Frames with Lights; 22 Lights without Frames; several Umbrella Wire Trellis; a large number of Pots of various sizes; Iron Bars, and a quantity of Metal. With the whole of the Garden Tools too numerous to mention; 10 Bee Hives, &c.—The whole of the above will be Lotted, and may be viewed on the Tuesday, Wednesday, and Thursday previous to the days of Sale. Hornby Castle is situate five miles from Bedale Station, and four miles from Catterick Bridge Station. T. M. & Son request an early attendance on account of the numerous Lots. The Sale to commence at 10 for 11 o'clock precisely each day.

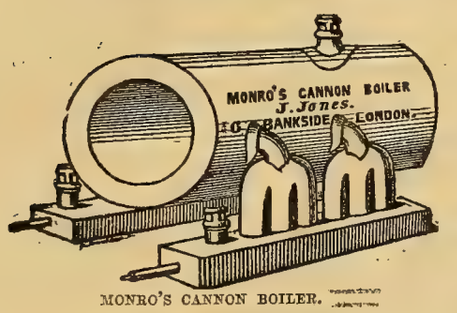
WESTERHAM, KENT.—TO PARTIES ABOUT TO PLANT. IMPORTANT SALE OF FIRST-CLASS NURSERY STOCK.

MESSRS. BLAKE will Sell by Auction on the premises, on WEDNESDAY, October 19, at 10 for 11 o'Clock, a portion of the NURSERY STOCK growing upon Land forming part of the Grange Estate, which Estate is for sale. The whole of the stock is young and in the best possible condition for removal, having all been transplanted during the last two seasons. The soil of the Nursery has been remarkable for upwards of 30 years for producing unusually fine fibrous roots, so that there will be no risk in the removal of the stock, which comprises Larch, Scotch, Spruce, Silver, and other Firs, Spanish and Horse Chesnut, Elm, Lime, Maple, Hornbeam, Mountain and Weeping Ash, a large quantity of fine grown common Ash (3, 4, and 5 feet), Beech, Birch, Willow, Sycamore, common Laurels (2 and 4 feet and fine bushy stuff); Portugal Laurels, evergreen Berberis, common Holly, Irish and common Yew, Laurustinus, Standard and Dwarf Roses of the choicest sorts, fine grown Standard and Dwarf Fruit Trees (trained and round-headed), consisting of Apples, Pears, Plums, Cherries, Apricots, Peaches, Nectarines, Gooseberries, and Currants; several hundred yards of Box edging (very close and compact); nearly 100,000 strong, fine grown, 3-years transplanted Quick, and a great variety of Trees and Shrubs.—May be viewed until the Sale, and Catalogues had of James Dulake, upon the premises, who will show the Lots. Catalogues may also be had at the King's Arms, Westerham; Laker's Hotel, Redhill; Angel, Tonbridge; Crown, Sevenoaks; White Hart, Bromley; Greyhound, Sydenham; and White Hart, Norwood; at Garraway's Coffee House, Change Alley, Cornhill; and of Messrs. Blake, Croydon.

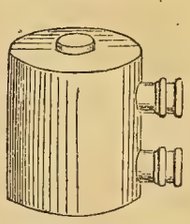
TO NURSERYMEN, GARDENERS, AND OTHERS.

HOT-WATER APPARATUS.

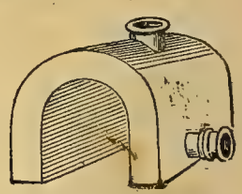




MONRO'S CANNON BOILER.



CYLINDER BOILERS OF VARIOUS SIZES.



SADDLE BOILERS OF WROUGHT AND CAST IRON, OF ALL SIZES.

THE LARGEST STOCK OF

HOT-WATER PIPES, CONNECTION BOILERS, ETC.,

OF THE BEST QUALITY.

THE WHOLE OF THE ABOVE KEPT IN STOCK READY FOR IMMEDIATE DELIVERY.

PRICES WILL BE SENT ON APPLICATION, OR ESTIMATES FOR

HOT-WATER APPARATUS

ERECTED COMPLETE IN ANY PART OF THE COUNTRY.

J. JONES, 6, BANKSIDE, SOUTHWARK, LONDON, S.E.

Printed by William Bradbury, of 13, Upper Woburn Place, and Frederick Mullett Evans, of No. 20, Queen's Road, West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and published by them at the Office, No. 5, Upper Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—Saturday, October 1, 1859.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 41.—1859.] SATURDAY, OCTOBER 8. {Price Fivepence. Stamped Edition, 6*d*.

INDEX.

Agriculture, Irish	813 *b*	Labourer, condition of	819 *a*
— Theory of	814 *b*	Land, reclamation of	820 *b*
— Journal of	819 *c*	Leaves, dimorphism of	809 *a*
Arsenic in plants	818 *b*	Man, antiquity of	809 *c*
Aubergine	812 *c*	Manure, fish	817 *a*
Bean stalks as food	819 *a*	Melons, withering of	809 *a*
Books noticed	811 *b*	Mildew and Gishurst Compound	809 *b*
Bothics	817 *c*	Mowing machine, Whitaker's	812 *a*
British Association	809 *c*	Mushrooms, true	809 *c*
— Pomological Society	810 *b*	Orchids, growth of	807 *a*
Calliriboe digitata	809 *c*	Peach, McEwen on, rev.	811 *b*
Camellia, Fortune's yellow	807 *c*	Plants, propagation of	808 *b*
Cattle cookery	814 *a*–815 *c*	— arsenic in	818 *b*
Chrysanthemums at Crystal Palace	809 *a*	Ploughs, Belgian	816 *b*
Cottages, Scotch	817 *c*	Rabbits	818 *c*
Dahlia show, national	811 *a*	Rye, St. John's Day	818 *c*
Fair, Ballinasloe	820 *b*	Seeds, vitality of	819 *a*
Farming, Irish	813 *b*	Sheep dipping	819 *c*
Fish manure	817 *a*	— Shropshire	820 *a*
Food, Bean stalks as	819 *a*	Statistics, Irish agricultural	817 *a*
Fruit trees, to prune	809 *b*	Steam engine explosions	813 *a*–814 *a*
Gishurst Compound	809 *b*	Stock feeding	816 *a*
Grammatophyllum speciosum	809 *a*	Strawberries, list of	807 *c*
Grapes, select	810 *b*	Trade lists	812 *a*
Greyhound, Irish	812 *a*	Ventilator, self-acting	809 *c*
James, death of Rev. C. T.	820 *a*	Wokingham Farmers' Club	819 *a*

HORTICULTURAL SOCIETY OF LONDON.—The next Meeting of the FRUIT COMMITTEE will be held at 8, St. Martin's Place, Trafalgar Square, W.C., on TUESDAY, October 11, at 3 P.M. Packages of Fruit or Vegetables should be directed as above, to the Secretary to the Fruit Committee, and should either be delivered FREE before 1 P.M. on the day of meeting, or marked with the name and address of the sender, in which case the carriage will be paid, but otherwise they may not be received.

BRITISH POMOLOGICAL SOCIETY.—NOTICE.—The next Meetings will be held on THURSDAYS, October 27, and November 17, when Premiums are offered for special subjects, of which details will be found in *Gardeners' Chronicle* of October 8. Copies of Rules, Regulations for Exhibitors, Forms to be filled up, or other information may be obtained on application to
WILLIAM DAVIDSON, Secretary.
2, Randolph Road, Maida Hill, W.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—Notice is hereby given that in consequence of there being no vacancies on the List of Pensioners, the usual Election in January will not take place. By order,
14, Tavistock Row, W.C.—Oct. 8. E. R. CUTLER, Sec.

THE LATE MR. GRIFFIN.—All Persons Indebted to, or to whom Debts are due from the Estate of the late Mr. JAMES GRIFFIN, Nurseryman, Weston Road, Bath, are requested to pay their accounts, or send in their demands for payment (as the case may be), to Mrs. GRIFFIN, at the Nursery or Seed Establishment, 2, New Bond Street, Bath.—October 8.

ROSES.
THOMAS RIVERS has just published the 26th Edition of his DESCRIPTIVE CATALOGUE of ROSES, which will be sent post free on application.
Nurseries, Sawbridgeworth, Herts.

STANDARD ROSES.—All the leading kinds in cultivation at prices scarcely ever offered before.
CHARLES NOBLE, Bagshot, Surrey.

ROSE CATALOGUE.
A. PAUL AND SON have just published their ROSE CATALOGUE for the present season, which they will be happy to forward in return for one postage stamp. The quality of the stock is very superior, and prices unprecedentedly low.—Nurseries, Cheshunt, Herts.

NEW CATALOGUES.
WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.
WM. WOOD AND SON have now forwarded Copies of their New CATALOGUE OF ROSES, together with LISTS OF NURSERY STOCK and TRADE CATALOGUES, to their respective Customers, and will be happy to furnish Copies to other applicants gratis on application.—October 8.

ROSES IN BLOOM.
JAMES MITCHELL begs to announce to the nobility and gentry that his unrivalled collection is now in fine Bloom. Two and a half miles from the Uckfield Station, the London, Brighton, and South Coast Railway.
J. M.'s New CATALOGUE will be ready early in October.
The Nurseries, Piltdown, Maresfield, Sussex, Oct. 8.

ROSES.
EDWIN HOLLAMBY begs most respectfully to inform the nobility and gentry that his superb collection of Autumnal ROSES is now in bloom, the stock of which is in the finest condition.
E. H.'s NEW CATALOGUE will be ready for distribution in a few days.
Strawberry Hill Nurseries and the Parade, Tunbridge Wells.

ROSES.
E. P. FRANCIS'S new and extensive CATALOGUE of ROSES on the Manetti Stock is now ready for delivery, and will be forwarded gratis on application.
Rose Nurseries, Hertford.

ROSE CATALOGUE, &c.
H. LANE AND SON'S CATALOGUES for the present season are now ready, and will be sent to their customers as usual. The following may be had on application at the Nurseries or by post. They consist of—
ROSE CATALOGUE, | FRUIT TREE CATALOGUE,
TREE AND SHRUB CATALOGUE.
Their stock is very extensive and unusually fine, and well worthy of inspection.
The Nurseries, Great Berkhampstead, Herts.

ERICAS.
F. AND A. SMITH'S Stocks of the above are this season unusually fine, comprising most of the leading winter and spring-flowering varieties. Prices on application.
Dulwich, Surrey, S.

DUTCH AND OTHER BULBS.
MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their CATALOGUE of the above is now ready, and will be forwarded post free on application. Early orders are solicited, as their successful cultivation depends in a great measure on early planting.
Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

HYACINTHS AND OTHER BULBS.
WM. CUTBUSH AND SON'S DESCRIPTIVE CATALOGUE of the above is published, and can be had post free on application.—Highgate Nurseries, London, N.

DUTCH AND CAPE BULBS.
BUTLER AND McCULLOCH'S PRICED AUTUMN CATALOGUE of Hyacinths, Gladioli, the finest hybrid varieties, Amaryllis, Chinese Pæonies, Oxalis, Lilium lancifolium, giganteum, and many other beautiful varieties; Tulips, Ranunculus, Anemones, Polyanthus, Narcissus, Crocus, Ixias, Sparaxis, &c., is now ready, and sent post paid on application.
Covent Garden Market, W.C.

DUTCH BULBS, FLOWER ROOTS, ETC.
JAMES FAIRHEAD AND SON, SEED GROWERS and MERCHANTS, Borough Market, London, S.E., beg leave to inform purchasers of the above that their WHOLESALE CATALOGUE is now ready and may be had post free on application.
Their selections are from the most eminent growers in Holland. Prices the lowest consistent with first-class quality.

FLOWER ROOTS.
A. PONTEY has received a fine collection of DUTCH FLOWER ROOTS, which he offers at very low prices. A CATALOGUE will be forwarded on application.
The Nurseries, Plymouth.—October 8.

JOHN CATTELL'S CATALOGUE, No. 7, containing DUTCH and other BULBS, also a List of Plants for Forcing and Early Flowering, may be had post free on application.
Nursery and Seed Establishment, Westerham, Kent.

YOUELL AND CO.'S GENERAL PRICED CATALOGUE is now published, and may be had post free on application.—Royal Nursery, Great Yarmouth, Oct. 8.

FERN CATALOGUE.
ROBERT SIM'S NEW DESCRIPTIVE AND PRICED CATALOGUE, No. 6 (62 pages) of his COLLECTION of BRITISH AND EXOTIC FERNS, can be had, post free, for 8 stamps. Gratis to all previous purchasers of Ferns.
Nursery, Foot's Cray, Kent, S.E.

WHOLESALE CATALOGUE.
GEORGE JACKMAN AND SONS' PRICED and DESCRIPTIVE CATALOGUE for 1859, & SPRING 1860, can be had on application.—Woking Nursery, Surrey.

TO THE SEED TRADE.
ABRAHAM HARDY AND SON, SEED GROWERS, Maldon, Essex, respectfully call attention of the Trade to their FORTIETH ANNUAL WHOLESALE PRICED CATALOGUE OF SEEDS, which may be had on application. They particularly recommend to notice their superior stock of CUCUMBERS.—October 8.

CHOICE RHODODENDRONS, AZALEAS, AND CONIFEROUS PLANTS.—A CATALOGUE of GEORGE BAKER'S unrivalled Stock of the above may be had on application.—The American Nursery, Bagshot, Surrey.

RHODODENDRONS "of every hue," Scarlet, White, Rose, Crimson, and every intermediate shade, nearly all sizes and at all prices, can be supplied by CHARLES NOBLE, Bagshot, Surrey.

TO THE TRADE.
JOHN SHARPE can offer of his own growing, from the most select stocks—
SKIRVING'S SWEDE | PURPLE-TOP SCOTCH GREEN GLOBE.
Bardney Hall, near Lincoln.

KALMIA LATIFOLIA.—Handsome plants covered with bloom for Forcing, if wanted, can be supplied by CHARLES NOBLE, Bagshot.

CARNATIONS AND PICOTEES.
CHARLES TURNER can supply these in great variety, strong plants of the finest kinds, 18*s*., 24*s*., and 30*s*. per dozen pairs.—The Royal Nurseries, Slough.

AUSTRALIAN GARDEN CRESS, just harvested (the true broad-leaved sort). Price on application.—ARTHUR HENDERSON & Co., Pine-apple Place, Edgware Road, London, W.

AZALEAS ON SALE. — Six large specimen AZALEAS for sale.—Apply to Messrs. DAVIES & SON, Nurserymen, Wavertree, Liverpool.

MUSHROOM SPAWN.—The largest and best stock now selling on the most reasonable terms. The Trade supplied.—G. TEBBUTT, Gardener and Florist, Earl's Court, Old Brompton, S.W.

EARLY CABBAGE PLANTS.—The choicest sorts, fine and true, packed and delivered at Godalming Station, 3*s*. 6*d*. per 1000, by THOMAS WELLAND, Surrey Gardens, Godalming, Surrey.

PINE APPLES, GRAPES, &c.
PINE PLANTS, Fruiting and Succession.
GRAPE VINES, from Eyes, for Fruiting in Pots or Planting.
JOHN WEEKS AND CO. can now supply any quantity of very fine strong healthy Pine Plants, either Fruiting or Succession; also remarkably fine strong Grape Vines from Eyes, all the best sorts.
JOHN WEEKS & Co.'s Horticultural Show Establishment is now entirely devoted to the Growing and Forcing of Fruits in great variety, thereby showing the most improved plans of construction, and the most superior system of Hot-water Apparatus.
JOHN WEEKS & Co., Horticultural Builders and Hot-water Apparatus Manufacturers, King's Road, Chelsea, London, S.W.

GOOD SEEDS. CARRIAGE FREE.
SUTTON AND SONS,
SEED GROWERS AND MERCHANTS,
ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.

GEORGE GIBBS AND CO.,
SEEDSMEN,
26, DOWN STREET, PICCADILLY,
LONDON, W.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY LIMITED supply every requisite for the Farm and the Garden.
Registered Offices, Union Road, Plymouth.

R. H. VERTEGAN, LANDSCAPE GARDENER, &c.,
Chad Valley Nursery, Harborne Road,
Edgbaston, Birmingham.
Removed from Ladywood Lane.

LANDSCAPE GARDENING & GARDEN ARCHITECTURE.
MR. DAVIDSON, 2, Randolph Road, Maida Hill, London, W., continues to prepare Designs and Working Drawings, and direct the execution of all Park and Garden formations and improvements. His past experience enables him to give most satisfactory references in almost every part of the kingdom.

STRAWBERRIES.
CHARLES TURNER can supply good strong healthy plants of the following most approved and favourite kinds:—

Adair (Elphinstone)	British Queen (Myatt)
Carolina superba (Kitley)	Crimson Queen (Myatt)
Filbert Pine (Myatt)	Prince of Wales (Ingram)
Sir C. Napier (Smith's)	Wonderful (Jeyes)

The Royal Nurseries, Slough.

OSCAR STRAWBERRY.
CHARLES TURNER can still supply strong plants, warranted to fruit next season, at 42*s*. per 100.
For full particulars of this fine early variety see previous Advertisements.—The Royal Nurseries, Slough.

LARGE RED GRAPE CURRANT.—Five Thousand Plants, from 1 to 3 years old; also FALSTAFF RASPBERRY CANES to any extent, to be sold remarkably cheap by taking a quantity.—Apply to Mr. MITTON, Lampton, near Isleworth and Hounslow, W.

PINE PLANTS.
WANTED, from 100 to 200 good FRUITING and SUCCESSION PLANTS.—Letters, stating terms and description, to be addressed to JOHN LEWIS, Gardener, Kingston, Surrey.

MUSCAT GRAPES WANTED.—PINE-APPLES (not under 2 lbs.) WANTED.
PEACHES (large size) WANTED.
Forward immediately to GEORGE TAYLOR,
CHOICE FRUIT SALESMAN,
St. John's Market, Liverpool.

GREAT SCARCITY OF FRUIT.
STRONG ROOTS OF THE LINNÆUS RHUBARB, from division, can be supplied in any quantity at 12*s*. per 100, or 5*l*. per 1000, by WALTER PENNINGTON, Nurseryman, South Retford, Nottinghamshire.

FRUIT TREES.—Intending purchasers are respectfully invited to inspect the extensive Stock growing at the Nursery of the Subscribers. The quality is this season unusually good.—HUGH LOW & Co., Clapton Nursery, London, N.E.

FRUIT TREES.
J. AND J. FRASER, Lea Bridge Road Nurseries, Essex, N.E., beg to invite purchasers of Fruit Trees to an inspection of their stock, which is this year unusually fine. PRICED CATALOGUES can be had on application.

TO THE TRADE.
J. AND J. FRASER, The Nurseries, Lea Bridge Road, Essex, N.E., beg to offer a large Stock of Maiden FRUIT TREES, including all the best sorts of Apricots, Peaches, &c. The prices, which are very moderate, may be had on application.

TRANSPLANTED FOREST TREES.—Large quantities of Transplanted ALDER, LARCH, SCOTCH, SPRUCE, HAZEL, SPANISH CHESNUTS, ASH, &c., 1, 2, 3, and 4 feet. A good stock of QUICKS. Samples, with prices, may be had on application.
WATERER & GODFREY, Knap Hill, near Woking.

HARDY HEATHS.—A Collection of 20 sorts, by name, of the above favourite autumnal flowers, in good plants, at 30*s*. per 100, or 12*l*. 10*s*. per 1000.
JOHN WATERER, The American Nursery, Bagshot, Surrey.

LOMBARDY POPLARS WANTED. — Any one having a few hundred LOMBARDY POPLARS to dispose of, from 15 to 20 feet high, and good plants, may hear of a purchaser by stating price and applying to JAMES CAMPBELL, Overseer, Polloc, Glasgow.

TO BE SOLD, by Private Contract, a choice collection of ORCHIDS, viz.:—Ærides, Vandas, Saccolabiums, Phalænopsis, Cypripediums, Cymbidiums, Dendrobiums, &c., the property of THOMAS CROSS, Esq., Mortfield, Bolton-le-Moors, Lancashire.—For further particulars inquire of J. H. COLLENS, Gardener.

SPERGULA PILIFERA (a fine quantity in pots).—Fine sized plants, 1*s*. each or 9*s* per dozen. Each plant will divide into quantities of tufts. Directions for planting sent.
Apply to STEPHEN BROWN, Seed and Nursery Establishment, Sudbury, Suffolk.

SPECIMEN STOVE AND GREENHOUSE PLANTS.—A handsome lot of these to be disposed of very cheap. A List with descriptions of the plants, sizes, and prices, sent on application to STEPHEN BROWN, Seed and Nursery Establishment, Sudbury, Suffolk.

SELLING OFF.

THE VALUABLE NURSERY AND PLANT STOCK OF BASS AND BROWN, SUDBURY, SUFFOLK, is offered at a very large reduction on the usual prices for cash, in order to the discontinuance of that part of the business.

The stock is in the finest possible condition, and the Fruits, of which there is a large collection, consist of none but the choicest and most esteemed.

A VERY FINE IMPORTATION OF DUTCH BULBS has been received, and are also offered very low.

CATALOGUES OF BULBS, with the Nursery and Plant Stock, furnished on application to STEPHEN BROWN, Seed and Nursery Establishment, Sudbury, Suffolk.

WINTER BLOOMING PLANTS.

CAMELLIAS, CHINESE AZALEAS, EPACRIS, ERICAS, of various sizes and all in unusually fine condition. Many thousands of these plants can be seen at the Nursery of the Subscribers.

DWARF OTAHEITE ORANGES in fruit.

CATALONIAN JASMINE (Jasminum grandiflorum).—Fine plants, grafted on short stems, and full of flower buds.

SPRAGUEA UMBELLATA, introduced by H. L. & Co. from California, is now finely in flower in the open ground.

Inspection respectfully invited.

HUGH LOW & Co., Clapton Nursery, London, N.E.

BEGONIA MARSHALLI.

WILLIAM COLE will send out the above beautiful variety, raised by Mr. Franklin, Gardener to J. G. Marshall, Esq., on and after the 26th inst. It has been exhibited at the Regent's Park, Kirkstall, Halifax, Shipley, &c., and Certificates have been awarded to it. It is universally admitted to be by far the handsomest of all the Begonias, and will be invaluable for Exhibition purposes. Drawings by Mr. Andrews free by post for eight stamps.

For further particulars see *Gardeners' Chronicle* of July 16; also Sept. 10; also "Cottage Gardener" of July 19 and Sept. 13.

Strong plants 15*s.* each, with the usual discount to the Trade.

Post-office Orders payable at Manchester.

Nursery, Withington, near Manchester.—Oct 8.

JOHN STEWART, (of the late firm of Mackie and Stewart,) NURSERYMAN and SEEDSMAN, begs respectfully to inform his friends and the public generally that he opened his new premises at 6, Exchange Street, Norwich, two doors from the Corn Hall, in the last week in September, with an entire NEW STOCK of everything connected with the trade.

JOHN STEWART'S DUTCH BULBS have arrived, having been selected especially for him by some of the first houses in Haarlem. A List is now ready, and will be franked to any address upon application. He solicits the favour of early orders for the same, so as to secure Roots of the best quality; and pledges himself that every order entrusted to his care shall receive his personal attention. All Bulb orders to the amount of 20*s.* will be sent, carriage paid, to the nearest Railway Station.

THE NORWICH NURSERY AND BRACONDALE HORTICULTURAL ESTABLISHMENT. LATE MACKIE & STEWART.—"We have this day disposed of our business to Mr. JOHN BELL, including all book debts due to us up to this date; and we therefore authorise him to receive all such debts and to give discharges for the same. { ARTHUR MACKIE, JOHN STEWART."

"March 16.

JOHN BELL having purchased the good-will and interest of the Nursery and Seed business of Messrs. MACKIE & STEWART, earnestly solicits a continuation of the patronage so liberally bestowed on his predecessors, and begs to say that the greatest care and attention will be given to every order intrusted to him.

J. B. begs to call attention to his large and well selected Stock of EVERGREENS and FLOWERING SHRUBS, ORNAMENTAL TREES, AMERICAN PLANTS, FRUIT and FOREST TREES, GRAPE VINES, FRUIT TREES in pots for Orchard Houses, &c.

J. BELL'S importation of DUTCH HYACINTHS and other Bulbs has arrived in excellent condition, early orders for which are respectfully solicited. CATALOGUES may be had at his Seed Warehouse, Nos. 10 & 11, Exchange Street, Norwich.

RARE HARDY CONIFERS—PICEA (ABIES) AMABILIS, TRUE; PICEA (ABIES) GRANDIS, TRUE.

HUGH LOW AND CO. have great pleasure in announcing that they have this season been successful in obtaining from Seed imported by them direct from California a large supply of Plants of the above named most beautiful and thoroughly hardy Conifers. They are without exception two of the finest and most ornamental trees yet known to Botanists, and attain in Northern California a height of from 250 to 280 feet. Their perfect hardiness and adaptation to the climate of this country have been proved beyond a doubt, but up to the present time Seedling Plants have been rarely to be obtained. The quantity now raised being considerable, H. L & Co. have decided on offering them by the dozen and 100 at such low prices as will induce lovers of hardy trees to plant them in large numbers. Prices can be had on application; as also of Seedling Plants of Cupressus Lawsonii, C. macrocarpa, C. Goveniana, C. M'Nabiana, Picea Pinsapo, P. Nordmanniana, P. Pindrow, P. nobilis, Abies Menziesi, A. cephalonica, A. Douglasi, both from Californian and Scotch seeds; A. Mertensiana, (taxifolia of Jeffrey), A. Williamsoni (Pattoni, Hookeriana), A. orientalis, Araucaria imbricata, Cedrus Deodara, Cedrus Atlantica (argentea), Cryptomeria japonica, C. Lobbi, Pinus Benthamiana, P. excelsa, P. insignis, P. Don Pedri, P. Pallasiana, P. Sabiniana, P. macrocarpa, P. Edgariana, P. Jeffreyi, P. Monticola, and many others; Podocarpus andina, P. nubigena, Thuja gigantea (Libocedrus decurrens); Thuja Lobbi (Menziesi), Torreya grandis, Wellingtonia gigantea, and many other fine Coniferous plants.—Clapton Nursery, London, N.E.

NEW AZALEA INDICA.

J. IVERY AND SON beg to inform their patrons that they are now offering for the first time the two undermentioned distinct varieties, which they feel assured will become general favourites. J. I. & Son take this opportunity of thanking their patrons for the very liberal support they have received for this popular class of plants, and at the same time beg to say that their Stock is unusually fine, particularly of young half-specimens, from 2 to 3 feet, well set with bloom.

A new DESCRIPTIVE CATALOGUE is now ready, containing all the best varieties, which will be forwarded post free, upon application at Dorking or Reigate Nurseries.

BOUQUET DE FLORE (IVERY'S).—This very pretty distinct variety seems to be an accidental cross from obtusa or amœna. It was exhibited at the Horticultural Society's Meeting, 21, Regent Street, May 4, where it received a First-class Certificate. The following report, copied from the *Gardeners' Chronicle*, May 15, 1858, describes it thus:—"Azalea Bouquet de Flore: this was one of the most charming Azaleas in the room; it has soft rosy lilac flowers of considerable size, and short stiff leaves like those of Mr. Fortune's little Azalea amœna; in short the whole aspect of the plant looked as if the latter had had something to do with its parentage." Plants, 10*s.* 6*d.* to 20*s.* each.

VARIEGATA SUPERBA (IVERY'S).—This beautiful variety received the Bronze Medal of the Royal Botanic Society, June 2, 1858. Habit similar to Beauty of Reigate, the flowers also partaking of the fine form and substance of that favourite variety; colour richer than the old variegata, the marking in the upper petals being more distinct; a great improvement in this class, as it is a late blooming kind. Plants, 21*s.* each.

AMBROISE VERSCHAFFELT, NURSERYMAN, Ghent, Belgium, begs to offer the following plants:—

	£	*s.*	*d.*
BEGONIA CHARLES WAGNER (finer than Begonia Rex)	0	6	0
LAPORTEA CRENULATA, splendid ornamental plant	0	8	0
MYRISTICA GHIESBREGHTII, fine foliage	0	14	0
CIBOTIUM PRINCEPS, one of the finest Tree Ferns yet introduced *3l.* to	8	0	0
ALSOPHYLLA AUSTRALIS, Tree Fern for greenhouse	0	10	0
CLEMATIS SOPHIA FLORE PLENO	0	4	0
MUSSCHIA WOLLASTONII	0	4	0
LILIUM GIGANTEUM, FLOWERING BULBS	2	0	0
PÆONIA ARBOREA, ALEXANDRE II., one of the finest dark Tree Pæonias	1	0	0
New Pear GENERAL TOTLEBEN, of which a drawing can be obtained	0	8	0
RHODODENDRON BYLSIANUM	0	8	0
ROSE hyb. rem. IMPERATRICE EUGENIE, splendid white flower	0	3	6

A. VERSCHAFFELT'S NEW CATALOGUE, No. 66, is just printed, and may be obtained free of Mr. R. SILBERRAD, 5, Harp Lane, Great Tower Street, London, E.C.

CHOICE CONIFERS,

ALL SEEDLING PLANTS GROWN IN POTS.

Per dozen.—*s. d.*		Per dozen.—*s. d.*	
Pinus Don Pedri, 2 years	60 0	Pinus Lerdoi, 2 years	18 0
,, Veitchii, 2 years	60 0	,, resinosa, 2 years	18 0
,, Popacatepetli, 2 years	60 0	,, corvea, 2 years	18 0
,, macrocarpa, fine, 9 in.	24 0	,, patula, 2 years	9 0
,, Llaveana, 2 years	18 0	,, Ehrenbergii, 2 years	12 0
,, tuberculata, 2 years	18 0	,, popelini, 2 years, each	1 6
,, Benthamiana, 2 years	9 0	,, insignis, fine, 2 feet	18 0

Abies religiosa, 2 years, 24*s.* per dozen.
Cupressus McNabiana, true, 6 inches, 9*s.* per dozen.
,, macrocarpa, 2 feet, fine, 6*s.* per dozen.
Taxodium sempervirens, very fine, 2 feet, 24*s.* per dozen.
Wellingtonia gigantea, fine specimen plants, in 24 pots, 2 feet high, 21*s.* each.

J. HENCHMAN, Edmonton, London.

MESSRS. WATERER AND GODFREY respectfully refer planters to the following LIST of well-known good hardy Plants:—

ARAUCARIA IMBRICATA, 1 foot, stout, healthy, 5*l.* per 100; larger, up to 8 feet.
CEDRUS DEODARA, 2½ to 3 feet, very handsome, 10*l.* per 100; larger, in any quantity, up to 10 and 15 feet.
PICEA NOBILIS, Seedlings, in quantity, 1 foot, stout.
Ditto larger and in every way perfect plants, up to 4 feet.
NORDMANNIANA, from seed, 2, 3, 4, and 6 feet.
PINSAPO, 2½ to 3½ feet, and as much through.
Ditto magnificent plants, 8 and 10 feet high.
CUPRESSUS LAWSONIANA, fine bushy seedling plants, 2½ feet high.
JUNIPERUS, CHINESE, 3 feet up to 8 and 10 feet.
,, IRISH, 5, 6, and 7 feet.
YEWS, IRISH, 5, 6, 7, and 8 feet.
,, GOLDEN, from 2 to 7 and 8 feet.
,, COMMON ENGLISH, in large quantities, 4 to 6, 7, and 8 feet.
THUJA AUREA.—Several hundred magnificent specimens, 3, 4, and 5 feet high, and measuring 10 to 15 feet in circumference.
THUJOPSIS CÆREOLIS, 2½ to 3 feet.
WELLINGTONIA GIGANTEA, all from seed, 1½ to 3 feet, and as wide.
HOLLY GREEN, in quantities, 5, 6, and 8 ft.; VARIEGATED, especially the best gold striped, of all sizes, up to 6 feet.

All the plants referred to in this advertisement were removed in April last, and they are in a condition to travel any distance with perfect safety.—Knap Hill Nursery, near Woking, Surrey.

CHOICE BULBS.

50 varieties choice imported Hyacinths, 30*s.*, or per dozen, named, 6*s.*, 9*s.*, and 12*s.* The roots of the above have this season been received in unusual fine and sound condition.

EARLY GLADIOLI.

The varieties of this class are very free flowering, and the best sorts to grow in pots for forcing, for which purpose they should be planted early, and well rooted previous to being placed in heat. To give a pleasing effect they should be from three to six of a sort in each pot. They also make very handsome clumps in beds, and are very attractive flowers in bouquets.

12 splendid early dwarf varieties	6*s.*	0*d.*	
12 splendid early dwarf varieties, three of each	16	0	
12 splendid early dwarf varieties, new selection	15	0	
Splendid early, in best mixture, 3*s.* 6*d.* p. doz.; p. 100	25	0	
Splendid early, second mixture, 2*s.* 6*d.* p. doz.; p. 100	15	0	
Loddigesii, deep pink, crimson and white stripe, p. doz.	5	0	
Spectabilis, shaded rose, very dwarf and fine	4	0	
Prince Albert, fine bright pink, striped white	6	0	
Brownii, fine lively pink, with white feather, largest of the early varieties Each	2	6	
British Queen, a fine pure white and very early	1	6	

GLADIOLUS RAMOSUS HYBRIDS.

12 superb varieties	6	0
12 superb varieties (three roots of each	16	0
Formosissima, rich crimson, per dozen	3	6
Gen. Von Welden, a splendid large crimson, with white mark	6	0
Queen Victoria, fine rosy scarlet	3	0
Ramosus, fine light rose crimson, flamed	3	0

GLADIOLUS GANDAVENSIS HYBRIDS.

12 superb varieties, as Admiral Dundas, Brenchleyensis, Monsieur Blouett, &c.	6	0
12 superb varieties, newest selection	15	0

GLADIOLUS (VARIOUS).

Floribundus, per doz. 2*s.* 6*d.*	Gandavensis, per doz.	2	6
Psittacinus ,, 1 6	Colvillii ,,	2	0
Colvillii roseum per dozen 7*s.* 0*d.*			

50 splendid early and late varieties of Gladiolus, for succession 40 0
50 do. do. newest selection 55 0

40 vars. beautiful English Iris, 14*s.*; per doz., 3*s.* 6*d.* to	5	0
40 varieties beautiful German Iris	20	0
20 varieties ditto	10	6
6 vars. Iris pumila, very dwarf, early, and showy	4	6
6 varieties ditto, three of each	12	6

(The above beautiful in clumps in front of borders.)

Iris reticulata, very striking and most beautiful, very dwarf and early for beds Each	5	0
12 superb varieties Chinese Pæonies	15	0

Superior collections of EARLY AND DOUBLE TULIPS, CROCUS, RANUNCULUS, ANEMONES, LILIES, IXIAS, SPARAXIS, and various CAPE AND DUTCH ROOTS.

The CATALOGUE of Bulbs, Herbaceous Plants, Conifera, Roses, Fruits, and general Nursery Stock sent free on application.

☞ The valuable Nursery and Plant Stock this season offered at a large reduction for cash on the usual prices, in order to the discontinuance of that department of the business.

CARRIAGE FREE (for goods 20*s.* and upwards) to all the London Stations, and all Stations on the Colchester Line between London and Norwich.

All orders and letters addressed to STEPHEN BROWN will receive prompt attention.

Seed and Nursery Establishment, Sudbury, Suffolk.

E. G. HENDERSON AND SON'S LIST OF 3000 HERBACEOUS AND ALPINE GARDEN FLOWERS, free on application, with the BULB CATALOGUE AND AMATEUR'S GUIDE in the cultivation of the same.

Messrs E. G. HENDERSON & SON respectfully offer the following in Seed, of first-class quality:—

DIANTHUS HEDDEWIGI (exceedingly beautiful), 1*s.*, 2*s.* 6*d.*, and 5*s.* per packet.

SPERGULA PILIFERA.—An admirable substitute for Grass on Lawns, requiring no mowing, 6*d.* to 10*s.* per packet, and Clumps for immediate planting, at 8*s.* and 16*s.* per 100. Also plants of

GAZANIA SPLENDENS AND SALVIA TRICOLOR—the former a rich golden yellow-flowered bedding plant, blooming from June until November; and the latter forms a neat, odoriferous spring and summer-flowering Greenhouse Shrub, with white-lipped flowers, richly tipped with carmine scarlet. Further descriptions in the above Catalogue.

Wellington Nursery, St. John's Wood, London, N.W.

NEW PINKS.

CHARLES TURNER (MACLEAN).—Dark purple lacing, large and fine; 5*s.* per pair.

ELEANOR (TURNER).—Rose, fine; 5*s.* per pair.
EDITH (MACLEAN).—Reddish purple; 3*s.* 6*d.* per pair.
LITTLE GEM (MACLEAN).—Red; 3*s.* 6*d.* per pair.
MILLIE (MACLEAN).—Dark, fine; 5*s.* per pair.
MISS GLOVER (TURNER).—Purple; 3*s.* 6*d.* per pair.

CHARLES TURNER can strongly recommend the above as first-class Pinks, and great acquisitions for exhibition purposes.

C. TURNER'S general stock of Pinks are very healthy and strong, and are now ready for sending out at 9*s.*, 12*s.*, and 18*s.* per dozen pairs.—The Royal Nurseries, Slough.

TWENTY THOUSAND RANUNCULUSES & ANEMONES.

CARY TYSO, FLORIST & SEEDSMAN, Wallingford, Berks, having in the past season had a profuse bloom of Ranunculuses, has taken up a large quantity of fine roots. He offers them in assortments of

100 splendid named sorts, 40*s.* to 4*l.*
100 fine mixed roots, 5*s.*, 8*s.*, 15*s.*, to 1*l.*
25 Tyso's choice Seedlings, named, 25*s.* 6*d.* to 1*l.* 15*s.*
50 Double Anemones, named, 10*s.* 6*d.* to 13*s.*

Treatise on Ranunculus, post free, for seven labels. Packets of Seed, 2*s.* 6*d.* and 5*s.* each. Treatise on Anemone for four labels. Seeds, 1*s.* and 2*s.* 6*d.* per packet.

Bulbs for Autumn Planting in choice variety. FLORAL CATALOGUE sent for one postage stamp.

ROBERT NEAL, NURSERYMAN, Wandsworth Common, S.W., begs to call the attention of buyers to his large and well-selected stock of EVERGREENS and FLOWERING SHRUBS, ORNAMENTAL TREES, AMERICAN PLANTS, FRUIT AND FOREST TREES, STANDARD AND DWARF ROSES of every description. A large stock of BOX-LEAF EVERGREEN PRIVET, from 1 to 6 feet for hedges; GREEN HOLLY, 1 to 6 feet; RICH BOG and LOAM for American Beds; LEAF MOULD. The Nursery is 10 minutes' walk from Clapham Common, and New Wandsworth Station, Crystal Palace Line.

GERANIUMS, HERBACEOUS PLANTS, ETC.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their new PRICED and DESCRIPTIVE CATALOGUE of the above, to which are added Supplemental Lists of Stove, Greenhouse, and Hardy Plants, Fruit Trees, &c. (which include all the best new plants of the season), is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

PAMPAS GRASS.—The present is the most favourable time for planting out this charming Plant. No one can imagine the grand effect of a mass of its silvery plumes unless they see it, nor is its value confined to the ornamental, but is likely to become useful as Cover for Game. It grows in any soil or situation, attaining the height of from 6 to 10 feet.—Any quantity can be supplied by C. NOBLE, Bagshot, Surrey.

TO NURSERYMEN AND AMATEURS.

TO BE SOLD, the property of a gentleman, deceased, about 100 ORCHIDS and STOVE PLANTS in good condition, pair of fine CROTONS, 7 feet; also six bushy ORANGE TREES, from 5 to 7 feet.—Mr. P. LEGG, Nurseryman, Gosport.

VIOLETS.

ROBERT SHACKELL begs to offer very strong plants in bloom of his

Russian superb VIOLET per dozen	12*s.*	0*d.*	
Small Plants	4	0	
Very strong Plants of the Double Perpetual Tree Violet, in bloom	6	0	
Small ditto	4	0	
White Tree Violet	4	0	
White Double Violet	4	0	
Spring Double Violet	4	0	
Neapolitan Violet	4	0	
Old Russian, per hundred, 10*s.*	2	0	

Locksbrook Nursery, or 5, Broad Street, Bath.

TO THE TRADE.—

	Per doz.	*s.*	*d.*
Begonia Miranda	12	0	
,, Reichemani	12	0	
,, splendida argentea	12	0	
Begonia Madame Wagner	12	0	
Begonia Rex, strong, per 100	50	0	
Begonia umbelica	6	0	
,, ricinifolia maculata	6	0	
Begonia grandis, each	5	0	
,, Virginia, each	5	0	
,, Isis, each	5	0	
,, nebulosa, each	5	0	
Graptophyllum pictum	9	0	
Gesneria cinnabarina, p. 100, 40*s.*; per doz.	6	0	
Pittosporum variegatum	12	0	
Croton discolor	12	0	
Cissus discolor	6	0	
Torenia pulchella	6	0	
New Bouvardias	6	0	

	Per doz.	*s.*	*d.*
Ligustrum ovalifolium, per 100	25	0	
Ligustrum japonicum, per 100	75	0	
Weigela rosea, p. 100	16	0	
,, amabilis, p. 100	16	0	
Ash, weeping, and Elm	18	0	
Arbor-vitæ, China, 9 to 18 inches, per 100	25	0	
Cedar, red, 9 to 12 ins.	25	0	
Laurustinus 16*s.* to	40	0	
Laurel, common, per 1000 15*s.* to	120	0	
Viburnum, strong, p. 100	25	0	
Currants, red Dutch, superior kind, p. 1000	60	0	
Apples, standards, p 100	50	0	
Pears, standards, p. 100	75	0	
Plums, ditto ditto	75	0	
Vines in pots, leading kinds 12*s.* to	30	0	
Lobelia fulgens, per 100	16	0	

MARTIN AND SONS, Cottingham and Hull.

THE BRISTOL NURSERY, KEMP TOWN, BRIGHTON.

ALEX. MCKENZIE, for some time Gardener, &c., at Woodlands, Blackheath, begs to inform his friends and the public that he has taken the above Nursery on Lease, and hopes by strict attention to his business to obtain a share of the patronage so liberally bestowed on the late Mr. Mitchell.

Having taken the whole Stock, he will be prepared to execute orders at once, and begs to offer the following, which are in fine condition:—VINES, from Eyes, fit for forcing or planting.

FRUIT TREES, trained and in pots.
Extra large RHUBARB, for immediate forcing.
FIGS, in pots, fit for forcing.
STOVE and GREENHOUSE PLANTS.
And a very superior collection of TULIPS.—October 8.

BUCKLAND SWEETWATER GRAPE.

THIS fine early WHITE GRAPE received the Premium offered by the Pomological Society for the best Seedling hardy Grape, Sept. 9, 1858, also received an extra Prize at the Crystal Palace Exhibition, Sept. 8 and 9, 1858; it was favourably noticed at that time by all the leading journals, and is recommended by the under-mentioned Gardeners. It has been exhibited again this season, and fully maintained the high opinion previously passed on it. See report as follows :—

Pomological Society's Report, copied from the Cottage Gardener, *August* 9, 1859.

"Mr. Ivery, of Dorking, produced a noble bunch of his Buckland Sweetwater Grape, weighing certainly not less than 2lbs., broadly shouldered and remarkably well set. The berries were roundish, inclining to oval, and were just beginning to assume their amber tinge. They were very richly flavoured and vinous. Altogether this variety has stamped itself as one of particular excellence, and as a valuable addition to the collection of White Grapes which ripen perfectly in an ordinary Vinery."

We, the undersigned Gardeners, having seen Messrs. IVERY's new Grape called the Buckland Sweetwater, growing with other varieties, and tasted the fruit thereof, are unanimously of an opinion that it is a very desirable early White variety, and likely to supersede the White Muscadine in general cultivation. The berry is much larger than that of the Muscadine, and the bunch resembles that of the Hamburgh in form and appearance.

DREWETT, JAMES, Denbies Gardens, Dorking.
DORE, W., Juniper Hall Gardens, near Dorking.
HILL, WM., Keele Hall Gardens, Staffordshire.
HILL, J., Norbury Park Gardens, near Dorking.
INGRAM, A., Highgrove Gardens, Reading.
KEMP, W., Albury Park Gardens, near Guildford.
ROBINSON, Mr., Englefield House Gardens, near Reading.
ROBY, THOS., Bury Hill Gardens, Dorking.
SIMMONDS, THOS., Mickleham Hall Gardens, near Dorking.
SNOW, S., Wrest Park Gardens, Silsoe, Beds.
UNDERWOOD, W., Broome Hall Gardens, near Dorking.
WHITING, J. B., The Deepdene Gardens, Dorking.

Messrs. IVERY AND SON, of Dorking and Reigate Nurseries, feel great pleasure in introducing this fine early White Grape, and beg to intimate that nice young plants, in two sizes, are now ready at 21*s.* and 31*s.* 6*d.* each; also plants of all the new and old esteemed varieties of Grapes at moderate prices.

List of Trade Subscribers for (Ivery's) Buckland Sweetwater Grape,

from whom Plants may be obtained:—

Atlee, Mr. R., Clapham Road
Backhouse, J. & Son, York
Barnes, Mr. W., Camberwell
Bell, Mr. J., Norwich
Butler, Mr. D., Widcombe, Bath
Cattell, Mr. J., Westerham
Charlwood & Cummins, Covent Garden, London
Clark, Mr. R., Manchester
Cole, Mr. W., Withington, Manchester
Dickson & Turnbull, Perth
Dickson, F. & A., Chester
Dickson, J. & Son, Chester
Fisher, Holmes, & Co., Sheffield
Finney, Mr. S. & Co., Gateshead
Foster, Mr. W., Stroud
Fraser, J. & J., Leytonstone
Garraway, Mayes, & Co., Bristol
Godwin, Mr. F., Sheffield
Halley, Mr. J., Blackheath
Henderson, A. & Co., Pine Apple Place, London
Henderson, E. G. & Co., St. John's Wood, London
Henderson, Mr. W., Birkenhead
Hurst & McMullen, 6, Leadenhall Street, London
Ivery, Mr. W., Peckham
Jackman, Mr. J., Woking
Jackson, T. & Son, Kingston
Lee, J. & C., Hammersmith
Lucombe, Pince, & Co., Exeter
Marshall, Mr. G., Leamington
Maule, W. & Sons, Bristol
Meldrum, Mr. J., Kendal
Milne, Arnott, & Co., Wandsworth Road
Moore, J. & Sons, Perry Bar, Birmingham
Osborn & Sons, Fulham
Parker & Williams, Hornsey Road, London
Paul, A. & Sons, Cheshunt
Perkins, Mr. J., Northampton
Pope, Mr. H., Gib Heath, Birmingham
Rollisson, W. & Sons, Tooting
Shaw, Mr. J., Manchester
Spary & Campbell, Brighton
Sutton & Sons, Reading
Turner, Mr. C., Slough
Veitch, Mr. J., Chelsea
Watkinson, Mr. H., Manchester
Wheeler, Mr. G., Warminster
Wilson, Mr. R., Warwick
Wood & Ingram, Huntingdon
Yates, Mr. R. S., Manchester

DORKING NURSERY.—October 8.

BUTLER & McCULLOCH,

COVENT GARDEN MARKET, W.C.

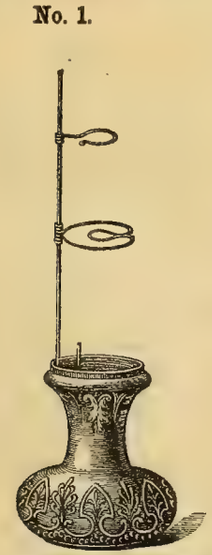
COLLECTIONS OF BULBS.

		£	*s.*	*d.*
No. 1.	A Choice Collection of Bulbs, for Greenhouse and Border Culture (see p. 29)	5	5	0
,, 2.	do. do. do. do.	2	12	6
,, 3.	do. do. do. do.	2	2	6
,, 4.	do. do. do. do.	1	1	0
,, 5.	do. do. do. do.	0	10	6
,, 6.	A Choice Collection of Named Hyacinths, in 100 extra fine sorts	5	0	0
,, 7.	do. do. in 100 very fine sorts	4	0	0
,, 8.	do. do. in 50 extra fine sorts	2	10	0
,, 9.	do. do. in 50 very fine sorts	2	2	0
No. 10.	A Choice Collection of Named Hyacinths, in 25 extra fine sorts	1	5	0
,, 11.	do. do. in 25 very fine sorts	1	1	0
,, 12.	do. do. in 12 extra fine sorts	0	15	0
,, 13.	do. do. in 12 choice sorts	0	12	0
,, 14.	do. do. in 12 very fine sorts (these we confidently recommend	0	9	0
,, 15.	do. do. in 12 good sorts	0	6	0
,, 16.	Best double mixed Border Hyacinths, per 100, do. do. 21*s.*; per dozen	0	3	0
,, 17.	Best single mixed do., p. 100, 21*s.*; do.	0	3	0

A DESCRIPTIVE AND PRICED CATALOGUE OF DUTCH AND CAPE BULBS now ready and forwarded free and post paid on application. For Contents of Catalogue see advertisement in last week's *Gardeners' Chronicle.*

AGENTS FOR TYE'S REGISTERED HYACINTH GLASSES.

No. 1.



No. 1, 10*s.* 6*d.* to 25*s.* 6*d.* per doz.

No. 2.



No. 2, 4*s.* 6*d.* to 6*s.* 6*d.* each.

No. 3.



No. 3, 3*s.* 6*d.* to 12*s.* per doz.

COVENT GARDEN MARKET, W.C.

NEW AND CHOICE GERANIUMS.

GEORGE SMITH offers strong plants of the following, selected from those sent out in the Autumn of 1858. The plants are remarkably healthy and fine, and now require potting on. Price 30*s.* per dozen, stronger plants at 36*s.* per dozen, viz:—(Hoyle's) Belle of the Season, Excellent, Lady Canning, Leviathan, Monarch, Prince of Wales, Rajah, Star, Tom Brown; (Foster's) Criterion, Golden Hue; (Turner's) Excelsior, Fisherman, Guido, Jung Bahadoor, Osiris, Picnic, Peacock, The Belle; (Fraser's) Echo; (Beck's) Fairest of the Fair, The Bride, Vestal; (Dobson's) Ringleader, Spotted Pet; (Fellowes') Ariel, Desdemona, and (White's) Blink Bonny. Fancies: (Turner's) Beauty, Captivator, Circle, formosum, Marchioness of Tweeddale, modestium, Negro, and Othello.

G. S. has also a splendid stock of all the leading kinds of former years, of Show, Fancy, and Spotted.

A DESCRIPTIVE CATALOGUE will be forwarded in exchange for one postage stamp.

Tollington Nursery, Hornsey Road, Islington, London, N.

PLANTING.

A. PAUL AND SON respectfully invite the attention of gentlemen improving their Estates or forming new Gardens to the following TREES, &c., which they are prepared to sell at the lowest remunerating prices for a good standard quality. It is their practice to transplant every second year, in order that little or no loss may be incurred by removal. Many things are grown in large quantities and offered on advantageous terms to the Trade. An inspection of the stock is invited.

Abies alba, 2 to 6 feet
,, ,, glauca, 1 to 2½ feet
,, Clanbrasiliana and other dwarf Firs, 9 in. to 1½ ft.
,, canadensis, 3 to 6 feet
,, Douglasii, 2 to 6 feet
,, fine onensis, 2 to 3 feet
,, Menziesii, 1½ to 6 feet
,, monstrosa, 2 to 7 feet
,, Morinda, 2 to 10 feet
,, orientalis, 1 to 2 feet
,, rubra, 2 to 4 feet
,, 20 other sorts, 1 to 6 feet
Araucaria imbricata, 1½ to 6 ft.
Arbor-vitæ (see Thuja).
Alaternus silver & gold striped, 1½ to 4 feet
Arbutus, 6 sorts, 1 to 3 feet
Aucuba japonica, 1 to 3 feet
Box, 6 sorts, 1½ to 6 feet
Berberis Darwinii, 1 to 1½ foot
Cedrus africanus, 2 to 10 feet
,, Deodara, 1 to 12 feet
Cedar of Lebanon, 1 to 12 feet
,, Red, 2 to 5 feet
,, White, 3 to 5 feet
☞ The largest and finest stock of Cedars in the country.
Cistus, 12 sorts, 1 to 3 feet
Cryptomeria Lobbiana, 3 to 8 ft.
,, nana, 9 inches
Cupressus Corneyana, 1½ to 3 ft.
,, Knightii, 3 to 4 feet
,, Lambertiana, 3 to 7 feet
,, Lawsoniana, 9 in. to 1 foot
,, torulosa, 1½ to 3 feet
,, 12 other sorts, 1 to 4 feet
Daphne pontica, 2 to 3 feet
Furze, double, 1 to 1½ foot
Garrya elliptica, 1½ to 3 feet
Holly, green and variegated, 30 sorts, 1 to 6 feet
,, green standards, 5 ft. stems
Juniperus chinensis, 2 to 5 feet
,, communis pendula, 2 to 3 ft.
,, excelsa, 1 to 2½ feet
,, fragrans, 2 to 4 feet
,, glauca, 2 to 3½ feet
,, oblonga, 2 to 6 feet
,, ,, pendula, 2 to 3 feet
,, thurifera, 1½ to 6 feet
,, tamariscifolia
,, virginiana aurea, 1 to 2 feet
,, ,, pendula, 1½ to 3 feet
,, viridis, 1½ to 2½ feet
,, weeping, 5 feet stems
,, 20 other sorts, 1 to 6 feet
Laurel, Common, 1 to 5 feet
,, Portugal, 1½ to 4 feet
,, ,, Standards, 8 feet
Laurustinus, 1 to 2 ft. (bloom)
Ligustrum lucidum, 3 to 4 feet
,, japonicum, 1½ to 3 feet
,, ovalifolium, 5 feet
,, evergreen, 2 to 4 feet
Mahonia aquifolia, 1 to 3 feet
,, 6 other sorts, 1 to 3 feet
Phillyreas, of sorts, 1½ to 7 feet
Picea amabilis, 1 to 1½ foot
,, nobilis, 1 to 4 feet
,, Nordmanniana, 1 to 4 ft.
,, Pinsapo, 1½ to 4 feet
,, Webbiana, 2 to 3 feet
,, 6 other sorts, 1 to 6 feet
Pinus austriaca, 2 to 4 feet
,, Benthamiana, 2 to 5 feet
,, calabrica, 3 to 4 feet
,, Cembra, 1½ to 4 feet
,, excelsa, 1½ to 12 feet
,, insignis, 3 to 6 feet
,, Llaveana, 2 to 5 feet
,, Laricio, 2 to 4 feet
,, macrocarpa, 2 to 3 feet
Pinus monticolor, 2 to 3 feet
,, monspeliensis, 3 to 5 feet
,, muricata, 3 to 5 feet
,, Montezumæ, 3 years seedlings
,, nivea (Snow Pine), 1½ to 5 ft.
,, Pallasiana, 2 to 3 feet
,, pinaster, 3 to 6 feet
,, pyrenaica, 4 to 6 feet
,, Sabiniana, 4 to 5 feet
,, 40 other sorts, 1 to 6 feet
Quercus (Oak), Evergreen, 3 to 5 feet
,, Fordii, 4 to 6 feet
,, latifolia, 3 to 6 feet
,, Mirbeckii, 2 feet
,, Suber (Cork Oak), 3 to 4 ft.
Ruscus hypoglossum
Santolina chamæcyparissus, 1 foot
Taxodium distichum, 3 to 6 ft.
Taxus (Yew), adpressa, 2 to 4 ft.
,, canadensis, 1½ to 3 feet
,, cheshuntensis, 1½ to 6 feet
,, elegantissima, 1½ to 4 feet
,, gold striped, 1½ to 5 feet
,, ,, standards, 6 feet
,, Jackson's Weeping, 1½ foot
,, japonica, 1 to 2 feet
,, nana, 2 to 4 feet
,, nigra, 3 feet
,, stricta, 5 feet
,, yellow-berried, 2 feet
,, common, round, and fair, 2 to 7 feet
,, Irish, 2 to 7 feet
,, 12 other sorts, 1 to 4 feet
Thuja americana, 3 to 8 feet
,, aurea, 1 to 3 feet
,, Chinese, 2 to 4 feet
,, gigantea, 2 to 3 feet
,, Wareana, 1 to 5 feet
,, 12 other sorts, 1 to 3 feet
Thujopsis borealis, 2 to 3 feet
Salisburia adiantifolia, 3 feet
Wellingtonia gigantea, 1 to 3ft.

Acer negundo variegata, 2 to 6 feet
Acacia, of sorts, 4 to 10 feet
Ash ,, 6 to 10 feet
Alder ,, 6 to 10 feet
Ailanthus ,, 8 feet
Almonds ,, 6 to 8 feet
Beech, purple, best variety, 5 to 8 feet
Birch, of sorts, 6 to 10 feet
Chesnut, Horse, of sorts, 1½ to 6 feet
,, Spanish, of sorts, 2 to 8 ft.
Catalpas, 6 to 8 feet
Caragana arborescens, 6 to 8 ft.
Cerasus padus aucubæfolius, 6 to 8 feet
Cornus mas variegata, 2 feet
Elms, 12 sorts, 6 to 8 feet
Gleditschias, 1½ to 8 feet
Kolreuteria paniculata, 3 to 6 feet
Laburnums, 8 feet
Lilacs, Persian, 6 feet stems
Liquidambars, 2 to 3 feet
Limes, of sorts, 8 to 10 feet
Maple ,, 5 to 10 feet
Planes ,, 7 to 10 feet
Poplar ,, 6 to 10 feet
Oak ,, 6 to 10 feet
Robinia ,, 6 to 8 feet
Sophora japonica, 10 feet
Sycamore, 6 to 10 feet
Thorns, of sorts, 6 to 8 feet
Tulip Trees, 2 to 10 feet
Willows, American, and other
Quick, 2-year transplanted, fine

WEEPING AND LAWN TREES in very great variety.

FLOWERING TREES AND SHRUBS, in 300 species and varieties, including Althæa, Cytisus, Berberis, Daphne, Deutzia, Lilac, Purple Nut, Pyrus, Ribes, Rose Acacia, Syringa, Spiræa, Wiegela, &c.

ROSES, an unrivalled collection. Standards, 12*s.* per dozen and upwards; dwarfs, 6*s.* per dozen and upwards. See separate Catalogue.

HARDY CLIMBING PLANTS, a large collection.

AMERICAN PLANTS, including Azaleas, Heaths, Kalmias, Magnolias, Rhododendrons, &c.

FRUIT TREES, consisting of all the choicest sorts, warranted true to name. The trained Peaches, Nectarines, Apricots, &c., particularly fine.

GRAPE VINES, from eyes, well ripened, short jointed canes 6 to 10 feet.

HERBACEOUS PLANTS, in 500 species and varieties.

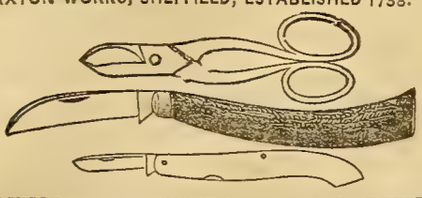
HOLLYHOCKS, a fine stock of healthy and well established plants. See separate Catalogue.

☞ Particulars of Prices, &c., furnished on application. Carriage of all packages free to London; if a ton weight or upwards placed free on the Railway at any London Terminus. An inspection of the stock invited.

Nurseries, Cheshunt, Herts.,
12 miles N.E. of London, Eastern Counties Railway.

GARDEN POTS AND PANS, in quantities of not less than 20 casts, delivered to the London Stations at the following prices:—Nos. Thbs. 60, 60, 54, 48, 40, 32, 28, 24, 16, per cast, 2s. respectively. 12, 3s.; 8, 3s. 6d.; 6, 5s.; 4, 5s.; 3, 5s.; 2, 5s.; 1, 5s. On lesser quantities, 6d. per mile, for delivery to the Station, charged. The usual discount to the Trade. Square Propagating Pans, Kale and Plunging Pots, Strawberry and Border Tiles, &c., made to order.
J. & W. ADAMS. Kilns, Belle Isle, York Road, King's Cross, N.

PAXTON WORKS, SHEFFIELD, ESTABLISHED 1738.



SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.—Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

WARNER'S PATENT VIBRATING STANDARD PUMPS.

PATENT CAST-IRON PUMPS for Farms, Cottages, Stable Yards, &c., where the Well does not exceed 28 feet in depth; fitted with WARNER'S Patent Metal Bucket and Valve, which cannot clog in action. These Pumps can be made right-handed, left-handed, or with handle opposite the nose by removing four screws only.

Diameter of Barrel.	Height.		£.	s.	d.
2¼ in. short	1 ft. 7 in.	Fitted for lead, gutta percha or cast iron flanged pipe as required.	1	5	0
2¼ ,, long	3 ,, 3 ,,		1	10	0
3 ,, ditto	3 ,, 6 ,,		2	4	0
3½ ,, ditto	3 ,, 6 ,,		2	9	0
4 ,, ditto	3 ,, 6 ,,		2	13	0
2½ ,, short, with 15 feet of Lead Pipe attached, ready for fixing			2	10	0
2½ in. long	ditto	ditto ditto	2	14	0



The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.

May be obtained of any Ironmonger or Plumber in Town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin Street, London, E.C.

Every description of Machinery for Raising Water by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

PRICES REDUCED.

H. J. MORTON AND CO., Galvanised Iron Works, 2, Basinghall Buildings, Leeds.

GALVANISED IRON ROOFING for Farm Buildings and other Roofs; the cheapest, most durable, and neatest Roofing in use; also Spouting at 10½d. per yard.

WIRE STRAND CABLE FENCING



(formed of Twisted Wires like a rope or cable), the strongest cheapest, and neatest fence in use, will resist the largest cattle and will not bend or get out of form by trespassing upon or over. Price, with five lines of the Galvanised Strand, iron main posts, and pronged Standards, 1s. 2½d. per yard.

This fence is far cheaper than posts and rails, or any kind of iron fencing; and possesses four times the strength of solid bars. Will not rust nor corrode. Upwards of 1200 miles of this Fencing supplied.

GALVANISED GAME AND POULTRY NETTING.



Galvanised, 24 ins. wide, 2-inch mesh, 5½d., 7½d. and 9½d. per yard.
Galvanised, 24 ins. wide, 3-inch mesh, 4d., 5d., and 7d. per yard. The Netting made any width, and with openings of any size.

GALVANISED IRON CHAIN CAMP STOOLS & CHAIRS, POULTRY FOUNTAINS & FEEDERS, PRONGED DAHLIA RODS AND ROSE STAKES, &c.

Strong CATTLE HURDLES from 2s. per yard.

PATENT IMPROVED GAS WORKS,

of all sizes for the use of Private Houses, Mansions, Railway Stations, Mills, Collieries, Mines, Villages, &c. Works from 10 to 500 lights estimated for. The works can be entrusted to an ordinary labourer.—Apply to
HENRY J. MORTON & Co. 2, Basinghall Buildings, Leeds.



BARNARD, BISHOP, AND BARNARD, Market Place, Norwich, in consequence of improvements in their machinery for the manufacture of the above article, have been enabled to make a great reduction in the prices.

		Galvanised.	Japanned Iron.
2-inch mesh, 24 inches wide	..	5d. per yd.	4d. per yd.
2-inch ,, strong do.	.. ..	6 ,,	4½ ,,
2-inch ,, intermediate, do.	..	7 ,,	5½ ,,
2-inch ,, extra strong, do.	..	9½ ,,	7½ ,,
1⅝-inch ,, 24 inches wide	..	5½ ,,	4½ ,,
1⅝-inch ,, strong, do.	.. ..	6½ ,,	5¼ ,,
1⅝-inch ,, intermediate, do.	..	7½ ,,	6 ,,
1⅝-inch ,, extra strong, do.	..	10 ,,	8 ,,

All the above kinds can be made of any width (under 8 feet) at proportionate prices. If the upper half is of a coarser mesh than the lower, it will reduce the prices about one-fifth.

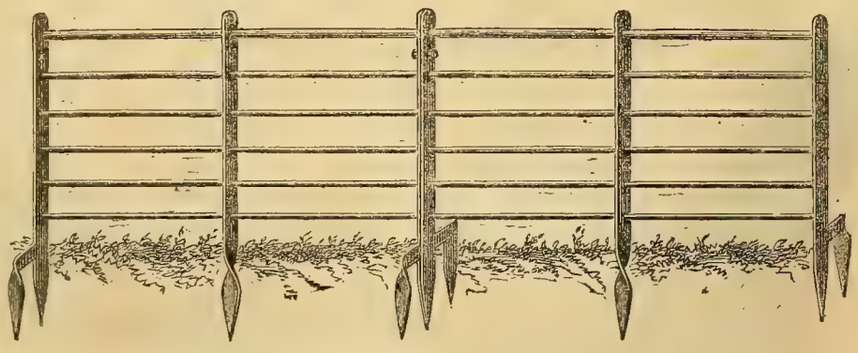
Strong Galvanised Poultry Netting, 8½d. per yard, 3 feet wide Galvanised Sparrow-proof Netting for Pheasantries, 2¼d. per square foot. Delivered free of expense in London, Peterborough, Hull, or Newcastle. Manufacturers of Improved Strained Wire Cattle and Deer Fencing, Iron Hurdles, &c.
Illustrated Catalogues and Patterns forwarded by post.

MESSRS. J. B. BROWN & CO.'S

IMPROVED WROUGHT IRON HURDLES

OF

BEST STAFFORDSHIRE IRON.



SPECIFICATIONS AND PRICES.

No. 1.—Very useful for general purposes, combining strength with good appearance. 3 feet 6 inches high, six bars round iron, top bar ⅝ inch diameter, five under bars ½ inch; two side uprights flat iron, 1¼ inch by ¼ inch, and middle upright 1½ by ¼ inch. Weight about 48 lbs. Present price delivered in London and at most of the principal Railway Stations, 2s. 5d. per yard, or about 5s. 3d. each hurdle of 6 feet 6 inches long.

No. 3.—Stronger and more suitable for heavy stock. 3 feet 9 inches high, five bars, top bar ¾ inch diameter. four under bars ⅝ inch, end standards 1¼ inch by ⅜ inch, centre standard 1½ inch by ¼ inch. Weight about 63 lbs.; price 6s. 9d., 6 feet 6 inches long, delivered as above.

No. 6.—Extra strong and high for heaviest stock. 4 feet high, six bars, top bar ¾ inch diameter, five under bars ⅝ inch, end and two centre standards 1½ inch by ⅜ inch. The weight of this strong Hurdle is about 84 lbs. and the price 8s. 10d., 6 feet long.

No. 7.—Light Hurdle for sheep and lambs. 3 feet 4 inches high, five bars ½ inch diameter, standards 1¼ inch by ¼ inch. Weight about 39 lbs.; price 4s., 6 feet long.

No. 8.—Light Sheep Hurdle. 2 feet 6 inches high, three bars ½ inch diameter, standards 1¼ inch by ¼ inch. Weight about 24 lbs.; price 2s. 9d., 6 feet long.

Strong Wrought-Iron Continuous Round Bar Fence for Horses, Cattle, and Sheep.

4 feet high with six bars of round Iron in 16 feet lengths connected in every fourth standard by an improved ferrule-joint firmly joining them by Wrought Iron pins passing through the ferrule and the bars. The top bar is of ⅜ inch diameter, the five under bars ⅝ inch. Strong Wrought Iron intermediate standards, 1½ inch wide by ⅜ inch thick, placed every 4 feet apart with strong double prongs to fix into the ground; also with strong Wrought Iron joining standards, 1¾ inch wide by ⅜ inch thick, with improved ferrule-joints, and with strong double prongs, placed every fourth standard, or 16 feet apart. The price of this Fence, which is highly recommended as a very strong and useful one indeed, is 3s. 4d. per yard.

This Fence for Horses and Cattle 3 feet 6 inches high, with five bars instead of six, but in every other respect the same as the above specification, 2s. 9d. per yard.

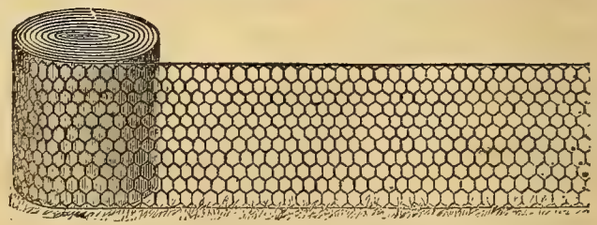
Strong Strained Iron and Wire Fence, for Horses, Cattle, Sheep, and Lambs.

Much in use through Pleasure Grounds along the sides of approaches, and in other situations where comparative invisibility and fine appearance are desirable—3½ to 4 feet high, with from 5 to 7 strong horizontal rods of the best prepared Fencing Wire, in long lengths, with Wrought Iron intermediate uprights placed every 6 to 7 feet apart, and strong Wrought Iron straining pillars every 80 or 100 yards—from 1s. 6d. to 2s. 6d. per yard—the prices varying according to the weight, strength, and number of Wires, and dependent also on the description and extent of the line of Fence. The prices include the time and travelling expenses of thoroughly experienced workmen erecting the fence in any part of England, where the order amounts to 25l. or upwards. These prices are exclusive of wooden or stone blocks for the Iron pillars and standards, these being furnished and put into the ground by the proprietor, under the superintendence of Messrs. BROWN & Co.'s workmen.

Fully Detailed and Illustrated Catalogues of Iron and Wire Fencing, Hurdles, Gates, Wire Netting, Garden Rollers and Engines, Ornamental Vases, &c., on application.

J. B. BROWN & CO., 18, CANNON STREET, CITY, LONDON, E.C.

IMPROVED PREMIUM WIRE NETTING.



PRICES PER LINEAL YARD, 24 INCHES HIGH:—

Size of mesh.	Mostly used for	Light. Japanned.	Light. Galvanized.	Medium. Japanned.	Medium. Galvanized.	Strong. Japanned.	Strong. Galvanized.	Extra strong. Japanned.	Extra strong. Galvanized.
2¼ inch	Hares, Dogs, Poultry	3½d.	4½d.	4¼d.	5½d.	5d.	6½d.	6d.	8d.
2 inch	Game Netting	4d.	5d.	4¾d.	6d.	5½d.	7d.	7½d.	9½d.
1⅝ inch	Small Rabbits, Hares, &c.	4½d.	5½d.	5¼d.	6½d.	6d.	7½d.	8d.	10d.
1½ inch	Smallest Rabbits	6d.	7½d.	7½d.	9d.	9d.	11d.	11d.	13d.

Quantities of 100 yards or upwards delivered free at nearly all the principal Railway Stations and Shipping Ports in England; and 200 yards or upwards delivered free to most parts of Scotland or Ireland. Any width of Netting under 8 feet made at proportionate prices.

☞ *Every description of Netting warranted to give satisfaction, and if not approved will be exchanged, or may be returned unconditionally.*

J. B. BROWN & CO., 18, CANNON STREET, LONDON, E.C.

WEEKS' ONE BOILER SYSTEM.

BY APPOINTMENT.

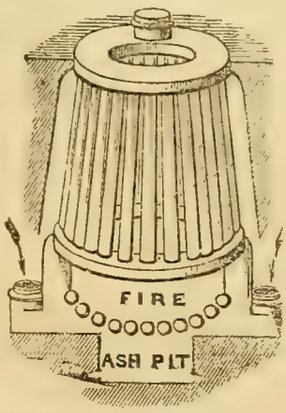
JOHN WEEKS & COMPANY,

KING'S ROAD, CHELSEA, S.W.,

CHALLENGE THE WORLD to produce a Boiler not made in imitation of their Upright Tubular Boiler that will produce anything like the same effect with the same quantity of fuel in a given time.

The following unequalled statistics fully justify the challenge:—

Mark the enormous length of Houses and Piping heated by One Boiler.	Length of Houses in feet	Total length of Piping.
Messrs. E. G. Henderson & Co., Wellington Nursery	1,200	5,500
Messrs. F. A. Smith, Dulwich	3,000	11,000
M. Van Houtte, Belgium	3,300	13,000
Our own Fruit Forcing Show Establishment ...	1,000	7,000



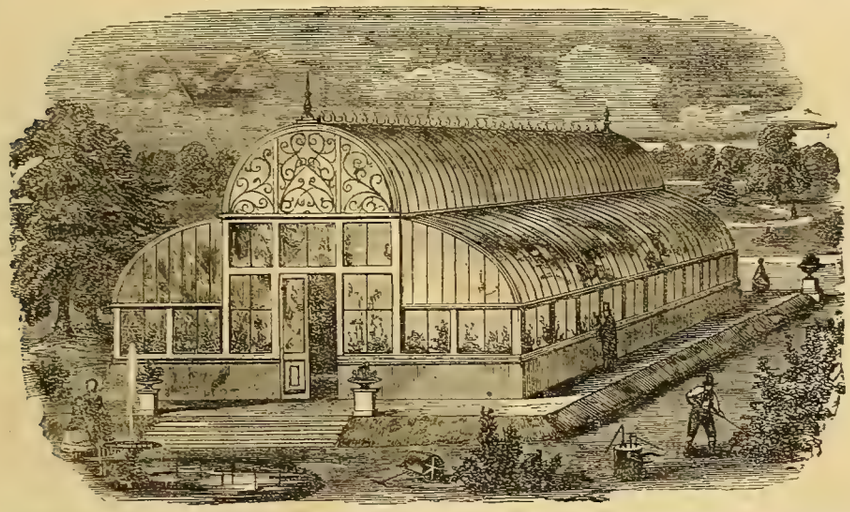
Also the Nurseries of Mr. Woodroffe, Harrow Road, N.W.; Messrs. Rollisson, Tooting, S.; Messrs. Wood & Ingram, Huntingdon; Messrs. Wood & Son, Maresfield; together with numerous Public Buildings and Establishments of the Nobility and Gentry, far too numerous for insertion.

J. WEEKS & CO., Horticultural Builders and Hot-Water Apparatus Manufacturers,
King's Road, Chelsea, S.W.

PLANS AND ESTIMATES FREE ON APPLICATION.

COTTAM & COMPY., Engineers, Founders, &c.,

2, WINSLEY STREET, LONDON, W.



A SHOW ROOM DEVOTED ENTIRELY TO ARTICLES OF HORTICULTURE.

THE NEW ILLUSTRATED CATALOGUE UPON APPLICATION.

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	,, Syringes	Garden Bordering
Hot-water Apparatus	Ornamental Wire Work	Hurdles	,, Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

Iron Hurdles, Strained Wire Fencing, Game Netting, &c.

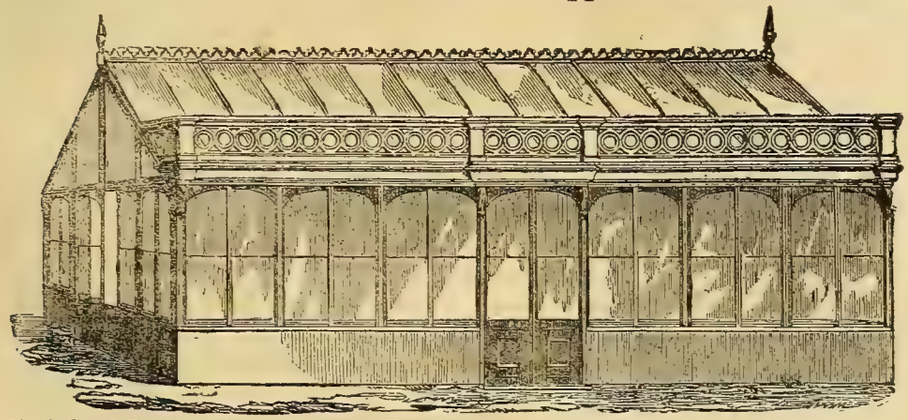
Every description of Plain, Ornamental, Cast and Wrought Iron, and Wire Work.

EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

N.B. COTTAM AND COY. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

J. WATTS & CO.,

Hothouse Builders and Hot-Water Apparatus Manufacturers.



Horticultural Buildings of every description Heated on the most approved principles, combining great power with simplicity of construction. A Range of Houses containing 20,000 feet can be Heated as easily as the smallest Pit. Two Hundred Cucumber Boxes and Lights, and from Three to Four Hundred Lights of all sizes kept in stock, glazed and painted complete, ready for immediate use.

References to the Nobility, Gentry, and the Trade in most of the Counties in England.

Claremont Place, Old Kent Road, London, S.E.

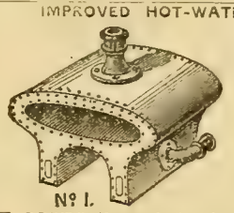
VOKINS AND HURD,

Jubilee Place, King's Road, Chelsea, S.W.



HORTICULTURAL BUILDERS and HOT-WATER APPARATUS MANUFACTURERS. Estimates forwarded on the shortest notice. BOILERS of all sizes on sale.

IMPROVED HOT-WATER APPARATUS.



No. 1.



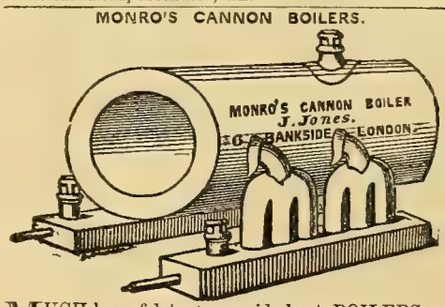
No. 2.

T. SCOTT (formerly in the employ of Messrs. John Penn & Son) manufactures and fits up complete Apparatus for Heating Buildings by Hot Water, also Bath and Kitchen Apparatus of every description.

T. SCOTT manufactures Improved Hot-water Boilers, Stop Valves, Thermometers, &c., and having lately fixed several of the Boilers (No. 1), can confidently recommend them as particularly adapted for Heating Churches, Chapels, Schools, extensive Ranges of Forcing Houses, &c., efficiently, and with great economy of fuel; also the PORTABLE BOILER (No. 2), requiring no brickwork, for Small Conservatories, Pits, Baths, &c.

Estimates, references, &c., on application to THOMAS SCOTT Blackheath Road, Greenwich, S.E.

MONRO'S CANNON BOILERS.



MUCH has of late been said about BOILERS FOR HEATING BY HOT WATER, but these Boilers have now proved themselves to be the best at present invented. They are adapted for Heating every description of Building, and are made of various sizes. The price of the

24-inch Cast Iron is ..	..	..	..	£5 10s. each.
24-inch Wrought Iron is	..	..	..	6 10 ,,
36-inch Cast Iron is ..	..	..	..	8 0 ,,
36-inch Wrought Iron is	..	..	..	8 10 ,,

References to Gentlemen and Nurserymen where these Boilers are now at work. The Cannon Boilers are now kept in stock, and are to be had only of J. JONES, 6, Bankside, S.E. Also, every description of Saddle and Cylinder Boilers. Hot-water Pipes and Connections at prices lower than those of any other house in London. Estimates for Hot-water Apparatus erected complete in any part of the country, and an Illustrated Catalogue on application to J. JONES, 6, Bankside, Southwark, London, S.E.

IMPROVEMENTS IN HEATING, &c.

MUSGRAVE'S PATENT SLOW-COMBUSTION STOVE, for Warming Public Buildings, Hall, Shops, Conservatories, Factories, Drying Rooms, &c. Will burn in Churches from Saturday till Sunday evening, avoiding attention during the hours of worship. In Halls will burn day and night for weeks, with little care. Capable of warming a large apartment for 24 hours, at a cost of 3*d.*; and deserving of special attention, because of its safety, healthfulness, durability, and extreme simplicity. This Stove is the nearest approach to warming by hot water.



MUSGRAVE'S PATENT STABLE FITTINGS AND HARMLESS LOOSE BOXES have obtained the award of a large Council Medal from the R. I. A. Society for the following improvements:—1st, The Horse cannot injure himself or others in the same stable if he breaks loose in his stall. 2d, He cannot waste the hay. 3d, He can have cut or uncut hay at pleasure. 4th, He has clean water always before him. 5th, A pure and wholesome atmosphere is secured. 6th, The whole fittings are stronger than usual, without increase in price, and there is no risk of infection.



The Loose Box is really what its name denotes, and the most spirited Horse may be turned into it without danger.

MUSGRAVE'S PATENT IRON COW-HOUSE FITTINGS, as approved by the Board of Works, adopted in the Ulster Model Farm, and by many of the most eminent Stock Breeders in the Kingdom, are made wholly of iron, very durable, cleanly, and attractive in appearance. The fodder is always fresh, being freely exposed to the air, removed from the breath of the animal, and separated from the roots or damp food. The range of Troughs can be quickly filled with water for the use of the Cows, or for washing out in case of epidemic, and the cost is very moderate.



These inventions being distinguished for strength, simplicity, and practical usefulness will repay public inquiry.

MUSGRAVE BROTHERS are also Makers of Wire Fencing, Hurdles, Field and Entrance Gates, Corn Rick Stands, Conservatories, Hot-water Apparatus, Verandahs, Rural Bridges, &c.; and their works being favourably placed for cheap labour and materials, they can offer corresponding advantages in price.

MUSGRAVE'S Patent Field Gates have gained the 1st Prize from the R. I. A. Society for strength, durability, and cheapness.

For particulars address MUSGRAVE BROTHERS, Ann Street Iron Works, Belfast.

AMERICAN PLANTS, &c.

MESSRS. WATERER AND GODFREY'S CATALOGUE for the present season is now ready, and may be had on application. It describes fully all Rhododendrons worth growing, and contains a List of Azaleas, Hardy Heaths, and other American Plants, as well as a summary of the general stock of the most extensive Nurseries in England.

The Catalogue may also be had at Messrs. May's & Co., 1, Wellington Street, Strand, W.C.

Knap Hill Nursery, near Woking, Surrey.

HARDY RHODODENDRONS.

MESSRS. WATERER AND GODFREY invite attention to their Seedling RHODODENDRONS, which they are selling without names, and which they strongly recommend as being very superior in point of HABIT, FOLIAGE, COLOUR, and GENERAL HARDINESS. They are from 1½ to 2½ feet high, and as much through, and no plants can possibly be in finer health. They will be sold at very liberal prices, and purchasers can select from a stock of many thousands.

Knap Hill Nursery, near Woking, Surrey.

RHODODENDRONS.

JOHN WATERER'S CATALOGUE OF HARDY, SCARLET, and other choice RHODODENDRONS, as annually exhibited at the Royal Botanic Gardens, Regent's Park, is now published and will be forwarded on application. Faithful descriptions of all the esteemed varieties will be found detailed, with a list of the popular kinds of AZALEAS and other AMERICAN PLANTS, as well as a selection of CONIFEROUS TREES, with height and prices.

The American Nursery, Bagshot, Surrey, near Sunningdale Station, South-Western Railway.

NEW HARDY GHENT RHODODENDRON "JEAN VERSCHAFFELT."

This superb Rhododendron, that was so much admired by all who saw it in flower last year, is to be sent out before the 15th of October next. Price 20, 30, and 50 francs per plant. Each Subscriber will receive post free a coloured plate of said Rhododendron. All orders to be addressed direct to

JEAN VERSCHAFFELT, Nurseryman, Ghent, Belgium.

SCARLET RHODODENDRONS, IRISH YEWS, &c.

L. T. DAVIS begs to offer the following, in quantity, SCARLET and CRIMSON RHODODENDRONS, IRISH YEWS, LAURUSTINUS, HARDY HEATHS, PERNETTYAS, &c. These can be had of various sizes, and are in the best possible condition for safe removal, having been recently transplanted. Prices on application (carriage free to Belfast).—Ogle's Grove Nursery, Hillsborough, County Down.

TO THE TRADE, ETC.

L. T. DAVIS has a very large stock of 1 and 2-year SEEDLING THORN QUICKS, which he offers at moderate prices; also a large quantity of 3-year SEEDLING ASH. Prices, &c., on application. Carriage free to Belfast.

Ogle's Grove Nursery, Hillsborough, County Down.

MAIDEN AND CUT-BACK FRUIT TREES. STANDARD AND PYRAMID FRUIT TREES. EXTRA FINE TRAINED FRUIT TREES.

RICHARD SMITH has this season 23 acres of the above. Price on application.

St. John's Nurseries, Worcester.

PLANTING SEASON.

SEEDLING AND TRANSPLANTED FOREST TREES AND SHRUBS, ROSES, AURICULAS, BORDER FLOWERS, AND FERNS.—Priced List on application to

WM. URQUHART & SONS, Dundee.—Oct. 8.

SPRAGUEA UMBELLATA.

HUGH LOW AND CO. have pleasure in offering healthy plants, well established in pots, of the above-named beautiful novelty, introduced by them from California, and exhibited at the July meeting of the Royal Botanic Society in the Regent's Park. Price 12s. per dozen. It can be seen finely in flower in the open ground at the Clapton Nursery, N.E.

CINERARIAS.

CHARLES TURNER is now sending out the 10 fine new varieties so successfully exhibited by him last spring. Price of the set, 50s. Strong plants of all the best named kinds at moderate prices.

If procured and repotted at once these will make fine specimens for early spring decoration.—The Royal Nurseries, Slough.

CINERARIA, CALCEOLARIA, AND PRIMULA.

F. AND A. SMITH are now sending out SEED of their splendid varieties of the above in sealed packets, without which none are genuine, at 1s., 1s. 6d., 2s. 6d., and 5s. each. To be had also of most respectable Nurserymen and Seedsmen in the Kingdom.—Dulwich, Surrey, S.

CAMELLIAS AND AZALEA INDICA.

F. AND A. SMITH beg to offer the above well set with flower buds, dwarf, bushy, and thoroughly ripened off. Having been grown in this country they are most suitable for packing, and are strongly recommended to country Amateurs and the Trade in general. An inspection invited. Prices on application.—Dulwich, Surrey, S.

CHOICE GERANIUMS.

JOHN DOBSON AND SONS' Annual DESCRIPTIVE LIST of all the leading kinds of SHOW, FANCY, and SPOTTED GERANIUMS, together with a SELECT LIST of CINERARIAS and FUCHSIAS, is now ready, and may be had post free on application; it includes several new varieties now offered for the first time.

Woodlands Nursery, Isleworth, and High Street, Hounslow.

TO THE TRADE.

GLADIOLUS BRENCHLEYENSIS BY THE 1000.

J. MORGAN having this season grown a very extensive stock of this most beautiful Gladiolus, the bulbs of which are exceedingly large and well matured, is enabled to offer them at unusually low prices, which may be had on application.—Horticultural Establishment, Torquay.

SEED WHEAT FROM THE CHALK.—Selected samples of CHIDHAM, WHITE TRUMP, ROUGH CHAFF, HUNTER'S WHITE, RED-CHAFF WHITE, GRACE'S WHITE, TALAVERA, RED BROWICK, RED NURSERY, GOLDEN DROP, and all the best kinds of Wheat, supplied by RAYNBIRD & HARVEY, of Basingstoke, and 89, Seed Market, Mark Lane, London, E.C. Samples and prices on application.

SELECT HARDY HERBACEOUS PLANTS at very reduced prices, and a further large discount for cash, according to the quantity of goods taken.

200 Plants in 200 fine sorts, including many new and scarce		£3	10 0
400 Plants in 200 fine sorts	ditto ditto	6	0 0
100 Plants in 100 fine sorts	ditto ditto	2	0 0
200 Plants in 100 fine sorts	ditto ditto	3	10 0

Selections 4s., 6s., 9s., 12s., and 18s. per dozen.

50 fine sorts, selected for rock, 20s.; or per dozen, 5s. to 9s.

CATALOGUES sent on application to STEPHEN BROWN, Nursery and Seed Establishment, Sudbury, Suffolk.

NEW DUTCH FLOWER ROOTS.

CHARLES TURNER'S CATALOGUE of these valuable spring flowers is now ready, and may be had free on application.

The Hyacinths, Tulips, Crocus, &c., have been selected with the greatest care from the best growers, and have arrived in fine condition.

C. T. will be able to execute any orders intrusted to him with punctuality.—The Royal Nurseries, Slough.

HYACINTHS, &c., FOR PRESENT PLANTING.—The following collection (H) for 21s.;—12 Superior named Hyacinths, 6 mixed Hyacinths, 6 Polyanthus Narcissus, 50 Border Narcissus, 25 Sweet Scented Tulips, 50 Double Tulips, 100 Crocus, 100 Double Snowdrops, 12 beautiful Iris, 25 Ranunculus, 12 Double Anemones, half of the above for 10s. 6d. All orders amounting to 21s. and upwards sent carriage paid.—BUTLER & MCCULLOCH, Covent Garden Market, W.C.

DUTCH FLOWER ROOTS.

TIMOTHY BRIGDEN, SEEDSMAN and FLORIST, 10, Railway Arcade, London Bridge, London, E.C., begs most respectfully to inform his Friends and the Public generally that he has just returned from Holland with his unrivalled collection of HYACINTHS, CROCUS, TULIPS, NARCISSUS, JONQUILS, &c., of which a PRICED LIST may be had upon application. T. B. further begs to state that, having selected them from the best growers in Holland himself, he can guarantee them finer than any other house in London.

A large assortment of Aquaria, Wardian Cases, and Gold and Silver Fish always on sale.

DUTCH FLOWER ROOTS.

E. P. DIXON will supply the following Collection of Bulbs, package included, on receipt of a Post-office Order for 21s.

12 choice Polyanthus Narcissus	12 choice named Hyacinths
1 col. Crocus, 20 varieties	100 Turban Ranunculus
12 Tournesol double Tulips	12 Rex Rubrorum Tulips
12 Yellow Rose ,,	12 Paeony Gold ,,
12 Parrot Tulips	12 sweet-scented Jonquils
50 Double Snowdrops	50 Winter Aconites

CATALOGUES gratis on application.

Seed Establishment, 57, Queen Street, Hull.

DUTCH FLOWER ROOTS.



JAMES VEITCH, JUN., ROYAL EXOTIC NURSERY, Chelsea, S.W., begs to announce that he has received his annual supply of BULBOUS ROOTS from Holland, and is pleased to say that they are PARTICULARLY FINE and in EXCELLENT CONDITION. Catalogues are now ready and will be forwarded on application.

J. V., Jun., desires to impress upon those who patronise him the great advantage of giving him their ORDERS EARLY, as the successful cultivation of Bulbs depends in a great measure upon their BEING PLANTED EARLY IN THE SEASON.

DUTCH BULBS.



MILNE, ARNOTT, AND CO. are now sending out, in the best possible condition, HYACINTHS, NARCISSUS, TULIPS, CROCUS, and other Flower Roots, imported direct from some of the most celebrated growers in Holland.

A PRICED and DESCRIPTIVE CATALOGUE just published will be forwarded free upon application.

Finest Hyacinths, by name, 5s., 6s., 7s. 6d., & 9s. per dozen. Select Collections of Bulbs from 10s. 6d. upwards.

The Nursery, Wandsworth Road, London, S.

DUTCH FLOWER ROOTS.



PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN, &c., respectfully announce the arrival of a fine Stock of DUTCH FLOWER ROOTS, and they are now prepared to execute orders for the same.

27, Great George Street, Westminster, S.W.

NEW SEEDS.



TRIFOLIUM INCARNATUM

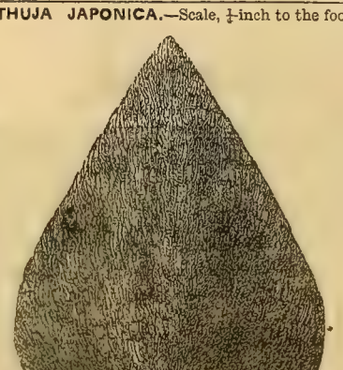
ITALIAN RYE-GRASS

NATURAL GRASS SEEDS FOR PERMANENT PASTURE LAWNS, &c.

PETER LAWSON AND SON, the QUEEN'S SEEDSMEN, &c., are prepared to supply all kinds of SEEDS for AUTUMN SOWING of the best quality.

27, Great George Street, Westminster, S.W.

THUJA JAPONICA.—Scale, ½-inch to the foot.



J. WRIGHT AND CO. beg to inform the Trade and Public generally that they have a large Stock of the above, including a few 1000 SEEDLINGS, saved from their specimen, as above, and acknowledged to be the most beautiful of all the Thujas by many or all that have seen it.

Also THUJA AUREA, 2 to 3 feet; ditto SEEDLINGS; GIGANTEA; fine LAURUSTINUS, LAURELS, a quantity of BOX EDGING, &c. Prices upon application.

Nurseries, Mill Hill and Edgware, N.W.

JAMES CARTER AND CO., 237 and 238, HIGH HOLBORN, LONDON, W.C.—HYACINTHS of decided colours for ribands and beds—double and single.

Crimson	Purple	Pure white
Pink	Blue	
Flesh	Porcelain	White, purple eye

At 4s. per dozen.

The old system of offering HYACINTHS of mixed shades of colour for beds prevents anything like a tasteful arrangement, as the early and late, tall and dwarf varieties are all mixed together. We have great pleasure in offering Bulbs of separate decided colours, equal height, and same kind of flowering, by which our customers will be enabled to form effective groups for early spring. The following extract from our CATALOGUE will be found the most approved method of preparing the beds for planting. "When the bedding plants are removed the beds should be immediately dug up to the depth of a foot or 18 inches; when finished the beds should stand considerably above the level, as moisture is injurious. Five inches of soil may be removed, the ground marked out in squares of from 6 to 9 inches, the bulbs placed thereon with some silver sand under and about them, and the soil which has been removed cast back over them. Or, without removing any soil, mark the beds as before, and take out the place of each bulb with the old-fashioned Tulip planter, which makes a hole about 5 inches deep and 3 inches wide; drop some silver sand in each hole; more sand laid thereon, and the holes filled up. On the approach of severe weather it would be advisable to put on a covering of 2 or 3 inches of rotten leaves; or, when the growth of the bulb appears above ground, immediately cover it with silver sand."

TULIPS for edging Hyacinth beds and also for clumping:—

	Per 100—s. d.		Per 100—s. d.
Tournesol, red and yellow	7 6	La Candeur, pure white	18 0
Rex rubrorum, scarlet	7 6	Yellow Rose, fragrant	10 0

COMMON HYACINTHS for mixed borders, single and double:

Red	Blue	White
	21s. per 100.	

LILIUM SPECIOSUM or LANCIFOLIUM, quite hardy, and very effective for forming centres in beds.

ALBUM, extra large roots, per doz., 17s. 6d.; each	1s. 6d.				
RUBRUM,	,,	,,	22 0	,,	2 3
PUNCTATUM,	,,	,,	20 0	,,	2 0

CROCUS (LARGE DUTCH ROOTS).

	Per 1000.	Per 100.		Per 1000.	Per 100.
Blue	12s. 0d.	1s. 4d.	Versicolor	18s. 0d.	2s. 0d.
Blue, light	12 0	1 4	White	18 0	2 0
Cloth of Gold	15 0	1 8	Yellow, large	18 0	2 0
Purple	12 0	1 4	Very fine mixed	12 0	1 4
Scotch	21 0	2 6	Yellow, second size	12 0	1 4
Striped	15 0	1 8			
Variegated	15 0	1 8			

GLADIOLUS BRENCHLEYENSIS, vermilion, very effective, 5s. per dozen.

We beg to refer our customers to our CATALOGUE of BULBS (which will be forwarded gratis and post free) for all descriptions of Bulbs for Drawing-room, Greenhouse, or open Border, with practical directions as to culture and treatment.

New large-flowered PINKS from Japan. For description and cultivation see Catalogue. Price 1s. and 2s. 6d. per packet.

JAMES CARTER & Co., 237 and 238, High Holborn, W.C.

CONIFERÆ.—A very choice collection of these in the finest possible condition, including also several fine specimen plants.

THE BULB AND NURSERY CATALOGUE sent on application to STEPHEN BROWN, Seed and Nursery Establishment, Sudbury, Suffolk.

CINERARIA, HERBACEOUS CALCEOLARIA, AND HALF SHRUBBY DITTO SEED.—These have been saved from Turner's most beautiful varieties; in 1s. and 2s. 6d. packets. Primula and Hollyhock, from the newest and handsomest varieties, 1s. per packet. Agents for F. & A. Smith's splendid Cineraria, in 1s. 6d., 2s. 6d., and 5s. packets; also agents for Dobson & Son's splendid Calceolaria, in 1s. 6d., 2s. 6d., 3s. 6d., & 5s. packets.—Catalogues of the newest Flower Seeds, and newest Dutch and Cape Bulbs, sent post-paid.—BUTLER & MCCULLOCH, Seedsmen, Covent Garden Market, W.C.

ARAUCARIA IMBRICATA.

YOUELL AND CO. beg to inform the Trade they have to offer a fine and healthy stock of the above in 1-year-old plants.

GLADIOLUS BRENCHLEYENSIS.—An extensive stock of large flowering Bulbs of this magnificent Gladiolus, the colour of which is vermilion scarlet, the best and brightest variety known. Prices of the above on application.

Royal Nursery, Great Yarmouth.

NEW PANSY.

ROBERT REA, NURSERYMAN, &c., Ipswich, begs to announce that he intends sending out fine strong established plants in pots of his unrivalled Seedling Pansy JOHN HINES the second week in October. Colour deep orange yellow, top petals very rich puce, lower petals evenly margined with the same colour, a perfectly round, smooth, full-sized flower with very dense eye. Received First-class Certificates at the Ipswich Horticultural and Whitton Floral Societies, and pronounced by the most competent Judges in this locality to be the best flower in its numerous class. Plants 5s. each, with the usual discount to the Trade; by post 6d. extra.

TRAINED PEACHES, NECTARINES, APRICOTS, APPLES, CHERRIES, AND PLUM TREES, can be had of E. R. GREENUS, RAILWAY NURSERIES, Watford, of the best quality and on the most reasonable terms, with instructions gratis as to soil, planting, and treatment of the Trees so as to insure success.

STANDARD AND DWARF ROSES, EVERGREENS, and all sorts of NURSERY STOCK.

Cash, or reference from unknown correspondents.

FRUIT TREES.

B. WHITHAM, of the Clough Nursery, Mottram, near Manchester, has now ready for disposal 1000 LORD SUFFIELD APPLE TREES, and about 4000 fine strong Trees, including 96 of the best sorts in cultivation, all at 9s. per dozen.

Also a large quantity of best LANCASHIRE SHOW GOOSEBERRIES (160 sorts), at 4s. per dozen; Common kinds, 2s. do. CATALOGUES on application, distinguishing Kitchen and Dessert kinds, and the time each will keep. Cash with order, or known reference.

SPLENDID NEW ORNAMENTAL FOLIAGED PLANT—CONATANTHUS, OR CALADIUM CUPREUS.

HUGH LOW AND CO. have now in their Nursery a magnificent specimen of the above-named new plant, which was imported by them from Borneo. It was exhibited at the July Show of the Royal Botanic Society, where a Certificate was awarded to it, but the plant was then newly imported, and was consequently small. It has now developed itself, and proves to be the finest ornamental foliaged plant introduced up to the present time.

The Floral Committee of the Horticultural Society of London in awarding it a FIRST-CLASS CERTIFICATE appended to it the following remark:—"ONE OF THE MOST STRIKINGLY BEAUTIFUL OF ORNAMENTAL FOLIAGED PLANTS." No description can convey an adequate conception of its surpassing beauty, and therefore H. L. & Co. invite an inspection. They will have pleasure in showing it to any gentleman who may favour them with a visit.—Clapton Nursery, London, N.E.

BRITISH POMOLOGICAL SOCIETY
HANOVER SQUARE ROOMS, REGENT STREET, W

NOTICE.—The next Meeting will be held on THURSDAY, October 27, when the following Premiums are offered for special subjects, exhibited according to the Society's regulations:

One Guinea for the best dish of six SALWAY PEACHES.

The following must be exhibited by the growers:—

One Guinea and Half a Guinea for the best and second best dish of six SUFFOLK THORN PEAR.

One Guinea and Half a Guinea for the best and second best dish of six DESSERT PEARS of any other kinds in season.

One Guinea and Half a Guinea for the best and second best dish of six DESSERT APPLES of any kinds in season.

One Guinea and Half a Guinea for the best and second best Culinary varieties of APPLE, fit for present use, exhibited in tens. These will be examined externally on the meeting at which they are exhibited, but the award of the prizes will not be announced until the succeeding meeting, that their culinary value may be tested during the interval.

The Meeting next succeeding will be held on THURSDAY, November 17, when the following Premiums are offered for special subjects exhibited by the growers:—

Half a Guinea (by Mr Turner), for the best dish of COX'S ORANGE PIPPIN APPLE.

One Guinea and Half a Guinea for the best and second best dishes of PASSE COLMAR PEAR.

Similar Premiums are also offered for fruit in season of other kinds of Dessert Pears, and Dessert and Culinary Apples, in the same manner as at the meeting of October 27.

Copies of Rules, Regulations for Exhibitors, Forms to be filled up, or other information may be obtained on application to W. DAVIDSON, Secretary.

2, Randolph Road, Maida Hill, London, W.

The Gardeners' Chronicle.

SATURDAY, OCTOBER 8, 1859.

MEETINGS FOR THE ENSUING WEEK.

TUESDAY, Oct. 11 { Horticultural (Fruit Committee at St. Martin's Place) ..... 3 P.M.

THE success of English gardeners which has attended the growth of ORCHIDACEOUS PLANTS inhabiting trees and rocks in tropical or sub-tropical countries has been one of the most signal marks of horticultural skill. Plants thought in 1820 to be uncultivable have been brought as much under command as Heaths or Ferns. In that year in the Royal Botanic Garden of Kew, into whose lap the British colonies had been pouring their treasures for a quarter of a century, nothing was to be found except Cymbidium sinense and aloifolium, Epidendrum cochleatum, Rodriguezia secunda, Oncidium altissimum, and a few more vulgar species, which it was more difficult to kill than to keep alive. Now, go where we will, these plants so much abound that some have even come to be hawked about London streets.

Nevertheless it must be owned that if some succeed most admirably others fail deplorably, and we are beginning to discover that Epiphytes after all demand to be treated with some attention to their peculiar nature. It is not enough to tie them to a block of wood or to pot them among peat or leaves or potsherds, or to keep the air about them always damp, as some imagine. There is always a principle behind, which principle must be looked at and studied, and so understood as to be rightly modified according to the nature of the plants. Some grow on trees, some on stones, many on the ground itself. Some bask in the hottest sun, others luxuriate in the open places of deep forests, or ride aloft on the branches of trees. There are also highland races that can only exist on the sides of mountains where clouds are always condensing, or that even struggle onwards towards the limits of alpine vegetation; such for example as Epidendrum frigidum, which lives on damp rocks at a short distance below the limits of eternal snow; while the curious Masdevalls are found in but a little better climate, and on their very heels tread Pleurothalls, Odontoglots, Stelids, Pachyphylls, Epidendrum, and Telipogons. Some curious facts connected with this subject have been collected by the author of the Orchidaceæ Lindenianæ, in speaking of the species which inhabit that northern portion of the South American continent now called Colombia. Here, says the writer, "a species of Epidendrum is found where the mean temperature of the year is about 4C°, where trees are wanting, pastures only being found, and where it occasionally snows. This would be incredible upon worse testimony than Mr. LINDEN'S, if we did not know from Professor JAMIESON that one Oncidium (nubigenum) is found in Peru at the height of 14,000 feet, and rarely below it. Mr. LINDEN tells us that his plant, which grows at only a short distance from eternal snow, is covered all over, flowers included, with a varnish, which is perhaps intended for its safeguard. It is remarkable that all the Epidendrums, with one exception, occur above 5000 feet, and that they form a continued chain of species up to the ground of E. frigidum. It is, however, the Pleurothalls that principally occur in such elevated regions: Masdevallia, Restrepia, Stelis, and Pleurothallis itself constituting the most striking feature of the Orchidaceous flora until the mean temperature rises to 56°, *where they begin to disappear*. The genus Odontoglossum appears to be more impatient of heat than its nearly allied genus Oncidium, for a species is found where the mean temperature is only 49°, and where it sometimes even freezes; the others are scattered over the mountain slopes till they reach the lowest limits of their order, where the mean temperature rises to 75°, where it is never cooler than 55° nor hotter than 80°; in such a climate not one of the race is found except a Schomburgkia, a Burlingtonia, an Odontoglossum, and an Ionopsis. *In the hot lands on a level with the sea Orchids do not seem to be able to exist.*"

It is thus evident that he who would grow these plants successfully must have a good deal of intelligence, as well as the practical skill of a gardener. "Rule of Thumb" has nothing to say to Orchid growing; it is only effective in Orchid killing, as many a costly collection can testify.

One thing, however, is constant amidst all this diversity of nature. Let their climate vary ever so much, their manner of growth is in one respect the same. That this is so may be learned from even the dead refuse which is thrown away in the auction rooms, where species imported from their native haunts are sold. A wise gardener will find a most interesting field of study and learning in such a place. That uniform manner of growth is—*never to bury their roots* below the surface of what they grow on. The roots of Orchidaceous Epiphytes invariably *creep upon the earth, or leaves, or trunks that bear them*. Their peculiarly spongy surface renders it impossible for them to grow otherwise. Of this the examination of many thousand examples, during nearly 40 years, has convinced us. Of course we do not here speak of terrestrial species, which are quite of another nature. The Herbarium of Orchids collected by Mr. FENDLER in Venezuela affords us such excellent illustration of this most important fact that we cannot do better than describe the state of some of his more striking species.

Gongora Jenischii.—Roots form a superficial patch of 36 square inches; some as thick as a crowquill, the remains of others much longer; the rest as close as hair, forming an entangled mass lying flat upon bark, and mixed with Hypnum and Jungermannia.

Liparis, some undescribed species; stem slender, more than 18 inches long without leaves; it had laid flat upon something, and like Ivy has thrown out myriads of little conical roots consisting of a network of absorbing fibres from every part of its surface. Such a stem is provided to carry no more than seven or eight thin leaves.

A *Maxillaria*.—Roots form a close superficial tuft, born among Jungermannias, and spreading at least 6 inches round the common centre.

Another *Maxillaria*, only 4 inches high, leaves included. Roots innumerable, thread-like, spreading for at least 5 inches all round among Jungermannias, Trichomanes, and the dead flowers of some Inga. These Maxillarias in all cases spread their roots over bark, or among Moss, five or six times wider than the pseudo-bulbs are high.

An *Oncidium* with a prostrate flower stem 8 or 10 feet long throws out from below the leaves a root as thick as a crowquill, little branched, and more than a foot long where broken, at which place it spreads flat as if it had grown in the interstice of a rock. Many such roots had come from the same part. It has a young shoot rising for 18 inches, like a shoot of Asparagus, and then forming new leaves.

A *Warcziewiczella* forming a tuft only 7 inches high is held down by spreading roots above 10 inches long, with their underside covered with bits of rotten wood on which they have pressed themselves.

A beautiful *Chondrohyncha* is in the same state, with the roots entangled among bits of rotten wood on which they have laid.

Finally a *Telipogon*, one of the most lovely of Epiphytes, has been clasping the mossy bark of some tree with roots looking like great white earthworms.

Abundance of other examples of the same fact are given by the same collection, but it is needless to enumerate them. We will only add that even the little Stelids form roots in the same way and to the same extent. We have now before us a *Stelis purpurascens* from Mexico, the roots of which formed a superficial plate certainly not *less than a yard in circumference!* Such are the means that Nature provides for the production of these tropical gems. Look at the specimens at —— and at ——, and elsewhere, and judge whether all men think of that.

Let those who are intrusted with the management of Orchids think upon two things growing out of natural facts. Let them in the first place consider whether an atmosphere dry enough for succulents is likely to suit plants whose thin leaves can only retain their freshness while the air around them is as damp as that of a Vinery forced in February. And in the next place let them try to reconcile their senseless system of "hard potting" with the peculiar habits of plants whose roots cannot bear to exist, either under pressure, or unless freely exposed to the action of a suitable atmosphere. We know that this hard potting has been used by first-rate growers in the case of Vandas and species of similar habit. But how is it used by them? Not for compelling roots to grow when and how Nature peremptorily forbids, but as a contrivance to steady long straggling stems which throw their arm-like roots into the air, and never attempt to produce them below the ground level. The application of this method of hard potting to cases having no sort of analogy is one of the most striking illustrations of the fatal effect of substituting ignorant practice for intelligent skill.

FORTUNE'S YELLOW CAMELLIA.

IT was only the other day that I had an opportunity of examining at Kew the famous Yellow Camellia, mentioned by Fortune in his "Journey to the Tea Countries of China," and noticed in your Paper for 1852, p. 259, and may be allowed to say here a few words respecting its systematic position, as that seems to involve a question of practical tendency. The Yellow Camellia does not constitute a new species, as has been supposed, nor is it to be regarded as a variety of Camellia japonica. It is merely a form of C. Sasanqua (which I hold to be identical with C. oleifera, of Abel). C. japonica flowers towards the spring, and has quite glabrous leaf-buds, petioles, leaves, and ovaries; whilst C. Sasanqua flowers in the autumn and has pubescent leaf-buds, petioles, and veins of the leaves, and a woolly ovary. The characters of the latter fully agree with Fortune's Yellow Camellia; and it may therefore be safely referred to it as a Warratah or Anemone-flowered variety, the stamens of which are transformed into short, spathulate petals of a primrose colour. Hitherto the Warratah state was only known to occur in C. japonica, and the yellow colour is certainly quite a new feature in this genus, deserving the greatest attention of horticulturists. That C. Sasanqua has a tendency to assume a yellow tinge is evident even from the single flowering state, as will be seen from the excellent figure in the Botanical Register, t. 942, where the outer series of stamens displays the primrose colour peculiar to the Yellow Camellia. I may add that the plate quoted represents the form nearest approaching the plant under consideration; the leaves of the Yellow Camellia always being more acuminate than those of the ordinary form of C. Sasanqua found in the gardens, and the styles are generally (but not always) entirely free.

The Yellow Camellia has generally a sickly appearance. This I think may, in a great measure, be accounted for by its being almost invariably grafted upon C. japonica. If that process is resorted to at all, C. Sasanqua should be selected. There is another Camelliaceous plant that is in most gardens in rather a precarious state; I mean Thea maliflora, fl. pleno (= Camellia maliflora, or Palmer's Double Sasanqua), either grafted upon Camellia Sasanqua or C. japonica, with which it can claim only a distant relationship. Its normal type I have ascertained to be the Camellia euryoides of the gardens (not of Lindley!) figured in the Botanical Magazine, t. 5044, a fast growing, generally healthy-looking plant, upon which this so-called Double Sasanqua would no doubt thrive better than upon the species upon which it has hitherto been grafted with such indifferent results. *Berthold Seemann, October* 2.

STRAWBERRIES.

[WE extract the following from Messrs. Vilmorin & Co.'s new catalogue. It is the selection made by Madame L. Vilmorin of the sorts of Strawberry that prove best in France. The opinion of a lady so conscientious and thoroughly acquainted with the races of this plant cannot fail to be read with interest.]

When the soil is not too cold and damp in winter, Strawberries should be planted in the autumn in preference to the spring, because by doing so they bear a better crop the following year. The species or varieties marked * are the best adapted for forcing in either greenhouses or frames. We advise those who receive their Strawberry plants a little withered, which cannot always be avoided, to restore them by plunging them into water for some hours before planting them. Anyhow they should be well watered after planting, let the time be when it may, and shaded for a week at least, if the weather be warm and dry, in order to facilitate their taking root again. When the Strawberry plants arrive very much flagged, in consequence of a long journey, it is advisable to prick them out under a cold frame, which must be carefully shaded during the day, and regularly aired; when the plants have well taken, they may be removed with balls of earth round their roots and planted out, or still better left alone till the spring, when success will be more certain. In fact, this last mode of cultivation is the best for all Strawberry beds made rather late in the autumn, particularly if the soil is cold and damp in the winter. Those who have not frames may prick out their Strawberries in the open ground, provided the place is perfectly well sheltered from the north wind, and the plants are placed about 8 inches apart; it is then easy to protect them from severe cold, and especially snow by straw mats or straw alone. In light soils the frequent frosts of the early spring are apt to draw out the plants and expose their roots to the air; this

inconvenience may be partially prevented by treading down the earth, or by rolling it, in order to make it solid before planting, and doing so every time that frosts raise the roots and loosen them; but care must be taken that the earth is dry enough not to stick to the feet.

Ajax (Nicholson).—Fruit very large, round, deep red, flesh red streaked with white, firm, sweet, high flavoured, a good early Strawberry.

Admiral Dundas (Myatt's).—Fruit very large, of irregular form, of a scarlet red colour, flesh white, edged with orange, sweet, high flavoured, perfumed; a late sort which appears not to bear freely till it has been planted two years.

Barnes's Large White.—Fruit large, round, amber white, tolerably perfumed, prolific, very late, and remarkable for the colour of its fruit.

*Belle Bordelaise.—Obtained from the seed of the old Hautbois (*musqué*), fertilised by the Alpine (*quatre saisons*); the fruit has a delicious perfume, and the plant is a good bearer. This variety is perfectly well suited for forcing, as well as the open ground; sometimes produces a second crop in the autumn.

*Belle de Paris.—Fruit very large, of a conical form, bright red colour, flesh rosy white, very firm, sweet and high flavoured, comes to maturity the second season; a strong and fertile variety, easily forced.

*Black Prince (Cuthill).—The value of this variety is its precocity, fertility, the length of time it continues to bear, and the deep colour of its fruit, which is tolerably good; the flesh is juicy, rather sour, pretty good, but in some light dry soils it forms its fruit badly. It is well calculated for forcing.

British Queen (Myatt's).—Fruit very large, of an irregular oblong, light vermilion red, flesh solid, tolerably firm, white or a rosy white, sweet, watery, perfumed, delicious; late. This variety, whose fruit is one of the very finest, and perhaps the best of the large-fruited sorts, has the fault of being delicate in the ground; it prefers a virgin sandy soil.

Carolina superba (Kitley).—An excellent Strawberry, large, of a vermilion red colour, seeds prominent, flesh white, firm, and of a delicious perfume, something like the British Queen, but stronger and more hardy.

Crystal Palace (Nicholson).—Enormous fruit of a beautiful elongated form, flattened, bright red colour, flesh rosy, firm, juicy, and of a rich flavour; a very late and very prolific variety.

Deptford Pine (Myatt's).—Fruit large, firm, flesh white, rose in the centre, rather sweet, high flavoured, pretty good; very early.

*Red Meudonnaise, Alpine.—A beautiful variety with large fluted leaves; fruit more regular and generally larger than that of the common Alpine, producing less at a time, but for a longer period.

White Alpine (or *quatre saisons*).—Perhaps rather sweeter and more perfumed than the red.

Bush Alpines (or *quatre saisons—de Gaillon*), with both red and white fruit, being without runners, are best suited for cultivating as border edging; they bear abundantly at the end of autumn.

Duc de Malakoff (Gloede).—A very vigorous and fertile plant, fruit middle early, of the largest size, irregular form, very deep red, seeds prominent, flesh red streaked with pale red; of a rich vinous flavour.

Eleanor (Myatt's).—One of the most beautiful and largest fruits, of elongated form, and a bright red colour, flesh rather firm, slightly acid and high flavoured; a fertile variety, and one of the latest.

Eliza (Myatt's).—Fruit middle-sized, conical, light vermilion red, juicy, high flavoured, very perfumed and peculiar; ripens early. This sort prefers fresh land; it is not prolific, but bears fruit during a month or six weeks. Its fruit is one of the best for preserving or for making into sweetmeats.

Empress Eugenie (Knevett).—Extremely large fruit, many of them measuring 6 inches in circumference; the flesh is of a beautiful red, very juicy, and its perfume superior to most large Strawberries.

Excellente (Lorio).—Fruit large, generally oval, deep red, flesh white streaked with red; flavour of the wood Strawberry; early.

Exhibition (Nicholson).—Very fine fruit, of an odd form, vermilion red colour, seeds prominent, flesh whitish yellow, sweet and perfumed. Remarkable for the length of time it continues to bear.

Goliath (Kitley).—Fruit middling size, conical, vermilion red; flesh firm, rosy white, high flavoured, very perfumed, excellent; one of the best sorts for preserving or making into sweetmeats; prolific and hardy; ripens late.

Hovey's Seedling.—Fine large fruit, or of a very large rounded form, scarlet red colour, flesh rosy, of a good quality though slightly pasty. This sort can bear drought better than most.

Impératrice Eugénie (Gauthier).—Fruit of a fine conical form, bright rose coloured, white prominent seeds, flesh rosy white, sweet and perfumed. Appears to be strong and prolific.

* Keens' Seedling.—Fruit of middling size, bright red, flesh firm, sweet, juicy, high flavoured, of good quality; early, hardy, and prolific; well suited for forcing, but after the first gathering, the remainder is too small.

La Châlonnaise (Dr. Nicaise).—Large vermilion red coloured fruit, flesh white, delicate, dissolving, of a delicious flavour; middle season.

La Constante (De Jonghe).—Large fruit of a fine conical form, bright red colour, shiny looking, seeds prominent, flesh white, very firm, of a sweet and perfumed flavour; ripens late. Strong dwarf plant and very prolific. A very interesting variety, which has hitherto succeeded well in different situations and soils.

La Reine (De Jonghe).—Large fruit, of a long flattened form, rosy white colour, flesh firm, white, very perfumed, and of a delicious flavour.

Marquise de la Tour Maubourg (Jamin and Durand).—Fruit beyond the average size, bright red colour, flesh pale red, sweet and high flavoured, of good taste. Strong and prolific plant.

Monstrueuse de Robine (Baumann).—Fruit of an odd form, often enormous, vermilion colour, white fleshed, slightly edged with red, sweet, acid, and high flavoured. A very prolific variety.

Nec plus Ultra (De Jonghe).—A very beautiful and good Strawberry of an odd form, sometimes of an enormous size, seeds prominent, black red colour, flesh red with pale streaks, hollow, sweet, pasty, without juice, ripens early.

Nimrod (Lucombe & Co.)—Beautiful and good fruit, of an elongated flattened form of the largest size; the same kind as Eleanor. Flesh red, pink in the centre, sweet, and high flavoured; one of the latest to ripen.

Prince Alfred (Ingram).—Very large fine fruit of a pointed heart shape, deep red glossy colour, flesh hollow, red veined with white, sweet, high flavoured, slightly acid.

Prince Arthur (Willmot).—Very large elongated fruit slightly flattened at the end, regular, red, flesh white to the centre, a little acid, high flavoured, ripens late. A strong and prolific variety.

Prince Imperial (Graindorge).—A good variety with fine cone shaped fruit of an average size, red, flesh of an even rose colour, hollow, sweet, perfumed, high flavoured, a strong and prolific variety, earlier than Keens' Seedling. It appears to be well suited for forcing.

*Prince of Wales (Ingram).—Average sized Strawberry, most frequently conical, red coloured, flesh white streaked with red, hollow, sweet and high flavoured, early and very prolific.

Princess Royal of England (Cuthill).—Strong early and prolific variety, its fruit is large or middling sized, of a conical form, orange red colour, seeds prominent, flesh of a delicate white, sweet, very high flavoured, having a slight musky taste.

*Princesse Royale (Pelvilain).—Large fine elongated fruit, bright red glossy colour; flesh full and firm, rosy white, rather high flavoured, tolerably sweet; an early prolific sort, better calculated for forcing.

*Queen Victoria (Myatt's).—Fruit very large, almost round, vermilion red and glossy, flesh red veined with white, slightly and sufficiently perfumed; ripens about the middle of the season. A hardy and prolific variety.

Rival Queen (Tiley).—Very strong plant, the largest sized fruit, of a conical form, orange red colour, seeds prominent, flesh white, very delicate, sweet and perfumed.

*Sir Charles Napier (Smith). — Pointed heart-shaped fruit, regular, with white flesh, firm, good tasting, a little acid and high flavoured, a prolific variety, and appears to be easily forced; ripens the second season.

*Sir Harry (Underhill).—Fruit very large, almost round, of a deep red colour, flesh white, sweet and perfumed. A prolific variety and easily forced. We have seen perfectly enormous fruit of this sort from English growers.

*Sir Walter Scott (Nicholson).—Beautiful variety with very large fruit of an elongated form, pointed, deep red colour, seeds prominent, flesh white, firm, sweet and perfumed, a very great bearer and well suited for forcing.

Stirling Castle Pine. — Large long fruit, red, flesh tolerably solid and firm, pale red, sweet, high flavoured and perfumed; half early. A very valuable variety on account of the firmness of its fruit, which enables it to stand travelling, and keep good longer after it is gathered than most sorts.

Surprise (Myatt's). — Splendid fruit, elongated, flattened, and square at the end, light red colour, with white tips, flesh white, sweet; seeds prominent, does very well in dry soils, tolerably early.

Triomphe.—An American sort, bearing well even the first year, the fruit of an average size, but of a very good flavour, and forces well.

Vicomtesse Héricart de Thury (Jamin and Durand).—Fruit middle-sized or large, elongated, cone shaped, often flattened at the end, red, flesh rosy and pale red, high flavoured, sweet, good. A prolific early variety.

*Victoria (Trollope).—Fine large fruit, round and regular, vermilion red colour, flesh slightly hollow, juicy, sweet, of good flavour, tolerably precocious and hardy. Forces well, and is also cultivated in open fields, in some places near Paris.

PLANT PROPAGATION.

When we glance at the plants scattered over the surface of the globe we cannot fail to perceive that they may be divided into two great groups; the one, comprising those which are provided with vessels and therefore called vascular plants; the other, without vessels, but composed of cells only, and for that reason called cellular plants. We might even say, metaphorically, that the first are all nerve, and the second all marrow.

This difference in the structure of plants, notwithstanding its importance in a scientific point of view, has hitherto had no practical application. Nevertheless it leads to a rational theory supported by experience, and may be regarded as a fundamental law, upon which depends the principle of the multiplication of plants.

In the first place assuming the principle, we then draw our conclusions; if we say that the presence of vessels is necessary to the formation of roots by the parts of plants exposed to the air, we immediately exclude from multiplication by buds the whole of the plants which belong to the group of *Acotyledons*.*

Again, in looking at the organisation of the vegetable world, we cannot but see that *vascular* plants may be themselves divided into two classes; the one comprises those which have only longitudinal vessels (Wheat, Maize, Yucca, Dracæna, Lilies, Orchids, &c.); the other includes all those which, independently of their longitudinal fibres, show when their stem is cut across transverse lines running from the centre to the circumference; these lines are called by botanists *medullary rays*, on account of the manner in which they are arranged. In fact they radiate from the *medullary sheath*, which encloses the pith, and terminate in the most external part of the alburnum, where they find themselves in contact with a substance of a particular nature, the *cambium*, placed between the wood and the bark. To this class belong all our fruit and forest trees, as well as those cultivated for ornamental purposes.

Nearly all the plants belonging to these two groups can with more or less ease be propagated by division of the parts exposed to the air, that is to say, such cuttings have the power of forming roots, although there is nevertheless in this respect a very great difference amongst the plants which belong to these two groups. In fact, some of the species of the family of Grasses, *Chamædorea* and certain other Palms, &c., which have longitudinal vessels, are not capable of producing roots except from parts which are almost entirely woody, called *nodes*, which form, at certain distances upon the stem, a kind of partition or network composed of vessels interlaced in every possible manner. Between these nodes roots never make their appearance. These last are to be met with sometimes in certain other species, which by their organisation, appear rather to belong to dicotyledons; such as Dracænas, certain arborescent Colocarias, and species of *Pandanus*, &c., and in all these cases either these roots proceed from the axil of the leaves, or else they appear to occupy the place of the leaves themselves, as in certain caulescent Orchids.

We observe also in striking cuttings from monocotyledonous plants that the roots are always produced from the circumference of the part cut; there is not a callus, properly speaking, formed, for this, which is the result of the accumulation of sap between the bark and the alburnum, can only be formed in those plants in which the bark is distinct from the alburnum.

If we now examine the second division of vascular plants, which includes all the Dicotyledons, we find quite a different order of things. In fact in these experience proves that nearly all their parts (when young and growing and placed under conditions suitable to their nature, such as all gardeners understand) are more or less inclined to produce roots, and consequently may be propagated from cuttings, and moreover that the roots generally proceed from the callus, which forms at the base of the cutting.

From what has been now stated, the reader must have perceived that the plants which are wholly cellular, and which have not the power of forming roots from the parts above ground, are quite incapable of being multiplied by cuttings; that only plants provided with longitudinal vessels possess this power within certain limits; but there is an important fact to which I especially wish to draw attention—that when they have no medullary rays, it is almost impossible to multiply them by grafts. Indeed whatever has been done to effect this object, nothing has ever succeeded except in appearance; and we can but consider the few examples which have been brought forward to prove the contrary as of no value, since although the operations were performed under exceptional circumstances and upon plants belonging to a high order (Dracænas) they still met with no success, although every possible care was taken, and grafting by approach was even resorted to. Indeed shortly after being separated the stock and scion parted from each other, thus proving that there was *attachment*, but not *union*. Every time that the operation has been attempted with separate scions, or in other words when there has been a solution of continuity, that is to say, a separation of parts, whatever may have been the care taken, or whatever the plant that has been operated upon, it has always ended in failure without even the smallest appearance of success. As to dicotyledonous plants, every one knows, that according to the species, and according to their nature, they may almost always be multiplied more or less easily either by cuttings or grafts, or even in most cases by both means.

From all these considerations we may draw this conclusion, which from its strictness we may regard as a law or rather as an axiom; 1stly, it is *indispensably* necessary, if the parts of plants are to produce roots, that those parts should contain vessels; hence *cellular* or *utricular* plants cannot be multiplied by cuttings; 2dly, plants having only longitudinal vessels may be multiplied in certain cases either by cuttings or by

* I do not here include Ferns, or indeed certain other plants, which, though they belong to this same group of *acotyledons*, still have quite a peculiar organisation and a different mode of growth.

slips, but never by grafts; 3dly, medullary rays being the principal organs by the assistance of which the different parts of the plant are enabled to unite, all plants which do not contain medullary rays refuse to be multiplied by grafts. Dicotyledons are therefore the only plants that can be multiplied in that manner. If by care, management, or expense it shall be proved that there may be exceptions to the above rules, I maintain that although such cases will be interesting in a scientific point of view, they will practically have no value, and be mere curiosities.

I finish with a table, which as it indicates the principal characters of the groups adverted to will render it easier to see at a glance the inferences which I wish to draw:—

Plants are	Cellular	Are incapable of producing roots from the parts exposed to the air, and therefore cannot be multiplied by cuttings.
	Or Vascular — Have no medullary rays	Are capable of producing roots from the parts exposed to the air and may be multiplied by cuttings but not by grafts.
	Or Vascular — Have medullary rays	Are capable of producing roots from the parts exposed to the air, and may be multiplied both by cuttings and grafts.

Freely translated from a paper by Carrière in the Revue Horticole.

Home Correspondence.

Chrysanthemums at the Crystal Palace.—In the propagating ground I remarked an immense stock of splendidly grown plants in pots, numbering I should say upwards of 1000, and all well trained. Many of them measure from 2 to 3 feet across, some 4 feet, and about 1 foot high; they have fine healthy foliage, and are well furnished with shoots, there being scarcely a bad plant among them. They promise well, both large and small varieties, to make a fine show in November. They are trained in all forms—standards, pyramids, and dwarfs; in fact when collected together they will of themselves make a very complete exhibition. *S. Broome.*

Dimorphism of Leaves.—Enclosed are branchlets from two plants raised from the same Australian seed; the specimen with the pinnate appendage is from a small plant in a conservatory; the other is from a tree planted out, and now about 20 feet high. What is the name? The older tree has quite lost the pinnate appendage; what is its nature, and which are the true leaves? The tree flowers freely. *Lisselan.* [The plant is an Acacia, and resembles A. Sophora. The pinnate leaves are the early condition of those organs, the others are the old condition, and are merely leafstalks, minus the leaflets, flattened laterally. Such leaves are called phyllodes, and such Acacias phyllodineous. The cause of this difference between the infancy and adult state of Acacias, or of their dimorphism, is wholly unknown.]

Withering of Melons.—I have been long accustomed to grow Melons, and occasionally with good success. For a few years past I have grown them in two-light pits with good bottom heat, supplied by hot-water pipes, and with due surface heat which enables me to give good ventilation. The sort I grow is the Green-flesh Melon. But I find that the plants grow very well and the fruit prospers very favourably till it becomes nearly ripe, when the plant begins to give up, the leaves wither away, and the plant dies before the fruit has perfectly ripened. Consequently the flavour is vapid and disappointing. Can you give me any advice which may enable me so to manage the plants that they may remain perfect till after the fruit has matured? *An Essex Man.* [We suppose there can be no doubt that your fruit withers because it and the leaves cannot obtain from the roots the food they demand at the ripening season. That food is water. The hot-water pipes dry the soil too much.]

Grammatophyllum speciosum.—I inclose for inspection a flower from Grammatophyllum speciosum, or the Letter Plant. Has this very remarkable and striking East Indian Orchid hitherto flowered satisfactorily in England? We have a noble specimen of it flowering here for the first time, although we have had the plant 10 or 12 years. It is a very imperial-looking Orchid, with fine strong thick fleshy Palm-like stems, measuring from 5 to 7 feet in height. The flower spikes, two in number, spring from the base of the pseudo-bulbs or stems, as in Houlettia or Cyrtopodium; they are strong and erect, of a pale green colour, and measure from 4 to 5 feet high. They have not however yet arrived at their full length; they have from 40 to 50 flowers on a spike, each flower measuring from 4½ to 5 inches across, solitary, alternating from the base of the flower spike upwards. The peduncle is white, ground-colour of flower yellow, profusely spotted or blotched with purple or chocolate, the lip rather small, but pretty. From what I have stated you will perceive that this is an uncommonly fine thing, although a very shy bloomer. When induced to flower however it well rewards the patience of the cultivator; its appearance being striking in the extreme. I may add that we have growing on the lawn a superb specimen of Gynerium argenteum or Pampas Grass, with 60 flower spikes, many of them 12 feet high. *S. M. Carson, Gardener to W. F. G. Farmer, Esq., Nonsuch Park, Surrey.* [This superb plant flowered some years ago with Messrs. Loddiges, when it was figured in Paxton's Flower Garden. But it was far inferior to Mr. Farmer's specimen, only one flower having been produced and that not more than 3 inches across, while Mr. Farmer's measured 5 inches. It is indeed worth waiting for.]

The Gishurst Compound.—I should not have ventured to have troubled you any further on the subject of this Compound, had I not been reading only last night in your Paper some queries on the subject of mildew, and this morning found the note of which the following is a copy, referring more especially to this pest, from an experienced and careful authority, *George Wilson*, Oct. 4. [I did not immediately answer your inquiry of March 24, as to my experience with the Gishurst Compound, because I had not then given it a sufficient trial. I now beg to say that I have found it extremely useful in keeping in check, and also destroying various kinds of insects injurious to garden plants; such as the black and green aphis on outdoor fruit trees, red spider, and above all mildew. Some considerable care is necessary in mixing the composition. I prefer the mixture made by dissolving 2 ozs. to the gallon of hot water, even if I have to repeat the application, as in some cases I have seen a stronger dose affect the foliage when applied; this is more particularly necessary when the foliage is young and tender—with older leaves 3 ozs. to the gallon may be used. On the whole I consider you have invented a valuable composition for assisting the gardener in keeping his plants, &c., free from those animal and cryptogamic pests, which, unless kept down, so materially interfere with cultivation. *John Spencer, Bowood*].

Pruning Fruit Trees.—In soliciting insertion of the following remarks, perhaps I ought to say that I am what is sometimes called an "amateur gardener" of the old school, cautious in adopting any new practice, but very ready to find fault with what has the appearance of novelty or innovation. The constant pruning of fruit trees is a practice of too long standing for any amateur to put it down with a few strokes of the pen. I have no such wish, convinced that judicious pruning is attended with results that most gardeners wish to encourage. At the same time I am strongly of opinion that Nature, either in the animal or vegetable kingdom, furnishes few superfluous parts, and no tendency in either animal or plant is more apparent to a careful observer than that of an endeavour to reach a healthy vitality. Numbers of instances might be given to prove this from anatomical researches in the animal kingdom; but we have to do with plants, which in the manner their roots appear instinctively to run after suitable food, and their leaves to make their way to the light, show abundant signs of this inherent tendency. How is it then that the gardener finds so much use for his knife? Do plants every year form shoots to their own prejudice, incompatible with their healthy condition? No philosopher will admit this. Why then do we prune so freely is the theoretical inquiry we would now make? "The object of life," says a great German, "is life itself," and a plant placed in a suitable soil and duly supplied with light, air, and moisture, will fulfil its destiny better without the knife than with it. It will grow to maturity, produce its seed in greater abundance, and live to a longer period without pruning than with it. It is a mistaken idea that any plant requires to be robbed year after year of the shoots it has been at the pains to form; but the cultivator's object is not seed, but a large amount of parenchymatous matter; not the vital kernels, but the pulp; and with this object in view winter pruning is well directed. A Gooseberry bush growing *ad libitum* will produce abundance of small fruit each containing its quota of seed, but none such as suits the market gardener. The roots suffering nothing from moderate winter pruning afford to such fruit buds as remain a superabundance of support, and this increases the pulpy matter. The same practice applies to other fruit trees. What are we to say, then, about root pruning and summer (thumb) pruning? Simply that it is a decidedly bad practice, were the health and vigour of the tree alone to be considered. Root-pruning or lifting the trees tends to check or threatens to destroy their vitality; and as plants instinctively attempt to fulfil their destiny, this practice, as the phrase is, puts them into bearing, but they become stunted trees. I was walking a short time ago through a gentleman's orchard that had been planted about 10 years. The gardener pointed out to me one kind of Apple trees that were ill-thriven, stunted objects; "these," said he, "bear every year, but make no wood; they will soon be old trees." In my own garden this spring a cat undertook to scratch up one or two Larkspurs (annuals); I found them when they had been out of the ground two or three hours and replanted them; they grew; that is, they kept alive, flowered, and seeded long before any of the rest, but they were decrepid dwarfs ever afterwards. Such is the effect of root-pruning. Trees so treated are made sooner productive, but are diminutive and short-lived; considerations these of little moment. Thumb-pruning is virtually root-pruning. Take away the leaf in summer and the roots will supply food less plentifully. When the lungs of an animal are injured the alimentary viscera do little; the same doctrine applies to plants. Of this any one may be soon satisfied. Let him grow an Acorn in a glass vessel; he can thus see buds and leaves develop themselves, and will find after he has pinched off the former, the latter will be checked in their growth. In fact, nothing can be truer than this—when a tree is making wood rapidly it is making roots rapidly also. Some years ago in transplanting a tree I had injured most of its rootlets; the next year it was covered with bloom, but had scarcely any foliage. The tree died. A friend of mine, experimenting on a Pear tree with thumb-pruning one summer, carried it so far that the next season every bud became a fruit bud, and the tree died. These are extreme cases, but in point. Such I take to be the true theory of the various systems of pruning—each serves the end contemplated, and is so far to be adopted. Principles in Nature are thus directed by the cultivator to his benefit, and the better such principles are understood the more effectual will culture become. In most operations practice has been the forerunner of theory; but the latter, though late in the field, has ever been a valuable assistant to the cause of real progress. *Edward Burlent, Holly Wood Cottage, Swillington, near Leeds.*

Callirhoë digitata. — My attention having been directed to Messrs. Carter's advertisement of new annuals in your last issue, I beg permission to state with reference to the so-called Callirhoë digitata that if it be, as I have reason to believe, the same plant as that offered by the leading seedsmen in this country last spring, under the name of Callirhoë pedata, Messrs. Carter are hardly likely to be in possession of the whole stock of seed. Their statement contains indeed its own refutation, seeing that the notice in a contemporary, from which they quote an extract, related to Messrs. E. G. Henderson's Nursery. I have myself had the plant under cultivation in my garden for two years, and as seeds were freely sold in spring it must have been pretty generally grown. I beg to inclose a specimen, which, though very inferior, and considerably affected by the recent wet weather, may suffice as evidence of its cultivation. It certainly does not agree with the published figures of Nuttallia digitata, but I will leave it for you to decide whether it be the true pedata. The colour of its flowers is not a violet purple, but what is generally termed rosy or crimson purple, as you can judge from enclosed specimen. It seems to be only of annual duration, and succeeds well treated as a hardy annual. I presume that it is not generically distinct from Malva, though there is something apparently distinct in the habit. *Iota.* [The specimen sent was unexaminable.]

Mushrooms.—Can you tell me how I can distinguish true Mushrooms from others? My fields abound with them, yet we are afraid to touch them; they are a very large kind. *D. F. C.* [Cap brownish, thick, with many little bits peeling off; gills reddish violet, very fragrant.]

New Self-acting Ventilator.—"An invention capable of being made useful in ventilating hothouses has been patented, and is now exhibited at the Crystal Palace by Messrs. Taylor & Grimshaw, of Southampton. It was first employed as a self-acting ventilator in Mr. Taylor's Cucumber houses. It consists of a cylinder containing air and a diaphragm of India-rubber which moves up or down, according to the amount of heat applied to the cylinder. A ventilator attached to it therefore opens at any required degree of temperature and closes again when the temperature falls to that of the starting point. No manual labour is therefore required, and gardeners are saved the vexation of having tender or choice plants injured by an excess of heat at a time when it is not wanted. But this invention regulates the temperature not only of a hothouse, it will also govern the fire by which it is heated by attaching it to a damper so as to shut off the draught or admit it, as might be required. If the fire burns too slowly it will open the damper, and thus keep up the temperature desired. To agriculturists it will also be useful. By inserting it in ricks of any kind it will indicate the temperature, and its employment will also be found of importance where choice and valuable cattle require nice management as to heat or cold. The same principle is also applicable to dwelling-houses, factories, or other places. This is pointed out by merely placing the hands upon the cylinder, which sets the machinery in operation directly. At the same time it shows that under an increased degree of temperature it will ring a bell or fire a gun, and thus become a fire alarm. It detects any increase or decrease of heat at all times and in all places, whether in the deepest mine or on the surface, in the hold of a ship or on the deck." *A communication from Mr. Taylor, one of the Patentees.*

Societies.

British Association: *Continued from page* 791.—The Antiquity of Man.—No subject has lately excited more interest among geologists and the public than the antiquity of the human race; whether or no we have sufficient evidence to prove the former co-existence of man with certain extinct mammalia, in caves or in the superficial deposits commonly called drift or "diluvium." For the last quarter of a century, the occasional occurrence, in various parts of Europe, of the bones of man or the works of his hands, in cave-breccias and stalactites associated with the remains of the extinct hyæna, bear, elephant, or rhinoceros, have given rise to a suspicion that the date of man must be carried further back than we had heretofore imagined. On the other hand, extreme reluctance was naturally felt on the part of scientific reasoners to admit the validity of such evidence, seeing that so many caves have been in

habited by a succession of tenants, and have been selected by man, as a place not only of domicile, but of sepulture, while some caves have also served as the channels through which the waters of flooded rivers have flowed, so that the remains of living beings which have peopled the district at more than one era may have subsequently been mingled in such caverns and confounded together in one and the same deposit. The facts, however, recently brought to light during the systematic investigation, as reported on by Falconer, of the Brixham Cave, must, I think, have prepared you to admit that scepticism in regard to the cave evidence in favour of the antiquity of man had previously been pushed to an extreme. To escape from what I now consider was a legitimate deduction from the facts already accumulated, we were obliged to resort to hypotheses requiring great changes in the relative levels and drainage of valleys, and, in short, the whole physical geography of the respective regions where the caves are situated—changes that would alone imply a remote antiquity for the human fossil remains, and making it probable that man was old enough to have co-existed, at least, with the Siberian mammoth. But, in the course of the last 15 years, another class of proofs have been advanced, in France, in confirmation of man's antiquity, into two of which I have personally examined in the course of the present summer, and to which I shall now briefly advert. First, so long ago as the year 1844, M. Aymard, an eminent palæontologist and antiquary, published an account of the discovery in the volcanic district of Central France of portions of two human skeletons (the skulls, teeth, and bones), imbedded in a volcanic breccia, found in the mountain of Denise, in the environs of Le Puy en Velay, a breccia anterior in date to one, at least, of the latest eruptions of that volcanic mountain. On the opposite side of the same hill the remains of a large number of mammalia, most of them of extinct species, have been detected in tufaceous strata, believed, and I think correctly, to be of the same age. The authenticity of the human fossils was from the first disputed by several geologists, but admitted by the majority of those who visited Le Puy and saw with their own eyes the original specimen now in the museum of that town. Among others M. Pictet, so well known to you by his excellent work on Palæontology, declared after his visit to the spot his adhesion to the opinions previously expressed by Aymard. My friend Mr. Scrope, in the second edition of his "Volcanoes of Central France," lately published, also adopted the same conclusion, although after accompanying me this year to Le Puy, he has seen reason to modify his views. The result of our joint examination—a result which, I believe, essentially coincides with that arrived at by MM. Hébert and Lartet, names well known to science, who have also this year gone into this inquiry on the spot, may thus be stated. We are by no means prepared to maintain that the specimen in the museum at Le Puy (which unfortunately was never seen *in situ* by any scientific observer) is a fabrication. On the contrary, we incline to believe that the human fossils in this and some other specimens from the same hill were really imbedded by natural causes in their present matrix. But the rock in which they are entombed consists of two parts, one of which is a compact, and for the most part thinly laminated stone, into which none of the human bones penetrate; the other containing the bones is a lighter and much more porous stone, without lamination, to which we could find nothing similar in the mountain of Denise, although both M. Hébert and I made several excavations on the alleged site of the fossils. M. Hébert therefore suggested to me that this more porous stone, which resembles in colour and mineral composition, though not in structure, parts of the genuine old breccia of Denise, may be made up of the older rock broken up and afterwards re-deposited, or as the French say *remané*, and, therefore, of much newer date, an hypothesis which well deserves consideration; but I feel that we are, at present, so ignorant of the precise circumstances and position under which these celebrated human fossils were found, that I ought not to waste time in speculating on their probable mode of interment, but simply state that, in my opinion, they afford no demonstration of man having witnessed the last volcanic eruptions of Central France. The skulls, according to the judgment of the most competent osteologists who have yet seen them, do not seem to depart in a marked manner from the modern European or Caucasian type, and the human bones are in a fresher state than those of the Elephas meridionalis and other quadrupeds found in any breccia of Denise which can be referred to the period even of the latest volcanic eruptions. But, while I have thus failed to obtain satisfactory evidence in favour of the remote origin assigned to the human fossils of Le Puy, I am fully prepared to corroborate the conclusions which have been recently laid before the Royal Society by Mr. Prestwich, in regard to the age of the flint implements associated in undisturbed gravel, in the north of France, with the bones of elephants, at Abbeville and Amiens. These were first noticed at Abbeville, and their true geological position assigned to them by M. Boucher de Perthes, in 1849, in his "Antiquités Celtiques," while those of Amiens were afterwards described in 1855 by the late Dr. Rigollot. For a clear statement of the facts, I may refer you to the abstract of Mr. Prestwich's Memoir, in the Proceedings of the Royal Society for 1859, and have only to add that I have myself obtained abundance of flint implements (some of which are laid upon the table) during a short visit to Amiens and Abbeville. Two of the worked flints of Amiens were discovered in the gravel-pits of St. Acheul—one at the depth of 10, and the other of 17 feet below the surface, at the time of my visit; and M. Georges Pouchet, of Rouen, author of a work on the Races of Man, who has since visited the spot, has extracted with his own hands one of these implements, as Messrs. Prestwich and Flower had done before him. The stratified gravel resting immediately on the chalk in which these rudely fashioned instruments are buried belongs to the post-pliocene period, all the fresh-water and land shells which accompany them being of existing species. The great number of the fossil instruments which have been likened to hatchets, spear-heads, and wedges is truly wonderful. More than a thousand of them have already been met with in the last ten years, in the valley of the Somme, in an area 15 miles in length. I infer that a tribe of savages, to whom the use of iron was unknown, made a long sojourn in this region; and I am reminded of a large Indian Mound, which I saw in St. Simond's Island, in Georgia—a mound 10 acres in area, and having an average height of 5 feet, chiefly composed of cast-away oyster shells, throughout which arrow-heads, stone-axes, and Indian pottery are dispersed. If the neighbouring river, the Alatamaha, or the sea which is at hand, should invade, sweep away, and stratify the contents of this mound, it might produce a very analogous accumulation of human implements, unmixed perhaps with human bones. Although the accompanying shells are of living species, I believe the antiquity of the Abbeville and Amiens flint instruments to be great indeed if compared to the times of history or tradition. I consider the gravel to be of fluviatile origin; but I could detect nothing in the structure of its several parts indicating cataclysmal action, nothing that might not be due to such river-floods as we have witnessed in Scotland during the last half century. It must have required a long period for the wearing down of the chalk which supplied the broken flints for the formation of so much gravel at various heights, sometimes 100 feet above the present level of the Somme, for the deposition of fine sediment including entire shells, both terrestrial and aquatic, and also for the denudation which the entire mass of stratified drift has undergone, portions having been swept away, so that what remains of it often terminates abruptly in old river-cliffs, besides being covered by a newer unstratified drift. To explain these changes I should infer considerable oscillations in the level of the land in that part of France—slow movements of upheaval and subsidence, deranging but not wholly displacing the course of the ancient rivers. Lastly, the disappearance of the elephant, rhinoceros, and other genera of quadrupeds now foreign to Europe implies, in like manner, a vast lapse of ages, separating the era in which the fossil implements were framed and that of the invasion of Gaul by the Romans. *Sir Chas. Lyell in the Geological Section.*

(To be continued.)

BRITISH POMOLOGICAL: *Sept* 22.—Mr. Hogg in the chair. Twelve new members were elected.

Of Grapes an interesting collection was contributed by Mr. Hill, gr. to R. Sneyd, Esq., Keele Hall, Staffordshire, comprising the following varieties: Muscat of Alexandria, not quite ripe, berries very large; White Frontignan, a large and well-ripened bunch; Chasselas Musqué, very ripe; Royal Muscadine, not ripe; Muscat Hâtive de Saumur—this, like most of the so-called Muscat varieties of the French, is only a Muscadine; but Mr. Hill reports that the bunch (which was very much over-ripe), had been grown almost without artificial heat, and would, he believed, prove a very hardy and early variety for walls in the warm counties. The bunch is large, well-shouldered, rather thin in berries, which are medium sized, round, very sweet, and solid in flesh; Golden Hamburgh, over-ripe, but sweet and tender in flesh; Sahibee: this was a large, well-shouldered bunch, but the oval berries are rather small, watery, and deficient in saccharine quality; Old Tokay, much uncertainty exists regarding the Tokay varieties; but it is hoped that, at a later Meeting during the autumn, they will be brought together and carefully compared: the variety sent in this collection was long-bunched, shouldered, round, and large-berried; thick-skinned, very sweet, and solid-fleshed; Black Hamburgh, the usual variety; Bidwell's Seedling not quite ripe; but tender-fleshed, very sweet and vinous, and reported to be a good setter, and to keep well; Trentham Black, this variety received an important premium from the Society two years ago, and fully maintains the opinion formed of it: the flesh is remarkably tender, very sweet, and leaves a most agreeable after-taste on the palate—the bunch exhibited, however, was not well set; Lady Downe's Seedling, unripe, but a good keeping variety, very favourably reported on in February last: the berry is large, ovate, very vinous in flavour; and, being thick-skinned, will hang till March without shrivelling; Black Prince, a remarkably fine bunch, ripe, and excellent in flavour. The above were generally well ripened, excepting those marked otherwise; and were fine, well-grown bunches, displaying well the peculiarities of the respective varieties. All the Grapes in this collection were, however, more or less injured in flavour; and it was supposed that they had been syringed with something which made them taste as if impregnated with highly-sized whitewash. (The query was raised whether Gishurst's Compound had been used.) To this collection a first prize was deservedly awarded.

A second premium was awarded to Messrs. H. Lane & Son, of Berkhampstead, for a collection of 15 kinds grown (excepting where it is otherwise stated) in their great span-roofed orchard-house, the ends and one side of which have been left quite open during the whole of the season, and where they had been planted against the front posts and trained under the rafters up one side and down the other. The object had been to test the accuracy of the varieties, and to ascertain their respective qualities and distinctness. Of all the varieties the bunches are well formed, compact, and exceedingly well coloured; but those from the orchard-house appeared to want about a fortnight of being fully ripe. The varieties included were:—Muscat of Alexandria, a fine bunch from forced house, well set, but by the aid of artificial means. Bowood Muscat, a small bunch from a young plant in a pot grown in a Vinery, very well set, no artificial means having been used. Royal Muscadine from a wall, unripe; and White Sweetwater (misnamed Sahibee); in the Black Hamburgh section there were the usual variety—that which produces compact, well-shouldered bunches, and is vinous as well as sweet in flavour—it appeared under its own name, and also undistinguishable therefrom were Early Hamburgh and Ashbridge Hamburgh. Nearly allied, if not identical, was Hammond's Richmond Villa Hamburgh. Next to these in affinity came the Pope's Hamburgh, a variety introduced into England some years ago from Rome, by —— Fitzherbert, Esq., of Swinnerton, in Staffordshire; it was believed at the meeting to be identical with Frankenthal. Near this in general characteristics, but less shouldered and looser in habit of bunch, was the Esperione, which seems to be a link between the Hamburgh and St. Peter's sections. A good bunch was exhibited of the large-berried, but rather coarse, and sweet only (not vinous), variety, known as Mill Hill, and which appears to be identical with Wilmot's and Dutch Hamburgh. Bunches called Black Lombardy and Black St. Peter were unquestionably the same, but much doubt existed in their unripe state what they really were. There was the same doubt regarding a bunch called Black Prince, but which was scarcely distinguishable from the two former. The collection was concluded by a bunch of that large, oval-berried, thick-skinned, stiff-shouldered, and very shy-setting variety commonly known as Black Morocco, but sometimes called Tripoli. Mr. Lane promised to repeat this very interesting exhibition a few weeks later, when the fruit would be riper, and when it was hoped other specimens would be obtained to meet them, and thereby enable the Society to determine several important facts regarding their general nomenclature.

Amongst Grapes not exhibited in competition for premiums, the following were the most remarkable:—

From Mr. G. Cooper, the Palace Gardens, Armagh, a bunch of the large black variety he sent to the Society in March last, and which he was requested to send again. The bunch was large, long and loose shouldered, very different in this respect from the Black Morocco, the side branchlets being very stiff and rigid; differing also in that it appears to set freely; the berries are oval, extremely large, one three-sixteenth of an inch in their longest, and seven-eighths in their transverse diameter, skin thick, seeds very few, flesh very tender, not ripe enough to pronounce on as regards flavour; but promising to be sweet and slightly vinous. This very remarkable variety was not at all recognised, but appears likely to be worthy of cultivation if only for its magnificent appearance. From the same gardens came a variety under the name of White St. Peter's, evidently of the Tokay section, and similar in every respect to that from Mr. Hill, except that the berries are oval instead of round. Mr. Cooper is invited to send both varieties again on the 27th of this month.

From Mr. P. Davidson, gr. to F. Bell, Esq., Thirsk Hall, Yorkshire, several bunches of the Parsley-leaved Vine, a variety of Chasselas, having small, very deeply incised-leaves, and bearing large, stiff-shouldered bunches, thinly furnished with small amber-coloured and very transparent berries, but which, though sweet, did not appear good enough to render the variety worthy of cultivation, except as a curiosity.

From F. J. Graham, Esq., with a good example of Hamburgh, another bunch of a Seedling exhibited at last meeting, in a riper state. The bunch is compact and formed like the White Frontignan, the berries round and of a pale-yellow colour, in flavour resembling the Chasselas Musqué; but Mr. Graham considers it much hardier as well as a far better setter, and that it is not so liable to crack; as he had often tried to grow that variety under a glass, without fire-heat, without ever being able to produce a perfect bunch. He states on the other hand that his Seedling has brought a heavy crop to perfection in the first year of its bearing, on the north side of a span-roofed orchard-house, without fire heat, although the house was not glazed till the middle of April. Mr. Graham proposes calling it the Cranford Muscat. The meeting fully appreciated the quality of the Grape as regards flavour, but desires more conclusive evidence as to its superiority in regard to hardiness, setting, and cracking, over the Chasselas Musqué: Mr. Graham proposed, therefore, to graft the latter variety on to his Seedling, and lay the result before the Society as soon as he should be able.

From H. Wright, Esq., of Twickenham Grange, a collection of seven kinds, amongst which were a large-

berried, solid-fleshed, thin-skinned, and very sweet-flavoured variety of the Tokay section; which is to be brought again along with another example in a riper condition of the Wortley Hall Seedling, a very large oval-berried, thin-skinned, and sweet Grape, which is very little known, but comes very near the large sort mentioned above from Mr. Cooper.

From A. Scrutten, Esq., contributed by L. Richardson, Esq., of Eltham, a basket of Muscadine, well swelled, though not quite ripe, from a Vine of very great age, which was never known to ripen its fruit until the garden came into the hands of Mr. Richardson, who treated it (as nearly as circumstances permitted) after Mr. Hoare's system, never permitting any branch to bear Grapes more than once; and always after their ripening cutting away the branch which had borne them to the last two buds, in order that it might produce during the following year, bearing wood for the year next succeeding. This principle of treatment fully answered, although it was found impossible to manure the soil or in any way interfere with the roots, as they were situated under a gravel walk.

For Pears a first premium was awarded to Mr. Whiting, of the Deepdene, for a very excellent dish of Brown Beurré, from an old tree against a south wall. The fruit was large, very oblate, just ripe, melting, sweet, and very delicious.

Mr. Swinerd, gr. to Jno. Swinford, Esq., Minster Abbey, near Ramsgate, sent a dish of Gratioli, which would unquestionably have taken the first prize, but the fruit was just so much over ripe, that, in every fruit save one, decay had commenced at the core. The single fruit mentioned was deliciously melting and highly flavoured; the same gentleman sent a dish of remarkably fine Williams's Bon Chrétien, some of which were 5 inches in length, but they also were, unfortunately, over ripe.

Another dish was of Marie Louise, from Mr. H Miers, of Bradford, from a south wall, soil rich loam over a subsoil of sandy gravel, fruit very fine in size and colour, and promising excellent flavour, but not quite ripe enough to compete.

Of Pears not sent for competition, the most interesting were Archdeacon's Seedling Gansel, from J. Moorman, Esq., very like the parent in appearance, less gritty in texture; but, although very melting, acid in flavour and void of aroma.

Of Apples three dishes were exhibited, one of which, Hicks's Fancy or Summer Nonpareil (No. 4), from Mr. Swinerd, was unripe, and of the remaining two dishes, both Ribston Pippin, that which received the first premium was from Mr. Whiting, and the second from Mr. Swinerd. Both were very large, handsome, and rich in flavour; and it would have been a difficult matter to decide between them, but the latter had been laid on hay or some other pernicious material which had imparted its flavour to the fruit.

Of Plums, Mr. Whiting exhibited Belgium Purple, in nice order for table, although this is generally esteemed only a culinary fruit. The same remark applies to Kirke's brought by Mr. John Newton. Very fine Diamond Plums were sent by Mr. Swinerd.

Of Pears, Mr. Newton exhibited from a standard Williams's Bon Chrétien, fine, large, very melting and delicious in flavour. H. Webb, Esq., brought from a pyramid on a Quince stock, sandy soil and subsoil, Belle et Bonne; large and sweet, but decaying at the heart before they were fully ripe; and Flemish Beauty, from a south wall, Quince stock, fruit small, melting, but thick-skinned and rather gritty.

Mr. Spary brought branches of a very handsome variety of American Crab, with bright, red, oval fruit, about the size and shape of pigeons' eggs.

Of Nuts Mr. Swinerd sent specimens of four kinds:—the Red Filbert, a variety he received as a new Filbert, but which proved to be Lambert's Cob; the common Kentish Cob, and an unnamed variety bearing large clusters of fruit with a short beard, and which was recognised as Pearson's Prolific; this is a useful and very free-bearing but little known variety, which has been confounded with the Common Cob by some, but is very distinct, and worthy of more abundant cultivation.

National Dahlia for 1859.—This exhibition took place at Aston Hall, Birmingham, on September 20. Late as the day was, the flowers were very large, and in many instances very fine. The nurserymen's classes consisted of 50 and 24 varieties, exhibitors in the former not being allowed to show in the latter. In the fifties, the first prize was awarded to Mr. Turner, of Slough, for Commander, Lady Mildmay, Mrs. Huntley, Lord Bath, Sir R. Bruce, John Dorey, Lord Palmerston, Pandora, Chairman, Rosebud, Duchess of Kent, Sir Henry Havelock, Dr. Gully, Daughter of the Morning, Peerless, Disraeli, Goldfinder, Midnight, Emperor, Flower of the Day, J. Franklin, Sir Charles Napier, Mrs. Church, Mentor, Conqueror, Lord Cardigan, Hon. Mrs. Trotter, Triomphe de Pecq, Lord Eversley, Miss Pressley, Pluto, Merveille, Rachael Rawlings, Eclipse Lollipop, Touchstone, Sidney Herbert, Beauty, Standard Bearer, Cherub, Pre-eminent, Miss Watts, Perfection, Lady Taunton, and six seedlings; 2d, Mr. Keynes, Salisbury. In 24 varieties, the first prize was awarded to Mr. Walker, Thame, Oxon, for Empress, Colonel Windham, Miss Pressley, King, Marmion, Triomphe de Pecq, Sidney Herbert, Chairman, Miss Chetwode, Sir J. Paxton, Venus, Grand Sultan, Touchstone, Satirist, Mrs. Wheeler, Fanny Keynes, Goldfinder, Admiral Dundas, Annie Rawlings, Hon. Mrs. Trotter, Lollipop; 2d, Messrs. Wood and Ingram, Huntingdon. Fancy varieties, 24 blooms: 1st, Mr. Keynes, with Baron Alderson, Countess of Derby, Zebra, Charles Perry, Cleopatra, Oliver Twist, Leopard, Flirt, Triomphe de Roubaix, Madame Alboni, Favourite, Marc Antony, Bayadere, Duchess of Kent, Lady Paxton, Conqueror, Sportsman, Miss Frampton, Jessie, Pretty Polly, Rev. Joshua Dix; 2d, Mr. Turner. In 12 Fancies for Nurserymen not exhibiting in the class for 24, the first prize was awarded to Mr. Legge, for Marc Antony, Lady Paxton, Miss Herbert, Triomphe de Roubaix, Papilio, Pigeon, Baron Alderson, Cleopatra, Tiger, Duchess of Kent, Comus, Butterfly.

If nurserymen mustered well, which they did, amateur growers were equally well represented. The first prize for 24 varieties was awarded to the Rev. C. Fellowes, for Pre-eminent, Venus, Mentor, Chairman, Touchstone, Peerless, Fanny Keynes, Sir J. Paxton, Miss Pressley, Triomphe de Pecq, Pioneer, Satirist, Sir Robert Bruce, Miss Caroline, Commander, Lord Cardigan, Lemonade, Knight of the Bath, Golden Drop, Rosebud, Lady Popham, Wallace, Lord Palmerston, Mrs. Church; 2d, Mr. C. J. Perry, Birmingham. In 12 varieties, the first prize was awarded to Mr. J. Lofley, Brigg, Lincolnshire, for Pandora, Admiral Dundas, Miss Watts, Mrs. Church, Lord Cardigan, Gold Drop, Commander, Chairman, Lord Palmerston, Fanny Keynes, Sir H. Havelock, Venus; 2d, R. Hopkins, Esq., Brentford. In fancy varieties the first prize was awarded to Mr. C. J. Perry, who exhibited Lady Paxton, Countess of Derby, Cleopatra, Charles Perry, Flirt, Duchess of Kent, Miss Frampton, Favourite, Butterfly, Oliver Twist, Inimitable, Countess of Bective; 2d, Rev. C. Fellowes. Six Fancies: First prize, Mr. Hobbs, with Baron Alderson, C. Perry, Lady Granville, Lady Paxton, Gloire de Kain, Jupiter; 2d, Mr. Cooper.

Seedlings formed an interesting feature, they were both numerous and good. Not less than three blooms each were shown. First class certificates were awarded to Harlequin (Grant), a striped fancy, yellow ground, with bright red marking, the colour most evenly and beautifully distributed, form fine, Lilac Queen (Grant), pale lilac, finest form; Lady Taunton (Turner), white edged with bright crimson, full size, great depth, and new; Sir J. Radcliffe (Grant), maroon; Pluto (Turner), dark fancy, maroon tipped with white, of great depth; alba multiflora (Turner), a pure white kind for bedding; Queen Mab (Turner), fancy, scarlet and white, large and fine; Mrs. H. Vyse (Church), white edged with purple. The two latter received second class certificates. The above were contributed by Mr. Turner, of Slough; Mr. Keynes also sent a large number of seedlings. First class certificates were awarded to Lady Pennant (Keynes), pale yellow; Mrs. Wellesley Piggot (Keynes), pure white, very fine flower; William Dodds (Keynes), deep yellow; Sir Geo. Douglass (Dodds), yellow tipped and veined with red;—and second class certificates to Leopard (Keynes), striped fancy; Mr. Boshel (Rawlings), buff; and Jenny Austin (Keynes), lilac. Mr. C. J. Perry received a first class certificate for Acme, a pleasing light flower, of good form; and Earl of Shaftesbury a light mottled purple, of good size and form. Mr. S. Hodges, Cheltenham, received a first class certificate for Model, a small buff flower, of good outline. The same award was made to Mr. Addis, Gospel End, Wolverhampton, for Oscar, a red flower, with fine petal and outline.

In addition to the certificates just enumerated, eight money prizes were awarded for seedlings, six blooms of a kind. These were awarded as follows:—1, Lady Taunton (Turner); 2, Acme (Perry); 3, Lady D. Pennant (Keynes); 4, Jenny Austin (Keynes); 5, Mrs. W. Piggot (Keynes); 6, William Dodds (Keynes); 7, Miss Chetwode (Walker); 8, Sir G. Douglass (Dodds).

Notices of Books.

The Culture of the Peach and Nectarine. By George M'Ewen, late Superintendent of the Horticultural Society's Gardens, at Chiswick. Edited and enlarged by John Cox, F.H.S. Octavo, pp. 52. Groombridge. This work, we are informed, was in an advanced stage when the death of the author took place; but it does not appear that more than 27 pages of it had been written by him; the rest has been chiefly supplied by Mr. Cox, well known to be an excellent fruit cultivator. We cannot say that this combination of experience has been very happy. The author was a man much overrated, and his editor would have done better to publish a treatise on the Peach tree without assistance, if he thought such a book was wanted. At all events Mr. Cox would have avoided such absurdities as talking about "the pulses of a plant becoming weak."

After a careful examination of this thin volume we scarcely find a page that is not open to objection of one sort or another. Even the list of varieties does not supply the present demands of gardeners, who want above all things to know what sorts of Peaches and Nectarines to select, and which are best adapted to their climate or the objects they wish to attain. Surely such Peaches as the Catherine might have been dispensed with, and good melting Nectarines substituted for the Old Newington, Early Newington, and Red Roman, all clingstones. In a special treatise, such as this aspires to be regarded, full instructions for overcoming the difficulty of growing the Queen of Nectarines—the Stanwick—ought to have been given instead of a miserable paragraph teaching nothing; and it would have been better to have spelt the names of some of the new kinds correctly. It is rather too bad to be told that the Peach called *à bec* by the French was named after its raiser, unless indeed he had a beak instead of a nose; or to disguise their *Déesse tardive* under the queer name of *Desse tardine*. It is not, however, to these minor matters that we take objection so much as to the practical directions with which the reader is favoured.

What we are told about borders and soils is all very well; and the addition of one-fourth of charred earth to the main constituents of a "rich unctuous loam, free of manure, not pulverised, but roughly mixed up with turf or cut straw," is doubtless advantageous. We do not, however, see much use in the cut straw, for if the soil is of proper texture it will remain permanently open enough; and if it is not it will again become too adhesive when the straw decays in the course of a few years. Nor do we understand what the author meant by recommending gardeners to use "singed" earth. Speaking of stocks we are informed that "the practice of budding upon the Plum stock is no doubt the best that can be followed, particularly for such trees as are intended for the open walls, on account of their superior hardiness;" thus leaving the inexperienced to imagine that it is of no consequence on what a Peach or Nectarine is budded, provided it is a Plum; than which a more pernicious doctrine could not have been insinuated. The author then proceeds to express his opinion that dwarf trees for walls are not desirable, because "the atmosphere so near the surface is always some degrees colder than 4 feet up the wall; consequently, a hardier stock, say a half standard Plum stock, would not be so likely to suffer from the spring variations of temperature. From whatever cause it may arise I cannot divine, but I have long observed that standard trees in general succeed better than dwarfs, and therefore I feel justified in commending them." A shrewd observer once said to his son: "My dear Tom, express any opinion you like, but never give a reason for it." It is a pity that no one should have given the author such advice.

That the atmosphere near the foot of a wall is always some degrees colder than at 4 feet up the wall is an assertion entirely the reverse of the fact, unless, indeed, the lower part of a wall is shaded improperly by tall vegetables. An open wall, fully exposed to the sun's rays, is actually hotter up to 4 feet from the ground than it is above that distance. It is true that in wet seasons and in damp situations fruits situated at a foot or less from the ground are scarcely so rich as those which are higher, but that has nothing to do with temperature. No good gardener thinks of training the branches of a Peach tree lower than about a foot from the ground; but it is a gardener's business to take care that all above this should be occupied by well-trained branches, and that cannot be done by using standards. Walls are expensive articles; and when a gentleman has paid their cost, he ought to have the satisfaction of seeing them progressively covered with healthy productive trees from within a foot of the ground to the very top. In any favourable climate this is perfectly possible, provided the nature and *mode* of vegetation of the Peach tree is understood—a knowledge which renders all the operations connected with its cultivation comparatively easy.

If there is one circumstance which more than all others tends to the fruitfulness, health, and longevity of fruit trees in general, but of the Peach most especially, it is the equal distribution of the sap. We often see a tree pushing strong gross shoots in the centre, and at top, where they are not unfrequently permitted to rise, like a series of young stems, above the top of the wall; whilst the lower part is so weak that the branches there occupying a horizontal position are languishing and scarcely able to maintain their vitality; for if left to its natural course the sap flows very sparingly, right or left, into weak horizontal branches provided it can pass into vigorous upright ones. This fact is incontestible; and every system of training in which it is not recognised must be considered faulty, until such time as it may be thought no defect to have the lower and hottest part of a wall naked or badly furnished, and thus rendered useless except to support the upper part.

The mode of training recommended in the work before us is illustrated at p. 24 by a woodcut, representing a wall tree with a tall stem, from the top of which branches radiate in all directions; and on paper those branches that point downwards appear as strong as those that have an opposite direction. All that we shall say upon this point is, that very good gardeners think they do well when, by skill and attention, they can maintain sufficient vigour in branches extending horizontally; to do so in the case of branches trained downwards is rarely attempted with the Peach; for even the branches of the Pear tree trained in that direction become too weak to bear.

It is notorious that frost and drought affect compact soils to a greater depth than loose soils. The practice of treading over the borders recommended at p. 18 is not exactly in accordance with this fact. "Where light soils abound, or from circumstances the operator has been obliged to use them, it is a good plan to add marl or some other stiffening medium to give body to the compost; and when the weather is dry and evaporation excessive I frequently tread over open soils to give them a *fixedness* and prevent waterings. This operation should be regulated by the growth of the tree and the state of the weather. It is most

useful when the tree is in active growth, and during the prevalence of a dry and arid atmosphere. This treading is in many cases preferable to mulching, inasmuch as it does not intercept the sun's rays from the border. It is easily accomplished, and no objection can apply to it; for if the composition of the soil has been attended to, it will have a kind of elasticity which in a healthy root action will cause the soil to rebound, as it were, to its original openness." The meaning of all this is not very clear; but the scope of it seems to be that treading soil prevents the necessity of watering. This is contrary to the practice of the most experienced gardeners, who, in order to save watering, in very dry weather endeavour to keep the surface of the soil loose by plying the hoe and rake.

Under the head of disbudding, there appears to have been some mispunctuation in the following sentence:—"I usually go over the trees three times at the final thinning, which is when the young shoots are being laid in. I only leave the terminal bud and the one at the base of the shoot." What was meant must have been: "I usually go over the trees three times. At the final thinning, which is when the young shoots are being laid in, I only leave the terminal bud and the one at the base." What is done ultimately with the shoots so disbudded is not stated. Disbudding is termed "a most important operation, since by its careful performance winter pruning is almost entirely avoided." This quite passes our comprehension, especially since due stress is properly laid on not overcrowding the tree with shoots. If the tree is furnished with a sufficient quantity of bearing shoots they ought certainly after they have once borne to be removed at the winter pruning, in order to make room for succession shoots for bearing in the following season, otherwise the bearing shoots of the year would be crowded with naked branches which bore the fruit in the preceding season, and which do not bear a second time. To our limited apprehension these ought to be removed, and consequently there must be a considerable amount of winter pruning. But this most important part of the subject is forgotten. Perhaps it forms a part of the mystery of pruning not to be revealed to the uninitiated, but to be dealt with by "the final touches of the master," which the author modestly compares to the finishing strokes of a sculptor with his statue.

If it were worth while we should extend these remarks; but enough has been said to show the general character of the volume. We shall therefore only add that an excellent calendar of operations has been appended by Mr. Cox, who will we trust in future stand on his own stout legs instead of the crutches of other people.

TRADE LISTS RECEIVED.—Ambrose Verschaffelt's (Ghent) *Prix courant pour l'automne* 1859, *et le printemps et été* 1860. Mr. Verschaffelt's nursery, which is 15 minutes' walk from the railway station, appears from this catalogue to be rich in rare and valuable plants of all countries. Among others he offers, without naming price, the Tree Fern of N. Zealand, Cibotium Billardieri, 8 and 10 feet high, a very large collection of Palms, and at 10 fr. each a new winter Pear called General Totleben, which is stated to be one of the best in the world (*un des meilleurs qui existent*).

Miscellaneous.

Whitaker's Mowing Machine.—A sub-committee, which met from time to time at the Horticultural Society's Garden at Chiswick to examine samples of vegetables grown for comparison, made several trials of a new patent lawn mowing machine, which had been sent to the Society for the purpose of being tested by the manufacturer, Mr. J. Whitaker, Bedford Mill Iron Works, Leigh, Lancashire. After repeated trials the sub-committee were fully convinced that this machine was one of the best that had been brought forward. It was easily drawn and turned, and both cut and cleaned off the Grass in a perfectly satisfactory manner. They came therefore to the unanimous decision that Mr. Whitaker's was a first-rate machine. *Horticultural Society's Proceedings.*

The Irish Greyhound is a remarkably fine animal, being 4 feet in length, and very firmly built. Its hair is of a pale fawn colour, and much rougher than that of the smooth English greyhound. Unless excited by the sight of its game, or by anger, it is a very peaceable animal; but when roused, exhibits a most determined spirit. In former days, when wolves and wild boars infested the Irish forests, this dog was used for the purpose of extirpating those animals; but in these days their numbers are comparatively few. When fighting, it takes its antagonist by the back, and shakes the life out of its foe by main strength. One of these dogs measured 61 inches in total length; 28½ inches from the toe to the top of the shoulder, and 35 inches in girth. *Routledge's Illustrated Natural History.*

Calendar of Operations.

(*For the ensuing Week.*)

PLANT DEPARTMENT.

CONSERVATORY, &c.—Whatever watering may be necessary here should be done early in the day so as to allow of getting the superfluous moisture dried up before night, for there is much more danger from damp among plants in flower at this season than from a rather low temperature, and on cold dull cloudy days it will be advisable to use a little fire-heat with air during the day so as to secure a moderately dry state of the atmosphere before night. Use fire-heat very sparingly, however, and only when it may be necessary to prevent injury from damp, or to prevent the temperature falling below 40°, or where things are brought from warmer houses it will hardly be safe to allow the night temperature to average below 45°, but in houses containing a mixed collection of plants there is more danger to be apprehended from a high night temperature than from keeping it somewhat lower than may be suitable for some of the inmates.

FORCING DEPARTMENT.

PINERIES. — Plants swelling their fruit must be assisted with a warm moist atmosphere, for it is difficult to get Pines to swell properly after this season under any circumstances, and unless the atmosphere can be kept warm and moist they will make but little progress. Therefore use sufficient fire-heat to secure a night temperature of at least from 65° to 70°, and 75° by day, allowing it to rise considerably with sunshine, and admit a little fresh air during the day when the weather is mild, using sufficient fire-heat to allow of doing this without lowering the temperature, and if there is the means of admitting fresh air so as to bring it into contact with the pipes on its entrance into the house, a little may be admitted with advantage in all states of the weather, and in the case of houses which have to be kept warm in winter there should always be some contrivance for admitting fresh air under or against the heating apparatus so that it may get warmed before coming into contact with the plants, and with proper arrangement a moderate supply may be admitted constantly without requiring any extra amount of fuel to keep up the temperature. Also endeavour to secure a steady bottom-heat of about 85°, and endeavour to keep the soil about the roots in a properly moist state, giving clear, rather strong, manure-water when necessary; but if the atmosphere is kept properly moist the soil will not require much water for some time. It is very difficult however to get Queen Pines to swell properly after this season, and any plants of this variety showing now should, unless in cases where ripe Pines of any size or quality will be valuable early next spring, be kept cool and dry as soon as they have done flowering, until the middle or end of January, and then be afforded a brisk moist temperature; and treated in this way, we have often found them to swell off exceedingly well, and where ripe Pines in winter are in demand Cayennes, Black Jamaica, and Montserrats should be grown to furnish the supply from November to April, for those not only swell better in winter than Queens, and the larger sorts of blacks, but are also less liable to be hard and inferior in quality. Fruit approaching maturity must also be kept warm, but the atmosphere should be kept rather dry, admitting fresh air freely on every favourable opportunity, for anything like moderately well-flavoured fruit will not be obtained at this season without a liberal use of fire-heat. If any of the young stock in pots appear to want shifting examine these at once, and shift such as are found to be at all pot-bound, for young plants if kept short of pot room through the winter will be apt to start into fruit instead of growth in spring. But in repotting at this season be careful to have the balls and soil to be used in a healthy state as to moisture, and place the soil where it will get warmed before using it, so as to avoid checking the roots. VINERIES.—Use gentle fires when the weather is damp in houses where the fruit is ripe; but only just sufficient to keep the atmosphere dry. Use brisk fires in houses where the fruit is not yet ripe, giving air freely, and be careful to guard the foliage from insects, particularly where the fruit has to be kept for any length of time after it is ripe. PEACHES.—As the trees will now be freely exposed to the air day and night, very little attention will be required here for the present. The foliage should, however, be kept clear of red spider, by an occasional washing with the engine where necessary, so as to preserve it in health until it has performed its functions and decays naturally.

FLOWER GARDEN AND SHRUBBERIES.

Scarlet Geraniums, Fuchsias, &c., which it may be intended to winter for use next season, must soon be taken up and placed in safe quarters. Plants, however, which are still in good condition, may be left for some weeks longer; variegated Geraniums will not bear much frost, and where the plants have to be wintered in situations which are not very suitable for them they should be taken up before they are at all injured, as they will be much more liable to damp and die back in winter if the wood is at all touched by frost. Unless where there is a sufficient stock of these they should not be cut back, as is usually done with the old Scarlets, but should be kept over the winter just as they are lifted from the beds, and cut back early in spring after starting them into growth, when the cuttings will root very freely in heat, and in the case of Flower of the Day, or other free growers, will make useful sized plants by turning out time, and even the strongest growers of these do not cover a bed very quickly unless planted thick, and the plants should therefore be wintered in as large a state as the accommodation will permit. The autumn rooted stock of Verbenas, &c., must be well attended to, keeping them perfectly clear of greenfly, and exposing them freely to the air on every favourable opportunity, so as to prevent anything like growth after this season, and keep the plants hard, in which state they will be much less liable to fog off under a week or two's confinement in winter than if they were kept in a growing soft state until overtaken by severe weather. Things which are not sufficiently established must, however, be treated somewhat more kindly, for there is but little chance of carrying such things over a severe winter unless they are at least well rooted, and these might with advantage be placed upon a gentle bottom-heat to encourage the roots, but do not keep the atmosphere close and moist, for growth should not be encouraged after this season.

HARDY FRUIT AND KITCHEN GARDEN.

Where wasps are troublesome means must be taken to preserve ripe fruit from their depredations; look frequently over any varieties of Pears ripening, and gather those that are fit, for if allowed to hang after they are ripe wasps are sure to find them, and will attack the fruit before it is fit for gathering. Where Currants are covered with mats, which, by the bye, are very inferior to close nets for this purpose, and much more expensive, the trees should be uncovered occasionally on fine dry days, so as to expose the fruits thoroughly to the air, in order to prevent their being injured by damp, &c. Trim and dress Strawberry plantations, and be careful to injure the leaves of the plants as little as possible, and avoid deep digging between the rows which is of no farther use than to injure the roots, as the Strawberry rather prefers a somewhat firm soil. Take advantage of dry days, when the ground is in working order, to take up and store Carrots, Beet, Parsnips, &c., and stack them in sand in a cool place where they will be conveniently got at when wanted for use.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.
For the Week ending Oct. 6, 1859, as observed at the Horticultural Gardens.

Sept. and Oct.	Moon's Age.	Barometer, Max.	Barometer, Min.	Temperature of the Air, Max.	Temperature of the Air, Min.	Temperature of the Air, Mean	Temperature of the Earth, 1 foot deep.	Temperature of the Earth, 2 feet deep.	Wind.	Rain.
Friday 30	4	29.739	29.768	65	51	58.0	60	59½	S.W.	0.20
Satur. 1	5	29.929	29.733	67	53	60.0	60	59½	S.W.	.00
Sunday 2	6	30.136	30.106	73	55	64.0	60½	59½	S.W.	.00
Mon. 3	7	30.124	29.918	75	45	60.0	61½	60	S.	.00
Tues. 4	8	29.856	29.803	80	47	63.5	61	60	S.	.00
Wed. 5	9	29.959	29.947	74	53	63.5	61½	60	S.W.	.00
Thurs. 6	10	29.979	29.842	74	57	65.5	62	60½	E.	.00
Average		29.968	29.873	72.7	51.5	62.1	60.9	59.8		.20

Sept. 30—Rain; clear and fine at night
Oct. 1—Densely clouded; boisterous; fine, with Aurora Borealis.
— 2—Densely overcast; very fine throughout.
— 3—Fine; clear, quite cloudless and exceedingly fine.
— 4—Very fine; broad band of fleecy clouds from N. to S.; very fine.
— 5—Foggy; heavy dew; exceedingly fine throughout.
— 6—Slight fog; very fine; clear at night.
Mean temperature of the week, 8 4-5ths deg. above the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 33 years, for the ensuing Week, ending Oct. 15, 1859.

October.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 9..	59.7	42.9	51.3	17	0.52 in.	1	6	1	1	5	12	7	1
Mon. 10..	61.2	43.4	52.3	18	0.68	2	3	3	1	7	9	5	4
Tues. 11..	61.8	43.2	52.5	16	0.34	2	5	2	2	4	10	5	3
Wed. 12..	60.1	42.1	51.1	18	1.00	4	4	2	1	6	7	8	2
Thurs. 13..	60.2	42.2	51.2	16	0.33	4	4	4	1	7	7	5	2
Friday 14..	59.3	41.5	50.4	16	0.30	1	4	3	2	8	4	3	6
Satur. 15..	57.9	40.5	49.2	15	1.04	2	3	3	1	9	5	4	6

The highest temperature during the above period occurred on the 14th, 1845—therm. 76 deg.; and the lowest on the 15th, 1850—therm. 24 deg.

Notices to Correspondents.

AUBERGINE: *Ignoramus* What is thus called is the cultivated state of the common Egg-plant. The former is excellent, the latter uneatable.

EMIGRATION: *F B M.* For all works on emigration apply to Mr. Stanford, bookseller, Charing Cross, London, through your bookseller. We do not recollect anything specially treating of the agriculture of those colonies.

INSECTS: *W D.* The smaller grubs found in your lawn are the young state of the larvæ of the common Cock-chaffer, which takes more than one year, sometimes three, to undergo its transformations. The larger grubs are the larvæ (full grown) of the Rose Beetle (Cetonia aurata).—*H L.* Your lawn is also infested with the young larvæ of the Cock-chaffer. It would be better to pare off the sound turf and fork up all the ground so as to expose the grubs to the birds. Watering with gas-tar water might be effectual in rendering the roots of the Grass unpalatable to the grubs, but we do not recommend its use.—*J E (Seacombe).* Your Turnips are attacked by the Black Caterpillar of the Tenthredo, often called Niggers. Lime-water will destroy them, or a water-cart should be run over the rows and the plants immediately dusted with lime. *W.*

IVY: *J E, Richmond*, begs to inform our correspondent "An Irish Subscriber," that he lately purchased some "common Ivy," at Mr. Laing's Nursery, Twickenham, Middlesex. He adds that his plant was one of a collection of well-grown specimens in pots, some 3 or 4 feet high, with three branches each tied up to a stick. His plant, he states, cost 9*d.*

NAMES OF FRUITS: *W B H.* Your Pear, 8 inches in length, is very probably the Grosse Calebasse, judging from the outline you sent. It is reckoned an eating Pear, though not first-rate. The Uvedale's St. Germain, a baking Pear, assumes a similar form. If you send a leaf it will enable us to decide.‖

NAMES OF PLANTS: We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have or could have undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*Inquirer.* Abies Menziesii.—*A B.* Euonymus europæus, the common Spindle Tree.—*H S C*, Mirabilis Jalapa, the Marvel of Peru, an old-fashioned tender annual.—*J B.* Polygonum cuspidatum, a Japanese species, useful as forming a thick summer covert, but having the fault of disappearing after the first frost.—*A B.* Physalis edulis.—*A Z.* Dioscorea Batatas.—*Henry B.* Amanita muscaria, one of the most poisonous of all fungi.

PEACHSTONES: *Querist* would be glad to know the cause of defects in the stones of Peaches when getting ripe, occasioning a hollow which becomes a nest for woodlice.

THE HITCHAM VILLAGE SOCIETY: If *Querist* will apply to the Rev. J. S. Henslow, Hitcham, Bildestone, he will doubtless receive the information he seeks.

WEST OF ENGLAND AND SOUTH WALES LAND DRAINAGE AND INCLOSURE COMPANY.
Established in 1844.
Incorporated by Act of Parliament in 1848.
Draining, Inclosing, Irrigating, Warping, Road Making, and all kind of Land Improvements, executed on Entailed, Mortgaged, or other Properties, and the whole cost can be made a Permanent Charge on the Lands, or redeemable in a certain number of years. Bidwell & Brodie, Secretaries.
Offices: Exeter; and 30, Parliament Street, London, S.W.

AGRICULTURAL EDUCATION.
HIGHLAND AND AGRICULTURAL SOCIETY.—The Society's AGRICULTURAL DIPLOMA will be granted in terms of the following Bye-Laws enacted by authority of Royal Charter:—
"That it shall be competent for the Board of Examiners from time to time to receive for examination, and to recommend for the Society's Agricultural Diploma, Candidates who shall have attained their 21st year, and who shall exhibit the vouchers, and pass an examination on the subjects hereinafter prescribed.
"That the vouchers to be exhibited shall be such as to afford satisfactory evidence to the Board—1st, That the Candidate has attended a farm, and been engaged in the practical operations thereof, for a period of two years, or for two separate periods of not less than one year each. 2dly, That the Candidate has attended, for another period of two years, or for separate periods of not less than one year each, the following classes in some seminary recognised by the Board as sufficient:—Agriculture, Chemistry, Natural History, Botany, Veterinary Medicine, and Surgery.
"That the Candidate's knowledge of Practical Husbandry, and of the foregoing Branches of Study, as well as of Technology, Field Engineering and Surveying, Farm Mechanics and Architecture, and Book-keeping, shall be established to the satisfaction of the Board by means of a strict examination.
"That upon a Report made by the Board to the Council on Education, stating that a Candidate has exhibited the vouchers and passed the examination required, the Council shall issue, in favour of such Candidate, a diploma bearing the corporate seal of the Society, and certifying his proficiency in the Arts and Sciences connected with Agriculture."
Examinations are held annually towards the close of the Winter Session of the Edinburgh University. Detailed information may be had by applying to Mr. Hall Maxwell 6, Albyn Place, Edinburgh.

SMITHFIELD CLUB CATTLE SHOW, 1859.—The ANNUAL SHOW of FAT CATTLE, SHEEP, and PIGS will take place on the 6th, 7th, 8th, and 9th December, at the Bazaar, King Street, Portman Square.
The Prize List contains separate classes for Devons, Herefords, Short-horns, Sussex, Norfolk or Suffolk polled, Long-horns, Scotch horned, Scotch polled, Irish, Welch, and cross or mixed breeds. Also Long-woolled Sheep, cross breeds, Short-wools, and Pigs. In addition to the large amount offered in money prizes, there are also 50 Silver and 5 Gold Medals. The following forms of Certificates are now ready, and intending Exhibitors in applying for them need only quote the letters and state how many of each they require.

Cattle.	Sheep.
Form A. Ox or Steer.	Form D. Pen of 3 Wethers.
,, B. Cow or Heifer.	
,, C. Ox or Cow in Extra Stock.	,, E. One Wether or Ewe in Extra Stock.
Pigs.	
Form F. Pen of 3 Pigs.	Form G. One Pig in Extra Stock

The Entries finally close on November 1.
Prize Lists with rules and regulations and Forms of Certificates to be obtained of B. T. Brandreth Gibbs, Hon. Sec., corner of Half Moon Street, Piccadilly, London, W.
N.B. All communications on the Club's business should have the words "Smithfield Club" outside, to distinguish them from private letters.

The Agricultural Gazette.

SATURDAY, OCTOBER 8, 1859.

—— The recent terrible explosion of a locomotive agricultural steam engine at Lewes, which has resulted in the death of six persons, has drawn attention to the risks attending the use of such engines by people unaccustomed to their management. The remedy which our correspondent, Dr. Eddy, recommends in an adjoining column is to adopt those simple American horse powers to which the attention of the Agricultural Society was called some years ago by Mr. Chadwick, and to which he has himself recalled attention in the current number of the Agricultural Society's Journal. They are no doubt a simple and efficient method of making horse power available for chaff-cutting or for threshing, but that they can compete with steam power for such purposes on any but a very limited scale we do not believe.

The verdict of the coroner's jury declared "That the deaths were occasioned by the explosion of a steam-engine boiler, on the Wallands, September 21, 1859, caused by the non-action of a safety-valve; and that the said engine, from subsequent examination, has been found to be of inferior quality and construction, and not properly repaired and examined before it was used. The jury feel it their duty to recommend that every portable steam-engine should have an indicating pressure-gauge; and that the present system of employing unskilled persons as engineers requires that all persons so employed should be properly examined and certificated; and that a periodical inspection of such engines should be made by competent persons."

It is plain that the accident has arisen from a very badly constructed boiler, and such ill-management of it as resulted in excessive pressure. The evidence of Mr. Amos is sufficiently reon after Christmas, we would recommend to substitute for the greater part of them "Borecole," or other gross-growing open-hearted kind; we believe there is nothing better than the common Scotch Kail or Curlies. These would carry on the Cabbage or winter feeding till the Rye was ready, assuring us to the exceptional character of the circumstances out of which this accident has arisen. Let us here recommend that the instructions by Messrs. Ransome for the management of a locomotive engine be placed by the owners of such engines in the hands of all the foremen in their employ. They are published in the last number of the Journal of the English Agricultural Society, Vol. XIX., Part II.

It is an unquestionable fact that in Ireland the economy of the tillage of farms, with the exception of some few that are in the hands of men of superior intelligence, of liberal views, and abundant capital, is very defective; the prevailing system is still as it was before the appearance of the Potato disease, which, as a dispensation of Providence, was to have worked a wonderful reformation in Irish agriculture. Potatoes in beds alternate with Oats, very often in successive crops, and are continued till the land, at least the surface which is scratched over, is found unable to return a crop of three or four times the amount of the seed, and this by the bye, in order to keep down the weeds and to compensate for the want o tillering, is necessarily heavy. The land is then manured for Potatoes, or left waste, as it is very significantly called, to recover an imperfect fertility. This waste is the last stubble left unploughed and mostly unseeded and unproductive, and on it the cows of the farm depend for their summer support, the rent and taxes having to be defrayed out of the land under crops, supplemented however by what little butter cows so fed may yield. When restored to a sufficient fertility, this waste land is manured for Potatoes with such manure as cattle fed on straw and coarse hay in the winter along with such scanty herbage as they can pick up in the fields can make, with the addition, perhaps, of straw spread in a bye lane or in the farm passages.

This is our own observation of the present day, and it is sustained by a recent statement of the Professor of Agriculture of the Queen's College, Cork, in the *Weekly Agricultural Review*. His words are: "The system of culture has been Potatoes followed by two or more crops of corn, and the land, when refusing to yield more than about three times the amount of the seed, is laid down to 'rest;' generally without having Grass seeds sown with the last crop of corn. Very many of the fields so treated, which I have gone over, produce in the first year, off their 'rest,' a miserable crop of weeds. An acre of such land hardly yielded sufficient pasturage for a goat; the herbage, three-fourths of which is composed of weeds, may be capable in the second year of affording grazing for a sheep per acre, and in the third year for two sheep; and being by this time, as it is supposed, sufficiently rested, the land is again manured for Potatoes, with such manure as is produced when cattle is half starved, and the exhaustive process is repeated. This shocking system of farming, which is so detrimental to individual and public prosperity, applies, I regret to have to state, over almost every part of this great county" (Cork).

Does not such a state of agriculture call loudly for some strong measures that may promote a change? The want has been seen, but only seen—evidently not supplied. Agricultural societies, model farms, have been established, practical instructors have been sent abroad, simple and abstruse publications issued, all with little if any effect; vain have been the efforts to improve, vain because they have not come home to the people; vain because possibly they have attempted too much, have been on too large a scale, or have been attended with a cost that alarmed rather than conciliated farmers, as being far beyond their means. The very cattle shows, introduced no doubt to give a taste, are viewed with indifference, even with distrust by the great body of the people. "They look upon these exhibitions as intended to benefit the wealthy, regardless of consequences to the less fortunate; and as promoting the successful production of cattle at the expense and removal from the country of people," says a writer on the late exhibition at Dundalk. It is rarely, indeed, that any of the ordinary tillers of the soil can compete at these exhibitions, and they rarely attemp it.

Even among the most intelligent and enlightened to break out of old and confirmed habits is a very difficult matter; how much must it not be so with an uninformed people disposed to view in a ridiculous or suspicious light every innovation, who pique themselves upon their cunning, wit, and sarcasm, and are strongly attached to old faiths, who will not read, and indeed have little respect for the opinions of writers and for works on farming? How are we to convey information to them, how induce them to change their old preoccupations for a new light? Surely there can be none so likely to effect it as that which operated on the Norfolk farmer, although it took a long while to do it—the ocular demonstrations afforded by the great Coke. Establish through the length and breadth of the land such simply conducted example farms as shall speak at once to the minds of the masses, through the most sensitive of their organs and through the most sensitive of their concerns—their pockets; throw a net-work of these farms over the whole land, one at least in every parish or on each property, the size of them to be regulated by that of the average extent of farms if the neighbourhood, under the management of the more enlightened of the local farmers, men on reading, willing to learn themselves and forward to share their knowledge with and to give instruction to their neighbours, men whose capital shall not greatly exceed that of those to whom they are intended as examples, and who will live by their farms, not salaried men employing the capitals of their masters, for then the old quip would come in, "that money does it."

It must be made plain to spectators that the system exhibited is not bolstered up, but that its whole value lies in the success of the operations carried on by their equals, that are taking place before their eyes. There are no doubt some public-spirited men who, if convinced of the value of such establishments, would foster and promote them, but the great reliable machinery for carrying out the plan must be provided by the landed proprietors, under the supervision and assistance of their agents, agriculturists, and stewards. To many landlords this would be but an agreeable duty, as augmenting the wealth of the country and improving the condition of their tenantry, and even eventually increasing the amount of their own rentrolls.

The object of the farms we contemplate would be to effect improvement by a very gradual progress, one that would not shock existing prejudices, one for which more or less the minds of the people are prepared, one that does not very widely depart from long established practices. Thus, however desirable it may be to cultivate Potatoes in drills we would not insist on it, for the people are not prepared to adopt that cleanliness of tillage so essential to drill culture—we would continue the old bed plan. So, however desirable an extended system of rotation and home feeding may be, we would not seek to institute it, since neither the occupiers of the land, nor even many landowners are convinced of the practicability and beneficial consequences of it; much less would we introduce the more advanced and perhaps better founded practice of Lois-Weedon. We will begin with the most simple forms, content with introducing a partial green feeding in such way as will impose least change. Cabbages have become of late years almost as familiar as Potatoes, upon them then we will rest for our winter-feeding crop, and these grown in the way that has become common. Red Clover, although rarely sown but in small patches, is somewhat estimated; on this then we would much rely for summer feeding, aided by Vetches, which are not quite unknown, and winter Rye, which as a green food, except to support winter Vetches, is quite a novelty. Now all these crops may be considered rather as smothering weeds than hoeing them, and they are therefore more suitable to the habits of the people and the existing foul state of the land, for a hoeing crop would be neglected and the land perhaps left fouler than ever after it. The Potatoes in beds are not of course a hoeing crop; neither are Cabbages in the way they are now planted and which we do not propose to alter.

Shortly after the Potato failure the people, who formerly had been used to feed their swine solely on the refuse of their Potato crop, found out that Cabbage was a good substitute for that root and commenced planting Cabbages on the brows of the Potato ridges; this has now become a common custom and prevails everywhere. It is asserted not to be detrimental to the chief crop, the Potato, and indeed we have not been able to discover any inferior produce of tubers under those Potato plants that have been in closest proximity to the Cabbage, and as, from the effects of the disease, the Potato haulm begins to decay very early, the Cabbages soon have the whole air room to themselves, and possibly the earth room too: and notwithstanding the early oppression of the Potato plants and the ill prepared state of the land, it is wonderful how well the Cabbages succeed; there are indeed very many fine heads among them. The Cabbages most generally planted are the large-hearted, but as these cannot be depended

and, although the close-hearted may frequently afford heavier individual weight, yet we are persuaded that, in connection with the Potato ridge, the acreage weight of the curly-pated fellows will exceed that of the hard-hearted ones. To Cabbages then may succeed Winter Rye, Winter Vetches, Red Clover, or Spring-sown Vetches, all in such proportions at first as may prove rather an introduction to house feeding and a help to the ordinary system than a full establishment of it. Such a plan, although constituting an evident improvement on the old one, would not make any great extraordinary demand on the exertion, the intelligence, or the pecuniary abilities of our farmers. Examples by ocular demonstrations are so much more effective than any other mode of conveying instruction that we may expect very favourable effects from them; the benefits that would result from having a supply of artificial green feeding to supplement the natural sources on which the farmer now depends would become so evident that we must expect good consequences to ensue, and the shame of our backwardness to be covered. *G.*

We cannot allow the publication in another page of an article On Cattle Cookery by a correspondent who defends the use of condiments as adding to the nutritive effect of food, and classes Mr. Horsfall and Mr. Thorley together as alike the leaders of agricultural progress and teachers of sound agricultural practice, without adding a word of comment. These two men stand in very different relations to the agricultural public. Let it be conceded for the moment that both advise sound practice; the one reaps a profit from every one who takes his advice, the other is purely disinterested. Mr. Horsfall has related in this and other journals his experience in combining dairy produce with the meat manufacture by rich and skilful feeding, submitting without reward to considerable literary labour for the public good, and to the annoyance of hostile criticism. Mr. Thorley covers all our railway stations and broadsheets with invitations to purchase a very costly article of his manufacture, the cost of *making* which is by that very system of advertisement proved to be much below the price at which it is offered, and the nutritive value of which does not in our opinion justify any one in paying for it, as they do, many times the value of Bean-meal.

Mr. Thorley has just issued another elaborate advertisement in the shape of a sixpenny almanac, in almost every page of which the reader is taught that his success as a cattle feeder is dependent on the material given to the stock being "properly seasoned with Thorley's cattle food." It is plain that the two men whom "W. B." thus names together, stand wide apart as to the nature of their claims upon the confidence and regard of agriculturists.

Let us repeat our recommendation to any one who believes in the necessity of "condiment" for cattle food, to consult a competent veterinary adviser, and purchase what he needs direct from the druggist. He will find it an immense saving to his pocket if by adopting this plan he can medicate his Bean or Barley-meal to the proper pitch without sharing in the cost to Mr. Thorley's customers of Mr. Thorley's advertising, and Mr. Thorley's profits.

HIGH-PRESSURE STEAM *v.* THE AMERICAN RAILWAY HORSE-POWER.

The recent lamentable explosion of an agricultural steam-engine at Lewes, by which six persons have been in a moment hurled into eternity, ought to be a serious warning to the agricultural community against needlessly employing so dangerous an agent as high-pressure steam. The use of these engines appears indeed almost criminal when we reflect that not only is the safety of all concerned with them dependent each moment on such trivial circumstances as whether a valve has got rusted in or has been screwed down too tightly, or "got stuck," whether a proper supply of water is kept up in the boiler, and the inside of the boiler duly cleaned of the coating of "fur," which if the water contains certain salts, is apt to accumulate and burn the plates, and that all these small but momentous details are in agricultural engines usually left to the care of men who, to say the least, are not trained and experienced engineers; but besides all this it now appears from the evidence given on the inquest at Lewes, by no less an authority than Mr. Chas. Craven, the Locomotive Engineer to the London and Brighton line, that there is some occult cause of these explosions not yet understood by engineers; and hence accidents are liable to occur even under the most careful management. Mr. Craven is also reported to say in his evidence that in high pressure boilers the pressure increases so rapidly after reaching 45 lbs. to the square inch, that in 10 minutes it may be increased from 50 to 80 lbs. What an imminent and frightful source of danger is this, if the safety-valve be not in perfect order. There is, moreover, apart from this risk of explosion the further danger, especially in threshing with these engines, arising from the presence of fire in an open straw-yard; nor is this danger inconsiderable, especially in gusty, blowing weather. When we add to these risks the fact ascertained now by general experience, that there is no economy in the use of these engines, and that the only advantage they confer is the saving of time and the convenience of getting grain threshed out rapidly to take advantage of the state of the market, it is surprising that a substitute for this expensive and dangerous agent has not yet come into use in England, and the more so when it is known that there is a substitute for it both safe and economical, which is most extensively used in the United States, and has been favourably recommended by a Commissioner appointed to report on it to the Royal Agricultural Society; this is the American railway horse-power for one or for two horses. It is an application of that power which every farmer must possess and may as well use. The economy and efficiency of it are so well known and thoroughly appreciated in America that it is not only used to the exclusion of steam power on almost all the northern farms, but even by the railway companies for such purposes as cutting up wood for fuel for the locomotives. One of these two-horse powers will thresh and winnow 175 bushels of Wheat per day, at a cost of 2½*d.* per bushel; the only manual labour required being such as is necessary to feed the thresher and remove the straw, and this latter office is frequently performed by a straw elevator, which is run by the same "horse-power." No water-cart with its horse and man is required to keep this at work, no skilful engineer to attend to it, for there is here no dangerous accumulation of explosive force. The great success and extensive employment of these "powers" in the States is a sufficient warrant for their adoption in England. A description of them, with a drawing, may be seen in the just published number of the Royal Agricultural Society's Journal. They are manufactured in this country by Hartas, of Pickering, Yorkshire; and by Hughes, of the Falcon Works, Loughborough, Leicestershire. *C. W. Eddy, M. A., Oxford.*

THEORY OF AGRICULTURE.

By Dr. Evan Pugh.

(*See page* 778).

Letter VI.—On Agricultural Education on the Continent.

A CONTINENTAL EXCURSION.

Time, space, and force are important elements in everything we have to do, and the first instance in which they enter into the considerations we are about to enter upon is that which relates to when, how, and on what route a traveller is transported from the muddy, stinking cesspool that passes under London Bridge to the quaint old town of Hamburg. Overcharged by the cabman, and cheated by the boatman on the river, as usual, I succeeded in getting on board a steamboat in the middle of the Thames a short distance below London Bridge one morning in the early part of last August, and in less than a quarter of an hour we were upon our journey down the Thames. To say that we had a stormy, disagreeable passage would be but to repeat what everybody knows must be the case on the German Ocean; and to say that a motley group of passengers, part English, part German, part American, and part French, with no sympathies in common, and quite as much selfishness as refinement, all a little sea sick and cooped up in a close cabin on a wet day, did not constitute a pleasant company would be to assert an equally self-evident truth. And no doubt that on landing in Hamburg after a 48 hours' passage each one was as glad to get rid of all the rest as I was to get away from them all, to leave Hamburg by the first train for Berlin.

By no route could a traveller enter upon a continental tour that would give him so bad an impression of German agriculture as by that which we are now going. None would give a stronger contrast with the agriculture of England; the week before leaving England I had been across the island between Liverpool and London on two distinct routes. The richness of the agriculture, the deep green of the forests and the meadows, the ever-changing aspect of the landscape, the miniature scale of its physical geography and geology which combine to give England the most pleasant landscape scenery of any country in the world, contrast most strongly with the monotonous, and, comparatively speaking, barren sand plains between Hamburg and Berlin. Immediately in the neighbourhood of Hamburg, these remarks may not apply with such full force as at a greater distance on the road, since here the land is divided into small gardens, and these are surrounded by open ditches, full almost to the top with water, which serve to drain the land; and these gardens produce much larger crops than the sand plains to which we have alluded. But even they will not compare well with the general agriculture of England.

As the geological character of the soil remains the same, its agricultural qualities are unchanged, except in isolated patches, as where the transition from sandy to marshy or peaty soil takes place and then the change is most abrupt, not unfrequently in these very limited areas giving dry sand plains almost destitute of organic matter, and extensive marshes covered with stagnant water and large peat beds which are used for fuel. On the other hand we see patches of land that are worked, patches that are left fallow, portions with straggling trees, and these with the peat bogs and marshes and ditches all mixing and intermingling without any definite line of separation between them, thus indicating a most careless and slovenly husbandry. The crops that were growing upon the land were entirely characteristic of the land itself. In many places where the latter is not cultivated the natural coating of Grass and weeds is not sufficient to cover the soil and prevent the wind from blowing the sand about.

Such is the character of the land over hundreds of square miles in Prussian Germany. The far extending sand plains on first acquaintance remind one of the prairies of the Mississippi valley, but an examination of the soil or its crops is sufficient to show the marked difference between the rich alluvial deposits of the one and the clean washed sand of the other. The black peaty soil which often lies upon these beds of sand is not darker in colour than the loamy deposits of the Mississippi; but the one is due to organic matter passing rapidly to the last stages of its decomposition, while the other is the result of organic matter arrested in the course of decomposition, and thus prevented from either improving the physical texture of the soil, or from yielding up its elements to plants in the latter.

Through the kindness of Prof. H. Rose, known in the chemical world as the highest authority on chemical analysis, I was introduced to Dr. Schultz Fluth, the professor of agriculture in the University of Berlin; and the latter gentleman was kind enough to make me acquainted with the object and the present state of the department over which he presided in the University, as also to allow me to visit a manufactory for artificial manure in the neighbourhood of Berlin, in which he had an interest. This manufactory had formerly been used for preparing mixtures of common salt, peat, and the human excrements from the town, making a mixture with a large part of common salt, much organic matter, a little phosphate, and 1.5 to 2 per cent. of ammonia. Here, as in England, common salt produces remarkably good results upon certain kinds of sand, and none at all upon others, and consequently this manure answered the expectations of some who of course could recommend it to every one, and disappointed others who therefore could advise no one to use it. The consequence was a loss of confidence on the part of the farmer in the manure, and its manufacture was finally abandoned. They now make a manure in which the ammonia comes from blood and ground horns, and from the products of the distillation of old leather, woollen rags, &c., and the phosphoric acid from bones dissolved in sulphuric acid; and the sale of this, which contains 12 to 15 per cent. of ammonia and a large per centage of soluble phosphate, is gradually restoring that confidence which the turf, excrement, and salt effort lost. If the question of the use of the sewage of towns cannot be solved for a town like Berlin, situated in the midst of a desert sand plain, almost destitute of organic and nutritious mineral matter, one may well despair of the sewage of a town like London being used for agriculture. Professor Schultz Fluth informed me that several attempts to utilise the sewage of other towns in Germany had not been successful. Notwithstanding the sandy nature of the soil the addition of manure to the land enables it to produce good crops, as the Potatoes, Beets, and garden vegetables around this manure manufactory indicated, but it is quite improbable that any kind of farming would bring the land to that high state of cultivation that it is in England or even in the valleys of the more mountainous districts in southern Germany. Several persons with whom I conversed assured me that money invested in land did not yield over 3 per cent. interest to the owner in the most favourable circumstances, and very frequently much less than this was obtained from such investment. And this after all must be the rational test of the character of the agriculture in all communities. It is not simply a question of how to improve the land, or by what means it may be brought to a maximum degree of productive power, but a question of at what point in the gradual increase of the amount of capital invested in improving land will the sum total of capital yield the largest per centage of interest? If the agriculture of a community has reached the point at which it will yield this maximum per centage, whatever the character of the crops may be which correspond to it, the agriculturist has done all we can expect him to do. It remains for science to point out better methods of applying the capital to land, and for the political economist to so regulate the relations of trade as to maintain a rational relation between the per centage yielded by investments in land and that obtained from investments in manufacturing and commerce. Several Germans who have visited England, and who are perhaps over-anxious not to have the difference of agriculture in the two countries attributed to any fault of the inhabitants of fatherland, maintain that the superiority of English agriculture is due simply to the greater amount of capital at the disposal of the English agriculturist, and that the German farmer with as much money would raise as large crops and as fine stock as his neighbours on the other side of the North Sea. But this is only another way of admitting the superiority which a peculiar combination of circumstances has given to English agriculture—a superiority due in part to the inherent energies of the Anglo-Saxon race, and partly to the accidental geographical position of Great Britain. We shall see before we are through with our considerations on German agriculture that large investments in land in Germany will not yield an amount of interest at all commensurate with the value

of the capital invested, and that therefore the high farming of Great Britain is not practicable in Germany. On visiting Prof. Mitscherlich I was pleased to find that the old man, who for 40 years has enjoyed a European reputation for his purely scientific efforts, also had a deep interest in agriculture, and was well acquainted with its practical details. Most particularly was he interested in the source of nitrogen to plants, and the question of the assimilation of gaseous nitrogen by the latter. The large quantity of nitrogen obtained from some source by leguminous crops, and most particularly by white Lupins (a Bean) when growing upon the sandy soils around Berlin without any manure, and yet the quantity of combined nitrogen increasing in the soil at the same time, seemed to indicate that plants must be able to assimilate the gaseous nitrogen of the atmosphere. He did not feel that the researches of Boussingault upon this question were conclusive, but he did not attach any value to the researches of George Ville in Paris, which tended to invalidate the conclusions of the former. As yet the question of agricultural education in the University of Berlin is in its infancy, but it promises fair to develope itself into a distinct and well-established branch in the University. But before going further with this subject a few general remarks upon the character of German agricultural institutions will not be out of place. These institutions are of three distinct kinds.

1st. EDUCATIONAL, in which the object is to teach students and young people generally the facts and principles of agriculture.

2d. SCIENTIFICALLY INVESTIGATING; the object of which is to develope the principles involved in agricultural practice by scientific investigations, chemical, physical, and physiological investigation, &c.

3d. POPULAR.—Embracing agricultural unions, the object of which is to bring the farmers and the peasantry together to hear discourses on agriculture, and thus to infuse a spirit of progress and intelligence into the older people of communities.

A. EDUCATIONAL INSTITUTIONS.—The educational institutions fall into four different classes, which, though quite distinct in many respects, have points at which the transition from one to the other is not abrupt. They are—

(*a*). Educational departments in connection with universities in which agricultural principles are specially taught on the assumption that the student has availed himself of certain advantages of the university, in consequence of which it may be assumed that he already possesses a certain amount of a certain kind of knowledge. Some of the advantages of these institutions are, that they enable the student to avail himself of all the well-developed educational resources of an old institution, and to combine them with whatever agricultural science is prepared to teach. They enable the professor of the agricultural department to confine himself more particularly to his own department, fully conscious the student will have ample opportunities for getting a knowledge of the auxiliary sciences in the lectures of the general university course. The knowledge of these auxiliary sciences can be more thoroughly and more economically obtained than where special professors must be appointed for teaching each one of them simply in relation to agriculture. The student in connexion with the university is more likely to contract habits of careful and systematic thought, as the result of the more thorough manner in which everything is taught, and he gets a more definite idea of the importance of principles, in consequence of having studied them more, than when his attention is more distracted by the practical affairs of more popular institutions. The simplicity of the arrangements of such institutions makes it possible to have one in connexion with every university, and thus offer a great variety of locality and circumstances enabling the student to proceed with his studies in almost any particular agricultural district he may choose; or at any kind of an institution as regards morality and religion that he may desire. Such agricultural institutions are already associated with the Universities of Grieſswalde, Berlin, Jena, Göttingen, and Bonn, while professorships of agriculture are instituted at several other universities, as Munich, Vienna, Brunn, Gratz, and Klagenfurt.

b. High Schools for Agricultural Instruction, the object of which is to give a thorough knowledge of the theory and practice of agriculture, for which purpose the institution is located in an agricultural district, and is associated with a farm, upon which all the various processes of the best agricultural practice are in operation. The student is at liberty to learn how to perform the manual labour of the farm by doing it himself, or he may simply see how it is done. In most of these institutions however, previous to admittance, he must have in some way made himself familiar with agricultural practice, best by a residence of a year or two upon some well-conducted farm. All the sciences which bear upon agriculture are taught, and to facilitate this teaching, a chemical laboratory, Zoological, Mineralogical, Botanical, Geological, Anatomical, and Physical Cabinets are arranged, as also large collections of models of the different kinds of agricultural implements and machines used in different parts of the world. Political and national economy and agricultural jurisprudence are also taught, but the ancient and modern languages, history, literature, &c., are not studied, so that the course is not complete for the finished education of a highly intelligent agriculturist, yet the qualifications necessary to enter these institutions supply the deficiencies here indicated. Some of the disadvantages under which this class of institutions must labour will appear evident from the advantages enjoyed by those in connexion with the universities. As to the relative advantages of the two, there is quite a wide difference of opinion in the minds of different persons in Germany, who have been interested in the subject: we shall have occasion to refer to this difference again. There are a number of these schools already established in Germany.

c. Agricultural Manual Labour Schools, (*German, Ackerhausschulen.*)—In these institutions the practical element stands out much more prominently than in either of the two above noticed. Their object is to teach the children of the peasantry and others the best methods of practical farming, the various improvements that may be introduced from foreign countries, and the best means of adopting them in the German system of agriculture. The pupils are obliged to perform manual labour during the principal part of each day during the summer, and a few hours, varying with the nature of the work, during the winter. In some of the schools they are not admitted until they have been on some farm in the country long enough to learn all that can be learned in the ordinary agricultural practice of the country. They also receive during a few hours each day a certain amount of elementary instruction in the principles involved in the labours they are performing. This instruction must necessarily be very meagre: it can neither serve as a mental training for the pupil, nor enable him to fully appreciate the value of agricultural principles. But as such schools are often in connexion with the higher schools to which we have alluded, it is possible for the pupil to avail himself of the advantages of both in succession. He is under much stricter rules than in the higher institution, and has much less choice as to how he will employ his time, and is obliged to perform manual labour in each of a great number of departments, until he can do it skilfully and properly. He receives no remuneration for his labour, it being viewed in the same light as that of the student in the chemical laboratory, a source of expense to be borne as that of the other tuition, and not a source of revenue. We shall have occasion to discuss this part of the question more fully in connexion with the opinions of some of the professors and teachers in these institutions.

d. Manual labour Institutes (*Arbeiterschulen*).—Perhaps to the Anglo-Saxon mind the German analysis with regard to this and the last may appear a distinction without a difference, yet in origin and object the present differs in a marked degree from the last, although owing to practical difficulties these distinctions are falling away. These institutions originated in the philanthropic ideas of German and Swiss reformers, who hoped to bring about a more intimate association between teacher and the taught. The teacher should eat, sleep, work, and live constantly with the pupil; he should teach them moral, religious, social, and scientific truths from his own lips while engaged at manual labour, &c., with them. He should be to them as a parent, and they should live with him in his house as children. It is needless to say that an idea or rather an ideal so fine has scarcely found a second person to the one with whom it originated, who has had the perseverance and self-sacrificing spirit in connexion with the necessary moral and intellectual qualities to carry it out.

e. There are in Germany a number of other agricultural schools of minor importance that are devoted to special departments of agricultural teaching, as that of the dairy, the brewery, the preparation of flax, wool, &c., but at present we need not refer to them.

B. INVESTIGATION STATIONS.—The object of these is distinct from that of the last, in that they are devoted to the development of knowledge of what we are to teach, instead of to teaching. The necessity of such institutions will be evident from what was said in our last letter upon the undeveloped state of agricultural science. They are devoted to scientific experiments to develope our knowledge of the laws that govern the phenomena which are manifested in the various processes of agricultural practice. Such experiments require a great deal of time, patience, labour, and expense, so much so that it is difficult for a purely practical mind to see that the results are commensurate with the efforts expended to obtain them, and the consequence is that most of these institutions are so poorly provided for that they are incapable of leaving such results as the importance of the subject to which they are devoted demand. There are several of these Investigation Stations in Germany, but they are all quite limited in their efforts for want of pecuniary aid. Some of them are in connexion with educational establishments, and others are not. These are similar in aim and object to that which Mr. Lawes has, with such unexampled liberality, established, and for a number of years maintained at Rothamsted, England. They are most important auxiliaries in connexion with the higher class of agricultural schools, since much of the apparatus requisite for one is necessary for the other, and by uniting the teacher and the investigator in the same person, he is rendered better qualified both to teach and to investigate.

C. AGRICULTURAL SOCIETIES.—A great number of these have for a long time existed in Germany; their object is partly social, partly practical, partly educational, and to some extent intellectual. They serve to cultivate a more general intelligence, and to penetrate the almost impenetrable exterior of the peasant mind, to arouse him to a sense of the improvements of the age, and to urge upon him the importance of adopting them, and show him the necessity of giving his children a good agricultural education.

CATTLE COOKERY.

ALLOW me to take Alderman Mechi by the horn on the subject of feeding "live stock." In the English capital and in all our large towns daily, cows pay more than "the market price for their food." We ourselves have frequently purchased both stock and food for the sake of making profit—stock for breeding, and also stock for the shambles. Incoming tenants very frequently have to purchase both, and if they "pay well," profit is no unfrequent thing. Of course success depends upon how animals are bought, and afterwards fed and managed. The fact of an Alderman's pigs eating cinders is proof practical that something is wrong in the cooking of their food, and any successful feeder who has examined Mr. Lawes's experiment from a practical point of view must have seen that he, however good a chemist, is yet no authority in feeding sheep—for this experiment of his, quoted by Alderman Mechi, is a practical failure, similar to that which he made relative to Lois-Weedon husbandry. The soil in the one case, and the digestive and other organs of the animal system in the other are two great laboratories, and we hope Mr. Lawes will devote a little more attention to them than he appears yet to have done. What we want at present is not failures, but successes.

Buy well, feed well, manage well, and live stock will pay a fair market price for their food. Against the truth of this proposition we cannot allow Alderman Mechi, Mr. Lawes, or any one else even to throw a stone. But when we enter the market to buy well, how few animals do we find that will really pay for their food? And when we visit Tiptree Hall, Rothamsted, or any other crack establishment, how far is cattle cookery and management from what it should be, might be, and we hope from what it soon will be?

Progress is the master spirit of the age, and certainly no branch of husbandry affords greater scope for advance than cattle cookery and the general management of live stock, so as to enable animals to turn their food to a better account than they now do. In this department Mr. Horsfall and Mr. Thorley* are making rapid strides in the march of improvement, and we hope their successful example will receive more attention experimentally than it has yet done; for those who are thus taking a lesson of them find that animals which did not pay for their food on the old system pay well for it on the new. Ought not Alderman Mechi, therefore, to season the food of his live stock with "Thorley's cattle food condiment?" Would not this be preferable to giving "coal-ashes or cinders" to his pigs? And is not Lawes's great sheep failure attributable to improper cooking and mismanagement?

Alderman Mechi's question, "a necessary evil," is one which we fear is not generally very well understood, and we dare say little less can be said of the improved system of cooking food for live stock to which we have just referred. Both branches of the subject have long engaged our serious attention, scientifically and practically, but from their magnitude, importance, and the fact that they are, as it were, inseparably connected together, and beset with such a diversity of circumstances, we cannot enter upon the practical details of either at present so as to give the readers of the *Agricultural Gazette* the benefit of our experience. Our object in taking up the pen is to prevent fruitless opposition being thrown before the wheel of progress, and to solicit co-operation in the experimental investigation of this most important subject so as to extend the benefits which it is calculated to confer with the least possible delay. Landlords require this to enable them to erect proper homesteads for stock; for unless stock pay for their food they will not pay for household accommodation. Tenants require this to enable them to invest capital in live stock more profitably and largely than they now do; and the public require this so as to procure a larger supply of butcher's meat and daily produce than they now do from our provinces. To oppose progress, therefore, directly or indirectly, is a national sin—nothing less; but a helping hand the reverse — a national blessing.

The first division of the subject, the non-payment of food, may be resolved into the practical question—what is the difference between this animal which pays for its food and that animal which does not pay for its food? From the dung of the former we find the food is properly digested; from the urine that the waste upon the body is not greater than it should be; and from the sweet breath, the lively eye, the healthy coat, the firm active step and muscular energy generally, that the great laboratory is in a proper working state and doing its duty. On the other hand, we find from the dung of the latter that the food is imperfectly digested; from the urine that the waste upon the body is greater than it should be, and from the nauseous breath, the dull yet troubled unsettled eye, the hard coat, the slow feeble trailing step, and want of muscular energy generally, that the whole apparatus of the laboratory is out of order; the nerves and involuntary muscles upon whose action healthy vitality so much depends com-

* See leading article.

manding special attention. Look on this living picture and then on that, and who can doubt the difference?

As to the kind of food, having pointed out "the seat of the disease," we shall say very little on it. Mr. Horsfall's success and Mr. Thorley's success, it will readily be seen by those who know anything about pharmaceutical chemistry, stand upon a common foundation, so that he who lauds the one should approve of the other. We must here nail Alderman Mechi's ear to Thorley's door-post in passing. Again, it will be seen that stimulants to make animals eat more food is not sound doctrine, for the majority of those animals which do not pay for their food consume more than those which do pay for their food. What is wanted is less food consumed, but a greater result from it, or a greater result from a given quantity of food, and to obtain this we must keep our laboratory apparatus (involuntary muscles, &c.,) in sound working order, by improving our practice of cattle cookery as above suggested. *W. B., London, Oct.* 4.

THE FEEDING OF STOCK.

A lecture by Professor T. Anderson, of Glasgow, chemist to the Highland and Agricultural Society, was given on this subject in the Society's museum during the recent Edinburgh meeting of the Society.

He said:—The feeding of stock, and its relation to the general management of the farm, is a subject of the very highest practical importance, and one of those in which definite information is most essential; and yet there is probably no branch of agricultural practice in which more difference of opinion exists—so much so that while one class of persons believe it to be a highly remunerative department of farming, others with equal confidence maintain that cattle are chiefly valuable as mediums for the manufacture of manure. Even regarding details much doubt exists, and there are really but few points on which absolute unanimity exists. Looking at the magnitude of these differences, it was not without some diffidence that I ventured to select it as the subject of my address on the present occasion. Those matters, however, in regard to which doubts and differences of opinion exist, are, on the other hand, specially suited to discussion, for it is incumbent upon us to sift our information, and to ascertain what can be relied upon and what requires to be elucidated by further experiment. When this is done it appears that there are many points on which we are very imperfectly informed, and others on which statements of the most conflicting nature have been made. A great point is gained when we admit that both may be right, and when we set to work cordially to trace out the cause of the discrepancy. All branches of agriculture are now going through this phase of their existence, and principles are being gradually established. The feeding of stock is exactly one of those subjects which can be most successfully advanced by studying the principles on which it depends; and though these involve many most complex chemical and physiological questions, we have obtained some foundation on which to go. The food which an animal consumes is partly assimilated and partly excreted, but if it be properly proportioned to its requirements, its weight remains constant, and hence we learn that the food does not remain permanently in the body. If, now, an animal be deprived of food it loses weight, owing to the substances stored up in the body being used to maintain the process of respiration and the waste of the tissues. The course of events within the body is, so far as known, somewhat of this kind. The food is digested, absorbed into the blood, and deposited in the form of flesh and fat in the body, a certain quantity being consumed to support respiration. If the food be properly adjusted to the requirements of the animal, its weight remains unchanged—the quantity absorbed and that excreted exactly correspond to one another; but if we increase the food, a part of the excess will be deposited in the tissue and add to its weight. Now the quantity absorbed depends upon the state of the animal—a lean beast thoroughly exhausting its food, while, when it is nearly fat, it takes only a small proportion. So, likewise, if the quantity of food be greater than the digestive organs can well dispose of, a certain quantity escapes digestion altogether, and is practically lost. The problem which the feeder has to solve is, how to supply his cattle with such food, and in such proportions, as to insure the largest increase with the smallest loss. In solving this problem we must, in the first place, consider the general nature of the food of all animals, the constituents of which may be divided into three great classes — the nitrogenous matters, which go to the formation of flesh; the saccharine and oily, which support respiration and form fat. It is sufficiently obvious that as the two great functions of nutrition and respiration must proceed simultaneously, the most advantageous food will be that which supplies them in the most readily assimilable forms, and in proper proportions. In regard to the first of these matters, it will be obvious that if two foods contain the same quantity of nutritive matters, but in one they are associated with a larger quantity of woody fibre or other non-nutritious matter, the latter will have considerably less value than the former. The necessity for a proper balance of the two great classes of nutritive constituents is also sufficiently obvious; for if, for example, an animal be supplied with a large quantity of nitrogenous matters, and a small amount of respiratory elements, it must, to supply a sufficiency of the latter, consume a much larger quantity of the former than it can assimilate, and there is practically a great loss. We may determine the proper proportion of these substances in three different ways: 1st, We may determine the composition of the animal body; 2d, we may examine that of the milk, the typical food of the young animal; and 3d, the results of actual feeding experiments may be examined. The composition of the animal body is a subject on which, as it appears from the recent experiments of Lawes and Gilbert, great misapprehension has hitherto existed. It has always been supposed that by far the larger proportion consisted of nitrogenous matters; but that is quite an error, and even on lean animals the fat greatly preponderates over the lean. A lean sheep, for instance, contains 1½ lb. of fat for every pound of dry nitrogenous matter, and when very fat it may contain six times as much fat as lean. The inference obviously is that the food must contain a very large quantity of non-nitrogenous matters. The milk, which contains a number of each of the three great classes of nutritive matters, also affords us instruction, although, of course, more especially as regards the feeding of young stock, when the conditions are different from those existing in the mature animal. But, however valuable the data derived from these experiments may be, they are less important than those derived from actual feeding experiments. In fact, it by no means follows that the proportions in which the different substances are found in the animal are exactly those in which they ought to exist in the food. On the contrary, it appears that while one-tenth of the saccharine and fatty matters are assimilated by the animal, only one-twentieth of the nitrogenous compounds, and one-thirty-third of the mineral substances in the food are assimilated by the animal. On the other hand, however, it must be remembered that the particular compounds also exercise a very different influence. Thus, 1 lb. of fat in the food when assimilated will produce 1 lb. of fat in the animal; but it requires about 2½ lbs. of sugar or starch to produce the same effect. The broad general principle arrived at is, that we must afford a sufficient supply of readily assimilable food, containing a proper proportion of each class of nutritive substances. But there are other matters also to be borne in mind, for the food must not only increase the weight of the animal, but also support respiration and animal heat; and the quantity of food required for this purpose is large. It appears from Boussingault's experiments that in a cow 18 oz. of nitrogenous matters are required to counterbalance the waste of the tissues —a quantity contained in about 10 or 12 lbs. of Wheat flour; and it is well known that an ox expires 4 or 5 lbs. of carbon daily, to supply which 100 lbs. of Turnips are required. We see from this the large quantity relatively to that used up which is required for the maintenance of these functions, and the importance of adopting such measures as, by restraining them within the narrowest possible limits, produce a saving of food. The diminution of muscular exertion, and keeping the animals warm, so that a small quantity of food may be required to act as fuel to maintain the animal heat, are the most important considerations. Although the presence of a sufficient quantity of nutritive matters is an essential qualification of all foods, their mechanical condition is not unimportant, for unless its bulk be such as to admit of the stomach acting upon it properly there must be an appreciable loss; and there is no greater fallacy than to suppose that the best results are to be obtained by the use of those which contain their nutritive matters in a very small bulk. As a practical question, the principles of feeding are restricted to determining how the staple food produced on the farm can be most advantageously used to feed the cattle kept on it, and on this point much requires to be said. It appears that they can be best made use of when combined with more highly nutritious food, such as oilcake or Rape; and when this is properly done, a very great advantage is derived. It appears from experiments that sheep which, when fed on hay only, attain a weight of 90 lbs., reach 100 lbs. when Rape is added. The subject cannot be completed without referring to the value of the dung produced, which has been very variously estimated. The experiments referred to in the course of the address appear to show that, of food generally, about one-third to one-fourth of the money value and seven-eighths of the valuable matter appear in the dung. Dr. Anderson concluded by saying that he had by no means attempted to exhaust the subject, but had given only a sketch, trusting that the observations of others might fill up the details.

BELGIAN IMPLEMENTS.

(*Continued from p.* 531).

Resuming our description of the Flemish plough, we have to notice the next feature in its construction, the *avant-soc*, a member which is represented in our wheel-plough by the skim coulter of Howard's plough. This is carried by a branch of iron descending from the beam, and capable of adjustment by passing through an eye and fixed at any desired point by a key. The The hinder part of the *avant-soc*, sometimes also called the *petit-soc*, is of the same curve as the mould-board. The feature now under consideration is deemed of high utility in causing weeds and roots of plants to be inverted by the action of the mould-board. It is not used in the ploughs of some districts, although it is difficult to say with what reason, as there is little doubt of its utility in cleaning the land of weeds and foul choking roots of plants.

The stranger with little time or opportunity to examine in practice the various implements used in the different provinces of Belgium, has an admirable opportunity presented to him of examining their peculiarities in the Musée de l'Industrie de Bruxelles, situated near the middle of the Rue Montagne de la Cour. It is open three days in the week, free of all charge; on the other three days, English travellers can obtain admission on presentation of their passports. We propose to glance at its interesting contents. The implements which compose the collection are comprehended under three grand divisions — 1st, the machines principally employed in the *grand* or large cultivation; 2d, those in the *petite* culture; and 3d, those adapted for market gardening and horticulture generally. Each of these are subdivided into sections, for which nine take up the machines of the 1st division, or those for the "*grand culture*," viz.—Section A., Instruments of Culture, as ploughs, grubbers, weed extirpators, harrows, rollers, clod-crushers, horse-hoes, &c.; Section B., Implements and Machines for Seed Sowing, as drills; Section C., Implements and Machines for Harvesting, as scythes, reaping machines, haymakers, horse-rakes, &c.; Section D., Threshing and Winnowing Machines; Section E., Implements of Transport; Section F., Instruments of Drainage and Irrigation; Section G., Implements of Rural Economy, as straw-cutters, root-cutters, root-washers, Oat-crushers, Bean-crushers, oilcake breakers, malt-mills, churns, &c.; Section H., Instruments employed in Agricultural Industry, as mills for hand and power, Barley hummellers; Section I., Divers instruments. Although these sections comprise implements and machines adapted for large, we shall, as we go along, notice those implements adapted to the *petite culture*.

Returning to the ploughs, which are under Section A, and in connection with which we have already described the Flemish plough, we have to notice that the different specimens of Belgian ploughs exhibited are—the *charrue* (plough) *à pied*, manufactured by M. D'Omalias-Thierry, at Liège. The price of this implement is 67 to 72 francs; it takes a furrow 15 centimètres in depth and 25 in breadth, with a draught of 210 kilogrammes—this result was obtained in strong land. The Brabant plough, manufactured by M. Delstanche at Marbais, Brabant. It closely resembles in its arrangement of parts the Flemish plough which we have already described. The Malines plough, manufactured by M. Berckmans of Antwerp and of which the price is 80 francs, the depth of furrow cut by it on light land being 20, and the breadth 25 centimètres—the draught as shown by the dynamometer being 150 kilogrammes. The Omnibus plough, manufactured by M. D'Omalias at Arthisnes, Liège, is, as its name implies, one of those convertible implements which can be easily modified to serve different purposes, as a double mould-board plough, a subsoil plough, or a horse-hoe. While used as an ordinary plough, of which the price is 53 francs, the foot or *avant soc* is dispensed with and a small wheel substituted. Of the Flemish plough, manufactured by M. Van Maele at Shielt, West Flanders, the price of which is 55 francs, the depth of furrow taken in light land previously once worked is 20, and breadth 25 centimètres, the draught being 140 kilogrammes. A turn-wrest plough, adapted exclusively for mountainous districts, is exhibited by M. Focroulle at Esneax, Liège, the price of which is 65 francs. Proved by the dynamometer, the depth of furrow taken 20, and breadth 23 centimètres; draught 210 kilogrammes.

Generally speaking, the ploughs in Belgium are on the "swing" principle, although in some of the provinces the *avant-train*, as it is termed, is used. This consists of two wheels of equal diameter, running on axes at the ends of a central bar; a rounded indentation is made in the centre of the upper side of this bar, in which rests the end of the beam of the plough; the connection between the two being formed by chains. The wheels being of equal diameter, while one is running on the land and the other on the furrow, the former is tilted up, so that the central bar is at an angle, turning as on a centre on the end of the plough beam which rests in the rounded indentation above mentioned. The reputation of the wheel adjunct to ploughs is, we believe, not increasing. An able authority states that where it is added to the plough it renders it more complicated, more easily put out of repair, and by consequence more costly. It augments, he remarks, considerably the resistance, and occasions a loss of the motive force. Where the wheels are of the same diameter, the inclination of the central bar induced by the difference of elevation between the land and the bottom of the furrow-slice throws all the pressure upon the furrow wheel; on the other hand, where one of the wheels is made of less diameter than the other, their inequality offers great inconveniences when the plough cuts the first furrow on the summit of raised stetch, the right wheel finding itself upon a higher level than the left. The plough used in the Polders, where the soil is generally hard, coherent, and not easily divided, is of larger and stronger dimensions than the plough used in lighter lands—it has generally an *avant train*, but of a different construction from that already described; the central bar carrying the wheels being connected with the beam by a vertical bar of wood worked into the beam, the adjustment of the wheels to the different levels of the land upon which they run is very simply provided for.

As we have before mentioned in more than one of our articles on Belgian agriculture, the soil is stirred and pulverised to a great depth, this holding more especially

true of the provinces of East and West Flanders. To aid in this deep ploughing, the subsoil plough (*charrue à sous-sol*) is an implement of growing importance. The manufacturer and cultivator to whom Belgium was indebted for the introduction of a (native) subsoil plough was M. D'Omalias, of Liège. This is destined to work in the furrow worked by the ordinary plough, stirring the subsoil without raising it, and mixing it with arable seed-bed above. The whole arrangement of parts of this subsoil plough are of great weight and strength; it takes considerable power, two horses in some soils not being able to work it easily. Taking a depth of 15 centimètres it requires a traction force of 355 kilogrammes. The beam and stilt are of wood bound with iron; the former carries a small wheel at its forward extremity. The *soc* or share resembles that of Read's subsoil plough, which by the way enjoys a high reputation amongst scientific agriculturists, and is united to the beam by a frame or body of open wrought iron work*. A chain passes from the top of this to the regulator or bridle in front. The price of the implement is 120 francs.

AGRICULTURAL STATISTICS (IRELAND).

The following are Mr. Donelly's figures:—

	1858. Acres.	1859. Acres.	Increase. Acres.	Decrease. Acres.
Wheat	546,964	465,497	..	81,467
Oats	1,981,241	1,981,197	..	44
Barley	190,768	177,519	..	13,249
Bere and Rye	16,472	13,242	..	3,230
Beans and Peas	12,935	14,841	1906	..
Total	2,748,380	2,652,296	1906	97,990

Decrease on Cereal crops in 1859 .. .. 96,084 acres.

	1858. Acres.	1859. Acres.	Increase. Acres.	Decrease. Acres.
Potatoes	1,159,707	1,200,144	40,437	..
Turnips	338,202	322,266	..	15,936
Mangel Wurzel and Beet root	29,731	27,108	..	2623
Cabbage	33,132	31,580	..	1552
Carrots, Parsnips, other green crops	23,399	22,056	..	1343
Vetches and Rape	33,360	33,207	..	153
Total	1,617,531	1,636,361	40,437	21,607

Increase on green crops in 1859 .. .. 18,830 acres.

From these figures may be deduced the following general result:—

		Acres.
Decrease on cereal crops	in 1859	96,084
Increase in green crops	18,830	
Ditto ditto on Flax	44 683	
Ditto on meadow and Clover	12,185	
	in 1859	75,698

Total decrease in the extent of land under crops in 1859 .. 20,386

The following table represents the total number of live stock:—

	No. of horses.	No. of cattle.	No. of sheep.	No. of pigs.
1858	611,321	3,667,304	3,494,993	1,409,883
1859	628,916	3;310,136	3,588,356	1,262,873
Increase or decrease	Increase. 17,595	Increase. 142,832	Increase. 93,363	Decrease. 147,010

The value of the live stock in Ireland is estimated at:—

	Horses. £	Cattle. £	Sheep. £	Pigs. £	Total. £
	5,031,328	24,765,884	3,947,192	1,578,591	35,322,995
Increase or decrease from 1855 to 1859.	Increase. £ 581,032	Increase. £ 1,597,284	Decrease. £ 15,384	Increase. £ 106,585	Increase. £ 2,269,517
Increase or decrease from 1858 to 1859.	Increase. £ 140,760	Increase. £ 928,408	Increase. £ 102,700	Decrease. £ 183,763	Increase. £ 988,105

The entire number of holdings in Ireland, from all of which returns have been obtained, is nearly 600,000.

FISH MANURE.

Some years since public attention was directed to the large quantities of fish unsuited for human food, and of offal collected at the large fish-curing establishments existing in various parts of the coast. The good effects obtained by their application as manure by farmers in the neighbourhood suggested the importance of converting them into a portable form so as to insure the use of that large proportion for which there existed no demand in their natural state; and it was pointed out that if this could be done, the supply of refuse fish might be greatly increased, it being at present a common practice among fishermen to throw into the sea all the inedible fish, whereas if a demand existed for them, they would all be brought to shore. The result of this suggestion was, that a large number of patents for methods of treating fish and offal were taken; but few, if any, of them have come into operation on the large scale; and, at all events, the manufacture has attained no extension, and the prospects of an abundant supply of manure from this source are at the present moment as distant as ever. The principal cause of this result appears to be the too great complexity of the methods of manufacture which were suggested, and which required, in many instances, expensive and complicated machinery, or too costly materials. The former of these is a difficulty of the most serious character, because there are few, if any, places where the supply of fish is sufficiently large to enable expensive machinery to be worked with profit; and the irregularity of the supply, and the total cessation of fishing during a considerable part of the year, render it impossible to carry on the works with that regularity which is the soul of all manufacturing processes in which machinery is employed.

As a necessary consequence of these expensive processes, the cost of the manure produced was excessive; and farmers, contrasting it with guano and other manufactured manures, and finding that they were materially cheaper, naturally evinced a preference for those which they had been accustomed to use, and refused to give a price which would remunerate the manufacturer.

The failure of these processes, however, should not lead to the conclusion that it is impossible to convert fish into a dry manure, but should rather direct attention to the contrivance of simpler and easier processes. The truth is, that there has been a great deal of misunderstanding as to what is required to make such substances portable. The manufacturers of manures are rarely familiar with the principles of the art they practise, and being strongly impressed with the importance of rendering manures soluble, have most commonly made treatment with sulphuric acid in some way or other a fundamental part of their process; whereas, in this case, at least, all that is requisite is to remove the water, and to reduce the dry residue to a pulverulent state. To effect this object, no complicated apparatus is necessary, all that is required being a stove or flat drying surface, heated either by a small furnace, with flues passing backwards and forwards, or by means of steam, the latter being preferable. A thin layer of the moist fish or offal being laid upon this, might be rapidly dried and converted into a proper state before putrefaction commenced, and a manure be produced which would have comparatively little smell. As regards its value, there is some difficulty in forming an opinion; but some guide may be afforded by reference to the composition of such manures of this kind as have appeared in the market, analyses of several of which have at different times been made in the laboratory. The first of them to which I shall refer are two samples made on the east coast of England, by a process with the nature of which I am unacquainted. They were found to contain:—

	I.	II.
Water	9.77	12.15
Organic matter	53.55	55.27
Phosphates	4.72	6.44
Sulphate of lime	1.63	1·71
Common salt	26.49	22.29
Sand	3.84	2.14
	100.00	100.00
Ammonia	6.20	7.63

If we estimate these according to the plan used for guanos, then No. I. is worth about 4*l.* 12*s.*, and No. II. 5*l.* 10*s.* per ton—values which are certainly not very high. We must take into account, however, the large quantity of common salt, which materially reduces the value; and if it were possible to exclude this substance, which we shall immediately see can be done, then the value of these samples would be about 5*l.* 15*s.* and 6*l.* 18*s.* respectively.

Another sample, the source of which I have been unable to ascertain, but which I believe to have been offered for sale in Liverpool, contained:—

Water	7.55
Organic matter	87.45
Phosphates	0.55
Carbonate of lime	0.45
Alkaline salts	2.55
Sand	1.45
	100.00
Ammonia	7.29

The absence of common salt in this case, except to a very small extent in the alkaline salts, shows the possibility of producing a manure without that substance; but in this case the value is somewhat lower, owing to the trifling proportion of phosphates. It does not exceed 4*l.* 16*s.* per ton. It is probable that in this case some charcoal or other organic matter had been mixed with the fish, with the view of its acting as an antiseptic during the process of manufacture; but on this point I am unable to speak positively.

The last sample to which I shall refer was manufactured on the Portuguese coast, whence it was imported into this country. It is of a totally different nature from the others, sulphuric acid having obviously been used to some extent in the process, and sulphate of lime apparently added as a drier. For this reason its value must be estimated on the same principle as that of a superphosphate, which, indeed, it somewhat resembles in composition.

Water	14.04
Organic matter	27.77
Biphosphate of lime equivalent to 7.00 bone-earth made soluble	4.48
Insoluble phosphates	1.60
Sulphate of lime	36.17
Alkaline salts	6.14
Sand	9.80
	100.00
Ammonia,	2.10

This manure is worth only 3*l.* 16*s.* per ton, and this value is chiefly derived from the biphosphate of lime it contains.

Fish manures have usually been offered for sale at from 8*l.* to 9*l.* per ton; and at this price there is obviously no inducement to buy them, and hence the failure of the manufacture. But it is still a question whether, setting aside all complex processes, and simply confining the process to drying the fish and offal, it might not be possible to produce a manure which could be sold at a price sufficiently low to create a demand. The point on which this must mainly depend is the price at which the raw material can be obtained. At present we believe fish-refuse may be got for 8*s.* or 10*s.* per ton; and as it will require 4 or 5 tons to make 1 ton of manure, the raw material may be taken to cost about 2*l.* per ton; and allowing the same sum for the cost of manufacture, the price at the works would be 4*l.* per ton, which would be increased, by retailer's profit, &c., to 6*l.* when it came into the hands of the farmer. This price would exceed the value of any of the samples of which the analyses have been given above; but then it is probable that the quality of the manure would also greatly exceed any of them; in fact, if properly manufactured, it can scarcely be doubted that a manure fully equal to that value might be produced. It is extremely desirable, for the interests of agriculture, that some trial should be made, so as to ascertain whether it be practicable to produce such a manure with profit. One thing, however, is certain, that if it is to be done at all, it ought not to be taken up as a separate branch of manufacture, but should be carried out by the fish-curers, who ought to convert their own refuse into manure. Any other plan, involving, as it must necessarily do, considerable cost in transporting the raw material from one place to another, is not likely to succeed. On the coast of Scotland, there are many places where abundance of fish is to be obtained; and it is much to be desired that some enterprising persons could be found to make a trial of this manufacture. *Dr. Anderson in the Highland Society's Transactions.*

COTTAGES IN SCOTLAND.

At the late General Assembly of the Free Church of Scotland a report on this subject was read, from which we make the following extracts:—

"The attention of your Committee has been more particularly directed to the rural districts. They have found that although a number of good cottages have been erected of late, this is still the exception, and not the rule. Even where cottages exist, they are generally very inadequate in point of accommodation, having often only one apartment for a whole family, thus setting means of decency and proper opportunities for devotion equally at defiance, and resulting in many forms of social evil. This is the state of the ploughmen's houses in many of the most highly improved agricultural districts of Scotland, even where matters are supposed to be upon a tolerably good footing. In this one a partment the whole family must remain, in health and sickness in life, and till the funeral in death. To this it may be added, that in some districts what has been called the 'bondager' system exists—in other words, the ploughman is forced to accommodate in his inadequate cottage an additional labourer, whose services are required upon the farm. Many evils result from this plan. The miserable inadequacy of the houses of the people, and its sad results, seem also to exist even in a grosser form in some parts of the Highlands. Mr. Briscoe, at the instance of the Board of Supervision for the Poor, visited part of the Highlands lately, to ascertain the actual state of matters, and the result of his observations is contained in an appendix to the last Report of the Board. He says—'It is very deplorable to see the filthy habits and demoralising condition in which the great mass of the population exist. The houses, however small, could at least have the means of separate sleeping places for the sexes. When visiting, I had ample opportunities of observing the sleeping arrangements—young and old of both sexes often sleeping in the same beds, and with few exceptions, in the same room.' Examples are given by him which are too shocking to be mentioned in a public report.

"The attention of your Committee, however, has especially been directed, according to the remit of the Assembly, to what has been called the bothy system, or a plan of lodging a number of ploughmen and other labourers, generally unmarried, and of either sex, in a hut or outhouse called a bothy, and thus virtually rendering all the humanising influences of domestic life impossible. Your Committee issued a series of queries on this subject to the districts in which the evil was understood chiefly to prevail, which were very cordially responded to; and from the answers thus received, and other sources, they beg to submit the following abstract:—

"The bothy system prevails more or less in the eastern districts of Scotland, in East Lothian, Fife, Angus, Kincardine, Aberdeen, Banff, Moray, and Caithness, and partially even in other counties. It was ascertained by a strict inquiry in 1841 that in 30 parishes within the bounds of the Synod of Perth and Stirling, '825 men, almost all unmarried, were lodged in bothies.' By a return which this Committee has obtained, certified by the superintendent of police for Aberdeenshire, it appears that in that county there are at present 99 bothies, inhabited by 569 males and 159 females. It appears that in East Lothian there are not fewer than 600 Highland girls lodged in bothies. A similar state of things exists in connection with the bleach-fields in the west of Scotland. The prevalence of bothies is sometimes very great even in single parishes. Some of the returns mention that there is a bothy on every farm. In the parish of Monikie it is said that there are 20 bothies, and many additional in harvest for the accommodation of shearers. In the parish of Wick

* The *soc* is of gre h, round in section, and pointed in front.

there are 21 bothies, containing 77 young men and 65 young women.

"The system is of comparatively recent introduction. In truth, in some districts it is being now introduced for the first time. Your Committee have ascertained that one or two bothies have recently been introduced for the first time into Kirkcudbrightshire, one into Dumfriesshire, a few into Mid Lothian, one into Orkney. Unless arrested, they are likely to multiply in all these and other districts, and thus thoroughly to demoralise the population; for there is reason to believe that the great mass of them have sprung up in Scotland during the present century.

"Various causes are assigned in the returns for the introduction of bothies at first. In many of them the cause is said to have been the introduction of improved farming, the throwing of several farms into one, and the demolition of the old cottages, as being no longer necessary under the new system of husbandry—nay, as being likely to harbour a population that might become burdensome in the way of poor's rates. Bothies for unmarried men supplied the lack of cottages, and were supposed to be less dangerous in respect to pauperism. It is also frequently alleged in the returns that the cause of the bothies has been the elevation of the social position of the farmer and of his family, in consequence of which it became impossible for master and man servant any longer to sit at the same table, as in more primitive times. And some allege that the cause has been the unreasonable and discontented spirit of the servants themselves, who became in consequence disagreeable inmates of the farmers' houses, and required to be thrust out into a separate place. There is probably truth in all these suggestions.

"None of these reasons, however, will sufficiently account for the existence and spread of such a degrading and demoralising alternative as that of bothies. We fear that the real reason for this sad result, and that frankly given in many of the returns, must be found in a false idea of economy. Bothies are supposed to be the cheapest form in which servants can be housed. The landlord is often non-resident, and the farm is given to the man who offers the highest rent, and makes the smallest demand for buildings. The farmer is naturally anxious to have a good house for himself; and a regard to his own interest makes him equally careful to have his cattle suitably accommodated, otherwise their disease and death will soon destroy his profits. Therefore, if he is sparing in his demand for buildings, with a view to secure the farm, he is naturally induced to spare in asking the erection of cottages, as no immediate penalty results from the want of them; whilst the idea has been widely spread that the placing of servants in bothies, whilst it thus saves an immediate demand upon the landlord, is also much more economical for the tenants.

"Even as a matter of economy, such ideas are extremely short-sighted; but, what is infinitely worse, such calculations have been made in defiance of all moral considerations, for the nearly unanimous testimony of the returns is to the effect that almost every form of moral evil has sprung from the bothy system, and especially that it has been a great foster-parent of Sabbath-breaking, drunkenness, and illegitimacy in the districts in which it prevails.

"The subject is as yet only partially understood; and probably a Government Commission of intelligent men, to examine into the state of matters on the spot, might serve fully to arrest public attention upon the existing evils, and secure their remedy. In some instances that remedy, in so far as it is a physical one, is being applied by some of our noblemen and gentlemen, including Lord Kinnaird, the Duke of Buccleuch, and others, in the erection of suitable cottages in connection with farm steadings, although as yet they are seldom erected in sufficient numbers in any case. Your Committee regard this, after all, as the grand beginning of improvement, and they cordially adopt the sentiments embodied in the Report to the Synod of Perth and Stirling, to which they have already referred.

"After mentioning a number of subordinate remedies, the Committee says—'All other remedies, however, which have now been specified for correcting the evils connected with the present condition of farm servants would, in the opinion of this Committee, be in a great measure inefficient without the abolition of the bothy system. From all the inquiries that they have made, from all their own observation and all the information they have received, they are deeply impressed with the conviction that the bothy system is the main source of those evils which are connected with the present state of farm servants. They are persuaded that when that system was introduced, it was chiefly with the view of avoiding the expense of erecting and upholding so many separate cottages for married farm servants and farm labourers.'

"Considering the great increase in the rental of Scotland of late years, the enormous expense of our growing pauperism and crime, and the great advantages to all classes that would spring from the erection of suitable cottages, it seems not unreasonable to expect that the landlords of Scotland will erect as many as are necessary when their attention is properly directed to the subject, and the existing difficulties are removed. One great difficulty is a legal one, inasmuch as the Court of Session have found that it is impossible to burden entailed estates for the erection of farm cottages, whilst they may be burdened for the erection of dog-kennels. This legal difficulty must be swept out of the way. Another difficulty consists in the expensive style in which architects often insist that cottages shall be erected. This is totally unnecessary where it cannot be conveniently done. Immense sums have no doubt been lately expended for the purpose of erecting numbers of beautiful cottages by some of the wealthy noblemen of England. The Duke of Bedford is understood to have spent not less than 70,000*l.* in the erection of cottages within a few years, and the Duke of Northumberland not less than 100,000*l.* Many of our own proprietors have lately spent considerable sums for this purpose. But if the object in view is to be generally secured, cheapness must be studied, in so far as it is compatible with comfort, and the necessary amount of accommodation. Your Committee have had a very valuable communication from Dr. Mackenzie, of Eileanach, in which he states that he has erected a large number of cottages, with three or four apartments—of which he sends a plan—the actual outlay on each of which, apart from carting and some of the materials, was much smaller than any sum generally supposed to be sufficient for the purpose. The grand object to be aimed at is, by getting separate houses for the people, to secure the restoration of the family system, and that in connection with suitable accommodation for decency and devotion. There seems little reason to doubt that, by a combined and vigorous effort to arouse and direct public opinion, this result may, by the blessing of God, be speedily accomplished.

"In addition to this it is strongly urged in many of the returns that large gardens or small crofts should be given along with the cottages, and that small farms should be mixed with large. This would give the ploughman a greater motive to industry, and add much to the comforts of his family. It is also urged that the feeing markets should be entirely abolished by the introduction of an effectual substitute; and that at all events the sale of intoxicating drink should be superseded as far as possible by the introduction of wholesome and necessary refreshments on such occasions. It is also proposed, in some of the returns, that a Saturday half-holiday should be given to the agricultural labourers, to prevent the pretext which at present exists for visiting their friends, and engaging in other distracting occupations on the Sabbath day. A better and more universal system of education is also strongly recommended, and especially an education by which our females might be trained to domestic work, and to gain their bread by in-door employments. One of our ministers has commenced an undertaking of this nature, and with decided success; but the object will only be fully accomplished by the introduction of a well planned and supported national system of education."

Home Correspondence.

On the Absorption of Arsenic by Plants.—The statements of Dr. Edmund Davy (referred to in the leading article of the *Gardeners' Chronicle* of Sept. 10), to the effect that certain Pea plants which he had watered with a cold saturated solution of arsenious acid, not only absorbed the poison, but actually throve in it, came to perfection, and matured seeds, in which and in every other portion of the plants arsenic could be readily detected, were, as you justly observed, of so startling a nature that I was induced at once to make a few experiments on this subject, the results of which I now beg to lay before you. The late period of the season prevented my trying upon Peas, but in default of these I transplanted two Broccoli plants, two Cabbage plants, and four Lettuces, into six separate pots, and sowed in two other pots seeds of Mustard and Cress, and allowed several days to elapse, in fact until the seeds had germinated. I then watered all these various plants with a saturated solution of arsenious acid (made with cold water), and after about eight hours the plants all dropped their leaves, though care was taken not to touch the leaves with the solution. On the second day I did not water them, but they did not seem to recover at all. On the third day a second dose was given them, and on the fourth day all the plants were quite dead, and the Mustard and Cress (which had already sprouted) had shared the same fate. I next watered a small piece of Grass and that died also, and the shoot of a Rose bush which I dipped into the same solution soon turned black, and at the end of two days was completely withered. These results being apparently quite opposed to the statement of Dr. Davy, I thought perhaps that it might be objected that the plants had not been transplanted long enough to afford a fair trial. I therefore watered with the same solution a Broccoli plant which was growing in the garden very luxuriantly, perhaps a foot high, and very strong. This was watered on the 17th Sept., and after 10 hours it fared the same fate as the other plants. I continued to water this plant every other day, and on the 6th day very little of the plant was remaining. It appeared as it were burnt up, a section of the stem presenting a black morbid appearance. My next experiment was on three other Broccoli plants growing in the same piece of ground as the one just mentioned, and planted at the same time, and these I watered with solutions of different strengths. No. 1 was watered with a solution made of 30 grains of arsenic and 60 oz. of water, and this solution was divided into six parts, and one part given every other day to the roots of the plant. No. 2 was treated with a solution made of 15 grs. of arsenic and 60 oz. of water; and this also was divided into six portions as in the first case. In No. 3 a very dilute solution of 7½ grs. of arsenic to 60 oz. of water was applied. I consider therefore that No. 1 had 30 grs. of arsenic, No. 2, 15 grs., and No. 3, 7½, applied to their roots; and this I thought would be amply sufficient for the detection of arsenic if absorbed by them at all. The plants continued to look healthy, and as no signs of their having been poisoned was visible I cut them off just above the ground, and examined them chemically for arsenic. A section of the stem showed nothing uncommon, and after a very careful examination I failed to detect any trace of arsenic in either of these three plants. Under these circumstances I cannot help doubting very much the correctness of the statement that plants will absorb arsenic at all; and even if they could I see no ground for apprehension that they could derive it in any quantity worth noticing from any of the superphosphates now in general use; and I am greatly confirmed in this view of the case by the interesting and able remarks by Mr. Sibson in your last week's paper to the same effect. *E. S. Kensington, F.C.S., F.R.A.S., Dartmouth, October* 3.

St. John's Day Rye.—Under the impression, which has been realised, of the continued drought causing a scarcity of cattle fodder in Ireland, early in June last I drew attention in an Irish paper to the St. John's Day Rye, as affording an early spring supply of good succulent food, and under high culture of a cutting before and probably during winter. Unfortunately a difficulty arose in getting the seed, the Irish houses were not supplied, and a house in the south of England having been applied to could not supply it till after harvest; and—we must believe in much ignorance of it and of this country—replied that there existed no necessity for its culture as an autumnal forage plant, "and as to the probability of its being earlier in spring than a crop sown in October, it is manifestly absurd; it would be in ear and die an abortive crop." Now, as if in corroboration of this assertion, one at least, if not two, of the experiments with it that have been made this year of sowings at the end of June have actually come into ear, which may probably be attributed to the drought and h at of the summer, and therefore only a casualty ar ing under extraordinary circumstances. Is this supposi' on correct? I would ask such of the correspondents of this periodical as would be kind enough to give their experience. Indeed, I would beg for every informatio i they can give about this interesting variety of Rye, for we are in utter ignorance of it in Ireland, and it appears by this seedsman's account not very generally known even in England. Discredit has also been thrown on its superiority to common Rye by Mr. Murphy, professor of agriculture in Queen's College, Cork; in 1852, having got seed from Edinburgh, he says: "I sowed it in the model farm in drills 12 inches apart, having at the same time, viz. June 24, an equal quantity of common Rye in similarly good ground. I had a heavy cutting of both in October, and a good cutting again in the following April; but the St. John's Day Rye was not at all superior to the common Rye at either cutting." Now is it not, or is it, that this equality may be attributed to the richness of the soil forcing the common Rye to assume for the nonce the large tillering property of the St. John's Day; experience on this point is also solicited. In one respect Mr. Murphy's experiment is very decisive, in Rye affording both an autumnal and a vernal cutting; he also gives no notice of its premature starting to seed. If its true character is to afford such cuttings it must be a most valuable plant, as being easily and surely cultivated, not liable to disease, and giving a late and early Grass feeding. It might follow winter Vetches with little preparation and would be off the ground in time for either Turnips or for the new plant Holcus saccharatus. In Ireland these crops, the Vetches and Rye, would be very valuable indeed, as they are rather smothering than hoeing crops and therefore admirably accommodated to Irish customs and to the Irish soil in its present foul condition. *J. M. G., Granard.*

A Word for the Rabbits.—I cannot help thinking that the mischief said to be done by rabbits must be rather exaggerated; nor can I quite agree with those gentlemen who have lately written to you on the subject, in considering them as "semi-vermin." Of course where they are so numerous they should be kept down, and every reasonable facility be given tenants and their labourers for the purpose (I myself confess to setting traps for them in my garden with much success), still, I must say I consider the idea of ruthlessly exterminating the whole race a strong measure. I am no enemy to farmers; on the contrary, I sympathise with their grievances, and am a bit of an amateur myself, but I do not hear such complaints of the harm done by rabbits here in Dorsetshire, though they abound in our heaths, and as I sometimes meet the labourers returning from work at the present season with rabbits in their hands, and the farmers about here all shoot, and use their guns to good purpose both as regards them and game, I fancy they are pretty well kept down. There is a story goes that the farmers (in some place or other), fancying their crops suffered much from rooks, voted these birds a pest, and formed a battue to exterminate them. They accomplished their purpose; but what was the consequence? Their crops gradually deteriorated year by year, and they then when too late found out their mistake, and did all they could to encourage them back; but it was years before their quondam friends could be induced to return and build. I do not say this would be the case with rabbits; but I for one, as a lover of nature and animal life, should certainly miss them from the landscape. Possibly also some of

us would miss them on the table; for notwithstanding the dictum of "A. N." and his admirers as to these animals having no merits as articles of cookery, I venture to hint, "tastes differ," and that a rabbit "smothered in Onions," or dressed and stuffed like a hare, is not to be despised; at the same time I so far agree with your correspondents that the tenants might be made game preservers instead of the inferior game keepers. By all means, as "Judex" says is the custom on an estate in his neighbourhood, let the winged game be preserved for the landlord and rabbits and hares go to the tenants, and (I would add) their labourers. Thin them out then, but do not hunt them out of their burrows, nor by mercilessly destroying the whole species take away an article of food from the mouth of the poor man, and one of God's most handsome creatures from the earth. "The hills are a refuge for the wild goats, and so are the stony rocks for the coneys." *Clericus.*

On the Vitality of Seeds.—It was incidentally mentioned in one of your late articles that Turnip seed would grow a second year; not long since I sowed some many seasons old, quite mouldy, and it grew very well. As for Charlock seed, which you observe is of the same nature, I suppose it would grow after 20 years' keeping. I once fancied, having bushels of this troublesome weed, that by boiling it I should procure a nice oleaginous mixture, but to my surprise the seed was not at all affected by the hot water, nor was the water soiled; afterwards I pressed some between blotting paper and found no particle of oil. A friend of mine not long since sold his Charlock for 5*s.* a bushel! For what use? As it has a black coat, it would hardly do for mustard for the table; did my friend re-purchase it for Turnip seed? I offered mine to the same dealer, and as he would only give me 2*s.* a bushel, I did not trouble myself to send it to him. Sainfoin seed will not keep over the second season. The growth of broad Clover is uncertain the second year, unless, it is said, it has been double sacked to keep it from the air. Sainfoin seed and Mangel Wurzel are both safe in the field, as no bird will touch either, but I find mice are very fond of the latter, and will eat out the heart very ingeniously and leave the husk. When the Mangel is in bloom it smells like a strong honey pot. It would be a useful contribution if any of your intelligent readers would send a more correct list of the vitality of seeds, as I do not remember having seen anything of the kind * * *

Bean Stalks as Food for Cattle.—To-day, being wet, my folks are cutting up by steam a large supply of Bean straw, as stiff as small walking sticks, into chaff to be steamed for my bullocks; when moistened with hot water or steam it becomes soft and mucilaginous, and cattle relish it, preferring it to other straw. This is a great agricultural economy. I believe in Mr. Horsfall's statement that it is worth, as feeding stuff, 40*s.* per ton. It is notorious that the bare stalk is merely made into manure as a general rule, thus sacrificing three-fourths of its value. *J. J. Mechi.*

Farmers' Clubs.

WOKINGHAM: *Condition of the Labourer.* — The usual ploughing match of this association, now established more than 30 years, took place on Friday last. In the afternoon Sir Erskine Perry, the President of the association, distributed the prizes to the successful ploughmen, and to labourers who had distinguished themselves as yardsmen in their attention to cattle, for rick-building and thatching, shepherding, to male and female servants of good moral character and conduct for length of service on the same farm, and to parents for having brought up the greatest number of children independent of parochial relief. The prizes for length of service varied in amount from 15*s.* to 1*l.* 10*s.*, and from 1*l.* to 2*l.* for rearing families without the aid of the parish. 16 prizes were given away to ploughmen, from 10*s.* to 2*l.* The latter prizes excited a keen competition, there being as many as 33 teams engaged at one time. At the annual dinner the Rev. T. Morres said he looked upon this association as established for the moral improvement, as well as the temporal comfort of the labouring classes in the several parishes in this district. They gave rewards to yardsmen, shepherds, and female labourers, the principles upon which they acted being that a testimonial to character should be produced. With respect to ploughmen and boys, he thought that the matter was somewhat different. Those were rewards for skill, and he thought there should be ploughing matches, and that every improvement that could be made should be attended to and encouraged. It had, however, struck him that much might be done to improve the condition of the labourers generally. He would give them a case. A man on a wet day was unable to do his ploughing or other work of his master; he was sent home, and was it not a great hardship that he should have to walk a distance of two miles? And when he got home what sort of place was it? Great improvements had of late years been made in farmyards, stables, and other buildings; efficient systems of draining and ventilation had been carried out for their horses and cattle; but he maintained that many of the cottages in which the poor, hard-working labourer had to live were not to be compared with the excellent condition of many farmyards.

The chairman proposed "The Health of the Members for the County," alluding to the example Mr. Walter presented in remedying the evils pointed out by the rev. gentleman, in constructing cottages for his labourers.

Mr. Walter, M.P., said, Mr. Morres had spoken with great feeling upon the two great objects of the association. With respect to one of them he must venture to differ from him. Associations of this kind were not only eminently useful in bringing men together, but as a means of rewarding public trials of agricultural skill. For instance, he might mention the giving of rewards to the best ploughmen, for the best skill in any agricultural operations, for the best specimens of crops, and, he might add, such proofs of agricultural skill as were implied in the building of ricks of any description were very fit objects for any public society to encourage. They were rewards for merit of skill. They conferred no obligation which in any way could humble a man or diminish his self-respect, or assert any superiority of one class over another. But when they came to reward a man for moral conduct, it appeared to him it was doing that which no society could do. To his mind it was interfering with the sacred function of the relation between master and man, which he considered to lie at the bottom of the social fabric, any interference with which he was extremely jealous of. He had been in the habit of employing a great number of men, and he had never found that there was any necessity for the encouragement of them beyond what lay in his power to afford; and he must say that, as regarded the agricultural labourer, he did not understand why he should be singled out by associations as an object for reward. He did not find in manufacturing districts that that encouragement was ever thought necessary, or that an artisan was thought to be incapable of being intrusted with the good offices of his employer. But it so happened that about 25 years ago there was a strong feeling in this country that the agricultural labourer was going to the bad, that pauperism was to be the order of the day, that the land was to be untilled, the workhouses to be filled, and the poor-rates to become heavy. It was though, however, by some that giving the labourer such sops by associations of this kind, and rewarding him for bringing up his family without parochial relief, and for moral conduct, would in a great measure check the apprehended evil. He (Mr. Walter) never shared in that opinion. Those who went before him, and whose opinion he had a great respect for, never entertained such fears, and did not regard such special encouragement as necessary. Both he and they always thought they ought to look to themselves to reward the merits of their own labourers as they thought best. It appeared to him that the idea of giving prizes for moral conduct implied a kind of moral superiority or authority on the part of the person so rewarded, which ought to be very clearly established before it was asserted. They understood the relationship of a parent and a child, of a Queen and her army, as sometimes brought on the carpet as affording some sort of precedent for these associations, but they afforded no precedent whatever, because the army was a servant of the public or the Queen, and the Queen rewarded them on behalf of the public; but, on the other hand, the agricultural labourer was not the servant of the public, but of the person who employed him, and it appeared to him that no association ought to constitute itself judges of the conduct of labourers at large any more than any committee of gentlemen should elect themselves as judges of the conduct of the army or navy. He only wished it might be found possible that the *status* of the labourer might be so improved that he would no longer require to be treated in that way, and that they might all get back to that which he mentioned at first—to give prizes for trials of agricultural skill, and such acts of husbandry as were of unquestionable utility. Certainly in some of the objects of this association, as he had already stated, he most cordially agreed; but he saw that a very large proportion of the prizes, more than half that had been given, fell within that class which he had ventured to express an opinion upon as not being legitimate objects of a public society to interfere with—prizes having reference not to skill, but to the moral character and conduct of the labourer. The best way in which he could illustrate his position was by asking what would be thought of a body of private gentlemen, however respected and highly esteemed among them, who should meet together for the purpose of conferring rewards on each other's cooks, footmen, housekeepers, coachmen, or gamekeepers. He wanted some one to show what was the difference between the servant who had lived in his house 30 or 40 years and the labourer who worked in his farmyard. The feeling had unfortunately got abroad that an agricultural servant was public property, and not the servant of a private person. It was said that every person could not afford to reward a deserving labourer. He, however, felt bound to say that, according to the small prizes given by the association, such an experiment would not ruin him; for he found that 2*l.* were given for seven years' service. In the earliest account of agriculture, in the book of Genesis, they found that a certain person, rather shrewd in his way, and whose name was Laban, had a very different idea of rewarding a servant, not in husbandry, but one who had led a shepherd's life. They would find that his nephew had two of his daughters for wives and the best part of his cattle for 20 years' service. He, of course, did not expect every employer of labour to do that, but it seemed that even with that arrangement Jacob was not very well satisfied. Still he thought, on the whole, masters were more competent, and ought to feel it to be their duty to reward their labourers as much as domestic servants. Mr. Morres had called their attention to a very important feature in the relation between a land lord and a labourer—the improvement of their cottages. He had very strong feelings upon this matter, but that was a thing which associations of this kind could not undertake to do. There was one thing he had thought about, and that was, whether, for the encouragement of labourers, they could not give them a small holding of land. That appeared to be within the more legitimate mode of rewarding servants. It was a matter that must rest between a master and his servant, and could not be settled by this association.

Sir E. Perry made a very brief reply. He sympathised in many of the views which had been expressed, and it so happened that he ventured to take those views before the committee, but was outvoted. Now, had his hon. friend been an active member of the association, and attended the meetings of the committee, they might probably have produced a very different bill of fare to what they had had. However, he hoped some good would come out of the discussion of the topics which had been brought under their notice.

Notices of Books.

The Journal of Agriculture. Transactions of the Highland Society. October, 1859. Blackwood & Sons.

This is an unusually interesting number. The Report of Mr. McLagan on the Show at Edinburgh, and of Mr. Scott Burn on the Show at Warwick make one the more regret the delay which has attended the official publication of our own Society's annual report. In addition to these we have, among other things, a paper on Steam Culture, chiefly descriptive of Mr. Halkett's guideway system. There is also a valuable and instructive paper by Mr. Russell on the Absorption by Soils of Ammoniacal Substances as Food for Plants, in which the researches of Way, Liebig, Brustlein, and W. S. Johnson are discussed and compared with suggestions by the author. The most probable explanation of this phenomenon, to which Mr. Thomson, of Kirby Hall, first called attention, is that the power of soils to retain ammonia depends upon simply that surface attraction which is more a mechanical than a chemical phenomenon. A soil possessing organic matter present in any quantity throughout it possesses the power of absorbing and retaining simple ammonia. And if it has such substances in it as carbonate of lime, which can decompose ammoniacal salts and set free their ammonia, this mechanical force then comes into operation for the retention of the ammonia, which is thus set free. If no such substance as carbonate of lime be present, then whatever may be the power of the soil over ammonia in its simple form it exercises none over solutions of its salts which may be passed through it.

The following extract from the "Farmers' Note Book" relates to dipping sheep in arsenical solutions, the danger of which seemed to be established by the case Black *v.* Elliott, when 860 sheep died in 1858 after dipping in an arsenical solution. The writer, Mr. Young, of Kirkliston, speaks of his Australian experience. He says:—

"There are two solutions which I have been in the habit of using, although not equally extensively, for reasons which will presently appear. One of these is made by dissolving from half an ounce to 6 drachms of arsenic in a gallon of water; and in a solution of this strength I have dipped as many as 2000 sheep a day, with, during cold weather, no fatal consequences ensuing. In warm weather, however, and especially if the sheep be in fine condition, the use of this solution is very dangerous; so much, that in one instance, on using, during the summer, a solution containing only 2 drachms of arsenic to the gallon of water, 10 per cent of the sheep (fat wethers) died. I have always had a few deaths from dipping in an arsenical solution during warm weather, although not to the extent just mentioned, as on subsequent occasions I took care to make the solution very weak. In the case of sheep belonging to other individuals, I have known instances where death took place to a dreadful extent from the incautious use of arsenical solutions in warm weather. As an instance I may mention that a neighbour, in December of last year (summer time in Australia), dipped a flock of picked ewes and lambs in an arsenical solution, the strength of which, however, I do not know, and the result was that 1300, being exactly one-half of them, died."

"The application of these remarks to the case of Black *v.* Elliot is, I think, sufficiently obvious. The plaintiff's sheep, 869 in number, of which 850 died, were in fine condition, and were dipped, during the month of August, in a solution containing half an ounce of arsenic to the gallon of water. I am not surprised at the result. Had I been consulted in the case, I could have predicted what would happen, as indeed I have in other cases done. The experiments of the defendant's witnesses were made in January and February, therefore when the weather was cold; and although in some of them the arsenical solution was much stronger than the defendant's, no fatal consequences ensued. I am not surprised at this either; but I am well assured that if the witnesses alluded to will take the trouble of repeating their experiments during the hot season, they will arrive at very different conclusions from those which they stated at the trial."

The volume contains, beside the articles just named, a valuable paper by Professor James, of Birmingham, on Manures, and a full report of Dr. Anderson's Address on Cattle Feeding, of which a *resumé* is given elsewhere.

Miscellaneous.

Death of the Rev. Charles Thomas James.—We greatly regret to announce the death of the Rev. C. T. James, well known in the agricultural world. He was formerly curate of Ermington, and had been recently appointed Government inspector of model lodging-houses and factory schools. He was staying at the Railway Hotel, Taunton, on Tuesday night, and intended to start next morning for Tiverton. He had been unwell for several days, and was suffering from indisposition when he retired to rest. The following morning, as he did not make his appearance, the servants entered his room and found him lying on the bed quite dead. Several phials were found in his room—one containing soap liniment and castor oil, another the sediment of mixed prussic acid and almond emulsion, and another containing about half an ounce of prussic acid of Scheele's strength. Lieutenant Charles D. James, 36th Regiment, stationed at Devonport, was immediately telegraphed for, and on Thursday an inquest was held before Mr. Monckton, coroner. It was shown in evidence that the deceased took prussic acid under medical prescription. Several letters which the deceased had written on Tuesday night were read. One of them, addressed to his son, said that his indisposition almost mastered him, but appointed to meet his son at Plymouth on Thursday. The jury returned a verdict that the deceased died from the effects of an overdose of prussic acid, taken to relieve himself from pain. The deceased was well-known and much respected in agricultural circles, not only in this county but throughout England, and had always manifested a deep interest in the welfare of the farm labourer. *Western Times.*

The Shropshire Sheep.—It is, I find, a rather general impression among persons unacquainted with these sheep, that they are the result of a cross between the Leicester and the Southdown breeds. So far, however, is this from being the case, that it is probable that no Shropshire flock of eminence has, within the memory of man, been crossed with Leicester blood; and, although I would not speak so strongly with regard to the occasional use of Southdown blood, yet, I will venture to say, that no man possessing a good flock of Shropshires ever resorted to the Southdown cross without repenting it, and without endeavouring as speedily as possible to repair the error. Of Leicesters indeed it is unnecessary to speak, so palpably distinct are they from the Shropshires. And with regard to Southdowns, they have their merits, but these merits, eminent as they are, are not those of our sheep. I assume it to be a fact, well known to the breeders of Shropshire sheep, that they are a distinct breed. Of their origin, this is not the place to treat; but it may be casually mentioned that centuries ago the sheep of Morse Common, in Shropshire, were celebrated for the fineness of their wool. It is probable that the sheep found on the other high grounds of the county have been gradually improved into their present type. In like manner the unenclosed hills of Staffordshire, Cannock, Whittington Heath, and elsewhere, have from time immemorial possessed a grey or blackfaced mountain sheep very similar in character to the Shropshires. Like them, they are hardy in constitution, their mutton is of first-rate quality, and their wool fine in texture. When moved to better land, they increase in size without losing their original character. Care and judgment in selection improves their symmetry, as has been the case with nearly every other breed which the British agriculturist has deemed worthy of his attention. When I mention that a ram from a Staffordshire flock (that of Mr. Coxon, near Lichfield) took the first prize at Warwick in the class of short-woolled sheep not being Southdowns, it suffices to show the high character which the sheep of this county have reached. Another flock remarkable for the purity of its blood is that of the Hon. R. Curzon. These sheep, which have frequently won prizes at the Birmingham Christmas shows, have adhered for nearly a century to their own blood, until their recent infusion of that from Mr. Adney's flock. During the whole of that lengthened period they have preserved their character, and have been constantly resorted to for rams by neighbouring breeders. It is no small test of merit, that, after so long a probation, they now stand higher than ever. Among the other flocks of this county I may name those of Mr. Byrd, Mr. Masfen, Mr. Bradburne, Mr. Stubbs, Mr. Hollis, of Eland Lodge, and my own, which with several others have long been remarkable for purity of blood. It may be questioned indeed whether any sheep of this class are superior to those which exist in the neighbourhoods of Rugeley, Lichfield, Wolverhampton, &c. As compared with the Shropshire flocks, it is my impression that the Staffordshire sheep are on a somewhat larger scale, with a longer staple of wool. The latter is a point of no inconsiderable importance at the present day. The characteristics of the numerous Shropshire flocks have been so well described in the article on this subject in the Royal Agricultural Journal, that I need not dilate upon them here. Suffice it to remark that the rams from the most eminent of these flocks have of late years fetched higher prices than those of any other breed. The demand for them has especially extended since the memorable victory at Salisbury by Mr. Adney over all other short-woolled sheep, with Downs excepted. Since that time, the rams of that veteran breeder have been used in nearly every flock of importance, and always with beneficial effect. The Shropshires are hardy, and succeed under the most opposite climates and conditions, as is proved by the sheep exhibited by Lord Wenlock, in Yorkshire, and by Mr. Holland, of Dumbleton, at Warwick. They are excellent nurses, very prolific, and attain heavy weights on ordinary keep. The flavour of their mutton is surpassed by no other breed, and therefore in markets where they are found they render the white-faced sheep difficult of sale. For farmers whose object it is to produce early lambs or wethers of large size, it is found advantageous to put these ewes to a Leicester or Lincoln ram. The excellent suckling powers of the ewes, combined with the tendency to early maturity imparted by the sire, and the fine quality of the offspring, present a combination of advantages which renders this cross unrivalled as fat lambs. Indeed, for crossing with long-woolled sheep, the Shropshires are superior to the Southdowns, as possessing larger frames and heavier fleeces. With the growing demand for mutton of fine quality, these ewes will doubtless spread every year into new districts, and farmers may advantageously put a certain number to a Leicester ram for the sake of producing wethers which will yield a larger amount of profit in mutton and wool than any other kind. In conclusion, I will hint at another purpose to which these sheep may be applied, namely, to crossing with the unimproved mountain breeds. Of these, the flavour and the hardihood are the principal merits, and their smallness, slow growth, and coarse wool, the most prominent defects. The cross usually resorted to for the purpose of improving mountain sheep has been the Leicester. The first cross answers well, obtaining increased size, improved wool, and earlier maturity, without losing the mountain flavour and the lean flesh of the dams. The second cross would, in a great measure, obliterate all trace of the mountain breed, leaving a tallow-producing, heavy sheep, wanting in the hardihood requisite for upland districts, and destitute of the flavour which attracts customers of a superior grade. But supposing the first cross, for instance, between the Scotch black-faced sheep and a Leicester ram (which is so extensively cultivated on the hills of the North Riding of Yorkshire) were put to a Shropshire ram, then the result would be a cross of lambs equal in size and value of wool to that produced by a second Leicester cross, and of a quality of mutton even superior to that of the first cross. It is worthy of remark that the flesh of the Shropshires presents a firmness of texture and richness of flavour which are not attained by the half-bred sheep above alluded to as prevailing in Yorkshire. The Shropshire cross could not fail to produce sheep of great individual value, while their hardihood and activity would eminently fit them for hill pasturage. And the variety found in Staffordshire, tracing its origin back to the flocks which have for ages flourished on the bleak hills of Cannock chase, would be particularly suited to this purpose. *Willoughby Wood, in Bell's Messenger.*

Reclamation of Land.—The Earl of Leicester has for the last two years been engaged in a work of some interest and importance—viz., the reclamation from the sea of 700 acres of the vast tract of low marshy lands near the little port of Wells, Norfolk. For this purpose a great embankment, involving an outlay of about 12,000*l.*, has been carried from the Hookham side of Wells in a straight line towards the sea, which has been, it is hoped, effectually shut out by this means from the land sought to be reclaimed. The bank forms a marine road of considerable width, more than a mile long, and upwards of 20 feet in height, and it is stated that the cubic content of the work exceeds anything of the kind attempted in England, although there are some longer embankments of a similar character. With the view of assimilating the bank to an ordinary beach, the slope next the sea for the first 15 feet of the height is five to one, while for the remainder of the elevation attained, it is only four to one. It is not expected that ordinary tides will rise higher than the point at which the five to one slope terminates; but as the tides sometimes attain an extraordinary height at Wells, flowing over the quay, and almost drowning the inhabitants, the bank has been carried up about 7 feet more. The embankment has already had the effect of increasing the scour, and consequently deepening the channel in the harbour, and it is expected that ships of a greater burden will now be enabled to get up. Further works of a similar character in the direction of Stiffhey and Blakeney, between which places and Wells about 3000 acres await reclamation, are talked of.

Ballinasloe Fair.—The sheep fair on Wednesday has been largely supplied. Prices are 2*s.* or 3*s.* lower than last year. The following figures indicate the business done :—

	Sold.	Unsold.	Total.
1854	67,285	12,614	79,899
1855	77,390	4096	81,486
1856	91,774	5570	97,344
1857	60,849	924	67,773
1858	81,318	13,131*	94,449
1859	72,065	19,854	91,919

Notices to Correspondents.

Cattle Boxes : *J M G.* The cattle may be kept from soiling their food by arranging the mangers so that they shall hinge at either end upon the uprights which support them, and tilt over bottom upwards when not in use.

Cows : *Warrington.* Your letter has been sent to Mr. Spooner.

Drainage Tiles : *A Subscriber.* They are generally exempt from toll—but it all depends on the wording of your local act.

Italian Rye-grass : *Parkham.* The failure is most likely owing to faulty seed.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. Nesbit, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London, S. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

MR. J. B. LAWES manufactures the following MANURES :—

TURNIP MANURE	£6 6
SUPERPHOSPHATE OF LIME	6 6
MINERAL SUPERPHOSPHATE OF LIME	5 5
BARLEY MANURE	8 0

N.B. Genuine PERUVIAN GUANO direct from Messrs. Gibbs, NITRATE OF SODA, SULPHATE OF AMMONIA, and other Chemical Manures.

WHEAT MANURE.—PERUVIAN GUANO is proved to be the best and cheapest Artificial Manure for Wheat, at Autumn sowing.

American decorticated Cotton-seed Cake of best quality supplied at the market price.

Offices : 1, Adelaide Place, London Bridge, E.C.

LONDON MANURE COMPANY (Established 1840),

Have the following MANURES ready for delivery :—

CORN MANURE FOR AUTUMN SOWING.
BLOOD MANURE FOR AUTUMN SOWING.
URATE.
SUPERPHOSPHATE OF LIME.
SUPERPHOSPHATE MINERAL.

The London Manure Company also supply PERUVIAN GUANO (direct from Messrs. Gibbs & Sons), SULPHATE OF AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of known value, all of which they warrant strictly genuine. Wholesale dealers supplied.

116, Fenchurch Street, E.C. Edw. Purser, Secretary.

BURNARD, LACK, AND CO.'S CONCENTRATED SUPERPHOSPHATE OF LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.

CONCENTRATED TURNIP MANURE, equal in value to the preceding.

Of these Manures Dr. Voelcker says :—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."

Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to Burnard, Lack, & Co., Sutton Road, Plymouth.

PERUVIAN GUANO.—The present price of this valuable Manure is 12*l.* per ton for 30 tons and upwards; 13*l.* 5*s.* per ton for 1 ton up to 30 tons.

And, in order to protect themselves against the purchase of adulterated mixtures and of inferior Guanos purporting to produce results equal to Peruvian, consumers are recommended to apply either to ourselves, to our Agents Messrs. Gibbs, Bright, & Co., of Liverpool and Bristol; or to Dealers of established character, in whose honesty and fair dealing they can place implicit confidence. Anty. Gibbs & Sons.

15, Bishopsgate Street Within, London, E.C.

THE PATENT NITRO-PHOSPHATE OR BLOOD MANURE COMPANY (Limited).

Trustees :—

Abel Smith, Jun., Esq., Walton House, Ware, Herts.
Charles Dimsdale, Esq., Essendon Place, Herts.
Edward Ball, Esq., M.P., 8, Belgrave Road, Pimlico, S.W.
General Hall, Weston Colville, Linton, Cambridge.
John Brady, Esq., M.P., Warwick Terrace, Belgrave Square, W.

Directors :—

Chairman—Jonas Webb, Esq., Babraham, Cambridgeshire.

Deputy-Chairman :—

John Collins, Esq., Myddleton Square, Pentonville, E.C.
Edward Bell, Esq., Tottenham, Middlesex, N.
John Clayden, Esq., Littlebury, Essex.
Richard Hunt, Esq., Stanstead Abbot, Herts.
Thomas Knight, Esq., Edmonton, Middlesex, N.
Robert Leeds, Esq., West Lexham, Norfolk.
Robert Morgan, Esq., 72, Camden Villas, Camden Town, N.W.
George Savill, Esq., Ingthorpe, near Stamford.
William Collins, Esq., 105, St. John Street Road, E.C.

Bankers—Messrs. Barnett, Hoare & Co., Lombard Street, E.C.

Solicitors :—

Messrs. Kingsford & Dorman, 23, Essex Street, Strand, W.C.

Auditor—J. Carter Jonas, Esq., Cambridge.

Manager—Mr. James Odams. | *Secretary*—Mr. C. T. Macadam.

Offices : 109, Fenchurch Street, London, E.C.; Manufactory, Plaistow Marshes, Essex, E.

ODAMS'S BLOOD MANURE FOR WHEAT,
Price 7*l.* 10*s.* per Ton, delivered Free to any WHARF or RAILWAY in London.

GENUINE TOBACCO PAPER FOR FUMIGATING.

HAPPLEBY (Foreman to Messrs. Ivery & Son, Nurserymen, Dorking, Surrey), supplies the above in 4-lb. packets at 1*s.* 3*d.* per lb. A liberal discount allowed to the Trade. Testimonials too numerous for insertion, but may be had on application.

SHEET IRON POTS FOR FUMIGATING, 3*s.* 6*d.* each.

N.B. All orders to be accompanied with a Post-office Order, payable to Henry Appleby, Dorking, Surrey.

NURSERYMEN SUPPLIED WITH THE BEST GENUINE TOBACCO PAPER at 4*d.* per cwt.; any quantity less than ½ cwt., 10*d.* per lb. The above article is warranted genuine.—Address Tom Bryant, Messrs. Jackson & Son, Lady Lane, Leeds.

TO PIG, POULTRY, AND GAME FEEDERS.

JUPP'S RICE FOOD, POULTRY AND GAME.—RICE SWEEPINGS, 7*s.* 6*d.* per cwt., in 1¼ cwt. bags; SCREENED RICE, 10*s.* per cwt., in 1⅛ cwt. bags; DOG BISCUITS, 14*s.* per cwt.; OIL-CAKE, per ton only; RICE MEAL for PIGS, 6*s.* and 8*s.* per cwt., in 1 cwt. bags, at the mill. Orders must be accompanied by a remittance to insure delivery.—W. & R. Jupp, 6, Cross Lane, Eastcheap, E.C.

FOOD FOR WINTER STOCK.

SAMUELSON'S celebrated TURNIP CUTTERS, PULPERS, CHAFF-CUTTERS, OIL-CAKE BREAKERS, CORN and MALT-CRUSHING MILLS, all with the latest patented improvements, may be obtained through any Ironmonger or Implement Dealer in the kingdom, or (carriage paid to the nearest station to the purchaser) direct from the manufactory.—Britannia Works, Banbury, Oxon; or London Warehouse, 76, Cannon Street West, City, E.C.

Catalogues sent free on application.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, London, S.

Principal—J. C. NESBIT, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

BUILDING AND DRAINING.—Noblemen and gentlemen who contemplate Building or Draining, and who are desirous of making Bricks and Tiles upon their own Estates, can have their Clays practically tested, the necessary arrangements for Manufacture made, and if wished the Manufacture undertaken, by a Member of a Firm extensively engaged in the Manufacture of Bricks and Tiles of every description.—Apply, TERRA COTTA, Wood's Hotel, Furnival's Inn, E.C.

THE LANDS IMPROVEMENT COMPANY.—Incorporated by Special Act of Parliament in 1853.—2, Old Palace Yard, Westminster, S.W. To Landowners, the Clergy, Estate Agents, Surveyors, &c., in England and Wales and in Scotland.

The Directors beg leave to announce that the Company's Amendment Bill, 1859, has received the sanction of the Legislature. The Company now advance money, unlimited in amount, for the following works of Agricultural Improvement, the whole outlay and expenses in all cases being liquidated by a rentcharge for 25 years.

1. Drainage, Irrigation and Warping, Embanking, Inclosing, Clearing, Reclamation, Planting for any beneficial purpose, Engines or Machinery for Drainage or Irrigation.
2. Farm Roads, Tramways and Railroads for agricultural or farming purposes.
3. Jetties or Landing places on the sea coast or on the banks of navigable rivers or lakes.
4. The erection of Farm Houses, Labourers' Cottages, and other Buildings required for Farm purposes, and the improvement of and additions to Farm houses and other buildings for farm purposes.

Landowners assessed under the provisions of any Act of Parliament, Royal Charter, or Commission, in respect of any public or general works of drainage or other improvements, may borrow their proportionate share of the cost, and charge the same with the expenses on the lands improved.

No investigation of title is required, and the Company being of a strictly financial character do not interfere with the plans and execution of the Works, which are controlled only by the Government Enclosure Commissioners.

Under the Company's Acts, tenants for life, trustees, mortgagees in possession, incumbents of livings, bodies corporate, certain lessees, and other landowners are empowered to charge the inheritance with the cost and expenses of the above improvements, whether the money be borrowed from the Company or advanced by the Landowner out of his own funds, and owners in fee may effect these improvements of their Estates without incurring the expense and personal responsibilities incident to mortgagees, and without regard to the amount of existing incumbrances.

For further information, and for forms of application, apply to the Honourable WILLIAM NAPIER, Managing Director, 2, Old Palace Yard, Westminster, S.W.

HAYMAKERS, possessing the best features of Nicholson's Prize Machines, with recent improvements peculiar to those supplied and manufactured only for

RICHMOND AND CHANDLER, Salford.

Branch Establishment, South John Street, Liverpool.

N.B. The celebrated Bedford and Stamford Prize HORSE RAKES always in stock, with latest Patented Improvements.

HAY HARVEST. NICHOLSON'S PATENT HAYMAKER, to which was awarded the First Prize of the Royal Agricultural Society of England at the last contested trial.

The celebrated STAMFORD HORSE RAKE has lately been much improved, and has obtained 26 Prizes at competitive trials.

MOWING AND REAPING MACHINES are performing their work most satisfactorily, and fully justify public expectation, cutting about 10 acres per day, at a cost of 9*d.* per acre.

Orders for the above machines should be given at once to RICHMOND & CHANDLER, Salford, Manchester.

Branch Establishment, South John Street, Liverpool.

GUTTA PERCHA TUBING FOR WATERING GARDENS.

THE GUTTA PERCHA COMPANY have the pleasure to acknowledge the receipt of the following

Testimonial from MR. J. FARRAH, *Gr. to* BOSWELL MIDDLETON JALLAND, Esq., *of Holderness House, near Hull.*

"I have had 400 feet of your Gutta Percha Tubing, in engths of 100 feet each, with union joint, in use for the last 12 months for watering these gardens, and I find it to answer better than anything I have ever yet tried. The pressure of the water is very considerable, but this has not the slightest effect on the tubing. I consider this tubing to be a most valuable invention for Gardeners, inasmuch as it enables us to water our gardens in about one-half the time, and with one-half the labour required."

Manufactured by the Gutta Percha Company, Patentees, 18, Wharf Road, City Road, London, E.C., and sold by their Wholesale Dealers in town and country.

SHAW'S TIFFANY is universally acknowledged to be the best, neatest, and cheapest material for shading Conservatories, and other Hothouses. Effectually securing Plants from the scorching rays of the sun, without obscuring the light. Also, for protecting the Bloom of Wall Trees from spring frosts, and Fruit from birds and wasps. Sold in pieces.

No. 1.—20 yards long, by 38 inches wide, 5*s.* per piece.

No. 3.—Double strength, 18 yards long, by 39 inches wide, 7*s.* 6*d.* per piece.

No. 4.—Treble strength, 18 yards long, by 39 inches wide, 9*s.* per piece.

A liberal allowance to the Trade when ten or more Pieces are taken.—JOHN SHAW & Co., Princess Street, Manchester.

"FRIGI DOMO."—Patronised by her Majesty, the Queen, the Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, and —Collier, Esq., of Dartford.

PROTECTION FROM THE SCORCHING RAYS OF THE SUN.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and, floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths. Two yards wide, 1*s.* 6*d.* per yard run; four, 3*s.* per yard. Also, an improved make for Shading Purposes. Three yards wide, 2*s.* 6*d.* per yard run.

ELISHA THOMAS ARCHER, whole and sole manufacturer, 7, Trinity Lane, Cannon St., City,, E.C., and of all Nurserymen and Seedsmen throughout the kingdom. "It is much cheaper than mats as a covering."

ST. PANCRAS IRON WORKS,

OLD ST. PANCRAS ROAD, N.W.

IRON HURDLES, FENCING, AND GATES.

THE PROPRIETORS OF THE ST. PANCRAS IRON WORKS, OLD ST. PANCRAS ROAD, LONDON,

WERE AWARDED THE

SILVER MEDAL of the Royal Agricultural Society for their IRON HURDLES & GATES,

which, by their peculiar construction, are more than twice as strong and durable as those in ordinary use.

Lists per post on application. Gates from 30*s.* to 500*l.*

The Hurdles can be seen in process of Manufacture at the Works.

GAME WIRE NETTING.

Professor Varnell's Enamelled and Wrought-iron Stable Fittings,

These Patent Mangers and Stable Fittings obtained the Commendation and the Silver Medal of the Royal Agricultural Society of England and the Royal Agricultural Society of Ireland, are adopted by the Royal Veterinary College, and Professor Spooner of that Institution states that they should be used by all who value the health and comfort of their horses. They can be had plain, galvanised, or enamelled.

A Show Room is devoted entirely to every description of Stable Furniture, and full-sized stalls and loose boxes are erected for inspection at St. Pancras Iron Works.

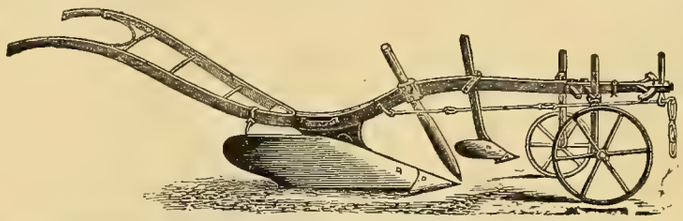
ADDRESS—THE MANAGERS,

ST. PANCRAS IRON WORKS, OLD ST. PANCRAS ROAD, LONDON, N.W.,

OPPOSITE OLD ST. PANCRAS CHURCH.

THE PLOUGH TRIALS AT WARWICK.

HOWARD'S CHAMPION PLOUGH



Gained the FIRST PRIZE as the Best Plough for General Purposes at Warwick,

BEING the CHIEF PRIZE for PLOUGHS, awarded by the Royal Agricultural Society of England, at this Meeting. The importance of this Prize will be gathered from the fact that the GENERAL PURPOSE PLOUGHS are the only ones tried on BOTH LIGHT AND HEAVY LAND, and as HOWARD'S CHAMPION PLOUGH proved itself to be the best on both soils, the FIRST PRIZE, of the HIGHEST AMOUNT given by the Society for any kind of Plough, was awarded to J. & F. HOWARD.

PRIZES awarded to J. & F. HOWARD, by the Royal Agricultural Society of England, at the WARWICK MEETING, 1859, being not only the LARGEST NUMBER of PRIZES, but the LARGEST NUMBER of FIRST PRIZES awarded to any Exhibitor.

THE FIRST PRIZE FOR THE BEST PLOUGH FOR GENERAL PURPOSES, ALSO A PRIZE FOR THE BEST PLOUGH FOR LIGHT LAND, AND A PRIZE FOR THE BEST PLOUGH FOR HEAVY LAND; THE FIRST PRIZE FOR THE BEST LIGHT HARROWS, THE SECOND PRIZE ALSO FOR THE BEST LIGHT HARROWS, AND THE FIRST PRIZE FOR THE BEST HEAVY HARROWS.

Every one of HOWARD'S Implements, tried at Warwick, gained a Prize.

CATALOGUES, with full particulars, sent post free on application to

J. & F. HOWARD, BRITANNIA IRON WORKS, BEDFORD.

GLASS FOR ORCHARD HOUSES, as supplied by us to Mr. Rivers.

20 in. by 12 in.				16 oz.		21 oz.
20 in. by 13 in.	Common ..	..	..	14*s.* 0*d.*	..	£1 1*s.*
20 in. by 14 in.	Superior do.	..	..	16 6	..	1 5
20 in. by 15 in.	English Glass	..	..	18 0	..	1 9

Boxes included and not returnable.

SMALL SHEET SQUARES, in 100 feet boxes.—*s. d.*

6 by 4	6½ by 4½	7 by 5	7½ by 5½	11 6
8 „ 6	8½ „ 6½	9 „ 7	9½ „ 7½	
10 „ 8	10½ „ 8½ ..	..	.. ..	12 6

Boxes 2*s.* each, returnable at full price.

JAMES PHILLIPS AND CO.,

180, Bishopsgate St. Without, London, E.C.

NO CONNECTION WITH ANY OTHER HOUSE IN TOWN.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz SHEET GLASS of British Manufacture at prices varying from 2*d.* to 3*d.* per square foot for the usual sizes required, many thousands of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES, and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London, W.

See *Gardeners' Chronicle* first Saturday in each month.

HORTICULTURAL GLASS—JUNE TARIFF.

THOMAS MILLINGTON'S reduced Tariff of GLASS, &c.

6 by 4, 7 by 5, 8 by 6, 9 by 7 } 16 oz. to the foot, 11*s.* 6*d.*
6½ by 4½, 7½ by 5½, 8½ by 6½, 9½ by 7½ } per 100 feet.

In 100 boxes,—4ths quality, 12*s.* 6*d.*; 3ds do., 14*s.* 4*d.*

10 by 8, 12 by 9, 12½ by 10½, 14½ by 10½, 13 by 11
10½ by 8½, 12½ by 9½, 13 by 10, 15 by 10, 13½ by 11¼
11 by 9, 13 by 9, 13½ by 10½, 12 by 11, 14 by 11
11½ by 9½, 12 by 10, 14 by 10, 12½ by 11½

20 by 12	per 100 feet	16 oz. 21 oz.
20 by 13	Common ..	16*s.* .. 24*s.*
20 by 14	Superior .	18*s.* .. 27*s.*
20 by 15		

All Boxes included.

Orchard House sizes as supplied to Mr. Rivers.

Hartley's improved Rough Plate Glass from ⅛ to ⅜ in thickness.

Coloured Glass in great variety, at 9*d.* and 1*s.* per foot.

Paints, Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, Lamp Glasses, &c.

87, Bishopsgate Street Without, E.C., same side as Eastern Counties Railway.

GLAZIERS' DIAMONDS FOR CUTTING HORTICULTURAL and other GLASS, to be had of the Wholesale Manufacturer, JOHN EDWARDS, 20, Sharp's Alley, West Smithfield, London, E.C. Prices from 10*s.* to 27*s.* 6*d.*

TREE TRANSPLANTING BY MACHINE' Landscape Gardening, Ornamental Planting, Land Draining, Lakes, and Road-making, &c. Plans and Estimates. W. H. RUMBOLD, Grange, Tunbridge Wells.

GREENHOUSES.

HENRY FREEMAN, HOTHOUSE BUILDER and HOT-WATER APPARATUS MANUFACTURER, Triangle, Hackney, N.E. Established 20 years. Good substantially built GREENHOUSES, fixed in any part of the kingdom, for cash, 42 feet long by 13 feet, 90*l.*; 21 feet by 13 feet, 50*l.*; 12½ feet by 10 feet, 30*l.* A first-rate CONSERVATORY, 30 feet by 16 feet, 130*l.* A large assortment kept. Estimates for Heating, or any branch in Wood or Iron or Park Fencing.

HOT-WATER PIPES at wholesale prices, with Elbows, Syphons, Tee Pipes, and every other connection. Wrought and cast iron Boilers, Saddle, Conical, Cylinder, and Elliptic, from 24*s.* each. Boilers and Iron Stands to use without brickwork. Valves from 12*s.* each. Coil Boxes, Furnace-Doors, Furnace Bars, Supply Cisterns, and Builders' Castings of every description in stock, at Mr. LYNCH WHITE'S Iron Wharf, Upper Ground Street, Blackfriars Bridge, London, S.

STEELL'S PATENT WROUGHT-IRON DOUBLE-BACKED DOUBLE BOILER, for HEATING CHURCHES, HORTICULTURAL BUILDINGS, WAREHOUSES, &c., is the most powerful, most economical, and quickest actioned Boiler in existence, and may now be seen ready for use at their Nurseries, Richmond, Surrey, S.W., the only place where they can be procured. TESTIMONIAL.

"Rectory, Barnes, Sept 10, 1859.

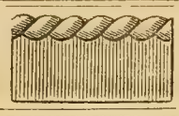
"Gentlemen,—I can readily bear my testimony to the excellence of your Boiler; indeed to that of the whole heating apparatus which you have supplied for our church. It combines great heating power with economy of fuel and facility of management.—I am, Gentlemen, yours faithfully,

"Messrs. G. & W. Steell." "R. E. COPLESTON."

HORTICULTURAL BUILDINGS AND HEATING BY HOT WATER.

JOHN R. PEILL, 17, New Park St., Southwark, S.E., Manufacturer of every description of Buildings for Horticultural purposes, and Inventor of the Improved Conical Boiler for heating the same, is prepared to undertake works of any magnitude, and refers among others to the celebrated range of FORCING HOUSES at HER MAJESTY'S GARDENS, FROGMORE, and at SIR ROBERT PEEL'S, DRAYTON MANOR, constructed under the superintendence of his Manager, Mr. JOHN JONES; and also to his BOILERS fixed at the CRYSTAL PALACE, the ROYAL BOTANIC GARDENS, REGENT'S PARK, and KEW, and at several hundreds of the Nobility's seats, Public Establishments, and Manufactories in London and the provinces. J. R. P. also manufactures every description of Iron Roofs, Iron Houses, and Iron Fencing, plain and ornamental. Strong Iron Hurdles for Sheep (6 ft. long, 3 ft. high, with 5 bars), 4*s.* 3*d.* each; ditto for cattle, 4*s.* 9*d.* each. Prices and other particulars forwarded on receipt of one postage stamp.

LOOMES AND CO.'S CABLE PATTERN GARDEN EDGING may be obtained of Messrs. HOOPER AND CO., Covent Garden Market, W.C.



FOR SALE.—Two Lean-to GREENHOUSES, 12 feet 6 long by 10 feet 6 wide, of the best manufacture. Can be seen now standing at E. DENCH's, Patent Horticultural Works, corner of Granby Street, Hampstead Road, N.W. Will be sold a bargain.

TRANSPARENT SHEETING, nearly 2 yards wide, 1s. per yard run; Thick Canvas ditto, 1s. per square yard; strong second-hand Waterproof Railway Sheets, 1s. per square yard, fresh dressed; Gardeners' Waterproof Capes, long enough to protect a man from wet while stooping down, 3s. each; second-hand Police Capes, at 1s. 4d., 1s. 6d., and 2s. each; Horses' Waterproof Loin Cloths, 7s. for shaft horses, and 9s. for front horses; Driving Aprons, 10s. each; Waterproof Cloth for Packing, 7d. per square yard.—R. RICHARDSON, White Horse Factory, Bidborough Street, Judd Street; Office: 99, Euston Road, London, N.W.

IRON FENCING AND HURDLES.

HILL AND SMITH'S Patent Continuous IRON FENCE is adapted for every variety of situation, and is much superior to, and cheaper than, Iron Hurdles of equal strength.

Many miles of this Fence have been erected on the London and North-Western Railway between Camden Town and Bletchley. The Patent principle is applied to Iron Hurdles, whereby their strength is much increased and the cost reduced.

Illustrated Priced Catalogues will be sent on application to HILL & SMITH, Brierly Hill Iron Works, near Dudley; or 40, Broad Street Buildings, City, London, E.C.; or 23, Enoch Square, Glasgow, where specimens may be seen; or to Mr. B. SAMUELSON, 76, Cannon Street West, London, E.C.

PAINTS OF ALL COLOURS, mixed ready for use from 5s. 6d. per gal., will cover 5½ sq. yds. Superior MANURES, equal to Guano, from 5s. 6d. per cwt. Efficacious SHEEP WASH, 1s. 6d. per gal. Patent CART GREASE, 10s. per cwt. PORTLAND CEMENT WASH for outside of buildings, prevents greenness and vegetation, also absorption of wet, 1s. 6d. per gal. Genuine COLZA OIL, 3s. 10d. per gal. The PEOPLE'S LIGHT LAMPS, 2s. PETROLEUM OIL, 3s. per gal.—G. SPILLS, Colour and Oil Works, Saint George Street, London Docks, E.

GAUNTLETT'S PATENT THERMOMETRIC CLOCK, FOR KEEPING A PERMANENT RECORD OF ATMOSPHERIC TEMPERATURE, &c.

An excellent Eight-day Clock, of the best English workmanship, may be had with Gauntlett's Patent Thermometric attachment whereby the temperature of the apartment is written off on a slip of paper.



EXTRACTS FROM THE PRESS.

"We awarded a Silver Medal to a Patent Chronometrical Thermometer, invented by Mr. Gauntlett. This instrument is extremely clever and invaluable for horticultural purposes, hospitals, &c."—*Royal Agricultural Society's Journal for* 1858.

"For some months past an instrument has been in use at the Samaritan Hospital, which deserves to be more generally known, as it serves to keep a permanent record of the temperature of a ward or sick room, day and night. We shall be glad to hear that it is brought into general use in hospitals."—*Medical Journal*, March 12, 1859.

"Every proprietor of a greenhouse or stove should possess one of these invaluable articles. We unhesitatingly recommend it to the gardening public."—*Florists' Magazine*, March, 1859.

W. H. GAUNTLETT, Southbank, Middlesbro'-on-Tees; and B. SAMUELSON, 76, Cannon Street West, London, E.C.

PRIZE MEDAL, PARIS EXHIBITION 1855.

METCALFE, BINGLEY, AND CO.'S New Pattern and Penetrating Tooth Brushes, Penetrating unbleached Hair Brushes, Improved Flesh and Clothes Brushes, and genuine Smyrna Sponges; and every description of Brush, Comb, and Perfumery for the Toilet. The Tooth Brushes search thoroughly between the divisions of the Teeth and clean them most effectually—the hairs never come loose. M., B., and Co. are sole makers of the Oatmeal and Camphor and Orris Root Soaps—sold in Tablets (bearing their names and address) at 6d. each; of METCALFE'S celebrated Alkaline Tooth Powder, 2s. per box; and of the New Bouquets.—Sole Establishment, 130B and 131, Oxford St. 2d and 3d doors west from Holles St., London, W.

FINE HEAD OF HAIR.

THE BEARD, WHISKERS, AND MOUSTACHIOS.

ROWLANDS' MACASSAR OIL is universally in high repute as the most successful article ever known in the growth, restoration, and in improving and beautifying the human hair, proved beyond question by its unprecedented results for more than half a century past, and when every other specific has failed. It prevents it from falling off or turning grey, strengthens weak hair, cleanses it from scurf and dandriff, and makes it beautifully soft, curly, and glossy. For children it is especially recommended, as forming the basis of a beautiful head of hair. Its invaluable properties have obtained the patronage of Royalty and the aristocracy throughout Europe; while its introduction into the nursery of Royalty, and the high esteem in which it is universally held, with numerous testimonials constantly received of its efficacy, afford the best and surest proofs of its merits. Price 3s. 6d. and 7s.; family bottles (equal to four small), 10s. 6d.; and double that size, 21s.—CAUTION: on the wrapper of each bottle are the words, ROWLANDS' MACASSAR OIL, &c., in white letters; and their signature, "A. ROWLAND & SONS," in red ink.—Sold at 20, Hatton Garden, London, E.C.; and by Chemists and Perfumers.

NATURE-PRINTED FERNS.

On the 12th inst. will be published, Vol. I., of the octavo NATURE-PRINTED BRITISH FERNS.—The Figures (110 in number) NATURE-PRINTED BY HENRY BRADBURY. The Descriptions by THOMAS MOORE, F.L.S. The Work will be completed in Two Volumes, price 2l. 2s. each.

Also, lately published, royal 8vo, price 2l. 2s., Volume I., containing Seventy Coloured Nature-Prints, of

THE NATURE-PRINTED BRITISH SEA-WEEDS.—With Engraved Magnified Dissections of the whole Species described in the Volume. The Descriptions by WILLIAM G. JOHNSTONE and ALEXANDER CROALL. NATURE-PRINTED BY HENRY BRADBURY.

The NATURE-PRINTED BRITISH SEA-WEEDS will form four handsome Volumes, in royal 8vo, consisting of about 220 plates, with the necessary letter-press, extending to about 900 pages.

*** Vol. II. will be published in November.

"For this kind of work Nature-Printing is exactly adapted. Every delicate and inimitable ramification is most attractively and accurately represented. The fifty-six plates in this volume can scarcely be surpassed, and have not, as far as we know, been equalled. Those who will not give an hour to the letter-press may find more than an hour's delight in the plates. For ourselves, we have found them pleasing, and still pleasing during several inspections. The volume is handsomely got up, and will make a very attractive drawing-room table book at home or at the sea-side. If the three succeeding volumes are as beautifully illustrated, we shall be glad to welcome them."—*Athenæum.*

London: BRADBURY & EVANS, 11, Bouverie Street, E. C.

This day is published, price 2s. 6d., Part IX. of

THE ENGLISH CYCLOPÆDIA OF ARTS AND SCIENCES, being the Fourth Division of the ENGLISH CYCLOPÆDIA, conducted by CHARLES KNIGHT.

☞ This Part comprises from the article "COIN" to the commencement of "COTTON MANUFACTURE."

Vols. I. and II. are now ready, price 12s. each.

The following Divisions are completed:—

BIOGRAPHY.

Six Volumes, price 3l.; or in Three Volumes, half-bound morocco, price 3l. 12s.

GEOGRAPHY.

Four Volumes, price 2l. 2s.; or in Two Volumes, half-bound morocco, price 2l. 10s.

NATURAL HISTORY.

Four Volumes, price 2l. 2s.; or in Two Volumes, half-bound morocco, price 2l. 10s.

*** Any Number or Part may be had separately.

London: BRADBURY & EVANS, 11, Bouverie Street, E.C.

THE EDINBURGH REVIEW, No. CCXXIV., Will be published on Saturday next.

CONTENTS.

I. BAIN'S PSYCHOLOGY.
II. A VISIT TO ENGLAND IN 1775.
III. SIR EMERSON TENNANT'S CEYLON.
IV. CARLYLE'S FREDERIC THE GREAT.
V. THE GRAFFITI OF POMPEII.
VI. THE VIRGINIANS.
VII. THE ITALIAN CAMPAIGN OF 1859.
VIII. UNPUBLISHED CORRESPONDENCE OF MADAME DU DEFFAND.
IX. SENIOR'S JOURNAL IN TURKEY AND GREECE.
X. SECRET ORGANISATION OF TRADES.

London: LONGMAN & Co.; Edinburgh, A. & C. BLACK.

GLENNY'S GARDENERS' GAZETTE.—A Monthly Journal, 16 pp. imperial 8vo, price 3d., post free, 4d., contains useful information for all interested in the Garden.

JAMES ALLEN, Warwick Lane, E. C.; KENNETT, York Street, Covent Garden, W. C.; and at all the railway stations and respectable booksellers.

Advertisements should be sent to the Printers, YATES & ALEXANDER, Horse-shoe Court, Ludgate Hill, E. C.

ORCHARD HOUSES.—The Sixth Edition of the ORCHARD HOUSE, enlarged and improved, is just published, 3s.

LONGMAN & Co., or per post from the Author, THOMAS RIVERS, Sawbridgeworth.

HOLCUS SACCHARATUS (Pamphlet).

"A VISIT AND A PLANT." A few copies only are left. Post free, 7d.

JOHN WILLDING CLARKE, Whittlesea, Cambs.

By post, 2s. 6d. (no catchpenny affair),

THE DEEP SIMPLE-PIPE DRAIN, A FALLACY, or Alderman J. J. Mechi, Esq., out of his Difficulties. Illustrated by Facts.

Address W. ISHMAEL, Albion House, Bewdley.

CUTHILL'S PAMPHLET on the Potato, Strawberry, Cucumber, Seakale, and 20 more things, 2s.; Market Gardening Round London, 1s. 6d.; on the Vine, 1s.; Thirty Years' Practice of Mushroom Growing: an Easy Plan for Killing Woodlice, 1s. 1d.; "Vegetable Meeting Paper" gratis.

JAMES CUTHILL, Camberwell, London, S.

ELEGANT PRESENT FOR THE COUNTRY OR SEASIDE.

Handsomely bound in cloth gilt, price One Guinea.

THE FERN COLLECTOR'S ALBUM: a descriptive folio for the reception of Natural Specimens, containing on the right-hand page a description of each Fern, printed in colours; the opposite page being left blank for the collector to affix the dried specimen, forming when filled an elegant and complete collection of this interesting family of plants.

London: ROBERT HARDWICKE, 192, Piccadilly, W.

FERNS.—Gratis and Post Free.—A CATALOGUE OF BOOKS ON FERNS, New and Second-hand.

London: WILLIAM PAMPLIN, 45, Frith Street, Soho Square, W.

Just published, Part IX., or Vol. III., Part I., price 10s.,

SPECIES FILICUM; being DESCRIPTIONS of ALL KNOWN FERNS. Illustrated with Plates. By Sir WILLIAM JACKSON HOOKER, K.H., D.C.L. Oxon., F.R.S., F.A.S., F.L.S., &c., and Director of the Royal Gardens of Kew.

London: WILLIAM PAMPLIN, 45, Frith Street, Soho Square, W.

Just published, Part VI., price 1s.,

INDEX FILICUM: a Synopsis, with Characters of the Genera, and an enumeration of the Species of Ferns with Synonyms, References, &c., &c. By THOMAS MOORE, F.L.S., F.H.S., &c., Curator of the Chelsea Botanic Garden.

London: WILLIAM PAMPLIN, 45, Frith Street, Soho Square, W.

Just published, Parts I. and II., price 5s. each,

ENUMERATIO PLANTARUM ZEYLANIÆ: an Enumeration of Ceylon Plants, with Descriptions, Uses, Native Names, &c. By G. H. K. THWAITES, F.L.S., Superintendent of the Royal Botanic Garden, Peradenia, Ceylon; Assisted in the Identification of the Species and Synonymy by J. D. HOOKER, M.D., V.P.R.S., F.L.S., and G.S., &c.

London: WILLIAM PAMPLIN, 45, Frith Street, Soho Square, W.

Just published, Part I., Price 1s.,

OUR FARM CROPS. By JOHN WILSON, F.R.S.E., Professor of Agriculture in the University of Edinburgh, Member of Council of the Royal Agricultural Society of England, &c.

The Series will be completed in Twelve Numbers, to be issued Monthly, according to the following arrangement:—

1. Crops cultivated for their Seeds (as Wheat, Beans, &c.) 3 Nos.
2. Fallow and Root Crops (as Turnips, Potatoes, &c.) 5 Nos.
3. Forage Crops (as Clovers, &c.) .. .. 2 Nos.
4. Special crops (as Flax, Hops, &c.) .. .. .. 2 Nos.

Each Part will consist of about Eighty Pages, with Woodcuts, &c., and will be complete in itself, as regards the subjects which it treats upon.

BLACKIE & SON, Warwick Square, City, London, E.C.; and all Booksellers.

On November 21st will be published, in crown 8vo, price One Shilling,

THE GARDENERS' YEAR BOOK,

ALMANACK, AND DIRECTORY FOR 1860.

BY ROBERT HOGG,

Vice-President of the British Pomological Society.

This work will contain, besides the information usually found in Almanacks, a complete Gardeners' Calendar for every month in the year—Notices of and remarks upon all New Plants, Flowers, Fruits, and Vegetables introduced during the year—Select Lists of the best varieties in cultivation, and a complete Directory of the Nurserymen, Seedsmen, and Florists in Great Britain, Ireland, the Continent, and America.

To Nurserymen, Seedsmen, Florists, Horticultural Builders, and Mechanicians.

ADVERTISEMENTS for the above will be received up to November 5. TERMS:—One page, 40s.; half page, 25s.; and a quarter of a page, 15s.

F. S. ANGEL, 162, FLEET STREET, E.C.

THE PEACH AND NECTARINE—LATEST WORK UPON THE SUBJECT.

This day is published, Illustrated with a Coloured Plate of Peach LATE ADMIRABLE, *price* 3s. 6d. *in cloth, sent post free to any part of the Kingdom on receipt of* 42 *stamps,*

THE CULTURE OF THE PEACH AND NECTARINE.

BY THE LATE GEORGE McEWEN,

Late Superintendent of the Horticultural Society's Gardens at Chiswick, and formerly Gardener to His Grace the Duke of Norfolk at Arundel Castle.

EDITED AND ENLARGED BY JOHN COX, F.H.S.,

Gardener to William Wells, Esq., of Redleaf.

CONTENTS.

History of the Peach.
Borders and Soils.
Remarks on Peach Culture.
Budding.
Stocks, etc.
Walls and Aspects.
Spring Coverings.
Glass Coverings.
Treading over the Borders.
Mulching.
Disbudding, or Summer Pruning.
Final Touches.
Out Door Training
In Door Training.
Peaches in Pots.
Insects and their Cure.
Mildew.
General Treatment.
Influence of Sunlight.
Calendarial Directions.
Lists of Sorts, Early Peaches.
Midseason Peaches.
Late Peaches.
Nectarines, Early Sorts.
Midseason ditto.
Late ditto.

To which is added a Descriptive List of New and Valuable Varieties of American and French Peaches. By Mr. Rivers, of Sawbridgeworth.

LONDON: GROOMBRIDGE AND SONS, 5, PATERNOSTER ROW, E.C.

In Two Volumes large Octavo,

THE BOOK OF THE FARM.

By Henry Stephens, F.R.S.E.

With upwards of 600 Engravings, price 3*l.*, half-bound.

"The best practical book I have ever met with."—*Professor Johnston.*

"One of the completest works on agriculture of which our literature can boast."—*Agricultural Gazette.*

William Blackwood & Sons, Edinburgh and London.

In One Volume, large Octavo, uniform with the "Book of the Farm," price 2*l.* 2*s.*,

THE BOOK OF FARM IMPLEMENTS AND MACHINES. By James Slight and Robert Scott Burn, Engineers. Edited by Henry Stephens, F.R.S.E. Illustrated with 356 Engravings.

William Blackwood & Sons, Edinburgh and London.

Complete in Two large Volumes, royal Octavo,

THE BOOK OF THE GARDEN.

By Charles M'Intosh.

The Volumes are sold separately, viz. :—

Vol. I.—On the Formation of Gardens and Construction of Garden Edifices, &c. 776 pages, and 1073 Engravings. 2*l.* 10*s.*

Vol. II.—Practical Gardening. 868 pages, and 279 Engravings. 1*l.* 17*s.* 6*d.*

William Blackwood & Sons, Edinburgh and London.

FARM ACCOUNTS.

In royal 8vo, bound in cloth, price 2*s.* 6*d.*,

A PRACTICAL SYSTEM of FARM BOOK-KEEPING; being that recommended in "The Book of the Farm." By Henry Stephens, F.R.S.E.

Also,

SEVEN FOLIO ACCOUNT BOOKS, constructed in accordance with the system, Printed and Ruled throughout, and bound in separate volumes; the whole being specially adapted for keeping, by an easy and accurate method, an account of all the Transactions of the Farm.

"We have no hesitation in saying, that of the many systems of keeping farm-accounts which are in vogue, there is not one which will bear comparison with that just issued by Messrs. Blackwood, according to the recommendations of Mr. Stephens in his invaluable 'Book of the Farm.' The great characteristic of this system is its simplicity. When once the details are mastered, which it will take very little trouble to accomplish, it will be prized as the clearest method to show the profit and loss of business, and to prove how the soundest and surest calculations can be arrived at."—*Bell's Messenger.*

W. Blackwood & Sons, Edinburgh and London.

TO BE SOLD, 12 Volumes of the GARDENERS' CHRONICLE and AGRICULTURAL GAZETTE, from 1846 to 1857, without the Newspaper part (not bound). Price 2*l.* 10*s.* for the lot of twelve.—Apply to J. S., 4, Waterloo Place, Turnham Green, W.

Just published, price 2*s.*, free by post,

A BOOK on TAKING RATS, whereby every Rat upon the premises, no matter how numerous, may all be taken alive in one single night, without the aid of poison or traps. None can escape.

W. Goodwin, Halstow, Rochester, Kent.

RATS.—A novel Stratagem for taking RATS by wholesale, without POISON or TRAPS.—Ships, Mills, Barns, Stables, Granaries, Warehouses, Farmsteads, and Houses, cleared at one sweep. Any person can by this method clear the entire premises of every Rat, however numerous they may be, in one single night. Printed directions how to entice and secure the whole lot alive, but powerless to move, sent free by post for 12 Penny Stamps. — Direct Fisher & Son, Publishers, Kingsland, London, N. E. Established 1847.

Notice.—Appended to this invaluable Publication will be found 40 Graziers', Farmers', and Agricultural Recipes, the rarest in the world.

HOW TO BREW SPLENDID STRONG ALE, at 7*d.* per Gallon, fine as Sherry, and an aroma equal to Burton Tenpenny. This new Practical Treatise is by a Derbyshire man of 28 years' attendance at the spigot and tun in the best brewery in the county. No brewing utensils required, only those for household use. This is guaranteed to be the best and cheapest mode to produce fine Ale ever made public. The above beautifully printed in large type can be had of the sole publishers for 12 Penny Post stamps. Sent post free to any address. Direct to Fisher & Son, Publishers, Kingsland, London, N.E. Established 1847.

Notice.—Just appended to this universally prized Book, all the methods to make the improved Ærated Unfermented Ginger Beer, Soda Water, Lemonade, all the Cordials and Nectars, together with the Penny French Ices, the Delightful Summer Cooling Beverages, and all the French, American, and English cheap fruit drinks.

EPPS'S HOMŒOPATHIC COCOA.—Produced, in 1839, specially for the use of Homœopathic Patients, to provide them with a beverage highly nutritious and free from those effects of Coffee and Tea which to many persons are pernicious. Rendered attractive to the taste by its delicious aroma and grateful smoothness, it has become adopted by the public generally for breakfast, luncheon, and supper. It is sold by the principal Grocers at 1*s.* 6*d.* per lb., in 1 lb., ½ lb., and ¼ lb. packets. Each packet is labelled, "James Epps, Homœopathic Chemist, London."

THE NEW WINTER LINSEY WOOLSEYS are now on view at Her Majesty's Royal Tartan Warehouse, London.

Scott Adie,

115, Regent Street, corner of Vigo Street, W.

PERFECT FREEDOM from Coughs is secured by Dr. Locock's PULMONIC WAFERS.—They give instant relief, and a rapid cure of asthma, consumption, coughs, and all disorders of the breath and lungs. Price 1*s.* 1½*d.*, 2*s.* 9*d.*, and 11*s.* per box. Sold by all medicine vendors.

HOLLOWAY'S PILLS.—AUTUMN AILMENTS. —There are diseases peculiar to each season; but autumn usually much increases the sick list! Fever, diarrhœa, cholera, and many chest complaints frequently prevail at this time. Purifying the blood is the most rational and certain antidote to all of them. This can be accomplished most readily and effectually by a course of Holloway's estimable Pills, which act directly by expelling all impurities, and healthily stimulating every organ. They wonderfully assist digestion, and promote wholesome activity in the kidneys, liver, and lungs; and strengthen the nerves. These Pills may be taken with benefit and safety by all invalids, whatever be the malady, for their purifying and harmless nature admirably adapts them to all ages, constitutions, and climates.

TO NURSERYMEN, GARDENERS, AND OTHERS.

TO BE DISPOSED OF, a NURSERY, containing about 4 Acres, with numerous Greenhouses, Plants, Stock in Ground, &c., situated in a favourite suburb south of London, on the high road, and with an increasing business.—Full particulars will be given on application to Mr. A. Chandler, Horticultural Valuer, 28, Priory Road, Wandsworth Road, S.

TO NURSERYMEN, FLORISTS, AND OTHERS.

TO BE DISPOSED OF, a First-Class LONDON NURSERY, long Lease and Good Will, the Vendor having been in occupation for 16 years. Extensive frontage, stands well for business, Omnibuses to all parts of London. There are 12 Greenhouses, besides Pits, &c., part heated by Hot Water, and adapted to the Propagation and Culture of Hard-wooded and Miscellaneous Plants. The usual Ground Stock includes American Plants, choice young Fruit Trees, &c., in fine condition. Good Residence, Seed Shop, and Offices separate; two Stall Stable, Cart and Packing Sheds, front and back entrance, and every convenience to carry on a large business. —Apply to Messrs. Brooks & Beal, Estate Agents and Auctioneers, 209, Piccadilly, W.

NURSERY and PLANT BUSINESS, Sudbury, Suffolk.—A fine opportunity offers immediately, as this part of the Business of Bass & Brown is for disposal. The stock of Fruit Trees, Ornamental Shrubs, Roses, &c., is first rate, standing on a superior soil, an unfailing supply of water on the spot, conspicuously situated between the Railroad and the public road, at a short distance from the Station. Also the whole or part of the Greenhouses, Pits, &c., with the Greenhouses, Pits, &c., with the excellent stock contained therein.—Particulars of Blunden & Squire, Agents; or of Stephen Brown, at the Seed Establishment, Sudbury, Suffolk.

SHOOTING, HUNTING, OR FISHING BOX.

TO BE LET, furnished for the season, or the LEASE to be SOLD, situate within five minutes' walk from the Railway Station at Taplow and Maidenhead, a pretty residence of 12 rooms, with 7 acres of Pleasure Ground, 4 acres of Water, Coach-house, and Stabling for two or three horses.—Apply to Mr. Bryson, 27, Queen Street, City, C. E.

Sales by Auction.

EXMOOR PONIES.

THE Annual Sale by Auction of 50 EXMOOR PONIES, COBS, and GALLOWAYS, will take place at Bampton Fair, near Tiverton, Devon, on THURSDAY, October 27. Every particular may be had of Mr. Smith, Emmett's Grange (Exmoor), Southmolton, Devon. — Emmett's Grange, Oct. 8.

MESSRS. ARCHER and SON beg to inform their patrons that the POULTRY and PIGEON SALE advertised for the 15th, must be unavoidably postponed until further notice.

MR. J. C. STEVENS begs to announce that his next POULTRY and PIGEON SALE will take place at his Great Room, 38, King Street, Covent Garden, W.C., on TUESDAY, Oct. 18, and these Sales will be continued on the 1st and 3d TUESDAY IN EVERY MONTH during the season.

*** Gentlemen having Poultry or Pigeons to dispose of should send in their list about a fortnight before.

EXTRA POULTRY AND PIGEON SALE.

MR. J. C. STEVENS will Sell by Auction at his Great Room, 38, King Street, Covent Garden, W. C., on TUESDAY, October 18, at 12 o'Clock precisely, 260 LOTS of CHOICE POULTRY and PIGEONS, consisting of Cochins, Dorkings, Spanish, Brahmas, Game, Malays, Hamburghs, Bantams, Polands, Aylesbury and Rouen Ducks, &c., from the yards of the Rev. C. Gilbert, F. Manning, Esq., H. Ranson, Esq., Mrs. A. G. Brooke, Miss J. Milward, and others. Also a capital Lot of Pigeons from Mr. Woodhouse and other well-known Fanciers.—May be viewed on the morning of Sale and Catalogues had of Mr. J. C. Stevens, 38, King Street, Covent Garden, W.C.; if for the country by enclosing two stamps.

CEDRUS DEODARA AND OTHER SEED JUST IMPORTED.

MR. J. C. STEVENS begs to announce that he will include in his Sale on the 11th, about 60 lbs. of CEDRUS DEODARA, 5 lbs. of PICEA PINDROW, 6 cones with seed of PINUS SENECLAUZII, 12 Specimen Plants of WELLINGTONIA GIGANTEA, 60 strong plants of PINUS DON PEDRII, &c.—May be viewed on the morning of Sale and Catalogues had.

ORCHIDS, FERNS, AND FOLIAGE PLANTS.

MR. J. C. STEVENS will Sell by Auction at his Great Room, 38, King Street, Covent Garden, W.C., on TUESDAY, Oct. 11, at half-past 12 o'Clock precisely, a Collection of ESTABLISHED ORCHIDS in excellent health, and including the following choice sorts :—

Vanda cœrulea	Cypripedium hirsutissimum
,, suavis (Veitch's)	,, Fairrieanum
,, tricolor	Lycaste Skinnerii, fine dark
Aerides Warnerii (true	Cœlogyne cristata [variety
,, virens superba	Saccolabium Blumei major
,, Foxbrush	,, retusum

and numerous other good sorts.

A Collection of RARE FERNS, STOVE and GREENHOUSE PLANTS, and about 60 lbs. of CEDRUS DEODARA and other Seed just imported.—May be viewed on the morning of sale and Catalogues had.

VALUABLE AND EXTENSIVE HERBARIUM AND LIBRARY OF BOOKS.

MR. J. C. STEVENS has the honour to announce that he will Sell by Auction at his Great Room, 38, King Street, Covent Garden, on FRIDAY, Oct. 21, at half-past 12 o'clock precisely, a most Valuable, Extensive, and Arranged HERBARIUM, containing more than 38,000 species of Phænogamous Plants, being more than one half the known number of that division of the Vegetable Kingdom, mostly in the finest possible condition, and forming the most extensive and Valuable Collection ever offered for Sale. Also some smaller Collections of Plants, all named together, with the very Choice Library of Books, which include the works of Bateman, Andrews, Duhamel, Humboldt, Jacquin, St. Hilaire, Thornton, Wight, Griffiths, Palisot, Blume, Martius, De Candolle, Pohl, Reichenbach, Roxburgh, Royle, Lindley, Don, Horsfield, Ellis, and other eminent authors, most elegantly bound, and in the finest possible condition, the property of a Nobleman.—May be viewed the day prior and morning of Sale, and Catalogues had at the Rooms, or sent by Post on receipt of two stamps.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, AND OTHERS.

MESSRS. PROTHEROE and MORRIS are instructed by Mr. Lockhart to Sell by Auction at the Mart, Bartholomew Lane, City, E.C., on THURSDAY, October 13, at 12 o'Clock, a costly and extensive Collection of BULBS and FLOWER ROOTS, about 45,000 in number, consisting of all the approved hardy and ornamental varieties of Hyacinths, Early and Late Tulips, Crocus, Narcissus, Lilies, Gladiolus, Anemones, Ranunculus, in 50 splendid varieties, and including 1500 Sir Charles Napier, the finest variety yet raised; also Iris, Scillas, and other bulbs; a choice assortment of Standard Roses, exceedingly handsome; Herbaceous and other plants, &c.—On view the morning of Sale. Catalogues may be had at Mr. Lockhart, Parson's Green Lane, Fulham, S.W.; at the Mart; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex, N.E.

VERY IMPORTANT SALE AT HORNBY CASTLE, CATTERICK, YORKSHIRE.

MESSRS. T. MASTERMAN and SON have the honour to announce that they have received instructions to Sell by Auction without reserve, on THURSDAY, October 13, all the valuable large stock of Hunting Saddles and Bridles, Ladies' Saddles and Bridles, complete sets of Carriage Harness, Horse Clothing, together with all the other Hunting and Carriage Stable requisites, &c. ; Four-wheeled Dog Cart, very good, by Pullen; Break fitted up as a Carriage with Cushions, and Snow Sledge, all as used by the late Duke of Leeds. Also, on FRIDAY and SATURDAY, October 14 and 15, the whole of the most costly and rare collection of STOVE, GREENHOUSE, and ORCHIDACEOUS PLANTS, consisting of Musas, Dracænas, Caladiums, Begonias, Heliconias, Marantas, &c., Tree and other rare Ferns, including some very fine specimens; Fruiting and Succession Pines; Apple, Pear, Plum, Cherry, Peach, Nectarine, and Apricot Trees, in Pots; also a quantity of Untrained Fruit Trees; a large quantity of Vines for forcing in Pots; Apple, Pear, Plum, and Quince Stocks; a large number of young Red, White, and Black Currant, and Gooseberry Trees; a very large collection of Strawberry Plants, of the finest sorts; also a quantity in Pots for forcing; Roses in Pots—Standards and Dwarfs; scented and variegated Geraniums; Carnations, Pinks, Hollyhocks, Dahlias, and Bedding Plants—all in great variety; a large quantity of Cuttings in Pots. Also a large quantity of Onions, Parsnips, Carrots, Beet, Celery, Rhubarb in variety; Salsify, Scorzonera, and Potatoes of different sorts, &c.; 9 Frames with Lights; 22 Lights without Frames; several Umbrella Wire Trellis; a large number of Pots of various sizes; Iron Bars, and a quantity of Metal. With the whole of the Garden Tools too numerous to mention; 10 Bee Hives, &c.—The whole of the above will be Lotted, and may be viewed on the Tuesday, Wednesday, and Thursday previous to the days of Sale. Hornby Castle is situate five miles from Bedale Station, and four miles from Catterick Bridge Station. T. M. & Son request an early attendance on account of the numerous Lots. The Sale to commence at 10 for 11 o'clock precisely each day.

HUCCLECOTE GARDENS, 2½ miles from Gloucester—Highly Important Sale of Specimen Stove and Greenhouse Plants.

MR. WILLIAM KNOWLES is favoured with instructions from G. S. Wintle, Esq. (who is leaving the neighbourhood), to Sell by Auction, upon the premises, on TUESDAY, WEDNESDAY, THURSDAY, and FRIDAY, October 18, 19, 20, and 21, commencing each day at 12 o'Clock, the whole of his very valuable Collection of Specimen ORCHIDS, STOVE, GREENHOUSE, and ORNAMENTAL-FOLIAGED PLANTS, among which will be found the

Cossignea borbonica, 5 by 4 ft.	Azalea alba grandiflora, 4 by 4 ft.
Colea Commersonii, 5 by 4 ft.	,, amœna, 2 ft. by 2 ft. 6 in.
Aralia farinifera, 4 by 3 ft.	,, juliana, 2 ft by 2 ft. 6 in.
Latania borbonica, 4 by 6 ft.	Phœnocoma prolifera Barnesii, 3 by 3 ft.
Cycas revoluta, 4 by 6 ft.	Erica Savileana major, 3 by 3 ft.
Attalea Cohune, 7 by 5 ft.	Erica tricolor Wilsonii, 2 ft. 6 in. by 2 ft. 6 in.
Monsteria Adansonia, in fruit, 4 by 7 ft.	Erica jasminiflora alba, 2 ft. by 2 ft. 6 in.
Croton variegatum, 4 by 4 ft.	
,, longifolium crispifolium, 4 by 3 ft.	

And numerous other fine and rare Plants, which have gained the principal prizes at the various Horticultural Exhibitions.—May be viewed on Monday, October 17, and mornings of Sale, by Catalogues only (price 6*d.* each), to be obtained at the office of the Auctioneer, St. Mary's Square, Gloucester.

TO BE LET, the above capital Walled-in GARDENS (containing about 4 acres), with House, Farmyard Buildings, Orchard, and Land adjoining, containing in the whole about 1 acres, with Greenhouses, Propagating Houses, Vineries, Pits, &c. Extent of Grass, 5770 feet.—For particulars apply to Mr. Knowles, Auctioneer, Gloucester.

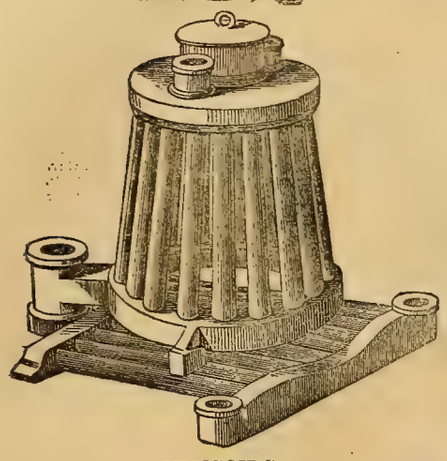
WESTERHAM, KENT.—To Parties about to Plant. Important Sale of First-class Nursery Stock.

MESSRS. BLAKE will Sell by Auction on the premises, on WEDNESDAY, October 19, at 10 for 11 o'Clock, a portion of the NURSERY STOCK growing upon Land forming part of the Grange Estate, which Estate is for sale. The whole of the stock is young and in the best possible condition for removal, having all been transplanted during the last two seasons. The soil of the Nursery has been remarkable for upwards of 30 years for producing unusually fine fibrous roots, so that there will be no risk in the removal of the stock, which comprises Larch, Scotch, Spruce, Silver, and other Firs, Spanish and Horse Chesnut, Elm, Lime, Maple, Hornbeam, Mountain and Weeping Ash, a large quantity of fine grown common Ash (3, 4, and 5 feet), Beech, Birch, Willow, Sycamore, common Laurels (2 and 4 feet and fine bushy stuff); Portugal Laurels, evergreen Berberis, common Holly, Irish and common Yew, Laurustinus, Standard and Dwarf Roses of the choicest sorts, fine grown Standard and Dwarf Fruit Trees (trained and round-headed), consisting of Apples, Pears, Plums, Cherries, Apricots, Peaches, Nectarines, Gooseberries, and Currants; several hundred yards of Box edging (very close and compact); nearly 100,000 strong, fine grown, 3-years transplanted Quick, and a great variety of Trees and Shrubs.—May be viewed until the Sale, and Catalogues had of James Dulake, upon the premises, who will show the Lots. Catalogues may also be had at the King's Arms, Westerham; Laker's Hotel, Redhill; Angel, Tonbridge; Crown, Sevenoaks; White Hart, Bromley; Greyhound, Sydenham; and White Hart, Norwood; at Garraway's Coffee House, Change Alley, Cornhill; and of Messrs. Blake, Croydon.

BLAKEMOOR.—NORTHUMBERLAND.

MR. S. DONKIN will Sell by Auction, in one lot, on SATURDAY, October 22, at One for Two o'clock precisely, at the Central Station Hotel, Newcastle-upon-Tyne, the FREEHOLD ESTATE of BLAKEMOOR, with a Mansion House, Farm Buildings, and Garden, and a Dwelling-house and seven Cottages, in the village of Cresswell. The property consists of one Farm of about 345 acres, arable and pasture, of good Wheat soil, lying in a ring fence, bounded on the north by Widdrington Estate, belonging to Lord Vernon; on the south and west by Cresswell and Ellington Estates, belonging to A. J. Baker Cresswell, Esq.; and on the east by the sea, and comprises a considerable part of the shore of Druridge Bay, and a Freestone Quarry. Game is abundant on the estate. The Owner is entitled to a Right of Common on unenclosed lands at Cresswell, and to take Ware from the sea shore. The Coal will be sold with the estate. The Dwelling-house, in Cresswell, is situated at a short distance from the beach, and commands a view of the sea. There is good Sea Bathing on the sands adjoining. The Tithes are commuted for three rentcharges, one of 25*l.* 6*s.* 9*d.*, payable to the Mercer's Company of the City of London, another of 25*l.* 6*s.* 9*d.*, payable to the perpetual curate of St. John's Chapel, Hampstead, and another of 7*l.* 10*s.*, payable to the Vicar of Woodhorn. The property is 5 miles from the Longhirst Station of the North-Eastern Railway, to which there are admirable roads, about 2 miles from a proposed branch of the Blyth and Tyne Railway, 23 miles from Newcastle-upon-Tyne, and 9 from Morpeth. The property may be seen on application to the Farm Steward, at Blakemoor; and Particulars and Conditions of Sale may be had at the Offices of Mr. James Crosby, Solicitor, 3, Church Court, Old Jewry, London, E.C.; and of Messrs. William & Benjamin Woodman, Solicitors, Morpeth.—Morpeth, Oct. 8.

By Her Majesty's Royal Letters Patent.



ORMSON'S

PATENT JOINTLESS TUBULAR BOILER.

TESTIMONIALS.

"Sir,—I feel much pleasure in bearing testimony to the efficiency of your Patent Jointless Tubular Boiler which you have erected for Baron de Rothschild, at Gunnersbury Park, and from the number of hothouses and great extent of pipe you have heated from one boiler, I now feel confident it is decidedly the most powerful, economical, and safe boiler yet invented. Having had the working of the Wrought-iron Arch, and Cast-iron Corrugated Arch Boilers in these gardens, I have no hesitation in stating that your boiler is infinitely superior to either of them in every respect.—Yours truly,

"William Forsyth.

"The Gardens, Gunnersbury Park, Acton, Middlesex."

"Sir,—It is with much satisfaction I give my testimony in favour of your admirable Patent Jointless Tubular Boiler, being attached to upwards of 3000 feet of 4-inch pipe, and doing the work of four fires, and consumes little more fuel than was required for one of the fires previous to the adoption of your boiler. We can command any amount of heat, the boiler being so powerful I am confident it would with ease heat as much more. Altogether we have realised much more economy in fuel and attendance than we at first anticipated. In addition to the great power and economy of your boiler it possesses another most important advantage over all other tubular boilers which have come under my notice, in the fact of its being jointless, consequently quite safe from all danger of leakage. On referring to my coal account I find that I now only use one where I formerly used five waggon loads of coal for the arched boilers which you took out.—I am, Sir, yours respectfully, "J. Fraser.

"The Gardens, Luton Hoo, Bedfordshire."

"Mr. Henry Ormson, Sir,—I beg to inform you of my entire satisfaction with your Hot-water Apparatus in general, and your Patent Jointless Tubular Boiler in particular, as fitted up in the new range of Hothouses you have recently erected for Lord Powerscourt. The Boilers I admire for three excellent reasons; they are simple in construction, effective in working, and I feel assured, from the calculation I have already made, a very great saving of fuel will be the consequence from using these Boilers. You will permit me to add if I had formed a contrary opinion of the merits of these Boilers I should have been candid enough to have told you so, but in justice to you I must distinctly state I consider them a great boon to the horticultural world.—I am, Sir, yours truly, "Alexander Robertson.

"The Gardens, Powerscourt, Ireland."

"Sir,—I have much pleasure in testifying to the excellent working of your Patent Jointless Tubular Boiler; though a small one it does the work of five fires, and is a great saving of fuel and labour.—I am, Sir, yours respectfully,

"Holland House Gardens, Kensington." "J. Scobie.

"Sir,—In regard to your Patent Jointless Tubular Boiler, it answers admirably the purpose for which it was erected. I consider it the most economical and powerful Boiler ever introduced, and am confident it will not fail to give general satisfaction.—I am, yours most respectfully,

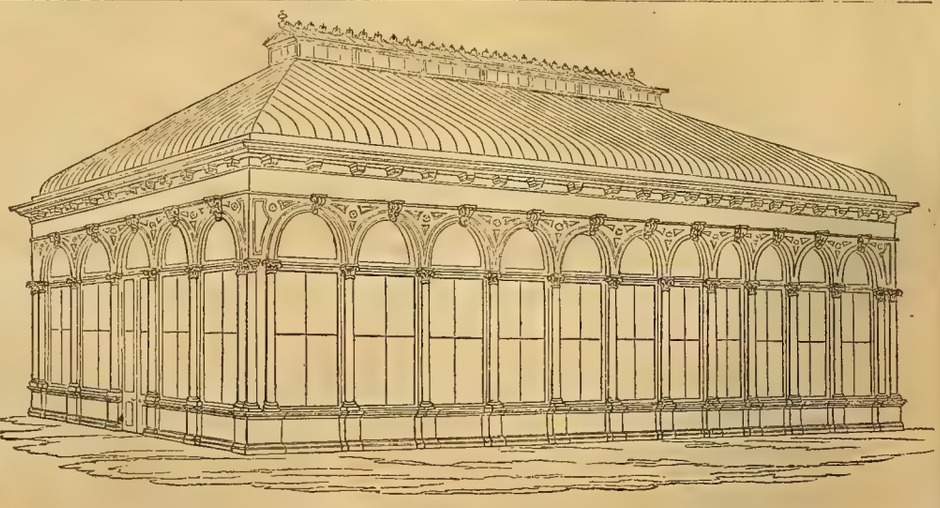
"John Lauder.

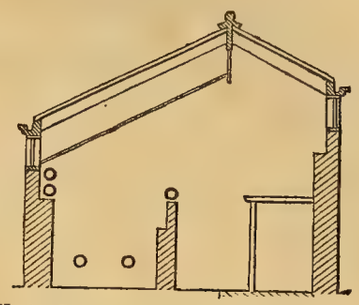
"The Gardens, Witley Court, Worcestershire."

"Sir,—I have much pleasure in testifying to the efficiency of your simple but most powerful Patent Jointless Tubular Boilers. The two small boilers you put up here are doing the work of six fires, with the addition of a range of lofty coach-houses which were afterwards attached. The amount of fuel is little more, and the attention much less, than was required for one fire before these boilers were put up; there is not the least strain on them, and I am confident if required would heat a considerably greater amount of piping. I must also add that the whole of the hot-water apparatus works satisfactory, especially the ventilating boxes you put up in the Fruiting Pine Stove, which I consider a great acquisition, supplying at all seasons a constant stream of pure warm air to the plants, which are in consequence sturdy and in the most robust health. —I am, Sir, yours respectfully, "John Clark.

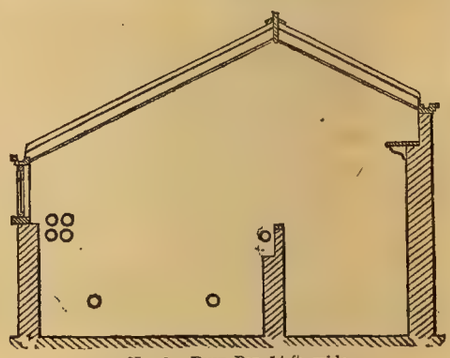
"The Gardens, Cobham Hall, Gravesend, Kent."

Ormson's Patent Jointless Tubular Boilers may be seen in successful operation at Mr. Veitch's, Royal Exotic Nursery, King's Road, Chelsea.

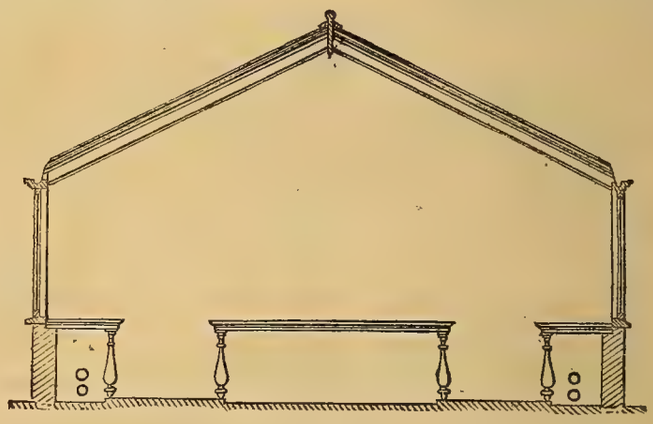




No. 1.—Cucumber and Melon Pit, 10 ft. wide.



No. 2.—Pine Pit, 14 ft. wide.



No. 6.—Greenhouse, from 18 to 20 ft. wide.

HORTICULTURAL BUILDINGS MANUFACTURED BY STEAM POWER MACHINERY.

BEST MATERIALS AND LOWEST PRICES.

HENRY ORMSON,

HORTICULTURAL BUILDER & HOT-WATER APPARATUS MANUFACTURER,

STANLEY BRIDGE, KING'S ROAD, CHELSEA, LONDON, S.W

Begs most respectfully to call the attention of the Nobility, Gentry, Nurserymen, &c., to his superior manner of erecting every description of Horticultural Building, and he trusts by unremitting personal attention to the details of his business, by using only the very best materials, by employing the most skilful and efficient workmen, and by the most moderate possible charges to merit a continuance of the patronage so kindly and so liberally bestowed on him for many years past.

In the BUILDING DEPARTMENT his object will be to adapt all erections to the particular purposes for which they are required. He will devote equal attention to the plain, inexpensive, practical erections of Pits, Orchard Houses, Greenhouses, Vineries, &c., as to the more elaborate and architectural erections of Conservatories, Winter Gardens, &c., either in wood or iron.

The HEATING DEPARTMENT always engages his especial personal attention, and he feels justified in saying that in simplicity, safety, durability, and economy of fuel, combined with thorough effectiveness, his system cannot be surpassed.

VENTILATION.—Knowing the absolute necessity for thorough ventilation, he makes it a matter of first consideration.

See SECTIONS, &c., of Horticultural Buildings in former Numbers of the *Gardeners' Chronicle*.

PLANS, SPECIFICATIONS, and ESTIMATES free on application.

Printed by William Bradbury, of No. 13, Upper Woburn Place, and Frederick Mullett Evans, of No. 20, Queen's Road West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and published by them at the Office, No. 5, Upper Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—Saturday, October 8, 1859.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 42.—1859.] SATURDAY, OCTOBER 15. {Price Fivepence. STAMPED EDITION, 6*d*.

INDEX.

Abies Douglasii	829 *a*	Hort. Soc. subscriptions	827 *c*
Adder bite	832 *a*	— fruit committee	830 *a*
Australia, voyage to	830 *c*	Mangel acreage	836 *a*
Belladonna fruit	832 *a*	Mushrooms	829 *b*
Books noticed	831 *a*	Pigs, cinders for	835 *c*
Botanical prize	832 *a*	Portulacea, dimorphism in	829 *a*
Bread making	830 *b*	Rhododendron hirsutum	829 *c*
British Association	830 *b*	Roots, to store	835 *c*
Cattle cookery	836 *a*	Seeds, weeds in	834 *a*
— and Yew	837 *a*	Spergula pilifera	829 *b*
Conifers at Beauport	829 *c*	Steam engines, portable, 834 *c*—	836 *a*
Disease and Fungi	828 *a*	Stock and the weather	835 *b*
Elephant remains	830 *b*	Thistles in Tasmania	828 *b*
Entomological Society	830 *c*	Trade lists	831 *b*
Evergreens, summer moving of	829 *b*	Trees, summer moving of	829 *b*
Farm, Lough Foyle	836 *b*	Veitch's Messrs.' nursery	831 *b*
Fungus and disease	828 *a*	Weeds in seeds	834 *a*
Gardeners and employers	830 *a*	Weyhill Fair	836 *c*
Gossamer	829 *a*	Wheat, sorts of	837 *a*
Gourds	830 *a*	Yew and cattle	837 *a*
Holly Tea	828 *b*	Yucca gloriosa	830 *a*

BRITISH POMOLOGICAL SOCIETY.—NOTICE.—The next Meetings will be held on THURSDAYS, October 27, and November 17, when Premiums are offered for special subjects, of which details will be found in *Gardeners' Chronicle* of October 8. Copies of Rules, Regulations for Exhibitors, Forms to be filled up, or other information may be obtained on application to
WILLIAM DAVIDSON, Secretary.
2, Randolph Road, Maida Hill, W.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—Notice is hereby given that in consequence of there being no vacancies on the List of Pensioners, the usual Election in January will not take place. By order.
14, Tavistock Row, W.C.—Oct. 15. E. R. CUTLER, Sec.

THE LATE MR. GRIFFIN.—All Persons Indebted to, or to whom Debts are due from the Estate of the late Mr. JAMES GRIFFIN, Nurseryman, Weston Road, Bath, are requested to pay their accounts, or send in their demands for payment (as the case may be), to Mrs. GRIFFIN, at the Nursery or Seed Establishment, 2, New Bond Street, Bath.—October 15.

ROSE CATALOGUE.
A. PAUL AND SON have just published their ROSE CATALOGUE for the present season, which they will be happy to forward in return for one postage stamp. The quality of the stock is very superior, and prices unprecedentedly low.—Nurseries, Cheshunt, Herts.

STANDARD ROSES.—All the leading kinds in cultivation at prices scarcely ever offered before.
CHARLES NOBLE, Bagshot, Surrey.

NEW CATALOGUES.
WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.
WM. WOOD AND SON have now forwarded Copies of their New CATALOGUE OF ROSES, together with LISTS OF NURSERY STOCK and TRADE CATALOGUES, to their respective Customers, and will be happy to furnish Copies to other applicants gratis on application.—October 15.

ROSES.
E. P. FRANCIS'S new and extensive CATALOGUE of ROSES on the Manetti Stock is now ready for delivery, and will be forwarded gratis on application.
Rose Nurseries, Hertford.

ROSES.
THOMAS RIVERS has just published the 26th Edition of his DESCRIPTIVE CATALOGUE of ROSES, which will be sent post free on application.
Nurseries, Sawbridgeworth, Herts.

ROSES.
JOHN HARRISON begs to inform the nobility and gentry that his CATALOGUE OF ROSES for the present season is now ready, and may be had gratis on application. His plants, both Standard and Dwarfs, cannot be surpassed for health and vigour. Dwarfs upon their own roots, also on the Manetti, are robust and healthy. Prices exceedingly reduced.
Darlington Nursery.—October 15.

ROSE CATALOGUE.
JOHN CRANSTON begs respectfully to inform his patrons that he will be happy to forward his New ROSE CATALOGUE for the present season, post free, upon application. It will be found replete with the most desirable flowers (new and old) in every class, and the descriptions are copious and faithful.—Nurseries, King's Acre, near Hereford.

ROSE CATALOGUE, &c.
H. LANE AND SON'S CATALOGUES for the present season are now ready, and will be sent to their customers as usual. The following may be had on application at the Nurseries or by post. They consist of—
ROSE CATALOGUE, | FRUIT TREE CATALOGUE,
TREE AND SHRUB CATALOGUE.
Their stock is very extensive and unusually fine, and well worthy of inspection.—The Nurseries, Great Berkhampstead, Herts.

DESCARTE'S STOCKS FOR PERPETUAL ROSES.
J. J. FOSTER, of Edgware, is now prepared to supply the Trade and Amateurs with this PROVED first-rate dwarf Stock on the following low terms:—1000 Stocks for 50*s*.; 500 for 28*s*.; 250 for 15*s*., or 7*s*. 6*d*. per 100; and 3*s*. per two dozen. Early purchases best secure the establishment of the plants. EVERGREENS and all NURSERY STOCK on moderate terms.

CHOICE RHODODENDRONS, AZALEAS, AND CONIFEROUS PLANTS.—A CATALOGUE of GEORGE BAKER'S unrivalled Stock of the above may be had on application.—The American Nursery, Bagshot, Surrey.

RHODODENDRONS "of every hue," Scarlet, White, Rose, Crimson, and every intermediate shade, nearly all sizes and at all prices, can be supplied by CHARLES NOBLE, Bagshot, Surrey.

AUSTRALIAN GARDEN CRESS, just harvested (the true broad-leaved sort). Price on application.—ARTHUR HENDERSON & Co., Pine apple Place, Edgware Road, London, W.

DUTCH FLOWER ROOTS.
JOSEPH MAY AND CO. beg to offer the following Collection of BULBS on receipt of a Post-office Order for 20*s*., or reference:—

12 fine named Hyacinths	100 named Crocus
12 fine mixed Hyacinths	100 mixed Crocus
12 fine Narcissus	6 Crown Imperials
12 Early Tulips	12 Jonquils
12 Double Van Thol Tulips	Half the above for 10*s*.

A PRICED CATALOGUE forwarded on application.
1, Wellington Street, Strand, Waterloo Bridge, W.C.

DUTCH BULBS, FLOWER ROOTS, ETC.
JAMES FAIRHEAD AND SON, SEED GROWERS and MERCHANTS, Borough Market, London, S.E., beg leave to inform purchasers of the above that their WHOLESALE CATALOGUE is now ready and may be had post free on application.
Their selections are from the most eminent growers in Holland. Prices the lowest consistent with first-class quality.

DUTCH AND OTHER BULBS.
MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their CATALOGUE of the above is now ready, and will be forwarded post free on application. Early orders are solicited, as their successful cultivation depends in a great measure on early planting.
Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

HYACINTHS AND OTHER BULBS.
WM. CUTBUSH AND SON can still supply Roots equal to the first they sent out this season, as all BULBS are especially selected for them before they are imported from Holland. Descriptive CATALOGUE post free on application.
Highgate Nurseries, London, N.

JOHN CATTELL'S CATALOGUE, No. 7, containing DUTCH and other BULBS, also a List of Plants for Forcing and Early Flowering, may be had post free on application.
Nursery and Seed Establishment, Westerham, Kent.

FLOWER ROOTS.
A. PONTEY has received a fine collection of DUTCH FLOWER ROOTS, which he offers at very low prices. A CATALOGUE will be forwarded on application.
The Nurseries, Plymouth.—October 15.

FERN CATALOGUE.
ROBERT SIM'S NEW DESCRIPTIVE AND PRICED CATALOGUE, No. 6 (62 pages) of his COLLECTION of BRITISH and EXOTIC FERNS, can be had, post free, for 8 stamps. Gratis to all previous purchasers of Ferns.
Nursery, Foot's Cray, Kent, S.E.

WHOLESALE CATALOGUE.
GEORGE JACKMAN AND SONS' PRICED and DESCRIPTIVE CATALOGUE for 1859, & SPRING 1860, can be had on application.—Woking Nursery, Surrey.

TO THE SEED TRADE.
ABRAHAM HARDY AND SON, SEED GROWERS, Maldon, Essex, respectfully call attention of the Trade to their FORTIETH ANNUAL WHOLESALE PRICED CATALOGUE OF SEEDS, which may be had on application. They particularly recommend to notice their superior stock of CUCUMBERS.—October 15.

PLANTING.
A. PAUL AND SON invite attention to their large and superior Stock of CONIFERÆ and other ornamental TREES and SHRUBS, FRUIT TREES, &c. For further particulars see advertisement in *Gardeners' Chronicle* of last week.—Nurseries, Cheshunt, Herts.

LARGE EVERGREENS, ETC.
WM. CUTBUSH AND SON invite planters wishing to produce an IMMEDIATE effect to their fine stock of EVERGREENS, &c.; and as all HARDY STOCK is kept CONSTANTLY TRANSPLANTED, the RISK of injury by removal is REDUCED to its MINIMUM.—Highgate Nurseries, London, N.

CONIFERÆ.—A very choice collection of these in the finest possible condition, including also several fine specimen plants.
THE BULB AND NURSERY CATALOGUE sent on application to STEPHEN BROWN, Seed and Nursery Establishment, Sudbury, Suffolk.

TO THE TRADE.
WOOD AND SON have a splendid lot of two-year HOLLIES to offer at a very low figure. Having been grown on light land they are well rooted. Price will be forwarded on application.—Barbourne Nursery, Worcester.

HARDY HEATHS.—A Collection of 20 sorts, by name, of the above favourite autumnal flowers, in good plants, at 30*s*. per 100, or 12*l*. 10*s*. per 1000.
JOHN WATERER, The American Nursery, Bagshot, Surrey.

TRANSPLANTED FOREST TREES.—Large quantities of Transplanted ALDER, LARCH, SCOTCH, SPRUCE, HAZEL, SPANISH CHESNUTS, ASH, &c., 1, 2, 3, and 4 feet. A good stock of QUICKS. Samples, with prices, may be had on application.
WATERER & GODFREY, Knap Hill, near Woking.

SPERGULA PILIFERA (a fine quantity in pots).—Fine sized plants, 1*s*. each or 9*s* per dozen. Each plant will divide into quantities of tufts. Directions for planting sent.
Apply to STEPHEN BROWN, Seed and Nursery Establishment, Sudbury, Suffolk.

SPECIMEN STOVE AND GREENHOUSE PLANTS.—A handsome lot of these to be disposed of very cheap. A List with descriptions of the plants, sizes, and prices, sent on application to STEPHEN BROWN, Seed and Nursery Establishment, Sudbury, Suffolk.

BOX EDGING.
FOR SALE, a large quantity, of excellent quality, cheap.—Apply to A. ROBERTSON, Box Hill Nursery, Dorking, adjoining the Box Hill Station, South Eastern Railway, where it may be seen.

GEORGE GIBBS AND CO.,
SEEDSMEN,
26, DOWN STREET, PICCADILLY,
LONDON, W.

GOOD SEEDS. CARRIAGE FREE.
SUTTON AND SONS,
SEED GROWERS AND MERCHANTS,
ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY LIMITED supply every requisite for the Farm and the Garden.
Registered Offices, Union Road, Plymouth.

THE SALWAY PEACH.
CHARLES TURNER can supply fine Trained Trees of this superior late variety, Dwarfs or Standards.
The Royal Nursery, Slough.

BUCKLAND SWEETWATER GRAPE.—This fine early White Grape received the premium offered by the Pomological Society for the best Seedling Grape not having a Muscat flavour, Sept. 9, 1858; also received an extra prize at the Crystal Palace Exhibition, Sept. 8 and 9, 1859. It has been exhibited again this season, and fully maintained the high opinion previously passed on it. Plants, 21*s*. and 31*s*. 6*d*. each.
Dorking Nursery.—Oct. 15.

MUSCAT GRAPES WANTED.—
PINE-APPLES (not under 2 lbs.) WANTED.
PEACHES (large size) WANTED.
Forward immediately to GEORGE TAYLOR,
CHOICE FRUIT SALESMAN,
St. John's Market, Liverpool.

TO FRUITERERS, ETC.
PINE APPLES (for the Lord Mayor's Dinner).—From 10 to 20 or more of first-rate QUEEN PINES to be disposed of. Weight from 3 lbs. to 5 lbs. each. Price on application.—Address T. M. H. Post Office, Winchester, Hants.

PINE PLANTS.
WANTED, some strong SUCCESSION PLANTS.—Letters, stating terms and description, to be addressed to Mr. BUNDY, Wentworth, Staines.

PINE APPLES, GRAPES, &c.
PINE PLANTS, Fruiting and Succession.
GRAPE VINES, from Eyes, for Fruiting in Pots or Planting.
JOHN WEEKS AND CO. can now supply any quantity of very fine strong healthy Pine Plants, either Fruiting or Succession; also remarkably fine strong Grape Vines from Eyes, all the best sorts.
JOHN WEEKS & Co.'s Horticultural Show Establishment is now entirely devoted to the Growing and Forcing of Fruits in great variety, thereby showing the most improved plans of construction, and the most superior system of Hot-water Apparatus.
JOHN WEEKS & Co., Horticultural Builders and Hot-water Apparatus Manufacturers, King's Road, Chelsea, London, S.W.

STRAWBERRY PLANTS.—Elton Pine, Sir Harry and Keens' Seedling, 2*s*.; British Queen, Eleanor, Eliza and Admiral Dundas, 2*s*. 6*d*. per 100.
LILIES, ground roots, Orange and Turk's Cap, 8*s*. per 100.
Large LAURUSTINUS.
GEORGE CORNWELL, Barnet, N.

OSCAR STRAWBERRY.
CHARLES TURNER can still supply strong plants, warranted to fruit next season, at 42*s*. per 100.
For full particulars of this fine early variety see previous Advertisements.—The Royal Nurseries, Slough.

LARGE RED GRAPE CURRANT.—Five Thousand Plants, from 1 to 3 years old; also FALSTAFF RASPBERRY CANES to any extent, to be sold remarkably cheap by taking a quantity.—Apply to Mr. MITTON, Laupton, near Isleworth and Hounslow, W.

GREAT SCARCITY OF FRUIT.
STRONG ROOTS OF THE LINNÆUS RHUBARB, from division, can be supplied in any quantity at 12*s*. per 100, or 5*l*. per 1000, by WALTER PENNINGTON, Nurseryman, South Retford, Nottinghamshire.

MAIDEN AND CUT-BACK FRUIT TREES.
STANDARD AND PYRAMID FRUIT TREES.
EXTRA FINE TRAINED FRUIT TREES.
RICHARD SMITH has this season 23 acres of the above. Price on application.
St. John's Nurseries, Worcester.

FRUIT TREES.
J. AND J. FRASER, Lea Bridge Road Nurseries, Essex, N.E., beg to invite purchasers of Fruit Trees to an inspection of their stock, which is this year unusually fine. PRICED CATALOGUES can be had on application.

TO THE TRADE.
J. AND J. FRASER, The Nurseries, Lea Bridge Road, Essex, N.E., beg to offer a large Stock of Maiden FRUIT TREES, including all the best sorts of Apricots, Peaches, &c. The prices, which are very moderate, may be had on application.

LAPAGERIA ROSEA.
MESSRS. ARTHUR HENDERSON AND CO.'S grand Specimen of LAPAGERIA ROSEA is now in great perfection, having many hundreds of blossoms fully expanded. Strong blooming plants may be had, price on application.—Pine-apple Place, Edgware Road, London, W.

A LARGE ASSORTMENT of very fine SPECIMENS of VEGETABLE MARROWS and GOURDS on Show during next week at the New Tiger's Head, Lee Green, Blackheath, Kent. JAMES PHILLIPS, Landlord.

E. SALTER, Strawberry Nursery, Old Brompton, Middlesex, S.W., is prepared to send out his well-known BROMPTON SCARLET DEFIANCE STOCK. It grows 3 feet high and 7 feet round, and has taken the prize three times. Price 12*s*. per 100, postage free 100 miles. Seed 2*s*. 6*d*. per packet.—Post-office Order on Old Brompton.

GARDENERS' CHRONICLE
PENNY

CINERARIA, HERBACEOUS CALCEOLARIA, AND HALF SHRUBBY DITTO SEED.—These have been saved from Turner's most beautiful varieties; in 1s. and 2s. 6d. packets. Primula and Hollyhock, from the newest and handsomest varieties, 1s. per packet. Agents for F. & A. Smith's splendid Cineraria, in 1s. 6d., 2s. 6d., and 5s. packets; also agents for Dobson & Son's splendid Calceolaria, in 1s. 6d., 2s. 6d., 3s. 6d., & 5s. packets.—Catalogues of the newest Flower Seeds, and newest Dutch and Cape Bulbs, sent post-paid.—BUTLER & MCCULLOCH, Seedsmen, Covent Garden Market, W.C.

NEW AZALEA INDICA.

J. IVERY AND SON are now offering the two undermentioned distinct varieties, which they feel assured will become general favourites:—

BOUQUET DE FLORE, received a First-Class Certificate at the Horticultural Society's Meeting, May 4, 1858. Plants, 10s. 6d. and 21s. each.

VARIEGATA SUPERBA received the Bronze Medal of the Royal Botanic Society, June 2, 1858. Plants, 21s. each.

A NEW DESCRIPTIVE CATALOGUE is now ready containing a full description of the above, and also of all the best varieties known, which will be forwarded post free upon application. J. IVERY & SON beg to say that their stock is unusually fine this season; an inspection is respectfully requested.—Dorking, October 15.

CLAPHAM.—EVERGREEN SHRUBS.

CHARLES SOUTHBY begs to inform the Gentry of Clapham and its neighbourhood, that he has a healthy Stock of COMMON LAUREL, PORTUGAL do., BOX-LEAVED PRIVET, ARBOR VITÆ, UPRIGHT CYPRESS, GREEN HOLLY, 1 to 6 feet, &c, all of which removes well from his Nursery, Manor Street, S.

SEEDS and DUTCH FLOWER ROOTS supplied at his Warehouse (late Fairbairn's), High Street, S., where he respectfully solicits all orders to be sent.

FRUIT TREES.

B. WHITHAM, of the Clough Nursery, Mottram, near Manchester, has now ready for disposal 1000 LORD SUFFIELD APPLE TREES, and about 4000 fine strong Trees, including 96 of the best sorts in cultivation, all at 9s. per dozen.

Also a large quantity of best LANCASHIRE SHOW GOOSEBERRIES (160 sorts), at 4s. per dozen; Common kinds, 2s. do. CATALOGUES on application, distinguishing Kitchen and Dessert kinds, and the time each will keep. Cash with order, or known reference.

NEW PINE APPLE—HURST HOUSE SEEDLING.

H. WILLIAMS, late Gardener to A. Fairrie, Esq., is now prepared to send out this fine and useful variety of PINE APPLE; habit similar to Nidularia and Veresia splendens; foliage recurved, making the plant quite ornamental; fruit large and conical, and of good flavour.

H. W. can with confidence recommend this variety to all Pine growers. It is invaluable to the Market grower, as the plants take up so little room. Numerous testimonials could be given, but H. W. thinks it sufficient to add Mr. G. Fleming's, of Trentham:—"An acquisition."—Orders made payable to H. WILLIAMS, Nurseryman, Fortes Green, Muswell, Finchley, N. Price Three Guineas, Two Guineas, and One Guinea, according to the size of the plants.

GLADIOLUS BRENCHLEYENSIS.

YOUELL AND CO. are now sending out strong flowering Bulbs of this magnificent showy variety, the colour of which is bright vermilion scarlet. A box of the spikes of bloom was forwarded to the Editor of this Paper in August last, whose opinion of it will be found in the publication of August 20, page 694, as follows:—

"This must certainly be regarded as one of the most showy and beautiful of the class to which it belongs."

Price 6s. per dozen; 40s. per 100. Trade price on application. Royal Nursery, Great Yarmouth, Norfolk.

CARNATIONS AND PICOTEES.

YOUELL AND CO. are now sending out strong well-rooted Plants of the above at the following prices:—

CARNATIONS, finest first-class show varieties by name, 18s. and 24s. per dozen pairs.

PICOTEES, ditto ditto, 18s. and 24s. per dozen pairs.

" on yellow grounds, 20s. and 30s. per dozen pairs.

Finest mixed Border CARNATIONS and PICOTEES, 9s. per dozen pairs.

True old CLOVE CARNATION, 12s. per dozen pairs.

Scarlet " " 18s. "

White " " 24s. "

(Our extensive stock of the above enables us to offer them to the Trade on most advantageous terms.)

PINKS, finest first-class varieties, by name, 9s. and 12s. per dozen pairs, or fine mixed border, 6s. per dozen.

Royal Nursery, Great Yarmouth.

CHOICE CONIFERS,

ALL SEEDLING PLANTS GROWN IN POTS.

	Per dozen.—s. d.		Per dozen.—s. d.
Pinus Don Pedri, 2 years	60 0	Pinus Lerdoi, 2 years	18 0
,, Veitchii, 2 years	60 0	,, resinosa, 2 years	18 0
,, Popocatepetli, 2 years	60 0	,, corvea, 2 years	18 0
,, macrocarpa, fine, 9 in.	24 0	,, patula, 2 years	9 0
,, Llaveana, 2 years	18 0	,, Ehrenbergii, 2 years	12 0
,, tuberculata, 2 years	18 0	,, popelini, 2 years, each	1 6
,, Benthamiana, 2 years	9 0	,, insignis, fine, 2 feet	18 0

Abies religiosa, 2 years, 21s. per dozen

Cupressus McNabiana, true, 6 inches, 9s. per dozen.

,, macrocarpa, 2 feet, fine, 6s. per dozen.

Taxodium sempervirens, very fine, 2 feet, 24s. per dozen.

Wellingtonia gigantea, fine specimen plants, in 24 pots, 2 feet high, 21s. each.

J. HENCHMAN, Edmonton, London.

MESSRS. WATERER AND GODFREY respectfully refer planters to the following LIST of well-known good hardy Plants:—

ARAUCARIA IMBRICATA, 1 foot, stout, healthy, 5l. per 100; larger, up to 8 feet.

CEDRUS DEODARA, 2½ to 3 feet, very handsome, 10l. per 100; larger, in any quantity, up to 10 and 15 feet.

PICEA NOBILIS, Seedlings, in quantity, 1 foot, stout.

Ditto larger and in every way perfect plants, up to 4 feet.

NORDMANNIANA, from seed, 2, 3, 4, and 6 feet.

PINSAPO, 2½ to 3½ feet, and as much through.

Ditto magnificent plants, 8 and 10 feet high.

CUPRESSUS LAWSONIANA, fine bushy seedling plants, 2½ feet high.

JUNIPERUS, CHINESE, 3 feet up to 8 and 10 feet.

,, IRISH, 5, 6, and 7 feet.

YEWS, IRISH, 5, 6, 7, and 8 feet

,, GOLDEN, from 2 to 7 and 8 feet.

,, COMMON ENGLISH, in large quantities, 4 to 6, 7, and 8 feet.

THUJA AUREA.—Several hundred magnificent specimens, 3, 4, and 5 feet high, and measuring 10 to 15 feet in circumference.

THUJOPSIS CÆREOLIS, 2½ to 3 feet.

WELLINGTONIA GIGANTEA, all from seed, 1½ to 3 feet, and as wide.

HOLLY GREEN, in quantities, 5, 6, and 8 ft.; VARIEGATED, especially the best gold striped, of all sizes, up to 6 feet.

All the plants referred to in this advertisement were removed in April last, and they are in a condition to travel any distance with perfect safety.—Knap Hill Nursery, near Woking, Surrey.

JAMES CARTER & CO.,

237 AND 238, HIGH HOLBORN, LONDON, W.C.

HYACINTHS OF DECIDED COLOURS FOR RIBANDS AND BEDS—DOUBLE AND SINGLE.

CRIMSON	FLESH	BLUE	PURE WHITE
PINK	PURPLE	PORCELAIN	WHITE (PURPLE EYE)

At 4s. per dozen.

The old system of offering HYACINTHS of mixed shades of colour for beds prevents anything like a tasteful arrangement, as the early and late, tall and dwarf varieties are all mixed together. We have great pleasure in offering Bulbs of separate decided colours, equal height, and same kind of flowering, by which our customers will be enabled to form effective groups for early spring. The following extract from our CATALOGUE will be found the most approved method of preparing the beds for planting. "When the bedding plants are removed the beds should be immediately dug up to the depth of a foot or 18 inches; when finished the beds should stand considerably above the level, as moisture is injurious. Five inches of soil may be removed, the ground marked out in squares of from 6 to 9 inches, the bulbs placed thereon with some silver sand under and about them, and the soil which has been removed cast back over them. Or, without removing any soil, mark the beds as before, and take out the place of each bulb with the old-fashioned Tulip planter, which makes a hole about 5 inches deep and 3 inches wide; drop some silver sand in each hole; more sand laid thereon, and the holes filled up. On the approach of severe weather it would be advisable to put on a covering of 2 or 3 inches of rotten leaves; or, when the growth of the bulb appears above ground, immediately cover it with silver sand."

TULIPS for edging Hyacinth Beds and also for clumping:—

	Per 100—s. d.		Per 100—s. d.
Tournesol, red and yellow	7 6	La Candeur, pure white	18 0
Rex rubrorum, scarlet	7 6	Yellow Rose, fragrant	10 0

COMMON HYACINTHS for mixed borders, single and double:—

RED ... BLUE ... WHITE ... 21s. per 100.

LILIUM SPECIOSUM or LANCIFOLIUM, quite hardy, and very effective for forming centres in beds.

ALBUM, extra large roots, per doz.	17s. 6d.; each	1s. 6d.
RUBRUM, " "	22 0 "	2 3
PUNCTATUM, " "	20 0 "	2 0

CROCUS (large Dutch Roots).

	Per 1000.	Per 100.		Per 1000.	Per 100.
	12s. 0d.	1s. 4d.		15s. 0d.	1s. 8d.
Blue			Variegated		
Blue, light	12 0	1 4	Versicolor	18 0	2 0
Cloth of Gold	15 0	1 8	White	18 0	2 0
Purple	12 0	1 4	Yellow, large	18 0	2 0
Scotch	21 0	2 6	Very fine mixed	12 0	1 4
Striped	15 0	1 8	Yellow, second size	12 0	1 4

GLADIOLUS BRENCHLEYENSIS, vermillion, very effective, 5s. per dozen.

We beg to refer our customers to our CATALOGUE OF BULBS (which will be forwarded gratis and post free) for all descriptions of Bulbs for Drawing-room, Greenhouse, or open Border, with practical directions as to culture and treatment. New large-flowered PINKS from Japan. For description and cultivation see Catalogue. Price 1s. and 2s. 6d. per packet.

No. 7, FLORAL ILLUSTRATION (by ANDREWS) is now ready and will be forwarded post paid upon application, price 1s. 6d.

JAMES CARTER & CO., 237 & 238, HIGH HOLBORN, LONDON, W.C.

BUSBY'S STOCKWOOD GOLDEN HAMBURGH GRAPE.

THE very beautiful specimens of this really SPLENDID GRAPE (some of the bunches weighing upwards of 3 lbs.) which have been exhibited during the past season, combined with the numerous unsolicited testimonials as to its superiority and general excellence which JAMES VEITCH, JUN., has received from the most eminent practical Gardeners, warrant him in again calling attention to its great merit.

J. V., JUN., can with confidence recommend it as being without doubt *the best light Grape of its class* in cultivation. It will be found a most valuable acquisition, succeeding well under the same treatment as the Black Hamburgh, and *certainly no vinery should be without it.* That so fine a fruit may be universally planted and enjoyed, J. V., JUN., now offers good established plants at the following prices:—

Nice young Canes	**5s. 0d. each**	**Fine well-ripened Canes**	**10s. 6d. each**
Good well ripened Canes	**7s. 6d. each**	**And a few extra strong ones for pots at**	**15s. each**

ROYAL EXOTIC NURSERY, CHELSEA, S.W.—October 15.

SUTTON'S COLLECTIONS OF FLOWER BULBS.

N.B.—ALL GOODS CARRIAGE FREE TO ALL PARTS EXCEPT VERY SMALL PARCELS.

FOR OPEN GROUND.

COLLECTION No. 1 ... ... £2 2s.

24 Double Hyacinths	300 Crocuses, in 6 colours
50 Scarlet Ranunculus	100 Mixed Ranunculus
24 Double Anemones	24 Single Anemones
12 Pheasant Eye Narcissus	12 Dble White Narcissus
24 Van Thol Tulips	12 Parrot Tulips
12 Double Scarlet Tulips	12 Double Yellow Tulips
12 Choice Irises	12 Gladiolus
100 Double Snowdrops	12 Campernelle Jonquils
6 Crown Imperials	24 Fine Mixed Tulips

COLLECTIONS No. 2 and No. 3.

The above choice sorts in quantities proportionately reduced, **21s. and 10s. 6d.**

FOR POTS AND GLASSES.

COLLECTION No. 4 ... ... £2 2s.

12 Hyacinths, by name	12 Double Sweet Jonquils
12 Polyanthus Narcissus, do.	12 Sweet Persian Irises
12 Tournesol Tulips	24 Dble Van Thol Tulips
12 Single Van Thol Tulips	12 Rex Rubrorum Tulips
6 dozen named Crocuses	6 Gladiolus, by name
1 Lilium lancifolium speciosum	12 Ixias, choice sorts
1 ,, ,, album	6 Dog's-tooth Violets
1 Amaryllis formosissima	3 Fritillarias
1 Cyclamen persicum	3 Achimenes

COLLECTIONS No. 5 and No. 6.

The above choice sorts in quantities proportionately reduced, **21s. and 10s. 6d.**

SUTTON'S AUTUMN CATALOGUE

is now ready and will be sent post free on application. In this Catalogue prices are affixed to every article.

The best 12 HYACINTHS, by name, for pots or glasses, 9s. The second best 12 ditto, 6s. Mixed Double HYACINTHS for beds or borders, 3s. 6d. per dozen.

☞ *None but fresh imported Bulbs are kept on the premises.*

ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.

GERANIUMS, HERBACEOUS PLANTS, ETC.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their new PRICED and DESCRIPTIVE CATALOGUE of the above, to which are added Supplemental Lists of Stove, Greenhouse, and Hardy Plants, Fruit Trees, &c. (which include all the best new plants of the season), is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

AMERICAN PLANTS, &c.

MESSRS. WATERER AND GODFREY'S CATALOGUE for the present season is now ready, and may be had on application. It describes fully all Rhododendrons worth growing, and contains a List of Azaleas, Hardy Heaths, and other American Plants, as well as a summary of the general stock of the most extensive Nurseries in England.

The Catalogue may also be had at Messrs. MAY'S & Co., 1, Wellington Street, Strand, W.C.

Knap Hill Nursery, near Woking, Surrey.

HARDY RHODODENDRONS.

MESSRS. WATERER AND GODFREY invite attention to their Seedling RHODODENDRONS, which they are selling without names, and which they strongly recommend as being very superior in point of HABIT, FOLIAGE, COLOUR, and GENERAL HARDINESS. They are from 1½ to 2½ feet high, and as much through, and no plants can possibly be in finer health. They will be sold at very liberal prices, and purchasers can select from a stock of many thousands.

Knap Hill Nursery, near Woking, Surrey.

RHODODENDRONS.

JOHN WATERER'S CATALOGUE OF HARDY, SCARLET, and other choice RHODODENDRONS, as annually exhibited at the Royal Botanic Gardens, Regent's Park, is now published and will be forwarded on application. Faithful descriptions of all the esteemed varieties will be found detailed, with a list of the popular kinds of AZALEAS and other AMERICAN PLANTS, as well as a selection of CONIFEROUS TREES, with height and prices.

The American Nursery, Bagshot, Surrey, near Sunningdale Station, South-Western Railway.

CATALOGUE.

YOUELL AND CO.'S GENERAL AND DESCRIPTIVE PRICED CATALOGUE for this season is now ready, and will be sent free on application.

It contains detailed Lists of Greenhouse Plants, Conifers, Shrubs, as well as all the newest introductions in Soft-wooded Plants.—Royal Nursery, Great Yarmouth.

CHOICE GERANIUMS.

JOHN DOBSON AND SONS' Annual DESCRIPTIVE LIST of all the leading kinds of SHOW, FANCY, and SPOTTED GERANIUMS, together with a SELECT LIST of CINERARIAS and FUCHSIAS, is now ready, and may be had post free on application; it includes several new varieties now offered for the first time.

Woodlands Nursery, Isleworth, and High Street, Hounslow.

ERICAS.

F. AND A. SMITH'S Stocks of the above are this season unusually fine, comprising most of the leading winter and spring-flowering varieties. Prices on application.

Dulwich, Surrey, S.

CAMELLIAS AND AZALEA INDICA.

F. AND A. SMITH beg to offer the above well set with flower buds, dwarf, bushy, and thoroughly ripened off. Having been grown in this country they are most suitable for packing, and are strongly recommended to country Amateurs and the Trade in general. An inspection invited. Prices on application.—Dulwich, Surrey, S.

CINERARIA, CALCEOLARIA, AND PRIMULA.

F. AND A. SMITH are now sending out SEED of their splendid varieties of the above in sealed packets, without which none are genuine, at 1s., 1s. 6d., 2s. 6d., and 5s. each. To be had also of most respectable Nurserymen and Seedsmen in the Kingdom.—Dulwich, Surrey, S.

CARNATIONS, PICOTEES, ETC.

CHARLES SCHOFIELD has now ready first-class varieties of the above Flower at 12s. per dozen pairs; also PINKS, 4s. to 8s. per dozen. CATALOGUES may be had free.

Knowsthrope, near Leeds, Yorkshire.

CARNATIONS.

J. HARRISON begs to inform his friends and the public generally that he has a stock of several Thousand pairs of the choicest and best CARNATIONS AND PICOTEES in cultivation to dispose of, at 1s. to 1s. 6d. per pair. The stock are in most beautiful health and well rooted, a CATALOGUE of which will be ready in a few days.

Darlington Nursery.—October 15.

TO THE TRADE.

GLADIOLUS BRENCHLEYENSIS BY THE 1000.

J. MORGAN having this season grown a very extensive stock of this most beautiful Gladiolius, the bulbs of which are exceedingly large and well matured, is enabled to offer them at unusually low prices, which may be had on application.—Horticultural Establishment, Torquay.

TO NURSERYMEN AND AMATEURS.

TO BE SOLD, the property of a gentleman, deceased, about 100 ORCHIDS and STOVE PLANTS in good condition, pair of fine CROTONS, 7 feet; also six bushy ORANGE TREES, from 5 to 7 feet.—Mr. J. LEGG, Nurseryman, Gosport.

JUST ARRIVED, a fine lot of ORANGE TREES, CAMELLIAS and AZALEAS; handsome ORANGE TREES, with Fruit and Bloom, 2s. 6d. and 3s. 6d. each; do., 1s. 6d. and 2s.; CAMELLIAS and AZALEAS, well set for Bloom, 18s. and 21s. per dozen; DUTCH FLOWER ROOTS, 20 per cent. under the usual prices.—R. GREEN, 154, Kingsland Road, N.E., 55 doors from Shoreditch Church. No connection with any other house.

TO PLANTERS OF CONIFERS.

YOUELL AND CO. can supply 50 species of RARE AND HARDY CONIFERS in good plants for 5l., package included, and carriage paid to London, Manchester, Newcastle-on-Tyne, Hull, or to any Railway Station within 150 miles of the Nursery. A List of the above can be had on application.

Royal Nursery, Great Yarmouth.

ARAUCARIA IMBRICATA.

YOUELL AND CO. beg to inform the Trade that they have to offer a fine and healthy stock of the above in 1-year-old plants. Prices on application.

Royal Nursery, Great Yarmouth.

ARAUCARIA IMBRICATA.—The finest lot of trees in the world of this noble plant, from 1 to 10 feet high, are to be seen at H. LANE & SON'S Nurseries, Great Berkhampstead, and they strongly recommend gentlemen and planters to view them. This forms the most noble tree for Avenues and Plantations. There is a most beautiful specimen at Dropmore, which the intelligent gardener, Mr. Frost, feels great pleasure in showing.

They also have a fine stock of CEDRUS DEODARA, ABIES DOUGLASII, IRISH YEW, &c., from 5 to 10 feet high, for immediate effect.

BUTLER AND McCULLOCH.

HYACINTHS, &c.—A DESCRIPTIVE AND PRICED CATALOGUE, with practical Cultural directions, for Amateurs, sent free and post paid on application. Orders amounting to 21s. sent carriage paid. The following choice collection (A) for Conservatory and out door Culture, for 21s., or the half for 10s. 6d.;—12 Superior named Hyacinths, 6 mixed Hyacinths, 6 Polyanthus Narcissus, 50 Border Narcissus, 25 Sweet Scented Tulips, 50 Double Tulips, 100 Crocus, 100 Snowdrops, 12 beautiful Iris, 50 Ranunculus, 25 Anemones, 12 Fritillarias.—Covent Garden Market, W.C.

BUTLER AND McCULLOCH'S DESCRIPTIVE AND PRICED CATALOGUE OF DUTCH AND CAPE BULBS, WITH PRACTICAL CULTURAL DIRECTIONS FOR AMATEURS, SENT FREE AND POST PAID ON APPLICATION.

ALL ORDERS AMOUNTING TO 21s. AND UPWARDS SENT CARRIAGE PAID.

The lovers of the Gladioli will find in B. & McC.s Catalogue descriptions of the most beautiful of this highly ornamental and favourite genera.

For the contents of B. & McC.'s Catalogue, see *Gardeners' Chronicle* of Oct. 1, page 786.

For collections of Bulbs, see *Gardeners' Chronicle* of Oct 8, page 803.

Agents for Tye's new registered Hyacinth Glasses, see woodcut group of glasses, page 103, of *Gardeners' Chronicle*.

The early Handsworth Potato, the earliest and best for forcing, very dwarf and very prolific, 3s. 6d. per peck.

Imperial Kidney, the best late Potato, the most prolific, and of very superior quality, 3s. 6d. per peck.

Covent Garden Market, W.C.

NEW DUTCH FLOWER ROOTS.

CHARLES TURNER'S CATALOGUE of these valuable spring flowers is now ready, and may be had free on application.

The Hyacinths, Tulips, Crocus, &c., have been selected with the greatest care from the best growers, and have arrived in fine condition.

C. T. will be able to execute any orders intrusted to him with punctuality.—The Royal Nurseries, Slough.

DUTCH FLOWER ROOTS.

PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN, &c., respectfully announce the arrival of a fine Stock of DUTCH FLOWER ROOTS, and they are now prepared to execute orders for the same.

27, Great George Street, Westminster, S.W.

NEW SEEDS.

TRIFOLIUM INCARNATUM

ITALIAN RYE-GRASS

NATURAL GRASS SEEDS FOR PERMANENT PASTURE LAWNS, &c.

PETER LAWSON AND SON, the QUEEN'S SEEDSMEN, &c., are prepared to supply all kinds of SEEDS for AUTUMN SOWING of the best quality.

27, Great George Street, Westminster, S.W.

SORGHUM, OR HOLCUS SACCHARATUS.

ROYAL BERKSHIRE SEED ESTABLISHMENT.

SUTTON AND SONS having introduced this useful plant to their customers five years ago, and having confidently recommended it in their "Amateur's Guide," have great satisfaction in observing the very general cultivation of the crop this season.

SUTTON & SONS will be obliged by any communications from their customers containing particulars of their success in cultivating the Sorghum this season, including the kind of soil, manure, time of sowing and cutting, weight of crop per acre, &c.—Reading, Oct. 15.

SUTTON'S CHAMPION SWEDE AND IMPROVED MANGEL WURZELS.—THREE MORE SILVER CUPS and several other prizes have already been awarded THIS SEASON to SUTTON'S CHAMPION SWEDE and Improved Mangel Wurzels.

Messrs. SUTTON & SONS will feel obliged by any additional information as to Prizes awarded to Roots raised from their seeds. New Seeds are now ready for delivery. Champion Swede, 1s. per lb., 4s. per bushel. Mangel Wurzel, 9d. per lb., or cheaper by the cwt.

N.B. The Royal Berks Root Show will be held at Reading in November, at which numerous Prizes will be awarded as usual to pulled roots of Swedes, Turnips, Mangels, Carrots, Kohl Rabi, &c., from any part of the kingdom.

Royal Berkshire Seed Establishment, Reading.

PAMPAS GRASS.—The present is the most favourable time for planting out this charming Plant. No one can imagine the grand effect of a mass of its silvery plumes unless they see it, nor is its value confined to the ornamental, but is likely to become useful as Cover for Game. It grows in any soil or situation, attaining the height of from 6 to 10 feet.—Any quantity can be supplied by C. NOBLE, Bagshot, Surrey.

SPRAGUEA UMBELLATA.

HUGH LOW AND CO. have pleasure in offering healthy plants, well established in pots, of the above-named beautiful novelty, introduced by them from California, and exhibited at the July meeting of the Royal Botanic Society in the Regent's Park. Price 12s. per dozen. It can be seen finely in flower in the open ground at the Clapton Nursery, N.E.

ROBERT NEAL, NURSERYMAN, Wandsworth Common, S.W., begs to call the attention of buyers to his large and well-selected stock of EVERGREENS and FLOWERING SHRUBS, ORNAMENTAL TREES, AMERICAN PLANTS, FRUIT AND FOREST TREES, STANDARD AND DWARF ROSES of every description. A large stock of BOX-LEAF EVERGREEN PRIVET, from 1 to 6 feet for hedges; GREEN HOLLY, 1 to 6 feet; RICH BOG and LOAM for American Beds; LEAF MOULD. The Nursery is 10 minutes' walk from Clapham Common, and New Wandsworth Station, Crystal Palace Line.

BEGONIA MARSHALLI.

WILLIAM COLE will send out the above beautiful variety, raised by Mr. Franklin, Gardener to J. G. Marshall, Esq., on and after the 26th inst. It has been exhibited at the Regent's Park, Kirkstall, Halifax, Shipley, &c., and Certificates have been awarded to it. It is universally admitted to be by far the handsomest of all the Begonias, and will be invaluable for Exhibition purposes. Drawings by Mr. Andrews free by post for eight stamps.

For further particulars see *Gardeners' Chronicle* of July 16; also Sept. 10; also "Cottage Gardener" of July 19 and Sept. 13.

Strong plants 15s. each, with the usual discount to the Trade.

Post-office Orders payable at Manchester.

Nursery, Withington, near Manchester.—Oct. 15.

THE BEST FRAME CUCUMBER.

SUTTON'S BERKSHIRE CHAMPION 1s. per packet.

CARTER'S CHAMPION, 1s. per packet.

IMPROVED SION HOUSE, 1s. per packet.

Free by post from SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

WINTER BLOOMING PLANTS.

CAMELLIAS, CHINESE AZALEAS, EPACRIS, ERICAS, of various sizes and all in unusually fine condition. Many thousands of these plants can be seen at the Nursery of the Subscribers.

DWARF OTAHEITE ORANGES in fruit.

CATALONIAN JASMINE (Jasminum grandiflorum).—Fine plants, grafted on short stems, and full of flower buds.

SPRAGUEA UMBELLATA, introduced by H. L. & Co. from California, is now finely in flower in the open ground.

Inspection respectfully invited.

HUGH LOW & Co., Clapton Nursery, London, N.E.

VIOLETS.

ROBERT SHACKELL begs to offer very strong plants in bloom of his

Russian superb VIOLET	per dozen	12s. 0d.
Small Plants..	,,	4 0
Very strong Plants of the Double Perpetual		
Tree Violet, in bloom	,,	6 0
Small ditto	,,	4 0
White Tree Violet	,,	4 0
White Double Violet	,,	4 0
Spring Double Violet	,,	4 0
Neapolitan Violet	,,	4 0
Old Russian, per hundred, 10s.;	,,	2 0

Locksbrook Nursery, or 5, Broad Street, Bath.

QUICKS, QUICKS.

WANTED, 1,000,000 SEEDLINGS, one-year-old.—Price and samples to be sent to B. WHITHAM, Clough Nursery, Mottram, near Manchester.

COMMON LAURELS.

R. GADD AND SON have to offer 50,000 of the above from 2 to 6 feet high, extra stout and well rooted; 30,000 Seedling and Bedded Evergreen Oaks; Bays, 1 to 4 feet; Laurustinus, 1 to 2½ feet. Price on application.

Salvington Nurseries, near Worthing.—October 15.

SPLENDID NEW ORNAMENTAL FOLIAGED PLANT—CONATANTHUS, OR CALADIUM CUPREUS.

HUGH LOW AND CO. have now in their Nursery a magnificent specimen of the above-named new plant, which was imported by them from Borneo. It was exhibited at the July Show of the Royal Botanic Society, where a Certificate was awarded to it, but the plant was then newly imported, and was consequently small. It has now developed itself, and proves to be the finest ornamental foliaged plant introduced up to the present time.

The Floral Committee of the Horticultural Society of London in awarding it a FIRST-CLASS CERTIFICATE appended to it the following remark:—"ONE OF THE MOST STRIKINGLY BEAUTIFUL OF ORNAMENTAL FOLIAGED PLANTS." No description can convey an adequate conception of its surpassing beauty, and therefore H. L. & Co. invite an inspection. They will have pleasure in showing it to any gentleman who may favour them with a visit.—Clapton Nursery, London, N.E.

MR. EDWARD MILNER having constructed and laid out the Crystal Palace Gardens and Park, Sydenham, under the direction of Sir Joseph Paxton, and having managed them for the Company till last Midsummer (when owing to the pressure of other professional duties his engagement terminated), desires to express his acknowledgments to those Noblemen and Gentlemen who have honoured him with their patronage, and to state that he continues to undertake the execution of works of a similar character.

An active experience of upwards of 20 years enables Mr. MILNER to offer his services in the formation and improvement of Parks, Gardens, and Ornamental Grounds, also in preparing designs for Conservatories and other Horticultural Buildings; in establishing and thinning Plantations and Woods, with special reference to the trees most suitable for particular soils and aspects, the valuation of Timber, Draining, Road-making, &c.

Mr. MILNER is permitted to refer to Sir Joseph Paxton and to several Noblemen and Gentlemen for whom he has done work.—Address, EDWARD MILNER, "Oxford House," Anerley Road, Norwood, S.

HORTICULTURAL SOCIETY OF LONDON.—Notice is hereby given that the Council are about to appoint a SUPERINTENDENT to take entire charge of the Gardens at Kensington Gore and Chiswick. Persons desirous of offering themselves as Candidates are requested to apply IMMEDIATELY by letter, addressed to "The Chairman of the Sub-Committee for selecting a Garden Superintendent." The salary proposed, if a thoroughly competent person should offer, will be 300l. a year and a residence, or allowance in lieu of it. No one should apply who has not been engaged in the highest class of similar appointments.

8, St. Martin's Place, W.C., London.—Oct. 15.

The Gardeners' Chronicle.

SATURDAY, OCTOBER 15, 1859.

THE subscription to the NEW GARDEN AT KENSINGTON GORE has now arrived at a point which leaves no doubt that the sum required, 50,000l., large as it is, will be speedily forthcoming. Last night the amount announced was estimated at about 44,200l., viz.:—

Donations	£1860
Life Subscriptions	7750
Debentures bearing 5 per cent. interest and carrying personal privileges	34,600
	£44,210

We say estimated, because it is sometimes uncertain whether the new Life Members intend to pay 21l. or 42l.; and such uncertain cases are taken at 26l. 5s. But it is probable that many of these are in reality intended for 42l.; and moreover several gentlemen who have announced their intention to support the measure generally have not yet determined in what form their subscription shall be given. All things considered, it may be

assumed that 45,000*l.* out of 50,000*l.* has been already secured; and fresh subscriptions are announced almost daily.

Under these circumstances it is clear that operations will soon commence, and that the present winter will not pass over without progress having been made in the ground work. Something indeed has already been effected, a considerable number of trees likely to bear removal having been prepared under the direction of the Garden Committee by having their roots cut back both at Chiswick and Kensington Gore. When the time shall come for transplanting such heavy masses to their positions we shall see some better method of moving adopted than that employed just now by the ingenious people at work in the grounds about to be added to Chelsea Hospital, where, the other day, *seventeen labourers* were struggling in vain to get some old Lilac bushes on a truck. Four men and a M'Glashan tree lifter would have carried off in 10 minutes a mass five times as heavy.

Matters of this kind obviously demand the direction of some most skilful practical officer, and it will excite no surprise to see in our advertising columns a notice from the Council of the Horticultural Society, announcing their intention to proceed immediately to the appointment of a Garden Superintendent. So much will depend upon the conduct and skill of this officer that the selection of a fitting person is one of the most important duties the Council have now to fulfil. He must be a thoroughly practical gardener, versed in every department of horticulture, and known to be so by his works; not a fine gentleman who imagines that fruit growing is the great art and whole duty of man. He must be a skilful ground workman, and experienced manager of men, young enough and active enough to bear the strain which the work of such a Superintendent must render inevitable for at least the few first years. Nor is this all; he must be popular with his brother gardeners, familiar with the management of public exhibitions, and with such an appearance and address as will enable him to receive visitors of all ranks in a manner becoming the magnitude of his charge.

With no lower qualifications than these ought the Council to be satisfied. If they can command a higher standard so much the better. The enterprise in which the Horticultural Society is now engaged is of such vast importance that no means can be neglected to secure the highest talent that this country is able to supply. We hope soon to announce that a Superintendent equal to so great a trust has been found.

The influence of Fungi in the production of disease both in the animal and vegetable kingdom is now acknowledged by almost every person who has made their pathology a specific study. In the vegetable kingdom the Fungi which induce disease are extremely numerous and of very different affinities; in the animal kingdom, on the contrary, they are few, closely allied, and, as far has been ascertained, belonging to the most common and widely diffused forms. Many indeed have received distinct names, but we believe that they are for the most part referrible to the very common species of Mucor Aspergillus and Penicillium, and it is remarkable that Dr. Lowe has induced certain skin diseases, which beyond doubt are ascribable to Fungi, by inoculation with the granules of yeast, which, as is well known, is a mixture of the spores or germs of species belonging to those genera.

One of the most curious forms which occur in animal pathology is the *Sarcina ventriculi*, which consists of square quadripartite bodies, wearing the aspect of an Alga rather than of a Fungus. This strange production we have always regarded as an anomalous condition of one of the common moulds above mentioned, and our notion is confirmed by an observation of Dr. W. Tilbury Fox, in the *Lancet* of Sept. 17, that he has found bodies exactly resembling Sarcina in severe *Tinea tonsurans*, a very unlikely condition for the development of a stomach fungus, except there be some closer relation between these organisms than is generally supposed.

It is beyond our province to enter at length into the observations which he brings forward to show the identity of parasitic Fungi affecting the human surface, and of several of the skin diseases which are commonly believed to be distinct, as it would involve details which belong to medical matters which would necessarily be unintelligible and uninteresting to the majority of our readers. We have however an important observation of Dr. Lowe before us, which tends to show that our notion as to the origin of Sarcina is correct. He had placed some months ago some crystals of cholesterine in water. On examining the contents of the phial a few days since he found that they were full of Sarcina, a specimen of which is now upon the field of our microscope. This observation, combined with that of Dr. Fox, tends to show very clearly that the Sarcina is no peculiar plant, but a mere condition of some common mould. It is true that no one has yet seen the bodies of which it is composed germinate; as however it appears under such different circumstances, it is all but certain from analogy that it is but some abnormal form, and the more so when it is remembered that a closely allied production of a bright orange colour has been found on putrid bones by Mr. Stephens.

The subject is not without its bearing on vegetable economy. If the parasitic growths which do so much mischief in the animal kingdom assume such varied forms, we may be prepared for similar phenomena amongst vegetables. The history of the Hop and Grape mildews indeed presents us with facts and changes scarcely less surprising, and bids us keep our eyes open when investigating other diseases amongst the objects of cultivation. Again, if the elementary organs of plants are capable of such change, need we be surprised at the instability of so many species, and the uncertainty which attaches itself to so many of the generic divisions proposed by authors. Botanists of the present day are more and more alive to the changes of which species are capable, and till the extent of them is generally felt, we shall have science overwhelmed with a host of forms, of which even the authors themselves have no definite notions. *M. J. B.*

Can any of our correspondents lend a helping hand to their brethren in Tasmania, where A plague of Thistles has invaded the land and threatens as much mischief as clouds of locusts? We learn from one of the principal proprietors in this important colony that acres and acres are already overrun, and that the mischief is spreading at such a rate that the landowners are seriously alarmed and asking for legislative interference. But what shape can such interference assume? These pests are not merely in open plains but swarm in the thickets and dense forests.

It appears that three species of Thistle have taken up their residence in the island; viz., 1, Carduus lanceolatus; 2, C. palustris; and 3, C. arvensis; the first a biennial, the second an annual, and the third a perennial. How are these to be dealt with? That is the question.

It is evident that continual destruction of the flower heads before the flowers open fully would ultimately expel the two first; but it would have no effect upon the last and worst, or perhaps might make it spread faster than ever. It would therefore seem better to depend upon mechanical contrivances for clearing the land of all at the same time, care being also taken to destroy all flower heads the moment they are distinguishable—a business that would suit children—if children there be available for such work. In a common near where we are writing Carduus arvensis has almost disappeared under the influence of geese, donkeys, and horses, except where the turf has been skinned off for the surrounding gardens; in such bare places it is as rampant as ever.

But it would be of very great value to Tasmania if some of the intelligent correspondents of this Paper, whether horticultural or agricultural, who have themselves had to deal practically with a plague of Thistles, would have the kindness to state how they proceeded. Some of our Irish, or even Yorkshire friends must remember when such a duty devolved upon them, and we venture to promise beforehand the hearty thanks of our distant fellow-countrymen for all such advice upon the subject as may be communicated.

HOLLY TEA.

Some years ago I wrote a letter which was published in the Journal of the Horticultural Society of London on this subject; that letter was afterwards copied into many of the provincial newspapers, and may therefore be said to have prepared the public mind for the present communication. Should I be able to succeed in getting the people of this country "addicted" to drinking this species of liquid food as the people of the finer country of Paraguay are "addicted" to the use of Holly Tea, it would be worth years of toil, and would eventually wrench from sin and Satan myriads of men who are handed over to every vice from the besetting habit of intemperance. What would the drunkard's wife and family give to see the husband and father of the family addicted to drinking the costly Chinese Tea with all its heavy duty and sea-borne expenses? But what should we say if the healthy and cheerful beverage for a family could be got of the highest quality as a Tea and without the heavy duty and sea-borne expenses of the Chinese Tea? The bare fact of a nation of highly civilised Christians being "addicted" to drinking Holly-leaf Tea is worthy of being engraven in golden letters and holden before the eyes of old and young till they can spell the marvellous import of its mission. I tell you plainly now, however you may smile at the sentence, that it has seldom fallen to the lot of any single individual to have it in his power to do so much good in a lifetime as may be done by the introduction of such a social reform, coupled with its economy; for, mind you, the drunkard's poverty falls heavily upon his innocent family, and upon parish relief, as well as the drunkard's crimes and bad example. A beverage therefore free of the intoxicating character of alcoholic drinks and of the costly character of Chinese Tea is by no means an ordinary boon to mankind, and I have no doubt that a wise and bountiful Providence gave us the native tree for our food, and gave it an evergreen character so that, like the tree of life, it should never fail, summer or winter, to yield the necessary supply. It has no need of being gathered into barns like the Olive, the Vine, and the bread corn; I believe that I have seen Holly leaves seven years old upon the tree, as if they were granaried there by Him who feeds the "callow young of the raven" and "clothes the Lily," to feed the offspring of Eve (the mother of all living). The Jesuits directed the manufacture of Holly-leaf Tea, so as to make it excellent and so agreeable to the taste that it might take hold of the habit which the natives already had of this species of drink; for the decoction of the leaves of certain plants has been habitual to the Indians from time immemorial, and right glad should all well meaning people be to see drunkenness dethroned and this idol set up in its stead, for as long as hunger and thirst craves so long will a supply be wanted, and let us not offer our fellow-creatures when they cry for thirst a draught to do them grievous bodily harm any more than if they asked for bread to offer them a stone.

The highest chemical authorities agree that Holly Tea contains "theine," the active ingredient in Chinese Tea and Arabian Coffee; the article is moreover extensively manufactured and traded in, carried thousands of miles to the consumers, and drunk by young and old at all times of the day. As I have already stated my views upon this subject in the letter above referred to, I would only now remark that the geographical range of the Holly is perhaps without a parallel in the distribution of plants. The species of Ilex lately introduced into this country and known only to botanists and to such parties as may have seen them exhibited at the Chiswick fêtes are beautiful in the highest degree; and that mind must be dull indeed that can see no beauty in our own native Holly adorned with its coral fruit to hail the birth of Christ and feed the blackbird and other birds of song. But what most concerns us now is the argument that the plant being scattered in high latitudes as well as in low latitudes, and growing luxuriantly everywhere, cannot be looked upon as an affair of chance but a gift of God, for we see Wheat succeeding to admiration in all soils and situations, and even where it will hardly ripen a nearly allied corn plant steps in to make up the deficiency, and so it seems to be the case with Tea (Thea), Coffee (Coffea), Paraguay Tea (Ilex).

I have prepared Holly Tea in all sorts of ways for years, and have amused my friends with trials of its qualities. I have roasted old leaves and young ones, and have charred some quite dark brown, and find that to be the only safe way of using the article in our present state of information and manipulation of the article. If I were to throw down unroasted Coffee of the highest quality to some maid of all work to bake for my breakfast I fear I should not relish the Coffee thus roasted; still if it were baked enough the unpleasant and perhaps unhealthy flavour would be got rid of, and this is all I can say at present. It must be distinctly borne in mind that Chinese Tea is baked in a particular manner by experienced hands, as Mr. Fortune in his work on China has clearly told us, and we must in like manner bake our native leaf so as to preserve all its good qualities for our use, and never think of laying the blame due to our own bungling to the fault of the Holly-leaf, which has been proved to be excellent in good hands. I calculate that very good Tea may be made now (before Christmas) at one farthing per ounce, and even at this low figure a fair margin may be realised as profit to the maker.

If it be true that 25,000 tons of Chinese Tea are used in this country, and that moderately-priced tea is about 4*s.* per lb., what a gathering does this represent! Poor old creatures in the decline of their days labouring hard when they have years ago been unfit for work, to get the money to buy Tea—their only solace; think only of the aching limbs, and the aching heads, the long hours of labour, that have gone to make up the twenty times 500,000*l.* that have to be paid for the Tea leaves only, not to speak of the sugar, for that has to be sacrificed. During the last 30 years I have cultivated every Holly that could be purchased for money in this country, and having had a first-class education as a gardener, and being a corresponding member of the Horticultural Society of London, I may be considered a fair judge at this time of life of the nature of Hollies, and as the fruit of dearly paid for experience, I may now be allowed to state that I know of no good reason why the leaves of our native Holly (Ilex Aquifolium) should not henceforth be our Tea leaves. I have compared the flavour of roasted Holly-leaves used as Tea, and can assure any one that I have paid 4*s.* a pound for worse Tea from the shops. The

Holly Tea leaves should be as brown as the crust of well-baked bread, yet not burnt black like charcoal. Holly Tea leaves are not fit for food raw. They have to be baked; they have to be kept after they are baked; age improves the Tea. Young leaves differ essentially from old leaves, and when very young have little or no flavour. Holly-leaf Tea should be drunk in weak solutions, not strong tea at first. Try it with a good will and no prejudice, convinced that better men and women too than we are have used it during the term of their natural lives, and blessed God for bestowing it upon them. I might say a great deal more respecting the plant, its cultivation, propagation, and the like, but my brothers of the gardening trade, and particularly the nurserymen, are in no need of my advice on this head, and I commend it to their interest to forward the good work. To the landed proprietor I would beg of him to plant Hollies of all sorts for their beauty, and for God's sake to benefit the poor, to whom the Holly will one day prove an inestimable blessing. *Alexander Forsyth*, 13, *Islington Square, Salford, Manchester.*

Home Correspondence.

Abies Douglasii.—"Knollibus" commences his remarks in your Number for August 20, thus—"Notwithstanding Mr. Barron's experience, and with every respect for his opinion on all matters Coniferous, I think he is at fault in making more than one variety of this Fir." "Knollibus" then takes a rather extensive ramble over the hills, valleys, and forests of his own California, and then assuming a bolder tone, he tells us outright that "wherever a free vigorous growth is obtained the dark green tints prevail, and where a stunted or less free growth exists they invariably assume the 'warm yellow green,' as described by Mr. Barron. "Knollibus" we have little doubt has succeeded in convincing himself that he is right, but we wish to tell him that because his observations have been confined to free and stunted growing trees of the same kind, varying in colour, owing to local circumstances, it still does not follow that all of us are identical. We are here many brethren, and have grown side by side in the same soil; our character never varies, as you will perceive by specimens of lateral branches sent from eight trees, four from the dark blue green, and four from the "warm yellow green." You have an example of five years' growth, our leading shoots of both kinds running from 2½ to 4 feet yearly; generally speaking, the light variety makes the longest leaders. Our cones are distinct in colour when young, and form or size when full grown. Such is our experience. A visit to Elvaston might be of service to "Knollibus," as it has been to others before him. *The Douglas Firs, Elvaston Castle.* [We can confidently endorse this statement. Douglas Firs vary in colour no doubt, like other Conifers, according to the conditions under which they grow. But it is a great mistake to say that only one form of the species exists. The two above spoken of are permanently distinct, the dark green one having leaves whiter on the under side. We believe that it is the original Abies taxifolia, a name which its dark leaves render peculiarly appropriate. There is even a third form, that found in Mexico, to which the name of Tsuga Lindleyana has been given, which is by no means the same as Mr. Barron's dark-leaved sort—to which the name taxifolia should be applied. The latter is by far the finer of the two northern forms.]

Supposed Dimorphism in Portulaca.—The enclosed flat-leaved Portulaca came up with a great number of P. Thellusoni. The peculiarity consists in the plant producing ripe and apparently perfect seeds without any flowers preceding. Will you examine it and give some account of it in the next number of the *Gardeners' Chronicle?* Only two seedling plants of the kind came up in a large bed of the P. Thellusoni. *Ely, Oct.* 5. [It is very certain that if the specimen sent us were really a transformation of Portulaca Thellusoni it would be quite extraordinary; for a plant with flat blunt broad leaves and no petals appears instead of one with slender leaves and large brilliant petals. It is however not a case of dimorphism; for the stranger is only common Purslane, the seeds of which had been *mixed* with the other.]

Gossamer.—Can you inform me what is the cause of that appearance so frequent in autumn, consisting of threads resembling spider webs, commonly called gossamer? If it be the production of that insect, how do you account for their hanging apparently unsuspended in the air, as it is seen 50 or 60 feet high, without a tree or any other object near to which it could be attached? *A Young Inquirer.* [The following passage in Rees's Cyclopædia solves our correspondent's enigma:—"The general method of these creatures (spiders) spinning and weaving the webs is by letting down the thread, then drawing it after them, and so disposing it as they think proper; but in the midst of their work of this sort, if they are closely observed, they will be sometimes found to desist, and turning the tail to the contrary way of the wind they will emit a thread with great violence; no less than that with which a jet of water is discharged from a cock. In this manner they continue darting forth the thread, which the wind takes, and carrying it forwards, it soon becomes many yards long. Soon after this the creature will throw herself off from the web, and trusting herself to the air with this long tail, will ascend swiftly and to a great height with it. The fragments of these lines, or the whole lines, and the spiders attached to them, though unobserved, make these air-threads, and the use nature destines them for is evidently the wafting of the creature along the air, and giving it an opportunity of preying on gnats, and many other insects that inhabit the air, out of the reach of these creatures by any other means."]

Summer Transplanting of Evergreens and Trees.—I have been much interested in the notices you have published relative to transplanting trees and shrubs during summer. My garden and shrubberies average about 920 feet above the level of the sea, and are situated on the north slope of a hill which rises to a height of 1237 feet, and are so thoroughly inland as to be nearly equidistant from the Atlantic and German Oceans. Though common evergreens are difficult to rear in this neighbourhood, they all grow with me in the wildest luxuriance; and having occasion to transplant these at various seasons, either in forming new shrubberies, or removing old ones, I experienced so many losses of, or damage to, valuable plants by transplanting them during winter, that three years ago I determined to give a fair trial to transplanting during summer, when the growth was vigorous. During the first year I limited my trials to young plants varying from three to five years old, including Yews, Portugal and common Laurels, Rhododendrons, Berberis, as also deciduous shrubs and trees of the same age, as Ash, Lime, Horse Chesnut, Plane, Guelder Rose, &c. All these plants were lifted without balls, with naked roots, as in winter planting, as the object was to compare the results with similar removals during winter. These plants were removed at various times from the last week of May till the end of August. To my great delight not one of the summer-moved trees or shrubs failed; all took root readily; and some even made considerable growths before winter. Encouraged by this success, this year, though a most unfavourable one for the purpose, I transplanted many shrubs of from 15 to 20 years of age, as Irish Yews, Chinese Arbor-vitæ, tree Box, Portugal and common Laurels, and Rhododendrons; also several Spruce Firs of the same age, a Wallnut (which just lives at this height), and some Limes, Yews, Silver Firs, and Deodars, from 5 to 10 years old. To my great surprise not one has failed; all appear vigorous and well established, and on examination I find the new soil filled with vigorous new rootlets. Winter planting has never had the same success with me, and some of my neighbours cannot get a single winter-planted Laurel of any kind to grow. A few winters ago I myself lost 50 plants of Portugal Laurel, which had been planted during winter. Not having a McGlashan transplanting machine, the plan I follow is this:—Previous to touching the tree or shrub a pit is prepared in the place where it is to stand from 18 to 20 inches deep, and the bottom is covered about 2 inches deep with fine loam mixed with an equal quantity of well-rotted manure or decayed leaves. The plant is then dug round at the distance of about 3 feet from the stem, if 15 or 20 years old, and when I get below the roots work inwards with a pick till the tree is undermined, when it is pulled over. If the soil be moist and adhesive a good ball is thus got; but if, as this year, the ground be parched, it is nearly impossible to get a ball of soil; but this seems to be of little importance if care be taken not to injure the roots. The tree or shrub is then carried to the pit prepared for it, and its roots carefully spread out and covered with fine soil mixed with plenty of well-rotted manure* and decayed leaves. Two or more pitchers of water are then poured over the loose soil covering the fibres, so as to wet it thoroughly and settle the soil about the roots; the rest of the soil is then put on, and the whole gently firmed with the foot. In the afternoon a panful of water was thrown over the leaves, and the operation was finished. This year, in consequence of the excessive drought, every large plant so transplanted was twice watered during the first week after removal, and was then left to itself. From my experience I have no hesitation in saying that in this high part of the country summer transplanting of evergreens and trees of moderate height is far superior to winter planting. Whether it would do for general planting of forest trees I am not yet prepared to say; though I may mention that the planting of the hill above alluded to was not finished till the end of June, and more flourishing trees it would be difficult to meet anywhere. *James Stark, M.D., Huntfield, by Biggar, Upper Ward of Lanarkshire.*

[* Does our correspondent use dung for his Conifers?]

Mushrooms.—As regards "D. F. C.'s" query in your last Number, I would add a remark that although the autumn set in with promise of a great Mushroom season, the appearance of them ceased all at once, and a large fungus very difficult to distinguish from the true Mushroom abounded in our meadows. I passed through a field and saw so many and so promising that I sent my man to gather them; but my cook would not deal with them; though there was no mark of distinction to be pointed out, except that they had no fragrance at all. Your mark, therefore, "very fragrant," is the safest and most valuable, for I assure you the gills of these were of bright reddish violet colour, quite as true Mushrooms ought to be. The poor folks who gather Mushrooms about this town tell me that when they see these large funguses abound, which they call "cow Mushrooms," they never find any more of the true Mushroom, and no more of them appear that season. *W. M. R., Bishop's Castle, Salop.*

Spergula pilifera.—Ought there not by this time to be reports from all parts of the country about this Spergula? Is it not time we heard how it is affected by climate, aspect, soil, and cultivation, and had for reference a body of evidence as to its physiology and botanical relations? It was no sooner announced than I destroyed a piece of turf on a slope under the drawing-room window on purpose to make room for a circle of it, and that circle is now a close velvet-like turf, and I am more than satisfied that it will accomplish all that was predicted of it, provided it be fairly dealt by. My circle surrounds a bed of 50 Roses planted on purpose to make a feature of the Spergula. The Roses are in a circular bed 13 feet across, and the ring of Spergula measures 4½ feet on 70 feet in circumference. The whole of the ground was newly made to a depth of 3 feet of maiden loam and turf, well broken up, and in levelling the ring for the Spergula, about half a yard of Hyacinth compost was used for a surface dressing, on the principle that as all we knew about it was that it was an alpine, sand and leaf-mould would be the right stuff in which to give it a start. Five shillings' worth of seed was sown in pans in rich sandy compost, and the pans covered with squares of glass and put on a top shelf till the minute seedlings made their appearance. They were then allowed a little air, and when the plant had made half a dozen of its fine wiry leaves the pans were transferred to a frame. The growth was very slow in the earlier stages; but a pan that was sown three weeks before the rest locked fit for planting out, and was planted out on the 25th of April, making the first ring of plants next the edge of the Rose bed; cold and drought followed; the plants were allowed to chance it, and in four weeks all had perished. Other pans, in which the plants had grown about an inch long, were planted out successively, and the last planting was made on the 2d of June, when the circle that had missed was made good. The 5*s.* worth of seed furnished enough to cover the circle at about 4 inches apart all over. During the whole time the circle of Spergula was not supplied with a single drop of water. I was determined to test its merits severely; and during the drought of June and July it looked anything but promising, for though some of the early planted pieces had grown to patches 3 inches diameter, the bare dry spaces between and the very thin state of the plant generally gave no promise of a speedy surfacing. But since the middle of August the growth has been so rapid that except on one edge, where light rains are kept off by a neighbouring tree, it is now a thick close turf of mossy felt, the separate plants having extended themselves horizontally, rooting at every point with great regularity, and when meeting mixing their growths together in the fashion of some textile fabric. Some of the patches from single plants from the seed pans are now 8 inches in diameter, and I can already afford to remove rooted patches from the best places to plant elsewhere. My experience so far enables me to advise intending planters not to sow in the open ground, for weeds and worms are powerful enemies to this close growing alpine in all its earlier stages. The labour of weeding my piece has been immense; every tuft of Grass, Groundsel, &c., has its own way to tower above the Spergula, and mix its roots with it; and to use the hoe is quite out of the question. The best mode is to hand-weed with the help of an old dinner-fork, to plant at once any scraps of Spergula that come out with the weeds, and then to roll every part of the surface at least half a dozen times. If worms abound in the soil they make their casts under the decumbent stems till they form miniature mole-hills, which the roller does not crush, and hence lime-water, or some other extirpator, must be used to preserve a level surface. If intended to be sown broadcast the ground ought to be got ready long before to allow time to start all weed-seeds, and clear them off before sowing, as also to get rid of earth-worms. When well established, worms may be of no consequence, but I expect weeds will always find encouragement in the moist felt, and weeding will be the chief labour in keeping the Spergula in condition. I ought to add that my piece is in a north aspect, has only the afternoon sun; soil deep moist loam, and the circle elevated 9 inches above the Grass turf, with the Spergula turning over the edge to meet the Grass. If we take the mean between the 25th of April and the 2d of June, during which mine was planted, and allow to this present period, 11th of October, we may conclude that to form a compact turf of Spergula pilifera requires a period of 21 weeks. *Shirley Hibberd, Stoke Newington.*

Will Rhododendrons flower in Autumn?—I enclose you blossoms of R. hirsutum which will answer this question. They were gathered from plants now in full flower by the side of a walk in the grounds of Woodstock Park, the seat of the Right Hon. W. F. Tighe. The grounds in question are famed for the quantity and great variety of Rhododendrons which they contain, and are much admired by all who visit them. Scarlet hybrids commenced flowering last December, and ever since one or more of the varieties have kept up a succession of bloom. Some years ago Sir James and Lady Matheson made efforts to have Rhododendrons in flower in autumn, when they went down to their seat at Stornaway. Could any correspondent inform us what success attended the experiment? The Tussac Grass succeeded in the Lews; the peculiar deep, black peat there may also favour the late flowering of Rhododendrons. Some of the experiments—such as cutting out the flower buds in spring, were of a doubtful nature to secure a good blow in September. *Charles M'Donald, Woodstock, near Inistiogue, Kilkenny.* [The blooms of R. hirsutum sent along with this communication were bright in colour, fresh, and beautiful.]

Conifers at Beauport.—Admirers of Conifers will be

glad to have their attention directed to Beaufort, the beautiful seat of Sir Charles Lamb, Bart., near St. Leonards, to which equestrians are kindly allowed free access. Here is a park of very considerable extent, in which the more rare kinds of Pinus, Cupressus, and other evergreens are growing wildly in all the luxuriance of their native woods, and in great beauty and variety. It is difficult to conceive a richer collection. Of the numerous Araucarias there is one near the mansion, which although not so high as that at Dropmore (being about 45 feet), surpasses it in the beauty of its growth, the lower branches drooping down with the laterals curving upwards in the most graceful form. A Wellingtonia, 2 feet high when planted in April 1857, is now 11½ feet, according to the observation of the steward (who by the way has a fine collection of cones at his beautifully situated house, on the south of the Park). It seems this plant has frequent intervals of rest, thus confirming the opinion of your correspondent in last week's *Gardeners' Chronicle*. The soil in which these trees luxuriate is a near approach to clay. *F. H. S.*

Gourds.—Two fine specimens of "ornamental Gourds" caught my attention on passing through Yniscedwyn, near Swansea, a short time back, on a tour through South Wales. One of a large size, pale yellow, and orange-shaped, measured upwards of 50 inches in circumference, and weighed between 50 and 60 lbs. The plant with its luxuriant growth and fine foliage (some of the leaves measuring more than 2 feet across) was trained over a cottage porch, and had a striking effect. The other, having the size and figure of an ordinary Vegetable Marrow, was elegantly striped with dark green and golden yellow. I also noticed a tall specimen of Sunflower, a new variety lately introduced from California, said to attain the height of 20 feet, showing a bloom nearly 4 feet in circumference. Altogether they formed an interesting group, which must have been highly satisfactory to the cultivator, Mr. James Bird. *An Old Subscriber.*

Yucca gloriosa.—I have in my garden a plant of this Yucca now exhibiting six flower spikes, with a profusion of blossoms on each spike. I wish to ask whether it is not an unusual circumstance to have so many spikes on one plant. They began to emerge from their respective birth-places on the last day of August, and the lateness of their appearance after so hot a summer and within a few miles of the south coast surprised me. The plant is much more than 20 years old. *J. P., Oct.* 13.

Gardeners and their Employers.—Your Correspondent "An Employer" (see p. 789) says that he has combined the offices of steward and gardener, and has known others do the same, but in no one case has it answered. Now permit me to inform him that within a circuit of 4 miles from where I reside, there are no fewer than five instances of one man filling both situation; and three of those are from 10 to 15 years' standing—sufficient proof I think to show that the combination can be successfully carried out. But your correspondent has experienced the same difficulty which others sometimes have in getting a man to fill one or the other place separately. The secret is in getting "the right man in the right place;" let him accomplish that and increase his salary in proportion to his new duties, and "An Employer" will find that there is at least a difference of 150*l.* per annum in wages. *Equity.*

Societies.

Horticultural: *Sept.* 20.—Mr. Edmonds in the chair. On this occasion the Fruit Committee met at the Garden of the Society, chiefly for the purpose of examining the varieties of Grape in fruit in the large conservatory, of which a report will appear hereafter. It was intimated to the Committee that C. W. Dilke, Esq., proposed to place at their disposal for 1860 two prizes of five guineas each for the best specimens of such new fruits as the Committee may select. Mr. W. P. Ayres sent from Orchardleigh Park, Frome, a fruit of his Improved Cashmere Melon, the usual weight of which he stated to be from 4 lbs. to 7 lbs.; it was very handsome, of an oval form, 10 inches in length and 5½ inches in diameter, obscurely ribbed, and slightly netted; yellow, mottled with green; rind exceedingly thin. The flesh was white, crisp, tender, melting, and very good; but the Committee were of opinion that it was shown too late in the season for the full development of the excellence in flavour which it appeared likely to have possessed at an earlier period. Messrs. Veitch exhibited a collection of Syrian Peaches and Nectarines, ripened on an open south wall at Exeter without glass. With one exception they were all sweet kernelled. This class of fruits was originally sent to this country from Syria, by J. Barker, Esq., of Suedia, formerly her Majesty's consul at Alexandria; and they were grown in the garden of his relative, Mr. Warmington, at Kensington, until wholly removed to the Exeter nursery. Peach No. 9; fruit large, roundish oblong, with very deep suture; skin, pale greenish yellow where shaded, marbled and dotted with red next the sun; flesh melting, parting from the stone, at which it is slightly rayed with red, rich and sugary; kernel bitter; leaves crenated, with globose glands. This proved a delicious fruit. Peach No. 12; fruit middle-sized, round, greenish yellow on the shaded side, and mottled with dull red next the sun; flesh parting from the stone; kernel sweet; leaves crenated, with reniform glands. Probably a good Peach, but it was not in condition, being over ripe. Peach No. 13; fruit like a large Noblesse, pale yellowish green, except next the sun, where it is mottled with dull red; flesh adhering firmly to the stone, sweet but not rich, and considered not superior to the old Catherine; kernel sweet; leaves crenated, with reniform glands. The same firm also sent Nectarine 22 A; externally this resembles the Stanwick, but the flesh adheres to the stone, nevertheless it is half melting, rich, sugary, and delicious, with a fine aroma; kernel sweet. An excellent fruit. Nectarine 22 B; between this and the preceding no decided difference could be observed, and as far as could be judged from the fruit, it was presumed they are the same variety.—From Mr. G. Hood, gardener, Mamhead Park, near Exeter, a dish of Stanwick Nectarine, accompanied by the following note: "The fruit sent is not so large nor well coloured as we have had them in other years. They are part of a crop of 120 fruits on a bush tree in a 13-inch pot, and ripened this season without the aid of fire-heat." The specimens, although not so large as the variety usually becomes, were of medium size, about as large as the Elruge. The flavour was very good, but of course not so rich as those ripened with more heat. From this exhibition it is evident that fruit of the Stanwick Nectarine may be abundantly produced without the defect of cracking, to which it is liable. J. Allnutt, Esq., sent a well-grown fruit of the Stanwick from the garden at Clapham. He stated that it was grown in a pot in a house without fire-heat, and that none of the fruit exhibited any sign of cracking.

Oct. 11.—Rev. L. V. Harcourt in the chair. At this meeting were large, finely-grown Beurré Diel Pears from Mr. Vinall, gr. to M. G. Thoyts, Esq., of Reading; and Scagglethorpe Queening Apples, a red kind with little or no flavour, from C. W. Strickland, Esq., Hildenley, near Malton. A kitchen Apple, called Large Cockpit, also came from the same gentleman. Halldoor Apple from Mr. Webb, of Reading, did not appear to be different from Hormead's Pearmain. The same exhibitor also sent Eve Apple, Emperor Alexander, and very fine specimens of Blenheim Orange. From the same grower came, moreover, very fine bunches of a seedling Grape from the Black Hamburgh, ripened out of doors without any protection. Some Pears were furnished from the Society's garden, the best of which was Rousselet Enfant Prodigue, which was juicy and melting, and well worthy of further trial. A specimen of the Salway Peach from the open wall proved dry and flavourless. Some Kidney Potatoes—not free from disease—and two large Cucumbers came from Mr. Webb of Reading.

British Association.—*Continued from page* 810.—New Mode of Bread-making.—By this process the carbonic acid is produced independently of and superadded to the flour, which consequently undergoes no modification whatever. The carbonic acid gas is stored in an ordinary gas-holder, and is pumped therefrom into a cylindrical vessel of water, whereby the water becomes charged with gas. This soda-water is mixed under pressure with the flour, and the resulting dough becomes vesicular on removing the pressure. It is then divided into loaves and baked. This process is so rapid that in an hour and a half from the first wetting of the flour a sack of flour is made into 2 lb. loaves. The advantages of this new mode are—its cleanliness; from the beginning to the end of the operation neither the flour nor the water is touched by the human feet; it conduces to the health of the work-people, it is a very rapid process, it is certain and uniform, and it prevents any deterioration of the flour, so that by this process you can use flour which would require alum in the ordinary process. *Dr. Odling in Chemical Section.*

The Elephant Remains at Ilford.—The first fossil to which I wish to direct attention is the tusk of an enormous mammoth, which was discovered about two years since. It was lying on its side, about 14 feet below the present surface of the soil; and I had the honour of inviting Sir Charles Lyell and other eminent geologists to see it before it was disturbed. It belonged to an animal of the species Elephas primogeneus, and is identified with the Siberian mammoth, and, I believe, with the one found in Behring Straits. The tusk was decayed at each end, the extremities being gone, but the part preserved was over 9 feet long, and of proportionate bulk. Some idea may be formed from this of the huge size of the animal of which it formerly formed a part. It was very much incurved, being so much bent back that the bone was not more than 4 feet 2 or 3 inches across in any part. Owing to the nature of the soil, the whole tusk was very friable, most of the gluten of the ivory being decayed, so that great care was required in moving it to prevent it falling to pieces. This was done in the usual manner by the authority of the British Museum, to whom, by permission of Mr. Curtis, I presented the fossil; it was, however, I regret to say, much damaged by removal, notwithstanding the care bestowed. It was nearly a year afterwards before any more bones were found. I then obtained a large tibia, and two molar teeth, probably belonging to the same animal, as they were not a great way from the tusk. One of the latter was very large, weighing about 12 lbs., though, from long use, much worn. From this, I infer that the mammoth to which it belonged must have been of great age. About the same time, I obtained several bones of a large rhinoceros. These, from their more compact nature, were less decayed; and the tibia and one side of the jaw were very perfect, several teeth being *in situ*. The other half of the jaw was smashed by the workman's pick before I saw it; but I saved several teeth. Like those of the mammoth, they were very much worn. Two of them I gave to the College of Surgeons. The rhinoceros has been referred to the genus Leptorhinus. Associated with these remains were some of the bones of a large ox, the horns and skull of which were very perfect, with several teeth *in situ*. There were also turned up, within the last month or two, some bones of a large ruminant, which I believe to be of the Minocero, or Irish elk; but I have not yet been able to get them exhibited. About 30 years since the late Dr. Buckland discovered the bones of a mammoth in this locality; and about the same time the late Mr. Gibson obtained the beautiful collection of bones now in the Royal College of Surgeons. Associated with the remains of those giants of ancient days are the skulls of Planorbis, Mico, Cyclon, Paludina, &c. And there are now living in the Roden, and other tributary brooks in the neighbourhood, the lineal descendants of these fossils, the ancestors of which enjoyed the same sunshine as the mammoth and rhinoceros, the aristocracy of those days. We boast not of the primary rocks of Scotland, but we have amongst us, living on the same estate as their ancestors, the humble Paludina, Planorbis, &c. They are interesting, for they form, as it were, the link between the past and the present order of things. *Mr. Brady in Geological section.* The President expressed his opinion of the very interesting nature of this paper, showing, as it did, how near to the existence of man on earth those huge creatures lived; the vegetation of their time being such as we are acquainted with. He did not by any means suggest that they were contemporaneous with man, and they must disabuse their minds of the opinion that anything said or published by geologists was calculated to destroy any rational belief. They did not and could not assert—because they had no evidence—that man lived 15,000 or 20,000 years ago; but they produced evidence to show that those creatures lived nearer to our own time than had been supposed; whether at the exact chronology of 6000 years, or thereby, is a matter of indifference.

(To be continued.)

Entomological: *Sept.* 5.—Dr. J. E. Gray, President, in the chair. R. W. Fereday, Esq. was elected a member. The President exhibited on behalf of Dr. Power a number of rare Coleoptera taken by the latter during the present season. Mr. Stevens exhibited a portion of a collection of Lepidoptera, made by Mr. Trimmings in South Africa, containing a fine series of Pieridæ; he also exhibited a living example of Locusta migratoria, taken near Brighton, where the species had been unusually common this season. Dr. Knaggs exhibited a specimen of Polia occulta, taken at Camden Town, and some fine Lepidoptera, taken this season in the south of England, including Clostera anachoreta, a species hitherto considered as a doubtful native of this country; Emmelesia tæniata, Nonagria concolor, Eupithecia expallidata, Simaëthis vibrana, &c.; he also exhibited the living larva of Timandra prataria, feeding on Polygonum aviculare. Mr. McLachlan exhibited a fine specimen of Hadena peregrina lately taken at Freshwater, Isle of Wight. Mr. Stevens exhibited a box of beautiful Longicorn Coleoptera, sent from Sierra Leone by Mr. Foxcroft. Mr. Allchin exhibited a specimen of Leucania musculosa taken at Brighton, and Nola Ceutonalis from Folkestone. Mr. Janson exhibited a fine new species of Adelops, a genus of minute beetles destitute of eyes, found by Mons. Jacquelin Duval in the Pyrenees. Mr. Pascoe announced that the collection of insects of all orders belonging to the United Service Museum was about to be disposed of by private contract. Mr. Tegetmeier had recently noticed that bees resorted to a chalybeate spring for water in preference to all others.

Notices of Books.

Journal of a Voyage to Australia and round the World for Magnetical Research by the Rev. W. Scoresby, D.D., F.R.S. Edited by Archibald Smith, Esq., M.A., F.R.S. London: Longman & Co. 8vo. Pp 315.

The volume of which the above is the title consists, 1st, of an introduction stating the object and result of Dr. Scoresby's voyage; 2dly, of a concise statement of those magnetical principles which bear upon the action of the mariners' compass in an iron ship; and 3dly, of the journal of a voyage made by Dr. Scoresby to Australia and back in the year 1856.

The introduction tells us that the voyage of which this volume contains the journal was undertaken by Dr. Scoresby, with the object of observing the changes which take place in the magnetic state of an iron ship proceeding from a northern to a southern magnetic latitude, and of deciding certain questions as to the best mode of correcting the deviations of the compass in such a ship.

The particular questions to which Dr. Scoresby's attention was directed during the voyage had been the subject of controversy between him and the Astronomer Royal; and related to the nature of the magnetism of the rolled and hammered iron of which an iron vessel is chiefly composed, the changes which that magnetism undergoes, and the mode of correcting the deviation of the compass caused thereby; and particularly to the well-known mode of correcting the deviation by the application of magnets and soft iron. This mode of correction Dr. Scoresby, in common with many others, considered to be not only erroneous in principle,

but dangerous in practice. He protested strongly against it on all occasions, and his sense of its danger was one of the motives which induced him to undertake the voyage.

The Royal Charter was an iron ship of 3000 tons burthen, and was built with her head in the direction N. 50° W. (magnetic). When newly launched, there was, therefore, a strong tendency of the north point of the compass to the port side; the blows and strains which the Royal Charter experienced in her voyage diminished or, so to speak, "shook out" that inequality to such an extent that the standard compass, which had originally a deviation of nearly 20° to the port side when the ship's head was north, had this deviation reduced to 3° 22′ on the ship's return to Liverpool; while the steering compass, which originally had been rather over corrected, returned with an increase of 20° 42′; while the companion compass, originally rather under corrected, returned with a change of 19° 23′. This change shows the complete failure in such a voyage of the correction by fixed magnets. Whatever difference of opinion may be entertained as to applying correctors to the steering compasses of iron ships, it can hardly admit of question that every iron ship should have at least one compass removed as much as possible from the influence of iron, and not corrected by magnets, and should be swung at the beginning and end of every voyage of any length, and the deviation of the uncorrected and corrected compasses, (if any) observed. The journal of the voyage is printed at length and will be found interesting not only to those engaged in magnetical researches, but also to the general reader. The following extracts relate to the spouting of whales and sea-serpents.

"In a former part of my journal, I have remarked on the prevalent error and persuasion of the spouting of water by whales, a persuasion which in one of my earliest essays on Natural History I showed was founded on mistake, for nothing like water, much less fountains and jets of water, is to be seen in the respiration of this order of animals. Yet the error is not only a popular one, but even to this day is supported by many of our eminent naturalists. In again noticing the subject, it is with the purpose of adding the experience, gained in this voyage, of the blowing of several kinds of whales previously unknown to me. In the whales of the Indian Ocean, of the South Pacific, of the South Atlantic, as well as of the North, and of tropical regions, the 'spouting' is but the respiration common to animals breathing the atmospheric air, except in being more dense and steam-like in its expirations!"

Next as to sea-serpents:—"Sometimes the manner of congregating and swimming in the more gregarious or sociable tribes enables us to discriminate the species at very considerable distances. Thus, when on one occasion I was crossing the Atlantic to the United States, the attention of the passengers was called to a very striking assemblage of the whale tribe, pursuing a sportive course nearly parallel to that of the ship, though they were at a considerable distance. One series of society was arranged in a straight line, extending for near a quarter of a mile as in Indian file, and they rose to the surface much about the same time, and pursued for some distance a somewhat systematic undulating course. This peculiar manner and aspect suggested the conviction that they were of the globocephalus species, the Delphinus deductor, described in my account of the Arctic Regions; in which species the forming in line, or following a leader, is a characteristic, and was suggested by my friend Professor Traill as a good demonstrative trait in the habits of the animal. The same appearance struck me as likely to give the impression of the sea-serpent. It is not, however here my intention to express any decided opinion against the various statements which have been made of sea-serpents of prodigious magnitude having been seen."

We are sorry to see a work like this published without an index. It has however an excellent chart.

We have received the following since our last:—No. 6 of *Moore's Index Filicum* (Pamplin), carrying the table of genera as far as Marattia, and advancing the Index itself beyond the middle of the great genus Asplenium. The book continues to be remarkably well done.—Part II. of *Thwaites and Hooker's Enumeratio Plantarum Zeylaniæ;* in this are included the great Leguminous, Myrtaceous, Melastomaceous, and Cinchonaceous orders, and Composites are begun. The following account of Pachycentria Walkeri, a Medinilla-like plant, will we trust secure that plant for gardens. "This is one of the most beautiful plants of the island, covering the trunks and branches of forest trees with a mantle of the most lovely rose-colour." The species inhabits the central province of Ceylon at an elevation of 3000 to 5000 feet. No fewer than 15 species of the pretty genus Sonerila are also enumerated. At the present rate of publication this very useful work will soon arrive at completion.—Messrs. Routledge have brought out a shilling edition of Moore's Handbook of British Ferns, popularised by the author under the name of *British Ferns* and their allies. Mr. Moore has simplified the original so as to render it a first book for beginners, and has omitted the endless varieties, or rather forms, which so abound in the eyes of the Fern collector. There are plenty of characteristic wood engravings which will assist in making the little volume popular, in the proper sense of the word.—Buckland's *Elements of Botany* (Hall, Virtue, and Co.), is a very small shilling pamphlet for the use of children. It would have been called more correctly, First Steps to Botany, for it is nothing more. Mrs. Buckland's object has been to simplify to the utmost a very simple subject, and in doing so she has wisely avoided teaching too much. We would however suggest that Dictyogens have no business in a child's book, and that she does not always seize the simplest marks of distinction. The idea is good, but it is not quite successful in execution.

Under the name of the *Fern Collector's Album* Mr. Hardwicke, of Piccadilly, has produced a handsomely printed 4to Portfolio bound in scarlet and gold, with blank leaves on which dried specimens may be glued by the collector, and short accounts of the structure, habitation, and cultivation of each species on the opposite page. When filled by the collector it will be a little repository of pleasant souvenirs to beguile many a weary hour. We think the beautiful volume bears unmistakeable marks of a lady's hand, on which account, as well as because of its intrinsic merits, we heartily recommend it to those who are looking out for acceptable presents.

Trade Lists Received.—Richard Bradley & Son's (Halam Nursery, near Southwell, Notts) *Catalogue of Plants, Shrubs, Trees, &c.;* rich in Roses, and hardy trees and shrubs, with the addition of a few useful stove and greenhouse plants; among other things Douglas Firs are offered, "fine plants, 10 to 12 and 15 feet."—Wm. Urquhart & Son's (Dundee) *Nursery Priced List;* 11 pages of prices of seedling forest trees and shrubs, the same transplanted, herbaceous plants, greenhouse and hardy Ferns, Roses and florists' flowers.—Wm. Wood & Son (Woodlands, Maresfield), *a Descriptive Catalogue of Roses;* also *General Catalogue of Ornamental Trees and Shrubs;* also *Wholesale Lists of Roses, Fruit Trees, Ornamental Trees and Shrubs, &c. &c.* These three lists taken together form one of the largest catalogues of country nurseries; Roses alone occupy 23 pages, exclusive of unenumerated old sorts which it is stated are also kept.—Croux (établissement d'horticulture à la ferme de la Saussaye, Villejuif, Seine) *Extrait des Prix-courants pour Marchands;* a trade list of fruit trees, fruit tree stocks, and ornamental trees and shrubs grown near Paris.

Garden Memoranda.

The Royal Exotic Nursery, King's Road, Chelsea.—Among the many sights to be seen in the neighbourhood of London, few can exceed in interesting the intelligent observer more than the justly celebrated nursery of Mr. J. Veitch, jun., in the King's Road, Chelsea. No high-domed conservatory or architectural display calls the attention of the passer by to the world of treasures contained within. A plain yet elegant conservatory somewhat Grecian in its style, whose paths form broad commodious promenades, on each side of which are stages filled with the hardier kinds of Palms, Ferns, minature Orange trees laden with golden fruit, fine specimens of Stadmannia australis, whose light brown downy leaves and fine symmetric form eclipse the brighter hues of many gaudy flowers; here too in every stage of growth are Araucarias and other tender beauties of the Coniferous family. On the columns and supports of this conservatory are trained in elegant festoons climbers of various hues and clime;* jardinières, suspended from the roof, filled with graceful drooping plants, the whole forming with their glowing colours and vigorous health a *toute ensemble* rarely, if ever, surpassed. Following the centre promenade of the above-mentioned conservatory, a turn to the right at the end brings us to a house filled with rich, rare, and delicate Ferns; at first sight one scarcely knows which to admire the most.

To attempt to name or describe the vast number of plants here brought together, denizens of the tropical forests, swamps, hills, and plains, by the indefatigable exertions of Messrs. Veitch and their collectors, the brothers T. & W. Lobb, would be a work of too much time and space; but for the information of those who may not have an opportunity of seeing themselves, I will endeavour briefly to describe the general arrangement, appearance, and effect, as well as some of the most striking individual plants. One thing which tells more than any other in the nursery is the successful and effective manner in which the plants are arranged and cultivated; each in accordance to their varying climes and habits are wondrous examples of the perfection to which the art of gardening has brought so many different and difficult subjects in the untoward climate of England.

To return to the Fern house, in which are one or two plants deserving honourable mention. First and most distinguished is a lovely plant of Gymnogramma argyrophylla, the most silvery of all silver-leaved Ferns; some fine plants of Gleichenia speluncæ, with quaint foliage reminding one of a mass of light green coral; a Gymnogramma lanata with soft downy leaves, a thing of quietness and repose; whilst Mohriæ, Nothochlænas, Stemionitis, and Lygodiums are plants that cannot fail to fire the imagination of the most cool observer.

Whether Mr. Veitch has an hospital to which the sick are taken at first symptoms I did not stay to inquire, but judging from the appearance of the Ferns in this house, it did not appear likely he would ever have many on the sick list.

* One of them, Lapageria rosea, smothered with cup-like flowers of bright rose marbled with white; a climber no conservatory should be without.

Passing from this temperate Fern house, you are among a host of Vandas, Aerides, and other aerial Orchids filling a house devoted entirely to their cultivation; here are plants in every stage of growth all glowing with health, whilst the air is filled with a delicious perfume such as the beautiful wax-like flowers of these Orchids alone can give. Another turn, and you are among a swamp of Pitcher plants, looking as healthy and as much at home as if in the thick dank air of their native lands, and it is quite evident from the numerous and fine Pitchers hanging from the tips of the leaves that Mr. Veitch has found out the exact manner in which these plants should be treated. In the same house I noticed some beautiful and tree-like Lycopods of the Selaginella class; amongst the most conspicuous were Selaginella Lyalli, Lobbii, and atroviridis, all plants of erect growth, reminding one of miniature Arbor-vitæ with a kind of polished steel foliage. Leaving this house and crossing the centre path of the nursery to an opposite door, I found a house filled with Cattleyas, without speck or blemish, and looking as happy and as much at home as any of the afore-mentioned.

An adjoining house is filled with Cypripediums, Dendrobiums, Oncidiums, Cymbidiums, and other parasitical natives from tropical forests. From this house a turn to the left brings us into another in which are some fine examples of Tree Ferns, and Orchids requiring temperate treatment. Here I saw a blaze of Odontoglossum grande, a perfect bank of butterfly-like flowers, the finest of the kind I have ever seen. Among them I noticed some variation, several having larger and much more handsomely marked flowers than the general lot.

I may here remark that a son of the proprietor, who kindly showed me over the nursery, informed me that a great deal of the success that attended their Orchid growing arose from a careful consideration of the climate and habits of the plants in their native countries, and assimilating as much as possible that state here, instead of jumbling them up together as is often done, to the utter ruin and destruction of many valuable plants. Leaving the house last-mentioned, you enter a kind of court in which is a somewhat classical arrangement of vases, standing on high pedestals, filled with Aloes, Bonaparteas, Yuccas, &c.; and arranged in parterres on the ground are vast numbers of Araucarias, Azaleas, Camellias, Ilex, variegated Ivy, and a host of things I had not time to note.

Continuing along the centre walk of the nursery I came to another house of glowing interest—the Palm house, in which are some rich and rare objects of those monarchs of the tropical forest. This house is varied in interest with plants whose leaves, instead of flowers, "are of all hue;" here too stands a splendid plant, probably the finest in England of its kind, viz., Angiopteris evecta, which, without close inspection, might easily be mistaken for a monarch too—it certainly is a monarch among Ferns.

I cannot follow correctly the labyrinth of houses through which I was shown, but in passing through a house filled with a splendid stock of Indian Azaleas to the stove I noticed a well-flowered plant of the beautiful though much neglected Lisianthus Russelianus.

On entering the stove, although these houses have not been built for showing off plants, one cannot fail being struck with the gorgeous mass of foliage that here presents itself. Foremost stands a beautiful plant, Cyanophyllum magnificum, with leaves 18ins. in length and about half that in diameter, resembling figured velvet, lined, interlined, and fringed with stripes of purple and white. A plant of this 12 feet high and nearly as much through is almost too glorious a thing to imagine.

This stove is entirely devoted to fine-foliaged plants, and noble things they are. Here are Begonias that would require a greater connoisseur than myself to name the different colours in their leaves, some bright, some dingy, but all singular and interesting; here are Crotons, of golden yellow and bright red stripes and blotches; Dracænas, with bright red leaves; Theophrastas, with leathery leaves, thick enough to make a buff jerkin jacket for a Cromwellian. Among these majors are many minor beauties, such as the golden and silver striped leaved Anæctochiles, Maranta rosea lineata, and vittata, and another gem that will, from its adaptibility and easy culture, become a special favourite, namely Pothos argyræa, a plant that may from its habit be trained to any purpose. Passing over innumerable objects of great interest, line upon line of closely studded plants, propagating houses, and other offices all active with busy workmen, I was shown into a kind of hardy Fernery, with which, for fear I should occupy too much time and space in the *Gardeners' Chronicle*, I must conclude this notice. This hardy Fernery is arranged on quite a novel principle, at least so to me, and is formed with a span-roofed house, the ends standing north and south; the whole is of a rustic construction just in character with the object in view, and is about 8 yards by 6 in dimension. The roof is formed with glass having thick shading fixed inside to obscure the strong sunlight of summer, the roof only being glass. The angles in the gables of the Fernery are made to work for ventilators by the simple means of a cord and pulley, and the whole is of such simple construction that any ingenious person might easily construct a similar one; no artificial heat is used. I fear my descriptive power will fail to convey to the

reader the interior effect, which certainly surpasses anything of the kind I have seen.

In the centre is raised a circular mound of rockwork, tastefully planted with Woodwardia radicans, a Fern having large graceful drooping fronds; Lomaria chilensis, whose bold angular and erect fronds of the deepest green stand boldly out in relief; Struthiopteris germanica, a noble flowering Fern; the larger and strong growing kinds occupying the higher places, whilst the portion near the ground is planted with Scolopendriums of such curled, twisted, and undulated foliage as almost to defy description; Woodsias, Aspidiums, and Asplenium all occupy their places. The whole is covered with that beautiful green Moss, Lycopodium denticulatum, with here and there a piece of brown rock peering through. The four corners are similarly arranged. In one nook I noticed a fine mass of our own Queen Fern Osmunda regalis, lovely patches of Maiden's Hair, Hymenophyllum tunbridgense and Wilsoni, &c., the whole forming the most Mossy and Ferny nook imagination could picture.

From here I went to the experimental ground on the opposite side of the King's Road, a piece of land recently added by Mr. Veitch for the purpose of proving all kinds of hardy fruit, flowers, and vegetables previous to letting them out to customers. Here I noticed two noble plants of Araucaria imbricata, about 20 feet high, and proportionately robust, which were transported last spring upwards of 100 miles, and there planted, without sustaining the slightest check.

So much have I left undescribed that I would recommend every one to seize an opportunity of visiting the nursery, particularly young gardeners, ay and old ones too, who I feel sure would leave with greater love for their business than they had previously ever felt. *Asmodeus, Sept. 26.* [*From an occasional Country Correspondent.*]

Miscellaneous.

Botanical Prize.—A prize of 100*l.* has been placed at the disposal of the Council of the Society of Arts, by Sir W. C. Trevelyan, Bart., to be awarded for "the best Essay on the Applications of the Marine Algæ and their products, as Food or Medicine for Man and Domestic Animals, or for Dyeing and other Manufacturing Purposes." *Pharmaceutical Journal.*

Belladonna Fruit mistaken for Blackberries.—Last week some children belonging to the town of Sevenoaks went out Blackberry gathering, and one of them, a lad about 10 years of age, was induced to eat some berries which he found growing in Knole Park, and which proved to be the Belladonna, or Deadly Nightshade, one of the most dangerous of the "narcotico-irritant" class. The poisonous effect of the berries soon became visible, and shortly after his arrival home he appeared in a state of extreme intoxication. This was afterwards followed by great delirium and total blindness, although the eyelids were widely extended, as if in earnest gaze. For some time his life was despaired of, but owing to the unremitting attention of the parish surgeon, the lad is going on favourably, although still in a precarious condition. *Pharmaceutical Journal.*

Bite from an Adder.—A singular accident occurred in the village of Kingsley on Wednesday to a man named Charles Chandler. It appears that three men were digging Potatoes on some ground the property of Mr. Charles Maybee, between 10 and 11 A.M.; two girls were also there, and seeing a rabbit start from a hedge and run into a hole, the girls called the men and told them of it. Chandler went to the hole and put his arm in, when an adder bit his forehead. A man named Colver, who was there, immediately killed the reptile. The poor fellow's face commenced swelling to a fearful extent. He was conveyed to Alton at once, and on reaching Binsted he was nearly blind. Mr. Daniel Inwood, on making inquiries what was the matter with the man, and on being told the nature of the case, supplied the poor fellow with some adder's fat, and applied it to his face, which relieved him to a great extent. He was taken to a medical man, who gave him some medicine and other remedies, which relieved him. We are happy to say the man is now doing well. *West Sussex Gazette.*

Calendar of Operations.

(*For the ensuing week.*)

PLANT DEPARTMENT.

Conservatory, &c.—Summer flowering twiners, which usually become unsightly by this season, should be cut back rather freely, as also any others that will bear this treatment, so as to afford the plants underneath every possible ray of light. The shade afforded by luxuriant twiners may be rather beneficial to plants in bloom in the house when the sun is powerful; but not a spray that can be spared should be left to obstruct the light after dull cloudy weather sets in. Acacias, and other winter-flowering plants, having been subjected to a period of comparatively dry treatment, to ensure their blooming profusely, should now be liberally supplied with water at the root, in order to get them into flower during the dull season, when they will be much more esteemed than in spring, when flowers are becoming plentiful. Manure water, if it can be used, should be given frequently to Chrysanthemums, for these will bloom but poorly if their supply of manure-water is withheld. Give air freely on every favourable opportunity, avoiding cold draughts against plants that have been brought from a warm house, and guard against damp by using gentle fires with a little top air on wet days. Let pot specimens in bloom be frequently re-arranged, so as to make the most of these, for the finest specimens become too familiar to be interesting when allowed to remain too long in one place. Be careful not to over-water things brought from the stove, and also to use water at a temperature of 70° or 80° for these; as watering plants with cold water that has just been brought from a warm house injures the young tender roots, shortens the duration of the blossoms, and often ruins the plant. Use weak manure-water for Salvia splendens, so as to preserve the plants in a vigorous state, and keep them blooming as long as possible. Give attention to securing a plentiful succession of things for maintaining the gaiety of the house during winter.

FORCING DEPARTMENT.

Pineries. — As stated last week plants swelling their fruit should be assisted with a brisk temperature, say from 65° to 75° at night, regulating this according to the state of the external temperature, keeping the house rather close on sunny days and allowing the thermometer to rise to 80° or 85° before giving air freely. Also endeavour to proportion the moisture to the temperature, for a high dry temperature is not favourable to the swelling of the fruit, and there is no chance of getting well swelled heavy fruit without plenty of warmth and moisture. Maintain a steady bottom-heat of about 85°, and use every care to keep the soil in a healthy state as to moisture. When watering is necessary, use clear manure-water, and give sufficient to moisten the whole of the soil, and avoid frequent dribblings, for when this system of watering is practised it is nearly impossible to keep the under soil, where the principal roots should be, in a healthy state. Use the syringe very sparingly, and only to dew the plants, as heavy syringing after this season is apt to keep the surface soil so moist as to render it difficult to judge as to when water should be given. Any young stock growing in pots which may require re-potting should be seen to at once so as to allow of getting them established in their fresh pots, while they can be kept moderately warm. See that the balls are in a proper state as to moisture before re-potting, as neglect of this is a frequent cause of young plants fruiting prematurely. Keep moist and rather warm for a time after shifting, so as to encourage the formation of fresh roots. Vineries. — Should wet weather set in we would advise covering the borders of the early house with dry stable litter, Fern, or whatever can be obtained most conveniently that will answer the purpose of keeping the border dry. Nothing answers better for this purpose than clean straw, provided the border slopes from the front of the house, and in this case it is easily thatched so as to throw off the wet entirely. But straw is too valuable in most parts of the country to be used for this purpose, and wooden shutters would be found cheaper in the end; nevertheless, where straw can be obtained, it will be found to answer the purpose perfectly. It will also be advisable to cover the borders of houses in which it is intended to keep ripe Grapes for any length of time, so as to prevent the soil getting saturated about the roots. Look over ripe Grapes frequently, particularly in damp weather, cutting out any tainted berries immediately they are perceived, and keep the atmosphere as dry as possible, using gentle fires when necessary with a free circulation of air; but a warm temperature is nearly as injurious as damp, therefore use no more fire-heat than may be absolutely necessary. Let no pot plants requiring watering remain in houses where the Grapes are ripe and expected to hang for any length of time.

FLOWER GARDEN AND SHRUBBERIES.

Unless where alterations are in hand the principal work in this department for the present will be mowing and clearing up of leaves, &c.; and if anything like neatness is to be maintained, this will require daily attention; also see to getting gravel walks thoroughly cleared of weeds and Moss, &c., and roll them frequently when wet, to keep the surface hard and smooth. Continue to afford young stock in pits and frames the most careful attention, and endeavour to get it well rooted and strong without keeping so close or warm as to render it sappy and liable to fog and damp off on the first approach of winterly weather, as is the case with stock got up in heat late in autumn and then stored away in cold pits for the winter. Therefore admit air freely to all plants that are sufficiently rooted to bear it without flagging. Newly potted-off things should, however, be placed on a gentle bottom heat which will impart a little warmth to the soil and encourage the formation of roots, but sufficient air should be given to prevent anything like weakly growth. Cuttings of Calceolarias, Scarlet Geraniums &c., may still be put in where the stock is deficient. Scarlet Geraniums will root almost anywhere, but Calceolarias are not quite so accommodating, as cuttings taken from plants in the open ground are very liable to damp off in heat; these will be found to do very well, however, in a close pit or frame where there is the means of applying a little warmth when necessary to dispel damp. See to securing as many cuttings as possible of any scarce plants which it may be desirable to increase while there is a fair chance of rooting them, and also be prepared to protect Scarlet Geraniums and other things which it may be intended to take up and winter, for we may expect frost any time after this season, and if such things can be protected so as to prevent the foliage and young wood being much injured they are much more easily wintered.

HARDY FRUIT AND KITCHEN GARDEN.

As formerly recommended, look over fruit remaining out of doors frequently, and gather it as it becomes fit. Also examine that stored in the fruit room frequently, as there will occasionally be a few decaying fruit found for a few weeks after housing, and these should be removed as soon as they can be perceived. Keep the fruit room cool and airy, in order to allow of the escape of the moisture given off by the fruit, which is considerable for a few weeks at first. Examine all fruits protected by covering occasionally, to see that they are not spoiling. Where it is intended to make fresh plantations of fruit trees this season, the ground should be prepared at the earliest convenience, and any fresh soil to be used for planting should be thoroughly exposed to the action of the weather so as to have it in a mellow state when wanted for use. If not already done clean and dress Strawberry plantations, clearing away all useless runners, giving a good dressing of manure where necessary, but be careful to select that which is thoroughly decayed, and which can be covered without the necessity of digging deep or injuring the roots. The principal crop of Celery should now be kept rather closely earthed up, using quick lime and soot freely to destroy slugs, and if these are troublesome go over the lines every morning for several successive days, and apply quick lime or pick up the pests.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.
For the Week ending Oct. 13, 1859, as observed at the Horticultural Gardens.

October.	Moon's Age.	Barometer.		Temperature of the Air.			Temperature of the Earth		Wind.	Rain.
		Max.	Min.	Max.	Min.	Mean	1 foot deep.	2 feet deep.		
Friday 7	11	29.806	29.759	73	55	64.0	62	60½	S.E.	.18
Satur. 8	12	29.870	29.844	74	46	60.0	62	60½	S.E.	.10
Sunday 9	13	29.854	29.603	64	50	57.0	61½	60½	E.	.21
Mon. 10	14	29.609	29.491	58	50	54.0	61	60½	E.	.04
Tues. 11	○	29.543	29.422	60	42	51.0	60½	60½	N.W.	.05
Wed. 12	16	29.657	29.656	61	46	54.5	60	60	S.E.	.10
Thurs. 13	17	29.743	29.616	59	44	51.5	59	59½	S.E.	.01
Average		29.726	29.627	64.4	47.6	56.0	60.8	60.3		.69

Oct. 7—Foggy; fine; cloudy; rain at night.
— 8—Rain; overcast; foggy.
— 9—Foggy; hazy; windy; rain at night.
— 10—Foggy; slight rain; hazy; boisterous.
— 11—Overcast; drizzly; overcast.
— 12—Rain; overcast; foggy at night.
— 13—Foggy; hazy; overcast; foggy.
Mean temperature of the week, 4 1-5th deg. above the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 33 years, for the ensuing Week, ending Oct. 22, 1859.

October.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 16..	58.3	40.4	49.3	14	0.56 in.	—	4	6	1	4	6	8	4
Mon. 17..	58.1	41.4	49.8	13	0.31	1	3	5	—	3	9	7	5
Tues. 18..	58.0	41.8	49.9	16	0.85	2	4	2	1	4	6	12	2
Wed. 19..	59.3	40.0	49.6	15	0.60	1	3	5	3	3	6	8	4
Thurs. 20..	59.4	40.7	50.1	14	0.34	1	5	1	3	5	7	8	3
Friday 21..	58.6	40.3	49.5	14	0.64	3	3	3	3	5	7	8	1
Satur. 22..	58.8	43.9	51.3	19	1.96	1	1	5	1	6	11	5	3

The highest temperature during the above period occurred on the 21st, 1830—therm. 73 deg.; and the lowest on the 21st, 1842—therm. 20 deg.

Notices to Correspondents.

Conifers: *Hibernicus.* Your trees are suffering from the attacks of Hylesinus (Hylurgus) piniperda, one of the commonest of our native beetles. You will find a full account of it in our Volume for 1846, p. 740; and it has been repeatedly noticed since. You cannot kill it except by picking off the shoots that it infests and *immediately* burning them. As early as the year 1816 it had committed great ravages among Scotch Firs.

Diseases: *J N E N.* The leaves have evidently been suffering from damp and cold, probably also from insufficient ventilation.

Insects: *M F.* Your Orchids are infested by a small, polished, black scale insect (Coccus), which is new to Mr. Westwood. The ants found running about the plants are in search of the saccharine matter discharged by the Cocci.—*L D.* The small, flossy, white masses on the Vine leaves sent are the young of the Vine-fretter or Coccus Vitis, the parents of which, of a much larger size, will probably be found on the stems of the plant. They must be carefully removed and the stems washed with warm soapsuds. *W.*

Names of Fruits: *J W.* Kentish Codlin.—*J O W.* 140 is the true Old Golden Pippin; 89, Burr-knot.‖

Names of Plants: We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have or could have undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*A H.* Your plant not being in flower cannot be named with certainty. We however believe it to be a bit of Anisodus stramonifolius.—*B H.* Araujа (Physianthus) albens.—*Lotte.* Abelia triflora.—*P C.* 1, Cerastium tomentosum; 2, Tropæolum minus; 3, Lithospermum officinale; 4, Silene Armeria.—*Curiosa.* Coronilla Emerus, and some North American Eupatorium.—*Enquirer.* The Beech tree.—*Kenilworth.* We do not recognise your Bean; in short, Kidney Beans can seldom be named from mere specimens; yours is unknown in the London seed trade.—*G W.* It is the real Artemisia vulgaris.—*Iota.* It is the beautiful Callirhöe pedata, exactly as figured by Dr. Asa Gray.—*An Original Subscriber.* Some species of Solidago, probably from North America, and quite hardy. The species cannot be ascertained without a more perfect specimen, including the lowest or root leaves.

New Zealand Seeds: *Norwood.* Seeds are dead when they reach New Zealand because they are badly packed. Any of the great London seedsmen will pack them properly; but we cannot say which, because we never recommend one house rather than another. The great point in packing is to send the seeds in canvas bags loosely packed in a sack, and to get it placed anywhere that is properly ventilated, but not down in the hold, among the dead cargo.

Potatoes: *An Old Subscriber* asks the following question: "Should the cultivation and supply of Potatoes for a gentleman's family be included in the expenses of the Garden?" We confess our inability to understand this question.

* * As usual, many communications have been received too late, and others are detained till the necessary inquiries can be made. We must also beg the indulgence of those correspondents the insertion of whose contributions is still delayed.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London, S. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

MR. J. B. LAWES manufactures the following MANURES:—

TURNIP MANURE	£6 6
SUPERPHOSPHATE OF LIME	6 6
MINERAL SUPERPHOSPHATE OF LIME	5 5
BARLEY MANURE	8 0

N.B. Genuine PERUVIAN GUANO direct from Messrs. Gibbs, NITRATE OF SODA, SULPHATE OF AMMONIA, and other Chemical Manures.

WHEAT MANURE.—PERUVIAN GUANO is proved to be the best and cheapest Artificial Manure for Wheat, at Autumn sowing.

American decorticated Cotton-seed Cake of best quality supplied at the market price.

Offices: 1, Adelaide Place, London Bridge, E.C.

LONDON MANURE COMPANY (ESTABLISHED 1840),

Have the following MANURES ready for delivery:—

CORN MANURE FOR AUTUMN SOWING.
BLOOD MANURE FOR AUTUMN SOWING.
URATE.
SUPERPHOSPHATE OF LIME.
SUPERPHOSPHATE MINERAL.

The London Manure Company also supply PERUVIAN GUANO (direct from Messrs. Gibbs & Sons), SULPHATE OF AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of known value, all of which they warrant strictly genuine. Wholesale dealers supplied.

116, Fenchurch Street, E.C. EDW. PURSER, Secretary.

BURNARD, LACK, AND CO.'S CONCENTRATED SUPERPHOSPHATE OF LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.

CONCENTRATED TURNIP MANURE, equal in value to the preceding.

Of these Manures Dr. Voelcker says:—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."

Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to BURNARD, LACK, & Co., Sutton Road, Plymouth.

PERUVIAN GUANO.—The present price of this valuable Manure is 12*l.* per ton for 30 tons and upwards; 13*l.* 5*s.* per ton for 1 ton up to 30 tons.

And, in order to protect themselves against the purchase of adulterated mixtures and of inferior Guanos purporting to produce results equal to Peruvian, consumers are recommended to apply either to ourselves, to our Agents Messrs. GIBBS, BRIGHT, & Co. of Liverpool and Bristol; or to Dealers of established character, in whose honesty and fair dealing they can place implicit confidence. ANTY. GIBBS & SONS.

15, Bishopsgate Street Within, London, E.C.



THE PATENT NITRO-PHOSPHATE OR BLOOD MANURE COMPANY (LIMITED).

Trustees:—

ABEL SMITH, Jun., Esq., Walton House, Ware, Herts.
CHARLES DIMSDALE, Esq., Essendon Place, Herts.
EDWARD BALL, Esq., M.P., 8, Belgrave Road, Pimlico, S.W.
GENERAL HALL, Weston Colville, Linton, Cambridge.
JOHN BRADY, Esq., M.P., Warwick Terrace, Belgrave Square, W.

Directors:—

Chairman—JONAS WEBB, Esq., Babraham, Cambridgeshire.

Deputy-Chairman:—

JOHN COLLINS, Esq., Myddleton Square, Pentonville, E.C.
EDWARD BELL, Esq., Tottenham, Middlesex, N.
JOHN CLAYDEN, Esq., Littlebury, Essex.
RICHARD HUNT, Esq., Stanstead Abbot, Herts.
THOMAS KNIGHT, Esq., Edmonton, Middlesex, N.
ROBERT LEEDS, Esq., West Lexham, Norfolk.
ROBERT MORGAN, Esq., 72, Camden Villas, Camden Town, N.W.
GEORGE SAVILL, Esq., Ingthorpe, near Stamford.
WILLIAM COLLINS, Esq., 105, St. John Street Road, E.C.

Bankers—Messrs. BARNETT, HOARE & Co., Lombard Street, E.C.

Solicitors:—

Messrs. KINGSFORD & DORMAN, 23, Essex Street, Strand, W.C.

Auditor—J. CARTER JONAS, Esq., Cambridge.

Manager—Mr. JAMES ODAMS. | *Secretary*—Mr. C. T. MACADAM.

Offices: 109, Fenchurch Street, London, E.C.; Manufactory, Plaistow Marshes, Essex, E.

ODAMS'S BLOOD MANURE FOR WHEAT,

Price 7*l.* 10*s.* per Ton, delivered Free to any WHARF or RAILWAY in London.

TO FARMERS, CORN FACTORS, MERCHANTS, &c.—WANTED, AGENTS, by the PATENT WOOL MANURE COMPANY, in districts not yet represented, for the Sale of their Patent Wool Manure, Superphosphate of Lime, Bones, Sulphate of Ammonia, and other Chemicals and Manures required by Agriculturists. Application to be made to the Proprietors, who are the sole Manufacturers, Messrs. C. H. TIDBURY & Co., 81, Gracechurch Street, E.C.; or Lavender Dock Wharf, Rotherhithe, S.E., London.

"FRIGI DOMO."—Patronised by her Majesty, the Queen, the Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, and —Collier, Esq., of Dartford.

PROTECTION FROM THE SCORCHING RAYS OF THE SUN.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and, floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths. Two yards wide, 1*s.* 6*d.* per yard run: four, 3*s.* per yard. Also, an improved make for Shading Purposes. Three yards wide, 2*s.* 6*d.* per yard run.

ELISHA THOMAS ARCHER, whole and sole manufacturer, 7, Trinity Lane, Cannon St., City, E.C., and of all Nurserymen and Seedsmen throughout the kingdom. "It is much cheaper than mats as a covering."

TREE TRANSPLANTING BY MACHINE, Landscape Gardening, Ornamental Planting, Land Draining, Lakes, and Road-making, &c. Plans and Estimates W. H. RUMBOLD, Grange, Tunbridge Wells.

IMMEDIATE ORDERS WILL PREVENT DISAPPOINTMENT.

"SIGMA'S" UNIVERSAL SEED PLANTERS (Dibbles), vastly improved since the Prize of the Royal Agricultural Society was awarded them. The "MULTUM IN PARVO," forming eight perfect implements, highly commended, see testimonials. The Manure Distributor carried off the Prize Medal in 1851, recently much improved, see *Gardeners' Chronicle*, July 30 and August 6th "Simple, promising, and ingenious." The STEEL DRAW SHAVE HOE clears a row between Turnips at one sweep. Engravings sent.—C. POWELL, Hurstgreen, Sussex. All Patented.

FOWLER'S PATENT STEAM PLOUGH has gained the following prizes:—

The Royal Agricultural Society's Prize, at Warwick, July 1859, 50*l.*

The Royal Agricultural Society's Prize, at Chester, July 1858, 500*l.*

The Highland Society's Special Prize at Stirling, Oct. 1857, 200*l.*

And at other Agricultural Meetings in the United Kingdom, Prizes amounting to 175*l.*

For further particulars, prices, and Catalogues apply to JOHN FOWLER, JUN., 28, Cornhill, London, E.C.

THE LANDS IMPROVEMENT COMPANY.—Incorporated by Special Act of Parliament in 1853.—2, Old Palace Yard, Westminster, S.W. To Landowners, the Clergy, Estate Agents, Surveyors, &c., in England and Wales and in Scotland.

The Directors beg leave to announce that the Company's Amendment Bill, 1859, has received the sanction of the Legislature. The Company now advance money, unlimited in amount, for the following works of Agricultural Improvement, the whole outlay and expenses in all cases being liquidated by a rentcharge for 25 years.

1. Drainage, Irrigation and Warping, Embanking, Inclosing, Clearing, Reclamation, Planting for any beneficial purpose, Engines or Machinery for Drainage or Irrigation.
2. Farm Roads, Tramways and Railroads for agricultural or farming purposes.
3. Jetties or Landing places on the sea coast or on the banks of navigable rivers or lakes.
4. The erection of Farm Houses, Labourers' Cottages, and other Buildings required for Farm purposes, and the improvement of and additions to Farm houses and other buildings for farm purposes.

Landowners assessed under the provisions of any Act of Parliament, Royal Charter, or Commission, in respect of any public or general works of drainage or other improvements, may borrow their proportionate share of the cost, and charge the same with the expenses on the lands improved.

No investigation of title is required, and the Company being of a strictly financial character do not interfere with the plans and execution of the Works, which are controlled only by the Government Enclosure Commissioners.

Under the Company's Acts, tenants for life, trustees, mortgagees in possession, incumbents of livings, bodies corporate, certain lessees, and other landowners are empowered to charge the inheritance with the cost and expenses of the above improvements, whether the money be borrowed from the Company or advanced by the Landowner out of his own funds, and owners in fee may effect these improvements of their Estates without incurring the expense and personal responsibilities incident to mortgagees, and without regard to the amount of existing incumbrances.

For further information, and for forms of application, apply to the Honourable WILLIAM NAPIER, Managing Director, 2, Old Palace Yard, Westminster, S.W.

LAND IMPROVEMENTS.—The GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY are empowered by Act of Parliament to assist the Owners of Land in carrying into effect the following Improvements, and charging the whole outlay and expenses on the property improved.

I. All Works of Drainage, Irrigation, Warping, and Embankment.

II. The erection of Farmhouses, Cottages for Agricultural Labourers, and all kinds of Farm Buildings.

III. The construction of Roads.

IV. The Grubbing and Clearing of Old Woodlands, Enclosing, Fencing, and Reclaiming Land.

The Landowners by whom any of these Improvements may be executed are—Tenants for Life, Trustees, Mortgagees in Possession, Guardians, Committees of Incompetent persons, Married Women, Beneficial Lessees for Lives or for a Term exceeding 14 years, Corporations, Ecclesiastical or Municipal, Incumbents, Sequestrators, Charitable Trustees, &c.

The Owners of Estates not entailed, who may be desirous to avoid the expense or inconvenience of a Legal Mortgage, may also avail themselves of the powers of the Company's Act to charge their estates with an outlay in improvements.

In all cases the whole cost of the improvements, with the attendant expenses, may be charged on the Estate, the term for Building Works being limited to 31 years, but for all other improvements being capable of extension to 50 years.

No investigation of title being required, and the charge not being affected by Incumbrances, no legal expenses are incurred.

Operations under the Company's Act are divided into two principal branches; one where the Landowner designs and executes the improvements by his own Agent and merely requires a loan from the Company to charge the Estate,—the other where the Company undertake the entire responsibility of the Improvement and obtain repayment by way of Rent Charge. In the first case the plans, specifications, and estimates prepared by the Landowner's Agent are forwarded to the Company to be submitted for approval to the Inclosure Commissioners. As soon as the sanction has been given the Landowner proceeds to execute the works, and the Company having conducted the business through all the official forms, complete the charge on the estate when the works have been passed by the Commissioners, and repay the Landowner the amount agreed upon.

In no part of the business is there any control upon a Landowner except by the Inclosure Commissioners. The Company never interfere, except at the special request of the Landowner or his Agent, and only to such extent as may further the objects he has in view.

In the other case, where the Company are required to execute the works, a report and estimate of the Improvement are sent to the Landowner, and having been approved, the plans are then prepared and the works—either submitted to public competition or entrusted to their own staff—are carried on to completion, and the amount of the actual expenditure only, approved by the Inclosure Commissioners with the Company's agreed commission and the Commissioners' expenses, finally charged on the Estate for the term fixed by the Landowner.

The Company also execute Drainage and all other Works of Land Improvement on Commission for the Owners of Estates not Entailed who may wish to charge the outlay on the property through the simple and inexpensive process of the Company's Act.

Applications to be addressed to WILLIAM CLIFFORD, the Secretary, at the Offices of the Company, 52, Parliament Street, London.

WEST OF ENGLAND AND SOUTH WALES LAND DRAINAGE AND INCLOSURE COMPANY. Established in 1844.

INCORPORATED BY ACT OF PARLIAMENT IN 1848.

Draining, Inclosing, Irrigating, Warping, Road Making, and all kind of Land Improvements, executed on Entailed, Mortgaged, or other Properties, and the whole cost can be made a Permanent Charge on the Lands, or redeemable in a certain number of years. BIDWELL & BRODIE, Secretaries.

Offices: Exeter; and 30, Parliament Street, London, S.W.

AGRICULTURAL IMPROVEMENTS, LAND DRAINAGE, ROAD MAKING, & FARM BUILDINGS.

MR. BAILEY DENTON maintains a large staff for the execution of these works by commission or contract. He also prepares Working Plans to enable Landowners to carry out such improvements themselves.—52, Parliament Street, S.W.

BUILDING AND DRAINING.—Noblemen and gentlemen who contemplate Building or Draining, and who are desirous of making Bricks and Tiles upon their own Estates, can have their Clays practically tested, the necessary arrangements for Manufacture made, and if wished the Manufacture undertaken, by a Member of a Firm extensively engaged in the Manufacture of Bricks and Tiles of every description—Apply, TERRA COTTA, Wood's Hotel, Furnival's Inn, E.C.

EDINBURGH NEW VETERINARY COLLEGE.—Her Majesty has been graciously pleased, under Her Royal Sign Manual, to place the New Veterinary College under the operation of the Charter of the Royal College of Veterinary Surgeons, and to "will and declare that the persons who now are and may hereafter become Students of the new Veterinary College of Edinburgh, and shall pass the Examination prescribed by the said Royal Charter, shall be members of the Royal College of Veterinary Surgeons, and shall be entitled to all the privileges given to such Members by the said Charter."

Moreover, at the last General Meeting of the Highland and Agricultural Society, it was resolved that Students educated in any Veterinary College in Scotland, authorised by Government, shall be eligible for Examination for the Highland and Agricultural Society's Veterinary Certificate.

The COURSE OF INSTRUCTION undertaken during the WINTER SESSION is the following:—

1. Descriptive Anatomy of the Domestic Animals. By Dr. A. MONASTIER.
2. Physiological Anatomy and Physiology. By Professor JOHN GAMGEE and Dr. MONASTIER.
3. Chemistry. By Dr. STEVENSON MACADAM.
4. Materia Medica and Practical Pharmacy applicable to Veterinary Purposes. By Professor JOHN GAMGEE.
5. Veterinary Medicine and Surgery. By Professor JOHN GAMGEE.
6. Principles and Practice of Shoeing. By Mr. GAMGEE, Sen.
7. Clinical Instruction. By Mr. GAMGEE, Sen., and Professor JOHN GAMGEE.
8. Anatomical Demonstrations.

The WINTER SESSION for 1859-60 commences on the 2d of November, and ends the 3d week in April.

Particulars as to Fees, &c., may be learned on application to Professor JOHN GAMGEE, at the New Veterinary College, Edinburgh.

Professor GAMGEE has a vacancy for a House Pupil.

QUEEN'S COLLEGE, GALWAY. DEPARTMENT OF AGRICULTURE.

A Matriculation Examination will be held on October 21. In the Department of Agriculture four Scholarships of the value of 15*l.* each are appropriated; two to Students of the first year, and two to students of the second year. The College is also empowered to award at the same examinations Two Prizes of 10*l.* to Students of the first year, and Two of 10*l.* each to Students of the second year.

In addition to the scientific education given in the Lecture Rooms of the College, the most ample means are now possessed for giving practical instruction to Students in Agriculture. The Professor will exhibit on his own Farm, as well as on a large property of which he has the management, the best examples of land improvement, and superior cropping on waste worn-out bog and mountain land, with specimens of the crops raised thereon.

Further information may be had on application to the Registrar, from whom Copies of the Prospectus may be obtained. By order of the President.

October 15. W. LUPTON, A.M., Registrar.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, London, S.

Principal—J. C. NESBIT, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

SMITHFIELD CLUB CATTLE SHOW, 1859.—The ANNUAL SHOW of FAT CATTLE, SHEEP, and PIGS will take place on the 6th, 7th, 8th, and 9th December, at the Bazaar, King Street, Portman Square.

The Prize List contains separate classes for Devons, Herefords, Short-horns, Sussex, Norfolk or Suffolk polled, Longhorns, Scotch horned, Scotch polled, Irish, Welch, and cross or mixed breeds. Also Long-woolled Sheep, cross breeds, Short-wools, and Pigs. In addition to the large amount offered in money prizes, there are also 50 Silver and 5 Gold Medals. The following forms of Certificates are now ready, and intending Exhibitors in applying for them need only quote the letters and state how many of each they require.

CATTLE.	SHEEP.
Form A. Ox or Steer.	Form D. Pen of 3 Wethers.
,, B. Cow or Heifer.	
,, C. Ox or Cow in Extra Stock.	,, E. One Wether or Ewe in Extra Stock.

PIGS.

Form F. Pen of 3 Pigs. | Form G. One Pig in Extra Stock

The Entries finally close on November 1.

Prize Lists with rules and regulations and Forms of Certificates to be obtained of B. T. BRANDRETH GIBBS, Hon. Sec., corner of Half Moon Street, Piccadilly, London, W.

N.B. All communications on the Club's business should have the words "Smithfield Club" outside, to distinguish them from private letters.

The Agricultural Gazette.

SATURDAY, OCTOBER 15, 1859.

—— An unfortunate accidental transposition of six lines from the foot of the third column to that of the first column of page 813 in last week's Paper has doubtless puzzled many of our readers. The

leading article on that page is continued in the second column from the 7th line above the foot of the first; and the remaining six lines of that column are to be read between the third column of that page and the first column of the next.

On paying a visit the other day to the Laboratory of the Royal Agricultural College, we were much interested in observing a mass of earth and plants which we were informed consisted of the contents of a square yard of soil taken from a patch of "old seeds," the land of which may be described as a thin calcareous soil resting on the brash of the great oolite, a formation which enters so largely into the composition of the southern half of the "Stony Cotteswolds." The soil and plants were collected for the purpose of a chemical analysis, but as the plants themselves were so numerous both in species and specimens, they struck us as containing matter of interest for another kind of analysis, and we proceeded at once to take note of them in order for further remark and inquiry, and the following is so far the result of this investigation.

List of Plants from a square yard of old Seeds on the Great Oolite Brash, taken August 31, 1859.

	Botanical name,	Trivial name.	No.
1	Plantago lanceolata ..	Narrow-leaved Plantain ..	7
2	Ranunculus repens ..	Creeping Crowfoot ..	8
3	Centaurea scabiosa ..	Hardhead	2
4	Leontodon Taraxacum ..	Dandelion	2
5	Apargia autumnalis ..	Autumnal Hawkbit ..	1
6	Glechoma hederacea ..	Ground Ivy	6
7	Prunella vulgaris	Self Heal	4
8	Convolvulus arvensis ..	Small Bindweed	1
9	Æthusa cynapium.. ..	Fool's Parsley	1
10	Cerastium arvense ..	Mouse Ear	2
11	Sherardia arvensis ..	Field Madder	6
12	Triticum repens	Common Couch	2
13	Agrostis stolonifera ..	Creeping Bent	4
	Total of Weeds		*46

The Clover and Rye Grasses had nearly died out—a result which is soon secured in "seeds" by too great tardiness in commencing to make seed hay on the one hand, and the increase of weeds by seeding on the other. As regards the first cause, we have experimented as follows:—a patch of Clover was half seeded and half cut down on the appearance of the first few flowers; the first half was extinct in three years, the other was a fair plant for six years. Now taking the facts presented by this analysis as a fair sample for the field, and in doing so we should recollect that it had not been chosen with a view to this botanical investigation, but partly with reference to a chemical one, we see that the "seeds" have gradually succumbed to a host of invaders; the crop it is true has nearly died out, but the land has still sufficient of tenants for its occupation, and though these must be looked upon to a considerable extent as usurpers, a few remarks upon whence they come and how they increase cannot be considered other than interesting. The cropping has been Wheat, Turnips, Barley, seeds; the patch we have now under review we presume was sown with the Barley of 1857, and from it was taken a crop of hay in 1858; they are now old leas designed no doubt for Wheat. Now if we look at the list of the 46 plants we have just enumerated, there is not one but must come under the denomination of weeds, as not a single species is there as the result of design; and yet there is not a species whose seeds could not have been sown with the seed admixture. In all probability however the rhizomatous plants, that is those with the creeping underground stems, may partly or even wholly have been derived from slips left after the last ploughing; such are those numbered 8, 12, and 13, whilst 4 and 5 are such as may or may not owe their origin to a dirty wayside, whence they may have been wafted by flying (pappiform) seeds.

Still with these allowances we can only conclude that the majority, if not all, may not only have been sown with the seed, but in fact are merely a few of the species of weeds which samples of Clover and Grass seeds usually contain, in proof of which we offer the following list of the botanical contents of three fields of "seeds" on the same farm, premising that in all cases we have disregarded examples from the hedgerows, such as wild Parsnips, common Nettles, and the like, and have confined our list as nearly as may be to the enumeration of what may truly be termed "agrarian weeds." As regards the lists themselves, they have been prepared during the last month, when many of the spring weeds have died out, but as some of these have left colonies of in many cases thousands of young plants, we have been thus enabled to make them out, not forgetting the significancy of such a prolific progeny.

The three lists then are as follows:—

1. Old Clover and common Ryegrass.
2. Not far remote from 1. Old Seeds, Clover, Dutch Trefoil, common and Italian Rye-grass.
3. New seeds, Clover and Rye-grass, adjoining No. 2.

1. Examined on the 31st August; 2 and 3 examined on the 24th September.

List of Weed Plants in Seeds:—

No.	Botanical Name.	Trivial Name.	Oct. 1	Oct. 2	Nov. 3
1	Knautia arvensis ..	Corn Scabious	..		
2	Centaurea Jacobea ..	Hard Head	..		..
3	,, nigra	Black Head	..		
4	Achillea millefolium ..	Milfoil	..		
5	Chrysanthemum leucanthemum ..	Ox-eye	..		
6	Tussilago farfara.. ..	Coltsfoot	.		
7	Gnaphalium Germanicum	Cudweed	..	..	..
8	Anthemis arvensis ..	Corn Chamomile	..		
9	Bellis perennis	Daisy..		..	
10	Senecio vulgaris	Groundsel	..	..	..
11	Leontodon taraxacum ..	Dandelion	..	..	..
12	Apargia hispida	Rough Hawkbit	..		
13	,, autumnalis ..	Autumnal ditto	..		
14	Sonchus arvensis ..	Corn Sowthistle	..	..	..
15	Carduus arvensis ..	Corn Thistle	..	..	..
16	,, lanceolatus ..	Lancet-leaved Thistle ..		..	
17	,, nutans	Nodding or Musk Thistle	..	..	..
18	,, acanthoides ..	Welted Thistle			..
19	Arctium lappa	Burdock	..	..	
20	Sinapis arvensis ..	Charlock			..
21	Sisymbrium officinale ..	Treacle Mustard			..
22	Rumex obtusifolius ..	Round-leaved Dock ..	..	..	
23	,, crispus	Curled-leaf Dock	..	..	..
24	Veronica serpyllifolia ..	Thyme-leaved Speedwell..	..	..	
25	,, agrestis	Field Speedwell		..	..
26	,, Buxbaumii ..	Buxbaum's ditto		..	..
27	Euphorbia exigua ..	Petty Spurge	..	..	..
28	Geum urbanum .. .	Common Avens	..		
29	Prunella vulgaris ..	Self Heal	..	..	..
30	Acinos vulgaris	Bastard Thyme	..	..	
31	Polygonum aviculare ..	Knot Grass	..	..	..
32	,, convolvulus..	Climbing Buckwheat ..			..
33	Plantago media	Broad-leaved Plantain ..	..	..	..
34	,, lanceolata ..	Lancet-leaved ditto ..	..	..	..
35	Ranunculus repens ..	Creeping Crowfoot.. ..	..	..	..
36	Geranium molle	Soft Cranesbill	..	..	..
37	,, Columbinum.	Long-stalked ditto ..			..
38	Galeopsis Ladanum ..	Red Hemp Nettle		..	
39	Glechoma hederacea ..	Ground Ivy	..	..	..
40	Stachys sylvatica ..	Hedge Stachys		..	
41	Stellaria media	Chickweed	..	..	..
42	Cerastium arvense ..	Mouse-ear	..	..	..
43	Arenaria serpyllifolia ..	Thyme-leaved Sandwort ..	..	..	..
44	Lychnis dioica	White Campion		..	
45	Convolvulus arvensis ..	Small Bindweed	..	..	..
46	Urtica dioica	Nettle			
47	Petroselinum segetum ..	Corn Parsley	..		
48	Torilis anthriscus ..	Hedge Parsley			..
49	,, nodosa	Knotted Parsley ..	..	..	..
50	Anagallis arvensis ..	Pimpernel	..	..	..
51	Capsella Bursa-pastoris..	Shepherd's Purse ..	..	..	..
52	Sherardia arvensis ..	Field Madder	..	..	..
53	Chenopodium polyspermum ..	Goosefoot			..
54	Potentilla anserina ..	Silver Weed	..		
55	Bartsia odontites ..	Red Bartsia		..	..
56	Linaria spuria	Round-leaved Toad Flax..			..
57	,, Elatine	Fluellen ditto			..
58	Myosotis arvensis ..	Corn Forget-me-not ..			..
59	Lamium amplexicaule ..	Henbit			..
60	Poa annua..	Annual Meadow Grass ..			..
61	Agrostis stolonifera ..	Creeping Bent	..	..	
62	Bromus mollis	Lop or Soft Brome-grass	..	..	
63	,, ,, var. racemosus	,, Smooth Brome-grass		..	
64	Triticum repens	Couch	..		
			44	39	38

The dots .. in the three columns intimate the occurrence of the plant signified in the fields 1, 2, and 3 respectively.

From this list it will be seen at a glance that three fields all within a bow-shot of each other, and all situate on the stonebrash of the great oolite, yet nevertheless differ immensely in the weeds which the same crop and farming may present. A further scrutiny will show that out of a list of 64 species observed in the three fields, only 24 species or a little more than one-third are common to all, and yet we would answer that the aboriginal flora of any three fields of the district would scarcely offer half a dozen species in one field that could not be found in all.

How then do we account for the differences in these fields? They are simply the result of obtaining the seed from different seedsmen. It was grown in different localities. This is clearly illustrated by the Lop Grass: the true Bromus mollis is found in one field out of the three; the Smooth Lop, Bromus racemosus, in another; whilst the third has neither. Several instances of a like kind may be cited, the which if we examine different samples of seeds will serve to specify them.

Further, if we look well into the list, we shall soon see that it presents few examples of plants the seeds of which we cannot make out in different samples of Clover and Grass seeds, and this may, therefore, be taken as further evidence upon the point that the farmer sows most of his weed pests. They come with his seed of various kinds. In the case of the Clover crop each weed seed sown not only subtracts from the sum of the Clover seed, and this is not all, as very many of the weeds grow so fast as to smother and kill (or at least so much weaken that winter kills) many of the Clovers in the weed vicinity; and lastly, many weeds seed the first year and are succeeded in the next by an immense increase—three circumstances which in a great measure will account for much of the so-called Clover-sickness of the soil.

* The number of weeds has reference to the separate heads of the plants named, but probably as in Ranunculus and Glechoma they may have been scions.

DIRECTIONS FOR WORKING PORTABLE STEAM ENGINES.

The following memoranda are given by Messrs. Ransome under this head in the last volume of the Agricultural Society's Journal. We give them here as being proved by recent events to be especially needed for the instruction of those in charge of agricultural steam engines:—

"*Preparing Engine for Work.*—Place the engine as nearly dead-level as possible, and in such a position that the dust caused by threshing may not be blown upon it. The wheels should all have an even bearing on the ground, so as to prevent any rocking motion when at work.

"*Filling the Boiler.*—Care should be taken to procure water as clean as possible for the use of the engine; water from ponds or ditches, into which the drainage of the farmyard is taken, should be avoided. The water must be poured into the boiler through the opening provided for that purpose (by means of the iron funnel furnished with the engine) till it appears about half way up the glass gauge tube.

"*Glass Water-gauge Apparatus.*—The water-gauge cocks should always be tried before the fire is lighted, to ascertain that there is no obstruction in the passages, which would prevent the water finding its proper level in the glass tube. In case the water does not appear to move freely in the tube, on opening the small cock at the bottom of the gauge, take out the two screws opposite the passages to the boiler, and insert a wire through the holes into the boiler, till the water issues freely; the screw-plugs may then be put in again, and the fire lighted. Great care should be taken to prevent either of the cocks between the boiler and the glass tube becoming shut when the fire is burning and the steam up.

"*Use of Gauge-Cocks.*—It is possible that the glass gauge may become choked up when the engine is at work, so that it cannot be cleaned out without letting down the steam; if the water does not appear to move freely in the glass tube, the small cock at the bottom of the gauge must be opened, so as to let the steam and water blow out of the gauge; if it is then evident that the gauge is choked, the gauge-cocks must be used to ascertain the height of the water in the boiler; the bottom one should discharge water only, and the top one steam; the level of the water in the boiler being somewhere between the two gauge-cocks.

"*Lighting the Fire.*—The fire-bars must be well cleaned from dirt and clinkers before the fire is laid; a few dry shavings and a small quantity of firewood should then be spread over the bars, and some small coal scattered over them; a light may then be applied to the shavings from beneath the grate bars, and the fire will soon burn briskly; with some fuel it is better to place the fire-door a little way open till the coal is ignited; coal may then be put on in small quantities at a time, the fire-bars being kept covered to a depth not exceeding 3 inches; the fire must be clear, but the bars must not be allowed to become bare of coal in places, for the cold air will then pass through the tubes and check the formation of steam; all wet straw and damp wood should be avoided for lighting the fire. As soon as the fire is lighted a few pails of water should be poured into the ash-pan; it tends to prevent the formation of clinkers, and greatly preserves the fire-bars by keeping them cool; it also decreases the danger of fire in the stack-yard, because all the hot cinders, as they fall from the grate, are instantly extinguished; if the weather be very windy, it may be necessary to close one of the doors of the ash-pan, and to open the other; experience will soon point out which door should be closed.

"*Raising Steam.*—The fire as it burns up should be kept thin and bright; the coal must never be heaped up against the tubes; too much coal should not be thrown on at a time, or it will tend to delay the production of steam; a careful engine-man will soon find out the best mode of firing with the different descriptions of coal he will be required to use.

"*Brushing-out Tubes.*—If the coal is bad, or of a kind which emits a large quantity of smoke, the tubes should be well brushed out during the dinner hour; this can easily be done without dropping the fire, by allowing it to burn low, and raking it into one corner of the grate. The tubes may be easily brushed out from the smoke-box end. Before commencing to light the fire in the morning, the tubes must always be well brushed out.

"*Safety-valve and Spring-balance.*—As soon as the water begins to boil, the safety-valve should be opened by hand and examined, to make sure that it is not obstructed in any way; the spring-balance may then be screwed down to about 10 lbs., and when the steam blows off at that point it may be gradually screwed down to 45 or 50 lbs. as the steam rises. The spring-balance should on no account be left always screwed down to the full pressure when the engine is not at work, and the steam not up, because the elasticity of the spring is thus destroyed; and it is very possible, if the engine remains long out of use, that the valve may become set fast, which would cause danger when the steam was next got up.

"*Oiling the Engine.*—Before starting put a little oil into the cylinder through the cock provided for the purpose, and move the engine round by hand, by means of the fly-wheel, to ascertain that it is all in working condition; all the oil-cups must be filled up, and the syphon-wicks examined, to make sure of their being in good condition. A little oil should be put upon the guide-bars themselves, as well as into the oil-cups attached to them; the pump-plunger, and all the eccentrics, must also be oiled.

"*Starting and Working the Engine.*—The piston should be placed at about the half-stroke, and the regulator-valve opened gradually, the two relief-cocks on the cylinder being previously opened; after the engine has made a few revolutions these cocks may be shut, and the regulator-valve set full open, so that the speed of the engine may be controlled by the governors. The feed-pump should be tried as soon as the engine is in motion, to ascertain that it is in working condition, before the water has had time to diminish. To set the pump to work the suction-cock may be opened, and the small pet-cock must also be opened and shut a few times; if water does not issue from the pet-cock at every stroke of the plunger, the finger should be applied so as to stop the hole in the pet-cock for a few strokes, and then be taken off it again; this operation should be so performed that the hole in the cock may be closed by the finger on the plunger going out of the barrel of the pump, and opened on the return stroke when the plunger is forced in again. If, after repeated trials, no water is thrown by the pump, and steam or hot water only issues from the cock, something is wrong with the valves, and they must be carefully examined.

"*Pump out of Order, Valves to be examined.*—The engine must be stopped, the cock connecting the feed-pipe to the boiler must be shut, the covers of either or both valves may then be taken off, and the valves examined or cleaned; the engine must on no account be moved round after the valve covers are put on again, before the cock connecting the feed-pipe to the boiler be opened, or the pump and pipes may be seriously damaged. The use of this cock is to enable the pump-valves to be examined when the steam is up, without the danger of scalding those about the engine.

"*Supply of Water to Boiler.*—It is desirable to have a constant supply of water always going into the boiler from the feed-pump; a little experience will soon point out to the engine

man how far the cock requires to be open to enable him to do this; the plan of shutting the feed quite off for some time, and then turning it full on, should never be adopted, for by this means the formation of steam is rendered irregular and much fuel wasted.

"*Mode of Firing.*—The fire must be kept constantly bright and clear; the bars must be covered, but never more than 3 inches thick; and the coals must not be heaped up against the mouths of the tubes; coal must be put on the fire in small quantities, and frequently, and not all at once, and then allow the fire to burn quite low; experience will show how often the fire must be supplied with coal, as it much depends upon the quality of the coal and the amount of work that the engine is doing.

"*Water low in Boiler.*—There should never be less than 2 inches of water visible in the glass gauge-tube when the engine is at work; if, by accident or neglect, the water should become so low as only to show about half an inch in the glass tube, the fire should instantly be dropped; by lifting the fire-bars from their places by means of the tools furnished for the purpose, the burning coals will fall into the water in the ash-pan, and be extinguished; water should never be thrown into the fire-box to put out the fire—it is apt to scald those who do so, and to injure the fire-box; the fire must on no account be again lighted until the boiler has been filled up.

"*Bearings to be oiled and examined when Engine is at work.*—The bearings and guide-bars should be carefully examined from time to time to see that they are properly supplied with oil from the lubricators attached to them; it is a good plan to put a little extra oil upon the guide-bars, in addition to filling the lubricators upon them. Whenever the engine is stopped, all the bearings should be felt, to make sure that they have not heated; if there be any disposition to heat, the bearings having such a tendency may be loosened a little, but they must not be too slack, or it will occasion a disagreeable knocking, which is very injurious; sometimes it becomes necessary to take the top brasses quite off to free them from grit, which will cause heating in the brasses; the parts requiring most attention are the two ends of the connecting rod and the bearings of the crank-shaft; the eccentrics also should be oiled occasionally when the engine is working; the brass rings should be slackened a little if they become warm; after taking the cap off a bearing, care must be taken that, on replacing it, it is not screwed down too tightly, or it will be sure to cause friction, and increase the mischief sought to be avoided.

"*Preparations for Moving the Engine.*—When the day's work is over, and the engine is going to be moved to another place, the water should be run out of the boiler when the steam is quite down; the practice of blowing all the water out of the boiler directly the fire is dropped is a very bad one, for the sudden contraction of the tubes caused by the rapid cooling makes them leaky, and does much mischief; the boiler should never be re-filled when hot; for the same reason the water should never be left in the boiler when the engine is going to travel over a hard road; if it is merely going to be moved on soft ground for a short distance, no harm will be done beyond adding greatly to the weight; care should be taken that the fire-bars do not shake out, and thus be lost, when the engine is travelling.

"*Governor Balls.*—It is a good plan to take the levers carrying the balls off when the engine is going to travel, as the jolting on roads is very apt to break these levers; they may be carried conveniently in the smoke-box, wrapped up in hay or shavings to prevent injury.

"*Road Wheels to be occasionally examined.*—Before the engine travels any great distance the road wheels should be taken off, and the axles examined and cleaned. If the axles are much cut they should be dressed over with a smooth file to take off all roughness; they should be well greased with a mixture of oil and melted tallow before going on a journey; and if the journey be long, the small screws in the naves of the wheels should be occasionally taken out, and fresh oil be poured into the axle-boxes.

"*Cleaning Engine.*—After the day's work is done the engine should be well rubbed over with Cotton waste, and all dust and grit should be removed, also all superfluous oil which may have accumulated during working; the chimney should be lowered down, and the engine be covered over with the tarpauling furnished for that purpose; the engine should always be carefully covered up when travelling, to prevent the working parts from becoming injured by dust or mud.

"*Washing out Boiler.*—The boiler must be well washed out and cleansed after about 12 or 14 days' working; to do this the brass plugs and mud-doors round the bottom of the outside shell of the fire-box must be taken out; water must be poured freely into the boiler through the opening where water is poured in, the mud and scales being at the same time loosened and pulled out with a small iron rod, the end of which should be made like a hoe; at the same time the plug beneath the tubes in the smoke-box should be taken out, and the man-hole cover be lifted off, a long rod being pushed backwards and forwards through the hole under the tubes, so as to loosen the dirt and sediment. Water should be poured into the man-hole plentifully, so as to wash out all that may be collected in the boiler through the various mud-holes, which should all be open during this operation. On again putting in the brass plugs, be careful not to cross the threads; they must be entered with the fingers only, and not screwed up with the spanner until they have been screwed in several turns by hand.

"*Preparing the Engine for Lying-out of Work for a considerable time.*—If the engine is not going to be used for some length of time (say a month), the cylinder-cover should be taken off, and the cylinder well rubbed dry and oiled; the fly-wheel should then be turned round a few times by hand, to ensure every part of the piston and slide becoming well covered with oil; the cylinder-cover may then be put on again; the joint only requires a little red-lead cement to be spread around it; but the red-lead must not be so placed as to squeeze into the cylinder itself when the cover is screwed up: care must be taken to screw the bolts up very equally. The whole of the bright work of the engine must be well dressed over with a mixture of white-lead and hot tallow, put on with a painter's brush. The packings from the piston-rod, slide-rod, and pump-plunger should be taken out, for they injure the rods by causing corrosion to take place from the moisture of the hemp packing.

"*Packing the Engine.*—This operation cannot easily be described, and must be seen to be comprehended thoroughly; the engine-man who is sent from the works with the engine will instruct the person who is about to take charge of the engine how to do the packing, and many other things which require practice to do properly. None but the best white spun-yarn and white hemp must be used for packing, and it must be quite free from all gritty particles. The packing before being put into the stuffing-boxes must be well soaked in hot tallow.

"*Oil for Engine.*—Neatsfoot or sperm-oil should be used; but if this cannot be procured, olive-oil will answer the purpose. Hot tallow should never be poured into the cylinder, for much dirt is thereby introduced, which will cut and injure the piston and cylinder.

General Remarks.—The more care and attention the engine receives the longer it will work without extensive repairs. Very frequently great damage is done, and heavy expense incurred, through the carelessness and ignorance of the person who acts as engine-man; no person should be sent out to work these engines who has not had previous experience with high-pressure engines of some kind. Wood should never be used as a fuel when the engine is at work, on account of the great quantity of ignited pieces blown out of the top of the tunnel by the steam-blast; the foolish and dangerous practice of carrying hot coals in shovels from the farm-house to the engine in the stack-yard for the purpose of lighting the fire should never be allowed. All tools and spanners must always be kept in the tool-box with the engine ready for use, and everything should be kept clean and in its place.

"*Small Repairs.*—The parts that will require repairing most frequently are the brasses of the connecting-rod and crank-shaft; the guide-bars also occasionly require adjusting; but all these things should be done by an engineer who is accustomed to the work; and the file and chisel must never be used by the engine-man, or more harm than good will be done."

INFLUENCE OF WEATHER ON LIVE STOCK.

The influence of a continuous hot or cold temperature, a moist or dry atmosphere, or a very variable condition of the weather, in the production of prevailing diseases, is a circumstance far too lightly thought of by many practitioners. Not only in some seasons, but likewise at particular periods of the year, certain diseases are so frequently occurring as to call forth remarks even from the least observant. That many of the maladies of domesticated animals are dependent on the locality and soil they inhabit, as well as on the quantity and quality of their provender, all practitioners are ready to admit; but the immediate, as well as the ultimate, influence of the weather, in mitigating or increasing the effects of these local causes, is often too little regarded by them.

For upwards of a year the fall of rain throughout the greater part of England has been remarkably small; so much so, that many agriculturists have experienced the greatest difficulty in procuring a sufficiency of water, both last summer and this, for their cattle, while that which was obtained was often of the worst kind possible for the maintenance of health, being charged with vegetable matters in a state of decay. From the same cause, also, the pasture lands at the latter part of the summer of last year were so scorched, that they yielded a very insufficient supply of herbage. The immediate result of this state of things was a great fall in the condition of cattle and sheep, which ill adapted them to withstand the privations and chilling blasts of winter; and the ultimate result the loss of hundreds of sheep during the winter, although the weather remained dry, and as such, according to ordinary experience, well suited for these animals. *Post mortem* examinations showed an emaciated state of the body, accompanied with local congestions, particularly of the lungs, as the direct cause of death.

Next to sheep, young cattle suffered the most, the major part dying from diarrhœa, running on to dysentery. It is also worthy of note that in numerous cases, where persons by too generous feeding with oil-cake, Mangel Wurzel, &c., attempted quickly to restore the loss of condition of their young stock, the animals fell a sacrifice to attacks of hæmato-sepsis, commonly called black quarter, or quarter garget, from a gangrenous condition of a considerable part of the body, due to a septic state of the blood.

The last summer also has been remarkable both for its heat and dryness. The *Observer* newspaper of the third week in July, alluding to the subject, says that:—

"For the last 46 years it has not been so hot in the metropolis as during the last fortnight. All at once we seem to have passed into a tropical climate. For two or three days there has been experienced a temperature equal to that of India. Several persons have been prostrated with sun-stroke, and perished during the week, and among others two poor little children, left in a perambulator by a careless nurse-girl in the sun. To follow the ordinary avocations of life has been a most weary and irksome task; men, women, and children seemed almost to gasp for breath. In the House of Commons, especially in the committee rooms, which face the river, the temperature was something frightful, as every crevice through which air could be admitted was stopped up, in order to exclude the pestilential odour of the Thames. In one of the courts of law the presiding judge could endure the heat no longer; he dashed his wig from his head, and invited the members of the bar to follow suit. In the country the effect of the high temperature has been most marvellous. The crops, which 10 days ago were quite green, are now ready for the sickle: in fact, in many parts harvesting is in full operation. The most serious results of the hot weather, however, are to be found in the greatly increased rate of mortality, especially in the metropolis, during the week ending the 16th inst. The deaths in that week amounted to 1400; in the three previous weeks they had been respectively 970, 1024, and 1226. The average rate of mortality during the past 10 years in the corresponding week was 1100. The comparison, therefore, gives a most unfavourable result, as it shows that the deaths in the present return are higher by 300 than the number which the average rate of mortality for the second week in July should have produced. Diarrhœa has been unusually fatal."

As was to be expected, animals likewise suffered greatly from the extraordinary elevation of temperature, particularly those depastured in exposed situations, where little protection could be afforded by shade. Many cases of sudden death occurred; the *post mortem* examinations showing the vessels of the meninges of the brain turgid with blood, and also the cavities of the heart filled to repletion with soft and dark-coloured coagula. The most serious consequences, however, of the long-continued heat are still being experienced in the loss of lambs. For many weeks these animals have been dying by scores, especially in several of the eastern counties, so as to threaten, in some instances, the loss of the whole flock. Their death is usually preceded by wasting, an ill-conditioned state of the wool, irregular bowels, fastidious appetite, pallid membranes, and husky cough. They thus gradually "pine away," to use an agricultural expression; no ordinary treatment sufficing to arrest the fatal result. On examination, death, in the greater number of instances, is found to depend on structural changes of the pulmonary tissues, and sometimes of the liver. The edges of the lungs, in particular, are consolidated, impervious to air, and often infiltrated with a purulent fluid, seemingly caused by passive congestion, leading to effusion and slow degeneracy of the *liquor sanguinis*, as results of the exhausting influence of the long-continued heat. Besides this cause of death, great numbers of lambs are likewise being lost from the presence of filariæ, hair-like worms, in the *abomasum*—the true digestive stomach. The animals present analogous symptoms to those whose lungs are organically diseased; and as such, the cause being overlooked, we are often told that nothing can be discovered to account for death. I do not now stop to go into further particulars of these cases of worms within the stomach, because in the present state of science we cannot satisfactorily trace their connection with either a paucity of rain or an elevated temperature. There are, however, two remarkable instances of the destruction of animals depending upon the latter cause, which, notwithstanding they have already appeared in the pages of the "Veterinarian," I think are of sufficient importance to be repeated in this address. The record of one runs thus:—

"*Death of Sheep from the Sucking of their Wool after being Dressed.*—A singular circumstance has just occurred in the parish of Cudham, Kent, on Lusted Farm, in the occupation of Mr. James Francis. Mr. Francis has been in the habit for several years of using a wash to his sheep, containing mercury and soft soap, as a preventive against flies. He has generally had it applied by dipping them; but this year he had them laid on their side, and poured the wash—one pint to a sheep—over them. The flock (about 128) having been thus dressed, were turned into a barren part of a field to drip. About an hour or so afterwards the shepherd noticed some of them looking badly, and in a short space of time they began to die, and by the morning only 16 remained alive out of the entire number. It is supposed that they had sucked the moisture from each other's wool, there being no water in the field, and the great heat causing them much thirst."

The other is an equally interesting and instructive a case, as likewise showing that animals when pressed by thirst will take the most deleterious and unpalatable fluids. It is headed

"*Poisoning of Pigs by an Accidental Partaking of Sheep-Dipping Mixture.*—Within the past month (August) we (the editors) have been consulted in a similar case to the preceding in the accidental poisoning of some valuable pigs, the property of an influential member of the Royal Agricultural Society. It appears that the shepherd emptied some 'sheep-dipping mixture,' which he had to spare after dressing the sheep, into the yard where the pigs were kept, and that the animals, driven by extreme thirst consequent on the great heat which prevailed, drank some of the fluid. In this way 22 were killed. One of the animals was sent to the College, and examined by Assistant-Professor Varnell, who found that the immediate deleterious effects of the agent were produced on the mucous membrane of the mouth and fauces. These parts were intensely inflamed, and covered over with a thick layer of effused lymph, which likewise extended into the larynx and a short distance down the trachea, caused death by asphyxia. The entire lining membrane of the œsophagus was similarly covered with lymph, down to the cardiac orifice of the stomach, which organ, however, was scarcely diseased. The mixture was composed of arsenic, sulphur, and soft soap in solution."

I must here leave this part of my subject, although numerous other proofs could be adduced of the ill effects produced on animal life by the extreme drought and heat of the weather. *Professor Simond's Inaugural Lecture, Royal Veterinary College.*

Home Correspondence.

Round Clamp for Roots.—You do not perceive the utility of our proposed "circular" clamp for roots compared with a long one of same dimensions, or the common round lump. But we gain by it in convenience and save in space, and in so much expense as covering with straw and earth. The covering of a round top with haulm or rubbish in a conical form would avoid all this, and the expense would be trivial, and not exceed the price of covering a long clamp of the same size (and especially of a smaller size in diameter), even if it were only for one year's standing; but it might be permanent, and besides it would secure a clamp house for all necessary work attending the roots in winter, for the cattle always in the dry and out of the way of cold. But if it were only a circular clamp without a permanent covering above, it would be much better confined in one small circular space, to be well covered with haulm, and a slight thatching (which always keeps out the frost sufficiently), instead of the great expense of covering it with clay, it may be, forming deep ditches on each side, full of water on retentive soils, especially if of smaller dimensions in diameter. But this would knock aside our idea of preparing the roots for the cattle at home, or near the cattle yard, in the central part of the clamp, as we suggest. *A. Hardy & Son.*

Cinders for Pigs.—I am a pig breeder and rear a large number. For nine years past I have been in the habit of giving my pigs some small fragments of coal or coal ashes. They devour them greedily, especially when feeding upon store food, raw vegetables, and the "swill" of the house. I believe it to be a natural instinct, for the removal of some felt bodily sensation—perhaps acidity in the stomach; but it is easier to guess than to determine, especially as neither coal or coal ash possess alkalies stronger than chalk, still chalk and earthy matter may of themselves meet their requirements as an antacid. Young sucking pigs are very fond of nibbling and eating coal ashes. The fact itself is valuable, if we cannot at present determine its "rationale" or cause. Dogs often eat Grass and vomit afterwards. Practical observations are at present much in advance of science. I have never met with a medical man who could tell me why or how quinine cured ague, although most medical men admit that it is one of the best established facts in medicine. The art of agriculture owes so much to the enterprise and talent of Mr. Mechi that I regret I cannot answer his question as to the amount of Barley-meal required to make 1 stone of

pork, live weight; but this I know that it will vary immensely in two varieties of the pig trade. I have tested many pigs, and find that a well-bred Berkshire pig will make a stone weight upon one-sixth less food than a Shropshire or Yorkshire pig bought out of the market. *J. H., Mickleover.*

How many tons to the acre?—A neighbour has laid a very considerable bet that he will grow 40 tons of Mangel to the acre this season, on a light loamy soil. Farmers smile and say "let him grow 30 tons first," and yet by reference to an old book—"Lawrence's Farmer's Calendar," published many years since, 11th edition, 1809, 12*s.*, and a work of some authority in times past—you may read, page 318, that a crop of Turnips drilled on ridges 11½ inches from row to row, weighed 55 tons. The account in Lawrence's book is interesting in the highest degree, as to the culture and the use made of them, drawn, and perfectly sound, the 5th day of March. I would extract the whole but it occupies two pages of his work. * * *

The value of my Steam-engine—If by chance I hire a portable steam-engine the charge, with two men, is, two guineas *per diem*, I finding the coals. As I work my own engine about 200 days in the year the total charge or saving is thus, at 35*s.* per day, 350*l.* per annum! I am quite sure that my wear and tear and repairs do not exceed 25*l.* per annum. Who, after this, will say that it not preferable to have one's own engine? After nearly 11 years' work, my engine and boiler appear likely to last another 20 years. *J. J. Mechi, Tiptree.*

Cattle Cookery.—Your "word of comment" last week obviously demands a reply, but although the subject requires ventilation I have not time to discuss either the individual merits of Horsfall's system or Thorley's system of feeding, much less the writings of the former and "advertisements" of the latter. All I wish is to justify myself from the fallacious view taken of my classing these two gentlemen together in the great work at which they are now actually both engaged, and this I trust you will allow me space to do. Mr. Horsfall is as much self-interested in his practice (the feeding of his own stock) as Mr. Thorley is in his practice—the manufacture and sale of his condiment. Both, we presume, try to make as large a profit as they can. The former pockets his profit, while the latter, as yet, has spent all his, and much more than all his profit in bringing a most important article before the public. You have therefore certainly no right to hold up Mr. Horsfall as the "disinterested" man you do, insinuating the reverse of Mr. Thorley at the same time. In the article (Oct. 8) when I state that "the improved system of cooking food for live stock" is not generally "very well understood," I include Mr. Horsfall's system. From the first time it was made public I have supported Mr. Horsfall's practice against much opposition in the columns of the agricultural press, for which at the time I was almost expelled the British capital! I could never, however, support Mr. Horsfall's writings as a fair exposition of his practice. In short, his writings are contrary to established science in many points, and therefore I condemn them as unworthy of public confidence. He appears too fond to be seen in print. [!!] I am now, again, it appears in a similar box as to Thorley's condiment, and what I shall say on this head at present is in the language of the poet—

"Lay on, Macduff,"

if you have aught to say against me in the shape of facts. As to the use of a "condiment" "direct from the druggist," it would be well to consider what the former means before the advice of the latter is taken. For my own part I shall continue to use condiment and shun the druggist's shop as much as possible. In Morton's Cyclopædia of Agriculture salt is recommended as a condiment, and Alderman Mechi, in the *Agricultural Gazette*, brings under our notice "coal ashes and cinders!" but is this all the length we can go in cattle cookery? I trust not. As to economy, Thorley's practice has the advantage of Horsfall's even at the high price we are now paying for the condiment of the former. This however is not the proper view of the subject under this head—that which ought to be discussed in the columns of a journal professing to be the exponent of agricultural science, although "it is one calculated to chime softly in the ear" of too many farmers. The proper view is this:—The articles in Thorley's condiment can be grown in warm climates to any amount, and cheap so that we have a suitable supply to our demand; consequently as prejudice and opposition disappear, and justice is done to manufacturing and commercial enterprise, and industry, the present price which Mr. Thorley is compelled to charge will be reduced—supply and demand regulating the market in this as in every other case. It is otherwise with some of the articles used by Mr. Horsfall, for they are limited in supply (not to mention the fact that they are less efficacious than those used in Thorley's practice); consequently the conclusion is therefore manifest that Mr. Thorley has higher "claims upon the confidence and regard of agriculturists" than Mr. Horsfall. To bring the subject home, which is always the practical and best plan, I blame the *Agricultural Gazette* for the high price we are paying Mr. Thorley, and not Mr. Thorley himself, and I dare you to justify your leading columns from the heavy charge I now prefer against them. *W. B., London, Oct.* 10. [Let this be taken for what it is worth, and the measure of its value may be pretty well determined by the absurdity of its charge of vanity on Mr. Horsfall.—One man having proved the value of a remedy publishes his experience for the benefit of all, and him we call *philanthropist*. Another man has proved the value of a remedy, he keeps the knowledge of it to himself, but offers it for sale to all and sundry; to him an altogether different name is given. There is difference enough between them.—Mr. Thorley may have proved the value of his cattle food and reaped profit from its use, and Mr. Horsfall has no doubt done the same; so far then they are alike—the difference arises after this; the latter publishes his experience in full detail, describes his practice, and recommends its adoption; the former establishes a manufacture upon his experience, and makes people pay him if they would make that experience their own. Is there no difference between the two? And this is putting the contrast in the most favourable light for Thorley and his food; for it is assuming that the article which he makes and offers to his customers at many times the price of the most nutritive of known foods possesses all the properties it claims. We hope that the readers of a Journal "professing to be the exponent of agricultural science" will listen to the advice of Messrs. Lawes and Gilbert, of Professors Anderson and Cameron, Voelcker and Way, and let "W. B.," unlistened to, amuse himself, if so he please, with any further defence he may have to offer of high-priced cattle condiments, though it must be in other columns than these for the future.]

Farm Memoranda.

Lough Foyle, when first I saw it, some 30 years since, formed at full tide a sheet of water of some 18 or 20 miles in length, by about 10 miles in its widest part, and at the recess of the tide, and especially in spring tides, a tract in extent as far as the sight could reach was left bare. Some attempt had even then been made to enclose portions of this immense slob, but they were on a small scale as compared to the subsequent efforts. A tract of about 1400 acres was enclosed on the eastern or Magilligan side some 20 years ago; at a more recent period, an embankment for the Londonderry and Coleraine railway was carried through the lough, shutting off the tide from an immense tract of slob; an embankment still farther out at sea was afterward constructed; and now some thousands of acres, over which a few years since rolled the waves of the ocean, are rewarding industry and enriching the state by their abundant productiveness. Induced by the results which accrued from previous attempts, a company was formed years since for the purpose of extending on an immense scale the work of reclamation. An embankment was commenced which was to have added more than 20,000 acres to the conquests already obtained over the lough; the embankment, the result of this grand project, and on which a quarter of a million of money was expended, is seen afar, apparently in mid-ocean, where it appears, little affected by the waves with which both its faces are lashed; but unfortunately money became scarce; funds to complete the undertaking could not be obtained, and the work was abandoned; but the slob, both within the embankment and beyond its termination, is being raised by deposition, and by the growth and decay of fields of unlimited extent of Grass-wrack (Zostera marina), so that in the course of another generation, or sooner, the certainty of a highly productive return for the capital necessary for the embankment will effect the completion of this noble project.

I proceeded to my inspection of these interesting reclamations by the Londonderry and Coleraine railway, and stopping at the junction, about 16 miles from Londonderry, was laid down on the farm of an old and kind friend, Mr. Campbell, for 23 years director of the Templemoyle Agricultural School, to whom very many prosperous farmers are indebted for the knowledge which has secured for them success in their calling, and to whom also it was very gratifying to me to learn the same pupils presented, on his resignation of office, an enduring and valuable token of their gratitude and regard.

Robinson's level or slob, on which Mr. Campbell's farm is situated, comprises about 1400 statute acres, and was enclosed some 20 years since; the railway intersects it, and affords in its fences a good opportunity of investigating the nature of the land, which is found to be composed of a mixture of sand and clay, similar to that forming the soil of the reclamations on the shore of Lough Swilly; in the reclamation at present under revise, the sand is for the most part overlain by a stratum of darkish-coloured clay, the result of a mixture of fine mud and decomposed sea-wreck, the clay varying in depth from an inch or two to 2 or 3 feet, and forming, when mixed by cultivation with the underlying sand, a soil of considerable fertility, and adapted to the culture of agricultural crops of all kinds. Over a considerable extent of land along the embankment, and on the eastern side of the reclamation, however, this upper stratum is wanting, and then the comparatively pure sand, although inexpensive to labour, requires heavy dressings of manure, without which its cultivation would be the reverse of profitable. That this is so appears patent by inspection of a farm of some 250 acres of this sandy soil, and which I believe is now to be let; much of the miserable Wheat crop of the current year on this farm lies, having been mown, so thin on the ground, so short and so poor, as to be hardly worth the trouble and expense of gathering, whilst on adjoining and similar, but more judiciously treated land, the crop will average eight barrels per statute acre of very beautiful white Wheat. The rent of the land of this level varies from 18*s.* to 24*s.* per statute acre.

Much of the land is cultivated in ridges similar to those on the Lough Swilly levels, before described; the water in the furrows, or open drains, which divide the ridges, stands at depths varying from 12 inches, contiguous to the embankment, to more than 2 feet at a considerable distance from it (for the land rises as it recedes from the sea), being kept at that low level by a 12-horse power steam-engine, which works a scoop wheel about 16 feet diameter, making five revolutions per minute, and capable of raising 18,000 gallons of water per minute to a height of 4 feet. The engine works only during the period that the exterior water is below the level of half-tide; it consumes 7 lbs. of coal per horse-power per hour, and keeps the 1400 acres permanently, and, with the exception of some land in the vicinity of the rampart, sufficiently dry, at a cost of about 3*s.* per acre per annum. At the period of my visit (22d of September) Mr. Campbell was sowing Wheat, broadcast, on Clover lea, a furrow presser following each pair of ploughs; the seed (7 stones per acre) was sufficiently covered by a couple of strokes of the harrows, but to ensure a fair crop a dressing of Peruvian guano is harrowed in in spring. The Potato, Turnip, Bean, corn, and Clover crops on this farm are usually good, the fertility of the land being greatly promoted by the large quantity of Grass torn up by the waves and rolled on and left at the foot of the embankment; and in addition to the large amount of manure produced by the stall feeding of a number of cattle, town manure is brought by rail from Derry, at a cost for carriage of 1*s.* 8*d.* per ton for the 16 miles, and these sources of fertility are still further augmented by the purchase of from 100*l.* to 150*l.* worth annually of concentrated manures, principally guano. Bone manure is not efficacious on this land.

Mr. Drennan, to whom Mr. Campbell kindly introduced me, holds an adjoining farm of 600 acres, most of which has been tile-drained; the crops are excellent; the Swedish Turnips amongst the very finest I have seen this year.

A commodious farm-steading, with stalls for 60 head of cattle, has been erected by the landlord, the tenant paying 6½ per cent. interest on the outlay of 500*l.* A most comfortable and gentlemanly residence has been erected by the tenant. The team consists of 12 very beautiful and powerful horses. Large numbers of cattle are fattened annually, and a flock of Cheviot sheep appear to find themselves unusually well circumstanced in the luxuriant Clover and Rye-grass pastures of those level lands. The greater part of the corn was cut down this year by the reaping machine; the threshing and preparation of the corn for market is here effected by steam, and doubtless only a short time will elapse before the ploughing of these stoneless, flat, and large fields will be performed by the same power.

Tyrell's reclamation, comprising another 1400 acres, is situated some miles nearer to Derry than Robinson's, to which the foregoing observations have reference, but my arrangements unfortunately did not permit me to examine it. About 900 acres of it, I understand, are rented by Mr. M'Cormack, for which he pays 30*s.* per statute acre; large tracts of it, I was informed, are let on the con-acre system for growing Flax, for which it is extremely well suited. The land, as well as I could judge of it, as I was twice whirled past it in the railway carriage, appeared of a darker colour, and much superior in quality to the more eastward level, and an enormous stackyard gave evidence that the fertility of the land is not permitted to lie dormant.

To the west of, and abutting against Mr. M'Cormack's farm, are 400 acres of slob, nearly inclosed by an embankment; the land is fast rising by deposition within the embankment, and when this work of accumulation, which is proceeding rapidly, has progressed sufficiently far, the breach that now admits the tide will be closed, and a tract at present yielding at the recess of the tide a chance meal to a few sea-gulls will, with its golden harvests and luxuriant Flax fields, meadows, and pastures, abundantly reward the engineering skill and laborious industry by which such nationally important results will have been effected. *Agricultural Review, Dublin.*

Miscellaneous.

Weyhill Fair, (Hants) Oct. 11.—This celebrated fair not only ranks high as a stock and sheep fair, but is one of the greatest Hop fairs in this country. Sussex, Kent, and Worcestershire contribute their growth of Hops to this great sale, and Surrey consigns its highly-famed "Farnhams" for competition at this great Hop mart. The fair will last the whole week. Yesterday and to-day are for the sale of sheep, stock, and horses, and the four last days are exclusively for Hops, cheese, &c. The Hop barns and offices are in readiness for Hops, and several miles of ground are under canvass, taking in the bulk of Hop plantations. The Sheep Fair.—The side hills were hidden by the sheep pens, which were well filled, and it is estimated that between 300,000 and 400,000 sheep were hurdled in for sale. The western counties contributed largely with some of the choicest and best bred sheep, and Sussex sent the pure Southdown. The fair opened with a brisk business, and prices asked exceeded the value obtained at the late Wilton Great Sheep Fair. The following were the figures made by the various breeds of sheep:—West-country sheep—useful well-conditioned wethers, 40*s.* to 45*s.* a head; store sheep, for folding on Turnips, 36*s.* to 40*s.*; strong tegs varied according to breed, and

made from 29*s.* to 34*s.* Southdowns—prime wethers, 37*s.* to 43*s.*; cross-bred ditto, 30*s.* to 36*s.* and 38*s.*; well-bred Southdown ewes, 32*s.* to 37*s.* a head; choice ditto of celebrated flocks, 38*s.* to 43*s.*; lambs (wethers), 23*s.* to 28*s.*; ditto (ewes for stock), 21*s.* to 26*s.*; and plain lambs, 21*s.* to 23*s.* a head.

Death of Cattle from eating Yew Branches.—At Red House, Hursley, lately occupied by Mr. Fowlie, bailiff to Sir W. Heathcote, Bart., there is a Yew hedge cut to fancy shapes and figures. This operation was performed during the past week, and the cuttings, which Mr. Fowlie during his occupation always had carefully collected and burnt at once, were on this occasion suffered to lie on the Grass of the field. Alongside in this field Mr. Newton, of Ashley, had about 30 heifers to feed, and on Thursday morning some boys out picking Mushrooms found eight of them lying dead at different places. A ninth was apparently in great pain, and a strong emetic given to it showed the cause of the death of the others—namely, the eating of the Yew cuttings from the hedge. *Hampshire Independent.*

Calendar of Operations.

OCTOBER.

Wester Ross: *Oct.* 10.—On the 14th of last month we completed one of the finest harvests we have ever had. There was little interruption from bad weather from beginning to end. We have little to boast of however, save the fineness of the weather, and the cheapness of the harvest. Take the following as a specimen of what can be done by the scythe, with a light crop, and having all the hands well fitted for the different parts of the work. On Saturday the 20th of August, we commenced cutting 140 acres of Wheat, Oats, and Barley, with 6 scythes. In 12 days of working time the whole 140 acres were gone over—each man having cut little less than 2 acres per day. There were employed in all 6 scythemen, 6 women for gathering, 6 men for binding, and 3 boys for raking. The 6 scythemen and 2 of the rakers were engaged for the half year; all the others were engaged for the harvest. A few of the hands were discharged when the cutting was completed; the others were retained to assist in carting home and in stacking the crop. This operation occupied 7 additional days, on which days some 55 stacks were carted to the stackyard. The scythemen and 2 of the rakers being, as I have already said, half-year servants, were not, of course, then paid. The binders had from 2*s.* 3*d.* to 2*s.* 6*d.*, and the women and boys 1*s.* 9*d.* per day. The whole outlay amounted to 20*l.*, the cutting, reaping, binding, raking, leading, and stacking being about 2*s.* 11*d.* per imperial acre. We would have greatly preferred a more costly harvest, with a better filled stackyard. Wheat bulked less than usual; Barley considerably less, and of Oats there is less than half the usual bulk. Straw will be a scarce and costly commodity until another harvest; and, to add to the evil, our Turnips, which were never at any time very promising, have, from the continued drought, been overtaken with mildew, and must now be a very deficient crop; consequently, from the want of keep, numbers of cattle will be thrust on the market, and for the remainder of the season prices will be very low. Wheat and Barley are spoken of as threshing out satisfactorily, but Oats are turning out soberly both as to quantity and quality. A more abundant and satisfactory crop of Potatoes has not been lifted since the commencement of the disease, and although the breadth planted was small, a large quantity might be exported from the north.

Tyneside: *October* 10.—Now that farmers have had time to test the produce of the cereals by threshing, we are able to give a more probable estimate of the yield. Wheat, the staple crop of the district, bulked well, and the produce is a good average in quantity, the quality however is quite inferior to last year, both colour and weight being deficient. Barley in exceptional instances cut up a heavy crop, but in the majority of cases will be deficient in yield per acre, but the quality superior. Oats in almost every stackyard occupy far too little room, and the produce is generally light in weight and husky. The breadth under Beans is annually increasing, the winter variety being viewed with considerable favour on the drier soils; the crop is very various as to bulk, but the produce quite under an average. Potatoes are a sound crop, but on the warmer soils are not taking up well, having a large proportion of small ones. Turnips on all the best soils are a great failure, though with a continuance of open weather they may improve to half a crop; while in the colder and later districts they approach a fair average. Keep for stock has been scanty throughout the season, and the rains though copious came too late to improve the pastures much. Considerable progress has been made with cleaning of stubbles, both by grubbers and skim ploughs. The comparatively settled weather of last week and this have been employed in sowing winter Beans and preparing the land for their reception. A considerable breadth of Wheat has also been sown on the "bare" fallows, too often I am afraid "bare" of manure if not of weeds. Now that the nights are cold we are turning our attention to the housing of cattle, with a grudge at the thought of such short provisions for their maintenance. *W. C. T.*

Notices to Correspondents.

Blood Manure: *T J.* It is a superphosphate containing probably a little more ammoniacal or nitrogenous matter than usual, as it is made with blood instead of water.

Cows: *Henry Gauthorpe.* Give Bean-meal instead of oil-cake and gruel made with wheaten flour once a day, and with it the following powder:—Prepared chalk, 1 oz.; powdered opium, 1 scruple; gum catechu, 1 drachm. *W C S.*

Name of Grass: *W C M.* The Grass sent is the Agrostis stolonifera, a variety of A. alba—the Fiorin Grass. In the position indicated it may be described as useless; and if it has possession of the field it is an evidence of the land being out of condition; in short, what is called a "hungry clay." From these conditions it may be concluded that any ill effects upon animals feeding in the meadows is not so much the result of eating this so-called "sour" Grass, but from the general poverty of the herbage.

Sorts of Wheat: *R.* Velvet ear and Fenton (white) and Piper's thick set (red) are short strawed; Talavera (white) and April (red) are early; Fenton, Red Straw, and Hunter's are good white sorts; Lammas, Browick, Spalding, and Nursery are good red sorts.

Trifolium incarnatum: *Cairnhill.* We doubt if it will answer in Berwickshire; but you should try it. Apply to any of the seedsmen advertising in our columns.

Young Pasture: *T S.* Don't mow it. Graze it with young stock for two or three years; diligently gather their droppings; don't let sheep in till the pasture is established. Read Mr. Thompson's experience in Vol. 19 of the Agricultural Society's Journal.

*** As usual, many communications have been received too late, and others are detained till the necessary inquiries can be made. We must also beg the indulgence of those correspondents the insertion of whose contributions is still delayed.

THE BRISTOL NURSERY, KEMP TOWN, BRIGHTON.

ALEX. McKENZIE, for some time Gardener, &c., at Woodlands, Blackheath, begs to inform his friends and the public that he has taken the above Nursery on Lease, and hopes by strict attention to his business to obtain a share of the patronage so liberally bestowed on the late Mr. Mitchell.

Having taken the whole Stock, he will be prepared to execute orders at once, and begs to offer the following, which are in fine condition:—VINES, from Eyes, fit for forcing or planting.
FRUIT TREES, trained and in pots.
Extra large RHUBARB, for immediate forcing.
FIGS, in pots, fit for forcing.
STOVE and GREENHOUSE PLANTS.
And a very superior collection of TULIPS.—October 8.

JOHN STEWART, (of the late firm of Mackie and Stewart,) Nurseryman and Seedsman, begs respectfully to inform his friends and the public generally that he opened his new premises at 6, Exchange Street, Norwich, two doors from the Corn Hall, in the last week in September, with an entire NEW STOCK of everything connected with the trade.

John Stewart's DUTCH BULBS have arrived, having been selected especially for him by some of the first houses in Haarlem. A List is now ready, and will be franked to any address upon application. He solicits the favour of early orders for the same, so as to secure Roots of the best quality; and pledges himself that every order entrusted to his care shall receive his personal attention. All Bulb orders to the amount of 20*s.* will be sent, carriage paid, to the nearest Railway Station.

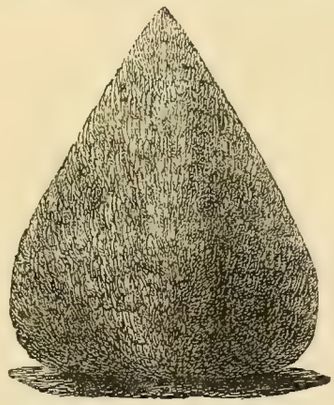
SEED WHEAT FROM THE CHALK.—Selected samples of CHIDHAM, WHITE TRUMP, ROUGH CHAFF, HUNTER'S WHITE, RED-CHAFF WHITE, GRACE'S WHITE, TALAVERA, RED BROWICK, RED NURSERY, GOLDEN DROP, and all the best kinds of Wheat, supplied by Raynbird & Harvey, of Basingstoke, and 89, Seed Market, Mark Lane, London, E.C. Samples and prices on application.

IMPROVED RIVET WHEAT FOR SEED.

MR. T. BENTALL invites the attention of Farmers to his new Stock of RIVET WHEAT, the produce of a handsome and well-formed ear, selected from the variety usually known as the "Golden Rivet" or "Payne's Defiance," and which contained no less than One Hundred and Twenty-one Grains.

Mr. B. confidently recommends the above to all growers of Rivet Wheat on account of its great productiveness, and the esteem in which it is held by Millers. Great care has been taken to preserve the stock as pure as possible. Price 4*s.* per quarter. New sacks, 1*s.* 6*d.* each. May be obtained of Mr. T. Bentall, Perces, Halstead; also of Mr. R. Emson, Secretary to the Essex Agricultural Society, Halstead, by whom samples will be shown at Braintree, Colchester, and Sunbury Markets. Remittances requested from unknown correspondents.

THUJA JAPONICA.—Scale, ¼-inch to the foot.



J. WRIGHT and CO. beg to inform the Trade and Public generally that they have a large Stock of the above, including a few 1000 SEEDLINGS, saved from their specimen, as above, and acknowledged to be the most beautiful of all the Thujas by many or all that have seen it.

Also THUJA AUREA, 2 to 3 feet; ditto SEEDLINGS; GIGANTEA; fine LAURUSTINUS, LAURELS, a quantity of BOX EDGING, &c. Prices upon application.
Nurseries, Mill Hill and Edgware, N.W.

AMBROISE VERSCHAFFELT, Nurseryman, Ghent, Belgium, begs to offer the following plants:—

	£	s.	d.
BEGONIA CHARLES WAGNER (finer than Begonia Rex)	0	6	0
LAPORTEA CRENULATA, splendid ornamental plant	0	8	0
MYRISTICA GHIESBREGHTII, fine foliage	0	14	0
CIBOTIUM PRINCEPS, one of the finest Tree Ferns yet introduced, 3*l.* to	8	0	0
ALSOPHYLLA AUSTRALIS, Tree Fern for greenhouse	0	10	0
CLEMATIS SOPHIA FLORE PLENO	0	4	0
MUSSCHIA WOLLASTONII	0	4	0
LILIUM GIGANTEUM, flowering bulbs	2	0	0
PÆONIA ARBOREA, ALEXANDRE II., one of the finest dark Tree Pæonias	1	0	0
New Pear GENERAL TOTLEBEN, of which a drawing can be obtained	0	8	0
RHODODENDRON BYLSIANUM	0	8	0
ROSE hyb. rem. IMPERATRICE EUGENIE, splendid white flower	0	3	6

A. Verschaffelt's NEW CATALOGUE, No. 66, is just printed, and may be obtained free of Mr. R. Silberrad, 5, Harp Lane, Great Tower Street, London, E.C.

CAMELLIAS AND INDIAN AZALEAS, with flower-buds, AND OTHER USEFUL PLANTS.

A. VAN GEERT, Nurseryman, Ghent, Belgium, begs to offer the following:—
Fine CAMELLIAS, with flower-buds of the best and showiest varieties, 5*l.* to 6*l.* per 100.
Fine INDIAN AZALEAS, with flower-buds, of the choicest varieties, 4*l.* to 6*l.* per 100.
New French and Belgian Herbaceous PÆONIES, 25 vars., for 1*l.*
LILIUM LANCIFOLIUM RUBRUM, strong bulbs, 4*l.* per 100.
" " ALBUM " 3*l.* per 100.
" " PUNCTATUM, 3*s.* 6*d.* each.
" JAPONICUM (true), 5*s.*
" CORDIFOLIUM, 5*s.*
ASCLEPIAS TUBEROSA, flowering roots, 1*l.* 1*s.* per 100.
GLADIOLUS GANDAVENSIS, strong roots, 10*s.* 6*d.* per 100.
" " a collection of 25 new distinct varieties, for 1*l.* 5*s.*
Ghent and English Hardy RHODODENDRONS, fine young plants grafted, 6*l.* per 100.
GHENT AZALEAS, with flower-buds, 4*l.* to 5*l.* per 100.
The new MEXICAN PINES, 50 varieties, 5*l.*
PINUS VEITCHI, 5*s.* each.
" DON PEDRO, 5*s.* each.
TILIA EUROPEA foliis variegatis (new), 15*s.* each.

TRAINED PEACHES, NECTARINES, APRICOTS, APPLES, CHERRIES, and PLUM TREES, can be had of E. R. GREENUS, Railway Nurseries, Watford, of the best quality and on the most reasonable terms, with instructions as to soil, planting, and treatment of the Trees so as to insure success.

STANDARD and DWARF ROSES, EVERGREENS, and all sorts of NURSERY STOCK.

Cash, or reference from unknown correspondents.

REIGATE SILVER SAND.—Best quality for Florists, 16*s.* per ton; less quantities, 1*s.* 6*d.* per bushel, delivered to any London wharf or railway. PEAT, LOAM, and LEAF MOULD, in large or small quantities. Sacks for Sand, 1*s.* 6*d.* each, or on hire 6*d.* each (five hold a ton).

John Kennard, Purveyor to her Majesty, Swan Place, Old Kent Road, London, S.E.

HOT-WATER PIPES at wholesale prices, with Elbows, Syphons, Tee Pipes, and every other connection. Wrought and cast iron Boilers, Saddle, Conical, Cylinder, and Elliptic, from 24*s.* each. Boilers and Iron Stands to use without brickwork. Valves from 12*s.* each. Coil Boxes, Furnace Doors, Furnace Bars, Supply Cisterns, and Builders' Castings of every description in stock, at Mr. Lynch White's Iron Wharf, Upper Ground Street, Blackfriars Bridge, London, S.

HORTICULTURAL BUILDINGS AND HEATING BY HOT WATER.

JOHN R. PEILL, 17, New Park St., Southwark, S.E., Manufacturer of every description of Buildings for Horticultural purposes, and Inventor of the Improved Conical Boiler for heating the same, is prepared to undertake works of any magnitude, and refers among others to the celebrated range of FORCING HOUSES at HER MAJESTY'S GARDENS, FROGMORE, and at SIR ROBERT PEEL'S, DRAYTON MANOR, constructed under the superintendence of his Manager, Mr. John Jones; and also to his BOILERS fixed at the CRYSTAL PALACE, the ROYAL BOTANIC GARDENS, REGENT'S PARK, and KEW, and at several hundreds of the Nobility's seats, Public Establishments, and Manufactories in London and the provinces. J. R. P. also manufactures every description of Iron Roofs, Iron Houses, and Iron Fencing, plain and ornamental. Strong Iron Hurdles for Sheep (6 ft. long, 3 ft. high, with 5 bars), 4*s.* 3*d.* each; ditto for cattle, 4*s.* 9*d.* each. Prices and other particulars forwarded on receipt of one postage stamp.

TO THE NOBILITY, GENTRY, AND HORTICULTURISTS.

H. McCALLA (late principal Draughtsman to Messrs. Weeks & Co.), Civil Engineer and Farm Architect, begs to inform the above that the Horticultural Buildings being confined to so few, exorbitant prices are charged; that he prepares Working Drawings and Specifications, so that they can have their own constructed by any country carpenter, at 1*s.* 6*d.* per foot super, or upon their own estates at 1*s.* 4*d.* per foot. Plans also upon the same rule for erecting Hot Water Apparatus. Plans for all kinds of Farm Buildings, Homesteads, Labourers' Cottages, Laying out of Estates, Drainage. Plans &c., prepared for all the above Works and submitted to competition.—Office: 7, Upper Cheyne Row, King's Road, Chelsea, S.W.

STEELL'S PATENT WROUGHT-IRON DOUBLE-BACKED DOUBLE BOILER, for HEATING CHURCHES, HORTICULTURAL BUILDINGS, WAREHOUSES, &c., is the most powerful, most economical, and quickest actioned Boiler in existence, and may now be seen ready for use at their Nurseries, Richmond, Surrey, S.W., the only place where they can be procured.

Testimonial.

"Rectory, Barnes, Sept 10, 1859.

"Gentlemen,—I can readily bear my testimony to the excellence of your Boiler; indeed to that of the whole heating apparatus which you have supplied for our church. It combines great heating power with economy of fuel and facility of management.—I am, Gentlemen, yours faithfully,

"Messrs. G. & W. Steell." "R. E. Copleston."

T. G. MESSENGER, Horticultural Builder and Patent Hot-Water Apparatus and Garden Engine Manufacturer, Loughborough.

T. G. Messenger's Divisionless Horticultural Erections, ventilated with screw mechanism by which the top or front lights are opened the entire length of the house momentarily, do not fail to give complete satisfaction (as numerous Testimonials can show), for the following reasons:—They are much lighter in appearance, more durable, much stronger, and cheaper than any other can possibly be.

Three years' trial has proved his PATENT BOILER to be superior to any hitherto invented; a great number of houses can be heated at once with this Boiler, with the facility of heating any separately.

Illustrated descriptions and prices of his Patent and greatly approved GARDEN ENGINES sent free upon application; also Plans, Estimates, and Testimonials for Building or Heating. See *Gardeners' Chronicle*, May 21.

FOR SALE, about 15 lengths of HOT-WATER PIPES of the best quality, also Elbows and Bends of every sort. One Stop Valve. All in good order; only been in use 2 years.—Mr. Head, Nurseryman, Upper St., Islington, N.

GREENHOUSES, CONSERVATORY, &c., for Sale. A large Stock, Glazed, ready for Fixing, at Henry Freeman's, Hothouse Builder, Triangle, Hackney, N.E.

TANNED GARDEN NETTING for Preserving Fruit Trees from Frost, Blight, Birds, &c., and as a Fence for Fowls, &c. One yard wide 1½*d.*, 2 yards 3*d.*, 3 yards 4½*d.*, and 4 yards 6*d.* per yard, in any quantity, may be had at C. Wright's, 376, Strand, W.C.

A liberal allowance to Nurserymen.

HENRY J. MORTON and CO., 2, Basinghall Buildings, Leeds.

GALVANISED IRON WATER CISTERNS

for Cottage Houses, &c., to contain 50 gallons, 27*s.*; 80 gallons, 30*s.* each; and 140 gallons, 36*s.*, and fitted with tap, keeping the water perfectly sweet and clean; will not rust or corrode. Cisterns of all sizes.

GALVANISED IRON PUMPS

for Liquid Manure or Domestic Use, 3 inches diameter, 30*s.* and 32*s.* 6*d.* each; Tail Pipe for same at from 10*d.* per foot.

GALVANISED IRON SWING WATER BARROWS

for Garden or Farm use, containing about 20 gallons, entirely formed of iron, 32*s.* 6*d.* each.

IRON FENCING AND HURDLES.

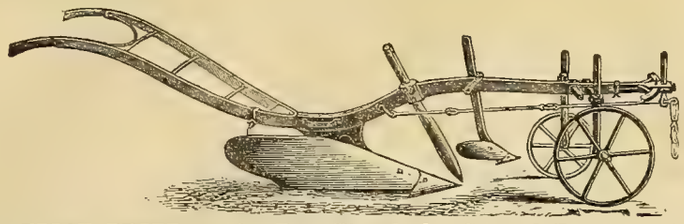
HILL and SMITH'S Patent Continuous IRON FENCE is adapted for every variety of situation, and is much superior to, and cheaper than, Iron Hurdles of equal strength.

Many miles of this Fence have been erected on the London and North-Western Railway between Camden Town and Bletchley. The Patent principle is applied to Iron Hurdles, whereby their strength is much increased and the cost reduced.

Illustrated Priced Catalogues will be sent on application to Hill & Smith, Brierly Hill Iron Works, near Dudley; or 40, Broad Street Buildings, City, London, E.C.; or 23, Enoch Square, Glasgow, where specimens may be seen; or to Mr. B. Samuelson, 76, Cannon Street West, London, E.C.

THE PLOUGH TRIALS AT WARWICK.

HOWARD'S CHAMPION PLOUGH



Gained the FIRST PRIZE as the Best Plough for General Purposes at Warwick,

BEING the CHIEF PRIZE for PLOUGHS, awarded by the Royal Agricultural Society of England, at this Meeting. The importance of this Prize will be gathered from the fact that the GENERAL PURPOSE PLOUGHS are the only ones tried on BOTH LIGHT AND HEAVY LAND, and as HOWARD'S CHAMPION PLOUGH proved itself to be the best on both soils, the FIRST PRIZE, of the HIGHEST AMOUNT given by the Society for any kind of Plough, was awarded to J. & F. HOWARD.

PRIZES awarded to J. & F. HOWARD, by the Royal Agricultural Society of England, at the WARWICK MEETING, 1859, being not only the LARGEST NUMBER of PRIZES, but the LARGEST NUMBER of FIRST PRIZES awarded to any Exhibitor.

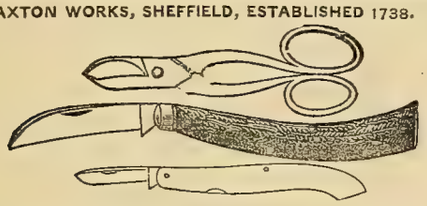
THE FIRST PRIZE FOR THE BEST PLOUGH FOR GENERAL PURPOSES, ALSO A PRIZE FOR THE BEST PLOUGH FOR LIGHT LAND, AND A PRIZE FOR THE BEST PLOUGH FOR HEAVY LAND; THE FIRST PRIZE FOR THE BEST LIGHT HARROWS, THE SECOND PRIZE ALSO FOR THE BEST LIGHT HARROWS, AND THE FIRST PRIZE FOR THE BEST HEAVY HARROWS.

Every one of HOWARD'S Implements, tried at Warwick, gained a Prize.

CATALOGUES, with full particulars, sent post free on application to

J. & F. HOWARD, BRITANNIA IRON WORKS, BEDFORD.

PAXTON WORKS, SHEFFIELD, ESTABLISHED 1738.



SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.—Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

WARNER'S IMPROVED LIQUID MANURE OR GENERAL PORTABLE PUMP.



These Pumps are fitted with WARNER'S Patent Bucket and Valve, and cannot clog in action. The barrel is made of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure on the stand, the legs of which fold together, and may be carried with ease by one man to tank or pond.

	£	s.	d.
Stand and Pump, with screwed tail pipe, fitted with strong brass union for suction pipe	2	15	0
If fitted with barrel of planished copper	3	17	0
Stand and Pump, with plain tail pipe, for tying on suction pipe	2	9	0
2-inch patent rubber and canvas flexible suction pipe, on wires, either 10, 12, or 15 ft., per foot	0	2	2

May be obtained of any Ironmonger or Plumber in town or country, at the above prices, or of the Patentees and Manufacturers, J. WARNER & SONS, 8, Crescent, Jewin St., London, E.C.

PARKES' STEEL DIGGING FORKS.

BURGESS AND KEY, 95, Newgate St., E.C., London, being the Wholesale and Retail Agents for these celebrated TOOLS have always a large Stock on hand from which their Customers may select what they may require.

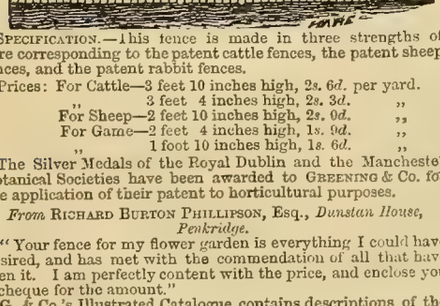
ANTHONY'S PATENT AMERICAN CHURN.—The FIRST PRIZE was again awarded to this Churn in Competition with several others at the Chester Meeting of the Royal Agricultural Society; it has obtained the First Prize given by the Society at every Meeting since 1850.

Messrs. BURGESS & KEY, 95, Newgate Street, E.C., strongly recommend it as the most perfect Churn now in use. Full particulars sent on application.

GREENING AND COMPANY'S PATENT WIRE FENCES.

Patronised by His Royal Highness the Prince Consort.

No. 16 variety, Double Mesh, Italian Pattern, for Gardens, &c.



SPECIFICATION.—This fence is made in three strengths of wire corresponding to the patent cattle fences, the patent sheep fences, and the patent rabbit fences.

Prices: For Cattle—3 feet 10 inches high, 2*s.* 6*d.* per yard.
,, 3 feet 4 inches high, 2*s.* 3*d.* ,,
For Sheep—2 feet 10 inches high, 2*s.* 0*d.* ,,
For Game—2 feet 4 inches high, 1*s.* 9*d.* ,,
,, 1 foot 10 inches high, 1*s.* 6*d.* ,,

The Silver Medals of the Royal Dublin and the Manchester Botanical Societies have been awarded to GREENING & Co. for the application of their patent to horticultural purposes.

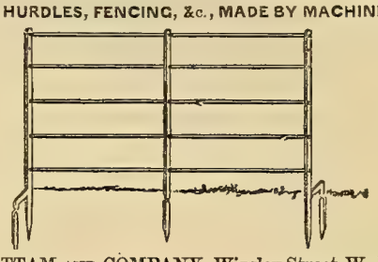
From RICHARD BURTON PHILLIPSON, Esq., *Dunstan House, Penkridge.*

"Your fence for my flower garden is everything I could have desired, and has met with the commendation of all that have seen it. I am perfectly content with the price, and enclose you a cheque for the amount."

G. & Co.'s Illustrated Catalogue contains descriptions of the above and other Iron and Wire Fences for Parks, Farms, Gardens, Game Preserves, Poultry Courts, &c., also of Iron Gates, Iron Hurdles, &c. Post free on application.

GREENING & Co., Victoria Iron and Wire Works, 81, Oxford Street, Manchester.

IRON HURDLES, FENCING, &c., MADE BY MACHINERY.



COTTAM AND COMPANY, Winsley Street, W., have invented machinery for making Hurdles, &c.; the bars, instead of being pointed by hand in the old fashioned style, are nipped down by the machine, leaving a shoulder so as to more effectually tighten the standards when rivetted. They are made of superior iron only, and will compete in price with those made by hand from cinder or common iron which so frequently break. Iron Fencing, Gates, and Iron Work of all kinds, both Plain and Ornamental, Conservatories, Hot Water Apparatus and Garden Implements.

Illustrated CATALOGUES free on application to COTTAM & COMPANY, Ironfounders, 2, Winsley Street, Oxford Street, W.

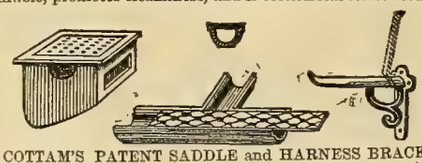
N.B. COTTAM & Co. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

COTTAM'S PATENT INVENTIONS FOR STABLE REQUISITES, awarded a Prize at the Paris Exhibition, and patronised by the English and French Governments.



COTTAM AND COMPANY, Winsley Street, W., are the original inventors of the PATENT ENAMELLED MANGER, Water Trough, and Wrought Iron Rack, united to an iron top-plate, and forming one complete and useful fixture, having COTTAM'S patent noiseless halter guide and collar rein attached, which is taken to the back of the manger, and works with ease and freedom up or down the guide-bar.

COTTAM'S NEW PATENT SEED-BOX, an important addition to the above fittings, being simple in construction, light, and durable, promotes cleanliness, and is economical in its results.



COTTAM'S PATENT SADDLE and HARNESS BRACKET combined, can be used with great advantage where space is an object, as it can be turned up out of the way when not in use.

COTTAM'S IMPROVED SURFACE GUTTER, with perforated moveable cover, the use of which prevents accidents, and can be easily cleaned out.

COTTAM'S CAST-IRON SANITARY TRAP, from its improved construction, gives a full water passage, and does not allow any smell to ascend from the drain.

PATENT LOOSE-BOX FITTINGS, and every article for the harness-room and stable, kept in stock, plain, galvanised, and enamelled. Iron gates, fencing, hurdles, &c.

The New Illustrated Catalogue and Estimates, gratis, upon application to COTTAM and COMPANY, 2, Winsley Street, Oxford Street, W.

N.B. COTTAM & Co. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

PAINTS OF ALL COLOURS, mixed ready for use from 5*s.* 6*d.* per gal., will cover 54 sq. yds. Superior MANURES, equal to Guano, from 5*s.* 6*d.* per cwt. Efficacious SHEEP WASH, 1*s.* 6*d.* per gal. Patent CART GREASE, 10*s.* per cwt. PORTLAND CEMENT WASH for outside of buildings, prevents greenness and vegetation, also absorption of wet, 1*s.* 6*d.* per gal. Genuine COLZA OIL, 3*s.* 10*d.* per gal. The PEOPLE'S LIGHT LAMPS, 2*s.* PETROLEUM OIL, 3*s.* per gal.—G. SPILLS, Colour and Oil Works, Saint George Street, London Docks, E.

GLASS FOR ORCHARD HOUSES & CONSERVATORIES.

JAMES PHILLIPS AND CO. beg to submit their prices of GLASS for the present month.

16-oz. SHEET GLASS, in boxes of 100 feet.—3rds. 4ths.

12 by 9, 13 by 9, 14 by 9 .. .. / 12 ,, 10, 13 ,, 10, 14 ,, 10, 15 by 10 ..	14*s.* 6*d.*	12*s.*6*d.*
13 ,, 11, 14 ,, 11, 15 ,, 11, 16 ,, 11 .. / 14 ,, 12, 15 ,, 12, 16 ,, 12, 17 ,, 12 .. / 18 ,, 12, 19 ,, 12, 20 ,, 12 ,, .. / 16 ,, 13, 17 ,, 13, 18 ,, 13 ,, .. / 19 ,, 13, 20 ,, 13, 21 ,, 13 ,, .. / 16 ,, 14, 17 ,, 14, 18 ,, 14 ,, .. / 19 ,, 14, 20 ,, 14, 21 ,, 14 ,, ..	16*s.* 6*d.*	14*s.*0*d.*

Boxes included and not returnable.

GLASS for ORCHARD HOUSES, supplied by us to Mr. Rivers.

		16 oz.	21 oz.
20 in. by 12 in. / 20 in. by 13 in. / 20 in. by 14 in. / 20 in. by 15 in.	Common	14*s.* 0*d.* ..	£1 1*s.*
	Superior do. ..	16 6 ..	1 5
	English Glass ..	18 0 ..	1 9

Boxes included and not returnable.

SMALL SHEET SQUARES, in 100 feet boxes.—*s.* *d.*

6 by 4	6½ by 4½	7 by 5	7½ by 5½ / 9½ ,, 7½	11 6
8 ,, 6	8½ ,, 6½	9 ,, 7		
10 ,, 8	10½ ,, 8½			12 6

Boxes 2*s.* each, returnable at full price.

JAMES PHILLIPS AND CO.,

130, Bishopsgate St. Without, London, E.C.

NO CONNECTION WITH ANY OTHER HOUSE IN TOWN.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz SHEET GLASS of British Manufacture at prices varying from 2*d.* to 3*d.* per square foot for the usual sizes required, many thousands of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES, and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London, W.

See *Gardeners' Chronicle* first Saturday in each month.

HORTICULTURAL GLASS—JUNE TARIFF.

THOMAS MILLINGTON'S reduced Tariff of GLASS, &c.

6 by 4, 7 by 5, 8 by 6, 9 by 7 / 6½ by 4½, 7½ by 5½, 8½ by 6½, 9½ by 7½ } 16 oz. to the foot, 11*s.* 6*d.* per 100 feet.

In 100 boxes,—4ths quality, 12*s.* 6*d.*; 3ds do., 14*s.* 4*d.*

10 by 8, 12 by 9, 12½ by 10½, 14½ by 10½, 13 by 11
10½ by 8½, 12½ by 9½, 13 by 10, 15 by 10, 13½ by 11½
11 by 9, 13 by 9, 13½ by 10½, 12 by 11, 14 by 11
11½ by 9½, 12 by 10, 14 by 10, 12½ by 11½

20 by 12 / 20 by 13 / 20 by 14 / 20 by 15	per 100 feet	16 oz. 21 oz.
	Common ..	16*s.* .. 24*s.*
	Superior .	18*s.* .. 27*s.*

All Boxes included.

Orchard House sizes as supplied to Mr. Rivers.

Hartley's improved Rough Plate Glass from ⅛ to ⅜ in thickness.

Coloured Glass in great variety, at 9*d.* and 1*s.* per foot.

Paints, Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, Lamp Glasses, &c.

87, Bishopsgate Street Without, E.C., same side as Eastern Counties Railway.

GLAZIERS' DIAMONDS FOR CUTTING HORTICULTURAL and other GLASS, to be had of the Wholesale Manufacturer, JOHN EDWARDS, 20, Sharp's Alley, West Smithfield, London, E.C. Prices from 10*s.* to 27*s.* 6*d.*

SHAW'S TIFFANY is universally acknowledged to be the best, neatest, and cheapest material for shading Conservatories, and other Hothouses. Effectually securing Plants from the scorching rays of the sun, without obscuring the light. Also, for protecting the Bloom of Wall Trees from spring frosts, and Fruit from birds and wasps. Sold in pieces.

No. 1.—20 yards long, by 38 inches wide, 5*s.* per piece.

No. 3.—Double strength, 18 yards long, by 39 inches wide, 7*s.* 6*d.* per piece.

No. 4.—Treble strength, 18 yards long, by 39 inches wide, 9*s.* per piece.

A liberal allowance to the Trade when ten or more Pieces are taken.—JOHN SHAW & Co., Princess Street, Manchester.

MICROSCOPES.

J. AMADIO'S BOTANICAL MICROSCOPES, packed in mahogany case, with three powers, condenser, pincers, and two slides, will show the animalcule in water. Price 18*s.* 6*d.*—Address JOSEPH AMADIO, 7, Throgmorton Street, E.C.—A large assortment of Achromatic Microscopes.

"It is marvellously cheap, and will do everything which the lover of nature can wish it to accomplish either at home or in the open air."—*The Field*, June 6, 1857.

Just published, 2d Ed., an Illustrated Catalogue, with names of 1500 Microscopic objects, free for 6 stamps.

DR. DE JONGH'S

(KNIGHT OF THE ORDER OF LEOPOLD OF BELGIUM)

LIGHT-BROWN COD LIVER OIL, administered with the greatest success in cases of CONSUMPTION, BRONCHITIS, COUGHS, RHEUMATISM, GOUT, NEURALGIA, GENERAL DEBILITY, DISEASES OF THE SKIN, RICKETS, INFANTILE WASTING, AND ALL SCROFULOUS AFFECTIONS,

is the most efficacious, the most palatable, and, from its rapid curative effects, unquestionably the most economical of all kinds. Its immeasurable therapeutic superiority over every other variety is attested by innumerable spontaneous testimonials from Physicians and Surgeons of European reputation.

OPINION OF BARON FOUQUIER,

Professor at the University of Paris, Physician to his late Majesty Louis Philippe, &c.

"You have rendered an eminent service to science by acquainting practitioners with the cause of the frequent irregularity in the effects of Cod Liver Oil, and directing their attention to a proper choice. You have thus shown us the way of rendering highly effectual the administration of one of the most powerful medicines we are acquainted with."

Sold ONLY in IMPERIAL half pints, 2*s.* 6*d.*; pints, 4*s.* 9*d.*; quarts, 9*s.*, capsuled, and labelled with DR. DE JONGH'S stamp and signature, WITHOUT WHICH NONE CAN POSSIBLY BE GENUINE, by most respectable Chemists.

WHOLESALE AND RETAIL DEPOT:

ANSAR, HARFORD, & CO., 77, Strand, London, W.C.

HOLLOWAY'S PILLS AND OINTMENT.—BILIOUS DISORDERS.—As the autumn advances, liver complaints are certain to prevail and those are wise who give attention to the early symptoms, and check them by the immediate use of HOLLOWAY'S Pills and Ointment; which, rightly applied, never fail in arresting and discharging all impurities which contaminate the blood and produce biliousness, fever, and numerous other ailments. For liver and stomach complaints this invaluable Ointment should be well rubbed twice a day over the regions of the stomach and liver, on both of which it acts beneficially. Loss of appetite, weariness, headache, and indigestion all yield before these restorative Pills and purifying Ointment, which frequently effect a cure and renew health after every other means has failed.

GUTTA PERCHA TUBING FOR WATERING GARDENS.

THE GUTTA PERCHA COMPANY have the pleasure to acknowledge the receipt of the following

Testimonial from Mr. J. Farrah, *Gr. to* Boswell Middleton Jalland, Esq., *of Holderness House, near Hull.*

"I have had 400 feet of your Gutta Percha Tubing, in engths of 100 feet each, with union joint, in use for the last 12 months for watering these gardens, and I find it to answer better than anything I have ever yet tried. The pressure of the water is very considerable, but this has not the slightest effect on the tubing. I consider this tubing to be a most valuable invention for Gardeners, inasmuch as it enables us to water our gardens in about one-half the time, and with one-half the labour required."

Manufactured by the Gutta Percha Company, Patentees, 18, Wharf Road, City Road, London, E.C., and sold by their Wholesale Dealers in town and country.

TO PIG, POULTRY, AND GAME FEEDERS.

JUPP'S RICE FOOD, POULTRY and GAME.—RICE SWEEPINGS, 7*s.* 6*d.* per cwt., in 1½ cwt. bags; SCREENED RICE, 10*s.* per cwt., in 1½ cwt. bags; DOG BISCUITS, 14*s.* per cwt.; OIL-CAKE, per ton only; RICE MEAL for PIGS, 6*s.* and 8*s.* per cwt., in 1 cwt. bags, at the mill. Orders must be accompanied by a remittance to insure delivery.—W. & R. Jupp, 6, Cross Lane, Eastcheap, E.C.

GENUINE TOBACCO PAPER FOR FUMIGATING.

H. APPLEBY (Foreman to Messrs. Ivery & Son, Nurserymen, Dorking, Surrey), supplies the above in 4-lb. packets at 1*s.* 3*d.* per lb. A liberal discount allowed to to the Trade. Testimonials too numerous for insertion, but may be had on application.

SHEET IRON POTS for FUMIGATING, 3*s.* 6*d.* each.

N.B. All orders to be accompanied with a Post-office Order, payable to Henry Appleby, Dorking, Surrey.

NURSERYMEN SUPPLIED with the BEST GENUINE TOBACCO PAPER at 4*l.* per cwt.; any quantity less than ½ cwt., 10*d.* per lb. The above article is warranted genuine.—Address Tom Bryant, Messrs. Jackson & Son, Lady Lane, Leeds.

TO GARDENERS AND NURSERYMEN.

FOR SALE, a highly-finished Portable FUMIGATING APPARATUS, mounted on brass wheels; gun metal boiler, universal-jointed pipes, rose heads, &c. Made by Bramah & Co., and cost 90*l.* It will be sold for 20*l.*, as the gentleman for whom it was made has no farther use for it. To be seen at 25, Down Street, Piccadilly, W.

TO MARKET GARDENERS, FLORISTS, HOTEL-KEEPERS, ETC.

TO BE LET, about 10 acres of GARDEN GROUND, well known for their productiveness and good condition, together with a comfortable Residence, requisite Sheds, and Outbuildings, situate within three miles of Hyde Park Corner, and adjoining the Fulham Road.—For particulars, apply to Mr. James Poupart, Land Agent, Walham Green, Fulham, S.W.

EPPING NURSERY TO BE LET.—Rent 12*l.* a square acre, walled three sides, and open to the best part of the high road. Some thousands of Standard, Half-standard, Dwarf, Climbing, and Pot Roses for sale by private contract or public auction. Hedges, stools, and specimens must be taken at a valuation.—G. Glenny, Horticultural Agent and Valuer, Fulham, S.W.

TO NURSERYMEN, GARDENERS, AND OTHERS.

TO BE DISPOSED OF, a NURSERY, containing about 4 Acres, with numerous Greenhouses, Plants, Stock in Ground, &c., situated in a favourite suburb south of London, on the high road, and with an increasing business.—Full particulars will be given on application to Mr. A. Chandler, Horticultural Valuer, 28, Priory Road, Wandsworth Road, S.

TO NURSERYMEN, FLORISTS, AND OTHERS.

TO BE DISPOSED OF, a First-Class LONDON NURSERY, long Lease and Good Will, the Vendor having been in occupation for 16 years. Extensive frontage, stands well for business, Omnibuses to all parts of London. There are 12 Greenhouses, besides Pits, &c., part heated by Hot Water, and adapted to the Propagation and Culture of Hard-wooded and Miscellaneous Plants. The usual Ground Stock includes American Plants, choice young Fruit Trees, &c., in fine condition. Good Residence, Seed Shop, and Offices separate; two Stall Stable, Cart and Packing Sheds, front and back entrance, and every convenience to carry on a large business.—Apply to Messrs. Brooks & Beal, Estate Agents and Auctioneers, 209, Piccadilly, W.

NURSERY.

TO BE SOLD, a very SNUG NURSERY in Islington, some years established, in the midst of a first-rate neighbourhood, with a respectable and paying retail connection attached, and which may be doubled. The erections consist of Greenhouse, with Hot-water Pipes, Show-house, Forcing-house, and Potting-house, Pit Frames, and utensils of every description, and the stock; in addition there is a House in the Garden, replete with drawers for seeds, &c., and which has been and may be used as a Dwelling for business purposes. A Well, with iron pump; also a quantity of Rockwork. This is genuine, and is offered in consequence of the recent decease of the proprietor. A Lease will be granted by the ground landlord for 50 years at a yearly rental of 12*l.* The Connection is now being kept together. — Apply to B. J. W., 5, Devonshire Terrace, New North Road, Hoxton, N.

DESIRABLE FARM.

TO BE LET, as one Farm, the two adjoining FARMS of ROBGILL MAINS and BROADLEA, in the South of Dumfriesshire, with entry to Robgill Mains at Candlemas first as to the Arable Lands, and Whitsunday first as to the Houses and Grass; and to Broadlea at Candlemas, 1861, as to the Arable Lands, and Whitsunday in the same year as to the Houses and Grass. Robgill Mains consists of 119 imperial acres or thereby. It has been in the proprietor's possession for six years, and the land is of good quality and in very good order. It is tile-drained, and laid with under-ground pipes for irrigation with liquid and liquefied manure. The steading upon it is new, and is centrally situated for the two Farms as one, is supplied with water brought into it, and is constructed for House-feeding both Sheep and Cattle, the houses being upon the most approved principle. There is a Steam Engine, a Force Pump, Threshing Mill, and Saw Table on the premises, as well as Chaff Cutters, Oat Bruisers, Steaming Apparatus, &c. Broadlea consists of 213 imperial acres or thereby. The land is of good quality, and is capable of great improvement. The proprietor will be prepared to agree to drain it also. Both are situated close upon the Caledonian Railway, and between the Kirtle Bridge and Kirkpatrick Stations on that line, being about 2½ miles from each, and about 4 miles from Ecclefechan, and 5 from the market town and port of Annan, where there is a Station of the Glasgow and South-Western Railway, and from which there is a Steam Boat twice a week to Liverpool. The access to and from markets and the Farm is thus very convenient.—Further particulars may be obtained from Mr. David Ewart, Royal Bank, Ecclefechan; and the boundaries will be pointed out, and other information given upon the premises, by Mr. Scott, the Overseer.

NURSERY GROUND.

TO BE LET, WHITTINGTON NURSERY, Upper Holloway, to be entered upon immediately.—For particulars, apply to J. F. Marson, Esq., Small Pox Hospital; or to Mr. Bunney, Nurseryman, Stratford, Essex.

MR. EPPS'S SALE OF LARGE ORNAMENTAL TREES, PINUSES, SHRUBS, AND NURSERY STOCK,

November 3, and following days.

MR. RUMBOLD begs respectively to inform Gentlemen and the Trade that he will be in attendance on the days of the above Sale to receive orders for removing any of the large specimens, Conifera, ornamental Trees and Shrubs, with his Transplanting Machines, and will guarantee every tree to succeed at very moderate charges.—Tunbridge Wells.

Sales by Auction.

ANNUAL SALE OF
FIFTY EXMOOR PONIES, COBS, AND CALLOWAYS.

MESSRS. ELLIS and SON have again the honour to announce that they will Sell by Auction, for Mr. Smith, Emmett's Grange (Agent to F. W. Knight, Esq., M.P.), at Bampton Fair, on THURSDAY, October 27, at noon, FIFTY EXMOOR PONIES, COBS, and GALLOWAYS, which will be on view at Mr. Trapnel's Farm, Bampton, on Wednesday afternoon and until the time of sale. The Animals forming this year's Sale consist of 10 beautiful Ponies, ready broken; 10 first-class Cobs and Galloways, ready broken; 20 Ponies direct from the Hills; and 10 superb Cob and Galloway Colts. Catalogues of their age, height, and pedigrees are prepared, and may be had of Mr. Smith, or of the Auctioneers, Duvale Barton. All Animals that have been broken in will be warranted. Bampton is 8 miles from the Tiverton Station. Conveyances will run to and from to suit the Trains.—Duvale Barton, Bampton, Devon, Oct. 15.

MR. J. C. STEVENS begs to announce that his next POULTRY and PIGEON SALE will take place at his Great Room, 38, King Street, Covent Garden, W.C., on TUESDAY, Oct. 18, and these Sales will be continued on the 1st and 3d TUESDAY IN EVERY MONTH during the season.

*** Gentlemen having Poultry or Pigeons to dispose of should send in their list about a fortnight before.

EXTRA POULTRY AND PIGEON SALE.

MR. J. C. STEVENS will Sell by Auction at his Great Room, 38, King Street, Covent Garden, W. C., on TUESDAY, October 18, at 12 o'Clock precisely, 260 LOTS of CHOICE POULTRY and PIGEONS, consisting of Cochins, Dorkings, Spanish, Brahmas, Game, Malays, Hamburghs, Bantams, Polands, Aylesbury and Rouen Ducks, &c., from the yards of the Rev. C. Gilbert, F. Manning, Esq., H. Ranson, Esq., Mrs. A. G. Brooke, Miss J. Milward, and others. Also a capital Lot of Pigeons from Mr. Woodhouse and other well-known Fanciers.—May be viewed on the morning of Sale and Catalogues had of Mr. J. C. Stevens, 38, King Street, Covent Garden, W.C.; if for the country by enclosing two stamps.

VALUABLE AND EXTENSIVE HERBARIUM AND LIBRARY OF BOOKS.

MR. J. C. STEVENS has the honour to announce that he will Sell by Auction at his Great Room, 38, King Street, Covent Garden, on FRIDAY, Oct. 21, at half-past 12 o'clock precisely, a most Valuable, Extensive, and Arranged HERBARIUM, containing more than 38,000 species of Phænogamous Plants, being more than one half the known number of that division of the Vegetable Kingdom, mostly in the finest possible condition, and forming the most extensive and Valuable Collection ever offered for Sale. Also some smaller Collections of Plants, all named together, with the very Choice Library of Books, which include the works of Bateman, Andrews, Duhamel, Humboldt, Jacquin, St. Hilaire, Thornton, Wight, Griffiths, Palisot, Blume, Martius, De Candolle, Pohl, Reichenbach, Roxburgh, Royle, Lindley, Don, Horsfield, Ellis, and other eminent authors, most elegantly bound, and in the finest possible condition, the property of a Nobleman.—May be viewed the day prior and morning of Sale, and Catalogues had at the Rooms, or sent by Post on receipt of two stamps.

CAMELLIAS, AZALEAS, AND OTHER PLANTS FROM GHENT.

MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on TUESDAY, October 25, at half-past 12 o'Clock precisely, 300 choice CAMELLIAS, well set with flower buds; 300 DWARF INDIAN AZALEAS; 200 strong LILIUM LANCIFOLIUM ALBUM; 150 LILIUM VENUSTUM; 1000 flowering roots of ASCLEPIAS TUBEROSA; 100 ERYTHRINA CRISTAGALLI; 500 GLADIOLUS GANDAVENSIS, &c.—May be viewed on the morning of Sale, and Catalogues had of Mr. J. C. Stevens, 38, King Street, Covent Garden, W.C.; if for the country by enclosing two stamps.

ORCHIDS.

MR. J. C. STEVENS will Sell by Auction at his Great Room, 38, King Street, Covent Garden, W.C., on FRIDAY, October 28, at half-past 12 o'Clock precisely, a small Collection of established ORCHIDS in good health, including—

Phalænopsis amabilis	Cypripedium Fairrieanum
,, grandiflora	Lælia purpurata (true)
Saccolabium retusum	Érides odoratum purpurescens
Miltonia Regnellii	,, affine
Dendrobium Farmeri	,, roseum
Vanda teres	Cattleya Lindleyana

And numerous other nice plants

—May be viewed on the morning of Sale and Catalogues had.

WESTERHAM, KENT.—To Parties about to Plant. Important Sale of First-class Nursery Stock.

MESSRS. BLAKE will Sell by Auction on the premises, on WEDNESDAY, October 19, at 10 for 11 o'Clock, a portion of the NURSERY STOCK growing upon Land forming part of the Grange Estate, which Estate is for sale. The whole of the stock is young and in the best possible condition for removal, having all been transplanted during the last two seasons. The soil of the Nursery has been remarkable for upwards of 30 years for producing unusually fine fibrous roots, so that there will be no risk in the removal of the stock, which comprises Larch, Scotch, Spruce, Silver, and other Firs, Spanish and Horse Chesnut, Elm, Lime, Maple, Hornbeam, Mountain and Weeping Ash, a large quantity of fine grown common Ash (3, 4, and 5 feet), Beech, Birch, Willow, Sycamore, common Laurels (2 and 4 feet and fine bushy stuff); Portugal Laurels, evergreen Berberis, common Holly, Irish and common Yew, Laurustinus, Standard and Dwarf Roses of the choicest sorts, fine grown Standard and Dwarf Fruit Trees (trained and round-headed), consisting of Apples, Pears, Plums, Cherries, Apricots, Peaches, Nectarines, Gooseberries, and Currants; several hundred yards of Box edging (very close and compact); nearly 100,000 strong, fine grown, 3-years transplanted Quick, and a great variety of Trees and Shrubs.—May be viewed until the Sale, and Catalogues had of James Dulake, upon the premises, who will show the Lots. Catalogues may also be had at the King's Arms, Westerham; Laker's Hotel, Redhill; Angel, Tonbridge; Crown, Sevenoaks; White Hart, Bromley; Greyhound, Sydenham; and White Hart, Norwood; at Garraway's Coffee House, Change Alley, Cornhill; and of Messrs. Blake, Croydon.

TO GENTLEMEN, NURSERYMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE and MORRIS will Sell by Auction at the Mart, on WEDNESDAY and FRIDAY, October 19 and 21, at 12 o'Clock, a first class Collection of DUTCH BULBS, consisting of the finest Double and Single Hyacinths, Narcissus, Jonquils, Anemones, Crocus, Tulips, Ranunculus, Gladiolus, Snowdrops, &c.; also a fine assortment of 500 Standard and Dwarf Roses, with handsome straight stems and fine bushy heads; selected American Plants, including Ghent and other Azaleas, Hybrid Rhododendrons, Kalmias, Andromeda floribunda, beautifully set with bloom buds, &c. May be viewed the morning of Sale.—Catalogues may be had at the Mart and of the Auctioneers, American Nursery, Leytonstone, Essex, N.E.

KING'S ROAD, CHELSEA.

MESSRS. PROTHEROE and MORRIS are instructed by Mr. Dennis to Sell by Auction on the Premises, opposite Cremorne Gardens, King's Road, Chelsea, on TUESDAY, Oct. 25, and following day, at 11 o'Clock each day, a portion of his valuable NURSERY STOCK, consisting of 10,000 fine Evergreens of sorts; an assortment of American Plants, comprising fine Hybrid Rhododendrons, Hardy Ghent, and other Azaleas, Kalmias, Andromeda floribunda, &c., well set with bloom; 500 choice Standard Roses (very handsome); Fruit Trees, including Standard Mulberries, with stems 4 to 7 feet, in good bearing condition; Standard Apples, Pears, Cherries, Dwarf-trained Peaches, Nectarines, Plums; 3000 Gooseberries and Currants by name, &c.; 1000 Lime Trees, Mountain Ash, Poplars, Laburnums, &c.; a quantity of Jasmines in pots, Lilacs, &c., together with sundry Greenhouse Plants. May be viewed prior to the Sale.—Catalogues may be had on the Premises, of the principal Seedsmen in London, and of the Auctioneers, American Nursery, Leytonstone, Essex, N.E.

IMPORTANT SALE AT THE COVENTRY NURSERIES.

To Noblemen, Gentlemen, Nurserymen, and Others requiring Healthy, Ornamental, & useful Nursery Stock.

S. BLOORE is instructed by Mr. Ogden to submit to Unreserved Public Competition, on TUESDAY and WEDNESDAY, October 18 and 19, at the Nurseries, near the Railway Station, at Coventry, the first portion of his very extensive and judiciously-selected Stock, including fine grown ORNAMENTAL TREES and SHRUBS in unusual variety, HOLLIES, STANDARD ROSES, Choice FRUIT TREES, &c.—Catalogues may be had on application at the Nurseries, or at Mr. Bloore's, Offices, 105½, New Street, Birmingham.

TO PLANTERS AND NURSERYMEN.

Concluding Sale of all the Important Stock of Strong Transplanted Forest Trees, Quicks, Evergreens, Flowering Shrubs, American Plants, &c., at Cliffe Vale Nurseries, Wetley Rocks, near Leek, in the County of Stafford.

MESSRS. EDWARDS have received unreserved instructions from Messrs. Fox, Grosvenor, and Hill, to offer for Sale by Auction on TUESDAY, WEDNESDAY, THURSDAY, and FRIDAY, October 18, 19, 20, and 21, the last portion of their NURSERY STOCK, as, their co-partnership is now expired, and the whole must be cleared off by March 25, 1860. The Stock consists of about 400,000 extra strong Larch, Quicks, Oaks, Scotch Spruce, Mountain Ash, Hazels, Hollies, Yews, Laurels, Rhododendrons, and other choice Evergreens and Ornamental Trees, among which are many fine specimens rarely to be met with. Catalogues may be had six days prior to the Sale, from the Proprietors as above, or from the Auctioneers, Newcastle-under-Lyne.

Conveyances will run to and from the Cheddleton Station, Churnel Valley line, on each day of sale. Lunch at 12. Sale at 1 o'clock precisely.

HUCCLECOTE GARDENS, 2½ miles from Gloucester—Highly Important Sale of Specimen Stove and Greenhouse Plants.

MR. WILLIAM KNOWLES is favoured with instructions from G. S. Wintle, Esq. (who is leaving the neighbourhood), to Sell by Auction, upon the premises, on TUESDAY, WEDNESDAY, THURSDAY, and FRIDAY, October 18, 19, 20, and 21, commencing each day at 12 o'Clock, the whole of his very valuable Collection of Specimen ORCHIDS, STOVE, GREENHOUSE, and ORNAMENTAL-FOLIAGED PLANTS, among which will be found the

Cossignea borbonica, 5 by 4 ft.	Azalea alba grandiflora, 4 by 4 ft.
Colea Commersonii, 5 by 4 ft.	,, amœna, 2 ft. by 2 ft. 6 in.
Aralia farinifera, 4 by 3 ft.	,, juliana, 2 ft. by 2 ft. 6 in.
Latania borbonica, 4 by 6 ft.	Phænocoma prolifera Barnesii, 3 by 3 ft.
Cycas revoluta, 4 by 6 ft.	Erica Savileana major, 3 by 3 ft.
Attalea Cohune, 7 by 5 ft.	Erica tricolor Wilsonii, 2 ft. 6 in. by 2 ft. 6 in.
Monsteria Adansonia, in fruit, 4 by 7 ft.	Erica jasminiflora alba, 2 ft. by 2 ft. 6 in.
Croton variegatum, 4 by 4 ft.	
,, longifolium crispifolium, 4 by 3 ft.	

And numerous other fine and rare Plants, which have gained the principal prizes at the various Horticultural Exhibitions.—May be viewed on Monday, October 17, and mornings of Sale, by Catalogues only (price 6*d.* each), to be obtained at the office of the Auctioneer, St. Mary's Square, Gloucester.

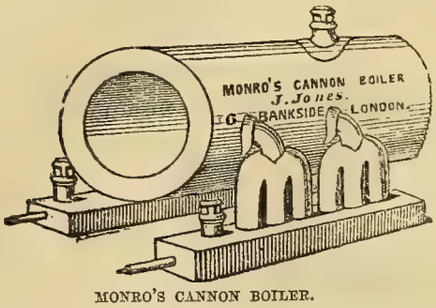
TO BE LET, the above capital Walled-in GARDENS (containing about 4 acres), with House, Farmyard Buildings, Orchard, and Land adjoining, containing in the whole about 1 acres, with Greenhouses, Propagating Houses, Vineries, Pits, &c. Extent of Grass, 5770 feet.—For particulars apply to Mr. Knowles, Auctioneer, Gloucester.

BLAKEMOOR.—NORTHUMBERLAND.

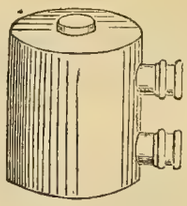
MR. S. DONKIN will Sell by Auction, in one lot, on SATURDAY, October 22, at One for Two o'clock precisely, at the Central Station Hotel, Newcastle-upon-Tyne, the FREEHOLD ESTATE of BLAKEMOOR, with a Mansion House, Farm Buildings, and Garden, and a Dwelling-house and seven Cottages, in the village of Cresswell. The property consists of one Farm of about 345 acres, arable and pasture, of good Wheat soil, lying in a ring fence, bounded on the north by Widdrington Estate, belonging to Lord Vernon; on the south and west by Cresswell and Ellington Estates, belonging to A. J. Baker Cresswell, Esq.; and on the east by the sea, and comprises a considerable part of the shore of Druridge Bay, and a Freestone Quarry. Game is abundant on the estate. The Owner is entitled to a Right of Common on unenclosed lands at Cresswell, and to take Ware from the sea shore. The Coal will be sold with the estate. The Dwelling-house, in Cresswell, is situated at a short distance from the beach, and commands a view of the sea. There is good Sea Bathing on the sands adjoining. The Tithes are commuted for three rentcharges, one of 25*l.* 6*s.* 9*d.*, payable to the Mercer's Company of the City of London, another of 25*l.* 6*s.* 9*d.*, payable to the perpetual curate of St. John's Chapel, Hampstead, and another of 7*l.* 10*s.*, payable to the Vicar of Woodhorn. The property is 5 miles from the Longhirst Station of the North-Eastern Railway, to which there are admirable roads, about 2 miles from a proposed branch of the Blyth and Tyne Railway, 23 miles from Newcastle-upon-Tyne, and 9 from Morpeth. The property may be seen on application to the Farm Steward, at Blakemoor; and Particulars and Conditions of Sale may be had at the Offices of Mr. James Crosby, Solicitor, 3, Church Court, Old Jewry, London, E.C.; and of Messrs. William & Benjamin Woodman Solicitors, Morpeth.—Morpeth, Oct. 15.

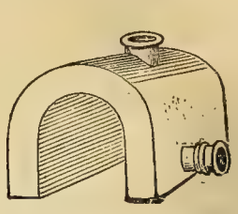
TO NURSERYMEN, GARDENERS, AND OTHERS.

HOT-WATER APPARATUS.



MONRO'S CANNON BOILER.


CYLINDER BOILERS OF VARIOUS SIZES.


SADDLE BOILERS OF WROUGHT AND CAST IRON, OF ALL SIZES.

THE LARGEST STOCK OF

HOT-WATER PIPES & CONNECTIONS, BOILERS, &c.,

OF THE BEST QUALITY AND AT THE LOWEST PRICES.

THE WHOLE OF THE ABOVE KEPT IN STOCK READY FOR IMMEDIATE DELIVERY.

PRICES WILL BE SENT ON APPLICATION, OR ESTIMATES FOR

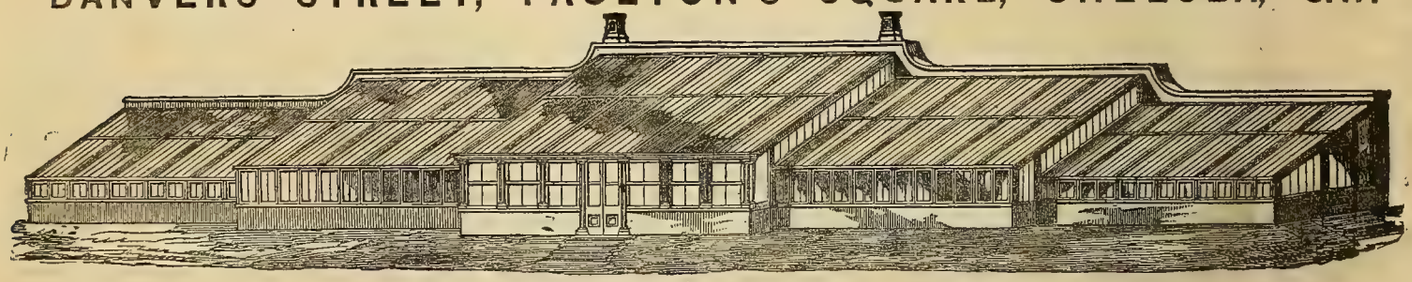
HOT-WATER APPARATUS

ERECTED COMPLETE IN ANY PART OF THE COUNTRY.

J. JONES, 6, BANKSIDE, SOUTHWARK, LONDON, S.E.

HORTICULTURAL WORKS,

DANVERS STREET, PAULTON'S SQUARE, CHELSEA, S.W.



JAMES GRAY

RESPECTFULLY BEGS TO INFORM THE NOBILITY, GENTRY, NURSERYMEN, GARDENERS, AND OTHERS, THAT HE CONTINUES TO CARRY ON THE BUSINESS IN ALL ITS BRANCHES AT THE ABOVE OLD ESTABLISHED PREMISES.

CONSERVATORIES, GREENHOUSES, FORCING HOUSES, VINERIES, PITS, &c.,

OF EVERY DESCRIPTION, ERECTED ON THE MOST APPROVED PRINCIPLES.

HEATING BY HOT WATER.

J. G. having specially devoted his attention for many years to this part of the business, is now fully prepared to Heat every description of public and private buildings, viz. :—Churches, Mansions, Warehouses, &c., as well as all structures connected with Horticulture, in the most efficient manner. His system is the most simple that can be adopted—which he has found from long experience to be the best—can be constructed at less cost, and is more easily managed than those of a complicated nature which have attracted the notice of the public.

J. G. begs to call attention to his CAST-IRON CORRUGATED ARCH BOILER, which from its simplicity of construction has not the liability to fracture to which those of a more complex design are always subject. They have been extensively used for many years, and have given the greatest satisfaction.

All business is conducted at this establishment on the principle of lowest remunerative profits consistent with best materials and workmanship.

PLANS AND ESTIMATES FURNISHED ON THE SHORTEST NOTICE.

WEEKS' ONE BOILER SYSTEM.

BY APPOINTMENT.

JOHN WEEKS & COMPANY,

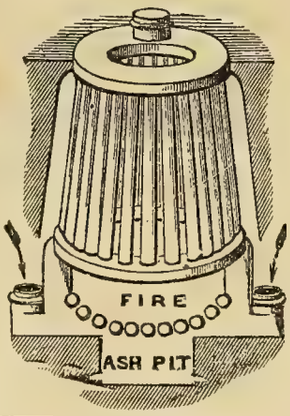
KING'S ROAD, CHELSEA, S.W.,

CHALLENGE THE WORLD to produce a Boiler not made in imitation of their Upright Tubular Boiler that will produce anything like the same effect with the same quantity of fuel in a given time.

The following unequalled statistics fully justify the challenge:—

Mark the enormous length of Houses and Piping heated by One Boiler.	Length of Houses in feet	Total length of Piping.
Messrs. E.G. Henderson & Co., Wellington Nursery	1,200	5,500
Messrs. F. A. Smith, Dulwich	3,000	11,000
M. Van Houtte, Belgium	3,300	13,000
Our own Fruit Forcing Show Establishment ...	1,000	7,000

Also the Nurseries of Mr. Woodroffe, Harrow Road, N.W.; Messrs. Rollisson, Tooting, S.; Messrs. Wood & Ingram, Huntingdon; Messrs. Wood & Son, Maresfield; together with numerous Public Buildings and Establishments of the Nobility and Gentry far too numerous for insertion.



J. WEEKS & CO., Horticultural Builders and Hot-Water Apparatus Manufacturers, King's Road, Chelsea, S.W.

PLANS AND ESTIMATES FREE ON APPLICATION.

WEST OF ENGLAND HOTHOUSE AND HOT-WATER APPARATUS MANUFACTORY, BRIDEWELL STREET, BRISTOL.



VINCENT SKINNER (late Partner in and for seven years connected with the firm of John Weeks & Co., of Chelsea), erects Conservatories, Forcing Houses, &c., of the best materials and workmanship. Whole Establishments heated on the ONE BOILER SYSTEM, and each division effectually regulated by his *improved valve*.

Upright Pipe Boilers of all sizes, from 18 inches diameter by 15 inches high. Garden Frames, &c.

Plans and Estimates free.

LOOMES AND CO.'S CABLE PATTERN GARDEN EDGING may be obtained of MESSRS. HOOPER AND CO., Covent Garden Market, W.C.



C. STEPHENSON, late STEPHENSON AND SONS, 61, Gracechurch St., London, E.C., Manufacturer of Iron Hurdles, Fencing, &c., Improved Iron and Copper Conical Boilers and Apparatus for Warming Buildings of every description by Hot Water.

Prices and Estimates furnished upon application.

Printed by WILLIAM BRADBURY, of 13, Upper Woburn Place, and FREDERICK MULLETT EVANS, of No. 20, Queen's Road, West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and published by them at the Office, No. 5, Upper Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—SATURDAY, October 15, 1859.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 43.—1859.] SATURDAY, OCTOBER 22. {Price Fivepence. Stamped Edition, 6d.

INDEX.

Agriculture, Yorkshire	858 c	Labourers and cottages	859 a
— Australian	854 b	— prizes	853 b
— Theory of	855 b	Manchester People's Show	850 b
Arsenic in crops	857 c	Manure making	856 b
Carts, harvest	857 b	Mushrooms, false	852 a
Chemico-Agri. Soc.	857 c	Nectarine, Stanwick	848 a
Chesnut, autumn blooming	850 a	Peas, quick growing	850 c
Combe St. Nicholas Club	859 a	Plants in flower now	850 b
Conifers and manure	860 b	Plant sale, Cooper's Hill	850 a
Cracking of fruits, &c.	847 c	Ploughs, steam	853 c
Craven Farmers' Club	858 c	Ploughing match	857 a
Crops, rotation of	860 a	Potato growing	850 a
— Wilson on Farm	859 b	Rabbits	857 b
Cultivation, autumn	858 a	Rifle shooting	851 b
Cumberland Farmers' Club	858 a	Rugeley Farmers' Club	858 c
Evergreens, transplanting	849 b	Seeding, rational	857 a
Farm, Deighton	859 c	Sewage, to deodorise	854 b
Farming, Irish	856 c	Spergula pilifera	850 a
Gardens, Belgian	848 c	Statistics, Irish	854 a
Gard. Benevolent Institution	848 a	Stock, profit on	856 b
Gosse's Alabama	851 a	Sudbury cottagers' show	850 c
Grapes, cracking	847 c	Tenant, incoming, and Clover	854 a
Grass land, manuring	857 c	Thistles in Tasmania	849 c
Gum trees	851 a	Trade lists	851 c
Holly Tea	848 a—850 a	Trees, transplanting large	849 b
Importations, Jan. to Aug.	856 b	Turnip failure	858 a
Insects, spectre	851 b	Wellingtonia, cones on	850 a
Labourers, farm	858 b	Wheat, Piper's	857 c

STOKE NEWINGTON CHRYSANTHEMUM SOCIETY.—The 13th ANNUAL EXHIBITION (open to all England) of this Society will be held at the Manor Rooms, Church Street, Stoke Newington, N., on WEDNESDAY and THURSDAY, November 2 and 3, when Prizes, including FOUR SILVER CUPS will be awarded. Admission, first day, 1s.; second day, 6d. ARTHUR WORTLEY, Stoke Newington Common, N. Hon. Sec.

THE ORIGINAL STOKE NEWINGTON CHRYSANTHEMUM SOCIETY will hold their 13th GRAND ANNUAL EXHIBITION, at the Manor Rooms, Church Street, Stoke Newington, N., on MONDAY and TUESDAY, November 7 and 8, when PRIZES will be given to two-thirds of the Exhibitors, including SIX SILVER CUPS.
JOSEPH PAXTON, Secretary.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—Notice is hereby given that in consequence of there being no vacancies on the List of Pensioners, the usual Election in January will not take place. By order.
14, Tavistock Row, W.C.—Oct. 22. E. R. CUTLER, Sec.

FLOWER BULBS FOR WINTER AND SPRING.
SUTTON'S COLLECTIONS FOR POTS AND GLASSES, and SUTTON'S COLLECTIONS FOR OPEN GROUND. See *Gardeners' Chronicle* of October 15.

THE BEST TWELVE HYACINTHS.
SUTTON'S BEST TWELVE HYACINTHS imported can be supplied for 9s., or second best 6s. Also fine mixed DOUBLE HYACINTHS, all fresh imported, 3s. 6d. per dozen, or 25s. per 100.
PRICED LISTS of BULBS and Seeds may be had post free.
Royal Berkshire Seed Establishment, Reading.

BUTLER AND McCULLOCH. HYACINTHS, &c.—A DESCRIPTIVE AND PRICED CATALOGUE, with practical Cultural directions, for Amateurs, sent free and post paid on application. Orders amounting to 21s. sent carriage paid. The following choice collection (A) for Conservatory and out door Culture, for 21s., or the half for 10s. 6d.;—12 Superior named Hyacinths, 6 mixed Hyacinths, 6 Polyanthus Narcissus, 50 Border Narcissus, 25 Sweet Scented Tulips, 50 Double Tulips, 100 Crocus, 100 Snowdrops, 12 beautiful Iris, 50 Ranunculus, 25 Anemones, 12 Fritillarias.—Covent Garden Market, W.C.

HYACINTHS AND OTHER BULBS.
WM. CUTBUSH AND SON can still supply Roots equal to the first they sent out this season, as all BULBS are especially selected for them before they are imported from Holland. Descriptive CATALOGUE post free on application.
Highgate Nurseries, London, N.

DUTCH AND OTHER BULBS.
MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their CATALOGUE of the above is now ready, and will be forwarded post free on application. Early orders are solicited, as their successful cultivation depends in a great measure on early planting.
Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

ARAUCARIA IMBRICATA.
YOUELL AND CO. beg to inform the Trade that they have to offer a fine and healthy stock of the above in 1-year-old plants. Prices on application.
Royal Nursery, Great Yarmouth.

ANDROMEDA FORMOSUM (TRUE).
W. H. ROGERS, RED LODGE NURSERY, Southampton, can offer fine strong plants of the above beautiful American Plant, 50s. per 100, or 9s. per doz., selected.

SPERGULA PILIFERA (a fine quantity in pots).—Fine sized plants, 1s. each or 9s. per dozen. Each plant will divide into quantities of tufts. Directions for planting sent.
Apply to STEPHEN BROWN, Seed and Nursery Establishment, Sudbury, Suffolk.

SPECIMEN STOVE AND GREENHOUSE PLANTS.—A handsome lot of these to be disposed of very cheap. A List with descriptions of the plants, sizes, and prices, sent on application to STEPHEN BROWN, Seed and Nursery Establishment, Sudbury, Suffolk.

RHODODENDRONS "of every hue," Scarlet, White, Rose, Crimson, and every intermediate shade, nearly all sizes and at all prices, can be supplied by CHARLES NOBLE, Bagshot, Surrey.

CHOICE RHODODENDRONS, AZALEAS, AND CONIFEROUS PLANTS.—A CATALOGUE of GEORGE BAKER'S unrivalled Stock of the above may be had on application.—The American Nursery, Bagshot, Surrey.

ROSE CATALOGUE.
A. PAUL AND SON have just published their ROSE CATALOGUE for the present season, which they will be happy to forward in return for one postage stamp. The quality of the stock is very superior, and prices unprecedentedly low.—Nurseries, Cheshunt, Herts.

ROSE CATALOGUE.
JAMES MITCHELL respectfully informs the Nobility and Gentry his new CATALOGUE for the present season is now ready, and will be forwarded post free on application.
The Nurseries, Piltdown, Maresfield, Sussex.—Oct. 22.

CATALOGUES OF ROSES, HOLLYHOCKS, ORNAMENTAL TREES AND SHRUBS, HARDY HERBACEOUS PLANTS AND ALPINES, FRUIT AND FOREST TREES, &c.
HENRY MAY will be happy to forward any of the above CATALOGUES on application.
The Hope Nurseries, near Bedale, Yorkshire.

STANDARD AND DWARF ROSES.—An unequalled stock of the most splendid Plants of Standard Roses is offered at 60s. per 100, all the best Perpetual sorts; also Dwarf Roses 50s. per 100. Catalogues on application.
The Hope Nurseries, near Bedale, Yorkshire.

STANDARD ROSES.—All the leading kinds in cultivation at prices scarcely ever offered before.
CHARLES NOBLE, Bagshot, Surrey.

ROSES.
E. P. FRANCIS'S new and extensive CATALOGUE of ROSES on the Manetti Stock is now ready for delivery, and will be forwarded gratis on application.
Rose Nurseries, Hertford.

ROSE CATALOGUE.
JOHN CRANSTON begs respectfully to inform his patrons that he will be happy to forward his New ROSE CATALOGUE for the present season, post free, upon application. It will be found replete with the most desirable flowers (new and old) in every class, and the descriptions are copious and faithful.—Nurseries, King's Acre, near Hereford.

ROSE CATALOGUE, &c.
H. LANE AND SON'S CATALOGUES for the present season are now ready, and will be sent to their customers as usual. The following may be had on application at the Nurseries or by post. They consist of—
ROSE CATALOGUE, | FRUIT TREE CATALOGUE,
TREE AND SHRUB CATALOGUE.
Their stock is very extensive and unusually fine, and well worthy of inspection.—The Nurseries, Great Berkhampstead, Herts.

LAPAGERIA ROSEA.
MESSRS. ARTHUR HENDERSON AND CO.'S grand Specimen of LAPAGERIA ROSEA is now in great perfection, having many hundreds of blossoms fully expanded. Strong blooming plants may be had, price on application.—Pine-apple Place, Edgware Road, London, W.

CATALOGUE.
YOUELL AND CO.'S GENERAL AND DESCRIPTIVE PRICED CATALOGUE for this season is now ready, and will be sent free on application.
It contains detailed Lists of Greenhouse Plants, Conifers, Shrubs, as well as all the newest introductions in Soft-wooded Plants.—Royal Nursery, Great Yarmouth.

CHOICE GERANIUMS.
JOHN DOBSON AND SONS' Annual DESCRIPTIVE LIST of all the leading kinds of SHOW, FANCY, and SPOTTED GERANIUMS, together with a SELECT LIST of CINERARIAS and FUCHSIAS, is now ready, and may be had post free on application; it includes several new varieties now offered for the first time.
Woodlands Nursery, Isleworth, and High Street, Hounslow.

CARNATIONS, PICOTEES, ETC.
CHARLES SCHOFIELD has now ready first-class varieties of the above Flower at 12s. per dozen pairs; also PINKS, 4s. to 8s. per dozen. CATALOGUES may be had free.
Knowsthrope, near Leeds, Yorkshire.

FERN CATALOGUE.
ROBERT SIM'S NEW DESCRIPTIVE AND PRICED CATALOGUE, No. 6 (62 pages) of his COLLECTION of BRITISH AND EXOTIC FERNS, can be had, post free, for 8 stamps. Gratis to all previous purchasers of Ferns.
Nursery, Foot's Cray, Kent, S.E.

TO THE SEED TRADE.
ABRAHAM HARDY AND SON, SEED GROWERS, Maldon, Essex, respectfully call attention of the Trade to their FORTIETH ANNUAL WHOLESALE PRICED CATALOGUE OF SEEDS, which may be had on application. They particularly recommend to notice their superior stock of CUCUMBERS.—October 22.

ERICAS.
F. AND A. SMITH'S Stocks of the above are this season unusually fine, comprising most of the leading winter and spring-flowering varieties. Prices on application.
Dulwich, Surrey, S.

TO THE TRADE.
ERICAS.—Fine young bushy plants now and coming into flower, 50s. per 100; fine plants in 48 and 32-size pots, 5l. per 100; Stove plants of all the best and newest kinds in 48 and 32-size pots, 5l. per 100. List sent on application.—Nurseries, Maidstone.

TO NURSERYMEN AND AMATEURS.
TO BE SOLD, the property of a gentleman, deceased, about 100 ORCHIDS and STOVE PLANTS in good condition, pair of fine CROTONS, 7 feet; also six bushy ORANGE TREES, from 5 to 7 feet.—Mr. J. LEGG, Nurseryman, Gosport.

FINE NEW HOLLYHOCKS.
HENRY MAY begs to offer a splendid stock of the above in the finest health, and best kinds at most unprecedented low prices. Catalogues on application.
The Hope Nurseries, near Bedale, Yorkshire.

GOOD SEEDS. CARRIAGE FREE.
SUTTON AND SONS,
SEED GROWERS AND MERCHANTS,
ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.

GEORGE GIBBS AND CO.,
SEEDSMEN,
26, DOWN STREET, PICCADILLY,
LONDON, W.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY LIMITED supply every requisite for the Farm and the Garden.
Registered Offices, Union Road, Plymouth.

AUSTRALIAN GARDEN CRESS, just harvested (the true broad-leaved sort). Price on application.—ARTHUR HENDERSON & Co., Pine-apple Place, Edgware Road, London, W.

THE SALWAY PEACH.
CHARLES TURNER can supply fine Trained Trees of this superior late variety, Dwarfs or Standards.
The Royal Nursery, Slough.

TO THE TRADE.
J. TROTMAN beg to offer well-grown plants of the following:—Dwarf Trained and Untrained PEACHES, NECTARINES, and APRICOTS. Dwarf Untrained PEARS, PLUMS, APPLES, and CHERRIES. Fine well-furnished Trees for Orchard House or Pot cultivation of Peaches, Nectarines, and Apricots. Prices moderate on application.—New Road, Hammersmith, W.

TRAINED PEACHES, NECTARINES, APRICOTS, APPLES, CHERRIES, AND PLUM TREES, can be had of E. R. GREENUS, RAILWAY NURSERIES, Watford, of the best quality and on the most reasonable terms, with instructions gratis as to soil, planting, and treatment of the Trees so as to insure success.
STANDARD AND DWARF ROSES, EVERGREENS, and all sorts of NURSERY STOCK.
Cash, or reference from unknown correspondents.

MUSCAT GRAPES WANTED.—PINE-APPLES (not under 2 lbs.) WANTED.
PEACHES (large size) WANTED.
Forward immediately to GEORGE TAYLOR,
CHOICE FRUIT SALESMAN,
St. John's Market, Liverpool.

CRYSTAL PALACE.—BRANCHING PINE APPLE OF PENANG.—The Crystal Palace Company has about 80 plants of the above, of all sizes, to dispose of. No reasonable offer will be refused.—Apply to the SECRETARY, Crystal Palace, Sydenham, S.E. This advertisement will not be repeated.

STRAWBERRY PLANTS.—Elton Pine, Sir Harry and Keens' Seedling, 2s.; British Queen, Eleanor, Eliza and Admiral Dundas, 2s. 6d. per 100.
LILIES, ground roots, Orange and Turk's Cap, 8s. per 100. Large LAURUSTINUS.
GEORGE CORNWELL, Barnet, N.

LARGE RED GRAPE CURRANT.—Five Thousand Plants, from 1 to 3 years old; also FALSTAFF RASPBERRY CANES to any extent, to be sold remarkably cheap by taking a quantity.—Apply to Mr. MITTON, Lampton, near Isleworth and Hounslow, W.

GREAT SCARCITY OF FRUIT.
STRONG ROOTS OF THE LINNÆUS RHUBARB, from division, can be supplied in any quantity at 12s. per 100, or 5l. per 1000, by WALTER PENNINGTON, Nurseryman, South Retford, Nottinghamshire.

FRUIT TREES.—Intending purchasers are respectfully invited to inspect the extensive Stock growing at the Nursery of the Subscribers. The quality is this season unusually good.—HUGH LOW & Co., Clapton Nursery, London, N.E.

MAIDEN AND CUT-BACK FRUIT TREES.
STANDARD AND PYRAMID FRUIT TREES.
EXTRA FINE TRAINED FRUIT TREES.
RICHARD SMITH has this season 23 acres of the above. Price on application.
St. John's Nurseries, Worcester.

FRUIT TREES.
J. AND J. FRASER, Lea Bridge Road Nurseries, Essex, N.E., beg to invite purchasers of Fruit Trees to an inspection of their stock, which is this year unusually fine. PRICED CATALOGUES can be had on application.

TO THE TRADE.
J. AND J. FRASER, The Nurseries, Lea Bridge Road, Essex, N.E., beg to offer a large Stock of Maiden FRUIT TREES, including all the best sorts of Apricots, Peaches, &c. The prices, which are very moderate, may be had on application.

TRANSPLANTED FOREST TREES.—Large quantities of Transplanted ALDER, LARCH, SCOTCH, SPRUCE, HAZEL, SPANISH CHESNUTS, ASH, &c., 1, 2, 3, and 4 feet. A good stock of QUICKS. Samples, with prices, may be had on application.
WATERER & GODFREY, Knap Hill, near Woking.

PLANTING SEASON.
SEEDLING AND TRANSPLANTED FOREST TREES AND SHRUBS, ROSES, AURICULAS, BORDER FLOWERS, AND FERNS.—Priced List on application to WM. URQUHART & SONS, Dundee.—Oct. 22.

LARGE EVERGREENS, ETC.
WM. CUTBUSH AND SON invite planters wishing to produce an IMMEDIATE effect to their fine stock of EVERGREENS, &c.; and as all HARDY STOCK is kept constantly TRANSPLANTED, the RISK of injury by removal is reduced to its MINIMUM.—Highgate Nurseries, London, N.

GARDENERS' CHRONICLE

CARTER'S

List of New Annuals for Season 1860.

CLARKIA PULCHELLA, VAR. INTEGRIPETALA.—This is the first of what might almost be called an entire new class of Clarkias, of which we shall have the pleasure of offering a succession of varieties during the next few years; the flowers are nearly double the size, colour more brilliant, and the petals whole instead of being three-lobed like the old pulchella varieties, thus forming an apparently *circular* instead of *cruciform* flower. This variety was "commended" by the Floral Committee of the Horticultural Society in July last, and described by them as "an improvement on the older kind in respect to its ornamental qualities."

CALLIRHOE DIGITATA.—A very elegant plant, strongly resembling the scarlet Linum; colour rich violet purple, with white eye; height from 2 to 3 feet, commences to bloom when about 6 inches high, and presents a mass of blossom during the entire summer. This is the same plant as that referred to under the name of Nuttallia by Mr. Beaton in the "Cottage Gardener," as follows:—"Among other novelties was a bed of new Nuttallia, a genus that is little known. The old Nuttallia grandiflora is one of the best old border plants, and one of the most difficult to keep; but this will be an easy thing, as it seeds freely, and is not more than a biennial. The plants were a yard high, very branchy, and full of blooms—violet and crimson colour, with a white bottom. If the flowers of Chironia frutescens were cupped, and dashed with a tinge of purple, they would give some idea of this beautiful thing; but it will be best to prove it in patches, like patches of Coreopsis.

ŒNOTHERA BIENNIS, VAR. HIRSUTISSIMA (Asa Grey).—A new variety of the Evening Primrose from California, very distinct from the common bienuis; height 2 feet, colour crimson orange.

LOBELIA GRACILIS ROSEA.—A very graceful little plant of a good rose colour, especially adapted for edgings.

DIANTHUS CHINENSIS LACINIATUS.—We have purchased part of the stock of seed of this unprecedented novelty from the raiser, Mr. Heddewig, who describes it as follows:—Grows 2 feet high, very hardy; flowers about 4 inches in diameter, each petal consisting of a long delicate fringe, some double, others single; blossoms from the end of May till the beginning of frost; the colours are pure white, flesh, rose, various shades of red, carmine, violet, purple, and rich maroon, some being selfs, other striped and spotted.

DIANTHUS CHINENSIS HEDDEWIGI.—Of this splendid annual Dianthus we have also purchased part of the stock of seed from the raiser. The plants are scarcely 1 foot high, very bushy, and covered with a profusion of flowers, which measure nearly 3 inches in diameter; the colours are various, consisting of different shades of rose, crimson, violet, &c., some delicately marbled, others entirely self colour. This plant has received the highest awards from the Horticultural Society and Botanic Society, Regent's Park.

ANAGALLIS GRANDIFLORA, VAR. EUGENIE
ANAGALLIS GRANDIFLORA, VAR. NAPOLEON III.
Two beautiful new Continental varieties of the well-known Anagallis grandiflora, but the flowers are much larger. They will be found highly ornamental as half hardy bedding plants, as they continue a long time in bloom, and contrast effectively. Var. Eugenie light blue, shading from the centre to pure white at the border. Var. Napoleon III. rich maroon crimson.

NIGELLA HISPANICA ALBA
NIGELLA HISPANICA ATROPURPUREA
Two varieties of great merit, of erect habit, the one a clear rich purple and the other a pure white, can be recommended as being decidedly the best of their class.

CAPTAIN CLARKE'S NEW HYBRID SWEET PEA.—This beautiful variety is the result of a cross between Painted Lady and Purple Sweet Pea, raised by Captain Trevor Clarke, F.H.S., well known to the floricultural world as a successful hybridiser of plants. The upper petals are of a delicate rose colour, and the lower white, with a deep blue edge. (This was inadvertently described as a hybridisation between Lord Anson's and Painted Lady Pea.)

NEMOPHILA DISCOIDALIS MARMORATA.—A handsome new variety from discoidalis, which in addition to the white border of the old variety is very prettily marbled with white on the black ground of each petal.

PHACELIA TANACETIFOLIA ALBA.—A white variety of the blue tanacetifolia, pretty and distinct.

LUPINUS MUTABILIS VARIECOLOR.—This most peculiar and handsome variety of Lupine is distinct in seed from all other sorts, and the same seed produces plants of various colours, such as pure white, dark purple, white, red, and yellow, variegated, yellow and purple, &c. We can recommend this variety as one of the most interesting ever offered.

NEW DWARF BEDDING TROPÆOLUMS.

TOM THUMB YELLOW.—A new variety in colour, particularly adapted for bedding, and also for growing in pots and ornamental vases, and the flowers are well thrown up above the foliage; very dwarf and compact in habit. Colour pure yellow without any marking; was "commended" by the Floral Committee of the Horticultural Society in July last, and described by them as "a compact free blooming rich yellow annual, likely to become useful for beds."

TOM THUMB BEAUTY.—An elegant variety with Lobbianum-shaped flowers, raised by Mr. Melville, gardener to the Earl of Roseberry, Dalmeny Park, near Edinburgh. The flower is yellow flamed and blotched with bright crimson. A plant was sent to the Editors of the "Cottage Gardener," in October, 1858, who speak of it as follows;—"No. 11, a dwarf yellow, tinged with crimson; would be a good bedding plant we think.

☞ Price of the above to the Trade on application. Coloured Drawings are in progress, and our Artist (Mr. Andrews) promises copies in October.

JAMES CARTER AND CO.,
237 AND 238, HIGH HOLBORN, W.C.

PLANTING.

A. PAUL & SON

RESPECTFULLY invite the attention of Gentlemen improving their Estates or forming new Gardens to the following TREES, &c., which they are prepared to sell at the lowest remunerating prices for a good standard quality. It is their practice to transplant every second year, in order that little or no loss may be incurred by removal. Many things are grown in large quantities and offered on advantageous terms to the Trade. An inspection of the stock is invited.

Abies alba, 2 to 6 feet
,, ,, glauca, 1 to 2½ feet
,, Clanbrasiliana and other dwarf Firs, 9 in. to 1½ ft.
,, canadensis, 3 to 6 feet
,, Douglasii, 2 to 6 feet
,, fine onensis, 2 to 3 feet
,, Menziesii, 1½ to 6 feet
,, monstrosa, 2 to 7 feet
,, Morinda, 2 to 10 feet
,, orientalis, 1 to 2 feet
,, rubra, 2 to 4 feet
,, 20 other sorts, 1 to 6 feet
Araucaria imbricata, 1½ to 6 ft.
Arbor-vitæ (see Thuja).
Alaternus silver & gold striped, 1½ to 4 feet
Arbutus, 6 sorts, 1 to 3 feet
Aucuba japonica, 1 to 3 feet
Box, 6 sorts, 1½ to 6 feet
Berberis Darwinii, 1 to 1½ foot
Cedrus africanus, 2 to 10 feet
,, Deodara, 1 to 12 feet
Cedar of Lebanon, 1 to 12 feet
,, Red, 2 to 5 feet
,, White, 3 to 5 feet
☞ The largest and finest stock of Cedars in the country.
Cistus, 12 sorts, 1 to 3 feet
Cryptomeria Lobbiana, 3 to 8 ft.
,, nana, 9 inches
Cupressus Corneyana, 1½ to 3 ft.
,, Knightii, 3 to 4 feet
,, Lambertiana, 3 to 7 feet
,, Lawsoniana, 9 in. to 1 foot
,, torulosa, 1½ to 3 feet
,, 12 other sorts, 1 to 4 feet
Daphne pontica, 2 to 3 feet
Furze, double, 1 to 1½ foot
Garrya elliptica, 1½ to 3 feet
Holly, green and variegated, 30 sorts, 1 to 6 feet
,, green standards, 5 ft. stems
Juniperus chinensis, 2 to 5 feet
,, communis pendula, 2 to 3 ft.
,, excelsa, 1 to 2½ feet
,, fragrans, 2 to 4 feet
,, glauca, 2 to 3½ feet
,, oblonga, 2 to 6 feet
,, ,, pendula, 2 to 3 feet
,, thurifera, 1½ to 6 feet
,, tamariscifolia
,, virginiana aurea, 1 to 2 feet
,, ,, ,, pendula, 1½ to 3 feet
,, viridis, 1½ to 2½ feet
,, weeping, 5 feet stems
,, 20 other sorts, 1 to 6 feet
Laurel, Common, 1 to 5 feet
,, Portugal, 1½ to 4 feet
,, ,, Standards, 8 feet
Laurustinus, 1 to 2 ft. (bloom)
Ligustrum lucidum, 3 to 4 feet
,, japonicum, 1½ to 3 feet
,, ovalifolium, 5 feet
,, evergreen, 2 to 4 feet
Mahonia aquifolia, 1 to 3 feet
,, 6 other sorts, 1 to 3 feet
Phillyreas, of sorts, 1½ to 7 feet
Picea amabilis, 1 to 1½ foot
,, nobilis, 1 to 4 feet
,, Nordmanniana, 1 to 4 ft.
,, Pinsapo, 1½ to 4 feet
,, Webbiana, 2 to 3 feet
,, 6 other sorts, 1 to 6 feet
Pinus austriaca, 2 to 4 feet
,, Benthamiana, 2 to 5 feet
,, calabrica, 3 to 4 feet
,, Cembra, 1½ to 4 feet
,, excelsa, 1½ to 12 feet
,, insignis, 3 to 6 feet
,, Llaveana, 2 to 5 feet
,, Laricio, 2 to 4 feet
,, macrocarpa, 2 to 3 feet
Pinus monticolor, 2 to 3 feet
,, monspeliensis, 3 to 5 feet
,, muricata, 3 to 5 feet
,, Montezumæ, 3 years seedlings
,, nivea (Snow Pine), 1½ to 5 ft.
,, Pallasiana, 2 to 3 feet
,, pinaster, 3 to 6 feet
,, pyrenaica, 4 to 6 feet
,, Sabiniana, 4 to 5 feet
,, 40 other sorts, 1 to 6 feet
Quercus (Oak), Evergreen, 3 to 5 feet
,, Fordii, 4 to 6 feet
,, latifolia, 3 to 6 feet
,, Mirbeckii, 2 feet
,, Suber (Cork Oak), 3 to 4 ft.
Ruscus hypoglossum
Santolina chamæcyparissus, 1 foot
Taxodium distichum, 3 to 6 ft.
Taxus (Yew), adpressa, 2 to 4 ft.
,, canadensis, 1½ to 3 feet
,, cheshuntensis, 1½ to 6 feet
,, elegantissima, 1½ to 4 feet
,, gold striped, 1½ to 5 feet
,, ,, standards, 5 feet
,, Jackson's Weeping, 1½ foot
,, japonica, 1 to 2 feet
,, nana, 2 to 4 feet
,, nigra, 3 feet
,, stricta, 5 feet
,, yellow-berried, 2 feet
,, common, round, and fair, 2 to 7 feet
,, Irish, 2 to 7 feet
,, 12 other sorts, 1 to 4 feet
Thuja americana, 2 to 8 feet
,, aurea, 1 to 3 feet
,, Chinese, 2 to 4 feet
,, gigantea, 2 to 3 feet
,, Wareana, 1 to 5 feet
,, 12 other sorts, 1 to 3 feet
Thujopsis borealis, 2 to 3 feet
Salisburia adiantifolia, 3 feet
Wellingtonia gigantea, 1 to 3ft.

Acer negundo variegata, 2 to 6 feet
Acacia, of sorts, 4 to 10 feet
Ash ,, 6 to 10 feet
Alder ,, 6 to 10 feet
Ailanthus ,, 8 feet
Almonds ,, 6 to 8 feet
Beech, purple, best variety, 5 to 8 feet
Birch, of sorts, 6 to 10 feet
Chesnut, Horse, of sorts, 1½ to 6 feet
,, Spanish, of sorts, 2 to 8 ft.
Catalpas, 6 to 8 feet
Caragana arborescens, 6 to 8 ft.
Cerasus padus aucubæfolius, 6 to 8 feet
Cornus mas variegata, 2 feet
Elms, 12 sorts, 6 to 8 feet
Gleditschias, 1½ to 8 feet
Kolreuteria paniculata, 3 to 6 feet
Laburnums, 8 feet
Lilacs, Persian, 6 feet stems
Liquidambars, 2 to 3 feet
Limes, of sorts, 8 to 10 feet
Maple ,, 5 to 10 feet
Planes ,, 7 to 10 feet
Poplar ,, 6 to 10 feet
Oak ,, 6 to 10 feet
Robinia ,, 6 to 8 feet
Sophora japonica, 10 feet
Sycamore, 6 to 10 feet
Thorns, of sorts, 6 to 8 feet
Tulip Trees, 2 to 10 feet
Willows, American, and others
Quick, 2-year transplanted, fine

WEEPING AND LAWN TREES in very great variety.

FLOWERING TREES AND SHRUBS, in 300 species and varieties, including Althæa, Cytisus, Berberis, Daphne, Deutzia, Lilac, Purple Nut, Pyrus, Ribes, Rose Acacia, Syringa, Spiræa, Weigela, &c.

ROSES, an unrivalled collection. Standards, 12s. per dozen and upwards; dwarfs, 6s. per dozen and upwards. See separate Catalogue.

HARDY CLIMBING PLANTS, a large collection.

AMERICAN PLANTS, including Azaleas, Heaths, Kalmias, Magnolias, Rhododendrons, &c.

FRUIT TREES, consisting of all the choicest sorts, warranted true to name. The trained Peaches, Nectarines, Apricots, &c, particularly fine.

GRAPE VINES, from eyes, well ripened, short jointed, canes 6 to 10 feet.

HERBACEOUS PLANTS, in 500 species and varieties.

HOLLYHOCKS, a fine stock of healthy and well established plants. See separate Catalogue.

☞ Particulars of Prices, &c., furnished on application. Carriage of all packages free to London; if a ton weight or upwards placed free on the Railway at any London Terminus. An inspection of the stock invited.

A. PAUL AND SON,
NURSERIES, CHESHUNT, HERTS,
13 miles N.E. of London, Eastern Counties Railway.

TO PLANTERS OF CONIFERS.

YOUELL AND CO. can supply 50 species of RARE AND HARDY CONIFERS in good plants for 5l., package included, and carriage paid to London, Manchester, Newcastle-on-Tyne, Hull, or to any Railway Station within 150 miles of the Nursery. A List of the above can be had on application.
Royal Nursery, Great Yarmouth.

CHOICE BULBS.

50 varieties choice imported Hyacinths, 30s., or per dozen, named, 6s., 9s., and 12s. The roots of the above have this season been received in unusual fine and sound condition.

EARLY GLADIOLI.

The varieties of this class are very free flowering, and the best sorts to grow in pots for forcing, for which purpose they should be planted early, and well rooted previous to being placed in heat. To give a pleasing effect they should be from three to six of a sort in each pot. They also make very handsome clumps in beds, and are very attractive flowers in bouquets.

	s.	d.
12 splendid early dwarf varieties	6	0
12 splendid early dwarf varieties, three of each	16	0
12 splendid early dwarf varieties, new selection	15	0
Splendid early, in best mixture, 3s. 6d. p. doz.; p. 100	25	0
Splendid early, second mixture, 2s. 6d. p. doz.; p. 100	15	0
Loddigesii, deep pink, crimson and white stripe, p. doz.	5	0
Spectabilis, shaded rose, very dwarf and fine	4	0
Prince Albert, fine bright pink, striped white	6	0
Brownii, fine lively pink, with white feather, largest of the early varieties, Each	2	6
British Queen, a fine pure white and very early	1	6

GLADIOLUS RAMOSUS HYBRIDS.

	s.	d.
12 superb varieties	6	0
12 superb varieties (three roots of each	16	0
Formosissima, rich crimson, per dozen	3	6
Gen. Von Welden, a splendid large crimson, with white mark	6	0
Queen Victoria, fine rosy scarlet	3	0
Ramosus, fine light rose crimson, flamed	3	0

GLADIOLUS GANDAVENSIS HYBRIDS.

	s.	d.
12 superb varieties, as Admiral Dundas, Brenchley-ensis, Monsieur Blouett, &c.	6	0
12 superb varieties, newest selection	15	0

GLADIOLUS (VARIOUS).

Floribundus, per doz. 2s. 6d.		Gandavensis, per doz.	2 6
Psittacinus ,, 1 6		Colvillii ,,	2 0
Colvillii roseum	per dozen 7s. 0d.		
50 splendid early and late varieties of Gladiolus, for succession			40 0
50 do. do. newest selection			55 0

40 vars. beautiful English Iris, 14s.; per doz., 3s. 6d. to	5	0
40 varieties beautiful German Iris	20	0
20 varieties ditto	10	6
6 vars. Iris pumila, very dwarf, early, and showy	4	6
6 varieties ditto, three of each	12	6

(The above beautiful in clumps in front of borders.)

Iris reticulata, very striking and most beautiful, very dwarf and early for beds, Each	5	0
12 superb varieties Chinese Pæonies	15	0

Superior collections of EARLY AND DOUBLE TULIPS, CROCUS, RANUNCULUS, ANEMONES, LILIES, IXIAS, SPARAXIS, and various CAPE AND DUTCH ROOTS.

The CATALOGUE of Bulbs, Herbaceous Plants, Conifera, Roses, Fruits, and general Nursery Stock sent free on application.

☞ The valuable Nursery and Plant Stock this season offered at a large reduction for cash on the usual prices, in order to the discontinuance of that department of the business.

CARRIAGE FREE (for goods 20s. and upwards) to all the London Stations, and all Stations on the Colchester Line between London and Norwich.

All orders and letters addressed to STEPHEN BROWN will receive prompt attention.
Seed and Nursery Establishment, Sudbury, Suffolk.

THUJA JAPONICA.—Scale, ½-inch to the foot.



J. WRIGHT AND CO. beg to inform the Trade and Public generally that they have a large Stock of the above, including a few 1000 SEEDLINGS, saved from their specimen, as above, and acknowledged to be the most beautiful of all the Thujas by many or all that have seen it.

Also THUJA AUREA, 2 to 3 feet; ditto SEEDLINGS; GIGANTEA; fine LAURUSTINUS, LAURELS, a quantity of BOX EDGING, &c. Prices upon application.
Nurseries, Mill Hill and Edgware, N.W.

RED LODGE NURSERY AND AMERICAN GROUNDS, SOUTHAMPTON.

THESE GROUNDS, extending over 60 acres, and consisting of every variety of soil, contain a large and choice assortment of AMERICAN PLANTS, including many thousands of fine Scarlet, Crimson, Pink, White, and Hybrid Rhododendrons, of the newest and best varieties; also a million of Rhododendron Ponticum, suitable for Covers or large Plantations; Kalmias, Azaleas, Andromedas, Ericas, Ledums, Gaultherias, &c. TRANSPLANTED FOREST TREES of every denomination, in immense quantity, including 800,000 Scotch, Larch, Spruce, Austrian, and Sea Pines. FRUIT TREES, Trained, Maiden, and Standard, of the choicest kinds, strong, well grown, and mostly in a bearing state. Strong plants of the beautiful GYNERIUM ARGENTEUM, or PAMPAS GRASS, also of that fine decorative plant FARFUGIUM GRANDE. Fine double CAMELLIAS of all the leading sorts. QUICK-SETS, for Fencing, about two millions. ORNAMENTAL TREES, EVERGREENS, AND FLOWERING SHRUBS, including many novelties, in very great variety and of all sizes. STANDARD AND DWARF ROSES, upwards of 30,000 in 500 named sorts. Beautiful specimens of CONIFERÆ, &c. An inspection of the General Stock growing in this unrivalled Nursery is earnestly and respectfully solicited. CATALOGUES and every information obtainable on application to W. H. ROGERS, Red Lodge Nursery, and 130, High St., Southampton.

COMMON LAURELS.

R. GADD AND SON have to offer 50,000 of the above from 2 to 6 feet high, extra stout and well rooted; 30,000 Seedling and Bedded Evergreen Oaks; Bays, 1 to 4 feet; Laurustinus, 1 to 2½ feet. Price on application.
Salvington Nurseries, near Worthing.—October 22.

LAURELS.—FOR SALE, several thousands of well-grown and thriving LAUREL PLANTS, from 2 to 3 feet high. Delivered at the Tisbury Station, on the London and South-Western Railway (in quantities not less than 1000), at 25*s.* per 1000.—Apply to Mr. JEFFERY, Old Wardour Castle, Salisbury.

TO THE TRADE.

GLADIOLUS BRENCHLEYENSIS BY THE 1000.

J. MORGAN having this season grown a very extensive stock of this most beautiful Gladiolus, the bulbs of which are exceedingly large and well matured, is enabled to offer them at unusually low prices, which may be had on application.—Horticultural Establishment, Torquay.

TO THE SEED TRADE.

W. J. EPPS begs to offer the following GENUINE SEEDS of his own growth from the finest selected Stocks in the country:—Orange and Yellow Globe Wurzel, Long Red ditto; White Belgian, Altringham, Long Orange, and Early Horn Carrot; superior Crimson Beet; British Queen, Hair's Mammoth, Champion of England, and Burbridge's Eclipse Peas; Short-top Scarlet Radish.—Seed Warehouse, Maidstone.

GERANIUM FLORIBUNDUM (SMITH).

F. AND A. SMITH beg to offer the above-named as an acquisition, colour bright rose, upper petals pink with crimson spot, dwarf free habit, a continuous and abundant bloomer; without exception the best first early variety ever offered; obtained two Certificates of merit at the Botanical Society's Meetings in March and April 1859. Strong plants, 7*s.* 6*d.* each. The usual allowance to the Trade.—Dulwich, Surrey, S.

NEW ANNUALS.

JOHN GEORGE WAITE, SEED MERCHANT, 181, High Holborn, London, W.C., has great pleasure in offering SEEDS of the following new hardy Annuals:—
CLARKIA PULCHERRIMA,
SCHIZANTHUS GRANDIFLORUS OCULATUS,
HELIOPHILA CŒRULEA STRICTA.
Coloured Drawings and prices of which (to the Trade only) can be had on application.
Seed Establishment, 181, High Holborn, London, W.C.

CHOICE HOLLYHOCKS.

WILLIAM HUSSEY begs to offer the under-named collection, package included, for 18*s.*, viz.:—Mrs. Oakes, Black Prince, Primrose, Model, Standard, Comet, Walden Gem, Solfaterre, Schamyl, Beauty of Cheshunt, La Tourelle, Unique, Omar Pacha, Memnon, Hedenham Rival, Lilac Model, Miss Nightingale, Mrs. Ashley, Pourpre de Tyre, Lemonade, Purple Perfection, Jenny Lind, Lizzy, Lord Jocelyn, White Globe, and Queen of Denmark.
Horticultural Gardens, Norwich.

LANDSCAPE GARDENING & GARDEN ARCHITECTURE.

MR. DAVIDSON, 2, Randolph Road, Maida Hill, London, W., continues to prepare Designs and Working Drawings, and direct the execution of all Park and Garden formations and improvements. His past experience enables him to give most satisfactory references in almost every part of the kingdom.

TREE TRANSPLANTING BY MACHINE, Landscape Gardening, Ornamental Planting, Land Draining, Lakes, and Road-making, &c. Plans and Estimates.
W. H. RUMBOLD, Grange, Tunbridge Wells.

GLAZIERS' DIAMONDS FOR CUTTING HORTICULTURAL and other GLASS, to be had of the Wholesale Manufacturer, JOHN EDWARDS, 20, Sharp's Alley, West Smithfield, London, E.C. Prices from 10*s.* to 27*s.* 6*d.*

GLASS FOR ORCHARD HOUSES & CONSERVATORIES.

JAMES PHILLIPS AND CO. beg to submit their prices of GLASS for the present month.

16-oz. SHEET GLASS, in boxes of 100 feet.—3rds.	4ths.
12 by 9, 13 by 9, 14 by 9 .. .. }	
12 ,, 10, 13 ,, 10, 14 ,, 10, 15 by 10 .. }	14*s.* 6*d.* 12*s.*6*d.*
13 ,, 11, 14 ,, 11, 15 ,, 11, 16 ,, 11 ..	
14 ,, 12, 15 ,, 12, 16 ,, 12, 17 ,, 12 ..	
18 ,, 12, 19 ,, 12, 20 ,, 12 ,, ..	
16 ,, 13, 17 ,, 13, 18 ,, 13 ,, .. }	16*s.* 6*d.* 14*s.*0*d.*
19 ,, 13, 20 ,, 13, 21 ,, 13 ,, ..	
16 ,, 14, 17 ,, 14, 18 ,, 14 ,, ..	
19 ,, 14, 20 ,, 14, 21 ,, 14 ,, ..	

Boxes included and not returnable.

GLASS for ORCHARD HOUSES, supplied by us to Mr. Rivers.

		16 oz.	21 oz.
20 in. by 12 in.			
20 in. by 13 in.	Common	14*s.*0*d.* ..	£1 1*s.*
20 in. by 14 in.	Superior do. ..	.. 16 6 ..	1 5
20 in. by 15 in.	English Glass ..	.. 18 0 ..	1 9

Boxes included and not returnable.

SMALL SHEET SQUARES, in 100 feet boxes.—*s.* *d.*

6 by 4	6½ by 4½	7 by 5	7½ by 5½	11 6
8 ,, 6	8½ ,, 6½	9 ,, 7	9½ ,, 7½	
10 ,, 8	10½ ,, 8½ ..	.. ..	.. ..	12 6

Boxes 2*s.* each, returnable at full price.

JAMES PHILLIPS AND CO.,
180, Bishopsgate St. Without, London, E.C.
NO CONNECTION WITH ANY OTHER HOUSE IN TOWN.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz SHEET GLASS of British Manufacture at prices varying from 2*d.* to 3*d.* per square foot for the usual sizes required, many thousands of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES, and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London, W.

See *Gardeners' Chronicle* first Saturday in each month.

HORTICULTURAL GLASS—JUNE TARIFF.

THOMAS MILLINGTON'S reduced Tariff of GLASS, &c.

6 by 4, 7 by 5, 8 by 6, 9 by 7 } 16 oz. to the foot, 11*s.* 6*d.*
6½ by 4½, 7½ by 5½, 8½ by 6½, 9½ by 7½ } per 100 feet.

In 100 boxes,—4ths quality, 12*s.* 6*d.*; 3ds do., 14*s.* 4*d.*

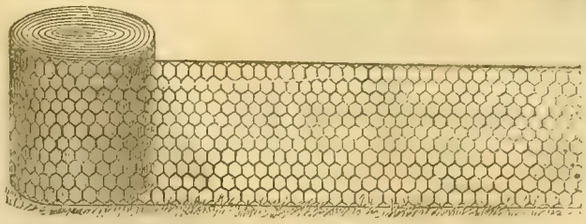
10 by 8, 12 by 9, 12½ by 10½, 14½ by 10½, 13 by 11
10½ by 8½, 12½ by 9½, 13 by 10, 15 by 10, 13½ by 11½
11 by 9, 13 by 9, 13½ by 10½, 12 by 11, 14 by 11
11½ by 9½, 12 by 10, 14 by 10, 12½ by 11½

		16 oz.	21 oz.
20 by 12	per 100 feet		
20 by 13	Common ..	16*s.* ..	24*s.*
20 by 14	Superior .	18*s.* ..	27*s.*
20 by 15			

All Boxes included.

Orchard House sizes as supplied to Mr. Rivers.
Hartley's improved Rough Plate Glass from ⅛ to ⅜ in thickness.
Coloured Glass in great variety, at 9*d.* and 1*s.* per foot.
Paints, Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, Lamp Glasses, &c.
87, Bishopsgate Street Without, E.C., same side as Eastern Counties Railway.

IMPROVED PREMIUM WIRE NETTING.



PRICES PER LINEAL YARD, 24 INCHES HIGH:—

Size of mesh.	Mostly used for	Light. Japanned.	Light. Galvanized.	Medium. Japanned.	Medium. Galvanized.	Strong. Japanned.	Strong. Galvanized.	Extra strong. Japanned.	Extra strong. Galvanized.
2½ inch	Hares, Dogs, Poultry	3½*d.*	4½*d.*	4½*d.*	5½*d.*	5*d.*	6½*d.*	6*d.*	8*d.*
2 inch	Game Netting.....	4*d.*	5*d.*	4½*d.*	6*d.*	5½*d.*	7*d.*	7½*d.*	9½*d.*
1⅝ inch	Small Rabbits, Hares, &c.	4½*d.*	5½*d.*	5½*d.*	6½*d.*	6*d.*	7½*d.*	8*d.*	10*d.*
1½ inch	Smallest Rabbits.....	6*d.*	7½*d.*	7½*d.*	9*d.*	9*d.*	11*d.*	11*d.*	13*d.*

Quantities of 100 yards or upwards delivered free at nearly all the principal Railway Stations and Shipping Ports in England; and 200 yards or upwards delivered free to most parts of Scotland or Ireland. Any width of Netting under 8 feet made at proportionate prices.

☞ *Every description of Netting warranted to give satisfaction, and if not approved will be exchanged, or may be returned unconditionally.*

J. B. BROWN & CO., 18, CANNON STREET, LONDON, E.C.

ST. PANCRAS IRON WORKS,

OLD ST. PANCRAS ROAD, N.W.

IRON HURDLES, FENCING, AND GATES.

THE PROPRIETORS OF THE ST. PANCRAS IRON WORKS, OLD ST. PANCRAS ROAD, LONDON,
WERE AWARDED THE
SILVER MEDAL of the Royal Agricultural Society for their IRON HURDLES & GATES,
which, by their peculiar construction, are more than twice as strong and durable as those in ordinary use.

Lists per post on application. Gates from 30*s.* to 500*l.*

The Hurdles can be seen in process of Manufacture at the Works.

GAME WIRE NETTING.

Professor Varnell's Enamelled and Wrought-iron Stable Fittings.

These Patent Mangers and Stable Fittings obtained the Commendation and the Silver Medal of the Royal Agricultural Society of England and the Royal Agricultural Society of Ireland, are adopted by the Royal Veterinary College, and Professor Spooner of that Institution states that they should be used by all who value the health and comfort of their horses. They can be had plain, galvanised, or enamelled.

A Show Room is devoted entirely to every description of Stable Furniture, and full-sized stalls and loose boxes are erected for inspection at St. Pancras Iron Works.

ADDRESS—THE MANAGERS,
ST. PANCRAS IRON WORKS, OLD ST. PANCRAS ROAD, LONDON, N.W.,
OPPOSITE OLD ST. PANCRAS CHURCH.

IRON FENCING AND HURDLES.

HILL AND SMITH'S Patent Continuous IRON FENCE is adapted for every variety of situation, and is much superior to, and cheaper than, Iron Hurdles of equal strength.

Many miles of this Fence have been erected on the London and North-Western Railway between Camden Town and Bletchley. The Patent principle is applied to Iron Hurdles, whereby their strength is much increased and the cost reduced.

Illustrated Priced Catalogues will be sent on application to HILL & SMITH, Brierly Hill Iron Works, near Dudley; or 40, Broad Street Buildings, City, London, E.C.; or 23, Enoch Square, Glasgow, where specimens may be seen; or to Mr. B. SAMUELSON, 76, Cannon Street West, London, E.C.

FOOD FOR WINTER STOCK.

SAMUELSON'S celebrated TURNIP CUTTERS, PULPERS, CHAFF-CUTTERS, OIL-CAKE BREAKERS, CORN and MALT-CRUSHING MILLS, all with the latest patented improvements, may be obtained through any Ironmonger or Implement Dealer in the kingdom, or (carriage paid to the nearest station to the purchaser) direct from the manufactory.—Britannia Works, Banbury, Oxon; or London Warehouse, 76, Cannon Street West, City, E.C.
Catalogues sent free on application.

HOT-WATER PIPES at wholesale prices, with Elbows, Syphons, Tee Pipes, and every other connection. Wrought and cast iron Boilers, Saddle, Conical, Cylinder, and Elliptic, from 24*s.* each. Boilers and Iron Stands to use without brickwork. Valves from 12*s.* each. Coil Boxes, Furnace Doors, Furnace Bars, Supply Cisterns, and Builders' Castings of every description in stock, at Mr. LYNCH WHITE'S Iron Wharf, Upper Ground Street, Blackfriars Bridge, London, S.

TO THE NOBILITY, GENTRY, AND HORTICULTURISTS.

H. McCALLA (late principal Draughtsman to Messrs. Weeks & Co.), CIVIL ENGINEER and FARM ARCHITECT, begs to inform the above that the Horticultural Buildings being confined to so few, exorbitant prices are charged; that he prepares Working Drawings and Specifications, so that they can have their own constructed by any country carpenter, at 1*s.* 6*d.* per foot super, or upon their own estates at 1*s.* 4*d.* per foot. Plans also upon the same rule for erecting Hot Water Apparatus. Plans for all kinds of Farm Buildings, Homesteads, Labourers' Cottages, Laying out of Estates, Drainage. Plans &c., prepared for all the above Works and submitted to competition.—Office: 7, Upper Cheyne Row, King's Road, Chelsea, S.W.

PAINTS OF ALL COLOURS, mixed ready for use from 5*s.* 6*d.* per gal., will cover 54 sq yds. Superior MANURES, equal to Guano, from 5*s.* 6*d.* per cwt. Efficacious SHEEP WASH, 1*s.* 6*d.* per gal. Patent CART GREASE, 10*s.* per cwt. PORTLAND CEMENT WASH for outside of buildings, prevents greenness and vegetation, also absorption of wet, 1*s.* 6*d.* per gal. Genuine COLZA OIL, 3*s.* 10*d.* per gal. The PEOPLE'S LIGHT LAMPS, 2*s.* PETROLEUM OIL, 3*s.* per gal.—G. SPILLS, Colour and Oil Works, Saint George Street, London Docks, E.

GUTTA PERCHA TUBING FOR WATERING GARDENS.

THE GUTTA PERCHA COMPANY have the pleasure to acknowledge the receipt of the following *Testimonial from* Mr. J. FARRAH, *Gr. to* BOSWELL MIDDLETON JALLAND, Esq., *of Holderness House, near Hull.*

"I have had 400 feet of your Gutta Percha Tubing, in engths of 100 feet each, with union joint, in use for the last 12 months for watering these gardens, and I find it to answer better than anything I have ever yet tried. The pressure of the water is very considerable, but this has not the slightest effect on the tubing. I consider this tubing to be a most valuable invention for Gardeners, inasmuch as it enables us to water our gardens in about one-half the time, and with one-half the labour required."

Manufactured by the Gutta Percha Company, Patentees, 18, Wharf Road, City Road, London, E.C., and sold by their Wholesale Dealers in town and country.

"FRIGI DOMO."—Patronised by her Majesty, the Queen, the Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, and —Collier, Esq., of Dartford.

PROTECTION FROM THE MORNING AND EVENING FROST.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths. Two yards wide, 1*s.* 6*d.* per yard run; four, 3*s.* per yard. Also, an improved make for Shading Purposes. Three yards wide, 2*s.* 6*d.* per yard run.

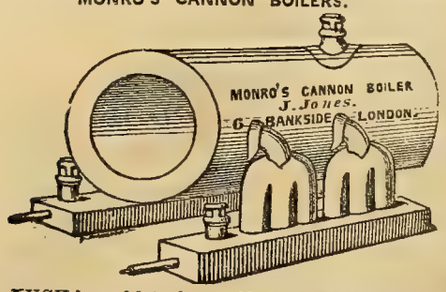
ELISHA THOMAS ARCHER, whole and sole manufacturer, 7, Trinity Lane, Cannon St., City,, E.C., and of all Nurserymen and Seedsmen throughout the kingdom. "It is much cheaper than mats as a covering."

LOOMES AND CO.'S CABLE PATTERN GARDEN EDGING



may be obtained of
Messrs. HOOPER AND CO.,
Covent Garden Market, W.C.

MONRO'S CANNON BOILERS.



MUCH has of late been said about BOILERS FOR HEATING BY HOT WATER, but these Boilers have now proved themselves to be the best at present invented. They are adapted for Heating every description of Building, and are made of various sizes. The price of the

24-inch Cast Iron is	£5	10s.	each.
24-inch Wrought Iron is	6	10	,,
36-inch Cast Iron is	8	0	,,
36-inch Wrought Iron is	8	10	,,

References to Gentlemen and Nurserymen where these Boilers are now at work. The Cannon Boilers are now kept in stock, and are to be had only of J. JONES, 6, Bankside, S.E. Also, every description of Saddle and Cylinder Boilers. Hot-water Pipes and Connections at prices lower than those of any other house in London. Estimates for Hot-water Apparatus erected complete in any part of the country, and an Illustrated Catalogue on application to J. JONES, 6, Bankside, Southwark, London, S.E.

VOKINS AND HURD,
Jubilee Place, King's Road, Chelsea, S.W.

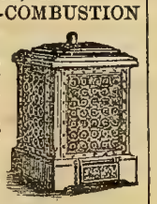




HORTICULTURAL BUILDERS and HOT-WATER APPARATUS MANUFACTURERS. Estimates forwarded on the shortest notice. BOILERS of all sizes on sale.

IMPROVEMENTS IN HEATING, &c.

MUSGRAVE'S PATENT SLOW-COMBUSTION STOVE, for Warming Public Buildings, Hall, Shops, Conservatories, Factories, Drying Rooms, &c. Will burn in Churches from Saturday till Sunday evening, avoiding attention during the hours of worship. In Halls will burn day and night for weeks, with little care. Capable of warming a large apartment for 24 hours, at a cost of 3d.; and deserving of special attention, because of its safety, healthfulness, durability, and extreme simplicity. This Stove is the nearest approach to warming by hot water.



MUSGRAVE'S PATENT STABLE FITTINGS AND HARMLESS LOOSE BOXES have obtained the award of a large Council Medal from the R. I. A. Society for the following improvements:—1st, The Horse cannot injure himself or others in the same stable if he breaks loose in his stall. 2d, He cannot waste the hay. 3d, He can have cut or uncut hay at pleasure. 4th, He has clean water always before him. 5th, A pure and wholesome atmosphere is secured. 6th, The whole fittings are stronger than usual, without increase in price, and there is no risk of infection.



The Loose Box is really what its name denotes, and the most spirited Horse may be turned into it without danger.

MUSGRAVE'S PATENT IRON COW-HOUSE FITTINGS, as approved by the Board of Works, adopted in the Ulster Model Farm, and by many of the most eminent Stock Breeders in the Kingdom, are made wholly of iron, very durable, cleanly, and attractive in appearance. The fodder is always fresh, being freely exposed to the air, removed from the breath of the animal, and separated from the roots or damp food. The range of Troughs can be quickly filled with water for the use of the Cows, or for washing out in case of epidemic, and the cost is very moderate.



These inventions being distinguished for strength, simplicity, and practical usefulness will repay public inquiry.

MUSGRAVE BROTHERS are also Makers of Wire Fencing, Hurdles, Field and Entrance Gates, Corn Rick Stands, Conservatories, Hot-water Apparatus, Verandahs, Rural Bridges, &c.; and their works being favourably placed for cheap labour and materials, they can offer corresponding advantages in price.

MUSGRAVE'S Patent Field Gates have gained the 1st Prize from the R. I. A. Society for strength, durability, and cheapness.

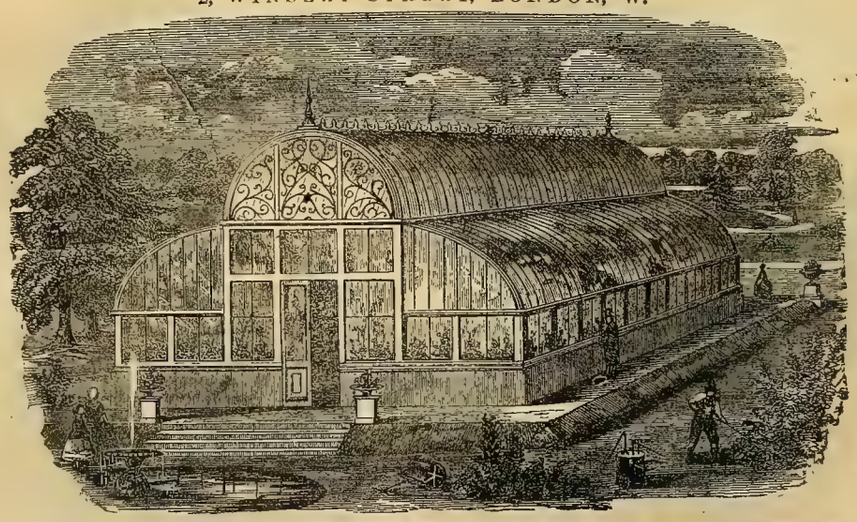
For particulars address MUSGRAVE BROTHERS, Ann Street Iron Works, Belfast.

HORTICULTURAL BUILDINGS AND HEATING BY HOT WATER.

JOHN R. PEILL, 17, New Park St., Southwark, S.E., Manufacturer of every description of Buildings for Horticultural purposes, and Inventor of the Improved Conical Boiler for heating the same, is prepared to undertake works of any magnitude, and refers among others to the celebrated range of FORCING HOUSES at HER MAJESTY'S GARDENS, FROGMORE, and at SIR ROBERT PEEL'S, DRAYTON MANOR, constructed under the superintendence of his Manager, Mr. JOHN JONES; and also to his BOILERS fixed at the CRYSTAL PALACE, the ROYAL BOTANIC GARDENS, REGENT'S PARK, and KEW, and at several hundreds of the Nobility's seats, Public Establishments, and Manufactories in London and the provinces. J. R. P. also manufactures every description of Iron Roofs, Iron Houses, and Iron Fencing, plain and ornamental. Strong Iron Hurdles for Sheep (6 ft. long, 3 ft. high, with 5 bars), 4s. 3d. each; ditto for cattle, 4s. 9d. each. Prices and other particulars forwarded on receipt of one postage stamp.

COTTAM & COMPY., Engineers, Founders, &c.,

2, WINSLEY STREET, LONDON, W.



A SHOW ROOM DEVOTED ENTIRELY TO ARTICLES OF HORTICULTURE.

THE NEW ILLUSTRATED CATALOGUE UPON APPLICATION.

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	,, Syringes	Garden Bordering
Hot-water Apparatus	Ornamental Wire Work	Hurdles	,, Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

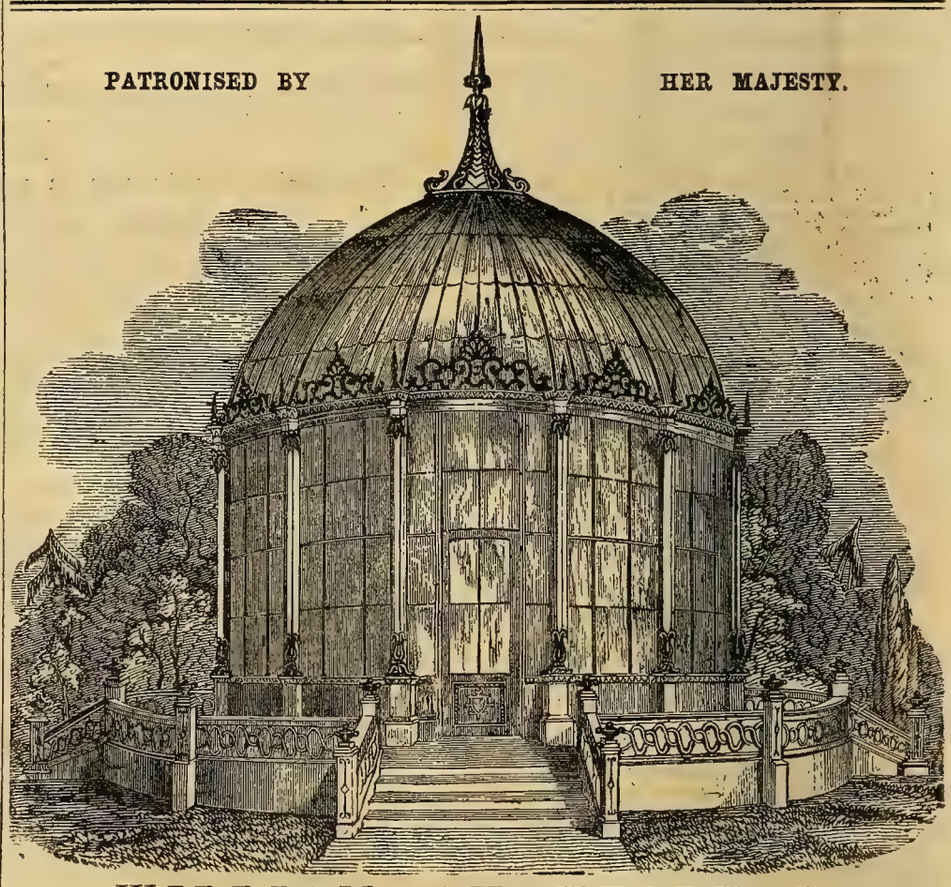
Iron Hurdles, Strained Wire Fencing, Game Netting, &c.

Every description of Plain, Ornamental, Cast and Wrought Iron, and Wire Work.

EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

N.B. COTTAM AND COY. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

PATRONISED BY HER MAJESTY.



WILLIAM SHAKESPEAR,

SUCCESSOR TO CLARK AND JONES,

Manufacturer of Metallic Hothouses, Conservatories, &c.,

HOT-WATER APPARATUS, AND GENERAL HORTICULTURAL BUILDER,

55, LIONEL STREET, BIRMINGHAM.

WILLIAM SHAKESPEAR in soliciting the attention of the Nobility and Gentry to this old and well-known Establishment, begs to say that in addition to continuing the Manufacture of METALLIC HOTHOUSES, &c., for which his predecessors were so justly celebrated, he undertakes the erection of HORTICULTURAL BUILDINGS to any extent in Wood, and since taking to the business in 1852, having gone to considerable expense in putting up the most improved Steam Machinery, he is enabled to execute orders in the best manner and at the very lowest price for which first-class materials and workmanship only can be afforded. Among the many examples of the superior mode of construction peculiar to this Establishment, W. S. can with pleasure refer to the magnificent range of METALLIC FORCING HOUSES in the Royal Gardens, Frogmore, which, after having been in operation for some years, are allowed to be unsurpassed in their suitability to the purposes required and the excellence of the workmanship.

☞ *Designs and Estimates on application. Experienced workmen sent to any part of the kingdom.*

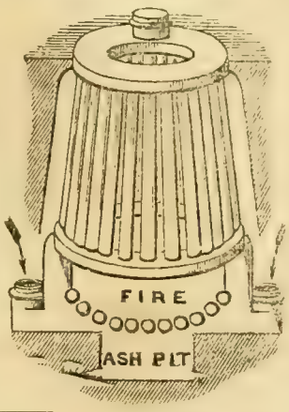
ESTABLISHED IN THE YEAR 1818.

WEEKS' ONE BOILER SYSTEM.

BY APPOINTMENT.

JOHN WEEKS & COMPANY,

KING'S ROAD, CHELSEA, S.W.,



CHALLENGE THE WORLD to produce a Boiler not made in imitation of their Upright Tubular Boiler that will produce anything like the same effect with the same quantity of fuel in a given time.

The following unequalled statistics fully justify the challenge:—

Mark the enormous length of Houses and Piping heated by One Boiler.	Length of Houses in feet	Total length of Piping.
Messrs. E.G. Henderson & Co., Wellington Nursery	1,200	5,500
Messrs. F. A. Smith, Dulwich	3,000	11,000
M. Van Houtte, Belgium	3,300	13,000
Our own Fruit Forcing Show Establishment ...	1,000	7,000

Also the Nurseries of Mr. Woodroffe, Harrow Road, N.W.; Messrs. Rollisson, Tooting, S.; Messrs. Wood & Ingram, Huntingdon; Messrs. Wood & Son, Maresfield; together with numerous Public Buildings and Establishments of the Nobility and Gentry far too numerous for insertion.

J. WEEKS & CO., Horticultural Builders and Hot-Water Apparatus Manufacturers, King's Road, Chelsea, S.W.

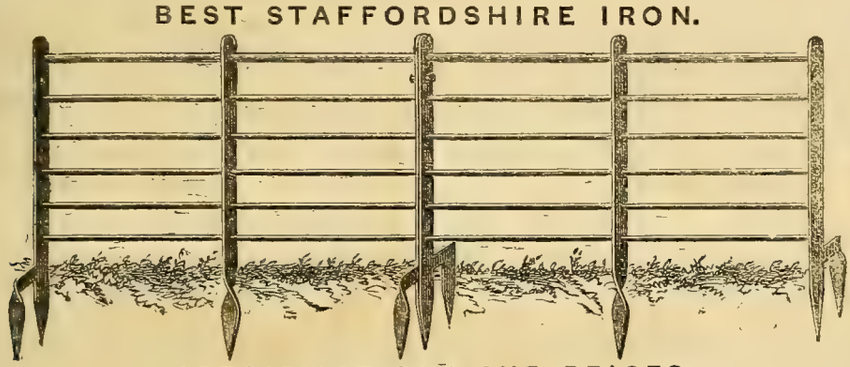
PLANS AND ESTIMATES FREE ON APPLICATION.

MESSRS. J. B. BROWN & CO.'S

IMPROVED WROUGHT IRON HURDLES

OF

BEST STAFFORDSHIRE IRON.



SPECIFICATIONS AND PRICES.

No. 1.—Very useful for general purposes, combining strength with good appearance. 3 feet 6 inches high, six bars round iron, top bar ⅝ inch diameter, five under bars ½ inch; two side uprights flat iron, 1¼ inch by ¼ inch, and middle upright 1½ by ¼ inch. Weight about 48 lbs. Present price delivered in London and at most of the principal Railway Stations, 2*s.* 5*d.* per yard, or about 5*s.* 3*d.* each hurdle of 6 feet 6 inches long.

No. 3.—Stronger and more suitable for heavy stock. 3 feet 9 inches high, five bars, top bar ⅝ inch diameter. four under bars ⅝ inch, end standards 1¼ inch by ⅝ inch, centre standard 1½ inch by ¼ inch. Weight about 63 lbs.; price 6*s.* 9*d.*, 6 feet 6 inches long, delivered as above.

No. 6.—Extra strong and high for heaviest stock. 4 feet high, six bars, top bar ⅝ inch diameter, five under bars ⅝ inch, end and two centre standards 1½ inch by ⅜ inch. The weight of this strong Hurdle is about 84 lbs.; and the price 8*s.* 10*d.*, 6 feet long.

No. 7.—Light Hurdle for sheep and lambs. 3 feet 4 inches high, five bars ½ inch diameter, standards 1¼ inch by ¼ inch. Weight about 39 lbs.; price 4*s.*, 6 feet long.

No. 8.—Light Sheep Hurdle. 2 feet 6 inches high, three bars ½ inch diameter, standards 1¼ inch by ¼ inch. Weight about 24 lbs.; price 2*s.* 9*d.*, 6 feet long.

Fully Detailed and Illustrated Catalogues of Iron and Wire Fencing, Hurdles, Gates, Wire Netting, Garden Rollers and Engines, Ornamental Vases, &c., on application.

J. B. BROWN & CO., 18, CANNON STREET, CITY, LONDON, E.C.

THE PLOUGH TRIALS AT WARWICK.

HOWARD'S CHAMPION PLOUGH



Gained the FIRST PRIZE as the Best Plough for General Purposes at Warwick,

BEING the CHIEF PRIZE for PLOUGHS, awarded by the Royal Agricultural Society of England, at this Meeting. The importance of this Prize will be gathered from the fact that the GENERAL PURPOSE PLOUGHS are the only ones tried on BOTH LIGHT AND HEAVY LAND, and as HOWARD'S CHAMPION PLOUGH proved itself to be the best on both soils, the FIRST PRIZE, of the HIGHEST AMOUNT given by the Society for any kind of Plough, was awarded to J. & F. HOWARD.

PRIZES awarded to J. & F. HOWARD, by the Royal Agricultural Society of England, at the WARWICK MEETING, 1859, being not only the LARGEST NUMBER of PRIZES, but the LARGEST NUMBER of FIRST PRIZES awarded to any Exhibitor.

THE FIRST PRIZE FOR THE BEST PLOUGH FOR GENERAL PURPOSES, ALSO A PRIZE FOR THE BEST PLOUGH FOR LIGHT LAND, AND A PRIZE FOR THE BEST PLOUGH FOR HEAVY LAND; THE FIRST PRIZE FOR THE BEST LIGHT HARROWS, THE SECOND PRIZE ALSO FOR THE BEST LIGHT HARROWS, AND THE FIRST PRIZE FOR THE BEST HEAVY HARROWS.

Every one of HOWARD'S Implements, tried at Warwick, gained a Prize.

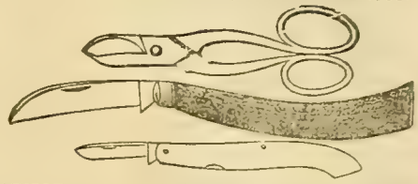
CATALOGUES, with full particulars, sent post free on application to

J. & F. HOWARD, BRITANNIA IRON WORKS, BEDFORD.

AGRICULTURAL IMPLEMENTS.

BURGESS AND KEY, 95, Newgate Street, London, E.C., have always on hand Ploughs, Harrows, Carts, Waggons, Turnip Cutters and Pulpers, Cake Breakers; and their Improved Chaff Cutters, 50*s.* Galvanised Game Netting, 4*d.* per Yard. Price Lists sent free.—Illustrated Catalogues on receipt of six postage stamps.

PAXTON WORKS, SHEFFIELD, ESTABLISHED 1738.



SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.—Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

PRICES REDUCED.

H. J. MORTON AND CO., Galvanised Iron Works, 2, Basinghall Buildings, Leeds.

GALVANISED IRON ROOFING

for Farm Buildings and other Roofs: the cheapest, most durable, and neatest Roofing in use; also Spouting at 10½*d.* per yard.

WIRE STRAND CABLE FENCING



(formed of Twisted Wires like a rope or cable), the strongest cheapest, and neatest fence in use, will resist the largest cattle and will not bend or get out of form by trespassing upon or over. Price, with five lines of the Galvanised Strand, iron main posts, and pronged Standards, 1*s.* 2½*d.* per yard.

This fence is far cheaper than posts and rails, or any kind of iron fencing; and possesses four times the strength of solid bars. Will not rust nor corrode. Upwards of 1200 miles of this Fencing supplied.

GALVANISED GAME AND POULTRY NETTING.



Galvanised, 24 ins. wide, 2-inch mesh, 5½*d.*, 7½*d.* and 9½*d.* per yard.

Galvanised, 24 ins. wide, 3-inch mesh, 4*d.*, 5*d.*, and 7*d.* per yard. The Netting made any width, and with openings of any size.

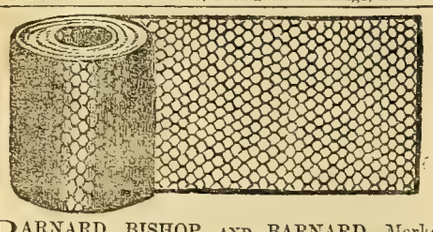
GALVANISED IRON CHAIN CAMP STOOLS & CHAIRS, POULTRY FOUNTAINS & FEEDERS, PRONGED DAHLIA RODS AND ROSE STAKES, &c.

Strong CATTLE HURDLES from 2*s.* per yard.

PATENT IMPROVED GAS WORKS,

of all sizes for the use of Private Houses, Mansions, Railway Stations, Mills, Collieries, Mines, Villages, &c. Works from 10 to 500 lights estimated for. The works can be entrusted to an ordinary labourer.—Apply to

HENRY J. MORTON & CO. 2, Basinghall Buildings, Leeds.



BARNARD, BISHOP, AND BARNARD, Market Place, Norwich, in consequence of improvements in their machinery for the manufacture of the above article, have been enabled to make a great reduction in the prices.

	Galvanised.	Japanned Iron.
2-inch mesh, 24 inches wide	5*d.* per yd.	4*d.* per yd.
2-inch ,, strong do.	6 ,,	4¾ ,,
2-inch ,, intermediate, do. ..	7 ,,	5½ ,,
2-inch ,, extra strong, do. ..	9½ ,,	7½ ,,
1⅝-inch ,, 24 inches wide	5½ ,,	4½ ,,
1⅝-inch ,, strong, do.	6½ ,,	5¼ ,,
1⅝-inch ,, intermediate, do. ..	7½ ,,	6 ,,
1⅝-inch ,, extra strong, do. ..	10 ,,	8 ,,

All the above kinds can be made of any width (under 8 feet) at proportionate prices. If the upper half is of a coarser mesh than the lower, it will reduce the prices about one-fifth.

Strong Galvanised Poultry Netting, 8½*d.* per yard, 3 feet wide Galvanised Sparrow-proof Netting for Pheasantries, 2½*d.* per square foot. Delivered free of expense in London, Peterborough, Hull, or Newcastle. Manufacturers of Improved Strained Wire Cattle and Deer Fencing, Iron Hurdles, &c.

Illustrated Catalogues and Patterns forwarded by post.

WARNER'S PATENT VIBRATING STANDARD PUMPS.

PATENT CAST-IRON PUMPS for Farms, Cottages, Stable Yards, &c., where the Well does not exceed 28 feet in depth; fitted with WARNER'S Patent Metal Bucket and Valve, which cannot clog in action. These Pumps can be made right-handed, left-handed, or with handle opposite the nose by removing four screws only.



Diameter of Barrel.	Height.		£. s. d.
2½ in. short	1 ft. 7 in.	Fitted for lead, gutta percha or cast iron flanged pipe as required.	1 5 0
2½ ,, long	3 ,, 3 ,,		1 10 0
3 ,, ditto	3 ,, 6 ,,		2 4 0
3½ ,, ditto	3 ,, 6 ,,		2 9 0
4 ,, ditto	3 ,, 6 ,,		2 18 0
2½ ,, short, with 15 feet of Lead Pipe attached, ready for fixing			2 10 0
2½ in. long ditto	ditto	ditto	2 14 0

The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses: they may be fixed, when desired, under the stage.

May be obtained of any Ironmonger or Plumber in Town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin Street, London, E.C.

Every description of Machinery for Raising Water by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

GERANIUMS, HERBACEOUS PLANTS, ETC.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their new PRICED and DESCRIPTIVE CATALOGUE of the above, to which are added Supplemental Lists of Stove, Greenhouse, and Hardy Plants, Fruit Trees, &c. (which include all the best new plants of the season), is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

CINERARIA, HERBACEOUS CALCEOLARIA, AND HALF SHRUBBY DITTO SEED.—These have been saved from Turner's most beautiful varieties; in 1s. and 2s. 6d. packets. Primula and Hollyhock, from the newest and handsomest varieties, 1s. per packet. Agents for F. & A. Smith's splendid Cineraria, in 1s. 6d., 2s. 6d., and 5s. packets; also agents for Dobson & Son's splendid Calceolaria, in 1s. 6d., 2s. 6d., 3s. 6d., & 5s. packets.—Catalogues of the newest Flower Seeds, and newest Dutch and Cape Bulbs, sent post-paid.—BUTLER & MCCULLOCH, Seedsmen, Covent Garden Market, W.C.

VIOLETS.

ROBERT SHACKELL begs to offer very strong plants in bloom of his

Russian superb VIOLET	per dozen	12s. 0d.
Small Plants..	,,	4 0
Very strong Plants of the Double Perpetual Tree Violet, in bloom	,,	6 0
Small ditto	,,	4 0
White Tree Violet	,,	4 0
White Double Violet	,,	4 0
Spring Double Violet	,,	4 0
Neapolitan Violet	,,	4 0
Old Russian, per hundred, 10s.;	,,	2 0

Locksbrook Nursery, or 5, Broad Street, Bath.

WINTER BLOOMING PLANTS.

CAMELLIAS, CHINESE AZALEAS, EPACRIS, ERICAS, of various sizes and all in unusually fine condition. Many thousands of these plants can be seen at the Nursery of the Subscribers.

DWARF OTAHEITE ORANGES in fruit.

CATALONIAN JASMINE (Jasminum grandiflorum).—Fine plants, grafted on short stems, and full of flower buds.

SPRAGUEA UMBELLATA, introduced by H. L. & Co. from California, is now finely in flower in the open ground.

Inspection respectfully invited.

HUGH LOW & CO., Clapton Nursery, London, N.E.

ROBERT NEAL, NURSERYMAN, Wandsworth Common, S.W., begs to call the attention of buyers to his large and well-selected stock of EVERGREENS and FLOWERING SHRUBS, ORNAMENTAL TREES. AMERICAN PLANTS. FRUIT AND FOREST TREES, STANDARD AND DWARF ROSES of every description. A large stock of BOX-LEAF EVERGREEN PRIVET, from 1 to 6 feet for hedges; GREEN HOLLY, 1 to 6 feet; RICH BOG and LOAM for American Beds; LEAF MOULD. The Nursery is 10 minutes' walk from Clapham Common, and New Wandsworth Station, Crystal Palace Line.

CLAPHAM.—EVERGREEN SHRUBS.

CHARLES SOUTHBY begs to inform the Gentry of Clapham and its neighbourhood, that he has a healthy Stock of COMMON LAUREL, PORTUGAL do., BOX-LEAVED PRIVET, ARBOR VITÆ, UPRIGHT CYPRESS, GREEN HOLLY, 1 to 6 feet, &c, all of which removes well from his Nursery, Manor Street, S.

SEEDS and DUTCH FLOWER ROOTS supplied at his Warehouse (late Fairbairn's), High Street, S., where he respectfully solicits all orders to be sent.

SELECT HARDY HERBACEOUS PLANTS at very reduced prices, and a further large discount for cash, according to the quantity of goods taken.

200 Plants in 200 fine sorts, including many new and scarce			£3	10	0
400 Plants in 200 fine sorts	ditto	ditto	6	0	0
100 Plants in 100 fine sorts	ditto	ditto	2	0	0
200 Plants in 100 fine sorts	ditto	ditto	3	10	0

Selections 4s., 6s., 9s., 12s., and 18s. per dozen.

50 fine sorts, selected for rock, 20s.; or per dozen, 5s. to 9s.

CATALOGUES sent on application to STEPHEN BROWN, Nursery and Seed Establishment, Sudbury, Suffolk.

NEW PINE APPLE—HURST HOUSE SEEDLING.

H. WILLIAMS, late Gardener to A. Fairrie, Esq., is now prepared to send out this fine and useful variety of PINE APPLE; habit similar to Nidularia and Veresia splendens; foliage recurved, making the plant quite ornamental; fruit large and conical, and of good flavour.

H. W. can with confidence recommend this variety to all Pine growers. It is invaluable to the Market grower, as the plants take up so little room. Numerous testimonials could be given, but H. W. thinks it sufficient to add Mr. G. Fleming's, of Trentham:—"An acquisition."—Orders made payable to H. WILLIAMS, Nurseryman, Fortes Green, Muswell, Finchley, N. Price Three Guineas, Two Guineas, and One Guinea, according to the size of the plants.

SEED WHEAT FROM THE CHALK.—Selected samples of CHIDHAM, WHITE TRUMP, ROUGH CHAFF, HUNTER'S WHITE, RED-CHAFF WHITE, GRACE'S WHITE, TALAVERA, RED BROWICK, RED NURSERY, GOLDEN DROP, and all the best kinds of Wheat, supplied by RAYNBIRD & HARVEY, of Basingstoke, and 89, Seed Market, Mark Lane, London, E.C. Samples and prices on application.

IMPROVED PROLIFIC RED WHEAT FOR SEED.

JOHN MOSS, JUN., invites the attention of Farmers to his new stock of PROLIFIC RED WHEAT, the produce of a careful selection from the highly esteemed variety of the Essex Red, known as "Hall's," and very highly appreciated by millers. J. M., jun., confidently recommends this selection for its prolific properties, as well as for weight and quality. Amount seeded 4 pecks; yield this season, 48 bushels per statute acre. Price 48s. per quarter, at Kelvedon Station. New sacks, 1s. 6d. each.

May be obtained of Mr. JOHN MOSS, jun., Kelvedon and Feering; and of Mr. T. C. WILSON, Kelvedon; by whom samples will be shown at Chelmsford, Braintree, and Colchester Markets.—Feering, Oct., 1859.

Remittances expected from unknown correspondents.

IMPROVED RIVET WHEAT FOR SEED.

MR. T. BENTALL invites the attention of Farmers to his new Stock of RIVET WHEAT, the produce of a handsome and well-formed ear, selected from the variety usually known as the "Golden Rivet" or "Payne's Defiance," and which contained no less than ONE HUNDRED AND TWENTY-ONE GRAINS.

Mr. B. confidently recommends the above to all growers of Rivet Wheat on account of its great productiveness, and the esteem in which it is held by Millers. Great care has been taken to preserve the stock as pure as possible. Price 48s. per quarter. New sacks, 1s. 6d. each. May be obtained of Mr. T. BENTALL, Perces, Halstead; also of Mr. R. EMSON, Secretary to the Essex Agricultural Society, Halstead, by whom samples will be shown at Braintree, Colchester, and Sunbury Markets. Remittances requested from unknown correspondents.

SUTTON'S CHAMPION SWEDE AND IMPROVED MANGEL WURZELS.—THREE MORE SILVER CUPS and several other prizes have already been awarded THIS SEASON to SUTTON'S CHAMPION SWEDE and Improved Mangel Wurzels.

Messrs. SUTTON & SONS will feel obliged by any additional information as to Prizes awarded to Roots raised from their seeds. New Seeds are now ready for delivery. Champion Swede, 1s. per lb., 4s. per bushel. Mangel Wurzel, 9d. per lb., or cheaper by the cwt.

The ROYAL BERKS ROOT SHOW will be held at Reading in November, at which numerous Prizes will be awarded as usual to pulled roots of Swedes, Turnips, Mangels, Carrots, Kohl Rabi, &c., from any part of the kingdom.

Royal Berkshire Seed Establishment, Reading.

GREEN HOLLY, EVERGREEN OAK, AND BAYS.

MR. LAKE having a large stock of the above, 3-years seedlings, will render them at moderate prices. Likewise a large and choice collection of Dwarf Trained Peaches, Nectarines, Apricots, Apples, Pears, Plums, and Cherries; also Standard Pears, Plums, Cherries, Apples, &c.

All the best varieties of Goosberries, Currants, and Raspberries; Rhubarb, Seakail, and Asparagus Roots for Forcing.

Several thousand Standard Cider Apple Trees.

Prices on application. The Trade supplied.

The Nurseries, Bridgwater.—October 22.

CHOICE CONIFERS,

ALL SEEDLING PLANTS GROWN IN POTS.

Per dozen.—s. d.	Per dozen.—s. d.
Pinus Don Pedri, 2 years 60 0	Pinus Lerdoi, 2 years .. 18 0
,, Veitchii, 2 years .. 60 0	,, resinosa, 2 years .. 18 0
,, Popacatepetli, 2 years 60 0	,, corvea, 2 years .. 18 0
,, macrocarpa, fine, 9 in. 24 0	,, patula, 2 years .. 9 0
,, Llaveana, 2 years .. 18 0	,, Ehrenbergii, 2 years.. 12 0
,, tuberculata, 2 years.. 18 0	,, popelini, 2 years, each 1 6
,, Benthamiana, 2 years 9 0	,, insignis, fine, 2 feet . 18 0

Abies religiosa, 2 years, 21s. per dozen.

Cupressus McNabiana, true, 6 inches, 9s. per dozen.

,, macrocarpa, 2 feet, fine, 6s. per dozen.

Taxodium sempervirens, very fine, 2 feet, 24s. per dozen.

Wellingtonia gigantea, fine specimen plants, in 24 pots, 2 feet high, 21s. each.

J. HENCHMAN, Edmonton, London.

MESSRS. WATERER AND GODFREY respectfully refer planters to the following LIST of well-known good hardy Plants:—

ARAUCARIA IMBRICATA, 1 foot, stout, healthy, 5l. per 100; larger, up to 8 feet.

CEDRUS DEODARA, 2½ to 3 feet, very handsome, 10l. per 100; larger, in any quantity, up to 10 and 15 feet.

PICEA NOBILIS, Seedlings, in quantity, 1 foot, stout.

Ditto larger and in every way perfect plants, up to 4 feet.

NORDMANNIANA, from seed, 2, 3, 4, and 6 feet.

PINSAPO, 2½ to 3½ feet, and as much through.

Ditto magnificent plants, 8 and 10 feet high.

CUPRESSUS LAWSONIANA, fine bushy seedling plants, 2½ feet high.

JUNIPERUS, CHINESE, 3 feet up to 8 and 10 feet.

,, IRISH, 5, 6, and 7 feet.

YEWS, IRISH, 5, 6, 7, and 8 feet.

,, GOLDEN, from 2 to 7 and 8 feet.

,, COMMON ENGLISH, in large quantities, 4 to 6, 7, and 8 feet.

THUJA AUREA.—Several hundred magnificent specimens, 3, 4, and 5 feet high, and measuring 10 to 15 feet in circumference.

THUJOPSIS CÆREOLIS, 2½ to 3 feet.

WELLINGTONIA GIGANTEA, all from seed, 1½ to 3 feet, and as wide.

HOLLY GREEN, in quantities, 5, 6, and 8 ft.; VARIEGATED, especially the best gold striped, of all sizes, up to 6 feet.

All the plants referred to in this advertisement were removed in April last, and they are in a condition to travel any distance with perfect safety.—Knap Hill Nursery, near Woking, Surrey.

OSCAR STRAWBERRY.

CHARLES TURNER can still supply strong plants, warranted to fruit next season, at 42s. per 100.

For full particulars of this fine early variety see previous Advertisements. It can also be supplied by the following in Trade who have received plants:—

Backhouse, Messrs., York
Barnes, Mr. W., Camberwell
Baskerville, Mr., Bristol
Bell, Mr., Norwich
Brind, Mr., Marlborough
Bunting, Mr. W., Colchester
Bunyard, Mr., Maidstone
Burbury, Mr. J., Kenilworth
Butler & McCulloch, Messrs., Covent Garden Market, London, W.C.
Campbell, Mr. A., Glasnevin, Dublin
Carpenter, Mr. E., Bath
Cook, Mr. H., Handsworth Woodhouse, by Sheffield
Day, Mr., Oxford
Dean, Mr., Bradford
Dickson, Messrs. F. & A., Chester
Dickson, Messrs., Sons & Co., Manchester
Dickson & Turnbull, Messrs., Brechin
Dreghorn & Aitken, Messrs., Kilmarnock
Ewing, Mr., Norwich
Finney, Messrs, & Co., Gateshead, Durham
Fraser, Messrs. J. & J., Lea Bridge Road, Leyton, Essex
Garaway, Mayes, Messrs, & Co., Bristol
Glœde, M. Ferdinand, Aux Sablons, near Moret sur Loing, France
Griffin, Mrs., Bath
Hally, Mr., Blackheath, S.E.
Handasyde, Mr., Musselburgh
Harman, Mr., Denham, by Uxbridge
Harrison, Mr., Darlington
Henderson, Messrs. A. & Co., Pine-apple Place London, W.
Henderson, Messrs. E G., St. John's Wood, London, N.W.
Hinxman, Mr. G, Salisbury
Hurst & McMullen, Messrs., 6, Leadenhall St., London, E.C
Ivery, Messrs., Dorking, Surrey
Jackson, Messrs., Kingston, Surrey [Bath
Kenway, Mr. S., Batheaston,
Keynes, Mr., Salisbury
Kimberley, Mr., Stoke by Coventry
Kitley, Mr., Bath
Laing, Mr. A., Beverley
Low, Messrs. Hugh & Co., Clapton, N.E.
Lucombe, Pince, Messrs., & Co., Exeter
Milne, Arnott, Messrs., & Co., Wandsworth Road, London S.W.
Miller, Mr., Andover, Hants
Nelson, Mr. G., Kingsdown, Bristol
Nelson, Mr. J., St. Michael's Hill, Bristol
Oldroyd, Mr., Shrewsbury
Osborn, Messrs., & Son, Fulham, S.W.
Oswald, Mr., Adderley Gardens, Birmingham
Paul, Mr. Evan, 42, Queen Street, Derby
Pennell, Mr. C., Lincoln
Perkins, Mr. J., Northampton
Pontey, Mr., Plymouth
Pope, Mr. H., Gib Heath, Birmingham
Rivers, Mr., Sawbridgeworth, Herts
Rylance, Mr. C., Aughton by Ormskirk
Scott, Mr., Bathford, Bath
Shaw, Mr. J., Manchester
Sibbald, Mr., Bishop's Auckland, Durham
Smith, Mr. W., Hereford
Snowden, Mr., Thirsk
Sollis, Mr. H. G., City Fruit Stores, Bath
Stafford, Mr., Hyde, Manchester
Standish, Mr., Bagshot
Tiley, Mr. E., Bath
Veitch & Son, Messrs., Exeter
Veitch, Mr., Jun., Chelsea
Verschaffelt, Mons., Ghent, Belgium
Wood & Ingram, Messrs., Huntingdon
Waite, Mr., High Holborn, London, W.C.
Watkinson, Mr., Manchester
Wheeler, Messrs. J. & C. & Son, Gloucester
White, Mr., 54, Kingsgate Street, Winchester
White, Mr. R., Poole, Dorset
Wood & Son, Messrs., Maresfield

Royal Nurseries, Slough.

PINE APPLES, GRAPES, &c.

PINE PLANTS, Fruiting and Succession.

GRAPE VINES, from Eyes, for Fruiting in Pots or Planting.

JOHN WEEKS AND CO. can now supply any quantity of very fine strong healthy Pine Plants, either Fruiting or Succession; also remarkably fine strong Grape Vines from Eyes, all the best sorts.

JOHN WEEKS & Co.'s Horticultural Show Establishment is now entirely devoted to the Growing and Forcing of Fruits in great variety, thereby showing the most improved plans of construction, and the most superior system of Hot-water Apparatus.

JOHN WEEKS & Co., Horticultural Builders and Hot-water Apparatus Manufacturers, King's Road, Chelsea, London, S.W.

HYACINTHS FOR BEDS AND BORDERS.—

DOUBLE RED, fine Dutch Roots, 3s. 6d. per dozen.			
DOUBLE BLUE	,,	3 6	,,
DOUBLE WHITE	,,	3 6	,,
ALL COLOURS, mixed	,,	3 6	,,

All other BULBS cheap, as see Priced List.

SUTTON AND SONS,
Royal Berkshire Seed Establishment, Reading.

HARDY HEATHS.—A Collection of 20 sorts, by name, of the above favourite autumnal flowers, in good plants, at 30s. per 100, or 12l. 10s. per 1000.

JOHN WATERER, The American Nursery, Bagshot, Surrey.

CONIFERÆ.—A very choice collection of these in the finest possible condition, including also several fine specimen plants.

THE BULB and NURSERY CATALOGUE sent on application to STEPHEN BROWN, Seed and Nursery Establishment, Sudbury, Suffolk.

PAMPAS GRASS.—The present is the most favourable time for planting out this charming Plant. No one can imagine the grand effect of a mass of its silvery plumes unless they see it, nor is its value confined to the ornamental, but is likely to become useful as Cover for Game. It grows in any soil or situation, attaining the height of from 6 to 10 feet.—Any quantity can be supplied by C. NOBLE, Bagshot, Surrey.

WHOLESALE CATALOGUE.

GEORGE JACKMAN AND SONS' PRICED and DESCRIPTIVE CATALOGUE for 1859, & SPRING 1860; comprising Fruit Trees of all the leading kinds; New and Selected Roses; fine varieties of American Plants; Choice and Rare Conifers; Evergreen and Deciduous Trees and Shrubs; and a fine stock of transplanted Forest Trees, &c., can be had free on application.—Woking Nursery, Surrey.

DWARF MAIDEN FRUIT TREES.—

APPLES.

PEARS.	CHERRIES.	PEACHES.
PLUMS.	APRICOTS.	NECTARINES.

Prices moderate.

Fine and clean grown; and all the leading sorts can be supplied in quantities by GEORGE JACKMAN & SON, Woking Nursery, Surrey.

DWARF TRAINED FRUIT TREES.—

APPLES.

PEARS.	CHERRIES.	PEACHES.
PLUMS.	APRICOTS.	NECTARINES.

Prices moderate.

Great care is taken in the formation of these fine, healthy, free-grown trees. Particulars can be obtained of GEORGE JACKMAN & SON, Woking Nursery, Surrey.

CAMELLIAS AND AZALEA INDICA.

F. AND A. SMITH beg to offer the above well set with flower buds, dwarf, bushy, and thoroughly ripened off. Having been grown in this country they are most suitable for packing, and are strongly recommended to country Amateurs and the Trade in general. An inspection invited. Prices on application.—Dulwich, Surrey, S.

EARLY POTATOES, LEMON KIDNEYS.—This early and excellent variety (see article on Cultivation of Early Potatoes, by the Rev. E. F. Manby, in Royal Agricultural Journal, Vol. XVIII.), may be had on early application to Author's Bailiff, JOHN HELM, Morecombe, price 2s. 6d. per stone. As also Copy of Article, 3d edition enlarged, price 1s.

N.B.—Late removal being injurious to the sprouts, orders should be at once supplied.

BEGONIA MARSHALLI.

WILLIAM COLE will send out the above beautiful variety, raised by Mr. Franklin, Gardener to J. G. Marshall, Esq., on and after the 26th inst. It has been exhibited at the Regent's Park, Kirkstall, Halifax, Shipley, &c., and Certificates have been awarded to it. It is universally admitted to be by far the handsomest of all the Begonias, and will be invaluable for Exhibition purposes. Drawings by Mr. Andrews free by post for eight stamps.

For further particulars see *Gardeners' Chronicle* of July 16; also Sept. 10; also "Cottage Gardener" of July 19 and Sept. 13; and "Book of Beautiful Leaves," by E. J. Lowe, Esq.

Strong plants 15s. each, with the usual discount to the Trade.

Post-office Orders payable at Manchester.

Nursery, Withington, near Manchester.—Oct. 22.

NOTICE IS HEREBY GIVEN, that the PARTNERSHIP heretofore subsisting and carried on between the undersigned EPHRAIM SYMS DODWELL and JOHN BAYLEY, as GARDENERS and FLORISTS, at Bradshaw Gardens, near Middleton Junction, in the County of Lancaster, under the firm of "Holland, Dodwell, & Bayley," is this day DISSOLVED by mutual consent. All DEBTS due to and owing by the concern will be received and paid by the undersigned JOHN HOLLAND and JOHN BAYLEY, by whom the business will in future be carried on under the firm or style of "Holland & Bayley." As Witness our hands the 19th day of October, 1859.

Signed by the said Ephraim Syms Dodwell, and John Bayley, and John Holland, in the presence of } E. S. DODWELL, JOHN BAYLEY, JOHN HOLLAND.

J. F. TWEEDALE, Solicitor, Oldham.

NOTICE.

E. S. DODWELL begs to inform his friends and the public, that the PARTNERSHIP heretofore subsisting between himself and JOHN BAYLEY for the carrying on the business of FLORISTS was this day DISSOLVED, and that he is trading on his sole account in the said business at the undernoted address, where all orders, letters, and communications are for the present requested to be be forwarded.—Mills Hill, Chadderton, Manchester, Oct. 19.

SALE OF NEW CHINESE AND JAPANESE, PLANTS.—In consequence of the termination of the Agreement between Mr. FORTUNE and Mr. GLENDINNING, they have decided upon offering the entire Stock of two new, hardy, Ornamental Plants for sale. The one a RHODODENDRON from the North of China. This is a new and undescribed species, with fine large foliage, of which there are about 800 vigorous young plants, in fine health, bushy, and fit for immediate sale. The other a new TAXUS from Japan (apparently Taxus cuspidata) as described by Siebold, but never before introduced into European gardens, and is a very interesting species of Yew. There are about 66 healthy young plants, including the original imported plant from Japan. Private offers may be made for the entire stock of either or both of the above, and may be inspected at Mr. R. GLENDINNING'S, Chiswick Nursery, London, W.

BUTLER & McCULLOCH'S

Descriptive and Priced Catalogue of Dutch and Cape Bulbs,

WITH PRACTICAL CULTURAL DIRECTIONS FOR AMATEURS,

SENT FREE AND POST PAID ON APPLICATION.

☞ *All orders amounting to 21s. and upwards sent Carriage paid.*

THE lovers of GLADIOLI will find in B. & McC.'s CATALOGUE descriptions of the most beautiful of this highly ornamental and favourite genus.

For the CONTENTS of B. & McC.'s CATALOGUE, see *Gardeners' Chronicle* of October 1, page 786.
For Collections of BULBS, see *Gardeners' Chronicle* of October 8, page 803.
Agents for Tye's new registered HYACINTH GLASSES. See woodcut group of Glasses, page 803 of *Gardeners' Chronicle*.
The EARLY HANDSWORTH POTATO, the earliest and best for forcing, very dwarf and very prolific, 3s. 6d. per peck.
IMPERIAL KIDNEY, the best late Potato, the most prolific, and of very superior quality, 3s. 6d. per peck.

COVENT GARDEN MARKET, W.C.

JAMES CARTER & CO.,

237 AND 238, HIGH HOLBORN, LONDON, W.C.

HYACINTHS OF DECIDED COLOURS FOR RIBANDS AND BEDS—DOUBLE AND SINGLE.

CRIMSON PINK	FLESH PURPLE	BLUE PORCELAIN	PURE WHITE WHITE (PURPLE EYE)

At 4s. per dozen.

The old system of offering HYACINTHS of mixed shades of colour for beds prevents anything like a tasteful arrangement, as the early and late, tall and dwarf varieties are all mixed together. We have great pleasure in offering Bulbs of separate decided colours, equal height, and same kind of flowering, by which our customers will be enabled to form effective groups for early spring. The following extract from our CATALOGUE will be found the most approved method of preparing the beds for planting. "When the bedding plants are removed the beds should be immediately dug up to the depth of a foot or 18 inches; when finished the beds should stand considerably above the level, as moisture is injurious. Five inches of soil may be removed, the ground marked out in squares of from 6 to 9 inches, the bulbs placed thereon with some silver sand under and about them, and the soil which has been removed cast back over them. Or, without removing any soil, mark the beds as before, and take out the place of each bulb with the old fashioned Tulip planter, which makes a hole about 5 inches deep and 3 inches wide; drop some silver sand in each hole; more sand laid thereon, and the holes filled up. On the approach of severe weather it would be advisable to put on a covering of 2 or 3 inches of rotten leaves; or, when the growth of the bulb appears above ground, immediately cover it with silver sand."

TULIPS for edging Hyacinth Beds and also for clumping:—

	Per 100—s. d.		Per 100—s. d.
Tournesol, red and yellow	7 6	La Candeur, pure white	18 0
Rex rubrorum, scarlet	7 6	Yellow Rose, fragrant	10 0

COMMON HYACINTHS for mixed borders, single and double:—

RED ... BLUE ... WHITE ... 21s. per 100.

LILIUM SPECIOSUM or LANCIFOLIUM, quite hardy, and very effective for forming centres in beds.

ALBUM, extra large roots, per doz.	17s. 6d.	each	1s. 6d.
RUBRUM, ,, ,, ...	22 0	,,	2 3
PUNCTATUM, ,, ,, ...	20 0	,,	2 0

CROCUS (large Dutch Roots).

	Per 1000.	Per 100.		Per 1000.	Per 100.
	12s. 0d.	1s. 4d.		15s. 0d.	1s. 8d.
Blue	12 0	1 4	Variegated	18 0	2 0
Blue, light	15 0	1 8	Versicolor	18 0	2 0
Cloth of Gold	12 0	1 4	White	18 0	2 0
Purple	21 0	2 6	Yellow, large	12 0	1 4
Scotch	15 0	1 8	Very fine mixed	12 0	1 4
Striped			Yellow, second size		

GLADIOLUS BRENCHLEYENSIS, vermillion, very effective, 5s. per dozen.

We beg to refer our customers to our CATALOGUE OF BULBS (which will be forwarded gratis and post free) for all descriptions of Bulbs for Drawing-room, Greenhouse, or open Border, with practical directions as to culture and treatment.
New large-flowered PINKS from Japan. For description and cultivation see Catalogue. Price 1s. and 2s. 6d. per packet.

No. 7, FLORAL ILLUSTRATION (by ANDREWS) is now ready and will be forwarded post paid upon application, price 1s. 6d.

JAMES CARTER & CO., 237 & 238, HIGH HOLBORN, LONDON, W.C.

FRUIT TREES.

B. WHITHAM, of the Clough Nursery, Mottram, near Manchester, has now ready for disposal 1000 LORD SUFFIELD APPLE TREES, and about 4000 fine strong Trees, including 96 of the best sorts in cultivation, all at 9s. per dozen.
Also a large quantity of best LANCASHIRE SHOW GOOSEBERRIES (160 sorts), at 4s. per dozen; Common kinds, 2s. do.
CATALOGUES on application, distinguishing Kitchen and Dessert kinds, and the time each will keep. Cash with order, or known reference.

GLADIOLUS BRENCHLEYENSIS.

YOUELL AND CO. are now sending out strong flowering Bulbs of this magnificent showy variety, the colour of which is bright vermilion scarlet. A box of the spikes of bloom was forwarded to the Editor of this Paper in August last, whose opinion of it will be found in the publication of August 20, page 694, as follows:—
"This must certainly be regarded as one of the most showy and beautiful of the class to which it belongs."
Price 6s. per dozen; 40s. per 100. Trade price on application.
Royal Nursery, Great Yarmouth, Norfolk.

CARNATIONS AND PICOTEES.

YOUELL AND CO. are now sending out strong well-rooted Plants of the above at the following prices:—
CARNATIONS, finest first-class show varieties by name, 18s. and 24s. per dozen pairs.
PICOTEES, ditto ditto, 18s. and 24s. per dozen pairs.
,, on yellow grounds, 20s. and 30s. per dozen pairs.
Finest mixed Border CARNATIONS and PICOTEES, 9s. per dozen pairs.
True old CLOVE CARNATION, 12s. per dozen pairs.
Scarlet ,, ,, 18s. ,,
White ,, ,, 24s. ,,
(Our extensive stock of the above enables us to offer them to the Trade on most advantageous terms.)
PINKS, finest first-class varieties, by name, 9s. and 12s. per dozen pairs, or fine mixed border, 6s. per dozen.
Royal Nursery, Great Yarmouth.

AMERICAN PLANTS, &c.

MESSRS. WATERER AND GODFREY'S CATALOGUE for the present season is now ready, and may be had on application. It describes fully all Rhododendrons worth growing, and contains a List of Azaleas, Hardy Heaths, and other American Plants, as well as a summary of the general stock of the most extensive Nurseries in England.
The Catalogue may also be had at Messrs. MAY'S & Co., 1, Wellington Street, Strand, W.C.
Knap Hill Nursery, near Woking, Surrey.

HARDY RHODODENDRONS.

MESSRS. WATERER AND GODFREY invite attention to their Seedling RHODODENDRONS, which they are selling without names, and which they strongly recommend as being very superior in point of HABIT, FOLIAGE, COLOUR, and GENERAL HARDINESS. They are from 1½ to 2½ feet high, and as much through, and no plants can possibly be in finer health. They will be sold at very liberal prices, and purchasers can select from a stock of many thousands.
Knap Hill Nursery, near Woking, Surrey.

RHODODENDRONS.

JOHN WATERER'S CATALOGUE OF HARDY, SCARLET, and other choice RHODODENDRONS, as annually exhibited at the Royal Botanic Gardens, Regent's Park, is now published and will be forwarded on application. Faithful descriptions of all the esteemed varieties will be found detailed, with a list of the popular kinds of AZALEAS and other AMERICAN PLANTS, as well as a selection of CONIFEROUS TREES, with height and prices.
The American Nursery, Bagshot, Surrey, near Sunningdale Station, South-Western Railway.

CHARLES DALY AND SON will sell COMMON LAUREL, 1 to 2 feet, at 12s 6d. per 1000; Transplanted do., 15s. per 1000; PORTUGAL do., 1 to 1½ foot, 3s. per 100: do., 15s. per 1000; HOLLY BERRIES, HAWS, to sow this autumn, 5s. per bush.; HOLLY BERRIES, 5s. per bushel. A List of Prices of Seedling Forest Trees and Shrubs sent free by post.—Nursery, Seed, and Agricultural Implement Warehouse, Coleraine, Ireland.

DUTCH FLOWER ROOTS.

PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN, &c., respectfully announce the arrival of a fine Stock of DUTCH FLOWER ROOTS, and they are now prepared to execute orders for the same.
27, Great George Street, Westminster, S.W.

NEW SEEDS.

TRIFOLIUM INCARNATUM
ITALIAN RYE-GRASS
NATURAL GRASS SEEDS FOR PERMANENT PASTURE LAWNS, &c.

PETER LAWSON AND SON, the QUEEN'S SEEDSMEN, &c., are prepared to supply all kinds of SEEDS for AUTUMN SOWING of the best quality.
27, Great George Street, Westminster, S.W.

THE BEST FRAME CUCUMBER.

SUTTON'S BERKSHIRE CHAMPION, 1s. per packet.
CARTER'S CHAMPION, 1s. per packet.
IMPROVED SION HOUSE, 1s. per packet.
Free by post from SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

NEW GARDEN SEEDS, GROWTH OF 1859.

ROYAL BERKSHIRE SEED ESTABLISHMENT.

SUTTON AND SONS are now prepared to execute orders for all kinds of GARDEN SEEDS, and can warrant them genuine.
Royal Berkshire Seed Establishment, Reading.—Oct. 22.

HORTICULTURAL SOCIETY OF LONDON.—

The next Meeting of the FRUIT COMMITTEE will be held at 8, St. Martin's Place, Trafalgar Square, W.C., on TUESDAY, November 1, at 3 P.M.

At this meeting Prizes will be awarded as follows:—ONE POUND for the best, and TEN SHILLINGS for the second best dish of each of the following varieties of PEARS:—

CLASS A.—Marie Louise.
,, B.—Suffolk Thorn.
,, C.—Beurré Bosc.
,, D.—Louise Bonne of Jersey.
,, E.—Van Mons Léon le Clerc.
,, F.—Thompson's.
,, G.—Any other Variety.

ONE POUND for the best, and TEN SHILLINGS for the second best dish of each of the following varieties of APPLES:—

CLASS H.—Ribston Pippin.
,, I.—Cox's Orange Pippin.
,, K.—Early Nonpareil or Hicks's Fancy.
,, L.—Blenheim Pippin.
,, M.—Any other Dessert variety.

The carriage of Packages of Fruit will be paid.
All fruit exhibited must be fit for table, and accompanied by forms exhibiting the circumstances under which the fruit was produced. Blank forms may be obtained on application to Mr. ROBERT THOMPSON, Horticultural Society's Garden, Chiswick, London, W.

The Gardeners' Chronicle.

SATURDAY, OCTOBER 22, 1859.

MEETINGS FOR THE ENSUING WEEK.

THURSDAY, Oct. 27—Pomological ..... 2 P.M.

A PEAL is rung in our editorial ears that might drown the voice of Big Ben of Westminster. East, west, north and south, the cry is the same—"my Nectarines crack;" "my Apples crack;" "my Pears crack;" "my Bullaces are all cracked;" "my Grapes are cracked;" "my Cabbages are rent asunder;" "even my Oak trees are bursting their bark;"—what can be the history of all this? Surely there must be something in the air, seeing that Big Ben himself has met with a similar misfortune? To such a lament it is impossible to turn a deaf ear; and yet what answer can be given?

The best reply, we believe, is to show *why* plants burst their skins, and then perhaps a clue may be found to the mystery rather more satisfactory than blaming the nurseryman for bad plants or the seedsman for bad seeds. Let the following experiment be tried:—tie a piece of parchment over the mouth of a strong jar, to which an apparatus for filling it with water has been adapted. Pump the water in very slowly; it will be seen that the parchment gradually stretches to make room for the water; but pump in the same quantity of water suddenly, and the parchment will tear, or burst. Now, we have only to substitute natural suction for the pump, the skin of a plant for the parchment, and sap for water, and the phenomenon is explained.

The skin of a plant, whether on a leaf or a fruit, or elsewhere, is a highly extensible delicate membrane, having the power of perspiring gently in addition to its other work. Roots suck water out of the ground, also gently. That water, when it enters into the plant, becomes sap, and rises upwards till it reaches the skin, where it is partly changed and detained, but also to a great extent restored to the air by the perspiration of the skin. With what force this ascent of sap takes place at certain times is familiar to all who have ever witnessed the bleeding of a Vine. Let any one cut back the main stem of a Vine in the spring, and bind down the wounded end with a ligature

or a piece of leather; he will soon find the covering beginning to swell up, and in a few days, if not actually forced off, it will burst with the report of a pistol. One effect of this ascent of the sap is the formation of the fleshy matter of fruits and leaves, a very slow operation as we all know; the skin is perpetually enlarging to make room for this fleshy matter as it accumulates; and it does so under ordinary circumstances without a trace of tearing or splitting.

But if the skin of a plant is killed, as happens in what is called the rust of Grapes, or in the Vine disease, then, being unable to stretch so as to make room for the sap that rushes upwards, it bursts. That, however, will not explain the innumerable instances of cracking which have occurred during the present summer.

We apprehend that the real cause of what has been taking place this year was the peculiarly dry summer, succeeded by sudden deluges of rain. For weeks and weeks we had nothing like the usual quantity of rain; the earth became dry by the perpetual removal of its water by vegetation; the water however was supplied very slowly, and consequently the skin of plants became tougher and less extensible than usual. At last down comes a flood; the empty roots hasten to gorge themselves; up rushes the sap, till it is stopped by the skin. Then the skin, not being able to grow fast enough to dispose of the water accumulating beneath it, at last gives way in the form of the cracks we have witnessed. There can be no doubt about the matter. It was the over supply of water to the roots, suddenly acting upon a tough unyielding skin, that did the mischief.

If we want examples under ordinary circumstances let us look at the Stanwick Nectarine, which has been half abandoned, although the finest fruit we have. In the old Vinery at Stanwick the trees were loaded with fruit, which never cracked; the young plants propagated from it, full of vegetable blood, were unable to hold their contents and the skin cracked in all directions. The Nectarines at Stanwick, carried by a tree comparatively old and weak, had no over supply of water, and what they had was readily disposed of by the large perspiring surface of a heavy crop. Now that the plants of Stanwick Nectarine have lost their exuberance, and that the crop is larger, and care is taken not to let them have too much water, they have ceased to crack, as was lately seen in the exquisite specimens ripened by Mr. W. P. AYRES at Orchardleigh Park, and by Mr. GEORGE HOOD at Mamhead. So with the Chasselas Musqué Grape, which has a very tender skin: withhold water when the fruit is swelling and it does not crack; let it have as much as will not hurt a Muscat or a Black Hamburgh, and nothing can save it from cracking.

This is undoubtedly the history of the mischief so widely felt this year in fleshy fruits. In Cabbages the principle in which an explanation is to be sought is the same; but it is differently applied. The Cabbage does not burst its skin, but bursts its heart. The heart is gradually formed by leaf being accurately applied under leaf, the whole forming a firm compact mass, and the outer enlarging as the inner grow. So long as the rate of growth in the inside is the same as that of the outside, things remain in their usual state. But a sudden heavy fall of rain upon ground heated by the sun to 66°, and therefore literally a hot-bed, causes a violent enlargement of the inner leaves. They grow much faster than the old ones on the outside, giving them no time to slide over each other, and the whole mass rends asunder.

It is evident that if this explanation is just the cracking of fruits and vegetables is only preventible where land is entirely under control, as in fruit tree borders or with potted plants; but that crops in the open quarter must take their chance; no one being more blamable for a Cabbage bursting or an orchard crop cracking and becoming worthless than for the destruction of a bridge by a sudden flood. We therefore hope to hear no more of blame for such events being thrown upon innocent gardeners or nurserymen or seedsmen.

WE learn with much satisfaction that the Earl of CARNARVON has consented to preside at the next anniversary dinner of the Gardeners' Benevolent Institution, to be held in 1860.

IT is from no wish to discourage Mr. FORSYTH's attempt to induce people to use HOLLY TEA that we offer the following remarks. On the contrary, should he prove right, and the leaves of our favourite evergreen be found deserving of all he claims for them, the labouring classes might certainly be relieved from a heavy tax, unless indeed some obdurate CHANCELLOR of the EXCHEQUER should cry "Veto." But if in other matters it is necessary that projectors should proceed upon a sure foundation it is most especially so when food is the article to be experimented on.

It will have struck every one that when a proposal is made to substitute something of unknown value for another in universal consumption there are two points above all others that require to be substantiated; one, that the new article has the same properties as the old one, another, that it shall be equally palatable. For argument's sake we will admit that the latter is made out, firstly because Mr. FORSYTH says so, and secondly, because the taste of man is so admirably organised that it is capable of becoming accustomed to anything from train-oil or caviare up to tainted game or tobacco. The other question is of higher interest. Do Holly leaves possess those properties which render Tea and Coffee valuable, and do they possess any other property?

According to Mr. FORSYTH "the highest chemical authorities agree that Holly Tea contains Theine," the organic base, or proximate principle on which the dietetic value of Tea and Coffee is allowed to depend. Let us confess at once our ignorance of that fact. On the contrary, so far as we know, the proximate principle of the Holly is Ilicine, a bitter substance composed of brown crystals, and quite different in appearance from the fine white silky needles of Theine. What the composition of this Ilicine may be we do not find stated; but the fact that while Theine is soluble in ether, Ilicine is not, points to their being essentially different principles. Some writers even assert that Ilicine is similar in its effect upon the constitution to Quinine. Is it possible that Mr. FORSYTH has somewhere seen it stated that Ilex paraguayensis or Maté yields Theine; and has therefore concluded that the same principle must exist in Ilex Aquifolium? If so he may have made a great mistake. It is true that both Maté and Holly are placed by botanists in a genus which they call Ilex; but that does not prove Maté and Holly leaves to have the same properties. It may be a reasonable inference that they have similar properties, but it is an inference that demands verification.

If we assume that Maté and Holly leaves necessarily contain theine because one does, we must go a little further and also assume that our Holly tree has the same properties as all other species of Ilex. Now, one of the most general peculiarities of the genus Ilex is to possess emetic qualities. Ilex opaca and Aquifolium are so active in this way as to bring their berries within the denomination of poisons. Ilex vomitoria takes its name because the American Indians, who call it Cassina, prepare *from its roasted leaves* a black drink which acts as a powerful vomit. Another Ilex, called Dahoon, is used as a substitute for the Cassina. Even the Ilex paraguayensis itself is "medicinal" when the infusion is taken in large quantities. We are far from asserting that the leaves of our wild Holly would produce the same effect; but we have no right to say they would not, in the absence of direct experiment. Those, however, who desire to judge for themselves need not fear danger from their use. The Indians find their Cassina quite refreshing.

Another point that should not be overlooked in this question is the effect of the Maté or Paraguay Holly on the system. Mr. Forsyth trusts that English Holly will put an end to the use of intoxicating beverages among the poor. Nothing can be more laudable than attempts to diminish the chances of men getting drunk or even tippling. But what if the Holly Tea of Paraguay is only Opium in disguise? and what if the English Holly should also be its likeness? In Hooker's Journal of Botany, Vol. I., where there is a very full account of Paraguay Holly Tea, drawn up from the most authentic sources, there is the following rather important announcement:—"To individuals who accustom themselves to it the habit (of drinking Maté) becomes second nature, and to break it off, or even diminish the customary quantity, is almost impossible. Like Opium it certainly appears to rouse the torpid and calm the restless; but, as in the case of that noxious drug, the immoderate use is apt to occasion diseases, &c."

Should any of our readers now desire to make experiments in preparing Holly Tea, we venture to advise them to try two different plans:—1. To roast the leaves immediately after being gathered, taking care that they are as dry as possible. This is the way that the Paraguay Tea is prepared. 2. To throw the leaves in a heap, and press them enough to bring on a slight degree of heating or fermentation before they are roasted. This would probably effect some change in the quality of the leaves, and might possibly render wholesome what before was unwholesome; just as the stimulating narcotic qualities of Green Tea are destroyed by the Chinese when they ferment the leaves of the Tea tree in order to prepare Black Tea.

BELGIAN GARDENS.

No. II. GARDENS OF THE DUKE OF AREMBERG.—One of the most remarkable general collections of plants of which Belgium can boast is that of the Duke of Aremberg. Its value is somewhat lessened by being divided amongst his various residences, which makes it more difficult to judge of it as a whole.

There is nothing remarkable about the construction of the greenhouses annexed to the palace of the Duke at Brussels; they are simple and without pretention; yet one for Ferns so perfectly combined all that is necessary for this class that it particularly attracted our attention. It is a low, narrow, and rather long house, containing a very varied collection of Ferns and Lycopods, which are arranged with great taste, and extremely well cultivated. The wall at the end is concealed by large blocks of rough Cork, to which cling pretty species of Pteris and graceful Adiantums, whose finely cut delicate green fronds form festoons amongst the whitish leaves of Gymnograms and Nothochlænas, and the stiff dark leaves of Polypodium, Blechnum, and Acrostichum, which, with a great number of other elegant species, decorate a long bank extending the whole length of the wall at the bottom, and corresponding with a second bank in front of the house. In the centre are two masses of rockwork edged by Lycopods and Selaginellas. Although not possessing any of the newly-introduced novelties, it is one of the richest amateur collections in Belgium.

The Camellias are also very varied and choice. A new lean-to greenhouse with upright sashes contains more than 300 varieties grown upon stages; the bottom of the wall is ornamented by a row of these plants pruned *en espalier*, which has a charming effect. With respect to this mode of growing Camellias, we think, setting aside the fine effect produced, it is scarcely favourable to their flowering; for most of those that we have seen thus cultivated produce their flowers merely at the extremities, the rest of the plant having none. Besides this collection there are a hundred pyramid Camellias, varying in height from 3 to 6 yards; unfortunately, for want of room, some of the largest are placed where dampness and want of light is enough to kill them. It will be really a crime, although almost excusable under the circumstances, if these matchless specimens should die for want of a proper place to put them in.

The conservatory is very rich in ornamental plants provided for the decoration of the walks in the parks during the summer. There are Orange trees which date at least from the time of Louis XIV., Viburnum Tinus, Clethras, Magnolias, perfect in size and form; beautiful Azaleas and Rhododendrons as well as the larger part of the pyramid Camellias, than the appearance of which nothing can be finer. Some New Holland Acacias and a Sophora tetraptera were also conspicuous for their health and vigour.

Two old greenhouses placed back to back, separated by a glazed vestibule, contain the hothouse plants. A hundred Orchids grow there, either hung up or in pots, in the midst of other tropical plants, such as Palms, Begonias, Bromelias, Melastoms, Ficus, Aroids, &c. We were delighted to find here in flower two pretty plants of that graceful Centradenia floribunda which was so widely cultivated not many years ago, and is now so seldom met with; a Begonia Rex displayed its brilliant silvery edged leaves; Chysis bractescens and Oncidium Papilio were the only Orchids in flower. Of this strange family of plants there are only a few species, such as Cattleyas Urseli, reflexa, and Pescatorei [what are these?], and Lælia purpurata which deserve notice.

The castle of Enghien is the favourite abode of the Duke of Aremberg. We call it castle, though there is little more of it remaining than an old tower, the exterior walls of which form ruins of antiquity. A new mansion was built on the site, but this fell a prey to the flames, and what remained was turned into a farm. The present residence of the duke consists of some extremely simple modern square pavilions, the two which form the front communicating with each other by a corridor or glazed gallery. From the beautiful Grass plot in the centre of these pavilions the eye wanders over an extensive park of little less than 700 acres, entirely inclosed by walls, and containing venerable trees, which show how religiously the living relics of the past have been respected. In one part of the park which was laid out by Le Nôtre there still stands an octagonal pavilion of curious architecture, from which diverge eight large avenues, intersecting a forest of fine old trees, which reminds one of the time of Louis XIV. Everything about the place is on a grand scale. Some of the Oaks we measured are from 9 to 12 and even 15 feet in circumference; the Beeches, Tulip trees, Elms, Ashes, Birches, Larches, and Fir trees are all of *taille à l'avenant*. Magnificent purple Beeches scattered here and there form a charming contrast with the dark and uniform tint of the forest trees, and the bright green of the turf and meadows. A Cedar of Lebanon, the lower branches of which touch the ground, stands alone in the centre of a Grass plot, and forms a pyramid nearly 60 feet high. Nearly all the new Conifers recently in-

troduced are already planted out here in the open air, upon trial.

Vast meadows, intersected by canals and watercourses; ponds and running streams, walks and avenues, each composed of different kinds of trees; orchards and kitchen gardens, hunting-boxes, statues, more or less well preserved, ruins stamped with age, two farm-houses surrounded by corn fields, sheep of English breed, Enghien cows inferior in nothing to the best Durhams graze here and there, and give to the whole a country appearance, which, although sometimes a little rough, yet on the whole has a grand and noble appearance.

The old tower forming part of the ancient castle of Enghien is particularly beautiful; it has been turned into a chapel, and its rich sculptures and stone frescoes may be looked upon as marvels of art. No one would doubt that artistic riches abounded in this place when looking on the massive walls of this old feudal tower, now, however, covered with a close growth of Honeysuckle.

It was not until we had wandered for hours through the avenues and winding roads of this vast possession that we reached the hothouses, which in architecture and extent are in keeping with the rest of this lordly residence.

The principal conservatory, facing the south, is built in the most substantial manner, all the foundations being constructed of hewn stone. In the centre of this immense glazed parallelogram rises a pavilion nearly 15 yards high, where Palms and other tropical plants which require space are kept. With the exception of the Peacock Island near Potsdam and Herrenhausen in Hanover, perhaps there are not in all Europe finer and larger specimens of Palms. Here we find Sabal umbraculifera, Diplothemium campestre, Arenga saccharifera, Corypha umbraculifera, and Latania borbonica, the stems of which do not measure less than 3 feet in circumference, and the fronds of which threaten to break through the glazed roof. We observed also superb specimens of Cocos flexuosa, plumosa, fernambucensis, oleracea, coronata, nucifera, and chilensis; Areca lutescens, rubra, and paraguayensis; Diplothemium australe (Cocos australis) and argentea; Sabal Adansoni and glaucescens; Elaeis melanococca, Corypha rotundifolia, Latania rubra, Astrocaryum Airi and mexicanum, Livistona mauritiana, Saribus subglobosus, Oreodoxa regia, Chamærops excelsa, Wallichia caryotoides, besides a great number of graceful Chamædoreas; some gigantic specimens of Cycas circinalis and revoluta; Pandanus utilis, furcatus, glaucus, rigidus, purpurascens, amaryllidifolius and odoratissimus; Dracæna umbraculifera, marginata, arborea, ferrea, terminalis, and nigrescens; Urania speciosa and guayanensis; Strelitzia augusta, and seven species of Musa, which with the Palms combined to give to this conservatory the appearance of a tropical forest. A specimen of the rare Corypha australis must be noticed, for it has scarcely its equal in Europe. Most of these specimens were planted in the open ground and were all of unusual vigour. A great number of them were old inhabitants of the conservatories of the late M. Parmentier, of Enghien, who is known to have had one of the finest and most extensive collections. The sashes of this conservatory are of fluted glass, and measure not less than a yard square by $\frac{1}{4}$ of an inch thick. We think that these sashes would have answered the purpose better if they had been half the size; experience also has proved, though unfortunately too late, that their thickness was not in proportion to their other dimensions; most are cracked in many places, but will still last for years.

The house forming the right wing of this pavilion contains a quantity of plants not to be met with in common collections, and for that reason very interesting. Here are to be found, pell-mell, Dracæna Boerhavii, Draco, and arborea; Bonapartea juncea and gracilis, Ficus elastica, Araucaria excelsa, imbricata and Cunninghami; Dacrydium cupressinum, Aralia integrifolia, quinquefolia, and trifoliata; Agnostus sinuatus, Banksia ericoides, integrifolia, and latifolia; Tamus elephantipes, Thea Bohea and viridis, Laurus camphora, Melaleuca linearifolia, Agave americana, mexicana, and fœtida; Protea cynaroides, Belis lanceolata (from 18 to 21 feet high), Pinus canariensis and maritima, Banksia serrata, Cussonia spicata, &c. &c. [We cannot say much for the rarity of some of these.]

The left wing contains the bulk of the hothouse and greenhouse plants, comprising many very fine species; those which we particularly remarked for their beauty and rarity were Theophrasta imperialis (Curatella), Brownea erecta, Cupania australis, Theophrasta mexicana, Chrysophyllum macrophyllum, Phyllanthus juglandifolius, Paratropia farinifera, Rhopala corcovadensis and elegans, Xanthochymus speciosus, Aralia elegans, papyrifera, guatemalensis, and Sieboldi; Galactodendron utile (the cow tree) and G. speciosum; Sterculia Balanghas, Portea (?) Kermesina, Coffea opulina (?) and mauritiana, Pincnectitia tuberculata, stricta, and glauca; Cinnamomum aromaticum, as well as several Dracænas, Hechtias, Agaves, and Bromeliads, besides most of the new Begonias. This conservatory is kept in perfect order, and the plants are in fine health and form. More than 50 plants of Ixora coccinea in first-rate condition form a splendid *coup d'œil*, with their large bunches of red coral flowers. We have rarely seen this species so well cultivated and flowered except in England.

About 50 paces from this last gallery there is a low span-roofed greenhouse situated a little in front, and in a south direction, at right angles with the principal body of the building. This greenhouse is divided into three equal compartments; the first, a cold house, contains a large collection of seedling Calceolarias and Cinerarias; the Cinerarias alone were in flower, and we must say they were extremely pretty. The centre compartment is devoted to a large collection of Ferns; amongst them there are fine specimens of Balantium antarcticum, Angiopteris evecta, and Acrostichum inæquale. The third compartment contains some hundred young Palms, some of which are still rare; amongst others Calamus micranthus, niger, viminalis, and Rotang; Zalacca Blumeana, Maximiliana regia, Martinezia caryotæfolia, Phytelephas macrocarpa (ivory Palm), Chamædorea elegans and pygmæa, Thrinax parviflora, Bactris setosa and caryotæfolia, besides some very rare Plectocomias. The back of this house was decorated with Orchids, placed there on trial.

Vis-à-vis to this conservatory, or rather facing it, and also at right angles to the right wing of the body of the principal conservatory, his Highness has recently had a most beautiful glazed gallery built, for the cultivation of aquatic plants. This gallery, the framework of which is of wrought iron, has a charming appearance. The centre forms a rotunda, with a hemispherical dome, surmounted by a graceful cupola. Under it there is a large circular basin, with the immense round leaves of the celebrated Victoria Regia floating on its waters. This place has been most ingeniously contrived, so that persons walking there are not inconvenienced by the high temperature that necessarily attends such a place. To effect this, there are placed round the basin upright glazed sashes, which allow visitors to pass around the Victoria Regia, and admire it without being annoyed by the oppressive atmosphere. The two wings of this rotunda also have their basins, but of an oblong square shape; as yet there are few aquatic plants in them. On the other hand the approaches are decorated with a considerable collection of succulent plants, which produce a singular effect; here are Cereuses and Opuntias from 9 to 12 feet high, Echeverias, Crassulas, Agaves, Aloes, Stapelias, &c., producing a striking effect.

We can only find one fault with this conservatory, and that is the absence of a running stream of water. Victoria Regia, as well as most Nymphæas, will only flourish under the influence of moving water which is imperceptibly renewed. Let us hope that this small objection will be removed; the park of Enghien may then boast of containing the most elegant and best contrived building of the kind upon the Continent. *From the Journal d'Horticulture Pratique.*

TRANSPLANTING LARGE EVERGREEN AND DECIDUOUS TREES.

Having had considerable experience within the last three years in transplanting very large evergreen and deciduous trees, perhaps a few observations may not be uninteresting, as the subject has been lately mooted in your columns. Some of the trees operated upon here have been of a large size, with balls of earth from one to eight tons in weight, and requiring nine strong horses to draw the machines with the heaviest trees. We have two machines of different sizes made by Mr. Barron, of Elvaston, on improved principles, and they answer the purpose admirably. Considerable dissatisfaction has occurred in some places where large evergreens have been transplanted, from the expectation that such trees would suffer no change in their transplantation. My experience has been that, however carefully and well planted such very large evergreens have been, it takes two or three years after transplantation for them to look themselves again. In dry, hot summers, copious waterings every second or third week will do much to keep them growing; but all the watering possible will not make up for their mutilated roots in the first year of transplantation. In the second year new roots and fibres will be vigorously at work, and if properly planted in good soil they will be quite recovered by the third year's growth.

Some sensible observations on the transplanting of evergreens in the summer months have lately appeared in your columns from several correspondents. Although large evergreens can be planted with the machine any time in the year when the weather is open, I find that May, June, and August are the best months for the purpose. In July Yews, Cedars of Lebanon, Hemlock Spruces, and other evergreens are making their growths, and if transplanted then no amount of waterings or syringing at night will keep the young shoots from flagging and being injured in very hot days on large trees from the great amount of surface exposed to the sun and their loss of roots. With smaller evergreens, such as a truck would shift, I have no doubt that plenty of watering and syringing in July would keep them from flagging until root action took place.

Having transplanted upwards of 300 large evergreen and deciduous trees here in 1857, 1858, 1859, perhaps a list of the largest of the different varieties may be of use to intending planters. The first I shall name was a Mulberry, with a stem 5 feet 4 inches in circumference; this tree was removed from the old kitchen garden to a new one which was formed here in March, 1858, and bore a good crop of fruit the same summer. In the past summer it bore another excellent crop, and the fruit was larger and finer than usual. This tree is known to be above 100 years old, and the late Mr. Mearns, when gardener here, commenced training it to a high wall, it being originally a standard and unproductive. A second tree moved was a Pinus ponderosa, 45 feet in height, with the circumference of the stem 3 feet 10 inches. This tree required nine strong horses to remove it to its place.

The largest Holly transplanted was 40 feet in height with three stems, 6 feet 11 inches in circumference. This tree was brought from a plantation some distance off, the weight of the ball and tree being above 8 tons.

Immense numbers of large Yews were transplanted here in 1857, '58, and '59. The largest had a stem 4 feet 10 inches in circumference, and of the branches 84 feet.

Quantities of Cedars of Lebanon were brought from plantations some distance off, the largest being 30 feet high and the circumference of the stem 3 feet 3 inches. Some large Red Cedars were transplanted this spring, but to be successful with large trees requires great caution. The trees were prepared the year before by cutting the large roots to induce them to make fibres, so as to get the ball of earth to hold together. The largest tree shifted here was 32 feet in height, and the circumference of the stem 5 feet 7 inches.

About 23 large Arbor-vitæ were transplanted, but they are easy and safe trees to shift, being so fibrous-rooted. The largest tree shifted here was 25 feet in height, and the circumference of the stem 4 feet 8 inches, and of the branches 49 feet; a large Weeping Ash, 30 feet high, the circumference of the stem 3 feet 6 inches; a Cedrus Deodara grafted on the Cedar of Lebanon, 30 feet high, circumference of stem, 2 feet 6 inches. Numbers of large Hemlock Spruce were shifted here in 1857, but with less success than any of the other evergreens, owing to their being planted in an exposed situation. I find they will not bear any windy place after being grown in sheltered situations. As a lawn plant the Hemlock Spruce is one of the most graceful evergreens known, but it must be sheltered by other trees and in a damp situation. *William Tillery, Welbeck.*

Home Correspondence.

Thistles in Tasmania. — The most likely country where hints about the destruction of Thistles might be picked up would be the United States, where, as in the rich plains of South America, these weeds have multiplied to an incredible extent. When in the autumn of 1857 I visited the Western States, our train often passed through districts where the air was literally loaded with pappus, and one could scarcely open the mouth without the intrusion of those feathery organs. For miles and miles the sides of the railroads were densely crowded with these emblems of Scotland, growing with surprising vigour. The Yankees, like the good people of Van Diemen's Land, look upon them as a perfect plague. I have not heard what remedy they have adopted to check or destroy them, but a careful search of American journals devoted to agriculture may probably lead to the discovery of some passage bearing upon this subject. *Berthold Seemann.*——Some years ago I had placed under my charge several hundred acres of old park and pasture land very much overrun indeed with luxuriant batches of strong Thistles, old and well-established. I was told these could never be eradicated. Nothing daunted however I set to work in the spring, as soon as the Thistles appeared above ground, no matter what variety, and with old men and lads with paddles, I had them cut off just under the surface of the soil. Behind each pair of paddle cutters, who kept pretty close together, a little boy with a box of salt applied a pinch to each cut Thistle. After warm weather and genial rains set in some that had not been salted made their appearance again as luxuriantly as ever, and also some of those that had been salted, but the latter were much more puny, and in a weak and yellow state. The ground was once more run over, and the operation persevered in, till I had the pleasure of seeing the whole eradicated and perfectly cleared. There were at my first commencement of operations more waggon-loads of Thistles than there have since been hatfuls. Instead of Thistles, Nettles, and an old rubbishing Mossy bottom, I have the pleasure of seeing a most beautiful herbage. Arable land is easily kept clear of all such pests by persevering in good, *i. e.*, deep cultivation, drilling each succeeding crop at a good distance, and constantly at the proper season and on every favourable opportunity applying the horse-hoe. My method of eradicating Nettles and some scores of acres of Moss I hope to give on another occasion. *Jas. Barnes.*——I have just read your article on the "Plague of Thistles," which interests me much. You ask, "But what shape can such (legislative) interference assume?" The question is easily answered. Pass an Act declaring Thistles a nuisance, and subjecting every proprietor convicted of not exerting himself to abate the nuisance to the utmost to the penalties prescribed by the Act, and my belief is that the Thistle nuisance in Tasmania will soon be as effectually reduced as the smoke one is in London. Until that or something of that kind is done to systematise the exertions of the colonists they will I fear labour in vain. On my small farm I am a determined enemy to Thistles of all kinds, and from time to time employ people to go over my fields digging up and destroying every one they can find; making sure as much as possible to prevent their ripening their seed. In this way I manage to keep them pretty well down, but only pretty well, for I seem to be the only person here who looks upon these pests with a decidedly "evil eye;" hence the road-sides, hedge-rows, and surrounding fields are all abundantly stocked with them, and a windy day towards the end of summer or early in autumn restocks the ground as fast as I clear it. A moderately stringent

enactment of the kind suggested would soon put an end to this state of things here, and I dare say, with greater certainty there, now that the pressure of the evil is so severely felt and well understood. Of course public or Crown lands must be cleared and kept clean at the public expense. *R. W., Grazeley Lodge, Reading.*

The Sale of Plants at Cooper's Hill, Staines.—In your Paper of Oct. 1 Mr. J. C. Stevens advertised that the remaining portion of the plants at Cooper's Hill was to be sold by auction on Thursday, Oct. 13. In consequence of this advertisement I travelled 150 miles to be present at the sale; but on my arrival in London I was informed that it was postponed. Now I think there must be great neglect of somebody in not publicly advertising that the sale was postponed. I am not the only one who has cause to complain of such treatment. Not only is a great expense incurred in travelling, but there is also a great loss of time. I must admit that I was much surprised at the way in which the first sale was conducted; the catalogues distinctly stated that the sale would take place without any reservation, yet I read in the second portion of the plants advertised the names of some of the very same Azaleas knocked down at the first sale; these must of course have been bought in again or at least a price set on them. For the future the word reserve had better be omitted in the auction catalogues. *E. Bennett, Nottinghamshire.*

Holly Tea.—Your intelligent correspondent, Mr. Forsyth, has said so much in favour of Holly Tea that we may soon hope the subject to receive the attention it seems to demand. Meanwhile it may not be uninteresting to remark that Holly leaves are already used as a substitute for Chinese tea by the people of the Black Forest in Germany, as pointed out some years ago by Hugo Von Mohl (see Bonplandia for 1855, p. 44), but whether they had come into use only of late years, since Maté has become known, or whether their employment dates from a more ancient period, has not been ascertained. The leaves are dried in the sun, and in order to extract their principle a simple infusion is not considered sufficient, but they are boiled. Mohl, though no tea-drinker and averse to every species of substitute, thinks Holly-tea not to be despised, superior to the Maté he has tasted, and deserving of the attentive consideration of experimentalists. *Berthold Seemann.*

Autumn flowering Horse Chesnut.—A curious instance of a tree flowering out of its usual season may now be seen on Kew Green in front of the Coach and Horses Inn. A common Horse Chesnut which I was informed was planted about three years ago is now producing large, healthy, well-formed blossoms. The leaves of the tree have evidently suffered during the summer, and perhaps that has caused it to flower at this season; the sap not having been consumed by them has had the effect of forcing the flower buds into premature action. Some adduce it as an instance of the mildness of the season. It was stated a week or so ago in the daily papers that some Horse Chesnut trees in France were then in flower. We have Strawberries here in flower now, not an uncommon thing, and some kinds of fruit trees often flower twice, but I never recollect seeing the Horse Chesnut in flower in autumn before. *C. Edmonds, Chiswick House.*

Potato Growing.—I am surprised you should not have understood my question about the Potatoes, as I think it was so simple. In looking over my gardener's accounts of the last year I observed a heavy charge for planting and digging up Potatoes, &c. I observed I could save money by buying them, as they increased the garden expenses so much. He answered that Potatoes were never included in the usual garden expenses, as Cabbages, Carrots, &c., but were considered extra, and not to be charged to the garden except when they were grown in frames. *An Old Subscriber.* [The representation that has been made to you is one that we have never heard of before. Potatoes are a garden crop, and their setting and raising form part of the ordinary work of all gardens. Not that we recommend Potatoes to be grown in gardens. It is cheaper to buy them out of the open field, where their quality is also superior.]

Wellingtonia gigantea.—I have a plant of this about 4 feet 6 inches high, and the same in width, which has three small cones upon it. Have any other plants in this country thus early produced cones? *E. C., Glen Eyre, near Southampton.*

Spergula pilifera.—Mr. Shirley Hibberd asks for the experience of your readers as to the behaviour of this Spergula. I bought a 2*s.* 6*d.* packet of seed in April, and according to Mr. Henderson's directions mixed it with some 20 times its bulk of fine sand and sowed it in a bed with very little heat. It was slow in making its appearance, but at last came up thickly and evenly over the bed, when it was shaded with a screen of cloth thrown over stakes to protect it from the sun, but with free access to the air. As long as it was carefully watered it made good progress, though slow; but eventually through neglect of watering, owing to the illness of my man, who has since left me, by the end of May nearly every plant was dead; so much so, indeed, that I gave orders for the removal of the bed. Happily, however, this was not persevered in; for by subsequent care what remained were planted out in health and strength late in June, and some more plants made their appearance in the seed-bed. The former were watered for a fortnight after their removal, and then left to their own resources, and are now patches of from 4 to 6 inches in diameter, the whole under side of which is a dense mass of rootlets, so that they will divide into from six to 12 patches each. To-morrow I purpose laying down one of the three divisions of my lawn with them, and by next summer I hope to show any one a good specimen of a Spergula lawn. The seed-bed is now a complete velvet mat, one-half of which consists of seven plants originally, before they ran together, and is now about a square yard of pile. Both these plants and those which were removed have seeded freely, and I regret I did not save the seed, because seedling plants have with me done better than rooted cuttings. In both cases, however, the progress at first has been most slow, and the plants have required when young, as Messrs. Henderson advised me they would, great care and attention. But when well established they are hardy enough, though they fully appreciate any attention paid to them. A fortnight ago I pulled up a plant of Groundsel from the seed bed, and around it were about 40 small branches of Spergula from half an inch to an inch and a half long, each with many rootlets; these I had planted under a hand-glass and shaded, but they have not yet begun to move, though I have no doubt they will all do so. Worms have apparently done no injury to either those in the seed bed or those planted out. Weeds give some trouble at first, and perhaps, as Mr. Hibberd says, the thick pile may be a *nidus* for the seed of weeds. But I doubt if even its own minute seeds can penetrate through to the ground, for no Turkey carpet is so thick and matted. On the whole, I expect from it all that has been promised. *Iota, Oct.* 18.

Plants now in Flower Out-of-doors.—I was greatly surprised a few days ago to find in every garden I saw in and around London that nearly all the bedding plants had ceased to blossom, and that many of the ornamental plants which usually flower in autumn were not likely to develop their blossoms this season, when at the same time plants in this neighbourhood continue as attractive as in the month of August. We have at present in our own garden many highly interesting plants which continue not only to supply us with showy but also fragrant flowers. Amongst others that well known Rose, Géant de Batailles, stands conspicuous. A few days ago I cut a good handful of blooms of Rose Cloth of Gold from a plant half hid among Hedera Regneriana, both plants being on a brick column 15 feet high. Heliotropes still perfume the air of the flower garden; good beds of those plants may be had late by sowing in spring some seeds of Ageratum amongst them, which grow and flower later than plants from cuttings. The Ageratum rises about a foot above the Mignonette, and having flowers of a lively blue makes a pretty mixture. Variegated Fuchsias and Salvias are blooming well. A plant of Paulownia imperialis, 18 feet high, is studded with globular inconspicuous downy flower buds, which I expect will fall with the leaves or be pushed from their seats undeveloped by the first frost we get. Plants of Pampas Grass are very effective, their silvery plumes associating well with evergreens and Conifers. A male plant, which has 42 spikes of flowers on it, bears heavy rains much better than the female, which grows by its side; the flowers of the former being of a more coarse and open texture, soon become dry and feathery, whereas the latter, with its delicate downy inflorescence thoroughly moistened, remains for days closed up like camel-hair pencils. Farfugium grande flowers well. I hope to obtain ripe seed from one of them. The last on my list, but not least, is an Aralia japonica 13 feet high, with 28 branches, each crowned with a garland of flowers and ripe black fruits about half the size of Currants; so that half-ripened red and green leaves, black fruit, and white flowers make up a highly interesting plant well adapted for garden decoration. *J. Moon, Gardener to R. E. Thomson, Esq., Renfield Hall, near Canterbury.*——I have Lilacs and Strawberries now in full bloom in my garden on the north-west of London. As a proof I send you a few of the blossoms. *A. Brown, Rose Villa, Hanger Hill, Ealing.*

Flower Show for the People at the Manchester Botanical Gardens.—During the past summer floral exhibitions have assumed a somewhat new aspect at these gardens. The following is the scheme that has been successfully carried out, and I think, to say the least of it, it is suggestive and worthy of imitation; large quantities of plants have been grown in the garden, such as Pelargoniums, Fuchsias, Cinerarias, Schizanthus, Achimenes, Gloxinias, and ornamental plants. These have been collected and tastefully arranged by the superintendent in the commodious exhibition house, and a very complete exhibition they made. I believe there have been three of these shows held during the summer, and about 14,000 persons have availed themselves of the treat afforded them, the charge being 6*d.* each. I attended one of them myself, and was much pleased with the interest evinced by the working men present. I cannot help thinking that this is a step in the right direction, creating as it does a taste for plants and flowers amongst the artisan population, and there have been likewise two competitive exhibitions, which, I understand, have been successful. *A Gardener.*

Summer Transplanting of Shrubs, &c.—In reference to my remarks on this subject you put the very pertinent query whether I use dung for my Conifers? I answer no, only decayed leaves. You evidently put the question in consequence of the printer having mistaken an *or* for an *and*, and thus made me state that the roots were "covered with fine soil mixed with well rotted manure and decayed leaves," whereas it ought to have been manure or decayed leaves, as it is rightly printed in a previous paragraph. I may mention, however, that several years ago from inattention to this point I lost several Conifers; and indeed could not explain why some succeeded and some failed, until my attention was directed to the subject by some remarks in your own journal; and I am now, and was then, thoroughly convinced that it was the manure which was put at the roots of these trees which induced their decay. *James Stark, M.D., Huntfield.*

Peas.—In February last I sowed Dickson's Favourite Peas. I had a good crop the third week in June, and on the 25th July again I sowed some of the same Peas, the produce of February's sowing, which I again gathered on the 8th of October. As a further illustration of quick growth, I also sowed Carter's Earliest Peas on the 20th July, which I gathered for table use on the 28th September. *Thomas Davies, Prospect Villas, Twickenham Common, October* 20.

Societies.

Sudbury Cottagers' Vegetable Show: *Oct.* 14.—The Sudbury Association for rewarding the industrious agricultural labourers connects with its distribution of prizes to the meritorious poor, and with its ploughing matches, a Show of the vegetable produce of cottagers' gardens. The spectacle is one of great interest. On the 14th 57 ploughs, each drawn by two of the justly admired Suffolk horses gaily decorated, contended in amicable emulation for the prizes offered, and the work, especially of the boys, was declared by the judges to be surprisingly excellent. While these interesting operations were going on in a large field close to the town, the handsome Corn Exchange was the scene of the exhibition of the fruits of the poor men's gardens. One side of the building was completely occupied by them, and in the centre there was a regular grove of rare Pinuses in pots from the nursery of Messrs. Bass & Brown, while the other side and a portion of the middle was appropriated to specimens of roots sent by the farmers. The Turnips were exceedingly fine, and there were many lots of Globe Mangel Wurzel, averaging from 18 lbs. to 20 lbs. weight each. But the chief attraction was the cottagers' table. All who inspected it were surprised at the examples of the poor man's skill in gardening, and the gentlemen's gardeners present fairly acknowledged themselves surpassed. The Potatoes, Onions, Parsnips, Carrots, and Savoys were extremely fine; not an inferior specimen was to be seen, and the Potatoes readily sold at large prices for seed. There were also good out-of-door Cucumbers, excellent Green Peas, and gigantic sticks of Celery. The Kidney Potatoes, York Regents, and Shaws looked almost like waxwork, they were so clean, and the quality so excellent. Prizes were offered for baskets of vegetables tastefully arranged by the inmates of the cottages in the gardens of which they grew, and the results were several of remarkable produce and excellent taste. One in particular, shown by a man named Golding Hume, from Bures, the parish of the Rev. A. Hanbury, where much encouragement is given to field gardening and cottage gardening, attracted great attention. It was composed of Cauliflowers, Grapes, Green Peas, Kidney Beans, Apples, Red Cabbage, Lettuce, Endive, Horse Radish, Parsnips, Carrots, culinary herbs, Turnips, Potatoes, Celery, Onions, tastefully intermingled with bouquets of Dahlias and other autumnal flowers. There were others also equally pretty, though not so large. The owner of one said with pride, "My daughter did it." At 3 o'clock the President, N. C. Barnardiston, Esq., took his place at a desk surrounded by several ladies, by Major Parker, M.P., and many gentry and clergy of the neighbourhood. The successful candidates were then led up one by one by the Rev. Edwin Sidney, to receive their prizes, and the merits of each stated. When it is mentioned that one young woman received a reward for nearly 11 years' service, and men for services varying from 50 years to 26 years, and boys under 18 for steady conduct for periods from 11 to 9 years, it will be seen that in the county of Suffolk there is much of good feeling between employers and employed. Seven men also had rewards for honest and industrious maintenance of large families in honourable independence of the parish, a class of great merit. When these prizes had been received amidst the well-deserved applause of the spectators, and many kind words from the respected president, Mr. Sidney brought forward the vegetable exhibitors. No less than 62 prizes were awarded to these poor men, a proof that they deserved the encomiums passed upon the produce of their little plots of garden ground. Besides money from the Association, many extra prizes were given by the President, Major Parker, the Rev. E. Sidney, the Rev. A. Hanbury, W. R. Bevan, Esq., E. S. Bence, Esq., J. W. Poley, Esq., J. Sikes, Esq., W. Atkinson, Esq., the Misses Hallifax, J. Gowad, Esq., and C. Townshend, Esq., all anxious to encourage the laudable skill of the cottage gardener. Those who witnessed the grateful manner and respectful bearing of these humble horticulturists could not fail to be struck with the beneficial influence on their character of the interesting pursuit which fills their leisure hours and keeps them at home. At the dinner many observations were made by the President on the decrease of crime amongst the labouring classes, which as the chairman of the Quarter Sessions at Chelmsford he was well qualified to do. He attributed this happy sign of the times to the exertions of the clergy, and to the agency of such associations. The Rev. E. Sidney also mentioned that he had been in.

formed in Norfolk that rural crime had greatly decreased, and could not but feel that the gospel, good education, harvest homes, and rural gatherings for good objects were instruments which alone could effect such encouraging results. He spoke also of the importance of mixing industrial with other instruction of the rural peasantry, of teaching them to fear God, honour their Sovereign, read their Bibles, and learn those things which best fitted them for their respective stations, which was true education—the training of man as a moral agent for the ends of his existence, eternal and temporal. He rejoiced, he said, to find that the Committee of Council were disposed most wisely to make special educational grants to kitchens, washhouses, and bakehouses for girls, and workshops and field gardens for boys. This would be found a great social benefit. Ample proof indeed had been given of it this day. The intelligence displayed by the rural exhibitors, the taste of their arrangement, the quality of their vegetables, were noticed and admired by all present, and we sincerely hope that examples in Suffolk, such as are found at Hitcham and Sudbury, will be extensively imitated, and become in many places equally successful.

Notices of Books.

Letters from Alabama, chiefly relating to Natural History. By P. H. Gosse, F.R.S. 12mo. Morgan and Chase. Pp. 306.

So good an observer as Mr. Gosse is sure to write an interesting volume, provided he drops the character of Omphalos; on this occasion he has produced one that cannot fail to be a universal favourite, but would have been more useful for reference by the professed naturalist had it had an index.

It appears that the author was induced to visit Alabama, one of the most southern of the United States, for the purpose of opening a school; while there he communicated to a magazine, called the "Home Friend" the letters which are collected into the present volume, and form a striking picture of the country, the people, and its natural productions. Considering that Cotton is one of the most important of its agricultural crops, and that even the Sugar Cane may be grown there it will be obvious that Alabama must abound in objects unfamiliar to Europeans, and perhaps the more interesting on that account. Accordingly we have descriptions of curious trees and flowers, Slave Cookery, Butterflies and Wild Hogs, Southern Farming, Bears, Opossums, and Racoons, Blue Herons, Devil's Walking Sticks, Spectres, Humming Birds, Rifle shooting, Scorpion lizards, Battues of Deer, Great Eagle Owls, and a thousand other striking subjects. In the midst of such a mine of information we scarcely know where to stop in our extracts; justice to the author however forbids us to go far in working it. Let the following then suffice.

Wild Turkeys.—"If you will come a little way further into the forest, I will show you a very curious contrivance for taking turkeys. It is called a pen, and it is a common and very successful trap: this one was set up, 'fixed,' by some of my schoolboys in the winter, but it is not baited in summer, when the bird is not in season. It consists of an inclosure about 10 feet square, made with rails resting on each other at the corners, covered in also by rails. A hole or passage is dug, leading from some distance outside to the midst of the pen, under the bottom rail, the part next the rails, within the pen, being covered with a board, or with sticks. Corn is then scattered around the hole and within the pen: the turkeys follow the corn, eating as they go, until they get into the pen; when, finding themselves inclosed, they endeavour to get out, running round and round, looking for an opening above, but are so stupid that they never think of getting out at the hole by which they got in, but remain there until the hunter comes, who goes in and knocks them on the head."

The Sweet Gum Tree.—"One of our commonest trees is the Sweet Gum (Liquidambar styraciflua), which grows to a large size both in swamps and in dry woods. Its foliage much resembles that of a Maple, the leaves being five-lobed, but the lobes are more regular than in that genus, and finely toothed. They are of a beautiful green hue, and give out, when rubbed, a fragrance something like that of the Lemon tree, but inferior. In the angles formed by the main nerves, which diverge from the base of the leaf, there is a little mass of down, which is characteristic of the genus. The flowers are inconspicuous, the barren and the fertile ones being on distinct branches: the latter succeeded by a singular fruit, consisting of numerous capsules agglomerated into a ball of an inch and a half in diameter, from which the points of the capsules project in every direction; it hangs from a petiole 2 or 3 inches long. These globes are green, but become yellow when ripe, and then the capsules burst, and allow the exit of little winged seeds, like those of the Ash. The bark of old trees is full of deep furrows: if wounded in summer, it distils a fluid gum or resin in very small quality, possessed of an agreeable fragrance. The wood being strong and tough, and of close texture, is sometimes cleft into rails, and used for building, but having little durability, it is not much valued."

The Sour Gum Tree.—"This must not be confounded with the Sour Gum or Black Gum (Nyssa sylvatica), a tree of a very different genus. This thrives best on the high grounds, where it becomes a noble tree of 70 or 80 feet in height. The leaves are long-oval, rather crumpled; the fruit, from which it derives its commonest appellation, is a beautiful oval berry of a deep blue, generally arranged in pairs at the end of a long pink footstalk. They look very tempting to the eye, but like the apples of Sodom, they are nauseous to the palate, for though the first taste of their acidity is agreeable, they are found to be intensely bitter. The berry contains a largish flattened stone, marked with longitudinal lines. The wood is exceedingly hard to split, the fibres being singularly interwoven, like a braided cord—a very remarkable peculiarity of this genus. There is a joke current of a poor Irish emigrant, who having engaged himself to cut and split fence rails, unfortunately selected a Sour Gum tree as the subject of his dissective power; but having toiled all day with indomitable perseverance, he accomplished the manufacture of but a single rail."

The Chinquapin Chesnut tree and Yellow Rat.—"By the side of the narrow winding path, which I traverse every day, there is, a little way within the forest, a Chinquapin tree (Castanea pumila). It is a miniature representative of the gigantic Chesnut, agreeing with it in almost every respect except in size, rarely exceeding twenty feet in height, the leaves, the fruit, and everything in proportion. The little nuts are now ripening, and about the size of a small marble. In the centre of this small tree there is a structure whose dimensions would seem to have better suited the magnitude of the towering Chesnut; an enormous nest composed of sticks, thorny twigs, Briers, dried weeds, and similar trash, interwoven into a mass as big as a half-hogshead, strong and impenetrable. There is a small hole near the bottom of the structure, into which the owner and builder finds access; but it is impossible for any one else to make acquaintance with the interior except by cutting it to pieces with an axe. This is the dwelling of the Yellow Rat (Mus Floridanus), a little sylvan creature, quite common in this part of the state, but rarely seen, doubtless because its activity is principally nocturnal. Such nests as this are frequently found in the woods, almost always being built in the Chinquapin tree; but as the little creature (or rather, *varmint*) does no manner of harm, the people are averse to any interference with it by destroying its nest. It lives on nuts, berries, and roots; is a pretty cleanly little thing, about the size of our English rat, but far more prepossessing, clothed in soft fur of a pale yellowish grey on the back, buff on the sides, and white on the belly."

Walking Leaf and Spectre insects.—"Of the former, belonging to the genus Mantis, we have two or three species of large size. They bear a resemblance to a cockroach, but have the thorax greatly elongated, so as to be equal in length to the whole body besides; the wings and their covers are, however, more delicate than in the Blatta, and the whole insect is more slender. They are predatory and fierce, and are furnished in an extraordinary manner with weapons for the warfare they wage upon other insects. The fore-legs are of great length and stoutness. The tibia is set with sharp spines or teeth, and one long curved one at the extremity. The femur is armed with similar spines along its edge. The insect stations itself on a leaf or twig, with its fore parts elevated, and its armed limbs stretched widely apart. On the passing of any fly, the warrior makes a cut at it, as if with a drawn sword, and with so true an aim as frequently to seize the prey, the tibia folding back upon the femur, and the spines interlocking. With these the Mantis can grasp very hard, so as to drive the spines through the skin of the human hand, while the flying insects on which it preys are pierced and cut through by the merciless blow, and are immediately handed to the mouth, to be munched into mince-meat by the horny jaws. The tarsi, in the act of making the stroke, are doubled back out of the way. The voracity of these creature was shown by one which I kept confined for a few days in a box. During that time he ate off a great part of one of his own fore-legs, leaving only the haunch and a small piece of the thigh. The Spectres, Walking Rods, or Devil's Walking sticks, as they are variously called (Phasma), are curious for their almost linear slenderness and great length. One species, which was given me the other day, is about five inches long, exclusive of the antennæ and limbs, and as thick as a goose-quill. It was when alive of a lavender grey hue, marbled all over with a faint netted pattern. The legs are long, and set far apart, so that it crawls with great length of stride, and with rapidity, though awkwardly. The insect, when touched or annoyed, turns up the tail over its back, in a threatening attitude, which has given it a reputation for being highly venomous—an altogether erroneous notion. This specimen was a female, and laid several eggs while I had it. These were about as large as Sweet Peas, oval, somewhat flattened, partly black and partly whitish, with a curious arched dome, made of transparent network, thrown over one extremity, which is flat, with a kind of rim. This little vaulted chamber looks like the lantern of a light-house."

Rifle Shooting.—With the following account of American Rifleshooting we conclude. It is to be regretted that Mr. Gosse should have omitted to mention the distance at which such feats as he describes are performed. "Skill as a marksman is not estimated by quite the same standard as in the old country. Pre-eminence in any art must bear a certain relation to the average attainment; and where this is universally high, distinction can be won only by something very exalted. Hence, when the young men meet together to display their skill, curious tests are employed, which remind one of the days of old English archery, when splitting the peeled wand at a hundred paces, and such like, were the boast of the greenwood bowman. Some of these practices I had read of, but here I find them in frequent use. 'Driving the nail' is one of these; a stout nail is hammered into a post about half way up to the head; the riflemen then stand at an immense distance, and fire at the nail; the object is to hit the nail so truly on the head with the ball as to drive it home. To hit it all on one side, so as to cause it to bend or swerve, is failure; missing it altogether is out of the question. Another feat is 'threading the needle.' An auger-hole is pierced through the centre of an upright board; the orifice is just large enough to allow the ball to pass without touching; and it is expected to pass without touching. A third is still more exciting—'snuffing the candle.' It is performed in the night, and the darkness of the scene adds a wildness to the amusement that greatly enhances its interest. A calm night is chosen; half a dozen ends of tallow candle and a box of matches are taken out into the field, whither the uproarious party of stalwart youths repair. One of them takes his station by the mark; a stick is thrust perpendicularly in the ground, on the top of which a bit of candle is fixed either in a socket, or by means of a few drops of grease. A plank is set up behind the candle, to receive the balls, which are all carefully picked out after the sport is over, being much too valuable to be wasted. The marker now lights the candle, which glimmers like a feeble star, but just visible at the spot where the expectant party are standing. Each one carefully loads his rifle; some mark the barrel with a line of chalk to aid the sight in the darkness; others neglect this, and seem to know the position of the 'pea' by instinct. There is a sharp short crack, and a line of fire; a little cloud of smoke rises perpendicularly upwards; an unmerciful shout of derision hails the unlucky marksman, for the candle is still twinkling dimly and redly as before. Another confidently succeeds; the light is suddenly extinguished; his ball has cut it off just below the flame. This won't do; the test of skill is to snuff the candle, without putting it out. A third now steps up; it is my friend Jones, the overseer on the plantation where I am residing; he is a crack shot, and we all expect something superb now. The marker has replaced the lighted candle; it is allowed to burn a few minutes until the wick has become long. The dimness of the light at length announces its readiness, and the marker cries 'Fire!' A moment's breathless silence follows the flash and the report; a change was seen to pass upon the distant gleam, and the dull red light has suddenly become white and sparkling. 'Right good!' cries the marker; the ball has passed through the centre of the flame and 'snuffed the candle,' and whoops and shouts of applause ring through the field, and echo from the surrounding forest. This extraordinary feat is usually performed two or three times in every contest of skill. A common exploit is 'barking off' a squirrel. My worthy friend Major Vanner, the other day, at my request, performed this. A couple of fox squirrels were playing far up on a towering Beech in the yard, little suspecting what was coming 'for the benefit of science.' My friend went in, and brought out his trusty rifle; waited a moment for one of the little frisky gentlemen to be rightly placed, for it is needful to the feat that the squirrel should be clinging to the bark of the tree. The first shot was a failure; the squirrel fell dead indeed, but it was pierced with the ball, which was not the object. Perhaps the creature had moved a little at the instant, or perhaps the planter had been too carelessly confident; however, his mettle was up, and he took care that the second should be all right. The ball struck the trunk of the tree just beneath the belly of the animal, driving off a piece of the bark as large as one's hand, and with it the squirrel, without a wound or a ruffled hair, but killed by the concussion."

Trade Lists Received.—A. Paul & Son's (Cheshunt) *Rose Catalogue for* 1859-1860. An excellent list, full of useful advice. Extra large standards and dwarfs are offered to those who require immediate effect. It is also announced that prices have been reduced 20 per cent.—E. P. Francis's (Hertford) *Descriptive Catalogue of Select Roses.* Here again we have a valuable assortment well arranged, as was to be expected from Mr. Francis's success as a Rose exhibitor. The following remarks on Manetti-worked plants deserve attention:—"The sale of Dwarf Roses budded on the Manetti Stock continues undiminished. Of the vast number sold annually from this nursery, not one complaint has been made as to the unsuitableness of the Manetti Stock for Roses; on the contrary, they have uniformly met with the greatest surprise and admiration when in flower. When an occasional disappointment has occurred, it has arisen from their not being planted deep enough in the ground, and the soil not sufficiently prepared. I here give a few hints as to the cultivation of Roses on the Manetti Stock. On receiving Roses from the nursery, care should be taken to remove every eye from the stem and root before planted out. The soil where they are to be planted should be of a deep rich loam, well mixed with rotten manure, rotten leaf-mould, decomposed night soil, and a small portion of guano. The Roses should then be planted up level with the eye of the bud, so that the Rose itself may have the chance of rooting into the ground as well as the stem of the Manetti, which it will do if carefully planted. The first season the Manetti (as well as the Briar) is apt to throw up suckers; this arises from the Rose not

having arrived at sufficient strength to carry the lead. These suckers being carefully removed with a spud, the second year the Rose will be master of the stock, and no more suckers will appear. Amongst the many thousands budded on the Manetti in these nurseries, only here and there is a sucker to be observed, and these will quickly disappear when transplanted and carefully attended to." —A. Campbell & Sons' (Glasnevin, Dublin) *Descriptive Catalogue of Roses, Hollyhocks, &c., and Fruit Trees.* We have here 55 pages of what printers call solid matter, filled with names, prices, and descriptions of Roses, Pelargoniums, and other florists' flowers, hardy and tender, Dutch roots, fruit trees, and a considerable variety of miscellaneous articles. It is the most extensive Irish catalogue we have seen.

Miscellaneous.

Deaths from eating "Mushrooms."—Mr. Newton, coroner, held an inquest a few days ago at Collingham, Notts, on the body of Thomas Batter, a boy 8 years of age. The father of the deceased said his son Thomas had accompanied his brother into the fields to look for Mushrooms. They found a quantity and returned home with them. At dinner time the boy complained of a pain in his head and could not eat anything. At 7 o'clock the same evening, upon his parents undressing him, he screamed every time he was touched, and appeared in great agony, shrinking from every one. His mind became affected, and at midnight he expired. The surgeon made a *post mortem* examination of the body of the deceased, and arrived at the conclusion that the deceased met with his death from partaking of a poisonous fungus which he mistook for Mushroom.—Last week an elderly man in the marshes near Midhurst, who had been previously in robust health, was suddenly seized with violent vomiting, &c., which caused his wife to send off for their medical attendant, who, on arriving and having made the requisite inquiry, without hesitation pronounced the symptoms to arise from the man having, 30 hours before, eaten a quantity of large, or what are commonly called "Horse Mushrooms." After a short stay the medical man left his patient comparatively tranquil; a few hours after, however, he was again sent for, but before he reached the house the poor man had breathed his last; and this in less than 60 hours from the time of eating the Mushrooms. The appearance of the corpse was remarkable as indicative of the cause of death; inasmuch as besides considerable frothy exudation from the mouth, which smelt strongly of fungine, advanced decomposition had taken place within 24 hours. The body was of a dark purple hue, and so frightfully swollen that not a single feature of the countenance was discernible.

Calendar of Operations.

(*For the ensuing week.*)

PLANT DEPARTMENT.

Conservatory, &c.—Hyacinths and other Dutch bulbs, if not already got, should be procured and potted without delay. Oranges meant for forcing in winter for the decoration of this house should now be attended to. The Mandarin being a free grower, with a dwarf bushy habit and small foliage, and a most abundant bloomer, is probably the best for ordinary purposes, but any of the varieties flower profusely provided the wood is thoroughly ripened in autumn. These and the deliciously fragrant Daphne indica are invaluable for winter blooming, and should be largely grown for this purpose wherever sweet-scented flowers are in demand. Also see to having plenty of the old Salvia splendens, which is an exceedingly gay plant and useful for mixing among Chrysanthemums in the show-house. It is a good practice to place the largest plants of Salvias in a shady situation out of doors for a few weeks in autumn; plants so treated will be found to bloom more strongly, and last longer in beauty than others run up in a warm house. Greenhouse.—Look carefully after the watering of large specimens of hard-wooded things, especially Heaths and other fine-rooted plants, which are soon injured by being either over or under-watered. Examine the specimens often and carefully, and where they are found to be dry water thoroughly, so as to moisten the whole of the ball; also look sharply after mildew on soft-wooded Heaths, and dress the plant with sulphur directly the enemy is perceived. Get Azaleas tied into form as soon as can be done, in order to give them a neat appearance. Also attend to the staking and training of other things as leisure time can be found. Look carefully after red spider on Bossiæas, Chorozemas, and anything else found to be liable to that pest, and see that it is eradicated before the plants get disfigured. Red spider is easily got rid of by laying the affected plant on its side, and well washing the under sides of the leaves with the engine, applying the water with as much force as the foliage will bear. Repot strong growing Pelargoniums; plants that are fairly established after repotting can hardly be too freely exposed to air, or kept too cool. Also keep Cinerarias cool and moist, and attend to repotting such as require it, and fumigate immediately aphides are perceived upon any of the plants. Primulas must also be carefully attended to, in order to encourage them to make rapid growth, particularly the double varieties, which are hardly surpassed as useful subjects for winter decoration. Keep Tree Violets clear of their great enemy, red spider, by a liberal use of the syringe, and give them plenty of manure water, which will assist in keeping them in vigorous health.

FORCING DEPARTMENT.

Pineries.—Any of the stock which may appear to require repotting should be examined and shifted at once, if this is found necessary, in order that the roots may get hold of the fresh soil before dull weather sets in, when it will not be safe to encourage free growth. And any necessary re-arrangement of plants growing in the open bed should also be effected as soon as possible, as with a little care in shading and keeping the atmosphere moist, this can be carried out at present with very little risk of checking the plants, so as to throw them into fruit. Encourage plants expected to show fruit next January to make vigorous growth, for these should be sufficiently advanced by the beginning of next month to allow of keeping them rather cool and dry, so as to check and thoroughly mature their growth, as unless this is attended to there will be considerable risk about getting them to show fruit at that season. Plants which have been prepared for fruiting, and which it is desired to get up at once, should be encouraged with a moist warm atmosphere, keeping the soil about their roots in a healthy state as to moisture. Some have a dread of applying water at the root in the case of plants that have been kept dry for a time to check growth, and withhold it until the fruit is perceptible; but this is a mistake, causing loss of time as well as injuring the plants, as unless root action is encouraged, plants cannot be expected to start freely. If artificial treatment must be resorted to in order to get the plants to fruit at the desired time, there is no method so certain or so little injurious as keeping them cool and dry for a month, and then affording them a moist warm temperature and a brisk bottom-heat, giving sufficient water at the root to properly moisten the soil. Take off and pot, or plant out suckers at short intervals as they can be obtained of sufficient strength, for having a regular succession of plants is the most likely way to secure a regular supply of fruit. Vineries.—Take advantage of the present dry weather to give air freely in houses where the ripening of the wood is the object, and if a little fire-heat is used, with the air, this will be much more efficacious now than later. But except in the case of young Vines with a very gross habit it will hardly be necessary to use fire-heat while the weather continues dry. Keep the surface of the border in a free open state, so as to encourage evaporation, for keeping the roots too wet is the main cause generally of the wood being backward in ripening at the proper time. Figs.—Where any are ripening keep the atmosphere as dry as can conveniently be done, and also let the trees be on the side of dryness at the root, but avoid such a degree of dryness as would be likely to injure the foliage or the bearing wood for next crop. Keep the shoots thin and neatly tied in, so as to expose them fairly to light and air, but avoid stopping young shoots at this season. Keep the atmosphere moist where the fruit is swelling, giving the foliage a good washing with the syringe frequently to prevent red spider, and give plants in pots or tubs a liberal supply of manure-water.

FLOWER GARDEN AND SHRUBBERIES.

Cuttings should be carefully looked over to see that nothing has been omitted, and that a sufficient quantity of everything is in a promising state for making nice stocky plants before winter, and if it is found that the stock of anything is insufficient not a day must be lost in getting in cuttings, for it is already too late in the season for this kind of work, and it will be well to bear in mind that plants of things which are at all difficult to winter rooted after this season may be considerably thinned before spring, and also that they will not be sufficiently strong to furnish many cuttings for spring propagation, and consequently to provide a larger quantity than would have been necessary had the cuttings been put in a month ago. But if there is a reserve stock of strong plants in pots, which is a safe practice where there is a large quantity of bedding stuff required, and proper convenience for growing them and propagating in spring, these will furnish a large quantity of cuttings next March which will form equally good plants by turning out time as cuttings put in now. In the case of such things as Ageratums, Heliotropes, and dwarf Lobelias, it is useless wintering young stock, as these grow so freely in heat, and are so easily propagated from soft cuttings that a few good-sized old plants which require but little room or attention in winter will furnish a very large quantity of plants by bedding out time. See, however, where there are not plants to furnish spring cuttings, that plenty are got in at once, so as to provide while it can be done against the risk of being short of stock at turning out time. Attend to the potting of such cuttings as are sufficiently rooted, and give every after attention to these in order to get them well established. Persevere with leaf-sweeping and other routine work.

HARDY FRUIT AND KITCHEN GARDEN.

Pay every attention to getting the wood of Peaches and Apricots well ripened, by exposure, shortening, &c. Prepare for planting all kinds of fruit trees, by getting the ground in good order for the different kinds. On cold stiff soils it is advisable to plant on hillocks, 1 foot or 18 inches higher than the surrounding surface. The trees will not grow so fast in consequence, and will require more attention in summer in the way of mulching, but they will form short-jointed, well ripened, fruitful wood, which is the best preventive of canker, gum, &c., and will save the labour of resorting much to root-pruning. No opportunity should now be lost for getting Potatoes, Parsnips, Carrots, Beet, &c., out of the ground, and stored up in a dry condition. Potatoes may either be kept in narrow pits, with a little dry earth sprinkled among them, or in airy dark sheds, according as it is desired, either to have them with the flavour and consistence of fresh lifted Potatoes, or in as dry and mealy a condition as possible. Pull Cauliflower before it gets too large, and prepare a shed or pit to plant a quantity on the first approach of frost. French Beans may require a slight protection at night. Remove those growing in pots, where they can have the protection of glass; lay down strong growing Broccoli, so that the stems may be covered with earth; plant out Lettuces and Endive for spring use. If planted on the sloping sides of wide ridges they will stand better, damp being quite as destructive as frost. Take the precaution of securing a quantity either in pits or frames, or have the means of protection in readiness. Remove the leaves from Rhubarb and Seakale, that you intend forcing very early, and keep a look-out for slugs and weeds.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.
For the Week ending Oct. 20, 1859, as observed at the Horticultural Gardens.

October.	Month's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Temperature of the Air. Min.	Temperature of the Air. Mean	Temperature of the Earth. 1 foot deep.	Temperature of the Earth. 2 feet deep.	Wind.	Rain.
Friday 14	17	29.502	29.470	60	47	53.5	59	59	E.	.00
Satur. 15	18	29.510	29.427	63	50	56.5	59	59	E.	.14
Sunday 16	19	29.499	29.417	64	46	55.0	59	59	S.W.	.34
Mon. 17	20	29.838	29.578	66	41	48.5	59	59	S.W.	.01
Tues. 18	21	29.933	29.892	58	41	49.5	58½	58½	E.	.00
Wed. 19	22	29.916	29.753	59	40	49.5	58	58½	W.	.03
Thurs. 20	23	29.588	29.294	60	35	47.5	58	58	W.	.06
Average		29.638	29.547	60.0	42.8	51.4	58.6	58.7		.58

Oct. 14—Foggy; fine; overcast.
— 15—Overcast; fine; hazy; rain.
— 16—Rain; frequent showers; heavy rain at night.
— 17—Rain; slight showers; clear and fine.
— 18—Dense fog; hazy; overcast at night.
— 19—Foggy; overcast; foggy at night; rain.
— 20—Overcast; very fine; rain at night.
Mean temperature of the week, 1¼ deg. above the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 33 years, for the ensuing Week, ending Oct. 29, 1859.

October.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 23..	58.3	41.0	49 6	18	0.56 in.	3	1	1	3	4	12	8	1
Mon. 24..	56.3	39.8	48.0	15	0.88	2	3	3	—	8	10	5	2
Tues. 25..	55.5	38.0	46.7	15	0.72	4	5	5	3	4	5	4	3
Wed. 26..	55.1	37.0	46.0	12	0.52	5	4	3	2	6	7	4	2
Thurs. 27..	55.0	39.0	47.0	22	0.92	3	4	3	1	5	5	7	5
Friday 28..	54.3	36.6	45.4	19	1.06	1	5	3	—	6	10	3	5
Satur. 29..	53.5	35.2	44.4	16	0.63	3	5	3	1	6	11	1	3

The highest temperature during the above period occurred on the 24th, 1833—therm. 68 deg.; and the lowest on the 26th, 1850, and 29th, 1842—therm. 23 deg.

Notices to Correspondents.

Books: *G A A.* Kemp's How to Lay Out a Garden is an excellent guide to landscape gardening. Barron's British Winter Garden will tell you how to plant; cultivation may be learned from 50 practical books, of which Loudon's Encyclopedia, Mackintosh's Book of the Garden, and Thompson's Gardeners' Assistant, are the best; the latter is just completed. If you wish for landscape gardening books of higher pretentions then we advise you to add the works of Repton, Smith, and Uvedale Price to your library.—*Attleborough.* Do not trust to great names. The book is a thoroughly bad one, and mere waste paper.

Chasselas Musqué Grape. An inquirer will find an answer to his question in another column. Plant Peach trees 20 feet apart on the wall; that is the usual distance.

Fungi: *T E.* There is no way of preserving these in a dry state except by making a section of each perpendicularly through the stipes, soaking the section in a solution of corrosive sublimate, and then drying it under gentle pressure. Sowerby's Fungi, a very dear book, is the only English work on these plants, with coloured plates. Sometimes Bolton on Funguses, an obsolete work in 2 vols., 4to, may be had of the second-hand booksellers, and is useful as far as it goes, which is not very far. You will also find Funguses figured occasionally in Greville's Scottish Cryptogamic Flora—a work in 6 volumes, 8vo, filled with coloured plates.

Insects: The insects on the Vine leaves sent are young specimens of the mealy bug. The leaves should be burnt and the rods carefully cleaned.

Mignonette: *G H M.* There is no question as to this being the proper way of spelling this common word.

Names of Fruits: *H Lowe.* 1. Very like Augustus Pearmain; 3. American Sops of Wine; 4. Golden Reinette; 5. Beauty of Kent; 6. Crimson Queening.‖

Names of Plants: We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have or could have undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*Edmund Conolly.* Polygonum complexum.—*G M B.* Garden Begonias are so muled that it is almost impossible to know to what species a given plant can be referred. 1, albo-coccinea; 2, some cross from fuchsioides; 3, Cacalia tomentosa. Blechnum brasiliense, apparently, but the frond was not developed.—*J D M.* 1, Polygonum complexum; 2, Gymnogramma Calomelanos; 3, Lastrea patens; 4, Adiantum cuneatum, a large pinnuled form.—*M. F.* Pedilanthus tithymaloides and Selaginella helvetica.—*P P.* Abies Douglasii, certainly; and cephalonica, we believe. The latter, however, is in a very poor condition.—*A J.* 1. Linaria triphylla; 2. Anchusa paniculata.—*T C.* Tagetes signata, from Mexico.

Seeds for Australia: *B M.* Seeds are dead when they reach Australia because they are badly packed. Any of the great London seedsmen can doubtless pack them properly for you. The great point is to send the seeds in canvas bags loosely packed in a sack, and to get it placed anywhere that is properly ventilated, but not down in the hold among the dead cargo.

Tobacco: *Sub.* There is nothing illegal in drying the leaves and keeping them for your own use; but you must not sell them ‡

Misc: *G J.* It is not the New Zealand Running Bean. We are sorry to say that thepreserved Citron Gourd is very inferior to other preserves.

*** As usual, many communications have been received too late, and others are detained till the necessary inquiries can be made. We must also beg the indulgence of those correspondents the insertion of whose contributions is still delayed.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, London, S.
Principal—J. C. NESBIT, F.G.S., F.C.S., &c.
The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.
Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London, S. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

MR. J. B. LAWES manufactures the following MANURES:—

TURNIP MANURE	£6 6
SUPERPHOSPHATE OF LIME . ..	6 6
MINERAL SUPERPHOSPHATE OF LIME	5 5
BARLEY MANURE	8 0

N.B. Genuine PERUVIAN GUANO direct from Messrs. Gibbs, NITRATE OF SODA, SULPHATE OF AMMONIA, and other Chemical Manures.
WHEAT MANURE.—PERUVIAN GUANO is proved to be the best and cheapest Artificial Manure for Wheat, at Autumn sowing.
American decorticated Cotton-seed Cake of best quality supplied at the market price.
Offices: 1, Adelaide Place, London Bridge, E.C.

LONDON MANURE COMPANY
(ESTABLISHED 1840),
Have the following MANURES ready for delivery:—
CORN MANURE FOR AUTUMN SOWING.
BLOOD MANURE FOR AUTUMN SOWING.
URATE.
SUPERPHOSPHATE OF LIME.
SUPERPHOSPHATE MINERAL.
The London Manure Company also supply PERUVIAN GUANO (direct from Messrs. Gibbs & Sons), SULPHATE OF AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of known value, all of which they warrant strictly genuine. Wholesale dealers supplied.
116, Fenchurch Street, E.C. EDW. PURSER, Secretary.

BURNARD, LACK, AND CO.'S CONCENTRATED SUPERPHOSPHATE OF LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.
CONCENTRATED TURNIP MANURE, equal in value to the preceding.
Of these Manures Dr. Voelcker says:—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."
Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to BURNARD, LACK, & Co., Sutton Road, Plymouth.

PERUVIAN GUANO.—The present price of this valuable Manure is 12*l.* per ton for 30 tons and upwards; 13*l.* 5*s.* per ton for 1 ton up to 30 tons.
And, in order to protect themselves against the purchase of adulterated mixtures and of inferior Guanos purporting to produce results equal to Peruvian, consumers are recommended to apply either to ourselves, to our Agents Messrs. GIBBS, BRIGHT, & Co, of Liverpool and Bristol; or to Dealers of established character, in whose honesty and fair dealing they can place implicit confidence. ANTY. GIBBS & SONS.
15, Bishopsgate Street Within, London, E.C.

THE PATENT NITRO-PHOSPHATE OR BLOOD MANURE COMPANY (LIMITED).
Trustees:—
ABEL SMITH, Jun., Esq., Walton House, Ware, Herts.
CHARLES DIMSDALE, Esq., Essendon Place, Herts.
EDWARD BALL, Esq., M.P., 8, Belgrave Road, Pimlico, S.W.
GENERAL HALL, Weston Colville, Linton, Cambridge.
JOHN BRADY, Esq., M.P., Warwick Terrace, Belgrave Square, W.
Directors:—
Chairman—JONAS WEBB, Esq., Babraham, Cambridgeshire.
Deputy-Chairman:—
JOHN COLLINS, Esq., Myddleton Square, Pentonville, E.C.
EDWARD BELL, Esq., Tottenham, Middlesex, N.
JOHN CLAYDEN, Esq., Littlebury, Essex.
RICHARD HUNT, Esq., Stanstead Abbot, Herts.
THOMAS KNIGHT, Esq., Edmonton, Middlesex, N.
ROBERT LEEDS, Esq., West Lexham, Norfolk.
ROBERT MORGAN, Esq., 72, Camden Villas, Camden Town, N.W.
GEORGE SAVILL, Esq., Ingthorpe, near Stamford.
WILLIAM COLLINS, Esq., 105, St. John Street Road, E.C.
Bankers—Messrs. BARNETT, HOARE & Co., Lombard Street, E.C.
Solicitors:—
Messrs. KINGSFORD & DORMAN, 23, Essex Street, Strand, W.C.
Auditor—J. CARTER JONAS, Esq., Cambridge.
Manager—Mr. JAMES ODAMS. | *Secretary*—Mr. C. T. MACADAM.
Offices: 109, Fenchurch Street, London, E.C.; Manufactory, Iaistow Marshes, Essex, E.
ODAMS'S BLOOD MANURE FOR WHEAT,
Price 7*l.* 10*s.* per Ton, delivered Free to any WHARF or RAILWAY in London.

TO FARMERS, CORN FACTORS, MERCHANTS, &c.—WANTED, AGENTS, by the PATENT WOOL MANURE COMPANY, in districts not yet represented, for the Sale of their Patent Wool Manure, Superphosphate of Lime, Bones, Sulphate of Ammonia, and other Chemicals and Manures required by Agriculturists. Application to be made to the Proprietors, who are the sole Manufacturers, Messrs. C. H. TIDBURY & Co., 81, Gracechurch Street, E.C.; or Lavender Dock Wharf, Rotherhithe, S.E., London.

WEST OF ENGLAND AND SOUTH WALES LAND DRAINAGE AND INCLOSURE COMPANY.
Established in 1844.
INCORPORATED BY ACT OF PARLIAMENT IN 1848.
Draining, Inclosing, Irrigating, Warping, Road Making, and all kind of Land Improvements, executed on Entailed, Mortgaged, or other Properties, and the whole cost can be made a Permanent Charge on the Lands, or redeemable in a certain number of years. BIDWELL & BRODIE, Secretaries.
Offices: Exeter; and 30, Parliament Street, London, S.W.

THE LANDS IMPROVEMENT COMPANY.—Incorporated by Special Act of Parliament in 1853.—2, Old Palace Yard, Westminster, S.W. To Landowners, the Clergy, Estate Agents, Surveyors, &c., in England and Wales and in Scotland.
The Directors beg leave to announce that the Company's Amendment Bill, 1859, has received the sanction of the Legislature. The Company now advance money, unlimited in amount, for the following works of Agricultural Improvement, the whole outlay and expenses in all cases being liquidated by a rentcharge for 25 years.
1. Drainage, Irrigation and Warping, Embanking, Inclosing, Clearing, Reclamation, Planting for any beneficial purpose, Engines or Machinery for Drainage or Irrigation.
2. Farm Roads, Tramways and Railroads for agricultural or farming purposes.
3. Jetties or Landing places on the sea coast or on the banks of navigable rivers or lakes.
4. The erection of Farm Houses, Labourers' Cottages, and other Buildings required for Farm purposes, and the improvement of and additions to Farm houses and other buildings for farm purposes.
Landowners assessed under the provisions of any Act of Parliament, Royal Charter, or Commission, in respect of any public or general works of drainage or other improvements, may borrow their proportionate share of the cost, and charge the same with the expenses on the lands improved.
No investigation of title is required, and the Company being of a strictly financial character do not interfere with the plans and execution of the Works, which are controlled only by the Government Enclosure Commissioners.
For further information, and for forms of application, apply to the Honourable WILLIAM NAPIER, Managing Director, 2, Old Palace Yard, Westminster, S.W.

RUGBY AND DUNCHURCH CATTLE SHOW, THURSDAY, November 24.—A PRIZE of 15*l.* is open to all England for the best FAT BEAST of any description, the property of the exhibitor for six months prior to the Show. Entrance, 10*s.*; to close on November 12. For forms of Certificates, apply to the Secretaries, Messrs. W. & E. HARRIS, Rugby.
N.B. Covered Booths will be provided for the Beasts shown for the above Prize.

THE BIRMINGHAM CATTLE AND POULTRY SHOW, 1859.—The ELEVENTH GREAT ANNUAL EXHIBITION OF CATTLE, SHEEP, PIGS, DOMESTIC POULTRY, AND ROOTS, will be held in Bingley Hall on MONDAY, TUESDAY, and WEDNESDAY, November 28, 29, and 30, and THURSDAY, December 1, when Prizes, Cups, or other Articles of Silver Plate, and Gold and Silver Medals, to the amount of 1250*l.* will be awarded.
The ENTRIES finally CLOSE on TUESDAY, November 1.
Prize Lists and Certificates of Entry are now ready, and may be obtained at the Offices, or by letter to
JOHN MORGAN, Secretary.
Offices: Unity Buildings, Upper Temple Street, Birmingham.

SMITHFIELD CLUB CATTLE SHOW, 1859.—The ANNUAL SHOW of FAT CATTLE, SHEEP, and PIGS will take place on the 6th, 7th, 8th, and 9th December, at the Bazaar, King Street, Portman Square.
The Prize List contains separate classes for Devons, Herefords, Short-horns, Sussex, Norfolk or Suffolk polled, Longhorns, Scotch horned, Scotch polled, Irish, Welch, and cross or mixed breeds. Also Long-woolled Sheep, cross breeds, Short-wools, and Pigs. In addition to the large amount offered in money prizes, there are also 50 Silver and 5 Gold Medals. The following forms of Certificates are now ready, and intending Exhibitors in applying for them need only quote the letters and state how many of each they require.

CATTLE.	SHEEP.
Form A. Ox or Steer.	Form D. Pen of 3 Wethers.
,, B. Cow or Heifer.	
,, C. Ox or Cow in Extra Stock.	,, E. One Wether or Ewe in Extra Stock.

PIGS.
Form F. Pen of 3 Pigs. | Form G. One Pig in Extra Stock
The Entries finally close on November 1.
Prize Lists with rules and regulations and Forms of Certificates to be obtained of B. T. BRANDRETH GIBBS, Hon. Sec., corner of Half Moon Street, Piccadilly, London, W.
N.B. All communications on the Club's business should have the words "Smithfield Club" outside, to distinguish them from private letters.

The Agricultural Gazette.

SATURDAY, OCTOBER 22, 1859.

THE local agricultural societies are meeting and awarding their prizes to agricultural labourers for character and skill. Men and women who have lived for 10 years in one service (a fact which on the very face of it proves considerable personal worth) receive such a reward as shows sufficiently that these societies approve their conduct and would gladly see it general. That is one side of the picture.

The other is represented by what was on Wednesday of last week almost universal over large districts in England. Old Michaelmas Day witnesses the meetings and the partings of masters and servants. Household servants more especially, but young lads also very generally, who have been hired for the year, having partial board and perhaps living on the premises, leave as a general rule on October 11th, after one year's service. New hands come in and a twelvemonth's service in a new place commences, to terminate as that preceding it had done, without one particle of regret or indeed emotion of any kind whatever on either side.

We are persuaded that these provincial associations for the reward of long servitude are utterly useless for inducing that which they reward. The majority of the very men who assemble on these festive days and unite in paying their 2*l.*, 3*l.*, or 4*l.*, to deserving labourers have just parted with all their young men and young women servants, and will not keep those hired in their room beyond the year for which they have engaged.

If instead of subscribing to societies, and shifting upon an association that which is a personal responsibility, masters would give their thoughts and some little personal labour to the personal interests of their younger servants, the purposes now professedly sought by these associations would be infinitely better served. Let a master correct the faults of his servant, and not consider them merely as an annoyance to himself to be got rid of by the threat of a dismissal. He will ultimately be the better served for his patience and forbearance now. Though common enough this annual parting is not universal. Some men keep their servants, and the reward for long servitude in such cases is really often due to the master as much as to the labourer. It is the original difference between the employers, not that originally existing between their servants, which has resulted in the continuance of these with one and their constant succession under another. We have known tenant-farmers who could say that but one or two in the course of a long experience had ever left their service voluntarily, and after crossing the breadth of England they have found the labourers of Sussex just the same in character with those of Gloucestershire—the secret of this success lying in their own character and management. And others, stationary in one parish, have thrown off an annual crop of dissatisfied men and boys from their employ as regularly as they have gathered in the annual harvest from their fields.

The class thus made restless and dissatisfied, or domesticated and good neighbours, numbers hundreds of thousands throughout the country. They are as deserving the regards of the philanthropist on the score of mere numbers as any he can name, and there is enough in their present lot to excite his interest. It would well deserve the discussion of a future gathering of the Social Science Association which has just met at Bradford whether the agricultural employers of Great Britain are more likely to make good labourers and induce them to remain in their service by the annual award of prizes for good character on an annual gala day, or by individually interesting themselves in the character and intelligence and skill of the servants under their individual employ.

It will be with the best influence both on ourselves and our labourers if we can show them that these qualifications are regarded, by the value set on character, whether in hirings or dismissals, by retaining those old men in our employ by whose labour we have been benefitted in the past, and by such proofs of interest and fellow-feeling as the encouragement of evening schools and wholesome occasional recreation afford.

—— AT a very interesting meeting last week of the Long Sutton (Lincolnshire) Agricultural Society, one of the most energetic of our local farmers' clubs, a prize of 50*l.* was awarded to one of the competing steam cultivators, all of them being essentially forms of SMITH of Woolston's apparatus.

The interesting fact connected with this competition is that all of these steam ploughs were exhibited by tenant farmers of the neighbourhood. We are told that the prize was awarded to Mr. T. B. DRING, of Gedney Marsh, for the work done by what is called CHANDLER'S application of Mr. SMITH'S principle. "The new improvement consists in the windlass being combined with the engine, and driven by cog-gear direct from the fly-wheel shaft, by which arrangement the strap is dispensed with, and with it many hindrances that arise in wet and windy weather, when the engine and windlass are separate. This engine is of 10-horse power, and produced by Messrs. ROBEY, of Lincoln. From the drums hung upon the hind axle, the ropes proceed through a double-snatch block, right and left, to the extreme corners of the field or space to be cultivated, the engine thus forming the apex of the triangle, whose base is formed by the implement's line of draught. Two implements were worked—the ordinary SMITH'S cultivator, with improved spud points; and CHANDLER'S three-furrow balance plough, which did not show good work."

Among the competing engines was one by Mr. WALKER, of Terrington, which, dispensing with the use of horses, travelled six miles to the trial ground and returned after work, carrying with it seven hours' supply of water. When the plan which it so successfully illustrated shall be carried out in an apparatus of greater power, it will doubtless command attention.

—— A case of some agricultural interest was lately decided before the Monmouth County Court, in which an incoming tenant was sued for the seed and labour of a piece of young Clover to which he had entered, but which according to his

reply had failed, owing to the carelessness and mismangement of the plaintiff. The judge said:

"If the plaintiff sowed good seed in regular course, at the proper time and in a proper manner, and afterwards treated the Clover stock as a prudent farmer of competent knowledge would do, I think he would be entitled to recover whatever sum the custom would give him, although the crop ultimately failed; for having done everything which could be reasonably required of him to secure a good crop for his successor, he would have fully performed his duty towards the incoming tenant, and would be entitled to recover the customary remuneration for his services; and if the crops afterwards failed from an unfavourable season, or from any of those natural causes to which a Clover crop is liable notwithstanding the best arrangement, his right to recover would not be affected. Again: if he sowed the Clover out of regular course, as, for instance, on a field of autumn-sown Wheat, which, according to the prevailing course of tillage, would be followed by a crop of Turnips, then I apprehend the plaintiff could not recover, though the stock of Clover, when the incoming tenant took possession, was as promising as possible. If, however, the crop turn out to be ultimately good, it would go to show that those rules of husbandry, which the outgoing tenant had disregarded, were not under all circumstances absolutely essential; but inasmuch as the outgoing tenant's cause of action must be complete at the time of his giving up possession, his right to recover must be determined by the state of facts *at that time*; that is to say, it can only be established by his showing that he has done everything which can be reasonably required of a prudent farmer with reference to that particular crop, everything which farmers of ordinary skill and judgment think it necessary to do in order to secure a good crop for their own use. Applying these views to the facts of this case, I am of opinion that it was clearly proved that the plaintiff did turn his sheep on these seeds up to a considerably later period of the year than it is prudent to turn such animals upon young Clover, and that he also suffered the outer fence to get out of repair, so as to admit the horses and cattle breaking in, to a still later period of his tenancy; but this probably caused far less damage to the crop than the depasturing them with sheep during the frosts of November. And the plaintiff having so acted, I am of opinion that he cannot recover, because having failed to prove that he had done what the rules of good husbandry and common prudence required of him with reference to this particular crop, he has not satisfied the court that he has fully performed his duty to his successor, and has therefore well earned that customary remuneration which is consequent only on the full performance of that duty."

—— An elaborate examination of recent Irish agricultural statistics appears in last week's *Irish Farmers' Gazette*, which leads the writer to the conclusion that Irish agriculture has of late years been gradually resuming the former character of its produce, from which it was driven by the famine. The following figures bear him out in his assertion that the extent under Cereals and Turnips and Mangel Wurzel has been rapidly decreasing, and that under the Potato has been rapidly increasing. The falling off in Cereals will be seen, from the following statement, to have been regular, although in some of the items the statistics of various years show a considerable rising and falling in the acreage under these crops, ruled evidently by the range of prices. Still, the general result shows that a steady decrease in the cultivation of cereals has taken place in Ireland during the last 11 years.

Years.	Total extent under Cereals.
1849	3,174,424
1850	3,149,556
1851	3,099,401
1852	2,976,600
1853	2,833,387
1854	2,743,736
1855	2,832,564
1856	2,785,208
1857	2,787,128
1858	2,748,380
1859	2,652,296

The following statement exhibits the progress of Potato cultivation in Ireland since 1849:—

Years.	Acres.
1849	718,608
1850	875,357
1851	868,501
1852	876,532
1853	898,733
1854	989,660
1855	982,801
1856	1,104,704
1857	1,146,647
1858	1,159,707
1859	1,200,144

Again the returns from 1847 showed a steady and progressive increase in the acreage under Turnips and Mangel Wurzel until 1853, when the extent under Turnips and Mangel amounted to 432,660 acres. Ever since that year there has been a progressive decrease; thus—

Years.	Acres.
1853	432,660
1854	360,521
1855	389,520
1856	376,652
1857	371,676
1858	367,933
1859	349,374

These figures appear to the *Irish Farmers' Gazette* to throw a doubt on the generally asserted healthy condition of Irish agriculture; and the writer contrasts the gradual falling off of cultivation in Ireland with the progress made in such an outlying portion of Her Majesty's dominions as the Orkneys, whence a landed proprietor writes as follows:—

"My tenants have reclaimed some 20,000 acres from the Rush and Heather, in little more than 10 years, and in Shapinshay alone, where the agitation commenced, the arable land has been enlarged from 730 acres to more than 5000 since the winter of 1848, with an acreable produce even more than proportional. It may well be said, if this little island can do so much with its scanty population, and limited means and area, what might not Ireland do, with her boundless fertility and teeming population?"

—— Australian papers give us figures indicative of agricultural progress in Victoria, Tasmania, and South Australia. It appears that in the first-named colony there were 11,534 holdings extending over 2,492,443 acres, of which 297,035 were under cultivation in 1859, as compared with 10,259 holdings of 2,113,134 acres, of which 237,728 acres were cultivated in 1858. The results of the statistical inquiry into the extent of cropping are given as follows;—

Acreage in Grain Crops.

	Wheat.	Oats.	Barley.	Maize.	Pulse, &c.
1859	77,705	76,935	5296	489	132
1858	87,230	40,222	5409	445	..

Acreage in Green Crops.

	Potatoes.	Turnips	Mangel Wurzel.	Carrots.	Cabbages.	Fallow.
1859	29,822	331	184	95	51	36,426
1858	20,697	355	118	56	..	21,239

Acreage in Forage Crops.

	Grain, Wheat, and Barley.	Maize	Lucerne	Clover	Sorghum.	Artificial Grass.
1859	3809¾	278¾	285	370	32½	2508½
1858	1277	357	163¼	277¼	..	No return.

Acreage in Hay and other Crops.

	Grasses Wheat, Oats and Barley.	Rye.	Garden.	Tobacco.	Vines.	Other crops.	Orchard
1859..	85,330	506	5475	66½	530¼	297¾	387¾
1858..	75,373	163	4657⅜	71	401⅜	4	310

We learn that the rapidity of progress in cultivation in the colony exceeds even that of its population: 44 acres of land were under cultivation in 1857 for every 100 inhabitants, 50 acres in 1858, and 58 acres in 1859.

The following table indicates the acreage and produce of the cultivated lands in Tasmania and South Australia respectively:—

Statistics of Tasmania.—*A Table showing the number of acres in crop, and the produce:—*

	No. of Acres.		Bushels.	
	1857.	1858.	1857.	1858.
Wheat	63,357	50,463	1,213,807	930,297
Barley	11,735	10,849	198,085	202,631
Oats	31,940	47,729	676,877	925,110
Peas	854	1,050	17,797	21,803
Beans	118	177	1,988	2,653
Potatoes	7,803	8,147	..	..
Turnips	5,312	2,069	..	..
English Grasses	11,960	8,912	..	..
Tares	597	402	..	..
Carrots	130	243	..	..
Onions	85	222	..	..
Colonial hay	..	..	..	..
Mangel Wurzel	213	385	..	..
Tobacco	..	97	..	..
Total number of acres in cultivation in 1857			..	206,119
" " 1858			..	229,489
Increase			..	23,370

South Australian Statistics.

The following amended Statistical Returns for 1858 *have just been issued:—*

	Acres.	Produce.
		Bushels.
Wheat	188,703	2,109,514
Barley	14,526	239,318
Oats	3934¼	76,336
		Tons.
Potatoes	2577½	8685¼
Hay	45,919¼	52,893

The area in Vineyards in the two Australian colonies appears to be increasing, having nearly doubled during the last two years in Victoria, where there are now 530 acres under Vines; while in South Australia the following was in 1858 the area of Vineyards and their produce:—

Area of Vineyards.

Acres.	No. of Vines.	Quantity of Wine made 1857-8.
		Gallons.
1626	2,523,580	140,970

DEODORISATION OF SEWAGE.

The following are passages from a report addressed by Dr. Hofmann, F.R.S., and Dr. Frankland, F.R.S., to the Metropolitan Board of Works:—

Having been requested by a resolution of your Board, bearing date the 27th of May, 1859, to undertake the duty of advising the Board as to the selection from the various schemes proposed for the deodorisation of sewage, of a process combining both efficiency and economy, we now beg leave to report to you the result of a minute inquiry into this subject.

In conducting our investigation, we have carefully kept in view the final plan of dealing with the sewage adopted by the Board, the principal features of which were lucidly described to us in a letter from your chief engineer.

Of all the proposals, old and new, referred to us, there is only one which appears to satisfy in the necessary degree the conditions involved in the circumstances of the case.

The agent to which we allude is that described as "Dales' Muriate of Iron," essentially a concentrated solution of perchloride of iron, the disinfectant properties of which were some years ago pointed out by Mr. Ellerman. This we have submitted to an extensive series of comparative trials with the well-known disinfectants, lime and chloride of lime, which, probably owing to their long-established character, are not included in the proposals before us.

These trials lead to the conclusion that the deodorisation of sewage may be effected either by the perchloride of iron, chloride of lime, or lime; but that, if quantities of equal value* be applied, the perchloride of iron is markedly superior to either of the others, whilst chloride of lime acts much more powerfully than lime.

These statements refer both to the immediate action of the three agents upon sewage, and to the permanency of the effect produced; but when examined from the latter point of view, the superiority of the perchloride of iron is exhibited even in a still more marked degree.

It may be stated that these results were obtained by operating upon sewage, such as flows from the mouths of the chief metropolitan sewers during the hottest season of the year, our experiments having been performed during the latter half of the month of July.

Since the calculations as to the cost of deodorisation are based upon these experiments, it may not be out of place here to mention briefly the mode in which they were conducted. In order to enable us to operate upon a sufficiently large scale, brickwork tanks, lined with cement, and holding 7500 gallons each, were constructed at the outfall of the King's Scholars' Pond Sewer. The sewage was lifted into these tanks by means of a steam pump, and the various deodorising agents were incorporated, either by their gradual introduction into the shoots during the process of filling, or by diffusing them through the mass of the liquid by means of mechanical agitation.

From a number of experiments thus conducted, it appears that each of the three agents above-mentioned will effect the immediate deodorisation of 7500 gallons of sewage when applied in the following proportions:—

Perchloride of iron	½ gallon.
Chloride of lime	3 lbs.
Lime	1 bushel.

From these results it follows that 1,000,000 gallons of sewage require respectively:—

	£	s.	d.
66 gallons of perchloride of iron, costing	1	13	3
400 lbs. of chloride of lime	2	2	10½
132½ bushels of lime	3	6	6

During the performance of these experiments, which, as already stated, were made during the hottest portion of a dry season, we were surprised to find that the liquid flowing from the outfall of the sewer was by no means strongly offensive; it was only after preservation in tanks for 24 hours, or upwards, that a really powerful odour manifested itself. This circumstance rendered it of the highest importance to inquire more closely into the degree of permanency of the effect produced by the several agents under consideration.

For this purpose, three equal quantities of sewage were collected, and perfectly deodorised respectively by perchloride of iron, chloride of lime, and lime; they were then allowed to stand. After two days, the sewage disinfected by lime became slightly tainted, whilst that deodorised by chloride of lime and perchloride of iron remained perfectly odourless. At the end of three days, the limed sewage had become decidedly offensive, whilst the other two specimens still remained free from smell. After four days, the odour of the limed sewage had become worse, but that treated with chloride of lime likewise began to exhibit an offensive character, whilst the sewage to which perchloride of iron had been added remained perfectly inodorous. Even after the lapse of nine days, the condition of the latter had not changed. In other experiments the same relative permanency of effect has been observed.

Another important element in estimating the comparative fitness of an agent for the treatment of sewage, is the time required for clarification after the addition of the disinfectant. In this respect, also, the results of the preceding experiments lead us to give a decided preference to perchloride of iron.

The subjoined table gives the quantities of sewage

* We have endeavoured to arrive at the average prices of these three agents. It appears that they are subject to considerable fluctuation. As the average result of our inquiries, we have taken the value of lime at 9*s.* per cubic yard = 18 bushels; the value of chloride of lime of 36 per cent. (about the strength of that used in our experiments), at 12*l.* per ton; and that of the perchloride of iron solution, specific gravity 1.45, at 6*d* per gallon. Probably these prices would be subject to a certain amount of reduction if very large quantities were consumed. We should state further, that the estimation of the value of perchloride of iron is founded upon our knowledge of the price of its ingredients and the cost of manufacture, although Messrs. Ellerman & Dales, who have proposed this liquid, quote 1*s.* 6*d.* as their maximum price per gallon.

discharged at present daily, according to Mr. Bazalgette's estimate, and likewise the quantities anticipated in future years:—

	Present.	Prospective.
Discharge of Sewage at Barking Creek	56,536,875	62,500,000
Do. Crossness Point	20,066,250	35,937,500
Do. The outfall of Western Division	4,646,875	9,375,000
Total ..	81,250,000	107,812,500

The sewage discharged at Barking Creek and Crossness Point would probably not require deodorisation, except during the hot season of the year—say during three months. Supposing the deodorisation to be effected by perchloride of iron, the disinfection of this portion of the sewage at the present rate of flow would involve an expenditure of 11,620*l.* 13*s.* 9*d.* for the three months. We are, however, of opinion that in practice the sewage discharged into the river at this distance from the metropolis would rarely require deodorisation for so long a period as three months. In fact, we are not without hope that the sewage, supposing it to arrive at these outfalls in a condition similar to that in which it is at present discharged from the King's Scholars' Pond Sewer, would, when properly freed from suspended matter, only require deodorisation under particularly unfavourable circumstances.

With regard to the sewage discharged at the outfall of the Western Division, it will be indispensable to submit it to a systematic deodorisation the whole year round. Owing to the comparatively small fraction of the sewage delivered at this point, a very moderate sum would cover the expense—282*l.* 3*s.* 0*d.* being the cost of the disinfectant for the year.

It is not within our province to enter into details respecting the mechanical arrangements necessary for the application of the disinfectant, or for the filtration and subsidence of the sewage; but we beg to express our opinion, based upon the experience acquired during this investigation, in manipulating with comparatively large quantities, that the disinfection of vast volumes of sewage can be more easily accomplished than is generally believed, and than we ourselves anticipated at the commencement of our inquiry. The actual process of deodorisation will probably present less difficulty than the mechanical separation of the deposit by filtration or subsidence. This separation will involve the temporary storage of immense quantities of sewage, the rapid removal of large quantities of deposit, and a number of operations which can be successfully carried out only with considerable system and under strict inspection. Operations of this kind should be as far as possible conducted at a distance from densely populated districts; and we consider it therefore a happy feature of the scheme adopted by the Board, that a small fraction only of the total amount of sewage requires to be manipulated in the immediate neighbourhood of London. (Signed) A. W. Hofmann.

London, August, 1859 E. Frankland.

The following are the few among the many suggestions received by the reporters which contemplate the utilisation of the disinfected sewage:—

G. Lindsey Blyth, Esq., recommends that superphosphate of magnesia should be mixed with the sewage, which should then be precipitated with lime, or another alkaline earth, the object being the production of a manure.

W. Burness, Esq., recommends separate systems of drainage for sewage and for surface water. The latter he would filter, if necessary, before its discharge into the Thames; the sewage he would pump to the proper level, and pass through suitable pipes for distribution in the surrounding agricultural districts, completing the distribution before the sewage had time to putrefy and become offensive. He is of opinion that the value of liquid manure is much greater than that indicated by its constituents, because "during the process of decomposition of animal and vegetable matter oxygen is worked up both from water and the atmosphere; consequently hydrogen is liberated from the former and nitrogen from the latter; so that these two uniting, form ammonia, one of the best fertilisers."

Gurney Burt, Esq., states that he will shortly make a proposal for utilising the London sewage without deodorisation, by distributing it over the country by means of the railways.

John Hitchman, Esq., gives his arguments in favour of

"The rainfall to the river,
The sewage to the land."

M. Louis Napoleon Legras states that he has invented a deodoriser which is applicable to London sewage water, and which produces a valuable manure.

A. McDougall, Esq., and Dr. Angus Smith propose the use of carbolate of lime in solution, and also of a solid mixture of sulphites and carbolates. These substances are to be added to the sewage to produce immediate and permanent deodorisation.

F. C. Maguire, Esq., advises to convey the sewage to railway stations, and then to transmit it to the surrounding agricultural districts through earthenware or iron pipes. If necessary and practicable he would filter it through dry sewers constructed over the present drains, converting the solid matter into manure, and deodorising the filtered liquid in subterraneous deodorising docks; the deodorised fluid to be then pumped into reservoirs at levels, sufficient to allow of its being conveyed in pipes along the various lines of railway to the provinces. He proposes no method of deodorisation.

Rudolph Turecki, Esq., states that he has discovered a material which enables him to disinfect excrementitious matters, and to convert them into manure; but he does not state the nature of the materials which he employs.

THEORY OF AGRICULTURE.

By Dr. Evan Pugh.

(*See page* 814).

No. VII. Agricultural Education on the Continent.

A CONTINENTAL EXCURSION.

Having in our last left the reader in Berlin, while we took a general preliminary review of the character of the agricultural schools of Germany, we are now prepared to proceed upon our journey towards Dresden. Leaving Berlin we see the same sandy plains, with occasional peat bogs, marshes, and clusters of trees, and open ditches with banks covered with bushes and weeds, alternating with cultivated patches, that would strike the eye of a tidy systematic English or American farmer so prominently between Berlin and Hamburgh—a vast extended sand plain better qualified to afford a battle-field of nations, on which ambitious emperors and jealous princes can settle their disputes, than enable the quiet farmer to raise good crops. As we approach Dresden the aspect of the country suddenly changes, and the eye of the geologist will recognise that the change corresponds to a change in the geological formation of the country. As the express train hurls us along the iron road across the hills and valleys of England, we have scarcely time to get the most indefinite idea of the general configuration of each geological formation over which we pass, so rapid is the transition from one to another, until the whole series from the most recent formations to the oldest rocks have been beneath our feet. But here, as in America, we can travel for hundreds of miles and see only the deposits of a single geological period, and the monotony of this is rendered still more oppressive by the barrenness of the soil that covers the whole. Immediately around Dresden the landscape is more varied, the scenery very much more beautiful, and the state of agriculture much more prosperous and encouraging; indeed few cities in Europe have more pleasant agricultural suburbs than has Dresden.

In the small village of Tharand located about a dozen miles south of Dresden, and surrounded by the most beautiful and picturesque scenery, is one of the best agricultural schools in Germany. It is approached by a railroad which follows the winding course of a small stream that flows down the narrow valley, and receives its water from the high hills and narrow gorges upon either side, and from the mountainous regions to the south. The effect of the high hills, in some places presenting rugged rocks, and in others cultivated up the steep ascent or covered with trees of luxuriant growth, and at repeated intervals broken by narrow ravines, is most refreshing, after the dreary ride in the sand plains to the north. I spent several hours at this institution and although it was during the vacation, I had the good fortune to meet the director, Hofrath Dr. Stockhardt, well known for his valuable works upon agriculture, who was kind enough to furnish me with a number of interesting details with regard to the aim and object of the institution, together with the state of its present prosperity. The school was founded in 1811, or more than a quarter of a century before there was anything known about agriculture that was worthy of a place amongst the things that should be taught at an educational establishment. But, like all old educational institutions, the progress of modern science has made great inroads into its original plans, so that its programme of lectures at the present time exhibits a complete recognition of all that science has done for agriculture, and certainly no one can visit it now and see the general spirit of scientific inquiry that pervades its several departments without being pleased with the progress that such institutions may make towards a general system of sound scientific instruction.

The institution is under the general direction of the Minister of Finance of the Government of Saxony. It embraces a department of agriculture and of sylviculture (*Forstwirthschaft*), or the cultivation of trees and forests. The latter department was formerly the only one that existed in the institution, it being that for which it was founded, but since 1830 the two departments have been united. It would be difficult in a country like America, where the question of how to get rid of the wood upon land is often of more importance than that of cultivating forests, to excite much interest in the question of sylviculture. But in a country like Germany, where it is difficult to find a tree, or a shrub, that has not been placed in the position we find it by the hand of man, and where coal is not so abundant as with us, and there has not been much ingenuity expended in adopting it to the ordinary purposes of life, the question of how to keep up a constant supply of wood to correspond to the constant consumption becomes of great importance.

Each of the two departments has a director, although the entire general superintendance of the united departments is intrusted to them in common. The students enjoy the academical privileges of the university, which implies very much more freedom as to the manner in which they shall dispose of their time than is allowed in lower schools. As in the university, a certain preparatory knowledge must be exhibited, and if certain degrees are to be taken, particular studies must be followed; but if the student do not wish to follow such a course, he is at liberty to select another. And he is not looked after with that constant degree of attention which characterises the course of instruction in primary schools, where daily recitations are heard.

The laxity of government which characterises most of the higher institutions of learning in Germany meets with much criticism from moralists and friends of education, who have been brought up under the English or American systems; and even a Frenchman (M. Royer), who was commissioned by the Minister of Agriculture of France in 1844 to visit the schools of Germany, expresses his disapprobation of the absence of rigid moral discipline in this institution at that time. But perhaps persons foreign to Germany are hardly capable, without having resided some considerable time in the country, to do justice to their systems of government in institutions of learning. If we can lay aside our prejudices for a time, and passing by the obnoxious systems, we can but consider their results, we will find that they compare well with those of any other country in the world. Amongst those beer drinking, tobacco smoking, midnight carousing students, we find scholars who, for patient and laborious thought, for deep and subtle penetration, and for prolonged exhausting mental effort, are equalled by those of no other country.

I certainly should be sorry to see any such habits tolerated in Anglo-Saxon institutions, yet the early training in the family circle, and the discipline of the elementary schools, and the natural character of the German mind, are such that we cannot judge of the moral influence of particular circumstances upon the German mind by what experience teaches us would result to the Anglo-Saxon or the French, brought up under a different system. Those drunken German students have already had a good mental training in the iron discipline of the gymnasium or the Polytechnic School. They are often capable of conversing in Latin, or discussing questions in fluxions across the beer table, and this carousing character is but a stage in existence that is soon passed—it is the turning point of life, from that course in which everything is enforced by discipline to that in which the student lays out his own plan and follows up the studies of his choice with an energy and an interest inherent in himself, and with a well disciplined mind which resulted from the early training to which we have referred.

But if the student had not had the advantage of the early training, he could not afford to lose time in the college or the university. He must then submit to a system of discipline there, such as the German student went through before coming there, and if he do not the result will be disastrous to himself in leaving his mind simply impressed with a few striking facts which, like the prominent points in a novel, have served to interest for a time, but which have not strengthened the mind, because they have not rigidly and systematically taxed its powers.

Many, and perhaps one might say most, of the students in the purely agricultural institutions of Germany have not had the mental training to which reference has just been made, and yet they are generally rather clamorous for academical privileges. There certainly is here some danger that the student may get through his course, under the lax discipline which these privileges imply, without much thoroughness, and the professors of such institutions would certainly do well to guard against results of this kind which must ultimately bring their schools into discredit, as affording superficial instruction instead of thorough training and sound education.

In Tharand, while all the students have the freedom to which we have alluded on the one hand, they are obliged to submit to certain definite courses of study on the other, if they wish to leave the school with credit to themselves; and that they should do so is almost a necessity in a country like Germany, where it is a disgrace to be ignorant—where the greatest insult that one can heap upon a man is to say that he is dumb—where there is an aristocracy of brains, and where the honourable offices of state, as also all the prominent positions in the arts and general industry, must be filled by men who are able to produce evidence of industrious habits and successful application at one or more of the several institutions of learning in the country.

The entire social and political arrangements of society combine to assist the school in enforcing a system of thorough education, so that such rigid dicipline is not necessary as where these causes do not operate.

The academy is open to foreigners as well as to natives of Saxony. The latter who wish to enter into the service of the State must produce certificates or other evidence of their having already gone through a particular course of instruction such as certain specified schools are capable of giving. And, for the service of sylviculture, they must have had, at least, one year's practical experience in the manipulative details of the production of forest trees.

Those who do not wish to enter the service of the State, but yet wish to graduate, must produce evidence of their possessing the knowledge required of those that do wish to do so.

Those who do not wish to graduate, but who wish simply to devote a certain amount of time to a definite part of the course of instruction, are admitted upon easier terms, and are not required to follow so definite a course. Indeed grown up men, married men, and men who have already been on farms of their own, can

and do embrace the advantage here afforded of getting that knowledge so essential to them, which the circumstances of youth prevented them from obtaining.

Foreigners who, like myself, are travelling to see the agriculture of the country, may stop and fall into the general course of instruction for a term, and get out and go on again without deranging the latter.

It is further required that the students be over 16 years of age—"that they produce evidence of their having been born"!!—that since the event of birth they have behaved themselves properly—and that in case of minors the consent of parents or guardians be obtained for entering the academy.

It is further strongly recommended that agricultural students, before coming to the institution, should have been so long upon a farm as to have become familiar with all the ordinary practical details of the latter, for which at least a year is requisite. And it is required that all should produce testimony to the effect that they are capable of understanding the different courses of lectures they expect to hear.

The course of instruction extends through two years, and when desirable it may be extended to a third year. The students who graduate, or who wish to enter the service of the State, must make the two years' course, and in addition to the knowledge afforded by this course, for some of the services of State they must have availed themselves of the teaching of the university.

The subjects taught embrace mathematical sciences, land surveying, levelling, drawing, perspective, and science of building, &c.; also physics, chemistry, constitution of soils, technology, geognosy, botany, zoology, and social economy (*Volkswirthschaftslehre*).

This list is far too formidable for a two years' course, if anything like thoroughness is to be attained in any of these sciences; but the object of the course is simply to treat of their more direct relations to sylviculture, scientific agriculture, the health and disease of agricultural animals, and the jurisprudence of agriculture.

The teaching is done, as in all the higher institutions in Germany, by lectures; of course certain books are recommended to the students, yet so detailed is the course that if the student rely on the lecture only, he will be enabled to get the subject entire, and much more compact and better up to date in its details and in much less time than he can from books alone.

An objectionable feature that usually attaches itself to this system of instruction, but which does not necessarily belong to it (and yet it runs through the entire German University system), is that there is not a sufficiently distinct and definite arrangement for seeing what progress the student is making, and how far he is understanding what he hears. So great is this difficulty felt to be that I have known numerous instances of students either combining together to examine one another, or to get a private teacher to do it, and the want of some such auxiliary in the form of an examining system is felt and expressed by large numbers of German students. The high position which the student may take in society, and the consequent intimate relations between his professor and himself, in a measure compensates for this loss; but still it is felt greatly in the university and it must to some extent be felt here. A book of 17 well-filled pages gives the general outline of the several subjects which are taught; we need not stop here to dwell upon it, but those who have an interest in the subject and who do not read German will find it in the work we propose to publish upon the agricultural schools of Germany.

Educational Auxiliaries.—The success of a modern educational institution is very much dependent upon the quality and the quantity of these auxiliaries that it has at its disposal, and the efficient use that is made of them. In this respect the institution at Tharand occupies a first-class position. For sylviculture and the chase it has an extensive forest, where all the processes of propagating and growing trees and clearing forests, so as to economise the fuel and let the wood grow again, &c., are carried out; for agriculture a farm, on which the various practical farm operations are going on, to be seen by the students. There is also an experimental field, a botanical garden, a library, natural history collection, collections of physical, chemical, and mathematical apparatus and instruments, chemical laboratory, collection of models of apparatus, &c., for sylvi- and agricultural practice, &c.

The director of the agricultural department, being a chemist, has been able to appreciate the importance of chemistry in an institution of this kind, and he has obtained for it an excellent laboratory, with not only all the appliances for chemical lectures but for extensive investigations into questions in agricultural chemistry and vegetable physiology; the latter department is entrusted to the care of a special investigator, Dr. Sachs, who was kind enough to show me a number of interesting and highly instructive experiments on vegetable growth in which he was engaged. He had a great number and variety of plants growing in clear water in glass vessels so as to exhibit all the roots and rootlets. A stalk of Indian Corn held in a wooden clamp with its roots thus in water was several feet high, and appeared as healthy as if in the best soil. The water of course was supplied with the necessary mineral matter for the growth of the plant. This property of land plants to take up substances from solutions will tend, in connection with a great many other facts, to lead scientific agriculturists to call in question some of the new views of Liebig upon the subject of vegetable nutrition, which he has drawn from the able researches of Way upon the absorptive properties of soils. With all the facts which science now affords these views, which have recently been very highly lauded by some parties in England, they will hardly be accepted as satisfactory by those who are cognisant of all the facts involved.

But I must leave Tharand with thanks for the kindness with which its educational machinery was explained to me, and proceed to Leipsic and Möckern.

IMPORTATIONS: January to August, 1859.

The following is an extract from the official returns:—

Articles.	Importations.		Entered for Home Consumption.	
	1858.	1859.	1858.	1859.
Animals, living:—				
Oxen, Bulls, and Cows .. number	24,813	27,650	Free.	Free
Calves .. .. .. ,,	13,893	15,499	....	....
Sheep and Lambs .. ,,	66,302	131,908	....	....
Swine and Hogs .. .. ,,	5,457	4,885	....	....
Bones (whether burnt or not, or as animal charcoal .. } tons	54,107	52,099	....	....
Corn:—Wheat .. .. Total qrs.	3,120,216	2,885,245	3,120,216	2,885,245
Barley .. .. .. ,,	1,079,228	981,049	1,079,228	981,049
Oats .. .. ,,	1,032,100	1,001,756	1,032,100	1,001,756
Peas .. .. ,,	80,999	51,888	80,999	51,888
Beans .. .. .. ,,	248,816	181,367	248,816	181,367
Indian Corn, or Maize .. ,,	1,040,582	652,704	1,040,582	652,704
Wheatmeal and Flour Total cwts	3,039,855	2,741,257	3,039,855	2,741,257
Indian Corn Meal.. .. ,,	3,318	2,178	3,318	2,178
Flax .. .. ,,	648,468	773,694	....	....
Guano .. .. tons	244,497	61,423	Free	Free
Hemp .. .. cwts.	392,378	584,344	....	....
Hops .. .. ,,	11,357	1,435	13,582	1,535
Oil seed cakes .. .. tons	45,170	53,440	....	....
Potatoes .. .. .. cwts.	1,271,292	472,527	....	....
Provisions:—Bacon and Hams ,,	165,347	81,104	....	....
Beef, salt .. .. .. ,,	131,606	170,919	....	....
Pork, salt .. .. .. ,,	66,028	119,529	....	....
Butter .. .. .. ,,	266,961	268,192	270,079	269,717
Cheese .. .. .. ,,	222,013	229,182	227,673	233,339
Eggs .. .. .. number	101,936,000	115,538,600	102,031,800	115,692,600
Saltpetre .. .. .. cwts.	174,029	264,867	Free	Free
Cubic Nitre .. .. ,,	284,652	348,247	....	....
Seeds:—Clover .. .. ,,	124,798	74,748	....	....
Flaxseed and Linseed .. qrs.	375,809	616,011	....	....
Rape.. .. .. .. ,,	89,119	249,733	....	....
Wool .. .. Total lbs.	77,549,151	88,668,386	....	....
Alpacca .. .. .. ,,	906,006	1,980,271	....	....

MANURE MAKING AND PROFITS ON STOCK.

This is the season for taking up the subject of "manure making and profits on stock." The former is mainly completed, or ought to be, between Michaelmas and Lady Day; and we have now before our eyes all the products, or we can fairly estimate the growing ones, that we shall have to dispose of during the next six months. When Mangel and Turnips have done growing, the winter's supply for making meat or manure will have been completed. These productions are so variable in quantity and quality on different occupations that no rules can be laid down, nor facts given, for certain guidance. Every farmer must make his own calculations, as to cost of methods in feeding what he has got or can get. Straw, hay, oil-cake, some corn, Turnips, and Mangel are the resources we have to convert into meat, or manure, or partly into both.

Straw is the main point in regard to manure. The whole of the extraneous stimulants and fertilisers that can be found at anything like a tempting price during the next twelve months will not amount to a tenth part of the value of the straw in hand for restoring exhausted soils and producing healthy plants. Science has not as yet discovered methods that will substitute materials for straw. If the straw of this country had during the last 10 or 20 years been steamed and eaten by animals, and formed into bone and muscle, and thus entered nearly all at once into human consumption, the complaints about our domesticated crops degenerating would have been far greater than they now are. Not one farm in a hundred can afford to have its straw fed and carried off direct. It may be necessary, and more profitable altogether, to use some at times to prevent acid food from injuring the digestion of animals, but the future yield of most farms will be proportionately lessened in sustaining and fattening food. The more stimulating fertilisers we can get, the more straw manure we require.

Straw as manure, independently of what inorganic or earthly constituents it may contain, is of a quality which will give form and substance to plants that have their juice greatly forced by stimulants. Mangel, for example, grown partly or wholly with well-rotted straw, will keep much better and longer than had guano alone been used. It is a carbonaceous substance that modifies the organic acid that would otherwise be formed in living plants. If, therefore, an increase of plants be produced, and their qualities improved by giving them straw for food, it must be a good investment to dispose of it in this way. The constituents of it come back to us in another and better form: as heavier green Clover, Tares, and Rye, and bigger Mangel and Turnips, and these of a better quality too. As this is so, if a farmer have a partial failure of Turnips from any cause, and he is left with more mouths than he has food for, he had better quietly reduce the number of his store cattle than to largely consume his straw in hand, for if he were to do that with a view to maintain his usual quantity of animals this year, he would most surely lessen the capacity of his farm to produce animal food in future years.

The reasoning in respect to straw holds good in 99 cases out of 100. If an occupation be composed of alluvial soil that contains large proportions of organic substances, and the corn crops are disposed to fall and rot instead of maturing, even here it is very narrow sighted practice to feed it largely directly by animals. In this case it ought to come to them in another form. This is an instance where store animals should be reared. Every one who possesses ordinary practical knowledge knows the difference to the soil where store animals or fatting animals are produced; and also that store animals will now-a-days pay nearly double as much direct profit as fatting ones will. The relative value per stone of fat and lean animals constitutes a substantial and agreeable consideration for any one who has an occupation that requires to have the organic proportions of its soil reduced or drawn upon.

The next step is the reduction of straw into a soluble form, or as food for plants. There are two methods of doing this economically, all other circumstances being favourable. The first is simply to make the straw an agent to convey the dung and urine of well-fed animals to the soil to be amended or restored, and this without allowing any volatile compounds to escape by fermentation in a heap. For this purpose pits or covered sheds are used, but this method must be practised on a very limited scale, or expenses will be too great to pay. A great deal of straw may, however, be trodden down in a short time by this plan, and if the raw material for yielding ammonia be so plentiful on the farm as to render the purchase of guano unnecessary, a supply of this manure to apply in the winter and spring, and plough in at once for Mangels and Swedes, will not be expensively produced as a dressing. Straw so charged will soon decompose in the soil, and in ordinary seasons, no soluble compounds will be washed away by rains. Manure so made should in no case be heaped, or half its stimulating and fertilising qualities will fly off, and be scattered no one knows where.

The other method is to charge straw with just enough fermentative matter to cause it to decompose—and no more. The loss of the most valuable fertilisers by the common practice of making "rich" farmyard manure and then heaping it to rot, is enormous in this country.

Now that portable steam-threshing machines are easily come-at-able, the cost of reducing straw may be lessened one-half, at the least. I make a great point of doing this all I can. My simple object is to rot my straw, and as much of it as is practicable as early as I can. To do this I arrange stacks of corn in a close corner, and as I thresh them I make a rough fold of poles or hurdles and stakes, and the straw to be reduced. If I can get burned earth to cover the bottom so much the better. In this yard I put store cattle, or at this season, if the Turnip field be far from the homestead, store cattle and fatting cattle alternately, the former by day, the latter at night to have a cake and a few Turnips. This plan prepares them for better feed and closer quarters. The store cattle I feed on the straw twice a day, foddering with fresh straw before spreading the Turnips. The Turnips I throw down just as they are drawn from the field, blades and all. But little is left uneaten, and that little helps to rot the straw when it is heaped, although it may not be so powerful as it would have been had a vital process of uniting oxygen with it been produced by its passing through the systems of the living animals. [?] But although nothing is gained by that not eaten, nothing is lost; and it will all be conveyed to the land the manure is intended for. One cartload of juicy autumn Turnips so fed will be instrumental in rotting—perfectly enough for top-dressing for Clover or Tares, or whatever may require help—a waggon-load of straw by January. By thus reducing much straw in the field, near by the current food, or the spot it will be required for, we gain more advantages than my present space will allow me to specify. The yards of the homestead may be reduced to half their present size, and thereby be made warmer for cattle, and with a less surface for receiving winter rains. The expensive tank system may be superseded. If there be superfluous food after the bulk of the straw has been simply rotted, the place to feed it, let it be Swedes, Mangel, or corn, is on the Tare and Rye land, on Rye-grass layer, or on a mixed soil field where Swedes are to be sown.

At the present and threatening price of wages expenses must be cut down in disposing of productions, or the weekly expenses will overlap annual profits. *W. G.*

Home Correspondence.

Irish Farming.—The leading article in your Paper of the 8th, signed "G." does not give a true view of the present state of Irish farming. My experience is in a country district of the county Cork. No doubt there is plenty of room for better farming, yet the contrast between the present farming and that of 20 years ago is great. Every farmer now grows Turnips, from 1 to 3 and even 5 acres, and from the fitness of the climate for

such crops, they succeed in getting crops of them, which, farming as well as I can and on a large scale, I can hardly beat. Many grow Carrots as well and a few Mangels. Clover is universally and largely grown. The little patches of it I speak of were things of 20 years ago, as was also the practice of leaving land to rest without sowing Grass seeds. In this district I do not believe there is such a thing as a field laid out without Grass seeds of some sort—often inferior seeds no doubt, mere sweepings of lofts, but still better than nothing, and, as I said before, Clover and proper seeds are largely used. Successive corn crops from the same land have greatly diminished in frequency. The better farmers only do it in this case, viz., where the first crop is Potatoes after Grass, the second is Wheat, and the third Oats or Barley, with Clover and seeds. When the Potatoes are well manured, this is not a more exhausting course than—1, Lea Oats; 2, Potatoes; 3, Wheat with seeds, and the Wheat does better when there has been no previous crop of Lea Oats, and the seeds do better with Oats or Barley than with Wheat. Guano is largely and unceasingly used both with Potatoes and Turnips. A man in whom I am interested has this year sold 1500*l.* worth in this neighbourhood, chiefly to farmers. The improvement in cattle is beyond belief. Twenty years ago every fair was full of a set of wretched, large-headed, hard-hided, brindled stock, whose only merit was that they did not die under the starvation and exposure they underwent. Now the stock would bear comparison with those of many parts of England. Sheep and pigs are improved in almost the same degree. No doubt still the farming is dirty and inferior, more green crops and more manure are wanted; yet the returns in another part of your same Paper of the increasing number and value of stock in Ireland are conclusive proof that the farming is improving, and rapidly too. *W.*

Leicestershire Agricultural Ploughing Match.—This agricultural meeting came off last Friday on land belonging to Lord Berners; his lordship afterwards very kindly opened his mansion to a large party of neighbours and farmers to dinner. To elicit information from those from a distance the healths of many distinguished guests were drunk, and they were invited to give their opinions freely of what they had been witnessing. This led to some useful discussion, and it is hoped that the native farmers will benefit from the criticism freely cast upon their work. The farming of this county is more particularly governed by the great extent of its rich pastures, and the large amount of stock they carry. It is therefore not surprising that arable farmers from the neighbourhood of Bedford should find fault with the ploughs and the work executed, although admitting some Swedes and Mangel Wurzel on his lordship's farm to be the finest they had seen this season. A stranger coming into the county must at once see the land is not so well adapted for corn as for pasture; and that the farmers are led to pay more attention to the raising and feeding of stock than to the growth of corn. The irregularity of its surface, its natural tendency to produce good Grass, and the subdivision of the fields by strong timber fences for the protection of the stock, advisedly limit the breaking up of its Grass land. The contrast in the treatment of the pastures of this county with what they elsewhere receive is remarkable, and is very deserving of general consideration; for to this much of their rich quality must be ascribed. The Leicestershire farmers, not content with the natural feeding quality of their grass, assist their stock with corn and cake while grazing, and in this way the land is constantly receiving a nourishing dressing, which greatly helps their land, and which would go far to make any land rich, and rapidly convert much second-rate land into first-rate. Lord Berners pointed out a field, which, from a contrary treatment in the hands of a tenant (the ordinary treatment elsewhere), had fallen in value to less than 1*l.* an acre, but which in his lordship's hands, assisted by drainage, is now cheap at 40*s.* When we consider the benefit conferred on farmers by such a gathering, by such an exposition of agricultural improvements, superior implements, and machinery, as is exhibited on Lord Berners's estate, we cannot but regret that so few are following so noble an example. In this way farmers are to be shown the value of expensive improvements, and the importance of good implements and machinery to assist them in growing corn at free-trade prices. They will learn from examples what they can be taught by teaching; and now that peace and increasing facilities of communication are opening new supplies of corn to us at lower prices than have ever prevailed since this ceased to be an exporting country, and rent and wages are not likely to bear reduction, his lordship's zeal and kindness should be highly appreciated. In these times of declining prices farmers must seek in improvements the means to increase fertility and lessen expenses, for in each of these ways may they reduce the cost of growing corn. *Hewitt Davis, Frederick's Place, Old Jewry, London, Oct.* 18.

Rational Seeding."—The writer can well remember in his youth 3 bushels of Wheat was commonly used for seed, and it is still, even in this enlightened age, practised in some districts, and sometimes more than 4. The most reasonable excuse for not sowing Wheat earlier and thinner is, "that their crops get so strikingly foul with weeds before winter, especially the Cock Grass." All this we admit is feasible, and not the reasoning, and we ourselves have sometimes (though very reluctantly) been induced to follow their example and row in the same boat, sowing as much as two bushels, because it should "smother the weeds," but the time is come that we must secure means to avoid this evil, in order to compete with those that do so already. By perseverance and assiduity this evil may be very much if not entirely obviated. If Wheat, Winter Beans, Barley, Oats, or Peas are to be sown on fallowed land, or after early crops of Beans, Peas, &c., the land should be once well ploughed, and perfectly and repeatedly comminuted by Bentalling or scarifying, also by harrowing, and lastly by rolling, all under one operation, or at one time, not later than the end of July or beginning of August, thus obtaining a beautiful tilth or seed bed for all kinds of indigenous and spontaneous seeds to germinate in, as if it were for nursing the most tender annual flowers to be sown in our gardens. In short every facility should then be brought into requisition to obtain abundance of weeds, which will then not have time to ripen their seeds, to be fed off with sheep at Michaelmas time, or to be ploughed in as vegetable food for the Wheat plants. In fact it is not extravagant to manure for the weeds before the summer ploughing, instead of for the Wheat in autumn, as they will then be encouraged to germinate in more abundance, and at no loss whatever. We have a piece of land at the present time thus cultivated after one of our early crops, so completely covered with seedling weeds of all descriptions, the progeny of many years' sowing no doubt, that we are ashamed our brother farmers should look upon it, but we ourselves regard it as a beautiful crop, and anomalous as it may appear, this very piece of land we flatter ourselves will prove the cleanest of our Wheat crops, feeling assured that no other process would have paid us so well, and effected so good a cure or destruction for the weeds, it may be for many years to come; whereas if the land had been repeatedly ploughed at great expense till the present time, and the Wheat sown now early as it should be, most of the seeds of the weeds would have lain dormant, and not have germinated till now, with the Wheat, or in the spring, and the crop must have been inevitably smothered, and attended with much labour and expense and loss; in fact no human art could then have devised means to eradicate them from the corn, not even with considerable expense and amount of manual toil which cannot now in these times of low prices be afforded. All must then "grow together until the harvest," hence arises the chief motive farmers in general have for adhering to thick sowing, "to choke the weeds," at the expense of not much more, very often, than half crops of corn. If Turnips are to be taken as a stolen crop, as they may be with profit on fallow and stubble, they should be sown at the time of the last operation of harrowing and rolling, whether for pot boiling, or for sheep feeding, and hoed out to uniform distances, whether somewhat thick for sheep, or thin for marketing. The weed crop may be left to flourish till the middle of September; or later, if they do not begin to ripen their seeds. If they should show signs of this in some of the quick growing kinds, when the summer holds out till October, and when the land was ploughed and tilthed early by fallowing, they should at once be ploughed in, with a skim coulter attached to the plough to bury the weeds more effectually, and the Wheat sown immediately (if it was not ploughed in, which by the bye is a good plan) as singly as possible, at not more than 1 bushel, or at most 5 pecks per acre, which is half a pint for a square rod; common sense however dictates that even this is unnecessary; but some people will sow double that quantity! Imagine (which is equivalent to 2½ bushels per acre,) 1 pint to be sprinkled equally over 1 rod of ground. *Hardy & Son.*

Mr. Hannam's Harvest Carts.—Mr. Mechi mentions in his useful little book "How to Farm Profitably," that the carts on his farm "are long, low and light, not exceeding 7 cwt.; 12 feet long, 7 feet wide; in fact they are Mr. Hannam's harvest cart." With them Mr. Mechi carts "coals (2 tons), corn (Wheat 80 bushels, Barley 100 bushels)," lime, hay, straw, planks, bricks, &c. He adds, "I do not find the Scotch cart so useful; it is not large or low enough. Our light Essex three-quarter carts do well for dung only, but Hannam's are always wanted, and at harvest we never use more than one horse in them, and a boy to drive. They are made for 10*l.* each; I used to pay 14*l.* or 15*l.*" I am personally grateful to Mr. Mechi for all he has attempted for agriculture; and others with myself must acknowledge we have much to thank him for. He will however confer on me an additional favour, if he will communicate through your journal the name and direction of the man he employs to make him these carts, or whether he knows whom Mr. Hannam employed for this purpose. I have read Mr. Hannam's account of his cart in the Royal Agricultural Society's Journal, vol. 2, but though my cart-maker is willing to try his hand at anything, I am so convinced of the advantages of Mr. Hannam's proposition and of Mr. Mechi's recommendation, that I prefer to have the principle carried out as completely as possible by employing the original maker of Mr. Hannam's carts, if I can. If Mr. Mechi can oblige me in this respect, I believe I can send the maker many customers. Will Mr. Mechi also mention whether he considers these carts useless for manure? He says that he uses the Essex three-quarter cart for dung. I shall feel obliged if he will add the direction of the maker of these carts, as well as that of Mr. Hannam's. *G. P.* [Mr. Mechi's carts are made by Mr. Eley, Wheelwright, Tolleshunt Knights, near Kelvedon, Essex.]

A Word against Rabbits.—In conversation with farmers who had read "A Word for Rabbits" in your Paper, one of them stated that he suffered to the amount of 100*l.* per annum by them. Another said: "I would gladly pay double my present rent if I had a lease and the rabbits and hares put down." Another said his land was adapted for a flock of sheep, but he kept none, as it was impossible to provide for them—Tares, &c., all eat off as soon as above ground if sown in the autumn, and if he got Turnips he was obliged to take them off the land instead of feeding them on it, or they would be all spoiled by the rabbits and hares. A steward to —— said that in one year damage to the amount of 500*l.* was done to their woodlands by rabbits eating off thousands of young Chesnuts and the young growing underwood. That instead of a poor man walking home with a rabbit he was walked to prison if found with one in his possession, his family kept by the parish during his confinement—a great addition to the heavy county rates—and perhaps forbid employment by any of the tenants on his release. We calculated that a rabbit spoiled ten times more than he eat, and eat ten times more than he was worth. Are landlords who thus preserve to the injury of their tenants, of their parish, and their country at large, proper representatives for an agricultural county? I subscribe myself what I am, *A Small Farmer.*

Manuring Grass Land.—What is the best manure for meadow land not lying contiguous to water for irrigation, of equal cost, that will produce the most Grass. I now top-dress my meadow with six cart-loads of farm-yard manure per acre every spring of the year, which I estimate at 24*s.*; as an annual dressing it should not exceed that cost, my meadow without the manure will cut about 18 cwt. to the acre, with the manure 28 cwt. to the acre. I know several manures highly spoken of, especially guano, new manure, and the Economical Manure, with some thousand testimonials. I have received much valuable information from your *Gazette* of tested artificial manures for arable land, but no tested manures for Grass land. *C. H. D.* [We have the very highest opinion of guano, and the very poorest of the Economical Manure, and for the grounds of the last you may consult our Volume for 1854.]

"Piper's Thickset Wheat."—It appears that this variety of Wheat is become nearly extinct. For what reason? it is often asked. Allow us to reply what we believe about it. By cultivation it has degenerated or retrograded to the same variety from whence it originated, viz., "Smoothy's thickset, short-strawed Red," exactly in every form, growth, and habit, the ears being nearly as large again as was "Piper's Thickset," which was said to be the shortest strawed then extant. The origin of Piper's Wheat, as we were informed by our late friend Mr. Piper himself, was, that he at first selected it from a field of "Smoothy's," which proved constant only for a few years, a circumstance which he could not explain or understand, till he visited us some few years before his death, purposely to view a plot we were growing on a rich piece of land on our usual thin-seeded plan, from seed we received directly from himself. On seeing it he was surprised, and pronounced it as fine a piece of "Smoothy" as he ever saw, and flatly denied that it could possibly be grown from the stock he sent us; but such was the fact, and we believe it has, ever since he first let it out, been retrograding or going back again to its original "Smoothy." It is, however, a very common, dwarfy or short-strawed, and thick-set and prolific variety, which, strange as it may appear, like all other prolific kinds, especially red varieties, adds very little to its reputation amongst purchasers and consumers. No, not although it produces on an average nearly one quarter more per acre than the smaller-grained white varieties, so much appreciated by the millers; and no marvel, as they can obtain a better and heavier article (flour) from this than any coarser varieties, as they call the prolifics. But does the better price they and the merchants give for the one compensate the grower so satisfactorily as if he had grown one quarter per acre more of a coarser or larger-grained variety? Query. Tell us of growing quantity even without quality, if the price of the latter is not equivalent with the value of the former. *Hardy & Son, Maldon, Essex.*

Societies.

Chemico-Agricultural: *Ulster, Oct.* 7.—*Arsenic in Manures and Crops.*—Professor Hodges said that his attention had been directed to some newspaper extracts, and also by a letter published in the *Belfast Daily Mercury*, to a communication to the Royal Dublin Agricultural Society, by Professor Davy, on the introduction of arsenic into the Turnip and other crops grown upon superphosphates prepared from oil of vitriol (sulphuric acid) manufactured from pyrites. The presence of arsenic (Dr. Hodges remarked) in vitriol made from some varieties of pyrites had long been known, but it was also known that many kinds of pyrites used in the manufacture did not contain any arsenic. The impregnation by arsenic of Wheat which had been grown from seed which had been steeped in arsenical solutions for the destruction of the spores of the smut, had at several times occupied the attention of chemists, especially in France, where it was at one time alleged that the practice might be attended with injurious consequences. The numerous investigations which had been made had led to the conclusion that no arsenic could be detected in the crops raised from grain which had been so prepared, and in one of these experiments M. Girardin had

failed, even whilst employing 4 lbs. of corn grown from seed treated with arsenic, to obtain any evidence of the presence of poison. Even, therefore, did the manure contain a small amount of arsenic, which was, however, not always the case, little apprehension need be entertained of any injury to health from its employment. In reasoning on this subject, it must not be forgotten that if arsenic was likely to be introduced into the animal system by the use of vegetables grown upon arsenical superphosphates, traces of it would be the more frequently discovered in the course of the delicate analytical investigations required in medico-legal investigations, even where no criminal administration of that poison had taken place. Yet, in an experience of 20 years during which he (Dr. H.) had made more than a hundred toxicological examinations, he had not discovered its presence in any case in which there was not good reason to suppose that death had been produced by criminal doses. He was entirely opposed to the statement that arsenic was what is termed an accumulative poison; that is, that by the continued use of vegetables containing a minute trace of it, the poison may collect in the system, till its effect may exercise an injurious effect on the health of man and animals. People were easily alarmed by such statements, and occasionally nervous individuals were made very uncomfortable by them. Some time ago accounts of the production of disease by room-papers coloured by arsenical compounds excited great uneasiness. He had been requested by a physician in Belfast to examine some room-papers which, it was asserted, had produced on an individual a long train of serious symptoms, precisely resembling those of arsenical poisoning. Yet the papers, on examination, did not contain a trace of arsenic. It was true that many room-papers did contain arsenic, and also that in superphosphates there might occasionally be a small amount of arsenic; but we require further investigation on this subject before the apprehension of death in the pot obliged us to abandon the use of vegetables grown on artificial manures.

Cumberland.—*Half a Century of Progress—Turnip Failure—Autumnal Cultivation.*—At the late annual meeting of this society, Mr. John Grey, of Dilston, said:—It is now nearly 50 years since I resided in the vale of Lorton, one of the loveliest spots the sun ever shone upon, and which still remains in my recollection with all the native ardour of youth and imagination. When a boy I lived there with an old clergyman. I took the opportunity yesterday of revisiting the scenes of my youth. I found the lovely vale there as of old, unchanged in all its beauty; the same familiar mountains rearing their majestic heads over the peaceful lake of Buttermere, which was once the joy of my youth. I don't wish to impose upon you the sentimentalism which inspires my own breast, but that visit recalled to my mind the kind of stock and cultivation there used to be in those days, and showed how great was the contrast of the present day. I recollect that the worthy parson with whom I lodged kept a cow. It was of a type now gone out. I see none of its progeny in the present day. It was one of those respectable matronly animals, with red sides and long white streaks, with horns so adjusted that it was necessary for it to go with mathematical precision in order to enable it to get its head within the door of its byre. I remember to have seen specimens of a breed of cattle at Mire House and Workington, whose place have since been almost entirely superseded by the usurping Short-horn. Nor is it to be lamented that these relics of a former time are gone, for, though they were certainly picturesque objects in the surrounding scene, they did not possess the advantages of early feeding and quick maturity which the farmers of the present day find absolutely essential to the supply of the fast-increasing population of this country. That population, I am happy to say, are now able by their earnings to indulge in beef and mutton, which was not so much the practice at the time I have mentioned. We know that early pay is the thing now to be aimed at—a quick return for the money laid out; not to wait till they are four or five years old, but to feed them from their birth upwards, so as to bring them quickest to maturity. That, however, is a subject which I need not enlarge upon; but there is one thing peculiarly appropriate to the season which I may be permitted for a moment to advert to. My time and experience are now of considerable extent, but I never saw so great a failure in the root crop as there has been this year in all the northern counties of England and parts of Scotland. This is accounted for in various ways. Some tell you it is owing to the excessive drought of the past season; others will say it is from the extreme mildness of the winters we have had of late years, and the absence of those severe frosts and snows which destroy the insects which are so inimical to roots; but one thing I should wish to impress upon your minds is this, that wherever there has been any great exception from a failure so general, I have always found it to be in those situations where autumn cultivation has been attended to. The land has been made up in the previous autumn, on the removal of the crop, and allowed to become mellow under the winter rains and frosts; in all cases where this course has been adopted there have been abundant crops; whereas on land differently treated, however well managed and well manured during the heat of summer, Turnips have not grown at all. The circumstances of the present early harvest give farmers a great opportunity for observation and experience of this description, and I am glad to find that in my neighbourhood many agriculturists are taking advantage of what they have seen, and are now making up their land into drill rows for the reception of their crop.

Mr. Gillbanks said, it had afforded him much pleasure to observe that agricultural implements were daily becoming less massive, less cumbersome and more compact, lighter and cheaper—much cheaper and more practical in every sense of the word. They might depend upon it that light, practical, and cheap machinery was the great pivot upon which all agricultural success must eventually turn. It was not the rich nobleman spending 40*l.* upon a new implement to please a favourite tenant; it was not the enthusiastic amateur squandering his money without calculation; nor was it the man who simply spent his money in order to astonish his neighbours, and usually concluded by astonishing them in a very different way to what they anticipated; but it was the comparatively poor but honest men—the horny-handed practical farmers, who were determined to avail themselves of these improvements. He heard of 10 or 15 of these men clubbing together for the purpose of going to Warwick to lay out their money in the purchase of some agricultural implement, worth from 50*l.* down to 5*s.*, for their mutual benefit and for the benefit of the locality in which they farmed. These were the men who generally prospered, and he hoped they would always continue to prosper. When he contrasted this conduct with, he would not say the laziness or want of skill of some of the Cumberland farmers, but with the prejudice and obstinacy of some, he could not help feeling ashamed to see them still plodding on in the beaten track of the Fellside forefathers of an age gone by. What was the career of a small holder who never stirred out of the beaten track? He had a small farm, worked like a galley slave for 40 or 50 years, eating the bread of carefulness and taking no rest, till at length, having saved some 200*l.* to 300*l.*, he had reached the summit of his ambition, and, to use a homely and familiar Cumberland phrase, was enabled to retire and live, theoretically and practically, "upon his own bottom."

Stow-on-the-Wold: *Labourers.*—Mr. Langston said: During the late harvest there had been a great scarcity of labour in all parts of the country; he was, however, glad to learn that, in consequence of the fineness of the weather, no great loss had occurred to those who were unable, at the moment they required them, to find hands. Under those circumstances, they must begin to learn the real value of labour, for they must no longer trust to the Irish and Welsh labourers. In his capacity of Chairman of the Chipping Norton Board of Guardians, it had grieved him, in winter time, to find that no proper exertions were made by those who had the land to employ their labourers for that period. The consequence was, that the men became discontented, and when they knew that their services were required, they went elsewhere. The fact was, that the same result would occur another year. He could recollect the time when the harvest was an affair of many weeks, whereas now it was done in a short period. What with the assistance of machinery, and the skill which was brought to bear in the cultivation of the land, the seed was put in the ground within a shorter time, and it was ready for the harvest also at the same time, and he was of opinion that unless they kept their men, their difficulties, instead of diminishing, would increase. It was, in his opinion, the duty of those who occupied the land to deal with this matter in a proper spirit, and remedy the evil complained of. Many persons went away because they could not find cottages, and he thought the landlords, instead of pulling down their cottages, as some had done, ought no longer to do so, but endeavour to keep in their parishes those men who were so valuable to them. He considered this question one of the deepest importance, and he trusted that many persons would be led to reflect upon what had occurred.

Mr. Holland said the condition of the labourer must be considered in connection with the land, their holdings, and their tillage, and in improving one they must endeavour to improve all. As tenant farmers, it was indispensable that they should have some security in the land, so as to be induced to expend their capital, and they must not expect, in investing their money, to get much profit in the first year or two. He (Mr. Holland) was now farming at a profit; but he had no hesitation in saying that if he had gone out of his farm two or three years after he took it he should have left it comparatively a ruined man. With respect to their labourers, if they intended to avail themselves of improved machinery they must at the same time secure men who were competent to use such machinery, and it was by educating them they would get a better sort. It was generally admitted that every one who went to school was brought into training, and acquired proper habits, and he believed that it would have the same effect with the labouring class, and make them better servants; they were the only class that had not moved on with the times, and while others have been helped forward, they had been kept back. The farmer, not living in towns, laid in from that source his stock of domestic requirements for a time, and there he also obtained his stock of labour for the year, and that might be said to be the origin of statute fairs. In consequence, however, of increased facilities, the farmer was no longer obliged to supply his domestic necessities on those particular occasions, when he and his labourers made their journey to the statute fair; but even now he was supplied with labour there, for it was there where he sought for it, and where the labourer relied for obtaining employment. He was happy to find that this system did not extend all over England, although it prevailed in this neighbourhood, and he was sure they would agree with him, that there was a larger amount of drunkenness and vice, and a greater number of blackguards at a statute fair than on any other occasion. He suggested that they should hire their labourers in the same way as domestic servants were hired—by the year, but allowing them extra in harvest time, so as to induce them to remain, instead of causing them to leave when their services were most needed, and would command elsewhere a better rate of remuneration.

Craven: *Yorkshire Agriculture.*—At the meeting of this society, Skipton, Sir J. W. Ramsden said:—We are accustomed to boast of this West Riding of ours that it presents an epitome of the whole life of England—that in the West Riding are represented commerce and manufactures of every branch and agriculture of every description. If this boast of ours be true, the functions we in Craven exercise may be taken as representing the pastoral state. Now this district is divided into two separate divisions; one, that in which we are now assembled, viz., Skipton, the capital of Craven, and in this lower region perhaps there is not very great room for improvement. We see here, in the fertility of the soil, and the skill of those who cultivate it, that farming has attained to a very high place in the agriculture of England. But those, as I do myself, who come from the barbarous mountain regions, will derive the greatest benefit from the establishment of this society. We have, I fear, a rather different tale to tell. As far as we are concerned, there has been but very little or no improvement. As you go up among those mountains, you will find that our pastures are still undrained, our roads in many places hardly practicable, our hill-sides devoid of shelter, our farm buildings of a most primitive description, and, in short, that we have a great deal to learn: and I can only hope that we shall have the will to learn it. But if in these districts we are very much behind-hand, compared with the rest of the world, in agricultural improvement, at least we have two mainstays from which our future improvement may be developed. We are tolerably "wide awake," and we are tolerably "well-to-do." If, then, we have these two requirements of agricultural improvement—that is to say material resources and intelligence to know how to make use of them, I think the prospect for us is not very dismal one. All we want is to have presented before us, and forced upon our notice, the great advantage which agricultural improvement brings with it. We want to see, in short, that we can drain, and plan and improve our roads; and when all this is done, that it will pay us well. That is, after all, the long and short of the matter; and I think that is precisely the function which such a society as this is best calculated to afford. We come down from this barbarous region and can meet our neighbours who live in the more fertile and improved district, and converse with them they hear our antiquated prejudices, and laugh at us for them; they tell us what they have done, and we see what they have done, and they point out to us that if we choose, if we have energy and spirit to profit by the example, we may do just the same; and when we see a thousand acres of fertile land on those hills which are now lost in wet ridges, and are covered with nothing but Bent and Ling, and see the wonderful improvement wherever an open ditch is cut to let the water off, we think the evidence of our own senses will show us that everything is ready to our hands, and that we only want energy, spirit, and skill to make use of the advantages which we possess, I must say that in going through the exhibition to-day I was lost in amazement at the high quality not only of the prize animals exhibited but of the high average which has been attained. It is not only such men as Sir C. R. Tempest who is pre-eminent in agricultural societies throughout the kingdom, but we see that the smaller owners of the land and the farmers throughout the country are seeing the advantage of improving the quality of their stock, and that they are associated to do it. Depends upon it the whole matter rests in their hands. It is not by a large landed proprietor here and there setting an example by laying out his money, and perhaps considering whether it will pay or not, but the real improvement of a district must rest in the hands of those who cultivate that district; and it is not until we are able to show them that they can cultivate it so as to derive a great profit by introducing improvements that we shall see any material advance in agriculture take place. It is just because I believe that the society is calculated to perform that function that I look forward so hopefully to its success in future years.

Rugeley.—At the late annual meeting of this agricultural society, Mr. C. Chawner, in proposing the principal toast of the evening, "Success to the Rugeley Agricultural Society," remarked:—At this season of the year societies like their own were holding meetings in all parts of the kingdom, and men of all ranks and of all opinions were assembled at these meetings, all joining in the toast, "Success to Agriculture." This being the case, a very important question suggested itself for consideration, and that was, whether

farmers of England as a body were doing all that the community at large had a right to require from them, looking at the position in which they were placed; whether, in fact, they were so cultivating their farms as to carry out to the fullest extent all those improvements which experience had shown to be practicable, in order to promote not only their own interests but the interests also of the great body of consumers. He was bound to state, as the result of careful observation, that at present this was not the case. He might be told that this was an old story of his own. It was not only an old story, but a true one; and as they now had free importations of all kinds of agricultural produce from each quarter of the globe, it was most desirable for them to ascertain whether they were taking up the best position as agriculturists. If they referred to the climate of corn producing countries, they were compelled, from what we had imported, to acknowledge that they could supply superior and better varieties of corn than could be produced in this country for bread our; but if they looked at the supply of fat stock, they came to the conclusion that no country could compete with them in the production of animal food. Then came the question whether they were doing the best they could for themselves and the consumer in his direction. He (Mr. Chawner) considered that they were not. Take, for instance, an example. When they were going to lay in the raw material (if he might so term it) for feeding, store or barren beasts, they met together in the market; there might be a short supply, and the cost of the raw material was often so high, that if they added to it the cost of feeding, they would have to live by the loss rather than the gain. Well, now, was there any remedy? For his own part he knew of but one; and that was, the rearing a greater number of animals, both cattle and sheep, than they were now doing. He believed they might lower the price of butchers' meat in the country, and yet obtain much better profit for themselves. During the last two years he had reared 100 calves. He found that many of his neighbours were glad to get rid of their calves, and he had purchased many of them from the dairy farms. He had found in the rearing of calves very little milk was necessary; some small quantity as required, but the real thing to rely upon was good linseed cake, and he had found from experience that nearly the same nutritive properties existed in the cake as in the milk of the cow. The steers reared in that way were fed off and sold at about two and a half years old; the heifers came in with their calves at two years old, and they were fed off the next winter. The subject on which he was speaking was a most important one. A man might do as he liked with reference to the improvement of his land, but he must also produce an increased number of cattle and sheep if he intended to do better for himself, and to do what was his plain duty to the consumer also. He should be most happy at any time to show any practical person the details of his plan, and remove whatever misgivings he might have as to its practicability; for if they could only increase the number of stock two-fold they would be doing a great thing, as they could never obtain a sufficient supply of animal food from other countries. One more remark he would make with regard to the disposal of stock at the market. He thought all stock should be sold by auction. Sales of stock were now being generally established, and they had a very good monthly sale in that town, at which a ready market was found for the disposal of cattle. He thought the establishment of that sale was one of the reasons why the society had revived, and the show that day had been so good. The great majority of animals exhibited would not have disgraced the Royal Agricultural Society of England. In fact, they had several Shorthorns which took prizes at the exhibition of the Royal Society this year; and if they were still assiduous in promoting the prosperity of the society, they would make it one of the best in the kingdom.

In the course of the evening, the labourers who had competed in the ploughing matches, &c., and the shepherds and others, were introduced for the purpose of hearing the awards read; after which the chairman addressed a few very kind and appropriate remarks to them, urging especially that they should make themselves fully acquainted with every department of skilled labour in connection with agriculture. In this respect they were at present deficient as a class, for they did not take the same pride in their work, or the same pains to obtain information which might be useful to them, as the artisans in our manufacturing districts. "A very considerable change had already taken place in agricultural labour in connection with the use of machinery, and they would find that it would be speedily applied to every department of the more laborious descriptions of work; but this would have a tendency to multiply labour in every other department. They must remember that, if a man lacked intelligence and sobriety, he was not fit to be anywhere near a machine; but, if he possessed those qualifications, he became more and more valuable every day. He trusted that they would do their utmost to maintain good characters, and improve themselves in every department of skilled labour."—*Midland Counties' Herald.*

Combe St. Nicholas: *Labourers and Cottages.*—At the late annual meeting of this society Mr. Aplin spoke on this subject. He said:—Their object was the promotion of general skilled labour. For that society went a little further than a ploughing match, as it offered prizes for sheep-shearing, and for that important branch of husbandry the skilful hoeing of roots. He trusted that they should be able to go still further in the encouragement of skilled labour. The time was come when the labourer must be better cared for than he has hitherto been. Let them think of the generally too cheerless homes of the creators of England's wealth. Ride where they would, they would find many of them comfortless and neglected. Too often were the eyes shut, as it were, and the back turned upon them as if they did not concern us. But are not our domestics drawn principally from the cottage of the labourer? Could we expect suitable servants, trained as they too often are? What, may be asked, was the remedy for all this? The removal of that barrier to progress, the law of parochial settlement—the substitution of a fair union rate, with no removal of paupers. Under such a change they might expect cottages to be built on the estates of gentlemen who are now deterred by a feeling that they should be incurring a charge on their property by an increase of the poor rate. But, he would ask, is not land let the dearest where population is most abundant, and the reverse where population is scarce, examples of which are plentiful enough in the southern counties? Of course improvements in agriculture can only be applied by an increased number of labourers, who surely ought to have comfortable cottages, with large gardens attached, so that they might feel that they are men—that they are cared for, and that they have masters whom they can regard with respect—that they have really "sweet homes" in which to raise the family altar, at which to thank Providence for the blessings they enjoy. Let them compare a man so situated with the mere wandering hireling—a "time server,"—coming, his employer knew not whence, and when he had done with him leaving him to go he cared not whither. High wages to these men can hardly be said to better their condition, for experience shows that they are not better off even after a good summer, than those who are regularly employed. What he wanted to see was, that the labourer might be able to sell his only commodity—labour—in the best market, and to feel that he is not bound by the law to any particular parish. In a word, give him Free Trade. Let the voice of the people rise to press the legislature to fulfil what has long been wanting—the removal of the parochial settlement. They might then expect the labourer to be cared for as he ought to be—as a servant and as a man.

Reviews.

Our Farm Crops: Part I. The Wheat Crop. By John Wilson, F.R.S.E., Professor of Agriculture in the University of Edinburgh, &c. Blackie & Son, Warwick Square, London, E.C.

Professor Wilson is to discuss the whole subject of farm crops in 12 such parts as the one before us—each being complete in itself. The present specimen of the series comes perfectly up to the plan of the prospectus; and if any one wishes to know the history of the Wheat crop as cultivated in this country, to be acquainted with the varieties most grown, the details of their cultivation, growth, ripening, and harvesting, the diseases and insect attacks to which they are liable, he will find all he wants in this pamphlet, given, as is the case with all Professor Wilson's publications that we have seen, in simple unpretending English, so as to be intelligible to all.

He will find more than what we have named—references to the history of the plant from the earliest ages; repeated allusions to the maxims of Roman agriculture, and to the experience of even Grecian cultivators are sprinkled through the pages of the pamphlet, but these, except as meeting the taste of those literary men who shall consult its pages, are in our opinion of little service towards the object of the author. The experience of our own cultivators for the guidance of their contemporaries and successors is all the latter need or can reasonably desire.

The theory of Wheat growth and of Wheat as food is sufficiently detailed in Professor Wilson's pages. The composition of the soil, its due preparation by cultivation, the selection of the seed, *its* preparation before sowing, the manner of its germination, the quantity to be sown per acre, the mode of sowing, the cultivation of the land during the growth of the crop, the period and process of harvesting, the operation of threshing, the nature of parasitic fungi, and of the mischievous insects which in all stages of its growth attack the plant—all these particulars are discussed in sufficient detail; and the pamphlet concludes with nine or ten pages on the chemistry of the Wheat crop.

We may add as indicating a defect which in the further issues of the work may, if the author pleases, be corrected, that most readers will regret the absence of fuller information on the statistics of the Wheat crop—on the extent of land occupied by it in this country, the deficiencies in the home growth of Wheat as indicated by grain importation from abroad, the proofs from experience of the possibility of vastly exceeding our present annual growth by more generally extending the produce per acre of good cultivation. Fuller information on the effect of the various manures which are applied to this crop might have been given—the effect of land drainage might have been illustrated—the place of the crop in the rotation might have been more fully discussed—and an index to the contents of the work might have been given. The reader has the advantage of capital engravings of ears of the different species of Triticum, and of the insects to whose attacks the plant is obnoxious. The following passage is extracted in illustration of the author's style:—

"The *Chemistry* of the Wheat plant, owing to its importance as the first of our food grains, has received more attention than that of most of our other cultivated plants. Numerous analyses of its organic as well as inorganic constituents have been made by continental, as well as by our own chemists; all of them add greatly to our store of knowledge, though some of them have a more practical application than others. In the early days of agricultural chemistry, the composition of the soil was thought to claim our first consideration, and soil analyses were looked upon as the keystones of the new system. These failed, however, to secure the results expected—not that the chemist was unable to determine the exact constituents of the sample submitted to him, but because it was impossible to supply him with any sample that should fairly represent the mass of the soil whose composition we wished to have made known to us. Every one conversant with farming must have noticed the variations in the soil of different fields on the same farm, and frequently even of different parts of the same field. A sample taken, therefore, from one part alone might be widely different from the soil of the other parts of the field, while a number of samples drawn from these differing soils and mixed together, might still more mislead, and represent no portion of the surface-soil whatever. Again, take the same soil under different conditions: take a sample in the early spring, after the rains of winter have acted upon the surface, and carried its most soluble constituents down into the subsoil, or away altogether in the drainage; and take a sample from the same spot at the close of autumn, when no rain has passed through the soil for months, but has passed off by evaporation, leaving behind in the surface-soil the soluble salts it had met with in its upward passage—submit these two samples to the laboratory tests, and see what different indications of fertility they would give you of the same soil. The spring analyses would indicate a soil poor in available food for the crop, while that of autumn would place the same soil very high in the scale of fertility. Even if the analyses of soils had furnished us with all the reliable data we expected, we should have failed to apply them profitably, until we were equally acquainted with the composition and constituents of the plants we wished to cultivate, so that we might know whether those ingredients which the plant required for its growth were to be met with in the soil in which it was to be placed. The importance to be attached to a chemical investigation into the composition of our farm plants was at once recognised, and the subject was taken up with great energy and liberality by the Royal Agricultural Society, whose Journal promptly made known to the agricultural community, abroad as well as at home, the valuable and very interesting results obtained. In the investigations carried out under their auspices, most of our crops are comprised; those especially relating to Wheat will be found chiefly in Vol. vii. These investigations showed us, that although the constituents of any individual plant are always the same, still that there is well-nigh as great a variety in the composition of different plants as in that of different soils; which at once gives us a reason—not only one though—why certain plants thrive better on certain soils than on others. They also showed us, that although the constituents of a plant—Wheat, for instance—were always the same, still their relative proportions might vary in different specimens or varieties; and thus indicated the probability that one variety might be more advantageous than another for cultivation under certain conditions. In twenty specimens of Wheat examined (sixteen English and four foreign), a variation was shown in the amount (per centage) of silica assimilated of from 1.34 to 9.71, the one grown on calcareous rubble, the other on a greensand loam. In phosphoric acid the proportion differed from 34.44 to 49.22; some contained 26.7 of potash, while in another it amounted to 36.6 per cent. In lime and soda a greater difference was shown, the lowest proportion of lime being 1.15 and the highest 8.21, and of soda .07 and 9.06 per cent. These points of different proportions may have a practical value, as indicating varieties of Wheat more or less suitable for soils of different qualities, those varieties with the least percentage of phosphoric acid and potash being evidently better suited for cultivation in poor soils than the others, which require larger proportions of those salts for their growth."

Farm Memoranda.

Deighton near Wetherby.—On Monday evening last the workpeople employed upon the farms occupied by Messrs. John and William Hannam, at Kirk and North Deighton, celebrated the feast of the ingathering—the harvest home. The entertainment took place in one of the large out-houses, which was most tastefully fitted up for the occasion. The roof and walls were decorated with flowers and evergreens, and a large number of flags, banners, and mottoes, artistically arranged, still further improved the *tout ensemble*. At six o'clock upwards of 70 persons, comprising the labourers, their wives and families, and guests, sat down to an excellent tea. Mr. John Hannam occupied the chair, and welcomed the invited guests. "The labourers he welcomed as old friends. There were families amongst them, that had been employed for 60 years in his

family; and individuals present representing, respectively, 36, 35, 15, &c., &c. years of employment with him and his father, and he hoped his own children and theirs would, in years to come, meet to tell a similar tale." Mr. Hannam explained what is "harvest home," and sketched the customs connected with such feasts from the earliest age to the present day. How it degenerated from a thanksgiving festival to a play and a mummery, in the middle ages, and in the last century, merely a scene of dissipation. Now we were sufficiently advanced to make the meeting one for the "feast of reason and the flow of soul"—an evening of enjoyment and instruction—of gladness and gratitude. He then traced the importance of the agricultural produce annually given by God in return for our labours—its enormous amount—its influence on trade, commerce, and the happiness of the nation: comprising Queen, Lords, and Commons, Merchant, Mechanic, Farmer, and Labourer. How the products of agriculture were at once the materials of art, the capital which kept machinery in motion, the sinews of war, and the means which gave the labourer a "fair day's wages for a fair day's work," and made her Majesty the sovereign of a happy people and a powerful nation. He then showed how the labourer and every one had cause of gratitude for the national advantage and the individual benefit conferred by this unprecedented fine harvest; and showed how agricultural improvement in this district had changed its face, and bettered the condition of all those who cultivated the soil. He contrasted the serf of the fourteenth century and the wretched "houserow" men of 30 years ago, with the hearty, happy, and he was proud to say sober as well as well-paid labourers present. He thanked them for this, and for their intelligence; in proof of which he had this year introduced a reaper amongst them, and instead of offering opposition to its use, they had done their best to work it efficiently, and he had cut about 100 acres of corn at 6*s.* per acre. This cheap harvest was not their loss, but the loss of the Irish emigrant, who would be better at home; and the profit or gain, he, Mr. H., had made by using machinery, they knew would enable him to employ them more constantly in more productive labour, that would repay him for his outlay. Threshing, reaping, and such work were unproductive labour, they did not increase produce. Field labour, weeding, manuring, trenching, draining, &c., did increase production, and benefited the country; hence it would be beneficial when all heavy, unproductive work was done by machinery, and men with heads on their shoulders were employed on work that required sense as much as sinew, and intelligence as much as muscle. His men understood this, and they welcomed the reaper—as they had welcomed the steam engine and threshing machine some few years ago—and they had accomplished what in some parts of England could scarcely be believed—the cutting of 100 acres of corn in ten days at 6*s.* per acre: for he held in his hand the Report of the Evesham Agricultural Show, at which the Hon. F. Charteris alludes to this statement made by him (Mr. H.) at Liverpool a few weeks ago as something surprising, and adds that "they in the South have been paying from 20*s.* to 30*s.* per acre for harvest work." The labourers here, however, know that where such exorbitant wages are paid at harvest but little will be paid afterwards; and therefore they say more machinery, more work—the more work master gets done for his money, the more work he will find to do, and the more men he will employ as he increases his production and lessens his expenses in unprofitable labour. The manufacturers have found this out. It has been illustrated by the progress of this parish during the last 20 years, and he was proud his men had found out the secret, and were, like him, thankful for a good harvest, glad it had been done cheaply and satisfied to go hand in hand with their employers, in accomplishing the duties that belonged to their occupation. *Wetherby Journal.*

Miscellaneous.

The Four-course Rotation of Crops.—The Norfolk, or four-course, shift is going out of favour in its native county. At any rate it is not so rigidly adhered to as formerly. For many years two white straw crops in succession have been taken in some of the good deep soils of East Norfolk, but, until recently, such a deviation from the established rule was considered bad farming in the west. The very mention of snch a thing was a perfect shock to some landlords. But what is the use of artificial food and manures, of new implements, of extra capital, and of all our recent improvements, if we cannot grow more corn, ay, and grow it more frequently too? Already the land is stimulated to such an extent that it is dangerous to force it further, unless some means be discovered to keep the straw from lodging. As it seems impossible to grow more corn in one year with any certainty, the next step is to grow it in more frequent rotation. As long as a tenant keeps his land clean and in good heart, the conditions of good farming are complied with, even if an extra white straw crop be taken. Even on the Holkham estate—that fostering parent and stanch supporter of the four-course rotation—the tenants are allowed to grow as many Oats on their Wheat stubbles as they consume on the farm. In order to show that these extra crops can be grown without in any way injuring the fertility of the soil, a field of Oats, which in 1856 attracted much notice at Castle Acre, is brought forward as a successful instance. The field in question contains 46 acres, and soon after the harvest of 1855 the little Couch Grass that was in the Wheat stubble was forked out. During the winter Turnip tops, &c., were thrown on the land for the ewes, which were removed at night, and in February the field was regularly folded over with 2000 sheep, eating 5 tons of Mangels per acre and ½ lb. of oil-cake each per day. The ground was then ploughed, and 2 cwt. of guano an acre sown on the weakest portion of the field; white Tartarian Oats were drilled in March, and were afterwards top-dressed with 1 cwt. of nitrate of soda and 2 cwt. common salt. The result was one of the most level and glorious crops of grain ever seen in Norfolk. The yield of Oats was nearly 15 quarters to the acre. and the field on being cleared was as clean as a garden, Last year the same field produced the best crop of Swedes in the county, and the Barley which follows now shows signs of over-luxuriance. This is the perfection of farming: to grow such excellent and profitable crops, and yet keep the land free from weeds and increasing in fertility. The usual mode of growing such Oats is to clean the Wheat-stubbles directly after harvest, and to sow 2 cwt. of guano before the Oats are drilled in the spring. A top-dressing of nitrate of soda is often added, for Oats will stand plenty of manuring, and the grain, if the crop lodge, is not necessarily spoiled. It is the general practice to take Oats after Wheat, but it is questionable if Barley is not a better grain to grow as a second corn-crop. The quality of Wheat stubble Barley is invariably finer than that of the Turnip lands, and Oats could be grown after the late Swedes when the sheep had consumed an extra quantity of cake, and the land was in too rich a condition to be safe for Barley. *Journal of the Royal Agricultural Society.*

Calendar of Operations.

—♦—

OCTOBER.

AGRICULTURAL REPORT FOR THE ISLE OF ELY.—The month of September this year scarcely maintained its character as one of the most lovely and beautiful months of the year, but was stormy rather than calm, and cold at intervals rather than mild and genial. Storms of wind and rain prevailed very largely throughout the whole of the month, which gave it a strong resemblance to March, and made us almost forget that the "queen of summer months" was here. October however brought with it a return to summer weather, and on some of the days of the first week the sun shone as brilliantly and the temperature was as high as in July. This gave a fresh impetus to vegetation, and clothed our pasture fields with a spring-like verdure. During the last few days we have had a return to stormy weather, and a good deal of rain has fallen. Whilst we write the rain falls copiously, and promises to continue, as the barometer is very low, and the clouds indicate a heavy downfall. This season contrasts very favourably in this respect with the last. We have had refreshing showers at short intervals throughout the whole of the last few months, which have prepared the soil for the reception of the seed; whereas last year we suffered much at seed time for want of moisture, and many lands were sown in a state too dry to vegetate the seed until rain should fall. Many of our farmers commenced sowing Wheat last week; others are beginning this week, and should the weather prove favourable the bulk of the Wheat will be put into the ground during the next fortnight. We have now as fine a seed-bed as could well be desired, especially on our fen soils; some of the high lands are now quite wet enough, and with more rain will soon begin to work badly. The dry seasons which are generally so beneficial to strong tenacious clay soils are exceedingly prejudicial to our light and dusty fen soils. Consolidation, which is such an important element in fen farming, cannot be obtained; but every particle of the soil becomes so completely disintegrated and pulverised, until the whole surface becomes a mere dust heap, and as a consequence, vegetation becomes less luxuriant and we get a weak and sickly plant. Moderately wet seasons, especially during the winter and spring months, conduce very much to render our fen soils fruitful, and to make their cultivation remunerative. The present seems likely to be one of those old-fashioned seasons, and in this locality will be an agreeable change from the excessively dry and parching weather of the last year or two. As the threshing proceeds we find our worst fears as to the yield of the new crop of Wheat more than realised. The grower of Wheat in this immediate district has three bad things to contend against which combined must prove very ruinous, viz. a bad yield, a bad quality, and a bad price. We are still unable to report very accurately as to the yield of the Oat crop, but it cannot be much below an average we conceive from the bulk and general appearance of the crop. The heavy arrivals of foreign Oats have considerably depreciated the value of our own produce, but we shall not be surprised to see ere long a slight reaction in the value of this description of grain. The trade in lean cattle and sheep at the autumnal fairs has not been brisk, but for any but the best qualities has been very slow, and prices have declined. Keep is very plentiful. Grass grows rapidly. Mangels are a good crop. Coleseed is various, but is now growing well, and where there is an adequate plant will be a heavy crop. Mutton maintains its value, and sheep are going away from the Coleseeds with great firmness of hand. Potatoes are a light crop, and are mostly secured. There is a smaller amount of disease than was apparent some time since, but this attributable to the fact that many of the diseased tubers have become soft, and have rotted away and disappeared. The corn trade appears to be struggling for some improvement. The inferior crop of Wheat in so many counties is beginning to exert some influence, and prices point upwards. *Your Fen Reporter.*

Notices to Correspondents.

BLOOD MANURE, &c.: *J V.* Next week.

DISEASE IN COWS: *C J.* Mr. Spooner will report on your case. Meanwhile house them at night and give them warm Linseed mashes in addition to their ordinary food. We see no fault in the recipe you quote.

LAMBS: *Amateur.* You will find oil-cake as good as anything; begin with a very little daily.

LIQUID MANURE: *Amateur.* You may cart it on Grass land. It will pay for the operation if the land be drained and not too distant.

MILDEW: *J S.* The mildewed leaves may be removed, but if the cause of mildew still remains the disease will reappear.

MR. HORSFALL'S WRITINGS: *B M.* They are the subject of dairy management and the feeding of dairy cows. See Vols. XVII. and XVIII. of the Journal of the Agricultural Society.

*** As usual, many communications have been received too late, and others are detained till the necessary inquiries can be made. We must also beg the indulgence of those correspondents the insertion of whose contributions is still delayed.

TABLES ON CATTLE, HAY, AND DRAINING.
Tenth Edition, price 2*s.* 6*d.* cloth, of
A NEW SET OF TABLES for computing the Weight of Cattle by Measurement, the Quantity of Hay in Ricks of different Forms, the Value of Land, &c. To which is now added, a Concise System of FARM BOOK-KEEPING. By JAMES STRACHAN, Fochabers.
The Book-keeping is also sold separately, price 6*d.*
Second Edition, price 2*s.* 6*d.* cloth, of
STRACHAN'S TABLES ON DRAINING, with Practical Directions.
Edinburgh: OLIVER & BOYD.
London: SIMPKIN, MARSHALL, & Co.

FARM ACCOUNTS.
In royal 8vo, bound in cloth, price 2*s.* 6*d.*,
A PRACTICAL SYSTEM of FARM BOOK-KEEPING; being that recommended in "The Book of the Farm." By HENRY STEPHENS, F.R.S.E.
Also,
SEVEN FOLIO ACCOUNT BOOKS, constructed in accordance with the system, Printed and Ruled throughout, and bound in separate volumes; the whole being specially adapted for keeping, by an easy and accurate method, an account of all the Transactions of the Farm.
"We have no hesitation in saying, that of the many systems of keeping farm-accounts which are in vogue, there is not one which will bear comparison with that just issued by Messrs. Blackwood, according to the recommendations of Mr. Stephens in his invaluable 'Book of the Farm.' The great characteristic of this system is its simplicity. When once the details are mastered, which it will take very little trouble to accomplish, it will be prized as the clearest method to show the profit and loss of business, and to prove how the soundest and surest calculations can be arrived at."—*Bell's Messenger.*
W. BLACKWOOD & SONS, Edinburgh and London.

ELEGANT PRESENT FOR THE COUNTRY OR SEASIDE.
Handsomely bound in cloth gilt, price One Guinea,
THE FERN COLLECTOR'S ALBUM: a descriptive folio for the reception of Natural Specimens, containing on the right-hand page a description of each Fern, printed in colours; the opposite page being left blank for the collector to affix the dried specimen, forming when filled an elegant and complete collection of this interesting family of plants.
London: ROBERT HARDWICKE, 192, Piccadilly, W.

BOHN'S ILLUSTRATED LIBRARY FOR NOVEMBER.
THE ADVENTURES OF GIL BLAS. Translated from the French of LESAGE by TOBIAS SMOLLETT, carefully revised by Dr. BENJAMIN HEATH MALKIN. New Edition, with 34 Engravings on Steel, of which 24 are after the celebrated designs of SMIRKE, and 10 are spirited and humorous etchings by GEORGE CRUIKSHANK. Complete in one Volume (upwards of 600 pages). Post 8vo, cloth, 6*s.*
HENRY G. BOHN, York Street, Covent Garden, London, W.C.

Just published, in post 8vo, with 7 Woodcut Illustrations from Original Drawings by Wolf, price 10*s.* 6*d.* cloth,
FALCONRY: its Claims, History, and Practice. By GAGE EARLE FREEMAN, M.A. ("Peregrine" of the *Field* Newspaper), and FRANCIS HENRY SALVIN, Captain West York Rifles. To which are added Remarks on Training the Otter and Cormorant, by Captain Salvin.
London: LONGMAN, GREEN, LONGMAN, & ROBERTS.

THE THIRD EDITION OF
PEAKS, PASSES, AND GLACIERS is now ready, price 21*s.* cloth.
The Third Edition of "Peaks, Passes, and Glaciers" contains an Abstract of the new Chamounix Regulations as to Guides, which have been made in consequence of a Memorial to the Sardinian Minister from the Committee of the Alpine Club; and a few Additions and Corrections have been made throughout the work. A notice of some Excursions made by Members of the Alpine Club during the past summer is added to the Preface. The EIGHT SWISS MAPS, accompanied by a Table of the HEIGHTS of MOUNTAINS, may be had separately, price 3*s.* 6*d.*
London: LONGMAN, GREEN, LONGMAN, & ROBERTS.

NEW AND ENLARGED EDITION OF
DR. LINDLEY'S THEORY OF HORTICULTURE.
Just Published, in 8vo, with 98 Woodcuts, price 21*s.* cloth.
THE THEORY AND PRACTICE OF HORTICULTURE; or, an Attempt to explain the chief Operations of Gardening upon Physiological Grounds: being the Second Edition of the "Theory of Horticulture," much enlarged. By JOHN LINDLEY, Ph.D., F.R.S., Corresponding Member of the Institute, Vice-Secretary of the Horticultural Society, Professor of Botany in University College, London, &c.
"The First Edition of this valuable work was issued in 1840 since which time it has had an extensive circulation, and has been translated into the German, Dutch, and even Russian languages. Being more particularly restricted to principles however, the author at length resolved to render the work more generally interesting and useful by a more frequent reference to practical operations. He has thus greatly extended the matter by supporting the physiological doctrines with an appeal to fact familiar to cultivators, or which ought to be; and the result is a still more interesting and popular compendium of the principles and practice, or the science and art, of horticulture."—*Builder.*
"This is a Second Edition of the 'Theory of Horticulture' with the addition of a large quantity of practical matter, introduced to show how entirely scientific principles and good cultivation correspond. The volume contains about four times as much matter as the first edition . . . . Although very large additions are made to every chapter, while many passages in the first edition have been wholly struck out, it may be proper to say that the greatest changes are those which relate to vitality, climate, domestication, ventilation, propagation, pruning, resting, and soils and manures; such being the subjects in which practical men are most interested. The whole work has, indeed, assumed such a form as to make it evident that the great object of the author has been, not to produce a work suited to men of science but one which every well-informed gardener may understand and apply. As the volume concludes with a very copious index of matter, there is no difficulty in ascertaining where any given subject is treated of."—*Gardeners' Chronicle.*
By the same Author,
INTRODUCTION TO BOTANY. 4th Edition greatly enlarged; with 6 Plates, and numerous Wood Engravings. Two vols. 8vo, 24*s.*
*** It has been the Author's wish to bring every subject that he has introduced down, as nearly as possible, to the state in which it is found at the present day. In doing so, he has added so very considerable a quantity of new matter, especially in what relates to Vegetable Anatomy and Physiology, that the present Edition may be considered, in those respects, a new work.
London: LONGMAN, GREEN, LONGMAN, & ROBERTS.

ZADKIEL'S ALMANACK, 1860, 84 pages, price 6*d.*
For Contents, see *Punch*, October 1. The foul abuse and vulgar wit lavished therein on ZADKIEL prove that facts and arguments against him the writers have none. The prediction of the late war, &c., gives the retort courteous to all the insolence. The Thirtieth Thousand now selling.
G. BERGER, Holywell Street, Strand, London, W.C.

Now Ready, 160 pages Crown Octavo,

THORLEY'S FARMERS' ALMANACK.

THE MOST COMPREHENSIVE & COMPLETE WORK OF THE KIND EVER PUBLISHED.

FREE BY POST FOR SIX STAMPS, UPON APPLICATION TO

JOSEPH THORLEY, Almanack Department, 77, Newgate Street, London, E.C.

INDEX.

	PAGE
Adulteration of Seeds	97
,, Barley-meal	98
,, Rape Cake	98
,, Linseed Cake	98
Agricultural Societies—	
England	102
Scotland	102
Ireland	102
Bath	102
Yorkshire	102
Smithfield Club	102
Birmingham	102
Agricul. Railway Traffic	27
Alpha & Omega of Agricul.	72
Artificial Manures	59
Arts and Manufactures	59
Bad Farming, the Rule	67
Bean Straw	20
Bedrooms, Size of	63
Brewers' Grains	68
Butcher Meat, Improved	70
Cabinet Ministers	103
Calendar (Monthly)	
Cattle Cookery	86
,, Condiment	99
Chmistry of Cattle Food	90
,, By Dr. Anderson	95
Chemistry, By Dr. Voelcker	93
Classification of Feeding Principles	51
Condiment for Seasoning Food for Live Stock	99
Corn Food	27
,, Refuse 21, 27, 33,	39
Cottage Poultry Yards	51
Country Occupations	50
Cow Houses, &c.	43
Cows, Management of, in Towns	43
Dairy Produce Improved	70
Dumpling, A Devonshire	27
Extraordinary Cow	63
Experiments, Cattle Food	100
Fairs, England and Wales	129
,, Scotland	140
,, Ireland	145
Farm, Two Acre	51
Farming Prairie, Illinois	56
,, Stock	39
,, Dairy	38
Farms, American 20,	67
Farmers' Memoranda (Monthly)	
Flax Culture	41
Forcing System of Feeding Stock 80,	90
Feeding Live Stock—	
Horses (Monthly)	
Oxen ,,	
Sheep ,,	
Pigs and Poultry ,,	
Deer and Dogs ,,	
French Poultry	33
Future of the Steam Engine	74
Grass Land Management	20
Harvest, Hay	35
,, Corn	47
,, Roots	59
Homestead	77
Horses, Management of, in Town	42
,, Management (Monthly)	
,, the Food of	44
,, Stable	39
,, Vitality of	39
,, Experiments in Feeding	
,, Old	100
,, Young	100
,, per Sea	101
Hounds, Fox	57
House Feeding	56
Italian Rye-grass Culture, 32,	57
,, ,, Soiling	33
,, ,, Cookery	35
Labourers' Cottages, English	85
,, French	21
,, Healthy	45
,, Size of Bedrooms	63
Law, Courts of	106
Linseed Cake	94
Liquid Manure Farms	35
Lois-Weedon Culture	67
Machinery, Cattle Food	77
,, Mowing	79
,, Reaping	79
,, Threshing	76
Manufacture of Cattle Food	100
,, Condiment	100
Management	50
Mechi's Rule for Sowing	62
Memoranda, Concluding	100
Merino Flock, A, U.S.	33
Mixed Feed	21
Ox, Management (Monthly)	
,, Experiments in Feeding	101
,, ,, Cows	101
,, ,, Calves	101
Parliament, Peers	107
Parliament, Peers, Officers	113
,, Address	117
,, of the United Kingdom	114
,, Scotch and Irish	117
,, Titles of Courtesy	115
,, Summary	128
,, Commons	118
,, Ministry	102
,, Summary, Commons	128
,, Analysis	128
Public Offices	104
Pigs and Poultry (Monthly)	
Pig, The	57
Pisciculture, English	26
,, French	27
Potato Culture	73
Poultry	11
Railway, Crosskill's	82
,, Boydell's	81
Royal Family	103
Seed, Change of	62
,, John Cheap Bargains	63
,, Wheat, Preparation of	62
,, ,, Pickling	62
Sewage Manure	35
Sheep Dipping	44
,, Management (Monthly)	
Shepherd, The Good	61
Singular Shot	45
Steam Engine, Fixed	75
,, Portable	74
Steam Culture, Importance	80
,, Boydell's System	81
,, Halkett's System	81
,, Romaine's System	82
,, Fowler's System	83
,, Howard & Smith's System	83
,, Comparative Merits of Different Systems	84
Steam Cartage on Common Roads	84
,, Boydell's System	84
,, Bray's System	85
Steam and Manual Labour	32
Stock Taking	63
Straw as Food for Cattle	20
Successful Settler, A	45
Taxes, Assessed, &c. 155,	156
Veterinary Science, its Importance	86
Weights and Measures, 152,	153
Winona	21
Wonderful Eggs	21
Wool	38

"This is in reality a farmer's book, not merely an Almanack—in which respect it is perfect—but a handbook and *vade mecum* of everything useful and informational that can in any way be serviceable to the Agriculturist. We question if a more valuable and strictly practical little work was ever offered to the Farmer than will be found in THORLEY'S Cheap Almanack for 1860."—*Era, Oct.* 9, 1859.

"THORLEY'S Farmers' Almanack for 1860 is exactly what its name imports, a 'Farmers' Almanack.' It will be hard to get another containing such general information on stock and agriculture."—*Bristol Times, and Felix Farley's Bristol Journal, October* 15, 1859.

Upwards of Forty Thousand have been sold within the last fortnight.—London, Oct. 22, 1859.

THORLEY'S FOOD FOR CATTLE.

In acknowledging the increasing demand for THORLEY'S Food for Cattle, Mr. THORLEY in the warmest terms begs leave to thank his customers for their kind patronage, and to assure them that every endeavour on his part will be exercised to merit a continuation of their favours. The experimental evidence which is daily being received, showing the efficacy and economy of this now justly celebrated Cattle Food Condiment, is very congratulating and encouraging, especially as it is voluntarily given along with orders for fresh supplies; for practical testimony thus given must always be received as satisfactory evidence in favour of the article—a justification, as it were, for continuing its use. The experience thus being acquired is fast establishing the condimental value of THORLEY'S Food for Cattle in every town and province of the kingdom; and the more that breeders and feeders of live stock examine the subject practically, the more thoroughly are its merits appreciated by them. "Practice with Science" is the golden motto of the Royal Agricultural Society of England, and this is just the kind of testimony now being received in favour of THORLEY'S Food for Cattle; for agriculturists and other owners of stock are, by the successful use of this condiment, beginning to experience that the value of food depends upon how it is digested. Chemically, its constituent elements may be of the highest value; but if imperfectly digested, what is its value to the animal which eats it? The testimony just referred to proves that hay and straw properly seasoned with this condiment is more nourishing than unseasoned food, although the latter may contain a much greater amount of alimentary matter; consequently the practical question arises, how many animals, including horses, oxen, sheep, pigs, poultry, and dogs, are there, whose food is imperfectly digested, because unseasoned? whose digestive and other functions are deranged by such unwholesome food—functions which might soon be restored to a healthy state by properly seasoned food? This is the grand problem, the practical solution of which is giving rise to an increased consumption of THORLEY'S Food for Cattle; and Mr. THORLEY has much pleasure in inviting special attention to it, hoping that practical men will solve this important question practically, by giving his condiment a fair trial.

Mr. THORLEY also begs leave to draw attention to the harmony which exists amongst the different examples above referred to, each corroborating the other, thus proving the soundness of his practice of seasoning the food of cattle.

Mr. JAMES BREBNER, Steward to H.R.H. the Prince Consort, states: "Through using it on my saddle-horse I have been enabled to reduce his ordinary food half a truss of hay and half a bushel of Oats per week, and can testify that he has gained very much in condition."

Mr. JAMES FISHER, Farm Manager to her Grace the Duchess of Athole, says: "I have found your Food for Cattle to answer very well."

Sir DAVID CUNYNGHAME, Bart., writes: "The cows thrive and do well upon it, and the pigs have improved already wonderfully."

Sir JOHN RIBTON, Bart., expresses his approbation thus: "Relating to Thorley's Food for Cattle, I have fed with it for the last 4 months, and never fed with more nourishing food for cattle in general."

Sir JOHN ANDREW CATHCART, Bart., states: "I have used Thorley's Food for Cattle for 3 months, both for horses and cattle, and find that it has an extraordinary effect in producing condition, and keeping them in a healthy state."

Sir JOHN HESKETH LETHBRIDGE, Bart., writes: "My old groom, on speaking to him this morning, says my horses never did better, since they have been fed upon it."

And since his Almanack for 1860 was in print Mr. THORLEY has received a note from Ormesby, in which Sir EDMUND LACON draws attention to the fact that Thorley's Food for Cattle was of great service to a pony which was very difficult to get into condition.

Again, Colonel WHITE says: "I have tried your Food with horses and pigs; in both cases I consider they have considerably improved in condition."

Colonel RAMSAY writes: "I have used Thorley's Food both for horses, cattle, and swine, in all instances with great success, and can safely recommend the use of it both for economy and fattening qualities."

Lieut.-Colonel MACDONALD states, in 1857: "I would be unjust if I withheld my testimony to its beneficial effects, which are most apparent in the improved condition of the horses." And in 1859: "As an instance of its efficacy I may mention that having had occasion during the autumn (1858) to hire a horse for three months, his owner said to my servant when he was returned, 'He is so much improved that I would not have known him.'"

GODFREY MEYNELL, Esq., in writing from Langley, says: "I shall be glad if you will forward to me at the above address another cask of your Cattle Food, with measure, as a tenant of mine is anxious to make a trial of it. From what I have seen of its effect upon two milch cows of my own that slipped their calves some time since, I am inclined to speak favourably of your Food."

Captain the Hon. HUGH GOUGH writes: "I have tried Thorley's Food for Cattle, and gave two feeds per day to an aged horse, which I found it impossible to get in condition otherwise, and in six weeks he became very fat, and entirely beyond anything I could conceive.'

ALEXANDER HENDERSON, Esq., the younger, of Stemster, Caithness, says: "I have used Thorley's Food with great advantage, in one case where a half-bred mare would not feed."

"COURTENAY VERNON, Esq., would feel obliged to Mr. Thorley if, on the 15th of November, he would forward him three casks, to be continued monthly from that date until further notice, Mr. Vernon having found the Food so useful and beneficial for all kinds of stock."

Captain LOCKYER, R.N., adds: "I have found it most excellent and economical."

W. WINTERTON, Esq., says: "The heifer that I gave some of your Food to has taken three prizes."

J. M. BROWNE, Esq., concludes thus: "I beg to inform you that I have three hunters now in better condition than I ever had in any previous season at this time, which I attribute to your Food."

S. H. WATSON, Esq., states that, "By using it I have been able to dispense with all horse medicines and clipping, my horses being now beautifully coated."

EDWARD M'GOWAN, Esq., says: "It gives to horses and pigs a bright fresh skin, and a much improved appearance: working horses it keeps in excellent condition and fresh; in feeding bullocks, it is manifestly of great utility, developing fat in much less time than in feeding on Turnip and cake alone."

WILLIAM PATRICKSON, Esq., writes: "I find my horses thrive well on it and like it much."

JOHN HODGE, Esq., states: "It strengthens and fattens better than anything which I have used hitherto.'

CHARLES INGRAM, Esq., says: "I have used it for a considerable time, and especially for one of my horses, which is of such a nervous and irritable temperament that he used to get frequent attacks of spasmodic colic or fret; since I have given him this Food (three months), he has never suffered from it. I believe, with Professor Apjohn, it operates by sharpening the appetite, and promotes healthy digestion and rapid assimilation, rendering it of great advantage to the owners of cattle; and I give Mr. Thorley great credit for having effected so desirable an object, and so great a boon to the public."

The Rev. C. B. ELLIS, Tobago, West Indies, says: "One horse particularly—a cribber—has improved much from its use; and from its effects upon him and others I am convinced it has an admirable tonic in its composition, and is well adapted for improving the condition and appearance of all horses fed with it. I have ordered more to come in the next year's supplies, being satisfied as to its economy."

B. HAIGH ALLEN, Esq., has used it with his yearling calves pigs, and horses; in all cases it has answered

W. H. GOGARTY, Esq., says: "I have used Thorley's Food for Cattle, and find it very superior in keeping horses in good condition, and fattening all kinds of cattle."

R. CLOAK, Esq., says: "Before I had this food introduced to my notice I was allowing my horses half a bushel of Oats daily; I now reduce the Oats 1 gallon, and substitute one packet of the Food, and my horses are, most certainly, in better condition than previously. Not satisfied with this, I determined to give it to my pigs and poultry, and after several severe comparisons between those fed with it and otherwise, I am most decidedly of opinion that it is a most excellent food."

WM. LINDSEY, Esq., says: "I have used your Food for Cattle some two years upon horses, cows, and pigs, against other kinds of food, and find it to be far superior, at a less cost. I think well to state that, during the time I gave it to pigs I had a poor dog who got so fat by eating out of the pigs' food, that he really astonished all who saw him. I have, at various times, discontinued the Food, and find that the dog is reduced to his former state. My fowls are equally as fond of the Food as the dog, and the result is the same."

J. NEWBERRY, Esq., says: "On one occasion I gave it to a cow after it had been under the farrier for a length of time without any effect. I gave your Food, as per your instructions, and found the effect was astonishing. I also tried it upon a remarkably poor horse, after many other means had failed. I am satisfied he gained 10*l.* in value in the course of six or eight weeks from the use of your Food."

Sold in cases containing 448 packages, each package one feed, at the cost of 56*s.* per case; also in casks, containing 448 feeds, with measure included, price 50*s.* per cask. Carriage paid to any Railway Station in the United Kingdom. None are genuine without the signature being affixed to each package or feed—

JOSEPH THORLEY, Inventor and Sole Proprietor.—Offices: 77, Newgate Street, London, E.C.

Post-office Orders must be made payable to JOSEPH THORLEY, General Post Office, St. Martin's-le-Grand, E.C.

☞ *The public are cautioned against being imposed upon by worthless imitations.*

THE QUARTERLY REVIEW, No. CCXII., is published this day.

CONTENTS:—

I. ARCHITECTURE OF ALL COUNTRIES.
II. PROGRESS OF NEW ZEALAND.
III. GEOGRAPHY AND BIOGRAPHY OF THE BIBLE.
IV. STRIKES, AND THEIR EFFECT ON THE WORKING CLASSES.
V. THE ORDER OF NATURE—BADEN POWELL.
VI. FARM WEEDS.
VII. TENNYSON'S POEMS.
VIII. ORCHARD HOUSES.
IX. THE THREE BILLS OF PARLIAMENTARY REFORM.

JOHN MURRAY, Albemarle Street, W.

HOLCUS SACCHARATUS (Pamphlet).

"A VISIT AND A PLANT." A few copies only are left. Post free, 7*d*.

JOHN WILLDING CLARKE. Whittlesea, Cambs.

CUTHILL'S PAMPHLET on the Potato, Strawberry, Cucumber, Seakale, and 20 more things, 2*s*.; Market Gardening Round London, 1*s*. 6*d*.; on the Vine, 1*s*.; Thirty Years' Practice of Mushroom Growing: an Easy Plan for Killing Woodlice, 1*s*. 1*d*.; "Vegetable Meeting Paper" gratis.

JAMES CUTHILL, Camberwell, London, S.

ROSE CULTURE.

THE ROSE AMATEUR'S GUIDE.—Sixth Edition, enlarged and improved, giving Directions for the Culture of Roses in the open air and in pots. By THOMAS RIVERS. Price 3*s*. 6*d*.

LONGMAN & Co., or per post from the Author, Sawbridgeworth.

The DESCRIPTIVE CATALOGUE OF ROSES FOR 1859-60. By THOMAS RIVERS. Gratis or per post free from the Author, Sawbridgeworth, Herts.

IMPROVED FRUIT TREE CULTURE.

Just published, enlarged and improved, the Sixth Edition of the ORCHARD HOUSE, OR THE CULTIVATION OF FRUIT TREES UNDER GLASS. By THOMAS RIVERS. 3*s*.

LONGMAN & Co., or per post from the Author.

THE MINIATURE FRUIT GARDEN. By THOMAS RIVERS, giving the Culture of Fruit Trees adapted for Suburban Gardens. Eighth Edition. 2*s*. 6*d*.

LONGMAN & Co., or per post from the Author.

A DESCRIPTIVE CATALOGUE OF FRUITS FOR 1859. By THOMAS RIVERS. 6*d*.

LONGMAN & Co., or per post from the Author, Sawbridgeworth, Herts.

On the 1st of November will be published, price 5*s*.,

THE ROSE ANNUAL FOR 1859-60. With four Coloured Plates of New Roses. By WILLIAM PAUL, F.H.S., author of "The Rose Garden," &c.

*** A few copies of THE ROSE ANNUAL FOR 1858-9 are still on hand, price 5*s*.

Works by the same Author,

THE ROSE GARDEN. Price 1*l*. 1*s*., with 15 Coloured Plates and numerous Wood Engravings.

SUPPLEMENT TO THE ROSE GARDEN. With four additional Plates, 5*s*.

OBSERVATIONS ON THE CULTIVATION OF ROSES in POTS. Second Edition, price 1*s*. 6*d*.

MORNING RAMBLES IN THE ROSE GARDENS OF HERTFORDSHIRE. Price 1*s*.

AN HOUR WITH THE HOLLYHOCK. Second Edition, price 1*s*.

THE HAND-BOOK OF VILLA GARDENING. Price 2*s*. 6*d*.

AMERICAN PLANTS, THEIR HISTORY AND CULTURE. Price 2*s*. 6*d*.

London: PIPER, STEPHENSON, & SPENCE, 23, Paternoster Row; or post free from the Author, Cheshunt Nurseries, Waltham Cross, Herts, N.

Third Edition, considerably enlarged, price 5*s*. 6*d*., free by post, 5*s*. 10*d*.,

RURAL CHEMISTRY.

By EDWARD SOLLY, F.R.S., F.L.S., F.G.S.

Honorary Member of the Royal Agricultural Society of England, Professor of Chemistry to the Horticultural Society of London, Lecturer on Chemistry in the Hon. E. I. Co.'s Military Seminary at Addiscombe, &c., &c.

J. MATTHEWS, 5, Upper Wellington St., Covent Garden, W.C.

This day is published, price 2*s*. 6*d*.,

FOLIA ORCHIDACEA, Part IX. Containing the conclusion of Pleurothallis.

Parts I. to VIII., price 2*s*. 6*d*. each, may still be had.

JAMES MATTHEWS, 5, Upper Wellington St., Covent Garden. London, W.C.

GLENNY'S GARDENERS' GAZETTE.—A Monthly Journal, 16 pp. imperial 8vo, price 3*d*., post free, 4*d*., contains useful information for all interested in the Garden.

JAMES ALLEN, Warwick Lane, E. C.; KENNETT, York Street, Covent Garden, W.C.; and at all the railway stations and respectable booksellers.

Advertisements should be sent to the Printers, YATES & ALEXANDER, Horse-shoe Court, Ludgate Hill, E.C.

TWENTY-THIRD YEAR OF PUBLICATION.

Will be ready, November 1, price 1*s*.,

GLENNY'S GARDEN ALMANACK AND FLORISTS' DIRECTORY FOR 1860; containing the Management of all the popular Flowers, and of an Amateur's Garden during the year; New Plants, Flowers, &c., to come out in the Spring, and other useful information.

London: W. KENT & Co., Paternoster Row, E C.

On November 21 will be published, in crown 8vo, price 1*s*.,

THE GARDENERS' YEAR BOOK, ALMANACK, AND DIRECTORY FOR 1860. By ROBERT HOGG, Vice-President of the British Promological Society, and Co-Editor of the Cottage Gardener.

This work will contain, besides the information usually found in Almanacks, a complete Gardeners' Calendar for every month in the year—Notices of and remarks upon all New Plants, Flowers, Fruits, and Vegetables, introduced during the year—Select Lists of the best varieties in cultivation, and a complete Directory of the Nurserymen, Seedsmen, and Florists in Great Britain, Ireland, the Continent, and America.

To NURSERYMEN, SEEDSMEN, FLORISTS, HORTICULTURAL BUILDERS, AND MECHANICIANS.—Advertisements for the above will be received up to November 5. Terms:—One page, 40*s*.; half page, 25*s*.; and a quarter of a page, 15*s*.

London: Cottage Gardener Office, 162, Fleet Street, E.C.

FERNS.—Gratis and Post Free.—A CATALOGUE OF BOOKS ON FERNS, New and Second-hand.

London: WILLIAM PAMPLIN, 45, Frith Street, Soho Square, W.

Just published, Part IX., or Vol. III., Part I., price 10*s*.,

SPECIES FILICUM; being DESCRIPTIONS of ALL KNOWN FERNS. Illustrated with Plates. By Sir WILLIAM JACKSON HOOKER, K.H., D.C.L. Oxon., F.R.S., F.A.S., F.L.S., &c., and Director of the Royal Gardens of Kew.

London: WILLIAM PAMPLIN, 45, Frith Street, Soho Square, W.

Just published, Part VI., price 1*s*.,

INDEX FILICUM: a Synopsis, with Characters of the Genera, and an enumeration of the Species of Ferns with Synonyms, References, &c., &c. By THOMAS MOORE, F.L.S., F.H.S., &c., Curator of the Chelsea Botanic Garden.

London: WILLIAM PAMPLIN, 45, Frith Street, Soho Square, W.

Just published, Parts I. and II., price 5*s*. each,

ENUMERATIO PLANTARUM ZEYLANIÆ: an Enumeration of Ceylon Plants, with Descriptions, Uses, Native Names, &c. By G. H. K. THWAITES, F.L.S., Superintendent of the Royal Botanic Garden, Peradenia, Ceylon; Assisted in the Identification of the Species and Synonymy by J. D. HOOKER, M.D., V.P.R.S., F.L.S., and G.S., &c.

London: WILLIAM PAMPLIN, 45, Frith Street, Soho Square, W.

WORKS ON BOTANY. BY DR. LINDLEY.

THE VEGETABLE KINGDOM; OR, THE STRUCTURE, CLASSIFICATION, AND USES OF PLANTS. Illustrated upon the Natural System. In One Volume, 8vo, cloth, price 36*s*., with upwards of 500 Illustrations.

THE ELEMENTS OF BOTANY, Structural and Physiological. With a Glossary of Technical Terms. In One Volume, 8vo, cloth, with numerous Illustrations, price 12*s*.

*** The Glossary may be had separately, price 5*s*. cloth.

MEDICAL AND ŒCONOMICAL BOTANY. With numerous Illustrations. A New Edition, in One Volume, 8vo, cloth, price 7*s*. 6*d*.

SCHOOL BOTANY; OR, THE RUDIMENTS OF BOTANICAL SCIENCE. In One Volume, 8vo, half-bound, with 400 Illustrations, price 5*s*. 6*d*.

DESCRIPTIVE BOTANY; OR, THE ART OF DESCRIBING PLANTS correctly, in Scientific Language, for Self-Instruction and the Use of Schools. Price 1*s*.

BRADBURY & EVANS, 11, Bouverie Street.

TO TUTORS, SURGEONS, THE HEADS OF SCHOOLS, &c.—The above can be supplied with Collections for practically Illustrating the Natural Orders, also Physiological and Medical Botany, by FREDK. Y. BROCAS, who has been eight years in the medical profession, and has attended the Lectures of Professors Lindley, Lankester, Henirey, and Forbes, and the Botanic Gardens in the vicinity of the Metropolis. Collections named, arranged, and mounted, and desiderata supplied by FREDK. Y. BROCAS, Botanist, 85, St. Martin's Lane, London, W.C.

BUILDING AND DRAINING.—Noblemen and gentlemen who contemplate Building or Draining, and who are desirous of making Bricks and Tiles upon their own Estates, can have their Clays practically tested, the necessary arrangements for Manufacture made, and if wished the Manufacture undertaken, by a Member of a Firm extensively engaged in the Manufacture of Bricks and Tiles of every description.—Apply, TERRA COTTA, Wood's Hotel, Furnival's Inn, E.C.

HOW TO BREW SPLENDID STRONG ALE, at 7*d*. per Gallon, fine as Sherry, and an aroma equal to Burton Tenpenny. This new Practical Treatise is by a Derbyshire man of 28 years' attendance at the spigot and tun in the best brewery in the county. No brewing utensils required, only those for household use. This is guaranteed to be the best and cheapest mode to produce fine Ale ever made public. The above beautifully printed in large type can be had of the sole publishers for 12 Penny Post stamps. Sent post free to any address. Direct to FISHER & SON, Publishers, Kingsland, London, N.E. Established 1847.

NOTICE.—Just appended to this universally prized Book, all the methods to make the improved Ærated Unfermented Ginger Beer, Soda Water, Lemonade, all the Cordials and Nectars, together with the Penny French Ices, the Delightful Summer Cooling Beverages, and all the French, American, and English cheap fruit drinks.

MICROSCOPES.

JOSEPH AMADIO'S Improved Compound MICROSCOPE, 2*l*. 2*s*.; Students', 3*l*. 13*s*. 6*d*.

"Both these are from Amadio, of Throgmorton Street, and are excellent of their kind, the more expensive one especially."—*Household Words*, No. 345.

A large Assortment of Achromatic Microscopes.

Just published, 2d ed., an Illustrated Catalogue, with the names of 1500 Microscopic objects, free for 6 stamps.

ALLEN'S PATENT PORTMANTEAUS AND TRAVELLING BAGS, with SQUARE OPENING; Ladies' Dress Trunks, Dressing Bags, with Silver Fittings; Despatch Boxes, Writing and Dressing Cases, and 500 other articles for Home or Continental Travelling, illustrated in their New Catalogue for 1859. By post for two stamps. J. W. & T. ALLEN, Manufacturers of Officers' Barrack Furniture and Military Outfitters (see separate Catalogue), 18 & 22, Strand, W.C.

EPPS'S HOMŒOPATHIC COCOA.—Produced, in 1839, specially for the use of Homœopathic Patients, to provide them with a beverage highly nutritious and free from those effects of Coffee and Tea which to many persons are pernicious. Rendered attractive to the taste by its delicious aroma and grateful smoothness, it has become adopted by the public generally for breakfast, luncheon, and supper. It is sold by the principal Grocers at 1*s*. 6*d*. per lb., in 1 lb., ½ lb., and ¼ lb. packets. Each packet is labelled, "JAMES EPPS, Homœopathic Chemist, London."

PERFECT FREEDOM FROM COUGHS is secured by Dr. LOCOCK'S PULMONIC WAFERS. To singers and public speakers they are invaluable for clearing and strengthening the voice. They have a pleasant taste. Price 1*s*. 1½*d*., 2*s*. 9*d*. and 11*s*. per box. Sold by all medicine vendors.

FENDERS, STOVES, FIRE-IRONS, AND CHIMNEY PIECES.—Buyers of the above are requested, before finally deciding, to visit WILLIAM S. BURTON'S SHOW ROOMS. They contain such an assortment of FENDERS, STOVES, RANGES, CHIMNEY PIECES, FIRE-IRONS, and GENERAL IRONMONGERY as cannot be approached elsewhere, either for variety, novelty, beauty of design, or exquisiteness of workmanship. Bright Stoves, with ormolu ornaments and two sets of bars, 3*l*. 15*s*. to 38*l*. 10*s*.; Bronzed Fenders, with standards, 7*s*. to 5*l*. 12*s*.; Steel Fenders, 2*l*. 15*s*. to 11*l*.; ditto, with rich ormolu ornaments, 2*l*. 15*s*. to 18*l*.; Chimney Pieces, from 1*l*. 8*s*. to 80*l*.; Fire-Irons, from 2*s*. 3*d*. the set to 4*l*. 4*s*. The BURTON and all other PATENT STOVES, with radiating hearth-plates.

BEDSTEADS, BATHS, AND LAMPS.—WILLIAM S. BURTON has SIX LARGE SHOW ROOMS devoted exclusively to the SEPARATE DISPLAY of Lamps, Baths, and Metallic Bedsteads. The stock of each is at once the largest, newest, and most varied ever submitted to the public, and marked at prices proportionate with those that have tended to make his establishment the most distinguished in this country.

Bedsteads, from	.. .. ..	12*s*. 6*d*. to £20	0*s*. each.
Shower Baths, from	.. ..	8 0 ,, 6 0	,,
Lamps (Moderateur), from	..	6 0 ,, 7 7	,,

(All other kinds at the same rate.)

Pure Colza Oil .. .. 4*s*. 0*d*. per gallon.

DISH COVERS AND HOT-WATER DISHES.—In every material, in great variety, and of the newest and most recherché patterns. Tin Dish Covers, 7*s*. 6*d*. the set of six; Block Tin, 12*s*. 3*d*. to 27*s*. 0*d*. the set of six; elegant modern patterns, 35*s*. 6*d*. to 62*s*. 6*d*. the set; Britannia Metal, with or without silver-plated handles, 3*l*. 11*s*. 0*d*. to 6*l*. 8*s*. 0*d*. the set; Sheffield plated, 10*l*. to 16*l*. 10*s*. the set; Block-tin Hot-water Dishes, with wells for gravy, 12*s*. to 30*s*.; Britannia Metal, 22*s*. to 77*s*.; Electro-plated on Nickel, full size, 11*l*. 11*s*.

WILLIAM S. BURTON'S GENERAL FURNISHING IRONMONGERY CATALOGUE may be had gratis, and free by post. It contains upwards of 400 Illustrations of his illimited Stock of Electro and Sheffield Plate, Nickel Silver and Britannia Metal goods, Dish Covers and Hot-water Dishes, Stoves, Fenders, Marble Chimney-pieces, Kitchen Ranges, Lamps, Gaseliers, Tea Urns and Kettles, Tea Trays, Clocks, Table Cutlery, Baths and Toilet Ware, Turnery, Iron and Brass Bedsteads, Bedding, Bedroom Furniture, &c., with Lists of Prices and Plans of the 16 large Show Rooms at 39, Oxford Street, W.; 1, 1*a*, 2, and 3, Newman Street, W.; and 4, 5, and 6, Perry's Place, W., London.—Established 1820.

Every Saturday, price Fourpence, or Stamped Fivepence,

NOTES AND QUERIES:

A MEDIUM OF INTERCOMMUNICATION FOR LITERARY MEN, ARTISTS, ANTIQUARIES, GENEALOGISTS, PHOTOGRAPHERS, &c.

NOTES AND QUERIES will, it is believed, be found to bring before the general reader every week a vast amount of curious and interesting information. It was established for the purpose of furnishing to all lovers of Literature a Commonplace Book, in which they might, on the one hand, record for their own use and the use of others those minute facts—those elucidations of a doubtful phrase or disputed passage—those illustrations of an obsolete custom—those scattered biographical anecdotes or unrecorded dates—which all who read occasionally stumble upon; and, on the other, of supplying a medium through which they might address those Queries, by which the best informed are sometimes arrested in the midst of their labours, in the hope of receiving solutions of them from some of their number. The success which has attended this endeavour to supply a want long felt by literary men, is rendered manifest by the necessity of permanently enlarging the Paper from 16 to 24 pages. For opinions of *The Quarterly Review, Athenæum, Examiner, Literary Gazette, Spectator, Dublin Review*, &c., as to the utility, &c., of NOTES AND QUERIES, see Prospectus.

A SPECIMEN NUMBER sent on receipt of five postage stamps.

NOTES AND QUERIES is also issued in Monthly Parts, for the convenience of those who may either have a difficulty in procuring the unstamped Weekly Numbers, or may prefer receiving it monthly. Each Part contains Papers by some of our most distinguished Writers. Those already issued contain articles by—

Lord Braybrooke	Professor De Morgan	Rev. J. Hunter	J. E. B. Mayor, Esq.	Earl of Shaftesbury
John Britton, Esq.	Dr. Diamond	Samuel Hickson, Esq.	Lord Monson [M.P.	W. J. Thoms, Esq.
John Bruce, Esq.	Hepworth Dixon, Esq.	Douglas Jerrold, Esq.	R. Monck. Milnes, Esq.,	B. Thorpe, Esq.
J. Burtt, Esq.	Sir Fortunatus Dwarris	Rev. Dr. Kennedy	George Ormerod, Esq.	Rev. J. H. Todd, D.D.
W. D. Christie, Esq.	Sir Henry Ellis	R. J. King, Esq.	J. R. Planché, Esq.	Sir W. C. Trevelyan, Bt.
J. P. Collier, Esq.	C. Forbes, Esq.	Rev. L. B. Larking	E. F. Rimbault, Esq.	T. H. Turner, Esq.
W. D. Cooper, Esq.	E. Foss, Esq.	Marc Antony Lower, Esq.	Rev. Dr. Rock	Rev. Henry Walter
Bolton Corney, Esq.	Rev. A. Gatty	W. B. MacCabe, Esq.	S. W. Singer, Esq.	Albert Way, Esq.
P. Cunningham, Esq.	Henry Hallam, Esq.	Rev. S. R. Maitland, D.D.	E. Smirke, Esq.	Benj. B. Wiffen, Bart.
Rev. T. Corser	J. O. Halliwell, Esq.	Sir F. Madden	George Stephens, Esq.	W. Yarrell, Esq.,
Dr. Dalton	E. Hawkins, Esq.	J. H. Markland, Esq.	H. E. Strickland, Esq.	&c. &c. &c.

NOTES AND QUERIES is also published in Half-yearly Volumes, each with very Copious Index, price 10*s*. 6*d*. cloth boards. Of these Nine have been published; and a few Complete Sets, price 4*l*. 14*s*. 6*d*., may still be had.

The following List of Subjects treated upon will show that these Volumes are not merely of temporary interest, but of lasting value for reference:—

Literary History	Illustrations of Chaucer and Early English Literature	Writings of English and Continental Reformers	Anglo-Saxon Literature
Bibliography	Glossarial Notes	History of London and its Neighbourhood	Fine Arts
Biographical Illustrations	Notes on Hallam, Macaulay, &c.	Ballads and Old Poetry	Natural History
Popular Manners and Customs	Genealogy and Heraldry	Remarkable Events in English, Scotch, and Irish History	Photography, especially in its Relation to Archæology, &c. &c. &c.
Origin of Proverbial Sayings	Miscellaneous Antiquities		
Folk-Lore	Ecclesiastical History		
Illustrations of Shakspeare			

"As a mass of curious, out-of-the way information upon almost every matter that may be supposed to be of interest to educated minds, a Volume of NOTES AND QUERIES is of itself a curiosity, and quite an out-of-the-way treasure. Wholly apart from its very great value as an aid to the literary labourer who works upon unhacknied material—a point so well recognised that it need not be urged—we would suggest that the reader for amusement scarcely could take up a miscellany that contains more anecdote and quaint accounts of odd things new to his mind, than a Volume of NOTES AND QUERIES.... It may lead to the formation of some notion on the point if we state that the Index to the Fifth Volume contains not many less than three thousand five hundred references to subjects upon which there is information given in its pages."—*Examiner.*

GEORGE BELL, No. 186, FLEET STREET; AND BY ORDER OF ALL BOOKSELLERS AND NEWSMEN.

GLENFIELD PATENT STARCH, used in the Royal Laundry, and pronounced by Her Majesty's Laundress to be the finest Starch she ever used. When you ask for Glenfield Patent Starch, see that you get it, as inferior kinds are often substituted. Sold by all Chandlers, Grocers, &c.
Wotherspoon & Co., Glasgow and London.

PRIZE MEDAL, PARIS EXHIBITION 1855.
METCALFE, BINGLEY, AND CO.'S New Pattern and Penetrating Tooth Brushes, Penetrating unbleached Hair Brushes, Improved Flesh and Clothes Brushes, and genuine Smyrna Sponges; and every description of Brush, Comb, and Perfumery for the Toilet. The Tooth Brushes search thoroughly between the divisions of the Teeth and clean them most effectually—the hairs never come loose. M., B., and Co. are sole makers of the Oatmeal and Camphor and Orris Root Soaps—sold in Tablets (bearing their names and address) at 6d. each; of Metcalfe's celebrated Alkaline Tooth Powder, 2s. per box; and of the New Bouquets.—Sole Establishment, 130b and 131, Oxford St. 2d and 3d doors west from Holles St., London, W.

FINE HEAD OF HAIR.
THE BEARD, WHISKERS, AND MOUSTACHIOS.
ROWLANDS' MACASSAR OIL is universally in high repute as the most successful article ever known in the growth, restoration, and in improving and beautifying the human hair, proved beyond question by its unprecedented results for more than half a century past, and when every other specific has failed. It prevents it from falling off or turning grey, strengthens weak hair, cleanses it from scurf and dandriff, and makes it beautifully soft, curly, and glossy. For children it is especially recommended, as forming the basis of a beautiful head of hair. Its invaluable properties have obtained the patronage of Royalty and the aristocracy throughout Europe; while its introduction into the nursery of Royalty, and the high esteem in which it is universally held, with numerous testimonials constantly received of its efficacy, afford the best and surest proofs of its merits. Price 3s. 6d. and 7s.; family bottles (equal to four small), 10s. 6d.; and double that size, 21s.—Caution: on the wrapper of each bottle are the words, Rowlands' Macassar Oil, &c., in white letters; and their signature, "A. Rowland & Sons," in red ink.—Sold at 20, Hatton Garden, London, E.C.; and by Chemists and Perfumers.

DR. DE JONGH'S
(Knight of the Order of Leopold of Belgium)
LIGHT-BROWN COD LIVER OIL,
administered with the greatest success in cases of
Consumption, Bronchitis, Coughs, Rheumatism, Gout, Neuralgia, General Debility, Diseases of the Skin, Rickets, Infantile Wasting, and all Scrofulous Affections,
is the most efficacious, the most palatable, and, from its rapid curative effects, unquestionably the most economical of all kinds. Its immeasurable therapeutic superiority over every other variety is attested by innumerable spontaneous testimonials from Physicians and Surgeons of European reputation.

Opinion of W. MURDOCH, Esq., M.D., M.R.C.S., *Medical Officer of Health, St. Mary, Rotherhithe, &c. &c.*
"I entertain a high opinion of Dr. de Jongh's valuable Oil, the results of my practice being much more satisfactory since I have administered it, than when I used the preparation of Pale Oil usually sold by the druggists. I never could get two samples of them alike, whereas Dr. de Jongh's Oil is always the same in taste, colour, and other properties. My own opinion is, that it is the best Oil sold."

Sold only in imperial half pints, 2s. 6d.; pints, 4s. 9d.; quarts, 9s., capsuled, and labelled with Dr. de Jongh's stamp and signature, without which none can possibly be genuine.
Sole Agents:
ANSAR, HARFORD, & CO., 77, Strand, London, W.C.

HEALTH WITHOUT PHYSIC.—Nervousness cured by a novel and successful mode of treatment, discovered in America. The most convincing proof of the efficacy of this wonderful remedy, with other details, will be sent to any address on receipt of one stamp.—Address, Mr. Hill, 27, Alfred Place, Bedford Square, London, W.C.

HOLLOWAY'S PILLS AND OINTMENT.—LIVER AND STOMACH COMPLAINTS.—In the present day our large cities teem with these distressing disorders, which display themselves in the sallowness of the complexion, the offensive breath, the flatulency, and debility always accompanying diseases of the liver and stomach. After eating the food ferments, and instead of nourishing the body only forms foul gases, which render the blood impure and throws mind and body out of order. Holloway's Pills and Ointment soon remedy these disasters, speedily setting liver and stomach in order, They act as powerful alteratives, purge gently, and at the same time regulate the digestion, and purify the secretions. Thus these remedies not only remove the present malady, but cleanse the whole body.

EMEUS.—Daily expected from Australia, THREE beautiful EMEUS. Parties disposed to purchase such are requested to communicate by letter with S. T., care of Messrs. Algar and Street, 11, Clement's Lane, E.C.

TO PIG, POULTRY, AND GAME FEEDERS.
JUPP'S RICE FOOD, POULTRY AND GAME.—RICE SWEEPINGS, 7s. 6d. per cwt., in 1¼ cwt. bags; SCREENED RICE, 10s. per cwt., in 1¾ cwt. bags; DOG BISCUITS, 14s. per cwt.; OIL-CAKE, per ton only; RICE MEAL for PIGS, 6s. and 8s. per cwt., in 1 cwt. bags, at the mill. Orders must be accompanied by a remittance to insure delivery.—W. & R. Jupp, 6, Cross Lane, Eastcheap, E.C.

GREENHOUSES, CONSERVATORY, &c., for Sale. A large Stock, Glazed, ready for Fixing, at Henry Freeman's, Hothouse Builder, Triangle, Hackney, N.E.

A 3-LIGHT BRICK PIT, heated with 6-inch drain Pipe Light, 9 feet by 4; a 3-Light BOX, and 2-Light BOX to be sold cheap.—Apply to Mr. Thurley, High Hill Ferry, Upper Clapton, N.E.

NURSERY GROUND.
TO BE LET, WHITTINGTON NURSERY, Upper Holloway, to be entered upon immediately.—For particulars, apply to J. F. Marson, Esq., Small Pox Hospital, or to Mr. Bunney, Nurseryman, Stratford, Essex, E.

TO NURSERYMEN, FLORISTS, AND OTHERS.
TO BE DISPOSED OF, a First-Class LONDON NURSERY, long Lease and Good Will, the Vendor having been in occupation for 16 years. Extensive frontage, stands well for business, Omnibuses to all parts of London. There are 12 Greenhouses, besides Pits, &c., part heated by Hot Water, and adapted to the Propagation and Culture of Hardwooded and Miscellaneous Plants. The usual Ground Stock includes American Plants, choice young Fruit Trees, &c., in fine condition. Good Residence, Seed Shop, and Offices separate; two Stall Stable, Cart and Packing Sheds, front and back entrance, and every convenience to carry on a large business.—Apply to Messrs. Brooks & Beal, Estate Agents and Auctioneers, 209, Piccadilly, W.

TO NURSERYMEN, GARDENERS, AND OTHERS.
TO BE DISPOSED OF, a SMALL NURSERY, about 2 acres, in the neighbourhood of London, with Houses and Pits well stocked with Plants and Shrubs, and a good Jobbing Business.—Apply to Mr. A. Chandler, Horticultural Agent and Valuer, 20, Priory Road, Wandsworth Road, S.

A FRUITERER AND GREENGROCER'S BUSINESS TO BE DISPOSED OF, doing a good family trade; very suitable for any one who has a knowledge of Gardening, as there is a small Seed Business and Jobbing Gardening established capable of great improvement, in a good and rapidly increasing neighbourhood.—Apply to G. Wilkinson, 25, St. Paul's Road, Highbury, Islington, N.

TO NURSERYMEN, GARDENERS, AND OTHERS.
TO BE LET, with immediate possession, and the Stock taken at a valuation, 4 Acres of NURSERY GROUND, well stocked with choice Trees and Shrubs, &c.; also 3 Acres of MARKET GARDEN well stocked with Vegetables, including 25 large Asparagus Beds, &c. &c. There is also a large Greenhouse stocked with Plants, one 11-light Pit, Frames, Potting Sheds, &c &c. The above is in first-rate working order, with a good connection amongst the nobility and gentry, and is situate within a short distance of railways to the principal market towns in the country.—Further particulars may be had by applying to W. Tomlinson & Son, Auctioneers, Valuers, and Agents, East Retford, Notts.

DESIRABLE FARM.
TO BE LET, as one Farm, the two adjoining FARMS of ROBGILL MAINS and BROADLEA, in the South of Dumfriesshire, with entry to Robgill Mains at Candlemas first as to the Arable Lands, and Whitsunday first as to the Houses and Grass; and to Broadlea at Candlemas, 1861, as to the Arable Lands, and Whitsunday in the same year as to the Houses and Grass. Robgill Mains consists of 119 imperial acres or thereby. It has been in the proprietor's possession for six years, and the land is of good quality and in very good order. It is tile-drained, and laid with under-ground pipes for irrigation with liquid and liquefied manure. The steading upon it is new, and is centrally situated for the two Farms as one, is supplied with water brought into it, and is constructed for House-feeding both Sheep and Cattle, the houses being upon the most approved principle. There is a Steam Engine, a Force Pump, Threshing Mill, and Saw Table on the premises, as well as Chaff Cutters, Oat Bruisers, Steaming Apparatus, &c. Broadlea consists of 213 imperial acres or thereby. The land is of good quality, and is capable of great improvement. The proprietor will be prepared to agree to drain it also. Both are situated close upon the Caledonian Railway, and between the Kirtle Bridge and Kirkpatrick Stations on that line, being about 2½ miles from each, and about 4 miles from Ecclefechan, and 5 from the market town and port of Annan, where there is a Station of the Glasgow and South-Western Railway, and from which there is a Steam Boat twice a week to Liverpool. The access to and from markets and the Farm is thus very convenient.—Further particulars may be obtained from Mr. David Ewart, Royal Bank, Ecclefechan; and the boundaries will be pointed out, and other information given upon the premises, by Mr. Scott, the Overseer.

Sales by Auction.

ANNUAL SALE OF
FIFTY EXMOOR PONIES, COBS, AND GALLOWAYS.
MESSRS. ELLIS AND SON have again the honour to announce that they will Sell by Auction, for Mr. Smith, Emmett's Grange (Agent to F. W. Knight, Esq., M.P.), at Bampton Fair, on THURSDAY, October 27, at noon, FIFTY EXMOOR PONIES, COBS, AND GALLOWAYS, which will be on view at Mr. Trapnel's Farm, Bampton, on Wednesday afternoon and until the time of sale. The Animals forming this year's Sale consist of 10 beautiful Ponies, ready broken; 10 first-class Cobs and Galloways, ready broken; 20 Ponies direct from the Hills; and 10 superb Cob and Galloway Colts. Catalogues of their age, height, and pedigrees are prepared, and may be had of Mr. Smith, or of the Auctioneers, Duvale Barton. All Animals that have been broken in will be warranted. Bampton is 8 miles from the Tiverton Station. Conveyances will run to and from to suit the Trains.—Duvale Barton, Bampton, Devon, Oct. 22.

MONTHLY POULTRY SALE.
MR. J. C. STEVENS will Sell by Auction at his Great Room, 38, King Street, Covent Garden, on TUESDAY, November 1, at 12 o'clock precisely, a choice collection of POULTRY and PIGEONS, consisting of Cochins, Dorkings, Spanish, Brahmas, Bantams, Game, Game Bantams, Silver Pencilled Hamburghs, Aylesbury and Muscovy Ducks, &c., from the yards of the Rev. G. Gilbert, Messrs. Craigie, Rider, Andrews, and other first-rate breeders, and a choice lot of Pigeons from Major Hassard, Messrs. Jones, Woodhouse, and other well known Fanciers.—May be viewed on the morning of Sale, and Catalogues had of Mr. J. C. Stevens, 38, King Street, Covent Garden; if for the country by enclosing two stamps.

CAMELLIAS, AZALEAS, AND OTHER PLANTS FROM GHENT.
MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on TUESDAY, October 25, at half-past 12 o'Clock precisely, 300 choice CAMELLIAS, well set with flower buds; 300 DWARF INDIAN AZALEAS; 200 strong LILIUM LANCIFOLIUM ALBUM; 150 LILIUM VENUSTUM; 1000 flowering roots of ASCLEPIAS TUBEROSA; 100 ERYTHRINA CRISTAGALLI; 500 GLADIOLUS GANDAVENSIS, &c.—May be viewed on the morning of Sale, and Catalogues had of Mr. J. C. Stevens, 38, King Street, Covent Garden, W.C.; if for the country by enclosing two stamps.

ORCHIDS.
MR. J. C. STEVENS will Sell by Auction at his Great Room, 38, King Street, Covent Garden, W.C., on FRIDAY, October 28, at half-past 12 o'Clock precisely, a small Collection of established ORCHIDS in good health, including—

Phalænopsis amabilis	Cypripedium Fairrieanum
,, grandiflora	Lælia purpurata (true)
Saccolabium retusum	Ærides odoratum purpurescens
Miltonia Regnellii	,, affine
Dendrobium Farmeri	,, roseum
Vanda teres	Cattleya Lindleyana

And numerous other nice plants.
—May be viewed on the morning of Sale and Catalogues had.

ORCHIDS, BULBS, AND PEAR TREES.
MR. J. C. STEVENS will Sell by Auction at his Great Room, 38, King Street, Covent Garden, on FRIDAY, October 28, at half-past 12 precisely, a small but choice collection of ORCHIDS in good health, including Phalænopsis amabilis and grandiflora, Dendrobium Farmerii, Cypripedium Fairrieanum, and numerous other good sorts; 500 choice PEAR TREES of the best sorts, fit for planting; and a Collection of CAPE and other BULBS, in good condition.—May be viewed on the morning of sale, and Catalogues had; if for the country, by inclosing 2 stamps.

CAMELLIAS, AZALEAS, RHODODENDRONS, AND OTHER PLANTS FROM GHENT.
MR. J. C. STEVENS will Sell by Auction at his Great Room, 38, King Street, Covent Garden, W.C., on FRIDAY, Nov. 4, at half-past 12 o'Clock precisely, 500 CAMELLIAS of various heights well set with buds; 450 DWARF, STANDARD, and INDIAN AZALEAS (some new); 50 RHODODENDRONS; 100 Lilium lancifolium rubrum (true); 100 Gladioli gandavensis; 8 Laurustinus; 50 Roses; 100 various Greenhouse Plants, &c.—May be viewed on the morning of sale and Catalogues had.

BULSTRODE PARK.
Horticultural Buildings, Stove and Greenhouse Specimen Plants, &c.
MR. J. C. STEVENS has been favoured with instructions to Sell by Auction on the premises, Bulstrode Park, near Slough, Bucks, on WEDNESDAY, November 9, and following days without reserve, in consequence of the residence being required by the Duke of Somerset for his own occupation, 8 nearly new HORTICULTURAL BUILDINGS, consisting of Conservatory and Orangery, 2 Greenhouses Span-roofed, Peach, Vine, and Stove Houses, Pine and other Pits fitted with Weeks's Boilers, Hot-water Pipes, &c., complete, all erected within the last 4 years on the most improved principles, regardless of expense. Also the CHOICE AND EXTENSIVE COLLECTION OF PLANTS consisting of Specimen Stove and Greenhouse Plants, Roses, Azaleas, Camellias, Orange Trees, Ericas, &c., a few choice Orchids and other valuable Plants, many of which are from the renowned collection of the late Mrs. Lawrence; some first-class Vine, Peach, and Nectarine Trees just coming into full bearing; also a valuable collection of Orchard House Trees in Pots, Pines, and several hundred Strawberry and Bedding Plants, Terra Cotta Vases, Garden Implements, &c.—On view the day before the Sale, and Catalogues had on the premises, and at the principal hotels at Slough, Windsor, Maidenhead, Reading, and Uxbridge, and of the Auctioneer at his office, 38, King Street, Covent Garden, W.C.

N B. Bulstrode Park is about 5 miles from Slough on the Great Western Railway, and the same distance from Uxbridge.

TO TULIP GROWERS AND OTHERS.
MR. J. WILLMER begs to announce that he will submit to Public Auction without reserve at the Auction Mart, Bartholomew Lane, on TUESDAY, November 1, at 12 o'Clock, a Choice and Valuable Collection of TULIPS, consisting of upwards of 200 Rows and containing all the leading flowers in cultivation, the property of a celebrated grower of more than 40 years' standing who is declining their further cultivation. On view the morning of Sale.—Catalogues to be had at the Mart; and of Mr. J. Willmer, Horticultural Auctioneer and Valuer, Springfield Nursery, Sunbury, S.W.

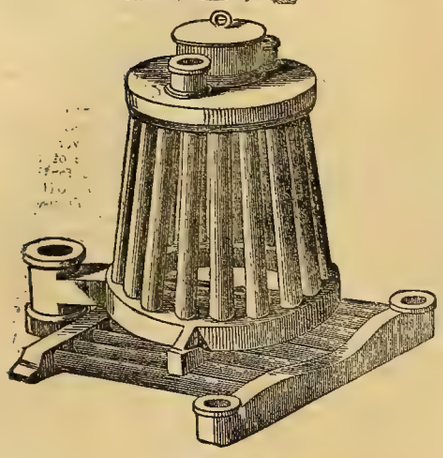
KING'S ROAD, CHELSEA.
MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Dennis to Sell by Auction on the Premises, opposite Cremorne Gardens, King's Road, Chelsea, on TUESDAY, Oct. 25, and following day, at 11 o'Clock each day, a portion of his valuable NURSERY STOCK, consisting of 10,000 fine Evergreens of sorts; an assortment of American Plants, comprising fine Hybrid Rhododendrons, Hardy Ghent, and other Azaleas, Kalmias, Andromeda floribunda, &c., well set with bloom; 500 choice Standard Roses (very handsome); Fruit Trees, including Standard Mulberries, with stems 4 to 7 feet, in good bearing condition; Standard Apples, Pears, Cherries, Dwarf-trained Peaches, Nectarines, Plums; 3000 Gooseberries and Currants by name, &c.; 1000 Lime Trees, Mountain Ash, Poplars, Laburnums, &c.; a quantity of Jasmines in pots, Lilacs, &c., together with sundry Greenhouse Plants. May be viewed prior to the Sale.—Catalogues may be had on the Premises, of the principal Seedsmen in London, and of the Auctioneers, American Nursery, Leytonstone, Essex, N.E.

TO GENTLEMEN, NURSERYMEN, FLORISTS, AND OTHERS.
MESSRS. PROTHEROE AND MORRIS will Sell by Auction at the Mart, on FRIDAY, October 28, at 12 o'Clock, a first class Collection of DUTCH BULBS, consisting of the finest Double and Single Hyacinths, Narcissus, Jonquils, Anemones, Crocus, Tulips, Ranunculus, Gladiolus, Snowdrops, &c.; also a fine assortment of 500 Standard and Dwarf Roses, with handsome straight stems and fine bushy heads; selected American Plants, including Ghent and other Azaleas, Hybrid Rhododendrons, Kalmias, Andromeda floribunda, beautifully set with bloom buds, &c. May be viewed the morning of Sale.—Catalogues may be had at the Mart and of the Auctioneers, American Nursery, Leytonstone, Essex, N.E.

TO NOBLEMEN, GENTLEMEN, & OTHERS PLANTING.
Important Sale of Ornamental, Forest, and Fruit Trees, Shrubs, Roses, &c.
MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Epps to Sell by Auction, on the premises, the Bower Nursery, Maidstone, Kent, on THURSDAY, November 3, and two following days, at 11 o'Clock each day, the whole of that extensive and valuable NURSERY STOCK, growing on the land recently sold for building, situate on the Tonbridge Road, Maidstone, consisting of some of the finest specimen CONIFERÆ, SHRUBS, ORNAMENTAL TREES, &c., of various sizes, many magnificent specimens giving immediate effect, and which from the adhesive nature of the soil, and being frequently transplanted, will insure their safe removal. There are 8000 fine Deciduous Trees, of new and ornamental kinds; also Acacias, Acers, Limes, Chesnuts, Poplars, Thorns, Elms, Oaks, &c.; 20,000 of the best kinds of Evergreen and Deciduous Shrubs; also 6000 noble specimen Coniferæ, from 2 to 20 feet high, consisting of Abies Douglassi, excelsa, Smithiana, Araucarias, Cedars, Cedrus Deodara, very fine; robusta, Picea cephalonica, Thaserii, nobilis, Pinsapo, Pinus austriaca, Cembra, insignis, &c.; Wellingtonia gigantea, Cryptomerias, Cupressus, 30 varieties; 3000 to 4000 choice Standard and Pyramid Fruit Trees; 200,000 Forest Trees, consisting of strong Chesnut, Ash, Larch, Scotch Fir, Spruce, Oak, Elm, &c.; 3000 Standard and Dwarf-worked Roses, Climbing Plants, &c.—May be viewed prior to the Sale. Catalogues may be had (6d. each, returnable to purchasers) on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex, N.E.

STOKE NEWINGTON.
To Noblemen, Gentlemen, Nurserymen, and Others.
MESSRS. PROTHEROE AND MORRIS have received instructions to Sell by Auction on the Premises, Albion Road, Stoke Newington, on MONDAY and TUESDAY, November 7 and 8, at 11 o'Clock each day, fine ornamental and deciduous Trees, Evergreens and Flowering Shrubs, consisting of fine Aucubas, Laurels, Variegated and Green Hollies, Arbor-vitæs, Bays, Ivies, Box Tilacs, Limes, Planes, Poplars, Scarlet Chesnuts, fine Weeping Ash, Evergreen Privets, &c.; a fine assortment of Fruit Trees, comprising Standard and Dwarf-trained Peaches, Apricots, Nectarines, Cherries, Plums, Pears, Gooseberries, Currants, Grape Vines, fine Standard Dwarf and Climbing Roses, American Plants, including Azaleas, Rhododendrons, and Andromeda floribunda, well set for bloom.—May be viewed prior to Sale. Catalogues had on the premises, of the principal Seedsmen in London, and of the Auctioneers, American Nursery, Leytonstone, Essex.

By Her Majesty's Royal Letters Patent.



ORMSON'S
PATENT JOINTLESS TUBULAR BOILER.

TESTIMONIALS.

"SIR,—I feel much pleasure in bearing testimony to the efficiency of your Patent Jointless Tubular Boiler which you have erected for Baron de Rothschild, at Gunnersbury Park, and from the number of hothouses and great extent of pipe you have heated from one boiler, I now feel confident it is decidedly the most powerful, economical, and safe boiler yet invented. Having had the working of the Wrought-iron Arch, and Cast-iron Corrugated Arch Boilers in these gardens, I have no hesitation in stating that your boiler is infinitely superior to either of them in every respect.—Yours truly,

"WILLIAM FORSYTH.

"The Gardens, Gunnersbury Park, Acton, Middlesex."

"SIR,—It is with much satisfaction I give my testimony in favour of your admirable Patent Jointless Tubular Boiler, being attached to upwards of 2000 feet of 4 inch pipe, and doing the work of four fires, and consumes little more fuel than was required for one of the fires previous to the adoption of your boiler. We can command any amount of heat, the boiler being so powerful I am confident it would with ease heat as much more. Altogether we have realised much more economy in fuel and attendance than we at first anticipated. In addition to the great power and economy of your boiler it possesses another most important advantage over all other tubular boilers which have come under my notice, in the fact of its being jointless, consequently quite safe from all danger of leakage. On referring to my coal account I find that I now only use one where I formerly used five waggon loads of coal for the arched boilers which you took out.—I am, Sir, yours respectfully, "J. FRASER.

"The Gardens, Luton Hoo, Bedfordshire."

"Mr. Henry Ormson, Sir,—I beg to inform you of my entire satisfaction with your Hot-water Apparatus in general, and your Patent Jointless Tubular Boiler in particular, as fitted up in the new range of Hothouses you have recently erected for Lord Powerscourt. The Boilers I admire for three excellent reasons; they are simple in construction, effective in working, and I feel assured, from the calculation I have already made, a very great saving of fuel will be the consequence from using these Boilers. You will permit me to add if I had formed a contrary opinion of the merits of these Boilers I should have been candid enough to have told you so, but in justice to you I must distinctly state I consider them a great boon to the horticultural world.—I am, Sir, yours truly, "ALEXANDER ROBERTSON.

"The Gardens, Powerscourt, Ireland."

"SIR,—I have much pleasure in testifying to the excellent working of your Patent Jointless Tubular Boiler; though a small one it does the work of five fires, and is a great saving of fuel and labour.—I am, Sir, yours respectfully,

"Holland House Gardens, Kensington." "J. SCOBIE.

"SIR,—In regard to your Patent Jointless Tubular Boiler, it answers admirably the purpose for which it was erected. I consider it the most economical and powerful Boiler ever introduced, and am confident it will not fail to give general satisfaction.—I am, yours most respectfully,

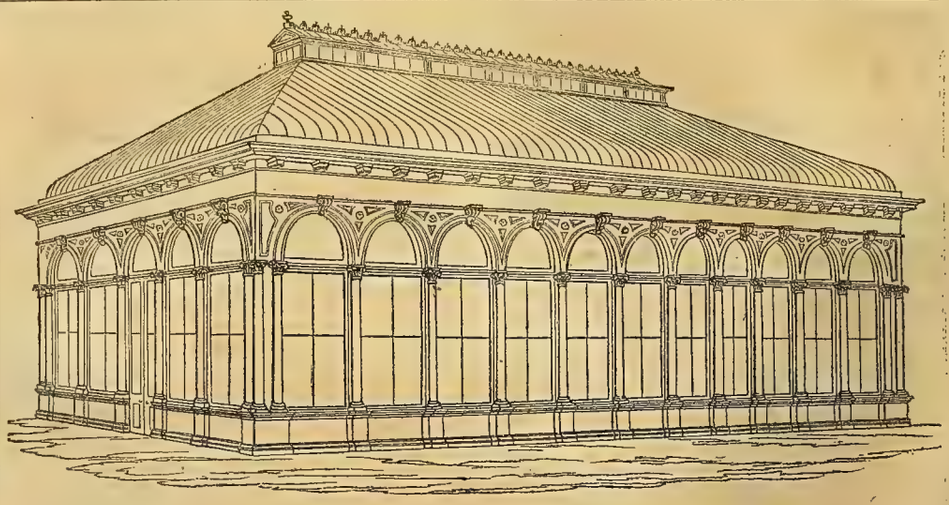
"JOHN LAUDER.

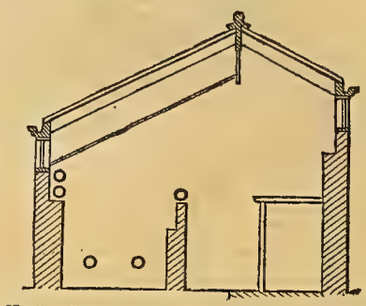
"The Gardens, Witley Court, Worcestershire."

"SIR,—I have much pleasure in testifying to the efficiency of your simple but most powerful Patent Jointless Tubular Boilers. The two small boilers you put up here are doing the work of six fires, with the addition of a range of lofty coach-houses which were afterwards attached. The amount of fuel is little more, and the attention much less, than was required for one fire before these boilers were put up; there is not the least strain on them, and I am confident if required would heat a considerably greater amount of piping. I must also add that the whole of the hot-water apparatus works satisfactory, especially the ventilating boxes you put up in the Fruiting Pine Stove, which I consider a great acquisition, supplying at all seasons a constant stream of pure warm air to the plants, which are in consequence sturdy and in the most robust health.—I am, Sir, yours respectfully, "JOHN CLARK.

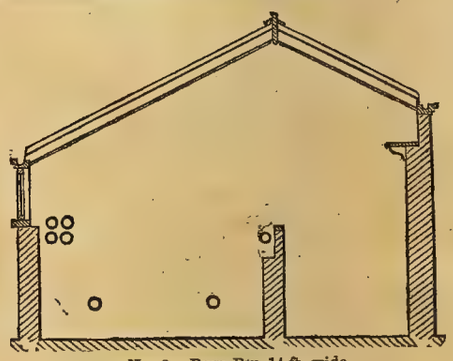
"The Gardens, Cobham Hall, Gravesend, Kent."

Ormson's Patent Jointless Tubular Boiler may be seen in successful operation at Mr. Veitch's, Royal Exotic Nursery, King's Road, Chelsea.

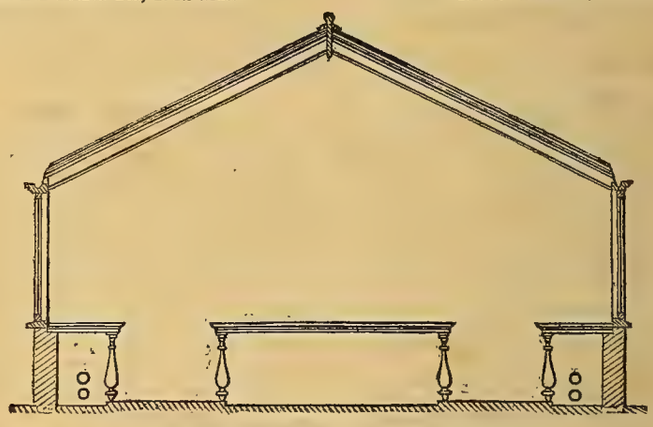




No. 1.—CUCUMBER AND MELON PIT, 10 ft. wide.



No. 2.—PINE PIT, 14 ft. wide.



No. 6.—GREENHOUSE, from 18 to 20 ft. wide.

HORTICULTURAL BUILDINGS MANUFACTURED BY STEAM POWER MACHINERY.

BEST MATERIALS AND LOWEST PRICES.

HENRY ORMSON,

HORTICULTURAL BUILDER & HOT-WATER APPARATUS MANUFACTURER,

STANLEY BRIDGE, KING'S ROAD, CHELSEA, LONDON, S.W.

BEGS most respectfully to call the attention of the Nobility, Gentry, Nurserymen, &c., to his superior manner of erecting every description of Horticultural Building, and he trusts by unremitting personal attention to the details of his business, by using only the very best materials, by employing the most skilful and efficient workmen, and by the most moderate possible charges to merit a continuance of the patronage so kindly and so liberally bestowed on him for many years past.

In the BUILDING DEPARTMENT his object will be to adapt all erections to the particular purposes for which they are required. He will devote equal attention to the plain, inexpensive, practical erections of Pits, Orchard Houses, Greenhouses, Vineries, &c., as to the more elaborate and architectural erections of Conservatories, Winter Gardens, &c., either in wood or iron.

The HEATING DEPARTMENT always engages his especial personal attention, and he feels justified in saying that in simplicity, safety, durability, and economy of fuel, combined with thorough effectiveness, his system cannot be surpassed.

VENTILATION.—Knowing the absolute necessity for thorough ventilation, he makes it a matter of first consideration.

See SECTIONS, &c., of Horticultural Buildings in former Numbers of the *Gardeners' Chronicle.*

PLANS, SPECIFICATIONS, and ESTIMATES free on application.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, and FREDERICK MULLETT EVANS, of No. 20, Queen's Road West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and published by them at the Office, No. 5, Upper Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—SATURDAY, October 22, 1859.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 44.—1859.] SATURDAY, OCTOBER 29. {Price Fivepence. Stamped Edition, 6d.

INDEX.

Aberdeenshire, vegetation of..	871 *a*	Gardener and bailiff	876 *a*
Agriculture, Theory of	875 *b*	Gardens, Belgian	869 *a*
Barter, death of Mr.	869 *c*	Gossamer	870 *b*
Bees in London	869 *b*	Holcus saccharatus	874 *a*
— and chloroform	872 *a*	Horticultural Society	868 *a*
Benuinborough Hall	872 *a*	Ivy tree	870 *b*
Books noticed	871 *b*	Lupin, a food plant	874 *b*
British Association	871 *a*	Mangel, frosted	876 *a*
Cauuellias, open air	870 *b*	Manure, blood	877 *a*
Cardamine, monstrous	869 *b*	Mushrooms, field	870 *a*
Cart, harvest	877 *a*	Otter hound	872 *a*
Cattle breeding	876 *b*	Pastures, old	874 *c*
— show, Birmingham	877 *a*	Pears, second crop of	870 *a*
Cereus, fruit of Night-blowing	872 *a*	Plants, new	868 *b*
Cotton, Indian	871 *a*	Potatoes	869 *c*
Cow, pebbles in a	877 *a*	Pyrus japonica	867 *c*
Derbyshire Agri. Soc.	876 *b*	Sheep, disease in	877 *a*
Drummond Castle	871 *c*	Stock, exhibition of fat	874 *c*
Entomological Society	870 *c*	Tomatoes in pots	870 *a*
Frigi domo	870 *a*	Vinery, orchard	868 *c*
Gardener for Georgia	870 *c*	Weather	869 *c*

STOKE NEWINGTON CHRYSANTHEMUM SOCIETY.—The 13th ANNUAL EXHIBITION (open to all England) of this Society will be held at the Manor Rooms, Church Street, Stoke Newington, N., on WEDNESDAY and THURSDAY next, when Prizes, including FOUR SILVER CUPS, will be awarded. Admission, first day, 1s.; second day, 6d.
ARTHUR WORTLEY, Hon. Sec.

THE STOKE NEWINGTON ORIGINAL CHRYSANTHEMUM SOCIETY (instituted 1846) will hold its 13th ANNUAL EXHIBITION at the Manor Rooms, Church Street, Stoke Newington, N., on MONDAY and TUESDAY November 7 and 8, when the Flowers will be in perfection. PRIZES, including SIX SILVER CUPS, will be awarded.

President—John Edwards, Esq., F.H.S.
Treasurer—Mr. Wm. Hurrell. | *Secretary*—Mr. Joseph Paxton.
Committee.

Mr. S. Allen.	Mr. Laidlaw.	Mr. Nicholls.
Mr. Argent.	Mr. Morgan.	Mr. Oubridge.
Mr. Bird, F.H.S.	Mr. D. Monk.	Mr. Putnum.
Mr. Broome, F.H.S.	Mr. Mardon.	Mr. Peachey.
Mr. Collins.	Mr. Merry.	Mr. Scruby.
Mr. Hutt.	Mr. McElroy.	Mr. Ward.

Doors open at 12 o'Clock on the first day, and 9 o'Clock on the second day. Admission—First Day, 1s.; Second Day, 6d. Schools admitted Free by applying to the Secretary, 12, Devonshire Place, Green Lanes, Stoke Newington, N. Omnibuses to and from the Flower Pot, Bishopsgate, every five minutes.

CHESTER ROOT SHOW, November 16 and 17.—Prize Lists and Forms of Entry for the above are now ready and may be had on application, or will be forwarded free by post. Entries closed on November 1. No entry fee charged.
Chester, October 29. GEORGE CHIVAS.

BUTLER AND McCULLOCH. HYACINTHS, &c.—A DESCRIPTIVE AND PRICED CATALOGUE, with practical Cultural directions, for Amateurs, sent free and post paid on application. Orders amounting to 21s. sent carriage paid. The following choice collection (A) for Conservatory and out door Culture, for 21s., or the half for 10s. 6d.;—12 Superior named Hyacinths, 6 mixed Hyacinths, 6 Polyanthus Narcissus, 50 Border Narcissus, 25 Sweet Scented Tulips, 50 Double Tulips, 100 Crocus, 100 Snowdrops, 12 beautiful Iris, 50 Ranunculus, 25 Anemones, 12 Fritillarias.—Covent Garden Market, W.C.

LARGE RED GRAPE CURRANT.—Five Thousand Plants, from 1 to 3 years old; also FALSTAFF RASPBERRY CANES to any extent, to be sold remarkably cheap by taking a quantity.—Apply to Mr. MITTON, Lampton, near Isleworth and Hounslow, W.

MUSCAT GRAPES WANTED.—PINE-APPLES (not under 2 lbs.) WANTED. PEACHES (large size) WANTED.
Forward immediately to GEORGE TAYLOR,
CHOICE FRUIT SALESMAN,
St. John's Market, Liverpool.

GREAT SCARCITY OF FRUIT.
STRONG ROOTS OF THE LINNÆUS RHUBARB, from division, can be supplied in any quantity at 12s. per 100, or 5l. per 1000, by WALTER PENNINGTON, Nurseryman, South Retford, Nottinghamshire.

MAIDEN AND CUT-BACK FRUIT TREES.
STANDARD AND PYRAMID FRUIT TREES.
EXTRA FINE TRAINED FRUIT TREES.
RICHARD SMITH has this season 23 acres of the above. Price on application.
St. John's Nurseries, Worcester.

FRUIT TREES.
J. AND J. FRASER, Lea Bridge Road Nurseries, Essex, N.E., beg to invite purchasers of Fruit Trees to an inspection of their stock, which is this year unusually fine. PRICED CATALOGUES can be had on application.

TO THE TRADE.
J. AND J. FRASER, The Nurseries, Lea Bridge Road, Essex, N.E., beg to offer a large Stock of Maiden FRUIT TREES, including all the best sorts of Apricots, Peaches, &c. The prices, which are very moderate, may be had on application.

MULBERRY TREES.
J. WOOD AND SONS have a Surplus Stock of the above fine healthy Trees with straight stems and well rooted, of all sizes up to Trees in full bearing, which they can offer at low prices.—Nursery, Old Kent Road, S.E.

AUSTRALIAN GARDEN CRESS, just harvested (the true broad-leaved sort). Price on application.—ARTHUR HENDERSON & Co., Pine-apple Place, Edgware Road, London, W.

FINE NEW HOLLYHOCKS.
HENRY MAY begs to offer a splendid stock of the above in the finest health, and best kinds at most unprecedented low prices. Catalogues on application.
The Hope Nurseries, near Bedale, Yorkshire.

STANDARD ROSES.—All the leading kinds in cultivation at prices scarcely ever offered before.
CHARLES NOBLE, Bagshot, Surrey.

ROSE CATALOGUE.
JAMES MITCHELL respectfully informs the Nobility and Gentry his new CATALOGUE for the present season is now ready, and will be forwarded post free on application.
The Nurseries, Piltdown, Maresfield, Sussex.—Oct. 29.

ROSE CATALOGUE.
JOHN CRANSTON begs respectfully to inform his patrons that he will be happy to forward his New ROSE CATALOGUE for the present season, post free, upon application. It will be found replete with the most desirable flowers (new and old) in every class, and the descriptions are copious and faithful.—Nurseries, King's Acre, near Hereford.

ROSES.
E. P. FRANCIS'S new and extensive CATALOGUE of ROSES on the Manetti Stock is now ready for delivery, and will be forwarded gratis on application.
Rose Nurseries, Hertford.

ROSE CATALOGUE, &c.
H. LANE AND SON'S CATALOGUES for the present season are now ready, and will be sent to their customers as usual. The following may be had on application at the Nurseries or by post. They consist of—
ROSE CATALOGUE, | FRUIT TREE CATALOGUE,
TREE AND SHRUB CATALOGUE.
Their stock is very extensive and unusually fine, and well worthy of inspection.—The Nurseries, Great Berkhampstead, Herts.

DESCARTE'S STOCKS FOR PERPETUAL ROSES.
J. J. FOSTER, of Edgware, is now prepared to supply the Trade and Amateurs with this PROVED first-rate dwarf Stock on the following low terms:—1000 Stocks for 50s.; 500 for 28s.; 250 for 15s., or 7s. 6d. per 100; and 3s. per two dozen. Early purchases best secure the establishment of the plants. EVERGREENS and all NURSERY STOCK on moderate terms.

STANDARD AND DWARF ROSES.—An unequalled stock of the most splendid Plants of Standard Roses is offered at 60s. per 100, all the best Perpetual sorts; also Dwarf Roses 50s. per 100. Catalogues on application.
The Hope Nurseries, near Bedale, Yorkshire.

CATALOGUES OF ROSES, HOLLYHOCKS, ORNAMENTAL TREES AND SHRUBS, HARDY HERBACEOUS PLANTS AND ALPINES, FRUIT AND FOREST TREES, &c.
HENRY MAY will be happy to forward any of the above CATALOGUES on application.
The Hope Nurseries, near Bedale, Yorkshire.

LAPAGERIA ROSEA.
MESSRS. ARTHUR HENDERSON AND CO.'S grand Specimen of LAPAGERIA ROSEA is now in great perfection, having many hundreds of blossoms fully expanded. Strong blooming plants may be had, price on application.—Pine-apple Place, Edgware Road, London, W.

FLOWER BULBS FOR WINTER AND SPRING.
SUTTON'S COLLECTIONS FOR POTS AND GLASSES, and SUTTON'S COLLECTIONS FOR OPEN GROUND. See *Gardeners' Chronicle* of October 15.

THE BEST TWELVE HYACINTHS.
SUTTON'S BEST TWELVE HYACINTHS imported can be supplied for 9s., or second best 6s. Also fine mixed DOUBLE HYACINTHS, all fresh imported, 3s. 6d. per dozen, or 25s. per 100.
PRICED LISTS of BULBS and Seeds may be had post free.
Royal Berkshire Seed Establishment, Reading.

HYACINTHS AND OTHER BULBS.
WM. CUTBUSH AND SON can still supply Roots equal to the first they sent out this season, as all BULBS are especially selected for them before they are imported from Holland. Descriptive CATALOGUE post free on application.
Highgate Nurseries, London, N.

DUTCH AND OTHER BULBS.
MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their CATALOGUE of the above is now ready, and will be forwarded post free on application. Early orders are solicited, as their successful cultivation depends in a great measure on early planting.
Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

NEW CATALOGUES.
WM. WOOD AND SON will be happy to forward Copies of their New Catalogue gratis and post paid on application.—Address,
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

FERN CATALOGUE.
ROBERT SIM'S NEW DESCRIPTIVE AND PRICED CATALOGUE, No. 6 (62 pages) of his COLLECTION of BRITISH AND EXOTIC FERNS, can be had, post free, for 8 stamps. Gratis to all previous purchasers of Ferns.
Nursery, Foot's Cray, Kent, S.E.

MESSRS. ROEZL AND BESSERER, of Mexico, will execute orders from their CATALOGUE of last year through their Agents, Messrs. B. A. GRANTOFF & Co., 4, Lime Street Square, London, E.C.

TO THE SEED TRADE.
ABRAHAM HARDY AND SON, SEED GROWERS, Maldon, Essex, respectfully call attention of the Trade to their FORTIETH ANNUAL WHOLESALE PRICED CATALOGUE OF SEEDS, which may be had on application. They particularly recommend to notice their superior stock of CUCUMBERS.—October 29.

CARNATIONS, PICOTEES, ETC.
CHARLES SCHOFIELD has now ready first-class varieties of the above Flower at 12s. per dozen pairs; also PINKS, 4s. to 8s. per dozen. CATALOGUES may be had free.
Knowsthrope, near Leeds, Yorkshire.

GEORGE GIBBS AND CO., SEEDSMEN,
26, DOWN STREET, PICCADILLY,
LONDON, W.

GOOD SEEDS. CARRIAGE FREE.
SUTTON AND SONS,
SEED GROWERS AND MERCHANTS,
ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY LIMITED supply every requisite for the Farm and the Garden.
Registered Offices, Union Road, Plymouth.

WELLINGTONIA GIGANTEA.
JOHN WATERER has thousands of the above Plants to offer, varying in height from 1 to 4 feet. The whole are exceedingly handsome and well rooted. Price on application.—The American Nursery, Bagshot, Surrey.

PLANTING.
A. PAUL AND SON invite attention to their large and superior Stock of CONIFERÆ and other ornamental TREES and SHRUBS, FRUIT TREES, &c. For further particulars see advertisement in *Gardeners' Chronicle* of last week.—Nurseries, Cheshunt, Herts.

LARGE EVERGREENS, ETC.
WM. CUTBUSH AND SON invite planters wishing to produce an IMMEDIATE effect to their fine stock of EVERGREENS, &c.; and as all HARDY STOCK is kept CONSTANTLY TRANSPLANTED, the RISK of injury by removal is REDUCED to its MINIMUM.—Highgate Nurseries, London, N.

TRANSPLANTED FOREST TREES.—Large quantities of Transplanted ALDER, LARCH, SCOTCH, SPRUCE, HAZEL, SPANISH CHESNUTS, ASH, &c., 1, 2, 3, and 4 feet. A good stock of QUICKS. Samples, with prices, may be had on application.
WATERER & GODFREY, Knap Hill, near Woking.

500,000 fine Transplanted LARCHES, from 2 to 5 feet, also SPANISH CHESNUTS, POPLARS, QUICKS, and all other FOREST TREES.
Prices on application to WM. WOOD & SON, Woodlands Nursery, Maresfield, near Uckfield, Sussex.

COMMON LAURELS.
R. GADD AND SON have to offer 50,000 of the above from 2 to 6 feet high, extra stout and well rooted; 30,000 Seedling and Bedded Evergreen Oaks; Bays, 1 to 4 feet; Laurustinus, 1 to 2½ feet. Price on application.
Salvington Nurseries, near Worthing.—October 29.

LAURELS.—8000 Two-year CUTTINGS, very fine; 10,000 Do. TRANSPLANTED, 1 to 3 feet; a few 3 to 5 feet. G. FROST offers the above at low prices.
Address the Nurseries, Brushford, Tiverton.

HARDY HEATHS.—A Collection of 20 sorts, by name, of the above favourite autumnal flowers, in good plants, at 30s. per 100, or 12l. 10s. per 1000.
JOHN WATERER, The American Nursery, Bagshot, Surrey.

TRITOMA UVARIA.—Having saved a small quantity of this beautiful perennial plant, we offer packets containing 400 seeds at 10s. per packet free by post.
R. FENNESSY & SON, Waterford Nurseries.

ARAUCARIA IMBRICATA.
YOUELL AND CO. beg to inform the Trade that they have to offer a fine and healthy stock of the above in 1-year-old plants. Prices on application.
Royal Nursery, Great Yarmouth.

ANDROMEDA FORMOSUM (TRUE).
W. H. ROGERS, RED LODGE NURSERY, Southampton, can offer fine strong plants of the above beautiful American Plant, 50s. per 100, or 9s. per doz., selected.

CHOICE RHODODENDRONS, AZALEAS, AND CONIFEROUS PLANTS.—A CATALOGUE of GEORGE BAKER'S unrivalled Stock of the above may be had on application.—The American Nursery, Bagshot, Surrey.

RHODODENDRONS "of every hue," Scarlet, White, Rose, Crimson, and every intermediate shade, nearly all sizes and at all prices, can be supplied by CHARLES NOBLE, Bagshot, Surrey.

STANDARD RHODODENDRONS.—Hundreds of handsome specimens of all the choicest varieties, varying in colour from deepest crimson to rose and pure white, with symmetrical heads and straight stems, from 2 to 5 feet in height, can be supplied by
JOHN WATERER, American Nursery, Bagshot, Surrey.

ERICAS.
F. AND A. SMITH'S Stocks of the above are this season unusually fine, comprising most of the leading winter and spring-flowering varieties. Prices on application.
Dulwich, Surrey, S.

TO THE TRADE.
ERICAS.—Fine young bushy plants now and coming into flower, 50s. per 100; fine plants in 48 and 32-size pots, 5l. per 100; Stove plants of all the best and newest kinds in 48 and 32-size pots, 5l. per 100. List sent on application.—Nurseries, Maidstone.

SPERGULA PILIFERA (a fine quantity in pots).—Fine sized plants, 1s. each or 9s. per dozen. Each plant will divide into quantities of tufts. Directions for planting sent.
Apply to STEPHEN BROWN, Seed and Nursery Establishment, Sudbury, Suffolk.

PAMPAS GRASS.—The present is the most favourable time for planting out this charming Plant. No one can imagine the grand effect of a mass of its silvery plumes unless they see it, nor is its value confined to the ornamental, but is likely to become useful as Cover for Game. It grows in any soil or situation, attaining the height of from 6 to 10 feet.—Any quantity can be supplied by C. NOBLE, Bagshot, Surrey.

CARTER'S

List of New Annuals for Season 1860.

CLARKIA PULCHELLA, VAR. INTEGRIPETALA.—This is the first of what might almost be called an entire new class of Clarkias, of which we shall have the pleasure of offering a succession of varieties during the next few years; the flowers are nearly double the size, colour more brilliant, and the petals whole instead of being three-lobed like the old pulchella varieties, thus forming an apparently *circular* instead of *cruciform* flower. This variety was "commended" by the Floral Committee of the Horticultural Society in July last, and described by them as "an improvement on the older kind in respect to its ornamental qualities."

CALLIRHOE DIGITATA.—A very elegant plant, strongly resembling the scarlet Linum; colour rich violet purple, with white eye; height from 2 to 3 feet, commences to bloom when about 6 inches high, and presents a mass of blossom during the entire summer. This is the same plant as that referred to under the name of Nuttallia by Mr. Beaton in the "Cottage Gardener," as follows:—"Among other novelties was a bed of new Nuttallia, a genus that is little known. The old Nuttallia grandiflora is one of the best old border plants, and one of the most difficult to keep; but this will be an easy thing, as it seeds freely, and is not more than a biennial. The plants were a yard high, very branchy, and full of blooms—violet and crimson colour, with a white bottom. If the flowers of Chironia frutescens were cupped, and dashed with a tinge of purple, they would give some idea of this beautiful thing; but it will be best to prove it in patches, like patches of Coreopsis.

ŒNOTHERA BIENNIS, VAR. HIRSUTISSIMA (Asa Grey).—A new variety of the Evening Primrose from California, very distinct from the common biennis; height 2 feet, colour crimson orange.

LOBELIA GRACILIS ROSEA.—A very graceful little plant of a good rose colour, especially adapted for edgings.

DIANTHUS CHINENSIS LACINIATUS.—We have purchased part of the stock of seed of this unprecedented novelty from the raiser, Mr. Heddewig, who describes it as follows:—Grows 2 feet high, very hardy; flowers about 4 inches in diameter, each petal consisting of a long delicate fringe, some double, others single; blossoms from the end of May till the beginning of frost; the colours are pure white, flesh, rose, various shades of red, carmine, violet, purple, and rich maroon, some being selfs, other striped and spotted.

DIANTHUS CHINENSIS HEDDEWIGI.—Of this splendid annual Dianthus we have also purchased part of the stock of seed from the raiser. The plants are scarcely 1 foot high, very bushy, and covered with a profusion of flowers, which measure nearly 3 inches in diameter; the colours are various, consisting of different shades of rose, crimson, violet, &c., some delicately marbled, others entirely self colour. This plant has received the highest awards from the Horticultural Society and Botanic Society, Regent's Park.

ANAGALLIS GRANDIFLORA, VAR. EUGENIE }
ANAGALLIS GRANDIFLORA, VAR. NAPOLEON III. }
Two beautiful new Continental varieties of the well-known Anagallis grandiflora, but the flowers are much larger. They will be found highly ornamental as half hardy bedding plants, as they continue a long time in bloom, and contrast effectively. Var. Eugenie light blue, shading from the centre to pure white at the border. Var. Napoleon III. rich maroon crimson.

NIGELLA HISPANICA ALBA } Two varieties
NIGELLA HISPANICA ATROPURPUREA } of great merit,
of erect habit, the one a clear rich purple and the other a pure white, can be recommended as being decidedly the best of their class.

CAPTAIN CLARKE'S NEW HYBRID SWEET PEA.—This beautiful variety is the result of a cross between Painted Lady and Purple Sweet Pea, raised by Captain Trevor Clarke, F.H.S., well known to the floricultural world as a successful hybridiser of plants. The upper petals are of a delicate rose colour, and the lower white, with a deep blue edge. (This was inadvertently described as a hybridisation between Lord Anson's and Painted Lady Pea.)

NEMOPHILA DISCOIDALIS MARMORATA.—A handsome new variety from discoidalis, which in addition to the white border of the old variety is very prettily marbled with white on the black ground of each petal.

PHACELIA TANACETIFOLIA ALBA.—A white variety of the blue tanacetifolia, pretty and distinct.

LUPINUS MUTABILIS VARIECOLOR.—This most peculiar and handsome variety of Lupine is distinct in seed from all other sorts, and the same seed produces plants of various colours, such as pure white, dark purple, white, red, and yellow, variegated, yellow and purple, &c. We can recommend this variety as one of the most interesting ever offered.

NEW DWARF BEDDING TROPÆOLUMS.

TOM THUMB YELLOW.—A new variety in colour, particularly adapted for bedding, and also for growing in pots and ornamental vases, and the flowers are well thrown up above the foliage; very dwarf and compact in habit. Colour pure yellow without any marking; was "commended" by the Floral Committee of the Horticultural Society in July last, and described by them as "a compact free blooming rich yellow annual, likely to become useful for beds."

TOM THUMB BEAUTY.—An elegant variety with Lobbianum-shaped flowers, raised by Mr. Melville, gardener to the Earl of Roseberry, Dalmeny Park, near Edinburgh. The flower is yellow flamed and blotched with bright crimson. A plant was sent to the Editors of the "Cottage Gardener," in October, 1858, who speak of it as follows;—"No. 11, a dwarf yellow, tinged with crimson; would be a good bedding plant we think.

☞ Price of the above to the Trade on application.

No. 7, FLORAL ILLUSTRATION (by ANDREWS), is now ready, and will be forwarded post paid upon application, price 1*s.* 6*d.*

JAMES CARTER AND CO.,

237 AND 238, HIGH HOLBORN, W.C.

BUTLER & McCULLOCH,

COVENT GARDEN MARKET, W.C.

A DESCRIPTIVE AND PRICED CATALOGUE OF

HYACINTHS, GLADIOLI, RANUNCULUS, ANEMONES, IXIAS, AMARYLLIS, CROCUS, and other DUTCH and CAPE BULBS, with practical Cultural directions affixed to each Class for the use of Amateurs, sent free and post paid (for contents of CATALOGUE see *Gardeners' Chronicle*, October 1, page 786).

☞ *All orders amounting to 21s. and upwards sent Carriage paid.*

BEST DOUBLE and SINGLE MIXED HYACINTHS	..	..	..	21*s.* 0*d.*	per 100,	3*s.* 0*d.*	per dozen.
TOURNESOL and REX RUBRORUM DOUBLE TULIPS	..	..	..	7 6	,,	1 0	,,
YELLOW ROSE, pure yellow and scented	Do.	..	..	10 6	,,	1 6	,,
LA CANDEUR, pure white	Do.	..	..	14 0	,,	2 0	,,

FOR CENTRES OF LARGE BEDS AND BORDERS.

TRITOMA UVARIA	21*s.* 0*d.*	per doz.	2*s.* 0*d.*	each	
LILIUM LANCIFOLIUM ALBUM	15 6	,,	1 6	,,	
LILIUM LANCIFOLIUM ROSEUM	20*s.* 0*d.*	per doz.	2*s.* 0*d.*	each.	
,, ,, RUBRUM	20 0	,,	2 0	,,	

GLADIOLI HYBRID of RAMOSUS,	30	splendid varieties named, for	21*s.* 6*d.*, or 12 for 9*s.* 6*d.*	
,, ,, CARDINALIS,	12	beautiful	,,	10 6
,, ,, BLANDUS,	6	new	,,	4 6 } best for forcing.
,, ,, SAGITTALIS	6	,,	,,	4 6 }

GLADIOLUS BRENCHLEYENSIS	30*s.* 0*d.*	per 100	5*s.* 0*d.*	per dozen.		
,, GANDAVENSIS	15 6	,,	2 6	,,		
,, QUEEN VICTORIA	15 6	,,	2 6	,,		
,, RAMOSUS	15 6	,,	2 6	,,		
,, FLORIBUNDUS	15 6	,,	2 6	,,		

AGENTS FOR TYE'S REGISTERED HYACINTH GLASSES.

These are without exception the most elegant and best adapted for the successful Culture of the Hyacinth. See Woodcut Group of Glasses, page 803 of *Gardeners' Chronicle*, October 8.

HYACINTHS FOR BEDS AND BORDERS.—
DOUBLE RED, fine Dutch Roots, 3*s.* 6*d.* per dozen.
DOUBLE BLUE ,, 3 6 ,,
DOUBLE WHITE ,, 3 6 ,,
ALL COLOURS, mixed ,, 3 6 ,,
All other BULBS cheap, as see Priced List.
SUTTON AND SONS,
Royal Berkshire Seed Establishment, Reading.

MESSRS. WATERER AND GODFREY respectfully refer planters to the following LIST of well-known good hardy Plants:—

ARAUCARIA IMBRICATA, 1 foot, stout, healthy, 5*l.* per 100; larger, up to 8 feet.
CEDRUS DEODARA, 2½ to 3 feet, very handsome, 10*l.* per 100; larger, in any quantity, up to 10 and 15 feet.
PICEA NOBILIS, Seedlings, in quantity, 1 foot, stout.
Ditto larger and in every way perfect plants, up to 4 feet.
NORDMANNIANA, from seed, 2, 3, 4, and 6 feet.
PINSAPO, 2½ to 3½ feet, and as much through.
Ditto magnificent plants, 8 and 10 feet high.
CUPRESSUS LAWSONIANA, fine bushy seedling plants, 2½ feet high.
JUNIPERUS, CHINESE, 3 feet up to 8 and 10 feet.
,, IRISH, 5, 6, and 7 feet.
YEWS, IRISH, 5, 6, 7, and 8 feet.
,, GOLDEN, from 2 to 7 and 8 feet.
,, COMMON ENGLISH, in large quantities, 4 to 6, 7, and 8 feet.
THUJA AUREA.—Several hundred magnificent specimens, 3, 4, and 5 feet high, and measuring 10 to 15 feet in circumference.
THUJOPSIS CÆREOLIS, 2½ to 3 feet.
WELLINGTONIA GIGANTEA, all from seed, 1½ to 3 feet, and as wide.
HOLLY GREEN, in quantities. 5, 6, and 8 ft.; VARIEGATED, especially the best gold striped, of all sizes, up to 6 feet.
All the plants referred to in this advertisement were removed in April last, and they are in a condition to travel any distance with perfect safety.—Knap Hill Nursery, near Woking, Surrey.

THE PLANTING SEASON.
WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.
WM. WOOD AND SON beg leave to offer the following, selected from their well-known extensive Stock, occupying an area of 60 acres of land.

STANDARD ORNAMENTAL TREES, from 6 to 10 feet.

Acers (Maples), of sorts	Hornbeam, Cut-leaved and Weeping
Æsculus (Horse Chesnuts), Scarlet and other kinds	Limes, of various kinds
Ailanthus glandulosa	Oaks, very fine collection
Ash, very fine collection	Pyrus, of sorts
Beech, Purple, Weeping, and other kinds	Robinia Bessoniana, very fine, and other sorts
Caraganas, of sorts	Standard Portugal Laurels, with very fine heads
Catalpa syringæfolia	Sycamore, Purple-leaved and variegated [fine
Chesnut, Spanish, Prolific, &c.	Ulmus (Elms), of sorts, very
Cotoneasters, five kinds, very handsome, worked on straight stems of Cotoneaster frigida	Weeping Willows, American, &c. &c. &c.

CONIFERÆ.

Araucaria imbricata, 1 to 6 feet	Juniperus Wallichiana, 1 foot
Biota meldensis, new, 2 to 3 ft.	Picea Nordmanniana, 1 to 1½ ft.
Cedrus Deodara, 2 to 4 feet	Pinus Fremontiana, 1 to 1½ foot
Cupressus ericoides, 1 to 3 feet	,, Montezumæ, stout
,, Lambertiana, 2 to 6 feet	,, monticola, 1 foot
,, Lawsoniana, 1 to 2 feet	Taxodium distichum, 1 to 6 feet
,, torulosa viridis, 1 to 3 ft.	Thuja aurea, the Golden Arbor-vitæ, very fine, 1 to 1½ ft.
,, torulosa, 3 to 5 feet	,, gigantea, 1½ to 2 feet
Juniperus glauca, 1 to 3 feet	,, japonica, 1 to 3 feet
,, Irish, 1 to 4 feet	Wellingtonia gigantea, 1 to 1½ ft.
,, japonica, 1 to 1½ foot	&c. &c. &c.
,, macrocarpa, 1 to 1½ ft.	

EVERGREENS.

Alaturnus, of sorts, 1 to 3 feet	Portugal Laurels, 1 to 2 feet
Arbor-vitæ, American, 1 to 2 ft.	,, ,, large Pyramids, very fine, 6 to 8 ft.
,, Chinese, 1 to 3 feet	Laurustinus, 1 to 3 feet
Aucuba japonica, 1 to 2½ feet	Privet, Evergreen, very strong
Cedars, Red Virginian, 1 to 3 ft.	Yews, English and Irish, very fine
Junipers, Common, 2 to 3 feet	
,, Irish, 1 to 4 feet	

AMERICAN PLANTS.—Andromedas, Azaleas, Hardy Heaths, Kalmias, Rhododendrons, Vacciniums, &c.
DECIDUOUS AND FLOWERING SHRUBS in great variety, comprising a splendid stock of Spiræas, Berberis, Deutzias, Euonymus, Ribes, Syringas, Weigelas, &c.
CATALOGUES on application.
A liberal number of plants will be presented with each order to compensate for distant carriage.

NEW ANNUALS.
JOHN GEORGE WAITE, SEED MERCHANT, 181, High Holborn, London, W.C., has great pleasure in offering SEEDS of the following new hardy Annuals:—
CLARKIA PULCHERRIMA,
SCHIZANTHUS GRANDIFLORUS OCULATUS,
HELIOPHILA CŒRULEA STRICTA.
Coloured Drawings and prices of which (to the Trade only) can be had on application.
Seed Establishment, 181, High Holborn, London, W.C.

GERANIUM "ZEPHYR."
JOHN SCOTT, FLORIST, Bathford, near Bath, can supply good plants of the above, and can with the greatest confidence recommend it as a first-rate Geranium for exhibition purposes, a first-rate habit and free bloomer, with very strong foot stalks, showing every bloom to the best advantage. Colour, lower petals, clear pink, crimson purple blotch in upper petals, surrounded with carmine, edged with rosy pink, with a very distinct white throat. It received a first-class Certificate at the Bristol and Clifton Horticultural Society.
Plants 10*s.* 6*d.* each, with the usual discount to the Trade.

SPERGULA PILIFERA.—The past summer has again proved the great superiority of the above Plant for Lawns, Terrace Gardens, Steep Banks, Verges, Edgings, &c., never requiring mowing or turning up in such situations during the warmest weather. Strong Plants, 1*s.*, 2*s.*, 3*s.*, or 4*s.* per dozen. Having the Gardens at Forest Hill (in which Spergula was first introduced as a Lawn Plant) under our care, we are able to send full instructions for Culture with the Plant.
BRITISH FERNS, ALPINE AND ROCK PLANTS in great variety, 6*s.* to 9*s.* per dozen. [S.E.
J. A. SUMMERS, Howard Park Nursery, Ferry Hill, Sydenham.

TO THE TRADE.
THOMAS CRIPPS, NURSERYMAN, Tunbridge Wells, Kent, respectfully offers the following in fine strong well-rooted Plants:—
Standard Roses, 2 feet to 3½ and 4 feet stems, really good kinds, 50*s.* per 100; superior ditto, 2½ ft. to 4 ft. stems, 63*s.* per 100.
Dwarf Gallica Roses, &c., on own roots, by name, 20*s.* per 100.
Dwarf-worked Perpetual Roses, by name, 40*s.* per 100.
Dwarf Blush Pink China Roses, 15*s.* per 100, or 500 for 63*s.*
Dwarf Crimson do. do. 25*s.* per 100, or 500 for 100*s.*
Rhododendron ponticum stocks, fine strong for spring working, 20*s.* per 100.
Rhododendron ponticum, fine healthy stuff, the greater portion showing from 1 to 6 or 7 flower-heads, and from 9 in. to 2 feet in height, 25*s.* to 50*s.* per 100.
Rhododendron maximum album, fine large bushy stuff, 18 to 30 inches high, many well set with bloom buds, 9*s.* per doz. or 60*s.* per 100.
Rhododendrons.—Choicest named kinds can be supplied by the 1000 if required.
Hardy Heaths.—A fine collection, and beautiful large healthy plants, 20*s.* per 100.
Double Yellow Primroses, 20*s.* per 100 or 60*s.* for 400.
Manetti Stocks.—Fine strong, 40*s.* per 1000 or 70*s.* for 2000.
Larch Fir, 3 to 5 feet, 25*s.* per 1000.
Spanish Chesnut, 4 feet to 6 feet, fine, 40*s.* per 1000.
From unknown correspondents either a remittance or respectable London reference must accompany the order. Five per cent. on cash accounts. When less than half-quantities herein quoted are ordered at once, an advance in price will be charged.

WALTON NURSERY, LIVERPOOL.
WILLIAM SKIRVING begs to announce that in consequence of part of the Land of one of his Nurseries being required for building purposes, he intends CLEARING OFF the TREES and SHRUBS thereon as soon as possible, to accomplish which he is willing to submit to a great reduction in their value.
The Stock consists of many hundreds of fine well-grown specimen plants of such Trees as the Araucaria, the Cedrus Deodara, the Cryptomeria, and many other Choice Hardy Coniferous Trees lately introduced, with very large quantities of smaller sizes of the same. There is also a very extensive Stock of Evergreen and Flowering Shrubs on the land to be cleared, amongst which are fine large specimen plants of the varieties of Green and Variegated Holly, the English and Irish Yew, Cedars, Cypress, Arbor-vitæ, and Rhododendrons, with many thousands of ordinary planting sizes.
W. S. invites the particular attention of Planters of Public or Private Parks, Cemeteries, Garden or Pleasure Grounds, to inspect the Stock now offered, feeling certain such a collection of Trees and Shrubs, for extent and variety, has seldom or ever been offered to the public.
At the same time W. S. begs to offer his extensive Stock of Fruit and Forest Trees, and several acre of Transplanted Thorn Quicks, at his adjoining permanent Nursery. Catalogues on application.

TANSLEY NURSERY, NEAR MATLOCK.

To Gentlemen Planting and the Trade.

J. SMITH, Sen., begs to offer his STOCK OF TREES AND SHRUBS, of various sizes, and in addition to his general stock of the leading kinds, he has this season to offer an Extra Stock of many hundred thousands of fine Larches, Scotch Firs, and Highland Pines; a large quantity of Evergreens, Privets, Mahonia Aquifolium, and other plants for planting under cover. Many things are grown in large quantities, and will be sold on advantageous terms to the Trade and gentlemen requiring large lots.

CATALOGUES sent free on application. The Nurseries are on the Mansfield and Nottingham roads, and 2 miles from Matlock Bridge Station on the Midland Railway.

OSCAR STRAWBERRY.

CHARLES TURNER can still supply strong plants, warranted to fruit next season, at 42*s.* per 100.

For full particulars of this fine early variety see previous Advertisements. It can also be supplied by the following in the Trade who have received plants:—

Backhouse, Messrs., York
Barnes, Mr. W., Camberwell
Baskerville, Mr., Bristol
Bayliss, Mr., Wolverhampton
Bell, Mr., Norwich
Brind, Mr., Marlborough
Bunting, Mr. W., Colchester
Bunyard, Mr., Maidstone
Burbury, Mr. J., Kenilworth
Butler & McCulloch, Messrs., Covent Garden Market, London, W.C.
Campbell, Mr. A., Glasnevin, Dublin
Carpenter, Mr. E., Bath
Clarke, Mr. H., Covent Garden, London, W.C.
Cook, Mr. H., Handsworth Woodhouse, by Sheffield
Day, Mr., Oxford
Dean, Mr., Bradford
Dickson, Messrs. F. & A., Chester
Dickson, Messrs., Sons & Co., Manchester
Dickson & Son, Messrs., Belfast
Dickson & Turnbull, Messrs., Brechin
Dreghorn & Aitken, Messrs., Kilmarnock
Ewing, Mr., Norwich
Finney, Messrs., & Co., Gateshead, Durham
Fisher, Holmes, & Co., Messrs., Sheffield
Fraser, Messrs. J. & J., Lea Bridge Road, Leyton, Essex
Garaway, Mayes, Messrs., & Co., Bristol
Glœde, M. Ferdinand, Aux Sablons, near Moret sur Loing, France
Griffin, Mrs., Bath
Hally, Mr., Blackheath, S.E.
Handasyde, Mr., Musselburgh
Harman, Mr., Denham, by Uxbridge
Harrison, Mr., Darlington
Henderson, Messrs. A. & Co., Pine-apple Place, London, W.
Henderson, Messrs. E. G., St. John's Wood, London, N.W.
Hinxman, Mr. G., Salisbury
Hurst & McMullen, Messrs., 6, Leadenhall St., London, E.C
Ivery, Messrs., Dorking, Surrey
Jackson, Messrs., Kingston, Surrey [Bath
Kenway, Mr. S., Batheaston,
Keynes, Mr., Salisbury
Kimberley, Mr., Stoke by Coventry [setshire
Kelway, Mr., Langport, Somer-
Kitley, Mr., Bath
Laing, Mr. A., Beverley
Low, Messrs. Hugh & Co., Clapton, N.E.
Lucombe, Pince, Messrs., & Co., Exeter
Milne, Arnott, Messrs., & Co., Wandsworth Road, London S.W.
Miller, Mr., Andover, Hants
Nelson, Mr. G., Kingsdown, Bristol
Nelson, Mr. J., St. Michael's Hill, Bristol
Oldroyd, Mr., Shrewsbury
Osborn, Messrs., & Son, Fulham, S.W.
Oswald, Mr., Adderley Gardens, Birmingham
Parker & Williams, Messrs., Holloway, N.
Paul, Mr. Evan, 42, Queen Street, Derby
Pennell, Mr. C., Lincoln
Perkins, Mr. J., Northampton
Pontey, Mr., Plymouth
Pope, Mr. H., Gib Heath, Birmingham
Rivers, Mr., Sawbridgeworth, Herts
Rylance, Mr. C., Aughton by Ormskirk
Scott, Mr., Bathford, Bath
Shaw, Mr. J., Manchester
Sibbald, Mr., Bishop's Auckland, Durham
Smith, Mr. W., Hereford
Smith, Peter & Son, Messrs., Hamburgh
Snowden, Mr., Thirsk
Sollis, Mr. H. G., City Fruit Stores, Bath
Stafford, Mr., Hyde, Manchester
Standish, Mr., Bagshot
Tiley, Mr. E., Bath
Veitch & Son, Messrs., Exeter
Veitch, Mr., Jun., Chelsea
Verschaffelt, Mons., Ghent, Belgium
Wood & Ingram, Messrs., Huntingdon
Waite, Mr., High Holborn, London, W.C.
Watkinson, Mr., Manchester
Wheeler, Messrs. J. & C. & Son, Gloucester
Wheeler, Mr. G., Warminster
White, Mr., 54, Kingsgate Street, Winchester
White, Mr. R., Poole, Dorset
Wood & Son, Messrs., Maresfield

Royal Nurseries, Slough.

ROBERTSON'S WIZARD OF THE NORTH STRAWBERRY.

DANIEL ROBERTSON begs to intimate that PRINTS of a Drawing of this variety are now ready for distribution, and will be forwarded free on application to parties in the Trade, who may desire to have them for reference or for exhibition in their shops or places of business, and who agree to have their plants direct from D. R. or from parties named by him as being in honest and lawful possession of the genuine stock.

In printing copies from the original Drawing of this Seedling D. R. has incurred a very serious expense, and which, but for circumstances that have lately transpired in connection with the name of this variety, he would most certainly never have subjected himself to; he has done this to protect himself in his right, and to guarantee the public from imposture.

Purchasers are warned that they ought to see the Drawing of the Wizard in the hands of any nurseryman or other party from whom they buy plants, as all parties selling the genuine article will be furnished with a Drawing.

In Mr. W. J. Nicholson's Catalogue, published in the late Number of the *Gardeners' Chronicle*, a kind appears under the name of Wizard of the North, no raiser's name given, and queried as Sir Walter Scott. Not knowing any Strawberry named Wizard of the North besides our Seedling, this matter became the subject of immediate and frequent communication with Mr. Nicholson, and in a letter from that gentleman dated September 22, he writes:—"I have had some inquiries about the Wizard of the North to know if it is really different from the Sir Walter Scott, to which I have said yes, after comparing the plants sent by you with those of Sir Walter Scott. I see it is different, though a good deal alike, and I think of the same race. In my next Catalogue this will be made all right." Having seen growing in a nobleman's garden here plants of the Sir Walter Scott (obtained from Mr. Nicholson direct), beside plants of our seedling the Wizard of the North, D. R. feels astonished that Mr. N. or any other grower should have compared the two sorts, they are so dissimilar in growth, and can only account for Mr. Nicholson's error by concluding that the plants he compared with Sir Walter Scott in the first instance were in reality not the Wizard of the North at all. He had no plants of this kind from D. R. until after the appearance of his Catalogue.

D. R. begs to state that Messrs. Dickson and Co. of Edinburgh, and Mr. R. Pollock of Kilmarnock, had plants of the Wizard of the North in the autumn of 1858, to propagate stock for themselves, and which they have honourably retained until after he advertised it out. They are the only Nurserymen who could have been in honest and lawful possession of this kind previous to the 16th of August last. The appearance of its name in any Catalogue previous to that date was quite unwarranted.

DANIEL ROBERTSON, Lumside Nursery, Paisley, Oct. 29.

THE LARGEST AND FINEST STOCK OF TEA-SCENTED ROSES IN ENGLAND.

50,000 Plants in Pots and in the Open Ground.

WM. WOOD AND SON invite attention to their very extensive and superior stock of the above, which they feel certain are unsurpassed in the Trade.

Dwarfs, from 48-pots	per dozen	9*s.* to 12*s.*
,, in 6-inch or 24-pots	,,	24 to 30
Standards, very fine	,,	18 to 24

Specimen Plants, in 8-inch pots, for exhibition, each, 3*s.* 6*d.* to 5*s.*

DESCRIPTIVE CATALOGUES on application.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

ROSES AT REDUCED PRICES.

WM. WOOD AND SON refer with pleasure to their enormous stock of many thousands of STANDARD and DWARF ROSES, which they will be happy to supply at the following remarkably low prices, viz.:—

	Per doz.—*s.*	*s.*
Selected tall Standards, with three to six best varieties of Perpetual and Climbing Roses in each stem		24 to 30
Standards and Half Standards		12 to 18
Dwarfs and Dwarf Standards		9 to 12
Dwarfs on own roots		9 to 12
,, ,, without names		3
Climbing Dwarfs, ,,		3
,, with names		6 to 9

DWARF ROSES, from 48-sized pots, or from open ground adapted for potting.

BOURBON, CHINA, TEA-SCENTED, NOISETTE & HYBRID PERPETUAL, 9*s.* to 12*s.* per dozen.

CATALOGUES gratis on application. Extra plants presented with each order to compensate for carriage.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

DESCRIPTIVE CATALOGUE OF SELECT ROSES.

DESCRIPTIVE CATALOGUE OF FRUIT TREES.

CATALOGUES OF FOREST TREES, ORNAMENTAL TREES AND SHRUBS.

JOHN CATTELL begs respectfully to announce that his Catalogues as above for the present season are now ready, and will be forwarded on application. The Stock is of very superior quality, and in the finest condition for removal.

Nurseries, Westerham, Kent.

ROSE NURSERIES, HERTFORD.

E. P. FRANCIS invites attention to his splendid stock of DWARF ROSES budded on the Manetti Stock, of which he possesses the following quantities:—

HYBRID PERPETUALS.		HYBRID PERPETUALS.	
250	Adelaide Fontaine	100	Pius the 9th
200	Alexandrine Bachmeteff	1000	Prince Leon
500	Auguste Mie	200	Paul Dupuy
100	Arthur de Sansal	100	Reine des Fleurs
100	Baron Hallez	500	Souvenir de la Reine d'Angleterre
150	Baron Heecheren	500	Souvenir de Leveson Gower
150	Baron Larray	200	Triomphe de l'Exposition
200	Caroline de Sansal	500	,, de Paris
50	Charles Bossiere	500	William Griffiths
500	Colonel Rougemont	100	Amandine
500	Comte de Nanteuil	100	Augustine Mouchelet
150	Comte Odart	500	Baron Prévost
50	Doctor Henon	50	Comet
250	Duchess of Norfolk	100	Duchess of Sutherland
500	,, of Orleans	100	Jacques Lafitte
1500	Géant des Batailles	500	La Reine
200	General Castellane	100	Louis Buonaparte
150	,, Cavaignac	100	Madame Laffay
1000	,, Jacqueminot	100	Robin Hood
100	,, Pelissier	50	Sydonie
100	,, Simpson	50	William Jesse
200	Gloire de France		TEA-SCENTED.
100	Imperatrice Française	500	Comte à Paris
1000	Jules Margottin	500	Devoniensis
500	Louis Peyronny	100	Elise Sauvage
100	Lion des Combats	1000	Gloire de Dijon
50	La Ville de St. Denis	100	Goubault
500	Lord Raglan	100	Jaune
100	Madame Pepin	150	Madame Willermorz
250	,, Domage	100	Niphetos
150	,, Hector Jacquin	100	Pauline Plantier
100	,, Knorr	100	Sombreuil
500	,, Masson	150	Souvenir d'un Ami
150	,, Cambacères	100	Vicomtesse de Cazes
500	,, Vidot		
300	Mathurin Regnier		
200	Mrs. Rivers		

The above are all fine grown plants, strong and vigorous; they are all budded close to the ground, within 3 and 4 inches of the root, and are admirably adapted either for clumps or potting. Smaller quantities are grown of all the other varieties in their different classes.

GLADIOLUS BRENCHLEYENSIS.

YOUELL AND CO. are now sending out strong flowering Bulbs of this magnificent showy variety, the colour of which is bright vermilion scarlet. A box of the spikes of bloom was forwarded to the Editor of this Paper in August last, whose opinion of it will be found in the publication of August 20, page 694, as follows:—

"This must certainly be regarded as one of the most showy and beautiful of the class to which it belongs."

Price 5*s.* per dozen; 40*s.* per 100. Trade price on application.

Royal Nursery, Great Yarmouth, Norfolk.

CARNATIONS AND PICOTEES.

YOUELL AND CO. are now sending out strong well-rooted Plants of the above at the following prices:—

CARNATIONS, finest first-class show varieties by name, 18*s.* and 24*s.* per dozen pairs.

PICOTEES, ditto ditto, 18*s.* and 24*s.* per dozen pairs.

,, on yellow grounds, 20*s.* and 30*s.* per dozen pairs.

Finest mixed Border CARNATIONS and PICOTEES, 9*s.* per dozen pairs.

True old CLOVE CARNATION, 12*s.* per dozen pairs.

Scarlet ,, ,, 18*s.* ,,

White ,, ,, 24*s.* ,,

(Our extensive stock of the above enables us to offer them to the Trade on most advantageous terms.)

PINKS, finest first-class varieties, by name, 9*s.* and 12*s.* per dozen pairs, or fine mixed border, 6*s.* per dozen.

Royal Nursery, Great Yarmouth.

CRIMSON PERFECTION RHUBARB.

ROBERT SALT begs to announce that having on hand a good quantity of the above excellent variety of RHUBARB, he is prepared to offer them at the following low prices:—

One-year old Roots		8*s.* 0*d.* per doz.
Two-year do.		15 0 do.
Three-year do.		20 0 do.

With usual discount to the Trade.

R. S. has much pleasure in recommending the above, it being very early and productive, and the interior of the stalks a crimson colour. Orders forwarded to Robert Salt, Longton, Staffordshire, or to the undermentioned, will receive prompt attention:—Messrs. Hurst & M'Mullen, Seedsmen, 6, Leadenhall Street, London, E.C.; Burgess & Kent, Nurserymen, Penkhull, Staffordshire; Mr. Chas. Turner, Royal Nursery, Slough; Francis & Arthur Dickson, Nurserymen, 106, Eastgate Street, Chester.

A remittance from unknown correspondents.—Longton, Oct. 29.

HYACINTHS, TULIPS, CROCUS, ETC.

JAMES CARTER AND CO. have just received a fresh supply of BULBS from Holland in first-rate condition:—

HYACINTHS for pots, mixed, red, various shades	..	3 0	do.
,, for open borders, single and double blue, do.	..	3 0	do.
,, white	..	3 0	do.
Crimson	..	4 0	do.
Blue	..	4 0	do.
Purple	..	4 0	do.
Pink	..	4 0	do.
White	..	4 0	do.
POLYANTHUS NARCISSUS for pots, 8 fine varieties, one of each for	..	2 9	

CROCUS.

	Per 1000.	Per 100.		Per 1000.	Per 100.
Blue	12*s.*	1*s.* 4*d.*	White	18*s.*	2*s.* 0*d.*
Cloth of Gold	15*s.*	1 8	Large Yellow	18*s.*	2 0
Purple	12*s.*	1 4	Striped	12*s.*	1 4
Striped	15*s.*	1 8	Yellow	12*s.*	1 4

TULIPS for open borders and pots.

	Per 100—*s.* *d.*		Per 100—*s.* *d.*
Very fine mixed single	6 0	Duc Van Thol	3 6
Very fine mixed double	6 0		
Tournesol, scarlet and yellow	7 6	Spanish Iris, finest named	4 0
Rex rubrorum, scarlet	7 6	Ranunculus, Scarlet	
		Turban	2 0

JAMES CARTER & Co., 238, High Holborn, London, W.C.

NEW GARDEN SEEDS, GROWTH OF 1859.

ROYAL BERKSHIRE SEED ESTABLISHMENT.

SUTTON AND SONS are now prepared to execute orders for all kinds of GARDEN SEEDS, and can warrant them genuine.

Royal Berkshire Seed Establishment, Reading.—Oct. 29.

DUTCH FLOWER ROOTS.

PETER LAWSON AND SON

The Queen's Seedsmen, &c.,

respectfully announce the arrival of a fine Stock of

DUTCH FLOWER ROOTS,

and they are now prepared to execute orders for the same.

27, Great George Street, Westminster, S.W.

NEW SEEDS.

TRIFOLIUM INCARNATUM

ITALIAN RYE-GRASS

NATURAL GRASS SEEDS for PERMANENT PASTURE LAWNS, &c.

PETER LAWSON AND SON, the Queen's Seedsmen, &c., are prepared to supply all kinds of SEEDS for AUTUMN SOWING of the best quality.

27, Great George Street, Westminster, S.W.

MR. EDWARD MILNER having constructed and laid out the Crystal Palace Gardens and Park, Sydenham, under the direction of Sir Joseph Paxton, and having managed them for the Company till last Midsummer (when owing to the pressure of other professional duties his engagement terminated), desires to express his acknowledgments to those Noblemen and Gentlemen who have honoured him with their patronage, and to state that he continues to undertake the execution of works of a similar character.

An active experience of upwards of 20 years enables Mr. Milner to offer his services in the formation and improvement of Parks, Gardens, and Ornamental Grounds, also in preparing designs for Conservatories and other Horticultural Buildings; in establishing and thinning Plantations and Woods, with special reference to the trees most suitable for particular soils and aspects, the valuation of Timber, Draining, Road-making, &c.

Mr. Milner is permitted to refer to Sir Joseph Paxton and to several Noblemen and Gentlemen for whom he has done work.—Address, Edward Milner, "Oxford House," Anerley Road, Norwood, S.

HORTICULTURAL SOCIETY OF LONDON.—The next Meeting of the FRUIT COMMITTEE will be held at 8, St. Martin's Place, Trafalgar Square, W.C., on TUESDAY, November 1, at 3 P.M.

At this meeting Prizes will be awarded as follows:—One Pound for the best, and Ten Shillings for the second best dish of each of the following varieties of PEARS:—

Class A.—Marie Louise.
,, B.—Suffolk Thorn.
,, C.—Beurré Bosc.
,, D.—Louise Bonne of Jersey.
,, E.—Van Mons Léon le Clerc.
,, F.—Thompson's.
,, G.—Any other Variety.

One Pound for the best, and Ten Shillings for the second best dish of each of the following varieties of APPLES:—

Class H.—Ribston Pippin.
,, I.—Cox's Orange Pippin.
,, K.—Early Nonpareil or Hicks's Fancy.
,, L.—Blenheim Pippin.
,, M.—Any other Dessert variety.

The carriage of Packages of Fruit will be paid.

All fruit exhibited must be fit for table, and accompanied by forms exhibiting the circumstances under which the fruit was produced. Blank forms may be obtained on application to Mr. Thompson, Society's Garden, Chiswick, London, W.

The Gardeners' Chronicle.

SATURDAY, OCTOBER 29, 1859.

MEETINGS FOR THE ENSUING WEEK.

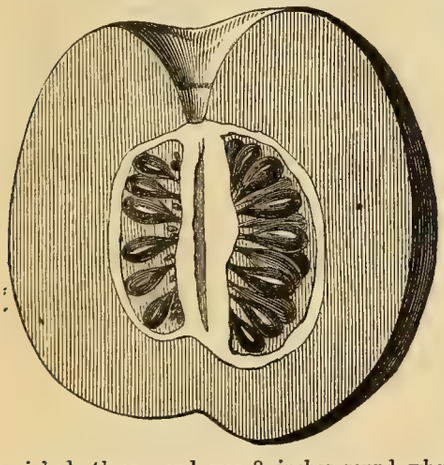
Tuesday, Nov. 1 { Horticultural (Fruit Committee at St. Martin's Place) ..... 3 P.M.

It has often struck us as a singular omission on the part of gardeners that they have not attempted to domesticate the Japan Crab, or Pyrus Japonica as it is improperly called, the plant being in reality a Quince, or Cydonia. This most beautiful of all hardy shrubs except the Rose is now in precisely the same state as when it first, about the year 1815, arrived from China; the poor pallid variety called "white" having been also an importation and not of home production. Here was a plant unsurpassed for hardiness, for brilliancy of colour,

and for the durability of its blossoms, a winter flowerer and an evergreen, propagated moreover with the greatest ease, left disregarded by those who would have expended a life in experimenting upon the Rose. And what is the more remarkable it was a species evidently having a tendency to change, as its two or three unimportant varieties plainly indicated, and most nearly related to the Apple and Pear on the one hand, and the Rose itself on the other, all three of which are among the most domesticable (*s. v. v.*) of plants, as all men know.

It has perhaps been owing to the unwillingness of the plant to ripen its fruit here that the opportunity of raising seedlings has been neglected. And yet it does sometimes produce good seeds, more often perhaps than has been suspected, the fruit itself being worthless and disregarded. Attention has moreover been turned more in the direction of the fruit, whose qualities have been thought hopelessly bad, than towards the flowers, which appear to possess all the elements of mutability. When we think of the poor field Rose, with its red blossoms, not broader than a florin, which, when transferred from an Austrian cornfield, grew up from generation to generation in increasing beauty till it stood revealed what it now is—the loveliest of flowers, there is surely every inducement to subject the Pyrus japonica to the same discipline.

We have been led to these remarks by the examination of a case of very marked improvement actually effected in the plant before us. Not in the flowers, however, but in the fruit. The Quince which the species bears is described by Thunberg as having the size of a Walnut in Japan, where it grows wild on the mountains. With us it sometimes becomes twice as big—a rugged angular unattractive thing, which none pause to look upon. But we received the other day from Messrs. Lowe & Co. some specimens of an improved variety raised by one of their correspondents in the south of France, which presents so very marked an advance towards change as to hold out great encouragement to skilful breeders. Instead of the shapeless, angular, rugged fruit that we see here, the specimens in question were very exactly oblong, as large at one end as the other, without any angles whatever, and clean-skinned like a Nectarine. The largest specimen, of which the annexed cut represents a section,



weighed 4½ oz., and was 8 inches round when measured lengthwise. The flesh was very firm, sub-acid, but rather austere, with a weak fragrance. As it did not promise to be eatable when raw it was made into a preserve with sugar in the usual way, and it proved to be admirably suited for that purpose, becoming semi-transparent and having a very delicate flavour resembling that of Quince marmalade.

It is now clear that to Pyrus japonica does not belong one of those unchangeable natures that defy attempts at alteration; but that like others of its Rosaceous kindred it is capable of yielding to the influence of the arts of cultivation. To what extent it will yield can only be ascertained by experiment; but considering the changes already brought about in China in its flowers, and in Europe in its fruit, there is surely no extravagant enthusiasm in anticipating the appearance of it, some day, with flowers as double and as large as those of the China Rose. This at least is certain—that there are now sufficient grounds to justify serious attempts at operating upon it.

Last Tuesday "His Royal Highness the Prince Consort presided at a meeting of the Council of the Horticultural Society, held at Windsor Castle, at 3 o'clock. There were present Lord Ducie, Mr. J. J. Blandy, Mr. Wentworth Dilke, Colonel Challoner, Dr. Lindley, Mr. Wilson Saunders, Mr. Godson, Mr. J. R. Scott, Mr. Bohn, Mr. Veitch, and Mr. Edmonds." So says the *Court Circular*. The business of the meeting was to decide upon some preliminary points connected with the plans for the New Garden at Kensington Gore. The Council sat nearly three hours.

New Plants.

228. Cordyline indivisa, *Kunth. Hooker, fil. Flora of New Zealand, I.*, 258.

This is very different from the plant thus called in gardens, or otherwise known by Forster's name of Dracæna indivisa, which is merely C. australis, as Dr. Hooker pointed out in his valuable Flora of New Zealand. It has now been introduced to Europe for the first time by Messrs. Lee, of the Hammersmith Nursery, who have communicated the following history of it:—

"Our correspondent describes the tree as being the only one he could find near the neighbourhood of Canterbury settlement, and he describes it as the most beautiful of all the trees or plants of the forest, having a large umbrageous head with many branches and fine long leaves (over 3 feet long). Their colour is a golden bronzy green, and the mid-rib, which is prominent and broad near the base, is of a tolerable crimson hue and very conspicuous. The country was searched for above 100 miles round and no other specimen met with."

That it is very rare in the country that produces it is shown by Dr. Hooker never having seen it alive, but described it from dried specimens. We transcribe our learned friend's account from the work above quoted:—"Inhabits the Northern and Middle Islands; Dusky Bay, according to Forster: the foot of Ruahine mountains, according to Colenso; Thomson's Sound, according to Lyall. Native name, 'Tikapu.' Trunk 10 feet high, according to Colenso (20 in the Middle Island), nearly a foot in diameter, undivided. Leaf very thick and coriaceous, 4 to 5 feet long, 5 inches broad, often glaucous below. Panicle 4 feet long, stout, drooping. Branches 8 to 10 inches long, very stout, densely covered with crowded pedicellate flowers. Perianth white, bell-shaped; segments oblong, one-fifth of an inch long, recurved. Mr. Colenso says that the fibre of the trunk of this plant is extensively used in the manufacture of mats and garments called 'Toii," of which he has communicated one now exhibited in the Kew Museum of Economic Botany."

The leaves sent to Messrs. Lee resemble in form Yucca aloifolia, but are thinner. The inflorescence which accompanied them, from which however all the flowers had fallen, was a dense oblong panicled spike, not in the least like the loose pyramid of C. australis, the side branches curving gracefully upwards, like the arms of a candelabrum, and not being set on more than half an inch apart.

229. Syringa oblata.

We refrain from giving a specific character to this plant on account of the uncertainty under which we labour as to its distinctness as a species from S. vulgaris. Mr. Fortune informs us that it was first discovered in a garden near Shanghae, but it was evidently rare in that part of the country. "The Chinese informed me it came from the North and was common in the gardens of Pekin. Full grown specimens are about the size of our English Lilac, but more tree-like in the general outline; the leaves also are very striking, being large, rather fleshy, and oblately cordate. The species blooms profusely, and its fine bunches of purple flowers are very ornamental. There is a white variety equally interesting found in the same country which I have succeeded in getting home alive, and which is now under the care of Messrs. E. G. Henderson & Son, St. John's Wood. Both these varieties will be found perfectly hardy in England, and will no doubt prove attractive objects in our parks and gardens. I may mention that the Chinese nurserymen propagate them by grafting on the Privet (Ligustrum lucidum)."

It differs from the common Lilac in its leaves being as broad or even broader than they are long, and in the flowers, which are not more than half the size, forming a thin loose panicle nearly destitute of the down of the common Lilac. The cup of the calyx is also more acutely four-toothed. It appears from Mr. Fortune's specimens in our herbarium that a purple variety occurs in the gardens in the north of China, and that a white one is in cultivation at Shanghae.

Mr. Glendinning's nursery contains the only specimens of the purple variety of this species alive in Europe.

230. Rhododendron Fortuni.

There has been for two or three years in the Nursery of Mr. Glendinning, of Turnham Green, a very striking Rhododendron, which is quite distinct from any others in cultivation. It has not yet flowered, but its leaves show that it is unknown in gardens, and, as far as we can discover, in books and herbaria also. Its leaves are very exactly oblong, perfectly flat, about 6 inches long by 2½ inches broad, rather heartshaped, and cuspidate. They are deep green and not at all shining on the upper side, white on the under. Their foot stalk is very strong, purplish, and about ¾ inch long. We cannot say more about it for want of flowers, but name it in order that it may not be confounded with others in cultivation; as it must very soon find its way into the trade. Its aspect will cause it to be likened to R. campanulatum; but it is wholly distinct, and possesses the great merit of being as hardy as Rhododendron ponticum, as we can state of our personal knowledge, a plant in our possession having stood the last three winters and even the snow storms of the late spring, without the least protection, in a shrubbery facing the N. West.

Mr. Fortune has furnished us with the following memorandum concerning this plant, which promises to be worthy to bear his name. "When on one of my long journeys in the province of Chekiang (West from Ningpo), I accidentally met with this fine species amongst the mountains, about 3000 feet above the level of the sea. The discovery was most unexpected, for although the lower parts of these mountains are covered with the allied genus Azalea, no Rhododendron had been known to exist in this part of China. The specimens I met with were of all sizes, from a year's seedlings to full-grown plants, the latter being 10 to 12 feet in height. The large plants had been covered with flowers a short time before, and the ground under the branches was now strewed with decayed blossoms, but not in a state fit for examination. I was told on all sides by the natives that the plants were most beautiful objects when in full bloom. When I returned to the same place in the autumn I found an abundance of ripe seed, which has vegetated freely in Mr. Glendinning's Nursery at Chiswick. The only other species of Rhododendron known in China is *R. Championæ* (Hooker), a pretty plant discovered by the lamented Col. Champion on the Hongkong Hills."

HISTORY OF AN ORCHARD VINERY.

The following are the particulars as to the origin and results of a cheap or orchard Vinery, which, if its very moderate cost and ultimate utility are considered, will I think prove interesting to many. I do not presume to instruct people either how to grow Grapes or how to erect cheap orchard-houses as separate matters, as this information can be better obtained elsewhere; my object is simply to inform your readers what has been done and at what cost, and to show that much more has been realised than could possibly have been expected either by employer or gardener, the former especially being unfavourably predisposed to the contrivance, though now it is much in favour, its merits having been fully tested. The idea occurred thus: early in the spring of 1855, having on previous seasons felt the want of more convenience for wintering bedding plants, I had permission of my employer to expend a small sum for a pit, frame, or other building, which should supply what was required. I came to the conclusion that no erection would be so useful as a cheap building, which would answer the purpose of a hybernatory and Grapery without fire-heat. Four Vines had been planted in a small greenhouse three years previously, which owing to shading the plants had never produced fruit, and had been otherwise very unsatisfactory, and into the intended cheap wooden orchard Vinery it was thought these might be removed with advantage. I confess I was very anxious to give a fair trial to the principle of connecting these two purposes with small cost of erection, and that such can be done is proved satisfactorily, both as to quantity and quality of the Grapes, as well as the preservation of bedding plants.

The result of a consultation with a master carpenter was that 12 lights, 6 feet 9 inches long by 3 feet 6 inches wide, were prepared and glazed with 16 oz. sheet glass, size 9 by 7 inches, with glazed ends, a door at one end, 7 rafters and 16 posts* for the front and ends, 3 feet of which were fixed in the ground, and 2½ feet out, cut to a straight edge, to the outside of which are nailed half-inch deals; these form the front wall, four boards 9 inches wide from ground to wall plate; the house measures inside 22 feet 10 inches long, by 11 feet 9 inches wide, the back wall is 9 feet clear inside, giving ample head room for path; the rafters rest upon wall plate 3 by 5 inches back and front.

So far as carpenter, bricklayer, painter, and glazier were concerned the Vinery was finished April 2; the border was then made by taking the soil all out inside to the depth of 2½ feet, and within 1 foot of the posts; there were 6 inches in depth of rough brick rubbish placed for drainage, with a fall of from 3 to 4 inches toward the front, in which a common red 2-inch drain pipe was laid. Two-thirds of the soil which was dug out were mixed up with five cart-loads of fresh loam, two loads of rotten dung, and two of brick rubbish and brickbats broken up so as not to exceed the size of a hen's egg; no other material whatever was used. On April 18 following, the four unsatisfactory Vines alluded to were lifted from the greenhouse; they consisted of Muscadine, Black Hamburgh, West's St. Peter's, and Raisin de Calabre; they had when removed made shoots from 4 to 5 inches long, and bled profusely on removal. These Vines were planted up the back wall to which the house was built, having nearly a south aspect. They now come down the rafters and up again; planted within a foot of the front posts were also five Black Hamburgh Vines, which had been raised and grown the previous season. The crop of 1855 consisted of 47 bunches on the young Vines only, averaging ¾ lb. each. The lifted Vines of course received a considerable check, and made no wood thicker than the little finger the first season, but that was good and well ripened. In 1856 the house contained about 90 bunches of good quality. In 1857 there were upwards of 200 bunches; the first were cut August 3, though the average time of commencing cutting has been the middle of August;

* We found the posts, the carpenter the labour of cutting and preparing.

and when the weather became damp towards the end of October, having no heat whatever, I cut about 100 bunches with part of the wood attached, sealed the ends and hung them up in a dry room of south aspect with occasional fire. These were in use till Christmas. In 1858 the crop exceeded 280 bunches; I began cutting August 15; many of the bunches were 1½ lb. weight, and the whole would average 1 lb. each. Thinking that a small Arnott stove would keep the Grapes best, I now had one placed in the centre of the Vinery with pipe carried through the back wall, and this season the crop was too large; and owing to the absence of the family during part of November and December, the crop hung too long. They however kept well until the middle of January of this year, and the present season, though the crop is not so large or good, we have had upwards of 200 bunches, several weighing from 1¼ to 1½ lb. I began cutting August 22, and I have at this time (October 25) upwards of 120 bunches, which will average as many pounds; no fire has been used until the recent damp days. The stove is employed with air, and only to dry the atmosphere, as well as not to injure the bedding plants which occupy the floor of the house, which is as useful as any of the same superficial contents for keeping various plants from October to May, during which time I use a cover of rough Manchester cotton sheeting. It is in lengths suitable for this house from top to bottom, and five sheets sewed together cover the roof at a cost of 2*s.* 6*d.* each, or 12*s.* 6*d.* for the whole; these I find stronger than Frigi Domo, and at about half the cost. This is easily drawn up by sewing four rings to the cover and corresponding pulleys at the top of the house.

After the house is cleared of bedding plants, the border is forked up, and during the summer is very useful for newly-potted plants owing to its shade. I usually give the border two thorough soakings of water during the growing season. I continue watering until I can see that it has passed through the whole of the soil and drainage, having a tub sunk for the purpose. From the end of July the border is allowed to become as dry as possible, when the house forms a good shelter for drying seeds, herbs, Onions, &c.

This cheap orchard Vinery has, as has been stated, much more than answered what was expected, the best proof of which is the desserts furnished to my employer and the cost of production. The average crop of the season would more than pay the entire cost of the house, and in some seasons has exceeded that, for the entire cost was something under 20*l.*, and the carpenter's bill included raising the back wall a foot at one end to get the level, also pointing, plastering, and lime-washing, for the wall was very old, and full of nail holes. The Arnott stove was an after expense, 2½ years after erection, and was 1*l.* 14*s.*, including about 13 feet of pipe for chimney. I may remark that I give all the air possible in the spring with a view to retard the breaking of the Vines, and in a secondary point of view the better for the plants, lest the frost, which sometimes does injury at the end of April and early in May, should find the young Vine shoots unable to resist it. But with the covering I have hitherto had no reason to fear, and from the end of May for the next three months I shut up early and economise heat as much as possible, checking growth as long as I can while I have the power, but when unable to further retard assisting to obtain and retain heat, closing the house early, frequently forking the border, and sprinkling soot, ashes, and very rotten dung on the border. *M.*

BELGIAN GARDENS.

No. III. Not long agowe had an opportunity of visiting the magnificent residence of M. Warocquié, of Mariemont. We need not speak of either the fine park, in the midst of which still stand the ruins of the spacious palace, formerly inhabited by the Archduke Albert of Austria, or of the new mansion quasi royal, from the top of which there is an extensive view for many miles round. Our business is with the beautiful gardens, the fruit trees growing under glass, and the conservatories, partly finished and partly in the course of construction.

Close to the mansion is a kitchen garden covering a space of more than 5 acres of ground; borders of annual and perennial flowers, mingled with pyramid fruit trees, which are of unexceptionable health, break the monotony of the square beds. A walk 4 yards wide runs the whole length of this garden, and brings you to the front of a glazed pavilion, flanked on two sides by long ranges of almost perpendicular forcing houses, under which a network of Black Hamburgh Grapes bends down beneath the weight of the numerous beautiful bunches.

In the central pavilion are many very fine Apricot and Peach trees planted in the open ground. In the front of these forcing houses, and for more than 80 feet in length, are several ranges of hot beds for growing Pine Apples and early plants requiring heat. This extensive kitchen garden is almost entirely enclosed by a very high wall, literally covered with choice trained fruit trees, in perfect health and admirably cultivated. At some distance behind the forcing houses, across an orchard where the trees are supported against the wind by strong iron wires fixed to the ground and the trees themselves, you come to a spot which richly deserves the name of a Rose garden, containing as we were told more than 500 different varieties of Roses. Large masses of Rhododendron ponticum, Azalea pontica, Roses, Kalmias, &c. in exact proportion to the size of the park, destroy the monotony of the Grass.

Not far from the chateau, on the left, and in front of the kitchen garden, a "monumental" greenhouse is being raised upon a vaulted base, the doors and sashes being made of galvanised iron, 6 yards high. Beneath this greenhouse, warmed by means of a hot-water apparatus, partly of iron and partly of copper, are spacious cellars for preserving fruit. From the sides, in front of this building and at right angles to it, are two span-roofed greenhouses for Camellias. In front of these and parallel to the greenhouse, two other houses are backed up to the foot of the vault, one of which is to be for Azaleas; the other, which is finished, contains the commencement of a collection of Orchids, and judging from the rarity and vigour of the specimens already there, promises to be very fine. Amongst the latter we noticed a Vanda tricolor and a V. tricolor formosa, 5 feet high; a Vanda cœrulea, nearly 13 inches; a gigantic Aerides odoratum majus bearing more than 30 bunches of flowers; Saccolabium violaceum and Blumei majus, in great beauty; a Chysis Limminghii, with 12 bulbs, really something to be looked at; very fine specimens of Lælia purpurata, Cattleya labiata, crispa, Leopoldi, Aclandiæ, and Skinneri; most beautiful Oncidiums, Odontoglossums, Stanhopeas, Huntleyas, &c., in fact nothing common-place, all chosen by a master hand. Many Tree Ferns and other plants with finely divided leaves, Marantas, Tillandsias, and Caladiums, alternated with Orchids, which they protect with their shade and to which they form a tropical enclosure. In the centre of the greenhouse is formed a row of arches, 2 yards high, ornamented with climbing plants such as Cissus, Dioscoreas, Bignonias, and Thunbergias, in the centre of all which are groups of ornamental and variegated leaved plants. We observed among other things most of the new hothouse Marantas and Dracænas. *From the Journal d'Horticulture Belge.*

Home Correspondence.

Bees in London.—This has been a curious season with bees in all parts of the country. The terrible frost which occurred at the end of March upset their economy, and was probably the cause of the scarcity of swarms during the subsequent May and June. Those who got good swarms, however, had them early; but the season has been characterised by a small increase of stocks and a very large honey harvest. So vigorously did my bees work during June and July, that stocks newly supplied with Stewarton supers of great capacity persisted in working in the open air as well, and I had a number of large combs formed under the board. This was very generally the case throughout the south of England, and many who had never before seen such freaks were in a quandary what to do. Some bee-keepers turn this propensity to account, and enclose the open air combs with a bit of rough woodwork. I prefer to leave the bees alone, and as soon as damp and chilly weather makes them quit the combs, I cut them away and fix them on the bars of boxes as guide combs, but such examples should teach us the policy of nadiring as well as supering, so as to turn to account the whole of the work accomplished during the very short season bees enjoy in this country. In my description of the Indicator Bee Stand (*Gardeners' Chronicle*, May 28, 1859), I stated that in 1858 the increase of store ceased on the 15th of July. This year it was continued till the 10th of September, and on the 12th I took a second Stewarton box from a swarm of the previous year, making a total of 36 lbs. from one stock. Bee-keepers who pasture good Heather will see nothing remarkable in that, but my bees are just 3 miles from St. Paul's as the crow flies, and I should reckon a take of 10 lbs. per stock a very fair result in such a locality. True, the locality is a good one, and the new combs of this season are only a shade less white than those that come from the New Forest, which is perhaps the best bee country in the south of England. According to a recent note in the *Builder* there is scarcely a street in the city of London in which you may not get sight of living trees, and the gardens of the Temple, the Bank, and the Inns of Courts prove that London need not be utterly destitute of rural embellishments. So in regard to bees, they may be kept almost anywhere within moderate distance of open country, but the nearer you take them towards the town, the more soot you get along with the honey. Last year one cup of honey taken here was so discoloured that it took two months to settle, and then the bottom of the jar was coated with a black deposit, when the honey became moderately clean. In all moderately open suburbs, supers put on strong stocks in June, and taken in July, will be of a passable colour, and the metropolitans may therefore enjoy all the pleasures that arise out of bee-keeping as a pastime, even if they now and then have to deplore that the honey is not bright enough to set before their friends. It is time we got rid of all cottage hives and erased straw from the catalogue of apiarian appliances. Nothing like boxes of considerable capacity and double swarms to stock them. Then there need be no feeding, no ventilating, no swarming, for two or three years, or perhaps never with supering and nadiring; and instead of cups of 8 lbs. or 10 lbs., boxes of 20 lbs. to 30 lbs. might be taken in equal number and in a similar brief space of time. *Shirley Hibberd, Stoke Newington.*

Monstrous Cardamine.—We have received from Mr. Wheeler, of Chelmsford, the following interesting account of the singular and very important monstrosity mentioned at page 525 of this year's volume. We understand that the writer, Mr. Gibbs, is an enthusiastic botanist, who, in addition to his other pursuits, also teaches a botanical class in connection with the Mechanics' Institution of Chelmsford. "As the monstrous flowers of Cardamine pratensis appear to be as new as they are interesting, I purpose telling you what I know of their history. I think it was in April when I noticed a flower of a rather deeper colour than the others of that species, and gathered it; after which I saw that though it seemed perfectly to resemble its kind in calyx, corolla, and stamens, the pistil was very different from what it usually is, being raised upon a stalk and swollen so that it might almost be called sub-globular. I could make out nothing of its internal structure, so that I could only regret having gathered it prematurely, and resolve that if anything like it should again attract my notice I would allow it to develope its peculiarities before gathering it. Some time after I was gratified with the sight of many similar flowers, and noticed that there were no ovules, but that the deformed carpels seemed to have become the calyx of a second flower, consisting wholly of petals without any trace of sexual organs. But this carpellary calyx did not resolve itself into separate sepals, but opened by a slit on one side. This second flowering is perfectly distinct from the first, which takes place in the regular course of indefinite inflorescence from the base upwards; some of the flowers near the top of the raceme being yet in bloom, while the double flowers of the second series are beginning to expand below. But I notice much irregularity in the order of expansion of the second flowers, as might have been expected from their monstrous character. The upper flowers of the raceme showed some alteration of the stamens, indicating a tendency to such doubleness as is common in Ten-week Stocks, with which I presume that this case has some analogy. I had noticed most of these particulars previously to the 20th May, on which day I alluded to the case in the examination paper, for which the Society of Arts have awarded me a certificate of proficiency. It is remarkable that this transformation affects all the flowers of the raceme in which it occurs, and nearly all the plants which grow in the particular field where they grow, which may be accounted for on the supposition that the pollen from the first altered flowers, not being affected by the change, fertilises other perfect flowers in its neighbourhood, and so the monstrosity is propagated by seed." *John Gibbs, Moulsham.*

Death of Mr. Barter.—Intelligence has been received of the death of Mr. Charles Barter, botanist to the Niger expedition, which took place on the 15th July at a place called Rabba, on the river Niger. His brother received the sad news from Dr. Baikie before the 22d of September. *Gilbert Macaulay.* [We, in common with all who knew Mr. Barter, deeply regret his untimely fate. The letters from him published in our columns in the early part of the present year showed him to be a man of great intelligence; and the very valuable collections of both living and dried plants sent by him to Kew proved that his intelligence was accompanied by much zeal and untiring energy. We believe that his death was caused by dysentery, a dreadful scourge in such climates as the banks of the Niger. He has been succeeded by Mr. Gustave Mann, a young Hanoverian, who sailed for Lagos last Monday. May he do as well as poor Barter, and meet with a better fate.]

Potatoes are considered a Garden Crop.—This we cannot deny, yet it is easy to solve the question asked by your correspondent (see pp. 832 and 850). I would here remark that Potato planting, moulding, and storing generally take place during the busy time of the season; and I believe where the principal crop is grown for the family under the sole charge of the gardener, say 1 or more acres, it is frequently necessary that extra help should be allowed. For my own part, when gardener to the late Sir O. P. Wakeman, Bart., Perdiswell, Worcester, the Potato crops that had previously been grown by the farm bailiff were in consequence of complaints respecting quality and quantity (the former quite likely to occur through careless cooking) placed under my management. I found it impossible for me to bear this extra burden (although it is well known to have been once my great hobby) without additional help; consequently, whenever I found it necessary I put on extra men, but the extra expense was not booked in my garden account but charged as extra labour for Potato planting, storing, &c. I am acquainted with many gentlemen's places where only 1 acre of Potatoes is planted annually, yet extra help is always allowed the gardener to plant and store his crop. *Edward Bennett, Osberton, Notts.*

The Weather in Yorkshire.—On Thursday night, the 20th inst., severe frost set in and our thermometer indicated 4° of frost at 6 in the morning of Friday, and 10° at 7 o'clock. A clear sunny day followed with a considerable amount of lightning in the evening. Dahlias, Calceolarias, Verbenas, and all soft-wooded things were a total wreck. Friday night brought another severe frost, which terribly cut up Chrysanthemums, Eugenia Ugni, &c., in exposed places. A tolerable fall of snow on Saturday, and severe frosts at night on Saturday and Sunday nights. This night (Monday) snow on the hills, and the thermometer indicating 6° of frost. Dahlias and bedding plants were in full flower on the morning of the 20th and it was a fine mild day. *W. Dean, Bradford, Yorkshire.*

Weather in Staffordshire.—Thursday, Oct. 20, therm.

53°, barom. 29.8 inches, heavy rain, which continued till midnight; wind then veered to N.W., and found us Friday, Oct. 21, with black frost, therm. 28°. Saturday, 22d, clear, frost, therm. 27°. Sunday, 23d, clear, frost, therm. 22°; Dahlias, Fuchsias, and tender vegetables black and withered. Monday, 24th, hoar frost and fog, therm. 20°. Tuesday, 25th, hoar frost and fog, therm. 19°; P.M. thaw, succeeded by rain, heavy gale of wind from S.E. Wednesday, 26th, therm. 36°, heavy gale from W. with rain; the Horse-chesnuts, Walnuts, Mountain Ash and Ash trees quite denuded of leaves. The barometer gradually sinking during the week till this morning, when it had fallen to 29 inches. *Old Subscriber, Oct.* 26, 4 P.M.

The Weather in Ireland.—Since Friday last, the 21st, we have had very severe weather in this quarter. It commenced snowing on the 21st to the west of Cork, and on Saturday last Mangerton Mountain, the Paps, Glenflesk mountains, and the Noen range were covered with snow. The weather here is intensely cold. The oldest inhabitants never recollect anything like it so early. Smart frosts at night. *An Old Subscriber, Cork.*

Field Mushrooms.—We have not had a season equal to the past for heat and dryness for many years. Your leading article, which every one must understand, in last week's Paper will at once prove what I am about to state with regard to the field Mushroom. It is true that the Mushroom did not burst like the skin of a tree, nor like that of fruit, nor did it burst like a Cabbage; but this is simply because the vessels of Mushrooms, if they have any, expand to such an enormous size that people well understanding them under ordinary circumstances thought that they must be Cow or Horse Mushrooms. It is true that we have had a few very well shaped, firm, and moderately sized ones, with that unboiled rumpsteak fragrance which any Mushroom grower can tell in a moment, but the crop was soon over; the weather became very cold, and again very hot and dry, making Mushrooms strong and most abundant. Still they were Mushrooms real and genuine, but simply much over fed. A poisonous Fungus is never met with in the open fields. They are not found under Oak, Beech, Hornbeam, or Thorn trees in the centres of fields. But the very finest Mushrooms are gathered under those trees on account of cattle getting under their shade in hot weather. Poisonous Fungi are to be found along hedges and sides of ditches, and in plantations, where vermin have died and other refuse has been collected, as well as on decayed roots of certain trees. They are entirely divested of that fine meat-like fragrance which characterises the Mushroom. Salt put on their gills has no effect as on the true Mushroom. The true kind gets black in an hour or two by salting, and gets quite black in the gills like an old overgrown one. Some kinds of poisonous Toadstools are so pernicious in their smell that venomous things will not even approach them. The whole race of poisonous Fungi has a stinking bad smell, their caps generally have a dirty, yellow, and sickly appearance. Hawkers no doubt may gather them to help to fill their baskets for the London market. I think that the time has now arrived when something ought to be done to put a stop to such filth entering London to risk the lives of people, or even to flavour the broth of the horse-flesh boiler, which is made into catsup. *James Cuthill, Camberwell.*

Frigi Domo.—I find this most useful in the protection of fruit trees against a wall, but it is rather fragile. Can any of your readers suggest to me anything wherewith to bind it, so as to strengthen it, which will be durable and resist the weather? Would unbleached tape answer the purpose? Perhaps some of your correspondents, who have used the "Frigi Domo," may be able to give me the required information. *G. P.*

Two Crops of Pears in one Season.—Enclosed is a Pear that has just been gathered at Twickenham, being part of a second crop this year. The first crop was spoilt by frost which we had about April. You will see by the specimen in question, which is an average-sized one, that it is rather a fine sort; I think the St. Catharine. *Thomas Davies, Prospect Villa, Twickenham Common.* [The fruit was as large as a medium-sized Duchesse d'Angoulême, and appeared to be that sort.][]

Tomatoes in Pots.—I have not planted out Tomatoes for the last five years, but have had instead good crops from plants in pots, with no trouble in training, or stopping, and no failure as to production or ripening. I sow at the end of February in a 60-pot. The plants are kept starving under glass till the middle of April, then shifted into thumbs, and put on the potting bench for a week. They are then packed together under a warm fence, and when they want it are shifted into 60's and allowed to get quite pot-bound. Another shift into 6-inch pots starts them into bloom at less than a foot high, and their further growth entirely depends on their amount of root room. If left alone and allowed to root through their pots they swell their fruit well and make no more growth, and every plant bears from half-a-dozen to nine good fruit which are ripe by the end of September. To swell them off give liquid manure once a week and allow no succession of blooms. Any that are not quite ripe when sun heat begins to fail may be put under glass for a week; or if of good size, cut off th fruit with a good length of stem and hang them in a warm room and they soon ripen. For small consumers who want only a dozen or two this plan is far preferable to planting out. The pot plants are entirely under control, and require almost no attention at all. I should think market growers might make a good thing by growing Tomatoes in pots for Covent Garden market; they would pay better than Egg plants for the London windows if got ripe before the foliage began to change colour. *Shirley Hibberd, Stoke Newington.*

Gossamer a Money Spider.—Your "Young Inquirer" has got from your quotation from Rees's Cyclopædia some account of the manner by which spiders throw out their webs and ascend into the air. Many years ago I was taught by a Mr. Murray, a chemical lecturer, how to see the process of the ascent of the gossamer spider, and having often tried it with success, I now send you a description of it. This spider, although small, has a round jet black body of considerable weight, for if you allow one to spin from your finger and cut the web, it will instantly fall to the ground; but if after suspending itself on a web of 6 or 8 inches long, you leave it to act for itself, it will often be found to originate a vibratory motion, and in a little time will swing to the horizontal. It will then cut the web which attaches itself to your finger, and steadily ascend perpendicularly until out of sight; wind has nothing to do with it, for it is always best tried in still weather. In gossamer days, which we get sometimes in autumn, when a cloudless sky with great heat prevails, then you see floating in the air large flakes of gossamer, being accumulations of web. Mr. Murray considered these threads to be electrical, and said he had seen the spider throw out many threads whilst swinging from his finger, and that they acted as a balloon to cause the spider to ascend; but I never could discover this—of the fact of the ascent there is not the slightest doubt. That the surface of the earth is the spider's ordinary abode there can be no doubt; their webs spread over the whole earth at times, and are rendered visible by reflection; but what the spider does in the air I cannot tell, he may feed himself, or the swallows may feed on him. I hope your "Young Inquirer" will himself study this interesting subject, and give us the result. My inquiries have left much to be desired; but I have gained what he may gain—a moral, which I beg to hand him for his encouragement:—

> Who taught the little gossamer to fly?
> Quit the green earth, and mount into the sky,
> Make the fair canopy of heaven his home,
> And in cerulean fields of ether roam?
> Fearless in space his little body fling,
> And mount in tranquil air without a wing?
> His silver threads to sunbeams can he tie,
> Or hang his webs like clouds upon the sky,
> A bright pavilion, radiant with the light,
> Spread for a day a palace of delight.
> Did instinct teach thee that the winds were still,
> That thou for one short day might take thy fill
> Nearer to heaven's bright gate, and Zion's heavenly hill?
> Is it that thou whose meaner dwelling's found
> Spread lowest on the surface of the ground,
> Might teach this moral to the passer-by,
> Humility 's alone the passport to the sky?

—Thos. C. Brown, Further Barton, Cirencester.

Culture of the Camellia in open Borders.—Last week I went to look at some finely cultivated Chrysanthemums in the gardens of Miss Williams, Stamford Hill, under the skilful management of Mr. Taylor. The garden is small, but tastefully laid out. At the south-east corner and on the north-side of a south wall is a pretty piece of rockwork filled with a collection of British Ferns in excellent condition, and on the north side of the pleasure ground, a short distance from the garden wall, I was somewhat surprised to find a large oval clump of well-grown Camellias, with good foliage, and covered with bloom. Mr. Taylor informed me that they had been planted seven years, and that they bloomed profusely every season; they are exposed to all weathers, and never have had the least artificial covering since they were planted, and generally they come into bloom about the middle of April. The bed consists of nearly 40 plants; the centre ones are from 8 to 9 feet high, and the front and back from 3 to 7 feet. The bed when made for their reception consisted of peat and rotten cow-dung, 2 feet deep. The roots have never been disturbed since planting time, except merely by surface hoeing to keep down weeds. The plants are never allowed to get dry in summer, and the only shelter they have are two or three trees on the east side about 10 feet back from the bed. The sorts are Pæoniflora (double striped), Carolina (double white), Prince Leopold, Perfection, imbricata, Dahliaflora, Eclipse, Duchesse d'Orleans, imbricata alba, and Bealii. I also noticed a fine collection of plants in pots. In the adjoining ground, the residence of Mr. Foster, is a small conservatory that has been planted some years back. In this is as fine and healthy a bed of plants as any in England, a perfect gem in its way, and a credit to the gardener, Mr. Oubridge. I mention this to show that although so near town and subject to London smoke occasionally when the wind is in the south, still plants are as healthy as one might expect to find them 20 miles in the country. *Samuel Broome, Temple.*

The Ivy Tree.—Last Sunday week on taking a quiet stroll after church time, and just where an old cottage had been pulled down, I perceived a faint but most pleasant and spring-like odour of flowers, and on looking up saw an old Ivy bush in full blossom, and covered with an infinite number of insects. I was not aware till then that the Ivy was sweet-scented; the odour was exactly that of the Black Sallow blossom in early spring. On the bush I saw numbers of the beautiful peacock butterfly busily engaged in extracting the honey with their long delicate trunks which they wielded with infinite cleverness and dexterity, all the time keeping an exceedingly sharp look out. The honey bee, the humble bee of various sorts, the drone, wasps of various kinds, and flies of all colours and sizes, including the blue-bottle, were there. It was a sunny day, and they all seemed to be enjoying themselves thoroughly without molesting one another. Though a very great lover of Nature, and delighting to observe such matters, I had never seen this before. I do not know if the honey extracted from the Ivy would be good or not, but if so, a vast deal might be collected by the honey bee from this source in autumn, where the Ivy grows strong on ruins, as on our own beautiful castle, which is clothed from head to foot on the north side of the keep by magnificent specimens of Ivy covered with blossoms. *F. N., Ludlow, October* 20.

Foreign Correspondence.

Gardener wanted in Georgia.—*New York, September* 26, 1859.—My residence is situated about four miles due south from Savannah, and the locality is considered more healthy than any in the neighbourhood with the exception of the immediate sea coast. I have there 300 acres of land, about 120 of which are appropriated to the cultivation of vegetables for the markets of Savannah, New York, Philadelphia, and Boston, and of provisions for my family and the force employed on the place. In 8 or 10 weeks I shall remove some hands from a Rice plantation in South Carolina, and shall then have a force there of 15 or 20 hands. I am desirous of procuring a practical gardener to superintend the cultivation of the vegetables and their preparation for market. I will enumerate the requirements, peculiarities of character and disposition, the possessor of which would be most likely to suit me, the salary, accommodations, and the expectations he could experience, and, if you know of a suitable person, willing to try his fortunes with me, I would consider myself under an obligation, if you would send him out in a vessel bound direct either for Savannah or Charleston. A married man would be more contented to make the place his home. He must be intelligent, industrious, steady, energetic, willing, and anxious to please, and should have been employed in a market garden and understand the management of hot-beds and frames.

An opinion prevails in Europe, and during a sojourn there of 10 years I have remarked it, that a slaveholder must be harsh, exacting, even cruel, and accustomed to drive unwilling labourers to work. This is erroneous, and does us injustice. It is not the case with myself. One who would have an eye to my interest and wishes, be discreet and attend to his business from goodwill, would suit me best. If he should understand the management of fruit trees, Grape Vines, and flowers, so much the better; but these are somewhat of secondary considerations. Salary 300 dollars per annum, payable monthly. I will advance his passage, pay him the three first months in full, deduct then one-third of the three following, which he forfeits if he leaves me before the end of one year from the date of engagement. Should he give entire satisfaction, and we suit each other, I will increase his pay to 30 dollars after the end of the first six months, and from the commencement of the second year allow him 10 per cent. of the nett income from the sale of truck. This should pay him between 500 dollars and 1000 dollars, depending of course very much upon his own exertions and industry. He will be found in vegetables, fuel, and a house. In a couple of years I may pay a second visit to Europe, and I am therefore desirous of procuring a perfectly trustworthy person under whose control I could leave the place. He will at first have little or nothing to do with the negroes, and they must not deter any one from accepting my offer.

No. 35 of the *Gardeners' Chronicle* contains an article on Field Cucumbers. During my visit north this summer I visited several truck farms (market gardens) on Long Island. One farmer had 13 acres, another 18 acres of Cucumbers under cultivation—White-spined variety. From a 3½-acre field 60,000 Cucumbers had been picked in one day, and 1000 dollars' worth sold from it in one week. They are planted in hills 4 feet by 4½ feet apart, with no other crop in the intervals, five plants being left in each hill. Generally four or five plantings are made with a weekly interval, so that one may escape the frost and a good stand be secured. *M. D., Savannah, Georgia.*

Societies.

Entomological: *October* 3.—Dr. J. E. Gray, F.R.S., President, in the chair. Mr. S. Stevens exhibited a specimen of Pieris Daplidice, lately captured on the Kentish coast. Mr. Bond exhibited a number of rare moths from the Isle of Wight, including two new to the British lists—Leucania extranea and Noctua flammatra; other rare species were exhibited by Messrs. Matthews and Lynch. Mr. F. Smith exhibited a number of the original drawings made by Rösel for his great work on the insects of the Netherlands. Mr. Jansen exhibited the rare Emus hirtus, taken at Southend; also Anchomenus elongatus, new to this country, from Southwold, Suffolk. A specimen of the beautiful butterfly, Lycæna Boetica, taken near Brighton in August, being the first specimen known to have been found in this country, was exhibited by Dr. Allchin. Mr. Stainton gave an account of a larva which resides in the inside of the pods of Peas in the island of Guernsey, and exhibited a drawing of a new species of Lithocolletis, from Ratisbon; and Mr. Frimins a number of rare and

beautiful species captured by himself in South Africa. Mr. F. Moore exhibited living specimens of the caterpillars of the Eria Silk Moth of Bengal, and of the hybrid between it and the Chinese Eria, which had been fed upon the Castor-oil plant. Dr. Knaggs exhibited a species of Ino, apparently distinct from the recorded British species; and also the curious cluster of cocoons of the Microgaster alvearius. Letters were read from Henry Mann, Esq., of Mercarra, Madras Presidency, giving an account of the insects injurious to the Coffee plantations, the chief of which appeared to be a species of Coccus, allied to the mealy bug. The trees had been treated with coal-tar and charcoal, as many as 17,000 having thus been cleared in three days. A letter was also read from Mr. J. Swann, giving an account of the extraordinary tenacity of life of the larvæ of the common gnat during some chemical experiments. A paper was also read by Mr. S. Stone, on the habits of Sitaris humeralis, a beetle parasitic in the nests of mason bees. The third Part of the current volume of the Society's Transactions was announced as just published.

British Association: *Continued from page* 830).—The Vegetation of Aberdeenshire.—Remarks on the physical characters of Aberdeenshire form a necessary introduction to an account of its Flora. The county of Aberdeen occupies a position between 56° 52′ and 57° 42′ N., and 1° 49′ to 3° 48′ W. long.; it embraces a surface of 1950 English square miles. A line drawn from Culter, on the borders of Kincardineshire, to Pennan, on the borders of Banffshire, divides it into two portions, presenting very great difference in physical characters. To the east of this line the surface, though undulating, does not present any point exceeding 900 feet in elevation, and no part of this section is more than 20 miles distant from the German Ocean. The more inland part, to the west of the line above mentioned, has in general a very different aspect, there being a gradual rise of the surface towards the south-western extremity of the county. This is very obvious on tracing the levels of the two principal rivers, the Dee and the Don. The former has an elevation of 1640 feet at a distance of 70 miles from the sea; the Don, about 55 miles inland, is 1240 feet above the sea. The river Muick, in the course of 10 miles only, from its source at Loch Muick to its conjunction with the Dee at Ballater, presents a difference of level amounting to more than 500 feet. These facts are singularly in contrast with observations made on the course of the river Ythan, which chains part of the more eastern district; at 22 miles from its termination in the German Ocean, it is only 124 feet above the level of that sea. Some of the passes from one glen to another illustrate the same point; the highest level of the path on the east shoulder of Mount Battock, 28 miles from Aberdeen, is about 2000 feet, while that on the west shoulder of Mount Keen, 10 miles further inland, attains an elevation of 2400 feet. Again, if we take a general view of the heights of the mountains in sections of 10 miles from east to west, we observe a steady increase of elevation, till we reach a zone in which few of the numerous mountains are lower than 2000 or 3000 feet, and many exceed 4000, the extreme elevation being that of Ben Muich Dhui, viz., about 4320 feet, and therefore in Britain second only to Ben Nevis. Omitting here other details respecting the shore line, prevailing rocks and soil, temperature, rain, &c., the following is a summary of conclusions respecting the vegetation:—Excluding upwards of 40 species, many of which though now extensively diffused have doubtless been introduced at a comparatively recent period, the indigenous flowering plants amount to 635, consisting of 458 Dicotyledons and 177 Monocotyledons; these are distributed among 53 natural orders of the former and 11 of the latter. The Flora, therefore, is not rich as regards mere numbers, nevertheless it comprehends many species of great interest. *Dr. Dickie in Natural History Section.* Prof. Balfour called attention to the exceptional character of the Flora on the Coial Hills, and accounted for it by the presence of serpentine in these hills. He had found there Arenaria verna, and the same plant on the green hill of Strathdon.—Mr. Babington observed on the comparative poverty of the Flora as compared with the fenny county of Cambridgeshire, where double the number of species of plants existed.

(*To be continued.*)

Indian Cotton.—We learn from the *Madras Spectator* that the following letter has been addressed by Mr. Thwaites to the Secretary of the *Agri-Horticultural Society of Madras.*

"Peradenia, Ceylon, March 24th, 1859.

"I am glad to hear that a decided effort is to be made to give an impetus to an extensive cultivation of Cotton, for the English market, in the Madras Presidency, and I trust it will be attended with every wished for success. It has occurred to me, as there would probably be some difficulty in getting the superior descriptions of American Cotton acclimated in any moderate space of time, that attempts to improve the native Cotton are well worthy of consideration, and I would suggest that systematic experiments should be made of crossing the native kinds with the Bourbon, Sea Island, and New Orleans varieties. In conducting the operation the same plan should be adopted and the same precautions observed that are taken in crossing valuable flowers and fruit, with such signal success in Europe. An intelligent, active and conscientious person should be employed, who would give the experiment a fair trial: for, if the result should be the obtaining a variety of Cotton—hardy, prolific, and of superior staple, the benefit would be almost incalculable; whilst, if the experiment should not end in so favourable a manner as could be desired, a problem of very great interest would have been solved, as to the affinity the several varieties of Cotton bear to one another. The following is the plan I should recommend being adopted in carrying out the experiment. A moderate number of each of the several varieties of superior Cotton should be planted and carefully cultivated; each kind being kept separate. The native Cotton should be planted in a certain number of rows, and of so many of these rows all the plants should have their flowers crossed by one description of superior Cotton;—the plants of so many other rows by another description of superior Cotton, and so on:—and each flower, when crossed, might be marked by a small piece of coloured twine being tied to its stalk. The ripe seeds obtained from these crossed flowers should be sown in distinct patches,—that is to say—those resulting from the cross with the Bourbon in one place, those from the New Orleans in another, and so on for the rest. When the plants raised from these seeds come into bearing, a great diversity would probably be exhibited by them respectively, as regards healthy appearance, prolificness and the quality of the staple. The inferior ones should be pulled up and thrown away, and the better kinds retained and numbered and their comparative qualities well examined and recorded. If it should be found that real progress had been made towards improvement of the native Cotton, the system of crossing might be still further carried on, using the plants of the already improved stock, instead of those of the original native kind, for crossing upon: and this operation might be carried on for several generations of plants until the maximum improvement should be considered to have been realised."

The Committee considered the foregoing proposition as exceedingly ingenious and likely to prove a means of improving native Cotton so as to produce from it an article of good staple. In recording their thanks to the Chamber of Commerce, for the opportunity afforded them of perusing Mr. Thwaites's letter, the Committee determined to draw up a brief memorandum of the best method of hybridising (or crossing) Cotton: and also to make inquiry as to how far the results of the experiments in Cotton by Dr. Wight can be made known to, and rendered useful to, the public.

Notices of Books.

Handbook of Geological Terms and Geology. By David Page, F.G.S. Blackwood. 12mo. pp. 416. The title of this valuable volume scarcely does justice to its contents. It is in reality an elaborate and excellent Dictionary of words used in geological writings, preceded by sketches of Natural History classifications connected with Geology. For students there are carefully prepared lists of the synonyms of all known formations at home and abroad, in itself a most acceptable addition. We have tested Mr. Page's volume repeatedly, and not only found every word that was sought for, but such full and clear explanations of their meaning as to leave nothing to criticise. A book like this is as necessary in a library as Johnson's Dictionary itself.

We find on our table a few accumulations among which the following are most in arrear. The *New Exegesis of Shakspeare* (Black), 8vo, is an interpretation of the principal characters and plays on the principle of races. The author takes Iago as the type of the Romano-Italic race, Hamlet of the Teutonic, Macbeth of the Celtic, and Shylock of the Hebrew. The whole concludes with a dissertation on the supernatural machinery of the great author. We suspect that Shakspeare, if he revisited the earth, would be rather surprised at the labours of his ingenious, and dare we add fanciful commentators and illustrators. — *Routledge's Illustrated Natural History*, part VII., is wholly occupied by dogs and foxes.—*The Climate of Brighton*, by Dr. Kebbell (Longmans), is a small volume of 180 pages devoted to showing the extreme salubrity of the town, and pointing out what class of patients it does not suit. The author is a resident physician.—*Cassell's Illustrated Almanack* for 1860 is a thin royal 8vo of 44 pages, containing in addition to the usual contents of an almanack, a considerable number of woodcuts mostly relating to the events of the day, especially to those in the late war in Italy. It only costs 6*d.*

Trade Lists Received.—John Waterer's (Bagshot) *Catalogue of American Plants as exhibited at the Royal Botanic, &c.* This is by no means a mere list of Rhododendrons, Azaleas, and the like, as its name implies, but a very extensive catalogue of all sorts of ornamental hardy plants, fruit trees included. Mr. Waterer can supply among other things fine specimens of Portugal Laurels, Bays, Hollies, &c., trained as standards with stems 3 to 10 feet high.—John Cranston's (Hereford) *Descriptive Catalogue of selected Roses;* a capital collection worthy the reputation of the proprietor as one of our greatest Rose growers.—James Mitchell's (Maresfield) *Descriptive Catalogue of Roses;* Benjamin Cant's (Colchester) *Descriptive Catalogue of Roses* are two more very useful lists; nothing shows more plainly the rage that exists for Roses than the increasing number and excellence of the trade collections that are now springing up all over the country.

Garden Memoranda.

Drummond Castle Gardens, N.B.—Drummond Castle is situated at the distance of about 3 miles south of the town of Creiff, on the road to Dunblane and Stirling, and is approached from the high road through an avenue (about a mile in length) of majestic old Beeches, the stems of some of which are of enormous size. Emerging from this avenue, the castle comes suddenly into view on the left of the drive; and passing under an archway into the court-yard, a view is obtained from the top of a flight of steps of the whole of the gardens, which are some 30 or 40 feet below this point. Beyond this the park is seen extending in a southerly direction. Descending these steps a terrace is reached which extends the whole length of the castle on the south side. On this there is a straight walk 10 or 12 feet in width, and between it and the wall is a border filled with herbaceous and bulbous plants, which are mostly arranged in masses of single colours. Among these was particularly noticeable a large patch of Tritoma Uvaria, with something like 200 spikes of its gorgeous orange scarlet flowers in full bloom. Two or three beds of very highly coloured Gladioli also tended to give much brilliancy to this part of the garden. The wall at the back of this border was covered with a good selection of Climbers. A plant of Clematis lanuginosa, with its large pale lilac flowers, was very attractive. Among recent introductions perhaps no plant deserves more attention as a hardy or nearly hardy climber than this. Nothing can exceed the beauty of its very delicately coloured flowers, which are so large as to render them conspicuous in the choicest collection. In the middle of the terrace and underneath the flight of steps (which is a double one, the steps descending on either side), is a large cavity, in which are placed pieces of spar, shells, &c., the roof and sides being thickly covered with tufts of the common Spleenwort (Asplenium Trichomanes). Those only who have seen this elegant little Fern growing in profusion as it is here, and as it is occasionally but rarely met with in its wild state, can form any idea of the extreme beauty of its appearance. And yet, where a due amount of shade can be secured (of which it appears to be particularly fond), it is not difficult to establish this plant, a task by no means easy of accomplishment with many of our British Ferns, especially those which, like this species, are usually found on old walls and buildings. Between the terrace and the garden below is a steep bank planted with various evergreen and deciduous shrubs, the side towards the walk being filled with masses of Geraniums, Verbenas, and other summer flowers. Descending again another broad flight of steps with a balustraded wall and vases filled with flowering plants on either side, a straight walk conducts to an open space, in the centre of which, and in a line with the flight of steps, is a stone obelisk about 15 or 20 feet in height. From this six walks diverge, opposite to one another. That in a line with the flight of steps is a broad gravel walk, terminated by another cavity formed of pieces of quartz and spar, and in which is a small fountain of clear water. The remaining four walks, which take an oblique direction, are laid down in Grass. On each side of these Grass walks is a border with masses of herbaceous and summer flowers, mostly arranged with one kind of plant in each mass, in a similar manner to those on the terrace, and backed by evergreen shrubs. A quantity of Colchicum autumnale now in flower was very conspicuous in these borders. Some particularly fine specimens of Irish Yew, Siberian Arbor-vitæ, Irish Juniper, green and variegated Hollies, and a very handsome variegated Oak, all regularly trained and cut into a pyramidal form, and from 10 to 12 feet in height, are placed at a distance of about 15 feet apart at the back of these borders. As these walks are of a considerable length, the effect of so many plants of a pyramidal or conical form is very striking, and imparts a peculiar character to the whole garden. The plan of the garden is a regular parallelogram, and in addition to the six walks already mentioned, there is a straight walk at each side and end, with several narrower ones at right angles to these, which lead to small flower gardens laid out in beds of geometric form. These appear to be chiefly used for spring flowering bulbs. At the east and west ends of the garden is a circular Grass plot, having a fountain in the middle, around which are disposed beds of hardy Heaths of various kinds. These fountains have each a fine piece of marble statuary in the centre, and the water in the basins is remarkably pure and clear.

From one of the towers of the castle a most interesting bird's eye view is obtained of the whole garden, the design of which, as may be supposed, is well seen from such a commanding position. The park, with its numerous and varied undulations, and fine groups of Beech and Wych Elm, now in all the glory of their autumn foliage, forms a suitable background to a garden scene of so much beauty, and beyond, in a south-easterly direction, the faint outline of the Ochil Hills terminates this delightful prospect.

But it is in a northerly direction that the most comprehensive view is obtained. Here the ground falls rapidly from the castle into a deep dell, the sides of which are clothed with some very fine Spruce Fir and Oaks. Below, on the right, is seen a large sheet of water or small loch, the banks of which are thickly

covered with Oak, Birch, and other trees, while here and there a bold mass of rock juts out into the lake, giving to the shore a very broken and rugged outline. Beyond this, from east to west, the view embraces the whole of the celebrated valley of Strathearn, deriving its name from the river Earn, which flows from the loch of the same name, about 12 miles distant. The lofty range of mountains south of Loch Tay, among which Benchonzie with its irregular outline and deep glens is especially prominent, completes a scene which for richness of wooding and pastoral beauty is perhaps not excelled by any of a similar kind in Scotland.

The castle, formerly the residence of the Dukes of Perth, but now the property of Lord and Lady Willoughby d'Eresby, has undergone considerable restoration within the last few years. It is much resorted to by visitors during the summer season, who are most kindly permitted at all times to inspect the gardens; and happily, in the present instance, this privilege appears to be in no way abused, the most perfect order and neatness being everywhere observable. The extreme kindness and liberality displayed in thus allowing strangers at all times to view the place may perhaps be best understood by the answer of the porter, who, on being asked at what time the gates were closed, replied—"Oh, we never send any one away." May this generosity always be appreciated as it deserves. *J. W. Chapman, Dulwich.*

BENNINGBOROUGH HALL, THE SEAT OF THE HON. PAYAN DAWNAY.—This place, which is situated close to the river Ouse, is about 6 miles west from York. The grounds are extensive and beautiful; the flower garden was very gay at the time of my visit. There are some very good ribbon borders here, and many of the Scarlet Geraniums used in these ribbons are from 15 to 20 years old. Nothing can exceed the amazing profusion of flowers.

The kitchen garden was in excellent order. In two late Vineries were good crops of Grapes, and among them the now justly celebrated "Lady Downe's Seedling," which was raised here. The parent plant is still growing against a trellis on the back wall. On some young Vines were some splendid bunches of it, which I have little doubt will keep in excellent condition until April next. Close to Lady Downe's Seedling is a white Grape called Foster's White Seedling. This and Lady Downe were raised at the same time and from the same parents. Foster's Seedling is a deliciously sweet white Grape, and an abundant bearer. It is worthy of extensive cultivation.

On one of the south walls is a splendid lot of Peach trees which do Mr. Foster great credit. They have been covered with fruit this season. The gardener commenced gathering ripe fruit the first week in August, and he finished pulling the last only on the 6th inst. I saw some of the fruit, and nothing could be finer.

Plants of all descriptions are extensively grown. Of Heaths and Indian Azaleas there are numbers of fine specimens. There is also a small but choice collection of Ferns. Stove plants are largely grown; among them I observed several good specimens of that splendid old stove plant, Aphelandra cristata. On looking over the stock of young "bedding plants," my attention was attracted to a frame full of a variegated plant, which I did not at first recognise, but on closer inspection I found it to be a strikingly variegated Agathea. Those who know the old Agathea cœlestis will easily form an idea of its compact habit of growth. That it will be much sought after when it has got into the trade I have no doubt, but at present the entire stock is to be found here. There is a good collection of the best Roses grown here. Mr. Foster likes them best on their own roots for pot culture. His mode of propagating them is very simple. He takes off cuttings of the young wood early in August, puts them in a cold frame under a north wall, and in about a month they are fit for potting off. Ninety-nine out of every hundred will strike in this manner. *S.*

Miscellaneous.

Fruit of the Night-blowing Cereus. — We have received this from J. M. Clarke, Esq., of Trowbridge. It is the size of a hen's egg, very pale pink, with a greenish pulp abounding in black seeds. The flavour of the pulp is rather pleasant, but not very much so.

Effects of Chloroform on Bees.—Mr. Annan, builder, Downfield, says the *Dundee Advertiser*, wishing to have honey taken from a hive without killing the bees, and having before heard of chloroform being used, felt anxious to try the experiment. He first closed the doorway, then covered the hive with a cloth to shut out the light as much as possible, after which he commenced to blow chloroform into the hive. When it was discovered that the bees had fallen asleep, they were easily removed to another hive without harm to any one, and next morning were all awake and in a lively state, humming around their hive. *Pharmaceutical Journal.*

Ferocity and Courage of the Otterhound.—Such needful courage is found in the otter dog, but is sometimes rather prone to degenerate into needless ferocity. There are few animals, with the exception of the bull-dog, which fight so savagely as the otterhound, or bite so fiercely and with such terrible results. The attack of the otterhound is even more dangerous than that of the bull-dog, and its bite more to be dreaded. As is well known, where the bull-dog has once fixed his teeth there he hangs, and cannot be forced to loosen his hold without the greatest difficulty; but when the otter-hound bites, it instantly tears its teeth away without relaxing its jaws, and immediately seizes its prey with a second grip. The wounds which it inflicts by this ferocious mode of action are of the most terrible description, lacerating all the tissues, and tearing asunder the largest and most important vessels. The reason for this very savage mode of attack is evident enough. The otter is so quick and agile, that if the dog were to retain his hold, the otter would twist round and inflict a severe bite, so the dog bites as fast and as often as he can, in order to give his antagonist the fewest possible chances of retaliation. When a number of these dogs are placed in the same kennel they are sadly apt to fight, and to inflict fatal injuries on each other from the sheer love of combat. If two of the dogs begin to quarrel and to fight, the others are sure to join them; so that, from the bad temper of a single dog, half the pack may lose their lives. As these dogs are obliged to endure the most turbulent weather and the coldest streams, they are furnished with a very strong, rough, and wiry coat, which is capable of resisting the effects of cold and storm, and is also of much service in blunting the severity of the otter's bite. The face and muzzle are guarded with a profusion of longish and very rough 'whisker' hairs. *Routledge's Illustrated Natural History.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

CONSERVATORY, &c. — Summer-flowering twiners, which usually get unsightly at this season, should be cut back freely, as should also any others that will submit to that kind of treatment. Shade which they afford in summer is not now required. In the case of cold pits, if not already done, get straw shutters or whatever else it may be intended to use for coverings for these put in readiness for use without delay. Straw shutters if well made are expensive in the first instance, but are considered by many to be the most efficient of any kind of covering in use, and taking into account the time they last they are perhaps as cheap as any. Expose the stock here freely to air on every favourable opportunity, so as to check growth and get the wood firm. Very little water will be required at the root, but look over the stock every few days, withholding water until it is absolutely necessary, and then giving a moderate soaking, which is the only safe method of watering at this season. Heaths and other things subject to the attacks of mildew must be closely watched, and sulphur applied the moment the enemy is perceived.

FORCING DEPARTMENT.

PINERIES.—The trying period for those who have to winter their young stock in pits heated by fermenting materials has now arrived, for with sunless weather and frost it is a very difficult matter to preserve Pines in a healthy state, where warmth must be accompanied by excessive moisture. Keep the linings sufficiently strong to maintain the temperature at about 65°, which will allow of giving air rather freely on fine days, and a little must also be given in all states of the weather, when doing so does not cause the thermometer to sink under 55°. There should be no attempt made at inducing growth with the present amount of light, but the linings should be kept rather strong, so as to be prepared against the occurrence of severe weather, and also to allow of giving sufficient air to prevent excess of moisture. See that efficient coverings are prepared, and endeavour to keep the bottom-heat steady at about 75°, and the soil in a rather dry state. This system of Pine growing is now, however, but little practised, and it would be economy on the part of those who adopt it to supersede it at once by means of a hot-water apparatus.

VINERIES.—The night temperature to begin forcing with should range about 50° by fire-heat, raising it to 60° by day, or to 70° with the assistance of the sun. Also endeavour to secure a little warmth for the roots in the outside border, and if fermenting materials be used watch these narrowly, and endeavour by timely additions and frequent turnings to secure a regular gentle warmth of 60° or 65° at a foot below the surface of the soil. If fermenting materials are employed, there will be a great saving of labour, &c., by thatching them with a good coat of something to throw off wet, and preserve them from the weather.

FLOWER GARDEN AND SHRUBBERIES.

Cover Fuchsias and such things if not already protected for the winter. Dry Fern is an excellent material for covering the stems, &c., of plants that require a slight protection in winter. Choice sorts of Hollyhocks, of which there is not sufficient stock of well established young plants in pots, should be taken up, potted now, and wintered in a cool house, they will be exceedingly useful for furnishing cuttings, and these if got in early in spring will make excellent plants for next season. Be very careful to secure transplanted things against wind, especially large plants, which should never be left until they are properly staked or otherwise made fast, for when this is put off it frequently happens that the roots get injured through the tops being rocked about by the wind. Get ground intended to be planted with Dahlias and Hollyhocks next season deeply trenched and ridged up so as to expose the soil as much as possible to the weather, putting in plenty of good rotten manure, especially where the Hollyhocks are to stand, for these require a deep rich soil.

HARDY FRUIT AND KITCHEN GARDEN.

The forcing of Seakale and Rhubarb must soon be attended to, and where there is a good stock of strong roots, a supply of these will be easily kept up. Where there is room to spare in the Mushroom house this forms a very suitable and convenient place for forcing these. The roots should be placed on a slight bed of warm dung, filling up the places between them with old tan or the soil and manure mixed from an old Mushroom bed, giving a good watering to wash it in amongst the roots. The bottom-heat should not exceed 70°, as too much heat is not favourable to securing strong growth, but except for the first crop it may be dispensed with altogether. Take advantage of wet days for making fresh Mushroom-beds, and clearing out those that are spent; also collect and prepare droppings for forming fresh beds by spreading them in a shed and turning them every day until they are sufficiently dried to prevent excessive fermentation after putting up.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.
For the Week ending Oct. 27, 1859, as observed at the Horticultural Gardens.

October.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Temperature of the Air. Min.	Temperature of the Air. Mean	Temperature of the Earth. 1 foot deep.	Temperature of the Earth. 2 feet deep.	Wind.	Rain.
Friday 21	24	29.304	29.282	45	23	34.0	57	57½	N.	.00
Satur. 22	25	29.481	29.438	53	21	37.0	56	57	N.W.	.00
Sunday 23	26	29.424	29.346	41	17	29.0	53	57	N.W.	.00
Mon. 24	27	29.623	29.401	40	23	31.5	51	55	S.W.	.00
Tues. 25	●	29.473	29.034	53	40	46.5	50	50	E.	.30
Wed. 26	1	29.664	29.161	48	23	35.5	50	50	W.	.00
Thurs. 27	2	29.829	29.803	44	29	36.5	49	49	S.W.	.04
Average		29.508	29.352	46.3	25.1	35.7	52.3	53.6		.34

Oct. 21—Clear; cold and dry air; clear; frosty.
— 22—Clear and frosty; fine; much lightning at night.
— 23—Frosty and foggy; hazy; clear; lightning; severe frost.
— 24—Sharp frost; densely overcast; thick fog.
— 25—Dense fog; foggy and drizzly; boisterous with heavy rain.
— 26—Very boisterous; cloudy; clear and frosty.
— 27—Foggy; rain; foggy; slight frost at night.
Mean temperature of the week, 12½ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 33 years, for the ensuing Week, ending Nov. 5, 1859.

October and Nov.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 30..	55.0	38.3	46.7	16	0.98 in.	3	7	1	3	4	12	2	1
Mon. 31..	53.7	38.2	46.0	18	0.58	3	2	5	1	4	7	8	3
Tues. 1..	54.4	38.4	46.4	18	0.38	1	2	5	4	3	11	3	4
Wed. 2..	54.5	38.8	46.6	14	0.61	2	2	7	1	5	8	7	1
Thurs. 3..	53.3	37.4	45.3	16	0.82	3	4	6	2	4	7	5	2
Friday 4..	51.4	36.9	44.1	17	0.44	2	4	7	2	6	5	5	2
Satur. 5..	53.0	38.3	45.7	15	0.23	2	2	4	2	6	10	5	2

The highest temperature during the above period occurred on the 30th, 1833, and 31st, 1854—therm. 67 deg.; and the lowest on the 3d, 1845—therm. 20 deg.

Notices to Correspondents.

ABIES BRACTEATA: *X.* We will attend to your suggestion.

BOOKS: *Clericus.* In forming the nucleus of a library of books useful to young gardeners we should take the following six as a beginning; viz., Loudon's Encyclopædia of Gardening; ditto Self-Instruction for Young Gardeners; Lindley's Theory of Horticulture; Neill's Fruit, Flower, and Kitchen Gardener; Glenny's Manual of Practical Gardening; Barron's British Winter Garden. Divide your Pampas Grass in March; and give the young plants plenty of rotten dung.—*Angusian.* Sweet's Hothouse and Greenhouse Cultivator.

DISEASES: *E W.* The appearance on the leaves of your *Solanum* does not arise from parasitic Fungi, but from some disease of the cellular tissue. It is true a few Fungus spores exist in the spots, but they are, we believe, accidental. We have never seen precisely the same affection before. *M J B.*

GRAPES: *N Devon.* In our judgment the course taken by your gardener was perfectly right. You must not blame him for consequences which no one could have foreseen, considering how entirely exceptional the last summer has been.

KENSINGTON GORE: *Brompton.* You are misinformed in every particular; as might have been expected, considering the source from which your information was derived.

LANDSCAPE GARDENING: *Longchamps.* There is not a work on this subject so perfectly useful as Kemp's "How to lay out a Garden;" we mean the edition of 1858, which is a beautiful volume even regarded as a library book. Its distinguishing peculiarities are good taste, which means good sense, and absence of crotchets.

NAMES OF FRUITS: *H Stenhouse.* Doyenné blanc.—*S Taylor.* 1. Louise Bonne (of Jersey); 2, Crassane; 3, Princesse d'Orange, (of no merit); Apple No. 1, probably Braddick's Nonpareil; 2, Pigeon. In this variety there are only 4 cells at the core, disposed like a Maltese cross, instead of 5, the usual number.—*E G.* Early Nonpareil.—*W.* Margil.—*G H.* Your Grapes produced out of doors have been considerably affected by mildew. They are perhaps the Black Hamburgh; but they are not so large nor so well ripened as some of that sort which we have seen grown on the open wall this season.‖

NAMES OF PLANTS: We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have or could have undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*P B.* Tropæolum tuberosum.—*A M G.* Your Begonia maculata is Gloxinia caulescens!; the Caladium is bicolor, var. pictum. Williams on Orchids.—*J H L.* Verbascum phœniceum.—*W D.* It appears to be some Indigofera, but in so large a genus the species cannot be determined without much better materials than you have forwarded; your flowers are all imperfect, and there is no fruit, which is indispensable.

NEW PLANTS: *S.* Chamæbatia is a Rosaceous plant, and Pothos an Orontiad. Plants cannot be named unless in flower; your shrivelled leaves may possibly belong to Hydrocleys Commersoni.

*** As usual, many communications have been received too late, and others are detained till the necessary inquiries can be made. We must also beg the indulgence of those correspondents the insertion of whose contributions is still delayed.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London, S. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

MR. J. B. LAWES manufactures the following MANURES:—

TURNIP MANURE	£6 6
SUPERPHOSPHATE OF LIME . ..	6 6
MINERAL SUPERPHOSPHATE OF LIME	5 5
BARLEY MANURE	8 0

N.B. Genuine PERUVIAN GUANO direct from Messrs. Gibbs, NITRATE OF SODA, SULPHATE OF AMMONIA, and other Chemical Manures.

WHEAT MANURE.—PERUVIAN GUANO is proved to be the best and cheapest Artificial Manure for Wheat, at Autumn sowing.

American decorticated Cotton-seed Cake of best quality supplied at the market price.

Offices: 1, Adelaide Place, London Bridge, E.C.

LONDON MANURE COMPANY (ESTABLISHED 1840),
Have the following MANURES ready for delivery:—
CORN MANURE FOR AUTUMN SOWING.
BLOOD MANURE FOR AUTUMN SOWING.
URATE.
SUPERPHOSPHATE OF LIME.
SUPERPHOSPHATE MINERAL.

The London Manure Company also supply PERUVIAN GUANO (direct from Messrs. Gibbs & Sons), SULPHATE OF AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of known value, all of which they warrant strictly genuine. Wholesale dealers supplied.

116, Fenchurch Street, E.C. EDW. PURSER, Secretary.

BURNARD, LACK, AND CO.'S CONCENTRATED SUPERPHOSPHATE OF LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.

CONCENTRATED TURNIP MANURE, equal in value to the preceding.

Of these Manures Dr. Voelcker says:—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."

Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to BURNARD, LACK, & Co., Sutton Road, Plymouth.

PERUVIAN GUANO.—The present price of this valuable Manure is 12*l.* per ton for 30 tons and upwards; 13*l.* 5*s.* per ton for 1 ton up to 30 tons.

And, in order to protect themselves against the purchase of adulterated mixtures and of inferior Guanos purporting to produce results equal to Peruvian, consumers are recommended to apply either to ourselves, to our Agents Messrs. GIBBS, BRIGHT, & Co. of Liverpool and Bristol; or to Dealers of established character, in whose honesty and fair dealing they can place implicit confidence. ANTY. GIBBS & SONS.

15, Bishopsgate Street Within, London, E.C.

THE PATENT NITRO-PHOSPHATE OR BLOOD MANURE COMPANY (LIMITED).

Trustees:—
ABEL SMITH, Jun., Esq., Walton House, Ware, Herts.
CHARLES DIMSDALE, Esq., Essendon Place, Herts.
EDWARD BALL, Esq., M.P., 8, Belgrave Road, Pimlico, S.W.
GENERAL HALL, Weston Colville, Linton, Cambridge.
JOHN BRADY, Esq., M.P., Warwick Terrace, Belgrave Square, W.

Directors:—
Chairman—JONAS WEBB, Esq., Babraham, Cambridgeshire.
Deputy-Chairman:—
JOHN COLLINS, Esq., Myddleton Square, Pentonville, E.C.
EDWARD BELL, Esq., Tottenham, Middlesex, N.
JOHN CLAYDEN, Esq., Littlebury, Essex.
RICHARD HUNT, Esq., Stanstead Abbot, Herts.
THOMAS KNIGHT, Esq., Edmonton, Middlesex, N.
ROBERT LEEDS, Esq., West Lexham, Norfolk.
ROBERT MORGAN, Esq., 72, Camden Villas, Camden Town, N.W.
GEORGE SAVILL, Esq., Ingthorpe, near Stamford.
WILLIAM COLLINS, Esq., 105, St. John Street Road, E.C.
Bankers—Messrs. BARNETT, HOARE & Co., Lombard Street, E.C.
Solicitors:—
Messrs. KINGSFORD & DORMAN, 23, Essex Street, Strand, W.C.
Auditor—J. CARTER JONAS, Esq., Cambridge.
Manager—Mr. JAMES ODAMS. | *Secretary*—Mr. C. T. MACADAM.

Offices: 109, Fenchurch Street, London, E.C.; Manufactory, Iaistow Marshes, Essex, E.

ODAMS'S BLOOD MANURE FOR WHEAT,
Price 7*l.* 10*s.* per Ton, delivered Free to any WHARF or RAILWAY in London.

TO FARMERS, CORN FACTORS, MERCHANTS, &c.—WANTED, AGENTS, by the PATENT WOOL MANURE COMPANY, in districts not yet represented, for the Sale of their Patent Wool Manure, Superphosphate of Lime, Bones, Sulphate of Ammonia, and other Chemicals and Manures required by Agriculturists. Application to be made to the Proprietors, who are the sole Manufacturers, Messrs. C. H. TIDBURY & Co., 81, Gracechurch Street, E.C.; or Lavender Dock Wharf, Rotherhithe, S.E., London.

"FRIGI DOMO."—Patronised by her Majesty, the Queen, the Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, and —Collier, Esq., of Dartford.

PROTECTION FROM THE MORNING AND EVENING FROST.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and, floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths. Two yards wide, 1*s.* 6*d.* per yard run; four, 3*s.* per yard. Also, an improved make for Shading Purposes. Three yards wide, 2*s.* 6*d.* per yard run.

ELISHA THOMAS ARCHER, whole and sole manufacturer, 7, Trinity Lane, Cannon St., City, E.C., and of all Nurserymen and Seedsmen throughout the kingdom. "It is much cheaper than mats as a covering."

BEDFORDSHIRE AGRICULTURAL SOCIETY, 1859.

J. AND F. HOWARD have much pleasure in informing the public that at the Ploughing Matches of the above Society, just concluded, HOWARD'S CHAMPION PLOUGH gained SEVEN out of EIGHT FIRST PRIZES, and SEVEN out of EIGHT SECOND PRIZES, thereby more than ever sustaining its position at home, while at the recent Meetings of the Royal Agricultural Society of England and the Highland and Agricultural Society of Scotland, it also gained the TWO CHIEF PRIZES as the best PLOUGH for GENERAL PURPOSES.

AGRICULTURAL IMPLEMENTS.

BURGESS AND KEY, 95, Newgate Street, London, E.C., have always on hand Ploughs, Harrows, Carts, Waggons, Turnip Cutters and Pulpers, Cake Breakers; and their Improved Chaff Cutters, 50*s.* Galvanised Game Netting, 4*d.* per Yard. Price Lists sent free.—Illustrated Catalogues on receipt of six postage stamps.

IMMEDIATE ORDERS WILL PREVENT DISAPPOINTMENT.

"SIGMA'S" UNIVERSAL SEED PLANTERS (Dibbles), vastly improved since the Prize of the Royal Agricultural Society was awarded them. The "MULTUM IN PARVO," forming eight perfect implements, highly commended, see testimonials. The Manure Distributor carried off the Prize Medal in 1851, recently much improved, see *Gardeners' Chronicle*, July 30 and August 6th. "Simple, promising, and ingenious." The STEEL DRAW SHAVE HOE clears a row between Turnips at one sweep. Engravings sent.—C. POWELL, Hurstgreen, Sussex. All Patented.

FOWLER'S PATENT STEAM PLOUGH has gained the following prizes:—
The Royal Agricultural Society's Prize, at Warwick, July 1859, 50*l.*
The Royal Agricultural Society's Prize, at Chester, July 1858, 500*l.*
The Highland Society's Special Prize at Stirling, Oct. 1857, 200*l.*
And at other Agricultural Meetings in the United Kingdom, Prizes amounting to 175*l.*

For further particulars, prices, and Catalogues apply to JOHN FOWLER, JUN., 28, Cornhill, London, E.C.

WARNER'S IMPROVED LIQUID MANURE OR GENERAL PORTABLE PUMP.



These Pumps are fitted with WARNER'S Patent Bucket and Valve, and cannot clog in action. The barrel is made of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure on the stand, the legs of which fold together, and may be carried with ease by one man to tank or pond.

	£	s.	d.
Stand and Pump, with screwed tail pipe, fitted with strong brass union for suction pipe	2	15	0
If fitted with barrel of planished copper	3	17	0
Stand and Pump, with plain tail pipe, for tying on suction pipe	2	9	0
2-inch patent rubber and canvas flexible suction pipe, on wires, either 10, 12, or 15 ft., per foot	0	2	2

May be obtained of any Ironmonger or Plumber in town or country, at the above prices, or of the Patentees and Manufacturers, J. WARNER & SONS, 8, Crescent, Jewin St., London, E.C.

TANNED GARDEN NETTING for Preserving Fruit Trees from Frost, Blight, Birds, &c., and as a Fence for Fowls, &c. One yard wide 1½*d.*, 2 yards 3*d.*, 3 yards 4½*d.*, and 4 yards 6*d.* per yard, in any quantity, may be had at C. WRIGHT'S, 376, Strand, W.C.

A liberal allowance to Nurserymen.

CUTTA PERCHA TUBING FOR WATERING GARDENS.

THE GUTTA PERCHA COMPANY have the pleasure to acknowledge the receipt of the following

Testimonial from Mr. J. FARRAH, *Gr. to* BOSWELL MIDDLETON JALLAND, Esq., *of Holderness House, near Hull.*

"I have had 400 feet of your Gutta Percha Tubing, in engths of 100 feet each, with union joint, in use for the last 12 months for watering these gardens, and I find it to answer better than anything I have ever yet tried. The pressure of the water is very considerable, but this has not the slightest effect on the tubing. I consider this tubing to be a most valuable invention for Gardeners, inasmuch as it enables us to water our gardens in about one-half the time, and with one-half the labour required."

Manufactured by the Gutta Percha Company, Patentees, 18, Wharf Road, City Road, London, E.C., and sold by their Wholesale Dealers in town and country.

BUILDING AND DRAINING.—Noblemen and gentlemen who contemplate Building or Draining, and who are desirous of making Bricks and Tiles upon their own Estates, can have their Clays practically tested, the necessary arrangements for Manufacture made, and if wished the Manufacture undertaken, by a Member of a Firm extensively engaged in the Manufacture of Bricks and Tiles of every description.—Apply, TERRA COTTA, Wood's Hotel, Furnival's Inn, E.C.

THE LANDS IMPROVEMENT COMPANY.—Incorporated by Special Act of Parliament in 1853.—2, Old Palace Yard, Westminster, S.W. To Landowners, the Clergy, Estate Agents, Surveyors, &c., in England and Wales and in Scotland.

The Directors beg leave to announce that the Company's Amendment Bill, 1859, has received the sanction of the Legislature. The Company now advance money, unlimited in amount, for the following works of Agricultural Improvement, the whole outlay and expenses in all cases being liquidated by a rentcharge for 25 years.

1. Drainage, Irrigation and Warping, Embanking, Inclosing, Clearing, Reclamation, Planting for any beneficial purpose, Engines or Machinery for Drainage or Irrigation.
2. Farm Roads, Tramways and Railroads for agricultural or farming purposes.
3. Jetties or Landing places on the sea coast or on the banks of navigable rivers or lakes.
4. The erection of Farm Houses, Labourers' Cottages, and other Buildings required for Farm purposes, and the improvement of and additions to Farm houses and other buildings for farm purposes.

Landowners assessed under the provisions of any Act of Parliament, Royal Charter, or Commission, in respect of any public or general works of drainage or other improvements, may borrow their proportionate share of the cost, and charge the same with the expenses on the lands improved.

No investigation of title is required, and the Company being of a strictly financial character do not interfere with the plans and execution of the Works, which are controlled only by the Government Enclosure Commissioners.

For further information, and for forms of application, apply to the Honourable WILLIAM NAPIER, Managing Director, 2, Old Palace Yard, Westminster, S.W.

WEST OF ENGLAND AND SOUTH WALES LAND DRAINAGE AND INCLOSURE COMPANY.
Established in 1844.
INCORPORATED BY ACT OF PARLIAMENT IN 1848.

Draining, Inclosing, Irrigating, Warping, Road Making, and all kind of Land Improvements, executed on Entailed, Mortgaged, or other Properties, and the whole cost can be made a Permanent Charge on the Lands, or redeemable in a certain number of years. BIDWELL & BRODIE, Secretaries.

Offices: Exeter; and 30, Parliament Street, London, S.W.

LAND IMPROVEMENTS.—The GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY are empowered by Act of Parliament to assist the Owners of Land in carrying into effect the following Improvements, and charging the whole outlay and expenses on the property improved.

I. All Works of Drainage, Irrigation, Warping, and Embankment.

II. The erection of Farmhouses, Cottages for Agricultural Labourers, and all kinds of Farm Buildings.

III. The construction of Roads.

IV. The Grubbing and Clearing of Old Woodlands, Enclosing, Fencing, and Reclaiming Land.

The Landowners by whom any of these Improvements may be executed are—Tenants for Life, Trustees, Mortgagees in Possession, Guardians, Committees of Incompetent persons, Married Women, Beneficial Lessees for Lives or for a Term exceeding 14 years, Corporations, Ecclesiastical or Municipal, Incumbents, Sequestrators, Charitable Trustees, &c.

The Owners of Estates not entailed, who may be desirous to avoid the expense or inconvenience of a Legal Mortgage, may also avail themselves of the powers of the Company's Act to charge their estates with an outlay in improvements.

In all cases the whole cost of the improvements, with the attendant expenses, may be charged on the Estate, the term for Building Works being limited to 31 years, but for all other improvements being capable of extension to 50 years.

No investigation of title being required, and the charge not being affected by Incumbrances, no legal expenses are incurred.

Operations under the Company's Act are divided into two principal branches; one where the Landowner designs and executes the improvements by his own Agent and merely requires a loan from the Company to charge the Estate,—the other where the Company undertake the entire responsibility of the Improvement and obtain repayment by way of Rent Charge. In the first case the plans, specifications, and estimates prepared by the Landowner's Agent are forwarded to the Company to be submitted for approval to the Inclosure Commissioners. As soon as the sanction has been given the Landowner proceeds to execute the works, and the Company having conducted the business through all the official forms, complete the charge on the estate when the works have been passed by the Commissioners, and repay the Landowner the amount agreed upon.

In no part of the business is there any control upon a Landowner except by the Inclosure Commissioners. The Company never interfere, except at the special request of the Landowner or his Agent, and only to such extent as may further the objects he has in view.

In the other case, where the Company are required to execute the works, a report and estimate of the Improvement are sent to the Landowner, and having been approved, the plans are then prepared and the works—either submitted to public competition or entrusted to their own staff—are carried on to completion, and the amount of the actual expenditure only, approved by the Inclosure Commissioners with the Company's agreed commission and the Commissioners' expenses, finally charged on the Estate for the term fixed by the Landowner.

The Company also execute Drainage and all other Works of Land Improvement on Commission for the Owners of Estates not Entailed who may wish to charge the outlay on the property through the simple and inexpensive process of the Company's Act.

Applications to be addressed to WILLIAM CLIFFORD, the Secretary, at the Offices of the Company, 52, Parliament Street, London.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, London, S.
Principal—J. C. NESBIT, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

RUGBY AND DUNCHURCH CATTLE SHOW, THURSDAY, November 24.—A PRIZE of 15*l.* is open to all England for the best FAT BEAST of any description, the property of the exhibitor for six months prior to the Show. Entrance, 10*s.*; to close on November 12. For forms of Certificates, apply to the Secretaries, Messrs. W. & E. HARRIS, Rugby.

N.B. Covered Booths will be provided for the Beasts shown for the above Prize.

THE BIRMINGHAM CATTLE AND POULTRY SHOW, 1859.—The ELEVENTH GREAT ANNUAL EXHIBITION OF CATTLE, SHEEP, PIGS, DOMESTIC POULTRY, AND ROOTS, will be held in Bingley Hall on MONDAY, TUESDAY, and WEDNESDAY, November 28, 29, and 30, and THURSDAY, December 1, when Prizes, Cups, or other Articles of Silver Plate, and Gold and Silver Medals, to the amount of 1250*l.* will be awarded.

The ENTRIES finally CLOSE on TUESDAY, November 1.

Prize Lists and Certificates of Entry are now ready, and may be obtained at the Offices, or by letter to
JOHN MORGAN, Secretary.

Offices: Unity Buildings, Upper Temple Street, Birmingham.

The Agricultural Gazette.

SATURDAY, OCTOBER 29, 1859.

OUR advertising columns have repeatedly intimated the inducements offered by the Smithfield Club, and also by the Midland Counties Association to exhibitors of fat stock in their several classes. We have now to call attention to the fact that the first day of November is the last day on which entries of such stock can be made for these shows. Intending exhibitors who have not yet done so, should at once therefore apply to Mr. B. T. BRANDRETH GIBBS, the Honorary Secretary to the Smithfield Club, at the corner of Half-Moon Street, Piccadilly, London, W.; or to Mr. J. MORGAN,

Cattle Show Offices, Unity Buildings, Upper Temple Street, Birmingham.

—— At the last weekly meeting of the Royal Agricultural Improvement Society of Ireland, Captain JOHN B. THORNHILL was elected to the vacant office of Secretary. Seventeen candidates were in attendance.

THE HOLCUS SACCHARATUS (*Sorghum saccharatum*), North China Sugar Cane, the Sorgo sucré of the French, has of late attracted so much attention that we offer no apology for inserting a few remarks upon some experiments on the growth and economy of this plant with which we have been engaged during the present season. The examples alluded to are as follows:—

Firstly, a patch of about a quarter of an acre sown on the farm, in soil of a tolerably good depth, resting on the brash of the great oolite, the previous crop having been Potatoes. The only manure employed was ashes from burnings of road side parings and the refuse of hedgerows. The seed was drilled on the 13th of May in rows 14 inches apart, and at a depth of about 3 inches; it came up very well and evenly, and through the summer went on growing very luxuriantly, and its large flags presented a most handsome appearance.

About the same time we sowed one of our experimental plots with seed of Holcus obtained from the Messrs. SUTTON, of Reading, the soil here being forest marble clay resting on the great oolite, and ashes from garden refuse being the manure. The distance apart was in this instance 20 inches, depth not more than 3 inches. This came up soon and for the first month did not at all promise the fine aspect it afterwards showed, but as soon as the warm nights came on it made rapid growth, and we were thus led to infer that too early sowing is by no means a saving of time, though we are not quite sure whether getting strong plants early by germinating in a hothouse or under glass with artificial heat and gradually exposing them to harden before transplanting would not be advisable, especially where the growth of Holcus is attempted in cold, exposed, or late growing situations, and in this case of course the operation of transplantation should be done in wet weather, the saving of seed and the ensuring of a well regulated equidistant plant being taken as no bad equivalent for the extra labour and expense. In this as in the other case the crop was hoed, but this is a delicate operation in the Sorghum, as it sends out adventitious roots from the joint immediately above the ground, which dip into the soil, and if not interfered with aid immensely in forwarding the growth and development of the plant. Hoeing then before this process commences encourages it, but by no means can it be properly done when this is in progress. When, however, the new roots are fully established a careful stirring of the ground between the rows, not between the individual plants, appears very much to facilitate a larger and, what is more important, a quicker growth. Thus, then, have we brought up the history of both plots until about the middle of August, when trials were made of the feeding properties of the field crop, or rather of the tastes of cattle in regard to it. Food parcels of the whole plant were cut close to the ground and carried at once to the farmstead and tried, with the following effect:—

Horses would not touch it.

A two-year-old bull ate it greedily, and could scarcely be induced to eat anything else.

The milking cows partook of it very sparingly.

The pigs had no prejudice with regard to it.

Having ourselves made trial of some of the produce of the experimental plot at this time with some cows, we conclude that matters were with it pretty much as with the farm crop.

Now, on applying the same test to our own palate, we did not wonder at the general coolness of the cattle towards it, as even the most forward parts of the crop were at this time intensely bitter, and we began to fear that the cold climate of at least some part of England was inimical to the development of the saccharine matter which this plant is known to possess when grown in warm climates, a circumstance which we still think will militate against this plant succeeding in perfection —at least over a great part of the United Kingdom.

In September we again employed the trial by taste, and in the larger or central stalk we then found a great change; these had become very sweet and the cows then partook of it at least with an apparent relish, but while this was so with the principal or main stem the stolons or side shoots were still bitter, and it was not until the present month that the major part of these became sufficiently sweet to warrant one in the conclusion that the feeding qualities of the plant had made any great advance towards their full development.

Now these facts seem to point to some rather important conclusions with regard to the use of this Grass, namely that it does not all ripen together, the central or oldest stem is perfect before the lateral shoots, so that while this is sweet those are even intensely bitter, and if we wait until the sweet matter is developed in all, the central stem will by that time be so hard and woody as not to be capable of being used as a cattle food—hence then we would advise that the central stem be the first to be gathered. This can easily be done by boys who can readily detach it with some kind of knife, and this done the other shoots will at once make accelerated growth, so that by adopting this expedient we have a better chance of deriving the full benefits from the whole of the crop.

As regards the amount of the crop our calculations founded upon the results of the smaller experiment would lead us to infer that the weight per acre in the second week of September was somewhere about 50 tons to the acre, and the farm produce seemed to us to be very nearly of the same quality and quantity. This is a large yield, and this season it is not very likely to have improved beyond that time, as the first cold nights played sad havoc with the flags of our plants, from which we may conclude that the slight frosts towards autumn are as prejudicial to the older plants as the spring frosts to the younger ones.

With only this evidence before us it may perhaps be considered premature to judge of the agricultural merits of the Holcus saccharatus, but we yet cannot help expressing the opinion that the changeable nature of our climate is opposed to its growth in anything like full perfection. If summer suddenly commenced and kept on uniformly warm until near winter, there would be a chance, but while

> "Saint Bartholomew
> Brings cold dew,"

and this has such effect upon the growth of the plant that we have not seen a case of ripening of seed, scarcely, indeed, of flowering, we shall have some difficulty here in acclimating this denizen of a warmer and more steady temperature.

AMONG recent interesting additions to the plants of the farm, the Lupine appears to be one of unusual value. It yields a large produce of seed of a very nutritive character, and is adapted for the poorest of sandy soils. Mr. CRISP, of Butley Abbey, states in the recent number of the Journal of the Agricultural Society:—

"In 1858 I drilled about 1 bushel per acre of seed, upon 18 acres of poor land; from which I obtained 50 waggonloads of sheaves. The luxuriance of this crop quite astonished all that were acquainted with the sterility of the soil; and the quantity of grain, before harvesting, was estimated by various persons at from 40 to 50 bushels per acre."

The seed was in this case obtained from Baron HERM. VON NATHUSIUS, of Hundisburg, Prussia, who in the same volume describes the plant and its cultivation. He speaks of both the blue and yellow Lupine as cultivated for the purposes of being ploughed in as green manure, of being folded over with sheep while still succulent, and of yielding a crop of seed which is of great use as food for sheep. "What makes these plants so very important for agriculture," he says, "is their growing luxuriantly on light, poor, sandy soils, in situations where no other of our leguminous plants could live. We have some districts in the northern parts of Germany and Prussia where a miserable crop of Rye was nearly the only production, and where even Buckwheat would fail in dry seasons; and it is in such situations that farming has become profitable by the cultivation of the Lupines, and where, in consequence, the rent has been much more than doubled. For such poor dry land it has been proved a good plan to sow the yellow Lupine (especially this because it is more succulent) in June; to roll it down when it is in full flower, the first pods beginning to show; to plough the field and to sow a corn crop some weeks after ploughing, and very often a better crop has been raised than after manuring with cattle-dung, a stuff of course not abundant in such poor situations. There may be some conditions when such a manner of 'green-manuring,' as it is called, may be advisable, but generally I think it a much better plan to fold off the plant with sheep, which, not at first, but after they had been accustomed to it, are very fond of the yellow Lupine in this state, and thrive remarkably well on it. If the seeds are sown in spring, which we here dare not do before the end of April or the beginning of May, sharp night-frosts being destructive to the young plant, the vegetation is slow in the first weeks, but it soon becomes very rapid. In the poorest soil, if any rain falls, the plants grow to the height of 3 or 4 feet, and a great quantity of beautiful flowers cover the whole field. The seeds of the first flowers begin to ripen when the top of the plant is still blooming, and for that reason the plant must be cut before finishing its growth; even then there is always some loss of seeds, the ripe pods being very prone to open by the heat of a sunny day."

An analysis is given of the air-dried seeds, showing that they are particularly rich in nitrogenous substances. The cultivation is something like that of Rape. Drillled in May at the rate of 1 or 1½ bushel per acre, in rows 12 inches or more apart, so as to enable the use of the horse-hoe until the plants meeting keep the ground clean, it yields a crop of 6 or 7 quarters per acre.

"The seeds of both varieties form very superior food for sheep, lambs, and fattening wethers. After they had been weaned to it, I have often seen them refusing cake if they had plenty of Lupines. The straw and chaff is excellent for store sheep. It has been found by many persons that Lupine hay, straw, and corn, are in some degree preventatives of the rot, and even sometimes remedial, if the danger is just beginning and the disease not far advanced. We know of no other plant which, generally speaking, is so peculiarly adapted for sheep.

"The seeds have been used for horses and cattle, and undoubtedly it has been found profitable to mix them with Oats or Beans, but they generally refuse a greater quantity. Some small farmers now begin to give Lupine-meal with milk to the weaning calves, and they are said to do well, and that the grown cattle afterwards are fond of the plant. Swine generally refuse them, and some experiments to extract their peculiar bitterness by water or chemical agents have not succeeded.

Baron VON NATHUSIUS adds of the crop:—

"There is no doubt that it is a real boon for the poorest sandy and gravelly soils, but for soils of a better description it is no less a very profitable plant."

ON CONVERTING OLD PASTURES.

IN October, 1854, you published in the *Agricultural Gazette* the statistics of 15 dairy farms in the Vale of Gloucester, stating the number and kind of stock kept, the quantity of cheese, butter, bacon, calves, and old cows produced. And last week you have given us the statistics of an arable farm of 300 acres, the system of cultivation adopted, the quantity and kind of stock kept, the grain produced, and also the return from the stock and from the grain separately. Were we to compare the statistics of this arable farm with those of the 15 dairy farms, we may learn what would be the consequence of converting natural pasture into arable land under such a system of cultivation. But to come to a correct comparison between the dairy and the arable farms we must enter into the particulars of each system.

The 15 dairy farms consisted of 1974 acres, of which 1716 acres were in natural Grass, and 258 acres of arable land; but as it is necessary for every dairy farm to have a small portion of arable land to provide bread-corn for the family and Potatoes for the pigs, we shall add to the 1716 acres of pasture 5 per cent., say 84 acres of arable, thus making altogether 1800 acres; and we shall give to these 1800 acres the credit of all the produce mentioned in the statistics of the 15 dairy farms, and take no notice of 174 acres of arable land nor of the 127 sheep mentioned in the report.

The capital employed in the management of these 15 dairy farms is stated at 9868*l.*, or about 5*l.* per acre. The rent averaged 1*l.* 14*s.*, and the parochial taxes were 6*s.*, so that the gross rent would be 2*l.* The stock kept was 439 cows, 85 calves, 85 year old heifers, 85 2-year old heifers, and 38 horses.

The return of the produce is stated as under:—

Goods.	Weight.	The money value I have added at the market price.		
Cheese ..	1604 cwt., at 56*s.* per cwt. ..	.. £4491	4	0
Milk butter ..	5268 lbs.., at 1*s.* per lb. ..	.. 263	8	0
Whey butter,	11,428 lbs., at 10*d.* per lb. ..	.. 476	0	0
Bacon ..	1756 score lbs. at 9*s.* per score	.. 790	4	0
354 calves sold a week old at 20*s.* each	.. ..	340	0	0
85 dry cows or young heifers in calf, at 9*l.* each	..	765	0	0
The money return from the 1800 acres is	..	£7139	16	0

And if we divide the sum by the 1800 acres we shall have the return per acre from the dairy farm, which is 3*l.* 19*s.* 3¾*d.* per acre.

We now propose to divide the 1800 acres of the dairy farms into six arable farms of 300 acres each, to be managed the same way as the one you have stated in your last week's Paper. It will therefore consist of 60 acres of pasture, and 240 acres of arable land; we will therefore suppose the statistics of each of these six arable farms to be the same as the one you have just published, and from it we shall estimate the return from land under arable culture and compare it with land under natural pastures and the dairy system.

But can the same number of cows and breeding stock be kept on 120 acres of roots and Clover and the 60 acres of pasture of the arable farm, as there were

maintained on 300 acres of natural pasture under the dairy farm management in the Vale of Gloucester?

This question may be answered by adopting the principle of getting at the quantity of food which each of the several kinds of animals consumed, as was done on the arable farm of 300 acres.

As we have divided the 1800 acres of pasture land into six arable farms, we must also divide the stock which they maintained by six, so as to ascertain the quantity and kind of stock which each of the six arable farms are required to maintain:—

The Stock maintained on the 1800 Acres of Pasture.				The Stock which 300 acres of Arable land is required to maintain.
437 cows	÷	6	=	$73\frac{1}{6}$
85 calves	÷	6	=	$14\frac{1}{6}$
85 year-olds	÷	6	=	$14\frac{1}{6}$
85 2-year olds	÷	6	=	$14\frac{1}{6}$
38 horses	÷	6	=	$6\frac{2}{6}$
730				122 beasts, which the 300 acres of arable land must maintain throughout the year.

The principle adopted in obtaining the quantity of food required for the maintenance of each of the kinds of stock of different ages on the arable farm is from the knowledge of the quantity of food which the sheep consumes, and the number of sheep keep it requires to maintain beasts of every age; thus we find the food required by a cow is equal to that required by seven sheep, a calf requires the food of two sheep, a year-old the food required by four sheep, a two-year-old the food required by six sheep, and a horse requires as much as six sheep besides the corn he gets. We reckon the sheep to consume 20 lbs. of Swedes daily. Adopting the same table as that of the arable farm mentioned, we shall have—

						Sheep.
$73\frac{1}{6}$ Cows require the food of	7	sheep, or	140	lbs. each, equal to		512
$14\frac{1}{6}$ Calves	„	2	„	40	„	„ 28
$14\frac{1}{6}$ year-olds	„	4	„	80	„	„ 56
$14\frac{1}{6}$ two-year-olds	„	6	„	120	„	„ 84
$6\frac{2}{6}$ horses	„	6	„	120	„	„ 36
						716

The food required by these 122 beasts is equal to the food required by 716 sheep, but the food produced on the arable farm from the 180 acres of roots, Clover, and pasture is equal to the maintainance of 726 sheep in a fattening condition, which is equal to the food of 10 sheep more than the 300 acres of natural pasture maintained, and therefore the same number of cows, calves, year-olds, two-year-olds, and horses, may be kept upon the produce of the arable farm of 300 acres, and of course the same quantity of cheese, butter, bacon, calves, and old cows may be expected, viz., one-sixth of 7139*l.* 16*s.* 0*d.*, or 1189*l.* 19*s.* 4*d.*, as was the return from the produce of 300 acres of natural pasture under the dairy system.

But of the 300 acres of the arable farm there are only 240 under the plough, and as 120 acres produce roots and Clover, there are 120 acres yearly producing grain; one-half is in Wheat, one-fourth in Barley, and the other fourth in Oats.

Acres.	Bushels per acre.	Quan.—price	£.
60 in Wheat ..	36 ..	2160 at 6*s.* per bushel ..	648
30 in Barley ..	50 ..	1500 at 4*s.* „ ..	300
30 in Oats ..	72 ..	2160 at 3*s.* „ ..	324
120 acres			£1272

Thus the return from the grain produced on the 120 acres is more than the return from the 300 acres of natural pasture under the dairy system, so that the return from land under arable cultivation is more than double what is got from dairy management.

It is clear from these statements that by converting pasture land into such a system of arable cultivation the fodder crops produced on half of the land will maintain all the stock which the whole of the land maintained when it was in pasture, and the stock may produce the same quantity of cheese, butter, bacon, &c., and the other half will produce as great a money value of grain, so that double the money value may be produced by turning it into arable land.

But the capital required to cultivate arable land is equal to 10*l.* per acre, while that which is employed in the management of the 15 dairy farms is only 5*l.* so that the farmer will require double the capital before he undertakes to become an arable farmer.

There will also require more buildings on the arable farm for keeping the stock in boxes, stalls, or courts, and also much of the land will require to be drained, so that the landlord will have to lay out his capital in these permanent improvements.

We shall take 8*l.* as the expense of the permanent improvement which the landlord will have to invest, which on the 300 acres amount to 2400*l.*; and if we allow him the same per centage which Government requires in lending money borrowed for the drainage of land, viz. 6 per cent., which is	£144	0	0
And the additional capital which the farmer will require at 5*l.* per acre, which amounts to 1500*l.*, which at 10 per cent.	150	0	0
And the additional labour required may cost 35*s.* more per acre	525	0	0
The additional yearly expense will be ..	£819	0	0
And this additional expense of capital invested is met by the additional return from the Wheat, Barley, and Oats, equal to.	1272	0	9
Leaving a profit of	£453	0	9
Whereas under the dairy system the rent and expense of the 300 acres of dairy land may be as under. Rent, say 2*l.* per acre	600	0	0
Farmer's capital, 5*l.* per acre, 1500*l.* at 10 per cent.	150	0	0
Labour at 15*s.* per acre	225	0	0
The expense under the dairy system	£975	0	0
The return is shown to be £1189	19	4	
Leaving a profit of	£214	19	4

If these statements are at all correct the profit to the farmer by this outlay of capital in converting pasture land into arable is evident, but this additional profit will not be returned until the whole of the land has been brought into a proper state of cultivation, and this will take at least two if not four years before this has been effected; but after this has been done the landlord may then have a right to claim an additional rent, say from 8*s.* to 12*s.* per acre, equal to 120*l.* or 180*l.* a year.

It requires a farmer not only of greater capital, but of different habits and of a greater capacity and talents to manage an arable than to manage a dairy farm. The milking and foddering seem to be the only duties and labour which the dairy farmer has to perform in converting the natural produce of the land into a marketable article, and consequently there is an idle space between each of these imperious duties, and it is quite a question if the indolent habits of the dairy farmer can be formed into the active, industrious, careful, and anxious habits of the profitable arable farmer whose business is to use the best means of raising the largest crops, and of adopting the best and most profitable way of converting the produce into the best and most profitable marketable article.

Let us apply the system to the Vale of Gloucester, which extends from Bristol to Evesham in Worcestershire, containing at least 300,000 acres of pasture used as dairy farms.

	Acres.
If this pasture was converted in arable land under this system of culrivation there would be one-fifth of it or	60,000
of it in pasture, and .. .. producing roots and Clover;	120,000
That is	180,000
Giving sufficient food for the same number and kind of stock as are at present maintained on the whole of the dairy farms in the district; and they would produce the same quantity of cheese, butter, bacon, &c., and be of the same money value as at the present time.	
And in addition to this there would be .. .. producing Wheat, Barley, and Oats.	120,000
	300,000

The return from the grain crops we shall estimate as before. There would be—

Bushels.		Bushels.	£
60,000 of Wheat, at 36 per acre	=	2,160,000, at 6*s.*..	648,000
30,000 of Barley, at 50 „	=	1,500,000, at 4*s.* ..	300,000
30,000 of Oats, at 72 „	=	2,160,000, at 3*s.* ..	324,000
120,000		5,820,000	£1,272,000

But to do this there would require an additional capital laid out by the landlord of say 8*l.* per acre, which is	£2,400,000
And by the farmer an additional capital of 5*l.* per acre will be required to cultivate the arable land of say	1,500,000
	£3,900,000

£		
2,400,000	The landlord to have 6 per cent. on his will be a yearly charge of	£144,000
1,500,000	And the farmer to have 10 per cent. on his will be a yearly charge of	150,000
3,900,000	And an additional 35*s.* per acre for labour amounts to	525,000
	Amounting in all to the yearly sum of	819,000
	But this sum would be repaid by the produce from the 120,000 acres of grain, which at the market price amounts to 1,272,000*l.*, and leaves a profit of	453,000
		£1,272,000

And if this system were generally adopted in the conversion of pasture land into arable, we should soon be independent of foreign grain without decreasing in any degree the present produce of cheese, butter, pork, beef, or mutton; indeed the increase of grain would enable us to produce a much greater amount of fat beef and mutton by the consumption of the Oats and Barley, or of Beans and Peas which may become part of the grain crop. *Gloucestershire Bottoms, Sept.* 30.

THEORY OF AGRICULTURE.

By Dr. Evan Pugh.

(*See page* 814).

No. VIII. Agricultural Education on the Continent.

A CONTINENTAL EXCURSION.

Leaving Tharand late in the afternoon of the 16th of August, it was quite dark before the train reached Dresden, and at an early hour the next morning I left that town for Leipsic intending to take Chemnitz on the way, as there is an important industrial school here, and by this route a better view of the agriculture of Saxony is obtained than on the direct route between the two cities. German agriculture appears to better advantage as seen upon this route than almost anywhere else in Northern Germany. The soil is naturally of a good quality, and, as a rule, appears to lay well for cultivation. The land is very much divided up into small farms, or garden patches, many of which do not exceed an acre, yet it exhibits a degree of cultivation which is not surpassed, and often not equalled on large farms. Even when the peasantry are possessed of large quantities of land it is scattered about in different places, so that only the system of the small farm or garden work can be applied to its tillage. Recently the government has taken the matter in hand, and has been attempting by surveys and appraisement of the value, to bring the several small tracts of each peasant together. There are many reasons why this would be desirable, yet experience here certainly does go to show that an idea almost universally accepted in England, that small farms are incompatible with good agriculture, is not unusual in its application.

It is an assumption which is hardly ever questioned in England, that in order to develope a high degree of agriculture the land should be divided into large farms, of which 400 to 600 acres should be a minimum. It is contended that the farmer who would take less could not afford to avail himself of the advantages of agricultural improvements, and could not invest sufficient capital in draining and manuring his land.

There is undoubtedly a semblance of truth in this idea, and a peculiar combination of circumstances in England tends to make it seem more true. But as a general truth I cannot see that it has any foundation whatever. On our American farms of 50, 100, and 150 acres, we have adopted drilling, reaping, mowing, hayraking, and threshing machines, much more generally than they are adopted anywhere in England. English authors like to refer to the miserable system of agriculture in France, in connection with the division of property which is universal there. But the poverty of French agriculture may be traced to other causes. The pernicious system of centralisation which characterises the policy of those who control the destinies of France has exhausted the rural districts. The capital which should exist in the land has been drawn to Paris, to accumulate in expensive palaces, and fine streets, and spacious quays, and grand boulevards, not to count the millions that have been expended for military purposes. Besides, Montesquieu told a great truth which we must not lose sight of when comparing the agriculture of England and France:—"Les pays ne sont pas cultivés en raison de leur fertilité, mais en raison de leur liberté."*

It is not intended to go into this question here, but merely in passing to express dissent from a commonly received notion upon the subject in England. The work of uniting the small lots in Saxony proceeds but slowly, and while government is labouring to bring them together, it has not power to prevent the peasant from making new purchases of isolated small lots.

A three hours' ride at the deliberate rate of a German railroad brought me to Chemnitz. Since 1850 there has been an agricultural department in connection with the school (*Gewerbschule*) here. Its course of instruction is similar to that at Tharand, and its auxiliaries, though not so complete, are alike in character. In connection with it is a chemical laboratory under the management of my friend and old university associate, Dr. Wunder, who also is conducting a series of agricultural experiments on a portion of land near the institution specially adapted to that purpose. About 200 students attend the institution, and a little more than one-fourth of these take the agricultural course.

Leaving Chemnitz by a rather circuitous route through a fine agricultural district in which the Clover and green crop looked flourishing, after a four hours' ride we behold the domes and spires of Leipsic. Just before we get to Leipsic the land appears to be divided into large plots, yet these do not correspond to an improvement in the agriculture. The farm implements visible in the fields or laid up in the farm storehouse, here as elsewhere, looked as if made from a pattern as old as the town itself. Ploughs with wooden mouldboards, wooden harrows with teeth, wooden spades with a sheet-iron edge, and shovels, forks, hoes, and scythes on the same scale. In ploughing the virgin subsoil is allowed to sleep quietly where its mother ocean deposited it thousands of centuries before a creature existed upon the earth that was destined to live by the cultivation of the soil. The latter is disturbed only to the depth of about 4 inches, and very often the wooden plough does not go so deep. This deplorable state of things is gradually being changed for a better by the intelligent and persevering efforts of Messrs. Hamm, Cousins, and others, of Leipsic, who place within reach of the agriculturist the improved implements, &c., of English farming, and by encouraging agricultural associations and scientific agricultural investigations, endeavour to awaken an intelligence amongst the peasant population that will enable them to see and avail themselves of the advantages of the improvements of modern agriculture.

The stranger on visiting Leipsic just now will be surprised to see the improvements that are going on in an old town that one might have thought would have rested quietly satisfied with its old houses and antiquated streets, after it had repaired the damage done in driving Napoleon out of it in 1813, after the first marked defeat that man encountered from the Germans. But, except Paris, there is scarcely a town in Europe that manifests such an enterprising spirit of improvement as has Leipsic during the last few years. The environs have been extending by new buildings, and within its old walls the spirit of improvement has been sacrificing the old ones to make room for new, with an energy which one cannot help thinking the quiet sentimental spirit of the Germans must feel is sacriligious.

Once within its walls and comfortably (as the English say) provided for at an hotel, I attempted to hunt up some of the old acquaintances of a former 18 months' residence, as a student in the University here. I found the Royal Laboratory as clean and as orderly arranged as when I left it three years ago, and its professor as kind, affable, and obliging as then.

The professor in geology, minerology, &c. (Naumann), has not received the three years that have fallen upon him since I bid him what I then thought was my last farewell in Leipsic, without marked effect, which assure one that the old man is drawing near the close of his long, laborious, and useful life, yet he is as active as

* Countries are not cultivated in consequence of their fertility, but in consequence of their liberty.

ever, and is now engaged with a new edition of the 2000 pages of his great work on Geognosy. It was a source of satisfaction to find that the Professor of Botany whom I had left, rather envying what then seemed to be his power to withstand the temptations of this nether world, and live on enjoying a state of single blessedness, has since fallen a victim to the fascinating powers of a daughter of Eve, and is now but the part of a whole, in which a wife is the better half. A walk with him around the very large and well-filled botanical garden sufficed to assure me that it was not his intention to sacrifice the scientific to the social; here, as in the town, improvement and extension were marked features. In no place in Germany have I found rooms for scientific lectures so crowded as were those on botany by Prof. Mettenius—in no place are the advantages for studying botany greater—in none is the professor more earnest in his desire that the student shall learn, nor his efforts more indefatigable in enabling him to do so. Few minds are so powerfully constituted for the duties of a teacher on botany as is his. I have often seen him standing in the middle of a busy group of 20 to 30 students on a botanical excursion, and the latter running to him with every grade of vegetable matter, from a Lichen to an Oak, and he without the least hesitation giving the names of each almost as soon as his eye fell upon them; or if the species was not distinguishable without the microscope he was ready to point out exactly what little characteristic was to be looked after if we had the latter instrument.

FROSTED MANGEL WURZEL.

The frost of last week came on so suddenly, and for the time of year so sharply, that it caught my Mangels unsecured. All the upper side has suffered, the frost-bite extending over about an eighth part of their surface. I have placed them in rows, covered them with the tops, and ploughed a furrow on either side over them. Is there anything I can do to arrest decay by steaming or otherwise? The answer of any grower will much oblige *G. B. Hudson, Wick, near Pershore, Worcestershire, Oct.* 23.

[We have numerous requests for information on the possibility of saving frosted Mangel Wurzel: and we have simply to add our own to the number. If any correspondent can describe an experience capable of encouraging the many who are now anticipating the loss of a great part of their winter food for stock, it will be very acceptable. Certainly our own experience is not encouraging, a very little frost having always ultimately destroyed the root. In the meantime, however, we can only recommend that the roots if piled together be put in small heaps, and while protected from any further frost by straw that they be not covered over at the top with earth for a week or two. The plan described above by Mr. Hudson in which the roots are not piled in heaps at all, but for the present lie in rows, is better still. If notwithstanding after a week or two they appear to be rotting, they must just be used as quickly as possible.]

Home Correspondence.

Bailiff and Gardener.—A good deal having been written respecting the necessity for combining the offices of farm steward and head gardener, owing to such a bad feeling prevailing between so many bailiffs and gardeners, I have no hesitation in stating that it is the result of a jealous spirit too often on the bailiffs' part, and in some instances is caused by ladies or gentlemen causing bailiffs and gardeners to interfere with each other's duties; consequently the bailiff has it in his power to annoy the gardener. But first class gardeners have very vague ideas repecting agriculture. For instance, Sir Joseph Paxton stated in his speech before a meeting held in behalf of the Gardeners' Benevolent Institution, that, "horticulture is 100 years in advance of agriculture." Bearing in mind the respective professed objects of the higher branches of agriculture and horticulture, in what respects can horticulture be said to be in advance of agriculture at the present day? Gardeners introduced a deep system of culture and the sowing of seeds in rows instead of broadcast; but the sowing of seed and trenching is labourers' work. Farmers had, previous to a comparatively recent date, to trust to the statements of dealers in artificial foods and artificial manures; but farmers of the present day have no one to blame, except themselves, if they are duped by artificial food or manure manufacturers. You have entered fully into the relative value of a great many different articles which are intended for sale amongst farmers. You have shown what losses farmers, who have not suitable accommodation for feeding cattle, incur by so much food being wasted in supporting respiration and keeping up the heat of the animal system. The statements of chemists respecting the value of the different component parts of artificial food and the fertilising properties of artificial manures are now regarded as final by the majority of the most intelligent practical farmers. But for the advanced point to which chemical analysis has now reached what golden harvests artificial food and manure manufacturers would have reaped! Since gardeners appear to be anxious to monopolise the most lucrative appointments in rural districts, allow me to request some first class gardeners to show that they are competent to undertake such onerous duties? As a *bonâ fide* farm labourer I rejoice to see such an interest taken in agriculture, and beg to thank your correspondent "F. L. O." for writing in behalf of the working classes; nevertheless, what practical information has he imparted respecting the Norfolk system of farming? You state that "Its faults are many; Turnips ultimately fail, become diseased, attacked by Finger-and-Toe, and so on, if taken so often from the same land." You insert a letter from a farmer in Bedfordshire, who shows the system of management on a 1000-acre farm. Since I know of a great many farms, one-fifth of which has been cropped every year with Turnips on the five-course system, these last 50 years, and as these farms grow as sound healthy Turnips at the present day as they did 50 years ago, I, notwithstanding the statements of eminent agriculturists that Turnips fail when taken so often from the same land, am yet to convince that land will become "Clover sick," and "Turnip sick," on the four-course system. Having had opportunities of observing the nature of a farm manager's duties connected with a mixed rotation of cropping, and having been employed by nine different head gardeners, I have had opportunities of observing that they are an intelligent class of men. Nevertheless it is quite ridiculous for a first-class gardener, who from early boyhood to manhood devoted his attention chiefly to horticultural pursuits, to state that he is competent to act as a farm manager, unless he is conversant with the principal details of farm management. What connection has the rotation of cropping a garden or a farm with the rearing, feeding, buying and selling of cattle, sheep, and horses, and the superintendence of permanent improvements? The concreting of the bottoms of the floor and outside borders of a Vinery is sufficient proof that a good many first-class gardeners have vague ideas respecting land drainage, which is the basis of land improvement. A garden and a home farm being necessary appendages to a gentleman's residence, I acknowledge that a gardener is competent to superintend a garden of medium extent and a small home farm; but since a man is considered incompetent to superintend a garden unless he is practically acquainted with the growing of soft and hard-wooded plants, the management of standard and wall fruit trees, the forcing of fruit and vegetables, the formation of and the keeping of kitchen and flower gardens in order, how can he be regarded as competent to act as farm manager unless he has mastered the details of farm management under an intelligent agriculturist? Since I have been employed in a garden, the superintendent of which is an accomplished gardener, who, after he had gone through all the different branches of practical horticulture in first class gardens, placed himself under a superintendent of labour connected with the executing of permanent improvements, and attended markets and devoted his attention to practical farming, I do not wish to be regarded as trying to prejudice employers against such an intelligent class of men further than naming details to show that a first class gardener knows no more about the details of farm management than any other class of intelligent men who have not made practical farming a branch of special study. *W.*

Societies.

East Derbyshire: *Cattle Breeding.*—At the late annual meeting of the society, Dr. Hitchman spoke on this subject. He said:—We are living in an age of intense competition, and need all the aid we can afford to each other. Other nations are emulating our industry; our brother Jonathan, on the other side of the Atlantic, is "going ahead" as to agricultural matters, in boldness—if not in discretion. His agricultural implements are of the most simple and effective character; and his zeal is shown in the fact, that he does not hesitate to give a thousand guineas for a very first class Short-horn bull. This is, indeed, a "fancy price," and one which few even ardent patriots could afford, yet, nevertheless, Jonathan is wise in his generation. The consumption of meat in this country is becoming enormous. London alone requires two millions of sheep and upwards of five hundred thousand beasts for its annual supply. And, again, when we reflect upon the energetic labours that are going on in our mining districts, when we learn that Derbyshire, with some aid from its sister county, Nottingham, raises nearly four millions of tons of coals annually, we cannot but conclude that the men who perform these enormous labours must require a large supply of animal food. The Short-horn tribe of animals is peculiarly adapted to the rich lands of Kentucky, and America is determined to cope with us in "meat-stuffs," as she already does in "bread-stuffs," and as a nation we must look to our laurels. Mr. Russell, of Kilwhiss, in Scotland, states that he saw at Springfield, in America, a very large show of Short-horn cattle, and he does not think that at the Royal Agricultural Show at Windsor, in 1851, the general stock was so universally good. The American, by importing such bulls as the "4th Duke of York," and such cows as those of the "Duchess" tribe, places himself at once in the same position for success as England was in 1810—when Charles Collins's magnificent bull "Comet" was almost the sole fountain, from whence have sprung the hundreds of fine animals which now graze in the valleys and uplands of this beautiful country. America acts wisely in selecting well formed animals of the "Duchess" tribe to found a race, for they possess intense vital force, and impress their own characteristics upon their offspring; as a proof of this, I may mention, that three years ago, prior to a sale at which, among many others, some alleged animals of the "Duchess" tribe were to be sold, I went into the field where the ticketed cows were feeding, and giving the catalogue, into which I had not looked, to a friend, I said: "Now, let me see whether I cannot pick out for you every heifer that is alleged to be descended from the '4th Duke of Oxford,' through a cow that is herself well bred;" and I did so without a single error. I mention the fact as an illustration of how distinctly qualities are handed down from generation to generation by special individuals. But, gentlemen, valuable, unspeakably valuable, as is a long descent; much as I esteem and love a pedigree, yet I hold it to be the veriest folly to give high prices merely for a pedigree; to value an inferior animal merely because it has descended from fine race. Such folly will almost always end in disappointment. I have known heifers purchased at 60 guineas, which were not worth 20*l.* in any market in England; they were small, misshapen animals of low quality; they had narrow chests, hollow shoulders, flat sides, and thin flanks, but wherewithal a pedigree so long, that it bothered the printer to find "g's" enough and "r's" enough to print the catalogue in which were detailed the great, great, great ancestors of these abortions. No lineage, however high, can compensate for such defects. One deformity, in a cow of strong vital force, may be impressed upon its offspring through many generations, just as the good qualities of an unpedigreed bull—a bull without a registered maternal grandfather, "Hubback"—have been handed down for nearly 80 years, and are seen in some of his progeny to this very hour. Some people are perfectly infatuated with the "Herd Book;" they are spell-bound by its records, and seem to disregard other circumstances, if we may accept their purchases as the tests of their opinions; but this of itself will not suffice to produce a first-class herd of cows, or sheep, or pigs. Secure pedigree whenever you can, but do not omit form, quality, size, and what, for want of a better term, I will call life-vigour, and by this I mean strength, activity, and a stately, lively carriage, and if to these you can join docility of temper so much the better. I repeat, many animals imprint their own characteristics upon their offspring through many generations, and when you have a good animal of this kind it becomes priceless, and with care and proper management may be serviceable for many years. We deal with artificial forms; special and even accidental characteristics have been arrested in the individual, and been stamped upon its progeny: what we term our best-formed animals are wide departures from the primitive type, and we could secure for our successors, if not to ourselves, still wider deviations from existing forms, if such were deemed advisable. These facts, I think, prove how very particular we ought to be as to the qualities of the individual animals from which we rear stock. For practical purposes it is not enough that an animal should be pure bred. It should in itself be symmetrical, full-sized, handsome, of good "touch," and vigorous, if retained for breeding purposes. No pedigree, however high, can be an equivalent substitute for these qualities—in short, we desire form with pedigree; but pedigree without good form and without quality we hold to be a mockery, a delusion, and a snare. Having secured a good calf, or young animal of any kind, it almost entirely depends upon the owner whether it shall be a stunted or a full-sized animal. No after treatment can ever compensate for bad management in the early stages of the animal's growth. If at any time food be stinted and warmth be withheld, or if, as sometimes happens, warmth is given but light is withheld, or if warmth be secured only by impure ventilation, mischief is done, and a check to growth takes place which is never fully recovered from. Light and proper warmth are essential elements of health. Exclude a young growing animal from light, keep him warm by means only of the heated carbonic acid gas which he has thrown from off his lungs, and by the ammoniacal gases which emanate from his evacuations, and you will plant the seeds of "scouring," "black-leg," and those other mysterious complaints which carry off calves suddenly and hopelessly. You may produce scrofula ("king's evil"), rickets, or consumption in an animal, by excluding it from light, giving improper food, and surrounding the creature with an impure atmosphere. See how a flower in a darkened room creeps towards the light from some stray sunbeam. See how Grass loses its green hue when artificially excluded from the light—and animals require it in like manner for the healthy performance of the functions of life. You may retard, and in some cases arrest, those higher changes which certain creatures have to pass through to their full development, by simply excluding them from light; tadpoles, for instance, have been kept for months as tadpoles, without reaching the higher development of the frog, by keeping them in darkness—and the young calves, which are pent up in early spring, in dark and ill-ventilated places, are prevented from attaining that full health and perfect development which under happier circumstances would be reached. If required for the butcher, the diseased blood—the blood deprived by darkness and an improper atmosphere of much of its colouring matter and its fibrine, may cause the veal to be whiter, but if the animal be destined for a useful life, then let in upon him the glorious sunshine; let him breathe the pure, the life-giving oxygen of the skies; surround him with wholesome warmth; give him good food at regular intervals, and then, oh! then, in his sparkling eye, his smooth

soft coat, his elastic skin, his rounded form, his frisking motions, he will testify his gratitude, and in his growth proclaim that he has a master who has had wisdom enough to comprehend, and kindness enough to supply the conditions upon which health, and strength, and beauty, and fertility can be obtained. *Derby Mercury.*

Miscellaneous.

The Birmingham Cattle and Poultry Show.—Now that the autumn meetings of our numerous local agricultural societies are terminated, attention will be given, and that immediately, to what are called our Christmas exhibitions, but which, from the early period they are fixed for this year, scarcely deserve that title. With regard to our own gathering in Bingley Hall, we must remind intending exhibitors that they should at once obtain the requisite certificates, as the entries in all departments will close on the 1st of November. Already, indeed, the applications of this nature to the secretary have been very numerous, in some cases from gentlemen who have not previously been exhibitors, and we have every confidence that the show of stock will prove to be quite equal if not superior to any which has been yet held in this town. With regard to the collection of Poultry there can be no doubt that, as in former years, still further improvement will be manifested in all our principal breeds, the number of zealous and intelligent breeders of poultry increasing every year, and the competition for prizes becoming consequently more severe at each succeeding meeting. With respect to the general arrangements, but few changes have been made from last year, and the programme already issued supplies all the information which exhibitors can require. *Midland Counties Herald.*

Pebbles in a Cow's Stomach.—The Rev. W. Symonds exhibited 30 pebbles, one of them weighing ¾ lb., found in the stomach of a cow lately killed at Barton-under-Needwood, Burton-on-Trent. The pebbles belong to the northern drift of geologists which abundantly overlies the new red sandstone of the district; and they are remarkably glazed and polished by the action of the cow's stomach. The weight of the pebbles is 5 lbs., and the animal appeared perfectly healthy and fat when killed by Mr. Goodman, butcher, of Barton-under-Needwood, to whom reference may be made.—Dr. Lankester thought this was an instance of a morbid appetite, and quoted many instances of the same nature. *British Association, Natural History Section.*

Pleuro-Pneumonia in Sheep.—In July I came home, and found that I had lost several ewes: one was ill at the time, and presented all the appearances that a cow does under this disease. I had her killed, and examined her carefully, and found her sound, with the exception of the parts about the lungs, which were just like those of cattle that have died of pleuro-pneumonia. Some time afterwards, in my absence, my wife heard of another ewe being ill, and had it brought in. She found it apparently in the last stage of the disease, and and my steward and shepherd both thought it past recovery. She, however, determined to try the homœopathic treatment, beginning with phosphorus, and continuing with bryonia, and, finally, sulphur. The sheep perfectly recovered. Since then I have had two more cases, a ewe and a wether. The first was taken in time by my steward, and recovered. The latter was very ill indeed; but under his treatment, following the directions of the little pamphlet by Turner of Manchester, he also was recovering, when he was put out in a field with a ram. The ram attacked him, and he was found nearly dead, and was for some days hardly able to breathe, but is now recovering, and almost well. *C. G. Grey, Portnard, Cappamore.—Irish Farmers' Gazette.*

Notices to Correspondents.

Blood Manure: *Coventry.* The blood manure is a superphosphate in which the sulphuric acid used is mixed with twice or three times its weight of blood instead of being diluted with water, and in which, therefore, the constituents of so much blood form a small addition to an ordinary superphosphate. Professor Anderson has analysed a so-called blood manure, which is a very poor superphosphate, and that is the only analysis we can find. It contained 11 per cent. of soluble phosphate and 16 of the insoluble phosphate, no less than 35 per cent. of sulphate of lime, and only 0.2 per cent. of ammonia. Well-made blood manure of this kind may, however, be a very good superphosphate.

Cows: *Cor.* We cannot tell whether your cows are suffering from Pleuro-pneumonia or from a simple inflammatory disease. Most probably the former, which if one were to die would show itself by the lungs being of unusual size, solid and heavy. The remedy you mention we consider as too stimulating. We should prefer Spts. Nit. Æther, 1½ oz.; Camphor, ½ drachm; Tartarised Antimony, ½ do. Twice a day with warm water or gruel. Blisters to the sides, setons in the brisket, Linseed boiled or Linseed-cake as food. *W. C. S.*

Mare's tail: *Mr. Fox, of Wellington, Somerset,* writes as follows: I hold a piece of ground of nearly 17 acres in allotment grounds, for the convenience of the artisans and labourers of a large manufactory with which I am connected. They have given universal satisfaction for many years, and are considered a great advantage by the holders; but I fear this will soon be affected by the rapid spread of the common Equisetum or "Mare's tail," which the men seem unable to eradicate, and which has this past season overpowered the other crops, and is in some places a dense rank growth. The soil is a light sandy loam, through which the roots run in all directions and to a great depth. [The drainage of wet, sandy soils, combined with deep and thorough tillage, has in instances of farms within our knowledge eradicated this pest; one cannot help thinking that deep and thorough tillage in gardens must be even more effectual.]

Mr. Hannam's Harvest Cart.—Mr. J. I. Ody, of Clifton Hampden, near Abingdon, is the name of the original maker of Mr. Hannam's carts. "He will not, I think, make them for so little as Mr. Mechi states; but I know that the wear proves the goodness of the stuff and construction. An ordinary wheelwright would probably fail in making such carts, even had he one before him. *J. C. C., Long Wittenham.*"

Pigs: *N C L.* Next week.

SEED WHEAT FROM THE CHALK.—Selected samples of CHIDHAM, WHITE TRUMP, ROUGH CHAFF, HUNTER'S WHITE, RED-CHAFF WHITE, GRACE'S WHITE, TALAVERA, RED BROWICK, RED NURSERY, GOLDEN DROP, and all the best kinds of Wheat, supplied by Raynbird & Harvey, of Basingstoke, and 89, Seed Market, Mark Lane, London, E.C. Samples and prices on application.

IMPROVED PROLIFIC RED WHEAT FOR SEED.

JOHN MOSS, Jun., invites the attention of Farmers to his new stock of PROLIFIC RED WHEAT, the produce of a careful selection from the highly esteemed variety of the Essex Red, known as "Hall's," and very highly appreciated by millers. J. M., jun., confidently recommends this selection for its prolific properties, as well as for weight and quality. Amount seeded 4 pecks; yield this season, 48 bushels per statute acre. Price 48*s.* per quarter, at Kelvedon Station. New sacks, 1*s.* 6*d.* each.

May be obtained of Mr. John Moss, jun., Kelvedon and Feering; and of Mr. T. C. Wilson, Kelvedon; by whom samples will be shown at Chelmsford, Braintree, and Colchester Markets.—Feering, Oct., 1859.

Remittances expected from unknown correspondents.

EARLY HANDSWORTH POTATO.

FISHER, HOLMES, and CO. beg to offer their EARLY HANDSWORTH POTATO, a very superior kind for forcing in pots and frames, the very earliest for open ground, and a great acquisition for market gardening purposes. It is very dwarf, growing not more than from 4 to 8 inches high, price 3*s.* per peck. It is thus reported in the *Gardeners Chronicle*, 1858, p. 457: "Out of 74 varieties grown for trial in the Horticultural Society's Gardens the Early Handsworth was by 10 days the earliest;" also, at p. 656, "Among Potatoes the Early Handsworth deserves particular notice. It comes in some 10 days earlier than the Ash-leaf Kidney, is excellent in quality and a very prolific, round, white kind; six plants produced 6 lbs. of Potatoes; its great recommendation, however, is its earliness," to which may be added testimonials from many of the leading Gardeners and Nurserymen in the country.

F., H., & Co. having made provision for a large supply this season they are enabled to offer it to the Trade. Price on application. The following Nurserymen and Seedsmen have already purchased:—

Mr. James Veitch, jun., Chelsea
,, Denyer, London
,, W. Skirving, Walton Nursery, Liverpool
,, Charles Turner, Slough
,, Watkinson, Manchester
,, Henderson, Birkenhead
,, John Soden, Middle Barton, Oxford
,, Ivery, Peckham, London
,, Wm. Foster, Stroud
,, Darby, Cirencester
,, Perkins, Leamington
,, Matheson, Gloucester
,, J. Sealey, Bristol
,, Harris, Bristol
,, Wm. Hood, Ashby-de-la-Zouch
,, Wardle, Burton-on-Trent
,, Thos. Warner, Leicester
Messrs. Hurst & M'Mullen, London
,, E. G. Henderson & Son, St. John's Wood, London
,, James Carter & Co., London
Messrs. Henderson & Co., Pine apple Place, London
,, Butler & M'Culloch, London
,, Hooper & Co., London
,, Osborn & Sons, Fulham
,, J. & C. Lee, Hammersmith
,, H. Low & Co., Clapton
,, James Veitch & Son, Exeter
,, Garraway, Mayes & Co., Bristol
,, F. & A. Dickson & Sons, Chester
,, Finney & Co., Gateshead
,, Thomas Davies & Co., Wavertree, Liverpool
,, Peter Lawson & Son, Edinburgh
,, Downie & Laird, Edinburgh
,, Dickson, Hogg, & Robertson, Dublin
,, Wood & Son, Maresfield, Uckfield
,, J. & C. Wheeler & Son, Gloucester
,, Maule & Son, Bristol

WILLIAM YOUNG begs to call attention to his extensive NURSERY STOCK, which is in fine condition for removal, and which will be found well worth notice of those engaged in any kind of planting.

Having large quantities of the undermentioned, all well grown, good-rooted plants, he can offer them at very moderate prices.

SPECIMEN CONIFERÆ.

Abies Douglassii, 8 to 12 feet
,, canadensis, 8 to 12 feet
,, Menziesii, 6 to 10 feet
,, nigra, 6 to 8 feet
,, Pinsapo (very handsome), 6 to 8 feet
Pinus Cembra, 6 to 10 feet
,, excelsa, 8 to 10 feet
,, insignis, 6 to 8 feet
Cedrus Deodara, 6 to 12 feet
,, Libani, 6 to 12 feet
Araucaria imbricata, 4 to 6 ft.
Cryptomeria japonica, 6 to 8 ft.
Juniperus chinensis, 6 to 8 ft.
,, hibernica, 6 to 8 ft.
Taxodium sempervirens, 6 to 10 feet

LARGE DECIDUOUS TREES AND EVERGREENS.

Ash, Weeping, 8 to 10 feet
Beech, common, 6 to 10 feet
,, copper, 6 to 10 feet
,, Fern leaf, 6 to 8 feet
,, weeping, 6 to 8 feet
Horse Chesnut, 8 to 12 feet
Limes, 6 to 10 feet
Poplar Abele, 8 to 10 feet
,, black Italian, 8 to 10 ft.
Maple, Norway, 6 to 8 feet
Oak, English, 10 to 12 feet
,, Fordii, 8 to 10 feet
Oak, exoniensis, or New Leucombe, 8 to 12 feet
Oak, evergreen, 8 to 10 feet
Weeping Willows, 8 to 10 feet
Spruce Firs, 10 to 12 feet
Silver Firs, 10 to 12 feet
Arbor-Vitæ, American, 6 to 8 ft
,, Chinese, 6 to 8 ft.
,, Ontario, 5 to 7 ft.
Hollies, green, 8 to 12 feet
Yews, 8 to 12 feet

STANDARD ROSES.—A fine collection of all best varieties.

RHODENDRONS and other AMERICAN PLANTS of all the leading varieties.

FOR ORNAMENTAL GAME COVER.

Azalea pontica
Common Laurels
Evergreen Privet
Mahonia Aquifolium
Juniper, Common
Juniper sabina
Rhododendron ponticum

FOREST TREES.—Larch, Scotch, Alder, Ash, Birch, Hazel, Chesnut, Willow, &c., from 2 to 4 and 5 feet, in any quantity for Coppice planting.

A NEW DESCRIPTIVE CATALOGUE of New Plants, Coniferæ, Deciduous Trees, Evergreens, Flowering Shrubs, Roses, American Plants, and general Nursery Stock, with heights and prices, forwarded on application.

N.B.—Good Railway communication to any part of England.
Milford Nurseries, near Godalming, Surrey.

REIGATE SILVER SAND.—Best quality for Florists, 16*s.* per ton; less quantities, 1*s.* 6*d.* per bushel, delivered to any London wharf or railway. PEAT, LOAM, and LEAF MOULD, in large or small quantities. Sacks for Sand, 1*s.* 6*d.* each, or on hire 6*d.* each (five hold a ton).

John Kennard, Purveyor to her Majesty, Swan Place, Old Kent Road, London, S.E.

NURSERYMEN SUPPLIED WITH THE BEST TOBACCO PAPER at 4*l.* per cwt.: any quantity less than ½ cwt., 10*d.* per lb. Warranted genuine.—Address Tom Bryant, Messrs. Jackson & Son, Tobacco Manufacturers, Lady Lane, Leeds.

TO PIG, POULTRY, AND GAME FEEDERS.

JUPP'S RICE FOOD, POULTRY and GAME.—RICE SWEEPINGS, 7*s.* 6*d.* per cwt., in 1½ cwt. bags; SCREENED RICE, 10*s.* per cwt., in 1½ cwt. bags; DOG BISCUITS, 14*s.* per cwt.; OIL-CAKE, per ton only; RICE MEAL for PIGS, 6*s.* and 8*s.* per cwt., in 1 cwt. bags, at the mill. Orders must be accompanied by a remittance to insure delivery.—W. & R. Jupp, 6, Cross Lane, Eastcheap, E.C.

GLASS FOR ORCHARD HOUSES & CONSERVATORIES.

JAMES PHILLIPS and CO. beg to submit their prices of GLASS for the present month.

16-oz. SHEET GLASS, in boxes of 100 feet.—3rds. 4ths.

12 by 9, 13 by 9, 14 by 9 .. .. } 14*s.* 6*d.* 12*s.*6*d.*
12 ,, 10, 13 ,, 10, 14 ,, 10, 15 by 10 ..
13 ,, 11, 14 ,, 11, 15 ,, 11, 16 ,, 11 .. }
14 ,, 12, 15 ,, 12, 16 ,, 12, 17 ,, 12 .. }
18 ,, 12, 19 ,, 12, 20 ,, 12 ,, .. }
16 ,, 13, 17 ,, 13, 18 ,, 13 ,, .. } 16*s.* 6*d.* 14*s.*6*d.*
19 ,, 13, 20 ,, 13, 21 ,, 13 ,, .. }
16 ,, 14, 17 ,, 14, 18 ,, 14 ,, .. }
19 ,, 14, 20 ,, 14, 21 ,, 14 ,, .. }

Boxes included and not returnable.

GLASS for ORCHARD HOUSES, supplied by us to Mr. Rivers.

		16 oz.	21 oz.
20 in. by 12 in.	Common	14*s.* 0*d.* ..	£1 1*s.*
20 in. by 13 in.	Superior do. ..	16 6 ..	1 5
20 in. by 14 in.	English Glass ..	18 0 ..	1 9
20 in. by 15 in.			

Boxes included and not returnable.

SMALL SHEET SQUARES, in 100 feet boxes.—*s.* *d.*

6 by 4 6½ by 4½ 7 by 5 7½ by 5½ } 11 6
8 ,, 6 8½ ,, 6½ 9 ,, 7 9½ ,, 7½ }
10 ,, 8 10½ ,, 8½ 12 6

Boxes 2*s.* each, returnable at full price.

JAMES PHILLIPS and CO.,

180, Bishopsgate St. Without, London, E.C.

No Connection with any other House in Town.

GLASS FOR CONSERVATORIES, ETC.

HETLEY and CO. supply 16-oz SHEET GLASS of British Manufacture at prices varying from 2*d.* to 3*d.* per square foot for the usual sizes required, many thousands of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES, and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to James Hetley & Co., 35, Soho Square, London, W.

See *Gardeners' Chronicle* first Saturday in each month.

HORTICULTURAL GLASS—JUNE TARIFF.

THOMAS MILLINGTON'S reduced Tariff of GLASS, &c.

6 by 4, 7 by 5, 8 by 6, 9 by 7 } 16 oz. to the foot, 11*s.* 6*d.*
6½ by 4½, 7½ by 5½, 8½ by 6½, 9½ by 7½ } per 100 feet.
In 100 boxes,—4ths quality, 12*s.* 6*d.*; 3ds do., 14*s.* 4*d.*
10 by 8, 12 by 9, 12½ by 10½, 14½ by 10½, 13 by 11
10½ by 8½, 12½ by 9½, 13 by 10, 15 by 10, 13½ by 11½
11 by 9, 13 by 9, 13½ by 10½, 12 by 11, 14 by 11
11½ by 9½, 12 by 10, 14 by 10, 12½ by 11½

20 by 12	per 100 feet	16 oz.	21 oz.
20 by 13	Common ..	16*s.* ..	24*s.*
20 by 14	Superior .	18*s.* ..	27*s.*
20 by 15			

All Boxes included.

Orchard House sizes as supplied to Mr. Rivers.

Hartley's improved Rough Plate Glass from ½ to ¾ in thickness.

Coloured Glass in great variety, at 9*d.* and 1*s.* per foot.

Paints, Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, Lamp Glasses, &c.

87, Bishopsgate Street Without, E.C., same side as Eastern Counties Railway.

GLAZIERS' DIAMONDS for CUTTING HORTICULTURAL and other GLASS, to be had of the Wholesale Manufacturer, John Edwards, 20, Sharp's Alley, West Smithfield, London, E.C. Prices from 10*s.* to 27*s.* 6*d.*

HENRY J. MORTON and CO.,
2, Basinghall Buildings, Leeds.

CALVANISED IRON WATER CISTERNS

for Cottage Houses, &c., to contain 50 gallons, 25*s.*; 80 gallons, 30*s.* each; and 140 gallons, 36*s.*, and fitted with tap, keeping the water perfectly sweet and clean; will not rust or corrode. Cisterns of all sizes.

CALVANISED IRON PUMPS

for Liquid Manure or Domestic Use, 3 inches diameter, 30*s.* and 32*s.* 6*d.* each; Tail Pipe for same at from 10*d.* per foot.

CALVANISED IRON SWING WATER BARROWS

for Garden or Farm use, containing about 20 gallons, entirely formed of iron, 32*s.* 6*d.* each.

TREE TRANSPLANTING by MACHINE.
Landscape Gardening, Ornamental Planting, Land Draining, Lakes, and Road-making, &c. Plans and Estimates.
W. H. Rumbold, Grange, Tunbridge Wells.

GREENHOUSES, CONSERVATORY, &c., for Sale. A large Stock, Glazed, ready for Fixing, at Henry Freeman's, Hothouse Builder, Triangle, Hackney, N.E.

HOT-WATER PIPES at wholesale prices, with Elbows, Syphons, Tee Pipes, and every other connection. Wrought and cast iron Boilers, Saddle, Conical, Cylinder, and Elliptic, from 24*s.* each. Boilers and Iron Stands to use without brickwork. Valves from 12*s.* each. Coil Boxes, Furnace Doors, Furnace Bars, Supply Cisterns, and Builders' Castings of every description in stock, at Mr. Lynch White's Iron Wharf, Upper Ground Street, Blackfriars Bridge, London, S.

C. STEPHENSON, late STEPHENSON and SONS, 61, Gracechurch St., London, E.C., Manufacturer of Iron Hurdles, Fencing, &c., Improved Iron and Copper Conical Boilers and Apparatus for Warming Buildings of every description by Hot Water.

Prices and Estimates furnished upon application.

TO THE NOBILITY, GENTRY, AND HORTICULTURISTS.

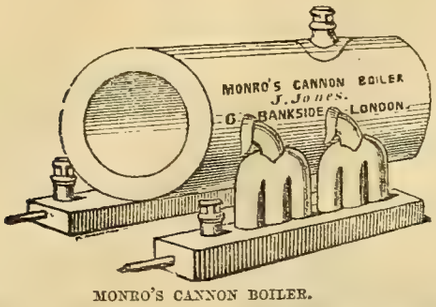
H. McCALLA (late principal Draughtsman to Messrs. Weeks & Co.), Civil Engineer and Farm Architect, begs to inform the above that the Horticultural Buildings being confined to so few, exorbitant prices are charged; that he prepares Working Drawings and Specifications, so that they can have their own constructed by any country carpenter, at 1*s.* 6*d.* per foot super, or upon their own estates at 1*s.* 4*d.* per foot. Plans also upon the same rule for erecting Hot Water Apparatus. Plans for all kinds of Farm Buildings, Homesteads, Labourers' Cottages, Laying out of Estates, Drainage. Plans &c., prepared for all the above Works and submitted to competition.—Office: 7 Upper Cheyne Row, King's Road, Chelsea, S.W.

HORTICULTURAL BUILDINGS AND HEATING BY HOT WATER.

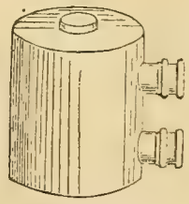
JOHN R. PEILL, 17, New Park St., Southwark, S.E., Manufacturer of every description of Buildings for Horticultural purposes, and Inventor of the Improved Conical Boiler for heating the same, is prepared to undertake works of any magnitude, and refers among others to the celebrated range of FORCING HOUSES at HER MAJESTY'S GARDENS, FROGMORE, and at SIR ROBERT PEEL'S, DRAYTON MANOR, constructed under the superintendence of his Manager, Mr. John Jones; and also to his BOILERS fixed at the CRYSTAL PALACE, the ROYAL BOTANIC GARDENS, REGENT'S PARK, and KEW, and at several hundreds of the Nobility's seats, Public Establishments, and Manufactories in London and the provinces. J. R. P. also manufactures every description of Iron Roofs, Iron Houses, and Iron Fencing, plain and ornamental. Strong Iron Hurdles for Sheep (6 ft. long, 3 ft. high, with 5 bars), 4*s.* 3*d.* each; ditto for cattle, 4*s.* 9*d.* each. Prices and other particulars forwarded on receipt of one postage stamp.

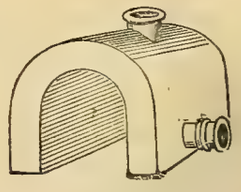
TO NURSERYMEN, GARDENERS, AND OTHERS.

HOT-WATER APPARATUS.



MONRO'S CANNON BOILER.


CYLINDER BOILER
VARIOUS SIZES.


SADDLE BOILERS OF WROUGHT AND CAST IRON, OF ALL SIZES.

THE LARGEST STOCK OF

HOT-WATER PIPES & CONNECTIONS, BOILERS, &c.,

OF THE BEST QUALITY AND AT THE LOWEST PRICES.

THE WHOLE OF THE ABOVE KEPT IN STOCK READY FOR IMMEDIATE DELIVERY.

PRICES WILL BE SENT ON APPLICATION, OR ESTIMATES FOR

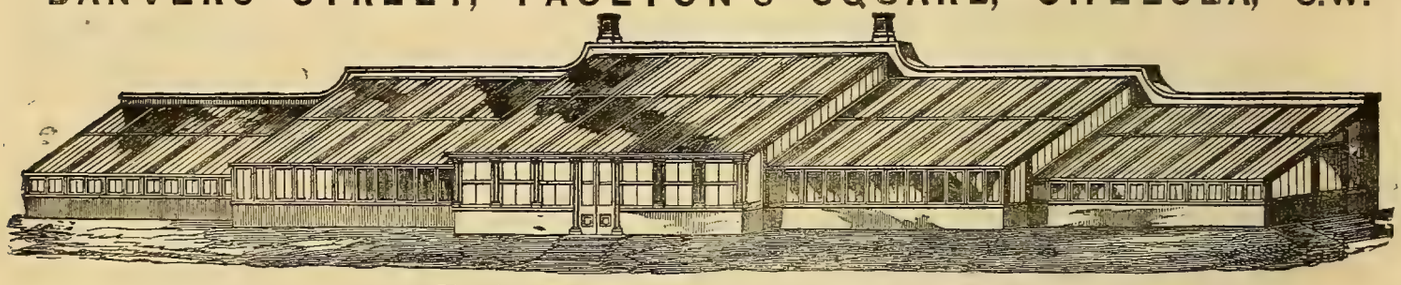
HOT-WATER APPARATUS

ERECTED COMPLETE IN ANY PART OF THE COUNTRY.

J. JONES, 6, BANKSIDE, SOUTHWARK, LONDON, S.E.

HORTICULTURAL WORKS,

DANVERS STREET, PAULTON'S SQUARE, CHELSEA, S.W.



JAMES GRAY

RESPECTFULLY BEGS TO INFORM THE NOBILITY, GENTRY, NURSERYMEN, GARDENERS, AND OTHERS, THAT HE CONTINUES TO CARRY ON THE BUSINESS IN ALL ITS BRANCHES AT THE ABOVE OLD ESTABLISHED PREMISES.

CONSERVATORIES, GREENHOUSES, FORCING HOUSES, VINERIES, PITS, &c.,

OF EVERY DESCRIPTION, ERECTED ON THE MOST APPROVED PRINCIPLES.

HEATING BY HOT WATER.

J. G. having specially devoted his attention for many years to this part of the business, is now fully prepared to Heat every description of public and private buildings, viz :—Churches Mansions, Warehouses, &c., as well as all structures connected with Horticulture, in the most efficient manner. His system is the most simple that can be adopted—which he has found from long experience to be the best—can be constructed at less cost, and is more easily managed than those of a complicated nature which have attracted the notice of the public.

J. G. begs to call attention to his CAST-IRON CORRUGATED ARCH BOILER, which from its simplicity of construction has not the liability to fracture to which those of a more complex design are always subject. They have been extensively used for many years, and have given the greatest satisfaction.

All business is conducted at this establishment on the principle of lowest remunerative profits consistent with best materials and workmanship.

PLANS AND ESTIMATES FURNISHED ON THE SHORTEST NOTICE.

WEEKS' ONE BOILER SYSTEM.

BY APPOINTMENT.

JOHN WEEKS & COMPANY,

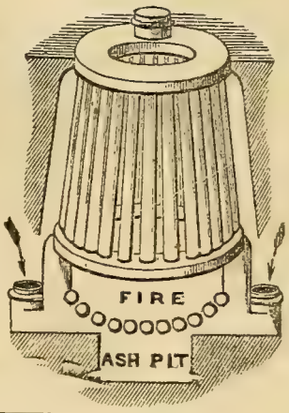
KING'S ROAD, CHELSEA, S.W.,

CHALLENGE THE WORLD to produce a Boiler not made in imitation of their Upright Tubular Boiler that will produce anything like the same effect with the same quantity of fuel in a given time.

The following unequalled statistics fully justify the challenge:—

Mark the enormous length of Houses and Piping heated by One Boiler.	Length of Houses in feet	Total length of Piping.
Messrs. E. G. Henderson & Co., Wellington Nursery	1,200	5,500
Messrs. F. A. Smith, Dulwich	3,000	11,000
M. Van Houtte, Belgium	3,300	13,000
Our own Fruit Forcing Show Establishment ...	1,000	7,000

Also the Nurseries of Mr. Woodroffe, Harrow Road, N.W.; Messrs. Rollisson, Tooting, S.; Messrs. Wood & Ingram, Huntingdon; Messrs. Wood & Son, Maresfield; together with numerous Public Buildings and Establishments of the Nobility and Gentry far too numerous for insertion.



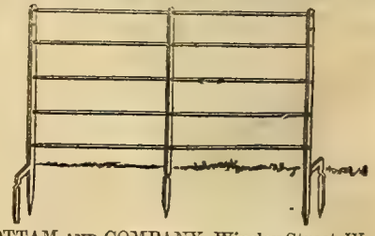
J. WEEKS & CO., Horticultural Builders and Hot-Water Apparatus Manufacturers, King's Road, Chelsea, S.W.

PLANS AND ESTIMATES FREE ON APPLICATION.

LOOMES AND CO.'s CABLE PATTERN GARDEN EDGING may be obtained of Messrs. HOOPER AND CO., Covent Garden Market, W.C.



IRON HURDLES, FENCING, &c., MADE BY MACHINERY.



COTTAM AND COMPANY, Winsley Street, W., have invented machinery for making Hurdles, &c.; the bars, instead of being pointed by hand in the old fashioned style, are nippled down by the machine, leaving a shoulder so as to more effectually tighten the standards when rivetted. They are made of superior iron only, and will compete in price with those made by hand from cinder or common iron which so frequently break. Iron Fencing, Gates, and Iron Work of all kinds, both Plain and Ornamental, Conservatories, Hot Water Apparatus and Garden Implements.

Illustrated CATALOGUES free on application to COTTAM & COMPANY, Ironfounders, 2, Winsley Street, Oxford Street, W.

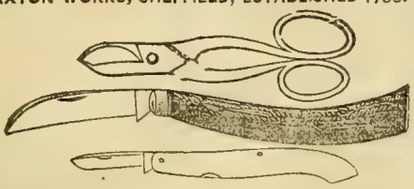
N.B. COTTAM & Co. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

PARKES' STEEL DIGGING FORKS.

BURGESS AND KEY, 95, Newgate St., E.C., London, being the Wholesale and Retail Agents for these celebrated TOOLS have always a large Stock on hand from which their Customers may select what they may require.

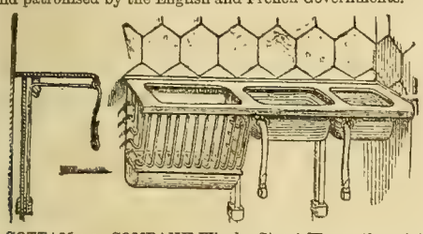
ANTHONY'S PATENT AMERICAN CHURN.—The FIRST PRIZE was again awarded to this Churn in Competition with several others at the Chester Meeting of the Royal Agricultural Society; it has obtained the First Prize given by the Society at every Meeting since 1850. Messrs. BURGESS & KEY, 95, Newgate Street, E.C., strongly recommend it as the most perfect Churn now in use. Full particulars sent on application.

PAXTON WORKS, SHEFFIELD, ESTABLISHED 1738.



SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.—Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

COTTAM'S PATENT INVENTIONS FOR STABLE REQUISITES, awarded a Prize at the Paris Exhibition, and patronised by the English and French Governments.



COTTAM AND COMPANY, Winsley Street, W., are the original inventors of the PATENT ENAMELLED MANGER, Water Trough, and Wrought Iron Rack, united to an iron top-plate, and forming one complete and useful fixture, having COTTAM'S patent noiseless halter guide and collar rein attached, which is taken to the back of the manger, and works with ease and freedom up or down the guide-bar.

COTTAM'S NEW PATENT SEED-BOX, an important addition to the above fittings, being simple in construction, light, and durable, promotes cleanliness, and is economical in its results.



COTTAM'S PATENT SADDLE and HARNESS BRACKET combined, can be used with great advantage where space is an object, as it can be turned up out of the way when not in use.

COTTAM'S IMPROVED SURFACE GUTTER, with perforated moveable cover, the use of which prevents accidents, and can be easily cleaned out.

COTTAM'S CAST-IRON SANITARY TRAP, from its improved construction, gives a full water passage, and does not allow any smell to ascend from the drain.

PATENT LOOSE-BOX FITTINGS, and every article for the harness-room and stable, kept in stock, plain, galvanised, and enamelled. Iron gates, fencing, hurdles, &c.

The New Illustrated Catalogue and Estimates, gratis, upon application to COTTAM and COMPANY, 2, Winsley Street, Oxford Street, W.

N.B. COTTAM & Co. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

PRIZE MEDAL, PARIS EXHIBITION 1855.

METCALFE, BINGLEY, AND CO.'S New Pattern and Penetrating Tooth Brushes, Penetrating unbleached Hair Brushes, Improved Flesh and Clothes Brushes, and genuine Smyrna Sponges; and every description of Brush, Comb, and Perfumery for the Toilet. The Tooth Brushes search thoroughly between the divisions of the Teeth and clean them most effectually—the hairs never come loose. M., B., and Co. are sole makers of the Oatmeal and Camphor and Orris Root Soaps—sold in Tablets (bearing their names and address) at 6d. each; of METCALFE'S celebrated Alkaline Tooth Powder, 2s. per box; and of the New Bouquets.—Sole Establishment, 130B and 131, Oxford St. 2d and 3d doors west from Holles St., London, W.

TO NURSERYMEN, GARDENERS, AND OTHERS.

TO BE DISPOSED OF, A SMALL NURSERY, about 2 acres, in the neighbourhood of London, with Houses and Pits well stocked with Plants and Shrubs, and a good Jobbing Business.—Apply to Mr. A. CHANDLER, Horticultural Agent and Valuer, 20, Priory Road, Wandsworth Road, S.

NURSERY, SEED, AND MANURE TRADES.

TO BE DISPOSED OF, the old established NURSERY, SEED, AND MANURE TRADES (late Rendle's), conveniently and pleasantly situated, adjacent to the town of St. Austle, and within a mile of the Railway Stations.—Address J. M., Messrs. Hurst & M'Mullen's, 6, Leadenhall Street, London, E.C.—N.B. If the above should not be disposed of this autumn, a WORKING PARTNER will be required.

TO NURSERYMEN, FLORISTS, AND OTHERS.

TO BE DISPOSED OF, a First-Class LONDON NURSERY, long Lease and Good Will, the Vendor having been in occupation for 16 years. Extensive frontage, stands well for business, Omnibuses to all parts of London. There are 12 Greenhouses, besides Pits, &c., part heated by Hot Water, and adapted to the Propagation and Culture of Hardwooded and Miscellaneous Plants. The usual Ground Stock includes American Plants, choice young Fruit Trees, &c., in fine condition. Good Residence, Seed Shop, and Offices separate; two Stall Stable, Cart and Packing Sheds, front and back entrance, and every convenience to carry on a large business.—Apply to Messrs. BROOKS & BEAL, Estate Agents and Auctioneers, 269, Piccadilly, W

HUCCLECOTE GARDENS, 2½ MILES FROM GLOUCESTER.

TO BE LET, with immediate possession, the above capital walled-in GARDENS, containing about 4 acres, with House, Farm-yards, Buildings, Orchard, and Land adjoining, containing in the whole about 16 acres, with Greenhouses, Propagating houses, Vineries, Pits, &c. Extent of glass 5770 feet.—For particulars apply to W. KNOWLES, Auctioneer, St. Mary's Square, Gloucester.

BATH NURSERY AND SEED ESTABLISHMENT.

MRS. GRIFFIN, widow of the late JAMES GRIFFIN, finding the business too extensive for her management, would be glad to dispose of it on liberal terms.—Further particulars can be obtained at the Nursery, Weston Road; or 2, New Bond Street, Bath.

NURSERY GROUND.

TO BE LET, WHITTINGTON NURSERY, Upper Holloway, to be entered upon immediately.—For particulars, apply to J. F. MARSON, Esq., Small Pox Hospital, or to Mr. Bunney, Nurseryman, Stratford, Essex, E.

Sales by Auction.

TO GENTLEMEN, NURSERYMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will Sell by Auction at the Mart, on WEDNESDAY, November 2, at 12 o'Clock, a first-class collection of DUTCH BULBS, consisting of the finest Double and Single Hyacinths, Narcissus, Jonquils, Anemones, Crocus, Tulips, Ranunculus, Gladiolus, Snowdrops, &c.; also a fine assortment of 500 Standard and Dwarf Roses, with handsome straight stems and fine bushy heads; selected American Plants, including Ghent and other Azaleas, Hybrid Rhododendrons, Kalmias, Andromeda floribunda, &c., beautifully set with bloom-buds, with 120 fine Coniferæ, from 2 to 3 feet, comprising Pinus insignis, Taxodium sempervirens, Cupressus macrocarpa, &c.—May be viewed the morning of Sale. Catalogues may be had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO NOBLEMEN, GENTLEMEN, & OTHERS PLANTING.

IMPORTANT SALE OF ORNAMENTAL, FOREST, AND FRUIT TREES, SHRUBS, ROSES, &c.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Epps to Sell by Auction, on the premises, the Bower Nursery, Maidstone, Kent, on THURSDAY, November 3, and two following days, at 11 o'Clock each day, the whole of that extensive and valuable NURSERY STOCK, growing on the land recently sold for building, situate on the Tonbridge Road, Maidstone, consisting of some of the finest specimen CONIFERÆ, SHRUBS, ORNAMENTAL TREES, &c., of various sizes, many magnificent specimens giving immediate effect, and which from the adhesive nature of the soil, and being frequently transplanted, will insure their safe removal. There are 8000 fine Deciduous Trees, of new and ornamental kinds; also Acacias, Acers, Limes, Chesnuts, Poplars, Thorns, Elms, Oaks, &c.; 20,000 of the best kinds of Evergreen and Deciduous Shrubs; also 6000 noble specimen Coniferæ, from 2 to 20 feet high, consisting of Abies Douglassi, excelsa, Smithiana, Araucarias, Cedars, Cedrus Deodara, very fine; robusta, Picea cephalonica, Thaserii, nobilis, Pinsapo, Pinus austriaca, Cembra, insignis, &c.; Wellingtonia gigantea, Cryptomerias, Cupressus, 30 varieties; 3000 to 4000 choice Standard and Pyramid Fruit Trees; 200,000 Forest Trees, consisting of strong Chesnut, Ash, Larch, Scotch Fir, Spruce, Oak, Elm, &c.; 3000 Standard and Dwarf-worked Roses, Climbing Plants, &c.—May be viewed prior to the Sale. Catalogues may be had (6d. each, returnable to purchasers) on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex, N.E.

STOKE NEWINGTON.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS have received instructions to Sell by Auction on the Premises, Albion Road, Stoke Newington, on MONDAY and TUESDAY, November 7 and 8, at 11 o'Clock each day, fine ornamental and deciduous Trees, Evergreens and Flowering Shrubs, consisting of fine Aucubas, Laurels, Variegated and Green Hollies, Arbor-vitæs, Bays, Ivies, Box Lilacs, Limes, Planes, Poplars, Scarlet Chesnuts, fine Weeping Ash, Evergreen Privets, &c.; a fine assortment of Fruit Trees, comprising Standard and Dwarf-trained Peaches, Apricots, Nectarines, Cherries, Plums, Pears, Gooseberries, Currants, Grape Vines, fine Standard Dwarf and Climbing Roses, American Plants, including Azaleas, Rhododendrons, and Andromeda floribunda, well set for bloom.—May be viewed prior to Sale. Catalogues had on the premises, of the principal Seedsmen in London, and of the Auctioneers, American Nursery, Leytonstone, Essex, N.E.

TO TULIP GROWERS AND OTHERS.

MR. J. WILLMER begs to announce that he will submit to Public Auction without reserve at the Auction Mart, Bartholomew Lane, on TUESDAY, November 1, at 12 o'Clock, a Choice and Valuable Collection of TULIPS, consisting of upwards of 200 Rows and containing all the leading flowers in cultivation, the property of a celebrated grower of more than 40 years' standing who is declining their further cultivation. On view the morning of Sale.—Catalogues to be had at the Mart; and of Mr. J. WILLMER, Horticultural Auctioneer and Valuer, Springfield Nursery, Sunbury, S.W.

PHILIP LANE, NEAR THE HIGH CROSS, TOTTENHAM.
NURSERY STOCK.

MR. A. RICHARDS will Sell by Auction, on the ground, on THURSDAY, November 3, at 12 o'Clock, by direction of the Proprietor, the whole of the NURSERY STOCK, comprising fine Portugal and Common Laurels, Aucubas, Laurustinus, Euonymus, Arbor-vitæ, Rhododendrons, strong Privet, Firs, Yews, Variegated and Common Hollies, Standard Roses, Trained Fruit Trees, Forest Trees, &c.—Catalogues obtainable on the premises, and of the Auctioneers, Tottenham, N.

WEST GREEN, TOTTENHAM.

GREENHOUSES, PLANTS, EVERGREENS, FARMING STOCK, AND EFFECTS.

MR. A. RICHARDS will Sell by Auction, by direction of the Executrix of the late Mr. Jno. Martins, on the premises, on TUESDAY, November 1, at 12 o'Clock, a nearly new Span Greenhouse, 40 feet long; a Half-span ditto, 48 feet, and one other; also the Hot-water Pipes, Pits, Frames, and Lights; a quantity of Shrubs and Evergreens, Camellias, 100 dozen Geraniums, Fuchsias, 2000 Strawberry Plants; 1000 Gold and Silver Fish; 30 loads of Meadow Hay. 2 acres of Mangel Wurzel, Farming Implements, four Cows, two Heifers, two Chaise Horses, Norfolk Pony, two Phaetons, two Gigs, Harness, Sows and Pigs, 80 Iron Hurdles, Household Furniture, &c. View the day previous.—Catalogues obtainable on the premises, and of the Auctioneer, Tottenham, N.

SIX DAYS' SALE.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, AND OTHERS.
IMPORTANT AND EXTENSIVE SALE OF TREES AND SHRUBS.

MR. ROWLAND WARD has been honoured with instructions to offer for Public Competition, on MONDAY, TUESDAY, WEDNESDAY, THURSDAY, FRIDAY, and SATURDAY, November 14, 15, 16, 17, 18, and 19, the largest and most valuable NURSERY STOCK which he has ever had the pleasure to announce, consisting of all kinds and ages of Forest, Fruit, and Ornamental Trees; Deciduous, Evergreen, and Flowering Shrubs; American and Coniferous Plants, Roses, &c., the property of Mr. Fisher Godwin, Broadfield Nurseries, Sheffield; who is removing from his present nurseries, owing to their proximity to the town, to more extensive and better adapted grounds for nursery purposes. Further particulars in future advertisements.—Catalogues (post free) may be had of the owner, Mr. FISHER GODWIN, Broadfield Nursery, and 2, 3, and 4, New Market Hall, Sheffield; or of Mr. ROWLAND WARD, Auctioneer, Handsworth Woodhouse, near Sheffield.

MONTHLY POULTRY SALE.

MR. J. C. STEVENS will Sell by Auction at his Great Room, 38, King Street, Covent Garden, on TUESDAY, November 1, at 12 o'clock precisely, a choice collection of POULTRY and PIGEONS, consisting of Cochins, Dorkings Spanish, Brahmas, Bantams, Game, Game Bantams, Silver Pencilled Hamburghs, Aylesbury and Muscovy Ducks, &c., from the yards of the Rev. G. Gilbert, Messrs. Craigie, Rider, Andrews, and other first-rate breeders, and a choice lot of Pigeons from Major Hassard, Messrs. Jones, Woodhouse, and other well known Fanciers.—May be viewed on the morning of Sale, and Catalogues had of Mr. J. C. STEVENS, 38, King Street, Covent Garden; if for the country by enclosing two stamps.

SPECIAL EXTRA POULTRY AND PIGEON SALE.

MR. J. C. STEVENS begs to announce that he will have a SPECIAL EXTRA SALE OF POULTRY AND PIGEONS on TUESDAY, November 8, at his Great Room, 38, King Street, Covent Garden, W. C., at 12 o'Clock precisely, consisting of 230 Lots of Cochins, Dorkings, Spanish, Game, Bantams, Gold Pencilled Hamburghs, Bramahs, Aylesbury and Rouen Ducks, Himalaya Rabbits, &c., from the yards of Messrs. Craigie, Ranson, Tegetmeier, and other first-rate breeders. Also a capital Lot of PIGEONS from Messrs. Summerhayes, Allison, Stevens, and other well-known Fanciers.—May be viewed on the morning of Sale, and Catalogues had; if for the country, by inclosing 2 stamps.

CAMELLIAS, AZALEAS, RHODODENDRONS, AND OTHER PLANTS FROM GHENT.

MR. J. C. STEVENS will Sell by Auction at his Great Room, 38, King Street, Covent Garden, W.C., on FRIDAY, Nov. 4, at half-past 12 o'Clock precisely, 500 CAMELLIAS of various heights well set with buds; 450 DWARF, STANDARD, and INDIAN AZALEAS (some new); 50 RHODODENDRONS; 100 Lilium lancifolium rubrum (true); 100 Gladioli gandavensis; 8 Laurustinus; 50 Roses; 160 various Greenhouse Plants, &c.—May be viewed on the morning of Sale and Catalogues had.

BULSTRODE PARK.

HORTICULTURAL BUILDINGS, STOVE AND GREENHOUSE SPECIMEN PLANTS, &c.

MR. J. C. STEVENS has been favoured with instructions to Sell by Auction, on the premises, Bulstrode Park, near Slough, Bucks, on WEDNESDAY, November 9, at half-past 12 o'Clock precisely, and following days without reserve, in consequence of the residence being required by the Duke of Somerset for his own occupation, 8 nearly new HORTICULTURAL BUILDINGS, consisting of Conservatory and Orangery, 2 Greenhouses Span-roofed, Peach, Vine, and Stove Houses, Pine and other Pits fitted with Weeks's Boilers, Hot-water Pipes, &c., complete, all erected within the last 4 years on the most improved principles, regardless of expense. Also the CHOICE AND EXTENSIVE COLLECTION OF PLANTS consisting of Specimen Stove and Greenhouse Plants, Roses, Azaleas, Camellias, Orange Trees, Ericas, &c., a few choice Orchids and other valuable Plants, many of which are from the renowned collection of the late Mrs. Lawrence; some first-class Vine, Peach, and Nectarine Trees just coming into full bearing; also a valuable collection of Orchard House Trees in Pots, Pines, and several hundred Strawberry and Bedding Plants, &c.—On view the day before the Sale, and Catalogues had on the premises, and at the principal Hotels at Slough, Windsor, Maidenhead, Reading, and Uxbridge, and of the Auctioneer at his Office, 38, King Street, Covent Garden, W.C.

N.B. Bulstrode Park is about 5 miles from Slough on the Great Western Railway, and the same distance from Uxbridge.

FINAL STOCK OF MR. R. FORTUNE'S CHINESE PLANTS.

MR. J. C. STEVENS has been favoured with instructions from Mr. Glendinning, of Chiswick, to Sell by Auction, at his Great Room, 38, King Street, Covent Garden, W.C., on WEDNESDAY, November 30, and following day, at half-past 12 o'Clock precisely, without reserve, the FINAL AND MOST VALUABLE PORTION OF MR. FORTUNE'S CHINESE INTRODUCTIONS. The Plants consist of the beautiful NEW CAMELLIAS "Cup of Beauty" and "Princess Frederick William," fine striped varieties with flowers of the most perfect form, and producing striped and self-coloured blooms upon the same plant; three new DOUBLE FLOWERING PEACHES, viz. the Carnation, the Rose, and the Camellia flowered; these have flowers as large as Roses, the first being beautifully striped like the Carnation; Torreya grandis; an entirely new species of Juniper with glaucous leaves, Prunus biloba, Abies Kæmpferi, a new Evergreen Hardy Oak, together with a new Purple Lilac, and other unknown and undescribed species of Chinese Plants.—On view the day prior and morning of Sale, and Catalogues had at the Rooms; or if for the country by inclosing two stamps.

MESSRS. CUTTEN AND DAVIS are directed by the Assignees of Mr. Boshell to Sell by Auction on TUESDAY, November 1, at 12 for 1 o'Clock, on the premises, 86, High Street, Borough, the wholesale and retail STOCK in TRADE of a Seedsman and Florist, comprising Cabbage, Broccoli, Mangel Wurzel, Globe, and other Turnip Seeds, Peas, Beans, Parsnip, Lawn and other Grasses, Carrot Seed, Onion, Leek, Lettuce, Celery, Radish. Parsley, Mushroom Spawn, &c. Mignonette and Flower Seeds in every variety. Standard Rose and Gooseberry Trees, Box-edging, and numerous items at the Gardens, Cold Harbour Lane, Camberwell.—To be viewed the day before and morning of Sale. Catalogues to be had on the Premises, and of the Auctioneers and Surveyors of Fire Losses, 21, Coleman Street, City, E.C.

BARBOURNE NURSERIES, NEAR WORCESTER.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, AND PLANTERS GENERALLY.

MR. BENTLEY is instructed by Wood & Son, of Barbourne Nurseries, to Sell by Auction, without reserve (the Land being required for Building purposes), on THURSDAY, November 10, at 11 o'clock, at the Lower Nursery, Barbourne, a very valuable NURSERY STOCK, comprising Standard Perpetual Roses, Yews, Junipers, Arbor-vitæ, Plums, Cherries, Apples, Pears, Common and Portugal Laurels, Silver, Spruce, and Balm of Gilead Firs, Spanish Chesnut English Oak, Beech, English and Chichester Elms, large Eg Plum, Pinus Mughus, &c.—Catalogues may be had one week prior to the Sale, at Mr. BENTLEY'S Offices, Worcester.

QUEEN'S ELM, FULHAM ROAD.

TO THE NOBILITY, GENTRY, NURSERYMEN, FLORISTS, BUILDERS, AND OTHERS.

MR. KIRKE has been instructed by Mr. Shearman to Sell by Auction on the Premises, Rose Cottage, Fulham Road, S.W., near the Queen's Elm, on TUESDAY and WEDNESDAY, November 15 and 16, at 12 for 1 o'Clock each day, a portion of his valuable NURSERY STOCK, comprising 1000 Standard and Dwarf Roses; 1000 Passion Flowers in pots; 1000 Aucubas, 2 to 3 feet; 300 Variegated and Green Hollies; 600 Arbor Vitæ, 3 to 5 feet; 10,000 Evergreen Privets, 3 to 6 feet; 2000 fine young Laurels, 2 to 5 feet; 500 fine young Yews, 3 to 5 feet; 300 Limes and Laburnums; 700 Persian and other Lilacs; 600 Irish Ivies in pots; Portugal Laurels; Box Trees, 3 to 5 feet; Spruce Firs; 2000 Euonymus, 1½ to 3 feet; 1000 Delphinium formosum, Berberis Aquifolium; 1000 Phillyrea, Ribes, &c. A new Spring Van.—May be viewed two days prior to the Sale. Catalogues had on the premises, and at the Offices of Mr. KIRKE, Auctioneer, House and Estate Agent, 19, Brompton Row, Brompton, S.W.

WHOLESALE CATALOGUE.

GEORGE JACKMAN AND SONS' PRICED and DESCRIPTIVE CATALOGUE for 1859, & SPRING 1860; comprising Fruit Trees of all the leading kinds; New and Selected Roses; fine varieties of American Plants; Choice and Rare Conifers; Evergreen and Deciduous Trees and Shrubs; and a fine stock of transplanted Forest Trees, &c., can be had free on application.—Woking Nursery, Surrey.

CATALOGUE.

YOUELL AND CO.'S GENERAL AND DESCRIPTIVE PRICED CATALOGUE for this season is now ready, and will be sent free on application.

It contains detailed Lists of Greenhouse Plants, Conifers, Shrubs, as well as all the newest introductions in Soft-wooded Plants.—Royal Nursery, Great Yarmouth.

CHOICE GERANIUMS.

JOHN DOBSON AND SONS' Annual DESCRIPTIVE LIST of all the leading kinds of SHOW, FANCY, and SPOTTED GERANIUMS, together with a SELECT LIST of CINERARIAS and FUCHSIAS, is now ready, and may be had post free on application; it includes several new varieties now offered for the first time.

Woodlands Nursery, Isleworth, and High Street, Hounslow

GERANIUMS, HERBACEOUS PLANTS, ETC.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their new PRICED and DESCRIPTIVE CATALOGUE of the above, to which are added Supplemental Lists of Stove, Greenhouse, and Hardy Plants, Fruit Trees, &c. (which include all the best new plants of the season), is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

AMERICAN PLANTS, &c.

MESSRS. WATERER AND GODFREY'S CATALOGUE for the present season is now ready, and may be had on application. It describes fully all Rhododendrons worth growing, and contains a List of Azaleas, Hardy Heaths, and other American Plants, as well as a summary of the general stock of the most extensive Nurseries in England.

The Catalogue may also be had at Messrs. MAY'S & Co., 1, Wellington Street, Strand, W.C.

Knap Hill Nursery, near Woking, Surrey.

HARDY RHODODENDRONS.

MESSRS. WATERER AND GODFREY invite attention to their Seedling RHODODENDRONS, which they are selling without names, and which they strongly recommend as being very superior in point of HABIT, FOLIAGE, COLOUR, and GENERAL HARDINESS. They are from 1½ to 2½ feet high, and as much through, and no plants can possibly be in finer health. They will be sold at very liberal prices, and purchasers can select from a stock of many thousands.

Knap Hill Nursery, near Woking, Surrey.

RHODODENDRONS.

JOHN WATERER'S CATALOGUE OF HARDY, SCARLET, and other choice RHODODENDRONS, as annually exhibited at the Royal Botanic Gardens, Regent's Park, is now published and will be forwarded on application. Faithful descriptions of all the esteemed varieties will be found detailed, with a list of the popular kinds of AZALEAS and other AMERICAN PLANTS, as well as a selection of CONIFEROUS TREES, with height and prices.

The American Nursery, Bagshot, Surrey, near Sunningdale Station, South-Western Railway.

THE SALWAY PEACH.

CHARLES TURNER can supply fine Trained Trees of this superior late variety, Dwarfs or Standards.

At the meeting of the Pomological Society, October 6, the Society reports as follows:—"Mr. TURNER, of Slough, exhibited Salway, very large and fine, very melting and delicious for a Peach at this season. This is another case in which the Society has to congratulate itself on its carefully pronounced opinion of the merits of a new fruit being fully sustained by after experience."—The Royal Nursery, Slough.

CAMELLIAS AND AZALEA INDICA.

F. AND A. SMITH beg to offer the above well set with flower buds, dwarf, bushy, and thoroughly ripened off. Having been grown in this country they are most suitable for packing, and are strongly recommended to country Amateurs and the Trade in general. An inspection invited. Prices on application.—Dulwich, Surrey, S.

CERANIUM FLORIBUNDUM (SMITH).

F. AND A. SMITH beg to offer the above-named as an acquisition, colour bright rose, upper petals pink with crimson spot, dwarf free habit, a continuous and abundant bloomer; without exception the best first early variety ever offered; obtained two Certificates of merit at the Botanical Society's Meetings in March and April 1859. Strong plants, 7s. 6d. each. The usual allowance to the Trade.—Dulwich, Surrey, S.

TO THE TRADE.

GLADIOLUS BRENCHLEYENSIS BY THE 1000.

J. MORGAN having this season grown a very extensive stock of this most beautiful Gladiolius, the bulbs of which are exceedingly large and well matured, is enabled to offer them at unusually low prices, which may be had on application.—Horticultural Establishment, Torquay.

CINERARIA, HERBACEOUS CALCEOLARIA, AND HALF SHRUBBY DITTO SEED.—These have been saved from Turner's most beautiful varieties; in 1s. and 2s. 6d. packets. Primula and Hollyhock, from the newest and handsomest varieties, 1s. per packet. Agents for F. & A. Smith's splendid Cineraria, in 1s. 6d., 2s. 6d., and 5s. packets; also agents for Dobson & Son's splendid Calceolaria, in 1s. 6d., 2s. 6d., 3s. 6d., & 5s. packets.—Catalogues of the newest Flower Seeds, and newest Dutch and Cape Bulbs, sent post-paid.—BUTLER & MCCULLOCH, Seedsmen, Covent Garden Market, W.C.

BEGONIA MARSHALLI.

WILLIAM COLE will send out the above beautiful variety, raised by Mr. Franklin, Gardener to J. G. Marshall, Esq., on and after the 26th inst. It has been exhibited at the Regent's Park, Kirkstall, Halifax, Shipley, &c., and Certificates have been awarded to it. It is universally admitted to be by far the handsomest of all the Begonias, and will be invaluable for Exhibition purposes. Drawings by Mr. Andrews free by post for eight stamps.

For further particulars see *Gardeners' Chronicle* of July 16; also Sept. 10; also "Cottage Gardener" of July 19 and Sept. 13; and "Book of Beautiful Leaves," by E. J. Lowe, Esq.

Strong plants 15s. each, with the usual discount to the Trade. Post-office Orders payable at Manchester.

Nursery, Withington, near Manchester.—Oct. 22.

ROBERT NEAL, NURSERYMAN, Wandsworth Common, S.W., begs to call the attention of buyers to his large and well-selected stock of EVERGREENS and FLOWERING SHRUBS, ORNAMENTAL TREES, AMERICAN PLANTS, FRUIT AND FOREST TREES, STANDARD AND DWARF ROSES of every description. A large stock of BOX-LEAF EVERGREEN PRIVET, from 1 to 6 feet for hedges; GREEN HOLLY, 1 to 6 feet; RICH BOG and LOAM for American Beds; LEAF MOULD. The Nursery is 10 minutes' walk from Clapham Common, and New Wandsworth Station, Crystal Palace Line.

FRUIT TREES.—STANDARDS AND PYRAMIDS, DWARF-MAIDEN AND CUT-BACK, DWARF-TRAINED, &c.

WM. WOOD AND SON solicit especial attention to their enormous stock of FRUIT TREES, occupying an area of many acres of land, which for vigour and uniformity of growth are unsurpassed in the Trade; the Trained Trees especially are most beautifully grown.

DESCRIPTIVE CATALOGUES may be had on application.

An immense stock of beautifully Trained DWARF MAY DUKE AND MORELLO CHERRIES, with 10 and 12 branches to each tree, admitted to be among the finest in the kingdom.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

DWARF MAIDEN FRUIT TREES.—APPLES.

PEARS.	CHERRIES.	PEACHES.
PLUMS.	APRICOTS.	NECTARINES.

Prices moderate.

Fine and clean grown; and all the leading sorts can be supplied in quantities by GEORGE JACKMAN & SON, Woking Nursery, Surrey.

DWARF TRAINED FRUIT TREES.—APPLES.

PEARS.	CHERRIES.	PEACHES.
PLUMS.	APRICOTS.	NECTARINES.

Prices moderate.

Great care is taken in the formation of these fine, healthy, free-grown trees. Particulars can be obtained of GEORGE JACKMAN & SON, Woking Nursery, Surrey.

FRUIT TREES.

B. WHITHAM, of the Clough Nursery, Mottram, near Manchester, has now ready for disposal 1000 LORD SUFFIELD APPLE TREES, and about 4000 fine strong Trees, including 96 of the best sorts in cultivation, all at 9s. per dozen.

Also a large quantity of best LANCASHIRE SHOW GOOSEBERRIES (160 sorts), at 4s. per dozen; Common kinds, 2s. do. CATALOGUES on application, distinguishing Kitchen and Dessert kinds, and the time each will keep. Cash with order, or known reference.

FRUIT TREES.

JOHN ADAMS AND CO., NURSERYMEN, Brentford, Middlesex, W., beg to call the attention of the Trade and the public generally to their extensive stock of FRUIT TREES, which is this season in very fine condition. It consists of Dwarf, Standard, Pyramid, and Trained of the various kinds of Fruit Trees, all of which will be found true to name.

J. A. & Co. hope to receive a continuance of those favours which their friends and the public have so liberally bestowed, and assure them that whatever orders may be intrusted to them will meet with prompt and careful attention.—Brentford, Middlesex, W.; Nurseries at Acton Green, Turnham Green, W.

TO PLANTERS OF CONIFERS.

YOUELL AND CO. can supply 50 species of RARE AND HARDY CONIFERS in good plants for 5l., package included, and carriage paid to London, Manchester, Newcastle-on-Tyne, Hull, or to any Railway Station within 150 miles of the Nursery. A List of the above can be had on application.

Royal Nursery, Great Yarmouth.

CHARLES DALY AND SON will sell COMMON LAUREL, 1 to 2 feet, at 12s. 6d. per 1000; Transplanted do., 15s. per 1000; PORTUGAL do., 1 to 1½ foot, 3s. per 100; HAWS, to sow this autumn, 5s. per bush.; HOLLY BERRIES, 5s. per bushel. A List of Prices of Seedling Forest Trees and Shrubs sent free by post.—Nursery, Seed, and Agricultural Implement Warehouse, Coleraine, Ireland.

A FEW HUNDREDS OF LAURUSTINUS, AUCUBAS, COTONEASTERS, CURRANTS, of sorts, GOOSEBERRIES, BOX EDGING, and GENERAL NURSERY STOCK, to be Sold Cheap, as the ground is required for other purposes.—Apply to M. AUSTIN, Gardener, &c., Bower, Maidstone.

GOOSEBERRY TREES, &c.

EDMUND SALSBURY, Melbourne, near Derby, in addition to his usual stock of Lancashire Gooseberries, which comprises about 150 of the most approved show varieties, begs to offer strong clean legged plants of his Melbourne Red at 3s. per dozen. The fruit is a bright red, as large as the Crown Bob, but earlier, and is now proved to be the most profitable sort in cultivation, for while the fruit of many other leading varieties growing near it were almost entirely destroyed with the severe frosts last spring there was a fair crop on this. He has also a large stock of 1, 2, and 3 years transplanted Quick, and 50,000 transplanted Hollies, from 9 inches to 3 feet.

The above are of first-rate quality, and will be offered to parties requiring such at very low prices.

Apply to Mr. HENRY CLARKE, Seed Merchant, 39, King Street, Covent Garden, W.C.

ARAUCARIA IMBRICATA.—The finest lot of Trees in the world of this noble plant, from 1 to 10 feet high, are to be seen at H. LANE AND SON'S NURSERIES, Great Berkhampstead, and they strongly recommend Gentlemen and Planters to view them. This forms the most noble Tree for Avenues and Plantations. There is a most beautiful specimen at Dropmore, which the intelligent Gardener, Mr. Frost, feels great pleasure in showing.

They also have a fine stock of CEDRUS DEODARA, ABIES DOUGLASII. IRISH YEW, &c., from 5 to 10 feet high, for immediate effect.

TO PLANTERS AND THE TRADE.

WILLIAM IVERY invites inspection to his superb Stock of Evergreens, Flowering Shrubs, trained and untrained Fruit Trees of the best description. All have been removed within 2 years. Fine specimen Evergreen Oaks, 3 to 6 feet, with good balls of earth; Chinese Arbor-vitæs, 3 to 5 feet; Irish Yews, 3 to 5 feet; large Laurustinus, full of bloom; sweet Bay, Euonymus, Cupressus torulosa, Ilex Bellarica, variegated and green Holly, Aucubas, fine Common Laurels, &c., Standard and Dwarf Roses of the best quality. A large assortment of Hardy Climbers in pots, Dutch Bulbs, Russian Mats, Mushroom Spawn, and all goods appertaining to the Nursery Trade at moderate prices. Fine Standard wall-trained Peaches and Nectarines.—Hanover Nursery, Peckham, S.E.

CLAPHAM.—EVERGREEN SHRUBS.

CHARLES SOUTHBY begs to inform the Gentry of Clapham and its neighbourhood, that he has a healthy Stock of COMMON LAUREL, PORTUGAL do., BOX-LEAVED PRIVET, ARBOR VITÆ, UPRIGHT CYPRESS, GREEN HOLLY, 1 to 6 feet, &c. all of which removes well from his Nursery, Manor Street, S.

SEEDS and DUTCH FLOWER ROOTS supplied at his Warehouse (late Fairbairn's), High Street, S., where he respectfully solicits all orders to be sent.

GREEN HOLLY, EVERGREEN OAK, AND BAYS.

M. A. LAKE having a large stock of the above, 3-years seedlings, will render them at moderate prices.

Likewise a large and choice collection of Dwarf Trained Peaches, Nectarines, Apricots, Apples, Pears, Plums, and Cherries; also Standard Pears, Plums, Cherries, Apples, &c.

All the best varieties of Goosberries, Currants, and Raspberries; Rhubarb, Seakail, and Asparagus Roots for Forcing.

Several thousand Standard Cider Apple Trees.

Prices on application. The Trade supplied.

The Nurseries, Bridgwater.—October 22.

FOREST TREES.

JOHN WATERER has to offer upwards of a Hundred Thousand of each of the following, from 2 to 4½ feet high, and all good rooted:—

CHESNUT	LARCH	BIRCH
HAZEL	ASH	ALDER
SCOTCH	LAURELS	WITHY, &c.

Samples with prices sent on application. Planting done by contract.—The American Nursery, Bagshot, Surrey.

FISHER, HOLMES, AND CO. beg respectfully to inform the Trade that their LIST for the present season is now ready and will be sent free on application. It contains:

Seedlings of Forest and Ornamental Trees, Shrubs, &c.	Ornamental Trees and Shrubs
Bedded Trees and Shrubs	American Plants
Fruit Trees	Climbers—Roots
Forest Trees	Stove, Greenhouse, and Herbaceous Plants

Their Stock is very extensive, extending over 100 acres.

Handsworth Nursery, Sheffield.

PINE APPLES, GRAPES, &c.

PINE PLANTS, Fruiting and Succession.

GRAPE VINES, from Eyes, for Fruiting in Pots or Planting.

JOHN WEEKS AND CO. can now supply any quantity of very fine strong healthy Pine Plants, either Fruiting or Succession; also remarkably fine strong Grape Vines from Eyes, all the best sorts.

JOHN WEEKS & Co.'s Horticultural Show Establishment is now entirely devoted to the Growing and Forcing of Fruits in great variety, thereby showing the most improved plans of construction, and the most superior system of Hot-water Apparatus.

JOHN WEEKS & Co., Horticultural Builders and Hot-water Apparatus Manufacturers, King's Road, Chelsea, London, S.W.

TRAINED PEACHES, NECTARINES, APRICOTS, APPLES, CHERRIES, AND PLUM TREES, can be had of E. R. GREENUS, RAILWAY NURSERIES, Watford, of the best quality and on the most reasonable terms, with instructions gratis as to soil, planting, and treatment of the Trees so as to insure success.

STANDARD AND DWARF ROSES, EVERGREENS, and all sorts of NURSERY STOCK.

Cash, or reference from unknown correspondents.

NEW PINE APPLE—HURST HOUSE SEEDLING.

H. WILLIAMS, late Gardener to A. Fairrie, Esq., is now prepared to send out this fine and useful variety of PINE APPLE; habit similar to Nidularia and Veresia splendens; foliage recurved, making the plant quite ornamental; fruit large and conical, and of good flavour.

H. W. can with confidence recommend this variety to all Pine growers. It is invaluable to the Market grower, as the plants take up so little room. Numerous testimonials could be given, but H. W. thinks it sufficient to add Mr. G. Fleming's, of Trentham:—"An acquisition."—Orders made payable to H. WILLIAMS, Nurseryman, Fortes Green, Muswell, Finchley, N. Price Three Guineas, Two Guineas, and One Guinea, according to the size of the plants.

WILLIAM DEAN, Bradford Nursery, Yorkshire, offers the following for Spring Riband Planting:—

YELLOW ALYSSUM, very strong plants ..	Per doz.	7s.	6d.
WHITE ARABIS, strong plants	,,	6	0
DOUBLE WHITE ROCKETS, strong plants	,,	4	0
RICH DARK PURPLE PANSY	,,	6	0
BLUE BEDDING PANSY	,,	4	0
DELPHINIUM FORMOSUM..	,,	3	0

A very fine Collection of PANSIES, 6s., 9s., 12s., and 18s. per dozen. Price per 100 to the Trade very low. A Catalogue now ready.

Very choice PANSY SEED, extra quality, 1s. 6d. and 2s. 6d. per packet.

Very choice POLYANTHUS SEED, from prize flowers, 1s. 6d. and 2s. 6d. per packet.

MR. GLENNY will send a packet of the true Delphinium formosum to any reader on receipt of a directed envelope. Mr. GLENNY'S Balsams proved to be the finest in Europe, 6 classes, 37 stamps; mixed, 13; any one colour, 7. Pinks, Hollyhocks, Dahlias, Geraniums, equally distinguished, 13.—G. GLENNY, Horticultural Agent and Valuer, Fulham, S.W.

THE BEST FRAME CUCUMBER.

SUTTON'S BERKSHIRE CHAMPION, 1s. per packet.

CARTER'S CHAMPION, 1s. per packet.

IMPROVED SION HOUSE, 1s. per packet.

Free by post from SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

EARLY POTATOES, LEMON KIDNEYS.—This early and excellent variety (see article on Cultivation of Early Potatoes, by the Rev. E. F. Manby, in Royal Agricultural Journal, Vol. XVIII.), may be had on early application to Author's Bailiff, JOHN HELM, Morecombe, price 2s. 6d. per stone. As also Copy of Article, 3d edition enlarged, price 1s.

N.B.—Late removal being injurious to the sprouts, orders should be at once supplied.

TO THE SEED TRADE.

W. J. EPPS begs to offer the following GENUINE SEEDS of his own growth from the finest selected Stocks in the country:—Orange and Yellow Globe Wurzel, Long Red ditto; White Belgian, Altringham, Long Orange, and Early Horn Carrot; superior Crimson Beet; British Queen, Champion of England, and Burbridge's Eclipse Peas; Short-top Scarlet Radish.—Seed Warehouse, Maidstone.

TO SEEDSMEN AND OTHERS.

FOR SALE, 48 BUSHELS of PURPLE-TOP SWEDISH TURNIP SEED of this year's growth, warranted true.—For prices and particulars apply to Mr. SAMUEL BROWN, Gardener and Seedsman, Wisbeach Road, Long Sutton, Lincolnshire.

TO THE TRADE.

JOHN SHARPE is offering the undernamed TURNIP SEEDS of his own Growing from the best selected Stocks:—

SKIRVING'S SWEDE	PURPLE TOP SCOTCH
EAST LOTHIAN PURPLE TOP	GREEN GLOBE

Barney Hall, near Lincoln.

SUTTON'S CHAMPION SWEDE AND IMPROVED MANGEL WURZELS.—THREE MORE SILVER CUPS and several other prizes have already been awarded THIS SEASON to SUTTON'S CHAMPION SWEDE and Improved Mangel Wurzels.

Messrs. SUTTON & SONS will feel obliged by any additional information as to Prizes awarded to Roots raised from their seeds. New Seeds are now ready for delivery. Champion Swede, 1s. per lb., 45s. per bushel. Mangel Wurzel, 9d. per lb., or cheaper by the cwt.

The ROYAL BERKS ROOT SHOW will be held at Reading in November, at which numerous Prizes will be awarded as usual to pulled roots of Swedes, Turnips, Mangels, Carrots, Kohl Rabi, &c., from any part of the kingdom.

Royal Berkshire Seed Establishment, Reading.

Printed by WILLIAM BRADBURY, of 13, Upper Woburn Place, and FREDERICK MULLETT EVANS, of No. 20, Queen's Road, West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and published by them at the Office, No. 5, Upper Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—SATURDAY, October 29, 1859.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 45.—1859.] SATURDAY, NOVEMBER 5. {Price Fivepence. Stamped Edition, 6d.

INDEX.

Agriculture, Irish	897 c	Lime-tree moth	888 b
— French	900 b	Macnade farm	899 a
— progress	895 c	Mangel crops	899 b
Agricultural Soc. of England	898 a	Manure, economical	897 c
Almanack, Pearl's	898 c	— liquid	899 c
Animal excrement	894 a	Meat, prices of	900 b
Books, sale of	892 a	Moth, mottled umbre	888 b
Bulbs, notices	891 c	Nitrogen and carbon	897 a
Cattle weights	900 b	Orchards, Cheapside	888 c
Clays	890 a	Orchard House, Rivers's, rev.	890 c
Cobaea scandens, Wardell's	891 a	Pampas Grass	889 c
Chrysanthemums, Bird's	891 b	Pheasants	899 b
— Temple	892 a	Potato, wild	891 a
Chrysanthemum shows	890 b	Railway charges	889 c
— Pompone	890 a	Roots, condition of	887 c
Clover, to hoe	896 c	— pulping	895 a
Cotton	892 c	— storing	896 c
Excrements, animal	894 a	Sheep feeding	897 a
Farms, letting	898 b	South London show	890 c
Farm rents	899 b	Stock, does live pay	897 c
Ferns, nature-printed	891 b	Stoke Newington show	890 b
Frizzi domo	889 c	Thistles, Tasmanian	888 c
Frost, the late	887 b	Title by insurance	894 c
Gardening, United States	890 a	Trade lists	891 b
Grapes in Ireland	892 b	Turnips	893 c
Horticultural fruit committee	890 b	Weights of cattle	900 b
Inverness Farmers' Club	898 b	Wellingtonia gigantea	890 a

ROSES.

E. P. FRANCIS'S new and extensive CATALOGUE of ROSES on the Manetti Stock is now ready for delivery, and will be forwarded gratis on application.
Rose Nurseries, Hertford.

STANDARD ROSES.—All the leading kinds in cultivation at prices scarcely ever offered before.
Charles Noble, Bagshot, Surrey.

ROSE CATALOGUE.

JAMES MITCHELL respectfully informs the Nobility and Gentry his new CATALOGUE for the present season is now ready, and will be forwarded post free on application.
The Nurseries, Piltdown, Maresfield, Sussex.—Nov. 5.

ROSE CATALOGUE.

JOHN CRANSTON begs respectfully to inform his patrons that he will be happy to forward his New ROSE CATALOGUE for the present season, post free, upon application. It will be found replete with the most desirable flowers (new and old) in every class, and the descriptions are copious and faithful.—Nurseries, King's Acre, near Hereford.

DESCRIPTIVE CATALOGUE OF SELECT ROSES.
DESCRIPTIVE CATALOGUE OF FRUIT TREES.
CATALOGUES OF FOREST TREES, ORNAMENTAL TREES AND SHRUBS.

JOHN CATTELL begs respectfully to announce that his Catalogues as above for the present season are now ready, and will be forwarded on application. The Stock is of very superior quality, and in the finest condition for removal.
Nurseries, Westerham, Kent.

BUTLER AND McCULLOCH, HYACINTHS, &c.—A DESCRIPTIVE AND PRICED CATALOGUE, with practical Cultural directions, for Amateurs, sent free and post paid on application. Orders amounting to 21s. sent carriage paid. The following choice collection (A) for Conservatory and out door Culture, for 21s., or the half for 10s. 6d.:—12 Superior named Hyacinths, 6 mixed Hyacinths, 6 Polyanthus Narcissus, 50 Border Narcissus, 25 Sweet Scented Tulips, 50 Double Tulips, 100 Crocus, 100 Snowdrops, 12 beautiful Iris, 50 Ranunculus, 25 Anemones, 12 Fritillarias.—Covent Garden Market, W.C.

FLOWER BULBS FOR WINTER AND SPRING.

SUTTON'S COLLECTIONS FOR POTS AND GLASSES, and SUTTON'S COLLECTIONS FOR OPEN GROUND. See *Gardeners' Chronicle* of October 15.

THE BEST TWELVE HYACINTHS.

SUTTON'S BEST TWELVE HYACINTHS imported can be supplied for 9s., or second best 6s. Also fine mixed DOUBLE HYACINTHS, all fresh imported, 3s. 6d. per dozen, or 25s. per 100.
PRICED LISTS of BULBS and Seeds may be had post free.
Royal Berkshire Seed Establishment, Reading.

HYACINTHS AND OTHER BULBS.

WM. CUTBUSH AND SON can still supply Roots equal to the first they sent out this season, as all BULBS are especially selected for them before they are imported from Holland. Descriptive CATALOGUE post free on application.
Highgate Nurseries, London, N.

DUTCH AND OTHER BULBS.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their CATALOGUE of the above is now ready, and will be forwarded post free on application. Early orders are solicited, as their successful cultivation depends in a great measure on early planting.
Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

DUTCH FLOWERING ROOTS.

CHARLES TURNER can supply Strong Roots of the under-mentioned, all of the first quality, having been selected with much care:—

HYACINTHS for pot or glass culture	RANUNCULUS
for bedding	TULIPS
NARCISSUS	ANEMONES
CROCUS	GLADIOLUS, &c.

A Priced Descriptive List will be sent free by post on application.—The Royal Nurseries, Slough.

ERICAS.

E. AND A. SMITH'S Stocks of the above are this season unusually fine, comprising most of the leading winter and spring-flowering varieties. Prices on application.
Dulwich, Surrey, S.

TO THE TRADE.

ERICAS.—Fine young bushy plants now and coming into flower, 50s. per 100; fine plants in 48 and 32-size pots, 5l. per 100; Stove plants of all the best and newest kinds in 48 and 32-size pots, 5l. per 100. List sent on application.—Nurseries, Maidstone.

GOOD SEEDS. CARRIAGE FREE.

SUTTON AND SONS,
SEED GROWERS AND MERCHANTS,
Royal Berkshire Seed Establishment, Reading.

GEORGE GIBBS AND CO.,
SEEDSMEN,
26, DOWN STREET, PICCADILLY,
LONDON, W.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY LIMITED supply every requisite for the Farm and the Garden.
Registered Offices: Union Road, Plymouth.

VEGETABLE SEEDS.

J. CARTER AND CO. can supply PEAS, BEANS, CARROTS, RADISHES, &c., for present Sowing, New Seed of 1859 Harvest.—237 & 238, High Holborn, W.C.

CARNATIONS, PICOTEES, ETC.

CHARLES SCHOFIELD has now ready first-class varieties of the above Flower at 12s. per dozen pairs; also PINKS, 4s. to 8s. per dozen. CATALOGUES may be had free.
Knowsthrope, near Leeds, Yorkshire.

CHOICE RHODODENDRONS, AZALEAS, AND CONIFEROUS PLANTS.—A CATALOGUE of GEORGE BAKER'S unrivalled Stock of the above may be had on application.—The American Nursery, Bagshot, Surrey.

RHODODENDRONS "of every hue," Scarlet, White, Rose, Crimson, and every intermediate shade, nearly all sizes and at all prices, can be supplied by Charles Noble, Bagshot, Surrey.

STANDARD RHODODENDRONS.—Hundreds of handsome specimens of all the choicest varieties, varying in colour from deepest crimson to rose and pure white, with symmetrical heads and straight stems, from 2 to 5 feet in height, can be supplied by
John Waterer, American Nursery, Bagshot, Surrey.

NEW CATALOGUES.

WM. WOOD AND SON will be happy to forward Copies of their New Catalogue gratis and post paid on application.—Address,
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

FERN CATALOGUE.

ROBERT SIM'S NEW DESCRIPTIVE AND PRICED CATALOGUE, No. 6 (62 pages) of his COLLECTION of BRITISH AND EXOTIC FERNS, can be had, post free, for 8 stamps. Gratis to all previous purchasers of Ferns.
Nursery, Foot's Cray, Kent, S.E.

CATALOGUE.

YOUELL AND CO.'S GENERAL AND DESCRIPTIVE PRICED CATALOGUE for this season is now ready, and will be sent free on application.
It contains detailed Lists of Greenhouse Plants, Conifers, Shrubs, as well as all the newest introductions in Soft-wooded Plants.—Royal Nursery, Great Yarmouth.

TO THE SEED TRADE.

W. J. EPPS begs to offer the following GENUINE SEEDS of his own growth from the finest selected Stocks in the country:—Orange and Yellow Globe Wurzel, Long Red ditto; White Belgian, Altringham, Long Orange, and Early Horn Carrot; superior Crimson Beet; British Queen, Champion of England, and Burbridge's Eclipse Peas; Short-top Scarlet Radish.—Seed Warehouse, Maidstone.

FOREST TREES.

JOHN WATERER has to offer upwards of a Hundred Thousand of each of the following, from 2 to 4½ feet high, and all good rooted:—

CHESNUT	LARCH	BIRCH
HAZEL	ASH	ALDER
SCOTCH	LAURELS	WITHY, &c.

Samples with prices sent on application. Planting done by contract.—The American Nursery, Bagshot, Surrey.

PAMPAS GRASS.—The present is the most favourable time for planting out this charming Plant. No one can imagine the grand effect of a mass of its silvery plumes unless they see it, nor is its value confined to the ornamental, but is likely to become useful as Cover for Game. It grows in any soil or situation, attaining the height of from 6 to 10 feet.—Any quantity can be supplied by C. Noble, Bagshot, Surrey.

SPERGULA PILIFERA SEED.—Wanted, a quantity of the above.—Address, stating price and quantity to offer, to R. B. T., *Gardeners' Chronicle* Office, W.C.

WELLINGTONIA GIGANTEA.

JOHN WATERER has thousands of the above Plants to offer, varying in height from 1 to 4 feet. The whole are exceedingly handsome and well rooted. Price on application.—The American Nursery, Bagshot, Surrey.

ANDROMEDA FORMOSUM (True).

W. H. ROGERS, Red Lodge Nursery, Southampton, can offer fine strong plants of the above beautiful American Plant, 50s. per 100, or 9s. per doz., selected.

TRITOMA UVARIA.

J. MARCHAM having a large stock of the above can supply good strong plants at 9s., 12s., and 18s. per doz.
TRITOMA UVARIA SEED at 1s., 2s. 6d. and 5s. per packet.
The Trade supplied. Post-office Orders payable at Kensington to J. Marcham, Earl's Court Road, Old Brompton, S.W.

ARAUCARIA IMBRICATA.

CHARLES SHARPE AND CO. have a large stock of the above, fine well-grown plants, from 1 to 4 feet. Price on application.—Nurseries, Sleaford.

ARAUCARIA IMBRICATA.

YOUELL AND CO. beg to inform the Trade that they have to offer a fine and healthy stock of the above in 1-year-old plants. Prices on application.
Royal Nursery, Great Yarmouth.

CHRYSANTHEMUMS.

J. H. BIRD, Nurseryman, Stoke Newington, begs to inform his friends that his meadows in front of the above flower is now in Bloom, and can be seen gratis daily between the hours of 10 and 4. Sundays excepted.

LARGE RED GRAPE CURRANT.—Five Thousand Plants, from 1 to 3 years old; also FALSTAFF RASPBERRY CANES to any extent, to be sold remarkably cheap by taking a quantity.—Apply to Mr. Mitton, Lampton, near Isleworth and Hounslow, W.

MUSCAT GRAPES WANTED.—
PINE-APPLES (not under 2 lbs.) WANTED.
PEACHES (large size) WANTED.
Forward immediately to GEORGE TAYLOR,
Choice Fruit Salesman,
St. John's Market, Liverpool.

GREAT SCARCITY OF FRUIT.

STRONG ROOTS OF THE LINNÆUS RHUBARB, from division, can be supplied in any quantity at 12s. per 100, or 5l. per 1000, by Walter Pennington, Nurseryman, South Retford, Nottinghamshire.

MULBERRY TREES.

J. WOOD AND SONS have a Surplus Stock of the above fine healthy Trees with straight stems and well rooted, of all sizes up to Trees in full bearing, which they can offer at low prices.—Nursery, Old Kent Road, S.E.

MAIDEN AND CUT-BACK FRUIT TREES.
STANDARD AND PYRAMID FRUIT TREES.
EXTRA FINE TRAINED FRUIT TREES.

RICHARD SMITH has this season 23 acres of the above. Price on application.
St. John's Nurseries, Worcester

FRUIT TREES.

J. AND J. FRASER, Lea Bridge Road Nurseries, Essex, N.E., beg to invite purchasers of Fruit Trees to an inspection of their stock, which is this year unusually fine. PRICED CATALOGUES can be had on application.

TO THE TRADE.

J. AND J. FRASER, The Nurseries, Lea Bridge Road, Essex, N.E., beg to offer a large Stock of Maiden FRUIT TREES, including all the best sorts of Apricots, Peaches, &c. The prices, which are very moderate, may be had on application.

FRUIT TREES.—Intending purchasers are respectfully invited to inspect the extensive Stock growing at the Nursery of the Subscribers. The quality is this season unusually good.—Hugh Low & Co., Clapton Nursery, London, N.E.

HARDY HEATHS.—A Collection of 20 sorts, by name, of the above favourite autumnal flowers, in good plants, at 30s. per 100, or 12l. 10s. per 1000.
John Waterer, The American Nursery, Bagshot, Surrey.

TRANSPLANTED FOREST TREES.—Large quantities of Transplanted ALDER, LARCH, SCOTCH, SPRUCE, HAZEL, SPANISH CHESNUTS, ASH, &c., 1, 2, 3, and 4 feet. A good stock of QUICKS. Samples, with prices, may be had on application.
Waterer & Godfrey, Knap Hill, near Woking.

COMMON LAURELS.

R. GADD AND SON have to offer 50,000 of the above from 2 to 6 feet high, extra stout and well rooted; 30,000 Seedling and Bedded Evergreen Oaks; Bays, 1 to 4 feet; Laurustinus, 1 to 2½ feet. Price on application.
Salvington Nurseries, near Worthing.—November 5.

TO PLANTERS OF CONIFERS.

YOUELL AND CO. can supply 50 species of RARE AND HARDY CONIFERS in good plants for 5l., package included, and carriage paid to London, Manchester, Newcastle-on-Tyne, Hull, or to any Railway Station within 150 miles of the Nursery. A List of the above can be had on application.
Royal Nursery, Great Yarmouth.

THREE MILLIONS OF TRANSPLANTED QUICKS.

GEORGE CHIVAS, Chester, offers the above, which are admitted to be unequalled in point of quality in Great Britain. A sample bale, containing 100 each of five sizes, forwarded on receipt of 15s., and orders for 10,000 delivered free at any railway station.—Chester, November 5.

IMPORTANT TO RAILWAY CONTRACTORS AND NURSERYMEN.

FOR SALE, 4 Acres of extra strong 3-years old THORN QUICK HEDGEROWS, at 10s. per 1000; 1 acre do. do. 4 years old, at 15s., 20s. The usual allowance to Nurserymen.—Jacob Scott Matthews, Nurseryman, Cardiff, South Wales.

TO NURSERYMEN AND OTHERS.

THORNQUICKS FOR SALE.—1,500,000 of 1-year old Thornquicks, extra fine. 1,000,000 of 1-year old Thornquicks, stout and well rooted. Very suitable for transplanting.—Application to be made to Michael Faulkner, Nurseryman, Collon, Co. Louth, Ireland. N.B. Satisfactory reference required from unknown correspondents.

PLANTING SEASON.

SEEDLING AND TRANSPLANTED FOREST TREES AND SHRUBS, ROSES, AURICULAS, BORDER FLOWERS, AND FERNS.—Priced List on application to
Wm. Urquhart & Sons, Dundee.—Nov. 5.

500,000 fine Transplanted LARCHES, from 2 to 5 feet, also SPANISH CHESNUTS, POPLARS, QUICKS, and all other FOREST TREES.
Prices on application to Wm. Wood & Son, Woodlands Nursery, Maresfield, near Uckfield, Sussex.

TO THE TRADE.—The Subscribers have for sale several dozens of fine plants of CEDRUS LIBANI, 3½, 4½, to 6 feet high; and CEDRUS ARGENTEA, 3½, 4½, to 6 feet high. Price, &c., on application.
Ballantyne & Son, Nurserymen & Seedsmen, Dalkeith, N.B.

FRUIT TREES.—STANDARDS AND PYRAMIDS, DWARF-MAIDEN AND CUT-BACK, DWARF-TRAINED, &c.

WM. WOOD AND SON solicit especial attention to their enormous stock of FRUIT TREES, occupying an area of many acres of land, which for vigour and uniformity of growth are unsurpassed in the Trade; the Trained Trees especially are most beautifully grown.

DESCRIPTIVE CATALOGUES may be had on application.

An immense stock of beautifully Trained DWARF MAY DUKE and MORELLO CHERRIES, with 10 and 12 branches to each tree, admitted to be among the finest in the kingdom.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

DWARF MAIDEN FRUIT TREES.—APPLES.

PEARS. | CHERRIES. | PEACHES.
PLUMS. | APRICOTS. | NECTARINES.

Prices moderate.

Fine and clean grown; and all the leading sorts can be supplied in quantities by GEORGE JACKMAN & SON, Woking Nursery, Surrey.

DWARF TRAINED FRUIT TREES.—APPLES.

PEARS. | CHERRIES. | PEACHES.
PLUMS. | APRICOTS. | NECTARINES.

Prices moderate.

Great care is taken in the formation of these fine, healthy, free-grown trees. Particulars can be obtained of GEORGE JACKMAN & SON, Woking Nursery, Surrey.

FRUIT TREES.

JOHN ADAMS AND CO., NURSERYMEN, Brentford, Middlesex, W., beg to call the attention of the Trade and the public generally to their extensive stock of FRUIT TREES, which is this season in very fine condition. It consists of Dwarf, Standard, Pyramid, and Trained of the various kinds of Fruit Trees, all of which will be found true to name.

J. A. & Co. hope to receive a continuance of those favours which their friends and the public have so liberally bestowed, and assure them that whatever orders may be intrusted to them will meet with prompt and careful attention.—Brentford, Middlesex, W.; Nurseries at Acton Green, Turnham Green, W.

GOOSEBERRY TREES, &c.

EDMUND SALSBURY, Melbourne, near Derby, in addition to his usual stock of Lancashire Gooseberries, which comprises about 150 of the most approved show varieties, begs to offer strong clean legged plants of his Melbourne Red at 3s. per dozen. The fruit is a bright red, as large as the Crown Bob, but earlier, and is now proved to be the most profitable sort in cultivation, for while the fruit of many other leading varieties growing near it were almost entirely destroyed with the severe frosts last spring there was a fair crop on this. He has also a large stock of 1, 2, and 3 years transplanted Quick, and 50,000 transplanted Hollies, from 9 inches to 3 feet.

The above are of first-rate quality, and will be offered to parties requiring such at very low prices.

Apply as above, or to Mr. HENRY CLARKE, Seed Merchant, 39, King Street, Covent Garden, W.C.

TRANSPLANTED SHRUBS & FOREST TREES.

MARSH AND PERKINS call the attention of the Trade to the undernamed, which are strong and healthy:

Laurels, common	12 to 18 inches,	50s. per 1000
Do. do	18 to 24 ,,	60s ,,
Berberis Aquifolium	9 to 12 ,,	20s. ,,
Privet, evergreen	1 to 2 feet	15s. ,,
Box, green	9 to 12 inches,	50s. ,,
Fir Larch	1½ to 2 feet	10s. ,,
,, 1 year's transplanted		3s. 6d. ,,
,, Scotch	1½ to 2½ feet	18s. ,,
Quick, fine transplanted	.. ..	8s. to 10s. ,,

Samples sent on application to 42, Drapery, Northampton.

TO PLANTERS AND THE TRADE.

WILLIAM IVERY invites inspection to his superb Stock of Evergreens, Flowering Shrubs, trained and untrained Fruit Trees of the best description. All have been removed within 2 years. Fine specimen Evergreen Oaks, 3 to 6 feet, with good balls of earth; Chinese Arbor-vitæs, 3 to 5 feet; Irish Yews, 3 to 5 feet; large Laurustinus, full of bloom; sweet Bay, Euonymus, Cupressus torulosa, Ilex Bellarica, variegated and green Holly, Aucubas, fine Common Laurels, &c., Standard and Dwarf Roses of the best quality. A large assortment of Hardy Climbers in pots, Dutch Bulbs, Russian Mats, Mushroom Spawn, and all goods appertaining to the Nursery Trade at moderate prices. Fine Standard wall-trained Peaches and Nectarines.—Hanover Nursery, Peckham, S.E.

THE PLANTING SEASON.

WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

WM. WOOD AND SON beg leave to offer the following, selected from their well-known extensive Stock, occupying an area of 60 acres of land.

STANDARD ORNAMENTAL TREES, from 6 to 10 feet.

Acers (Maples), of sorts
Æsculus (Horse Chesnuts), Scarlet and other kinds
Ailanthus glandulosa
Ash, very fine collection
Beech, Purple, Weeping, and other kinds
Caraganas, of sorts
Catalpa syringæfolia
Chesnut, Spanish, Prolific, &c.
Cotoneasters, fine kinds, very handsome, worked on straight stems of Cotoneaster frigida
Hornbeam, Cut-leaved and Weeping
Limes, of various kinds
Oaks, very fine collection
Pyrus, of sorts
Robinia Bessoniana, very fine, and other sorts
Standard Portugal Laurels, with very fine heads
Sycamore, Purple-leaved and variegated [fine
Ulmus (Elms), of sorts, very
Weeping Willows, American, &c. &c. &c.

CONIFERÆ.

Araucaria imbricata, 1 to 6 feet
Biota meldensis, new, 2 to 3 ft.
Cedrus Deodara, 2 to 4 feet
Cupressus ericoides, 1 to 3 feet
,, Lambertiana, 2 to 6 feet
,, Lawsoniana, 1 to 2 feet
,, torulosa viridis, 1 to 3 ft.
,, torulosa, 2 to 5 feet
Juniperus glauca, 1 to 3 feet
,, Irish, 1 to 4 feet
,, japonica, 1 to 1½ foot
,, macrocarpa, 1 to 1½ ft.
Juniperus Wallichiana, 1 foot
Picea Nordmanniana, 1 to 1½ ft.
Pinus Fremontiana, 1 to 1½ foot
,, Montezumæ, stout
,, monticola, 1 foot
Taxodium distichum, 1 to 6 feet
Thuja aurea, the Golden Arbor-vitæ, very fine, 1 to 1½ ft.
,, gigantea, 1½ to 2 feet
,, japonica, 1 to 3 feet
Wellingtonia gigantea, 1 to 1½ ft.
&c. &c. &c.

EVERGREENS.

Alaturnus, of sorts, 1 to 3 feet
Arbor-vitæ, American, 1 to 2 ft.
,, Chinese, 1 to 3 feet
Aucuba japonica, 1 to 2½ feet
Cedrus, Red Virginian, 1 to 3 ft.
Junipers, Common, 2 to 3 feet
,, Irish, 1 to 4 feet
Portugal Laurels, 1 to 2 feet
,, ,, large Pyramids, very fine, to sift.
Laurustinus, 1 to 3 feet
Privet, Evergreen, very strong
Yews, English and Irish, very fine

AMERICAN PLANTS.—Andromedas, Azaleas, Hardy Heaths, Kalmias, Rhododendrons, Vaccinium, &c.

DECIDUOUS AND FLOWERING SHRUBS in great variety, comprising a splendid stock of Spiræas, Berberis, Deutzias, Euonymus, Rib , Sorreas, Weigelas, &c.

CATALOGUES on application

A liberal number of plants will be presented with each order to compensate for distant carriage.

PLANTING.

A. PAUL & SON

RESPECTFULLY invite the attention of Gentlemen improving their Estates or forming new Gardens to the following TREES, &c., which they are prepared to sell at the lowest remunerating prices for a good standard quality. It is their practice to transplant every second year, in order that little or no loss may be incurred by removal. Many things are grown in large quantities and offered on advantageous terms to the Trade. An inspection of the stock is invited.

Abies alba, 2 to 6 feet
,, ,, glauca, 1 to 2½ feet
,, Clanbrasiliana and other dwarf Firs, 9 in. to 1½ ft.
,, canadensis, 3 to 6 feet
,, Douglasii, 2 to 6 feet
,, fineuonensis, 2 to 3 feet
,, Menziesii, 1½ to 6 feet
,, monstrosa, 2 to 7 feet
,, Morinda, 2 to 10 feet
,, orientalis, 1 to 2 feet
,, rubra, 2 to 4 feet
,, 20 other sorts, 1 to 6 feet
Araucaria imbricata, 1½ to 6 ft.
Arbor-vitæ (see Thuja).
Alaternus silver & gold striped, 1½ to 4 feet
Arbutus, 6 sorts, 1 to 3 feet
Aucuba japonica, 1 to 3 feet
Box, 6 sorts, 1½ to 6 feet
Berberis Darwinii, 1 to 1½ foot
Cedrus africanus, 2 to 10 feet
,, Deodara, 1 to 12 feet
Cedar of Lebanon, 1 to 12 feet
,, Red, 2 to 5 feet
,, White, 3 to 5 feet
☞ The largest and finest stock of Cedars in the country.
Cistus, 12 sorts, 1 to 3 feet
Cryptomeria Lobbiana, 3 to 8 ft.
,, nana, 9 inches
Cupressus Corneyana, 1½ to 3 ft.
,, Knightii, 3 to 4 feet
,, Lambertiana, 3 to 7 feet
,, Lawsoniana, 9 in. to 1 foot
,, torulosa, 1½ to 3 feet
,, 12 other sorts, 1 to 4 feet
Daphne pontica, 2 to 3 feet
Furze, double, 1 to 1½ foot
Garrya elliptica, 1½ to 3 feet
Holly, green and variegated, 30 sorts, 1 to 6 feet
,, green standards, 5 ft. stems
Juniperus chinensis, 2 to 5 feet
,, communis pendula, 2 to 3 ft.
,, excelsa, 1 to 2½ feet
,, fragrans, 2 to 4 feet
,, glauca, 2 to 3½ feet
,, oblonga, 2 to 6 feet
,, ,, pendula, 2 to 3 feet
,, thurifera, 1½ to 6 feet
,, tamariscifolia
,, virginiana aurea, 1 to 2 feet
,, ,, pendula, 1½ to 3 feet
,, viridis, 1½ to 2½ feet
,, weeping, 5 feet stems
,, 20 other sorts, 1 to 6 feet
Laurel, Common, 1 to 5 feet
,, Portugal, 1½ to 4 feet
,, ,, Standards, 8 feet
Laurustinus, 1 to 2 ft. (bloom)
Ligustrum lucidum, 3 to 4 feet
,, japonicum, 1½ to 3 feet
,, ovalifolium, 5 feet
,, evergreen, 2 to 4 feet
Mahonia aquifolia, 1 to 3 feet
,, 6 other sorts, 1 to 3 feet
Phillyreas, of sorts, 1½ to 7 feet
Picea amabilis, 1 to 1½ foot
,, nobilis, 1 to 4 feet
,, Nordmanniana, 1 to 4 ft.
,, Pinsapo, 1½ to 4 feet
,, Webbiana, 2 to 3 feet
,, 6 other sorts, 1 to 6 feet
Pinus austriaca, 2 to 4 feet
,, Benthamiana, 2 to 5 feet
,, calabrica, 3 to 4 feet
,, Cembra, 1½ to 4 feet
,, excelsa, 1½ to 12 feet
,, insignis, 3 to 6 feet
,, Llaveana, 2 to 5 feet
,, Laricio, 2 to 4 feet
,, macrocarpa, 2 to 3 feet
Pinus monticolor, 2 to 3 feet
,, monspeliensis, 3 to 5 feet
,, muricata, 3 to 5 feet
,, Montezumæ, 3 years seedlings
,, nivea (Snow Pine), 1½ to 5 ft.
,, Pallasiana, 2 to 3 feet
,, pinaster, 3 to 6 feet
,, pyrenaica, 4 to 6 feet
,, Sabiniana, 4 to 5 feet
,, 40 other sorts, 1 to 6 feet
Quercus (Oak), Evergreen, 3 to 5 feet
,, Fordii, 4 to 6 feet
,, latifolia, 3 to 6 feet
,, Mirbeckii, 2 feet
,, Suber (Cork Oak), 3 to 4 ft.
Ruscus hypoglossum
Santolina chamæcyparissus, 1 foot
Taxodium distichum, 3 to 6 ft.
Taxus (Yew), adpressa, 2 to 4 ft.
,, canadensis, 1½ to 3 feet
,, cheshuntensis, 1½ to 6 feet
,, elegantissima, 1½ to 4 feet
,, gold striped, 1½ to 5 feet
,, ,, standards, 5 feet
,, Jackson's Weeping, 1½ foot
,, japonica, 1 to 2 feet
,, nana, 2 to 4 feet
,, nigra, 3 feet
,, stricta, 5 feet
,, yellow-berried, 2 feet
,, common, round, and fair, 2 to 7 feet
,, Irish, 2 to 7 feet
,, 12 other sorts, 1 to 4 feet
Thuja americana, 3 to 8 feet
,, aurea, 1 to 3 feet
,, Chinese, 2 to 4 feet
,, gigantea, 2 to 3 feet
,, Wareana, 1 to 5 feet
,, 12 other sorts, 1 to 3 feet
Thujopsis borealis, 2 to 3 feet
Salisburia adiantifolia, 3 feet
Wellingtonia gigantea, 1 to 3ft.

Acer negundo variegata, 2 to 6 feet
Acacia, of sorts, 4 to 10 feet
Ash ,, 6 to 10 feet
Alder ,, 6 to 10 feet
Ailanthus ,, 8 feet
Almonds ,, 6 to 8 feet
Beech, purple, best variety, 5 to 8 feet
Birch, of sorts, 6 to 10 feet
Chesnut, Horse, of sorts, 1½ to 6 feet
,, Spanish, of sorts, 2 to 8 ft.
Catalpas, 6 to 8 feet
Caragana arborescens, 6 to 8 ft.
Cerasus padus aucubæfolius, 6 to 8 feet
Cornus mas variegata, 2 feet
Elms, 12 sorts, 6 to 8 feet
Gleditschias, 1½ to 8 feet
Kolreuteria paniculata, 3 to 6 feet
Laburnums, 8 feet
Lilacs, Persian, 6 feet stems
Liquidambars, 2 to 3 feet
Limes, of sorts, 8 to 10 feet
Maple ,, 5 to 10 feet
Planes ,, 7 to 10 feet
Poplar ,, 6 to 10 feet
Oak ,, 6 to 10 feet
Robinia ,, 6 to 8 feet
Sophora japonica, 10 feet
Sycamore, 6 to 10 feet
Thorns, of sorts, 6 to 8 feet
Tulip Trees, 2 to 10 feet
Willows, American, and others
Quick, 2-year transplanted, fine

WEEPING AND LAWN TREES in very great variety.

FLOWERING TREES AND SHRUBS, in 300 species and varieties, including Althæa, Cytisus, Berberis, Daphne, Deutzia, Lilac, Purple Nut, Pyrus, Ribes, Rose Acacia, Syringa, Spiræa, Weigela, &c.

ROSES, an unrivalled collection. Standards, 12s. per dozen and upwards; dwarfs, 6s. per dozen and upwards. See separate Catalogue.

HARDY CLIMBING PLANTS, a large collection.

AMERICAN PLANTS, including Azaleas, Heaths, Kalmias, Magnolias, Rhododendrons, &c.

FRUIT TREES, consisting of all the choicest sorts, warranted true to name. The trained Peaches, Nectarines, Apricots, &c., particularly fine.

GRAPE VINES, from eyes, well ripened, short-jointed, canes 6 to 10 feet.

HERBACEOUS PLANTS, in 500 species and varieties.

HOLLYHOCKS, a fine stock of healthy and well established plants. See separate Catalogue.

☞ Particulars of Prices, &c., furnished on application. Carriage of all packages free to London; if a ton weight or upwards placed free on the Railway at any London Terminus. An inspection of the stock invited.

A. PAUL AND SON,
NURSERIES, CHESHUNT, HERTS,
13 miles N.E. of London, Eastern Counties Railway.

FISHER, HOLMES, AND CO. beg respectfully to inform the Trade that their LIST for the present season is now ready and will be sent free on application. It contains:

Seedlings of Forest and Ornamental Trees, Shrubs, &c.
Bedded Trees and Shrubs
Fruit Trees
Forest Trees
Ornamental Trees and Shrubs
American Plants
Climbers—Roots
Stove, Greenhouse, and Herbaceous Plants

Their Stock is very extensive, extending over 100 acres.
Handsworth Nursery, Sheffield.

FOR SALE, about 500 LABURNUMS from 5 to 6 feet high; also from 3000 to 4000 Mixed NARCISSUS; about 1000 blooming bulbs, having no ground to put them in; also 500 good strong PRIVETS.—M. HEAD, Nurseryman and Seedsman, Prospect House, Upper Street, Islington, N.

ROBERT NEAL, NURSERYMAN, Wandsworth Common, S.W., begs to call the attention of buyers to his large and well-selected stock of EVERGREENS and FLOWERING SHRUBS, ORNAMENTAL TREES, AMERICAN PLANTS, FRUIT AND FOREST TREES, STANDARD AND DWARF ROSES of every description. A large stock of BOX-LEAF EVERGREEN PRIVET, from 1 to 6 feet for hedges; GREEN HOLLY, 1 to 6 feet; RICH BOG and LOAM for American Beds; LEAF MOULD. The Nursery is 10 minutes' walk from Clapham Common, and New Wandsworth Station, Crystal Palace Line.

GREEN HOLLY, EVERGREEN OAK, AND BAYS.

M. A. LAKE having a large stock of the above, 3-years seedlings, will render them at moderate prices.

Likewise a large and choice collection of Dwarf-trained Peaches, Nectarines, Apricots, Apples, Pears, Plums, and Cherries; also Standard Pears, Plums, Cherries, Apples, &c.

All the best varieties of Gooseberries, Currants, and Raspberries; Rhubarb, Seakail, and Asparagus Roots for Forcing.

Several thousand Standard Cider Apple Trees.

Prices on application. The Trade supplied.

The Nurseries, Bridgwater.—Nov. 5.

TANSLEY NURSERY, NEAR MATLOCK.

To GENTLEMEN PLANTING AND THE TRADE.

J. SMITH, SEN., begs to offer his STOCK OF TREES AND SHRUBS, of various sizes, and in addition to his general stock of the leading kinds, he has this season to offer an Extra Stock of many hundred thousands of fine Larches, Scotch Firs, and Highland Pines; a large quantity of Evergreens, Privets, Mahonia Aquifolium, and other plants for planting under cover. Many things are grown in large quantities, and will be sold on advantageous terms to the Trade and gentlemen requiring large lots.

CATALOGUES sent free on application. The Nurseries are on the Mansfield and Nottingham roads, and 2 miles from Matlock Bridge Station on the Midland Railway.

WILLIAM YOUNG begs to call attention to his extensive NURSERY STOCK, which is in fine condition for removal, and which will be found well worth notice of those engaged in any kind of planting.

Having large quantities of the undermentioned, all well grown, good-rooted plants, he can offer them at very moderate prices.

SPECIMEN CONIFERÆ.

Abies Douglassii, 8 to 12 feet
,, canadensis, 8 to 12 feet
,, Menziesii, 6 to 10 feet
,, nigra, 6 to 8 feet
,, Pinsapo (very handsome), 6 to 8 feet
Pinus Cembra, 6 to 10 feet
,, excelsa, 8 to 10 feet
,, insignis, 6 to 8 feet
Cedrus Deodara, 6 to 12 feet
,, Libani, 6 to 12 feet
Araucaria imbricata, 4 to 6 ft.
Cryptomeria japonica, 6 to 8 ft
Juniperus chinensis, 6 to 8 ft.
,, hibernica, 6 to 8 ft.
Taxodium sempervirens, 6 to 10 feet

LARGE DECIDUOUS TREES AND EVERGREENS.

Ash, Weeping, 8 to 10 feet
Beech, common, 6 to 10 feet
,, copper, 6 to 10 feet
,, Fern leaf, 6 to 8 feet
,, weeping, 6 to 8 feet
Horse Chesnut, 8 to 12 feet
Limes, 6 to 10 feet
Poplar Abele, 8 to 10 feet
,, black Italian, 8 to 10 ft.
Maple, Norway, 6 to 8 feet
Oak, English, 10 to 12 feet
,, Fordii, 8 to 10 feet
Oak, exoniensis, or New Leucombe, 8 to 12 feet
Oak, evergreen, 8 to 10 feet
Weeping Willows, 8 to 10 feet
Spruce Firs, 10 to 12 feet
Silver Firs, 10 to 12 feet
Arbor-Vitæ, American, 6 to 8 ft
,, Chinese, 6 to 8 ft.
,, Ontario, 5 to 7 ft
Hollies, green, 8 to 12 feet
Yews, 8 to 12 feet

STANDARD ROSES.—A fine collection of all best varieties.

RHODENDRONS and other AMERICAN PLANTS of all the leading varieties.

FOR ORNAMENTAL GAME COVER.

Azalea pontica
Common Laurels
Evergreen Privet
Mahonia Aquifolium
Juniper, Common
Juniper sabina
Rhododendron ponticum

FOREST TREES.—Larch, Scotch, Alder, Ash, Birch, Hazel, Chesnut, Willow, &c., from 2 to 4 and 5 feet, in any quantity for Coppice planting.

A NEW DESCRIPTIVE CATALOGUE of New Plants, Coniferæ, Deciduous Trees, Evergreens, Flowering Shrubs, Roses, American Plants, and general Nursery Stock, with heights and prices, forwarded on application.

N.B.—Good Railway communication to any part of England.
Milford Nurseries, near Godalming, Surrey.

TO NOBLEMEN, GENTLEMEN, AND OTHERS PLANTING EXTENSIVELY.

WHITEHOUSE AND WHITTAKER beg to call attention to their Stock of FOREST TREES in general, and particularly to their extensive Stock of LARCH, SPRUCE, AND SCOTCH FIRS. The Larch this season is very strong and suitable where Game abounds, being from 3 to 6 feet high, Spruce from 1½ to 3 feet, and Scotch from 1½ to 4 feet, all of which, from the peculiar nature of the soil, lift with fine fibrous roots. Their Stock of Transplanted GREEN HOLLIES exceeds 200,000 from 6 inches to 4 feet, a large portion of which are handsome plants with leaders. The whole having been recently removed, will move with safety. Their Stock of Transplanted QUICKS is also large and very strong.

The General NURSERY STOCK of Ornamental Trees, Flowering Shrubs, Evergreens, American Plants and Coniferous, &c., are varied and extensive:—Cedrus Libani, 8 to 11 feet, with fine leaders; Cedrus Deodara, from 1 to 5 feet; Araucaria imbricata, 1 to 6 feet; Cupressus macrocarpa, 2 to 5 feet; Variegated Hollies, fine specimens; Arbor-vitæs, of sorts, 1 to 8 feet; Pinus insignis, 5 feet; Hemlock Spruce, 3 to 8 feet; Standard and Portugal Laurels, Balm of Gilead, Austrian Pines, Pinus Cembra, &c. The whole of these having been shifted within the last 18 months will insure their complete success in moving to a distance.

Their Stock of FRUIT TREES is this season of very fine growth, consisting of Standard and Dwarf-trained Peaches, Nectarines, Apricots, Plums, Cherries, Pears, &c.

Horticultural and Agricultural Seeds of the best quality; Greenhouse, Bedding, and Herbaceous Plants, Dutch Bulbs, Seakale, Asparagus, Russian Mats, Mushroom Spawn, Gishurst Compound, and all other articles connected with the Nursery and Seed business.

Brereton Nursery, Rugeley, Staffordshire, is conveniently situated, being two miles from Rugeley Station, on the Trent Valley Line.

OSCAR STRAWBERRY.

CHARLES TURNER can still supply strong plants, warranted to fruit next season, at 42s. per 100.

For full particulars of this fine early variety see previous Advertisements. It can also be supplied by the following in the Trade who have received plants :—

Austin & M'Aslan, Messrs., Glasgow
Backhouse, Messrs., York
Barnes, Mr. W., Camberwell
Baskerville, Mr., Bristol
Bayliss, Mr., Wolverhampton
Bell, Mr., Norwich
Benary, Mr. Ernest, Erfurt, Prussia
Brind, Mr., Marlborough
Bunting, Mr. W., Colchester
Bunyard, Mr., Maidstone
Burbury, Mr. J., Kenilworth
Butler & McCulloch, Messrs., Covent Garden Market, London, W.C.
Campbell, Mr. A., Glasnevin, Dublin
Carpenter, Mr. E., Bath
Clarke, Mr. H., Covent Garden, London, W.C.
Cook, Mr. H., Handsworth Woodhouse, by Sheffield
Day, Mr., Oxford
Dean, Mr., Bradford
Dickson, Messrs. F. & A., Chester
Dickson, Messrs. James, Sons & Co., Manchester
Dickson & Son, Messrs., Belfast
Dickson & Turnbull, Messrs., Brechin
Dreghorn & Aitken, Messrs., Kilmarnock
Ewing, Mr., Norwich
Finney, Messrs., & Co., Gateshead, Durham
Fisher, Holmes, & Co., Messrs., Sheffield
Fraser, Messrs. J. & J., Lea Bridge Road, Leyton, Essex
Garaway, Mayes, Messrs., & Co., Bristol
Gloede, M. Ferdinand, Aux Sablons, near Moret sur Loing, France
Griffin, Mrs., Bath
Hally, Mr., Blackheath, S.E.
Handasyde, Mr., Musselburgh
Harman, Mr., Denham, by Uxbridge
Harrison, Mr., Darlington
Hawkins, Mr., Weymouth
Henderson, Messrs. A. & Co., Pine-apple Place, London, W.
Henderson, Messrs. E. G., St. John's Wood, London, N.W.
Hinxman, Mr. G., Salisbury
Hooper & Co., Messrs., Covent Garden, London
Hurst & McMullen, Messrs., 6, Leadenhall St., London, E.C
Ivery, Messrs., Dorking, Surrey
Ivery, Mr. Wm., Peckham
Jackson, Messrs., Kingston, Surrey
Kenway, Mr. S., Batheaston, Bath
Keynes, Mr., Salisbury
Kimberley, Mr., Stoke by Coventry
Kelway, Mr., Langport, Somersetshire
Kitley, Mr., Bath
Laing, Mr. A., Beverley
Lee, Messrs. J. & C., Hammersmith
Low, Messrs. Hugh & Co., Clapton, N.E.
Lucombe, Pince, Messrs., & Co., Exeter
Marriott, Mr., Nuneaton, Warwick
Milne, Arnott, Messrs., & Co., Wandsworth Road, London S.W.
Miller, Mr., Andover, Hants
Nelson, Mr. G., Kingsdown, Bristol
Nelson, Mr. J., St. Michael's Hill, Bristol
Oldroyd, Mr., Shrewsbury
Osborn, Messrs., & Son, Fulham, S.W.
Oswald, Mr., Adderley Gardens, Birmingham
Parker & Williams, Messrs., Holloway, N.
Parsons, Mr. Geo., Brighton
Paul, Mr. Evan, 42, Queen Street, Derby
Pennell, Mr. C., Lincoln
Perkins, Mr. J., Northampton
Pontey, Mr., Plymouth
Pope, Mr. H., Gib Heath, Birmingham
Rivers, Mr., Sawbridgeworth, Herts
Rogers, Mr. Geo., Uttoxeter
Rylance, Mr. C., Aughton by Ormskirk
Schofield, Mr. C., Knowsthorpe
Sclater, Mr., Exeter
Scott, Mr., Bathford, Bath
Service, Mr., Maxweltown, Dumfries
Shaw, Mr. J., Manchester
Sibbald, Mr., Bishop's Auckland, Durham
Simons, Mr., Promenade Gardens, Malvern
Smith, Mr. W., Hereford
Smith, Peter & Son, Messrs., Hamburgh
Snowden, Mr., Thirsk
Sollis, Mr. H. G., City Fruit Stores, Bath
Stafford, Mr., Hyde, Manchester
Standish, Mr., Bagshot
Tiley, Mr. E., Bath
Van Houtte, Mr. Louis, Ghent
Veitch & Son, Messrs., Exeter
Veitch, Mr., Jun., Chelsea
Verschaffelt, Mons., Ghent, Belgium
Wood & Ingram, Messrs., Huntingdon
Waite, Mr., High Holborn, London, W.C.
Watkinson, Mr., Manchester
Wheeler, Messrs. J. & C. & Son, Gloucester
Wheeler, Mr., Bath
Wheeler, Mr. G., Warminster
White, Mr., 54, Kingsgate Street, Winchester
White, Mr. R., Poole, Dorset
Wood & Son, Messrs., Maresfield
Youell & Co., Messrs., Great Yarmouth

Royal Nurseries, Slough.

ROBERTSON'S WIZARD OF THE NORTH STRAWBERRY.

DANIEL ROBERTSON begs to intimate that PRINTS of a Drawing of this variety are now ready for distribution, and will be forwarded free on application to parties in the Trade, who may desire to have them for reference or for exhibition in their shops or places of business, and who agree to have their plants direct from D. R. or from parties named by him as being in honest and lawful possession of the genuine stock.

In printing copies from the original Drawing of this Seedling D. R. has incurred a very serious expense, and which, but for circumstances that have lately transpired in connection with the name of this variety, he would most certainly never have subjected himself to; he has done this to protect himself in his right, and to guarantee the public from imposture.

Purchasers are warned that they ought to see the Drawing of the Wizard in the hands of any nurseryman or other party from whom they buy plants, as all parties selling the genuine article will be furnished with a Drawing.

In Mr. W. J. Nicholson's Catalogue, published in the late Number of the *Gardeners' Chronicle*, a kind appears under the name of Wizard of the North, no raiser's name given, and queried as Sir Walter Scott. Not knowing any Strawberry named Wizard of the North besides our Seedling, this matter became the subject of immediate and frequent communication with Mr. Nicholson, and in a letter from that gentleman dated September 22, he writes :—"I have had some inquiries about the Wizard of the North to know if it is really different from the Sir Walter Scott, to which I have said yes, after comparing the plants sent by you with those of Sir Walter Scott. I see it is different, though a good deal alike, and I think of the same race. In my next Catalogue this will be made all right." Having seen growing in a nobleman's garden here plants of the Sir Walter Scott (obtained from Mr. Nicholson direct), beside plants of our seedling the Wizard of the North, D. R. feels astonished that Mr. N. or any other grower should have compared the two sorts, they are so dissimilar in growth, and can only account for Mr. Nicholson's error by concluding that the plants he compared with Sir Walter Scott in the first instance were in reality not the Wizard of the North at all. He had no plants of this kind from D. R. until after the appearance of his Catalogue.

D. R. begs to state that Messrs. Dickson and Co. of Edinburgh, and Mr. R. Pollock of Kilmarnock, had plants of the Wizard of the North in the autumn of 1858, to propagate stock for themselves, and which they have honourably retained until after he advertised it out. They are the only Nurserymen who could have been in honest and lawful possession of this kind previous to the 16th of August last. The appearance of its name in any Catalogue previous to that date was quite unwarranted.

DANIEL ROBERTSON, Lumside Nursery, Paisley, Nov. 5.

BUTLER & McCULLOCH,

COVENT GARDEN MARKET, W.C.

A DESCRIPTIVE AND PRICED CATALOGUE OF

HYACINTHS, GLADIOLI, RANUNCULUS, ANEMONES, IXIAS, AMARYLLIS, CROCUS, and other DUTCH and CAPE BULBS, with practical Cultural directions affixed to each Class for the use of Amateurs, sent free and post paid (for contents of CATALOGUE see *Gardeners' Chronicle*, October 1, page 786).

☞ *All orders amounting to* 21*s. and upwards sent Carriage paid.*

For conspicuous beds the following HYACINTHS and TULIPS cannot be surpassed; they occupy a most important position in the economy of the Flower Garden, coming into bloom immediately after the Crocus, &c., and ready for removal at the time of planting out Geraniums and other Summer and Autumn Flowering Plants :

BEST DOUBLE and SINGLE MIXED HYACINTHS	21*s.* 0*d.* per 100,	3*s.* 0*d.* per dozen.
TOURNESOL and REX RUBRORUM DOUBLE TULIPS	7 6	,,	1 0	,,
YELLOW ROSE, pure yellow and scented Do.	10 6	,,	1 6	,,
LA CANDEUR, pure white Do.	14 0	,,	2 0	,,
FINE MIXED DOUBLE do.	7 6	,,	1 0	,,
FINE MIXED SINGLE do.	6 0	,,	1 0	,,
CHOICE MIXED LATE FLOWERING do.	10 6	,,	1 6	,,

FOR CENTRES OF LARGE BEDS AND BORDERS

The following favourites are perfectly hardy, and cannot be too extensively cultivated :—

TRITOMA UVARIA (true) .. 21*s.* 0*d.* per doz.	2*s.* 0*d.* each	LILIUM LANCIFOLIUM ROSEUM	20*s.* 0*d.* per doz.	2*s.* 0*d.* each.
LILIUM LANCIFOLIUM ALBUM 15 6 ,,	1 6 ,,	,, ,, RUBRUM	20 0 ,,	2 0 ,,

GLADIOLI HYBRID of RAMOSUS,	30	splendid varieties named, for	21*s.* 6*d.*, or 12 for 9*s.* 6*d.*	
,, ,, CARDINALIS,	12	beautiful	,,	10 6	
,, ,, BLANDUS,	6	new	,,	4 6	best for forcing.
,, ,, SAGITTALIS	6	,,	,,	4 6	
GLADIOLUS BRENCHLEYENSIS			30*s.* 0*d.* per 100	5*s.* 0*d.* per dozen.
,, GANDAVENSIS			15 6	,,	2 6 ,,
,, QUEEN VICTORIA			15 6	,,	2 6 ,,
,, RAMOSUS			15 6	,,	2 6 ,,
,, FLORIBUNDUS			15 6	,,	2 6 ,,

AGENTS FOR TYE'S REGISTERED HYACINTH GLASSES.

These are without exception the most elegant and best adapted for the successful Culture of the Hyacinth. See Woodcut Group of Glasses, page 803 of *Gardeners' Chronicle*, October 8.

BUSBY'S STOCKWOOD GOLDEN HAMBURGH GRAPE.

THE very beautiful specimens of this really SPLENDID GRAPE (some of the bunches weighing upwards of 3 lbs.) which have been exhibited during the past season, combined with the numerous unsolicited testimonials as to its superiority and general excellence which JAMES VEITCH, JUN., has received from the most eminent practical Gardeners, warrant him in again calling attention to its great merit.

J. V., JUN., can with confidence recommend it as being without doubt *the best light Grape of its class* in cultivation. It will be found a most valuable acquisition, succeeding well under the same treatment as the Black Hamburgh, and *certainly no vinery should be without it.* It has also proved to be a most excellent variety for fruiting in pots. That so fine a fruit may be universally planted and enjoyed, J. V., JUN., now offers good established plants at the following prices :—

Nice young Canes ... 5s. 0d. each | Fine well-ripened Canes ... ... 10s. 6d. each
Good well ripened Canes 7s. 6d. each | And a few extra strong ones for pots at 15s. each

ROYAL EXOTIC NURSERY, CHELSEA, S.W.—November 5.

ROSES! ROSES! ROSES!

W. H. DAVIS

BEGS TO INVITE SPECIAL ATTENTION TO HIS LARGE AND WELL-GROWN

STOCK OF STANDARD AND DWARF ROSES,

which for quality and cheapness cannot be surpassed, the following Testimonials being evidence of the SUPERIOR PLANTS supplied last season :—

"Stamford, April 12.

"Dear Sir,—The Roses I had from you are, notwithstanding the late severe frosts, looking remarkably well. As far as I can at present discover, the Dwarfs on Manetti Stock have stood the frost better than those on their own roots, and quite as well as others worked on the Dog Roses. Out of the large number I had from you I have not lost one, and I attribute this principally to their being very carefully packed and planted early in November.—Yours truly,

"THOS. LAXTON, Jun., F.H.S."

"Castle Wigg, Whethorn, N.B., Jan. 15.

"Sir,—The 200 Roses arrived all safe, and better plants I never saw. I will do all I can to recommend you to my friends. —Your obedt.,

"JOHN LAUDER, Bart."

"Rushton, Blandford, Aug. 22, 1859.

"Sir,—Your moderate prices last year and good materials induce me to give you an order for 100 Roses.—Yours truly,

"W. F. RADCLIFFE, Rector of Rushton."

"Falkirk, June 1.

"Dear Sir,—I had the pleasure to receive your Roses all in good order, and I have to thank you for the excellent plants you have sent me. I am well pleased with them, and hope to give you a further good account of them in the autumn.—Yours, &c.,

"JAMES NEILSON."

"Belladram, Beauly, N.B.

"Sir,—The Roses, 200 in number, arrived in good order and generally good plants. The Dwarfs are really fine plants, and I will be glad to do anything in my power to recommend your plants and prices.—Yours obedtly,

"WILLIAM WESTWOOD,

"Gr. to James Merry, Esq."

"Rectory, Rushton, Blandford, Dorset, Nov. 6, 1858.

"Sir,—I have this day received the 57 Roses, which are very nice plants, and quite as good as I expected. I am much obliged for one Evêque de Nimes and Géant de Batailles gratis. Thanks for your attention to my orders for myself and friends.—I am, yours truly,

"W. F. RADCLIFFE."

STANDARDS, in 100 very superior varieties, extra strong well rooted plants .. .. per 100	£4 0 0	DWARFS, in 100 do. do. .. .. .. per 100	£2 10 0
Do. in 12 do. do. .. .. per dozen	0 12 0	Do. in 12 do. do. .. .. per dozen	0 8 0
		Manetti Stocks .. .. per 100	0 4 0

The following HYBRID PERPETUALS in EXTRA LARGE plants can be supplied as Dwarfs at 7*s.* per dozen or 2*l.* 5*s.* per 100 :—

Géant de Batailles	Duchess of Sutherland	Triomphe de l'Exposition	Baronne Hallez
Baronne Prevost	General Simpson	Alexandrine Bachmeteff	Madame Ducher
General Jacqueminot	Madame Laffay	Mrs. Elliott	Auguste Mie
William Griffiths	Arthur de Sansalles	Mrs. Rivers	Madame Phelip
L'Enfant du Mont Carmel	Docteur Reynaud	Lady Stewart	Augustine Mouchlet
Madame Place	Louise Odier	Jules Margottin	La Reine

Gentlemen planting in large quantities will find this an excellent opportunity.

Plants most carefully packed and dispatched to any part of the Kingdom.

DESCRIPTIVE CATALOGUES with numerous testimonials now ready and sent post free upon pre-paid application.

THE TRADE LIBERALLY SUPPLIED.

ROSE NURSERIES, NEWBURY, BERKS.

MESSRS. WATERER AND GODFREY respectfully refer planters to the following LIST of well-known good hardy Plants :—

ARAUCARIA IMBRICATA, 1 foot, stout, healthy, 5*l.* per 100; larger, up to 8 feet.
CEDRUS DEODARA, 2½ to 3 feet, very handsome, 10*l.* per 100; larger, in any quantity, up to 10 and 15 feet.
PICEA NOBILIS, Seedlings, in quantity, 1 foot, stout.
Ditto larger and in every way perfect plants, up to 4 feet.
NORDMANNIANA, from seed, 2, 3, 4, and 6 feet.
PINSAPO, 2½ to 3½ feet, and as much through.
Ditto magnificent plants, 8 and 10 feet high.
CUPRESSUS LAWSONIANA, fine bushy seedling plants, 2½ feet high.
JUNIPERUS, CHINESE, 3 feet up to 8 and 10 feet.
" IRISH, 5, 6, and 7 feet.
YEWS, IRISH, 5, 6, 7, and 8 feet.
" GOLDEN, from 2 to 7 and 8 feet.
" COMMON ENGLISH, in large quantities, 4 to 6, 7, and 8 feet.
THUJA AUREA.—Several hundred magnificent specimens, 3, 4, and 5 feet high, and measuring 10 to 15 feet in circumference.
THUJOPSIS CÆREOLIS, 2½ to 3 feet.
WELLINGTONIA GIGANTEA, all from seed, 1½ to 3 feet, and as wide.
HOLLY, GREEN, in quantities. 5, 6, and 8 ft.; VARIEGATED, especially the best gold striped, of all sizes, up to 6 feet.

All the plants referred to in this advertisement were removed in April last, and they are in a condition to travel any distance with perfect safety.—Knap Hill Nursery, near Woking, Surrey.

JOSEPH BAUMANN, NURSERYMAN, Ghent, Belgium, begs to offer the following plants :—

	£	s.	d.
Cydonia japonica, alba odorans, coccinea, cardinalis, gigantea ignea, nana, rubra aurantiaca, rubra aurantiaca semi-pleno, rubra grandiflora, umbellicata, each	0	1	6
Cydonia japonica Moerloosii	0	3	0
100 Deutzia gracilis, strong plants	1	0	0
12 " " standards	1	10	0
100 Standard Hybrid Perpetual Roses, in sorts ..	4	0	0
100 Half Standard " " " ..	3	0	0
100 Dwarf	2	0	0
100 ornamental trees	5	0	0
100 " shrubs	3	0	0
100 hardy Ghent Azaleas, without flower buds ..	3	0	0
100 " " " strong	4	0	0
100 " " seedlings of good sorts, with flower buds	2	0	0
100 Azalea indica, with flower buds, dwarf	4	0	0
100 " " larger plants, each .. 3*s.* and	0	4	0
100 " " stocks	1	0	0
100 Camellias, best sorts, without flower buds ..	4	0	0
100 " stocks	1	10	0
100 hardy Ghent Rhododendrons, 50 sorts, 1-year grafted	4	0	0
100 ditto, 2-years grafted	6	0	0
100 Asclepias tuberosa	1	0	0
100 Gladiolus gandavensis	0	6	0
12 Glycine sinensis, strong	0	9	0
100 Grevillea longifolia, beautiful greenhouse plants..	8	0	0
100 " saligna, stocks (Embothrium)	2	0	0
100 Peach trees, 1-year grafted	8	0	0
100 Pear trees, 1-year grafted	1	10	0

NURSERY GROUNDS, ABERGAVENNY.

JAMES SAUNDERS begs to invite attention to his general stock of all kinds of FOREST and ORNAMENTAL TREES, EVERGREEN and FLOWERING SHRUBS of all descriptions and of all sizes. A large stock of Chichester Elm, Sycamore, Horse Chesnut, Norway Maple, Turkey Oak, Spanish Chesnut, Cedar of Lebanon, and other fine specimens suitable for Parks and Avenues, 12 to 20 feet high; quite safe to move, having been replanted every two years. A large quantity of Standard, Half-Standard, and Dwarf Roses of all the best kinds in cultivation; all kinds of Flowering Plants suitable for Flower-beds and Borders, Stove and Greenhouse Plants; about 20 extra fine specimens of Azalea indica, first-class plants and sorts, 3 to 6 feet high; several thousands of choice kinds of Pears worked on Quince stocks; 10,000 Gooseberry trees in 150 named kinds; Currants in sorts; Seakale, Rhubarb, &c. The whole of the stock is young and thriving. A liberal discount for cash.—November 5.

RED LODGE NURSERY AND AMERICAN GROUNDS, SOUTHAMPTON.

THESE GROUNDS, extending over 60 acres, and consisting of every variety of soil, contain a large and choice assortment of AMERICAN PLANTS, including many thousands of fine Scarlet, Crimson, Pink, White, and Hybrid Rhododendrons, of the newest and best varieties; also a million of Rhododendron Ponticum, suitable for Covers or large Plantations; Kalmias, Azaleas, Andromedas, Ericas, Ledums, Gaultherias, &c. TRANSPLANTED FOREST TREES of every denomination, in immense quantity, including 800,000 Scotch, Larch, Spruce, Austrian, and Sea Pines. FRUIT TREES, Trained, Maiden, and Standard, of the choicest kinds, strong, well grown, and mostly in a bearing state. Strong plants of the beautiful GYNERIUM ARGENTEUM, or PAMPAS GRASS, also of that fine decorative plant FARFUGIUM GRANDE. Fine double CAMELLIAS of all the leading sorts. QUICKSETS, for Fencing, about two millions. ORNAMENTAL TREES, EVERGREENS, AND FLOWERING SHRUBS, including many novelties, in very great variety and of all sizes. STANDARD AND DWARF ROSES, upwards of 30,000 in 500 named sorts. Beautiful specimens of CONIFERÆ, &c. An inspection of the General Stock growing in this unrivalled Nursery is earnestly and respectfully solicited. CATALOGUES and every information obtainable on application to W. H. ROGERS, Red Lodge Nursery, and 130, High St., Southampton.

WALTON NURSERY, LIVERPOOL.

WILLIAM SKIRVING begs to announce that in consequence of part of the Land of one of his Nurseries being required for building purposes, he intends CLEARING OFF the TREES and SHRUBS thereon as soon as possible, to accomplish which he is willing to submit to a great reduction in their value.

The Stock consists of many hundreds of fine well-grown specimen plants of such Trees as the Araucaria, the Cedrus Deodara, the Cryptomeria, and many other Choice Hardy Coniferous Trees lately introduced, with very large quantities of smaller sizes of the same. There is also a very extensive Stock of Evergreen and Flowering Shrubs on the land to be cleared, amongst which are fine large specimen plants of the varieties of Green and Variegated Holly, the English and Irish Yew, Cedars, Cypress, Arbor-vitæ, and Rhododendrons, with many thousands of ordinary planting sizes.

W. S. invites the particular attention of Planters of Public or Private Parks, Cemeteries, Garden or Pleasure Grounds, to inspect the Stock now offered, feeling certain such a collection of Trees and Shrubs, for extent and variety, has seldom or ever been offered to the public.

At the same time W. S. begs to offer his extensive Stock of Fruit and Forest Trees, and several acre of Transplanted Thorn Quicks, at his adjoining permanent Nursery. Catalogues on application.

SNOW'S MUSCAT HAMBURGH GRAPE.

MESSRS. ARTHUR HENDERSON AND CO. beg to give notice that TWO PRIZES will be awarded by them at the Pomological Meeting in August, 1860, for the production of the three best bunches of the above Grape. The first Prize Three Guineas; the second Two Guineas. They will also give a Prize at the Crystal Palace Show in September, 1860, of Five Guineas for the best dish of Grapes, and Three Guineas for the second best.—A. HENDERSON & Co., Pine Apple Place, W., Nov 5.

ORANGE TREES.—Fresh arrival with very large fruit on, 1*s.* 6*d.* to 10*s.* 6*d.* each; CAMELLIAS and AZALEAS full of flower buds, 18*s.* to 21*s.* per dozen; ditto, without buds, 15*s.* per dozen; STANDARD ROSES in the choicest varieties, 15*s.* per dozen, or 5*l.* per 100; HYACINTHS, the choicest named sorts, 6*s.* per dozen; best mixed do, 4*s.*, second do., 3*s.* per dozen, or 1*l.* per 100; CROCUS and SNOWDROPS, 1*s.* 6*d.* per 100; NARCISSUS, large bulbs, 2*s.* per dozen; DOUBLE VAN THOL TULIPS, 3*s.* per 100; TOURNESOL, 4*s.* per 100, Double mixed, 3*s.* 6*d.*; LILIUM RUBRUM, 1*s.* 6*d.* each, large roots; Do. ALBUM, 9*d.* each, &c.; FICUS ELASTICA, handsome plants, from 18 inches to 4 feet high, 2*s.* 6*d.* to 5*s.* each. An immense quantity of BRITISH and FOREIGN FERNS, 6*s.* and 9*s.* per dozen.—R. GREEN, 154, Kingsland Road, N.E., 55 doors from Shoreditch Church. No connection with any other house.

SEED WHEAT FROM THE CHALK.—Selected samples of CHIDHAM, WHITE TRUMP, ROUGH CHAFF, HUNTER'S WHITE, RED-CHAFF WHITE, GRACE'S WHITE, TALAVERA, RED BROWICK, RED NURSERY, GOLDEN DROP, and all the best kinds of Wheat, supplied by RAYNBIRD & HARVEY, of Basingstoke, and 89, Seed Market, Mark Lane, London, E.C. Samples and prices on application.

IMPROVED PROLIFIC RED WHEAT FOR SEED.

JOHN MOSS, JUN., invites the attention of Farmers to his new stock of PROLIFIC RED WHEAT, the produce of a careful selection from the highly esteemed variety of the Essex Red, known as "Hall's," and very highly appreciated by millers. J. M., jun., confidently recommends this selection for its prolific properties, as well as for weight and quality. Amount seeded 4 pecks; yield this season, 48 bushels per statute acre. Price 48*s.* per quarter, at Kelvedon Station. New sacks, 1*s.* 6*d.* each.

May be obtained of Mr. JOHN MOSS, jun., Kelvedon and Feering; and of Mr. T. C. WILSON, Kelvedon; by whom samples will be shown at Chelmsford, Braintree, and Colchester Markets.—Feering, Oct., 1859.

Remittances expected from unknown correspondents.

TO THE TRADE.

THOMAS CRIPPS, NURSERYMAN, Tunbridge Wells, Kent, respectfully offers the following in fine strong well-rooted Plants :—

Standard Roses, 2 feet to 3½ and 4 feet stems, really good kinds, 50*s.* per 100; superior ditto, 2½ ft. to 4 ft. stems, 63*s.* per 100.
Dwarf Gallica Roses, &c., on own roots, by name, 20*s.* per 100.
Dwarf-worked Perpetual Roses, by name, 40*s.* per 100.
Dwarf Blush Pink China Roses, 15*s.* per 100, or 500 for 63*s.*
Dwarf Crimson do. do. 25*s.* per 100, or 500 for 100*s.*
Rhododendron ponticum stocks, fine strong for spring working, 20*s.* per 100.
Rhododendron ponticum, fine healthy stuff, the greater portion showing from 1 to 6 or 7 flower-heads, and from 9 in. to 2 feet in height, 25*s.* to 50*s.* per 100.
Rhododendron maximum album, fine large bushy stuff, 18 to 30 inches high, many well set with bloom buds, 9*s.* per doz. or 60*s.* per 100.
Rhododendrons.—Choicest named kinds can be supplied by the 1000 if required.
Hardy Heaths.—A fine collection, and beautiful large healthy plants, 20*s.* per 100.
Double Yellow Primroses, 20*s.* per 100 or 60*s.* for 400.
Manetti Stocks.—Fine strong, 40*s.* per 1000 or 70*s.* for 2000.
Larch Fir, 3 to 5 feet, 25*s.* per 1000.
Spanish Chesnut, 4 feet to 6 feet, fine, 40*s.* per 1000.

From unknown correspondents either a remittance or respectable London reference must accompany the order. Five per cent. on cash accounts. When less than half-quantities herein quoted are ordered at once, an advance in price will be charged.

EARLY POTATOES, LEMON KIDNEYS.—This early and excellent variety (see article on Cultivation of Early Potatoes, by the Rev. E. F. Manby, in Royal Agricultural Journal, Vol. XVIII.), may be had on early application to Author's Bailiff, JOHN HELM, Morecombe, price 2*s.* 6*d.* per stone. As also Copy of Article, 3d edition enlarged, price 1*s.*

N.B.—Late removal being injurious to the sprouts, orders should be at once supplied.

EARLY HANDSWORTH POTATO.

FISHER, HOLMES, AND CO. beg to offer their EARLY HANDSWORTH POTATO, a very superior kind for forcing in pots and frames, the very earliest for open ground, and a great acquisition for market gardening purposes. It is very dwarf, growing not more than from 4 to 8 inches high, price 3*s.* per peck. It is thus reported in the *Gardeners' Chronicle*, 1858, p. 457: "Out of 74 varieties grown for trial in the Horticultural Society's Gardens the Early Handsworth was by 10 days the earliest;" also, at p. 656, "Among Potatoes the Early Handsworth deserves particular notice. It comes in some 10 days earlier than the Ash-leaf Kidney, is excellent in quality and a very prolific, round, white kind; six plants produced 6 lbs. of Potatoes; its great recommendation, however, is its earliness," to which may be added testimonials from many of the leading Gardeners and Nurserymen in the country.

F., H., & Co. having made provision for a large supply this season they are enabled to offer it to the Trade. Price on application. The following Nurserymen and Seedsmen have already purchased :—

Mr. James Veitch, jun., Chelsea
" Denyer, London
" W. Skirving, Walton Nursery, Liverpool
" Charles Turner, Slough
" Watkinson, Manchester
" Henderson, Birkenhead
" John Soden, Middle Barton, Oxford
" Ivery, Peckham, London
" Wm. Foster, Stroud
" Darby, Cirencester
" Perkins, Leamington
" Matheson, Gloucester
" J. Sealey, Bristol
" Harris, Bristol
" Wm. Hood, Ashby-de-la-Zouch
" Wardle, Burton-on-Trent
" Thos. Warner, Leicester
Messrs. Hurst & M'Mullen, London
" E. G. Henderson & Son, St. John's Wood, London
" James Carter & Co., London
Messrs. Henderson & Co., Pine apple Place, London
" Butler & M'Culloch, London
" Hooper & Co., London
" Osborn & Sons, Fulham
" J. & C. Lee, Hammersmith
" H. Low & Co., Clapton
" James Veitch & Son, Exeter
" Garraway, Mayes & Co., Bristol
" F. & A. Dickson & Sons, Chester
" Finney & Co., Gateshead
" Thomas Davies & Co., Wavertree, Liverpool
" Peter Lawson & Son, Edinburgh
" Downie & Laird, Edinburgh
" Dickson, Hogg, & Robertson, Dublin
" Wood & Son, Maresfield, Uckfield
" J. & C. Wheeler & Son, Gloucester
" Maule & Son, Bristol

Handsworth Nursery, Sheffield.

NOTICE.

ROBERT WARD begs to inform his friends and the public that he has DISSOLVED PARTNERSHIP with Mr. BIRCHAM, and is now trading in conjunction with Mr. HENRY BOWLER, at Ipswich. All communications to be addressed Ipswich Rosery, Foxhall Road, Ipswich.

NOTICE.

JOHN BAYLEY begs to inform his Friends and the Public that the PARTNERSHIP heretofore subsisting between himself and E. S. DODWELL, as Florists, &c., at Bradshaw Gardens, was this day DISSOLVED, and that he has entered into Partnership with Mr. JOHN HOLLAND, who established and for many years successfully conducted these Gardens. The business will for the future be carried on under the Firm of HOLLAND & BAYLEY, to whom all orders, communications, &c., are to be addressed,

Bradshaw Gardens, Chadderton, near Manchester.—Nov. 5.

HOLLAND AND BAYLEY beg to announce to their Friends and the Public that their AUTUMN CATALOGUE is now ready and may be had on application.

Bradshaw Gardens, Chadderton, near Manchester.

CHOICE HOLLYHOCK SEED.

BOWLER AND WARD have given especial attention to the gathering from those varieties only which they know to be productive of good and satisfactory seedlings. Separate sorts in packets by name, 1*s.* each; mixed, 2*s.* 6*d.* to 5*s.*

The Trade supplied by the ounce, price on application.

Ipswich Rosery, Foxhall Road, Ipswich.

DESIGNS FOR FLOWER BEDS AND GARDENS —In consequence of numerous applications J. MARSHALL, 2, Goldsmith Street, Nottingham, has been induced to prepare another set of Designs. They comprise upwards of 80, diversified in style, and will be forwarded to any address on receipt of 24 postage stamps.

NURSERYMEN SUPPLIED WITH THE BEST TOBACCO PAPER at 4*l.* per cwt.; any quantity less than ½ cwt., 10*d.* per lb. Warranted genuine.—Address TOM BRYANT, Messrs. Jackson & Son, Tobacco Manufacturers, Lady Lane, Leeds.

GLAZIERS' DIAMONDS FOR CUTTING HORTICULTURAL and other GLASS, to be had of the Wholesale Manufacturer, JOHN EDWARDS, 20, Sharp's Alley, West Smithfield, London, E.C. Prices from 10*s.* to 27*s.* 6*d.*

GLASS FOR ORCHARD HOUSES & CONSERVATORIES.

JAMES PHILLIPS AND CO. beg to submit their prices of GLASS for the present month.

16-oz. SHEET GLASS, in boxes of 100 feet.—3rds. 4ths.

12 by 9, 13 by 9, 14 by 9	}	14*s.* 6*d.*	12*s.* 6*d.*
12 " 10, 13 " 10, 14 " 10, 15 by 10 ..			
13 " 11, 14 " 11, 15 " 11, 16 " 11 ..	}	16*s.* 6*d.*	14*s.* 0*d.*
14 " 12, 15 " 12, 16 " 12, 17 " 12 ..			
18 " 12, 19 " 12, 20 " 12 " ..			
16 " 13, 17 " 13, 18 " 13 " ..			
19 " 13, 20 " 13, 21 " 13 " ..			
16 " 14, 17 " 14, 18 " 14 " ..			
19 " 14, 20 " 14, 21 " 14 " ..			

Boxes included and not returnable.

GLASS for ORCHARD HOUSES, supplied by us to Mr. Rivers.

		16 oz.	21 oz.
20 in. by 12 in. / 20 in. by 13 in.	Common	14*s.* 0*d.* ..	£1 1*s.*
20 in. by 14 in. / 20 in. by 15 in.	Superior do. ..	16 6 ..	1 5
	English Glass ..	18 0 ..	1 9

Boxes included and not returnable.

SMALL SHEET SQUARES, in 100 feet boxes.—*s.* *d.*

6 by 4	6½ by 4½	7 by 5	7½ by 5½	11 0
8 " 6	8½ " 6½	9 " 7	9½ " 7½	
10 " 8	10½ " 8½ ..	..	..	12 6

Boxes 2*s.* each, returnable at full price.

JAMES PHILLIPS AND CO.,

180, Bishopsgate St. Without, London, E.C.

NO CONNECTION WITH ANY OTHER HOUSE IN TOWN.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

HETLEY AND CO. are supplying 16-oz. Sheet Glass of British Manufacture, packed in boxes, containing 100 square feet each, at the following REDUCED PRICES for cash. A reduction made on 1000 feet.

Sizes.—Inches.		Inches.		Per foot.	Per 10 feet.
Under 6	by 4	at	1½*d.*	is	£0 12 6
From 6 by 4	" 7	" 5	" 2*d.*	"	0 16 8
" 7 " 5	" 8	" 6	" 2½*d.*	"	0 18 9
" 8 " 6	" 10	" 8	" 2½*d.*	"	1 0 10
" 10 " 8	" 12	" 9	" 2⅔*d.*	"	1 2 11

Larger sizes, not exceeding 40 inches long.

16 oz. from 3*d.* to 3½*d.* per square foot, according to size.
21 oz. " 3½*d.* to 5*d.* " " "
26 oz. " 3½*d.* to 7½*d.* " " "

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS, for Horticultural purposes, at reduced prices, by the 100 square feet.

GLASS TILES AND SLATES made to any size or pattern, either in Sheet or Rough Plate Glass.

Propagating Glasses, Beehive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in Glass.

PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.

GLASS SHADES, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the excise duty, reduced one-half. List of Prices and Estimates forwarded on application to

JAMES HETLEY & Co., 35, Soho Square, London, W.

HORTICULTURAL GLASS—JUNE TARIFF.

THOMAS MILLINGTON'S reduced Tariff of GLASS, &c.

6 by 4, 7 by 5, 8 by 6, 9 by 7 } 16 oz. to the foot, 11*s.* 6*d.*
6½ by 4½, 7½ by 5½, 8½ by 6½, 9½ by 7½ } per 100 feet.

In 100 boxes,—4ths quality, 12*s.* 6*d.*; 3ds do., 14*s.* 4*d.*

10 by 8,	12 by 9,	12½ by 10½,	14½ by 10½, 13 by 11
10½ by 8½,	12½ by 9½,	13 by 10,	15 by 10, 13½ by 11½
11 by 9,	13 by 9,	13½ by 10½,	12 by 11, 14 by 11
11½ by 9½,	12 by 10,	14 by 10,	12½ by 11½

20 by 12 / 20 by 13 / 20 by 14 / 20 by 15 } per 100 feet 16 oz. 21 oz.
Common .. 16*s.* .. 24*s.*
Superior . 18*s.* .. 27*s.*

All Boxes included.

Orchard House sizes as supplied to Mr. Rivers.

Hartley's improved Rough Plate Glass from ⅛ to ⅜ in thickness.

Coloured Glass in great variety, at 9*d.* and 1*s.* per foot.

Paints, Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, Lamp Glasses, &c.

87, Bishopsgate Street Without, E.C., same side as Eastern Counties Railway.

WEEKS' ONE BOILER SYSTEM.

BY APPOINTMENT.

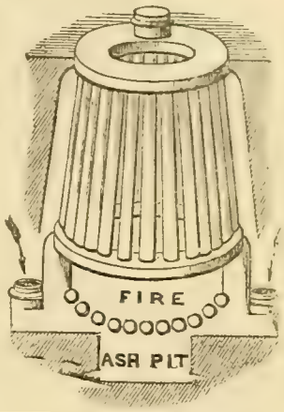
JOHN WEEKS & COMPANY,

KING'S ROAD, CHELSEA, S.W.,

CHALLENGE THE WORLD to produce a Boiler not made in imitation of their Upright Tubular Boiler that will produce anything like the same effect with the same quantity of fuel in a given time.

The following unequalled statistics fully justify the challenge:—

Mark the enormous length of Houses and Piping heated by One Boiler.	Length of Houses in feet	Total length of Piping.
Messrs. E. G. Henderson & Co., Wellington Nursery	1,200	5,500
Messrs. F. A. Smith, Dulwich	3,000	11,000
M. Van Houtte, Belgium	3,300	13,000
Our own Fruit Forcing Show Establishment ...	1,000	7,000



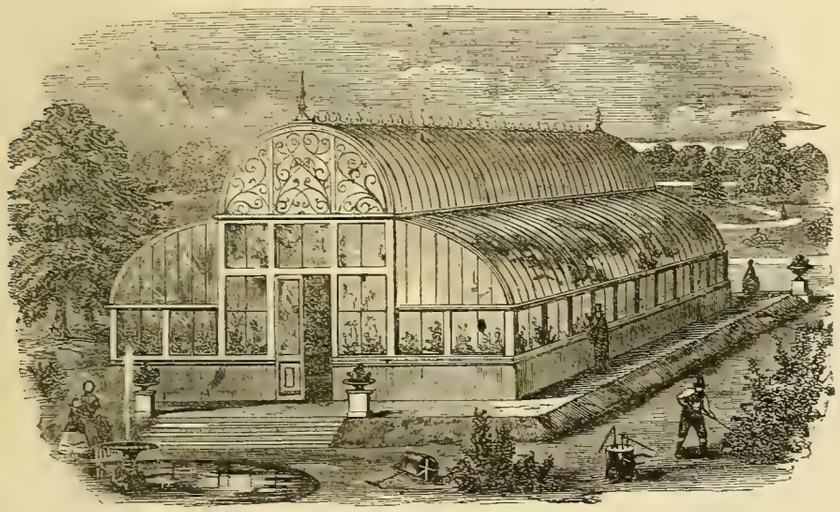
Also the Nurseries of Mr. Woodroffe, Harrow Road, N.W.; Messrs. Rollisson, Tooting, S.; Messrs. Wood & Ingram, Huntingdon; Messrs. Wood & Son, Maresfield; together with numerous Public Buildings and Establishments of the Nobility and Gentry far too numerous for insertion.

J. WEEKS & CO., Horticultural Builders and Hot-Water Apparatus Manufacturers, King's Road, Chelsea, S.W.

PLANS AND ESTIMATES FREE ON APPLICATION.

COTTAM & COMPY., Engineers, Founders, &c.,

2, WINSLEY STREET, LONDON, W.



A SHOW ROOM DEVOTED ENTIRELY TO ARTICLES OF HORTICULTURE.

THE NEW ILLUSTRATED CATALOGUE UPON APPLICATION.

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	,, Syringes	Garden Bordering
Hot-water Apparatus	Ornamental Wire Work	Hurdles	,, Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

Iron Hurdles, Strained Wire Fencing, Game Netting, &c.

Every description of Plain, Ornamental, Cast and Wrought Iron, and Wire Work.

EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

N.B. COTTAM AND COY. beg to make it known that there is no longer an entrance to their establishment from Oxford Street, but that they have made a second entrance from 2, Winsley Street, Oxford Street, W., by the side of the old entrance to their works, opposite the Pantheon.

ST. PANCRAS IRON WORKS,

OLD ST. PANCRAS ROAD, N.W.

IRON HURDLES, FENCING, AND GATES.

THE PROPRIETORS OF THE ST. PANCRAS IRON WORKS, OLD ST. PANCRAS ROAD, LONDON, WERE AWARDED THE

SILVER MEDAL of the Royal Agricultural Society for their IRON HURDLES & GATES,

which, by their peculiar construction, are more than twice as strong and durable as those in ordinary use.

Lists per post on application. Gates from 30*s.* to 500*l.*

The Hurdles can be seen in process of Manufacture at the Works.

GAME WIRE NETTING.

Professor Varnell's Enamelled and Wrought-iron Stable Fittings.

These Patent Mangers and Stable Fittings obtained the Commendation and the Silver Medal of the Royal Agricultural Society of England and the Royal Agricultural Society of Ireland, are adopted by the Royal Veterinary College, and Professor Spooner of that Institution states that they should be used by all who value the health and comfort of their horses. They can be had plain, galvanised, or enamelled.

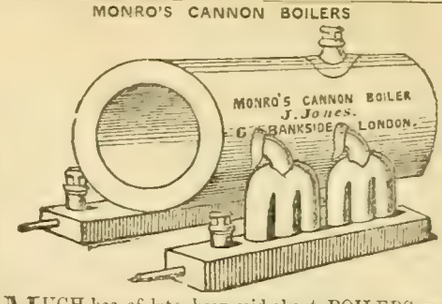
A Show Room is devoted entirely to every description of Stable Furniture, and full-sized stalls and loose boxes are erected for inspection at St. Pancras Iron Works.

ADDRESS—THE MA AGERS,

ST. PANCRAS IRON WORKS, OLD ST. PANCRAS ROAD, LONDON, N.W.,

OPPOSITE OLD ST. PANCRAS CHURCH.

MONRO'S CANNON BOILERS



MUCH has of late been said about BOILERS FOR HEATING BY HOT WATER, but these Boilers have now proved themselves to be the best at present invented. They are adapted for Heating every description of Building, and are made of various sizes. The price of the

24-inch Cast Iron is	£5 10*s.*	each.
24-inch Wrought Iron is	6 10	,,
36-inch Cast Iron is	8 0	,,
36-inch Wrought Iron is	8 10	,,

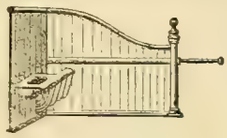
References to Gentlemen and Nurserymen where these Boilers are now at work. The Cannon Boilers are now kept in stock, and are to be had only of J. JONES, 6, Bankside, S.E. Also, every description of Saddle and Cylinder Boilers. Hot-water Pipes and Connections at prices lower than those of any other house in London. Estimates for Hot-water Apparatus erected complete in any part of the country, and an Illustrated Catalogue on application to J. JONES, 6, Bankside, Southwark, London, S.E.

IMPROVEMENTS IN HEATING, &c.

MUSGRAVE'S PATENT SLOW-COMBUSTION STOVE, for Warming Public Buildings, Hall, Shops, Conservatories, Factories, Drying Rooms, &c. Will burn in Churches from Saturday till Sunday evening, avoiding attention during the hours of worship. In Halls will burn day and night for weeks, with little care. Capable of warming a large apartment for 24 hours, at a cost of 3*d.*; and deserving of special attention, because of its safety, healthfulness, durability, and extreme simplicity. This Stove is the nearest approach to warming by hot water.



MUSGRAVE'S PATENT STABLE FITTINGS AND HARMLESS LOOSE BOXES have obtained the award of a large Council Medal from the R. I. A. Society for the following improvements:—1st, The Horse cannot injure himself or others in the same stable if he breaks loose in his stall. 2d, He cannot waste the hay. 3d, He can have cut or uncut hay at pleasure. 4th, He has clean water always before him. 5th, A pure and wholesome atmosphere is secured. 6th, The whole fittings are stronger than usual, without increase in price, and there is no risk of infection.



The Loose Box is really what its name denotes, and the most spirited Horse may be turned into it without danger.

MUSGRAVE'S PATENT IRON COW-HOUSE FITTINGS, as approved by the Board of Works, adopted in the Ulster Model Farm, and by many of the most eminent Stock Breeders in the Kingdom, are made wholly of iron, very durable, cleanly, and attractive in appearance. The fodder is always fresh, being freely exposed to the air, removed from the breath of the animal, and separated from the roots or damp food. The range of Troughs can be quickly filled with water for the use of the Cows, or for washing out in case of epidemic, and the cost is very moderate.



These inventions being distinguished for strength, simplicity, and practical usefulness will repay public inquiry.

MUSGRAVE BROTHERS are also Makers of Wire Fencing, Hurdles, Field and Entrance Gates, Corn Rick Stands, Conservatories, Hot-water Apparatus, Verandahs, Rural Bridges, &c.; and their works being favourably placed for cheap labour and materials, they can offer corresponding advantages in price.

MUSGRAVE'S Patent Field Gates have gained the 1st Prize from the R. I. A. Society for strength, durability, and cheapness.

For particulars address MUSGRAVE BROTHERS, Ann Street Iron Works, Belfast.

HOT-WATER PIPES at wholesale prices, with Elbows, Syphons, Tee Pipes, and every other connection. Wrought and cast iron Boilers, Saddle, Conical, Cylinder, and Elliptic, from 24*s.* each. Boilers and Iron Stands to use without brickwork. Valves from 12*s.* each. Coil Boxes, Furnace Doors, Furnace Bars, Supply Cisterns, and Builders' Castings of every description in stock, at Mr. LYNCH WHITE'S Iron Wharf, Upper Ground Street, Blackfriars Bridge, London, S.

TO THE NOBILITY, GENTRY, AND HORTICULTURISTS.

H. McCALLA (late principal Draughtsman to Messrs. Weeks & Co.), CIVIL ENGINEER and FARM ARCHITECT, begs to inform the above that the Horticultural Buildings being confined to so few, exorbitant prices are charged; that he prepares Working Drawings and Specifications, so that they can have their own constructed by any country carpenter, at 1*s.* 6*d.* per foot super, or upon their own estates at 1*s.* 4*d.* per foot. Plans also upon the same rule for erecting Hot Water Apparatus. Plans for all kinds of Farm Buildings, Homesteads, Labourers' Cottages, Laying out of Estates, Drainage. Plans &c., prepared for all the above Works and submitted to competition.—Office: 7 Upper Cheyne Row, King's Road, Chelsea, S.W.

HORTICULTURAL BUILDINGS AND HEATING BY HOT WATER.

JOHN R. PEILL, 17, New Park St., Southwark, S.E., Manufacturer of every description of Buildings for Horticultural purposes, and Inventor of the Improved Conical Boiler for heating the same, is prepared to undertake works of any magnitude, and refers among others to the celebrated range of FORCING HOUSES at HER MAJESTY'S GARDENS, FROGMORE, and at SIR ROBERT PEEL'S, DRAYTON MANOR, constructed under the superintendence of his Manager, Mr. JOHN JONES; and also to his BOILERS fixed at the CRYSTAL PALACE, the ROYAL BOTANIC GARDENS, REGENT'S PARK, and KEW, and at several hundreds of the Nobility's seats, Public Establishments, and Manufactories in London and the provinces. J. R. P. also manufactures every description of Iron Roofs, Iron Houses, and Iron Fencing, plain and ornamental. Strong Iron Hurdles for Sheep (6 ft. long, 3 ft. high, with 5 bars), 4*s.* 3*d.* each; ditto for cattle, 4*s.* 9*d.* each. Prices and other particulars forwarded on receipt of one postage stamp.

PINE APPLES, GRAPES, &c.

PINE PLANTS, Fruiting and Succession.
GRAPE VINES, from Eyes, for Fruiting in Pots or Planting.

JOHN WEEKS AND CO. can now supply any quantity of very fine strong healthy Pine Plants, either Fruiting or Succession; also remarkably fine strong Grape Vines from Eyes, all the best sorts.

JOHN WEEKS & Co.'s Horticultural Show Establishment is now entirely devoted to the Growing and Forcing of Fruits in great variety, thereby showing the most improved plans of construction, and the most superior system of Hot-water Apparatus.

JOHN WEEKS & Co., Horticultural Builders and Hot-water Apparatus Manufacturers; King's Road, Chelsea, London, S.W.

AMERICAN PLANTS, &c.

MESSRS. WATERER AND GODFREY'S CATALOGUE for the present season is now ready, and may be had on application. It describes fully all Rhododendrons worth growing, and contains a List of Azaleas, Hardy Heaths, and other American Plants, as well as a summary of the general stock of the most extensive Nurseries in England.

The Catalogue may also be had at Messrs. MAY's & Co., 1, Wellington Street, Strand, W.C.

Knap Hill Nursery, near Woking, Surrey.

HARDY RHODODENDRONS.

MESSRS. WATERER AND GODFREY invite attention to their Seedling RHODODENDRONS, which they are selling without names, and which they strongly recommend as being very superior in point of HABIT, FOLIAGE, COLOUR, and GENERAL HARDINESS. They are from 1½ to 2½ feet high, and as much through, and no plants can possibly be in finer health. They will be sold at very liberal prices, and purchasers can select from a stock of many thousands.

Knap Hill Nursery, near Woking, Surrey.

RHODODENDRONS.

JOHN WATERER'S CATALOGUE OF HARDY, SCARLET, and other choice RHODODENDRONS, as annually exhibited at the Royal Botanic Gardens, Regent's Park, is now published and will be forwarded on application. Faithful descriptions of all the esteemed varieties will be found detailed, with a list of the popular kinds of AZALEAS and other AMERICAN PLANTS, as well as a selection of CONIFEROUS TREES, with height and prices.

The American Nursery, Bagshot, Surrey, near Sunningdale Station, South-Western Railway.

GERANIUMS, HERBACEOUS PLANTS, ETC.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their new PRICED and DESCRIPTIVE CATALOGUE of the above, to which are added Supplemental Lists of Stove, Greenhouse, and Hardy Plants, Fruit Trees, &c. (which include all the best new plants of the season), is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

SELECT HARDY HERBACEOUS PLANTS at very reduced prices, and a further large discount for cash, according to the quantity of goods taken.

200 Plants in 200 fine sorts, including many new and scarce			£3 10 0
400 Plants in 200 fine sorts	ditto	ditto	6 0 0
100 Plants in 100 fine sorts	ditto	ditto	2 0 0
200 Plants in 100 fine sorts	ditto	ditto	3 10 0

Selections 4s., 6s., 9s., 12s., and 18s. per dozen.
50 fine sorts, selected for rock, 20s.; or per dozen, 5s. to 9s.
CATALOGUES sent on application to STEPHEN BROWN, Nursery and Seed Establishment, Sudbury, Suffolk.

WHOLESALE CATALOGUE.

GEORGE JACKMAN AND SONS' PRICED and DESCRIPTIVE CATALOGUE for 1859, & SPRING 1860; comprising Fruit Trees of all the leading kinds; New and Selected Roses; fine varieties of American Plants; Choice and Rare Conifers; Evergreen and Deciduous Trees and Shrubs; and a fine stock of transplanted Forest Trees, &c., can be had free on application.—Woking Nursery, Surrey.

THE SALWAY PEACH.

CHARLES TURNER can supply fine Trained Trees of this superior late variety, Dwarfs or Standards.

At the meeting of the Pomological Society, October 6, the Society reports as follows:—"Mr. TURNER, of Slough, exhibited Salway, very large and fine, very melting and delicious for a Peach at this season. This is another case in which the Society has to congratulate itself on its carefully pronounced opinion of the merits of a new fruit being fully sustained by after experience."—The Royal Nurseries, Slough.

GERANIUM "ZEPHYR."

JOHN SCOTT, FLORIST, Bathford, near Bath, can supply good plants of the above, and can with the greatest confidence recommend it as a first-rate Geranium for exhibition purposes, a first-rate habit and free bloomer, with very strong foot stalks, showing every bloom to the best advantage. Colour, lower petals, clear pink, crimson purple blotch in upper petals, surrounded with carmine, edged with rosy pink, with a very distinct white throat. It received a first-class Certificate at the Bristol and Clifton Horticultural Society.

Plants 10s. 6d. each, with the usual discount to the Trade.

SPERGULA PILIFERA.—The past summer has again proved the great superiority of the above Plant for Lawns, Terrace Gardens, Steep Banks, Verges, Edgings, &c., never requiring mowing or turning up in such situations during the warmest weather. Strong Plants, 1s., 2s., 3s., or 4s. per dozen. Having the Gardens at Forest Hill (in which Spergula was first introduced as a Lawn Plant) under our care, we are able to send full instructions for Culture with the Plant.

BRITISH FERNS, ALPINE AND ROCK PLANTS in great variety, 6s. to 9s. per dozen. [S.E.

J. A. SUMMERS, Howard Park Nursery, Ferry Hill, Sydenham,

GLADIOLUS BRENCHLEYENSIS.

YOUELL AND CO. are now sending out strong flowering Bulbs of this magnificent showy variety, the colour of which is bright vermilion scarlet. A box of the spikes of bloom was forwarded to the Editor of this Paper in August last, whose opinion of it will be found in the publication of August 20, page 694, as follows:—

"This must certainly be regarded as one of the most showy and beautiful of the class to which it belongs."

Price 5s. per dozen; 40s. per 100. Trade price on application.
Royal Nursery, Great Yarmouth, Norfolk.

BEGONIA MARSHALLI.

WILLIAM COLE will send out the above beautiful variety, raised by Mr. Franklin, Gardener to J. G. Marshall, Esq., on and after the 26th inst. It has been exhibited at the Regent's Park, Kirkstall, Halifax, Shipley, &c., and Certificates have been awarded to it. It is universally admitted to be by far the handsomest of all the Begonias, and will be invaluable for Exhibition purposes. Drawings by Mr. Andrews free by post for eight stamps.

For further particulars see *Gardeners' Chronicle* of July 16; also Sept. 10; also "Cottage Gardener" of July 19 and Sept. 13; and "Book of Beautiful Leaves," by E. J. Lowe, Esq.

Strong plants 15s. each, with the usual discount to the Trade.
Post-office Orders payable at Manchester.
Nursery, Withington, near Manchester.—Nov. 5.

NEW ANNUALS.

JOHN GEORGE WAITE, SEED MERCHANT, 181, High Holborn, London, W.C., has great pleasure in offering SEEDS of the following new hardy Annuals:—

CLARKIA PULCHERRIMA,
SCHIZANTHUS GRANDIFLORUS OCULATUS,
HELIOPHILA CŒRULEA STRICTA.

Coloured Drawings and prices of which (to the Trade only) can be had on application.

Seed Establishment, 181, High Holborn, London, W.C.

NEW PINE APPLE—HURST HOUSE SEEDLING.

H. WILLIAMS is now prepared to send out this fine and useful variety of PINE APPLE; fruit large and conical, and of good flavour.

H. W. can with confidence recommend this variety to all Pine growers. Numerous testimonials could be given, but H. W. thinks it sufficient to add Mr. G. Fleming's, of Trentham: "An acquisition." Price on application.

Fortes Green, Muswell Hill, Finchley, N.

SPLENDID NEW VARIEGATED FERN, PTERIS ARGYRÆA (MOORE).

JAMES VEITCH AND SON have peculiar satisfaction in calling attention to the above-named most striking novelty, which is undoubtedly one of the greatest acquisitions of recent introduction to our now justly popular collections of Ferns.

It is of *noble aspect* and free growth, perfectly distinct and novel in its character, the pinnæ on every frond as well as their branches having a broad central stripe of glistening silver, which, in contrast with the bright green, produces a most charming effect. It may justly be called

THE VARIEGATED FERN.

It was exhibited at the Royal Botanic Garden on July 6, and before the Horticultural Society's newly-appointed Floral Committee on July 7, and in both cases received the highest Prizes given to such novelties, and was universally admired.

Established Plants, 31s. 6d. each. The usual allowance to the Trade.—Royal Exotic Nurseries, Exeter and Chelsea.

NEW GARDEN SEEDS, GROWTH OF 1859.

ROYAL BERKSHIRE SEED ESTABLISHMENT.

SUTTON AND SONS are now prepared to execute orders for all kinds of GARDEN SEEDS, and can warrant them genuine.

Royal Berkshire Seed Establishment, Reading.—Nov. 5.

THE LARGEST AND FINEST STOCK OF TEA-SCENTED ROSES IN ENGLAND.

50,000 PLANTS IN POTS AND IN THE OPEN GROUND.

WM. WOOD AND SON invite attention to their very extensive and superior stock of the above, which they feel certain are unsurpassed in the Trade.

Dwarfs, from 48-pots	per dozen	9s. to 12s.
,, in 6-inch or 24-pots	,,	24 to 30
Standards, very fine	,,	18 to 24

Specimen Plants, in 8-inch pots, for exhibition, each, 3s. 6d. to 5s.
DESCRIPTIVE CATALOGUES on application.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

ROSES AT REDUCED PRICES.

WM. WOOD AND SON refer with pleasure to their enormous stock of many thousands of STANDARD and DWARF ROSES, which they will be happy to supply at the following remarkably low prices, viz.:—

	Per doz.—s.	s.
Selected tall Standards, with three to six best varieties of Perpetual and Climbing Roses in each stem		24 to 30
Standards and Half Standards		12 to 18
Dwarfs and Dwarf Standards		9 to 12
Dwarfs on own roots		9 to 12
,, ,, without names		3
Climbing Dwarfs,		3
,, with namos		6 to 9

DWARF ROSES, from 48-sized pots, or from open ground adapted for potting.
BOURBON, CHINA, TEA-SCENTED, NOISETTE & HYBRID PERPETUAL, 9s. to 12s. per dozen.
CATALOGUES gratis on application. Extra plants presented with each order to compensate for carriage.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

ROSE NURSERIES, HERTFORD.

E. P. FRANCIS invites attention to his splendid stock of DWARF ROSES budded on the Manetti Stock, of which he possesses the following quantities:—

HYBRID PERPETUALS.	HYBRID PERPETUALS.
250 Adelaide Fontaine	100 Pius the 9th
200 Alexandrine Bachmeteff	1000 Prince Leon
500 Auguste Mie	200 Paul Dupuy
100 Arthur de Sansal	100 Reine des Fleurs
100 Baron Hallez	500 Souvenir de la Reine d'Angleterre
150 Baron Heecheren	500 Souvenir de Leveson Gower
150 Baron Larray	200 Triomphe de l'Exposition
200 Caroline de Sansal	500 ,, de Paris
50 Charles Bossiere	500 William Griffiths
500 Colonel Rougemont	100 Amandine
500 Comte de Nanteuil	100 Augustine Mouchelet
150 Comte Odart	500 Baron Prévost
50 Doctor Henon	50 Comet
250 Duchess of Norfolk	100 Duchess of Sutherland
500 ,, of Orleans	100 Jacques Lafitte
1500 Géant des Batailles	500 La Reine
200 General Castellane	100 Louis Buonaparte
150 ,, Cavaignac	100 Madame Laffay
1000 ,, Jacqueminot	100 Robin Hood
100 ,, Pelissier	50 Sydonie
100 ,, Simpson	50 William Jesse
200 Gloire de France	
100 Imperatrice Française	TEA-SCENTED.
1000 Jules Margottin	500 Comte à Paris
500 Louis Peyronny	500 Devoniensis
100 Lion des Combats	100 Elise Sauvage
50 La Ville de St. Denis	1000 Gloire de Dijon
500 Lord Raglan	100 Goubault
100 Madame Pepin	100 Jaune
250 ,, Domage	150 Madame Willermorz
150 ,, Hector Jacquin	100 Niphetos
100 ,, Knorr	100 Pauline Plantier
500 ,, Masson	100 Sombreuil
150 ,, Cambacères	150 Souvenir d'un Ami
500 ,, Vidot	100 Vicomtesse de Cazes
300 Mathurin Regnier	
200 Mrs. Rivers	

The above are all fine grown plants, strong and vigorous; they are all budded close to the ground, within 3 and 4 inches of the root, and are admirably adapted either for clumps or potting. Smaller quantities are grown of all the other varieties in their different classes.

HYACINTHS FOR BEDS AND BORDERS.

DOUBLE RED, fine Dutch Roots, 3s. 6d. per dozen.		
DOUBLE BLUE	,,	3 6 ,,
DOUBLE WHITE	,,	3 6 ,,
ALL COLOURS, mixed	,,	3 6 ,,

All other BULBS cheap, as see Priced List.

SUTTON AND SONS,
Royal Berkshire Seed Establishment, Reading.

HYACINTHS, TULIPS, CROCUS, ETC

JAMES CARTER AND CO. have j received a fresh supply of BULBS fr Holland in first-rate condition:—

HYACINTHS, for pots or glasses, 6s., 8s., 9s., 10s. 0d. per dozen.
,, for open borders, single and dou mixed, red, various shades, per dozen.
,, Blue, do., 3s. p. doz. | ,, White do., 3s. p. d

Crimson ..	per dozen 4s. 0d.	Purple ..	per dozen 4s. (
Blue ..	,, 4 0	Pink ..	,, 4 (
		White ..	,, 4 (

POLYANTHUS NARCISSUS for pots, 8 fine varieties, one of each for .. .. 2s. 9d.

CROCUS.

	Per 1000.	Per 100.		Per 1000.	Per 1(
Blue ..	.. 12s.	.. 1s. 4d.	White ..	.. 18s.	.. 2s. (
Cloth of Gold..	15s.	.. 1 8	Large Yellow..	18s.	.. 2 0
Purple ..	.. 12s.	.. 1 4	Yellow ..	.. 12s.	.. 1 4
Striped..	.. 15s.	.. 1 8			

TULIPS for open borders and pots.

	Per 100—s. d.		Per 100—s.
Very fine mixed single ..	6 0	Duc Van Thol ..	.. 3
Very fine mixed double..	6 0		
Tournesol, scarlet and yellow	.. 7 6	Spanish Iris, finest named	4
Rex rubrorum, scarlet ..	7 6	Ranunculus, Scarlet Turban ..	.. 2

JAMES CARTER & Co., 238, High Holborn, London, W.C.

DUTCH FLOWER ROOTS.

PETER LAWSON AND SON THE QUEEN'S SEEDSMEN, &c., respectfully announce the arrival of a fir Stock of DUTCH FLOWER ROOTS, and they are now prepared to execute orde for the same.

27, Great George Street, Westminster, S.W.

NEW SEEDS.

TRIFOLIUM INCARNATUM
ITALIAN RYE-GRASS
NATURAL GRASS SEEDS FOR PER MANENT PASTURE LAWNS, &c.

PETER LAWSON AND SON, th QUEEN'S SEEDSMEN, &c., are prepare to supply all kinds of SEEDS for AUTUM SOWING of the best quality.

27, Great George Street, Westminster, S.W.

AZALEA INDICA.

F. AND A. SMITH beg to offer the above well se with flower buds, dwarf, bushy, and thoroughly ripene off. Having been grown in this country they are most suitabl for packing, and are strongly recommended to country Amateurs and the Trade in general. An inspection invited Prices on application.—Dulwich, Surrey, S.

CHOICE BULBS

50 varieties choice imported Hyacinths, 30s., or per dozen, named, 6s., 9s., and 12s. The roots of the above have this season been received in unusual fine and sound condition.

EARLY GLADIOLI.

The varieties of this class are very free flowering, and the best sorts to grow in pots for forcing, for which purpose they should be planted early, and well rooted previous to being placed in heat. To give a pleasing effect they should be from three to six of a sort in each pot. They also make very handsome clumps in beds, and are very attractive flowers in bouquets.

12 splendid early dwarf varieties	6s. 0d.
12 splendid early dwarf varieties, three of each ..	16 0
12 splendid early dwarf varieties, new selection ..	15 0
Splendid early, in best mixture, 3s. 6d. p. doz.; p. 100	25 0
Splendid early, second mixture, 2s. 6d. p. doz.; p. 100	15 0
Loddigesii, deep pink, crimson and white stripe, p. doz.	5 0
Spectabilis, shaded rose, very dwarf and fine. ..	4 0
Prince Albert, fine bright pink, striped white ..	6 0
Brownii, fine lively pink, with white feather, largest of the early varieties .. .. Each	2 6
British Queen, a fine pure white and very early ..	1 6

GLADIOLUS RAMOSUS HYBRIDS.

12 superb varieties	6 0
12 superb varieties (three roots of each..	16 0
Formosissima, rich crimson, per dozen	3 6
Gen. Von Welden, a splendid large crimson, with white mark	6 0
Queen Victoria, fine rosy scarlet..	3 0
Ramosus, fine light rose crimson, flamed	3 0

GLADIOLUS GANDAVENSIS HYBRIDS.

12 superb varieties, as Admiral Dundas, Brenchleyensis, Monsieur Blouett, &c.	6 0
12 superb varieties, newest selection	15 0

GLADIOLUS (VARIOUS).

Floribundus, per doz.	2s. 6d.	Gandavensis, per doz.	2 6
Psittacinus ,,	1 6	Colvillii ,,	2 0
Colvillii roseum	per dozen 7s. 0d.		

50 splendid early and late varieties of Gladiolus, for succession 40 0
50 do. do. newest selection .. 55 0

40 vars. beautiful English Iris, 14s.; per doz., 3s. 6d. to	5 0
40 varieties beautiful German Iris	20 0
20 varieties ditto	10 6
6 vars. Iris pumila, very dwarf, early, and showy ..	4 6
6 varieties ditto, three of each	12 6

(The above beautiful in clumps in front of borders.)
Iris reticulata, very striking and most beautiful, very dwarf and early for beds .. .. . Each 5 0
12 superb varieties Chinese Pæonies 15 0

Superior collections of EARLY AND DOUBLE TULIPS, CROCUS, RANUNCULUS, ANEMONES, LILIES, IXIAS, SPARAXIS, and various CAPE AND DUTCH ROOTS.

The CATALOGUE of Bulbs, Herbaceous Plants, Conifera, Roses, Fruits, and general Nursery Stock sent free on application.

☞ The valuable Nursery and Plant Stock this season offered at a large reduction for cash on the usual prices, in order to the discontinuance of that department of the business.

CARRIAGE FREE (for goods 20s. and upwards) to all the London Stations, and all Stations on the Colchester Line between London and Norwich.

All orders and letters addressed to STEPHEN BROWN will receive prompt attention.

Seed and Nursery Establishment, Sudbury, Suffolk.

JOHN KERNAN, HORTICULTURAL & AGRICULTURAL SEEDSMAN, 4, Great Russell Street, Covent Garden, has now in stock a splendid assortment of Hyacinths and other Dutch flowering Bulbs, imported direct from the best growers, and selected as early as possible, for J. K. has invariably found that those obtained by late or what is termed second importations are absolutely worthless. For present sowing, Winter Tares, Vetches, and true Chevalier Barley, Rye, the choicest and best descriptions of White and Red Wheat, Russia Mats, Cubic Lasts, Garden Netting, Knives, and other implements. Patent Disinfecting Compound to exterminate Red Spider, Mildew, &c. Guano, Potatoes for early forcing; Olive Radish, Horn Carrot, Asparagus, and Seakale plants. Mushroom Spawn, Garlic and Shallots, &c. Apple, Pear, Grape, and Quince Pips. Seeds of Currants, Gooseberry, Strawberry, and Raspberry, with most other fruits suitable for the Colonies. Rivers's List of Roses and Fruits. Catalogue of Bulbs and Seeds on application as above N.E. Assorted Collections of Roots, as advertised, from 10s. to 5l., may be had on application.

John Waterer's "List of American Plants" may be also had.

CINERARIA, HERBACEOUS CALCEOLARIA, AND HALF SHRUBBY DITTO SEED.—These have been saved from Turner's most beautiful varieties; in 1s. and 2s. 6d. packets. Primula and Hollyhock, from the newest and finest varieties, 1s. per packet. Agents for F. & A. Smith's splendid Cineraria, in 1s. 6d., 2s. 6d., and 5s. packets; also agents for Dobson & Son's splendid Calceolaria, in 1s. 6d., 2s. 6d., 3s. 6d., & 5s. packets.—Catalogues of the newest Flower Seeds, and newest Dutch and Cape Bulbs, sent post-paid.—SUTTLEY & MCCULLOCH, Seedsmen, Covent Garden Market, W.C.

SUPERB DOUBLE HOLLYHOCKS.

BOWLER AND WARD have great pleasure in announcing that they have a large stock of the choicest varieties in cultivation. The plants are well established and in the finest possible health. Orders to any extent can now be executed. For description, &c., see printed Catalogue, which will be forwarded on application.

Ipswich Rosery, Foxhall Road, Ipswich.

NEW CHRYSANTHEMUMS.

JOHN SALTER'S unrivalled Collection of CHRYSANTHEMUMS is now in bloom; also several splendid Seedlings of his own and other growers which will be sent out next spring. The flowers in the WINTER GARDEN having been protected from the late severe frosts present a magnificent display of all the finest varieties in cultivation. The Gardens are open every day except Sunday.—Versailles Nursery, William Street, near Hammersmith Turnpike, W.

CHRYSANTHEMUMS.

W. HOLMES begs to offer strong plants of every known good variety of CHRYSANTHEMUM at 5s. per dozen: including Golden Queen of England, Aurora, Cassandra, Sir Sidney Quintius, Excelsior, Fabius, Fortune's Two Coloured Incurved, Golconda, Glory, Julie Lagravère, Madam Clos, Mount Vesuvius, Orange Brilliant, Prince Albert, Remus, Sulphureum superbum, Una, Andromeda, Ariel, Astrea, Baron d'Adelsward, Esmeralda, Maid of Saragossa, Miss Julia, Miss Talfourd, Mrs. Dix, Shirley Hibberd, Rose Trevenna, &c.

Frampton Park Nursery, Hackney, N.E.

GERANIUM FLORIBUNDUM (SMITH).

F. AND A. SMITH beg to offer the above-named as an acquisition, colour bright rose, upper petals pink with crimson spot, dwarf free habit, a continuous and abundant bloomer; without exception the best first early variety ever offered: obtained two Certificates of merit at the Botanical Society's Meetings in March and April 1859. Strong plants, 7s. 6d. each. The usual allowance to the Trade.—Dulwich, Surrey, S.

MONRO'S PROLIFIC CUCUMBER.—Seeds of the above may now be had in packets 2s. 6d. each. First-prize Certificates have been awarded it, both by the Horticultural Society and Crystal Palace Company, at the grand exhibitions of this season, where as many as 36 fruit were shown on one branch 2 feet long, six fruit averaging about 20 inches long. Special notice was also taken of it in the leading article of the *Gardeners' Chronicle* of May 14. Upwards of 3000 fruit have been cut this season from April 4 to July 4 out of a house 40 feet long. The usual allowance to the Trade.

G. MONRO, Colner Street, St. Albans, Herts.

THE BEST FRAME CUCUMBER.

SUTTON'S BERKSHIRE CHAMPION, 1s. per packet.

CARTER'S CHAMPION, 1s. per packet.

IMPROVED SION HOUSE, 1s. per packet.

Free by post from SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

SUTTON'S CHAMPION SWEDE AND IMPROVED MANGEL WURZELS.—THREE MORE SILVER CUPS and several other prizes have already been awarded THIS SEASON to SUTTON'S CHAMPION SWEDE and Improved Mangel Wurzels.

Messrs. SUTTON & SONS will feel obliged by any additional information as to Prizes awarded to Roots raised from their seeds. New Seeds are now ready for delivery. Champion Swede, 1s. per lb., 4s. per bushel. Mangel Wurzel, 9d. per lb., or cheaper by the cwt.

The ROYAL BERKS ROOT SHOW will be held at Reading in November, at which numerous Prizes will be awarded as usual to pulled roots of Swedes, Turnips, Mangels, Carrots, Kohl Rabi, &c., from any part of the kingdom.

Royal Berkshire Seed Establishment, Reading.

CRIMSON PERFECTION RHUBARB.

ROBERT SALT begs to announce that having on hand a good quantity of the above excellent variety of RHUBARB, he is prepared to offer them at the following low prices:—

One-year old Roots..	8s. 0d. per doz.
Two-year do.	15 0 do.
Three-year do.	20 0 do.

With usual discount to the Trade.

R. S. has much pleasure in recommending the above, it being very early and productive, and the interior of the stalks a crimson colour. Orders forwarded to ROBERT SALT, Longton, Staffordshire, or to the undermentioned, will receive prompt attention:—Messrs. HURST & M'MULLEN, Seedsmen, 6, Leadenhall Street, London, E.C.; BURGESS & KENT, Nurserymen, Penkhull, Staffordshire; Mr. CHAS. TURNER, Royal Nursery, Slough; FRANCIS & ARTHUR DICKSON, Nurserymen, 106, Eastgate Street, Chester.

A remittance from unknown correspondents.—Longton, Nov. 5.

SALE OF NEW CHINESE AND JAPANESE PLANTS.—In consequence of the termination of the Agreement between Mr. FORTUNE and Mr. GLENDINNING, they have decided upon offering the entire Stock of two new, hardy, Ornamental Plants for sale. The one a RHODODENDRON from the North of China. This is a new and undescribed species, with fine large foliage, of which there are about 500 vigorous young plants, in fine health, bushy, and fit for immediate sale. The other a new TAXUS from Japan (apparently Taxus cuspidata) as described by Siebold, but never before introduced into European gardens, and is a very interesting species of Yew. There are about 66 healthy young plants, including the original imported plant from Japan. Private offers may be made for the entire stock of either or both of the above, and may be inspected at Mr. R. GLENDINNING'S, Chiswick Nursery, London, W.

SCOTTISH ARBORICULTURAL SOCIETY.—The Sixth Annual Meeting of this Society was held in the Rooms, 6, York Place, Edinburgh, on Wednesday, October 5, Mr ROBERT COWAN, Arniston, in the Chair. It was resolved to offer Prizes for Essays on the following subjects for next year:—

I. Introduction and Cultivation of the newer Coniferæ and other Forest Trees, with special reference to the Climate of Great Britain and Ireland (Silver Medal).

II. Preparation of Waste Land for Planting (Silver Medal).

III. On the successful raising of two Crops of Scotch Fir in succession, on Moorland; the crop reported on to be not less than 12 years old (Silver Medal).

IV. The best season for Felling Timber of various kinds, with a view to future durability (Silver Medal).

V. The best method of rearing and maintaining Live Fences, with an account of the plants best fitted for filling up gaps in old hedges (Silver Medal).

The following Office Bearers were elected for the year:—

President—Sir JOHN HALL, Bart., Dunglass.

Vice-Presidents.—

JOHN J. CHALMERS, Esq., of Aldbar, Brechin.
The Rt. Hon the EARL of AIRLIE, Cortachy Castle, Forfarshire.
Mr. JAMES BROWN, Grantown, Strathspey.
Mr. W THOMSON, Chopwell, Ebchester.
Mr. ROBERT PHILIP, Aldbar, Brechin.

Secretary—Mr. R. M. STARK, Edgehill Nursery, Edinburgh.
Treasurer—Mr. JOHN ANDERSON, Nurseries, Perth.
Auditor—Mr. THOMAS METHVEN, Stanwell Nursery, Edinburgh.

The next ANNUAL MEETING will take place on the first WEDNESDAY of October, 1860.

THE STOKE NEWINGTON ORIGINAL CHRYSANTHEMUM SOCIETY (instituted 1846) will hold its 13th ANNUAL EXHIBITION at the Manor Rooms, Church Street, Stoke Newington, N., on MONDAY and TUESDAY November 7 and 8, when the Flowers will be in perfection. PRIZES, including SIX SILVER CUPS, will be awarded.

President—John Edwards, Esq., F.H.S.
Treasurer—Mr. Wm. Hurrell. | *Secretary*—Mr. Joseph Paxton.

Committee.

Mr. S. Allen.	Mr. Laidlaw.	Mr. Nicholls.
Mr. Argent.	Mr. Morgan.	Mr. Oubridge.
Mr. Bird, F.H.S.	Mr. D. Monk.	Mr. Putnum.
Mr. Broome, F.H.S.	Mr. Mardon.	Mr. Peachey.
Mr. Collins.	Mr. Merry.	Mr. Scruby.
Mr. Hutt.	Mr. McElroy.	Mr. Ward.

Doors open at 12 o'Clock on the first day, and 9 o'Clock on the second day. Admission—First Day, 1s.; Second Day, 6d. Schools admitted Free by applying to the Secretary, 12, Devonshire Place, Green Lanes, Stoke Newington, N. Omnibuses to and from the Flower Pot, Bishopsgate, every five minutes.

The Gardeners' Chronicle.

SATURDAY, NOVEMBER 5, 1859.

IT seems to be a very general opinion that the late frost, the first frost of autumn, has occurred at an unusually early period. In all directions you hear the remark—"I never knew a frost so early as this." But the records of weather tell a different tale, and the first frost, instead of being unusually early, was in reality much later than is sometimes the case. The following Table prepared by Mr. R. THOMPSON, from the Chiswick registers, shows that during the last 20 years there have been four hard frosts even in September, on one occasion as early as the 7th; that in 14 years out of the 20 considerable frost visited us between the 20th and 30th of October; and that in 10 years noteworthy frosts were registered earlier in October than the 20th. Frosts in the end or middle of October are therefore the rule, at least in the valley of the Thames, and not the exception.

First Frosts of Autumn in which the Thermometer fell below 30°.

Year.	Date.	Minimum Temperature.	Duration.	Year.	Date.	Minimum Temperature.	Duration.
		Deg.	Days			Deg.	Days
1840	Sept. 17	29	1	1851	Oct. 16	28	1
	Oct. 20	29	1	1852	Oct. 8	28	1
	25	28	1	1853	Oct. 2	27	2
1841	Oct. 21	26	1		3	28	
1842	Oct. 4	29	1	1854	Oct. 11	28	2
	19	25	3		12	29	
	20	22			26	24	1
	21	20			28	26	1
1843	Oct. 14	29	3	1855	Sept. 7	28	1
	15	25			25	27	2
	16	27			26	26	
	18	24	2		Oct. 27	26	1
	19	22		1856	Sept. 20	29	1
1844	Oct. 7	29	1		Oct. 25	26	4
1845	Oct. 23	27	3		26	25	
	24	29			27	25	
	25	29			28	26	
1846	Oct. 23	29	1	1857	Oct. 30	27	1
1847	Sept. 27	28	1	1858	Oct. 8	26	1
	Oct. 25	26	1		11	26	1
1848	Oct. 21	29	1		29	26	3
1849	Oct. 8	29	2		30	27	
	9	28			31	24	
1850	Oct. 5	28	1	1859	Oct. 21	23	8
	12	27	1		22	21	
	15	24	1		23	17	
	26	23	1		24,26	23	
	29	24	1		27,28	29	
					29	28	

There is however this peculiarity in the present season, that the frost has lasted longer than at any time during 20 years, and the thermometer has fallen lower. The duration of these early frosts seldom extends beyond three days; usually it is limited to one. This year we had eight days of it. The lowest temperature in the 20 years was 29°, and that only in 1842; usually the thermometer marks from 25° to 29; on the late occasion it fell to 17°, a very material difference. The effects we see in the woeful condition of our gardens. Autumn frosts seldom produce much mischief; wood is ripe; herbaceous vegetation is torpid. But now Coleworts, Cabbages, Celery, even the hardy Kale itself appears as if parboiled; and wherever a second growth was made by shrubs and trees the young wood is destroyed. This is most especially the case with autumn-planted evergreens, such as Rhododendrons and Laurels, and the autumnal Roses. Even certain hardy trees with ripe wood will be found hereafter to have lost the ends of their shoots. There are now before us shoots of the Oriental Plane and the Indian Pavia, which, although green and fair to the eye, are dead to the heart. Gardeners must therefore be prepared to see hereafter many casualties among plants that seem to have passed through the late ordeal uninjured.

If we inquire why that is, the meteorological registers supply the answer. Never within our recollection has the earth been heated as it was in last October. At the end of August the thermometer at 2 feet below the ground stood at 62°; at the end of September it was still 59½°, and on the 20th October, the day before frost set in, it was no lower than 58°, instead of 52¾°, the usual average. Now during the months of August, September, and October rain fell in unusual quantity for those months:—

1859.—*Rainfall at Chiswick.*

	August.	September.	October.
	Inches.	Inches.	Inches.
1st week ...	0.39	0.48	0.18
2d „ ...	0.86	0.50	0.51
3d „ ...	0.05	0.87	0.38
4th „ ...	1.19	2.20	1.28
Amount ...	2.49	4.05	2.35

And, finally, coincident with the setting in of frost was a deluge. Here then we had temperature of air 17° and earth 58° soaked with water, which was therefore warm. Leaves and young active shoots were thus gorged with moisture, and the inevitable consequence was the destruction that surrounds us.

A FEW weeks ago (see August 15 and 22) some remarks were made in these columns upon the extreme importance of paying more attention to the condition of ROOTS than many gardeners imagine. And we availed ourselves of a recent paper of the late lamented Prof. HENFREY, and some new French observations, to explain why so much more care of roots was demanded than is generally suspected. Two circumstances more especially were referred to in connection with the subject; one, the continual formation of new matter beneath or within the point of a root; the other, the universal production of very delicate absorbing hairs upon its surface. It is true that neither of these facts was wholly new to vegetable anatomists. It had been long known that the aerial roots of Orchids are clothed with minute hairs for absorption from the atmosphere. But this was far from being suspected to be a general condition of the root. SCHLEIDEN, indeed, expressly states (*Principles of Botany*, p. 218) that in such plants it is "a peculiar investment." And so with respect to the cap at the end of the root, which Nature provides to guard the tender matter there from injury, and the removal of which must necessarily be productive of mischief; that also had been long since ascertained to occur in certain cases, but was not regarded as an universal fact. It had been asserted indeed by the writer just quoted that in forming a root the point is pushed forward, and the youngest most delicate cells are *always* situated immediately beneath it; but this was a mere assertion, unsupported by details, and considering this author's trenchant style, not accepted as a rule of organisation, especially since he at the same time warned his readers not to confound the structure in question with the root cups of certain plants, which, however, are certainly the same. We therefore gladly availed ourselves of HENFREY'S carefully written and elaborate paper on roots in the Journal of the Royal Agricultural Society, to draw attention to these important points. For they have the most direct bearing upon a very large part of the practical operations of husbandry.

We revert to the subject now for the sake of

doing justice to one of the most able observers of the age, who nine years ago, in a work we had overlooked, pointed out the facts of which we are speaking. In his Botanical Text Book Dr. Asa Gray, the learned Professor of Natural History in Harvard University, speaks of the root in the following words—

"The primary root is the descending axis, or that portion of the trunk which, avoiding the light, grows downwards, fixing the plant to the soil, and absorbing nourishment from it. The examination of any ordinary embryo during germination, such as that of the Sugar Maple, will give a good idea of the formation and entire peculiarities of the root. Its radicle or pre-existing axis first of all grows in such a way as to elongate throughout its whole extent (thus showing that it is not itself *root*, but the first joint of stem); this lengthening, while it thrusts the root-end downwards a little deeper into the soil, at the same time raises the cotyledons to the surface, and at length elevates them above it, where they expand in the light and air, and begin to perform the office of leaves. Contemporaneous with this elongation of the radicle, a new and different growth takes place from its lower extremity in a downward direction, which forms the root. The root is therefore a new formation from the root-end of the radicle. It begins by the production of a quantity of new cells (by division) at the extremity of the radicle; not on its surface, however, but beneath its thin epidermis and the superficial cells. The multiplication of cells at this point proceeds from below onwards; those behind quickly expanding to their full size, and then remaining unaltered, while those next the apex continue to multiply by division. In this way the root grows onward by continual additions of new material to its advancing extremity; lengthening from the lower end entirely or chiefly, so that this part of the growing root always consists of the most newly formed and vitally active tissue.

"The new cells, however, do not occupy the very point, as is commonly, but incorrectly, stated. This is capped, as it were, by an obtusely conical mass of older cells, consisting of the superficial tissue of the end of the radicle, pushed forward by the cell-multiplication that commenced behind it, as already mentioned. As the original cells of this apex wear away or perish, they are replaced by the layer beneath: and so the advancing point of the root consists, as inspection plainly shows, of older and denser tissue than that behind it. The point of every branch of the root is capped in the same way. It follows that the so-called *spongioles* or *spongelets* of the roots have no existence. Not only are there no such special organs as are commonly spoken of, but absorption evidently does not take place, to any considerable extent, through the older tissue of the point itself.

"As to absorption by roots, the inspection of the root of a germinating plantlet, or of any growing rootlet, even under a low magnifying power, shows that they must imbibe the moisture that bathes them by endosmosis, through the whole recently formed surface, and especially by the hair-like prolongations of the exterior layer of cells, or *fibrils*, as they may be termed, which are copiously borne by all young roots. These capillary tubes, of great tenuity and with extremely delicate walls, immensely increase the surface which the rootlet exposes, and play a more important part in absorption than is generally supposed; for they appear to have attracted little attention. These fibrils perish when the growing season is over, or when the root gets a little older; at the same time, the external layer of cells that bears them, at first undistinguishable from the parenchyma beneath, except perhaps in the size of the cells, hardens and thickens into a sort of epidermis, or firmer skin, so as to arrest or greatly restrain the imbibition. This epidermis of the root consists of less compressed cells than in parts exposed to the light, and is destitute of stomates or breathing-pores.

"The growth of the root and its branches keeps pace with the development of the stem. As the latter shoots upward and expands its leaves, from which water is copiously exhaled during vigorous vegetation, the former grow onward and continually renew the tender, hygrometric tissue through which the absorption, required to restore what is lost by evaporation or consumed in growth, is principally effected. Hence the danger of disturbing the active roots during the season of growth. In early summer, when the sap is rapidly consumed by the fresh leaves, the rootlets are also in rapid action. The growth of the branches and roots being simultaneous, while new branchlets and leaves are developing, the rootlets are extending at a corresponding rate, and their tender absorbing points are most frequently renewed. They cannot now be removed from the soil without destroying them, at the very time when their action is essential to restore the liquid which is exhaled from the leaves. But towards the close of summer, as the leaves grow languid and the growth of the season is attained, the rootlets also cease to grow, the loose tissue of their extremities, not being renewed, gradually solidifies, and absorption at length ceases. This indicates the proper period for transplanting, namely, in the autumn after vegetation is suspended, or in early spring before it recommences."

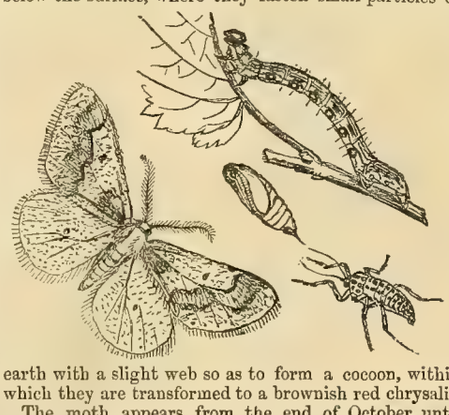
This extract from one of the best works we have, clearly shows that Dr. Asa Gray had distinctly described facts which had before him been regarded as particular to be in reality general, and had thus anticipated by several years the recent observations both of England and France.

ENTOMOLOGY.

THE MOTTLED UMBRE MOTH.

Amongst the various trees which have been employed for the formation of avenues either in town or country none are more ornamental in their growth than the Lime, and certainly whilst in bloom none can compare with that tree. No wonder then that we find it a favourite whenever it has been thus planted, and nowhere is it more cherished than in the grand avenue in Berlin, which takes its name from this tree "Unter den Linden."

In general also this tree is but rarely subject to the attacks of insects to an objectionable extent; occasionally however, outbreaks, so to speak, of some particular species do take place, and we have had our attention directed to one such instance in which an avenue of Limes of great beauty was attacked during two years to such an extent by the larvæ of the mottled umbre moth that we understand that some of the trees actually died in consequence of the injury which they received from the complete defoliation of the branches and the consequent injury to the internal economy of the trees. The caterpillar of this moth belongs to the tribe which is termed loopers or geometers, from the habit it has of walking along by the bending of the body into a loop, and then extending it to its whole length. This family is of great extent, and is scientifically known under the name of Geometridæ, and the particular species in question has received the name of Hybernia defoliaria, the generic name being an allusion to the late period of the year, when the perfect insect makes its appearance, and the specific name indicating the powers of the insect in stripping trees of their leaves. In France and Germany it occasionally is very injurious upon fruit trees, especially Apples; and it is sometimes found on the Whitethorn, Oak, Alder, &c., although the Lime is its favourite food. When full grown the caterpillar is marked with a row of large chesnut-coloured patches along the back, the sides of the body having a brimstone yellow streak with a slender dark line, beneath which are a row of small rusty dots, each enclosing a small breathing pore; the head and three following segments are uniformly brown. It is in the months of April and May, as soon as the young leaves of the trees are developed, that the caterpillars are hatched and commit their ravages on the trees. By the end of May they are full grown, when they let themselves down to the ground by a thread and descend below the surface, where they fasten small particles of



earth with a slight web so as to form a cocoon, within which they are transformed to a brownish red chrysalis.

The moth appears from the end of October until the middle of December. The male has a slender body, and large ochre-coloured wings, the anterior pair of which are marked near the base with a brown bar, and another wider and more irregular crosses them beyond the middle; there is also a black dot in the middle of the wings, and a few small brown dots on the fringe. The hind wings are paler, with a dark dot in the middle. It is extremely variable, however, not only in the general colour of the wings, which varies from cream coloured to umbre; but also in the strength of the markings, which are sometimes almost obliterated. This description is however only applicable to the male, since the female is wingless, of a pale yellow or cream colour, with numerous black dots varying in size and arranged in transverse rows.

This peculiarity of the female being destitute of wings affords an easy means of preventing the injuries caused by the attacks of this species. When the perfect female has made her way out of the earth, her instinct directs her to ascend the trunk of the tree, upon which she sits, and where pairing takes place, after which the female crawls to the young branches (where the leaves will be most numerously developed in the following spring) in order to deposit her eggs in the places where the young larvæ will obtain an abundant supply of food. All, therefore, that is necessary to accomplish, is to prevent the females from ascending the trunks of the trees; this has been accomplished in France by washing a space round the base with a glutinous matter, in which the females are entangled, whilst in Germany a kind of boot is formed round the base of the trunk with pieces of board, upon the top of which is fixed a narrow, flat rim, the under surface of which is smeared with tar which is thus defended from the action of rain. We understand that in the instance of the avenue above mentioned this plan has been successfully adopted; and as each female deposits about 300 eggs it may easily be conceived how much good is obtained by the destruction even of a few of the females. This plan is also much preferable to that of beating the branches in the month of May when the caterpillars are full grown, as many must escape. When this process is adopted and when applied to fruit trees the buds and young fruit must also be injured considerably. *W.*

PLAGUE OF THISTLES IN TASMANIA.

(*See p.* 828.)

There are strange occurrences from time to time in the animal and the vegetable world. They often render all researches unavailing on the part of naturalists, and they set the speculations of philosophers at utter defiance. In the year 1806, I planted 3 acres of rich land, in alternate rows of Oaks and Larches. They throve surprisingly. But in the summer of 1814 the Oaks were damaged in a singular manner. Having observed unusual numbers of the kestrel hawk hovering all day long over this plantation, I was led by curiosity to examine the locality.

I found the Grass which had been allowed to grow betwixt the Oaks and Larches dotted with little round holes, evidently the lodgments of mice. "Continue your attacks," said I to the hawks which were soaring above my head. "I see at once what has brought you hither. You are much wanted." It was the short-tailed field mouse which had attracted the hawks. They literally swarmed during the summer. The Larches continued in their usual vigour, but the Oak plants began to fade and lose their leaves; and they all died by the end of autumn. Upon examination, I found that the mice had gnawed through the bark of the Oaks from the soil, as far as they could reach on their hind legs. Having ordered that the dead stems should be cut off in the winter, the roots (which apparently had not been touched by the mice) sent forth strong and healthy shoots in the returning spring.

From that time to the present, these Oaks have been free from the depredations of the short-tailed field mice, which disappeared that year, and have been seen no more.

Again, in this immediate neighbourhood, occasionally a tract of land will be covered with Poppies, as though it had a scarlet mantle on; and then whole years will pass away ere the Poppies show their heads again.

Now, I venture an opinion, that, if the plague of Thistles in Tasmania should merely prove to be an occasional visitation, the worthy colonists need not despair. But if, on the other hand, it should visit them annually, and become as it were perpetual, just as hordes of hungry Hanoverian rats swarm amongst us here in England the year throughout; ah! well o' day, relief must not be looked for. In our own country, which may be considered a mere span when contrasted with the boundless extent of land in far Tasmania, our dandy farmers, in certain localities, have made such a smash amongst the Thistles, that the poor goldfinches have been forced to leave their ancient haunts and have migrated into other parts to find their favourite food.

For these last 15 years not a single solitary individual of this lovely and melodious tribe has been observed in our park, where all birds are protected — Hiatus valde deflendus!" *Charles Waterton, Scarborough, Oct.* 31.

ORCHARDS IN CHEAPSIDE.

And why not? We stall-feed milch cows in upper-stories of London houses, bring deep sea fishes and zoophytes under inspection in our drawing-rooms, and grow choice Ferns in domestic glass-cases, and we contend it is quite as easy to pick our own fruit from our own trees in the centre of the city as from the south Peach-wall of some snug country house. Our reader, of course, is incredulous, but we mean what we say, and hope, before we have done, to convince him that we speak the words of truth and soberness. The cultivation of fruit trees in pots in hothouses has long been practised by nurserymen in this country, in the same manner as Grapes are cultivated; this process is necessarily expensive, and entails the necessity of employing highly-skilled gardeners. Mr. Rivers, of Sawbridgeworth, in Hertfordshire, was the first, however, we believe, who proposed to simplify the growing of rare fruits—such as the Peach, Nectarine, and Apricot—so as to render their culture within the means and knowledge of persons of very moderate incomes. To grow Peaches at the cost of 2*s.* a-piece has never been a difficulty; to

grow them at 1*d.* a-piece is a triumph, and that he has taught us all to do. In this country the production of the rare stone-fruits out of doors has always been a lottery. We rejoice greatly at seeing our walls one sheet of blossom in early spring; and then comes a day of wet and a nipping frost, as in this very year, and all our hopes are blighted. To afford protection during the few trying weeks of March and April, and to produce a temperature like the dry yet varying atmosphere of the East, the natural home of our finest wall-fruit, without delivering us into the hands of the professed gardener—with his stoves, hot pits, boilers, and other horticultural luxuries, which the rich only can afford—was the desideratum, and that Mr. Rivers has accomplished with, what he terms, his "orchard-houses."

These are not the elaborate pieces of carpentry work we meet with in great gardens, but glass-houses, constructed so simply that any person of an ingenious turn may construct them for himself; they are nothing more, in fact, than low wooden-sided houses, with a glass roof. As there is no window-framing, planing, mortising, or rebating required, the cost is very inconsiderable. A span-roofed orchard-house, 30 feet long by 14 feet wide, with a height to the ridge in the middle of 8 feet, sloping down to 4 feet on either side, can be constructed by any carpenter for 27*l.* 10*s.*; smaller lean-to houses for very considerably less; estimates for which our more curious reader who may feel inclined to make an experiment in home fruit growing will find carefully set forth in Mr. Rivers's original little work "The Orchard House," published by Longman. One of these houses gives the fruit grower an atmosphere as nearly as possible resembling the native one of the Peach, Nectarine, and Apricot. The glass affords abundance of light through its ample panes, and its protection gives a dry atmosphere, in which the fruit is sure to set and come to maturity; whilst the vigour of the tree is insured by the wide openings or shutters in the opposite side walls, which admit a constant and abundant current of air through the house when it is thought desirable to do so. The atmosphere produced, beds are made, composed of loam and manure, on either side of the sunken central pathway, not for our orchard to grow in but upon. And here begins the singularity of this new method of culture. Any one who has grown fruit trees must be aware that their roots are great travellers: they penetrate under the garden wall, crop up in the gravel path, and penetrate into the old drains; they seek their food, in fact, as the cow does in the meadow, moving from place to place, and, like the cow, they, to a certain extent, exhaust themselves in so doing. Under such circumstances artificial aid is of little avail, you cannot give nourishment to roots that have run you don't know where; but you can confine the roots and stall-feed them, as we do animals, with a certainty of producing the effect we desire, and this we accomplish by putting our orchards into pots.

But Pomona has still an infinity to learn. It clearly will not do to allow our fruit-trees to fling about their arms as they do in a wild state; in the orchard-house we have to economise room; there must not be an inch of useless wood. A little time since, small standard trees, about 4 feet high, were thought to be the best form for the orchard-house, but Mr. Rivers has come to the conclusion that most light and heat is gained by training his trees perpendicularly—in the form of a small Cypress—thus a stem, 4 feet high, supports a large number of short lateral branches, pinched back to five or six fruit-buds. This somewhat formal shape has the great advantage of allowing a large number to be congregated together, and of ripening their fruit better, inasmuch as they are not so much shaded with leaves as those having straggling branches. And now for the manner of feeding them. The pots in which the roots are encased may be considered the managers of the tree; to these nutriment is given in the autumn of every year, in the shape of a top-dressing of manure, in addition to which, instead of one hole, three or four are made in the bottom of the pot, to allow the roots to emerge into the rich compost of two-thirds loam and one of manure, forming the border.

"But," says our reader, "this, after all, is but a round-about way of making the roots seek mother earth."

It may appear so, but in reality it is a very different thing. In the first place, the zone of baked clay placed round about the roots, in the shape of the pot, is a good conductor of heat, which highly stimulates the tree. In the second place, the roots, although allowed to strike into the border, are within call; when the branches are pinched back in the spring, these roots also are pruned; thus the vegetation, which otherwise would be apt to run riot and fill the house with useless leaves and wood, is checked at will. To provide still further nourishment to our nurslings, every two years the earth is picked out of each pot, 2 inches all round, and 6 inches deep, and fresh compost is rammed into its place.

Our reader will perhaps smile when he thinks of the old grey and mossy orchards of the country, with their tumble-down trees leaning in every direction, and spreading over acres of ground, and hundreds of yards of wall trees being compressed into a little glass-house, and thus made so shockingly tame by the hand of man, that they are forced to depend upon him, like barn-door fowl, for their daily nourishment; but he would smile, and that with delight, to see the town of orchard-houses in Mr. Rivers's nursery, thus filled with obedient trees, and bearing educated crops, such as no open orchard or garden ever dreamed of doing.

Trees, once potted and placed in the orchard-house, the trouble attendant upon them is not very much, and does not require any special gardening qualifications. A lady might, with advantage, relieve the monotony of making holes upon cambric and sewing them up again, by this delightful occupation. In the winter and spring months protection should be given against frosts by closing the shutters; very little water should be allowed in winter, as the trees require to hibernate, and water acts as a stimulant. About March, pruning should commence, and should continue through the season until the final autumn pruning, when the orchard is once more put to sleep. All these are matters which afford infinite pleasure to all persons of healthy tastes. The trees are all brought microscopically, as it were, before us; we watch the buds perfected into the blossom, and an orchard-house of Peaches in full bloom is one of the most beautiful sights in horticulture. We watch with still greater interest the gradually ripening fruit. Some one has wittily said, "that the orchard-house is the ladies' billiard-table;" and certainly a more pleasurable occupation for them could not well be devised. Peaches, Nectarines, or Apricots grown on these pyramidal trees, as they are somewhat incorrectly called, are charmingly ornamental, especially the Apricot, the golden fruit of which contrasts beautifully with the green leaves, and what can be more quaint or delicious than to pluck your own fruit from the living tree ornamenting the dessert-table? It will be impossible within the limits of this article to attempt any directions with regard to the management of the different fruit that may be grown in these domestic orchards, we would rather refer the reader to Mr. Rivers's little volume for these particulars.

It is essential to inform our reader, however, that failure, with even the most moderate care, is the exception rather than the rule. We all know how difficult it is to keep the Peach and the Nectarine trees clear of the brown aphis blight which infest them. These and all other kinds of blight, including the red spider, the pest of hothouses, can now be most readily destroyed by the application of the new patent composition, termed Gishurst, a kind of sulphur soap, which readily dissolves in water. One or two applications of this compound clears the most shrivelled leaves of these parasites at once without injuring the points of the tender growing shoots, as the fumes of sulphur or the decoction of tobacco-water are sometimes apt to do. But it may be asked, what is the actual gain resulting from this domestic method of treatment? We reply, in point, size, quantity and quality, the fruit is greatly superior to that given by the old method of wall training.

An orchard house 30 feet long and 14 feet wide will hold, say 40 perpendicularly trained Peach trees, or two rows on either side the centre pathway. These trees in the third year, and henceforth for many years (Mr. Rivers has them still luxuriantly bearing in the twelfth year), will produce two dozen fruit each, or 80 dozen altogether, and by the selection of various sorts and the retardation of the ripening, by the simple expedient of removing some of the trees to an out-of-door north aspect, a constant succession of this fine fruit may be maintained from August to November. The trees should be placed alternately, thus—

. . . . . .

in the double row, so as to give them the utmost amount of light and air. By this arrangement the fruit is ripened all round, instead of simply on its outer surface, as it often happens with wall-fruit. Another important matter is to shift the trees now and then, let the pot in the north-east end of the house be taken to the south-west; a little visiting in fresh air is quite as beneficial to trees as to humans; and this locomotive quality is another advantage that orchard-house trees have over those planted against walls.

Apples, Pears, Grapes, Figs, and Oranges are grown in this manner with the same facility, certainty, and cheapness, as the choicer stone fruit; and, be it remembered, these orchard-houses are designed for small gardens and for small gardeners. All that is required is a slip of ground open to the sun, just large enough to find room for the orchard-house, which should, if possible, lie south-east by north-west, in order that the full summer sun may, in the course of the day, fall upon all sides of the trees,

There is scarcely a suburban road-side slip of garden which may not find room for its Peach-orchard, and where room and expense is an object, a small lean-to house may be erected for a very few pounds, which will ripen its fruit as well as the larger ones. And where there are no gardens we may make them on the roofs of our houses, as they do in the East. Where there are flat-leads the erection of glass orchard-houses is a simple matter enough. "But what about the blacks?" interposes my reader. Simply this: we must treat the orchard-houses in such situations as we do persons with delicate lungs; we must provide them with respirators; over all the openings left in the sides for the free circulation of air, woollen netting with ¾-inch meshes must be stretched. The small fibres projecting from these meshes filter the air in the most surprising manner, as will be evidenced by the soot entangled within them by the time they have done their work for the season. Moderate frosts are intercepted in the same manner. A gentleman living at Bow, in the midst of the smokiest suburb of London, has in this way produced abundant crops of the rarest fruit for many years; and Mr. Rivers informs us, that he would engage to produce excellent fruit in City orchard-houses, if required to do so. Glass is now so cheap, that we see no reason why the roofs of the houses should not be glazed instead of tiled. By an arrangement of this kind every citizen may, if he likes, possess his attic garden blooming with fruit, and after it is gathered with autumn flowers, such as Chrysanthemums. Such glass-roofed attics (only far more lofty and expensive ones) already meet the eye in all directions, built for the use of photographers. We see no manner of reason why Peaches as well as pictures may not be produced in such situations; and indeed there is nothing to prevent the construction of very fruitful "Orchards in Cheapside." *Reprinted from Once a Week.*

Home Correspondence.

The Pampas Grass.—About a year ago I had the pleasure of writing to you from Scotland in reference to this very showy and interesting autumn plant, and was then gardener to the Earl of Wemyss and March. I spoke of it as being suitable for shrubberies, and that even plots of it in Grass would be interesting. And from what I have seen of the plant here I am satisfied I have not said one word too much in its favour. There is a handsome specimen of it in full bloom here at present and has been for a month past, and it is certainly by far the finest I have ever seen or heard of, a description of which I believe will be acceptable to many of your readers. The circumference of the plant is about 55 to 60 feet, there are 85 flower stems on it, and there were a few cut off; height of stems 9 to 11 feet, length of flower 2 to 3 feet or nearly. It is one mass of bloom and has a very picturesque effect. In point of locality it is admirably situated; it is planted in Grass and in one of the shrubbery gardens, and is surrounded by Cedrus Deodara and other interesting evergreens which grow very kindly here. My employer the Earl of Shannon informs me it was planted 4 years ago, and his lordship, who takes a great interest in horticulture, and still more amongst rare Conifers and Evergreens generally, advised me to give the plant a good dose of rotted manure, and a trench was cut round about it and filled in with manure, and also about the interior of it, and the result has been very satisfactory and was of great importance in such a hot dry summer. The plant is evidently fond of moisture, and is not easily affronted with a large share of what is sometimes called the Mother of Gold. *John Addison, Gardener to the Earl of Shannon.*

Railway Charges on Nursery Goods.—The excessive charges made by the railway companies for the conveyance of plants compared with their charges for other descriptions of goods, the conveyance of which is attended with a similar risk, demand the attention of nurserymen. It may not be known to many that for plants two scales of charges exist; viz., for plants in pots, 3*s.* 4*d.* per cwt., or 3*l.* 6*s.* 8*d.* per ton; for trees and plants not in pots, 40*s.* per ton. I have seen several instances of Rhododendrons, Cedrus Deodara, and other plants not in pots, but packed in matted baskets charged at the rate of 3*s.* 4*d.* per cwt., but reduced to 2*s.* when the consignee refused to pay the greater charge. Hundreds of buyers are not aware that two degrees of charges exist, and should be informed which rate of charge they may have to pay. The railway companies have four or more classes of charges, and each commodity used in trade is placed in one of these classes, as the companies have thought fit to arrange them, each class having a specified rate per ton. Ale, porter, molasses, oils of all kinds, rice, sugar, garden seeds, &c., at 23*s.* 4*d.* per ton; candles, butter, &c., 25*s.* per ton; machinery, 33*s.* 4*d.* per ton; wines and spirits, 40*s.* per ton; fresh meat, 55*s.* per ton; toys, 56*s.* 8*d.* per ton. It will thus be seen that trees and shrubs not in pots are on a level with wine and spirits, and that plants in pots are at a higher rate than fresh meat or toys, the former incurring great risk from delay, and the latter of a very precarious nature for travelling. I cannot pretend to estimate the many thousands of pounds paid annually for the carriage of plants, but the sum is of such magnitude and capable of considerable extension by a reduced scale of charges that I think nurserymen should take some steps towards seeking a reduction. The heavy rate of carriage, 3*s.* 4*d.* per cwt., with the cost for carriage, is causing many of the country gentry to apply to a local nurseryman, and throw upon him these costs. Others refuse to order so liberally as they otherwise would do because of the heavy tax for carriage. Three crates of Rhododendrons came into this neighbourhood the other day, with carriage at the rate of 3*s.* 4*d.* per cwt., to the tune of 4*l.* 11*s.* 3*d.* I recommended the consignee to refuse payment unless the charge was reduced to 2*s.* per cwt., about 2*l.* 14*s.* It would perhaps help the railway companies if nurserymen were to adopt two different headings to their directions—"plants in pots," "plants not in pots." I however think that about 25*s.* per ton would be a sufficient charge for trees and plants, and I think some steps should be taken to get some concession from the railway companies. *W. Dean, Bradford Nursery, Yorkshire.*

Frigi Domo.—For strengthening this material for the protection of wall-trees your correspondent will find nothing better than unbleached tape 1 inch wide. *George Thompson, Bramham Park, Yorkshire.*—After nine years' experience of this material as a covering for pits, frames, and fruit trees, I have not found anything so useful as strong twine for strengthening it. I have bound with tape and with carpet binding, but neither of them stand wind and weather like twine. The edge of the Frigi Domo must be sewn over the twine, passing the needle through the twine

about every inch to prevent it from drawing out. *Thomas Cope, Gardener to Sir Watkin W. Wynn, Bart., Wynnstay.*

Wellingtonia gigantea (see p. 850).—I beg to state for the information of your correspondent that we have a plant here not more than a yard high, which has a cone on it. *H. Muggleton, Gardener to W. Cubitt, Esq., M.P., Penton Lodge, Andover, Hants.*

Culture of the Pompone Chrysanthemum in 8-inch Pots for Exhibition.—Chrysanthemums are now exciting a large amount of interest both in town and country, in consequence of the great number of exhibitions of them about to take place this month. Unfortunately the days fixed for most of them are too early on account of the severe weather we have experienced lately, which has stopped their growth. I was favoured last week with a treat I shall not soon forget, viz., an inspection of 12 of the best plants I ever witnessed, in Mr. Beck's garden at Isleworth. They were grown by Wiggins, Mr. Beck's gardener, under a range of glass at the north end of the grounds about 44 feet in length; there are 12 trained Pompones, grown in 8-inch pots, and these occupied the whole length, touching each other, and if room had been afforded would have averaged 4 feet 6 inches each; as it is they are rather cramped for space, their height is 15 inches, and the average number of blooms about 1500. They are furnished with fine dark foliage down to the rim of the pot. Mr. Wiggins informed me that he struck the cuttings the first week in December; he put them in thumb-pots, plunged them in ashes in a cold or light box, where they remained till they were well rooted. When fully established he gave them a shift into 48-inch pots, and stopped them. As soon as they threw out laterals he carefully pegged them down and continued to repot, stop, and peg down till the last week in July, when they received their final shift into their blooming pots. They were then plunged in a sheltered part of the garden, sinking the pots three parts down, and placing them on slates to prevent the roots growing out at bottom. When the plants had become well rooted weak liquid manure was used three times a week, and the foliage syringed night and morning. The pegs were all taken out and the plants removed to the house the first week in October to guard against frost. They will be in perfection by the middle of this month. I also noticed three Geranium houses containing 2000 healthy seedling plants raised this year, and there is also a very pretty little house of Orchids, as well as a fine healthy collection of choice Cinerarias. The houses were scrupulously clean and neat. *S. Broome.*

Celery.—We beg to forward two heads of our Celery (Monarch), and shall feel obliged by your opinion of them. We have grown several thousands of Ellison's Mammoth and Manchester Giant by the side of it, both of which sorts it greatly excels. The two heads sent are of an average size. *G. Adams & Son, Domino Cross Nursery, East Retford, Oct.* 29. [When stripped of their outside leaves and dressed as for market, we found one of these heads to measure 18 inches in length and 8½ inches in circumference near the base, and the other to be of the same length and 8 inches in circumference. One weighed 1¼ lb.; the other 1 lb. 1 oz.

Foreign Correspondence.

UNITED STATES GARDENING; WILD BLACKBERRY; FORTUNE'S TEA PLANTS; NATIVE WINE.—*Extracts from a Letter from H. Christy, Esq., to Sir William Hooker.*—In the course of a brief revisit to the United States, I met with a variety of Blackberry under extensive and profitable cultivation; and it seemed worth while, as it has continued the same class of fruit for 10 years, and under varied treatment and different circumstances of soil and climate, to attempt its introduction into England. Messrs. George Seymour & Co., South Norwalk, Connecticut, are the cultivators of it; and I had from them also these facts, that this year off 3¼ acres they picked over 400 bushels, which netted on an average 7 dollars per bushel. The canes were planted in squares, 6 feet apart, on good land, well hoed, and the land kept clean; they grew 6 feet high, two or three are allowed, and these kept side pruned.

At Washington I saw in one range of houses, in what they call the Propagation Garden, 35,000 Tea plants, which Fortune brought from China, through the help of our friend Ward's glazed cases. Most of them were planted as seed, and vegetated on the way or shortly after their arrival; the latter are now the best and healthiest plants. They are destined for the hill country from Texas to the Alleghanies, on all of which at varying elevations the climate is considered to be suited to them. I asked how it was possible, as labour was too dear in England to allow of our cultivating Tea, they could, with their dearer labour, do so profitably in the States. The reply was nationally characteristic; that they rely on inventing a machine by the time the trees are grown which shall perform, in competition with Chinese hand labour, all but the picking. I learn that a planter in the South, either in Alabama or Florida, has for years attempted the cultivation of Tea by negro slave labour, but without success.

The Vine culture is making rapid progress in the United States. When I was there three years ago the total yield for that year was estimated at 500,000 gallons. I hear that California alone will yield this year near three million gallons; the climate is especially suited to the Vine, and the European sort, introduced by the Jesuits two centuries ago, produces bunches of the weight of 12 to 14 lbs. They are now collecting the wild Grapes of the country, which abound throughout the northern states as well as the southern, and sugaring them for champagne. In the small state of Massachusetts, one man has got a contract taken for 100 tons of wild Grapes, and in some of the states they are much more abundant. At Washington they are now trying to improve the native Grapes by impregnation with foreign varieties; they have obtained all foreign species, and aim at keeping them back till the flowering of the native ones outside, when they aim at impregnating them, and obtaining on the old hardy stock some improved fruit.

At Niagara I was very much interested in the great variety of plants, which usually affect such very different localities, growing within a short distance of each other; here a rock plant where the rock was dry, there a water plant where the spray of the falls was borne against the rock, and made it perpetually damp.

Societies.

HORTICULTURAL: *Nov.* 1.—Mr. Edmonds in the chair. At a meeting of the fruit committee which took place on this occasion, prizes were awarded to Mr. Smith, gardener to S. Ricardo, Esq., Sunning Hill, for a dish of Marie Louise Pears, and to Mr. Ingram, gardener to J. J. Blandy, Esq., of High Grove, Reading, for Beurré Bosc Pears. The Marie Louise were very fine, some of the specimens weighing ¾ of a lb.; they were much russetted, and upon trial proved finely flavoured. The tree was stated to be planted on the north side of a wall with the branches trained over the top and turned down the south side, and it was from the last-named aspect that the fruit in question was gathered. The Beurré Bosc were from an espalier and were also fine examples of that variety of Pear. They were, however, scarcely "up to the mark" in flavour. Of Ribston Pippin Apples for which prizes were offered, there were five dishes, but all of them were comparatively dry and mealy, and some of them badly spotted. The best came from Mr. Whiting, gr. to H. Hope, Esq., of the Deepdene; and the second best from W. Strickland, Esq., of Hildenley, Yorkshire. Some from Woodstock Park, Kilkenny, were stated to have been from very old trees, whose produce was much affected with spot. They were, however, root-pruned last autumn, and had charred earth and weeds added to the border, and this year the spotting is stated to have been less severe. The fruit was, however, still spotted, very mealy, and deficient in flavour. The soil was stated to be a clayey slate. Of other dessert Apples the best were Adams's Pearmain, from Mr. Whiting, and the second best, King of the Pippins, from Mr. McDonald, Woodstock Park, Kilkenny. The last-named exhibitor also sent some very fine examples of Blenheim Orange, one of which weighed 10 oz.; they were however not good in flavour. Mr. Cox, of Redleaf, sent some very high coloured fruit of the same variety, the largest of which weighed 8 oz. Of other Apples we noticed Sweeney Nonpareil, Golden Reinette, Golden Knob, Alexander, Manks Codlin, and Cox's Pomona, all good specimens of their respective kinds.

STOKE NEWINGTON CHRYSANTHEMUM.—This exhibition took place on Wednesday and Thursday last, at the Manor Rooms, Church Street, and was tolerably well supported both in the way of plants and cut blooms. The first prize for 24 cut blooms was awarded to S. Wortley, Esq., for Themis, Duke, Aristée, Golden Yellow, Lysias, Hermione, Christophe Colomb, lucidum, M. André, Queen of England, Marshal Duroc, Aimée Ferrière, Leon Leguay, Vesta, Glory, formosum, Beauté du Nord, formosum luteum, Princesse Marie, Rosa mystica, Clarence, Goliath, Pio Nono, and General Negrier. Mr. Sanderson was second, with Aristée, Pio Nono, formosum luteum, Anaxo, Goliath, Dupont de l'Eure, Campestroni, Trelby, Themis, M. Miellez, C. Colomb, Aregina, Arc en Ciel, Gem, Queen of England, Lysias, M. Lebois, Nonpareil, Hermione, Miss Kate Raymond, Stella globosa, and formosum. The next best in point of merit came from Mr. James, who showed Queen of England, Marshal Duroc, Imperial, Goliath, Trelby, Plutus, Themis, Two-coloured Incurved, M. Miellez, Raymond, formosum, Lysias, Pio Nono, M. Lebois, Aregina, Hermione, formosum luteum, Vesta, C. Colomb, Glory, Fabius, Duke, and Dupont de l'Eure. In the class of 12 blooms, the first prize was awarded to Mr. Sanderson, for a fine stand, which consisted of Themis, Trelby, Pio Nono, Aregina, Stella globosa, M, Miellez, Raymond, Lysias, M. Lebois, Nonpareil, Dupont de l'Eure, and formosum luteum. Mr. Wortley took the second prize with Themis, Pio Nono, formosum, Delight, Duke, Hermione, Marshal Duroc, C. Colomb, Aristée, Golden Queen, M. André, and Lysias. In the class of 6 blooms, Mr. Radley, of Stamford Hill, had a good stand, in which were Leon Leguay, Queen, Voltaire, Aristée, Delight, and formosum. Mr. Wortley sent Themis, Golden Queen, Princesse Marie, formosum, Columbus, and Lysias. From Mr. Sanderson came Aregina, Themis, Lysias, Raymond, M. Lebois, and Hermione. In the class for "Maiden Growers," Mr. Bones, of Woodford, sent good blooms of M. Lebois, Aregina, Lysias, Columbus, Duke, and Hermione. Anemone-flowered kinds were not remarkable either for good growth or novelty. The finest bloom in the whole show, as far as size was concerned, was Queen of England from Mr. Wortley. Plants in pots came from various growers. Considerably the best in all respects were from Mr. George, of Stamford Hill. They consisted of Aregina, insigne, Christine, Madame Camerson, Annie Salter, and Queen of England. The next best group came from Mr. James; it consisted of Defiance, Annie Salter, Christine, Mount Etna, Vesta, and Prince Albert. The best Pompone came from Mr. Kendall. It was Cedo Nulli, a fine plant well furnished with bloom. Mr. George sent Helene in good condition. In the class of six Pompones, Mr. Walker, of Clapton, sent La Vogue, Bob, Trophée, Cedo Nulli, St. Thais, and Berrol. Mr. Forsyth, of Shacklewell, had Cedo Nulli, Duruflet, Duval, M. Philippine, Brilliant, and Surprise. Mr. George showed the large-flowered sort Christine, as a single specimen beautifully flowered and well grown. The number of plants shown was less than last year, and those that were produced were not, as a whole, sufficiently in flower.

SOUTH LONDON (CAMBERWELL) CHRYSANTHEMUM: *Nov.* 3.—The annual exhibition of this Society was held on Thursday last, at the Assembly Rooms, Rosemary Branch, Peckham, and was well attended. There were several stands of cut blooms, many groups of specimen plants, and a space set apart for bouquets. Among the first named Mr. Potts contributed considerably, and we may mention some in particular, namely in the class of 12 cut blooms there were admirable specimens of Albin, Plutus, Hermione, Anaxo, luteum formosum, and others; while in the 6 cut bloom class (gaining the 1st prize as well as those just enumerated) were George Sand, Eclipse, Louis Bonamy, and others. In the class of 24 cut blooms, Mr. Potts was also first with Madame Lebois, Gem, Aristée, Themis, Dupont de l'Eure, &c. Mr. Champion exhibited six very good dissimilar blooms, among which were Vesta and Anaxo. In the 3d class Mr. Pink showed Stella globosa, Racine, Themis, and Campestroni; and in Class 4 he also produced good flowers of Antigone, Astrolabe, insigne, Auguste Mie, and others. Mention must be made of the several stands of cut blooms exhibited by Mr. Fenton, of the Park Road, Peckham, though they were particularly notified as not being for competition; they consisted of Pio Nono, Queen of England, Versailles Defiance, formosum, Cassy, C. Colomb, Albin, Dupont de l'Eure, Hermione, Christine, Astrolabe, Madame Guillon, and many others; also a stand of six admirable Anemone-centered Glucks. All these were highly commended, and though not awarded prizes formed no inconsiderable portion of the exhibition. Mr. Holland supplied four blooms of an extremely handsome Primrose-coloured seedling, named Miss Augusta, which promises to become a great favourite. Among the specimen plants in pots we may mention those sent by Mr. Broome, of the Temple Gardens, all very beautiful and showing the care bestowed upon them; others by Mr. Mortram, the celebrated pyrotechnist, completely filling one corner of the room; others, again, by Mr. Bickley, very good; and some well grown and flowered by Mr. Potts. Mr. Clarke also contributed some very fine specime Pompones, grown without stick or tie, among which were Surprise, Cedo Nulli, Hector, &c. Mr. Morgan, of Lincoln's Inn Fields, furnished some plants grown as standards, all very good, and which being placed by the side of an immense one sent by Mr. Broome, and two or three others belonging to Messrs. Mortram and Potts, completely filled the end of the apartment. There were also six very pretty miniature Pompones by Mr. Boulton, as well as a quantity of bouquets. There were many other plants of interest, but as they bore unmistakeable signs of being frost-bitten, they were not placed very prominently forward.

Notices of Books.

The Orchard House; by Thomas Rivers. Sixth Edition. 18mo. Longmans.

It is to be hoped that the prejudices of anti-orchard-housists have by this time softened down; and especially that the very respectable slow gardeners who thought Mr. Rivers crazed when he opened his campaign have, like the Austrian Kaiser, the wisdom to acknowledge themselves fairly beaten. That they answer all that has been expected from them would be shown by the large sale that has attended the little book before us, if the fact had not become notorious by the experience of the whole kingdom.

Mr. Rivers states in this new edition that "In the fifth edition the cultivation of Peaches and Nectarines as close pyramids was recommended. This method has proved so highly successful that in the present edition I have gone more fully into it; I fully believe it is likely to make quite a revolution in orchard-house culture. The pruning of orchard-house trees is a simple operation, and appears so when it can be shown. It is however difficult to describe; many words must be employed, so that the learner often becomes fatigued with the description before he can comprehend how to prune a branch. In this edition it will be seen how easy it is to prune a pyramidal Apricot or Peach tree, by pinching off the ends of its young shoots during the summer. The same method of pruning, with a very slight change, may be applied to bush trees, making them stout, robust, better adapted for small orchard houses, and removing all anxiety about winter pruning. I fear it will be thought I have been very slow in bringing out these improved methods of culture; I can only offer as

... excuse the gentle pace of Nature,—she will not ... hurry or be hurried; so that often, with very trifling gardening experiments, one or two seasons must pass before results can be known.

"The article 'Orchards in Cheapside,'* as given in 'Once a Week,' No. 9, has doubtless brought forth smiles of incredulity. It is however a fact that our finest fruits may be grown in any garden or open space in or about London, or any other smoky city, in orchard houses, simply by 'keeping out the blacks' with the woollen netting mentioned in pp. 108, 109 of this edition. The day is not far distant, when Peaches, Nectarines, and Apricots, at present far beyond the reach of the merchant's clerk, will be to him familiar things, and thousands of little suburban gardens will have their cheap orchard houses, in which the tired *employé* will feel refreshed in the pleasant evenings of summer, by the mere act of pinching off the young and tender shoots of his Peach trees, and inhaling their sweet perfume."

As to the manner of managing pyramid trees the directions which are given leave nothing to be desired on the score of clearness, and they will we are sure be eagerly read—for of all stone fruit the Apricot is in some districts the most precarious, owing to the very early time of the year in which that tree expands its flowers. We extract a few of the author's instructions:

"The management and pruning of pyramidal Apricots is pruning 'made easy,' so that any lady may attend to her trees without fear of committing herself by taking off a wrong shoot.

"Pyramids in pots may now be bought in the nurseries. They should be potted in October or November in 13-inch pots, and if they have been properly managed they will bear a fine crop of fruit the first season after potting. The fruit should be thinned exactly as recommended for bush trees, and as soon as the trees put forth their young shoots in May pinching must be commenced. What a pleasing pastime it is! Every shoot as soon as it has made four leaves must have its fourth leaf with the end of the shoot pinched or cut off with a penknife, leaving three young leaves. The leading shoot only must be pinched so as to leave six leaves. Two or three shoots will break out; all but one of these should be pinched down to three leaves, and when the young leading shoot has made seven leaves pinch down to six; this will require to be done two or three times during the summer, the tree gradually increasing in height. All the pinched shoots growing from the stem of the tree after the first pinching will put forth numerous young shoots; all these must be pinched off to three leaves as soon as they have made four. This must be constantly attended to till the trees cease growing. Many of my trees have up to this time (Sept. 10th) been pinched from four to five times, and every branch from bottom to top of the stems is a cluster of blossom buds."

"Our market gardeners, at present wedded to their wall culture of fruit-trees, will do well to cover a few acres of ground with cheap orchard houses, and to plant out in them pyramidal Apricot trees. These may be suffered to make trees 7 to 8 or 9 feet in height. If pinched in incessantly their growth will be much arrested, they will not require annual lifting, and they will bear abundantly. Covent Garden will then be supplied with such Apricots as have rarely been seen there. They may be sold cheaply, and yet yield a fortune to the growers. The Peach-Apricot is the only kind adapted for this profitable mode of culture."

A new part of *Weddell's Chloris andina* is before us, containing the Polemoniaceæ, Boraginaceæ, Solanaceæ, and part of the Scrophulariaceæ, with the usual number of exquisitely drawn figures. We observe that Dr. Weddell inclines to place the puzzling genus Desfontainia among the Gentianworts. In speaking of the Potato we have the following interesting remarks:—"I never found the Potato in Peru so circumstanced as to satisfy me that it is really wild in that country. Neither do I believe that it is wild in the distant stations on the extra-Chilian Alps where it has hitherto been thought so. When we consider that on the arid Cordilleras the Indians often fix their patches of cultivation on points that would appear almost inaccessible to our European farmers, it is easy to imagine how a traveller visiting one of these stations which had been long abandoned, and finding the Potato accidentally surviving, would conclude that it must be really wild there. But where is the proof? For my own part, after reading all that has been written on the subject, I am forced to conclude that its real native country is Chili rather than Peru. There can be no doubt that the cultivation of the Potato is of great antiquity, seeing that at the time of the conquest it was found in every part of the temperate portions of Western America from Chili to New Grenada and even Mexico, and I am very much inclined to think that it was everywhere the same species; for although the Potato grown on the high plains of Peru possesses some degree of acridity, and resists frost better than those with which we are familiar, it does not appear from its botanical characters that it can be distinguished as a species rather than a simple race.——D'Orbigny brought from the summit of the Cerro de Potosi, and consequently from an elevation of 14,640 feet, a form of the Potato which might be called Alpine. The leaves grow in rosettes and the flowers sit perfectly close upon the root. I found the same form in a piece of ancient cultivated ground on the Peruvian plateau at the height of 12,000 feet."

* Reprinted in another column.

The Octavo Nature-printed British Ferns, being figures and descriptions of the species and varieties of Ferns found in the United Kingdom. By Thomas Moore, F.L.S. Nature-printed by Henry Bradbury. In two volumes. Vol. I., royal 8vo. Bradbury & Evans.

The Nature-printing process is making rapid progress under the management of Mr. Henry Bradbury. We have hardly ceased turning over the beautiful pages of the Nature-printed Seaweeds when another volume appears upon our table, now commencing the illustration of Ferns. How well suited are such plants to this curious process has been abundantly shown by the magnificent work in folio on the same subject, which has already appeared from the same publishers. The present work is very similar to the larger one, except that it is reduced to an 8vo size, and that it is greatly expanded by the introduction of a complete account of the numerous forms, varieties, monstrosities, or whatever else they may be, on which the Fern collector loves to dwell. The plants are now accompanied by dissections useful in pointing out the characters by which the species are to be distinguished, and are prepared from specimens so skilfully selected that nothing is lost by their diminished size. The impressions and the colour of the leaves are also improved, as was to be expected from further experience. The plate of *Polypodium alpestre, flexile* is one of the most beautiful things we ever looked on. Even those who have no taste for natural history must be delighted to see such charming volumes in their library.

Trade Lists Received.—Peter Lawson & Son's (Edinburgh) *List of Forest Trees, Shrubs, &c.* Here we find one of the largest collections in the kingdom arranged in so peculiar a manner that we reprint its table of contents:—"Seedling and transplanted Forest Trees—Firs for Timber Trees—Transplanted Fruit-tree Stocks—Plants for Shrubberies and Underwood—Extra strong Bushy Trees—Selection of Hardy Plants of the Fir Tribe—New Pines—Pendulous or Weeping Trees—Ornamental Trees and Shrubs—Fruit Trees—Grape Vines—Culinary Plants—Strawberries—Roses—Roses, Selections—Table for Planters." The whole occupies 24 quarto pages.—Wm. Young (Milford, near Godalming) *A Catalogue of New or Rare Plants, Conifers, &c.;* 40 pages 8vo are filled with the particulars of this collection, which is well worth the attention of buyers. The lists are headed by the following account of a new Azalea aurea grandiflora:—"This beautiful Azalea, of which I possess the entire stock, is a hybrid raised between A. pontica and the best variety of A. sinensis; the flowers are of a beautiful bright yellow with a rich orange flake on the upper petal; the individual blooms are of an immense size, and the truss very large; it flowers very freely, and is perfectly hardy. A small plant with three trusses was exhibited at the Royal Botanic Society's Exhibition in the spring of 1858, and obtained a silver medal as a new and rare plant, which is a sufficient guarantee of its merits. It is a first class plant for growing in pots for exhibition, as in size and colour it is far superior to Azalea sinensis, and as a hardy plant it will prove a valuable acquisition to every collection of American plants, as it grows freely in the open ground."—Thomas Rivers (Sawbridgeworth) *A Descriptive Catalogue of Fruits;* ditto, *Catalogue of Roses for Autumn, 1859, and Spring, 1860.* The catalogues of the Sawbridgeworth Nursery have too great a reputation to require any further notice than the announcement of their appearance. As usual, they abound in novelties for the eager and good selections for the less impatient amateur.

Garden Memoranda.

Mr. Bird's Nursery, Stoke Newington.—At the present time of year, when but little is to be found to decorate the town and suburban gardens except the now popular and almost universally cultivated Chrysanthemum, whose growth the late frosts and winds have also put an effectual stop to out of doors, a visit to the above nursery will greatly repay the admirer for all expense, time, and trouble that he may incur to procure a view of three large greenhouses devoted to the blooming of the above-named flower. In these are placed hundreds of pots, and taking the average number of blooms to each pot at 10 or 12, the result furnishes an astonishing quantity of all colours, shades, and sizes. Amongst some admirable specimens of names now familiar and well known to us there are others, in a great measure surpassing them, brought in the beginning of the year by the enterprising proprietor from Guernsey, to which place he paid a visit for the express purpose of procuring new sorts. In this latter collection will be found a beautiful purple Alma; a very handsome bloom of Alarm; a Negro Boy, nearly black; pictorium roseum (measuring 6 inches across), of a dark rose colour; Pearl, white; Novelty, a French white; Beauregarde, dark deep crimson; Yellow Perfection, a perfect gem; General Harding (called after the Governor of Guernsey), of a splendid Indian gold tint; and Comet, looking like a brilliant bronzed star. The above are only a few of the most successful importations, but they suffice to show the enthusiast in this flower where to see enough to satisfy his curiosity, and we have high authority for stating that such flowers as those above-mentioned are not to be found elsewhere in the kingdom. Mr. Bird has also been able to procure a new specimen from among his own which he styles White Beauty, being a sport obtained from the old Beauty. It is of the purest white, and more nearly resembles wax than a flower. A number of new seedlings are being cultivated, but as yet little can be said further than that a few promise to become very handsome plants, of which indeed Mr. Bird seems to have every hope. As we have already stated, the admirers of this plant will be fully recompensed by paying a visit, though had the weather been more favourable and not so severe for the last week or two their pleasure would have been greatly enhanced; for there are thousands of plants lying about the grounds destroyed by the frost.

Cadlands, the Seat of Mr. Drummond.—Some account of what the difference of climate can do for plants may perhaps not be uninteresting to your readers. Cadlands is pleasantly situated on one of the many undulating hills on the west shore of Southampton Bay. Entering by a lodge from the New Forest, some two miles from the house, the drive leads through plantations of Firs, Holly, evergreen Oak, and some fine old trees in the open places, and terminates at the south side of the house, which is the chief entrance; from the portico is a fine view of the Isle of Wight, through a vista of trees, commencing with large Cedars of Lebanon on each side.

The house is a large plain structure of white brick, with Portland stone corners; and thence, entering from the front, we come to the east and north, the latter being the main or principal flower garden front. At the east side the house is surrounded by broad gravel walks, and from this, all round the two fronts, are beautiful views across the bay, Southampton, in the distance, looking bright with the setting sun, and the bay between covered with numerous steamers, yachts, and smaller craft of all descriptions, their white sails glittering in the sun, and their movements adding life and interest to the view; further up the shore is Netley Abbey, nestling among the trees, the Royal Military Hospital, and the shore as far as the eye can reach is studded with fine villas and trees. Every care has evidently been bestowed upon the cutting and keeping of these views, as the trees below rise sufficiently high to render this necessary. The lawn is extensive, and almost completely covered on both fronts with beds; and lower down the lawn are various designs with rustic baskets and rustic edgings to the beds, and such other variations as this easy style admits of; among others a small Rosery, where we found mildew quite covering the plants: Mr. Arnott, the gardener, told us it was occasioned by hot dry weather, and that the common kinds of Roses were always the greatest sufferers.

The beds near the house were mostly filled with Geraniums, with edgings, as generally used; but no person who has not seen Geraniums round here, or at the Isle of Wight, can credit the difference between them and those grown in less favoured climates; they were one intense blaze of colour, with scarcely a leaf to be seen. In the lower and mixed beds we saw fine Myrtle bushes, Coronilla, Plumbago, Veronica Lindleyana, Hydrangea—fine bushes on the Grass, which take the form of shrubs, and other varieties, standing the winter and blooming abundantly—the old lemon-scented Aloysia, and several others also winter here. Among the mixture in these beds we saw quantities of the old-fashioned herbaceous plants, as Golden Rod, tall Phloxes, &c., making quite a show; in some of the beds round the baskets the dwarf French Asters, not more than 6 inches in height, made good compact beds. On the lawn are some fine Cedars and other trees, one of the former terminating the broad front walk where it branches into two, one leading to the forest and the other to the park in front of the lawn, which suddenly terminates here on the west side at the top of a deep dell. The sudden contrast from gay and dressy to Nature's wildest forms of heath, with Furze up the opposite hill mixed with stunted Firs, &c., is quite startling. In returning to the house, on the right hand is a good-sized garden in front of a temple, laid out in stone, with a large fountain in the centre; the beds full and fine. A back border here was filled with conservatory plants in pots, and mossed to the level of the pots—a good plan.

On the west side of the house there is a conservatory of large dimensions in communication with the rooms of the house. A fine plant of Mandevilla suaveolens in full bloom completely scented the air with its beautiful fragrance. Some large plants of the old Brugmansia suaveolens also aided. Fuchsias trained Mushroom-shaped looked novel and well. This house is principally for Orange trees, of which there is a fine lot of clean-stemmed young trees, set at present round the house, and covered with fruit; Mr. Arnott told us they were used for dessert, and greatly prized; we tasted one and found little difference from those imported.

The kitchen garden is some distance from the house on a slope to the south, nearer the shore, and divided into sections, with good high walls. At the entrance are two large fish ponds, with a walk all round. A fine border of shrubs, with Apple, Pear, Medlar, and other standard fruit trees for a backing, divides this from the park. In this border are fine trees of the Magnolia grandiflora 25 feet high, and most of them, as is the habit of this plant, with a few flowers in different stages; these, from the flower, I thought were the Exmouth variety; some of the stems at the ground were like a good aged forest tree. At the top of this pond is a fine

specimen of the deciduous Cypress, 60 feet high and 12 feet round the stem above a seat. In the houses we found plenty of Grapes in different stages. The first Vinery the gardener had lifted, putting a bed of heating materials over the roots of the new border; only one Vine, a Muscat, had shown any signs of flagging.

In the small stove we found, planted out and covered with bloom, Allamanda, Stephanotis, and other stove plants in good condition. Apricots had been nearly a failure; Peaches and Nectarines plentiful; a fair sprinkling of Pears and Plums, and fine crops of Apples. Figs grow and ripen their fruit as standards anywhere in the garden. We also saw Raspberries in great quantities; Mr. Arnott said they keep bearing until frost comes.

In most of the cottage gardens we saw Myrtle bushes. In the village of Hythe, close by, one or two were completely covered with the broad-leaved variety, forming low hedges in front similar to the evergreen Privet, even in exposed situations open to the sea. *F.*

TEMPLE GARDENS.—The Chrysanthemums in these gardens are nearly now in their prime, and will no doubt be visited by thousands of persons. They are decidedly the finest grown out of doors in the neighbourhood of London, though they have been somewhat damaged by the late gales and injured by frost. It is to be regretted that from the latter cause some of the blooms are not so fine as we have been accustomed to see them; but still there is one of the finest borders of the large-flowering kinds in the Inner Temple we remember to have witnessed, while the garden of the Middle Temple is almost exclusively devoted to very handsome groups of Pompones.

Miscellaneous.

Sale of Books and Dried Plants.—A sale took place at Mr. Stevens's the other day of a collection of dried plants and some fine books. The former were not at all suited to the English market, and consequently a herbarium, which appeared to have belonged to some Belgian gentleman, and which was described as "most extensive and valuable, containing more than 38,000 species of phænogamous plants, each in most cases represented by several (sometimes as many as a score or even more) well preserved specimens from various countries and by various collectors; generally speaking in excellent order and preservation, arranged in their natural families and placed within (but not fastened down to) separate sheets of paper, strapped up in convenient sized bundles, of which the number amounts to upwards of 430 parcels," produced only 205*l.* It was bought by Mr. Pamplin for Trinity College, Dublin. The books were in excellent order and well bound. The more remarkable lots obtained the following prices: — Horsfield's (T.) Zoological Researches in Java and the neighbouring Islands, royal 4to, 65 finely coloured plates and 7 of anatomy, 3*l.* 10*s.*; Andrews' Botanists' Repository, 10 vols., 4to, bound in 5, calf, 5*l.* 10*s.*; Batemann's Orchidaceæ of Mexico and Guatemala, elephant folio, black morocco, gold borders, 13*l.*; Cavanilles Icones et Descriptiones Plantarum quæ, aut sponte in Hispania crescunt aut in hortis hospitantur, 6 vols., folio, with 600 plates, red morocco, 8*l.* 10*s*; Pescatorea ou Choix Iconographique des Orchidées, par Linden, 10 parts, folio, 4*l.* 6*s.*; Decandolle Historia Plantarum Succulentarum, 180 beautifully coloured plates, gold borders, black morocco, together with Duhamel Traite des Arbres et Arbustes, 7 vols., folio, with 500 beautifully coloured plates, bound, 12*l.*; Flora Danica, 14 vols., folio, with 2520 coloured plates, and the supplement, unbound, 15*l.* 10*s.*; Humboldt Monographie des Mélastomacées, folio, with 120 coloured plates, bound in red and blue morocco, 4*l.* 10*s.*; Jacquin Selectarum Stirpium Americanarum Historia, the original drawings, folio maximo, 264 plates (only 18 copies made), 25*l.*; Jacquin Icones Plantarum Rariorum, 3 vols., folio, bound in 4, with 648 coloured plates, calf, 10*l.*; Jacquin Plantarum Rariorum Horti Cæsarei Schönbrunensis Descriptiones et Icones, 4 vols., folio, morocco, gold borders, 500 coloured plates, 12*l.* 12*s.*; Martius Genera et Species Palmarum, 3 vols., elephant folio, with 245 coloured plates, gold borders, black morocco, a perfect copy, 22*l.*; Martius et Endlicher Flora Brasiliensis, viz., fasciculus 1 to 9, with 154 plates, bound in 2 vols., folio, gold borders, brown morocco, and fasciculus 10 to 22, with about 352 plates and 2 maps, unbound (all published), 11*l.*; Plenck Icones Plantarum Medicinalium, 6 vols., folio, gold borders, with 600 coloured plates, 5*l.*; Pohl Plantarum Brasiliæ Icones et Descriptiones, 2 vols., folio, with 200 plates, brown morocco, gold borders, 4*l.* 10*s.*; Redouté les Liliacées, 8 vols., atlas folio, with 486 exquisitely coloured plates, magnificently bound in red morocco, 17*l.* 10*s.*; Redouté and Decandolle Plantarum Succulentarum Historia, 2 vols., folio, gold borders, black morocco, with 185 coloured plates, 4*l.* 10*s.*; Reichenbach Flora Exotica, 5 vols., 4to, with 360 coloured plates, black morocco, gold borders, 8*l.*; Roscoe Monandrian Plants of the order Scitamineæ, 1 vol., atlas folio, with 112 large and finely coloured plates, very rare, 3*l.* 15*s.*; Roxburgh's Plants of the Coast of Coromandel, 3 vols., atlas folio, 300 coloured plates, splendidly half-bound morocco, 17*l.* 10*s.*; Royle's Illustrations of the Botany and Natural History of the Himalayan Mountains, 2 vols., imperial 4to, 100 coloured plates, half-bound morocco, gold borders, 4*l.* 12*s.* 6*d.*; Saint Hilaire Flora Brasiliæ Meridionalis, 3 vols., folio, half-bound morocco, gold borders, with 192 coloured plates, carefully retouched, vellum paper, 11*l.* 10*s.*; Wallich Plantæ Asiaticæ Rariores, 3 vols., imperial folio, 300 coloured plates, half-bound in black morocco, 11*l.* 5*s.*; Wight Icones Plantarum Indiæ Orientalis, 6 vols., 4to, with 2100 plates, half-bound, 24*l.*; Wight Spicilegium Neilgherriense, 2 vols., 4to, 100 coloured plates, 2*l.* 17*s.* 6*d.*; Wight's Illustrations of Indian Botany, 2 vols., 4to, with 134 coloured plates, 6*l.* 5*s.*; Griffith's Palms of British East India, 1 vol., folio, with 139 plates, 2*l.* 10*s.*; Palissot de Beauvois, Flore d'Oware et de Benin, 2 vols., folio, with 120 coloured plates, rare, half-bound, 4*l.* 10*s.*; Blume Rumphia, 4 vols. in 2, folio, with 200 coloured plates of Orchids, &c., half-bound morocco, 15*l.*; Martius Nova Genera et Species Plantarum, 3 vols., folio, with 300 coloured plates, 12*l.* 12*s.*; Poeppig et Endlicher Nova Genera et Species Plantarum, 3 vols., folio, with 300 coloured plates, 10*l.*; De Vriese Illustrations d'Orchidées des Indes Orientales Niederlandaises, 3 parts, imperial folio, with 18 plates, coloured (all published), 3*l.* 5*s.*

Grapes in Ireland.—There was brought to this office the other day a very fine specimen of Black Hamburgh Grape grown against a wall in the open air at Durrus Court, near Bantry, a seat of the Earl of Bandon. They were large and good, and very creditable to the culture of his lordship's gardener. *From the Cork Constitution.*

Calendar of Operations.

(*For the ensuing week.*)

PLANT DEPARTMENT.

CONSERVATORY.—In most places Chrysanthemums will be the chief feature of attraction at present, and where these are largely grown, which they should be whenever there is a demand for flowers at this season, they make a fine display, and are worth every necessary attention to preserve them in beauty as long as possible. They are very impatient of a close, rather warm atmosphere, and if the house contains plants requiring this treatment, the Chrysanthemums should as far as practicable be placed in the coolest part, where air can be given freely on every favourable opportunity; for except they can be rather freely exposed to air their foliage soon gets attacked and disfigured by mildew, especially if the plants are bushy and well grown. See also that they are kept well watered at the root. Use fire-heat only when absolutely necessary either to prevent the temperature from falling too low or to dry the atmosphere. If such things as Geraniums, Cinerarias, and Calceolarias must be wintered in the same house with Heaths and other hard-wooded plants, they should be kept as much as possible by themselves, as they will require a somewhat closer temperature than hard-wooded plants, but where circumstances admit of it these should occupy a house or pit by themselves. Cinerarias and Geraniums intended for late flowering will do very well in a cold pit if the weather should not prove very severe, but those intended for flowering early should be placed at once where fire-heat can be used at will, so as to be able to preserve the foliage from damp. Roses for early forcing should be pruned by this time, and placed where they will at least be safe from heavy rains. Where American and other shrubs are used for forcing, these should be taken up and potted without delay, placing them in a cold pit until they are wanted for forcing, or in a turf pit where they can be protected from severe weather by straw mats, shutters, or other covering.

FORCING DEPARTMENT.

PINERIES.—The plants expected to show fruit early next year will be greatly benefited by being kept in a comparatively dry state for a few weeks previous to subjecting them to a warm moist temperature. The atmosphere should be kept dry, also allowing the soil about the roots to become as dry as can be done with safety; do not, however, subject the plants to a very low temperature, but keep this at from 60° to 65° by means of fire-heat, for although the plants will bear a considerably lower temperature without any apparent injury, those not subjected to any unnecessary extremes will produce the finest fruit; and a short period of comparatively dry treatment will ripen the growth, and just as effectually induce a tendency to show fruit as checking the energies of the plant by an unnaturally low temperature, and without any of the ill effects of the latter method. No dependence can be placed on the weather at this season, therefore see to plants in pits with insufficient means of heating being well protected by means of covering at night, and maintain the command of a rather high temperature by frequently renewing the linings, &c., so as to be prepared for any sudden decrease of the external temperature; avoid anything approaching excess of atmospheric moisture among young stock, whether in pits heated by linings, or in better arranged structures, which only tends to promote a too free rate of growth for the amount of light, and weakly blanched foliage is the result. VINERIES.—Where forcing is commenced, attend to previous directions as to keeping the atmosphere moist, as there will be some difficulty in getting Vines to break freely at this season except this is attended to. If circumstances allow of having a bed of fermenting manure inside the house, this will be found the best means of keeping the atmosphere regularly moist, but if this cannot be used the house must be sprinkled with the syringe frequently, and the evaporating troughs kept full. Also see that the roots are afforded a steady gentle warmth until the buds are fairly swelled; keep the temperature about 50° by fire-heat at night, and 60° by day, letting it rise to 70° on sunny days.

FLOWER GARDEN AND SHRUBBERIES.

Where the land is not too wet alterations of grounds and planting should be carried on with dispatch, but on no account attempt planting when the soil is in a state of puddle; the drier soil is when placed round the roots of newly planted trees and shrubs (provided they are judiciously watered in) the sooner they will emit fresh roots. Mulching is, however, requisite to keep out frost, and earlier in the season to prevent evaporation. As tree leaves are always in request either as a fermenting material or for leaf soil, they should at this season be carefully collected. If they are required only as a manure they may be stowed away in any bye place and left to rot; but if, as is generally the case, they are in demand as a cheap mode of furnishing bottom heat to Pines as well as for forcing different kinds of vegetables, some pains should be taken to keep them dry. For this purpose they should be stacked up in some back place or behind the garden walls, where access can be had to them at all times, and after allowing time for them to settle, put on a coat of thatch to effectually secure them from rain. By these means they will be found in a state fit for use for a twelvemonth to come.

HARDY FRUIT AND KITCHEN GARDEN.

Pruning and nailing may be proceeded with where the leaves are off, even though it should delay some of the other work, which can be done with more comfort in bad weather than nailing; it is most important to get the latter done while the weather is favourable. Look over fruit stores frequently to see that all is keeping well, and remove any fruit that may show symptoms of decay, so as to prevent the mischief from spreading. A good stock of Lettuce fit for use should be put into cold frames or turf pits, where they can be protected from frost by means of straw mats or some other efficient covering; also take care to secure a good supply of Endive for winter use. Cauliflowers coming in must be frequently examined; those not wanted for use should be taken up and stored till wanted, for these cannot be safely trusted to the weather after this time. Take advantage of frosty mornings should they occur to get manure wheeled on quarters where it will be wanted, and get all spare ground trenched and ridged as soon as possible.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.
For the Week ending Nov. 4, 1859, as observed at the Horticultural Gardens.

October, and Nov.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Temperature of the Air. Min.	Temperature of the Air. Mean	Temperature of the Earth. 1 foot deep.	Temperature of the Earth. 2 feet deep.	Wind.	Rain.
Friday 28	2	29.786	29.361	53	29	41.0	48	50	S.W.	.20
Satur. 29	3	29.407	29.318	55	28	41.5	49	50	S.W.	.00
Sunday 30	4	29.520	29.006	48	38	43.0	49½	50	S.	.24
Mon. 31	5	29.306	28.800	57	43	50.0	49½	50	E.	.00
Tues. 1	6	29.204	28.714	58	43	50.5	50	50	S.W.	.20
Wed. 2	7	29.778	29.659	55	31	43 0	51	50	S.W.	.05
Thurs. 3	8	29.714	29.572	55	33	44.0	50½	50½	W.	.15
Average		29.531	29.204	54.4	35.0	44.7	49.6	50.1		.82

Oct. 28—Foggy; shower; cloudy; rain at night.
— 29—Slightly overcast; fine; clear; slight frost.
— 30—Clear; rain; very boisterous.
— 31—Overcast; boisterous with rain at night.
Nov. 1—Boisterous; rain; excessively boisterous.
— 2—Partially overcast; cloudy; overcast; rain.
— 3—Clear and fine; hazy; rain at night.
Mean temperature of the week, 1 deg. below the average

RECORD OF THE WEATHER AT CHISWICK,
During the last 33 years, for the ensuing Week, ending Nov. 12, 1859.

November.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 6..	53.3	39.5	46.4	15	0.76 in.	1	3	2	4	4	11	4	4
Mon. 7..	52.4	38.3	45.3	17	1.02	1	5	2	3	4	11	4	3
Tues. 8..	51.0	35.5	43.3	16	0.58	2	4	1	2	2	12	6	4
Wed. 9..	50.9	35.6	43.2	13	0.28	2	3	3	3	5	9	3	5
Thurs. 10..	51.6	35.7	43.4	19	0.67	3	4	2	4	6	8	2	4
Friday 11..	51.3	36.4	43.8	14	1.02	3	5	5	1	—	8	4	1
Satur. 12..	50.9	34.9	42.9	15	0.50	3	5	5	2	3	6	7	2

The highest temperature during the above period occurred on the 6th, 1834, and 12th, 1841—therm. 63 deg.; and the lowest on the 9th, 1854—therm. 18 deg.

Notices to Correspondents.

DISEASES: *J R E R.* There is little doubt that your Tea leaves are in the same condition with those of Portugal Laurels all over the country. The spots arise from water which has at some period of growth chilled the tissues on which it rested and ultimately destroyed them. You do not say what the other plant is. The spots are apparently due to the attack of an *Æcidium*, which is however abortive. We should, however, speak with more confidence if we knew what the plant is *M J B.*

GARDENER FOR GEORGIA, U S. Applicants are requested to observe that it is impossible for the Editor to answer their numerous letters. The person who may eventually be recommended will be duly communicated with; and notice will be given when the place is filled up. We will add that men of bad character are not so little known in London as one applicant imagines.

INSECTS: The woodborer sent by a correspondent near Ryde, without any note, is the caterpillar of some great moth. It is very like what Ratzeburg has figured in his Forstinsekten, as the caterpillar of Cossus Æsculi.—*M S.* Your insect is not a mealy bug. It seems to be a mouldy shrivelled up Millepede. *W.*

MANCHESTER FLOWER SHOW: *Looker-on* must not expect us to insert statements that are not only self-contradictory but impute motives to gentlemen. He begins by charging the Council with having no other object in view than to extract sixpences out of poor men's pockets; and he ends by declaring that the Council richly deserve the thanks of all exhibitors. Such letters are discreditable to the writers.

NAMES OF PLANTS: *G T M.* 1, Dendrobium cumulatum; 2, D. aqueum.—*R S & Co.* The species of Oak is the Cut-leaved Alder.

THE COTTON PLANT: *W J S.* The great book on this subject is Royle on the Culture and Commerce of Cotton in India, published by Smith and Elder, but we fear it will be hardly found sufficiently practical. Then there is Porter's Tropical Agriculturist; and a great deal of valuable information is scattered through the United States Patent Office Report for 1855.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London, S. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

MR. J. B. LAWES manufactures the following MANURES:—

TURNIP MANURE	£6 6
SUPERPHOSPHATE OF LIME	6 6
MINERAL SUPERPHOSPHATE OF LIME	5 5
BARLEY MANURE	8 0

N.B Genuine PERUVIAN GUANO direct from Messrs. Gibbs. NITRATE OF SODA, SULPHATE OF AMMONIA, and other Chemical Manures.

WHEAT MANURE.—PERUVIAN GUANO is proved to be the best and cheapest Artificial Manure for Wheat, at Autumn sowing.

American decorticated Cotton-seed Cake of best quality supplied at the market price.

Offices: 1, Adelaide Place, London Bridge, E.C.

LONDON MANURE COMPANY
(ESTABLISHED 1840),
Have the following MANURES ready for delivery:—
CORN MANURE FOR AUTUMN SOWING.
BLOOD MANURE FOR AUTUMN SOWING.
URATE.
SUPERPHOSPHATE OF LIME.
SUPERPHOSPHATE MINERAL.

The London Manure Company also supply PERUVIAN GUANO (direct from Messrs. Gibbs & Sons), SULPHATE OF AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of known value, all of which they warrant strictly genuine. Wholesale dealers supplied.

116, Fenchurch Street, E.C. EDW. PURSER, Secretary.

BURNARD, LACK, AND CO.'S CONCENTRATED SUPERPHOSPHATE OF LIME: guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.

CONCENTRATED TURNIP MANURE, equal in value to the preceding.

Of these Manures Dr. Voelcker says:—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."

Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to BURNARD, LACK, & Co., Sutton Road, Plymouth.

PERUVIAN GUANO.—The present price of this valuable Manure is 12*l.* per ton for 30 tons and upwards; 13*l.* 5*s.* per ton for 1 ton up to 30 tons.

And, in order to protect themselves against the purchase of adulterated mixtures and of inferior Guanos purporting to produce results equal to Peruvian, consumers are recommended to apply either to ourselves, to our Agents Messrs. GIBBS, BRIGHT, & Co. of Liverpool and Bristol; or to Dealers of established character, in whose honesty and fair dealing they can place implicit confidence. ANTY. GIBBS & SONS.

15, Bishopsgate Street Within, London, E.C.

THE PATENT NITRO-PHOSPHATE OR BLOOD MANURE COMPANY (LIMITED).
Trustees:—
ABEL SMITH, Jun., Esq., Walton House, Ware, Herts.
CHARLES DIMSDALE, Esq., Essendon Place, Herts.
EDWARD BALL, Esq., M.P., 8, Belgrave Road, Pimlico, S.W.
GENERAL HALL, Weston Colville, Linton, Cambridge.
JOHN BRADY, Esq., M.P., Warwick Terrace, Belgrave Square, W.
Directors:—
Chairman—JONAS WEBB, Esq., Babraham, Cambridgeshire.
Deputy-Chairman:—
JOHN COLLINS, Esq., Myddleton Square, Pentonville, E.C.
EDWARD BELL, Esq., Tottenham, Middlesex, N.
JOHN CLAYDEN, Esq., Littlebury, Essex.
RICHARD HUNT, Esq., Stanstead Abbot, Herts.
THOMAS KNIGHT, Esq., Edmonton, Middlesex, N.
ROBERT LEEDS, Esq., West Lexham, Norfolk.
ROBERT MORGAN, Esq., 72, Camden Villas, Camden Town, N.W.
GEORGE SAVILL, Esq., Ingthorpe, near Stamford.
WILLIAM COLLINS, Esq., 105, St. John Street Road, E.C.
Bankers—Messrs. BARNETT, HOARE & Co., Lombard Street, E.C.
Solicitors:—
Messrs. KINGSFORD & DORMAN, 23, Essex Street, Strand, W.C.
Auditor—J. CARTER JONAS, Esq., Cambridge.
Manager—Mr. JAMES ODAMS. | *Secretary*—Mr. C. T. MACADAM.
Offices: 109, Fenchurch Street, London, E.C.: Manufactory, Iaistow Marshes, Essex, E.
ODAMS'S BLOOD MANURE FOR WHEAT.
Price 7*l.* 10*s.* per Ton, delivered Free to any WHARF or RAILWAY in London.

MANURE FOR SALE.
THE LONDON GENERAL OMNIBUS COMPANY (LIMITED) are desirous of Disposing of the MANURE of about 500 horses, standing in their Highbury Yard, on Contract, for 12 months. The Contractor will be required to remove the accumulation every third day.—Application to be made to H. G. CHURCH, Secretary, 454, Strand, W.C.

TO FARMERS, CORN FACTORS, MERCHANTS, &c.—WANTED, AGENTS, by the PATENT WOOL MANURE COMPANY, in districts not yet represented, for the Sale of their Patent Wool Manure, Superphosphate of Lime, Bones, Sulphate of Ammonia, and other Chemicals and Manures required by Agriculturists. Application to be made to the Proprietors, who are the sole Manufacturers, Messrs. C. H. TIDBURY & Co., 81, Gracechurch Street, E.C.; or Lavender Dock Wharf, Rotherhithe, S.E., London.

FOOD FOR WINTER STOCK.
SAMUELSON'S celebrated TURNIP CUTTERS, PULPERS, CHAFF-CUTTERS, OIL-CAKE BREAKERS, CORN and MALT-CRUSHING MILLS, all with the latest patented improvements, may be obtained through any Ironmonger or Implement Dealer in the kingdom, or (carriage paid to the nearest station to the purchaser) direct from the manufactory.—Britannia Works, Banbury, Oxon; or London Warehouse, 76, Cannon Street West, City, E.C.
Catalogues sent free on application.

WEST OF ENGLAND AND SOUTH WALES LAND DRAINAGE AND INCLOSURE COMPANY.
Established in 1844.
INCORPORATED BY ACT OF PARLIAMENT IN 1848.
Draining, Inclosing, Irrigating, Warping, Road Making, and all kinds of Land Improvements, executed on Entailed, Mortgaged, or other Properties, and the whole cost can be made a Permanent Charge on the Lands, or redeemable in a certain number of years. BIDWELL & BADDE, Secretaries.
Offices: Exeter: and 30, Parliament Street, London, S.W.

LAND DRAINAGE.—WORKS OF DRAINAGE of any extent are EXECUTED by the GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY on all descriptions of property, whether freehold, entailed, mortgaged, trust, ecclesiastical, corporate, or collegiate.

Repayment may be made by the landowners as successive portions of the works are completed; or the actual expenditure, with a commission thereon, may be charged on the property improved, by way of rentecharge created for various terms of years so as to adapt the rate per cent of annual charge to the circumstances of the tenants.

No investigation of title being required, and the charge not being affected by incumbrances, no legal expenses are incurred.

Works of Irrigation, Enclosing, Wood Grubbing, Road Making, and Farm Buildings are executed in a similar manner.

The Company also assist landowners in executing any of the improvements by their own agents, and charge the amount expended on the property improved.

Applications to be made to WILLIAM CLIFFORD, the Secretary, at the Offices of the Company, 52, Parliament Street, S.W.

THE LANDS IMPROVEMENT COMPANY.—Incorporated by Special Act of Parliament in 1853.—2, Old Palace Yard, Westminster, S.W. To Landowners, the Clergy, Estate Agents, Surveyors, &c., in England and Wales and in Scotland.

The Directors beg leave to announce that the Company's Amendment Bill, 1859, has received the sanction of the Legislature. The Company now advance money, unlimited in amount, for the following works of Agricultural Improvement, the whole outlay and expenses in all cases being liquidated by a rentcharge for 25 years.

1. Drainage, Irrigation and Warping, Embanking, Inclosing, Clearing, Reclamation, Planting for any beneficial purpose, Engines or Machinery for Drainage or Irrigation.
2. Farm Roads, Tramways and Railroads for agricultural or farming purposes.
3. Jetties or Landing places on the sea coast or on the banks of navigable rivers or lakes.
4. The erection of Farm Houses, Labourers' Cottages, and other Buildings required for Farm purposes, and the improvement of and additions to Farm houses and other buildings for farm purposes.

Landowners assessed under the provisions of any Act of Parliament, Royal Charter, or Commission, in respect of any public or general works of drainage or other improvements, may borrow their proportionate share of the cost, and charge the same with the expenses on the lands improved.

No investigation of title is required, and the Company being of a strictly financial character do not interfere with the plans and execution of the Works, which are controlled only by the Government Enclosure Commissioners.

For further information, and for forms of application, apply to the Honourable WILLIAM NAPIER, Managing Director, 2, Old Palace Yard, Westminster, S.W.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, London, S.
Principal—J. C. NESBIT, F.G.S., F.C.S., &c.
The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.
Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

CRYSTAL PALACE.—AGRICULTURAL ROOT SHOW.—A Show of Agricultural Roots and other Produce will be held on TUESDAY to SATURDAY, the 6th, 7th, 8th, 9th, and 10th December next. Schedules of Prizes, and Regulations are now ready.—All communications to be addressed to Mr. W. HOUGHTON, Secretary to the Show, Crystal Palace, Sydenham, S.E.

The Agricultural Gazette.

SATURDAY, NOVEMBER 5, 1859.

A GREAT deal of injury has been done by the frost of last week to Mangel Wurzel crops in various parts of the country. Where the roots have been pulled and laid in rows upon the land preparatory to carriage to the heaps they are destroyed. Where still standing and partially sheltered by their leaves, those leaves are only partly injured, and it is probable that the roots may last. The best plan to treat them in that case probably is to run a large double mouldboard plough down the intervals of the rows, and thus throw earth enough up each side of each row as a protection to the roots, until in a week or two it shall be seen whether the plants are destroyed. The useless expenditure of harvesting a worthless crop will thus be saved, and each root that has been injured past remedy will rot by itself and not infect the rest. If, after a slight frosting, this protection could at once have been given to the slightly frosted roots, there would have been less chance of immediate injury than where the frozen roots were subjected to a rapid thawing. We must, however, express the fear that injury by frost over the surface of a Mangel Wurzel root is fatal, and that no remedy for its effects is possible. Whether such roots would keep after steaming and being thrown together in a heap or pit as rotting Potatoes will, we cannot say. If superheated steam were used in cooking them, so as to drive off a portion of the enormous quantity of water they contain, there would be greater chance of success in such a scheme. Under the ordinary cooking process we should think the chance of turning roots to useful account for longer than a week in this way to be extremely small.

THE period at which any green crop can be most advantageously consumed is a subject worthy of careful consideration—second only in importance to the best method of producing it. In some cases it is even of greater importance, and it is probable that few of us as carefully consider this as our interest renders desirable. The full growth of a crop can by no means be taken as an indication of its maturity. If we look at our root crops we find very clear and convincing proof of this fact. The Mangel Wurzel is a root which has been as carefully noticed as any of its class, and may be taken as some indication of results which yet await fuller examination of other roots. The facts connected with this root are simply these—that at the time the crop has completed its growth, it contains an acrid body within it which has a tendency to produce considerable irritation in the stomach of the animals fed upon these newly grown roots. When it is freely used in this condition it produces a considerable amount of purging in the animal, accompanied by griping pains. The result is that the animal pines away and loses condition by the use of this food, instead of reaping any benefit from its use. As a consequence of this character it has become a general practice not to give these roots until they have been stored away for some two or more months; and it is then found that they are free from these injurious effects and valuable as food. Upon examination it has been found that the acrid matter which was present in the fresh root and produced such pain and inconvenience has been changed into sugar or starch, which are prepared to do good service in the support of the animal and in promoting its growth. To use a common simile, we might compare the fresh root to unripe fruit, which although it may have attained its full size, has by no means arrived at that condition in which it is most valuable for use. Its sourness has to be removed by the more perfect ripening of the fruit and its acrid character transformed into a sweetness at once grateful to the palate and innoxious to the system. This is the change which we know takes place in the ripening of fruit, and we have a parallel example in the ripening of the roots of Mangel Wurzel; both if used before the completion of this change produce an inconvenience which is not experienced from its subsequent use.

It is more than probable that what has been said respecting the Mangel Wurzel may be applied to a more extended group of farm produce. There is no reason why this root should be an exception to other root crops, and the result of our observation leads us to the conclusion that similar influences are more frequently operative than is generally imagined. If, for example, we take the Swede crop, we cannot but have observed that its early use is never so productive of increased weight as it is at a later period in the season. The tendency upon stock fed upon this root when in its fresh-grown condition is to scour them, and care is generally necessary to avoid this result. The use of dry food is generally resorted to as a palliative, and this shields the stomach to a great extent from the powerful action of the acrid matter present. To overcome this prejudicial action, and to use the Swede to advantage, it is necessary to allow it to ripen before it is used. In proportion as it is unripe, and produces diarrhœa in the same proportion, is it valueless as food, being calculated rather to decrease the animal's weight than to further its growth. Observation shows that those Swedes which from being sown early have come to their growth, and had an opportunity of ripening afterwards before their feeding has been commenced—such roots invariably carry on the stock more rapidly and with less injury to health than where such an interval has not been allowed before their consumption.

The common Turnip is no exception from the same rule, for we find exactly the same results attending their early use. Much of the loss of sheep which happens when they are first put upon Turnips may, without doubt, be traced to the fact of their being unripe, or, in other words, their consumption has been commenced before they are ready for food. This in some measure explains the advantages which attend the consumption of Turnips which have been sown as early as the Swedes; for these have better opportunity of attaining their full growth, and then have time to ripen before they are wanted for use. So far as we have observed we believe that roots have no constant value as food independent of the time when they are used. As a general rule, Swedes are

of less value in November than common Turnips, and equal quantities of each being used the former will produce less increase of weight than the latter, and yet if you wait until the Swede has ripened a very different result is gained, for then the Swede increases the weight more rapidly than the common Turnip. We might extend our observations to the Rape crop, and here also we have reason to believe that the loss of stock arising from its use may be traced to the unripe condition of the plant. The value of a food is clearly dependent upon its power of supporting life and administering to the growth of the animal consuming it. So far as it is capable of performing these duties so far will it be valuable; but if when we have produced a crop for this specific purpose we consume it before it has attained its greatest feeding power, we clearly make an unnecessary sacrifice of food, and endanger the health of the stock by which it is consumed.

That the quantity and quality of the solid and liquid excrements voided by an animal vary with the nature of the food on which it is fed is a fact generally known. If a beast is fed on food deficient in nitrogen, the dung obtained from it will not be capable of producing any marked effect under circumstances where nitrogenised manures are essential. On the other hand if the animal, and especially in the fattening process, be fed liberally on oilcake, Bean-meal, or some other feeding materials rich in the albuminous compounds, the excrements may reasonably be expected to prove efficacious in the production of our farm crops. General statements of this kind are very useful in their way; but they do not convey that scientific precision which alone can constitute "exact" knowledge. And until formulæ are established by which to indicate the proportions of a given quantity to be charged to the animal and the field respectively, our information on feeding remains in a semi-chaotic state.

The farmer has been taught to know that certain crops are more valuable than others — that the functions of these crops in the animal economy are referable to simple laws—that such proximate constituents of plants, as starch, sugar, gum and fat, produce fat in the animal and support the combustion which maintains the animal heat—that the albuminous compounds or those containing nitrogen go to form flesh. Upon all these points the intelligent farmer of the present day has clear and satisfactory ideas. But when he comes to estimate the exact balance which his live stock pay he is completely at sea. "A day with the chemists" will prove of little avail in satisfying his inquiring mind. In vain may we search chemical volumes, from Berzelius to Voelcker, for an answer to the question—"How much of the first cost of my oilcake and hay is to be charged to the cattle, and how much to the manure heap?"

Some months since Mr. Charles William Hamilton, of Hamwood, near Dublin, undertook to elucidate the subject, and went to considerable expense in paying for the analytical portion of the investigation. The result of his inquiry appeared first in a paper on "Sheep Feeding" which he contributed to the "Monthly Agricultural Review," and it was transferred soon after to the columns of the *Agricultural Gazette*. Some of these results were so startling that Mr. W. Spooner, jun.,* seeks to correct what he considers an important error in Mr. Hamilton's paper.

Mr. Hamilton fed some wethers for the last fat stock show of the Royal Dublin Society on oilcake and Oats, at the rate of 1½ lb. of the former and ½ lb. of the latter *per diem*. It occurred to him, among other ideas, to compare the solid and liquid excrements of sheep so fed with others which never had any food but Grass. One of the cake-fed wethers and a Grass-fed ewe were placed in a sheep shed for 24 hours for the purpose of collecting their droppings. The daily yield of excrement was—

	Solid. lbs. oz.	Liquid, lbs. oz.
Wether	3 3½ ..	2 11½
Ewe	2 15½ ..	3 11

Dr. Apjohn valued the solid dung of the wether at 1*s.* 1½*d.* per cwt., and the ewe's at 8½*d.* This is a difference of great magnitude, but sinks into insignificance when compared with the marvellous difference between the urine of the animals experimented upon. Indeed, we thought it probable that, as Mr. Spooner suggested, Mr. Hamilton might have made some clerical error; and with the view of eliciting the truth, we have placed ourselves in communication with that gentleman, who has forwarded to us Dr. Apjohn's original report of the analyses, from which we find that Mr. Hamilton's conclusions were strictly deduced from the data before him. Making one or two corrections by the aid of Dr. Apjohn's manuscript, we find that the urine of the ewe had a specific gravity of 1.009. After being strongly acidulated with muriatic acid and evaporated down, until upon cooling it was converted into a solid, the residuum was weighed, and found to constitute 2.609 per cent. (or 2.609 grains in every 100 grains). Such amount of it (2.609 grains) was then burned with soda lime, and was thus found to yield 0.542 grains of ammonia = 0.393 grains of nitrogen. Urine of wether was sp. gr. 1.057; treated in the same way it gave a larger residuum, consisting of 25.43 per cent. of the urine, 9.165 per cent. of ammonia = 7.45 of nitrogen. This comparison gives—

	Sp. gr.	Per cent. Ammonia.	Per cent. Nitrogen.
Urine of ewe	1.009	0.542	0.393
„ wether ..	1.057	9.165	7.450

"We thus arrive at the conclusion," continues Dr. Apjohn, "that the urine of the wether yields nearly 17 times as much ammonia as that of the ewe; and that, using the ammonia as our guide, the value of the urine of the wether is to that of the best Peruvian guano in the ratio of 9 to 17."

Mr. Spooner, forgetful or ignorant of the fact that Mr. Hamilton used Dr. Apjohn's very words and figures in quoting the analysis, thinks it "probable that Mr. Hamilton has mistaken the per centage of ammonia in the solid matter for the per centage of ammonia in the whole bulk of the urine." We are now in a position to say that no such mistake has occurred; and that Mr. Hamilton's papers deserve the most careful consideration. It is highly probable that the majority of those who have read that paper labour (like Mr. Spooner) under the impression that the urine of wethers is, according to Mr. Hamilton's investigations, weight for weight, seventeen times richer in nitrogen than that of ewes, when the animals of both sexes are fed and treated alike. Such, however, is not the case. The ewe whose urine Mr. Hamilton collected "never received any other food" but Grass, while the wether was highly fed with concentrated feedings. That some difference would exist in the composition of the urine of ewes and wethers (and of the sexes generally) is what everybody would expect; but that the quantity of nitrogen in wethers' urine could be seventeen times the proportion in ewes' urine when the two animals are fed alike is highly improbable if not impossible. But every student of agricultural chemistry knows that there must be a wide difference in the per centage of nitrogen in the urine of two animals, when the one is fed on Grass which contains a very low per centage of nitrogen, and oilcake and corn, which are rich in that element. Viewed in this light Mr. Hamilton's first experiment does not appear so startling after all.

That we are correct in supposing that the difference commented upon is not so much due to a difference of sex as many have imagined is most clearly evidenced by the second experiment conducted by Mr. Hamilton, in which he weighed and had analysed the urine of two wethers that had been equally fed on oilcake and Oats; the artificial food was stopped from one of them for three days previous to their being shut up for 24 hours. The urine was found to contain per lb.—

	Grains.
No. 1. Which continued to receive oilcake during the three days mentioned	252.80
No 2. Fed on Grass alone during those three days	33.12

Estimating their value by their nitrogen we find from this experiment that the urine of the cake-fed wether is nearly eight times as valuable as that of the Grass-fed one. This is a marked differential value in favour of the former; and completely refutes Mr. Spooner's suggestion, if any such refutation were needed. An interesting question remains unanswered by either of these experiments, namely, the relative value of the urine of ewes and wethers treated in every way alike. Conjointly, however, the Hamwood experiments throw some light upon this point. The second experiment reduced the influence of concentrated feeding and Grass on the quantity of ammonia in the urine to the ratio of 8 to 1; the first experiment gave the ratio of 17 to 1 as the combined influence of feeding and sex, which reduces the influence of sex to modifying the per centage of nitrogen in the urine to the ratio of 5 (wethers) to 2 (ewes.) We have at present in hand an extensive series of experiments for determining the quantity and quality of the excrements of different animals. In one case it has been found that the per centage of nitrogen—

In the urine of a Grass-fed ewe was	0.612
„ „ wether	0.936

Or, in other words, the urine of the wether contains over 50 per cent. more nitrogen than that of the wether, which is a curious result; but upon this we will not dilate at present further than to say that we hope ere long to be in a position to give the influence of sex in modifying the value of animal excrements for manure.

In these remarks we have not ventured to determine how much of the value of the feeding is to be charged to the manure heap or the field. Mr. Hamilton's paper enters into the subject so far as sheep are concerned. And Professor Anderson has addressed himself to the same subject in his lecture of the 2d August last. We ask the co-operation of those who have the will and the means to aid us in elucidating a subject of such scientific and practical importance; knowing of how little service towards the establishment of a general rule is any experience, however carefully recorded, of single animals.† *B.*

* *Agricultural Gazette*, Aug. 6, 1859.

† See Mr. Spooner's remarks in another column.

TITLE BY INSURANCE.

[Mr. Hoskyns has addressed the following letter to the *Times* upon the social and agricultural benefits which are to follow free trade in land.]

Some degree of public interest has attached itself to the approaching election of a secretary to the Royal Agricultural Society of England. It is, however, scarcely known beyond the land-owning and farming world that the election falls almost contemporaneously with the commencement of a second 20 years' campaign of this association of English agriculturists, whose late re-opening at Warwick—almost the central town of the kingdom—offered perhaps the largest exhibition of the kind ever seen in Europe, probably in the world. Their first campaign commenced at Oxford in 1839, and terminated last year at Chester.

The long course of "Practice with Science" divides itself, somewhat singularly on review, into two equal periods—the former having been received by British husbandry under protection, and the latter under free trade. It is not necessary to draw any comparison. The relative progress during the two periods, and under the two systems, is matter of familiar knowledge to almost all classes of the public.

But I would ask your aid to give expression to a want which the Royal Agricultural Society cannot supply for the soil of England—a want which presses upon it with increasing severity every year, and that now meets the ear directly or inferentially in every conversation among thinking men upon the future of agriculture in this country. It may be stated very briefly. It does not broach complicated questions of steam ploughing machinery, or elaborate systems of cultivation; it does not plunge into schemes of education for farmers' sons, or of the suitable wages of a class of labourers who never strike. It shapes the one thing wanted in this short phrase—freedom for the land.

It is not too much to say that the actual bearing of this question upon the whole community is not known, not suspected by one man out of 10,000 in it. Hardly a better proof of this could be given than the very terms of the welcome with which the late Solicitor-General Sir Hugh Cairns's Bill was received by the greater portion of the press. It was chiefly characterised as a boon to the owners of land which they ought to have long ago used their Parliamentary influence to obtain; and, for the rest, crumbs of comfort were thrown to the lawyers in the prospect of an increased, though altered business. If the 70,000,000 acres of the United Kingdom existed solely for the benefit of landowners and conveyancers, there would be little left to say; and I would not attempt to say it, for who can help those who will not help themselves? But this, which is so commonly taken as the whole of the question, is its narrowest and least deserving side. The land of this country, and of every other country in the world, however it may pass from hand to hand as property, is in one sense, and a very obvious sense, the birthright of labour. It is the ultimate source of all production, all wealth, and the origin of all employment and investment. No country, much less such a one as this, can measure what it loses by the denial or stagnation of the commerce in land. It stops or contracts the arteries that supply the whole system of trade, internal and external. It is a "strike," indeed, of the most fundamental and fearful kind, affecting thousands upon thousands who have no means of knowledge—no suspicion whatever of the source of the evil that insidiously reaches their own hearth. If an iron-master be compelled to blow out half his furnaces, or a mill-owner to turn off half his hands, we may lament the cause for his sake; but our sympathies do not begin or end with him. We think of the thousands who are thrown out of employment, and the other thousands whose trade is thus affected directly and indirectly. But what shall be said of a system of established law, or custom having the force of law, which deliberately closes the most natural, most wholesome, and most extensive field of labour that we know from the labourer, and its produce from the community, by tying up the hands of its proprietors from the employment of the full complement of labour it is capable of employing? The owner himself, like any other capitalist, is perhaps the least sufferer, and the last. He may be idle enough to care but little, or to even prefer half labour, half crops, half investments of capital or time; but the labourer's family are increasing around him meanwhile. Has he no vested interest in the employment which the soil should afford? Now, it happens in this otherwise improved and well-ordered England that the capitalist cannot buy land, and the embarrassed owner cannot sell it, and the improving owner cannot borrow on it without the torture of expenses and delays that every one who knows anything of business knows to be a virtual denial of that free action, and destructive of the motives which lead men to act at all. Who would fatten an ox, or sheep, or print a yard of calico, if, before he could sell it, it had to go through a third pair of hands, coming in between the seller and the buyer, that nipped off that little increment of value that men call profit? The carcass price is not the thing men bargain about; it is that addition which skill or labour puts upon it. Confiscate this and all markets may as well be closed. The gist of the whole matter lies in this. Our system of conveyancing, the obsolete coinage of an age when the investment of capital in land was almost a thing unknown, operates as a deterring

indolence, paralyses the motive which should be the mainspring of all trade in land combining its retention in the hands that are unable to make the best use of it, and would willingly part with it, and denying it to those who have capital to invest in it and are able to employ labour in its improvement. This might be of less moment if no one but the buyer and seller were concerned, but let any one say it that be so who has seen the condition of a landed estate whose owner was too poor to improve it, and that same estate when it has been at length dragged through the fiery ordeal of the conveyancer's office into the hands of a wealthy purchaser. One sight of this is worth a hundred arguments.

There is a kind of toadyism that is fond of coining imaginary pleas for the "ancient owners," the "old aristocracy" of the soil, cheating the ear with the false assumption that slow and costly transfer of land has a tendency to keep estates in old families. They forget, kind advocates, that the same impediments which shackle a seller embarrass an owner wishing to improve and save his property; that the high price of money to the owners of "green-field security"—though allowed by the best of all—is due to that very complexity and delay which make the sale so troublesome. For, what is mortgage but a sale with power of redemption? Make that power short, simple, certain, and inexpensive, and many an owner of land would be able to hold and improve, partially or entirely, who under the present system is ultimately driven to sell under every disadvantage. An assumption more perniciously erroneous than that dear conveyancing keeps land in old families it would be difficult to conceive. It is more like the joke of an enemy than the error of a friend.

The truth lies grievously the other way. Not only are the owners of land restrained from the power to employ labour by the dearness of capital on their particular class of security, even where the ownership is untrammelled by entail or settlement (a subject on which I should like to address you again), but the continued operation of this impediment begets a kind of generic or class illiteracy. A landed estate is a business; and for one improvement that will pay 10 per cent. on the outlay 100 will pay 5; and were capital for agricultural enterprise obtainable at the rates of interest that the merchant pays on bills of lading, dock warrants, and Government securities, and which thus govern his investments, it would produce a revolution in the employment of agricultural and estate labour, the building of cottages, and the application of capital to every permanent improvement of the soil. Of all the taxes that can press upon land, that of expensive and protracted transfer is the most extensively injurious. It impoverishes the labourer first, the public who would benefit by his labour second, the capitalist, both large and small, seeking investment third, and lastly, the landowner himself. For what? Not to aid the public exchequer, but to support an obsolete system of fiction and quackery in the so-called "practice of conveyancers," whose conveying lies in the whole art and ingenuity of obstruction, by virtue of the assumption that every title to land is bad until the ransacking of all the incidents of 60 years' possession has enabled them to prove a negative: that, after all, it is not bad: therefore the conveyance may proceed! Will such a thing be believed hereafter, when the present "system" has been consigned to the limbo of "fines and recoveries," and "outstanding terms," and its supporters are walking hand in hand with John Doe and Richard Roe in the plains of Elysium.

But it is only justice to a noble profession to say that its most eminent members have been among the first advocates of a reform of this greatest unreformed abuse in this country. Conveyancers of the highest standing and experience admit that a really bad title to land is a thing of the most infrequent occurrence; that the risk is, to use the language of insurance, so small, taking one title with another, that it would be a matter of scarcely calculable appreciation. Yet by the very same authorities the doubt is often expressed whether (speaking professionally) any effectual remedy will ever come from within.

Every experience is in favour of that belief. Already the practice is obtaining among the wealthier class of buyers, in the case of small purchases, to take a simple conveyance, and be their own insurers of the title. Why should not this hint be acted on? We have insurance offices in abundance, ready to undertake every species of risk, and not too full of business at present; and here is a risk declared by the best authorities to be, not, like life insurance, a mere question as to the time when an event, certain in itself, will take place, but the infinitesimal risk of a thing which rarely ever happens at all. The Great Eastern is a floating property of tolerable magnitude, yet she can be insured. The poor Royal Charter, so lately lost, will cost each of her insurance offices the price of a handsome landed estate. Why should not landowners take a leaf out of the ledger of commercial prudence and sagacity, and by a Landed Title Insurance Company free themselves for ever from the tyranny of shadowy doubts upon their titles that have such fearful power for mischief, yet no reality or substance, except for the benefit of those who raise them?

By such an association, composed of landowners themselves, this question might be set at rest, and every transfer of land in the kingdom be reduced to the simplest form a conveyance can assume; not by an elaborate and vexatious investigation of title-deeds, such as that proposed by the Bill of last session, but by enabling every vendor and purchaser to make at once the conveyance they have agreed upon, and to insure the title, at a trifling cost, until the lapse of a statutorily determined period shall have rendered it indefeasible. *C. Wren Hoskyns.*

PULPING ROOTS.

A REPORT of a recent meeting of the Haddington Farmers' Club is given in the *North British Agriculturist*, from which we extract the following particulars on this important subject. Mr. Shirreff, of Saltcoats, presided and said:—He observed that the district of the railway from Dunbar to Edinburgh presented this appearance, that while there is not one single field of good Turnips of any variety, there is a great difference as to the extent of the failure, and to his mind that diversity is the most puzzling feature in the case. Near Drem the Swedes, the seed of which had long lain dormant in the utterly dry soil, came up at last without their full natural vigour. He is convinced however that it is not the long drought which is the secret cause of this disease. He has some fields sown after the rain which rushes away at once, and, indeed, nearly the whole of his Turnips were most luxuriant and vigorous at the time they were singled. The period of their being sown made no difference. There is one field, portions of which were sown at four different times; they did well at first, all became yellow at once, and drooped their leaves, and died at once, but the dissolution of the younger ones was by far the most rapid. The manure had nothing to do with the disease. This he thought was clearly proved by the Club's experiments, which he had tried, together with a portion of farm-yard manure.

Mr. Sadler, Ferrygate, said:—The question is, what are we to feed our cattle with this season? Oilcake is cheap, and we have now straw-cutters, steamers, and Turnip pulpers to call to our aid. He had tried pulping, and thought that it would interest the meeting to hear his experience of that system, which has been so much recommended in England for its economy of Turnips in the feeding of cattle, that one manufacturer alone has sold no less than 4000 machines. The plan recommended is to mince or grate the Turnip into a pulp, which, either fresh or fermented is mixed and given to cattle along with cut straw. He then read the following paper, containing the details and result of his experiments:—

This time two years ago I obtained one of the most approved pulpers of the day on trial, and I would advise this plan of getting a trial with all new and unknown machines before purchasing. The machine in question was made to pluck the roots into small pieces, without apparently pressing out any of their juices. I selected eight Short-horn cattle bought at Dalkeith fair, and up to the end of the year fed them upon sliced Turnips and a few Potatoes. Before being weighed and marked for trial, they were divided as equally as possible into two lots of four each, and for some weeks each lot was fed upon the respective food intended for it during the trial.

The experiment commenced on the 22d January, the cattle being in fair thriving condition. They were then all weighed singly upon a steelyard, and notes began to be taken of the food commenced—Lot No. 1 getting sliced Swedes, *ad libitum*, with uncut Wheat straw, and lot No. 2 pulped Swedes, *ad libitum*, mixed, and given fresh with cut Wheat straw, the daily quantity of the latter allowed being 7 lbs. per head, or as much as the pulp would amalgamate with, without rendering the mixture over dry. For the first month the lot feeding upon the pulp seemed to take the lead, but ultimately, as will be shown, they did not exhibit any superiority. During the last four weeks of the trial, both lots had an allowance of 4 lbs. of oilcake per head daily. The experiment was continued until the 22d April, when the beasts were all again weighed. The lot on sliced food was found to have consumed, in 88 days, 25 tons 1 cwt. 2 qrs. of Swedish Turnips, and to have increased in weight 7 cwt. 31 lbs. and the lot upon pulp had consumed 23 tons 13 cwt. 1 qr., and had increased in weight 6 cwt. 46 lbs.

The following is a table showing the weight of each beast at the commencement and end of the experiment, and also the improvement on each:—

LOT No. I.—FOUR CATTLE ON SLICED SWEDES.

Nos.	Weight, January 22.	Weight, April 22.	Increase.
	cwt. lbs.	cwt. lbs.	cwt. lbs.
1	9 7	11 28	2 21
2	7 98	9 42	1 56
3	9 84	11 94	2 10
4	9 0	10 56	1 56
	35 77	42 108	7 31

LOT No. II.—FOUR CATTLE UPON PULPED SWEDES MIXED WITH CUT STRAW, AND GIVEN FRESH.

Nos.	Weight, January 22.	Weight, April 22.	Increase.
	cwt. lbs.	cwt. lbs.	cwt. lbs.
1	9 2	11 14	2 12
2	9 15	10 77	1 62
3	9 28	10 84	1 56
4	8 84	10 0	1 28
	36 17	42 63	6 46

TABULAR VIEW OF THE RESULTS.

	Kinds of food.	Weight at Jan. 22	Weight at April 22	Increase in weight.	Comparative value of increase at 6d. per lb.	Weight of Turnips consumed in 88 days.	Value of Oilcake consumed in four weeks	Extra Turnips consumed by lot upon sliced food.	Value of extra Turnips	Cost of slicing, &c., 4d. per head per week.	Cost of pulping, 6d., and cutting straw 1d. per head per week.	Total for extra food and labour.	Return on each lot of Turnips consumed, taking increase at 6d. per lb. per week.	Payment on Turnips per ton, taking value of increase at 6d. per lb. per week.
Lot 1. Four Beasts.	Sliced Swedes	cwt. lbs. 35 77	cwt. lbs. 42 108	cwt. lbs. 7 31	£ s. d. 20 2 6	ts. ct. qr. 25 1 2	s. d. 10 0	tons. ct. 1 8	£ s. d. 0 14 0	£ s. d. 0 16 0	..	£ s. d. 2 0 0	£ s. d. 18 2 6	£ s. d. 0 14 6
Lot 2. Four Beasts.	Pulped Swedes	cwt. lbs 36 17	cwt. lbs. 42 63	cwt. lbs. 6 46	£ s. d. 17 19 0	ts. ct. qr. 23 13 1	s. d. 10 0	..	..	..	£ s. d. 1 11 6	£ s. d. 2 1 6	£ s. d. 15 17 6	£ s. d. 0 13 6

From the tables it would appear that, putting the cost of pulping against the saving of Turnip, in my case I got 1s. per ton less for the pulped Turnips than for those given in the ordinary way. It is to be hoped now, when our roots are so far from plentiful, other experiments may shortly be made upon this subject, as it would be rash to rest satisfied with even one or two trials. We all know that in a lot of beasts even one animal from being a dull feeder would effect a great difference in a trial of this sort, and in future ones it may be desirable to increase the quantity of cut straw, and to add, perhaps, a little Linseed gruel to damp the mixture.

I may mention that a friend of mine in the south of England, who had a good crop of Swedes last year, preferred giving them all to his sheep, and fed his oxen entirely on Mangel, cake, and Barley meal; and, as he observed, he had every reason to be satisfied with the result. I have some idea that he was correct; at least, I have always found a better return from sheep than from cattle. Should this be so in general, perhaps the diminution of our Turnip crop this season may, like the loss of the Potato in Ireland in 1846, lead to a profit in the end, by turning our attention to a more profitable method of feeding our cattle than that we have hitherto adopted.

In England the pulping system has progressed beyond all measure, although we are still without any comparative trials; yet, if we credit the vendors of these machines, something even superior to Thorley's cattle feed is being spurned from our feet.

Mr. Durie, Standingstane, understood the subject before the club to be what to grow instead of Turnips, but it seemed to him to have merged into what to buy. If we are to have the present emergency supplied, there is nothing in the market just now as good as oilcake at its present price. With respect to Mr. Sadler's last substitute, it is rather a kind of Irish resort to substitute "pulped Turnips and straw" for Turnips, especially after Mr. Sadler himself has shown the club that he got 1s. per ton less for pulped Turnips. In fact, he did not approve of pulping at all, as by it the amount of nourishment in the Turnip may be diminished, but cannot be increased, and as it supersedes the process of chewing, which promotes digestion. The animal cannot fatten better on the same weight of roots. But what are we to grow instead of Turnips, as they are getting every year more liable to disease? The great cause of the deficiency this year is the want of rain, which has produced mildew. It is worst in the low district of this county, where there was most drought; not quite so bad in the middle district, where there is more heavy land, which drought does not affect so much; and in the higher district, where they had more rain, Turnips are a fair crop. He thought members ought to try various mixtures of manures, and see if any of them will check the tendency to mildew in dry weather. Last year, where he had mixed ¾ cwt. per acre of nitrate of soda, the mildew almost stopped. He thought the best substitute for Turnips is undoubtedly Mangel. It requires more manure than Turnips, but it grows well on all deep soils, and once brairded it is not liable to disease, and drought has very little effect on it. The only thing against Mangel is, that it will not grow well on light Turnip soils.

After remarks from various other members, it was agreed to confine the resolutions of the meeting to the present emergency, and to take another opportunity of discussing what is the best substitute for the Turnip crop in time to come. It was then moved by Mr. Sadler, seconded by Mr. Shirreff, and unanimously agreed to, "That in the present emergency, caused by the deficiency of the Turnip crop, the club recommend experiments to be made in feeding cattle with Mangel, alone, and also with the various feeding substances now in the market, and that trials be made with steamed cut straw, bran, Linseed-cake, Rape-cake, and Barley meal, separately or mixed, and also, although not hitherto successful in Scotland, with pulped Turnips mixed with cut straw."

PROGRESS—MATERIAL AND MORAL—SINCE 1700.

[Sir J. K. Shuttleworth's Discourse on Social Economy, before the Association at Bradford contains the following passages.]

In a century and a half the exports of England and Wales had risen from less than 7,000,000*l.* in 1699 to nearly 60,000,000*l.* in 1849, while the whole exports of the United Kingdom amounted to 116,614,331*l.* in 1858, and the imports to 163,795,803*l.* in that year. The population of England increased from about 6,000,000 in 1700 to nearly 18,000,000 in 1851, and probably upwards of 20,000,000 in 1858.

The actual value of the cotton manufacture in 1787

was estimated at 3,304,371*l.*, while Mr. M'Culloch, in the latest edition (1849) of the "Commercial Dictionary," gives 36,000,000*l.* as the value of the goods annually made, and 47,000,000*l.* as the estimate of the capital employed. Mr. Baines in 1833 estimated the persons employed at 237,000, supporting 1,500,000 by upwards of 6,000,000*l.* of annual wages; whereas, in 1849, Mr. M'Culloch calculates that 542,000 spinners, weavers, bleachers, &c., and 80,000 engineers, machine-makers, smiths, masons, joiners, &c., were employed at annual wages, amounting to 17,000,000*l.* for 622,000 workmen. The exports of woollens in 1699 were estimated as amounting to nearly 3,000,000*l.* of value, whereas Mr. Baines estimated the annual value of woollen and worsted exported in 1857 as 13,645,175*l.*, the number of individual workers as 275,000, the number of persons supported as 837,500, and the annual value of the woollen manufacture as 20,290,079*l.*

It was not till the close of the 18th century that Flax-spinning mills were erected in England or Scotland. The Irish exports of linens to Great Britain and foreign parts increased from 34,000,000 yards in 1800 to 55,000,000 in 1825, and the declared value of linen goods and yarn exported from the United Kingdom increased from 2,579,658*l.* in 1834 to 4,225,895*l.* in 1849, and to 5,870,696*l.* in 1857.

The quantity of iron made in England and Wales in 1740, estimated at 17,130 tons, had increased in 1858 to 8,040,959 tons.

English canals date from 1755. Though only a century has elapsed, the navigable canals of England alone exceed 2200 miles, while the navigable rivers exceed 1800 miles in length, making a total of 4000 miles of inland navigation. The first steamboat worked for hire in Great Britain was the Comet, which plied with passengers on the Clyde in 1811. In 1814 six steam-vessels were built and registered in the United Kingdom and her colonies with a burden of 672 tons. In 1822 169 British and foreign steam-vessels of 15,017 tons burden cleared inwards. In 1858 the tonnage of steam-vessels cleared inwards had increased to 2,115,052.

In 1803 the vessels of all classes belonging to the United Kingdom and its dependencies numbered 20,803 ships, with 2,000,000 tons burden; and in 1858 to 20,071 ships, with 4,325,242 tons burden, exclusive of river steamers in the last return.

Thirty years have not elapsed since the first public railway was made in England; whereas on the 31st of December, 1858, there had been constructed in the United Kingdom 9,506 miles and Parliamentary powers exist for the construction of 2,070 more. The existing railways have been constructed at a cost of 325,375,507*l.*, and in 1858 conveyed 139,193,699 passengers, upwards of 73,000,000 tons of merchandise and minerals, and 11,326,006 of live stock, with an aggregate gross income of 23,956,749*l.*, and at an annual outlay of nearly 12,000,000*l.* (11,738,807*l.*)

During a century of mechanical invention the home and foreign trade in coal have advanced until in 1858 65,008,649 tons of coal were raised in Great Britain.

Two strong tendencies have accompanied the growth of the population from 6,000,000 in 1700 in England and Wales to upwards of 20,000,000 at the present time. The first has been the growth of great towns (some of which have increased their population six or eightfold), the aggregation of the people on the coal-fields, by migration from the agricultural and moorland districts and from Ireland, as well as by the extraordinary stimulus given to natural increase by higher wages, early employment, and early marriages. The second has been that hitherto the sudden checks in commercial prosperity caused by wars, by defective harvests, by the errors of our commercial legislation, by the very eagerness of enterprise, have all been met by the silent influence of colonisation, which in dangerous crises have enriched our colonies and the United States with the transiently surplus labour of the United Kingdom. There is scarcely a more touching incident in our national history than the fact that the Irish emigrants to North America have, since the failure of the Potato crop and the famine of 1846, sent 9,000,000*l.* sterling to their relations in Ireland to enable them to follow.

The migration, immigration, and vast increase in the numbers of the people—their gathering from comparative isolation in rural districts to close aggregation on the coal-fields under the stimulus of higher wages—began at a period when the schooling of the common people had been uncared for. Raikes commenced his Sunday-school in Gloucester in the latter end of the last century. The people during 50 years of the last, and 20 of the present century, were chiefly educated in the workshop.

The Legislature was ignorant of the true principles of finance and of commercial legislation to such an extent that, but a century ago, it prohibited by sumptuary laws the wearing of printed calicoes; and, with a limited area of culture, until a very recent period, deprived our vast mechanical force of the opportunity to purchase cheap bread. We should not, then, wonder at those outbursts of the fury of a population whom we had neglected to instruct, and who met each severe though transient embarrassment in the labour market by the "Luddite" riots of Yorkshire, and the successive efforts to destroy the spinning-jenny, the carding-machine, and the power-loom in Lancashire. Our work-people, taught rather by the press, by the influence of public opinion, and by personal experience, than as yet acquainted with any abstract principles, are ready now to protect the machines which they formerly destroyed.

In like manner, the attempt to regulate wages by associations of workmen has, under similar influences, undergone successive forms of amelioration. Secret associations, bound by terrible oaths, and issuing orders of assassination, are apparently not extinct, if the recently reported attempts in Sheffield are to be received as evidence of the existence of these ruthless gangs. But the recent strikes in Preston and other parts of Lancashire have passed off without tumult and without the picketting of mills. There remain forms of interference with personal freedom of workmen almost as effectual. Moral intimidation has succeeded to violence, the isolation of the "knobstick" or "black sheep" who will not join the union is substituted for personal assaults, the Trades Unions attempt to dominate in their own class by refusing to work with "knobsticks" or "black sheep," and thus to subordinate the whole body of the workmen in any trade to the orders of the directing committee. If the representative system of such associations were perfect; if the committee were always disinterested and pure; and if they had a more comprehensive knowledge of general principles than they have ever shown, it is clear that this social control of individual action would constitute at best that tyranny of the majority which De Tocqueville has conclusively shown to be the fatal crime against public and private liberty of any purely democratic constitution. * * * *

The first effect of a rise of wages among a rude people has commonly been the increase of the coarser forms of sensual enjoyment. Thus Mr. Porter, some years ago, estimated the amount of beer, spirits, and tobacco consumed by working men in the United Kingdom at 53,411,615*l.*; the spirits amounting to 20,810,208*l.*, the beer and porter to 25,383,165*l.*, and the tobacco and snuff to 7,218,242*l.* Probably no standard of the moral and intellectual condition of our population is so sure as this inordinate and unnecessary use of intoxicating drinks and tobacco. This is fatal proof that, though the pauper bound by the law of settlement is our last actual slave, some of the worst consequences of serfdom remain. The workman is free to emigrate from the moorland cottage, or the hut in the fens, or the mud hovel in a stagnating agricultural district, or from an Irish bog. He may settle in the midst of the vigorous life of the English coalfields. He may be trained gradually with better food, lodging, and clothing, by the discipline of toil, till he has a muscular energetic frame for outdoor work, or has gained a wiry, highly nervous organisation for the skilled manipulations of the factory. He may submit his will to the regulated system of the division of labour and to the influence of opinion on society. He may combine with perfect respect to the law to adjust the relations of labour and capital. But, though in all this there is gain, the animal nature of the ancient serf reappears. Ages ago his progenitor was a beast of burden, sold as a chattel of his owner, when life was subject even to his caprice. He has not risen to real freedom until he has acquired self-control. Emancipated from the *mund* of his lord, he has become his own master without the power to control his appetites.* In his new life the mind of the workman is mainly developed by his industrial and social training. The workshop and the press have done more for him than any other agency, and, next to these, the Sunday School. But it is to be confessed that that portion of the workmen who spend their evenings in sensual excesses have not yet become freemen. The tendencies to democratic change are so obvious, and are so strongly indicated by the origin, history, and theory of our constitution, that they are in some form ultimately irresistible. We have, therefore, to determine for ourselves whether we value the personal liberty of opinion and action which we enjoy under the mixed political power of this country, and whether we cannot preserve it, while we proceed to fulfil the apparent destiny of our race, by completing the freedom of the mass of our countrymen, by raising them to the dignity of freemen in the power of self-control, and to the intelligent exercise of the rights of freemen by the recognition of their claim as a class to a more direct influence in our representative system. Something has been done towards this result. The cities, towns, and villages of our coal-fields into which in the last century the population have migrated were irregularly constructed, unpaved, unsewered, the houses often rude and unhealthy. There was bad scavenging, little lighting, no sufficient water supply. Great advance has been made during the last 20 years in these forms of improvement both in town and country. The physical condition of the people has also been greatly ameliorated by the cheapening of food and clothing and all the other necessaries of life, while their habitations and wages have improved. The protection of women and children under 13 from excessive hours of labour, the prohibition of the employment of women in mines, have had a practical effect beyond the mere letter of the law. Excessive hours of work for men are discountenanced by public opinion; factories and mines are subject to regulations for the protection of life and health; and what the law does not require an intelligent sense of Christian duty often effects. The new hamlets, villages, and towns have in the last half-century, and especially in the last 25 years, been organised as centres of Christian influences by the building of churches, and chapels, and schools. We have spent many millions on these buildings.

We probably now expend about 2,000,000*l.* annually on the education of the people.

In the last quarter of a century literature has been cheapened for the use of the masses by such societies as that for Diffusing Useful Knowledge, over which Lord Brougham has presided since its origin. The press has become the great instructor of the people in all social and political topics. An earnest practical effort has been within the same period made to foster in the working population habits of prudence by savings-banks, in which 50,000,000*l.* are accumulated; building and benefit societies, in which large funds have been accumulated; by the possession of cottages and small freeholds; by temperance leagues; by societies of mutual improvement and mechanics' institutions; by advice, remonstrance, and example.

The chief object of this brief review of the social history of the most numerous class of our fellow-countrymen will have been attained if it tend to inspire a lively faith in their destiny; if it teach us to recognise in our history how all the elements of our social state inevitably react on each other; how each advance in order, in peace, in social polity, in civil and religious freedom, in the power of mind over matter, and especially in the Divine influence of Christian charity, has slowly but surely emancipated our humblest classes from serfdom, from villenage, from pauperism, and now tends to lift them up to the enjoyment of all the privileges of intelligent freemen. Nor have I been without hope that while such a review may thus strengthen our faith in the beneficent tendency of all providential laws, we may in contemplating their operation learn to restrain a short-sighted impatience. 1500 years have elapsed in our history, and yet the theory of our Saxon constitution is only partially realised. The schools of Edward VI. and Elizabeth only partially educate our middle class. Some generations must pass before home education in the cottage will generally worthily co-operate with the elementary school. How long a time will be required before the vast annual waste on intemperance is converted either into a means of rational enjoyment, domestic comfort, or into capital for the elevation of those who work with their hands! Whatever be the time required, we have to maintain our faith in the beneficent tendency of all great providential laws, whether in the great eras of material forces and animal life, or in the epochs of social change. All history teaches us that as the earth was in the vast ages of geological development slowly prepared by one great design for the habitation of man, so in the history of our race whatever have been the catastrophes which have overwhelmed empires—the internal ferments which have appeared for a time to cause a social chaos—slowly but surely, in the eye of Him with whom a thousand years are but as one day, man has been making a conquest of nature, asserting and exercising the dominion of mind over matter, emancipating himself from debasing animal instincts, raising class after class from serfdom, ignorance, and brutishness, and preparing for that reign of Christ in the hearts and institutions of mankind, when every man shall sit under his own Vine and his own Fig tree, none daring to make him afraid.

* It appears to us that this should be read with the consciousness that it does not apply exclusively, as it seems here exclusively to be applied, to the so-called working class. The "animal nature of the ancient serf" is just the animal nature of all mankind alike; and when uncontrolled by higher influences tyrannises and asserts itself in individuals of all classes. ED. *Agricultural Gazette.*

Home Correspondence.

Hoeing Clover.—Your recent *exposé* of the number of seed weeds in Clover suggests the necessity for removing those weeds so that they may not interfere with the growth of Clover. For many years I have invariably hoed my Clovers with the best results. About April or May when the Clover and weeds develop themselves the hoers cut out the weeds with their hoes, the Clover then by its rapid growth soon covers the ground. Such an operation is most profitable, the neglect of it very costly. I fear it is by no means customary to hoe Clovers. *J. J. Mechi, Oct.* 25.

Storage of Roots.—The following opportune remarks are taken from the *Coventry Standard*:—The frost coming on so suddenly, many of us have been caught napping as far as regards the storage of the root crops. Every farmer was getting comfortably satisfied with the appearance of his Mangel field, thinking of getting them up before Guy Fawkes' Day, and congratulating himself on the prospect of a nice lot of roots to carry on his stock from February till a good flush of Grass showed itself about May Day. But these hopes are partially doomed to disappointment. Some little experience has hitherto told us that frosted Mangels are safely booked for early decay. The very fact of its containing some 85 per cent. of water in its composition, which adds to its keeping properties, is also a chief cause of its speedy liability to injury from frost. The reason we take to be this: water expands in freezing, and the cellular formation of the bulb being fractured, decomposition is readily induced by returning warmth. We were fortunate enough to have a couple of hundred tons stored prior to the frost, and these we should think of keeping for later spring consumption, using the unstored lot at an earlier date. But we may all learn a lesson here. Let the grower make a point of completing their storage by the middle of October, and a recurrence of such loss will not probably be experienced in a generation. Other roots have done moderately well. The only complaint respecting Swedes is the prevalence of mildew. They were later sown than usual, and those which were

put in earliest have suffered most. Of common Turnips appearances are very diverse. The best crops are those which were sown after seeds, about the end of July, and these are generally far a-head of those which followed a well prepared winter fallow. After Peas, the crop is not so good as usual—the dry weather at the close of harvest having prevented a free germination. Carrots, Parsnips, and Kohl Rabi—where grown—are over a full average, and Potatoes have proved comparatively free from disease, though of less size than usual. The dry summer prevented a due enlargement of the tuber at the usual period of their most rapid growth, notwithstanding which they this year prove a paying crop. We subjoin the culture and produce per acre of a crop of Fluke Kidneys—a variety which does not stand in the highest repute with those who grow for the general market. The reason is, that although the quality is generally excellent, and more free from disease than most others, yet the produce is far less in quantity than the Farmer's Glory and other old-fashioned sorts. Hence, in a season like the present, when little disease has prevailed, the larger bulk brings a greater return, even at a lower price per bushel.

Culture.			
Manure, 18 loads at 5*s.*	£2	10	0
Deep ploughing—4 horses and 2 men ..	0	15	0
Ridging, planting, and summer labour ..	1	10	0
Seed, 15 cwt. at 80*s.* per ton	3	0	0
Rent and taxes	2	2	0
Digging and storing	1	10	0
	£11	7	0
Produce.			
95 bushels (84 lbs.) at 4*s.*	£19	0	0
60 ditto ditto, second quality, at 2*s.* 3*d.* ..	6	15	0
20 ditto ditto, third ditto, at 1*s.* 3*d.*	1	5	0
	£27	0	0
Deduct cost of culture, &c. ..	11	7	0
Profit, &c.	£15	13	0

The above is no fictitious arrangement of figures, although the cost of culture would probably be differently arranged by other growers. There might be more spring labour charged, but the deep ploughing in early autumn has not at any time rendered this needful in our own case. A single turn of Coleman's cultivator, followed by the harrow and roll, will, in land free from weeds, be sufficient before ridging. And, as regards the produce, which is fully 6½ tons per acre, it need only be said that the second two lots were sold to a Potato dealer, at the prices named; while the first—equal in quality and size to the best Covent Garden—were entered for the consumption of a large establishment, at the figure quoted. Many growers might secure a larger acreable return, and we do not adduce the instance as remarkable either way; it represents our usual produce during the past four years, under the ordinary routine of farm management. *T. B.*

Can we not get abundance of Nitrogen and Carbon from the Atmosphere?—A careful study of the recent work on Modern Farming by that great man Baron Liebig, taken in conjunction with his former admirable productions, has still further confirmed my belief in his so-called mineral theory. In seeking for additional facts to justify my convictions I select the following:—A successful farming friend of mine never manures for his Turnips, but depends entirely on cultivation, and I never knew him to fail in growing a good crop of White Turnips. These are fed off by sheep, eating no oil-cake or corn; Barley sown with seeds succeed the Turnips, and are followed by Wheat, thus completing the four years' rotation. In the second course or rotation Beans or Peas take the place of Clover, so that it is only grown once in eight years. He ploughs his land at least five times before sowing the Turnips, and, no doubt, herein lies the secret of his success. We have (at any rate I know that I have) been apt to condemn so many ploughings, but Liebig's recent scientific explanation of fallow (which every agriculturist should study) has completely removed my objection and convinced me of the advantage of a very frequent stirring, admixture, and separation of the granules of soil; and it has also confirmed me unalterably in the conviction that if the inorganic or incombustible food of broad-leaved or bulbous plants exist in the soil in an available condition, and in sufficient quantities, all the combustible substances can be furnished by the atmosphere. Could I doubt this when wading through a dense vegetation of bulbs and leaves as high as my knees on a soil to which no organic manure had been applied for that crop. What an abundant supply of carbon and nitrogen must this fallow crop have accumulated for the succeeding crop. Then comes the question, is it not cheaper to obtain this supply of nitrogen and carbon by three extra ploughings, rather than by the purchase and application of carbonaceous and nitrogenous manures? I think it is cheaper. What an insight to the mysteries of fallow and tillage do we obtain from the Baron's discoveries! Let us then profit by them. *J. J. Mechi, Oct.* 27.

Sheep Feeding.—I am glad to see from remarks of which I have been favoured with a sight that the letter I wrote some time back in reference to Mr. Hamilton's paper on sheep-feeding and manure has elicited a reply, since it may be a means of ascertaining the truth on this highly important subject. You say that "Mr. Spooner, forgetful or ignorant of the fact that Mr. Hamilton used Dr. Apjohn's very words and figures in quoting the analysis, thinks it probable that Mr. Hamilton has mistaken the percentage of ammonia in the solid matter for the percentage of ammonia in the whole bulk of the urine. We are now in a position to state that no such mistake has occurred, having placed ourselves in communication with that gentleman, who has forwarded to us Dr. Apjohn's original report of the analysis, from which we find that Mr. Hamilton's conclusions were strictly deduced from the data before him." Since such is the case I at once withdraw a supposition which appeared to me as the readiest mode of explanation of an error which I thought, and still think, has been committed; but I beg leave to say that I never for one moment entertained the idea that the two sheep were fed on the same food and that the difference, therefore, arose from the difference of sexes, as the writer imagines must have been my idea. I will now endeavour to give my reasons for believing that the results derived from Mr. Hamilton's experiments are indeed startling and highly improbable. In the first place it appears that the wether on which Mr. Hamilton experimented received daily 1½ lb. of oilcake, and ½ lb. of Oats, whilst the ewe received nothing but Grass. Accepting, then, the analysis quoted by Mr. Hamilton, the 1½ lbs. of oilcake contain 533.4 grains, and the ½ lb. of Oats contains 77 grains of ammonia, making altogether 610.4 grains of ammonia in one day's food, let us now take a glance at the amount of ammonia which, according to Mr. Hamilton, is contained in the solid excrements and the urine. The amount of dung voided by the wether in one day was 3 lbs. 3½ oz. = 24,720, or dry 10,145 grains, which, at 2.49 per cent. (dry), contains 252.6 grains of ammonia. The amount of urine voided by the same *per diem* was 2 lbs. 11½ oz. = 20,880 grains, which at 9.165 per cent., contains 1913.65 grains of ammonia. Thus the amount of ammonia contained in the solid and liquid excrements = 2166 grains, making 1556 grains over and above all the ammonia contained in the food from which it was derived, besides that portion (5 per cent.) expended in laying on flesh on the animal itself. Therefore without ignoring the fact that oil-cake and Oats contain considerably more ammonia than Grass, am I not justified in considering Mr. Hamilton's conclusions, that 610.4 grains of ammonia goes in with the food and 2166 grains comes out with the excrement during the same period, are startling in the highest degree? The reporter then brings forward the second experiment made by Mr. Hamilton, which he asserts "completely refutes Mr. Spooner's suggestion if any such refutation were needed." Now, we cannot exactly understand by what peculiar logic he has convinced himself that it is refuted by that particular experiment, for in our eyes it tends rather to confirm it, most certainly it bears us out in our opinion that a mistake of some kind or other has been committed. The second experiment was made on two wethers, one receiving concentrated food and the other Grass. The food given to the former per diem was 2 lbs. of oilcake and ½ lb. of Oats, and contained 788.2 grains of ammonia. The urine voided (quantity as before) contained 687.3 grains of ammonia, which is 1226 grains less than in the first experiment, the proportion stands nearly in the ratio of three to one, which is a vast difference, although there was ½ lb. less oilcake given in the first than in the second experiment. The reporter has also made a slight mistake in asserting that the first experiment gave the ratio of 17 to 1, and the second experiment of 8 to 1. If he will refer to Mr. Hamilton's paper he will see that considering the greater quantity of urine voided by the ewe than the wether, which he appears to have overlooked, the ratio is reduced to 12 to 1, and if he will work out the experiment in the same manner (quantity as before) the ratio will be reduced to 5.6 to 1. He likewise endeavours to account for the greater difference in the first than in the second experiment by estimating the difference of the sexes (in 1st experiment) at the ratio of 5 (wethers) to 2 (ewes). If however we compare the urine of the ewe of the first experiment with that of the wether in the second experiment, both being fed on the same food (namely Grass), an altogether different result than the one imagined presents itself to our notice. Urine of ewe 3 lbs. 11 oz. = 28,320 grs., at 0.542 per cent. contains of ammonia 153.4 grains. Urine of wether 28,320 grains, at 33.12 grains per lb., contains of ammonia 1221 grains. Thus the urine of the ewe actually contains 31.8 grains of ammonia more than that of the wether, although both were fed on the same food, with the exception that the latter (wether) received oilcake previously to being shut up, whilst the former (ewe) never received anything but Grass, by which circumstance the writer, Mr. Hamilton, seeks to account for the fact that in the second experiment there is less difference between the oilcake-fed and Grass-fed sheep than in the first experiment since he supposes that the concentrated food previously received told in some degree on the secretions of the animal fed on Grass. What now becomes of the ratio of "five (wethers) to two (ewes)?" There is another point in Mr. Hamilton's paper which I cannot agree with. He asserts that when "the farmer gives the artificial food to his sheep, out of every 10*l.* expended at least, at least 8*l.* 15*s.* goes to the improvement of the land. We will make a few calculations to show the utmost value of artificial manure than can be derived from a certain portion of artificial food. In Mr. Hamilton's first experiment, the wether received 14 lbs. of Oats and 42 lbs. of oilcake per month, which will be found to contain 17,091.2 grs. of ammonia. If we subtract from this the 5 per cent. assimilated by the animal, namely 354.5, it leaves 16,235 grs. = 2 lbs. 1 oz. 6 drs. 35 grs., which may pass out in the manure. Ammonia being valued at 60*l.* a ton — 6½*d.* a lb.; the value of the solid and liquid excrements which may be ejected by the wether in one month equals 1*s.* 1½*d.*, whilst the food given in the same time will be worth about 4*s.* 6*d.* Thus instead of Mr. Hamilton's calculation that for every 10*l.* expended in food 8*l.* 15*s.* is returned as manure, we find that for every 10*l.* expended only 2*l.* 10*s.* is returned in the manure. Indeed how could we possibly expect any other result when we remember that it is the nitrogen alone (with the exception of a little phosphate of lime) which is valuable as manure, and this nitrogen itself is worth nearly twice as much when contained in food as when it exists in manure, for the nitrogren in manure may be estimated at 72*l.* per ton, and in food at 123*l.* (albumen being reckoned at 20*l.*). Were Mr. Hamilton's statement correct, sheep feeding would indeed be a profitable undertaking, for not only would the nitrogen cost no more in food than in manure, but the starch and oil would be obtained almost for nothing. It must be remembered also that the chief reason why artificial food is found to pay is owing to the increased value of the different constituents as they exist in mutton than as they exist in the food itself. We have we trust in our preceding remarks shown that some great error must have been made in Mr. Hamilton's experiments. 1st. Because the food consumed by the wether in his experiment contained considerably less than the ammonia stated to be voided in the excrement. 2nd. Because the second experiment differs remarkably from the conclusion of the first, inasmuch as although the sheep consumed half a pound more cake per day, his urine is stated to contain one-third of the ammonia in the first experiment. 3rd. That the difference in the quality of the urine voided by the ewe and wether when living on the same food is very doubtful, inasmuch as the urine of the Grass-fed ewe in the first experiment contained more ammonia than that of the Grass-fed wether in the second experiment. 4th. That the statement of the urine of the oilcake-fed sheep being worth 4*s.* per month is obviously incorrect, inasmuch as whilst the value of the food consumed during the period is only 4*s.* 6*d.*, if the whole of this were converted into manure it would not be worth 1*s.* 3*d.*, not even 1*s.* 2*d.*, after the usual quantity had been assimilated by the animal. *W. Spooner, Jun.*

The Economical Manure.—You are not singular in your opinion of the Economical Manure, with its long array of a thousand testimonials. May I ask "C. H. D." whether there are any from the parish of Broadwoodwidger, Devon? In that parish the manure is universally condemned as inert and useless. I have always observed that a good, serviceable article will speak for itself; and that it does not require a thousand testimonials to bring it into notice. On this ground I cannot help thinking, that if Mr. Thorley had had perfect confidence in the utility of his much-vaunted cattle-food, he would not have invented the new puffing machine, "Thorley's Farmers' Almanack for 1860;" the sole and entire object of which is apparent almost in every page, viz., to recommend the Thorley cattle-food as a panacea for all the ills that cattle-flesh is heir to. Do, Mr. Editor, reproduce your article of 1854 on Manures. It may be the means of opening the eyes of many a Mr. Verdant Green located in the rural districts. *Anti-Puffer.*

Do Live Stock pay the Market Price for their Food?—In order to remove any doubt upon this question, we may fairly suppose the case of persons, not being farmers or holding land, fattening animals with purchased food as a source of profit, placing no value on the manure. If there are any of your correspondents so circumstanced I trust they will communicate their experience. No doubt in towns where grains and other such food may be cheaply obtained, and high prices paid for milk, there may be such cases, but I allude to fattening animals with farm produce. I have obtained many "balance sheets" from village tradesmen who have fattened pigs, but they invariably show a loss, more or less, besides the shelter and attendance—without any allowance for casualties. Mr. Morton's experience, as well as mine, shows that pigs lose less than other animals for obvious reasons. *J. J. Mechi, Oct.* 26.

Irish Agriculture.—In the *Agricultural Gazette* of October 22d "W.," from a district in the county of Cork, expresses an opinion that the leading article of the 8th, signed "G.," "does not give a true view of the present state of Irish farming." We are happy to hear so favourable an account as "W." gives of any district; there are no doubt many such sunny spots in our landscape, and the wish of our heart is that they were more extended over it, but we fear that the dark shades more commonly prevail. We have taken our view from the more general aspect, from more common opinion, borne out by our statistical returns, and from what is brought under our own notice. In giving our view to the public we have adduced an evidence, even in the very county from which "W." writes, which we hardly expected could have been questioned, the Professor of Agriculture in the Queen's College. To this we may now add the opinion of the able editor of the first agricultural periodical of Ireland. The *Irish Farmers' Gazette* in commenting on a leading article of the *Freeman's Journal*, a paper certainly too Irish to admit untruly unfavourable accounts of her progress, observes: "For some time we stood almost alone in considering that the valuable information which was derived through the exertions of the Registrar-General pointed rather to a state of *retro-*

gression than progression ..... It now affords us considerable satisfaction to find that the weak points in our agricultural condition, to which we have frequently directed attention, are now beginning to force themselves upon the notice of our contemporaries." It is true that looking on the cattle, pigs, and sheep of 20 years ago and those of to-day, a very great improvement is to be observed, so no doubt in the farming community, for the famine thinned it out, and looking on our tillage a consequent improvement has no doubt taken place. But is our progression equal to what the true lovers of agriculture and of fatherland would desire to find; and is not this progression, such as it is, confined to certain favoured spots? Take the breadth under Turnips. It is reduced in the general, and if in the particular it has increased this has only diminished the proportion in the general. Let us take the statistical accounts of the last seven years, and we find a progressive decrease in the breadth of land under Turnips and Mangel Wurzel from 432,660 acres in 1853 to 394,374 in 1859. This is surely no indication that tillage is improving, nor is it so in the return of the breadth of land in cereals, which has diminished in 13 years from 3,174,424 acres in 1849 to 2,652,296 in 1859, and these returns also show a serious falling off in Wheat from 1858 to 1859, a crop which notoriously requires finer tillage than Oats, which in both years is near about the same; nor will it be thought by some to be a sign of progression the great increase of a crop, little used for cattle feeding, the much and we believe unjustly despised Potato, in the same period of 13 years from 718,608 acres in 1849 to 1,200,144 in 1859. This increase in the breadth of the Potato crop has been in almost exact proportion to the decrease in Turnips and Mangel Wurzel—surely indicative of a shortcoming in manure, which does not appear to be made or supplied in sufficient quantities for both crops; nor indeed can be till a change takes place in our mode of feeding cattle on our tillage farms—the first step to progress. Low as is the breadth of land under cereals it is nearly double that under fallow crops; surely, then, if in some places a regular rotation of cereal and green crops obtain, in others there must exist a repetition of cereal after cereal, and the wider the regular rotation is spread the more must be the number of grain crops raised in succession where this rotation does not obtain. In a country containing an area of over 20,000,000 acres, it affords us no satisfactory proof of agricultural health to find less than 400,000 of Mangels and Turnips, and little more than two millions and a half of corn, mostly of an inferior kind. *G.*

Societies.

ROYAL AGRICULTURAL OF ENGLAND.

At a Monthly Council held November 2, the Right Hon. Lord Walsingham, President, in the chair, 20 new members were elected.

Reports were received from the Finance Committee from which it appeared that the present current cash balance in the hands of the Society's bankers is 2206*l.* 12*s.* 10*d.*; also from the Journal Committee, and the Veterinary Committee, and from Mr. Humberston, M.P., the Steward of Refreshments at Warwick.

On the motion of Mr. H. S. Thompson, a Committee was appointed to consider and report on the future editorship of the Journal.

The Honorary Secretary reported and laid before the Council the applications and testimonials he had received from candidates for the vacant office of Secretary to the Society. The Council appointed a Committe of 13 to take into consideration the testimonials of the different candidates who have come forward, and to place before the Council such names as they may think eligible (not less than 10), from which list the Council shall choose the secretary.

The Council then determined the method in which the election should take place.

The Hon. Secretary reported that the agreement with the city of Canterbury relative to the Society's country meeting in 1860 had been duly signed by the Mayor, and the corporate seal affixed. The Council authorised the Hon. Secretary to sign and affix the Society's seal to the same.

A communication was received from Mr. Smith relative to steam cultivators.

The Council appointed the General Canterbury Committee, his Grace the Duke of Marlborough being the Chairman.

A communication was received from the Hon. Secretary of the Local Committee at Canterbury, relative to Local Prizes which they propose to offer. The subject was referred to the General Canterbury Committee to report on.

A communication having been received from Mr. Richard Stratton, stating that he had made an unintentional error of 12 days in the age of the bull calf to which the second prize at Warwick had been adjudged, the Council decided that the prize should go to the "Reserve Number," given in the judges' award, viz., No. 91, Lieut.-Col. Towneley, of Towneley Park, for his bull calf "Bow Bearer," by Baron Hopewell, out of Frederick's Victoria.

A communication was received from the Foreign Office by direction of Lord John Russell, accompanied by an album (containing portraits of horned cattle shown at the Vienna Exhibition in 1857), the Imperial Ministry having transmitted the album for presentation to the Society. The Council ordered thanks to be returned for this and other presents of books which were laid on the table.

The Council adjourned to its monthly meeting on Wednesday, the 7th December.

Farmers' Clubs.

Inverness.—At the annual meeting of this association the following question was submitted for discussion, viz., "The mode of letting farms; and the terms and conditions of entry best calculated to preserve and advance the interests of landlord and tenant, and to promote those of the country at large."

Mr. Sinclair, Borlum, thought the mode of letting generally adopted was satisfactory. As far as possible it should be by private bargain and without advertising.

Mr. Gentle, Dell, said he was not prepared to recommend any change either in the mode of letting land, or as to the term of admission or demission. Landlords were entitled to the same freedom as other vendors in bringing their properties into the market so as to make the most by them. They, as tenants, had a horror at advertising, particularly in regard to the farm possessed; but if they needed a farm they had no objection to see the broad-sheet full of advertisoments. Altogether landlands had the vantage ground, and they, as tenants, were in the condition of the person flogged. If racking hard was to be adopted, no way of laying it on was pleasant—and they would want a change. As to the term of entry, Whitsunday was decidedly best for sheep-farms, and he rather inclined to think so in rogard to arable farms too.

Mr. Simpson, Teawig, said: Nine-tenths, he believed, of the farms whose leases expired were relet by private arrangement between landlords and tenants. So that practically what all would recommend was the course followed by the large majority of cases. But the subject as stated for discussion to-night called upon them to express an opinion, how good rents could be paid to landlords—good profits obtained by tenants, and an increasingly large supply of home agricultural produce furnished to the rapidly growing millions of our population. Those millions were more able now to consume butcher meat and butter and cheese than they had been in past times, and it was chiefly from home production that the supply of these articles must come, while of corn there would always be large importations from abroad. As to the advantage to landlords of large rents for their lands, he need not say a word; but he believed that the paying a full rent for his occupancy was not, on the whole, detrimental to the farmer; for it quickened his energies, made him more alive to the spirit of improvement around him—and that spirit was as active in agriculture as in any other branch—and, moreover, the knowledge that he was paying the full money value of his occupation was the best means of setting him free from the trammels of the old feudal feeling that a tenant should be politically and socially subservient to his landlord. But a fair condition to the landlord obtaining, or the tenant being able to pay, a full rental for land, was that that land should be in a state of fitness in houses, enclosures, and drainage, for profitable occupation. For it was no more monstrous to suppose that a manufacturer could produce cotton or woollen goods with machinery which wanted here a wheel and there a shafting, or which had no motive power, than to suppose that a farmer, who was after all just a manufacturer, prosecuting the largest of all manufactures, the manufacture of a nation's food, could produce corn on undrained land, or butcher-meat without the necessary accommodation for stock. The attempt—to continue the illustration—to repair the machinery and to work it at the same time, an attempt in which too large a proportion of the land occupants of Britain were even at this moment engaged, was one prejudicial to their own interests, and no less so to those of the population who are principally fed by them, and it was one which there was now no necessity for. There were in vigorous operation Land Improvement Companies who furnish money on terminable rent charges, for the drainage of lands, for the construction of buildings; in fact, for everything that was necessary to bring the farming machine into working order, and co-operation between landlord and tenant was all that was wanted to bring forth any amount of capital necessary for this purpose. He would allude to another point as essential in the settling of the lease of a farm, viz., that the lease should be self-interpreting, that is, that it should distinctly express that every point on which a difference arose should be referred to the decision of an arbiter named in the lease. It was well known that, however carefully the conditions of a lease had been gone over, differences of construction would arise. These differences were at times carried before the Court of Session, where they ended, of course, in loss even to the winning party, and in the yearly working together of tenant and landlord, or factor, there were smaller points which, if not giving rise to litigation, gave rise to discussions or dissensions in which the weaker party went to the wall. Now litigation and unpleasantries would be alike prevented by the appointment of an arbiter. One of the most fertile sources of dispute—the rotation of cropping—was being, he thought, removed by the progress of events. With Wheat at rather less than 10*s.* per cwt., with a languid demand—beef and mutton at 60*s.* per cwt., with a demand which the supply cannot overtake—with wages for agricultural labour yearly advancing—he thought there was little question that Grass land would now give better and surer returns than land under corn crops, and thus there was more danger of too little than of too much corn cropping.

Mr. Smith, factor, Glen-Urquhart, thought leases for a reasonable period indispensable, and that at the end of a lease the farm should be gone over by a competent person and revalued. Reference should of course be made to the unaided improvements made by the tenant in the valuation, and if the farmer was willing to give the new rent proposed, he should have a preference; but if not the farm should be advertised and given to the most suitable and acceptable candidate. As regards the second part of the subject, the houses and buildings on a farm should belong to the landlord, and by him be made suitable for the farm, and be handed over to the tenant in good condition, free of all meliorations, the tenant binding himself to keep the buildings in good tenantable condition. The regulations and conditions tenants were asked to subscribe, when taking a farm, were, in some cases, full of unnecessary or absurd restrictions, and burdened with vexatious obligations. Hence, some said let there be no regulation at all, in particular as to cropping, but allow every tenant to crop as he pleased; as farming having now come to that position that no tenant of skill and intelligence would impoverish his land, knowing well that he could not do so with impunity, and that the only way to make a farm pay was to farm high. But they must remember that among farmers, as among all other classes, there were good and bad men, some of whom would manage or crop their farm, not only to the injury of their landlord, but ultimately to their own loss. Some regulations were necessary. They could not be too few for good tenants; but, to prevent abuse, it was advisable to lay down rules, and that a certain rotation of cropping be agreed upon, with this understanding, that if the tenant showed himself to be an intelligent and persevering agriculturist, and, after trial, he found that, from some cause or other, his farm could not be profitably cultivated by strictly adhering to the rotation of cropping he bound himself to, and if he could suggest some alteration for his benefit, and not disadvantageous to the landlord, it should be adopted.

Mr. Fraser, Balloch, said he saw no reason why landlords should not know accurately the value of their land, and put their value upon them. The speech recently delivered by the Duke of Richmond was one the spirit of which he thought should pervade all proprietors in the country. Farms were not like any other merchandise, for the merchant dealt in many articles, and if he lost by one, he might retrieve himself by another; but the farmer took his subject on a long lease, and if he gave too high a price he could not recover himself. The proprietor should ascertain what was the fair rent of a farm, all things considered, and if he was not capable of valuing it himself he should employ a competent person to do so; and after considering what were the claims of an old tenant, let him fix the rent. He had no respect for an old tenant of a farm simply as an old tenant, if he would not give what the place was worth; but give an old tenant a fair chance of the farm, and if he refuses the rent, then let it be put forward to public competition. As to the terms and conditions of entry, he found that Whitsunday had been the usual time in the country for a great many years, and was on the whole the most suitable. Any term would have advantages and disadvantages, but Whitsunday seemed to have most of the one and fewest of the other. He agreed with Mr. Smith that houses and buildings should belong to the proprietor and be erected by him. The farmer could not do without them, but the proprietor was entitled to charge a fair price for the outlay in the amount of the rent. The old system of investing capital in houses with the prospect of meliorations was a barbarous one that would soon be ranked among the things that were. Every tenant should get his farm unhampered; let him have suitable accommodation for working his farm and let him pay accordingly. He disapproved of restrictions as to the rotation of cropping; means might be taken to protect the landlord and yet leave the tenant full scope for developing the resources of the farm. As a general rule no good farming could be expected where two Wheat crops were taken off the land in succession, and the landlord might fairly demand that a certain portion of his land should be laid down in Grass or green crop every year; but to say that a farmer was told on his lease what he was to do with every field on his farm was to make him a mere machine. Besides, changes and discoveries were made every day. Under the Lois-Weedon system, Wheat had been grown on the same field for 13 or 14 years successively. They did not know what might be accomplished by steam culture, and it was very hard, indeed absurd, to bind a man down to grow Wheat in this field, Barley in that, and Turnips in a third, when the whole science of agriculture was undergoing a great revolution. *Abridged from Inverness Courier.*

Notices of Books.

Peat's Farmers' Diary and Account Book for 1860. Simpkin, Marshall, & Co.

This quarto pamphlet of 104 pages contains an almanack and calendar of operations, alternate pages for memoranda and cash account for the several months, forms for recording the extent, crop, and produce of the several fields, and for recording the outlay on horses, cattle, sheep, and pigs respectively, and on the several crops, on manures, and wages; forms also for

entering the names of labourers, their wages, &c., during the different weeks of the year, and pages in which to enter the returns. There are pages containing useful recipes, list of fairs, &c., and blank leaves for memoranda. No doubt the publication will prove useful, and be just what many a farmer wants.

Farm Memoranda.

MACKNADE, NEAR FAVERSHAM.—Mr. Frederick Neame farms about 270 acres, divided nearly as follows:—

75 acres in Wheat.		23 acres in Turnips.	
44	,, Barley.	25	,, Mangels.
22	,, Hops.	24	,, Clover.
32	,, Beans.	Remainder in pasture.	

The system of rotation pursued is one of nine years, for example—1, Turnips; 2, Barley or Oats; 3, Wurzel; 4, Wheat; 5, Red Clover; 6, Wheat; 7, Barley or Oats; 8, Beans or Peas; and 9, Wheat—thus securing five white crops, three of them Wheat, to four green crops. To take this rotation from the beginning, the Turnip crop will have been preceded by Wheat; after that was harvested, a kind of plough or cultivator, called a broad-share, was passed over the land, a flat edge 18 inches wide being carried about 3 inches below the surface, not turning over the ground at all, but cutting off the roots, and killing the weeds. By this operation and the subsequent harrowing, the ground is so stirred that the seeds of noxious plants, as well as those self-sown by the last crop, will vegetate. Immediately after the broadshare, the harrow is twice used to free the ground from the stubble, which is gathered in rows every 15 or 20 rods, according to quantity, and if thought worth the labour, or in default of straw enough, this is carried to the yards, to be trodden into manure; otherwise it is burnt. A second ploughing takes place, if possible, before the middle of October, say 8 inches deep, burying any vegetation that has started, and throwing the soil into furrows as rough as possible, in order that the frost may act upon it; for the rougher and the larger lumps in which it lies, the better will a spontaneous disintegration be effected during winter. The next process is a ploughing the last of March or the first of April, after which the land is harrowed twice and rolled. The second spring-ploughing is done with the broadshare, and after another harrowing and rolling, the manure is carted out and spread, and ploughed in 6 or 7 inches deep. Then there is another harrowing and rolling and the land lies about a fortnight, when, if the weather is dry, the broadshare may be once more employed. Swede Turnips are sown about the first week in July, and white Turnips about the third week—about half and half of each being grown. If Mangels be the crop, the preparation of the land for it is similar, except that one ploughing would be omitted, as the seed is sown the second week in May.

The White Turnips make good bulbs in 6 or 8 weeks after sowing, and in 10 are fit for feeding, being the earliest root on which the sheep are put. The Swedes succeed, and when they are gone, which should not be until late winter or early spring, the Mangels come in season, their merit being their keeping qualities. I saw through June and July, here and there, the last of the Mangel crop of the preceding year not yet entirely exhausted, although they were said to be suffering rather more from decay than usual. The Turnip growers sell in spring the sheep fatted during winter upon roots, while the March farmers winter their flocks on the highlands and take them back again upon the pasturage during a second summer, so that they finally come to market toward the close of the year.

The second crop in the rotation will produce in seasons at all favourable, on this rich loam, 56 bushels to the acre of Barley, or 80 of Oats. If the Turnips are so disposed of that the ground is clear of them by Christmas, the Barley is put in before that date, and what is sown thus early almost invariably yields the best sample of grain. Living so nearly adjacent to water communication with London, my host often disposes there of his hay and root crops, particularly Mangels, and purchases in return manure from the city stables and other sources—transportation being cheap enough to admit of this being a better policy than the home manufacture of fertilising material, by the feeding of stock and the purchase of oilcake. But he generally keeps 150 sheep to take care of the Turnips, and will perhaps feed a dozen bullocks. Beyond four miles from the water the cartage of manure is found too heavy to make it profitable to buy, instead of yarding the necessary dung. The agricultural year begins at Michaelmas, October 11, about which date he buys in the cattle, and they will be ripe for the butcher in spring. Soon after harvest the purchases of sheep are made, and they graze upon the grain stubbles in the daytime, and in the night upon the Clover fields, from which two crops have previously been cut, until Michaelmas, when they are put upon the Turnips for the whole 24 hours, receiving in addition, in troughs, about equal quantities mixed of Clover and straw, with oilcake. The first cost of the lambs is about an average of 18*s.* sterling per head, and they are sold along after shearing, probably during the month of May, for perhaps 55*s.* Of this about two dollars, as I understood, is received for the wool, which yields an average of 6 lbs. per head, and varies in price from 20 to 36 cents. per lb.

The cattle grazed are principally the Irish or Welsh stock that comes into the county in spring at about 18 months old, is grazed in Romney Marsh during the summer months, and about the middle of October again changes hands, then coming to the stall feeders for final preparation for market. In the application of manure, whether manufactured or purchased, Mr. Neame expressed the belief that a moderate supply for every crop was a better system than an infrequent application, however profuse. Wheat after Clover is perhaps the only crop which receives nothing, but the Clover has been manured, and the grain itself, if the land is too rich, will be liable to lay, particularly in a season tolerably wet and windy.

Kent is not regarded as a county of "high farming" in comparison with some other districts—Norfolk for example I think; and still upon not quite 270 acres my host was spending no less than 351*l.* a year for fertilising materials; his pay roll for labour was about 760*l.*, and his rent, tithes, and rates amounted to 990*l.* In the rotation mentioned Mangels are sometimes substituted for Beans, and a greater bulk of manure can be put on the latter, and more if it will be left for the succeeding Wheat crop. Ten pounds sterling of manure should yield 30 tons of Mangels, while it would only produce 6 quarters of Beans. The former will sell in London for about 18*s.* per ton, while the latter are worth perhaps 45*s.* per quarter. Clover hay sells for about 4*l.* 10*s.* per ton, and 2½ tons may be depended on as the yield per acre for two cuttings. This is a low estimate, both as to quality and price, for they reckon on a good Clover field to bring sometimes 16*l.* per acre. The cost of cutting is 1.25 dollars per acre, and an equal sum in addition will cover the expense of curing and hauling. About 40 bushels of soot per acre is recommended for the Clover crop, and it costs 6*d.* sterling per bushel.

The hay for the London market is cut from the stack in trusses of exactly 56 lbs., 3 feet long, 18 inches wide, and 18 inches deep. Thirty-six of these trusses I think count for a ton or "load." All the hay and grain is stacked, and to the neatness and regularity with which these stacks are made I shall have occasion elsewhere to refer. Stacks, rectangular in shape, cut up better for hay, but round ones are often preferred for "corn" as having less surface exposed. *Luther Tucker, in Albany Country Gentleman.*

Miscellaneous.

Competition for Land in Scotland.—The Earl of Airlie writes on this subject to the *Economist*, which had commented on the following passages from a Dundee paper:—"The farms recently advertised on the Airlie estates have been let to excellent tenants. West Mains of Auchterhouse brings 515*l.*, being a rise of the odd notes; Kirklandbank has more than doubled the old rent, so has Newton of Lintrathen." The *Economist* had said: "Thus it is plain that the cost price of land, the main agent or instrument of agricultural production, is constantly advancing in price, at the same time the necessity of increased produce to pay the advanced rent compels the farmer to invest more and more capital in the work of cultivation." His lordship thus replies:—"Now, sir, though your statement is perfectly accurate as to matters of fact, I deny that the inference which you seek to draw follows necessarily from your facts. Before you can draw any such inference, you must show that the farms on which increased rents have been obtained are in the same condition as when they were last let. Now, during the last thirty years a very large sum has been laid out by my father and myself, both on drainage and on farm-buildings. And in almost every instance in which a large advance of rent has been obtained upon any of my farms, I have entered into engagements to lay out considerable sums on improvements. The farm of West Mains of Auchterhouse, to which you refer, has been for a very long time in the occupation of one family. It had been let at what was considered a fair rent, but circumstances to which I need not here refer caused it to be brought into the market this year, and it has been let at an advance of 3 per cent., not a very extraordinary rise, certainly. Newton of Lintrathen was for many years (I am writing from memory, not having any papers by me to refer to) in the occupation of a tenant who carried on improvements with great energy and judgment, and on that account the farm was let to him at a very low rent. On his death the farm was advertised, and it is not at all surprising, considering that it had previously been let at a rent far below what it was worth, and that large sums had been laid out on improvements, that a large increase of rent has been obtained. I should not have troubled you with a reference to my private affairs, were it not that I believe that my case is very much the case of the other landowners of Scotland, and that wherever a large increase of rent has been obtained, it will be found, on investigation, to be owing either, as in the case of the pastoral districts, to the fact of the rise which has taken place in the prices of butcher's meat and of wool, or to the circumstance that large sums have been expended on improvements."

Newly Introduced Pheasants.—After a sketch of the distribution of the family of gallinaceous birds, Mr. Gould gave an account of the species of Phasianus (pheasant), which had been introduced into England. All the species were from Asia. The oldest English species was the P. Colchicus, which came from Asia Minor. The next was P. torquatus, from Shanghai, which was introduced about 100 years ago, and had recently been reintroduced. Specimens of this kind reared in Bedfordshire were exhibited. The crosses between these two birds produced remarkably fine and strong birds. The other true species were P. Mongolicus from Mongolia, P. Laemmenigii from Japan, P. Reevesii from China, and P. versicolor from Japan. P. Reevesii is remarkable for a tail 6 feet in length; whilst the last species had been successfully introduced into England, and bred freely with P. Colchicus, and the crosses between that bird and P. torquatus; and the result had been greatly to improve the strength and weight of the birds. *Nat. Hist. Section, Brit. Assoc.*

The Composition of Liquid Manure.—Since the intrinsic value of all manuring substances is mainly dependent upon the amount of nitrogen, phosphoric acid, and potash which they contain, some idea of the relative merits of these six kinds of liquid manure may be formed by comparing the proportions of these constituents which each kind contains. I have, therefore, grouped together these determinations of nitrogen, potash, and phosphoric acid, as well as some other data which will facilitate comparison. In the first place, I would observe that five of the liquid manures possessed the following specific gravities at 62° Fahr.:—

Liquid manure from Westonbirt	1.006
,, Badminton	1.007
,, College Farm, 1858	1.0014
,, Tiptree Hall, clear liquid ..	1.0006
,, Tiptree Hall, with sediment ..	1.001

The specific gravity of these five liquids corresponds with the amount of solid matters which each kind contains in solution. To a certain extent the specific gravity of different kinds of liquid manure may serve as an indication of their relative fertilising value.

Proportion of dry Organic and Inorganic Matters in 1 gallon of—

Liquid Manure from	Organic Matters.	Mineral Matters.	Total.
Westonbirt	155.44	262.81	418.25
Badminton	239.22	361.90	601.12
College Farm, 1857	47.157	73.943	121.10
College Farm, 1858	20.59	91.27	111.86
Tiptree, clear liquid	7.70	21.49	29.19
Tiptree, with sediment ..	50.19	45.57	95.76

The difference in the amount of solid matters contained in liquid manure are much greater than I expected to find them, and, curiously enough, the liquid manure from Tiptree Hall, which I anticipated would be very concentrated, was by far the weakest of all; the clear liquid contained in reality not more than 1-20th part of the amount of solid fertilising substances which I found in the Badminton manure, and between one-fourth and one-fifth of the amount contained in the Cirencester tank-liquid, which I always considered very poor stuff, though it smelt extremely disagreeable. In the next place I shall group together—

The proportion of Nitrogen, ready-formed Ammonia, and total Nitrogen in 1 gallon of—

Liquid Manure from	Nitrogen in Organic Matters.	Nitrogen as Ammonia.	Total Nitrogen.	Equal to Ammonia.
Westonbirt ..	4.78	89.24	94.02	114.16
Badminton ..	8.98	9.40	18.38	22.32
Cirencester, 1857 ..	3.033	18.911	21.944	26.647
Cirencester, 1858 ..	1.49	29.31	30.80	37.39
Tiptree, clear liquid	.52	2.77	3.29	3.99
Tiptree, muddy do.	2.17	2.34	4.51	5.476

In the Government Report by Mr. Austin, C.E., on the Means of Deodorising and Utilising the Sewage of Towns, published in 1857, the author gives a short account of a visit to Mr. Mechi's farm, and, amongst other particulars referring to the working expenses for distributing liquid manure at Tiptree, states on page 57:—

"The quantity delivered daily in ten working hours would be 130 tons of water; but Mr. Mechi estimates that the cost of delivery may be fairly placed at from 1½*d.* to 2*d.* per ton, the specific gravity of liquid manure being so much greater than water. There will be distributed over the whole farm on the average from 45,000 to 50,000 gallons of liquid manure per acre per annum."

Assuming the composition of the liquid manure not to vary materially at different periods, 50,000 gallons of liquid manure, with the sediment, would yield 50,000 × 5.476 grains, or 273,800 grains of ammonia, or in round numbers 39 lbs. of ammonia. Peruvian guano yields from 16 to 18 per cent. of ammonia. To produce the above-mentioned 39 lbs. of ammonia, we should require 2 cwt. of Peruvian guano of the best quality. At 13*l.* per ton, the 2 cwt. would cost 26*s.* For this outlay of money the same amount of ammonia would be obtained which is yielded by 50,000 gallons of Mr. Mechi's muddy tank-liquid. Deducting the clay and earth which swell the amount of solid matter in the muddy tank-liquid, and taking no account of the suspended organic matter, which may be done with propriety, since account has been taken of the nitrogen, the only valuable portion in it, we have as nearly as possible the same weight of solid matter in 2 cwt. of Peruvian guano which is contained in 50,000 gallons of the Tiptree liquid manure. But the solid constituents of Peruvian guano being more valuable than those in the liquid, a balance would be left in favour of guano. Allowing 4*s.* for sowing 2 cwt. of guano, 30*s.* would cover the cost price and expense of applying the guano. If one ton of liquid manure, according to Mr. Mechi's estimate, costs for delivery 2*d.*, 50,000 gallons = 500,000 lbs., will cost 1*l.* 17*s.* 2*d.* The fertilising matters in 50,000 gallons of liquid manure thus will cost for delivery 7*s.* 2*d.* more than the price of the materials and expenses of application would amount to were they put upon the land in the shape of Peruvian guano. Whether or not it is good economy to spend 1*l.* 17*s.* 2*d.* for the delivery of fertilising materials which are intrinsically worth about 26*s.*, or at the most 30*s.*, is a question which may be safely left in the hands of practical men. It is a question which, I think, cannot be answered in a general way. On some

soils I believe even a larger expense for delivery may be incurred, whilst on others less than a quarter the expense may be ruinous. Many persons, deceived by the bad smell and dark colour of liquid manure, entertain very extravagant notions respecting the amount and intrinsic value of the fertilising matters which it contains. Such notions are a great bar to the fair adjustment of the question so frequently asked—Will liquid manure pay or not? It is well, therefore, to remember that 50,000 gallons may not contain more fertilising matter than 2 cwt. of good Peruvian guano; and that this opinion is based on analytical facts which are quite independent of any theoretical reasonings. In the following Table I have placed side by side the—

Amount of phosphoric acid, potash, and chloride of potassium, expressed in grains and fractions of grains, in 1 imperial gallon of—

Liquid Manure from	Phosphoric Acid.	Potash and Chloride of Potassium together.
Westonbirt	2.70	175.23
Badminton	9.51	189.64
Cirencester College, 1857 ..	2.304	21.123
Cirencester College, 1858 ..	4.83	19.66
Tiptree, clear liquid	2.36	2.41
Tiptree, with sediment ..	3.72	2.30

Even a superficial reader will be struck with the great variations which are exhibited in any of the Tables in which is contrasted for convenience of comparison the relative amount of the more important fertilising substances contained in a gallon of liquid manure. It is evident that the practical effects which it is capable of producing depend upon the nature and amount of fertilising matters which enter into its composition; and as the composition of the different kinds differs so very widely, we cannot feel surprised to hear that in one instance it has done marvels, and in others little or no good. *Dr. Voelcker, in the Journal of the Royal Agricultural Society.*

Calendar of Operations.

NOVEMBER.

CHESHIRE: *Oct.* 31.—All field operations have to a considerable extent been retarded by the severe winterly weather we have had within the last fortnight. Wheat sowing had commenced under very favourable auspices, the land being in the finest possible condition, and was progressing rapidly when the sudden change to frost and snow put a stop to all proceedings, but we still consider it soon enough to sow Wheat, excepting upon the tenacious and unadrained clay soils. And when land of this description has been ploughed up into "butts," it has been rather benefited than otherwise by the frost, which for two nights, the 23d and 24th inst., was unusually severe for the time of year, and which we fear has injured the Mangel Wurzel crops, most of them being then on the ground. The general impression was that the whole crop was entirely destroyed, and we are of opinion that such would be the case where the roots were taken up immediately and thrown into heaps whilst the frost was still on them; but where they have been left in the ground for the frost to go out gradually and entirely, we are induced to believe that a great portion of the crop will be saved, provided there is due caution in separating as far as possible the good from the bad at the time of pulling and storing the roots. We think, however, that the amount of injury is not yet fairly ascertained, and that it will remain in doubt for some time to come. Mangel Wurzel has of late years become a most important crop to the farmers of this country, and the entire loss of it would be serious indeed, more especially as the Turnip crop this season is generally very deficient; we therefore recommend Mangel growers to examine the roots carefully at the expiration of a fortnight or three weeks from the time of storing; and if they are not keeping well, to separate all that appear injured and make use of them to prevent any further loss. Grass has been plentiful during the autumn, and cattle have been doing well up to the time of the great change in the weather when the cold foggy nights brought on coughs and lung complaints of a very serious character; and it is to be feared that "pleuro-pneumonia" has been increased to some extent. Potatoes are a moderate crop, and the disease much worse than last year; but the prices keep low in consequence of too great a supply being taken direct from the field to the market. The floods in many of the meadows have been very high, consequently much Grass has been destroyed, and the cattle therefore have been forced into the market prematurely, to the great disadvantage of their owners. *W. P.*

WEST SUSSEX: *Nov.* 1.—We have had a very sudden change from the mildness of summer to the piercing cold of winter—frost, wind, and rain alternating nearly every 24 hours; at present there is no appearance of a change to more settled weather. And as there was not much Wheat sown before the alteration took place, there has been no chance to do much since, so that there is not much Wheat sown yet. But though we have had a good deal of rain, yet the land is not very wet, as it was formerly so dry, and with fair weather over head sowing will proceed rapidly, for the ground works freely, and is all nearly ready for the seed, so that we are not yet uneasy about the matter. I see that choice samples for seed are hard to obtain in some parts, but such is not the case here, for the quality is good, though not perhaps up to last year's mark, and the supply is abundant; and those in want would do well to pay Chichester market a visit. But perhaps the sort that we generally sow may not suit all; I believe it is peculiar to this district, being a mixture of white and fine red which grows white straw. The only name it goes by here is "old-fashioned white and white-strawed Wheat;" and it is said that it is best adapted for rich land, as it will bear a good heavy crop without lodging, and the quality is good; it is preferred here by the millers to any other sort. Yet other sorts are now more common than they lately were. Golden Drop is the most common of the coarser sorts of red Wheat, and there are many samples of Chidham, and of Morton's red straw, also of spring or nursery. The sudden frosts that we have had have blackened the Mangel tops, but we do not think that the roots are yet hurt; we have found that they do not suffer much from frost if not pulled, the tops partly protect them, and so it appears do the roots when they have hold of the ground; and though it may be running a risk, yet I think it is better to let them stand a short time longer, and then we shall see if any damage is done. In ours at least there does not appear to be any. The Swedes and Turnips also have got a sudden check, but the latter ones may yet grow a little. However, there does not appear to be any misgiving respecting winter food, for all kinds of wintering stock are very dear. Sheep are 2*s.* to 3*s.* dearer than last year. Cattle perhaps are not much higher. Beef is very scarce and of poor quality, but dear. Mutton is more plentiful, but very dear and in good demand. Perhaps there will not be so many cattle fatted this winter as usual, but there is not likely to be any falling off in sheep, so we may expect that beef will be dear. Pig jobbing has gone out of favour very much lately, as they are generally found not to pay. Formerly, when all the threshing was done by hand, the pigs lived at the barn-door and cost nothing; but since the steamers were employed to thresh the pig has been fed through the bushel, and has given a sad account of itself, but it is likely the corn crop has yielded rather better. If we had not a liberal supply from the Irish market pork would be dear. The quality of Barley is worse than last year, and varies in price from 28*s.* up to 48*s.*, rather a wide range, but it is, as formerly, the late sown that has turned out badly. Oats are also inferior. Peas look better than usual, but are not so heavy per bushel as last year, but the crop is good. Work now with suitable weather will be Wheat sowing, to the exclusion of everything else for a time, and the Mangel must soon be taken up. *G. S.*

Notices to Correspondents.

AGRICULTURE IN FRANCE: *N Smith.* In answer to your question we give the following particulars from the Quarterly Journal of Agriculture:—In France one-fourth of the entire, and one-third of the cultivated, land is under cereal crops; whilst in the United Kingdom, one-sixth of the whole, and one-fourth of the cultivated land, is so occupied. The produce of Wheat in France is 13½ bushels per acre—that of the United Kingdom is 28 bushels. The 15,000,000 acres of Wheat in the former country produce only 25,315,500 qrs., whilst the 4,500,000 acres in the latter yield 15,750,000:—

ANIMALS KEPT.

United Kingdom.

Sheep .. .. 30,000,000, or 1 to 2½ acres.
Bullocks .. 8,000,000, or 1 to 9½ acres.

France.

Sheep .. .. 30,000,000, or 1 to 4½ acres.
Bullocks .. 10,000,000, or 1 to 13 acres.

ANIMALS SLAUGHTERED.

United Kingdom.

Sheep .. .. 10,000,000, producing 80 lbs. of meat each, or 800,000,000 lbs.
Bullocks .. 2,000,000, weighing 560 lbs. each, or a total of 1,120,000,000 lbs.

France.

Sheep .. .. 8,000,000, producing 40 lbs. of meat each, or 320,000,000 lbs.
Bullocks, cows, and calves .. 4,000,000, weighing 220 lbs. each, or a total of 880,000,000 lbs.

It is necessary to state here that both oxen and milch cows are employed in France as beasts of burthen and in field labour; the next results will therefore be at once accounted for:—

MILCH COWS KEPT.

England.

3,000,000, producing 656,250,000 gallons of milk, or 218¾ gallons each.

France.

4,000,000, producing 437,500,000 gallons of milk, or 109¾ gallons each.

The cattle are kept either until they are from four to seven years old before they are slaughtered, or killed as calves at a month or six weeks old. This latter practice will in part account for the low average produce of beef per head. Out of the four millions slaughtered annually, the calves are stated to amount to 2½ millions.

Cows: *R C Lewis.* The disease appears to have been hepatitis or inflammation of the liver principally connected with peritonitis; the latter is often produced by exposure to external wet or cold, but the former rather points to the food as the origin. *W C S.*

DISEASED FEET: *R C Lewis.* Apply the following ointment frequently:—Plaster of Paris, 8 ozs; coal tar, ½ oz.; Olive-oil sufficient to make an ointment. *W C S.*

EARTHENWARE PIPES: *J W.* 27 feet of water will not burst well-made earthenware pipes of 4-inch bore. How long they will remain sound at the joints under that pressure depends on the care and material used in putting them together.

ESTIMATED CROP OF WHEAT IN FRANCE: *R.*

		Quarts.
1846	60 millions hectolitres, or	20,634,000
1847	97 ,, ,,	33,358,300
1848	88 ,, ,,	30,263,200
1849	90 ,, ,,	30,951,000
1850	88 ,, ,,	30,263,200
1851	86 ,, ,,	29,575,400
1852	86 ,, ,,	29,575,400
1853	63 ,, ,,	21,665,700
1854	97 ,, ,,	33,369,212
1855	73 ,, ,,	25,104,700
1856	85 ,, ,,	29,231,500
1857	110 ,, ,,	37,829,000
Average		29,318,384

The crop of Wheat in 1858 was a full average, but of 1859 it is estimated to be nearly one-third below average. *Leonce de Lavergne.*

GRASS FIELD: *J B* says:—"I have to acquaint you that the larvæ of the Melolontha are busy in the Grass fields of this district. I yesterday saw a field of about 20 acres, in which I counted nearly a hundred rudely circular patches of damaged Grass, varying from 3 to 13 feet diameter. Much of the Grass had been killed by the larvæ eating away the roots; the rest had been torn up by rooks and starlings in search of this just now abundant food in this place. It would appear that the encouragement of these birds is a most complete check upon the ravages of this insect." [We would advise the mending of these dissightly patches by sowing the seeds of the species of Grass of the meadow, pressing it well in the ground and consolidating the soil by a Crosskill].

PRICES OF BUTCHERS' MEAT AT THE METROPOLITAN MARKETS: *L L.* During the autumn of 1858 the best beef varied from 6¾*d.* to 7½*d.* per lb.; the best mutton from 6¾*d.* to 7¾*d.* per lb.; and veal from 5½*d.* to 7*d.* The highest prices were reached on Dec. 13, the great Christmas market. During the spring of 1859 beef of the best quality ranged from 7*d.* to 7¾*d.*; and mutton was towards Midsummer as high as 8*d.*, and lamb as high as 10*d.* per lb. At present the prices are for the best beef, 7*d.* to 7½*d.*; for the best mutton, 8*d.*; veal, 7*d.* to 7½*d.*; Pork, 6*d.* to 7½*d.*

WEIGHT OF CATTLE: *L.* The following is the rule which may be estimated by measurement as follows:—The girth is to be taken where it is smallest, squarely round the body, immediately behind the shoulder; the length, from the front of the shoulder to the insertion of the tail. Multiply the square of the girth in feet and inches, with the length in feet and inches, and the product by .24, .26, .28, .30, according to the fatness of the animal; the result will be the weight of the carcass in imperial stones. The weight of the carcass is to the live weight of an animal as 1 to 2—or a little more than 1 to 2 in cattle—as 8 to 14 or thereabouts in fat sheep; as 2 to 3 in the case of well fattened pigs. These proportions vary according to the condition and breed of the animal.

*** As usual, many communications have been received too late, and others are detained till the necessary inquiries can be made. We must also beg the indulgence of those correspondents the insertion of whose contributions is still delayed.

Now ready, 160 pages, crown 8vo, price 6*d.*,

THORLEY'S FARMERS' ALMANACK for 1860, the most Comprehensive and Complete Work of the kind ever published. Free by post for Six Stamps, upon application to JOSEPH THORLEY, Almanack Department, 77, Newgate St., London, E.C.

CONTENTS:—

	PAGE
Adulteration of Seeds ..	97
,, Barley-meal .	98
,, Rape Cake ..	98
,, Linseed Cake	98
Agricultural Societies—	
England	102
Scotland	102
Ireland	102
Bath	102
Yorkshire	102
Smithfield Club	102
Birmingham	102
Agricul. Railway Traffic ..	27
Alpha & Omega of Agricul.	72
Artificial Manures	59
Arts and Manufactures ..	59
Bad Farming, the Rule ..	67
Bean Straw	20
Bedrooms, Size of	63
Brewers' Grains	63
Butcher Meat, Improved ..	70
Cabinet Ministers	103
Calendar .. (Monthly)	
Cattle Cookery	86
,, Condiment	99
Chemistry of Cattle Food .	90
,, By Dr. Anderson	95
Chemistry. By Dr. Voelcker	93
Classification of Feeding Principles	51
Condiment for Seasoning Food for Live Stock ..	99
Corn Food	27
,, Refuse 21, 27, 33,	39
Cottage Poultry Yards ..	51
Country Occupations ..	50
Cow Houses, &c.	43
Cows, Management of, in Towns	43
Dairy Produce Improved .	70
Dumpling, A Devonshire .	27
Extraordinary Cow ..	63
Experiments, Cattle Food	100
Fairs, England and Wales	129
,, Scotland	140
,, Ireland	145
Farm, Two Acre . ..	51
Farming Prairie, Illinois ..	56
,, Stock ..	39
,, Dairy ..	38
Farms, American .. 20,	67
Farmers' Memoranda (Monthly)	
Flax Culture	41
Forcing System of Feeding Stock 86,	90
Feeding Live Stock—	
Horses (Monthly)	
Oxen ,,	
Sheep ,,	
Pigs and Poultry ,,	
Deer and Dogs ,,	
French Poultry	33
Future of the Steam Engine	74
Grass Land Management .	20
Harvest, Hay	35
,, Corn	47
,, Roots	59
Homestead	77
Horses, Management of, in Town	42
,, Management (Monthly)	
,, the Food of	44
,, Stable	39
,, Vitality of	39
,, Experiments in Feeding	
,, Old	100
,, Young	100
,, per Sea	101
Hounds, Fox	57
House Feeding	56
Italian Rye-grass Culture,	32, 57
,, ,, Soiling .	33
,, ,, Cookery	35
Labourers' Cottages, English	85
,, French	21
,, Healthy	45
,, Size of Bedrooms	63
Law, Courts of	106
Linseed Cake	94
Liquid Manure Farms ..	35
Lois-Weedon Culture ..	67
Machinery, Cattle Food ..	77
,, Mowing ..	79
,, Reaping ..	79
,, Threshing ..	76
Manufacture of Cattle Food	100
,, Condiment	100
Management	50
Mechi's Rule for Sowing ..	62
Memoranda, Concluding ..	100
Merino Flock, A, U.S. ..	33
Mixed Feed	21
Ox, Management (Monthly)	
,, Experiments in Feeding	101
,, ,, Cows .	101
,, ,, Calves	101
Parliament, Peers	107
Parliament, Peers, Officers	113
,, Address	117
,, of the United Kingdom	114
,, Scotch and Irish ..	117
,, Titles of Courtesy ..	115
,, Summary .. .	128
,, Commons	118
,, Ministry	102
,, Summary, Commons ..	128
,, Analysis	128
Public Offices	104
Pigs and Poultry (Monthly)	
Pig, The	57
Pisciculture, English ..	26
,, French ..	27
Potato Culture	73
Poultry	11
Railway, Crosskill's ..	82
,, Boydell's ..	81
Royal Family	103
Seed, Change of	62
,, John Cheap Bargains	63
,, Wheat, Preparation of	62
,, ,, Pickling ..	62
Sewage Manure	35
Sheep Dipping	44
,, Management (Monthly)	
Shepherd, The Good ..	61
Singular Shot	45
Steam Engine, Fixed ..	75
,, Portable ..	74
Steam Culture, Importance	80
,, Boydell's System ..	81
,, Halkett's System ..	81
,, Romaine's System ..	82
,, Fowler's System ..	83
,, Howard & Smith's System	83
,, Comparative Merits of Different Systems ..	84
Steam Cartage on Common Roads ..	84
,, Boydell's System ..	84
,, Bray's System ..	85
Steam and Manual Labour	32
Stock Taking	63
Straw as Food for Cattle ..	20
Successful Settler, A ..	45
Taxes, Assessed, &c.	155, 156
Veterinary Science, its Importance	86
Weights and Measures,	152, 153
Winona	21
Wonderful Eggs	21
Wool	38

"This is in reality a Farmer's Book, not merely an Almanack—in which respect it is perfect—but a Handbook and Vade Mecum of everything useful and informational that can in any way be serviceable to the Agriculturist."—*Era, Oct.* 9. 1859.

THORLEY'S FOOD for CATTLE, as used in her Majesty's Stables; in those of his Royal Highness at the Prince Consort's Farm, Windsor; in the Establishment of his Royal Highness the Prince Regent of Prussia; in the Royal Military Stables of Prussia, by order of his Excellency Lieut.-Gen. Willissen, Head Master of the Horse, is highly efficacious in promoting and sustaining the functions of the Horse in health and vigour. For Milch Cows it is equally valuable, increasing the quantity and improving the quality of Milk. For Beasts nothing can compare with it for feeding quickly. For Sheep, Pigs, and Poultry the effects produced in one month will exceed all expectations.

THORLEY'S FOOD FOR CATTLE contains bitter, saccharine, aromatic, and balsamic properties, essentially necessary to the health of all our domesticated animals. It is purely a vegetable compound, and when the food of Cattle is properly seasoned with it, it gives to the digestive and other functions of animals a healthy action, somewhat similar in character to what is produced by Spring Grass, but without any of the injurious purgative effects of the latter. These aromatic and other properties enhance the flavour and quality of both butcher meat and dairy produce, similar to what Sweet-scented Vernal Grass does in spring.

THORLEY'S FOOD FOR CATTLE can only be had direct from Mr. THORLEY or his accredited Agents. As various spurious imitations are now being sold giving rise to much disappointment, purchasers cannot be too cautious; for although some of those patent foods contain mineral substances, which produce a favourable effect at first, the upshot is ruinous to animal health. To avoid fraud and disappointment of this kind Mr. THORLEY supplies his Food in cases, containing packages, each packet having the signature of JOSEPH THORLEY engraved thereon and containing one feed; and loose in casks, with a one-feed measure, having his signature burnt thereon.

Price of case, containing 448 packages, 56*s.*; and of cask, 448 feeds, 50*s.* Orders to be accompanied by a remittance. Post-office Orders made payable to JOSEPH THORLEY, General Post Office, St. Martin's-le-Grand, E.C.

Offices: 77, Newgate Street, London, E.C. Manufactory and Steam Mills, Caledonian Road, N.

Sole Consignee for the United States, B. THORLEY, 174, Greenwich Street, near Cortland Street, New York.

Sole Consignee for Upper and Lower Canada, J. W. THORLEY, 26, Front St., next door west of Newbiggin House, Toronto, C.W.

☞ Carriage Paid to any Railway Station.

ALBEMARLE STREET, NOV., 1859.

MR. MURRAY'S LIST FOR NOVEMBER.

I.
NARRATIVE OF THE DISCOVERY OF THE FATE OF SIR JOHN FRANKLIN AND HIS COMPANIONS, and VOYAGE of the FOX in the ARCTIC SEAS. By Captain McCLINTOCK, R.N. Map and Illustrations. 8vo.

II.
THE DUKE OF WELLINGTON'S CORRESPONDENCE WHILE CHIEF SECRETARY FOR IRELAND, from 1807 to 1809. 8vo.

III.
ON THE ORIGIN OF SPECIES BY MEANS OF NATURAL SELECTION. By CHARLES DARWIN, M.A., Author of "Naturalist's Voyage Round the World." Post 8vo.

IV.
LIFE AND CORRESPONDENCE OF THE RIGHT REV. DANIEL WILSON, D.D., late BISHOP of CALCUTTA. By Rev. JOSIAH BATEMAN, M.A. Portrait and Illustrations. Two Vols., 8vo.

V.
THOUGHTS ON GOVERNMENT AND LEGISLATION. By Lord WROTTESLEY, F.R.S. Post 8vo.

VI.
HISTORICAL EVIDENCES OF REVEALED RELIGION, with Reference to recent Discoveries at Nineveh, Babylon, &c. By Rev. GEORGE RAWLINSON, M.A. 8vo.

VII.
THE ARCHÆOLOGY OF BERKSHIRE; an Address delivered by Lord CARNARVON. Post 8vo.

VIII.
THE STORY OF NEW ZEALAND; PAST and PRESENT—SAVAGE and CIVILISED. By ARTHUR S. THOMSON, M.D., 58th Regiment. Illustrations. Two Vols., post 8vo.

IX.
MODERN SYSTEMS OF FORTIFICATION, examined with reference to the NAVAL, LITTORAL, and INTERNAL DEFENCE OF ENGLAND. By Genl. Sir HOWARD DOUGLAS, Part. Plans. 8vo.

X.
SCIENCE IN THEOLOGY. Sermons Preached before the University of Oxford. By Rev. ADAM S. FARRAR, M.A., F.G.S., Fellow of Queen's College. 8vo.

XI.
BECKET; A BIOGRAPHY. By Rev. CANON ROBERTSON, M.A. Illustrations, post 8vo.

XII.
ON THE INTUITIVE CONVICTIONS OF THE MIND. By Rev. JAS. McCOSH, LL.D., Professor in Queen's College, Belfast. 8vo.

XIII.
MEMOIRS OF LORD CHANCELLOR SHAFTESBURY. With his Letters, Speeches, and other Papers illustrating his Early Life. By W. D. CHRISTIE, Esq. Portrait. 8vo.

XIV.
A DICTIONARY OF BIBLICAL ANTIQUITIES, GEOGRAPHY, GEOGRAPHY, and NATURAL HISTORY. Edited by W. SMITH, LL.D. Woodcuts. Vol. I. Med. 8vo.

XV.
LIFE AND TIMES OF ROBERT NELSON, Author of "Companion to the Fasts and Festivals of the Church." By Rev. C. F. SECRETAN, M.A. Portrait. 8vo.

XVI.
THE MODERN EGYPTIANS. By E. W. LANE. New Library Edition, with Additions by the Author. Edited by E. STANLEY POOLE. Woodcuts. 8vo.

XVII.
THE CHINESE AT HOME; or, PICTURES of the CHINESE. Drawn by Themselves. With Descriptions, by Rev. H. COBBOLD, M.A. Thirty-four Plates. Crown 8vo.

XVIII.
SELF HELP. With Illustrations of Character and Conduct. By SAMUEL SMILES, Author of "Life of George Stephenson." Post 8vo.

XIX.
A MANUAL OF THE ENGLISH CONSTITUTION; ITS RISE, GROWTH, and PRESENT STATE. By DAVID ROWLAND. Post 8vo.

XX.
PRINCIPIA LATINA; a FIRST LATIN COURSE, comprehending Grammar, Delectus, and Exercise Book, with Vocabularies, for the Lower Forms in Public and Private Schools. By WM. SMITH, LL.D. 12mo.

XXI.
A SMALLER HISTORY OF GREECE FOR JUNIOR CLASSES. By WM. SMITH, LL.D. Woodcuts.

XXII.
CATHAY; or, TRACES of TRAVEL BROUGHT HOME from the EAST. A New Edition. Post 8vo.

XXIII.
THE LIFE OF SIR FOWELL BUXTON. By his Son. A New and Condensed Edition for the People. Portrait. Post 8vo.

XXIV.
CHILDE HAROLD. New Editions, at 6d. and 1s.

JOHN MURRAY, Albemarle Street, W.

A CHRISTMAS AND NEW YEAR'S PRESENT.

Now ready, illustrated with 80 beautiful Engravings of the principal Scenes and Places described in the Poem,
DRAWN ON WOOD BY MR. PERCIVAL SKELTON,
FROM SKETCHES BY SIR CHARLES FELLOWS, MR. FORD, CRESWICK, TELBIN, LEAR, &c., &c.
Crown 8vo, price One Guinea, handsomely bound,

CHILDE HAROLD'S PILGRIMAGE.
BY LORD BYRON.

"The illustrations are taken from original sketches, and are not only remarkable for the artistic merit, but also for the poetical feeling, infused into them by Mr. Percival Skelton. They have the additional charm of originality. The drawings have been skilfully engraved by Messrs. Whymper & Cooper." —*Illustrated News.*
"This splendid edition."—*Times.*
"A wonder of embellishment."—*Athenæum.*
"A bibliopolic gem."—*Spectator.*
"A beautiful book."—*Literary Churchman.*
"A first-class work of art."—*Press.*
"The book is most beautiful."—*Examiner.*
"A most superb edition."—*Literary Gazette.*

JOHN MURRAY, ALBEMARLE STREET, W.

On November 21st will be published, in crown 8vo, price One Shilling,

THE GARDENERS' YEAR BOOK,
ALMANACK, AND DIRECTORY FOR 1860.
BY ROBERT HOGG,
Vice-President of the British Pomological Society, and Co-Editor of the Cottage Gardener.

This work will contain, besides the information usually found in Almanacks, a complete Gardeners' Calendar for every month in the year—Notices of and remarks upon all New Plants, Flowers, Fruits, and Vegetables introduced during the year—Select Lists of the best varieties in cultivation, and a complete Directory of the Nurserymen, Seedsmen, and Florists in Great Britain, Ireland, the Continent, and America.

To Nurserymen, Seedsmen, Florists, Horticultural Builders, and Mechanicians.
ADVERTISEMENTS for the above will be received up to November 12. TERMS:—One page, 40*s.*; half page, 25*s.*; and quarter of a page, 15*s.*

LONDON: COTTAGE GARDENER OFFICE, 162, FLEET STREET, E.C.

THE QUARTERLY REVIEW, No. CCXII., is published this day.

CONTENTS:—
I. ARCHITECTURE OF ALL COUNTRIES.
II. PROGRESS OF NEW ZEALAND.
III. GEOGRAPHY AND BIOGRAPHY OF THE BIBLE.
IV. STRIKES, AND THEIR EFFECT ON THE WORKING CLASSES.
V. THE ORDER OF NATURE—BADEN POWELL.
VI. FARM WEEDS.
VII. TENNYSON'S POEMS.
VIII. ORCHARD HOUSES.
IX. THE THREE BILLS OF PARLIAMENTARY REFORM.

JOHN MURRAY, Albemarle Street, W.

"THE STORY OF OUR LIVES FROM YEAR TO YEAR." SHAKESPEARE.
Now ready, price 5*s.* 6*d.*, bound in cloth,
THE FIRST VOLUME OF
ALL THE YEAR ROUND.
Conducted by CHARLES DICKENS.
Containing the First and Second Books, and Part of the Third Book of
A TALE OF TWO CITIES.
By CHARLES DICKENS.
In addition to a variety of Original Papers on Subjects of passing and permanent interest.
Published (also in Weekly Numbers, price 2*d.*) and in Monthly Parts) at 11, Wellington Street North, Strand, London, W.C.; and by Messrs. CHAPMAN & HALL, 193, Piccadilly, W., of whom may be had all the Numbers of HOUSEHOLD WORDS.
Country Booksellers can be supplied with bills on application through their London Agents.

HOLCUS SACCHARATUS (Pamphlet).
"A VISIT AND A PLANT." A few copies only are left. Post free, 7*d.*
JOHN WILLDING CLARKE, Whittlesea, Cambs.

CUTHILL'S PAMPHLET on the Potato, Strawberry, Cucumber, Seakale, and 20 more things, 2*s.*; Market Gardening Round London, 1*s.* 6*d.*; on the Vine, 1*s.*; Thirty Years' Practice of Mushroom Growing: an Easy Plan for Killing Woodlice, 1*s.* 1*d.*; "Vegetable Meeting Paper" gratis.
JAMES CUTHILL, Camberwell, London, S.

GLENNY'S GARDENERS' GAZETTE.—A Monthly Journal, 16 pp. imperial 8vo, price 3*d.*, post free, 4*d.*, contains useful information for all interested in the Garden.
JAMES ALLEN, Warwick Lane, E. C.; KENNETT, York Street, Covent Garden, W.C.; and at all the railway stations and respectable booksellers.
Advertisements should be sent to the Printers, YATES & ALEXANDER, Horse-shoe Court, Ludgate Hill, E.C.

On the 1st of November will be published, price 5*s.*,
THE ROSE ANNUAL FOR 1859-60. With four Coloured Plates of New Roses. By WILLIAM PAUL, F.H.S., author of "The Rose Garden," &c.
*** A few copies of THE ROSE ANNUAL FOR 1858-9 are still on hand, price 5*s.*
Works by the same Author,
THE ROSE GARDEN. Price 1*l.* 1*s.*, with 15 Coloured Plates and numerous Wood Engravings.
SUPPLEMENT TO THE ROSE GARDEN. With four additional Plates, 5*s.*
OBSERVATIONS ON THE CULTIVATION OF ROSES IN POTS. Second Edition, price 1*s.* 6*d.*
MORNING RAMBLES IN THE ROSE GARDENS OF HERTFORDSHIRE. Price 1*s.*
AN HOUR WITH THE HOLLYHOCK. Second Edition, price 1*s.*
THE HAND-BOOK OF VILLA GARDENING Price 2*s.* 6*d.*
AMERICAN PLANTS, THEIR HISTORY AND CULTURE. Price 2*s.* 6*d.*
London: PIPER, STEPHENSON, & SPENCE, 23, Paternoster Row. or post free from the Author, Cheshunt Nurseries, Waltham Cross, Herts, N.

Just published, price 1*s.*
MORTON'S NEW FARMER'S ALMANACK FOR 1860.—BLACKIE & SON, Warwick Square, City, London, E.C.; and all Booksellers.

Now publishing in 12 Monthly Parts, 1*s.* each,
OUR FARM CROPS.
By JOHN WILSON, F.R.S.E., Professor of Agriculture in the University of Edinburgh, Member of Council of the Royal Agricultural Society of England, &c.
Each part will consist of about 80 pages with Woodcuts, &c., and will be complete in itself. The following are now ready:—
PART I. The WHEAT CROP.
PART II. BARLEY AND OAT CROPS.
BLACKIE & SON, Warwick Square, City, London, E.C.; and all Booksellers.

Just published, in One large Volume, cloth, price 31*s.* 6*d.*,
THE GARDENERS' ASSISTANT:
PRACTICAL AND SCIENTIFIC. A Guide to the Formation and Management of the Kitchen, Fruit, and Flower Gardens, and the Cultivation of Conservatory, Greenhouse, and Hothouse Plants. With a copious calendar of Gardening Operations. By ROBERT THOMPSON, of the Royal Horticultural Society's Gardens, Chiswick. Illustrated by numerous Engravings and Coloured Plates.
BLACKIE & SON, Warwick Square, City, London, E.C. and all Booksellers.

To be completed in eight parts, of which seven are now ready, price 2*s.* 6*d.* each, plain; 3*s.* 6*d.* each, coloured,
FARM INSECTS: being the Natural History and Economy of the Insects injurious to the Field Crops in Great Britain and Ireland, and also those which infest Barns and Granaries. With Suggestions for their Destruction. By JOHN CURTIS, F.L.S., &c. Illustrated with many hundred figures, Plain and Coloured.
BLACKIE & SON, Warwick Square, City, London, E. C.; and all Booksellers.

IMPORTANT TO FARMERS.
Now ready, post 4to, bound in cloth, price 2*s.*, free by post, 2*s.* 4*d*
PEAT'S FARMER'S DIARY AND ACCOUNT BOOK, 1860; being a complete and easy method of keeping farm accounts. Dedicated by permission to the Right Hon. the EARL of CARLISLE.
The publisher begs to call the attention of Agriculturists to this Diary and Account Book. It has been favourably received during the last 6 years by a great many eminent agriculturists in England, Ireland, and Scotland; and high encomiums have been passed upon it by all the leading journals (London and Provincial), advocating the cause of agriculture.
The publisher has pleasure in stating that it has received the high patronage of the Right Hon. the Earl of Carlisle, and will by permission be dedicated to him.
This Diary contains Space for Memoranda; Complete Almanack—Almanack with Breeder's Tables—Memoranda—Cash Account—Farmer's Account Book—Inventory, Cash, Stock, &c., beginning of year—Extent of Farm—Cropping or Produce Table—Outlay and Income during the Year—Inventory, Cash, Stock, &c., ending of year—Summary of Outlay and Income—a great many useful Tables, Stamps, Taxes, Licenses, &c.—Valuable recipes for Farmers—A complete List of Fairs in the United Kingdom, &c.
The publisher would recommend that an early application be made for this Diary, as a great many were disappointed in ordering copies for 1859, after the edition was sold off and too late to print a second edition.
"The great desiderata in farm account-books are simplicity and brevity, leaving nothing for the farmer to do but to enter under printed heads the transactions of each day, when the labour of the day is finished. In looking over the 'Diary' of Mr. Peat, we think he has met these requirements of the farmer in a very satisfactory manner, so that any farmer, by making himself familiar with the various headings, may settle the day's accounts of his farm in a very few minutes. We have no hesitation in recommending it to our readers."—*Mark Lane Express.*
Sold by SIMPKIN, MARSHALL, & Co., London; WHITTAKER & Co., London; M'GLASHAN & GILL, Dublin; JOHN MENZIES, Edinburgh; DAVID PEAT, Thirsk; all Booksellers and at the Railway Stations.

This day is published, price 2s. 6d., Part X. of

THE ENGLISH CYCLOPÆDIA OF ARTS AND SCIENCES, being the Fourth Division of the English CYCLOPÆDIA, conducted by CHARLES KNIGHT.

☞ This part comprises from the article "COTTON MANUFACTURE" to the commencement of "DICTIONARIES."

Vols. I. and II. are now ready, price 12s. each.

The following Divisions are completed:

BIOGRAPHY.
Six Volumes, price 3l.; or in three Volumes, half-bound morocco, price 3l. 12s.

GEOGRAPHY.
Four Volumes, price 2l. 2s.; or in Two Volumes, half-bound morocco, price 2l. 10s.

NATURAL HISTORY.
Four Volumes, price 2l. 2s.; or in Two Volumes, half-bound morocco, price 2l. 10s.

*** Any Number or Part may be had separately.

London: BRADBURY & EVANS, 11, Bouverie Street, E.C.

GARDEN BOOKS.
ESPECIALLY ADAPTED TO THE PRESENT SEASON.

I.

HOW TO LAY OUT A GARDEN.—Intended as a General Guide in Choosing, Forming, or Improving an Estate. (From a Quarter of an Acre to a Hundred Acres in extent.) By EDWARD KEMP, Landscape Gardener, Birkenhead Park. Crown 8vo, price 12s., illustrated with numerous Plans, Sections, and Sketches of Gardens and General Objects.

"Mr. Kemp's 'How to Lay Out a Garden' is the best work on Practical Landscape Gardening which has appeared in this country, its value being much increased by an extraordinary number of excellent instructive woodcuts."—*Gardeners' Chronicle.*

II.

THE HANDBOOK OF GARDENING.—For the use of persons who possess a small Garden. By EDWARD KEMP. The Eleventh Edition, enlarged and improved. Price 2s.

III.

PRACTICAL HINTS ON PLANTING ORNAMENTAL TREES.—With Particular Reference to Coniferæ. In which all the Hardy Species are Popularly Described. By Messrs. STANDISH & NOBLE. Price 5s.

IV.

The Sixth Edition, cloth gilt, price 7s.

THE LADIES' COMPANION TO THE FLOWER GARDEN.—By Mrs. LOUDON. Being an Alphabetical Arrangement of all the Ornamental Plants grown in Gardens and Shrubberies. With full directions for their Culture.

V.

Crown 8vo, price 16s. cloth extra,

PAXTON'S BOTANICAL DICTIONARY.—Comprising the Names, History, and Culture of all Plants known in Britain, together with a full Explanation of Technical Terms.

London: BRADBURY & EVANS, 11, Bouverie Street, E.C.

GEORGE MILLS'S TREATISE ON THE CULTURE OF THE CUCUMBER, MELON, SEAKALE, AND ASPARAGUS, will be forwarded post free on the receipt of 42 postage stamps. Also his Treatise on the Culture of the Pine Apple on the receipt of 30 postage stamps.

GEORGE MILLS, Uxbridge Road, Ealing, Middlesex.

TWENTIETH YEAR OF PUBLICATION.

Now ready, price 1s., or bound in cloth and interleaved, 2s.,

JOHNSON AND SHAW'S FARMER'S ALMANACK FOR 1860, containing every information relating to Agriculture, Implements, Seeds, Fairs, &c.

London: JAMES RIDGWAY, Piccadilly, W., and all Booksellers and Railway Stations.

On the 24th of November, with the rest of the Stationers' Company's Almanacks, will be published,

JOHNSON'S GARDENERS' ALMANACK FOR 1860, Price 1s.—In addition to the usual contents of an Almanack it will contain among other numerous Gardening Directions, very ample rules relative to Planting and Pruning; Out-door Culture and Greenhouse Culture of Grapes; the Construction of Cold Pits; Protection of Blossoms; Formation of Hot-beds, &c., besides an enumeration of Wild Flowers found in each month.

London: Published for the Company of Stationers by JOSEPH GREENHILL, at their Hall, Ludgate Street, E.C.; and may be had of all Booksellers and Stationers.

Second Edition, Revised and Enlarged, 18s. cloth,

A DIGEST OF THE LAW OF THE FARM. By HENRY H. DIXON, Esq., Barrister-at-Law, of the Midland Circuit.

CONTENTS.—Agricultural Customs of the different Counties of England and Wales—Interests in Land—Easements—Trees and Fences—Dangerous Animals—Water, Irrigation, &c.—Servants—Conveyance of Horses and Cattle—Distress—Husbandry Covenants—Trespass and Game—Landlord and Tenant—Tithes—Contracts and Sales—Horses and Cattle.

APPENDIX.—Leases—Rules of Horse Repositories and Smithfield Market, Smithfield Club Show, and Royal Agricultural Show, Railway Sack Lending, Coursing, &c.

STEVENS & NORTON, 26, Bell Yard, Lincoln's Inn, E.C.

Now Completed, in Two handsome Vols., cloth lettered, price 16s.,

CYCLOPÆDIA OF ENGLISH LITERATURE; History, Critical and Biographical, of British Authors, from the Earliest to the Present Times, with Specimens of their Writings. Edited by ROBERT CHAMBERS, and ROBERT CARRUTHERS of Inverness. New and much improved Edition. Embellished with numerous Wood Engravings. Cloth Cases for Binding may be had from any Bookseller.

W. & R. CHAMBERS, London and Edinburgh; and all Booksellers.

STRONG ALE, PALE ALE, PORTER, AND STOUT.

In fcp. 8vo, with 4 Diagrams, price 4s. 6d. cloth,

HOW TO BREW GOOD BEER.—A complete Guide to the Art of Brewing Ale, Bitter Ale, Table Ale, Brown Stout, Porter and Table Beer. To which are added Practical Instructions for making Malt. By JOHN PITT, Butler to Sir William R. P. Geary, Bart.

London: LONGMAN, GREEN, LONGMAN, & ROBERTS.

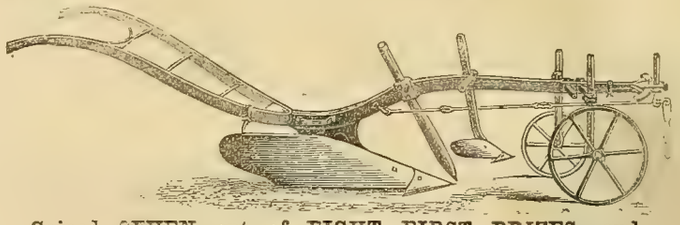
HOW TO BREW SPLENDID STRONG ALE, at 7d. per Gallon, fine as Sherry, and an aroma equal to Burton Tenpenny. This new Practical Treatise is by a Derbyshire man of 25 years' attendance at the spigot and tun in the best brewery in the county. No brewing utensils required, only those for household use. This is guaranteed to be the best and cheapest mode to produce fine Ale ever made public. The above beautifully printed in large type can be had of the sole publishers for 12 Penny Post stamps. Sent post free to any address. Direct to FISHER & SON, Publishers, Kingsland, London, N.E. Established 1847.

NOTICE.—Just appended to this universally prized Book, all the methods to make the improved Ærated Unfermented Ginger Beer, Soda Water, Lemonade, all the Cordials and Nectars, together with the Penny French Ices, the Delightful Summer Cooling Beverages, and all the French, American, and English cheap fruit drinks.

BEDFORDSHIRE AGRICULTURAL SOCIETY, 1859.

J. AND F. HOWARD have much pleasure in informing the Public that at the Ploughing Matches of above Society, just concluded,

HOWARD'S CHAMPION PLOUGH



Gained SEVEN out of EIGHT FIRST PRIZES, and SEVEN out of EIGHT SECOND PRIZES,

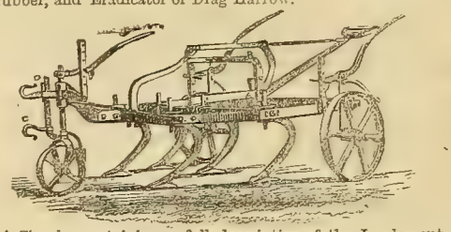
Thereby more than ever sustaining its position at home, while, at the recent Meetings of the Royal Agricultural Society of England and the Highland and Agricultural Society of Scotland, it also gained the

Two Chief Prizes as the Best Plough for General Purposes.

CATALOGUES, with full particulars, sent post free on application to

J. & F. HOWARD, BRITANNIA IRON WORKS, BEDFORD.

CLAY'S PATENT CULTIVATOR AND ERADICATOR.—Royal Yorkshire and North Lincolnshire Societies' Prize Implement.—Requires one-fourth less horse power than any other implement tested by the Royal Society's judges. The frame of each implement is applicable as a broad-share or Scarifier, Surface Parer or Skim, Cultivator or Grubber, and Eradicator or Drag Harrow.



A Circular containing a full description of the Implement, Price List, and upwards of fifty testimonials (one from the Wakefield Farmers' Club) sent post free on application to CHARLES Clay, Oakenshaw Iron Works, near Wakefield.

PRICES REDUCED.

H. J. MORTON AND CO., Galvanised Iron Works, 2, Basinghall Buildings, Leeds.

GALVANISED IRON ROOFING

for Farm Buildings and other Roofs; the cheapest, most durable, and neatest Roofing in use; also Spouting at 10½d. per yard.

WIRE STRAND CABLE FENCING



(formed of Twisted Wires like a rope or cable), the strongest cheapest, and neatest fence in use, will resist the largest cattle and will not bend or get out of form by trespassing upon or over. Price, with five lines of the Galvanised Strand, iron main posts, and pronged Standards, 1s. 2½d. per yard.

This fence is far cheaper than posts and rails, or any kind of iron fencing; and possesses four times the strength of solid bars. Will not rust nor corrode. Upwards of 1200 miles of this Fencing supplied.

GALVANISED GAME AND POULTRY NETTING.



Galvanised, 24 ins. wide, 2-inch mesh, 5½d., 7½d. and 9½d. per yard.

Galvanised, 24 ins. wide, 1-inch mesh, 4d., 5d., and 7d. per yard. The Netting made any width, and with openings of any size.

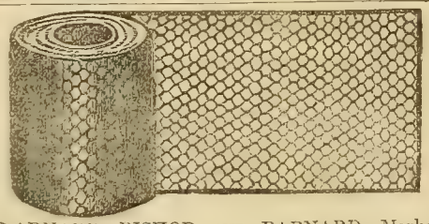
GALVANISED IRON CHAIN CAMP STOOLS & CHAIRS, POULTRY FOUNTAINS & FEEDERS, PRONGED DAHLIA RODS AND ROSE STAKES, &c.

Strong CATTLE HURDLES from 2s. per yard.

PATENT IMPROVED GAS WORKS,

of all sizes for the use of Private Houses, Mansions, Railway Stations, Mills, Collieries, Mines, Villages, &c. Works from 10 to 500 lights estimated for. The works can be entrusted to an ordinary labourer.—Apply to

☞ HENRY J. MORTON & Co. 2, Basinghall Buildings, Leeds.



BARNARD, BISHOP, AND BARNARD, Market Place, Norwich, in consequence of improvements in their machinery for the manufacture of the above article, have been enabled to make a great reduction in the prices.

	Galvanised.	Japanned Iron.
2-inch mesh, 24 inches wide	*5d. per yd.	4d. per yd.
2-inch ,, strong do.	6 ,,	4¾ ,,
2-inch ,, intermediate, do. ..	7 ,,	5½ ,,
2-inch ,, extra strong, do. ..	9½ ,,	7½ ,,
1½-inch ,, 24 inches wide	5½ ,,	4½ ,,
1⅝-inch ,, strong, do.	6½ ,,	5½ ,,
1⅝-inch ,, intermediate, do. ..	7½ ,,	6 ,,
1⅝-inch ,, extra strong, do. ..	10 ,,	8 ,,

All the above kinds can be made of any width (under 8 feet) at proportionate prices. If the upper half is of a coarser mesh than the lower, it will reduce the prices about one-fifth.

Strong Galvanised Poultry Netting, 8½d. per yard, 3 feet wide Galvanised Sparrow-proof Netting for Pheasantries, 2½d. per square foot. Delivered free of expense in London, Peterborough, Hull, or Newcastle. Manufacturers of Improved Strained Wire Cattle and Deer Fencing, Iron Hurdles, &c.

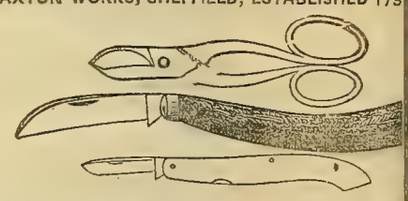
Illustrated Catalogues and Patterns forwarded by post.

GREENHOUSES, CONSERVATORY, &c., for S
A large Stock, Glazed, ready for Fixing, at HE
FREEMAN'S, Hothouse Builder, Triangle, Hackney, N.E.

LOOMES AND CO.'S CABLE PATTERN GARDEN EDGING may be obtained of Messrs. HOOPER AND CO., Covent Garden Market, W.C.



PAXTON WORKS, SHEFFIELD, ESTABLISHED 173



SAYNOR AND COOKE'S warranted PR
PRUNING and BUDDING KNIVES, SCISSORS, &
Sold by all respectable Nurserymen and Seed Merchan
the three Kingdoms.

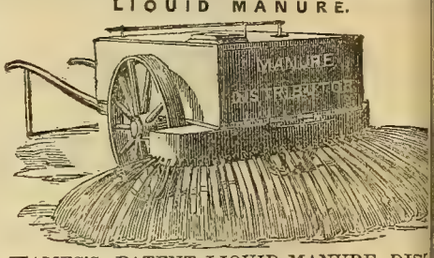
BRADFORD'S PATENT WASHING MACHI
SIMPLICITY AND WONDERFUL EFFICIENCY.



"I very gratefully acknowledge the extraordinary patronage I have received from all parts of England, Ireland, and Scotland, and which has very far exceeded my most sanguine expectations."—THOMAS BRADFORD, Patentee, Manchester.

N.B. My Machines always have, and always will be sent on approval, if desired, before payment. Description and Price free by post.

LIQUID MANURE.



JAMES'S PATENT LIQUID MANURE DIS
BUTOR OR WATER-CART, warranted not to choke
otherwise get out of order. It is thoroughly adapted for Crops, or Pasture Land, or for Watering Streets; has awarded SIX FIRST PRIZES.

Full Particulars and Testimonials may be obtained o
Patentee, ISAAC JAMES, Tivoli Waggon Works, Cheltenha
Improved LIQUID MANURE PUMPS supplied.

WARNER'S PATENT VIBRATING STAND
PUMPS.

PATENT CAST-IRON PUMPS for Farms, Cottages, S
Yards, &c., where the Well does not exceed 28 feet in d
fitted with WARNER'S Patent Metal Bucket and Valve,
cannot clog in action. These Pumps can be made
handed, left-handed, or with handle opposite the no
removing four screws only.



Diameter of Barrel.	Height.	£.
2½ in. short	1 ft. 7 in.	Fitted for lead, gutta percha or cast iron flanged pipe as required.
2½ ,, long	3 ,, 3 ,,	
3 ,, ditto	3 ,, 6 ,,	
3½ ,, ditto	3 ,, 6 ,,	
4 ,, ditto	3 ,, 6 ,,	
2½ ,, short, with 15 feet of Lead Pipe attached, ready for fixing		
2½ in. long ditto	ditto	ditto

The short barrel Pump is very conve
for fixing in situations of limited heigh
space, for the supply of coppers and sin
Wash-houses with soft water from u
ground tanks, or in Hot, Forcing, and
Houses; they may be fixed, when de
under the stage.

May be obtained of any Ironmong
Plumber in Town or country, at the
prices, or of the Patentees and Manufacti
JOHN WARNER & SONS, 8, Crescent, Jewin Street, London

Every description of Machinery for Raising Water by n
of Wheels, Rams, Deep Well Pumps, &c.; also Fire and G
Engines, &c. &c.—Engravings sent on application.

AGRICULTURAL IMPLEMENTS.

BURGESS AND KEY, 95, Newgate Street, London, E.C., have always on hand Ploughs, Harrows, Carts, Waggons, Turnip Cutters and Pulpers, Cake Breakers; and their Improved Chaff Cutters, 50s. Galvanised Game Netting, 4d. per Yard. Price Lists sent free.—Illustrated Catalogues on receipt of six postage stamps.

IRON FENCING AND HURDLES.

HILL AND SMITH'S Patent Continuous IRON FENCE is adapted for every variety of situation, and is much superior to, and cheaper than, Iron Hurdles of equal strength.

Many miles of this Fence have been erected on the London and North-Western Railway between Camden Town and Bletchley. The Patent principle is applied to Iron Hurdles, whereby their strength is much increased and the cost reduced Illustrated Priced Catalogues will be sent on application to HILL & SMITH, Brierly Hill Iron Works, near Dudley; or 40, Broad Street Buildings, City, London, E.C.; or 25, Enoch Square, Glasgow, where specimens may be seen; or to Mr. B. SAMUELSON, 76, Cannon Street West, London, E.C.

GUTTA PERCHA TUBING FOR WATERING GARDENS.

THE GUTTA PERCHA COMPANY have the pleasure to acknowledge the receipt of the following

Testimonial from Mr. J. FARRAH, *Gr. to* BOSWELL MIDDLETON JALLAND, Esq., *of Holderness House, near Hull.*

"I have had 400 feet of your Gutta Percha Tubing, in lengths of 100 feet each, with union joint, in use for the last 12 months for watering these gardens, and I find it to answer better than anything I have ever yet tried. The pressure of the water is very considerable, but this has not the slightest effect on the tubing. I consider this tubing to be a most valuable invention for Gardeners, inasmuch as it enables us to water our gardens in about one-half the time, and with one-half the labour required."

Manufactured by the Gutta Percha Company, Patentees, 18, Wharf Road, City Road, London, E.C., and sold by their Wholesale Dealers in town and country.

"FRIGI DOMO."—Patronised by her Majesty, the Queen, the Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, and —Collier, Esq., of Dartford.

PROTECTION FROM THE MORNING AND EVENING FROST.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and, floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths. Two yards wide, 1*s.* 6*d.* per yard run; four, 3*s.* per yard. Also, an improved make for Shading Purposes Three yards wide, 2*s.* 6*d.* per yard run.

ELISHA THOMAS ARCHER, whole and sole manufacturer, 7, Trinity Lane, Cannon St., City, E.C., and of all Nurserymen and Seedsmen throughout the kingdom. "It is much cheaper than mats as a covering."

PAINTS OF ALL COLOURS, mixed ready for use from 5*s.* 6*d.* per gal., will cover 54 sq. yds. Superior MANURES, equal to Guano, from 5*s.* 6*d.* per cwt. Efficacious SHEEP WASH, 1*s.* 6*d.* per gal. Patent CART GREASE, 10*s.* per cwt. PORTLAND CEMENT WASH for outside of buildings, prevents greenness and vegetation, also absorption of wet, 1*s.* 6*d.* per gal. Genuine COLZA OIL, 3*s.* 10*d.* per gal. The PEOPLE'S LIGHT LAMPS, 2*s.* PETROLEUM OIL, 3*s.* per gal.—G. SPILLS, Colour and Oil Works, Saint George Street, London Docks, E.

MICROSCOPES.

JOSEPH AMADIO'S Improved Compound MICROSCOPE, 2*l.* 2*s.*; Students', 3*l.* 13*s.* 6*d.*

"Both these are from Amadio, of Throgmorton Street, and are excellent of their kind, the more expensive one especially." —*Household Words*, No. 345.

A large Assortment of Achromatic Microscopes.

Just published, 2d ed., an Illustrated Catalogue, with the names of 1500 Microscopic objects, free for 6 stamps.

PRIZE MEDAL, PARIS EXHIBITION 1855.

METCALFE, BINGLEY, AND CO.'S New Pattern and Penetrating Tooth Brushes, Penetrating unbleached Hair Brushes, Improved Flesh and Clothes Brushes, and genuine Smyrna Sponges; and every description of Brush, Comb, and Perfumery for the Toilet. The Tooth Brushes search thoroughly between the divisions of the Teeth and clean them most effectually—the hairs never come loose. M., B., and Co. are sole makers of the Oatmeal and Camphor and Orris Root Soaps—sold in Tablets (bearing their names and address) at 6*d.* each; of METCALFE'S celebrated Alkaline Tooth Powder, 2*s.* per box; and of the New Bouquets.—Sole Establishment, 130B and 131, Oxford St. 2d and 3d doors west from Holles St., London, W.

ALLEN'S PATENT PORTMANTEAUS AND TRAVELLING BAGS, with SQUARE OPENING; Ladies' Dress Trunks, Dressing Bags, with Silver Fittings; Despatch Boxes, Writing and Dressing Cases, and 500 other articles for Home or Continental Travelling, illustrated in their New Catalogue for 1859. By post for two stamps. J. W. & T. ALLEN, Manufacturers of Officers' Barrack Furniture and Military Outfitters (see separate Catalogue), 18 & 22, Strand, W.C.

FRY AND SONS' CHOCOLATES AND COCOAS. —Victoria Chocolate, Bon Bons, Soluble Cocoa, &c., in great variety. These delicious beverages are now sold at very moderate prices, and many of them are highly economical.

FRY'S HOMŒOPATHIC COCOA is an article of unexceptionable quality. FRY'S SOLUBLE COCOA, in Hexagon packets, and FRY'S PEARL COCOA, are strongly recommended.

FRY AND SONS, MANUFACTURERS TO THE QUEEN.

Liebig, the celebrated Chemist, asserts that nitrogen is essential to the healthy action of the bile, and the growth, sustenance, and invigoration of the body. No stronger recommendation of Cocoa and Chocolate can therefore be given than the following statement:—Caffeine and Theine each contain only about 29 per cent., whilst Theobromine (or essence of Cocoa) contains upwards of 35 per cent. of nitrogen.

EPPS'S HOMŒOPATHIC COCOA.—Produced, in 1839, specially for the use of Homœopathic Patients, to provide them with a beverage highly nutritious and free from those effects of Coffee and Tea which to many persons are pernicious. Rendered attractive to the taste by its delicious aroma and grateful smoothness, it has become adopted by the public generally for breakfast, luncheon, and supper. It is sold by the principal Grocers at 1*s.* 6*d.* per lb., in 1 lb., ½ lb., and ¼ lb. packets. Each packet is labelled, "JAMES EPPS, Homœopathic Chemist, London."

TO PIG, POULTRY, AND GAME FEEDERS.

JUPP'S RICE FOOD, POULTRY AND GAME.—RICE SWEEPINGS, 7*s.* 6*d.* per cwt., in 1¼ cwt. bags; SCREENED RICE, 10*s.* per cwt., in 1¾ cwt bags; DOG BISCUITS, 14*s.* per cwt; OIL-CAKE, per ton only; RICE MEAL for PIGS, 6*s.* and 8*s* per cwt., in 1 cwt. bags, at the mill. Orders must be accompanied by a remittance to insure delivery.—W. & R. JUPP, 6, Cross Lane, Eastcheap, E.C.

BATH NURSERY AND SEED ESTABLISHMENT.

MRS. GRIFFIN, widow of the late JAMES GRIFFIN, finding the business too extensive for her management, would be glad to dispose of it on liberal terms.—Further particulars can be obtained at the Nursery, Weston Road; or 2, New Bond Street, Bath.

NURSERY GROUND.

TO BE LET, WHITTINGTON NURSERY, Upper Holloway, to be entered upon immediately.—For particulars, apply to J. F. MARSON, Esq., Small Pox Hospital, or to Mr Bunney, Nurseryman, Stratford, Essex, E.

HUCCLECOTE GARDENS, 2½ MILES FROM GLOUCESTER.

TO BE LET, with immediate possession, the above capital walled-in GARDENS, containing about 4 acres, with House, Farm-yards, Buildings, Orchard, and Land adjoining, containing in the whole about 16 acres, with Greenhouses, Propagating houses, Vineries, Pits, &c. Extent of glass 5770 feet.—For particulars apply to W. KNOWLES, Auctioneer, St. Mary's Square, Gloucester.

TO NURSERYMEN, GARDENERS, AND OTHERS.

TO BE DISPOSED OF, A SMALL NURSERY, about 2 acres, in the neighbourhood of London, with Houses and Pits well stocked with Plants and Shrubs, and a good Jobbing Business.—Apply to Mr. A. CHANDLER, Horticultural Agent and Valuer, 20, Priory Road, Wandsworth Road, S.

TO NURSERYMEN, FLORISTS, AND OTHERS.

TO BE DISPOSED OF, a First-Class LONDON NURSERY, long Lease and Good Will, the Vendor having been in occupation for 16 years. Extensive frontage, stands well for business, Omnibuses to all parts of London. There are 12 Greenhouses, besides Pits, &c., part heated by Hot Water, and adapted to the Propagation and Culture of Hardwooded and Miscellaneous Plants. The usual Ground Stock includes American Plants, choice young Fruit Trees, &c., in fine condition. Good Residence, Seed Shop, and Offices separate; two Stall Stable, Cart and Packing Sheds, front and back entrance, and every convenience to carry on a large business. —Apply to Messrs. BROOKS & BEAL, Estate Agents and Auctioneers, 209, Piccadilly, W.

Sales by Auction.

DUTCH BULBS, STANDARD AND DWARF ROSES, ETC.

MR. J. WILLMER begs to announce that he will Sell as above, at the Auction Mart, on THURSDAY, November 10, at 12 o'Clock.—Catalogues may be had at the Mart, and of the Auctioneer, Springfield Nursery, Sunbury, S.W

SPECIAL EXTRA POULTRY AND PIGEON SALE.

MR. J. C. STEVENS begs to announce that he will have a SPECIAL EXTRA SALE OF POULTRY AND PIGEONS on TUESDAY, November 8, at his Great Room, 38, King Street, Covent Garden, W. C., at 12 o'Clock precisely, consisting of 230 Lots of Cochins, Dorkings, Spanish, Game, Bantams, Gold Pencilled Hamburghs, Bramahs, Aylesbury and Rouen Ducks, Himalaya Rabbits, &c., from the yards of Messrs. Craigie, Ranson, Tegetmeier, and other first-rate breeders. Also a capital Lot of PIGEONS from Messrs. Summerhayes, Allison, Stevens, and other well-known Fanciers. —May be viewed on the morning of Sale, and Catalogues had; if for the country, by inclosing 2 stamps.

BULSTRODE PARK.

HORTICULTURAL BUILDINGS, STOVE AND GREENHOUSE SPECIMEN PLANTS, &c.

MR. J. C. STEVENS has been favoured with instructions to Sell by Auction, on the premises, Bulstrode Park, near Slough, Bucks, on WEDNESDAY, November 9, at half-past 12 o'Clock precisely, and following days without reserve, in consequence of the residence being required by the Duke of Somerset for his own occupation, 8 nearly new HORTICULTURAL BUILDINGS, consisting of Conservatory and Orangery, 2 Greenhouses Span-roofed, Peach, Vine, and Stove Houses, Pine and other Pits fitted with Weeks's Boilers, Hot-water Pipes, &c., complete, all erected within the last 4 years on the most improved principles, regardless of expense. Also the CHOICE AND EXTENSIVE COLLECTION OF PLANTS consisting of Specimen Stove and Greenhouse Plants, Roses, Azaleas, Camellias, Orange Trees, Ericas, &c., a few choice Orchids and other valuable Plants, many of which are from the renowned collection of the late Mrs. Lawrence; some first-class Vine, Peach, and Nectarine Trees just coming into full bearing; also a valuable collection of Orchard House Trees in Pots, Pines, and several hundred Strawberry and Bedding Plants, &c.—On view the day before the Sale, and Catalogues had on the premises, and at the principal Hotels at Slough, Windsor, Maidenhead, Reading, and Uxbridge, and of the Auctioneer at his Office, 38, King Street, Covent Garden, W.C.

N.B. Bulstrode Park is about 5 miles from Slough on the Great Western Railway, and the same distance from Uxbridge.

FINAL STOCK OF MR. R. FORTUNE'S CHINESE PLANTS.

MR. J. C. STEVENS has been favoured with instructions from Mr. Glendinning, of Chiswick, to Sell by Auction, at his Great Room, 38, King Street, Covent Garden, W.C., on WEDNESDAY, November 30, and following day, at half-past 12 o'Clock precisely, without reserve, the FINAL AND MOST VALUABLE PORTION OF MR. FORTUNE'S CHINESE INTRODUCTIONS. The Plants consist of the beautiful NEW CAMELLIAS "Cup of Beauty" and "Princess Frederick William," fine striped varieties with flowers of the most perfect form, and producing striped and self-coloured blooms upon the same plant; three new DOUBLE FLOWERING PEACHES, viz. the Carnation, the Rose, and the Camellia flowered; these have flowers as large as Roses, the first being beautifully striped like the Carnation; Torreya grandis; an entirely new species of Juniper with glaucous leaves, Prunus triloba, Abies Kæmpferi, a new Evergreen Hardy Oak, together with a new Purple Lilac, and other unknown and undescribed species of Chinese Plants.—On view the day prior and morning of Sale, and Catalogues had at the Rooms; or if for the country by inclosing two stamps.

SIX DAYS' SALE.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, AND OTHERS.

IMPORTANT AND EXTENSIVE SALE OF TREES AND SHRUBS.

MR. ROWLAND WARD has been honoured with instructions to offer for Public Competition, on MONDAY, TUESDAY, WEDNESDAY, THURSDAY, FRIDAY, and SATURDAY, November 14, 15, 16, 17, 18, and 19, the largest and most valuable NURSERY STOCK which he has ever had the pleasure to announce, consisting of all kinds and ages of Forest, Fruit, and Ornamental Trees; Deciduous, Evergreen, and Flowering Shrubs; American and Coniferous Plants, Roses, &c., the property of Mr. Fisher Godwin, Broadfield Nurseries, Sheffield; who is removing from his present nurseries, owing to their proximity to the town, to more extensive and better adapted grounds for nursery purposes. —Catalogues (post free) may be had of the owner, Mr. FISHER GODWIN, Broadfield Nursery, and 2, 3, and 4, New Market Hall, Sheffield; or of Mr. ROWLAND WARD, Auctioneer, Handsworth Woodhouse, near Sheffield.

STOKE NEWINGTON.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS have received instructions to Sell by Auction on the Premises, Albion Road, Stoke Newington, on MONDAY and TUESDAY, November 7 and 8, at 11 o'Clock each day, fine ornamental and deciduous Trees, Evergreens and Flowering Shrubs, consisting of fine Aucubas, Laurels, Variegated and Green Hollies, Arbor-vitæs, Bays, Ivies, Box Lilacs, Limes, Planes, Poplars, Scarlet Chesnuts, fine Weeping Ash, Evergreen Privets, &c.; a fine assortment of Fruit Trees, comprising Standard and Dwarf-trained Peaches, Apricots, Nectarines, Cherries, Plums, Pears, Gooseberries, Currants, Grape Vines, fine Standard Dwarf and Climbing Roses, American Plants, including Azaleas, Rhododendrons, and Andromeda floribunda, well set for bloom.—May be viewed prior to Sale. Catalogues had on the premises, of the principal Seedsmen in London, and of the Auctioneers, American Nursery, Leytonstone, Essex, N.E.

PUTNEY.

TO COW KEEPERS, FARMERS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will Sell by Auction, on the Premises, Park Farm, Upper Richmond Road, Putney, close to the Railway Station, on THURSDAY, Nov. 10, at 12 o'Clock, without reserve, by order of the Landlord under a distraint for rent, the valuable stock consisting of 2 Ricks of fine Meadow Hay; about 8 acres of Yellow Globe Mangel Wurzel; 8 acres of Turnips; a Patent Land Presser with Drill attached; Agricultural Implements, &c.—May be viewed prior to the Sale. Catalogues may be had on the Premises; at the Fox and Hounds Inn, Putney; and of the Auctioneers, American Nursery, Leytonstone, Essex, N.E.

TO GENTLEMEN, NURSERYMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will Sell by Auction at the Mart, on FRIDAY, November 11, at 12 o'Clock, a first-class collection of DUTCH BULBS, consisting of the finest Double and Single Hyacinths, Narcissus, Jonquils, Anemones, Crocus, Tulips, Ranunculus, Gladiolus, Snowdrops, &c.; also a fine assortment of 500 Standard and Dwarf Roses, with handsome straight stems and fine bushy heads; selected American Plants, including Ghent and other Azaleas, Hybrid Rhododendrons, Kalmias, Andromeda floribunda, &c., beautifully set with bloom-buds, &c.—May be viewed the morning of Sale. Catalogues may be had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, COW-KEEPERS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are directed by Mr. Lockhart to Sell by Auction, on the Premises, Parsons Green Lane, Fulham, on MONDAY, Nov. 14, at 12 o'Clock, a costly and extensive collection of BULBS and FLOWER ROOTS, about 20,000 in number, consisting of all the approved and ornamental varieties of Hyacinths, early and late Tulips, Crocus, Narcissus, Lilies, Gladiolus, Ranunculus, Iris, Scillas, and other Bulbs, all warranted true to description and of the finest kinds. Also 300 fine STANDARD ROSES, including the choicest Hybrid Perpetuals, Bourbons, Noisettes, &c.; handsome dwarf-trained Peaches and Nectarines, a quantity of Potatoes, Mangel Wurzel, Garden Tools, and sundry effects.—May be viewed the day prior to the Sale. Catalogues may be had of Mr. Lockhart on the Premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex, N.E.

STOWMARKET.—TO GENTLEMEN, NURSERYMEN, AND PUBLIC COMPANIES ENGAGED IN PLANTING.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Barnes to Sell by Auction, on the premises, Danecroft Nurseries, Stowmarket, about 10 minutes' walk from the Railway Station, on WEDNESDAY, Nov. 16 and following day, at 11 o'Clock each day, without reserve, a portion of the land being required for other purposes, the valuable NURSERY STOCK, including 20,000 Common Laurels, 10,000 Berberis Aquifolium, 2000 Laurustinus, 5000 Privet sorts, 1000 Lilacs, Guelder Roses, and other Evergreen and Deciduous Shrubs; also 10,000 Ornamental, Fruit, and Florist's Trees, comprising the usual assortment, with about 2000 choice Dahlia Roots, including the finest varieties of 1859 and other approved kinds; 20,000 Gladiolus Bowensis, 2000 Evergreen and other Honeysuckles, &c.—May be viewed prior to the Sale. Catalogues may be had on the premises; at the Post Office, Stowmarket; at the principal Inns in the neighbourhood and Seedshops in London; and of the Auctioneers, American Nursery, Leytonstone, Essex, N.E.

FOREST HILL, KENT.

IMPORTANT SALE OF NURSERY STOCK.

MR. WILLIAM HODSOLL will Sell by Auction on TUESDAY, November 8, at 11 o'clock, by order of the proprietor, without reserve, the whole of the VALUABLE NURSERY STOCK on the Dartmouth Park Nursery, near the Railway Station, Forest Hill, S.E., comprising about 15,000 Deciduous and Evergreen Shrubs and Plants, in great variety, including choice American and other plants, quantity of fine Laurels, Cedars, Yews, Arbor-vitæ, Hollies, Rhododendrons, Laburnums, Box, Limes, Chesnuts, &c.; the complete erection of the exceedingly well-built Greenhouse, 24 feet by 13 feet and fittings, together with the five Grape Vines, and about 150 dozen of plants in pots.—May be viewed prior to the Sale, and Catalogues had at the Inns in the neighbourhood; of Mr. Samuel Baxter, Auctioneer, &c., Forest Hill; and of Mr. WILLIAM HODSOLL, Auctioneer, &c., Farningham, Kent.

BARBOURNE NURSERIES, NEAR WORCESTER.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, AND PLANTERS GENERALLY.

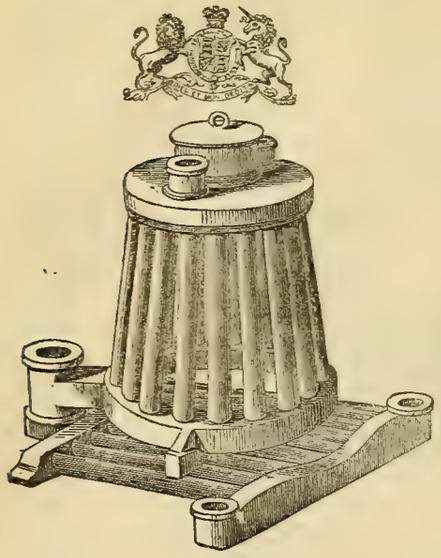
MR. BENTLEY is instructed by Wood & Son, of Barbourne Nurseries, to Sell by Auction, without reserve (the Land being required for Building purposes), on THURSDAY, November 10, at 11 o'clock, at the Lower Nursery, Barbourne, a very valuable NURSERY STOCK, comprising Standard Perpetual Roses, Yews, Junipers, Arbor-vitæ, Plums, Cherries, Apples, Pears, Common and Portugal Laurels, Silver, Spruce, and Balm of Gilead Firs, Spanish Chesnut, English Oak, Beech, English and Chichester Elms, large Egg Plum, Pinus Mughus, &c.—Catalogues may be had one week prior to the Sale, at Mr. BENTLEY'S Offices, Worcester.

QUEEN'S ELM, FULHAM ROAD.

TO THE NOBILITY, GENTRY, NURSERYMEN, FLORISTS, BUILDERS, AND OTHERS.

MR. KIRKE has been instructed by Mr. Shearman to Sell by Auction on the Premises, Rose Cottage, Fulham Road, S.W., near the Queen's Elm, on TUESDAY and WEDNESDAY, November 15 and 16, at 12 for 1 o'Clock each day, a portion of his valuable NURSERY STOCK, comprising 1000 Standard and Dwarf Roses; 1000 Passion Flowers in pots; 1000 Aucubas, 2 to 3 feet; 300 Variegated and Green Hollies; 600 Arbor Vitæ, 3 to 5 feet; 10,000 Evergreen Privets, 3 to 6 feet; 2000 fine young Laurels, 2 to 5 feet; 500 fine young Yews, 3 to 5 feet; 300 Limes and Laburnums; 700 Persian and other Lilacs; 600 Irish Ivies in pots; Portugal Laurels; Box Trees, 3 to 5 feet; Spruce Firs; 2000 Euonymus, 1½ to 3 feet; 1000 Delphinium formosum, Berberis Aquifolium; 1000 Phillyrea, Ribes, &c. A new Spring Van.—May be viewed two days prior to the Sale. Catalogues had on the premises, and at the Offices of Mr. KIRKE, Auctioneer, House and Estate Agent, 19, Brompton Row, Brompton, S.W.

By Her Majesty's Royal Letters Patent.



ORMSON'S
PATENT JOINTLESS TUBULAR BOILER.

TESTIMONIALS.

"SIR,—I feel much pleasure in bearing testimony to the efficiency of your Patent Jointless Tubular Boiler which you have erected for Baron de Rothschild, at Gunnersbury Park, and from the number of hothouses and great extent of pipe you have heated from one boiler, I now feel confident it is decidedly the most powerful, economical, and safe boiler yet invented. Having had the working of the Wrought-iron Arch, and Cast-iron Corrugated Arch Boilers in these gardens, I have no hesitation in stating that your boiler is infinitely superior to either of them in every respect.—Yours truly,
"WILLIAM FORSYTH.
"The Gardens, Gunnersbury Park, Acton, Middlesex."

"SIR,—It is with much satisfaction I give my testimony in favour of your admirable Patent Jointless Tubular Boiler, being attached to upwards of 3000 feet of 4-inch pipe, and doing the work of four fires, and consumes little more fuel than was required for one of the fires previous to the adoption of your boiler. We can command any amount of heat, the boiler being so powerful I am confident it would with ease heat as much more. Altogether we have realised much more economy in fuel and attendance than we at first anticipated. In addition to the great power and economy of your boiler it possesses another most important advantage over all other tubular boilers which have come under my notice, in the fact of its being jointless, consequently quite safe from all danger of leakage. On referring to my coal account I find that I now only use one where I formerly used five waggon loads of coal for the arched boilers which you took out.—I am, Sir, yours respectfully, "J. FRASER.
"The Gardens, Luton Hoo, Bedfordshire."

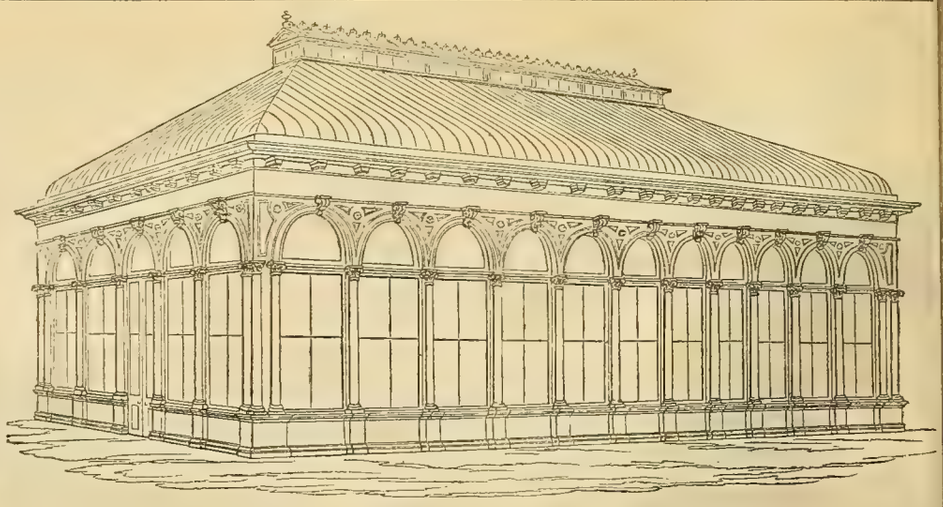
"Mr. Henry Ormson, Sir,—I beg to inform you of my entire satisfaction with your Hot-water Apparatus in general, and your Patent Jointless Tubular Boiler in particular, as fitted up in the new range of Hothouses you have recently erected for Lord Powerscourt. The Boilers I admire for three excellent reasons; they are simple in construction, effective in working, and I feel assured, from the calculation I have already made, a very great saving of fuel will be the consequence from using these Boilers. You will permit me to add if I had formed a contrary opinion of the merits of these Boilers I should have been candid enough to have told you so, but in justice to you I must distinctly state I consider them a great boon to the horticultural world.—I am, Sir, yours truly, "ALEXANDER ROBERTSON.
"The Gardens, Powerscourt, Ireland."

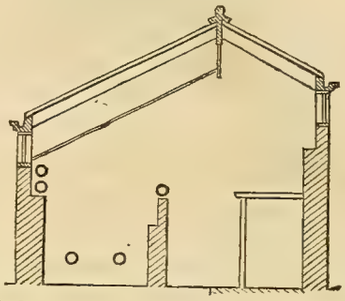
"SIR,—I have much pleasure in testifying to the excellent working of your Patent Jointless Tubular Boiler; though a small one it does the work of five fires, and is a great saving of fuel and labour.—I am, Sir, yours respectfully,
"Holland House Gardens, Kensington." "J. SCOBIE.

"SIR,—In regard to your Patent Jointless Tubular Boiler, it answers admirably the purpose for which it was erected. I consider it the most economical and powerful Boiler ever introduced, and am confident it will not fail to give general satisfaction.—I am, yours most respectfully,
"JOHN LAUDER.
"The Gardens, Witley Court, Worcestershire."

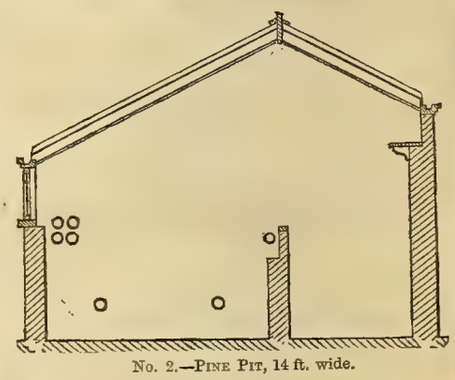
"SIR,—I have much pleasure in testifying to the efficiency of your simple but most powerful Patent Jointless Tubular Boilers. The two small boilers you put up here are doing the work of six fires, with the addition of a range of lofty coach-houses which were afterwards attached. The amount of fuel is little more, and the attention much less, than was required for one fire before these boilers were put up; there is not the least strain on them, and I am confident if required would heat a considerably greater amount of piping. I must also add that the whole of the hot-water apparatus works satisfactory, especially the ventilating boxes you put up in the Fruiting Pine Stove, which I consider a great acquisition, supplying at all seasons a constant stream of pure warm air to the plants, which are in consequence sturdy and in the most robust health.—I am, Sir, yours respectfully, "JOHN CLARK.
"The Gardens, Cobham Hall, Gravesend, Kent."

Ormson's Patent Jointless Tubular Boiler may be seen in successful operation at Mr. Veitch's, Royal Exotic Nursery, King's Road, Chelsea.

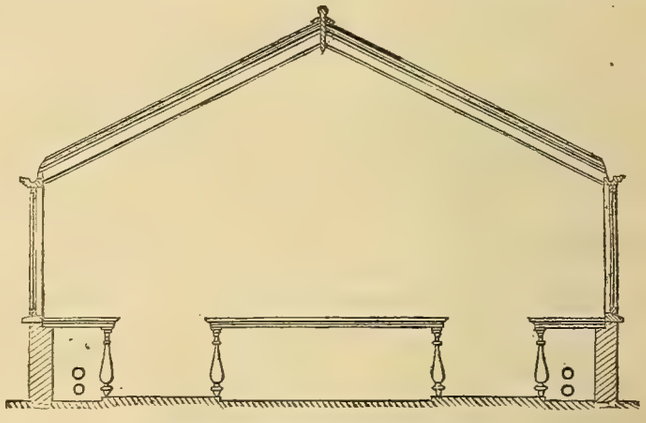




No. 1.—CUCUMBER AND MELON PIT, 10 ft. wide.



No. 2.—PINE PIT, 14 ft. wide.



No. 6.—GREENHOUSE, from 18 to 20 ft. wide.

HORTICULTURAL BUILDINGS MANUFACTURED BY STEAM POWER MACHINERY.

BEST MATERIALS AND LOWEST PRICES.

HENRY ORMSON,

HORTICULTURAL BUILDER & HOT-WATER APPARATUS MANUFACTURER,

STANLEY BRIDGE, KING'S ROAD, CHELSEA, LONDON, S.W.

BEGS most respectfully to call the attention of the Nobility, Gentry, Nurserymen, &c., to his superior manner of erecting every description of Horticultural Building, and he trusts by unremitting personal attention to the details of his business, by using only the very best materials, by employing the most skilful and efficient workmen, and by the most moderate possible charges to merit a continuance of the patronage so kindly and so liberally bestowed on him for many years past.

In the BUILDING DEPARTMENT his object will be to adapt all erections to the particular purposes for which they are required. He will devote equal attention to the plain, inexpensive, practical erections of Pits, Orchard Houses, Greenhouses, Vineries, &c., as to the more elaborate and architectural erections of Conservatories, Winter Gardens, &c., either in wood or iron.

The HEATING DEPARTMENT always engages his especial personal attention, and he feels justified in saying that in simplicity, safety, durability, and economy of fuel, combined with thorough effectiveness, his system cannot be surpassed.

VENTILATION.—Knowing the absolute necessity for thorough ventilation, he makes it a matter of first consideration.

See SECTIONS, &c., of Horticultural Buildings in former Numbers of the *Gardeners' Chronicle*.

PLANS, SPECIFICATIONS, and ESTIMATES free on application.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, and FREDERICK MULLETT EVANS, of No. 20, Queen's Road West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and published by them at the Office, No. 5, Upper Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—SATURDAY, November 5, 1859.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 46.—1859.] SATURDAY, NOVEMBER 12. {Price Fivepence. Stamped Edition, 6d.

INDEX.

Australian Cress	909 c	Grapes, out-door	909 c
Belgian Hort. Exhibition	908 b	Holly Tea	909 c
Boiler, Monro's	910 a	Husbandry, alternate	915 c
Carpocapsa saltitans	909 a	Lactoscope	917 a
Cattle, "hoose" in	915 c	Loquat	909 c
Cental, abandonment of the	914 b	Mangel	915 c
Chrysanthemums at the Crystal Palace	910 b	Manure, farm	915 b
— at Stoke Newington	910 c	Marseilles, cultivation round	908 c
Clover, substitutes for	913 c	Mushrooms	907 c
Cord Coch Gardens	912 a	Reaping machine	914 a
Cress, Australian	909 c	Seeds, jumping	909 a
Cybele Britannica, rev	911 a	Sewage, town	914 a—915 a
Disease, preventible	914 b	Stoke Newington Chrysanthemum show	910 c
Eriobotrya japonica	909 c	Tea, Holly	909 c
Exhibition, Belgian	908 b	Trade lists	912 a
Farm, Yew Tree	916 c	Transplanting machines	910 a
Farm Law, Dixon's	916 b	Tillage, Tullian	916 c
Farmers' Club, London	915 c	Vineyards in England	910 a
Frost, the late	909 c	Wall ventilation	912 c
Gardeners' education	909 c	Wood borers	912 c

HORTICULTURAL SOCIETY OF LONDON.—The FLORAL COMMITTEE, at its Meetings on October 13 and November 10, made the following Awards:—

FIRST CLASS CERTIFICATE.

Pogonia discolor from Messrs. Veitch & Son, Exeter and Chelsea.
Cattleya (hybrid) from Messrs. Veitch & Son.

COMMENDED.

Clerodendron calamitosum, from Messrs. Veitch & Son.
Nephelaphyllum pulchrum, from Messrs. Veitch & Son.

The next Meeting of the Committee will take place on December 8, when New Plants and Flowers of all kinds are invited. Any person may exhibit. Subjects for the examination of the Committee must be at the Society's rooms before 1 P.M.—S, St. Martin's Place, Trafalgar Square, W.C., Nov. 12.

HORTICULTURAL SOCIETY OF LONDON.—FRUIT COMMITTEE (8, ST. MARTIN'S PLACE, W.C.).

The next Meeting will be held on TUESDAY, December 6, at 3 P.M., at the Society's Rooms, 8, St. Martin's Place, Trafalgar Square, on which occasion the following Prizes are offered:—

PEARS.

CLASS A. KNIGHT'S MONARCH.—One Pound for the best, and Ten Shillings for the second best dish.
B. PASSE COLMAR.—One Pound for the best, and Ten Shillings for the second best dish.
C. BEURRÉ D'AREMBERG.—One Pound for the best, and Ten Shillings for the second best dish.
D. ANY OTHER VARIETY.—One Pound for the best, and Ten Shillings for the second best dish.

APPLES.

CLASS E. COCKLE PIPPIN.—One Pound for the best, and Ten Shillings for the second best dish.
F. MARGIL.—One Pound for the best, and Ten Shillings for the second best dish.
G. CORNISH GILLIFLOWER.—One Pound for the best, and Ten Shillings for the second best dish.
H. ANY OTHER VARIETY.—One Pound for the best, and Ten Shillings for the second best dish.

All Fruits exhibited must be fit for table, and accompanied by filled-up tabular forms exhibiting the circumstances under which the Fruit was produced. Blank forms may be obtained for the purpose, on application to Mr. ROBERT THOMPSON, Horticultural Society's Garden, Chiswick, W. Blank forms to be filled up and sent with Seedling or other Fruits, may also be obtained on application to Mr. THOMPSON, as above.

All Fruits and Vegetables for exhibition before the Committee should be addressed "To the SECRETARY TO THE FRUIT COMMITTEE OF THE HORTICULTURAL SOCIETY, 8, St. Martin's Place, Trafalgar Square, London, W.C.," and must be delivered before 1 P.M. on the day of Meeting. The carriage of packages of Fruit will be paid.

BRITISH POMOLOGICAL SOCIETY, Hanover Square Rooms, Regent Street, London, W.

The next MEETING will be held on THURSDAY, November 17, when growers are invited to send any Fruits in season which are calculated to excite interesting discussion. The following premiums are offered for special subjects, exhibited by the growers, according to the Society's regulations:—

One Guinea and Half a Guinea for the best and second best dishes of PASSE COLMAR Pear.
One Guinea and Half a Guinea for the best and second best dish of six DESSERT PEARS of any other kinds in season.
Half a Guinea (by Mr. Turner), for the best dish of Cox's ORANGE PIPPIN Apple.
Half a Guinea (by Mr. Newton, who does not himself intend to compete), for the best dish of CORNISH GILLIFLOWER Apple.
One Guinea and Half a Guinea for the best and second best dish of six DESSERT APPLES of any other kinds in season.
One Guinea and Half a Guinea for the best and second best Culinary varieties of APPLE, fit for present use, exhibited in tens.

Copies of Rules, &c., to be obtained of Mr. W. DAVIDSON, 2, Randolph Road, Maida Hill, N.W.

SOUTH ESSEX CHRYSANTHEMUM SOCIETY.—The First ANNUAL EXHIBITION will take place on THURSDAY and FRIDAY, November 17 and 18, at the Mechanics' Institution, Angel Lane, Stratford, E Admission, first day, 1s.; second day, 6d. Schools admitted at reduced price by application to the Secretary, ROBERT W. WAITES, Church Street, West Ham, E. Doors open at 12 o'clock the first, and 10 o'clock the second day of Exhibition. The Institution is one minute's walk from the Stratford Station on the Eastern Counties Railway.

THE NORTH-WESTERN CHRYSANTHEMUM SOCIETY (Instituted 1858. Under the patronage of EDWIN JAMES, Esq., Q.C., M.P., and Rev. E. SPOONER, M.A.), will hold its Second Annual Exhibition in the Lecture Hall of the Reading Room and Library, 1, Frances Terrace, near the Canal Bridge, Hampstead Road, N.W., on THURSDAY and FRIDAY, Nov. 17 and 18, when Liberal Prizes will be awarded to two-thirds of the Exhibitors. Doors open at 12 on the first day, admission 1s.; and 9 o'Clock on the second day, admission 6d. Members of the Reading Room will be admitted at half price. Tickets to be had of Mrs. BRADBERRY.

VEGETABLE SEEDS.

J. CARTER AND CO. can supply PEAS, BEANS, CARROTS, RADISHES, &c., for present Sowing, NEW SEED OF 1859 HARVEST.—237 & 238, High Holborn, W.C.

JOSEPH MAY AND CO. beg to announce that they have a true stock of the following SEED POTATOES to dispose of in large and small quantities—price on application:—

Shilling's EARLY (none better), for a first crop	IMPERIAL ditto (Webb's)
Loden's OXFORD	PHEASANT'S EYE (equal to the Regent, and much earlier)
WALNUT KIDNEY	

1, Wellington Street, Strand, near Waterloo Bridge, W.C.

SEEDLING POTATO.—WEBB'S IMPERIAL KIDNEY.—This Potato is without exception the best for every purpose. Its yield is extraordinary, and its quality first-rate. For Seed, 10s. 6d. per bushel.—Application to be made to GEORGE MACE, Gardener, Calcot, near Reading.

CARNATIONS, PICOTEES, ETC.

CHARLES SCHOFIELD has now ready first-class varieties of the above Flower at 12s. per dozen pairs; also PINKS, 4s. to 8s. per dozen. CATALOGUES may be had free. Knowsthrope, near Leeds, Yorksbire.

CHOICE RHODODENDRONS, AZALEAS, AND CONIFEROUS PLANTS.—A CATALOGUE of GEORGE BAKER'S unrivalled Stock of the above may be had on application.—The American Nursery, Bagshot, Surrey.

RHODODENDRONS "of every hue," Scarlet, White, Rose, Crimson, and every intermediate shade, nearly all sizes and at all prices, can be supplied by CHARLES NOBLE, Bagshot, Surrey.

STANDARD RHODODENDRONS.—Hundreds of handsome specimens of all the choicest varieties, varying in colour from deepest crimson to rose and pure white, with symmetrical heads and straight stems, from 2 to 5 feet in height, can be supplied by JOHN WATERER, American Nursery, Bagshot, Surrey.

FERN CATALOGUE.

ROBERT SIM'S NEW DESCRIPTIVE AND PRICED CATALOGUE, No. 6 (62 pages) of his COLLECTION of BRITISH AND EXOTIC FERNS, can be had, post free, for 8 stamps. Gratis to all previous purchasers of Ferns. Nursery, Foot's Cray, Kent, S.E.

NEW CATALOGUES.

WM. WOOD AND SON will be happy to forward Copies of their New Catalogue gratis and post paid on application.—Address, Woodlands Nursery, Maresfield, near Uckfield, Sussex.

SUPERB DOUBLE HOLLYHOCKS.

WILLIAM CHATER'S CATALOGUE is now ready, and can be procured by inclosing One Postage Stamp, on application to the Nurseries, Saffron Walden, Essex. See also other Advertisements in this Paper.

ROSES.

E. P. FRANCIS'S new and extensive CATALOGUE of ROSES on the Manetti Stock is now ready for delivery, and will be forwarded gratis on application. Rose Nurseries, Hertford.

STANDARD ROSES.—All the leading kinds in cultivation at prices scarcely ever offered before. CHARLES NOBLE, Bagshot, Surrey.

ROSE CATALOGUE.

JAMES MITCHELL respectfully informs the Nobility and Gentry his new CATALOGUE for the present season is now ready, and will be forwarded post free on application. The Nurseries, Piltdown, Maresfield, Sussex.—Nov. 12

ROSE CATALOGUE.

JOHN CRANSTON begs respectfully to inform his patrons that he will be happy to forward his New ROSE CATALOGUE for the present season, post free, upon application. It will be found replete with the most desirable flowers (new and old) in every class, and the descriptions are copious and faithful.—Nurseries, King's Acre, near Hereford.

DESCARTE'S STOCKS FOR PERPETUAL ROSES.

J. J. FOSTER, of Edgware, is now prepared to supply the Trade and Amateurs with this PROVED first-rate dwarf Stock on the following low terms:—1000 Stocks for 50s.; 500 for 28s; 250 for 15s., or 7s. 6d. per 100; and 3s. per two dozen. Early purchases best secure the establishment of the plants. EVERGREENS and all NURSERY STOCK on moderate terms.

ARAUCARIA IMBRICATA.

CHARLES SHARPE AND CO. have a large stock of the above, fine well grown plants, from 1 to 4 feet. Price on application.—Nurseries, Sleaford.

ANDROMEDA FORMOSUM (TRUE).

W. H. ROGERS, RED LODGE NURSERY, Southampton, can offer fine strong plants of the above beautiful American Plant, 50s. per 100, or 9s. per doz., selected.

WELLINGTONIA GIGANTEA.

JOHN WATERER has thousands of the above Plants to offer, varying in height from 1 to 4 feet. The whole are exceedingly handsome and well rooted. Price on application.—The American Nursery, Bagshot, Surrey.

PINE APPLES, GRAPES, &c.

PINE PLANTS, Fruiting and Succession.
GRAPE VINES, from Eyes, for Fruiting in Pots or Planting.

JOHN WEEKS AND CO. can now supply any quantity of very fine strong healthy Pine Plants, either Fruiting or Succession; also remarkably fine strong Grape Vines from Eyes, all the best sorts.

JOHN WEEKS & Co.'s Horticultural Show Establishment is now entirely devoted to the Growing and Forcing of Fruits in great variety, thereby showing the most improved plans of construction, and the most superior system of Hot-water Apparatus.

JOHN WEEKS & Co., Horticultural Builders and Hot-water Apparatus Manufacturers, King's Road, Chelsea, London, S.W.

GEORGE GIBBS AND CO. SEEDSMEN, 26, DOWN STREET, PICCADILLY, LONDON, W.

GOOD SEEDS. CARRIAGE FREE.

SUTTON AND SONS, SEED GROWERS AND MERCHANTS, ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY LIMITED supply every requisite for the Farm and the Garden. Registered Offices: Union Road, Plymouth.

ITALIAN RYE-GRASS SEED.

J. DIXON, SEEDSMAN, Kendal, has ITALIAN SEED for sale. Samples sent on application.—Nov. 12.

RASPBERRIES.—Victoria, Fastolf, Fillbasket, New Monthly Autumn-Fruited, and Yellow Antwerp, 10s. per 100; Strong CURRANTS, 3 to 4 years; LILIES, Yellow and Turk's Cap, Purple Martagon, 2s. per doz.; Large LAURUSTINUS, bushy plants, 3 to 4 feet. GEORGE CORNWELL, Market Gardener, Barnet, N.

GREAT SCARCITY OF FRUIT.

STRONG ROOTS OF THE LINNÆUS RHUBARB, from division, can be supplied in any quantity at 12s. per 100, or 5l. per 1000, by WALTER PENNINGTON, Nurseryman, South Retford, Nottinghamshire.

MAIDEN AND CUT-BACK FRUIT TREES. STANDARD AND PYRAMID FRUIT TREES. EXTRA FINE TRAINED FRUIT TREES.

RICHARD SMITH has this season 23 acres of the above. Price on application. St. John's Nurseries, Worcester.

FRUIT TREES.

J. AND J. FRASER, Lea Bridge Road Nurseries, Essex, N.E., beg to invite purchasers of Fruit Trees to an inspection of their stock, which is this year unusually fine. PRICED CATALOGUES can be had on application.

TO THE TRADE.

J. AND J. FRASER, The Nurseries, Lea Bridge Road, Essex, N.E., beg to offer a large Stock of Maiden FRUIT TREES, including all the best sorts of Apricots, Peaches, &c. The prices, which are very moderate, may be had on application.

PLANTING.

A. PAUL AND SON invite attention to their large and superior Stock of CONIFERÆ and other ornamental TREES and SHRUBS, FRUIT TREES, &c. For further particulars see advertisement in *Gardeners' Chronicle* of last week.—Nurseries, Cheshunt, Herts.

TRANSPLANTED FOREST TREES.—Large quantities of Transplanted ALDER, LARCH, SCOTCH, SPRUCE, HAZEL, SPANISH CHESNUTS, ASH, &c., 1, 2, 3, and 4 feet. A good stock of QUICKS. Samples, with prices, may be had on application. WATERER & GODFREY, Knap Hill, near Woking

COMMON LAURELS.

R. GADD AND SON have to offer 50,000 of the above from 2 to 6 feet high, extra stout and well rooted; 30,000 Seedling and Bedded Evergreen Oaks; Bays, 1 to 4 feet; Laurustinus, 1 to 2½ feet. Price on application. Salvington Nurseries, near Worthing.—November 12.

500,000 fine Transplanted LARCHES, from 2 to 5 feet, also SPANISH CHESNUTS, POPLARS, QUICKS, and all other FOREST TREES. Prices on application to WM. WOOD & SON, Woodlands Nursery, Maresfield, near Uckfield, Sussex.

IMPORTANT TO RAILWAY CONTRACTORS AND NURSERYMEN.

FOR SALE, 4 Acres of extra strong 3-years old THORN QUICK HEDGEROWS, at 10s. per 1000; 1 acre do. do. 4 years old, at 15s., 20s. The usual allowance to Nurserymen.—JACOB SCOTT MATTHEWS, Nurseryman, Cardiff, South Wales.

TO NURSERYMEN AND OTHERS.

THORN QUICKS FOR SALE.—1,500,000 of 1-year old Thorn Quicks, extra fine. 1,000,000 of 1-year old Thorn Quicks, stout and well rooted. Very suitable for transplanting.—Application to be made to MICHAEL FAULKNER, Nurseryman, Collon, Co. Louth, Ireland. N.B. Satisfactory reference required from unknown correspondents.

THORN QUICKS, three years' transplanted, two sizes.—We are about clearing a field of the above, and will forward for a sample 1 Mat containing 500 of each size, on receipt of 15s. 6d. from unknown correspondents. JOSEPH TREMBLE & SONS, Nurserymen, &c., Penrith.

PINE PLANTS, THE SUCKERS WANTED.

WANTED, SUCKERS or SUCCESSION PLANTS of the PROVIDENCE, the BLACK PRINCE, the SMOOTH CAYENNE, and the PRICKLY CAYENNE. Address to JOHN WEEKS & Co., Horticultural Builders, King's Road, Chelsea, London, W.

WANTED, 1000 yards of good BOX EDGING.—Apply by letter, stating particulars, to J. SMES, Seedsman, &c., Tooting, Surrey, S.

GIANT POLYANTHUS AND GIANT COWSLIP.—A few pounds of these gigantic and beautiful Spring Flowers to be disposed of, many of them almost equal to the Auricula.—Apply to G. MACE, at the Garden, Calcot, near Reading.

SPECIAL ADVERTISEMENT.

TO THE SEED TRADE.—Our customers in the provinces should agree with their neighbours, Seedsmen and friends to have their Seeds sent from our Establishment in one parcel, saving at least 50 per cent. transit from London. Our 40th PRICED SEED LIST will be sent on application. ABRAHAM HARDY & SON, Seed Growers, &c., Maldon, Essex.

MESSRS. WATERER AND GODFREY respectfully refer planters to the following LIST of well-known good hardy Plants :—

ARAUCARIA IMBRICATA, 1 foot. stout, healthy, 5*l.* per 100; larger, up to 8 feet.
CEDRUS DEODARA, 2½ to 3 feet, very handsome, 10*l.* per 100; larger, in any quantity, up to 10 and 15 feet.
PICEA NOBILIS, Seedlings, in quantity, 1 foot, stout.
Ditto larger and in every way perfect plants, up to 4 feet.
NORDMANNIANA, from seed, 2, 3, 4, and 6 feet.
PINSAPO, 2½ to 3½ feet, and as much through.
Ditto magnificent plants, 8 and 10 feet high.
CUPRESSUS LAWSONIANA, fine bushy seedling plants, 2½ feet high.
JUNIPERUS, CHINESE, 3 feet up to 8 and 10 feet.
,, IRISH, 5, 6, and 7 feet.
YEWS, IRISH, 5, 6, 7, and 8 feet.
,, GOLDEN, from 2 to 7 and 8 feet.
,, COMMON ENGLISH, in large quantities, 4 to 6, 7, and 8 feet.
THUJA AUREA.—Several hundred magnificent specimens, 3, 4, and 5 feet high, and measuring 10 to 15 feet in circumference.
THUJOPSIS CÆREOLIS, 2½ to 3 feet.
WELLINGTONIA GIGANTEA, all from seed, 1½ to 3 feet, and as wide.
HOLLY, GREEN, in quantities, 5, 6, and 8 ft.; VARIEGATED, especially the best gold striped, of all sizes, up to 6 feet.

All the plants referred to in this advertisement were removed in April last, and they are in a condition to travel any distance with perfect safety.—Knap Hill Nursery, near Woking, Surrey.

ROBERT NEAL, NURSERYMAN, Wandsworth Common, S.W., begs to call the attention of buyers to his large and well-selected stock of EVERGREENS and FLOWERING SHRUBS, ORNAMENTAL TREES, AMERICAN PLANTS, FRUIT AND FOREST TREES, STANDARD AND DWARF ROSES of every description. A large stock of BOX-LEAF EVERGREEN PRIVET, from 1 to 6 feet for hedges; GREEN HOLLY, 1 to 6 feet; RICH BOG and LOAM for American Beds; LEAF MOULD. The Nursery is 10 minutes' walk from Clapham Common, and New Wandsworth Station, Crystal Palace Line.

NURSERY GROUNDS, ABERGAVENNY.

JAMES SAUNDERS begs to invite attention to his general stock of all kinds of FOREST and ORNAMENTAL TREES, EVERGREEN and FLOWERING SHRUBS of all descriptions and of all sizes. A large stock of Chichester Elm, Sycamore, Horse Chesnut, Norway Maple, Turkey Oak, Spanish Chesnut, Cedar of Lebanon, and other fine specimens suitable for Parks and Avenues, 12 to 20 feet high; quite safe to move, having been replanted every two years. A large quantity of Standard, Half-Standard, and Dwarf Roses of all the best kinds in cultivation; all kinds of Flowering Plants suitable for Flower-beds and Borders, Stove and Greenhouse Plants; about 20 extra fine specimens of Azalea indica, first-class plants and sorts, 3 to 6 feet high; several thousands of choice kinds of Pears worked on Quince stocks; 10,000 Gooseberry trees in 150 named kinds; Currants in sorts; Seakale, Rhubarb, &c. The whole of the stock is young and thriving. A liberal discount for cash.—November 12.

SUPERB DOUBLE HOLLYHOCKS.

WILLIAM CHATER is prepared to supply Plants from his unequalled collection of this noble flower. See CATALOGUE for the newest and most celebrated varieties, containing Practical Hints on their Culture, prices, and other information.

W. C. has a large stock of good healthy Ground Roots (Seedlings) suitable for borders, with colours, 6*s.* to 18*s.* per dozen; without, 4*s.* to 6*s.*, or 30*s.* per 100.

Seed saved from the best exhibition varieties, in separate *s. d.*
colours, per packet 1 0
Ditto, in 12 separate colours, the collection 10 0
Ditto, in 6 ditto ditto 5 0
Ditto from older named varieties, in 12 separate colours, the collection 7 6
Ditto, in 6 ditto ditto 4 0
Ditto, from 20 of the best varieties, mixed, per packet .. 5 0
Ditto 12 ditto ditto ditto .. 2 6
Ditto good mixed, per packet 1 0

This Seed WILLIAM CHATER can warrant to produce flowers of equal merit to existing show varieties.

Nurseries, Saffron Walden, Essex.

NEW AND CHOICE PLANTS.

JOHN STANDISH, in offering the following Plants, can assure his customers that they are now in fine condition for sending out:—

MYOSOTIDIUM NOBILE, or Antarctic Forget-Me-Not, each 31*s.* 6*d.*—This plant, from the Chatham Islands, is one of the most remarkable that has been introduced for some years, being totally distinct from all others. It has large thick leaves, 8 or 9 inches across, of a dark glossy green, and sends up magnificent trusses of bloom of the most beautiful blue and white, similar to a Forget-me-not, but of a giant form. A Drawing of it is published in Curtis's "Botanical Magazine" for September. A description taken from the above is also published in the *Gardeners' Chronicle* of Sept. 17, 1859, wherein Dr. Lindley says:—"This is the handsome perennial provisionally named Cynoglossum nobile by Dr. Hooker in our last year's Volume, page 240. It is quite deserving all the encomiums that have been passed upon it."

GLADIOLI, named varieties, from the choicest and largest collection in England, 6*d.* to 5*s.* each. Also a fine lot of bulbs raised from seeds saved from the best flowers, all of which will flower in the summer of 1860. 7*s.* 6*d.* per dozen, or 50*s.* per 100. These are strongly recommended.

RHODODENDRON LIMBATUM.—Pale blush, bordered with bright crimson. This has received several medals at the exhibitions for Rhododendrons, being very distinct and one of the most free flowering. 21*s.* each.

RHODODENDRON MINNIE.—White, very large blotch of chocolate-coloured spots, a fine flower, and remains a very long time in bloom. This is one of the most curiously marked Rhododendrons amongst all the white; it bears a noble truss of blooms, which cannot fail to be admired. 21*s* and 31*s.* 6*d.* each. Selections can be made from one of the finest collections in Europe.

ROSE HYBRID PERPETUAL EUGENE APPERT.—Fiery scarlet crimson, 10*s.* 6*d.* each. This beautiful new Rose is in the hands of J. S. only, and is now ready to send out. It has received a First-class Certificate at the Grand National Rose Show, also at the Regent's Park. It is the most brilliant of all Roses and the finest grown, being well adapted for pot culture and for poles, growing most rapidly, sending up its flowers stiff and erect. They can be seen at a long distance. Besides this, J. S. has a fine lot of both Standards and Dwarfs of the newest and most select Roses in cultivation, which are offered at very reasonable prices.

PHLOX MRS. STANDISH.—The purest white, with a large red eye, 5*s.* each. Also a large collection of the finest kinds which J. S. has shown during the last summer and in every case received the First Prize. Plants from 1*s.* to 2*s.* 6*d.* each.

A CATALOGUE containing a full description of the best Hardy Plants in cultivation will be forwarded on application to The Royal Nursery, Bagshot.

BUTLER & McCULLOCH,

COVENT GARDEN MARKET, W.C.

A DESCRIPTIVE AND PRICED CATALOGUE OF

HYACINTHS, GLADIOLI, RANUNCULUS, ANEMONES, IXIAS, AMARYLLIS, CROCUS, and other DUTCH and CAPE BULBS, with practical Cultural directions affixed to each Class for the use of Amateurs, sent free and post paid (for contents of CATALOGUE see *Gardeners' Chronicle*, October 1, page 786).

☞ *All orders amounting to* 21*s. and upwards sent Carriage paid.*

For conspicuous beds the following HYACINTHS and TULIPS cannot be surpassed; they occupy a most important position in the economy of the Flower Garden, coming into bloom immediately after the Crocus, &c., and ready for removal at the time of planting out Geraniums and other Summer and Autumn Flowering Plants:

BEST DOUBLE and SINGLE MIXED HYACINTHS	21*s.* 0*d.*	per 100,	3*s.* 0*d.*	per dozen.
TOURNESOL and REX RUBRORUM DOUBLE TULIPS	7 6	,,	1 0	,,
YELLOW ROSE, pure yellow and scented Do.	10 6	,,	1 6	,,
LA CANDEUR, pure white Do.	14 0	,,	2 0	,,
FINE MIXED DOUBLE do.	7 6	,,	1 0	,,
FINE MIXED SINGLE do.	6 0	,,	1 0	,,
CHOICE MIXED LATE FLOWERING do.	10 6	,,	1 6	,,

FOR CENTRES OF LARGE BEDS AND BORDERS

The following favourites are perfectly hardy, and cannot be too extensively cultivated:—

TRITOMA UVARIA (true) .. 21*s.* 0*d.* per doz. 2*s.* 0*d.* each	LILIUM LANCIFOLIUM ROSEUM 20*s.* 0*d.* per doz. 2*s.* 0*d.* each.
LILIUM LANCIFOLIUM ALBUM 15 6 ,, 1 6 ,,	,, ,, RUBRUM 20 0 ,, 2 0 ,,

GLADIOLI HYBRID of RAMOSUS,	30	splendid varieties named, for	21*s.* 6*d.*, or 12 for 9*s.* 6*d.*	
,, ,, CARDINALIS,	12	beautiful	,,	10 6
,, ,, BLANDUS,	6	new	,,	4 6 } best for forcing.
,, ,, SAGITTALIS	6	,,	,,	4 6 }
GLADIOLUS BRENCHLEYENSIS			30*s.* 0*d.* per 100	5*s.* 0*d.* per dozen.
,, GANDAVENSIS			15 6 ,,	2 6 ,,
,, QUEEN VICTORIA			15 6 ,,	2 6 ,,
,, RAMOSUS			15 6 ,,	2 6 ,,
,, FLORIBUNDUS			15 6 ,,	2 6 ,,

AGENTS FOR TYE'S REGISTERED HYACINTH GLASSES.

These are without exception the most elegant and best adapted for the successful Culture of the Hyacinth. See Woodcut Group of Glasses, page 803 of *Gardeners' Chronicle*, October 8.

SUTTON'S COLLECTIONS OF FLOWER BULBS.

☞ **ALL GOODS CARRIAGE FREE to all PARTS EXCEPT VERY SMALL PARCELS.**

FOR OPEN GROUND.

COLLECTION No. 1 ... ... £2 2s.

24 Double Hyacinths	300 Crocuses, in 6 colours
50 Scarlet Ranunculus	100 Mixed Ranunculus
24 Double Anemones	24 Single Anemones
12 Pheasant Eye Narcissus	12 Dble White Narcissus
24 Van Thol Tulips	12 Parrot Tulips
12 Double Scarlet Tulips	12 Double Yellow Tulips
12 Choice Irises	12 Gladiolus
100 Double Snowdrops	12 Campernelle Jonquils
6 Crown Imperials	24 Fine Mixed Tulips

COLLECTIONS No. 2 and No. 3.

The above choice sorts in quantities proportionately reduced,
21s. and 10s. 6d.

FOR POTS AND GLASSES.

COLLECTION No. 4 ... ... £2 2s.

12 Hyacinths, by name	12 Double Sweet Jonquils
12 Polyanthus Narcissus, do.	12 Sweet Persian Irises
12 Tournesol Tulips	24 Dble Van Thol Tulips
12 Single Van Thol Tulips	12 Rex Rubrorum Tulips
6 dozen named Crocuses	6 Gladiolus, by name
1 Lilium lancifolium speciosum	12 Ixias, choice sorts
1 ,, ,, album	6 Dog's-tooth Violets
1 Amaryllis formosissima	3 Fritillarias
1 Cyclamen persicum	3 Achimenes

COLLECTIONS No. 5 and No. 6.

The above choice sorts in quantities proportionately reduced,
21s. and 10s. 6d.

SUTTON'S AUTUMN CATALOGUE

is now ready and will be sent post free on application. In this Catalogue prices are affixed to every article.

The best 12 HYACINTHS, by name, for pots or glasses, 9*s.* The second best 12 ditto, 6*s.* Mixed Double HYACINTHS for beds or borders, 3*s.* 6*d.* per dozen.

☞ *None but fresh imported Bulbs are kept on the premises.*

ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.

WILLIAM YOUNG begs to call attention to his extensive NURSERY STOCK, which is in fine condition for removal, and which will be found well worth notice of those engaged in any kind of planting.

Having large quantities of the undermentioned, all well grown, good-rooted plants, he can offer them at very moderate prices.

SPECIMEN CONIFERÆ.

Abies Douglassii, 8 to 12 feet	Cedrus Deodara, 6 to 12 feet
,, canadensis, 8 to 12 feet	,, Libani, 6 to 12 feet
,, Menziesii, 6 to 10 feet	Araucaria imbricata, 4 to 6 ft.
,, nigra, 6 to 8 feet	Cryptomeria japonica, 6 to 8 ft.
,, Pinsapo (very handsome), 6 to 8 feet	Juniperus chinensis, 6 to 8 ft.,
Pinus Cembra, 6 to 10 feet	,, hibernica, 6 to 8 ft.
,, excelsa, 8 to 10 feet	Taxodium sempervirens, 6 to 10 feet
,, insignis, 6 to 8 feet	

LARGE DECIDUOUS TREES AND EVERGREENS.

Ash, Weeping, 8 to 10 feet	Oak, exoniensis, or New Leucombe, 8 to 12 feet
Beech, common, 6 to 10 feet	Oak, evergreen, 8 to 10 feet
,, copper, 6 to 10 feet	Weeping Willows, 8 to 10 feet
,, Fern leaf, 6 to 8 feet	Spruce Firs, 10 to 12 feet
,, weeping, 6 to 8 feet	Silver Firs, 10 to 12 feet
Horse Chesnut, 8 to 12 feet	Arbor-Vitæ, American, 6 to 8 ft
Limes, 6 to 10 feet	,, Chinese, 6 to 8 ft.
Poplar Abele, 8 to 10 feet	,, Ontario, 5 to 7 ft
,, black Italian, 8 to 10 ft.	Hollies, green, 8 to 12 feet
Maple, Norway, 6 to 8 feet	Yews, 8 to 12 feet
Oak, English, 10 to 12 feet	
,, Fordii, 8 to 10 feet	

STANDARD ROSES.—A fine collection of all best varieties.

RHODENDRONS and other AMERICAN PLANTS of all the leading varieties.

FOR ORNAMENTAL GAME COVER.

Azalea pontica	Juniper, Common
Common Laureis	Juniper sabina
Evergreen Privet	Rhododendron ponticum
Mahonia Aquifolium	

FOREST TREES.—Larch, Scotch, Alder, Ash, Birch, Hazel, Chesnut, Willow &c., from 2 to 4 and 5 feet, in any quantity for Coppice planting.

A NEW DESCRIPTIVE CATALOGUE of New Plants, Coniferæ, Deciduous Trees, Evergreens, Flowering Shrubs, Roses, American Plants, and general Nursery Stock, with heights and prices, forwarded on application.

N.B.—Good Railway communication to any part of England.
Milford Nurseries, near Godalming, Surrey.

CHEAP AND SELECT NURSERY STOCK.

WILLIAM JACKSON AND CO., Bedale, Yorkshire, beg to offer the following at annexed very reasonable prices. The Nursery is peculiarly suitable for the growth of all kinds of Trees and Shrubs, which can be forwarded to any part of the country on the shortest notice.

	£	*s.*	*d.*
12 best Tree Pæonia, of sorts, flowering plants ..	1	10	0
12 best Pæonia albiflora, of sorts, sweet scented ..	0	12	0
12 best hardy Ghent Azaleas, 2 feet, with flower buds	1	0	0
12 splendid hybrid Rhododendrons, by name, 1 to 2 feet, neat growers, mostly with flower buds, scarlet, deep crimson, blush, and shaded salmon, bushy strong plants (per 100, 6*l.*)	1	0	0
12 scarlet and white Cydonia japonica	0	9	0
12 scarlet new Persian Lilacs, very fine, strong plants	0	12	0
12 scarlet new Persian Lilacs, standards, grafted ..	0	18	0
12 great flowered Lilacs, splendid variety, do. do. ..	0	12	0
12 Berberis Darwinii, very handsome	0	12	0
12 Standard Roses, best prize and perpetuals (per 100, 3*l.*), extra fine plants	0	12	0
12 Dwarf Roses, best prize and perpetuals (per 100, 2*l.*)	0	8	0
12 Taxodium sempervirens, 4 to 5 ft., ex. transplanted	1	0	0
12 Cedar of Lebanon, 3 to 5 feet, extra transplanted..	1	0	0
100 Roses, on own roots, a good variety, including double yellows	1	10	0
100 evergreen and flowering Shrubs, 2 of a sort ..	2	0	0
100 Arbor-vitæ, 4 to 5 feet, fine plants, grown singly ..	3	0	0
100 Yews, 4 to 5 feet, perfect trees, extra transplanted, strong	4	0	0
100 Tree Box, 3 to 4 ft., grown singly, strong bushy plants	3	0	0
100 best evergreen Privets, 2 to 3 feet, for fancy hedges	0	4	0
1000 Apple Stocks, 2 years transplanted, strong.. ..	1	10	0

Transplanted FOREST TREES, in large quantities and best possible condition for planting. Prices, which are strictly moderate, may be had on application.

FRUIT TREES, per dozen.	£	*s.*	*d.*
Apricots, trained, very fine strong plants	2	2	0
Apples, standard (per 100, 40*s.* to 50*s.*), and at 9*s.* to	0	12	0
Cherries, Pears, and Plums, standards	0	18	0
Asparagus, 3 years old, transplanted into lines, for forcing, strong .. .. per 1000	1	10	0
Seakale, 3 years old, strong .. .. ,,	2	0	0

A large quantity of ORNAMENTAL TREES for new Parks and Pleasure Grounds to be sold cheap.

A reference or remittance is respectfully solicited from unknown correspondents. The Trade supplied on reasonable terms.

JAMES CARTER & CO.

BEG LEAVE TO OFFER THE FOLLOWING :—

DOUBLE AND SINGLE BORDER HYACINTHS, 21s. per 100, 3s. per dozen.
DITTO DITTO named, 6s., 8s., 9s., and 10s. per dozen.
POLYANTHUS NARCISSUS, 8 sorts, 10s. ; each, 2s. 9d.

	Per 1000.	Per 100.
CROCUS, blue	12s. 0d.	1s. 4d.
,, light blue	12 0	1 4
,, purple	12 0	1 4
,, yellow	12 0	1 4
,, large yellow	18 0	2 0
,, white	18 0	2 0
,, striped	15 0	1 8

	Per 100.
TULIPS, Tournesol	7s. 6d.
,, Rex Rubrorum	7 6
,, La Candeur	14 0
,, Yellow Rose	10 0
,, very fine double single	6 0

LILIUM LANCIFOLIUM (extra large)—red, per doz., 22s. ; each, 2s. 3d. White, per doz., 17s. 6d. ; each, 1s. 6d. Spotted, per doz., 20s. ; each, 2s.

GLADIOLUS—FRENCH SEEDLINGS FROM GANDAVENSIS.

	Each—s.	d.
Adonis, cherry, lower petals yellow and carmine	0	6
Aglacé, salmon colour	0	6
Archimède, light red, carmine striped	0	6
Aristote, carnation rose, variegated	0	6
Bérénice, beautiful rose red, variegated	1	0
Calandulaceus, nankeen	1	6
Comtesse de Bresson, red, sometimes variegated	0	6
Daphne, cherry, striped carmine	0	9
Docteur Andry, bright orange	0	9
Don Juan, orange red, yellow spots	0	6
Edith, carnation rose, dark stripes	0	9
Egerie, salmon, dark rose stripes	0	6
Endymion, purple rose	1	0
Galathée, carnation striped	1	0
Gil Blas, cherry red, variegated	0	9
Goliath, light red, carmine striped	1	0
Hebe, carnation striped, carmine	1	0
Helène, French white, purple striped	0	6
Impératrice, carnation striped, french white	1	6
Janire, orange red	0	6
Madame Herincq, yellowish white, lilac striped	0	6
Mazeppa, rose, striped yellow and red	1	0
Monsieur Corbay, orange red, purple striped	0	6
Monsieur Vinchon, salmon red, white striped	1	0
Neptune, red, variegated carmine	1	3
Ninon de l'Enclos, carnation rose var.	1	6
Oracle, cherry rose	1	6
Pallas, rose var., carmine and orange	0	6
Pégase, carnation, spotted purple, and chamois	1	0
Penelope, French white, carmine striped	1	0
Pollonia, variegated rose, carmine shaded	0	6

The above splendid collection, 22s. 6d.

GLADIOLUS FOR CLUMPING.

The following collections are particularly adapted for clumping and bedding. The Gandavensis seedlings are now offered for this purpose for the first time, and can be strongly recommended for robust habit and varied brilliancy of colour.

We have added two scarce and beautiful varieties to the other assortment, which we think will be found desirable, as forming an effective contrast to those already offered :—

	Doz. s.	d.
Couranti fulgens, crimson	4	0
Eugenie, salmon, rose striped	5	0
Fulgens aureus pictus	5	0
Madame Coudere, carmine shaded	4	0

12 each above 8 sorts, 28s.

	Doz. s.	d.
Mdlle. Fanny Rouget, rose, white, and carmine	5	0
Mons Blouet, rose, shaded carmine	4	0
Mons. Georgeon, salmon rose	4	0
Triomphe d'Enghien, carmine var.	4	0

6 each above 8 sorts, 15s.

3 each above 8 sorts, 8s.

		d.
Brenchleyensis, vermillion	5s.	0d.
Cardinalis, scarlet, white mark	3	0
Formosissimus, beautiful red	3	6
Gandavensis, scarlet and yellow	3	0
Insignis, carmine spotted	5	6
Magnifique, purple, white mark	2	6

12 each above 11 sorts, 30s.

		d.
Natalensis, yellow and red	1s.	6d.
Oppositiflorus, white and rose	2	6
Prince Albert, bright rose	3	6
Ramosus, salmon rose	3	0
Victoria Regina, bright scarlet	3	6

6 each above 11 sorts, 15s. 6d.

3 each above 11 sorts.

CARTER'S FLORAL ILLUSTRATIONS, Plate No. 7, now ready, 1s. 6d.

JAMES CARTER & CO., 237 & 238, HIGH HOLBORN, LONDON, W.C.

FRUIT TREES.—STANDARDS AND PYRAMIDS, DWARF-MAIDEN AND CUT-BACK, DWARF-TRAINED, &c.

WM. WOOD AND SON solicit especial attention to their enormous stock of FRUIT TREES, occupying an area of many acres of land, which for vigour and uniformity of growth are unsurpassed in the Trade ; the Trained Trees especially are most beautifully grown.

DESCRIPTIVE CATALOGUES may be had on application.

An immense stock of beautifully Trained DWARF MAY DUKE AND MORELLO CHERRIES, with 10 and 12 branches to each tree, admitted to be among the finest in the kingdom.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

HEDENHAM ROSARY, BUNGAY, SUFFOLK.

IN CONSEQUENCE OF A DISSOLUTION OF PARTNERSHIP,

R. B. BIRCHAM is desirous of clearing off a portion of his stock, consisting of 35,000 STANDARD and DWARF ROSES, including all the best and leading sorts of Perpetuals in cultivation. To effect a clearance this autumn R. B. B. begs to offer them at the following very reduced prices :—

50 Dwarfs of the best Perpetuals	£0 18	0
50 Half standards, do.	1 5	0
50 Standards, do.	1 15	0

R. B. B. will be happy to supply Amateurs requiring half the quantity of each. Trade orders at a still lower rate per 100. Carriage paid to London and Peterborough.

EDWARD TAYLOR, NURSERYMAN, Malton, Yorkshire, has to offer as under :—

500,000 Transplanted LARCH.
10,000 2-year GIANT ASPARAGUS, 1s. 3d. p. 100, 10s. p. 1000.
GOOSEBERRIES and CURRANTS, best vars., 8s. to 10s. p. 100.
EVERGREEN CYPRESS, twice transplanted, 2 feet, 3s. per dozen, 20s. per 100.
LASTREA FILIX MAS CRISTATA, 6s. per dozen.
CINERARIAS, the choicest varieties, 6s. per dozen.
New CHRYSANTHEMUMS of 1859, 12s. per dozen.
FARFUGIUM GRANDE, 1s. 6d. each, 12s. per dozen.
LILIUM CANDIDUM, 10s. per 100.
DAHLIAS, in pot roots, 4s. per dozen, 20s. per 100.
SALVIA PATENS, 20s. per 100.
CATALOGUES gratis on application.

GERANIUMS, HERBACEOUS PLANTS, ETC.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their new PRICED and DESCRIPTIVE CATALOGUE of the above, to which are added Supplemental Lists of Stove, Greenhouse, and Hardy Plants, Fruit Trees, &c. (which include all the best new plants of the season), is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

BEGONIA MARSHALLI.

WILLIAM COLE will send out the above beautiful variety, raised by Mr. Franklin, Gardener to J. G. Marshall, Esq., on and after the 26th inst. It has been exhibited at the Regent's Park, Kirkstall, Halifax, Shipley, &c., and Certificates have been awarded to it. It is universally admitted to be by far the handsomest of all the Begonias, and will be invaluable for Exhibition purposes. Drawings by Mr. Andrews free by post for eight stamps.

For further particulars see *Gardeners' Chronicle* of July 16 ; also Sept. 10 ; also "Cottage Gardener" of July 19 and Sept. 13 ; and "Book of Beautiful Leaves," by E. J. Lowe, Esq.

Strong plants 15s. each, with the usual discount to the Trade. Post-office Orders payable at Manchester.

Nursery, Withington, near Manchester.—Nov. 12.

CARTER'S LIST of NEW ANNUALS and PERENNIALS :—

Clarkia pulchella integripetala
Callirhoe digitata.
Œnothera biennis hirsutissima.
Lobelia gracilis rosea.
Anagallis grandiflora "Eugenie."
,, ,, "Napoleon."
Nigella hispanica alba.
,, ,, atropurpurea.
Phacelia tanacetifolia alba.

Dianthus chinensis laciniatus, fl. pl.
Ditto Heddewigi
Captain Clarke's Blue Sweet Pea.
Nemophila discoidalis marmorata.
Lupinus mutabilis varicolor.
Yellow Tom Thumb Nasturtum
Tom Thumb "Beauty" ditto.
Datura chlorantha, fl. pl.
Thunbergia coccinea.
Impomœa limbata elegantissima.
Spergula pilifera, new substitute for Grass.

Price to the Trade and Coloured Drawings may be had on application to JAMES CARTER & Co., 237 and 238, High Holborn, W.C.

QUICKS, FOREST TREES, &c.

JAMES DICKSON & SONS, NURSERYMEN and SEEDSMEN, the Newton Nurseries (close to the Railway Station), Chester, offer many millions of the above, of EXCELLENT QUALITY and at VERY MODERATE PRICES.

The Trees and Plants, consequent upon the Nursery Grounds (which cover an area of about 60 acres) lying in an exposed situation, and a routine of regular transplanting being carried out, are WELL ROOTED, HARDY and VIGOROUS, hence are calculated to remove with great success.

PRICED LISTS, post paid, upon application, or in cases where LARGE QUANTITIES are required SPECIAL PRICES will be given.

Newton Nurseries, and 102, Eastgate Street, Chester ; also at 23, Market Place (late Deansgate), Manchester, and Newtown, Montgomeryshire.

CRIMSON PERFECTION RHUBARB.

ROBERT SALT begs to announce that having on hand a good quantity of the above excellent variety of RHUBARB, he is prepared to offer them at the following low prices :—

One-year old Roots	8s.	0d.	per doz.
Two-year do.	15	0	do.
Three-year do.	20	0	do.

With usual discount to the Trade.

R. S. has much pleasure in recommending the above, it being very early and productive, and the interior of the stalks a crimson colour. Orders forwarded to ROBERT SALT, Longton, Staffordshire, or to the undermentioned, will receive prompt attention :—Messrs. HURST & M'MULLEN, Seedsmen, 6, Leadenhall Street, London, E.C. ; BURGESS & KENT, Nurserymen, Penkhull, Staffordshire ; Mr. CHAS. TURNER, Royal Nursery, Slough ; FRANCIS & ARTHUR DICKSON, Nurserymen, 106, Eastgate Street, Chester. A remittance from unknown correspondents.—Longton, Nov. 12.

THE LARGEST AND FINEST STOCK OF TEA-SCENTED ROSES IN ENGLAND.

50,000 PLANTS IN POTS AND IN THE OPEN GROUND.

WM. WOOD AND SON invite attention to their very extensive and superior stock of the above, which they feel certain are unsurpassed in the Trade.

Dwarfs, from 48 pots	per dozen	9s. to 12s.	
,, in 6 inch or 24-pots	,,	24 to 30	
Standards, very fine	,,	18 to 24	
Specimen Plants, in 8-inch pots, for exhibition, each,	3s. 6d. to	5s	

DESCRIPTIVE CATALOGUES on application.

Woodlands Nursery, Maresfield, near Uckfield, Sussex

ROSES AT REDUCED PRICES.

WM. WOOD AND SON refer with pleasure to their enormous stock of many thousands of STANDARD and DWARF ROSES, which they will be happy to supply at the following remarkably low prices, viz. :— Per doz.—s.

Selected tall Standards, with three to six best varieties of Perpetual and Climbing Roses in each stem	24 to 30
Standards and Half Standards	12 to 18
Dwarfs and Dwarf Standards	9 to 12
Dwarfs on own roots	9 to 12
,, ,, without names	3
Climbing Dwarfs,	3
,, with names	6 to 9

DWARF ROSES, from 48-sized pots, or from open ground adapted for potting.

BOURBON, CHINA, TEA-SCENTED, NOISETTE & HYBRID PERPETUAL, 9s. to 12s. per dozen.

CATALOGUES gratis on application. Extra plants presented with each order to compensate for carriage.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

FINEST STANDARD ROSES, 3l. per 100.—HYB. PERP : Alexandrine Bachmeteff, Auguste Mie, Abbé Feytel, Bacchus, Baron Hallez, Baron Prevost, Belle Lyonnaise, Beauté Vive, Belle Anglaise, Belle Jardinière, Caroline de Sansalles, Comte de Nanteuil, Cardinal Patrizzi, Clemence de la Rue, Count Bobrinski, Charles Bosseul, Dr. Marx, Duchess of Norfolk, Duchess of Sutherland, Ernest Bergman, Etendard de Sebastopol, Edward Desfosse, Géant de Batailles, General Simpson, General Pelissier, Gloire de Lyon, General Jacqueminot, Gloire de France, Gustave Corcaux, Glorieux, Jules Margottin, Lady Stuart, Lord Raglan, La Belle Egarée, Lafontaine, La Reine, Le Lion des Combats, Louis Bonaparte, Madame Cambacères, Madame A. Gilbou, Madame Heraud, Madame Laffay, Madame Pepin, Madame Th. Martel, Madame Vidot, Madame A. Leroy, Madame H. Jacquin, Madame de Trottaire, Madame F. Regeaux, Madame Knorr, Marquise de Murat, Mathurin Regnier, Mrs. Elliott, Mrs. Rivers, Mrs. Standish, Marie Thierry, Monsieur Pigeron, Paeonia, Pauline Lansezeur, Pius Ninth, Prince Leon, President Menoux, Prince Noir, Paul Dupuy, Prince Chiptowszikoff, Robin Hood, Rosine Margottin, Robert Newton, Reine des Fleurs, Souvenir de la Reine d'Angleterre, Standard of Marengo, Thomas Rivers, Triomphe de l'Exposition, Triomphe des Beaux Arts, William Griffith, Moss : Laneii, crested ; H. C. Chénédolé ; HYB. BOURB. : Charles Duval, Paul Perras, Elize d'Henning, Austrian Brier, Persian Yellow. BOURBON : Adelaide Bougère, Acidale, splendens. TEA : Gloire de Dijon.

100 superior Standard ROSES, purchaser's selection, from above-named, 60s., or 10s. per dozen.

HENRY MAY, the Hope Nurseries, near Bedale, Yorkshire.

ROSE NURSERIES, HERTFORD.

E. P. FRANCIS invites attention to his splendid stock of DWARF ROSES budded on the Manetti Stock of which he possesses the following quantities :—

HYBRID PERPETUALS.		
250	Adelaide Fontaine	
200	Alexandrine Bachmeteff	
500	Auguste Mie	
100	Arthur de Sansal	
100	Baron Hallez	
150	Baron Heecheren	
150	Baron Larray	
200	Caroline de Sansal	
50	Charles Bossiere	
500	Colonel Rougemont	
500	Comte de Nanteuil	
150	Comte Odart	
50	Doctor Henon	
250	Duchess of Norfolk	
500	,, of Orleans	
1500	Géant des Batailles	
200	General Castellane	
150	,, Cavaignac	
1000	,, Jacqueminot	
100	,, Pelissier	
100	,, Simpson	
200	Gloire de France	
100	Imperatrice Française	
1000	Jules Margottin	
500	Louis Peyronny	
100	Lion des Combats	
50	La Ville de St. Denis	
500	Lord Raglan	
100	Madame Pepin	
250	,, Domage	
150	,, Hector Jacquin	
100	,, Knorr	
500	,, Masson	
150	,, Cambacères	
500	,, Vidot	
300	Mathurin Regnier	
200	Mrs. Rivers	

HYBRID PERPETUALS	
100	Pius the 9th
1000	Prince Leon
200	Paul Dupuy
100	Reine des Fleurs
500	Souvenir de la Rein d'Angleterre
500	Souvenir de Leveson Gower
200	Triomphe de l'Exposition
500	,, de Paris
500	William Griffiths
100	Amandine
100	Augustine Mouchelet
500	Baron Prévost
50	Comet
100	Duchess of Sutherland
100	Jacques Lafitte
500	La Reine
100	Louis Buonaparte
100	Madame Laffay
100	Robin Hood
50	Sydonie
50	William Jesse

TEA-SCENTED.	
500	Comte à Paris
500	Devoniensis
100	Elise Sauvage
1000	Gloire de Dijon
100	Goubault
100	Jaune
150	Madame Willermorz
100	Niphetos
100	Pauline Plantier
100	Sombreuil
150	Souvenir d'un Ami
100	Vicomtesse de Cazes

The above are all fine grown plants, strong and vigorous ; they are all budded close to the ground, within 3 and 4 inches of the root, and are admirably adapted either for clumps or potting. Smaller quantities are grown of all the other varieties in their different classes.

FLOWER, VEGETABLE, AND TREE SEEDS.

C. PLATZ AND SON, SEED GROWERS and NURSERYMEN, Erfurt, Prussia, beg leave to inform their friends and patrons that their New CATALOGUE (52d annual) of FLOWER, VEGETABLE, and TREE SEEDS from the last growth is now published, and may be had post paid on application.

The Gardeners' Chronicle.

SATURDAY, NOVEMBER 12, 1859.

MEETINGS FOR THE ENSUING WEEK.

THURSDAY, Nov. 17—Pomological ..... 2 P.M.

FEW seasons perhaps have been so productive as the present in Mushrooms. The ketchup merchants have been almost inundated, and the gatherers who in general are not scrupulous as to what goes into the Mushroom can, have for once

confined themselves pretty strictly to legitimate species, without having recourse to such doubtful trash as passes under the name of "Numprellas" or "Numperells." * One or two cases of poisoning from eating Fungi have been reported, but nothing can be looser than the evidence on which it was asserted that death arose from this particular cause, and the † terms employed in the report indicate a very imperfect knowledge of the subject.

It should be remembered as regards alleged cases of poisoning by Fungi, and that by species usually considered wholesome, that large meals consisting almost entirely of Fungi are frequently taken upon an empty stomach, and when it is borne in mind that pork, shell-fish, and even eggs are positively poisonous to certain constitutions, we need not be surprised that instances should occur of evil arising from the use of Mushrooms, especially when it is so possible that deleterious species may be mixed with the most wholesome.

So far is it from being true, as asserted by a valued correspondent, that "a poisonous Fungus is never met with in the open fields," that the most poisonous of all, *A. semi-globatus*, constantly occurs in such situations, and is often mistaken for the species known under the name of Champignons (Agaricus Oreades). No person who had once seen a true Champignon could by any chance make such a mistake, but it is very possible to make an equally fatal mistake as regards another species. The pleasure-grounds at Kew absolutely swarmed last autumn with the true Champignon; but mixed with this, which is the safest and best of all Fungi, was a species, *Agaricus urens*, extremely difficult to distinguish on a superficial view. The gills, however, were narrower, closer, and of a pale brownish tint, instead of being broad, distant, and cream-coloured, and the hot pungent taste of the one, from whence it takes its name, as compared with the delicate aroma of the other, placed the matter beyond all doubt. The case was so important, that accurate drawings of each were prepared by Mr. FITCH, whose artistic talents are so well known, and will shortly be published.

There are several very distinct varieties of the common Mushroom (*Agaricus campestris*), and several closely allied species, some of which are of doubtful character. The garden Mushroom, with which every one is so well acquainted, is scarcely to be found in a state of nature. A person who should judge of the wholesomeness of what he finds in the fields from a comparison with this, would be greatly disappointed in his search. It is most curious that this form should not occur universally, as some of the most successful Mushroom growers never use anything except horse-droppings. Mr. INGRAM, for instance, at Belvoir, employs, we believe, exclusively the straw which is trampled under the horses' feet in the riding-school, and we have seen masses consisting of many loads entirely threaded with healthy spawn.

The most generally approved variety of Mushroom, and the one almost exclusively employed in many establishments where Mushrooms are not raised artificially, is of a pure white, not changing to yellow when rubbed or bruised, with a silky coat, and gills of a rich pink, even in the button state, which changes to a purplish brown in age. The aroma of these is exquisite, and the species may in general be eaten with perfect safety, though it is condemned as highly poisonous, and excluded from the markets in Italy.

There is however a variety of this which is but little known which far exceeds it in excellence, and it has been this year very abundant. Externally it resembles the garden Mushroom, though often less scaly, but it is easily distinguished by its pouring out a rich red juice when divided. This usually grows under trees, and a family with which we are well acquainted have fed largely on it two or three times a day during the greater part of this autumn without the slightest inconvenience.

Another variety with browner gills is abundant in woods, approaching *Agaricus sylvaticus* in character, and distinguished from the common form principally by a disagreeable pungent odour and browner gills, of which, like the species just named, we should be sorry to partake.

Besides *A. campestris* there is another very useful and more abundant species, *A. arvensis*, known under the name of Horse Mushroom, which by many is accounted poisonous, but which is consumed to a very great extent with safety, though occasional accidents are reported, either from the admixture of dangerous species, or from causes above indicated. This species appears in the London markets very frequently to the exclusion of all others. We have seen specimens this year 13 inches in diameter, weighing 2 lbs., and yielding more than two-thirds of a pint of ketchup.‡ The aroma is not so fine as that of *A. campestris*; the gills in the buttons are nearly white, and when the cap is expanded they do not assume the beautiful pink of the common Mushroom, though in age they are nearly as dark. This is well known in France under the name of *boules de neige*, and is so esteemed in Italy that it is named by VITTADINI, the great Italian authority on such matters, *Agaricus exquisitus*. We should not counsel our friends to partake largely of a stew made of buttons of this species, as it is apt to be tough, and in that state is indigestible, but the flaps are excellent, as also is the ketchup which runs from it.

It should be observed that there is a closely allied species, *A. cretaceus*, with even more persistently white gills, which are, however, distinguished by coming to a very fine point behind and not reaching the stem, which may be confounded with *A. arvensis*, and is of doubtful quality. This might very easily be substituted by careless gatherers for the true Horse Mushroom.

The Blewits which are now abundant in the fields, and which are sometimes sold in London, distinguished by the stem being tinged with lilac, are of such a bad quality that they are scarcely worth notice. Several persons died at Cambridge some years ago after eating largely of this mixed with other species.

Many other species as *A. nebularis*, *A. grammopodius*, *A. geotrapus*, &c., are consumed by enthusiastic Fungus eaters, but for our own part we think most of them detestable, though we have partaken of them prepared under the immediate auspices of Dr. BADHAM, in whose work and in that of Mr. HUSSEY they will be found well figured and described. We are inclined to pass the same judgment on the Puff-ball tribe, though we must confess that we have had no opportunity of trying the Giant Puff-ball, which is *said* to be exquisite.
M. J. B.

There are certain points in the great BELGIAN EXHIBITION OF AGRICULTURAL AND HORTICULTURAL PRODUCE, held at Brussels on the 23d, 24th, 25th, and 26th of last September, which seem to deserve notice in this country. We therefore glean from the official report now before us, a pamphlet of 72 pages, the following facts, from which some idea may be formed of the state of horticulture in that prosperous country, the gardens of which have a reputation beyond any others on the continent. The exhibition was arranged under the immediate authority of the Duke de BRABANT, by the Royal Linnean Society of Brussels, an association to which any one may belong by paying 4*s.* 2*d.* a year.

The subjects of exhibition were divided into four sections; the 1st Agricultural, the 3d Pomological, the 4th Horticultural; what the 2d was the official report does not state. Let us examine each in some detail.

In the agricultural division, in addition to the usual agricultural produce, there was included kitchen garden-stuff of all kinds, including even Capsicums, Tomatoes, sweet herbs; plants of this kind being excluded from the horticultural class. Even fruits, termed *fruits d'agrément*, whatever they may be, were admitted here. There was also Hemp and Flax, raw, prepared, half prepared, and manufactured, Maize, Sorghum in seed, Tobacco from many persons, Hops, butter, Osiers, Potatoes, of which one person produced 54 varieties; Jerusalem Artichokes, artificial manures, wine of the country, machines, brushes required in the Vine disease, books relating to cultivation, hives and honey, Gourds, &c. In addition to which were the following novelties, viz., *Panicum altissimum*, a Grass yielding several cuts in the year; *Paspalum elegans*, another Grass; the *pois oléifère* of the French, called by us the Soy Bean; and a plant named Saradelle—no doubt our Serradilla, a little known species (*Ornithopus sativus*), cultivated successfully 40 years ago as a green crop instead of Vetches on the blowing sands near Thetford, but now we believe forgotten. Upon none of these plants, however, does the official Belgian report condescend to afford even a particle of information.

The Pomological section was wholly occupied by Pears, Apples, Peaches, Grapes, Pine Apples, and Melons. The Pears were innumerable. Our correspondent, M. DE JONGHE, stood at the head with 150 sorts; and many of the exhibitors furnished collections not very much less extensive. What the value was of all this display the report is silent; for ourselves we venture to suspect that their quality was of that uniform kind which we have become accustomed to find in Belgian collections sent hither—very good, nice, small fruit, no better, however, than Chaumontel, Marie Louise, Napoleon, and Duchesse d'Angoulême, and immeasurably inferior to those varieties in beauty, with us a most essential attribute. If otherwise the reporter, who here guides us, is to blame, for not giving the public the smallest scrap of information. Apples were of no importance. The same may be said of Peaches. Among Grapes we find the following names with which we are unacquainted, and on which the official report throws no light; viz., Chasselas rouge de Vibert, Chasselas F. Muller, Chasselas Vroege Vanderlaen, Quesi noir, Chasselas des Antonis, Fromental de la Corrèze, Klauenberg rose, Muscat rose, Muscat Alexandre and Muscat blanc, Sion Vanhamme, Brusselloos, Montesclivia, Chasselas Napoleon, Saint Bernard, &c. Of Pine Apples there was but one exhibition, in which ranked what are called La Trinité and Trois fontaines, whatever they may be.

Finally, there is the Horticultural section, properly so called. Here we find ourselves more assimilated to our Belgian brethren, and we have less to notice. There was a great many Ferns, and Orchids, and Palms; some Mallows, Dahlias, and China Asters; a good many Fuchsias, garden implements, plans of gardens, Roses, Begonias, and the like. But in the enumeration of these plants we again find that disregard of explaining what the so-called novelties are which renders the return unintelligible. What, for example, were Massovia cannæfolia, Halicomia metallica, Erivirema ænea, Curcuma deodora, Daphnea Delphinii, and many more? Horticulture knows nothing about them. Science repudiates them. They are only produced by authority in Belgium for the annoyance of well-informed people. As to the general orthography it is barbarous. Upon the whole we must say that the report before us is discreditable to any Society, to say nothing of one presided over by a Prince of the Blood. Its proceedings ought to be worthy of its patron. But let this pass and proceed we to the prizes.

We have nothing to remark upon those which were given in the Agricultural section, except that a Medal was awarded to an exhibitor of Agricultural Machines—for their number!—not one of which was tried; and that those machines were classed among esculents. When we come to the Pomological section we are struck by the remarkable fact that although the exhibition of Apples and Pears alone would seem to have been very large, there were only 15 prizes awarded out of 33. No Medals were given for miscellaneous collections of fruits; 3 were refused for Pears, 5 for Apples, and 1 for Grapes, in the very midst of the season for those fruits. Here, however, there is one marked exception in the case of our able correspondent M. de JONGHE, who would not show for competition, and of whom very honourable mention is made.

When we come to what is called Horticulture, by which is meant the cultivation of ornamental plants, the report shows again an extraordinary want of merit in the exhibitors. All the medals except one are refused to collections of plants in flower; none were given for Orchids, though three were offered; Palms and Tree Ferns and Gesnerads shared the same fate, every medal being withheld; nobody who showed hardy plants in flower was decorated; and so on with various other classes. It is not for a stranger to assign a reason for this; but we certainly must be permitted to remark that upon the face of the report it would seem either that the great Belgian Society has managed very unskilfully, or that the merits of Belgian gardeners and the riches of Belgian gardens have been excessively overrated.

CULTIVATION ROUND MARSEILLES.

I FIRST visited the establishment of M. Rougié Sarrette, a skilful horticulturist. His is a very small garden, but quite a model as far as management and cultivation goes. There is a greenhouse for Azaleas, with a winter garden containing Camellias, both of which are in the best possible condition. I should say that these are the only plants of this kind which are well adapted to the country. Peat being scarce at Marseilles (it is brought

* The price this year has scarcely exceeded three farthings a pound, whereas in some years it is as high as 5*d.*, and even at the present low rate, some of the collectors have hundreds of gallons of salted Mushrooms on their hands for which they can obtain no sale.

† It is said for example in one case that there was a strong smell of Fungin. Fungin is a term employed by BRACONNOT to indicate the fleshy part of Fungi after everything soluble has been washed out. It is highly nutritious and in itself not poisonous. It is now generally acknowledged that it is not a vegetable principle. The poisonous element is probably in all cases "amanitin."

‡ Twenty-five pounds of Mushrooms, which by the dealers are called a bushel, yields, according to the state of the weather, from 6 to 12 pints of ketchup. *A. campestris* yields more abundant and richer juice than *A. arvensis*, but the variety of the true Mushroom, which is red when cut or bruised, is the richest and most productive.

from Belgium) M. Rougié tried the experiment of using Chesnut earth instead, which he found answered very well. I cannot pass over in silence a hedge of Chorozema varium, separating the greenhouses, 8 yards long by 2½ high, so covered with flowers that it was the most ornamental thing of the kind I had ever seen.

All the avenues or drives in Marseilles are planted with Plane trees. It is the only tree which does well in town, in the country it is quite different; there you may see fine Mulberry trees, Elms, and forests of Aleppo Pines. Abies excelsa and pectinata will not grow there; if you see any, they are poor miserable dying specimens, 1 or 2 yards high; Cedars, on the contrary, grow very well, especially the Deodar, nevertheless, few are to be met with except at the Marquis of Foresta's, at the Chateau de Trois Tours, about 8 kilometres from Marseilles. I observed in the same garden an Abies Pinsapo about 5 yards high. I think it would be as well to try some Mexican Conifers in this country, such as Pinus leiophylla, Montezumæ, filifolia, Hartwegii, Wincesteriana, &c., and Cupressus Benthamiana, Knightiana, Lindleyana; this climate would suit them far better than Spruces. [The writer should have visited Mr. Philip Taylor's residence.] Many plants which are delicate in Paris live very well planted out in the open air at Marseilles; Oleanders (Nerium), Mespilus japonica, Erythrina Crista-galli, are second class trees there; Fabiana imbricata becomes 3 yards high there; Agave americana grows everywhere upon the rocks—it is wonderfully strong and requires no shelter in the winter. There are also beautiful specimens of Poinciana Gilliesii, Mandevilla suaveolens, which decorate the south walls. At Madame Benausse's, at St. Barthélemy, I observed Pelargonium zonale in the open ground, a yard high, which had been for many years at the foot of a flight of steps, without any shelter, but screened from the violent winds (mistral) by the château. Marseilles is the very country for Pittosporum; one sees there clumps of nothing else. Rhododendrons generally do badly. I think that arises from their not being planted in suitable situations, for I saw some very fine ones at M. Hathan's on the Course de Prado. Would it not be as well to try arboreum and the Sikkim species?

If on one hand the Marseilles gardeners have a great deal of trouble in protecting their plants from the destructive effect of violent winds, they have on the other hand the immense advantage of being able to irrigate their gardens with the water from the Durance, which has been conducted at great expense into a reservoir on the top of the town. Permission is granted to all proprietors to use it, which enables them to water their grounds twice a day—an all-important matter in such a dry country. It is to the formation of this reservoir that the town owes the beauty of its avenues of Plane trees, whose roots are refreshed continually by means of drains through which the water filters wherever it is wanted.

I must remark, however, that notwithstanding the great quantity of water used by the gardeners, vegetables are very scarce at Marseilles, so that Strawberries are brought there from Toulon in earthen jars. *M. Malet in the Revue Horticole.*

ENTOMOLOGY.

JUMPING SEEDS.

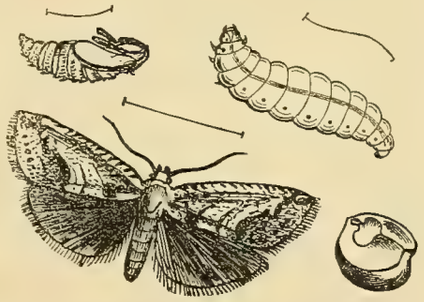
During the early part of the last year considerable interest was excited in the horticultural world by the arrival in England of the seeds of an apparently new species of plant, from Mexico, which seeds had the singular habit of jerking themselves along, with considerable alacrity, often to the distance of an inch or an inch and a half when laid upon a flat surface. Such a circumstance produced of course much curiosity and speculation, and some of the seeds were kindly placed in my hands for examination by Sir William Hooker. The seeds themselves are about four-tenths of an inch long, with a smooth surface, each resembling the third part of an Orange (which has been cut into three pieces), three seeds evidently growing together and forming a globular mass. On examining the interior of one of them, however, it was found that it was occupied by a fat grub or larva, which had consumed the whole of the inside of the seed (leaving however no excrement within).

The natural size of this larva is shown in the curved line in the accompanying figures, and it will be noticed that the larva has a small head marked with two small dark dots, and furnished with small but strong jaws, and the other parts of the mouth of a lepidopterous larva. The legs are very short, consisting of three pairs attached to the first three segments of the body behind the head; the fourth and fifth segments are footless, but each of the four following has a pair of very short membranous feet surrounded with a circle of very minute spines, and there is another pair at the extremity of the body. This larva is of a yellowish white colour, with the head chesnut brown.

The fact of this larva being found full grown within the seed (the inside of which it nearly occupied), of which the outer surface exhibited not the slightest evidence of its introduction, is easily explained, a nearly similar instance occurring in the case of the Nut Weevil; the only difference between the two instances being that the female weevil bores a hole into the very young Nut and introduces an egg into the wound, which quickly heals over, and is not visible when the Nut is full grown, whereas in the case of the jumping seeds, the parent insect, as we shall subsequently find, has no instrument sufficiently strong to bore into the young seed, and must deposit her eggs in its immediate vicinity, and the young grub (as we imagine) must itself burrow into the embryo seed as soon as hatched.

How the very peculiar motion exhibited by these seeds is produced is not easy to be conceived. Many well-known insects indeed are capable of taking strong leaps, which are effected in different methods. The common cheese maggot jumps to a considerable distance by laying hold of its tail with its mouth and compressing its body; it then suddenly lets its tail go with a strong spring, which, striking upon the surface upon which the insect is placed, throws it to a considerable distance. Other insects spring by means of their incrassated hind legs; the Lepismæ jump to great distances by striking a forked appendage on the under side of the extremity of the body against the surface on which they stand, whilst the Elateridæ or skip jacks have a horn-like appendage on the under side of the fore-chest which, when laid on the back, they strike with great force into a cavity in front of the hind-chest, thus producing a strong spring; but none of these instances appear applicable to our larva, which when taken out of its case moves about with the same motion as ordinary Lepidopterous larvæ. There is indeed another instance recorded by M. Reaumur which appears more analogous to the jumping seeds, being the movement produced in the small oval cocoons of a species of Ichneumon, which being suspended by a long thread attached to one end of the cocoon, are put into considerable movement by the inclosed larva, which probably moves in the same manner as the cheese maggot. It is also to be mentioned that the seed progresses equally when placed on its convex side or on either of its two flat surfaces.

Other specimens of the seeds were sent to England by different persons, and on the 5th October the Mexican Chargé d'Affaires, W. G. Lettsom, Esq., forwarded some specimens to the Entomological Society, stated to have been obtained from the neighbourhood of Tepic, and it was supposed that the plant which produced them was a species of Euphorbia. Subsequent



information has led us to infer that the seeds are in fact Peruvian and had been carried to Mexico, and that they are the fruit of a plant called Colliguaja.

In some of the seeds at a later period the insect was found to have undergone its change to the chrysalis state. The chrysalis is furnished (like that of the goat moth, wood leopard, and others residing in wood) with transverse rows of small reflexed spines on the segments of the abdomen, by the help of which the chrysalis pushes itself forward.

The seeds produced specimens of the moth, of which the larvæ were the immature state, at the beginning of the following summer, one of which having been communicated to us by Sir William Hooker, was exhibited at the meeting of the Entomological Society on the 7th June, 1858, when a description was read of it (published in the Proceedings of that date), under the name of Carpocapsa saltitans, the genus to which it is evidently referrible belonging to the Tortricidæ, and containing other species of which the larvæ reside in seeds and fruits, including the acorn moth and the codling moth. The following is a description of the perfect moth, which measures ⅜ inch in the expanse of the fore-wings:—Fore-wings greyish-white, faintly marked with pale ashy undulating lines, the fore-margin with about 16 small oblique dashes, the tip of the wings black with a small white oval spot; the hinder margin, near the base of the wings, with a small square black spot and with a large conical ashy spot near the outer angle, having its edges and middle marked with black lines; the apical margin varied with grey, leaden, and white colours, and a double row of minute black dots; the hind wings are brown, the head and collar reddish brown, and the palpi outwardly brown and inwardly whitish.

Specimens of the seeds were also forwarded in the spring to Paris, where they were exhibited at the Academy of Sciences, and the inclosed larvæ were erroneously described as those of a Coleopterous insect, a mistake which the existence of membranous prolegs in the larvæ ought to have prevented. Subsequently, however, the perfect insect has been reared, and its transformations have formed the subject of an interesting Paper in the Revue Zoologique, by M. Lucas, who, not aware that the insect had already received a name in this country, described it under a new one. The accompanying woodcut represents the caterpillar, chrysalis, and moth, magnified, the lines indicating the natural lengths, together with one of the seeds. *J. O. W.*

Home Correspondence.

Out-door Grapes.—I have this year grown on a brick wall without any covering, on a Vine planted two years ago, five bunches of good Grapes (Black Hamburgh); one of the bunches weighed ¾ lb., with berries measuring 2¼ inches in circumference, well coloured, with a good bloom on them. They may now be seen in the shop window of Mr. George Barry, Seedsman, 13, South Castle Street, Liverpool. *J. Wignall, Alpha Cottage, Ticebrook, West Derby, near Liverpool, Nov.* 10. [Surely this is not surprising in so hot a summer.]

Holly Tea.—The earnest way in which Mr Forsyth recommended the use of this substitute for Chinese Tea induced me to make a trial of it, and as he specially recommended it to be roasted before use, I had the leaves roasted "as brown as the crust of well-baked bread," and on trying the infusion found such an oleaginous smell as strongly to remind me of a floor-cloth manufactory. I nevertheless endeavoured to get over this difficulty, applied milk and sugar in the usual way, and with a prejudice rather in favour of the discovery than opposed to it, could not by any means bring my palate or the palates of my family to accommodate themselves to it. Indeed, there was so much of a *primâ facie* emetic about the drink, that I think there is very little danger of people laying out a farthing an ounce for it after one taste, though I really am sorry at the result. *J. J. Foster, Edgware Nurseries.*

The Late Frost.—You say truly that frost in October is no novelty. Almost every year there is sufficient cold in that month to cut off Dahlias, Scarlet Runners, and such like tender plants; but the frost this season has done more mischief in the kitchen garden than in any other within the recollection of the "oldest inhabitant." Salading will, I expect, be very scarce in consequence. Lettuces, both Cos and Cabbage, Endive, especially that which is full grown, and even Celery where not well earthed up, are greatly injured. Cardoons are almost entirely spoiled, the heavy snow having weighed down the large leaves till the stalks, previously weakened by the frost, are broken and split into fragments. All the late Cauliflowers that had formed heads were destroyed here, and the more tender leaves of Broccoli, Greens, &c., considerably damaged. All tender bedding plants which had not been taken up were killed as a matter of course, and I hear that in some extensive places the loss in this line has been great. The large quantity of rain (over 4 inches) which has fallen in this district since Oct. 24 has made matters worse by increasing the tendency to rot in the frost-bitten vegetables. *J. B. Whiting, The Deepdene, Dorking.*—— "I never knew a frost so early as this" surely cannot be the expression of a practical gardener, as he must have small experience and less weather knowledge who calls it early (21st October) to have his Dahlias, Heliotropes, and similar tender plants killed. The fact is that this is very like the rule, and to stand over this date, the exception. I myself have been an anxious observer of weather as to its effect on plants, and I can say that I never saw the like at the same date before, and this I can have corroborated by men of 50 years' experience. By the bye, I should be glad to hear from our worthy Chrysanthemum friend Broome as to the state of his plants in the Temple Gardens. I much fear his year of toil and labour has been entirely thrown away this season, judging from what I see in so many places. I quite agree with his remark that Chrysanthemum shows are too early, for how very few full blown plants does one see in the first week of November. *North Notts.*

Eriobotrya japonica, or Loquat.—The effect of the two last hot summers in ripening wood is somewhat remarkably shown by the appearance of several bunches of flower upon a large plant of the Loquat growing here on a south wall. The plant is about 15 years old and upwards of 20 feet high, and has never received any protection; but until the present autumn it has never formed any visible flower buds. Those now put forth are sufficiently expanded for the petals to be visible, and should the weather continue mild may perhaps open fully. Its natural season of flowering in the south of Europe is November, so that it is only in very favourable summers that it ever flowers in England. The plant in question is grafted, I believe, on a Pear stock, and its foliage is very large and fine. *J. Rogers, River Hill, Sevenoaks.*

Australian Cress.—I see that a new harvest of what is called "Australian Cress" seed is announced in your pages. Will the advertiser be kind enough to inform the public wherein the difference lies between this reputed new Cress and a kind which has been cultivated in this country for probably half a century? I am aware that this Cress has been exhibited at horticultural meetings, and (if my memory is correct) has received "high commendations," if not "certificates of merit." But these distinctions do not make it what it is said to be—a new salad-herb; they only show that the judges who conferred them have more oil in their composition than vinegar. *W.*

Gardeners' Education.—Several articles have recently appeared in the *Gardeners' Chronicle* relative to gardeners and their employers, to the general good sense of which I cordially subscribe. In speaking of gardeners your correspondent "H. A. W. D." (p. 774) says: "I dare affirm that there is no class of men more intelligent or trustworthy, or who study more their employers' interest if fair play be given them." Now this statement (the correctness of which I believe few will deny)

fairly assumes that a gardener must be an educated man; and, from the varied and responsible nature of his duties, and the respectability of the position that he is expected to occupy, it is of the last importance that he should really be so. However we often discover that this essential element has been in a great measure neglected as a preliminary preparation; and it is therefore with a view of supplying in some measure the means of improvement to young men during the period of their apprenticeship that I am now desirous, through the medium of the *Gardeners' Chronicle*, of submitting for the consideration of others a practice which I have myself adopted for several years, and with results so satisfactory that I am induced to recommend to others the adoption of a similar course. During the winter season, or say from November till March, I arrange with any young men under my charge that they shall meet with me for three hours, five nights of the week, for the purpose of receiving such instruction as my humble abilities enables me to afford, or their more immediate requirements demand. I also make occasional selections of practical subjects on which they are required to prepare Essays, and, the more effectually to test their knowledge and abilities, I strictly prohibit all reference to books or periodicals on gardening during the preparation of such essays. My own experience is, that, as a general rule, young men are only too happy to avail themselves of such facilities for improvement; nevertheless exceptions to this rule will occur; in such cases a judicious exercise of authority must be resorted to. Let us who have passed our probation afford all the assistance we possibly can to those who are just entering upon the path that we have trod for many years. They place themselves under our care; let us, on our part, be faithful to our trust. It is a duty we owe to their future welfare; it is a duty we owe to our own individual credit, and to the respectability of the profession; and let me also add, that it is a duty we owe to the mutual interests of gardeners and their employers. *A. M'Intosh, Castlerea, Ireland, Nov.* 1.

Vineyards in England.—There is no question that in very early times Vineyards were plentiful in England, and that abundance of good wine was produced from them. Soon after the Norman conquest, however, the wines of France were largely imported into England, and it is expressly recorded that "a passion for French wines became a characteristic of the court and the nobility in the reign of Henry III." But the monks of many an abbey in the south of England continued to cultivate their Vines in famous Vineyards in the southern counties of England; and what are now cornfields and meadows retain in hundreds of places the name of "Vineyards" to this day. They gradually succumbed, however, especially after the dissolution of the monastic establishments, under the more bountiful supplies from the coast of France. The reasons for this are not material. I am only so far concerned with the facts as to prove that the Grape having been formerly successfully grown in England for the purpose of making wine, there is nothing in the soil or climate of England to prevent its being grown for the same purpose now, especially with the improved knowledge which we possess of the mode of its cultivation and treatment, added to the increased mildness of our climate. Such being the case, I have no doubt you or some of your numerous practical correspondents would be conferring a great boon on many of those who dwell in the warm, sunny valleys of the south of England, if you would allow your valuable *Chronicle* to be the medium of conveying to them information on the choice of situation, soil, and its preparation, kinds of Grape best suited to the purpose, distance, mode and time of planting, age and cost of plants, after treatment of the Vines, &c. In ordinary seasons the Sweet Water, Black Cluster, &c., ripen well against a south wall in the south-west of England; and though they might not attain the same degree of perfection in a Vineyard, they would in the most unfavourable seasons at least produce a wine far superior to green Gooseberry, Rhubarb, or any other imitations of Champagne, or indeed anything that is called wine made from other English fruits. *Y., Devonshire.* [Surely it is hopeless to make wine in England so good as even the worst of what may be called low-priced French wines, and for the same money.]

Transplanting Large Trees.—At page 849 Mr. Tillery states that he has had much experience in removing large trees with machines. He will greatly oblige me by giving a description of the machines, and mode of operation. *Inquirer, Stockwell.*

Monro's Cannon Boiler.—A great deal has been advertised about Monro's cannon boiler, sold by J. Jones, of Bankside, for 5 guineas. My employer sent me to purchase one, of cast-iron, when I was told they only kept wrought iron, which were 6 guineas each. So I said I would take one of them; the answer I received was: "Don't you want the top connecting piece and elbows, furnace bars and doors?" I then asked what difference that made, as the boiler was advertised for 5 guineas. He said to have it all completed would be 10*l.*, at which I was greatly surprised. That furnace bars and doors and connecting piece should be charged extra, I consider is most extraordinary. Others in the trade are all complete for the price they fix. So those that want to purchase a cheap boiler may profit by my experience. They told me it don't answer their purpose to sell them under the amount above. *James Ellis, Gardener, Edmonton.*

Societies.

CRYSTAL PALACE CHRYSANTHEMUM EXHIBITION, *Nov.* 9, 10, and 11.—This exhibition took place on Wednesday, Thursday, and Friday last, and the display presented was all that could possibly be desired. The first day was fine, and, this, as well as the prospect of seeing our now almost national autumnal flower in perfection, no doubt tended in no insignificant way to entice many visitors, who we feel assured could not have departed without experiencing very great satisfaction with the objects they had witnessed. The following will show what kind of flowers were to be found in the winning stands:

Cut Blooms.—In Class 10, 24 Cut Blooms, Mr. Bird, Nurseryman, Stoke Newington, gained the first prize with Plutus, Novelty, Themis, Yellow Perfection (far superior as a yellow to Plutus), Madame Andry, Goliath, Raymond, Pio Nono, Nonpareil, and Marshal Duroc. These were very justly placed in the first rank, for anything more nearly allied to perfect symmetry there could not be. The second in this class was awarded to Mr. J. Wilkinson, of Bow, who exhibited Themis, Goliath, Madame Mullier (very small but compact), Marshal Duroc, and Dupont de l'Eure. These were all somewhat smaller than the foregoing, but still excellent. The third award was given to Mr. Merry, Nurseryman, Stamford Hill, for specimens of lucidum, Raymond, and Defiance.

In Class 8, 24 Cut Blooms, the second prize was awarded to Mr. J. Sanderson, of Regent's Park, for Beauty, Arc en Ciel, Plutus, Aristée, Dupont de l'Eure, Pio Nono, Raymond, Cassy, insigne, and Lysias. The third to Mr. Robert Oubridge, gr. to J. Foster, Esq., Stamford Hill, for Nonpareil, Themis, Madame Andry, Plutus, Anaxo, Aimée Ferrière, Lysias, Cyclops, formosum, and Two-coloured Incurved. The fourth prize was given to Mr. Chas. Ward, gr. to W. Fowler, Esq., Tottenham Green, for Dupont de l'Eure, Plutus, Marshal Duroc, and Nonpareil. In this class the best flowers were those just enumerated; the others though good were not up to the standard of perfection.

In Class 9 (12 Cut Blooms), Mr. Sanderson was first with Queen of England, Themis, Anaxo, Cassy, and Madame Mullier. Mr. Oubridge was second, with Themis, Nonpareil, Marshal Duroc, Dupont de l'Eure, and others; third, Mr. Arthur Wortley, of Stoke Newington, who showed some excellent specimens of Goliath, Plutus, Pio Nono, Dupont de l'Eure, and Lysias; the fourth was awarded to Mr. Sanderson, of Hermitage Terrace, Bow, for Hermione, formosum, Gloire de Toulouse, &c. In this Class there were stands from Mr. Joseph Monk, gr. to C. J. Heath, Esq., Balham Hill, containing good flowers of Anaxo and Goliath; Mr. George, of Hanger Lane, Stamford Hill, had a good yellow formosum and Plutus.

In Class 11 there were many entries. Among the most successful were Mr. Sanderson, of Bow, who exhibited good flowers of Nonpareil and formosum; Mr. Isaac Delvalle, of Stoke Newington Green, showed Dupont de l'Eure, Princesse Marie, formosum, and Annie Salter; blooms were also shown by Mr. Butt, of Milton Terrace, Stoke Newington; and by Mr. E. Sanderson, of Regent's Park, whose specimens consisted of Raymond, Plutus, Themis, Nonpareil, and others; some excellent blooms likewise came from Mr. Wortley, among which were Plutus, Pio Nono, Nonpareil, and Lysias. Among others from Mr. George we found Trilby, Goliath, and Plutus. Mr. E. Merry, Stamford Hill; Mr. J. Wilkinson, Bow; Mr. Ward, and lastly Mr. Monk also showed in this class.

In Class 12 (24 Cut Blooms) were to be found some really good flowers from Mr. Wortley, consisting of Themis, Queen of England, Marshal Duroc, Pio Nono, Glory, Goliath, white formosum, Curtius Quintus, Rosa Mystica, and Arc en Ciel, and on another stand we found some admirable Anemone-centered specimens from the same exhibitor entitled Rose Marguerite, Jean Achette, Eugene Langayle, and Madame Senta. In this class Mr. George showed Antonius Fouchette, Rose Marguerite, and Regulus.

Amongst cut blooms not sent for competition especial mention must be made of an immense stand from Mr. Bird in another portion of the building. There were long separate rows of Themis, Nonpareil, Plutus, and mixed specimens, and above all an admirably designed device bearing an inscription in variously-coloured blooms. This stand formed one of the principal attractions, as well it deserved, for anything more beautiful at this time of the year than these blooms were can scarcely be conceived. Beside this stand, though not for competition, was one by Mr. J. Wilkinson, of Bow, who showed good specimens of Progne, Marshal Duroc, and Nonpareil.

Specimen Plants.—In Class 7, Pompones grown in pots, for the best six plants in 8-inch pots Mr. Forsyth gained the first prize, with Doctor Bois Duval, Aurora Borealis, Brilliant, Mdlle. Celestine Philopel, Ninon, and Golden Cedo Nulli. In Class 6 the first prize was awarded to Mr. Shrimpton, gr. to A. J. Doxat, Esq., Putney Heath, for a beautiful single specimen of Cedo Nulli, full to repletion with bloom, and looking as white as if covered with snow. Mr. John Tandy, gr. to E. Sanders, Esq., Fair Lawn, Wimbledon Park, showed some really excellent specimens of Madame Rousillon, Bob, Requiqui, Helène, Cedo Nulli, and Brilliant, and this being his first appearance at any show he deserves great credit. Mr. Ward exhibited Mustapha, Cedo Nulli, Trophée, Gen. Canrobert, Requiqui, and Durufflet, good well grown plants, somewhat cramped in the training, but evidently the largest in the exhibition. Mr. Hutch, of Stoke Newington, produced two admirable specimens of Adonis and Christine, which deserve commendation. Mr. Wiggins exhibited an admirable Cedo Nulli.

In Class 5 Mr. Wiggins showed a brilliant plant of Bob, Gen. Canrobert, St. Thais, Helène, Cedo Nulli, and Durufflet. In Class 6 Mr. George had a very large plant, but somewhat wanting in brightness.

Among large-flowering specimen plants we found Mr. F. Bennett, of Upper Tulse Hill, exhibiting Annie Salter, Beauty, Themis, Albin, Christine, and Trilby; Mr. Adam Forsyth, nurseryman, Shacklewell, sent Gen. Negrier, Pilot, Defiance, Auguste Mie, Vesta, and Annie Salter; Mr. E. Merry, of Stamford Hill, showed Beauté de Nord, Christine, Havelock, Chevalier Dumas, Voltaire, and Albin. Mr. Ward furnished a single specimen of Pilot; Mr. Oubridge, an excellent Dr. Maclean, beautifully variegated, as well as an excellent Phidias; and some came from Mr. Oubridge, among which were Progne, Defiance, Pilot, Vesta, Annie Salter, and Christine; Mr. Hutch also showed some good specimens of Annie Salter, Christine, Madame Camerson, General Havelock, Chevalier Dumage, and Mount Etna; as did also Mr. George a Plutus, Christine, Aregina, and Queen of England. There was likewise a well grown plant of Queen of England sent by Mr. Brown, gr. to J. C. Thurn, Esq., of Dulwich.

Among plants put up for effect by the Company, one of the most attractive objects was an immense basket placed under the centre transept, but which, owing to the Schiller festival taking place on Thursday, was necessarily removed to another site on that day. It measured about 8 feet across, and was formed of rope and wood very tastefully combined. The outer ring was filled with the yellow Pompones Solfaterre, Sacramento, and Drin Drin, inside which were placed the almost white Cedo Nulli, and the pretty Madame Rousillon; in the next row were placed some plants of President Decaisne and Helène, the whole being surmounted by three handsome standards of Bob and a Brilliant, the centre being filled up with a large General Canrobert. This was continually surrounded by visitors. About four dozen standards were placed in different parts of the Palace, freely grown, and showing no cramping in their cultivation. There was also a table about 200 feet long, almost entirely devoted to the Company's plants, miscellaneously placed, but forming a very pleasing collection taken as a whole. Some were grown dwarf, while towering above their heads were many handsome specimens in the shape of standards. This table viewed from end to end formed a very pretty picture.

Among matters not exactly for competition, but which may in no small measure influence future displays of this flower, must have been noticed a very beautiful seedling of Mr. Holland's, gr. to R. W. Peak, Esq., Spring Grove, Isleworth, named Miss Augusta; this gained a First-class Certificate as it richly deserved, and not only in this instance, but it has also gained a like award at five other exhibitions, thus fully establishing its merits. First-class Certificates were also awarded to seedlings named by Mr. Salter, Mr. Holborn, and Arthur Wortley. There were also on this stand of Mr. Salter's some good Pompone seedlings, named Emperor, Bouquet des Fleurs, Alarm, Lara, Snowflake, Distinction, mirandum (excellent), Augusta, Christina (very pretty), and others named Favourite, Lord Harding, Wonderful (a great acquisition), and Belmont.

There was also a beautiful stand of 24 cut bunches of Pompones, sent by Mr. George, Stoke Newington; among them were Helène, Bijou d'Horticulture, Trophée, Requiqui, Cedo Nulli, and others. We must not omit mentioning some excellent Standard Pompones, sent by Mr. Morgan, of Lincoln's Inn Fields, which were pleasingly placed in vases, &c., among which were two good Vestas, and a Cedo Nulli.

We may mention in conclusion that the numerous groups of Camellias scattered about the Palace are now in full bud, and no doubt about April next will form objects of great attraction.

STOKE NEWINGTON CHRYSANTHEMUM.—The 13th annual exhibition of this, the oldest of all the Chrysanthemum societies now so numerous in the neighbourhood of London, took place on Monday and Tuesday last, in the Manor Rooms, Church Street. There was a fair attendance of company, and the room was literally crowded with plants and cut flowers, among both of which were specimens which for beauty and symmetry could not possibly be excelled. In the Class of Cut Blooms, Mr. Bird obtained a silver cup for the best collection of 36. It contained Queen of England, Themis, large and fine; Anaxo, Madame Lebois, Goliath, Duke, Princesse Marie, Nonpareil, Beauty, Plutus, and the following new varieties, viz., Alarm, Alma, pictoreum roseum, Novelty, a beautiful white; Pearl, Yellow Perfection, and Beauregarde, all of which are flowers of great promise. The next best 36 blooms came from Mr. Wilkinson, of Old Ford. It contained Queen, Goliath, Progne, King, lucidum, and Madame Andry, in excellent condition. In the class of 24 blooms by far the best came from Mr. Bird. The following were the admiration of everybody, viz., Nonpareil, Hermione, Dupont de l'Eure, Anaxo, Raymond, Trilby, Albin, Goliath, Novelty, Aregina, Marshal Duroc, Perfection, Themis, pictoreum roseum, Pio Nono,

Beauty, Stella globosa, formosum luteum, Duke, Plutus, Queen, formosum, and Madame Andry. Mr. Wilkinson produced a good stand of 24, in which were good blooms of Themis, Goliath, Dupont de l'Eure, Plutus, and Golden Queen, a new kind raised by Mr. Salter, of Hammersmith. It is very large, but in this instance somewhat coarse; some blooms of it shown by the raiser himself were however in rather better condition. Mr. Elliott, of Stamford Hill, showed 24 good flowers, among which Themis, Queen, formosum, Dupont de l'Eure, Defiance, Trilby, and Anaxo were conspicuous both for size and beauty. Mr. Oubridge and Mr. Monk also showed well in this class. The kinds did not differ much from those enumerated above. In the Class of 12 Blooms, the best came from Mr. Oubridge, who sent Trilby, Anaxo, Themis, Nonpareil, Hermione, Plutus, M. Andry, Duke, Marshal Duroc, formosum luteum, Dupont de l'Eure, and Stella globosa, all evenly grown and in every way excellent. Mr. Elliott had the second best 12, among which were fine specimens of M. Andry, Lysias, Themis, Queen, Anaxo, Goliath, Alfred Salter, Dupont de l'Eure, Defiance, Duke, Stella globosa, and formosum. Mr. Monk sent Goliath, Aregina, Raymond, Themis, Marshal Duroc, Duke, M. Andry, Dupont de l'Eure, Stella globosa, Plutus, and formosum luteum, all good examples of skilful cultivation. In the class for Maiden growers, Mr. Taylor of Enfield showed handsome blooms of Lysias, Goliath, Nonpareil, Plutus, formosum, and Marshal Duroc. From Mr. Harris, of Dalston, also came some good blooms, which were not dissimilar to those just mentioned. Anemone-flowered kinds came from Messrs. Oubridge, Monk, and Bird. Among them were King of Anemones, Gluck, Georges Sand, Margaret of York, M. Godereau, Louis Bonamy, Eclipse, and Marguerite d'Anjou. With respect to plants in pots some of the collections were really magnificent. Among large-flowered kinds the best came from Mr. Oubridge, to whom was awarded, and deservedly, a silver cup, for fine specimens of Christine, Annie Salter, Pilot, Defiance, Vesta, and Dr. Maclean. From Mr. Scruby came Salter's Annie, Progne, Christine, General Havelock, Pilot and Vesta. Mr. Hutch sent Christine, Mount Etna, Chevalier Dumas, and Annie Salter, both well grown and flowered. Among Pompones the best we ever remember to have seen were from Wiggins, gr. to Mr. Beck, of Isleworth. They fully bore out all that was said in their praise last week by Mr. Broome. They were trained on horizontal wire trellises, some 4 or 5 feet in diameter, and were literally masses of bloom, intermixed with just sufficient green leaves to relieve and set it off to advantage. The sorts were Bob, a brilliant kind; Dûrufflet, Cedo Nulli, Helène, General Canrobert, and St. Thais. These being well contrasted as to colour had an excellent effect. The next best group came from Mr. Ward, of Tottenham. They consisted of Cedo Nulli, Durufflet, Riquiqui, Trophée, Gen. Canrobert, and Mount Etna. Six nice Pompones came from Mr. Scruby, and of plants in 8-inch pots Mr. Eden, of Kingsland, sent some pretty bloomed specimens. From Mr. Holland came the seedling named Miss Augusta, with remarkably fine petals; it is pure white and promises to be a favourite. We also noticed a sport from Aregina with yellow flowers; it was however not in a condition to fairly judge of its merits. In the centre, opposite the entrance, was an immense plant of Adonis, and specimens of a striking character as to size also occupied the corners. Altogether the arrangement was excellent, but the room is too small to admit of visitors moving about with comfort.

[We shall next week publish reports on the South Metropolitan Amateur, South Eastern, and other Chrysanthemum Societies, our space for to-day being exhausted.]

Notices of Books.

Cybele Britannica; or, British plants, and their Geographical relations. By H. C. Watson. Vol. IV. 8vo. Longmans. Pp. 527.

Well might a distinguished botanist, upon looking at this volume, exclaim, "*Que signifie ce mot Cybele, que l'auteur a introduit dans la science?*" What indeed could have led to the selection of a name concerning which we shall only say that it was given to a goddess whose festivals were the most beastly in even heathen mythology. Mr. Hewitt Watson has, however, a very peculiar turn of mind; and it would seem as if he had adopted the name in order to show how high he stands above the scientific throng in even so small a matter as the selection of a title; or it may be that *Cybele* was chosen because of its resemblance in sound to *cynic* and *cynical*, an idea that has struck others as well as ourselves.

The object of the work is to reduce to certainty the manner in which the plants wild in Great Britain are distributed, and the causes (or as Mr. Watson says the causal conditions) "by which plants and places are connected together." How *Cybele* and such a subject are "connected together" passes our comprehension.

In truth the volume before us is the fourth of a treatise on what Brown, Humboldt, Alphonse De Candolle, and other less eminent men than Mr. Watson call botanical geography. The author inquires into the nature of what are termed Orders, Genera, and Species; he attempts to determine which species now supposed to be aboriginal have been introduced; he describes the superficial peculiarities and climate of Britain, goes into a variety of statistical questions, and closes the subject by general remarks on miscellaneous matters. It is impossible not to admire the industry shown by Mr. Watson in travelling over this ground. He has brought together a very large amount of evidence as to the range of species; put together with skill, and commented upon with a good deal of acuteness. The notes collected in order to enable him to form his calculations of numerical numbers must alone have consumed years of patient research. But when we inquire for the results to which so much labour and so many years have been sacrificed we ask in vain. The object was to ascertain "the causes by which plants and places are connected;" in other words to discover the reason why one plant or race of plants is only found under one set of conditions, and some other plant or race under a different set; and to show moreover, we imagine, why certain forms of vegetation are characteristic of certain countries or regions, as for instance Palms of tropical countries, the genus Cinchona of the western slope of the Cordillera, phyllodineous Acacias of Australia; or, to confine ourselves to this country, why Spiranthes gemmipara is only found in the south-east of Ireland, Erica ciliaris on the Cornish serpentine, Smethis bicolor in Kerry (?) and Dorset.

To this highly curious subject Mr. Watson's pages do not appear to us to offer a reply. Instead of precise results we have elaborately learned disquisitions, which really, when dissected, end in nothing. We are far from blaming Mr. Watson for this termination of his toil. To us it seems hopeless to expect any other; the question no more admits of a solution than the origin of the plants under consideration. We all know, without the aid of much research, that there is something peculiar in the constitution of species which determines their power of existence. Plants like animals have their idiosyncracy, as it is called. But what is idiosyncracy? a word and nothing more. Why does South Australia produce a Pelargonium or two; the range of Taurus another; Abyssinia one or two more; while the great mass of the species occurs only in Southern Africa? Why, where one is found, are not others also numerous? If the form of vegetation called Pelargonium depends upon "causal conditions," what are those conditions; and why should not a Pelargonium be found at the foot of Olympus as well as on the Bulgar Dagh? Agrimonia Eupatoria occurs in Ceylon; probably a mere form of it is in the Himalayan range. What similarity of condition is there between the hills of Ceylon and Northern India and a Norfolk ditch, sufficient to bring about the appearance of the plant at such distant points? Look again at Cressa cretica, found wild in the Mediterranean and on the Murray in Australia. How is that? Those are points worth elucidation, if elucidation is possible; and we had hoped that Mr. Watson might at least have furnished a clue.

He has failed; and it would seem from remarks frequently repeated as if he attributed his want of success to the vagueness and inexactness of botanists; he complains of the vagueness and inexactness of Humboldt, Brown, and others of that rank; of the inextricable confusion introduced into statistical questions by the clashing opinions of systematical writers. But he does not perceive that such "inexactness" arises out of the very nature of the things dealt with. We are certainly no advocates of that system of species-splitting of which Mr. Watson so much and so justly complains; at the same time we cannot shut our eyes to the fact that to bring the words species, or genus, or order within a strict definition is chimerical. To these names a certain more or less clear conventional meaning is attached, which is not only convenient but necessary if order is to prevail in botanical arrangements. But no botanist of any mark attaches a positive meaning to them. They represent artificial divisions and nothing more. Whether or not even species really exist is by some questioned. We do not ourselves concur in the opinion that there are no species in nature; but we are obliged to confess that it is extremely difficult to say in all cases what it is that absolutely separates one form from another. And so of genera. A botanist may say that Conium, Æthusa, and Rosa have all the appearance of being precisely limited genera; but what of Anthriscus and Fragraria and Lepidium?

Mr. Watson talks thus about species after speaking of orders and genera—

"Have botanical species an existence in nature more real and definite than the groups above named? Perhaps *without exception every technical botanist* will affirm that species have such an existence; that they are realities in nature, as definite and distinct in their way as the man and the chimpanzee, or the tiger and the lion, are believed to be by ordinary observers. But technical botanists—that is to say, describers of genera and species—*are seldom profound reasoners;* and those cultivators of science, who wish to have sound reasons for the faith that is in them, will do better by examining the practices, than by accepting the opinions of the mere describers of species, so many of whom *are unequal to any other object in science.*

"Two questions are involved in an inquiry as to the reality of species. It may first be asked, whether species do actually exist in nature? And secondly comes the inquiry, whether botanists know the species so existing, or supposed to exist? Although essentially distinct in kind, the two queries are practically inseparable. We cannot reply to the first question positively and logically in the affirmative, unless we can also answer the second one to a positively and certainly. The only certainty that species do exist in nature, definite and distinct from each other, must be derived through our knowledge of them as true species. If it should appear, on rigorous investigation, that we do not know such and such assemblages of individuals to be species, according to our abstract definition of the term species; but that we only infer from incomplete data and proofs that they are so; then, it seems quite logically to follow that the existence of species in nature is equally an inference or supposition, and not a certain fact, so far as human knowledge yet reaches.

"This appears to be the actual condition of technical botany. The existence of real species, according to a strict definition of the term, has not been fully and logically proved. But it is assumed and believed to be a truth, because the arguments advanced in support of the previously assumed truth, under present knowledge, appear to be more weighty, and more nearly conclusive, than any which are adduced against the belief. It may be said further, that such arguments appear thus weighty and conclusive, not solely *to the unreasoning minds* of the mere describers of species, but also to the minds of many highly reasoning men (namely, we presume, to Mr. Hewitt Cotterell Watson). Though the latter, be it here observed, *are not usually adepts* in the knowledge of species so-called; and they must thus rely rather too much upon the representations of the species-men, for the data from which their conclusions or convictions are deduced." The italics are our own. And then he goes on to propose a definition which to those who are curious enough to read it will be found as misty as any for which it is substituted.

Well then—he does not know what is a species—nobody knows—and yet out of this no knowledge he produces four octavo volumes, which, as we have already said, tell us nothing positive. Had he arrived at a single solid axiom he might have been forgiven. But he has been working according to his own showing in a fog, which he has left as dense as he found it.

The term "technical" botanists, so often employed in the foregoing extract, is doubtless used in contradistinction to "philosophical." The former, Mr. Hewitt Watson, with that courtesy so peculiar to him, declares to be "seldom profound reasoners," and to be "unequal to any other object in science." Philosophical botanists on the other hand, to which class Mr. Hewitt Watson evidently claims to belong, are profound reasoners, and equal to any object in science. It is painful to undeceive him. But surely the man who asserts that a correct knowledge of species is the foundation of all his "philosophy," and at the same time announces that there is no correct knowledge of species, should have seen that *therefore* there is no philosophy. We should have thought so great a philosopher would have himself set to work to acquire a correct knowledge of species, rather than have abused others for not furnishing him with the object of his desires. The assertion that "every technical botanist without exception" will affirm that botanical species have a real and definite existence in nature, we beg to deny in the most positive manner; unless he confounds botanists with botanophilists. If so we venture to refer him to his Linnæus. What are called botanical species are forms, the importance of which is estimated differently by different observers. Nobody doubts that the Wood Strawberry, the Raspberry, the Apple, the Pear, the Plum, the Gooseberry, the Black Currant, Conium, Æthusa, Groundsel, &c. &c., are natural species as real and imperishable in the vegetable kingdom as man, the sparrow, the squirrel, the horse, the ass, the goose, the lady-bird, the cockchafer, the oyster, are natural and imperishable in the animal kingdom. Upon these indeed all botanists are agreed; but when we come to botanical species, such as Prunus insititia and spinosa, Fragraria elatior and chilensis, Ribes spicatum, Elms, Willows, Brambles, and swarms of Senecios and Solanums, then we find ourselves in debateable land, where instead of unanimity we have *quot homines tot sententiæ.*

Mr. Watson writes as if he expected the world to have been created to suit his own peculiar turn of mind; not as if he had to deal with the world as it is. His eternal complaint is of the vagueness and inexactness of botanical writings, quite forgetting that physical geography is far more vague than genera, species, and orders; and that if his view of the *mutability* of these last is correct, then vagueness is inseparable from the subject with which he has attempted to deal. He talks as if anything short of absolute exactness was worse than useless, bringing contempt on authors and mischief into science; not appearing to perceive that natural history sciences are, as we have just remarked, inexact from their very nature; and that all men can do is to improve classifications by degrees as evidence accumulates.

We are sorry not to be able to appreciate the merits of this Cybele Britannica. And before we dismiss it we must draw attention to the extraordinary language which its author employs when speaking of others. Poor Forbes he calls blundering and false, a plagiarist, a man of reckless hardihood of assertion. Gentlemen who hold botanical chairs are accused of filling them for the mere sake of putting money into their pockets, botany being "useless to medical practitioners;" an assertion which shows that Mr. Watson really knows very little about the subject on which he has undertaken to write. It is announced that very few English botanists (?) seek more than a petty amateur knowledge of species. We are informed that the prevailing peculiarity of the botanical mind is

not always reasoning with strict accuracy and soundness; M. Alphonse De Candolle cannot reason on "causation and dependence;" and so on. If Mr. Hewett Watson can condescend to take advice he will employ another tone hereafter.

TRADE LISTS RECEIVED.—John Cattell's (Westerham, Kent) *Catalogue, No. 8, descriptive of the Collection of Select Roses;* Part I., *Roses that flower in June and July;* Part II., *Roses that flower from June till November:* 20 full pages of names, descriptions, and very useful directions for cultivation.—Stewart & Son's (Dundee) *Catalogue of Roses, Seedling and Transplanted Forest and ornamental Trees Shrubs, Fruit Trees, &c.* Although not like our metropolitan and southern lists this includes as much as is likely to be asked for in a country nursery. It is particularly well off for shrubs, but we cannot approve of the orthography.—John Carter's (Keighley) *Catalogue of Forest and Fruit Trees, American and other Shrubs.* The remark on the last list applies equally to this.—George Chivas's (Chester) *Priced List of Trees and Plants.* This is more ample than the two last Catalogues; and in addition Mr. Chivas makes the important announcement that he keeps on view a large collection of agricultural implements. The pages are neatly printed; but the spelling is the worst we have yet seen.

Garden Memoranda.

COED COCH GARDENS, DENBIGHSHIRE. — These charming gardens, the property of J. Wynne, Esq., are situated at the mouth of a little valley which carries a portion of the water from the high grounds which border the Conway, and ultimately pours it after passing under the magnificent rocks of Bryndulas into the sea, beneath the viaduct which is so conspicuous an object between Abergele and Colwyn. The valley itself about two miles above the gardens, though on a small scale, is remarkable for its rich covering of wood and precipitous banks, and contains in its recesses a very pretty waterwall. Its ancient name of Dawn is expressive of its native beauty. The mountain stream Dulas, a name synonymous with Douglas or dark grey, runs completely through the gardens with a moderately rapid fall, leaving a sloping bank of charming turf on either side laid out after the modern fashion, but with great taste, in beds, intermixed with beautiful specimens of Conifers and other hardy trees and shrubs; and on either side rises a steep-wooded bank continued from the higher defiles of the valley, along which the most delightful walks are conducted profusely ornamented with Rhododendrons and an admirable collection of rare and beautiful flowering shrubs.

The Rhododendrons indeed are one of the most striking charms of the place. Not only do they flourish in the utmost luxuriance amongst the Wenlock Shales of the district, but they spring up everywhere from seed, and the choicest sorts give no more trouble in the nursery beds than so many Whitethorns. This is the more remarkable, as in the carboniferous limestone of Gwrwch Castle, at a distance only of five miles, separated from the Shales by a very narrow strip of old red sandstone, they will scarcely grow, though great pains are bestowed upon the extensive plantations with which that noble mansion is ornamented.

Amongst other objects of interest are the Conifers, which, though of recent introduction, are making great progress. A fine Wellingtonia, a magnificent Cupressus torulosa, and one of the most thriving Pinsapos we ever saw are amongst the most observable. The plan is adopted here of planting the Conifers amongst the brushwood and gradually clearing it away as it ceases to perform the office of a nurse or more air is wanted. The woods happily are not troubled much with rabbits, and though they swarm with hares, the young Pines do not seem to suffer in consequence.

We should not omit to notice the extensive collection of spring-flowering plants, which, in addition to the Rhododendrons, make these gardens as attractive in the early months as most are in autumn.

The adjoining park, though not equalling in size many of our English parks, is very beautiful, commanding a fine view of the two Moelfres, and in one point of the range running from Conway to Lake Ogwen, and is remarkable for the magnificent specimens of Quercus sessiliflora, the ramification of which is so different from that of the more common English Oak that the general effect is totally different. We observed a very few specimens of Quercus pedunculata, intermixed; but the sessile fruit is not a constant character of the other species, so that unless attention be paid to the ramification, mistakes may easily be made. The timber of the Welsh Oak is certainly less valuable than that of Q. pedunculata, but the growth is so much more rapid that the return is probably far greater. In a specimen before us the growth in five years has been $\frac{15}{16}$ths of an inch in radius, or $2\frac{1}{2}$ inches in diameter, while in an unusually vigorous piece of English Oak the growth has been under 2 inches. In ordinary cases it would be far less rapid. The Spanish Chesnut thrives here wonderfully. A block which we have secured as a specimen shows an increase of $3\frac{1}{2}$ inches in diameter during the same period.

The gardens are under the care of Mr. Clarke, to whom they do great credit; but the skill with which they have been laid out, the judicious combination of art and nature, and the admirable general effect produced by the details are in great part ascribable to the lady of the house, who combines considerable scientific knowledge *with* the most excellent taste. *M. J. B.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

CONSERVATORY, &c.—Some of the very earliest Chrysanthemums may probably be getting past their best, and these should be replaced at once by something of a more showy character. While the principal collection is in bloom a selection should be made of the best and most useful sorts, for there are many worthless varieties in cultivation, and it is better to grow duplicates of the really good kinds than to retain such as are but indifferent, merely for the sake of having a long list of names. Give timely attention to providing a succession of bloom with which to keep this house gay, and avoid as far as possible the expense of hard forcing, which is moreover so very injurious to most plants. Be careful not to let things in bloom suffer for the want of water, giving weak clear manure water to Chrysanthemums, Salvias, Camellias, &c., and use every means to preserve the beauty of specimens in bloom as long as possible. GREENHOUSE.—Damp and mildew are the great enemies to be guarded against here, and these must be sharply looked after, especially in the case of plants that have not well ripened their growth, and are in a rather soft state. If the former is troublesome it must be got rid of by means of free ventilation on mild days, using a little fire-heat at the same time, and for the latter a dry airy atmosphere is the best preventive, but the plants should be frequently examined, applying sulphur on the first appearance of the enemy. Very little water will be required here at present, but the plants should be carefully looked over about twice a week, so as to make sure that nothing is allowed to feel the want of it. If not already done, get the plants tied with the least possible delay, for it is very difficult to tie a plant so that it will not look somewhat stiff and unnatural, and the sooner all this kind of work is done the better the specimens will look when in bloom.

FORCING DEPARTMENT.

PINERIES.—Plants in bloom will require very careful management to prevent their being injured by damp, and the atmosphere must be kept dry, with a rather brisk temperature, admitting a little fresh air on every favourable opportunity; and if there is the means of admitting air over the pipes, so that it may get warmed before coming in contact with the plants, a little should be admitted constantly. Plants in bloom should also be near the glass, and where they will catch every ray of sunshine. It is nearly impossible to get fruit to swell anything like properly at this season, therefore unless a succession of ripe fruit is indispensable, and cannot be secured save by driving plants that bloomed late in autumn these had better be kept rather quiet until the sun gains a little more power. Where an attempt must be made at present to get fruit to swell, a moist warm temperature of about 70° at night and 75° by day must be maintained, allowing it to rise to 80° with the assistance of sunshine, and the bottom-heat must be kept regular at about 85°, taking care to keep the soil in a healthy state as to moisture. But it is difficult to get the fruit to make much progress at present, and a little time lost now will be easily overtaken in spring when the plants will enjoy a high moist temperature, and the fruit will increase more in weight in one month then than in two at present. VINERIES.—As soon as the early house is closed for forcing, be careful to secure a thoroughly moist state of the atmosphere by frequently sprinkling the floors and every available surface, but as observed previously, a regular moist state of the atmosphere is most effectually secured by means of a slight bed of fermenting materials in the house, which will also afford a little warmth, and the moisture from this is much more congenial to vegetation than anything that can be effected by the most careful use of the syringe or evaporating pans.

FLOWER GARDEN AND SHRUBBERIES.

The weather is still comparatively favourable for executing alterations; and where these are in hand they should be prosecuted with the greatest possible despatch, taking advantage of frosty mornings, &c., for wheeling Planting, or the removal of large trees or shrubs, cannot be finished too soon; for it is of the utmost importance that the plants should be afforded some chance of making fresh roots before the trying winds of March. See to even small plants being secured against the wind; for these are often greatly injured by being blown about after planting, which a small stake and a few minutes' work would prevent. Get in a stock of Briars for budding upon next season. Let the roots be well trimmed, cutting back closely the strong ones; for these, if left, will be of little use except to furnish an endless supply of suckers.

HARDY FRUIT AND KITCHEN GARDEN.

If any transplanting or root pruning of fruit trees has yet to be done let this be attended to without further loss of time, and see that those exposed to the wind are securely staked before leaving them. Also get the ground prepared for fresh plantations, and the trees planted as soon as possible. Take every opportunity of pushing forward pruning and nailing. Give air freely to Lettuce and Cauliflower plants under glass; indeed the sashes should merely be used to exclude frost, and throw off rains, for they will do all the better in spring for being kept hard and stocky over the winter. If not already done make a sowing of Peas and Beans on well sheltered dry ground, and do not spare the seed of the former, for it will be some time exposed to the depredations of mice, &c. In favourable localities a second sowing may be made if the first sowing is through the ground. Take advantage of the first dry day that may occur with the ground in a rather dry state to earth up closely any of the Celery that may have outgrown the previous soiling, and be prepared to protect the ridges in case of severe frost. Dry stable litter answers very well for this purpose, but where they can be afforded, light straw or Reed shutters are preferable as being more easily applied, causing less litter, and these are also useful in excluding wet. It will soon be time to be providing seed for the early crop of Celery next season, and for this purpose we know no variety equal to Cole's dwarf white. This is, as its name indicates, a dwarf variety, and cannot be grown to a large size, but where quality is preferred to size it will give satisfaction, for it is very crisp, soon blanches, and the flavour is everything that could be wished. Attend to keeping up a regular succession of Seakale, Asparagus, and Rhubarb, by introducing moderate quantities at short intervals into heat.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.
For the Week ending Nov. 10, 1859, as observed at the Horticultural Gardens.

Nov.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature Of the Air. Max.	Min.	Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep.	Wind.	Rain.
Friday 4	9	29.297	29.000	56	38	47.0	50	50½	S.	.23
Satur. 5	10	29.406	29.262	58	49	53.5	49	50	S.W.	.62
Sunday 6	11	29.480	29.318	57	40	48.5	52	50½	S.W.	.03
Mon. 7	12	29.669	29.568	60	39	49.5	52	50½	W.	.00
Tues. 8	13	29.830	29.665	53	31	42.0	52	51	S.W.	.00
Wed. 9	14	30.452	30.202	45	21	33 5	51	50½	N.	.00
Thurs. 10	○	30.631	30.595	45	26	35.5	50	50	N.	.00
Average		29.813	29.658	53.6	34.8	44.2	50.8	50.4		.88

Nov. 4—Rain; overcast; cloudy.
— 5—Clear and fine in forenoon; boisterous with heavy rain.
— 6—Cloudy; showery; very boisterous; thunder and lightning in afternoon and at night.
— 7—Boisterous; very fine throughout.
— 8—Clear; fine; clear at night.
— 9—Slight frost; very clear and fine; frosty.
— 10—Sharp frost; fine; foggy; overcast; frosty and foggy.
Mean temperature of the week, ½ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 33 years, for the ensuing Week, ending Nov. 19, 1859.

November.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 13..	50.3	36.2	43.3	18	0.66 in.	—	4	3	4	5	9	3	5
Mon. 14..	48.5	34.3	41.4	17	1.24	6	5	3	5	2	5	3	4
Tues. 15..	48.5	38.2	41.9	16	0.34	2	5	4	2	5	9	5	1
Wed. 16..	48.6	33.1	40.8	12	0.41	6	3	3	3	3	7	4	2
Thurs. 17..	48.0	34.8	41.4	16	0.40	6	6	3	1	6	7	2	2
Friday 18..	48.3	34.0	41.1	19	0.56	3	6	3	2	3	10	3	3
Satur. 19..	48 5	34.7	41.6	16	0.33	1	4	4	4	3	10	3	4

The highest temperature during the above period occurred on the 16th, 1840—therm. 62 deg.; and the lowest on the 16th, 1841—therm 15 deg.

Notices to Correspondents.

BEE HIVES: *C W S* will feel obliged by some of our correspondents giving him the address of the maker of the "Stewarton Bee Boxes" in Scotland.

BOOKS: *J D.* To understand law books a man must be a lawyer. There is, however, the "Cabinet Lawyer" which you may consult. Take our word for it Sweet Peas will not turn to Vetches until peacocks turn to geese.—*Busy Bee.* Herbert's Amaryllidaceæ was published by Ridgway; we do not know the price. It contains a good deal about hybrids and hybridisation.—*W M R.* The best book for an amateur to procure for management of a small conservatory, containing instruction for judicious selection of plants and for their management, is Sweet's Hothouse and Greenhouse Cultivator—not however what it ought to be.

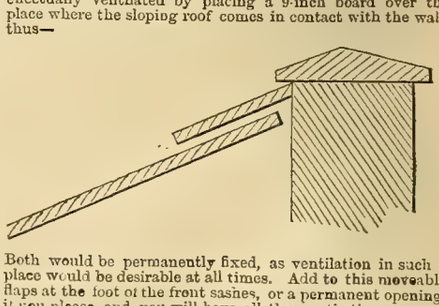
GARDENER FOR GEORGIA, U. S. The applicants for this place are informed that a gardener has been selected.

INSECTS: *Anon.* The Pear branch contained a living caterpillar of the Wood Leopard Moth (Zenzera Æsculi) which had burrowed nearly through its entire length. *W.*

NAMES OF PLANTS: We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have or could have undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*J U.* It is seldom possible to name Conifers from fragments, unaccompanied by Cones. We therefore have no answer for Nos. 1 and 2. As to No. 3, it is Cupressus Goveniana, and the "white lumps or excrescences" are male flowers unexpanded. No. 2 *may* be Cupressus Lambertiana, a tall upright massive dark green tree. We do not know what book you mean. The best on Conifers is Gordon's Pinetum, published by Bohn.—*Edmund Conolly.* As we have stated over and over again, no one can name bits of cultivated plants not in flower.—We regret to be obliged to return the same answer to *An Underling.*

OAK LEAVES: *W.* They are covered with what are called Oak spangles, the history of which has been fully given in former volumes.

VENTILATION: *S.* We conceive your glazed wall might be very effectually ventilated by placing a 9-inch board over the place where the sloping roof comes in contact with the wall, thus—



Both would be permanently fixed, as ventilation in such a place would be desirable at all times. Add to this moveable flaps at the foot of the front sashes, or a permanent opening, if you please, and you will have all the ventilation you can need or desire.

*** As usual, many communications have been received too late, and others are detained till the necessary inquiries can be made. We must also beg the indulgence of those correspondents the insertion of whose contributions is still delayed.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London, S. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

MR. J. B. LAWES manufactures the following MANURES:—

TURNIP MANURE	£6 6
SUPERPHOSPHATE OF LIME . ..	6 6
MINERAL SUPERPHOSPHATE OF LIME	5 5
BARLEY MANURE	8 0

N.B. Genuine PERUVIAN GUANO direct from Messrs Gibbs, NITRATE OF SODA, SULPHATE OF AMMONIA, and other Chemical Manures.

WHEAT MANURE.—PERUVIAN GUANO is proved to be the best and cheapest Artificial Manure for Wheat, at Autumn sowing.

American decorticated Cotton-seed Cake of best quality supplied at the market price.

Offices: 1, Adelaide Place, London Bridge, E.C.

LONDON MANURE COMPANY
(ESTABLISHED 1840),
Have the following MANURES ready for delivery:—
CORN MANURE FOR AUTUMN SOWING.
BLOOD MANURE FOR AUTUMN SOWING.
URATE.
SUPERPHOSPHATE OF LIME.
SUPERPHOSPHATE MINERAL.

The London Manure Company also supply PERUVIAN GUANO (direct from Messrs. Gibbs & Sons), SULPHATE OF AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of known value, all of which they warrant strictly genuine. Wholesale dealers supplied.

116, Fenchurch Street, E.C. EDW. PURSER, Secretary.

BURNARD, LACK, AND CO.'S CONCENTRATED SUPERPHOSPHATE OF LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.

CONCENTRATED TURNIP MANURE, equal in value to the preceding.

Of these Manures Dr. Voelcker says:—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."

Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to BURNARD, LACK, & Co., Sutton Road, Plymouth.

PERUVIAN GUANO.—The present price of this valuable Manure is 12*l.* per ton for 30 tons and upwards; 13*l.* 5*s.* per ton for 1 ton up to 30 tons.

And, in order to protect themselves against the purchase of adulterated mixtures and of inferior Guanos purporting to produce results equal to Peruvian, consumers are recommended to apply either to ourselves, to our Agents Messrs. GIBBS, BRIGHT, & Co., of Liverpool and Bristol; or to Dealers of established character, in whose honesty and fair dealing they can place implicit confidence. ANTY. GIBBS & SONS.

15, Bishopsgate Street Within, London, E.C.

THE PATENT NITRO-PHOSPHATE OR BLOOD MANURE COMPANY (LIMITED).

Trustees:—
ABEL SMITH, Jun., Esq., Walton House, Ware, Herts.
CHARLES DIMSDALE, Esq., Essendon Place, Herts.
EDWARD BALL, Esq., M.P., 8, Belgrave Road, Pimlico, S.W.
GENERAL HALL, Weston Colville, Linton, Cambridge.
JOHN BRADY, Esq., M.P., Warwick Terrace, Belgrave Square, W.

Directors:—
Chairman—JONAS WEBB, Esq., Babraham, Cambridgeshire.

Deputy-Chairman:—
JOHN COLLINS, Esq., Myddleton Square, Pentonville, E.C.
EDWARD BELL, Esq., Tottenham, Middlesex, N.
JOHN CLAYDEN, Esq., Littlebury, Essex.
RICHARD HUNT, Esq., Stanstead Abbot, Herts.
THOMAS KNIGHT, Esq., Edmonton, Middlesex, N.
ROBERT LEEDS, Esq., West Lexham, Norfolk.
ROBERT MORGAN, Esq., 72, Camden Villas, Camden Town, N.W.
GEORGE SAVILL, Esq., Ingthorpe, near Stamford.
WILLIAM COLLINS, Esq., 105, St. John Street Road, E.C.
Bankers—Messrs. BARNETT, HOARE & Co., Lombard Street, E.C.
Solicitors:—
Messrs. KINGSFORD & DORMAN, 23, Essex Street, Strand, W.C.
Auditor—J. CARTER JONAS, Esq., Cambridge.
Manager—Mr. JAMES ODAMS. | *Secretary*—Mr. C. T. MACADAM.

Offices: 109, Fenchurch Street, London, E.C.; Manufactory, laistow Marshes, Essex, E.

ODAMS'S BLOOD MANURE FOR WHEAT,
Price 7*l.* 10*s.* per Ton, delivered Free to any WHARF or RAILWAY in London.

TO FARMERS, CORN FACTORS, MERCHANTS, &c.—WANTED, AGENTS, by the PATENT WOOL MANURE COMPANY, in districts not yet represented, for the Sale of their Patent Wool Manure, Superphosphate of Lime, Bones, Sulphate of Ammonia, and other Chemicals and Manures required by Agriculturists. Application to be made to the Proprietors, who are the sole Manufacturers, Messrs. C. H. TIDBURY & Co., 81, Gracechurch Street, E.C.; or Lavender Dock Wharf, Rotherhithe, S.E., London.

"FRIGI DOMO."—Patronised by her Majesty, the Queen, the Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, and —Collier, Esq., of Dartford.

PROTECTION FROM THE MORNING AND EVENING FROST.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from windy from attacks of insects, and from morning frosts. To be had in any required lengths. Two yards wide, 1*s.* 6*d.* per yard run; four, 3*s.* per yard. Also, an improved make for Shading Purposes Three yards wide, 2*s.* 6*d.* per yard run.

ELISHA THOMAS ARCHER, whole and sole manufacturer, 7, Trinity Lane, Cannon St., City, E.C., and of all Nurserymen and Seedsmen throughout the kingdom. "It is much cheaper han mats as a covering."

FOWLER'S PATENT STEAM PLOUGH has gained the following prizes:—
The Royal Agricultural Society's Prize, at Warwick, July 1859, 50*l.*
The Royal Agricultural Society's Prize, at Chester, July 1858, 50*l.*
The Highland Society's Special Prize at Stirling, Oct. 1857, 200*l.*
And at other Agricultural Meetings in the United Kingdom, Prizes amounting to 175*l.*

For further particulars, prices, and Catalogues apply to JOHN FOWLER, JUN., 28, Cornhill, London, E.C.

IMMEDIATE ORDERS WILL PREVENT DISAPPOINTMENT
"SIGMA'S" UNIVERSAL SEED PLANTERS (Dibbles), vastly improved since the Prize of the Royal Agricultural Society was awarded them. The "MULTUM IN PARVO," forming eight perfect implements, highly commended, see testimonials. The Manure Distributor carried off the Prize Medal in 1851, recently much improved, see *Gardeners' Chronicle*, July 30 and August 6th "Simple, promising, and ingenious." The STEEL DRAW SHAVE HOE clears a row between Turnips at one sweep. Engravings sent.—C. POWELL, Hurstgreen, Sussex. All Patented

AGRICULTURAL IMPLEMENTS.

BURGESS AND KEY, 95, Newgate Street, London, E.C., have always on hand Ploughs, Harrows, Carts, Waggons, Turnip Cutters and Pulpers, Cake Breakers; and their Improved Chaff Cutters, 50*s.* Galvanised Game Netting, 4*d.* per Yard Price Lists sent free.—Illustrated Catalogues on receipt of six postage stamps.

PARKES' STEEL DIGGING FORKS.

BURGESS AND KEY, 95, Newgate St., E.C., London, being the Wholesale and Retail Agents for these celebrated TOOLS have always a large Stock on hand from which their Customers may select what they may require.

ANTHONY'S PATENT AMERICAN CHURN.—The FIRST PRIZE was again awarded to this Churn in Competition with several others at the Chester Meeting of the Royal Agricultural Society; it has obtained the First Prize given by the Society at every Meeting since 1850. Messrs. BURGESS & KEY, 95, Newgate Street, E.C., strongly recommend it as the most perfect Churn now in use. Full particulars sent on application.

HENRY J. MORTON AND CO.,
2, Basinghall Buildings, Leeds.
GALVANISED IRON WATER CISTERNS
for Cottage Houses, &c., to contain 50 gallons, 25*s.*; 80 gallons, 30*s.* each; and 140 gallons, 36*s.*, and fitted with tap, keeping the water perfectly sweet and clean; will not rust or corrode. Cisterns of all sizes.
GALVANISED IRON PUMPS
for Liquid Manure or Domestic Use, 3 inches diameter, 30*s.* and 32*s.* 6*d.* each; Tail Pipe for same at from 10*d.* per foot.
GALVANISED IRON SWING WATER BARROWS
for Garden or Farm use, containing about 20 gallons, entirely formed of iron, 32*s.* 6*d.* each.

HILL AND SMITH'S Patent Continuous IRON FENCE is adapted for every variety of situation, and is much superior to, and cheaper than, Iron Hurdles of equal strength.

Many miles of this Fence have been erected on the London and North-Western Railway between Camden Town and Bletchley. The Patent principle is applied to Iron Hurdles, whereby their strength is much increased and the cost reduced.

Illustrated Priced Catalogues will be sent on application to HILL & SMITH, Brierly Hill Iron Works, near Dudley; or 40, Broad Street Buildings, City, London, E.C.; or 23, Enoch Square, Glasgow, where specimens may be seen; or to Mr. B. SAMUELSON, 76, Cannon Street West, London, E.C.

LAND IMPROVEMENTS.—The GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY are empowered by Act of Parliament to assist the Owners of Land in carrying into effect the following Improvements, and charging the whole outlay and expenses on the property improved.

I. All Works of Drainage, Irrigation, Warping, and Embankment.

II. The erection of Farmhouses, Cottages for Agricultural Labourers, and all kinds of Farm Buildings.

III. The construction of Roads.

IV. The Grubbing and Clearing of Old Woodlands, Enclosing, Fencing, and Reclaiming Land.

The Landowners by whom any of these Improvements may be executed are—Tenants for Life, Trustees, Mortgagees in Possession, Guardians, Committees of Incompetent persons, Married Women, Beneficial Lessees for Lives or for a Term exceeding 14 years, Corporations, Ecclesiastical or Municipal, Incumbents, Sequestrators, Charitable Trustees, &c.

The Owners of Estates not entailed, who may be desirous to avoid the expense or inconvenience of a Legal Mortgage, may also avail themselves of the powers of the Company's Act to charge their estates with an outlay in improvements.

In all cases the whole cost of the improvements, with the attendant expenses, may be charged on the Estate, the term for Building Works being limited to 31 years, but for all other improvements being capable of extension to 50 years.

No investigation of title being required, and the charge not being affected by Incumbrances, no legal expenses are incurred.

Operations under the Company's Act are divided into two principal branches; one where the Landowner designs and executes the improvements by his own Agent and merely requires a loan from the Company to charge the Estate,—the other where the Company undertake the entire responsibility of the Improvement and obtain repayment by way of Rent Charge. In the first case the plans, specifications, and estimates prepared by the Landowner's Agent are forwarded to the Company to be submitted for approval to the Inclosure Commissioners. As soon as the sanction has been given the Landowner proceeds to execute the works, and the Company having conducted the business through all the official forms, complete the charge on the estate when the works have been passed by the Commissioners, and repay the Landowner the amount agreed upon.

In no part of the business is there any control upon a Landowner except by the Inclosure Commissioners. The Company never interfere, except at the special request of the Landowner or his Agent, and only to such extent as may further the objects he has in view.

In the other case, where the Company are required to execute the works, a report and estimate of the Improvement are sent to the Landowner, and having been approved, the plans are then prepared and the works—either submitted to public competition or entrusted to their own staff—are carried on to completion, and the amount of the actual expenditure only, approved by the Inclosure Commissioners with the Company's agreed commission and the Commissioners' expenses, finally charged on the Estate for the term fixed by the Landowner.

The Company also execute Drainage and all other Works of Land Improvement on Commission for the Owners of Estates not Entailed who may wish to charge the outlay on the property through the simple and inexpensive process of the Company's Act.

Applications to be addressed to WILLIAM CLIFFORD, the Secretary, at the Offices of the Company, 52, Parliament Street, London.

WEST OF ENGLAND AND SOUTH WALES LAND DRAINAGE AND INCLOSURE COMPANY.
Established in 1844.
INCORPORATED BY ACT OF PARLIAMENT IN 1848.

Draining, Inclosing, Irrigating, Warping, Road Making, and all kind of Land Improvements, executed on Entailed, Mortgaged, or other Properties, and the whole cost can be made a Permanent Charge on the Lands, or redeemable in a certain number of years. BIDWELL & BIDDLE, Secretaries.

Offices: Exeter: and 30, Parliament Street, London, S.W.

THE LANDS IMPROVEMENT COMPANY.—Incorporated by Special Act of Parliament in 1853.—2, Old Palace Yard, Westminster, S.W. To Landowners, the Clergy, Estate Agents, Surveyors, &c, in England and Wales and in Scotland.

The Directors beg leave to announce that the Company's Amendment Bill, 1859, has received the sanction of the Legislature. The Company now advance money, unlimited in amount, for the following works of Agricultural Improvement, the whole outlay and expenses in all cases being liquidated by a rent charge for 25 years.

1. Drainage, Irrigation and Warping, Embanking, Inclosing, Clearing, Reclamation, Planting for any beneficial purpose, Engines or Machinery for Drainage or Irrigation.
2. Farm Roads, Tramways and Railroads for agricultural or farming purposes.
3. Jetties or Landing places on the sea coast or on the banks of navigable rivers or lakes.
4. The erection of Farm Houses, Labourers' Cottages, and other Buildings required for Farm purposes, and the improvement of and additions to Farm houses and other buildings for farm purposes.

Landowners assessed under the provisions of any Act of Parliament, Royal Charter, or Commission, in respect of any public or general works of drainage or other improvements, may borrow their proportionate share of the cost, and charge the same with the expenses on the lands improved.

No investigation of title is required, and the Company being of a strictly financial character do not interfere with the plans and execution of the Works, which are controlled only by the Government Enclosure Commissioners.

For further information, and for forms of application, apply to the Honourable WILLIAM NAPIER, Managing Director, 2, Old Palace Yard, Westminster, S.W.

THE AGRICULTURAL ENGINEERS' COMPANY (LIMITED).

Directors.
ANDREWES, CHAS. J., Esq., of the firm of Messrs. Barrett, Exall, & Andrewes, Agricultural Engineers, Reading.
BENTALL, E. H., Esq., Agricultural Engineer, Heybridge, near Maldon, Essex.
FOWLER, JOHN, Esq., Patentee of the Steam Plough, 28, Cornhill, London, E.C.
TURNER, E. R., Esq., of the firm of Messrs. E. R. & F. Turner, Agricultural Engineers, Ipswich.
WARNER, CHAS. B., Esq., of the firm of Messrs. John Warner & Sons, Bell and Brass Founders to her Majesty, and Hydraulic Engineers, 8, Crescent, Jewin Street, London, E.C.
Bankers—The Bank of England.
CENTRAL DEPOT AND SHOW ROOMS—
Swan Lane, Upper Thames Street, London, E.C.

This Company has been for the purpose of supplying the public direct, with Agricultural Implements and Machinery of the most approved construction, at Manufacturers' fixed prices.

With an ample Capital and the best and most extensive premises in London at its disposal, the Company can offer to Shippers, Colonists, Agriculturists, Foreign Buyers, Amateur Farmers, Gardeners, &c., the following *exclusive* advantages:—

The opportunity of purchasing from the largest and best selected Stock in England.

The certainty of being supplied with none but the best made and most efficient Implements of their class.

Promptitude, regularity, and care in the execution of all orders intrusted to it.

Reliable information and advice as to the requirements of particular districts and foreign markets.

Particular attention is called to the fact that the direction is composed exclusively of well-known Makers, whose practical knowledge and standing will afford an invaluable guarantee to purchasers of the material, workmanship, and adaptability to its use of every article sold.

Shippers, Colonists, and Foreign Buyers will be relieved of all anxiety and trouble by intrusting the execution of their orders to the Company.

The Stock will be found to comprise the manufactures of the leading makers. Illustrated Catalogues with prices, in English, French, German, and other languages will shortly be ready for distribution. Meanwhile Price Lists and every information may be obtained post free upon application at the offices of the Company.

Orders addressed to the Agricultural Engineers' Company (Limited), Swan Lane, Upper Thames Street, London, E.C., will have prompt attention.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, London, S.
Principal—J. C. NESBIT, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

BIRMINGHAM CATTLE AND POULTRY SHOW.—The ELEVENTH GREAT ANNUAL EXHIBITION OF CATTLE, SHEEP, PIGS, ROOTS, DOMESTIC POULTRY, AND PIGEONS will be held in Bingley Hall on MONDAY, TUESDAY, WEDNESDAY, and THURSDAY, November 28, 29 and 30, and December 1.—Admission on Monday, the PRIVATE VIEW, 5*s.*; on Tuesday, Wednesday, & Thursday, 1*s.*

The Agricultural Gazette.

SATURDAY, NOVEMBER 12, 1859.

——THE London Farmers' Club discussed last Monday at their first meeting for the season the difficult subject of a substitute for Clover as a remedy for its diseases. A short account of the opening paper by Mr. MARSHALL will be found in another page. The well-known fact that land "tires" of Clover if sown too frequently upon it was abundantly verified in the experience of the speakers. But beyond the well-known expedient of taking a crop of Beans in place of Clover every

alternate or third course of the four-field system, bringing the repetition of the Clover in the one case down to once in every eight years, and in the others, the Cowgrass and the smaller Clovers being sown alternately, to once in every 12 respectively, nothing was elicited by way of remedy. Mr. MARSHALL objected to the use of Italian Rye-grass on the ground of its spoiling the land for a subsequent Wheat crop.

The fact we believe to be that it, like every other crop, needs a climate and a treatment proper to it-elf. In the moister western climate of this island Italian Rye-grass yields an abundance of succulent herbage, though in a dry summer in Lincolnshire its growth may be of less use as food. As regards the breaking of it up for Wheat too, it is very probable that those differences which do exist in the experience of its cultivators under this head—for there are some with whom it answers, although with the great majority it proves injurious—may arise from the land in the one case being repeatedly ploughed and cultivated so as thoroughly to break up and disintegrate the soil; and in the other from its being subjected to the single ploughing and harrowing which is all that our Clover leas generally receive before Wheat sowing.

On the general subject of Clover sickness, Mr. NESBIT expressed his regret that its cause was not better understood, and that the attention of scientific and practical men had not been systematically and effectively turned to it. Where soils are not favourable to the growth of Clover even every eighth year, he suggested the propriety of having an intermediate root crop, or Beans, or other Pulse crop as a preparation for the Wheat, so as to bring the land in Clover only once in 12 years. He also stated that as the roots of the Red Clover increased with the growth of the plant, it was desirable to let the Clover crop grow to its full maturity, and not break it up too soon, their roots being of so much the more advantage as a manuring to the ensuing Wheat crop.

Mr. OWEN gave a decided preference to Red Clover over all other expedients as a preparation for the succeeding Wheat crop. His light soils, however, had not been capable of growing Clover alone at short intervals, and he had therefore been induced to try Italian Rye-grass with the Clover. This, however, he denounced as a failure, as it proved unfavourable to the subsequent crop of Wheat. His usual plan had been to sow 12 lbs. of Red Clover, with 4 lbs. of Trefoil, and a peck of common Rye-grass, planting the land with this addition and that of White Clover in alternate cases.

Mr. COUSSMAKER referred to the occurrence of Dodder in his Clover, which he found very injurious to the second cut of Red Clover, destroying it in patches, and the same thing was referred to by subsequent speakers.

The whole subject of Clover and Flax Dodders was elaborately treated some weeks ago in these columns. It is sufficient now to say that the mischief done by these parasites is an accident, so to speak, perfectly capable of avoidance, and a subject of an entirely different order from that far more serious difficulty, which is every year pressing more urgently for a solution, which is ordinarily termed the "Clover sickness" of our lighter soils.

——MR. MECHI again calls attention to the loss of fertilising matter which this island sustains by our neglect of what may be called the manure heaps of its towns. It would seem as if no other way presented itself to enthusiastic minds of sufficiently exciting attention to any subject than that of depicting it in colours gloomier or brighter—as the case may be—than actually belong to it. There can be no doubt of the main position than an enormous waste of fertilising matter annually takes place from the Thames and the other sewers of our other towns, but as little can there be that notwithstanding this enormous waste our island is increasing annually in fertility. It is indeed a startling consideration that notwithstanding, as we know, the processes of vegetable growth depend essentially on the existence of soluble matters and their availability as food for plants, and notwithstanding, as we know, that in the soil these soluble fertilising matters are spread out in a layer some 6 inches thick over the surface of the country, which is there washed year after year by five or six times its bulk of rain water, yet year by year there seems to be more and more of this fertilising matter present and available for each year's vegetable growth. The explanation does of course for the most part hinge upon the fact that this rain water which one would expect to wash away to waste that on which fertility depends does really bring to the soil even more than it removes — more at least of that on which the plant-growing powers of our soils essentially depend. That there are other circumstances helping to explain the anomaly is of course well understood, and that one of them is an enormous importation of guanoes, nitrates, and phosphates, to meet the loss of similar substances from our towns, is of course admitted. It may seem, and really is, a great absurdity that we should carry carefully to waste our home-made guano — and expend millions annually in procuring guano from abroad—but so long as we can afford to do it, the question nationally is whether or not the life saved by the effectual accomplishment of this process is worth its cost. Towns must get rid of the putrifying filth which will naturally accumulate if not removed; and agriculturists each for himself must look about for the cheapest means of increasing the fertility of their land. The upshot of these necessities at present is that town drainage schemes are prospering and guano importation is increasing. We have no fear of the fertility of Great Britain, notwithstanding the waste of the manure heaps of her towns; and to prophesy the ruin of the empire as its consequence is not the only way of drawing attention to the undoubted loss we thus sustain.

——"The cental is, we regret to say, no longer in use in the Liverpool market for any description of grain except Wheat." That is to say, the difficulties and annoyances of a change have proved insuperable: and its advantages have failed to conciliate its opponents. The *Liverpool Albion* in announcing this fact declares the struggle to establish this new unit of weight to have been a gallant one, animated only by the desire to make a practical beginning in that reform of our grain measures which has so long been deemed desirable, alike in Parliament, in the trade, and by the public. And it has ceased, for the present, in the face of an opposition of which the best we can say is that it proceeds from motives more powerful because more personal, and of a lower order.

"The trade deliberately resolved on trying it, and after the trial had fairly begun, nearly all the leading houses signed a declaration in its favour. A large number of the buyers, however, did not share either the convictions or the common sense of this majority; the market became openly divided; and the more consistent advocates of the change found themselves sacrificing, not only time, trouble, and expense in the common cause, but even a portion of their business itself. This could not last long. Accordingly, at a recent general meeting of the Corn Association, two resolutions were proposed, by way of bringing the matter to a final issue. The first proposed simply to rescind the resolution establishing the cental (on the 1st of February last) as the common weight of the market. This was passed by a large majority. It relieved many of the members of the discomfort attending a wilful breach of their own rule. The second came from the original opponents of the cental. It went a step further, and proposed a return to the old system. But this was at once negatived by a large majority. So that the net result, in accordance with the apparent desire of the meeting, was simply to release the members from any pledge to use the cental, and to leave all free to act as they might deem fit. Hence, as we have said, the use of the new method is now very generally abandoned, except for Wheat. This, however, is the most important article by far, and its use for this only, if continued, cannot fail in the end to bring about a general change."

—— Messrs. BURGESS & KEY have published reports of their reaper by 11 gentlemen farming in Yorkshire and Cambridgeshire, who have cut on the whole more than 2000 acres of corn at an expense for repairs on the whole of 23*s*., and with an average performance of from 14 to 20 acres cut per 12 hours of work. The crops are described as being "heavy," "good," "fair," "average," "very good," and occasionally "very heavy," "much laid;" nevertheless the reaper worked "remarkably well," is "capable of cutting all wold crops," is "an excellent implement," and furnishes "the best and cheapest way of cutting corn."

PREVENTIBLE DISEASE.

[The following is a portion of the address on this subject by the Hon. W. Cowper, M.P., at Bradford.]

MAN'S life is a struggle, and the very existence of his body is the result of an unceasing contest between destructive and repairing influences. At every breath he exhales, at every action of muscles and of nerves, a portion of his substance wastes away and is cast off, and at every breath that is drawn in and every mouthful that is digested that waste is repaired and that loss is supplied. The forces of nature must be directed by his skill, lest they injure, instead of serving him. He must never rest in his unceasing struggle to overcome the tendency he finds in everything around him to get into a wrong place. Even cleanliness, the most obvious of simple duties, is the result of the never-ending removal of impurities from places they defile, to their proper receptacle, and the cleanliness most important to health is just that which is least regarded—cleanliness of the air that is breathed. The most refined persons, who would indignantly refuse to enter a room with soiled walls, and muddy floor, and dirty company, sit complacently in ballrooms and theatres where every one is breathing impure air, soiled with the fumes of gas or wax candles, and with other pernicious exhalations. The impurities in which they are steeped are disregarded because they are not visible, and people who are most particular about the materials of their dinner cannot spare a thought for what they are breathing; and yet one is no less important than the other. The accurate fitting of modern houses leaves few crevices for the passage of air, and builders are well satisfied when they have prevented any escape of air, except up through the chimney. But the law of expansion by heat has provided that vitiated breath shall rise towards the great ocean of air rolling for a height of 50 miles above us, in which all impurities are lost by dilution; but our impervious ceilings stop the intended ascent, and drive down the cooled carbonic acid gas to be again inhaled with injurious result. But a hole in the ceiling and a hole in the wall, permitting the natural movement of air, makes Nature our friend again, instead of our enemy; and if we take the precaution of admitting the external air by a channel round the back of the fireplace our current of air flows in warm, instead of cold.

But cleanliness in the atmosphere of towns is not so easily obtainable. From tall chimneys and short chimneys, from furnaces and chemical works, from sinks and gully-holes, from back yards and middens, from gutters and laystalls, innumerable pollutions are continually pouring. Nature has provided against all these defilements of the air, if we will but investigate her laws and take the trouble of obeying them. The smoke that shrouds our great towns in perpetual gloom might be rolled away to let the sunshine appear if we would but take the trouble, for opaque smoke is but ill-burnt coal that ought to have been consumed in the furnace. With reference to the refuse of towns the theory is clear, but the practice is lax and careless. Every animal and vegetable is nourished by assimilating to its own use particles of the material substances, such as air, water, and food, which are continually circulating through its organism; but by a general law the substance which has been so used is rendered unfit for a repetition of the same use until it has been decomposed and has entered into a new combination. Care is, therefore, required to hasten and render harmless the decomposition of the refuse which might accumulate near the habitations of animals and men. Nature is fond of moving in circles, and the elements which rose from the earth for the nourishment of plants, and thence nourished animals, and thence nourished men, will, if restored directly to the earth, afford nourishment and fertilisation to the soil whence they proceeded, while, if allowed to wander in the air, they will exercise a poisonous influence. So also water brought from rivers or wells for distribution through a town should, after passing through the houses, complete its sanitary course by washing the refuse into the earth, and ultimately regain its original purity by percolating into the river or spring. At Rugby and at Watford this law of Nature is strictly observed; an apparatus of pipes and hose conveys the liquid sewage from the streets to the farm, which it irrigates with profit. But in the case of large towns where the drains carry away a great bulk of water and gravel from the surface drainage, and where irrigation is not in request, this natural method is inapplicable. The most tempting arrangement is at once to convey all into the nearest river, and these outrages against the purity of rivers that ought to be the pride and pleasure of towns are everywhere attempted to be perpetrated. The Thames, being the thoroughfare of literary as well as business men, and having on its banks, within reach of every whiff of odour, the Houses of Parliament, has found competent defenders, and has by Act of Parliament been declared exempt from the filthy task of receiving the contents of the sewers, and is hereafter to become a river again, instead of a gigantic drain. But the Medlock, at Manchester, and numberless rivers of other towns, large and small, still want defenders, and it is necessary to declare and maintain that the cleansing of houses and streets must not lead to the pollution of rivers. The necessity which the Metropolitan Board of Works believe to exist of casting into the sea, at enormous expense, that which, if separated from the water and gravel with which it is mixed, would fertilise half a country, is discreditable to the mechanical and chymical skill of the nation; but I am still in hopes that so wasteful and clumsy a proceeding may be rendered unnecessary, and that, if the attention of competent persons be drawn to so important a matter, means of deodorisation will before long be discovered by which those salutary processes which the soil is adapted by Nature to produce will be artificially attained without too much inconvenience or undue cost.

Sanitary science is still in its infancy, for, though rules for health were inculcated at the time of Moses and of Hippocrates, yet it is only within a few years that discoveries in chymistry, improvements in mechanics, and the collection of vital statistics have enabled this subject to be treated scientifically. It is not very long since men became aware that the air we breathe is as much a material substance as the food we eat and the water we

drink, consisting of the same elements in different combinations, and equally capable of conveying poisons. The recent discovery of ozone, and the slight knowledge we yet possess of the meaning of its presence or absence, is an indication of how much has still to be learnt about the composition of the air. A deeper acquaintance with the processes of decomposition and fermentation is greatly desired. The microscope is revealing regions as astounding and as interesting as any that the telescope can unfold. Not only is it useful in tracing the hidden incitements to disease, but it is winning its way to the witness-box. Every purchaser of eatables that may be adulterated—and into what articles of food has not perverse and dishonest ingenuity found some means of adulteration?—ought to have within reach some analysts to whom he might refer for an authoritative decision on the genuineness of the articles offered for sale. I don't care much about penalties if only fraudulent admixtures could be exposed. Let the public know from authority that the Cayenne pepper sold at a particular shop is coloured with red lead, and the green pickles with copper; that the loaf, which to the naked eye seems made of the best and purest Wheat flour, owes its whiteness to the alum, which gives a fine appearance to damaged and unnutritious flour: and that the beer which seems so strong has been diluted with water, then strengthened with narcotic drugs and salted, so as to increase the thirst it seems to quench, and the public may safely be left to itself. When the snare becomes visible to the bird, the fowler will have but an empty bag; and, if the purchaser could be enabled to see with the eyes of the analyst, everything necessary would be accomplished for his protection.

Invigorating manly exercises are needful for the health of men who are employed in sedentary or monotonous occupations. Gymnastic grounds have been established near Primrose Hill, in London, and also in Liverpool by the munificence of an individual. The pastimes of races, running in sacks, and dancing, which are being revived at harvest homes and similar gatherings, show that the universal taste for trials of strength and for humorous games is not wanting even to this grave generation; and the success which has attended the revival of old English sports at Wenlock, under the name of Olympian games, is very encouraging. Every town should have its parks, where the population may disport themselves on holydays and Sundays, and get health as well as recreation from the beauties of Nature. It cannot be expected that many towns will receive gifts as noble as that which was conferred on Halifax by Mr. Crossley, on Derby by Mr. Strutt, and on Birmingham by Mr. Adderley; but every town may secure a park for itself by the imposition of a moderate rate to repay the loan by which the land is purchased.

(To be continued.)

THE SEWAGE QUESTION.

[Mr. Mechi once more calls attention to this subject in the columns of the *Times*.]

I CONSIDER it a public duty to direct attention to a danger of great magnitude which threatens British agriculture, and through it the nation at large. I mean the gradual but sure exhaustion of the soil of Great Britain by our new sanitary arrangements, which permit the excrements (really the food) of 15,000,000 people who inhabit our towns and cities to flow wastefully into our rivers. The continuance of this suicidal practice must ultimately result in great calamities to our nation.

Science has shown us that the land, to the depth at which it is ordinarily cultivated, contains but a limited and measurable quantity of the elements of our food; that these elements may be readily exhausted, and that they can only be profitably restored by the application of human and animal ordure such as we now waste. A century of abstraction without replacements has reduced the old and once fertile States of the American Union to comparative barrenness, and although by extensive purchases of guano, bones, and feeding stuffs, we are trying to mitigate the evil, we are warned by that great man Baron Liebig (the Sir Isaac Newton of agricultural science), that these attempts are but as a drop, compared with what we waste.

By a false delicacy and want of knowledge we have been accustomed to deprecate as indelicate the very mention of our *excreta*, but the stern requirements of a rapidly increasing population imperatively demand of us the only profitable and available means of providing food for the people. Increase of population would, but for our sewer system, bring with it increased means of production. Such has been the case in China, where the commercial value of human excrement has ever been most wisely appreciated and availed of.

Of course our Boards of Health very properly consider their only duty is to cleanse our towns and cities. It is for our landlords and agriculturists to associate their will and means to convey to the land those precious streams which now exhaust our soil, contaminate our livers, and impoverish our agriculturists, and those dependent upon them. It may be said we are producing more food than we used to do; no doubt we are, by enclosing wastes, removing trees and fences, cleaner and deeper cultivation, &c., but by these very means and by the application of stimulating substances we are more rapidly hastening the exhaustion of our country.

A very large proportion of our population would be starved but for the enormous importations of foreign food. I trust that you will bring your powerful pen to bear upon this important subject. *J. J. Mechi, Tiptree Hall, Kelvedon, Essex, Nov.* 3.

Baron Liebig on Modern Agriculture (p. 129) says:—

"In the year 1856—57 about 10 million cwt. of guano were imported, of which the greater portion remained in England. In the course of half a century above 100 million cwt. of it will have been imported into that country, yet all this mass of manure is not worth mentioning when considered in relation to the arable surface of Great Britain, and is as nothing when compared to the sea of human excrements carried by the rivers to the ocean."

The same author, speaking of the Romans, who also had their sewers and wasted their human excrements, says—(pp. 241-242):—

"All these rules had, as history tells us, only a temporary effect: they hastened the decay of Roman agriculture, and the small farmer ultimately found that he had exhausted all his expedients to keep his fields fruitful, &c., and, as the history of the three first centuries of our era informs us, there ensued a condition of the population the most calamitous and frightful into which a nation can fall. It is true that many causes co-operated in producing this result, but assuredly one of these was the exhaustion of the soil by the spoliation system of agriculture then pursued."

He says of the Chinese (p. 243):—

"I will show the teachers of agriculture another nation, who without the aid of Science have found the philosopher's stone which those very teachers in their blindness vainly seek. I will point out to them a land the fertility of which has for 5000 years never decreased, but on the contrary, has been ever on the increase, and where more men are crowded together on a square mile than are to be found on the same space in Holland or England. . . . . It is quite impossible for us in Europe to form an adequate conception of the great care which is bestowed in China upon the collection of human excrements. In the eyes of the Chinese these constitute the true sustenance of the soil (so Davis, Fortune, Hedde, and others tell us), and it is principally to this most energetic agent that they ascribe the activity and fertility of the earth. . . . . The estimation in which it is held is so great that everybody knows the amount of excrements yielded per man in a day, month, or year, and a Chinese would regard as a gross breach of manners the departure from his house of a guest who neglects to let him have that advantage to which he deems himself justly entitled in return for his hospitality. . . . . Except the trade in grain and in articles of food generally there is none so extensively carried on in China as that of human excrements. Every system of farming based on the spoliation of the land leads to poverty. The country in Europe which in its time most abounded in gold and silver was nevertheless the poorest. All the treasures of Mexico and Peru brought to Spain by the richly laden silver fleets melted away in the hands of the nation, because the Spaniards had forgotten, or no longer practised, the art of making the money return to them which they had put into circulation in commerce to supply their wants; because they did not know how to produce articles of exchange required by other nations, who were in possession of their money. There is no other way of maintaining the wealth of a nation, the deplorable effects of the spoliation system of farming is nowhere more strikingly evident than in America, where the early colonists in Canada, in the States of New York, in Pennsylvania, Virginia, Maryland, &c., found tracts of land which for many years by simply ploughing and sowing yielded a succession of abundant Wheat and Tobacco harvests; no falling off in the weight or quality of the crops reminded the former of the necessity of restoring to the land the constituents of the soil carried away in the produce. We all know what has become of these fields. In less than two generations, though originally so teeming with fertility, they were turned into deserts, and in many districts brought to a state of such absolute exhaustion that even now, after having lain fallow more than 100 years, they will not yield a remunerative crop of a Cereal plant."

Home Correspondence.

Farm Manure.—The communication of "W. G." in your Number for October 22, p. 856, furnishes considerable matter for reflection, and I thought it would have produced or provoked some reply, as his theory and practice of "rotting straw" does not seem based upon principles that can be generally recommended. His plan of "a rough fold of poles or hurdles and stakes," would, I think, require more room than "pits or covered sheds," although he states "the yard of the homestead may be reduced to half their present size and made warmer," by feeding store cattle in his "rough folds," with "Turnips thrown down just as they are drawn from the field." This surely is not intended to supersede the use of cake or offered as more advisable than fattening beasts!—as nearly all farmers now find it most serviceable if not most profitable to put up a few beasts, say five or ten to the 100 acres irrespective of any young stock they may raise or any additional stores they may buy for treading down straw for manure; and even supposing none but store stock kept, I contend that all farms ought to have their permanent buildings so arranged as to afford shelter from north and easterly winds, for such young and growing stock as are only supplied with straw or roots. Where such buildings or properly fenced yards do not exist we commonly see at least a stubble wall as a protection during winter. It is true that some farmers make a point of not using all their straw in this way; indeed where a demand exists for straw near a large town they scarcely retain enough to bed down their horses and pigs, if at liberty to sell it; but presuming that all the straw is kept on the farm and turned into manure, "W. G." has only to pay a visit to a covered homestead on a large scale to satisfy himself that it may be *all* profitably used or consumed, and that the value of that under beasts fed with Linseed-cake far, very far, surpasses any of equal bulk drawn from "rough folds," or by any other scheme that can be adopted. "W. G." says "manure so made should in no case be heaped;" but if he allows his horses to run in a yard attached to their stable, he will find it advantageous to mix the two sorts of manure so made with that from cattle in alternate layers so as to induce fermentation, regulated by heavier materials spread over the top, and he may then have the luxury of "spit dung," to strengthen his weak lands and keep up the vigour of his strong ones. Plenty of straw under store stock makes them comfortable, and with a portion of roots I admit that they may be kept going while thus making manure, but it is after all a secondary resource, the first importance being attached to the concomitant of fattening stock with as much oil-cake as they will eat and a due proportion of roots and fodder. Then as to the profit arising from feeding beasts, it all depends upon the judgment of the buyer; if he select well-bred thriving stock they will repay him. I have been often advised to buy them big enough, and the advice is good if the price is not too big; good old beasts must have a first-rate pasture, and a good market to make them pay. Younger beasts well bought and well selected often bring a larger return with less risk, but this still depends very much upon the knowledge and judgment of the purchaser. Some men can hardly make mistakes, others hardly ever lay out their money to advantage; the latter class yearly diminish in number in proportion to the increased value of the animals bought and the improved treatment of them when bought. It is quite clear that beasts must be fattened in increasing numbers to meet the requirements of the farm, and we are happy to add there are growing probabilities of this process being made to pay by the increasing requirements of consumers. *J. W., Peterborough, Nov.* 1.

Mangel Wurzel.—On passing through the Eynsham Hall estate, the property of the Countess of Macclesfield, last week, my attention was drawn to an extraordinary crop of Mangel Wurzel—the Red Tankard. I inquired of Mr. Williams, the manager, the weight per acre; he could not tell; so I measured off exactly 2½ poles. The men pulled up the produce, and to my surprise this small piece of land produced 1 ton 1 cwt. 17 lbs., or at the rate of 67 tons 13 cwt. per acre. They grew on a small farm set apart for her ladyship's use. Mr. Williams considered the whole piece will contain an equal weight. *Viator.*

The Husk in Young Stock.—Two of my cows and several of my young stock have this summer been affected with a cough which yielded to none of the usual remedies, and which though they fed as usual reduced them to mere skeletons. The wife of a retired farmer in the parish suggested that they had worms in their windpipe, but as nobody whom I consulted in the neighbourhood had heard of such a thing, I laughed at the idea until one died, when the various passages of the lungs were found full of small worms an inch long, a little thicker than a coarse thread, and white. I see that in a book on the Homœopathic Treatment of Cattle, mentioned in your last Number, "Bronchitis from Worms" is mentioned, and it is suggested that chloroform should be poured into the nostril. Would some of your correspondents kindly give their experience on the subject? How do the worms get there and what is the best remedy? I have tried turpentine but I am not sure in what quantity I may give it, and, whether one or two strong doses or repeated small ones would be best. *C. J.* [The disease is "hoose," which has several times been alluded to in this Paper, and is often produced by bad or scanty provender, or insufficient or impure water. Linseed oil 4 ozs., oil of turpentine 1 oz., oil of Carraways 20 drops; give every 10 days, and a free allowance of Linseed-cake as food. *W. C. S.*]

Treatment of Mangel Wurzel.—The frost from October 21 to October 25 will be long remembered by its effects upon Mangel Wurzel and Coleseed. The latter having grown very rapidly during the last month was for the most part young and tender, and therefore highly susceptible for a frost of 20° Fah. The Mangel also suffered much, many persons were raising them, and in numerous fields they lay in long rows out of the ground quite unprotected; these are rendered useless for storing. But where the tops are growing and the Mangels allowed to remain in the ground a few days undisturbed, we do not apprehend much mischief, as they appear to recover gradually from the effects of the frost. We are now busy having them pulled, and topped, and stored in the usual way, with a slight coating of straw or stubble, to be well covered with earth in a week or a fortnight's time. *J. W., Peterborough.*

Farmers' Clubs.

LONDON: *Nov.* 7. *The growth of Seeds in alternate Husbandry, without the admixture of Trefoil or Rye-Grass.* A paper on this subject was read by Mr. J. Marshall of Riseholme, Lincolnshire. He said: The four-field system being that almost universally adopted on the light-land soils of England, and the intervening growth of a Pulse crop in lieu of seeds not altogether a popular introduction—though, with clean cultivation, by no means as a change to be lost sight of—it necessarily follows that the seed crop, involving as it does one-fourth of the production of the whole farm, should be so arranged as to grow no description of Grass which shall be liable at any period of the year to disorder or disagree with the animals (ewes and lambs) depastured on it, on the one hand, or risk the filling of your fields with Twitch or Couch-grass on the other. The custom of sowing large quantities of Trefoil, on account of its cheapness, and, since its introduction of late years, of Italian Rye-grass mixed with other small seeds, has long since prevailed in the northern and midland counties; and I am inclined to think, from my own experience, which has been pretty generally confirmed by that of others, that to the superabundant growth of Trefoil at particular seasons of the year, and under certain circumstances, may be attributed the immense loss of lambs sustained by flockmasters during the disastrous autumns of 1857 and 1858, when thousands of lambs died, as I am fully convinced, from feeding on Trefoil seeds, under certain conditions, in

July and August. I believe no Grass hitherto discovered will bear a comparison in produce, upon dry chalky or stony soils (or perhaps upon any other description of soil), that will give the same amount of sheep-feed in dry hot weather, or that will bear close feeding with the same impunity in alternate husbandry, as Trefoil; and by the same rule, no Grass with which I am acquainted grows with the same degree of rapidity, or produces in a short time so luxuriant or dangerous a pasture in warm, damp, showery weather, and it is to this condition of its growth that I am so particularly anxious to direct your attention. So long as you keep your three or four ewes and lambs per acre upon it without removal, you have perhaps little to fear, because they necessarily keep it extremely bare, and in that state it must always be kept, even though it inflict upon you the necessity of giving a little corn or cake to supply what may appear a deficiency in the pasture; but since there appears no absolute necessity of growing it amongst your seeds, I recommend you to abandon it altogether. The objection I have to Italian Rye-grass is chiefly founded on the effect produced on the subsequent crop of Wheat; and when we take seriously into our consideration the fact that in many instances one-third, and in most one-fourth, of the crop is jeopardised, if not entirely destroyed by it, if we are to continue its growth, it becomes a matter of some moment to discover a remedy for so fearful an evil. Italian Rye-grass is by far the most valuable variety as sheep-food, and produces perhaps double or treble more than any other variety of Rye-grass; it is relished and eaten with avidity by every description of cattle, and they all appear to thrive upon it; still you cannot afford to sacrifice the integrity of your corn crop. I attribute the loss of the Wheat plant, of late years so much complained of, to the increased growth of Italian Rye-grass, and to no other cause. You scarcely ever see the same effect produced after a crop of Beans or Peas; there is no waste then, no dead plants to be pulled up by yards, and almost by acres together, but a healthy tillering and gradual increase, and in the end a full and productive crop. I am, however, glad to be able—even under circumstances of compulsion to cultivate this objectionable plant—to point out to you a remedy, as far as the Wheat crop may be influenced by its growth, and it is simply this: to plough your seed lands intended for Wheat early enough, say the last week in August or the first in September, and to sow it not later than the 14th October. This system has been adopted to some extent in Lincolnshire the last two years, and with the best and most marked effect. In order to prove this theory, I left 2 acres in the middle of a 60-acre seed field, which was finished ploughing on the 4th September, until the 4th October, the day before it was drilled; the entire field was then pressed with a Cambridge roller, and drilled across; and that portion recently ploughed lost plant, and was at harvest, to all appearance, at least one quarter per acre less than the remainder of the field. I have seen the same effect produced by growing other varieties of Rye-grass; that portion of the field sown with small seeds having no admixture of Rye-grass, or any kind of Bent whatever, lost no plant, and yielded, apparently, 25 per cent. more than the remainder of the field sown with different varieties of Rye-grass and other small seeds. There is one other objection to the growth of Rye-grass, which, in the minds of some men—and those very good judges too—must always operate against its general cultivation, and that is, the difficulty of procuring a sample of the seed entirely free from the seeds of Couch-grass. Now, in the substitute I shall propose, and I know of only one variety of Grass at all adapted to "alternate husbandry," I mean Timothy Grass, the seeds are so dissimilar, and the facility of dressing out any extraneous matter so easy, that a perfectly clean sample may always be obtained, and no risk of an increased growth of Twitch Grass hazarded. I am, however, free to confess that even Timothy Grass will not produce so good a pasture as Rye-grass, and that perhaps the middle course—that of growing a little of both—might in the end prove the most advantageous. In laying lands down in seeds in many districts far too little seed is commonly sown. A gentleman from Crediton, in Devonshire, says that there, a mixture of 6 lbs. of Red Clover, and 1 lb. of White, with 2 pecks of Eaver [?], is considered a good seeding. Now here, from 14 to 21 lbs. is not thought too much; and whether drilled or sown broadcast should be adhered to, as the best system of depositing the seeds, is still a very open question. I rather incline to drilling, inasmuch as the seeds get a certain depth into the soil; whereas when sown broadcast much remains on the surface, and often does not vegetate at all. The mixture I propose for feeding purposes would be as follows: 12 lbs. of White Clover, 2 lbs. of Parsley, 2 lbs. of Rib-grass, 4 lbs. of Timothy, ½ a peck of dwarf Rye-grass, ½ a peck of Italian; the latter the sheep will eat to the very earth; the former they will not eat much of, but it will serve as a shade for the other Grasses, and keep out the drought. For mowing, I would recommend 14 lbs. of Red Clover and 2 lbs. of Timothy or ½ a peck of Italian Rye-grass. In these minute quantities, Rye-grass may be grown as an adjunct without perhaps much danger to the succeeding crop; and so far, and no farther, is it safe to cultivate it, though perhaps it might be wiser to omit it altogether; nor do I mean to say that 2 or 3 lbs. of Trefoil per acre, amongst other Grasses, would endanger the health of a flock of sheep in ordinary seasons, but I am quite sure they would be safer and far more healthy without it.

Notices of Books.

Dixon's Law of the Farm. Second Edition. Stevens & Norton, 26, Bell Yard, Lincoln's Inn.

That there is a large number to whom this book will be welcome is plain from the constant questions of the law relating to agricultural circumstances which are every week addressed to the agricultural papers. The volume contains an extended notice of the agricultural customs of the English and Welsh counties, forms of agreement for all manner of sales and purchase of any agricultural interest, and definitions of all kinds of property of either landowners or tenants. Its chapters are on Interests in Land, Easements, Trees and Fences, Dangerous Animals, Water, Servants, Conveyance of Cattle, Distress, Husbandry Covenants, Trespass and Game, Tithes, Landlord and Tenant, Contracts and Sales, Horses and Cattle, and various appendices. It is a volume of 600 pages densely packed—with a capital index to its contents—full of illustrative cases, so cited and epitomised as to interest the reader; and of such number and variety as to furnish a parallel to almost every possible case of legal difficulty of which a solution is desired. It ought to be in the hands of all business men in the agricultural world. The following extracts from the last pages of the book may be taken in illustration of the style in which the cases are reported, and of the kind of interest which attaches to the work:—

"The case of cows being poisoned in their pasture was the subject of Lathbury *v.* Earle. The plaintiff was a large dairy farmer at Stratton, and the defendant a railway contractor, who was engaged in making a railway through the plaintiff's farm. The wood for the line was pickled with creosote and oil of tar, and the defendant had a tank for this purpose near the plaintiff's farm. When the pathway was laid down, the stuff in the tank was pumped out into a culvert, which passed under the canal and to a watercourse going through the plaintiff's field where the cattle were watered. This was in the autumn of 1852, and in April 1853, when the cattle were turned out, their mouths in five days became burnt and black, and their hocks affected. On a request being made the defendant cleaned out the watercourse, the length of the plaintiff's field, but not the culvert under the canal, and promised compensation, and plaintiff put the cows into a field he had saved for mowing. At the end of a month the cows were put back, but did not recover till after calving. They fell off so much in their milk that the deficiency was calculated at 7000 quarts at 7*d.* per gallon, for the first three months, the loss being 182*l.* odd, as they ought to have given during May, June, and July 16 quarts a day, and for the next four months 204*l.*, calculating the milk at 10 quarts a day. Besides this, his loss on the hay was 40*l.*, but 30*l.* was deducted for cheese he had made, and milk used on the premises. It was attempted to show that his cows were affected with the 'mouth disease,' but he denied that they had the running and blisters in the mouth consequent upon it; and Professor Spooner stated that the effect of creosote was to suspend the secretions of the body, especially the secretions of milk, and stated that none of the symptoms from which the cows were described to have suffered were analogous to those of 'mouth disease.' It was attempted to show for the defence that other cattle drank of the stream, and were uninjured, but the plaintiff had a verdict for 266*l.* 8*s.*"

"Stevens *v.* Boswell was a similar case to Lathbury *v.* Earle. The plaintiff had a dairy farm, on which he kept 30 or 40 cows near certain lead works, which had a blasting and three calcining furnaces, and in 1851-53 four cows, 48 lambs, and six colts died, poisoned with sulphate of lead, which was found in their insides, as well as in the hay, the hedges, and the weeds on the arm. It was also detected in the milk, after it had passed through the cow; though it did not affect vegetation, but only animal life. On examination the carcases had oxide of lead in the mucous membrane, as well as in the lungs and liver, in great black patches. There was also a black streak round the gums; and one pig's kidneys were bare of fat. It was urged by the counsel for the defence that the land on the farm was of a poisonous nature, and had been for centuries, and that the smelting works had nothing to do with it. A juror was withdrawn, and the plaintiff was to receive 500*l.* damages, and the defendants to purchase the farm at full value. The nearest point of the farm which was thus injured by the lead fumes was half a mile from the works, and the most distant a mile; and the white smoke from the blast furnace gave a small proportion of oxide of lead, and the remainder of carbonate and sulphate of lead.

"Professor Herapath described the effect as 'a stunted growth, and leanness, shortness of breathing, paralysis of the extremities (particularly the hinder ones), the flexor muscles of the forelegs, affected so that the beasts stand on their toes, swelling of the knees, but no constipation or colic, as in the human race. In a few days death followed. If the injured beasts were removed to another farm they never throve. In the young the symptoms were more conspicuous and the mortality greater. Lambs were yeaned paralytic: when three weeks old they could not stand, although they had made great efforts to do so; in attempts to feed out of a bottle they were nearly suffocated from paralysis of the glottis, and 21 died early out of 23. Colts also died; and those that lived could not be trotted 150 yards without distressed breathing. Pigs confined to the stye were not injured; but if allowed to roam were soon affected. The milk of cows and sheep was reduced in quality and quantity; and cheese made from the former had less fat in it. I find in the milk of both minute traces of lead. It will be observed that of the symptoms, those of emaciation, paralysis, and the blue line in the gum of the lower jaw, are similar to those of the human subject, that constipation and colic are absent, and that we get two new ones—shortness of breath and swelled knees.'"

Tillage a Substitute for Manure, illustrated by the principles of modern Agricultural Science, and the precepts and practice of Jethro Tull, &c. By Alexander Burnett, M.A., Land Agent. Whittaker & Co.

This is a book upon the most important agricultural question of the day. Mr. Burnett collects all the evidence of Tull's experience, and that of the Rev. S. Smith, of Lois-Weedon, of Mr. J. A. Clarke, and many others, in illustration of the question—whether and in what degree tillage is a substitute for manure?

We have from him in the first place a description of root growing and cattle feeding as a means of fertility; then a biography of Tull, who was the earliest advocate of what may be called, not that it necessarily is, the other side of the question, viz., the fitness of mere tillage to restore productiveness to the soil. Chapters 3 and 4 describe the experience of English agriculturists up till the time of Tull. The theory of manure and of tillage is then elucidated at great length, and the Rothamsted experiments on the subject are analysed and shown not to have affected the conclusions drawn from the experience of others in favour of Tull's views.

If any one wishes to become acquainted with the doctrines on this subject of Mr. Smith of Lois-Weedon, and of Jethro Tull, and with the experience which has been recorded since his time in relation to these doctrines, he had better study Mr. Burnett's book. If it had been written with less dash and in a less ambitious style, the purpose of the author would probably have been better served; but there are many who will be interested in his arguments and facts in whatever manner they may be dressed.

Farm Memoranda.

Yew Tree Farm, Penkridge.—The farm contains 360 acres. In tillage 300 acres, meadow 18 acres, and pasture 42 acres. Soil sandy, gravelly, and light loam. Subsoil chiefly gravel. I have tried the subsoil plough, but have not derived much benefit beyond making the land work more easily. I cultivate Wheat, Mangels, Swedes, Turnips, Barley, seeds, and Vetches. The four-course system of Wheat, roots, Barley, and seeds is best suited to the farm. Of the green crops, Mangels have answered best lately, and for these crops I have found artificial manures to answer the best, and farmyard manure for permanent pasture. Very few cows are kept in summer, in winter about 40. 160 ewes are turned to the rams, which, with their followers, make a flock of about 500. The sheep are kept on pasture in summer, and have Swedes cut for them in winter. The feeding sheep and rams have ½ lb. of Linseed-cake per day, which helps to manure the land and keep it in condition. In permanent improvement, several miles of old hedges have been grubbed up, and new ones planted where requisite. Nearly the whole of the farm has been drained. Water power has been effected, which threshes, cuts chaff, grinds, and pulps roots. The landlord has paid for all the buildings, the water-wheel, service pipes, and drain tiles. I hold the farm from year to year.—*Charles Reynolds Keeling, Yew Tree Farm, Penkridge, September* 10.

The Judges of the Staffordshire Agricultural Society report as follows:—

"This farm belongs to the Right Hon. Lord Hatherton, and lies in the parish of Penkridge, and the homestead about two miles east of that village. The farm is bounded on the east by Cannock Chase, consequently it lies at a considerable elevation, as the highest part of the Chase is 700 feet above the sea. The water fall is into the River Penk, which feeds that longest of English rivers, the Trent. The climate, considering this elevation, is a good one; the air in the spring must be rather keen, but dry. The surface has very slight inclination, and in many parts level; the general aspect westerly. The fall on all parts sufficient to ensure perfect drainage, and which appears to be complete on the whole farm. The soil is light and easy to cultivate, but requires great assistance in manure, and great attention and good management to keep it in condition, and clean from weeds. The subsoil is a flint gravel, and on most parts of the farm lies near the surface, many of the pebbles very large. There are good roads through the farm, and a canal about a mile and a half distant. There has evidently been a new arrangement in the fields, roads, and fences. The fields are large and square and the fences and roads new and straight; the fences, except the boundary ones, all parallel to each other. The farm now is in 20 inclosures. The fences are in good and proper order, and trimmed in a hogmane shape, and from 4 to 5 feet high. There are good gates and posts to every field, in proper situations for convenience. All the fields can be approached from the roads. The homestead is very central; the house fronting the south and the road, with garden and pleasure ground laid out with taste between it and the road. The farmyards and buildings are behind, with the yards open to the south. The house roomy, substantial, and neat. The farm buildings are tolerably well arranged for convenience, and the whole in very good repair, and in neat order. The same remark as to neatness and good order will apply to the well-filled stack yard and premises around. Mr. Keeling has a well selected stock of implements, in good condition, suitable for the farm, both in the field and the farmyard—in the latter for threshing, cutting, chopping, crushing, steaming, and pulping. For power a two-horse steam-engine, water wheel of 26 feet diameter and 2 feet wide, a large reservoir and a plentiful supply of water, but unfortunately the service pipe is of rather too small a diameter for some portions of the work. The following is the extent of the crops cutivated this year:—Swedes, 31 acres; yellow common Turnips, after a crop of Rye,

11 acres; winter Vetches, cut twice, 2 acres; White Tankard Turnips, 18 acres; Mangels, 12 acres; Potatoes, 2 acres; and Cabbage, 1 acre; total green or root crops, 77 acres. Barley, after root crops, 71 acres, all seeded; seeds, after Barley, pastured, 67 acres; Wheat, after seeds, 57 acres; Oats, after seeds, 18 acres; total corn, after seeds, 75 acres. Meadow, 18 acres; pasture, homesteads, orchard, and garden, 42 acres. This shows a very equal distribution of the crops in their proper place in the rotation. The root crops are cultivated in 27-inch drills, are very clean, and under good management; the plants thinned to about 12 inches in the rows; the Swedes on a portion of this field much mildewed, and had the finger and toe disease; the greater portion a fair average crop of healthy good shaped bulbs. Mr. Keeling draws one half the Swedes to consume at home; the other half eaten on the land. The Mangels are a fine crop, both the yellow and the red; the White Tankard healthy and growing. The same may be said of the common yellow, but which will not be so heavy a crop as the Tankards. Cabbage not a heavy crop, the soil not very suitable for them. Potato part a light crop, with a few weeds in them. The Barley stubbles are very clean, and the young seeds beautifully thick and uniform. Near thirty acres had a good dressing of farmyard manure given since the Barley was removed. The seeds, pastured this season and now in ploughing up for Wheat, had a good appearance, the soil turning up very clean and in good condition. The Wheat and Oat stubbles, after seeds, very strong and thick, and generally clean, one portion of the Wheat stubble showing some Thistles and a little Couch Grass. We were told that the land on which the Mangels grow had been fallowed and well cleaned in the autumn, the dung applied and ploughed in; in the spring grubbed, harrowed, and rolled, and then ridged; and the intervals, between the ridges, subsoiled before the artificial manure and salt were applied. After applying these, reversed the ridges, and then the seeds sown; the new intervals then subsoiled, and the crop summer cultivated on the usual plan. We should recommend this mode of management in the cultivation of Swedes. The winter Vetches, we were told, had been mown twice, the land then fallowed, and the Wheat in sowing when we were going over the land, after the artificial manure had been applied immediately before. The soil particularly clean. Mr. Keeling says he never sows Red Clover oftener than once in eight years, but seeds alternately, if not more often, with a mixture of White Clover, Ribgrass, and Trefoil. He has 55 acres this season seeded with this mixture, which are now looking beautiful. The Oat stubbles are to be sown with Rye, winter and spring Vetches—the latter in succession portions—and the whole to be fallowed next season with Turnips. The Rye and winter Vetches are now above ground. They are each sown on separate ground. The land is dressed before sowing with Wheat after seeds. Mr. Keeling, in his certificate, says nothing of the number of horses or pigs kept. He keeps eight farm horses, a pony, and hack, and five working bullocks. He considers the bullocks profitable. Works them two or three years. The horses are well selected, of the native breed, stout and active, stepping along at a good pace whether in plough or waggon. The sheep are mostly of the Shropshire breed, of a good sort generally, but many are prime samples of that excellent breed, as the various premiums won at numerous shows will testify. Seventy acres of the land, we were told, had only been laid to the farm six years ago. This lies up to Cannock Chase, and was drained and the new fences planted by the landlord. All the remaining part of the farm had been in the occupation of the present tenant six years, and of his father twelve years before, but during that twelve years had been under the management of the son, the father living four miles distant. By a statement given us, it appears upwards of 30 miles of tile drains have been put in at the father's expense. A very great length of old fence stocked up, new ones planted, and 22 acres of Gorse forked up. All the pits and ditches are filled up, and converted into arable land. Bad management on such a soil will soon make it miserably poor, and filled with Thistles, Couch, and other weeds. But the whole at this time shows great perseverance and industry applied in a true practical manner and to good purpose, and with, no doubt, favourable results to the tenant. We have, therefore, awarded him the price of 10*l.* and the society's silver medal. Inspected October 13, 1859."

Notices to Correspondents.

AGRICULTURE: *Agricola.* 1000*l.* might enable you to manage 80 or 90 acres of arable land and 20 or 30 of pasture. You had better reside on a farm for a year before undertaking one for yourself. The Cyclopedia published by Blackie, Stephens's Book of the Farm, &c., are suitable books.

FOODS: *D.* We may make it the subject of a fuller discussion hereafter; meanwhile it appears to us that Wheat at 1*s.* 2*d.* per stone is as cheap as anything you name. Oilcake, however, at 1*s.* 3*d.* per stone is, as they say, "hard to beat."

LACTOSCOPE: *F R S.* An ingenious method of distinguishing the value of milk is based upon the fact, that opacity of milk depends upon the corpuscles of fatty matter which are suspended on it, and that consequently the more cream it contains the greater will be the obstacle opposed to the passage of the rays of light. The lactoscope on this principle is an instrument for determining the degree of transparency which the milk possesses. It consists of two tubes, one of which may be pushed into the other like the joints of a telescope, and the end of each tube is closed with glass, so that when milk is poured into the outer tube by a small opening on the side, by pushing in the inner tube a layer of milk of any thickness may be obtained. The apparatus is placed on a stand, the value of the milk is estimated by the thickness of the layer of it through which the light of a small wax taper at a fixed distance can be observed, the value of the milk being in the inverse ratio of the transparency; the larger the amount of fat present, the greater, of course, will be the opacity. The thickness of the layer of milk is measured by a scale on the instrument, and a table sold with it shows the percentage of cream to which it corresponds.

RECIPES: *R.* The following are the memoranda which you ask for:—*To make Potato Soup.* Boil 3 lbs. of Potatoes and 7 good sized Onions in 3 qts. of water; after rubbing it through a sieve add a pint of good cream and 3 ozs. of butter with pepper and salt.—*To make Plain Gingerbread.* Mix 3 lbs. of flour with 4 ozs. of moist sugar, ¼ oz. of powdered ginger, and 1½ lb. of warm treacle, melt ½ lb. of fresh butter in it, put it all to the flour and make it a paste. Then form it into nuts or cakes, or bake it in one cake.—*Strengthening Jelly for an Invalid.* 2 oz. of white sugar candy, 1 oz. of isinglass, 1 oz. of gum arabic; put these ingredients into a basin, cover them with cold water, let it stand all night, the next morning put it on the fire and let it simmer until all is dissolved. Then add 1 pint of port wine and boil it all together half-an hour; strain it and let the patient take a tablespoonful three times a day.

TOP-DRESSING WHEAT: *G R A.* Nitrate of soda 1 cwt. per acre, along with 2 cwt. of common salt, is a good dressing. Notwithstanding its price we would apply genuine Peruvian guano in preference to almost anything else.

WEIGHTS AND MEASURES: *Emily.* There is no immediate prospect of a law to assimilate weights and measures. The "cental" in use at Liverpool has been abandoned.

WINDPIPE OF COW: *C J.* Your letter is in another column.

*** As usual, many communications have been received too late, and others are detained till the necessary inquiries can be made. We must also beg the indulgence of those correspondents the insertion of whose contributions is still delayed.

EDWARD TAYLOR begs to offer the following collection of FLOWER ROOTS on receipt of a Post-office Order for 20*s.*; or half the quantity of each sort for 10*s.*, package included; or any of the articles separate at the prices attached:—

	Per dozen—*s. d.*		Per dozen—*s. d.*
12 Hyacinths, best named, for pots or glasses, or at	6 0	12 double yellow Tulips	1 0
12 mixed Hyacinths for beds, 20*s.* per 100	3 0	24 Anemones	1 0
12 double Duc Van Thol Tulips, 4*s.* 6*d.* per 100	0 6	12 Jonquils	1 0
12 mixed Parrot Tulips	1 0	12 Narcissus	2 0
12 double mixed Tulips	1 0	12 Dog's-tooth Violets	1 0
12 finest single mixed Tulips	1 0	50 Winter Aconites, per 100	3 0
12 double Rex Rubrorum Tulips	1 0	50 double Snowdrops	1 6
		50 mixed Ranunculus	5 0
		100 Crocus, in 25 named varieties	3 0
		100 mixed Crocus	1 0

If any sorts in the foregoing collection are not required, increased quantities of those most desired will be sent. CATALOGUES gratis on application.

Seed and Plant Establishment, Malton, Yorkshire.

EARLY HANDSWORTH POTATO.

FISHER, HOLMES, AND CO. beg to offer their EARLY HANDSWORTH POTATO, a very superior kind for forcing in pots and frames, the very earliest for open ground, and a great acquisition for market gardening purposes. It is very dwarf, growing not more than from 4 to 8 inches high, price 3*s.* per peck. It is thus reported in the *Gardeners' Chronicle*, 1858, p. 457: "Out of 74 varieties grown for trial in the Horticultural Society's Gardens the Early Handsworth was by 10 days the earliest;" also, at p. 656, "Among Potatoes the Early Handsworth deserves particular notice. It comes in some 10 days earlier than the Ash-leaf Kidney, is excellent in quality and a very prolific, round, white kind; six plants produced 6 lbs. of Potatoes; its great recommendation, however, is its earliness," to which may be added testimonials from many of the leading Gardeners and Nurserymen in the country.

F., H., & Co. having made provision for a large supply this season they are enabled to offer it to the Trade. Price on application. The following Nurserymen and Seedsmen have already purchased:—

Mr. James Veitch, jun., Chelsea
,, Denyer, London
,, W. Skirving, Walton Nursery, Liverpool
,, Charles Turner, Slough
,, Watkinson, Manchester
,, Henderson, Birkenhead
,, John Soden, Middle Barton, Oxford
,, Ivery, Peckham, London
,, Wm. Foster, Stroud
,, Darby, Cirencester
,, Perkins, Leamington
,, Matheson, Gloucester
,, J. Sealey, Bristol
,, Harris, Bristol
,, Wm. Hood, Ashby-de-la-Zouch
,, Wardle, Burton-on-Trent
,, Thos. Warner, Leicester
Messrs. Hurst & M'Mullen, London
,, E. G. Henderson & Son, St. John's Wood, London
,, James Carter & Co., London
,, Henderson & Co., Pine-apple Place, London
,, Butler & M'Culloch, London
,, Hooper & Co., London
,, Osborn & Sons, Fulham
,, J. & C. Lee, Hammersmith
,, H. Low & Co., Clapton
,, James Veitch & Son, Exeter
Messrs. Garraway, Mayes & Co., Bristol
,, F. & A. Dickson & Sons, Chester
,, Finney & Co., Gateshead
,, Thomas Davies & Co., Wavertree, Liverpool
,, Peter Lawson & Son, Edinburgh
,, Downie & Laird, Edinburgh
,, Dickson, Hogg, & Robertson, Dublin
,, Wood & Son, Maresfield, Uckfield
,, J. & C. Wheeler & Son, Gloucester
,, Maule & Son, Bristol
Mr. G. Chivas, Chester
Messrs. Peter Lawson & Sons, London
Mr. Vertigern, Birmingham
,, Thomas Wild, Ipswich
Messrs. Minier, Nash, & Co., London
,, Morrison, Brothers, Aberdeen
,, Morrison & Son, Elgin
Mr. W. Crowder, Horncastle, Lincolnshire
,, G. Wheeler, Warminster
,, William May, Leaming Lane, Bedale [Leeds
Messrs. Walker, Buslingthorpe, Handsworth Nursery, Sheffield.

WALTON NURSERY, LIVERPOOL.

WILLIAM SKIRVING begs to announce that in consequence of part of the Land of one of his Nurseries being required for building purposes, he intends CLEARING OFF the TREES and SHRUBS thereon as soon as possible, to accomplish which he is willing to submit to a great reduction in their value.

The Stock consists of many hundreds of fine well-grown specimen plants of such Trees as the Araucaria, the Cedrus Deodara, the Cryptomeria, and many other Choice Hardy Coniferous Trees lately introduced, with very large quantities of smaller sizes of the same. There is also a very extensive Stock of Evergreen and Flowering Shrubs on the land to be cleared, amongst which are fine large specimen plants of the varieties of Green and Variegated Holly, the English and Irish Yew, Cedars, Cypress, Arbor-vitæ, and Rhododendrons, with many thousands of ordinary planting sizes.

W. S. invites the particular attention of Planters of Public or Private Parks, Cemeteries, Garden or Pleasure Grounds, to inspect the Stock now offered, feeling certain such a collection of Trees and Shrubs, for extent and variety, has seldom or ever been offered to the public.

At the same time W. S. begs to offer his extensive Stock of Fruit and Forest Trees, and several acre of Transplanted Thorn Quicks, at his adjoining permanent Nursery. Catalogues on application.

TO NOBLEMEN, GENTLEMEN, AND OTHERS PLANTING EXTENSIVELY.

WHITEHOUSE AND WHITTAKER beg to call attention to their Stock of FOREST TREES in general, and particularly to their extensive Stock of LARCH, SPRUCE, AND SCOTCH FIRS. The Larch this season is very strong and suitable where Game abounds, being from 3 to 6 feet high, Spruce from 1½ to 3 feet, and Scotch from 1½ to 4 feet, all of which, from the peculiar nature of the soil, lift with fine fibrous roots. Their Stock of Transplanted GREEN HOLLIES exceeds 200,000 from 6 inches to 4 feet, a large portion of which are handsome plants with leaders. The whole having been recently removed, will move with safety. Their Stock of Transplanted QUICKS is also large and very strong.

The General NURSERY STOCK of Ornamental Trees, Flowering Shrubs, Evergreens, American Plants and Coniferous, &c., are varied and extensive:—Cedrus Libani, 8 to 11 feet, with fine leaders; Cedrus Deodara, from 1 to 5 feet; Araucaria imbricata, 1 to 6 feet; Cupressus macrocarpa, 2 to 5 feet; Variegated Hollies, fine specimens; Arbor-vitæs, of sorts, 1 to 8 feet; Pinus insignis, 5 feet; Hemlock Spruce, 3 to 8 feet; Standard and Portugal Laurels, Balm of Gilead, Austrian Pines, Pinus Cembra, &c. The whole of these having been shifted within the last 18 months will insure their complete success in moving to a distance.

Their Stock of FRUIT TREES is this season of very fine growth, consisting of Standard and Dwarf-trained Peaches, Nectarines, Apricots, Plums, Cherries, Pears, &c.

Horticu tural and Agricultural Seeds of the best quality; Greenhouse, Bedding, and Herbaceous Plants, Dutch Bulbs, Seakale, Asparagus, Russian Mats, Mushroom Spawn, Gishurst Compound, and all other articles connected with the Nursery and Seed business.

Brereton Nursery, Rugeley, Staffordshire, is conveniently situated, being two miles from Rugeley Station, on the Trent Valley Line.

MONRO'S PROLIFIC CUCUMBER.—Seeds of the above may now be had in packets 2*s.* 6*d.* each. First prize Certificates have been awarded it, both by the Horticultural Society and Crystal Palace Company, at the grand exhibitions of this season, where as many as 36 fruit were shown on one branch 2 feet long, six fruit averaging about 2 inches long. Special notice was also taken of it in the leading article of the *Gardeners' Chronicle* of May 14. Upwards of 3000 fruit have been cut this season from April 4 to July 4 out of a house 40 feet long. The usual allowance to the Trade.

G. MONRO, Colney Street, St. Albans, Herts.

CARTER'S PROLIFIC RASPBERRY.

JOHN CARTER, JUN., has pleasure in again offering the above Raspberry to the notice of the Horticultural world. It is a beautiful red fruit, very large, of fine flavour, and most abundant bearer. It was named by Mr. Glenny, after he had grown some plants one season, and he has since confirmed all he said in its favour, both in the "Garden Almanack" and in *Lloyd's Newspaper*.

J. C. has many testimonials of its excellence, and feels quite confident no one who may favour him with an order can be disappointed. Strong Canes, 5*s.* per dozen, or 33*s.* per 100, at the Nursery, or of the agents, HURST & MCMULLEN, 6, Leadenhall Street, E.C., or GEORGE GLENNY, Fulham, S.W. A CATALOGUE of general NURSERY STOCK may be had on application.—Keighley Nursery, Yorkshire.

TO THE TRADE.

THOMAS CRIPPS, NURSERYMAN, Tunbridge Wells, Kent, respectfully offers the following in fine strong well-rooted Plants:—

Standard Roses, 2 feet to 3½ and 4 feet stems, really good kinds, 50*s.* per 100; superior ditto, 2½ ft. to 4 ft. stems, 63*s.* per 100.
Dwarf Gallica Roses, &c., on own roots, by name, 20*s.* per 100.
Dwarf-worked Perpetual Roses, by name, 40*s.* per 100.
Dwarf Blush Pink China Roses, 15*s.* per 100, or 500 for 63*s.*
Dwarf Crimson do. do. 25*s.* per 100, or 500 for 100*s.*
Rhododendron ponticum stocks, fine strong for spring working, 20*s.* per 100.
Rhododendron ponticum, fine healthy stuff, the greater portion showing from 1 to 6 or 7 flower-heads, and from 9 in. to 2 feet in height, 25*s.* to 50*s.* per 100.
Rhododendron maximum album, fine large bushy stuff, 18 to 30 inches high, many well set with bloom buds, 9*s.* per doz. or 60*s.* per 100.
Rhododendrons.—Choicest named kinds can be supplied by the 1000 if required.
Hardy Heaths.—A fine collection, and beautiful large healthy plants, 20*s.* per 100.
Double Yellow Primroses, 20*s.* per 100 or 60*s.* for 400.
Manetti Stocks.—Fine strong, 40*s.* per 1000 or 70*s.* for 2000.
Larch Fir, 3 to 5 feet, 25*s.* per 1000.
Spanish Chesnut, 4 feet to 6 feet, fine, 40*s.* per 1000.

From unknown correspondents either a remittance or respectable London reference must accompany the order. Five per cent. on cash accounts. When less than half-quantities herein quoted are ordered at once, an advance in price will be charged.

REIGATE SILVER SAND.—Best quality for Florists, 16*s.* per ton; less quantities, 1*s.* 6*d.* per bushel, delivered to any London wharf or railway. PEAT, LOAM, and LEAF MOULD, in large or small quantities. Sacks for Sand, 1*s* 6*d.* each, or on hire 6*d.* each (five hold a ton).

JOHN KENNARD, Purveyor to her Majesty, Swan Place, Old Kent Road, London, S.E.

DESIGNS FOR FLOWER BEDS AND GARDENS—In consequence of numerous applications J. MARSHALL, 2, Goldsmith Street, Nottingham, has been induced to prepare another set of Designs. They comprise upwards of 80, diversified in style, and will be forwarded to any address on receipt of 24 postage stamps.

MR. EDWARD MILNER having constructed and laid out the Crystal Palace Gardens and Park, Sydenham, under the direction of Sir Joseph Paxton, and having managed them for the Company till last Midsummer (when owing to the pressure of other professional duties his engagement terminated), desires to express his acknowledgments to those Noblemen and Gentlemen who have honoured him with their patronage, and to state that he continues to undertake the execution of works of a similar character.

An active experience of upwards of 20 years enables Mr. MILNER to offer his services in the formation and improvement of Parks, Gardens, and Ornamental Grounds, also in preparing designs for Conservatories and other Horticultural Buildings; in establishing and thinning Plantations and Woods, with special reference to the trees most suitable for particular soils and aspects, the valuation of Timber, Draining, Road-making, &c.

Mr. MILNER is permitted to refer to Sir Joseph Paxton and to several Noblemen and Gentlemen for whom he has done work.—Address, EDWARD MILNER, "Oxford House," Anerley Road, Norwood, S.

NURSERYMEN SUPPLIED WITH THE BEST TOBACCO PAPER at 4*l.* per cwt.; any quantity less than ½ cwt., 10*d.* per lb. Warranted genuine.—Address TOM BRYANT, Messrs. Jackson & Son, Tobacco Manufacturers, Lady Lane, Leeds.

GENUINE TOBACCO PAPER FOR FUMIGATING.

H. APPLEBY (Foreman to Messrs. Ivery & Son, Nurserymen, Dorking, Surrey), has always a stock of the above in 4-lb. packets at 1*s.* 3*d.* per lb. A liberal discount allowed to the Trade. Testimonials too numerous for insertion, but may be had on application.

SHEET IRON POTS FOR FUMIGATING, 3*s.* 6*d.* each.

N.B. All orders to be accompanied with a Post-office Order, payable to HENRY APPLEBY, Dorking, Surrey.

GLAZIERS' DIAMONDS FOR CUTTING HORTICULTURAL and other GLASS, to be had of the Wholesale Manufacturer, JOHN EDWARDS, 20, Sharp's Alley, West Smithfield, London, E.C. Prices from 10*s.* to 27*s.* 6*d.*

PATENT GUTTA PERCHA SOLES.—IMPORTANT TO GARDENERS.—The Gutta Percha Company have the pleasure to acknowledge the receipt of the following letter from G. GLENNY, Esq., the celebrated Florist:—

"420, Strand, London.

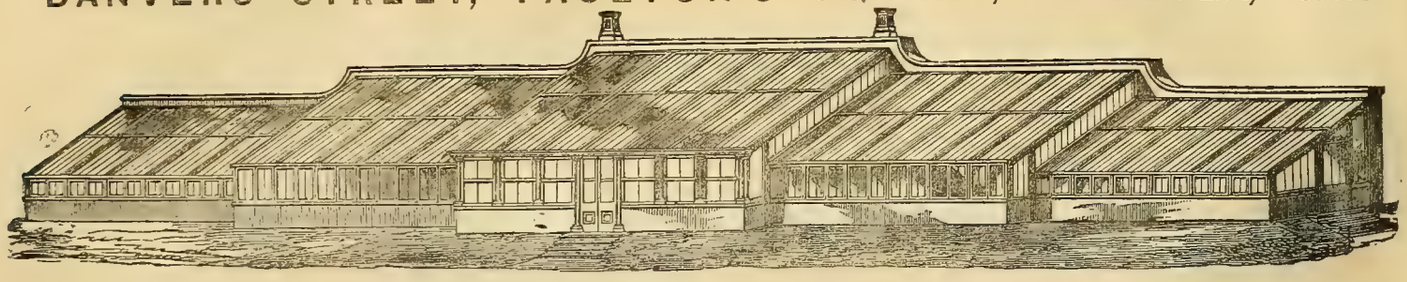
"Gentlemen,—I have worn Gutta Percha Soles and Heels these two years, and being so much in a garden as I necessarily am in all weathers, and with the ground in all states, I would on no account be without them. As a matter of economy I would recommend Gardeners to use them, for they may repair the worn part at all times by warming the material at the fire, and pressing it from the thick parts to the worn parts, as easily as if it were so much dough. I think it the duty of all persons who must occasionally wet their feet to adopt a material that completely defies damp. Many a gardener would escape colds and rheumatism by the use of Gutta Percha Soles.

"Your obedient servant, G. GLENNY."

Every variety of Gutta Percha articles, such as Mill Bands, Tubing, Soles, Sheet, Pump Buckets, Fire Buckets, Bosses, Union Joints, Flasks, Bottles, Bowls, Chamber Vessels, Toilet Trays, Sponge Bags, Curtain Rings, Galvanic Batteries, Talbotype Trays, &c., manufactured by the Gutta Percha Company, and sold by their wholesale dealers in town or Country.—The Gutta Percha Company, Patentees, 18, Wharf Road, City Road, E.C., London.

HORTICULTURAL WORKS,

DANVERS STREET, PAULTON'S SQUARE, CHELSEA, S.W.



JAMES GRAY

RESPECTFULLY BEGS TO INFORM THE NOBILITY, GENTRY, NURSERYMEN, GARDENERS, AND OTHERS, THAT HE CONTINUES TO CARRY ON THE BUSINESS IN ALL ITS BRANCHES AT THE ABOVE OLD ESTABLISHED PREMISES.

CONSERVATORIES, GREENHOUSES, FORCING HOUSES, VINERIES, PITS, &c.,

OF EVERY DESCRIPTION, ERECTED ON THE MOST APPROVED PRINCIPLES.

HEATING BY HOT WATER.

J. G. having specially devoted his attention for many years to this part of the business, is now fully prepared to Heat every description of public and private buildings, viz. :—Churches Mansions, Warehouses, &c., as well as all structures connected with Horticulture, in the most efficient manner. His system is the most simple that can be adopted—which he has found from long experience to be the best—can be constructed at less cost, and is more easily managed than those of a complicated nature which have attracted the notice of the public.

J. G. begs to call attention to his CAST-IRON CORRUGATED ARCH BOILER, which from its simplicity of construction has not the liability to fracture to which those of a more complex design are always subject. They have been extensively used for many years, and have given the greatest satisfaction.

All business is conducted at this establishment on the principle of lowest remunerative profits consistent with best materials and workmanship.

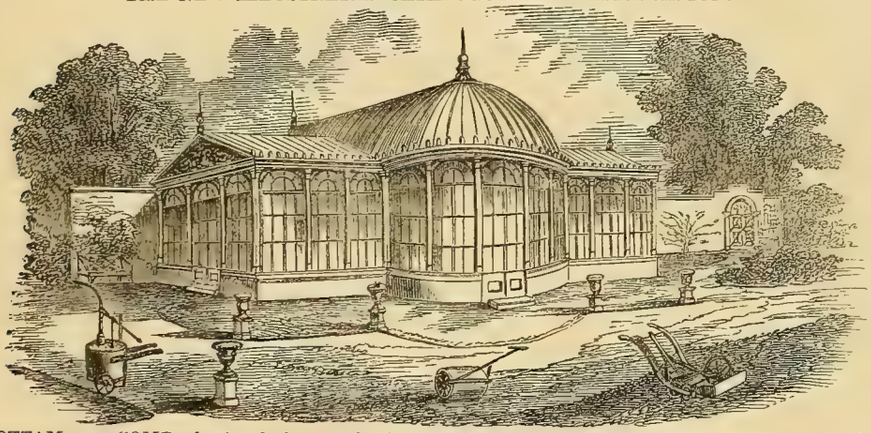
PLANS AND ESTIMATES FURNISHED ON THE SHORTEST NOTICE.

COTTAM & COMPY., Engineers, Founders, &c.,

2, WINSLEY STREET, LONDON, W.

☞ **A SHOW ROOM DEVOTED ENTIRELY TO ARTICLES OF HORTICULTURE.**

THE NEW ILLUSTRATED CATALOGUE UPON APPLICATION.



COTTAM AND COMPY. having had upwards of 40 years' experience in the arrangement and construction of every description of HORTICULTURAL BUILDINGS AND HEATING BY THE CIRCULATION OF HOT WATER, are well qualified to guarantee the perfect execution of any works entrusted to them in the erection of

Conservatories	Summer Temples	Orchid Houses	Apricot and Peach Houses
Conservatory or Glass Walls for the protection of plants or ripening wall fruit	Arbours, &c.	Conservatories for Window or Balcony Gardening	Tropical Fruit Houses
	Greenhouses		Forcing Pits and Frames
	Orangeries	Vineries	Cucumber and Melon Houses

☞ *Drawings and Estimates free upon application.*

ORCHARD HOUSES, combining cheapness of construction with suitability of purpose—portable or otherwise.

EXHIBITION PRIZE MEDAL GATES AND STABLE FITTINGS.

Iron Hurdles, Strained Wire Fencing, Game Netting, &c.

Every description of Plain, Ornamental, Cast and Wrought Iron, and Wire Work.

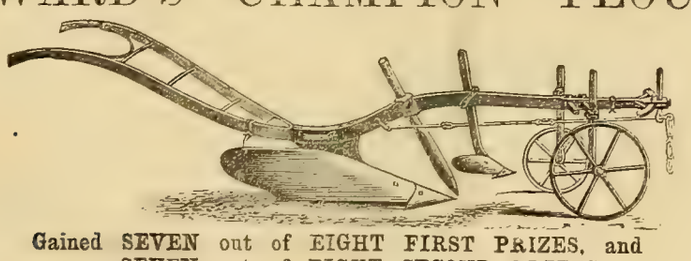
SEE SEPARATE LISTS UPON APPLICATION.

COTTAM & COMPY, Iron Works, 2, Winsley Street, Oxford Street, W. (opposite the Pantheon).

BEDFORDSHIRE AGRICULTURAL SOCIETY, 1859.

J. AND F. HOWARD have much pleasure in informing the Public that at the Ploughing Matches of the above Society, just concluded,

HOWARD'S CHAMPION PLOUGH



Gained SEVEN out of EIGHT FIRST PRIZES, and SEVEN out of EIGHT SECOND PRIZES,

Thereby more than ever sustaining its position at home, while, at the recent Meetings of the Royal Agricultural Society of England and the Highland and Agricultural Society of Scotland, it also gained the

Two Chief Prizes as the Best Plough for General Purposes.

CATALOGUES, with full particulars, sent post free on application to

J. & F. HOWARD, BRITANNIA IRON WORKS, BEDFORD.

IMPROVEMENTS IN HEATING, &c.

MUSGRAVE'S PATENT SLOW-COMBUSTION STOVE, for Warming Public Buildings, Hall, Shops, Conservatories, Factories, Drying Rooms, &c. Will burn in Churches from Saturday till Sunday evening, avoiding attention during the hours of worship. In Halls will burn day and night for weeks, with little care. Capable of warming a large apartment for 24 hours, at a cost of 2*d.*; and deserving of special attention, because of its safety, healthfulness, durability, and extreme simplicity. This Stove is the nearest approach to warming by hot water.



MUSGRAVE'S PATENT STABLE FITTINGS AND HARMLESS LOOSE BOXES have obtained the award of a large Council Medal from the R. I. A. Society for the following improvements:—1st, The Horse cannot injure himself or others in the same stable if he breaks loose in his stall. 2d, He cannot waste the hay. 3d, He can have cut or uncut hay at pleasure. 4th, He has clean water always before him. 5th, A pure and wholesome atmosphere is secured. 6th, The whole fittings are stronger than usual, without increase in price, and there is no risk of infection.



The Loose Box is really what its name denotes, and the most spirited Horse may be turned into it without danger.

MUSGRAVE'S PATENT IRON COW-HOUSE FITTINGS, as approved by the Board of Works, adopted in the Ulster Model Farm, and by many of the most eminent Stock Breeders in the Kingdom, are made wholly of iron, very durable, cleanly, and attractive in appearance. The fodder is always fresh, being freely exposed to the air, removed from the breath of the animal, and separated from the roots or damp food. The range of Troughs can be quickly filled with water for the use of the Cows, or for washing out in case of epidemic, and the cost is very moderate.



These inventions being distinguished for strength, simplicity, and practical usefulness will repay public inquiry.

MUSGRAVE BROTHERS are also Makers of Wire Fencing, Hurdles, Field and Entrance Gates, Corn Rick Stands, Conservatories, Hot-water Apparatus, Verandahs, Rural Bridges, &c.; and their works being favourably placed for cheap labour and materials, they can offer corresponding advantages in price.

MUSGRAVE'S Patent Field Gates have gained the 1st Prize from the R. I. A. Society for strength, durability, and cheapness.

For particulars address MUSGRAVE BROTHERS, Ann Street Iron Works, Belfast.

C. STEPHENSON, late STEPHENSON AND SONS, 61, Gracechurch St., London, E.C., Manufacturer of Iron Hurdles, Fencing, &c., Improved Iron and Copper Conical Boilers and Apparatus for Warming Buildings of every description by Hot Water.

Prices and Estimates furnished upon application.

HOT-WATER PIPES at wholesale prices, with Elbows, Syphons, Tee Pipes, and every other connection. Wrought and cast iron Boilers, Saddle, Conical, Cylinder, and Elliptic, from 24*s.* each. Boilers and Iron Stands to use without brickwork. Valves from 12*s.* each. Coil Boxes, Furnace Doors, Furnace Bars, Supply Cisterns, and Builders' Castings of every description in stock, at Mr. LYNCH WHITE'S Iron Wharf, Upper Ground Street, Blackfriars Bridge, London, S.

TO THE NOBILITY, GENTRY, AND HORTICULTURISTS.

H. McCALLA (late principal Draughtsman to Messrs. Weeks & Co.), CIVIL ENGINEER and FARM ARCHITECT, begs to inform the above that the Horticultural Buildings being confined to so few, exorbitant prices are charged; that he prepares Working Drawings and Specifications, so that they can have their own constructed by any country carpenter, at 1*s.* 6*d.* per foot super, or upon their own estates at 1*s.* 4*d.* per foot. Plans also upon the same rule for erecting Hot Water Apparatus. Plans for all kinds of Farm Buildings, Homesteads, Labourers' Cottages, Laying out of Estates, Drainage. Plans &c., prepared for all the above Works and submitted to competition.—Office: 7 Upper Cheyne Row, King's Road, Chelsea, S.W.

HOT-WATER APPARATUS.

J. JONES begs to offer a complete HOT-WATER APPARATUS FOR GREENHOUSES, at the following prices, delivered free to any Railway Station in England :—

Size of House.	With Cylinder Boiler.	With Saddle Boiler.
20 feet by 10 feet ..	£8 10 0 ..	£9 0 0
25 ,, by 12 ,, ..	10 0 0 ..	10 10 0
30 ,, by 12 ,, ..	11 10 0 ..	12 0 0
30 ,, by 15 ,, ..	13 10 0 ..	14 10 0
40 ,, by 15 ,, ..	16 10 0 ..	17 10 0
50 ,, by 15 ,, ..	18 10 0 ..	20 0 0

The above prices include Boiler, strong Furnace Doors, Bars, Soot Doors, Cistern, Damper, Hot-water Pipes and Connections, Air Pipes, &c., all ready for fixing, and of the best quality. Further particulars will be sent on application. Parties ordering must send plans, showing doorways, position of boiler, &c.—J. JONES, Hot water Apparatus Manufacturer, 6, Bankside, Southwark, London, S.E.

HORTICULTURAL BUILDINGS AND HEATING BY HOT WATER.

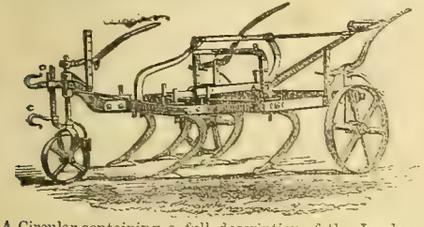
JOHN R. PEILL, 17, New Park St., Southwark, S.E., Manufacturer of every description of Buildings for Horticultural purposes, and Inventor of the Improved Conical Boiler for heating the same, is prepared to undertake works of any magnitude, and refers among others to the celebrated range of FORCING HOUSES at HER MAJESTY'S GARDENS, FROGMORE, and at SIR ROBERT PEEL'S, DRAYTON MANOR, constructed under the superintendence of his Manager, Mr. JOHN JONES; and also to his BOILERS fixed at the CRYSTAL PALACE, the ROYAL BOTANIC GARDENS, REGENT'S PARK, and KEW, and at several hundreds of the Nobility's seats, Public Establishments, and Manufactories in London and the provinces. J. R. P. also manufactures every description of Iron Roofs, Iron Houses, and Iron Fencing, plain and ornamental. Strong Iron Hurdles for Sheep (5ft. long, 3 ft. high, with 5 bars), 4s. 3d. each; ditto for cattle, 4s. 9d. each. Prices and other particulars forwarded on receipt of one postage stamp.

CLAY'S PATENT CULTIVATOR AND ERADICATOR will be exhibited at the SMITHFIELD SHOW, Baker Street, December 6, 7, 8, and 9.—Royal Yorkshire, and North Lincolnshire Societies' Prize Implement.—Requires one-fourth less horse power than any other implement tested by the Royal Society's judges as shown by the following table from the *Mark Lane Express*, July 18, 1859 :—

WARWICK MEETING—LIST OF CULTIVATORS.

	Cutting Width.	Power.
Clay ..	4 feet 5 inches	3.8
Bentall..	4 feet 4 inches	4.8
Coleman.	3 feet 5 inches	4 39

The frame of each implement is applicable as a Broadshare or Scarifier, Surface Parer or Skim, Cultivator or Grubber, and Eradicator or Drag Harrow. Price from 6*l.* 5*s.* to 12*l.* according to size and number of tines, wrought iron.



A Circular containing a full description of the Implement, Price List, and upwards of fifty testimonials (one from the Wakefield Farmers' Club) sent post free on application to CHARLES CLAY, Oakenshaw Iron Works, near Wakefield.

GLASS FOR ORCHARD HOUSES & CONSERVATORIES.

JAMES PHILLIPS AND CO. beg to submit their prices of GLASS for the present month.

16-oz. SHEET GLASS, in boxes of 100 feet.—3rds.	4ths.
12 by 9, 13 by 9, 14 by 9	14*s.* 6*d.* 12*s.*6*d.*
12 ,, 10, 13 ,, 10, 14 ,, 10, 15 by 10 ..	
13 ,, 11, 14 ,, 11, 15 ,, 11, 16 ,, 11 ..	
14 ,, 12, 15 ,, 12, 16 ,, 12, 17 ,, 12 ..	
18 ,, 12, 19 ,, 12, 20 ,, 12 ,, ..	16*s.* 6*d.* 14*s.*0*d.*
16 ,, 13, 17 ,, 13, 18 ,, 13 ,, ..	
19 ,, 13, 20 ,, 13, 21 ,, 13 ,, ..	
16 ,, 14, 17 ,, 14, 18 ,, 14 ,, ..	
19 ,, 14, 20 ,, 14, 21 ,, 14 ,, ..	

Boxes included and not returnable

GLASS for ORCHARD HOUSES, supplied by us to Mr. Rivers.

		16 oz.	21 oz.
20 in. by 12 in.			
20 in. by 13 in.	Common	14*s.* 0*d.* ..	£1 1*s.*
20 in. by 14 in.	Superior do. ..	16 6 ..	1 5
20 in. by 15 in.	English Glass ..	18 0 ..	1 9

Boxes included and not returnable.

SMALL SHEET SQUARES, in 100 feet boxes,—	*s.*	*d.*
6 by 4	6½ by 4½ 7 by 5 7½ by 5½	
8 ,, 6	8½ ,, 6½ 9 ,, 7 9½ ,, 7½	11 6
10 ,, 8	10½ ,, 8½	12 6

Boxes 2*s.* each, returnable at full price.

JAMES PHILLIPS AND CO.,

180, Bishopsgate St. Without, London, E.C.

NO CONNECTION WITH ANY OTHER HOUSE IN TOWN.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz SHEET GLASS of British Manufacture at prices varying from 2*d.* to 3*d.* per square foot for the usual sizes required, many thousands of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES, and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London, W.

See *Gardeners' Chronicle* first Saturday in each month.

HORTICULTURAL GLASS—JUNE TARIFF.

THOMAS MILLINGTON'S reduced Tariff of GLASS, &c.

6 by 4, 7 by 5, 8 by 6, 9 by 7 } 16 oz. to the foot, 11*s.* 6*d.*
6½ by 4½, 7½ by 5½, 8½ by 6½, 9½ by 7½ } per 100 feet.

In 100 boxes,—4ths quality, 12*s.* 6*d.* ; 3ds do., 14*s.* 4*d.*

10 by 8, 12 by 9, 12½ by 10½, 14½ by 10½, 13 by 11
10½ by 8½, 12½ by 9½, 13 by 10, 15 by 10, 13½ by 11½
11 by 9, 13 by 9, 13½ by 10½, 12 by 11, 14 by 11
11½ by 9½, 12 by 10, 14 by 10, 12½ by 11½

20 by 12	per 100 feet	16 oz. 21 oz.
20 by 13	Common ..	16*s.* .. 24*s.*
20 by 14	Superior .	18*s.* .. 27*s.*
20 by 15		

All Boxes included.

Orchard House sizes as supplied to Mr. Rivers.

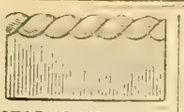
Hartley's improved Rough Plate Glass from ⅛ to ¾ in thickness.

Coloured Glass in great variety, at 9*d.* and 1*s.* per foot.

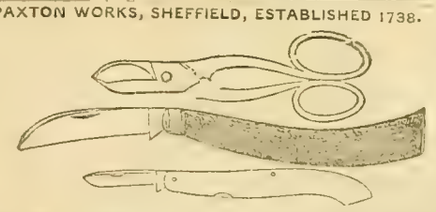
Paints, Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, Lamp Glasses, &c.

87, Bishopsgate Street Without, E.C., same side as Eastern Counties Railway.

LOOMES AND CO.'s CABLE PATTERN GARDEN EDGING may be obtained of Messrs. HOOPER AND CO., Covent Garden Market, W.C.



PAXTON WORKS, SHEFFIELD, ESTABLISHED 1738.

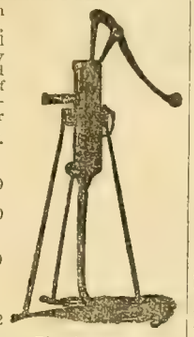


SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.—Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

WARNER'S IMPROVED LIQUID MANURE OR GENERAL PORTABLE PUMP.

These Pumps are fitted with WARNER'S Patent Bucket and Valve, and cannot clog in action. The barrel is made of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure on the stand, the legs of which fold together, and may be carried with ease by one man to tank or pond.

	£	*s.*	*d.*
Stand and Pump, with screwed tail pipe, fitted with strong brass union for suction pipe	2	15	0
If fitted with barrel of planished copper	3	17	0
Stand and Pump, with plain tail pipe, for tying on suction pipe	2	9	0
2-inch patent rubber and canvas flexible suction pipe, on wires, either 10, 12, or 15 ft., per foot	0	2	2



May be obtained of any Ironmonger or Plumber in town or country, at the above prices, or of the Patentees and Manufacturers, J. WARNER & SONS, 8, Crescent, Jewin St., London, E.C.

TO PIG, POULTRY, AND GAME FEEDERS.

JUPP'S RICE FOOD, POULTRY AND GAME.—RICE SWEEPINGS, 7*s.* 6*d.* per cwt., in 1½ cwt. bags; SCREENED RICE, 10*s.* per cwt., in 1½ cwt. bags; DOG BISCUITS, 14*s* per cwt.; OIL-CAKE, per ton only; RICE MEAL for PIGS, 6*s.* and 8*s.* per cwt., in 1 cwt. bags, at the mill. Orders must be accompanied by a remittance to insure delivery.—W. & R. JUPP, 6, Cross Lane, Eastcheap, E.C.

TO POULTRY FANCIERS.

FOR SALE, pure white TURKEYS, very beautiful and bred pure for years—Large Black, American Copper-coloured, and Grey, splendid; AYLESBURY DUCKS, Blue DUCKS (very handsome), COCHIN CHINAS, DORKINGS; also ICELAND PONIES—a pair of cream-coloured Ponies, a pair of Blacks, and a pair of Greys, imported direct from Iceland; very handsome, hardy, and capital action, and from their docility admirably adapted for ladies driving, or for children riding. They are all three to four years old, and 12 to 13 hands high.—Apply to Mr. JAMES CLARK, Overseer, Stidriggs by Moffat, N.B.

FOR SALE, 4 pair of YOUNG BUDGEREEJARS or AUSTRALIAN PAROQUETS, price 3*l.* 10*s.* the pair. Also 1 pair of COCKATEELS, price 4*l.* The above Birds were all born in England this summer. The owner having been most successful in rearing a great number is willing to part with a few at the above prices.—For particulars, address to L. G. A., care of Messrs. Hunt & Collins, Tailors, Haymarket, London, S.W.

BATH NURSERY AND SEED ESTABLISHMENT.

MRS. GRIFFIN, widow of the late JAMES GRIFFIN, finding the business too extensive for her management, would be glad to dispose of it on liberal terms.—Further particulars can be obtained at the Nursery, Weston Road; or 2, New Bond Street, Bath.

TO NURSERYMEN, GARDENERS, AND OTHERS.

TO BE DISPOSED OF, a SMALL NURSERY, about 2 acres, in the neighbourhood of London, with Houses and Pits well stocked with Plants and Shrubs, and a good Jobbing Business.—Apply to Mr. A. CHANDLER, Horticultural Agent and Valuer, 20, Priory Road, Wandsworth Road, S.

NURSERY GROUND.

TO BE LET, WHITTINGTON NURSERY, Upper Holloway, to be entered upon immediately.—For particulars, apply to J. F. MARSON, Esq., Small Pox Hospital, or to Mr. Bunney, Nurseryman, Stratford, Essex, E.

HUCCLECOTE GARDENS, 2½ MILES FROM GLOUCESTER.

TO BE LET, with immediate possession, the above capital walled-in GARDENS, containing about 4 acres with House, Farm-yards, Buildings, Orchard, and Land adjoining, containing in the whole about 16 acres, with Greenhouses, Propagating houses, Vineries, Pits, &c. Extent of glass 5770 feet.—For particulars apply to W. KNOWLES, Auctioneer, St. Mary's Square, Gloucester.

TO BE LET, a Farm 3 miles from North Crawley, Bucks, and 8 from Bedford, comprising 44 acres of Grass and 97 of Arable Land, in all 141 acres, with convenient cottage residence, and suitable farm buildings. The Land lies level and open and is well drained. Possession may be had immediately. The tenant will be required to show good recommendation, and at least 1000*l.* ready capital.—Address, Messrs. Davis & Vigers, Land Agents, 3, Frederick's Place, Old Jewry, E.C.

FARMS TO BE LET.—The time for receiving offers for a LEASE of the FARMS of ROBGILL MAINS and BROADLEA, in the south of Dumfriesshire, lately advertised in this Paper, is now limited to the 21st of November current.—Apply to Mr. EWART, Royal Bank, Ecclefechan, Nov. 12.

Sales by Auction.

DUTCH BULBS, STANDARD AND DWARF ROSES, ETC.

MR. J. WILLMER will Sell as above, at the Auction Mart, on TUESDAY, Nov. 15, and THURSDAY, Nov. 17, at 12 o'Clock each day.—On view the mornings of Sale, and Catalogues had at the Mart, and of the Auctioneer, Springfield Nursery, Sunbury, S.W.

EXTRA POULTRY SALE.

MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, W.C., on TUESDAY, November 15, at 12 o'Clock precisely, POULTRY of choice quality, including Cochins, Dorkings, Spanish, Brahmahs, Game, Bantams, &c., from Messrs. Manning, Andrews, Douglas, and other first-rate breeders. Also a capital Lot of PIGEONS from F. G. Stevens, Esq., and other well-known Fanciers.—May be viewed on the morning of Sale, and Catalogues had of Mr. J. C. STEVENS, 38, King Street, Covent Garden, W.C.; if for the country, by inclosing 2 stamps.

STANDARD AND DWARF ROSES. DUTCH BULBS,

ABOUT 100 STRONG PLANTS OF ARAUCARIA COOKII, AND DAMMARA OVATA, &c.

MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, W.C., on SATURDAY, Nov. 19, at half-past 12 precisely, about 500 Standard and Dwarf Roses of the best sorts of Hybrid Perpetual, Bourbon, Tea, and Noisette, and including some of the recent novelties. Also a first-class collection of DUTCH BULBS, consisting of the finest single and double Hyacinths, Narcissus, Jonquils, Anemones, Crocus, Tulips, Ranunculus, Gladioli, Iris, Tacsettes, &c. &c.; about 80 strong plants of ARAUCARIA COOKII, from 6 to 7 inches high; 30 nice Plants of DAMMARA OVATA, from 6 to 8 ins high, &c. &c.—May be viewed on the morning of Sale, and Catalogues had of Mr. J. C. STEVENS, 38, King Street, Covent Garden, W.C.; if for the country by enclosing two stamps.

FINAL STOCK OF MR. R. FORTUNE'S CHINESE PLANTS.

MR. J. C. STEVENS has been favoured with instructions from Mr. Glendinning, of Chiswick, to Sell by Auction, at his Great Room, 38, King Street, Covent Garden, W.C., on WEDNESDAY, November 30, and following day, at half-past 12 o'Clock precisely, without reserve, the FINAL AND MOST VALUABLE PORTION OF MR. FORTUNE'S CHINESE INTRODUCTIONS. The Plants consist of the beautiful NEW CAMELLIAS "Cup of Beauty" and "Princess Frederick William," fine striped varieties with flowers of the most perfect form, and producing striped and self-coloured blooms upon the same plant; three new DOUBLE FLOWERING PEACHES, viz. the Carnation, the Rose, and the Camellia flowered; these have flowers as large as Roses, the first being beautifully striped like the Carnation; Torreya grandis; an entirely new species of Juniper with glaucous leaves, Prunus triloba, Abies Kæmpferi, a new Evergreen Hardy Oak, together with a new Purple Lilac, and other unknown and undescribed species of Chinese Plants.—On view the day prior and morning of Sale, and Catalogues had at the Rooms; or if for the country by inclosing two stamps.

TO GENTLEMEN, NURSERYMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will Sell by Auction at the Mart, on FRIDAY, November 18, at 12 o'Clock, a first-class collection of DUTCH BULBS, consisting of the finest Double and Single Hyacinths, Narcissus, Jonquils, Anemones, Crocus, Tulips, Ranunculus, Gladiolus, Snowdrops, &c.; also a fine assortment of 500 Standard and Dwarf Roses, with handsome straight stems and fine bushy heads; selected American Plants, including Ghent and other Azaleas, Hybrid Rhododendrons, Kalmias, Andromeda floribunda, &c., beautifully set with bloom-buds, &c.—May be viewed the morning of Sale. Catalogues may be had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, COW-KEEPERS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are directed by Mr. Lockhart to Sell by Auction, on the Premises, Parsons Green Lane, Fulham, on MONDAY, Nov. 14, at 12 o'Clock, a costly and extensive collection of BULBS and FLOWER ROOTS, about 20,000 in number, consisting of all the approved and ornamental varieties of Hyacinths, early and late Tulips, Crocus, Narcissus, Lilies, Gladiolus, Ranunculus, Iris, Scillas, and other Bulbs, all warranted true to description and of the finest kinds. Also 300 fine STANDARD ROSES, including the choicest Hybrid Perpetuals, Bourbons, Noisettes, &c.; handsome dwarf-trained Peaches and Nectarines, a quantity of Potatoes, Mangel Wurzel, Garden Tools, and sundry effects.—May be viewed the day prior to the Sale. Catalogues may be had of Mr. Lockhart on the Premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex, N.E.

STOWMARKET.—TO GENTLEMEN, NURSERYMEN, AND PUBLIC COMPANIES ENGAGED IN PLANTING.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Barnes to Sell by Auction, on the premises, Danecroft Nurseries, Stowmarket, about 10 minutes' walk from the Railway Station, on WEDNESDAY, Nov. 16 and following day, at 11 o'Clock each day, without reserve, a portion of the land being required for other purposes, the valuable NURSERY STOCK, including 20,000 Common Laurels, 10,000 Berberis Aquifolium, 2000 Laurustinus, 5000 Privet sorts, 1000 Lilacs, Guelder Roses, and other Evergreen and Deciduous Shrubs; also 10,000 Ornamental, Fruit, and Florist's Trees, comprising the usual assortment, with about 2000 choice Dahlia Roots, including the finest varieties of 1859 and other approved kinds; 20,000 Gladiolus Bowensis, 2000 Evergreen and other Honeysuckles, &c.—May be viewed prior to the Sale. Catalogues may be had on the premises; at the Post Office, Stowmarket; at the principal Inns in the neighbourhood and Seedshops in London; and of the Auctioneers, American Nursery, Leytonstone, Essex, N.E.

QUEEN'S ELM, FULHAM ROAD.

TO THE NOBILITY, GENTRY, NURSERYMEN, FLORISTS, BUILDERS, AND OTHERS.

MR. KIRKE has been instructed by Mr. Shearman to Sell by Auction on the Premises, Rose Cottage, Fulham Road, S.W., near the Queen's Elm, on TUESDAY and WEDNESDAY, November 15 and 16, at 12 for 1 o'Clock each day, a portion of his valuable NURSERY STOCK, comprising 1000 Standard and Dwarf Roses; 1000 Passion Flowers in pots; 1000 Aucubas, 2 to 3 feet; 300 Variegated and Green Hollies; 600 Arbor Vitæ, 3 to 5 feet; 10,000 Evergreen Privets, 3 to 6 feet; 2000 fine young Laurels, 2 to 5 feet; 500 fine young Yews, 3 to 5 feet; 300 Limes and Laburnums; 700 Persian and other Lilacs; 600 Irish Ivies in pots; Portugal Laurels; Box Trees, 3 to 5 feet; Spruce Firs; 2000 Euonymus, 1½ to 3 feet; 1000 Delphinium formosum, Berberis Aquifolium; 1000 Phillyrea, Ribes, &c. A new Spring Van.—May be viewed two days prior to the Sale. Catalogues had on the premises, and at the Offices of Mr. KIRKE, Auctioneer, House and Estate Agent, 19, Brompton Row, Brompton, S.W.

EXTENSIVE SALE OF FRUIT AND FOREST TREES, SHRUBS, &c.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, BUILDERS, & OTHERS.

MESSRS. PAGE AND CAMERON will Sell by Auction on TUESDAY, November 29, and following days, at 10 for 11 o'Clock, on the premises, New Road, Barnet, by direction of the proprietor, the general NURSERY STOCK, comprising fine and valuable Green and Variegated Hollies, Aucubas, Laurustinus, Arbutuses, Portugal and Common Laurels, Pinuses, Rhododendrons, Arbor-vitæs, &c.; together with Fruit and Forest Trees of all kinds.—Catalogues may be had on the premises; at the Inns in the neighbourhood; and of Messrs. PAGE & CAMERON, Land Agents and Surveyors, 64, Old Bread Street, E.C., and St. Albans.

JAPAN LILIES, HYACINTHS, &c.—All orders amounting to 21*s.* and upwards sent carriage paid. The following collection "B." for 21*s.* or the half for 10*s.* 6*d.*:—12 Splendid Hyacinths, 4 Border Hyacinths, 2 beautiful Japan Lilies, 12 beautiful Gladioli, 30 Double Tulips, 12 Single Tulips, 100 Crocus, 100 Snowdrops, 4 Polyanthus Narcissus, 40 Border Narcissus, 40 Ranunculus, 20 Anemones.

A DESCRIPTIVE AND PRICED CATALOGUE OF BULBS, with practical cultural directions for amateurs, sent free and post paid on application.

BUTLER & MCCULLOCH, Covent Garden Market, W.C.

HYACINTHS AND OTHER BULBS.

WM. CUTBUSH AND SON can still supply Roots equal to the first they sent out this season, as all BULBS are especially selected for them before they are imported from Holland. Descriptive CATALOGUE post free on application.

Highgate Nurseries, London, N.

DUTCH AND OTHER BULBS.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their CATALOGUE of the above is now ready, and will be forwarded post free on application. Early orders are solicited, as their successful cultivation depends in a great measure on early planting.

Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

DUTCH FLOWERING ROOTS.

CHARLES TURNER can supply Strong Roots of the under-mentioned, all of the first quality, having been selected with much care:—

HYACINTHS for pot or glass culture for bedding	RANUNCULUS
NARCISSUS	TULIPS
CROCUS	ANEMONES
	GLADIOLUS, &c.

A Priced Descriptive List will be sent free by post on application.—The Royal Nurseries, Slough.

AMERICAN PLANTS, &c.

MESSRS. WATERER AND GODFREY'S CATALOGUE for the present season is now ready, and may be had on application. It describes fully all Rhododendrons worth growing, and contains a List of Azaleas, Hardy Heaths, and other American Plants, as well as a summary of the general stock of the most extensive Nurseries in England.

The Catalogue may also be had at Messrs. MAY'S & Co., 1, Wellington Street, Strand, W.C.

Knap Hill Nursery, near Woking, Surrey.

HARDY RHODODENDRONS.

MESSRS. WATERER AND GODFREY invite attention to their Seedling RHODODENDRONS, which they are selling without names, and which they strongly recommend as being very superior in point of HABIT, FOLIAGE, COLOUR, and GENERAL HARDINESS. They are from 1½ to 2½ feet high, and as much through, and no plants can possibly be in finer health. They will be sold at very liberal prices, and purchasers can select from a stock of many thousands.

Knap Hill Nursery, near Woking, Surrey.

RHODODENDRONS.

JOHN WATERER'S CATALOGUE OF HARDY, SCARLET, and other choice RHODODENDRONS, as annually exhibited at the Royal Botanic Gardens, Regent's Park, is now published and will be forwarded on application. Faithful descriptions of all the esteemed varieties will be found detailed, with a list of the popular kinds of AZALEAS and other AMERICAN PLANTS, as well as a selection of CONIFEROUS TREES, with height and prices.

The American Nursery, Bagshot, Surrey, near Sunningdale Station, South-Western Railway.

SUPERB SPECIMEN SCARLET RHODODENDRONS and others, from 3 to 5 feet in height, and 3 to 4 feet in diameter, some of which are well furnished with bloom buds, from 3*s.* 6*d.* to 10*s.* 6*d.* each, large and very bushy, well adapted for immediate effect.

WILLIAM WOOD & SON, Woodlands Nursery, Maresfield, near Uckfield, Sussex.

CATALOGUE.

YOUELL AND CO.'S GENERAL AND DESCRIPTIVE PRICED CATALOGUE for this season is now ready, and will be sent free on application.

It contains detailed Lists of Greenhouse Plants, Conifers, Shrubs, as well as all the newest introductions in Soft-wooded Plants.—Royal Nursery, Great Yarmouth.

NEW AND CHEAP CHRYSANTHEMUMS OF 1859.

J. COURCHA is now prepared to send out strong plants of all the new CHRYSANTHEMUMS and POMPONES of this year, from 5*s.* to 6*s.* per dozen.

CATALOGUES may be had on application at Wellington Row, Hart's Lane, Bethnal Green Road, London, E.

CHRYSANTHEMUMS.

W. HOLMES begs to offer strong plants of every known good variety of CHRYSANTHEMUM at 5*s.* per dozen; including Golden Queen of England, Aurora, Cassandra, Curtius Quintius, Excelsior, Fabius, Fortune's Two-Cloured Incurved, Golconda, Glory, Julie Lagravère, Madam Clos, Mount Vesuvius, Orange Brilliant, Prince Albert, Remus, sulphureum superbum, Una, Andromeda, Ariel, Astrea, Baron d'Adwaërd, Esmeralda, Maid of Saragossa, Miss Julia, Miss Talfourd, Mrs. Dix, Shirley Hibberd, Rose Trevenna, &c.

Frampton Park Nursery, Hackney, N.E.

NEW CHRYSANTHEMUMS.

JOHN SALTER'S unrivalled Collection of CHRYSANTHEMUMS is now in bloom; also several splendid Seedlings of his own and other growers which will be sent out next spring. The flowers in the WINTER GARDEN having been protected from the late severe frosts present a magnificent display of all the finest varieties in cultivation. The Gardens are open every day except Sunday.—Versailles Nursery, William Street, near Hammersmith Turnpike, W.

SUPERB DOUBLE HOLLYHOCKS.

BOWLER AND WARD have great pleasure in announcing that they have a large stock of the choicest varieties in cultivation. The plants are well established and in the finest possible health. Orders to any extent can now be executed. For description, &c., see printed Catalogue, which will be forwarded on application.

Ipswich Rosery, Foxhall Road, Ipswich.

CHOICE HOLLYHOCK SEED.

BOWLER AND WARD have given especial attention to the gathering from those varieties only which they know to be productive of good and satisfactory seedlings. Separate sorts in packets by name, 1*s.* each; mixed, 2*s.* 6*d.* to 5*s.*

The Trade supplied by the ounce, price on application.

Ipswich Rosery, Foxhall Road, Ipswich.

FINE NAMED HOLLYHOCKS.—Beauty of Dysart, Ceres, Crusader, El Dorado, Empress, Exquisite, Golconda, Hon. Mrs. Ashley, King of Salmons, Lady Franklin, Lady Middleton, Lady Tarleton, Memnon, Mrs. Oakes, Phyllis, Plutarch, Queen of the Buffs, Sceptre d'Or, Saturn, Sovereign, Veritas, Walden Gem, ochroleuca, Pourpre de Tyre, Purple Perfection, Lizzy Improved, Criterion, Brilliant, Lemonade Improved, Comet. Purchaser's selection from the above, 12*s.* per dozen, the set for 18*s.*

HENRY MAY, the Hope Nurseries, near Bedale, Yorkshire.

DWARF MAIDEN FRUIT TREES.—APPLES.

PEARS.	CHERRIES.	PEACHES.
PLUMS.	APRICOTS.	NECTARINES.

Prices moderate.

Fine and clean grown; and all the leading sorts can be supplied in quantities by GEORGE JACKMAN & SON, Woking Nursery, Surrey.

DWARF TRAINED FRUIT TREES.—APPLES.

PEARS.	CHERRIES.	PEACHES.
PLUMS.	APRICOTS.	NECTARINES.

Prices moderate.

Great care is taken in the formation of these fine, healthy, free-grown trees. Particulars can be obtained of GEORGE JACKMAN & SON, Woking Nursery, Surrey.

MAGNIFICENT DWARF-TRAINED MORELLO AND MAY DUKE CHERRIES.

WM. WOOD AND SON invite especial attention to their very extensive stock of the above, which are well worthy the attention of the Trade. The trees offered are most beautifully trained, each tree having from 9 to 12 branches, measuring from 6 to 8 feet across the plant, clear-grown, and remarkably handsome. Sample trees sent on application.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

NEW PINE APPLE—HURST HOUSE SEEDLING.

H. WILLIAMS is now prepared to send out this fine and useful variety of PINE APPLE; fruit large and conical, and of good flavour.

H. W. can with confidence recommend this variety to all Pine growers. Numerous testimonials could be given, but H. W. thinks it sufficient to add Mr. G. Fleming's, of Trentham: "An acquisition." Price on application.

Fortes Green, Muswell Hill, Finchley, N.

HOLLAND AND BAYLEY are now sending out in Strong Plants the heaviest Lancashire Show—

	Per doz. *s.*	*d.*		Per doz. *s.*	*d.*
Gooseberries	6	0	White Currants (strong)	3	0
Black Currants (strong)	2	6	Apple, Lord Suffield,		
Red ,, ..	2	6	extra fine	12	0

H. & B.'s CATALOGUE of Florists' Flowers, &c., is now ready, and may be had on application.

Bradshaw Gardens, Chadderton, near Manchester.

FOREST TREES.

JOHN WATERER has to offer upwards of a Hundred Thousand of each of the following, from 2 to 4½ feet high, and all good rooted:—

CHESNUT	LARCH	BIRCH
HAZEL	ASH	ALDER
SCOTCH	LAURELS	WITHY, &c.

Samples with prices sent on application. Planting done by contract.—The American Nursery, Bagshot, Surrey.

TRANSPLANTED SHRUBS & FOREST TREES.

MARSH AND PERKINS call the attention of the Trade to the undernamed, which are strong and healthy:

Laurels, common .. .	12 to 18 inches,	50*s.* per 1000
Do. do	18 to 24 ,,	60*s.* ,,
Berberis Aquifolium	9 to 12 ,,	20*s.* ,,
Privet, evergreen	1 to 2 feet	15*s.* ,,
Box, green	9 to 12 inches,	50*s.* ,,
Fir Larch	1½ to 2 feet	10*s.* ,,
,, 1 year's transplanted		3*s.* 6*d.* ,,
,, Scotch	1½ to 2½ feet	18*s.* ,,
Quick, fine transplanted		8*s.* to 10*s.* ,,

Samples sent on application to 42, Drapery, Northampton.

FISHER, HOLMES, AND CO. beg respectfully to inform the Trade that their LIST for the present season is now ready and will be sent free on application. It contains:

Seedlings of Forest and Ornamental Trees, Shrubs, &c.	Ornamental Trees and Shrubs
Bedded Trees and Shrubs	American Plants
Fruit Trees	Climbers—Roots
Forest Trees	Stove, Greenhouse, and Herbaceous Plants

Their Stock is very extensive, extending over 100 acres.

Handsworth Nursery, Sheffield.

WHOLESALE CATALOGUE.

GEORGE JACKMAN AND SONS' PRICED and DESCRIPTIVE CATALOGUE for 1859, & SPRING 1860; comprising Fruit Trees of all the leading kinds; New and Selected Roses; fine varieties of American Plants; Choice and Rare Conifers; Evergreen and Deciduous Trees and Shrubs; and a fine stock of transplanted Forest Trees, &c., can be had free on application.—Woking Nursery, Surrey.

TO THE TRADE.

ERICAS.—Fine young bushy plants now and coming into flower, 50*s.* per 100; fine plants in 48 and 32-size pots, 5*l.* per 100; Stove plants of all the best and newest kinds in 48 and 32-size pots, 5*l.* per 100. List sent on application.—Nurseries, Maidstone.

ERICAS.

F. AND A. SMITH'S Stocks of the above are this season unusually fine, comprising most of the leading winter and spring-flowering varieties. Prices on application.

Dulwich, Surrey, S.

AZALEA INDICA.

F. AND A. SMITH beg to offer the above well set with flower buds, dwarf, bushy, and thoroughly ripened off. Having been grown in this country they are most suitable for packing, and are strongly recommended to country Amateurs and the Trade in general. An inspection invited. Prices on application.—Dulwich, Surrey, S.

GERANIUM FLORIBUNDUM (SMITH).

F. AND A. SMITH beg to offer the above-named as an acquisition, colour bright rose, upper petals pink with crimson spot, dwarf free habit, a continuous and abundant bloomer; without exception the best first early variety ever offered; obtained two Certificates of merit at the Botanical Society's Meetings in March and April 1859. Strong plants, 7*s.* 6*d.* each. The usual allowance to the Trade.—Dulwich, Surrey, S.

TO THE SEED TRADE.

W. J. EPPS begs to offer the following GENUINE SEEDS of his own growth from the finest selected Stocks in the country:—Orange and Yellow Globe Wurzel, Long Red ditto; White Belgian, Altringham, Long Orange, and Early Horn Carrot; superior Crimson Beet; British Queen, Champion of England, and Burbridge's Eclipse Peas; Short-top Scarlet Radish.—Seed Warehouse, Maidstone.

NEW PLANTS.

H. LAURENTIUS, HORTICULTURAL ESTABLISHMENT, Leipzig, Saxony, is now sending out the following new ROSES:—

BOURBON PERPETUAL GIULIETTA: White, slightly tinged flesh; smooth stems; 15 francs.

HYBRID BOURBON PERFECTION: Fine rose colour, perfect shape; 5 francs.

HYBRID PERPETUAL FOR WALLS: L'ELEGANTE, bright cerise, flowering in clusters; 12 francs.

NEW TYDÆA: Bella, Bijou, Fortschritt, Goldfasan, Harlequin, Lisette, Meteor, Princeps, Rebecca. Each variety 4 francs; the set of nine, 25 francs.

NEW ANNUALS.

JOHN GEORGE WAITE, SEED MERCHANT, 181, High Holborn, London, W.C., has great pleasure in offering SEEDS of the following new hardy Annuals:—

CLARKIA PULCHERRIMA,
SCHIZANTHUS GRANDIFLORUS OCULATUS,
HELIOPHILA CŒRULEA STRICTA.

Coloured Drawings and prices of which (to the Trade only) can be had on application.

Seed Establishment, 181, High Holborn, London, W.C.

THE FINEST CINERARIA EVER OFFERED.

NOW SENDING OUT,

ROGERS'S LADY HAVELOCK.—Strong plants, 10*s.* 6*d.* each; 3 for 2 to the Trade.

"Lady Havelock is a very pretty thing indeed. Colour is a great point in these flowers, and this Lady Havelock has pre-eminently very bright and striking; of good habit, will be very desirable."—*Editor of the Gossip for the Garden.*

"Lady Havelock, good in colour and form, above the average size, and no doubt of good habit; the best crimson."—*G. Glenny.*

The above has been grown two seasons, so that its merits are well proved.

Lady Havelock, with 12 fine named varieties, 30*s.*

G. ROGERS, Florist, &c., Uttoxeter.

THREE MILLIONS OF TRANSPLANTED QUICKS.

GEORGE CHIVAS, Chester, offers the above, which are admitted to be unequalled in point of quality in Great Britain. A sample bale, containing 100 each of five sizes, forwarded on receipt of 15*s.*, and orders for 10,000 delivered free at any railway station.—Chester, November 12.

HARDY HEATHS.—A Collection of 20 sorts, by name, of the above favourite autumnal flowers, in good plants, at 30*s.* per 100, or 12*l.* 10*s.* per 1000.

JOHN WATERER, The American Nursery, Bagshot, Surrey.

TO THE TRADE.—The Subscribers have for sale several dozens of fine plants of CEDRUS LIBANI, 3½, 4½, to 6 feet high; and CEDRUS ARGENTEA, 3½, 4½, to 6 feet high. Price, &c., on application.

BALLANTYNE & SON, Nurserymen & Seedsmen, Dalkeith, NB.

GREEN HOLLY, EVERGREEN OAK, AND BAYS.

M. A. LAKE having a large stock of the above, 3-years seedlings, will render them at moderate prices.

Likewise a large and choice collection of Dwarf-trained Peaches, Nectarines, Apricots, Apples, Pears, Plums, and Cherries; also Standard Pears, Plums, Cherries, Apples, &c.

All the best varieties of Gooseberries, Currants, and Raspberries; Rhubarb, Seakail, and Asparagus Roots for Forcing.

Several thousand Standard Cider Apple Trees.

Prices on application. The Trade supplied.

The Nurseries, Bridgwater.—Nov. 12.

FRUIT TREES.

JOHN ADAMS AND CO., NURSERYMEN, Brentford, Middlesex, W., beg to call the attention of the Trade and the public generally to their extensive stock of FRUIT TREES, which is this season in very fine condition. It consists of Dwarf, Standard, Pyramid, and Trained of the various kinds of Fruit Trees, all of which will be found true to name.

J. A. & Co. hope to receive a continuance of those favours which their friends and the public have so liberally bestowed, and assure them that whatever orders may be intrusted to them will meet with prompt and careful attention.—Brentford, Middlesex, W.; Nurseries at Acton Green, Turnham Green, W.

TANSLEY NURSERY, NEAR MATLOCK.

TO GENTLEMEN PLANTING AND THE TRADE.

J. SMITH, SEN., begs to offer his STOCK OF TREES AND SHRUBS, of various sizes, and in addition to his general stock of the leading kinds, he has this season to offer an Extra Stock of many hundred thousands of fine Larches, Scotch Firs, and Highland Pines; a large quantity of Evergreens, Privets, Mahonia Aquifolium, and other plants for planting under cover. Many things are grown in large quantities, and will be sold on advantageous terms to the Trade and gentlemen requiring large lots.

CATALOGUES sent free on application. The Nurseries are on the Mansfield and Nottingham roads, and 2 miles from Matlock Bridge Station on the Midland Railway.

PAMPAS GRASS.—The present is the most favourable time for planting out this charming Plant. No one can imagine the grand effect of a mass of its silvery plumes unless they see it, nor is its value confined to the ornamental, but is likely to become useful as Cover for Game. It grows in any soil or situation, attaining the height of from 6 to 10 feet.—Any quantity can be supplied by C. NOBLE, Bagshot, Surrey.

SPERGULA PILIFERA.—The past summer has again proved the great superiority of the above Plant for Lawns, Terrace Gardens, Steep Banks, Verges, Edgings, &c., never requiring mowing or turning up in such situations during the warmest weather. Strong Plants, 1*s.*, 2*s.*, 3*s.*, or 4*s.* per dozen. Having the Gardens at Forest Hill (in which Spergula was first introduced as a Lawn Plant) under our care, we are able to send full instructions for Culture with the Plant.

BRITISH FERNS, ALPINE AND ROCK PLANTS in great variety, 6*s.* to 9*s.* per dozen. [S.E.

J. A. SUMMERS, Howard Park Nursery, Ferry Hill, Sydenham.

EARLY POTATOES, LEMON KIDNEYS.—This early and excellent variety (see article on Cultivation of Early Potatoes, by the Rev. E. F. Manby, in Royal Agricultural Journal, Vol. XVIII.), may be had on early application to Author's Bailiff, JOHN HELM, Morecombe, price 2*s.* 6*d.* per stone. As also Copy of Article, 3d edition enlarged, price 1*s.*

N.B.—Late removal being injurious to the sprouts, orders should be at once supplied.

SEED WHEAT FROM THE CHALK.—Selected samples of CHIDHAM, WHITE TRUMP, ROUGH CHAFF, HUNTER'S WHITE, RED-CHAFF WHITE, GRACE'S WHITE, TALAVERA, RED BROWICK, RED NURSERY, GOLDEN DROP, and all the best kinds of Wheat, supplied by RAYNBIRD & HARVEY, of Basingstoke, and 89, Seed Market, Mark Lane, London, E.C. Samples and prices on application.

IMPROVED PROLIFIC RED WHEAT FOR SEED.

JOHN MOSS, JUN., invites the attention of Farmers to his new stock of PROLIFIC RED WHEAT, the produce of a careful selection from the highly esteemed variety of the Essex Red, known as "Hall's," and very highly appreciated by millers. J. M., jun., confidently recommends this selection for its prolific properties, as well as for weight and quality. Amount seeded 4 pecks; yield this season, 48 bushels per statute acre. Price 48*s.* per quarter, at Kelvedon Station. New sacks, 1*s.* 6*d.* each.

May be obtained of Mr. JOHN MOSS, jun., Kelvedon and Feering; and of Mr. T. C. WILSON, Kelvedon; by whom samples will be shown at Chelmsford, Braintree, and Colchester Markets.—Feering, Oct., 1859.

Remittances expected from unknown correspondents.

Printed by WILLIAM BRADBURY, of 13, Upper Woburn Place, and FREDERICK MULLETT EVANS, of No. 20, Queen's Road, West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and published by them at the Office, No. 5, Upper Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—SATURDAY, November 12, 1859.

THE GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 47.—1859.] SATURDAY, NOVEMBER 19. {Price Fivepence. Stamped Edition, 6d.

INDEX.

Abies bracteata ..... 928 a
Bee boxes, Stewarton ..... 929 a
Books noticed ..... 931 a
British Association ..... 929 b
Butterflies ..... 929 c
Celery and sawdust ..... 929 a
Chrysanthemum shows ..... 929 c
— Salter's ..... 931 b
Cigars ..... 932 c
Clover Dodder ..... 933 c
— substitutes ..... 936 b
Conifers, Californian ..... 928 a
Cottagers' Kale ..... 929 a
Crops in Norfolk ..... 937 c
Disease, preventible ..... 935 b
Education, gardeners' ..... 927 a
Eyles' (Mr.) appointment ..... 925 c
Farm, Haymount ..... 937 c
Farmers' Club, London ..... 936 b
Gardeners' education ..... 927 a
Gooseberry buds and birds ..... 929 a
Grass land ..... 934 b
Horticultural Society .. 925 c—929 b
Law relating to bad manures .. 938 a
Leaves, causes of drooping ..... 932 c
Mangel ..... 934 a—936 a
Manures, law relating to worthless ..... 938 a
Mushrooms ..... 932 c
Rhubarb, seedling ..... 931 c
Rose Annual, Paul's ..... 930 c
Salter's (Mr.), Chrysanthemums ..... 931 b
Sewage, town ..... 933 c
Shrop, Shropshire ..... 933 c
Statistics, Irish ..... 936 a
Strawberry forcing ..... 927 c
Tomato, the ..... 932 a
Torreya myristica ..... 929 a
Transplanter ..... 929 b
Trees, Californian Coniferous 928 a
Vine borders ..... 929 a
Weed, what is a ..... 937 b
Yam, Chinese, to cook ..... 932 c

HORTICULTURAL SOCIETY OF LONDON.—FRUIT COMMITTEE (8, ST. MARTIN'S PLACE, W.C.).

The next Meeting will be held on TUESDAY, December 6, at 3 P.M., at the Society's Rooms, 8, St. Martin's Place, Trafalgar Square, on which occasion the following Prizes are offered:—

PEARS.

CLASS A. KNIGHT'S MONARCH.—One Pound for the best, and Ten Shillings for the second best dish.

B. PASSE COLMAR.—One Pound for the best, and Ten Shillings for the second best dish.

C. BEURRÉ D'AREMBERG.—One Pound for the best, and Ten Shillings for the second best dish.

D. ANY OTHER VARIETY.—One Pound for the best, and Ten Shillings for the second best dish.

APPLES.

CLASS E. COCKLE PIPPIN.—One Pound for the best, and Ten Shillings for the second best dish.

F. MARGIL.—One Pound for the best, and Ten Shillings for the second best dish.

G. CORNISH GILLIFLOWER.—One Pound for the best, and Ten Shillings for the second best dish.

H. ANY OTHER VARIETY.—One Pound for the best, and Ten Shillings for the second best dish.

All Fruits exhibited must be fit for table, and accompanied by filled up tabular forms exhibiting the circumstances under which the Fruit was produced. Blank forms may be obtained for the purpose, on application to MR. ROBERT THOMPSON, Horticultural Society's Garden, Chiswick, W. Blank forms to be filled up and sent with Seedling or other Fruits, may also be obtained on application to Mr. THOMPSON, as above.

All Fruits and Vegetables for exhibition before the Committee should be addressed "To the SECRETARY TO THE FRUIT COMMITTEE OF THE HORTICULTURAL SOCIETY, 8, St. Martin's Place, Trafalgar Square, London, W.C.," and must be delivered before 1 P.M. on the day of Meeting. The carriage of packages of Fruit will be paid.

CRYSTAL PALACE.—BIRD SHOW.—The SECOND EXHIBITION of CANARIES and BRITISH and FOREIGN CAGE BIRDS will be held in the Tropical Transept on SATURDAY, MONDAY, TUESDAY, and WEDNESDAY, the 19th, 21st, 22d, and 23d inst. Open at 10. Admission: Saturday, half-a-crown; children, 1s.; other days, 1s.; children under 12, 6d.

STANDARD ROSES.—All the leading kinds in cultivation at prices scarcely ever offered before.
CHARLES NOBLE, Bagshot, Surrey.

ROSES.

E. P. FRANCIS'S new and extensive CATALOGUE of ROSES on the Manetti Stock is now ready for delivery, and will be forwarded gratis on application.
Rose Nurseries, Hertford.

ROSE CATALOGUE.

JOHN CRANSTON begs respectfully to inform his patrons that he will be happy to forward his New ROSE CATALOGUE for the present season, post free, upon application. It will be found replete with the most desirable flowers (new and old) in every class, and the descriptions are copious and faithful.—Nurseries, King's Acre, near Hereford.

WANTED, a large quantity of WHITE BROOM SEED. Say price and quantity to Messrs. FISHER, HOLMES, & Co., Nurserymen and Seedsmen, Sheffield.

RHODODENDRONS "of every hue," Scarlet, White, Rose, Crimson, and every intermediate shade, nearly all sizes and at all prices, can be supplied by CHARLES NOBLE, Bagshot, Surrey.

CHOICE RHODODENDRONS, AZALEAS, AND CONIFEROUS PLANTS.—A CATALOGUE of GEORGE BAKER'S unrivalled Stock of the above may be had on application.—The American Nursery, Bagshot, Surrey.

SUPERB SPECIMEN SCARLET RHODODENDRONS and others, from 3 to 5 feet in height, and 3 to 4 feet in diameter, some of which are well furnished with bloom buds, from 3s. 6d. to 10s. 6d. each, large and very bushy, well adapted for immediate effect.
WILLIAM WOOD & SON, Woodlands Nursery, Maresfield, near Uckfield, Sussex.

STANDARD RHODODENDRONS.—Hundreds of handsome specimens of all the choicest varieties, varying in colour from deepest crimson to rose and pure white, with symmetrical heads and straight stems, from 2 to 5 feet in height, can be supplied by
JOHN WATERER, American Nursery, Bagshot, Surrey.

JOSEPH FRYER, Clarendon Nurseries, Camberwell, offers a large stock of the undermentioned:—Magnolia grandiflora Exmouth, Euonymus japonica; Mulberries, various sizes; Limes, Lilacs, various sorts; Evergreen Privet, Evergreen Oak; Figs and Grape Vines in pots; Irish Ivies, Sweet Clematis, Virginian Creepers, Glycine sinensis, and other Nursery Stock.

GOOD SEEDS. CARRIAGE FREE.

SUTTON AND SONS, SEED GROWERS AND MERCHANTS,
ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.

THE BEST FRAME CUCUMBER.

SUTTON'S BERKSHIRE CHAMPION, CARTER'S CHAMPION, & IMPROVED SION HOUSE, 1s. per packet each.
Free by post from SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

FLOWER BULBS FOR WINTER AND SPRING.

SUTTON'S COLLECTIONS FOR POTS AND GLASSES, and SUTTON'S COLLECTIONS FOR OPEN GROUND. See *Gardeners' Chronicle* of November 12.

THE BEST TWELVE HYACINTHS.

SUTTON'S BEST TWELVE HYACINTHS imported can be supplied for 9s., or second best 6s. Also fine mixed DOUBLE HYACINTHS, all fresh imported, 3s. 6d. per dozen, or 25s. per 100.
PRICED LISTS of BULBS and Seeds may be had post free.
Royal Berkshire Seed Establishment, Reading.

HYACINTHS AND OTHER BULBS.

WM. CUTBUSH AND SON can still supply Roots equal to the first they sent out this season, as all BULBS are especially selected for them before they are imported from Holland. Descriptive CATALOGUE post free on application.
Highgate Nurseries, London, N.

FERN CATALOGUE.

ROBERT SIM'S NEW DESCRIPTIVE AND PRICED CATALOGUE, No. 6 (62 pages) of his COLLECTION of BRITISH AND EXOTIC FERNS, can be had, post free, for 8 stamps. Gratis to all previous purchasers of Ferns.
Nursery, Foot's Cray, Kent, S.E.

MESSRS. ROEZL AND BESSERER, of Mexico, will execute orders from their CATALOGUE of last year through their Agents, Messrs. B. A. GRANTOFF & Co., 4, Lime Street Square, London, E.C.

CATALOGUE.

YOUELL AND CO.'S GENERAL AND DESCRIPTIVE PRICED CATALOGUE for this season is now ready, and will be sent free on application.
It contains detailed Lists of Greenhouse Plants, Conifers, Shrubs, as well as all the newest introductions in Soft-wooded Plants.—Royal Nursery, Great Yarmouth.

RASPBERRIES.—Victoria, Fastolf, Fillbasket, New Monthly Autumn-Fruited, and Yellow Antwerp, 10s. per 100; Strong CURRANTS, 3 to 4 years; LILIES, Yellow and Turk's Cap, Purple Martagon, 2s. per doz.; Large LAURUSTINUS, bushy plants, 3 to 4 feet.
GEORGE CORNWELL, Market Gardener, Barnet, N.

COX'S EMPEROR PLUM is now ready for delivery.—Parties wishing to have Plants of this very superior PLUM are requested to apply to Mr. HENRY CLARKE, 39, King Street, Covent Garden, London, W.C.

STRONG VINES FOR FRUITING.

MESSRS. ARTHUR HENDERSON AND CO. can now supply exceedingly fine STRONG VINES of the best leading kinds for immediate Planting and Fruiting. Prices furnished on application.
Pine-apple Place, Edgware Road, W.

PINE APPLES, GRAPES, &c.

PINE PLANTS, Fruiting and Succession.
GRAPE VINES, from Eyes, for Fruiting in Pots or Planting.
JOHN WEEKS AND CO. can now supply any quantity of very fine strong healthy Pine Plants, either Fruiting or Succession; also remarkably fine strong Grape Vines from Eyes, all the best sorts.
JOHN WEEKS & Co.'s Horticultural Show Establishment is now entirely devoted to the Growing and Forcing of Fruits in great variety, thereby showing the most improved plans of construction, and the most superior system of Hot-water Apparatus.
JOHN WEEKS & Co., Horticultural Builders and Hot-water Apparatus Manufacturers, King's Road, Chelsea, London, S.W.

ANDROMEDA FORMOSUM (TRUE).

W. H. ROGERS, RED LODGE NURSERY, Southampton, can offer fine strong plants of the above beautiful American Plant, 50s. per 100, or 9s. per doz., selected.

WELLINGTONIA GIGANTEA.

JOHN WATERER has thousands of the above Plants to offer, varying in height from 1 to 4 feet. The whole are exceedingly handsome and well rooted. Price on application.—The American Nursery, Bagshot, Surrey.

CARNATIONS, PICOTEES, ETC.

CHARLES SCHOFIELD has now ready first-class varieties of the above Flower at 12s. per dozen pairs; also PINKS, 4s. to 8s. per dozen. CATALOGUES may be had free.
Knowsthrope, near Leeds, Yorkshire.

ERICAS.

F. AND A. SMITH'S Stocks of the above are this season unusually fine, comprising most of the leading winter and spring-flowering varieties. Prices on application.
Dulwich, Surrey, S.

ITALIAN RYE-GRASS SEED.

J. DIXON, SEEDSMAN, Kendal, has ITALIAN SEED for sale. Samples sent on application.—Nov. 12.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY LIMITED supply every requisite for the Farm and the Garden.
Registered Offices: Union Road, Plymouth.

TRANSPLANTED FOREST TREES.—Large quantities of Transplanted ALDER, LARCH, SCOTCH, SPRUCE, HAZEL, SPANISH CHESNUTS, ASH, &c., 1, 2, 3, and 4 feet. A good stock of QUICKS. Samples, with prices, may be had on application.
WATERER & GODFREY, Knap Hill, near Woking.

GEORGE GIBBS AND CO., SEEDSMEN,
26, DOWN STREET, PICCADILLY,
LONDON, W.

VEGETABLE SEEDS.

J. CARTER AND CO. can supply PEAS, BEANS, CARROTS, RADISHES, &c., for present Sowing, NEW SEED OF 1859 HARVEST.—237 & 238, High Holborn, W.C.

ASPARAGUS FOR FORCING, extra strong Roots; also 2 and 3 years old for planting, in any quantity.—Apply to HENRY PAGE, Gardener, St. John's, Fulham, S.W.

JAPAN LILIES, HYACINTHS, &c.—All orders amounting to 21s. and upwards sent carriage paid. The following collection "B." for 21s. or the half for 10s. 6d.:—12 Splendid Hyacinths, 4 Border Hyacinths, 2 beautiful Japan Lilies, 12 beautiful Gladioli, 36 Double Tulips, 12 Single Tulips, 100 Crocus, 100 Snowdrops, 4 Polyanthus Narcissus, 40 Border Narcissus, 40 Ranunculus, 20 Anemones.
A DESCRIPTIVE AND PRICED CATALOGUE OF BULBS, with practical cultural directions for amateurs, sent free and post paid on application.
BUTLER & MCCULLOCH, Covent Garden Market, W.C.

GREAT SCARCITY OF FRUIT.

STRONG ROOTS OF THE LINNÆUS RHUBARB, from division, can be supplied in any quantity at 12s. per 100, or 5l. per 1000, by WALTER PENNINGTON, Nurseryman, South Retford, Nottinghamshire.

MAIDEN AND CUT-BACK FRUIT TREES.
STANDARD AND PYRAMID FRUIT TREES.
EXTRA FINE TRAINED FRUIT TREES.

RICHARD SMITH has this season 23 acres of the above. Price on application.
St. John's Nurseries, Worcester.

FRUIT TREES.—Intending purchasers are respectfully invited to inspect the extensive Stock growing at the Nursery of the Subscribers. The quality is this season unusually good.—HUGH LOW & Co., Clapton Nursery, London, N.E.

DWARF MAIDEN FRUIT TREES.

HUGH LOW AND CO. have to offer, of fine quality, PEACHES, NECTARINES, APRICOTS, PLUMS, CHERRIES, APPLES, PEARS, both on Pear and Quince Stocks. Prices will be furnished on application.
The Autumn Wholesale CATALOGUES now ready for distribution.—Clapton Nursery, London, N.E.

FRUIT TREES.

J. AND J. FRASER, Lea Bridge Road Nurseries, Essex, N.E., beg to invite purchasers of Fruit Trees to an inspection of their stock, which is this year unusually fine. PRICED CATALOGUES can be had on application.

TO THE TRADE.

J. AND J. FRASER, The Nurseries, Lea Bridge Road, Essex, N.E., beg to offer a large Stock of Maiden FRUIT TREES, including all the best sorts of Apricots, Peaches, &c. The prices, which are very moderate, may be had on application.

CHEAP AND SELECT NURSERY STOCK.

WILLIAM JACKSON AND CO., Bedale, Yorkshire, beg to refer to their Advertisement of the above in the *Gardeners' Chronicle* of the 12th inst., page 906; and take the opportunity to state that their ROSES were transplanted last spring, and will now remove in fine condition without risk.

PLANTING SEASON.

SEEDLING AND TRANSPLANTED FOREST TREES AND SHRUBS, ROSES, AURICULAS, BORDER FLOWERS, AND FERNS.—Priced List on application to
WM. URQUHART & SONS, Dundee.—Nov. 19.

PINE PLANTS, THE SUCKERS WANTED.

WANTED, SUCKERS or SUCCESSION PLANTS of the PROVIDENCE, the BLACK PRINCE, the SMOOTH CAYENNE, and the PRICKLY CAYENNE.
Address to JOHN WEEKS & Co., Horticultural Builders, King's Road, Chelsea, London, W.

THREE MILLIONS OF TRANSPLANTED QUICKS.

GEORGE CHIVAS, Chester, offers the above, which are admitted to be unequalled in point of quality in Great Britain. A sample bale, containing 100 each of five sizes, forwarded on receipt of 15s., and orders for 10,000 delivered free at any railway station.—Chester, November 19.

TO THE TRADE.—The Subscribers have for sale several dozens of fine plants of CEDRUS LIBANI, 3½, 4½, to 6 feet high; and CEDRUS ARGENTEA, 3½, 4½, to 6 feet high. Price, &c., on application.
BALLANTYNE & SON, Nurserymen & Seedsmen, Dalkeith, N.B.

IMPORTANT TO RAILWAY CONTRACTORS AND NURSERYMEN.

FOR SALE, 4 Acres of extra strong 3-years old THORN QUICK HEDGEROWS, at 10s. per 1000; 1 acre do. do. 4 years old, at 15s., 20s. The usual allowance to Nurserymen.—JACOB SCOTT MATTHEWS, Nurseryman, Cardiff, South Wales.

LAURELS,

TWO YEARS' CUTTINGS TRANSPLANTED, 1 TO 3 FEET.

G. FROST has a few thousands remaining which he offers at low prices, the ground being wanted for other evergreens.—The Nurseries, Brushford, Tiverton.

COMMON LAURELS.

R. GADD AND SON have to offer 50,000 of the above from 2 to 6 feet high, extra stout and well rooted; 30,000 Seedling and Bedded Evergreen Oaks; Bays, 1 to 3 feet; Laurustinus, 1 to 2½ feet. Price on application.
Salvington Nurseries, near Worthing.—November 19.

HARDY HEATHS.—A Collection of 20 sorts, by name, of the above favourite autumn flowers, in pots, plants, at 30s. per 100, or 12l. 10s. per 1000.
JOHN WATERER, The American Nursery, Bagshot, Surrey.

GARDENERS' CHRONICLE PENNY NEWSPAPER

WILLIAM YOUNG begs to call attention to his extensive NURSERY STOCK, which is in fine condition for removal, and which will be found well worth notice of those engaged in any kind of planting.

Having large quantities of the undermentioned, all well grown, good-rooted plants, he can offer them at very moderate prices.

SPECIMEN CONIFERÆ.

Abies Douglassii, 8 to 12 feet	Cedrus Deodara, 6 to 12 feet
,, canadensis, 8 to 12 feet	,, Libani, 6 to 12 feet
,, Menziesii, 6 to 10 feet	Araucaria imbricata, 4 to 6 ft.
,, nigra, 6 to 8 feet	Cryptomeria japonica, 6 to 8 ft.
,, Pinsapo (very handsome), 6 to 8 feet	Juniperus chinensis, 6 to 8 ft.
Pinus Cembra, 6 to 10 feet	,, hibernica, 6 to 8 ft.
,, excelsa, 8 to 10 feet	Taxodium sempervirens, 6 to 10 feet
,, insignis, 6 to 8 feet	

LARGE DECIDUOUS TREES AND EVERGREENS.

Ash, Weeping, 8 to 10 feet	Oak, exoniensis, or New Leu-
Beech, common, 6 to 10 feet	combe, 8 to 12 feet
,, copper, 6 to 10 feet	Oak, evergreen, 8 to 10 feet
,, Fern leaf, 6 to 8 feet	Weeping Willows, 8 to 10 feet
,, weeping, 6 to 8 feet	Spruce Firs, 10 to 12 feet
Horse Chesnut, 8 to 12 feet	Silver Firs, 10 to 12 feet
Limes, 6 to 10 feet	Arbor-Vitæ, American, 6 to 8 ft
Poplar Abele, 8 to 10 feet	,, Chinese, 6 to 8 ft.
,, black Italian, 8 to 10 ft.	,, Ontario, 5 to 7 ft
Maple, Norway, 6 to 8 feet	Hollies, green, 8 to 12 feet
Oak, English, 10 to 12 feet	Yews, 8 to 12 feet
,, Fordii, 8 to 10 feet	

STANDARD ROSES.—A fine collection of all best varieties.

RHODENDRONS and other AMERICAN PLANTS of all the leading varieties.

FOR ORNAMENTAL GAME COVER.

Azalea pontica	Juniper, Common
Common Laurels	Juniper sabina
Evergreen Privet	Rhododendron ponticum
Mahonia Aquifolium	

FOREST TREES.—Larch, Scotch, Alder, Ash, Birch, Hazel, Chesnut, Willow, &c., from 2 to 4 and 5 feet, in any quantity for Coppice planting.

A NEW DESCRIPTIVE CATALOGUE of New Plants, Coniferæ, Deciduous Trees, Evergreens, Flowering Shrubs, Roses, American Plants, and general Nursery Stock, with heights and prices, forwarded on application.

N.B.—Good Railway communication to any part of England.

Milford Nurseries, near Godalming, Surrey.

TRANSPLANTED FOREST TREES.

WOOD AND INGRAM beg to offer the following extra fine and well rooted stuff:—

ALDERS, 4 to 5 feet, 35s.; 5 to 6 feet, 40s. per 1000.
ACACIAS, 3 to 4 feet, 12s.; 4 to 5 feet, 15s.; 8 to 14 feet, 50s. per 100.
ASH, 3 to 4 feet, 30s.; 4 to 5 feet, 35s.; 5 to 6 feet, 40s.; 6 to 7 feet, 50s. per 1000.
BEECH, 2 to 3 feet, 30s.; 3 to 4 feet, 40s.; 4 to 5 feet, 50s. per 1000.
CHESNUT, SPANISH, 3 to 4 feet, 40s.; 4 to 5 feet, 50s.; 6 to 7 feet, 60s.; 7 to 8 feet, 80s. per 1000.
ELMS, NARROW-LEAVED ENGLISH, 2 years seedling, 8s. per 1000.
ELMS, NARROW-LEAVED ENGLISH, 2 to 3 feet, 25s.; 3 to 4 feet, 30s. per 1000.
ELMS, HUNTINGDON AND HERTS, from layers, 3 to 4 feet, 15s.; 4 to 5 feet, 20s.; 5 to 6 feet, 25s.; 6 to 8 feet, 35s. per 100.
ELMS, HUNTINGDON, from grafts, 4 to 5 feet, 25s.; 5 to 6 feet, 30s.; 6 to 8 feet, 50s.; 8 to 10 feet, 70s. per 100.
FIR, SPRUCE, 1 to 1½ foot, 50s.; 1½ to 2 feet, 60s.; 2 to 3 feet, 70s. per 1000.
FIR, SCOTCH, 2 to 3 feet, 30s.; 2½ to 3 feet, 35s.; 3 to 4 feet, 50s. per 1000.
FIR, LARCH, 2 to 3 feet, 25s.; 3 to 5 feet, 35s.; 4 to 5 feet, 40s. per 1000.
HAZEL, 3 to 4 feet, 30s.; 4 to 5 feet, 40s.; 6 to 7 feet, 70s. per 1000.
HORNBEAM, 2 to 3 feet, 30s.; 3 to 4 feet, 35s.; 5 to 6 feet, 50s.; 4 to 5 feet, 40s. per 1000.
MAPLE, 1½ to 2 feet, 20s.; 2 to 3 feet, 25s.; 3 to 4 feet, 30s.; 4 to 5 feet, 40s. per 1000.
MAPLE, NORWAY, 3 to 5 feet, 8s.; 7 to 8 feet, 20s. per 100.
OAKS, BRITISH, 2 to 3 feet, 30s.; 3 to 4 feet, 40s.; 4 to 5 feet, 50s.; 5 to 6 feet, 80s. per 1000.
OAKS, TURKEY, 4 to 5 feet, 10s. per 100.
POPLAR, BLACK ITALIAN, 2 to 3 feet, 25s.; 3 to 4 feet, 30s.; 4 to 5 feet, 35s; 5 to 6 feet, 40s.; 6 to 8 feet, 50s.; 8 to 10 feet, 65s. per 1000.
POPLAR, LOMBARDY, 4 to 5 feet, 10s.; 5 to 6 feet, 15s.; 6 to 7 feet, 20s.; 7 to 8 feet, 25s.; 8 to 10 feet, 50s. per 100.
POPLAR, ONTARIO, 6 to 7 feet, 20s.; 7 to 8 feet, 25s. per 100.
SYCAMORE, 2 to 3 feet, 25s.; 5 to 6 feet, 40s.; 6 to 8 feet, 45s. per 1000.
WILLOW, BEDFORD, CÆRULEAN, and HUNTINGDON, 4 to 5 feet, 30s.; 5 to 6 feet, 40s. per 1000.
Prices to the Trade on application.

W. & I.'s new CATALOGUE of NURSERY STOCK, including Fruit, Forest, and Ornamental Trees and Shrubs, Evergreens, Roses, &c., is now ready and will be forwarded free on application.—Nurseries, Huntingdon.

TO NOBLEMEN, GENTLEMEN, AND OTHERS PLANTING EXTENSIVELY.

WHITEHOUSE AND WHITTAKER beg to call attention to their Stock of FOREST TREES in general, and particularly to their extensive Stock of LARCH, SPRUCE, AND SCOTCH FIRS. The Larch this season is very strong and suitable where Game abounds, being from 8 to 6 feet high, Spruce from 1½ to 3 feet, and Scotch from 1½ to 4 feet, all of which, from the peculiar nature of the soil, lift with fine fibrous roots. Their Stock of Transplanted GREEN HOLLIES exceeds 200,000 from 6 inches to 4 feet, a large portion of which are handsome plants with leaders. The whole having been recently removed, will move with safety. Their Stock of Transplanted QUICKS is also large and very strong.

The General NURSERY STOCK of Ornamental Trees, Flowering Shrubs Evergreens, American Plants and Coniferous, &c., are varied and extensive:—Cedrus Libani, 8 to 11 feet, with fine leaders; Cedrus Deodara, from 1 to 5 feet; Araucaria imbricata, 1 to 6 feet; Cupressus macrocarpa, 2 to 5 feet; Variegated Hollies, fine specimens; Arbor-vitæs, of sorts, 1 to 8 feet; Pinus insignis, 5 feet; Hemlock Spruce, 2 feet; Standard and Portugal Laurels, Balm of Gilead, Austrian Pines, Pinus Cembra, &c. The whole of these having been shifted within the last 18 months will insure their complete success in moving to a distance.

Their Stock of FRUIT TREES is this season of very fine growth, consisting of Standard and Dwarf-trained Peaches, Nectarines, Apricots, Plums, Cherries, Pears, &c.

Horticultural and Agricultural Seeds of the best quality; Greenhouse, Bedding, and Herbaceous Plants, Dutch Bulbs, Sprkale, Asparagus, Russian Mats, Mushroom Spawn, Gishurst Compound, and all other articles connected with the Nursery and Seed business

Brereton Nursery, Rugeley, Staffordshire, is conveniently situated, being two miles from Rugeley Station, on the Trent Valley Line.

PLANTING.

A. PAUL & SON

RESPECTFULLY invite the attention of Gentlemen improving their Estates or forming new Gardens to the following TREES, &c., which they are prepared to sell at the lowest remunerating prices for a good standard quality. It is their practice to transplant every second year, in order that little or no loss may be incurred by removal. Many things are grown in large quantities and offered on advantageous terms to the Trade. An inspection of the stock is invited.

Abies alba, 2 to 6 feet
,, ,, glauca, 1 to 2½ feet
,, Clanbrasiliana and other dwarf Firs, 9 in. to 1½ ft.
,, canadensis, 3 to 6 feet
,, Douglasii, 2 to 6 feet
,, fine-lonensis, 2 to 3 feet
,, Menziesii, 1½ to 6 feet
,, moustvea, 3 to 7 feet
,, Morinda, 2 to 10 feet
,, orientalis, 1 to 2 feet
,, rubra, 2 to 4 feet
,, 20 other sorts, 1 to 6 feet
Araucaria imbricata, 1½ to 6 ft.
Arbor-vitæ (see Thuja).
Alaternus silver & gold striped, 1½ to 4 feet
Arbutus, 6 sorts, 1 to 3 feet
Aucuba japonica, 1 to 3 feet
Box, 6 sorts, 1½ to 6 feet
Berberis Darwinii, 1 to 1½ foot
Cedrus africanus, 2 to 10 feet
,, Deodara, 1 to 12 feet
Cedar of Lebanon, 1 to 12 feet
,, Red, 2 to 5 feet
,, White, 3 to 5 feet

☞ The largest and finest stock of Cedars in the country.

Cistus, 12 sorts, 1 to 3 feet
Cryptomeria Lobbiana, 3 to 8 ft.
,, nana, 9 inches
Cupressus Corneyana, 1½ to 3 ft.
,, Knightii, 3 to 4 feet
,, Lambertiana, 3 to 7 feet
,, Lawsoniana, 9 in. to 1 foot
,, torulosa, 1½ to 3 feet
,, 12 other sorts, 1 to 4 feet
Daphne pontica, 2 to 3 feet
Furze, double, 1 to 1½ foot
Garrya elliptica, 1½ to 3 feet
Holly, green and variegated, 90 sorts, 1 to 6 feet
,, green standards, 5 ft. stems
Juniperus chinensis, 2 to 5 feet
,, communis pendula, 2 to 3 ft.
,, excelsa, 1 to 2½ feet
,, fragrans, 2 to 4 feet
,, glauca, 2 to 3½ feet
,, oblonga, 2 to 3 feet
,, ,, pendula, 2 to 3 feet
,, thurifera, 1½ to 6 feet
,, tamariscifolia
,, virginiana aurea, 1 to 2 feet
,, ,, pendula, 1½ to 3 feet
,, viridis, 1½ to 2½ feet
,, weeping, 5 feet stems
,, 20 other sorts, 1 to 6 feet
Laurel, Common, 1 to 5 feet
,, Portugal, 1½ to 4 feet
,, ,, Standards, 8 feet
Laurustinus, 1 to 2 ft. (bloom)
Ligustrum lucidum, 3 to 4 feet
,, japonicum, 1½ to 3 feet
,, ovalifolium, 5 feet
,, evergreen, 2 to 4 feet
Mahonia aquifolia, 1 to 3 feet
,, 6 other sorts, 1 to 3 feet
Phillyreas, of sorts, 1½ to 7 feet
Picea amabilis, 1 to 1½ foot
,, nobilis, 1 to 4 feet
,, Nordmanniana, 1 to 4 ft.
,, Pinsapo, 1½ to 4 feet
,, Webbiana, 2 to 3 feet
,, 6 other sorts, 1 to 6 feet
Pinus austriaca, 2 to 4 feet
,, Benthamiana, 2 to 5 feet
,, calabrica, 3 to 4 feet
,, Cembra, 1½ to 4 feet
,, excelsa, 1½ to 12 feet
,, insignis, 3 to 6 feet
,, Llaveana, 2 to 5 feet
,, Laricio, 2 to 4 feet
,, macrocarpa, 2 to 3 feet
Pinus monticolor, 2 to 3 feet
,, monspeliensis, 3 to 5 feet
,, muricata, 3 to 5 feet
,, Montezumæ, 3 years seedlings
,, nivea (Snow Pine), 1½ to 5 ft.
,, Pallasiana, 2 to 3 feet
,, pinaster, 3 to 6 feet
,, pyrenaica, 4 to 6 feet
,, Sabiniana, 4 to 5 feet
,, 40 other sorts, 1 to 6 feet
Quercus (Oak), Evergreen, 3 to 5 feet
,, Fordii, 4 to 6 feet
,, latifolia, 3 to 6 feet
,, Mirbeckii, 2 feet
,, Suber (Cork Oak), 3 to 4 ft.
Ruscus hypoglossum
Santolina chamæcyparissus, 1 foot
Taxodium distichum, 3 to 6 ft.
Taxus (Yew), adpressa, 2 to 4 ft.
,, canadensis, 1½ to 3 feet
,, cheshuntensis, 1½ to 6 feet
,, elegantissima, 1½ to 4 feet
,, gold striped, 1½ to 5 feet
,, ,, standards, 5 feet
,, Jackson's Weeping, 1½ foot
,, japonica, 1 to 2 feet
,, nana, 2 to 4 feet
,, nigra, 3 feet
,, stricta, 5 feet
,, yellow-berried, 2 feet
,, common, round, and fair, 2 to 7 feet
,, Irish, 2 to 7 feet
,, 12 other sorts, 1 to 4 feet
Thuja americana, 3 to 8 feet
,, aurea, 1 to 3 feet
,, Chinese, 2 to 4 feet
,, gigantea, 2 to 3 feet
,, Wareana, 1 to 5 feet
,, 12 other sorts, 1 to 3 feet
Thujopsis borealis, 2 to 3 feet
Salisburia adiantifolia, 3 feet
Wellingtonia gigantea, 1 to 3ft.

Acer negundo variegata, 2 to 6 feet
Acacia, of sorts, 4 to 10 feet
Ash ,, 6 to 10 feet
Alder ,, 6 to 10 feet
Ailanthus ,, 8 feet
Almonds ,, 6 to 8 feet
Beech, purple, best variety, 5 to 8 feet
Birch, of sorts, 6 to 10 feet
Chesnut, Horse, of sorts, 1½ to 6 feet
,, Spanish, of sorts, 2 to 8 ft.
Catalpas, 6 to 8 feet
Caragana arborescens, 6 to 8 ft.
Cerasus padus aucubæfolius, 6 to 8 feet
Cornus mas variegata, 2 feet
Elms, 12 sorts, 6 to 8 feet
Halleschiahia, 1½ to 8 feet
Koireuteria paniculata, 3 to 6 feet
Laburnums, 8 feet
Lilacs, Persian, 6 feet stems
Liquidambars, 2 to 3 feet
Limes, of sorts, 8 to 10 feet
Maple ,, 2 to 10 feet
Planes ,, 7 to 10 feet
Poplar ,, 6 to 10 feet
Oak ,, 6 to 10 feet
Robinia ,, 6 to 8 feet
Sophora japonica, 10 feet
Sycamore, 6 to 10 feet
Thorns, of sorts, 6 to 8 feet
Tulip trees, 2 to 10 feet
Willows, American, and others
Quick, 2-year transplanted, fine

WEEPING AND LAWN TREES in very great variety.

FLOWERING TREES AND SHRUBS, in 300 species and varieties, including Althæa, Cytisus, Berberis, Daphne, Deutzia, Lilac, Purple Nut, Pyrus, Ribes, Rose Acacia, Syringa, Spiræa, Weigela, &c.

ROSES, an unrivalled collection. Standards, 12s. per dozen and upwards; dwarfs, 6s. per dozen and upwards. See separate Catalogue.

HARDY CLIMBING PLANTS, a large collection.

AMERICAN PLANTS, including Azaleas, Heaths, Kalmias, Magnolias, Rhododendrons, &c.

FRUIT TREES, consisting of all the choicest sorts, warranted true to name. The trained Peaches, Nectarines, Apricots, &c., particularly fine.

GRAPE VINES, from eyes, well ripened, short jointed, canes 6 to 10 feet.

HERBACEOUS PLANTS, in 500 species and varieties.

HOLLYHOCKS, a fine stock of healthy and well established plants. See separate Catalogue.

☞ Particulars of Prices, &c., furnished on application. Carriage of all packages free to London; if a ton weight or upwards placed free on the Railway at any London Terminus. An inspection of the stock invited.

A. PAUL AND SON,
NURSERIES, CHESHUNT, HERTS,
13 miles N.E. of London, Eastern Counties Railway.

NEW APPLE.—NELSON'S GLORY.

WM. WOOD AND SON have the honour to announce that they have been appointed Agents for the Sale of the above very excellent new Apple, the property of Mr J. NELSON, of Bristol.

NELSON'S GLORY APPLE is one of immense size, weighing from 20 to 22 oz., and especially adapted to culinary purposes; indeed for making Jelly, Jam, and Sauces it is truly invaluable, and is ready for use from August to December. Plants have been ordered by all those parties who had the opportunity of seeing the magnificent fruit at Bristol.

DWARF MAIDEN PLANTS are now ready for sending out at 5s. each, with the usual discount allowed to the trade.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

GLENNY'S IMPROVED BALSAM, the finest that can be produced: 6 classes, 37 stamps; mixed, 13; any single colour, 7; scaled packets signed. Any other sort sold as GLENNY'S IMPROVED will be fraudulent. EQUALLY good Dahlia, Pink, Hollyhock, Geranium, Chrysanthemum, Primula sinensis, Cineraria, Platycodon, 13 each; Delphinium, Phlox, Antirrhinum, Digitalis, Columbine, Imperial Double India Pink, New Everlasting Crimson do., Double Canterbury Bell, 7 each.—G. GLENNY, Horticultural Agent, Fulham, S.W.

GLENNY'S "Gardeners' Gazette," monthly, 3d., by post, 4d., is the only journal devoted to the interest of the Gardener, the Employer, the Amateur, and the fair Trader.

NEW AND CHOICE PLANTS.

JOHN STANDISH, in offering the following Plants, can assure his customers that they are now in fine condition for sending out:—

MYOSOTIDIUM NOBILE, or Antarctic Forget-Me-Not, each 31s. 6d.—This plant, from the Chatham Islands, is one of the most remarkable that has been introduced for some years, being totally distinct from all others. It has large thick leaves, 8 or 9 inches across, of a dark glossy green, and sends up magnificent trusses of bloom of the most beautiful blue and white, similar to a Forget-me-not, but of a giant form. A Drawing of it is published in Curtis's "Botanical Magazine" for September. A description taken from the above is also published in the *Gardeners' Chronicle* of Sept. 17, 1859, wherein Dr. Lindley says:—"This is the handsome perennial provisionally named Cynoglossum nobile by Dr. Hooker in our last year's Volume, page 240. It is quite deserving all the encomiums that have been passed upon it."

GLADIOLI, named varieties, from the choicest and largest collection in England, 6d. to 5s. each. Also a fine lot of bulbs raised from seeds saved from the best flowers, all of which will flower in the summer of 1860. 7s. 6d. per dozen, or 50s. per 100. These are strongly recommended.

RHODODENDRON LIMBATUM.—Pale blush, bordered with bright crimson. This has received several medals at the exhibitions for Rhododendrons, being very distinct and one of the most free flowering. 21s. each.

RHODODENDRON MINNIE.—White, very large blotch of chocolate-coloured spots, a fine flower, and remains a very long time in bloom. This is one of the most curiously marked Rhododendrons amongst all the white; it bears a noble truss of blooms, which cannot fail to be admired. 21s. and 31s. 6d. each. Selections can be made from one of the finest collections in Europe.

ROSE HYBRID PERPETUAL EUGENE APPERT.—Fiery scarlet crimson, 10s. 6d. each. This beautiful new Rose is in the hands of J. S. only, and is now ready to send out. It has received a First-class Certificate at the Grand National Rose Show, also at the Regent's Park. It is the most brilliant of all Roses and the finest grown, being well adapted for pot culture and for poles, growing most rapidly, sending up its flower-buds from all sides erect. They can be seen at a long distance. Besides this, J. S. has a fine lot of both Standards and Dwarfs of the newest and most select Roses in cultivation, which are offered at very reasonable prices.

PHLOX MRS. STANDISH.—The purest white, with a large red eye, 5s. each. Also a large collection of the finest kinds which J. S. has shown during the last summer and in every case received the First Prize. Plants from 1s. to 2s. 6d. each.

A CATALOGUE containing a full description of the best Hardy Plants in cultivation will be forwarded on application to

The Royal Nursery, Bagshot.

ROBERTSON'S WIZARD OF THE NORTH STRAWBERRY.

STRONG PLANTS, 63s. PER 100; 9s. PER DOZ.

DANIEL ROBERTSON begs to intimate that Prints of a Drawing of this variety are now ready for distribution, and will be forwarded free on application to parties in the Trade who may desire to have them for reference or exhibition in their shops or places of business, and who agree to have their plants direct from D. R.

In printing copies from the original drawing of this Seedling D. R. has incurred a very serious expense, and which, but for circumstances that have lately transpired in connection with the name of this variety, he would most certainly never have subjected himself to. He has done this to protect himself in his right, and to guard the public from imposition.

Purchasers are warned that they ought to see the Drawing of the Wizard in the hands of any nurseryman or other party from whom they buy plants, as all parties selling the genuine article will be furnished with a Drawing.

In Mr. W. J. Nicholson's Catalogue, published in a late number of the *Gardeners' Chronicle*, a kind appears named Wizard of the North (no raiser's name) and queried as Sir Walter Scott. Not knowing any Strawberry named Wizard of the North besides our Seedling, this matter became the subject of immediate and frequent communication with Mr. Dean, and in a letter from that gentleman, dated Sept. 22, he writes, "I have had some inquiries about the Wizard of the North, to know if it is really different from Sir Walter Scott, to which I have said yes. After comparing the plants sent by you with those of Sir Walter Scott, I see it is different, though a good deal like, and I think of the same race. In my next Catalogue this will be made all right."

Having seen growing in a nobleman's garden here plants of the Sir Walter Scott (obtained from Mr. Nicholson direct) besides plants of our Seedling Wizard of the North, D. R. feels astonished that any grower should have compared the two sorts, they are so dissimilar in growth, and can only account for Mr. Nicholson's error by concluding that the plants he compared with Sir Walter Scott in the first instance were in reality not the Wizard of the North at all. He had no plants of the Wizard from D. R. until after the appearance of his Catalogue.

All parties applying for Drawings of the Wizard are requested to send a written declaration that all plants which they may sell under the name of Wizard of the North up to the end of May, 1860, shall be the genuine variety, and obtained direct from the subscriber.

This precaution is necessary on our part, as a Drawing in the possession of any one is a guarantee to purchasers that the holder is an agent appointed by us, and also on account of the gross rascality and imposition that has already been practised in the name of this variety. The first plants we ever sent to England were sent on the 10th of September last, yet, strange to say, its name appears in several English catalogues for spring, 1859, the prefix ROBERTSON'S awanting.

The appearance of its name in any Catalogue till now is quite unwarranted. Having a large stock of the Wizard of the North, Market Gardeners and Nurserymen will be favourably dealt with on large orders. For description see former advertisements. A remittance or reference required.

DANIEL ROBERTSON, Linside Nursery, Paisley, N.B.

MESSRS. J. & H. BROWN offer the following selection of choice PLANTS, which they will forward to any part:—

	s.	d.
Andromeda floribunda, winter flowering, per doz. ..	15	0
25 Azaleas, new hardy Belgian varieties, one of a sort, on their own roots, by name, well set for bloom, fine for beds or pot culture for forcing	20	0
25 Azaleas, hardy American varieties, do. do. ..	15	0
12 hardy Rhododendrons, including red, white, and rose colour	12	0
Fine hardy Scarlet Rhododendrons, 2 feet, for beds, per dozen..	10	6
New Yellow Rhododendrons, each, 3s. 6d. to.. ..	5	6
Roses, best sorts, Standards and Half-standards, per dozen, 12s. to	15	0
Climbing Roses of best sorts, rapid growers, per doz.	6	0
6 fine hardy Magnolias, one of a sort	10	0
Greenhouse Azaleas, fine varieties, per doz., 10s. to..	12	0
Camellias, best double varieties, well set with buds, per dozen	28	0
24 Epacris and Ericas, one of a sort, in small pots ..	16	0
Hyacinths and other Dutch Bulbs of all kinds, cheap.		

FRUIT TREES.

Fine Standard and Dwarf-trained Peaches, Nectarines, Apricots, Cherries, Plums, and Pears, each, 2s. 6d.; or per dozen	24	0
Dwarf plants of all the above kinds, grown especially for pot culture in orchard-houses, &c., per dozen	18	0
Best sorts of Gooseberries, Currants, and Raspberries, per dozen	3	0
Mulberries, Medlars, Quince, and Walnuts, each ..	2	0
Filberts, Red and Thin-shell, per dozen	3	0

Choice Grape Vines from eyes and layers, strong.
Evergreen Shrubs and ornamental Trees of all kinds, cheap.
Albion Nursery, Stoke Newington, London, N.

TO THE TRADE.—CONTINENTAL FLOWER SEEDS.

FREDERICK WILLIAM WENDEL, SEEDSMAN and FLORIST, Erfurt, Prussia (established 1832).

F. W. W. begs to inform the Trade that his Wholesale CATALOGUE of the above is now ready, containing Collections of ASTERS, STOCKS, BALSAMS, WALLFLOWERS, &c., and also an extensive list of all other New and Choice FLOWER SEEDS, sold in assortments, or by weight.

F. W. W. having extensive grounds in the town and its vicinity, and devoting his personal attention to this department of his establishment, he can with the greatest confidence recommend all Seeds offered by him, as genuine and of the best quality.

Agent for this country—Mr. GEO. MACINTOSH, Nurseryman and Seedsman, High Road, Hammersmith, London, W., to whom all orders should be addressed, and where PRICE LISTS can be obtained post free on application.

The prices will be found as low as any house which supplies a genuine article. All parcels carriage paid to London.

DESIGNS FOR FLOWER BEDS AND GARDENS.—In consequence of numerous applications J. MARSHALL, 2, Goldsmith Street, Nottingham, has been induced to prepare another set of Designs. They comprise upwards of 80, diversified in style, and will be forwarded to any address on receipt of 24 postage stamps.

EXTRA STRONG TOBACCO PAPER, Warranted Genuine, 4 lbs. for 5s., or 1s. 6d. per lb.; 12 lbs. carriage free for 15s.

NEW MUSHROOM SPAWN, of the finest quality, 4s. per bushel.—CHARLES SOUTHBY, Nurseryman, &c., Clapham, S.

NURSERYMEN SUPPLIED WITH THE BEST TOBACCO PAPER at 4d. per cwt.; any quantity less than ½ cwt., 10d. per lb. Warranted genuine.—Address TOM BRYANT, Messrs. Jackson & Son, Tobacco Manufacturers, Lady Lane, Leeds.

GISHURST COMPOUND, PATENTED,

FOR PREVENTING AND DESTROYING

RED SPIDER	MEALY BUG	MILDEW
THRIPS	SCALE	GREEN and BROWN
AMERICAN BLIGHT	ANTS	FLY

BED BUGS, &c.,

And useful in winter dressing.

Contains no deleterious ingredient.

Has received the sanction of the Gardening Press, see *Gardeners' Chronicle* of 9th April and 16th July, 1859, and "Cottage Gardener," 12th July, and has been favourably reported on, and is used by eminent gardening authorities, among whom are—

Mr. Judd, of Althorp Gardens
Mr. Rivers, of Sawbridgeworth
Mr. Edmonds, of Chiswick House Gardens
Mr. Collinson, of Eaton Hall Gardens
Messrs. A. Henderson & Co., Edgeware Road
Mr. Jas. Veitch, jun., Chelsea
Mr. Spencer, of Bowood Gardens

The principal Nurserymen and Seedsmen throughout England, Scotland, and Ireland use it, have taken in supplies, and are now prepared to sell single boxes—price 1s. for first trials and small uses, such as destroying bed bugs; 3s. for not large gardens; 10s. 6d. for large gardens, with testimonials and full descriptions for use.

Nurserymen and Seedsmen supplied by
PRICE'S PATENT CANDLE COMPANY, Limited, London.

HOT-WATER APPARATUS.

J. JONES begs to offer a complete HOT-WATER APPARATUS for GREENHOUSES, at the following prices, delivered free to any Railway Station in England:—

Size of House.	With Cylinder Boiler.	With Saddle Boiler.
20 feet by 10 feet ..	£8 10 0 ..	£9 0 0
25 ,, by 12 ,, ..	10 0 0 ..	10 10 0
30 ,, by 12 ,, ..	11 10 0 ..	12 0 0
30 ,, by 15 ,, ..	13 10 0 ..	14 10 0
40 ,, by 15 ,, ..	16 10 0 ..	17 10 0
50 ,, by 18 ,, ..	18 10 0 ..	20 0 0

The above prices include Boiler, strong Furnace Doors, Bars, Soot Doors, Cistern, Damper, Hot-water Pipes and Connections, Air Pipes, &c., all ready for fixing, and of the best quality. Further particulars will be sent on application. Parties ordering must send plans, showing doorways, position of boiler, &c.—J. JONES, Hot-water Apparatus Manufacturer, 6, Bankside, Southwark, London, S.E.

HORTICULTURAL BUILDINGS AND HEATING BY HOT WATER.

JOHN R. PEILL, 17, New Park St., Southwark, S.E., Manufacturer of every description of Buildings for Horticultural purposes, and Inventor of the Improved Conical Boiler for heating the same, is prepared to undertake works of any magnitude, and refers among others to the celebrated range of FORCING HOUSES at HER MAJESTY'S GARDENS, FROGMORE, and at SIR ROBERT PEEL'S, DRAYTON MANOR, constructed under the superintendence of his Manager, Mr. JOHN JONES; and also to his BOILERS fixed at the CRYSTAL PALACE, the ROYAL BOTANIC GARDENS, REGENT'S PARK, and KEW, and at several hundreds of the Nobility's seats, Public Establishments, and Manufactories in London and the provinces. J. R. P. also manufactures every description of Iron Roofs, Iron Houses, and Iron Fencing, plain and ornamental. Strong Iron Hurdles for Sheep (6 ft. long, 3 ft. high, with 5 bars), 4s. 3d. each; ditto for cattle, 4s. 9d. each. Prices and other particulars forwarded on receipt of one postage stamp.

WEEKS' ONE BOILER SYSTEM.

So styled from the fact that the largest Horticultural Establishments in Europe are now effectually heated by WEEKS' ONE BOILER.

THE SEASON FOR TESTING THE EFFICIENCY OF A HOT-WATER APPARATUS having arrived, J. WEEKS & Co. are privileged by the under-mentioned well-known Horticultural Firms to issue a special invitation to the nobility, clergy, and gentry to pay a visit to their immense Establishments in order to become eye-witnesses of the extraordinary power of WEEKS' ONE BOILER SYSTEM.

J. W. & Co. beg emphatically to assert that their ONE BOILER SYSTEM is in every respect superior to any other method of Heating. It is more economical and clean, requires no night attendance, effects a great saving in labour, and that it is infinitely more efficient is clearly shown by the following statistics:—

	Length of Pipe Heated on Weeks' One Boiler System.
	Feet.
Messrs. E. G. Henderson & Son, Wellington Nursery, St. John's Wood	5500
Messrs. F. & A. SMITH, Dulwich Nursery	10,000
Mr. WOODROFFE, Harrow Road, Paddington	4000
Mons. LOUIS VAN HOUTTE, Ghent, Belgium..	13,000



J. W. & Co. also manufacture smaller and less expensive Boilers upon the same principle as the ONE BOILER SYSTEM, ranging in size from Nos. 1 to 6, at prices from 4l. up to 60l.

J. W. & Co. also invite an inspection of their own HORTICULTURAL SHOW ESTABLISHMENT at Chelsea, which they built expressly as a place of reference for exhibiting various designs and improvements in the Construction of CONSERVATORIES, GREENHOUSES, PINE STOVES, VINERIES, ORCHARD-HOUSES, CUCUMBER and other FORCING PITS, together with an extensive WINTER GARDEN, the whole in full and constant operation, and now being managed for Forcing CHOICE FRUITS, displaying an unrivalled selection of HORTICULTURAL STRUCTURES suited for every required purpose.

J. WEEKS & Co. have constantly on hand an extensive variety of HORTICULTURAL BUILDINGS ready for fixing in any part of the country, and also Forcing Frames and Pit Lights in large quantities.

J. WEEKS & CO., Horticultural Builders and Hot-Water Apparatus Manufacturers, King's Road, Chelsea, S.W.

PLANS, ESTIMATES, AND ILLUSTRATED CATALOGUES FREE ON APPLICATION.

TO THE NOBILITY, GENTRY, AND HORTICULTURISTS.

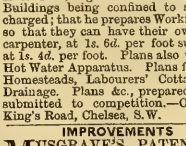
H. McCALLA (late principal Draughtsman to Messrs. Weeks & Co.), CIVIL ENGINEER and FARM ARCHITECT, begs to inform the above that the Horticultural Buildings being confined to so few, exorbitant prices are charged; that he prepares Working Drawings and Specifications, so that they can have their own constructed by any country carpenter, at 1s. 6d. per foot super, or upon their own estates at 1s. 4d. per foot. Plans also upon the same rule for erecting Hot Water Apparatus. Plans for all kinds of Farm Buildings, Homesteads, Labourers' Cottages, Laying out of Estates, Drainage. Plans &c., prepared for all the above Works and submitted to competition.—Office: 7 Upper Cheyne Row, King's Road, Chelsea, S.W.

IMPROVEMENTS IN HEATING, &c.

MUSGRAVE'S PATENT SLOW-COMBUSTION STOVE, for Warming Public Buildings, Hall, Shops, Conservatories, Factories, Drying Rooms, &c. Will burn in Churches from Saturday till Sunday evening, avoiding attention during the hours of worship. In Halls will burn day and night for weeks, with little care. Capable of warming a large apartment for 24 hours, at a cost of 3d.; and deserving of special attention, because of its safety, healthfulness, durability, and extreme simplicity. This Stove is the nearest approach to warming by hot water.



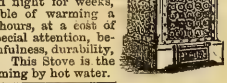
MUSGRAVE'S PATENT STABLE FITTINGS AND HARMLESS LOOSE BOXES have obtained the award of a large Council Medal from the R. I. A. Society for the following improvements:—



1st, The Horse cannot injure himself or others in the same stable if he breaks loose in his stall. 2d, He cannot waste the hay. 3d, He can have cut or uncut hay at pleasure. 4th, He has clean water always before him. 5th, A pure and wholesome atmosphere is secured. 6th, The whole fittings are stronger than usual, without increase in price, and there is no risk of infection.

The Loose Box is really what its name denotes, and the most spirited Horse may be turned into it without danger.

MUSGRAVE'S PATENT IRON COW-HOUSE FITTINGS, as approved by the Board of Works, adopted in the Ulster Model Farm, and by many of the most eminent Stock Breeders in the Kingdom, are made wholly of iron, very durable, cleanly, and attractive in appearance. The fodder is always fresh, being freely exposed to the air, removed from the breath of the animal, and separated from the roots or damp food. The range of Troughs can be quickly filled with water for the use of the Cows, or for washing out in case of epidemic, and the cost is very moderate.



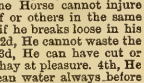
These inventions being distinguished for strength, simplicity, and practical usefulness will repay public inquiry.

MUSGRAVE BROTHERS are also Makers of Wire Fencing, Hurdles, Field and Entrance Gates, Corn Rick Stands, Conservatories, Hot-water Apparatus, Verandahs, Rural Bridges, &c.; and their works being favourably placed for cheap labour and materials, they can offer corresponding advantages in price.

MUSGRAVE'S Patent Field Gates have gained the 1st Prize from the R. I. A. Society for strength, durability, and cheapness.

For particulars address MUSGRAVE BROTHERS, Ann Street Iron Works, Belfast.

LOOMES AND CO.'S CABLE PATTERN GARDEN EDGING may be obtained of Messrs. HOOPER AND CO., Covent Garden Market, W.C.



GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz SHEET GLASS of British Manufacture at prices varying from 2d. to 3d. per square foot for the usual sizes required, many thousands of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES, and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London, W.

See *Gardeners' Chronicle* first Saturday in each month.

GLASS FOR ORCHARD HOUSES & CONSERVATORIES.

JAMES PHILLIPS AND CO. beg to submit their prices of GLASS for the present month.

16-oz. SHEET GLASS, in boxes of 100 feet.—3rds.		4ths.
12 by 9, 13 by 9, 14 by 9	14s. 6d.	12s. 6d.
12 ,, 10, 13 ,, 10, 14 ,, 10, 15 by 10		
13 ,, 11, 14 ,, 11, 15 ,, 11, 16 ,, 11		
14 ,, 12, 15 ,, 12, 16 ,, 12, 17 ,, 12		
18 ,, 12, 19 ,, 12, 20 ,, 12	16s. 6d.	14s. 0d.
16 ,, 13, 17 ,, 13, 18 ,, 13		
19 ,, 13, 20 ,, 13, 21 ,, 13		
16 ,, 14, 17 ,, 14, 18 ,, 14		
19 ,, 14, 20 ,, 14, 21 ,, 14		

Boxes included and not returnable.

GLASS for ORCHARD HOUSES, supplied by us to Mr. Rivers.

20 in. by 12 in.		16 oz.	21 oz.
20 in. by 13 in.	Common	14s. 0d. ..	£1 1s.
20 in. by 14 in.	Superior do. ..	.. 16 6 ..	1 5
20 in. by 15 in.	English Glass ..	.. 18 0 ..	1 9

Boxes included and not returnable.

SMALL SHEET SQUARES, in 100 feet boxes.—s. d.

6 by 4 ..	6½ by 4½ ..	7 by 5 ..	7½ by 5½ .. 11 6
8 ,, 6 ..	8½ ,, 6½ ..	9 ,, 7 ..	9½ ,, 7½ ..
10 ,, 8 ..	10½ ,, 8½ ..	.. .. ..	.. 12 6

Boxes 2s. each, returnable at full price.

JAMES PHILLIPS AND CO.,

130, Bishopsgate St. Without, London, E.C.

NO CONNECTION WITH ANY OTHER HOUSE IN TOWN.

HORTICULTURAL GLASS—JUNE TARIFF.

THOMAS MILLINGTON'S reduced Tariff of GLASS, &c.

6 by 4, 7 by 5, 8 by 6, 9 by 7 / 6¼ by 4½, 7¼ by 5½, 8½ by 6½, 9½ by 7½	16 oz. to the foot, 11s. 6d. per 100 feet.
In 100 boxes,—4ths quality, 12s. 6d.; 3ds do., 14s. 4d.	
10 by 8, 12 by 9, 12½ by 10½, 14½ by 10½, 13 by 11	
10½ by 8½, 12¼ by 9½, 13 by 10, 15 by 10, 13½ by 11½	
11 by 9, 13 by 9, 13½ by 10½, 12 by 11, 14 by 11	
11½ by 9½, 12 by 10, 14 by 10, 12½ by 11½	
20 by 12 / 20 by 13 / 20 by 14 / 20 by 15	per 100 feet 16 oz. 21 oz. Common .. 16s. .. 24s. Superior . 18s. .. 27s.

All Boxes included.

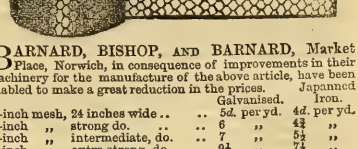
Orchard House sizes as supplied to Mr. Rivers.

Hartley's improved Rough Plate Glass from ⅛ to ⅜ in thickness.

Coloured Glass in great variety, at 9d. and 1s. per foot.

Paints, Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, Lamp Glasses, &c.

87, Bishopsgate Street Without, E.C., same side as Eastern Counties Railway.



BARNARD, BISHOP, AND BARNARD, Market Place, Norwich, in consequence of improvements in their machinery for the manufacture of the above article, have been enabled to make a great reduction in the prices.

	Galvanised.	Japanned Iron.
2-inch mesh, 24 inches wide	5d. per yd.	4d. per yd.
2-inch ,, strong do.	6 ,,	4½ ,,
2-inch ,, intermediate, do. ..	7 ,,	5½ ,,
2-inch ,, extra strong, do. ..	9½ ,,	7½ ,,
1½-inch ,, 24 inches wide	5½ ,,	4½ ,,
1½-inch ,, strong, do.	6½ ,,	5½ ,,
1½-inch ,, intermediate, do. ..	7½ ,,	6 ,,
1½-inch ,, extra strong, do. ..	10 ,,	8 ,,

All the above kinds can be made of any width (under 8 feet) at proportionate prices. If the upper half is of a coarser mesh than the lower, it will reduce the prices about one-fifth.

Strong Galvanised Poultry Netting, 2½d. per yard, 3 feet wide
Galvanised Sparrow-proof Netting for Pheasantries, 2½d. per square foot. Delivered free of expense in London, Peterborough, Hull, or Newcastle. Manufacturers of Improved Strained Wire Cattle and Deer Fencing, Iron Hurdles, &c.

Illustrated Catalogues and Patterns forwarded by post.

NEW AND CHEAP CHRYSANTHEMUMS OF 1859.

J. COURCHA is now prepared to send out strong plants of all the new CHRYSANTHEMUMS and POMPONES of this year, from 5s. to 6s. per dozen.

CATALOGUES may be had on application at Wellington Row, Hart's Lane, Bethnal Green Road, London, E.

NEW CHRYSANTHEMUMS.

JOHN SALTER'S unrivalled Collection of CHRYSANTHEMUMS is now in bloom; also several splendid Seedlings of his own and other growers which will be sent out next spring. The flowers in the WINTER GARDEN having been protected from the late severe frosts present a magnificent display of all the finest varieties in cultivation. The Gardens are open every day except Sunday.—Versailles Nursery, William Street, near Hammersmith Turnpike, W.

CHRYSANTHEMUMS.

W. HOLMES begs to offer strong plants of every known good variety of CHRYSANTHEMUM at 5s. per dozen; including Golden Queen of England, Aurora, Cassandra, Curtius Quintius, Excelsior, Fabius, Fortune's Two-Coloured Incurved, Golconda, Glory, Julie Lagravère, Madam Clos, Mount Vesuvius, Orange Brilliant, Prince Albert, Remus, sulphureum superbum, Una, Andromeda, Ariel, Astrea, Baron d'Adswaërd, Esmeralda, Maid of Saragossa, Miss Julia, Miss Talfourd, Mrs. Dix, Shirley Hibberd, Rose Trevenna, &c.

Frampton Park Nursery, Hackney, N.E.

NEW PLANTS.

H. LAURENTIUS, HORTICULTURAL ESTABLISHMENT, Leipzig, Saxony, is now sending out the following new ROSES:—

BOURBON PERPETUAL GIULIETTA: White, slightly tinged flesh; smooth stems; 15 francs.

HYBRID BOURBON PERFECTION: Fine rose colour, perfect shape; 5 francs.

HYBRID PERPETUAL FOR WALLS: L'ELEGANTE, bright cerise, flowering in clusters; 12 francs.

NEW TYDÆA: Bella, Bijou, Fortschritt, Goldfasan, Harlequin, Lisette, Meteor, Princeps, Rebecca. Each variety 4 francs; the set of nine, 25 francs.

SURPLUS NURSERY STOCK.—

GOOD QUALITY and CHEAP.

SEEDLINGS, 5,000,000.

PINUS PINASTER (Cluster Pine) one year.
PINUS SYLVESTRIS (Scots Fir) one year.
QUERCUS PEDUNCULATA (Common Oak) one and two year.
QUERCUS SESSILIFLORA (Durmast Oak) one and two year.

TRANSPLANTED, 1,000,000.

CEDRUS DEODARA (Indian Cedar) from 2 to 4 ft. in height.
LARIX EUROPÆA (Common Larch Fir) from 2 to 4 ft. in height.
QUERCUS PEDUNCULATA (Common Oak) from 3 to 8 ft. high.

Circulars with wholesale prices, terms, samples, or other information upon application to the undersigned,
J. E. NELSON, the Nurseries, Rinefield, near Lymington, Hants.

MESSRS. WATERER AND GODFREY respectfully refer planters to the following LIST of well-known good hardy Plants:—

ARAUCARIA IMBRICATA, 1 foot, stout, healthy, 5l. per 100; larger, up to 8 feet.
CEDRUS DEODARA, 2½ to 3 feet, very handsome, 10l. per 100; larger, in any quantity, up to 10 and 15 feet.
PICEA NOBILIS, Seedlings, in quantity, 1 foot, stout.
Ditto larger and in every way perfect plants, up to 4 feet.
NORDMANNIANA, from seed, 2, 3, 4, and 6 feet.
PINSAPO, 2½ to 3½ feet, and as much through.
Ditto magnificent plants, 8 and 10 feet high.
CUPRESSUS LAWSONIANA, fine bushy seedling plants, 2½ feet high.
JUNIPERUS, CHINESE, 3 feet up to 8 and 10 feet.
" IRISH, 5, 6, and 7 feet.
YEWS, IRISH, 5, 6, 7, and 8 feet.
" GOLDEN, from 2 to 7 and 8 feet.
" COMMON ENGLISH, in large quantities, 4 to 6, 7, and 8 feet.
THUJA AUREA.—Several hundred magnificent specimens, 3, 4, and 5 feet high, and measuring 10 to 15 feet in circumference.
THUJOPSIS CÆREOLIS, 2½ to 3 feet.
WELLINGTONIA GIGANTEA, all from seed, 1½ to 3 feet, and as wide.
HOLLY, GREEN, in quantities, 5, 6, and 8 ft.; VARIEGATED, especially the best gold striped, of all sizes, up to 6 feet.

All the plants referred to in this advertisement were removed in April last, and they are in a condition to travel any distance with perfect safety.—Knap Hill Nursery, near Woking, Surrey.

ROSES! ROSES! ROSES!

W. H. DAVIS begs to invite special attention to his large and well grown Stock of Standard and Dwarf Roses, which for quality and cheapness cannot be surpassed, the following Testimonials being evidence of the Superior Plants supplied last season:—

"Castle Wigg, Whethorn, N.B., Jan. 15.

"Sir,—The 200 Roses arrived all safe, and better plants I never saw. I will do all I can to recommend you to my friends. —Your obedt., "JOHN LAUDER, Bart."

"Rushton, Blandford, Aug. 22, 1859.

"Sir,—Your moderate prices last year and good materials induce me to give you an order for 100 Roses.—Yours truly,
"W. F. RADCLIFFE, Rector of Rushton."

"Falkirk, June 1.

"Dear Sir,—I had the pleasure to receive your Roses all in good order, and I have to thank you for the excellent plants you have sent me. I am well pleased with them, and hope to give you a further good account of them in the autumn.—Yours, &c., "JAMES NEILSON."

"Belladram, Beauly, N.B.

"Sir,—The Roses, 200 in number, arrived in good order and generally good plants. The Dwarfs are really fine plants, and I will be glad to do anything in my power to recommend your plants and prices.—Yours obedtly, "WILLIAM WESTWOOD,
"Gr. to James Merry, Esq."

"Rushton, Blandford, Dorset, Oct. 8, 1859.

"Dear Sir,—Thanks for your "gratis" Roses, which have more than covered carriage. The Roses purchased, over 100, are excellent, and most reasonable in price. Amateurs ought to know more of you. The 68 Manetti Roses are also cheap and excellent plants.—Your obedtly,
"W. F. RADCLIFFE, Rector of Rushton."

STANDARDS, in 100 very superior varieties, extra strong well rooted plants	per 100	£4 0 0
Do. in 12 do. do.	per dozen	0 12 0
DWARFS, in 100 do. do.	per 100	£2 10 0
Do. in 12 do. do.	per dozen	0 8 0
Manetti Stocks	per 100	0 4 0

All the best show varieties grown in extra strong plants as Dwarfs, can be supplied at 6s. per dozen. or 2l. per 100.

Gentlemen planting in large quantities will find this an excellent opportunity. Plants most carefully packed and despatched to any part of the Kingdom. Descriptive Catalogues with numerous testimonials now ready and sent post free upon pre-paid application. The Trade liberally supplied.

Rose Nurseries, Newbury, Berks.

BUTLER & McCULLOCH,

COVENT GARDEN MARKET, W.C.

A DESCRIPTIVE AND PRICED CATALOGUE OF

HYACINTHS, GLADIOLI, RANUNCULUS, ANEMONES, IXIAS, AMARYLLIS, CROCUS, and other DUTCH and CAPE BULBS, with practical Cultural directions affixed to each Class for the use of Amateurs, sent free and post paid (for contents of CATALOGUE see *Gardeners' Chronicle*, October 1, page 786).

☞ *All orders amounting to 21s. and upwards sent Carriage paid.*

For conspicuous beds the following HYACINTHS and TULIPS cannot be surpassed; they occupy a most important position in the economy of the Flower Garden, coming into bloom immediately after the Crocus, &c., and ready for removal at the time of planting out Geraniums and other Summer and Autumn Flowering Plants:

BEST DOUBLE and SINGLE MIXED HYACINTHS	21s. 0d.	per 100,	3s. 0d. per dozen.
TOURNESOL and REX RUBRORUM DOUBLE TULIPS	7 6	,,	1 0 ,,
YELLOW ROSE, pure yellow and scented Do.	10 6	,,	1 6 ,,
LA CANDEUR, pure white Do.	14 0	,,	2 0 ,,
FINE MIXED DOUBLE do.	7 6	,,	1 0 ,,
FINE MIXED SINGLE do.	6 0	,,	1 0 ,,
CHOICE MIXED LATE FLOWERING do.	10 6	,,	1 6 ,,

FOR CENTRES OF LARGE BEDS AND BORDERS

The following favourites are perfectly hardy, and cannot be too extensively cultivated:—

TRITOMA UVARIA (true)	21s. 0d. per doz.	2s. 0d. each	LILIUM LANCIFOLIUM ROSEUM 20s. 0d. per doz. 2s. 0d. each.
LILIUM LANCIFOLIUM ALBUM	15 6 ,,	1 6 ,,	,, ,, RUBRUM 20 0 ,, 2 0 ,,

GLADIOLI HYBRID of RAMOSUS,	30	splendid varieties named, for	21s. 6d., or 12 for 9s. 6d.	
,, ,, CARDINALIS,	12	beautiful ,,	10 6	
,, ,, BLANDUS,	6	new ,,	4 6	best for forcing.
,, ,, SAGITTALIS	6	,, ,,	4 6	

GLADIOLUS BRENCHLEYENSIS	30s. 0d.	per 100	5s. 0d. per dozen.
,, GANDAVENSIS	15 6	,,	2 6 ,,
,, QUEEN VICTORIA	15 6	,,	2 6 ,,
,, RAMOSUS	15 6	,,	2 6 ,,
,, FLORIBUNDUS	15 6	,,	2 6 ,,

THE FOLLOWING COLLECTIONS OF CHOICE BULBS SENT CARRIAGE PAID

No. 1, C, £1 1s.

12 Choice named Hyacinths
2 beautiful Japan Lilies, 2 varieties
12 beautiful Gladioli, 4 vars.
4 Polyanthus Narcissus
50 Ranunculus
40 Border Narcissus
100 Crocus
100 Snowdrops
40 Double Tulips
12 beautiful Iris
2 Chinese Pæonies

No. 2, D. £2 2s.

18 Choice named Hyacinths
3 beautiful Japan Lilies, 3 varieties
18 beautiful Gladioli, 6 vars.
6 Polyanthus Narcissus
100 Ranunculus
40 Anemones mixed
20 ,, scarlet
150 Crocus
150 Snowdrops
50 Double Tulips
4 Chinese Pæonies
12 beautiful Ixias
6 beautiful Sparaxis
1 Tritoma Uvaria
6 Babianas
2 Tritoma aurea

No. 3, E, £3 3s.

24 Choice named Hyacinths
4 beautiful Japan Lilies, 4 varieties
24 beautiful Gladioli, 12 vars.
9 Polyanthus Narcissus
100 Ranunculus
50 Anemones mixed
30 ,, scarlet
200 Crocus
200 Snowdrops
60 Double Tulips
6 Chinese Pæonies
18 beautiful Ixias
12 beautiful Sparaxis
2 Tritoma Uvaria
1 Lilium giganteum
12 Babianas
3 Tritoma aurea

AGENTS FOR TYE'S REGISTERED HYACINTH GLASSES.

These are without exception the most elegant and best adapted for the successful Culture of the Hyacinth. See Woodcut Group of Glasses, page 803 of *Gardeners' Chronicle*, October 8.

DUTCH AND OTHER BULBS.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their CATALOGUE of the above is now ready, and will be forwarded post free on application. Early orders are solicited, as their successful cultivation depends in a great measure on early planting.

Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

HEDENHAM ROSARY, BUNGAY, SUFFOLK.

IN CONSEQUENCE OF A DISSOLUTION OF PARTNERSHIP,

R. B. BIRCHAM is desirous of clearing off a portion of his stock, consisting of 35,000 STANDARD and DWARF ROSES, including all the best and leading sorts of Perpetuals in cultivation. To effect a clearance this autumn R. B. B. begs to offer them at the following very reduced prices:—

50 Dwarfs of the best Perpetuals	£0	18	0
50 Half standards, do.	1	5	0
50 Standards, do.	1	15	0

R. B. B. will be happy to supply Amateurs requiring half the quantity of each. Trade orders at a still lower rate per 100. Carriage paid to London and Peterborough.

ROSE NURSERIES, HERTFORD.

E. P. FRANCIS invites attention to his splendid stock of DWARF ROSES budded on the Manetti Stock of which he possesses the following quantities:—

HYBRID PERPETUALS.	HYBRID PERPETUALS
250 Adelaide Fonraine	100 Pius the 9th
200 Alexandrine Bachmeteff	1000 Prince Leon
500 Auguste Mie	200 Paul Dupuy
100 Arthur de Sansal	100 Reine des Fleurs
100 Baron Hallez	500 Souvenir de la Rein d'Angleterre
150 Baron Heecheren	500 Souvenir de Leveson Gower
150 Baron Larray	200 Triomphe de l'Exposition
200 Caroline de Sansal	500 ,, de Paris
50 Charles Bossiere	500 William Griffiths
500 Colonel Rougemont	100 Amandine
500 Comte de Nanteuil	100 Augustine Mouchelet
150 Comte Odart	500 Baron Prévost
50 Doctor Henon	50 Comet
250 Duchess of Norfolk	100 Duchess of Sutherland
500 ,, of Orleans	100 Jacques Lafitte
1500 Géant des Batailles	500 La Reine
200 General Castellane	100 Louis Buonaparte
150 ,, Cavaignac	100 Madame Laffay
1000 ,, Jacqueminot	100 Robin Hood
100 ,, Pelissier	50 Sydonie
100 ,, Simpson	50 William Jesse
200 Gloire de France	TEA-SCENTED.
100 Imperatrice Française	500 Comte à Paris
1000 Jules Margottin	500 Devoniensis
500 Louis Peyronny	100 Elise Sauvage
100 Lion des Combats	1000 Gloire de Dijon
50 La Ville de St. Denis	100 Goubault
500 Lord Raglan	100 Jaune
100 Madame Pepin	150 Madame Willermoz
250 ,, Domage	100 Niphetos
150 ,, Hector Jacquin	100 Pauline Plantier
100 ,, Knorr	100 Sombreuil
500 ,, Masson	150 Souvenir d'un Ami
150 ,, Cambacères	100 Vicomtesse de Cazes
500 ,, Vidot	
300 Mathurin Regnier	
200 Mrs. Rivers	

The above are all fine grown plants, strong and vigorous; they are all budded close to the ground, within 3 and 4 inches of the root, and are admirably adapted either for clumps or potting. Smaller quantities are grown of all the other varieties in their different classes.

EARLY HANDSWORTH POTATO.

FISHER, HOLMES, AND CO. beg respectfully to say that after this notice they will not be able to supply any more EARLY HANDSWORTH POTATOES to the Trade this season.—Handsworth Nursery, Sheffield.

EARLY POTATOES, LEMON KIDNEYS.—This early and excellent variety (see article on Cultivation of Early Potatoes, by the Rev. E. F. Manby, in Royal Agricultural Journal, Vol. XVIII.), may be had on early application to Author's Bailiff, JOHN HELM, Morecombe, price 2s. 6d. per stone. As also Copy of Article, 3d edition enlarged, price 1s.

N.B.—Late removal being injurious to the sprouts, orders should be at once supplied.

SUTTON'S CHAMPION SWEDE AND IMPROVED MANGEL WURZELS.—THREE MORE SILVER CUPS and several other prizes have already been awarded THIS SEASON to SUTTON'S CHAMPION SWEDE and Improved Mangel Wurzels.

Messrs. SUTTON & SONS will feel obliged by any additional information as to Prizes awarded to Roots raised from their seeds. New Seeds are now ready for delivery. Champion Swede, 1s. per lb., 4s. per bushel. Mangel Wurzel, 9d. per lb., or cheaper by the cwt.

The ROYAL BERKS ROOT SHOW will be held at Reading in November, at which numerous Prizes will be awarded as usual to pulled roots of Swedes, Turnips, Mangels, Carrots, Kohl Rabi, &c., from any part of the kingdom.

Royal Berkshire Seed Establishment, Reading.

SUPERB DOUBLE HOLLYHOCKS.

WILLIAM CHATER is prepared to supply Plants from his unequalled collection of this noble flower. See CATALOGUE for the newest and most celebrated varieties, containing Practical Hints on their Culture, prices, and other information.

W. C. has a large stock of good healthy Ground Roots (Seedlings) suitable for borders, with colours, 6s. to 18s. per dozen; without, 4s. to 6s., or 30s. per 100.

Seed saved from the best exhibition varieties, in separate colours, per packet	s.	d.
	1	0
Ditto, in 12 separate colours, the collection	10	0
Ditto, in 6 ditto ditto	5	0
Ditto from older named varieties, in 12 separate colours, the collection	7	6
Ditto, in 6 ditto ditto	4	0
Ditto, from 20 of the best varieties, mixed, per packet	5	0
Ditto 12 ditto ditto ditto	2	6
Ditto good mixed, per packet	1	0

This Seed WILLIAM CHATER can warrant to produce flowers of equal merit to existing show varieties.

Nurseries, Saffron Walden, Essex.

NURSERY GROUNDS, ABERCAVENNY.

JAMES SAUNDERS begs to invite attention to his general stock of all kinds of FOREST and ORNAMENTAL TREES, EVERGREEN and FLOWERING SHRUBS of all descriptions and of all sizes. A large stock of Chichester Elm, Sycamore, Horse Chesnut, Norway Maple, Turkey Oak, Spanish Chesnut, Cedar of Lebanon, and other fine specimens suitable for Parks and Avenues, 12 to 20 feet high; quite safe to move, having been replanted every two years. A large quantity of Standard, Half-Standard, and Dwarf Roses of all the best kinds in cultivation; all kinds of Flowering Plants suitable for Flower-beds and Borders, Stove and Greenhouse Plants; about 20 extra fine specimens of Azalea indica, first-class plants and sorts, 3 to 6 feet high; several thousands of choice kinds of Pears worked on Quince stocks; 10,000 Gooseberry trees in 150 named kinds; Currants in sorts; Seakale, Rhubarb, &c. The whole of the stock is young and thriving. A liberal discount for cash.—November 19.

AMERICAN PLANTS, &c.

MESSRS. WATERER AND GODFREY'S CATALOGUE for the present season is now ready, and may be had on application. It describes fully all Rhododendrons worth growing, and contains a List of Azaleas, Hardy Heaths and other American Plants, as well as a summary of the general stock of the most extensive Nurseries in England.

The Catalogue may also be had at Messrs. May's & Co., 1, Wellington Street, Strand, W.C.

Knap Hill Nursery, near Woking, Surrey.

HARDY RHODODENDRONS.

MESSRS. WATERER AND GODFREY invite attention to their Seedling RHODODENDRONS, which they are selling without names, and which they strongly recommend as being very superior in point of HABIT, FOLIAGE, COLOUR, and GENERAL HARDINESS. They are from 1½ to 2 feet high, and as much through, and no plants can possibly be in finer health. They will be sold at very liberal prices, and purchasers can select from a stock of many thousands.

Knap Hill Nursery, near Woking, Surrey.

RHODODENDRONS.

JOHN WATERER'S CATALOGUE OF HARDY, SCARLET, and other choice RHODODENDRONS, as annually exhibited at the Royal Botanic Gardens, Regent's Park, is now published and will be forwarded on application. Full and descriptions of all the esteemed varieties will be found therein, with a list of the popular kinds of AZALEAS and other AMERICAN PLANTS, as well as a selection of CONIFEROUS TREES, with height and prices.

The American Nursery, Bagshot, Surrey, near Sunningdale Station, South-Western Railway.

GERANIUMS, HERBACEOUS PLANTS, ETC.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their new PRICED and DESCRIPTIVE CATALOGUE of the above, to which are added Supplemental Lists of Stove, Greenhouse, and Hardy Plants, Fruit Trees, &c. (which include all the best new plants of the season), is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

GLADIOLUS BRENCHLEYENSIS.

YOUELL AND CO. are now sending out strong flowering Bulbs of this magnificent showy variety, the colour of which is bright vermilion scarlet. A box of the spikes of bloom was forwarded to the Editor of this Paper in August last, whose opinion of it will be found in the publication of August 20, page 694, as follows:—

"This must certainly be regarded as one of the most showy and beautiful of the class to which it belongs."

Price 5s. per dozen; 40s. per 100. Trade price on application.

Royal Nursery, Great Yarmouth, Norfolk.

FLOWER, VEGETABLE, AND TREE SEEDS.

C. PLATZ AND SON, SEED GROWERS and NURSERYMEN, Erfurt, Prussia, beg leave to inform their friends and patrons that their New CATALOGUE (52d annual) of FLOWER, VEGETABLE, and TREE SEEDS from the last growth is now published, and may be had post paid on application.

GERMAN STOCKS AND ASTERS, &c.

APPELIUS'S 27TH ANNUAL TRADE LIST now ready.—Apply to his London Agency, 132, Upper Thames Street, E.C.

N.B. All Flower Seeds delivered free of carriage within 14 days.

TO NURSERYMEN AND OTHERS.

THORN QUICKS FOR SALE.—1,500,000 of 1-year old Thorn Quicks, extra fine. 1,000,000 of 1-year old Thorn Quicks, stout and well rooted. Very suitable for transplanting.—Application to be made to MICHAEL FAULKNER, Nurseryman, Collon, Co. Louth, Ireland. N.B. Satisfactory reference required from unknown correspondents.

SUPERB DOUBLE HOLLYHOCKS.

WILLIAM CHATER'S CATALOGUE is now ready, and can be procured by inclosing One Postage Stamp, on application to the Nurseries, Saffron Walden, Essex.

See also other Advertisements in this Paper.

SUPERB DOUBLE HOLLYHOCKS.

BOWLER AND WARD have great pleasure in announcing that they have a large stock of the choicest varieties in cultivation. The plants are well established and in the finest possible health. Orders to any extent can now be executed. For description, &c., see printed Catalogue, which will be forwarded on application.

Ipswich Rosery, Foxhall Road, Ipswich.

CHOICE HOLLYHOCK SEED.

BOWLER AND WARD have given especial attention to the gathering from those varieties only which they know to be productive of good and satisfactory seedlings. Separate sorts in packets by name, 1s. each; mixed, 2s. 6d. to 5s.

The Trade supplied by the ounce, price on application.

Ipswich Rosery, Foxhall Road, Ipswich.

MAGNIFICENT DWARF-TRAINED MORELLO AND MAY DUKE CHERRIES.

WM. WOOD AND SON invite especial attention to their very extensive stock of the above, which are well worthy the attention of the Trade. The trees offered are most beautifully trained, each tree having from 9 to 12 branches, measuring from 6 to 8 feet across the plant, clean-grown, and remarkably handsome. Sample trees sent on application.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

NEW PINE APPLE—HURST HOUSE SEEDLING.

H. WILLIAMS is now prepared to send out this fine and useful variety of PINE APPLE; fruit large and conical, and of good flavour.

H. W. can with confidence recommend this variety to all Pine growers. Numerous testimonials could be given, but H. W. thinks it sufficient to add Mr. G. Fleming's, of Trentham: "An acquisition." Price on application.

Fortes Green, Muswell Hill, Finchley, N.

FOREST TREES.

JOHN WATERER has to offer upwards of a Hundred Thousand of each of the following, from 2 to 4½ feet high, and all good rooted:—

CHESNUT	LARCH	BIRCH
HAZEL	ASH	ALDER
SCOTCH	LAURELS	WITHY, &c.

Samples with prices sent on application. Planting done by contract.—The American Nursery, Bagshot, Surrey.

ROBERT NEAL, NURSERYMAN, Wandsworth Common, S.W., begs to call the attention of buyers to his large and well-selected stock of EVERGREENS and FLOWERING SHRUBS, ORNAMENTAL TREES, AMERICAN PLANTS, FRUIT AND FOREST TREES, STANDARD AND DWARF ROSES of every description. A large stock of BOX-LEAF EVERGREEN PRIVET, from 1 to 6 feet for hedges; GREEN HOLLY, 1 to 6 feet; RICH BOG and LOAM for American Beds; LEAF MOULD. The Nursery is 10 minutes' walk from Clapham Common, and New Wandsworth Station, Crystal Palace Line.

CARTER'S LIST of NEW ANNUALS and PERENNIALS:—

Clarkia pulchella integripetala
Calliriboe digitata.
Œnothera biennis hirsutissima.
Lobelia gracilis rosea.
Anagallis grandiflora "Eugenie"
" "Napoleon"
Nigella hispanica alba.
" atropurpurea.
Phacelia tanacetifolia alba.
Dianthus chinensis laciniatus, fl. pl.
Ditto Heddewigi
Captain Clarke's Blue Sweet Pea.
Nemophila discoidalis marmorata.
Lupinus mutabilis varicolor.
Yellow Tom Thumb Nasturtium
Tom Thumb "Beauty" ditto.
Datura chlorantha, fl. pl.
Thunbergia coccinea.
Ipomœa limbata elegantissima
Spartium pilifera, new substitute for Grass.

Price to the Trade and Coloured Drawings may be had on application to JAMES CARTER & Co., 237 and 238, High Holborn, W.C.

JAMES CARTER AND CO. beg leave to offer the following:—

DOUBLE AND SINGLE BORDER HYACINTHS, 21s. per 100, 3s. per dozen.
Do. Do., named, 6s., 8s., 9s., and 10s. per dozen.
POLYANTHUS NARCISSUS, 8 sorts, 10s.; each, 2s. 9d.

	Per 1000.	Per 100.
CROCUS, blue	12s. 6d.	1s. 4d.
" light blue	12 0	1 4
" purple	12 0	1 4
" yellow	12 0	1 4
CROCUS, large yellow	18 0	2 0
" white	18 0	2 0
" striped	15 0	1 8
TULIPS, Tournesol	7 6	
" Rex Rubrorum	7 6	
" La Candeur	14 0	
" Yellow Rose	10 0	
" very fine double single	6 0	

LILIUM LANCIFOLIUM (extra large)—red, per doz., 22s.; each, 2s. 3d. White, per doz., 17s. 6d.; each, 1s. 6d. Spotted, per doz., 20s.; each, 2s.

GLADIOLUS FOR CLUMPING.—The following collections are particularly adapted for clumping and bedding. The Gandavensis seedlings are now offered for this purpose for the first time, and can be strongly recommended for robust habit and varied brilliancy of colour.

We have added two scarce and beautiful varieties to the other assortment, which we think will be found desirable, as forming an effective contrast to those already offered:—

	Per dozen
Couranti fulgens, crimson	4s. 0d.
Eugenie, salmon, rose striped	5 0
Fulgens aureus pictus	5 0
Madame Coudere, carmine shaded	4 0

12 each above 8 sorts, 28s.

Mdlle. Fanny Rouget, rose, white, and carmine	5 0
Mons Blouet, rose, shaded carmine	4 0
Mons. Georgeau, salmon rose	4 0
Triomphe d'Enghien, carmine var.	4 0

6 each above 8 sorts, 15s. | 3 each above 8 sorts, 8s.

Brenchleyensis, vermillion	5s. 0d.
Cardinalis, scarlet, white mark	3 0
Formosissimus, beautiful red	3 6
Gandavensis, scarlet and yellow	3 0
Insignis, carmine spotted	5 6
Magnifique, purple, white mark	2 6

12 each above 11 sorts, 30s.

Natalensis, yellow and red	1s. 6d.
Oppositiflorus, white and rose	2 6
Prince Albert, bright rose	3 6
Ramosus, salmon rose	3 0
Victoria Regina, bright scarlet	3 6

6 each above 11 sorts, 15s. 6d. | 3 each above 11 sorts.

CARTER'S FLORAL ILLUSTRATIONS, Plate No. 7, now ready, 1s. 6d.

JAMES CARTER & Co., 237 & 238, High Holborn London, W.C.

DWARF MAIDEN FRUIT TREES.—

APPLES.

PEARS.	CHERRIES.	PEACHES.
PLUMS.	APRICOTS.	NECTARINES.

Prices moderate.

Fine and clean grown; and all the leading sorts can be supplied in quantities by GEORGE JACKMAN & SON, Woking Nursery, Surrey.

DWARF TRAINED FRUIT TREES.—

APPLES.

PEARS.	CHERRIES.	PEACHES.
PLUMS.	APRICOTS.	NECTARINES.

Prices moderate.

Great care is taken in the formation of these fine, healthy, free-grown trees. Particulars can be obtained of GEORGE JACKMAN & SON, Woking Nursery, Surrey.

HOLLAND AND BAYLEY are now sending out in Strong Plants the heaviest Lancashire Show—

	Per doz. s.	d.		Per doz. s.	d.
Gooseberries	6	0	White Currants (strong)	3	0
Black Currants (strong)	2	6	Apple, Lord Suffield,		
Red "	2	6	extra fine	12	0

H. & B.'s CATALOGUE of Florists' Flowers, &c., is now ready, and may be had on application.

Bradshaw Gardens, Chadderton, near Manchester.

TRANSPLANTED SHRUBS & FOREST TREES.

MARSH AND PERKINS call the attention of the Trade to the undernamed, which are strong and healthy:

Laurels, common	12 to 18 inches, 50s. per 1000
Do. do	18 to 24 " 60s. "
Berberis Aquifolium	9 to 12 " 20s. "
Privet, evergreen	1 to 2 feet 15s. "
Box, green	9 to 12 inches, 50s. "
Fir Larch	1½ to 2 feet 10s. "
" 1 year's transplanted	3s. 6d. "
" Scotch	1½ to 2½ feet 18s. "
Quick, fine transplanted	8s. to 10s. "

Samples sent on application to 42, Drapery, Northampton.

MAGNIFICENT STANDARD AND PYRAMIDAL PORTUGAL LAURELS.—The above are well adapted for planting out on lawns or where immediate effect is required. The Standards range from 4 to 6 feet, with large well-formed heads; and the Pyramids are most beautifully shaped plants, from 5 to 7 feet. Prices on application.—WM. WOOD & SON, Woodlands Nursery, Maresfield, near Uckfield, Sussex.

TO THE TRADE.

FRUIT TREES, MAIDEN APRICOTS, PEACHES, NECTARINES, PEARS, APPLES, PLUMS, CHERRIES, &c.; also Standard and Dwarf-trained, in great variety, and correct to name.

GRAPE VINES of all the principal kinds from Eyes, strong and well rooted.

Pyramidal PEARS and APPLES in fine health, coming into a bearing state. Prices on application.

R. GLENDINNING, Chiswick Nursery, London, W.

WHOLESALE CATALOGUE.

GEORGE JACKMAN AND SONS' PRICED and DESCRIPTIVE CATALOGUE for 1859 & SPRING 1860; comprising Fruit Trees of all the leading Kinds; New and Selected Roses; fine varieties of American Plants; Choice and Rare Conifers, Evergreen and Deciduous Trees and Shrubs; and the finest stock of transplanted Forest Trees, &c., can be had free on application.—Woking Nursery, Surrey.

TANSLEY NURSERY, NEAR MATLOCK.

TO GENTLEMEN PLANTING AND THE TRADE.

J. SMITH, SEN., begs to offer his STOCK OF TREES AND SHRUBS, of various sizes, and in addition to his general stock of the leading kinds, he has this season to offer an Extra Stock of many hundred thousands of fine Larches, Scotch Firs, and Highland Pines; a large quantity of Evergreens, Privets, Malvonia Abutilon, and other plants for planting under cover. Many things are grown in large quantities, and will be sold on advantageous terms to the Trade and gentlemen requiring large Lots.

CATALOGUES sent free on application. The Nurseries are on the Mansfield and Nottingham roads, and 2 miles from Matlock Bridge Station on the Midland Railway.

CHOICE DOUBLE FUCHSIA SEED.

GEO. WHEELER, having saved a limited quantity of Seed from the finest DOUBLE FUCHSIA ever offered, viz., his SIR COLIN CAMPBELL, which from such a Stock may reasonably be expected to produce a considerable proportion of double flowers, is prepared to forward, post free, in return for cash or postage stamps, packets containing 24 Seeds each, at 2s. 6d. per packet.—Warminster Nursery, Nov. 10.

AZALEA INDICA.

F. AND A. SMITH beg to offer the above well set with flower buds, dwarf, bushy, and thoroughly ripened off. Having been grown in this country they are most suitable for packing, and are strongly recommended to country Amateurs and the Trade in general. An inspection invited. Prices on application.—Dulwich, Surrey, S.

SPECIAL ADVERTISEMENT.

TO THE SEED TRADE.—Our customers in the provinces should agree with their neighbouring Seedsmen and friends to have their Seeds sent from our Establishment in one parcel, saving at least 50 per cent. transit from London. Our 40th PRICED SEED LIST will be sent on application.

ABRAHAM HARDY & SON, Seed Growers, &c., Maldon, Essex.

PAMPAS GRASS.—The present is the most favourable time for planting out this charming Plant. No one can imagine the grand effect of a mass of its silvery plumes unless they see it, nor is its value confined to the ornamental, but is likely to become useful as Cover for Game. It grows in any soil or situation, attaining the height of from 6 to 10 feet.—Any quantity can be supplied by C. NOBLE, Bagshot, Surrey.

NEW ANNUALS.

JOHN GEORGE WAITE, SEED MERCHANT, 181, High Holborn, London, W.C., has great pleasure in offering SEEDS of the following new hardy Annuals:—

CLARKIA PULCHERRIMA,
SCHIZANTHUS GRANDIFLORUS OCULATUS,
HELIOPHILA CŒRULEA STRICTA.

Coloured Drawings and prices of which (to the Trade only) can be had on application.

Seed Establishment, 181, High Holborn, London, W.C.

SPLENDID NEW VARIEGATED FERN,
PTERIS ARGYRÆA (MOORE).



JAMES VEITCH AND SON have peculiar satisfaction in calling attention to the above-named most striking novelty, which is undoubtedly one of the greatest acquisitions of recent introduction to our now justly popular collections of Ferns.

It is of *noble aspect* and free growth, perfectly distinct and novel in its character, the pinnæ on every frond as well as their branches having a broad central stripe of glistening silver, which, in contrast with the bright green, produces a most charming effect. It may justly be called

THE VARIEGATED FERN.

It was exhibited at the Royal Botanic Garden on July 6, and before the Horticultural Society's newly-appointed Floral Committee on July 7, and in both cases received the highest Prizes given to such novelties, and was universally admired.

Established Plants, 31s. 6d. each. The usual allowance to the Trade.—Royal Exotic Nurseries, Exeter and Chelsea.

SNOW'S MUSCAT HAMBURGH GRAPE.

MESSRS. ARTHUR HENDERSON AND CO. beg to give notice that TWO PRIZES will be awarded by them at the Pomological Meeting in August, 1860, for the production of the three best bunches of the above Grape. The first Prize Three Guineas; the second Two Guineas. They will also give a Prize at the Crystal Palace Show in September, 1860, of Five Guineas for the best dish of Grapes, and Three Guineas for the second best.

A. HENDERSON AND CO., Pine Apple Place, W.—Nov. 19.

The Gardeners' Chronicle.

SATURDAY, NOVEMBER 19, 1859.

LET us congratulate the Horticultural Society; let us congratulate the public. The creation of a NEW GARDEN AT KENSINGTON GORE is no longer doubtful. It will be seen by the following letter that the subscription list has been filled up, and a lease of the ground is about to be executed.

(COPY of a letter from the Secretary of the Horticultural Society to the Royal Commissioners.)

November 14, 1859.

SIR,—I have now the pleasure to report for the information of her Majesty's Commissioners for the Exhibition of 1851, that the sum of 50,000*l.* for the formation of the new garden at Kensington Gore has been subscribed for, and that the Council are ready to execute the lease.—I have the honour to be, Sir,

Your obedient Servant,

(Signed) JOHN LINDLEY.

Edgar Bowring, Esq., &c., Whitehall.

We have also to report that Mr. GEORGE EYLES has been appointed Superintendent; that plans for the construction of a place of business, including a spacious meeting and committee room at Kensington Gore, are to be immediately prepared;

and that the Council have already under consideration a scheme for the re-organisation of the Society upon a scale of efficiency commensurate with the importance of the new position it is about to assume. We are enabled to give the following list of the subscriptions here referred to, from which the public will learn who are the present supporters of this great design.

LIST OF PROMOTERS.	Donations.	Life Memberships	Debentures.
	£ s.		£
HER MOST GRACIOUS MAJESTY THE QUEEN, *Patron of the Society* ..	1000 0		
And Life Memberships for			
H.R.H. THE PRINCE OF WALES			
H.R.H. THE PRINCESS ALICE			
H.R.H. THE PRINCE ALFRED			
H.R.H. THE PRINCESS HELENA			
H.R.H. THE PRINCESS LOUISA			
H.R.H. THE PRINCE ARTHUR			
H.R.H. THE PRINCE LEOPOLD			
H.R.H. THE PRINCESS BEATRICE			
H.R.H. THE PRINCE CONSORT, *President of the Society*	500 0		1000
H.R.H. THE PRINCESS FREDERIC WILLIAM OF PRUSSIA	..	One	
H.R.H. THE DUCHESS OF KENT ..	..	One	
H.R.H. THE DUCHESS OF CAMBRIDGE .	..	One	
H.R.H. THE PRINCESS MARY	..	One	
Earl Granville	..	One	100
Countess Granville	..	One	
Hon. Fred. Leveson Gower, M.P., F.H.S.	..	One	
George Granville Leveson Gower, Esq.	..	One	
G. A. Stewart, Esq.	..	One	
Sir John Dalberg Acton, Bart., M.P. .	..	One	
The Duke of Newcastle	..	One	
The Duke of Manchester	..	One	
The Duchess of Manchester	..	One	
Lady Ulrica Thynne	..	One	
The Marquis of Ailesbury	..	One	
The Marchioness of Ailesbury	..	One	
C.W. Dilke, Esq., F.H.S., *Vice-President*	..	One	500
Henry A. Hunt, Esq., Tooting ..	..	Three	
E. A. Bowring, Esq.	..	One	
H. R. Williams, Esq.	..	One	
Earl of Ellesmere	..	One	
Dr. Lindley, F.H.S., *Secretary* ..	..	..	200
The Earl of Harrowby, F.H.S. ..	..	One	
Sir J. F. Davis, Bart., F.H.S. ..	..	..	1000
Edmund H. Joynson, Esq., F.H.S., Kent	..	One	
Duke of Leinster, F.H.S.	..	One	100
The Marchioness of Kildare	..	One	
Lord Gerald Fitzgerald	..	One	
Lord Otho Augustus Fitzgerald ..	..	One	
George W. J. Repton, Esq., M.P. ..	..	One	
Lady Jane Repton	..	One	
Earl of Ducie, F.H.S., *Vice-President* ..	..	Two	200
R. C. L. Bevan, Esq.	..	One	
Mrs. Bevan	..	One	
Mr. John R. Challice, F.H.S., Devon .	..	One	
J. Russell Reeves, Esq., F.H.S. ..	..	Five	500
Edward Kinnersly, Esq., F.H.S., Berks	..	One	100
Hon. Payan Dawnay, F.H.S.	10 0	..	
Sir Proby Cautley, F.H.S.	..	One	
Colonel Long, F.H.S., Bromley ..	25 0	..	
Sir Richard Frederick, Bart., F.H.S. .	50 0	..	
Earl of St. Germans, F.H.S.	..	One	100
Lord Eliot	..	One	
Lady Rolle, F.H.S.	52 10	..	
Sir John Cathcart, Bart., F.H.S. ..	21 0	..	
Earl of Cawdor, F.H.S.	25 0	..	
Beriah Botfield, Esq., M.P., F.H.S. ..	..	One	
J. Ames, Esq., F.H.S., Clevelands, Lyme	..	One	
Sir Roderick I. Murchison	..	One	200
Lady Murchison, F.H.S.	..	One	
C. S. Whitmore, Esq., Q.C.	..	One	200
J. G. Hubbard, Esq., F.H.S., Winslow	..	Three	
Samuel Gurney, Esq., M.P., F.H.S. ..	..	One	500
Lord Ashburton, F.H.S.	50 0	Two	
A.S. Gladstone, Esq., F.H.S., Liverpool			
G. Forbes, Esq., F.H.S., Bereleigh ..	..	..	100
Mr. I. McPherson, F.H.S.	1 1	..	
W. M. Fladgate, Esq.	..	Three	
H. Barnard, Esq., F.H.S., Ham Common	..	One	
Miss Baring	..	One	
J. R. Gowen, Esq., F.H.S.	..	One	100
J. N. Walker, Esq., F.H.S., Liverpool	50 0	Two	300
Mr. John Clark, F.H.S.	..	One	
John Noble, Esq., F.H.S.	..	One	
Lord Taunton	..	One	
Lady Taunton	..	One	
Hon. Miss Labouchere	..	One	
Hon. Miss Mina Labouchere	..	One	
Hon. Miss Emily Labouchere	..	One	
Sir Charles Lyell, F.R.S.	..	One	
Lord Overstone, F.H.S.	..	One	
Lady Overstone	..	One	
Lieut.-Colonel Loyd Lindsay	..	One	
Hon. Mrs. Loyd Lindsay	..	One	
Colonel W. Kirkman Loyd	..	One	
Miss Eliza Loyd	..	One	
T.F. Gibson, Esq., Sandown, I. of Wight	..	One	100
Right Hon. Robert Lowe, M.P. ..	..	One	
James Veitch, Jun., Esq., F.H.S. ..	..	Two	
H. G. Bohn, Esq., F.H.S., Twickenham	..	Two	
A. F. Godson, Esq.	..	...	100
Miss H. B. Godson	..	..	100
Miss A. M. Godson	..	..	100
Miss M. E. Godson	..	..	100
Miss D. S. Godson	..	..	100
Mr. C. Edmonds, F.H.S.	..	..	100
H. T. Hope, Esq., F.H.S., Deepdene .	..	..	200
John C. Whiteman, Esq., F.H.S. ..	..	..	100
Sir Joseph Paxton, M.P., F.H.S. ..	..	..	500
Matthew Uzielli, Esq.	..	Two	500
Robert Napier, Esq., Glasgow	..	Two	
Richard Redgrave, Esq., R.A.	..	..	200
Henry Cole, Esq., C.B., F.H.S. ..	..	..	200
James R. Scott, Esq., F.H.S., Hornsey	..	One	
W. Wilson Saunders, Esq., F.H.S., *Treasurer*, Reigate	..	..	500
J. J. Blandy, Esq., F.H.S., *Vice-President*, Reading	..	..	300
Sir William Cubitt	..	Two	
Sir Charles Barry, R.A.	..	One	
W. Coulson, Esq., Q.C.	..	One	
J. Gott, Esq., Leeds	..	Five	
George Wood, Esq., F.H.S., Rochford	..	..	100
Captain Fowke, R.E.	..	..	200
MacLeod, of MacLeod	..	..	100
Samuel Redgrave, Esq.	..	..	100
Lady Lamb	..	One	
Walter Ewer, Esq., F.H.S.	50 0	..	
Colonel Harcourt, F.H.S.	..	One	
Rev. T. Staniforth, F.H.S., Windermere	..	One	
William Heathcote, Esq.	..	One	
Lord Boston, F.H.S.	..	One	300
General Watkins	..	One	
Lady Eastlake	..	One	
Henry White, Esq., F.H.S.	..	..	100
J. H. Lance, Esq., F.H.S., Holme Wood	..	Two	300
Stephen Bird, Esq.	..	One	100
Rt. Hon. T. Milner Gibson, M.P. ..	..		
Mrs. Milner Gibson	..		
Thomas Bazley, Esq., M.P., Manchester	..	Five	
W. J. Phelps, Esq., F.H.S., Chestal ..	..	One	
Alfred Fowler, Esq.	..	One	
D. D. Heath, Esq., F.H.S., Kitlands ..	..	One	100
John Bell, Esq.	..	One	
T. R. Auldjo, Esq.	..	One	
Chas. Hill, Esq., F.S.A., West Hoathleys	..	One	
Miss Burdett Coutts	..	One	500
W. M. Coulthurst, Esq, F.H.S, Streatham	..	.	500
Edmund Coulthurst, Esq.	..	One	
Edward Weston, Esq., Hornsey ..	..	One	
T. Meynell, Esq., the Fryerage, Yarm	..	One	500
Edward Marjoribanks, Esq., F.H.S. ..	..	..	500
Edward Holmes Baldock, Esq. ..	..	One	
Thos. Broadwood, Esq., Holme Bush ..	..	Two	100
Henry Langley, Esq.	..	One	
Gawthorn Hardy, Esq., M.P.	..	One	100
W. Forsyth, Esq.	..	One	
Professor R. Westmacott, R.A. ..	..	..	500
B. M. Power, Esq.	..	..	300
Earl of Lichfield, F.H.S.	..	One	
Thomas William Tatton, Esq., F.H.S.	..	..	200
Thomas C. Higgins, Esq., F.H.S., Bucks	..	..	100
Wm. Richard Hopkins Northey, Esq.	..	..	200
David Fullerton, Esq., F.H.S., Rench-combe Park	..	One	
Mrs. Fullerton	..	One	
George Ellis, Esq., F.H.S.	5 0	..	
Rev. J. Heyworth, F.H.S., Henbury Hill	..	..	500
Miss Turner, F.H.S., Godstone ..	..	One	
Thomas Baring, Esq., M.P.	..	One	100
Professor Owen, F.R.S.	..	..	100
C. M. Campbell, Esq., Stoke-upon-Trent	..	One	
Henry Webb, Esq., Harlow	10 10		
Sir James Clark, Bart.	..	..	100
Benjamin Norden, Esq.	..	One	
J. Gaskell, Esq., St. Nicholas-at-Wade	..	One	
W. Colnett, Esq., Kensington	..	..	100
Mrs. Colnett	..	..	100
Miss Colnett	..	..	100
Earl of Shannon, F.H.S.	..	One	
W. M. Thackeray, Esq.	..	..	100
Marquis of Salisbury, F.H.S.	..	..	500
Samuel Reynolds Solly, Esq., F.H.S., Serge Hill, St. Albans	..	One	300
Everard Brande, Esq., F.H.S. ..	..	..	200
J. Joel, Esq. (Montevidean Vice-Consul)	..	One	
William Reed, Esq.	..	..	500
Sir Alex. P. G. Cumming, Bt., F.H.S.	..	One	
Mr. John Henry Bird, F.H.S.	..	One	
E. Banks, Esq., F.H.S., Shalden, Deal	..	..	400
Thomas Hancock, Esq., F.H.S., Stoke-Newington	..	..	100
Rev. L. Vernon Harcourt, F.H.S., *Vice-President*	..	..	500
Duke of Cleveland, F.H.S.	..	One	
George Brough, Esq.	..	..	100
Sir William Middleton, Bart., F.H.S. .	..	One	
Sir Thomas Dyke Acland, Bt., F.H.S.	..	One	
Dr. Acland, F.R.S., Oxford	..	..	200
H. Micholls, Esq., F.H.S., Bowdon ..	..	One	
C. D. E. Fortnum, Esq., Stanmore ..	..	..	100
Mrs. C. D. E. Fortnum	..	..	100
Miss Fortnum, Chalvey Park, Slough .	..	..	100
Horatio G. M. Stewart, Esq., F.H.S., Cally, Gatehouse, N.B.	..	One	
Right Hon. Colonel Tighe, F.H.S. ..	..	..	100
Sir Charles Locock, Bart.	..	One	
Miss Robertson	..	One	
Wm. Jackson, Esq., M.P., Birkenhead	..	One	
Lord Wm. Powlett	..	One	
Henry Wilson, Esq., F.H.S., Suffolk ..	..	One	
George Wood, Esq.	..	One	
Mrs. Wood	..	One	
Miss Wood	..	One	
Master Wood	..	One	
James Scott, Esq.	..	One	300
Lady Louisa Tenison, F.H.S.	..	One	
Mr. G. Dixon	..	..	100
W. R. C. Stansfield, Esq., Esholt Hall ..	..	..	200
Robert S. Holford, Esq., M.P., F.H.S.	..	One	100
Mr. Joseph Henderson, F.H.S. ..	1 1	..	
Right Hon. H. Fitzroy, M.P.	..	Two	
Mr. Wm. Barron, F.H.S.	..	One	
G. H. Tod Heatly, Esq.	..	One	100
Joseph Locke, Esq., M.P.	..	Five	500
Earl of Harrington, C.B.	..	..	1000
Edward Fellowes, Esq., M.P., F.H.S.	..	One	
Sir John Kirkland	..	Two	200
Charles Hammersley, Esq., F.H.S. ..	..	One	
Mr. George Wright	..	..	200
Titus Salt, Esq., M.P., Bradford ..	..	Three	
Charles R. Harford, Jun., Esq. ..	..	One	
Sir George Cornewall Lewis, Bt., M.P.	..	One	
Lieut.-Gen. Hon. John Finch, G.B. ..	..	..	100
Thomas Forty, Esq.	..	One	
G. T. Davy, Esq., F.H.S.	..	Five	
Wm. Christie, Esq.	..	..	100
Mrs. Christie	..	..	100
Mr. Eyles	..	..	100
Earl of Dartmouth	..	One	
Capt. W. Gray, M.P.	..	..	
Robert Benson, Esq.	..	One	
Henry Snook, Esq.	..	..	100
Miss A. Lætitia Snook	..	One	
Duncan Macgregor, Esq.	..	..	100
Capt. Ross, R.E.	..	..	100
Walter Hawkins, Esq.	..	One	
Lady Erle, F.H.S.	..	..	500
Charles Chatfield, Esq., Croydon ..	..	One	
J. Vickers, Esq., F.H.S., Woodlands ..	..	One	
Duchess Dowager of Norfolk	..	Two	
John Clutton, Esq., F.H.S.	..	Two	
Sydney Smirke, Esq., R.A.	..	..	200
Thomas Fairbairn, Esq., Manchester ..	..	One	
Thomas Ashton, Esq., Manchester ..	..	One	
A. H. Novelli, Esq.	..	One	
W. G. Romaine, Esq.	..	One	
Duke of Rutland	..	Two	
W. C. Long, Esq.	..	..	100
F. Wright, Esq., Osmaston Manor, Derby	..	One	
George Moffatt, Esq.	..	One	
John Webb, Esq.	..	..	200
Rev. D. A. Beaufort, Warburton Rectory, Warrington	..	..	400
Col. J. W. Gordon, C.B.	..	..	100
William Tite, Esq., M.P.	..	..	
Sir R. P. Glyn, Bart., F.H.S.	50 0		
Sir John C. Thorold, Bart.	..		
W. T. Hibbert, Esq.	..	One	
Wm. Allcard, Esq., F.H.S.	..	One	
Mr. Edward Milner	..	..	
Francis Galton, Esq.	..	One	
Wm. Salt, Esq.	..	One	
Mrs. Salt	..	..	
Miss Mary Salt	..	One	
J. E. Bartlett, Esq., F.H.S., Aylesbury	..	One	
Edwin Chadwick, Esq., C.B., F.H.S., Richmond	..	..	
E. Johnston, Esq., F.H.S., Beaulieu ..	..	One	
Fred. Cass, Esq., F.H.S., East Barnet	..	One	
Wm. Phillipps, Esq., F.H.S., Reigate .	..	One	
A. Druce, Esq., F.H.S., Dulwich Com.	..	..	
Sir R. Throckmorton, Bart., F.H.S. ..	..	One	
Lord Egerton of Tatton, F.H.S. ..	..	..	
Charles Deane, Esq., F.H.S.	..	..	
George Godwin, Jun., Esq.	..	One	
G.S. Ridgway, Esq., F.H.S., Turnham G.	..	..	
J. Backhouse, Jun., Esq., F.H.S., York	10 10		
W.H. Hawkins, Esq., F.H.S., Nutfield	..	One	
W. H. Belli, Esq.	..	One	
Marquis of Chandos	..	One	
Thomas B. Potter, Esq., F.H.S., Buile Hall, Manchester	..	One	
Lady Wilmot Horton, F.H.S.	..	..	
Thomas Henry Allen Poynder, Esq., Hartham Park, Corsham	..	One	
Mrs. Poynder	..	One	
Right Hon. B. Disraeli, M.P.	..	One	
Alexander J. R. Stewart, Esq., F.H.S., Ardes, Cashelmore	..	One	
Lady Isabella Stewart	..	One	
Rev. John C. Clark, F.H.S., Cowley Hall, Chertsey	5 0		
H. B. Alexander, Esq., Barnes, Surrey	..	Two	
Philip Rose, Esq.	..	..	
Edward Wood, Esq., Burslem	..	..	
Thomas Dyer Edwardes, Esq.	..	..	
Thomas Dyer Edwardes, Jun., Esq. ..	..	..	
Miss Mary Dyer Edwardes	..	..	
Miss Caroline Isabella Edwardes ..	..	..	
Miss Elizabeth Sarah Edwardes ..	..	..	
Miss Anne Sophia Edwardes	..	..	
John Kelk, Esq., Stanmore	..	One	
Mrs. Kelk	..	One	
John William Kelk, Esq.	..	One	
George Edward Kelk, Esq.	..	One	
Wm. Hine, Esq.	..	One	
Rev. John A. Wedgwood, F.H.S., Dumbleton Rectory	..	One	
J. W. Burmester, Esq.	..	One	
Herbert Taylor, Esq.	..	..	
Mrs. Herbert Taylor	..	..	
Herbert John Taylor, Esq.	..	..	
Miss Taylor	..	..	
Right Hon. W. Cowper, M.P.	..	One	
Decimus Burton, Esq.	..	One	
Simon Hyam, Esq.	..	..	
J. A. F. Hawkins, Esq.	..	One	
J. Bramley Moore, Esq., Liverpool ..	..	One	
James Cook, Esq., F.H.S.	..	One	
Edward Rosher, Esq., F.H.S.	..	One	
Rev. William Rogers	5 0		
Marquis of Westminster	..	One	
James Bateman, Esq., F.H.S. ..	25 0		
Edward Howley Palmer, Esq.	..	One	
Colonel Pitcairn	..	..	
Henry Greville, Esq.	..	..	
Miss Cunninghame, F.H.S., Corehouse, Lanark	..	..	
Alfred Sartoris, Esq.	..	..	
Major Usborne, Esq.	..	..	
Very Rev. Dean of Canterbury	..	One	
Arthur A. Rasch, Esq., Ewell, Surrey	..	..	
Miss Mary Louisa Rasch	..	..	
Miss Florence Catherine Rasch	..	..	
George Newen, Esq.	..	..	
Lady Charles Wellesley, F.H.S.	..	One	
Colonel F. H. Turner, Jersey	..	..	
Richard Benyon, Esq., F.H.S., Englefield House, Reading	..	One	
Hon. Robert Curzon, Jun.	..	..	
Hon. Mrs. Curzon	..	..	
C. Ratcliffe, Esq., F.H.S., Downing Col.	..	One	
Rev. J. M. Heath, Enfield, Middlesex	..	One	
Captain George Stevenson	..	..	
Major H. Holford Stevenson	..	..	
Charles Richard Fenwick, Esq.	..	..	
Mrs. Fenwick	..	One	
Lord John Manners, M.P.	..	One	
F. Leybourne Popham, Esq., F.H.S., Littlecote, Pangbourne	..	..	
James Booth, Esq.	..	One	
Saul Isaacs, Esq.	..	One	
Mrs. Isaacs	..	..	
James Pratt Barlow, Esq.			
Prof. J. Wilson, F.R.S.E., Iver, Uxbridge	..	..	
Mrs. Wilson	..	..	
M. Ewing, Esq., Iver House	..	..	
Mrs. Ewing	..	..	
Rev. R. M. Boultbee, Iver Grove ..	..	..	
Mrs. Boultbee	..	..	
Miss Boultbee	..	..	
Miss J. C. Boultbee	..	..	
Miss Bancroft, Round Coppice, Iver Hth.	..	..	
W. Good, Esq., Round Coppice, Iver Hth.	..	..	
A. Rowland, Esq., F.H.S., Lewisham	..	Two	
J. H. Good, Esq., F.H.S.	..	..	
Miss Good	..	..	
Miss Emma Good	..	..	
T. H. Longden, Esq.	..	..	
R. Hannah, Esq.	..	..	
Mrs. Hannah	..	One	
Dr. Bence Jones, F.R.S.	..	One	
Robert William Eastwick, Esq.	..	..	
Mrs. Edward B. Eastwick	..	..	
Richard Gunter, Esq.	..	..	
Mrs. Richard Gunter	..	..	
G. R. G. Ricketts, Esq., F.H.S., North Stoneham	5 0		
Peter Graham, Esq.	..	..	
Dr. Protheroe Smith	..	One	
Mrs. Shaw	..	..	
Mrs. Allason	..	..	
General Sir Hugh H. Rose, G.C.B. ..	..	..	
Samuel Stepney, Esq.	..	..	
Sigismund Rucker, Esq., F.H.S.	..	..	

LIST OF PROMOTERS.	Donations.	Life Memberships	Debentures.
	£ s.		£
E. Z. Dresden, Esq.	..	One	
Miss D. M. Bacon, Wandsworth Road	..	..	100
James Holmes, Esq., F.H.S.	..	..	200
Rev. F Bowden, F H S, NorthStoneham	10 0		
A. J. Baker Cresswell, Esq., F.H.S.	..	One	
Sir John Boileau, Bart., F.H.S.	..	..	100
Charles Leach, Esq., F.H.S.	..	Two	
Alexander Zanzi, Esq.	..	..	100
Mrs. Zanzi	..	One	
Colonel Westmore	..	..	100
Mrs. Westmore	..	..	100
Sir William P. Call, Bart.	..	..	100
George R. Marten, Esq.	..	..	100
Mr. W. B. Booth	..	..	100
Mrs. Keeling	..	..	100
Miss Keeling	..	One	
Miss Emily Keeling	..	One	
Major-General Sir Travell Phillips	..	..	100
George Capes, Esq.	..	..	100
C. J. Freake, Esq.	..	Three	
Samuel Hughes, Esq.	..	..	100
Mrs Challoner	..	One	
Viscount Eversley, F.H.S.	..	One	
Captain Douglas Galton, R.E.	..	..	100
Harry Chester, Esq.	..	..	200
Frederick Lack, Esq.	..	..	100
Charles F. Cundy, Esq.	..	..	100
Sir S. Morton Peto, Bart., M.P.	..	One	
Lady Peto	..	One	
Vice-Admiral Deacon	..	One	200
F. M. Hall Dare, Esq.	..	One	
J.S.W.S. Erle-Drax, Esq., M.P., F.H.S.	..	One	
William Goding, Esq., Taplow	..	One	
Miss Waudby	..	..	100
William H. Norton, Esq., Woodbridge	..	..	100
J. S. Law, Esq., F.H.S.	..	One	
Earl of Derby	..	One	100
Lady Emma Stanley	..	One	
Robert Buckley, Esq.	..	..	200
Mrs. B. Harvey, MontpelierRd, Brighton	..	Three	
James Nichols, Esq.	..	Two	
Edward Smirke, Esq., Vice-Warden of the Stannaries	..	..	100
Sir Thomas Phillips	..	..	100
Colin G. Campbell, Esq.	..	One	
Captain Edward Walter	..	One	
George Saunders, Esq., M.P., F.H.S.	..	One	
Mr. R. Glendinning, F.H.S.	..	One	
Lieut.-General Charles R. Fox, F.H.S.	..	..	400
John Murray, Esq., Wimbledon	..	One	
Samuel Isaacs, Esq.	..	One	200

Upon the completion of the subscription the following letter to every Fellow of the Society was decided on :—

Horticultural Society,
8, St. Martin's Place, London, W.C.
November 18, 1859.

SIR,—In reference to the proposed garden at Kensington Gore, the Council have the satisfaction to announce to the Fellows that without once publicly advertising the arrangements contemplated in forming this great establishment, they have received promises of the whole sum required, 50,000*l.*—partly by donations, (including her Majesty 1000*l.* and H.R.H. the President 500*l.*) 1936*l.*—partly by various Fellows and their friends undertaking either to become themselves Life Members or to propose various branches of their family as such, to the number of 300; and the remainder by offers of money on debentures to the extent of 39,000*l.* The Council therefore, acting on the resolutions of the last special general meeting, have this day given notice to her Majesty's Commissioners that the Society is prepared to commence its portion of the works.

In making this communication I am to say that in the opinion of the Council it would be more to the interest of the Society if a larger sum could be raised by Life Memberships, because it would relieve the Society from having to pay interest on debentures, and therefore if Fellows are acquainted with any persons who propose to aid in forming the new garden, the Council would be obliged by their mentioning their intentions before the first ballot for Fellows in 1860, which is fixed for Friday, January 20.

I forward two lists of those who have promised to contribute the before mentioned 50,000*l.* in case you should wish to give one away.—I am, Sir,

Your obedient Servant,
WILLIAM B. BOOTH, Assistant Secretary.

Now that the long evenings have arrived, and with them plenty of leisure time for gardeners, the time seems opportune for laying before our readers the following remarks, by a correspondent, upon a subject that we are glad to see attracting attention. THE EDUCATION OF YOUNG GARDENERS is a most interesting question, and the writer, himself familiar with the wants and possibilities of such young men, being competent to form a correct opinion upon the matter, we submit his views to those whom they concern.

"There are those who say, 'Why should a gardener know anything but gardening?' As well might they ask why an apothecary should know anything beyond the administration of drugs. The answer is in both cases obvious—more is required of them. The world is not standing still; knowledge is rapidly increasing; all classes are improving, and must improve, and in no pursuit is general knowledge more necessary than in gardening. If we inquire how this general improvement has been brought about we find that it has not been effected by doing exactly what our fathers did and nothing more. Railroads and modern engineering were not so brought to their present state; chemistry, geology, and the other applied sciences have not been created by looking backwards. All such sciences have been advanced and continue to advance by the steady application of *principles*. Their motto is that of the famous Prussian Marshal — FORWARDS. And it will always be found that where gardeners do not advance like their neighbours it is because they are unacquainted with the principles on which their art depends, and are consequently unable to apply them.

"*Via trita via tuta* is the maxim of what are called mere practical men; to that they stick, despising improvement because were they to adopt any they would not do as their fathers did, and 'their fathers got on very well.' There is no maxim more true than the above, but like all good thing it may be and often is abused. Let it not however be supposed that we wish a gardener to leave his old tried ways every time some new scheme is started. All that we insist upon is that he should know *why* practices shown by experience to be good *are* good; and why those condemned by experience deserved condemnation. First principles teach him this, and nothing else can do so. So, again, in considering new processes, be they what they may, no sound judgment can spring from those who have no idea of the first principles on which such judgment must depend. An unacquaintance with first principles is the evil to be remedied, and any steps taken with this for their object are to be hailed as the greatest boons that can be bestowed on the rising generation of gardeners.

"Now to understand any one subject really well, it is absolutely necessary to go something beyond the strict limits of that subject. To understand the principles on which gardening operations, however simple they may appear, depend, a rather considerable knowledge of vegetable physiology is indispensable. Vegetable physiology cannot be well studied without first obtaining some idea of the elements of physics and chemistry; the latter require both study and careful observation. A gardener is always in a position to observe; he sees, or would see if he knew them when before his eyes, constant examples of, or exceptions, real or apparent, to established principles, and if these were carefully noted and examined he would soon find himself stored with such a stock of really useful knowledge as would save him from difficulty when anything not in the common routine of business occurs.

"It must not be thought that we want to have every gardener a botanist and a chemist and a natural philosopher and a hundred other things besides; that such should be the case, even if desirable, would be impossible; but although an intimate acquaintance with such subjects cannot be gained and would be of little use if it could, it by no means follows that their elements may not be acquired, and without more labour than industrious young men can spare. Some indeed say that it is unreasonable to expect men who work hard all day should spend their evenings in study; but the urgers of this objection forget that a man has a mind as well as a body, and that while one is being cultivated the other may rest. Moderate study, so far from being wearisome, is a great relaxation.

"The French understand these things better than we do. On the continent, in France especially, public lectures are given in every town of importance; nobody has to pay to attend, nobody is obliged to attend; nevertheless the lecture rooms are filled, and by whom? By workmen, by common labourers, who go after their work is done to refresh their bodies by exciting their minds. To be sure this is sometimes carried rather far; we were acquainted with a person, who, when he applied for a place as a porter, was refused because he had not attended the public lectures on chemistry! But Englishmen are not likely to push matters quite so far.

"There are hundreds of young gardeners through the country who will endorse all that has now been said. It is for those who employ them, especially for the head gardeners in great places, to assist them in gaining the knowledge they are thirsting for; and the long evenings of winter offer the most favourable opportunity of doing so. The only advice we have to offer beyond the suggestions thus thrown out may be conveyed in the language of Lord BACON:—'Read not to *contradict* and *confute*, nor to *believe* and *take for granted*, nor to *find talk and discourse*, but to WEIGH and CONSIDER.' These words of wisdom should be painted in letters of gold in every reading room.'

So far our correspondent. Considering the importance of such a question as education, we venture to reproduce our own views, as expressed about 20 years ago in the Theory of Horticulture:—

Vegetable anatomy is no doubt the foundation of all correct views of physiological action: chemistry is of the first importance, when the general functions of plants are considered in a large and general way: and electricity probably exercises an important influence over the vital actions of all living things. But these are the refinements of science, belonging to the philosopher in his laboratory, and not to the worker in gardens; they are indispensable to the correct appreciation of physiological phenomena, but not to the application of those phenomena to the arts of life; electricity, in particular, appears to be, in the present imperfect state of our knowledge of its relation to vegetable functions, altogether incapable of forming a part of any horticultural theory.

What the gardener wants is, not a treatise upon botany, nor a series of speculations upon the possible nature of the influence on plants of all existing forces, nor an elaborate account of chemical agencies inappreciable by his senses and obscurely indicated by the visible results; but an intelligible explanation, founded upon well ascertained facts which he can judge of by his own means of observation, of the general nature of vegetable actions, and of the causes which, while they control the powers of life in plants, are themselves capable of being regulated by himself. The possession of such knowledge will necessarily teach him how to improve his methods of cultivation, and lead him to the discovery of new and better modes.

It is very true that ends of this kind are often brought about by accident, without the smallest design on the part of the gardener; and there are, doubtless, many men of uncultivated or idle minds, who think waiting upon Providence much better than any attempt to improve their condition by the exertion of their reasoning faculties. For such persons books are not written.

In conclusion, let us, in impressing upon the minds of gardeners the importance of attending to first principles, also caution them against attempting to apply them, except in a limited manner, and by way of safe experiment, until they fully understand them. The difference between failure and success, in practice, *usually depends upon slight circumstances*, very easily overlooked, and not to be anticipated beforehand, even by the most skilful; their importance is often unsuspected till an experiment has failed, and may not be discovered till after many unsuccessful attempts, during which more mischief may be done by extensive failures than the result is worth when attained. No man understood this better than the late Mr. KNIGHT, the best horticultural physiologist that the world has seen, whose experiments were conducted with a skill and knowledge which few can hope to equal. So fully was he aware of the uncertain issue of experimental investigations in Horticulture, that he thought it necessary, in recommending a new mode of cultivating the Pine Apple, and in objecting to methods at that time commonly in use, to express himself in the following words:—"I beg it to be understood that I condemn the machinery only which our gardeners employ, and that I admit most fully their skill in the application of that machinery to be very superior to that which I myself possess. Nor do I mean, in the slightest degree, to censure them for not having invented better machinery, for it is their duty to put in practice that which they have learned; and, having to expend the capital of others, they ought to be cautious in trying expensive experiments, of which the results must necessarily be uncertain; and, I believe, a very able and experienced gardener, after having been the inventor of the most perfect machinery, might, in very many instances, have lost both his character and his place before he had made himself sufficiently acquainted with it, and consequently become able to regulate its powers."

STRAWBERRY FORCING.

HAVING been very successful with forcing Straw berries, perhaps the means employed may be interesting.

As soon as the runners can be obtained, which they may generally be by the beginning of June, we commence by laying them in small pots. When sufficiently rooted they are taken off, placed for a few days in a rather shady situation, and kept sufficiently watered to prevent flagging. After a few days they begin to grow freely, when they are potted into the pots in which they are intended to fruit, generally 5 or 6-inch ones, using rather strong, rough soil, rotten sod with a little rotten

manure added, except for Keens' Seedling, which we find does much better with road scrapings (from a limestone road) added instead of manure. They are potted firmly, and placed rather closely together on rough coal-ashes, and watered sparingly until they begin to grow freely; they are then removed to an exposed situation, and placed in rows running east and west and much thinner, perhaps 2 feet from row to row, and quite clear of each other in the row. They are kept here, sometimes turning them round, until the end of September, when the pots are plunged up to the rims in sifted coal-ashes and kept without water, or nearly so, until put in to force. A few stakes driven into the ground, with a top rail nailed on to support any spare lights, the glass being kept 9 inches or a foot above the foliage, with the sides left open so that the plants may have a thorough ventilation, is all the protection necessary, the glass being put over them principally to keep them dry.

We begin forcing by plunging the necessary quantity into a pit of leaves with a bottom-heat of about 70°, and covered with glass. We ventilate freely until they begin to make new foliage, after which more cautiously, either wholly at the back or wholly at the front, never back and front at the same time, except late in the season; and even then it is better to have the lights off entirely for an hour or so in the middle of the day, as tilting lights alternately front and back induces a current, which is injurious. We water sparingly at first, little water being necessary until the plants have made some full-sized new foliage. We keep a small portion of back air on constantly, even when so frosty as to require covering with mats.

As soon as a sufficient quantity of plants to fill the shelf, or space they are to occupy, shows their trusses, they are taken out of the leaf bed, a few of the yellow leaves taken off, the surface stirred and a top-dressing of old Mushroom bed or something similar given; the pots are then inserted into others a trifle larger, having about 2 inches of similar material to the top-dressing in the bottom of each; the pot containing the plant just touches, does not press on the manure in the outer pot. They are now removed to their places and as they are allowed to get rather dry, before being taken out of the pit of leaves a good soaking of water, of the temperature of the house, is given. For a few days before taking the plants out of the pit of leaves the temperature (top-heat) of the frame is made to approximate as near as circumstances will admit to that of the house they are put into, as the Strawberry whilst being forced is very impatient of any great change of temperature. After being placed in the house the plants are syringed morning and evening on fine days, until they begin to expand their blossoms; after which (for early crops) the house is kept rather dry until a sufficient quantity is set. With later crops we syringe or engine regularly, regardless of their being in bloom. As soon as a sufficient quantity of blossoms has set their fruit, the remainder is cut off. We have from 8 to 10 fruit on a plant, for early crops of the larger kinds such as British Queen, Ingram's Prince of Wales, Keens' Seedling, &c., and from 10 to 15 on a plant for later crops. After being thinned they are removed to a warmer house, thus making room for a succession from the pit. As soon as they begin to colour they require more air; great care is necessary that they never suffer from want of water; if once they droop, they never do much good. Weak manure water is used every watering after the fruit is set; plants put in the beginning of January ripen their fruit about the end of April. *Henry Groom, Gardener to Sir John H. Lowther, Bt., Swillington House, near Leeds.*

NOTES UPON CALIFORNIAN TREES.

(From a Paper by Andrew Murray, Esq., published in the Edinburgh New Philosophical Journal.)

Abies bracteata, Don.—Having been for some time desirous to obtain seeds and cones of this singularly beautiful Pine, I interested my brother in the subject; and although his other avocations prevented his undertaking the expedition himself, he caused two different expeditions to be made to procure it, one in 1856, and the other last season.

The first of these expeditions was conducted by his old fellow traveller and co-explorer Mr. Beardsley; the latter by Mr. William Peebles, a gentleman who, in addition to his other qualifications for the task, appears to possess much talent as an artist, for it is to his pencil that we owe the graphic view of this tree as seen on its native mountains.

Before extracting one or two passages from their notes, I should perhaps first remind the reader of what was previously known regarding it.

The tree was first discovered by Dr. Coulter, who spent 10 years of his life in exploring the wilds of California and Mexico, at a time when they were still undisturbed by the hordes of gold seekers who have since turned much of the country into vulgar ground. He discovered many new trees and plants, some of which (and among them A. bracteata) were described by Mr. Don in the "Linnean Transactions," vol. xvii. (1835). Mr. Don there says, "This curious and interesting species of Fir was discovered by Dr. Coulter on the sea side of the mountain range of Santa Lucia, about 1000 feet lower down than Pinus Coulteri. The trunk rises to the height of about 120 feet, is very slender, not exceeding 2 feet in circumference, and as straight as an arrow. The upper third of the tree is clothed with branches, giving it the appearance of an elongated pyramid. The branches are spreading, the lower ones are decumbent." I quote these remarks of Mr. Don, because there are some slight discrepancies (nothing material, but still discrepancies) between his account and those given by Hartweg and Beardsley, to be presently adverted to. He goes on,—"The bracts are long and recurved, and but little changed from the ordinary leaves, which give the cones a singular appearance. The seeds are remarkable for a peculiarity in their structure, in having the nucleus exposed at the inner angle of the seed through a considerable opening in the outer testa, as if the junction of the two sides had been prevented by the rapid enlargement of the nucleus." I may remark that the same peculiarity is to be found in the seeds of Abies grandis, A. nobilis, and the allied species. Mr. Don adds, that it is only the middle branches which bear cones, a circumstance which reminds me of a similar remark made by my brother, on one of his former expeditions, regarding Pinus tuberculata, on which he plucked very ancient cones within reach of the ground, growing on the main stem of a great tree. The next botanist who saw this fine tree was Hartweg, who was sent out by the London Horticultural Society in search of plants and seeds in 1847. He describes his various expeditions in reports sent to the London Horticultural Society, which were published from time to time in the Journal of that Society. In vol. iii., p. 225 (1848), he gives the following account of his attempt to obtain seeds of A. bracteata. "On September the 20th I again left Monterey for the southern parts, which, on account of the disturbed state of last year, I could not visit before. As guide, I engaged the services of a man who had accompanied me on my last excursion to Santa Cruz, and who, from his profession of a hunter, was well acquainted with the intricate mountain paths of the district I intended to visit. On the day of our starting we reached the mission of La Solidad, an ill-constructed, half ruined building, situate in the Salinas Valley, and encamped towards evening on the banks of the Salinas River, within a short distance of the mission. By sunrise the following morning we were again on horseback, and leaving the main road on the right, we entered a mountain defile leading to the mission of San Antonio. . . . . From San Antonio a range of mountains extends along the coast, attaining a great elevation, which, though apparently barren, as seen from the mission, I was assured on the western flank towards the sea is covered by large Pines." Mr. Hartweg at last reaches the mountain range, where he goes on—"Descending the western flank of the great mountain range, I found at last the long-wished-for Abies bracteata occupying exclusively ravines. This remarkable Fir attains the height of 50 feet," (the reader will remember that Dr. Coulter stated it at 120 feet, and he will presently find that Beardsley states it at 130 feet), "with a stem from 12 to 15 feet in diameter." This must be a mistake for 12 to 15 inches Dr. Coulter saying that the largest were only 2 feet in circumference, instead of 15 in diameter, which would give 45 in circumference; "one third of which is clear of branches, and the remainder forming an elongated tapering pyramid, of which the upper part for 3 feet is productive of cones." These must have been bad specimens, for Mr. Beardsley's account describes them as branched to the ground, and Mr. Peebles's drawing, although it represents one or two devoid of branches at the base, represents others feathered nearly to the ground. "Having cut down some trees, I found to my regret that the cones were but half grown, and had been frost-bitten. In more sheltered situations towards the sea-shore, the same happened to be the case; and I was thus precluded from introducing this remarkable Fir into Europe."

The next attempt to obtain seed of it was that made by Mr. Beardsley in 1856—(Jeffrey was not so far south)—and I cannot do better than quote that part of his notes which relates to this tree. He made his attempt in the middle and latter part of October:—"After finishing my collections in this vicinity (Monterey), I set out for the Santa Lucia mountains below the mission of San Antonio; our equipage from Monterey consisted of a waggon drawn by two horses, three loose animals, to ride and pack into the mountains, one Dutchman, one greaser, one rifle, two revolvers, two bowie knives, camping utensils, &c., and provisions for 12 days," (a preparation which indicates that, however much the rest of California is crowded, this part is still in its primitive wildness). "We reached the mission the third day; here we left our waggon, and proceeded on horseback into the mountains, in search of Abies bracteata, which we found on the second day, on the western slope of the range, about 30 miles from the mission, and about 10 miles from the sea-coast, by the worst trail that I ever travelled in this or any other country. After passing the divide, and descending to the west, I fell in with the tree, occupying the mountain sides as well as the ravines, and not 'exclusively the ravines,' as described by Hartweg; I was greatly disappointed in finding the cones too ripe to be able to obtain a supply of seed; I tried cutting the top off; but a few strokes of the hatchet shattered the cones in pieces, and scattered the seeds to the winds. The only plan was to climb to a most dangerous height and pick off the few cones which could be reached. They went to pieces in my hand the moment they were touched. The cones only occupy a few feet of the top, hence the difficulty and danger of obtaining them. I have never seen any description that does justice to this most beautiful of all the Firs; it rises to the height of 130 feet, straight as a line, the trunk tapering regularly from the ground to the top; clothed with branches, which are slim and graceful, down to the ground; the outlines of the branches taper almost as regularly as the trunk, giving the appearance of an 'elongated pyramid,' as Hartweg describes it; but I would rather call it a tall spire with a pyramidal base of two-thirds of the lower part of the tree; the pencil of the artist could not give it a more regular shape than it appears in nature. I saw no tree deprived of its lower branches, except in thickets where it was impossible for them to grow; there was none, with the above exceptions, that I could not step from the ground on to its branches. Not the least remarkable thing is, that these branches bear fine foliage down to the ground, and the branchlets often touch the ground. I have found it occupying exclusively the calcareous districts abounding with ledges of white, veined, and gray marble. We encamped for the night on the point of a ridge, the only place to be found level, and large enough to make down our beds; in the evening it commenced raining, and increased into a regular driving storm. We passed the most horrible night that ever fell to my lot to experience; we were totally unprovided, as there was no appearance of a storm when we lay down a short time after dark. We had provided wood only to cook with, and we were obliged to get it with great labour, and at the risk of breaking our necks, to keep from freezing. With great difficulty we kept our fire up until morning. The mountains here are as steep as the laws of gravity will admit, and in a state of decomposition; rocks from the ledges above were set at liberty by the rains, and came tumbling down past us, making a fearful crashing among the trees, increasing in speed until they landed among the rocks at the bottom of the ravine below us, with a noise which sent its reverberations up among the hills like peals of thunder. The impenetrable darkness of the night, the howl of the tempest, the crashing of falling rocks, together with the severity of the cold rain, almost snow, made the night truly awful. We saw a large grizzly bear just before dark, and plenty of fresh tracks everywhere, which added nothing to the enjoyments of the night; day-light came at last, and with it a clear sky, which I hailed with more gratitude, I think, than I ever did in my life, thankful that I was alive.

"I had intended to have spent a portion of the day in collecting what few seeds I could; but the storm had beaten them off, so that all attempts in this vicinity were useless. After breakfast, we packed up and took the back track. After passing the first ridge, I descended into a deep gulch where there were a few trees, and found the seeds all gone. I descended again on the north side, and found one small tree that had a few shattered cones left, and obtained about a handful. I attempted to cut off the top, but the first few strokes of the hatchet knocked them all off, and I was obliged to give it up for the season. We reached Monterey after an absence of nine days. We had killed on the trip four deer, three antelopes, one hare, one wild cat, and seen two grizzly bears."

This account of Mr. Beardsley's gives an important hint to cultivators in this country. The tree being confined to a calcareous soil, would indicate that it would be well adapted to our chalk districts, which, for another reason, may be more suitable to it than our Scottish hills, namely, from their better climate. From its locality south of San Francisco, and Dr. Coulter's remark that it grows 1000 feet lower on the mountains than Coulteri, it is probably less hardy than the general run of Californian Pines. Still Hartweg's finding the cones frost-bitten, and Beardsley nearly getting frost-bitten himself, would seem to indicate that it grows in a climate not free from a considerable degree of cold.

Next year (1857) Mr. Lobb, the collector, paid a visit to the spot, but was scarcely more successful than Mr. Beardsley. He found that the seeds were, like those of P. nobilis, subject to the attacks of an insect in their green state, from which, of course, no precaution in the way of gathering, drying, or packing can protect them.

Last year Mr. Peebles's expedition has produced little more than Mr. Lobb's. Notwithstanding that he was a month earlier than Beardsley, he was still too late.

He returned on the 17th of September. He found that the cones were so ripe that the trees could not be cut (which was the usual method adopted in procuring cones from the Pines in former expeditions) without scattering all the cones to the winds, so that all he got was obtained by climbing the trees and carefully picking the cones. This difficulty in reaching the spot at the right time is explained by a remark of Hartweg's in regard to other plants. "Being now aware of the rapidity of Californian vegetation, I lost no time in collecting such seeds as were worth taking, and returned to my head-quarters by the beginning of May. Most kinds had during the fortnight after I first saw them in flower ripened their seeds." For the benefit of any future expedition, I may mention that a man of the name of Miers accompanied both Lobb and Peebles as guide, and he knows the station perfectly. It is exceedingly unlikely, however, that any fresh expedition will be tried until the country is more opened up. The expense, danger, chance of bad seed, &c., and small returns, will deter any one from trying it as a mercantile speculation, and there is little in the district to

induce an explorer to try such difficult ground which has been already examined.

Mr. Peebles mentions that the padres of the Mission use the resin of the tree for incense. My brother sent me a little of it, which I have tried, and find the odour pleasantly terebinthine.

He also sent me a beautiful photograph of the cone taken by Mr. G. Johnston, one of the principal photographic artists in San Francisco, which suggests a convenient and rapid mode of procuring information as to species from scientific head-quarters, without the expense and delay of sending bulky specimens, which may possibly be of no value.

Torreya myristica, Hooker (Californian Nutmeg).—This interesting genus was first correctly described and put upon its present basis by Dr. Walker Arnott in the "Annals of Natural History" (1st series), Vol. I., 1838. There are two Californian species: one, the *T. taxifolia*, or stinking Cedar, is common both to the east and west sides of North America; the other, the *T. Myristica* or Californian Nutmeg, is confined to the western sides of the Rocky Mountains. It receives its vernacular appellation, not from its spicy qualities, nor from possessing any of the intrinsic properties of the Nutmeg, but from its cone bearing a very close external resemblance to that fruit, more especially in the ruminated appearance of its seed. Although known to my brother several years before, it was only first sent home by Lobb in 1857, and described by Hooker in the "Botanical Magazine," No. 4780. The fruit and leaves are there figured, but not the tree itself. It grows to a height of 30 or 40 feet, and it will be seen that it bears considerable resemblance in habit to an old Larch.

This paper is accompanied by excellent pictorial representations of the trees now described.

Home Correspondence.

Gooseberry Buds and Sparrows.—Can any of your correspondents inform me of a simple and effectual means of protecting the buds of Gooseberry trees from the attacks of birds? We are here so pestered with sparrows that they attack the buds even before the trees have entirely shed their leaves. Many of our trees have already lost more than half their buds. We lost last season the entire crop of fruit from the same cause, and many of the bushes are rendered useless. The peculiar situation will not permit the usual plan of shooting the destroyers. Encircling each tree with straw has been suggested, but I fear that such would induce the buds to swell prematurely. Perhaps some of your readers can enlighten me by a hint on the subject. *G. E., Ford Abbey.*

Cottagers' Kale.—Amidst the almost general wreck occasioned by the late frost, it is some consolation to find one valuable vegetable unscorched. It would therefore, I think, be well for gardeners to bear in mind that the Cottagers' Kale withstood the frost of 23d Oct., 1859, when Savoys and Broccoli of all kinds appear parboiled. Mine in this place, though planted in a very wet and retentive soil, are looking as fresh and strong as before the frost, already clothed from the ground to the crown of the stem with beautifully green and succulent shoots. *H. S. T., Thornborough, Buckingham.*

Blanching Celery with Sawdust.—Having had some trouble in the winter of 1857 in keeping late Celery from rotting in a new kitchen garden, where the soil was very retentive and damp, and the plants earthed up in the usual manner, I have since used sawdust for the purpose, and find that it answers perfectly. Last winter all the late Celery here was earthed up with sawdust, and it kept quite sound till April, and no slugs or insects attacked it underground, the heads being very solid, clear and crisp, and well flavoured. I had some doubts that the sawdust from resinous trees might give the Celery a disagreeable flavour, but on trial I found this not to be the case, and the sawdust is now taken indiscriminately from the sawpits, where different kinds of trees are sawn up. Before the late severe frost occurred in October I had just finished the earthing up of all the late Celery with sawdust, and I find it is now wonderfully fresh, the frost not having penetrated far through the surface to the hearts. This practice of using sawdust may not be new to some, yet I often hear of the difficulty of keeping late Celery from rotting in winter, and the more extended use of sawdust may be of advantage to other gardeners who, like myself, have stiff and damp soils to manage. *William Tillery, Welbeck.*

Vine Borders.—Will any of your correspondents do me the favour to say whether it is desirable to cover an outside Vine border during the winter and early spring months with any kind of waterproof material, as tarpauling or roofing of any kind as a protection to the roots against the snow and cold rains of those months? I have covered the border with stable litter; but of course this can protect the border from frost only. The Vines are not intended to be forced before February. I should also be glad to know which is the best treatise of the day on Grape culture. *R. C., Manchester.*

[Sanders on the Vine, published by Lovell Reeve.]

Stewarton Bee Boxes. — Your correspondent "C. W. S." is informed that Mr. Eaglesham, of Stewarton, who first introduced the Stewarton Bee Boxes to public notice, and who manufactured them for sale, fell a victim to the American crisis of 1858, and was shortly after carried to his grave. I believe there are a few spare sets at the apiary, Muswell Hill, respecting which information may be obtained by addressing a note to Mr. W. B. Tegetmeier, the manager there. *Shirley Hibberd, Stoke Newington.*

Transplanting large Evergreen Trees.—I beg to inform your Stockwell correspondent that he will find a full description of the tree transplanting machines I used, and the whole *modus operandi* in Mr. Barron's "British Winter Garden." From page 31 to 48 the whole system is as perfectly described as it can be in writing, with figures of the different sized machines and trucks employed. *William Tillery, Welbeck.*

Societies.

Horticultural: *Nov.* 10.—At a meeting of the Floral Committee held on this occasion, Messrs. Veitch exhibited another of the hybrid Cattleyas raised by their foreman, Mr. Dominy. This had been produced between labiata and amethystina, and was very handsome, the flower being large, blush-coloured, with a delicately veined lip. It was awarded a First-class Certificate. They had also a dwarf variegated-leaved Orchid, with dull coppery tinged leaves, named Nephelaphyllum pulchellum, which was commended as a distinct variegated plant. Aralia Sieboldi, a noble species exhibited in flower for the first time, also came from Messrs. Veitch, as did a young plant of the beautiful crimson-ribbed Dracæna indivisa, of New Zealand. The Aralia bears a large panicle of small whitish flowers in umbels resembling those of the Ivy, and is an ornamental fine-foliaged plant of very considerable character. From Messrs. E. G. Henderson were two Pelargoniums of the horse-shoe class; one named Novelty had the petals salmon below, white in the upper half; the other, named Advance, had fine, large, bright salmon-rose flowers, remarkable for their circular outline. They were both considered promising; but blooming out of season no exact opinion was formed as to their merits.

British Association: *Concluded from page* 871.—On Human Remains in Superficial Drift.—Undoubted cases exist of human remains inclosed in hard compact concretionary rocks, buried deep in the silts of rivers, and high up in caverns associated with the bones of elephants, lions, tigers, hyenas, and other extinct carnivora now only existing in southern latitudes. One is startled at the idea of a North Briton inhabiting the same cave with an African lion, or Indian mammoth, or a huge Polar bear, and all apparently contemporaneous occupants, according to their different species, of the British Isles. Sir Charles Lyell's remarks in his opening address, not only deepened vastly the importance of the subject, but added fresh difficulties to the more recent historic views which he (Dr. Anderson) strongly entertained. As to the instances occurring in beds of lakes, rivers, and seas, and which have become mineralised, he contended that a few years, or even months, often sufficed for the formation of a compact durable mass of calcareous and silicious rock, in which human bones, skeletons, pottery, coins, and implements were imbedded. He referred to a case betwixt Aberdour and Burntisland, in Fife, which he examined a few weeks ago, where an incrustation was now forming of great depth, and in which are imbedded land shells, branches of trees, and where on the face of the incrusted cliffs, twigs of the living trees are becoming entangled in the calcareous breccia. The Rev. Doctor quoted the case of a cannon-ball—a 32-pounder—lately presented to him by a fellow townsman—deeply incrusted with ferruginous mud, and completely indurated, which was raised on his anchor in the harbour of Copenhagen; and, he doubted not, an identical bullet of our naval attack of 50 years ago. The skulls of Amiens and Abbeville, the remains in the caverns of Torquay and those in Sicily, the flint weapons in veined limestone in Cantire, and the arrow-heads with elephant remains in Suffolk, were then successively brought under review in the paper—the solution of all these given by Dr. Anderson being, that from the action of petrifying springs, the subsidence of tracts of country, the falling in of the roofs of caverns, the undermining of cliffs and headlands, the superficial soil is incrusted or buried beneath the strata on which it was originally superimposed. He saw no evidence deducible from the superficial drifts to warrant a departure from the usually accepted data of man's very recent introduction upon the earth. We have more positive evidence that his first appearance was characterised by many proofs of high intellectual condition which our sacred beliefs attach to his origin, and that he was not primarily the ignoble creature that arrow-heads and flint-knives and ossiferous caverns would so lamentably indicate. The mighty ruins spread over the plains and great river water-sheds of the East clearly indicate his Oriental cradle-land, when in conjunction with the traditions of all nations in the most remote times, he dwelt in palaces, luxuriated in gardens, worshipped in temples of solemn grandeur, and reared towers and pyramids enduring as the rocks from which they were hewn. The arts and sciences and commerce accompanied the progress of his terrestrial occupation, bringing in their train the elegancies, luxuries, and perfected implements of defence or attack which the highest stages of civilisation imply. Races of the human stamp have perished—are perishing; and, as if it were a law of nature, where a race cannot rise and maintain itself beyond a certain standard, civilisation, instead of benefiting, only leads to their more rapid extirpation from the face of the earth. Certain it was, that islands and tribes in the Pacific, which in Cook's time were enumerated by hundreds of thousands, can now be counted by their tens or twenties; and just as certain that, where the Christianising element accompanied it, the onward progress of civilisation would know no limits until the Divine principle in man should vindicate its heaven-chartered claims to universal earthly dominion.—*Dr. Anderson in Geological Section.* Sir C. Lyell agreed with Dr. Anderson as to the necessity of using extreme caution in arriving at conclusions as to the antiquity of the human race founded on the association of bones in caverns with human remains; also that it was impossible, from the data at present acquired, to pretend to calculate the exact period; but he thought the evidence was very strong in favour of a very high antiquity, as would be seen when other papers were read.

On the Distribution of British Butterflies.—Among the insect tribes, the "scale-wings" or order Lepidoptera has always attracted a considerable amount of attention. The variety and beauty of the Butterfly tribe is a matter of notoriety. The order Lepidoptera includes two great divisions, butterflies and moths,—the former group all fly by day, whereas most of the moths are nocturnal in their habits. It has been calculated that there are not less than 50,000 different species of Lepidoptera on the globe. More than 3000 species of butterflies are already known, and it has been computed that the moths are sixteen times as numerous. In this country the proportion of moths is much greater, being nearly 30 to 1, but then we are remarkable throughout Europe for our poverty in butterflies. As already observed, in the whole world 3000 species of butterflies are already known; of these only one-tenth occur in Europe, the tropical parts of Asia and America being by far the most numerously populated with this beautiful tribe of insects. In central Europe or Germany, 186 species of butterflies have been observed, the remaining 120 European species being peculiar to Spain, Italy, Greece, Russia, or Lapland. Of the German species 94 occur in Belgium, but only 65 in England, though we possess one species, Erebia Cassiope, which does not occur in Belgium. All the British butterflies occur in England, but little more than half (only 33) are found in Scotland, and scarcely more in Ireland. Twenty-five species may be considered as generally distributed and common; but it should not be understood that these are everywhere to be met with, but simply that their geographical range is not limited, and that where they find suitable localities we may expect to meet with them from Norfolk to Killarney, and from the Isle of Wight to Caithness,—some frequent gardens, some meadows, some heaths, some woods, and some hedge-rows and lands. Twenty-five other species, which all occur in the south-east of England, thin out as we advance northwards and westwards,—only five of them occurring in Scotland, only fourteen in Ireland. Three species, two of which are common in the mountainous parts of Scotland, do not occur at all in the south of England. Seven species are local to particular limited districts in the midland counties or the south of England. Three species of rare occurrence in this country must be looked upon as stragglers from the Continent; one of them, Vanessa Antiopa, has occurred in the south-west of Scotland and at Dunbar. Two other species, which formerly occurred in restricted English localities, now appear to be extinct there. *Mr. H. T. Stainton in Natural History Section.*

Boring for Water in the New Red Sandstone, near Shiffnal.—The supply of water to Wolverhampton being found insufficient, new works have been constructed by the author for bringing the water from the River Worth, nine miles from Wolverhampton and three from Shiffnal. The River Worth, at the place where the pumping-works are erected, is not more than 40 or 50 feet above the Severn, which it joins at Bridgwater, eight or ten miles distant. It may therefore be considered as the bottom of a basin little above the level of the sea. From the character of the surrounding hills, and the inclination of the beds of New Red Sandstone, it appeared to the author of the paper likely, that although the wells previously sunk on the high plateau of Wolverhampton had proved comparative failures, a considerable quantity of water might be found in the sandstone at the lower level, and that some might overflow, as an artesian well. A bore well was accordingly commenced near Shiffnal, 12 inches in diameter, and continued for 70 feet, when it was diminished to 7 inches, and carried down to a total depth of 260 feet from the surface. Water was met with first at a depth of 22 feet, and from that time it rose with increasing supply to the surface, and flowed over as an artesian well, giving a supply in the end of 210,000 gallons daily. Throughout the whole depth of boring the work varied little in character. It was nearly all hard rock, sometimes very hard, with occasional beds of soft stone. For the last 40 feet or so the soft beds were thicker; but otherwise there was little change from top to bottom. As the whole well is charged with water to the level of the river, which forms its natural outlet, as the boring shows that the lower beds receive their supplies from distant sources, the supply may reasonably be expected to be inexhaustible with the limits of that which is due to the percolation of the rain upon the collecting area. *Mr. J. F. Bateman in Geological Section.*

South Eastern Chrysanthemum: *Nov.* 8 *and* 9.—The annual exhibition of this Society took place in the St. James's School Rooms, Bermondsey, on Tuesday and

Wednesday last. There were several prizes offered for competition, and they appeared to be well contested. In the 12 Cut Bloom Class, the first prize, a silver cup, was awarded to Mr. Potts, Old Kent Road, for Lysias, Themis, Aimée Ferrière, Goliath, Plutus, and six others; the second in this class was awarded to Mr. Marshall, of Bermondsey, for Madame Lebois, Plutus, Marshal Duroc, and others; the third to Mr. Day, of Bermondsey, for Nonpareil, Vesta, Dupont de l'Eure, Racine, Stella globosa and others; the fourth to Mr. Gueran, for Albin, Etoile Polaire, Aristée, Christophe Colomb, Pio Nono, &c.; the fifth to Mr. Huggins, of the Blue Anchor Road, for Aregina, luciduum, Trilby, and Leon Leguay; the sixth to Mr. Greenwood, Peckham, for Phidias, Versailles Defiance, Nonpareil, Albin, and others; and the seventh to Mr. T. Mars, Jun., Bermondsey, for Miss Kate, Gem, Anaxo, and Aristée.

There being a maiden class, we find Mr. Pink, of the Old Kent Road, exhibited Dupont de l'Eure, Campestroni, and Vesta, gaining first prize; Mr. Harper, the second, for Aregina and Vesta, and Mr. Ling, of Bermondsey, the third, with a good Cassy and Vesta. There were also some good stands sent by Mr. Walker and Mr. Read; in the latter there was rather too much eye visible, but they were not sent for competition. Mr. Parry, Grange Road, Bermondsey, contributed six Anemone-centered blooms, as did also Mr. Potts, of the Kent Road, an excellent Madame Godereau, Louis Bonamy, and Eclipse. Mr. Mortram and Mr. Walker also sent stands, though not entered for competition. In the 6 Cut Bloom Class we find Mr. Pink, Mr. Harper, Mr. Ling, Mr. Marshall (who exhibited Arc en Ciel, Madame Lebois, and Madame Andry), Mr. Huggins, Mr. T. Mars, Mr. Gueran, Mr. Payne, of Walworth, and Mr. Day, of Bermondsey. Both in this and in the 12 Cut Bloom Class the prizes were ably contested. Mr. Holland also exhibited his new seedling Miss Augusta.

There were also some stands with no names attached to them; we are unable therefore to record one or two very excellent cut blooms. In the specimen classes we could not help remarking the beautifully grown plants of Mr. Clyma; they gained the silver cup, and richly deserved the award, having a more natural appearance than those trained and tied to hoops; those of Mr. Bartlett, of Walworth, which are spoken of below in our report of the South Metropolitan; those of Mr. Rose, the secretary; those of Mr. Walker, of Stoke Newington; those of Mr. Gueran; and those of Mr. Bartlett were excellent. Among standards Mr. Perfect, gr. to C. Nicholls, Esq., was the only exhibitor. The room was well decorated with miscellaneous specimens, and altogether the exhibition must be spoken of as somewhat successful.

SOUTH METROPOLITAN AMATEUR CHRYSANTHEMUM: *Nov.* 7.—This Society has only been 12 months in existence, dating from about this time last year, and this its first show may be deemed a thorough success. The place for exhibition (the Horns' Assembly Rooms, Kennington) showed a judicious selection, the room was filled to the utmost with objects of interest, and the ability displayed in the growth and culture of the Chrysanthemum will place this association second to none in London. There were to be found a formidable assortment of specimen plants, both large and Pompones grown in pots, in the shape of standards, dwarfs, and bushes. There were cut blooms enough to afford the critic in these matters food for consideration for many a day, and there were handsome bouquets of the small Pompones in the arrangement of which good taste could be discerned. The principal exhibitors and their productions were as follows. In the classes set apart for Six Cut Blooms, Mr. Mortram, the pyrotechnist, showed some admirable specimens of William Tell, as well as Christine, Temple of Solomon, and Annie Salter; Mr. Fletcher some beautiful Anemone-centered blooms, gaining the second prize in Class 9, while Mr. Potts, of the Kent Road, won the first in this class with Madame Godereau, Gluck, Georges Sand, and Louis Bonamy. Mr. James, of Stoke Newington, as well as Mr. George, contributed extensively in this division, though not for competition, their specimens all being very beautiful. In Class 7 Mr. Greenwood showed Nonpareil, Themis, and Hermione, gaining the first prize; Mr. Fletcher, the second; the third being awarded to Mr. Bartlett, for Dupont de l'Eure, Plutus, Anaxo, Vesta, and others; the fourth to Mr. Champion, for Auguste Mie, Goliath, Plutus, and Anaxo. In Class 17 *a*, Mr. Joseph Monk, gr. to C. Heath, Esq., Balham Hill, exhibited some splendid blooms of Madame Andry, Racine, Marshal Duroc, and others. In Class 6 (12 Cut Blooms), T. Potts, Esq., was first, with luteum formosum, Albin, Fabius, &c.; Mr. Gueran second, with a very handsome stand; and Mr. Greenwood third, with Arestie, Phidias, Versailles Defiance, Dupont de l'Eure, and others. In Class 16 *a* (for 12 Cut Blooms), Mr. Joseph Monk stood pre-eminent; and Mr. James, of Stoke Newington, sent some pretty flowers, not for competition, but which were recommended by the censors for an extra prize. Mr. George also sent a stand which received a similar commendation from the judges. In spikes of Pompones Mr. Sears exhibited some good specimens, though not equal to those of Mr. Fletcher, gr. to Dr. Young, which were excellent. Before leaving this department of the show, too great praise cannot be given to the magnificent stands of Mr. Bird, nurseryman, of Stoke Newington, and others from Mr. Ball, of Kennington; these combined forming one of the principal attractions in the room. There was also a stand of 12 Anemone-centered Pompones sent by Mr. James, of Stoke Newington, extremely beautiful and well worthy of mention.

The specimen plants, which may be said to have formed the display portion of the exhibition, deserve every praise. Mr. Sears showed some admirable Pompones, as did also Mr. Bartlett, the latter gaining first prize in Class 3 for Brilliant, Cedo Nulli, Aurora Borealis, and others. Mr. Hill sent three pretty plants, but one of the best groups was to be found from Mr. Forsyth, nurseryman, Shacklewell, in which were Duruflet, Madame Celestine, Philopal, Dr. Boisduval, Vesta, Annie Salter, Mount Etna, Union, Brilliant, Golden Cedo Nulli, and others. Mr. James, of Stoke Newington, sent Plutus, Mount Etna, Defiance, Annie Salter, Vesta, Christine, and others; Mr. Walker, Brook Street, Clapton, a Cedo Nulli, Bob, and Antonius; Mr. Morgan forwarded for Mr. Russell, of the Caledonian Road, some specimens; Mr. Mortram a splendid Adonis, and Mr. Wiggins a magnificent plant, for the culture of which we must refer our readers to page 890. There were also many others from Mr. Taylor, Mr. Hill, Mr. Sears, Mr. H. Perfect, gr. to C. Nickles, Esq., of Camberwell (highly recommended by the Censors), as well as some from Mr. Fletcher, among which were La Rousse, Requiqui, and others.

There were in addition to the above two very noticeable objects, one a most superb specimen plant shown by E. Grove, Esq., not for its quantity of bloom, though there was no want of that, but for its beautiful foliage, which called forth general commendation from the delicacy and regular manner in which it was trained, not a leaf appearing out of its place; the other the Standard Pompones of Mr. Morgan and Mr. Perfect, having much more the appearance of handsomely-shaped floral umbrellas than anything else. The censors awarded a prize to Mr. Morgan for his standards as well as recommending his pyramidal plants to the consideration of the committee for award.

The arrangement of the room and the disposition of the plants we believe were under the management of Mr. Morgan, of Lincoln's Inn Fields, and most ably and efficiently did he perform his duty, The sides were well and closely filled with large flowering kinds, fronted by the smaller Pompones; and the centre was occupied in a great measure with the cut blooms and bouquets (of which some very excellent ones were sent by Mr. Taylor). It is only surprising after the late severe weather that such a mass of bloom and plants could have been brought together in a great measure from amateurs, but if the Society progresses in the time to come as it has during the last 12 months, some other and larger exhibition room must be found, for it was crowded to excess the whole evening. An excellent band was in attendance, and enlivened the company with many musical selections.

EAST LONDON CHRYSANTHEMUM.—This Society held its annual meeting at Dalston on Monday last, and was one of the best within the London district. There was an abundant supply of cut blooms, and some of the specimen plants nearly equalled those at the Crystal Palace. Amongst the former were some remarkable specimens from Mr. Harrison, Mr. Home (a good Aimée Ferrière), from Mr. Scarrott, Mr. Hutchings, and Mr. Vile. In Class 5 Mr. D. Cole showed a good Louis Bonamy and Gluck, and Mr. Butt a good Regulus. Mr. Bolton exhibited a fine Goliath, Plutus, and Racine; Mr. Harrison Dupont de l'Eure and Etoile polaire; and Mr. Pratt a Stellaris globosa and Anaxo. But by far the handsomest stands were from Mr. Hutt, who gained the first prize, and very deservedly so. As the names of the flowers that have become favourites so nearly approximate each other at all the exhibitions, we will not enumerate them further than by saying that all were good with perhaps one or two exceptions. Among blooms not sent for competition may be mentioned a handsome group of 30 from Mr. Forsyth, and some good reflexed from Mr. Yeowell. Mr. Salter also produced some new varieties, Anemone-centered, as did also Mr. James, of Stoke Newington, consisting together of four very choice stands.

Among specimen plants we again find Mr. Hutt first; his plants were the best in the hall, consisting of good well shaped, well grown Adonis, Cedo Nulli, Bob, Drin Drin, and Helène. Mr. Hutchings, Mr. Pratt, Mr. Swainson, and Mr. Charles Bolton had some choice specimens. The sides were all filled with the large-flowering sorts, principally grown by the exhibitors already mentioned. Altogether it was an excellent show, and we could not help noticing a marked improvement upon last year. The judges were Mr. Morgan, Mr. Kendall, and Mr. Holland, for plants; and Mr. Taylor, Mr. Paxton, and Mr. Dale, of the Temple Gardens, for blooms.

PECKHAM AND HATCHAM CHRYSANTHEMUM.—The annual exhibition of this Society took place on Friday last. It is an amateur society in the full acceptance of the word—for prizes are not only given for the productions of the garden, but also for the best kept gardens themselves. These are awarded by a visiting committee, and we are assured that many a commendation has been bestowed on the founders, as a principal means of retaining at home the cottager in his garden, who would in all probability have been spending his leisure hours in a tavern. On the present occasion there was a good and plentiful assortment of cut blooms and specimen plants, and among the exhibitors in the first named class may be mentioned Mr. F. Mitchell, Mr. Skelton Mr. Reston, and Mr. Kirby. We may also mention Mr. Anderson and Mr. Orlidge as successful claimants; but by far the handsomest blooms came from Mr. Potts, of the Old Kent Road, consisting of 48, in which a number of Nonpareils was most conspicuous. Mr. Fenton also produced a stand of 72 cut blooms, the more remarkable that they appeared but very little attacked by the frost, though grown in the open air. These were highly commended by the judges, and generally admired by the visitors. Mr. Mortram, of East Lane, also exhibited some very good blooms, both incurved and reflexed; as did also Messrs. Greenwood, Pink, and Barnes. There were many specimen plants, but the most remarkable were the standards sent by Mr. Morgan, of Lincoln's Inn Fields, showing fine heads of flower. There were also some 40 pots of well-grown Pompones sent for decoration by Mr. Clark, of the Commercial Inn, Peckham.

NORWOOD CHRYSANTHEMUM: *Nov.* 15.—The exhibition of this Society took place on Tuesday last in the Working Man's Institute, Lower Norwood, and has received the patronage of the most wealthy inhabitants of the neighbourhood. Among the successful exhibitors were Mr. S. Miles, gr. to Miss Pering, Lower Norwood, who showed a good Aurore and Cedo Nulli; Mr. Sears, of Camberwell, some good Pompones; and Mr. J. Hayes, gr. to O. J. Jones, Esq., Tulse Hill. One of the most prominent objects was a handsome plant of Bob from Mr. Joseph Parker, of Lower Norwood, and in conjunction with this may be mentioned 6 beautiful Pompones from Mr. W. Parker, gr. to F. Doulton, Esq., of Dulwich, among which were Helène, Bob, Cedo Nulli, and La Vogue. Mr. Webb, gr. to H. Walmsley, Esq., Clapham Park, obtained a prize in the miscellaneous class for the sort called Bob. Among large specimen plants Mr. Harper, gr. to F. Bennett, Esq., Tulse Hill, exhibited a good Stellaris globosa, Alfred Salter, and Queen of England, and in a separate class a good Albin. Plants for decoration were sent by Mr. Fletcher, of Kennington.

Among cut blooms, spikes, and bouquets, we find Mr. Knight showing a pretty box of flowers, and Mr. Webb gained the first prize for blooms of Queen of England (very fine), Astrolabe, Vesta, and Plutus. Mr. Lewis, of Lower Norwood, and Mr. Harper also exhibited in these classes. Mr. Webb also produced a fine large specimen plant of Astrolabe, Mr. Miles some good spikes of Pompones highly recommended by the judges, and Mr. Taylor some handsome bouquets. In the centre of the hall was to be found a large Gourd, grown by Mr. Wood, gr. to W. Gilpin, Esq., of East Sheen, and exhibited by Mr. Dore, it weighed 260 lbs.

This is the first exhibition of this Society, and seemed to be well attended, the large room being crowded with visitors. The judges were Mr. Morgan, of Lincoln's Inn Fields, and Mr. Davis, of Norwood.

TOWER HAMLETS CHRYSANTHEMUM.—This was a well-conducted exhibition, at which beautiful cut blooms were shown by Messrs. Vile, How, and Fisher. Of Pompones, Messrs. Courcha, Stonestreet, and Farmer furnished handsome stands. Of plants in pots, Messrs. Fisher, Farmer, and Vile contributed skilfully managed plants. Mr. Courcha exhibited a beautiful half-standard Pompone, called Zebra, with 300 well-shaped blooms on it and good foliage down to the pot. It attracted much attention, being without stick or tie. Among plants sent for decoration were finely grown specimens from Mr. Forsyth, consisting of Pilot, Annie Salter, Christine, Vesta, and Mount Etna. Of Pompones there were Gen. Canrobert, Helène, Cedo Nulli, Madame Roussillon, a splendid specimen very tastefully trained and evidently the best in the exhibition, not being so flat as the others. Mr. Broome, to whom was entrusted the arrangement of the room, took a vanload of plants for decoration. Mr. Morgan sent three Pyramidal plants, all handsome. More than 1700 visitors were present, and the show was in every way satisfactory. Floriculture in this district appears to flourish. In consequence of the success attending this show, we understand that a general summer exhibition will be held here next year.

Notices of Books.

The Rose Annual for 1859 *and* '60. By W. Paul, F.H.S. Large 8vo. Piper & Co.

We gladly welcome Mr. Paul's excellent annual report upon the state of the Rose question; for he fairly, faithfully, and skilfully puts together all that has been most important in the history of the queen of flowers during the previous year. On the present occasion we have reports of exhibitions, comments on the weather as affecting the Rose, returns of prizes, and a very useful list of the number of times each Rose was shown in first-prize collections—a safe guide to buyers. From this return we learn that the favourites of the year have been:—

Paul Perras,	shown 10 times	Mrs. Rivers,	shown 10 times
Paul Ricaut,	,, 12 ,,	Prince Leon,	,, 15 ,,
Baronne Prevost,	,, 11 ,,	Triomphe de Paris,	,, 10 ,,
Caroline de Sansal,	,, 10 ,,	William Griffith,	,, 11 ,,
Gen. Jacqueminot,	,, 14 ,,	Solfaterre,	,, 10 ,,
Jules Margottin,	,, 16 ,,	Souvenir de Malmaison	,, 11 ,,
Lord Raglan,	,, 16 ,,	Devoniensis,	,, 18 ,,
Madame Masson,	,, 10 ,,	Gloire de Dijon,	,, 14 ,,
Madame Vidot,	,, 11 ,,		

In addition to this Mr. Paul speculates on the forthcoming brood of novelties, and presents for public

approbation coloured figures of his own four favourites, namely, Anna de Diesbach (H.P.), President (T.), Evêque de Nîmes (H.P.), and Queen of Denmark (H.P.). Of these the Evêque de Nîmes is a superb flower, coloured like Lord Raglan, and formed something like a hexangular Camellia.

Ure's Dictionary of Arts, Manufactures, and Mines. Longmans. 8vo.

Of this very valuable work Messrs. Longmans have commenced the publication of a new edition, chiefly rewritten and greatly enlarged, under the care of Mr. Robert Hunt, Keeper of the Mining Records. It is to be completed in 14 Parts, price 5*s.* each, and forming three volumes. Each part consists of 192 pages, very closely printed, and illustrated by numerous engravings on wood. A long list of contributors, all eminent in their own branches of knowledge, amply guarantees the soundness of the information conveyed; and the name of Mr. Hunt, as the editor, is a pledge that the many trade interests affected by a work like this will be honestly dealt with. The number before us extends from ABA, a woollen stuff manufactured in Turkey, to ARTESIAN WELLS, the description of which is commenced, and contains a highly interesting account of the new metal of clay called aluminium.

British Timber Trees. By John Blenkarn. Small 8vo. Pp. 275. Routledge.

In this volume the author undertakes to teach all that is required in the rearing and subsequent management of British timber trees "in woods, groves, and plantations, including remarks on soil and situation, the general improvement of landed estates and mountainous districts, with directions for the management and valuation of standing timber." At p. 86 we are further informed that the author's "first intention was to include only such trees as are actually cut down and sold for timber, and no others;" a wise resolution which should have been adhered to, for it is evident that Mr. Blenkarn's knowledge often goes no further—if so far. The "cobbler should not go beyond his last" is a very old and very wise proverb, which had the author remembered it would have rendered the volume before us smaller, cheaper, and better, and would have spared us the necessity of expressing an unfavourable opinion of it. When we find a writer calling himself agricultural engineer and surveyor, and professing to teach all that the title-page of the volume announces, informing his readers that owing to their elasticity the increasing rings of timber exert great pressure on the heartwood! that the Laburnum is Cytisus sessilifolius!! that the timber of the Sweet Chesnut was formerly used for the roofs of churches!!! and recommending to attention as ornamental trees the flowering Oak, the Indian Date Plum, the African Cypress, whatever they may be, we are bound by our duty to the public to protest against such rubbish being cast before the world. Passing by these matters, and turning to what must be called the practical part of the subject, we are surprised to see how meagre, ill-arranged, and incomplete is even that portion of the volume. Surely those who want such instruction as a book like this professes to give, ought at least to have been introduced to such great matters as timber felling and barking, bark curing, Larch rot, dry rot, and similar details of the utmost importance to the young and inexperienced forester. Upon the whole Mr. Blenkarn's book is a very crude affair; the best part of which is an account of the method of planting adopted (qy. practised) by the late Duke of Portland on the Welbeck estates.

Favourite Flowers; How to Grow them. By A. G. Sutton, F.H.S. Routledge. Price 1*s.*

This is a useful volume because the author writes of what he understands, and of nothing more. We only regret that so much is in the language of others instead of being instruction founded on personal experience. The flowers treated of are the Dahlia, Hyacinth, Hollyhock, Auricula, Camellia, Cineraria, Roses, Fuchsia, Pelargonium, Carnation and Picotee, Chrysanthemum, Tulip, and annuals in general; the latter very poorly done. Interspersed with the above are instructions as to managing a greenhouse and mixed borders; meagre, but good as far as they go.

A Class-book of English Prose, comprehending Specimens of the most distinguished Prose Writers from Chaucer to the present time. By R. Demaus, M.A. 8vo. Pp. 552. Black.

The "Elegant Extracts" of former days are here supplanted by a far better book, having however the same end in view. Mr. Demaus gives short extracts from the works of our best prose writers down to Mr. Ruskin, prefacing them by a short account of the writers themselves. The extracts are well selected, and the volume deserves a large share of popular favour.

Der Cacao und die Chocolade. By Alfred Mitscherlich. 8vo. Berlin. Hirschwald.

The author of this Treatise names the geographical limits of the tree which furnishes the Cacao Bean, the foundation of chocolate, narrates its history, describes its cultivation, exhibits the minute anatomy of the bean or seed, and its chemical composition, treats of its action on the system, and finally explains the manner in which chocolate is made. It is illustrated by a map, a figure of the Cacao tree, which we think we have seen elsewhere, some anatomical details, and a figure of a chocolate mill.

Silva capensis. By Dr. Pappe. (Capetown: Taats; Leipsic: Köhler) is a thin pamphlet describing South African forest trees and arborescent shrubs used for technical or economical purposes. It forms a useful companion to the author's Flora Medica, but is sadly in want of an index to the Colonial names.

Under the title of *Zur Kenntniss der Visnea Mocanera,* Dr. Hermann Schacht has published a treatise to show that this paradoxical plant belongs to the order of Heathworts, and is near Clethra. The author has examined the question carefully, and his views, though not new, deserve the attention of botanists.

Garden Memoranda.

VERSAILLES NURSERY, HAMMERSMITH.—A visit to this nursery at the present time will amply repay all lovers of Chrysanthemums; for Mr. Salter's splendid collection of these flowers is now in full beauty, and after 20 years' attention and careful selection from thousands of seedlings it is well worth seeing. It contains various new and improved varieties, many of which were raised in this nursery, and there are also several seedlings from Guernsey, whose rich colours and fine form make them peculiarly desirable, and no well chosen collection will soon be considered complete without them. The extremely neat arrangement of the plants and general effect of the whole house in which they are placed, displays a taste which might with advantage be imitated at this time of the year in some of our large conservatories. To the house usually set apart for the exhibition of Chrysanthemums another compartment has been added, in which the larger specimens are placed. For the first time Mr. Salter has disbudded some of his specimen plants to procure large flowers, and in this he has fully succeeded. He has usually exhibited them as they were removed from the open ground to the greenhouse. One prominent feature in this collection is worthy of remark, and that is, the flowers are grown naturally, they have not had their faces bowed down to the ground to produce an incurved petal, and no tweezers are permitted to touch them; their qualities good or bad, are therefore fairly and honestly presented to view. Mr. Salter has for many years devoted his attention to this most useful flower; and to him must be ascribed the credit of having introduced to our gardens many of the best varieties.

Of new Pompones, the following are well worth attention:—Christiana, clear yellow, with small brown tips, very double, and dwarf; a valuable acquisition; received a certificate at Nottingham. Edith, reddish rose or rose salmon, free flowering, double, and distinct; Queen Mab, deep red and dark orange, in the way of Dr. Bois Duval, but brighter colour; Emily, rose salmon with lighter centre, quite new in colour, double, and distinct; Mrs. Turner, pure white, very double, and of first-rate form; a fine plant for purposes of exhibition. Eva, golden yellow, double and good; Distinction, blush, or silver lilac, flowers very full in form, and habit like Madame Fould; mirandum, deep rose, or rose carmine, a very distinct and pretty variety, the flowers, which are produced in great abundance, being regularly fringed, which give this plant a very novel appearance; Lara, pale yellow, tipped bright rose, fine form, double, and good; Musidora, chesnut and orange, small flowers of perfect form; Madame Victor Verdier, rose lilac changing to white, very pretty, quite double, and very attractive; Augusta, blush white, early flowering, very dwarf, and a first-rate plant for the conservatory or exhibition; Andromeda, pale sulphur yellow, tipped brown, quite double, and very free; a perfect gem, and for specimens invaluable. Astrea (Anemone), lilac blush, one of the best of this class; Golden Ceto Nulli (Anemone), golden yellow and brown points, very fine; Mrs. Dix, pale yellow, bordered rose, full size, very double, and first-rate; Miss Talfourd, pure white, abundant flowerer, in the way of Argentine; Emma, rose purple, and yellow centre, free, and of good habit.

Among Seedlings raised by Mr. Salter, the following appeared to be improvements on old varieties:—Arthur Wortley, cinnamon and red, very full and beautifully incurved; received a First Class Certificate at the Crystal Palace and also at Nottingham. Emperor (Anemone), guard petals blush, with yellow and rose centre; a noble flower. Mrs. W. Holborn, pure white, large, full, and beautifully incurved; received a First Class Certificate at the Crystal Palace, and also at Nottingham. Ajax, Indian red, large, double, and well incurved; Purity, paper-white, large, and showy; Rosa (Anemone), guard petals bright rose pink and yellow centre; Queen of the Isles, white-tinted blush, incurved and good; received a Certificate at Nottingham. Mr. Murray, deep rose-violet, or plum colour—a new colour and very attractive; Ethel, deep rose-violet, very close and full—new shade of colour; John Bunyan, bright rose-lilac, very full, and incurved; Dr. Rozas, dark rose-carmine, very full and incurved; Crista-galli, orange-scarlet, and yellow back—a very showy tasselled variety, an improvement on Duc de Conegliano.

Among other novelties, the following raised by an eminent cultivator in Guernsey, will be found very good:—Jewess, red and orange, free, early, and very showy; Comet, bronzed orange; Bouquet de Fleurs, red crimson, with yellow back, very large, incurved, and splendid; pictoreum roseum, dark rose, fine in form and colour; Yellow Perfection, a splendid flower in form and colour, an improvement on Plutus; General Hardinge, Indian red and gold; Alma, rose purple, broad petals, incurved, and good; Alarm, rich crimson, large, and good; Beauregard, deep crimson maroon; Novelty, blush white, full, and incurved in the way of Goliath; Grand Sultan, dark cinnamon, large, and incurved; Clipper, red carmine, gold back, incurved, and fine; Jardin d'Hiver (Anemone), rose purple; Wonderful, light carmine crimson, very attractive.

Among older varieties were very large flowers of the following:—Queen of England, Auguste Mie, Hermione, Plutus, Alfred Salter, Dupont de l'Eure, King, Versailles Defiance, Leon Leguay, Golden Queen, Christine, Golden Cluster, Julie Lagravere Progne, Prince Albert, Anaxo, Goliath, Princess Marie, Lysias, Nonpareil, Themis, Vesta, Trilby, Madame Cammerson, Cassy, and sulphureum superbum.

Miscellaneous.

Raising Rhubarb from Seed.—Specimens of two sorts seedling Rhubarb were exhibited to the Horticultural Society in July last, by the Rev. Charles Mackie, Quorley Rectory, Andover, Hampshire, accompanied by the following communication:—"As Rhubarb is a plant which produces seed very freely, almost the whole of which will germinate, it is impossible, with the largest space of ground, to have the whole of them planted out so as to put the qualities of the seedlings to the test. As the readiest way of ascertaining which of them are most likely to repay the trouble of cultivating, I have found it a most excellent plan to sow the seed in pots as soon as it is gathered. These being kept under cover during the winter months, not so much as a protection to the plants as for the sake of preventing the pots from being injured by the frost, the young plants will be found to vegetate very early in the spring; showing from the first a difference of character, not only as to precocity, but in other respects also, as to growth and habit. Even at this time, therefore, some may be selected as the subject of experiment, and planted out; but the preferable plan, I think, is to allow the whole to remain in the seed-pots till the end of the season, when the difference of character is more decidedly marked. Those of the earliest and strongest habit will then have gained greatly on the others in point of size, and will otherwise show the qualities which should determine the selection as to which are most likely to reward the cultivator by turning out a new and valuable variety. The qualities in question I hold to be, chiefly, a stalk that is thick, succulent, and of a red colour; and a leaf that is round in shape, smooth on the surface, and of a fleshy texture. In this way, the plants which make the best promise may be selected; but my remarks as to subsequent treatment apply equally, if not more, to the best of the varieties already in cultivation. The mode which I pursue is this:—Having chosen ground with a warm aspect, I have the soil dug out down to the subsoil, which, in the instance now referred to, is chalk at no great depth, say from 18 inches to 2 feet. The space so dug out is about 2 feet in diameter. Of the earth dug out, I reject the lower and poorer portion, mixing the rest with leaf-mould, and with fresh soil of as good a quality as I can procure. The soil thus improved I further enrich with guano, superphosphate of lime, soot, and bone-dust; all, or as many of them as I can at the time command, not forgetting some well-made stable manure. The whole of these being thoroughly incorporated with the soil, I place at the bottom of the hole, above the subsoil, a layer of bones of a considerable size, over which is put some of the mixture to the depth of 6 inches, then a few more bones with more earth alternately, till the hole is not only filled up but there is a hillock, say of 1½ foot above the level of the ground. In the centre of this I make an opening and fill up with leaf-mould, or any other good unmixed earth, for the reception of the plants, in order that the roots may not touch the richer soil until they are in a growing state, before which they might be injured by the strength of the manure. As a proof how well this has answered with myself, I may state that soon after the Prince Albert Rhubarb was introduced, now, I should imagine, at least 12 or 14 years ago, I had three small plants of it, which I treated in the manner here recommended. Though put in at a distance of 6 feet from each other, they now appear like one large plant, the heads being joined together, and the crowns of the roots approaching very near. As a further proof that they have not otherwise degenerated in that length of time, I may mention that last year I sent a leaf taken from one of them to a very intelligent practical gardener in the neighbourhood, with a request that he would measure it, and let me know the size. His answer when he had done so was, that it was 14 feet 6 inches in circumference, the largest Rhubarb leaf he had ever seen, though he had certainly seen them with a thicker stalk. I may perhaps also be permitted to state that of the two sent, the one marked No. 2 was raised from seed grown in 1856. It was sown with others in a small pot, in which it remained till the month of October, 1857, when, thinking it promised well, it was planted out, being at the time not much larger than my hand. In the spring of last year it took a very early, and made a very rapid growth, so that in the course of the summer the leaves covered a space of ground 9 feet in circumference. This year it was also very early, and has increased pro-

portionally in size. All this, it is to be remembered, is in a situation where the soil is naturally shallow as well as poor, and on that account by no means favourable to the growth of the plant. The above observations are, of course, not expected to be of use to the professional cultivator, but may perhaps be of some service to the amateur, who may be desirous of ascertaining how new varieties may be obtained, or the established varieties may best be grown, without either going to any great expense or having much ground to spare. By treating them in the way described, and allowing them ample room, say 6 feet at least from plant to plant (but it were better to give them more), and by giving every season a top-dressing of a mixture the same as that recommended in planting, to be carried down by the winter rains, he will ensure himself a supply of this most excellent and wholesome esculent, from the setting in of spring till nearly the end of autumn." Specimens of the seedlings referred to, Nos 1 and 2, were exhibited. The stalk of No. 1 was 18 inches long and 5 inches in circumference. That of No. 2 was 21 inches long, but only 3½ in circumference; it was tinged with red, and although not so thick as the other, the substance was more tender, and in point of quality it was therefore doubtless the finer of the two. *Horticultural Society's Proceedings.*

The Tomato.—To many persons there is something unpleasant in the flavour of this excellent fruit. It has, however, long been used for culinary purposes in various parts of Europe. Dr. Bennett, a professor of some celebrity, considers it an invaluable article of diet, and ascribes to it very important medicinal properties. He declares—1. That the Tomato is one of the most powerful deobstruents of the "Materia Medica;" and that, in all those affections of the liver and other organs where calomel is indicated, it is probably the most effective and least harmful remedial agent known in the profession. 2. That a chemical extract will be obtained from it, which will altogether supersede the use of calomel in the cure of diseases. 3. That he has successfully treated diarrhœa with this article alone. 4. That when used as an article of diet, it is almost a sovereign remedy for dyspepsia and indigestion. 5. That persons in ordinary should make use of it, either raw, cooked, or in the form of a ketchup, with their daily food, as it is the most healthy article in the *materia alimentaria.* A writer in the *Farmers' Register* says: "It has been tried by several persons with decided success. They were afflicted with chronic cough, the primary cause of which, in one case, was supposed to be diseased liver—in another, diseased lungs. It mitigates and sometimes checks a fit of coughing. The method most commonly adopted in preparing this fruit for daily use, is to cut them in slices, and serve them with salt, pepper, and vinegar, as you do Cucumbers. To stew them, remove them ripe from the Vines, slice up, and put them in a pot over the fire without water. Stir them slowly, and when done, put in a small piece of good butter, and eat them as you do Apple sauce. Some add a little flour, and fine crumbs of bread." *Victorian Agricultural and Horticultural Gazette.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

CONSERVATORY, &c.—Next to Camellias, Azaleas are perhaps the most showy plants that can be had in bloom early in the season, and where there is a good stock to select from some of the most forward plants should be placed in heat soon, moistening them overhead two or three times a day. Unless, however, plants can be had which made their growth and set their buds early, they need hardly be expected to flower so finely as under more natural circumstances in spring, and unless the buds are plump there will be some danger of the plants starting into growth instead of flowering. Dutch bulbs should be largely used for forcing at this season, and where hardy shrubs are forced for the decoration of this house, these should be got into flower as soon as circumstances admit. Do not forget to introduce into gentle heat by degrees a good batch of Roses, choosing the most promising plants of Teas, Bourbons, and Hybrid Perpetuals, which are the best kinds for winter flowering; a gentle bottom-heat will be of service to these as also to most other plants subjected to heat in order to get them into flower early, and a moist state of the atmosphere must be secured, admitting a little air freely on every favourable opportunity. In greenhouses damp or insects soon do irreparable injury to soft-wooded plants at this season, and these must be carefully attended to if they are to be wintered in first-rate condition. Pelargoniums should be kept rather cool and dry, giving whatever water may be necessary on the mornings of fine days, so that the superfluous moisture may be removed before the evening, avoiding the use of fire-heat except when necessary to prevent the temperature falling below 40°, or to dispel damp when this cannot safely be done by giving air. Calceolarias require very similar treatment, except that they are very subject to the attacks of thrips, unless afforded a moist atmosphere; they must therefore be narrowly watched, and smoked lightly two or three evenings successively if this pest makes its appearance, keeping the atmosphere moist and giving air on every favourable opportunity to prevent the foliage from flagging. Cinerarias for late blooming must also be kept cool and airy, and should not be allowed to suffer for want of pot room. These must not be trusted in cold pits after this season for they cannot endure much frost. Plants intended to flower early should be encouraged with a gentle heat, keeping them near the glass and admitting air on every favourable opportunity.

FORCING DEPARTMENT.

PINERIES.—If circumstances should render it necessary to subject a portion of the stock intended for fruiting to a brisk temperature at once to induce it to start, the most promising plants should be very carefully selected, and placed in a small house or pit by themselves; and, where anything like a regular supply of ripe fruit is required, several houses, or separately heated compartments, should be at command; and without this convenience no gardener can reasonably be blamed for having too many ripe at one time and none at others. It is not by any means desirable to start more plants into fruit at this early season than may be absolutely necessary, for they will produce finer fruit later in the season than can possibly be obtained from them now; and where a separate house cannot be commanded for those which must be subjected to a high temperature, we would advise that the plants selected for fruiting should be placed in the warmest part of the house at command, filling the rest of the house with young stock. The former should be afforded a bottom-heat of about 85°, and the latter about 10° or 15° lower; the atmosphere should range from 68° to 75° by fire-heat, allowing it to rise 5° with the assistance of sunshine, keeping the young plants near the glass, and properly supplied with water at the root. This temperature will be considerably too high for young stock at this season, but we have seen this system practised with considerable success; and although the young plants may get somewhat drawn, they will gain substance as light increases, and the evil will be less than running the risk of starting at this early period of the season the greater portion of the plants that are at command for keeping up the supply throughout the summer. VINERIES.—Until the buds are fairly broken the points of the shoots should be kept nearly on a level with the lowest part of the Vine; and if this should not be found sufficient to induce the buds to start equally throughout the length of the Vine, the rod should be bent so as to bring the most forward buds to the lowest level, elevating those that are backward. Maintain a thoroughly moist atmosphere by frequently sprinkling the floor and passages, &c.; and syringe the Vines lightly at least twice a day until the leaves begin to appear, when the amount of moisture must be moderated. Give every attention towards securing a gentle warmth for the roots: turning the litter, and adding fresh as may be requisite, and keeping it well protected from the effects of heavy rains and severe weather. Be satisfied with a moderate night temperatnre until the buds begin to push, when it may gradually be raised to 60° by the time that the leaves fairly begin to open.

FLOWER GARDEN AND SHRUBBERIES.

Tenderer kinds of Roses are found in some places to be injured by the late frosts; protection should therefore be applied at once to such plants as are yet safe. Also get in the stock of Briers for budding upon next year without delay, for unless these are planted before spring they seldom furnish strong shoots for early budding. Many object to planting shrubs or trees in winter, believing that the roots if hurt at that season are liable to rot, and certainly early in autumn is a very preferable season; but with weather like the present we would not delay such work a single day, and if the soil is properly prepared by draining, &c., where necessary, as should always be done before planting, there will probably be fewer failures from planting now than if the work was delayed until March. Where however the ground to be planted is of a clayey nature, and in an unkind state at present, it will undoubtedly be better to defer planting until spring, meantime using every means to improve the state of the ground; and soils of this nature should always be dug or trenched some considerable time before planting, as neither draining nor anything but exposure to the action of the atmosphere will bring them into a fit state for planting. While, however, we would not hesitate to plant small "stuff" generally at present, things which are at all tender had better be left until the chance of severe frost is past, and the transplanting of large evergreens which has unfortunately been delayed until now should be put off until the weather becomes mild in spring, especially things which are known not to be perfectly hardy. Roll walks and lawns after frost to keep them firm and smooth. There will be comparatively little to be done in the flower garden at present, except sweeping and cleaning, and any spare time will be well spent in going over the stock of plants in pits for next season's use, removing every decaying leaf, and where the surface soil has got green, removing this and top-dressing with sandy loam. There is nothing so unfavourable to these plants at this season as damp, therefore take every opportunity you can of admitting fresh air.

HARDY FRUIT AND KITCHEN GARDEN.

It is always desirable to get as much of the pruning and nailing done before the approach of spring as possible; lose no favourable opportunity therefore of forwarding these operations; for, besides the advantage of having that kind of work done before the busy season, the garden will present a much neater appearance after the wall trees are nailed and the borders made trim, and the small fruit-bearing bushes pruned and the ground among them turned over. See that standard trees which have been recently moved or root-pruned are firmly secured against injury from winds, and also get any root-pruning or transplanting remaining to be done this season executed as soon as possible. Endeavour as far as circumstances will permit to have a good supply of Parsley under save protection; for there is generally a large demand for this, and in the event of a severe winter it is difficult to save it by the ordinary protection of hoops and mats. It has already been injured by the late frost. Lettuces, Cauliflowers, &c., in frames should be freely exposed on all favourable occasion. See to maintaining a regular supply of Seakale, Rhubarb, and other forced vegetables, for which it is likely there may be a considerable demand. Look over root stores occasionally to see that nothing is going wrong, and be very careful of any Broccoli that may be fit for use or turning in. As has been recommended take advantage of frosty weather to get manure wheeled on spare ground, and see to keeping a good supply well rotted and fit for use when wanted. Trench, dig, and ridge every spare inch of ground whenever the weather will permit these operations to be advantageously performed. This is particularly to be observed in gardens, the soil of which is of a clayey nature.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.
For the Week ending Nov. 17, 1859, as observed at the Horticultural Gardens.

Nov.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Temperature of the Air. Min.	Temperature of the Air. Mean	Temperature of the Earth 1 foot deep.	Temperature of the Earth 2 feet deep.	Wind.	Rain
Friday 11	16	30.645	30.481	48	30	37.0	48	49	S.E.	.00
Satur. 12	17	30.436	30.335	49	24	36.5	47	48½	S.E.	.00
Sunday 13	18	30.327	30.257	41	18	29.5	47	48	E.	.00
Mon. 14	19	30.281	30.203	28	19	23.5	46	47	E.	.00
Tues. 15	20	30.297	30.241	42	25	33.5	44	47	E.	.00
Wed. 16	21	30.239	30.130	47	31	39.0	44	46½	E.	.00
Thurs. 17	(	30.185	30 162	48	25	36.5	44	46	N.E.	
Average		30.344	30.255	43.2	24 0	33.6	45.7	47.4		.00

Nov. 11—Dense fog; fine; overcast; slight frost.
— 12—Foggy; hazy; slightly overcast; foggy; frosty.
— 13—Foggy throughout; sharp frost at night.
— 14—Frosty, with thick fog; below freezing throughout the day.
— 15—Frosty and foggy; clear and frosty at night.
— 16—Partially overcast; fine; heavy clouds; overcast.
— 17—Fine; very fine; frosty and foggy at night.
Mean temperature of the week, 11 deg. below the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 33 years, for the ensuing Week, ending Nov 26, 1859.

November.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 20..	48.8	35.7	42.3	13	0.35 (n.	1	7	—	—	6	6	6	5
Mon. 21..	49.0	37.1	43.1	20	0.37	6	4	5	3	1	7	5	2
Tues. 22..	48.8	34 8	41.8	19	0.62	3	4	6	2	4	6	7	1
Wed. 23..	47 3	34.7	41.0	14	0.36	—	5	4	1	4	11	5	3
Thurs. 24..	47.2	32.4	39.8	11	0 61	5	5	2	3	3	8	4	3
Friday 25..	46.0	33.2	39.6	17	0.31	5	4	4	8	4	7	2	3
Satur. 26..	46.7	33.2	40.0	17	0.70	1	5	6	1	3	12	1	4

The highest temperature during the above period occurred on the 20th, 1843, and 21st, 1828, 1833—therm. 59 deg.; and the lowest on the 23d, 1853—therm 9 deg.

Notices to Correspondents.

ACTION OF FROST ON LEAVES: *Belgravus.* You will find the leaves and branches always droop in very cold weather. Their doing so is no indication of their suffering from frost. The phenomenon is probably owing to the contraction of the air that fills their tissues, and which, expanding as temperature rises, again restores them to their former position.

BOOKS: *W S.* Curtis's Botanical Magazine has now (including the volume for the present year) reached vol. 85. To the first 53 there is a complete index. Then at the end of vol. 63 there is an index to that and the nine preceding volumes, and after that an index only to each separate volume. Such is the fact; and therefore if you want to ascertain something about a plant and with this view go to Curtis, you may have recourse to all these indexes. We cannot but think that it would be to the interest of the proprietor of this important work if he would now publish either a complete index or a further one?—*D.* The Scottish Gardener is a good periodical. Of the American monthly we know nothing. The Reports of the Horticultural Society are only circulated among the Fellows. We suppose the same rule to be observed in the Pomological. Dr. Asa Gray's Botanical Text Book is excellent and cheap, but we do not know the price. —*B J, Reigate.* Thompson's Gardeners' Assistant.‡

CHINESE YAMS: *S H.* Cook them like Potatoes, but do not boil more than 10 minutes. More or less spoils them.

CIGARS: *Fumosus.* The fragrance of Havannah cigars is not owing merely to the quality of the Tobacco, but according to Ramon de la Sagra, to the action of Eupatorium aromatizans employed in their preparation. We should like to see that plant in cultivation here.

MUSHROOMS: *J S P.* You will find Agaricus urens mentioned in the English Flora under A. peronatus. Agaricus silvaticus is a species figured long since by Schæffer, and is known from A. campestris by its thin pileus, hollow stem, &c. It is not mentioned in the English Flora. *M J B.*

NAMES OF PLANTS: We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have or could have undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*Bath X.* The plant whose blossoms are *now* numerous, with a faint aromatic odour, and which bore the late hard frost without injury is, as you conjecture, an Elæagnus. It is E. rufa, a plant from the N. of India, and hardly different from the E. Loureiri of Hong Kong.—*J S P.* Gomphocarpus arborescens from the Cape of Good Hope.

REBATING: *G M B.* Your nearest carpenter can inform you what rebating is. It belongs to carpentry, not, as you imagine, to arithmetic.‡

SCORZONERA—SALSAFY: *Diss.* We do not think that either of these vegetables is likely to succeed at Calcutta, Bombay, or Kurrachee, unless they can be reared as a cold weather crop. That should be tried.

*** As usual, many communications have been received too late, and others are detained till the necessary inquiries can be made. We must also beg the indulgence of those correspondents the insertion of whose contributions is still delayed.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London, S. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

MR. J. B. LAWES manufactures the following MANURES:—

TURNIP MANURE	£6 6
SUPERPHOSPHATE OF LIME . ..	6 6
MINERAL SUPERPHOSPHATE OF LIME	5 5
BARLEY MANURE	8 0

N.B. Genuine PERUVIAN GUANO direct from Messrs. Gibbs, NITRATE OF SODA, SULPHATE OF AMMONIA, and other Chemical Manures.

WHEAT MANURE.—PERUVIAN GUANO is proved to be the best and cheapest Artificial Manure for Wheat, at Autumn sowing.

American decorticated Cotton-seed Cake of best quality supplied at the market price.

Offices: 1, Adelaide Place, London Bridge, E.C.

LONDON MANURE COMPANY (ESTABLISHED 1840),
Have the following MANURES ready for delivery:—
CORN MANURE FOR AUTUMN SOWING.
BLOOD MANURE FOR AUTUMN SOWING.
URATE.
SUPERPHOSPHATE OF LIME.
SUPERPHOSPHATE MINERAL.

The London Manure Company also supply PERUVIAN GUANO (direct from Messrs. Gibbs & Sons), SULPHATE OF AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of known value, all of which they warrant strictly genuine. Wholesale dealers supplied.

116, Fenchurch Street, E.C. EDW. PURSER, Secretary.

BURNARD, LACK, AND CO.'S CONCENTRATED SUPERPHOSPHATE OF LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.

CONCENTRATED TURNIP MANURE, equal in value to the preceding.

Of these Manures Dr. Voelcker says:—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."

Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to BURNARD, LACK, & Co., Sutton Road, Plymouth.

PERUVIAN GUANO.—The present price of this valuable Manure is 12*l.* per ton for 30 tons and upwards; 13*l.* 5*s.* per ton for 1 ton up to 30 tons.

And, in order to protect themselves against the purchase of adulterated mixtures and of inferior Guanos purporting to produce results equal to Peruvian, consumers are recommended to apply either to ourselves, to our Agents Messrs. GIBBS, BRIGHT, & Co. of Liverpool and Bristol; or to Dealers of established character, in whose honesty and fair dealing they can place implicit confidence. ANTY. GIBBS & SONS.

15, Bishopsgate Street Within, London, E.C.



THE PATENT NITRO-PHOSPHATE OR BLOOD MANURE COMPANY (LIMITED).

Trustees:—
ABEL SMITH, Jun., Esq., Walton House, Ware, Herts.
CHARLES DIMSDALE, Esq., Essendon Place, Herts.
EDWARD BALL, Esq., M.P., 8, Belgrave Road, Pimlico, S.W.
GENERAL HALL, Weston Colville, Linton, Cambridge.
JOHN BRADY, Esq., M.P., Warwick Terrace, Belgrave Square, W.

Directors:—
Chairman—JONAS WEBB, Esq., Babraham, Cambridgeshire.
Deputy-Chairman:—
JOHN COLLINS, Esq., Myddleton Square, Pentonville, E.C.
EDWARD BELL, Esq., Tottenham, Middlesex, N.
JOHN CLAYDEN, Esq., Littlebury, Essex.
RICHARD HUNT, Esq., Stanstead Abbot, Herts.
THOMAS KNIGHT, Esq., Edmonton, Middlesex, N.
ROBERT LEEDS, Esq., West Lexham, Norfolk.
ROBERT MORGAN, Esq., 72, Camden Villas, Camden Town, N.W.
GEORGE SAVILL, Esq., Ingthorpe, near Stamford.
WILLIAM COLLINS, Esq., 105, St. John Street Road, E.C.
Bankers—Messrs. BARNETT, HOARE & Co., Lombard Street, E.C.
Solicitors:—
Messrs. KINGSFORD & DORMAN, 23, Essex Street, Strand, W.C.
Auditor—J. CARTER JONAS, Esq., Cambridge.
Manager—MR. JAMES ODAMS. | *Secretary*—MR. C. T. MACADAM.

Offices: 109, Fenchurch Street, London, E.C.; Manufactory, Plaistow Marshes, Essex, E.

ODAMS'S BLOOD MANURE FOR WHEAT,
Price 7*l.* 10*s.* per Ton, delivered Free to any WHARF or RAILWAY in London.

TO FARMERS, CORN FACTORS, MERCHANTS, &c.—WANTED, AGENTS, by the PATENT WOOL MANURE COMPANY, in districts not yet represented, for the Sale of their Patent Wool Manure, Superphosphate of Lime, Bones, Sulphate of Ammonia, and other Chemicals and Manures required by Agriculturists. Application to be made to the Proprietors, who are the sole Manufacturers, Messrs. C. H. TIDBURY & Co., 81, Gracechurch Street, E.C.; or Lavender Dock Wharf, Rotherhithe, S.E., London.

TO PIG, POULTRY, AND GAME FEEDERS.

JUPP'S RICE FOOD, POULTRY AND GAME.—RICE SWEEPINGS, 7*s.* 6*d.* per cwt., in 1¼ cwt. bags; SCREENED RICE, 10*s.* per cwt., in 1¾ cwt. bags; DOG BISCUITS, 14*s.* per cwt.; OIL-CAKE, per ton only; RICE MEAL for PIGS, 6*s.* and 8*s.* per cwt., in 1 cwt. bags, at the mill. Orders must be accompanied by a remittance to insure delivery.—W. & R. JUPP, 6, Cross Lane, Eastcheap, E.C.

FOOD FOR WINTER STOCK.

SAMUELSON'S celebrated TURNIP CUTTERS, PULPERS, CHAFF-CUTTERS, OIL-CAKE BREAKERS, CORN and MALT-CRUSHING MILLS, all with the latest patented improvements, may be obtained through any Ironmonger or Implement Dealer in the kingdom, or (carriage paid to the nearest station to the purchaser) direct from the manufactory.—Britannia Works, Banbury, Oxon; or London Warehouse, 76, Cannon Street West, City, E.C.

Catalogues sent free on application.

PATENT GUTTA PERCHA SOLES.—IMPORTANT TO GARDENERS.—The Gutta Percha Company have the pleasure to acknowledge the receipt of the following letter from G. GLENNY, Esq., the celebrated Florist:—

"Gentlemen,—I have worn Gutta Percha Soles and Heels these two years, and being so much in a garden as I necessarily am in all weathers, and with the ground in all states, I would on no account be without them. As a matter of economy I would recommend Gardeners to use them, for they may repair the worn part at all times by warming the material at the fire, and pressing it from the thick parts to the worn parts, as easily as if it were so much dough. I think it the duty of all persons who must occasionally wet their feet to adopt a material that completely defies damp. Many a gardener would escape colds and rheumatism by the use of Gutta Percha Soles.

"Your obedient servant, G. GLENNY."

Every variety of Gutta Percha articles, such as Mill Bands, Tubing, Soles, Sheet, Pump Buckets, Fire Buckets, Bosses, Union Joints, Flasks, Bottles, Bowls, Chamber Vessels, Toilet Trays, Sponge Bags, Curtain Rings, Galvanic Batteries, Talbotype Trays, &c., manufactured by the Gutta Percha Company, and sold by their wholesale dealers in town or country.—The Gutta Percha Company, Patentees, 18, Wharf Road, City Road, E.C., London.

"FRIGI DOMO."—Patronised by her Majesty, the Queen, the Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, and —Collier, Esq., of Dartford.

PROTECTION FROM THE MORNING AND EVENING FROST.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and, floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths. Two yards wide, 1*s.* 6*d.* per yard run; four, 3*s.* per yard. Also, an improved make for Shading Purposes Three yards wide, 2*s.* 6*d.* per yard run.

ELISHA THOMAS ARCHER, whole and sole manufacturer, 7, Trinity Lane, Cannon St., City, E.C., and of all Nurserymen and Seedsmen throughout the kingdom. "It is much cheaper than mats as a covering."

THE AGRICULTURAL ENGINEERS' COMPANY (LIMITED).

Directors.
ANDREWES, CHAS. J., Esq., of the firm of Messrs. Barrett, Exall, & Andrewes, Agricultural Engineers, Reading.
BENTALL, E. H., Esq., Agricultural Engineer, Heybridge, near Maldon, Essex.
FOWLER, JOHN, Esq., Patentee of the Steam Plough, 28, Cornhill, London, E.C.
TURNER, E. R., Esq., of the firm of Messrs. E. R. & F. Turner, Agricultural Engineers, Ipswich.
WARNER, CHAS. B., Esq., of the firm of Messrs. John Warner & Sons, Bell and Brass Founders to her Majesty, and Hydraulic Engineers, 8, Crescent, Jewin Street, London, E.C.
Bankers—The Bank of England.
CENTRAL DEPOT AND SHOW ROOMS—
Swan Lane, Upper Thames Street, London, E.C.

This Company has been for the purpose of supplying the public direct, with Agricultural Implements and Machinery of the most approved construction, at Manufacturers' fixed prices.

With an ample Capital and the best and most extensive premises in London at its disposal, the Company can offer to Shippers, Colonists, Agriculturists, Foreign Buyers, Amateur Farmers, Gardeners, &c., the following *exclusive* advantages:—

The opportunity of purchasing from the largest and best selected Stock in England.

The certainty of being supplied with none but the best made and most efficient Implements of their class.

Promptitude, regularity, and care in the execution of all orders intrusted to it.

Reliable information and advice as to the requirements of particular districts and foreign markets.

Particular attention is called to the fact that the direction is composed exclusively of well-known Makers, whose practical knowledge and standing will afford an invaluable guarantee to purchasers of the material, workmanship, and adaptability to its use of every article sold.

Shippers, Colonists, and Foreign Buyers will be relieved of all anxiety and trouble by intrusting the execution of their orders to the Company.

The Stock will be found to comprise the manufactures of the leading makers. Illustrated Catalogues with prices, in English, French, German, and other languages will shortly be ready for distribution. Meanwhile Price Lists and every information may be obtained post free upon application at the offices of the Company.

Orders addressed to the Agricultural Engineers' Company (Limited), Swan Lane, Upper Thames Street, London, E.C., will have prompt attention.

WEST OF ENGLAND AND SOUTH WALES LAND DRAINAGE AND INCLOSURE COMPANY.
Established in 1844.
INCORPORATED BY ACT OF PARLIAMENT IN 1848.

Draining, Inclosing, Irrigating, Warping, Road Making, and all kind of Land Improvements, executed on Entailed, Mortgaged, or other Properties, and the whole cost can be made a Permanent Charge on the Lands, or redeemable in a certain number of years. BIDWELL & BRODIE, Secretaries.

Offices: Exeter; and 30, Parliament Street, London, S.W.

THE LANDS IMPROVEMENT COMPANY.—Incorporated by Special Act of Parliament in 1853.—2, Old Palace Yard, Westminster, S.W. To Landowners, the Clergy, Estate Agents, Surveyors, &c., in England and Wales and in Scotland.

The Directors beg leave to announce that the Company's Amendment Bill, 1859, has received the sanction of the Legislature. The Company now advance money, unlimited in amount, for the following works of Agricultural Improvement, the whole outlay and expenses in all cases being liquidated by a rent charge for 25 years.

1. Drainage, Irrigation and Warping, Embanking, Inclosing, Clearing, Reclamation, Planting for any beneficial purpose, Engines or Machinery for Drainage or Irrigation.
2. Farm Roads, Tramways and Railroads for agricultural or farming purposes.
3. Jetties or Landing places on the sea coast or on the banks of navigable rivers or lakes.
4. The erection of Farm Houses, Labourers' Cottages, and other Buildings required for Farm purposes, and the improvement of and additions to Farm houses and other buildings for farm purposes.

Landowners assessed under the provisions of any Act of Parliament, Royal Charter, or Commission, in respect of any public or general works of drainage or other improvements, may borrow their proportionate share of the cost, and charge the same with the expenses on the lands improved.

No investigation of title is required, and the Company being of a strictly financial character do not interfere with the plans and execution of the Works, which are controlled only by the Government Enclosure Commissioners.

For further information, and for forms of application, apply to the Honourable WILLIAM NAPIER, Managing Director, 2, Old Palace Yard, Westminster, S.W.

LAND DRAINAGE.—WORKS OF DRAINAGE of any extent are EXECUTED by the GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY on all descriptions of property, whether freehold, entailed, mortgaged, trust, ecclesiastical, corporate, or collegiate.

Repayment may be made by the landowners as successive portions of the works are completed; or the actual expenditure, with a commission thereon, may be charged on the property improved, by way of rentcharge created for various terms of years so as to adapt the rate per cent. of annual charge to the circumstances of the tenants.

No investigation of title being required, and the charge not being affected by incumbrances, no legal expenses are incurred.

Works of Irrigation, Enclosing, Wood Grubbing, Road Making, and Farm Buildings are executed in a similar manner.

The Company also assist landowners in executing any of the improvements by their own agents, and charge the amount expended on the property improved.

Applications to be made to WILLIAM CLIFFORD, the Secretary, at the Offices of the Company, 52, Parliament Street, S.W.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, London, S.

Principal—J. C. NESBIT, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

BIRMINGHAM CATTLE AND POULTRY SHOW.—The ELEVENTH GREAT ANNUAL EXHIBITION OF CATTLE, SHEEP, PIGS, ROOTS, DOMESTIC POULTRY, AND PIGEONS will be held in Bingley Hall on MONDAY, TUESDAY, WEDNESDAY, and THURSDAY, November 28, 29, and 30, and December 1.—Admission on Monday, the PRIVATE VIEW, 5*s.*; on Tuesday, Wednesday, & Thursday, 1*s.*

CRYSTAL PALACE.—AGRICULTURAL ROOT and PRODUCE SHOW during the London Cattle Show. The Entries close on Saturday, Nov. 26. Schedules of Prizes and Regulations will be sent by post on application to WM. HOUGHTON, Secretary to the Show, Crystal Palace, Sydenham, S.E.

NOTE.—Agricultural Implement Makers will find this an unusually advantageous opportunity for exhibiting during the Show.

PRIZE CATTLE SHOW OF THE SMITHFIELD CLUB.

The Annual Exhibition of PRIZE CATTLE, SEEDS, ROOTS, IMPLEMENTS, &c., commences on TUESDAY MORNING and closes on FRIDAY EVENING, 6, 7, 8, and 9th December, —Baker Street Bazaar, King Street Entrance. Open from daylight till nine in the evening. Admittance 1*s.*

The Agricultural Gazette.

SATURDAY, NOVEMBER 19, 1859.

—— WE are informed that the breeders of Shropshire sheep mean to move for a "status" at future shows of the Royal Agricultural Society and Smithfield Club. The following circular, which has been issued to all interested in this movement, is signed by names of sufficient influence to ensure attention to their purpose:—

CIRCULAR ADDRESSED TO BREEDERS OF SHROPSHIRE SHEEP.

Sir,—Your attendance is requested at a meeting proposed to be held at the Birmingham, on the Dec. (being the day of the Show-week), when the propriety of bringing before the Council of the Royal Agricultural Society the claims of the Shropshire breed of sheep to be exhibited as a distinct class (at the annual meetings of the Society) will be taken into consideration.

We are, Sir, faithfully yours (signed) DARTMOUTH.
AYLESFORD.
W. O. FOSTER.
ED. HOLLAND.

—— During the discussion on Clover failure at the Central Farmers' Club, a remarkable degree of ignorance was displayed with reference to the true nature of Dodder as a parasite on Clover. The idea that its seeds are mere germs attaching themselves to the surface of Clover seed as those of the Bunt Fungus do to the grain of Wheat—and that therefore the mischief is to be avoided by a preparation of the Clover seed similar to the pickling which Wheat undergoes—is entirely mistaken. Dodder blooms and forms its seeds, and these are sown with those of the Clover along with which it has been mown and dried and threshed; they grow in the soil and cling like a Bindweed to the neighbouring Clover plant, piercing its stem at every contact, with the rootlets which are there put forth, and ultimately deriving all its nourishment from the juices of the plant which it thus destroys; before which time its attachment to the ground withers away. On this and all other points connected with its history, see No. 37 of the *Agricultural Gazette*, p. 746.

—— Mr. J. SHEPHERD, C.E., pursues in the columns of the *Times* the subject of Town Sewage, to which Mr. MECHI's letter had drawn attention. The following are his facts:—

"It is a fact, if we take the whole of London sewage as it flows into the Thames at 70,000,000 tons annually, and apply it at the rate of 40 tons per acre, it would manure 1,750,000 acres, or 2734 square miles, of land annually, without the aid of a single cartload of farm-yard manure; and wherever the sewage has been employed it has increased the fertility of the land more than 100 per cent. It is also a fact that 750 tons of the rich sewage of London can be delivered to a distance of 100 miles round London, and on every farm included in that area, at a less cost than the farmer is now paying for 1 ton of guano, while the 750 tons of sewage contain

more fertilising matter than 5 tons of guano. It is equally a fact that the soil almost instantly deodorises the sewage the moment it is applied. Water and soil are the only true disinfectants. To apply the sewage of all our towns for agricultural purposes there is ample investment for 100,000,000*l.* of capital at a remunerative rate of interest at home, instead of lending it to despotic Governments. And if the sewage is properly applied, England will gratefully yield ample food for a population of 30,000,000, with less cost and labour than she supplies her 15,000,000 children with agricultural produce."

THE Mangel Wurzel is so valuable a root that hardly anything connected with its growth can fail to be a matter of interest. We, therefore offer no apology for the insertion of the following record of experiments upon Mangels made during the present year, to which we shall append some remarks upon the general condition of this year's crop deduced both from our experiments and from observations upon field examples. We have before placed on record the important fact that Mangels deprived of any of their green leaves whilst in a growing state are curtailed in their root development in proportion to the amount of leaf injury; still we are so repeatedly asked questions both by students and farmers relating to the possibility of feeding from the leaves and growing a crop of roots at the same time, that we have experimented several times in a manner similar to that which has now to be related, in order both to test the soundness of our results as also to have growing examples to appeal to in our daily teaching. In April of the present year we sowed two of our experimental plots with Yellow Globe Mangel, depositing the seed in ridges but without manure. The plant on coming up was thinned and hoed in the usual way, and in the middle of August the one which appeared the best plot had each plant stripped of its large outer leaves, an operation which was repeated in the middle of September, and again in the middle of October. In the other plot the plants were left intact.

On the 27th October the topped and tailed roots were weighed, and the result will be gathered from the following:—

TABLE I.—*Results of the Stripped Mangels.*

		Weight of single root.	Circumference of single root.
	lbs. oz.	lbs. oz.	Inches.
6 largest roots.. ..	10 10½	1 8	12
6 smallest do.	3 9	0 8	
9 remaining do. ..	10 1		
21 roots	24 4½		

TABLE II.—*Results of Intact Mangels.*

6 largest roots.. ..	27 4½	5 8	19
6 smallest do.	11 10	1 4	
8 remaining do. ..	22 7		
20 roots	61 5½		

Here then we see the immense preponderance of root growth of the unstripped over the stripped roots, and from it we deduce the following important conclusion:—*That as long as a Mangel leaf is in a fit state to be wholesome or useful as food for cattle, so long is it important to the well-being of the root.*

All our experiments upon this subject have tended to the same conclusion; and indeed, the effect of taking away a few leaves from a growing root is so quickly made manifest, that on comparison with others we have more than once been quite unprepared for the result. In the case before us the last stripping in October could have had but little effect, as the frost so soon followed and stopped the growth altogether, so that the wide difference in the production of the two plots has been in reality caused by two strippings. It will further be remarked that in the best plot the crop is not large; in fact the average of the neighbouring field cultivation has afforded roots considerably larger than our best specimen. This difference is easily accounted for in the fact of the absence of manuring in our plots, whilst in the field good farmyard dung and superphosphate were plentifully employed.

It will be noticed that our crop was gathered on the 27th October, four days after the late severe frost, which on the 23d registered 12° of freezing, and we are enabled to state that they were little affected by the frost. This may arise partly from the cause suggested in a late Number, viz., the partial shelter afforded by the leaves to the then standing roots; but still we incline to the belief that another cause was active in producing the difference observed in this respect between these and the field crops which have been very seriously damaged, and that is—that our plants in the experimental plots were less artificially stimulated. Our own observations certainly lead to the conclusion that with roots of all kinds, and especially with Mangels, inordinate and over stimulated growth tends to a delicacy of constitution easily affected by external causes, and so tending to disease and premature decay; for if to be too lean on the one hand or too fat on the other be signs of want of perfect health in animals,* it is especially so in plants, whilst in the one as in the other the tendency of high breeding is to a constitutional enervation.

If in the case before us we look at the natural history of the Mangel, we shall find that it is derived from a wild native plant, the *Beta maritima*. BENTHAM says that "the white and red Beets or Beetroots of our gardeners and the *Mangel Wurzel* (*Root of Scarcity*) of our agriculturists, are cultivated varieties of the wild Beet;" and speaking of the rootstock he remarks that "the wild Beet has a short hard stock of a few years' duration." In fact the Beet in a wild state is perfectly hardy, and its rootstock stands winter after winter, yet in the garden the rootstock requires the most careful protection from frost, whilst year by year as the cultivation of the Mangel extends in the fields we find in it an increasing delicacy of constitution. We incline then to the opinion that, with Mangel as with Turnips, we should be satisfied with something less than the fullest amount to which this root can be developed, and look for a paying crop rather to the following circumstances—*good form, uniformity in size, regularity in the rows*, and better keeping powers—conditions which we cannot help thinking will also result in a larger amount of feeding property in proportion to water; but we await the analyses which we have reason to know are in progress upon Mangels by Professor VOELCKER for fuller evidence upon this point.

As regards the effects of the recent early frost upon the Mangel, judging from the appearance of our crop the day after they were touched so severely, and the present state of those left standing, we are inclined to think that great improvement has taken place. Many only slightly injured have recovered with the mild warm weather; our directions, therefore, of last week are fully borne out, and we still think that a great part of this valuable crop may be well stored for the winter. We would, however, suggest great care in this operation, as the external leaves are rendered almost putrid, and in many merely the core of the stem is beginning to decay; topping then should be done with even greater freedom than usual. So again the wet weather will cause a quantity of moist dirt to cling about the rootlets, which latter will soon decay, and thus decay of the crop when in mass will be likely to be commenced. Our notion is, then, that Mangels this year should be cleanly topped and tailed, and afterwards left to get as dry as possible; and any circumstance which will tend to this result will not only cause a healing or callosity to the wounded surfaces we make in trimming, but will to a great extent have a like effect upon the scalded spots of the rootstock.

Finally, with respect to the much injured roots, we cannot help thinking that the frost-biting may have facilitated such changes as to induce premature ripeness, at least the affected roots that we have examined are much sweeter to the taste than the others; we should therefore employ them, and that as speedily as possible, without any fear of evil from want of ripeness. Our plan of dealing with them would be to give them to swine in quantity, by which they would be turned into manure; and should any tendency to purging or any symptom indicating that disagreement which is not uncommon with a new kind of food appear, we would correct this by the addition to the wash of a little powdered *Fœnugreek seeds, Turmeric root, Gentian*, or any aromatic and stimulating substance of a like kind.

Again, we might suggest that carting these Mangels to a poor upland but dry pasture and thickly stocking with sheep would greatly enhance the value of the land, and we cannot but think that the sheep would do better than draggling in poached Swede lands.

BREAKING-UP GRASS LAND.

THE *Times* of the 29th September last gives us a statement of the disafforesting of Whichwood Forest, and after giving to all those who had a claim of forest rights, there remained 2000 acres left to the Crown, and after all the trees were cut down, their roots grubbed up, and all the rubbish cleared away, the 2000 acres were inclosed by stone walls, divided into seven arable farms, convenient and substantial farmhouses and homesteads erected, and seven miles of excellent roads made to connect each farm with the public roads. And all this was done at the expense of 10*l.* per acre, and the farms were let on lease for 32 years at the yearly rent of 28*s.* per acre. And, says the *Times*, "by this act 2000 acres of productive land is added to our isle."

They say "that the parks belonging to the great proprietors are unproductive of good to the population;" and, we therefore infer that they think by disafforesting the New Forest, the Forest of Dean, and all the other forests, is the only means we have of adding any more productive land to our island.

But the additions of all the forests to our arable land would go a very short way towards producing food for our yearly increasing population.

We must have other and much better sources than the disafforesting of all the forests in the kingdom to draw upon, although the sooner they are all converted into productive arable land the better, for "the forests are generally a school of crime and a real advantage to no one."

The increase of the population has for the last 50 years been at the rate of 15 per cent. every 10 years, so that in 1851 it was more than double what it was in 1801. And this increase is still going on, and our 26,000,000 of inhabitants may be double that amount in 1901.

But the present produce of all the land under cultivation is not able to supply us with all the food which we require, for in 1842 we imported from foreign parts 3,775,984 qrs. of grain, and I believe our present importation is considerably greater.

From the statistics of England and Wales published by the Poor Law Commissioners, we find that out of the 37,324,915 acres, there were in 1854

Acres.		Quarters.
3,807,019	of Wheat which I estimate at 3 qrs. per acre	11,424,057
2,767,776	of Barley, which at 4 qrs. ..	10,671,104
1,302,782	of Oats which at 5 qrs. ..	6,513,910
73,731	of Rye which at 3 qrs. ..	224,103
7,851,308		
There were 7,379,541	producing Turnips, Beans, Peas, and Clover, as food for stock.	
So that 15,230,849	are under arable cultivation in England and Wales, and the produce was	28,830,264

From the agricultural statistics of Scotland, published by Mr. Hall Maxwell, in 1857, we have the following return:—

Acres.		Quarters.
223,152	in Wheat and	769,373
225,983	in Barley and	939,525
938,613	in Oats and the crop	4,083,843
So that 1,387,748	yielded	5,792,741
There were 2,025,555	acres producing Turnips, Potatoes, Peas, and Beans, and Clover as food for stock.	
There were 3,413,303	acres under arable cultivation in Scotland and its produce.	

In the agricultural statistics of Ireland, published by Mr. Donelly, in 1857, we have the following return:—

Acres.		Quarters.
551,386	in Wheat, the return is	1,662,957
207,489	of Barley, the return is	956,588
1,976,929	of Oats, the return is	8,895,347
So that 2,735,804	acres produce	11,514,892 qrs.
There are 3,067,194	acres producing Potatoes, Turnips, roots, and Clover.	
There are 5,802,998	acres under arable cultivation in Ireland, and its produce.	

From the foregoing statements we have the amount of land under arable cultivation, and its produce of food for man.

RECAPITULATION.

	Acres under cultivation.	Wheat and Rye.	Barley.	Oats.
	quarters.	quarters.	quarters.	quarters.
England	15,230,849	11,645,250	10,671,104	6,513,910
Scotland	3,413,303	769,373	904,526	4,093,645
Ireland	5,802,998	1,662,957	956,588	8,895,347
		14,077,580	12,532,218	19,502,902
				12,532,218
				14,077,580
So that	24,447,150 acres produce			46,012,700

quarters of grain. But we have had of late years to import nearly 9,000,000 quarters, so that we required 55,000,000 quarters of grain to maintain our population.

Now, as this is really the quantity of grain which our present inhabitants require for their maintenance; and if the population continue to increase at the rate of 1½ per cent. per annum, how can this rapid increase of the population be supplied with the food which they require? This is the question.

Mr. Spackman, in the Statistics of the United Kingdom of Great Britain, has given us the following table of the quantity of land:—

	Acres cultivated	Acres uncultivated	Acres unprofitable	Total.
England	25,632,000	3,454,000	3,256,400	32,342,400
Wales	3,117,000	530,000	1,105,000	4,752,000
Scotland	5,265,000	5,950,000	8,523,930	19,738,930
Ireland	12,125,280	4,900,000	2,416,664	19,441,944
British Isles ..	383,690	166,000	569,469	1,119,159
	46,522,970	15,000,000	15,871,468	77,394,433

By deducting from the 46,522,970 acres of cultivated land, and from the 15,000,000 acres of uncultivated land, together .. .. 61,522,970 acres, the .. .. .. 24,447,150 acres of land under cultivation, we have .. 37,075,820 acres, which we may bring under arable cultivation

We may increase the productiveness of this land by converting the natural pasture, all the cultivated and unproductive land into a much more productive soil by bringing it into an alternate system of arable culture.

It has been shown that this can be done in a paper you published the other day relative to the converting the

* See GREGORY'S "Conspectus of Medicine."

pasture land in the Vale of Gloucester into arable land, under the alternate system, one-half always to be in roots and fodder crop as food for stock, and the other half to be in grain—Wheat, Barley, Oats, &c.; and it was shown that with one-fifth of the land being left in permanent pasture, that the half of the land under cultivation producing roots and fodder crops will produce food for the maintenance of all the number and kind of stock which were kept on the whole of the land when it was in its natural pasture, and that the remaining two-fifths may produce Wheat, Barley, and Oats, of more money value than the natural pasture produced before.

Now, if we apply this principle to the 37,075,820 acres which we have shown may be brought under arable cultivation, we shall have no fear that our increasing population shall not be provided with food for their maintenance.

	Acres.
The statistics of England and Wales show us that there are	28,749,000
of cultivated land, and that there is	3,981,000
of uncultivated land, making in all	32,733,000
From which, if we deduct the	15,230,849
which are under arable cultivation, we shall have	17,502,151
Which is in permanent pasture, water meadows, sheep walks, commons, and waste. Of this we shall take 15,000,000 acres, which we may convert into the system of arable culture before mentioned, and by dividing it into five parts, we shall take all the water meadows and the best of the pasture land, say one-fifth of the whole	3,000,000
to be in perpetual pasture; two-fifths or	6,000,000
to be producing roots and fodder crops .. .. will give food for all the stock which are at present maintained on the land in its natural state; the remaining two-fifths will produce grain:—	9,000,000

Acres.	Quarters.
say 3,000,000 in Wheat, at say 3 quarters per acre	9,000,000
say 1,500,000 in Barley at 4 quarters per acre ..	6,000,000
say 1,500,000 in Oats at 5 quarters per acre ..	7,500,000
6,000,000	22,500,000
9,000,000 in fodder crops.	
15,000,000	

	Acres.
In Scotland there are said to be cultivated	5,265,000
and uncultivated	5,950,000
Total	11,215,000
From this deduct the land in cultivation	3,413,303
And there remains	7,801,697

Of this we shall only take 5,000,000 acres, and leave the rest in its natural state.

We shall adopt the same system of cultivation as before, taking one-fifth for permanent pasture and two-fifths to produce root and fodder crops for stock, and of the remaining two-fifths we propose to have—

Acres.	Quarters.
200,000 in Wheat, at 3 quarters per acre	600,000
200,000 in Barley, at 3½ quarters per acre	700,000
1,600,000 in Oats, at 4 quarters per acre	6,400,000
2,000,000 producing of Grain	7,700,000
3,000,000 producing food for stock.	
5,000,000	

	Acres.
In Spackman's Statistics of Ireland there is said to be ..	12,125,288 of cultivated land
and	4,900,000 of uncultivated land
In all	17,025,281; from this we
must deduct the	5,802,729 under cultivation.
Which leaves	11,222,551 in a natural state.

Of this we shall take 10,000,000 acres and place them under the following system of arable cultivation:—

Acres.	
One-fifth, or ..	2,000,000 under permanent pasture.
And two-fifths, or	4,000,000 in roots and fodder crops.
Three-fifths, or ..	6,000,000 producing food for stock.

Acres.		Quarters.
Of Wheat, 700,000	at, say 3 qrs. per acre	2,100,000
Of Barley, 300,000	at, say 4 qrs. per acre	1,200,000
Of Oats, 3,000,000	at, say 4½ qrs. per acre	13,500,000
4,000,000		
10,000,000 producing		16,800,000

The conversion of the natural pastures into arable land may produce the following result:—

	Acres.	Quarters of Wheat.	Quarters of Barley.	Quarters of Oats.
England ..	15,000,000	9,000,000	6,000,000	7,500,000
Scotland ..	5,000,000	600,000	700,000	6,400,000
Ireland ..	10,000,000	2,100,000	1,200,000	13,500,000
		11,700,000	7,900,000	27,400,000
			Barley ..	7,900,000
			Wheat ..	11,700,000
So that the	30,000,000	may produce		47,000,000

of grain under this system of culture.

Thus by converting 30,000,000 acres of land from its natural pasture, and adopting the alternate system of cultivation we may produce 47,000,000 quarters of grain, which is equal to the produce of grain from 24,446,681 acres at present under cultivation; and by this means, and improvement in the present mode of cultivation we have it in our power to produce a sufficient amount of grain to maintain double our present population.

But to do this we must invest a large capital, not only in the permanent improvement of the soil but in the system of cultivation proposed. Part of this outlay will fall upon the farmer and part upon the landowner. This process is every year going on, and the results of it show themselves in a gradually increased produce.

The land will require to be drained, additional buildings will be required to house the stock, besides other permanent improvements which may be required.

To do this 8*l.* per acre may be the expense ..	£240,000,000
And to cultivate this arable land the farmer will require an additional 5*l.* per acre to his capital, which will amount to	150,000,000
It will therefore require	£290,000,000

to be invested in the conversion of 30,000,000 acres of land into arable cultivation.

There will be no difficulty in the landlord finding his portion because of power granted to various companies to lend money in the draining or otherwise improving land, and because he may receive 6 per cent. on his outlay for the first three or four years, and after a time this may be increased. The interest which the farmer must get should not be less than 10 per cent., which is but a fair per centage on his capital, as he can only turn over his capital once in 12 months.

It is astonishing that landowers do not see the advantage to themselves as well as to the community which the permanent improvement of their estates would produce in a pecuniary point of view. The draining of the land, the erecting of necessary buildings, and the converting of the worthless pasture land into arable would employ capital to a greater advantage than any of the present speculations. *J. M.*

PREVENTIBLE DISEASE.

(Continued from p. 915).

Comprehensive and minute records of the number and causes of sickness and death are absolutely necessary for a sure and steady advance on this subject. The official supply of statistics, which is quite accurate as to numbers, is at present insufficient for our purpose. The registration districts are not set out with any view to produce vital statistics, but simply follow the subdivisions required for Poor Law relief. They are not coincident with the limits of any sanitary jurisdiction, and do not separate people according to the conditions or occupations we desire to compare; so that in local or detailed inquiries the Registrar-General's reports will often not avail. An improvement in the registration of the causes of death is urgently needed, and there is no reason why it should be combined with the registration of marriages; but it should be placed as far as possible in the hands of medical men. We want a registration of sickness that do not terminate fatally. The easiness with which this might be procured is shown by the weekly publication of illnesses occurring in the public establishments of the metropolis, which was for some months published by the General Board of Health from information gratuitously supplied by the medical officers of health of the metropolis. But though the returns of mortality are not as complete as might be desired, yet, under the able interpretation of Dr. Farr, they give us broad and intelligible results. In fixing the aim to which we should direct our efforts it is desirable to ascertain as far as we can the proportion of the annual mortality which is preventable by means within our reach. It is estimated that if all the population were living in healthy condition, and life were only terminated by natural decay, the ordinary age at which men and women would depart would be 80. But it is more important to know that in 64 out of 628 registration districts the average annual death rate is less than 17 in 1000 persons living. These districts are salubrious in their natural features, and their population, amounting to 1,000,000, are chiefly employed in agriculture; but, on the other hand, the cottages are exposed to many of the evils that we most denounce; they are not model districts, but they are districts from which the chief evils we are seeking to remove are absent, and they furnish a fair practical standard of what is possible to attain. While, then, persons die at the rate of 17 in 1000 in these standard districts, above 22 in 1000 die on the average of all England, and 36 in the worst urban district; and as 419,815 persons died in 1857, if the mortality of the rest of England had been no greater than it was in these 64 districts, 91,652 lives would have been preserved in that year.

England has been divided by the Registrar-General into two classes of districts of about equal populations, one consisting mainly of urban and the other of rural inhabitants, and it is found that the rural death-rate reaches only 22 in 1000, while the urban is 26. The facts we possess at present support the theory that unhealthiness prevails in proportion to the density of population; but this, like other branches of the subject, requires elucidation. An examination of the soils on which epidemic mostly prevail would, I believe, lead to some remarkable conclusions, for the different influence exercised over certain diseases by clay and gravel soils has been too much overlooked. But the light we now possess is sufficient to prove the startling fact, that in England alone a hecatomb of victims, at least 100,000 of our people, are being annually sacrificed to ignorance or disregard to the laws of health, and that in addition to these 100,000 deaths, far more than a million of persons are suffering from serious illness from the same cause. For the more complete confirmation of this fact we require that the total mortality should be separated and distinguished according to the diseases by which it is occasioned. An important contribution to this knowledge has been made by Dr. Greenhow. He has extracted from the general returns the mortality occurring from diseases which prevail under those evil conditions of life which are most within the power of the community to remove. These are—1, typhoid fever; 2, diarrhœal diseases; 3, pulmonary affections; 4, contagious diseases of children, consisting of scarlatina, measles, and whoopingcough; and 5, the nervous diseases of infants. On comparing the mortality of districts at the top and bottom of the scale of health it appears that the difference between them is nearly equal to that mortality which occurs exclusively from the five classes of disease thus selected:—

AVERAGE MORTALITY TO 1000 LIVING.

	Total.	By Preventible Diseases.	Exclusive of those Diseases.
In selected rural districts	16 ..	5 ..	11
England and Wales ..	23 ..	12 ..	11
London	27 ..	16 ..	11
Birmingham	27 ..	16 ..	11
Leeds	31 ..	20 ..	11
Manchester	34 ..	22 ..	12
Liverpool District ..	37 ..	25 ..	12

From this it appears that if the excessive mortality from these more preventible diseases could be reduced everywhere to the amount which is found in these selected rural districts, one-half the deaths in England would be prevented, and two-thirds of the deaths in the district at the bottom of the scale. I think no one will deny that the prevalence and fatality of these five classes of disease could be checked by the energetic employment of comprehensive sanitary measures. Typhoid fever has its home in ill-drained places, and requires for an ally some impurity in the air. It never springs up in the homes of the wealthy, though it sometimes invades them by means of contagion. The nature and locomotion of the cholera poison has not yet been discovered, but all experience shows that only amid the decomposition of organic substances can it develope its crushing power and acquire its full virulence. This is also notoriously the case with its kindred diseases. A large proportion of fatal pulmonary diseases arise from persons working in overheated or too dry workshops, and from inhaling dust, fluff, or other aerial impurities. The death-rates of young children afford an instructive test of sanitary circumstances, allowing for the different demands upon the time and attention of the mothers in different places. The sensitive and delicate frames of very young children show more directly the influences of their dwellings than the more hardened and resisting constitutions of adults. It is naturally found that where most deaths of infants are recorded there also are more weakly and scrofulous children, who drag on a debilitated existence and perpetuate a race deficient in stamina and vigour both of body and mind. In Mr. Simon's report to the Board of Health in 1858 it is stated that every year more than 23,000 children under 5 years of age die of inflammation of the respiratory organs, besides nearly 4000 whose deaths are attributed to phthisis, and these 27,000 deaths are so unequally distributed that the corresponding death-rate, in proportion to the infantine population, ranges from 213 in the healthiest district of England to 2,897 in the unhealthiest.

The acute non-infectious diseases, which hold their chief sway in towns, and in large manufacturing towns, destroy annually 72,000 young children, and the death-rate they produce in one urban district is seven times as great as in the most healthy rural districts. And if we make a much broader comparison, and compare the average taken from the 2,500,000 who occupy the north-western counties with that from the 4,000,000 who occupy the south-eastern portion of England, we find the infantile death-rate from these disorders in the north-wastern counties to be about 2½ times as high as throughout the south-eastern counties. In the case of infants we have to calculate the proportion of the mortality which arises from the poverty of the parents, and from work which takes mothers away from their homes, leaving their infants without proper nursing, while the cries of those infants for food and change of posture are quieted by opiates, so prized in manufacturing towns for the calm they produce, though it is only a prelude to the deeper calm of the tomb, to which they are hastening the child; and after deductions have been made under this head, the remaining mortality, attributable to impure air, is quite sufficient to afford a safe test of the want of proper sanitary conditions.

But statistical records tell us not only of the penalty we are paying in the lives and comfort of our people by the breach of sanitary laws, but also of the lives that have been saved and the strength that has been preserved by the practical application of sanitary science. Returns from 19 towns in which drainage works have been executed under the Public Health Act show that the mortality, which previous to those sanitary measures averaged 28 in 1000, fell after them to 21 in 1000; and as these towns contained a population of 468,000, the saving amounted to 3200 lives annually. Croydon is one of the most instructive cases. Tubular drainage was adopted there at a moment when the controversy respecting that system was raging, and grave mistakes having been made in the application of the plan, Croydon became a battle field for the contending parties. Commissioners inquired, heavy bluebooks were published, and all the circumstances of the place have been minutely investigated and recorded. Dr. Carpenter gave at our meeting last year a summary of the results, showing Croydon to be one of the healthiest towns in the kingdom. Notwithstanding an imperfection which still exists in the outfall of the drains, the cleansing of the town, the rapid removal of the sewage, and the supply of pure water have diminished the zymotic diseases to such an extent that the death-rate, which in 1848 was 28.16, was in the first half of the present year only 15.75, and, comparing the mean of five years before the works came into complete action, and that of five years after, the death-rate is

found to have fallen from 28 to 22.9—an annual saving of 196 lives. The outlay, too, has been compensated by such corresponding diminution of expense that the total amount paid in rates is only 4*s.* 11*d.*, while the average of other neighbouring towns is 5*s.* 9*d.* Bradford furnishes a striking example of improvement. The death-rate, which, on the average of five years previous to 1853, was 28½, has been reduced on the average of the last five years to 22 in 1000. Liverpool, about which much controversy has been excited, owing to the different boundaries included in different calculations, has obtained a reduction of the death-rate of the municipal area from 39 to 27 in 1000 by the expenditure of three and a quarter millions of money during the last 11 years. In Glocester the death-rate has been reduced from 27 to 24.

Home Correspondence.

Irish Agricultural Statistics.—In drawing practical inferences from Irish agricultural statistics one or two points are not sufficiently borne in mind—1. The great fitnesss of the climate for Grass; 2. That in the exact proportion the climate is favourable for Grass it is unfavourable for corn. A glance at a rain map of Europe will show that the rain-fall of most part of Munster has no equal, except a small part of Cornwall, Brittany, Cumberland, and the west of Scotland. Add to this a winter temperature of great mildness. The average annual temperature of Cork is said to be the highest recorded in the British Isles, and this solely from high winter temperature, for the summers are cool enough. Frost we have scarcely any. I do not suppose there are 10 boys in a county who can skate. Some good farmers leave Mangels in the ground all winter. The result is that Grass grows all the year round, except in the east winds in spring. A field laid down in good condition to Grass in five years gets covered with a rich thick close sole of Grass, that would hardly be got in 10 times as many years in the dry climate of the east of England. All this of course influences farmers, rather it forces them, whether they like it or not, out of corn growing into grazing. I think this fully accounts for the decrease of corn crops mentioned lately in your Paper, as shown from the official returns. You did not mention that it appears from the same returns that "Meadow and Clover" had increased from 1,314,807 acres in 1855 to 1,436,680 acres in 1859. There is no return of land used for grazing, but this would probably show a still larger increase. In fact both large farmers and small find it to their profit as fast as the land gets in condition to put it in Grass and leave it so. The only really bad point shown in the returns is the diminution of Turnips and Mangel, and increase of Potatoes. This I believe has arisen from the Potato crop having gone on improving in soundness for several years past. (This year however, after great promise, it has rotted more than ever.) Farmers and labourers accordingly applied their manure to growing more Potatoes, and so could grow fewer Turnips. It has been so far a relapse into old habits. On the whole, I believe the increased number and value of cattle and sheep is the true test of agricultural progress in Ireland, and no one denies that the return in this respect is satisfactory. Archbishop M'Hale and the patriots declaim against the increase of pasture and stock, as a device of the enemy for exterminating the Roman Catholic tenantry and peasantry, but in truth it is the mild moist climate, producing the bright green of the Emerald Isle of which they are so proud, that is the true *causa causans*, by making it unprofitable to grown corn and most profitable to grow Grass in Ireland. *W.* We have received a further letter on the subject, which shall appear next week.

Mangel Wurzel.—The following account of transplanted Mangel Wurzel may possess some interest for your agricultural readers; more especially a correspondent, who a few weeks ago professed himself somewhat incredulous of 40 tons per acre. Having satisfied myself last year by a small experiment in my garden that Mangel of first-rate quality was to be grown by transplanting in a particular mode, I desired this year that one ridge in a field of 8 or 9 acres might be left for repeating the experiment. The ridge previous to planting was treated in every respect like the rest of the field, and a day or two after the first portion had been drilled, the plants, then from 2 to 3 inches long above ground and rather weak, were put in. The rows were 30 inches apart and the plants set at 13 inches in the rows. The transplanted row contained 398 plants. Some few that failed were afterwards filled up and the result is as follows:—398 roots taken up on the 5th of November and cleaned; the weight without the top 1 ton, 1 cwt., and 12 lbs., or over 42 tons per acre—the quality again unexceptionable. Although this may seem to some of your readers an unusual weight, I beg to inform them that the prize for acres of Mangel at the Hadleigh Farmers' Club was given last year for more than 50 tons per acre; and I can certainly promise them that 40 tons will not win the same prize this. The mode adopted in transplanting was to raise the plants in a box in my striking house; a board covered with 4 or 5 inches of mould and placed in a frame or on a warm dung heap would do equally well. The plants were turned out topsy-turvy, so as to secure the fine rootlets from injury, and then planted like young Cabbages. This mode of filling up the rows where the seed has failed, whether drilled or dibbled, will I am inclined to believe in most instances secure a full crop of this valuable root. *Wm. Gurdon, Brantham, Suffolk, Nov.* 9

Farmers' Clubs.

LONDON: *Nov. 7.—Substitutes for Clover.*—The following is abridged from the published reports of the discussion which followed the paper read by Mr. Marshall, and given in our columns last week.

Mr. Thomas, Lidlington, said to grow Grasses in alternate husbandry without fear of failure every eight years was not at all difficult; but now that sheep farming was so rapidly overtaking tillage, it became a matter of importance to learn the best means of keeping the largest possible quantity of stock on a farm. He was happy to say that he scarcely recollected a single instance in which he had lost his seeds. He had never adopted the plan of mixing them; but he thought that, whenever the farmer was bound by his lease to keep to the four-course system, it was essential to discover the best method of obtaining, if possible, a pasture every fourth year. This he had only been able to do by rejecting Rye-grass altogether, because in his early attempts he found that not only the Wheat crop, the Turnips, Oats, Barley, and Clover, but the next Wheat crop, four years afterwards, never recovered the damage occasioned by Italian Rye-grass to the land, and that in spite of large applications of liquid manure. The plan which had proved successful with his seeds, was to grow White Clover and ribbed Grass one four years, and Red Clover and Trefoil the next four years. When the Red Clover had been mowed, the Trefoil seldom rose a second time: thus he got a better article to place his lambs upon for weaning than anything that could be supplied on a tillage farm. By placing lambs upon White Clover, which had been previously fed off by sheep in the autumn, an immense mortality amongst the lambs was almost inevitable; and he believed that a large portion of the losses of lambs in Lincolnshire and elsewhere, during the last two years referred to by Mr. Marshall, must have arisen from putting them on White Clover leas previously fed off by sheep. The same remark would apply also to Red Clover, which had been so fed off; but not to that which had been mown. Therefore, where they were obliged to follow the four-course shift, they would not find a better than the alternate system he had just described. Those who, like himself, farmed hot or sandy lands, knew that, in order to ensure a Wheat crop afterwards, it was well to keep the land shaded, by not allowing it to grow seeds in too great abundance. He wished he could add his testimony to that of Mr. Marshall, that the harvest had been a productive one this year; but, however it might be in Lincolnshire and some other places, it was very different in the counties with which he was more particularly acquainted.

Mr. Mechi said that 16 years' practice had convinced him of the undesirableness of mixing anything with Red Clover. In Essex they almost invariably sowed Red Clover alone, once in eight years, taking especial care late in April or early in May to hoe out any weeds that appeared in it, so that the Clover might have all the ground to itself. It very soon asserted its rights, and took care that no neighbour should intrude. His own practice was, to mow the Clover, hoe once, let it grow well a second time, and then when high feed it off, the sheep eating oilcake. He believed that a better crop of Wheat was grown after the Clover had been allowed to reach its full size; and that over-close feeding prevented the development of the root, which was the food of the Wheat. On his light land he also adopted the plan suggested by Mr. Thomas, namely, to have a crop of White Clover; and if the land were very saucy, he sometimes took it for seed. With regard to Italian Rye-grass, the utmost attention should be given to obtaining genuine seed, free from Couch or Twitch Grass. He had reason to know that a large quantity of Couch-grass seeds was exported from this country, and afterwards sent home as Italian Rye-grass, with which it was mixed. That he had been told by a friend who was in the trade, and consequently in its secrets. It was, therefore, of importance that they should buy of a respectable person, who was careful in the selection of his seed. He purchased his from Mr. Dickinson, and found that it was really Italian Rye-grass, and nothing else. It was a plant, however, which was very greedy in its desire for moisture, and he thought it a bad preparation for Wheat in the general acceptation of the term. He always grew some, however; irrigated it thoroughly, and his cattle liked it. Everything thrived upon it; nothing was scoured; and the animals did well, provided the Grass had an ample supply of moisture, which it had by his system of irrigation, putting on 6000 gallons an hour. By the fallowing process, too, it was not a bad preparation for Wheat. He kept it two years, broke up the second year's growth in the beginning of July, then sowed Rape, and when that had risen to a certain height he either fed it off or ploughed it in. Acting upon this system on some miserably poor land, he had this year been able to produce 4½ qrs. of very fine Wheat to the acre. If he were not able to break that land up in the dry weather, so as to take an intermediate crop of Rape, he would sow 5 cwt. of Rape-cake and 2 cwt. of salt; and then, although the ground might be covered with tens of thousands of wireworms, not a single stem of the Wheat plant would be lost. This he had proved by experiment. One thing was certain, the wireworms would disappear. They ate into the Rape-cake, and gorged and killed themselves. As a general rule, he thought they would be quite safe in drilling Clover. It was certainly the more economical plan; for 8 lbs. of Clover drilled would give as thick a crop as 16 lbs. broad-casted.

Mr. Owen, Hungerford, said Red Clover was one of the best and most valuable preparations for the Wheat crop; White Clover, however, was anything but a kindly lea. He would refer subsequently to White Clover. After Red he would certainly plough one earth, but he did not think it would be safe to do that with White. As to Italian Ryegrass, in his opinion it was poison to the Wheat crop; and a friend of his having recommended him to mix it with his seeds, he did so, and had repented of it ever since. Where he put the Italian Rye-grass, he lost a quarter of Wheat per acre. The common Pacey Rye was bad enough for the Wheat crop, but the Italian was ten times worse. As to Clover, however, it was half the manure of a Wheat crop, provided they had a true plant; but wherever upon light soils they saw a deficiency in the Grass crop, they might rely upon seeing a similar deficiency in the Wheat crop. They could not, therefore, as a general rule, depend upon Red Clover as a lea for the Wheat crop. The plan he usually adopted was to mix 12 lbs. of Red Clover, 4 lbs. of Trefoil, and a peck of common Pacey Rye-grass. On land which he could depend upon, he sowed all Red Clover; but as a preparation for Wheat, he added the 4 lbs. of Trefoil and the peck of Pacey Rye. Supposing he sowed 150 acres of Wheat, he had a certain quantity which came in White Clover, Ryegrass, Hop, Rape, and so on. He sowed White Clover merely for food, in the proportion of 16 lbs. to a peck of Rye-grass; and, of course, the White Clover was sowed distinct from the Red.

Mr. Coussmaker, Guildford, said:—The practice in his neighbourhood was to mix all the seeds together; but the preferable plan would be to take Red Clover once in eight or 10 years, and a mixture of other seeds in the alternate course. One evil connected with Red Clover, from which he had suffered for the last few years—and, he regretted to say, it was on the increase—was Dodder. He remembered some years ago seeing patches of Dodder here and there in his Clover, but he never regarded it as a matter of consequence. Its increase was not great in the first crop, but it injured the second cutting. Within the last two or three years he had seen it in both the first and second crop; and of the second crop this year, he had lost one-third by it. Where the Dodder grew the Clover was killed. It was evidently a parasitic plant. It grew like a fairy ring, and went on continually increasing. In the first instance they would see a patch 5 or 6 feet in diameter, which on the second cutting would have expanded to 12 or 15 feet, and as it killed the Clover up would come a patch of weeds, no matter how clean the land might otherwise be. But that was not all the mischief it did, for where the Clover failed the Wheat would fail; consequently, when from this cause there was a failure of the Clover crop, a similar result ensued with the after crop. Great as had been the injury already occasioned by Dodder, he looked forward to its being still greater next year, for immediately after the Barley was cleared off he saw the seed in the Barley lea. There were not less than a dozen patches in a 10-acre field, of 3 or 4 feet in diameter each. He had sent the men into the field to pull it up by the hand, and every particle had been cleared away that they could find, but he feared that that would not stop it. He had never seen it before it made its appearance in the Clover, and all his neighbours suffered from its ravages in the same manner that he did.

Mr. Bradshaw, Guildford, said that the result of his experience was, that the failure of Wheat after Italian Rye-grass did not arise entirely from the use of the latter, but from its abuse. Italian Rye-grass was a most productive and valuable food for sheep and stock; but it should be kept down and not allowed to run to seed, because the same result would ensue to the perennials as to the Rye-grass. He knew instances in which last year six quarters of Wheat per acre were grown after Italian Rye-grass and Red and White Clover; and this year he had been told that in the midland counties the result had been equally good. He had introduced Italian Rye-grass upon his farm, which was situated in the southern part of the county of Surrey, just approaching the Weald; and he invariably grew it both with Red and White Clover, two pecks to the acre, but if he pastured it, he endeavoured to keep it down. He was at present engaged in manuring a splendid crop of 30 acres of White Clover, which he should feed off with ewes and lambs next year, and either plough up and make a bastard fallow of it, or plough and sow it with Peas and Beans, and have a good result in Wheat. Last year he grew 110 acres of Wheat, the produce of which was 180 loads, or nearly five quarters to the acre. After Italian Ryegrass, with Red and White Clover, and Beans and Peas. He repeated that it was the abuse, not the use, of Italian Ryegrass that was injurious; and it should always be borne in mind that what might succeed in the midland counties might not succeed in the south. If, for example, he were to farm in Surrey as they did in Lincolnshire, he should soon be a ruined man; and he felt that he could not too strongly impress upon his brother farmers that a practice which might be very good in one county might be false in another. No man had smarted more than himself in consequence of having discarded practices which prevailed on the other side of his fence, and adopted those which were most successful in the midlands; but his

plan now was to borrow from his neighbour, and endeavour to improve upon it.

Mr. J. Williams (Baydon) said, that a few years ago a friend of his told him that which he had never heard before, that Italian Rye-grass would bear mixing with Red Clover. But, to his mind, the two seemed like spring and winter; for his idea of Italian Rye-grass was, that it would become seed long before the Red Clover was fit to cut as hay. At all events his friend sowed his whole crop, and to his astonishment, upon looking for the results, he found on cutting the Red Clover that the Rye-grass was infinitely more tender than his own common Rye-grass at the same time. He looked upon it, therefore, as rather a crop of hay than as a preceding crop for Wheat; and he was certain that if it were permitted to grow to any length, it would be the worst possible preparation for Wheat. With the limited varieties of seed which they had at command—for if they dispensed with Italian Rye-grass and Trefoil, he only knew of Red and White Clover, the Cow Grass, and the Cow Clover, the two latter of which, although not mentioned to-night, were a very useful kind—he was utterly at a loss to divine what the light land farmers on the hills of Berkshire, Hampshire, and Wiltshire would have to depend upon for their sheep produce. With Wheat at the low figure of 40*s.* a quarter, and comparing the price of stock and wool with that, the question which presented itself to his mind was, whether he ought to dispense with the growth of an article which was one of the most valuable for sheep produce. He had a piece of Italian Rye-grass which was fed off in the spring, subsequently mowed for hay, and fed off again; he had now carted dung to it, and as Wheat was out of the question at the present price, he intended sowing it with Oats, for at 40*s.* a quarter he despised a crop of Wheat. And he knew he could grow a magnificent crop of Oats upon the ground.

Mr. Nesbit, with regard to sickness in Clover, said the fact that Clover would not grow on some soils more than once in a certain number of years was, in the present state of our knowledge, utterly unexplainable. He had tried various chemical manures on land which was termed "Clover sick," but without producing the least sensible benefit. He apprehended, therefore, that it had something to do with the physiology of the plant, and did not come within the province of chemistry. The nature and habits of Clover were not thoroughly understood, and he believed they never would be understood, until the practical farmer turned his attention to the study of his Clover crops, and learned what their habits were, and how they were injured. One thing which certainly did mischief to Clover was the sowing it with Barley, thus covering it up, and preventing it from having the light of the sun during a great portion of the year. In the West of England, therefore, they had resorted to the practice of sowing Clover with Wheat; and by this means they obtained a much better crop of the former. Again, after the Barley or Wheat was taken away, it would be judicious to allow time to the Clover plant, when it got a due supply of light and air, to disseminate its roots and foliage, and acquire strength; whereas the usual course was to feed it off with sheep before the plant had had time to get root and strength. With respect to these Grasses generally, in the practice of agriculture, they ought to be varied and kept as far asunder as possible; and, upon soils that would bear it, a crop of Beetroot or Mangels might be interpolated between the two. In the same manner with Turnips, he would use two or three varieties in rotation every three or four years, in order not to have on the same soil the same kind of Turnip too frequently. The question of laying down land for more than a year was a very important one. A variation from the four-course shift was quite necessary in two ways. On those excessively well cultivated lands in Norfolk, where two much oil-cake had been used, probably they could not get good malting Barley without taking it out of the Wheat crop; and by taking off the sharp edge of the manure, and imparting it to the Wheat, they had everything left that would secure a good crop after the Wheat. As to Trefoil, they could not well do without it, or Rye-grass, as one of the courses of husbandry, especially on the light chalky soils of Wilts, Hants, and Dorset; and the conclusion to which he had arrived, from the present discussion, was, that the greater amount of variation in the Grasses the better would be the result, not only with the Grasses themselves and their roots, but the interpolated crops of Beans and Peas, or other Pulse; that by the judicious application of proper manures they would be able to grow these at alternating periods; and especially he would recommend practical men to see if they could not discover something in the habits of the Clover plant itself which would teach them how to treat it. Upon nearly all the plants which were Clover sick he had detected very small Fungi, which grew upon the plant, and were easily discernible by the microscope. Still, that did not bring him nearer to the solution of the question, why the Fungus grew upon the plant, and why the plant was in a condition to receive it. All he could say was, that he knew the plant was in an unhealthy state, that it was seized upon by one or two varieties of Fungi, and that then it died

The Chairman: Every farmer ought to have a knowledge of his own business, and of what was most productive upon the land he tilled, whether Italian Rye-grass, Red or White Clover, or other Grasses. He had been a farmer for a considerable time, and was satisfied that there was nothing like Red Clover on heavy land. If they could manage, with convenience to their stock, to mow twice, he believed they would, as a general rule, get a better crop than if they merely mowed once, or fed off once with sheep. The roots were developed much more from cutting the top, and threw out more fibre; and this vegetable matter being turned over in the soil a better crop of Wheat was produced. His own experience was, that he always grew the best Wheat where he had cut the Clover twice. He occupied both strong clay and gravelly land, and upon the latter he usually sowed a mixture of Red and White Clover and Trefoil, in the proportion of something like 10 lbs. of Red, 5 lbs. of White, and 3 lbs. and 4 lbs. of Trefoil. He had never known any misfortune happen to his lambs through feeding upon it, which they invariably did, for he could not afford to mow it; and he found that he got as good a crop of Wheat after feeding on this description of land, as he could if he had mowed it; but he could not say the same with regard to the strong heavy lands. Rye-grass he had discarded for several years. He tried it on various occasions, but it proved defective, and where it grew his Wheat crop was greatly deficient in comparison with other portions of the land. Consequently, he had not grown Rye-grass for a considerable period.

Reviews.

The Quarterly Review, October, 1859. John Murray.

The current "Quarterly" contains an interesting paper on Weeds, which might have appeared in the *Agricultural Gazette*, so directly professional it is, and to which therefore the attention of agriculturists should be directed.

Bearing sufficient evidence in the course of it that it is from the pen of Professor Buckman of Cirencester, it collates all the facts connected with weed growth, most of them due to his own research, which have been discussed in the pages of this and other agricultural periodicals during the past few years. It commences with the definition of a weed, refers to its natural multiplication by seed and sprouts, and to its extension by the process of hoeing when already full of ripe seed, and by actual sowing in the seeds supplied to the farmer. Most of the paper, so far as the substantial framework of facts which it clothes is concerned, has, we may say, already appeared in the *Agricultural Gazette*.

The following are the introductory remarks:—

"Cobbett says that 'Ants are a pretty subject for poets, but a dismal subject for gardeners.' Weeds are a still more dismal subjects for farmers. Man has had to do battle with these competitors for the possession of the soil ever since the original sentence went forth to Adam:—

> 'Cursed is the ground for thy sake; thou in sorrow
> Shalt eat thereof, all the days of thy life;
> Thorns also and Thistles it shall bring thee forth
> Unbid.' *Paradise Lost*, book x. 201.

"In the preparation of the land for every crop weeding is an essential operation; and when the seed is committed to the ground its first germinal life is sadly interfered with by its 'unbid' rivals, whose greater vigour has caused it to be held as a proverb that 'Ill weeds grow apace.' As the crop ripens, so do the weeds. Their seeds have to be separated from our grain, or go with it to the grinding, when they manage to escape, and again become a nuisance. Others of the weed tribe have creeping underground stems, like Couch and some Thistles. Others spread along the surface, and establish a scion, like the Buttercup. As they are all endowed with wonderful powers of vitality, farmers quietly view them as a necessity, and are content to palliate an evil they cannot prevent. Nay, Sir John Sinclair considers this never-ending, still-beginning conflict with the wild produce of the soil a positive advantage, and believes that land would go out of cultivation except for the perennial crops of weeds:—'What,' he says, 'is the inference from the fact that Couch-grass and Thistles can by no means be extirpated? Is it not perpetual exertions, fallowing and agricultural labour? Some may be inclined to say, "A melancholy reflection!" But I say, No, not at all. Providence could not have better contrived than that exertions should be perpetual, and that success should be in proportion. There is not a weed that we ought to wish out of our fields unless we remove and destroy it; because, if there were none, or very few all fields would be clean, and no praise could light on superior modes of tillage. Some may say again, "So much the better!" But I say, No. Does any man think that our various soils would have been sufficiently pulverised and worked, had there been no enemies of this sort to challenge forth our labours? Sterility would have seized upon our Turnip lands, which are only continued in a state to bear the rotation of crops by the necessary periodical renewals of their fertility. So might all our clays have gone to perpetual Grass, for neglect of proper tillage would have rendered them unprofitable. The necessity of subsistence produces industrious hands for every department of labour, but the sluggish nature of man requires every stimulus to exertion. The weeds of the field excite emulation among farmers, and foul fields are always a reproach to the occupier. Thus we are compelled by an unseen hand to better habits and more active industry.'—*Sinclair on Grasses*, pp. 324-5.

"Yet we have seen weedless flower-gardens where the soil nevertheless was kept carefully pulverised, and kitchen-gardens so destitute of interlopers to interfere with the vegetables, that it was necessary to cultivate Groundsel for the purpose of feeding a pet bullfinch If, as Sir John Sinclair says, 'neglect of proper tillage would have rendered clays unprofitable,' what need is there of weeds as an incentive to exertion? The stimulus to toil and till exists independently of them, and by his own argument they are in this respect a superfluity. That, like everything else in creation, they answer many wise and necessary ends, no believer in Providence and no observer of nature can for an instant doubt. But man would plough, and sow, and reap, even though he could succeed in relieving his land of these robbers of the soil, and the illogical moralisings of Sir John Sinclair need not deter the most zealous improver from acting upon the maxim that 'prevention is better than cure.'

"What is a weed? Everybody in England would pronounce the Dandelion, commonly called Dandy Lion, an unmitigated pest. Yet we recollect reading in some Australian newspaper that a plant of it in full bloom attracted crowds of pleased spectators at a flower-show. How we should smile here at a Dandelion in a pot, or at the publication by an eminent gardener of a treatise on its cultivation! The lexicographers have not been very successful in their definitions of a weed. Johnson calls it 'A herb noxious or useless.' The agriculturists in their definitions look only to practical results, and confound things which, both in popular and scientific language, are distinct. 'When,' says Stephens, in his 'Book of the Farm,' 'any plant is found growing where it should not be, it is a weed. For example, a stalk of Wheat in a bed of Tulips in a garden is a weed, and would be removed; and, in like manner, a Tulip in a Wheat-field is a weed, and should be eradicated.' To the same purpose speaks the author of the article 'Weeds,' in Morton's 'Cyclopædia of Agriculture:'—'Every plant different from the crop, and growing with the crop to its hindrance, is a weed. Regarded in this light, most of our wild, and even cultivated, plants may take the place of weeds; thus Potatoes left in the soil may completely smother a succeeding crop, or the shed seeds of a former crop may germinate amid a new one, and, in both cases, their removal by weeding will be necessary to success.' This will serve for the farmer's view of the subject. These extraneous plants, which mingle with crops, cost him large sums of money to keep them in check, and often through ignorance of their peculiarities he employs fancied methods of extirpation which are in truth rather modes of propagation."

Farm Memoranda.

Haymount in Kelso.—As an instance of the high pitch to which the science of agriculture has reached in the Border district, we give the following interesting facts regarding the drainage operations which have for some time past been going on upon the farm of Haymount, near Kelso. There is lying in the shop of Messrs. J. and J. H. Rutherfurd, for binding, a plan or atlas of the drains on the farms of Haymount and Manorhill, executed by Thomas Wilson, Esq. Haymount has been long under cultivation, and was always considered one of the crack farms in the south of Scotland—nevertheless, the contents of this interesting and unique volume, inform us that these farms lying contiguously, and consisting of 845¼ acres of arable ground, have been perforated by 56,021¼ roods, or 190 miles, 1729 yards of drains, the common ones all 4 feet deep, and the leading ones 4½ feet. These drains have been all most judiciously planned under the immediate superintendence of Mr. Wilson and his able steward, William Cairns. Every field, too, has been properly limed. In the atlas every park [field] has a page assigned to it, and all are laid down upon the same scale (2 chains to the inch). Every drain is visible at a glance. The length of every hedge is marked, and the contents in arable, dykes, and total, all separately noted in imperial acres. In the onstead, which is upon an extended scale, the manure drains leading into the tank are marked with ink of one colour, and the rain water collected in roans from the roofs, and conveyed into the common drains, with ink of a different shade. We cordially recommend the adoption of this plan to our agricultural friends, especially proprietors, to whom it must prove a valuable record as an unerring directory for future reference. The survey has been very neatly and carefully executed by Mr. Dods, schoolmaster, of Makerstoun; and this part of the work deserves special commendation. The plans are all drawn by hand, with ordinary writing materials, and as specimens of caligraphy alone, are worthy of inspection, All parties concerned in this great work have exerted themselves to the utmost, and the result has been the production and working out of a scheme of thorough drainage as near perfection as possible. The sum expended on drains, lime, buildings, and other improvements on the farm of Haymount is about 15,000*l.*; and in view of these improvements we may well conclude that farming has attained a climax never before approximated in this, or perhaps in any other country. We sincerely wish Mr. Wilson may live to see himself amply rewarded, by the reimbursement of currency which he has so liberally expended. *Kelso Mail.*

Miscellaneous.

The Crops in Norfolk.—Messrs. Mealing & Mills, in their annual circular on the crops in Norfolk, issued on Saturday evening, observe, "There is a great variety as respects Wheat, particularly in the weight,

which is often 1 lb. to 2 lb. less per bushel than had been expected from the appearance of the samples. The weights are generally from 58 lb., 60 lb., 61 lb., up to 62 lb. per bushel. The larger portion was providentially secured before the rain, and is coming to hand generally in good condition. The production, taking into account the quantity which is dressed off in many cases, must be considered something below an average. In respect to the crop of Barley, from its being exposed to great heat in July, the quality has been much deteriorated. In that which was exposed to the rain where it was laid, and on the swathe, sprouting soon took place, and the grain is unfit for malting purposes. That which was housed off good soils before the rain is very fine, but the quality is comparatively small, and, upon the whole, there will be much less of malting sorts than we have been accustomed to have. The weight varies from 46 lb., 48 lb., 50 lb., 51lb., 52 lb. to 53 lb. per bushel. The produce is not quite an average. Beans, Peas, and Oats are about an average production. They were housed in good condition, and the quality is fine. There was a fair stock of old Wheat in the farmers' hands at harvest, but of Barley there was none remaining."

Calendar of Operations.

NOVEMBER.

WESTER ROSS: *Nov. 7.*—The long continued drought of summer has at length been succeeded by an unusually early and severe snow storm and torrents of rain; so that the springs, long dry, have again begun to flow, water mills are now abundantly supplied, and the soil that was dry as dust is now thoroughly saturated. In some of the later districts of the county the snow storm overtook the crofters with their crops still exposed, and rendered harvest work no pleasant occupation. Last month, from the brokenness of the weather, outdoor labour progressed but slowly. A pretty large breadth of the green crop lot has received its winter furrow, and perhaps one-half of the Wheat has been sown. Being desirous to have the Wheat sowing completed in time to admit of its coming above ground ere the severity of winter sets in, we will for some time be busily occupied in preparing the remainder of the ground, and in having the seed cast in. With these tremendous falls of rain more of our time has been occupied with threshing than we would have liked, and already pretty large inroads have been made upon our scantily supplied stackyards. Our Turnip crop is the poorest we have had for many years. With the severe drought it had made little progress up till the end of harvest, and shortly thereafter the snow storm with severe frost came, which cut off a large portion of its usual growing season; and now being necessitated from the continued severity of the weather to put our stock at this early season upon a full supply of Turnips and straw, we are beginning to wonder what will become of us in spring. Hill farmers have extreme difficulty in getting a sufficient supply of Turnips for sheep, and long prices are being paid. Through out the winter and spring both straw and Turnips will be fetching inordinate prices, and will by-and-bye be difficult to be had at any price. Notwithstanding the scarcity of keep we believe that the Ross-shire farmer will reach the end of the year in circumstances certainly not worse than he was at the beginning. Although Oats are inferior both in quantity and quality, the stacks of Wheat and Barley are yielding satisfactorily, the grain is of the finest quality with scarcely any dressings, the prices of Wheat and Barley put together are higher than they have been for some years, whilst fat continues to fetch its extreme figure.

Notices to Correspondents.

BERKSHIRE PIGS: *Letellier, of Lisieux.* Mr. Morland, of Chilton, Harwell, Abingdon, is a good breeder; so are Mr. E. Bowley, of Siddington, near Cirencester; and Mr. W. J. Sadler, Rentham, Calcot, near Cricklade. The prize holders for Berkshire pigs at Warwick were Messrs. Morland and Sadler named above; also Sir R. G. Throckmorton, Bart., Buckland, near Farringdon.

DINGLE *v.* HARE: *R.* The following paragraph proves the certainty and facility of obtaining justice in the case of dealings in worthless manures:—This was an action on a warranty of some manure sold by one Wilson as agent for the defendant, and who sold it to the plaintiff instead of some blood manure, not approved, with a warranty that it contained "30 per cent. of phosphate, and was equal to Lawes's." Ten tons of this manure were sold to the plaintiff at 5*l.* a ton. It turned out very inferior stuff, and did not contain anything like 30 per cent. of phosphate, and a field of Turnips failed which was manured with it. The plaintiff brought his action to recover back the price, and it was contended that the agent Wilson who sold it to him on behalf of the defendant had no authority to make the guarantee he had done. The jury found that Wilson had such an authority, and that such an article could not be sold without a warranty, and that the manure he sold was only worth 2 guineas per ton, and they found a verdict for the plaintiff for 31*l.* 10*s.* A rule having been obtained to set aside this verdict as against the evidence, the Court were of opinion that the rule ought to be discharged. There was very strong presumptive evidence indeed that a party authorised to sell goods for another principal would be authorised to make all the guarantees which were usual in the business. The Court thought that there was evidence to go to the jury, and that the verdict ought not to be disturbed.

GUANO FOR WHEAT: *H.* Sow 2 or 3 cwt. per acre broadcast in March and harrow it in.

HUSK IN CALVES: *R B H.* The dose named is, we believe, for a calf—but we will ascertain before next week.

LIQUID MANURE: *G R A.* There is a considerable demand for manuals on different sections of farm practice which ought to be better supplied. The strength of liquid manure is to be ascertained by an analysis for ammonia which it contains. Mr. Mechi's "Sayings and Doings" have been published by Routledge.

MANGEL WURZEL CULTURE: *H S W.* In reference to the cultivation of Mangels "on the ridge," advocated lately in our columns by "An Old Foreign Subscriber," the following extract of a letter received by last mail from Geelong may be considered conclusive evidence as to the propriety of that mode of culture in Australia:—"Your Mangels (on the ridge) are splendid. I have just weighed one of 45 lbs."

SHORT-HORNS: *H S W.* We regret to state that the celebrated bull "Master Butterfly," purchased from Colonel Townley by Mr. Ware, of Geelong, died in September last, on his way to the great yearly cattle exhibition of Melbourne.

SULPHURIC ACID: *H S Wells* You cannot make it on a small scale on a farm at a smaller price than you can buy it for, even though you send from Australia to England for it. The process of manufacture is well known. See Ure's Dictionary.

*** As usual, many communications have been received too late, and others are detained till the necessary inquiries can be made. We must also beg the indulgence of those correspondents the insertion of whose contributions is still delayed.

Now ready, 160 pages, crown 8vo, price 6*d.*,

THORLEY'S FARMERS' ALMANACK for 1860, the most Comprehensive and Complete Work of the kind ever published. Free by post for Six Stamps, upon application to JOSEPH THORLEY, Almanack Department, 77, Newgate St., London, E.C.

CONTENTS:—

	PAGE		PAGE
Adulteration of Seeds	97	Italian Rye-grass Culture,	32, 57
,, Barley-meal	98	,, ,, Soiling	33
,, Rape Cake	98	,, ,, Cookery	35
,, Linseed Cake	98	Labourers' Cottages, English	85
Agricultural Societies—		,, French	21
England	102	,, Healthy	45
Scotland	102	,, Size of Bedrooms	63
Ireland	102	Law, Courts of	106
Bath	102	Linseed Cake	94
Yorkshire	102	Liquid Manure Farms	35
Smithfield Club	102	Lois-Weedon Culture	67
Birmingham	102	Machinery, Cattle Food	77
Agricul. Railway Traffic	27	,, Mowing	79
Alpha & Omega of Agricul.	72	,, Reaping	79
Artificial Manures	59	,, Threshing	76
Arts and Manufactures	59	Manufacture of Cattle Food	100
Bad Farming, the Rule	67	,, Condiment	100
Bean Straw	20	Management	50
Bedrooms, Size of	63	Mechi's Rule for Sowing	62
Brewers' Grains	63	Memoranda, Concluding	100
Butcher Meat, Improved	70	Merino Flock, A, U.S.	33
Cabinet Ministers	103	Mixed Feed	21
Calendar (Monthly)		Ox, Management (Monthly)	
Cattle Cookery	86	,, Experiments in Feeding	101
,, Condiment	99	,, ,, Cows	101
Chemistry of Cattle Food	90	,, ,, Calves	101
,, By Dr. Anderson	95	Parliament, Peers	107
Chemistry, By Dr. Voelcker	93	Parliament, Peers, Officers	113
Classification of Feeding Principles	51	,, Address	117
Condiment for Seasoning Food for Live Stock	99	,, of the United Kingdom	114
Corn Food	27	,, Scotch and Irish	117
,, Refuse 21, 27, 33,	39	,, Titles of Courtesy	115
Cottage Poultry Yards	51	,, Summary	128
Country Occupations	50	,, Commons	118
Cow Houses, &c.	43	,, Ministry	102
Cows, Management of, in Towns	43	,, Summary, Commons	128
Dairy Produce Improved	70	,, Analysis	128
Dumpling, A Devonshire	27	Public Offices	104
Extraordinary Cow	63	Pigs and Poultry (Monthly)	
Experiments, Cattle Food	100	Pig, The	57
Fairs, England and Wales	129	Pisciculture, English	26
,, Scotland	140	,, French	27
,, Ireland	145	Potato Culture	73
Farm, Two Acre	51	Poultry	11
Farming Prairie, Illinois	56	Railway, Crosskill's	82
,, Stock	39	,, Boydell's	81
,, Dairy	38	Royal Family	103
Farms, American 20,	67	Seed, Change of	62
Farmers' Memoranda (Monthly)		,, John Cheap Bargains	63
Flax Culture	41	,, Wheat, Preparation of	62
Forcing System of Feeding Stock 86,	90	,, ,, Pickling	62
Feeding Live Stock—		Sewage Manure	35
Horses (Monthly)		Sheep Dipping	44
Oxen ,,		,, Management (Monthly)	
Sheep ,,		Shepherd, The Good	61
Pigs and Poultry ,,		Singular Shot	45
Deer and Dogs ,,		Steam Engine, Fixed	75
French Poultry	33	,, Portable	74
Future of the Steam Engine	74	Steam Culture, Importance	80
Grass Land Management	20	,, Boydell's System	81
Harvest, Hay	35	,, Halkett's System	81
,, Corn	47	,, Romaine's System	82
,, Roots	59	,, Fowler's System	83
Homestead	77	,, Howard & Smith's System	83
Horses, Management of, in Town	42	,, Comparative Merits of Different Systems	84
,, Management (Monthly)		Steam Cartage on Common Roads	84
,, the Food of	44	,, Boydell's System	84
,, Stable	39	,, Bray's System	85
,, Vitality of	39	Steam and Manual Labour	32
,, Experiments in Feeding		Stock Taking	63
,, Old	100	Straw as Food for Cattle	20
,, Young	100	Successful Settler, A	45
,, per Sea	101	Taxes, Assessed, &c. 155,	156
Hounds, Fox	57	Veterinary Science, its Importance	86
House Feeding	56	Weights and Measures, 152,	153
		Winona	21
		Wonderful Eggs	21
		Wool	38

"This is in reality a Farmer's Book, not merely an Almanack—in which respect it is perfect—but a Handbook and Vade Mecum of everything useful and informational that can in any way be serviceable to the Agriculturist."—*Era, Oct.* 9. 1859.

THORLEY'S FOOD for CATTLE, as used in her Majesty's Stables; in those of his Royal Highness at the Prince Consort's Farm, Windsor; in the Establishment of his Royal Highness the Prince Regent of Prussia; in the Royal Military Stables of Prussia, by order of his Excellency Lieut.-Gen. Willissen, Head Master of the Horse, is highly efficacious in promoting and sustaining the functions of the Horse in health and vigour. For Milch Cows it is equally valuable, increasing the quantity and improving the quality of Milk. For Beasts nothing can compare with it for feeding quickly. For Sheep, Pigs, and Poultry the effects produced in one month will exceed all expectations.

THORLEY'S FOOD FOR CATTLE contains bitter, saccharine, aromatic, and balsamic properties, essentially necessary to the health of all our domesticated animals. It is purely a vegetable compound, and when the food of Cattle is properly seasoned with it, it gives to the digestive and other functions of animals a healthy action, somewhat similar in character to what is produced by Spring Grass, but without any of the injurious purgative effects of the latter. These aromatic and other properties enhance the flavour and quality of both butcher meat and dairy produce, similar to what Sweet-scented Vernal Grass does in spring.

THORLEY'S FOOD FOR CATTLE can only be had direct from Mr. THORLEY or his accredited Agents. As various spurious imitations are now being sold giving rise to much disappointment, purchasers cannot be too cautious; for although some of those patent foods contain mineral substances, which produce a favourable effect at first, the upshot is ruinous to animal health. To avoid fraud and disappointment of this kind Mr. THORLEY supplies his Food in cases, containing packages, each packet having the signature of JOSEPH THORLEY engraved thereon and containing one feed: and loose in casks, with a one-feed measure, having his signature burnt thereon.

Price of case, containing 448 packages, 56*s.*; and of cask, 448 feeds, 50*s.* Orders to be accompanied by a remittance. Post-office Orders made payable to JOSEPH THORLEY, General Post Office, St. Martin's-le-Grand, E.C.

Offices: 77, Newgate Street, London, E.C. Manufactory and Steam Mills, Caledonian Road, N.

Sole Consignee for the United States, B. THORLEY, 174, Greenwich Street, near Cortland Street, New York.

Sole Consignee for Upper and Lower Canada, J. W. THORLEY, 26, Front St., next door west of Newbiggin House, Toronto, C.W.

☞ Carriage Paid to any Railway Station.

Just published, price 1*s.*

MORTON'S NEW FARMER'S ALMANACK FOR 1860.—BLACKIE & SON, Warwick Square, City, London, E.C.; and all Booksellers.

FARM ACCOUNTS.

In royal 8vo, bound in cloth, price 2*s.* 6*d.*,

A PRACTICAL SYSTEM of FARM BOOK-KEEPING; being that recommended in "The Book of the Farm." By HENRY STEPHENS, F.R.S.E.

Also,

SEVEN FOLIO ACCOUNT BOOKS, constructed in accordance with the system, Printed and Ruled throughout, and bound in separate volumes; the whole being specially adapted for keeping, by an easy and accurate method, an account of all the Transactions of the Farm.

"We have no hesitation in saying, that of the many systems of keeping farm-accounts which are in vogue, there is not one which will bear comparison with that just issued by Messrs. Blackwood, according to the recommendations of Mr. Stephens in his invaluable 'Book of the Farm.' The great characteristic of this system is its simplicity. When once the details are mastered, which it will take very little trouble to accomplish, it will be prized as the clearest method to show the profit and loss of business, and to prove how the soundest and surest calculations can be arrived at."—*Bell's Messenger.*

W. BLACKWOOD & SONS, Edinburgh and London.

TWENTIETH YEAR OF PUBLICATION.

Now ready, price 1*s.*, or bound in cloth and interleaved, 2*s.*,

JOHNSON AND SHAW'S FARMER'S ALMANACK FOR 1860, containing every information relating to Agriculture, Implements, Seeds, Fairs, &c.

London: JAMES RIDGWAY, Piccadilly, W., and all Booksellers and Railway Stations.

IMPORTANT TO FARMERS.

Now ready, post 4to, bound in cloth, price 2*s.*, free by post, 2*s.* 4*d.*

PEAT'S FARMER'S DIARY AND ACCOUNT BOOK, 1860; being a complete and easy method of keeping farm accounts. Dedicated by permission to the Right HON. the EARL of CARLISLE.

The publisher begs to call the attention of Agriculturists to this Diary and Account Book. It has been favourably received during the last 6 years by a great many eminent agriculturists in England, Ireland, and Scotland; and high encomiums have been passed upon it by all the leading journals (London and Provincial), advocating the cause of agriculture.

The publisher has pleasure in stating that it has received the high patronage of the Right Hon. the Earl of Carlisle, and will by permission be dedicated to him.

This Diary contains Space for Memoranda; Complete Almanack—Almanack with Breeder's Tables—Memoranda—Cash Account—Farmer's Account Book—Inventory, Cash, Stock, &c., beginning of year—Extent of Farm—Cropping or Produce Table—Outlay and Income during the Year—Inventory, Cash, Stock, &c., ending of year—Summary of Outlay and Income—a great many useful Tables, Stamps, Taxes, Licenses, &c.—Valuable recipes for Farmers—A complete List of Fairs in the United Kingdom, &c.

The publisher would recommend that an early application be made for this Diary, as a great many were disappointed in ordering copies for 1859, after the edition was sold off and too late to print a second edition.

"The great desiderata in farm account-books are simplicity and brevity, leaving nothing for the farmer to do but to enter under printed heads the transactions of each day, when the labour of the day is finished. In looking over the 'Diary' of Mr. Peat, we think he has met these requirements of the farmer in a very satisfactory manner, so that any farmer, by making himself familiar with the various headings, may settle the day's accounts of his farm in a very few minutes. We have no hesitation in recommending it to our readers."—*Mark Lane Express.*

Sold by SIMPKIN, MARSHALL, & Co., London; WHITTAKER & Co., London; M'GLASHAN & GILL, Dublin; JOHN MENZIES, Edinburgh; DAVID PEAT, Thirsk; all Booksellers, and at the Railway Stations.

On the 1st of November will be published, price 5*s.*,

THE ROSE ANNUAL FOR 1859-60. With four Coloured Plates of New Roses. By WILLIAM PAUL, F.H.S., author of "The Rose Garden," &c.

*** A few copies of THE ROSE ANNUAL FOR 1858-9 are still on hand, price 5*s.*

Works by the same Author,

THE ROSE GARDEN. Price 1*l.* 1*s.*, with 15 Coloured Plates and numerous Wood Engravings.

SUPPLEMENT TO THE ROSE GARDEN. With four additional Plates, 5*s.*

OBSERVATIONS ON THE CULTIVATION OF ROSES IN POTS. Second Edition, price 1*s.* 6*d.*

MORNING RAMBLES IN THE ROSE GARDENS OF HERTFORDSHIRE. Price 1*s.*

AN HOUR WITH THE HOLLYHOCK. Second Edition, price 1*s.*

THE HAND-BOOK OF VILLA GARDENING Price 2*s.* 6*d.*

AMERICAN PLANTS, THEIR HISTORY AND CULTURE. Price 2*s.* 6*d.*

London: PIPER, STEPHENSON, & SPENCE, 23, Paternoster Row. or post free from the Author, Cheshunt Nurseries, Waltham Cross, Herts, N.

On the 24th of November will be published,

THE BRITISH ALMANACK FOR 1860, Price 1*s.*

THE COMPANION TO THE ALMANACK, Price 2*s.* 6*d.*

The first publication of the British Almanack, 32 years ago, gave the example of rational Year Books. It has always endeavoured to maintain its pre-eminence by furnishing the most complete and accurate registers in every department of Government and of public business. But a wider object has been steadily pursued in the union of the British Almanack and the Companion. These bound together constitute the most complete and at the same time the cheapest Manual of Current Information, and the most trustworthy record for future reference.

THE BRITISH ALMANACK AND COMPANION, Together in cloth boards, lettered, price 4*s.*,

Contain, in addition to every matter requisite to an Almanack, a vast body of information in the Companion:

AMONGST THE SUBJECTS FOR 1860, ARE ARTICLES ON,

THE NECESSITY FOR ELEMENTARY INSTRUCTION IN POLITICAL ECONOMY. By CHARLES KNIGHT.

THE PATENT OFFICE, and PATENT MUSEUM. By GEORGE DODD.

THE NAVAL FORCE of the UNITED KINGDOM.

THE NATIONAL COLLECTION OF SCULPTURE. By JAMES THORNE.

HISTORY OF COMETS. By JOHN RUSSELL HIND, F.R.A.S.

STATISTICAL VIEW of the VARIOUS ITALIAN STATES.

THE NATIONAL DEBT; HOW IT GREW.

THE WRECK CHART, and the NATIONAL LIFE-BOAT INSTITUTION.

WITH THE USUAL ARTICLES ON,

THE LEGISLATION, STATISTICS, ARCHITECTURE and PUBLIC IMPROVEMENTS, and CHRONICLE of 1859.

London: KNIGHT & Co., 90, Fleet Street, E.C.; and Sold by all Booksellers in the United Kingdom.

HOLCUS SACCHARATUS (Pamphlet).
"A VISIT AND A PLANT." A few copies only are left. Post free, 7d.
JOHN WILLDING CLARKE, Whittlesea, Cambs.

CUTHILL'S PAMPHLET on the Potato, Straw berry, Cucumber, Seakale, and 20 more things, 2s.; Market Gardening Round London, 1s 6d.; on the Vine, 1s.; Thirty Years' Practice of Mushroom Growing: an Easy Plan for Killing Woodlice, 1s. 1d.; "Vegetable Meeting Paper" gratis.
JAMES CUTHILL, Camberwell, London, S.

Now ready, 17th Edition, price 1s.,
A WORD IN SEASON: or How to Grow Wheat with Profit; with large additions about Tull and Liebig. By the Author of "Lois-Weedon Husbandry."
Also, Second Edition, price 2s. 6d., bound in cloth,
LOIS-WEEDON HUSBANDRY, being the Management of Roots and other Crops on this System.
JAMES RIDGWAY, Piccadilly, W.; and all Booksellers.

GLENNY'S GARDENERS' GAZETTE.—A Monthly Journal, 16 pp. imperial 8vo, price 3d., post free, 4d., contains useful information for all interested in the Garden.
JAMES ALLEN, Warwick Lane, E. C.; KENNETT, York Street, Covent Garden, W.C.; and at all the railway stations and respectable booksellers.
Advertisements should be sent to the Printers, YATES & ALEXANDER, Horse-shoe Court, Ludgate Hill, E.C.

THE AMATEUR FLORIST'S SHEET ALMANACK AND GARDENERS' CALENDAR FOR 1860.—Advertisements inserted at 6d. per line, which must be sent in by the 24th inst., to JOHN DOBSON & SONS, Seedsmen, &c., High Street, Hounslow.
J. DOBSON & SONS' New GERANIUM CATALOGUE sent post free to any address.—Woodlands Nursery, Isleworth, W.

Just published, price 1s.; free by post 1s. 2d.,
IMPORTANT HINTS FOR EVERY HORSE-OWNER. Translated from the 8th Edition of the German original.
B. YORK, 60, City Road, London, E.C.

A CHRISTMAS AND NEW YEAR'S PRESENT.

Now ready, illustrated with 80 *beautiful Engravings of the principal Scenes and Places described in the Poem,*
DRAWN ON WOOD BY MR. PERCIVAL SKELTON,
FROM SKETCHES BY SIR CHARLES FELLOWS, MR. FORD, CRESWICK, TELBIN, LEAR, &c., &c.
Crown 8vo, price One Guinea, handsomely bound,

CHILDE HAROLD'S PILGRIMAGE.

BY LORD BYRON.

"The illustrations are taken from original sketches, and are not only remarkable for the artistic merit, but also for the poetical feeling, infused into them by Mr. Percival Skelton. They have the additional charm of originality. The drawings have been skilfully engraved by Messrs. Whymper & Cooper."—*Illustrated News.*
"This splendid edition."—*Times.*
"A wonder of embellishment."—*Athenæum.*
"A bibliopolic gem."—*Spectator.*
"A beautiful book."—*Literary Churchman.*
"A first-class work of art."—*Press.*
"The book is most beautiful."—*Examiner.*
"A most superb edition."—*Literary Gazette.*

JOHN MURRAY, ALBEMARLE STREET, W.

Now ready, in crown 8vo, price One Shilling, free by post, 1s. 2d.,

THE GARDENERS' YEAR BOOK,

ALMANACK, AND DIRECTORY FOR 1860.

BY ROBERT HOGG,
Vice-President of the British Pomological Society, and Co-Editor of the "Cottage Gardener."

THIS WORK WILL CONTAIN, BESIDES THE INFORMATION USUALLY FOUND IN ALMANACS,
A COMPLETE GARDENERS' CALENDAR for EVERY MONTH in the YEAR;
NOTICES OF AND REMARKS UPON ALL
NEW PLANTS, FLOWERS, FRUITS, AND VEGETABLES INTRODUCED DURING THE YEAR;
AND
A Complete Directory of the Nurserymen, Seedsmen, and Florists
IN GREAT BRITAIN, IRELAND, THE CONTINENT, AND AMERICA.

LONDON: "COTTAGE GARDENER" OFFICE, 162, FLEET STREET, E.C.

Every Saturday, price Fourpence, or Stamped Fivepence,

NOTES AND QUERIES:

A MEDIUM OF INTERCOMMUNICATION FOR LITERARY MEN, ARTISTS, ANTIQUARIES, GENEALOGISTS, PHOTOGRAPHERS, &c.

NOTES AND QUERIES will, it is believed, be found to bring before the general reader every week a vast amount of curious and interesting information. It was established for the purpose of furnishing to all lovers of Literature a Commonplace Book, in which they might, on the one hand, record for their own use and the use of others those minute facts—those elucidations of a doubtful phrase or disputed passage—those illustrations of an obsolete custom—those scattered biographical anecdotes or unrecorded dates—which all who read occasionally stumble upon; and, on the other, of supplying a medium through which they might address those Queries, by which the best informed are sometimes arrested in the midst of their labours, in the hope of receiving solutions of them from some of their number. The success which has attended this endeavour to supply a want long felt by literary men, is rendered manifest by the necessity of permanently enlarging the Paper from 16 to 24 pages. For opinions of *The Quarterly Review, Athenæum, Examiner, Literary Gazette, Spectator, Dublin Review,* &c., as to the utility, &c., of NOTES AND QUERIES, see Prospectus.
A SPECIMEN NUMBER sent on receipt of five postage stamps.
NOTES AND QUERIES is also issued in Monthly Parts, for the convenience of those who may either have a difficulty in procuring the unstamped Weekly Numbers, or may prefer receiving it monthly. Each Part contains Papers by some of our most distinguished Writers. Those already issued contain articles by—

Lord Braybrooke	Professor De Morgan	Rev. J. Hunter	J. E. B. Mayor, Esq.	Earl of Shaftesbury
John Britton, Esq.	Dr. Diamond	Samuel Hickson, Esq.	Lord Monson [M.P.	W. J. Thoms, Esq.
John Bruce, Esq.	Hepworth Dixon, Esq.	Douglas Jerrold, Esq.	R. Monck. Milnes, Esq.,	B. Thorpe, Esq.
J. Burtt, Esq.	Sir Fortunatus Dwarris	Rev. Dr. Kennedy	George Ormerod, Esq.	Rev. J. H. Todd, D.D.
W. D. Christie, Esq.	Sir Henry Ellis	R. J. King, Esq.	J. R. Planché, Esq.	Sir W. C. Trevelyan, Bt.
J. P. Collier, Esq.	C. Forbes, Esq.	Rev. L. B. Larking	E. F. Rimbault, Esq.	T. H. Turner, Esq.
W. D. Cooper, Esq.	E. Foss, Esq.	Marc Antony Lower, Esq.	Rev. Dr. Rock	Rev. Henry Walter
Bolton Corney, Esq.	Rev. A. Gatty	W. B. MacCabe, Esq.	S. W. Singer, Esq.	Albert Way, Esq.
P. Cunningham, Esq.	Henry Hallam, Esq.	Rev. S. R. Maitland, D.D.	E. Smirke, Esq.	Benj. B. Wiffen, Bart.
Rev. T. Corser	J. O. Halliwell, Esq.	Sir F. Madden	George Stephens, Esq.	W. Yarrell, Esq.,
Dr. Dalton	E. Hawkins, Esq.	J. H. Markland, Esq.	H. E. Strickland, Esq.	&c. &c. &c.

NOTES AND QUERIES is also published in Half-yearly Volumes, each with very Copious Index, price 10s. 6d. cloth boards. Of these Nine have been published; and a few Complete Sets, price 4l. 14s. 6d., may still be had.
The following List of Subjects treated upon will show that these Volumes are not merely of temporary interest, but of lasting value for reference:—

Literary History	Illustrations of Chaucer and Early English Literature	Writings of English and Continental Reformers	Anglo-Saxon Literature
Bibliography	Glossarial Notes	History of London and its Neighbourhood	Fine Arts
Biographical Illustrations	Notes on Hallam, Macaulay, &c.	Ballads and Old Poetry	Natural History
Popular Manners and Customs	Genealogy and Heraldry	Remarkable Events in English, Scotch, and Irish History	Photography, especially in its Relation to Archæology, &c.
Origin of Proverbial Sayings	Miscellaneous Antiquities		&c. &c.
Folk-Lore	Ecclesiastical History		
Illustrations of Shakspeare			

"As a mass of curious, out-of-the way information upon almost every matter that may be supposed to be of interest to educated minds, a Volume of NOTES AND QUERIES is of itself a curiosity, and quite an out-of-the-way treasure. Wholly apart from its very great value as an aid to the literary labourer who works upon unhacknied material—a point so well recognised that it need not be urged—we would suggest that the reader for amusement scarcely could take up a miscellany that contains more anecdote and quaint accounts of odd things new to his mind, than a Volume of NOTES AND QUERIES.....It may lead to the formation of some notion on the point if we state that the Index to the Fifth Volume contains not many less than three thousand five hundred references to subjects upon which there is information given in its pages."—*Examiner.*

GEORGE BELL, No. 186, FLEET STREET; AND BY ORDER OF ALL BOOKSELLERS AND NEWSMEN.

In Weekly Numbers, price 3d., and in Monthly Parts,
ONCE A WEEK.
A Miscellany of Literature, Art, Science, and Popular Information. Illustrated by LEECH, TENNIEL, MILLAIS, CORBOULD, H. K. BROWNE, C. KEENE, WOLF, and others.
BRADBURY & EVANS, 11, Bouverie Street, Fleet Street, E.C.

Price One Shilling.
NATIONAL HEALTH AND WEALTH, instead of THE DISEASE, NUISANCE, EXPENSE, and WASTE, caused by Cesspools, and Water-drainage. By the Rev. HENRY MOULE, M.A., Vicar of Fordington, Dorset.
BRADBURY & EVANS, 11, Bouverie Street, Fleet Street, E.C.

SCHOOL BOTANY; OR, THE RUDIMENTS OF BOTANICAL SCIENCE.
By JOHN LINDLEY, Ph.D., F.R.S., &c. &c.
400 Illustrations. 8vo. Price 5s. 6d. half bound.
BRADBURY & EVANS, 11, Bouverie Street, E.C.

GARDEN BOOKS.
ESPECIALLY ADAPTED TO THE PRESENT SEASON.

I.
HOW TO LAY OUT A GARDEN.—Intended as a General Guide in Choosing, Forming, or Improving an Estate. (From a Quarter of an Acre to a Hundred Acres in extent.) By EDWARD KEMP, Landscape Gardener, Birkenhead Park. Crown 8vo, price 12s., illustrated with numerous Plans, Sections, and Sketches of Gardens and General Objects.
"Mr. Kemp's 'How to Lay Out a Garden' is the best work on Practical Landscape Gardening which has appeared in this country, its value being much increased by an extraordinary number of excellent instructive woodcuts."—*Gardeners' Chronicle.*

II.
THE HANDBOOK OF GARDENING.—For the use of persons who possess a small Garden. By EDWARD KEMP. The Eleventh Edition, enlarged and improved. Price 2s.

III.
PRACTICAL HINTS ON PLANTING ORNAMENTAL TREES.—With Particular Reference to Coniferæ. In which all the Hardy Species are Popularly Described. By Messrs. STANDISH & NOBLE. Price 5s.

IV.
The Sixth Edition, cloth gilt, price 7s.
THE LADIES' COMPANION TO THE FLOWER GARDEN.—By Mrs. LOUDON. Being an Alphabetical Arrangement of all the Ornamental Plants grown in Gardens and Shrubberies. With full directions for their Culture.

V.
Crown 8vo, price 16s. cloth extra,
PAXTON'S BOTANICAL DICTIONARY.—Comprising the Names, History, and Culture of all Plants known in Britain, together with a full Explanation of Technical Terms.
London: BRADBURY & EVANS, 11, Bouverie Street, E.C.

Fcap 8vo, sewed, 2s. 6d.
DEFECTS OF SIGHT: their Nature, Causes, Prevention, and General Management. By T. WHARTON JONES, F.R.S., Professor of Opthalmic Medicine and Surgery in University College, London.
JOHN CHURCHILL, New Burlington Street, W.

Fifth Edition, 12mo. cloth, 5s.
A COMPENDIUM OF DOMESTIC MEDICINE, and Companion to the Medicine Chest: comprising plain Directions for the employment of Medicines, their Properties, and Doses—Brief Descriptions of the Symptoms and Treatment of Diseases—Disorders incidental to Infants and Children—Directions for Restoring Suspended Animation—Counteracting the Effects of Poison—A selection of the most efficacious Prescriptions, and various Mechanical Auxiliaries to Medicine: the whole intended as a source of easy reference for clergymen, master mariners, and travellers, and for families residing at a distance from professional assistance. By JOHN SAVORY, Member of the Society of Apothecaries.
JOHN CHURCHILL, New Burlington Street, W.

8vo, cloth, 10 Plates, 9s.
ON DROPSY CONNECTED WITH DISEASE OF THE KIDNEYS (Morbus Brightii), and on some other Diseases of those Organs, associated with Albuminous and Purulent Urine. Illustrated by numerous Drawings from the Microscope. By W. R. BASHAM, M.D., Physician to the Westminster Hospital.
"Whether we have regard to the minuteness of observation and accuracy of delineation displayed in the accounts given of the cases themselves, or the masterly skill with which the important points of each are singled out for observation in the appended 'Remarks,' or to the admirable manner in which the progressive changes in the microscopic characters of the sedimentary deposits are displayed in the plates, we have no hesitation in recommending the book to our readers, as one whose perusal should not be omitted by any one anxious to treat cases of albuminuria with comfort to himself or advantage to his patients."—"Dublin Quarterly Journal of Medical Science," May, 1859.
JOHN CHURCHILL, New Burlington Street, W.

Post 8vo, cloth, 10s. 6d.
DIGESTION AND ITS DERANGEMENTS. By THOMAS K. CHAMBERS, M.D., Physician to St. Mary's Hospital, and Lecturer on Medicine at St. Mary's Medical School.
"There is common sense and sound philosophy in the views taken by Dr. Chambers."—*Medical Times and Gazette.*
"It is a book which we would with a good conscience recommend to a brother practitioner, or place in the hands of a pupil."—*British Medical Journal.*
JOHN CHURCHILL, New Burlington Street, W.

Fifth Edition, fcp. 8vo, 2s. 6d.,
HEALTHY SKIN: a Popular Treatise on the Skin and Hair, their Preservation and Management. By ERASMUS WILSON, F.R.S.
JOHN CHURCHILL, New Burlington Street, W.

Fcp. 8vo, cloth, 3s. 6d.,
GENERAL DEBILITY AND DEFECTIVE NUTRITION, their Causes, Consequences, and Treatment. By ALFRED SMEE, F.R.S., Senior Surgeon to the Royal General Dispensary, Surgeon to the Bank of England.
JOHN CHURCHILL, New Burlington Street, W.

Second Edition, 8vo, cloth 6s.,
THE CHANGE OF LIFE IN HEALTH AND DISEASE: a Practical Treatise on the Nervous and other Affections incidental to Women at the Decline of Life. By EDWARD J. TILT, M.D., Senior Physician to the Farringdon General Dispensary and Lying-in Charity.
JOHN CHURCHILL, New Burlington Street, W.

Second Edition, fcap 8vo, 2s. 6d.,
HUFELAND'S ART OF PROLONGING LIFE.
Edited by ERASMUS WILSON, F.R.S.
JOHN CHURCHILL, New Burlington Street, W.

LIST OF NEW WORKS,

RECENTLY PUBLISHED AND PREPARING FOR PUBLICATION,

BY MESSRS. LONGMAN, GREEN, & CO.

I.

THE SCHILLER CENTENARY.

SCHILLER'S LIFE AND WORKS.

BY EMIL PALLESKE.

Translated by LADY WALLACE. Dedicated by permission to Her Majesty QUEEN VICTORIA. Two Volumes post 8vo, with Two Portraits, price 24*s.* cloth.

THIS Work has been received with great approbation in Germany. Schiller's daughter wrote to the author about it as follows:—"Deeply affected and touched, but gratified beyond measure, I have just laid down your 'Life of Schiller.' Would that I could express all my warm feelings. You have depicted him admirably—with sympathy, tact, and truth. You are worthy to write such a life." And Varnhagen Von Ense has expressed the following opinion of its merits:—"We have many biographies of Schiller of various degrees of merit; but none that has hitherto fully satisfied the claims of history and criticism, the sublimity of the subject, or the sympathies of the nation. At length we joyfully welcome a minute and truly valuable delineation of our great Poet, and one worthy of the object. It is the work we have long required." Lady Wallace's Translation, for which the copyright has been secured in England, was published on Thursday, the 10th instant, being the hundredth anniversary of the birthday of the Poet.

II.

PICTORIAL EDITION OF THE PILGRIM'S PROGRESS.

BUNYAN'S PILGRIM'S PROGRESS.

With 126 Illustrations engraved on Steel and Wood from Original Designs by C. BENNETT; and a Preface by Rev. CHARLES KINGSLEY.
In One Volume, fcp. 4to, price 21*s.* cloth, gilt edges, or 31*s.* 6*d.* bound in morocco by Hayday.

"The principle on which the book is illustrated gives it an entirely novel character, and makes it the most interesting pictorial BUNYAN that has yet appeared. The execution of the plates and wood-cuts, and the style of typography, are quite perfect. The book ought to become one of the most popular of the illustrated gift-books of the coming season; but has also, we are persuaded, a higher and more enduring place awaiting it." *Nonconformist.*

III.

JACOB CATS' AND ROBERT FARLIE'S BOOK OF EMBLEMS.

MORAL EMBLEMS,

WITH APHORISMS, ADAGES, AND PROVERBS OF ALL NATIONS.

FROM JACOB CATS AND ROBERT FARLIE.

Comprising 60 large Illustrations and 60 Tail Pieces engraved on Wood. The *Illustrations* freely rendered from designs found in the works of Cats and Farlie by JOHN LEIGHTON, F.S.A., and engraved under his superintendence. The *Text* translated and edited with additions by RICHARD PIGOT. Imperial 8vo, in Grolier binding designed by the Artist, price 31*s.* 6*d.*; or bound in morocco by Hayday, 52*s.* 6*d.*
[*Early in December.*

THE Emblems and other Works of Dr. Jacob Catz, or Sir James Cats, have for two centuries been household books in Holland, and were well known to our forefathers; who highly prized them, both for their moral doctrine, and for the ingenious designs with which Adrian Van De Venne symbolised their teachings. Sir Joshua Reynolds, when a boy, was much influenced by these compositions, of which he made careful copies. Sir W. Beecher, in his Life of Reynolds, states that Sir Joshua's "richest store was Jacob Catz' Book of Emblems, which his grandmother, a native of Holland, had brought with her from that country." The Tail Pieces are derived from Farlie's "Lights, or Morall Emblems," a rare book of poems and primitive woodcuts printed in London in 1638.

IV.

THE SHILLING FAMILY SHAKESPEARE.

BOWDLER'S FAMILY SHAKESPEARE:

To which nothing is *added* to the Original Text; but those words and expressions are *omitted* which cannot with propriety be read aloud in a family. Illustrated with 36 Vignettes from original Designs by G. Cooke, R.A., R. Cooke, H. Howard, R.A., H. Singleton, R. Smirke, R.A., T. Stothard, R.A., H. Thomson, R.A., R. Westall, R.A., and R. Woodforde, R.A. A New Edition, to be published in 36 weekly Parts, each containing a Play complete with an Illustration, price One Shilling.

PART I. THE TEMPEST, price 1*s.*, *on the 30th inst.*

LORD JEFFREY in 1821 expressed his opinion in an article in the *Edinburgh Review* that "it required nothing more than a notice to bring this very meritorious publication into general circulation;" and the work, which was immediately successful, still commands a steady sale both in one volume for the library and in six volumes for the pocket. The Publishers believe that a re-issue of the thirty-six Plays, each to be had separately complete for a shilling, will bring this favourite edition of SHAKESPEARE within the reach of a still wider circle of readers.

V.

SIR JAMES EMERSON TENNENT'S WORK ON CEYLON.

THE ISLAND OF CEYLON:

An Account of Ceylon—Physical, Historical, and Topographical; with Notices of its Natural History, Antiquities, and Productions. By Sir JAMES EMERSON TENNENT, K.C.S., LL.D., &c. Illustrated with 7 Maps, 17 Plans and Charts, and 101 Engravings on Wood. 2 vols. 8vo, 2*l.* 10*s.*

"The most copious, interesting, and complete monograph which exists in our language on any of the possessions of the British Crown." *Edinburgh Review.*

"A work which we do not hesitate to describe as the most perfect and most entertaining monograph yet given to the English literature of geography." *Examiner.*

"Sir E. Tennent, who has closed the long list of writers on Ceylon by an exhaustive work, in which fine taste and literary excellence give life and grace to the fruits of vast and minute researches, presents an authentic picture of the island which more than verifies the best traits in the ideal picture our fancy had traced." *Spectator.*

VI.

ENTIRELY NEW EDITION OF DR. URE'S DICTIONARY.

DR. URE'S

DICTIONARY OF ARTS, MANUFACTURES, AND MINES.

A New Edition, chiefly rewritten and greatly enlarged; illustrated with nearly Two Thousand Engravings on Wood. Edited by ROBERT HUNT, F.R.S., F.S.S., Keeper of Mining Records, &c. Assisted by numerous Gentlemen eminent in Science and connected with the Arts and Manufactures. A complete List of the Contributors' Names is printed on the wrapper of PART I., and in the PROSPECTUS, which may be had gratis of Messrs. LONGMAN & Co., and all Booksellers. In course of publication in 14 Monthly Parts, price 5*s.* each. PART I., 5*s.*, is now ready.
[PART II. *on the 30th inst.*

VII.

NEW EDITION, EDITED BY H. WATTS, B.A., F.C.S.

DR. URE'S DICTIONARY OF CHEMISTRY.

A New Edition, entirely revised, and for the most part rewritten, bringing the Knowledge of the Science up to the most recent Discoveries, with especial application to the requirements of Manufactures. While the work will thus, it is hoped, fully represent the Science of Chemistry in its present state, it is intended that it shall be written in a style sufficiently elementary to be intelligible to Amateur Students of the Science. By HENRY WATTS, B.A., F.C.S., Editor of the "Quarterly Journal of the Chemical Society."
[*In preparation.*

LONDON: LONGMAN, GREEN, LONGMAN, AND ROBERTS, PATERNOSTER ROW, E.C.

MESSRS. LONGMAN & CO'S. LIST OF NEW WORKS—Continued.

8.

ITALY IN THE NINETEENTH CENTURY. By the Right Hon. JAMES WHITESIDE, M.P. New Edition, revised. [*Nearly ready.*

9.

THE PYRENEES, WEST AND EAST: a Summer Holiday in 1858. By CHARLES RICHARD WELD, Barrister-at-Law. With 8 Illustrations in Chromo-xylography from Drawings by the Author. Post 8vo, 12*s.* 6*d.*

10.

PEAKS, PASSES, AND GLACIERS: a Series of Excursions by Members of the Alpine Club. Edited by JOHN BALL, M.R.I.A., F.L.S., President of the Alpine Club. With 8 Illustrations in Chromo-lithography, 8 Maps, and numerous Wood Engravings. Third Edition. Square crown 8vo, 21*s.*

11.

JOURNAL KEPT IN TURKEY AND GREECE in the Autumn of 1857 and the beginning of 1858. By NASSAU W. SENIOR, Esq. With Two Maps and Two Views in Chromo-lithography. Post 8vo, 12*s.*

12.

PAUL KANE'S WANDERINGS OF AN ARTIST among the INDIANS of NORTH AMERICA; from Canada to Vancouver's Island and Oregon, through the Hudson's Bay Company's Territory, and Back Again. With Map, Illustrations in Colours, and Wood Engravings. 8vo, 21*s.*

13.

CAPT. SHERARD OSBORN'S NARRATIVE of the DISCOVERY of the NORTH-WEST PASSAGE, by H.M.S. Investigator, Capt. R. M'CLURE, 1850—1854. Edited from the Logs and Journals of Capt. M'Clure. Third Edition, revised; with Portrait, coloured Chart, and tinted Illustrations. 8vo, 15*s.*

14.

TRAVELS IN PERU AND MEXICO. By S. S. HILL, Esq., Author of "Travels in Siberia." Two vols. 8vo. [*Nearly ready.*

15.

PEOPLE'S EDITION OF THOMAS MOORE'S MEMOIRS.

MEMOIRS, JOURNAL, and CORRESPONDENCE of THOMAS MOORE. Edited by the Right Hon. Lord JOHN RUSSELL, M.P. New Edition, illustrated with Eight Portraits and Two Vignettes engraved on Steel. To be published Monthly, and completed in Ten Parts, price 1*s.* each. [PART 1. *on Dec.* 31.

16.

PEOPLE'S EDITION OF MOORE'S POETICAL WORKS.

THOMAS MOORE'S POETICAL WORKS, including the Author's Autobiographical Prefaces, Notes, and other copyright Additions. In course of publication, in Ten Monthly Parts, price 1*s.* each. Eight Parts have now appeared.

17.

LIVES OF THE QUEENS OF ENGLAND. By AGNES STRICKLAND. Dedicated, by express permission, to her Majesty. Embellished with Portraits of every Queen, engraved from the most authentic sources. Complete in Eight Vols. post 8vo, price 7*s.* 6*d.* each; 8 vols. 60*s.*

18.

THE REV. SIDNEY SMITH'S WORKS, People's Edition, complete in Two Vols. Crown 8vo, price 8*s.* cloth; to be had also in Seven Parts, price 1*s.* each.

19.

LORD MACAULAY'S CRITICAL and HISTORICAL ESSAYS, People's Edition, complete in Two Vols. Crown 8vo, price 8*s.* cloth; to be had also in Seven Parts, price 1*s.* each.

20.

LORD MACAULAY'S HISTORY OF ENGLAND from the Accession of James the Second. New Edition, in Seven Volumes, post 8vo, price 6*s.* each; 7 vols. post 8vo, 42*s.*

21.

TALES and STORIES by the Author of "Amy Herbert." New and Cheaper uniform Edition, complete in Nine Vols. Crown 8vo, price 30*s.* cloth.

AMY HERBERT .. 2*s.* 6*d.*	CLEVE HALL .. 3*s.* 6*d.*
GERTRUDE .. .. 2*s.* 6*d.*	IVORS .. .. .. 3*s.* 6*d.*
EARL'S DAUGHTER 2*s.* 6*d.*	KATHARINE ASHTON 3*s.* 6*d.*
EXPERIENCE of LIFE 2*s.* 6*d.*	MARGARET PERCIVAL 5*s.*
LANETON PARSONAGE .. .. 4*s.* 6*d.*	

22.

THE LIFE OF THE DUKE OF WELLINGTON. From the French of ALEXIS BRIALMONT, Captain on the Staff of the Belgian Army. With Emendations and Additions. By the Rev. G. R. GLEIG, M.A., Chaplain-General to the Forces and Prebendary of St. Paul's Vols. III. and IV. (completion) [*Nearly ready.*

23.

SAMUEL ROGERS'S RECOLLECTIONS of Personal and Conversational Intercourse with

CHARLES JAMES FOX,	PRINCE TALLEYRAND,
EDMUND BURKE,	LORD ERSKINE,
HENRY GRATTAN,	SIR WALTER SCOTT,
RICHARD PORSON,	LORD GRENVILLE, AND
JOHN HORNE TOOKE,	DUKE OF WELLINGTON.

Second Edition, fcap. 8vo, 5*s.*

24.

THE HISTORY OF FRANCE. By EYRE EVANS CROWE. In Five Volumes. Vol. II. 8vo. [*In the Press.*

25.

LORD BACON'S WORKS. Collected and Edited by R. L. ELLIS, M.A., Fellow of Trin. Coll. Camb.; J. SPEDDING, M.A., Trin. Coll. Camb.; and D. D. HEATH, Esq., Barrister-at-Law, late Fellow of Trin. Coll. Camb. Vols. I. to V., comprising the Division of Philosophical Works, price 4*l.* 6*s.*; Vols. VI. and VII., comprising the Division of Literary and Professional Works, price 1*l.* 16*s.*

26.

HISTORY OF THE KNIGHTS OF MALTA, or the Order of the Hospital of St. John of Jerusalem. By Major WHITWORTH PORTER, Royal Engineers. With 5 Illustrations. 2 Vols. 8vo, 24*s.*

27.

THE ORDER OF NATURE considered in reference to the Claims of Revelation; a Third Series of Essays on the Unity of Worlds and of Nature. By the Rev. BADEN POWELL, M.A., Savilian Professor of Geometry in the University of Oxford. Crown 8vo, 12*s.*

28.

HORNE'S INTRODUCTION TO THE CRITICAL STUDY and KNOWLEDGE of the HOLY SCRIPTURES. Vol. II. The Old Testament. New Edition. Edited by the Rev. JOHN AYRE, Domestic Chaplain to the Earl of Roden. [*In the Press.*

29.

CRITICAL ANNOTATIONS ON THE NEW TESTAMENT; being a Supplementary Volume to the Edition of "The Greek Testament with English Notes," in 2 Vols. 8vo. By the Rev. S. T. BLOOMFIELD, D.D. [*In January.*

30.

SELECT MEMOIRS OF PORT-ROYAL. To which are added, Tour to Alet, Visit to Port-Royal, Gift of an Abbess; and an Appendix, comprising Biographical and Historical Notices of St. Francis De Sales, the Grande Chartreuse, Archbishop Bellarmin, the Abbé De Rancé, and the Visit of James the Second to the Monastery of La Trappe. By M. A. SCHIMMELPENNINCK. Fifth Edition. 3 Vols. post 8vo, 21*s.*

31.

THE PRINCIPLES OF BEAUTY, as manifested in Nature, Art, and Human Character; with a classification of Deformities. II. An Essay on the TEMPERAMENTS (with 12 chromo-lithographic Illustrations in fac-simile of Water-colour Drawings by the Author). III. Thoughts on Grecian and Gothic ARCHITECTURE. By M. A. SCHIMMELPENNINCK. Edited by the Author's Relation, CHRISTIANA C. HANKIN. 1 Vol. post 8vo, 12*s.* 6*d.*

32.

LIFE OF MARY ANNE SCHIMMELPENNINCK. Including her Autobiography and Copious Extracts from her Journals and Correspondence. Edited by her Relation, CHRISTIANA C. HANKIN. Third Edition, revised and enlarged; with Portrait. Post 8vo, 10*s.* 6*d.*

33.

THE AFTERNOON OF LIFE. By the Author of "Morning Clouds." Second and Cheaper Edition, revised throughout. Fcap. 8vo, 5*s.*

34.

THE WARDEN: A Novel. By ANTHONY TROLLOPE. New and Cheaper Edition. Crown 8vo, 3*s.* 6*d.*

35.

TROLLOPE'S BARCHESTER TOWERS, a Sequel to the "Warden." New and Cheaper Edition, complete in One Volume. Crown 8vo, 5*s.*

36.

FALCONRY: its Claims, History, and Practice. By GAGE EARLE FREEMAN, M.A. ("Peregrine" of the *Field* Newspaper); and FRANCIS HENRY SALVIN, Captain West York Rifles. With remarks on Training the Otter and Cormorant to Fish, by Capt. SALVIN; and 8 Illustrations on Wood from Drawings by WOLF. Post 8vo, 10*s.* 6*d.*

37.

COL. HAWKER'S INSTRUCTIONS TO YOUNG SPORTSMEN in all that relates to GUNS and SHOOTING. 11th Edition, revised by the Author's Son, Major P. W. HAWKER; with a bust of the Author, and numerous Illustrations. Square crown 8vo, 18*s.*

38.

BLAINE'S ENCYCLOPÆDIA OF RURAL SPORTS; Hunting, Shooting, Hawking, Coursing, Fishing, Racing, &c. New Edition, revised and corrected; with above 600 Wood-cut Illustrations, including 20 now added from designs by JOHN LEECH. 8vo, 42*s.*

39.

YOUATT'S WORK ON THE HORSE; comprising also his Treatise on Draught. With numerous Wood-cut Illustrations. New Edition, revised and enlarged by E. N. GABRIEL, M.R.C.S., C.V.S., Secretary to the Royal College of Veterinary Surgeons. 8vo, 10*s.* 6*d.*

40.

STONEHENGE ON THE DOG IN HEALTH and DISEASE; comprising the Natural History, Zoological Classification, and Varieties of the Dog, as well as the various Modes of Breaking and Using him for Hunting, Coursing, Shooting, &c.; and including the Points or Characteristics of Toy Dogs. With about 70 Illustrations on Wood. Square crown 8vo, 18*s.*

41.

AN ESSAY ON CLASSIFICATION. By LOUIS AGASSIZ. 8vo, 12*s.*

"In our opinion, it would be difficult to overrate the services which Mr. AGASSIZ has rendered to Zoology in defining for the first time the limits of each division of the system. . . . This Essay will fully sustain the world-wide reputation of its author." —*Literary Gazette.*

42.

THE SEA AND ITS LIVING WONDERS. From the Fourth German Edition, by the Author, Dr. GEORGE HARTWIG. With very numerous Wood Engravings and Illustrations in Chromo-xylography. 8vo. [*In the Press.*

43.

ARAGO'S POPULAR ASTRONOMY. Translated and Edited by Admiral W. H. SMYTH, D.C.L., F.R.S.; and ROBERT GRANT, M.A., F.R.A.S. With 25 Plates, and 358 Woodcuts. 2 vols. 8vo, 2*l.* 5*s.*

44.

OUTLINES OF ASTRONOMY. By Sir JOHN F. W. HERSCHEL, Bart., K.H., M.A. Fifth Edition, revised and corrected to the existing state of Astronomical Knowledge; with Plates and Wood-cuts. 8vo, 18*s.*

45.

M'CULLOCH'S DICTIONARY OF COMMERCE AND COMMERCIAL NAVIGATION; illustrated with Maps and Plans. New Edition, revised, adapted to the present time; and containing much additional information. 8vo, 50*s.*

46.

MR. J. C. MORTON'S AGRICULTURAL HANDBOOKS.

HANDBOOK OF DAIRY HUSBANDRY; including the Diary of a Dairy Farm. By JOHN CHALMERS MORTON, Editor of the "Agricultural Gazette," of the "Agricultural Cyclopædia," of the new "Farmer's Almanack," &c. [*Just ready.*

47.

THE MASTER-BUILDER'S PLAN; or the Principles of Organic Architecture as indicated in the Typical Forms of Animals. By GEORGE OGILVIE, M.D. With 72 Illustrations engraved on Wood. Post 8vo, 6*s.* 6*d.*

48.

A MANUAL OF OPERATIVE SURGERY ON THE DEAD BODY. With 32 Wood-cut Illustrations. By THOMAS SMITH, F.R.C.S., Demonstrator of Anatomy and Operative Surgery at St. Bartholomew's Hospital, and Surgeon to the Great Northern Hospital. Post 8vo, 6*s.*

49.

LECTURES ON THE DISEASES OF INFANCY AND CHILDHOOD. By CHARLES WEST, M.D., &c.; Physician to the Hospital for Sick Children; Physician-Accoucheur to, and Lecturer on Midwifery at, St. Bartholomew's Hospital. Fourth Edition. 8vo, 14*s.*

50.

THE GRADUATED SERIES OF READING BOOKS.

A GRADUATED SERIES OF FIVE READING-LESSON BOOKS; adapted, as a Progressive Course of Reading, for all Classes of English Schools and Families. BOOK THE FOURTH, being the first in order of publication. Fcap. 8vo. 2*s.* 6*d.*

THE THIRD BOOK, price 2*s.*, the SECOND, price 1*s.* 6*d.*, the FIRST, price 1*s.*, and lastly the FIFTH, price 3*s.*, will speedily be published in the above order, completing the Graduated Series of Five Reading-Lesson Books, in 5 vols., price 10*s.* The Prospectus of the Series may be had of Messrs. Longman and Co., and all Booksellers.

51.

AN ELEMENTARY TREATISE ON LOGARITHMS; illustrated by carefully selected Examples. By the Rev. W. H. JOHNSTONE, M.A., Professor of Mathematics at the Royal Indian College, Addiscombe. 12mo, 2*s.* 6*d.*

52.

MANUAL OF GENERAL HISTORY: for the Use of Schools. Translated from the Noorthey Course by Professor HENRY ATTWELL, K.O.C., M.C.P., &c. Post 8vo, 2*s.* 6*d.*

53.

HISTORY OF THE EARLY CHURCH, from the First Preaching of the Gospel to the Council of Nicea. By the Author of "Amy Herbert," the "Child's First History of Rome," &c. 18mo, 4*s.* 6*d.*

54.

ELEMENTS OF MENSURATION. By the Rev. JOHN HUNTER, M.A., formerly Vice-Principal of the National Society's Training College, Battersea. Forming part of the new School Series in course of publication, edited by the Rev. G. R. GLEIG, M.A. 18mo, 9*d.*

55.

BAG-O-BAHAR: the Hindustani Text of Mir Amman, edited in Roman Type; with Notes, and an Introductory Chapter on the Use of the Roman Character in Oriental Languages. By MONIER WILLIAMS, M.A., Univ. Coll. Oxon., late Professor of Sanskrit in the East India College, Haileybury. Post 8vo, price 5*s*

56.

THE HINDUSTANI PRIMER, in the Anglo-Indian Orthography; containing a First Grammar suited to Beginners, and a Vocabulary of Common Words on all Subjects. With useful Phrases and short Stories. By MONIER WILLIAMS, M.A., Univ. Coll. Oxon., late Professor of Sanskrit in the East India College, Haileybury. 12mo. [*Just ready.*

57.

ELEMENTARY PRAXIS OF GREEK COMPOSITION; comprising a Series of Questions on Greek Accidence; progressive Examples for Practice on the Declensions and Conjugations; and a Body of Easy Sentences for Translation into Greek, accompanied by copious Vocabularies. By the Rev. J. R. MAJOR, D.D., Head Master of King's College School. Designed as a Companion to the Rev. H. M. Wilkins's "Progressive Greek Delectus." [*Just ready.*

58.

A PROGRESSIVE GREEK DELECTUS: for the Use of Schools. By the Rev. H. MUSGRAVE WILKINS, M.A., Fellow of Merton College, Oxford; Author of "Notes for Latin Lyrics," in use in Harrow, Westminster, and Rugby Schools. 12mo, 4*s.*

59.

CONTANSEAU'S NEW PRACTICAL DICTIONARY OF THE FRENCH AND ENGLISH LANGUAGES. By LEON CONTANSEAU, Professor of the French Language in the East India Military College, Addiscombe; Examiner for Direct Appointments of Cadets, &c. Third Edition, with Corrections. Post 8vo, 10*s.* 6*d.*

60.

LE DEBUT DANS L'ETUDE DE LA LANGUE FRANCAISE; or, First Lessons in Pronouncing, Reading, and Construing French. Intended to be used as a Reading Book by Beginners. By H. TARVER, Bachelier-ès-Lettres, Paris; Professor of French, Eton College. [*Just ready.*

61.

NATURAL HISTORY FOR BEGINNERS: a Reading Book for Schools and Families. By JAMES OWEN, Author of "The Stepping Stone to Natural History." Illustrated with 75 Wood Engravings. Forming part of the Rev. G. R. Gleig's new School Series. 18mo, 2*s*; or in 2 Parts, price 9*d.* each.

62.

CELESTIAL OBJECTS FOR COMMON TELESCOPES. By the Rev. T. W. WEBB, M.A., F.R.A.S., Incumbent of Hardwick, Herefordshire. With a few Wood cut Illustrations, and a Map of the Moon, 12 inches in diameter, engraved on Steel. 16mo, 7*s.*

Nearly ready, in post 8vo, with Map, price 12s. cloth,

SHOOTING AND FISHING IN LOWER BRITTANY: A complete and Practical Guide to Sportsmen. By JOHN KEMP, Esq., Author of "Sketches from the South of France," &c.

London: LONGMAN, GREEN, LONGMAN, & ROBERTS.

STRONG ALE, PALE ALE, PORTER, AND STOUT.

In fcp. 8vo, with 4 Diagrams, price 4s. 6d. cloth,

HOW TO BREW GOOD BEER.—A complete Guide to the Art of Brewing Ale, Bitter Ale, Table Ale, Brown Stout, Porter and Table Beer. To which are added Practical Instructions for making Malt. By JOHN PITT, Butler to Sir William R. P. Geary, Bart.

London: LONGMAN, GREEN, LONGMAN, & ROBERTS.

Price 1s. 6d., free by post, 1s. 7d.

LABELS FOR THE HERBARIUM,
CONSISTING OF THE NAMES OF THE
CLASSES, ALLIANCES, ORDERS, AND SUB-ORDERS,
OF
PROFESSOR LINDLEY'S "VEGETABLE KINGDOM."
So printed in large type, that they can be cut out and pasted into THE HERBARIUM.

J. MATTHEWS, 5, Upper Wellington Street, Covent Garden, London W.C

Third Edition, considerably enlarged, price 5s. 6d., free by post, 5s. 10d.,

RURAL CHEMISTRY.
By EDWARD SOLLY, F.R.S., F.L.S., F.G.S.

Honorary Member of the Royal Agricultural Society of England, Professor of Chemistry to the Horticultural Society of London, Lecturer on Chemistry in the Hon. E. I. Co.'s Military Seminary at Addiscombe, &c., &c.

J. MATTHEWS, 5, Upper Wellington St., Covent Garden, W.C.

This day is published, price 2s. 6d.,

FOLIA ORCHIDACEA, Part IX. Containing the conclusion of Pleurothallis.

Parts I. to VIII., price 2s. 6d. each, may still be had.

JAMES MATTHEWS, 5, Upper Wellington St., Covent Garden. London, W.C.

TO TUTORS, SURGEONS, THE HEADS OF SCHOOLS, &c.—The above can be supplied with Collections for practically Illustrating the Natural Orders, also Physiological and Medical Botany, by FREDK. Y. BROCAS, who has been eight years in the medical profession, and has attended the Lectures of Professors Lindley, Lankester, Henfrey, and Forbes, and the Botanic Gardens in the vicinity of the Metropolis. Collections named, arranged, and mounted, and desiderata supplied by FREDK. Y. BROCAS, Botanist, 85, St. Martin's Lane, London, W.C.

NEXT OF KIN WANTED, AND OTHERS who have been Advertised for; being exact Copies of Advertisements from the *Times, Gazette, Post, Advertiser, Chronicle*, also *Melbourne Argus, Sydney Herald, Canadian News, New York Herald, Indian Mail*, &c., for the last 60 years, covering many hundreds of Names and Descriptions of Persons of all classes Entitled to Property of several millions value. This invaluable new Book (just out) is worth its weight in gold. Hidden treasures are to be found in this extraordinary publication. It is sent post-free to every part of the United Kingdom for 12 penny post stamps by the publishers, FISHER & SON, Kingsland, London, N.E. Sent punctually per return of post.

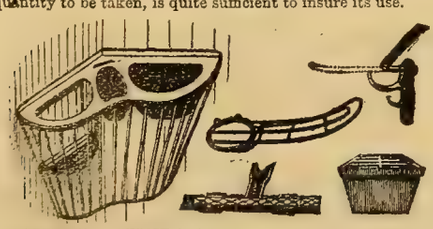
COTTAM'S PATENT INVENTIONS FOR STABLE REQUISITES, awarded a Prize at the Paris Exhibition, patronised by the English and French Governments, as well as by the principal Nobility, Gentry, and Hunting Establishments in the kingdom. In use at her Majesty's Stables, Aldershott and Balmoral.



COTTAM AND COMPANY, Winsley Street, W., are the original inventors of the PATENT ENAMELLED MANGER, Water Trough, and Wrought Iron Rack, united to an iron top-plate, and forming one complete and useful fixture, having COTTAM'S patent noiseless halter guide and collar rein attached, which is taken to the back of the manger, and works with ease and freedom up or down the guide-bar.

COTTAM'S NEW PATENT SEED-BOX, an important addition to the above fittings, being simple in construction, light, and durable, promotes cleanliness, and is economical in its results.

COTTAM'S PATENT PERMANENT ATTACHED DROP COVER, for the above, is a most essential addition to their fittings; it is never in the way; can be placed and replaced in an instant; while its cheapness, simplicity, and utility in keeping the contents of the troughs clean, and regulating the quantity to be taken, is quite sufficient to insure its use.



COTTAM'S PATENT SADDLE and HARNESS BRACKET combined, can be used with great advantage where space is an object, as it can be turned up out of the way when not in use.

COTTAM'S IMPROVED WROUGHT IRON VENTILATING BRACKET preserves the shape and allows a free admission of air to the under parts of the saddle.

COTTAM'S IMPROVED SURFACE CUTTER, with perforated moveable cover, the use of which prevents accidents, and can be easily cleaned out.

COTTAM'S CAST-IRON SANITARY TRAP, from its improved construction, gives a full water passage, and does not allow any smell to ascend from the drain.

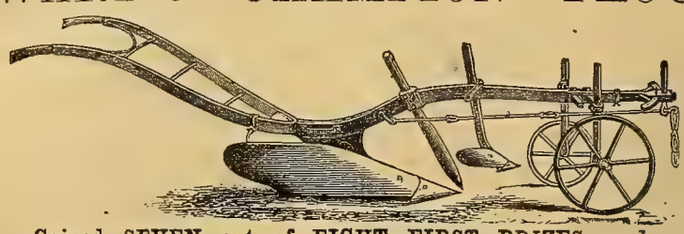
PATENT LOOSE-BOX FITTINGS, and every article for the harness-room and stable, kept in stock, plain, galvanised, and enamelled. Iron gates, fencing, hurdles, &c.

The New Illustrated Catalogue and Estimates, gratis, upon application to COTTAM and COMPANY, 2, Winsley Street Oxford Street, W. (opposite the Pantheon).

BEDFORDSHIRE AGRICULTURAL SOCIETY, 1859.

J. AND F. HOWARD have much pleasure in informing the Public that at the Ploughing Matches of the above Society, just concluded,

HOWARD'S CHAMPION PLOUGH



Gained SEVEN out of EIGHT FIRST PRIZES, and SEVEN out of EIGHT SECOND PRIZES,

Thereby more than ever sustaining its position at home, while, at the recent Meetings of the Royal Agricultural Society of England and the Highland and Agricultural Society of Scotland, it also gained the

Two Chief Prizes as the Best Plough for General Purposes.

CATALOGUES, with full particulars, sent post free on application to

J. & F. HOWARD, BRITANNIA IRON WORKS, BEDFORD.

ST. PANCRAS IRON WORKS,

OLD ST. PANCRAS ROAD, N.W.

IRON HURDLES, FENCING, AND GATES.

THE PROPRIETORS OF THE ST. PANCRAS IRON WORKS, OLD ST. PANCRAS ROAD, LONDON,

WERE AWARDED THE

SILVER MEDAL of the Royal Agricultural Society for their IRON HURDLES & GATES,

which, by their peculiar construction, are more than twice as strong and durable as those in ordinary use.

Lists per post on application. Gates from 30s. to 500l.

The Hurdles can be seen in process of Manufacture at the Works.

GAME WIRE NETTING.

Professor Varnell's Enamelled and Wrought-iron Stable Fittings.

These Patent Mangers and Stable Fittings obtained the Commendation and the Silver Medal of the Royal Agricultural Society of England and the Royal Agricultural Society of Ireland, are adopted by the Royal Veterinary College, and Professor Spooner of that Institution states that they should be used by all who value the health and comfort of their horses. They can be had plain, galvanised, or enamelled.

A Show Room is devoted entirely to every description of Stable Furniture, and full-sized stalls and loose boxes are erected for inspection at St. Pancras Iron Works.

ADDRESS—THE MANAGERS,

ST. PANCRAS IRON WORKS, OLD ST. PANCRAS ROAD, LONDON, N.W.,

OPPOSITE OLD ST. PANCRAS CHURCH.

AGRICULTURAL IMPLEMENTS.

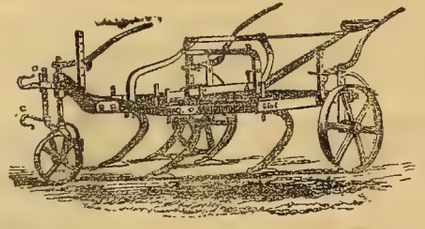
BURGESS AND KEY, 95, Newgate Street, London, E.C., have always on hand Ploughs, Harrows, Carts, Waggons, Turnip Cutters and Pulpers, Cake Breakers; and their Improved Chaff Cutters, 50s. Galvanised Game Netting, 4d. per Yard. Price Lists sent free.—Illustrated Catalogues on receipt of six postage stamps.

CLAY'S PATENT CULTIVATOR AND ERADICATOR will be exhibited at the SMITHFIELD SHOW, Baker Street, December 6, 7, 8, and 9, on STANDS 179 to 186.—Royal Yorkshire, and North Lincolnshire Societies' Prize Implement.—Requires one-fourth less horse power than any other implement tested by the Royal Society's judges as shown by the following table from the *Mark Lane Express*, July 18, 1859:

WARWICK MEETING—TRIAL OF CULTIVATORS.

	Cutting Width.	Power.
Clay ..	4 feet 5 inches	3.8
Bentall..	4 feet 4 inches	4.8
Coleman.	3 feet 5 inches	4.39

The frame of each implement is applicable as a Broadshare or Scarifier, Surface Parer or Skim, Cultivator or Grubber, and Eradicator or Drag Harrow. Price from 6l. 5s. to 12l. according to size and number of tines, wrought iron.



A Circular containing a full description of the Implement Price List, and upwards of fifty testimonials (one from the Wakefield Farmers' Club) sent post free on application to CHARLES CLAY, Oakenshaw Iron Works, near Wakefield.

HILL AND SMITH'S Patent Continuous IRON FENCE is adapted for every variety of situation, and is much superior to, and cheaper than, Iron Hurdles of equal strength.

Many miles of this Fence have been erected on the London and North-Western Railway between Camden Town and Bletchley. The Patent principle is applied to Iron Hurdles, whereby their strength is much increased and the cost reduced.

Illustrated Priced Catalogues will be sent on application to HILL & SMITH, Brierly Hill Iron Works, near Dudley; or 40, Broad Street Buildings, City, London, E.C.; or 23, Enoch Square, Glasgow, where specimens may be seen; or to Mr. B. SAMUELSON, 76, Cannon Street West, London, E.C.

WARNER'S PATENT VIBRATING STANDARD PUMPS.

PATENT CAST-IRON PUMPS for Farms, Cottages, Stable Yards, &c., where the Well does not exceed 28 feet in depth; fitted with WARNER'S Patent Metal Bucket and Valve, which cannot clog in action. These Pumps can be made right-handed, left-handed, or with handle opposite the nose by removing four screws only.



Diameter of Barrel.	Height.		£.	s.	d.
2½ in.	short	1 ft. 7 in.	1	5	0
2½ ,,	long	3 ,, 3 ,,	1	10	0
3 ,,	ditto	3 ,, 6 ,,	2	4	0
3½ ,,	ditto	3 ,, 6 ,,	2	9	0
4 ,,	ditto	3 ,, 6 ,,	2	18	0

Fitted for lead, gutta percha or cast iron flanged pipe as required.

2½ ,, short, with 15 feet of Lead Pipe attached, ready for fixing 2 10 0

2½ in. long ditto ditto ditto 2 14 0

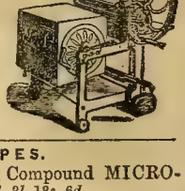
The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.

May be obtained of any Ironmonger or Plumber in Town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin Street, London, E.C.

Every description of Machinery for Raising Water by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

BRADFORD'S PATENT WASHING MACHINE
SIMPLICITY AND WONDERFUL EFFICIENCY.

"I very gratefully acknowledge the extraordinary patronage I have received from all parts of England, Ireland, and Scotland, and which has very far exceeded my most sanguine expectations." — THOMAS BRADFORD, Patentee, Manchester.



N.B. My Machines always have, and always will be sent on approval, if desired, before payment. Description and Price free by post.

MICROSCOPES.

JOSEPH AMADIO'S Improved Compound MICROSCOPE, 2l. 2s.; Students', 3l. 13s. 6d.

"Both these are from Amadio, of Throgmorton Street, and are excellent of their kind, the more expensive one especially."—*Household Words*, No. 345.

A large Assortment of Achromatic Microscopes.

Just published, 2d ed., an Illustrated Catalogue, with the names of 1500 Microscopic objects, free for 6 stamps.

PRICES REDUCED.

H. J. MORTON AND CO., Galvanised Iron Works, 2, Basinghall Buildings, Leeds.

GALVANISED IRON ROOFING

for Farm Buildings and other Roofs; the cheapest, most durable, and neatest Roofing in use; also Spouting at 1s. per yard.

WIRE STRAND CABLE FENCING



(Formed of Twisted Wires like a rope or cable), the strongest, cheapest, and neatest fence in use, will resist the largest cattle, and will not be damaged or get out of form by trespassing upon it, or over. Price, with five lines of the Galvanised Strand, iron main posts, and pronged standards, 1s. 2d. per yard.

This fence is far cheaper than posts and rails, or any kind of iron fencing; and possesses four times the strength of solid bars. Will not rust nor corrode. Upwards of 1200 miles of this Fencing supplied.

GALVANISED GAME AND POULTRY NETTING.



Galvanised, 24 ins. wide, 2-inch mesh, 5½d., 7½d. and 10d. per yard.
Galvanised, 24 ins. wide, 1-inch mesh, 4d., 5d., and 7d. per yard. The Netting made any width, and with openings of any size.

GALVANISED IRON CHAIN CAMP STOOLS & CHAIRS, POULTRY FOUNTAINS & FEEDERS, PRONGED DAHLIA RODS AND ROSE STAKES, &c.

Strong CATTLE HURDLES from 2s. per yard.

PATENT IMPROVED GAS WORKS,

of all sizes for the use of Private Houses, Mansions, Railway Stations, Mills, Collieries, Mines, Villages, &c. Works from 10 to 500 lights estimated for. The works can be entrusted to an ordinary labourer.—Apply to

HENRY J. MORTON & Co., 2, Basinghall Buildings, Leeds.

BENSON'S WATCHES.

"Perfection of mechanism."—*Morning Post.*

GOLD, 4 to 100 GUINEAS. | SILVER, 2 to 50 GUINEAS.

Send two Stamps for Benson's ILLUSTRATED WATCH PAMPHLET. Watches sent to all parts of the World free per post.

33 and 34, Ludgate Hill, London, E.C.

HEAL AND SON'S EIDER-DOWN QUILTS, from One Guinea to Ten Guineas. Also GOOSE-DOWN QUILTS, from 8s. 6d. to 24s. List of prices and sizes sent free by post. HEAL & SON'S New Illustrated Catalogue of Bedsteads and Priced List of Bedding also sent post free.

196, Tottenham Court Road, W.

MECHI AND BAZIN'S DESPATCH BOX-WRITING CASES in Russia and Morocco leather are made in 20 different forms and sizes, fitted with real Bramah and Chubb Locks. Also others of a cheaper description. Prices vary from 1l. to 50l. Portable writing and dressing cases, brush cases, courier bags, pic-nic cases, wicker luncheon baskets, sporting knives, wine and spirit flasks, &c.—112, Regent Street, W., and 4, Leadenhall Street, E.C.

GLENFIELD PATENT STARCH, used in the Royal Laundry, and pronounced by Her Majesty's Laundress to be the finest Starch she ever used. When you ask for Glenfield Patent Starch, see that you get it, as inferior kinds are often substituted. Sold by all Chandlers, Grocers, &c.

WOTHERSPOON & Co., Glasgow and London.

ALLEN'S PATENT PORTMANTEAUS AND TRAVELLING BAGS, with SQUARE OPENING; Ladies' Dress Trunks, Dressing Bags, with Silver Fittings; Despatch Boxes, Writing and Dressing Cases, and 500 other articles for Home or Continental Travelling, illustrated in their New Catalogue for 1859. By post for two stamps. J. W. & T. ALLEN, Manufacturers of Officers' Barrack Furniture and Military Outfitters (see separate Catalogue), 18 & 22, Strand, W.C.

BUTTER—GOOD FRESH BUTTER.—TRY

DOWMAN'S BUTTER POWDER, by the use of which, and following the simple directions given with each box, Butter comes in less than one-half the time it does when made in the usual mode. It is more abundant, and the quality and colour are greatly improved. The unpleasant taste of Swedes, Turnips, or other strong feed is entirely removed. The Butter will keep in a fresh state firm, and free from all rancidity, for a longer period; it is also more pure, as the cheesy part of the cream is neutralised and washed away by this process. Sold 1s. per Box, by Druggists, Grocers, &c. —London Wholesale Agents: EDWARDS, 67, St. Paul's Churchyard; BARCLAY & SONS, Farringdon Street. Sole Proprietor: G. DOWMAN, Chemist, Southampton. Agents wanted in every town. The public are cautioned against being imposed upon by worthless imitations. This article has been in use 15 years, and the best of experience has been successfully applied.

EPPS'S HOMŒOPATHIC COCOA.—Produced, in 1839, specially for the use of Homœopathic Patients, to provide them with a beverage highly nutritious and free from those effects of Coffee and Tea which to many persons are pernicious. Rendered attractive to the taste by its delicious aroma and grateful smoothness, it has become adopted by the public generally for breakfast, luncheon, and supper. It is sold by the principal Grocers at 1s. 6d. per lb., in 1 lb., ½ lb., and ¼ lb. packets. Each packet is labelled, "JAMES EPPS, Homœopathic Chemist, London."

HOW TO BREW SPLENDID STRONG ALE, at 7d. per Gallon, fine as Sherry, and an aroma equal to Burton Tenpenny. This new Practical Treatise is by a Derbyshire man of 28 years' attendance at the spigot and tun in the best brewery in the county. No brewing utensils required, only those for household use. This is guaranteed to be the best and cheapest mode to produce fine Ale ever made public. The above beautifully printed in large type can be had of the sole publishers for 12 Penny Post stamps. Sent post free to any address. Direct to FISHER & SON, Publishers, Kingsland, London, N.E. Established 1847.

NOTICE.—Just appended to this universally prized Book, all the methods to make the improved Ærated Unfermented Ginger Beer, Soda Water, Lemonade, all the Cordials and Nectars, together with the Penny French Ices, the Delightful Summer Cooling Beverages, and all the French, American, and English cheap fruit drinks.

PRIZE MEDAL, PARIS EXHIBITION 1855.

METCALFE, BINGLEY, AND CO.'S New Pattern and Penetrating Tooth Brushes, Penetrating unbleached Hair Brushes, Improved Flesh and Clothes Brushes, and genuine Smyrna Sponges; and every description of Brush, Comb, and Perfumery for the Toilet. The Tooth Brushes search thoroughly between the divisions of the Teeth and clean them most effectually—the hairs never come loose. M., B., and Co. are sole makers of the Oatmeal and Camphor and Orris Root Soaps—sold in Tablets (bearing their names and address) at 6d. each; of METCALFE'S celebrated Alkaline Tooth Powder, 2s. per box; and of the New Bouquets.—Sole Establishment, 130B and 131, Oxford St. 2d and 3d doors west from Holles St., London, W.

FENDERS, STOVES, FIRE-IRONS, AND CHIMNEY PIECES.—Buyers of the above are requested, before finally deciding, to visit WILLIAM S. BURTON'S SHOW ROOMS. They contain such an assortment of FENDERS, STOVES, RANGES, CHIMNEY PIECES, FIRE-IRONS, and GENERAL IRONMONGERY as cannot be approached elsewhere, either for variety, novelty of design, or exquisiteness of workmanship. Bright Steel Fenders, with ormolu ornaments and two sets of bars, 2l. 2s. to 10l.; Bronzed Fenders, with standards, 7s. to 2l. 5s.; Steel Fenders, 2l. 15s. to 11l.; ditto, with rich ormolu ornaments, 2l. 15s. to 16l.; Chimney Pieces, from 1l. 8s. to 54l.; Fire-Irons, from 2s. 6d. the set to 4l. 4s. The BURTON and all other PATENT STOVES, with radiating hearth-plates.

BEDSTEADS, BATHS, AND LAMPS.—WILLIAM S. BURTON has SIX LARGE SHOW ROOMS devoted exclusively to the SEPARATE DISPLAY of Lamps, Baths, and Metallic Bedsteads. The stock of each is at once the largest, newest, and most varied ever submitted to the public, and marked at prices proportionate with those that have tended to make his establishment the most distinguished in this country.

Bedsteads, from	.. ..	12s. 6d. to £20	0s. each.
Shower Baths, from	.. ..	8 0 ,,	6 0 ,,
Lamps (Moderateur), from	.. ..	6 0 ,,	7 7 ,,

(All other kinds at the same rate.)

Pure Colza Oil .. .. 4s 6d per gallon.

DISH COVERS AND HOT-WATER DISHES.—In every material, in great variety, and of the newest and most recherché patterns. Tin Dish Covers, 7s. 6d. the set of six; Block Tin, 12s. 3d. to 27s. 0d. the set of six; elegant modern patterns, 35s 6d. to 62s. 6d. the set; Britannia Metal, with or without silver-plated handles, 2l. 11s. 0d. to 6l. 8s. 0d. the set; Sheffield plated, 10l. to 16l. 10s. the set; Block-tin Hot-water Dishes, with wells for gravy, 12s. to 30s.; Britannia Metal, 22s. to 77s.; Electro-plated on Nickel, full size, 11l. 11s.

WILLIAM S. BURTON'S GENERAL FURNISHING IRONMONGERY CATALOGUE may be had gratis, and free by post. It contains upwards of 400 Illustrations of his illimited Stock of Electro and Sheffield Plate, Nickel Silver and Britannia Metal goods, Dish Covers and Hot-water Dishes, Stoves, Fenders, Marble Chimney-pieces, Kitchen Ranges, Lamps, Gaseliers, Tea Urns and Kettles, Tea Trays, Clocks, Table Cutlery, Baths and Toilet Ware, Turnery, Iron and Brass Bedsteads, Bedding, Bedroom Furniture, &c., with Lists of Prices and Plans of the 16 large Show Rooms at 39, Oxford Street, W.: 1, 1a, 2, and 3, Newman Street, W.; and 4, 5, and 6, Perry's Place, W., London.—Established 1820.

FINE HEAD OF HAIR.

THE BEARD, WHISKERS, AND MOUSTACHIOS.

ROWLANDS' MACASSAR OIL is universally in high repute as the most successful article ever known in the growth, restoration, and in improving and beautifying the human hair, proved beyond question by its unprecedented results for more than half a century past, and when every other specific has failed. It prevents it from falling off or turning grey, strengthens weak hair, cleanses it from scurf and dandriff, and makes it beautifully soft, curly, and glossy. For children it is especially recommended, as forming the basis of a beautiful head of hair. Its invaluable properties have obtained the patronage of Royalty and the aristocracy throughout Europe; while its introduction into the nursery of Royalty, and the high esteem in which it is universally held, with numerous testimonials constantly received of its efficacy, afford the best and surest proofs of its merits. Price 3s. 6d. and 7s.; family bottles (equal to four small), 10s. 6d.; and double that size, 21s.—CAUTION: on the wrapper of each bottle are the words, ROWLANDS' MACASSAR OIL, &c., in white letters; and their signature, "A. ROWLAND & SONS," in red ink.—Sold at 20, Hatton Garden, London, E.C.; and by Chemists and Perfumers.

HEALTH WITHOUT PHYSIC.—Nervousness cured by a novel and successful mode of treatment, discovered in America. The most convincing proof of the efficacy of this wonderful remedy, with other details, will be sent to any address on receipt of one stamp.—Address, Mr. HILL, 27, Alfred Place, Bedford Square, London, W.C.

PERFECT FREEDOM FROM COUGHS is secured by DR LOCOCK'S PULMONIC WAFERS.—They give instant relief, and a rapid cure of Asthma, Consumption, Coughs, and all disorders of the Breath and Lungs. They have a most pleasant taste.—Price 1s. 1½d., 2s. 9d., and 11s. per box. Sold by all Medicine Vendors.

PERFECT DIGESTION, Strong Nerves, Sound Lungs, and Refreshing Sleep restored by DU BARRY'S delicious health-restoring REVALENTA ARABICA FOOD, which saves 50 times its cost in other remedies, and removes effectually habitual constipation, indigestion (dyspepsia), acidity, flatulence, sleeplessness, torpidity of the liver, diarrhœa, bilious headaches, nervousness, biliousness, general debility, diabetes, cough, asthma, consumption, despondency, spleen. Canisters 1 lb., 2s. 9d.; 2 lb. 4s. 6d.; 5 lb. 11s.; 12 lb., 22s. The 12 lb. free of carriage on receipt of Post-office Order. —BARRY DU BARRY & Co., 77, Regent Street, London, W.; also at 182, Piccadilly, W.; 60, Gracechurch Street, E.C.; 63 and 150, Oxford Street, W.; 4, Cheapside, E.C.

HOLLOWAY'S OINTMENT AND PILLS—CONSTANT COMPANIONS.—In every climate Travellers may repose implicit confidence in the curative powers of these two remedies. They are procurable in every country; armed with them he faces danger with fortitude and repels the attacks of disease with certainty. HOLLOWAY'S Ointment, used in accordance with the printed directions, will cure all wounds, swellings, sores, and external disorders. For fever, diarrhœa, bowel complaints of all kinds, and bilious headache, no medicine proves so constantly efficient as HOLLOWAY'S purifying Pills, which relieve at once, and soon cure. The unfailing success of this treatment has been incontestably proved by the numbers it has saved after the most approved medicines, most skilfully prescribed, had long been taken in vain.

TO POULTRY FANCIERS.

FOR SALE, pure white TURKEYS, very beautiful and bred pure for years—Large Black, American Copper-coloured, and Grey, splendid; AYLESBURY DUCKS, Blue DUCKS (very handsome), COCHIN CHINAS, DORKINGS; also ICELAND PONIES—a pair of cream-coloured Ponies, a pair of Blacks, and a pair of Greys, imported direct from Iceland; very handsome, hardy, and capital action, and from their docility admirably adapted for ladies driving, or for children riding. They are all three to four years old, and 12 to 13 hands high.—Apply to Mr. JAMES CLARK, Overseer, Stidriggs by Moffat, N.B.

TO FLORISTS.

MUST BE SOLD, a BUSINESS in the above line, the Proprietor going into a different business. Rent low; trade good. Within three miles south of the market.—For address, &c., apply to C. H., Langton Cottage, Vassall Road, Camberwell New Road, S.

TO BE LET, with possession at Lady-day next, a small NURSERY with a SEED BUSINESS of many years' standing, and a comfortable newly-erected Dwelling-house and Greenhouse attached, situate seven miles eastward of Bath, and six miles westward of the Chippenham station.—Inquire of Mr. G. BISHOP, Cliffe, Chippenham, Wilts.

BATH NURSERY AND SEED ESTABLISHMENT.

MRS. GRIFFIN, widow of the late JAMES GRIFFIN, finding the business too extensive for her management, would be glad to dispose of it on liberal terms.—Further particulars can be obtained at the Nursery, Weston Road; or 2, New Bond street, Bath.

NURSERY GROUND.

TO BE LET, WHITTINGTON NURSERY, Upper Holloway, to be entered upon immediately.—For particulars, apply to J. F. MARSON, Esq., Small Pox Hospital, or to Mr Bunney, Nurseryman, Stratford, Essex, E.

HUCCLECOTE GARDENS, 2½ MILES FROM GLOUCESTER.

TO BE LET, with immediate possession, the above genteel walled-in GARDENS, containing about 4 acres with House, Farm-yards, Buildings, Orchard, and Land adjoining, containing in the whole about 16 acres, with Greenhouses, Propagating houses, Vineries, Pits, &c. Extent of glass 777 feet.—For particulars apply to W. KNOWLES, Auctioneer, St Mary's Square, Gloucester.

TO NURSERYMEN, GARDENERS, AND OTHERS.

TO BE LET, with immediate possession, and the Stock taken at a valuation, which will be from 300l. to 400l., 4 acres of NURSERY GROUND, well stocked with choice Trees and Shrubs, &c.; also 3 acres of MARKET GARDEN well stocked with Vegetables, including 25 large Asparagus Beds, &c. There is also a large Greenhouse stocked with Plants, one 11-light Pit, Frames, Potting Sheds, &c. The above is in first rate working order, with a good connexion amongst the nobility and gentry, and is situate within a short distance of railways to the principal market towns in the country. A good supply of water.—Further particulars may be had by applying to W. TOMLINSON & SON, Auctioneers, Valuers, and Agents, East Retford, Notts.

Sales by Auction.

SALE THIS DAY AT HALF-PAST 12 PRECISELY.

STANDARD AND DWARF ROSES, DUTCH BULBS,

AND ABOUT 100 STRONG PLANTS OF ARAUCARIA COOKII, AND DAMMARA OVATA, &c.

MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, W.C., THIS DAY, Nov. 19, at half-past 12 precisely, about 500 STANDARD AND DWARF ROSES of the best sorts of Hybrid Perpetual, Bourbon, Tea, and Noisette, and including some of the recent novelties. Also a first class collection of DUTCH BULBS, consisting of the finest single and double Hyacinths, Narcissus, Jonquils, Anemones, Crocus, Tulips, Ranunculus, Gladioli, Iris, Tacettes, &c.; about 80 strong plants of ARAUCARIA COOKII, from 6 to 7 inches high; 30 nice Plants of DAMMARA OVATA, from 6 to 8 ins. high, &c.—May be viewed and Catalogues had of Mr. J. C. STEVENS, 38, King Street, Covent Garden, W.C.; if for the country by enclosing two stamps.

FINAL STOCK OF MR. R. FORTUNE'S CHINESE PLANTS.

MR. J. C. STEVENS has been favoured with instructions from Mr. Glendinning, of Chiswick, to Sell by Auction, at his Great Room, 38, King Street, Covent Garden, W.C., on WEDNESDAY, November 30, and following day, at half-past 12 o'Clock precisely, without reserve, the FINAL AND MOST VALUABLE PORTION or MR. FORTUNE'S CHINESE INTRODUCTIONS. The Plants consist of the beautiful NEW CAMELLIAS "Cup of Beauty" and "Princess Frederick William," fine striped varieties with flowers of the most perfect form, and producing striped and self-coloured blooms upon the same plant; three new DOUBLE FLOWERING PEACHES, viz. the Carnation, the Rose, and the Camellia flowered; these have flowers as large as Roses, the first being beautifully striped like the Carnation; Torreya grandis; an entirely new species of Juniper with glaucous leaves, Prunus triloba, Abies Kæmpferi, a new Evergreen Hardy Oak, together with a new Purple Lilac, and other unknown and undescribed species of Chinese Plants.—On view the day prior and morning of Sale, and Catalogues had at the Rooms; or if for the country by inclosing two stamps.

CONSIGNMENT FROM GHENT FOR ABSOLUTE SALE.

To GENTLEMEN, NURSERYMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed to Sell by Auction, at the Mart, Bartholomew Lane, City, E.C., on TUESDAY, Nov. 22, at 12 o'Clock, about 200 Choice Double Camellias, and 300 Azalea indica, beautifully set with bloom buds; 1000 Asclepias tuberosa; 1000 Gladiolus gandavensis; 100 Erythrina Crista-Galli; 100 fine bulbs Lilium lancifolium rubrum; 200 Hardy and Choice-named Rhododendrons; 150 New Herbaceous Pæonias; with 200 Selected Standard Perpetual Roses, consisting of the most approved kinds.—May be viewed prior to the Sale. Catalogues may be had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex, N.E.

TO GENTLEMEN, NURSERYMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will Sell by Auction at the Mart, on FRIDAY, November 25, at 12 o'Clock, a first-class collection of DUTCH BULBS, consisting of the finest Double and Single Hyacinths, Narcissus, Jonquils, Anemones, Crocus, Tulips, Ranunculus, Gladiolus, Snowdrops, &c.; also a fine assortment of 500 Standard and Dwarf Roses, with handsome straight stems and fine bushy heads; selected American Plants, including Ghent and other Azaleas, Hybrid Rhododendrons, Kalmias, Andromeda floribunda, &c., beautifully set with bloom-buds, &c.—May be viewed the morning of Sale. Catalogues may be had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

EXTENSIVE SALE OF ROSES.

EPPING AND ONGAR, ESSEX.

MESSRS. PROTHEROE AND MORRIS are instructed to Sell by Auction on TUESDAY, Nov. 29, without reserve, the entire STOCK of the EPPING NURSERY; comprising some thousand Standard, Half-Standard, Dwarf, Climbing, and Potted Roses; Evergreens, Trained Fruit Trees, &c., Mr. HASLAM retiring altogether from business; and the Nursery is to Let. And on TUESDAY, Dec. 6, a similar STOCK at ONGAR.—May be viewed any time after the 22d. Catalogues had on the premises; at the principal Inns; of G. GLENNY, Horticultural Agent, Fulham, S.W.; and of the Auctioneers, American Nursery, Leytonstone, Essex, N.E.

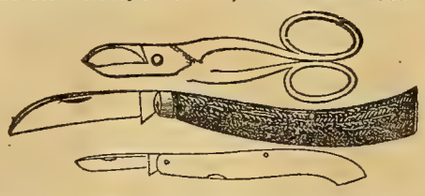
EXTENSIVE SALE OF FRUIT AND FOREST TREES, SHRUBS, &c.

To NOBLEMEN, GENTLEMEN, NURSERYMEN, BUILDERS, & OTHERS.

MESSRS. PAGE AND CAMERON will Sell by Auction on TUESDAY, November 29, and following days, at 10 for 11 o'Clock, on the premises, New Road, Barnet, by direction of the proprietor, the general NURSERY STOCK, comprising fine and valuable Green and Variegated Hollies, Aucubas, Laurustinus, Arbutuses, Portugal and Common Laurels, Pinuses, Rhododendrons, Arbor-vitæs, &c.; together with Fruit and Forest Trees of all kinds.—Catalogues may be had on the premises; at the Inns in the neighbourhood; and of Messrs. PAGE & CAMERON, Land Agents and Surveyors, 64, Old Broad Street, E.C., and St. Albans.

GARDENERS' WATERPROOF CAPES, 3*s.* each, long enough to protect a man from wet while stooping down; also for Keepers, Watchers, Carters, and Farm Labourers; Police do., 2*s.* and 1*s.* 6*d.*, each; Transparent Sheeting for garden frames, substitute for Mats, giving light and keeping out cold, waterproof, nearly 2 yards wide, 1*s.* per yard run; thick Canvas do., 1*s.* per square yard; Waggon Covers, thin, 1*s.* 6*d.* per square yard; thick, 2*s.* per square yard; Horses' Loin Cloths, waterproof, lined with woollen, 7*s.* each; large Carriage waterproof Aprons, the lining of stout horse blanket, and nearly double the size of the aprons, 8*s.* each, 5 feet by 3 feet 9 inches the waterproof, 7 feet by 7 feet the lining. Second-hand Tarpaulings, in good state, 9*d.* per square yard. Roofing Felt, 1*d.* per square foot, the best manufactured. Horses' Blankets, 6*s.*, good size, 7 feet by 7 feet. Sheep-skin Coats, 8*s.* each.—R. RICHARDSON, White Horse Factory, Bidborough Street, Judd Street W.C.; Offices: 99, Euston Road, London, N.W.

PAXTON WORKS, SHEFFIELD, ESTABLISHED 1738.



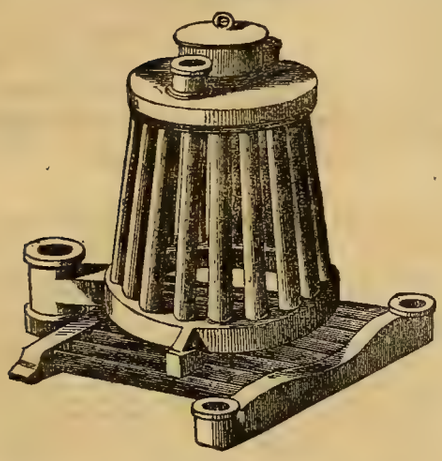
SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.—Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

GLAZIERS' DIAMONDS FOR CUTTING HORTICULTURAL and other GLASS, to be had of the Wholesale Manufacturer, JOHN EDWARDS, 20, Sharp's Alley, West Smithfield, London, E.C. Prices from 10*s.* to 27*s.* 6*d.*

WIRE ROPE FENCING.—A quantity of old Wire Rope, suitable for Fencing, for sale at 3*l.* to 4*l.* a ton.—Apply to W. HEWITSON, Wingate Grange Colliery, Ferry Hill.

HOT-WATER PIPES at wholesale prices, with Elbows, Syphons, Tee Pipes, and every other connection. Wrought and cast iron Boilers, Saddle, Conical, Cylinder, and Elliptic, from 24*s.* each. Boilers and Iron Stands to use without brickwork. Valves from 12*s.* each. Coil Boxes, Furnace Doors, Furnace Bars, Supply Cisterns, and Builders' Castings of every description in stock, at Mr. LYNCH WHITE'S Iron Wharf, Upper Ground Street, Blackfriars Bridge, London, S.

By Her Majesty's Royal Letters Patent.



ORMSON'S

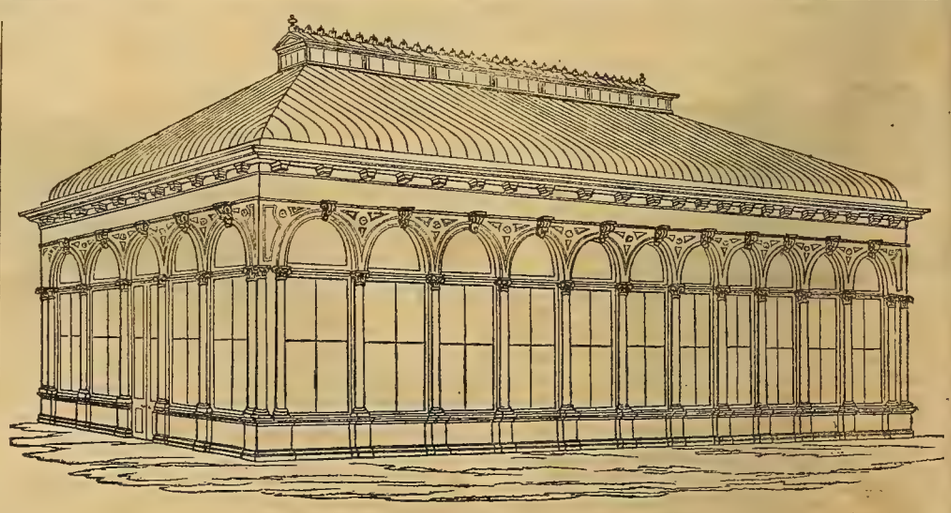
PATENT JOINTLESS TUBULAR BOILER,

HAS NOW GAINED the highest standing reputation for Power, Efficiency, Safety, and Economy of Fuel. There is not a single joint exposed to the action of the fire, which renders these Boilers far more safe than any other Tubular Boiler ever invented.

May be seen in successful operation at MR. VEITCH'S, Royal Exotic Nursery, King's Road, Chelsea, and in the Gardens of many of the Nobility and Gentry in England, Ireland, and Scotland.

They are made of various sizes. Prices on application.

HENRY ORMSON,
Stanley Bridge, King's Road, Chelsea, S.W.



HORTICULTURAL BUILDINGS

MANUFACTURED BY STEAM POWER MACHINERY

LOWEST PRICES AND BEST MATERIALS.

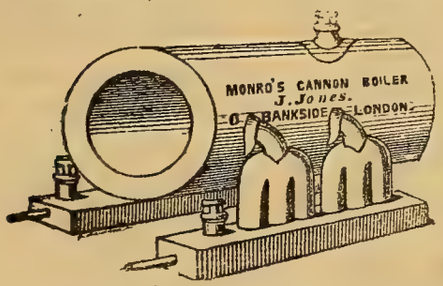
DESIGNING, BUILDING, HEATING, AND VENTILATING ON THE MOST APPROVED AND SCIENTIFIC PRINCIPLES.

PLANS, SPECIFICATIONS, AND ESTIMATES FREE ON APPLICATION.

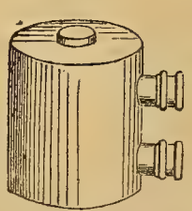
HENRY ORMSON, Horticultural Builder, and Hot-water Apparatus Manufacturer, Stanley Bridge, King's Road, Chelsea, London, S.W.

TO NURSERYMEN, GARDENERS, AND OTHERS.

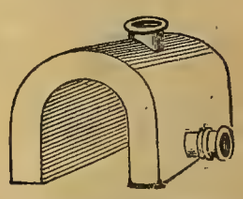
HOT-WATER APPARATUS.



MONRO'S CANNON BOILER.



CYLINDER BOILER VARIOUS SIZES.



SADDLE BOILERS OF WROUGHT AND CAST IRON, OF ALL SIZES.

THE LARGEST STOCK OF

HOT-WATER PIPES & CONNECTIONS, BOILERS, &C.,

OF THE BEST QUALITY AND AT THE LOWEST PRICES.

THE WHOLE OF THE ABOVE KEPT IN STOCK READY FOR IMMEDIATE DELIVERY.

PRICES WILL BE SENT ON APPLICATION, OR ESTIMATES FOR

HOT-WATER APPARATUS

ERECTED COMPLETE IN ANY PART OF THE COUNTRY.

J. JONES, 6, BANKSIDE, SOUTHWARK, LONDON, S.E.

Printed by WILLIAM BRADBURY, of 13, Upper Woburn Place, and FREDERICK MULLETT EVANS, of No. 20, Queen's Road, West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and published by them at the Office, No 5, Upper Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—SATURDAY, November 19, 1859.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 48.—1859.] SATURDAY, NOVEMBER 26. {Price Fivepence. Stamped Edition, 6d.

INDEX.

Archæology, Berkshire	951 b	Mangel	953 c
Bailiff and gardener	955 a	Manure, to disinfect	956 b
Birds and Gooseberries	950 a	Milk, preservation of	956 c
Boiler's, Monro's	949 c	Nut growing	950 b
Californian horticulture	947 c	Oak, new Japanese	949 c
Celery and charred earth	950 a	Plants, new	948 c
Cattleya Dominiana	948 c	— sale of Mr. Fortune's	948 c
— labiata	949 c	Potato return	955 c
Cheese, Ayrshire	956 a	Railway embankments	950 a
Chinese plants, sale of	948 c	Root crops	954 a
Chrysanthemum fence	950 b	— show, Caversham	954 c
Cottagers' Kale	950 b	Sewage	956 b
Dogs	952 a	Sheep, Shropshire	953 c
Farmers' Club, Kingscote	956 a	Soil, exhaustion of English	954 b
— — Kilmarnock	956 a	Strawberries, notes on	949 b
Farming, Irish	955 c	Tetanus	952 a
Fruits, weights of	948 a	Trade lists	951 b
Gardener and bailiff	955 a	Turnip crop	955 c
Gooseberries and birds	950 a	Vine growing, French	950 b
Grapes, large	950 b	Wadsworth's speech	948 c
Horse labour, French	957 a	Wallace's (Mr.) appointment	952 a
Horticulture, Californian	947 c	Weights of fruit	948 a
Lee's nursery, noticed	951 c	Wheat, Lois Weedon	953 c
Linnean Society	950 c	Zoology, Malay	950 c

A GRAND CHRYSANTHEMUM AND FRUIT SHOW will be held in Edinburgh on December 6 and 7. Growers desirous of exhibiting will please forward to Mr. STARK, Secretary, Masonic Hall, George Street, by 10 o'clock on the morning of the 6th. Certificates will be awarded to Seedlings of merit.

WANTED, a quantity of extra large handsome LIME TREES, from 25 to 30 feet in height. Any gentleman having in his plantations or grounds a surplus quantity of large Lime Trees, which he may be desirous of thinning and disposing of, may find a purchaser for the same by applying to JAMES VEITCH, Jun., Exotic Nursery, King's Road, Chelsea, S.W.

To insure the safe removal of such trees, J. VEITCH, Jun., will require to be permitted to have them cut round and prepared during the winter. Their removal to be effected in the autumn of 1860.—Chelsea, Nov. 26.

WANTED, a large quantity of WHITE BROOM SEED. Say price and quantity to Messrs. FISHER, HOLMES, & Co., Nurserymen and Seedsmen, Sheffield.

NEW ROSE CATALOGUE.

WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

WM. WOOD AND SON will be happy to forward Copies of their NEW CATALOGUE gratis and post free on application.

ROSES.

E. P. FRANCIS'S new and extensive CATALOGUE of ROSES on the Manetti Stock is now ready for delivery, and will be forwarded gratis on application.
Rose Nurseries, Hertford.

ROSE CATALOGUE.

JOHN CRANSTON begs respectfully to inform his patrons that he will be happy to forward his New ROSE CATALOGUE for the present season, post free, upon application. It will be found replete with the most desirable flowers (new and old) in every class, and the descriptions are copious and faithful.—Nurseries, King's Acre, near Hereford.

STANDARD ROSES.—All the leading kinds in cultivation at prices scarcely ever offered before.
CHARLES NOBLE, Bagshot, Surrey.

RHODODENDRONS "of every hue," Scarlet, White, Rose, Crimson, and every intermediate shade, nearly all sizes and at all prices, can be supplied by CHARLES NOBLE, Bagshot, Surrey.

STANDARD RHODODENDRONS.—Hundreds of handsome specimens of all the choicest varieties, varying in colour from deepest crimson to rose and pure white, with symmetrical heads and straight stems, from 2 to 5 feet in height, can be supplied by
JOHN WATERER, American Nursery, Bagshot, Surrey.

CHOICE RHODODENDRONS, AZALEAS, AND CONIFEROUS PLANTS.—A CATALOGUE of GEORGE BAKER'S unrivalled Stock of the above may be had on application.—The American Nursery, Bagshot, Surrey.

SUPERB SPECIMEN SCARLET RHODODENDRONS and others, from 3 to 5 feet in height, and 3 to 4 feet in diameter, some of which are well furnished with bloom buds, from 3s. 6d. to 10s. 6d. each, large and very bushy, well adapted for immediate effect.
WILLIAM WOOD & SON, Woodlands Nursery, Maresfield, near Uckfield, Sussex.

ANDROMEDA FORMOSA (TRUE).

W. H. ROGERS, RED LODGE NURSERY, Southampton, can offer fine strong plants of the above beautiful American Plant, 50s. per 100, or 9s. per doz., selected.

SUPERB DOUBLE HOLLYHOCKS.

WILLIAM CHATER'S CATALOGUE is now ready, and can be procured by inclosing One Postage Stamp, on application to the Nurseries, Saffron Walden, Essex.
See also other Advertisements in this Paper.

HYACINTHS AND OTHER BULBS.

WM. CUTBUSH AND SON can still supply Roots equal to the first they sent out this season, as all BULBS are especially selected for them before they are imported from Holland. Descriptive CATALOGUE post free on application.
Highgate Nurseries, London, N.

SEEDLING POTATO, WEBB'S IMPERIAL KIDNEY.—This Potato is without exception the best for every purpose. Its yield is extraordinary, and its quality first-rate. For Seed, 10s. 6d. per bushel.—Application to be made to GEORGE MACE, Gardener, Calcot, near Reading.

EARLY HANDSWORTH POTATO.

FISHER, HOLMES, AND CO. beg respectfully to say that after this notice they will not be able to supply any more EARLY HANDSWORTH POTATOES to the Trade this season.—Handsworth Nursery, Sheffield.

VEGETABLE SEEDS.

J. CARTER AND CO. can supply PEAS, BEANS, CARROTS, RADISHES, &c., for present Sowing, NEW SEED OF 1859 HARVEST.—237 & 238, High Holborn, W.C.

BEST CUCUMBER FOR EARLY WORK.

CARTER'S CHAMPION, 1s. per packet; also BERKSHIRE CHAMPION, 1s. per packet; and LORD KENYON'S FAVOURITE, 6d. per packet.
JAMES CARTER & Co., 237 and 238, High Holborn. W.C.

THE BEST FRAME CUCUMBER.

SUTTON'S BERKSHIRE CHAMPION, CARTER'S CHAMPION, & IMPROVED SION HOUSE, 1s. per packet each.
Free by post from SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

THE COTTAGERS' KALE.—Seed of this invaluable and finest of winter Greens can be had by the pound, ounce, or packet. Price to the Trade on application.
C. TURNER, the Royal Nurseries, Slough.

FLOWER, VEGETABLE, AND TREE SEEDS.

C. PLATZ AND SON, SEED GROWERS and NURSERYMEN, Erfurt, Prussia, beg leave to inform their friends and patrons that their New CATALOGUE (52d annual) of FLOWER, VEGETABLE, and TREE SEEDS from the last growth is now published, and may be had post paid on application.

SPECIAL ADVERTISEMENT.

TO THE SEED TRADE.—Our customers in the provinces should agree with their neighbouring Seedsmen and friends to have their Seeds sent from our Establishment in one parcel, saving at least 50 per cent. transit from London. Our 40th PRICED SEED LIST will be sent on application.
ABRAHAM HARDY & SON, Seed Growers, &c., Maldon, Essex.

GIANT POLYANTHUS AND GIANT COWSLIP.—A few pounds of these gigantic and beautiful Spring Flowers to be disposed of, many of them almost equal to the Auricula.—Apply to G. MACE, at the Garden, Calcot, near Reading.

WELLINGTONIA GIGANTEA.

JOHN WATERER has thousands of the above Plants to offer, varying in height from 1 to 4 feet. The whole are exceedingly handsome and well rooted. Price on application.—The American Nursery, Bagshot, Surrey.

FERN CATALOGUE.

ROBERT SIM'S NEW DESCRIPTIVE AND PRICED CATALOGUE, No. 6 (62 pages) of his COLLECTION of BRITISH AND EXOTIC FERNS, can be had, post free, for 8 stamps. Gratis to all previous purchasers of Ferns.
Nursery, Foot's Cray, Kent, S.E.

PELARGONIUMS.

C. TURNER'S DESCRIPTIVE CATALOGUE of the above is now ready, containing new varieties now offered for the first time, raised by Foster, Hoyle, Beck, and himself.
The selection of older varieties is complete. Strong plants ready for delivery.—The Royal Nurseries, Slough.

TRADE CATALOGUE.

THOS. CRIPPS, Tunbridge Wells, Kent, respectfully informs the Trade that his WHOLESALE CATALOGUE OF AMERICAN PLANTS, ROSES, AND GENERAL NURSERY STOCK is now ready and may be had post free,

MESSRS. ROEZL AND BESSERER, of Mexico, will execute orders from their CATALOGUE of last year through their Agents, Messrs. B. A. GRANTOFF & Co., 4, Lime Street Square, London, E.C.

CATALOGUE.

YOUELL AND CO.'S GENERAL AND DESCRIPTIVE PRICED CATALOGUE for this season is now ready, and will be sent free on application.
It contains detailed Lists of Greenhouse Plants, Conifers, Shrubs, as well as all the newest introductions in Soft-wooded Plants.—Royal Nursery, Great Yarmouth.

ERICAS.

F. AND A. SMITH'S Stocks of the above are this season unusually fine, comprising most of the leading winter and spring-flowering varieties. Prices on application.
Dulwich, Surrey, S.

AZALEA INDICA.

J. IVERY AND SON'S New DESCRIPTIVE CATALOGUE of the above contains all the newest and best varieties. Will be forwarded post free upon application.
Dorking Nursery.—Nov. 26.

AZALEA INDICA.

F. AND A. SMITH beg to offer the above well set with flower buds, dwarf, bushy, and thoroughly ripened off. Having been grown in this country they are most suitable for packing, and are strongly recommended to country Amateurs and the Trade in general. An inspection invited. Prices on application.—Dulwich, Surrey, S.

JAPAN LILIES, HYACINTHS, &c.—All orders amounting to 21s. and upwards sent carriage paid. The following collection "B." for 21s. or the half for 10s. 6d.:—12 Splendid Hyacinths, 4 Border Hyacinths, 2 beautiful Japan Lilies, 12 beautiful Gladioli, 30 Double Tulips, 12 Single Tulips, 100 Crocus, 100 Snowdrops, 4 Polyanthus Narcissus, 40 Border Narcissus, 40 Ranunculus, 20 Anemones.
A DESCRIPTIVE AND PRICED CATALOGUE OF BULBS, with practical cultural directions for amateurs, sent free and post paid on application.
BUTLER & MCCULLOCH, Covent Garden Market, W.C.

BEAUTIFUL JAPAN LILIES. LILIUM LANCIFOLIUM ALBUM, large bulbs, 6s. p. doz. LILIUM LANCIFOLIUM RUBRUM or SPECIOSUM, large bulbs, 15s. per doz., 1s. 6d. each.
To be had of HOOPER & Co., Seedsmen, Covent Garden Market, London, W.C.

GEORGE GIBBS AND CO.,
SEEDSMEN,
26, DOWN STREET, PICCADILLY,
LONDON, W.

GOOD SEEDS. CARRIAGE FREE.

SUTTON AND SONS,
SEED GROWERS AND MERCHANTS,
ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY LIMITED supply every requisite for the Farm and the Garden.
Registered Offices: Union Road, Plymouth.

PLANTING.

A. PAUL AND SON invite attention to their large and superior Stock of CONIFERÆ and other ornamental TREES and SHRUBS, FRUIT TREES, &c. For further particulars see advertisement in *Gardeners' Chronicle* of last week.—Nurseries, Cheshunt, Herts.

CHEAP AND SELECT NURSERY STOCK.

WILLIAM JACKSON AND CO., Bedale, Yorkshire, beg to refer to their Advertisement of the above in the *Gardeners' Chronicle* of the 12th inst., page 906; and take the opportunity to state that their ROSES were transplanted last spring, and will now remove in fine condition without risk.

RASPBERRIES.—Victoria, Fastolf, Fillbasket, New Monthly Autumn-Fruited, and Yellow Antwerp, 10s. per 100; Strong CURRANTS, 3 to 4 years; LILIES, Yellow and Turk's Cap, Purple Martagon, 2s. per doz.; Large LAURUSTINUS, bushy plants, 3 to 4 feet.
GEORGE CORNWELL, Market Gardener, Barnet, N.

GREAT SCARCITY OF FRUIT.

STRONG ROOTS OF THE LINNÆUS RHUBARB, from division, can be supplied in any quantity at 12s. per 100, or 5d. per 1000, by WALTER PENNINGTON, Nurseryman, South Retford, Nottinghamshire.

MAIDEN AND CUT-BACK FRUIT TREES.
STANDARD AND PYRAMID FRUIT TREES.
EXTRA FINE TRAINED FRUIT TREES.

RICHARD SMITH has this season 23 acres of the above. Price on application.
St. John's Nurseries, Worcester.

NEW FRUITS.—The SALWAY PEACH, COX'S ORANGE PIPPIN APPLE, and OSCAR STRAWBERRY. For Particulars of the above see CHARLES TURNER'S descriptive FRUIT CATALOGUE, which may be had on application.—The Royal Nurseries, Slough.

FRUIT TREES.

J. AND J. FRASER, Lea Bridge Road Nurseries, Essex, N.E., beg to invite purchasers of Fruit Trees to an inspection of their stock, which is this year unusually fine. PRICED CATALOGUES can be had on application.

TO THE TRADE.

J. AND J. FRASER, The Nurseries, Lea Bridge Road, Essex, N.E., beg to offer a large Stock of Maiden FRUIT TREES, including all the best sorts of Apricots, Peaches, &c. The prices, which are very moderate, may be had on application.

FRUIT TREES.—Intending purchasers are respectfully invited to inspect the extensive Stock growing at the Nursery of the Subscribers. The quality is this season unusually good.—HUGH LOW & Co., Clapton Nursery, London, N.E.

PINE PLANTS, THE SUCKERS WANTED.

WANTED, SUCKERS or SUCCESSION PLANTS of the PROVIDENCE, the BLACK PRINCE, the SMOOTH CAYENNE, and the PRICKLY CAYENNE.
Address to JOHN WEEKS & Co., Horticultural Builders, King' Road, Chelsea, London, W.

HARDY HEATHS.—A Collection of 20 sorts, by name, of the above favourite autumnal flowers, in good plants, at 30s. per 100, or 12l. 10s. per 1000.
JOHN WATERER, The American Nursery, Bagshot, Surrey.

THREE MILLIONS OF TRANSPLANTED QUICKS.

GEORGE CHIVAS, Chester, offers the above, which are admitted to be unequalled in point of quality in Great Britain. A sample bale, containing 100 each of five sizes, forwarded on receipt of 15s., and orders for 10,000 delivered free at any railway station.—Chester, November 26.

TO THE TRADE.—The Subscribers have for sale several dozens of fine plants of CEDRUS LIBANI, 3½, 4½, to 6 feet high; and CEDRUS ARGENTEA, 3½, 4½, to 6 feet high. Price, &c., on application.
BALLANTYNE & SON, Nurserymen & Seedsmen, Dalkeith, N.B.

TRANSPLANTED FOREST TREES.—Large quantities of Transplanted ALDER, LARCH, SCOTCH, SPRUCE, HAZEL, SPANISH CHESNUTS, ASH, &c, 1, 2, 3, and 4 feet. A good stock of QUICKS. Samples, with prices, may be had on application.
WATERER & GODFREY, Knap Hill, near Woking.

TRANSPLANTED AND SEEDLING QUICK.

EDMUND SALSBURY, Melbourne, near Derby, having a large quantity of the above, strong and well rooted, will be glad to send samples of three or more sizes to any place required without charge for samples.

COB NUTS.—Who would not grow Cob Nuts, selling at the present time in Covent Garden from 1s. to 1s. 6d. per lb. Trees to be obtained of JOSEPH MAY & Co., Seedsmen, &c., 1, Wellington Street, Strand, W.C.
First-rate KENTISH COB NUT.

MAGNIFICENT STANDARD AND PYRAMIDAL PORTUGAL LAURELS.—The above are well adapted for planting out on lawns or where immediate effect is required. The Standards range from 4 to 6 feet, with large well-formed heads; and the Pyramids are most beautifully shaped plants, from 5 to 7 feet. Prices on application to [illegible] & Sons, Woodlands Nursery, Maresfield, near Uckfield, Sussex.

DIANTHUS LACINIATUS.

(THE MOST VALUABLE NOVELTY OF THE COMING SEASON.)

MESSRS. E. G. HENDERSON AND SON have much pleasure in offering for sale Seeds of this very remarkable and splendid PINK, introduced from Japan with the beautiful D. HEDDEWIGI. It forms a taller plant, nearly 2 feet in height, with magnificent, large, terminal blossoms, from 3 to 4 inches in width, elegantly divided on the margin into laciniated lobes nearly 1 inch in depth, in some instances producing colossal-sized single rose-petalled flowers as in D. Heddewigi; and in others as double as a florist-Carnation, alike equally fringed and evenly expanded, spreading their richly-coloured petal-tints to the light and sun in all weathers, varying from pure white, pink, and rose, to brilliant carmine, and carmine-red, up to the richest shades of violet-crimson and maroon, and these ground colours are in many of the seminal varieties greatly enhanced in beauty by the light ones being picturesquely stained with rose and violet-crimson, whilst the dark ones are finely effective with mottled veins and streaks of white. The Seed may be sown about the last week in December, or with the commencement of the new year, in a genial warm Greenhouse. It is well adapted for pot culture in Conservatory decoration during the early summer months, and forms a fine effect in flower gardens for groups or beds throughout summer and autumn, thriving in ordinary good garden soil, and maintaining a free vigorous growth throughout the season. Seed Packets, 1s., 2s. 6d., and 5s. each.

DIANTHUS HEDDEWIGI (THE FINEST IMPORTATION OF 1859.)—This brilliant-flowered variety is of a neat dwarf compact habit, from 9 to 12 inches in height, with numerous large even-margined blossoms nearly 3 inches in diameter, of an equally rich colour as the foregoing species, varying in violet, rose, and carmine-crimson, with maroon shades, in self and parti-coloured varieties, the latter being finely marked with marbled white stains. This highly ornamental-flowered plant is also admirably adapted for pot-culture in Greenhouse and Conservatory decoration during the early summer months, and by spring sowings in pit frames, &c., for open ground planting, it makes a grand effect as groups or beds in flower garden arrangements, from June until October. Seed packets, 6d., 1s., 2s. 6d., and 5s. each.

Wellington Nursery, St. John's Wood, London, N.W.

WILLIAM YOUNG begs to call attention to his extensive NURSERY STOCK, which is in fine condition for removal, and which will be found well worth notice of those engaged in any kind of planting.

Having large quantities of the undermentioned, all well grown, good-rooted plants, he can offer them at very moderate prices.

SPECIMEN CONIFERÆ.

Abies Douglassii, 8 to 12 feet	Cedrus Deodara, 6 to 12 feet
,, canadensis, 8 to 12 feet	,, Libani, 6 to 12 feet
,, Menziesii, 6 to 10 feet	Araucaria imbricata, 4 to 6 ft.
,, nigra, 6 to 8 feet	Cryptomeria japonica, 6 to 8 ft.
,, Pinsapo (very handsome), 6 to 8 feet	Juniperus chinensis, 6 to 8 ft
Pinus Cembra, 6 to 10 feet	,, hibernica, 6 to 8 ft.
,, excelsa, 8 to 10 feet	Taxodium sempervirens, 6 to 10 feet
,, insignis, 6 to 8 feet	

LARGE DECIDUOUS TREES AND EVERGREENS.

Ash, Weeping, 8 to 10 feet	Oak, exoniensis, or New Leucombe, 8 to 12 feet
Beech, common, 6 to 10 feet	Oak, evergreen, 8 to 10 feet
,, copper, 6 to 10 feet	Weeping Willows, 8 to 10 feet
,, Fern leaf, 6 to 8 feet	Spruce Firs, 10 to 12 feet
,, weeping, 6 to 8 feet	Silver Firs, 10 to 12 feet
Horse Chesnut, 8 to 12 feet	Arbor-Vitæ, American, 6 to 8 ft
Limes, 6 to 10 feet	,, Chinese, 6 to 8 ft.
Poplar Abele, 8 to 10 feet	,, Ontario, 5 to 7 ft
,, black Italian, 8 to 10 ft.	Hollies, green, 8 to 12 feet
Maple, Norway, 6 to 8 feet	Yews, 8 to 12 feet
Oak, English, 10 to 12 feet	
,, Fordii, 8 to 10 feet	

STANDARD ROSES.—A fine collection of all best varieties.

RHODENDRONS and other AMERICAN PLANTS of all the leading varieties.

FOR ORNAMENTAL GAME COVER.

Azalea pontica	Juniper, Common
Common Laurels	Juniper sabina
Evergreen Privet	Rhododeudron ponticum
Mahonia Aquifolium	

FOREST TREES.—Larch, Scotch, Alder, Ash, Birch, Hazel, Chesnut, Willow, &c., from 2 to 4 and 5 feet, in any quantity for Coppice planting.

A NEW DESCRIPTIVE CATALOGUE of New Plants, Coniferæ, Deciduous Trees, Evergreens, Flowering Shrubs, Roses, American Plants, and general Nursery Stock, with heights and prices, forwarded on application.

N.B.—Good Railway communication to any part of England.

Milford Nurseries, near Godalming, Surrey.

TRANSPLANTED FOREST TREES.

WOOD AND INGRAM beg to offer the following extra fine and well rooted stuff:—

ALDERS, 4 to 5 feet, 35s.; 5 to 6 feet, 40s. per 1000.

ACACIAS, 3 to 4 feet, 12s.; 4 to 5 feet, 15s.; 8 to 14 feet, 50s. per 100.

ASH, 3 to 4 feet, 30s.; 4 to 5 feet, 35s.; 5 to 6 feet, 40s.; 6 to 7 feet, 50s. per 1000.

BEECH, 2 to 3 feet, 30s.; 3 to 4 feet, 40s.; 4 to 5 feet, 50s. per 1000.

CHESNUT, SPANISH, 3 to 4 feet, 40s.; 4 to 5 feet, 50s.; 6 to 7 feet, 60s.; 7 to 8 feet, 80s. per 1000.

ELMS, NARROW-LEAVED ENGLISH, 2 years seedling, 8s. per 100.

ELMS, NARROW-LEAVED ENGLISH, 2 to 3 feet, 25s.; 3 to 4 feet, 30s. per 1000.

ELMS, HUNTINGDON AND HERTS, from layers, 3 to 4 feet, 15s.; 4 to 5 feet, 20s.; 5 to 6 feet, 25s.; 6 to 8 feet, 35s. per 100.

ELMS, HUNTINGDON, from grafts, 4 to 5 feet, 25s.; 5 to 6 feet, 30s.; 6 to 8 feet, 50s.; 8 to 10 feet, 70s. per 100.

FIR, SPRUCE, 1 to 1½ feet, 50s.; 1½ to 2 feet, 60s.; 2 to 3 feet, 70s. per 1000.

FIR, SCOTCH, 2 to 3 feet, 30s.; 2½ to 3 feet, 35s.; 3 to 4 feet, 50s. per 1000.

FIR, LARCH, 2 to 3 feet, 25s.; 3 to 5 feet, 35s.; 4 to 5 feet, 40s. per 1000.

HAZEL, 3 to 4 feet, 30s.; 4 to 5 ft., 40s; 6 to 7 ft., 70s. per 1000.

HORNBEAM, 2 to 3 feet, 30s.; 3 to 4 feet, 35s.; 5 to 6 feet, 50s.; 4 to 5 feet, 40s. per 1000.

MAPLE, 1½ to 2 feet, 25s.; 2 to 3 feet, 25s.; 3 to 4 feet, 30s.; 4 to 5 feet, 40s. per 1000.

MAPLE, NORWAY, 3 to 5 feet, 8s.; 7 to 8 feet, 20s. per 100.

OAKS, BRITISH, 2 to 3 feet, 30s.; 3 to 4 feet, 40s.; 4 to 5 feet, 50s.; 5 to 6 feet, 80s. per 1000.

OAKS, TURKEY, 4 to 5 feet, 10s. per 100.

POPLAR, BLACK ITALIAN, 2 to 3 feet, 25s.; 3 to 4 feet, 30s.; 4 to 5 feet, 35s; 5 to 6 feet, 40s.; 6 to 8 feet, 50s.; 8 to 10 feet, 65s. per 1000.

POPLAR, LOMBARDY, 4 to 5 feet, 10s.; 5 to 6 feet, 15s.; 6 to 7 feet, 20s.; 7 to 8 feet, 25s.; 8 to 10 feet, 50s. per 100.

POPLAR, ONTARIO, 6 to 7 feet, 20s.; 7 to 8 feet, 25s. per 100.

SYCAMORE, 2 to 3 feet, 25s.; 5 to 6 feet, 40s.; 6 to 8 feet, 45s. per 1000.

WILLOW, BEDFORD, CÆRULEAN, and HUNTINGDON, 4 to 5 feet, 30s.; 5 to 6 feet, 40s. per 1000.

Prices to the Trade on application.

W. & I.'s new CATALOGUE of NURSERY STOCK, including Fruit, Forest, and Ornamental Trees and Shrubs, Evergreens, Roses, &c., is now ready and will be forwarded free on application.—Nurseries, Huntingdon.

BUSBY'S STOCKWOOD GOLDEN HAMBURGH GRAPE.



THE very beautiful specimens of this really SPLENDID GRAPE (some of the bunches weighing upwards of 3 lbs.) which have been exhibited during the past season, combined with the numerous unsolicited testimonials as to its superiority and general excellence which JAMES VEITCH, JUN., has received from the most eminent practical Gardeners, warrant him in again calling attention to its great merit.

J. V., JUN., can with confidence recommend it as being without doubt *the best light Grape of its class* in cultivation. It will be found a most valuable acquisition, succeeding well under the same treatment as the Black Hamburgh, and *certainly no vinery should be without it.* It has also proved to be a most excellent variety for fruiting in pots. That so fine a fruit may be universally planted and enjoyed, J. V., JUN., now offers good established plants at the following prices:—

Nice young Canes ... ... 5s. 0d. each | Good well ripened Canes ... 7s. 6d. each
Fine well-ripened Canes ... ... 10s. 6d. each

ROYAL EXOTIC NURSERY, CHELSEA, S.W.—November 26.

BUTLER & McCULLOCH,

COVENT GARDEN MARKET, W.C.

A DESCRIPTIVE AND PRICED CATALOGUE OF

HYACINTHS, GLADIOLI, RANUNCULUS, ANEMONES, IXIAS, AMARYLLIS, CROCUS, and other DUTCH and CAPE BULBS, with practical Cultural directions affixed to each Class for the use of Amateurs, sent free and post paid (for contents of CATALOGUE see *Gardeners' Chronicle*, October 1, page 786).

☞ *All orders amounting to* 21s. *and upwards sent Carriage paid.*

For conspicuous beds the following HYACINTHS and TULIPS cannot be surpassed; they occupy a most important position in the economy of the Flower Garden, coming into bloom immediately after the Crocus, &c., and ready for removal at the time of planting out Geraniums and other Summer and Autumn Flowering Plants:

BEST DOUBLE and SINGLE MIXED HYACINTHS	..	..	..	21s. 0d.	per 100,	3s. 0d.	per dozen.
TOURNESOL and REX RUBRORUM DOUBLE TULIPS	..	..	..	7 6	,,	1 0	,,
YELLOW ROSE, pure yellow and scented	Do.	..	..	10 6	,,	1 6	,,
LA CANDEUR, pure white	Do.	..	..	14 0	,,	2 0	,,
FINE MIXED DOUBLE do.	..	..	..	7 6	,,	1 0	,,
FINE MIXED SINGLE do.	..	..	..	6 0	,,	1 0	,,
CHOICE MIXED LATE FLOWERING do.	..	..	..	10 6	,,	1 6	,,

FOR CENTRES OF LARGE BEDS AND BORDERS

The following favourites are perfectly hardy, and cannot be too extensively cultivated:—

TRITOMA UVARIA (true) ..	21s. 0d. per doz.	2s. 0d. each	LILIUM LANCIFOLIUM ROSEUM 20s. 0d. per doz. 2s. 0d. each.
LILIUM LANCIFOLIUM ALBUM	15 6 ,,	1 6 ,,	,, ,, RUBRUM 20 0 ,, 2 0 ,,

GLADIOLI HYBRID of RAMOSUS, 30 splendid varieties named, for 21s. 6d., or 12 for 9s. 6d.

,, ,, CARDINALIS,	12	beautiful	,,	10 6
,, ,, BLANDUS,	6	new	,,	4 6 } best for forcing.
,, ,, SAGITTALIS	6	,,	,,	4 6 }

GLADIOLUS BRENCHLEYENSIS ..	..	..	..	30s. 0d.	per 100	5s. 0d.	per dozen.
,, GANDAVENSIS	..	..	..	15 6	,,	2 6	,,
,, QUEEN VICTORIA	..	..	..	15 6	,,	2 6	,,
,, RAMOSUS	..	..	..	15 6	,,	2 6	,,
FLORIBUNDUS	..	..	..	15 6	,,	2 6	,,

THE FOLLOWING COLLECTIONS OF CHOICE BULBS SENT CARRIAGE PAID.

No. 1, C, £1 1s.

12 Choice named Hyacinths
2 beautiful Japan Lilies, 2 varieties
12 beautiful Gladioli, 4 vars.
4 Polyanthus Narcissus
50 Ranunculus
40 Border Narcissus
100 Crocus
100 Snowdrops
40 Double Tulips
12 beautiful Iris
2 Chinese Pæonies

No. 2, D, £2 2s.

18 Choice named Hyacinths
3 beautiful Japan Lilies, 3 varieties
18 beautiful Gladioli, 6 vars.
6 Polyanthus Narcissus
100 Ranunculus
40 Anemones mixed
20 ,, scarlet
150 Crocus
150 Snowdrops
50 Double Tulips
4 Chinese Pæonies
12 beautiful Ixias
6 beautiful Sparaxis
1 Tritoma Uvaria
6 Babianas
2 Tritoma aurea

No. 3, F, £3 3s.

24 Choice named Hyacinths
4 beautiful Japan Lilies, 4 varieties
24 beautiful Gladioli, 12 vars.
9 Polyanthus Narcissus
100 Ranunculus
50 Anemones mixed
0 ,, scarlet
200 Crocus
200 Snowdrops
60 Double Tulips
6 Chinese Pæonies
18 beautiful Ixias
12 beautiful Sparaxis
2 Tritoma Uvaria
1 Lilium giganteum
12 Babianas
3 Tritoma aurea

AGENTS FOR TYE'S REGISTERED HYACINTH GLASSES.

These are without exception the most elegant and best adapted for the successful Culture of the Hyacinth. See Woodcut Group of Glasses, page 803 of *Gardeners' Chronicle*, October 8.

HOLLAND AND BAYLEY'S AUTUMN CATALOGUE is now ready, and may be had on application. It contains descriptive lists of the following, viz.:—

Carnations	Scarlet and Variegated Geraniums
Picotees	Fuchsias
Tree Carnations	Verbenas
Pinks	Ferns and Lycopods
Pansies	Roses
Auriculas	Daisies
Alpine Auriculas	Herbaceous Plants
Phloxes	Miscellaneous Plants
Azaleas (indica)	Apples
Rollisson's Spotted new Pelargoniums	Lancashire Show Gooseberries
Pelargoniums	Currants
Fancy Pelargoniums	Raspberries
French Spotted Pelargoniums	Strawberries, &c.

Bradshaw Gardens, Chadderton, near Manchester.

THE TRUE LANCASHIRE SHOW GOOSEBERRIES.

HOLLAND AND BAYLEY, Bradshaw Gardens, Chadderton, near Manchester, can now supply 24 strong plants for 12s., or 12 plants for 7s., of the below-named GOOSEBERRIES, which are of fine flavour. Weights taken from the Gooseberry Grower's Register for 1859, viz.,

RED.	dwts.	qrs.	GREEN.	dwts.	grs
London	27	1	Thumper	24	3
Dan's Mistake ..	26	5	Turnout	22	16
Wonderful	22	12	Gretna Green ..	22	6
Companion	22	4	General	21	12
Red Robin	21	14	Rough Green ..	21	8
Slaughterman ..	21	12	Tom Joiner	20	13
YELLOW.			WHITE.		
Catherine	26	3	Antagonist	27	4
Leader	23	3	Snowdrop	23	20
Drill	23	0	Freedom	23	3
Railway	19	19	King of Trumps ..	20	2
Peru	18	23	Queen of Trumps ..	19	16
Goldfinder	18	15	Eagle	19	12

Post-office Orders to be made payable at Middleton, Lancashire. Catalogues on application.

SUPERB DOUBLE HOLLYHOCKS.

WILLIAM CHATER is prepared to supply Plants from his unequalled collection of this noble flower. See CATALOGUE for the newest and most celebrated varieties, containing Practical Hints on their Culture, prices, and other information.

W. C. has a large stock of good healthy Ground Roots (Seedlings) suitable for borders, with colours, 6s. to 18s. per dozen; without, 4s. to 6s., or 30s. per 100.

Seed saved from the best exhibition varieties, in separate colours, per packet .. .. *s.* 1 *d.* 0
Ditto, in 12 separate colours, the collection 10 0
Ditto, in 6 ditto ditto 5 0
Ditto from older named varieties, in 12 separate colours, the collection 7 6
Ditto, in 6 ditto ditto 4 0
Ditto, from 20 of the best varieties, mixed, per packet .. 5 0
Ditto 12 ditto ditto ditto .. 2 6
Ditto good mixed, per packet 1 0

This Seed WILLIAM CHATER can warrant to produce flowers of equal merit to existing show varieties.

Nurseries, Saffron Walden, Essex.

TO THE TRADE.—CONTINENTAL FLOWER SEEDS.

FREDERICK WILLIAM WENDEL, SEEDSMAN and FLORIST, Erfurt, Prussia (establishe l 1832).

F. W. W. begs to inform the Trade that his Wholesale CATALOGUE of the above is now ready, containing Collections of ASTERS, STOCKS, BALSAMS, WALLFLOWERS, &c., and also an extensive list of all other New and Choice FLOWER SEEDS, sold in assortments, or by weight.

F. W. W. having extensive grounds in the town and vicinity of Erfurt, and devoting his personal attention to this department of his establishment, he can with the greatest confidence recommend all Seeds offered by him, as genuine and of the best quality.

Agent for this country—Mr. GEO MACINTOSH, Nurseryman and Seedsman, High Road, Hammersmith, London, W, to whom all orders should be addressed, and where PRICE LISTS can be obtained post free on application.

The prices will be found as low as any house which supplies a genuine article. All parcels carriage paid to London.

DUTCH AND OTHER BULBS.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their CATALOGUE of the above is now ready, and will be forwarded post free on application. Early orders are solicited, as their successful cultivation depends in a great measure on early planting.

Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

SUPERB BALSAMS.

F. AND A. SMITH are sending out seeds of their well-known superior BALSAMS, in collections of nine distinct colours, six seeds of each, 2s. 6d.; the same mixed, 2s.; half the quantity, mixed, 1s.

The above are selected from a stock of 24,000 plants, for purity and brightness of colour, size and doubleness of the blooms, and general good habit of the plant. A liberal allowance to the Trade when 12 Packets are taken.—Dulwich, Surrey, S.

ROBERT NEAL, NURSERYMAN, Wandsworth Common, S.W., begs to call the attention of buyers to his large and well-selected stock of EVERGREENS and FLOWERING SHRUBS, ORNAMENTAL TREES, AMERICAN PLANTS, FRUIT AND FOREST TREES, STANDARD AND DWARF ROSES of every description. A large stock of BOX-LEAF EVERGREEN PRIVET, from 1 to 6 feet for hedges; GREEN HOLLY, 1 to 6 feet; RICH BOG and LOAM for American Beds; LEAF MOULD. The Nursery is 10 minutes' walk from Clapham Common, and New Wandsworth Station, Crystal Palace Line.

NURSERY GROUNDS, ABERGAVENNY.

JAMES SAUNDERS begs to invite attention to his general stock of all kinds of FOREST and ORNAMENTAL TREES, EVERGREEN and FLOWERING SHRUBS of all descriptions and of all sizes. A large stock of Chichester Elm, Sycamore, Horse Chesnut, Norway Maple, Turkey Oak, Spanish Chesnut, Cedar of Lebanon, and other fine specimens suitable for Parks and Avenues, 12 to 20 feet high; quite safe to move, having been replanted every two years. A large quantity of Standard, Half-Standard, and Dwarf Roses of all the best kinds in cultivation; all kinds of Flowering Plants suitable for Flower-beds and Borders, Stove and Greenhouse Plants; about 20 extra fine specimens of Azalea indica, first-class plants and sorts, 3 to 6 feet high; several thousands of choice kinds of Pears worked on Quince stocks; 10,000 Gooseberry trees in 150 named kinds; Currants in sorts; Seakale, Rhubarb, &c. The whole of the stock is young and thriving. A liberal discount for cash.—November 26.

SUTTON'S CHAMPION SWEDE AND MANGEL WURZEL.

From J. G. IVE, Esq., *The Trenches, Langley, Bucks, Oct.* 19, 1859

"Messrs. SUTTON & SONS,—Your Yellow Globe Mangel and Champion Swede Seeds have proved excellent, having two years in succession obtained for me the Cups given by H.R.H. the Prince Consort, at the Meeting of the Royal South Bucks Agricultural Association held in 1858 and 1859.

(Signed) "J. G. IVE."

Messrs. SUTTON in publishing the above, have the gratification of stating also that the other Silver Cup presented this season to the Royal East Berks Agricultural Association was awarded to J. T. Mills, Esq., of Cookham, for 5 acres of "THE CHAMPION SWEDE," making, with those of former seasons, 10 large Silver Cups to the SUTTON'S Champion Swede, value 250 Guineas.

N.B. The new Seed is now ready of Champion Swede and Mangel Wurzel, 1s. per lb.; or cheaper in large quantities.

Royal Berkshire Seed Establishment.—November 26.

MESSRS. WATERER AND GODFREY respectfully refer planters to the following LIST of well-known good hardy Plants:—

ARAUCARIA IMBRICATA, 1 foot, stout, healthy, 5*l.* per 100; larger, up to 8 feet.
CEDRUS DEODARA, 2½ to 3 feet, very handsome, 10*l.* per 100; larger, in any quantity, up to 10 and 15 feet.
PICEA NOBILIS, Seedlings, in quantity, 1 foot, stout.
Ditto larger and in every way perfect plants, up to 4 feet.
NORDMANNIANA, from seed, 2, 3, 4, and 6 feet.
PINSAPO, 2½ to 3½ feet, and as much through.
Ditto magnificent plants, 8 and 10 feet high.
CUPRESSUS LAWSONIANA, fine bushy seedling plants, 2½ feet high.
JUNIPERUS, CHINESE, 3 feet up to 8 and 10 feet.
" IRISH, 5, 6, and 7 feet.
YEWS, IRISH, 5, 6, 7, and 8 feet
" GOLDEN, from 2 to 7 and 8 feet.
" COMMON ENGLISH, in large quantities, 4 to 6, 7, and 8 feet.
THUJA AUREA.—Several hundred magnificent specimens, 3, 4, and 5 feet high, and measuring 10 to 15 feet in circumference.
THUJOPSIS CÆREOLIS, 2½ to 3 feet.
WELLINGTONIA GIGANTEA, all from seed, 1½ to 3 feet, and as wide.
HOLLY, GREEN, in quantities, 5, 6, and 8 ft.; VARIEGATED, especially the best gold striped, of all sizes, up to 6 feet.

All the plants referred to in this advertisement were removed in April last, and they are in a condition to travel any distance with perfect safety.—Knap Hill Nursery, near Woking, Surrey.

MESSRS. J. & H. BROWN offer the following selection of choice PLANTS, which they will forward to any part:—

	s.	d.
Andromeda floribunda, winter flowering, per doz. ..	15	0
25 Azaleas, new hardy Belgian varieties, one of a sort, on their own roots, by name, well set for bloom, fine for beds or pot culture for forcing	20	0
25 Azaleas, hardy American varieties, do. do. ..	15	0
12 hardy Rhododendrons, including red, white, and rose colour	12	0
Fine hardy Scarlet Rhododendrons, 2 feet, for beds, per dozen..	10	6
New Yellow Rhododendrons, each, 3s. 6d. to..	5	6
Roses, best sorts, Standards and Half-standards, per dozen, 12s. to	15	0
Climbing Roses of best sorts, rapid growers, per doz.	6	0
6 fine hardy Magnolias, one of a sort	10	0
Greenhouse Azaleas, fine varieties, per doz., 10s. to..	12	0
Camellias, best double varieties, well set with buds, per dozen	28	0
24 Epacris and Ericas, one of a sort, in small pots ..	16	0
Hyacinths and other Dutch Bulbs of all kinds, cheap.		
FRUIT TREES.		
Fine Standard and Dwarf-trained Peaches, Nectarines, Apricots, Cherries, Plums, and Pears, each, 2s. 6d.; or per dozen	24	0
Dwarf plants of all the above kinds, grown especially for pot culture in orchard-houses, &c., per dozen	18	0
Best sorts of Gooseberries, Currants, and Raspberries, per dozen	3	0
Mulberries, Medlars, Quince, and Walnuts, each ..	2	0
Filberts, Red and Thin-shell, per dozen	3	0

Choice Grape Vines from eyes and layers, strong.
Evergreen Shrubs and ornamental Trees of all kinds, cheap.
Albion Nursery, Stoke Newington, London, N.

NEW GARDEN SEEDS, GROWTH OF 1859.

ROYAL BERKSHIRE SEED ESTABLISHMENT.

SUTTON AND SONS are now prepared to execute orders for all kinds of GARDEN SEEDS, and can warrant them genuine.

Royal Berkshire Seed Establishment, Reading.—Nov. 26.

PETER LAWSON AND SON,

THE QUEEN'S SEEDSMEN AND WOOD FORESTERS,

respectfully announce that they have now issued their

NURSERY CATALOGUE OF FOREST TREES, CONIFERÆ, SHRUBS, &c.,

which they will be happy to forward free by post on application.

27, Great George Street, Westminster, S.W.

PETER LAWSON AND SON,

THE QUEEN'S SEEDSMEN AND WOOD FORESTERS,

will be glad to communicate with parties engaged in Planting extensively, with whom special agreements may be effected.

27, Great George Street, Westminster, London, S.W.

QUICKS, FOREST TREES, &c.

JAMES DICKSON & SONS, NURSERYMEN and SEEDSMEN, the Newton Nurseries (close to the Railway Station), Chester, offer many millions of the above, of EXCELLENT QUALITY and at VERY MODERATE PRICES.

The Trees and Plants, consequent upon the Nursery Grounds (which cover an area of about 60 acres) lying in an exposed situation, and a routine of regular transplanting being carried out, are WELL ROOTED, HARDY and VIGOROUS, hence are calculated to remove with great success.

PRICED LISTS, post paid, upon application, or in cases where LARGE QUANTITIES are required SPECIAL PRICES will be given.

Newton Nurseries, and 102, Eastgate Street, Chester; also at 23, Market Place (late Deansgate), Manchester, and Newtown, Montgomeryshire.

CARTER'S LIST of NEW ANNUALS and PERENNIALS:—

Clarkia pulchella integripetala
Callirhoe digitata.
Œnothera biennis hirsutissima.
Lobelia gracilis rosea.
Anagallis grandiflora "Eugenie."
" "Napoleon."
Nigella hispanica alba.
" atropurpurea.
Phacelia tanacetifolia alba.
Dianthus chinensis laciniatus, fl. pl.
Ditto Heddewigi
Captain Clarke's Blue Sweet Pea.
Nemophila discoidalis marmorata.
Lupinus mutabilis varicolor.
Yellow Tom Thumb Nasturtium
Tom Thumb "Beauty" ditto.
Datura chlorantha, fl. pl.
Thunbergia coccinea.
Impomœa limbata elegantissima.
Spergula pilifera, new substitute for Grass.

Price to the Trade and Coloured Drawings may be had on application to JAMES CARTER & Co., 237 and 238, High Holborn, W.C.

JAMES CARTER AND CO. beg leave to offer the following:—

DOUBLE AND SINGLE BORDER HYACINTHS, 21s. per 100, 3s. per dozen.
Do. Do., named, 6s., 8s., 9s., and 10s. per dozen.
POLYANTHUS NARCISSUS, 8 sorts, 1 (root) of each, 2s. 9*d.*

	Per 1000.	Per 100.
CROCUS, blue	12s. 0*d.*	1s. 4*d.*
" light blue	12 0 ..	1 4
" purple	12 0 ..	1 4
" yellow	12 0 ..	1 4
CROCUS, large yellow	18 0 ..	2 0
" white	18 0 ..	2 0
" striped	15 0 ..	1 8
TULIPS, Tournesol	.. ..	7 6
" Rex Rubrorum	.. ..	7 6
" La Candeur	.. ..	14 0
" Yellow Rose	.. ..	10 0
" very fine double and single	.. ..	6 0

LILIUM LANCIFOLIUM (extra large)—red, per doz., 22s.; each, 2s. 3*d.* White, per doz., 17s. 6*d.*; each, 1s. 6*d.* Spotted, per doz., 20s.; each, 2s.

GLADIOLUS FOR CLUMPING.—The following collections are particularly adapted for clumping and bedding. The Gandavensis seedlings are now offered for this purpose for the first time, and can be strongly recommended for robust habit and varied brilliancy of colour.

We have added two scarce and beautiful varieties to the other assortment, which we think will be found desirable, as forming an effective contrast to those already offered:—

	Per dozen	
Conranti fulgens, crimson	4s.	0*d.*
Eugenie, salmon, rose striped	"	5 0
Fulgens aureus pictus	"	5 0
Madame Coudere, carmine shaded ..	"	4 0
Mdlle. Fanny Rouget, rose, white, and carmine ..	..	5 0
Mons Blouet, rose, shaded carmine	..	4 0
Mons. Georgeon, salmon rose	..	4 0
Triomphe d'Enghien, carmine var.	..	4 0

6 each above 8 sorts, 15s. | 3 each above 8 sorts, 8s.
12 each above 8 sorts, 28s.

Brenchleyensis, vermillion	3s. 0*d.*
Cardinalis, scarlet, white mark	3 0
Formosissimus, beautiful red	3 6
Gandavensis, scarlet and yellow	3 0
Insignis, carmine spotted	5 6
Magnifique, purple, white mark	2 6
Natalensis, yellow and red	1s. 6*d.*
Oppositiflorus, white and rose	2 6
Prince Albert, bright rose..	3 6
Ramosus, salmon rose..	2 0
Victoria Regina, bright scarlet	3 6

6 each above 11 sorts, 15s. 6*d.* | 3 each above 11 sorts.
12 each above 11 sorts, 30s.

CARTER'S FLORAL ILLUSTRATIONS, Plate No. 7, now ready, 1s. 6*d.*

JAMES CARTER & Co., 237 & 238, High Holborn, London, W.C.

NEW ANNUALS.

JOHN GEORGE WAITE, SEED MERCHANT, 181, High Holborn, London, W.C., has great pleasure in offering SEEDS of the following new hardy Annuals:—

CLARKIA PULCHERRIMA,
SCHIZANTHUS GRANDIFLORUS OCULATUS,
HELIOPHILA CŒRULEA STRICTA.

Coloured Drawings and prices of which (to the Trade only) can be had on application

Seed Establishment, 181, High Holborn, London, W.C.

NEW AND CHOICE PLANTS.

JOHN STANDISH, in offering the following Plants, can assure his customers that they are now in fine condition for sending out:—

MYOSOTIDIUM NOBILE, or Antarctic Forget-Me-Not, each 21s. 6*d.*—This plant, from the Chatham Islands, is one of the most remarkable that has been introduced for some years, being totally distinct from all others. It has large thick leaves, 8 or 9 inches across, of a dark glossy green, and sends up magnificent trusses of bloom of the most beautiful blue and white, similar to a Forget-me-not, but of a giant form. A Drawing of it is published in Curtis's "Botanical Magazine" for September. A description taken from the above is also published in the *Gardeners' Chronicle* of Sept. 17, 1859, wherein Dr. Lindley says:—"This is the handsome perennial provisionally named Cynoglossum nobile by Dr. Hooker in our last year's Volume, page 240. It is quite deserving all the encomiums that have been passed upon it."

GLADIOLI, named varieties, from the choicest and largest collection in England, 6*l.* to 5s. each. Also a fine lot of bulbs raised from seeds saved from the best flowers, all of which will flower in the summer of 1860. 7s. 6*d.* per dozen, or 50s. per 100. These are strongly recommended.

RHODODENDRON LIMBATUM.—Pale blush, bordered with bright crimson. This has received several medals at the exhibitions for Rhododendrons, being very distinct and one of the most free flowering. 21s. each.

RHODODENDRON MINNIE.—White, very large blotch of chocolate coloured spots, a fine flower, and remains a very long time in bloom. This is one of the most curiously marked Rhododendrons amongst all the white; it bears a noble truss of blooms, which cannot fail to be admired. 21s. and 31s. 6*d.* each. Selections can be made from one of the finest collections in Europe.

ROSE HYBRID PERPETUAL EUGENE APPERT.—Fiery scarlet crimson, 10s. 6*d.* each. This beautiful new Rose is in the hands of J. S. only, and is now ready to send out. It has received a First-class Certificate at the Grand National Rose Show, also at the Regent's Park. It is the most brilliant of all Roses and the finest grown, being well adapted for pot culture and for poles, growing most rapidly, sending up its flowers stiff and erect. They can be seen at a long distance. Besides this, J. S. has a fine lot of both Standards and Dwarfs of the newest and most select Roses in cultivation, which are offered at very reasonable prices.

PHLOX MRS. STANDISH.—The purest white, with a large red eye, 5s. each. Also a large collection of the finest kinds which J. S. has shown during the last summer and in every case received the First Prize. Plants from 1s. to 2s. 6*d.* each.

A CATALOGUE containing a full description of the best Hardy Plants in cultivation will be forwarded on application to The Royal Nursery, Bagshot.

MR. EDWARD MILNER having constructed and laid out the Crystal Palace Gardens and Park, Sydenham, under the direction of Sir Joseph Paxton, and having managed them for the Company till last Midsummer (when owing to the pressure of other professional duties his engagement terminated), desires to express his acknowledgments to those Noblemen and Gentlemen who have honoured him with their patronage, and to state that he continues to undertake the execution of works of a similar character.

An active experience of upwards of 20 years enables Mr. MILNER to offer his services in the formation and improvement of Parks, Gardens, and Ornamental Grounds, also in preparing designs for Conservatories and other Horticultural Buildings; in establishing and thinning Plantations and Woods, with special reference to the trees most suitable for particular soils and aspects, the valuation of Timber, Draining, Road-making, &c.

Mr. MILNER is permitted to refer to Sir Joseph Paxton and to several Noblemen and Gentlemen for whom he has done work.—Address, EDWARD MILNER, "Oxford House," Anerley Road, Norwood, S.

BRITISH POMOLOGICAL SOCIETY, Hanover Square Rooms, Regent Street, W.

The next MEETING will be held on THURSDAY, December 15, when growers generally are invited to send specimens of interesting Fruits in season. The following premiums are offered for special subjects, exhibited by the growers, according to the Society's regulations:—

One Guinea and Half a Guinea for the best and second best bunches of Retarded GRAPES, accompanied by information as to the manner in which they have been treated.
The like for the best and second best dishes of six GLOU MORCEAU Pear.
The like for the best and second best dish of six DESSERT PEARS of any other kinds in season.
Half a Guinea (by Mr. Turner) for the best dish of six Cox's ORANGE PIPPIN Apple.
The like (by Mr. Newton) for the best dish of six OLD NONPAREIL Apple.
One Guinea and Half a Guinea for the best and second best dish of six DESSERT APPLES of any kinds in season, excepting those for which the above special prizes are offered.
The like for the best and second best Culinary varieties of APPLE, fit for present use, exhibited in tens.

On this occasion the days of Meeting and Lists of Prizes will be arranged for the year 1860.

Copies of the Rules, Regulations for Exhibitors, Forms to be filled up, or other information, may be obtained on application to the Secretary, WILLIAM DAVIDSON, 2, Randolph Road, Maida Hill, London, W.

HORTICULTURAL SOCIETY'S GREAT WINTER FRUIT SHOW.—NOTICE is hereby given, that in consequence of the unusual earliness of all kinds of Fruit in the present exceptional season, also on account of the very deficient crops which have been obtained in most localities, the Council have determined that the EXHIBITION of FRUITS intended to have been held during the present year, on December 7, 8, and 9, shall NOT take place.

The Gardeners' Chronicle.

SATURDAY, NOVEMBER 26, 1859.

FOR several years past reports have occasionally reached Europe of fruits and vegetables being produced in CALIFORNIA of incredible size. On the 8th of January of the present year an extract from the American "Country Gentleman" inserted in our columns described Pears weighing 4 lbs.

each; and Mr. SEYD, in his account of that State, mentions Beetroots weighing 73 lbs., Carrots 10 lbs., bunches of Grapes 14 lbs., Apples 1½ lb., Lettuces as big as Cabbages, and Cabbages weighing 32 lbs., after being stripped of the outside leaves. Some have questioned the truth of these statements, setting them down to the credit of that fertile imagination which sometimes makes us doubt whether occidental descriptions are more trustworthy than oriental. But we are assured by perfectly credible witnesses who know California well and are well acquainted with her productions, that there is nothing in the reports alluded to that is at all beyond the strict truth.

The *Alta California* newspaper of Sept. 20 now brings us a very detailed account of a recent Horticultural Exhibition at San Francisco which is worth describing if it were only to show the energy with which the inhabitants are availing themselves of the capabilities of that fertile soil and magnificent climate. "The fair of the State Horticultural Society" as it is termed, was opened on the evening of Wednesday, Sept. 7, and lasted five days. The exhibition room was the Musical Hall, which we are informed was tastefully and appropriately decorated. Evergreens, garlands, and wreaths ornamented the walls, and hung in festoons over the numerous tables, interspersed with the national ensign—"always a beautiful decoration." At the south end of the Hall was a painting representing Pomona and Flora, the Goddesses of Fruit and Flowers, of whose great handiworks the exhibition consisted. Tables about 4 feet wide extended along the walls of the room, with two of equal width placed about the centre, extending nearly the whole length of the Hall, leaving however, an open space in front of the rostrum, which was occupied by a circular pyramidal stand about 12 feet across, rising by steps from the circumference to the centre, which was covered with flowers and ornamental plants, and presented a very beautiful appearance. "The display of fruits was truly magnificent, and the exhibition of flowers and vegetables formed a *tout ensemble* of more than ordinary effect."

The first day's proceedings seem to have been of a formal character, but were distinguished by an address by Mr. WADSWORTH, the Secretary of the Society, copious extracts from which will be found in another column.

On the second day business really commenced; and large additions were made to the Show. It seems indeed that every succeeding day increased it, the exhibitors who were not ready at first having been permitted to send their produce up to even the last day. One of the articles that attracted most attention is thus described:—

"Perhaps the most wonderful article in the Fair is the monster Red Beet, weighing 115 lbs. It beats all. It is two years old, and after having been exhibited last fall, by Mr. JOHN LEWELLING, when it weighed 42 lbs., it was stuck in the ground a second time to produce seed, and in 12 months it has gained 175 per cent. in weight without attaining that object. If the owner should pursue the same policy for several years more, and it should grow in the same proportion, it would weigh 315 lbs. in September, 1860, 855 in 1861, 2300 in 1862, and so on. It is now about 4 feet long and nearly a foot through. California *beets* the world."

Mention is made of a collection of eighty sorts of Grapes from the Vineyards of Mr. DELMAS, of St. Jose, and large quantities of Apples, Pears, Plums, Peaches, Nectarines, Apricots, "Blackberries," of which there was more than one eatable sort, Raspberries, Gooseberries, Currants. We borrow the editor's description of what was regarded as the most notable display:—

"Oak Knoll, Napa, J. W. OSBORNE.—Much was to be expected from the President of the Society, and the display he made of unirrigated fruit is certainly encouraging. He exhibited 57 varieties of Pears, of very choice character; 40 of Apples, among which we note the Golden Ball, Gloria Mundi, Danvers' Winter Sweet, Hubbardston's Nonsuch; 5 of Grapes, in quantity, they being festooned on the Vines across the table; 16 of Peaches, 10 of Plums, 4 of Nectarines and Apricots. Several branches of trees with fruit thereon also ornamented the table; on one was a cluster of 33 Plums, and on another 30 Pears."

Besides the fruits there was "a truly splendid" collection of pot plants, of which the Golden Gate Nursery, W. C. WALKER, contributed 396 pots, 264 varieties; the United States Nursery; O'DONNELL'S, 300 pots, among which were several Orange trees with native fruit, the *Stephanotis floribunda*, and a large variety of evergreen and ornamental shrubs. "Mr. SONTAG contributed a glorious collection of cut Roses, embracing some 100 varieties," and others followed in the same line.

In addition to these matters we find that samples of Californian wine and brandy were exhibited, but only in a few instances, which is unexpected considering that California last year produced between 300,000 and 400,000 gallons of wine made by Germans and French from European (not American) Grapes. The vegetables exhibited were not numerous, but "what was shown was very choice."

The third day was a continuation of the arrangements of the second, except that the various committees were busy during the morning in adjudging the awards. Mr. H. JEROME VALLIBONIA, Mission Dolores, also brought two monstrous Cabbages, and two Cauliflowers to match, plucked hap-hazard and without any design to cultivate for exhibition. One Cabbage was 3 feet 7½ inches in circumference.

On the fourth day the attendance of visitors "exhibited a decided increase;" and the awards for vegetables were announced. Among the prize Gourds is mentioned the Custard Squash.

On the fifth day, which brought the "Fair" to an end, the final awards of the judges were published, and some additions were still made to the exhibition tables. Of these by far the most interesting consisted of specimens of the Chinese Tea Plant from Mr. SILVER. "They are part," says the reporter, "of a lot of 24 which came this summer from Canton, through LESTER CLARKE, in their native earth. The transplanting there and here has retarded their growth; but they are making healthy roots. There can be no doubt of their adaptation to the climate of California; and attention is asked to the culture of this most useful household necessity. Every lady may raise her own Tea. The process of curing is not anything to deter us. It will be curious enough if we do not soon teach the Chinese how to make Tea better than any we have ever received from themselves. It is, perhaps, fair to say, that we seldom get Tea from them that is free from great adulteration. And the day we substitute our own purer articles neuralgic disorders will, probably, begin to decline."

While the "Fair" was advancing, a meeting of another kind, called the "Fruit Growers' Convention," was being held "to exchange opinions on the operations of last year, and suggest the best and tried varieties of various fruits," and continued for three days. In his opening address one of the members observed that "Fruit growing in California at present is creating a world-wide repute, for in the last fifty years great revolutions have occurred, but none so great as has been demonstrated with us. Within the past ten years, the changes by the advance of the science have been very great, as has been evidenced in Europe and the Atlantic States. Why, even in California, few believed that what was termed her arid plains and barren hills, bleak mountains and mining regions, could ever produce fruit. But now they teem with the choicest varieties known." And then the Convention proceeded to discuss the merits of Peaches, Apples, and Pears. The second day was dedicated in the forenoon to Strawberries, Raspberries, Blackberries, Gooseberries, Plums, Figs, Currants, Apricots, and Nectarines; and in the afternoon to Grapes and Cherries. On the third day came on a discussion about Artesian wells and minor matters, when the Convention was closed with a speech from the president. As a specimen of the way in which the discussions were conducted, we select the following:—

On motion, the recommendations of last year's Convention in regard to Peaches were taken up.

The following varieties of Peaches were taken up one by one, as recommended for general culture:

Crawford's Early.—No objections being noted, it was retained in the list.

Yellow Rare Ripe.—Mr. DANIELS inquired how this Peach had done this year? Mr. OSBORN said it was spoken well of in Napa. Retained.

Bergen's Yellow.—No satisfaction having been given by this variety, it was struck from the list.

Mixon Free.—Messrs. LEWELLING, of Alameda, and OSBORN, of Napa, gave this variety a good name. Retained.

Early York.—Mr. OSBORN, of Napa, said the Peach had thriven well in Napa. It was a great favourite with consumers, known as the "Strawberry Peach." Retained.

Mixon's Cling.—Mr. LEWELLING stated that it never developed on the east side of the bay (Alameda). Put on list for further trial.

Stump of the World.—This variety elicited a lengthy discussion. There being two colours, white and yellow, Judge DANIELS recommended the yellow as the superior. Mr. FOX, of San Jose, stated his conviction that the white was undoubtedly the true fruit; the yellow he considered an old Mexican with a new name. Judge DANIELS thought some authority necessary, as the sole point of objection seemed to be the colour. Mr. LEWELLING remarked that some trees he obtained from New York had turned out alike to the Crawford Peach, similar to that cultivated at Marysville. The question of colour was allowed to stand. Retained.

Crawford Late.—Retained.

President.—Ripens in September, and was free from curl in Alameda. Retained.

Evard's Late free.—Put on list for further trial.

Fox's Seedling.—Erased from the list.

Smock's Free.—No curl this year. Retained.

Heath Cling.—Judge DANIELS stated that in San Jose it was subject to curl, and he thought it would not bear a crop in four or five years in the vicinity of the bay. It was a good Peach, however. Put on list for further trial.

Cannot we English pick up a few crumbs dropped from the Californian table?

WE observe that a considerable sale of PLANTS INTRODUCED FROM CHINA by Mr. FORTUNE is to take place on the 20th inst., by direction of MR. GLENDINNING, of Chiswick. The catalogue mentions among other things a large quantity of Abies Kæmpferi, a Juniper from the North, said to be new; the Syringa oblata, lately described in our columns; an evergreen Oak, Quercus bambusifolia, reported to be hardy; a Chesnut, with the appearance of Castanea vesca, but with downy wood, and apparently undescribed; together with the beautiful new Camellias and Camellia-flowered Peaches, of which the public has already heard. In all there are 474 lots.

New Plants.

231. CATTLEYA DOMINIANA (*Garden Hybrid*).

Another hybrid has been added to the list of garden Orchids, and a new shock has been given to the old ideas of botanists as to species. At the last meeting of the Floral Committee of the Horticultural Society, Messrs. Veitch produced the plant at the head of this memorandum, bred by their clever foreman, Mr. Dominy, between Cattleya labiata and C. amethystina. The latter name is given in gardens to a form of C. Loddigesii; so that this hybrid is between a one-leaved and a two-leaved species. Its flowers are as large as small states of C. Mossiæ; the colours of the lip, with a pale citron centre, are comparable to those of a pale Mossiæ; and what is curious the appendage of the column behind the anther is also that of C. Mossiæ, not of C. labiata. In general aspect the flowers, which are pale rose colour and very handsome, resemble C. intermedia, (another form of C. Loddigesii); but the petals are thin, membranous, and wavy as in C. labiata.

A very remarkable plant.

SPEECH OF MR. WADSWORTH

AT THE OPENING OF THE "THIRD ANNUAL FAIR OF THE STATE HORTICULTURAL SOCIETY OF CALIFORNIA."

AGRICULTURE, in its broadest sense, has ever been deemed an ennobling pursuit, worthy the special favour and countenance of kings, and of the rulers of the peoples of all countries. If agriculture is that high and honourable pursuit, entitling its votaries to the world's praises, what may we not say of horticulture? which is but the refinement of all there is good in agriculture, without any of its evils; for agriculture, as practised in the Atlantic States, and in this State—differing widely from European agriculture—has its evils; horticulture, few or none.

Horticulture, technically speaking, differs materially from agriculture in this: that whilst the former is adapted to the production in the highest degree of perfection and in the greatest abundance of all the multiplied products of the garden, the orchard, and the vineyard, including, not only the fruits and flowers, but all the more succulent and perishable—though none the less desirable—vegetables; agriculture is that branch of the soil's economy, occupancy, and culture, that supplies the world abroad as well as at home with the products of the dairy, the flesh, food, and clothing of our people, and annually fills to overflowing the granaries of our country with the more substantial and indispensable products of the grain fields.

But it may be asked, in what consists the evil of an American agriculture, as differing from European, that is not equally a concomitant of our horticulture? We answer, horticulture, as practised amongst us, or upon the Atlantic side, improves the soil; the suburban gardens of every city in the Union, though devoted to the constant production and reproduction of fruits and flowers and vegetables, are as abounding in every element constituting a fertile horticultural soil now as they were fifty years ago.

But agriculture, in the Atlantic States, has impoverished the soil, and it is already doing the same for California. In this then we find the evil of an American agriculture, and that our soils are annually yielding less of the more important cereals, whilst European soils, with an European culture, are even more productive than they were a century ago. But it is not our purpose here to discuss the principles or the practices of agriculture. Of the principles and practices of horticulture, as applicable to California, we claim to have a right to speak, to endorse or to commend, unless the display of fruits and flowers, now on exhibition here, does not disarm of argument every opponent to our modes of culture, by its gorgeous richness, beauty and perfection. And, though these fruits and flowers may excel in every attribute of perfection the best the world has ever known before, yet no one except he who believes he knows more than all his compeers, will deny that there is yet vast room for improvement, and that that improvement must be based upon our own experience and practice rather than upon the dogmas of learned horticultural book writers of other countries.

If we can obtain all the information necessary to a practical and perfect horticulture in a country in which even its climate is yet an anomaly, a mystery, by study-

ing the works of even our best authors, why all that would be really necessary for the man desirous of turning his attention to the culture of fruits, trees, plants and flowers in California, would be to purchase a few books, and from them learn all that can be learned of horticulture.

No, gentlemen, we cannot learn a system of horticulture, adapted to the soil and climate of California, from any printed book extant. If we can, why this society, or any other for the promotion of our horticulture? Is it for the purpose merely of annually gathering together a few fine specimens of fruits, and exhibiting them here as the mountebank does his show, for the gain of a few paltry dollars? Rather let it be said that it is for the improvement of our horticulture, by assembling together the practical working horticultural producers, and by a comparison of products and the imparting of the knowledge gained by the experience of the more successful, stimulating others to renewed efforts at improvement, by adopting the practices of those who, discarding old theories and systems, are leading the way in a new and successful horticulture, adapted to our own peculiar condition of soils, climates, and circumstances.

Who among you, what horticulturist here present, we ask, ever thought of writing home to his friends in the Atlantic States or England, for information as to the best mode of cultivating a garden here, in a country in which the sun shines perpetually by day, and no rain falls—or next to none—during the whole six months of summer?

It is for us to learn from our own experience, and not for them to tell us.

Thus it is that we find horticulturists entertaining directly opposite opinions on the same subject; and yet both may be right. We will instance the practice of irrigation. One possesses soil that a ten years' experience has clearly demonstrated is better without irrigation than with; but this does not make it true that irrigation is undesirable, because we are at once met by some of the best and most successful horticulturists and fruit growers in the State with the declaration that irrigation is the basis of their success; that without it they might as well abandon their now successful and profitable pursuits. But because we have no experience with another's practice, which has grown out of circumstances that have not surrounded us, we should not always condemn; for though we would dispense with irrigation everywhere if we could, and believe it can be in very many localities where it has been deemed necessary, yet after all irrigation will make beautiful thousands of acres of our valley lands; irrigation will yet plant and sustain forests of orchard trees on, around, and among our foot-hills, where trees were never grown before; and irrigation will yet transfer acres and acres of Vineyards from the grosser alluviums of our valleys, and hang them in luxuriance and richer juices upon the mountain sides.

And what is true of one locality will apply to a large part of California, for hardly any two places have the same climate, and should their climates happen to be similar, their soils are almost sure to differ. But it is no disparagement to the present, and much less to the future of our horticulture, that we have these varied circumstances of soils and climates; they secure to us the fruits of the temperate zones, mingled with those of the tropics. Here, in this Hall, as the products of California, we find the Orange, the Lemon, the Fig, and the Pomegranate, that have grown almost side by side with the luscious Peach, the more hardy Apple and the Pear, and, as your tables show, all truly excellent of their kind; and these again interspersed with flowers so beautiful in form and brilliant in their colouring, and yet so chaste and pure, even Nature in them would have excelled herself, but for the presence of your wives and daughters.

Indeed, but for woman, the beautiful in horticulture would hardly be known amongst us; what cares man for flowers? He may think he loves them, and he does cultivate them now; but did he before woman came amongst us? Or were not his efforts in horticulture almost exclusively confined to the production of Onions, Cabbages, and Potatoes?

But suppose California should produce more fruit than can possibly be consumed at home, and it should be found necessary to export the surplus; is there any fear that such export will injure us? Has it come so suddenly to this, that California can export a large surplus of agricultural and horticultural products, that her corn, her fruits, her wines, and her wool are flooding the markets of the world, that she must necessarily be verging upon bankruptcy? Political economists seldom say this of any country; but they do say, and it has been the experience of the world, that where a country is found abounding in horticultural products, and able to export a large surplus of all the finer fruits, the people of that country must necessarily be well fed; which constitutes one of the first elements of happiness with all the animals or animate creations with which we have anything to do.

As a society, you have reason to be pleased at the progress you have made. This is your third annual exhibition; the second was better than the first, and this is an improvement upon both; and though the present has been a season unpropitious, beyond an average for California, for the fullest development of her horticultural products, yet we believe the display of fruits here presented, taking their size, beauty, fairness or freedom from imperfection, and good qualities in every sense into account could a comparison be made, would be found without its equal in any clime or country.

This one fact alone, that as a society you are able to beat the world in horticultural products, ought of itself to be a sufficient encouragement for your continued, combined effort. You have reason to be proud of your success; with no experience in Californian culture, or knowledge of the constituents of her soil or effects of climate, you have mastered, in a great degree, many of the previously unknown conditions of both; and if you have not made them entirely subservient to your purposes, you have discovered some of their capabilities, and turned them to good account, as this exhibition most clearly proves.

Go hence, then, once more to your noble work, nor let your pride nor your ambition flag; let your valleys lift their Vineyards to the foot-hills, and let the hills pass them on and upwards to the mountains, until their very gorges and cañons shall burst forth with new wine; and this, the evening coast of our country, the land of gold, sunshine, and flowers, be recognised and acknowledged as the Italy of America, the Vineyard of the continent, the floral and pomological garden of the world. *Abridged from the Alta California, Sept.* 20.

NOTES ON STRAWBERRIES GROWN FOR TRIAL AT CHISWICK.

The examination of the collection of Strawberries growing at the Garden, at Chiswick, was deputed to a sub-committee of the Fruit Committee, which met from time to time during the fruiting season, and tested the qualities of such kinds as were in a condition for examination. The excessively hot dry weather was, however, unfavourable to some of the late varieties which had been planted, and prevented satisfactory notes being taken of them. The sub-committee, moreover, thought it desirable that much more complete collections should in future seasons be planted out for the especial purpose of obtaining more complete information on the subject. The following are the notes and observations made:—

Ajax (Nicholson).—Fruit large, roundish, deep red; calyx small, reflexed; seeds slightly embedded; flesh pale red, juicy, and tolerably rich. Leafstalks hairy, very tall and strong; leaflets, of which there are sometimes five, very large, broad, widely serrated. Altogether the plant is of extraordinary vigour, but a shy bearer, growing too much to leaf in the open ground; yet it answers well in forcing, its excessive vigour being checked in consequence of the confinement of its roots in the pots.

Belle Bordelaise.—This is said to have been obtained from the old Hautbois fertilised by the Alpine. It appeared, however, to be exactly the same as the Prolific or Conical Hautbois.

British Queen Seedling.—Fruit middle-sized, obtusely conical, dark red. In point of flavour, this variety was found to be so much inferior to the British Queen, that it was pronounced to be not worth growing.

Captain Cook (Nicholson).—Fruit generally roundish-ovate, but irregular, red with frequently a green point; flavour scarcely second-rate. Habit of the plant rather dwarf. Leafstalks hairy; leaflets small, oval, sharply serrated, glaucous beneath.

Comte de Paris (Pelvilain).—Fruit large, roundish heart-shaped; flesh pale red throughout, firm, and very acid. Leafstalks slightly hairy, the hairs depressed; leaflets roundish obovate. The fruit was considered too acid for dessert.

Duchesse de Trévise.—See Vicomtesse Héricart de Thury.

Eliza (Myatt).—Fruit middle-sized, ovate, with a neck, light red; flesh pale red next the outside, whitish towards the centre, juicy, rich, sweet, and very excellent. Leafstalks hairy, the hairs spreading horizontally; leaflets roundish-oval, obtusely serrated. A good bearer, ripening about the middle season. It is hardier than the British Queen, and will therefore survive in cold situations where occasionally the last-named sort does not completely withstand very severe winters. It was highly approved when tried in comparison with other sorts. Omar Pacha, as received in the Garden of the Society, proved to be exactly the same as Myatt's Eliza.

Excellente (Lorio). — Fruit large, roundish-ovate, pale-red, with numerous small prominent seeds. Leafstalks hairy; leaflets broad and thin, widely and sharply serrated. A good bearer, but not well-flavoured.

Exhibition (Nicholson).—Fruit middle-sized, oblong, ovate, or irregular, bright red; seeds prominent; flesh dull yellow, and of bad flavour. Leafstalks dwarf hairy; leaflets roundish, rather sharply serrated. A good bearer, notwithstanding which it cannot be recommended, owing to its inferior quality.

Filbert Pine (Myatt). — Fruit above middle-size, conical, pale-red on the shaded side, and dull purplish red on the exposed side; seeds prominent; flesh firm, solid, and rich, pale, with a pink core. Leafstalks slightly hairy, the hairs adpressed; leaflets roundish oval. The quality of the fruit of this variety is variable, but often remarkably good.

Fill-basket (Nicholson).—Fruit rather large, roundish, sometimes flattened on the sides; flesh pale red, with a hollow core, and possessing but little flavour. Leafstalks very heavy; leaflets deeply and sharply serrated, glaucous beneath.

Highland Chief.—Fruit large, roundish or roundish ovate, light red; flesh pale red, soft, rich, and very excellent, with an agreeable mild acidity. Leafstalks rough and very hairy; leaflets obovate, coarsely serrated. A first-rate sort.

La Reine (De Jonghe).—Fruit middle-sized, of a longish shape, light red; flavour good. The variety cannot, however, be recommended at present, as it appears to be a shy bearer. Further trial is therefore necessary.

Marquise de la Tour Maubourg. — See Vicomtesse Héricart de Thury.

Ne Plus Ultra (De Jonghe).—Fruit large, of a singular oblong form, dark red; flesh solid, rich, and pleasant. Leafstalks hairy, the hairs depressed; leaflets roundish, obovate, rather widely serrated.

Omar Pacha.—See Eliza.

Prince of Wales (Cuthill).—Fruit middle-sized, conical, bright red; flesh firm, but rather acid. Leafstalks very hairy, the hairs spreading horizontally; leaflets ovate or obovate, pale green, glaucous beneath. An extraordinary bearer, ripening late.

Princess Royal of England (Cuthill).—Fruit middle-sized, conical or roundish ovate, with a neck, red next the sun, pale red where shaded; seeds prominent; flesh pale red, whitish near the centre, tolerably rich, with an agreeable aroma. Leafstalks hairy, the hairs spreading or horizontal; leaflets rather small, obovate, sharply serrated. An abundant bearer, and worthy of general cultivation.

Ruby (Nicholson).—Fruit large, roundish, dark red; flesh pale, soft, with a large core. Leafstalks hairy, the hairs depressed; leaflets oval, sharply serrated. The flavour of this proved bad.

Sir Walter Scott.—Fruit large, oblong, pointed, deep red, with prominent seeds; flesh pale, firm, but its quality was not approved. The plant is of dwarf, robust habit. Leafstalks very hairy; leaflets roundish or roundish obovate, widely but not deeply serrated.

Stirling Castle Pine.—Fruit large, ovate, dark red; flesh pale red, firm, but of second-rate quality. Leafstalks rough and likewise hairy, becoming brownish-red when old, resembling in these respects the old Hudson's Bay Strawberry, from which it seems to have been bred; leaflets obovate.

Triomphe.—This so much resembles the Hudson's Bay, as to lead to the conclusion that it is probably a seedling from it. Its aroma somewhat resembles that of the Vicomtesse Héricart de Thury, but the latter is in every respect superior to it.

Vicomtesse Héricart de Thury (Jamin).—Fruit middle-sized or large, conical, deep scarlet; seeds bright yellow, slightly imbedded; flesh pale red, with scarcely any core; flavour brisk, rich, and sweet. Ripens early, or about the same time as Keens' Seedling. Leafstalks moderately tall, hairy, the hairs disposed horizontally, but on the scapes and runners they are depressed; leaflets obovate, obtusely serrated, smooth above, somewhat hairy beneath. The plant is hardy, a free grower, and a very abundant bearer. The Marquise de la Tour Maubourg, and the Duchesse de Trévise, proved to be the same as this, in the Garden of the Society. *Horticultural Society's Proceedings.*

Home Correspondence.

New Japanese Oak—Fertile Spike of Q. glabra.—This is sent for fear the winter should cut it off, as though growing it has evidently another season to pass through before filling and ripening the Acorns. The flower which produced them appeared in August, 1858, so this is their second autumn; during all summer they appeared stationary. No fresh flowers have come out this year. Is this *fructificatio biennis* the same as that of certain North American Oaks? Some of the Acorns seem confluent by their cups, like Chesnuts. *I., Abbotsbury.*

Monro's Cannon Boilers.—Seeing a notice in your paper of the 12th inst. relative to this boiler, the remarks on which are entirely without foundation, I shall be glad if you will insert the following. In the first place when Mr. Ellis called at my wharf, I told him that the price of the 24-in. wrought iron boiler was 6*l.* 10*s.* I then asked him what pipes or connections he would require. His reply was that he was going to take out a small cylinder boiler for the purpose of putting in the 24-in. Cannon boiler. This being the case I told him he must have new furnace doors, bars, plates, cistern, &c., the cost of which would be 3*l.* 10*s.*, as the furnace fittings used for a cylinder boiler would not be of any use for the Cannon boiler, and without proper fittings the working of the boiler would be interfered with. Secondly, Mr. Ellis must be quite unaware of the usual custom to suppose that elbows, connecting pipes, &c., are included in the prices of boilers advertised, as not two houses require the same connections, and therefore the price is for the boiler only, just the same as stating a price for a saddle or cylinder boiler. Had Mr. Ellis been taking out a saddle boiler of the same size as the Cannon, he could have had the boiler and plates only. Having sold so large a number of these boilers, in all cases the fittings having been charged extra, I am anxious that this matter should be explained; and at the same time I should advise Mr. Ellis to be more careful in future about writing on subjects he does not understand, and more particularly if they are, as in this case, without foundation. *J. Jones, 6, Bankside, London.*

Cattleya labiata. — As this really beautiful Orchid is now in bloom, or will shortly be so in most collections where it has been successfully grown, a few remarks respecting it may not be unacceptable. In the first place, it dislikes being removed when once established; like C. crispa and others of the same habit, it

is often reduced to a weak state by so doing; indeed, such plants are often killed by over-potting. It is best grown in a pot half filled with potsherds, charcoal, or what is preferable, common brickbats broken in pieces about the size of a hen's egg, or even larger, according to the size of the pots. Over these place a layer of Moss; then fill the pot with good fibrous peat, broken in pieces, not cut in square lumps as some even now do, such pieces being very apt to get sour or sodden in the growing season; when the plant requires water frequently the roots always die as soon as they come in contact with them. Elevate the plant above the rim of the pot at least an inch, after which fasten down with strong pegs, or what is still better, when you have imported plants or plants otherwise deprived of their roots, insert some good sticks (previously charred) in the drainage, to tie the pseudo bulbs to, as all after-cure is of no avail unless the plant is made secure on what it is to grow upon. By no means allow any portion of the pseudo bulbs to be under the peat, as the plant loves to creep on the surface of what it has to grow upon. There are three very distinct varieties of this plant in cultivation, but all require similar treatment; they like the heat of the Indian or stove-house, but will not do well with much moisture about the leaves, even in the growing season. They come from Brazil and La Guayra, considerably above the sea-level. This plant when in good health frequently makes two growths in a year, and blooms are formed on both, often having as many as five and six flowers on a spike. The finest specimen I ever saw was in the collection of R. Hanbury, Esq., but it is lost to the country. The only other plant perhaps worthy of special remark is in the collection of G. Reed, Esq., of Burnham, which was said last year to have produced 36 flowers measuring from 4 to 5 inches across. *Gleanings.*

Charred Earth v. *Sawdust for Blanching Celery.*—I would suggest to "Mr. Tillery" the use of charred earth in preference to sawdust fresh out of the pit for blanching Celery. To use sawdust in sufficient quantity for blanching Celery is calculated to prepare the soil for a splendid crop of Fungi to the exclusion of everything else. Charred earth would not only answer the purpose of blanching as well as sawdust, but it would allow the rain water to percolate more freely to the roots of the plants, and would likewise be of infinite service to soil of a damp retentive nature. *Thomas Gell, St. Lawrence, Ventnor.*

Gooseberry Buds and Sparrows.—I would recommend your correspondent to use scarlet worsted twined round his Gooseberry bushes. I always employ it with complete success. *H. M., near Worcester.*——Procure a ball of red worsted, and tie a few yards of it round about each bush at distances of, say a foot apart, crossing and recrossing it. *J. Edlington; & J. C., St. Albans.*——Fasten one end of a piece of small twine, from 5 to 6 yards long, to one of the outer branches; then pass the twine through to the opposite side, and so from branch to branch, forming a skeleton net-work through the tree. I have found a very few intersections sufficient to alarm the depredators and prevent a repetition of their visits. In the same way young Peas just appearing above the ground may be protected. *W. R.*—— In autumn about this time I prune the trees, gather the branches of each plant together, and tie them at top and middle with a piece of rope yarn. I then stick a few Laurel branches round each plant, and tie them at top, so that the trees are completely enveloped in Laurel leaves. In spring as soon as the buds are sufficiently forward to be no longer food for birds, I untie the Laurels; a few days later remove them, and as soon as the first young leaves are fairly formed, undo all the ties, and place the branches in their natural positions. I prefer thus to guard against birds to destroying them. *A. Moffat, Easton Lodge.*—— Limewash put on with a brush made of strips of cloth and tied on a stick, will keep off birds; always draw it upwards so as not to injure the buds. *H. J., Brantridge.*——Your correspondent should prune his trees as soon as he can in autumn; then mix equal parts of soot and lime and give the trees a good dusting with it on a damp morning; if well done this will render the buds distasteful to sparrows, and also destroy the greater part of the Mosses, &c., which disfigure and weaken the trees. As a further preventive get some white cotton and encircle each tree with it. For young Peas I always run two or three lines along the row, about 3 inches high and the same apart, as soon as the Peas show themselves above ground; and the same with Radishes, Cabbages, &c. Sometimes I only use the cotton; at others the soot and lime; but the two combined I hardly ever knew to fail. The cotton I procure at the draper's, in balls No. 16, best sewing, at 10*d.* the ½ lb. *H. W. Nutt, Flitwick Manor Gardens, Beds.*—— A thin limewash syringed on your correspondent's trees will effectually prevent sparrows from attacking their buds; it takes but little time, and answers a double purpose, freeing at the same time the trees from Moss. *J. Sheppard, Wolverstone Park.*——Let the trees be pruned immediately; get some fresh slacked lime, water with a fine rose watering-pot, and apply as much of the powdered lime as will adhere to the trees. If your correspondent has not a proper dredger he may enlarge the holes of a large watering pot rose, and it will answer the purpose equally well. *Old Jasper, Bourton.*

Railway Embankments.—I have often thought in travelling by railway what an improvement it would be to the country if the sides of cuttings, and still more of embankments were planted with evergreen shrubs. The sides of some railways have been planted with forest trees, which are clearly out of place there, and have to be cut down or headed down, before they get to be 20 feet high; but evergreen shrubs, especially low kinds such as the common Gorse or Broom, or the varieties of evergreen Berberry, would never interfere with the railway, and in the case of cuttings which are inclined to slip, these and larger ones such as the Yew tree and Holly would help considerably to keep the clay in its place. But in these days when Englishmen talk of the possibility of invasion there might possibly be another use in having them so planted; a railway cutting (such, for instance, as that between Pimlico and the Crystal Palace), filled thick with Gorse would be no mean impediment in the way of an invading army; and the common Gorse, which is a beautiful plant when in flower, and that is almost all the year round, would only require to be sown broadcast, at a very trifling expense. I wish that you would use your influence to induce some of the railway companies to undertake something of the kind. The North-Western Railway Company spent more money in a very ineffectual attempt to beautify their embankments than would have sufficed, if economically applied, for converting a large part of the banks and cuttings in the neighbourhood of London into handsome shrubberies. In many instances I should think that the occupiers of neighbouring houses would undertake this if the railway companies would give them permission to do so. *C. W. Strickland, Hildenley.*

Chrysanthemum Fence.—At this season, when all gardens must look dull, the Chrysanthemum supplies a void which would otherwise be much felt. I have just seen a hedge of this flower in a kitchen garden, the effect of which is surpassingly beautiful, brilliant in colour, and pleasing from its variety. It is made very simply; thus:—Plant any number of Chrysanthemums, taking care to mix the colours, in a row 18 inches apart. Behind them form a rough wire fence, which is easily made with a few rough stakes supporting four rows of wire, to which the plants are trained out about September, espalier fashion, but the branches so laid in as to cover the whole surface. The result is, as I have said, singularly effective. *V. P.*

Nuts.—Permit me to ask a question or two relative to the produce of the Kentish Cob. What weight per acre has ever been produced, and what money value has an acre yielded? I have myself just planted several acres, and shall be very much obliged to any of your correspondents if they will give me any information respecting them. I have planted my trees half a pole apart, consequently it takes 640 plants to the acre; now, if every tree produces 1*s.*, there is at once 32*l.* per acre, and if, as I am confident they will do, they produce 10*s.* per tree, see what amount of money may be obtained from 1 acre, 300*l.* and upwards. I beg also to state that I have had the produce of one tree, 84 lbs., sold for 4 guineas. I shall be very happy to enter into a correspondence with any of your readers who may be able to supply any more information than I am already acquainted with. *Richard Webb.*

Cottagers' Kale.—I am happy to be able to bear testimony to the great hardiness of this Kale. Here, on the 23d Oct., when exposed to 14° of frost, all the Brassica tribe, including Celery, Parsley, and salading, was much injured; not a leaf of the Cottagers' Kale received injury. It is now growing rapidly, and to all appearance is as hardy as British Oak. Happily for me I have a large plantation of it this season. As the Black Hamburgh is the gardener's friend in the Grape family so is the Cottagers' Kale in the way of Cabbage. *J. B., Missenden, Bucks.*

Grapes.—A bunch of Grapes was grown here and cut on Friday, the 18th of September, which measured 42 inches in circumference and 16 inches long; the shoulders of the bunch which are very large had previously been tied up, but were let down before the bunch was measured; and when measured the bunch was nearly round and the berries hung as close together as they could well do. The bunch was measured by Lord Charles Fitzroy, in the presence of Lord Thurlow and my employer, and was considered extraordinary. The variety is Charlesworth Tokay. The stem of the Vine is about 8 feet long, and it produced three bunches this season about the same size. *T. Burnett, Baynards Park, near Guildford, Surrey.* [But what was its weight?]

Foreign Correspondence.

Vines.—St. Omer, France: *Nov.* 17, 1859.—An incident has occurred in my Vinery this year that may interest some of your readers. My Vines began to move in March, and I then began fire-heat. Among my Vines is the White Tokay, which with the others grew most luxuriantly, but showed very little fruit. When the new wood had grown some 2 feet 6 inches in length I reduced it to 15 inches, and immediately from the last eye a new shoot sprung forth loaded with two and some with three bunches. I left of course but one bunch to each shoot and thinned severely. They have come to perfect maturity and but little inferior as to size to the first crop. I put no animal manure to the roofs of my Vines—planted outside—only stable dung well rotted, and sow heavily common soda on the border in April or May, which the Vines seem to absorb greedily, and I feel assured by experience, that if sufferers from carrion feeding would neutralise its effects with soda they would cause their Vines speedily to recover from their diseased condition. *H. St. Bertin.*

Societies.

Linnean: *Nov.* 3.—Prof. Bell, President, in the chair. Dr. Alexander Carte was elected a Fellow. Mr. Joseph Wood exhibited specimens of Leersia oryzoides, gathered in a new locality, at Tillingbourne, near Shalford, Surrey. The following papers were read:—1. "Description of a new species of Hymenopterous insect, collected by A. R. Wallace, Esq., at Celebes," by F. Smith, Esq. 2. "On the Zoological Geography of the Malay Archipelago," by A. R. Wallace, Esq. This was an extremely interesting paper. The author commenced by observing that Mr. Sclater, in treating of the geographical distribution of birds, some time since, had pointed out that the western islands of the Archipelago belong to the Indian, and the eastern to the Australian region of ornithology. His own researches in these countries led him to believe that the same division would hold good in every branch of zoology; and the object of the paper was to mark out from actual observation the precise limits of each region, as well as to call attention to certain inferences of great general importance, in the study of the laws of organic distribution. Mr. Wallace then mentioned numerous facts showing the strongly contrasted characters of the two zoological regions above referred to. The exact limits of these regions were indicated by the fact that in a short stay at the island of Baly he found various genera of birds all characteristic of the Indian region, and abundant in Malacca, Java, and Borneo; while on crossing over to Lombock not one of them was seen during three months of collecting, neither had they occurred in Celebes or in any of the more eastern islands he had visited. This, taken in conjunction with the fact that certain other genera have their western limit in Lombock, led him to the conclusion that the Straits of Lombock, only 15 miles wide, abruptly separate two of the great zoological regions of the globe. Indeed, he observed, the eastern and western islands, as thus divided, belong to regions more distinct and contrasted than any other of the great zoological divisions. South America and Africa, separated by the Atlantic, do not differ so widely as Asia and Australia —Asia with its abundance and variety of large mammals and no marsupials, and Australia with scarcely anything but marsupials; Asia with its gorgeous Phasianidæ, and Australia with its dull-coloured Megopodidæ; Asia the poorest tropical region in parrots, and Australia the richest — such striking characteristics being almost unimpaired at the very limits of their respective regions, so that in a few hours' passage an amount of difference may be experienced which weeks or even months of travel alone could give in other parts of the globe. There is nothing, he stated, in the aspect or physical character of the islands to lead to the expectation of such a difference, for their physical and geological characters do not coincide with their zoological differences. There is, indeed a striking homogeneity in the two halves of the Archipelago; the great volcanic chain runs through both parts; Borneo is the counterpart of New Guinea, and yet in Borneo and New Guinea respectively, the Asiatic and Australian zoological regions find their highest development. Mr. Wallace then adverted to certain cases of identity or resemblance in species inhabiting the several islands, with the view to show that there was no transition in the proper sense of the word, the natural and limited amount of resemblances only showing more strongly the absolute and original distinctness of the two divisions. Peculiar genera, having little affinity with those of adjacent islands, were stated to be almost confined to Celebes. Cynopithecus, a genus of baboons, the extraordinary Babirusa, and the singular ruminant Anoa depressicornis have nothing in common with Asiatic mammals, but seem more allied to those of Africa. A congeneric perhaps identical quadrumanous animal occurs in the little island of Batchian, which forms the extreme eastern limit of the highest order of mammalia. This occurrence of Quadrumana in the Australian region, it was argued, proved nothing whatever as regards a transition to the western islands, which among their numerous monkeys and apes have nothing at all resembling them. The species of Celebes and Batchian have the high super-orbital ridge, the long nasal bone, the dog-like figure, the minute erect tail, the predacious habits, and the fearless disposition of the true baboons, and find their allies nowhere nearer than in tropical Africa. The Anoa seems also to point towards the same region, so rich in varied forms of antelopes. Of 103 species of Hymenoptera collected during his first residence in Celebes, only 16 are known to exhibit any of the western islands of the Archipelago, while 18 are identical with species of continental India, China, and the Philippine Islands, two identical with insects hitherto only known from tropical Africa, and another allied to one from the Cape. These phenomena of distribution the author held to be altogether unique. In no other case, he said, are the species of a genus or the genera of a family distributed in two distinct areas separated by countries in which they do not exist; so that it has come to be considered a law in geographical distribution that "both species and groups inhabit continuous areas." Facts such as the above could only be explained by a bold acceptance of vast changes in the surface of the earth. "They teach us that the island of Celebes is more ancient than most of the islands now surrounding it, and obtained some part of its fauna before they came into existence. They point to the time when a great continent occupied a portion at

least of what is now the Indian Ocean, of which the islands of Mauritius, Bourbon, &c., may be fragments; while the Chagos bank and the Keeling Atolls indicate its former extension eastward to the vicinity of what is now the Malayan Archipelago. The Celebes group remains the last eastern fragment of the now submerged land, or of some of its adjacent islands, indicating its peculiar origin by its zoological isolation, and by still retaining a marked affinity with the African fauna." The great Pacific continent, of which Australia and New Guinea are no doubt fragments, probably existed at a much earlier period, and extended as far westward as the Moluccas. The extension of Asia as far to the south and east as the Straits of Macassar and Lombock must have occurred subsequent to the submergence of both these great southern continents, and the breaking up and separation of the islands of Sumatra, Java, and Borneo has been the last great geological change these regions have undergone. That this has really taken place the author believes to be proved by the following considerations. Not more than 20, probably a smaller number, out of about 100 land birds of Celebes at present known, are found at Java or Borneo, and only one or two of 12 or 15 mammalia. Of the mammalia and birds of Borneo, however, at least three-quarters, probably five-sixths, inhabit also Java, Sumatra, or the peninsula of Malacca. Now looking at the direction of the Macassar Straits running nearly north and south, and remembering that they lie in the district of the monsoons, a steady S.E. and N.W. wind blowing alternately for about six months each, it will at once appear that Celebes is more favourably situated than any other island to receive stray passengers from Borneo, whether drifted across the sea, or wafted through the air. The distance too is less than between any other of the large islands, and numerous islets in mid-channel offer stations which might rescue many of the wanderers, and admit of fresh migrations after repose. Between Java and Borneo the width of sea is much greater, the intermediate islands are fewer, and the direction of the monsoons *along* and not *across* the Java Sea must render accidental communication between the two islands exceedingly difficult. Nevertheless where the facilities for intercommunication are greatest, the number of species common to the two islands is least, and *vice versâ*. Moreover, the mass of the species inhabiting Borneo, Java, &c., even when not identical are congeneric, indicating identity at an earlier epoch; whereas the great mass of the fauna of Celebes is widely different from that of the western islands, consisting mostly of genera, or even of entire families, altogether foreign to them. This clearly points to a former total diversity of forms and species. In the case of the great western islands a former more complete identity is indicated, the present differences having arisen from their isolation during a considerable period, allowing time for that partial extinction and introduction of species which is the regular course of Nature. If the very small number of western species in Celebes is all that the most favourable conditions for transmission could bring about, the complete similarity of the faunas of the western islands could never, with their far less favourable conditions, have been produced by the same means. And what other means can we conceive but the former connection of these islands with each other, and with the continent of Asia? There is physical evidence of a very striking nature in confirmation of this view. These countries are, in fact, still connected, and that so completely, that an elevation of only 300 feet would nearly double the extent of tropical Asia. Over the whole of the Java Sea, the Straits of Malacca, the Gulf of Siam, and the southern part of the China Sea, ships can anchor in less than 50 fathoms. A vast submarine plain unites together the apparently disjointed parts of the Indian zoological region, and abruptly terminates exactly at its limits in an unfathomable ocean. The deep sea of the Moluccas comes up to the very coasts of Borneo on the north, to the Straits of Lombock in the south, and to near the middle of the Straits of Macassar. The various islands of the Moluccas, though generally divided by a less extent of sea, have fewer species in common; but the separating seas are in almost every case of immense depth, indicating that the separation took place at a much earlier period. Thus, two of the common birds of Paradise are found only in New Guinea, and the islands of Aru, Mysol, Waigiou, and Jobie, all of which are connected with New Guinea by banks of soundings; while they do not extend to Ceram or the Ké Islands, which are no further from New Guinea, but separated from it by deep sea. Again, the chain of small volcanic islands to the west of Gilolo, though divided by channels of only 10 or 15 miles wide, possess many distinct representative species of insects and birds; and the baboons of Batchian have not passed to Gilolo, a much larger island, though only separated from it by a channel 10 miles wide, and in one part almost blocked up with small islands. Passing on, the author observed that most writers on geographical distribution have completely overlooked its connection with well established geological facts, and have thereby created difficulties where none existed. The peculiar and apparently endemic faunæ and floræ of the oceanic islands, *e. g.*, Galapagos and St. Helena, have been considered anomalous and inexplicable. It has been imagined that the more simple condition of such islands would be to have their productions identical with those of the nearest land, and their actual condition, so different from this, was therefore regarded as an incomprehensible mystery. The very reverse of this is, however, the case. Such phenomena are the logical results of well-known laws of nature. The regular and unceasing extinction of species and their replacement by allied forms is now no hypothesis but an established fact, and it necessarily produces such peculiar faunæ and floræ in all but recently found or newly disrupted islands. These and similar views were argued in much detail, and supported by a goodly array of facts and observations.

Reviews.

The Archæology of Berkshire, by the Earl of Carnarvon. (Murray).

As temporary President of the Archæological Association meeting at Newbury, Lord Carnarvon found himself called upon to address that body, and the present little pamphlet is a report of the speech as it was delivered. We do not presume to say that the matter is in every way worthy the acknowledged talents of the noble lord; but we may at least remark that no one interested in the History of Berkshire, or in antiquarian inquiries in general can read it without pleasure as well as instruction. Adverting to Stonehenge the noble author spoke thus:—

"Who were the builders? Were they wanderers from the Phœnician coasts, or pagan Anglo-Saxons, or the aboriginal Cymry of Britain, or a later and a more skilful race? Were they architects of a generation that preceded, or that followed upon, Roman rule in this country? These are questions as yet unanswered, and perhaps unanswerable. None but those who, unrequited by public praise, have devoted years of patient study to a dark, a perplexed, and perhaps an uninviting subject can pronounce an opinion; and meanwhile we the uninitiated, bewildered and doubtful, wander in a trackless labyrinth, and tread a magic circle surrounded by the spectres and mocking phantoms of the past.

"But it may be asked, is no exception to be made in favour of Arthur, the legendary hero of Britain? Did not a conclave of British chiefs at Silchester elect him the Basileus of Britain? Was it not at Winchester that he built his castle, that he instituted his Round Table, that he installed his knights? Were not the neighbouring downs the scene of his battles, and has not Stonehenge legends connected with his name? Will none of these plead for his victories, for his adventurous exploits, or even for his existence? Or must we, in spite of the monks of Glastonbury, say that King Arthur never lived nor ruled,—that his Round Table was but an allegory,—that the Seat Perilous, which none might take, was a mystic representation of the knowledge from which all but the wise hierarchy were excluded, and that his name was but a myth, under which was veiled a strange and monstrous revolution of religious faith, in which Christianity for awhile perished, and the mysteries of a semi-oriental magianism were enthroned?

"Who can tell? The brazen head is thrown down and shattered, and none now knows the spell which may replace the oracle or bid it speak. And so we see the barrows, the mounds, the earthworks—monuments of successive races, records of successive struggles, which for the most part probably belong to the Saxon period, but which two centuries afterwards our Saxon ancestors attributed to the work of the giants—and we know of their origin or history nothing but what some vague legend may preserve, or some ingenious conjecture suggest. We see and we wonder; we know that the men who constructed them have passed away, their lives of action and adventure unchronicled, their virtues and their faults unremembered, as our own will probably be with some future generation: and we sum up all that we can know or feel in the mournful saying of the preacher, as true now as it was 3000 years ago, 'There is no remembrance of the wise more than of the fool for ever, seeing that which now is in the days to come shall be all forgotten.'"

Surely this is true eloquence.

Trade Lists Received.—Charles Turner's (Slough) *Catalogue of Pelargoniums, Spotted Pelargoniums, Fancy Pelargoniums, and French Pelargoniums, also Cinerarias, Azaleas, &c.* A carefully prepared list of all the best varieties of florists' flowers, filling 20 8vo pages. Mr. Turner possesses all the finest novelties of such growers of Pelargoniums as Hoyle, Foster, and Beck, which are offered at from 15*s.* to 31*s.* 6*d.* each. The last sum is placed upon Foster's Lord Clyde, described as the brightest scarlet as well as best formed of all Pelargoniums. A figure of it is given in the Florist for December, 1859. The new Cinerarias range from 5*s.* to 7*s.* 6*d.* each.

Garden Memoranda.

Messrs. Lee's Nursery, Hammersmith.—Since we last visited this nursery several important improvements have been effected. By the side of the principal walk near the entrance a large span-roofed house is now being built; it is, we understand, to be a kind of winter garden, in which are to be tastefully arranged among other plants fine specimens of standard and Portugal Laurels, Bays, Laurustinus, Box, Hollies, and Orange trees, all of which have of late years been so much in demand for the decoration of terraces and for forming prominent features in other conspicuous situations. Of these kinds of plants Messrs. Lee have an excellent stock. This house is 75 feet in length, and 30 feet in width, and when finished and furnished with the description of plants just indicated, it cannot fail to be highly attractive. In a border of coniferous plants running parallel with the house just named are some fine specimens of Araucaria imbricata, measuring from 5 to 8 feet in height, very healthy and beautifully symmetrical in growth. Of the compact little Thuja aurea there were also some handsome examples, together with pretty plants of Cupressus Lawsoniana and Thujopsis borealis. Of Wellingtonias we likewise noticed many thriving specimens in pots both indoors and out.

In a cool house was a beautiful assortment of Epacrises, some of which are already coming into bloom, and of Cape Heaths. Messrs. Lee have an immense quantity. Among them the cheerful-looking winter-flowering gracilis was literally one mass of round purple blossoms not larger than common gun shot, and in an ornamental point of view hiemalis was scarcely less effective. These two kinds, common though they must be admitted to be, are not half so extensively grown as they deserve to be, especially for the decoration of small greenhouses at this comparatively dull season of the year. Of other plants, invaluable for the ornamentation of cool houses in winter, may be mentioned tree Carnations, examples of which we saw just coming into bloom. Among these there is now great diversity of colour; they are easily grown, and the more they are cut the longer is the succession of blossom, each young shoot that is produced furnishing a bloom. Of the New Zealand Cordyline indivisa, of which a full account will be found at p. 868, we remarked multitudes of young plants in small pots, looking like so many examples of young Pampas Grass. This may probably become a good plant for placing out of doors in summer in conspicuous positions, such as those in which Cannas and plants of that description are found to succeed. Be that as it may, however, it will certainly make a handsome ornamental conservatory plant. Of Ferns Messrs. Lee possess some rare kinds both British and Exotic, and in a little frame in an intermediate house was a small group of New Zealand Mosses.

In another house was a batch of the red-leaved Dracæna terminalis, consisting of some 400 or 500 plants, and we also noticed specimens of the pretty winter blooming Gesnera cinnabarina. To Camellias and Azaleas whole houses are devoted. Both were nicely set with bloom buds, and among them were some fine specimens of Myrtle-leaved and other small growing Oranges. We observed many pretty plants, well furnished with fruit, both in a ripe and unripe state. Of Eugenia Ugni were numbers of plants in pots; they had been exposed to the late frost, which had injured the young wood, but no further harm had befallen them. This is the less remarkable, as even common Laurels in some places have suffered in a similar manner. A small damp stove was literally a forest of rich and luxuriant vegetation, not only in the shape of plants remarkable for fine foliage in pots, but also in that of Orchids and trailing plants swung from the roof in baskets and on blocks; their long pendulous branches producing an excellent effect. Among variegated plants, of which there is here a good assortment, we noticed Marantas, Begonias, Caladiums, and all the kinds usually to be met with at our great exhibitions, to which Messrs Lee largely contribute, while on the roof were Clerodendron splendens and on the walls near the entrance Ficus barbata and repens. The latter fix themselves to stones like Ivy, completely clothing them with small green leaves, against which the other occupants of the house are seen to advantage.

In light wooden span-roofed houses were numbers of Variegated Geraniums, not only of Golden Chain, Flower of the Day, Brilliant, Mountain of Light, and Alma; but also of kinds of more recent date. These houses form excellent hybernatories for these and other bedding plants.

Vines in pots are largely cultivated in this nursery, and within the last three years two new span-roofed houses have been put up for their growth. They are efficiently warmed and ventilated, and otherwise well adapted for the employment to which they are devoted. They contain hundreds of Vines in pots, strong, healthy, and in good condition for fruiting next season. Between the houses just mentioned is a potting shed over the furnace, and covered with glass, so that in shifting and repotting the young Vines are never exposed to cold or draughts. In one of them were quantities of Geraniums in pots cut back and divested of their leaves. These had been lifted out of the open ground before the late frost came on. Being uninjured therefore they will winter with safety.

A large house is set apart for the culture of fruit trees in pots, of which Messrs. Lee have an excellent collection, and on which much care and pains are bestowed. Finer trees for fruiting next season could not be had; they are at present plunged in beds in the open ground. Of Figs in pots we also noticed great numbers. During the fruiting season they here form a most interesting feature. Both this year as last the crop has been excellent.

Miscellaneous.

Mr. Peter Wallace, formerly the Government gardener on the island of Ascension, has been appointed to the very important charge of the Gardens of the Viceroy of Egypt at Cairo. In addition to his knowledge

of gardening Mr. Wallace speaks French fluently, which has rendered him the most eligible man that could be found. Salary, 240*l.*

Superiority of the Russian Setter.—"The Russian setter is a curious animal in appearance, the fur being so long and woolly in texture, and so thoroughly matted together, that the form of the dog is rendered quite indistinct. It is by no means a common animal, and is but seldom seen. It is an admirable worker, quartering its ground very closely, seldom starting game without first marking them; and possessed of a singularly delicate nose. In spite of its heavy coat, it bears heat as well as the lighter-clad pointer, and better than the ordinary English setters with their curly locks. When crossed with the English setter it produces a mixed breed, which seems to be as near perfection as can be expected in a dog, and which unites the good properties of both parents. A well-known sportsman, when trying these dogs against his own animal, which he fondly thought to be unrivalled, found that the Russian animals obtained three points where his own dog only made one, and that from their quiet way of getting over the ground, they did not put up the birds out of gun range, as was too often the case with his own swifter footed dogs. The muzzle of this animal is bearded almost as much as that of the deerhound and the Scotch terrier, and the overhanging hair about the eyes gives it a look of self-relying intelligence that is very suggestive of the expression of a Skye terrier's countenance. The soles of the feet are well covered with hair, so that the dog is able to bear plenty of hard work among heather or other rough substances." *Routledge's Illustrated Natural History.*

Treatment of Tetanus by the Woorara Poison.—M. Vella, of Turin, says the Lancet, arguing from the fact shown by M. Bernard, in 1850, that the Woorara poison is a direct sedative of the motor nerves, undertook a series of experiments which clearly show the antagonism between strychnine and Woorara. Being appointed to the French Military Hospital of Turin during the late campaign, and seeing several cases of tetanus which had resisted opiates, ether, &c., M. Vella resolved to try Woorara. The first trials were made upon two patients who had been suffering from tetanus for four or five days respectively, in consequence of gun-shot wounds. They were both in a semi-asphyxiated and desperate state. The Woorara produced general relaxation of the muscular system, whereupon the patients felt much relieved; but they both died. The same treatment was however employed upon a third patient, who recovered. He was a sergeant, 35 years old, tetanic from a gun-shot wound of the foot. Two grains of Woorara were dissolved in nine drachms of water, and compresses moistened with the solution were applied to the wound; the strength being gradually increased to 15 grains in 14 drachms of water. For the first four days the compresses were renewed every third hour; afterwards every fifth hour, up to the twelfth day, when the changes were reduced to three and two in the 24 hours. In 22 days the patient could leave his bed, and returned to France 36 days after the first application of the Woorara. *Pharmaceutical Journal.* [This Woorara is prepared from a species of Strychnos.]

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

CONSERVATORY, &c.—Attend carefully to specimen hard-wooded plants, which it may be necessary to winter in this house; many of these are impatient of fire-heat and a confined atmosphere. Use no more artificial warmth, therefore, than is absolutely necessary, and endeavour to counteract its drying effects either by means of evaporating pans, or by sprinkling the borders, &c., in order to prevent anything like a dry parched state of the atmosphere. It is in many cases difficult to maintain a sufficiently moist atmosphere without causing drip, as the moisture in the house gets condensed upon the glass, and unless provision is made by means of inside gutters and pipes to catch the condensed moisture and carry it off, it is nearly impossible during frosty weather to preserve the beauty of flowers for any length of time; and in cases where there is no provision made against this kind of moisture falling upon the plants, the temperature should be kept as low as may be consistent with safety, avoiding moisture in the atmosphere as far as possible whenever the glass is affected by frost. Plants in cold pits that may have been excluded from light and air for a few days must not be too suddenly uncovered; on the contrary, they should be very gradually inured to exposure. Take advantage, however, of mild days to give air freely and keep the plants very sparingly supplied with water at the root so as to prevent the production of weakly sappy wood. Look frequently over anything subject to the attacks of mildew, apply sulphur the moment this pest makes its appearance, and see that everything is perfectly free from insects. If there is any prospect of a scarcity of bloom next May, a portion of the Achimenes and Gloxinias should be repotted at once and placed in a warm part of the stove, choosing such as have been the longest at rest; and a few Clerodendrons, Allamandas, a plant or two of Echites splendens and Dipladenia crassinoda, may also be started; but unless plants of these are at command with well-ripened wood, and that have been some time at rest, there will be nothing gained by attempting to start them into growth at present, for in most cases it is difficult at this season to maintain a sufficiently warm temperature to secure anything like free growth from these unless the plants have been well prepared for an early start. A gentle bottom-heat of about 80° or 85° will be of great service to such things in inducing a healthy root action, and if this can be secured there will be little difficulty about obtaining free vigorous growth. Let Ixoras and all other hard-wooded plants that have made sufficient growth be kept rather dry at the root in order to check their growth, and induce a tendency to form bloom buds; but do not let the soil in the pots get so dry as to affect the foliage.

FORCING DEPARTMENT.

PINERIES.—The supply of ripe fruit from May until August being usually obtained from plants that start into fruit without making growth in spring, a fair proportion of the stock should therefore be in a well matured state by or shortly after this season, and any sudden changes of temperature which might induce too many of them to show fruit at once should be carefully avoided. That portion of the stock expected to furnish the autumn supply of fruit should not be too much checked at present, indeed these may be kept growing slowly all the winter, which is perhaps the most certain method of preventing their fruiting too early in spring. Where the stock of plants likely to fruit without making farther growth is considered insufficient to meet the demand until August, the stronger plants of those for autumn fruiting should be encouraged to make growth as early as can be done without weakening the foliage, with the view of preparing them for showing fruit in April. Examine the soil occasionally about young stock growing in the open bed, and do not allow it to become unhealthily dry, for this would probably result in a great portion of the stock showing fruit prematurely, and it is also a work of some difficulty properly to moisten the bed if it is once allowed to get too much dried up. Use no more fire-heat for the present than will suffice to maintain the requisite temperature, which, for the general stock, need not be high for some time yet. VINERIES.—As soon as the buds in the early house are fairly started the temperature should be increased to 60° at night and 65° by day, allowing it to rise 10° on bright days. Take every opportunity of admitting a little fresh air, but recollect that the foliage will not bear exposure to cold drying winds, therefore air should be admitted in contact with the heating apparatus, and when it may be necessary to give back air the sashes or ventilators must be opened but very little, and if pieces of netting could be nailed over the openings this would greatly assist in preventing cold currents blowing into the house. Where the border cannot be warmed, see that it is well protected from wet, &c., by a thick covering of dry litter, or whatever more efficient covering can be recommended. Look over ripe Grapes often, removing any decaying berries, and aim at securing a dry atmosphere with the least possible application of fire-heat. PEACHES.—Until the trees are fairly on the move do not keep the night temperature higher than from 40° to 45° by means of fire-heat; but an advance of 10° early in the day, with plenty of moisture in the atmosphere, should be secured. Syringe the trees frequently, and secure a thoroughly moist atmosphere. Also see that the inside border is in a moist healthy state, and if this is not the case, two or three applications of tepid water should be given. It is becoming very much the order of the day to have Peach trees and most other things which are wanted for very early forcing in pots; and this plan offers the advantage of being able to afford the roots a mild regular bottom-heat, which is of the greatest importance in early forcing, and excellent crops are thus obtained. But the trees must be prepared for this purpose by having been grown some time in pots; and where these are not at hand, unless they can be purchased from the nurserymen who prepare them, nothing can be done this season except to procure and pot the trees, and prepare them for next year. STRAWBERRIES.—Where ripe fruit is wanted early, a portion of the most promising plants should now be selected and placed in a pit where they can be afforded a gentle bottom-heat; or if this cannot be commanded, a Peach-house or Vinery which has just been closed for forcing will do. They must, however, be kept close to the glass, for they require all the light that can possibly be afforded them at this season, and a free admission of air on mild days, with a low temperature until the fruit is fairly set, and if these conditions can be combined with bottom-heat, success will be more certain than under any other circumstances, and this will be more easily done in a small pit than in a house, the temperature of which must be regulated by other things.

FLOWER GARDEN AND SHRUBBERIES.

If not already done, get all borders neatly trimmed up for the winter; in doing this, places intended for Hollyhocks, Dahlias, &c., next summer should be prepared by deep digging and working in plenty of good rotten manure; there is generally as much time to spare now for that kind of work as at planting time. See that coarse growing plants which may be encroaching upon their weaker neighbours are reduced so as to occupy their proper places. Valuable plants, as variegated Hollies, Rhododendrons, &c., if not growing as freely as it is desirable that they should do, would be benefited by a liberal allowance of rotten manure or well-decayed leaf soil applied as a top-dressing, covering it with a little fine soil, and working it into the ground around the ball towards the extremities of the roots. But Rhododendrons, and what are generally termed American plants, bear removal so well that these where not growing satisfactorily should be taken up, the ground well prepared by a liberal addition of peat or leaf soil, and replanted. Continue to give careful attention to half hardy plants in cold frames, taking advantage of every favourable opportunity to expose them freely to air. Anything of which there is but a spare supply of plants to propagate from should be placed in growing quarters at once, taking care to keep them near the glass and free from insects, mildew, &c., for soft-wooded plants in heat at this season are very subject to the attacks of insects.

HARDY FRUIT AND KITCHEN GARDEN.

Do not let Pears get over-ripe before being used; also look over the whole stock as often as time can be spared, removing any fruit that exhibit symptoms of decay, and put them aside for immediate use. Apples are keeping very badly this year. Any of the choicer varieties of Pears that do not ripen properly in the fruit room should be removed to a warm dry room for a few days, which will be found to greatly improve them. Keep all fruit as cool and dry as possible; if frost is excluded from the house, it can scarcely be too cool where the object is to preserve fruit plump and sound as long as possible. Push forward pruning, nailing, tying espalier trees, and such like tedious operations as fast as the weather and circumstances will admit. Get manure wheeled upon vacant ground when the weather is frosty and this can be done without injuring the walks, and get all spare ground turned up as soon as possible, so as to expose it to the action of the weather. For land that has been long cropped with vegetables a dressing of fresh loam would in many cases be preferable to manure, and where this is wanted and can be obtained it should be got to hand, in order that advantage may be taken of frosty days for wheeling it upon the ground. Where fresh soil cannot be obtained, charred vegetable refuse, such as pruning of shrubberies, edgings of walks, and many things which turn up in the course of the season, may be cheaply made to form an excellent substitute.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.
For the Week ending Nov. 24, 1859, as observed at the Horticultural Gardens.

Nov.	Month's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Temperature of the Air. Min.	Temperature of the Air. Mean	Temperature of the Earth 1 foot deep.	Temperature of the Earth 2 feet deep.	Wind.	Rain.
Friday 18	23	30.286	30.250	49	32	40.5	45	46	S.W.	.00
Satur. 19	24	30.298	30.170	50	22	36.0	44½	45½	S.W.	.00
Sunday 20	25	30.055	29.844	43	26	34.5	44	45½	N.W.	.00
Mon. 21	26	29.771	29.715	54	26	39.5	44	45½	S.E.	.00
Tues. 22	27	29.930	29.889	48	40	41.0	44	45	S.E.	.00
Wed. 23	28	30.007	29.943	47	37	42.0	44½	45	S.E.	.02
Thurs. 24	☉	29.959	29.905	52	40	46.0	45	44½	E.	.00
Average		30.043	29.959	48.8	31.8	40.3	44.4	45.3		.02

Nov. 18—Foggy; overcast throughout.
— 19—Fine; very fine; frosty and foggy.
— 20—Fro-ty and rather foggy; very clear and fine; overcast.
— 21—Frosty and foggy; exceedingly fine; dense fog at night.
— 22—Dense fog throughout.
— 23—Dense fog; hazy; foggy at night.
— 24—Foggy; fine in forenoon; slight fog; clear.
Mean temperature of the week, 1 1-5th deg. below the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 33 years, for the ensuing Week, ending Dec 3, 1859.

November and Dec.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 27..	48.9	34.8	41.9	15	0.88 in.	1	5	4	1	5	9	5	3
Mon. 28..	47.9	35.6	41.7	17	1.21	2	4	2	2	8	5	7	3
Tues. 29..	47.5	34.4	41.0	16	0.56	4	1	5	3	5	10	4	1
Wed. 30..	47.9	35.2	41.6	18	0.31	3	3	2	3	3	9	8	2
Thurs. 1..	48.5	35.5	42.0	15	0.25	1	2	2	4	3	7	10	4
Friday 2..	47.4	34.6	41.0	15	0.51	2	2	2	1	5	10	3	8
Satur. 3..	47.0	36.0	41.5	17	0.26	1	5	3	1	4	10	7	2

The highest temperature during the above period occurred on the 1st 1857—therm. 62 deg.; and the lowest on the 30th, 1856—therm. 14 deg.

Notices to Correspondents.

ABSTRACTION OF A SHOPMAN: *A Retail Seedsman* should consult his attorney. Such disputes cannot be recognised in a newspaper.

CELERY: *S C.* The sample sent is of very ordinary quality.

GREENFLY: *G.* The safest and most effectual way of destroying greenfly in a greenhouse is to fumigate properly with foreign Tobacco. Completely fill the house with the smoke, and if one application is insufficient repeat the operation after the lapse of one, or say two days.‡

INSECTS: *Arlebury.* The insect which destroyed the Grass in the Green Park about two years ago was very far from being unknown before. It was merely the grub of the common "Daddy Longlegs," or Tipula oleracea. Our columns contained at that time a great deal of information concerning it.

NAMES OF FRUITS: *J G.* Your seedling Apples are so like the Court Pendu Plat that they could not be distinguished from that excellent productive sort.—*E Marchant.* We are not absolutely certain of the name of your Pear. It resembles the Figue de Naples Pear.‖

NAMES OF PLANTS: We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have or could have undertaken an unlimited duty of this kind. Young gardeners, to whom those remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*W.* Clitoria Plumieri, from the West Indies, not the East Indies.—*Julius.* 1, Juniperus squamosa; 2, Pinus Llaveana; 3, Eugenia apiculata, which is more hardy than a Myrtle; 4, Hippophäe nepalensis.—*W H.* It is *impossible* to name bulbs without their flowers.

RATS: *Lord H.* As far as our experience goes the substance called Phosphoric Rat Poison quite answers its purpose. It is sold, we believe, by Mr. Purser, 116, Fenchurch Street.

THE FLORE DES SERRES: *F H S.* We have not received a number for a long time. M. Van Houtte will doubtless explain the cause of the delay when he sees this note.

*** As usual, many communications have been received too late, and others are detained till the necessary inquiries can be made. We must also beg the indulgence of those correspondents the insertion of whose contributions is still delayed.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London, S. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

MR. J. B. LAWES manufactures the following MANURES:—

TURNIP MANURE	£6 6
SUPERPHOSPHATE OF LIME	6 6
MINERAL SUPERPHOSPHATE OF LIME	5 5
BARLEY MANURE	8 0

N.B. Genuine PERUVIAN GUANO direct from Messrs. Gibbs, NITRATE OF SODA, SULPHATE OF AMMONIA, and other Chemical Manures.

WHEAT MANURE.—PERUVIAN GUANO is proved to be the best and cheapest Artificial Manure for Wheat, at Autumn sowing.

American decorticated Cotton-seed Cake of best quality supplied at the market price.

Offices: 1, Adelaide Place, London Bridge, E.C.

LONDON MANURE COMPANY
(ESTABLISHED 1840),
Have the following MANURES ready for delivery:—
CORN MANURE FOR AUTUMN SOWING.
BLOOD MANURE FOR AUTUMN SOWING.
URATE.
SUPERPHOSPHATE OF LIME.
SUPERPHOSPHATE MINERAL.

The London Manure Company also supply PERUVIAN GUANO (direct from Messrs. Gibbs & Sons), SULPHATE OF AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of known value, all of which they warrant strictly genuine. Wholesale dealers supplied.

116, Fenchurch Street, E.C. EDW. PURSER, Secretary.

BURNARD, LACK, AND CO.'S CONCENTRATED SUPERPHOSPHATE OF LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.

CONCENTRATED TURNIP MANURE, equal in value to the preceding.

Of these Manures Dr. Voelcker says:—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."

Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to BURNARD, LACK, & Co., Sutton Road, Plymouth.

PERUVIAN GUANO.—The present price of this valuable Manure is 12*l.* per ton for 30 tons and upwards; 13*l.* 5*s.* per ton for 1 ton up to 30 tons.

And, in order to protect themselves against the purchase of adulterated mixtures and of inferior Guanos purporting to produce results equal to Peruvian, consumers are recommended to apply either to ourselves, to our Agents Messrs. GIBBS, BRIGHT, & Co., of Liverpool and Bristol; or to Dealers of established character, in whose honesty and fair dealing they can place implicit confidence. ANTY. GIBBS & SONS.

15, Bishopsgate Street Within, London, E.C.

THE PATENT NITRO-PHOSPHATE OR BLOOD MANURE COMPANY (LIMITED).
Trustees:—
ABEL SMITH, Jun., Esq., Walton House, Ware, Herts.
CHARLES DIMSDALE, Esq., Essendon Place, Herts.
EDWARD BALL, Esq., M.P., 8, Belgrave Road, Pimlico, S.W.
GENERAL HALL, Weston Colville, Linton, Cambridge.
JOHN BRADY, Esq., M.P., Warwick Terrace, Belgrave Square, W.
Directors:—
Chairman—JONAS WEBB, Esq., Babraham, Cambridgeshire.
Deputy-Chairman:—
JOHN COLLINS, Esq., Myddleton Square, Pentonville, E.C.
EDWARD BELL, Esq., Tottenham, Middlesex, N.
JOHN CLAYDEN, Esq., Littlebury, Essex.
RICHARD HUNT, Esq., Stanstead Abbot, Herts.
THOMAS KNIGHT, Esq., Edmonton, Middlesex, N.
ROBERT LEEDS, Esq., West Lexham, Norfolk.
ROBERT MORGAN, Esq., 72, Camden Villas, Camden Town, N.W.
GEORGE SAVILL, Esq., Ingthorpe, near Stamford.
WILLIAM COLLINS, Esq., 105, St. John Street Road, E.C.
Bankers—Messrs. BARNETT, HOARE & Co., Lombard Street, E.C.
Solicitors:—
Messrs. KINGSFORD & DORMAN, 23, Essex Street, Strand, W.C.
Auditor—J. CARTER JONAS, Esq., Cambridge.
Manager—Mr. JAMES ODAMS. | *Secretary*—Mr. C. T. MACADAM.
Offices: 109, Fenchurch Street, London, E.C.; Manufactory, Plaistow Marshes, Essex, E.
ODAMS'S BLOOD MANURE FOR WHEAT,
Price 7*l.* 10*s.* per Ton, delivered Free to any WHARF or RAILWAY in London.

TO PIG, POULTRY, AND GAME FEEDERS.
JUPP'S RICE FOOD, POULTRY AND GAME.—RICE SWEEPINGS, 7*s.* 6*d.* per cwt., in 1¼ cwt. bags; SCREENED RICE, 10*s.* per cwt., in 1¾ cwt. bags; DOG BISCUITS, 14*s.* per cwt.; OIL-CAKE, per ton only; RICE MEAL for PIGS, 6*s.* and 8*s.* per cwt., in 1 cwt. bags, at the mill. Orders must be accompanied by a remittance to insure delivery.—W. & R. JUPP, 6, Cross Lane, Eastcheap, E.C.

WIRE ROPE FENCING.—A quantity of old Wire Rope, suitable for Fencing, for sale at 3*l.* to 4*l.* a ton.—Apply to W. HEWITSON, Wingate Grange Colliery, Ferry Hill.

"FRIGI DOMO."—Patronised by her Majesty, the Queen, the Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, and —Collier, Esq., of Dartford.

PROTECTION FROM THE MORNING AND EVENING FROST.
"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and, floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths. Two yards wide, 1*s.* 6*d.* per yard run; four, 3*s.* per yard. Also, an improved make for Shading Purposes Three yards wide, 2*s.* 6*d.* per yard run.

ELISHA THOMAS ARCHER, whole and sole manufacturer, 7, Trinity Lane, Cannon St., City, E.C., and of all Nurserymen and Seedsmen throughout the kingdom. "It is much cheaper than mats as a covering."

FOWLER'S PATENT STEAM PLOUGH has gained the following prizes:—
The Royal Agricultural Society's Prize, at Warwick, July 1859, 50*l.*
The Royal Agricultural Society's Prize, at Chester, July 1858, 500*l.*
The Highland Society's Special Prize at Stirling, Oct. 1857, 200*l.*
And at other Agricultural Meetings in the United Kingdom, Prizes amounting to 175*l.*

For further particulars, prices, and Catalogues apply to JOHN FOWLER, JUN., 23, Cornhill, London, E.C.

IMMEDIATE ORDERS WILL PREVENT DISAPPOINTMENT
"SIGMA'S" UNIVERSAL SEED PLANTERS (Dibbles), vastly improved since the Prize of the Royal Agricultural Society was awarded them. The "MULTUM IN PARVO," forming eight perfect implements, highly commended, see testimonials. The Manure Distributor carried off the Prize Medal in 1851, recently much improved, see *Gardeners' Chronicle*, July 30 and August 6th. "Simple, promising, and ingenious." The STEEL DRAW SHAVE HOE clears a row between Turnips at one sweep. Engravings sent.—C. POWELL, Hurstgreen, Sussex. All Patented.

THE AGRICULTURAL ENGINEERS' COMPANY (LIMITED).
Directors.
ANDREWES, CHAS. J., Esq., of the firm of Messrs. Barrett, Exall, & Andrewes, Agricultural Engineers, Reading.
BENTALL, E. H., Esq., Agricultural Engineer, Heybridge, near Maldon, Essex.
FOWLER, JOHN, Esq., Patentee of the Steam Plough, 28, Cornhill, London, E.C.
TURNER, E. R., Esq., of the firm of Messrs. E. R. & F. Turner, Agricultural Engineers, Ipswich.
WARNER, CHAS. B., Esq., of the firm of Messrs. John Warner & Sons, Bell and Brass Founders to her Majesty, and Hydraulic Engineers, 8, Crescent, Jewin Street, London, E.C.
Bankers—The Bank of England.
CENTRAL DEPOT AND SHOW ROOMS—
Swan Lane, Upper Thames Street, London, E.C.
This Company has been for the purpose of supplying the public direct, with Agricultural Implements and Machinery of the most approved construction, at Manufacturers' fixed prices.

With an ample Capital and the best and most extensive premises in London at its disposal, the Company can offer to Shippers, Colonists, Agriculturists, Foreign Buyers, Amateur Farmers, Gardeners, &c., the following *exclusive* advantages:—

The opportunity of purchasing from the largest and best selected Stock in England.

The certainty of being supplied with none but the best made and most efficient Implements of their class.

Promptitude, regularity, and care in the execution of all orders intrusted to it.

Reliable information and advice as to the requirements of particular districts and foreign markets.

Particular attention is called to the fact that the direction is composed exclusively of well-known Makers, whose practical knowledge and standing will afford an invaluable guarantee to purchasers of the material, workmanship, and adaptability to its use of every article sold.

Shippers, Colonists, and Foreign Buyers will be relieved of all anxiety and trouble by intrusting the execution of their orders to the Company.

The Stock will be found to comprise the manufactures of the leading makers. Illustrated Catalogues with prices, in English, French, German, and other languages will shortly be ready for distribution. Meanwhile Price Lists and every information may be obtained post free upon application at the offices of the Company.

Orders addressed to the Agricultural Engineers' Company (Limited), Swan Lane, Upper Thames Street, London, E.C., will have prompt attention.

LAND IMPROVEMENTS.—The GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY are empowered by Act of Parliament to assist the Owners of Land in carrying into effect the following Improvements, and charging the whole outlay and expenses on the property improved.

I. All Works of Drainage, Irrigation, Warping, and Embankment.

II. The erection of Farmhouses, Cottages for Agricultural Labourers, and all kinds of Farm Buildings.

III. The construction of Roads.

IV. The Grubbing and Clearing of Old Woodlands, Enclosing, Fencing, and Reclaiming Land.

The Landowners by whom any of these Improvements may be executed are—Tenants for Life, Trustees, Mortgagees in Possession, Guardians, Committees of Incompetent persons, Married Women, Beneficial Lessees for Lives or for a Term exceeding 14 years, Corporations, Ecclesiastical or Municipal, Incumbents, Sequestrators, Charitable Trustees, &c.

The Owners of Estates not entailed, who may be desirous to avoid the expense or inconvenience of a Legal Mortgage, may also avail themselves of the powers of the Company's Act to charge their estates with an outlay in improvements.

In all cases the whole cost of the improvements, with the attendant expenses, may be charged on the Estate, the term for Building Works being limited to 31 years, but for all other improvements being capable of extension to 50 years.

No investigation of title being required, and the charge not being affected by Incumbrances, no legal expenses are incurred.

Operations under the Company's Act are divided into two principal branches; one where the Landowner designs and executes the improvements by his own Agent and merely requires a loan from the Company to charge the Estate,—the other where the Company undertake the entire responsibility of the Improvement and obtain repayment by way of Rent Charge. In the first case the plans, specifications, and estimates prepared by the Landowner's Agent are forwarded to the Company to be submitted for approval to the Inclosure Commissioners. As soon as the sanction has been given the Landowner proceeds to execute the works, and the Company having conducted the business through all the official forms, complete the charge on the estate when the works have been passed by the Commissioners, and repay the Landowner the amount agreed upon.

In no part of the business is there any control upon a Landowner except by the Inclosure Commissioners. The Company never interfere, except at the special request of the Landowner or his Agent, and only to such extent as may further the objects he has in view.

In the other case, where the Company are required to execute the works, a report and estimate of the Improvement are sent to the Landowner, and having been approved, the plans are then prepared and the works—either submitted to public competition or entrusted to their own staff—are carried on to completion, and the amount of the actual expenditure only, approved by the Inclosure Commissioners with the Company's agreed commission and the Commissioners' expenses, finally charged on the Estate for the term fixed by the Landowner.

The Company also execute Drainage and all other Works of Land Improvement on Commission for the Owners of Estates not Entailed who may wish to charge the outlay on the property through the simple and inexpensive process of the Company's Act.

Applications to be addressed to WILLIAM CLIFFORD, the Secretary, at the Offices of the Company, 52, Parliament Street, London.

WEST OF ENGLAND AND SOUTH WALES LAND DRAINAGE AND INCLOSURE COMPANY.
Established in 1844.
INCORPORATED BY ACT OF PARLIAMENT IN 1848.
Draining, Inclosing, Irrigating, Warping, Road Making, and all kind of Land Improvements, executed on Entailed, Mortgaged, or other Properties, and the whole cost can be made a Permanent Charge on the Lands, or redeemable in a certain number of years. BIDWELL & BRODIE, Secretaries.
Offices: Exeter; and 30, Parliament Street, London, S.W.

THE LANDS IMPROVEMENT COMPANY.—Incorporated by Special Act of Parliament in 1853.—2, Old Palace Yard, Westminster, S.W. To Landowners, the Clergy, Estate Agents, Surveyors, &c., in England and Wales and in Scotland.

The Directors beg leave to announce that the Company's Amendment Bill, 1859, has received the sanction of the Legislature. The Company now advance money, unlimited in amount, for the following works of Agricultural Improvement, the whole outlay and expenses in all cases being liquidated by a rent charge for 25 years.

1. Drainage, Irrigation and Warping, Embanking, Inclosing, Clearing, Reclamation, Planting for any beneficial purpose, Engines or Machinery for Drainage or Irrigation.
2. Farm Roads, Tramways and Railroads for agricultural or farming purposes.
3. Jetties or Landing places on the sea coast or on the banks of navigable rivers or lakes.
4. The erection of Farm Houses, Labourers' Cottages, and other Buildings required for Farm purposes, and the improvement of and additions to Farm houses and other buildings for farm purposes.

Landowners assessed under the provisions of any Act of Parliament, Royal Charter, or Commission, in respect of any public or general works of drainage or other improvements, may borrow their proportionate share of the cost, and charge the same with the expenses on the lands improved.

No investigation of title is required, and the Company being of a strictly financial character do not interfere with the plans and execution of the Works, which are controlled only by the Government Enclosure Commissioners.

For further information, and for forms of application, apply to the Honourable WILLIAM NAPIER, Managing Director, 2, Old Palace Yard, Westminster, S.W.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, London, S.
Principal—J. C. NESBIT, F.G.S., F.C.S., &c.
The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

BIRMINGHAM CATTLE AND POULTRY SHOW.—The ELEVENTH GREAT ANNUAL EXHIBITION OF CATTLE, SHEEP, PIGS, ROOTS, DOMESTIC POULTRY, AND PIGEONS will be held in Bingley Hall on MONDAY, TUESDAY, WEDNESDAY, and THURSDAY, November 28, 29, and 30, and December 1.—Admission on Monday, the PRIVATE VIEW, 5*s.*; on Tuesday, Wednesday, & Thursday, 1*s.*

PRIZE CATTLE SHOW OF THE SMITHFIELD CLUB.
The Annual Exhibition of PRIZE CATTLE, SEEDS, ROOTS, IMPLEMENTS, &c., commences on TUESDAY MORNING and closes on FRIDAY EVENING, 6, 7, 8, and 9th December, —Baker Street Bazaar, King Street Entrance. Open from daylight till nine in the evening. Admittance 1*s.*

CATTLE SHOW, BAKER STREET, BAZAAR.
SUTTON'S CHAMPION SWEDES, and new varieties of MANGEL WURZEL, KOHL RABI, and other Agricultural Roots will be exhibited at their STANDS, Nos. 325 to 336, Baker Street Bazaar, where Orders will be taken for Seed.
N.B. As the Stock of Seed is limited it is advisable that orders should be given early.
Royal Berkshire Seed Establishment, Reading.

The Agricultural Gazette.

SATURDAY, NOVEMBER 26, 1859.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

MONDAY,	Nov.	28	
TUESDAY,	—	29	Show of the Midland Counties Associa-
WEDNESDAY,	—	30	tion, Bingley Hall, Birmingham.
THURSDAY,	Dec.	1	
MONDAY,	—	5	—London Farmers' Club ..... 6 P.M.
WEDNESDAY,	—	7	Agri. Society of England .... Noon.
			Society of Arts ..... 8 P.M.
TUESDAY,	—	6	
WEDNESDAY,	—	7	Show of the Smithfield Club, Baker
THURSDAY,	—	8	Street Bazaar.
FRIDAY,	—	9	

—— THE meeting to which Shropshire breeders are invited during the show week at Birmingham is to be held in the theatre of the Midland Institute, Paradise Street, in the Town Hall, Birmingham, on Monday, November 28th, at 2 P.M.

—— In another edition of the "Word in Season," * its author adds many pages in discussion of the theory of his experience and that of TULL respectively as growers of Wheat during successive years on what is generally termed "the same ground." The intended meaning of the terms used by JETHRO TULL in explaining his practice and its results is ably ascertained by a comparison of passages from his writings, and his reputation is vindicated from the alleged folly urged against him that he believed plants to grow by feeding on minute particles of the mineral earth. The idea which he wished to convey by this term "earth" is explained in detail, and those who wish a fuller and more accurate knowledge of TULL'S husbandry than is given in any previous writings, not even excepting the latest publication—BURNETT'S Tillage and Manures—will do well to consult this new edition.

—— DURING the past few weeks, during which we have been discussing the probabilities of the Mangel crop, it is satisfactory to know that large quantities of the frosted Mangel roots have been

* A Word in Season; or How to Grow Wheat with Profit. 17th Edition. RIDGWAY.

used for sheep and cattle, and in no instance have we heard of scouring. We have also seen the effects of earthing up the standing roots by the plough, and we have no doubt that those not before very seriously injured are safe. Folding sheep on Grass and feeding them with the injured roots is now being followed out at the Royal Agricultural College farm; and is doing good to poor pastures, which will no doubt be felt for years to come. As the early frost has rendered all Grass and green food scarce, this use of the Mangels which will not keep will enable the farmer to hoard up his Swedes, which we should advise being earthed up and taken more than ordinary care of.

THE consumption of the root crop is influenced to a considerable degree by the condition of the roots at the time of their being consumed. It has been remarked on a former occasion that the ripeness or maturity of the crop materially influenced the result so far as the increase of the animal is considered. When the root had attained to a mellow condition and the acrid matter originally contained in it when its growth ceased had by any means been converted into matter capable of administering to the further development of the animal's body, then the use of the food was more profitable and the health of the animal more safe than when these changes had not taken place. The plan of storing roots for use is adopted in the case of Mangel Wurzel as a general rule, and there is every reason to believe that when carefully stored the process of ripening is very much favoured thereby. The juicy character of the Mangel Wurzel root when first stored causes a considerable quantity of moisture to be thrown off from the root, and this arises from that tendency to heat which vegetable matter of this description so generally manifests. The heat of the stack frequently rises very considerably, and under bad management, by which the steam is kept in, we have known the roots to be almost rendered valueless. The great object should be to allow the free passage of air—but not frost—through the heap so as to carry away the steam thrown off. This process of heating when kept within moderate limits is decidedly favourable to the ripening of the root, and much of the superior feeding-value of well-stored roots may be traced to this transformation of noxious matter into a form valuable as food.

So far as we know at the present time we have reason to believe that the Swede is beneficially influenced in a similar manner to the Mangel Wurzel. It is a point worthy of more attention than it has yet received; and we think some valuable information may be gained by a fuller knowledge of this change which takes place in the ripening of roots. If the storing of roots favours and perfects their maturity and fitness for food, it may be inquired if Swede Turnips, which complete their growth late in the season and remain in the field for consumption there ever become fully ripe; and if so, the scouring which so frequently attends the use of such food may be found to arise not from the quantity of water they contain so much as from the presence of acids which render the use of the unripe food alike productive of pain to the animal using it, as well as of a loss of weight; for as such matter cannot discharge the ordinary duty of food, this has to be performed by materials which have been previously stored up in the body, and consequently the animal decreases in weight.

The probability of this view of the matter receives some confirmation from the many instances in which we find intelligent agriculturists storing Swedes in the field for use upon the same land. It has been done, we are well aware, primarily for other reasons, such as for protection from game and frost, but a double result has been realised, for such roots are always found more valuable for sheep. A knowledge of this important chemical change in the composition of the root will, we believe, show that much of the value of storing roots depends upon the more perfect ripening which is thus attained. At any rate it is a subject for investigation to which we would draw attention, for a knowledge of the true condition of these late-sown Swedes would enable us to modify our course of management so as to avoid or correct the evil.

Whilst however we avoid on the one hand the too early use of Swedes, we must be equally cautious of the opposite extreme. After the root has become fully matured it is then in a favourable condition for becoming "woolly" in its character. This arises from the root giving off much of the solid matter deposited in its cells, and leaving them unoccupied, when they gradually assume that peculiar appearance very commonly known by the above term. To avoid this is by no means so easy as may at first appear, for this generally occurs in the spring when the feeding has been delayed too long. In this condition the roots are of very little value as food, and certainly do not remunerate for their cost of production. In the majority of cases this may be taken as a proof of a superabundance of roots, which has delayed their consumption, but unfortunately the deficiency in our root crops of late has given but little cause for anxiety about completing the consumption of our roots soon enough.

Another cause of loss, and one which we regret to state is very prevalent, is the rotting of the roots. This premature decay is producing very serious loss throughout the kingdom, and many speculations have been advanced as to the cause. It appears, indeed, to rival its predecessor, the Potato disease, for the multiplicity of opinions entertained respecting it. Numerous causes have been assigned in each of these diseases, and that which appears in one neighbourhood to be correct is quite inapplicable in other parts. Under any circumstances it is matter of very serious importance to the stock-masters of this country, and we hope that our fears of its future extension may prove to be incorrect. Before another season for Turnip sowing arrives let us hope for more information than we now possess. We believe that a fuller knowledge of the organic composition of these roots in their various stages of growth and development would be valuable in tracing the changes which are so commonly observed. It is because we feel the great importance of being more fully acquainted with the organic composition of our roots, of the changes they undergo, and the circumstances which favour or retard these changes, that we have thus noticed the subject; and if we should be the means of drawing the attention of those interested in such investigations to favour us with fuller information upon this subject, or if we should by drawing the notice of our practical men to it elucidate facts bearing upon this very important question, we shall have no cause to regret giving such prominence to the subject.

THE EXHAUSTION OF ENGLISH SOIL.

TO J. J. MECHI, ESQ.

"My dear Sir,—I reply to your letter of the 3d inst., 'On the sure exhaustion of the Soil of Great Britain by our new sanitary arrangements,' because, while I regret the loss of this manure, I cannot go so far as you do and believe such fatal consequences as you mention to be impending from it; and I would take the opportunity this affords me of showing the inexhaustible sources of nutriment from deeper and finer cultivation that are now opening to us by the introduction of steam ploughs. It is not my intention to depreciate the value of manures in farmers' estimation, for I am well aware that many are far too careless in preserving and making the best use of what their farms produce; I would simply show how much may be done to make supplies of extraneous manures unnecessary.

"You know that Jethro Tull proved by many years' practice, 120 years ago, the possibility of growing greater than ordinary crops of corn by deeper and finer disintegration of the soil, and that the Rev. Mr. Smith of Lois-Weedon has for the last 14 years been growing extraordinary crops of Wheat year after year on the same ground, without any manure, simply by trenching and finely comminuting the beds, and thus affording an unfailing supply of nutriment in the greater decomposition of the soil; and I, too, in my practice of thin sowing, found that the fertility of my land increased as my tillage became deeper and finer.

"With respect to your quotation from Prof. Liebig, I am sorry to find so learned a man turning such data to his purpose, for it was from very different causes than the waste of its town manures that the cultivation of Italy declined; and if the cultivation of districts in America has been abandoned, which it would be difficult to prove, it cannot be from exhaustion of soil in the few years it has been occupied, or the greater part of Europe would long since have ceased to be productive. The cessation to grow corn in Italy under the Empire is readily to be accounted for in the large tribute of corn paid to the Romans by the world (not even excepting Britain, which was dignified by being styled one of its granaries), and gratuitously distributed among the freemen of the towns in Italy, for this at once deprived the country of a market for its corn, and took away its agricultural labourers, who, attracted by this free distribution, left the country and work, for a town life and idleness, and this is quite sufficient to account for the decline of production at home, and the fatal dependence on foreign supplies when the country's declining strength ceased to secure them. With respect to the assistance that the Chinese find in the use of this particular manure to raise food for its extraordinarily dense population, I can readily believe in its importance, without going the length of saying the loss of it must lead to sterility. The use of manure doubtless increases the fertility of land, and is valuable as far as it goes to lessen the occasion for labour. The poorer the land the greater is the amount of labour necessary to make it fertile, and the higher it must be cultivated to bring its production to an equality with that from richer; and this is remarkably exemplified in the farming of England. I am often surprised to see how little the returns per acre of our different soils vary in comparison with the natural fertility of the land. The larger are far from always being supplied by our naturally richest soils; the higher cultivation of the secondary soils may often be seen to make them the most productive. And as the richer soils demand less labour because of their greater natural fertility, so will poorer soils when liberally enriched with manure require less assistance for cultivation; and it is "*as a substitute for cultivation that manure is useful;*" but the question is, "*To what extent is it more economical?*" The experience of Jethro Tull and Mr. Smith, supported to some extent by my own, go far to prove that good cultivation may more cheaply and more safely be looked to to supply the elements of growing corn; at any rate, all will agree that its assistance is very valuable. What an opening then is there before us to increase the fertility of our soils, and more particularly of our poorer ones. We must avail ourselves of the improvement of our implements and the introduction of steam power to crush and deepen the hard subsoil of our land and give a more extended and permeable range of soil to plants to feed from.

"Yours, my dear Sir, very sincerely,
"HEWITT DAVIS."

"3, Frederick's Place, Old Jewry,
"Nov. 16, 1859."

CAVERSHAM ANNUAL ROOT SHOW.

ON Tuesday week a large family party, and all the principal agriculturists and gentlemen of the neighbourhood, assembled at breakfast at the mansion of Caversham Park, by invitation of William Crawshay, Esq. They were afterwards, to the number of sixty ladies and gentlemen, conducted by Mr. Crawshay to the new conservatory, where a very large collection of roots, vegetables, and fruit was exhibited, with the names of the several contributors attached to them; and a more splendid collection of Mangel Wurzel, Swedes, and other Turnips, Drumhead Cabbages, and other vegetable productions will probably not again be seen this season. The dry summer was considered to be fatal to the production of roots equal in weight and quality to those of last year's exhibition at the same place; but it was admitted on all hands, and by Mr. Brandreth Gibbs, who was of the party, that the present exhibition was splendid and creditable to the several exhibitors, showing how highly valuable may be made the several vegetable productions of the field and garden for the feeding-stall, the pen, and the immediate use of man. On the right hand of the door, in the first compartment, were the roots grown on the Caversham Park farms, in the hands of Mr. Crawshay, consisting of 50 Yellow Globe Mangels, extending to the weight of 36 lbs. the single root; 24 Long Reds as high as 22½ lbs. each; 12 Swede Turnips as high as 13 lbs. each; later sown Swedes and White Globe Turnips, very handsome and good; and six Drumhead Cabbages, weighing as high as 32 lbs. each. Carrots, Parsnips, Beet Root, and Savoys, were all very fine, but grown in the parish of Caversham, and in an unusually dry and hot summer, they were necessarily much restricted in growth, which, under the influence of a moister season, they would have attained. Adjoining this collection were six roots each of Long Red, Yellow, and Red Globe Mangels, grown by Mr. Alfred Crawshay in the county of Brecon, weighing up to 28 lbs. the single root, and all very true and handsome. Some very good Mangels, Parsnips, and Carrots came next, the growth of Mr. W. Crawshay, jun., of Glamorganshire. The next compartment was occupied by the roots and plants contributed by R. Crawshay, Esq., of Cyfarthfa Castle, in the county of Glamorgan, another of the sons of Mr. Crawshay. The site whereon the whole were grown is at an altitude of 750 feet above the level of the sea, and consisted of ten of each sort of Mangel Wurzel, all very large and handsome, and extending to 30½ lbs. each in several instances, and the smallest being 28½ lbs. Ten Swede Turnips accompanied these, which varied in weight from the smallest, 11 lbs., to 15 lbs., the largest; they were very sound, well shaped, and handsome. Belgian, Altringham, and other Carrots were very fine indeed, and ten roots of Kohl Rabi were the largest which were exhibited, and weighed as high as 13 lbs. each. Some Drumhead Savoys were also very fine. The altitude at which these roots were grown, and in a very mountainous district, are to be taken into notice in reporting upon this contribution. Mr. Simpson, of Rowfant, Sussex, exhibited two very large Yellow Globe Mangels, weighing 40½ lbs. and 44 lbs. each, very handsome for such a monstrous weight, and he much regretted that he had not sent more in number and of equal weight, which he could have done. The contribution of Mr. Hy. Crawshay, of Oaklands, Gloucestershire, occupied the western end of the conservatory, and as a whole as well as in detail it excited the admiration and surprise of every one present. The gigantic size and beauty of the back row of Long Mangels were extraordinary. It consisted of 18 roots of Long Reds, the weights of which went as high as

34 lbs., and 12 Long Yellows, the weights of which extended to 41 lbs., and the beauty of growth, colour, and absence of roughness of the whole were remarkable. These roots will probably be exhibited at the Smithfield Club Cattle Show, at the Baker Street Bazaar in December, and will, it is thought, eclipse all other roots shown there, as they did on Tuesday at the Caversham Park Show. At the foot of this astounding row of Long Mangels were unusually fine Yellow Globes and Red Globes, extending in weight to 38 lbs. each, and extremely handsome and good. The colour of both were brilliant in the extreme. In front of these were several Swede Turnips, weighing as high as 15 lbs. the single root. Some Green Round and White Globe Turnips were fine, with some large Kohl Rabi, the latter weighing as much as 10 lbs. each and very fine. White and Red Carrots made up this very extraordinary exhibition of roots, against which all England might vainly contend for pre-eminence, for beauty, weight, and quality. This collection of roots (the contribution of Mr. Crawshay's son Henry, of Oaklands Park) was grown by himself near Newnham, Gloucestershire, and as Mr. Brandreth Gibbs, the Honorary Secretary of the Royal Agricultural Society of England, said, "might safely challenge all England in every respect." Mr. Crawshay expressed himself as very much gratified with the extreme pains and success which the Messrs. Sutton had evinced to fill the next compartment. They contributed and arranged most tastefully all the descriptions of Mangel Wurzels, the whole of which were of nice shape and good quality. They were true to their respective sorts, free from neck or coarseness of any sort. Twenty-one different sorts of Turnips beautifully arranged and ticketed with their names excited universal admiration. Frequent were the expressions of determination to try several of the sorts next year; those interested in agriculture cannot but heartily wish them success in their exertions to introduce everything that is new and useful. The following gentlemen and others also exhibited roots, all of which were much admired:—Mrs. Stephens, of the "Rise;" Mr. King, of Hampstead; Mr. Leach, "The Kiln;" Mr. T. Armstrong; Mr. Armstrong, sen.; Mr. Harrison, of Mapledurham; Mr. F. Fuller, Mr. W. H. Fuller, Mr. Pottinger, Mr. Josiah Fuller, Mr. Barkshire, Mr. Sivewright, Mr. Hollis, Mr. G. Shackel, Mr. Witherington, Mr. R. Lovegrove, Mr. C. Poulton, Mr. Clarke, of Rose Hill, and Mr. Coldicutt; also the boys of the Henley Union Workhouse. Having completed the show of roots in the conservatory we pass through the long room leading to it, where Potatoes, Apples, and several other vegetable productions were shown by Miss Crawshay, of Caversham Park, and were highly praised. Samples of the Regent Potatoes, very large, were shown "cooked" with their skins, exhibiting perfect mealiness. Cucumbers in profusion and very fine for the season were shown by Mr. R. Crawshay, and Onions of extraordinary size. Pines and Grapes of unusual quality were also exhibited in the long room, as others also had been on the breakfast table in large quantities and eaten by the guests. A tray of 12 Pears weighing as high as 39 ounces the single Pear excited unusual astonishment, and were occasionally thought to be artificial. These Pears will probably be exhibited at some of our Horticultural Shows in London, as they are thought to be the largest ever grown in England, and are the production of Mr. Crawshay, of Dany Park, Breconshire. A tray of very beautiful Apples, of several descriptions, most tastefully and elegantly arranged, and contributed by Mr. G. Loraine, of the Grove, completed the fruit show, and was as much admired for the taste displayed in the arrangement as for the fruit itself. We have noticed the several contributions to a show of roots, which we may say as a whole has never been excelled in this kingdom, and if the expression of universal admiration and gratification could heighten the satisfaction of the host he had it amply from his visitors, who cordially congratulated him upon his complete success in his repeated root show at Caversham Park.

BAILIFFS AND GARDENERS.

"Equity" states in his irrelevant reply to "An Employer":—"within a circuit of four miles from where I reside there are no fewer than five instances of one man filling both situations; and three of those are from 10 to 15 years' standing—sufficient proof I think to show that the combination can be successfully carried out."

To give you an idea of a gardener's horticultural education I shall suppose that you were born in 1826, and commenced serving your apprenticeship in 1840 either in a nobleman's garden or in a nursery. If you went into a garden you would probably be placed under the foreman who had charge of the plant or the forcing department, and act as his assistant during the greater part of your apprenticeship, which would give you an opportunity of acquiring a practical knowledge of housework.

Some gardeners would give you an opportunity of acquiring a general knowledge of outdoor cultivation, and direct you in your botanical studies and drawing; so you might be a mere plant grower or a trained hothouse labourer, or a general outdoor labourer, which would, to some extent, depend upon your master as well as yourself; as, for instance, you might serve your apprenticeship in a garden where there is very little forcing and a very limited number of plants.

If you served your apprenticeship in a nursery you would be a mere plant grower, and after completing your apprenticeship you would be employed for a few years as a gardener's foreman or plant grower; and, after you had grown the fruit which had been successfully exhibited at the metropolitan shows, you would, through "luck," for which I shall substitute accident, influence, interest, or a more acceptable term—merit, get a good situation as head gardener. You might, like some young men who make every effort to rise above the mediocrity, possess sufficient tact to prefer remaining a few years in obscurity, but at the same time steadily acquiring a thoroughly practical knowledge of your profession, to obtain which you would accept of employment at the formation of new kitchen and flower gardens, which would give you a practical knowledge of groundwork.

By exercising rigid but at the same time judicious economy you would be enabled to purchase a few horticultural and other works, and besides save a little money to enable you to keep up appearances while employed in such places as the Royal Gardens at Windsor, or in the botanical gardens at Kew, Edinburgh, or Glasgow.

Presuming that you were employed a few years in a botanical garden where you were occasionally sent on a botanical trip with the professor and students of botany, you might, ere this time, have such a varied practical knowledge of your business as to justify you n offering your services as superintendent of the Horticultural Society's New Garden. Some men who are at present occupying the most enviable positions as gurdeners are the sons of *bonâ fide* labourers.

Some boys are so fortunate as to be allowed sufficient time at school to enable them to study drawing, the elements of English composition, geometry, algebra, and the French or Latin languages. But if reading the English language at sight, a little scribbling with your pen, and a little knowledge of arithmetic, geography, and English grammar were, as with too many gardeners, the extent of your scholastic attainments in 1840, I think you will agree with me that it would require the greater part of your leisure time during these last 19 years to bring yourself up to the standard of qualifications which the Editor of the *Gardeners' Chronicle* states that the superintendent of the Garden at Kensington Gore must possess.

With a view to enable gardeners to form an idea respecting the nature of a farm manager's duties I shall suppose that your father was an agricultural employer, and was compelled to send your brother, who was born in 1828, to service in 1840. He commenced his career as a farm servant by acting in the capacity of a shepherd's assistant, and acting in that capacity till 1846; then engaged himself to a farmer to act as a ploughman and general farm servant, and acted in that capacity till 1852, when, probably owing to the nature of a farm servant's duties being somewhat similar to walking a given distance in a given number of consecutive hours, your brother would give up farm service and act as a jobbing labourer from 1852 to say 1856, which would give him a practical knowledge as well of the cost of all kinds of farm labour.

I shall now suppose that you and your brother have been acting as leading men in your respective professions since 1856; you, the superintendent of extensive gardens in which you have a foreman for every natural division of labour, although you can take a leading part as a labourer in any division of labour—the forcing and plant departments, the kitchen and flower gardens; and your brother a gentleman's home farm steward, or land steward on a 1000-acre farm which is rented by a gentleman farmer.

A superintendent of any kind of work cannot expect to command the respect of either employer or employed, unless he can show that he is competent to perform the duties which devolve upon him. Here is your brother can castrate lambs, take the charge of ewes during the lambing season, clip, smear, dip, and, lay sheep; can do all kinds of ploughing for the preparing of the soil, for the sowing of any kinds of agricultural seeds; can take a leading part in the sowing, reaping, and harvesting of the hay and corn crops; and last but not least in these days of organised combinations amongst so many different classes of operatives, can tell at a glance in the event of a strike amongst jobbing rural operatives, if his master requires to accede to the demands of the men! With a view to bring "Equity," "F. L. O.," "Gardener and Bailiff, Norfolk," and all other men who consider that "There is a royal road to learning" agriculture in first-class gardens to the point, I shall suppose that you are a wealthy nobleman's gardener, and your brother is the same gentleman's home farm steward. The land steward dies; you are elevated to the enviable position of steward, still retaining your situation as head gardener, and like "Equity," at page 830 of the *Gardeners' Chronicle*, being "the right man in the right place," your employer "increases your salary in proportion to your new duties;" but will you show how you could work the home farm at a difference of 150*l.* per annum in wages?

"H. A. W. D." states, "There are many reasons that might be adduced to show that it would generally prove to be to the interest of employers were the offices of gardener and steward combined;" that he "has known cases of positively useless expenditure on the farm or elsewhere." I know of a home farm, the working expenses of which, for superintendence and manual labour, amounted to 4*l.* per acre for the arable land, exclusive of the cutting and harvesting the hay, the cartage of the coals to the employer's house, and the draft horses' keep (!); but does that individual instance of which I am cognizant make me believe that an intelligent man, who knows no more about farm management than a tailor, or a shoemaker, or a mere gardener, will manage a home farm better than an intelligent practical farm servant, a shepherd who was employed from early boyhood to manhood on extensive arable farms, or a respectable farmer's son who has won the honorary degree of "M. R. A. C."? Again, allow me to suppose that you have a bailiff who has served you these last 20 years, and has a son who was apprenticed to a gardener. Assuming by your late editorial statements that you took such an interest in the education of this and your other boys that you convened them once a week to examine and direct them in their studies during their leisure hours, previous to leaving their homes, you would as it were watch them during their apprenticeship with a fatherly care. "Equity's" father dies. "Equity" takes his father's place and you discharge your gardener. Assuming that your farm is say 400 acres in extent, a bailiff, shepherd, and a head gardener is probably the number of foremen you employ owing to each having a separate charge. "Equity" would, previous to his father's death, probably do all the house work in the garden himself; but "Equity" not only now requires a garden foreman who is coupetent to grow fruit and plants for exhibition, and a working farm bailiff; but "Equity" would expect you to "increase his salary in proportion to his new duties," such as taking a walk through all the horticultural and agricultural buildings; but "Equity" must show me through the medium of the *Gardeners' Chronicle* or the *Agricultural Gazette*, that he is competent to perform the duties which devolve upon him, else I shall enter into particulars to prove that he, like a great many other classes of men, is only making the same use of his horticultural knowledge as the priests of old made of their hooks in the fleshpots of Egypt. *W.*

Home Correspondence.

A Good Return.—Having received from a correspondent in Ireland a small parcel of Potatoes said to have recently come from America, we selected 3 lbs. weight of them which we cut into 22 sets, and planted them in a row 12 yards in length, in common garden soil well manured. When lifted the whole produce weighed 154 lbs., all sound and healthy. Several of the tubers weighed from 1½ to 2 lbs., and were from 6 to 9 inches in length. The variety is very similar to one that made a considerable stir many years ago, under the name of the "Mangel Wurzel Potato," and was highly esteemed for cattle feeding. Such a Potato may become very valuable for cattle feeding, and in a season like the past would have proved a boon of no small importance to the farmer. *W. D. & Sons, Stirling.*

The Turnip Crop.—I have had an opportunity of examining a large portion of this year's Turnip crop in England, and I am quite satisfied that in the whole kingdom Turnips are not more than half an average crop. In many fields of real Turnip soil large patches without a plant are to be found, and even when the ground seems pretty well covered if you examine closely you will find the bulbs thinner on the ground and much coarser than usual. I have not yet heard of any bulbs of this year's growth having been tested by analysis, but from their appearance and the little good cattle seem to do with them, I suspect they are deficient in saccharine matter. English Linseed-cake can however be purchased at 9*l.* 5*s.* per ton, and at that price it should form a portion of the food of all fattening cattle. Potatoes have suffered a little during the last few weeks from disease, and good ones are consequently held firmly for more money. As much as 3*s.* per bushel has been paid to the growers for Fluke Potatoes during the last week, and no disposition has been shown to press sales. *H. J. Turner, Richmond, Yorkshire.*

Improved Farming in Ireland.—"G." endeavours to escape the effect of my statements of the improved farming in Co. Cork, by suggesting that I speak of some favoured district. He is mistaken in this. It is an average rural district far from Cork, and some miles from any town, the land letting at 10*s.* to 15*s.* per acre, rarely so high as 20*s.* Two or three men have farmed well on it for some years, and began earlier than in some other places. This is its only advantage. My knowledge extends pretty well over this county, and almost everywhere throughout it the same progress more or less prevails. As to the authority of Professor Murphy and newspaper editors to the contrary, it is a question not of authority but of evidence. Any man of good sense and knowledge of farming is as able to judge as any professor. Those too living among the people and watching the yearly progress of the same land are better judges of comparative advancement perhaps than others, who looking at the subject from a professional and editorial high standard, are apt to forget how much has been gained, because so much remains still to do. But we must all learn to walk before we can run. In my judgment the sole discouraging feature in Irish farming is the decrease of Turnips and increase of Potatoes. I am convinced however there is a large increase in the weight per acre of Turnips. The crops are often very good. The ordinary Irish farmer too only grows Turnips to support the stock he has. We have not yet got to the point of buying stock to consume a crop. Further let any one consider the practical inferences from the article in the last number of

the Royal English Agricultural Society by Mr. Russell of Kilwhiss, on the effects of climate on farming and apply them to such a dripping climate as ours. In truth however the love of Potatoes is terribly deep-seated. No food is so liked. The better wages a labourer gets the more Potatoes he plants, so too farmers in proportion as they thrive. I believe the great majority lose heavily by them, if they put a price on their own labour and that of wives and children. But the latter they put no value on, and every one hopes "may be they will grow next year," and old habits are hard to break through, and all are sure that to buy food is a great loss, and so I fear it will take many more years of that providential Potato blight to cure us effectually. *W.*

Farmers' Clubs.

KINGSCOTE: *Nov* 8.—At the first monthly meeting this season Mr. J. T. Harrison, the president for the year, read a paper on the alterations proposed, and the improvements introduced in agriculture during the past year, which will be given next week. The various topics alluded to were then commented on. It was thought reaping and mowing machines would shortly become general implements of the farm, but that they were not yet perfect; that cultivation by steam power might answer on heavy working soils where the holdings are large, but not so as yet in this immediate neighbourhood, the soil being thin makes it easy of draught for horses, as also the number of large (or crag) stones situate so near the surface, renders the implement liable to breakages. The most animated part of the conversation was on the various concentrated artificial foods for cattle. The prevailing opinion however was that they were much too dear to admit of being used as a general food with any degree of profit. A vote of thanks to Mr. Harrison for his able and interesting paper concluded the evening's proceedings.

KILMARNOCK.—The exhibition of cheese of the Ayrshire Agricultural Association took place here, and is reported at length in the *North British Agriculturist*, from which we extract the following passages:—There were 70 entries for the best cheese made after the Cheddar plan, and 49 entries for Dunlop cheese, besides about 160 entries of butter. At the dinner Mr. Titley of Bath, one of the judges, said he had been requested by his colleagues to say a few words regarding the character of the exhibition. They had never seen so large a bulk of really fine cheese. They were nearly as good as those made in Somersetshire. It would be, perhaps, desirable that he should say something as to the qualifications of good Cheddar cheese. He would mention what he thought the characteristics of a good cheese in one sentence. It must be mellow and rich in flavour, and firm and full in texture. Anything calculated to produce bitterness or either undue strength or weakness was to be avoided. He did not think those gentlemen from the Ayrshire Association who had gone to the south had spent their time unavailingly. From his recollection of what the Scotch cheese was before, he might say that a wonderful change had been effected. He might be allowed to say—although he might appear to be overstepping his limits—that the Dunlop cheese was greatly improved; and he believed this was owing to the adoption of part of the Cheddar system. He would say to the cheese trade at large, that he thought it was very likely that cheese would come more into demand, not so much as a condiment as a staple article of food. In a great many parts of the country it was used only as a condiment on a very small scale when the dinner was over. But if they looked at what the component parts of cheese were, they would see that there was a strength of nutritive property about it that would enable men to do their work better than many other articles of consumption. It had the advantage of being easily cooked, and was also portable and well adapted for taking from home, when there was not time to return for a regular meal. It was also being introduced in large quantities into our distant colonies. Australia had taken immense quantities of English cheese; and not only Australia, but the eastern parts of Europe were becoming customers in our cheese markets. Since the British army had been in the Crimea, it was extraordinary the demand that had sprung up for cheese in the eastern parts of Europe and Asia Minor. He knew a gentleman in London who had shipped large quantities of cheese to those parts. It was very desirable that in everything they put their hand to, they should do it well; and in every branch of business in which they engaged, it was their duty to excel. In his part of the country—and he supposed it would be the same in Scotland—dairy farms were now more sought after, and paid very much better than arable land.

Mr. Craig, one of the judges of the Dunlop cheese, said he had been at the show for two years, and he was glad to say it was the best show he had ever been at. There were a greater number of lots shown to-day than last year—he believed about a third more—and there were fewer lots objected to, even with the larger number, which spoke well for their general quality. He was glad to hear from the Cheddar judges that they had never seen finer cheese anywhere; and the opinion of his colleagues and himself was that the first prize Dunlop was superior to any Cheddar in the show. He could not say whether these Dunlop cheese had a little of the Cheddar method in their make or not; but if the Dunlop folks saw it to be their interest to introduce part of the Cheddar system he did not think it would be any fault. He believed the introduction of the Cheddar method had been a great benefit to Ayrshire. There was no doubt that it had led to an improvement in the Dunlop cheese. The Cheddar method required a great deal more of attention than it was customary to bestow upon the Dunlop. It had the recommendation of being something new; and the cheese-makers being willing to learn, they had given more attention to the subject than they had ever done before, and had begun to make cheese as their forefathers did—by rule, and not by guess.

Mr. Campbell, of Craigie, said: After seeing the fine specimens of cheese in the show to-day, we ought to think how that improvement has been produced in our cheese-making compared with the state of things which existed before. I think that is a most important matter. I know well that in former times we had many good cheeses in the county of Ayr; but we never could be sure that one cheese would be like another. Even in the best dairies in the county, you could not be certain that one half would be like the other half. Then, our prices were very low. When I heard of prices to such an extent being got in England, I asked why we are so low in Ayr. Looking over the country, and looking especially into those parts of Dunlop, where I think there is the finest pasture that I ever saw, I could not understand why cheese in Dunlop should be cheaper than that in England, where it occurred to me the pasture was inferior. Then it occurred to me that the mistake was in the manufacture. I tried to find out where the difference lay. I came to the farmers with whom I was best acquainted, and said to them, "Why can't we get as good prices for our cheese as our neighbours in England?" They said, "We can't find it out here;" but they went down to our friend Mr. Harding, in Somersetshire, to consult him. He said, "Your pasture is as good as ours; but your cheese is not properly made." With the concurrence of this Association, we got Mr. Harding to come down to Ayrshire, bringing with him Mrs. Harding, who—I say it with all respect for Mr. Harding—is the best cheesemaker of the two. We have succeeded so far, and it will be our own fault if we do not make still further progress. Mr. Campbell concluded by proposing the health of Mr. Harding, which was drunk with loud cheering.

Mr. Harding expressed the pleasure it gave him to find himself once more among the farmers of Ayrshire. You remember, he said, when we set out four years ago, the question was raised whether or not as good cheese could be made in Ayrshire as in Somersetshire; and you remember I told you then several times in the public prints that I had no doubt in the world that they could be made as good. I have weighed the thing a good deal over in my mind since, and can see no reason why it should be otherwise. Some of you object to the pastures, and say you are not so well off in that respect as we are in England. You give the preference to old pastures, but I beg leave to differ from you, from what I know, with four years' experience added to my past experience. On my own farm I pasture half my cows on artificial Grass—good three year old pasture, and the other half on old pasture; and I am satisfied I should not make as much cheese as I do now, and particularly not of such good quality, if I did not use the young pasture. As you remember, when we were in Ayrshire we made cheese in different parts of the county, and on all kinds of land. When we had finished there were about 20 cheeses altogether; and when we left I looked at them carefully, and I think no person could have picked out one cheese and said it was not like its fellow. I sent three of those cheeses home to my own cheese-room to have them properly tested when they came of age. One of them was cut up by my friend Mr. Titley, and he did not know but it was one that had been manufactured in my own dairy. One of the three was made at Dalgig, another at Meiklewood, and the other on good pasture land at Holmbyres. I was satisfied that, whether we made the cheese at Dalgig, among the mountains; at Cunning Park, amongst forced Grass; or among the Heather at Corwar, where Mr. Wason is making the desert to blossom as the Rose, there was no material difference whatever. My opinion is that good cheese with good management, in the hands of a person who has something in the upper storey, can be made anywhere, whether at the Land's End in Cornwall or at Caithness in the extreme north of Scotland. From what I have seen to-day I am perfectly satisfied my Ayrshire friends will yet make as good cheese as we in England can do. I have been perfectly delighted to see the progress you have made. When I went into that shed I was amazed—I had never seen such a sight before in my life. I venture to say that such a sight in any circumstances could not be got up in the whole county of Somerset.

Notices of Books.

National Health and Wealth, instead of the Disease, Nuisance, Expense, and Waste caused by Cesspools and Water Drainage. By the Rev. H. Moule, M.A., Vicar of Fordington, Dorset.

In this tract the absorbent and disinfecting powers of pulverised earth are once more pointed out. This is done in so explicit and detailed a manner as regards the way in which every householder or occupier of a garden or a farm may turn these powers to their use and advantage, that we strongly recommend every such person to procure the pamphlet and learn what Mr. Moule's experience has been.

The following is a short passage descriptive of his method of using dried surface earth as disinfectant and manure:—

"The power and efficacy of this agent will, however, be best understood and believed, if I give a simple narrative of what during the last six months it has done for my own family, averaging during that period 15 persons daily. Eight months previous to this period, under a strong impression of the evils either occasioned, or likely to be occasioned, by the vault or cesspool on my premises, and feeling it to be a nuisance to my next neighbour, as well as to myself, I filled it up with earth, and ever since I have had everything that would otherwise have gone into it received and removed in buckets. And even this mode of removal, though offensive in idea, has proved far less so in reality, than even a very small portion of the evils it is intended to remedy. At first the contents of these buckets were buried in trenches about a foot deep in my garden; but on the accidental discovery that in three or four weeks, after being thus deposited, not a trace of this matter could be discovered, I had a shed erected, the earth beneath it sifted, and with a portion of this the contents of the buckets every morning mixed, as a man would roughly mix mortar. The whole operation of removing and mixing does not occupy a boy more than a quarter of an hour. And within 10 minutes after its completion neither the eye nor nose can perceive anything offensive. This was the first observation I made. The next was this, that when all the earth, which did not exceed three cartloads, had been thus employed, that which had been first used was sufficiently dried to be used for the same purpose again; and it absorbed and deodorised the offensive matter as readily as at the first time. And so singularly does this capability continue that a portion of it is now being used for the *fifth* time for the same purpose; and thus all that offensive matter which otherwise would have been wasted in the vault, a nuisance to my house and the neighbourhood, and a source, it may be, of sickness and disease, is now a mass of valuable manure, perfectly inoffensive both to the eye and nose. I have taken 50 or 60 persons to see it without previously acquainting them with its nature, and not one has guessed it. All have declared it to be wholly without offence. Two have handled and smelt that in the afternoon which had been mixed in the morning without being able to discover its nature. And more than this, I have the same day submitted some to strong fire-heat; and that which unmixed with earth would under such heat have been intolerable in this mixed state emitted no offensive smell whatever. * * * * Again, a supply of manure for the garden is thus readily provided. A farmer and several labourers to whom I mentioned the following simple plan at once entered into it. The present vault is to be discontinued and in the place of it there is to be under the seat a small enclosure of brick or stone, about 6 or 9 inches deep. To preserve the full value of the manure for the garden this enclosure should be paved, or have a flat stone for its bottom. It would of course be closed with a door. On one side would be a small rough shed, capable of covering and keeping dry a cart-load of earth for the purpose of mixing, and on the other side a similar shed, into which the soil so mixed would day by day be thrown, for the purpose of drying. When dry, this would be used again, and the uses of the two sheds be reversed. By thus repeatedly using it and shifting it backwards and forwards from one shed to the other, one load of earth will be found sufficient for five persons certainly for six months, and, I believe, for 12. This is the simplest but by no means the least offensive mode of application of this remarkable agent."

Miscellaneous.

The Preservation of Milk.—To preserve milk for an indefinite period is an important problem, which in France has been solved in three different modes. M. de Villeneuve was the first to preserve milk, solidifying it by the addition of certain solid ingredients, but it was no longer, properly speaking, milk. M. de Signac preserved it by evaporating the milk till it became of the consistence of syrup, rendering it a solid mixture of milk and sugar, still it could not be called milk. M. Maben also preserved it by excluding the air and exposing it to an atmosphere of steam about 100° Cent.—thus depriving it of all the gases which it contained, and then hermetically sealing the filled bottles in which it had been heated. When about to leave for Aberdeen I opened a bottle which had been closed by M. Maben on the 14th of February, 1854; and after a lapse of five and a half years, I found it as fresh as it was the first day. M. de Pierre has greatly improved the discovery. The means which he employs to effect the preservation of milk is still heat; but heat applied in some peculiar way, by manual dexterity, first discovered by a Swiss shepherd. All that I am allowed to state is that the effect of this new method of applying heat is to remove a sort of *diastase*, or animal ferment, which exists in milk in a very small quantity, and which is the real cause of its speedy decomposition. When this species of ferment is removed, milk can be preserved for an indefinite period of time in vessels not quite full, and consequently exposed to the contact of rarefied air, a result which was not effected by the process of M. Maben or rather that of M. Gay-Lussac, as they com-

pletely expelled those gases which otherwise would have rendered it sour. I have such full confidence in the success of M. de Pierre's process, that I had not the least hesitation in bringing along with me from Paris to Aberdeen a large vessel containing 5 gallons of milk, fearlessly trusting it to railroads and steamboats, thus exposing it to all the incidents of the journey. I am so confident of the success of the process that I pour out the contents of this large vessel into Scotch glasses with the conviction that I am giving to the ladies and gentlemen of the British Association a milk as natural, as pure, and as rich as when it was taken from the cow in the fertile plains of Normandy. May this potion, so sweet and so pure, be a symbol of those sentiments of benevolent affection which France, flourishing and enlightened, entertains towards her noble and great sister England! Owing to its greater specific lightness cream ascends to the top of the vessel, but it can be easily made to diffuse itself through the milk by slightly shaking it before uncorking the bottle. As the vessel is not quite full, a small quantity of butter may have been formed, and the milk may have become somewhat less rich, but it will still be pure and natural milk without any strange taste. Thanks to the progress of science, of which I am happy to be the representative, France can yield with profit to England her fruits, her vegetables, her eggs, and now offers her prepared milk for the wants of the army and navy, having nothing to fear from the longest voyages, nor from the excesses of heat and cold. *The Abbé Moigno in the Chemical Section.*—Prof. Christison said that after tasting the specimens of the milk brought by the Abbé, he was of opinion that it was the best preserved milk he had ever met with.

Horse Labour in France, department of Aisne.—Small holdings employ one horse for about 12 acres; and large holdings one horse for about 20 acres, which tallies with the preceding statement. A good draught horse receives per day—1st. From 8 to 9 quarts of Oats. 2d. 14 lbs. of Grass hay, Clover, or Lucerne. 3d. 14 lbs. winter Vetches, Beans, or Rye, according to the season. 4th. At different times during the year a certain quantity of meal and bran. 5th. 16 lbs. of Wheat straw. All these items, calculated from their average prices, would bring the cost of one day's feeding to about 1 franc 76 centimes, equal to 1*s.* 5*d.* *M. Tréhonnais, in Journal of Agricultural Society.*

Calendar of Operations.

—♦—

NOVEMBER.

Isle of Ely: *Nov.* 21.—Our reports lately have all been more or less tinged with gloom, and unhappily we have no change of a favourable character this month to record. For added to the very deficient crop of Wheat lately and expensively harvested, and the unremunerative price realised for it in the public market, we have the serious injury sustained by our Mangels and Colesced crops, in consequence of the unusually severe and destructive frosts which occurred towards the end of October. Our losses this year will be fearfully heavy, and will make many a man wish he were anything but a farmer. "Farmers are proverbially grumblers," at least so the world says. We question the justice of the assertion, but whether it be true or no, they certainly this year are not grumbling without a cause, as any man gifted with common sense and common sagacity cannot fail to see. Our great hope is that another year Providence may graciously interpose and bless the nation with an abundant harvest, that producer and consumer may have occasion mutually to rejoice, and that "no complaining" may be heard "in our streets." But to return to the damage resulting to both the Mangel and Colseed crops from the severity of the frost. From observation we find that the Mangels put in a frozen state into the pits will not keep long, but should be immediately used. Those allowed to remain in the ground until thoroughly thawed, and a free circulation of the sap was restored, promise to keep better and appear less injured. The leaves also partly protected them, and prevented the frost exerting so serious an effect upon them. Those taken up, "topped and tailed," and left exposed upon the ground without any protection must be half spoiled, and will very soon begin to rot away. Our own, where taken up, were placed in rows, and well covered down with leaves; and where carted those exposed through an imperfect covering were put by themselves for immediate use, some of them being slightly injured, whilst the others were put into pits for subsequent use. The Colesseds are even more seriously hurt than the Mangels. At least half the crop is absolutely destroyed, and very much of the fattening property taken from the other half. The crops sown for seed purposes, as well as those for feeding, are nearly all rendered almost worthless, and the lands must be re-sown with some other crop. The Wheat seeding, but in a few exceptional cases, is completed, and so far as putting in the seed is concerned, satisfactorily. It however vegetates very slowly, and but few green fields are yet visible. It very seldom happens that the seed is so long in the ground before showing itself. The very early sown Wheats, such as were up before the October frosts, were seriously cut, and for a time looked anything but well, but have since become greatly improved. Horses are now busy breaking up stubble lands for next year's fallow, and ploughing for Oats, Beans, and other spring crops. Threshing is very forward, and the steam-engines are well employed. The price of meat continues good. Store cattle also sell well. The injury to the Colesced has made the trade for lean sheep slow, and prices are scarcely as good as they were. The corn trade has been slightly better; but to-day is dull again, and prices offered are 1*s.* to 2*s.* per quarter lower. Potatoes of good quality sell well, but are a light crop, and will yield a small return. *Your Fen Reporter.*

Notices to Correspondents.

Boar and Sow: *G C.* It is often done; but as an exceptional thing.

Chicory: *M J R.* Next week; or see article Chicory in Morton's Cyclopædia of Agriculture.

Holcus Saccharatus: *W J E.* We are unable to answer your question. Your own knowledge of the seed trade will guide you better than any suggestion from us.

Hoose or Husk: The prescription for Hoose or Husk was for calves for six to 10 months. It may be increased or diminished according to the age.

Red Rust: *J K.* Your letter has been forwarded to our first authority on the subject.

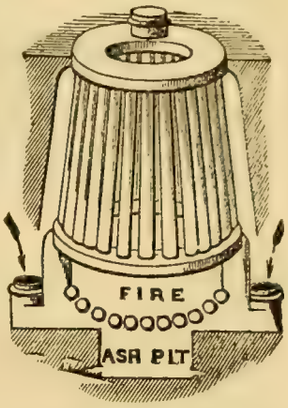
WEEKS' ONE BOILER SYSTEM.

So styled from the fact that the largest Horticultural Establishments in Europe are now effectually heated by WEEKS' ONE BOILER.

THE SEASON FOR TESTING THE EFFICIENCY OF A HOT-WATER APPARATUS having arrived, J. Weeks & Co. are privileged by the under-mentioned well-known Horticultural Firms to issue a special invitation to the nobility, clergy, and gentry to pay a visit to their immense Establishments in order to become eye-witnesses of the extraordinary power of WEEKS' ONE BOILER SYSTEM.

J. W. & Co. beg emphatically to assert that their ONE BOILER SYSTEM is in every respect superior to any other method of Heating. It is more economical and clean, requires no night attendance, effects a great saving in labour, and that it is infinitely more efficient is clearly shown by the following statistics:—

	Length of Pipe Heated on Weeks' One Boiler System.
Messrs. E. G. Henderson & Son, Wellington Nursery, St. John's Wood	Feet 5500
Messrs. F. & A. Smith, Dulwich Nursery	10,000
Mr. Woodroffe, Harrow Road, Paddington	4000
Mons. Louis Van Houtte, Ghent, Belgium	13,000



J. W. & Co. also manufacture smaller and less expensive Boilers upon the same principle as the ONE BOILER SYSTEM, ranging in size from Nos. 1 to 6, at prices from 4*l.* up to 60*l.*

J. W. & Co. also invite an inspection of their own HORTICULTURAL SHOW ESTABLISHMENT at Chelsea, which they built expressly as a place of reference for exhibiting various designs and improvements in the Construction of CONSERVATORIES, GREENHOUSES, PINE STOVES, VINERIES, ORCHARD-HOUSES, CUCUMBER and other FORCING PITS, together with an extensive WINTER GARDEN, the whole in full and constant operation, and now being managed for Forcing CHOICE FRUITS, displaying an unrivalled selection of HORTICULTURAL STRUCTURES suited for every required purpose.

J. Weeks & Co. have constantly on hand an extensive variety of HORTICULTURAL BUILDINGS ready for fixing in any part of the country, and also Forcing Frames and Pit Lights in large quantities.

J. WEEKS & CO., Horticultural Builders and Hot-Water Apparatus Manufacturers, King's Road, Chelsea, S.W.

PLANS, ESTIMATES, AND ILLUSTRATED CATALOGUES FREE ON APPLICATION.

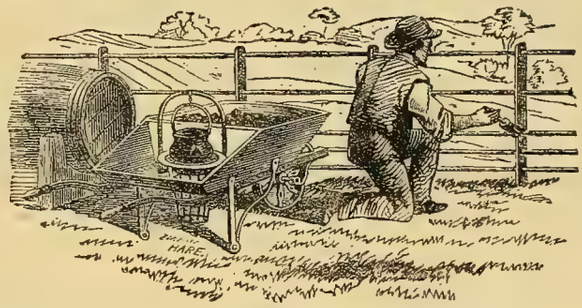
OIL PAINT NO LONGER NECESSARY.

HILL & SMITH'S

Black Varnish for preserving Iron Work, Wood, or Stone Work.

THIS varnish is an excellent substitute for oil paint on all out-door work, and not only saves two-thirds the expense of an ordinary quality of oil paint, but has the great advantage that it may be applied by an ordinary labourer in a cold state, and that no mixing or thinning is required. It is used in the grounds at Windsor Castle, Kew Gardens, and all the Royal Parks in London, and at the seats of many of the Nobility and Gentry of the United Kingdom. It is also largely exported. Testimonials from Noblemen and Gentlemen who regularly use it will be forwarded gratis on application. Sold in casks of about 30 gallons each, 1*s.* 6*d.* per gallon, or 1*s.* 8*d.* per gallon, carriage paid to any Railway Station.

THE WROUGHT IRON HEATING BARROW



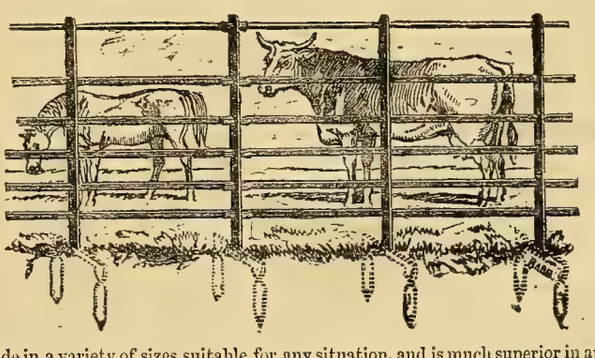
shown in the above engraving is a very useful article for applying the varnish or for heating gas tar. The front compartment holds tools, fuel, &c. and the back compartment carries an iron three gallon pot with fire grate underneath.

Price £3 or £3 3s. Carriage paid.

HILL and SMITH, BRIERLY HILL IRON WORKS, NEAR DUDLEY.
LONDON OFFICE: 40, BROAD STREET BUILDINGS, E.C.

HILL & SMITH'S

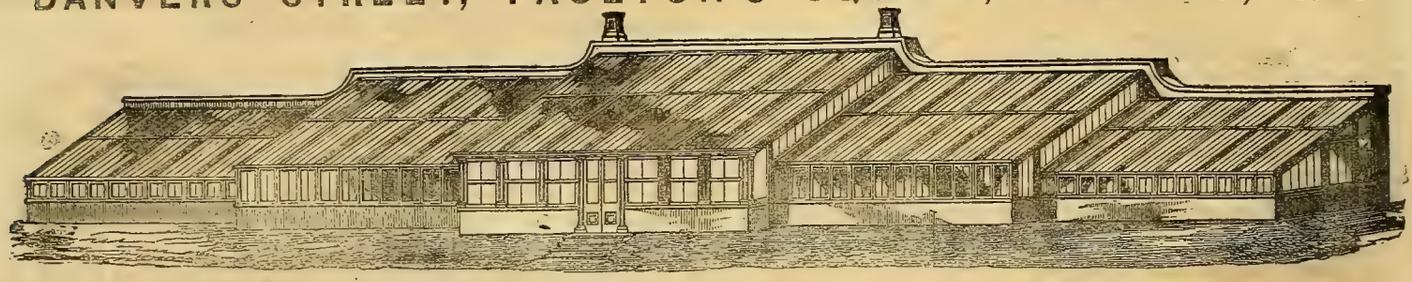
PATENT CONTINUOUS PARK FENCE.



THIS FENCE is made in a variety of sizes suitable for any situation, and is much superior in appearance to hurdle fences, than which it is also cheaper and stronger. It has obtained upon two occasions the Silver Medal of the Royal Agricultural Society of England, besides many other premiums. Many miles have been erected by Hill & Smith on the London and North Western Railway, between London and Bletchly Stations, and it has been erected at the Parks of upwards of 500 Noblemen and Gentlemen in England; that at Welbeck Abbey, the seat of his Grace the Duke of Portland, being entirely surrounded with it as a fence against Deer nearly 10 miles in extent. The patent principle is also applied to Iron Hurdles, whereby the strength is much increased and their cost reduced. ILLUSTRATED PRICED CATALOGUES will be sent on application to Hill & Smith, Brierly Hill Iron Works, near Dudley, who are the inventors and sole manufacturers, or te their London Office, 40, Broad Street Buildings, E.C., where specimens may be seen, or to Mr. B. Samuelson's, 76, Cannon Street West, London, E.C.

HORTICULTURAL WORKS,

DANVERS STREET, PAULTON'S SQUARE, CHELSEA, S.W.



JAMES GRAY

RESPECTFULLY BEGS TO INFORM THE NOBILITY, GENTRY, NURSERYMEN, GARDENERS, AND OTHERS, THAT HE CONTINUES TO CARRY ON THE BUSINESS IN ALL ITS BRANCHES AT THE ABOVE OLD ESTABLISHED PREMISES.

CONSERVATORIES, GREENHOUSES, FORCING HOUSES, VINERIES, PITS, &c.,

OF EVERY DESCRIPTION, ERECTED ON THE MOST APPROVED PRINCIPLES.

HEATING BY HOT WATER.

J. G. having specially devoted his attention for many years to this part of the business, is now fully prepared to Heat every description of public and private buildings, viz :—Churches Mansions, Warehouses, &c., as well as all structures connected with Horticulture, in the most efficient manner. His system is the most simple that can be adopted—which he has found from long experience to be the best—can be constructed at less cost, and is more easily managed than those of a complicated nature which have attracted the notice of the public.

J. G. begs to call attention to his CAST-IRON CORRUGATED ARCH BOILER, which from its simplicity of construction has not the liability to fracture to which those of a more complex design are always subject. They have been extensively used for many years, and have given the greatest satisfaction.

All business is conducted at this establishment on the principle of lowest remunerative profits consistent with best materials and workmanship.

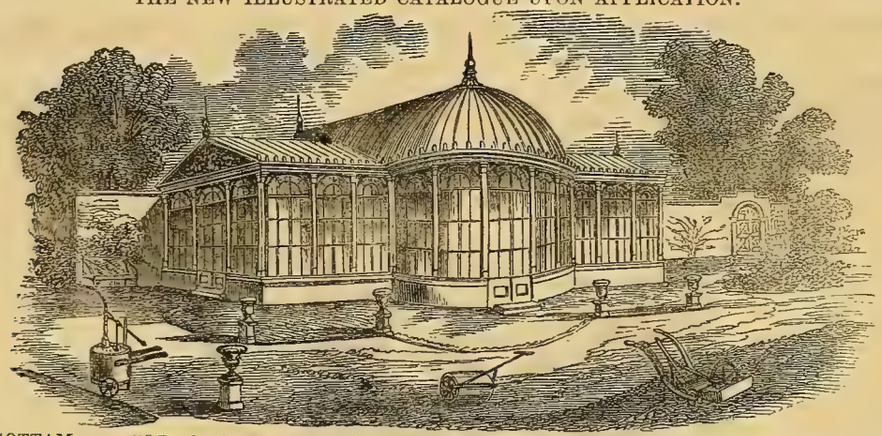
PLANS AND ESTIMATES FURNISHED ON THE SHORTEST NOTICE.

COTTAM & COMPY., Engineers, Founders, &c.,

2 WINSLEY STREET, LONDON, W.

☞ **A SHOW ROOM DEVOTED ENTIRELY TO ARTICLES OF HORTICULTURE.**

THE NEW ILLUSTRATED CATALOGUE UPON APPLICATION.



COTTAM AND COPY. having had upwards of 40 years' experience in the arrangement and construction of every description HORTICULTURAL BUILDINGS AND HEATING BY THE CIRCULATION OF HOT WATER, are well qualified to guarantee the perfect execution of any works trusted to them in the erection of

Conservatories	Summer Temples	Orchid Houses	Apricot and Peach Houses
Conservatory or Glass Walls for the protection of plants or ripening wall fruit	Arbours, &c.	Conservatories for Window or Balcony Gardening	Tropical Fruit Houses
	Greenhouses	Vineries	Forcing Pits and Frames
	Orangeries		Cucumber and Melon Houses

☞ *Drawing and Estimates free upon application.*

ORCHARD HOUSES, combining cheapness of construction with suitability of purpose—portable or otherwise

EXHIBITION PRIZE MEDAL GATES AND STABLE FITTINGS.

Iron Hurdles, Strained Wire Fencing, Game Netting, &c.

Every description of Plain, Ornamental, Cast and Wrought Iron, and Wire Work.

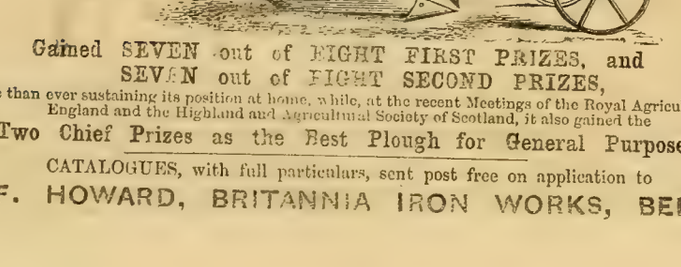
SEE SEPARATE LISTS UPON APPLICATION.

COTTAM & COMPY, Iron Works, 2, Winsley Street, Oxford Street, W. (opposite the Pantheon).

BEDFORDSHIRE AGRICULTURAL SOCIETY, 1859.

J. AND F. HOWARD have much pleasure in informing the Public that at the Ploughing Matches of the above Society, just concluded,

HOWARD'S CHAMPION PLOUGH



Gained SEVEN out of EIGHT FIRST PRIZES, and SEVEN out of EIGHT SECOND PRIZES,

Thereby more than ever sustaining its position at home, while, at the recent Meetings of the Royal Agricultural Society of England and the Highland and Agricultural Society of Scotland, it also gained the

Two Chief Prizes as the Best Plough for General Purposes.

CATALOGUES, with full particulars, sent post free on application to

J. & F. HOWARD, BRITANNIA IRON WORKS, BEDFORD.

C. STEPHENSON, late STEPHENSON AND SONS. 61, Gracechurch St., London, E C., Manufacturer of Iron Hurdles, Fencing, &c., Improved Iron and Copper Conical Boilers and Apparatus for Warming Buildings of every description by Hot Water.

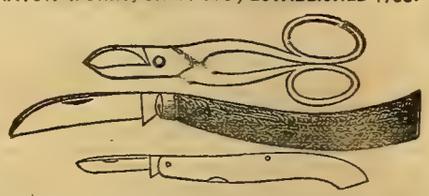
Prices and Estimates furnished upon application.

LOOMES AND CO.'S CABLE PATTERN GARDEN EDGING



may be obtained of Messrs. HOOPER AND CO., Covent Garden Market, W.C.

PAXTON WORKS, SHEFFIELD, **ESTABLISHED 1738.**



SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.—Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

IMPROVEMENTS IN HEATING, &c.

MUSGRAVE'S PATENT SLOW-COMBUSTION STOVE, for Warming Public Buildings, Hall, Shops, Conservatories, Factories, Drying Rooms, &c. Will burn in Churches from Saturday till Sunday evening, avoiding attention during the hours of worship. In Halls will burn day and night for weeks, with little care. Capable of warming a large apartment for 24 hours, at a cost of 3*d.*; and deserving of special attention, because of its safety, healthfulness, durability, and extreme simplicity. This Stove is the nearest approach to warming by hot water.



MUSGRAVE'S PATENT STABLE FITTINGS AND HARMLESS LOOSE BOXES have obtained the award of a large Council Medal from the R. I. A. Society for the following improvements:—1st, The Horse cannot injure himself or others in the same stable if he breaks loose in his stall. 2d, He cannot waste the hay. 3d, He can have cut or uncut hay at pleasure 4th, He has clean water always before him. 5th, A pure and wholesome atmosphere is secured. 6th, The whole fittings are stronger than usual, without increase in price, and there is no risk of infection.



The Loose Box is really what its name denotes, and the most spirited Horse may be turned into it without danger.

MUSGRAVE'S PATENT IRON COW-HOUSE FITTINGS, as approved by the Board of Works, adopted in the Ulster Model Farm, and by many of the most eminent Stock Breeders in the Kingdom, are made wholly of iron, very durable, cleanly, and attractive in appearance. The fodder is always fresh, being freely exposed to the air, removed from the breath of the animal, and separated from the roots or damp food. The range of Troughs can be quickly filled with water for the use of the Cows, or for washing out in case of epidemic, and the cost is very moderate.



These inventions being distinguished for strength, simplicity, and practical usefulness will repay public inquiry.

MUSGRAVE BROTHERS are also Makers of Wire Fencing, Hurdles, Field and Entrance Gates, Corn Rick Stands, Conservatories, Hot-water Apparatus, Verandahs, Rural Bridges, &c.; and their works being favourably placed for cheap labour and materials, they can offer corresponding advantages in price.

MUSGRAVE'S Patent Field Gates have gained the 1st Prize from the R. I. A. Society for strength, durability, and cheapness.

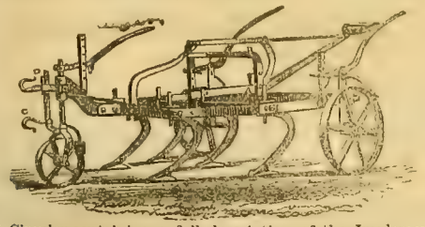
For particulars address MUSGRAVE BROTHERS, Ann Street Iron Works, Belfast.

CLAY'S PATENT CULTIVATOR AND ERADICATOR will be exhibited at the SMITHFIELD SHOW, Baker Street, December 6, 7, 8, and 9, on STANDS 179 to 186.—Royal Yorkshire, and North Lincolnshire Societies' Prize Implement.—Requires one-fourth less horse power than any other implement tested by the Royal Society's judges as shown by the following table from the *Mark Lane Express*, July 18, 1859:

WARWICK MEETING—TRIAL OF CULTIVATORS.

	Cutting Width.	Power.
Clay ..	4 feet 5 inches	3.8
Bentall..	4 feet 4 inches	4.8
Coleman.	3 feet 5 inches	4 39

The frame of each implement is applicable as a Broadshare or Scarifier, Surface Parer or Skim, Cultivator or Grubber, and Eradicator or Drag Harrow. Price from 6*l.* 5*s.* to 12*l.* according to size and number of tines, wrought iron.



A Circular containing a full description of the Implement Price List, and upwards of fifty testimonials (one from the Wakefield Farmers' Club) sent post free on application to CHARLES CLAY, Oakenshaw Iron Works, near Wakefield.

WARNER'S IMPROVED LIQUID MANURE OR GENERAL PORTABLE PUMP.

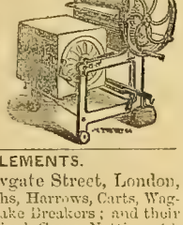


These Pumps are fitted with WARNER'S Patent Bucket and Valve, and cannot clog in action. The barrel is made of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure on the stand, the legs of which fold together, and may be carried with ease by one man to tank or pond.

	£	*s.*	*d.*
Stand and Pump, with screwed tail pipe, fitted with strong brass union for suction pipe	2	15	0
If fitted with barrel of planished copper	3	17	0
Stand and Pump, with plain tail pipe, for tying on suction pipe	2	9	0
2-inch patent rubber and canvas flexible suction pipe, on wires, either 10, 12, or 15 ft., per foot	0	2	2

May be obtained of any Ironmonger or Plumber in town or country, at the above prices, or of the Patentees and Manufacturers, J. WARNER & SONS, 8, Crescent, Jewin St., London, E.C.

BRADFORD'S PATENT WASHING MACHINE SIMPLICITY AND WONDERFUL EFFICIENCY.



"I very gratefully acknowledge the extraordinary patronage I have received from all parts of England, Ireland, and Scotland, and which has very far exceeded my most sanguine expectations."—THOMAS BRADFORD, Patentee, Manchester.

N.B. My Machines always have, and always will be sent on approval, if desired, before payment. Description and Price free by post.

AGRICULTURAL IMPLEMENTS.

BURGESS AND KEY, 95, Newgate Street, London, E.C., have always on hand Ploughs, Harrows, Carts, Waggons, Turnip Cutters and Pulpers, Cake Breakers; and their Improved Chaff Cutters, 50*s.* Galvanised Game Netting, 4*d.* per Yard. Price Lists sent free.—Illustrated Catalogues on receipt of six postage stamps.

PARKES' STEEL DIGGING FORKS.

BURGESS AND KEY, 95, Newgate St., E.C., London, being the Wholesale and Retail Agents for these celebrated TOOLS have always a large Stock on hand from which their Customers may select what they may require.

ANTHONY'S PATENT AMERICAN CHURN.—The FIRST PRIZE was again awarded to this Churn in Competition with several others at the Chester Meeting of the Royal Agricultural Society; it has obtained the First Prize given by the Society at every Meeting since 1850. Messrs. BURGESS & KEY, 95, Newgate Street, E.C., strongly recommend it as the most perfect Churn now in use. Full particulars sent on application.

HENRY J. MORTON AND CO., 2, Basinghall Buildings, Leeds.

GALVANISED IRON WATER CISTERNS

for Cottage Houses, &c., to contain 50 gallons, 25*s.*; 80 gallons, 30*s.* each; and 140 gallons, 36*s.*, and fitted with tap, keeping the water perfectly sweet and clean; will not rust or corrode. Cisterns of all sizes.

GALVANISED IRON PUMPS

for Liquid Manure or Domestic Use, 3 inches diameter, 30*s.* and 32*s.* 6*d.* each; Tail Pipe for same at from 10*d.* per foot.

GALVANISED IRON SWING WATER BARROWS

for Garden or Farm use, containing about 20 gallons, entirely formed of iron, 32*s.* 6*d.* each.

PATENT GUTTA PERCHA SOLES.—IMPORTANT TO GARDENERS.—The Gutta Percha Company have the pleasure to acknowledge the receipt of the following letter from G. GLENNY, Esq., the celebrated Florist:—

"420, Strand, London.

"Gentlemen,—I have worn Gutta Percha Soles and Heels these two years, and being so much in a garden as I neces sarily am in all weathers, and with the ground in all states, I would on no account be without them. As a matter of economy I would recommend Gardeners to use them, for they may repair the worn part at all times by warming the material at the fire, and pressing it from the thick parts to the worn parts, as easily as if it were so much dough. I think it the duty of all persons who must occasionally wet their feet to adopt a material that completely defies damp. Many a gardener would escape colds and rheumatism by the use of Gutta Percha Soles.

"Your obedient servant,
G. GLENNY."

Every variety of Gutta Percha articles, such as Mill Bands, Tubing, Soles, Sheet, Pump Buckets, Fire Buckets, Bosses, Union Joints, Flasks, Bottles, Bowls, Chamber Vessels, Toilet Trays, Sponge Bags, Curtain Rings, Galvanic Batteries, Talbotype Trays, &c., manufactured by the Gutta Percha Company, and sold by their wholesale dealers in town or Country.—The Gutta Percha Company, Patentees, 18, Wharf Road, City Road, E.C., London.

Just published, price 1*s.*

MORTON'S NEW FARMER'S ALMANACK FOR 1860.—BLACKIE & SON, Warwick Square, City, London, E.C.; and all Booksellers.

TWENTIETH YEAR OF PUBLICATION.

Now ready, price 1*s.*, or bound in cloth and interleaved, 2*s.*,

JOHNSON AND SHAW'S FARMER'S ALMANACK FOR 1860, containing every information relating to Agriculture, Implements, Seeds, Fairs, &c.

London: JAMES RIDGWAY, Piccadilly, W., and all Booksellers and Railway Stations.

Just published, in 16mo, price 2*s.* 6*d.* cloth,

A HANDY BOOK FOR YOUNG FARMERS: Comprising Operations for each Month in the Year; Directions for the making, preservation, and application of Manures; for the Economical Feeding of Stock; and for the Selection of Implements. By CHARLES LAWRENCE, Member of the Council of the Royal Agricultural Society of England.

London: LONGMAN, GREEN, LONGMAN, & ROBERTS.

IMPORTANT TO FARMERS.

Now ready, post 4to, bound in cloth, price 2*s.*, free by post, 2*s.* 4*d.*

PEAT'S FARMER'S DIARY AND ACCOUNT BOOK, 1860; being a complete and easy method of keeping farm accounts. Dedicated by permission to the Right Hon. the EARL of CARLISLE.

The publisher begs to call the attention of Agriculturists to this Diary and Account Book. It has been favourably received during the last 6 years by a great many eminent agriculturists in England, Ireland, and Scotland; and high encomiums have been passed upon it by all the leading journals (London and Provincial), advocating the cause of agriculture.

The publisher has pleasure in stating that it has received the high patronage of the Right Hon. the Earl of Carlisle, and will by permission be dedicated to him.

This Diary contains Space for Memoranda; Complete Almanack—Almanack with Breeder's Tables—Memoranda—Cash Account—Farmer's Account Book—Inventory, Cash, Stock, &c, beginning of year—Extent of Farm—Cropping or Produce Table—Outlay and Income during the Year—Inventory, Cash, Stock, &c., ending of your—Summary of Outlay and Income—a great many useful Tables, Stamps, Taxes, Licenses, &c.—Valuable recipes for Farmers—A complete List of Fairs in the United Kingdom, &c.

The publisher would recommend that an early application be made for this Diary, as a great many were disappointed in ordering copies for 1859, after the edition was sold off and too late to print a second edition.

"The great desiderata in farm account-books are simplicity and brevity, leaving nothing for the farmer to do but to enter under printed heads the transactions of each day, when the labour of the day is finished. In looking over the 'Diary' of Mr. Peat, we think he has met these requirements of the farmer in a very satisfactory manner, so that any farmer, by making himself familiar with the various headings, may settle the day's accounts of his farm in a very few minutes. We have no hesitation in recommending it to our readers."—*Mark Lane Express.*

Sold by SIMPKIN, MARSHALL, & Co., London; WHITTAKER & Co., London; M'GLASHAN & GILL, Dublin; JOHN MENZIES, Edinburgh; DAVID PEAT, Thirsk; all Booksellers, and at the Railway Stations.

DESIGNS FOR FLOWER BEDS AND GARDENS.—In consequence of numerous applications J. MARSHALL, 2, Goldsmith Street, Nottingham, has been induced to prepare another set of Designs. They comprise upwards of 80, diversified in style, and will be forwarded to any address on receipt of 24 postage stamps.

EXTRA STRONG TOBACCO PAPER, Warranted Genuine, 4 lbs. for 5*s.*, or 1*s.* 6*d.* per lb.; 12 lbs. carriage free for 15*s.*

NEW MUSHROOM SPAWN, of the finest quality, 4*s.* per bushel.—CHARLES SOUTHBY, Nurseryman, &c., Clapham, S.

GISHURST COMPOUND, PATENTED,

FOR PREVENTING AND DESTROYING

RED SPIDER	MEALY BUG	MILDEW
THRIPS	SCALE	GREEN and BROWN
AMERICAN BLIGHT	ANTS	FLY

BED BUGS, &c.,

And useful in winter dressing.

Contains no deleterious ingredient.

Has received the sanction of the Gardening Press, see *Gardeners' Chronicle* of 9th April and 16th July, 1859, and "Cottage Gardener," 12th July, and has been favourably reported on, and is used by eminent gardening authorities, among whom are—

Mr. Judd, of Althorp Gardens
Mr. Rivers, of Sawbridgeworth
Mr. Edmonds, of Chiswick House Gardens
Mr. Collinson, of Eaton Hall Gardens
Messrs. A. Henderson & Co., Edgeware Road
Mr. Jas. Veitch, jun., Chelsea
Mr. Spencer, of Bowood Gardens

The principal Nurserymen and Seedsmen throughout England, Scotland, and Ireland use it, have taken in supplies, and are now prepared to sell single boxes—price 1*s.* for first trials and small uses, such as destroying bed bugs; 3*s.* for not large gardens; 10*s.* 6*d.* for large gardens, with testimonials and full descriptions for use.

Nurserymen and Seedsmen supplied by PRICE'S PATENT CANDLE COMPANY, Limited, London.

MICROSCOPES.

J. AMADIO'S BOTANICAL MICROSCOPES, packed in mahogany case, with three powers, condenser, pincers, and two slides, will show the animalculæ in water. Price 18*s.* 6*d.*—Address JOSEPH AMADIO, 7, Throgmorton St. E.C.

"It is marvellously cheap, and will do everything which the lover of nature can wish it to accomplish either at home or in the open air."—*The Field*, June 6, 1857.

Second-hand Microscope with a cabinet slides for sale. Great Eastern Microscopic Photograph of the great ship sent post free for 32 stamps.

BATH NURSERY AND SEED ESTABLISHMENT.

MRS. GRIFFIN, widow of the late JAMES GRIFFIN, finding the business too extensive for her management, would be glad to dispose of it on liberal terms.—Further particulars can be obtained at the Nursery, Weston Road; or 2, New Bond Street, Bath.

TO BE DISPOSED OF, a First Class long established NURSERY and SEED BUSINESS in one of the Midland Counties commanding a very extensive trade; the Stock is young and healthy. The Nurseries extend over 25 Acres, are situated in a good locality, and near to a Railway Station.—For particulars apply to Messrs. NOBLE, COOPER, & BOLTON, Seed Merchants, 152, Fleet Street, London.

HUCCLECOTE GARDENS, 2½ MILES FROM GLOUCESTER.

TO BE LET, with immediate possession, the above capital walled-in GARDENS, containing about 4 acres with House, Farm-yards, Buildings, Orchard, and Land adjoining, containing in the whole about 16 acres, with Greenhouses, Propagating houses, Vineries, Pits, &c. Extent of glass 5770 feet.—For particulars apply to W. KNOWLES, Auctioneer, St. Mary's Square, Gloucester.

CONSERVATORIES AND GREENHOUSES FOR SALE.

TO BE SOLD CHEAP, 10 good substantial and well finished GREENHOUSES and CONSERVATORIES, quite new.—To be seen at W. FREEMAN'S, 50, Triangle, Hackney, N.E.

TO BE LET, with possession at Lady-day next, a small NURSERY with a SEED BUSINESS of many years' standing, and a comfortable newly-erected Dwelling-house and Greenhouse attached, situate seven miles eastward of Bath, and six miles westward of the Chippenham station.—Inquire of Mr. G. Bishop, Chilc, Chippenham, Wilts.

Sales by Auction.

MONTHLY POULTRY AND PIGEON SALE.

MR. J. C. STEVENS will Sell by Auction at his Great Room, 38, King Street, Covent Garden, W.C., on TUESDAY, December 6, at 12 o'Clock precisely, upwards of 220 Lots of choice POULTRY and PIGEONS from Messrs. Manning, Blagg, Franklyn, and other well-known breeders, consisting of Cochins, Dorkings, Spanish, Brahmas, Gold and Silver-laced Bantams, Silver-pencilled Hamburghs, Game, Aylesbury and Rouen Ducks, &c.; also some Pigeons from Mr. Olive and other well-known fanciers.—May be viewed on the morning of Sale, and Catalogues had; if for the country, by enclosing two stamps.

FINAL STOCK OF MR. R. FORTUNE'S CHINESE PLANTS.

MR. J. C. STEVENS has been favoured with instructions from Mr. Glendinning, of Chiswick, to Sell by Auction, at his Great Room, 38, King Street, Covent Garden, W.C., on WEDNESDAY, November 30, and following day, at half-past 12 o'Clock precisely, without reserve, the FINAL AND MOST VALUABLE PORTION OF MR FORTUNE'S CHINESE INTRODUCTIONS. The Plants consist of the beautiful NEW CAMELLIAS "Cup of Beauty" and "Princess Frederick William," fine striped varieties with flowers of the most perfect form, and producing striped and self-coloured blooms upon the same plant; three new DOUBLE FLOWERING PEACHES, viz. the Carnation, the Rose, and the Camellia flowered; these have flowers as large as Roses, the first being beautifully striped like the Carnation; Torreya grandis; an entirely new species of Juniper with glaucous leaves, Prunus triloba, Abies Kæmpferi, a new Evergreen Hardy Oak, together with a new Purple Lilac, and other unknown and undescribed species of Chinese Plants.—On view the day prior and morning of Sale, and Catalogues had at the Rooms; or if for the country by inclosing two stamps.

NEW CHINESE RHODODENDRON, NEW JAPAN TAXUS, AND FINE SPECIMENS OF CEDRUS DEODORA AND C. ATLANTICA, AND OTHER CHOICE CONIFERÆ.

MR. J. C. STEVENS has received instructions from Mr. Glendinning, of Chiswick Nursery, to Sell by Auction at his Great Room, 38, King Street, Covent Garden, W.C., on SATURDAY, Dec. 10, at Half-past 12 precisely, without reserve, the ENTIRE STOCK OF RHODODENDRON FORTUNI AND TAXUS CUSPIDATA, in consequence of their not being disposed of by private contract, in lots suitable to private buyers and the Trade, together with some valuable Coniferous plants. The Rhododendron and Taxus are perfectly hardy and quite new to European gardens.—On view the morning of Sale, and Catalogues had; if for the country by enclosing two stamps.

TO GENTLEMEN, NURSERYMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will Sell by Auction at the Mart, on FRIDAY, December 2, at 12 o'Clock, a first-class collection of DUTCH BULBS, consisting of the finest Double and Single Hyacinths, Narcissus, Jonquils, Anemones, Crocus, Tulips, Ranunculus, Gladiolus, Snowdrops, &c.; also a fine assortment of 500 Standard and Dwarf Roses, with handsome straight stems and fine bushy heads; selected American Plants, including Ghent and other Azaleas, Hybrid Rhododendrons, Kalmias, Andromeda floribunda, &c., beautifully set with bloom-buds, &c.—May be viewed the morning of Sale. Catalogues may be had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

EXTENSIVE AND UNRESERVED SALE OF ROSES, &c., AT EPPING AND ONGAR, ESSEX.

MESSRS. PROTHEROE AND MORRIS are instructed to Sell by Auction, on TUESDAY, Dec. 6, at 11 for 12 o'Clock precisely, the entire STOCK of the Epping Nursery, comprising some thousand Standard, Half Standard, Dwarf, Climbing and Potted Roses; Evergreens, Fruit Trees; several two and three-light Boxes, Barrows, a quantity of Garden Pots, and sundry effects of Mr. Haslam, retiring altogether from business; and the Nursery is to Let. And on TUESDAY, Dec. 13, a similar STOCK at Ongar may be viewed prior to the Sale.—Catalogues may be had on the Premises; at the principal Inns; of G. Glenny, Horticultural Agent, Fulham, S.W.; of B. R. Preston, Esq., 15, Broad Street Buildings, E.C., and Brentwood; and of the Auctioneers, American Nursery, Leytonstone, Essex, N.E.

EXTENSIVE SALE OF FRUIT AND FOREST TREES, SHRUBS, &c.

To NOBLEMEN, GENTLEMEN, NURSERYMEN, BUILDERS, & OTHERS.

MESSRS. PAGE AND CAMERON will Sell by Auction on TUESDAY, November 29, and following days, at 10 for 11 o'Clock, on the premises, New Road, Barnet, by direction of the proprietor, the general NURSERY STOCK, comprising fine and valuable Green and Variegated Hollies, Aucubas, Laurustinus, Arbutuses, Portugal and Common Laurels, Pinuses, Rhododendrons, Arbor-vitæs, &c.; together with Fruit and Forest Trees of all kinds.—Catalogues may be had on the premises; at the Inns in the neighbourhood; and of Messrs. PAGE & CAMERON, Land Agents and Surveyors, 64, Old Broad Street, E.C., and St. Albans.

KNOCKHOLT AND CUDHAM, KENT.

MESSRS. DAVIS AND VIGERS will Sell by Auction, early in the ensuing spring, unless an acceptable offer shall previously be made, the PARSONAGE and PORTLAND FARMS, containing together about 110 acres of very productive land, lying well together on each side of the high road from Green Street Green to Brasted, near to Cudham Church, and adjoining the estates of the Earl Stanhope and Sir Percival Hart Dyke, Bart., with Residence, Farm Buildings, two Cottages, and a Smithy, all let under one lease, at a rent of 150*l.* per annum. The situation is exceedingly healthy, and the views extensive and very beautiful. The Residence may with a small outlay be made fit for occupation by a gentleman's family, and in consequence of the decease of the lessee, possession may be had if required by the purchasers.—The property may be viewed, and further particulars had of Messrs. DAVIS & VIGERS, Land Agents, &c., 3, Frederick's Place, Old Jewry, London, E.C.

TO BE SOLD BY AUCTION in July next, 1860, at the Château of Destelbergen, near Ghent, Belgium, the renowned and so highly reputed extensive selections of RARE PLANTS of the late Baron Heynderyck, President of the Royal Horticultural and Botanic Society of Ghent.—All persons wishing for further particulars may apply, post paid, to JEAN VERSCHAFFELT, Nurseryman, Ghent, Belgium.

THE LARGEST AND FINEST STOCK OF
TEA-SCENTED ROSES IN ENGLAND.
50,000 PLANTS IN POTS AND IN THE OPEN GROUND.

WM. WOOD AND SON invite attention to their very extensive and superior stock of the above, which they feel certain are unsurpassed in the Trade.

Dwarfs, from 48-pots	.. .. .. per dozen	9s. to 12s.
,, in 6-inch or 24-pots	.. .. ,,	24 to 30
Standards, very fine	.. .. .. ,,	18 to 24

Specimen Plants, in 8-inch pots, for exhibition, each, 3s. 6d. to 5s.
DESCRIPTIVE CATALOGUES on application.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

HEDENHAM ROSARY, BUNGAY, SUFFOLK.
IN CONSEQUENCE OF A DISSOLUTION OF PARTNERSHIP,

R. B. BIRCHAM is desirous of clearing off a portion of his stock, consisting of 35,000 STANDARD and DWARF ROSES, including all the best and leading sorts of Perpetuals in cultivation. To effect a clearance this autumn R. B. B. begs to offer them at the following very reduced prices :—

50 Dwarfs of the best Perpetuals	..	£0 18 0
50 Half standards,	do.	1 5 0
50 Standards,	do.	1 15 0

R. B. B. will be happy to supply Amateurs requiring half the quantity of each. Trade orders at a still lower rate per 100. Carriage paid to London and Peterborough.

NEW CHRYSANTHEMUMS.

JOHN SALTER'S unrivalled Collection of CHRYSANTHEMUMS is now in bloom; also several splendid Seedlings of his own and other growers which will be sent out next spring. The flowers in the WINTER GARDEN having been protected from the late severe frosts present a magnificent display of all the finest varieties in cultivation. The Gardens are open every day except Sunday.—Versailles Nursery, William Street, near Hammersmith Turnpike, W.

CHRYSANTHEMUMS.

W. HOLMES begs to offer strong plants of every known good variety of CHRYSANTHEMUM at 5s. per dozen; including Golden Queen of England, Aurora, Cassandra, Curtius Quintius, Excelsior, Fabius, Fortune's Two-Coloured Incurved, Golconda, Glory, Julie Lagravère, Madam Clos, Mount Vesuvius, Orange Brilliant, Prince Albert, Remus, sulphureum superbum, Una, Andromeda, Ariel, Astrea, Baron d'Adswaërd, Esmeralda, Maid of Saragossa, Miss Julia, Miss Talfourd, Mrs. Dix, Shirley Hibberd, Rose Trevenna, &c.
Frampton Park Nursery, Hackney, N.E.

CHOICE DOUBLE FUCHSIA SEED.

GEO. WHEELER, having saved a limited quantity of Seed from the finest DOUBLE FUCHSIA ever offered, viz., his SIR COLIN CAMPBELL, which from such a Stock may reasonably be expected to produce a considerable proportion of double flowers, is prepared to forward, post free, in return for cash or postage stamps, packets containing 24 Seeds each, at 2s. 6d. per packet.—Warminster Nursery, Nov. 26.

AMERICAN PLANTS, &c.

MESSRS. WATERER AND GODFREY'S CATALOGUE for the present season is now ready, and may be had on application. It describes fully all Rhododendrons worth growing, and contains a List of Azaleas, Hardy Heaths, and other American Plants, as well as a summary of the general stock of the most extensive Nurseries in England.
The Catalogue may also be had at Messrs. MAY'S & Co., 1, Wellington Street, Strand, W.C.
Knap Hill Nursery, near Woking, Surrey.

HARDY RHODODENDRONS.

MESSRS. WATERER AND GODFREY invite attention to their Seedling RHODODENDRONS, which they are selling without names, and which they strongly recommend as being very superior in point of HABIT, FOLIAGE, COLOUR, and GENERAL HARDINESS. They are from 1½ to 2½ feet high, and as much through, and no plants can possibly be in finer health. They will be sold at very liberal prices, and purchasers can select from a stock of many thousands.
Knap Hill Nursery, near Woking, Surrey.

RHODODENDRONS.

JOHN WATERER'S CATALOGUE OF HARDY, SCARLET, and other choice RHODODENDRONS, as annually exhibited at the Royal Botanic Gardens, Regent's Park, is now published and will be forwarded on application. Faithful descriptions of all the esteemed varieties will be found detailed, with a list of the popular kinds of AZALEAS and other AMERICAN PLANTS, as well as a selection of CONIFEROUS TREES, with height and prices.
The American Nursery, Bagshot, Surrey, near Sunningdale Station, South-Western Railway.

GERANIUMS, HERBACEOUS PLANTS, ETC.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their new PRICED and DESCRIPTIVE CATALOGUE of the above, to which are added Supplemental Lists of Stove, Greenhouse, and Hardy Plants, Fruit Trees, &c. (which include all the best new plants of the season), is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

WHOLESALE CATALOGUE.

GEORGE JACKMAN AND SONS' PRICED and DESCRIPTIVE CATALOGUE for 1859, & SPRING 1860; comprising Fruit Trees of all the leading kinds; New and Selected Roses; fine varieties of American Plants; Choice and Rare Conifers; Evergreen and Deciduous Trees and Shrubs; and a fine stock of transplanted Forest Trees, &c., can be had free on application.—Woking Nursery, Surrey.

TANSLEY NURSERY, NEAR MATLOCK.
To GENTLEMEN PLANTING AND THE TRADE.

J. SMITH, SEN., begs to offer his STOCK OF TREES AND SHRUBS, of various sizes, and in addition to his general stock of the leading kinds, he has this season to offer an Extra Stock of many hundred thousands of fine Larches, Scotch Firs, and Highland Pines; a large quantity of Evergreens, Privets, Mahonia Aquifolium, and other plants for planting under cover. Many things are grown in large quantities, and will be sold on advantageous terms to the Trade and gentlemen requiring large lots.
CATALOGUES sent free on application. The Nurseries are on the Mansfield and Nottingham roads, and 2 miles from Matlock Bridge Station on the Midland Railway.

PAMPAS GRASS.—The present is the most favourable time for planting out this charming Plant. No one can imagine the grand effect of a mass of its silvery plumes unless they see it, nor is its value confined to the ornamental, but is likely to become useful as Cover for Game. It grows in any soil or situation, attaining the height of from 6 to 10 feet.—Any quantity can be supplied by C. NOBLE, Bagshot, Surrey.

EARLY POTATOES, LEMON KIDNEYS.—This early and excellent variety (see article on Cultivation of Early Potatoes, by the Rev. E. F. Manby, in Royal Agricultural Journal, Vol. XVIII.), may be had on early application to Author's Bailiff, JOHN HELM, Morecombe, price 2s. 6d. per stone. As also Copy of Article, 3d edition enlarged, price 1s.
N.B.—Late removal being injurious to the sprouts, orders should be at once supplied.

PINE APPLES, GRAPES, &c.
PINE PLANTS, Fruiting and Succession.
GRAPE VINES, from Eyes, for Fruiting in Pots or Planting.

JOHN WEEKS AND CO. can now supply any quantity of very fine strong healthy Pine Plants, either Fruiting or Succession; also remarkably fine strong Grape Vines from Eyes, all the best sorts.
JOHN WEEKS & Co.'s Horticultural Show Establishment is now entirely devoted to the Growing and Forcing of Fruits in great variety, thereby showing the most improved plans of construction, and the most superior system of Hot-water Apparatus.
JOHN WEEKS & Co., Horticultural Builders and Hot-water Apparatus Manufacturers, King's Road, Chelsea, London, S.W.

SNOW'S MUSCAT HAMBURGH GRAPE.

MESSRS. ARTHUR HENDERSON AND CO. beg to give notice that TWO PRIZES will be awarded by them at the Pomological Meeting in August, 1860, for the production of the three best bunches of the above Grape. The first Prize Three Guineas; the second Two Guineas. They will also give a Prize at the Crystal Palace Show in September, 1860, of Five Guineas for the best dish of Grapes, and Three Guineas for the second best.
A. HENDERSON AND CO., Pine Apple Place, W.—Nov. 26.

THE GREAT VINE AT HAMPTON COURT.—The Subscribers being the holders of the Royal Kitchen Gardens, Hampton Court, are enabled to offer genuine the famous and truly excellent HAMPTON COURT BLACK HAMBURGH GRAPE. | each
Strong well-ripened Fruiting Plants, in 12-inch pots, 10s. 6d.
Good well-ripened Plants, in 9-inch pots, 5s. each.
A liberal reduction in price if taken in large numbers.
THOMAS JACKSON & SON, Nurseries, Kingston, S.W.

TO THE TRADE.

J. TROTMAN begs to offer well-grown Plants of the following:—Dwarf Trained and Untrained PEACHES, NECTARINES, and APRICOTS. Dwarf Untrained PEARS, PLUMS, APPLES, and CHERRIES. Fine well furnished Trees for Orchard House or pot cultivation of Peaches, Nectarines, and Apricots. Prices moderate on application.
New Road, Hammersmith, W.

NEW APPLE.—NELSON'S GLORY.

WM. WOOD AND SON have the honour to announce that they have been appointed Agents for the Sale of the above very excellent new Apple, the property of Mr J. NELSON, of Bristol.
NELSON'S GLORY APPLE is one of immense size, weighing from 20 to 22 oz., and especially adapted to culinary purposes; indeed for making Jelly, Jam, and Sauces it is truly invaluable, and is ready for use from August to December. Plants have been ordered by all those parties who had the opportunity of seeing the magnificent fruit at Bristol.
DWARF MAIDEN PLANTS are now ready for sending out at 5s. each, with the usual discount allowed to the trade.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

NEW PINE APPLE—HURST HOUSE SEEDLING.

H. WILLIAMS is now prepared to send out this fine and useful variety of PINE APPLE; fruit large and conical, and of good flavour.
H. W. can with confidence recommend this variety to all Pine growers. Numerous testimonials could be given, but H. W. thinks it sufficient to add Mr. G. Fleming's, of Trentham: "An acquisition." Price on application.
Fortes Green, Muswell Hill, Finchley, N.

TO THE TRADE.

FRUIT TREES, MAIDEN APRICOTS, PEACHES, NECTARINES, PEARS, APPLES, PLUMS, CHERRIES, &c.; also Standard and Dwarf-trained, in great variety, and correct to name.
GRAPE VINES of all the principal kinds from Eyes, strong and well rooted.
Pyramidal PEARS and APPLES in fine health, coming into a bearing state. Prices on application.
R. GLENDINNING, Chiswick Nursery, London, W.

DWARF MAIDEN FRUIT TREES.—
APPLES.

PEARS.	CHERRIES.	PEACHES.
PLUMS.	APRICOTS.	NECTARINES.

Prices moderate.
Fine and clean grown; and all the leading sorts can be supplied in quantities by GEORGE JACKMAN & SON, Woking Nursery, Surrey.

DWARF TRAINED FRUIT TREES.—
APPLES.

PEARS.	CHERRIES.	PEACHES.
PLUMS.	APRICOTS.	NECTARINES.

Prices moderate.
Great care is taken in the formation of these fine, healthy, free-grown trees. Particulars can be obtained of GEORGE JACKMAN & SON, Woking Nursery, Surrey.

FOREST TREES.

JOHN WATERER has to offer upwards of a Hundred Thousand of each of the following, from 2 to 4½ feet high, and all good rooted:—

CHESNUT	LARCH	BIRCH
HAZEL	ASH	ALDER
SCOTCH	LAURELS	WITHY, &c.

Samples with prices sent on application. Planting done by contract.—The American Nursery, Bagshot, Surrey.

IMPORTANT TO LANDHOLDERS.

FOR SALE, 200,000 LARCH FIR, 1½ to 2 feet, at 15s. per 1000.
200,000 LARCH FIR, 2 to 2½ feet, at 20s. per 1000.
50,000 LARCH FIR, 3 to 3½ feet, at 40s. ,,
FLUKE POTATOES for planting, warranted free from disease, at 4s. 6d. per bushel. Orders for the above to the amount of 5l. and upwards, Carriage paid to any Railway Station from Milford to London.—JACOB SCOTT MATTHEWS, Nurseryman, Seedsman, and Florist, Cardiff, South Wales.

GOOSEBERRIES.—Wanted Whitesmith and Crown Bob, 2-year Plants, price and quantity, also Box-edging.
WM. DENNIS, Florist, &c., King's Road, Chelsea, S.W.

WM. DENNIS, King's Road, Chelsea, S.W., has on hand a few excellent Fruit-bearing MULBERRY TREES, clean stems, 6 to 9 feet, fine heads and well rooted; warranted to grow well. Smaller trees, various sizes. Aucuba japonica, fine specimens, 2 to 4 feet; Yucca recurva, gloriosa, &c., very fine.

CARTER'S PROLIFIC RASPBERRY.

JOHN CARTER, JUN., has pleasure in again offering the above Raspberry to the notice of the Horticultural world. It is a beautiful red fruit, very large, of fine flavour, and most abundant bearer. It was named by Mr. Glenny, after he had grown some plants one season, and he has since confirmed all he said in its favour, both in the "Garden Almanack" and in *Lloyd's Newspaper*.
J. C. has many testimonials of its excellence, and feels quite confident no one who may favour him with an order can be disappointed. Strong Canes, 5s. per dozen, or 33s. per 100, at the Nursery, or of the agents, HURST & MCMULLEN, 6, Leadenhall Street, E.C., or GEORGE GLENNY, Fulham, S.W. A CATALOGUE of general NURSERY STOCK may be had on application.—Keighley Nursery, Yorkshire.

GLASS SLATES.

WITH DRILLED HOLES.	Rough Plate ⅜ inch thick.	Rough Plate ⅝ in. thick.	Rough Plate ¾ inch thick.	Sheet. 16 oz.	Sheet. 21 oz.	Sheet. 26 oz.	Sheet. 32 oz.
Size.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Duchess .. .. 24 by 12	1 3	1 6	1 9	0 9	1 1	1 4	1 8
Small Imperials .. 20 by 14	1 2	1 5	1 8	0 8	1 0	1 3	1 7
Small Duchess .. 22 by 12	1 2	1 5	1 8	0 8	1 0	1 3	1 6
Countess .. .. 20 by 10	0 11	1 1	1 3	0 7	0 10	1 0	1 3
Viscountess .. 18 by 10	0 10	1 0	1 1	0 6	0 9	0 11	1 1
Large Ladies .. 16 by 10	0 9	0 11	1 0	0 6	0 8	0 10	1 0
Ladies .. .. 16 by 8	0 8	0 9	0 10	0 5½	0 7	0 8	0 10
Doubles .. .. 13 by 7	0 6	0 7	0 8	0 5	0 6	0 7	0 8

The above are well adapted for Farm Buildings, Outhouses, and any place where the admission of light through the roof is desirable.

GLASS TILES.

ROUGH PLATE.		SHEET.	
⅜ inch thick ..	0s. 10d. each	16 ounces ..	0s. 6d. each
⅝ inch thick ..	0 11 each	21 ounces ..	0 8 each
¾ inch thick ..	1 0 each	26 ounces ..	0 10 each
⅞ inch thick ..	1 6 each	32 ounces ..	1 0 each

CORRUGATED TILES of the usual form, at double price.
JAMES PHILLIPS AND CO.,
180, Bishopsgate St. Without, London, E.C.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz SHEET GLASS of British Manufacture at prices varying from 2d. to 3d. per square foot for the usual sizes required, many thousands of which are kept ready packed for immediate delivery.
Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES, and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London, W.
See *Gardeners' Chronicle* first Saturday in each month.

HORTICULTURAL GLASS—JUNE TARIFF.

THOMAS MILLINGTON'S reduced Tariff of GLASS, &c.

6 by 4, 7 by 5, 8 by 6, 9 by 7 } 16 oz. to the foot, 11s. 6d.
6½ by 4½, 7½ by 5½, 8½ by 6½, 9½ by 7½ } per 100 feet.

In 100 boxes,—4ths quality, 12s. 6d.; 3ds do., 14s. 4d.

10 by 8,	12 by 9,	12½ by 10½,	14½ by 10½, 13 by 11
10½ by 8½,	12½ by 9½,	13 by 10,	15 by 10, 13½ by 11½
11 by 9,	13 by 9,	13½ by 10½,	12 by 11, 14 by 11
11½ by 9½,	12 by 10,	14 by 10,	12½ by 11½

20 by 12	per 100 feet	16 oz.	21 oz.
20 by 13	Common ..	16s. ..	24s.
20 by 14	Superior .	18s. ..	27s.
20 by 15			

All Boxes included.
Orchard House sizes as supplied to Mr. Rivers.
Hartley's improved Rough Plate Glass from ⅛ to ⅜ in thickness.
Coloured Glass in great variety, at 9d. and 1s. per foot.
Paints, Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, Lamp Glasses, &c.
87, Bishopsgate Street Without, E.C., same side as Eastern Counties Railway.

GLAZIERS' DIAMONDS FOR CUTTING HORTICULTURAL and other GLASS, to be had of the Wholesale Manufacturer, JOHN EDWARDS, 20, Sharp's Alley, West Smithfield, London, E.C. Prices from 10s. to 27s. 6d.

HOT-WATER PIPES at wholesale prices, with Elbows, Syphons, Tee Pipes, and every other connection. Wrought and cast iron Boilers, Saddle, Conical, Cylinder, and Elliptic, from 24s. each. Boilers and Iron Stands to use without brickwork. Valves from 12s. each. Coil Boxes, Furnace Doors, Furnace Bars, Supply Cisterns, and Builders' Castings of every description in stock, at Mr. LYNCH WHITE'S Iron Wharf, Upper Ground Street, Blackfriars Bridge, London, S.

TO THE NOBILITY, GENTRY, AND HORTICULTURISTS.

H. MCCALLA (late principal Draughtsman to Messrs. Weeks & Co.), CIVIL ENGINEER AND FARM ARCHITECT, begs to inform the above that the Horticultural Buildings being confined to so few, exorbitant prices are charged; that he prepares Working Drawings and Specifications, so that they can have their own constructed by any country carpenter, at 1s. 6d. per foot super, or upon their own estates at 1s. 4d. per foot. Plans also upon the same rule for erecting Hot Water Apparatus. Plans for all kinds of Farm Buildings, Homesteads, Labourers' Cottages, Laying out of Estates, Drainage. Plans &c., prepared for all the above Works and submitted to competition.—Office: 7 Upper Cheyne Row, King's Road, Chelsea, S.W.

HORTICULTURAL BUILDINGS AND HEATING BY HOT WATER.

JOHN R. PEILL, 17, New Park St., Southwark, S.E., Manufacturer of every description of Buildings for Horticultural purposes, and Inventor of the Improved Conical Boiler for heating the same, is prepared to undertake works of any magnitude, and refers among others to the celebrated range of FORCING HOUSES at HER MAJESTY'S GARDENS, FROGMORE, and at SIR ROBERT PEEL'S, DRAYTON MANOR, constructed under the superintendence of his Manager, Mr. JOHN JONES; and also to his BOILERS fixed at the CRYSTAL PALACE, the ROYAL BOTANIC GARDENS, REGENT'S PARK, and KEW, and at several hundreds of the Nobility's seats, Public Establishments, and Manufactories in London and the provinces. J. R. P. also manufactures every description of Iron Roofs, Iron Houses, and Iron Fencing, plain and ornamental. Strong Iron Hurdles for Sheep (6 ft. long, 3 ft. high, with 5 bars), 4s. 3d. each; ditto for cattle, 4s. 9d. each. Prices and other particulars forwarded on receipt of one postage stamp.

HOT-WATER APPARATUS.

J. JONES begs to offer a complete HOT-WATER APPARATUS FOR GREENHOUSES, at the following prices, delivered free to any Railway Station in England:—

Size of House.	With Cylinder Boiler.	With Saddle Boiler.
20 feet by 10 feet ..	£8 10 0 ..	£9 0 0
25 ,, by 12 ,, ..	10 0 0 ..	10 10 0
30 ,, by 12 ,, ..	11 10 0 ..	12 0 0
30 ,, by 15 ,, ..	13 10 0 ..	14 10 0
40 ,, by 15 ,, ..	16 10 0 ..	17 10 0
50 ,, by 15 ,, ..	18 10 0 ..	20 0 0

The above prices include Boiler, strong Furnace Doors, Bars, Soot Doors, Cistern, Damper, Hot-water Pipes and Connections, Air Pipes, &c., all ready for fixing, and of the best quality. Further particulars will be sent on application. Parties ordering must send plans, showing doorways, position of boiler, &c.—J. JONES, Hot-water Apparatus Manufacturer, 6, Bankside, Southwark, London, S.E.

Printed by WILLIAM BRADBURY, of 13, Upper Woburn Place, and FREDERICK MULLETT EVANS, of No. 29, Queen's Road, West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and Published by them at the Office, No. 5, Upper Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—SATURDAY, November 26, 1859.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 49.—1859.] SATURDAY, DECEMBER 3. {Price Fivepence. Stamped Edition, 6d.

INDEX.

Agriculture of 1859	974 c	Floriculture among the working classes	969 b
Aquilegia	968 b	Foods, cattle	974 a
Bentham (Mr.) medal to	968 a	Fungi, corn	973 b
Birds and Gooseberries	968 a—970 a	Gleaning, law as to	978 b
Books noticed	971 a	Gooseberries and birds	968 a—970 a
Cattle foods	974 a	Herbarium, Horsfield's	972 a
Chrysanthemum shows	971 a	Lavender	968 b
Climbers, greenhouse	972 c	Law as to gleaning	978 b
Cover substitute	976 b	Lily of the Nile	972 c
College, agri	974 b	Linnean Society	970 b
Columbine	968 b	Mangel	976 b
Corn Fungi	973 b	Mushrooms	969 c
— averages	976 b	Pampas Grass	969 a
Cottagers' Kale	969 a	Pears, De Jonghe on	970 a
Datura arborea	969 c	Plants, sale of Mr. Fortune's	972 a
Dioscorea Batatas	969 c	Poultry show	974 b—977 a
Entomological Society	970 c	Springs, theory of	969 a
Falconry	971 a	Tea in United States	967 a
Farmers' Almanack	978 b	Trade lists	971 c
— Club, Braintree	977 c	Turner's (Mr.), nursery	971 c
Farming, Mechi on	977 c		

HORTICULTURAL SOCIETY OF LONDON.
FLORAL COMMITTEE.

The next Meeting of the Committee will be held at the Society's Rooms, 8, St. Martin's Place, Trafalgar Square, W.C., on THURSDAY, December 8, at 2 P.M., when ALL PERSONS are invited to send their NEW PLANTS and FLOWERS for examination. Subjects for exhibition must be delivered free at the place of meeting not later than 1 P.M.—December 3.

HORTICULTURAL SOCIETY. — NOTICE is hereby given that a SPECIAL GENERAL MEETING of this Society will be held in the Rooms of the Society of Arts, John Street, Adelphi, on FRIDAY, December 9, at 12 o'clock at noon, to elect a new Member of Council, vice Professor Henfrey, deceased, and various Candidates to become Fellows, and for no other purpose.

N.B. John Clutton, Esq., will be put in nomination as new Member of Council.

WM. B. BOOTH, Assist. Sec.
8, St. Martin's Place, W.C., Dec. 1, 1859.

THE HANOVERIAN BAND AND FLORAL FETE COMMITTEE beg to announce to Exhibitors that the SHOW DAYS are fixed for WEDNESDAY, MAY 9, and WEDNESDAY, SEPTEMBER 5, 1860. R. KING, Chairman; H. SMITH, Hon. Secretary.—Bath, December 3.

WANTED, a quantity of extra large handsome LIME TREES, from 25 to 30 feet in height. Any gentleman having in his plantations or grounds a surplus quantity of large Lime Trees, which he may be desirous of thinning and disposing of, may find a purchaser for the same by applying to JAMES VEITCH, Jun., Exotic Nursery, King's Road, Chelsea, S.W.

To insure the safe removal of such trees, J. VEITCH, Jun., will require to be permitted to have them cut round and prepared during the winter. Their removal to be effected in the autumn of 1860.—Chelsea, Dec. 3.

NEW ROSE CATALOGUE.

WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

WM. WOOD AND SON will be happy to forward Copies of their NEW CATALOGUE gratis and post free on application.

STANDARD ROSES.—All the leading kinds in cultivation at prices scarcely ever offered before.
CHARLES NOBLE, Bagshot, Surrey.

ROSES.

E. P. FRANCIS'S new and extensive CATALOGUE of ROSES on the Manetti Stock is now ready for delivery, and will be forwarded gratis on application.
Rose Nurseries, Hertford.

ROSE CATALOGUE.

JOHN CRANSTON begs respectfully to inform his patrons that he will be happy to forward his New ROSE CATALOGUE for the present season, post free, upon application. It will be found replete with the most desirable flowers (new and old) in every class, and the descriptions are copious and faithful.—Nurseries, King's Acre, near Hereford.

ROSES.

JOHN HARRISON begs respectfully to inform his friends and the Trade that he has still on hand a splendid Stock of Standard and Dwarf ROSES. His Plants cannot be excelled, and his prices are as low as any in the Trade. CATALOGUES free on application. Fruit Trees, Evergreen and Deciduous Shrubs, Forest Trees, &c., of every variety. Plantations contracted for and maintained until permanent, at prices to suit the times.—Darlington Nursery.

THE NEW DESCARTES ROSE STOCK.—This first-rate stock for Perpetuals, 3s. per 2 dozen; 7s. 6d. per 100; 250 for 15s.; 500 for 28s.; or 1000 for 50s. Also fine EVERGREENS and NURSERY STOCK reasonable, at J. J. FOSTER'S, Edgware, N.W.

RHODODENDRONS "of every hue," Scarlet, White, Rose, Crimson, and every intermediate shade, nearly all sizes and at all prices, can be supplied by CHARLES NOBLE, Bagshot, Surrey.

STANDARD RHODODENDRONS.—Hundreds of handsome specimens of all the choicest varieties, varying in colour from deepest crimson to rose and pure white, with symmetrical heads and straight stems, from 2 to 5 feet in height, can be supplied by
JOHN WATERER, American Nursery, Bagshot, Surrey.

CHOICE RHODODENDRONS, AZALEAS, AND CONIFEROUS PLANTS.—A CATALOGUE of GEORGE BAKER'S unrivalled Stock of the above may be had on application.—The American Nursery, Bagshot, Surrey.

SUPERB SPECIMEN SCARLET RHODODENDRONS and others, from 3 to 5 feet in height, and 3 to 4 feet in diameter, some of which are well furnished with bloom buds, from 3s. 6d. to 10s. 6d. each, large and very bushy, well adapted for immediate effect.
WILLIAM WOOD & SON, Woodlands Nursery, Maresfield, near Uckfield, Sussex.

VEGETABLE SEEDS.

J. CARTER AND CO. can supply PEAS, BEANS, CARROTS, RADISHES, &c., for present Sowing, NEW SEED OF 1859 HARVEST.—237 & 238, High Holborn, W.C.

BEST CUCUMBER FOR EARLY WORK.

CARTER'S CHAMPION, 1s. per packet; also BERKSHIRE CHAMPION, 1s. per packet; and LORD KENYON'S FAVOURITE, 6d. per packet.
JAMES CARTER & Co., 237 and 238, High Holborn, W.C.

MONRO'S PROLIFIC CUCUMBER.—The best for winter cultivation, 2s. 6d. per packet. First-prize Certificates have been awarded it, both by the Horticultural Society and Crystal Palace Company, at the grand exhibitions of this season. The usual allowance to the Trade.
G. MONRO, Colney Street, St. Albans, Herts.

NEW SEEDLING PEA.

COTTON'S LEVIATHAN, PROLIFIC MARROW.—A tall, large, wrinkled Marrow Pea. From One Pea 11,000 were produced the second year. The flavour excellent.—To be had at GILBERT KNILL COTTON'S Seed Warerooms, High Cross, Barnstaple.—Dec. 3.

THE COTTAGERS' KALE.—Seed of this invaluable and finest of winter Greens can be had by the pound, ounce, or packet. Price to the Trade on application.
C. TURNER, the Royal Nurseries, Slough.

STANDARD CHERRIES.

WOOD AND INGRAM beg to inform the Trade and others who may be planting CHERRIES largely, that they have this year a very large stock of fine healthy trees, prices of which they will forward on application. A very fine lot of DWARF and TRAINED TREES also may be had.
Nurseries, Huntingdon.

TRADE CATALOGUE.

THOS. CRIPPS, Tunbridge Wells, Kent, respectfully informs the Trade that his WHOLESALE CATALOGUE OF AMERICAN PLANTS, ROSES, AND GENERAL NURSERY STOCK is now ready and may be had post free.

FERN CATALOGUE.

ROBERT SIM'S NEW DESCRIPTIVE AND PRICED CATALOGUE, No. 6 (62 pages) of his COLLECTION of BRITISH AND EXOTIC FERNS, can be had, post free, for 8 stamps. Gratis to all previous purchasers of Ferns.
Nursery, Foot's Cray, Kent, S.E.

PELARGONIUMS.

C. TURNER'S DESCRIPTIVE CATALOGUE of the above is now ready, containing new varieties now offered for the first time, raised by Foster, Hoyle, Beck, and himself.

The selection of older varieties is complete. Strong plants ready for delivery.—The Royal Nurseries, Slough.

CATALOGUE.

YOUELL AND CO.'S GENERAL AND DESCRIPTIVE PRICED CATALOGUE for this season is now ready, and will be sent free on application.

It contains detailed Lists of Greenhouse Plants, Conifers, Shrubs, as well as all the newest introductions in Soft-wooded Plants.—Royal Nursery, Great Yarmouth.

SUPERB DOUBLE HOLLYHOCKS.

WILLIAM CHATER'S CATALOGUE is now ready, and can be procured by inclosing One Postage Stamp, on application to the Nurseries, Saffron Walden, Essex.
See also other Advertisements in this Paper.

HYACINTHS AND OTHER BULBS.

WM. CUTBUSH AND SON can still supply Roots equal to the first they sent out this season, as all BULBS are especially selected for them before they are imported from Holland. Descriptive CATALOGUE post free on application.
Highgate Nurseries, London, N.

GIANT POLYANTHUS AND GIANT COWSLIP.—A few pounds of these gigantic and beautiful Spring Flowers to be disposed of, many of them almost equal to the Auricula.—Apply to G. MACE, at the Garden, Calcot, near Reading.

AZALEA INDICA.

J. IVERY AND SON'S New DESCRIPTIVE CATALOGUE of the above contains all the newest and best varieties. Will be forwarded post free upon application.
Dorking Nursery.—Dec. 3.

AZALEA INDICA.

F. AND A. SMITH beg to offer the above well set with flower buds, dwarf, bushy, and thoroughly ripened off. Having been grown in this country they are most suitable for packing, and are strongly recommended to country Amateurs and the Trade in general. An inspection invited. Prices on application.—Dulwich, Surrey, S.

ERICAS.

F. AND A. SMITH'S Stocks of the above are this season unusually fine, comprising most of the leading winter and spring-flowering varieties. Prices on application.
Dulwich, Surrey, S.

COB NUTS.—Who would not grow Cob Nuts, selling at the present time in Covent Garden from 1s. to 1s. 6d. per lb. Trees to be obtained of JOSEPH MAY & Co., Seedsmen, &c., 1, Wellington Street, Strand, W.C.
First-rate KENTISH COB NUT.

WELLINGTONIA GIGANTEA.

JOHN WATERER has thousands of the above Plants to offer, varying in height from 1 to 4 feet. The whole are exceedingly handsome and well rooted. Price on application.—The American Nursery, Bagshot, Surrey.

LAWNS WITHOUT MOWING—SPERCULA PILIFERA.

J. A. SUMMERS supplies the above in plants enough to cover the ground next summer at 1s. per square yard, or at 1s., 2s., and 4s. per doz. plants. A specimen post free, 1s.
Howard Park Nursery, Perry Hill, Sydenham, S.E.

GOOD SEEDS. CARRIAGE FREE.

SUTTON AND SONS,
SEED GROWERS AND MERCHANTS,
ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.

GEORGE GIBBS AND CO.,
SEEDSMEN,
26, DOWN STREET, PICCADILLY,
LONDON, W.

J. H. ROBINSON, SEED GROWER AND DEALER,
Wholesale and Retail, Abbey Farm, Hinckley.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY LIMITED supply every requisite for the Farm and the Garden.
Registered Offices: Union Road, Plymouth.

CHEAP AND SELECT NURSERY STOCK.

WILLIAM JACKSON AND CO., Bedale, Yorkshire, beg to refer to their Advertisement of the above in the *Gardeners' Chronicle* of the 12th inst., page 906; and take the opportunity to state that their ROSES were transplanted last spring, and will now remove in fine condition without risk.

COX'S EMPEROR PLUM is now ready for delivery.—Parties wishing to have Plants of this very superior PLUM are requested to apply to MR. HENRY CLARKE, 39, King Street, Covent Garden, London, W.C.

GREAT SCARCITY OF FRUIT.

STRONG ROOTS OF THE LINNÆUS RHUBARB, from division, can be supplied in any quantity at 12s. per 100, or 5l. per 1000, by WALTER PENNINGTON, Nurseryman, South Retford, Nottinghamshire.

MAIDEN AND CUT-BACK FRUIT TREES.
STANDARD AND PYRAMID FRUIT TREES.
EXTRA FINE TRAINED FRUIT TREES.

RICHARD SMITH has this season 23 acres of the above. Price on application.
St. John's Nurseries, Worcester.

NEW FRUITS.—The SALWAY PEACH, COX'S ORANGE PIPPIN APPLE, and OSCAR STRAWBERRY. For Particulars of the above see CHARLES TURNER'S descriptive FRUIT CATALOGUE, which may be had on application.—The Royal Nurseries, Slough.

FRUIT TREES.

J. AND J. FRASER, Lea Bridge Road Nurseries, Essex, N.E., beg to invite purchasers of Fruit Trees to an inspection of their stock, which is this year unusually fine. PRICED CATALOGUES can be had on application.

TO THE TRADE.

J. AND J. FRASER, The Nurseries, Lea Bridge Road, Essex, N.E., beg to offer a large Stock of Maiden FRUIT TREES, including all the best sorts of Apricots, Peaches, &c. The prices, which are very moderate, may be had on application.

FRUIT TREES.—Intending purchasers are respectfully invited to inspect the extensive Stock growing at the Nursery of the Subscribers. The quality is this season unusually good.—HUGH LOW & Co., Clapton Nursery, London, N.E.

DWARF MAIDEN FRUIT TREES.

HUGH LOW AND CO. have to offer of fine quality, PEACHES, NECTARINES, APRICOTS, PLUMS, CHERRIES, APPLES, PEARS, both on Pear and Quince Stocks. Prices will be furnished on application.

The Autumn Wholesale CATALOGUE is now ready for distribution.—Clapton Nursery, London, N.E.

WANTED, 150 MAIDEN PEACH AND APRICOT TREES.—Address, GEORGE BUCK, Market Gardener, Mitcham Common, Surrey.—Dec. 3.

WANTED, for planting an Estate, a large quantity of well-grown LIMES, POPLARS, SYCAMORES, HORSE CHESNUTS, &c.; also EVERGREENS of every description.—Address (stating size and price delivered to a station on the Mid Kent Line) to Mr. HAMILTON, 4, Camberwell Green, S.

FOR SALE, a stock of about 60 FRUITING and SUCCESSION PINES. Price Six Guineas.—For particulars address, post paid, T. N. L., Post Office, Taunton.

FOR SALE, a large quantity of fine TRANSPLANTED LARCHES, from 2 to 4 feet. Prices on application.—R. TURNBULL, Catterick Bridge Nursery, Yorkshire.

MAGNIFICENT STANDARD AND PYRAMIDAL PORTUGAL LAURELS.—The above are well adapted for planting out on lawns or where immediate effect is required. The Standards range from 4 to 6 feet, with large well-formed heads; and the Pyramids are most beautifully shaped plants, from 5 to 7 feet. Prices on application.—WM. WOOD & SON, Woodlands Nursery, Maresfield, near Uckfield, Sussex.

HARDY HEATHS.—A Collection of 20 sorts, by name, of the above favourite autumnal flowers, in good plants, at 30s. per 100, or 12l. 10s. per 1000.
JOHN WATERER, The American Nursery, Bagshot, Surrey.

TRANSPLANTED AND SEEDLING QUICK.

EDMUND SALSBURY, Melbourne, near Derby, having a large quantity of the above, strong and well rooted, will be glad to send samples of three or more sizes to any place required without charge for samples.

THREE MILLIONS OF TRANSPLANTED QUICKS.

GEORGE CHIVAS, Chester, offers the above, which are admitted to be unequalled in point of quality in Great Britain. A sample bale, containing 100 each of five sizes, forwarded on receipt of 15s., and orders for 10,000 delivered free at any railway station.—Chester, December 3.

T. LOCKHART, FLORIST, Fulham, S.W., near London, begs to offer his celebrated Collection of RANUNCULUS in 25 finest sorts, at 2*s.* per 100. If required he will add simple instructions for their treatment, which will ensure a splendid bloom of this most beautiful flower, which of late years has been so sadly neglected

LOCKHART'S IMPROVED WHITE COS LETTUCE, the finest in cultivation, 13 postage stamps per packet.

Single BLACK WALLFLOWERS, 50 Seeds, 13 stamps per packet. Both free by post.

ASTERS, STOCKS, and a general Collection of SEEDS.

MESSRS. WATERER AND GODFREY respectfully refer planters to the following LIST of well-known good hardy Plants:—

ARAUCARIA IMBRICATA, 1 foot, stout, healthy, 5*l.* per 100; larger, up to 8 feet.

CEDRUS DEODARA, 2½ to 3 feet, very handsome, 10*l.* per 100; larger, in any quantity, up to 10 and 15 feet.

PICEA NOBILIS, Seedlings, in quantity, 1 foot, stout.
Ditto larger and in every way perfect plants, up to 4 feet.

NORDMANNIANA, from seed, 2, 3, 4, and 6 feet.

PINSAPO, 2½ to 3½ feet, and as much through.
Ditto magnificent plants, 8 and 10 feet high.

CUPRESSUS LAWSONIANA, fine bushy seedling plants, 2½ feet high.

JUNIPERUS, CHINESE, 3 feet up to 8 and 10 feet.
" IRISH, 5, 6, and 7 feet.

YEWS, IRISH, 5, 6, 7, and 8 feet.
" GOLDEN, from 2 to 7 and 8 feet.
" COMMON ENGLISH, in large quantities, 4 to 6, 7, and 8 feet.

THUJA AUREA.—Several hundred magnificent specimens, 3, 4, and 5 feet high, and measuring 10 to 15 feet in circumference.

THUJOPSIS CÆREOLIS, 2½ to 3 feet.

WELLINGTONIA GIGANTEA, all from seed, 1½ to 3 feet, and as wide.

HOLLY, GREEN, in quantities. 5, 6, and 8 ft.; VARIEGATED, especially the best gold striped, of all sizes, up to 6 feet.

All the plants referred to in this advertisement were removed in April last, and they are in a condition to travel any distance with perfect safety.—Knap Hill Nursery, near Woking, Surrey.

FIVE THOUSAND INDIAN AZALEAS.

WILLIAM BARNES begs to invite attention to his unrivalled Collection of the above beautifuland justly admired class of plants. The sizes vary from 1 to 5 feet in height, worked upon strong healthy stocks, are in the finest possible condition, and perfectly free from thrip. The following list comprises a portion of his extensive stock:—

Conqueror	Glory of Sunning Hill	Standard of Perfection
Murrayana	Ethansii [ford	Grand Monarch
Carminata	Countess of Stam-	Marie Louise
Duke of Devonshire	Beauty of Europe	Queen Victoria (Ivery's)
Triumphans	Barclayana	Iveryana alba cincta
Perryana	Stanleyana	Alba lutescens
Iveryana	Crispiflora	Modèle
Alba striata	Striata formosissi-	Baron de Peet
Aurora	Admiration [ma	Le Géant
Coronata	Criterion	Belle Jeannette
Variegata	Delicatissima	Etendard de Flandres
Lateritia	Magnificans	Papilionatima
Gledstanesi	Alba Meloi	Rubens
Alba magniflora	Mrs. Fry	Pelargoniflora
Frostii	Perfecta elegans	Gloire de Lederberg
Delecta	Lateritia alba su-	Baron de Vrière
Alba magna	preme	Gloire de Belgique
Holfordii	Empress Eugenie	Distinction
Ardens	Impératrice Jose-	Queen of Whites
Vivicans	phine	Leopoldi
Rosea elegans	Eulalie Van Geert	Duc de Brabant
Juliana	Queen Victoria (con-	Etoile, de Gand
Elegans superb	tinental)	Reine des Panachées
Beauty of Reigate	Reine des Belges	Princess Adelaide de Nassau
Lawrenciana	Queen of Perfection	Flower of the Day
Symmetry	Adolphe	Souvenir de l'Exposition
Vesta	Loeana	Duchess Adelaide de Nassau
Gledstanesi excelsa	Louis Napoleon	Iveryana Improved
Buckinghamii	The Bride	Duc de Nassau
Maria	Gem (Ivery's)	Miltonii
Chelsonii	Madame Miellez	Variegata superba
Fentonii	Princess Mary of Cambridge	Bouquet de Flore
Lucens	Petuniæflora	
Constantia rosea	Roi Leopold	
Lateritia grandiflora	Rosy Circle	
Trotteriana	Sir Charles Napier	
Gledstanesi formosa		

CATALOGUES with Prices can be had on application.
Camden Nursery, Camberwell, S.

WILLIAM YOUNG begs to call attention to his extensive NURSERY STOCK, which is in fine condition for removal, and which will be found well worth notice of those engaged in any kind of planting.

Having large quantities of the undermentioned, all well grown, good-rooted plants, he can offer them at very moderate prices.

SPECIMEN CONIFERÆ.

Abies Douglassii, 8 to 12 feet	Cedrus Deodara, 6 to 12 feet
" canadensis, 8 to 12 feet	" Libani, 6 to 12 feet
" Menziesii, 6 to 10 feet	Araucaria imbricata, 4 to 6 ft.
" nigra, 6 to 8 feet	Cryptomeria japonica, 6 to 8 ft
" Pinsapo (very handsome), 6 to 8 feet	Juniperus chinensis, 6 to 8 ft.
Pinus Cembra, 6 to 10 feet	" hibernica, 6 to 8 ft.
" excelsa, 8 to 10 feet	Taxodium sempervirens, 6 to 10 feet
" insignis, 6 to 8 feet	

LARGE DECIDUOUS TREES AND EVERGREENS.

Ash, Weeping, 8 to 10 feet	Oak, exoniensis, or New Leucombe, 8 to 12 feet
Beech, common, 6 to 10 feet	Oak, evergreen, 8 to 10 feet
" copper, 6 to 10 feet	Weeping Willows, 8 to 10 feet
" Fern leaf, 6 to 8 feet	Spruce Firs, 10 to 12 feet
" weeping, 6 to 8 feet	Silver Firs, 10 to 12 feet
Horse Chesnut, 8 to 12 feet	Arbor-Vitæ, American, 6 to 8 ft
Limes, 6 to 10 feet	" Chinese, 6 to 8 ft.
Poplar Abele, 8 to 10 feet	" Ontario, 5 to 7 ft
" black Italian, 8 to 10 ft.	Hollies, green, 8 to 12 feet
Maple, Norway, 6 to 8 feet	Yews, 8 to 12 feet
Oak, English, 10 to 12 feet	
" Fordii, 8 to 10 feet	

STANDARD ROSES.—A fine collection of all best varieties.
RHODENDRONS and other AMERICAN PLANTS of all the leading varieties.

FOR ORNAMENTAL GAME COVER.

Azalea pontica	Juniper, Common
Common Laurels	Juniper sabina
Evergreen Privet	Rhododendron ponticum
Mahonia Aquifolium	

FOREST TREES.—Larch, Scotch, Alder, Ash, Birch, Hazel, Chesnut, Willow, &c., from 2 to 4 and 5 feet, in any quantity for Coppice planting

A NEW DESCRIPTIVE CATALOGUE of New Plants, Coniferæ, Deciduous Trees, Evergreens, Flowering Shrubs, Roses, American Plants, and general Nursery Stock, with heights and prices, forwarded on application.

N.B.—Good Railway communication to any part of England.
Milford Nurseries, near Godalming, Surrey.

BUTLER & McCULLOCH,

COVENT GARDEN MARKET, W.C.

A DESCRIPTIVE AND PRICED CATALOGUE OF

HYACINTHS, GLADIOLI, RANUNCULUS, ANEMONES, IXIAS, AMARYLLIS, CROCUS, and other DUTCH and CAPE BULBS, with practical Cultural directions affixed to each Class for the use of Amateurs, sent free and post paid (for contents of CATALOGUE see *Gardeners' Chronicle*, October 1, page 786).

☞ *All orders amounting to* 21*s. and upwards sent Carriage paid.*

For conspicuous beds the following HYACINTHS and TULIPS cannot be surpassed; they occupy a most important position in the economy of the Flower Garden, coming into bloom immediately after the Crocus, &c., and ready for removal at the time of planting out Geraniums and other Summer and Autumn Flowering Plants:

BEST DOUBLE and SINGLE MIXED HYACINTHS	21*s.* 0*d.* per 100,	3*s.* 0*d.* per dozen.
TOURNESOL and REX RUBRORUM DOUBLE TULIPS	7 6 "	1 0 "
YELLOW ROSE, pure yellow and scented Do.	10 6 "	1 6 "
LA CANDEUR, pure white Do.	14 0 "	2 0 "
FINE MIXED DOUBLE do.	7 6 "	1 0 "
FINE MIXED SINGLE do.	6 0 "	1 0 "
CHOICE MIXED LATE FLOWERING do.	10 6 "	1 6 "

FOR CENTRES OF LARGE BEDS AND BORDERS

The following favourites are perfectly hardy, and cannot be too extensively cultivated:—

TRITOMA UVARIA (true)	21*s.* 0*d.* per doz.	2*s.* 0*d.* each	LILIUM LANCIFOLIUM ROSEUM 20*s.* 0*d.* per doz. 2*s.* 6*d.* each
LILIUM LANCIFOLIUM ALBUM	15 6 "	1 6 "	" " RUBRUM 20 0 " 2 0 "

GLADIOLI HYBRID of RAMOSUS,	30	splendid varieties named, for	21*s.* 6*d.*, or 12 for 9*s.* 6*d.*	
" " CARDINALIS,	12	beautiful "	10 6	
" " BLANDUS,	6	new "	4 6	best for forcing.
" " SAGITTALIS	6 "	"	4 6	best for forcing.

GLADIOLUS BRENCHLEYENSIS	30*s.* 0*d.* per 100	5*s.* 0*d.* per dozen.	
" GANDAVENSIS	15 6 "	2 6 "	
" QUEEN VICTORIA	15 6 "	2 6 "	
" RAMOSUS	15 6 "	2 6 "	
" FLORIBUNDUS	15 6 "	2 6 "	

THE FOLLOWING COLLECTIONS OF CHOICE BULBS SENT CARRIAGE PAID

No. 1, C, £1 1s.

12 Choice named Hyacinths
2 beautiful Japan Lilies, 2 varieties
12 beautiful Gladioli, 4 vars.
4 Polyanthus Narcissus
50 Ranunculus
40 Border Narcissus
100 Crocus
100 Snowdrops
40 Double Tulips
12 beautiful Iris
2 Chinese Pæonies

No. 2, D, £2 2s.

18 Choice named Hyacinths
3 beautiful Japan Lilies, 3 varieties
18 beautiful Gladioli, 6 vars.
6 Polyanthus Narcissus
100 Ranunculus
40 Anemones mixed
20 " scarlet
150 Crocus
150 Snowdrops
50 Double Tulips
4 Chinese Pæonies
12 beautiful Ixias
6 beautiful Sparaxis
1 Tritoma Uvaria
6 Babianas
2 Tritoma aurea

No. 3, E, £3 3s.

24 Choice named Hyacinths
4 beautiful Japan Lilies, 4 varieties
24 beautiful Gladioli, 12 vars.
9 Polyanthus Narcissus
100 Ranunculus
50 Anemones mixed
50 " scarlet
200 Crocus
200 Snowdrops
60 Double Tulips
6 Chinese Pæonies
18 beautiful Ixias
12 beautiful Sparaxis
2 Tritoma Uvaria
1 Lilium giganteum
12 Babianas
3 Tritoma aurea

AGENTS FOR TYE'S REGISTERED HYACINTH GLASSES.

These are without exception the most elegant and best adapted for the successful Culture of the Hyacinth. See Woodcut Group of Glasses, page 803 of *Gardeners' Chronicle*, October 8.

TO BOTANISTS AND HORTICULTURISTS.

ROBINSON SCOTT, formerly of the Belfast Botanic Garden, Albert Model Farm, and Kew Gardens; now of Philadelphia, United States, America, has facilities for collecting specimens of the American Flora, also Indigenous Seeds, as well as rare Plants and Insects. Any Naturalist or Collector who may desire such can be promptly supplied at reasonable prices.

References: Baillière Brothers, New York; Dr. Kirkpatrick, Dublin; D. Ferguson, Esq., Belfast Botanic Garden; Professor J. E. Planchon, Montpellier, France.

N.B. Nurserymen and Florists are requested to send their Catalogue by Post.

Address prepaid, R. ROBINSON SCOTT, Philadelphia, United States, America.

SURPLUS NURSERY STOCK.

F. GODWIN in removing to his New Nursery Grounds offers the undermentioned at the following low prices:—

		s.	d.
13,000 Acacias, 1 year's	per 1000	3	6
10,000 Brooms, Yellow Spanish, 1 year's	"	10	0
10,000 Chesnut, Horse, 1 year's	"	4	0
32,000 Oaks, 1 year's, fine in drills	"	2	0
2,000 do. Scarlet, 1 year's do.	per 100	4	0
20,000 Pinus maritima, 1 year's	per 1000	4	0
1,500 Morus nigra, 1 year's	per 100	3	0
8,000 Pinus Laricio, 2 year	"	3	0
50,000 Spruce, 2 year's	per 1000	1	6
25,000 do. 3 years	"	2	0
60,000 Yews 3 years	"	12	6
15,000 Pinus austriaca, 1 year bedded, fine	"	8	0
1,000 " Alepica, 1 year do. do.	per 100	5	0
1,500 " calabrica, 1 year do. do.	"	6	0
10,000 " Pinaster, 1 year do. do.	per 1000	10	0
50,000 Scotch, 2 years and 1 year bedded, fine	"	3	0
25,000 Spruce, 2 years and 1 year do. do.	"	4	0
7,000 Beech, 3 to 4 feet	"	30	0
25,000 Larch, 1½ to 2 feet	"	12	0
5,000 Scotch, 1½ to 2 feet	"	18	0
50,000 Asparagus, 3 years	"	10	0
5,000 Currants, Red, White, and Black, Victoria Red, Long-bunched, Red, and Black Naples, per 100		8	0
20 extra fine Mulberry Trees, 8 to 10 ft., bushy, each, 10*s.* 6*d.* to		12	6
100 Apricots 2 and 3 years trained	per doz.	30	0
200 Peaches and Nectarines, 2 and 3 years trained, fine	per doz.	36	0
300 Andromeda polyfolia	per 100	16	0
4,000 Arbor-vitæ, American, 8 to 15 inches, 2 yrs. transplanted	"	5	0
1,000 Azalea, Belgian, in sorts	"	50	0
700 Erica carnea	"	16	0
1,000 Honeysuckles, Red Dutch	"	8	0
6,000 Laurels, common, 2 to 3 feet	"	10	0
150 Araucaria imbricata, 9 to 12 inches	per doz.	24	0
250 do. do. 12 to 18 inches	"	36	0
1,000 Lilacs, of sorts	per 1000	18	0
1,500 Roses; Standard, Hybrid, Perpetual, & others	p. 100	70	0
100 Ash, Weeping, strong	per doz.	15	0
25 " Mountain, Weeping	"	18	0
50 Limes, Weeping	"	18	0
2,000 Yews, extra transplanted, 1½ to 2 feet	per 100	18	0
2,500 " " 2 to 2½ feet	"	24	0
3,500 " " 2½ to 3 feet	"	30	0
2,500 " " 3 to 4 feet	"	40	0

POTATOES, Davis's Seedling, or Handsworth's Early Round, 2*s.* per peck of 20 lb., with all other kind of NURSERY STOCK. Prices on application.—Sheffield.

CEDRUS DEODARA.

WM. MAULE AND SONS still hold the largest Stock of the above Tree in this country, and invite the attention of gentlemen planting, and the Trade generally. Magnificent specimens, 5, 6, and 7 feet, at 5*s.*, 6*s.*, and 7*s.* each.
Stapleton Road and Stoke Nurseries, Bristol.

PELARGONIUMS OR GERANIUMS.

T. GAINES begs to inform the growers of the above that he has a large stock of Show, French, and Fancy GERANIUMS. Also AZALEAS, FUCHSIAS, CAMELLIAS, FERNS, and LILIUMS, which can be seen at the Nursery, Surrey Lane, Battersea, S.W.—Dec. 3.

1859.—The London Agents of Mr. CHARLES APPELIUS have just received a consignment of his well-known Collections of STOCKS and ASTERS in 12 vars. The New TRADE LIST (27th) can be had free on application. All Flower Seeds delivered carriage paid as usual.
ERFURT (Prussia), and 132, Upper Thames St., London, E.C.

TRANSPLANTED FOREST TREES.

WOOD AND INGRAM beg to offer the following extra fine and well rooted stuff:—

ALDERS, 4 to 5 feet, 35*s.*; 5 to 6 feet, 40*s.* per 1000.
ACACIAS, 3 to 4 feet, 12*s.*; 4 to 5 feet, 15*s.*; 8 to 14 feet, 50*s.* per 100.
ASH, 3 to 4 feet, 30*s.*; 4 to 5 feet, 35*s.*; 5 to 6 feet, 40*s.*; 6 to 7 feet, 50*s.* per 1000.
BEECH, 2 to 3 feet, 30*s.*; 3 to 4 feet, 40*s.*; 4 to 5 feet, 50*s.* per 1000.
CHESNUT, SPANISH, 3 to 4 feet, 40*s.*; 4 to 5 feet, 50*s.*; 6 to 7 feet, 60*s.*; 7 to 8 feet, 80*s.* per 1000.
ELMS, NARROW-LEAVED ENGLISH, 2 years seedling, 8*s.* per 1000.
ELMS, NARROW-LEAVED ENGLISH, 2 to 3 feet, 25*s.*; 3 to 4 feet, 30*s.* per 1000.
ELMS, HUNTINGDON AND HERTS, from layers, 3 to 4 feet, 15*s.*; 4 to 5 feet, 20*s.*; 5 to 6 feet, 25*s.*; 6 to 8 feet, 35*s.* per 100.
ELMS, HUNTINGDON, from grafts, 4 to 5 feet, 25*s.*; 5 to 6 feet, 30*s.*; 6 to 8 feet, 50*s.*; 8 to 10 feet, 70*s.* per 100.
FIR, SPRUCE, 1 to 1½ foot, 50*s.*; 1½ to 2 feet, 60*s.*; 2 to 3 feet, 70*s.* per 1000.
FIR, SCOTCH, 2 to 3 feet, 30*s.*; 2½ to 3 feet, 35*s.*; 3 to 4 feet, 50*s.* per 1000.
FIR, LARCH, 2 to 3 feet, 25*s.*; 3 to 5 feet, 35*s.*; 4 to 5 feet, 40*s.* per 1000.
HAZEL, 3 to 4 feet, 30*s.*; 4 to 5 ft., 40*s.*; 6 to 7 ft., 70*s.* per 1000.
HORNBEAM, 2 to 3 feet, 30*s.*; 3 to 4 feet, 35*s.*; 5 to 6 feet, 50*s.*; 4 to 5 feet, 40*s.* per 1000.
MAPLE, 1½ to 2 feet, 20*s.*; 2 to 3 feet, 25*s.*; 3 to 4 feet, 30*s.*; 4 to 5 feet, 40*s.* per 1000.
MAPLE, NORWAY, 3 to 5 feet, 8*s.*; 7 to 8 feet, 20*s.* per 100.
OAKS, BRITISH, 2 to 3 feet, 30*s.*; 3 to 4 feet, 40*s.*; 4 to 5 feet, 50*s.*; 5 to 6 feet, 80*s.* per 1000.
OAKS, TURKEY, 4 to 5 feet, 10*s.* per 100.
POPLAR, BLACK ITALIAN, 2 to 3 feet, 25*s.*; 3 to 4 feet, 30*s.*; 4 to 5 feet, 35*s.*; 5 to 6 feet, 40*s.*; 6 to 8 feet, 50*s.*; 8 to 10 feet, 65*s.* per 1000.
POPLAR, LOMBARDY, 4 to 5 feet, 10*s.*; 5 to 6 feet, 15*s.*; 6 to 7 feet, 20*s.*; 7 to 8 feet, 25*s.*; 8 to 10 feet, 50*s.* per 100.
POPLAR, ONTARIO, 6 to 7 feet, 20*s.*; 7 to 8 feet, 25*s.* per 100.
SYCAMORE, 2 to 3 feet, 25*s.*; 5 to 6 feet, 40*s.*; 6 to 8 feet, 45*s.* per 1000.
WILLOW, BEDFORD, CÆRULEAN, and HUNTINGDON, 4 to 5 feet, 30*s.*; 5 to 6 feet, 40*s.* per 1000.
Prices to the Trade on application.

W. & I.'s new CATALOGUE of NURSERY STOCK, including Fruit, Forest, and Ornamental Trees and Shrubs, Evergreens, Roses, &c., is now ready and will be forwarded free on application.—Nurseries, Huntingdon.

TO THE SEED TRADE.

BEAUTIFUL NEW CALIFORNIAN ANNUALS.

MESSRS. VEITCH & SON,

OF EXETER AND CHELSEA,

ARE now prepared to supply SEEDS of the following recent introductions, which were sent them by their Collector, Mr. William Lobb. They are certainly two lovely additions to our Hardy Annuals, and cannot fail to give general satisfaction.

SPRAGUEA UMBELLATA.

This is a very distinct and beautiful Hardy Annual, and has bloomed in great beauty at the Exeter Nursery for several months this year, raised from seeds sown in the open ground in the autumn of 1858, having stood without any protection through the winter. It is also well adapted for pot culture, the habit is dwarf and spreading, resembling that of Calandrinia grandiflora, the flowers, which may be compared to an Amaranthus, are beautifully shaded pink with purple stamens. It was exhibited in July of this year at a meeting of the Horticultural Society, and "commended as a very elegant dwarf flowering species, of novel character, well adapted for rock work and the margins of flower borders, having proved quite hardy in Mr. Veitch's Nursery." It is figured in Curtis's "Botanical Magazine," October, 1859.

FENZLIA DIANTHIFLORA.

This lovely Annual is of a beautiful rosy lilac colour, having five dark blood-coloured spots surrounding an orange-coloured eye in the centre of each flower; it is of very dwarf and compact habit, producing blossoms in profusion: it blooms through the summer months, and continues long in flower if sufficiently supplied with moisture. It has a beautiful effect in small beds, and is also well adapted for growing in pots or boxes for Greenhouse decoration. It is figured in Curtis's "Botanical Magazine," October, 1855. Prices of the above on application.

NURSERIES AND SEED WAREHOUSES, EXETER AND CHELSEA, S.W.—Dec. 3.

JAMES CARTER & CO.'S
LIST OF
NEW ANNUALS AND PERENNIALS
For 1860.

CLARKIA PULCHELLA, VAR. INTEGRIPETALA.—This is the first of what might almost be called an entire new class of Clarkias. The flowers are nearly double the size, colour more brilliant, and the petals whole instead of being three-lobed like the old pulchella varieties. This variety is described in the report of the Floral Committee of the Horticultural Society as follows:—"This variety differs from the old pulchella, which it resembles in habit, in having the petals broad and entire instead of being cut into narrow segments; it is consequently more showy, and seems likely to prove a handsome purple-flowered Annual. It was 'commended,' its increased breadth of petal being regarded as an improvement on the original kind."

DIANTHUS CHINENSIS HEDDEWIGI.—Of this splendid annual Dianthus we have also purchased part of the stock of seed from the raiser. The plants are scarcely 1 foot high, very bushy, and covered with a profusion of flowers, which measure nearly 3 inches in diameter; the colours are various, consisting of different shades of rose, crimson, violet, &c., some are delicately marbled, others self colour. This plant has received the highest awards from the Horticultural Society and Botanic Society, Regent's Park. Is suitable either for Greenhouse or out-door cultivation.

NIGELLA HISPANICA ALBA } Two varieties
NIGELLA HISPANICA ATROPURPUREA } of great merit, of erect and compact habit, the one a clear rich purple and the other a pure white, can be recommended as being decidedly the best of their class. The report of the Floral Committee of the Horticultural Society on the above is as follows:—"These varieties are both large flowered, the purple kind is especially deserving of notice as a fine showy Annual. The flowers are of a dark violet purple shaded with maroon."

DATURA CHLORANTHA FLORE PLENO.—Figured in Curtis's "Botanical Magazine" of July, 1859.—A splendid half-hardy perennial, very free, blooming with large trumpet-shaped, golden yellow, sweet-scented double flowers; the plant is of a low growing habit.

NEMOPHILA DISCOIDALIS MARMORATA.—A handsome new variety from discoidalis, which in addition to the white border of the old variety is very prettily marbled with white on the black ground of each petal.

PHACELIA TANACETIFOLIA ALBA.—A white variety of the blue tanacetifolia, pretty and distinct.

SILENE BARBATA.—A free flowering rich pink dwarf Annual, suitable for growing massy or ribbanding.

ANAGALLIS GRANDIFLORA, VAR. EUGENIE } Two beautiful new Continental varieties of the well-known Anagallis grandiflora, but the flowers are much larger. They will be found highly ornamental as half hardy bedding plants, also for decoration in Greenhouse or Conservatory, as they present an extremely graceful appearance when cultivated in pots or vases. The colours contrast well, and they continue in bloom for a long period, as var. Eugenie, light blue shading from the centre to pure white at the border. Var. Napoleon III., rich maroon crimson.
ANAGALLIS GRANDIFLORA, VAR. NAPOLEON III. }

DIANTHUS CHINENSIS LACINIATUS, Fl. Pl.—Is described by the raiser, Mr. Heddewig, as being imported from Japan with the Dianthus chinensis Heddewigi. The following is a description of the flowers and habit of plant, that we have received from the raiser:—"Grows 2 feet high, very hardy. flowers about 4 inches in diameter, each petal consisting of a long delicate fringe, some double, others single; blossoms from the end of May until the beginning of frost; the colours are pure white, flesh, rose, various shades of red, carmine, violet, purple, and rich maroon, some being selfs, others striped and spotted;" is suitable either for greenhouse or out-door cultivation.

ŒNOTHERA BIENNIS, VAR. HIRSUTISSIMA (Asa Gray).—A new variety of the Evening Primrose from California, very distinct from the common biennis; height 2 feet, colour crimson orange.

IPOMŒA LIMBATA ELEGANTISSIMA is a new Continental variety of the old limbata, which we can specially recommend as being a very elegant climbing plant; the flowers are of an intense blue with a pure white margin, half hardy.

CALLIRRHOE DIGITATA (TRUE).—A very elegant plant, strongly resembling the scarlet Linum. Colour rich violet purple with white eye; height from 2 to 3 feet; commences to bloom when about 6 inches high, and presents a mass of blossom during the entire summer. Makes a good bedding plant if sown thick.

LOBELIA GRACILIS ROSEA.—A very graceful little plant of a good rose colour, especially adapted for edgings.

CAPTAIN CLARKE'S NEW HYBRID SWEET PEA.—This beautiful variety is the result of a cross between Painted Lady and Purple Sweet Pea, raised by Captain Trevor Clarke, F.H.S., well known to the floricultural world as a successful hybridiser of plants. The upper petals are of a delicate rose colour, and the lower white, with a deep blue edge.

LUPINUS MUTABILIS VARIECOLOR.—This most peculiar and handsome variety of Lupine is distinct in seed from all other sorts, and the same seed produces plants of various colours, such as pure white, dark purple, white, red, and yellow, variegated, yellow and purple, &c. We can recommend this variety as one of the most interesting ever offered.

NEW DWARF BEDDING TROPÆOLUMS.

TOM THUMB YELLOW.—A new variety in colour, particularly adapted for bedding, and also for growing in pots and ornamental vases, and the flowers are well thrown up above the foliage; very dwarf and compact in habit. Colour pure yellow without any marking. The Floral Committee of the Horticultural Society speaks of it as follows:—"The habit of this plant, shown by the entire plants exhibited, was quite dwarf and compact, and the flowers were of a golden yellow." It was "commended" as likely to be a useful Flower Garden and Bedding Plant.

TOM THUMB BEAUTY.—An elegant variety with Lobbianum-shaped flowers, raised by Mr. Melville, gardener to the Earl of Roseberry, Dalmeny Park, near Edinburgh. The flower is yellow flamed and blotched with bright crimson. A plant was sent to the Editors of the "Cottage Gardener," in October, 1858, who speak of it as follows;—"A dwarf yellow, tinged with crimson; would be a good bedding plant."

ORNAMENTAL GRASSES.

AGROSTIS NEBULOSA.—The most elegant and graceful of Ornamental Grasses. A dried specimen may be seen on application.

ERIANTHUS RAVENNÆ.—A bold looking Reed-like Grass in the way of Gynerium.

SPERGULA PILIFERA.—A perfect substitute for Lawn Grass, does not require any mowing, and is particularly adapted for edging Flower Beds, Slopes, Terraces, and all small work.

A Coloured Plate, containing Drawings of the following price 1s. 6d.:—

Dianthus chinensis Heddewigi
" " laciniatus
Nigella hispanica alba
" " purpurea
Clarkea pulchella, var. integripetala [Swest Pea
Captain Clarke's new hybrid
Lobelia gracilis rosea
Callirrhoe digitata

Also a Coloured Plate of Nasturtium Tom Thumb Yellow, price 1s. 6d.

Prices of the above upon application to

JAMES CARTER & CO., SEEDSMEN, 238, HIGH HOLBORN, W.C.

PLANTING.

A. PAUL & SON

RESPECTFULLY invite the attention of Gentlemen improving their Estates or forming new Gardens to the following TREES, &c., which they are prepared to sell at the lowest remunerating prices for a good standard quality. It is their practice to trans-plant every second year, in order that little or no loss may be incurred by removal. Many things are grown in large quantities and offered on advantageous terms to the Trade. An inspection of the stock is invited.

Abies alba, 2 to 6 feet
" " glauca, 1 to 2½ feet
" Clanbrassiliana and other dwarf Firs, 9 in. to 1½ ft.
" canadensis, 3 to 6 feet
" Douglasii, 2 to 6 feet
" fine-nensis, 2 to 3 feet
" Menziesii, 1½ to 6 feet
" monstrosa, 2 to 7 feet
" Morinda, 2 to 10 feet
" orientalis, 1 to 2 feet
" rubra, 2 to 4 feet
" 20 other sorts, 1 to 6 feet
Araucaria imbricata, 1½ to 6 ft.
Arbor-vitæ (see Thuja).
Alaternus silver & gold striped, 1½ to 4 feet
Arbutus, 6 sorts, 1 to 3 feet
Aucuba japonica, 1 to 3 feet
Box, 6 sorts, 1½ to 6 feet
Berberis Darwinii, 1 to 1½ foot
Cedrus africanus, 2 to 10 feet
" Deodara, 1 to 12 feet
Cedar of Lebanon, 1 to 12 feet
" Red, 2 to 5 feet
" White, 3 to 5 feet
☞ The largest and finest stock of Cedars in the country.
Cistus, 12 sorts, 1 to 3 feet
Cryptomeria Lobbiana, 3 to 8 ft.
" nana, 9 inches
Cupressus Corneyana, 1½ to 3 ft.
" Knightii, 3 to 4 feet
" Lambertiana, 3 to 7 feet
" Lawsoniana, 9 in. to 1 foot
" torulosa, 1½ to 3 feet
" 12 other sorts, 1 to 4 feet
Daphne pontica, 2 to 3 feet
Furze, double, 1 to 1½ foot
Garrya elliptica, 1½ to 3 feet
Holly, green and variegated, 30 sorts, 1 to 6 feet
" green standards, 5 ft. stems
Juniperus chinensis, 2 to 5 feet
" communis pendula, 2 to 3 ft.
" excelsa, 1 to 2½ feet
" fragrans, 2 to 4 feet
" glauca, 2 to 3½ feet
" oblonga, 2 to 6 feet
" " pendula, 2 to 3 feet
" thurifera, 1½ to 6 feet
" tamariscifolia
" virginiana aurea, 1 to 2 feet
" " pendula, 1½ to 3 feet
" viridis, 1½ to 2½ feet
" weeping, 5 feet stems
" 20 other sorts, 1 to 6 feet
Laurel, Common, 1 to 5 feet
" Portugal, 1½ to 4 feet
" " Catalpas, 8 feet
Laurustinus, 1 to 2 ft. (bloom)
Ligustrum lucidum, 3 to 4 feet
" japonicum, 1½ to 3 feet
" ovalifolium, 5 feet
" evergreen, 2 to 4 feet
Mahonia aquifolia, 1 to 3 feet
" 6 other sorts, 1 to 3 feet
Phillyreas, of sorts, 1½ to 7 feet
Picea amabilis, 1 to 1½ foot
" nobilis, 1 to 4 feet
" Nordmanniana, 1 to 4 ft.
" Pinsapo, 1½ to 4 feet
" Webbiana, 2 to 3 feet
" 6 other sorts, 1 to 6 feet
Pinus austriaca, 2 to 4 feet
" Benthamiana, 2 to 5 feet
" calabrica, 3 to 4 feet
" Cembra, 1½ to 4 feet
" excelsa, 1½ to 12 feet
" insignis, 3 to 6 feet
" Llaveana, 2 to 5 feet
" Laricio, 2 to 4 feet
" macrocarpa, 2 to 3 feet
Pinus maritima, 2 to 5 feet
" monspeliensis, 3 to 5 feet
" nigricata, 3 to 5 feet
" Montezumæ, 3 years seedlings
" nivea (Snow Pine), 1½ to 3 ft.
" Pallasiana, 2 to 3 feet
" pinaster, 3 to 6 feet
" pyrenaica, 4 to 6 feet
" Sabiniana, 4 to 5 feet
" 40 other sorts, 1 to 6 feet
Quercus (Oak), Evergreen, 3 to 5 feet
" Fordii, 4 to 6 feet
" Ilicifolia, 3 to 6 feet
" Mirbeckii, 2 feet
" Suber (Cork Oak), 3 to 4 ft.
Ruscus hypoglossum
Santolina chamæcyparissus, 1 foot
Taxodium distichum, 3 to 6 ft.
Taxus (Yew), adpressa, 2 to 4 ft.
" canadensis, 1½ to 3 feet
" cheshuntensis, 1½ to 6 feet
" elegantissima, 1½ to 4 feet
" gold striped, 1½ to 5 feet
" " standards, 5 feet
" Jackson's Weeping, 1½ foot
" japonica, 1 to 2 feet
" nana, 2 to 4 feet
" nigra, 3 feet
" stricta, 5 feet
" yellow-berried, 2 feet
" common, round, and fair, 2 to 7 feet
" Irish, 2 to 7 feet
" 12 other sorts, 1 to 4 feet
Thuja americana, 3 to 8 feet
" aurea, 1 to 3 feet
" Chinese, 2 to 4 feet
" gigantea, 2 to 3 feet
" Wareana, 1 to 5 feet
" 12 other sorts, 1 to 3 feet
Thujopsis borealis, 2 to 3 feet
Salisburia adiantifolia, 3 feet
Wellingtonia gigantea, 1 to 3ft.

Acer negundo variegata, 2 to 6 feet
Acacia, of sorts, 4 to 10 feet
Ash " 6 to 10 feet
Alder " 6 to 10 feet
Ailanthus " 8 feet
Almonds " 6 to 8 feet
Beech, purple, best variety, 5 to 8 feet
Birch, of sorts, 6 to 10 feet
Chesnut, Horse, of sorts, 1½ to 6 feet
" Spanish, of sorts, 2 to 8 ft.
Catalpas, 6 to 8 feet
Caragana arborescens, 6 to 8 ft.
Cerasus padus aucubæfolius, 6 to 8 feet
Cornus mas variegata, 2 feet
Elms, 12 sorts, 6 to 8 feet
Gleditschias, 1½ to 8 feet
Kolreuteria paniculata, 3 to 6 feet
Laburnums, 8 feet
Lilacs, Persian, 6 feet stems
Liquidambars, 2 to 3 feet
Limes, of sorts, 8 to 10 feet
Maple " 5 to 10 feet
Planes " 7 to 10 feet
Poplar " 6 to 10 feet
Oak " 6 to 10 feet
Robinia " 6 to 8 feet
Sophora japonica, 10 feet
Sycamore, 6 to 10 feet
Thorns, of sorts, 6 to 8 feet
Tulip Trees, 2 to 10 feet
Willows, American, and others
Quick, 2-year transplanted, fine

WEEPING AND LAWN TREES in very great variety.

FLOWERING TREES AND SHRUBS, in 300 species and varieties, including Althæa, Cytisus, Berberis, Daphne, Deutzia, Lilac, Purple Nut, Pyrus, Ribes, Rose Acacia, Syringa, Spiræa, Weigela, &c.

ROSES, an unrivalled collection. Standards, 12s. per dozen and upwards; dwarfs, 6s. per dozen and upwards. See separate Catalogue.

HARDY CLIMBING PLANTS, a large collection.

AMERICAN PLANTS, including Azaleas, Heaths, Kalmias, Magnolias, Rhododendrons, &c.

FRUIT TREES, consisting of all the choicest sorts, warranted true to name. The trained Peaches, Nectarines, Apricots, &c., particularly fine.

GRAPE VINES, from eyes, well ripened, short jointed, canes 6 to 10 feet.

HERBACEOUS PLANTS, in 500 species and varieties.

HOLLYHOCKS, a fine stock of healthy and well established plants. See separate Catalogue.

☞ Particulars of Prices, &c., furnished on application. Carriage of all packages free to London; if a ton weight or upwards placed free on the Railway at any London Terminus. An inspection of the stock invited.

A. PAUL AND SON,
NURSERIES, CHESHUNT, HERTS,
13 miles N.E. of London, Eastern Counties Railway.

SUPERB BALSAMS.

F. AND A. SMITH are sending out seeds of their well-known superior BALSAMS, in collections of nine distinct colours, six seeds of each, 2*s.* 6*d.*; the same mixed, 2*s.*; half the quantity, mixed, 1*s.*

The above are selected from a stock of 24,000 plants, for purity and brightness of colour, size and doubleness of the blooms, and general good habit of the plant. A liberal allowance to the Trade when 12 Packets are taken.—Dulwich, Surrey, S.

SEEDLING POTATO, WEBB'S IMPERIAL KIDNEY.—This Potato is without exception the best for every purpose. Its yield is extraordinary, and its quality first-rate. For Seed, 10*s.* 6*d.* per bushel.—Application to be made to GEORGE MACE, Gardener, Calcot, near Reading.

EARLY POTATOES, LEMON KIDNEYS.—This early and excellent variety (see article on Cultivation of Early Potatoes, by the Rev. E. F. Manby, in Royal Agricultural Journal, Vol. XVIII.), may be had on early application to Author's Bailiff, JOHN HELM, Morecombe, price 2*s.* 6*d.* per stone. As also Copy of Article, 3d edition enlarged, price 1*s.*

N.B.—Late removal being injurious to the sprouts, orders should be at once supplied.

PAMPAS GRASS.—The present is the most favourable time for planting out this charming Plant. No one can imagine the grand effect of a mass of its silvery plumes unless they see it, nor is its value confined to the ornamental, but is likely to become useful as Cover for Game. It grows in any soil or situation, attaining the height of from 6 to 10 feet.—Any quantity can be supplied by C. NOBLE, Bagshot, Surrey.

DESIGNS FOR FLOWER BEDS AND GARDENS.—In consequence of numerous applications J. MARSHALL, 2, Goldsmith Street, Nottingham, has been induced to prepare another set of Designs. They comprise upwards of 80, diversified in style, and will be forwarded to any address on receipt of 24 postage stamps.

MUSGRAVE'S PATENT STABLE FITTINGS AND HARMLESS LOOSE BOX.
MUSGRAVE'S PATENT IRON COW-HOUSE FITTINGS.
MUSGRAVE'S PATENT SLOW COMBUSTION STOVE.

Will be exhibited in London for the first time at the Show of the Smithfield Club in Baker Street, on December 6, 7, 8, and 9.

SMITHFIELD CATTLE SHOW.
STANDS 639 TO 641.
CATTLE, INSTRUMENTS, PROBANGS, &c.

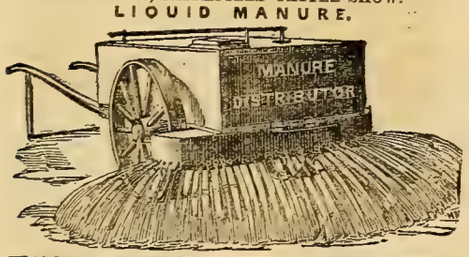
READ'S PATENT VETERINARY INJECTING SYRINGES; Improved HOLLOW PROBANGS, for Relieving Hoven or Choked Bullocks, Calves, Sheep, &c.
READ'S NEW PATENT GARDEN WATERING ENGINES, MACHINES, and SYRINGES, with all the latest improvements; manufactured only by the Patentee,
RICHARD READ,
Instrument Maker (by Special Appointment) to her Majesty,
35, Regent Circus, Piccadilly, London, W.
*** Descriptions sent Post Free.

AT STANDS Nos. 246 TO 260,
SMITHFIELD CLUB SHOW,
MAY BE SEEN

MR. SAMUELSON'S New Pattern CHAFF-CUTTERS; TURNIP CUTTERS; newly improved OILCAKE BREAKERS from 2*l.* upwards; Improved PULPING MACHINES; Marriot's New Patent CIRCULAR REVOLVING HARROWS, now exhibited for the first time; The BRITANNIA SELF-RAKING REAPER, of which he supplied a large number last year, and which gave great satisfaction; Boyd's Patent LAWN MOWER; ROLLER MILLS, &c.

London Warehouse: 76, Cannon Street West, E.C.; Manufactory: Britannia Works, Banbury, Oxon.

STAND 266, SMITHFIELD CATTLE SHOW.
LIQUID MANURE.



JAMES'S PATENT LIQUID MANURE DISTRIBUTOR OR WATER-CART, warranted not to choke up or otherwise get out of order. It is thoroughly adapted for Drill Crops, or Pasture Land, or for Watering Streets; has been awarded SIX FIRST PRIZES.

Full Particulars and Testimonials may be obtained of the Patentee, ISAAC JAMES, Tivoli Waggon Works, Cheltenham.

Improved LIQUID MANURE PUMPS supplied.

WARNER'S PATENT VIBRATING STANDARD PUMPS.

PATENT CAST-IRON PUMPS for Farms, Cottages, Stable Yards, &c., where the Well does not exceed 28 feet in depth; fitted with WARNER'S Patent Metal Bucket and Valve, which cannot clog in action. These Pumps can be made right-handed, left-handed, or with handle opposite the nose by removing four screws only.



Diameter of Barrel.	Height.		£.	s.	d.
2½ in.	short 1 ft. 7 in.	Fitted for lead, gutta percha or cast iron flanged pipe as required.	1	5	0
2½ ,,	long 3 ,, 3 ,,		1	10	0
3 ,,	ditto 3 ,, 6 ,,		2	4	0
3½ ,,	ditto 3 ,, 6 ,,		2	9	0
4 ,,	ditto 3 ,, 6 ,,		2	18	0

2½ ,, short, with 15 feet of Lead Pipe attached, ready for fixing 2 10 0
2½ in. long ditto ditto ditto 2 14 0

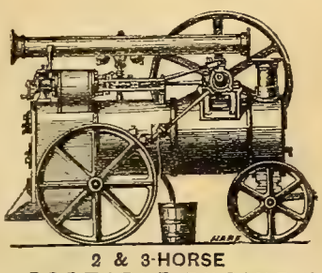
The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.

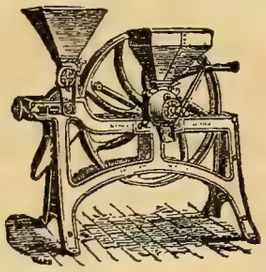
May be obtained of any Ironmonger or Plumber in Town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin Street, London, E.C

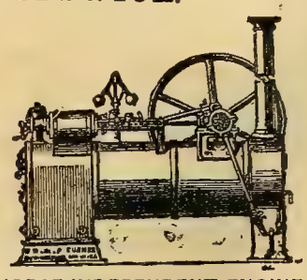
Every description of Machinery for Raising Water by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

SMITHFIELD CLUB CATTLE SHOW.—STANDS 109 to 116.

E. R. & F. TURNER,
ST. PETER'S IRON WORKS, IPSWICH.


2 & 3-HORSE PORTABLE ENGINE.


PRIZE CORN CRUSHER.


2 & 3-HORSE INDEPENDENT ENGINE

E. R. & F. TURNER beg to direct attention to the above small Engines of their manufacture. The excellent article first introduced by them at the R. A. S. E. Salisbury Show has secured for them a large and increasing demand amongst occupiers, with whom a large Engine would involve only a heavy and unremunerative outlay, without any corresponding advantage. The preference E. R. & F. T. thus enjoy they are determined to maintain, by continuing to supply Engines of real commercial value, and in many respects superior to any other of a similar class.

THRESHING MACHINES, with Shakers and Riddles, and either with or without Winnowing, Avelling, and Sacking Apparatus, are made expressly adapted for the 2 and 3-horse Engines.

E. R. & F. T.'s ROLLER MILLS for Crushing Oats, Linseed, Malt, Barley, Beans, &c., are the most effective Corn Crushers made. In the numerous competitions with other Mills in which they have engaged they have never been excelled.

Fixed and Portable Engines. Threshing Machines for Horse and Steam Power, Portable Grinding Mills, Oilcake Breakers Chaff Cutters, Horse Gears, Circular-Saw Tables, &c., all of a superior description, are manufactured by the Advertisers.

Descriptive Illustrated Price Catalogues sent Free on Application at the Works, Ipswich.

SMITHFIELD CLUB MEETING, 1859.

TUXFORD & SONS'
FIRST PRIZE
PORTABLE STEAM THRESHING AND PLOUGHING ENGINE
OF ALL ENGLAND.

TUXFORD AND SONS, BOSTON, LINCOLNSHIRE, submit the following from the LIST of PRIZES and HONOURS conferred upon them during the past Year, and would merely remark that amongst their earlier Honours, they for the THREE PREVIOUS YEARS held the FIRST PRIZE of the Royal Agricultural Society of England:—

JULY.—The Royal Agricultural Society of England awarded to TUXFORD AND SONS' PORTABLE STEAM ENGINE their FIRST PRIZE.
AUGUST.—The Yorkshire Society awarded to the same Makers their GREAT PRIZE.
SEPTEMBER, 1858.—The Port Philip Farmer's Society, Australia, awarded their FIRST PRIZE to TUXFORD AND SONS' ENGINE. At this Meeting, English-made Engines from Boston, Lincoln, Grantham, Leiston, &c., were in competition.
APRIL, 1858.—The IMPERIAL GOVERNMENT OF RUSSIA selected one of TUXFORD AND SONS' ENGINES as a Model Engine.
MAY, 1858.—One of TUXFORD AND SONS' ENGINES WAS SELECTED FOR THE MODEL FARM OF HIS MAJESTY THE EMPEROR OF FRANCE.

TUXFORD AND SONS'
PATENT COMBINED THRESHING, SHAKING, DRESSING & FINISHING MACHINE.

THESE MACHINES, FITTED WITH TUXFORD'S IMPROVED SHAKER AND CAVING RIDDLE, AND WITH BOBY'S PATENT SCREEN, THE BEST SEPARATOR FOR GRAIN KNOWN, AND WHICH HAS RECEIVED THE SPECIAL NOTICE AND APPROVAL OF THE ROYAL AGRICULTURAL SOCIETY OF ENGLAND, ARE THE MOST PERFECT MACHINES OUT. WHEN AT WORK THEY STAND STEADY, AND ARE DRIVEN WITH A POWER LESS THAN ANY OTHER FINISHING MACHINE.

Applications for Catalogues and information to be made direct to the Manufacturers.

BOSTON AND SKIRBECK IRON WORKS, LINCOLNSHIRE.

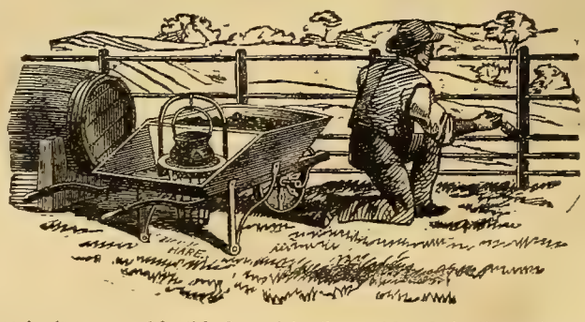
At the London Depôt of Mr. B. SAMUELSON, 76, Cannon Street West, E.C., Agent for TUXFORD & SONS, the FIRST PRIZE ENGINE may be inspected.

OIL PAINT NO LONGER NECESSARY.

HILL & SMITH'S
Black Varnish for preserving Iron Work, Wood, or Stone Work.

THIS varnish is an excellent substitute for oil paint on all out-door work, and not only saves two-thirds the expense of an ordinary quality of oil paint, but has the great advantage that it may be applied by an ordinary labourer in a cold state, and that no mixing or thinning is required. It is used in the grounds at Windsor Castle, Kew Gardens, and all the Royal Parks in London, and at the seats of many of the Nobility and Gentry of the United Kingdom. It is also largely exported. Testimonials from Noblemen and Gentlemen who regularly use it will be forwarded gratis on application. Sold in casks of about 30 gallons each, 1*s.* 6*d.* per gallon, or 1*s.* 8*d.* per gallon, carriage paid to any Railway Station.

THE WROUGHT IRON HEATING BARROW

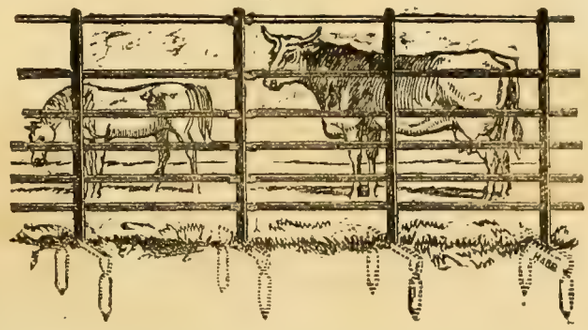


shown in the above engraving is a very useful article for applying the varnish or for heating gas tar. The front compartment holds tools, fuel, &c. and the back compartment carries an iron three gallon pot with fire grate underneath.

Price £3 or £3 3*s.* Carriage paid.

HILL AND SMITH, BRIERLY HILL IRON WORKS, NEAR DUDLEY.
LONDON OFFICE: 40, BROAD STREET BUILDINGS, E.C.

HILL & SMITH'S
PATENT CONTINUOUS PARK FENCE.

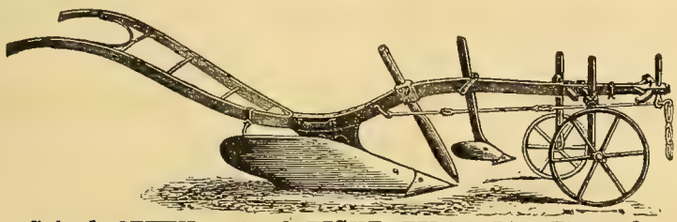


THIS FENCE is made in a variety of sizes suitable for any situation, and is much superior in appearance to hurdle fences, than which it is also cheaper and stronger. It has obtained upon two occasions the Silver Medal of the Royal Agricultural Society of England, besides many other premiums. Many miles have been erected by HILL & SMITH on the London and North Western Railway, between London and Bletchly Stations, and it has been erected at the Parks of upwards of 500 Noblemen and Gentlemen in England; that at Welbeck Abbey, the seat of his Grace the Duke of Portland, being entirely surrounded with it as a fence against Deer nearly 10 miles in extent. The patent principle is also applied to Iron Hurdles, whereby the strength is much increased and their cost reduced. ILLUSTRATED PRICED CATALOGUES will be sent on application to HILL & SMITH, Brierly Hill Iron Works, near Dudley, who are the inventors and sole manufacturers, or to their London Office, 40, Broad Street Buildings, E.C., where specimens may be seen, or to Mr. B. SAMUELSON'S, 76, Cannon Street West, London, E.C.

BEDFORDSHIRE AGRICULTURAL SOCIETY, 1859.

J. AND F. HOWARD have much pleasure in informing the Public that at the Ploughing Matches of the above Society, just concluded,

HOWARD'S CHAMPION PLOUGH



Gained SEVEN out of EIGHT FIRST PRIZES, and SEVEN out of EIGHT SECOND PRIZES,

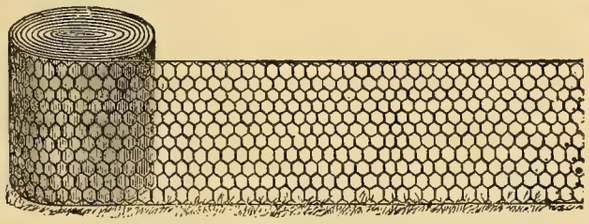
Thereby more than ever sustaining its position at home, while, at the recent Meetings of the Royal Agricultural Society of England and the Highland and Agricultural Society of Scotland, it also gained the

Two Chief Prizes as the Best Plough for General Purposes.

CATALOGUES, with full particulars, sent post free on application to

J. & F. HOWARD, BRITANNIA IRON WORKS, BEDFORD.

IMPROVED PREMIUM WIRE NETTING.



PRICES PER LINEAL YARD, 24 INCHES HIGH:—

Size of mesh.	Mostly used for	Light.		Medium.		Strong.		Extra strong.	
		Japanned.	Galvanized.	Japanned.	Galvanized.	Japanned.	Galvanized.	Japanned.	Galvanized.
2¼ inch	Hares, Dogs, Poultry	3½d.	4½d.	4½d.	5½d.	5d.	6½d.	6d.	8d.
2 inch	Game Netting	4d.	5d.	4½d.	6d.	5½d.	7d.	7½d.	9½d.
1⅝ inch	Small Rabbits, Hares, &c.	4½d.	5½d.	5½d.	6½d.	6d.	7½d.	8d.	10d.
1½ inch	Smallest Rabbits	6d.	7½d.	7½d.	9d.	9d.	11d.	11d.	13d.

Quantities of 100 yards or upwards delivered free at nearly all the principal Railway Stations and Shipping Ports in England; and 200 yards or upwards delivered free to most parts of Scotland or Ireland. Any width of Netting under 8 feet made at proportionate prices.

☞ *Every description of Netting warranted to give satisfaction, and if not approved will be exchanged, or may be returned unconditionally.*

J. B. BROWN & CO., 18, CANNON STREET, LONDON, E.C.

MESSRS. J. B. BROWN & CO.'S
IMPROVED WROUGHT IRON HURDLES
OF
BEST STAFFORDSHIRE IRON.

No. 1 Hurdle.—Very useful for general purposes, combining strength with good appearance. 3 feet 6 inches high, six bars round iron, top bar ⅝ inch diameter, five under bars ½ inch; two side uprights flat iron, 1¼ inch by ¼ inch, and middle upright 1½ by ¼ inch. Weight about 48 lbs. Present price delivered in London and at most of the principal Railway Stations, 2*s.* 5*d.* per yard, or about 5*s.* 3*d.* each hurdle of 6 feet 6 inches long.

Specifications and prices of others in Illustrated Catalogue of Iron and Wire Fencing, Hurdles, Gates, Wire Netting, Garden Rollers and Engines, Ornamental Vases, &c., on application.

J. B. BROWN & CO., 18, CANNON STREET, CITY, LONDON, E.C.

PRICES REDUCED.

H. J. MORTON AND CO., Galvanised Iron Works, 2, Basinghall Buildings, Leeds.

GALVANISED IRON ROOFING

for Farm Buildings and other Roofs; the cheapest, most durable, and neatest Roofing in use; also Spouting at 10½*d.* per yard.

WIRE STRAND CABLE FENCING



(formed of Twisted Wires like a rope or cable), the strongest cheapest, and neatest fence in use, will resist the largest cattle and will not bend or get out of form by trespassing upon or over. Price, with five lines of the Galvanised Strand, iron main posts, and pronged Standards, 1*s.* 2½*d.* per yard.

This fence is far cheaper than posts and rails, or any kind of iron fencing; and possesses four times the strength of solid bars. Will not rust nor corrode. Upwards of 1200 miles of this Fencing supplied.

GALVANISED GAME AND POULTRY NETTING.



Galvanised, 24 ins. wide, 2-inch mesh, 5½*d.*, 7½*d.* and 9½*d.* per yard.

Galvanised, 24 ins. wide, 1-inch mesh, 4*d.*, 5*d.*, and 7*d.* per yard. The Netting made any width, and with openings of any size.

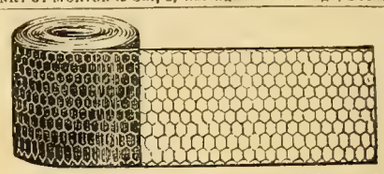
GALVANISED IRON CHAIN CAMP STOOLS & CHAIRS, POULTRY FOUNTAINS & FEEDERS, PRONGED DAHLIA RODS AND ROSE STAKES, &c.

Strong CATTLE HURDLES from 2*s.* per yard.

PATENT IMPROVED GAS WORKS,

of all sizes for the use of Private Houses, Mansions, Railway Stations, Mills, Collieries, Mines, Villages, &c. Works from 10 to 500 lights estimated for. The works can be entrusted to an ordinary labourer.—Apply to

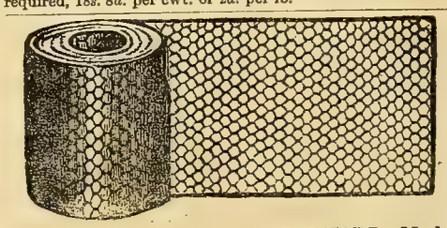
HENRY J. MORTON & CO., 2, Basinghall Buildings, Leeds.



GREEN'S IMPROVED WIRE NETTING, made by Patent Machinery and Steam Power, and Galvanised after being made.

	Light	Medium	Strong	Extra Strong
1½ inch mesh, 24 inches wide	8*d.*	10*d.*	12*d.*	14*d.*
1⅞ inch ,, 24 ,,	7*d.*	8*d.*	10*d.*	12*d.*
2 inch ,, 24 ,,	6*d.*	7*d.*	8*d.*	10*d.*
3 inch ,, 24 ,,	5*d.*	6*d.*	7*d.*	9*d.*

The above Wire Netting is made by patent machinery by steam power; all the holes are exactly the same size; it is galvanised after it is twisted and made up; it is much firmer and stronger, and will last four times as long as the ordinary wire netting which is galvanised before it is made, as the twisting breaks the skin or galvanising. Samples will be forwarded free, on application to THOMAS GREEN, Smithfield Iron Works, Leeds, Yorkshire, or 2, Victoria Street, bottom of Holborn Hill, London, E.C. Iron Standards for do. if required, 18*s.* 8*d.* per cwt. or 2*d.* per lb.



BARNARD, BISHOP, AND BARNARD, Market Place, Norwich, in consequence of improvements in their machinery for the manufacture of the above article, have been enabled to make a great reduction in the prices.

	Galvanised.	Japanned Iron.
2-inch mesh, 24 inches wide	5*d.* per yd.	4*d.* per yd.
2-inch ,, strong do.	6 ,,	4½ ,,
2-inch ,, intermediate, do. ..	7 ,,	5½ ,,
2-inch ,, extra strong, do. ..	9½ ,,	7½ ,,
1⅝-inch ,, 24 inches wide	5½ ,,	4½ ,,
1⅝-inch ,, strong, do.	6½ ,,	5¼ ,,
1⅝-inch ,, intermediate, do. ..	7½ ,,	6 ,,
1⅝-inch ,, extra strong, do. ..	10 ,,	8 ,,

All the above kinds can be made of any width (under 8 feet) at proportionate prices. If the upper half is of a coarser mesh than the lower, it will reduce the prices about one-fifth.

Strong Galvanised Poultry Netting, 8½*d.* per yard, 3 feet wide Galvanised Sparrow-proof Netting for Pheasantries, 2½*d.* per square foot. Delivered free of expense in London, Peterborough, Hull, or Newcastle. Manufacturers of Improved Strained Wire Cattle and Deer Fencing, Iron Hurdles, &c.

Illustrated Catalogues and Patterns forwarded by post.

LOOMES AND CO.'S CABLE PATTERN GARDEN EDGING may be obtained of Messrs. HOOPER AND CO., Covent Garden Market, W.C.



"FRIGI DOMO."—Patronised by her Majesty, the Queen, the Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, and —Collier, Esq., of Dartford.

PROTECTION FROM THE MORNING AND EVENING FROST.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and, floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths.

Two yards wide, 1*s.* 6*d.* per yard run.

Four, 3*s.* per yard; also,

An improved make three yards wide, 2*s.* 6*d.* per yard run.

ELISHA THOMAS ARCHER, whole and sole manufacturer, 7 Trinity Lane, Cannon St., City, E.C., and of all Nurserymen and Seedsmen throughout the kingdom. "It is much cheaper than mats as a covering."

CHRYSANTHEMUMS.

W. HOLMES begs to offer strong plants of every known good variety of CHRYSANTHEMUM at 5*s.* per dozen; including Golden Queen of England, Aurora, Cassandra, Curtius Quintius, Excelsior, Fabius, Fortune's Two-Coloured Incurved, Golconda, Glory, Julie Lagravère, Madam Clos, Mount Vesuvius, Orange Brilliant, Prince Albert, Remus, sulphureum superbum, Una, Andromeda, Ariel, Astrea, Baron d'Adswaërd, Esmeralda, Maid of Saragossa, Miss Julia, Miss Talfourd, Mrs. Dix, Shirley Hibberd, Rose Trevenna, &c.
Frampton Park Nursery, Hackney, N.E.

HARDY CALIFORNIAN CONIFERS, PICEA (ABIES) AMABILIS, PICEA (ABIES) GRANDIS—Healthy seedling Plants of the above named most beautiful hardy Trees can be supplied by the undersigned by the dozen, hundred, or thousand, as also many other choice Conifers. PRICED CATALOGUES of which will be sent on application.
HUGH LOW & Co., Clapton Nursery, London, N.E.

SUPERB DOUBLE HOLLYHOCKS.

WILLIAM CHATER is prepared to supply Plants from his unequalled collection of this noble flower. See CATALOGUE for the newest and most celebrated varieties, containing Practical Hints on their Culture, prices, and other information.

W. C. has a large stock of good healthy Ground Roots (Seedlings) suitable for borders, with colours, 6*s.* to 18*s.* per dozen; without, 4*s.* to 6*s.*, or 30*s.* per 100.

Seed saved from the best exhibition varieties, in separate colours, per packet	*s.*	*d.*
	1	0
Ditto, in 12 separate colours, the collection	10	0
Ditto, in 6 ditto ditto	5	0
Ditto from older named varieties, in 12 separate colours, the collection	7	6
Ditto, in 6 ditto ditto	4	0
Ditto, from 20 of the best varieties, mixed, per packet	5	0
Ditto 12 ditto ditto ditto	2	6
Ditto good mixed, per packet	1	0

This Seed WILLIAM CHATER can warrant to produce flowers of equal merit to existing show varieties.
Nurseries, Saffron Walden, Essex.

RHODODENDRONS, AZALEAS, ETC.

GEORGE WHEELER, NURSERYMAN, Warminster, Wilts, having a large Stock of RHODODENDRONS suitable for cover and general planting, offers them at very moderate prices, viz., 10*s.*, 20*s.*, 30*s.*, and 40*s.* per 100. good stout bushy plants from 9 inches to 2 feet and upwards. Named kinds, fine plants, 50*s.* to 100*s.* per 100.

AZALEAS, hardy, in many good named kinds, 42*s.* to 100*s.* per 100.

LIGUSTRUM OVALIFOLIUM, the desirable fine new Evergreen Privet, 8*s.* to 16*s.* per 100, 2 to 4 feet, the very best Privet for hedges, with fine foliage, and of robust and rapid growth.

PRIVET.—Box-leaved and common evergreen, very good, 30*s.* per 1000.

BOX, Tree, of sorts, variegated and green; Minorca Box, good.

BROOMS.—White Portugal and Yellow Spanish, good.

BEECH.—Purple, Fern-leaved, Cut-leaved, and other good kinds; and other Ornamental Trees and Shrubs, in great variety, on the most reasonable terms.

CARTER'S PROLIFIC RASPBERRY.

JOHN CARTER, JUN., has pleasure in again offering the above Raspberry to the notice of the Horticultural world. It is a beautiful red fruit, very large, of fine flavour, and most abundant bearer. It was named by Mr. Glenny, after he had grown some plants one season, and he has since confirmed all he said in its favour, both in the "Garden Almanack" and in *Lloyd's Newspaper*.

J. C. has many testimonials of its excellence, and feels quite confident no one who may favour him with an order can be disappointed. Strong Canes, 5*s.* per dozen, or 33*s.* per 100, at the Nursery, or of the agents, HURST & MCMULLEN, 6, Leadenhall Street, E.C., or GEORGE GLENNY, Fulham, S.W. A CATALOGUE of general NURSERY STOCK may be had on application.—Keighley Nursery, Yorkshire.

ROBERTSON'S WIZARD OF THE NORTH STRAWBERRY.

STRONG PLANTS, 63*s.* PER 100; 9*s.* PER DOZ.

DANIEL ROBERTSON begs to intimate that Prints of a Drawing of this variety are now ready for distribution, and will be forwarded free on application to parties in the Trade who may desire to have them for reference or exhibition in their shops or places of business, and who agree to have their plants direct from D. R.

In printing copies from the original drawing of this Seedling D. R. has incurred a very serious expense, and which, but for circumstances that have lately transpired in connection with the name of this variety, he would most certainly never have subjected himself to. He has done this to protect himself in his right, and to guard the public from imposition.

Purchasers are warned that they ought to see the Drawing of the Wizard in the hands of any nurseryman or other party from whom they buy plants, as all parties selling the genuine article will be furnished with a Drawing.

In Mr. W. J. Nicholson's Catalogue, published in a late number of the *Gardeners' Chronicle*, a kind appears named Wizard of the North (no raiser's name) and queried as Sir Walter Scott. Not knowing any Strawberry named Wizard of the North besides our Seedling, this matter became the subject of immediate and frequent communication with Mr. Nicholson, and in a letter from that gentleman, dated Sept. 22, he writes, "I have had some inquiries about the Wizard of the North, to know if it is really different from Sir Walter Scott, to which I have said yes. After comparing the plants sent by you with those of Sir Walter Scott, I see it is different, though a good deal like, and I think of the same race. In my next Catalogue this will be made all right."

Having seen growing in a nobleman's garden here plants of the Sir Walter Scott (obtained from Mr. Nicholson direct) besides plants of our Seedling Wizard of the North, D. R. feels astonished that any grower should have compared the two sorts, they are so dissimilar in growth, and can only account for Mr. Nicholson's error by concluding that the plants he compared with Sir Walter Scott in the first instance were in reality not the Wizard of the North at all. He had no plants of the Wizard from D. R. until after the appearance of his Catalogue.

All parties applying for Drawings of the Wizard are requested to send a written declaration that all plants which they may sell under the name of Wizard of the North up to the end of May, 1860, shall be the genuine variety, and obtained direct from the subscriber.

This precaution is necessary on our part, as a Drawing in the possession of any one is a guarantee to purchasers that the holder is an agent appointed by us, and also on account of the great rascality and imposition that has already been practised in the name of this variety. The first plants we ever sent to England were sent on the 10th of September last, yet, strange to say, its name appears in several English catalogues for spring, 1859, the prefix ROBERTSON'S awanting.

The appearance of its name in any Catalogue till now is quite unwarranted. Having a large stock of the Wizard of the North, Market Gardeners and Nurserymen will be favourably dealt with on large orders. For description see former advertisements. A remittance or reference required.
DANIEL ROBERTSON, Linside Nursery, Paisley, N.B.

THE LARGEST AND FINEST STOCK OF TEA-SCENTED ROSES IN ENGLAND.

50,000 PLANTS IN POTS AND IN THE OPEN GROUND.

WM. WOOD AND SON invite attention to their very extensive and superior stock of the above, which they feel certain are unsurpassed in the Trade.

Dwarfs, from 48-pots	per dozen	9*s.* to 12*s.*
" in 6-inch or 24-pots	"	24 to 30
Standards, very fine	"	18 to 24

Specimen Plants, in 8-inch pots, for exhibition, each, 3*s.* 6*d.* to 5*s.*

DESCRIPTIVE CATALOGUES on application.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

HEDENHAM ROSARY, BUNGAY, SUFFOLK.

IN CONSEQUENCE OF A DISSOLUTION OF PARTNERSHIP,

R. B. BIRCHAM is desirous of clearing off a portion of his stock, consisting of 35,000 STANDARD and DWARF ROSES, including all the best and leading sorts of Perpetuals in cultivation. To effect a clearance this autumn R. B. B. begs to offer them at the following very reduced prices:—

50 Dwarfs of the best Perpetuals	£0	18	0
50 Half standards, do.	1	5	0
50 Standards, do.	1	15	0

R. B. B. will be happy to supply Amateurs requiring half the quantity of each. Trade orders at a still lower rate per 100. Carriage paid to London and Peterborough.

ROSES! ROSES! ROSES!

W. H. DAVIS begs to invite special attention to his large and well grown Stock of Standard and Dwarf Roses, which for quality and cheapness cannot be surpassed, the following Testimonials being evidence of the Superior Plants supplied last season:—

"Castle Wigg, Whethorn, N.B., Jan. 15.

"Sir,—The 200 Roses arrived all safe, and better plants I never saw. I will do all I can to recommend you to my friends. —Your obedt., "JOHN LAUDER, Bart."

"Rushton, Blandford, Aug. 22, 1859.

"Sir,—Your moderate prices last year and good materials induce me to give you an order for 100 Roses.—Yours truly, "W. F. RADCLIFFE, Rector of Rushton."

"Falkirk, June 1.

"Dear Sir,—I had the pleasure to receive your Roses all in good order, and I have to thank you for the excellent plants you have sent me. I am well pleased with them, and hope to give you a further good account of them in the autumn.—Yours, &c., "JAMES NEILSON."

"Belladram, Beauly, N.B.

"Sir,—The Roses, 200 in number, arrived in good order and generally good plants. The Dwarfs are really fine plants, and I will be glad to do anything in my power to recommend your plants and prices.—Yours obedtly, "WILLIAM WESTWOOD, "Gr. to James Merry, Esq."

"Rushton, Blandford, Dorset, Oct. 8, 1859.

"Dear Sir,—Thanks for your "gratis" Roses, which have more than covered carriage. The Roses purchased, over 100, are excellent, and most reasonable in price. Amateurs ought to know more of you. The 68 Manetti Roses are also cheap and excellent plants.—Your obedtly, "W. F. RADCLIFFE, Rector of Rushton."

STANDARDS, in 100 very superior varieties, extra strong well rooted plants per 100	£4	0	0
Do. in 12 do. do. per dozen	0	12	0
DWARFS, in 100 do. do. per 100	£2	10	0
Do. in 12 do. do. per dozen	0	8	0
Manetti Stocks per 100	0	4	0

All the best show varieties grown in extra strong plants as Dwarfs, can be supplied at 6*s.* per. dozen. or 2*l.* per 100.

Gentlemen planting in large quantities will find this an excellent opportunity. Plants most carefully packed and despatched to any part of the Kingdom Descriptive Catalogues with numerous testimonials now ready and sent post free upon pre-paid application. The Trade liberally supplied.
Rose Nurseries, Newbury, Berks.

ROBERT NEAL, NURSERYMAN, Wandsworth Common, S.W., begs to call the attention of buyers to his large and well-selected stock of EVERGREENS and FLOWERING SHRUBS, ORNAMENTAL TREES, AMERICAN PLANTS, FRUIT AND FOREST TREES, STANDARD AND DWARF ROSES of every description. A large stock of BOX-LEAF EVERGREEN PRIVET, from 1 to 6 feet for hedges; GREEN HOLLY, 1 to 6 feet; RICH BOG and LOAM for American Beds; LEAF MOULD. The Nursery is 10 minutes' walk from Clapham Common, and New Wandsworth Station, Crystal Palace Line.

NEW AND CHOICE PLANTS.

JOHN STANDISH, in offering the following Plants, can assure his customers that they are now in fine condition for sending out:—

MYOSOTIDIUM NOBILE, or Antarctic Forget-Me-Not, each 31*s.* 6*d.*—This plant, from the Chatham Islands, is one of the most remarkable that has been introduced for some years, being totally distinct from all others. It has large thick leaves, 8 or 9 inches across, of a dark glossy green, and sends up magnificent trusses of bloom of the most beautiful blue and white, similar to a Forget-me-not, but of a giant form. A Drawing of it is published in Curtis's "Botanical Magazine" for September. A description taken from the above is also published in the *Gardeners' Chronicle* of Sept. 17, 1859, wherein Dr. Lindley says:—"This is the handsome perennial provisionally named Cynoglossum nobile by Dr. Hooker in our last year's Volume, page 240. It is quite deserving all the encomiums that have been passed upon it."

GLADIOLI, named varieties, from the choicest and largest collection in England, 6*d.* to 5*s.* each. Also a fine lot of bulbs raised from seeds saved from the best flowers, all of which will flower in the summer of 1860. 7*s.* 6*d.* per dozen, or 50*s.* per 100. These are strongly recommended.

RHODODENDRON LIMBATUM.—Pale blush, bordered with bright crimson. This has received several medals at the exhibitions for Rhododendrons, being very distinct and one of the most free flowering. 21*s.* each.

RHODODENDRON MINNIE.—White, very large blotch of chocolate-coloured spots, a fine flower, and remains a very long time in bloom. This is one of the most curiously marked Rhododendrons amongst all the white; it bears a noble truss of blooms, which cannot fail to be admired. 21*s.* and 31*s.* 6*d.* each. Selections can be made from one of the finest collections in Europe.

ROSE HYBRID PERPETUAL EUGENE APPERT.—Fiery scarlet crimson, 10*s.* 6*d.* each. This beautiful new Rose is in the hands of J. S. only, and is now ready to send out. It has received a First-class Certificate at the Grand National Rose Show, also at the Regent's Park. It is the most brilliant of all Roses and the finest grown, being well adapted for pot culture and for poles, growing most rapidly, sending up its flowers stiff and erect. They can be seen at a long distance. Besides this, J. S. has a fine lot of both Standards and Dwarfs of the newest and most select Roses in cultivation, which are offered at very reasonable prices.

PHLOX MRS. STANDISH.—The purest white, with a large red eye, 5*s.* each. Also a large collection of the finest kinds which J. S. has shown during the last summer and in every case received the First Prize. Plants from 1*s.* to 2*s.* 6*d.* each

A CATALOGUE containing a full description of the best Hardy Plants in cultivation will be forwarded on application to The Royal Nursery, Bagshot.

GLADIOLUS BRENCHLEYENSIS.

YOUELL AND CO. are now sending out strong flowering Bulbs of this magnificent showy variety, the colour of which is bright vermillion scarlet. A box of the spikes of bloom was forwarded to the Editor of this Paper in August last, whose opinion of it will be found in the publication of August 20, page 694, as follows:—

"This must certainly be regarded as one of the most showy and beautiful of the class to which it belongs."

Price 5*s.* per dozen: 40*s.* per 100. Trade price on application.
Royal Nursery, Great Yarmouth, Norfolk.

SURPLUS NURSERY STOCK.—

GOOD QUALITY AND CHEAP.

SEEDLINGS, 5,000,000.

PINUS PINASTER (Cluster Pine) one year.
PINUS SYLVESTRIS (Scots Fir) one year.
QUERCUS PEDUNCULATA (Common Oak) one and two year.
QUERCUS SESSILIFLORA (Durmast Oak) one and two year.

TRANSPLANTED, 1,000,000.

CEDRUS DEODARA (Indian Cedar) from 2 to 4 ft. in height.
LARIX EUROPÆA (Common Larch Fir) from 2 to 4 ft. in height.
QUERCUS PEDUNCULATA (Common Oak) from 3 to 8 ft. high.

Circulars with wholesale prices, terms, samples, or other information upon application to the undersigned,
J. E. NELSON, the Nurseries, Rinefield, near Lymington, Hants.

TANSLEY NURSERY, NEAR MATLOCK.

TO GENTLEMEN PLANTING AND THE TRADE.

J. SMITH, SEN., begs to offer his STOCK OF TREES AND SHRUBS, of various sizes, and in addition to his general stock of the leading kinds, he has this season to offer an Extra Stock of many hundred thousands of fine Larches, Scotch Firs, and Highland Pines; a large quantity of Evergreens, Privets, Mahonia Aquifolium, and other plants for planting under cover. Many things are grown in large quantities, and will be sold on advantageous terms to the Trade and gentlemen requiring large lots.

CATALOGUES sent free on application. The Nurseries are on the Mansfield and Nottingham roads, and 2 miles from Matlock Bridge Station on the Midland Railway.

TO PLANTERS.—We have now to offer a first-rate stock of TRUE HIGHLAND SCOTS FIR, seedling and transplanted; also NORWAY SPRUCE, LARCH, and other FIRS, BAY LAURELS, RHODODENDRONS, and other Evergreen Shrubs.

All our plants are grown in a cold exposed situation in the north of Scotland, and more able to stand removal than those grown in a warmer climate. CATALOGUES and Prices on application. Sample thousands forwarded.
J. MORRISON & SON, Montcoffer Nursery, Banff, N.B.

TO THE TRADE.—CONTINENTAL FLOWER SEEDS.

FREDERICK WILLIAM WENDEL, SEEDSMAN and FLORIST, Erfurt, Prussia (established 1832).

F. W. W. begs to inform the Trade that his Wholesale CATALOGUE of the above is now ready, containing Collections of ASTERS, STOCKS, BALSAMS, WALLFLOWERS, &c., and also an extensive list of all other New and Choice FLOWER SEEDS, sold in assortments, or by weight.

F. W. W. having extensive grounds in the town and vicinity of Erfurt, and devoting his personal attention to this department of his establishment, he can with the greatest confidence recommend all Seeds offered by him, as genuine and of the best quality.

Agent for this country—Mr. GEO. MACINTOSH, Nurseryman and Seedsman, High Road, Hammersmith, London, W., to whom all orders should be addressed, and where PRICE LISTS can be obtained post free on application.

The prices will be found as low as any house which supplies a genuine article. All parcels carriage paid to London.

MESSRS. J. & H. BROWN offer the following selection of choice PLANTS, which they will forward to any part:—

	s.	*d.*
Andromeda floribunda, winter flowering, per doz.	15	0
25 Azaleas, new hardy Belgian varieties, one of a sort, on their own roots, by name, well set for bloom, fine for beds or pot culture for forcing	20	0
25 Azaleas, hardy American varieties, do. do.	15	0
12 hardy Rhododendrons, including red, white, and rose colour	12	0
Fine hardy Scarlet Rhododendrons, 2 feet, for beds, per dozen	10	6
New Yellow Rhododendrons, each, 3*s.* 6*d.* to	5	6
Roses, best sorts, Standards and Half-standards, per dozen, 12*s.* to	15	0
Climbing Roses of best sorts, rapid growers, per doz.	6	0
6 fine hardy Magnolias, one of a sort	10	0
Greenhouse Azaleas, fine varieties, per doz., 10*s.* to	12	0
Camellias, best double varieties, well set with buds, per dozen	28	0
24 Epacris and Ericas, one of a sort, in small pots	16	0
Hyacinths and other Dutch Bulbs of all kinds, cheap.		
FRUIT TREES.		
Fine Standard and Dwarf-trained Peaches, Nectarines, Apricots, Cherries, Plums, and Pears, each, 2*s.* 6*d.*; or per dozen	24	0
Dwarf plants of all the above kinds, grown especially for pot culture in orchard-houses, &c., per dozen	18	0
Best sorts of Gooseberries, Currants, and Raspberries, per dozen	3	0
Mulberries, Medlars, Quince, and Walnuts, each	2	0
Filberts, Red and Thin-shell, per dozen	3	0

Choice Grape Vines from eyes and layers, strong.
Evergreen Shrubs and ornamental Trees of all kinds, cheap.
Albion Nursery, Stoke Newington, London, N.

WALTON NURSERY, LIVERPOOL.

WILLIAM SKIRVING begs to announce that in consequence of part of the Land of one of his Nurseries being required for building purposes, he intends CLEARING OFF the TREES and SHRUBS thereon as soon as possible, to accomplish which he is willing to submit to a great reduction in their value.

The Stock consists of many hundreds of fine well-grown specimen plants of such Trees as the Araucaria, the *Cedrus Deodara, the Cryptomeria, and many other Choice Hardy Coniferous Trees lately introduced, with very large quantities of smaller sizes of the same. There is also a very extensive Stock of Evergreen and Flowering Shrubs on the land to be cleared, amongst which are fine large specimen plants of the varieties of Green and Variegated Holly, the English and Irish Yew, Cedars, Cypress, Arbor-vitæ, and Rhododendrons, with many thousands of ordinary planting sizes.

W. S. invites the particular attention of Planters of Public or Private Parks, Cemeteries, Garden or Pleasure Grounds, to inspect the Stock now offered, feeling certain such a collection of Trees and Shrubs, for extent and variety, has seldom or ever been offered to the public.

At the same time W. S. begs to offer his extensive Stock of Fruit and Forest Trees, and several acre of Transplanted Thorn Quicks, at his adjoining permanent Nursery. Catalogues on application.—Dec. 3.

* The Deodar Cedar is allowed to be the best Tree for Timber, the best for Ornament, and for Game Cover, of all Trees yet introduced. The Stock of it on the Land to be cleared amounts to 40,000 of all sizes, from 2 to 10 feet.

JAPAN LILIES, HYACINTHS, &c.—All orders amounting to 21s. and upwards sent carriage paid. The following collection "B." for 21s. or the half for 10s. 6d.:—12 Splendid Hyacinths, 4 Border Hyacinths, 2 beautiful Japan Lilies, 12 beautiful Gladioli, 20 Double Tulips, 12 Single Tulips, 100 Crocus, 100 Snowdrops, 4 Polyanthus Narcissus, 40 Border Narcissus, 40 Ranunculus, 20 Anemones.

A DESCRIPTIVE AND PRICED CATALOGUE OF BULBS, with practical cultural directions for amateurs, sent free and post paid on application.

BUTLER & M'CULLOCH, Covent Garden Market, W.C.

JOSEPH MAY AND CO. beg to offer the following choice FLOWER ROOTS:—

AMARYLLIS FORMOSISSIMA	.. ..	each	0s.	6d.
,, VITTATA, "fine roots"	..	,,	2	6
,, JOHNSONII	.. ..	,,	3	6
GLADIOLUS BRENCHLEYENSIS ..		per doz.	5	0
,, GANDAVENSIS..	.. ..	,,	2	6
,, FLORIBUNDUS	.. ..	,,	2	6
,, FORMOSISSIMA	.. ..	,,	4	0
,, INSIGNIS "true"	.. ..	,,	9	0
ANEMONES, named, 25 varieties	.. ..	..	3	0
RANUNCULUS, name d, 25 varieties	..	,,	3	0
LILIUM SPECIOSUM ..	.. ..	each	2	6
,, LANCIFOLIUM ALBUM, each	..	6d. to	2	6

1, Wellington Street, Strand, W.C.

NEW ANNUALS.

JOHN GEORGE WAITE, SEED MERCHANT, 181, High Holborn, London, W.C., has great pleasure in offering SEEDS of the following new hardy Annuals:—

CLARKIA PULCHERRIMA,
SCHIZANTHUS GRANDIFLORUS OCULATUS,
HELIOPHILA CŒRULEA STRICTA.

Coloured Drawings and prices of which (to the Trade only) can be had on application.

Seed Establishment, 181, High Holborn, London, W.C.

CHOICE DOUBLE FUCHSIA SEED.

GEO. WHEELER, having saved a limited quantity of Seed from the finest DOUBLE FUCHSIA ever offered, viz., his SIR COLIN CAMPBELL, which from such a Stock may reasonably be expected to produce a considerable proportion of double flowers, is prepared to forward, post free, in return for cash or postage stamps, packets containing 24 Seeds each, at 2s. 6d. per packet.—Warminster Nursery, Dec. 3.

DUTCH AND OTHER BULBS.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their CATALOGUE of the above is now ready, and will be forwarded post free on application. Early orders are solicited, as their successful cultivation depends in a great measure on early planting.

Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

DUTCH CROCUS, a great quantity in fine condition, 1s. 6d. per 100, or 14s. per 1000; English mixed do., 1s. per 100, or 8s. per 1000. Mixed HYACINTHS, 3s. to 4s. per doz., or 1l. per 100; do., finest quality to name, 6s. per doz. Standard ROSES, the choicest named sorts, 15s. per doz., or 5l. per 100. ORANGE TREES, with very large fruit on, 4s. to 7s. each.—R. GREEN, 154, Kingsland Road, N.E, 55 doors from Shoreditch Church.

WHOLESALE CATALOGUE.

GEORGE JACKMAN AND SONS' PRICED and DESCRIPTIVE CATALOGUE for 1859, & SPRING 1860; comprising Fruit Trees of all the leading kinds; New and Selected Roses; fine varieties of American Plants; Choice and Rare Conifers; Evergreen and Deciduous Trees and Shrubs; and a fine stock of transplanted Forest Trees, &c., can be had free on application.—Woking Nursery, Surrey.

AMERICAN PLANTS, &c.

MESSRS. WATERER AND GODFREY'S CATALOGUE for the present season is now ready, and may be had on application. It describes fully all Rhododendrons worth growing, and contains a List of Azaleas, Hardy Heaths, and other American Plants, as well as a summary of the general stock of the most extensive Nurseries in England.

The Catalogue may also be had at Messrs. MAY's & Co., 1, Wellington Street, Strand, W.C.

Knap Hill Nursery, near Woking, Surrey.

HARDY RHODODENDRONS.

MESSRS. WATERER AND GODFREY invite attention to their Seedling RHODODENDRONS, which they are selling without names, and which they strongly recommend as being very superior in point of HABIT, FOLIAGE, COLOUR, and GENERAL HARDINESS. They are from 1½ to 2½ feet high, and as much through, and no plants can possibly be in finer health. They will be sold at very liberal prices, and purchasers can select from a stock of many thousands.

Knap Hill Nursery, near Woking, Surrey.

RHODODENDRONS.

JOHN WATERER'S CATALOGUE OF HARDY, SCARLET, and other choice RHODODENDRONS, as annually exhibited at the Royal Botanic Gardens, Regent's Park, is now published and will be forwarded on application. Faithful descriptions of all the esteemed varieties will be found detailed, with a list of the popular kinds of AZALEAS and other AMERICAN PLANTS, as well as a selection of CONIFEROUS TREES, with height and prices.

The American Nursery, Bagshot, Surrey, near Sunningdale Station, South-Western Railway.

GERANIUMS, HERBACEOUS PLANTS, ETC.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their new PRICED and DESCRIPTIVE CATALOGUE of the above, to which are added Supplemental Lists of Stove, Greenhouse, and Hardy Plants, Fruit Trees, &c. (which include all the best new plants of the season), is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

WILLIAM MASTERS AND SON, EXOTIC NURSERY, Canterbury, beg to inform their Friends and the Public that their Nurseries contain a greater number of Species and Varieties of PLANTS for Sale than any in the county. They are consequently better able to give variety of effect to any Plantations they are entrusted to lay out than others possessing a smaller Stock and less number of Species. Early orders are respectfully solicited.

J. COCKS AND SON offer the undermentioned, all of which are extra fine. To parties requiring large quantities they would Sell on still more liberal terms:—

QUICK, two years transplanted, 3 to 4 ft. ..	16s.	0d.	per	1000.
,, if 10,000 or more taken	15	0	,,	
GOOSEBERRIES, Warrington or Ashton } Red, Whitesmith, and other leading varieties }	5s. p. 100		60s. p.	1000.
CURRANTS, Red Grape	7	,,	60	,,
,, ,, Dutch } ,, ,, Goliath }	8	,,	70	,,
,, Black	7	,,	60	,,
,, ,, Naples	8	,,	70	,,
,, White Grape	8	,,	70	,,

The above are all well grown, and two or more years cut down.

Donington, Spalding.—Dec. 3.

PINE APPLES, GRAPES, &c.

PINE PLANTS, Fruiting and Succession.

GRAPE VINES, from Eyes, for Fruiting in Pots or Planting.

JOHN WEEKS AND CO. can now supply any quantity of very fine strong healthy Pine Plants, either Fruiting or Succession; also remarkably fine strong Grape Vines from Eyes, all the best sorts.

JOHN WEEKS & Co.'s Horticultural Show Establishment is now entirely devoted to the Growing and Forcing of Fruits in great variety, thereby showing the most improved plans of construction, and the most superior system of Hot-water Apparatus.

JOHN WEEKS & Co., Horticultural Builders and Hot-water Apparatus Manufacturers, King's Road, Chelsea, London, S.W.

NEW APPLE.—NELSON'S GLORY.

WM. WOOD AND SON have the honour to announce that they have been appointed Agents for the Sale of the above very excellent new Apple, the property of Mr J. NELSON, of Bristol.

NELSON'S GLORY APPLE is one of immense size, weighing from 20 to 22 oz., and especially adapted to culinary purposes; indeed for making Jelly, Jam, and Sauces it is truly invaluable, and is ready for use from August to December. Plants have been ordered by all those parties who had the opportunity of seeing the magnificent fruit at Bristol.

DWARF MAIDEN PLANTS are now ready for sending out at 5s. each, with the usual discount allowed to the trade.

Woodlands Nursery, Maresfield near Uckfield, Sussex.

THE GREAT VINE AT HAMPTON COURT.—The Subscribers being the holders of the Royal Kitchen Gardens, Hampton Court, are enabled to offer genuine the famous and truly excellent HAMPTON COURT BLACK HAMBURGH GRAPE. [each

Strong well-ripened Fruiting Plants, in 12-inch pots, 10s. 6d.

Good well-ripened Plants, in 9-inch pots, 5s. each.

A liberal reduction in price if taken in large numbers.

THOMAS JACKSON & SON, Nurseries, Kingston, S.W.

TO THE TRADE.

FRUIT TREES, MAIDEN APRICOTS, PEACHES, NECTARINES, PEARS, APPLES, PLUMS, CHERRIES, &c.; also Standard and Dwarf-trained, in great variety, and correct to name.

GRAPE VINES of all the principal kinds from Eyes, strong and well rooted.

Pyramidal PEARS and APPLES in fine health, coming into a bearing state. Prices on application.

R. GLENDINNING, Chiswick Nursery, London, W.

DWARF MAIDEN FRUIT TREES.—

APPLES.

PEARS.	CHERRIES.	PEACHES.
PLUMS.	APRICOTS.	NECTARINES.

Prices moderate.

Fine and clean grown; and all the leading sorts can be supplied in quantities by GEORGE JACKMAN & SON, Woking Nursery, Surrey.

DWARF TRAINED FRUIT TREES.—

APPLES.

PEARS.	CHERRIES.	PEACHES.
PLUMS.	APRICOTS.	NECTARINES.

Prices moderate.

Great care is taken in the formation of these fine, healthy, free-grown trees. Particulars can be obtained of GEORGE JACKMAN & SON, Woking Nursery, Surrey.

TO THE TRADE.

J. TROTMAN begs to offer well-grown Plants of the following:—Dwarf Trained and Untrained PEACHES, NECTARINES, and APRICOTS. Dwarf Untrained PEARS, PLUMS, APPLES, and CHERRIES. Fine well furnished Trees for Orchard House or pot cultivation of Peaches, Nectarines, and Apricots. Prices moderate on application.

New Road, Hammersmith, W.

FOREST TREES.

JOHN WATERER has to offer upwards of a Hundred Thousand of each of the following, from 2 to 4½ feet high, and all good rooted:—

CHESNUT	LARCH	BIRCH
HAZEL	ASH	ALDER
SCOTCH	LAURELS	WITHY, &c.

Samples with prices sent on application. Planting done by contract.—The American Nursery, Bagshot, Surrey.

IMPORTANT TO LANDHOLDERS.

FOR SALE, 200,000 LARCH FIR, 1½ to 2 feet, at 15s. per 1000.

50,000 LARCH FIR, 2 to 2½ feet, at 20s. per 1000.

50,000 LARCH FIR, 3 to 3½ feet, at 40s. ,,

FLUKE POTATOES for planting, warranted free from disease, at 4s. 6d. per bushel. Orders for the above to the amount of 5l. and upwards, Carriage paid to any Railway Station from Milford to London.—JACOB SCOTT MATTHEWS, Nurseryman, Seedsman, and Florist, Cardiff, South Wales.

NEW GARDEN SEEDS, GROWTH OF 1859.

ROYAL BERKSHIRE SEED ESTABLISHMENT.

SUTTON AND SONS are now prepared to execute orders for all kinds of GARDEN SEEDS, and can warrant them genuine.

Royal Berkshire Seed Establishment, Reading.—Dec. 3.

PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN AND WOOD FORESTERS, respectfully announce that they have now issued their NURSERY CATALOGUE OF FOREST TREES, CONIFERÆ, SHRUBS, &c., which they will be happy to forward free by post on application.

27, Great George Street, Westminster, S.W.

PETER LAWSON AND SON THE QUEEN'S SEEDSMEN AND WOOD FORESTERS, will be glad to communicate with parties engaged in Planting extensively, with whom special agreements may be effected.

27, Great George Street, Westminster, London, S.W.

10,000 HANDSOME SPRUCE FIRS, from 1 to 8 feet, all suitable for Christmas Trees, Common Laurels, from 1 to 8 feet, Portugal do., from 1 to 8 feet, Standard do., 8 feet, with a miscellaneous collection of other Evergreen and American Plants, Standard and Dwarf-trained Fruit Trees, Forest and Ornamental Trees from 6 to 18 feet, Climbing Plants, &c., at R. T. PENNETT'S Nursery, Marsh Lane, Tottenham, N.

COMPLIMENTARY DINNER TO Mr. GEORGE EYLES.—Many of the leading Exhibitors and others connected with the Flower Shows at the Crystal Palace having expressed a wish to testify the high estimation in which they hold the uniform kindness, courtesy, and attention extended to them upon all occasions by Mr. GEORGE EYLES, have resolved to entertain that gentleman at Dinner upon his retirement from the Crystal Palace, and to congratulate him upon his new appointment with the Horticultural Society.

The Dinner will take place on WEDNESDAY, the 14th inst., at the Albion Tavern, Aldersgate Street, and Mr. John Spencer will preside. Tickets, 21s. each.

Any Gentleman desirous of being present upon this interesting occasion can obtain a Ticket upon application to the Hon. Secretary on or before MONDAY, the 12th inst., after which day no Tickets will under any circumstances be issued.

EDW. R. CUTLER, Hon. Sec.

14, Tavistock Row, Covent Garden, W.C.—Dec. 3.

SCOTTISH GARDENERS', FORESTERS', AND LAND-STEWARDS' ASSOCIATION.—RESULT OF ELECTION.—At a General Meeting for the Election of a PENSIONER on the Funds of the Association, held at No. 6, York Place, Edinburgh, on Wednesday, November 23, Professor Balfour in the Chair, the following was the state of the Poll at the close of the Ballot:—

WILLIAM M'MILLAN ..	395	JANET CRERAR ..	247
CHRISTINA WALKER ..	288	MARY HENDERSON ..	82

WILLIAM M'MILLAN, having the greatest number of Votes, was thereupon declared duly elected.

J. H. BALFOUR, Chairman.

JAMES M'NAB, EDWD. RAVENSCROFT } Scrutineers.

Edinburgh, Nov. 26.

HORTICULTURAL SOCIETY OF LONDON.—FRUIT COMMITTEE (8, ST. MARTIN'S PLACE, W.C.).

The next Meeting will be held on TUESDAY, December 6, at 3 P.M., at the Society's Rooms, 8, St. Martin's Place, Trafalgar Square, on which occasion the following Prizes are offered:—

PEARS.

CLASS A. KNIGHT'S MONARCH.—One Pound for the best, and Ten Shillings for the second best dish.

B. PASSE COLMAR.—One Pound for the best, and Ten Shillings for the second best dish.

C. BEURRÉ D'AREMBERG.—One Pound for the best, and Ten Shillings for the second best dish.

D. ANY OTHER VARIETY.—One Pound for the best, and Ten Shillings for the second best dish.

APPLES.

CLASS E. COCKLE PIPPIN.—One Pound for the best, and Ten Shillings for the second best dish.

F. MARGIL.—One Pound for the best, and Ten Shillings for the second best dish.

G. CORNISH GILLIFLOWER.—One Pound for the best, and Ten Shillings for the second best dish.

H. ANY OTHER VARIETY.—One Pound for the best, and Ten Shillings for the second best dish.

All Fruits exhibited must be fit for table, and accompanied by filled up tabular forms exhibiting the circumstances under which the fruit was produced. Blank forms may be obtained for the purpose, on application to Mr. ROBERT THOMPSON, Horticultural Society's Garden, Chiswick, W. Blank forms to be filled up and sent with Seedling or other Fruits, may also be obtained on application to Mr. THOMPSON, as above.

All Fruits and Vegetables for exhibition before the Committee should be addressed "To the SECRETARY TO THE FRUIT COMMITTEE OF THE HORTICULTURAL SOCIETY, 8, St. Martin's Place, Trafalgar Square, London, W.C.," and must be delivered before 1 P.M., on the day of Meeting. The carriage of packages of Fruit will be paid.

The Gardeners' Chronicle.

SATURDAY, DECEMBER 3, 1859.

MEETINGS FOR THE FOLLOWING WEEK.

TUESDAY,	Dec. 6	Horticultural (Fruit Committee at St. Martin's Place)	3 P.M.
THURSDAY,	— 8	Horticultural (Floral Committee at St. Martin's Place) ..	2 P.M.
FRIDAY,	— 9	Horticultural (Special General Meeting in the Rooms of the Soc. of Arts, John Street, Adelphi)	NOON.

A FEW years ago the United States Government was led to take measures for the introduction of the TEA PLANT into the confederation, with a view to establishing if possible the preparation of Tea in some of the States. The success that had attended Mr. FORTUNE's operation for the East India Company having induced them to consult that gentleman, it was finally arranged that he should again proceed to the Celestial Empire for the purpose of obtaining as abundant a supply of plants for the west as he had secured for the east. His mission has been attended with the most complete success. A minute of the United States Patent Office now before us states that he was despatched in March, 1858, that he had obtained seed enough to plant 100 acres, a large portion of which had arrived by the 20th June, 1859, and was flourishing in a propagating house, especially constructed at Washington for their reception. Applications for plants were even then made in such numbers that it had become necessary to refer to Congress for instructions as to their disposal.

Mr. FORTUNE returned to England some time ago, and has favoured us with the following interesting report upon the final result of his expedition:—

"It will be seen by the accompanying papers that the results of my expedition to China for the Government of the United States has been very satisfactory. In little more than one year about 50,000 Tea plants, and many other vegetable productions useful in the arts or of an ornamental character* have been introduced to America from the Tea countries of China.

"This success was mainly owing to experience acquired during former visits to these countries. Arriving in China in the month of May I spent the

* For example: the Camphor and Tallow trees, Chusan Palm, green dye plant (Rhamnus), manure plants (Trifolium and Coronilla), Wax-insect tree (Fraxinus sp.), Yang-mae (Myrica sp.), southern fruits, such as the Lee-chee, Longan, Wampee, &c., &c.

first few months in visiting numerous Tea farms in different parts of the country, where I made arrangements with the natives for large supplies of seeds as soon as they ripened in the autumn. In October and November I repeated my visit to the same districts, and everywhere found supplies of seeds awaiting me. In former transactions with these Tea growers I had always treated them kindly and liberally, and I now found the advantage that resulted from such treatment. Seeds had been saved for me in all directions; I had only to pick them up and proceed onwards, and was thus enabled to get through a large amount of work in a short space of time. In December I reached the seaport of Shanghae with the whole of my collections in excellent condition.

"Tea seeds will not retain their vitality long if kept out of the soil. In order to guard against all risk a large number of WARD'S cases had been previously prepared and filled with earth, and to these the seeds were immediately transferred. The first shipment was made in December, a few days after my arrival in Shanghae. Knowing that the vessels would probably arrive in America about the middle or end of March I thought it likely the seed would remain in the earth without vegetating during the voyage. Instead, therefore, of sowing the seeds near the surface in the usual manner, I mixed up large quantities with soil, and filled the case up with the mixture of earth and seeds. By this simple plan many thousands of seeds were carried to their destination, and when they arrived there were as sound as if they had been all the winter on a Chinese seed-bed. Of course it was necessary to unpack them immediately on arrival and sow them thinly in other quarters. In the other cases which were shipped later, this mode of packing would not have been safe. The seeds were therefore sown thickly and covered with earth in the usual manner, and in this state might vegetate on the voyage without any risk whatever. In the one case the object was to get the seeds quickly to their destination without vegetating, for had this taken place the experiment would have been a failure; in the other they were placed in circumstances favourable for vegetation, and the only change likely to occur would be this, that in China they were only seeds, while towards the end of the voyage or at its termination they would have changed into healthy young plants.

"The watering, closing the cases, shipping, and last, but not least, securing the good-will of captain and officers, were all important operations."

Not only has the Tea plant been thus introduced to the Eastern states, but, as is mentioned in another column, it has found its way to the Western; and our friends on both the Atlantic and Pacific sides are with their usual energy setting about growing it.

But there still remains the question whether they can turn it to profitable account. That their climate will be found to suit in some of the vast regions of the West there can be no reasonable doubt. But merely growing Tea plants will not make commercial Tea. The difficulty lies in the preparation of it, an operation which, as conducted in China, demands an enormous quantity of labour — the article of which beyond all others the United States have the least to spare. But is it really necessary to prepare Tea Chinese fashion?—to chop it up into little balls and twist it into all sorts of queer shapes with all sorts of names, in order to give it its dietetical value? Surely not. We have ourselves found out that the painted article called green Tea is not very wholesome and by no means the better for the paint; and we quite anticipate that our United States friends will have even already projected some sort of machine that will produce good marketable Tea without the assistance of human hands. This indeed, we know, is the opinion of Mr. FORTUNE himself.

AT the Anniversary of the Royal Society on the 30th ult., one of the ROYAL MEDALS was presented to Mr. GEORGE BENTHAM, one of our most valued correspondents, "for his important contributions to systematic and scientific Botany."

GOOSEBERRY BUDS AND SPARROWS.

IF the buds of Gooseberry trees were the ordinary food of sparrows, a flock of these well-known birds would ever be a sight of great uneasiness to all our anxious gardeners. Here, where the feathered tribes find shelter and protection, my Gooseberry trees seem to have no attractions for the sparrows, except in occasional seasons of rare occurrence; and in those seasons I invariably find caterpillars on the leaves. This leads me to suspect that the buds of the Gooseberry trees must have been the cradle of these unwelcome marauders:—and far from being terrified at the appearance of cock robin and sparrows on the trees, I consider them as friends, and I wish them a hearty meal. If the sparrows at Ford Abbey have really an appetite for the buds alone, it is a bad business, as sparrows have now become formidable by their numbers. When I was a lad, the sparrow-hawk was considered a valuable assistant in checking the increase of these little winged thieves. But now, the ignorance of country squires, and the wanton cruelty of gamekeepers, and I may add, the venom of our ever busy old hen wives, have nearly destroyed the valuable breed of sparrow-hawks in this part of our county. The weasel too, and the stoat, which are always on the look out for sparrows and Hanoverian rats, have woefully decreased of late years. No sooner is the track of one of these trusty friends to the farmer and the gardener discovered, than a baited trap is set, and the poor victim is impaled to form another hideous appendage to the walls of the keeper's kennel.

The land being thus deprived of its faithful watchers, the weasel, stoat, and sparrow-hawk, we must not be disturbed in mind if our crops suffer for the loss of them. Neither can I pity the raving farmer when he descries large flocks of sparrows regaling themselves on his ripening corn. In order to guard Gooseberry trees against all winged intruders, I would beg to recommend the use of fishing nets. In our towns on the seacoast (Scarbro' to wit, which I have just left) superannuated fishing nets may be got at a very easy price, say for 3*s*. each. One of these nets would protect an extensive range of Gooseberry trees. I cannot help adding, that so late as last Wednesday, on going down a street in Scarbro', I turned into the shop of a bird preserver. On his table lay two pretty female sparrow-hawks. They had been killed the day before by a nobleman's gamekeeper. The knave in his letter said that he wished to form a case of British hawks. I wished the rascal a case of Tyburn halters. *Charles Waterton, Walton Hall, Nov. 27.*

THE AQUILEGIA OR COLUMBINE.

AMONG the many neglected old favourite flowers that deserve more notice than they now receive may be classed the Columbine. While the Chrysanthemum, Hollyhock, Sweet William, &c., have made rapid strides towards perfection, this once highly prized flower is, I believe, scarcely if anything superior to what it was 20 years ago. I believe in short that better varieties are to be found at the present day in the gardens of the cottager than in those of greater pretensions. Surely this is to be regretted, and I trust ere long to see the Rose Columbine elevated to the position in our gardens which it deserves to occupy. Few flowers make a better show early in the year than it does. Its gracefully drooping flowers of various colours, and the length of time they continue in perfection, should surely recommend the plant to the notice of all lovers of gardens. It is well adapted for ordinary decoration or pot culture, and well-grown specimens in pots look charmingly. I remember once seeing a long border planted with Columbines, and I need not say it was the admiration of every one who had an opportunity of inspecting it.

In order to have the Columbine in the greatest perfection fresh plants should be raised every four or five years, for it may be observed that the youngest always exhibit the finest flowers, and as the plants get old they frequently spoil their colours, instead of being ornamental becoming quite plain. The seed should always be gathered from flowers possessing the best properties, that is to say, from the largest, most double, and most distinct and decided kinds. Flowers with these properties may often be found on the same plants, along with others of an indifferent character, and as is the case with the Balsam, the inferior ones should be removed as they appear from such plants as are intended for seed, and the good ones only preserved.

The seed may be sown in autumn or spring. Any common garden mould made fine will be suitable, and the plants will require no further attention except keeping them free from weeds, or if the weather is very dry giving them a slight watering until they are fit to remove. A bed should then be prepared for their reception, which should be composed in part of light loam. The plants should then be placed in rows a foot apart. At Michaelmas they may be removed to the place intended for them to blossom, and the following May they will produce flowers. It is advisable if the roots are intended to be propagated from not to let them seed; on the contrary crop off all flower stems as soon as the beauty of the flowers is over, in order to keep up a good succession of bloom. Fresh seed should be sown every year, and if you can rely on a friend for a change of seed every two or three years, it will be advisable to secure it, as they are less liable to spoil than when raised from your own collection. All that have bad properties should be discarded at once, and the remainder should always be kept free from weeds. The ground should be dry between the rows every winter, and a little manure added. This is all the care that these elegant plants will require. *Edward Bennett, Osberton, Notts.*

CULTIVATION OF LAVENDER.

THE only districts in this country in which Lavender is grown to any extent, are, we believe, those of Mitcham and Hitchin, and the only species cultivated in both localities in any quantity worth notice is the common garden Lavender, the Lavandula vera, D.C.; and of this species, on an average of some years, there are about 35 acres under cultivation at Hitchin.

The soil best adapted for its growth would appear to be of a loamy nature, with a chalky subsoil. A loamy soil is, without doubt, that in which the Lavender thrives best, but whether a chalky bottom contributes in any essential degree to favour its development is uncertain, although this would appear to be the case, as in all soils about Hitchin in which the Lavender succeeds best, chalk is found beneath the loam. The land in which it is grown should be freely exposed to the air and sun, and in a somewhat elevated locality, for it has been always noticed, that when Lavender is planted in ground which lies very low, or which is surrounded by very high hedges, or in which there are many large trees growing, it is more liable to be injured by late frosts in spring, and to suffer most from blight and the other special diseases to which it is liable.

The Lavender at Hitchin is always raised from slips or cuttings. These slips were formerly taken of small size, but it is now the more common practice to cut large vigorously growing pieces or branches from the mature plants. These cuttings are then planted in land which has been previously trenched about 18 inches deep, and well manured. The planting is usually performed in September or October. Mr. Perks informs us that for two years past he has tried the experiment of planting the slips in the spring instead of the autumn, in consequence of the large number which are commonly destroyed during a severe winter, when planting takes place at the latter period; he finds, however, that the autumn plants are much stronger and not so liable to perish from the late frosts in spring, or to be injured by very dry weather. As soon as the plants begin to show the least signs of flowers in the following summer, they are carefully clipped, and this operation is repeated two or more times as may be necessary, in order to prevent the production of any flowers during the first season, for it is found that plants thus treated are ultimately much stronger and of a better shape than those which are allowed to flower. In the following October, when the plants are about twelve months old, or in the succeeding January, if the weather be fine and not frosty, they are planted out in rows, in land which has been previously well cleaned and manured. The plants in the rows are usually placed about 3 feet apart, and a space of from 3 to 4 feet is also maintained between the rows. Mr. Perks thinks that a greater distance than 4 feet between the rows would be advisable, for he says that unless the plants are freely exposed on all sides to the air, they will not flourish so well, and will not bear such large flowers for a length of time, as when they are planted so as to preserve a greater distance between the rows. He further adds, that he has one hedge-row of Lavender thus planted which is now 12 or 14 years old, and this has always produced a fine and good crop; while in other rows of plants of the same age, which have grown to large size, so as to touch each other between the rows, the flowers are small, and the yield of oil inferior to that of the former. In reference to this opinion, we may remark that there can be no doubt but that it is very desirable in planting Lavender to preserve a free access of air and sun between the plants, as otherwise they do not grow so strong or produce such large flowers. When too closely planted they are also liable to a peculiar disease, which is supposed to arise from their own aroma producing a poisonous influence, owing to its confinement too much in the vicinity of the plants. But at the same time we think that for all practical purposes a distance of 3 feet between the plants in the rows and from 3 to 4 feet between the rows themselves, is amply sufficient, more particularly so as it is usual to remove the plants after a few years' growth, and thus before they have arrived at such a size as to fill up the spaces between the rows. In the first summer after planting, that is, in the second year from the plants being raised from slips, it is sometimes the practice to commence cutting the Lavender for the purpose of distilling the essential oil; but it is far better to keep the plants clipped through this summer, and not allow them to flower at all till they are in their third year of growth. The expense, however, of allowing them to remain so long unproductive is very great; so that when the oil is dear the plants are sometimes allowed to bear flowers the second year, but by doing so the crops of future years are always injured. Those who desire a fine crop of Lavender should therefore always reserve the plants for use till they are in the third year of growth. This is the more usual practice at Hitchin. In the second year of growth it is customary with Mr. Perks, in order to strengthen the plants still further, to supply the roots with a regular supply of short manure, or if this cannot be procured in sufficient quantity, to supply its place by superphosphate of lime, which he believes greatly improves their appearance, and causes them also to produce finer flowers the following summer. Growers of Lavender must be careful, however, not to over-manure the land in which it is planted, as it does not require a very rich soil, and thus, by so doing, the plants run to stem and leaf, and the crop of flowers is less abundant. In the third year of growth the plants bear well, and from this period till they are four or five years old they are in perfection. They are commonly removed at the age of seven or eight years, but it is found that plants in different situations and localities vary much in the number of years in which they yield successfully.

Lavender is frequently liable to a kind of blight during the months of May or June, by which whole

plantations are sometimes destroyed. Late frosts in the spring, as at the end of April or beginning of May, frequently also do very great injury, as was especially the case last season. When the plants are in flower they are also liable to a kind of disease, arising, as before noticed, from a poisonous influence exercised by their own aroma, especially when too closely planted. From these causes Lavender is rather an uncertain crop, and hence the main cause of the fluctuation in the price of its essential oil.

A dry warm season, with occasional showers, suits the Lavender best. It is well known that English oil of Lavender is always much superior to the foreign oil, even when the latter is obtained from the same species of Lavender. The foreign oil is, however, commonly obtained from another species—namely, from the Spike or French Lavender, the Lavandula spica, D.C. When obtained from the same species the difference between the oils of home and foreign production is due probably in a great measure to our more humid climate. The character of the soil and other causes also, without doubt, influence in an important degree the quality of the oil. Good English oil of Lavender is commonly worth 10 or 12 times as much as that derived from the French Spike Lavender.

The crop of Lavender is gathered at the end of July or beginning of August, the time varying a week or more according to the character of the seasons. At about the 20th of July, in fine seasons, the Lavender plantations have a beautiful appearance, and exhale a delicious perfume; they are then well worth a visit. The Lavender flowers yield most oil and of the best quality when gathered in showery weather. A long succession of very hot dry weather preceding the harvest is always injurious, the oil obtained having then always a more or less rank odour. The flowers should be gathered when fully expanded, as it is better to lose a few from their falling off the stalk in the process of gathering, in consequence of their ripeness, than to get them too young, as the oil is not then fully developed. The plan adopted by the two cultivators at Hitchin for cutting and preparing the Lavender for the still is different. Thus, one has the flower-stalks cut from the plants with a short reaping-hook or sickle; they are then tied up into bundles or sheaves, each of which weighs about 35 lbs. These are removed from the field and carried to the still-house, where they are prepared as soon as possible for distillation, for otherwise the Lavender heats, and the quality of the oil is more or less injured. In order to prepare Lavender for the still the flowers are stripped altogether from the stalks, and received into pans of moderate size. This stripping is performed by women, two being placed to each pan. As the pans are filled they are emptied upon a large cloth, and the flowers are frequently moved until there are sufficient for the still. The time required to obtain sufficient flowers for a still of 120 gallons by 28 women is six hours and a half. The other cultivator adopts a different plan to the above. Thus, he has the Lavender cut in the field as close to the flowers as is possible; it is then put into sacks without being tied into bundles and conveyed at once to the still. He says that he has sometimes stripped the flowers altogether from the stalks according to the plan described above, but has found no material difference in the quality of the oil. He is, however, very careful not to have more stalks mixed with the flowers than can be avoided. It is necessarily more expensive to throw away the stalks and retain the flowers alone for distillation, as the labour of preparing the Lavender for the still in the latter case is greater than in the former, and the oil which the stalks contain is also then lost, although the amount of oil obtainable from the stalks is very small as compared with the yield of the flowers. The additional expense of the oil obtained by using the flowers alone has been estimated at 10*s.* per lb. The admixture of a little stalk does not appear to be of much consequence, but it is very important to guard against any large amount being mixed with the flowers, for, as a rule, the greater proportion of the former to the latter the less sweet the oil, and the more, in fact, does it resemble that of foreign origin.

In one case the ordinary fire-still is employed for distilling the oil; in the other, the distillation is performed by steam heat. This plan is considered by some to possess many advantages over the former, as by such a process the Lavender has no chance of getting burned, or the oil obtaining any empyreumatic odour from the application of a too great heat. On an average it is found that about 60 lbs. of good Lavender flowers yield about 16 ounces of essential oil.

The yield of essential oil of Lavender from an acre of land is, we are informed, on an average, about 6 Winchester quarts if old and young plants are taken together, but if all the plants from which the Lavender is gathered are young, that is, from three to five years old, then the produce will be about another Winchester quart per acre. As there are on an average about 35 acres of Lavender cultivated in the neighbourhood of Hitchin, the total yield of oil from that district will be, therefore, not less than 210 Winchester quarts. All the oil produced at Hitchin is, we believe, used in the preparation of Lavender water and other celebrated perfumes, the inferior oils, chiefly those of foreign origin, being employed for scenting soaps and pomades, &c.

The Hitchin oil of Lavender has a remarkably fine, delicate, and sweet odour, being free from all rankness, and, at the same time, it possesses a very rich strong perfume. This oil is now becoming fully appreciated in the trade, where it is commonly quoted under the name of Hitchin oil of Lavender. We believe that there can be no doubt that the best Hitchin oil is at least equal to any produced elsewhere. Its excellent quality is due to the favourable character of the soil in which it is produced, to the very careful manner in which the plants are raised and cultivated, and to the fact of the flowers being either used alone for distillation, or, at all events, mixed with a very small portion of the stalk. We are convinced that nothing injures the quality of the oil so much as the admixture of any large proportion of stalks with flowers. *Pharmaceutical Journal.*

ENCOURAGEMENT OF FLORICULTURE
AMONG THE OPERATIVE CLASSES.

In these troublesome times when strikes and lock-outs jar upon the ear, and are causing want and misery to thousands whose only error has been that they have trusted their enemies,—in these times, I say, it is pleasing to turn aside our regards, and view the working classes under a different aspect. There is a movement commencing among those classes which does them the highest honour, and which is, I think, calculated to become an inestimable benefit to them. I allude to the growing taste for floriculture, which I have reason to believe is gradually, yet extensively, developing itself among the operatives, not only of London, but also of other large provincial populations.

It is most gratifying to find how many families are rendering their humble homes happy and comfortable by this new and permanent source of pleasure, which can be indulged in with perfect innocence, at very trifling cost, and with the utmost social benefit.

I could say something on this subject of what has come under my own observation, but I prefer transcribing the words of one far better informed. Samuel Broome, the well-known gardener in the Temple, who appears to be the main-spring of this happy movement, writes to me as follows:—

"Having some years' practical experience of the increasing love of floriculture among the industrious working men in this great metropolis, I visit hundreds in the course of the year, sometimes at public meetings called for the purpose of hearing conversation as to the best mode of cultivating their show flowers; at other times at their private homes to inspect their gardens; and to me they are the happiest hours I enjoy, as they are so united and good-tempered one towards the other when conversation is introduced about flowers; but if any other subject is brought under notice, such as politics, strikes against employers, &c., then I find a different spirit exist directly, as there are not two of the same opinion; but quite the reverse on floriculture, for they all feel like brothers, and their innocent rivalry never engenders bad feeling. The one that gets the third prize is as pleased as his neighbour who obtains the first.

"Allow me to give a few instances of what has come under my notice with respect to some of their gardens. For some years past Mr. Dale and myself have cultivated Chrysanthemums in the two Temple Gardens very extensively, and generally have been successful in having a good blaze of bloom in November, when our gentlemen very liberally throw open the gardens to the public to inspect them. Most seasons they are visited by hundreds of thousands, the majority being the operative class, composed of all trades. and I must confess I rarely have a flower touched by any. They inspect the collection with great interest, and ask all sorts of questions as to the best mode of cultivating them. They say, 'Gardener, give me a slip for a pot to grow in the window.'—'Have you any garden?' I ask.—'No,' they say; 'my back-yard will not grow anything, it only does for the dust-hole.'—'I will give you some plants,' I reply, 'if you will try and grow them in it. Tell me where you live; I will come and look at it.' I get the address, and sure enough when I go, it is like a dust-hole, full of ashes, old rags, and rubbish. I say to them, 'Chrysanthemums will grow here, friend, if you form it into a garden. Trench it up well, put in some manure, and make some walks with some dry ashes, and your yard is converted from a rubbish place into a garden at once.' He has confidence in what I tell him, and goes to work. I then give him plants and directions, and in a few months he comes round and says, 'Gardener, I think I beat you; my plants are better than yours; come and see them.' I go and find it the case. The next neighbour follows his example; and so it passes from one to the other, till at last they find they are numerous enough to form a society to show their productions to the public. The wives begin to find their husbands, instead of going to a public-house after taking their tea, are employed at home among the flowers. She also keeps her house cleaned, for visitors calling to inspect them. The children are clean, and are delighted to see the visitors come to see their father's garden; and this teaches them not to touch the flowers at home, and a growing disposition not to do it when out in other places. I have been hailed in a spirit of joy by scores of the wives for persuading their husbands to grow flowers, it being the means of keeping them at home. As they say, it takes up all their time to look after them, and prevents them from spending many a hard-earned shilling in a beer house. But I must here state that most of them are hard-working men. I rarely come in company with a lazy man that will grow flowers. The more industrious the man, the better he cultivates his flowers; he being of an active mind, must have something to employ it at all times after leaving work; and what is more innocent than flowers? To see the fine productions they show at their exhibitions would surprise many good cultivators. I often feel ashamed of mine, after seeing what they have produced in some of the most confined spots.

"I must apologise for going so much into detail that I fear I may tire your patience in reading; but every word I state is correct. There have been within the last three years no less than 10 of these societies started, consisting of from 100 to 200 members, composed principally of mechanics belonging to different trades, and established in all parts of London, east, west, north, and south. But as the old saying is, there is never a good without an evil, and the evil is this. They have no place to hold their meetings and annual shows in except at public-houses, and this often keeps them to a late hour from home; whereas if held at some institution the business would be done in half the time, and save them many a shilling; as, when they meet at public-houses, they are apt to spend more than does them good, and they get excited. The only remedy to obviate this would be to get every parish round the suburbs to build good-sized rooms in a central part, where they could meet and talk about the flowers, and have a room large enough to exhibit them in afterwards, free of expense, except the gas and firing, and an attendant to keep it clean. I think large rooms might be built very reasonably, with sliding partitions in them for the meetings, and then the whole space thrown open when the exhibition takes place, so that there is plenty of room to see them to advantage. The plainer it is built the better, and it might be used for any other parish meeting. I am sure the parish would lose nothing in the end, for it would not be so burdened with winter rates; and we should have hundreds more members to join them, as at present many dislike belonging to our horticultural societies because they are held at public-houses.

"Should you be enabled to promote this object among the thousands of mechanics in this large metropolis, you will, I am satisfied, be effecting a great public benefit."

I might weaken rather than strengthen the case were I to add anything to these simple and honest words of Samuel Broome; but I would remark that, although my friend's zeal may be carrying him too far when he permits himself to expect large permanent buildings to be erected in various parts of London for these unpretending flower shows, yet I cannot doubt that there are many gentlemen holding large business premises in and about London who would not be unwilling to allow a portion of those premises to be occasionally applied to so truly useful a purpose. To the leading builders, for example, I would beg to suggest that it might contribute much to restore peace with their men were they to afford this evidence of their sympathy and good-will. *Mr. Sidney Smirke, in the Builder.*

Home Correspondence.

Dioscorea Batatas.—I shall feel much obliged by some of your correspondents who have cultivated this esculent informing me how they manage to take it up without breaking the root to pieces? My gardener adopts the plan recommended some time ago in your Paper of digging a deep hole at the beginning of the row, and proceeding onwards with a pickaxe or mattock, the soil being thrown behind him as he advances, yet notwithstanding all his care in this way he can only get the roots out in little bits. Where these are merely a foot or so in length it is easy enough to obtain them entire; but when they descend 3 feet, as a portion of mine do, or I may say even half that length, the job appears to me a most difficult one to accomplish. How, then, can this be expected ever to become a profitable field crop, as has been represented by some of your correspondents, when so much labour and expense are incurred in raising it? I have now grown it to some extent in my garden for three years, and certainly as a vegetable for the table it is not wholly to be despised; nor, so far as regards private consumption, does it much signify whether the roots be brought into the house whole or otherwise; but I should like to know in what manner those who cultivate the crop for market contrive not to break them when they attain a large size, particularly if the soil they are growing in be at all adhesive, considering their extreme brittleness, for even the head being allowed to bend over during the process of digging, frequently snaps the root towards its extremity. With regard to cooking, I find that if they be parboiled in the first instance, say, for five or six minutes, then roasted and eaten with unmelted butter, like Potatoes, it is the most eligible method, as they thus become dry and floury, instead of being soft and watery, as they are when plain boiled. Of course most of your readers are aware that it is only the white under part which is fit to be eaten, the thinner portion at the top being reserved for planting when the season arrives, cut into sets of 2 or 3 inches. *J. H., Whitland.* [The great point in cooking them is to boil them exactly ten minutes.]

Mushrooms.—In your Paper of the 12th ult., there is an article on Mushrooms by your esteemed correspondent "M. J. B.," agreeing with which in the main, I venture to make the following additional remarks. Besides the species mentioned as edible by "M. J. B.," Agaricus procerus, A. deliciosus, and A. prunulus are all very good eating, particularly the first, which much resembles the common Mushroom, and I have frequently partaken of them. I also consider A. grammopodius as excellent, though "M. J. B." pronounces it "detestable," but I suppose the adage "de gustibus, &c.," must be allowed in regard to Fungi, as well as other things. I have likewise eaten the "Blewits" (A. personatus) mentioned by "M. J. B." without any inconvenience, and this autumn I had several dishes of the variety "silvicola" of the common Mushroom, which grew in a wood, under Spruce Fir trees, without any bad effects. In gathering Fungi for the table too much attention cannot be paid to the state they are in. If at all old, or in the least infested by insects (to the attacks of which all the larger Fungi are very liable), they should at once be rejected; and only those specimens should be selected which are in a state of vigorous maturity (or youth). I think also that Fungi should always be partaken of with moderation. If these cautions are attended to, there are many species in this country which might be used with perfect safety, and which would add a relish to many a meagre dish, and also increase the general food of the community. *A. J.*

Datura arborea.—I have seldom seen this plant get the attention that in my opinion it is deserving of. When well grown it is one of the showiest autumn greenhouse plants that I know of, and it is very easily managed. There are nine plants of it in full bloom here at present in one of the conservatories; on one plant about 3 feet high I counted 21 flowers, and there are many more to come out. On the nine plants there are from 120 to 130 full-blown flowers, and they have an imposing effect amongst Camellias, Chrysanthemums, &c. To those who have not grown the plant a few hints as to the mode of culture I pursue may not perhaps be out of place. I strike a few from eyes every year; they are struck in March in a warm frame, and grown in a frame near the glass for six weeks or so, when they are removed to the greenhouse, keeping them as near the glass as possible. Plants one or two years old I cut down to the height wanted, and when they begin to grow in April I shake them out of the pots they bloomed in and put them in a smaller pot, when they will soon begin to grow freely. I have sometimes put them into a slight heat to start them, but I dislike it, as it is apt to "draw" them. They are fond of pot room and the soil well mixed with

rotted manure; on this head one can scarcely go wrong. A liberal supply of water is also wanted. They are subject to green fly and red spider, but from the large foliage these are easily kept down. *John Addison, Gr. to Earl of Shannon, Castle Martyr, Cork.*

Birds and Gooseberry Buds.—I would recommend "G. E." to try a mixture of lime, soot, and wood ashes, with a little fresh cow-dung and clay. Mix up the whole to the consistency of paint, and put it on with a brush. The process may at first seem tedious when there is a considerable quantity of Gooseberries grown, but a good crop of fruit may repay all the labour bestowed. I am convinced by repeated experiments that the mixture will save the buds from the depredations of birds if the adhesive substances of clay, cow-dung, and wood-ashes are incorporated together in such a way that heavy rains will not wash them off. *G. G., Athlone.*—— Cotton run through each tree is the best remedy, and if planted in beds from tree to tree. I have tried encircling the trees with straw, but it induces the buds to swell and to get destroyed by frost. *W. Shipman, West Ham.*

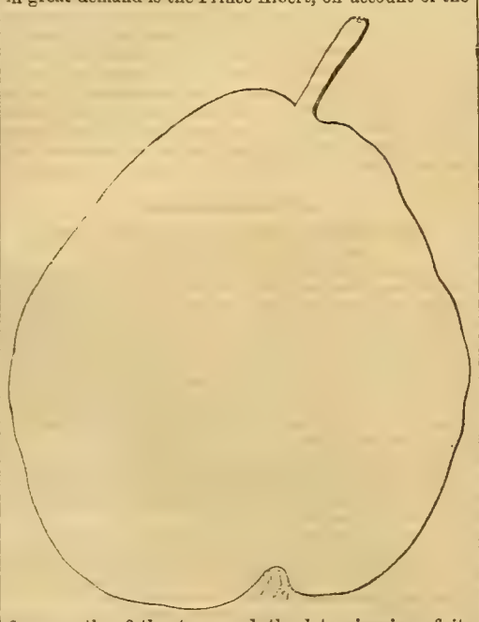
Pampas Grass.—You are probably constantly receiving notes of admiration from fresh admirers of this Grass; and certainly a well-established plant, surmounted by its lofty plumes, like silvery jets in the centre of a fountain, is as fine an ornament for the pleasure ground as can well be conceived. It may not, however, be generally known that in some seasons at least, a plant, if carefully moved, will flower within a few months after its removal. I have a young plant which was transplanted in spring that has borne six flower stems. *T.*

Cottager's Kale.—I can with confidence bear testimony to the great hardiness of this vegetable. Here it withstood uninjured the severe frosts of October, when Broccoli, Savoys, and other greens were very much cut up. It also fully bears out all that has been said respecting its flavour; and of all Kales it is undoubtedly the most productive. Where a large supply of winter and spring greens is required no garden should be without it. *Henry Bailey, Jun., Shardeloes, Amersham, Bucks.*

Theory of Springs.—The deficient rain-fall of the last few years has lately attracted much attention, and the subject presents a remarkable instance of the way in which the public (even I am afraid the scientific public) sometimes jumps hastily to a conclusion, and adopts a paradox in opposition to everyday experience. Experiments on this subject have been made, which are supposed to show that the water in springs and wells is exclusively derived from the rain that falls between October and April, and this theory seems to be almost universally adopted. I do not dispute the reliability of these experiments as far as they apply, that is, surely only to the case of a level country of uniform porosity; but a moment's reflection must show that they are quite inapplicable to the very extensive case of a hilly country, often abounding in crevices, and consisting of variously inclined strata, some pervious, some impervious to water. I can myself contradict the above theory from my own experience, for I find that the quantity of water in a spring supplying my house is evidently increased even after a few rainy days in summer, and I have no doubt that the experience of half the country would confirm my observation. The *Daily News* went so far last week in its alarm as to the consequences to be expected from the deficient rain-fall, that it actually recommends the impossible scheme of forming reservoirs all over the country for the purpose of irrigating the arable lands. *Observer.*

Foreign Correspondence.

PEARS.—BRUSSELS· *Nov.* 15, 1859.—I observe that you still consider the Chaumontel, Marie Louise, Napoléon, and Duchesse d'Angoulême Pears to be first-rate varieties; and certainly when ripened against a wall their fruit is very fine and good. But if the choice were limited to these varieties there would be nothing for the dessert in December. With us the cultivation of standards is much pursued, the walls being reserved for the Vine, Peach, and some very late ripening Pears. The Chaumontel, which is too long in coming into bearing, and which does not always yield good fruit, is never asked for. The Napoléon, being of too weakly a constitution, is but little in demand. The Duchesse d'Angoulême does not succeed well in our climate except on a Quince stock, or against a wall. The Marie Louise attains too great a size, and the fruit ripens too early as a standard; the tree, moreover, has not a fine habit of growth. The Conseiller de la Cour is more hardy and as productive; its fruit is as handsome, quite as good, and rather later than the Marie Louise. The varieties most in demand by the more advanced amateurs for culture on the Pear stock and as half-standards in the open ground are: Comte de Flandres, which forms a handsome very productive tree, and bears a superb, very fine fleshed fruit, ripening in December; Commissaire Delamotte (*Grégoire*), a fine tree with a close habit of growth, productive, bearing fruit in clusters of three or four, of the form represented in the accompanying figure. The fruit is of a dark green at the time of gathering, but becomes yellow on ripening, which takes place from the end of January till March. The skin is thin; the flesh melting, sugary, vinous, without grit. The cells of the core are large, the seeds long, and of a fine nut-brown colour. The fruit is not liable to be blown down by wind, its ripening is easily known, and its flavour very satisfactory. A third variety, for which there is also a great demand, is Aglæ Grégoire. The tree is more handsome but not so hardy as the preceding; the fruit is nearly of the same form and quality and ripens a month later. The fourth variety in great demand is the Prince Albert, on account of the



fine growth of the tree, and the late ripening of its excellent fruit. Another sort which is beginning to come into great request is the Bezi Mai. Of this I ate the last fruit of the crop of 1858 on June 6th, 1859, and I believe that this variety will prove a decided acquisition. *J. de Jonghe.*

Societies.

LINNEAN: *Nov.* 17.—Prof. Bell, President, in the chair. Jabez Hogg, Esq., and W. H. Ince, Esq., were elected Fellows. The following papers were read:—1. "Descriptions of new species of Utricularia from South America, with notes upon the genera Polypompholyx and Akentra," by D. Oliver, Esq. The author described a new species of Utricularia from Prof. Jameson, and enumerated those collected by Mr. Spence, among which was one remarkable form with peltate leaves; of this an excellent figure accompanied the paper.—2. "On the Fumaria capreolata of Britain," by C. C. Babington, Esq. After discussing the differences between the various European forms related to F. capreolata, the author remarked that "some excellent botanists will doubtless say these plants are all forms of one variable species, and I suppose that no person is in a position to contradict them; for who knows what really constitutes a species amongst plants? It seems to me to be just as impossible to prove that the 'aggregate species,' as Mr. Watson terms them, are quite distinct from each other, as it is to show that the 'segregate species' are so." The paper concluded with a description of the characters of the British species. To distinguish them Mr. Babington chiefly relied on characters derived from differences to be found in the fruit itself, and its pedicel, and also in a fleshy mass which unites the pedicel to the fruit, and which he called the *fruit base*. The species which were stated to occur in Britain, and of which full diagnoses were given, were the following:—F. pallidiflora, Jordan: fruit longer than broad, base short, narrower than the thickened tip of the pedicels, fruit stalks reflexed; from Devon, Somerset, Glamorgan, &c. F. Boræi, Jordan: fruit truncate, broader than long, base narrow, usually, perhaps always, much narrower than the enlarged tip of the pedicel, fruit stalks patent; from Tenby, Shrewsbury, Windermere, &c. F. confusa, Jordan: fruit subglobose, rounded at the apex, base very broad, conspicuously broader than the tip of the pedicel, fruit stalks patent; from Jersey, Guernsey, Cornwall, Devon, Pembrokeshire, &c. F. muralis, Sonder: fruit obovate, compressed, rounded at the apex, base broadly obconical, slightly narrower than the tip of the pedicel, flower-stalks erect, patent; from Barnes, Surrey, Shrewsbury, Wrexham, Sheffield. The true F. capreolata of Linnæus (F. speciosa, Jordan) has the fruit obovate-compressed obtuse, the base broadly obconical equalling the tip of the pedicel, and the flower and fruit-stalks reflexed. This plant has not been found in Britain, so that the name must disappear from our Flora.—3. "Synopsis Crescentiacearum, an enumeration of all the Crescentiaceous plants known," by Dr. Berthold Seemann. The Crescentiaceæ, it was remarked, inhabit the tropical and subtropical regions of both hemispheres, ranging from 30° S. to 30° N. lat. They occur in the greatest numbers in Madagascar, Mauritius, the Seychelles, and other islands of Eastern Africa. In America they are represented by 10 species. In Asia only two species have yet been discovered, one of them having been collected in Timor and also in Mauritius and Madagascar, the other in Cochin China. No representative of the order has hitherto been met with either in Europe or the continent of Australia. All the Crescentiaceæ may be considered ornamental plants, and their fine foliage, elegant flowers, and curious fruit have already procured for their order a fair representation in our gardens. We cultivate Colea floribunda, two species of Phyllarthron, Tanæcium parasiticum; all the known species of Crescentia, and Kigelia pinnata. Several of them were stated to furnish excellent timber. Considerable praise was given in this respect to the Kigelia pinnata, of which canoes, posts, pillars, &c., are made, and which not only as an umbraculiferous, but also as a sacred tree, was stated to be held in high esteem in Africa. Crescentia has a fruit with a hard woody shell, which in C. Cujete, the Calabash tree of the British colonists, is so large and durable that it admits of being converted into pails, bottles, pans, cups, sieves, ladles, spoons, and various other household articles. In Panama Dr. Seemann had seen milk pans made of it measuring 13 inches across, and Humboldt had told him that during his travels Bonpland and he had commonly used one of these vessels as their wash-hand basin. The shell of Crescentia alata, the Tecomate of the Mexicans, though much smaller is used for drinking cups. The shells or rather rinds of the fruit of Kigelia pinnata, after having been hardened by drying, serve as drum frames in Africa. The fruit of the Parmentiera cerifera, the famous Candle tree of Panama, has an Apple-like smell, and fattens cattle; whilst that of P. edulis, the Quaxhilote of the Mexicans, resembles a Cucumber in shape, and is eaten. The berry of Tanæcium lilacinum is also edible; and the sub-acid pulp of the fruit of Crescentia Cujete affords food to the negroes. Colea Telfairia is extensively cultivated in Madagascar on account of its fleshy fruit, which has an agreeable flavour, and is highly esteemed as an esculent. Phyllarthron Bojerianum also yields an edible fruit. The natives of Guiana extract a violet colour from the fruit of Tanæcium lilacinum, with which they dye their cotton cloth, their bark, and straw furniture. The juice of the fruit of the common Calabash tree dyes silk black. The medicinal properties of some species were stated to be held in repute among the natives of various countries, though they have not yet been recognised in our pharmacopœias. The paper concluded with a classified enumeration of the genera and species, accompanied by characters and remarks on their affinities and nomenclature.—4. "On Combretum butyrosum, a new kind of Butter-tree from Western Africa," by M. Caruel, of Florence. Several years since Prof. Bertoloni published an account of a new kind of vegetable butter which he had received from S.E. Africa, together with dried specimens of the tree that produced it. This he considered to form a new genus which he named Sheadendron, and called the plant S. butyrosum, from an idea that it was the same as the celebrated Shea tree of Mungo Park. This genus Sheadendron was moreover considered by its founder to be distinct from any known order of plants, and a new order, Shææ, was constituted for it in the neighbourhood of Myrtaceæ. Specimens in flower and fruit, communicated by Bertoloni himself to the herbarium of Florence, had enabled M. Caruel to ascertain that the plant belonged to the Combretaceæ, and was in fact a species of Combretum, which he named C. butyrosum. According to the information gathered by Bertoloni, the butter produced by this tree is called Chiquite by the Caffres, and is commonly used by them in dressing their food. It is also carried to the coast of Mozambique as an object of commerce. It is white and rather hard, with a peculiar aromatic odour; its chemical composition is—olein 25, marjorin 75 = 100. M. Caruel does not agree in the opinion that this plant is the Shea tree of Mungo Park, such an opinion, he said, being "founded on no other fact than that both are from Africa, and both produce a kind of vegetable butter." Mungo Park referred the Shea to the order Sapotaceæ, and it seems rightly so, as it has been subsequently described as a kind of Bassia (B. Parkii). [Is it not possible that some great mistake lies here? and that the Combretum and butter have nothing to do with each other? *Ed.*]

ENTOMOLOGICAL: *Nov.* 7.—Dr. J. E. Gray, F.R.S., President, in the chair. Mr. G. R. Waterhouse exhibited various new species of British Coleoptera captured by himself and Dr. Power, and stated that a deformed specimen of the common Tenebrio molitor had been formed by Stephens into a distinct species under the name of Tenebrio laticollis. Professor Syme exhibited a drawing of the larva of Sphinx convolvuli, and Mr. S. Stevens various beautiful Coleoptera collected by Mr. Squires in Brazil. Mr. Jansen also exhibited several new British species of beetles of small size, and Mr. F. Bond a specimen of the brilliant North American Buprestis fasciata, Fab., taken alive near London: also a new British moth belonging to the genus Phycita (P. conturbinella) taken in Dorsetshire by the Rev. Mr. Green. Mr. Stainton read descriptions of some new species of minute moths belonging to the genera Coleoptera and Adela, brought from the neighbourhood of the Cape of Good Hope by Mr. Trimen, who also exhibited some of the rare beetles which he had captured in the same locality. Mr. Pascoe read descriptions of some new Longicorn beetles from Batchian, a small island near New Guinea, collected by Mr. Wallace. Dr. Allchin exhibited Luperina Dumerilii, a rare species of Noctuidæ from Brighton. A notice by Mr. Wailes was read upon the insects which attack Rhododendrons; these are chiefly the larvæ of Mamestra Brassicæ, which

is found feeding by night; the larvæ of a species of Tortrix which gnaws the edges of the leaves; and a species of white scale (Aspidiotus) found on the upper surface of the leaves. The larvæ of a species of sawfly also eat half through the leaves. A paper by Mr. Stone on the parasitical habits of Ripiphorus paradoxus in the nests of the common wasp, and on the supposed power of depositing eggs by the worker wasp, was read by Mr. F. Smith.

South Essex Chrysanthemum.—This was the first exhibition of this Society, and although the last of the season it was highly satisfactory. Both plants and blooms were just in perfection, which shows that most of the exhibitions about London are held too early. The majority of both plants and cut flowers were the same as have before been noticed. The best Pompones came from Mr. Whitbread, gr. to C. B. Warner, Esq., and Messrs. Scarlett, Lucas, Harbott, Bunn, Clarke, Brown, Salmon, and Bunney also had excellent exhibitions. The best single specimen came from Mr. Whitbread, who sent Queen of England in beautiful condition, and we also noticed excellent plants of Madame Camerson and Racine. In the Amateurs' Class Messrs. Shipman, Anderson, Duncombe, and Johnson furnished well-grown collections. A splendid specimen of Christine was shown by Mr. South, Upton House (not for competition). It, however, received a First Class Certificate as the best plant in the room. A tastefully executed design for a flower garden, in Moss and cut blooms of Pompones beautifully arranged, was exhibited by Mr. Bunn, gr. to C. Dawes, Esq., Forest Gate. Mr. Wilkinson, of Bow, exhibited a collection of 60 blooms of the large variety (not for competition). It included most of the new and most improved varieties. These were highly commended by the judges; they were in fact about the best that have been at any exhibition this year; a few of the finest were Nonpareil, Themis, Goliath, Dupont de l'Eure, Plutus, Vesta, and Aimée Ferrière. Altogether the exhibition was one highly creditable to all concerned in its general management and arrangement.

North-Western Chrysanthemum.—This was the second annual show of this Society, and was a great improvement on that of last year. The exhibition took place at the Literary and Scientific Institute, Hampstead Road. Both plants and cut flowers were exceedingly fine, and the grouping and general arrangement admirable. A great many prizes were awarded; extra ones were given to Mr. Merry for Christine, the finest plant of the kind shown this season; also for a specimen of Golden Christine; and to Mr. Morgan, for a Pompone grown in a pyramidal shape. There was also a specimen plant from Mr. Windsor, without stick or tie. Special class: 1, a cut bloom of Golden Queen of England, 1st and 2d prizes, Mr. Harrison. Class 2: Golden Cedo Nulli, 1st prize, Mr. Hutt. Class 3: Golden Cedo Nulli, 1st prize, Mr. Cox. The exhibition was extremely well attended, the room towards evening being crowded.

Notices of Books.

Falconry, its Claims, History, and Practice. By Gage Earle Freeman, M.A. and Francis Henry Salvin, Captain West York Rifles. 8vo. Longmans. Pp. 352. Let those who can feel the joys of sport possess themselves of this little volume. They will find it full of life and vigorous health, and brimming over with information. The authors mean what they say, and thoroughly understand what they write about. There is no book-making here; there is no mediæval absurdity; the subject of again bringing the favourite pastime of our ancestors into fashion is handled for time present not from times and manners long since passed away. Shades of Sir John and Downes! How you would linger over the pages before us.

The authors, who commence their work by urging upon their readers the claims of Falconry, do not forget to include the fair sex among those who should become votaries of the sport. We must assist them in placing their claim before our own gentle readers:—

"One very great 'claim' will, I am sure, be admitted at once: ladies may, and do now as of old, join in the sport. I am half jealous of the bow and the target nevertheless; why should they take so many? Archery is a nice quiet elegant amusement; and to shoot as Robin Hood did in ancient, or as Mr. Ford does in modern, times, must require consummate skill and practice. But I shrewdly suspect that a becoming dress and attitude, close companionship, the opportunity of instilling axioms without which fair fingers could do little, run a race, and win it too, with the greatest score and the best gold. There is at least often a very little bow that strikes something better and warmer than the bull's eye, and does not count for nothing. I honour archery for its antiquity, and admire it for itself—but look at a picture, seldom seen, which I think to be better still. The canter of two or three horses; the scamper behind them of as many spaniels; the gleam of a green habit; the sombre of a grey; a hat clasped with a buckle and heron's plume; the red and white of a hood; the quiet hawks as they swing by to the easy motion of the horses; the silver bells and silver voices; the freshening colour; the hopeful eye:—Fly 'Blackjesse!' Good hawk! Fly well this day, if you ever flew! For the picture will take deeper colours still when these, are flying across the plain."

Claims disposed of we are introduced to the records of the art, then to the natural history of hawks in general, next to the mode of hawking different kinds of game; the whole concluding with a capital appendix on fishing with cormorants, and otter-training. See how the writers rattle along in describing a meet.

"We are now in the field, with three eyess peregrines of the year on our 'cadge,' viz. two tiercels and a falcon: added to this I have one old favourite tiercel on my glove. 'Major,' the pointer, keeps to heel; but he is young, and it will be necessary to use the check-cord when we begin work. Let us try for grouse in this stubble: they come from the moor to it at all hours, and we were not near it this morning. We will fly against the wind, which is blowing gently from the Heather: be quiet, and let 'Major' hold up. The young dog quarters the ground like a young dog—there is a little too much gallop and romp, but the check-cord is a slight drag on him, and he will soon settle down to his work in style. Suddenly he pitches nearly head-over-heels. Toho! 'By Jove!' says Jones, 'he's got them.' 'He has,' I answer, 'at least I think so, but I won't hood off to a false point if I can help it; however, I've so often put them up from that very spot that I'll cast off the "Earl." As for you, Jones, instead of swearing by your heathen gods, do me the favour to canter after "Major," on that little pony of yours, the moment the flight begins, and if the "Earl" kills, stop the dog, and peg him down near the birds; here's a peg, and the cord is on him.' Whilst giving these directions, I unhook the swivel from the jesses of the old tiercel, take off the hood, and, as I raise my hand to hold the bird aloft, he starts from it. In a moment he recognises the dog, and knows well what that statue-like position means: nay, perhaps, he can detect the very movement of the jaw (as though the pointer were eating the scent), and see the saliva running from it. I, however, at 200 yards, can only see the dead staunch point. Walk up gently, my friends; let the hawk get his pitch. Pray do not hurry him; the grouse know what kind of fellow has got above them, and won't rise till we make them. Well, that's high enough, at any rate, and now his head is turned in towards the birds and towards the moor—so, here goes. 'Hi, in! "Major," lad! into 'em, old boy!' And I set the example myself. Up get a brace of full-grown young birds, as the dog plunges forward. 'Hoo-ha-ha-ha!' The practised hawk answers the shout by flying forwards, rising (if anything) as he does so, and then, in one terrible stoop, passing downwards through the air almost with the speed and the hum of a rifle-ball. It was a glorious stoop, but there must have been a clever shift too, for though he appeared to brush by, he has not killed, and not badly wounded, the quarry. Bounding, at the distance of a few feet from the ground, which he almost seemed to touch, the good hawk rises again, not in rings, but in an oblique line, after the still flying grouse.

"Another stoop, from a pitch not so high as the last, at the same quarry again, which (evidently owing to its hurt) lags behind its neighbour; and down it goes, with a wing broken, and the skull nearly laid open (as we afterwards discovered) by that single blow. Look at Brown and Robinson! they 'Wo-whoop' like wild Indians, and dance on English stubble the dance of Africa—a polka worthy Makololo. Hasten, redoubted Jones, on thy mission, and leave these, thy brother chiefs, in their ridiculous ecstasy! Jones did well: he caught hold of the check-cord and stopped the young dog, who, though too well broke 'to run in' on the struggling birds, conducted himself in so excited a manner, at the distance of 15 paces from them, that a less experienced hawk than the 'Earl' might have been frightened from its quarry. All was right, however, when I got up. The old tiercel was fed from the head and neck of its victim, hooded and placed on the cadge. (He might have been 'fed up,' for we did not fly him again that day.)

"Take the falcon next; see what she will do—she has killed one bagged-grouse and three wild ones, since she was entered to them, and I know she is 'sharp-set.' Look, another dead point! off with the young falcon! She's well up now; flush the birds. 'Body of Bacchus!' said the enthusiastic but unclassical Jones, who, had he sworn at all, ought to have invoked Diana; 'Corpo di Bacco!' (as if the accusing angel did not understand Italian) repeated he, 'it's a hare!"

If a book like this will not restore the noble art of Falconry, nothing will.

Thesaurus capensis, Vol. 1, No. 2 (Van Voorst). We welcome most cordially a new number of this really excellent work. Twenty-five highly interesting plants, natives of the Cape colony, are again remarkably well represented by the faithful pencil of the accomplished author.

The Nature-printed British Seaweeds, Vol. II. (Bradbury & Evans). We can only repeat what we formerly said respecting this beautiful work (see p. 587). The present volume completes the series of red-seeded Seaweeds. To say that it is equal to the first is to say everything.

Knight's British Almanack for 1860 maintains its reputation as an annual of sterling value. The "Companion" is filled with topics of the day, skilfully handled, among which those of the Patent Office, our naval forces, the late war in Italy, will more especially attract attention. The abstracts of all important public Acts are not the least valuable subjects in the present volume.

On Wages, Trades Unions, and Strikes (Lockwood). This is a reprint of Mr. Adam Black's excellent lecture in Edinburgh. Employers should place it in the hands of their workmen, who, if they once read it, would see how entirely they are misled by such criminal advisers as Messrs. Potter & Co.

Trade Lists Received.—Wm. Barratt's (Wakefield) *Descriptive Catalogue of Selected Roses.* An extensive country list, with the old and bad or inferior sorts weeded out. Mr. B. undertakes to replace injured or misnamed plants if complaint is made *at once*; but we do not see how any one is to tell whether a Rose in its winter dress is misnamed or not.—James Meikle's (Folkstone) *Catalogue of Plants, Trees, Roses, Shrubs, &c.* There are many good useful things in this little list, but the orthography is quite alarming.—Wm. Chater's (Saffron Walden) *General Catalogue of Plants, Fruit Trees, Flowers, &c.* Another good country list. The Hollyhocks for which Mr. Chater is so deservedly celebrated are not included, but occupy a catalogue by themselves.—J. E. Nelson's (Lymington) *Wholesale Prices of Surplus Nursery Stock.* The vendor offers five millions of seedling Firs and Oaks and one million transplanted stuff, for cash, without discount to the trade.—W. R. Prince & Co.'s (Flushing near New York) *Descriptive Catalogue of Foreign and Native Grape Vines.* We have in this catalogue a list of 297 native American Grapes, exclusive of the worthless ones, and a description of the most important. Mr. Prince considers it hopeless to make wine profitably in the United States from the Eastern Vine; an opinion which California does not confirm. He is moreover persuaded that "an ample supply of pure American wine is the most sovereign preventive of intemperance." What can that mean? Is it that American wine is not intoxicating? or that it is not good enough to induce people to drink it? The statement is rather perplexing.

Garden Memoranda.

Mr. Turner's, Royal Nursery, Slough.—Conspicuous in the foreground of this nursery has been a magnificent plant of Pampas Grass, which until very lately has been ornamented with no fewer than 149 flower spikes, the silvery plumes of each of which measured from 18 inches to 2 feet in length. The plant itself is growing in a tolerably deep rich soil on gravel, and must certainly be admitted to be one of the finest of the kind on record. Associated with it was a considerable plantation of Wellingtonia gigantea, the appearance of every plant in which indicated the most robust health. These were not in pots plunged in the ground but planted out, and their roots had spread and taken such firm hold of the soil that the violent gales to which they have been subjected this autumn have had no effect on them. From the sharp frosts which they experienced in October last they have also sustained no injury, while the young growths of Cryptomerias, even rather more sheltered than the Wellingtonias, have been killed back to the previous year's wood. If any doubts therefore have existed as to the hardiness of this noble tree they may now be dismissed, as the frosts in question exercised their influence in most places rather severely, even on plants previously considered hardy. Near the entrance to this nursery Mr. Turner is forming a little Pinetum, in which examples of some of the rarer and more valuable kinds of Conifers have been planted. These will be permitted to form specimens from which customers may derive some knowledge of the kind of appearance each particular variety may be expected to present when fully grown.

To the glass houses considerable additions have been made since our last visit; all as usual are crowded with the different kinds of florist flowers. Long pits are filled with Auriculas, to which of late increased interest seems to be attached. Being now in their winter quarters they are disturbed as little as possible. Just sufficient water is given them to keep them alive, and no more; care is, however, taken to have them free from dead leaves and green fly, and on all favourable occasions they are allowed to have plenty of air. Carnations, of which the number cultivated here is immense, are wintered in a somewhat similar manner, and in larger houses are Pelargoniums destined next year to play an important part at our great metropolitan and other exhibitions. For these a moderately dry heat just sufficient to exclude frost is at present considered enough, except for Fancy varieties, which succeed best in the warmth of an intermediate house. What watering they receive is now done in the morning so as to allow the house to become dry by mid-day. The house in which those intended for specimens are growing being large, the plants are placed thinly on the stages so as to allow each plant to have as much light as possible. The shoots are tied out as they require it, and no pains are spared to keep the plants as clean and healthy as possible. They are dwarf and bushy, with sufficient strength to make a vigorous start when required to do so.

To Pelargoniums of all classes some important additions have been made during the last year or two. Festus, shown by Mr. Turner at Regent's Park in May last, has attracted considerable attention. The following are also acquisitions, viz., Candidate, a kind in the

way of Wonderful, but with rather more orange in it; Lord Clyde, as fiery and bold as that great hero himself, and certainly one of the brightest scarlet Pelargoniums we possess; as such it has been awarded first prizes both at Regent's Park and the Crystal Palace. Its top petals are blotched with black, round which is a well defined margin of brilliant crimson, and the eye being white sets off the flower to increased advantage. To spotted kinds a good addition has been made in King of Purples, which also has a white eye, and a variety called Beadsman is said to be an improvement on that now nearly universally grown and deservedly favourite kind Sanspareil. In colour it is a soft pale pink, spotted with dark maroon. As the best yearling it was awarded a prize by the Royal Botanic Society last year, and this season it has fully sustained the favourable opinion then formed of it. Other spotted kinds—a class now getting greatly into fashion—consist of Bracelet, a large fine flower; Favourite, a medium-sized kind, of good shape and substance; Mammoth, Rifleman, and Sweep. Of these Mammoth is especially remarkable for its size, being one of the largest Pelargoniums at present in existence. Among Fancy kinds the best are Musjid, Omega, and Sarah Turner. Of these the last is perhaps the best. In colour it is purplish crimson with a clear white eye and narrow margin of white. It is a very promising variety and has received prizes at several exhibitions this season.

To Cinerarias some useful additions have likewise been made, and we also noticed some fine plants growing on for specimens. These are already shifted into their blooming pots. Care is taken to keep the foliage as dry as possible, in order to prevent damping or mildew, and with a view the better to effect that object the plants are always watered at this season as early in the morning as is convenient. Air is also liberally given them on all favourable opportunities, but never when it is frosty, as cold currents then are almost sure to cause the foliage to curl. All superfluous leaves and shoots are removed, and those that remain are pegged out in such a manner as to expose as much of their surface as possible to the influence of light, which prevents them from becoming drawn. Mildew if it appears is kept in check by means of flowers of sulphur. There are also two houses of specimen Azaleas, in the finest health and form.

Out of doors the grounds have been greatly enlarged and contain an excellent collection of general nursery stock.

Miscellaneous.

Sale of Mr. Fortune's Plants.—As was announced last week at p. 948, these were brought to the hammer by Mr. Stevens on Wednesday and Thursday last. The following are the prices which they realised:—One large imported plant of Abies Kæmpferi fetched 6*l.* 10*s.*; other lots consisting of 10 plants each from 1*l.* 14*s.* to 2*l.* per lot; lots consisting of 1 Pinus Bungeana, 2 Abies Kæmpferi, 1 Torreya grandis, and 2 Abies Jezoensis, from 1*l.* 2*s.* to 2*l.* 10*s.* per lot; Torreya grandis, one large plant and one small one, 6*l.* 5*s.*; a new Juniper with glaucous foliage from the north of China, said to be hardy, from 1*l.* 1*s.* to 1*l.* 3*s.* per lot of five plants; six plants of Quercus bambusifolia, a hardy new evergreen Oak from the North of China, 7*l.*; other lots of the same kind from 5*l.* 10*s.* to 6*l.*; an undescribed species of Chesnut from the North of China stated to be hardy, five plants the entire stock, 7*l.* 15*s.*; a beautiful new Chesnut with fine foliage from the North of China, 11 plants the entire stock, 6*l.* 10*s.*; an undescribed Ailantus with handsome large leaves, two plants the entire stock, 5*l.* 10*s.*; Syringa oblata, a new purple Lilac with large foliage from the North of China, said to be hardy, 11 plants the entire stock, 7*l.* 10*s.*; Camellia Princess Frederick William, one fine large imported plant with about 50 bloom-buds on it, 10*l.*; lots of five plants each of the same, from 2*l.* 2*s.* to 4*l.* 4*s.* per lot; Camellia Cup of Beauty, one fine large imported plant, 6*l.* 10*s.*; lots of five plants of the same variety Camellia, from 4*l.* to 5*l.* per lot; Camellia-flowered Peach, in lots of five plants each, from 1*l.*, to 2*l.* 2*s.* per lot; similar lots of Carnation-flowered Peach from 1*l.* to 3*l.* 3*s.* per lot; Rose-flowered ditto, in lots of five strong blooming plants, each from 1*l.* to 3*l.* per lot; Prunus triloba, each lot consisting of five strong flowering plants from 1*l.* to 2*l.* 15*s.* per lot; Ilex ternago, 30 plants, 2*l.* 17*s.* 6*d.*; ditto, 3*l.*; I. cornuta, 20 plants, 1*l.* 1*s.*; Farfugium grande, in lots of 10 plants each, from 9*s.* to 13*s.* per lot; a hardy Rubus from the North of China, eight plants the entire stock, 1*l.* 1*s.*; Cephalotaxus Fortuni, in lots, each consisting of 20 plants, 1*l.* 1*s.* per lot; Aralia papyrifera four plants, Rhamnus utilis (green dye plant) four plants, and Ligustrum sinense, two plants, 1*l.* 13*s.*; Limonia trifoliata, 10 plants, 5*s.*; two Cbusan Palms and two Abies Kæmpferi, 1*l.* 3*s.* Other lots, of which there were in all 475, fetched somewhat lower prices than those just quoted. The total produce of the sale amounted to upwards of 650*l.*

Horsfield's Herbarium.—This collection of dried plants sold the other day at Stevens's, was, we understand, bought by Sir W. Hooker for the Herbarium at Kew. It was described in the Catalogue as the valuable and extensive private Herbarium of the plants of Java, of the late Dr. Horsfield, all named and contained in 62 brown paper parcels, in fine preservation.

Calendar of Operations.

(*For the ensuing week.*)

PLANT DEPARTMENT.

CONSERVATORY, &c.—Forcing-houses and pits will very soon require to be kept in full activity to supply the constant demand that will be made on them for plants in bloom. Care must, however, be taken before plants are removed to sitting-rooms to gradually harden them for a day or two, either by placing them in the conservatory or intermediate house. In addition to keeping the conservatory gay with blooming plants, let the arrangement of the house be occasionally changed, by grouping the plants somewhat differently, and adding a few striking ones, as some of the hardiest Palms, &c., for effect. Pay attention to the plants intended for successive blooming. Azaleas, Rhododendrons, Eranthemums, Justicias, Luculias, Cape Jasmines, Euphorbias, Epiphyllums, &c., for forcing should be in readiness when wanted. Narcissi, Hyacinths, &c., should be protected by a frame; when they begin to grow remove the plunging material down to the surface of the pots to prevent them rooting upwards. Mignonette and Neapolitan Violets will require abundance of light and air to keep them from damping. As a change from the present to severe weather may come on suddenly, be provided with ample means for covering pits, frames, &c., should it occur. As with the exception of forced plants most other things are now in an inactive state, the temperature of plant houses should fall to its minimum point consistent with the safety of their various inmates. Nothing can well be worse for the development of a healthy vigorous habit in plants than subjecting them to a high temperature at the present season of the year when light, so important to the healthy action of vegetable life, cannot accompany it. Where Achimenes and Gloxinias are required to bloom early a few pots may soon be started by plunging them in a little bottom-heat.

FORCING DEPARTMENT.

EARLY VINERY.—As soon as the bunches can be discerned on the young shoots the extra buds should be removed, excepting such as may be required for producing bearing wood next season. In leaving these latter select such as are formed nearest the main stem to avoid the awkward appearance of long spurs at a stage further in their growth. Such shoots as have more than one bunch should have them reduced to that number, selecting the one likeliest to form the handsomest bunch. Tying in the young wood should be managed carefully, bringing the shoots to their proper position by degrees, to avoid the danger of their breaking. After the buds are started a few inches the syringe may be gradually withheld; as too much humidity at this season will sometimes injure both foliage and bunches, and a sufficient degree of moisture can easily be kept by sprinkling the floors and heating apparatus several times daily. Regulate the admission of air so as to have a gentle current at all times through the house; increase, of course, by day agreeably with the state of the weather. Gradually advance the night temperature to 60° and then to 65° by the time the flowers are ready to open, keeping the thermometer from 10° to 15° higher by day according to the amount of light you can command. Keep up the heat in the outside border by additions when necessary, bearing in mind the injurious effects any sudden check to roots in action will produce on the coming crop. Bring succession Vineries into work as wanted. Late Vineries in which Grapes are still hanging will require fires daily and air sufficient to keep the house and fruit dry; remove decaying berries and dead leaves, and well protect the roots from frost. For a late Grape the Barbarossa is found to possess valuable properties. PEACH HOUSES.—Peaches and Nectarines which have been forced for several years oftentimes produce a large excess of fruit buds, and this more especially on weakly trees; a natural consequence of allowing these to remain are weak flowers and inferior fruit and wood. When therefore such is the case the trees will be greatly benefited by well thinning the bloom buds, leaving the largest and those most favourably placed; of course a considerable number will be still left to allow for casualties. Syringe twice or oftener daily till the bloom is ready to expand, when it must be discontinued. The night temperature may advance to 45°, with an increase by day accompanied with a proportionate admission of air. FIG HOUSE.—Damp the trees over frequently, and if wanted early increase the heat a degree or two weekly. PINERY.—Pines are often deficient in flavour at this season; this is improved by exposing the ripening fruit to all the light you can command, and giving but little water. A good supply of air is likewise essential at all times for high-flavoured fruit, and more than ever necessary at this time. Continue an increase of heat to Pines now wanted to start, employing it principally by day. Attend to linings for Pines grown in dung-pits and keep the atmosphere in which they grow dry. Strawberries in bottom-heat for forcing will require air daily to prevent drawing in those earliest started; when they show the truss of flower they should be removed to shelves in the Vineries and Peach-houses to bloom, but the principal crop should be advancing slowly as yet.

FLOWER GARDEN AND SHRUBBERIES.

Except in the driest localities nothing more can be done in this department than paying attention to order and neatness. The bedding stuff, however, must have attention, for in all likelihood many things are suffering from damp, and such plants as appear to suffer most should be removed to other quarters where a drier temperature is kept. Keep the stock in pits and frames well ventilated and the surface soil of the pots frequently stirred. Dust with sulphur Verbenas and similar plants attacked with mildew. Be particular in keeping the interior of pits containing plants of the above description as dry as circumstances will permit.

HARDY FRUIT AND KITCHEN GARDEN.

Figs against walls will require some protecting material placed over them, more especially in the midland and northern counties. Some wall trees, as Pears, Plums, Cherries, &c., are often attacked by a species of scale insect, in which case the infected trees should be well washed with a mixture of soft soap, tobacco water, and lime; half a pint of spirits of turpentine may be added to each 4 gallons of the mixture when they are much infested. The lime is added to give consistence to the mixture, and to show that no parts of the trees are missed in dressing. Let this be applied during dry weather if possible, that it may remain on for some time, and before the trees are nailed.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.
For the Week ending Dec. 1, 1859, as observed at the Horticultural Gardens.

Nov. and Dec.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Temperature of the Air. Min.	Temperature of the Air. Mean	Temperature of the Earth. 1 foot deep.	Temperature of the Earth. 2 feet deep.	Wind.	Rain.
Friday 25	1	29.920	29.884	45	35	40.5	47	45½	E.	.00
Satur. 26	2	29.823	29.360	54	38	46.0	46	45½	S.	.26
Sunday 27	3	29.963	29.844	50	35	42.5	47	46	N.W.	.62
Mon. 28	4	29.853	29.806	47	29	38.0	47	46½	N.W.	.00
Tues. 29	5	29.820	29.486	48	33	40.5	46	46½	N.E.	.56
Wed. 30	6	29.516	29.471	42	29	35.5	45½	46	N.	.02
Thurs. 1	7	29.832	29.618	42	32	37.0	45	46	N.	.02
Average		29.818	29.667	46.8	33.1	40.0	46.2	46.0		1.48

Nov. 25—Overcast throughout.
— 26—Foggy; overcast; rain at night.
— 27—Clear; cloudy; densely overcast; heavy and constant rain at night.
— 28—Hazy; fine but cold; clear with slight frost.
— 29—Fine; partially overcast; snow and rain at night.
— 30—Cold rain; fine; clear at night; slight frost.
Dec. 1—Cloudy and cold; slight showers; cloudy.
Mean temperature of the week, 1 1-10th deg. below the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 33 years, for the ensuing Week, ending Dec. 10, 1859.

December.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 4..	47.1	33.1	40.1	14	0.39 in.	5	2	1	2	4	13	5	1
Mon. 5..	47.9	34.8	41.3	19	0.25	—	1	2	1	3	12	9	5
Tues. 6..	47.0	35.7	41.4	18	0.30	1	2	1	1	5	13	7	3
Wed. 7..	47.3	36.2	41.7	18	0.52	4	2	2	3	6	6	5	4
Thurs. 8..	46.0	33.8	39.9	19	0.36	2	5	2	1	3	10	8	2
Friday 9..	45.9	36.1	41.0	15	0.31	2	7	3	1	3	11	5	1
Satur. 10..	46.1	34.0	40.0	11	0.33	2	4	3	1	8	8	4	3

The highest temperature during the above period occurred on the 7th, 1856, and 10th, 1848—therm. 60 deg.; and the lowest on the 5th and 6th, 1844—therm. 14 deg.

Notices to Correspondents.

BOOKS: *C B M.* Lindley's Theory and Practice of Horticulture, and Loudon's Self-instruction for Young Gardeners, will be the books best suited to your object.—*W Mitten.* There is no better book on Larch planting than Brown's Forester.

CLIMBERS: *A T.* Clematis azurea grandiflora, blue; Dolichos lignosus, pink; Hardenbergia macrophylla, blue; Kennedya Marryattæ, scarlet; and Mandevilla suaveolens, white, may possibly answer your purpose. To these may be added Roses, Fuchsias, and other plants that look well on pillars. Among Bignonias, radicans grandiflora is one of the showiest; Clianthus Dampieri and puniceus are both handsome; the flowers of the former each possess a large round black boss which serves to set them off to good advantage. Gardenia Fortuni succeeds best in the temperature of an intermediate house.‡

GOURDS AND CUCURBITACEÆ: *A T.* There is no special work on the above family, giving an account of their edible properties. Most of them are poisonous.

GREVILLEAS AND MANDEVILLA: *A T.* Some of the first and the second are hardy enough to live out in the South of England and Wales.

NAMES OF FRUITS: *J S.* Adams's Pearmain.—*J. M'Donald.* Your Grape is the sort called in some parts of the country the White Tokay.‖

NAMES OF PLANTS: We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have or could have undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*A H.* 10, Lomaria discolor; 11, appears to be Pteris tremula; 12, Hypolepis amaurorachis; 13, Hypolepis tenuifolia, glabrous var.; 14, Lomaria procera, var.; but they are, with the exception of No. 10, too immature in growth to be clearly determined.—*G K.* 1, Senecio Mikaniæ; 2, Gymnogramma tartarea; 3, not in fructification.

ORCHARD HOUSES: *A Constant Reader.* For so narrow a house 18 feet rafters are too long; 14 feet are long enough.—*N W.* If you do not wish to stock your house till you have gained some experience in the management of trees you had better fill the unoccupied end with ornamental plants, such as Camellias, Chrysanthemums, and any cheap, hardy greenhouse plants or tender annuals. Or you may bring forward Azaleas and Rhododendrons, and introduce a few hybrid Perpetual Roses. Anything in short which requires shelter but not heat. If you pot some Strawberries in the summer you may bring them forward the year after.

RHODODENDRONS: *E F.* Like other "Americans" these should have the beds forked over once a year. It may be done any time when there is no snow and the ground is tolerably dry, between the months of November and February.

SOUTH WALL: *M C.* If you do not glaze it you had better furnish it with a coping 9—12 inches wide, and fix moveable canvas sashes in front, reaching not nearer the ground than a foot, and not touching the coping by 6 inches. This will secure ventilation at all times, without the necessity of removing the sashes except in fine weather or during summer.

THE LILY OF THE NILE: *A Z.* The plant to which this name is sometimes given is Nelumbium speciosum.

VINES: *M C* Boxes 27 inches by 15, and 15 inches deep will not support Vines *permanently* and grow as good Grapes as a border. But with good management Vines will thrive in such boxes for some time.

ROYAL AGRICULTURAL BENEVOLENT COLLEGE FOR THE RELIEF OF DECAYED FARMERS, THEIR WIDOWS, AND ORPHANS.

The FIRST PUBLIC MEETING in connection with the above Institution will be held at St. James's Hall, 69, Regent Street, W.C., on THURSDAY, December 8, at 12 for 1 o'clock. The chair will be taken by Mr. Alderman MECHI. Admission free. The attendance of land-owners, farmers, and others visiting London for the Cattle Show is respectfully but earnestly solicited, in support of an Institution possessing so many claims to national sympathy.

Mr. MECHI is pleased to announce that his appeal for support in founding the above College has resulted in the enrolment of between 600 and 700 names as promoters, representing all degrees of title, position, occupation, and location. He ventures to solicit a further accession of subscribers in time for announcement at the meeting and publication with List of Donations and Amounts already promised.

Tiptree Hall, near Kelvedon, Essex.—Dec. 3.

WEST OF ENGLAND AND SOUTH WALES LAND DRAINAGE AND INCLOSURE COMPANY. Established in 1844.

INCORPORATED BY ACT OF PARLIAMENT IN 1848.

Draining, Inclosing, Irrigating, Warping, Road Making, and all kind of Land Improvements, executed on Entailed, Mortgaged, or other Properties, and the whole cost can be made a Permanent Charge on the Lands, or redeemable in a certain number of years. BIDWELL & BRODIE, Secretaries.

Offices: Exeter; and 30, Parliament Street, London, S.W.

LAND DRAINAGE.—WORKS OF DRAINAGE of any extent are EXECUTED by the GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY on all descriptions of property, whether freehold, entailed, mortgaged, trust, ecclesiastical, corporate, or collegiate.

Repayment may be made by the Landowner as successive portions of the works are completed; or the actual expenditure, with a commission thereon, may be charged on the property improved, by way of rentcharge on the estate created for various terms of years so as to adapt the rate per cent. of annual charge to the circumstances of the tenants.

No investigation of title being required, or notices given to Reversioners or Mortgagees, no legal expenses are incurred.

Works of Irrigation, Enclosing, Wood Grubbing, Road Making, and Farm Buildings are executed in a similar manner.

Landowners desirous to execute any of the Improvements by their own Agents, and charge the outlay and expenses on the Estate, may obtain Loans for the purpose.

Applications to be made to WILLIAM CLIFFORD, the Secretary, at the Offices of the Company, 52, Parliament Street, S.W.

THE LANDS IMPROVEMENT COMPANY.—Incorporated by Special Act of Parliament in 1853.—2, Old Palace Yard, Westminster, S.W. To Landowners, the Clergy, Estate Agents, Surveyors, &c., in England and Wales and in Scotland.

The Directors beg leave to announce that the Company's Amendment Bill, 1859, has received the sanction of the Legislature. The Company now advance money, unlimited in amount, for the following works of Agricultural Improvement, the whole outlay and expenses in all cases being liquidated by a rent charge for 25 years.

1. Drainage, Irrigation and Warping, Embanking, Inclosing, Clearing, Reclamation, Planting for any beneficial purpose, Engines or Machinery for Drainage or Irrigation.
2. Farm Roads, Tramways and Railroads for agricultural or farming purposes.
3. Jetties or Landing places on the sea coast or on the banks of navigable rivers or lakes.
4. The erection of Farm Houses, Labourers' Cottages, and other Buildings required for Farm purposes, and the improvement of and additions to Farm houses and other buildings for farm purposes.

Landowners assessed under the provisions of any Act of Parliament, Royal Charter, or Commission, in respect of any public or general works of drainage or other improvements, may borrow their proportionate share of the cost, and charge the same with the expenses on the lands improved.

No investigation of title is required, and the Company being of a strictly financial character do not interfere with the plans and execution of the Works, which are controlled only by the Government Enclosure Commissioners.

For further information, and for forms of application, apply to the Honourable WILLIAM NAPIER, Managing Director, 2, Old Palace Yard, Westminster, S.W.

THE AGRICULTURAL ENGINEERS' COMPANY (LIMITED).

Directors.

ANDREWES, CHAS. J., Esq., of the firm of Messrs. Barrett, Exall, & Andrewes, Agricultural Engineers, Reading.

BENTALL, E. H., Esq., Agricultural Engineer, Heybridge, near Maldon, Essex.

FOWLER, JOHN, Esq., Patentee of the Steam Plough, 28, Cornhill, London, E.C.

TURNER, E. R., Esq., of the firm of Messrs. E. R. & F. Turner, Agricultural Engineers, Ipswich.

WARNER, CHAS. B., Esq., of the firm of Messrs. John Warner & Sons, Bell and Brass Founders to her Majesty, and Hydraulic Engineers, 8, Crescent, Jewin Street, London, E.C.

Bankers—The Bank of England.

CENTRAL DEPOT AND SHOW ROOMS—Swan Lane, Upper Thames Street, London, E.C.

This Company has been for the purpose of supplying the public direct, with Agricultural Implements and Machinery of the most approved construction, at Manufacturers' fixed prices.

With an ample Capital and the best and most extensive premises in London at its disposal, the Company can offer to Shippers, Colonists, Agriculturists, Foreign Buyers, Amateur Farmers, Gardeners, &c., the following *exclusive* advantages:—

The opportunity of purchasing from the largest and best selected Stock in England.

The certainty of being supplied with none but the best made and most efficient Implements of their class.

Promptitude, regularity, and care in the execution of all orders intrusted to it.

Reliable information and advice as to the requirements of particular districts and foreign markets.

Particular attention is called to the fact that the direction is composed exclusively of well-known Makers, whose practical knowledge and standing will afford an invaluable guarantee to purchasers of the material, workmanship, and adaptability to its use of every article sold.

Shippers, Colonists, and Foreign Buyers will be relieved of all anxiety and trouble by intrusting the execution of their orders to the Company.

The Stock will be found to comprise the manufactures of the leading makers. Illustrated Catalogues with prices, in English, French, German, and other languages will shortly be ready for distribution. Meanwhile Price Lists and every information may be obtained post free upon application at the offices of the Company.

Orders addressed to the Agricultural Engineers' Company (Limited), Swan Lane, Upper Thames Street, London, E.C., will have prompt attention.

STAND No. 70 to 74.

SMITHFIELD SHOW.

WM. SKIRVING, OF WALTON NURSERY, AND QUEEN SQUARE, LIVERPOOL, begs to acquaint his Friends and the Public that he will attend, as usual, at the ensuing Show on December 6, 7, 8, and 9, to exhibit ROOTS of the improved varieties of TURNIPS, MANGEL WURZELS, CARROTS, &c., and to take Orders for the Seed of the same, as well as for all other kinds of AGRICULTURAL SEEDS.

SMITHFIELD CLUB CATTLE SHOW.

DIOSCOREA BATATAS, OR CHINESE YAM.—Fine specimens of this valuable root, fully 3 feet in length, will be seen on MESSRS. SUTTON'S STAND (Nos. 325 to 336) in the third avenue of the Implement Gallery, Baker Street Bazaar. Also of the CHINESE SUGAR CANE (Sorghum saccharatum), and many other useful and interesting agricultural Plants and Roots.

Royal Berkshire Seed Establishment, Reading.

CATTLE SHOW, BAKER STREET, BAZAAR.

SUTTON'S CHAMPION SWEDES, and new varieties of MANGEL WURZEL, KOHL RABI, and other Agricultural Roots will be exhibited at their STANDS, Nos. 325 to 336, Baker Street Bazaar, where Orders will be taken for Seed.

N.B. As the Stock of Seed is limited it is advisable that orders should be given early.

Royal Berkshire Seed Establishment, Reading.

NEW SORT OF PARSNIP.—A new PARSNIP of superior flavour has been raised by Professor Buckman of the Royal Agricultural College, Cirencester, being the result of ten years ennobling and cultivating the progeny of the wild Parsnip. Specimens of this interesting and useful esculent will be seen on MESSRS. SUTTON'S STAND (Nos. 325 to 336) in the third Avenue of the Implement Gallery, Baker Street Bazaar. Also many other useful and interesting Plants and Roots.

Royal Berkshire Seed Establishment, Reading, Berks.

CRYSTAL PALACE ROOT SHOW.

MESSRS. SUTTON AND SONS, SEED GROWERS, Reading, have a very extensive collection of AGRICULTURAL ROOTS at the Crystal Palace Show, having availed themselves of the liberal accommodation afforded by the company for the exposition of their numerous specimens to an extent which is impracticable at the Smithfield Club Cattle Show for want of space.

Messrs. SUTTON are also exhibiting at the Cattle Show as usual. STANDS Nos. 325 to 336 in the Third Avenue.

N.B. Both of these Shows will be open from TUESDAY till FRIDAY next, and the Crystal Palace on SATURDAY also. Admittance, 1s. each day.

CRYSTAL PALACE.—AGRICULTURAL ROOT AND PRODUCE SHOW.—The FIRST PRIZE SHOW of Agricultural Roots and other Produce at the Crystal Palace, and Great Exhibition of Agricultural Implements, will be held on TUESDAY, WEDNESDAY, THURSDAY, FRIDAY, and SATURDAY, December 6 to 10. Admission as usual; Saturday, Half-a-crown; other days, One Shilling; children under 12, Sixpence, including all the attractions of the Palace.

PRIZE CATTLE SHOW OF THE SMITHFIELD CLUB.

The Annual Exhibition of PRIZE CATTLE, SEEDS, ROOTS, IMPLEMENTS, &c., commences on TUESDAY MORNING and closes on FRIDAY EVENING, 6, 7, 8, and 9th December, —Baker Street Bazaar, King Street Entrance. Open from daylight till nine in the evening. Admittance 1s.

The Agricultural Gazette.

SATURDAY, DECEMBER 3, 1859.

MEETINGS FOR THE ENSUING WEEK.

MONDAY,	Dec.	5	Central Farmers' Club ..... 6 P.M. (Mr. Nesbitt on the Chemistry of Food.)
TUESDAY,	—	6	Show of the Smithfield Club at Baker Street Bazaar.
WEDNESDAY,	—	7	
THURSDAY,	—	8	
FRIDAY,	—	9	
WEDNESDAY,	—	7	Agri. Society of England .... Noon. Society of Arts ..... 8 P.M. (Mr. Morton on the Forces used in Agriculture.)

THOUGH so much has been written on the parasitic Fungi which affect corn, and they are familiarly known to every farmer, however ignorant he may be of their true nature, it is curious that general attention has been so little drawn to those which affect our Grass fields, though they are often quite as prevalent and do serious mischief. Amongst these may be reckoned the red rust or red ray identical with that so common on young Wheat, the true mildew, which keeps up the disease where it has once been established, though Wheat for a time should cease to be cultivated; the sheath-smut (Ustilago hypodites), which sometimes destroys every flower stem in a crop; the Grass mould (Erysiphe communis), which attacks the coarser Grasses where the crop is heavy and the weather damp; and finally, to omit several others less likely to attract notice, the Ergot or spurred grain, which converts the seed which it attacks into a black fungoid mass. All these occur in great quantities, but as their evil effects are not immediately apparent, they do not attract in general the notice of cultivators.

Our attention has however been lately called to the subject by the communication of a correspondent in Kent, which demands a serious consideration, and shows that a few words about it may not be unseasonable.

The Grass fields in the South of Kent in the months of August and September last were infected with red rust* to such a degree that the clothes of persons who walked in them were coloured with the orange-coloured dust, as in particular were the faces of the sheep that grazed there. This alone was sufficient to attract notice, but the matter became apparently of more importance when a considerable mortality, 13 per cent. or upwards, took place amongst the young picked ewe lambs which were placed in the pastures.

A great mortality, however, has taken place amongst lambs in various parts of England during the three last years, which has been attributed to various causes. It may be well then to inquire how far it is probable that the rust may have been the cause of evil in the particular case before us. Unfortunately but little is known as to the effects of these minute parasitic Fungi when eaten by animals. It is seldom indeed that they occur in such quantities as to render experiments easy. A few attempts, however, have been made to throw some light if possible on the subject, though little if anything has been ascertained as to the chemical composition of these productions as compared with that of Fungi known to be poisonous. A good quantitative analysis indeed is wanted respecting Fungi in general. The older analyses are very unsatisfactory, and we have met with nothing to fill up the gap.

IMHOFF made some experiments with a view to ascertain the effect of the black smut, which is so fatal to crops of Indian Corn,† attaining an enormous size, and polluting everything around with its multitudinous seeds or more correctly speaking spores. He took nearly a drachm mixed in water for 14 successive days without experiencing the slightest inconvenience. He applied also a quantity to the surface of an open wound, without altering its condition in the slightest degree, or producing or diminishing pain. CORDIER in turn tried on himself (but for two days only) the effect of the common smut, which is closely allied to the Indian Corn smut. A drachm the first day and three the second day were taken without producing any effect.

TESSIER reports that he has given large quantities of bunt to fowls without any bad consequences. Their excrement was however black from the spores, as if they had undergone no more change than the dust of Puffballs does when it passes through the intestines of certain insects, though it is certain that they derive some nutritive quality from it, as it constitutes apparently their only food. Bunt spores moreover are largely consumed occasionally by man either in the form of household bread or gingerbread, without producing any harm, and during the course of the investigations which took place concerning the origin of cholera, they were found not unfrequently in the evacuation, in a perfect state, as in the cases reported by TESSIER. The labourers indeed who thresh the corn affected with bunt are frequently quite black with the dust, which induces a little coughing or sneezing, probably from its mere mechanical effects, but besides this the eyes are irritated, and there is a feeling of oppression and loss of appetite while the work is in hand. There is however a peculiar smut produced upon the common Reed which is far more injurious. The persons who cut them suffer from headache, a swelling (apparently erysipelatous), accompanied by vesicles, of the head and face, and acute inflammation of the bowels. It has also peculiar effects on the generative organs in either sex. The irritation of the skin which arises from it is followed by the scaling of the surface, and yields to friction with oil, or such remedies as remove the spores entirely from the surface. These effects, which have been recorded by Dr. MICHEL in France, have been observed also in the neighbourhood of Ely, where Reeds are extensively cut for thatching and plastering.‡

Nothing is known about the effect of the red-seeded parasites, but as no bad effects have been experienced from the use of mildewed straw, we may conclude that in the red rust at least, which by many is regarded as a mere state of mildew, the principal result is the deterioration of the quality of the Grass rather than the communication of any noxious principle.

The question must however for the present remain undecided; but should the rust occur again in such quantities as during the present season, there can be no difficulty in obtaining a few drachms of the spores for experiment. We will ourselves bear the subject in mind, and embrace

* We suppose *Uredo rubigo vera*, but unfortunately no specimens were saved, therefore we cannot speak positively.

† It is not probable that Indian Corn can ever become in this country an extensive object of cultivation, but in Dorsetshire, where it has been tried on a large scale, the smut at once made its appearance, and it is sometimes so prevalent as to destroy a whole crop.

‡ These examples are taken from the article Uredinées in D'ORBIGNY'S Dictionary.

the first opportunity which may present itself of further investigation.

In conclusion we beg to call the attention of cultivators to one Fungus mentioned above, the Ergot, which is probably more detrimental to them than they are aware. It is sometimes so abundant that the cattle or sheep which graze in the fields can scarcely help taking it, in greater or less quantities, with their food. Now in man, as is well known, the frequent use of ergot in bread produces formidable gangrenous affections, and even in small quantities it has a specific action on the womb, which causes animals to slip their young. It is very possible then that many a grievance supposed to be constitutional may arise from this cause, and that many a young calf or lamb is lost from the mother swallowing the Ergot. If therefore the Bents in a field present black spur-like bodies instead of seeds to any great extent, we should counsel complete abstinence from such a pasture till either the Bents have been mowed, or the Ergot has fallen. At any rate, suffering pregnant animals to feed in such pastures is a practice attended with considerable danger. *M. J. B.*

We have frequently given our opinion of the various cattle foods of which the advertisements meet us in every newspaper, book, or pamphlet, and in every street of every town and village and at every station of every railway in the country. Already almanacks are retained for the purpose. The works of Byron, Shakespeare, Moore, and other poets will soon no doubt be enlisted in the honourable service, and we doubt not, if the wit of the originators were only equal to the credulity of the public, a new *Punch* would come out as the advocate of cattle food, and the sides of its numerous readers would be weekly shaken by the horse-laughs it would provoke.

Seriously, however, is there at the bottom of all this some grain of truth by which the bubble has been ballasted and prevented from exploding before. The grains of truth appear, then, to be the following:—Discarding the earlier professions that were sent out with these foods, viz., that there was an actual money saving in their use as it enabled the most inferior kind of food to be consumed—discarding, we say, these professions, which have been long since laughed out of court, and abandoned as altogether untenable—it is undoubtedly the fact that when horses get old their teeth often get out of order and become sharp and irregular at the edges so as to wound the gums; or perhaps a molar tooth gets broken off so that its antagonist becomes long and projecting, and in time prevents its neighbours from doing their duty. Whilst the old man under such circumstances can resort to the dentist, or to soup, or to the sausage machine, the old horse is expected to masticate as well as ever. Here then is a case for the cattle food; and the marvels it effects by supplying nourishment in the form of meal, doing that for the old horse that he could not do for himself, become a reason why hundreds of other horses should be so treated! Again, we have said that when a horse gets old his digestive organs frequently become weaker, and advantage is often derived from giving him tonics and cordials. Although the best tonics are bitter, hot, and disagreeable, such as Gentian, Ginger, Peruvian Bark, or preparations of iron or copper, yet fortunately for the compounders of cattle food there are others, though less potent, that are by no means disagreeable, such as Liquorice, Cascarilla Bark, Aniseed, carraways, and a few others. So that by giving meal thus sweetened and slightly flavoured with salt, the digestion of the old horse is stimulated and coaxed, and his condition improves. It is true that this effect can be produced as well by giving the animal his food properly ground or in the form of meal, and if need be assisting him occasionally with some tonics or cordials; but then there would be nothing wonderful in this, nothing *mysterious*, and John Bull, we know, is fond of the marvellous. It is true likewise that if it is beneficial for the old horse it is comparatively useless for the young and healthy; never mind—"what's sauce for the goose is sauce for the gander," and if the logic of this reply is not appreciated, we have a better in store. If its use were confined to old horses, how are the advertisements to be paid for?

There is a greenness about most of these foods which appears to be imparted by an article that has been imported within the last few years—the Carob Bean or sugar pod. This food contains very little flesh-making property, and that little not available in the ordinary state, as it resides in the small Bean, the seed, which is so hard that it escapes mastication. If, however, the whole is ground up together, its properties are rendered available, and the sugar which is contained in the mucilage which fills the pod imparts an agreeable flavour to the cattle food. There can of course be no difficulty in getting good meal so long as we can buy at less than 10*l.* and sell at 50*l.* per ton; and thus, whether we use Linseed-meal, Bean-meal, or Barley or Oatmeal, or Maize-meal, or the whole combined and sweetened with the sugar-pod and flavoured with agreeable aromatics and stimulants, there is no great difficulty in compounding the high-priced article.

But how about the cost? It may be urged that this is no business of ours—that if farmers are willing to buy we should not interfere. This however is an agricultural journal, and Profit and Loss are the very Alpha and Omega of farming. No matter how good a thing may be, if it costs more to get than it is worth it is valueless. Sewage manure may be a capital thing, but whilst it costs a guinea to get back a sovereign, to the sewers and the sea it must go. And thus it is our duty to warn agriculturists of the folly of paying 50*l.* per ton for that which is worth about 10*l.* We willingly accede to the plea that might be urged as to the large set-off against the retail price in the shape of enormous commission allowed to the retailers, who as long as they can get more profit out of a cwt. of cattle food than out of a ton of Linseed-cake, will do their utmost to force it down the throats of their customers. Then too there is a monstrous sum to be devoted to advertisements, placards, and sign-boards, and the large staff of *cheap Jacks*. It was held by a celebrated quack doctor that 1000*l.* well spent in advertising is sufficient to force anything not absolutely injurious into repute, and thus it has often happened that the harmless prescription of some eminent physician has enabled the charlatan to roll in his carriage. Purchasers, therefore, must not unreasonably suppose that it is all profit with the cattle food; but how much we leave them to calculate.

With regard to the effect on young and healthy fatting animals which are supplied with every kind of nutriment they can possibly digest, the idea of these cattle foods claiming the credit of the fattening because the feeder was foolish enough to employ them, seems too preposterous to be seriously entertained, and can only be likened to the fable of the fly on the wheel exclaiming "See what a dust *I* am kicking up." *W. C. S.*

The attention of our readers is particularly directed to the advertisement of a public meeting in behalf of the Royal Agricultural Benevolent College, which is to be held on Thursday, Dec. 8, at 1 p.m., in St. James's Hall, when Mr. Alderman Mechi will take the chair.

THE BIRMINGHAM POULTRY SHOW.

[From the *Times*.]

Of poultry there are 1342 entries, and of pigeons 214, or 1556 altogether, being within three pens of the number last year—a singular circumstance, considering the variableness of the exhibiting constituency, and the wide distances between localities represented. There no longer exists a poultry mania; but the taste for domestic fowls of the most perfect feather or the greatest weight, and other characteristics of excellence besides size and beauty, is in no wise diminished. Certain it is that while the egg—that most nutritive of albuminous meat, the invalid's joint, and the indispensable component in the cook's recipe—continues to be an article of such value in the provision-market; and while table fowl, roast duck, and goose, and turkey—that lordly dish, are in such popular demand, the cultivation of good breeds of poultry must always be of high national importance. We keep good horses, bulls, and rams for the advantage of our humbler neighbours' breeding; why not also benefit our rural peasantry by distributing among them chickens of the best breeds, replacing worthless by really valuable poultry, such as the Spanish or Dorkings, that would yield large profits in eggs to the poorest cottager? It is estimated that 500,000,000 eggs, worth about a million sterling, are annually exported from Ireland, and we import from France, chiefly from the Pas de Calais, also from Sardinia and Holland, a large proportion of the eggs which supply our metropolitan market. Probably we import as many as 700 millions of eggs every year. Good layers, then, are worth having, as well as good nurses and heavy weighers. The influence of the truer and more valuable sorts now superseding the coarse-legged and diminutive old-fashioned barn-door birds. At Bingley Hall we witness the poultry in all their best winter plumage; accurately classified; their points of excellence or demerit reduced to a system; the most minute points as to high condition, quality, beauty of plumage, purity of race, and uniformity in the markings, combs, and other characteristics, all determined by the highest authority. Hence, notwithstanding the vast number of exhibitions from all parts of the kingdom, every cage contains almost perfect birds. Still we find continual progress, exhibitors every year successfully following out the suggestions of the judges, and establishing higher criteria of excellence, transforming breeds, indeed, in a most remarkable manner, by dint of attentive cultivation and selection. Thus, the Spanish cocks formerly had drooping combs; the judges pronounced an upright comb the standard, and, accordingly, at the present exhibition not a drooping comb is to be found. In silver-splangled Hamburghs and Polands, clear tails were insisted on, and these are now the rule. Again, while the prescribed formula is for Aylesbury and Rouen ducks to be large, Buenos Ayres and East Indian ducks are to be small, and the result is that these are shown very little larger than widgeon—so extraordinary is the power of the skilful breeder to produce almost any characteristic or quality that may be desirable in greatest excess. The silvery-gray Dorking fowls, also, used to have separate classes in many exhibitions because of their small size; but this year they enter into general and equal competition with the darker birds. The greatest advance, however, is in the early maturity of the young birds shown, so that we have chickens of 1859 equal in size and weight to their parents. The developments of increase in weight brought out by this Show are really extraordinary. A few years ago, a Dorking hen of 7 lbs. was a large bird; this year there are 10-lb. hens. A Dorking cock was formerly marvellous at 9 lbs.; now the cocks weigh 11 lbs. each, and the average weight is 2½ lbs. per bird heavier than a few years since. A 12-lb. goose was once a marvel; at the present show three birds in one pen weigh 74 lbs., the gander by himself weighing no less than 30 lbs.—2 lbs. heavier than the celebrated white gander of the Rev. John Robinson a few years since. The average weight of the geese is 9 lbs. per bird, an improvement of fully 1 lb. upon a few years back. There is a pen of four Aylesbury ducks, weighing 32 lbs. Six-pound ducks are common, whereas 4 lbs. was the average weight formerly. Even Rouen ducks at this Show weigh 27 lbs. the four birds. And Christmas caterers will be glad to learn that turkeys of 17 lbs. and 18 lbs. each are quite common, while three turkeys in one pen weigh no less than 68 lbs. Such an advance in size alone, besides the improvement and aptitude to make flesh, must have added immensely to our capability of supplying the poultry-markets. To show that a legitimate trade in first-class fowls for breeding purposes is still carried on at high prices, apart from the mere fancy and factitious dealing created by the late poultry-keeping mania, take the last two years' sales in Bingley Hall. In 1857 were sold 201 pens for 800*l.* 14*s.*, an average of nearly 4*l.* per pen; a Dorking cock and three hens were sold for 31*l.* 10*s.*; a pen of Polish at 15 guineas, and several pens at 10 guineas each. Last year 206 pens were sold for 850*l.* 13*s.*, averaging 4*l.* 2*s.* 6*d.* per pen. Three pens of Cochins fetched 15 guineas each; a pen of turkeys, 15 guineas; a pen of geese, 15 guineas; and several pens 10 guineas each. So that the birds in the exhibition are probably worth as much as all the fat stock put together.

The largest number of entries we find in the Dorking classes—as many as 218 pens, with Captain Hornby and Mr. Wakefield as successful as usual. The single Dorking cocks are a marvellous fine class, and so indeed are all the single cocks exhibited. The Spanish fowls are very numerous and perfect, showing that a breed with special egg-laying properties is becoming duly valued. The Brahmapootras are also beautiful, testifying also to the attention which is being directed to fowls most profitable for their eggs,—articles of consumption that we might ourselves supply to our home market without being "dependent upon foreigners." The Cochin Chinas are recovering from the unmerited neglect of latter years, and, after having been run up to fantastic prices and then as extravagantly ridiculed, are now taking the position which their really valuable properties demand. In Hamburgh fowl classes it is to be observed that the golden are very superior to the silver feathered; and the spangled Hamburghs comprise many perfect birds. The old English game fowl shows well, as usual, the entries proving that in many counties he is still exclusively the favourite with a large class of poultry-keepers. No fowls are exhibited in such good plumage as the game, which is the case every year. The Malays are much improved. The Sebright bantams are beautiful, and what we say of game fowls is true also of the game bantams—purely fancy birds; the large number of entries, no less than 55 pens in this wonderfully fine class, show them to be the pugnacious little favourites of the public.

AGRICULTURE OF 1859.

ALTERATIONS PROPOSED AND IMPROVEMENTS MADE.

[The following paper was read to the Kingscote Farmers' Club at their last monthly meeting by their President, J. T. Harrison, Esq., of Frocester Court, Stonehouse, Gloucestershire.]

We are living in perhaps the most remarkable period of the world's history, when improvements which formerly occupied many years, ay, even centuries to accomplish, are now suggested, planned, and executed in the course of a few or even one year. When I look back and call to mind our childish surprise at seeing the "iron-horse," as it was called, travelling with its train of coal waggons within a quarter of a mile of my

birthplace, on the Hetton Railway, gaunt and grim, ungainly it would now be called, with its cylinders perched on the top of the boiler, and the long connecting rods attached to the wheels, and recollect that this was the great George Stephenson's first decided step towards enabling the people of the world to run to and fro as they do, drawn by those wonderful specimens of man's ingenuity and perseverance, the present locomotive railway engines,—when again I remember the careful toil and experimental anxiety that I day by day witnessed when Mr. Cook was laying down the first length of the electric telegraph between Paddington and Slough, just 20 years ago, and now see how thought is transmitted like lightning to the ends of the world by means of this invention, we may well say we live in an age of intellectual development, enterprise, and perseverance far surpassing the wildest imaginations of our most speculative forefathers.

The question then naturally presents itself—"What is the case with respect to agriculture?" In the midst of all this excitement and eagerness to overcome the obstacles presented by Nature to the intercourse and interchange of ideas among men, is agriculture alone standing still, or is it keeping pace with the times?

To say that it is, would be simply untrue: to say that it has done and is doing much towards it I am bold to assert. That there is in agriculture an opening for the employment of the surplus capital of the country such as may still cause us to open the eyes of astonishment at the results I firmly believe.

One of the first obstacles that must be removed is that presented by those who possess the land of our little island home. They must learn that as owners of the land they have duties to perform to their country as well as rights, and the first duty incumbent upon them is to remove every obstacle that presents itself to the improvement of the soil. But I shall be asked: Do landlords ever really present obstacles to improvement?—this is a serious charge. Knowingly, or unknowingly, and from long custom they do. Every acre of England that requires it should be drained, every part capable of cultivation should be employed, and every encouragement should be given to the occupiers of the land to improve it to the very utmost with the consciousness that their rights in such improvements will be respected. Then and not till then may we expect capital to flow freely towards the improvement of agriculture.

I believe that England calls for and that she requires for the maintenance of her national independence that this condition of things should be brought about. Consider the rate at which the population of England is increasing; it has doubled in the last half century. How is this enormous increase (and what but for emigration would it have been?) and the yearly addition to be maintained? Agriculture, no doubt, has done much to meet the increased demands, thanks to the enterprise of the British yeoman, to the discoveries of artificial manures and food, and to ingenuity of our implement makers, ay, and to the noble lead and encouragement given by many landlords. But is it not a fact that we are becoming as a nation more and more dependant upon foreign countries for some of the necessaries of life? This may be a necessary condition of things, but is it desirable? By no means. Remember the great Napoleon's observation that should England become dependent upon foreign countries for her food she might be conquered. Thank God, England's hope for protection in time of danger is founded on a more sure basis than that. But it is not the less necessary that England should take every precaution and raise herself above dependence upon her neighbours in case of necessity.

What then are the points we should aim at as agriculturists? I would suggest,—1st, to increase our productions; 2d, to take advantage of every appliance to diminish the cost of that production; and 3d, to use every means to economise that part of our crops which we consume on our farms. I shall endeavour to seize on a few of the alterations proposed and the improvements introduced under these three heads during the past year.

1. *To increase our productions.*—Under this head it is very difficult to bring any striking instances of improvement or alteration before you. Our journalists reiterate the recommendations to drain and plough deep, carefully preserve your manures, apply them freely, increase their value by using artificial food, and be not niggardly with artificial manure besides. For sandy lands the Lupin has been tried and found to yield a valuable addition to our sheep feeds. One subject deserves especial attention—the complaints which are becoming so general as to the failure of the Swede crop. This is particularly the case this year in the north of England. We find it is leading to a yearly more extensive growth of Mangel Wurzel, the advantages of which are the much larger quantity that can be grown, its excellent quality of keeping, with care, even till the ingathering of the succeeding crop. It is especially useful to the dairy farmer, as it is chiefly wanted by him in the spring, when it attains its best condition, and is excellent for increasing the milk of his cows. We cannot but gratefully welcome the enlarged employment of this root at a time when the uncertainty of the Swede would entail such serious evil. There is one point respecting the management of the Mangel which demands especial attention, namely its liability to injury from frost. This season will be long remembered by many who have experienced the effect of the unwonted frost in October, 1859. In future to be pretty certain of securing uninjured our Mangel crop we must store them by the middle of October. The cultivation of Mangel is forcing upon us a very desirable reform in one respect—if we wish to grow them successfully we must cultivate our land in the autumn. The old system of leaving our long stubbles with their once valued crop of Couch for the sheep to run over in the autumn, and for game cover, must be superseded, and immediately it is possible to set Bentall, Coleman, Woof, or the common plough with a broadshare to work, in they must go, giving the Couch no time to think about darting his roots in the soil, encouraging all the annual weed seeds to vegetate, following as rapidly as possible (after, I would recommend, burning all the remaining stubble and rubbish,) with the plough.

And here I must mention the excellent system recommended to us by our friend Mr. Burnett last winter, the satisfactory result of which we have seen in the magnificent crop of Mangels he has grown this season.

Mr. Coleman of the Agricultural College recommended a somewhat similar system, but I prefer Mr. Burnett's plan:—clean your field in autumn, spread your manure, bout it up, so let it lie all the winter; a few weeks before sowing cross harrow, thus destroying the young weeds, re-form the old bouts, and sow. Following these instructions you may be almost certain of a good seed bed. I should like to commence the operation by a thorough breaking up of the land with Smith's steam cultivator.

But how are we to manage this autumn cultivation? Under any circumstances it is a busy time. This may fairly introduce the second subject I proposed, viz:—

2. *Taking advantage of every appliance to diminish the cost of production.*—And here increased machinery and all-powerful steam present themselves as our obedient servants ready to do our behests. Ploughing by steam is no longer a matter of speculation; it is an established fact, and I am persuaded one that will rapidly cause a revolution in agriculture. It is established beyond all doubt that the steam plough can do the work equally well and at two-thirds the cost of horse-power, and further it can do that that cannot be accomplished by means of horses.

We cannot anticipate what will be the effect of the deeper ploughing and more thorough cultivation which the steam plough will produce, but I know that every year I have a crop of corn in a field of stiff clay which was drained 9 or 10 years ago. I have a much more luxuriant crop of Wheat about 2 feet wide over each drain than on the other parts of the field, which I must attribute as much to the thorough trenching the soil then underwent as to the drain that was put in below. And such trenching steam can and will accomplish. But besides doing the work more cheaply and effectively than by ordinary means, the greatest advantage to be derived from the application of machinery is the saving of time, the having the power of doing the thing when it is wanted to be done, and here it bears strikingly upon autumn cultivation. A steam engine that can plough 6 acres a day when you want it, and will not eat corn when the weather is unsuitable, so that you do not begrudge his remaining in the stable, must be a most invaluable part of the stock of a large arable farm, but I believe we are far as yet from fully appreciating the purposes to which the steam engine may be made available. We know that we can have an engine which shall take itself out of its stable and draw a good load after it, which on arriving at the field can scarify, plough, subsoil, drain, break up and cultivate our fields, which can take itself home again and when fixed in place shall thresh out our corn, and prepare it for market; bruise the Oats for our horses, grind meal for our cattle and pigs, cut chaff and litter for all our stock, crush (not our own I hope) bones, even carry our produce to market if required and at last blow off its waste steam among our chaff. There are very, very many farms where it cannot be a question as to the expediency of employing such a coadjutor. The proposed systems of steam culture may be arranged under three heads:—1. The portable engine, which is used as a stationary engine in the field working the ploughs or grubbers by means of wire ropes. Mr. Smith's made by Howard, and Mr. Fowler's are the best representations of this class; to Mr. Fowler has been adjudged the prize of 500*l.* offered by the Royal Agricultural Society. 2. The locomotive engine travelling on Boydell's Endless Railway is next, dragging after it either ploughs, cultivators, or circular grubbers. To this system there will always be the objection of treading the land, and the double dificulty of keeping the unwieldy horse as well as the implement in place. The 3d is Halkett's Guideway, which is admirable in conception and according to the published accounts works to perfection. The first cost of it however is very great and will form a formidable barrier to its extensive introduction. There are many ways, such as draining and providing accommodation for the labourers and stock of the farm, in which capital may be expended with greater benefit to the country.

Turning from the steam engine to the more simple machines, we have the mowing machine taking a prominent place among the new implements during the past year. Having used it myself, I speak with confidence as to its great utility and this not so much in lessening the expense of the operations, although that is important, as in the command it gives of the work. Haymaking is a tedious process; there is no more valuable precept in farming than making hay while the sun shines, in truth it is but then that you can make it, and then in reality it makes itself; and an implement that enables you to cut down 8 or 10 acres a day just when the weather suits is invaluable, to the Grass land farmer especially. The one I used was Wood's; its fault is not cutting close enough to the ground; this defect is remedied in that made by Burgess and Key, but I have no doubt it will be overcome in Wood's also, when it will be the more valuable implement, as it is a reaper as well as a mower, and does its work to perfection. I must mention the advantage I found in using it as forwarding autumn cultivation. By cutting the stubble close I was enabled to commence cultivating immediately, whereas after hand reaping the operation was delayed till we could mow the stubble and clear it away, and when I tried hand-mowing last year, although it obviated this difficulty, I found the operation very slovenly.

I will only add a few words on the subject of the objections raised by the labourers to the introduction of machinery. I have no hesitation in saying that the extension of machinery will in the end increase rather than diminish labour; it may have the very desirable effect of distributing the labour more evenly over the year, but that there is quite enough left undone, in a general way, on every farm which it would be well to do I have no doubt; besides we aim to grow heavier crops, and the labour required to prepare these whether for the market or stock will demand the spare time of all our hands. We should aim at keeping the same people at work all the year round as much as possible, and I believe that machinery, by easing the heavy pressure of harvest and other busy times, will enable us to accomplish more at the same cost and keep nearly the same staff of men employed constantly. The scarcity of hands for the harvest work this year has been very remarkable, partly owing no doubt to so much work requiring to be done at once, but partly from a real scareity. In some instances 30*s.* and 40*s.* per acre was given for reaping, but this again was probably in some measure owing to the laid condition of the crop.

3. The third point to which I would call your attention is *the necessity of our using every means to economise that part of our crops which we consume on our farms.* This subject is becoming year by year more interesting, and the attention of scientific and practical men is being so directed to it that it bids fair shortly to deserve the name of a science. Farmers have been accustomed for many years to use oilcake, bran, meal, &c., in addition to their hay, straw, and roots in fattening their stock, but the principles upon which the advantages gained are dependent are far from being understood. A good result from a certain system is established, and it is followed by many, and so far well, but the point to aim at is the best result; we want to know how to turn our straw, hay, and roots to the best advantage. The subject, although it may not appear so to us, is surrounded with difficulties, as admitted by Dr. Anderson in his highly interesting and scientific address to the Highland and Agricultural Society of Scotland.

I shall endeavour to bring clearly as I can under your notice the present position of the question. Our cattle during the summer months rove at large about our fields, using with discrimination those Grasses which their instinct tells them are best for them, and showing us very readily where our management is defective, by leaving the Grasses that are sour and unpalatable. During the winter our system of feeding necessarily becomes artificial, and we want to use our reason as the cows did their instinct, and make the proper selection of food for them. It is well known that could we consume the Grass, from which we make our hay, in its green state, it would yield a much larger return. It is also known that the more rapidly the Grass grows, and the younger in reason it is eaten the more good it does the stock, which probably arises from its being more easily digested and assimilated.

It is also determined that the early made hay is much more valuable than that made from Grass allowed to stand till the seeds are perfected, and the stems contain a large proportion of woody fibre. As when Ryegrass is allowed to ripen it is considered but little better than straw. The question then is, having a large portion of our winter provision in this dried state, can we by any means restore it to its originally digestible condition? Will steaming do it? Here doctors disagree. While some say that it merely makes musty food more palatable, and does little good besides, Mr. Horsfall says:—"My experience of the benefits of steaming is such that if I were deprived of it I should not continue to feed with satisfaction." Mr. Horsfall is no mean authority, but fairly deserves the title of the founder of scientific feeding. Others again think highly of the plan of mixing the pulped roots with chaff, allowing the mass to lie some hours, and then using the fermented food, supposing that the heat thus produced, so inexpensively, in a great measure, answers the same purpose as steaming. Both these systems call for further careful trial and exact comparison.

Mr. Horsfall, however, by no means depends upon steaming his food merely for success; he studies the demands made upon his cows, and by providing them with the food he finds they require, he succeeds both in summer and winter in maintaining an abundant supply of milk of superior quality, at the same time that his cows improve in condition and eventually fatten for the butcher. To show the result of his treatment he mentions an experiment he conducted in conjunction with two of his neighbours. One of them fed his cow on good hay; the other on somewhat inferior hay, ground

Oats, and Turnips, whilst he fed his on the mixture he recommends. At the end of the trial the first cow had lost weight, the second remained stationary, whilst his own had gained weight. Making allowance for this accordingly, and valuing the milk produced, the result was that whilst the cost of food was respectively 7*s.*, 9*s.* 2*d.*, and 8*s.* 7*d.* per week, the profit was 2*s.* 11*d.*, 4*s.* 3*d.*, and 10*s.* 10½*d.*

The extra expense he was at in cooking and attendance he considers was fully compensated by the improved quality of the milk.

The difference is certainly sufficiently decided to demand attention. Now mark this result is not obtained by any process of trial and error, but is the result of a close and scientific examination into the subject.

Mr. Horsfall does not confine his practice to dairying, he applies the same principles with success to fattening his stock. In the following remarks in his first paper to the Royal Agricultural Society in 1856, Mr. Horsfall appears to have fully foreseen the importance this subject would rapidly assume. "I think," he says, "that substances peculiarly rich in nitrogenous and other elements have a higher value for special than for general purposes; and that the employment of materials characterised by peculiar properties for the attainments of special objects has not yet attained the attention to which it is entitled."

Other inquirers have followed Mr. Horsfall; Messrs. Lawes and Gilbert have made some interesting experiments, and Dr. Anderson has introduced some of them to elucidate his views in his address to the Highland Society.

They examined the carcases of different animals in various stages of fatness, and found that whereas in animals in store condition the proportion of fat and flesh do not differ more than 2 to 1, the increase of fat during the process of fattening is 8 or 10 times as great as that of the flesh—thereby showing the much larger proportion of the fat than of the flesh-forming substances that are required to be assimilated by fatting animals.

They show however that animals can assimilate only 5 per cent. of the nitrogenous (flesh-forming) compounds contained in the food, whereas they can assimilate 10 per cent. or twice as much of the fatty matter, which in some measure accounts for the great value set upon those foods which contain a large per centage of nitrogenous compounds.

To introduce Dr. Anderson's views to you I will make one or two extracts from his address. He says:—

"The question reduces itself to determining how the crops commonly cultivated on the farm can be most advantageously used for feeding cattle, and whether they are best used alone or supplemented by food not forming part of the usual farm produce."

Again, "The advantage of these substances (artificial foods) seems to depend on the fact, that in many kinds of food the proportion of nitrogenous matters is too small to permit the full benefit to be derived from the saccharine constituents of the food; and their effect is not confined to adding a certain quantity to the nutriment consumed, but serves to render available substances existing in the ordinary food, and which under other circumstances would be lost."

And he illustrates his view by experiments on feeding some oxen which appear to prove his point.

Here then is a new step in the investigation, and if thoroughly established a most important one. Mr. Horsfall's position was to supply the animal with the substances he found it assimilated either in the shape of milk or meat in addition to what it required to maintain its animal heat, respiration, and its constant tendency to loss of muscle, &c.

Dr. Anderson goes a step further (which, however, Mr. Horsfall in the extract given before in some measure anticipated) and shows that by a judicious supply of artificial food not only does that food give a good account of itself in the improvement of the animal, but it besides increases the absolute value of the ordinary food by enabling the animal to more thoroughly assimilate it.

The facts mentioned above, as ascertained by Messrs. Lawes & Gilbert, that only 5 per cent. of the nitrogenous and 10 per cent. of the fatty compounds of ordinary food are assimilated, show that there is a wide margin for such a result, and that there is probably a great loss of nutritive matter in using simply the products of the farm by themselves.

Are then Thorley's and other cattle foods that are offered to us, nay, almost forced down our throats, the grand desiderata; do they possess this talismanic power of turning, as it were, dust into gold? There is no doubt that the (apparently at least) exorbitant price at which they are offered has raised a strong prejudice against them. In offering them at so high a price I think the makers are acting contrary to their own interest. By aiming at a smaller profit on a more extensive sale they would be much more likely to keep their secret to themselves and become popular. As it is they are stimulating the energies of many to discover their secret, and possibly in the process to produce a more valuable condiment than their own.

But is Thorley's food really valuable? We have Messrs. Lawes & Gilbert's analysis, which no doubt is right as far as it goes; but it is impossible almost to determine the ingredients of which it is composed. Most old shepherds can tell us the wonderful effects of Fœnugrec, which seems to be one of the ingredients. May there not be others equally efficacious?

Messrs. Lawes & Gilbert do not, however, found their condemnation merely on the analysis, which shows the food to be composed of a mixture whose market value is only one quarter of that charged for the food; but they have tried experiments on feeding pigs, the result of which, so far as it goes, is decisive against the food. But this trial alone does not carry conviction to my mind, pigs are always fattened on the best of food. Let the issue be fairly tried, in fattening cattle using the cattle food with hay and roots against oilcake and Bean meal of the like value with hay and roots, and let us know the result. Not having experience I cannot give an opinion, but I fear prejudice is too apt sometimes to warp the judgment, and I am free to believe there may prove to be more excellence in Thorley's cattle food when properly applied than it has at present credit given to it for.

I must mention a new and apparently very valuable introduction, viz,, the Cotton-cake which, when decorticated, seems to equal oilcake in value, whilst it is not nearly so costly.

In closing I must express my sense of my inability to comprise in the short compass of this paper the many subjects that its title would justify or call for. I have endeavoured to seize upon a few of what seemed the leading questions of the day, and which perhaps appear to stimulate to further inquiry and urge to investigation and experiment rather than to let us settle down on our leas, and comfort ourselves with the consideration that we have already attained to the highest point of agricultural science and practice. *Frocester Court.*

Home Correspondence.

Mangel Wurzel.— From a notice I saw in Morton's Almanack I am induced to offer a few remarks on a crop of Mangels just harvested here. Mr. Morton says: "Take the following again as an actual experience in the growth of this crop on the clay soils of Hampshire. This year an acre of Mangel Wurzel has produced 55 tons of evenly-sized roots after topping and cleaning." I now offer my experience of this year, off a field in 20 acres of a marsh soil in Essex; the seed was sown on the 11th and 12th of April on the flat with the common Suffolk-drill 28 inches between the rows. Before sowing I had the entire surface of the field reduced to the finest mould which I could obtain by the use of the harrow and clod-crusher, completing the operation by a one-horse roller following the drill, which sufficed to cover the seed. I used 6 lbs. of seed to the acre, and in due time had a uniform plant, which on the 29th May I commenced to thin out with hoes made for the purpose, 14 inches long, and with which an expert workman accomplished 1½ acre per day, leaving the plants about 15 inches in the rows; in most cases more than one plant was left, but to make the operation of thinning complete I had a boy to follow the hoe removing all plants except one. Three times horse-hoeing and one hand-hoeing completed the summer cultivation of the best crop of Mangels I ever saw. A specimen of the roots can be seen on the Messrs. Lawson's stand at the Smithfield Show. Anxious to ascertain as near as possible the weight per acre, along with a friend I selected a spot which appeared to offer a fair average of the produce of the field; we weighed half a ton, and measured the ground, which indicated a produce of 64 tons per acre. In connection with a soil admirably constituted for the growth of Mangel, I may be permitted to add what in my opinion tended much to favour the result, namely, early sowing and the consolidation of the seed-bed. From beginning to end their growth was uninterrupted, and on the 23d of last month, when the frost injured much of the Mangel in the country, these were completely shielded from harm by their own leaves; up to the time of the frost the bulbs were scarcely discernible under the foliage. I well remember reading in the *Gardeners' Chronicle* of the 30th April the following extract from your Fen Reporter: "Mangel sowing has already commenced, but most of our farmers have found it advantageous to sow this crop later than they did some few years since, and many decline sowing until May is in." At the time I read this I thought it a grand mistake, but I now feel convinced if I had been torturing the land about in the first week in May, the only advantages I would have gained would have been much less labour in storing, and far less anxiety respecting the state of the weather while the operation was going on. To be successful in obtaining a heavy crop of Mangel, deep and autumn cultivation, plenty of seed (8 lbs. per acre), early sowing (first week in April). Until those points are more attended to the Mangel crop will not arrive at that stage of extension and usefulness of which it is susceptible. *P. Mitchell, Rainham, Nov.* 21.

Substitute for Clover.—On reading your report of the late discussion at the London Farmers' Club, upon substitute for Clover, was much surprised that no one said a word about Cinquefoil, than which there cannot be a better substitute for Clover. Indeed I think it is much better for several reasons. It is an excellent preparation for Wheat, will grow more, feed, and come in earlier, fattens lambs better than anything, and never scours them as Clover often does, and never hoves sheep, let them be put on when they will. *T. Baker, Barton, Cambridge.*

Michaelmas Corn Averages.—At this season of the year it may not be uninteresting to your agricultural readers to take a review of the progress of prices in Wheat, Barley, and Oats during the 52 weeks ending on the 24th day of September, 1859. The averages for that period, it will be seen by the annexed table, are as follows, viz.:—

Wheat	43*s.* 6*d.*	per Imperial quarter.
Barley	33*s.* 5*d.*	ditto.
Oats	23*s.* 8*d.*	ditto.

It may also be of use to examine the fluctuations that have occurred in the price of Wheat in each year ending at this period, from the passing of Sir Robert Peel's Corn Bill, on June 26, 1846. For this purpose I have prepared a table exhibiting the highest and lowest prices in each year, with the difference. *Charles M. Willich, Actuary, University Life Assurance Society, 25, Suffolk Street, Pall Mall, S.W., Nov.* 11.

Annual Average Price of Wheat, per Imperial Quarter, in England and Wales, from Michaelmas, 1845, to Michaelmas, 1859, together with the Highest and Lowest Weekly Average Price in each of the respective years ending Michaelmas Day.

Average price for the year ending Michaelmas		Highest price for the Week ending		Lowest Price for the Week ending		Difference.	
	s. *d.*		*s.* *d.*		*s.* *d.*	*s.*	*d.*
1846 ..	54 1	Nov. 1, 1845,	60 1	Aug. 14, 1846,	45 1	15	0
1847 ..	71 3	May 29, 1847,	102 5	Sep. 18, 1847,	49 6	52	11
1848 ..	51 3	Sept. 9, 1848,	56 10	June 17, 1848,	46 10	10	0
1849 ..	46 7	Nov. 18, 1848,	52 3	Sep. 22, 1849,	41 9	10	6
1850 ..	40 3	Aug. 10, 1850,	44 1	May 4, 1850,	36 11	7	2
1851 ..	39 5	July 12, 1851,	43 6	Sep. 27, 1851,	36 7	6	11
1852 ..	39 10	Sep. 4, 1852,	44 9	Oct. 11, 1851,	35 6	9	3
1853 ..	45 7	Oct. 1, 1853,	59 5	Oct. 16, 1852,	37 10	21	7
1854 ..	72 10	Jan. 28, 1854,	83 3	Sep. 16, 1854,	52 2	31	1
1855 ..	71 10	Aug. 4, 1855,	78 2	Oct. 7, 1854,	56 7	21	7
1856 ..	73 1	Dec. 1, 1855,	83 1	Sep. 27, 1856.	64 4	18	9
1857 ..	59 2	Oct. 25, 1856,	66 4	April 18, 1857	53 0	13	4
1858 ..	46 10	Oct. 9, 1857,	56 3	Sep. 3, 1858	42 6	13	9
1859 ..	43 6	May 27, 1859,	54 4	Jan. 7, 1859,	39 10	14	6

Weekly Average Prices of Wheat, Barley, and Oats in England and Wales for 52 Weeks, ending the 24th of September, 1859.

Per "London Gazette."		Wheat.		Barley.		Oats.	
		s. *d.*		*s.* *d.*		*s.*	*d.*
Oct. 8, 1858	..	43 2.906		36 6.741		24	10.182
— 15 —	..	42 8.551		35 10.441		23	7.642
— 22 —	..	42 4.470		35 9.129		22	9.604
— 29 —	..	42 4.178		35 3.277		22	10.322
Nov. 5 —	..	42 10.007		35 7.856		23	5.656
— 12 —	..	42 8.946		35 5.319		33	0.315
— 19 —	..	41 10.553		35 5.456		23	2.853
— 26 —	..	41 2.744		35 1.652		22	11.271
Dec. 3 —	..	41 2.975		35 4.467		22	9.844
— 10 —	..	41 5.055		35 4.450		22	8.208
— 17 —	..	41 0.000		35 1.296		22	10.727
— 24 —	..	41 2 346		33 11.648		21	10.646
— 31 —	..	40 0.323		32 10.594		21	9.007
Jan. 7, 1859	..	39 10.969		32 4.393		21	10.251
— 14 —	..	40 6.918		32 2.429		21	5.890
— 21 —	..	41 3.062		32 7.757		21	4.047
— 28 —	..	41 9.990		33 2.702		21	8.660
Feb. 4 —	..	41 7.617		33 5.753		21	10.238
— 11 —	..	40 10.728		33 9.295		21	9.826
— 18 —	..	40 11.125		33 6.614		22	4.075
— 25 —	..	40 10.187		34 0.383		23	1.165
March 4 —	..	40 5.757		33 11.828		22	8.549
— 11 —	..	40 5.409		34 0.186		23	0.180
— 18 —	..	40 3.566		34 4.856		23	3.290
— 25 —	..	40 1.487		34 4.008		23	9.445
April 1 —	..	40 0.197		34 2.042		23	4.076
— 8 —	..	40 8.341		33 10.051		23	4.056
— 15 —	..	41 0.492		34 3.038		23	4.838
— 22 —	..	41 2.760		33 6.471		23	7.248
— 29 —	..	41 4.026		32 8.118		22	7.527
May 6 —	..	42 6.654		32 8.709		23	4.313
— 13 —	..	44 10.372		32 5.872		24	2.118
— 20 —	..	52 5.220		32 10.383		25	4.691
— 27 —	..	54 4.674		33 7.651		26	3.616
June 3 —	..	53 6.873		33 6.174		25	9.469
— 10 —	..	53 5.301		33 8.852		26	1.700
— 17 —	..	51 5.059		31 8.198		25	11.537
— 24 —	..	49 11.958		31 5.635		24	11.916
July 1 —	..	48 3.236		31 1.939		24	9.571
— 8 —	..	46 4.485		30 9.372		25	10.475
— 15 —	..	46 9.456		31 10.362		25	6.539
— 22 —	..	46 6.288		29 11.422		25	3.985
— 29 —	..	44 11.555		30 7.028		25	11.891
Aug. 5 —	..	43 0.545		30 1.494		25	3.883
— 12 —	..	43 7.434		29 0.125		25	1.951
— 19 —	..	43 11.644		30 1.026		25	2.484
— 26 —	..	44 1.241		31 1.028		25	5.421
Sept. 2 —	..	44 5.548		32 11.565		25	5.708
— 9 —	..	44 0.129		34 8.985		24	5.313
— 16 —	..	42 9.579		33 9.008		23	0.317
— 23 —	..	41 11.093		35 3.525		21	7.048
— 30 —	..	41 10.261		35 5.481		21	7.787
	52)	2262 2.300		1737 4.084		1230	5.355
Average ..	..	43 6.044		33 4.924		23	7.949

The Injurious Effects of Early Frost on Mangel Wurzel.—I have not been an inattentive observer of what has been said and done in regard to the storing of the Mangel Wurzel crop; and from all I can see and hear my impression is that one of the best crops ever grown will turn out one of the least value, in consequence of the injury the roots have sustained by the severe frosts in October and November. I shall probably be told, "'Tis easy enough to reason after the event, but who could foresee a temperature of 17° so early as the 23d of October?" Foresee it we could not, but provide against it I contend we could and ought to have done. "How?" By early and timely storing. I mean by drawing and securing the roots as soon as the crop is ripe; or, if this is impracticable, by earthing up the rows with the plough, as recommended by you, Mr. Editor. I agree with you that a crop ought to be ripe before it is drawn and stored, or even if not perfectly ripe, that when carefully stored, the process of ripening is very much favoured thereby, just as Apples and Pears are always the better for chambering. But I do not agree with you that "it is satisfactory to know that large quantities of the frosted Mangel roots have been used for sheep and cattle," notwithstanding your assurance that "in no instance have we heard of scouring." I confess I should feel but little satisfaction in consuming a crop in November, the chief value of which is that it holds good till late in spring, or early in summer, and it is but a poor consolation to learn that this crop, which ought to have produced so large a weight of beef and mutton, has done no harm to the animals that consumed it. Why, the boys that swallowed the Belladonna last week in mis-

take for "liquorish," as they called it, could have said almost as much. It did not kill them. That was all they could say in its favour. To be serious: it seems to me hardly possible that a crop which has been subjected to a temperature of 23°, 22°, 20°, and even lower, as was the case this season, can have escaped injury, and very great injury, too, even though to the eye the roots appear sound and but little the worse for the discipline to which they have been subjected in the field. I have seen many waggon loads of such splendid roots—"a little touched perhaps, but not much the worse," so the farmers say, and believe; but what say the sugar manufacturers and distillers? Can you persuade them that a waggon-load of these frost-bitten roots (for frost-bitten they are, whatever may be said to the contrary) are equal in quality for their purpose to a similar weight of roots drawn from the field before the frost, however slight, can have affected them? What the per centage of loss of saccharine matter in such a case would be I am not competent to say; but I believe it is something considerable; and if so detrimental to the manufacturer, by parity of reasoning it cannot be otherwise to the cattle feeder. I am aware that by some I shall be considered an alarmist for thus dwelling on, and perhaps exaggerating an evil, which, if it exist at all, cannot now be helped: therefore to discuss it is useless. I do not recognise the soundness of this doctrine—it might and ought to have been prevented. For November read October, as the month for storing; or, as no set time will suit all seasons, say as soon as the crop is ripe. Now, after such a hot summer as the last, there can be no question as to the early maturity of this plant; and I contend it might just as well have been stored early in October, as in the middle of November—and where is the difficulty of this? If the crop is worth growing, it is surely worth taking care of, and to let it stand in the field a day longer than it is fit to draw is not to take care of it, but about as sensible a proceeding as that of the boy, who, in going on an errand into the next village, put 20*s.* worth of silver into a hollow tree to see whether they would be there when he came back! If anything is likely to interfere with the process of harvesting, by all means set the plough to work, and cover the bulbs as well as you can. That will be better than nothing; but the safest plan is to clear the land of the crop at once. In conclusion, I wish not to excite any unnecessary alarm as to what has been done or is doing with this very important crop: but I do wish that people would make use of their common sense, secure the crop when it is fit, and thus supersede the necessity of any alarm whatever on the subject. *Samuel Taylor, Glocester, Nov.* 28.

Societies.

THE BIRMINGHAM AND MIDLAND COUNTIES SHOW

Nov. 28.—Bingley Hall was inconveniently crowded with its visitors, more so than we have ever seen it on the day of the "private" show. The cattle are hardly so numerous as they were last year. The sheep are now a wonderfully fine department of the Birmingham meeting. The pigs constitute, as they always have in Bingley Hall, one of the most useful sections of the exhibition, including, as their classes do, breeding animals as well as fat. The roots, though not so fine as last year in individual instances, and even defective as in individual instances they are this year, are a most remarkable display. The different classes of poultry are filled perfectly as usual.

The Herefords stand first in the order of this west country gathering; they do not in our opinion come up to the standard of previous years; there are instances of animals whose only claim to a place rests on excessive fatness. Among the oxen, including 8 heavy animals, No. 1 is a very well-fed Hereford ox shown by the Marquis of Downshire, comparatively defective, however, in the thigh and hind quarters generally. No. 3 is an animal of great depth of frame and evenly covered with rather loose flesh, shown by Lord Hatherton. The first prize is won by the Earl of Aylesford's ox, under 4 years' old, and fed on oilcake, Linseed, Bean and Barley meal, and *Thorley's food!* The second prize goes to Mr. Aldworth, of Frilford, near Abingdon. Mr. Naylor's ox (Welshpool) is commended; he is excessively fat.

The next class of oxen includes the best animal in the yard. The 1st prize in its class, 10*l.*, an extra prize of 20*l.*, the President's prize of 25*l.*, and the Gold Medal, together with the Silver Medal as breeder, all go to its owner, Mr. Shirley, of Bawcott, Munslow, Shrewsbury, a gentleman who has never shown at Birmingham before, but who has here carried everything before him. The steer is only 2 years 6 months and 28 days old, and is an extraordinary specimen of early ripeness—very symmetrical, and thickly covered with first-rate flesh. There is not a very large show of Hereford cows, and only three heifers. In the first class the principal prize goes to Mr. Naylor, for a red and white cow, looking less like a Hereford than its neighbour, Lady Foley's cow, which wins the second prize, and which is a large-framed useful animal, whose place ought to have been in the herd, not in the stall.

The Short-horns are a very fine show, forming much better classes than the Herefords, even though the latter have the advantage of superiority of colour. Mr. Stratton's ox, exhibited we believe at the fat shows last year, reappears and carries off the leading prize. He is a massive, deep, and well-formed animal covered with thick flesh, soft skin, and abundant hair, and looking really less excessively fat notwithstanding an extra year's feeding than some in the Hereford classes which carry their load less evenly. The show of Short-horn cows is somewhat short, Colonel Towneley carrying off the leading prize, and Mr. Stratton the second; while among the splendid show of Short-horn heifers Colonel Towneley again takes the first place with a beautiful white heifer. "Beauty's Butterfly" is one of the finest cows ever seen, and is brought to the butcher at 3 years and 7 months old. There are nine Short-horn heifers exhibited, many of them certainly of much greater use for breeding than for feeding. Attempts may yet be made to breed from some of them, but certainly, if so, they are injured by this excessive fatness; and if they are destined for the butcher there is much more injury than good done by the prizes offered, which have led them there before their time.

The Devon classes are pretty well filled in the ox classes, but almost empty in the classes of cows. Messrs. Farquharson, Quartly, Heath, Armine, and Turner, His R. H. Prince Albert, Lords Howe and Leicester—all known names in connection with the breed—carry off the prizes.

The other classes of cattle are not well filled. Four Long-horn cattle, seven of Scotch breeds, and only two of Welsh animals, together with cross-bred cattle and a few extra classes make up the show. Many of the animals will no doubt re-appear at the show immediately following of the Smithfield Club.

The Sheep exhibited are a very excellent collection of Leicesters, Longwoolled, Southdown, and other short-woolled breeds, the principal divisions being the Southdown, Shropshire, and cross-bred sheep, which are every year rising in value and importance. The list of prize-holders will be found below.

The Pigs are as numerous as usual, and the classes of Berkshire and of the small white breed for breeding purposes were extremely well supplied.

The last named are beautifully clean looking symmetrical little animals; and the Berkshire longer and more generally useful. Sir F. L. H. Goodricke, Mr. Smith, of Henley-in-Arden; Mr. Wright, of Great Bow, near Birmingham; Mr. W. J. Sadler, of Bentham Calcutt, Crickdale; Mr. W. Hewer, of Sevenhampton; Mr. Morland, of Chilton, near Harwell, may be named as exhibitors of the best pens. The prize list is given below.

The following are the awards of the judges:—

FAT CATTLE.—HEREFORDS.

Class I. HEREFORD OXEN OR STEERS.—1st prize, 10*l.*, and Silver Medal to breeder, the Right Hon. the Earl of Aylesford, Packington Hall; 2d do., 5*l.*, Mr. William Aldworth, Frilford, near Abingdon.

Class II. HEREFORD STEERS.—1st prize, 10*l.*, with President's Prize of 25*l.*; extra prize of 20*l.* and Gold Medal, and Silver Medal as breeder, Mr. Richard Shirley, Bawcott, Munslow, Shrewsbury; 2d do., 5*l.*, Mr. Richard Hill, Golding Hall, Shropshire.

Class III. HEREFORD COWS.—1st prize of 10*l.*, and Silver Medal as breeder, Mr. John Naylor, Leighton Hall, Welshpool, Montgomeryshire; 2d do., 5*l.*, the Right Hon. Lady Emily Foley, Stoke Edith Park, Herefordshire.

Class IV. HEREFORD HEIFERS.—1st prize, 10*l.*, and Silver Medal as breeder, Mr. Thomas Roberts, Ivington Bury, near Leominster, Herefordshire; 2d do., 5*l.*, Mr. Richard Hill, Golding Hall, Shropshire.

SHORT-HORNS.

Class V. SHORT-HORN OXEN OR STEERS.—1st prize, 10*l.*, and Silver Medal as breeder, Mr. Richard Stratton, Broad Hinton, Swindon; 2d do., 5*l.*, Mr. William Hewer, Sevenhampton, Highworth, Wiltshire.

Class VI. SHORT-HORN STEERS.—1st prize 10*l.*, and Silver Medal as breeder, Mr. Lovel Cowley, Ashby St. Legers, Rugby; 2d do., 5*l.*, the Right Hon. Earl Spencer, Althorp, Northamptonshire.

Class VII. SHORT-HORN COWS.—1st prize, 10*l.*, and Silver Medal as breeder, Lieut.-Colonel Charles Towneley, Towneley, near Burnley, Lancashire; 2d do., 5*l.*, Mr. Richard Stratton, Broad Hinton, Swindon.

Class VIII. SHORT-HORN HEIFERS.—1st prize 10*l.*, extra prize of 20*l.*, Gold Medal, and Silver Medal as breeder, Lieut.-Colonel Charles Towneley; 2d do., 5*l.*, Mr. William Aldworth, Frilford, near Abingdon, Berkshire.

DEVONS.

Class IX. DEVON OXEN OR STEERS.—1st prize, 10*l.*, extra prize of 20*l.*, and Silver Medal to breeder, Mr. James John Farquharson, Langton House, Blandford, Dorsetshire; 2d do., 5*l.*, Mr. William Heath, Ludham Hall, Norwich.

Class X. DEVON STEERS.—1st prize, 10*l.*, and Silver Medal to the breeder, his Royal Highness the Prince Consort; 2d do., 5*l.*, Mr. John Overman, Burnham Sutton, Burnham Market, Norfolk.

Class XI. DEVON COWS.—1st prize, 10*l.*, and Siver Medal to breeder, Mr. William Heath, Ludham Hall, Norwich; 2d do., 5*l.*, Mr. George Turner, Barton, near Exeter.

LONG-HORNS.

Class XIII. LONG-HORN OXEN OR STEERS. — Prize, 5*l.*, and Silver Medal as breeder, Mr. W. T. Cox, Spondon Hall, near Derby.

Class XIV. LONG-HORN COWS OR HEIFERS.—1st prize, 10*l.*, and Silver Medal as breeder, Mr. W. T. Cox; 2d do., 5*l.*, Mr. R. H. Chapman, Upton, near Nuneaton.

OTHER PURE BREEDS AND CROSS-BRED ANIMALS.

Class XV. FAT OXEN OR STEERS.—1st prize, 10*l.*, and Silver Medal as Breeder, Mr. John Beasley, Chapel Brampton, Northamptonshire; 2d do., 5*l.*, Mr. Richard Hawkes, Hunscote, Charlecote, Warwickshire.

Class XVI. FAT COWS —1st prize, 10*l.*, and Silver Medal as breeder, Mr. Aaron Pike, Mitton, near Tewkesbury (Cross-bred); 2d do., 5*l.*, Mr. T. R. B. Cartwright, Ayuho, near Brackley (Polled Angus).

Class XVII. FAT HEIFERS.—No 1st prize awarded; 2d do., 5*l.*, Mr. John Faulkner, Bretby Farm, near Burton-upon-Trent (Short-horn cross).

SCOTCH BREEDS.

Class XVIII. SCOTCH OXEN OR STEERS.—1st prize, 10*l.*, and Silver Medal as breeder, Mr. William M'Combie, Tillifour, Aberdeen (Scotch polled Angus); 2d do., 5*l.*, his Grace the Duke of Beaufort, Badminton, Chippenham, Wiltshire (West Highland Scotch).

WELSH BREEDS.

Class XIX. WELSH OXEN OR STEERS.—1st prize, 10*l.*, and Silver Medal to breeder, Mr. Richard Doig, Sunny Cottage, Long Buckby, Northamptonshire; 2d do., 5*l.*, Mr. John Ewins Bennett, Bosworth Grange, Leicestershire, breeder unknown.

EXTRA CLASSES,

For Animals not qualified to compete in any of the preceding classes.

Class XX. OXEN OR STEERS.—Prize 5*l.*, and Silver Medal to breeder, Mr. Robert Swinnerton, Weddington, near Nuneaton (Short-horn).

Class XXI. COWS OR HEIFERS.—Prize 5*l.*, and Silver Medal as breeder, the Right Hon. Earl Howe, Gopsall Hall, near Atherstone (Durham).

SHEEP.

Class XXII. LEICESTERS.—Three fat Wethers, under 22 months old. 1st prize, 10*l.*, extra prize of 10*l.*, and Silver Medal as breeder, Mr. G. S. Foljambe, Osberton Hall, Worksop, Nottinghamshire: 2d do., 5*l.*, Mr. G. S. Foljambe.

Class XXIII. LONG-WOOLLED SHEEP, NOT BEING LEICESTERS. Three fat Wethers, under 22 months old. 1st prize, 10*l.*, and Silver Medal as breeder, Mr. Jonathan Davis, Webton Court, Herefordshire. (The judges complain of the unfairness of the way in which the sheep in this pen have been shorn.) 2d do., 5*l.*, Mr. William Hewer, Sevenhampton, Highworth, Wiltshire.

Class XXIV. SOUTH AND OTHER DOWN SHEEP.—Three fat Wethers, under 22 months old. 1st prize, 10*l.*, and Silver Medal as breeder, the Right Hon. the Earl of Leicester, Holkham Hall, Norfolk (South Down); 2d do., 5*l.*, Mr. G. S. Foljambe.

Class XXV. SOUTH AND OTHER DOWN SHEEP.—Three fat Wethers, exceeding 22 but under 34 months old. 1st prize, 10*l.*, extra prize of 10*l.*, and Silver Medal as breeder, Mr. John Overman, Norfolk (South Down); 2d do., 5*l.*, the Right Hon. Lord Walsingham, Merton Hall, Thetford, Norfolk (South Down).

Class XXVI. SHROPSHIRE SHEEP.—Three fat Wethers, 22 months old. 1st prize, 10*l.*, and Silver Medal as breeder, Mr. Edward Holland, M.P., Dumbleton Hall, near Evesham; 2d do., 5*l.*, Mr. James Hand, Ludlow.

Class XXVII. SHROPSHIRE SHEEP.—Three fat Wethers, exceeding 22 but under 34 months old. 1st prize, 10*l.*, and Silver Medal as breeder, Mr. Henry Smith, jun, Sutton Maddock, Shiffnal; 2d do., 5*l.*, Mr. Henry Smith, jun.

Class XXVIII. CROSS BRED SHEEP.—Three fat Wethers, 22 months old. 1st prize, 10*l.*, and Silver Medal as breeder, Mr. John Overman, Norfolk (South Down and Leicester); 2d do., 5*l.*, Mr. George Wallis, Hinton, Waldridge, Berkshire.

PIGS.

Class XXX. FAT PIGS.—Three fat Pigs of One Litter, not exceeding 10 months old. 1st prize, 10*l.*, and Silver Medal as breeder, the Right Honourable the Countess of Chesterfield, Bretby Hall, Burton-upon-Trent; 2d do., 5*l.*, George B. Morland, Esq., Chilton Farm, Harwell, Berkshire.

Class XXXI. FAT PIGS.—Three Fat Pigs of One Litter, not exceeding 15 months old. 1st prize, 10*l.*, and Silver Medal as breeder, Mr. George Beale, Frolesworth, near Lutterworth; 2d do., 5*l.*, George B. Morland, Esq.

Class XXXII. FAT PIGS.—Fat Pig, exceeding 15 months old. 1st prize, 6*l.*, and Silver Medal as breeder, Mr. Thomas Crisp, Butley Abbey, Wickham Market; 2d do., 3*l.*, Mr. Thomas Crisp.

Class XXXIII. BERKSHIRE PIGS.—Five Pigs in one Litter, exceeding 3 and not exceeding 6 months old. 1st prize, 10*l.*, and Silver Medal as breeder, Mr. Joseph Smith, Henley-in-Arden; 2d do., 5*l.*, Sir F. L. H. Goodricke, Bart., Studley Castle.

Class XXXIV. PIGS OF OTHER LARGE BREEDS.—Five Pigs of One Litter, exceeding 3 and not exceeding 6 months old. 1st prize, 10*l.*, and Silver Medal as breeder, Mr. Andrew Guy, Eaton, Leicestershire; 2d do., 5*l.*, William Bradley Wainman, Esq., Carhead, near Cross Hills, Yorkshire.

Class XXXV. PIGS OF A SMALL BREED.—Five Pigs of One Litter, exceeding 3, and not exceeding 6 months. 1st prize, 10*l.*, and Silver Medal as breeder, Mr. Samuel Wiley, Bransby, Yorkshire; 2d do., 5*l.*, Mr. George Mangles, Givendale, Ripon.

The roots exhibited are remarkably fine. The Mangel Wurzels, long and round, weigh probably 35 lbs. apiece, the Swedish Turnips and Carrots of Sir W. Heathcote, whose steward was successful last year from another part of the county, carry off the 10 guinea Silver Cup, and the liberal offer of prizes have attracted a very extraordinary show of vegetables. And certainly the large clean Carrots and enormous Mangels and well made Turnips, which the long stand contained, exhibit a marvellous superiority to the average produce of our fields.

Of the Poultry it must suffice to refer to another column, where we have inserted the very interesting report given in the *Times* newspaper.

Farmers' Clubs.

BRAINTREE.—At the annual meeting of the Labourers' Friend Society Mr. Alderman Mechi said: He believed, that the great body of English farmers, whom he loved beyond measure, were now convinced that if in former times they had disagreed it had not been a personal disagreement, but a disagreement of principle. He believed that at that time it was thought by the agriculturists that he wanted to throw some advantage into the hands of the landlords at their expense, by enlightening them upon the secret of the profit of farming. That was not his intention. His intention was, and always had been, to prove that none of them, either as landlords or tenants, were doing that which was most profitable and most beneficial to our country. A good many years had passed since he first commenced his operations, and 15 years had enabled him to draw some practical conclusions as to their results. He was comparing notes to-day with a very clearheaded, practical working farmer near him, as to whether they could make both ends meet, and leave a little profit upon present prices. His friend said—and he was a very sagacious fellow—"Somehow I shall not do well this year." Now, as he held about the same acreage of land as himself, and was as often on his (Mr. Mechi's) farm as his own, they were both pretty well able to compare notes. On inquiring into the cause of the discrepancy between them, he found it arose from that word "non-improvement;" and when he said non-improvement, he should say that there were too many hedge-rows, too much absence of draining, too much want of manure, owing to the landlord not putting up a covered yard and charging him interest for it; and he had no steam-engine on his farm. The cultivation of his farm was not so deep as his own, and there had not been so much meat made per acre, so that it took 5 acres to keep one of his horses, while it only took

2½ acres to keep one of his (Mr. Mechi's). Thus they could at once account for the important difference between them. He ought to say, too, that his friend had less irrigation; that was an expensive operation, but still it gave him this great advantage, that he produced a great deal more per acre. Then, again, his friend's farm was not so well arranged, and he used waggons, while he (Mr. Mechi) used carts. Now, these were a few of the advantages which enabled him at present prices to pay a charge of 7*l*. 16*s*. per acre, which was what his farm cost him; he was enabled at present prices to pay that, and leave a comfortable margin of profit for his own farming capital. He did not mean to say that that profit was so comfortable as when Wheat was much higher; quite the reverse. But what he wished them to understand was—and he could prove it by figures—that it would be much better for the agriculture of this county and throughout the country if the landlords were to advance their capital for improvements, and charge 5*l*. per cent. upon it, which would better enable the farmers to meet the vicissitudes of lower prices. He did not charge the fault upon the farmers, because he knew that improvements of this nature must be gradual, and it always took a long time to get rid of our prejudices. So much for the practical working of the farm. He remembered his steam-engine and machinery cost him as much as 500*l*., and he was told by a practical man 10 years ago that it was not a profitable investment on so small a farm, but he had lived long enough to disprove those words. He thought there was a considerable loss at present sustained in feeding, for he believed that straw might be made to form a very important article of food. Science had recently proved that it was only worth about 9*s*. a ton to plough in as manure, whilst for feeding purposes, it was worth from 30*s*. to 35*s*. per ton. He spoke guardedly, for the chemist had shown what straw contained, and he found that every 100 lbs. contained the equivalent of 18 lbs. of oil and fat. Would any farmer, if he had not told him that he had been to the chemist, believe in this large fattening property of straw? They might say that their cattle wouldn't eat it, but let it be properly prepared, and they would be surprised at its fattening properties. In looking to the sources of farming profit, and to the practical working of the farm, he found a number of little mistakes which might appear slight, but which drew largely upon the profitable returns. Most of the farmers used waggons instead of carts, and this might appear a small matter, but it told largely upon the profits of the farm. Four of these carts with four horses took in all his harvest; he had one horse to each cart and a boy to drive, and he found it could be done in this way with much less trouble and expense than with waggons. He saw great danger to agriculture in the new sanitary arrangements. He recollected, a good many years ago, when he last had the pleasure of being there, recommending them what to do with the good things of Bocking and Braintree after they had done with them; he advised them, after they had done with their dinner, to take care that it went back again upon the land. [A voice, "We don't live well enough here, sir."] They looked well, nevertheless. Boards of Health were being established throughout the country, and they were excellent sanitary arrangements so far as concerned the general health, but they might depend upon it they were having an evil influence as to the furnishing of the British stomach, and the doing away with all cesspools deprived agriculture of an important manuring resource. He did not think he could illustrate it better than by comparing the loss of the sewage of the 15,000,000 inhabitants living in towns, to feeding 15,000,000 sheep, and throwing all their manure into the nearest river. That great authority, Baron Liebig, whom he considered the Sir Isaac Newton of agricultural science, lately called attention to the subject, and showed the immense benefit that must result from bringing the sewage of the population back upon the land. The farmers said that they were producing more corn than they used to do, but he was not prepared to admit that. Mr. Caird, in his book a few years ago, told them that Arthur Young estimated the amount of Wheat grown in England in 1770 at 2,000,000 quarters more than we now produced, for they must bear in mind that we were now importing ten millions of corn annually. Among his other crotchets he had been endeavouring to establish an Agricultural Benevolent Association, and he was very much surprised that the agricultural interest, certainly the largest in the country, had never had an institution connected with it for the relief of unfortunate farmers. [A voice, "There's too many of 'em."] That was a very good reason why they should establish such an association. He was happy to say that he had already 700 subscribers, which was gently on the way to 7000. Lord Rayleigh had that day sent his name, giving 30*l*. and promising a donation of 2*l*. 2*s*. annually, and their president had kindly told him that when he called on him he should be ready to aid in the work. It was proposed that every one who contributed should have a vote; that the gentlemen of Braintree who subscribed—and he saw some of them present—who wished to assist an old friend who had been reduced, might put their votes together, and so get him in; and surely it would be a great gratification to be able to assist in this way a man whom they had formerly esteemed. He believed it would do a great deal of good, and he meant to make a great stir about it some day, and no doubt when he came into that neighbourhood, or sent them down particulars, they would be ready to give him their support. He liked to turn these meetings to practical account, and should be happy to answer any question they might wish to put to him. He again referred to his own practical experience, observing that if he had not been successful in his experiments he should have been a mere quack, and should have no business in an agricultural meeting of that kind. Those experiments must be either right or wrong; if they were wrong, let him be scouted from every agricultural gathering, but if they were right, he called on them to the utmost of their power to follow his example.

Mr. J. Hutley said if he could find words he should like to run on with his friend Mr. Mechi a little. He hoped that they should be good friends though they might differ in opinion, but as to his carts he wouldn't have them if he were to give them to him. He believed Mr. Mechi and himself commenced their farms about the same time, and he had always challenged Mr. Mechi to show his balance sheet against his own, and he would do it now if he liked—he believed every penny had been put down since he had his farm. Mr. Mechi. Does it pay at present prices? Mr. Hutley. It paid but very little last year. I don't think that there were 10*l*. either one way or the other.—Mr. Mechi. Then I think I've beaten you.—Mr. Hutley said Mr. Mechi told them that they were to make money by stock, but if he went on as he had lately, he should not make much by stock, for he had lost 12 beasts within the last six or seven weeks by the murrain.—Mr. Mechi. I'm afraid you don't give them any straw.—Mr. Hutley said he always considered a good farmer ought never to give a cow a mouthful of straw, but to make it into manure. If his farm didn't pay he must; that was the principle he went on. He thought the ploughing to-day had been very well done, and he had been a judge of more ploughing than any other man in the county of Essex.

Notices of Books.

Johnson & Shaw's Farmer's Almanack and Calendar for 1860. Ridgway.

Morton's New Farm Almanack for 1860. Blackie.

The former contains 98 pages of instructive matter, and 92 pages of advertisements; the latter 112 and 56 respectively.

The former contains appended to each month a great deal of useful matter on a variety of agricultural topics, most of which is replaced each year by fresh paragraphs on the same general subjects—practical, meteorological, statistical, educational, experimental, agricultural. The latter contains a special report of agricultural progress and improvement during the past year, occupying 30 or 40 pages, in which education, landlord and tenant, labour, the condition of the soil, drainage, manures, farm implements, plants, weeds, live stock, and agricultural societies are discussed. Both contain calendars of farm and garden operations, fair lists, parliamentary lists, &c.; and both are useful companions. Let us here correct a reference made in Morton's Almanack to Garrett's horse hoe, which, compared with Spight's horse hoe, shown at Hull, is stated to be beaten by it in price. Garrett's horse hoe is the cheaper of the two we understand. We shall hereafter make a detailed comparison of these implements.

Notices to Correspondents.

ANALYSES: *Dorset Farmers' Clubs.* We have received a report signed by the secretaries of the Blandford, Milbourne, and Winforth Farmers' Clubs, publishing a series of analyses of the same manures by three well-known analysts, of which the differences are startling. We think however that they are less probably due to errors of analysis than to the samples being different, notwithstanding the attempt by mixture to ensure their uniformity.

CHICORY FOR GRAZING: *M J R.* Prepare the soil by thorough cleaning early in spring, applying a good coat of rotten dung. Drill 4 lbs. of seed per acre in March in rows 9 inches apart. Single them out when 5 inches high to 6 inches apart. The crop will continue luxuriant under good management for 6 or 8 years. Let it get of full growth and then cut it down before flowering and carry it to stock in the house. It may be also depastured with sheep, but the other is the more productive use of it.

CORN AVERAGES: *Clericus.* The following are the averages for 52 weeks ending Sept. 24:—Wheat, 43*s*. 6*d*. per qr.; Barley, 33*s*. 5*d*; Oats, 23*s*. 8*d*.

DAIRY STATISTICS: *Hampshire Dairy Farm.* Next week: meanwhile we add that all your questions are answered in a little book on Dairy Husbandry, now in the press; the first of a series of agricultural hand-books by Mr. J. C. Morton, which are being published by Longmans.

MARKET FOR SEEDS AND MANURES: *Rusticus* is anxious to know "the best market in which to obtain artificial manures, cattle food, and agricultural seeds in quantity." We must let our advertising columns speak for themselves.

OVERHANGING TREES: *J M.* must not act on any but safe legal advice in the matter. Our opinion is that they are a nuisance, and he can insist on their being lopped; but he must consult his legal adviser.

ROLLING: *E B.* You may properly roll Grass at any time when there is no actual crop upon the land and no frost, and when it is hard enough to avoid injury by the tread of the horses.

THE RIGHT TO GLEAN: *R. Woods* v. *Burton and Others.*—This was decided before the St. Neots County Court by an action of trespass. The plaintiff had found himself compelled by the misconduct of the defendants' wives during the harvest of last year to prohibit those persons gleaning his land, but that they, notwithstanding, at the last harvest, persisted in forcing their way into, and gleaning a field belonging to him. He was forced for his own protection to bring this action, in order to prove to the poor that gleaning was an indulgence, not a right, and depended solely upon the consent of the farmer. For the defence it was urged that gleaning was a practice sanctioned by the Old Testament, and that although the common law might give no right to glean, it might exist by custom, and that it did in part exist in the parish of Caxton—to prove which latter point he called several witnesses, who deposed to the fact that gleaning had been practised there as long as they could remember. Judgment was given for the plaintiff.

*** As usual, many communications have been received too late, and others are detained till the necessary inquiries can be made. We must also beg the indulgence of those correspondents the insertion of whose contributions is still delayed.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, London, S.

Principal—J. C. NESBIT, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London, S. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

MR. J. B. LAWES manufactures the following MANURES:—

TURNIP MANURE	£6 6
SUPERPHOSPHATE OF LIME	6 6
MINERAL SUPERPHOSPHATE OF LIME	5 5
BARLEY MANURE	8 0

N.B. Genuine PERUVIAN GUANO direct from Messrs. Gibbs, NITRATE OF SODA, SULPHATE OF AMMONIA, and other Chemical Manures.

WHEAT MANURE.—PERUVIAN GUANO is proved to be the best and cheapest Artificial Manure for Wheat, at Autumn sowing.

American decorticated Cotton-seed Cake of best quality supplied at the market price.

Offices: 1, Adelaide Place, London Bridge, E.C.

LONDON MANURE COMPANY (ESTABLISHED 1840),

Have the following MANURES ready for delivery:—

CORN MANURE FOR AUTUMN SOWING.
BLOOD MANURE FOR AUTUMN SOWING.
URATE.
SUPERPHOSPHATE OF LIME.
SUPERPHOSPHATE MINERAL.

The London Manure Company also supply PERUVIAN GUANO (direct from Messrs. Gibbs & Sons), SULPHATE OF AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of known value, all of which they warrant strictly genuine. Wholesale dealers supplied.

116, Fenchurch Street, E.C. EDW. PURSER, Secretary.

BURNARD, LACK, AND CO.'S CONCENTRATED SUPERPHOSPHATE OF LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.

CONCENTRATED TURNIP MANURE, equal in value to the preceding.

Of these Manures Dr. Voelcker says:—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."

Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to BURNARD, LACK, & Co., Sutton Road, Plymouth.

PERUVIAN GUANO.—The present price of this valuable Manure is 12*l*. per ton for 30 tons and upwards; 13*l*. 5*s*. per ton for 1 ton up to 30 tons.

And, in order to protect themselves against the purchase of adulterated mixtures and of inferior Guanos purporting to produce results equal to Peruvian, consumers are recommended to apply either to ourselves, to our Agents Messrs. GIBBS, BRIGHT, & Co., of Liverpool and Bristol; or to Dealers of established character, in whose honesty and fair dealing they can place implicit confidence. ANTY. GIBBS & SONS.

15, Bishopsgate Street Within, London, E.C.



THE PATENT NITRO-PHOSPHATE OR BLOOD MANURE COMPANY (LIMITED).

Trustees:—

ABEL SMITH, Jun., Esq., Walton House, Ware, Herts.
CHARLES DIMSDALE, Esq., Essendon Place, Herts.
EDWARD BALL, Esq., M.P., 8, Belgrave Road, Pimlico, S.W.
GENERAL HALL, Weston Colville, Linton, Cambridge.
JOHN BRADY, Esq., M.P., Warwick Terrace, Belgrave Square, W.

Directors:—

Chairman—JONAS WEBB, Esq., Babraham, Cambridgeshire.

Deputy-Chairman:—

JOHN COLLINS, Esq., Myddleton Square, Pentonville, E.C.
EDWARD BELL, Esq., Tottenham, Middlesex, N.
JOHN CLAYDEN, Esq., Littlebury, Essex.
RICHARD HUNT, Esq., Stanstead Abbot, Herts.
THOMAS KNIGHT, Esq., Edmonton, Middlesex, N.
ROBERT LEEDS, Esq., West Lexham, Norfolk.
ROBERT MORGAN, Esq., 72, Camden Villas, Camden Town, N.W.
GEORGE SAVILL, Esq., Ingthorpe, near Stamford.
WILLIAM COLLINS, Esq., 105, St. John Street Road, E.C.

Bankers—Messrs. BARNETT, HOARE & Co., Lombard Street, E.C.

Solicitors:—

Messrs. KINGSFORD & DORMAN, 23, Essex Street, Strand, W.C.

Auditor—J. CARTER JONAS, Esq., Cambridge.

Manager—Mr. JAMES ODAMS. | *Secretary*—Mr. C. T. MACADAM.

Offices: 109, Fenchurch Street, London, E.C.; Manufactory, Plaistow Marshes, Essex, E.

ODAMS'S BLOOD MANURE FOR WHEAT,

Price 7*l*. 10*s*. per Ton, delivered Free to any WHARF or RAILWAY in London.

TO PIG, POULTRY, AND GAME FEEDERS.

JUPP'S RICE FOOD, POULTRY AND GAME.—RICE SWEEPINGS, 7*s*. 6*d*. per cwt., in 1½ cwt. bags; SCREENED RICE, 10*s*. per cwt., in 1½ cwt. bags; DOG BISCUITS, 14*s*. per cwt.; OIL-CAKE, per ton only; RICE MEAL for PIGS, 6*s*. and 8*s*. per cwt., in 1 cwt. bags, at the mill. Orders must be accompanied by a remittance to insure delivery.—W. & R. JUPP, 6, Cross Lane, Eastcheap, E.C.

FOOD FOR WINTER STOCK.

SAMUELSON'S celebrated TURNIP CUTTERS, PULPERS, CHAFF-CUTTERS, OIL-CAKE BREAKERS, CORN and MALT-CRUSHING MILLS, all with the latest patented improvements, may be obtained through any Ironmonger or Implement Dealer in the kingdom, or (carriage paid to the nearest station to the purchaser) direct from the manufactory.—Britannia Works, Banbury, Oxon; or London Warehouse, 70, Cannon Street West, City, E.C.

Catalogues sent free on application.

Now Ready, 160 pages Crown Octavo,

THORLEY'S FARMERS' ALMANACK.

THE MOST COMPREHENSIVE & COMPLETE WORK OF THE KIND EVER PUBLISHED.

FREE BY POST FOR SIX STAMPS, UPON APPLICATION TO

JOSEPH THORLEY, Almanack Department, 77, Newgate Street, London, E.C.

INDEX.

	PAGE
Adulteration of Seeds	97
,, Barley-meal	98
,, Rape Cake	98
,, Linseed Cake	98
Agricultural Societies—	
England	102
Scotland	102
Ireland	102
Bath	102
Yorkshire	102
Smithfield Club	102
Birmingham	102
Agricul. Railway Traffic	27
Alpha & Omega of Agricul.	72
Artificial Manures	59
Arts and Manufactures	59
Bad Farming, the Rule	67
Bean Straw	20
Bedrooms, Size of	63
Brewers' Grains	63
Butcher Meat, Improved	70
Cabinet Ministers	103
Calendar (Monthly)	
Cattle Cookery	86
,, Condiment	99
Chemistry of Cattle Food	90
,, By Dr. Anderson	95
Chemistry, By Dr. Voelcker	93
Classification of Feeding Principles	51
Condiment for Seasoning Food for Live Stock	99
Corn Food	27
,, Refuse 21, 27, 38,	39
Cottage Poultry Yards	51
Country Occupations	50
Cow Houses, &c.	43
Cows, Management of, in Towns	43
Dairy Produce Improved	70
Dumpling, A Devonshire	27
Extraordinary Cow	63
Experiments, Cattle Food	100
Fairs, England and Wales	129
,, Scotland	140
,, Ireland	145
Farm, Two Acre	51
Farming Prairie, Illinois	56
,, Stock	39
,, Dairy	38
Farms, American 20,	67
Farmers' Memoranda (Monthly)	
Flax Culture	41
Foreign System of Feeding Stock 86,	99
Feeding Live Stock—	
Horses (Monthly)	
Oxen ,,	
Sheep ,,	
Pigs and Poultry ,,	
Deer and Dogs ,,	
French Poultry	33
Future of the Steam Engine	74
Grass Land Management	20
Harvest, Hay	35
,, Corn	47
,, Roots	59
Homestead	77
Horses, Management of, in Town	42
,, Management (Monthly)	
,, the Food of	44
,, Stable	39
,, Vitality of	39
,, Experiments in Feeding	
,, Old	100
,, Young	100
,, per Sea	101
Hounds, Fox	57
House Feeding	56
Italian Rye-grass Culture, 32,	57
,, ,, Soiling	33
,, ,, Cookery	35
Labourers' Cottages, English	85
,, French	21
,, Healthy	45
,, Size of Bedrooms	63
Law, Courts of	106
Linseed Cake	94
Liquid Manure Farms	35
Lois-Weedon Culture	67
Machinery, Cattle Food	77
,, Mowing	79
,, Reaping	79
,, Threshing	76
Manufacture of Cattle Food	100
,, Condiment	100
Management	50
Mechi's Rule for Sowing	62
Memoranda, Concluding	100
Merino Flock, A, U.S.	33
Mixed Feed	21
Ox, Management (Monthly)	
,, Experiments in Feeding	101
,, ,, Cows	101
,, ,, Calves	101
Parliament, Peers	107
Parliament, Peers, Officers	113
,, Address	117
,, of the United Kingdom	114
,, Scotch and Irish	117
,, Titles of Courtesy	115
,, Summary	128
,, Commons	118
,, Ministry	102
,, Summary, Commons	128
,, Analysis	128
Public Offices	104
Pigs and Poultry (Monthly)	
Pig, The	57
Pisciculture, English	26
,, French	27
Potato Culture	73
Poultry	11
Railway, Crosskill's	82
,, Boydell's	81
Royal Family	103
Seed, Change of	62
,, John Cheap Bargains	63
,, Wheat, Preparation of	62
,, ,, Pickling	62
Sewage Manure	35
Sheep Dipping	44
,, Management (Monthly)	
Shepherd, The Good	61
Singular Shot	45
Steam Engine, Fixed	75
,, Portable	74
Steam Culture, Importance	80
,, Boydell's System	81
,, Halkett's System	81
,, Romaine's System	82
,, Fowler's System	83
,, Howard & Smith's System	83
,, Comparative Merits of Different Systems	84
Steam Cartage on Common Roads	84
,, Boydell's System	84
,, Bray's System	85
Steam and Manual Labour	32
Stock Taking	63
Straw as Food for Cattle	20
Successful Settler, A	45
Taxes, Assessed, &c. 155,	156
Veterinary Science, its Importance	86
Weights and Measures, 152,	153
Winona	21
Wonderful Eggs	21
Wool	38

"This is in reality a farmer's book, not merely an Almanack—in which respect it is perfect—but a handbook and *vade mecum* of everything useful and informational that can in any way be serviceable to the Agriculturist. We question if a more valuable and strictly practical little work was ever offered to the Farmer than will be found in THORLEY'S Cheap Almanack for 1860."—*Era, Oct.* 9, 1859.

"THORLEY'S Farmers' Almanack for 1860 is exactly what its name imports, a 'Farmers' Almanack.' It will be hard to get another containing such general information on stock and agriculture."—*Bristol Times, and Felix Farley's Bristol Journal, Oct.* 15, 1859.

THORLEY'S FOOD FOR CATTLE.

IN acknowledging the increasing demand for THORLEY'S Food for Cattle, Mr. THORLEY in the warmest terms begs leave to thank his customers for their kind patronage, and to assure them that every endeavour on his part will be exercised to merit a continuation of their favours. The experimental evidence which is daily being received, showing the efficacy and economy of this now justly celebrated Cattle Food Condiment, is very congratulating and encouraging, especially as it is voluntarily given along with orders for fresh supplies; for practical testimony thus given must always be received as satisfactory evidence in favour of the article—a justification, as it were, for continuing its use. The experience thus being acquired is fast establishing the condimental value of THORLEY'S Food for Cattle in every town and province of the kingdom; and the more that breeders and feeders of live stock examine the subject practically, the more thoroughly are its merits appreciated by them.

"Practice with Science" is the golden motto of the Royal Agricultural Society of England, and this is just the kind of testimony now being received in favour of THORLEY'S Food for Cattle; for agriculturists and other owners of stock are, by the successful use of this condiment, beginning to experience that the value of food depends upon how it is digested. Chemically, its constituent elements may be of the highest value; but if imperfectly digested, what is its value to the animal which eats it? The testimony just referred to proves that hay and straw properly seasoned with this condiment is more nourishing than unseasoned food, although the latter may contain a much greater amount of alimentary matter; consequently the practical question arises, how many animals, including horses, oxen, sheep, pigs, poultry, and dogs, are there, whose food is imperfectly digested, because unseasoned? whose digestive and other functions are deranged by such unwholesome food—functions which might soon be restored to a healthy state by properly seasoned food? This is the grand problem, the practical solution of which is giving rise to an increased consumption of THORLEY'S Food for cattle; and Mr. THORLEY has much pleasure in inviting special attention to it, hoping that practical men will solve this important question practically, by giving his condiment a fair trial.

Mr. THORLEY also begs leave to draw attention to the harmony which exists amongst the different examples above referred to, each corroborating the other, thus proving the soundness of his practice of seasoning the food of cattle.

Mr. JAMES BREBNER, Steward to H.R.H. the Prince Consort, states: "Through using it on my saddle-horse I have been enabled to reduce his ordinary food half a truss of hay and half a bushel of Oats per week, and can testify that he has gained very much in condition."

Mr. JAMES FISHER, Farm Manager to her Grace the Duchess of Athole, says: "I have found your Food for Cattle to answer very well."

Sir DAVID CUNYNGHAME, Bart., writes: "The cows thrive and do well upon it, and the pigs have improved already wonderfully."

Sir JOHN RIBTON, Bart., expresses his approbation thus: "Relating to Thorley's Food for Cattle, I have fed with it for the last 4 months, and never fed with more nourishing food for cattle in general."

Sir JOHN ANDREW CATHCART, Bart., states: "I have used Thorley's Food for Cattle for 8 months, both for horses and cattle, and find that it has an extraordinary effect in producing condition, and keeping them in a healthy state."

Sir JOHN HESKETH LETHBRIDGE, Bart., writes: My old groom on speaking to him this morning says my horses never did better, since they have been fed upon it."

And since his Almanack for 1860 was in print Mr. THORLEY has received a note from Ormesby, in which Sir EDMUND LACON draws attention to the fact that Thorley's Food for Cattle was of great service to a pony which was very difficult to get into condition.

Again, Colonel WHITE says: "I have tried your Food with horses and pigs; in both cases I consider they have considerably improved in condition."

Colonel RAMSAY writes: "I have used Thorley's Food both for horses, cattle, and swine, in all instances with great success, and can safely recommend the use of it both for economy and fattening qualities."

Lieut.-Colonel MACDONALD states, in 1857: "I would be unjust if I withheld my testimony to its beneficial effects, which are most apparent in the improved condition of the horses." And in 1859: "As an instance of its efficacy I may mention that having had occasion during the autumn (1858) to hire a horse for three months, his owner said to my servant when he was returned, 'He is so much improved that I would not have known him.'"

GODFREY MEYNELL, Esq., in writing from Langley, says: "I shall be glad if you will forward to me at the above address another cask of your Cattle Food, with measure, as a tenant of mine is anxious to make a trial of it. From what I have seen of its effect upon two milch cows of my own that slipped their calves some time since, I am inclined to speak favourably of your Food."

Captain the Hon. HUGH GOUGH writes: "I have tried Thorley's Food for Cattle, and gave two feeds per day to an aged horse, which I found it impossible to get in condition otherwise, and in six weeks he became very fat, and entirely beyond anything I could conceive."

ALEXANDER HENDERSON, Esq., the younger, of Stemster, Caithness, says: "I have used Thorley's Food with great advantage, in one case where a half-bred mare would not feed."

"COURTENAY VERNON, Esq., would feel obliged to Mr. Thorley if, on the 15th of November, he would forward him three casks, to be continued monthly from that date until further notice, Mr. Vernon having found the Food so useful and beneficial for all kinds of stock."

Captain LOCKYER, R.N., adds: "I have found it most excellent and economical."

W. WINTERTON, Esq., says: "The heifer that I gave some of your Food to has taken three prizes."

J. M. BROWNE, Esq., concludes thus: "I beg to inform you that I have three hunters now in better condition than I ever had in any previous season at this time, which I attribute to your Food."

S. H. WATSON, Esq., states that, "By using it I have been able to dispense with all horse medicines and clipping, my horses being now beautifully coated."

EDWARD M'GOWAN, Esq., says: "It gives to horses and pigs a bright fresh skin, and a much improved appearance; working horses it keeps in excellent condition and fresh; in feeding bullocks it is manifestly of great utility, developing fat in much less time than in feeding on Turnip and cake alone."

WILLIAM PATRICKSON, Esq., writes: "I find my horses thrive well on it, and like it much."

JOHN HODGE, Esq., states: "It strengthens and fattens better than anything which I have used hitherto."

CHARLES INGRAM, Esq, says: "I have used it for a considerable time, and especially for one of my horses, which is of such a nervous and irritable temperament that he used to get frequent attacks of spasmodic colic or fret; since I have given him this Food (three months), he has never suffered from it. I believe, with Professor Apjohn, it operates by sharpening the appetite, and promotes healthy digestion and rapid assimilation, rendering it of great advantage to the owners of cattle; and I give Mr. Thorley great credit for having effected so desirable an object, and so great a boon to the public."

The Rev. C. B. ELLIS, Tobago, West Indies, says: "One horse particularly—a cribber—has improved much from its use; and from its effects upon him and others I am convinced it has an admirable tonic in its composition, and is well adapted for improving the condition and appearance of all horses fed with it. I have ordered more to come in the next year's supplies, being satisfied as to its economy."

B. HAIGH ALLEN, Esq., has used it with his yearling calves, pigs, and horses; in all cases it has answered.

W. H. GOGARTY, Esq., says: "I have used Thorley's Food for Cattle, and find it very superior in keeping horses in good condition, and fattening all kinds of cattle."

R. CLOAK, Esq., says: "Before I had this food introduced to my notice I was allowing my horses half a bushel of Oats daily I now reduce the Oats 1 gallon, and substitute one packet of the Food, and my horses are, most certainly, in better condition than previously. Not satisfied with this, I determined to give it to my pigs and poultry, and after several severe comparisons between those fed with it and otherwise, I am most decidedly of opinion that it is a most excellent food."

WM. LINDSEY, Esq., says: "I have used your Food for Cattle some two years upon horses, cows, and pigs, against other kinds of food, and find it to be far superior, at a less cost. I think well to state that, during the time I gave it to pigs I had a poor dog who got so fat by eating out of the pigs' food, that he really astonished all who saw him. I have, at various times, discontinued the Food, and find that the dog is reduced to his former state. My fowls are equally as fond of the Food as the dog, and the result is the same."

J. NEWBERRY, Esq., says: "On one occasion I gave it to a cow after it had been under the farrier for a length of time without any effect. I gave your Food, as per your instructions, and found the effect was astonishing. I also tried it upon a remarkably poor horse, after many other means had failed. I am satisfied he gained 10*l.* in value in the course of six or eight weeks from the use of your Food."

Sold in cases containing 448 packages, each package one feed, at the cost of 56*s.* per case; also in casks, containing 448 feeds, with measure included, price 50*s.* per cask. Carriage paid to any Railway Station in the United Kingdom. None are genuine without the signature being affixed to each package or feed—

JOSEPH THORLEY, Inventor and Sole Proprietor.—Offices: 77, Newgate Street, London, E.C.

Post-office Orders must be made payable to JOSEPH THORLEY, General Post Office, St. Martin's-le-Grand, E.C.

☞ *The public are cautioned against being imposed upon by worthless imitations.*

ONE SHILLING MONTHLY, ILLUSTRATED.

THE CORNHILL MAGAZINE.

EDITED BY

W. M. THACKERAY.

With whom will be associated some of the most distinguished Writers in every department of Literature.

☞ *No. I. will be published on the First of January,* 1860.

SMITH, ELDER AND CO., 65, CORNHILL, E.C.

Now Ready, price 1*s., Part V. of*

ONCE A WEEK,

CONTAINING

No. XVII.—Bradmere Pool, by Louisa Stewart—The Cook or the Doctor? by Harriet Martineau—The Swineherd Painter, by E. Acton—The Last Voyage of Sir John Franklin, by Captain Sherard Osborn, R.N.—Coldstream, by Herbert Vaughan—Hands and Machines, by W. Bridges Adams—Our Tame Hedgehog—The Song of the Survivor.

No. XVIII.—Crossbones Father, by C. P. William—Young France—Prawn Curry, by Austral—Black Monday—The Last Voyage of Sir John Franklin, by Captain Sherard Osborn, R.N.—Robert Stephenson—In Memoriam, by G. R. Taylor.

No. XIX.—How I became a Hero—Ana—An American Apple Frolic, by Francis Morton—Maude Clare, by Christina G. Rossetti—The Search for Sir John Franklin, by Captain Sherard Osborn, R. N.—Dress and its Victims, by Harriet Martineau—The Yaks in France—Six of the One, and Half-a-dozen of the Other, by J. Roy.

No. XX.—A Night with the Boobies, by T. E. Southee—The Swimming School for Women at Paris—Fairy May, by C. W. Goodheart—Our Page, by C. P. William—English War-Ships and their Uses—How I became a Hero—The Sprig of Lavender.

With many Illustrations by LEECH, TENNIEL, MILLAIS, H. K. BROWNE, C. KEENE, WOLF, SKILL, W. MAY, H. G. HINE, WOODS, SCOTT, and others.

Part VI., completing the First Volume, will contain **SIX NUMBERS**, *and will therefore be charged* **EIGHTEENPENCE.**

BRADBURY AND EVANS, 11, BOUVERIE STREET, FLEET STREET, E.C.

Shortly will be published, price 12*s.*,

A NEW VOLUME OF PICTURES OF LIFE AND CHARACTER. By JOHN LEECH.
FROM THE COLLECTION OF MR. PUNCH.

*** Volumes I. and II. are always on sale, price 12*s.* each.
London: BRADBURY & EVANS, 11, Bouverie Street, E.C.

Shortly will be published, in One Volume, crown 8vo, price 7*s.*, uniform with "The Miscellanies," "Vanity Fair," &c.,

A CHEAP AND POPULAR EDITION OF
THE NEWCOMES.
By W. M. THACKERAY.
Author of "Vanity Fair," "Pendennis," &c.
BRADBURY & EVANS, 11, Bouverie Street, Fleet Street, E.C.

SPORTING WORKS, ILLUSTRATED BY JOHN LEECH.

I.

Publishing in Monthly Parts, price 1*s.* each.

PLAIN OR RINGLETS. By the Author of "Ask Mamma," &c., with Coloured Engravings, and numerous Woodcuts by JOHN LEECH.

II.

MR. SPONGE'S SPORTING TOUR. By the Author of "Handley Cross," &c. With coloured Engravings, &c., by JOHN LEECH. One Vol. 8vo, price 14*s.*

III.

HANDLEY CROSS; OR, MR. JORROCKS'S HUNT. By the Author of "Mr. Sponge's Sporting Tour." With coloured Engravings, &c., by JOHN LEECH. 8vo, price 18*s.*

IV.

ASK MAMMA; OR, THE RICHEST COMMONER IN ENGLAND. By the Author of "Sponge's Tour," "Handley Cross," &c. Illustrated with Thirteen coloured Engravings and numerous Woodcuts by JOHN LEECH. 8vo, price 14*s.*

London: BRADBURY & EVANS, 11, Bouverie Street, E.C.

"A Guest that best becomes the table."—SHARSPEARE.

This day, Part II., New Series, price 1*l.d.*,

THE WELCOME GUEST.
EDITED BY ROBERT B. BROUGH.

CONTENTS:—

I. Miss Brown. By Robert B. Brough.
II. Lady Chesterfield's Letters to her Daughter. By George Augustus Sala.
III. My Very Singular Adventure. By Thomas Archer.
IV. Puss. By Paul Ward.
V. British Diplomacy.
VI. Oddities of Great Men. Drawn by Kenny Meadows.
VII. Enough for a Day. By Alfred Elwes.
VIII. A Leaf from Chambers. By Edmund F. Blanchard.
IX. The Provocations of a Protégé. By Fred. Greenwood.
X. The Confessions of an Old Newspaper. By Alfred Elwes.
XI. Our Titsie. By J. Crawford Wilson.
XII. The Bird has Flown. By Dr. G. Franck.
XIII. The Mastiff Guard. By H. S. Melville.
XIV. Bertha. By Paul Ward.
XV. The Allegorical Question. By K.
XVI. The New Prima Donna. By H. Sutherland Edwards.
XVII. Cheese. By W. B. Tegetmeier.
XVIII. Birds of a Curious Paradise. By John Hollingshead.
XIX. The Stephenson Dynasty. By Jacob Först.
XX. Must be Married. By Henry J. Byron.
XXI. A Cup of Tea. By Thomas Archer.
XXII. A Dreadful Story. By Edward Draper.
XXIII. What shall we do with Her? By T. P. Healey.
XXIV. Peeps at the Paper. By the Inconstant Reader.

The above entirely Original Articles are Illustrated by "PHIZ," KENNY MEADOWS, W. MCCONNELL, H. G. HINE, JULIAN PORTCH, T. R. MACQUOID, and H. S. MELVILLE.

Early in December will appear

ALL THE WELCOME GUESTS AT HAWLEY GRANGE:

With some particulars of

THE UNWELCOME GUEST,

And his abominable behaviour on the occasion;
Being the CHRISTMAS NUMBER of the WELCOME GUEST.
London: HOULSTON & WRIGHT, 65, Paternoster Row, E.C.

HOLCUS SACCHARATUS (Pamphlet).

"A VISIT AND A PLANT." A few copies only are left. Post free, 7*d.*
JOHN WILLDING CLARKE, Whittlesea, Cambs.

CUTHILL'S PAMPHLET on the Potato, Strawberry, Cucumber, Seakale, and 20 more things, 2*s.*; Market Gardening Round London, 1*s.* 6*d.*; on the Vine, 1*s.*; Thirty Years' Practice of Mushroom Growing: an Easy Plan for Killing Woodlice, 1*s.* 1*d.*; "Vegetable Meeting Paper" gratis.
JAMES CUTHILL, Camberwell, London, S.

GLENNY'S GARDENERS' GAZETTE.—A Monthly Journal, 16 pp. imperial 8vo, price 3*d.*, post free, 4*d.*, contains useful information for all interested in the Garden.

JAMES ALLEN, Warwick Lane, E. C.; KENNETT, York Street, Covent Garden, W.C.; and at all the railway stations and respectable booksellers.

Advertisements should be sent to the Printers, YATES & ALEXANDER, Horse-shoe Court, Ludgate Hill, E.C.

JUST PUBLISHED,

In 4to, price 24*s.*, Volume XIX. of the

ENCYCLOPÆDIA BRITANNICA, Eighth Edition, Illustrated with numerous Engravings, and containing, amongst other important articles, the following:—

REPTILIA. By JAMES WILSON, Author of the Article "Fisheries."

RETICULATION. By the Hon. and Rev. CHARLES BATHURST, LL.D.

RHETORIC and SIR WALTER SCOTT, Bart. By WILLIAM SPALDING, A.M., late Professor of Logic and Metaphysics in the University of St. Andrews.

RICARDO. By J. R. M'CULLOCH.

RICHELIEU. By GUSTAVE MASSON, one of the Masters of Harrow School.

RIVER. By SIR JOHN ROBINSON, late Professor of Natural Philosophy in the University of Edinburgh.

ROAD-MAKING. By THOMAS YOUNG, M.D., late Corresponding Member of the Royal Institute of France. Revised by CHARLES TOMLINSON.

ROBERTSON (WILLIAM), and ROGERS (SAMUEL). By ROBERT CARRUTHERS.

ROBISON (JOHN). By THOMAS YOUNG, M.D., late Corresponding Member of the Royal Institute of France.

ROMANCE. By GEORGE MOIR, late Professor of Rhetoric in the University of Edinburgh. With Continuation by W. EDMONSTOUNE AYTOUN, Professor of Rhetoric and Belles Lettres in the University of Edinburgh.

ROMAN HISTORY AND ROME. By the Rev. CHARLES MERIVALE, B.D., Author of a "History of the Romans under the Empire."

ROOF. By ARTHUR ASHPITAL, F.S.A., Architect.

ROTATION. By THOMAS GALLOWAY, F.R.S., late Secretary to the Royal Astronomical Society.

RUSSIA (Statistics of). By HENRY J. BISHOP, Adjunct Professor of the Ecclesiastical Academy, Alexander Neffski's Monastery, St. Petersburg.

SANITARY SCIENCE. By HENRY LETHEBY, M.B., and EDWIN LANKESTER, M.D., F.R.S., F.L.S.

SARDINIA. By the Author of the article "Italy."

SAVINGS BANKS. By EDWARD EDWARDS, Author of the article "Libraries."

SCANDINAVIAN LITERATURE. By WILLIAM HOWITT, Author of "Visits to Remarkable Places," &c.

SCHILLER. By THOMAS DE QUINCEY.

SCOTLAND. By PATRICK FRASER TYTLER. With Continuation.

SCULPTURE. By RICHARD WESTMACOTT, Professor of Sculpture, R.A., F.R.S.

Edinburgh: ADAM & CHARLES BLACK; London: SIMPKIN, MARSHALL & Co.

NEW CHRISTMAS DRAGON STORY.

On December 1, illustrated by "Phiz," fcap. 8vo, extra cloth, gilt sides and edges, price 3*s.* 6*d.*,

ULF THE MINSTREL; An Original Fairy Tale, never before published. By ROBERT B. BROUGH, Editor of "THE WELCOME GUEST."
London: HOULSTON & WRIGHT, 65, Paternoster Row, E.C.

NEW WORK BY SAMUEL LOVER.

This day, with Illustrations, fcap 4to., toned paper, extra cloth, gilt sides and edges, price 10*s.* 6*d.*,

METRICAL TALES AND POEMS. By SAMUEL LOVER. "Lover's volume comes forth as a sumptuous Christmas Book, the contents being entirely original."—*Liverpool Albion*, Nov. 14, 1859.
London: HOULSTON & WRIGHT, 65, Paternoster Row, E.C.

CHRISTMAS GIFT.

On December 1, New Volume for 1859—60. Price 2*s.* 6*d.*, complete in itself, illustrated with numerous Engravings, cloth gilt, crown 8vo,

THE FAMILY ECONOMIST. The charm of this book is that it treats of everything connected with Home in a lively and interesting style, interspersed with Original Poetry, Anecdotes, and instructive Tales, by well-known and popular Authors.
London: HOULSTON & WRIGHT, 65, Paternoster Row, E.C.

NEW GIFT BOOK.

Illustrated with 100 Engravings, price 5*s.*,

THE BOY'S BIRTHDAY BOOK: an entirely Original Collection of Tales, Essays, and Narratives of Adventures, by Mrs. S. C. HALL, WILLIAM HOWITT, AUGUSTUS MAYHEW, THOMAS MILLER, GEORGE AUGUSTUS SALA, WILLIAM BROUGH, and SUTHERLAND EDWARDS.
London: HOULSTON & WRIGHT, 65, Paternoster Row, E.C.

DEDICATED TO DR. LETHEBY, M.B.,
Medical Officer for the City of London.

This day, complete in Two Vols., price 3*s.* 6*d.* each, or bound up as One Vol., 7*s.*, cloth gilt, crown 8vo, 800 Engravings,

THE FAMILY DOCTOR: a complete Dictionary of Domestic Medicine and Household Surgery.
Never has a more thoroughly useful book been offered to the public, nor one more profusely illustrated. In every house it will relieve anxiety and save money.
London: HOULSTON & WRIGHT, 65, Paternoster Row, E.C.

On December 1, crown 8vo, price 3*s.* 6*d.*, cloth gilt, lettered.

THE MASTER-KEY TO PUBLIC OFFICES, and CANDIDATE'S COMPLETE INSTRUCTOR.

Fully showing—

1. What Places to Seek.
2. What Steps to Take.
3. Who are the Patrons.
4. What are the Examinations.
5. The Ages, and Qualifications.
6. The Salaries, Rules, of Promotion, Classification, Hours of Attendance, Prospects and Prizes in each Office.
7. Retiring Pensions, &c.

The whole forming a Comprehensive Hand-Book for all Persons desirous to enter any Department of Her Majesty's Civil Service. By JOHN BOULGER, Esq., Barrister-at-Law; Editor of the *Civil Service Gazette*, &c.
London: HOULSTON & WRIGHT, 65, Paternoster Row, E.C.

On December 1, entirely New Volume, Second Series, price 3*s.* 6*d.*, illustrated with 350 original Engravings. Also, First and Second Series bound together as One Volume, price 7*s.* Illustrated with 670 original Engravings. Crown 8vo, pp. 756. Title and Frontispiece by Harvey.

TEN THOUSAND WONDERFUL THINGS. Comprising everything Marvellous and Rare, Odd, Curious and Quaint, Eccentric and Extraordinary in all Ages and Nations. Edited by E. F. KING, M.A.
London: WARD & LOCK, 158, Fleet Street, E.C.

On December 1, with charming Steel Engraving and above 200 Woodcut Illustrations, price 2*s.* 6*d.*, cloth, gilt, the Christmas Volume of

THE FAMILY FRIEND.—This New Volume will be found a delightful Christmas Companion, unusually full of charming illustrated Tales and Pastime, which cannot fail to enhance the comforts of the fireside, and please every Christmas party.
WARD & LOCK, 158, Fleet Street, E.C., and all Booksellers.

Fifth Thousand, with 400 Original Illustrations, price 3*s.* 6*d.*,

THE FAMILY CYCLOPÆDIA: a complete Treasury of Useful Information on all subjects bearing upon the common interests and daily wants of Mankind, comprising

I. THINGS NOT GENERALLY KNOWN.
II. THINGS THAT OUGHT TO BE KNOWN.
III. THINGS WORTH KNOWING.

By the Editors of the "FAMILY FRIEND.'
London: WARD & LOCK, 158, Fleet Street, E.C.

Fifth Edition, with 250 Descriptive Engravings, price 3*s.* 6*d.*,

THE WIFE'S OWN BOOK OF COOKERY, containing 15,000 Original Recipes, adapted to all incomes.
"This volume furnishes every lady in the land with every sort of information she can require for purchasing, cooking, serving, and carving any meal for any amount of guests from three to thirty."—*Lady's Newspaper.* "Recommended by plain sense and practical worth."—*Illustrated London News.* "We recommend THE WIFE'S OWN BOOK OF COOKERY as the best and cheapest that was ever issued. It should be in every lady's household."—*St. James's Chronicle.*
London: WARD & LOCK, 158, Fleet Street, E.C.

ELEGANT CHRISTMAS GIFT.

New Edition, price 8*s.* 6*d.*, in richly gilt binding, with Frontispiece and Title printed in gold, and further embellished with nearly 400 exquisite Illustrative Designs and Patterns

TREASURES IN NEEDLEWORK,
By Mrs. WARREN and Mrs. PULLEN.
"'Treasures in Needlework' will be welcomed at thousands of homes and hearths; and the book, in its beautiful forms of teaching, must elevate the taste of the learner."—*Illustrated London News.*—London: WARD & LOCK, 158, Fleet Street, E.C.

Just ready, fifth edition, crown 8vo, cloth, strongly bound and gilt, 2*s.* 6*d.*, Frontispiece and Title engraved by Dalziel.

THE PRACTICAL HOUSEWIFE.
"It is a complete Encyclopædia of domestic economy, a book for ready reference in every household."—*Leeds Intelligencer.* "Will well repay its cost."—*Berkshire Chronicle.* "May be safely relied upon."—*Belfast News Letter.* "Will shed comfort and happiness in every dwelling."—*Civil Service Gazette.* "A practical guide to housekeeping, and the completest work of the kind which has ever come under our notice."—*Stirling Journal.* "Is worth its weight in gold."—*Bridgewater Times.* "Every thrifty housekeeper should order it."—*Glasgow Examiner.*
London: WARD & LOCK, 158, Fleet Street, E.C.

14th thousand, with 1000 Illustrations, price 3*s.* 6*d.*,

FACTS FOR EVERYBODY.—"As a Volume of current facts—facts from the Arts, Sciences and Literature facts from Commerce and Manufactures—facts from Anatomy and Physiology—facts from the Garden and Field—and facts from all sources and for everybody—no work has ever appeared more worthy of universal purchase."—London: WARD & LOCK, 158, Fleet St., E.C.

On the 1st of November was published, price 5*s.*,

THE ROSE ANNUAL FOR 1859-60. With four Coloured Plates of New Roses. By WILLIAM PAUL, F.H.S., author of "The Rose Garden," &c.

*** A few copies of THE ROSE ANNUAL FOR 1858-9 are still on hand, price 5*s.*

Works by the same Author,

THE ROSE GARDEN. Price 1*l.* 1*s.*, with 15 Coloured Plates and numerous Wood Engravings.

SUPPLEMENT TO THE ROSE GARDEN. With four additional Plates, 5*s.*

OBSERVATIONS ON THE CULTIVATION OF ROSES in POTS. Second Edition, price 1*s.* 6*d.*

MORNING RAMBLES IN THE ROSE GARDENS OF HERTFORDSHIRE. Price 1*s.*

AN HOUR WITH THE HOLLYHOCK. Second Edition, price 1*s.*

THE HAND-BOOK OF VILLA GARDENING Price 2*s.* 6*d.*

AMERICAN PLANTS, THEIR HISTORY AND CULTURE. Price 2*s.* 6*d.*

London: PIPER, STEPHENSON, & SPENCE, 23, Paternoster Row, E.C., or post free from the Author, Cheshunt Nurseries, Waltham Cross, Herts, N.

Just published, price 1*s.*

MORTON'S NEW FARMER'S ALMANACK FOR 1860.—BLACKIE & SON, Warwick Square, City, London, E.C.; and all Booksellers.

Just published, in 16mo, price 2*s.* 6*d.* cloth,

A HANDY BOOK FOR YOUNG FARMERS: Comprising Operations for each Month in the Year; Directions for the making, preservation, and application of Manures; for the Economical Feeding of Stock; and for the Selection of Implements. By CHARLES LAWRENCE, Member of the Council of the Royal Agricultural Society of England.

London: LONGMAN, GREEN, LONGMAN, & ROBERTS.

IMPORTANT TO FARMERS.

Now ready, post 4to, bound in cloth, price 2*s.*, free by post, 2*s.* 4*d.*

PEAT'S FARMER'S DIARY AND ACCOUNT BOOK, 1860; being a complete and easy method of keeping farm accounts. Dedicated by permission to the Right Hon. the EARL of CARLISLE.

The publisher begs to call the attention of Agriculturists to this Diary and Account Book. It has been favourably received during the last 6 years by a great many eminent agriculturists in England, Ireland, and Scotland; and high encomiums have been passed upon it by all the leading journals (London and Provincial), advocating the cause of agriculture.

The publisher has pleasure in stating that it has received the high patronage of the Right Hon. the Earl of Carlisle, and will by permission be dedicated to him.

This Diary contains Space for Memoranda; Complete Almanack—Almanack with Breeder's Tables—Memoranda—Cash Account—Farmer's Account Book—Inventory, Cash, Stock, &c., beginning of year—Extent of Farm—Cropping or Produce Table—Outlay and Income during the Year—Inventory, Cash, Stock, &c., ending of year—Summary of Outlay and Income—a great many useful Tables, Stamps, Taxes, Licenses, &c.—Valuable recipes for Farmers—A complete List of Fairs in the United Kingdom, &c.

The publisher would recommend that an early application be made for this Diary, as a great many were disappointed in ordering copies for 1859, after the edition was sold off and too late to print a second edition.

"The great desiderata in farm account-books are simplicity and brevity, leaving nothing for the farmer to do but to enter under printed heads the transactions of each day, when the labour of the day is finished. In looking over the 'Diary' of Mr. Peat, we think he has met these requirements of the farmer in a very satisfactory manner, so that any farmer, by making himself familiar with the various headings, may settle the day's accounts of his farm in a very few minutes. We have no hesitation in recommending it to our readers."—*Mark Lane Express.*

Sold by SIMPKIN, MARSHALL, & Co., London; WHITTAKER & Co., London; M'GLASHAN & GILL, Dublin; JOHN MENZIES, Edinburgh; DAVID PEAT, Thirsk; all Booksellers, and at the Railway Stations.

EXTRA STRONG TOBACCO PAPER, Warranted Genuine, 4 lbs. for 5*s.*, or 1*s.* 6*d.* per lb.; 12 lbs. carriage free for 15*s.*

NEW MUSHROOM SPAWN, of the finest quality, 4*s.* per bushel.—CHARLES SOUTHBY, Nurseryman, &c., Clapham, S.

GISHURST COMPOUND, PATENTED,

FOR PREVENTING AND DESTROYING

RED SPIDER	MEALY BUG	MILDEW
THRIPS	SCALE	GREEN and BROWN
AMERICAN BLIGHT	ANTS	FLY

BED BUGS, &c.,

And useful in winter dressing.

Contains no deleterious ingredient.

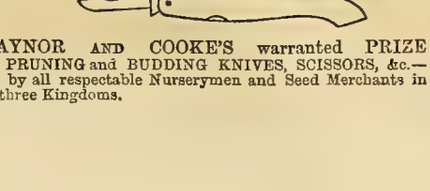
Has received the sanction of the Gardening Press, see *Gardeners' Chronicle* of 9th April and 16th July, 1859, and "Cottage Gardener," 12th July, and has been favourably reported on, and is used by eminent gardening authorities, among whom are—

Mr. Judd, of Althorp Gardens
Mr. Rivers, of Sawbridgeworth
Mr. Edmonds, of Chiswick House Gardens
Mr. Collinson, of Eaton Hall Gardens
Messrs. A. Henderson & Co., Edgeware Road
Mr. Jas. Veitch, jun., Chelsea
Mr. Spencer, of Bowood Gardens

The principal Nurserymen and Seedsmen throughout England, Scotland, and Ireland use it, have taken in supplies, and are now prepared to sell single boxes—price 1*s.* for first trials and small uses, such as destroying bed bugs; 3*s.* for not large gardens; 10*s.* 6*d.* for large gardens, with testimonials and full descriptions for use.

Nurserymen and Seedsmen supplied by PRICE'S PATENT CANDLE COMPANY, Limited, London.

PAXTON WORKS, SHEFFIELD, ESTABLISHED 1738.



SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.—Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

MICROSCOPES.

JOSEPH AMADIO'S Improved Compound MICROSCOPE, 2*l.* 2*s.*; Students', 3*l.* 13*s.* 6*d.*

"Both these are from Amadio, of Throgmorton Street, and are excellent of their kind, the more expensive one especially."—*Household Words*, No. 345.

A large Assortment of Achromatic Microscopes.

Just published, 2d ed., an Illustrated Catalogue, with the names of 1500 Microscopic objects, free for 6 stamps.

IMPROVEMENTS IN HEATING, &c.

MUSGRAVE'S PATENT SLOW-COMBUSTION STOVE, for Warming Public Buildings, Hall, Shops, Conservatories, Factories, Drying Rooms, &c. Will burn in Churches from Saturday till Sunday evening, avoiding attention during the hours of worship. In Halls will burn day and night for weeks, with little care. Capable of warming a large apartment for 24 hours, at a cost of 3*d.*; and deserving of special attention, because of its safety, healthfulness, durability, and extreme simplicity. This Stove is the nearest approach to warming by hot water.



MUSGRAVE'S PATENT STABLE FITTINGS AND HARMLESS LOOSE BOXES have obtained the award of a large Council Medal from the R. I. A. Society for the following improvements:—1st, The Horse cannot injure himself or others in the same stable if he breaks loose in his stall. 2d, He cannot waste the hay. 3d, He can have cut or uncut hay at pleasure. 4th, He has clean water always before him. 5th, A pure and wholesome atmosphere is secured. 6th, The whole fittings are stronger than usual, without increase in price, and there is no risk of infection.



The Loose Box is really what its name denotes, and the most spirited Horse may be turned into it without danger.

MUSGRAVE'S PATENT IRON COW-HOUSE FITTINGS, as approved by the Board of Works, adopted in the Ulster Model Farm, and by many of the most eminent Stock Breeders in the Kingdom, are made wholly of iron, very durable, cleanly, and attractive in appearance. The fodder is always fresh, being freely exposed to the air, removed from the breath of the animal, and separated from the roots or damp food. The range of Troughs can be quickly filled with water for the use of the Cows, or for washing out in case of epidemic, and the cost is very moderate.



These inventions being distinguished for strength, simplicity, and practical usefulness will repay public inquiry.

MUSGRAVE BROTHERS are also Makers of Wire Fencing, Hurdles, Field and Entrance Gates, Corn Rick Stands, Conservatories, Hot-water Apparatus, Verandahs, Rural Bridges, &c.; and their works being favourably placed for cheap labour and materials, they can offer corresponding advantages in price.

MUSGRAVE'S Patent Field Gates have gained the 1st Prize from the R. I. A. Society for strength, durability, and cheapness.

For particulars address MUSGRAVE BROTHERS, Ann Street Iron Works, Belfast.

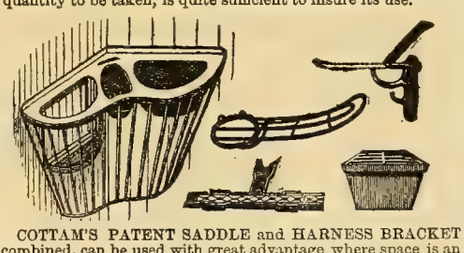
COTTAM'S PATENT INVENTIONS FOR STABLE REQUISITES, awarded a Prize at the Paris Exhibition, patronised by the English and French Governments, as well as by the principal Nobility, Gentry, and Hunting Establishments in the kingdom. In use at her Majesty's Stables, Aldershott and Balmoral.



COTTAM AND COMPANY, Winsley Street, W., are the original inventors of the PATENT ENAMELLED MANGER, Water Trough, and Wrought Iron Rack, united to an iron top-plate, and forming one complete and useful fixture, having COTTAM'S patent noiseless halter guide and collar rein attached, which is taken to the back of the manger, and works with ease and freedom up or down the guide bar.

COTTAM'S NEW PATENT SEED-BOX, an important addition to the above fittings, being simple in construction, light, and durable, promotes cleanliness, and is economical in its results.

COTTAM'S PATENT PERMANENT ATTACHED DROP COVER, for the above, is a most essential addition to their fittings; it is never in the way; can be placed and replaced in an instant; while its cheapness, simplicity, and utility in keeping the contents of the troughs clean, and regulating the quantity to be taken, is quite sufficient to insure its use.



COTTAM'S PATENT SADDLE and HARNESS BRACKET combined, can be used with great advantage where space is an object, as it can be turned up out of the way when not in use.

COTTAM'S IMPROVED WROUGHT IRON VENTILATING BRACKET preserves the shape and allows a free admission of air to the under parts of the saddle.

COTTAM'S IMPROVED SURFACE CUTTER, with perforated moveable cover, the use of which prevents accidents, and can be easily cleaned out.

COTTAM'S CAST-IRON SANITARY TRAP, from its improved construction, gives a full water passage, and does not allow any smell to ascend from the drain.

PATENT LOOSE-BOX FITTINGS, and every article for the harness-room and stable, kept in stock, plain, galvanised, and enamelled. Iron gates, fencing, hurdles, &c.

The New Illustrated Catalogue and Estimates, gratis, upon application to COTTAM and COMPANY, 2, Winsley Street Oxford Street, W. (opposite the Pantheon).

GLASS FOR ORCHARD HOUSES & CONSERVATORIES.

JAMES PHILLIPS AND CO. beg to submit their prices of GLASS for the present month.

16-oz. SHEET GLASS, in boxes of 100 feet.—3rds. 4ths.

12 by 9, 13 by 9, 14 by 9	14*s.* 6*d.*	12*s.* 6*d.*
12 „ 10, 13 „ 10, 14 „ 10, 15 by 10 ..		
13 „ 11, 14 „ 11, 15 „ 11, 16 „ 11 ..		
14 „ 12, 15 „ 12, 16 „ 12, 17 „ 12 ..		
18 „ 12, 19 „ 12, 20 „ 12 „ ..		
16 „ 13, 17 „ 13, 18 „ 13 „ ..	16*s.* 6*d.*	14*s.* 0*d.*
19 „ 13, 20 „ 13, 21 „ 13 „ ..		
16 „ 14, 17 „ 14, 18 „ 14 „ ..		
19 „ 14, 20 „ 14, 21 „ 14 „ ..		

Boxes included and not returnable.

GLASS for ORCHARD HOUSES, supplied by us to Mr. Rivers.

		16 oz.	21 oz.
20 in. by 12 in.			
20 in. by 13 in.	Common	14*s.* 0*d.* ..	£1 1*s.*
20 in. by 14 in.	Superior do. ..	16 6 ..	1 5
20 in. by 15 in.	English Glass ..	18 0 ..	1 9

Boxes included and not returnable.

SMALL SHEET SQUARES, in 100 feet boxes.—*s. d.*

6 by 4	6½ by 4½	7 by 5	7½ by 5½	11 6
8 „ 6	8¼ „ 6½	9 „ 7	9½ „ 7½	
10 „ 8	10⅝ „ 8½ ..	.. ..	.. ..	12 6

Boxes 2*s.* each, returnable at full price.

JAMES PHILLIPS AND CO.,

180, Bishopsgate St. Without, London, E.C.

HORTICULTURAL GLASS—JUNE TARIFF.

THOMAS MILLINGTON'S reduced Tariff of GLASS, &c.

6 by 4, 7 by 5, 8 by 6, 9 by 7 } 16 oz. to the foot, 11*s.* 6*d.*
6½ by 4½, 7½ by 5½, 8½ by 6½, 9½ by 7½ } per 100 feet.

In 100 boxes,—4ths quality, 12*s.* 6*d.*; 3ds do., 14*s.* 4*d.*

10 by 8,	12 by 9,	12½ by 10½,	14½ by 10½,	13 by 11
10½ by 8½,	12½ by 9½,	13 by 10,	15 by 10,	13½ by 11¼
11 by 9,	13 by 9,	13½ by 10½,	12 by 11,	14 by 11
11½ by 9½,	12 by 10,	14 by 10,	12½ by 11½	

20 by 12	per 100 feet	16 oz.	21 oz.
20 by 13	Common ..	16*s.* ..	24*s.*
20 by 14	Superior .	18*s.* ..	27*s.*
20 by 15			

All Boxes included.

Orchard House sizes as supplied to Mr. Rivers.

Hartley's improved Rough Plate Glass from ⅛ to ⅜ in thickness.

Coloured Glass in great variety, at 9*d.* and 1*s.* per foot.

Paints, Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, Lamp Glasses, &c.

87, Bishopsgate Street Without, E.C., same side as Eastern Counties Railway.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

HETLEY AND CO. are supplying 16-oz. Sheet Glass of British Manufacture, packed in boxes, containing 100 square feet each, at the following REDUCED PRICES for cash. A reduction made on 1000 feet.

Sizes.—Inches	Inches. Under 6	by 4	at 1½*d.* is	Per foot. £0	12	6	Per 10 feet.
From 6 by 4	„ 7	„ 5	„ 2*d.* „	0	16	8	
„ 7 „ 5	„ 8	„ 6	„ 2½*d.* „	0	18	9	
„ 8 „ 6	„ 10	„ 8	„ 2¼*d.* „	1	0	10	
„ 10 „ 8	„ 12	„ 9	„ 2¾*d.* „	1	2	11	

Larger sizes, not exceeding 40 inches long.

16 oz. from 3*d.* to 3¼*d.* per square foot, according to size.
21 oz. „ 3¼*d.* to 5*d.* „ „ „
26 oz. „ 3½*d.* to 7½*d.* „ „ „

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS, for Horticultural purposes, at reduced prices, by the 100 square feet.

GLASS TILES AND SLATES made to any size or pattern, either in Sheet or Rough Plate Glass.

Propagating Glasses, Beehive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in Glass.

PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.

GLASS SHADES, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the excise duty, reduced one-half. List of Prices and Estimates forwarded on application to

JAMES HETLEY & Co., 35, Soho Square, London, W.

CONSERVATORIES AND GREENHOUSES FOR SALE.

TO BE SOLD CHEAP, 10 good substantial and well finished GREENHOUSES and CONSERVATORIES, quite new.—To be seen at W. FREEMAN'S, 50, Triangle, Hackney, N.E.

PATENT GUTTA PERCHA SOLES.—IMPORTANT TO GARDENERS.—The Gutta Percha Company have the pleasure to acknowledge the receipt of the following etter from G. GLENNY, Esq., the celebrated Florist:—

"420, Strand, London.

"Gentlemen,—I have worn Gutta Percha Soles and Heels these two years, and being so much in a garden as I necessarily am in all weathers, and with the ground in all states, I would on no account be without them. As a matter of economy I would recommend Gardeners to use them, for they may repair the worn part at all times by warming the material at the fire, and pressing it from the thick parts to the worn parts, as easily as if it were so much dough. I think it the duty of all persons who must occasionally wet their feet to adopt a material that completely defies damp. Many a gardener would escape colds and rheumatism by the use of Gutta Percha Soles.

"Your obedient servant, G. GLENNY."

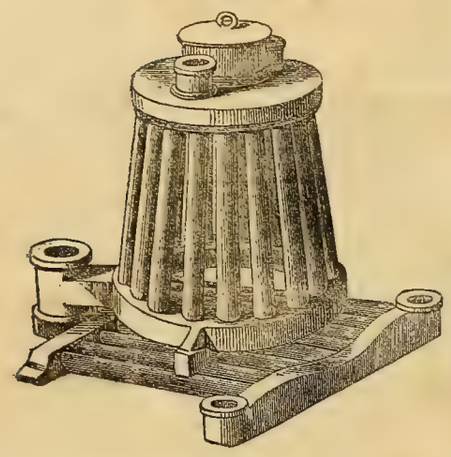
Every variety of Gutta Percha articles, such as Mill Bands, Tubing, Soles, Sheet, Pump Buckets, Fire Buckets, Bosses, Union Joints, Flasks, Bottles, Bowls, Chamber Vessels, Toilet Trays, Sponge Bags, Curtain Rings, Galvanic Batteries, Talbotype Trays, &c., manufactured by the Gutta Percha Company, and sold by their wholesale dealers in town or Country.—The Gutta Percha Company, Patentees, 18, Wharf Road, City Road, E.C., London.

MECHI AND BAZIN'S DESPATCH BOX-WRITING CASES in Russia and Morocco leather are made in 20 different forms and sizes, fitted with real Bramah and Chubb Locks. Also others of a cheaper description. Prices vary from 1*l.* to 50*l.* Portable writing and dressing cases, brush cases, courier bags, pic-nic cases, wicker luncheon baskets, sporting knives, wine and spirit flasks, &c.—112, Regent Street, W., and 4, Leadenhall Street, E.C.

PRIZE MEDAL, PARIS EXHIBITION 1855.

METCALFE, BINGLEY, AND CO.'S New Pattern and Penetrating Tooth Brushes, Penetrating unbleached Hair Brushes, Improved Flesh and Clothes Brushes, and genuine Smyrna Sponges; and every description of Brush, Comb, and Perfumery for the Toilet. The Tooth Brushes search thoroughly between the divisions of the Teeth and clean them most effectually—the hairs never come loose. M., B., and Co. are sole makers of the Oatmeal and Camphor and Orris Root Soaps—sold in Tablets (bearing their names and address) at 6*d.* each; of METCALFE'S celebrated Alkaline Tooth Powder, 2*s.* per box; and of the New Bouquets.—Sole Establishment, 130*B* and 131, Oxford St. 2d and 3d doors west from Holles St., London, W.

By Her Majesty's Royal Letters Patent.



ORMSON'S

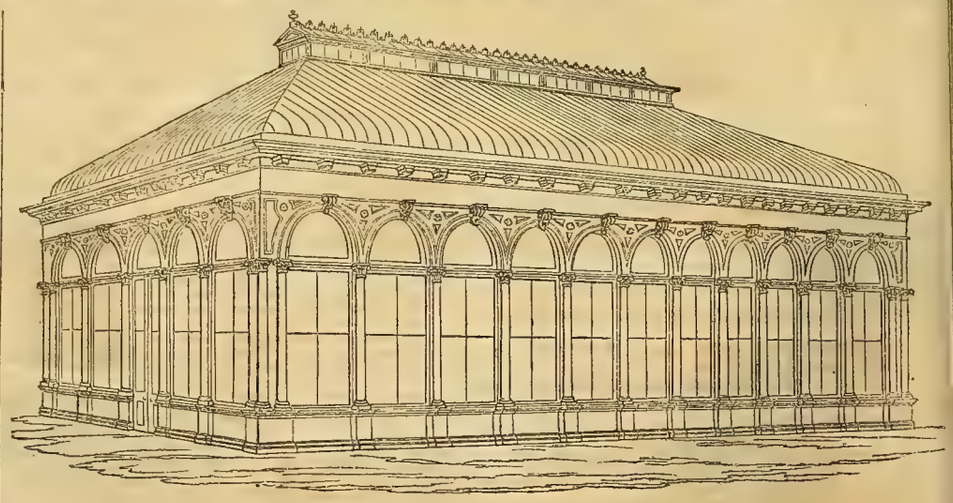
PATENT JOINTLESS TUBULAR BOILER,

HAS NOW GAINED the highest standing reputation for Power, Efficiency, Safety, and Economy of Fuel. There is not a single joint exposed to the action of the fire, which renders these Boilers far more safe than any other Tubular Boiler ever invented.

May be seen in successful operation at Mr. VEITCH'S, Royal Exotic Nursery, King's Road, Chelsea, and in the Gardens of many of the Nobility and Gentry in England, Ireland, and Scotland.

They are made of various sizes. Prices on application.

HENRY ORMSON,
Stanley Bridge, King's Road, Chelsea, S.W.



HORTICULTURAL BUILDINGS

MANUFACTURED BY STEAM POWER MACHINERY.

LOWEST PRICES AND BEST MATERIALS.

DESIGNING, BUILDING, HEATING, AND VENTILATING ON THE MOST APPROVED AND SCIENTIFIC PRINCIPLES.

PLANS, SPECIFICATIONS, AND ESTIMATES FREE ON APPLICATION.

HENRY ORMSON, Horticultural Builder, and Hot-water Apparatus Manufacturer, Stanley Bridge, King's Road, Chelsea, London, S.W.

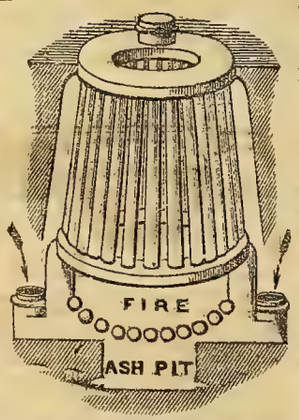
WEEKS' ONE BOILER SYSTEM.

So styled from the fact that the largest Horticultural Establishments in Europe are now effectually heated by WEEKS' ONE BOILER.

THE SEASON FOR TESTING THE EFFICIENCY OF A HOT-WATER APPARATUS having arrived, J. WEEKS & Co. are privileged by the under-mentioned well-known Horticultural Firms te issue a special invitation to the nobility, clergy, and gentry to pay a visit to their immense Establishments in order to become eye-witnesses of the extraordinary power of WEEKS' ONE BOILER SYSTEM.

J. W. & Co. beg emphatically to assert that their ONE BOILER SYSTEM is in every respect superior to any other method of Heating. It is more economical and clean, requires no night attendance, effects a great saving in labour, and that it is infinitely more efficient is clearly shown by the following statistics :—

	Length of Pipe Heated on Weeks' One Boiler System.
	Feet
Messrs. E. G. Henderson & Son, Wellington Nursery, St. John's Wood	5500
Messrs. F. & A. SMITH, Dulwich Nursery	10,000
Mr. WOODROFFE, Harrow Road, Paddington	4000
Mons. LOUIS VAN HOUTTE, Ghent, Belgium	13,000



J. W. & Co. also manufacture smaller and less expensive Boilers upon the same principle as the ONE BOILER SYSTEM, ranging in size from Nos. 1 to 6, at prices from 4*l.* up to 60*l.*

J. W. & Co. also invite an inspection of their own HORTICULTURAL SHOW ESTABLISHMENT at Chelsea, which they built expressly as a place of reference for exhibiting various designs and improvements in the Construction of CONSERVATORIES, GREENHOUSES, PINE STOVES, VINERIES, ORCHARD-HOUSES, CUCUMBER and other FORCING PITS, together with an extensive WINTER GARDEN, the whole in full and constant operation, and now being managed for Forcing CHOICE FRUITS, displaying an unrivalled selection of HORTICULTURAL STRUCTURES suited for every required purpose.

J. WEEKS & Co. have constantly on hand an extensive variety of HORTICULTURAL BUILDINGS ready for fixing in any part of the country, and also Forcing Frames and Pit Lights in large quantities.

J. WEEKS & CO., Horticultural Builders and Hot-Water Apparatus Manufacturers, King's Road, Chelsea, S.W.

PLANS, ESTIMATES, AND ILLUSTRATED CATALOGUES FREE ON APPLICATION.

HOT-WATER PIPES at wholesale prices, with Elbows, Syphons, Tee Pipes, and every other connection. Wrought and cast iron Boilers, Saddle, Conical, Cylinder, and Elliptic, from 24*s.* each. Boilers and Iron Stands to use without brickwork. Valves from 12*s.* each. Coil Boxes, Furnace Doors, Furnace Bars, Supply Cisterns, and Builders' Castings of every description in stock, at Mr. LYNCH WHITE'S Iron Wharf, Upper Ground Street, Blackfriars Bridge, London, S.

TO THE NOBILITY, GENTRY, AND HORTICULTURISTS.

H. McCALLA (late principal Draughtsman to Messrs. Weeks & Co.), CIVIL ENGINEER and FARM ARCHITECT, begs to inform the above that the Horticultural Buildings being confined to so few, exorbitant prices are charged; that he prepares Working Drawings and Specifications, so that they can have their own constructed by any country carpenter, at 1*s.* 6*d.* per foot super, or upon their own estates at 1*s.* 4*d.* per foot. Plans also upon the same rule for erecting Hot Water Apparatus. Plans for all kinds of Farm Buildings, Homesteads, Labourers' Cottages, Laying out of Estates, Drainage. Plans &c., prepared for all the above Works and submitted to competition.—Office : 7 Upper Cheyne Row, King's Road, Chelsea, S.W.

GLAZIERS' DIAMONDS FOR CUTTING HORTICULTURAL and other GLASS, to be had of the Wholesale Manufacturer, JOHN EDWARDS, 20, Sharp's Alley, West Smithfield, London, E.C. Prices from 10*s.* to 27*s.* 6*d.*

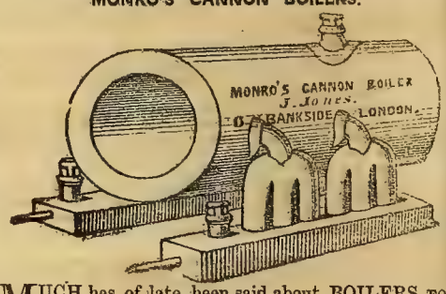
VOKINS AND HURD,
Jubilee Place, King's Road, Chelsea, S.W.





HORTICULTURAL BUILDERS and HOT-WATER APPARATUS MANUFACTURERS. Estimates forwarded on the shortest notice. BOILERS of all sizes on sale; also small CONSERVATORIES and GREENHOUSES, Heated by GAS; HOTWATER APPARATUS, from a single burner, upon quite a different plan to the Common Gas Stove, which is so injurious to plants. For prices &c. apply as above.

MONRO'S CANNON BOILERS.



MUCH has of late been said about BOILERS FOR HEATING BY HOT WATER, but these Boilers have now proved themselves to be the best at present invented. They are adapted for Heating every description of Building, and are made of various sizes. The price of the

24-inch Cast Iron is	£5 10*s.*	each.
24-inch Wrought Iron is	6 10	,,
36-inch Cast Iron is	8 0	,,
36-inch Wrought Iron is	8 10	,,
48-inch Wrought Iron is	12 0	,,

References to Gentlemen and Nurserymen where these Boilers are now at work. The Cannon Boilers are now kept in stock, and are to be had only of J. JONES, 6, Bankside, S.E. Also, every description of Saddle and Cylinder Boilers. Hot-water Pipes and Connections at prices lower than those of any other house in London. Estimates for Hot-water Apparatus erected complete in any part of the country, and an Illustrated Catalogue on application to J. JONES, 6, Bankside, Southwark, London, S.E.

HOT-WATER APPARATUS.

J. JONES begs to offer a complete HOT-WATER APPARATUS FOR GREENHOUSES, at the following prices, delivered free to any Railway Station in England :—

Size of House.	With Cylinder Boiler.	With Saddle Boiler.
20 feet by 10 feet	£8 10 0	£9 0 0
25 ,, by 12 ,,	10 0 0	10 10 0
30 ,, by 12 ,,	11 10 0	12 0 0
30 ,, by 15 ,,	13 10 0	14 10 0
40 ,, by 15 ,,	16 10 0	17 10 0
50 ,, by 15 ,,	18 10 0	20 0 0

The above prices include Boiler, strong Furnace Doors, Bars, Soot Doors, Cistern, Damper, Hot-water Pipes and Connections, Air Pipes, &c., all ready for fixing, and of the best quality. Further particulars will be sent on application. Parties ordering must send plans, showing doorways, position of boiler, &c.—J. JONES, Hot-water Apparatus Manufacturer, 6, Bankside, Southwark, London, S.E.

HORTICULTURAL BUILDINGS AND HEATING BY HOT WATER.

JOHN R. PEILL, 17, New Park St., Southwark, S.E., Manufacturer of every description of Buildings for Horticultural purposes, and Inventor of the Improved Conical Boiler for heating the same, is prepared to undertake works of any magnitude, and refers among others to the celebrated range of FORCING HOUSES at HER MAJESTY'S GARDENS, FROGMORE, and at SIR ROBERT PEEL'S, DRAYTON MANOR, constructed under the superintendence of his Manager, Mr. JOHN JONES; and also to his BOILERS fixed at the CRYSTAL PALACE, the ROYAL BOTANIC GARDENS, REGENT'S PARK, and KEW, and at several hundreds of the Nobility's seats, Public Establishments, and Manufactories in London and the provinces. J. R. P. also manufactures every description of Iron Roofs, Iron Houses, and Iron Fencing, plain and ornamental. Strong Iron Hurdles for Sheep (6 ft. long, 3 ft. high, with 5 bars), 4*s.* 3*d.* each; ditto for cattle, 4*s.* 9*d.* each. Prices and other particulars forwarded on receipt of one postage stamp.

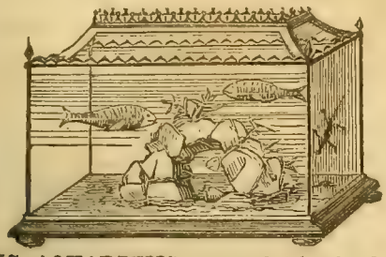
AQUARIUMS, FERN CASES, &c.

JAMES PHILLIPS & CO.

BEG TO SUBMIT THE FOLLOWING PRICES:—

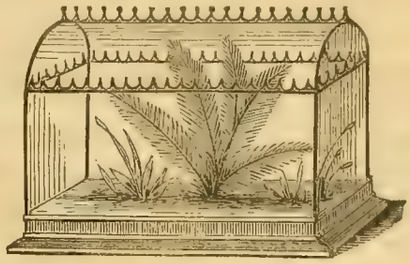
IRON TANK AQUARIUM, with Slate Bottom, and Glazed with Plate Glass, &c

30 in. long, 17 wide, 15 deep, £3 10*s*. | 26 in. long, 16 wide, 15 deep, £3. | 20 in. long, 13 wide, 9½ deep, £1 18*s*.



ZINC AQUARIUMS, as per sketch, glazed with stout sheet glass, and slate bottoms.

12 inches long	.. £0 18 0	18 inches long	.. £1 7 0
14 inches long	.. 1 1 0	20 inches long	.. 1 10 0
16 inches long	.. 1 4 0	24 inches long	.. 1 16 0



FERN CASES,
as per sketch, or with span roofs,
same price as Zinc Aquarium.

Best ROUND GLASS AQUARIUM, with Black Stand.

12 inches diameter	.. ..	5*s*.	16 inches diameter	.. ..	10*s*.	19 inches diameter	.. ..	14*s*.
14 inches diameter	.. ..	8	18 inches diameter	.. ..	13	20 inches diameter	.. ..	15

JAMES PHILLIPS & Co., 180, Bishopsgate Street Without, E.C.

ST. PANCRAS IRON WORKS,

OLD ST. PANCRAS ROAD, N.W.

IRON HURDLES, FENCING, AND GATES.

THE PROPRIETORS OF THE ST. PANCRAS IRON WORKS, OLD ST. PANCRAS ROAD, LONDON WERE AWARDED THE

SILVER MEDAL of the Royal Agricultural Society for their IRON HURDLES & GATES,

which, by their peculiar construction, are more than twice as strong and durable as those in ordinary use.

Lists per post on application. Gates from 30*s*. to 500*l*.

The Hurdles can be seen in process of Manufacture at the Works.

GAME WIRE NETTING.

Professor Varnell's Enamelled and Wrought-iron Stable Fittings.

These Patent Mangers and Stable Fittings obtained the Commendation and the Silver Medal of the Royal Agricultural Society of England and the Royal Agricultural Society of Ireland, are adopted by the Royal Veterinary College, and Professor Spooner of that Institution states that they should be used by all who value the health and comfort of their horses. They can be had plain, galvanised, or enamelled.

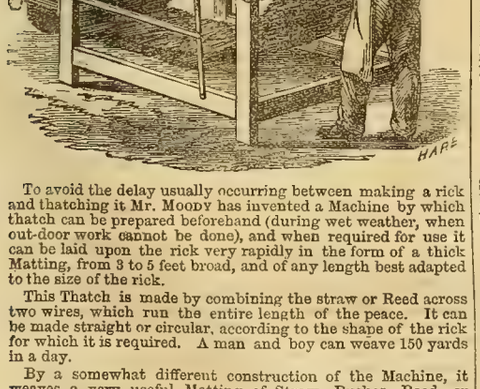
A Show Room is devoted entirely to every description of Stable Furniture, and full-sized stalls and loose boxes are erected for inspection at St. Pancras Iron Works.

ADDRESS—THE MANAGERS,

ST. PANCRAS IRON WORKS, OLD ST. PANCRAS ROAD, LONDON, N.W.,

OPPOSITE OLD ST. PANCRAS CHURCH.

MOODY'S PATENT STRAW FABRICATING MACHINE, manufactured by OLIVER MAGGS, BOURTON FOUNDRY, near Wincanton, Somerset.



To avoid the delay usually occurring between making a rick and thatching it Mr. MOODY has invented a Machine by which thatch can be prepared beforehand (during wet weather, when out-door work cannot be done), and when required for use it can be laid upon the rick very rapidly in the form of a thick Matting, from 3 to 5 feet broad, and of any length best adapted to the size of the rick.

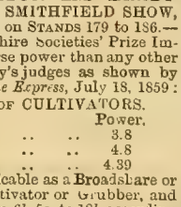
This Thatch is made by combining the straw or Reed across two wires, which run the entire length of the peace. It can be made straight or circular, according to the shape of the rick for which it is required. A man and boy can weave 150 yards in a day.

By a somewhat different construction of the Machine, it weaves a very useful Matting of Straw, Rushes, Reed, or other similar material of any thickness, and from 18 inches to 4 feet wide.

The Matting, which can be made any length, is easily rolled up, and is well adapted for Brickfields, covering Fruit Trees, Plants, and Hot-beds, to protect them from frost. It is readily tied to hurdles, and then forms a good and durable shade for Fence for sheep or Poultry. Price 12*l*. 12*s*.

BRADFORD'S PATENT WASHING MACHINE SIMPLICITY AND WONDERFUL EFFICIENCY.

"I very gratefully acknowledge the extraordinary patronage I have received from all parts of England, Ireland, and Scotland, and which has very far exceeded my most sanguine expectations." — THOMAS BRADFORD, Patentee, Manchester.



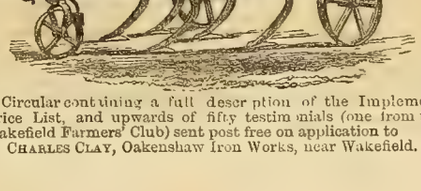
N.B. My Machines always have, and always will be sent on approval, if desired, before payment. Description and Price free by post.

CLAY'S PATENT CULTIVATOR AND ERADICATOR will be exhibited at the SMITHFIELD SHOW, Baker Street, December 6, 7, 8, and 9, on STANDS 179 to 186.—Royal Yorkshire, and North Lincolnshire Societies' Prize Implement.—Requires one-fourth less horse power than any other implement tested by the Royal Society's judges as shown by the following table from the *Mark Lane Express*, July 18, 1859:

WARWICK MEETING—TRIAL OF CULTIVATORS.

	Cutting Width.	Power.
Clay ..	4 feet 5 inches	3.8
Bentall..	4 feet 4 inches	4.8
Coleman.	3 feet 5 inches	4.39

The frame of each implement is applicable as a Broadshare or Scarifier, Surface Parer or Skim, Cultivator or Grubber, and Eradicator or Drag Harrow. Price from 6*l*. 5*s*. to 12*l*. according to size and number of tines, wrought iron.



A Circular containing a full description of the Implement Price List, and upwards of fifty testimonials (one from the Wakefield Farmers' Club) sent post free on application to CHARLES CLAY, Oakenshaw Iron Works, near Wakefield.

BATH NURSERY AND SEED ESTABLISHMENT.

MRS. GRIFFIN, widow of the late JAMES GRIFFIN, finding the business too extensive for her management, would be glad to dispose of it on liberal terms.—Further particulars can be obtained at the Nursery, Weston Road; or 2, New Bond Street, Bath.

TO BE LET, a COTTAGE, with 4 ACRES of LAND; a very desirable situation for a Market Gardener. The Wife of the Tenant to be a good Laundrywoman.—Address Rev. C T, Post Office, Lawton, Cheshire.

NURSERY GROUND.

TO BE LET, WHITTINGTON NURSERY, Upper Holloway, to be entered upon immediately.—For particulars, apply to J. F MARSON, Esq., Small Pox Hospital, or to Mr Bunney, Nurseryman, Stratford, Essex, E.

HUCCLECOTE GARDENS, 2½ MILES FROM GLOUCESTER.

TO BE LET, with immediate possession, the above capital walled-in GARDENS, containing about 4 acres with House, Farm-yards, Buildings, Orchard, and Land adjoining, containing in the whole about 16 acres, with Greenhouses, Propagating houses, Vineries, Pits, &c. Extent of glass 5770 feet.—For particulars apply to W. KNOWLES, Auctioneer, St. Mary's Square, Gloucester.

TO NURSERYMEN AND OTHERS.

TO BE LET, with possession at Christmas next, a small genteel VILLA RESIDENCE, with extensive Vineries, Conservatories, the necessary Outbuildings, and about 5 acres (more or less as may be required) of NURSERY and GARDEN GROUNDS, situate at New Basford, at present in the occupation of Mr. John Johnstone, Nurseryman. The above premises are well worth the attention of an enterprising industrious man. They are within two miles of Nottingham Market Place, with good roads, and a rapidly improving neighbourhood. A Lease would be granted if wished. Rent and taxes about 70*l*. per year, including fixtures, the valuation very small.—Apply to Mr. F. SANDERSON, Surveyor, High Street Nottingham; or G. A. BEARDMORE, Esq., Springfield House, Basford.

Sales by Auction.

MONTHLY POULTRY AND PIGEON SALE.

MR. J. C. STEVENS will Sell by Auction at his Great Room, 38, King Street, Covent Garden, W.C., on TUESDAY, December 6, at 12 o'Clock precisely, upwards of 220 Lots of choice POULTRY and PIGEONS from Messrs. Manning, Blagg, Franklyn, and other well-known breeders, consisting of Cochins, Dorkings, Spanish, Bramahs, Gold and Silver-laced Bantams, Silver-pencilled Hamburghs, Game, Aylesbury and Rouen Ducks, &c.; also some Pigeons from Mr. Olive and other well-known fanciers.—May be viewed on the morning of Sale, and Catalogues had; if for the country, by enclosing two stamps.

ROSES, BULBS, RASPBERRIES, FASTOLF, WHITE MAGNUM BONUM, ETC.

MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on WEDNESDAY, Dec. 7, at half-past 12 o'Clock precisely, upwards of 500 Standard ROSES, of the best sorts of Moss, Perpetual, Hybrid Perpetual, Bourbon, China, and Noisette; Raspberries, Fastolf, White Magnum Bonum, &c.; also a small Collection of DUTCH BULBS.—May be viewed the morning of Sale, and Catalogues had; if for the country by enclosing two stamps.

NEW CHINESE RHODODENDRON, NEW JAPAN TAXUS, AND FINE SPECIMENS OF CEDRUS DEODORA AND C. ATLANTICA, AND OTHER CHOICE CONIFERÆ.

MR. J. C. STEVENS has received instructions from Mr. Glendinning, of Chiswick Nursery, to Sell by Auction at his Great Room, 38, King Street, Covent Garden, W.C., on SATURDAY, Dec. 10, at Half-past 12 precisely, without reserve, the ENTIRE STOCK OF RHODODENDRON FORTUNI AND TAXUS CUSPIDATA, in consequence of their not being disposed of by private contract, in lots suitable to private buyers and the Trade, together with some valuable Coniferous plants. The Rhododendron and Taxus are perfectly hardy and quite new to European gardens.—On view the morning of Sale, and Catalogues had; if for the country by enclosing two stamps.

EXTENSIVE AND UNRESERVED SALE OF ROSES, ETC., AT EPPING.

MESSRS. PROTHEROE AND MORRIS are instructed to Sell by Auction on TUESDAY, Dec. 6, at 11 for 12 o'Clock precisely, the ENTIRE STOCK of the EPPING NURSERY, comprising some thousand Standard, Half Standard, Dwarf, Climbing, and Potted Roses; Evergreens, Fruit Trees, &c.; several two and three-light Boxes, Barrows, a quantity of Garden Pots, and sundry Effects of Mr. Haslam, retiring altogether from business; and the Nursery is TO LET.—Catalogues may be had on the premises; at the principal Inns; of G. GLENNY, Horticultural Agent, Fulham, S.W.; of B. R. PRESTON, Esq., 15, Broad Street Buildings, E.C., and Brentwood, and of the Auctioneers, American Nursery, Leytonstone, N. E.

TO GENTLEMEN, NURSERYMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will Sell by Auction at the Mart, on FRIDAY, December 9, at 12 o'Clock, a first-class collection of DUTCH BULBS, consisting of the finest Double and Single Hyacinths, Narcissus, Jonquils, Anemones, Crocus, Tulips, Ranunculus, Gladiolus, Snowdrops, &c.; also a fine assortment of 500 Standard and Dwarf Roses, with handsome straight stems and fine bushy heads; selected American Plants, including Ghent and other Azaleas, Hybrid Rhododendrons, Kalmias, Andromeda floribunda, &c., beautifully set with bloom-buds, &c.—May be viewed the morning of Sale. Catalogues may be had at the Mart, and of the Auctioneers' American Nursery, Leytonstone, Essex.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, AND OTHERS.

IMPORTANT AND UNRESERVED SALE OF TREES AND SHRUBS (BEING UNDER A BILL OF SALE).

MESSRS. W. TOMLINSON AND SON will offer by Auction upon the Nursery Grounds of Mr. GEORGE ADAMS, Retford, Nottinghamshire, on MONDAY, December 12, and two following days, each day at 11 o'clock, the whole of the valuable NURSERY STOCK of Forest, Fruit, and Ornamental Trees, 40,000 of Spruce, Deciduous Evergreen and Flowering Shrubs, American and Coniferous Plants, Roses, &c. Catalogues may be had of the Auctioneers, Retford.

TO BE LET, with immediate possession after the Sale, from year to year or on lease, the above NURSERY GROUNDS with HOUSE. The land is in first-rate cultivation, and well situate for doing an extensive trade. There is an excellent supply of water, a Greenhouse, Pits, Frames, Potting Shed, &c., 25 large Asparagus Beds. The above is an opportunity that seldom occurs, and will be very advantageous.—Apply to W. TOMLINSON & SON, Auctioneers, Retford.

TO BE SOLD BY AUCTION in July next, 1860, at the Château of Destelbergen, near Ghent, Belgium, the renowned and so highly reputed extensive selections of RARE PLANTS of the late Baron Heynderycx, President of the Royal Horticultural and Botanic Society of Ghent.—All persons wishing for further particulars may apply, post paid, to JEAN VERSCHAFFELT, Nurseryman, Ghent, Belgium.

FOWLER'S PATENT STEAM PLOUGH.

SMITHFIELD CLUB SHOW on Dec. 6, 7, 8, & 9. STANDS 675, 676, 677, 678, 679, 680.

JOHN FOWLER will attend at the above Stands between the hours of 11 and 4 during the Show days, of whom full information respecting the Steam Plough can be obtained.

A 10-HORSE SET OF FOWLER'S STEAM-PLOUGHING APPARATUS

will be in operation during the Show week (weather permitting), on the Farm of Mr. Puckle, The Grove, near Caterham Station, on the London and Brighton Railway.

JOHN FOWLER has gained the Prize at every Agricultural Show at which he has exhibited his Steam Plough, and his efficiency (especially the Traction), over all others brought into competition with it was universally acknowledged.

The Engines are all made Locomotive or Self-moving, requiring but one or two horses in the shafts to steer them, when moving from place to place or field to field, which is a great boon to the Agriculturist, as it renders him in a great measure independent of horse power for cultivating purposes. The Ploughs are constructed to be used both for Ploughing and Scarifying; the latter operation is performed by attaching a short mould-board in the place of the ordinary one, and by breaking up the soil to a depth of 10 to 12 inches, an excellent tillage is produced, which is pronounced to be preferable to scuffling upon the old plan with tines, when breaking it up for a fallow.

Special attention is called to the following **REPORTS**, which have been handed to JOHN FOWLER by parties who have purchased his Steam Plough:—

From MR. MATTHEW SAVIDGE,

"Sarsden Lodge Farm, Chipping Norton, March 31, 1859.

"Dear Sir,—I am pleased to give you a most favourable report of your Steam Plough, sent to Mr. Langston. It has been used daily for the last three weeks without the slightest accident or breakage, and has more than answered our expectations; we have ploughed with it the most varied and uneven field upon the estate, and have found the work perfect. The grubbing with plough heads and shares effects an excellent tillage. This is accomplished by moving the turn furrows; the same ploughs answer either for turning the soil, or for breaking it up. We have for some years had an excellent scarifier, which is easily attached to each end of your plough beams, and thus constitutes a simple and effectual cultivator, with this special recommendation, that it will work over ridge and furrow, and in the roughest land, without clogging. The above is the testimony of my own experience; and during the time mentioned, I have given exclusive attention to the working of the plough; but it has likewise been witnessed and approved by almost every practical farmer in the neighbourhood."

From Mr. M. SAVIDGE.

"Sarsden Lodge Farm, Chipping Norton, April 20, 1859.

"Dear Sir,—Since I wrote on March 31, we have done a deal of excellent work with your Steam Plough. I have put on each plough-head a short, narrow turn-furrow, which completely throws the furrows broadcast, making such a superior tillage as has never before been accomplished in one operation. We have dispensed with several old horses and 10 working bullocks, and with your latest improvements I have no doubt we shall yet reduce our horses. We can do about 6 acres with 8 to 10 cwt. of coal per day."

"Sarsden Lodge Farm, Nov. 26, 1859.

"Sir,—Since the alterations you have made in our machine we have gone on very satisfactorily, and we find a very great convenience in moving from field to field, from the engine being made self-propelling. We have this autumn sold four more horses; the whole of our autumn work is now finished, and the land is certainly in a very superior condition. From the deep cultivation having broken the old pan, during the late heavy rains, no water has stood on the steam plough land as it has usually done. Our crops of roots have been very good, Mangel especially, in one field all planted. To Swedes half were ploughed deeply, and the other half scarified; those on the ploughed portion are decidedly the best crop. From the perfect tilth of the land I anticipate very little spring work will be required to form an excellent seed-bed.—I am, &c.,

"(Signed) "M. SAVIDGE."

Extract of E. Holland's, Esq., M.P., speech at the dinner of the East Gloucestershire Agricultural Society, Nov. 24, 1859:—

"He had ploughed 272 acres with steam, and had ploughed at the rate, sometimes of 6, but on an average of 4 acres a day and had done 68 days ploughing. Now came the cost, which he estimated at 24*s.* for 4 acres, and which he divided this way. He used upon an average for the 4 acres ½ ton of coal at 12*s.*, that was 6*s.*; 1*s.* worth of oil; he reckoned 3*s.* for a horse and water cart, and a boy to look after it 1*s.*; a man to look after the engine, 3*s.*; and four other men at 2*s.* 6*d.* a day, 10*s.* That made 24*s.* Now if he had new tackle, with which Mr. Fowler could supply him—and no man was more liberal and pleasant to deal with than Mr. Fowler—he should be able to have two boys instead of two men, which would be a saving of 2*s.* 3*d.* an acre. Mr. Fowler estimated the wear and tear at 1*s.* 6*d.* an acre; that would make 30*s.* for the 4 acres, or 7*s.* 6*d.* an acre. If he had done it with horses, he must have had four horses to each plough, and he did not believe they could do more than an acre a day, at 1*l.* an acre. So that there was the difference in favour of steam ploughing between 4*l.* and 1*l.* 10*s.* for the four acres, or a saving of 2*l.* 10*s.* The next thing to take into consideration was the cost of the whole thing from beginning to end. The machinery cost him 800*l.*, but he had reduced this cost by selling 300*l.* worth of horses, leaving a net outlay of capital of 500*l.* Upon this he charged himself 20*l.* per cent. or 100*l.* a year. For breakages of machinery he charged himself 50*l.* a year more, placing 150*l.* a year against the steam engine. But instead of keeping 20 horses he had only to keep 12, and the saving in this keep he could not put at less than 30*l.* a year each, which must be taken into account. The eight horses saved thus effected a saving of 240*l.* a year in their keep, to be added to 170*l.*; and taking the 150*l.* a year for interest and wear, there was a net saving of 260*l.* a year in favour of the steam ploughing."

"Saltmarshe, November 18, 1859.

"Dear Sir,—In reply to your letter, I have the pleasure to inform you that I am perfectly satisfied with your Steam Ploughing Apparatus. You are aware that we have had several stoppages from deficient castings, &c.; these deficiencies are now made good, and I believe the whole tackle to be in first-rate working order.

"Whether used as a plough or a drag, the results have been equally good. We have ploughed from 7 to 10 inches deep, and dragged some very strong clay from 7 to 12 inches. The actual land worked has been 170 acres, and the cost, including the wages of your men, harvest wages for some time to my own men, coals, &c., has been 68*l.* 3*s.* 7*d.*

"I estimate the work done at from 10*s.* to 25*s.* per acre, and I am sure the sum of 15*s.* per acre would be a low price for the whole 170 acres. I think it is impossible to estimate the value of working strong clay lands in the autumn, before they become thoroughly wet. My field operations are now finished for the winter, and the land is all in a comparatively dry state. My neighbours are now busy ploughing and treading their stubbles, and many a hard day's work they are making for themselves next spring, as I know from experience.

"I have 25 horses at work on the farm at present, which number I propose to reduce to 15; two horses with a man to take care of them, with the expense of the blacksmith, saddler, &c., &c., will cost 80*l.* a year; thus, a saving of 400*l.* a year will be effected. This sum will be more than ample to meet every expense and charge on the Ploughing Apparatus, even if worked for 200 days in the year.—I am, dear sir, yours faithfully, "PHILIP SALTMARSHE."

"Woodcote, Carshalton, November, 1859.

"My dear Sir,—I am glad to say the Steam Plough and Tackle I bought of you this autumn gives me entire satisfaction, and the more I use it the better I like it. From what I have now seen, I have no hesitation in recommending it to any farmer of 500 acres light, or 300 clay land. I regret I have none of the latter so that I might gain a little more advantage, as there cannot be two opinions about the greater advantages derived from Steam cultivation upon heavy compared to those upon light land.

"I have now ploughed 150 acres altogether, 80 for Wheat, and 70 for root crops at an expense of 5*s.* 8*d.* per acre, which includes wages, coals, water-cart, oil and grease, shares, sharpening of coultery, and removals. The tear and wear I am afraid to express a confident opinion upon, but as yet we have had no breakages of the slightest consequences, except one very foggy day the engineer run the plough against the anchor and did a little damage, but only occasioned one lost day; the rope seems very little worse.

"Owing to the shortness of the day we have not done more than 7 acres, but I think with a day of 10 hours and no stoppages 9 acres could be done.

"As to the quality of the work done, I am quite willing to show it to any one. The ground intended for roots was ploughed 11 to 12 inches deep, and left as loose as if dug by hand. I found coals a great item of expense when ploughing deep (the price of which of course depends upon the district). I have used from 1¼ to 3½ cwts. per acre.

"I did not enlarge here upon autumn and deep cultivation for roots, as every practical farmer already knows the benefits derived from it; and those who practically follow out that system would do well to devote a deal more of their attention to steam cultivation, and they will very soon begin to think of getting their horses into condition for sale. I am convinced it is from the depth and manner in which your Plough breaks up land intended for roots that the greatest benefits are to be derived. I may add that if my books are any criterion, they are open to the public, who may satisfy themselves as to the actual expenses incurred in Steam Ploughing.—Wishing you every success, believe me, yours faithfully, "JAMES ARNOT."

"Broad Hinton, Nov. 29, 1859.

"My dear Sir,—I am happy in having the power to give you a very favourable account of the operations of the Steam Plough which we received, I believe, about the 12th of October, and at once set it to work ploughing for Wheat, which it continued doing until it had ploughed 80 acres, when that description of work was nearly finished. Since then it has been ploughing Wheat stubble for spring corn. These we have turned up very deeply, working only three furrows. It has accomplished about 24 acres of this kind of work, at the rate of 5½ acres per day. It would do 1 acre per diem more had it the proper stubble feet, as these now in use have a tendency to block up, which the revolving ones would prevent. It has been hindered considerably by unfavourable weather, a little, very little indeed (I think two half days), by accidents of an unimportant nature, such as one expects from a new machine of any kind. We put our own farm servants in charge of it, and for the last three weeks they have been quite independent of any other assistance. It has had a great number of spectators, and just as many admirers; all who see it speak of it as a great success. When ploughing for Wheat it did from 6 to nearly 8 acres per diem. I believe that in the summer it will plough from 7 to 10 acres. I think it much cheaper than horse ploughing, as it will do more work than 24 horses, but the great advantage from it is that the work is done better and in more seasonable time. It is an immense auxiliary to cultivators of heavy soil.—I am, Sir, yours truly, R. STRATTON.

"P.S.—In the very heavy ground where we commenced it performed the work of at least 30 horses. We got over 6½ acres per day where a team of three horses would plough only a little over half an acre."

"Rochester, Nov. 17, 1859.

"Sir,—With reference to the Steam Plough supplied me this autumn by you, I have pleasure in stating that I have ploughed 170 acres in a creditable manner. This quantity would have much exceeded had the engine worked satisfactorily; but in consequence of her continued priming (which the makers seem unable to cure) much time has been lost. The rest of the tackle has worked entirely to my satisfaction.

"Yours respectfully, "GEORGE PYE."

"P.S. 40 acres of this land, some of the heaviest in the county, would have taken six horses to plough ¾ of an acre per diem."

"Bourton, Nov. 18, 1859.

"Dear Sir,—In answer to your inquiry as to how I am getting on with the Steam Ploughing Tackle, I can only say that as yet it is everything I can wish. I have ploughed something over 100 acres, free from what I most dreaded (and was constantly told I should have), breakage—having had none of any consequence, merely a share or two and a bent coulter, from coming in contact with large stones and roots, liabilities of course to all ploughs; but as to the more serious parts we have broken none, as you are of course aware, having not sent to you for any. For some time past it has been in very heavy work, ploughing land at a depth of from 8½ to 10½ inches, which I usually plough with four horses at a depth of about 6 inches, and that is not easily done. The traction answers admirably. I have moved the tackle to my other farm and back, a distance of about 10 miles, without any mishap, and now the men are used to it, they soon accomplish the shifting. I am now drilling Wheat on the land ploughed when I first had the tackle of you in October; it works exceedingly well; I find it does not retain the wet like the horse ploughing. I ploughed about 45 acres at the Home Farm, before moving to the other, at a depth of from 5 to 6 inches, at an average of 5½ acres per day, including shifting, and we were some 3 or 4 acres over, on the whole, at the finish; this was four-horse ploughing work. I had not your tackle early enough to work the land as I wished, but next spring, if all should be well, I hope to make it prove greatly to my advantage. I do not regret making the choice I did; I think I told you I was undecided about having your tackle for some time. I thought of having Smith's, but I feel I have made the right choice. I was not fully decided till I saw your tackle at St. Alban's. It was then I first saw your last improvement; I mean placing the pulley under the engine and fixing all the gear work to her without shifting on and off, as on your other sets. I wish you all success, I am sure you will have it, for it only wants to be seen, to carry conviction that at last steam ploughing can be effected, and that with advantage, to practical men.

"I have given you this rather lengthy account of the working of the tackle since I have had it, and you are at liberty to make what use of it you please, because I think it is a duty I owe you to state fairly how I have succeeded, and I think, considering a first start with new tackle and men unaccustomed to the working of it, I have not succeeded badly. I think any one may do the same with a little perseverance—of course every new thing wants attention, and a little attention bestowed at the onset is, I think, a very good precaution from future mishaps. As to the working expenses, I think you have gone to the very outside in your estimate."—I am, dear Sir, yours truly, "GEO. POCOCK."

"Dumbleton, Nov. 10, 1859.

"Sir,—In reply to your letter I beg to state that our Steam Plough has worked admirably the whole of the autumn. Since harvest we have ploughed more than 200 acres, and I have now only 30 acres of Mangel ground and 26 acres for green crops to plough before the spring. I am now satisfied that we can cultivate our heavy clay land by steam, at about half the cost of horse labour, reckoning 20 per cent. wear and tear on tackle. Whoever affirmed that our Plough was broken and a failure spoke of things he knew nothing about; we have had no breakages of any moment, nothing more than all machinery is liable to when in constant work.—I am, sir, truly yours, "CHAS. GILBERT CLARKE."

"Fawley Court Farm, Henley-on-Thames, Nov. 21, 1859.

"Dear Sir,—We are very much pleased with the Ten Horse-Power Ploughing Apparatus supplied by you to Mr. Majoribanks; it works exceedingly well on our hilly and stony ground, and the ploughing is done much cheaper than by horse-power.

"We have ploughed 110 acres of Clover lea and Wheat stubble from 6 to 7 inches deep, at a cost not exceeding 8*s.* per acre, and with men and boys that had no previous knowledge of the working of the apparatus.

"We will be able to dispense with 10 horses now that we have got the Steam Ploughing Apparatus, reserving 14 others for the working of the farm, which is 1000 acres in extent.—I am, dear Sir, your most obedient servant, RICHARD BURNISTON."

"Dear Sir,—The engine I bought from you fitted with windlass, &c., suited for Mr. Fowler's ploughs and which moves itself and tackle from place to place, has given me perfect satisfaction. I have ploughed, or I should rather say smashed-up, about 52 acres since harvest, and have been highly pleased with the very effective manner in which it has worked on my strong clay soil; no horse-power could have done the work it performed, as it has left the land in so good a state for the action of the frost we may expect, and the easy spring cultivation either by going over the fields again or by horse-power, as may be most convenient. I have used your mould-boards on alternate ploughs for about 18 acres, which, while it cuts the land thoroughly and deep by the scarifier, throws upon it the soil turned over by the next mould-board, and so leaves the land in ridges, to lie dry during the winter, and will produce a fine seed bed with very little labour in early spring. Since I have done what I required on my land I have used the engine for threshing purposes, and find a great convenience, as well as saving in expense, by removing itself and its threshing machine considerable distances, and often very bad and hilly roads, with one horse only to guide the engine. I consider that Mr. Fowler's system has perfectly settled the question that land can be better and cheaper cultivated by steam than by horse-power. "Yours truly,

"To J. Smith, Engineer, Village Foundry, "JOHN HIGGS."
Coven, near Wolverhampton."

"As respects the work done by the Steam Tackle which Mr. Righton and myself purchased of you at the late Warwick Show, I am pleased to say the results are very satisfactory, having in the time it has been working ploughed and 'smashed-up' upwards of 150 acres, and that on the strongest and most tenacious clays.

"The work has been performed in such a workmanlike manner as to give perfect satisfaction to those who witnessed its beneficial effects.

"After going through the various items of the expenditure, we have come to the conclusion that the land cultivated by your steam tackle has been worked at a cost of 5*s.* per acre less than if done by horses. To say nothing of the heavy clay lands being left in such beautiful condition, just the reverse of being tempered and padded, as is the case when ploughed with horses; the consequence of which is an unyielding subsoil impervious to all natural agencies.

"We shall hope to have the 10-horse engine reach us by Christmas, having many spring orders on hand.—"I remain, dear sir, yours truly, "JOHN KING."

JOHN FOWLER, JUN., 28, CORNHILL, LONDON, E.C.

Printed by WILLIAM BRADBURY, of 13, Upper Woburn Place, and FREDERICK MULLETT EVANS, of No. 20, Queen's Road, West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and published by them at the Office, No 5, Upper Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—SATURDAY, December 3, 1859.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 50.—1859.] SATURDAY, DECEMBER 10. {Price Fivepence. Stamped Edition, 6d.

INDEX.

Agriculture, forces used in	997 c, 998 a	Horticultural Society	994 b
Agricultural Soc. of England	1001 c	Labourers' wages	1000 a
Belgian gardens	993 a	— feeding	997 c
Birds and Gooseberries	993 b	Linnean Society	994 c
Books noticed	985 a—998 a	Naval volunteers	993 c
Broccoli, new sprouting	991 c	Pine Apples, diseased	994 b
Chrysanthemum show, Dublin	995 a	Pomological congress at Bourdeaux	996 a
Cottagers' Kale	994 a	Rabbits	992 ‖
Cycadeæ	992 c	Rats	992 ‖
Datura arborea	993 c	Reaping machines	999 c
Discovery Batatas	992 b—994 b	Root shows	997 c
Food, Chemistry of	997 b	Self Help, rev.	995 a
Frost, the October	994 a	Sheep, Shropshire	997 c
Fruit trees, lifting	993 c	Smithfield Club	997 c—1002 a
Gardens, Belgian	993 a	Steam power	993 a
Gooseberry bushes	992 b	Trees, lifting fruit	993 c
— buds and birds	993 b	Turnip substitutes	997 b
Grape, Trentham Black	994 a	Vines, ringing	993 c
Hornsey Gardeners' Soc.	994 c	Wages, labourers'	1000 a
Horse labour, French	1003 a		

NEW HORTICULTURAL GARDENS AT KENSINGTON GORE.—The COUNCIL of the HORTICULTURAL SOCIETY give notice that the Fellows of the Society and their friends having already offered the Council more money on Debenture Loan than the Council anticipate will be required, the Debenture list has been closed.—The list for donations and Life Memberships is still open.

THE HANOVERIAN BAND AND FLORAL FETE COMMITTEE beg to announce to Exhibitors that the SHOW DAYS are fixed for WEDNESDAY, MAY 9, and WEDNESDAY, SEPTEMBER 5, 1860. R. KING, Chairman; M. SMITH, Hon. Secretary.—Bath, December 10.

WANTED, a quantity of extra large handsome LIME TREES, from 25 to 30 feet in height. Any gentleman having in his plantations or grounds a surplus quantity of large Lime Trees, which he may be desirous of thinning and disposing of, may find a purchaser for the same by applying to JAMES VEITCH, Jun., Exotic Nursery, King's Road, Chelsea, S.W.

To insure the safe removal of such trees, J. VEITCH, Jun., will require to be permitted to have them cut round and prepared during the winter. Their removal to be effected in the autumn of 1860.—Chelsea, Dec. 10.

NEW ROSE CATALOGUE.

WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

WM. WOOD AND SON will be happy to forward Copies of their NEW CATALOGUE gratis and post free on application.

ROSES.

E. P. FRANCIS'S new and extensive CATALOGUE of ROSES on the Manetti Stock is now ready for delivery, and will be forwarded gratis on application.
Rose Nurseries, Hertford.

ROSE CATALOGUE.

JOHN CRANSTON begs respectfully to inform his patrons that he will be happy to forward his New ROSE CATALOGUE for the present season, post free, upon application. It will be found replete with the most desirable flowers (new and old) in every class, and the descriptions are copious and faithful.—Nurseries, King's Acre, near Hereford.

STANDARD ROSES.—All the leading kinds in cultivation at prices scarcely ever offered before.
CHARLES NOBLE, Bagshot, Surrey.

RHODODENDRONS "of every hue," Scarlet, White, Rose, Crimson, and every intermediate shade, nearly all sizes and at all prices, can be supplied by CHARLES NOBLE, Bagshot, Surrey.

STANDARD RHODODENDRONS.—Hundreds of handsome specimens of all the choicest varieties, varying in colour from deepest crimson to rose and pure white, with symmetrical heads and straight stems, from 2 to 5 feet in height, can be supplied by
JOHN WATERER, American Nursery, Bagshot, Surrey.

CHOICE RHODODENDRONS, AZALEAS, AND CONIFEROUS PLANTS.—A CATALOGUE of GEORGE BAKER'S unrivalled Stock of the above may be had on application.—The American Nursery, Bagshot, Surrey.

SUPERB SPECIMEN SCARLET RHODODENDRONS and others, from 3 to 5 feet in height, and 3 to 4 feet in diameter, some of which are well furnished with bloom buds, from 3s. 6d. to 10s. 6d. each, large and very bushy, well adapted for immediate effect.
WILLIAM WOOD & SON, Woodlands Nursery, Maresfield, near Uckfield, Sussex.

DOUBLE ITALIAN TUBEROSES.

JAMES CARTER AND CO. have just received their first importation direct from Italy. Price per 1000 to the trade on application; retail, 3s. per dozen.
237 and 238, High Holborn, W.C.

CUTHILL'S CUCUMBER AND MELON SEEDS are now ready for the Trade, also his Shilling Packets. A new "Treatise on the Strawberry," showing how to obtain large crops off a small piece of ground, will be ready by the 20th inst., price 1s.—JAMES CUTHILL, Camberwell, London, S.

CEDRUS DEODARA.

WM. MAULE AND SONS still hold the largest Stock of the above Tree in this country, and invite the attention of gentlemen planting, and the Trade generally. Magnificent specimens, 5, 6, and 7 feet, at 5s., 6s., and 7s. each.
Stapleton Road and Stoke Nurseries, Bristol.

STANDARD CHERRIES.

WOOD AND INGRAM beg to inform the Trade and others who may be planting CHERRIES largely, that they have this year a very large stock of fine healthy trees, prices of which they will forward on application. A very fine lot of DWARF and TRAINED TREES also may be had.
Nurseries, Huntingdon.

VEGETABLE SEEDS.

J. CARTER AND CO. can supply PEAS, BEANS, CARROTS, RADISHES, &c., for present Sowing, NEW SEED OF 1859 HARVEST.—237 & 238, High Holborn, W.C.

BEST CUCUMBER FOR EARLY WORK.

CARTER'S CHAMPION, 1s. per packet; also BERKSHIRE CHAMPION, 1s. per packet; and LORD KENYON'S FAVOURITE, 6d. per packet.
JAMES CARTER & Co., 237 and 238, High Holborn, W.C.

TO THE TRADE.

CHARLES SHARPE AND CO. have a large quantity of DANIEL O'ROURKE PEAS to dispose of this season of their own growing and a true selected stock. Price and sample on application.—Sleaford, Dec. 10.

WHOLESALE CATALOGUE.

GEORGE JACKMAN AND SONS' PRICED and DESCRIPTIVE CATALOGUE for 1859, & SPRING 1860; comprising Fruit Trees of all the leading kinds; New and Selected Roses; fine varieties of American Plants; Choice and Rare Conifers; Evergreen and Deciduous Trees and Shrubs; and a fine stock of transplanted Forest Trees, &c., can be had free on application.—Woking Nursery, Surrey.

TRADE CATALOGUE.

THOS. CRIPPS, Tunbridge Wells, Kent, respectfully informs the Trade that his WHOLESALE CATALOGUE OF AMERICAN PLANTS, ROSES, AND GENERAL NURSERY STOCK is now ready and may be had post free.

FERN CATALOGUE.

ROBERT SIM'S NEW DESCRIPTIVE AND PRICED CATALOGUE, No. 6 (62 pages) of his COLLECTION of BRITISH AND EXOTIC FERNS, can be had, post free, for 8 stamps. Gratis to all previous purchasers of Ferns.
Nursery, Foot's Cray, Kent, S.E.

CATALOGUE.

YOUELL AND CO.'S GENERAL AND DESCRIPTIVE PRICED CATALOGUE for this season is now ready, and will be sent free on application.

It contains detailed Lists of Greenhouse Plants, Conifers, Shrubs, as well as all the newest introductions in Soft-wooded Plants.—Royal Nursery, Great Yarmouth.

HYACINTHS AND OTHER BULBS.

WM. CUTBUSH AND SON can still supply Roots equal to the first they sent out this season, as all BULBS are especially selected for them before they are imported from Holland. Descriptive CATALOGUE post free on application.
Highgate Nurseries, London, N.

AZALEA INDICA.

J. IVERY AND SON'S New DESCRIPTIVE CATALOGUE of the above contains all the newest and best varieties. Will be forwarded post free upon application.
Dorking Nursery.—Dec. 10.

AZALEA INDICA.

F. AND A. SMITH beg to offer the above well set with flower buds, dwarf, bushy, and thoroughly ripened off. Having been grown in this country they are most suitable for packing, and are strongly recommended to country Amateurs and the Trade in general. An inspection invited. Prices on application.—Dulwich, Surrey, S.

ERICAS.

F. AND A. SMITH'S Stocks of the above are this season unusually fine, comprising most of the leading winter and spring-flowering varieties. Prices on application.
Dulwich, Surrey, S.

CHOICE DOUBLE FUCHSIA SEED.

GEO. WHEELER, having saved a limited quantity of Seed from the finest DOUBLE FUCHSIA ever offered, viz., his SIR COLIN CAMPBELL, which from such a Stock may reasonably be expected to produce a considerable proportion of double flowers, is prepared to forward, post free, in return for cash or postage stamps, packets containing 24 Seeds each, at 2s. 6d. per packet.—Warminster Nursery, Dec. 10.

BEAUTIFUL JAPAN LILIES.

LILIUM LANCIFOLIUM ALBUM, large bulbs, 6s. p. doz.
LILIUM LANCIFOLIUM RUBRUM or SPECIOSUM, large bulbs, 15s. per doz., 1s. 6d. each.

To be had of HOOPER & Co., Seedsmen, Covent Garden Market, London, W.C.

JAPAN LILIES, HYACINTHS, &c.—All orders amounting to 21s. and upwards sent carriage paid. The following collection "B." for 21s. or the half for 10s. 6d.:—12 Splendid Hyacinths, 4 Border Hyacinths, 2 beautiful Japan Lilies, 12 beautiful Gladioli, 30 Double Tulips, 12 Single Tulips, 100 Crocus, 100 Snowdrops, 4 Polyanthus Narcissus, 40 Border Narcissus, 40 Ranunculus, 20 Anemones.

A DESCRIPTIVE AND PRICED CATALOGUE OF BULBS, with practical cultural directions for amateurs, sent free and post paid on application.
BUTLER & MCCULLOCH, Covent Garden Market, W.C.

LILIUM GIGANTEUM.—A few strong Bulbs of this splendid Lily, the Queen of flowers, are offered at 5s. each; also seed, this year's, at 1s. per 100. The Advertiser bloomed it this summer out of doors 10 inches round at the base, 10 inches high, with 18 blossoms, emitting a delicious fragrance.—JOEL ROBERTS, Pennycumquick, Plymouth.

PINE APPLES, GRAPES, &c.

PINE PLANTS, Fruiting and Succession.
GRAPE VINES, from Eyes, for Fruiting in Pots or Planting.

JOHN WEEKS AND CO. can now supply any quantity of very fine strong healthy Pine Plants, either Fruiting or Succession; also remarkably fine strong Grape Vines from Eyes, all the best sorts.

JOHN WEEKS & Co.'s Horticultural Show Establishment is now entirely devoted to the Growing and Forcing of Fruits in great variety, thereby showing the most improved plans of construction, and the most superior system of Hot-water Apparatus.
JOHN WEEKS & Co., Horticultural Builders and Hot-water Apparatus Manufacturers, King's Road, Chelsea, London, S.W.

GEORGE GIBBS AND CO., SEEDSMEN.
26, DOWN STREET, PICCADILLY, LONDON, W.

GOOD SEEDS. CARRIAGE FREE.

SUTTON AND SONS, SEED GROWERS AND MERCHANTS,
ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.

J. H. ROBINSON, SEED GROWER AND DEALER, Wholesale and Retail, Abbey Farm, Hinckley.

JAMES LOTHIAN, NURSERYMAN and SEEDSMAN, Campbeltown, Argyleshire, LISTS of GARDEN, FLOWER, and AGRICULTURAL SEEDS, TREES, SHRUBS, and PLANTS, &c., forwarded as published on application.
The Nurseries, New Road, Campbeltown.

RED LODGE NURSERY AND AMERICAN GROUNDS, SOUTHAMPTON.

W. H. ROGERS solicits attention to the large, fine, and varied Stock, growing on the above extensive Grounds.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY LIMITED supply every requisite for the Farm and the Garden.
Registered Offices: Union Road, Plymouth.

LAWNS WITHOUT MOWING—SPERGULA PILIFERA.

J. A. SUMMERS supplies the above in plants enough to cover the ground next summer at 1s. per square yard, or at 1s., 2s., and 4s. per doz. plants. A specimen post free, 1s.
Howard Park Nursery, Perry Hill, Sydenham, S.E.

WELLINGTONIA GIGANTEA.

JOHN WATERER has thousands of the above Plants to offer, varying in height from 1 to 4 feet. The whole are exceedingly handsome and well rooted. Price on application.—The American Nursery, Bagshot, Surrey.

RHUBARB PLANTS.—Several thousand Plants of the earliest kind to be Sold cheap.—Apply to Mr. S. CORSENS, Basingstoke.

PLANTING.

A. PAUL AND SON invite attention to their large and superior Stock of CONIFERÆ and other ornamental TREES and SHRUBS, FRUIT TREES, &c. For further particulars see advertisement in *Gardeners' Chronicle* of last week.—Nurseries, Cheshunt, Herts.

GREAT SCARCITY OF FRUIT.

STRONG ROOTS OF THE LINNÆUS RHUBARB, from division, can be supplied in any quantity at 12s. per 100, or 5l. per 1000, by WALTER PENNINGTON, Nurseryman, South Retford, Nottinghamshire.

MAIDEN AND CUT-BACK FRUIT TREES.
STANDARD AND PYRAMID FRUIT TREES.
EXTRA FINE TRAINED FRUIT TREES.

RICHARD SMITH has this season 23 acres of the above. Price on application.
St. John's Nurseries, Worcester.

ENGLISH CHESNUTS.

TO BE SOLD, a quantity of ENGLISH CHESNUTS for Seed, grown on the Cobham Hall estate, in the County of Kent. Price 5s. per bushel.—Apply to Mr. GEORGE FRANKS, Thory, near Gravesend, Kent.

WEEPING ASH and MOUNTAIN ASH, with stout straight stems, 8 feet to 10 feet, to be SOLD cheap; also PYRAMIDAL APPLE and PEAR TREES, very fine, best kinds.—Apply to ISAAC DAVIES, Larkfield Nursery, Wavertree, Liverpool.

FOR SALE, a large quantity of fine TRANSPLANTED LARCHES, from 2 to 4 feet. Prices on application.—R. TURNBULL, Catterick Bridge Nursery, Yorkshire.

FOR SALE, a stock of about 60 FRUITING and SUCCESSION PINES. Price Six Guineas.—For particulars address, post paid, T. N. L., Post Office, Taunton.

DWARF MAIDEN FRUIT TREES.

HUGH LOW AND CO. have to offer of fine quality, PEACHES, NECTARINES, APRICOTS, PLUMS, CHERRIES, APPLES, PEARS, both on Pear and Quince Stocks. Prices will be furnished on application.

The Autumn Wholesale CATALOGUE is now ready for distribution.—Clapton Nursery, London, N.E.

TRANSPLANTED AND SEEDLING QUICK.

EDMUND SALSBURY, Melbourne, near Derby, having a large quantity of the above, strong and well rooted, will be glad to send samples of three or more sizes to any place required without charge for samples.

THREE MILLIONS OF TRANSPLANTED QUICKS.

GEORGE CHIVAS, Chester, offers the above, which are admitted to be unequalled in point of quality in Great Britain. A sample bale, containing 100 each of five sizes, forwarded on receipt of 15s., and orders for 10,000 delivered free at any railway station.—Chester, December 10.

LARCH FIR.

CHARLES SHARPE AND CO. have a large stock of TRANSPLANTED LARCH, 3 to 4 feet, and 4 to 4½ feet. Samples and prices on application.—Sleaford, Dec. 10.

HARDY HEATHS.—A Collection of 20 sorts, by name, of the above favourite autumnal flowers, in good plants, at 30s. per 100, or 12l. 10s. per 1000.
JOHN WATERER, The American Nursery, Bagshot, Surrey.

HARDY CALIFORNIAN CONIFERS, PICEA (ABIES) AMABILIS, PICEA (ABIES) GRANDIS.—Healthy seedling Plants of the above named most beautiful hardy Trees can be supplied by the undersigned by the dozen, hundred, or thousand, as also many other choice Conifers. PRICED CATALOGUES of which will be sent on application.
HUGH LOW & Co., Clapton Nursery, London, N.E.

DUTCH AND OTHER BULBS.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their CATALOGUE of the above is now ready, and will be forwarded post free on application. Early orders are solicited, as their successful cultivation depends in a great measure on early planting.

Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

AMERICAN PLANTS, &c.

MESSRS. WATERER AND GODFREY'S CATALOGUE for the present season is now ready, and may be had on application. It describes fully all Rhododendrons worth growing, and contains a List of Azaleas, Hardy Heaths, and other American Plants, as well as a summary of the general stock of the most extensive Nurseries in England.

The Catalogue may also be had at Messrs. MAY'S & Co., 1, Wellington Street, Strand, W.C.

Knap Hill Nursery, near Woking, Surrey.

HARDY RHODODENDRONS.

MESSRS. WATERER AND GODFREY invite attention to their Seedling RHODODENDRONS, which they are selling without names, and which they strongly recommend as being very superior in point of HABIT, FOLIAGE, COLOUR, and GENERAL HARDINESS. They are from 1½ to 2½ feet high, and as much through, and no plants can possibly be in finer health. They will be sold at very liberal prices, and purchasers can select from a stock of many thousands.

Knap Hill Nursery, near Woking, Surrey.

RHODODENDRONS.

JOHN WATERER'S CATALOGUE OF HARDY, SCARLET, and other choice RHODODENDRONS, as annually exhibited at the Royal Botanic Gardens, Regent's Park, is now published and will be forwarded on application. Faithful descriptions of all the esteemed varieties will be found detailed, with a list of the popular kinds of AZALEAS and other AMERICAN PLANTS, as well as a selection of CONIFEROUS TREES, with height and prices.

The American Nursery, Bagshot, Surrey, near Sunningdale Station, South-Western Railway.

GERANIUMS, HERBACEOUS PLANTS, ETC.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their new PRICED and DESCRIPTIVE CATALOGUE of the above, to which are added Supplemental Lists of Stove, Greenhouse, and Hardy Plants, Fruit Trees, &c. (which include all the best new plants of the season), is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

SUPERB BALSAMS.

F. AND A. SMITH are sending out seeds of their well-known superior BALSAMS, in collections of nine distinct colours, six seeds of each, 2s. 6d.; the same mixed, 2s.; half the quantity, mixed, 1s.

The above are selected from a stock of 24,000 plants, for purity and brightness of colour, size and doubleness of the blooms, and general good habit of the plant. A liberal allowance to the Trade when 12 Packets are taken.—Dulwich, Surrey, S.

NEW PINES AND OTHER PLANTS.

A. VAN GEERT, NURSERYMAN, Ghent, Belgium, begs to offer the following:—

A set of 100 new Mexican Pines, for		£6	0 0
A collection of 100 best Camellias, 9 inches to 1 foot high		4	0 0
Indian Azaleas, with flower buds, choice varieties,	per 100.—4l. to	6	0 0
Alstrœmeria chilensis	per 100	0	10 6
Asclepias tuberosa, flowering roots	,,	0	15 0
Lilium superbum	per doz.	0	12 0
,, lancifolium rubrum	per 100	4	0 0
,, ,, album		3	0 0

THE TRUE LANCASHIRE SHOW GOOSEBERRIES.

HOLLAND AND BAYLEY, Bradshaw Gardens, Chadderton, near Manchester, can now supply 24 strong plants for 12s., or 12 plants for 7s., of the below-named GOOSEBERRIES, which are of fine flavour. Weights taken from the Gooseberry Grower's Register for 1859, viz.,

RED.	dwts.	grs.	GREEN.	dwts.	grs.
London	27	1	Thumper	24	3
Dan's Mistake	26	5	Turnout	22	16
Wonderful	22	12	Gretna Green	22	6
Companion	22	4	General	21	12
Red Robin	21	14	Rough Green	21	8
Slaughterman	21	12	Tom Joiner	20	13
YELLOW.			WHITE.		
Catherine	26	3	Antagonist	27	4
Leader	23	3	Snowdrop	23	20
Drill	23	0	Freedom	23	3
Railway	19	19	King of Trumps	20	2
Peru	18	23	Queen of Trumps	19	16
Goldfinder	18	15	Eagle	19	12

DESCRIPTIVE CATALOGUES OF GENERAL STOCK may be had on application.

Post-office Orders to be made payable at Middleton, Lancashire.

NEW AND CHOICE PLANTS.

JOHN STANDISH, in offering the following Plants, can assure his customers that they are now in fine condition for sending out:—

MYOSOTIDIUM NOBILE, or Antarctic Forget-Me-Not, each 31s. 6d.—This plant, from the Chatham Islands, is one of the most remarkable that has been introduced for some years, being totally distinct from all others. It has large thick leaves, 8 or 9 inches across, of a dark glossy green, and sends up magnificent trusses of bloom of the most beautiful blue and white, similar to a Forget-me-not, but of a giant form. A Drawing of it is published in Curtis's "Botanical Magazine" for September. A description taken from the above is also published in the *Gardeners' Chronicle* of Sept. 17, 1859, wherein Dr. Lindley says:—"This is the handsome perennial provisionally named Cynoglossum nobile by Dr. Hooker in our last year's Volume, page 240. It is quite deserving all the encomiums that have been passed upon it."

GLADIOLI, named varieties, from the choicest and largest collection in England, 6d. to 5s. each. Also a fine lot of bulbs raised from seeds saved from the best flowers, all of which will flower in the summer of 1860. 7s. 6d. per dozen, or 50s. per 100. These are strongly recommended.

RHODODENDRON LIMBATUM.—Pale blush, bordered with bright crimson. This has received several medals at the exhibitions for Rhododendrons, being very distinct and one of the most free flowering. 21s. each.

RHODODENDRON MINNIE.—White, very large blotch of chocolate-coloured spots, a fine flower, and remains a very long time in bloom. This is one of the most curiously marked Rhododendrons amongst all the white; it bears a noble truss of blooms, which cannot fail to be admired. 21s. and 31s. 6d. each. Selections can be made from one of the finest collections in Europe.

PHLOX MRS. STANDISH.—The purest white, with a large red eye. 1s. each. Also a large collection of the finest kinds which J. S. has shown during the last summer and in every case received the First Prize. Plants from 1s. to 2s. 6d. each.

A CATALOGUE containing a full description of the best Hardy Plants in cultivation will be forwarded on application to The Royal Nursery, Bagshot.

NEW ANNUALS.

JOHN GEORGE WAITE, SEED MERCHANT, 181, High Holborn, London, W.C., has great pleasure in offering SEEDS of the following new hardy Annuals:—

CLARKIA PULCHERRIMA,
SCHIZANTHUS GRANDIFLORUS OCULATUS,
HELIOPHILA CŒRULEA STRICTA.

Coloured Drawings and prices of which (to the Trade only) can be had on application.

Seed Establishment, 181, High Holborn, London, W.C.

CHEAP PLANTS.

F. GODWIN, previous to removing to his NEW NURSERIES, offers as under at the following low prices:—

	Each—s. d.
Asplenium Belangeri	1 6
,, fœniculacea	1 0
Begonia argentea guttata	1 0
,, ,, punctata	1 0
,, grandis	1 6
,, Madame Wagner	1 0
,, Miranda	1 0
,, nebulosa	1 6
,, picturata	2 6
,, Prince Troubetzkoy	1 0
,, Rollissoni	1 6
,, Rex	0 6
,, splendida	1 0
,, ,, argentea	1 0
,, ,, sanguinea atro-purpurea	1 6
Combretum purpureum	1 0
Croton variegata	1 0
Dracæna ferrea	1s. to 1 6
,, mobilis	2 6
,, terminalis	1s. 6d. to 2 6
Eucharis amazonica	1s. to 2 6
Franciscea confertifolia	1 6
Gardenia citriodora	2 6
,, Fortuni	1 6
,, radicans	1 0
Hoya variegata	1 6
Ixora alba	1 6
,, crocata	1 6
,, coccinea	1 0
Medinella magnifica	0 9
Pandanus javanicus variegatus	5 0
Stadmannia Jonghi	5 0
Thyrsacanthus rutilans	0 6
Acacia cultriformis	1 6
,, grandis	1 0
,, lineata	0 9
,, longifolia magnifica	1 0

	Each.—s. d.
Acacia Riceana	6d. & 1 0
,, armata	0 6
Abelia floribunda	1 0
Aphelexis macrantha purpurea	1 0
,, rupestris	1 0
,, sesamoides	1 0
,, ,, nova	1 0
Beaufortia purpurea	1 6
Bouvardia longiflora	0 6
Brachysima acuminata	1 0
Chorozema flava	0 9
,, cordata elegans	0 9
,, ,, splendens	0 9
,, Laurencianum	0 9
,, varium Chandleri	0 9
Clianthus magnificus	1 0
Dracophyllum gracile	1 0
Epacris, fine, strong, blooming plants	1 0
Ericas, of sorts	1 6
Eugenia Ugni, small plants 4s. per doz., 25s. per 100.	
Euonymus japonicus variegatus	1 0
Farfugium grande	1 0
Gnidia lævigata	1 0
,, pinifolia	1 0
Hydrangea japonica variegata	0 6
Kennedya monophylla variegata	1 0
Leschenaultia Baxteri	0 9
Lomatia ferruginea	1 6
Oxylobium Osborni	1 0
Polygala Dalmaisiana	1 0
Tremandra ericoides	1 0
,, verticillata	0 9
Tristania nerifolia	1 6
Vaccinium Erythrina	1 0

AZALEAS INDICA, of sorts, viz., amœna, amœna grandiflora, amœna lateritia, Adelaide de Nassau, Barclayana, Baronne de Prete, Chelsoni, Criterion, Duc de Nassau, Duke of Wellington, Eulalie Van Geert, Gledstanesi formosa, Illustris nova, Iveryana, Juliana, lateritia elegans, Louis Napoleon, Madlle. Victorine Vatel, Mrs. Fry, perfecta elegans, Princess Mary of Cambridge, Queen Victoria, Roi Leopold, Rosy Circle, Symmetry, Standard of Perfection, Teutonia, The Bride, Trotteriana, at 12s. per dozen; or the collection for 25s.

GERANIUMS (new varieties).—Ariel, Excellent, Fire Queen, Guido, Lady Canning, Monarch, Peacock, Prince of Wales, Sir Colin Campbell, Star, Telegram, at 2s. each.

GERANIUMS.—Messrs. Rollisson & Son's new varieties, Aglaia, Astarte, Eunice, Fanty, Hersilia, Irene, Julia, Lampetia, Lottie, Lucy, Menestho, Metis, Parthenope, Salacia, Sisera, Tethys, Theodosia, at 2s. each.

GERANIUMS, older varieties, per doz.	s.	d.
,, fine, of sorts, per 100	9	0
,, Fancy, fine, of sorts, per doz.	50	0
,, variegated, Bijou, each	9	0
,, ,, Brilliant, per doz.	9	0
,, ,, Fairy Nymph, per doz.	4	0
,, ,, Flower of the Day, do., 3s. and	6	0
,, ,, Jane, per doz.	4	0
,, ,, Julia, per doz.	24	0
,, ,, Mountain of Light, per doz.	12	0
,, ,, Mrs. Lennox, per doz.,	6	0
,, ,, Queen Victoria, per doz.	6	0
,, ,, St. Clair, per doz.	4	0

Broadfield Nurseries, Sheffield.

SURPLUS NURSERY STOCK.

F. GODWIN in removing to his New Nursery offers the undermentioned at the following low prices: s. d.

13,000 Acacias, 1 year's	per 1000	3	6
10,000 Brooms, Yellow Spanish, 1 year's	,,	10	0
10,000 Chesnut, Horse, 1 year's	,,	4	0
32,000 Oaks, 1 year's, fine in drills	,,	2	0
2,000 do. Scarlet, 1 year's do.	per 100	4	0
20,000 Pinus maritima, 1 year's	per 1000	4	0
1,500 Morus nigra, 1 year's	per 100	3	0
8,000 Pinus Laricio, 2 year	,,	3	0
50,000 Spruce, 2 year's	per 1000	1	6
25,000 do. 3 years	,,	2	0
60,000 Yews 3 years	,,	12	6
15,000 Pinus austriaca, 1 year bedded, fine	,,	8	0
1,000 ,, Alepica, 1 year do. do.	per 100	5	0
1,500 ,, calabrica, 1 year do. do.	,,	6	0
10,000 ,, Pinaster, 1 year do. do.	per 1000	10	0
50,000 Scotch, 2 years and 1 year bedded, fine	,,	3	0
25,000 Spruce, 2 years and 1 year do. do.	,,	4	0
7,000 Beech, 3 to 4 feet	,,	30	0
25,000 Larch, 1½ to 2 feet	,,	12	0
5,000 Scotch, 1½ to 2 feet	,,	18	0
50,000 Asparagus, 3 years	,,	10	0
5,000 Currants, Red, White, and Black, Victoria Red, Long-bunched, Red, and Black Naples, per 100		8	0
20 extra fine Mulberry Trees, 8 to 10 ft., bushy, each, 10s. 6d. to		12	6
100 Apricots 2 and 3 years trained	per doz.	30	0
200 Peaches and Nectarines, 2 and 3 years trained, fine	per doz.	36	0
300 Andromeda polyfolia	per 100	16	0
4,000 Arbor-vitæ, American, 8 to 15 inches, 2 yrs. transplanted	,,	5	0
1,000 Azalea, Belgian, in sorts	,,	50	0
700 Erica carnea	,,	16	0
1,000 Honeysuckles, Red Dutch	,,	8	0
6,000 Laurels, common, 2 to 3 feet	,,	10	0
150 Araucaria imbricata, 9 to 12 inches	per doz.	24	0
250 do. do. 12 to 18 inches	,,	36	0
1,000 Lilacs, of sorts, 18s. and	per 1000	15	0
1,500 Roses; Standard, Hybrid, Perpetual, & others	p. 100	70	0
100 Ash, Weeping, strong	per doz.	15	0
25 ,, Mountain, Weeping	,,	18	0
50 Limes, Weeping	,,	18	0
2,000 Yews, extra transplanted, 1½ to 2 feet	per 100	18	0
2,500 ,, ,, 2 to 2½ feet	,,	24	0
3,500 ,, ,, 2½ to 3 feet	,,	30	0
2,500 ,, ,, 3 to 4 feet	,,	40	0

POTATOES, Damm's Seedling, or Handsworth's Early Round, 2s. per peck of 20 lb., with all other kind of NURSERY STOCK. Prices on application.—Sheffield.

FOR SALE, a fine Collection of TULIPS, including many of the best sorts. They are offered at 5s. per 100, or 2l. per 1000, or to any one inclined to take the lot (about 5000) they would be disposed of for 5l. This is a good opportunity for a new beginner or an old grower, as a bed of choice show flowers may be selected.—Apply to MR. JOHN STEPWORTH, Lea Bridge Road, Leyton, Essex, N.E.

CARTER'S PROLIFIC RASPBERRY.

JOHN CARTER, JUN., has pleasure in again offering the above Raspberry to the notice of the Horticultural world. It is a beautiful red fruit, very large, of fine flavour, and most abundant bearer. It was named by Mr. Glenny, after he had grown some plants one season, and he has since confirmed all he said in its favour, both in the "Garden Almanack" and in *Lloyd's Newspaper*.

J. C. has many testimonials of its excellence, and feels quite confident no one who may favour him with an order can be disappointed. Strong Canes, 5s. per dozen, or 33s. per 100, at the Nursery, or of the agents, HURST & MCMULLEN, 6, Leadenhall Street, E.C., or GEORGE GLENNY, Fulham, S.W. A CATALOGUE of general NURSERY STOCK may be had on application.—Keighley Nursery, Yorkshire.

MESSRS. J. & H. BROWN offer the following selection of choice PLANTS, which they will forward to any part:—

	s.	d.
Andromeda floribunda, winter flowering, per doz.	15	0
25 Azaleas, new hardy Belgian varieties, one of a sort, on their own roots, by name, well set for bloom, fine for beds or pot culture for forcing	20	0
25 Azaleas, hardy American varieties, do. do.	15	0
12 hardy Rhododendrons, including red, white, and rose colour	12	0
Fine hardy Scarlet Rhododendrons, 2 feet, for beds, per dozen	10	6
New Yellow Rhododendrons, each, 3s. 6d. to	5	6
Roses, best sorts, Standards and Half-standards, per dozen, 12s. to	15	0
Climbing Roses of best sorts, rapid growers, per doz.	6	0
6 fine hardy Magnolias, one of a sort	10	
Greenhouse Azaleas, fine varieties, per doz., 10s. to	12	
Camellias, best double varieties, well set with buds, per dozen	28	0
24 Epacris and Ericas, one of a sort, in small pots	16	0
Hyacinths and other Dutch Bulbs of all kinds, cheap.		

FRUIT TREES.

Fine Standard and Dwarf-trained Peaches, Nectarines, Apricots, Cherries, Plums, and Pears, each, 2s. 6d.; or per dozen	24	0
Dwarf plants of all the above kinds, grown especially for pot culture in orchard-houses, &c., per dozen	18	0
Best sorts of Gooseberries, Currants, and Raspberries, per dozen	3	0
Mulberries, Medlars, Quince, and Walnuts, each	2	0
Filberts, Red and Thin-shell, per dozen	3	0

Choice Grape Vines from eyes and layers, strong.

Evergreen Shrubs and ornamental Trees of all kinds, cheap.

Albion Nursery, Stoke Newington, London, N.

MESSRS. WATERER AND GODFREY respectfully refer planters to the following LIST of well-known good hardy Plants:—

ARAUCARIA IMBRICATA, 1 foot, stout, healthy, 5l. per 100; larger, up to 8 feet.

CEDRUS DEODARA, 2½ to 3 feet, very handsome, 10l. per 100; larger, in any quantity, up to 10 and 15 feet.

PICEA NOBILIS, Seedlings, in quantity, 1 foot, stout.
Ditto larger and in every way perfect plants, up to 4 feet.

NORDMANNIANA, from seed, 2, 3, 4, and 6 feet.

PINSAPO, 2½ to 3½ feet, and as much through.
Ditto magnificent plants, 8 and 10 feet high.

CUPRESSUS LAWSONIANA, fine bushy seedling plants, 2½ feet high.

JUNIPERUS, CHINESE, 3 feet up to 8 and 10 feet.
,, IRISH, 5, 6, and 7 feet.

YEWS, IRISH, 5, 6, 7, and 8 feet.
,, GOLDEN, from 2 to 7 and 8 feet.
,, COMMON ENGLISH, in large quantities, 4 to 6, 7, and 8 feet.

THUJA AUREA.—Several hundred magnificent specimens, 3, 4, and 5 feet high, and measuring 10 to 15 feet in circumference.

THUJOPSIS CÆREOLIS, 2½ to 3 feet.

WELLINGTONIA GIGANTEA, all from seed, 1½ to 3 feet, and as wide.

HOLLY, GREEN, in quantities, 5, 6, and 8 ft.; VARIEGATED, especially the best gold striped, of all sizes, up to 6 feet.

All the plants referred to in this advertisement were removed in April last, and they are in a condition to travel any distance with perfect safety.—Knap Hill Nursery, near Woking, Surrey.

TRANSPLANTED FOREST TREES.

WOOD AND INGRAM beg to offer the following extra fine and well rooted stuff:—

ALDERS, 4 to 5 feet, 35s.; 5 to 6 feet, 40s. per 1000.

ACACIAS, 3 to 4 feet, 12s.; 4 to 5 feet, 15s.; 8 to 14 feet, 50s. per 100.

ASH, 3 to 4 feet, 30s.; 4 to 5 feet, 35s.; 5 to 6 feet, 40s.; 6 to 7 feet, 50s. per 1000.

BEECH, 2 to 3 feet, 30s.; 3 to 4 feet, 40s.; 4 to 5 feet, 50s. per 1000.

CHESNUT, SPANISH, 3 to 4 feet, 40s.; 4 to 5 feet, 50s.; 6 to 7 feet, 60s.; 7 to 8 feet, 80s. per 1000.

ELMS, NARROW-LEAVED ENGLISH, 2 years seedling, 8s. per 1000.

ELMS, HUNTINGDON AND HERTS, from layers, 3 to 4 feet, 15s.; 4 to 5 feet, 20s.; 5 to 6 feet, 25s.; 6 to 8 feet, 35s. per 100.

ELMS, HUNTINGDON, from grafts, 4 to 5 feet, 25s.; 5 to 6 feet, 30s.; 6 to 8 feet, 50s.; 8 to 10 feet, 70s. per 100.

FIR, SPRUCE, 1 to 1½ foot, 50s.; 1½ to 2 feet, 60s.; 2 to 3 feet, 70s. per 1000.

FIR, SCOTCH, 2 to 3 feet, 30s.; 2½ to 3 feet, 35s.; 3 to 4 feet, 50s. per 1000.

FIR, LARCH, 2 to 3 feet, 25s.; 3 to 5 feet, 35s.; 4 to 5 feet, 40s. per 1000.

HORNBEAM, 2 to 3 feet, 30s.; 3 to 4 feet, 35s.; 5 to 6 feet, 50s.; 4 to 5 feet, 40s. per 1000.

MAPLE, 1½ to 2 feet, 20s.; 2 to 3 feet, 25s.; 3 to 4 feet, 30s.; 4 to 5 feet, 40s. per 1000.

MAPLE, NORWAY, 3 to 5 feet, 8s.; 7 to 8 feet, 20s. per 100.

OAKS, BRITISH, 2 to 3 feet, 30s.; 3 to 4 feet, 40s.; 4 to 5 feet, 50s.; 5 to 6 feet, 80s. per 1000.

OAKS, TURKEY, 4 to 5 feet, 10s. per 100.

POPLAR, BLACK ITALIAN, 2 to 3 feet, 25s.; 3 to 4 feet, 30s.; 4 to 5 feet, 35s.; 5 to 6 feet, 40s.; 6 to 8 feet, 50s.; 8 to 10 feet, 65s. per 1000.

POPLAR, LOMBARDY, 4 to 5 feet, 10s.; 5 to 6 feet, 15s.; 6 to 7 feet, 20s.; 7 to 8 feet, 25s.; 8 to 10 feet, 50s. per 100.

POPLAR, ONTARIO, 6 to 7 feet, 20s.; 7 to 8 feet, 25s. per 100.

SYCAMORE, 2 to 3 feet, 25s.; 5 to 6 feet, 40s.; 6 to 8 feet, 45s. per 1000.

WILLOW, BEDFORD, CÆRULEAN, and HUNTINGDON, 4 to 5 feet, 30s.; 5 to 6 feet, 40s. per 1000.
Prices to the Trade on application.

W. & I.'s new CATALOGUE of NURSERY STOCK, including Fruit, Forest, and Ornamental Trees and Shrubs, Evergreens, Roses, &c., is now ready and will be forwarded free on application.—Nurseries, Huntingdon.

PAMPAS GRASS.—The present is the most favourable time for planting out this charming Plant. No one can imagine the grand effect of a mass of its silvery plumes unless they see it, nor is its value confined to the ornamental, but is likely to become useful as Cover for Game. It grows in any soil or situation, attaining the height of from 6 to 10 feet.—Any quantity can be supplied by C. NOBLE, Bagshot, Surrey.

PLANTING SEASON.

To NOBLEMEN, GENTLEMEN, NURSERYMEN, BUILDERS, AND PUBLIC COMPANIES ENGAGED IN PLANTING.

MESSRS. PROTHEROE AND MORRIS most respectfully invite the public to inspect their valuable NURSERY STOCK, extending over 20 acres, and in the highest state of cultivation, consisting of FRUIT, FOREST, and ORNAMENTAL TREES of every description, and in considerable quantities; also a large and rich assortment of AMERICAN PLANTS, fine EVERGREENS, ranging all sizes, including many magnificent specimens which will give immediate effect, and from the adhesive nature of the soil and being continually transplanted will incur no risk from removal.

The following include a portion of their stock.

These are fine bushy plants and beautifully furnished with bloom buds :—

30,000 Hybrid Scarlet Catawbiense, ponticum, and other Rhododendrons.
20,000 Ghent and other Azaleas.
4000 Kalmia latifolia
3000 Andromeda floribunda
6000 extra fine Dwarf-trained Peaches, Nectarines, and Apricots.
6000 Standard Apples, all sizes.
5000 Limes, 5 to 12 feet, Laburnums, Chesnuts, Birch, Maples, Poplars, Mountain Ash, Acacias.
3000 very handsome Fan Yews, 3 to 12 feet.
20,000 fine Standard Roses, including the newest and most improved varieties, with clean straight stems and full bushy heads.
50,000 Laurels, 18 inches to 10 feet.
2000 bushy Aucubas, 2 to 5 ft.
Also green and variegated Hollies, Box trees, Cedrus Deodara, Cedar of Lebanon, Pinus excelsa, Hemlock Spruce, Laurustinus, Sweet Bays, Phillyreas, Irish Yews, Privet, Arbor-vitæ, Berberis, China Privet, &c.

The Nursery is accessible by Railway in 20 minutes from Fenchurch and Bishopsgate Streets, whence trains leave 12 times daily to Leytonstone Station, which adjoins the Nursery.—American Nursery, Leytonstone, N.E.

FIVE THOUSAND INDIAN AZALEAS.

WILLIAM BARNES begs to invite attention to his unrivalled Collection of the above beautifuland justly admired class of plants. The sizes vary from 1 to 5 feet in height, worked upon strong healthy stocks, are in the finest possible condition, and perfectly free from thrip. The following list comprises a portion of his extensive stock :—

Conqueror
Murrayana
Carminata
Duke of Devonshire
Triumphans
Perryana
Iveryana
Alba striata
Aurora
Coronata
Variegata
Lateritia
Gledstanesi
Alba magnifiora
Frostii
Delecta
Alba magna
Holfordii
Ardens
Vivicans
Rosea elegans
Juliana
Elegans superb
Beauty of Reigate
Lawrenciana
Symmetry
Vesta
Gledstanesi excelsa
Buckinghamii
Maria
Chelsonii
Fentonii
Lucens
Constantia rosea
Lateritia grandiflora
Trotteriana
Gledstanesi formosa
Glory of Sunning Hill
Extransii [ford
Countess of Stam-
Beauty of Europe
Barclayana
Stanleyana
Crispiflora
Striata formosissi-
Admiration [ma
Criterion
Delicatissima
Magnificaus
Alba Melior
Mrs. Fry
Perfecta elegans
Lateritia alba supreme
Empress Eugenie
Impératrice Josephine
Eulalie Van Geert
Queen Victoria (continental)
Reine des Belges
Queen of Perfection
Adolphe
Leeana
Louis Napoleon
The Bride
Gem (Ivery's)
Madame Miellez
Princess Mary of Cambridge
Petuniæflora
Roi Leopold
Rosy Circle
Sir Charles Napier
Standard of Perfection
Grand Monarch
Marie Louise
Queen Victoria (Ivery's)
Iveryana alba cincta
Alba lutescens
Modèle
Baron de Peet
Le Géant
Belle Jeannette
Etendard de Flandres
Papilionatima
Rubens
Pelargoniflora
Gloire de Lederberg
Baron de Vrière
Gloire de Belgique
Distinction
Queen of Whites
Leopoldi
Duc de Brabant
Etoile, de Gand
Reine des Panachées
Princess Adelaide de Nassau
Flower of the Day
Souvenir de l'Exposition
Duchess Adelaide de Nassau
Iveryana Improved
Duc de Nassau
Miltonii
Variegata superba
Bouquet de Flore

CATALOGUES with Prices can be had on application.
Camden Nursery, Camberwell, S.

WILLIAM YOUNG begs to call attention to his extensive NURSERY STOCK, which is in fine condition for removal, and which will be found well worth notice of those engaged in any kind of planting.

Having large quantities of the undermentioned, all well grown, good-rooted plants, he can offer them at very moderate prices.

SPECIMEN CONIFERÆ.

Abies Douglassii, 8 to 12 feet
,, canadensis, 8 to 12 feet
,, Menziesii, 6 to 10 feet
,, nigra, 6 to 8 feet
,, Pinsapo (very handsome), 6 to 8 feet
Pinus Cembra, 6 to 10 feet
,, excelsa, 8 to 10 feet
,, insignis, 6 to 8 feet
Cedrus Deodara, 6 to 12 feet
,, Libani, 6 to 12 feet
Araucaria imbricata, 4 to 6 ft.
Cryptomeria japonica, 6 to 8 ft.
Juniperus chinensis, 6 to 8 ft.
,, hibernica, 6 to 8 ft.
Taxodium sempervirens, 6 to 10 feet

LARGE DECIDUOUS TREES AND EVERGREENS.

Ash, Weeping, 8 to 10 feet
Beech, common, 6 to 10 feet
,, copper, 6 to 10 feet
,, Fern leaf, 6 to 8 feet
,, weeping, 6 to 8 feet
Horse Chesnut, 8 to 12 feet
Limes, 6 to 10 feet
Poplar Abele, 8 to 10 feet
,, black Italian, 8 to 10 ft.
,, Maple, Norway, 6 to 8 feet
Oak, English, 10 to 12 feet
,, Fordii, 8 to 10 feet
Oak, exoniensis, or New Leucombe, 8 to 12 feet
Oak, evergreen, 8 to 10 feet
Weeping Willows, 8 to 10 feet
Spruce Firs, 10 to 12 feet
Silver Firs, 10 to 12 feet
Arbor-Vitæ, American, 6 to 8 ft
,, Chinese, 6 to 8 ft.
,, Ontario, 5 to 7 ft
Hollies, green, 8 to 12 feet
Yews, 8 to 12 feet

STANDARD ROSES.—A fine collection of all best varieties.
RHODENDRONS and other AMERICAN PLANTS of all the leading varieties.

FOR ORNAMENTAL GAME COVER.

Azalea pontica
Common Laurels
Evergreen Privet
Mahonia Aquifolium
Juniper, Common
Juniper sabina
Rhododendron ponticum

FOREST TREES.—Larch, Scotch, Alder, Ash, Birch, Hazel, Chesnut, Willow, &c., from 2 to 4 and 5 feet, in any quantity for Coppice planting.

A NEW DESCRIPTIVE CATALOGUE of New Plants, Coniferæ, Deciduous Trees, Evergreens, Flowering Shrubs, Roses, American Plants, and general Nursery Stock, with heights and prices, forwarded on application.

N.B.—Good Railway communication to any part of England.
Milford Nurseries, near Godalming, Surrey.

NEW PEAS.

BUCKLEY'S GENERAL WYNDHAM | THORNE'S ROYAL BRITAIN.

HURST AND M'MULLEN having grown a considerable quantity of the above fine full late varieties of PEAS this season, beg to offer them to the Trade only. They have been proved to be superior to any of their class, both in flavour and size for the last two years, and they can confidently recommend them.

Also "Dillestone's First Early Pea," quite seven days earlier than any other variety, and a great bearer. Prices on application.—Address, 6, Leadenhall Street, London, E.C.

TO THE SEED TRADE, MARKET GARDENERS, &c.

Per bushel.—s.		Per cwt.—s.	
British Queen Peas	14	Long Red Mangel Wurzel	32
Champion of England Peas	11	Yellow Globe ,,	36
Wickson's Ear Favourite Pea	12	Long Orange Carrot	48
Ne Plus Ultra Peas	18	Early Horn ,,	50
Hair's Mammoth Pea	20	White Belgian ,,	48

Selected dark crimson Beet, 1s. per lb.

The above Seeds are saved from the best stocks, and excellent samples unadulterated. Terms cash.

GEORGE SANDERS, 71, Bank Street, Maidstone.

CYCLAMEN PERSICUM DWARF ROSES, AND ROSES IN POTS.

SAMUEL WALTERS, NURSERYMAN, &c., Hilperton and Trowbridge, Wilts, begs to offer as above in fine condition, at the following prices :—Cyclamen persicum, in variety, with ornamental foliage, in flower or with fine buds, 1s. 6d. each; 15s. per dozen; 5l. per 100. Specimen plants in 6-inch pots, full of flower and flower buds, 2s. 6d. each. Dwarf Roses, Hybrid Perpetual, of the leading kinds, 8s. per dozen; 2l. 10s. per 100. Géant des Batailles, by the 100 or 1000, cheap. Roses established in 6-inch pots of the best kinds, to force, 1s. 6d. each; 15s. per dozen.

HEDENHAM ROSARY, BUNGAY, SUFFOLK.

IN CONSEQUENCE OF A DISSOLUTION OF PARTNERSHIP,

R. B. BIRCHAM is desirous of clearing off a portion of his stock, consisting of 35,000 STANDARD and DWARF ROSES, including all the best and leading sorts of Perpetuals in cultivation. To effect a clearance this autumn R. B. B. begs to offer them at the following very reduced prices :—

50 Dwarfs of the best Perpetuals	..	£0 18	0
50 Half standards,	do. ..	1 5	0
50 Standards,	do. ..	1 15	0

R. B. B. will be happy to supply Amateurs requiring half the quantity of each. Trade orders at a still lower rate per 100. Carriage paid to London and Peterborough.

TO THE TRADE.—CONTINENTAL FLOWER SEEDS.

FREDERICK WILLIAM WENDEL, SEEDSMAN and FLORIST, Erfurt, Prussia (established 1832).

F. W. W. begs to inform the Trade that his Wholesale CATALOGUE of the above is now ready, containing Collections of ASTERS, STOCKS, BALSAMS, WALLFLOWERS, &c., and also an extensive list of all other New and Choice FLOWER SEEDS, sold in assortments, or by weight.

F. W. W. having extensive grounds in the town and vicinity of Erfurt, and devoting his personal attention to this department of his establishment, he can with the greatest confidence recommend all Seeds offered by him, as genuine and of the best quality.

Agent for this country—Mr. GEO. MACINTOSH, Nurseryman and Seedsman, High Road, Hammersmith, London, W., to whom all orders should be addressed, and where PRICE LISTS can be obtained post free on application.

The prices will be found as low as any house which supplies a genuine article. All parcels carriage paid to London.

TO LANDSCAPE GARDENERS AND OTHERS.

THE LIVERPOOL BURIAL BOARD are desirous of receiving DESIGNS and ESTIMATES for ENCLOSING, LAYING OUT, and EMBELLISHING the NEW CEMETERY for the Parish of Liverpool. The Designs must embrace the following particulars :

1. A Ground Plan of the Site, showing the Roads and Walks; the Land to be set apart for Ornamental Planting; the Sites of the Chapels; the proposed general division of the Cemetery, and also its division into Grave Spaces; the lines of Drainage; the sites of the Lodges, Stone Yard, Offices, and other requirements for the proper working of the Cemetery.

2. Sections showing the Earthwork required for the rearrangement of the surface, and the depth, gradients, and dimensions of the Sewers and Drains.

3. Such other details and suggestions as the competitor may think necessary for the information and guidance of the Board in their selection.

The Site includes an area of more than 90 acres.

A Premium of 100l. will be given for the Design considered first in merit, and one of 50l. and another of 30l. for the second and third best. The premiated designs to become the property of the Board, who are not to be bound necessarily to employ any of the competitors to carry out the works.

Competitors to state the Terms on which they will carry out the works.

Lithographed Plans of the Site, with Levels marked at every 300 feet, and further particulars as to the competition, may be obtained on application from the Clerk. The plans and estimates must be distinguished by a motto or device, and accompanied by a sealed envelope, containing the name and address of the competitor, and bearing a similar motto or device to that on the plan. The plans, and everything intended to be submitted therewith, must be enclosed in a sealed cover, endorsed, "Plan for Liverpool New Cemetery," and addressed to ENOCH HARVEY, Esq., Clerk to the Liverpool Burial Board, 12, Castle Street, Liverpool, and must be sent to him on or before the 14th day of February, 1860.

DESIGNS FOR FLOWER BEDS AND GARDENS.

—In consequence of numerous applications J. MARSHALL, 2, Goldsmith Street, Nottingham, has been induced to prepare another set of Designs. They comprise upwards of 80, diversified in style, and will be forwarded to any address on receipt of 24 postage stamps.

HOT-WATER PIPES at wholesale prices, with Elbows, Syphons, Tee Pipes, and every other connection. Wrought and cast iron Boilers, Saddle, Conical, Cylinder, and Elliptic, from 24s. each. Boilers and Iron Stands to use without brickwork. Valves from 12s. each. Coil Boxes, Furnace Doors, Furnace Bars, Supply Cisterns, and Builders' Castings of every description in stock, at Mr. LYNCH WHITE'S Iron Wharf, Upper Ground Street, Blackfriars Bridge, London, S.

TO THE NOBILITY, GENTRY, AND HORTICULTURISTS.

H. McCALLA (late principal Draughtsman to Messrs. Weeks & Co.), CIVIL ENGINEER and FARM ARCHITECT, begs to inform the above that the Horticultural Buildings being confined to so few, exoroitant prices are charged; that he prepares Working Drawings and Specifications, so that they can have their own constructed by any country carpenter, at 1s. 6d. per foot super, or upon their own estates at 1s. 4d. per foot. Plans also upon the same rule for erecting Hot Water Apparatus. Plans for all kinds of Farm Buildings, Homesteads, Labourers' Cottages, Laying out of Estates, Drainage. Plans &c., prepared for all the above Works and submitted to competition.—Office: 7 Upper Cheyne Row, King's Road, Chelsea, S.W.

LONDON MANURE COMPANY

(ESTABLISHED 1840),

Have the following MANURES ready for delivery :—
CORN MANURE FOR AUTUMN SOWING.
BLOOD MANURE FOR AUTUMN SOWING.
URATE
SUPERPHOSPHATE OF LIME.
SUPERPHOSPHATE MINERAL.

The London Manure Company also supply PERUVIAN GUANO (direct from Messrs. Gibbs & Sons), SULPHATE OF AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of known value, all of which they warrant strictly genuine. Wholesale dealers supplied.

116, Fenchurch Street, E.C. EDW. PURSER, Secretary.

MR. J. B. LAWES manufactures the following MANURES :—

TURNIP MANURE	£6 6
SUPERPHOSPHATE OF LIME	6 6
MINERAL SUPERPHOSPHATE OF LIME	5 5
BARLEY MANURE	8 0

N.B. Genuine PERUVIAN GUANO direct from Messrs. Gibbs, NITRATE OF SODA, SULPHATE OF AMMONIA, and other Chemical Manures.

WHEAT MANURE.—PERUVIAN GUANO is proved to be the best and cheapest Artificial Manure for Wheat, at Autumn sowing.

American decorticated Cotton-seed Cake of best quality supplied at the market price.

Offices: 1, Adelaide Place, London Bridge, E.C.

BURNARD, LACK, AND CO.'S CONCENTRATED SUPERPHOSPHATE OF LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.

CONCENTRATED TURNIP MANURE, equal in value to the preceding.

Of these Manures Dr. Voelcker says :—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."

Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to BURNARD, LACK, & Co., Sutton Road, Plymouth.

PERUVIAN GUANO.—The present price of this valuable Manure is 12l. per ton for 30 tons and upwards; 13l. 5s. per ton for 1 ton up to 30 tons.

And, in order to protect themselves against the purchase of adulterated mixtures and of inferior Guanos purporting to produce results equal to Peruvian, consumers are recommended to apply either to ourselves, to our Agents Messrs. GIBBS, BRIGHT, & Co., of Liverpool and Bristol; or to Dealers of established character, in whose honesty and fair dealing they can place implicit confidence. ANTY. GIBBS & SONS.

15, Bishopsgate Street Within, London, E.C.



THE PATENT NITRO-PHOSPHATE OF BLOOD MANURE COMPANY (LIMITED).

Trustees :—
ABEL SMITH, Jun., Esq., Walton House, Ware, Herts.
CHARLES DIMSDALE, Esq., Essendon Place, Herts.
EDWARD BALL, Esq., M.P., S, Belgrave Road, Pimlico, S.W.
GENERAL HALL, Weston Colville, Linton, Cambridge.
JOHN BRADY, Esq., M.P., Warwick Terrace, Belgrave Square, W.

Directors :—
Chairman—JONAS WEBB, Esq., Babraham, Cambridgeshire.
Deputy-Chairman :—
JOHN COLLINS, Esq., Myddleton Square, Pentonville, E.C.
EDWARD BELL, Esq., Tottenham, Middlesex, N.
JOHN CLAYDEN, Esq., Littlebury, Essex.
RICHARD HUNT, Esq., Stanstead Abbot, Herts.
THOMAS KNIGHT, Esq., Edmonton, Middlesex, N.
ROBERT LEEDS, Esq., West Lexham, Norfolk.
ROBERT MORGAN, Esq., 72, Camden Villas, Camden Town, N.W.
GEORGE SAVILL, Esq., Ingthorpe, near Stamford.
WILLIAM COLLINS, Esq., 105, St. John Street Road, E.C.
Bankers—Messrs. BARNETT, HOARE & Co., Lombard Street, E.C.
Solicitors :—
Messrs. KINGSFORD & DORMAN, 23, Essex Street, Strand, W.C.
Auditor—J. CARTER JONAS, Esq., Cambridge.
Manager—Mr. JAMES ODAMS. | *Secretary*—Mr. C. T. MACADAM.

Offices: 109, Fenchurch Street, London, E.C.; Manufactory, Plaistow Marshes, Essex, E.

ODAMS'S BLOOD MANURE FOR WHEAT,
Price 7l. 10s. per Ton, delivered Free to any WHARF or RAILWAY in London.

TO PIG, POULTRY, AND GAME FEEDERS.

JUPP'S RICE FOOD, POULTRY AND GAME.—RICE SWEEPINGS, 7s. 6d. per cwt., in 1¼ cwt. bags; SCREENED RICE, 10s. per cwt., in 1¼ cwt. bags; DOG BISCUITS, 14s. per cwt.; OIL-CAKE, per ton only; RICE MEAL for PIGS, 6s. and 8s. per cwt., in 1 cwt. bags, at the mill. Orders must be accompanied by a remittance to insure delivery.—W. & R. JUPP, 6, Cross Lane, Eastcheap, E.C.

GISHURST COMPOUND,

PATENTED,

FOR PREVENTING AND DESTROYING

RED SPIDER	MEALY BUG	MILDEW
THRIPS	SCALE	GREEN and BROWN FLY
AMERICAN BLIGHT	ANTS	

BED BUGS, &c.,
And useful in winter dressing.
Contains no deleterious ingredient.

Has received the sanction of the Gardening Press, see *Gardeners' Chronicle* of 9th April and 16th July, 1859, and "Cottage Gardener," 12th July, and has been favourably reported on, and is used by eminent gardening authorities, among whom are—

Mr. Judd, of Althorp Gardens
Mr. Rivers, of Sawbridgeworth
Mr. Edmonds, of Chiswick House Gardens
Mr. Collinson, of Eaton Hall Gardens
Messrs. A. Henderson & Co., Edgeware Road
Mr. Jas. Veitch, jun., Chelsea
Mr. Spencer, of Bowood Gardens

The principal Nurserymen and Seedsmen throughout England, Scotland, and Ireland use it, have taken in supplies, and are now prepared to sell single boxes—price 1s. for first trials and small uses, such as destroying bed bugs; 3s. for not large gardens; 10s. 6d. for large gardens, with testimonials and full descriptions for use.

Nurserymen and Seedsmen supplied by
PRICE'S PATENT CANDLE COMPANY, Limited, London.

PHOSPHORIC RAT POISON.—This poison having now stood the test of many years trial is confidently recommended to Agriculturists and others as an effectual exterminator of Rats, Mice, and all Vermin. It is also found most valuable in the Coffee and Sugar Plantations.—Sold in ½-lb. and 1-lb. jars, price 2s. 6d. and 4s., by J. RICHARDS, late Purser & Richards, 40, New Bridge Street, Blackfriars, E.C.

GLASS SLATES

WITH DRILLED HOLES.	Size.	ROUGH PLATE ⅛ inch thick.	ROUGH PLATE 7/32 in. thick.	ROUGH PLATE ¼ inch thick.	SHEET. 16 oz.	SHEET. 21 oz.	SHEET. 26 oz.	SHEET. 32 oz.
		s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Duchess	24 by 12	1 3	1 6	1 9	0 9	1 1	1 4	1 8
Small Imperials	20 by 14	1 2	1 5	1 8	0 8	1 0	1 3	1 7
Small Duchess	22 by 12	1 2	1 5	1 8	0 8	1 0	1 3	1 6
Countess	20 by 10	0 11	1 1	1 3	0 7	0 10	1 0	1 3
Viscountess	18 by 10	0 10	1 0	1 1	0 6	0 9	0 11	1 1
Large Ladies	16 by 10	0 9	0 11	1 0	0 6	0 8	0 10	1 0
Ladies	16 by 8	0 8	0 9	0 10	0 5½	0 7	0 8	0 10
Doubles	13 by 7	0 6	0 7	0 8	0 5	0 6	0 7	0 8

The above are well adapted for Farm Buildings, Outhouses, and any place where the admission of light through the roof is desirable.

GLASS TILES.

ROUGH PLATE.		SHEET.	
¼ inch thick	0s. 10d. each	16 ounces	0s. 6d. each
7/32 inch thick	0 11 each	21 ounces	0 8 each
⅜ inch thick	1 0 each	26 ounces	0 10 each
½ inch thick	1 6 each	32 ounces	1 0 each
½ inch thick	2 0 each		

CORRUGATED TILES of the usual form, at double price.

JAMES PHILLIPS AND CO.,

180, Bishopsgate St. Without, London, E.C.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz SHEET GLASS of British Manufacture at prices varying from 2*d.* to 3*d.* per square foot for the usual sizes required, many thousands of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES, and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London, W.

See *Gardeners' Chronicle* first Saturday in each month.

HORTICULTURAL GLASS—JUNE TARIFF.

THOMAS MILLINGTON'S reduced Tariff of GLASS, &c.

6 by 4, 7 by 5, 8 by 6, 9 by 7 } 16 oz. to the foot, 11*s.* 6*d.*
6½ by 4½, 7½ by 5½, 8½ by 6½, 9½ by 7½ } per 100 feet.

In 100 boxes,—4ths quality, 12*s.* 6*d.*; 3ds do., 14*s.* 4*d.*

10 by 8, 12 by 9, 12⅛ by 10½, 14½ by 10½, 13 by 11
10½ by 8½, 12½ by 9½, 13 by 10, 15 by 10, 13½ by 11½
11 by 9, 13 by 9, 13½ by 10½, 12 by 11, 14 by 11
11½ by 9½, 12 by 10, 14 by 10, 12½ by 11½

	per 100 feet	16 oz.	21 oz.
20 by 12	Common	16*s.*	24*s.*
20 by 13	Superior	18*s.*	27*s.*
20 by 14			
20 by 15			

All Boxes included.

Orchard House sizes as supplied to Mr. Rivers.

Hartley's improved Rough Plate Glass from ⅛ to ⅝ in thickness.

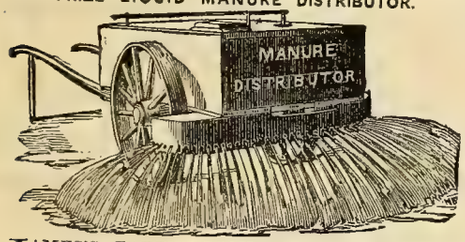
Coloured Glass in great variety, at 9*d.* and 1*s.* per foot.

Paints, Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, Lamp Glasses, &c.

87, Bishopsgate Street Without, E.C., same side as Eastern Counties Railway.

GLAZIERS' DIAMONDS FOR CUTTING HORTICULTURAL and other GLASS, to be had of the Wholesale Manufacturer, JOHN EDWARDS, 20, Sharp's Alley, West Smithfield, London, E.C. Prices from 10*s.* to 27*s.* 6*d.*

PRIZE LIQUID MANURE DISTRIBUTOR.



JAMES'S PATENT LIQUID MANURE DISTRIBUTOR OR WATER-CART, warranted not to choke up or otherwise get out of order. It is thoroughly adapted for Drill Crops, or Pasture Land, or for Watering Streets; has been awarded NINE FIRST PRIZES.

Full Particulars and Testimonials may be obtained of the Patentee, ISAAC JAMES, Tivoli Waggon Works, Cheltenham.

N.B.—Improved LIQUID MANURE PUMPS, either fixed or portable.

WARNER'S IMPROVED LIQUID MANURE OR GENERAL PORTABLE PUMP.

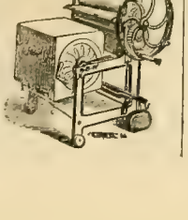


These Pumps are fitted with WARNER'S Patent Bucket and Valve, and cannot clog in action. The barrel is made of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure on the stand, the legs of which fold together, and may be carried with ease by one man to tank or pond.

	£ s. d.
Stand and Pump, with screwed tail pipe, fitted with strong brass union for suction pipe	2 15 0
If fitted with barrel of planished copper	3 17 0
Stand and Pump, with plain tail pipe, for tying on suction pipe	2 9 0
2-inch patent rubber and canvas flexible suction pipe, on wires, either 10, 12, or 15 ft., per foot	0 2 2

May be obtained of any Ironmonger or Plumber in town or country, at the above prices, or of the Patentees and Manufacturers, J. WARNER & SONS, 8, Crescent, Jewin St., London, E.C.

BRADFORD'S PATENT WASHING MACHINE SIMPLICITY AND WONDERFUL EFFICIENCY.



"I very gratefully acknowledge the extraordinary patronage I have received from all parts of England, Ireland, and Scotland, and which has very far exceeded my most sanguine expectations." — THOMAS BRADFORD, Patentee, Cathedral Steps, Manchester. London Office: 63, Fleet Street, E.C.

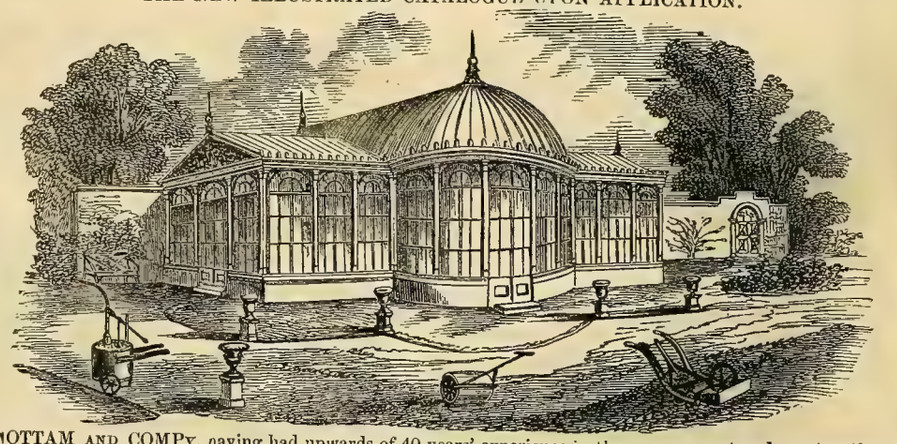
N.B. My Machines always have, and always will be sent on approval, if desired, before payment. Description and Price free by post.

COTTAM & COMPY., Engineers, Founders, &c.,

2, WINSLEY STREET, LONDON, W.

☞ **A SHOW ROOM DEVOTED ENTIRELY TO ARTICLES OF HORTICULTURE.**

THE NEW ILLUSTRATED CATALOGUE UPON APPLICATION.



COTTAM AND COMPY. having had upwards of 40 years' experience in the arrangement and construction of every description HORTICULTURAL BUILDINGS AND HEATING BY THE CIRCULATION OF HOT WATER, are well qualified to guarantee the perfect execution of any works entrusted to them in the erection of

Conservatories	Summer Temples	Orchid Houses	Apricot and Peach Houses
Conservatory or Glass Walls for the protection of plants or ripening wall fruit	Arbours, &c.	Conservatories for Window or Balcony Gardening	Tropical Fruit Houses
	Greenhouses	Vineries	Forcing Pits and Frames
	Orangeries		Cucumber and Melon Houses

☞ *Drawing and Estimates free upon application.*

ORCHARD HOUSES, combining cheapness of construction with suitability of purpose—portable or otherwise.

EXHIBITION PRIZE MEDAL GATES AND STABLE FITTINGS.

Iron Hurdles, Strained Wire Fencing, Game Netting, &c.

Every description of Plain, Ornamental, Cast and Wrought Iron, and Wire Work.

SEE SEPARATE LISTS UPON APPLICATION.

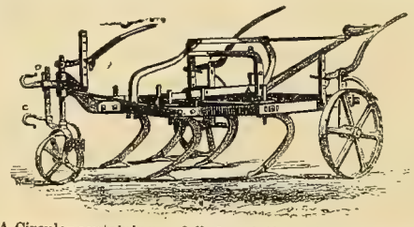
COTTAM & COMPY, Iron Works, 2, Winsley Street, Oxford Street, W. (opposite the Pantheon.)

CLAY'S PATENT CULTIVATOR AND ERADICATOR will be exhibited at the SMITHFIELD SHOW, Baker Street, December 6, 7, 8, and 9, on STANDS 179 to 186.—Royal Yorkshire, and North Lincolnshire Societies' Prize Implement.—Requires one-fourth less horse power than any other implement tested by the Royal Society's judges as shown by the following table from the *Mark Lane Express*, July 18, 1859:

WARWICK MEETING—TRIAL OF CULTIVATORS.

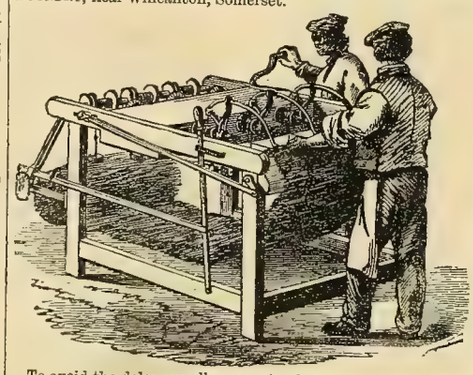
	Cutting Width.	Power.
Clay	4 feet 5 inches	3.8
Bentall	4 feet 4 inches	4.8
Coleman	3 feet 5 inches	4 39

The frame of each implement is applicable as a Broadshare or Scarifier, Surface Parer or Skim, Cultivator or Grubber, and Eradicator or Drag Harrow. Price from 6*l.* 5*s.* to 12*l.* according to size and number of tines, wrought iron.



A Circular containing a full description of the Implement Price List, and upwards of fifty testimonials (one from the Wakefield Farmers' Club) sent post free on application to CHARLES CLAY, Oakenshaw Iron Works, near Wakefield.

MOODY'S PATENT STRAW FABRICATING MACHINE, manufactured by OLIVER MAGGS, BOURTON FOUNDRY, near Wincanton, Somerset.



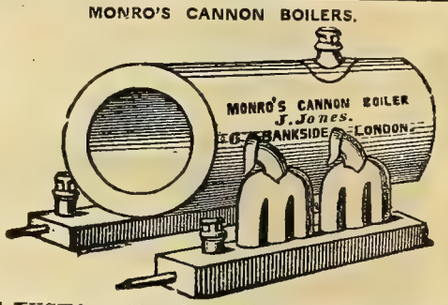
To avoid the delay usually occurring between making a rick and thatching it Mr. MOODY has invented a Machine by which thatch can be prepared beforehand (during wet weather, when out-door work cannot be done), and when required for use it can be laid upon the rick very rapidly in the form of a thick Matting, from 3 to 5 feet broad, and of any length best adapted to the size of the rick.

This Thatch is made by combining the straw or Reed across two wires, which run the entire length of the peace. It can be made straight or circular, according to the shape of the rick for which it is required. A man and boy can weave 150 yards in a day.

By a somewhat different construction of the Machine, it weaves a very useful Matting of Straw, Rushes, Reed, or other similar material of any thickness, and from 18 inches to 4 feet wide.

The Matting, which can be made any length, is easily rolled up, and is well adapted for Brickfields, covering Fruit Trees, Plants, and Hot-beds, to protect them from frost. It is readily tied to hurdles, and then forms a good and durable shade for Fence for sheep or Poultry. Price 12*l.* 12*s.*

MONRO'S CANNON BOILERS.



MUCH has of late been said about BOILERS FOR HEATING BY HOT WATER, but these Boilers have now proved themselves to be the best at present invented. They are adapted for Heating every description of Building, and are made of various sizes. The price of the

24-inch Cast Iron is	£5 10*s.* each.
24-inch Wrought Iron is	6 10 ,,
36-inch Wrought Iron is	8 10 ,,
48-inch Wrought Iron is	12 0 ,,

References to Gentlemen and Nurserymen where these Boilers are now at work. The Cannon Boilers are now kept in stock, and are to be had only of J. JONES, 6, Bankside, S.E. Also, every description of Saddle and Cylinder Boilers. Hot-water Pipes and Connections at prices lower than those of any other house in London. Estimates for Hot-water Apparatus erected complete in any part of the country, and an Illustrated Catalogue on application to J. JONES, 6, Bankside, Southwark, London, S.E.

HOT-WATER APPARATUS.

J. JONES begs to offer a complete HOT-WATER APPARATUS FOR GREENHOUSES, at the following prices, delivered free to any Railway Station in England:—

Size of House.	With Cylinder Boiler.	With Saddle Boiler.
20 feet by 10 feet	£8 10 0	£9 0 0
25 ,, by 12 ,,	10 0 0	10 10 0
30 ,, by 12 ,,	11 10 0	12 0 0
30 ,, by 15 ,,	13 10 0	14 10 0
40 ,, by 15 ,,	16 10 0	17 10 0
50 ,, by 15 ,,	18 10 0	20 0 0

The above prices include Boiler, strong Furnace Doors, Bars, Soot Doors, Cistern, Damper, Hot-water Pipes and Connections, Air Pipes, &c., all ready for fixing, and of the best quality. Further particulars will be sent on application. Parties ordering must send plans, showing doorways, position of boiler, &c.—J. JONES, Hot-water Apparatus Manufacturer, 6, Bankside, Southwark, London, S.E.

C. STEPHENSON, late STEPHENSON AND SONS, 61, Gracechurch St., London, E.C., Manufacturer of Iron Hurdles, Fencing, &c., Improved Iron and Copper Conical Boilers and Apparatus for Warming Buildings of every description by Hot Water.

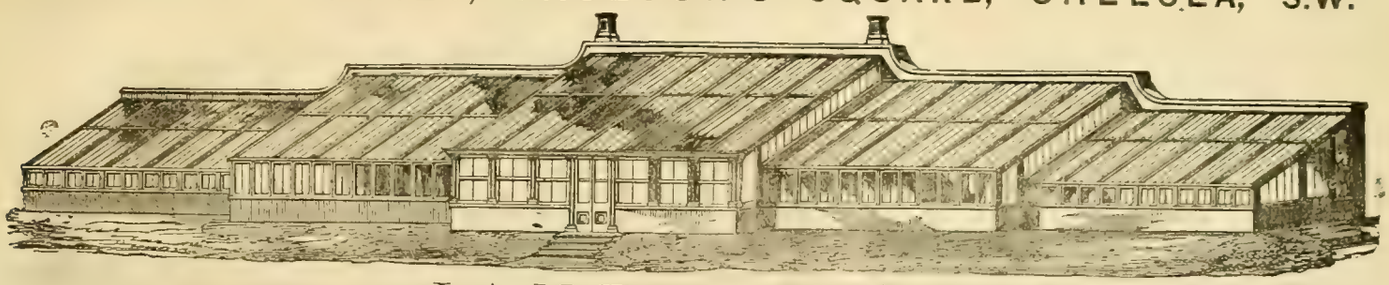
Prices and Estimates furnished upon application.

HORTICULTURAL BUILDINGS AND HEATING BY HOT WATER.

JOHN R. PEILL, 17, New Park St., Southwark, S.E., Manufacturer of every description of Buildings for Horticultural purposes, and Inventor of the Improved Conical Boiler for heating the same, is prepared to undertake works of any magnitude, and refers among others to the celebrated range of FORCING HOUSES at HER MAJESTY'S GARDENS, FROGMORE, and at SIR ROBERT PEEL'S, DRAYTON MANOR, constructed under the superintendence of his Manager, Mr. JOHN JONES; and also to his BOILERS fixed at the CRYSTAL PALACE, the ROYAL BOTANIC GARDENS, REGENT'S PARK, and KEW, and at several hundreds of the Nobility's seats, Public Establishments, and Manufactories in London and the provinces. J. R. P. also manufactures every description of Iron Roofs, Iron Houses, and Iron Fencing, plain and ornamental. Strong Iron Hurdles for Sheep (6 ft. long, 3 ft. high, with 5 bars), 4*s.* 3*d.* each; ditto for cattle, 4*s.* 9*d.* each. Prices and other particulars forwarded on receipt of one postage stamp.

HORTICULTURAL WORKS,

DANVERS STREET, PAULTON'S SQUARE, CHELSEA, S.W.



JAMES GRAY

RESPECTFULLY BEGS TO INFORM THE NOBILITY, GENTRY, NURSERYMEN, GARDENERS, AND OTHERS, THAT HE CONTINUES TO CARRY ON THE BUSINESS IN ALL ITS BRANCHES AT THE ABOVE OLD ESTABLISHED PREMISES.

CONSERVATORIES, GREENHOUSES, FORCING HOUSES, VINERIES, PITS, &c.,

OF EVERY DESCRIPTION, ERECTED ON THE MOST APPROVED PRINCIPLES.

HEATING BY HOT WATER.

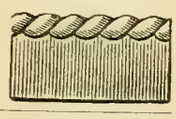
J. G. having specially devoted his attention for many years to this part of the business, is now fully prepared to Heat every description of public and private buildings, viz :—Churches, Mansions, Warehouses, &c., as well as all structures connected with Horticulture, in the most efficient manner. His system is the most simple that can be adopted—which he has found from long experience to be the best—can be constructed at less cost, and is more easily managed than those of a complicated nature which have attracted the notice of the public.

J. G. begs to call attention to his CAST-IRON CORRUGATED ARCH BOILER, which from its simplicity of construction has not the liability to fracture to which those of a more complex design are always subject. They have been extensively used for many years, and have given the greatest satisfaction.

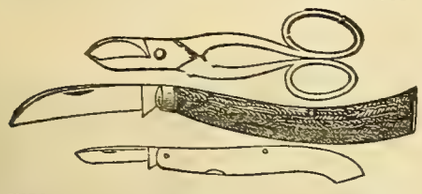
All business is conducted at this establishment on the principle of lowest remunerative profits consistent with best materials and workmanship.

PLANS AND ESTIMATES FURNISHED ON THE SHORTEST NOTICE.

LOOMES AND CO.'s CABLE PATTERN GARDEN EDGING may be obtained of Messrs. HOOPER AND CO., Covent Garden Market, W.C.



PAXTON WORKS, SHEFFIELD, ESTABLISHED 1738.



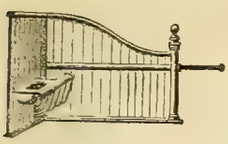
SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.—Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

IMPROVEMENTS IN HEATING, &c.

MUSGRAVE'S PATENT SLOW COMBUSTION STOVE, for Warming Public Buildings, Hall, Shops, Conservatories, Factories, Drying Rooms, &c. Will burn in Churches from Saturday till Sunday evening, avoiding attention during the hours of worship. In Halls will burn day and night for weeks, with little care. Capable of warming a large apartment for 24 hours, at a cost of 3*d.*; and deserving of special attention, because of its safety, healthfulness, durability, and extreme simplicity. This Stove is the nearest approach to warming by hot water.

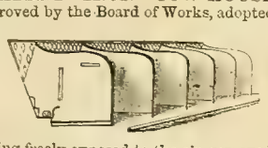


MUSGRAVE'S PATENT STABLE FITTINGS AND HARMLESS LOOSE BOXES have obtained the award of a large Council Medal from the R. I. A. Society for the following improvements:—1st, The Horse cannot injure himself or others in the same stable if he breaks loose in his stall. 2d, He cannot waste the hay. 3d, He can have cut or uncut hay at pleasure. 4th, He has clean water always before him. 5th, A pure and wholesome atmosphere is secured. 6th, The whole fittings are stronger than usual, without increase in price, and there is no risk of infection.



The Loose Box is really what its name denotes, and the most spirited Horse may be turned into it without danger.

MUSGRAVE'S PATENT IRON COW-HOUSE FITTINGS, as approved by the Board of Works, adopted in the Ulster Model Farm, and by many of the most eminent Stock Breeders in the Kingdom, are made wholly of iron, very durable, cleanly, and attractive in appearance. The fodder is always fresh, being freely exposed to the air, removed from the breath of the animal, and separated from the roots or damp food. The range of Troughs can be quickly filled with water for the use of the Cows, or for washing out in case of epidemic, and the cost is very moderate.



These inventions being distinguished for strength, simplicity, and practical usefulness will repay public inquiry.

MUSGRAVE BROTHERS are also Makers of Wire Fencing, Hurdles, Field and Entrance Gates, Corn Rick Stands, Conservatories, Hot-water Apparatus, Verandahs, Rural Bridges, &c.; and their works being favourably placed for cheap labour and materials, they can offer corresponding advantages in price.

MUSGRAVE'S Patent Field Gates have gained the 1st Prize from the R. I. A. Society for strength, durability, and cheapness.

For particulars address MUSGRAVE BROTHERS, Ann Street Works, Belfast.

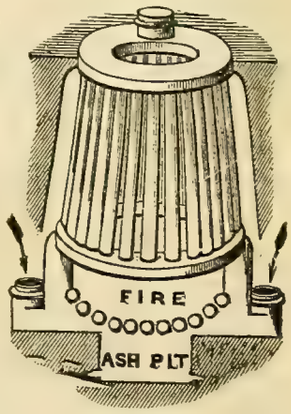
WEEKS' ONE BOILER SYSTEM.

So styled from the fact that the largest Horticultural Establishments in Europe are now effectually heated by WEEKS' ONE BOILER.

THE SEASON FOR TESTING THE EFFICIENCY OF A HOT-WATER APPARATUS having arrived, J. WEEKS & Co. are privileged by the under-mentioned well-known Horticultural Firms to issue a special invitation to the nobility, clergy, and gentry to pay a visit to their immense Establishments in order to become eye-witnesses of the extraordinary power of WEEKS' ONE BOILER SYSTEM.

J. W. & Co. beg emphatically to assert that their ONE BOILER SYSTEM is in every respect superior to any other method of Heating. It is more economical and clean, requires no night attendance, effects a great saving in labour, and that it in infinitely more efficient is clearly shown by the following statistics :—

	Length of Pipe Heated on Weeks' One Boiler System.
	Feet
Messrs. E. G. Henderson & Son, Wellington Nursery, St John's Wood	5500
Messrs. F. & A. SMITH, Dulwich Nursery	10,000
Mr. WOODROFFE, Harrow Road, Paddington	4000
Mons. LOUIS VAN HOUTTE, Ghent, Belgium	13,000



J. W. & Co. also manufacture smaller and less expensive Boilers upon the same principle as the ONE BOILER SYSTEM, ranging in size from Nos. 1 to 6, at prices from 4*l.* up to 60*l.*

J. W. & Co. also invite an inspection of their own HORTICULTURAL SHOW ESTABLISHMENT at Chelsea, which they built expressly as a place of reference for exhibiting various designs and improvements in the Construction of CONSERVATORIES, GREENHOUSES, PINE STOVES, VINERIES, ORCHARD-HOUSES, CUCUMBER and other FORCING PITS, together with an extensive WINTER GARDEN, the whole in full and constant operation, and now being managed for Forcing CHOICE FRUITS, displaying an unrivalled selection of HORTICULTURAL STRUCTURES suited for every required purpose.

J. WEEKS & Co. have constantly on hand an extensive variety of HORTICULTURAL BUILDINGS ready for fixing in any part of the country, and also Forcing Frames and Pit Lights in large quantities.

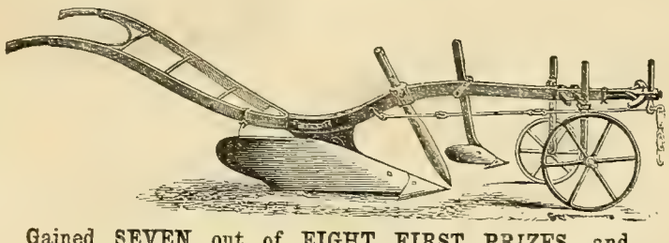
J. WEEKS & CO., Horticultural Builders and Hot-Water Apparatus Manufacturers, King's Road, Chelsea, S.W.

PLANS, ESTIMATES, AND ILLUSTRATED CATALOGUES FREE ON APPLICATION.

BEDFORDSHIRE AGRICULTURAL SOCIETY, 1859.

J. AND F. HOWARD have much pleasure in informing the Public that at the Ploughing Matches of the above Society, just concluded,

HOWARD'S CHAMPION PLOUGH



Gained SEVEN out of EIGHT FIRST PRIZES, and SEVEN out of EIGHT SECOND PRIZES,

Thereby more than ever sustaining its position at home, while, at the recent Meetings of the Royal Agricultural Society of England and the Highland and Agricultural Society of Scotland, it also gained the

Two Chief Prizes as the Best Plough for General Purposes.

CATALOGUES, with full particulars, sent post free on application to

J. & F. HOWARD, BRITANNIA IRON WORKS, BEDFORD.

CHRYSANTHEMUMS.

J. H. BIRD, F.H.S., NURSERYMAN, Stoke Newington, begs to inform his friends and the public that he has the finest Collection and the largest Stock of Chrysanthemums and Pompones in the world, and can supply them by the 100, 1000, or 10,000.

25 Pair of Best POMPONES, 10*s*.
20 Pair of Best Large Varieties, 10*s*.
25 Pair of Best POMPONE CUTTINGS, 5*s*.
20 Pair of Best Large Varieties, Do., 5*s*.

CATALOGUES for one stamp. To save trouble all orders to be pre-paid.

CHRYSANTHEMUMS.

W. HOLMES begs to offer strong plants of every known good variety of CHRYSANTHEMUM at 5*s*. per dozen; including Golden Queen of England, Aurora, Cassandra, Curtius Quintius, Excelsior, Fabius, Fortune's Two-Coloured Incurved, Golconda, Glory, Julie Lagravère, Madam Clos, Mount Vesuvius, Orange Brilliant, Prince Albert, Remus, sulphureum superbum, Una, Andromeda, Ariel, Astrea, Baron d'Adswaërd, Esmeralda, Maid of Saragossa, Miss Julia, Miss Talfourd, Mrs. Dix, Shirley Hibberd, Rose Trevenna, &c.
Frampton Park Nursery, Hackney, N.E.

WILLIAM MASTERS AND SON, EXOTIC NURSERY, Canterbury, beg to inform their Friends and the Public that their Nurseries contain a greater number of Species and Varieties of PLANTS for Sale than any in the county. They are consequently better able to give variety of effect to any Plantations they are entrusted to lay out than others possessing a smaller Stock and less number of Species. Early orders are respectfully solicited.

THE GREAT VINE AT HAMPTON COURT.—The Subscribers being the holders of the Royal Kitchen Gardens, Hampton Court, are enabled to offer genuine the famous and truly excellent HAMPTON COURT BLACK HAMBURGH GRAPE. [each
Strong well-ripened Fruiting Plants, in 12-inch pots, 10*s*. 6*d*.
Good well-ripened Plants, in 9-inch pots, 5*s*. each.
A liberal reduction in price if taken in large numbers.
THOMAS JACKSON & SON, Nurseries, Kingston, S.W.

NEW APPLE.—NELSON'S GLORY.

WM. WOOD AND SON have the honour to announce that they have been appointed Agents for the Sale of the above very excellent new Apple, the property of Mr. J. NELSON, of Bristol.
NELSON'S GLORY APPLE is one of immense size, weighing from 20 to 22 oz., and especially adapted to culinary purposes; indeed for making Jelly, Jam, and Sauces it is truly invaluable, and is ready for use from August to December. Plants have been ordered by all those parties who had the opportunity of seeing the magnificent fruit at Bristol.
DWARF MAIDEN PLANTS are now ready for sending out at 5*s*. each, with the usual discount allowed to the trade.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

DWARF MAIDEN FRUIT TREES.—
APPLES.
PEARS. | CHERRIES. | PEACHES.
PLUMS. | APRICOTS. | NECTARINES.
Prices moderate.
Fine and clean grown; and all the leading sorts can be supplied in quantities by GEORGE JACKMAN & SON, Woking Nursery, Surrey.

DWARF TRAINED FRUIT TREES.—
APPLES.
PEARS. | CHERRIES. | PEACHES.
PLUMS. | APRICOTS. | NECTARINES.
Prices moderate.
Great care is taken in the formation of these fine, healthy, free-grown trees. Particulars can be obtained of GEORGE JACKMAN & SON, Woking Nursery, Surrey.

FOREST TREES.

JOHN WATERER has to offer upwards of a Hundred Thousand of each of the following, from 2 to 4½ feet high, and all good rooted:—

CHESNUT	LARCH	BIRCH
HAZEL	ASH	ALDER
SCOTCH	LAURELS	WITHY, &c.

Samples with prices sent on application. Planting done by contract.—The American Nursery, Bagshot, Surrey.

J. COCKS AND SON offer the undermentioned, all of which are extra fine. To parties requiring large quantities they would Sell on still more liberal terms:—

QUICK, two years transplanted, 3 to 4 ft. .. 16*s*. 0*d*. per 1000.
,, if 10,000 or more taken .. .. 15 0 ,,

GOOSEBERRIES,	Warrington or Ashton Red, Whitesmith, and other leading varieties	8*s*. p. 100	60*s*. p. 1000.
CURRANTS,	Red Grape	7 ,,	60 ,,
,,	,, Dutch	8 ,,	70 ,,
,,	,, Goliath	8 ,,	70 ,,
,,	Black	7 ,,	60 ,,
,,	,, Naples	8 ,,	70 ,,
,,	White Grape	8 ,,	70 ,,

The above are all well grown, and two or more years cut down.
Donington, Spalding.—Dec. 10.

IMPORTANT TO LANDHOLDERS.

FOR SALE, 200,000 LARCH FIR, 1½ to 2 feet, at 15*s* per 1000.
50,000 LARCH FIR, 2 to 2½ feet, at 20*s*. per 1000.
50,000 LARCH FIR, 3 to 3½ feet, at 40*s*. ,,
FLUKE POTATOES for planting, warranted free from disease, at 4*s*. 6*d*. per bushel. Orders for the above to the amount of 5*l*. and upwards, Carriage paid to any Railway Station from Milford to London.—JACOB SCOTT MATTHEWS, Nurseryman, Seedsman, and Florist, Cardiff, South Wales.

ROBERT NEAL, NURSERYMAN, Wandsworth Common, S.W., begs to call the attention of buyers to his large and well-selected stock of EVERGREENS and FLOWERING SHRUBS, ORNAMENTAL TREES, AMERICAN PLANTS, FRUIT AND FOREST TREES, STANDARD AND DWARF ROSES of every description. A large stock of BOX-LEAF EVERGREEN PRIVET, from 1 to 6 feet for hedges; GREEN HOLLY, 1 to 6 feet; RICH BOG and LOAM for American Beds; LEAF MOULD. The Nursery is 10 minutes' walk from Clapham Common, and New Wandsworth Station, Crystal Palace Line.

TANSLEY NURSERY, NEAR MATLOCK.
To GENTLEMEN PLANTING AND THE TRADE.

J. SMITH, SEN., begs to offer his STOCK OF TREES AND SHRUBS, of various sizes, and in addition to his general stock of the leading kinds, he has this season to offer an Extra Stock of many hundred thousands of fine Larches, Scotch Firs, and Highland Pines; a large quantity of Evergreens, Privets, Mahonia Aquifolium, and other plants for planting under cover. Many things are grown in large quantities, and will be sold on advantageous terms to the Trade and gentlemen requiring large lots.
CATALOGUES sent free on application. The Nurseries are on the Mansfield and Nottingham roads, and 2 miles from Matlock Bridge Station on the Midland Railway.

TO THE SEED TRADE.

BEAUTIFUL NEW CALIFORNIAN ANNUALS.

MESSRS. VEITCH & SON,
OF EXETER AND CHELSEA,

ARE now prepared to supply SEEDS of the following recent introductions, which were sent them by their Collector, Mr. William Lobb. They are certainly two lovely additions to our Hardy Annuals, and cannot fail to give general satisfaction.

SPRAGUEA UMBELLATA.

This is a very distinct and beautiful Hardy Annual, and has bloomed in great beauty at the Exeter Nursery for several months this year, raised from seeds sown in the open ground in the autumn of 1858, having stood without any protection through the winter. It is also well adapted for pot culture, the habit is dwarf and spreading, resembling that of Calandrinia grandiflora, the flowers, which may be compared to an Amaranthus, are beautifully shaded pink with purple stamens. It was exhibited in July of this year at a meeting of the Horticultural Society, and "commended as a very elegant dwarf flowering species, of novel character, well adapted for rock work and the margins of flower borders, having proved quite hardy in Mr. Veitch's Nursery." It is figured in Curtis's "Botanical Magazine," October, 1859.

FENZLIA DIANTHIFLORA.

This lovely Annual is of a beautiful rosy lilac colour, having five dark blood-coloured spots surrounding an orange-coloured eye in the centre of each flower: it is of very dwarf and compact habit, producing blossoms in profusion: it blooms through the summer months, and continues long in flower if sufficiently supplied with moisture. It has a beautiful effect in small beds, and is also well adapted for growing in pots or boxes for Greenhouse decoration. It is figured in Curtis's "Botanical Magazine," October, 1855. Prices of the above on application.

NURSERIES AND SEED WAREHOUSES, EXETER AND CHELSEA, S.W.—Dec. 10.

JAMES CARTER & CO.'S
LIST OF
NEW ANNUALS AND PERENNIALS
For 1860.

CLARKIA PULCHELLA, VAR. INTEGRIPETALA.—This is the first of what might almost be called an entire new class of Clarkias. The flowers are nearly double the size, colour more brilliant, and the petals whole instead of being three-lobed like the old pulchella varieties. This variety is described in the report of the Floral Committee of the Horticultural Society as follows:—"This variety differs from the old pulchella, which it resembles in habit, in having the petals broad and entire instead of being cut into narrow segments; it is consequently more showy, and seems likely to prove a handsome purple-flowered Annual. It was 'commended,' its increased breadth of petal being regarded as an improvement on the original kind."

DIANTHUS CHINENSIS HEDDEWIGI.—Of this splendid annual Dianthus we have also purchased part of the stock of seed from the raiser. The plants are scarcely 1 foot high, very bushy, and covered with a profusion of flowers, which measure nearly 3 inches in diameter; the colours are various, consisting of different shades of rose, crimson, violet, &c., some are delicately marbled, others self colour. This plant has received the highest awards from the Horticultural Society and Botanic Society, Regent's Park. Is suitable either for Greenhouse or out-door cultivation.

NIGELLA HISPANICA ALBA } Two varieties
NIGELLA HISPANICA ATROPURPUREA } of great merit,

of erect and compact habit, the one a clear rich purple and the other a pure white, can be recommended as being decidedly the best of their class. The report of the Floral Committee of the Horticultural Society on the above is as follows:—"These varieties are both large flowered, the purple kind is especially deserving of notice as a fine showy Annual. The flowers are of a dark violet purple shaded with maroon."

DATURA CHLORANTHA FLORE PLENO.—Figured in Curtis's "Botanical Magazine" of July, 1859.—A splendid half-hardy perennial, very free, blooming with large trumpet-shaped, golden yellow, sweet-scented double flowers; the plant is of a low growing habit.

NEMOPHILA DISCOIDALIS MARMORATA.—A handsome new variety from discoidalis, which in addition to the white border of the old variety is very prettily marbled with white on the black ground of each petal.

PHACELIA TANACETIFOLIA ALBA.—A white variety of the blue tanacetifolia, pretty and distinct.

SILENE BARBATA.—A free flowering rich pink dwarf Annual, suitable for growing massy or ribbanding.

ANAGALLIS GRANDIFLORA, VAR. EUGENIE }
ANAGALLIS GRANDIFLORA, VAR. NAPOLEON III. }

Two beautiful new Continental varieties of the well-known Anagallis grandiflora, but the flowers are much larger. They will be found highly ornamental as half hardy bedding plants, also for decoration in Greenhouse or Conservatory, as they present an extremely graceful appearance when cultivated in pots or vases. The colours contrast well, and they continue in bloom for a long period, as var. Eugenie, light blue shading from the centre to pure white at the border. Var. Napoleon III., rich maroon crimson.

DIANTHUS CHINENSIS LACINIATUS, Fl. Pl.—Is described by the raiser, Mr. Heddewig, as being imported from Japan with the Dianthus chinensis Heddewigi. The following is a description of the flowers and habit of plant, that we have received from the raisor:—"Grows 2 feet high, very hardy, flowers about 4 inches in diameter, each petal consisting of a long delicate fringe, some double, others single; blossoms from the end of May until the beginning of frost; the colours are pure white, flesh, rose, various shades of red, carmine, violet, purple, and rich maroon, some being selfs, others striped and spotted;" is suitable either for greenhouse or out-door cultivation.

ŒNOTHERA BIENNIS, VAR. HIRSUTISSIMA (Asa Gray).—A new variety of the Evening Primrose from California, very distinct from the common biennis; height 2 feet, colour crimson orange.

IPOMŒA LIMBATA ELEGANTISSIMA is a new Continental variety of the old limbata, which we can specially recommend as being a very elegant climbing plant; the flowers are of an intense blue with a pure white margin, half hardy.

CALLIRRHOE DIGITATA (THUE).—A very elegant plant, strongly resembling the scarlet Linum. Colour rich violet purple with white eye; height from 2 to 3 feet; commences to bloom when about 6 inches high, and presents a mass of blossom during the entire summer. Makes a good bedding plant if sown thick.

LOBELIA GRACILIS ROSEA.—A very graceful little plant of a good rose colour, especially adapted for edgings.

CAPTAIN CLARKE'S NEW HYBRID SWEET PEA.—This beautiful variety is the result of a cross between Painted Lady and Purple Sweet Pea, raised by Captain Trevor Clarke, F.H.S., well known to the floricultural world as a successful hybridiser of plants. The upper petals are of a delicate rose colour, and the lower white, with a deep blue edge.

LUPINUS MUTABILIS VARIECOLOR.—This most peculiar and handsome variety of Lupine is distinct in seed from all other sorts, and the same seed produces plants of various colours, such as pure white, dark purple, white, red, and yellow, variegated, yellow and purple, &c. We can recommend this variety as one of the most interesting ever offered.

NEW DWARF BEDDING TROPÆOLUMS.

TOM THUMB YELLOW.—A new variety in colour, particularly adapted for bedding, and also for growing in pots and ornamental vases, and the flowers are well thrown up above the foliage; very dwarf and compact in habit. Colour pure yellow without any marking. The Floral Committee of the Horticultural Society speaks of it as follows:—"The habit of this plant, shown by the entire plants exhibited, was quite dwarf and compact, and the flowers were of a golden yellow." It was "commended" as likely to be a useful Flower Garden and Bedding Plant.

TOM THUMB BEAUTY.—An elegant variety with Lobbianum-shaped flowers, raised by Mr. Melville, gardener to the Earl of Roseberry, Dalmeny Park, near Edinburgh. The flower is yellow flamed and blotched with bright crimson. A plant was sent to the Editors of the "Cottage Gardener," in October, 1858, who speak of it as follows;—"A dwarf yellow, tinged with crimson; would be a good bedding plant."

ORNAMENTAL GRASSES.

AGROSTIS NEBULOSA.—The most elegant and graceful of Ornamental Grasses. A dried specimen may be seen on application.

ERIANTHUS RAVENNÆ.—A bold looking Reed-like Grass in the way of Gynerium.

SPERGULA PILIFERA.—A perfect substitute for Lawn Grass, does not require any mowing, and is particularly adapted for edging Flower Beds, Slopes, Terraces, and all small work.

A Coloured Plate, containing Drawings of the following price 1*s*. 6*d*.:—

Dianthus chinensis Heddewigi	Clarkea pulchella, var. integripetala [Sweet Pea
,, ,, laciniatus	Captain Clarke's new hybrid
Nigella hispanica alba	Lobelia gracilis rosea
,, ,, purpurea	Callirrhoe digitata

Also a Coloured Plate of Nasturtium Tom Thumb Yellow, price 1*s*. 6*d*.

Prices of the above upon application to

JAMES CARTER & CO., SEEDSMEN, 238, HIGH HOLBORN, W.C.

THE LARGEST AND FINEST STOCK OF
TEA-SCENTED ROSES IN ENGLAND.
50,000 PLANTS IN POTS AND IN THE OPEN GROUND.

WM. WOOD AND SON invite attention to their very extensive and superior stock of the above, which they feel certain are unsurpassed in the Trade.

Dwarfs, from 48-pots .. .. .. per dozen 9s. to 12s
,, in 6-inch or 24-pots .. .. ,, 24 to 30
Standards, very fine .. .. .. ,, 18 to 24
Specimen Plants, in 8-inch pots, for exhibition, each, 3s. 6d. to 5s.

DESCRIPTIVE CATALOGUES on application

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

ROYAL EXOTIC NURSERY, CHELSEA, S.W.



JAMES VEITCH, JUN., respectfully announces that his CATALOGUE OF KITCHEN GARDEN AND FLOWER SEEDS for 1859, with a List of Implements and other Garden requisites, is now published, and will be forwarded post free on application.

J. V., Jun., devoting his personal attention to this department of his business, can warrant his SEEDS TRUE TO NAME, and of the MOST GENUINE description.—December 10.

TO THE TRADE.



HENDERSON'S COMPACT TOPPED GARDEN BEET.—This superior variety, introduced by us three years since, is now generally cultivated in most gardens; its peculiar short top, symmetrical roots, and fine dark crimson colour, are points of excellence rivalled only by its exquisitely rich and sugary flavour. Price on application.

AUSTRALIAN GARDEN CRESS.—This remarkable large gigantic Cress is so rapid and fast growing that in Australia and New Zealand it almost stops the navigation of the rivers. The true Broad-leaved sort. Price on application.

N.B. New VEGETABLE SEED CATALOGUE is now ready, and can be sent on application.—Pine-apple Place, W., Dec. 10.



PETER LAWSON AND SON,
THE QUEEN'S SEEDSMEN AND WOOD FORESTERS,
respectfully announce that they have now issued their
NURSERY CATALOGUE OF FOREST TREES, CONIFERÆ, SHRUBS &c.,
which they will be happy to forward free by post on application.

27, Great George Street, Westminster, S.W.



PETER LAWSON AND SON,
THE QUEEN'S SEEDSMEN AND WOOD FORESTERS,
will be glad to communicate with parties engaged in Planting extensively, with whom special agreements may be effected.

27, Great George Street, Westminster, London, S.W.

QUICKS, FOREST TREES, &c.



JAMES DICKSON & SONS, NURSERYMEN and SEEDSMEN, the Newton Nurseries (close to the Railway Station), Chester, offer many millions of the above, of EXCELLENT QUALITY and at VERY MODERATE PRICES.

The Trees and Plants, consequent upon the Nursery Grounds (which cover an area of about 60 acres) lying in an exposed situation, and a routine of regular transplanting being carried out, are WELL ROOTED, HARDY and VIGOROUS, hence are calculated to remove with great success.

PRICED LISTS, post paid, upon application, or in cases where LARGE QUANTITIES are required SPECIAL PRICES will be given.

Newton Nurseries, and 102, Eastgate Street, Chester; also at 23, Market Place (late Deansgate), Manchester, and Newtown, Montgomeryshire.

BUSBY'S STOCKWOOD GOLDEN HAMBURGH GRAPE.



THE very beautiful specimens of this really SPLENDID GRAPE (some of the bunches weighing upwards of 3 lbs.) which have been exhibited during the past season, combined with the numerous unsolicited testimonials as to its superiority and general excellence which JAMES VEITCH, JUN., has received from the most eminent practical Gardeners, warrant him in again calling attention to its great merit.

J. V., JUN., can with confidence recommend it as being without doubt *the best light Grape of its class* in cultivation. It will be found a most valuable acquisition, succeeding well under the same treatment as the Black Hamburgh, and *certainly no vinery should be without it.* It has also proved to be a most excellent variety for fruiting in pots. That so fine a fruit may be universally planted and enjoyed, J. V., JUN., now offers good established plants at the following prices:—

Nice young Canes ... ... **5s. 0d. each** | **Good well ripened Canes** ... **7s. 6d. each**
Fine well-ripened Canes ... ... **10s. 6d. each**

ROYAL EXOTIC NURSERY, CHELSEA, S.W.—December 10.

BUTLER & McCULLOCH,

COVENT GARDEN MARKET, W.C.

A DESCRIPTIVE AND PRICED CATALOGUE OF

HYACINTHS, GLADIOLI, RANUNCULUS, ANEMONES, IXIAS, AMARYLLIS, CROCUS, and other DUTCH and CAPE BULBS, with practical Cultural directions affixed to each Class for the use of Amateurs, sent free and post paid (for contents of CATALOGUE see *Gardeners' Chronicle*, October 1, page 786).

☞ *All orders amounting to* 21*s. and upwards sent Carriage paid.*

For conspicuous beds the following HYACINTHS and TULIPS cannot be surpassed; they occupy a most important position in the economy of the Flower Garden, coming into bloom immediately after the Crocus, &c., and ready for removal at the time of planting out Geraniums and other Summer and Autumn Flowering Plants

BEST DOUBLE and SINGLE MIXED HYACINTHS	21s.	0d.	per 100,	3s.	0d. per dozen.
TOURNESOL and REX RUBRORUM DOUBLE TULIPS	7	6	,,	1	0 ,,
YELLOW ROSE, pure yellow and scented Do.	10	6	,,	1	6 ,,
LA CANDEUR, pure white Do.	14	0	,,	2	0 ,,
FINE MIXED DOUBLE do.	7	6	,,	1	0 ,,
FINE MIXED SINGLE do.	6	0	,,	1	0 ,,
CHOICE MIXED LATE FLOWERING do.	10	6	,,	1	6 ,,

FOR CENTRES OF LARGE BEDS AND BORDERS

The following favourites are perfectly hardy, and cannot be too extensively cultivated:—

TRITOMA UVARIA (true) ..	21s.	0d.	per doz.	2s.	0d.	each	
LILIUM LANCIFOLIUM ALBUM	15	6	,,	1	6	,,	
LILIUM LANCIFOLIUM ROSEUM	20s.	0d.	per doz.	2s.	0d.	each
RUBRUM	20	0	,,	2	0	,,

GLADIOLI HYBRID of RAMOSUS,	30	splendid varieties named, for	21s.	6d., or 12 for	9s.	6d.
,, ,, CARDINALIS,	12	beautiful ,,	10	6		
,, ,, BLANDUS,	6	new ,,	4	6	} best for forcing.	
,, ,, SAGITTALIS	6	,,	4	6		
GLADIOLUS BRENCHLEYENSIS			30s.	0d.	per 100	5s. 0d. per dozen.
,, GANDAVENSIS			15	0	,,	2 6 ,,
,, QUEEN VICTORIA			15	6	,,	2 6 ,,
,, RAMOSUS			15	6	,,	2 6 ,,
,, FLORIBUNDUS			15	6	,,	2 6 ,,

THE FOLLOWING COLLECTIONS OF CHOICE BULBS SENT CARRIAGE PAID.

No. 1, C, £1 1s.

12 Choice named Hyacinths
2 beautiful Japan Lilies, 2 varieties
12 beautiful Gladioli, 4 vars.
4 Polyanthus Narcissus
50 Ranunculus
40 Border Narcissus
100 Crocus
100 Snowdrops
40 Double Tulips
12 beautiful Iris
2 Chinese Pæonies

No. 2, D. £2 2s.

18 Choice named Hyacinths
3 beautiful Japan Lilies, 3 varieties
18 beautiful Gladioli, 6 vars.
6 Polyanthus Narcissus
100 Ranunculus
40 Anemones mixed
20 ,, scarlet
150 Crocus
150 Snowdrops
50 Double Tulips
4 Chinese Pæonies
12 beautiful Ixias
6 beautiful Sparaxis
1 Tritoma Uvaria
6 Babianas
2 Tritoma aurea

No. 3, E, £3 3s.

24 Choice named Hyacinths
4 beautiful Japan Lilies, 4 varieties
24 beautiful Gladioli, 12 vars.
9 Polyanthus Narcissus
100 Ranunculus
50 Anemones mixed
50 ,, scarlet
200 Crocus
200 Snowdrops
60 Double Tulips
6 Chinese Pæonies
18 beautiful Ixias
12 beautiful Sparaxis
2 Tritoma Uvaria
1 Lilium giganteum
12 Babianas
3 Tritoma aurea

AGENTS FOR TYE'S REGISTERED HYACINTH GLASSES.

These are without exception the most elegant and best adapted for the successful Culture of the Hyacinth. See Woodcut Group of Glasses, page 803 of *Gardeners' Chronicle*, October 8.

COMPLIMENTARY DINNER TO MR. GEORGE EYLES.—Many of the leading Exhibitors and others connected with the Flower Show at the Crystal Palace having expressed a wish to testify the high estimation in which they hold the uniform kindness, courtesy, and attention extended to them upon all occasions by Mr. GEORGE EYLES, have resolved to entertain that Gentleman at Dinner upon his retirement from the Crystal Palace, and to congratulate him upon his new appointment with the Horticultural Society.

The Dinner will take place on WEDNESDAY, the 14th inst., at the Albion Tavern, Aldersgate Street, and Mr. John Spencer will preside. Tickets, 21s. each.

Any Gentleman desirous of being present upon this interesting occasion can obtain a Ticket upon application to the Hon. Secretary on or before MONDAY, the 12th inst., after which day no Tickets will under any circumstances be issued.

EDW. R. CUTLER, Hon. Sec.

14, Tavistock Row, Covent Garden, W.C.—Dec. 10.

SOME OF THE EXHIBITING GARDENERS have resolved to present Mr. EYLES with an acknowledgment for his attention to them as a body during the time of his superintendence of the Flower Shows at the Crystal Palace, and have determined to meet at the Swan Tavern, Stockwell, on THURSDAY, 15th inst., at 7 o'clock, P.M., to consider the best method to carry out the object in view. Several gardeners have already subscribed. All gardeners who have exhibited at the Crystal Palace are invited. Mr. HAMP, 6, Mawby House, South Lambeth, has consented to receive the contributions of those who attend and report to the meeting thereon.

OSMAN RHODES, Hon. Sec.

BRITISH POMOLOGICAL SOCIETY,
Hanover Square Rooms, Regent Street, W.

The next MEETING will be held on THURSDAY, December 15, when growers generally are invited to send specimens of interesting Fruits in season. The following premiums are offered for special subjects, exhibited by the growers, according to the Society's regulations:—

One Guinea and Half a Guinea for the best and second best bunches of Retarded GRAPES, accompanied by information as to the manner in which they have been treated.
The like for the best and second best dishes of six GLOU MORCEAU Pear.
The like for the best and second best dish of six DESSERT PEARS of any other kinds in season.
Half a Guinea (by Mr. Turner) for the best dish of six COX'S ORANGE PIPPIN Apple.
The like (by Mr. Newton) for the best dish of six OLD NONPAREIL Apple.
One Guinea and Half a Guinea for the best and second best dish of six DESSERT APPLES of any kinds in season, excepting those for which the above special prizes are offered.
The like for the best and second best Culinary varieties of APPLE, fit for present use, exhibited in tens.

On this occasion the days of Meeting and Lists of Prizes will be arranged for the year 1860.

Copies of the Rules, Regulations for Exhibitors, Forms to be filled up, or other information, may be obtained on application to the Secretary, WILLIAM DAVIDSON, 2, Randolph Road, Maida Hill, London, W.

HORTICULTURAL SOCIETY OF LONDON.—At a Meeting of the FRUIT COMMITTEE of the HORTICULTURAL SOCIETY, held at 8, ST. MARTIN'S PLACE, W.C., Dec. 6, Prizes were awarded as follows:—

PEARS.

CLASS B. PASSE COLMAR.
1st prize to Mr. William Hill, Gardener to Ralph Sneyd, Esq., F.H.S., Keele Hall, Staffordshire.
2d prize to Mr. Edward Spivey, Gardener to J. H. Houblin, Esq., Hallingbury Place, Essex.

CLASS C. BEURRÉ D'AREMBERG.
1st prize to Mr. Walter Reid, Gardener to James Hunt, Esq., Sydenham Hill, Kent.
2d prize to Mr. Joseph Allport, Gardener to Henry Akroyd, Esq., F.H.S., Doddington Park.

CLASS D. ANY OTHER VARIETY OF PEAR.
1st prize to Mr. J. Hall, Gardener to Thomas Lucas, Esq., Lower Grove House, Roehampton, for Glou Morceau.
An extra 1st prize to Mr. John Cox, F.H.S., Redleaf, Kent, for Winter Nelis.
2d prize to Mr. W. Hill, for Beurré Diel.
Extra prizes were awarded for very large specimens of Uvedale's St. Germain to Mr. James Garnier, Gardener to Sir George Hodson, Bart., Hollybrook, Bray, county Wicklow; and to Mr. Thomas Robertson, Gardener to Sir Archibald Dunbar, Bart., Duffus House, near Elgin.

APPLES.

CLASS H. 1st prize to Mr. E. Spivey, for Old Golden Pippin.
2d prize to Mr. J. Hawes, Gardener to J. W. Rhodes, Esq., Hennerton, near Henley-on-Thames, for Ribston Pippin.

The Gardeners' Chronicle.
SATURDAY, DECEMBER 10, 1859.

WHATEVER uncertainty may exist concerning the origin of domesticated animals there is far less obscurity in the case of cultivated plants, the wild states of which, if not positively known, are at least ascertainable with great probability. We know that esculent Carrots come from the wild Carrots in a few generations, because that has been proved experimentally; and we also know, because experience teaches us, that the esculent quality once produced in a Carrot becomes fixed and capable of descent by inheritance. We also know that Nectarines have sprung from Peaches because we see them appearing occasionally upon trees whose fruit is for the most part the Peach. We know that some of the breeds of garden Chrysanthemums must have come from the common old purple Chrysanthemum because the first change that took place in England was from it to a buff colour, from which by degrees many of the newer forms have been obtained in this country. And if we have not the same absolute certainty as regards other domesticated plants, we are at least furnished with the means of reasoning fairly from the known to the unknown.

In no case has greater doubt been entertained than in what concerns the many races of Cabbages whose habits have become so fixed, and descent by

inheritance so perfect that cultivators cannot believe that they have all come from one common stock, in the lapse of time, and that stock the wild Cabbage that springs up hard, bitter, and uneatable on the coast of Devonshire and Cornwall. Nor can it be denied that a good deal of experience in the mutation of form is necessary to produce the conviction that Savoys, Coleworts, and Cauliflowers are descendants of some common parent. No one has seen the wild Cabbage close its leaves and form its solid heart; still less have its straggling flowering branches been seen to become soft, stunted, and blended together into the granular delicate ball called a Broccoli or Cauliflower. But although such positive evidence has not been acquired, yet it happens that every now and then a piece of presumptive evidence is obtained, which is little less important than the most direct. Of this kind an example is before us.

A few years ago, among a crop of white Broccoli, believed to have been the sort called Snow's White, a very valuable, firm, single-headed race, there appeared an individual with a branching stem and a multitude of lateral sprouts each producing a Broccoli in its own centre, as well as the usual one at top of the stem. It was a true branching Broccoli of the same nature as the purple branching, which has of late obtained so high a reputation, but is of better quality, and white. So remarkable a plant could not be overlooked; seed of it was saved and sown; the seedlings were like the parent; more seed was saved and the seedlings still came true. For four successive years has this been done, and the annexed representation of an individual of the present season, and therefore of the fourth generation, engraved for Messrs. LEE & Co., of the Vineyard, Hammersmith, *from a photograph*, will show what the new race has become.

Its quality is we understand unexceptionable, its importance as a cropper is manifest, and experience has shown that its habit is fixed. To gardeners it therefore promises to become a treasure.*

But this white sprouting Broccoli has an interest of another kind, showing as it does a plain tendency to assume a form that connects the Broccoli with the wild Cabbage. The nearest approach among cultivated Cabbages to the wild form is to be found in the Thousand-headed and the Colewort, with their allies. What is called Cottager's Kale is evidently the same thing with a more vigorous and productive constitution. Then Brussels Sprouts are merely Kale with the lateral shoots turned in after the manner of Cabbages. In the example before us we have a Brussels Sprout with all the end shoots and all the laterals forming Broccoli. This teaches us that the wild Cabbage has a natural tendency to form solid hearts, like Cabbages, and stunted succulent flowering branches like Cauliflowers, and that all the forms of Cabbage known to us are the result of a more or less complex manifestation of those tendencies. This may be stated as follows:—

I. *All the buds active and open. Flowers loose and perfect.* The wild Cabbage, Kale, &c.

II. *All the buds active and closed. Flowers loose and perfect.* Brussels Sprouts, &c.

III. *The terminal bud alone active and closed. Flowers loose and perfect.* Cabbages, Savoys, &c.

IV. *The terminal bud alone active and open. Flowers abortive, in succulent heads.* Broccoli and Cauliflower.

V. *All the buds active and open. Flowers abortive in succulent heads.* Sprouting Broccoli.

Hence it follows that Brussels Sprouts are I. with the peculiarity of II., and that in the case before us we have a race with the tendencies of I. and IV. combined. Of the causes that may have originally led to the appearance of these peculiarities we are profoundly ignorant. Nothing, however, more strongly than this Broccoli supports Mr. DARWIN'S† views of the inheritance of peculiarities. "The laws governing inheritance," says this able naturalist, "are quite unknown, no one can say why the same peculiarity in different individuals of the same species and in individuals of different species is sometimes inherited and sometimes not so." "But the number and diversity of inheritable deviations of structure, both those of slight and those of considerable physiological importance, is endless." Probably the case before us adds another to the instances known to the learned author of the *Origin of Species*.

* We observe that Messrs. LEE advertise the seed at 2*s.* 6*d.* a packet.

† *On the Origin of Species.* Small 8vo. MURRAY.

"THAT CHINESE YAM is the strangest plant I have ever seen," exclaimed an old gentleman the other day while looking at some fragments lying on the ground before him; "I have a capital crop of wonderfully fine roots, but now that they are ripe and ready they won't come up. Gardener says he can't get them out of the ground without breaking them to pieces, because they grow with the thick end downwards. It's a great pity, for I think them particularly nice, and I am certain they are more wholesome than Potatoes."

A looker on suggested that perhaps they might be taken up without breaking if a large hole were made at the end of the row of plants deeper than their roots, so that the soil might be cast back out of the way; and thus the refractory roots be undermined root by root. So brilliant an idea was not to be neglected. So the gardener did as he was



advised; the roots came out of the ground without resistance, and the looker on was pronounced a very clever sort of gentleman. What he thought of his two friends we have not heard.

GOOSEBERRY BUSHES, RATS, AND RABBITS.

I HAVE been interested in reading the various measures suggested by your correspondents to protect Gooseberry bushes in winter from birds, and I am vain enough to think that none of them are so cheap and so simple as mine—no, not mine, for I borrowed it from a neighbour, a farmer fond of gardening, and have employed it for some 10 years or more. Early in November prune your bushes, then take some refuse hay, shake it up well with a fork, and soak it with water. Let it lie in a heap a few hours, and while it is moist strew it over all the bushes, whether Gooseberries or Currants, so that it clings to them and forms a thin coat. This is best done on a quiet foggy day. The wind will not displace it and no birds will touch a bud. It may remain on the trees till the buds open in spring and the leaves are half grown. A portion of it may then be taken off, and the remainder suffered to subside into the trees by the spring rains. It is not only a protection from birds but from early spring frosts. In default of hay I have used stable litter or Barley straw, or indeed any other kind of straw, so that it is broken, moistened, and made to cling to the bushes. The fishing nets recommended by your venerable and witty correspondent Mr. Waterton are very tiresome to take off the trees in spring, as they are apt to pull off and injure the young opening buds. I go with him in all that he says about the destruction of hawks, stoats, weasels, &c., but I cannot agree with him in depreciating the Norway *alias* "Hanoverian" rat. He is a fine sagacious fellow, totally unlike the poor quiet do-nothing English rat which he has displaced. Our Norway rat is courageous and energetic, with an agreeable touch of audacity. Unlike some varieties of the genus *homo*, who sneak into your house and do much mischief before you know of their presence, he makes his entrance, and while you are quietly sitting by your fireside gives a crashing gnaw under your feet perhaps, plainly saying, "I am here, get me out how and when you can." This is thoroughly English, and like a good sound Protestant, as our Norway friend undoubtedly is.

I cannot quote anything in his favour from the writings of those accomplished scoundrels the Greeks and Romans, only because they did not know him. I can, however, give something in his favour from an authority more classic. My old thresher who used to thresh for me about 40 years ago from March till October, "from morn till dewy eve," used to say, "When there's not too many on 'em in they are useful, for they eats up all them darned meece (mice); but you must keep 'em down, or they'll play the dickens with the Wheat." The keeping them down—and, by the way, there are many things in Church and State want keeping down—was capital fun: trapping, shooting, and above all the rat-catching day, was real sport for us younkers.

I have yet something more to say in his favour. He has done much good in sharpening the intellects of our labourers, more particularly those living on the clay farms of Essex. Did you ever hear, Mr. Editor, of capillary attraction in clay? I believe in it. If the *heels* are always treading on it in clay the *heads* of both farmers and labourers become clay*ish* (this should be looked into by our physiologists), and so our lively, sagacious, Norway rat by his impudence, and being "up to trap," brings on activity of mind in trying to circumvent him. And then what a capital scavenger he is; our old English rat knew nothing about this sort of business. Mr. Waterton, you must cease to abuse our Norway friend, who, like our Hanoverian dynasty, displaced a useless race.

After all this I almost regret to give a recipe by which this active enemy or friend, as it may be, should be at all inconvenienced, but he must in some places be kept down and kept out. If therefore a rat hole is found in an inconvenient place you have only to pour into it 1 or 2 quarts of coal-tar and then stop it up with mortar. Our active friend will perchance make a fresh hole—serve it the same. He is a cleverly intelligent fellow, and will soon in disgust quit the ill smelling sticky promenade.

Something like this I have used to drive rabbits from their burrows, or keep them in. I found last spring a bank in which rabbits frequented some burrows, and on inquiry it seemed that they were of long standing, going a great distance into the adjoining field. Ferrets were tried and found useless; the rabbits began to breed and were very destructive. I directed my man to cut a large bundle of young Whitethorn bushes; these were chopped up into lengths of 5 or 6 inches and crammed into the mouths of all the burrows with a fork; he then poured 2 or 3 gallons of coal tar on to the bushes so as to thoroughly saturate them; they were then well banked up with earth. The rabbits never came out, and have only recently, coming from a preserve near, attempted to form some weak burrows by the side of those stopped last spring. I shall now serve them the same. *Barbeblanche.*

AUSTRALIAN CYCADEÆ.

THE Palms, those noble plants which impart such a grandeur to tropical vegetation, often exalted to "forests over the forest," and not inappropriately called "the princes of the empire of plants," are but scantily represented in Australia. Indeed none have been observed in Australia Felix west of the Snowy River; none on, or near, any part of the southern and western coast, or towards Central Australia; whilst round the Gulf of Carpentaria and Arnheim's Land seemingly no other Palms occur than the stately Livistona inermis, and the Seaforthia elegans; with which, in Eastern Australia, where Palms attain their maximum, occasionally one or two other Livistonias, Areca monostachya, and Calamus Australis, are consociated. A solitary Coco-Palm, grown possibly from a nut cast ashore, was, by Captain Blackwood, R.N., noticed on one of the islands of North-east Australia; and a Caryota is said to occur on the islands of Torres Straits. For so remarkable a paucity of Palms in Australia only a slight recompense is offered by the presence of six species of Cycadeæ, an interesting order of plants combining with the whole appearance of Palms a structure of flowers, and not dissimilar to those of Coniferæ. Of those hitherto known indigenous Cycadeous plants, two, belonging to the genus Cycas, and briefly described in R. Brown's "Prodromus," are strictly tropical, extending from

Arnheim's Land to Port Curtis; whilst the other four, which are extra-tropical, or sub-tropical, are referable to the genus Encephalartos, established by Lehmann on several South African Cycadeous trees, much akin to the Australian species. These we intend to review briefly on this occasion. Since the publication of some highly important memoirs on Cycadeæ by Miquel, we have been accustomed to regard the Australian Encephalarti as generally distinct from the South African ones, under the name of Macrozamiæ. But this separation seems to be carried out on reasons so slight that, after a recent examination of all the Australian congeners, I prefer returning to the view originally expressed by Dryander, and borne out by R. Brown (*Prodr.* p. 348), and Endlicher (*Gen. Plant. suppl. II.*, p. 103), to consociate the African and Australian Zamiæ in one genus, distinct from the normal American species.

The Encephalartos spiralis, Endl., (Zamia spiralis, Salisb.) is, by various authors, well elucidated. I may add that its stem, according to locality of growth, may be found cylindrical or spherical, and that this species has been noticed as far north as Broad Sound. At least I have been unable to detect any marked difference between the northern and southern specimens, as far as I had an opportunity to judge. A curious variety probably of this species, with bifid leaflets of the seemingly young plants, was found by Mr. C. Moore in the interior of New South Wales.

The Encephalartos Preissii, well described as Macrozamia Preissii, by Professor Lehmann, is restricted to South-west Australia, although in the landscape picture of Port Lincoln, illustrating Captain Flinders's voyage, this or the preceding Zamia is delineated, which however, recent collectors have been unable to rediscover at that locality.

The Encephalartos Denisonii (Macrozamia Denisonii, Moore and Mueller) is by far the noblest of the Australian Cycadeæ, and well worthy of bearing the name of the enlightened patron of sciences who rules at present in New South Wales. The description of it furnished in the Fragmenta Phytographiæ Australiæ (I., 41) rests solely on the examination of the fruit, for which reason I avail myself of this opportunity to complete the account of this rare and beautiful tree. Diagnosis:—Leaflets very numerous (about 240 to each leaf), acute linear-falcate, shining, without manifest callus at the base, arising from the vortex, not from the sides of the rachis, with 12—15 nerves; inferior part of the rachis tetragonous, superior part sideways compressed: male cone very large (sometimes 3½' long, and then horn shaped), generally broad or oblong ovate, 4—7" broad, and 9—12" long; antheriferous scales closely approaching each other, those of the lowest series sterile; lateral scales 1½—3" long; toward the base by inflexed margins either channelled or cylindrical; lamina rhomboid acuminate, transversely thickened at the back; the exserted part covered with a grey brown silky velvet; acumen coriaceous, of the lateral scales spreading, of the terminal ones reflexed; female cone with spreading scales. The remaining part of the diagnosis is published in the "Fragmenta" as quoted. Description:—Stem about 18' high. Leaves 7—12' long, dark green, shining. Petioles 2—3' long, with much thickened base, which is coated with a thin fulvous velvet, otherwise nearly smooth, unequally tetragonous, beneath blunt, above depressed, middle and lateral angles blunt. Rachis in its lower blunt part tetragonous, in its upper part more acute at the back, and there, on both sides, with a longitudinal furrow. Lower leaflets opposite, upper ones alternate, lowest only twice shorter than the others (not reduced gradually to mere teeth or thorns), uppermost not much smaller than the rest, all about 6—8" long, ½" broad, with decurrent base, therefore, in proportion to the long rachis, much shorter than in the other Australian species. Scales of the male cone below narrow cuneate, not gradually tapering to the base; above glabrous, beneath, from the base to the thickened part of the lamina, densely covered with anthers, which are not detached in two distinct groups. Lamina nearly 1½" broad.

The Encephalartos Pauli Gulielmi, fully described as Macrozamia in the "Fragm. Phytogr. Aust.," I., 86, seems by far the rarest of the Australian species. It was discovered near the Glasshouse Mountains, at the time when H.R.H. Prince Paul William, of Wurtemburg, visited these colonies; and whilst bestowing his Highness's name on this memorable plant, I desired to express my admiration for the scientific ardour which the royal traveller has retained to a highly advanced age.

In concluding these remarks I would point to the importance of these trees, as yielding a kind of Sago, although the amylum is not equally copious in the pith of the different species. The Encephalartos Preissii has already rendered good service to the Western Australian settlers; and Mr. Gregory, the Australian explorer, first employed the method of obtaining the starch by shaving the pith of the stem with a plane, by which means so much surface of the cellular tissue is laid open as to cause the separation of the starch grains by maceration from the pith shavings with great facility. *Dr. F. Mueller in Quarterly Pharmaceutical Journal of Victoria.*

BELGIAN GARDENS.

No. IV.—Château of Baron Heynderyckz.—About two miles from Ghent, in the middle of the fertile plains of Flanders, the monotony of which is broken here and there by little woods or lines of trees, is to be seen a charming modern dwelling-house, surrounded by water, and standing out in relief from a background of green. It is there, at the château of Destelbergen, that Baron Heynderyckx of Ghent has amassed one of the most important collections of rare and valuable plants that Belgium possesses. We say amassed in every sense of the word, for more varied or interesting collections in so small a place are rarely to be met with. In fact there is something of everything. Azaleas, Rhododendrons, Camellias, Conifers, Amaryllids, Ferns, Pelargoniums, Cycads, Palms, variegated greenhouse plants, Orchids, &c., are all housed, packed, and stowed away in a multitude of little greenhouses placed back to back in the form of an amphitheatre, overlooked by a handsome glazed building, placed upon the top of an artificial hill, and commanding a view of the gardens and surrounding country. In the centre of this building is a rotunda with a very lofty dome, which holds the larger ornamental greenhouse plants; such as Araucarias, Dammaras, Pinuses, Banksias, large Camellias, Rhododendrons, Azaleas, and New Holland Acacias, the smallest specimens of which are not less than 9 feet high. Araucaria excelsa, Cunninghamii, and brasilhensis, Dammara alba, Banksia serrata, Acacia longifolia and pendula, with a Balantium antarcticum, are especially conspicuous for beauty and stature. The left wing of this house contains a very fine collection of Palms and Cycads; among which may be mentioned Chamærops excelsa, tomentosa, and palmata, Phœnix spinosa, Sabal Adansonii and Blackburniana, Thrinax parviflora, Oreodoxa Sanchona (a very rare plant), Pinanga Nenga, Areca sapida, Calamus niger, Chamædorea fenestrata, Latania Commersoni and Astrocaryum mexicanum; beautiful specimens of Cycas revoluta and circinalis, Ceratozamia mexicana and Dion edule; Pandanus furcatus, Candelabrum, and inermis; with a magnificent Angiopteris evecta, a colossal Medinilla magnifica, and some beautiful species of Heliconia.

The right wing contains nearly 300 varieties of Camellia, but to judge from the unhappy appearance of the plants this house is not suited to their cultivation. The cause of their sickly state is perhaps attributable to too dry an atmosphere during the winter, or else to too much heat. Every one must have remarked at the last spring exhibition in Ghent the Azaleas of Baron Heynderyckx; they were splendid specimens and cultivated with great skill, their foliage being lost beneath the masses of flowers.

His collection of Amaryllids is also well known. Baron Heynderyckx possesses thousands of them, for they are great favourites with him.

The eight or ten small houses which stand back to back at the bottom of the principal conservatories are occupied by numbers of ornamental plants, such as Rhopalas, Aralias, Browneas, Ixoras, Gloxinias, Gesnerads, Begonias, Pavettas, Marantas, &c.; in fact most of the plants lately introduced are to be found there. The Orchids more especially attracted our attention; the collection is most important, and to it Baron Heynderyckx justly owes his great reputation. There is no exaggeration in estimating the number of species at 300. The specimens are mostly very fine and well cultivated. The following were most especially noteworthy for either vigour or rarity:—Cattleya crispa, crispa purpurea, Perrinii, Mossiæ, Mossiæ superba, guttata; Brassia maculata; Epidendrum aurantiacum, viscidum, Stamfordianum, Odontoglossum Pescatorei and nævium; Aerides odoratum, odoratum majus, crispum; Angræcum eburneum and bilobum; Sobralia macrantha, Uropedium Linden', Vanda Roxburghi, tricolor, teres, and cærulea (magnificent specimens); Chysis Limminghii (very rare); Dendrobium nobile, Wallichii, Paxtonii, and Gibsoni; Lælia purpurata, acuminata, and superbiens; Saccolabium retusum and Blumei.

Notwithstanding the advanced age of Baron Heynderyckx his zeal for horticulture does not cool, as is shown by the fact that every Belgian exhibition owes a great part of its beauty to the ardour of this gentleman. His collection of medals bears witness to prizes gained at Ghent, Brussels, Namur, Mons, Antwerp, and Mechlin. *From the Journal d'Horticulture Belge.*

Home Correspondence.

Gooseberry Buds and Sparrows.—Mr. Waterton recommends fish nets for keeping sparrows from the buds of Gooseberry trees. The advice, I think, is not good. About 15 years ago I had a good-sized kitchen garden in Cheltenham, the borders and central beds of which were bordered by Gooseberry and Currant trees. The sparrows made sad havoc with the buds, and pruning was obliged to be deferred till the spring, in order to make choice of the shoots that had least suffered. Two sailor-dressed men called at my house with tanned fish nets for sale. I bought a quantity for 3*l.* "And now," said I to my gardener, "we'll puzzle the sparrows." The trees were properly pruned, and the nets were stretched over the rows, including the trees and the spaces between each tree, and the opposite sides of the net were drawn round and fastened as closely as possible together, so that it seemed next to impossible for any birds to get inside. A space, however at the stem of each tree was unavoidable. After a while, observing that as I approached the trees sparrows flew from under them, I looked more narrowly and found that the buds had been attacked. The sparrows had got into the small spaces at the stems, and were cunning enough to make a hasty exit whenever anybody approached. There was hardly any fruit the next season, as in pruning but few shoots were left, and they were very well stripped indeed. I believe that nets do more harm than good, and that if I had spent one penny in white cotton instead of 3*l.* in nets, I should have had a good crop. Hoping to save a few buds and to be revenged on the sparrows, I steeped some Wheat in a solution of Nux Vomica, and put a little heap of it under several trees. The next morning I observed the sparrows had been at the heaps, and I picked up about half a dozen dead sparrows about the garden. "There," thought I, "at last I have out-manœuvred the Philistines, for surely they will partake of the repast provided for them at the bottom, and not ascend the tree to seek more meagre fare." But, no such thing—the heaps remained under the trees the whole winter, and not a grain (as far as I could notice) was ever touched after, whilst their visits to the interiors were as pertinacious and mischievous as before. In fact, I fancied more so, and did not know whether to attribute it to a mixture of malice and fun in their disposition, inducing them to spite me for my projects and to jeer me for my failures, or whether they really thought that I had constructed these Gooseberry bowers for their especial gratification. I was confirmed however in my notion that birds can reason, and (as Cowper phrases it) confabulate also. Apropos to this let me give an extract from Cobbett. After instructing how to use "a ball of coarse white sewing cotton," he goes on to say:—"What the little picking and scratching devils think of these threads, I know not, but it keeps them off, and that is enough for our purpose. I imagine that it inspires them with doubt, and as doubt has great influence upon all the human race, why should it not have the same upon these timid and watchful creatures?" *Henry Coles, Hammersmith.*

Ringing the Branches of Grape Vines.—This operation, from which favourable results were expected, will doubtless have received attention from many Grape growers during the past summer, and I think the present may be considered a suitable time for those who have been tempted to put it to the test to communicate their experience respecting its merits, especially as some doubts are now arising as to its utility under glass. Having tried it here on a small scale last year, and from its not having been attended with satisfactory results, I resolved upon giving it another trial, from seeing in the spring an article relating to its advantages when properly carried out. I therefore selected some small bunches on different parts of the Vines, and operated upon them in the way recommended by cutting through the bark with a sharp knife at ½ an inch apart and clearing out the piece all round; this was done shortly before the expanding of the flower—the bark at this stage came off freely and clean. These experiments were all made on Black Hamburghs, three of which were in one house and two in another. The same uniform want of success however attended all the cases, viz., want of colour; they, nevertheless, showed earlier signs of ripening, and of increased size, but the want of colour, in my own case, at least, is considered fatal to the experiment. If any one has been more successful with Vines under glass, I hope they will oblige by giving a clear definition of their mode of operation. *J. Webster, Gordon Castle.*

Lifting Fruit Trees.—This is, I am aware, not a new operation, but it is one not very generally practised. It is I think preferable to root pruning, for this reason: in root pruning only the strong and easily reached roots are divided, whereas in lifting the whole of the roots that go down into the subsoil, and tend to produce strong gross shoots, are all severed. Fruit trees of all sorts, varying in age from 20 to 40 years, have been lifted here with the most favourable results. Some of them were unhealthy, but fresh soil and shallower planting have rendered them all that could be desired. They are in every instance well furnished with bloom buds. Some of the trees which were lifted last autumn, principally Greengage Plums, were almost the only trees of the kind in the gardens that had a crop of fruit on them. They were planted against a west wall, and withstood, unprotected, the severe frosts of April last, and produced more fruit than they have done for years, while on others protected, and much more favourably situated, the fruit was almost wholly destroyed. For instance, the Apricots on south walls, protected with a net and Beech boughs, were all killed. The check which they receive in the operation of lifting is, I think, of service to them. It retards the opening of the bloom in spring, and assists no doubt greatly in hardening the wood and buds, thereby enabling them to withstand spring frosts better. Triennial lifting I think is the best system, as the trees are then kept in a healthy, fruitful state, and a crop may almost always be depended on. *Henry Bailey, Jun., Shardeloes, Amersham, Bucks.*

Datura arborea.—Mr. Addison states that he has nine plants of this in full bloom in one of his employer's conservatories. I quite agree with him in opinion that too little attention is in general paid to the culture of this beautiful plant; but I wish to state that it does not require the protection of a conservatory, or indeed any protection whatever during the summer, to produce in full perfection its noble and graceful flowers. During the last summer we had in different parts of this garden seven large plants of the Datura, all of them covered with bloom, as fully developed as I ever saw them to be under glass, and they

were really the admiration of all beholders. One of them in particular, the largest of the whole, and indeed almost to be called a tree, was planted near the house, and produced at one time I should think little short of 100 flowers. I certainly did not count them; but they were a gorgeous sight by day, and in the evening "scattered wide their delicate perfume," which is peculiarly sweet and powerful. As soon as the danger from spring frosts was over, these plants having been previously prepared in the greenhouse were planted out, and continued to produce a succession of flowers and flowering buds, until the sudden frost in October put an end to their glory. But they can be renewed another year, and they are so easily propagated by cuttings, and their beauty so amply rewards the little attention which they subsequently require, that I cannot but express my surprise that, in the present advanced state of horticulture, so great an out-of-door ornament should be so much neglected. *W. D. A., Sydenham.*

Trentham Black Grape.—On reading "Hogg's Gardeners' Year Book," I find a list of new Grapes, amongst which is Trentham Black, with an outline of the size and shape of the berry, which is perfectly oval. On referring to Mr. Rivers's catalogue of fruits, I find it there described as round. Now, I think the sooner the matter is set right the better, as to which is the right description, as it is very much calculated to mislead growers of Grapes, more particularly as the kind above alluded to is likely to prove a very valuable fruit. Perhaps some of your correspondents will enlighten us. *Clericus, Hereford.*

Cottager's Kale.—I planted about 500 of this Kale in three different gardens, and not one is injured by frost. Indeed nothing could look better. My Broccoli and Savoys are all cut up. *Thos. Akers, Newstead Abbey, Lincolnshire.*

The October Frost.—In its effect this frost has been very capricious, and plants seem to have suffered more from their relative state of vegetation at the time than from the intensity of the visitation. Here we had no snow, at least nothing more than a passing scud, though the Mendip and other hills in the neighbourhood were sheeted over—yet Alma and Mitchell's Hardy Cauliflower, Hammond's Cape Broccoli, and the earlier crop of Snow's, are either killed or so much injured as to be almost useless. Other Broccolis, even Purple Sprouting, are much injured in the foliage, and even Savoys and our old friend the Scotch Kale look anything but cheery. Lettuce, such as were fit for use, were parboiled, and some of my neighbours complain that most of their Endive is killed. I grow only the Batavian or large "Scarolle," as I find it more crisp and sweet than the curled varieties, and that has not suffered, another reason for growing it. Strawberries with me are not affected, but some complain of their British Queens looking queer. On the day preceding the frost the flower gardens here were looking quite gay, but anticipating a frost I secured the choicer kinds of Variegated Geraniums and a few other things, and the next morning the garden was a wreck. Verbenas, Calceolarias, Koniga maritima, and other tender things which stood the winter of 1858 uninjured were quite dead, and not a bed except Phlox Drummondi (a capital autumn thing for cutting) was worth retaining. Chrysanthemums with me, both Pompone and the large kinds, growing on south borders or sheltered among shrubs, are quite killed to the ground, not one producing a perfect flower. Yet in the Temple Gardens and also in the suburbs of London I saw ten days back fine specimens, scathed certainly, but still looking gay and cheerful. Now be it known we had only 8° of frost, the lowest register of the thermometer being 24°, while at Chiswick the glass marked 17°! How is this anomaly to be accounted for? If plants were killed with 8° of frost here, why were they not also killed with 15° of frost at Chiswick? Simply because they were in more mature growth, and hence contained less moisture for the cold to act upon. Among Roses the young tender shoots of such kinds as Mrs. Bosanquet and Madame Helfenbein were killed back to the ripe wood, and the young flower buds on most of the perpetual varieties are dead. Two years ago I gathered nice blooms of Souvenir de Malmaison and Géant des Batailles on Christmas Eve; and last year I had nice blooms in November. Of shrubs the common Laurel is much cut, especially in low situations, but the Portugal quite uninjured; Chinese Privet also is not touched. This here forms an uncommonly fine shrub—tree indeed I may say, as in the village of Beckington, a short distance from here, there is a plant 30 feet high and proportionately bushy. In the season with its deep shining leaves and numerous plumes of flowers it forms a very interesting object. Among Rhododendrons the most forward buds of the ponticums are browned, though R. arboreum close by was uninjured. Erica intermedia has all the young shoots killed, some of them as far down as 18 inches from the top, especially in the nursery of Mr. Wheeler, at Warminster; Berberis Darwini has the young shoots browned, but Escallonia macrantha, both in the open ground and on walls, is quite uninjured, though E. rubra in the open borders are much cut. The Pampas Grass, though in one instance the plumes were only just showing, is quite uninjured, but here it has never been killed down as it is in some places. The New Zealand Flax fully exposed in pots is unscathed. In the Pine[?]house I notice that Saxe-Gothæa conspicua is dead, the bark at the collar of the plant being split all to pieces, but in other respects except that some of the plants are browned sooner than usual (Libocedrus chilensis is an exception to the browning process), my plants are in beautiful condition. The same may be said of Thujopsis borealis and Cupressus Lawsoniana. Spergula pilifera has the centre of the plants quite brown. *W. P. Ayres.*

Diseased Pine Apples.—I shal lfeel much obliged for information from some of your readers on the following subject. Visiting a friend last week in the country who grows annually about three dozen Pines, I was much struck with the improved size of the fruit compared with that of former years, the plants being under the same treatment, but when the fruit came to be cut four out of five proved to be decayed at the centre, and the sound part of the Pine almost tasteless. I could not explain the cause, unless it was from some sudden change of temperature during the growth of the plants, more vigorous or more healthy specimens of which I never saw. An explanation of the cause of the disease will therefore very much oblige *J. D.*, 29, *St. Paul's Road, Camden Square.*

Societies.

HORTICULTURAL: *Dec.* 9.—*Special General Meeting.*—C. W. Dilke, Esq., V.P., in the chair. This meeting was held in the rooms of the Society of Arts, John Street, Adelphi, for the purpose of electing a new Member of Council in the room of Prof. Henfrey, deceased. John Clutton, Esq., having been put in nomination for the vacancy, was unanimously elected. The following were also elected Fellows, viz.:—The Duchess Dowager of Norfolk, Hamilton Place, Piccadilly; Dowager Countess of Craven, Hamstead Lodge, Newbury; Lady Isabella Stewart, 13, Belgrave Square; Miss M. J. Nichols, Hanger Hill, Acton; Major-Gen. Sir Travell Phillips, Senior United Service Club; General Shubrick, United Service Club; Algernon Perkins, Esq., Hanworth Park; J. P. Bull, Esq., Arlington House, Chiswick; T. Walcot, Esq., Lower Gore, Kensington; W. Reed, Esq., Oak Lodge, Kensington; J. Fisher, Esq., Cadogan Place; Rev. W. A. Paxton, Faversham, Kent; A. G. Harpur, Esq., Pembroke Place, Pimlico; C. Walton, Esq., Manor House, Acton; Mr. W. H. Rumbold, Grange, Tunbridge Wells; E. Giovannelli, Esq., Stoke Newington; J. Hambrough, Esq., Princes Terrace, Hyde Park, South; A. Elkington, Esq., Woodbrooke, Northfield, Worcestershire; E. H. Keeling, Esq., Hyde Park Gate; Mrs. J. Wentworth, 19, Old Quebec Street; Mr. R. P. Glendinning, Turnham Green; Mr. C. Ewing, Bodorgan, Anglesey; Mr. L. Booth, Flotbeck Nursery, Hamburgh; Mr. T. Potts, Green Man, Old Kent Road.

The chairman announced that the great election of Fellows, as Life Members supporting the new garden at Kensington Gore, would take place on the 20th of January next; and that the Council had found it necessary to close the list of subscribers for debentures, the sum offered being already beyond what this great undertaking would require.

Dec. 6.—*Fruit Committee.*—Mr. Edmonds in the chair. At a meeting held this day, a considerable number of Pears and Apples was produced, and special prizes offered for certain kinds were awarded. Of Knight's Monarch there were three dishes, one of which came from Mr. Hill, gr. to R. Sneyd, Esq., Keele Hall, Staffordshire. It was gathered from a tree on the Pear stock growing on loam resting on red sandstone, and had been root pruned two years ago. Neither this however nor the other dishes of this variety were in perfection. Of Passe Colmar there were four exhibitions, the best of which came from Mr. Spivey, Hallingbury Place, Essex, whose fruit was melting and excellent in flavour. From Northamptonshire, Mr. Judd, gr. to Earl Spencer, sent good examples of this variety of Pear, as did also Mr. Hill. Those from Mr. Judd came from trees growing against a south wall in good soil on blue clay, and those from Mr. Spivey from a south-west wall. The tree which produced them was grafted on the Quince, and had been root pruned in 1857. Mr. Allport also contributed good fruit of this Pear. Beurré d'Aremberg was sent in good condition from Sydenham Hall by Mr. Reid, and the same variety was also contributed by Mr. Allport, Mr. Moore, and Mr. Cox, of Redleaf. Among other Pears consisting of Beurré Diel (very large and fine from Mr. Hill), Easter Beurré, Winter Nelis, Glou Morceau, Marie Louise, and Beurré Rance, the Glou Morceau and Winter Nelis were by far the best. Beautiful fruit of the former was sent from the neighbourhood of Roehampton by Mr. Hall, and Mr. Cox had excellent examples of the latter. Very large Uvedale's St. Germain Pears came from Sir Archibald Dunbar's garden, near Elgin, and also from Ireland. Of these the heaviest weighed upwards of 3 lbs. Of Apples, Cockle Pippin came from Mr. Webb, of Reading; Mr. Parsons, Welwyn, Herts; and Mr. Judd, but none of them were considered good. Fair specimens of Margil were furnished by Mr. Spivey, but of all the dessert Apples exhibited the best were Old Golden Pippin, Ribston Pippin, and King of the Pippins, or Winter Pearmain of the Germans. The Ribstons were remarkable for their high colour, but they were a little over ripe and somewhat mealy. Of Dumelow's Seedling, Blenheim Orange, and other well-known kitchen Apples there were some good specimens. Two bunches of Grapes, said to have been a cross between the Syrian and Muscat, came from Mr. Downes, of Stourbridge. They were fine looking bunches, the heaviest of which weighed 4 lbs. 4 oz.; but they had no Muscat flavour about them whatever, and were otherwise hardly distinguishable from the Syrian. Some remarkably fine roots of Discorea Batates came from Messrs. Ivery, of Dorking. The largest of these weighed 6 lbs. 6 oz., and although quite 3 feet in length had been in no way broken in lifting. The others were nearly equally fine. Some large and very fine Leeks, one the Rouen and another sort, were shown by Mr. Turner, of Slough. From Mr. Webb, of Reading, came a Kidney Potato, which did not appear to be very different from some shown by that grower on former occasions. J. Luscombe, Esq., sent a basket of Citronworts.

Dec. 8.—*Floral Committee*—Rev. J. Dix in the chair. At this meeting one or two interesting plants were shown. Among others was a very beautiful Orchid from Messrs. Veitch, a hybrid raised by their foreman, Mr. Dominy, between Limatodes rosea and the red-eyed Calanthe vestita. To the colour of the former it added the size of the latter, and is altogether an extremely fine thing. The same firm also furnished two charming new Selaginellas; one especially, named S. Wallichiana, is nearly if not quite as handsome as Gleichenia flabellata, which it somewhat resembles. The other was of a smaller and dwarfer character. From R. Warner, Esq., came a Lælia, with violet purple lip and white sepals and petals, together with a drawing of a larger species of that genus, resembling L. Schilleriana of Reichenbach. Messrs. E. G. Henderson sent one of the best of the more recently introduced kinds of Tydæa, called Countess of Ilchester; and from Mr. Carson came a noble spike of Grammatophyllum speciosum, with at least 60 blossoms on it. It measured upwards of 7 feet in height, and it was stated that the same plant had had two such spikes on it at the same time, and that they had been in full bloom for these last 10 weeks. Mr. Mackintosh, nurseryman, Hammersmith, sent an extremely well-grown Solanum capsicastrum with upwards of 100 fruit on it, looking like so many large polished orange beads. Than this nothing in its way could be more ornamental at this season of the year, and it may be added that very small plants of it bear fruit freely.

LINNEAN: *Dec.* 1.—Prof. Bell, President, in the chair. A. H. Barford, Esq., B.A.; P. H. Bird, Esq.; J. Durham, Esq.; J. M. Jones, Esq.; and S. Livesay, Esq., were elected Fellows. There were presented to the Museum:—From C. C. Babington, Esq., an extensive series of dried plants for the British Herbarium; from Dr. Shortt, specimens of various Indian plants, together with skeletons of the leaves of Ficus religiosa, and 24 beautifully coloured drawings *upon talc* of birds of Southern India. J. Birkett, Esq., exhibited living plants of Ophioglossum lusitanicum, gathered in Guernsey a few days since. This Fern was stated to grow abundantly on the steep slopes of the southern cliffs of the island, where there is very little depth of soil, and that excessively parched in summer. Mr. Birkett also exhibited Asplenium marinum v. microdon (the plant known under this name proves to be a variety of A. lanceolatum), from a damp wall in a shady lane in the parish of St. Pierre-du-Bois, Guernsey. The following papers were read:—1. "A memoir on the structure and reproduction of Pyrosoma," by Prof. Huxley. 2. "Notice of certain English plants observed during the past summer," by John Hogg, Esq. One of these was the Rosa rubella, first found by Mr. Hogg, about the summer of 1823, in a hedge by the side of a lane leading from Carlton to Norton, in Durham; and then taken for a pink-flowered variety of R. spinosissima. Another was a white-flowered variety of R. tomentosa, from the same locality as the former. Besides these were records of some vegetable *lusus naturæ*, namely:—two double Dahlias growing back to back on the same stalk; a stem of Agapanthus umbellatus, to which a second smaller one had adhered for a portion of its height; and two "proliferous" cones of the common Larch. At the small extremity or apex of these cones the woody stem was described as being prolonged through the cone, having grown in one case ¾ inch, and in the other 2 inches beyond the cone itself; they had been gathered from a young healthy tree in a plantation at Norton. A letter from J. Woods, Esq., to Mr. Kippist, in reference to Rosa rubella and recording another Durham locality, was also read. Mr. Woods observed: "I recollect perfectly well observing among Mr. Janson's specimens one which I considered as the R. rubella of Winch. It was gathered at the opening of Castle Eden Dene towards the sea, in 1835. I kept more completely on the sands, which are very much covered with R. spinosissima. Mr. Janson kept rather on the boundary of the more solid ground, where the vegetation is more mixed. I did not see the plant at the time, nor, I believe, till looking over the produce of our excursion after our return to town."

HORNSEY GARDENERS' MUTUAL INSTRUCTION: *Dec.* 7.—The members of this Society assembled at the Infant School Room, Hornsey, to hear a lecture by Mr. Shirley Hibberd, of Stoke Newington, on the "History and Cultivation of the Rose." The chair was occupied by Robert Richmond, Esq., supported by many of the neighbouring gentry. Mr. Hibberd briefly sketched the history of the Rose from the earliest times to the peace of 1815, when, he said, the first of the great French Rose gardens was laid out by M. Vibert, and the improvement of the Rose as a florist's flower commenced in earnest. The great majority of show varieties

had been raised in France during the past 45 years by MM. Vibert, Laffay, Hardy, Deprez, Prevost, Lacharme, Margottin, Guillot, Granger, and a few other professional and amateur growers. The lecturer enumerated the best Roses raised by each, and gave a few historical memoranda of such Roses as Aimée Vibert, Jules Margottin, Géant des Batailles, Great Western, and others, tracing them to their parentage, and indicating also the varieties which had proceeded from them. The seedlings of Géant des Batailles, he said, were sufficiently numerous to constitute a rich collection of extraordinary Roses, and they included Lord Raglan, General Jacqueminot, Duchess of Norfolk, Evêque de Nimes, Louis Chaix, and others of the crimson section of Hybrid Perpetuals. Passing from the varieties the lecturer proceeded to the subject of culture, giving an epitome of the treatment of the Rose on loam, sand, clay, chalk, and peat, with hints on the selection of varieties and the management of stocks, as well as the improvement of unsuitable soils. He then treated of propagation, and by the aid of a black board explained the various modes of budding on the Briar, Manetti, Celine, and other stocks. His description of the method of striking Roses from eyes in the fashion of a Grape Vine was particularly interesting. The buds were to be taken at the same season and in the same manner as for budding on the Briar, that is from half ripe wood, the buds of which had not started. The leaf was not to be removed; nor was the wood to be taken out of the shield, but every bud with its attached wood, bark, and leaf, was to be planted in pure sand with a little peat under it for the first roots to work into, and then covered with a bell-glass. In this way scarce Roses would be multiplied rapidly. The Rector of Hornsey proposed a vote of thanks, which was carried by acclamation.

Royal Horticultural of Ireland.—The first public winter Exhibition of this Society took place on the 24th ult. at the Rotunda, and fully rewarded the Council for the addition to their 11th rule, by which the Society is empowered "to hold an Exhibition in November if found advisable." Heretofore a private show of Chrysanthemums was held at the Society's rooms; but in Dublin as elsewhere so marked an improvement in the culture of this beautiful flower has taken place that it was thought unfair to debar the public from sharing the treat of seeing so many fine plants and so exquisite and gorgeous a display of bloom. Speaking generally, a more creditable exhibition of Chrysanthemums could not have been witnessed; but we cannot omit to particularise those grown at the gardens of the Vice-Regal Lodge by Mr. Smith, and those of the Chief Secretary by Mr. McNeill; the latter were quite a sight in themselves, being 5 feet 6 inches in diameter and an entire sheet of blossom. The first prize was awarded to the Chief Secretary's gardener for the large-flowered kinds Hermione, Annie Salter, Versailles Defiance, and Queen of England. Dr. Nelegan obtained the first prize for Pompones, but many considered that others were more deserving of praise. Some splendid Grapes were exhibited by the Chief Secretary and some fine specimens of Apples, Pears, &c. The cut flowers were not so abundant as on other occasions, but those shown by Mr. Joseph Watkins which took first prize were very well flowered. Owing to the want of a military band some few seemed disappointed, but to those who went to see the flowers the exhibition was all that could be desired. *E. A. M.*

Notices of Books.

Self-Help: with Illustrations of Character and Conduct. By Sam. Smiles. 12mo. Murray. Pp. 343.

In his life of George Stephenson Mr. Smiles showed that he possessed the true talent of a biographer, knowing how to be diffuse without being prolix, not mistaking tediousness for accuracy, and while illuminating the salient points of his hero's career, throwing into the shade or among the middle tints whatever seemed uninteresting or unimportant. In the volume before us he has again displayed the same kind of tact. The origin of the work is so well told by the author that we give it in his own words with an omission or two:—

"Some 15 years since, the author was requested to deliver an address before the members of some evening classes, which had been formed in a northern town for mutual improvement, under the following circumstances:—

"Two or three young men of the humblest rank resolved to meet in the winter evenings, for the purpose of improving themselves by exchanging knowledge with each other. Their first meetings were held in the room of a cottage in which one of the members lived; and, as others shortly joined them, the place soon became inconveniently filled. When summer set in, they adjourned to the cottage garden outside; and the classes were then held in the open air, round a little boarded hut used as a garden house, in which those who officiated as teachers set the sums, and gave forth the lessons of the evening. When the weather was fine, the youths might be seen, until a late hour, hanging round the door of the hut like a cluster of bees; but sometimes a sudden shower of rain would dash the sums from their slates, and disperse them for the evening unsatisfied.

"Winter, with its cold nights, was drawing near, and what were they to do for shelter? Their numbers had by this time so increased, that no room of an ordinary cottage could accommodate them. But they were youths of pluck, and determined to go forward with the work they had taken in hand. They resolved, therefore, to hire a room; and on making inquiry, they found a large, dingy apartment to let, which had been used as a temporary cholera hospital.

"About 100 young men had thus come together, when, growing ambitious, they desired to have lectures delivered to them; and then it was that the author became acquainted with their proceedings. A party of them waited upon him, for the purpose of inviting him to deliver an introductory address, or, as they expressed it, 'to talk to them a bit;' prefacing the request by a modest statement of what they had done and what they were doing. He could not fail to be touched by the admirable self-helping spirit which they had displayed; and, though entertaining but slight faith in popular lecturing, he felt that a few words of encouragement, honestly and sincerely uttered, might not be without some good effect. And in this spirit he addressed them on more than on one occasion, citing examples of what other men had done, as illustrations of what each might, in a greater or less degree, do for himself; and pointing out that their happiness and well-being as individuals in after life must necessarily depend mainly upon themselves—upon their own diligent self-culture, self-discipline, and self-control—and, above all, on that honest and upright performance of individual duty, which is the glory of manly character.

"There was nothing in the slightest degree new or original in this counsel, which was old as the Proverbs of Solomon, and possibly quite as familiar. But old-fashioned though the advice may have been, it was welcomed. The youths went forward in their course; worked on with energy and resolution; and, reaching manhood, they went forth in various directions into the world, where many of them now occupy positions of trust and usefulness.

"The author's personal interest having in this way been attracted to the subject of Self-Help, he was accustomed to add to the memoranda from which he had addressed these young men; and to note down occasionally in his leisure evening moments, after the hours of business, the results of such reading, observation, and experience of life, as he conceived to bear upon it."

The result is the work before us. Mr. Smiles first insists upon the necessity of self-help, or as some would call it self-reliance; he then describes some of the most celebrated leaders of industry whether inventors or producers, among whom appear Watt, Arkwright, Hargreaves, Crompton, Boulton, Peel, and many more; the text of his third chapter is Genius is patience, a subject carried through two more chapters. A sixth deals with the rewards gained by industry in the shape of English Peerages, &c.; then follow examples of energy and personal courage; of business qualities; of the use and abuse of money. Other chapters treat of self-culture in its various forms, of its facilities and difficulties, and of the brilliant consequences that have followed it. Finally the pages close with an admirable chapter on character.

We are sure that every reader will peruse Mr. Smiles's pages with the same interest as ourselves. His style is unexceptionable; his subject of the deepest concern to all; and his illustrations and examples selected with singular felicity. Notwithstanding the crowded state of our columns we must find room for an extract from the chapter on energy and courage, which we think will fully justify the opinion just expressed:—

"There is a famous speech recorded by an old Norseman, thoroughly characteristic of the Teuton. 'I believe neither in idols nor demons,' said he, 'I put my sole trust in my own strength of body and soul.' The ancient crest of a pickaxe with the motto of 'Either I will find a way or make one,' was an expression of the same sturdy independence and practical materialism, which to this day distinguishes the descendants of the Northmen. Indeed nothing could be more characteristic of the Scandinavian mythology than that it had a god with a hammer. A man's character is seen in small matters; and from even so slight a test as the mode in which a man wields a hammer, his energy may in some measure be inferred. Thus an eminent Frenchman hit off in a single phrase the characteristic quality of the inhabitants of a particular district, in which a friend of his proposed to settle and buy land. 'Beware,' said he, 'of making a purchase there; I know the men of that department; the pupils who come from it to our veterinary school at Paris do not strike hard upon the anvil; they want energy; and you will not get a satisfactory return on any capital you may invest there.' A fine and just appreciation of character, indicating the accurate and thoughtful observer; and strikingly illustrative of the fact that it is the energy of the individual men that gives strength to a State, and confers a value even upon the very soil which they cultivate. As the French proverb has it: 'Tant vaut l'homme, tant vaut sa terre.'

"The cultivation of this quality is of the greatest importance; resolute determination in the pursuit of worthy objects being the foundation of all true greatness of character. Energy enables a man to force his way through irksome drudgery and dry details, and carries him onward and upward in every station in life. It accomplishes more than genius, with not one-half the disappointment and peril. It is not even eminent talent that is required to ensure success in any pursuit, [illegible] power, &c.—not merely the power to achieve, but the will to labour energetically and perseveringly. Hence energy of will may be defined to be the very central power of character in a man—in a word, it is the Man himself. It gives impulse to his every action, and soul to every effort. True hope is based on it,—and it is hope that gives the real perfume to life. There is a fine heraldic motto on a broken helmet in Battle Abbey, 'L'espoir est ma force,' which might be the motto of every man's life. 'Woe unto him that is faint-hearted,' says the son of Sirach. There is, indeed, no blessing equal to the possession of a stout heart. Even if a man fail in his efforts, it will be a great satisfaction to him to enjoy the consciousness of having done his best. In humble life nothing can be more cheering and beautiful than to see a man combating suffering by patience, triumphing in his integrity, and who, when his feet are bleeding and his limbs failing him, still walks upon his courage.

"Mere wishes and desires but engender a sort of green sickness in young minds, unless they are promptly embodied in act and deed. The good purpose once formed must be carried out with alacrity, and without swerving. In many walks of life drudgery and toil must be cheerfully endured as the necessary discipline of life. Hugh Miller says the only school in which he was properly taught was 'that world-wide school in which toil and hardship are the severe but noble teachers.' He who allows his application to falter, or shirks his work on frivolous pretexts, is on the sure road to ultimate failure. Let any task be undertaken as a thing not possible to be evaded, and it will soon come to be performed with alacrity and cheerfulness. The habit of strenuous continued labour will become comparatively easy in time, like every other habit. Thus even men with the commonest brains and the most slender powers will accomplish much, if they will apply themselves wholly and indefatigably to one thing at a time. Fowell Buxton placed his confidence in ordinary means and extraordinary application; realising the scriptural injunction, 'Whatsoever thy hand findeth to do, do it with all thy might;' and he himself attributed his own remarkable success in life to his practice of constantly 'being a whole man to one thing at a time.'

"Nothing that is of real worth can be achieved without courageous working. Man owes his growth chiefly to that active striving of the will, that encounter with difficulty, which we call effort; and it is astonishing to find how often results apparently impracticable are thus made possible. An intense anticipation itself transforms possibility into reality; our desires being often but the precursors of the things which we are capable of performing. On the contrary, the timid and hesitating find everything impossible, chiefly because it seems so. It is related of a young French officer, that he used to walk about his apartment exclaiming, 'I will be Marshal of France and a great general.' This ardent desire was the presentiment of his success; for he did become a distinguished commander, and he died a Marshal of France."

Every one who is interested in education should spare six shillings for the purchase of this book.

Regulations for carrying into Effect the Act 22 *and* 23 *Vict., c.* 40, *for the Establishment of a Reserve of Royal Naval Volunteers.* Eyre and Spottiswoode. Pamphlet.

In a pamphlet of 43 pages Government announces in great detail every part of the important plan for securing at all times and under any circumstances an abundant supply of seamen for the Royal Navy. The foremost parts of the proposed arrangement consist: 1. In the exclusion of soldiers, militia, and coast volunteers, partly, we presume, to avoid mere landsmen, and partly to preserve the coast volunteers as an unbroken force. 2. No naval volunteer can be enlisted in the army or militia. 3. Every such volunteer will receive the sum of 6*l.* a year, as a retainer, so long as he remains in the reserve. 4. He must present himself every six months, and must not engage in voyages likely to exceed six months. 5. He must go through an annual drill of 28 days; but the time consumed in passing to and from the place of drill will be reckoned as part of the 28 days; and the drill may be performed from time to time and at different places, provided the period at which he attends at any one place be in no case less than one week. 6. The volunteer's travelling expenses are defrayed by Government. 7. The volunteers will be paid, while on drill, the same wages as seamen of the same rating in the Royal Navy; they will be victualled on the same scale, and will be supplied with bedding and mess traps. 8. Volunteers can only be called out for active service by Royal Proclamation, and in case of a sudden emergency. 9. They will if wounded or injured in actual service receive the same pension as a seaman of the navy of the same rating; and will be eligible to the Coast Guard Service and Greenwich Hospital. 10. Enrolment commences on Jan. 1, 1860.

These are the more striking of the 158 clauses into which the "Regulations" are divided. The latter have been framed in a liberal spirit, and cannot fail we think to be well received by seamen. To the public service the measure is of extreme importance, and we trust that all who read these remarks will make them known to the utmost of their means.

The Long Bow of the Past: the Rifle for the Future is a pamphlet reprinted from the *Cambridge Chronicle* and published at its office. The writer strongly advo-

cates the Rifle movement, and urges on the Government the propriety of rendering it permanent—as may be easily done. He would adopt the principle on which the old archery laws were framed, and apply it to the formation of what might be called rifle laws. Its great fault is the fierce attack it makes upon Roman Catholics, and the suggestions that accompany it. We extract an amusing account of the English Volunteers who accompanied Lord Scales to Spain in the time of Henry VII., borrowed from Washington Irving's translation of "The Spanish Chronicle of the Conquest of Granada," written by Padre Fray Antonio Agapida:—

"This cavalier was from the island of England, and brought with him a train of his vassals; men who had been hardened in certain civil wars which had raged in their country. They were a comely race of men, but too fair and fresh for warriors; not having the sunburnt hue of our old Castilian soldiery. They were huge feeders also, and deep carousers; and could not accommodate themselves to the sober diet of our troops, but must fain eat and drink after the manner of their own country. They were often noisy and unruly, also, in their wassail, and their quarter of the camp was prone to be a scene of loud revel and sudden brawl. They were withal of great pride; yet it was not like our inflammable Spanish pride: they stood not much upon the *pundonor* and high punctilio, and rarely drew the stiletto in their disputes; but their pride was silent and contumelious. Though from a remote and somewhat barbarous island, they yet believed themselves the most perfect men upon earth; and magnified their chieftain, the Lord Scales, beyond the greatest of our grandees. With all this, it must be said of them that they were marvellous good men in the field, dexterous archers, and powerful with the battle-axe. In their great pride and self-will, they always sought to press on the advance, and take posts of danger, trying to outvie our Spanish chivalry. They did not rush forward fiercely, or make a brilliant onset, like the Moorish and Spanish troops, but they went into the fight deliberately, and persisted obstinately, and were slow to find out when they were beaten. Withal they were much esteemed, yet little liked by our soldiery, who considered them staunch companions in the field, yet coveted but little fellowship with them in the camp. Their commander, the Lord Scales, was an accomplished cavalier, of gracious and noble presence, and fair speech. It was a marvel to see s) much courtesy in a knight brought up so far from our Castilian court. He was much honoured by the King and Queen, and found great favour with the fair dames about the court, who, indeed, are rather prone to be pleased with foreign cavaliers. He always went in a costly state, attended by pages and esquires, and accompanied by noble young cavaliers of his country, who had enrolled themselves under his banner to learn the gentle exercise of arms. In all pageants and festivals, the eyes of the populace were attracted by the singular bearing and rich array of the English Earl and his train, who prided themselves on always appearing in the garb and manner of their own country; and were indeed something magnificent, delectable, and strange to behold."

The Gardener's Yearbook, Almanack, and Directory, by Robert Hogg, is a really useful Horticultural Companion. It contains in addition to the usual almanack a great deal of miscellaneous information, and a carefully prepared monthly Calendar of the work to be done in gardens, to which amateurs may turn with confidence. There are moreover lists of new plants, critical notices of new fruits and esculents, and a very full register of the Nurserymen and Seedsmen in London, England, Scotland, Wales, and the United States. The chapter on what are called the New Plants of 1859 is long and carefully written; but it requires critical revision, especially with regard to the species figured in some of the Continental periodicals, which are not always deserving of confidence.

Croker's Edition of Boswell's Life of Johnson, the issue of which we announced some months since, is now completed, and forms a handsome 8vo volume, of between 800 and 900 pages.——Two numbers have also appeared of *Moore's Life of Byron*, printed uniformly with the edition of the author's poetical works lately completed by Mr. Murray. These remarkably well edited volumes are a valuable gain to the library of us of the middle classes.

Ure's Dictionary of Arts, Manufactures, and Mines, Part 2 (Longmans), proceeds as far as the word Boring. It contains the completion of Artesian Wells, and interesting articles on Artillery, Beer, Bleaching, &c.

Miscellaneous.

Pomological Congress at Bourdeaux. (*Fourth Session.*)—It is now 10 years since those interested in the cultivation of fruit trees found that their collections contained several varieties of doubtful or inferior quality, and that different names had been given to the same variety. Attempts were made to clear up the confusion, which threatened to diminish the value of the eminently useful trade of a nurseryman. Individual efforts appeared to require too much time, and accordingly the work of expurgation and of rectifying erroneous nomenclature was undertaken by associations of zealous amateurs. In 1856 a first Pomological Congress was held at Lyons under the auspices of the Horticultural Society of the Rhone. The decisions then arrived at were far from resolving all difficulties. At a second session, in September of the following year, some further corrections were made. A third session took place last year at Paris, and the work of the Congress of Lyons was again sought to be perfected; nevertheless, a fourth session having been deemed necessary, it has just been held at Bourdeaux. The Horticultural Society of the Gironde has appealed to the associations established for the promotion of horticulture, and has laid before the members of the Congress specimens of fruits obtained from different climates and situations with the view of definitely settling upon a list of the best fruits at present in cultivation. The catalogue which we have received, consisting of 61 octavo pages, containing accounts of 126 lots on exhibition, proves that a large number of amateurs and nurserymen have responded to the call. Among the lots sent from Belgium, we observed one sent by M. Devergnies, Vice-president of the Society of Binche; a second by the Society of the province of Namur; and a third by J. De Jonghe, Nurseryman, Chaussée du Nieuw-Molen, No. 9, near Brussels. A correspondent from Bourdeaux informs us that the collection of M. De Jonghe, consisting of 26 varieties of seedling Pears, gained the silver gilt medal; and that his collections of 100 varieties of choice Pears received the large silver medal. These are both first prizes. This proves that the fruit from the neighbourhood of Brussels has had a high value placed upon it by a jury composed of delegates from 18 of the most important departments of France. We know, and the catalogue before us bears testimony of the fact, that good sorts of fruits raised in Belgium are highly esteemed by our southern neighbours. *Echo de Bruxelles, Nov.* 1, 1859.

Sorghum saccharatum.—Among the agricultural products not noticed in the catalogue of the Bourdeaux Horticultural Congress, and not remarked upon by the jury, I observed an exhibition from the Avocat Posson, of Brussels. It bore a label to the following effect:—The Sorghum saccharatum or Holcus saccharatus, till lately considered noxious; is an excellent food for cattle. Since August 20 three cows were supplied with 25 kilogrammes (or 55 lbs.) each per day. The cows are in excellent health; their milk is more abundant; the butter is of better quality. Sown between 5th and 15th May after Rye, which had been cut green, the Sorghum produced 87,750 kilogrammes per hectare (Sept. 22d), about 35 tons per acre. A few litres of seed (from five to seven), or from 25 to 33 gallons, are sufficient to sow a hectare (10 or 12 gallons per acre); each litre costs from 1½ to 2 francs. *J. De Jonghe, Brussels, Nov.* 15.

Calendar of Operations.

(*For the ensuing week.*)

PLANT DEPARTMENT.

CONSERVATORY, &c.—In changeable weather like the present, this structure will require very careful management. The best plan is to keep as low and dry a temperature as can possibly be permitted, say from 40° to 45° at night, allowing it to rise a little in the daytime. In mixed greenhouses see that the young stock of Heliotropes, Pelargoniums, Cyclamens, and other flowers grown especially for winter, have nice light situations and regular attention as regards watering. This is a good time to introduce the following things into the forcing-pit, provided they have received the necessary treatment through the summer:—Rhododendrons, Azaleas, Persian Lilacs, Sweet Briars, Moss and other Roses, Sedums, Kalmias, Daphnes, Anne Boleyn Pinks, Dutch Bulbs, &c. Unless however they are in proper trim it will be labour in vain, and no mode of forcing or form of pit can compensate for this. The great secret of success, if the heat is wholly composed of fermenting materials, is to keep down accumulating damp and mouldiness by an almost constant ventilation, increasing the linings in order to raise the necessary temperature. Those who are fortunate enough to possess pits heated by means of hot water will of course pursue a somewhat different course. Look well to pits and frames containing stores for next summer, and have efficient protecting material always in readiness, with which to cover them whenever the weather is unfavourable.

FORCING DEPARTMENT.

PINERY.—Water plants in pots as little as possible at this season; where the general stock is grown in this manner it is a good plan to cover the pots over 2 or 3 inches with the plunging material; where the bottom heat will permit that to be done it obviates the necessity of watering so frequently. VINERIES.—Use fire-heat sparingly in houses where the fruit is ripe, but sufficient must be used to prevent the moisture of the atmosphere being frozen to the glass inside the house, for if this is allowed to happen the moisture on thawing is liable to drop upon the bunches, injuring the bloom and causing the berries to decay. Admit air on every favourable opportunity, and examine the bunches often and carefully, so as to make sure of removing decaying berries the moment it can be perceived they are affected. Where forcing is fairly commenced be careful to maintain a properly moist state of the atmosphere, and this must be especially attended to in the event of severe weather, particularly when the buds are bursting. The evaporating troughs must be kept constantly supplied with water, and the paths, bed, &c., should be frequently syringed, and it will also be advisable not to have the tender foliage too near the glass if the weather changes. If fermenting material is used for warming the border, this must be well covered with dry litter to protect it from frost, and turned occasionally, adding some fresh as may be necessary to keep the heat in the border regular. It will be advisable, however, to have some dung and leaves thrown up to heat, as there would be some danger of chilling the bed by turning it in the event of frosty weather, and mixing it with the dung or leaves which had not commenced fermenting. Houses which it is intended to commence forcing the beginning of next month should also have some fermenting materials placed on the borders so as to encourage the roots a little before the Vines are excited, which will be of great service towards getting the buds to push strongly and without loss of time. STRAWBERRIES.—Where these must be obtained as early as possible, say by the end of February, a lot should now be introduced. Any house or pit will do, provided a temperature of from 45° to 50° can be maintained with a moist atmosphere. Let them also have as light a situation as possible.

FLOWER GARDEN AND SHRUBBERIES.

Now that the leaves are off the trees let lawns and shrubberies have a thorough cleaning. Examine pillar and trellis Roses, and if the weather is favourable see if the soil wants renewing or the kinds changing. For choice sorts roomy holes should be made capable of containing three or four barrow-loads of well prepared soil. Turfy loam of good quality is the chief thing; to this add a portion of rich rotten manure, and, if at hand, a little sandy peat or leaf-mould.

HARDY FRUIT AND KITCHEN GARDEN.

Trench, dig, and ridge every spare inch of ground whenever the weather will permit these operations to be advantageously performed. This is particularly to be observed in gardens the soil of which is of a claycy nature. If frost sets in let the manure necessary be wheeled out for the whole of the spring cropping, laying it in heaps either on the spot where it is to be used, or as near as possible to it. What is not required for immediate digging should be piled in small mounds and soiled over to prevent loss from evaporation. Never uncover tender vegetables after the breaking up of frost until they have become completely thawed, and even then do not uncover suddenly; leave a very light protection on them for a day or two in order to inure them gradually to sunlight. It is always desirable to get as much pruning and nailing done before the approach of spring as possible; lose no favourable opportunity therefore of forwarding these operations; for, besides the advantage of having that kind of work done before the busy season, the garden will present a much neater appearance than it would otherwise have.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.
For the Week ending Dec. 8, 1859, as observed at the Horticultural Gardens.

Dec.	Month's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Temperature of the Air. Min.	Temperature of the Air. Mean	Temperature of the Earth 1 foot deep.	Temperature of the Earth 2 feet deep.	Wind.	Rain.
Friday 2	7	30.015	29.928	38	26	32.0	44	45	N.E.	.00
Satur. 3	8	30.146	30.061	36	20	28.0	45½	44½	N.E.	.01
Sunday 4	9	29.900	29.495	54	30	42.0	45	44½	S.	.26
Mon. 5	10	29.560	29.393	56	32	44.0	44	44½	W.	.12
Tues. 6	11	29.669	29.555	41	29	35.0	45	44½	S.	.26
Wed. 7	12	30.053	29.659	49	32	40.5	45	44½	S.W.	.00
Thurs. 8	13	30.282	30.154	50	29	39.5	45	45	E.	.00
Average		29.964	29.606	46.3	28.3	37.3	44.8	44.6		.65

Dec. 2—Cloudy; clear; slight frost at night.
— 3—Cloudy; ground thinly covered with snow; sharp frost.
— 4—Overcast; rain, with cold north-east wind.
— 5—Rain; showery; fine; clear at night
— 6—Densely overcast; heavy rain 6–7 P.M.; overcast.
— 7—Fine; exceedingly fine; large halo round the moon.
— 8—Overcast; slight haze; clear; slight frost.
Mean temperature of the week, 3½deg. below the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 33 years, for the ensuing Week, ending Dec 17, 1859.

December.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 11..	45.4	32.5	39.0	8	0.62 in.	—	3	2	4	5	12	5	2
Mon. 12..	45.5	33.7	39.6	14	0.44	2	2	2	1	8	11	5	3
Tues. 13..	46.5	33.0	39.8	11	0.16	1	3	4	1	9	11	2	2
Wed. 14..	46.1	34.4	40.3	13	0.32	2	3	2	3	8	9	6	1
Thurs. 15..	46.6	35.3	40.9	19	0.50	2	4	1	3	9	8	5	1
Friday 16..	46.0	34.8	40.4	15	0.68	2	3	2	2	5	8	6	5
Satur. 17..	46.3	34.6	40.4	16	0.37	4	3	1	3	5	9	4	4

The highest temperature during the above period occurred on the 13th, 1842—therm. 61 deg.; and the lowest on the 16th, 1853—therm. 7 deg.

Notices to Correspondents.

BOOKS: *J. D.* Loudon's Encyclopædia of Plants; Solly's Rural Chemistry; Lindley's Theory and Practice of Horticulture; and Asa Gray's How Plants Grow, a capital American book which may be had through the booksellers.

NAMES OF PLANTS: We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have or could have undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*C.S.* The flowers were so smashed in the Post Office that it is impossible to make out their form. Could you not send them again in a small lucifer box, or something to guard them from pressure.

PHOSPHORIC RAT POISON. This we are informed by Mr. Purser is now made and sold by Mr. Richards (his successor) at 40, New Bridge Street, not Fenchurch Street, as stated in our last week's Number.‡

POTATO: *A poor Man* will feel obliged by some of our Correspondents informing him where in London he can get a true stock of the variety of Potato called Lemon Kidney.

*** As usual, many communications have been received too late, and others are detained till the necessary inquiries can be made. We must also beg the indulgence of those correspondents the insertion of whose contributions is still delayed.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, London, S.

Principal—J. C. NESBIT, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London, S. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

WEST OF ENGLAND AND SOUTH WALES LAND DRAINAGE AND INCLOSURE COMPANY.

Established in 1844.

INCORPORATED BY ACT OF PARLIAMENT IN 1848.

Draining, Inclosing, Irrigating, Warping, Road Making, and all kind of Land Improvements, executed on Entailed, Mortgaged, or other Properties, and the whole cost can be made a Permanent Charge on the Lands, or redeemable in a certain number of years. BIDWELL & BRODIE, Secretaries.

Offices: Exeter; and 30, Parliament Street, London, S.W.

THE LANDS IMPROVEMENT COMPANY.—Incorporated by Special Act of Parliament in 1853.—2, Old Palace Yard, Westminster, S.W. To Landowners, the Clergy, Estate Agents, Surveyors, &c., in England and Wales and in Scotland.

The Directors beg leave to announce that the Company's Amendment Bill, 1859, has received the sanction of the Legislature. The Company now advance money, unlimited in amount, for the following works of Agricultural Improvement, the whole outlay and expenses in all cases being liquidated by a rent charge for 25 years.

1. Drainage, Irrigation and Warping, Embanking, Inclosing, Clearing, Reclamation, Planting for any beneficial purpose, Engines or Machinery for Drainage or Irrigation.
2. Farm Roads, Tramways and Railroads for agricultural or farming purposes.
3. Jetties or Landing places on the sea coast or on the banks of navigable rivers or lakes.
4. The erection of Farm Houses, Labourers' Cottages, and other Buildings required for Farm purposes, and the improvement of and additions to Farm houses and other buildings for farm purposes.

Landowners assessed under the provisions of any Act of Parliament, Royal Charter, or Commission, in respect of any public or general works of drainage or other improvements, may borrow their proportionate share of the cost, and charge the same with the expenses on the lands improved.

No investigation of title is required, and the Company being of a strictly financial character do not interfere with the plans and execution of the Works, which are controlled only by the Government Enclosure Commissioners.

For further information, and for forms of application, apply to the Honourable WILLIAM NAPIER, Managing Director, 2, Old Palace Yard, Westminster, S.W.

LAND IMPROVEMENTS.

THE GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY are empowered by Act of Parliament to assist the Owners of Land in carrying into effect the following Improvements, and charging the whole outlay and expenses on the property improved.

I. All Works of Drainage, Irrigation, Warping, and Embankment.

II. The erection of Farmhouses, Cottages for Agricultural Labourers, and all kinds of Farm Buildings.

III. The construction of Roads.

IV. The Grubbing and Clearing of Old Woodlands, Enclosing, Fencing, and Reclaiming Land.

The Landowners by whom any of these Improvements may be executed are—Tenants for Life, Trustees, Mortgagees in Possession, Guardians, Committees of Incompetent persons, Married Women, Beneficial Lessees for Lives or for a Term exceeding 14 years, Corporations, Ecclesiastical or Municipal, Incumbents, Sequestrators, Charitable Trustees, &c.

The Owners of Estates not entailed, who may be desirous to avoid the expense or inconvenience of a Legal Mortgage, may also avail themselves of the powers of the Company's Act to charge their estates with an outlay in improvements.

In all cases the whole cost of the improvements, with the attendant expenses, may be charged on the Estate, the term for Building Works being limited to 31 years, but for all other improvements being capable of extension to 50 years.

No investigation of title being required, and the charge not being affected by Incumbrances, no legal expenses are incurred.

Operations under the Company's Act are divided into two principal branches; one where the Landowner designs and executes the improvements by his own Agent and merely requires a loan from the Company to charge the Estate,—the other where the Company undertake the entire responsibility of the Improvement and obtain repayment by way of Rent Charge. In the first case the plans, specifications, and estimates prepared by the Landowner's Agent are forwarded to the Company to be submitted for approval to the Inclosure Commissioners. As soon as the sanction has been given the Landowner proceeds to execute the works, and the Company having conducted the business through all the official forms, complete the charge on the estate when the works have been passed by the Commissioners, and repay the Landowner the amount agreed upon.

In no part of the business is there any control upon a Landowner except by the Inclosure Commissioners. The Company never interfere, except at the special request of the Landowner or his Agent, and only to such extent as may further the objects he has in view.

In the other case, where the Company are required to execute the works, a report and estimate of the Improvement are sent to the Landowner, and having been approved, the plans are then prepared and the works—either submitted to public competition or entrusted to their own staff—are carried on to completion, and the amount of the actual expenditure only, approved by the Inclosure Commissioners with the Company's agreed commission and the Commissioners' expenses, finally charged on the Estate for the term fixed by the Landowner.

The Company also execute Drainage and all other Works of Land Improvement on Commission for the Owners of Estates not Entailed who may wish to charge the outlay on the property through the simple and inexpensive process of the Company's Act.

Applications to be addressed to WILLIAM CLIFFORD, the Secretary, at the Offices of the Company, 52, Parliament Street, London.

SHROPSHIRE BREED.—At a Meeting of Breeders of SHROPSHIRE SHEEP, held in the Lecture Theatre of the Midland Institute, Birmingham, on Monday, Nov. 28, 1859, EDWARD HOLLAND, Esq., M.P., in the chair, the following RESOLUTIONS and MEMORIAL were unanimously adopted:

Moved by the CHAIRMAN, and seconded by Mr. THOMAS HARTSHORNE—

"That, in the opinion of this meeting, the time has arrived when it is most desirable that some united efforts should be made for the purpose of inducing the Council of the Royal Agricultural Society of England to open separate Classes for Shropshire Sheep at the Annual Country Meetings of that Society."

Moved by the CHAIRMAN, and seconded by the Right Hon. Lord HATHERTON—

"That, in order to carry out the foregoing resolution, the subjoined Memorial to the Council of the Royal Agricultural Society of England be adopted by this meeting, and signed by the Chairman; and that the Chairman, the Earl of Dartmouth, the Earl of Aylesford, and William Orme Foster, Esq., M.P., be and are hereby respectfully requested to obtain an interview with the Council when the Prize Lists for the Canterbury Meeting are under consideration, to present such Memorial, and to support the prayer thereof:—

"TO THE COUNCIL OF THE ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

"*The Memorial of Breeders of Shropshire Sheep, assembled at Birmingham, this 28th day of November*, 1859—

"SHOWETH,—That, in the opinion of your Memorialists, the claims of the Shropshire Sheep to be considered a pure breed have now been fully established.

"That the Shropshire Sheep have been exhibited in considerable numbers at some of the Country Meetings of your Society, and especially at Gloucester, Chester, and Warwick; the entries for the latter place being not less than 125 pens, exceeding the number of entries of any other breed at the same meeting.

"That successive Stewards of Stock at the Meetings of your Society have declared their appreciation of the value of the Shropshire breed of Sheep; and that in one instance, namely, in the report on the stock exhibited at Gloucester, the Steward acting on the occasion expressed a hope that the Society would in future recognise them as a distinct breed.

"That the Shropshire Sheep have long been distinguished for their size, early maturity, and quality, characteristics which have led to their being preferred above any other breeds in the general markets of those districts in which they are already established; while the long-acknowledged superiority of their wool, vigour of constitution and hardihood, are additional properties of great importance.

"That during the last 10 years the Shropshire Sheep have been introduced into many parts of the United Kingdom, and purchases are now being constantly made by agriculturists in the principal sheep counties for the purpose of founding new flocks; and the fact that so many tenant farmers who are not usually exhibitors of stock have adopted this breed to the exclusion of other breeds or cross-bred sheep, is also, in the opinion of your Memorialists, another striking proof of their excellence.

"That on these grounds your Memorialists respectfully urge your Council to open separate classes for Shropshire Sheep at the future Country Meetings of your Society, believing, as they do, that such a concession would be received with satisfaction by a large portion of the Members of your Society, and that it would tend to promote the great object which your Council has in view in offering prizes for stock, the encouragement of pure breeds, without which the value of agricultural stock generally cannot be maintained.

"EDWARD HOLLAND, Chairman."

The Chairman having left the chair,

It was moved by R. C. CHAWNER, Esq., seconded by the Worshipful the MAYOR of BIRMINGHAM, and carried by acclamation—

"That the cordial thanks of this meeting be given to Edward Holland, Esq., M.P., for his courtesy in presiding on this occasion, and for the ability with which he has conducted the business for which it was assembled."

The Agricultural Gazette.

SATURDAY, DECEMBER 10, 1859.

THE past week has been full of agricultural interest.—On Monday evening Mr. NESBITT addressed the Central Farmers' Club on the chemistry of food, pointing out the relative nutritiveness as a general rule of the different parts of plants—the straw and the succulent parts being ultimately exhausted in order to fill the seed: and alluding to the treatment of animals during feeding, in order to the more economical deposition of flesh and fat. The discussion which ensued did not follow Mr. NESBITT's guidance except in reference to the fitness of straw as cattle food, which most of the practical men in the room considered due simply to its giving bulk and substance to those additional portions of the daily ration on which the feeding of the animal depends. But that the power of straw really economises these other foods was insisted on by others: Mr. COLEMAN and Mr. C. HOWARD of Bedfordshire contending for its powers in this way when given along with Mangel Wurzel and pulped roots generally.

The discussion then turned upon the need of finding a substitute for Swedish Turnips, which were rapidly deteriorating in the hands of the farmer in spite of the best efforts both of agriculturists and of scientific men. The almost universal testimony was in favour of Mangel Wurzel as the substitute required. At the suggestion of Mr. G. DOBITO several gentlemen rose and gave their experience of the early use of the crop as food. It had been used early in autumn, all through the winter, and on till midsummer without injury. It had been given to a flock of ewes before lambing, during lambing, after lambing without the least injury. Its old character as physic rather than food until the spring-time of the year was generally disputed, and in fact we should imagine finally removed; notwithstanding that, as Mr. WALTON afterwards urged, the real merit of the plant lies in its power to furnish useful food until late in the year following its growth.

Another root, the Kohl Rabi, was spoken of as a good substitute for Swedes—capital food, of hardy growth, and especially valuable in its capability of easy transplantation, it is likely greatly to extend its growth.

Mr. W. BENNETT, of Cambridgeshire, has grown it five years on a considerable scale, and has this year 11 acres of it, after a late crop of Tares—"one of the most promising pieces of sheep keep that can be seen." Certainly the magnificent specimens of the root in the show at Baker Street justify any praise that may be due on the score of quantity of crop that is possible from the cultivation of this plant.

—— In the evening the Baker Street Bazaar was opened to the members of the Smithfield Club, to witness the magnificent display of fattened cattle, sheep, and pigs, and the imposing array of agricultural machinery which are annually exhibited at this season there. A report will be found in another column.

—— On the following day a display of roots competing for very liberal prizes was exhibited at the Crystal Palace. It was a comparatively meagre collection, especially distinguished however by Colonel NORTH's splendid specimens of Kohl Rabi, and by first rate specimens of Mangel Wurzel. We should be glad to see at all future shows of roots, whether at Sydenham or Birmingham, or on the stands of our seedsmen elsewhere, one at least of each of the specimens exhibited split open to enable one to judge by something other than mere form and size. The weight too of the different lots ought to be specified on the card identifying each.

—— On Wednesday morning, at the monthly council of the Royal Agricultural Society, Mr. HALL DARE was elected their future secretary, the competition lying principally between him and Mr. HALIFAX WYATT. Mr. DARE was, we understand, a Crimean officer, and has had ample experience as an accountant in the offices of adjutant and paymaster; and that he is otherwise amply qualified for the office to which he has been now elected there was abundant evidence to prove.

—— On Wednesday evening a paper on the Forces used in Agriculture was read before a considerable audience at the rooms of the Society of Arts. It will be found elsewhere. The discussion which ensued upon it must be given next week. We will only refer at present to the remark of Professor JOHN WILSON that the powers in question are not the engine, horse, and man, but the food which each consumes; and their relative efficiency and economy therefore depends on their being fed properly and well.

That the high-waged well-fed labourer is really a cheaper source of power than the poor and half-starved man is no doubt true, and the only pity is that labourers are so tied to parishes that wages do not naturally become more uniform in the country. The fact is that farmers have no choice of this particular "machine." They *cannot*, if they would, employ only a few and "feed" them well. Those in any parish have to maintain all in that parish, either in the field or in the workhouse, and in some populous parts if they were to be "fed in order to their efficiency," as Prof. J. WILSON recommends, they would eat up the whole produce of the land. It is plain that labouring men cannot be considered and cannot be treated by their employers as machines to be "fed," in order to obtain as large a "duty" from them as possible. It is upon their acquiring independence and manliness enough to seek for themselves the best circumstances of the country that the prospects of employers in dense as well as scanty populations depend. Wages are the natural result of the relation of the labouring population to the labour offered them, and being bound to maintain that population, whether we employ them or not, it is probable that the rate of payment which naturally arises out of the circumstances is the best possible for all parties under those circumstances.

—— On Thursday a meeting was held in St. James's Hall in advocacy of the Benevolent Agricultural College, which has been so grievously protracted, and which at length bids fair to be successfully realised. We must postpone until next week a more detailed reference to its present prospects, and to the intentions of its founders.

—— Our readers will see in another column an advertisement of the resolutions adopted by breeders of the Shropshire Down Sheep, at the Birmingham meeting last week. The abundant and first-rate illustration of their breed which has been offered by them at every agricultural

meeting where prizes have been offered for the Shropshire sheep certainly constitute a very strong claim upon the Royal Agricultural Society for the recognition of the breed in a separate class at future shows. No fewer than 125 pens were exhibited at Warwick, and previously at Gloucester and at Chester they had presented a most creditable appearance. It will be seen elsewhere that in consequence of the memorial presented for them, they now constitute a permanent section for the future of our annual exhibitions.

ON THE FORCES USED IN AGRICULTUURE.

The following paper was read by Mr. John C. Morton at the meeting of the Society of Arts last Wednesday, December 7.]

THE three forces to which I shall refer are steam power, horse power, and manual labour. Each of them has employment in our present English agriculture, and one object of this paper is to point out the extensive fields open, especially to the first and last of them, in the agriculture of the future. For there are three classes under which all the operations of the farm may be arranged, and they correspond exactly to these three forces which we have at our command.

In the first, where the greatest uniformity of process obtains, the greatest power is needed, and a purely mechanical force acting through levers, wheels, and pullies, is in this way sufficiently under our control for their performance, and this class of operations increases in extent and in importance with almost every permanent improvement of the land, *i.e.*, with everything which tends to the uniformity of its condition. In the second class as much force is needed; but rocky subsoil, awkward hedgerows, crooked roads, and scattered produce interfere with any possibility of uniform procedure. Some machinery, more pliable than cranks and rods, is needed by which to carry out the purpose of the mind, and here therefore it must work by means of the *teachable* and powerful horse. This class of operation diminishes in extent and importance with every permanent improvement of the soil, *i.e.*, with every removal of those obstacles to which I have referred. In the third class the care and cultivation of individual life, vegetable and animal, are concerned: no great power is needed, but there is need for the constant and immediate exercise of the will, varying, it may be, at every successive movement, and here, therefore, the human mind can work only by its most perfect instrument—the human hand. It is plain that everything by which on the one hand land is brought to a uniform condition, and by which, on the other, the quantity of its living produce is increased, will extend the first and last of these three fields of agricultural operations, and will diminish the necessity of employing horses.

And this is no mere speculation: it is the principal lesson of the agricultural experience of the past few years. If we knew for several successive years exactly the employment of our agricultural labourers (its nature, its quantity, and its reward), on each of the farms which make up the surface of Great Britain; and if we also knew the quantity and the manner during all these years of the horse labour of all these farms, its cost per acre and its effect; and if in addition to all this information we had the full experience, now very considerable, of the use of steam power upon the farm, not only for threshing and grinding and cutting, but for cultivating the soil, we should certainly learn from it how rapid has been the extension of those circumstances under which steam cultivation becomes possible, and how perfectly along with it the demand for agricultural labour has been maintained. Such a review of agricultural experience would, however, teach us more than this, for by a comparison of the experience of different farms we should learn the most economical mode of obtaining these powers and the best way of applying each within the field thus open to it. We should learn how to ensure the most economical and efficient condition of our steam engine and its machinery; we should learn how to obtain the most economical and efficient horse labour, and by so large an experience those circumstances would be pointed out under which the best farm servants are to be procured and retained.

The forces used in agriculture, thus considered, form therefore a very extensive subject, and it is only two or three illustrative remarks under each of these several aspects of it that can be made within the hour.

COST OF STEAM POWER.

In the first place, then, let me attempt a more particular comparison of steam power, horse power, and hand power for the cheap performance of mere labour. In describing steam-engines the term "horse power" is used as a unit of force. The power exerted by a horse is assumed, on the authority of experiment, equal to the pull or lift of 33,000 lbs. 1 foot per minute; and to this agricultural experience agrees, for if a pair of horses draw a plough along with an average pull of 300 lbs. at an average rate of 2½ miles per hour, *i.e.* of 220 feet per minute, it is the same as if those 300 lbs. were pulled over a pulley, *i. e.* lifted that height in that time, and 300 lbs. lifted 220 feet per minute is just the same as 66,000 lbs. lifted 1 foot high per minute, which as the performance of a pair of horses is exactly the 33,000 lbs. apiece at which their force is valued by the engineer. Now, it is not on a comparison merely of the *cost* of horse power in the animal and in the engine that so great a superiority of the latter will appear as really belongs to it. In addition to this, the performances of which they are severally capable must be taken into account. An ordinary 10-horse power locomotive agricultural engine will, according to the Chester judges of the work done by Fowler's steam plough there, cost in coals and oil and water and attendance, and tear and wear of implement and engine, and excluding interest on capital employed, nearly 45*s.* a day, or about 4*s.* 6*d.* an hour, which is 5½*d.* per hour for each nominal horse power exerted; but as the real force exerted by nominally 10-horse power engines is more often twice that amount, we have to divide this by two and call the cost of each steam produced horse power about 3*d.* per hour. Now, the cost of horse labour on 21 farms in different parts of this country, of which the particulars have been kindly given to me, did not exceed 5*d.* per horse for each of the working hours of the year. Those farms employ 282 horses, and they cost for food, for depreciation of value, and for saddlers' and blacksmiths' bills, 781*l.* a year; their implements need 87*l.* a year to keep them good; and the ploughmen and boys employed about them cost 424*l.* a year in wages—about 13,000*l.* in all, or 46*l.* per horse per annum; and supposing that there are 2500 working hours in the year, this is rather less than 5*d.* per horse per hour. Besides this the estimated expense of Fowler's engine was, I believe, excessive, and the nominal power of it was certainly below the actual force at which it could be worked with the estimated quantity of coal consumed; for of 30 engines tried at Chester only one consumed the 11 lbs. of coal per hour for every horse power produced, which is the consumption named for Fowler's engine, and the majority did not consume more than 6 to 8 lbs. per horse power during that time.

EFFICIENCY OF HORSE POWER.

Now, compare the two as to their respective applicability to their work:—A horse at plough with an average length of 120 yards of furrow loses one-third of his time on the headland in the mere act of turning the plough. At the dung-cart not one-third of his time is employed in the actual conveyance of the load, two-thirds are lost standing at the heap and in the field and returning with the empty cart. Or rather let me say this loss of time is a necessary part of his employment, however he may be engaged. He can pull 33,000 lbs. 1 foot high in a minute, but he cannot keep that performance up for 10 hours at a time.

On six farms the details of which I have so ascertained as that all the ploughing, scarifying, harrowing, rolling, horse-hoeing, carting—all the horse-labour in fact on each—is converted into lbs. lifted so many feet per minute throughout the working year, I find that the actual performance per horse throughout the year is not 33,000 lbs. lifted 1 foot high per minute, but more nearly one-half that quantity, varying from 14,000 lbs. in the lowest case, to 19,000 lbs. in the highest.

No doubt even in the case of steam-power there must be periods of waste labour—ploughs must be turned upon the headland even if it be done by steam—but these occasional periods of comparatively fruitless work are no necessary condition of steam-power; *it* is better if maintained continuously, and machinery will be invented to reduce this waste time to a minimum with a positive advantage to the efficiency of the engine. Whereas in horse-labour the waste time is necessary for the maintenance of the power itself. And it is plain that along with the 5*d.* per hour for every horse, which on the average it may cost, there has to be taken into account a performance on the average of the year of only 19,000 lbs. lifted by it 1 foot high per minute as its best result—whereas in the case of the steam-engine *its* 3*d.* per horse per hour has to be taken along with nearly twice as large a performance as *its* best result.

And the relative cost of the two forces is affected not only by the question of time during which each can be continuously maintained, but also by the quality of the performance of which each is capable. In threshing uniformity of speed is a condition of good work; it is more easily maintained by steam-power than by horses. In ploughing the avoidance of trampling and of pressure generally is almost always a condition of good work; it is more easily observed by steam-drawn machinery for the purpose. But to this I shall recur.

COST OF HAND POWER.

Let us now estimate the cost of manual labour engaged in what I call mere work, *i. e.*, where the least degree of skill is called for. I have four facts in illustration of this point:—

1st. A man will dig 8 perches of land, or say 2000 square feet nearly a foot deep, in a day. In doing so he lifts probably three-quarters of it through at least a foot in height, that is to say, he lifts 1500 cubic feet, weighing at least 150,000 lbs. 1 foot high in 10 hours' time, and to do it therefore he must maintain upon the average a lift of 250 lbs. per minute all that time. Of course in addition to the mere lift there is the labour of cutting off this earth from the firm ground to which it was attached. In my second case, then, this portion of his labour is very much reduced; three men will lift, I have often paid them for doing it, 100 cubic yards of farm-yard dung, and fill it into carts in 10 hours' time. The 33 cubic yards which fall to each man's share, at about 14 cwt. apiece, weigh 50,000 lbs., and this is lifted over the edge of the cart, or 4 feet high—equal to 200,000 lbs. lifted daily 1 foot high or 330 lbs. per minute. This is one-fourth more than in the last case. Now take one where there is no labour in detaching the weight from any previous connection. A man will pitch in an hour's time, I have often seen him do it, an acre of a good crop, tied in sheaves, to an average height of full 6 feet, on the cart or waggon. Straw and corn together such a crop will weigh more than 2 tons, say 5000 lbs. In doing this he therefore lifts 300,000 lbs. 1 foot high in 10 hours' time, or 500 lbs. per minute. My fourth case is of much the same kind. One man and five boys, or women, equal as regards wages, and I will therefore assume equal as regards power to three men, will throw into carts upon an average of Swedes and Mangel Wurzels 3 acres of a good crop, say 70 tons in all, in a day of 9 hours' length. They lift these 150,000 lbs. 4 feet, being equal to 600,000 lbs. 1 foot; or 200,000 lbs. apiece in nine hours' time, which is about 370 lbs. a minute.

These four cases indicate the mere force of a man then, at a cost of say 3*d.* an hour, as equal to a lift of 250, 330, 500, and 370 lbs. per minute; the two former being cases when the load has to be detached as well as lifted, and the third being performed under the influence of good harvest fare.

But now compare this even in its best case with the duty of the steam-engine or 33,000 lbs. 1 foot high per minute for 3*d.* an hour, and compare it with the actual average performance of the horse, 16,000 lbs. lifted 1 foot per minute for 5*d.* an hour. In order at the best rate named to do the work of the steam-engine, 66 men would be required at a cost not of 5*d.* but of more than 15*s.* per hour, and in order to do the work of the horse 32 men would be needed at a cost of 8*s.* instead of 5*d.* an hour. It is plain that if we can take much of the mere labour of the farm out of the hands of the labourer, and put it into the hands of steam power for its performance, there is an enormous amount of saving to be made in the cost of agricultural production. It is plain that it is mere folly in the labourer to think that as regards the *mere* labour of the land he can compete with either steam power or with horse power. Strength of body is desirable, and sinew hardened by long practice in hard labour has a considerable marketable value, for that, however hardly it may sound, is the aspect of the matter in which the interests of the labourer most directly appear—but it is plain that for sheer lift and the mere putting forth of force-horse-power, and still more that of untiring steam, must grind the soul out of any body that shall pretend to competition with them. It is in the cultivation not so much of mere strength of body as of skill and intelligence that the safety of the labourer lies, and in his capability of education he is perfectly secure.

QUALITY OF STEAM EXECUTED WORK.

As the matter at present stands then and confining ourselves to that large and increasing class of operations in which the power required is great and the process almost uniform, and looking only to the cost per unit of work done we have seen that steam-power stands decidedly first in the race, horse-power is a tolerably good second, and the agricultural labourer is literally nowhere. There are, however, two considerations which greatly affect the position of horse-power in this competition, and place it much further back than it would at present seem to be. They both affect its fitness for those acts of cultivation where it is plain that there is the greatest room for an extended use of steam-power. I refer 1st to the injury done to the land by the trampling of draught animals; and 2dly, to that irregularity of employment on the farm for horses during the year, which in effect makes you keep upon a large farm several horses all round the year for the sake of their work during a few weeks of spring and autumn. If a steam-engine, which costs nothing when it is idle, can be used to take this extra work and so reduce the horse labour of the farm to an uniform monthly amount, then its cost has to be compared, not with that of the horses which it has displaced during the few weeks in question, but with the cost of those horses throughout the year. It is this fitness of the engine for the cultivation of our stubbles in autumn, and so its power to displace so many teams throughout the year which would otherwise be kept just for the few weeks of most laborious time, that greatly heightens the economy of its employment.

And as to the superiority of its work of cultivation, I will quote the statement of a ploughman on the clay land of the oldest steam-cultivated farm in England—Mr. William Smith's farm, of Little Woolston, in Buckinghamshire—that in turning back the Wheat stubble in the autumn, with the horse-drawn plough he used often to uncover the foot-prints of the horses' shoes which had trod there at that depth when turning in the Bean stubble for the seed 12 months before. Of course it is no part of good agriculture that all the produce of the land is to be made out of a particular layer called the soil, which has to be cultivated, turned to and fro, and stirred and mixed, upon an impervious floor hardened by a perpetual trampling, below which lies the subsoil. All recent improvements of the soil have proceeded upon the idea that there is no essential or necessary distinction between it and the subsoil—that *through* drainage and deep cultivation both increase fertility, and that the existence of anything like a pan within 30 inches of the surface is injurious. The ability of steam-power for the deepest cultivation, and its applicability at the same time to the thorough cultivation of any depth to which it may be desired to stir or turn the soil without any pressure on it except by the wheels of

the implement employed, must ultimately obtain for it the preference over horses for all mere ploughing and stirring, especially of clay land. And a very large share of the horse labour of ordinary agriculture will thus be handed over to the steam-engine.

HORSE LABOUR OF THE FARM.

Let us consider how much. I will refer to three instances: On a farm of 675 acres occupied by Mr. Melvin, at Bonington, near Ratho, in Mid Lothian, the whole horse labour of cultivation and carriage being converted, as I have already said, into weight, amounts to upwards of 100,000 cwt. pulled, *i. e.*, lifted 1 mile per annum. Of this the ploughing and scarifying alone amount to 27,000 cwt., or more than one-quarter; the harrowing, rolling, and drill cultivation amount to upwards of 20,000 cwt., and the carriage of dung and crops and produce, amounts to 60,000 cwt. lifted 1 mile. The carriage is here an enormous proportion—more than one-half of the whole horse labour of the farm, and much beyond its average amount in ordinary experience; but still even here one-quarter of the horse labour goes in mere ploughing, which can all be done by steam-power, and *so* done as that an 8 horse-power engine shall displace more than eight horses and do their work much more effectually.

Again, on a farm of fen land of 790 acres, occupied by Mr. Aitken, near Spalding, Lincolnshire, where the horse labour of the farm is nearly the same as in the last instance, or equal to 100,000 cwt. lifted one mile per annum, the carriage does not exceed much more than quarter of the whole, while the ploughing is nearly 40,000 cwt., 4-10ths of the whole labour, and the harrowing and rolling about 35,000 cwt. per annum.

On Lord Ducie's farm at Whitfield, Gloucestershire, 260 acres, the horse labour amounted to 37,000 cwt. lifted 1 mile per annum, and of this, 12,000, one-third, was carriage; nearly 15,000, or 4-10ths, was ploughing and cultivating; and the remainder harrowing, rolling, and drill culture. This seems to be a pretty ordinary division of the labour, and if it applies generally to arable land it would appear that though farm carriage and all the lighter work of harrowing and drilling and rolling continue to be done by horses, there are still 4-10ths of the horse labour of the farm which may be done by steam. I know that a great deal ought to be said of the great advantage of this substitution owing to the more thorough performance of the cultivation which steam-power will accomplish. Ample evidence exists on steam-cultivated farms in this country on this point, but I will leave it to be adduced by others who may follow me, and I will continue to speak merely of the saving of expense which is thus effected. It appears then that on arable land two-fifths of the horse labour of the farm can be handed over to a power which is capable of nearly twice as much duty for the same expense. One other remark on this point, and I have done. On examining the horse labour of a farm of 240 acres of arable land under alternate husbandry, it will be found that it does not much exceed 500 days of a pair of horses in the year, and that the need for it is distributed among the month extremely unevenly. Not more than 35 days of a team per month are wanted in December, January, and February; about 45 days a month are wanted in March and April, May, and June; about 15 days are wanted in July; about 60 in August and 90 in September, and 55 in October, November, and December. August and September stand highest, and as there are not generally more than 24 working days in each of these two months, there must be a provision of at least three and a half pair of horses all the year, in order that the work of August and September may be done. Now, the two-fifths of the horse labour, which is proper for steam-power, is not going merely to displace two-fifths of these seven horses through the year; for the ploughing and cultivating being done by steam, will take (not two-fifths) but more than half of the labour of the incumbered months of March and April, May and August, and September and October, and so reduce the amount to something like 35 days' work during each month of the year, which two pairs of horses will more than easily accomplish.

I believe then that by steam-power at least three out of every seven horses on arable land may be dispensed with all the year, at a cost not exceeding the cost of these horses during the three or four months when alone they are really needed on the land.

The first class of operations then upon the farm, which includes the ploughing and turning of the soil, will be taken by steam-power out of the field of horse labour, just as threshing, and cutting, and grinding have been taken by it out of the field of hand-labour. To the second division of farm work I shall refer but very shortly. It includes such cases of ploughing and cultivation as are taken by very rocky subsoil and very crooked hedgerows out of the scope of the steam-driven plough; it also includes the lighter class of horse-work, such as harrowing and horse-hoeing, which however might very well be done by steam; and it more especially includes the work of carriage, which, considering the scattered position of the produce to be collected, and the crooked roads along which it must be drawn, I see no probability (as long as these remain) of getting done except by horse-power and manual labour in the usual way. Mr. Halkett does indeed propose to remove these obstacles, and is therefore able to accomplish all by steam. The third class of operations includes the lighter work, requiring skill and thought as well as labour. The planting of a seed equidistantly within the land may be done by machinery, but the culture of the young plant, much of the hoeing of the land immediately around it, and its treatment during growth according to its condition must be left to the hand. When ripe it may be harvested by horse-drawn implements: our corn crops are reaped, our Potatoes may be dug, and roots are cut from the ground by horse-drawn machines—they must however be gathered into bundles or to heaps, and ultimately removed by the help of manual labour.

When stored they are threshed, and ground, and cut, and steamed by steam-driven engines, but they must be administered as food by manual labour. Leaving the vegetable which even when living may be treated to some extent by machinery, and when no longer growing becomes at once the subject of steam-driven processes, we come to the treatment of the animal which it feeds, and here we leave altogether the region of machinery actuated by steam, and are confined to the hand, directed by intelligence.

DEMAND FOR LABOURERS.

Is it not a remarkable thing however that agriculture, which was once wholly the work of men's hands but which has long since given up the tillage of the soil, and the carriage of the manure, and the sowing of the seed, and three-fourths of the hoeing of the crops to be accomplished by the horse—which has latterly given up the threshing of the grain and the cutting of its straw to be effected by steam-power, which is rapidly abandoning the work of reaping to the former and of cultivation to the latter, should nevertheless require more labourers than ever?—that steam being first, and horse-power second, and the agricultural labourer nowhere in the race, considering the three merely as economical producers of power, the last should nevertheless be wanted more than ever?

The explanation lies in this: that agriculture is more and more becoming the work of intelligence and skill as well as power—those parts of its processes, where intelligence and skill are wanted, are becoming a larger portion of the whole. Cultivation is more perfectly performed, and over a greater extent of land—the crops cultivated are more laborious and more productive—the stock consuming them is proportionally larger and needs proportional attendance. Probably each acre cultivated in 1759 employed more manual labour in its cultivation then than each acre cultivated now; but how many more acres are there under cultivation now than then? Each bushel of Wheat grown half a century ago involved so much more labour then that 8*s.* was the lowest price at which it could be grown with profit; but how many more bushels per acre does land upon an average yield at present? Each lb. of beef and mutton cost more in wages 30 years ago than now; but we have a double and triple store of food for stock, we have two crops of fattened sheep and cattle where formerly we had one, and each supplies a double quantity of meat.

LABOUR ON STEAM FARMS.

But whatever the explanation be, the fact is certain that the use of steam-power on a farm is part of that system which employs most labourers in agriculture. Mr. Wm. Smith, of Woolston, who has an 8-horse engine for 110 acres of arable land and 70 acres of pasture, and works this engine only 14 days a year in cultivation, and not more in threshing, employs regularly throughout the year seven men and four boys, equal to nine men upon the whole, or one to every 12 acres of arable land and 8 of Grass—"more than any farmer in the neighbourhood employs." His steam cultivation, he tells me, costs him on the average 10*s.* 10*d.* annually per acre on his clays and 8*s.* 3*d.* annually per acre on his lighter soil. It has displaced exactly the 2-5ths of the former horse-power which I had anticipated that it would; and he says that 70 per cent. of the cost of engine work is manual labour and only 30 per cent. engine food, while of the horse work displaced only 20 per cent. is manual labour and 80 per cent. is horse food.—Mr. Pocock, who farms 300 arable acres and 300 acres of Grass land near Farringdon, employs regularly 22 men, 8 women, and 10 boys, equal to 30 men in all, or 1 for every 10 acres of arable land and 10 acres of Grass. He, too, uses steam-power for threshing, grinding, and cutting, and employs one of Fowler's steam ploughs.—Another gentleman occupying 410 arable and 190 pasture acres, on the fat land below the chalk hills of Wiltshire, and who does all his cultivation by steam, says:—

"Steam cultivation will lessen horse labour I think one-half, and in some cases two-thirds. A neighbour of mine who has a steam-plough, told me that he usually kept 18 or 20 horses; he now hoped to do with six. Another who occupies about 2000 acres of arable and pasture hopes to do with 13 horses. My own impression is that there will be more manual labour required where steam culture is adopted, and that a more energetic class of men will obtain higher wages."

Mr. Randal, of Chadbury, near Evesham, who cultivates 500 acres arable and 200 acres of pasture, employs with slight variation 30 men, 7 women, and 12 boys throughout the year, with 70 additional men for three weeks in harvest time; in all, equal to about 42 men regularly throughout the year, or 1 to every 12 acres of arable land, and 5 of pasture. He too uses a steam cultivator, and says steam cultivation makes no difference in the manual labour needed on the land. All these more or less are instances of the cultivation of clay land, on which, it by force of *character*, labour giving crops are cultivated, of course the labour of cultivation must be greater than on lighter soils. It is these lighter soils however, generally, which are devoted more especially to the growth of what are called fallow crops, and taking the ordinary rotation on each class of soils into account, we may therefore fairly compare the experience of the steam-cultivated farms, as to the labour they require, with the labour bills of other farms, though not quite so heavy. This "1 man to every 10 or 12 acres of arable land, and 8 to 10 acres of Grass," deducting 10*s.* an acre for the latter, is equal to a labour bill of 50*s.* per acre per annum on the plough land. And it is unnecessary to say that this is a very unusual amount.

LABOUR ON ORDINARY FARMS.

On a number of farms in Gloucestershire whose management I examined many years ago, where the pasture formed from 1-tenth to 5-tenths of the whole, the labour bill reached 50*s.* per acre very rarely indeed. It was more generally between 30*s.* and 40*s.*

— On a fen farm near Spalding, of which a most elaborate account of the labour used upon it has been kindly given me by the tenant Mr. Aitken, I find that on 790 acres almost wholly arable, the actual wages paid had during the past three years averaged 1260*l.*, or about 32*s.* an acre. On another similar farm, near Chatteris, on 900 acres arable and 120 pastures, the last year's wages were 1556*l.*, which is about 35*s.* per acre on the arable.

— On one of the crack farms of East Lothian, of 630 acres wholly arable, 22 men are kept regularly and 35 lads and women, besides 25 to 30 people for three or four weeks in harvest, and the wages, therefore, must be about 1200*l.*, not 2*l.* an acre, though Potatoes, one of the most laborious of crops, are very largely cultivated.

— The wages on the College farm, near Cirencester, of 400 acres arable and 40 pasture, are 700*l.* a year, or 30*s.* an acre on the plough land. Mr. Stratton's farm, Manningford, Bruce, near Pewsey, Wilts, 590 acres arable 65 acres pasture, and 160 down, costs about 1200*l.* a year in wages, or 2*l.* per acre on the arable land. Mr. Dods of Anick Grange, near Hexham, occupying 310 acres arable and 100 pasture, employs 7 men and 9 women annually, and extra for a month 7 men and 7 women. His wages cannot amount to more than 500*l.*, or not much more than 32*s.* an acre on the arable.

— And as a last instance I will take the farms of Mr. Edmonds of Eastleach, near Lechlade, Wilts, 2000 acres arable and 430 acres pasture, employing on an average, and taking harvest into account, about 120 men and 20 to 40 women. His labour bill must, I should suppose, from his rates of wages, which he has kindly given me, amount to at least 3200*l.* a year, which is 32*s.* an acre. It must be admitted that on a comparison of these figures the labour paid for upon steam-cultivated farms is even more than on farms where steam power is used only to drive the threshing mill.

GENERAL STATISTICS.

Agriculture is in fact experiencing the truth taught in the history of all other manufactures—that machinery is in the long run the best friend of the labourer. This truth is taught even more impressively by a review of agriculture generally than it is by the case of any individual farm. Here are we producers and consumers, 21,000,000 of people, living in this island, on a great farm which we may by the help of such statistics as we possess describe as nearly 19,000,000 arable acres and probably nearly as much Grass, employing as farm labourers indoors and out about 950,000 men and 120,000 women, besides 300,000 lads and 70,000 girls, or averaging them by their probable wages, as has been done before, let us say equal in all to 1,150,000 men, or one to every 17 acres of arable and nearly as much pasture. We feed and use some 1,500,000 horses, of which probably 800,000 are strictly for farm purposes. We are annually inventing and manufacturing labour-saving machines at an extraordinary rate, and every year at least 10,000 horses are added to the agricultural steam-power of the country, which must certainly displace both animals and men to some extent. We have taken the flail out of the hand of the labourer, and the reaping-hook is going; on many a farm he no longer walks between the handles of the plough—he no longer sows the seed—he does but a portion of the hoeing and the harvesting—and yet so far from being able to dispense with his assistance he is more in demand than ever he has been.

I have had returns sent to me by all the leading manufacturers of steam-engines for agricultural purposes. Within the past four years upwards of 40,000 horse-power has been added to the forces used in agriculture in steam alone. If I may single out Messrs. Clayton & Shuttleworth of Lincoln, Garrett of Saxmundham, Hornsby of Grantham, Ransome of Ipswich, and Tuxford of Boston, they alone are furnishing 10,000 horse-power annually to the farmer. Messrs. Tuxford, among the first to start the locomotive agricultural steam-engine, inform me that for the earliest suggestion of it they are indebted to Mr. John Morton, of Gloucestershire, then agent to the late Earl of Ducie, who 20 years ago recommended them to put these little engines upon wheels, thus foreseeing the fitness of these powers made locomotive to the circumstances of English agriculture. Messrs. Ransome, of Ipswich, were I believe the earliest to receive the commendations and the prizes of the Agricultural Society of England for their engines, and

now the leading manufacturers of them, Messrs. Clayton, of Lincoln, send out 10 of them each week, or 4000 horse-power per annum.

Of Reapers again since 1851 Burgess & Key have sold upwards of 1900 of their improved M'Cormack's reaper, of which 771 were sold last year; and they now hold four times as many orders as they did 12 months ago. Crosskills have sold 500 of Bell's reaper, and 800 of Hussey's; Messrs. Garrett have sold 600 of Hussey's; Dray has sold more than 800 of their improved form of Hussey; 250 of Wood's clever little reaper have been sold last year, and the Cuthberts, of Bedale, who have just begun the manufacture of their equally clever machine, sold 100 before last harvest and could have sold four times as many. In all, probably 4000 reaping machines were at work last harvest, capable of cutting more in a day than 40,000 labouring men, and yet there never was such a harvest as the last for the difficulty of procuring harvest men. Notwithstanding all this addition to the forces and the machinery of agriculture, more labourers are required, and as more labourers are not forthcoming wages rise.

It is, indeed, possible that some of this general rise in wages of the past two or three years is owing to the labourers in agriculture being, if anything, rather a diminishing than an increasing body; to that I shall refer directly, it is sufficient for the present to declare what ample experience confirms, that the need of their assistance is increasing.

Of the truth of this the following is perhaps an extravagant illustration. It is from a gentleman well known in the agricultural world, who has known East Kent for 50 or 60 years. He says:—

"I should be pleased to give you any information in my power, but I cannot answer one of your 12 questions. We have no custom in East Kent as to farming, and no fixed prices for any labour. For instance the price of cutting Wheat last harvest was from 12*s.* to 35*s.* per acre. If our labourers can only work half their time the ensuing winter, the prudent ones have saved sufficient to keep them during the winter. Almost all our labour cost us double, and in many instances triple to what it did 10 years ago. Neither servants or labourers seem to care about anything but themselves, and not one farmer in 100 in East Kent can get his work done at a seasonable and proper time. The labour market ultimately will beat us all. I have seen around here one, two, three, and four sacks of corn an acre lost in the stubbles for want of hands. There are hundreds of acres of land around here, which lie as they did after harvest, such as I have not known but once for the last 60 years; and that was in 1816 or 1817. I care naught about a man's capital, it will all go. The farms are all taken as they fall by bankers, brewers, butchers, chemists, jobbers, grocers, publicans, doctors, drapers, builders, &c. If I occupied a poor land farm, and was *obliged* to hold it I would have a sheep-walk, and my son and I would manage it ourselves."

Whatever discount may properly be deducted from this gloomy picture, and, however plain it is that its remedy is to be found in steam-power and reaping machines and such like, it may in the meantime be quoted as one of many illustrations of the fact that the increase of steam-engines and machines need create no fear for the agricultural labourer.

If however I might digress for one minute I would say it is no part of my business to fear or to lament the progress of events, however they may happen to develop. Even if the result should be that agricultural labourers are to form a diminishing class — that at most only one of the labourer's family is trained to take his father's place, it certainly may be doubted whether his lot in future life, or that of his brother who has gone as a carpenter, mechanic, a soldier, or a sailor, is to be preferred. The man will do his best to bring up his family for their good and as he best knows how—and if wages fall, most of them will naturally endeavour to obtain a maintenance in some better way. I confess my belief to be that there are natural safeguards enough in human nature to make the *natural* result within a Christian country, and in a matter so exclusively one of mere maintenance—so entirely one of mere profit and loss, a perfectly safe one, and even a desirable one. Only let all artificial interference between the buyer and the seller be done away with; let knowledge of the state of the market whether for labour or for its produce all over the country be general; let the price of agricultural labour be the natural result of simple competition among employers; let intelligent self-interest—and self-interest in the long run always *is* intelligent—let intelligent self-interest lead to the use of machinery and steam—in fact lead *where it will*,—and we shall be none the farther from the greatest happiness of the greatest number.

As, however, I have shown, if fears and lamentations have any place at all, it is in behalf of the masters rather than of their men.

WAGES OF LABOUR.

One illustration more of the present value of agricultural labour in this country, and on this part of my subject I have done. In the autumn of 1849, just 10 years ago, I applied through the correspondents of a weekly agricultural paper for information on this subject, and from most of the English counties and many of the Scottish ones I obtained answers to printed questions as to what is the present wage of able-bodied men, what is their weekly wage at harvest time, what is the ordinary daily wage of women in the field—what is the cost of mowing Clover, of mowing meadow Grass, of mowing Barley, of harvesting a good ordinary crop of Wheat—what is the ordinary rent of cottages, and so on. Within the past month I have done the same thing again, and have been told the rate of wages by 93 gentlemen residing in 12 Scottish and 35 English counties. There is thus the opportunity of making a very fair comparison of wages at a sufficient interval of time.

Let me run rapidly through a few instances, taking the weekly wage of an ordinary able-bodied man as the criterion, and of course endeavouring to do it without boring you by quotations from so many separate reports.

In Aberdeenshire Mr. M'Donald of Huntly reported the wages of ploughmen in 1849 to be 16*l.* a year with board and lodging; they are now 22*l.* with board and lodging. Mr. Grigor of Forres reported 10 years ago the ordinary weekly wages of an able-bodied man to be 9*s.* to 10*s.*; now he puts it at 11*s.* Mr. Bell, of Ferryden Farm, Forfarshire, reported it at 10*s.*; he puts it now at 12*s.* in winter and 15*s.* in summer. Similarly Fifeshire wages were 9*s.* and 10*s.*; they are now 11*s.* and 11*s.* 6*d.* In East Lothian the wages were worth 10*s.* a week or 10*s.* with coals hauled free; and now they are valued at 12*s.* to 15*s.*, &c. In Mid Lothian Mr. Melvin reported the annual wages of the married ploughmen at 910 lbs. of oatmeal, 12 cwt. of Potatoes, 2 meals daily during harvest time, the hauling of 4 tons of coal, and 17*l.* in money; he now reports them at 1050 lbs. of oatmeal, 8 cwt. of Potatoes, 4 weeks of harvest food, coals carted, house rent free, and 21*l.* in money. Go now to the south of Scotland, and in Wigtonshire Mr. Caird reported wages 10 years ago at 9*s.* a week; he puts them now at 12*s.* A woman's daily wage was 8*d.*, and it is 10*d.*

In Northumberland wages according to Mr. Grey of Dilston were 12*s.* weekly with cottage and garden, and carriage of coals free; they now are 15*s.* with house and garden free, and Mr. Dods, of Hexham, gives to good ordinary labourers 15*s.* a week in winter, and 18*s.* a week in summer. Mr. Drewry's wages at Holker, North Lancashire, were 13*s.* 6*d.*; they are 15*s.* to 16*s.* 6*d.* Mr. Evans of Wigan, in South Lancashire, reported wages to be 12*s.* a week; Mr. Twining, in the same neighbourhood, reports them now at 14*s.* From Lincolnshire I had four reports of the wages of able-bodied men, and they ran thus—10*s.*, 9*s.* to 10*s.*, 11*s.* to 12*s.*, and 9*s.* to 10*s.* The same employers report now—12*s.*, 12*s.*, 12*s.*, 10*s.* to 12*s.*

Mr. Spencer of Knossington, Leicestershire, told me 10 years ago that 8*s.* to 10*s.* were the wages of the able-bodied men, and he puts them now at 11*s.* to 12*s.* Take now the case of Norfolk: Mr. Cubitt, of North Walsham, 10 years ago put the wages at 7*s.* to 8*s.* and the carters 1*s.* to 2*s.* extra; now it is 9*s.* and the carters 10*s.* 6*d.* In Northamptonshire Mr. Grey of Courteen Hall, Northampton, reported 8*s.* and 9*s.* as ordinary wages; he puts them now at 12*s.* weekly. In Warwickshire Mr. Burbury, of Kenilworth, who reported 8*s.* to 9*s.* weekly in 1849, reports 11*s.* weekly in 1859.

In Worcestershire Mr. Hudson, of Pershore, who named 8*s.* formerly now says 10*s.*, or 9*s.* with 2 quarts of beer a day, are ordinary weekly wages.

In Oxfordshire Mr. Druce, of Eynsham, stated 8*s.* weekly, the carters and the shepherds having cottages rent free in addition; wages now are 10*s.* to 12*s.*, ploughmen and shepherds from 12*s.* to 14*s.*

In Wiltshire, the worst paid county in the kingdom, wages were some 10 years ago 6*s.* to 7*s.* for ordinary labourers a week; they are 8*s.* a week at present.

In Kent they were 9*s.* and 10*s.*, and are now 11*s.* to 12*s.* From Sussex I had three reports formerly, 8*s.* to 10*s.*, 10*s.*, and 10*s.*; and I have three reports now, 11*s.*, 11*s.*, and 12*s.*

From Dorsetshire I had five reports, averaging 7*s.* and 8*s.* a week, with cider or beer and with cottage free "in some cases." I have two reports now, the one names 9*s.*, and the other says the payments make the money equal to 12*s.* weekly. In Devonshire the wages were 8*s.* to 10*s.*, and they are 11*s.* to 12*s.*

In Cornwall they were 8*s.* to 9*s.*, and they are 10*s.* to 12*s.*

All this proves, then, that the labouring force in agriculture is better paid than it used to be, and that the enormous extension of machinery and of steam power lately has not been to the injury of the farm labourer.

Although however one is naturally glad to know this, yet no one has any right to seek for the labourer any more than that share which falls to him as the natural result of mutual competition. It is for the national interest that food be produced at the least possible expense; and in the second part of my subject, which refers to the most economical provision and maintenance of the forces used in agriculture, the cost of the labour of the farm is as much concerned as is the cost of horses or the cost of steam. It is indeed the first of these to which I most desire to draw attention. The economical application of steam-power, and whether Mr. Fowler's plough or Mr. Smith's cultivator or Mr. Halkett's system be the cheaper, will ultimately by large experience be determined. Messrs. Howard have I understand sold 70 or 80 sets of Smith's apparatus, and Mr. Fowler is so busy that he can hardly keep pace with his orders. Tens of thousands of acres have been this autumn ploughed or worked by steam; and it will be quite within the scope of our subject if the means by which this has been done should be the point on which the subsequent discussion turns. It will also be in keeping with the subject as announced, if the most economical provision and application of horse-power should engage the principal attention; but of all the forces used in agriculture, that of the labourer himself is the one to which I think we can most usefully confine ourselves.

On the question of efficient steam, agriculturists are willing to accept the judgment of the engineer and of the outside public. On the question of efficient horses the public are not likely to add anything to the experience or the judgment of the farmer; the question of efficient labourers is one on which wide differences exist, on which the possession of mere manhood is enough to justify independent thought—on which men of different professions therefore do not feel bound to accept one another's judgment, and on which I believe that the most good is likely to arise from a discussion at a meeting of townsmen with agriculturists. All that I can do in the short remainder of the hour is to indicate the points on which that discussion should turn.

HOW TO OBTAIN LABOURERS.

The object is to retain, indeed I now should say to obtain a sufficient number of well qualified agricultural labourers. The Oxford Farmers' Club met the other day, and Mr. Mein, who is, I believe, agent to the Duke of Marlborough, read a capital paper on this very subject. His method of obtaining more men was none the less sensible for its simplicity: it was just to *offer higher wages*. And this is, I presume, essentially the solution of the difficulty.

He said in effect: We have not provided constant employment nor wages at which a comfortable living can be had, and no wonder that our men have brought up their children to other trades to be better paid; we have not paid young men wages corresponding to their ability; married men have been paid at one rate, and young unmarried men have been paid at another and much lower rate; they have thus been treated as children, but they are not children, and no wonder they have left us. Our remedy is to improve the condition of the labourers in their cottages; to give them more regular employment and better wages (it resolves itself into this, whether a farmer upon 400 acres had better spend 100*l.* more in labour during winter or lose 200*l.* at harvest time in shed and damaged corn); to give the labourers more task work, and allow them to earn fair prices at it, simply according to their ability; and lastly, on occasions of unusual pressure to give unusual wages. Even at harvest, hitherto, he said, "the prices have not been anything to compare to the daily wage of the tradesman; nay, not enough to induce Paddy to join us in this district."

But there are other points besides the amount of wages to be paid. These will indeed increase, not by the exhortations of our public speakers but by the pressure of competition among masters, and are high or low just according to the relation between the resident population and the employment for them, so that in Wiltshire they are 8*s.*, while in some parts of the north they are almost twice as much.

But besides the amount of wages there is the mode of payment, which greatly affects the character and position of the labourer. It may be (1), in money solely; it may be (2), partly in board and lodging in the house; it may be (3), partly in money, along with an immense variety of perquisites. These three include, I believe, all the various systems of payment adopted. Of the last I give two instances from the extremes of the island, Forfarshire and Dorsetshire. Mr. Bell, of Ferryden Farm, Forfarshire, writes to me as follows:—

"Our ploughmen receive per annum 17*l.* in money, 6½ bolls oatmeal (140 lbs. a boll, present price 17*s.* 6*d.*); 1½ Scotch pint warm milk (3*d.* a pint), during summer six months, 1 pint in winter ditto; 15 cwt. Potatoes, and house and garden, at say 3*l.* This for married ploughman. Unmarried: 20*l.* and 22*l.*, 1 pint warm milk daily all the year, 6½ bolls meal, and fire and lodgings in a bothy. At hay and corn harvest they get two bottles beer daily, and bread and beer while leading to the stackyard. Married men get all their fuel driven by their masters."

I value these wages at 34*l.* 6*s.*, or 13*s.* weekly. The daily workers when getting something like steady work have 12*s.* a week in winter, 15*s.* in summer, with no beer or other allowance.

In Dorsetshire Mr. Saunders of Watercomb Farm, Dorchester, writes to me as follows:—

"In answer to your inquiry respecting the wages of the labourers of this part, I will give you account of what I pay my agricultural labourers of different callings. They all live on the farm near their work, where it is convenient for most of them to go into dinner every day. I have 18 cottages for which I never receive any rent, as my men all live rent free, and most of them have good gardens besides other Potato land free. It is a very great accommodation to labourers to reside near their work, quite equal to 1*s.* per week to a man not to have to travel a mile to his work morning and evening, and all have their regular pay wet or dry weather, there is no loss of time except they are working by piece work, which most of them get in their turn during the year, when they generally earn from 10*s.* to 15*s.* per week, according to circumstances, besides their yearly privileges, which I will state below, and which many of my labourers have said to me at different times 'is nearly half our living,' referring to a cottage garden, Potato land, and the privilege of having grist over that of buying bread of a baker, as I regulate the grist by allowing a peck a head to the family of workers in a house. I think our system is nearly equal to other counties, where they give nearly double the wages, and no house nor other privileges, nor pay for wet days. I will now state how, and in what way I pay my horse-men, as you term them:—

	£	s.	d.
House, good garden, worth to let, 4*l.* per year ..	4	0	0
Weekly wages 8*s.*, & 30 perch of Potato land ploughed in with their Potatoes, often grow 15 sacks, now worth 10*s.* per sack, and allow the seed out, would be 5*l.*	25	16	0
200 Furze faggots, carried home free to the cottage	1	0	0
28 cwt. of best coals, carried home at 1*s.* per cwt., and cost to fetch from ship	1	14	0
Extra for harvesting, cash 1*l.*, and 1 gallon of ale per day	2	0	0
Every journey with team, 1*s.*, average one per week	2	12	0
3 quarts of ale per day at haymaking, for eight weeks, at 9*d.* per gallon	1	7	0
1 bushel of Wheat per week if a family of small children none to go to work, at 5*s.*, not much advantage now, say 6*d.* per week, but when dear, 3*s.*	1	5	0
	39	14	0

The whole of horse-man's wages is about 15*s.* per week.

This is a most elaborate scheme of payment, and certainly a very liberal one, though I do not value the items so highly as Mr. Saunders does by about 6*l*. a year, making the yearly wage of his ploughmen 33*l*. 14*s*., or as nearly as possible 13*s*. a week.

Now, over large districts in England another system obtains, of which Mr. Manser, a tenant farmer, at Dumpton, near Ramsgate, gives the following very interesting account:—

"Our ploughmen here are generally single, and yearly servants, and are boarded and lodged by the farmer or by his bailiff. They are hired from the 11th Oct. to the 11th Oct. each year, and though they sometimes continue for several years with the same master, a fresh agreement takes place every year. They commence as lads at 13 or 14 years of age; their duties then are to drive the horses and attend to them in the stables. They begin at about 5*l*. wages per annum, which is usually increased every year, as their strength and ability increases, or as master and servant agree; the increase goes on at a ratio of about 1*l* per year, and our head horse-man or waggoner gets from 12*l*. to 14*l*. per year; the cost of their board varies according to the price of provisions, and when they are boarded by a third party. it is generally paid partly in money and partly in kind; they always have meat three times a day, and cannot be boarded on an average at less than 8*s*. per week per head. In some few instances where there are cottages near, married men are employed as ploughmen at wages of 14*s*. per week, and a cottage rent free; if they have to pay rent they are usually allowed about 5*l*. extra for harvest, in addition to the 14*s*. per week." He adds, "Our labourers pay about 2*s*. 6*d*. per week rent for their cottages, and for this many get but a miserable home. I know of nothing in the neighbourhood so disgraceful as the want of accommodation for our labourers. They are (many of them) driven to reside in the worst parts of the towns, many of them in hovels, built or rather stuck up for the sole purpose of investment, without any regard to health, comfort, cleanliness or morality. No garden attached, or anything else to make a poor man's home comfortable, completely away from the eye of his master, and all others that feel an interest in his welfare. The consequences I need not describe, with every inducement for him to spend his spare time and his hard earnings at the public-house or beer-shop, often having from 2 to 3 miles to go in all weather to his labour, never knowing the luxury of hot dinner except on a Sunday, or a meal with his family; the children run the streets in the worst parts of the town, and get early imbued in every vice and wickedness. With no father near to instruct or correct them, how can it be otherwise? I do hope this subject will be pressed before the public, on every favourable opportunity."

For all these various customs of payment there must of course be the general assent of the labourer and the concurrence both of master and servant, in order to their establishment and maintenance; and so long as a labourer agrees to take certain wages there is not the shadow of a place for interference by any other person between him and his master. The fitness of customs, however, whether in the interests of agriculturists who find that labourers are more difficult to hire, or in the interests of labourers themselves, may very properly be discussed; even by those who have no greater interest in the subject than that which they hold in the well-being of any other class of their fellow countrymen.

It is plain on a very short acquaintance with the subject that every system which has been, and I will say *can be* devised, is liable to abuse. And this, moreover, is also true—that each is so liable just in proportion to its excellence in the hands of a well-disposed man. The direct payment of a stipulated sum of money for stipulated services to be rendered is, of any plan of wages, the least liable to abuse; but it is at the same time that which furnishes the least scope of any for the establishment of friendly relations between masters and men.

Then, on the other hand, that system which gives food and fuel and accommodation is the best of all, when administered with kindness; for the extras are worth to the labourer much more than the sum at which they would be valued to him in a money payment; but there can be no doubt that it is more liable to abuse than the simple money payment. The abuse of the money payment, it is plain, does not affect the relation of labourer and employer at all; it lies in the scope afforded by it for the utter ignoring of the man in any other than this relation. The abuse in the case of payments of food, &c., does affect the due reward of labour; for notwithstanding the agreement on this score the quality of all these articles cannot be defined so exactly as their quantity. The payment too of all this household stuff as wages is a thing which affects householders only, and the young men who are leaving us are those whom we want to keep. To do so then, as Mr. Mein, a large employer of agricultural labour, tells us, we must just offer wages which will keep them. That is the simple truth.

RELATIONS OF MASTER AND SERVANT.

It is not however the whole truth of the matter. It must be admitted that the relation of master and servant is by force of circumstances mixed up in agriculture with much beside a mere bargain for the sale of services—with much that is personal; there is much more scope for the development of kindly personal feeling between the two than there is in the case of any other class excepting household servants. Of course this personal feeling may show itself in that which is of great money value besides mere wages, and in much that is of higher value than money is capable of measuring. A young man will notwithstanding lower wages keep his place for the sake of advantages of greater value to him than the increased sum he might otherwise receive. His master takes an interest in him personally, and he shows it by helping forward his education, and by seeking ultimately a better position for him than he can offer himself: and this is soon observed and thought of. But there is a reverse side to this picture, and just in proportion to the closeness of contact which the terms of service enforce between the two *may be* their recoil asunder as soon as they are once more free.

If there be a plan which would strengthen the bond between the two more than any other, one would imagine it to be the very common one in England of lodging the younger labourers in the farm-house, and giving them partial board as well as cash. But what is the ordinary experience on this point? In the parish in which I reside Old Michaelmas Day sees a complete sweep of the young men and lads who have lived during the past year in the house of their master. The evening school each winter presents a new array of faces—and the masters are for a while at least and necessarily as much strangers to their lads and many of their men as if they paid their wages through a clerk, and had as little opportunity of personal acquaintance as a manufacturer with his hundreds of mechanics.

It is plain that it is not in the *system* but in the administration of it that merit and demerit lies, and that while sufficient wages (and that is just as much as labourers can get) are given, a personal interest in the labourer as a neighbour is what will bind him to his master.

If I had in a single sentence to describe the relation of master and servant in the agricultural world it would be to assert that nowhere is it better and nowhere is it worse. The two are thrown together closely, and character is on both sides known, and therein lies the explanation; the two are never, as is unavoidably the case when one man pays 500—they are never indifferent to one another—they love, honour, and respect each another, or they distrust and hate; and while in the former case there is a noble scope for exerting a useful influence for their well-being over those who are employed, the latter in the very closeness which is the condition of agricultural service has scope enough for bringing forth its fruit.

The combination of sufficient wages with a greater opportunity for personal good-will than any other trade affords is what may and often does most honourably distinguish agricultural labourers and employers amongst the multitude of English occupations.

One further word and I have done. The whole value of the expression to which this good-will leads arises out of its origin in a personal feeling—it cannot be deputed without altogether losing its character. Anything like the transference of my personal duty and pleasure in such a thing to a public institution does, in my opinion, spoil the whole affair.

There are societies, as we all know, long established in England for distinguishing the worthy among agricultural labourers by public testimony to their worth. If that worth had shown itself in public-spirited conduct nothing could be more appropriate than a public acknowledgment of it. When it is, however, only personal and domestic worth (far more worthy, let us all admit it, than the other), nothing can be more grotesquely out of place.

These societies have however been established and are supported by a real if unwise philanthropy, and I would not say one word in discouragement of their object however unwise may be their plan. Benevolent men have truly seen that the relationship of master and servant is but a part of the truth affecting them; and, carrying the superiority of the employer over his servant into another field where no superiority exists, they have read the commandment as if it were addressed to the former only, and as if it said of the latter: "Thou shall be a father unto him." The system of rewards for good conduct, for long servitude, and for morality, is founded on a mistaken idea of this kind. It *is* a mistaken idea—let me repeat it. Along with the paternal relationship, with all its powers and responsibilities, wherever it really exists, God has implanted the natural love of the father as the safeguard of the child, and the docility and helplessness of the child as the counterpart justification of the father. Neither of these conditions applies to the relationship of master and servant. The commandment has been mis-read. It is addressed to both alike, and it prescribes a perfectly mutual and equal duty in words addressed to each—"Thou shalt love thy *neighbour* as thyself."

This is the law which supplements the bare relationship of master and servant, and makes the operation of it perfect. But it is not for me to pursue the subject further, or to illustrate at any greater length to what it tends. I would only add, as at once the natural corollary of the proposition, and as bringing us back more directly to the subject of this paper, that the more we encourage genuine individual manliness in labourers with its efforts after real self-improvement in intelligence and skill, and its higher sense of individual responsibility, the more likely are we to attach the young men to us, and to obtain labour of the kind of which steam power is rapidly proving the necessity. But this is not to be done either by taking all the difficulties of his position out of his way or by offering rewards to him proper only to the qualities and condition of a child.

And as affecting the reception of these few words of criticism, allow me to say one word of myself:—They must not be received as if they came from merely an outsider. I have for many years directed and paid the labour, on certainly a small farm, costing, however, about 700*l*. a year in wages paid to the agricultural labourer; and I claim to know the style and character of the man by many years' experience for I enjoy a larger number of personal friendships in his class than in any other class of her Majesty's subjects. I mention all this merely as affecting the weight which might attach to what I have said on this—the last of the forces used in agriculture to which I have to allude. But I have more than exhausted the time permitted me, and it only remains for me to indicate the probable results, so far as our subject is concerned, of that progress which we all see in English agriculture.

That the services of the labourer will more and more require the combination of skill with mere force, and that a larger number of well-qualified men is being and will be needed seems manifest. That horse-power will be displaced at least two-fifths by steam, I quite believe; and as there are now at least 800,000 horses used upon our farms there is scope enough for many years to come for all our agricultural mechanics.

The grand result will no doubt be a continual increase of produce and fertility, and that which the Registrar-General puts as a fulfilled prophesy into the mouth of the Englishman of a century ago may with equal probability of truth be uttered now:—

"Our fertile soil sustains 21 millions of people in its whole length from the Isle of Wight to the Shetland Islands. We cannot—for the mighty power is not given us—say, let there be on the European shores of the Atlantic Ocean—Three Great Britains. But the means exist for creating, in less than a hundred years, two more nations, each in number equal to the existing population; and of distributing them over our fields, in farms, and cottages, and towns, by the banks of our rivers, and around our immemorial hills: they will thus be separated neither by longer roads nor wider seas, but continue neighbours, fellow workers, and countrymen on the old territory; wielding by machines the forces of nature, that shall serve them with the strength of thousands of horses, on roads, and fields, and seas—in mines, and manufactories, and ships. Subsistence shall be as abundant as it is, and luxuries, which are now confined to few, shall be enjoyed by multitudes, for the wealth of the country—its stock and its produce—shall increase in a faster ratio than its people."

Societies.

ROYAL AGRICULTURAL OF ENGLAND.

At a monthly council held on Wednesday, Dec. 7, 1859, the Right Hon. Lord Walsingham in the chair, new members were elected and candidates proposed.

The usual monthly report of the Finance Committee was laid before the Council. From this it appeared that the present current cash balance in the hands of the Society's bankers amounted to 1711*l*. 0*s*. 0*d*.

The balance sheet of the Chester Meeting was laid before the council, as prepared by the members of the late Finance Committee at the request of the Council.

The report of the Secretaryship Committee was laid before the Council, together with the names of the 10 candidates the Committee considered the most eligible.

The Council having had an interview with each of these candidates proceeded to the election, which terminated in Mr. Henry Hall Dare being elected to the office of Secretary, subject to the necessary securities being given, his duties to commence on the 1st of January next.

The report of the Editorship Committee having been laid before the Council, it was resolved to appoint a Literary and Scientific Editor of the Society's Journal, at a salary of 500*l*., per annum—such Editor's whole time to be at the disposal of the Society, and that advertisements be inserted in order to obtain applications for gentlemen desirous of becoming candidates for this office.

A vote of thanks was passed to Mr. H. S. Thompson, M. P., and the members of the Journal Committee.

A vote of thanks was passed to Mr. Brandreth Gibbs, the Hon. Sec. *pro tem.*

The report of the General Canterbury Committee having been laid before the Council, it was resolved to accept the offer made by the Local Committee at Canterbury to give prizes for Hops and Wool, subject to conditions to be determined upon by the Council.

The report of the Live Stock Prizes Committee having been laid before the Council, it was resolved to add classes for Heifer Calves in the Short-horn, Hereford, and Devon divisions of Cattle; also classes for the Shropshire breed of Sheep, and for the Kentish or Romney Marsh breed of Sheep; and to classify Pigs as follows, viz:—Pigs of a large breed of any colour, Pigs of a small white breed, Pigs of a small black breed, and Pigs not eligible for the preceding Classes.

The report of the Implement Committee having been laid before the Council, it was resolved to offer prizes for the class of Applications of Steam Power to the Cultivation of the Soil, and for the classes of Threshing-Machines, Chaff-Cutters, Mills, Crushers, Oilcake-Breakers, Bone-Mills, Turnip-Cutters and Pulpers, Hand-tools used in Hop-grounds, and Hand-tillage, Field-gates, &c., the details of which will appear in the Prize-sheets that will be issued for the Canterbury Meeting.

The report of the House Committee was received and adopted.

On the motion of Mr. Brandreth, the resolution of which Lord Portman had given notice was carried, viz.: to appoint a Professional Accountant to examine the Society's accounts from time to time, under the direction of the Finance Committee.

A communication was read from Mr. Manning relative to the deed of assignment made by the late Mr. Hudson, and the Finance Committee and Honorary Secretary were authorised how to act relative thereto.

Mr. Lawrence presented a copy of his "Handy Book

for Young Farmers." The Council ordered thanks to be returned for this and other presents.

SMITHFIELD CLUB SHOW.

THE galleries of the Baker Street Bazaar are as full as ever of agricultural implements, notwithstanding that there is no prize list to attract them. All the machine-makers of any note, and all the leading seedsmen have very attractive stands at which their respective wares are displayed. In fact it is not only, nor even chiefly, to a great agricultural school but a great agricultural mart that both exhibitors and spectators have congregated.

There are very few novelties observable. Almost the only one we notice is the revolving harrow exhibited by Messrs. Crosskill—two circular harrows with a pin standing upright from the centre of each about 18 inches long. These pins are connected by a bar, and admit of being held below and thrust aside at top, so that one side of each circular harrow is made to dig into the land more than the other, and so the work causes them to revolve. It appears to us probable that they may answer for mere surface work, where the covering of seed is the principal object—but for heavy fallow work there is little chance of their success.

On walking round the galleries we notice Fowler's steam plough, illustrated by drawings and models; Peill's agricultural windmill (models); Smith's steam cultivator (models); Halkett's steam culture (drawings); farm buildings by Mr. Wilkinson of Oxford (a beautiful series of models); cattle foods in great variety, sweet and aromatic and bitter, by Thorley and Henri and Retigan and many others; steam-engines, locomotive and fixed, and combined threshing and winnowing machines, by all the leading makers; reapers by Burgess & Key, Dray, Samuelson, Crosskill, and others; stable accommodation in stalls and racks and loose boxes by Cottam, and the St. Pancras Works, and by Musgrave Brothers, of Belfast, who exhibit cow stalls and horse stalls with a great many ingenious provisions for water, roots, and hay, and for cleanliness, economy, and safety. Messrs. Lawson exhibit a great assortment of roots and seeds, especially dividing the former into ordinary and monster classes, and thereby doing their best to promote truthfulness and honesty. Their Turnips, and Swedes, and Globe Mangels, and Kohl Rabi appeared of excellent quality—the first having by repeated care in seeding only the first-class and the densest roots reached a very high specific gravity and general merit.

Messrs. Sutton also had a capital stand of extraordinary roots, and could intimate to spectators the success of roots from their seed at Birmingham and at the Crystal Palace. Messrs. Gibbs, of Half-Moon Street, Piccadilly, presented a very multifarious, extensive, and attractive display.

Mr. George Gibbs's stand was also praiseworthy—samples of Grass seeds growing in pots, in proof, we presume, of quality, occupied a portion of the space—and large Holcus saccharatus and other Grasses were exhibited. Mr. Page, of Southampton, exhibited Mangels, Swedes, and Belgian Carrots, and other roots, and he informs us that they are selected from crops of 61 tons of Mangels—and 35 tons [!] of Belgian Carrots, of which latter we should be exceedingly glad to learn the full and particular history.

Other seedsmen had stands within the gallery, and their contributions formed in our opinion much the most attractive portion of the whole show.

To enumerate a little further—let us add that Nicholson, of Newark, exhibited chaff-cutters, haymakers, &c.; Crosskill, of Beverley, carts, clod-crushers, &c., and a root-pulper cleaning itself by the velocity of its revolution. Boby, of St. Edmund's, exhibited his well-known corn-screen. Picksley & Sims, of Manchester, showed a great variety of tools; among other things a simple corn bruiser. Snowden, of Gloucester, had his well-known clever paring plough. Hornsby showed a large assortment of ploughs and drills and winnowers, &c. The Garretts had drills and horsehoes—one of their specialities—and other agricultural machines.

Barrett & Exall, of Reading, showed chaff-cutters, small threshing machines, steam engines, &c. Wheeler, of Oxford, showed a disc Turnip-cutter, which is either a pulper, a slicer, or a finger-shaped-piece cutter, according as you work it.

Ransome & Sims had a large stand of ploughs and corn bruisers, and chaff-cutters, and cultivators, and other tools. Smith, of Thrapston, showed drills, chaff-cutters, &c.; Fowler, pumps; Isaac, of Cheltenham, his well-known liquid manure cart; Samuelson, automaton reaper and a great variety of tools; Coleman, cultivators, &c.; Amies, of Peterborough, sack elevator, &c.; Drays, reapers, churns, &c. Clayton & Shuttleworth exhibited their steam-engine and threshing machine; Reed, of the Circus, had a variety of smaller implements of the stable, garden, and household; Messrs. Howards, of Bedford, showed ploughs and harrows and other well-known articles of their manufacture; Rothwell, of Yorkshire, showed ploughs; Wedlake exhibited churns and chaff-cutters, steam-engines, &c.; Cambridge, of Bristol, rollers, harrows, steam-engines, &c. Their patent harrow is held together, teeth and frame, by one or two nuts at the side, which on being unscrewed releases the connecting rods and the whole falls to pieces. Each tine thus forms part of the whole, and is not merely dependent on its own screw or wedge for its firmness. Priest & Woolnough, drills, Turnip-fly destroyers, &c.; Woods, Bentall, and others, exhibited root pulpers; Page, of Bedford, showed harrows, ploughs, &c.; Barnard & Bishop, of Norwich, exhibited a simple disc pulper, the quadrants of which are blank and armed alternately, thus gaining greater efficiency upon the whole, and admitting of replacement by other quadrants differently armed.

We have named but a few of the articles on exhibition, but must devote the remainder of our space to a short account of the well-filled area below the galleries.

The yard is filled by magnificent animals arranged according to breed, age, sex, and even weight; the sheep, ox, and pig classes being separate.—The Birmingham awards are confirmed—Mr. Shirley's wonderful 2 years and 6 months old Hereford steer, and Colonel Towneley's beautiful Short-horn heifer carrying off the first prizes and Gold Medals, to which they are fairly entitled; the former girthing fully 8½ feet, and the latter, one year older, girthing fully 9 feet. A general comparison of the two breeds, as represented here, shows that Mr. Shirley's ox is more exceptional and extraordinary than Colonel Towneley's heifer. The Short-horns carry the day, as a general rule, over the Herefords for size and symmetry and early maturity. And notwithstanding the advantage to the latter of uniformity of colour, there is to our eye greater equality of merit and more uniformity of quality in the classes of the former than in those of the latter. The Devons are always an exceedingly well represented breed at the Smithfield Club's Shows, and there are this year no fewer than three dozen of them—more than one-third of the three chief breeds—the Herefords numbering 17, and the Short-horns 42. The Sussex breed is also well represented. Nearly resembling the Devons with almost as much quality and greater size, they ought to be more than merely locally appreciated. A very good show of the Scotch Polled breeds, and a well filled class of cross-bred stock and extras made up the 175 cattle of this year's exhibition.

The Sheep classes and especially the South Down and cross-bred classes are much the most interesting portion of the exhibition. Nothing more exquisite in form nor better bred (in demeanour as well as quality) was ever seen than the Duke of Richmond's, Lord Radnor's, Lord Walsingham's, Mr. Rigden's, Mr. Scott Hayward's, and other pens of the South Down Sheep. The eye is indeed sometimes corrected by the hand, and the surface of the wool which guides the former to its judgment is not everywhere parallel or concentric with the surface of the body; but shepherds cannot deceive the judges, although they may the mere spectator, and clever shearing is very rarely serviceable. Whether the judges are Sussex men or not they have given the prizes to the smaller size and "quality" rather than mere butcher's meat. Indeed, in some of the classes, which seem framed to ensure the maintenance of this "quality," sheep of only a certain weight are permitted to compete, and this year the Duke of Richmond's beautiful pen is unfortunately disqualified by exceeding the limit specified by a lb. or two. The cross-bred classes, and the classes of short-woolled sheep, "not Southdowns," are filled with capital specimens of what is every year becoming a more numerous and more important class of animals.

The Pig classes, both of large and small breeds, contain 43 lots. Excessive and disgusting fatness is amply represented, but there are many very interesting results of good breeding and clever management. The prize lists are given below.

CATTLE.

Class I. DEVON STEERS, NOT EXCEEDING 3 YEARS OLD.—1st prize, 25*l.*, Mr. R. Farthing, of North Petherton, near Bridgewater; 2d do., 10*l.*, Mr. J. D. Dunning, of Creech St. Michael, near Taunton; 3d do., 5*l.*, Mr. W. Heath, of Ludham Hall, near Norwich.

Class II. DEVON STEERS OR OXEN, ABOVE 3 YEARS OLD.—1st prize, 25*l.*, Mr. J. J. Farquharson, of Langton House, near Blandford; 2d do., 10*l.*, his Royal Highness the Prince Consort; 3d do., 5*l.*, to Mr. W. Heath, of Ludham Hall, near Norwich.

Class III. DEVON HEIFERS, NOT EXCEEDING 4 YEARS OLD.—1st prize, 15*l.*, Mr. R. Farthing, of North Petherton, near Bridgewater; 2d do., 5*l.*, Mr. Edmund Coles, of Stone Farm, near Yeovil, Somersetshire.

Class IV. DEVON COWS, ABOVE 4 YEARS OLD.—1st prize, 20*l.*, Mr. William Heath, of Ludham Hall, near Norwich; 2d do., 10*l.*, Mr. John Coate, of Hammoon, near Blandford; 3d do., 5*l.*, Mr. George Turner, of Barton, near Exeter.

Class V. HEREFORD STEERS, NOT EXCEEDING 3 YEARS OLD.—1st prize, 25*l.*, Mr. Richard Shirley, of Baucot Munslow, near Shrewsbury; 2d do., 10*l.*, Mr. Richard Hill, of Golden Hall, near Shrewsbury; 3d do., 5*l.*, Mr. John Naylor, of Leighton Hall, near Welchpool, Montgomeryshire.

Class VI. HEREFORD STEERS OR OXEN ABOVE 3 YEARS OLD.—1st prize, 25*l.*, Mr. William Heath, of Ludham Hall, near Norwich; 2d do., 10*l.*, Mr. W. Aldworth, of Frilford, near Abingdon, Berkshire; 3d do., 5*l.*, Mr. John Naylor, of Leighton Hall, near Welchpool, Montgomeryshire.

Class VII. HEREFORD HEIFERS NOT EXCEEDING 4 YEARS OLD.—1st prize, 15*l.*, Mr. Richard Hill, of Golding Hall, near Shrewsbury; 2d do., 5*l.*, no competition.

Class VIII. HEREFORD COWS ABOVE 4 YEARS OLD.—1st prize, 20*l.*, Mr. John Naylor, of Leighton Hall, near Welchpool, Montgomeryshire; 2d do., 10*l.*, Lady Emily Foley, of Stoke Edith Park, near Ledbury, Herefordshire; 3d do., 5*l.*, Captain Peplow, of Garnstone, near Hereford.

Class IX. SHORT-HORNED STEERS, NOT EXCEEDING 3 YEARS OLD.—1st prize, 25*l.*, Mr. Edward Frost, of West Wratting Hall, near Linton, Cambridge; 2d do., 10*l.*, Mr. George Maxwell, of Kidbrooke Manor, near Blackheath, Kent; 3d do., 5*l.*, Mr. John Overman, of Burnham Sutton, near Burnham Market, Norfolk.

Class X. SHORT-HORNED STEERS OR OXEN, ABOVE 3 YEARS OLD.—1st prize, 25*l.*, the Marquis of Exeter, K.G., of Burghley Park, near Stamford; 2d do., 10*l.*, Mr. Thomas Swingler, of Langham, near Oakham; 3d do., 5*l.*, Mr. Charles Duffield, Marcham Park, near Abingdon, Berks.

Class XI. SHORT-HORNED HEIFERS, NOT EXCEEDING 4 YEARS OLD.—1st prize, 15*l.*, Lieut.-Colonel Towneley, of Towneley Park, near Burnley, Lancaster; 2d do., 5*l.*, Mr. Wm. Aldworth, of Frilford, near Abingdon, Berks.

Class XII. SHORT-HORNED COWS ABOVE 4 YEARS OLD.—1st prize, 20*l.*, Lieut.-Colonel Towneley, of Towneley Park, near Burnley, Lancaster; 2d do., 10*l.*, Mr. Richard Stratton, of Broad Hinton, near Swindon, Wilts; 3d do., 5*l.*, Mr. C. J. Bradshaw, of Alstoe House, Burley-on-the-Hill, near Oakham.

Class XIII. SUSSEX STEERS OR OXEN, OF ANY AGE.—1st prize, 20*l.*, Mr. John Shoosmith, of Berwick, near Lewes; 2d do., 10*l.*, Mr. Joseph Montefiore, of Worth Park, near Crawley, Sussex.

Class XIV. SUSSEX HEIFERS OR COWS OF ANY AGE.—1st prize, 10*l.*, Mr. Thomas Child, of Slinfold, near Horsham, Sussex; 2d do., 5*l.*, Lord Leconfield, of Petworth, Sussex.

Class XV. NORFOLK OR SUFFOLK POLLED STEERS OR OXEN OF ANY AGE.—1st prize, 10*l.*, Mr. T. M. Hudson, of Castle Acre, near Swaffham, Norfolk; 2d do., 5*l.*, Lord Sondes, of Elmham Hall, near Thetford, Norfolk.

Class XVI. NORFOLK OR SUFFOLK POLLED HEIFERS OR COWS OF ANY AGE.—1st prize, 10*l.*, Mr. R. Cooke, of Livermere, near Bury St. Edmund's, Suffolk; 2d do., 5*l.*, Mr. H. Cannon, of Bishop Park Farm, near Maidenham.

Class XVII. LONG-HORNED STEERS OR OXEN OF ANY AGE.—1st prize, 10*l.*, Mr. W. T. Cox, of the Hall, Spondon, Derby; 2d do., 5*l.*, no competition.

Class XVIII. LONG-HORNED HEIFERS OR COWS OF ANY AGE.—1st prize, 10*l.*, Mr. W. T. Cox, of the Hall, Spondon, Derby; 2d do., 5*l.*, Mr. R. H. Chapman, of Upton, near Nuneaton, Warwick.

Class XIX. SCOTCH HORNED STEERS OR OXEN OF ANY AGE.—1st prize, 20*l.*, Viscount Boyne, of Brancepeth, near Durham; 2d do., 10*l.*, Mr. Thomas Ball Troughton, of Foleshill, near Coventry.

Class XX. SCOTCH HORNED HEIFERS OR COWS, OF ANY AGE.—1st prize, 10*l.*, Mr. Alexander Leask, of Tattenhoe Bare Farm, near Stony Stratford; 2d do., 5*l.*, no competition.

Class XXI. SCOTCH POLLED STEERS OR OXEN, OF ANY AGE.—1st prize, 20*l.*, Mr. William M'Combie, of Tillyfour, near Aberdeen; 2d do., 10*l.*, Mr. James Stewart, of New Market, Aberdeen.

Class XXII. SCOTCH POLLED HEIFERS OR COWS, OF ANY AGE.—1st prize, 10*l.*, Mr. T. R. B. Cartwright, of Aynho, near Brackley, Northampton; 2d do., 5*l.*, Mr. John Turvill, of Hartley Park, near Alton, Southampton.

Class XXIV. IRISH HEIFERS OR COWS, OF ANY AGE.—1st prize, 10*l.*, Earl of Darnley, of Cobham Hall, near Gravesend, Kent; 2d do., 5*l.*, no competition.

Class XXV, WELSH STEERS OR OXEN (RUNTS), OF ANY AGE.—1st prize, 20*l.*, Hon. Colonel Pennant, of Penrhyn Castle, near Bangor, Carnarvon; 2d do., 5*l.*, Mr. J. E. Bennett, of Husbands Bosworth Grange, near Rugby.

Class XXVI. WELSH HEIFERS OR COWS, OF ANY AGE.—Prize 10*l.*, Mr. J. E. Bennett, of Husbands Bosworth Grange, near Rugby.

Class XXVII. CROSS OR MIXED-BRED STEERS, NOT EXCEEDING 3 YEARS OLD.—1st prize, 15*l.*, Mr. W. Aldworth, of Frilford, near Abingdon, Berkshire; 2d do., 10*l.*, Mr. Robert Wortley, of Suffield Hall, near North Walsham, Norfolk.

Class XXVIII. CROSS OR MIXED-BRED STEERS OR OXEN, ABOVE 3 YEARS OLD.—1st prize, 15*l.*, Mr. John Beasley, of Chapel Brampton, near Northampton; 2d do., 5*l.*, Mr. Thomas Knowles, sen., of New Market, Aberdeen.

Class XXIX. CROSS OR MIXED-BRED HEIFERS, NOT EXCEEDING 4 YEARS OLD.—Prize, 10*l.*, Mr. Edward Frost, of West Wratting Hall, near Linton, Cambridge.

SHEEP.

Class XXX. FAT WETHER SHEEP, OF ANY LONG-WOOLLED BREED, 1 year old (under 22 months).—1st prize, 20*l.*, Mr. F. Jordan, of Eastburn, near Driffield, Yorkshire; 2d do., 15*l.*, Mr. Richard Newman, of Harrowden, near Bedford; 3d do., 5*l.*, Mr. C. J. Bradshaw, of Alstoe House, Burley-on-the-Hill, near Oakham.

Class XXXI. FAT WETHER SHEEP, OR ANY LONG-WOOLLED BREED, 1 year old (under 22 months), each Sheep not to exceed 220 lbs. live weight.—1st prize, 20*l.*, Mr. G. S. Foljambe, of Osberton Hall, near Worksop, Nottinghamshire; 2d do., 15*l.*, Lord Berners, of Keythorpe Hall, near Leicester; 3d do., 5*l.*, Mr. J. Boast, of North Dalton, near Driffield, Yorkshire.

Class XXXII. FAT WETHER SHEEP, OF ANY LONG-WOOLLED BREED (NOT LEICESTERS), 1 year old (under 22 months).—1st prize, 15*l.*, Mr. Jonathan Davis, of Webton Court, near Hereford; 2d do., 10*l.*, Mr. John King Tombs, of Langford, near Lechlade, Gloucestershire; 3d do., 5*l.*, Mr. John F. Mills, of Westwell, near Burford, Oxon.

Class XXXIII. LONG AND SHORT-WOOLLED CROSS-BRED FAT WETHER SHEEP, 1 year old (under 22 months).—1st prize, 15*l.*, Mr. George Hine, jun., of Oakley, near Bedford; 2d do., 10*l.*, Mr. George Wallis, of Hinton Waldridge, near Farringdon, Berkshire; 3d do., 5*l.*, Mr. John Benjamin Twitchell, of Wilby, near Northampton.

Class XXXIV. LONG AND SHORT-WOOLLED CROSS-BRED FAT WETHER SHEEP, 1 year old (under 22 months), each Sheep not to exceed 200 lbs. live weight.—1st prize, 10*l.*, Mr. George Hine, jun., of Oakley, near Bedford; 2d prize, 5*l.*, Mr. Charles Hobbs, of Maisey Hampton, near Cricklade, Wiltshire.

Class XXXV. FAT WETHER SHEEP, OF ANY SHORT-WOOLLED BREED, 1 year old (under 22 months).—1st prize, 20*l.*, Mr. William Rigden, of Hove, near Brighton; 2d prize, 10*l.*, the Duke of Richmond, K.G., of Goodwood, near Chichester; 3d do., 5*l.*, the Earl of Leicester, of Holkham Hall, Norfolk.

Class XXXVI. FAT WETHER SHEEP, OF ANY SHORT-WOOLLED BREED, 1 year old (under 22 months), each Sheep not to exceed 200 lbs. live weight.—1st prize, 10*l.*, to William Rigden, of Hove, near Brighton; 2d do., 5*l.*, the Earl of Leicester, of Holkham Hall, Norfolk.

Class XXXVII. FAT WETHER SHEEP, OF ANY SHORT-WOOLLED BREED, 2 years old (above 22 and under 34 months).—1st prize, 20*l.*, the Duke of Richmond, K.G., of Goodwood, near Chichester; 2d do., 10*l.*, Sir R. G. Throckmorton, of Buckland, near Farringdon, Berks; 3d do., 5*l.*, Lord Walsingham, of Merton Hall, near Thetford, Norfolk.

Class XXXVIII. FAT WETHER SHEEP, OF ANY SHORT-WOOLLED BREED (not South Downs), 1 year old (under 22 months).—1st prize 15*l.*, Mr. W. B. Canning, of Chisledon, near Swindon; 2d do., 10*l.*, Mr. William King, of New Hayward Farm, near Hungerford; 3d do., 5*l.*, Mr. Stephen King, of Old Hayward Farm, near Hungerford, Berkshire.

PIGS.

Class XXXIX. PIGS OF ANY BREED, NOT EXCEEDING FOUR MONTHS OLD.—1st prize, 10*l.*, Mr. George B. Morland, of Chilton Farm, near Harwell, Berks; 2d do., 5*l.*, Mr. William Mills Barber, of Sunninghill, Wells, near Staines.

Class XL. PIGS OF ANY BREED, ABOVE FOUR AND NOT EXCEEDING EIGHT MONTHS OLD.—1st prize, 10*l.*, Mr. George B. Morland, of Chilton Farm, near Harwell, Berks; 2d do., 5*l.*, Mr. Thomas Crisp, of Butley Abbey, near Wickham Market, Suffolk.

Class XLI. PIGS OF ANY BREED, ABOVE EIGHT AND NOT EXCEEDING 12 MONTHS OLD.—1st prize, 10*l.*, Mr. George Beale, of Frowlesworth, near Lutterworth, Leicester; 2d do., 5*l.*, Mr. Henry Wilson, of Stowlangtoft Hall, near Bury St. Edmund's.

Class XLII. PIGS OF ANY BREED ABOVE 12 AND UNDER 18 MONTHS.—1st prize, 10*l.*, to his Royal Highness the Prince Consort; 2d do., 5*l.*, to Mr. Edward Sheppard, of Roundway Park Farm, near Devizes.

GOLD MEDALS.

Gold Medal to the exhibitor, for the best Steer or Ox in any of the classes, to Richard Shirley, of Bancott Munslow, near Shrewsbury; Gold Medal to the exhibitor, for the best Heifer or Cow in any of the classes, to Lieutenant-Colonel Towneley, of Towneley Park, near Burnley, Lancashire; Gold Medal to the exhibitor, for the best pen of Long-woolled Sheep in any of the classes, to Mr. F. Jordan, of Eastburn, near Driffield, York-

shire; Gold Medal to the exhibitor, for the best pen of one-year-old Short-woolled Sheep in the 35th, 36th, or 37th classes, to Mr. William Ryder, of Hove, near Brighton; and Gold Medal to the exhibitor, for the best pen of Pigs in any of the classes, to his Royal Highness the Prince Consort.

EXTRA STOCK.

Silver Medal to the exhibitor, for the best Steer or Ox in extra stock to the Marquis of Exeter, Burghley Park, near Stamford; Silver Medal to the exhibitor, for the best Heifer or Cow in extra stock to Earl Howe, of Gopsall Hall near Atherstone; Silver Medal, to the exhibitor for the best Long-woolled Wether Sheep in extra stock to Lord Berners, of Keythorpe Hall, near Leicester; Silver Medal to the exhibitor, for the best Long-woolled Ewe in extra stock, to Mr. F. Jordan, of Eastburn, near Driffield, Yorkshire; Silver Medal to the exhibitor, for the best Short-woolled Wether Sheep in extra stock, to the Duke of Richmond, of Goodwood, near Chichester; Silver Medal to the exhibitor, for the best Short-woolled Ewe in extra stock, to Lord Walsingham, of Merton Hall, near Thetford; Silver Medal to the exhibitor, for the best Cross-bred Sheep in extra stock, to Mr. G. Wallis, of Hinton Waldridge, near Faringdon, Berkshire; Silver Medal to the exhibitor, for the best pig in extra stock, to Sir R. G. Throckmorton, of Buckland, near Faringdon.

JUDGES OF CATTLE.—Messrs. William Sanday, James Hole, and William Wetherell.

JUDGES OF LONG-WOOLLED SHEEP AND PIGS.—Messrs. John Moon, R. J. Wiley, and George Mann.

JUDGES OF CROSS-BRED AND SHORT-WOOLLED SHEEP.—Messrs. William Fookes, H. P. Hart, and Henry Thurnell.

At the GENERAL MEETING of the ROYAL AGRICULTURAL SOCIETY on Friday, the report of the Council to the members, which was read to the meeting, was chiefly occupied with the lamentable history of their late Secretary's defalcations. We must postpone its publication until next week.

Miscellaneous.

Horse Labour in France.—The cultivation of Beet roots has since wrought such a beneficial change in husbandry, that an improved system of tillage, deeper cultivation, and more frequent manipulation of the soil, together with carrying roots to the factory, and bringing back pulp as fodder for the cattle, have necessitated a more numerous team of horses. The same team of four horses and one driver are therefore now required for every 80 acres in cultivation; that is, one horse per 20 acres. An eminent agriculturist in that department informs me that he keeps 21 horses and 15 oxen for about 400 acres, the agent's riding-horse included. They are kept in the following manner:—In winter they have each per day

6 quarts of Oats.	2½ lbs. of Wheat straw.
5 lbs. of Grass hay.	1 bundle of Bean straw.
5 lbs. of Clover hay.	1 lb. of bran.

The whole is cut, bruised, mixed, and fermented, together with ¼ lb. of salt for each horse, twice a week. In summer the only difference is the increase in the quantity of Oats, from 6 to 10 quarts. The working oxen are fed in the following manner:—

56 lbs. Beet-root pulp.	4½ lbs. cut straw.
2½ lbs. Grass hay.	2½ lbs. bruised Barley.
4½ lbs. Clover hay.	3½ lbs. Rape or Linseed cake.

The whole is cut, mixed, and fermented as above with a dose of salt twice a week. In winter the oxen work the same time as the horses; in summer those that work in the morning rest in the afternoon, and thus work only half a day. Every year the stables are debited—1st. The value of the team fixed at the preceding inventory, in which the decreased value of the horses was taken into consideration. 2d. The repairs of implements, waggons, harness, shoeing, veterinary attendance, losses, &c. 3d. The consumption of food. 4th. The straw and other litter. 5th. The attendance of the drivers and stablemen. 6th. The due proportion of stable and other building rent, taxes, repairs, &c. They are credited—1st. The debtor's side of the preceding inventory. 2d. The value of the manure at per load. 3d. The amount of sales in horses and fattened oxen. From all these items it is reckoned that the average cost of a horse or ox's day's work is 2 francs 92 centimes, about 2*s.* 5*d.*, exclusive of resting days. *M. Tréhonnais, in Journal of Agricultural Society.*

Calendar of Operations.

DECEMBER.

SOUTH DORSETSHIRE: *Dec.* 5.—Since last report we have been employed finishing the later Wheat sowings—after early and other Turnips fed off with sheep (ewes and lambs given hay), and taking up and storing in the field our Mangel crop, which, with some exceptions, is as good as in most years. There seem to be some good remarks on that crop by some of your correspondents in last Paper as to the effects of early frost upon it, time for sowing, &c. As to the latter, though early sowing might be suitable in Somersetshire and other favoured counties, it does not answer everywhere; thus hereabouts there is more sown in the month of May than in the month of April, which is a better time for this bleak part of the country. Those who keep the old breed of horn sheep (for the sake of early lambs), which however are nearly superseded by the Downs, have already lambs from them. These will be soon sold to dealers round, who take or send them up to London for sale to those who fatten early house lamb.

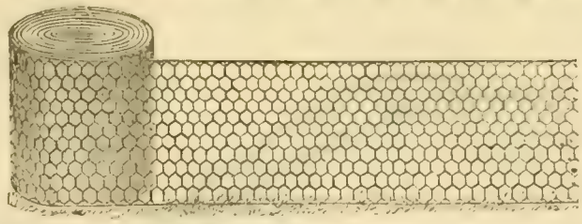
Notices to Correspondents.

BOOKS: *J Salt.* Complete books on Agriculture are all costly. The Cyclopedia of Agriculture (Blackie), Stephens's Book of the Farm (Blackwood) cost 2*l.* or 3*l.* Mr. Lawrence's Handy Book for Young Farmers (Longmans) 2*s.* 6*d.*, contains a good deal that will serve you. As a gardener you may get 150*l.* a year off 30 acres, paying 130*l.* a year in rent, but not as a farmer.

THE LATE MR. HUDSON'S LIBRARY. We beg the attention of our readers to an advertisement announcing the sale of the library of the late Secretary of the English Agricultural Society.

*** We have to thank Mr Holland, M.P., for a communication on the harvesting of Mangel Wurzel, which is unfortunately pressed out of this week's Paper by reports of meetings, but will appear next Saturday.

IMPROVED PREMIUM WIRE NETTING.



PRICES PER LINEAL YARD, 24 INCHES HIGH:—

Size of mesh.	Mostly used for	Light. Japanned.	Light. Galvanized.	Medium. Japanned.	Medium. Galvanized.	Strong. Japanned.	Strong. Galvanized.	Extra strong. Japanned.	Extra strong. Galvanized.
2½ inch	Hares, Dogs, Poultry	3½*d.*	4½*d.*	4½*d.*	5½*d.*	5*d.*	6½*d.*	6*d.*	8*d.*
2 inch	Game Netting	4*d.*	5*d.*	4½*d.*	6*d.*	5½*d.*	7*d.*	7½*d.*	9½*d.*
1⅝ inch	Small Rabbits, Hares, &c.	4½*d.*	5½*d.*	5½*d.*	6½*d.*	6*d.*	7½*d.*	8*d.*	10*d.*
1½ inch	Smallest Rabbits	6*d.*	7½*d.*	7½*d.*	9*d.*	9*d.*	11*d.*	11*d.*	13*d.*

Quantities of 100 yards or upwards delivered free at nearly all the principal Railway Stations and Shipping Ports in England; and 200 yards or upwards delivered free to most parts of Scotland or Ireland. Any width of Netting under 8 feet made at proportionate prices.

☞ *Every description of Netting warranted to give satisfaction, and if not approved will be exchanged, or may be returned unconditionally.*

J. B. BROWN & CO., 18, CANNON STREET, LONDON, E.C.

MESSRS. J. B. BROWN & CO.'S IMPROVED WROUGHT IRON HURDLES

OF

BEST STAFFORDSHIRE IRON.

No. 1 Hurdle.—Very useful for general purposes, combining strength with good appearance. 3 feet 6 inches high, six bars round iron, top bar ⅝ inch diameter, five under bars ½ inch; two side uprights flat iron, 1¼ inch by ¼ inch, and middle upright 1½ by ¼ inch. Weight about 48 lbs. Present price delivered in London and at most of the principal Railway Stations, 2*s.* 5*d.* per yard, or about 5*s.* 3*d.* each hurdle of 6 feet 6 inches long.

Specifications and prices of others in Illustrated Catalogue of Iron and Wire Fencing, Hurdles, Gates, Wire Netting, Garden Rollers and Engines, Ornamental Vases, &c., on application.

J. B. BROWN & CO., 18, CANNON STREET, CITY, LONDON, E.C.

THE AGRICULTURAL ENGINEERS' COMPANY (LIMITED).

Directors.

ANDREWES, CHAS. J., Esq., of the firm of Messrs. Barrett, Exall, & Andrewes, Agricultural Engineers, Reading.

BENTALL, E. H., Esq., Agricultural Engineer, Heybridge, near Maldon, Essex.

FOWLER, JOHN, Esq., Patentee of the Steam Plough, 28, Cornhill, London, E.C.

TURNER, E. R., Esq., of the firm of Messrs. E. R. & F. Turner, Agricultural Engineers, Ipswich.

WARNER, CHAS. B., Esq., of the firm of Messrs. John Warner & Sons, Bell and Brass Founders to her Majesty, and Hydraulic Engineers, 8, Crescent, Jewin Street, London, E.C.

Bankers—The Bank of England.

CENTRAL DEPOT AND SHOW ROOMS—
Swan Lane, Upper Thames Street, London, E.C.

This Company has been for the purpose of supplying the public direct, with Agricultural Implements and Machinery of the most approved construction, at Manufacturers' fixed prices.

With an ample Capital and the best and most extensive premises in London at its disposal, the Company can offer to Shippers, Colonists, Agriculturists, Foreign Buyers, Amateur Farmers, Gardeners, &c., the following *exclusive* advantages:—

The opportunity of purchasing from the largest and best selected Stock in England.

The certainty of being supplied with none but the best made and most efficient Implements of their class.

Promptitude, regularity, and care in the execution of all orders intrusted to it.

Reliable information and advice as to the requirements of particular districts and foreign markets.

Particular attention is called to the fact that the direction is composed exclusively of well-known Makers, whose practical knowledge and standing will afford an invaluable guarantee to purchasers of the material, workmanship, and adaptability to its use of every article sold.

Shippers, Colonists, and Foreign Buyers will be relieved of all anxiety and trouble by intrusting the execution of their orders to the Company.

The Stock will be found to comprise the manufactures of the leading makers. Illustrated Catalogues with prices, in English, French, German, and other languages will shortly be ready for distribution. Meanwhile Price Lists and every information may be obtained post free upon application at the offices of the Company.

Orders addressed to the Agricultural Engineers' Company (Limited), Swan Lane, Upper Thames Street, London, E.C., will have prompt attention.

"FRIGI DOMO."—Patronised by her Majesty, the Queen, the Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, and —Collier, Esq., of Dartford.

PROTECTION FROM THE MORNING AND EVENING FROST.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths.

Two yards wide, 1*s.* 6*d.* per yard run.
Four, 3*s.* per yard; also,
An improved make three yards wide, 2*s.* 6*d.* per yard run.

ELISHA THOMAS ARCHER, whole and sole manufacturer, 7 Trinity Lane, Cannon St., City, E.C., and of all Nurserymen and Seedsmen throughout the kingdom. "It is much cheaper than mats as a covering."

SMITHFIELD CATTLE SHOW.
STANDS 639 TO 641.
CATTLE, INSTRUMENTS, PROBANGS, &c.

READ'S PATENT VETERINARY INJECTING SYRINGES; Improved HOLLOW PROBANGS, for Relieving Hoven or Choked Bullocks, Calves, Sheep, &c.

READ'S NEW PATENT GARDEN WATERING ENGINES, MACHINES, and SYRINGES, with all the latest improvements; manufactured only by the Patentee,

RICHARD READ,
Instrument Maker (by Special Appointment) to her Majesty,
35, Regent Circus, Piccadilly, London, W.

*** Descriptions sent Post Free.

FOWLER'S PATENT STEAM PLOUGH has gained the following prizes:—
The Royal Agricultural Society's Prize, at Warwick, July 1859, 50*l.*
The Royal Agricultural Society's Prize, at Chester, July 1858, 500*l.*
The Highland Society's Special Prize at Stirling, Oct. 1857, 200*l.*
And at other Agricultural Meetings in the United Kingdom, Prizes amounting to 175*l.*

For further particulars, prices, and Catalogues apply to JOHN FOWLER, JUN., 28, Cornhill, London, E.C.

IMMEDIATE ORDERS WILL PREVENT DISAPPOINTMENT.

"SIGMA'S" UNIVERSAL SEED PLANTERS (Dibbles), vastly improved since the Prize of the Royal Agricultural Society was awarded them. The "MULTUM IN PARVO," forming eight perfect implements, highly commended, see testimonials. The Manure Distributor carried off the Prize Medal in 1851, recently much improved, see *Gardeners' Chronicle*, July 30 and August 6th "Simple, promising, and ingenious." The STEEL DRAW SHAVE HOE clears a row between Turnips at one sweep. Engravings sent.—C. POWELL, Hurstgreen, Sussex. All Patented.

PARKES' STEEL DIGGING FORKS.

BURGESS AND KEY, 95, Newgate St., E.C., London, being the Wholesale and Retail Agents for these celebrated TOOLS have always a large Stock on hand from which their Customers may select what they may require

ANTHONY'S PATENT AMERICAN CHURN.—The FIRST PRIZE was again awarded to this Churn in Competition with several others at the Chester Meeting of the Royal Agricultural Society; it has obtained the First Prize given by the Society at every Meeting since 1850. Messrs. BURGESS & KEY, 95, Newgate Street, E.C., strongly recommend it as the most perfect Churn now in use Full particulars sent on application.

PATENT GUTTA PERCHA SOLES.—IMPORTANT TO GARDENERS.—The Gutta Percha Company have the pleasure to acknowledge the receipt of the following letter from G. GLENNY, Esq., the celebrated Florist:—

"Gentlemen,—I have worn Gutta Percha Soles and Heels these two years, and being so much in a garden as I necessarily am in all weathers, and with the ground in all states, I would on no account be without them. As a matter of economy I would recommend Gardeners to use them, for they may repair the worn part at all times by warming the material at the fire, and pressing it from the thick parts to the worn parts, as easily as if it were so much dough. I think it the duty of all persons who must occasionally wet their feet to adopt a material that completely defies damp. Many a gardener would escape colds and rheumatism by the use of Gutta Percha Soles.

"Your obedient servant, G. GLENNY."

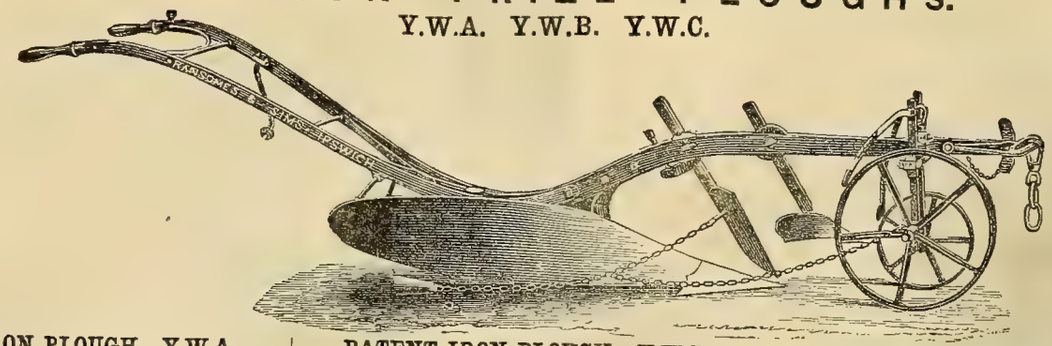
Every variety of Gutta Percha articles, such as Mill Bands, Tubing, Soles, Sheet, Pump Buckets, Fire Buckets, Bosses, Union Joints, Flasks, Bottles, Bowls, Chamber Vessels, Toilet Trays, Sponge Bags, Curtain Rings, Galvanic Batteries, Talbotype Trays, &c., manufactured by the Gutta Percha Company, and sold by their wholesale dealers in town or Country.—The Gutta Percha Company, Patentees, 18, Wharf Road, City Road, E.C., London.

RANSOMES AND SIMS, IPSWICH,

BEG TO CALL THE ATTENTION OF AGRICULTURISTS TO THEIR NEW SERIES OF

WARWICK PRIZE PLOUGHS.

Y.W.A. Y.W.B. Y.W.C.



PATENT IRON PLOUGH. Y.W.A.

This Light Two-horse Plough will make excellent work at any depth not exceeding 6 inches. The body can be removed, and a ridging body, suitable for every purpose of ridge work, placed in its stead.

Price, with two wheels	£4 2 6
Skim Coulter and Drag Chain, extra	0 7 0
Steel, instead of Cast Breast, extra	0 7 0
Shares, per dozen	0 9 6
Ridging Body	1 17 6

Received a prize of £3 at Warwick.

PATENT IRON PLOUGH. Y.W.B.

FOR GENERAL PURPOSES.

This Plough will make excellent work at any depth not exceeding 8 inches. The body can be removed, and a ridging body, suitable for every purpose of ridge work, placed in its stead.

Price, with two wheels	£4 7 6
Skim Coulter and Drag Chain, extra	0 7 0
Steel, instead of Cast Breast, extra	0 7 6
Shares, per dozen	0 9 6
Ridging Body	1 17 6

Received a prize of £4 at Warwick.

PATENT IRON PLOUGH. Y.W.C.

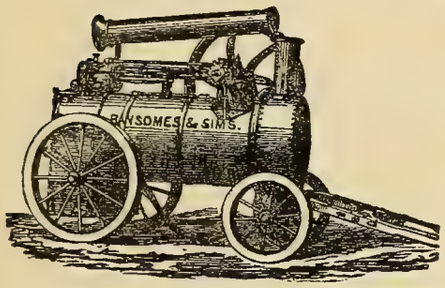
This Plough will make excellent work at any depth not exceeding 12 inches in any soil.

Price, two wheels	£5 15 0
Wrought, instead of Cast Frame	1 0 0
Skim Coulter and Drag Chain	0 7 6
Steel, instead of Cast Breast	0 12 6
Shares, per dozen	0 9 6

Received a prize of £2 at Warwick.

RANSOMES' PLOUGHS *have received* TWENTY FIRST PRIZES, 1 GOLD *and* 11 SILVER MEDALS *from the Royal Agricultural Societies of England, Ireland, &c.*

PORTABLE STEAM ENGINES & PATENT PORTABLE COMBINED STEAM THRESHING MACHINES.



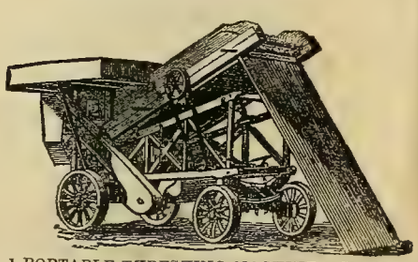
PRICES.

3-Horse Engine, 125*l.*, and No. 7 Single Blast Threshing Machine suitable for ditto, 75*l.*; Strap, 4*l.*; Waterproof Cover for Machine, 1*l.*; Barley Awner, 2*l.* extra.

7-Horse Engine, 210*l.*, and No. 1 Single Blast Threshing Machine suitable for ditto, with Common Drum and Iron Wheels, 100*l.*; Driving Strap, 6*l.* 6*s.*; Waterproof Cover for Machine, 2*l.* 5*s.*; if with Patent Drum, 5*l.* extra; if with Wood Wheels, 3*l.* extra; if without an Engine, 5*l.* extra.

8-Horse Engine, 215*l.*, and A 1 Double Blast Threshing Machine suitable for ditto, with common Drum and Wood Road Wheels, 125*l.*; Driving Strap, 6*l.* 6*s.*; Waterproof Cover for Machine, 2*l.* 5*s.*; if with Patent Drum, 5*l.* extra; if without an Engine, 5*l.* extra.

SINGLE BLAST MACHINE. No. 1.



The above cut represents one of our STANDARD PORTABLE ENGINES. They are made of the best quality of materials and workmanship; are remarkable for their simplicity, durability, economy of fuel, and their capability of making steam. They are very light draught for the Horses.

The above cut represents our No. 1 PORTABLE THRESHING MACHINE. The No. 7 is built on the same Model in all its important parts, and can be thoroughly recommended as a most efficient Machine. Each of them has a Patent Shaker, one Blower, Riddles, and Elevators; and the No. 1 has also a Barley Awner.

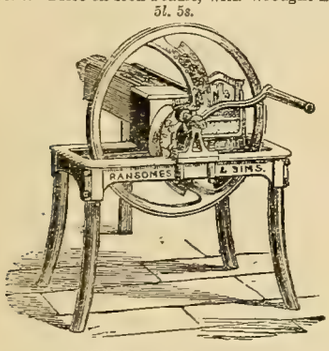
The A 1 or Double Blast Machine is on the same Model as the No. 1, but is furnished with a second Blower, and set of Dressing Apparatus, with a Patent Screen, by means of which Grain can be well and quickly prepared for Market.—Seven GOLD MEDALS and one highest DIPLOMA of MERIT have been awarded to these Machines. We shall be happy to furnish Testimonials from persons using our Single Blast Threshing Machines as to their superiority in economy of power, their extraordinary durability, and their capability of turning out a large quantity of work per day.

CHESTER FIRST PRIZE.

HAND CHAFF-CUTTER,

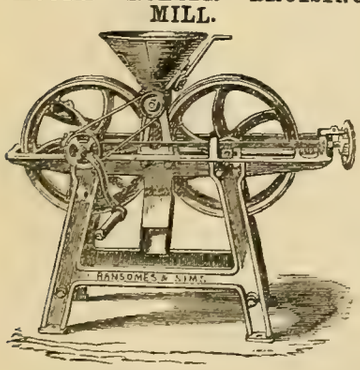
BIDDELL'S PATENT.

No. 3.—Price on Iron Frame, with Wrought Legs, 5*l.* 5*s.*



CHESTER FIRST PRIZE.

SMOOTH ROLLER BRUISING MILL.



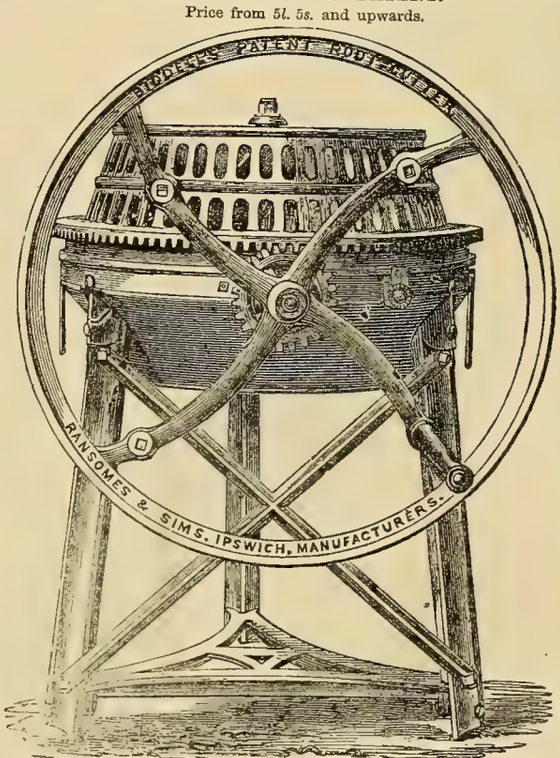
No. 6.—Price £10.

CHESTER FIRST PRIZE.

ROOT CUTTER FOR POWER.

BIDDELL'S NEW PATENT.

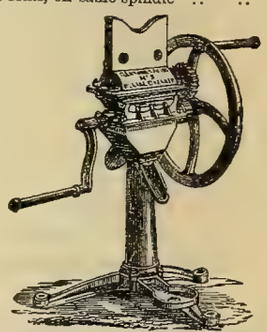
Price from 5*l.* 5*s.* and upwards.



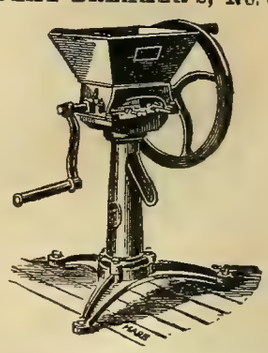
BIDDELL'S PATENT MILLS,

On Iron Columns, for hand power.

Patent Bean Cutter	£4 0 0
Patent Steel Oat Mill	3 15 0
Patent Combined Mill, No. 10—Bean and Oat Mills, on same spindle	6 0 0



OIL-CAKE BREAKERS, No. 3 & 4.



No. 3, for Lambs, Sheep, or Cattle, 4*l.*— No. 4, price 5*l.* 5*s.*, will break the hardest Cake for Sheep, or Cattle, separating the dust at the same time.

TESTIMONIALS FREE ON APPLICATION.

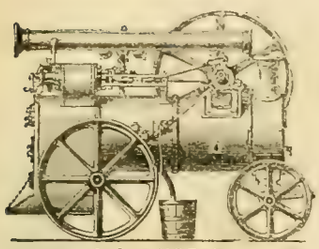
Illustrated Catalogues, post free, on application to the Orwell Works, or to our London Agent,

SHEPPARD RANSOME, 31, ESSEX STREET, STRAND, W.C.

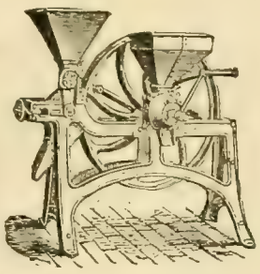
SMITHFIELD CLUB CATTLE SHOW.—STANDS 109 to 116.

E. R. & F. TURNER,

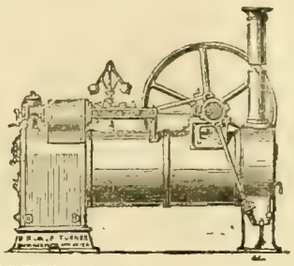
ST. PETER'S IRON WORKS, IPSWICH.



2 & 3-HORSE PORTABLE ENGINE.



PRIZE CORN CRUSHER.



2 & 3-HORSE INDEPENDENT ENGINE

E. R. & F. TURNER beg to direct attention to the above small Engines of their manufacture. The excellent article first introduced by them at the R. A. S. E. Salisbury Show has secured for them a large and increasing demand amongst occupiers, with whom a large Engine would involve only a heavy and unremunerative outlay, without any corresponding advantage. The preference E. R. & F. T. thus enjoy they are determined to maintain, by continuing to supply Engines of real commercial value, and in many respects superior to any other of a similar class.

THRESHING MACHINES, with Shakers and Riddles, and either with or without Winnowing, Avelling, and Sacking Apparatus, are made expressly adapted for the 2 and 3-horse Engines.

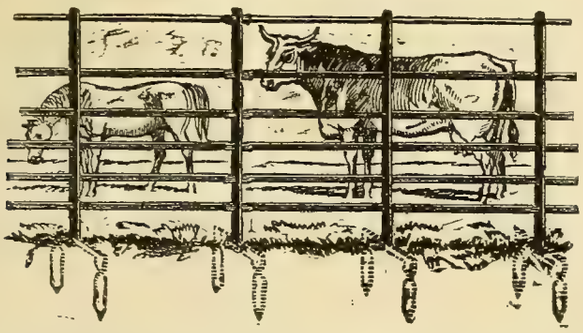
E. R. & F. T.'s ROLLER MILLS for Crushing Oats, Linseed, Malt, Barley, Beans, &c., are the most effective Corn Crushers made. In the numerous competitions with other Mills in which they have engaged they have never been excelled.

Fixed and Portable Engines, Threshing Machines for Horse and Steam Power, Portable Grinding Mills, Oilcake Breakers Chaff Cutters, Horse Gears, Circular-Saw Tables, &c , all of a superior description, are manufactured by the Advertisers.

Descriptive Illustrated Price Catalogues sent Free on Application at the Works, Ipswich.

HILL & SMITH'S

PATENT CONTINUOUS PARK FENCE.



THIS FENCE is made in a variety of sizes suitable for any situation, and is much superior in appearance to hurdle fences, than which it is also cheaper and stronger. It has obtained upon two occasions the Silver Medal of the Royal Agricultural Society of England, besides many other premiums. Many miles have been erected by HILL & SMITH on the London and North Western Railway, between London and Bletchly Stations, and it has been erected at the Parks of upwards of 500 Noblemen and Gentlemen in England; that at Welbeck Abbey, the seat of his Grace the Duke of Portland, being entirely surrounded with it as a fence against Deer nearly 10 miles in extent. The patent principle is also applied to Iron Hurdles, whereby the strength is much increased and their cost reduced. ILLUSTRATED PRICED CATALOGUES will be sent on application to HILL & SMITH, Brierly Hill Iron Works, near Dudley, who are the inventors and sole manufacturers, or to their London Office, 40, Broad Street Buildings, E.C., where specimens may be seen, or to Mr. B. SAMUELSON'S, 76, Cannon Street West, London, E.C.

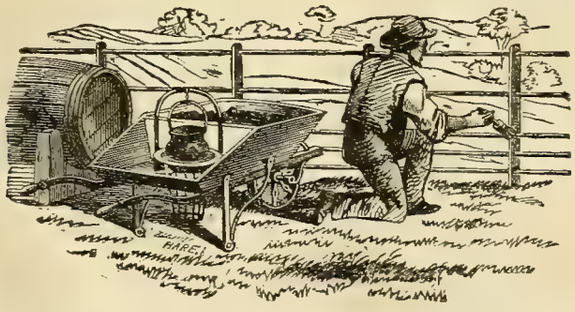
OIL PAINT NO LONGER NECESSARY.

HILL & SMITH'S

Black Varnish for preserving Iron Work, Wood, or Stone Work.

THIS varnish is an excellent substitute for oil paint on all out-door work, and not only saves two-thirds the expense of an ordinary quality of oil paint, but has the great advantage that it may be applied by an ordinary labourer in a cold state, and that no mixing or thinning is required. It is used in the grounds at Windsor Castle, Kew Gardens, and all the Royal Parks in London, and at the seats of many of the Nobility and Gentry of the United Kingdom. It is also largely exported. Testimonials from Noblemen and Gentlemen who regularly use it will be forwarded gratis on application. Sold in casks of about 30 gallons each, 1*s.* 6*d.* per gallon, or 1*s.* 8*d.* per gallon, carriage paid to any Railway Station.

THE WROUGHT IRON HEATING BARROW



shown in the above engraving is a very useful article for applying the varnish or for heating gas tar. The front compartment holds tools, fuel, &c. and the back compartment carries an iron three gallon pot with fire grate underneath.

Price £3 or £3 3s. Carriage paid.

HILL AND SMITH, BRIERLY HILL IRON WORKS, NEAR DUDLEY.
LONDON OFFICE: 40, BROAD STREET BUILDINGS, E.C.

HENRY J. MORTON AND CO., 2, Basinghall Buildings, Leeds.

CALVANISED IRON WATER CISTERNS

for Cottage Houses, &c., to contain 50 gallons, 25*s.*; 80 gallons, 30*s.* each; and 140 gallons, 36*s.*, and fitted with tap, keeping the water perfectly sweet and clean; will not rust or corrode. Cisterns of all sizes.

CALVANISED IRON PUMPS

for Liquid Manure or Domestic Use, 3 inches diameter, 30*s.* and 32*s.* 6*d.* each; Tail Pipe for same at from 10*d.* per foot.

CALVANISED IRON SWING WATER BARROWS

for Garden or Farm use, containing about 20 gallons, entirely formed of iron, 32*s.* 6*d.* each.

MICROSCOPES.

J. AMADIO'S BOTANICAL MICROSCOPES, packed in mahogany case, with three powers, condenser, pincers, and two slides, will show the animalculæ in water. Price 18*s.* 6*d.*—Address JOSEPH AMADIO, 7, Throgmorton St. E.C.

"It is marvellously cheap, and will do everything which the lover of nature can wish it to accomplish either at home or in the open air."—*The Field*, June 6, 1857.

Second-hand Microscope with a cabinet slides for sale. Great Eastern Microscopic Photograph of the great ship sent post free for 32 stamps.

BENSON'S WATCHES.

"Perfection of mechanism."—*Morning Post.*

GOLD, 4 to 100 GUINEAS. | SILVER, 2 to 50 GUINEAS.

Send two Stamps for Benson's ILLUSTRATED WATCH PAMPHLET.

Watches sent to all parts of the World free per post.

33 and 34, Ludgate Hill, London, E.C.

CHUBB'S PATENT DETECTOR LOCKS.
CHUBB'S FIRE AND BURGLAR-PROOF SAFES.
CHUBB'S FIRE-PROOF STRONG-ROOM DOORS.
CHUBB'S STREET-DOOR LATCHES.
CHUBB'S CASH AND DEED BOXES.

CHUBB & SON, 57, St. Paul's Churchyard, London, E.C; 28, Lord Street, Liverpool; 16, Market Street, Manchester; and Wolverhampton.—Illustrated Price Lists sent free.

WATERPROOF HIGHLAND CLOAKS for GENTLEMEN'S WEAR,

Are now on view in every description of Scotch Manufactured Tweed, at Her Majesty's Royal Tartan Warehouse, SCOTT ADIE'S, 115, Regent Street, corner of Vigo Street, W.

BERDOE'S WINTER CAPES AND OVER-COATS. The extensive sale of these first class garments is their best recommendation. They effectually exclude rain, yet freely admit air. A large Stock for selection.—WALTER BERDOE, 96, New Bond Street, W., and 69, Cornhill (north side), E.C.

HEAL AND SON'S EIDER-DOWN QUILTS, from One Guinea to Ten Guineas. Also GOOSE-DOWN QUILTS, from 8*s.* 6*d.* to 24*s.* List of prices and sizes sent free by post. HEAL & SON'S New Illustrated Catalogue of Bedsteads and Priced List of Bedding also sent post free.

196, Tottenham Court Road, W.

FENDERS, STOVES, FIRE-IRONS, AND CHIMNEY PIECES.—Buyers of the above are requested, before finally deciding, to visit WILLIAM S. BURTON'S SHOW ROOMS. They contain such an assortment of FENDERS, STOVES, RANGES, CHIMNEY PIECES, FIRE-IRONS, and GENERAL IRONMONGERY as cannot be approached elsewhere, either for variety, novelty, beauty of design, or exquisiteness of workmanship. Bright Stoves, with ormolu ornaments and two sets of bars, 3*l.* 15*s.* to 33*l.* 10*s.*; Bronzed Fenders, with standards, 7*s.* to 5*l.* 12*s.*; Steel Fenders, 2*l.* 15*s.* to 11*l.*; ditto, with rich ormolu ornaments, 2*l.* 15*s.* to 18*l.*; Chimney Pieces, from 1*l.* 8*s.* to 80*l.*; Fire-Irons, from 2*s.* 3*d.* the set to 4*l.* 4*s.* The BURTON and all other PATENT STOVES, with radiating hearth-plates.

BEDSTEADS, BATHS, AND LAMPS.—WILLIAM S. BURTON has SIX LARGE SHOW ROOMS devoted exclusively to the SEPARATE DISPLAY of Lamps, Baths, and Metallic Bedsteads. The stock of each is at once the largest, newest, and most varied ever submitted to the public, and marked at prices proportionate with those that have tended to make his establishment the most distinguished in this country.

Bedsteads, from	..	..	..	12*s.* 6*d.* to £20	0*s.* each.
Shower Baths, from	..	..	8 0	,, 6 0	,,
Lamps (Moderateur), from	..	6 0	,,	7 7	,,

(All other kinds at the same rate.)

Pure Colza Oil .. .. 4*s.* 0*d.* per gallon.

DISH COVERS AND HOT-WATER DISHES.—In every material, in great variety, and of the newest and most recherché patterns. Tin Dish Covers, 7*s.* 6*d.* the set of six; Block Tin, 12*s.* 3*d.* to 27*s.* 0*d.* the set of six; elegant modern patterns, 35*s.* 6*d.* to 62*s.* 6*d.* the set; Britannia Metal, with or without silver-plated handles, 3*l.* 11*s.* 0*d.* to 6*l.* 8*s.* 0*d.* the set; Sheffield plated, 10*l.* to 16*l.* 10*s.* the set; Block-tin Hot-water Dishes, with wells for gravy, 12*s.* to 30*s.*; Britannia Metal, 22*s.* to 77*s.*; Electro-plated on Nickel, full size, 11*l.* 11*s.*

WILLIAM S. BURTON'S GENERAL FURNISHING IRONMONGERY CATALOGUE may be had gratis, and free by post. It contains upwards of 400 Illustrations of his illimited Stock of Electro and Sheffield Plate, Nickel Silver and Britannia Metal goods, Dish Covers and Hot-water Dishes, Stoves, Fenders, Marble Chimney-pieces, Kitchen Ranges, Lamps, Gaseliers, Tea Urns and Kettles, Tea Trays, Clocks, Table Cutlery, Baths and Toilet Ware, Turnery, Iron and Brass Bedsteads, Bedding, Bedroom Furniture, &c., with Lists of Prices and Plans of the 16 large Show Rooms at 39, Oxford Street, W.; 1, 1A, 2, and 3, Newman Street, W.; and 4, 5, and 6, Perry's Place, W., London.—Established 1820.

PRIZE MEDAL, PARIS EXHIBITION 1855.

METCALFE, BINGLEY, AND CO.'S New Pattern and Penetrating Tooth Brushes, Penetrating unbleached Hair Brushes, Improved Flesh and Clothes Brushes, and genuine Smyrna Sponges; and every description of Brush, Comb, and Perfumery for the Toilet. The Tooth Brushes search thoroughly between the divisions of the Teeth and clean them most effectually—the hairs never come loose. M., B., and Co. are sole makers of the Oatmeal and Camphor and Orris Root Soaps—sold in Tablets (bearing their names and address) at 6*d.* each; of METCALFE'S celebrated Alkaline Tooth Powder, 2*s.* per box; and of the New Bouquets.—Sole Establishment, 130B and 131, Oxford St. 2d and 3d doors west from Holles St., London, W.

WHITE AND SOUND TEETH are indispensable to personal attraction and to health and longevity by the proper mastication of food. ROWLANDS' ODONTO, or Pearl Dentifrice, compounded of oriental ingredients, is of inestimable value in improving and beautifying the teeth, strengthening the gums, and in rendering the breath sweet and pure. It eradicates tartar from the teeth, removes spots of incipient decay, and polishes and preserves the enamel, to which it imparts a pearl-like whiteness. As the most efficient and fragant aromatic purifier of the breath, teeth, and gums ever known, ROWLANDS' Odonto has for a long series of years occupied a distinguished place at the toilets of the sovereigns and the nobility throughout Europe: while the general demand for it at once announces the favour in which it is universally held.—Price, 2*s.* 9*d.* per box. CAUTION.—The words "ROWLANDS' Odonto" are on the Label, and "A. ROWLAND & SONS, 20, Hatton Garden," engraved on the Government stamp affixed on each box.—Sold by them, and by Chemists and Perfumers.

SCIENTIFIC AMUSEMENTS.

T. AND H. DOUBLET, OPTICIANS TO GUY'S AND ST. THOMAS'S HOSPITALS, and the principal Institutions in London.

DOUBLET'S Improved Parlour Microscope, 6s. 6d., 17s., and 24s. Warranted Instruments.

DOUBLETS' Magic and Improved Phantasmagoria Lanterns, with Mechanical and Astronomical Slides, Chromatropes, &c., also Improved Stereoscopes and Slides.

DOUBLETS' Registering Garden Thermometer, 2s.

Thermometers for every purpose.

DOUBLETS' Achromatic Gardeners' and Dissecting Microscope, 60s.

DOUBLETS' TREATISE and ILLUSTRATED CATALOGUE gratis.—T. & H. DOUBLET, Opticians, 7, City Road, Finsbury Square, London, E.C.

THE MOST NOVEL AND UNIQUE FOR CHRISTMAS PRESENTS.

RAMAR'S PATENT PORTABLE ATMOSPHERIC FOUNTAINS, fit for the table, the boudoir, hall, or conservatory. A great variety of these pleasing and scientific objects may be seen at the Depôt, 150, Regent Street, London, W.—A List of Prices and Sizes sent free on application, from One Guinea and upwards.

HOW TO BREW SPLENDID STRONG ALE, at 7d. per Gallon, fine as Sherry, and an aroma equal to Burton Tenpenny. This new Practical Treatise is by a Derbyshire man of 28 years' attendance at the spigot and tun in the best brewery in the county. No brewing utensils required, only those for household use. This is guaranteed to be the best and cheapest mode to produce fine Ale ever made public. The above beautifully printed in large type can be had of the sole publishers for 12 Penny Post stamps. Sent post free to any address. Direct to FISHER & SON, Publishers, Kingsland, London, N.E. Established 1847.

NOTICE.—Just appended to this universally prized Book, a large number of Agricultural Warranted Recipes.

EPPS'S HOMŒOPATHIC COCOA.—Produced, in 1839, specially for the use of Homœopathic Patients, to provide them with a beverage highly nutritious and free from those effects of Coffee and Tea which to many persons are pernicious. Rendered attractive to the taste by its delicious aroma and grateful smoothness, it has become adopted by the public generally for breakfast, luncheon, and supper. It is sold by the principal Grocers at 1s. 6d. per lb., in 1 lb., ½ lb., and ¼ lb. packets. Each packet is labelled, "JAMES EPPS, Homœopathic Chemist, London."

FRY AND SONS' CHOCOLATES AND COCOAS. —Victoria Chocolate, Bon Bons, Soluble Cocoa, &c., in great variety. These delicious beverages are now sold at very moderate prices, and many of them are highly economical.

FRY'S HOMŒOPATHIC COCOA is an article of unexceptionable quality. FRY'S SOLUBLE COCOA, in Hexagon packets, and FRY'S PEARL COCOA, are strongly recommended.

FRY AND SONS, MANUFACTURERS TO THE QUEEN.

Liebig, the celebrated Chemist, asserts that nitrogen is essential to the healthy action of the bile, and the growth, sustenance, and invigoration of the body. No stronger recommendation of Cocoa and Chocolate can therefore be given than the following statement:—Caffeine and Theine each contain only about 29 per cent., whilst Theobromine (or essence of Cocoa) contains upwards of 35 per cent. of nitrogen

BUTTER—GOOD FRESH BUTTER.—TRY DOWMAN'S BUTTER POWDER, by the use of which, and following the simple directions given with each box, Butter comes in less than one-half the time it does when made in the usual mode. It is more abundant, and the quality and colour are greatly improved. The unpleasant taste of Swedes, Turnips, or other strong feed is entirely removed. The Butter will keep in a fresh state firm, and free from all rancidity, for a longer period; it is also more pure, as the cheesy part of the cream is neutralised and washed away by this process. Sold 1s. per Box, by Druggists, Grocers, &c. —London Wholesale Agents: EDWARDS, 67, St. Paul's Churchyard: BARCLAY & SONS, Farringdon Street. Sole Proprietor: G. DOWMAN, Chemist, Southampton. Agents wanted in every town. The public are cautioned against being imposed upon by worthless imitations. This article has been in use 15 years, and the test of experience has been successfully applied.

PERFECT DIGESTION, Strong Nerves, Sound Lungs, and Refreshing Sleep restored by DU BARRY'S delicious health-restoring REVALENTA ARABICA FOOD, which saves 50 times its cost in other remedies, and removes effectually habitual constipation, indigestion (dyspepsia), acidity, flatulence, sleeplessness, torpidity of the liver, diarrhœa, bilious headaches, nervousness, biliousness, general debility, diabetes, cough, asthma, consumption, despondency, spleen. Canisters 1 lb., 2s. 9d.; 2 lb. 4s. 6d.; 5 lb. 11s.; 12 lb., 22s. The 12 lb. free of carriage on receipt of Post-office Order. —BARRY DU BARRY & Co., 77, Regent Street, London, W.; also at 182, Piccadilly, W.; 60, Gracechurch Street, E.C.; 63 and 150, Oxford Street, W.: 4, Cheapside, E.C.

DR. DE JONGH'S
(KNIGHT OF THE ORDER OF LEOPOLD OF BELGIUM)
LIGHT-BROWN COD LIVER OIL,
administered with the greatest success in cases of CONSUMPTION, BRONCHITIS, COUGHS, RHEUMATISM, GOUT, NEURALGIA, GENERAL DEBILITY, DISEASES OF THE SKIN, RICKETS, INFANTILE WASTING, AND ALL SCROFULOUS AFFECTIONS,

Is incomparably superior to every other kind. The recorded investigations of numberless eminent British and Foreign medical practitioners have placed beyond the reach of cavil the fact that no invalid can possibly realise the full benefits of Cod Liver Oil, who does not take Dr. DE JONGH'S celebrated pure Light Brown Oil.

OPINION OF R. M. LAWRANCE, ESQ., M.D.

Physician to H.R.H. the Duke of Saxe Coburg and Gotha. Ophthalmic Surgeon to the Great Northern Hospital, &c. &c.

"I have frequently tasted your Cod Liver Oil, and so impressed am I with its superiority that I invariably prescribe it in preference to any other, feeling assured that I am recommending a genuine article, and not a manufactured compound, in which the efficacy of this invaluable medicine is destroyed."

Sold ONLY in IMPERIAL half pints, 2s. 6d.; pints, 4s. 9d.; quarts, 9s., capsuled, and labelled with Dr. DE JONGH'S stamp and signature, WITHOUT WHICH NONE CAN POSSIBLY BE GENUINE, by respectable Chemists

SOLE CONSIGNEES,
ANSAR, HARFORD, & CO., 77, Strand, London, W.C.

*** A Pamphlet on Cod Liver Oil, with cases of cure, sent Post Free on application to Dr. de Jongh's Consignees.*

HOLLOWAY'S OINTMENT AND PILLS.—CURABLENESS OF DISEASE.—All ailments where organic changes have not arisen are, with few exceptions, under the control of medicine, and consequently curable. The right means and proper time of employing them is the greatest difficulty to be surmounted in opposing illness. Professor HOLLOWAY, by the discovery of his purifying and healing medicaments, has removed this obstacle, and placed within the reach of all remedies capable of preventing, arresting, and curing all bodily maladies, whether arising from internal or external causes, climate, or the thousand things productive of disease. The invalid may be cured, though science pronounce him "incurable."

Now Ready, price 2s. 6d.,

PUNCH'S POCKET-BOOK FOR 1860. With a Coloured Plate by JOHN LEECH, and numerous Wood Engravings by JOHN LEECH and JOHN TENNIEL.

BRADBURY & EVANS, 11, Bouverie Street, E.C.

In a few days will be published, price 12s.,

A NEW VOLUME OF PICTURES OF LIFE AND CHARACTER. By JOHN LEECH. FROM THE COLLECTION OF MR. PUNCH.

*** Volumes I. and II. are always on sale, price 12s. each.

London: BRADBURY & EVANS, 11, Bouverie Street, E.C.

In a few days will be published, in One Volume, crown 8vo, price 7s., uniform with "The Miscellanies," "Vanity Fair," &c.,

A CHEAP AND POPULAR EDITION OF

THE NEWCOMES.

By W. M. THACKERAY.
Author of "Vanity Fair," "Pendennis," &c.

BRADBURY & EVANS, 11, Bouverie Street, Fleet Street, E.C.

SCHOOL BOTANY; OR, THE RUDIMENTS OF BOTANICAL SCIENCE.
By JOHN LINDLEY, Ph.D., F.R.S., &c. &c.
400 Illustrations. 8vo. Price 5s. 6d. half bound.
BRADBURY & EVANS, 11, Bouverie Street, E.C.

HOLCUS SACCHARATUS (Pamphlet).

"A VISIT AND A PLANT." A few copies only are left. Post free, 7d.

JOHN WILLDING CLARKE, Whittlesea, Cambs.

IMPORTANT TO FARMERS.

Now ready, post 4to, bound in cloth, price 2s., free by post, 2s. 4d.

PEAT'S FARMER'S DIARY AND ACCOUNT BOOK, 1860; being a complete and easy method of keeping farm accounts. Dedicated by permission to the Right Hon. the EARL OF CARLISLE.

The publisher begs to call the attention of Agriculturists to this Diary and Account Book. It has been favourably received during the last 6 years by a great many eminent agriculturists in England, Ireland, and Scotland; and high encomiums have been passed upon it by all the leading journals (London and Provincial), advocating the cause of agriculture.

The publisher has pleasure in stating that it has received the high patronage of the Right Hon. the Earl of Carlisle, and will by permission be dedicated to him.

This Diary contains Space for Memoranda; Complete Almanack—Almanack with Breeder's Tables—Memoranda—Cash Account—Farmer's Account Book—Inventory, Cash, Stock, &c., beginning of year—Extent of Farm—Cropping or Produce Table—Outlay and Income during the Year—Inventory, Cash, Stock, &c., ending of year—Summary of Outlay and Income—a great many useful Tables, Stamps, Taxes, Licenses, &c.—Valuable recipes for Farmers—A complete List of Fairs in the United Kingdom, &c.

The publisher would recommend that an early application be made for this Diary, as a great many were disappointed in ordering copies for 1859, after the edition was sold off and too late to print a second edition.

"The great desiderata in farm account-books are simplicity and brevity, leaving nothing for the farmer to do but to enter under printed heads the transactions of each day, when the labour of the day is finished. In looking over the 'Diary' of Mr. Peat, we think he has met these requirements of the farmer in a very satisfactory manner, so that any farmer, by making himself familiar with the various headings, may settle the day's accounts of his farm in a very few minutes. We have no hesitation in recommending it to our readers."—*Mark Lane Express.*

Sold by SIMPKIN, MARSHALL, & Co., London; WHITTAKER & Co., London; M'GLASHAN & GILL, Dublin; JOHN MENZIES, Edinburgh; DAVID PEAT, Thirsk; all Booksellers, and at the Railway Stations.

JUST PUBLISHED,
In 4to, price 24s., Volume XIX. of the
ENCYCLOPÆDIA BRITANNICA, Eighth Edition, Illustrated with numerous Engravings, and containing, amongst other important articles, the following:—

REPTILIA. By JAMES WILSON, Author of the Article "Fisheries."

RETICULATION. By the Hon. and Rev. CHARLES BATHURST, LL.D.

RHETORIC and SIR WALTER SCOTT, Bart. By WILLIAM SPALDING, A.M., late Professor of Logic and Metaphysics in the University of St. Andrews.

RICARDO. By J. R. M'CULLOCH.

RICHELIEU. By GUSTAVE MASSON, one of the Masters of Harrow School.

RIVER. By SIR JOHN ROBINSON, late Professor of Natural Philosophy in the University of Edinburgh.

ROAD-MAKING. By THOMAS YOUNG, M.D., late Corresponding Member of the Royal Institute of France. Revised by CHARLES TOMLINSON.

ROBERTSON (WILLIAM), and ROGERS (SAMUEL By ROBERT CARRUTHERS.

ROBISON (JOHN). By THOMAS YOUNG, M.D., late Corresponding Member of the Royal Institute of France.

ROMANCE. By GEORGE MOIR, late Professor of Rhetoric in the University of Edinburgh. With Continuation by W. EDMONSTOUNE AYTOUN, Professor of Rhetoric and Belles Lettres in the University of Edinburgh.

ROMAN HISTORY AND ROME. By the Rev. CHARLES MERIVALE, B.D., Author of a "History of the Romans under the Empire."

ROOF. By ARTHUR ASHPITAL, F.S.A., Architect.

ROTATION. By THOMAS GALLOWAY, F.R.S., late Secretary to the Royal Astronomical Society.

RUSSIA (Statistics of). By HENRY J. BISHOP, Adjunct Professor of the Ecclesiastical Academy, Alexander Neffski's Monastery, St. Petersburg.

SANITARY SCIENCE. By HENRY LETHEBY, M.B., and EDWIN LANKESTER, M.D., F.R.S., F.L.S.

SARDINIA. By the Author of the article "Italy."

SAVINGS BANKS. By EDWARD EDWARDS, Author of the article "Libraries."

SCANDINAVIAN LITERATURE. By WILLIAM HOWITT, Author of "Visits to Remarkable Places," &c.

SCHILLER. By THOMAS DE QUINCEY.

SCOTLAND. By PATRICK FRASER TYTLER. With Continuation.

SCULPTURE. By RICHARD WESTMACOTT, Professor of Sculpture, R.A., F.R.S.

Edinburgh: ADAM & CHARLES BLACK; London: SIMPKIN, MARSHALL & Co.

NEW CHRISTMAS DRAGON STORY.

On December 1, illustrated by "Phiz," fcap. 8vo, extra cloth, gilt sides and edges, price 3s. 6d.,

ULF THE MINSTREL; An Original Fairy Tale, never before published. By ROBERT B. BROUGH, Editor of "THE WELCOME GUEST."

London: HOULSTON & WRIGHT, 65, Paternoster Row, E.C.

NEW WORK BY SAMUEL LOVER.

This day, with Illustrations, fcap 4to., toned paper, extra cloth, gilt sides and edges, price 10s. 6d.,

METRICAL TALES AND POEMS. By SAMUEL LOVER. "Lover's volume comes forth as a sumptuous Christmas Book, the contents being entirely original."—*Liverpool Albion*, Nov. 14, 1859.

London: HOULSTON & WRIGHT, 65, Paternoster Row, E.C.

CHRISTMAS GIFT.

On December 1, New Volume for 1859—60. Price 2s. 6d. complete in itself, illustrated with numerous Engravings cloth gilt, crown 8vo,

THE FAMILY ECONOMIST. The charm of this book is that it treats of everything connected with Home in a lively and interesting style, interspersed with Original Poetry, Anecdotes, and instructive Tales, by well-known and popular Authors.

London: HOULSTON & WRIGHT, 65, Paternoster Row, E.C.

NEW GIFT BOOK.

Illustrated with 100 Engravings, price 5s.,

THE BOY'S BIRTHDAY BOOK: an entirely Original Collection of Tales, Essays, and Narratives of Adventures, by Mrs. S. C. HALL, WILLIAM HOWITT, AUGUSTUS MAYHEW, THOMAS MILLER, GEORGE AUGUSTUS SALA, WILLIAM BROUGH, and SUTHERLAND EDWARDS.

London: HOULSTON & WRIGHT, 65, Paternoster Row, E.C.

DEDICATED TO DR. LETHEBY, M.B.,
Medical Officer for the City of London.

This day, complete in Two Vols., price 3s. 6d. each, or bound up as One Vol., 7s., cloth gilt, crown 8vo, 800 Engravings,

THE FAMILY DOCTOR: a complete Dictionary of Domestic Medicine and Household Surgery.

Never has a more thoroughly useful book been offered to the public, nor one more profusely illustrated. In every house it will relieve anxiety and save money.

London: HOULSTON & WRIGHT, 65, Paternoster Row, E.C.

On December 1, crown 8vo, price 3s. 6d., cloth gilt, lettered.

THE MASTER-KEY TO PUBLIC OFFICES, and CANDIDATE'S COMPLETE INSTRUCTOR.

Fully showing—

1. What Places to Seek.
2. What Steps to Take.
3. Who are the Patrons.
4. What are the Examinations.
5. The Ages, and Qualifications.
6. The Salaries, Rules, of Promotion, Classification, Hours of Attendance, Prospects and Prizes in each Office.
7. Retiring Pensions, &c.

The whole forming a Comprehensive Hand-Book for all Persons desirous to enter any Department of Her Majesty's Civil Service. By JOHN BOULGER, Esq., Barrister-at-Law; Editor of the *Civil Service Gazette*, &c.

London: HOULSTON & WRIGHT, 65, Paternoster Row, E.C.

On December 1, entirely New Volume, Second Series, price 3s. 6d., illustrated with 350 original Engravings. Also, First and Second Series bound together as One Volume, price 7s. Illustrated with 670 original Engravings. Crown 8vo, pp. 756. Title and Frontispiece by Harvey.

TEN THOUSAND WONDERFUL THINGS. Comprising everything Marvellous and Rare, Odd, Curious and Quaint, Eccentric and Extraordinary in all Ages and Nations. Edited by E. F. KING, M.A.

London: WARD & LOCK, 158, Fleet Street, E.C.

On December 1, with charming Steel Engraving and above 200 Woodcut Illustrations, price 2s. 6d., cloth, gilt, the Christmas Volume of

THE FAMILY FRIEND.—This New Volume will be found a delightful Christmas Companion, unusually full of charming illustrated Tales and Pastime, which cannot fail to enhance the comforts of the fireside, and please every Christmas party.

WARD & LOCK, 158, Fleet Street, E.C., and all Booksellers.

Fifth Thousand, with 400 Original Illustrations, price 3s. 6d.,

THE FAMILY CYCLOPÆDIA: a complete Treasury of Useful Information on all subjects bearing upon the common interests and daily wants of Mankind, comprising

I. THINGS NOT GENERALLY KNOWN.
II. THINGS THAT OUGHT TO BE KNOWN.
III. THINGS WORTH KNOWING.

By the Editors of the "FAMILY FRIEND."

London: WARD & LOCK, 158, Fleet Street, E.C.

Fifth Edition, with 250 Descriptive Engravings, price 3s. 6d.,

THE WIFE'S OWN BOOK OF COOKERY, containing 15,000 Original Recipes, adapted to all incomes.

"This volume furnishes every lady in the land with every sort of information she can require for purchasing, cooking, serving, and carving any meal for any amount of guests from three to thirty."—*Lady's Newspaper.* "Recommended by plain sense and practical worth."—*Illustrated London News.* "We recommend THE WIFE'S OWN BOOK OF COOKERY as the best and cheapest that was ever issued. It should be in every lady's household."—*St. James's Chronicle.*

London: WARD & LOCK, 158, Fleet Street, E.C.

ELEGANT CHRISTMAS GIFT.

New Edition, price 8s. 6d., in richly gilt binding, with Frontispiece and Title printed in gold, and further embellished with nearly 400 exquisite Illustrative Designs and Patterns,

TREASURES IN NEEDLEWORK,
By Mrs. WARREN and Mrs. PULLEN.

"'Treasures in Needlework' will be welcomed at thousands of homes and hearths; and the book, in its beautiful forms of teaching, must elevate the taste of the learner."—*Illustrated London News.*—London: WARD & LOCK, 158, Fleet Street, E.C.

Just ready, fifth edition, crown 8vo, cloth, strongly bound and gilt, 2s. 6d., Frontispiece and Title engraved by Dalziel.

THE PRACTICAL HOUSEWIFE.

"It is a complete Encyclopædia of domestic economy, a book for ready reference in every household."—*Leeds Intelligencer.* "Will well repay its cost."—*Berkshire Chronicle.* "May be safely relied upon."—*Belfast News Letter.* "Will shed comfort and happiness in every dwelling."—*Civil Service Gazette.* "A practical guide to housekeeping, and the completest work of the kind which has ever come under our notice."—*Stirling Journal.* "Is worth its weight in gold."—*Bridgewater Times.* "Every thrifty housekeeper should order it."—*Glasgow Examiner*

London: WARD & LOCK, 158, Fleet Street, E.C.

14th thousand, with 1000 Illustrations, price 3s. 6d.,

FACTS FOR EVERYBODY.—"As a Volume of current facts—facts from the Arts, Sciences and Literature facts from Commerce and Manufactures—facts from Anatomy and Physiology—facts from the Garden and Field—and facts from all sources and for everybody—no work has ever appeared more worthy of universal purchase."—London: WARD & LOCK, 158, Fleet St., E.C.

CHRISTMAS PRESENTS.

The following are Now Ready:

I.

ANCIENT SPANISH BALLADS; HISTORICAL and ROMANTIC. Translated by J. G. LOCKHART. With Coloured Borders, Illuminated Titles, Initial Letters, and numerous Woodcuts. Fourth Edition, 4to, 21s.

II.

GREECE: PICTORIAL, DESCRIPTIVE, and HISTORICAL. By Rev. Dr. WORDSWORTH. With 600 Engravings of the Scenery, Architecture, Costume, and Fine Arts of the Country. Sixth Edition. Royal 8vo, 28s.

III.

THE PILGRIMAGE OF CHILDE HAROLD. By LORD BYRON. A new and beautifully printed Edition. Illustrated with 80 Engravings of the most remarkable Scenes, Edifices, &c., described in the Poem, from original Drawings. Crown 8vo, 21s.

IV.

THE ILLUSTRATED HISTORY OF ARCHITECTURE IN ALL COUNTRIES. By JAMES FERGUSON. Second Edition. With nearly 900 Illustrations. 8vo, 26s.

V.

THE ARABIAN NIGHTS'. Translated from the Arabic. By E. W. LANE, Author of "The Modern Egyptians." New Edition. With 600 Illustrations. 3 vols. 8vo, 42s.

VI.

LIVES OF THE EARLY FLEMISH PAINTERS; with NOTICES of their WORKS. By J. E. CROWE & CAVALCASELLE. With Illustrations. Post 8vo, 12s.

VII.

LIVES OF THE EARLY ITALIAN PAINTERS. By Mrs. JAMESON. A New Edition, entirely revised and greatly enlarged. With Illustrations. Crown 8vo, 12s.

VIII.

THE ITALIAN SCHOOLS OF PAINTING: from the German of KUGLER. Edited by Sir CHARLES EASTLAKE, R.A. Third Edition. With 150 Illustrations. Two Vols. post 8vo, 30s.

IX.

A HANDBOOK FOR YOUNG PAINTERS. By C. R. LESLIE, R.A., with Illustrations. Post 8vo, 10s. 6d.

X.

FABLES OF ÆSOP. A NEW VERSION, CHIEFLY from the ORIGINAL SOURCES. By Rev. THOMAS JAMES, M.A. Thirty-eighth Thousand. With 100 Woodcuts. Post 8vo, 2s. 6d.

XI.

THE STORY OF PUSS IN BOOTS, told by OTTO SPECKTER, in 12 Illustrations. Twelfth Thousand. 16mo, 1s. 6d.

JOHN MURRAY, Albemarle Street, W.

ALBEMARLE STREET, *Dec.*, 1859.

THIS DAY,

THE DUKE OF WELLINGTON'S CIVIL CORRESPONDENCE, WHILE CHIEF SECRETARY FOR IRELAND, from 1807 to 1809. 8vo, 20s.

ON THE ORIGIN OF SPECIES BY MEANS OF NATURAL SELECTION. By CHARLES DARWIN. Post 8vo, 14s.

MODERN SYSTEMS OF FORTIFICATION, examined with reference to the NAVAL, LITTORAL, and INTERNAL DEFENCE OF ENGLAND. By Genl. Sir HOWARD DOUGLAS. Plans. 8vo, 2s. 6d.

BECKET, ARCHBISHOP OF CANTERBURY; A BIOGRAPHY. By Rev. CANON ROBERTSON. Illustrations, post 8vo, 9s.

BAMPTON LECTURES FOR 1859.—THE HISTORICAL EVIDENCES OF THE TRUTH OF THE SCRIPTURE RECORDS STATED ANEW, with Special Reference to the Doubts and Discoveries of Modern Times. By Rev. GEO. RAWLINSON. 8vo, 14s.

THOUGHTS ON GOVERNMENT AND LEGISLATION. By Lord WROTTESLEY, F.R.S. Post 8vo, 7s. 6d.

SCIENCE IN THEOLOGY. Sermons Preached before the University of Oxford. By Rev. ADAM S. FARRAR, Fellow of Queen's College. 8vo, 9s.

A MANUAL OF THE ENGLISH CONSTITUTION; a REVIEW of its RISE, GROWTH, and PRESENT STATE. By DAVID ROWLAND. Post 8vo, 10s. 6d.

MEMOIRS OF THE EARLY ITALIAN PAINTERS. By Mrs. JAMESON. New Edition, revised throughout by the Author, with a New Introduction, and much Additional Matter. Woodcuts. Post 8vo, 12s. (Uniform with "Kugler's Handbooks.")

SELF HELP. With Illustrations of Character and Conduct. By SAMUEL SMILES, Author of "Life of George Stephenson." Post 8vo, 6s.

THE ARCHÆOLOGY OF BERKSHIRE; an Address delivered by the Earl of CARNARVON. Post 8vo, 1s.

MANSEL'S BAMPTON LECTURES.—THE LIMITS OF RELIGIOUS THOUGHT EXAMINED. By Rev. H. L. MANSEL. Fourth and Cheaper Edition, with an entirely New Preface. Post 8vo, 7s. 6d.

A POPULAR ACCOUNT OF THE LIFE OF SIR THOS. FOWELL BUXTON. By his SON. Portrait. Post 8vo, 2s. (Murray's Railway Reading.)

LORD BYRON'S COMPLETE WORKS, with Notes and Illustrations by JEFFREY, HEBER, WILSON, MOORE, GIFFORD, LOCKHART &c. A New Edition. With Portrait and Engravings. Royal 8vo, 9s., or cloth, 10s. 6d.

BOSWELL'S LIFE OF JOHNSON. Edited by Mr. CROKER. With Contributions by Lord STOWELL, Sir W. SCOTT, DISRAELI, MACKINTOSH, &c. A New Edition. With Portraits. Royal 8vo, 10s., or cloth 12s.

THE ART OF TRAVEL; or, HINTS on the SHIFTS and CONTRIVANCES AVAILABLE in WILD COUNTRIES. By FRANCIS GALTON. Third Edition, revised and greatly enlarged. With 150 Woodcuts. Post 8vo, 7s. 6d.

CHILDE HAROLD. By Lord BYRON. New Edition. Portrait and Vignette Titles. Fcap. 8vo, price 1s. (Murray's Railway Reading.)

CHILDE HAROLD. By Lord BYRON. New Edition, Portrait. Post 8vo, price 6d.

NEXT WEEK.

PICTURES OF THE CHINESE. Drawn by Themselves. With Descriptions, by Rev. R. H. COBBOLD, M.A., late Archdeacon of Ningpo. Crown 8vo.

EOTHEN; or, TRACES of TRAVEL BROUGHT HOME from the EAST. A New Edition. Post 8vo, 7s. 6d.

THE STORY OF NEW ZEALAND; PAST and PRESENT—SAVAGE and CIVILISED. By ARTHUR S. THOMSON, M.D., 58th Regiment. Map and Illustrations. Two Vols., post 8vo, 24s.

JOHN MURRAY, Albemarle Street, W.

"The Story of our Lives from Year to Year."—SHAKESPEARE.

ALL THE YEAR ROUND,

CONDUCTED BY CHARLES DICKENS,

Price 2d., contains a New Serial Story, called

THE WOMAN IN WHITE.

BY WILKIE COLLINS.

On Tuesday, December 13, will be published, price 4d.,

THE HAUNTED HOUSE,

FORMING

The Christmas Double Number of "All the Year Round."

11, WELLINGTON STREET NORTH, STRAND, W.C.; & CHAPMAN AND HALL, 193, PICCADILLY, W

Nearly ready, One Volume, 8vo, 7s. 6d.,

HARMONIES OF POLITICAL ECONOMY. By FREDERIC BASTIAT. Translated from the French, with a Notice of his Life and Writings. By PATRICK JAMES STIRLING, F.R.S.E., Author of "The Philosophy of Trade," "The Gold Discoveries and their probable Consequences," &c.

JOHN MURRAY, Albemarle Street, W.

PROFESSOR LINDLEY'S INTRODUCTION TO BOTANY, 4th Edition, with Corrections and Additions, now ready, in 2 vols. 8vo, with Six Copper Plates and numerous Wood Engravings. Price 24s. cloth.

London: LONGMAN, BROWN, & Co.

Now ready, in post 8vo, with Coloured Map, price 12s.,

SHOOTING AND FISHING IN LOWER BRITTANY: A complete and Practical Guide to Sportsmen. By JOHN KEMP, Esq., Author of "Sketches from the South of France," &c.

London: LONGMAN, GREEN, LONGMAN, & ROBERTS.

CUTHILL'S PAMPHLET on the Potato, Strawberry, Cucumber, Seakale, and 20 more things, 2s.; Market Gardening Round London, 1s. 6d.; on the Vine, 1s.; Thirty Years' Practice of Mushroom Growing: an Easy Plan for Killing Woodlice, 1s. 1d.; "Vegetable Meeting Paper" gratis.

JAMES CUTHILL, Camberwell, London, S.

Just published, price 13s. 6d., the VOLUME of

THE FLORIST, FRUITIST, AND GARDEN MISCELLANY for 1859, containing 13 highly coloured plates by ANDREWS), of favourite florist and other flowers, and excellent practical articles on all subjects connected with Horticulture, Floriculture, and general Gardening. Conducted by CHARLES TURNER, F.H.S. and JOHN SPENCER, F.H.S. For Christmas presents or New Year's gifts nothing could be more suitable. On the 1st of January next will appear the first Number for 1860, price 1s., containing a beautiful plate of three Pompone Chrysanthemums. Subscriptions for the year 12s., by Post-Office Order payable to JOHN SPENCER on Charing Cross. Back Volumes can be had on application.—Florist Office, 28, Henrietta Street, Covent Garden, London, W.C., and all Booksellers.

GLENNY'S GARDENERS' GAZETTE.—A Monthly Journal, 16 pp. imperial 8vo, price 3d., post free, 4d., contains useful information for all interested in the Garden.

JAMES ALLEN, Warwick Lane, E. C.; KENNETT, York Street, Covent Garden, W.C.; and at all the railway stations and respectable booksellers.

Advertisements should be sent to the Printers, YATES & ALEXANDER, Horse-shoe Court, Ludgate Hill, E.C.

In January will be published,

THE YEAR-BOOK OF AGRICULTURAL FACTS. Edited by ROBERT SCOTT BURN. To be published Annually. In foolscap 8vo, closely printed, price 5s.

WILLIAM BLACKWOOD & SONS, Edinburgh and London.

Just published, in crown 8vo, price 6s.,

HANDBOOK OF GEOLOGICAL TERMS AND GEOLOGY. By DAVID PAGE, F.G.S.

By the same author, third edition, price 1s. 6d.,

I.

INTRODUCTORY TEXT-BOOK OF GEOLOGY, With Engravings on Wood, and Glossarial Index.

II.

Second Edition, revised and enlarged, price 6s.,

ADVANCED TEXT-BOOK OF GEOLOGY, Descriptive and Industrial.

With Engravings, and Glossary of Scientific Terms.

WILLIAM BLACKWOOD & SONS, Edinburgh and London.

Price 1s. 6d., free by post, 1s. 7d.

LABELS FOR THE HERBARIUM, CONSISTING OF THE NAMES OF THE CLASSES, ALLIANCES, ORDERS, AND SUB-ORDERS, OF PROFESSOR LINDLEY'S "VEGETABLE KINGDOM." So printed in large type, that they can be cut out and pasted into THE HERBARIUM.

J. MATTHEWS, 5, Upper Wellington Street, Covent Garden, London, W.C.

Third Edition, considerably enlarged, price 5s. 6d., free by post, 5s. 10d.,

RURAL CHEMISTRY. By EDWARD SOLLY, F.R.S., F.L.S., F.G.S. Honorary Member of the Royal Agricultural Society of England, Professor of Chemistry to the Horticultural Society of London, Lecturer on Chemistry in the Hon. E. I. Co.'s Military Seminary at Addiscombe, &c., &c.

J. MATTHEWS, 5, Upper Wellington St., Covent Garden, W.C

Now ready, price 2s. 6d.,

FOLIA ORCHIDACEA, Part IX. Containing the conclusion of Pleurothallis.

Parts I. to VIII., price 2s. 6d. each, may still be had.

JAMES MATTHEWS, 5, Upper Wellington St., Covent Garden. London, W.C.

TO TUTORS, SURGEONS, THE HEADS OF SCHOOLS, &c.—The above can be supplied with Collections for practically Illustrating the Natural Orders, also Physiological and Medical Botany, by FREDK. Y. BROCAS, who has been eight years in the medical profession, and has attended the Lectures of Professors Lindley, Lankester, Henfrey, and Forbes, and the Botanic Gardens in the vicinity of the Metropolis. Collections named, arranged, and mounted, and desiderata supplied by FREDK. Y. BROCAS, Botanist, 85, St. Martin's Lane, London, W.C.

BATH NURSERY AND SEED ESTABLISHMENT.

MRS. GRIFFIN, widow of the late JAMES GRIFFIN, finding the business too extensive for her management, would be glad to dispose of it on liberal terms.—Further particulars can be obtained at the Nursery, Weston Road; or 2, New Bond Street, Bath.

NURSERY GROUND.

TO BE LET, WHITTINGTON NURSERY, Upper Holloway, to be entered upon immediately.—For particulars, apply to J. F. MARSON, Esq., Small Pox Hospital, or to Mr. Bunney, Nurseryman, Stratford, Essex, E.

HUCCLECOTE GARDENS, 2½ MILES FROM GLOUCESTER.

TO BE LET, with immediate possession, the above capital walled-in GARDENS, containing about 4 acres with House, Farm-yards, Buildings, Orchard, and Land adjoining, containing in the whole about 16 acres, with Greenhouses, Propagating houses, Vineries, Pits, &c. Extent of glass 5770 feet.—For particulars apply to W. KNOWLES, Auctioneer, St. Mary's Square, Gloucester.

TO GARDENERS, CAPITALISTS, ETC.

TO BE DISPOSED OF, A SUBURBAN NURSERY, in a first-rate situation, of between 4 and 5 acres, with numerous Greenhouses and Pits, and well stocked with Saleable Plants.—For particulars, apply to Mr. A. CHANDLER, Horticultural Agent and Valuer, 28, Priory Road, Wandsworth Road, S.

TO BE DISPOSED OF, a first-class long established NURSERY and SEED BUSINESS in one of the Midland Counties commanding a very extensive trade; the Stock is young and healthy. The Nurseries extend over 25 Acres, are situated in a good locality, and near to a Railway Station.—For particulars apply to Messrs. NOBLE, COOPER, & BOLTON, Seed Merchants, 152, Fleet Street, London, E.C.

Sales by Auction.

EXTRA POULTRY SALE.

MR. J. C. STEVENS will Sell by Auction at his Great Room, 38, King Street, Covent Garden, W.C., on TUESDAY, December 20, at 12 o'Clock precisely, a FIRST CLASS COLLECTION OF POULTRY, many of them Prize Birds, from the Yards of Mrs. Fookes, Mrs. Pattison, Mrs. L. C. Stow, Messrs. Leno, Ray, Harding, Whitwell, Bridges, Rider, and other well-known fanciers, consisting of Cochins, Dorkings, Spanish, Bantams, Polands, Malays, Game, Brahmas, Game Bantams, Hamburghs, Aylesbury Ducks, 16 Chinchilla Rabbits from Mr. Vipans; a few good Pigeons from E. S. Stephenson, Esq., and E. A. Lingard, Esq., and others.—May be viewed on the morning of Sale, and Catalogues had; if for the country, by inclosing two stamps.

NEW CHINESE RHODODENDRON, NEW JAPAN TAXUS, AND FINE SPECIMENS OF CEDRUS DEODORA AND C. ATLANTICA, AND OTHER CHOICE CONIFERÆ.

MR. J. C. STEVENS has received instructions from Mr. Glendinning, of Chiswick Nursery, to Sell by Auction at his Great Room, 38, King Street, Covent Garden, W.C., on SATURDAY, Dec. 10, at Half-past 12 precisely, without reserve, the ENTIRE STOCK of RHODODENDRON FORTUNI AND TAXUS CUSPIDATA, in consequence of their not being disposed of by private contract, in lots suitable to private buyers and the Trade, together with some valuable Coniferous plants. The Rhododendron and Taxus are perfectly hardy and quite new to European gardens.—On view the morning of Sale, and Catalogues had; if for the country by enclosing two stamps.

HIGHLY IMPORTANT SALE OF CONIFEROUS SEEDS JUST IMPORTED FROM CALIFORNIA, FRASER'S RIVER, SIERRA NEVADA, BRITISH COLUMBIA, &c.

MR. J. C. STEVENS will Sell by Auction at his Great Room, 38, King Street, Covent Garden, W.C., on WEDNESDAY, December 21, at Half-past 12 o'Clock precisely, a valuable and important consignment of PINE CONES and SEEDS in excellent condition, including Abies Menziesii, Williamsonii and Douglasii, Cupressus Lawsoniana, Pinus Lambertiana, ponderosa Sabiniana; above ½ lb. of clean seed of Wellingtonia gigantea; Picea grandis, Libocedrus decurrens or Thuja Craigiana, Pinus species-Benthamiana (?), Quercus Hindsii (?), Quercus species, Cones with Seeds for cabinet specimens of the above, &c.—May be viewed on the morning of Sale; and Catalogues had; if for the country, by inclosing two stamps.

TO GENTLENEN, NURSERYMEN, FLORISTS AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will Sell by Auction at the Mart on FRIDAY, Dec. 16, at 12 o'clock, a First Class Collection of DUTCH BULBS: also a fine assortment of 500 Standard and Dwarf ROSES with handsome straight stems and fine bushy heads; AMERICAN PLANTS, &c.; a selected assortment of FRUIT TREES, &c.—May be viewed the morning of sale, Catalogues may be had at the Mart, and of the Auctioneer's American Nursery, Leytonstone, Essex, N.E.

VALUABLE LIBRARY OF THE LATE JAMES HUDSON ESQ., SECRETARY TO THE ROYAL AGRICULTURAL SOCIETY.

MESSRS. PUTTICK AND SIMPSON, Auctioneers of Literary Property, will Sell by Auction at their new and very spacious premises, 47, Leicester Square, W.C. (formerly the Western Literary Institution), about the middle of JANUARY, the valuable and extensive Library of the late JAMES HUDSON, Esq., many in fine bindings, comprising the works of the best English and Foreign authors in most branches of literature; fine pictorial works; Musée Français and Musée Royal, 6 vols.; Galérie du Palais Pitti, 4 vols.; Galérie du Palais Royal, 4 vols.; Musée Napoléon, 10 vols.; the Portrait Galleries of Knight, Lodge, and others; scientific works, particularly in relation to Chemistry and Agriculture, in various languages, scientific journals, &c.—Catalogues are preparing, and will be sent when ready, on receipt of two stamps.

Now Ready, 160 pages Crown Octavo,

THORLEY'S FARMERS' ALMANACK.

THE MOST COMPREHENSIVE & COMPLETE WORK OF THE KIND EVER PUBLISHED.

FREE BY POST FOR SIX STAMPS, UPON APPLICATION TO

JOSEPH THORLEY, Almanack Department, 77, Newgate Street, London, E.C.

INDEX.

	PAGE
Adulteration of Seeds	97
,, Barley-meal	98
,, Rape Cake	98
,, Linseed Cake	98
Agricultural Societies—	
England	102
Scotland	102
Ireland	102
Bath	102
Yorkshire	102
Smithfield Club	102
Birmingham	102
Agricul. Railway Traffic	27
Alpha & Omega of Agricul.	72
Artificial Manures	59
Arts and Manufactures	59
Bad Farming, the Rule	67
Bean Straw	20
Bedrooms, Size of	63
Brewers' Grains	63
Butcher Meat, Improved	70
Cabinet Ministers	103
Calendar (Monthly)	
Cattle Cookery	86
,, Condiment	99
Chemistry of Cattle Food	90
,, By Dr. Anderson	95
Chemistry, By Dr. Voelcker	93
Classification of Feeding Principles	51
Condiment for Seasoning Food for Live Stock	99
Corn Food	27
,, Refuse 21, 27, 33,	99
Cottage Poultry Yards	51
Country Occupations	50
Cow Houses, &c.	43
Cows, Management of, in Towns	43
Dairy Produce Improved	70
Dumpling, A Devonshire	27
Extraordinary Cow	63
Experiments, Cattle Food	100
Fairs, England and Wales	129
,, Scotland	140
,, Ireland	145
Farm, Two Acre	51
Farming Prairie, Illinois	56
,, Stock	39
,, Dairy	38
Farms, American 20,	67
Farmers' Memoranda (Monthly)	
Flax Culture	41
Forcing System of Feeding Stock 86,	90
Feeding Live Stock—	
Horses (Monthly)	
Oxen ,,	
Sheep ,,	
Pigs and Poultry ,,	
Deer and Dogs ,,	
French Poultry	33
Future of the Steam Engine	74
Grass Land Management	20
Harvest, Hay	35
,, Corn	47
,, Roots	59
Homestead	77
Horses, Management of, in Town	42
,, Management (Monthly)	
,, the Food of	44
,, Stable	39
,, Vitality of	39
,, Experiments in Feeding	
,, Old	100
,, Young	100
,, per Sea	101
Hounds, Fox	57
House Feeding	56
Italian Rye-grass Culture, 32,	57
,, ,, Soiling	33
,, ,, Cookery	35
Labourers' Cottages, English	85
,, French	21
,, Healthy	45
,, Size of Bedrooms	63
Law, Courts of	106
Linseed Cake	94
Liquid Manure Farms	35
Lois-Weedon Culture	67
Machinery, Cattle Food	77
,, Mowing	79
,, Reaping	79
,, Threshing	76
Manufacture of Cattle Food	100
,, Condiment	100
Management	50
Mechi's Rule for Sowing	62
Memoranda, Concluding	100
Merino Flock, A, U.S.	33
Mixed Feed	21
Ox, Management (Monthly)	
,, Experiments in Feeding	101
,, ,, Cows	101
,, ,, Calves	101
Parliament, Peers	107
Parliament, Peers, Officers	113
,, Address	117
,, of the United Kingdom	114
,, Scotch and Irish	117
,, Titles of Courtesy	115
,, Summary	128
,, Commons	118
,, Ministry	102
,, Summary, Commons	128
,, Analysis	128
Public Offices	104
Pigs and Poultry (Monthly)	
Pig, The	57
Pisciculture, English	26
,, French	27
Potato Culture	73
Poultry	11
Railway, Crosskill's	82
,, Boydell's	81
Royal Family	103
Seed, Change of	62
,, John Cheap Bargains	63
,, Wheat, Preparation of	62
,, ,, Pickling	62
Sewage Manure	35
Sheep Dipping	44
,, Management (Monthly)	
Shepherd, The Good	61
Singular Shot	45
Steam Engine, Fixed	75
,, Portable	74
Steam Culture, Importance	80
,, Boydell's System	81
,, Halkett's System	81
,, Romaine's System	82
,, Fowler's System	83
,, Howard & Smith's System	83
,, Comparative Merits of Different Systems	84
Steam Cartage on Common Roads	84
,, Boydell's System	84
,, Bray's System	85
Steam and Manual Labour	32
Stock Taking	63
Straw as Food for Cattle	20
Successful Settler, A	45
Taxes, Assessed, &c. 155,	156
Veterinary Science, its Importance	86
Weights and Measures, 152,	153
Winona	21
Wonderful Eggs	21
Wool	38

"This is in reality a farmer's book, not merely an Almanack—in which respect it is perfect—but a handbook and *vade mecum* of everything useful and informational that can in any way be serviceable to the Agriculturist. We question if a more valuable and strictly practical little work was ever offered to the Farmer than will be found in THORLEY's Cheap Almanack for 1860."—*Era, Oct.* 9, 1859.

"THORLEY's Farmers' Almanack for 1860 is exactly what its name imports, a 'Farmers' Almanack.' It will be hard to get another containing such general information on stock and agriculture."—*Bristol Times, and Felix Farley's Bristol Journal, Oct.* 15, 1859.

THORLEY'S FOOD FOR CATTLE.

IN acknowledging the increasing demand for THORLEY's Food for Cattle, Mr. THORLEY in the warmest terms begs leave to thank his customers for their kind patronage, and to assure them that every endeavour on his part will be exercised to merit a continuation of their favours. The experimental evidence which is daily being received, showing the efficacy and economy of this now justly celebrated Cattle Food Condiment, is very congratulating and encouraging, especially as it is voluntarily given along with orders for fresh supplies; for practical testimony thus given must always be received as satisfactory evidence in favour of the article—a justification, as it were, for continuing its use. The experience thus being acquired is fast establishing the condimental value of THORLEY's Food for Cattle in every town and province of the kingdom; and the more that breeders and feeders of live stock examine the subject practically, the more thoroughly are its merits appreciated by them.

"Practice with Science" is the golden motto of the Royal Agricultural Society of England, and this is just the kind of testimony now being received in favour of THORLEY's Food for Cattle; for agriculturists and other owners of stock are, by the successful use of this condiment, beginning to experience that the value of food depends upon how it is digested. Chemically, its constituent elements may be of the highest value; but if imperfectly digested, what is its value to the animal which eats it? The testimony just referred to proves that hay and straw properly seasoned with this condiment is more nourishing than unseasoned food, although the latter may contain a much greater amount of alimentary matter; consequently the practical question arises, how many animals, including horses, oxen, sheep, pigs, poultry, and dogs, are there, whose food is imperfectly digested, because unseasoned? whose digestive and other functions are deranged by such unwholesome food—functions which might soon be restored to a healthy state by properly seasoned food? This is the grand problem, the practical solution of which is giving rise to an increased consumption of THORLEY's Food for cattle; and Mr. THORLEY has much pleasure in inviting special attention to it, hoping that practical men will solve this important question practically, by giving his condiment a fair trial.

Mr. THORLEY also begs leave to draw attention to the harmony which exists amongst the different examples above referred to, each corroborating the other, thus proving the soundness of his practice of seasoning the food of cattle.

Mr. JAMES BREBNER, Steward to H.R.H. the Prince Consort, states: "Through using it on my saddle-horse I have been enabled to reduce his ordinary food half a truss of hay and half a bushel of Oats per week, and can testify that he has gained very much in condition."

Mr. JAMES FISHER, Farm Manager to her Grace the Duchess of Athole, says: "I have found your Food for Cattle to answer very well."

Sir DAVID CUNYNGHAME, Bart., writes: "The cows thrive and do well upon it, and the pigs have improved already wonderfully."

Sir JOHN RIBTON, Bart., expresses his approbation thus: "Relating to Thorley's Food for Cattle, I have fed with it for the last 4 months, and never fed with more nourishing food for cattle in general."

Sir JOHN ANDREW CATHCART, Bart., states: "I have used Thorley's Food for Cattle for 3 months, both for horses and cattle, and find that it has an extraordinary effect in producing condition, and keeping them in a healthy state."

Sir JOHN HESKETH LETHBRIDGE, Bart., writes: My old groom on speaking to him this morning says my horses never did better, since they have been fed upon it."

And since his Almanack for 1860 was in print Mr. THORLEY has received a note from Ormesby, in which Sir EDMUND LACON draws attention to the fact that Thorley's Food for Cattle was of great service to a pony which was very difficult to get into condition.

Again, Colonel WHITE says: "I have tried your Food with horses and pigs; in both cases I consider they have considerably improved in condition."

Colonel RAMSAY writes: "I have used Thorley's Food both for horses, cattle, and swine, in all instances with great success, and can safely recommend the use of it both for economy and fattening qualities."

Lieut.-Colonel MACDONALD states, in 1857: "I would be unjust if I withheld my testimony to its beneficial effects, which are most apparent in the improved condition of the horses." And in 1859: "As an instance of its efficacy I may mention that having had occasion during the autumn (1858) to hire a horse for three months, his owner said to my servant when he was returned, 'He is so much improved that I would not have known him.'"

GODFREY MEYNELL, Esq., in writing from Langley, says: "I shall be glad if you will forward to me at the above address another cask of your Cattle Food, with measure, as a tenant of mine is anxious to make a trial of it. From what I have seen of its effect upon two milch cows of my own that slipped their calves some time since, I am inclined to speak favourably of your Food."

Captain the Hon. HUGH GOUGH writes: "I have tried Thorley's Food for Cattle, and gave two feeds per day to an aged horse, which I found it impossible to get in condition otherwise, and in six weeks he became very fat, and entirely beyond anything I could conceive."

ALEXANDER HENDERSON, Esq., the younger, of Stemster, Caithness, says: "I have used Thorley's Food with great advantage, in one case where a half-bred mare would not feed."

"COURTENAY VERNON, Esq., would feel obliged to Mr. Thorley if, on the 15th of November, he would forward him three casks, to be continued monthly from that date until further notice, Mr. Vernon having found the Food so useful and beneficial for all kinds of stock."

Captain LOCKYER, R.N., adds: "I have found it most excellent and economical."

W. WINTERTON, Esq., says: "The heifer that I gave some of your Food to has taken three prizes."

J. M. BROWNE, Esq., concludes thus: "I beg to inform you that I have three hunters now in better condition than I ever had in any previous season at this time, which I attribute to your Food."

S. H. WATSON, Esq., states that, "By using it I have been able to dispense with all horse medicines and clipping, my horses being now beautifully coated."

EDWARD M'GOWAN, Esq., says: "It gives to horses and pigs a bright fresh skin, and a much improved appearance; working horses it keeps in excellent condition and fresh; in feeding bullocks it is manifestly of great utility, developing fat in much less time than in feeding on Turnip and cake alone."

WILLIAM PATRICKSON, Esq., writes: "I find my horses thrive well on it, and like it much."

JOHN HODGE, Esq., states: "It strengthens and fattens better than anything which I have used hitherto."

CHARLES INGRAM, Esq., says: "I have used it for a considerable time, and especially for one of my horses, which is of such a nervous and irritable temperament that he used to get frequent attacks of spasmodic colic or fret; since I have given him this Food (three months), he has never suffered from it. I believe, with Professor Apjohn, it operates by sharpening the appetite, and promotes healthy digestion and rapid assimilation, rendering it of great advantage to the owners of cattle; and I give Mr. Thorley great credit for having effected so desirable an object, and so great a boon to the public."

The Rev. C. B. ELLIS, Tobago, West Indies, says: "One horse particularly—a cribber—has improved much from its use; and from its effects upon him and others I am convinced it has an admirable tonic in its composition, and is well adapted for improving the condition and appearance of all horses fed with it. I have ordered more to come in the next year's supplies, being satisfied as to its economy."

B. HAIGH ALLEN, Esq., has used it with his yearling calves, pigs, and horses; in all cases it has answered.

W. H. GOGARTY, Esq., says: "I have used Thorley's Food for Cattle, and find it very superior in keeping horses in good condition, and fattening all kinds of cattle."

R. CLOAK, Esq., says: "Before I had this food introduced to my notice I was allowing my horses half a bushel of Oats daily I now reduce the Oats 1 gallon, and substitute one packet of the Food, and my horses are, most certainly, in better condition than previously. Not satisfied with this, I determined to give it to my pigs and poultry, and after several severe comparisons between those fed with it and otherwise, I am most decidedly of opinion that it is a most excellent food."

WM. LINDSEY, Esq., says: "I have used your Food for Cattle some two years upon horses, cows, and pigs, against other kinds of food, and find it to be far superior, at a less cost. I think well to state that, during the time I gave it to pigs I had a poor dog who got so fat by eating out of the pigs' food, that he really astonished all who saw him. I have, at various times, discontinued the Food, and find that the dog is reduced to his former state. My fowls are equally as fond of the Food as the dog, and the result is the same."

J. NEWBERRY, Esq., says: "On one occasion I gave it to a cow after it had been under the farrier for a length of time without any effect. I gave your Food, as per your instructions, and found the effect was astonishing. I also tried it upon a remarkably poor horse, after many other means had failed. I am satisfied he gained 10*l.* in value in the course of six or eight weeks from the use of your Food."

Sold in cases containing 448 packages, each package one feed, at the cost of 56*s.* per case; also in casks, containing 448 feeds, with measure included, price 50*s.* per cask. Carriage paid to any Railway Station in the United Kingdom. None are genuine without the signature being affixed to each package or feed—

JOSEPH THORLEY, Inventor and Sole Proprietor.—Offices: 77, Newgate Street, London, E.C.

Post-office Orders must be made payable to JOSEPH THORLEY, General Post Office, St. Martin's-le-Grand, E.C.

☞ *The public are cautioned against being imposed upon by worthless imitations.*

Printed by WILLIAM BRADBURY, of 13, Upper Woburn Place, and FREDERICK MULLETT EVANS, of No. 20, Queen's Road, West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and published by them at the Office, No. 5, Upper Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—SATURDAY, December 10, 1859.

THE GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 51.—1859.] SATURDAY, DECEMBER 17. {Price Fivepence. Stamped Edition, 6d.

INDEX.

Agriculture, Irish	1025 b	Lambs, loss of	1021 c
Agricultural forces	1021 b	Larch decay	1015 b
— societies	1025 b	Leeks, large	1016 c
— Soc. of England	1025 c	Lois-Weedon experience	1023 c
— Benevolent College	1026 b	Macintosh's (Mr.) nursery	1019 b
— contrasts	1027 a	Mangel	1024 c—1025 a
Australian statistics	1018 b	Mushroom, monstrous	1018 b
Books noticed	1018 c	Pastures, Ergot in	1022 c
Calanthe Veitchii	1016 b	Peas, list of	1016 c
Cattle shed	1021 b	Plants, new	1019 c
College, Agri. Benevolent	1026 b	— sale of	1019 c
Cow, extraordinary	1026 c	— winter	1019 c
Crops, relative value of	1022 a	Rabbits v. trees	1018 b
Datura	1017 c	Rats	1018 c
Dioscorea	1018 b	Rhododendron Fortuni	1019 c
Ergot in pastures	1022 c	Smithfield Club	1021 b
Farm, American	1026 b	Solanums, qualities of	1016 a
Farmers' Club, Central	1021 c	— capsicastrum	1016 a
Forests, N. American	1019 c	— — culture of	1019 b
Gardener and steward	1025 a	Sparrows and nests	1016 c
Grass, Fungus	1021 c	Tea, Holly	1017 c
Holly Tea	1017 c	Tortworth Court, show at	1021 b
Horse-powers, American	1022 c	Trade lists	1019 b
Hort. Soc. new garden	1016 b	— memoranda	1017 c
Labourers' show	1021 b	Windmills for water raising	1018 b

ROYAL BOTANIC SOCIETY, Regent's Park.—EXHIBITIONS of PLANTS, FLOWERS, and FRUIT for 1860.

SPRING EXHIBITIONS, to which Fellows of the Society have the privilege of admitting two Friends each:—WEDNESDAYS—March 21, April 4 and 25.

GENERAL EXHIBITIONS, admission by Tickets, 5s. each:—WEDNESDAYS—May 30, June 20, July 4, at 2 o'clock.

NEW HORTICULTURAL GARDENS at KENSINGTON GORE.—The COUNCIL of the HORTICULTURAL SOCIETY give notice that the Fellows of the Society and their friends having already offered the Council more money on Debenture Loan than the Council anticipate will be required, the Debenture list has been closed.—The list for donations and Life Memberships is still open.

WANTED, a quantity of extra large handsome LIME TREES, from 25 to 30 feet in height. Any gentleman having in his plantations or grounds a surplus quantity of large Lime Trees, which he may be desirous of thinning and disposing of, may find a purchaser for the same by applying to James Veitch, Jun., Exotic Nursery, King's Road, Chelsea, S.W.

To insure the safe removal of such trees, J. Veitch, Jun., will require to be permitted to have them cut round and prepared during the winter. Their removal to be effected in the autumn of 1860.—Chelsea, Dec. 17.

JAPAN LILIES, CHINESE PÆONIES, GLADIOLI, HYACINTHS, &c.—Collection "L," sent carriage paid for 21s.—12 splendid named Hyacinths, 12 Border Hyacinths, 6 Polyanthus Narcissus, 25 Border Narcissus, 2 Japan Lilies, 2 Chinese Pæonies, 6 Gladioli, 12 beautiful Iris, 50 Double Tulips, 25 Choice Single Tulips, 150 Crocus, 6 Double Jonquils, and 50 Ranunculus.

Butler & McCulloch, Covent Garden Market, W.C.

NEW ROSE CATALOGUE.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

WM. WOOD and SON will be happy to forward Copies of their NEW CATALOGUE gratis and post free on application.

ROSE CATALOGUE.

JOHN CRANSTON begs respectfully to inform his patrons that he will be happy to forward his New ROSE CATALOGUE for the present season, post free, upon application. It will be found replete with the most desirable flowers (new and old) in every class, and the descriptions are copious and faithful.—Nurseries, King's Acre, near Hereford.

ROSES.

E. P. FRANCIS'S new and extensive CATALOGUE of ROSES on the Manetti Stock is now ready for delivery, and will be forwarded gratis on application.

Rose Nurseries, Hertford.

STANDARD ROSES.—All the leading kinds in cultivation at prices scarcely ever offered before.

Charles Noble, Bagshot, Surrey.

THE NEW DESCARTES ROSE STOCK.—This first-rate stock for Perpetuals 3s. per 2 dozen; 7s. 6d. per 100; 250 for ; 500 for 28s.; or 1000 for 50s. Also fine EVERGREEN and NURSERY STOCK reasonable, at J. J. Foster's, Edgware, N.W.

RHODODENDRONS "of every hue," Scarlet, White, Rose, Crimson, and every intermediate shade, nearly all sizes and at all prices, can be supplied by Charles Noble, Bagshot Surrey.

STANDARD RHODODENDRONS.—Hundreds of handsome specimens of all the choicest varieties, varying in colour from deepest crimson to rose and pure white, with symmetrical heads and straight stems, from 2 to 5 feet in height, can be supplied by

John Waterer, American Nursery, Bagshot, Surrey.

CHOICE RHODODENDRONS, AZALEAS, and CONIFEROUS PLANTS.—A CATALOGUE of GEORGE BAKER'S unrivalled Stock of the above may be had on application.—The American Nursery, Bagshot, Surrey.

SUPERB SPECIMEN SCARLET RHODODENDRONS and others, from 3 to 5 feet in height, and 3 to 4 feet in diameter, some of which are well furnished with bloom buds, from 3s. 6d. to 10s. 6d. each, large and very bushy, well adapted for immediate effect.

William Wood & Son, Woodlands Nursery, Maresfield, near Uckfield, Sussex.

TO THE SEED TRADE.

JAMES FAIRHEAD and SON, Seed Growers and Merchants, Lewisham, Kent, S.E., and 7, Borough Market, London, S.E., beg to acquaint their friends and the trade generally, that their WHOLESALE CATALOGUES are now ready, and will be forwarded post free on application.

CARTER'S SELECT LIST OF SEEDS for 1860 is now published, and will be forwarded post free upon application to James Carter & Co., Seedsmen, 237 and 238, High Holborn, London, W.C.

VEGETABLE SEEDS.

J. CARTER and CO. can supply PEAS, BEANS, CARROTS, RADISHES, &c., for present Sowing, New Seed of 1859 Harvest.—237 & 238, High Holborn, W.C.

DOUBLE ITALIAN TUBEROSES.

JAMES CARTER and CO. have just received their first importation direct from Italy. Price per 1000 to the trade on application; retail, 3s. per dozen.

237 and 238, High Holborn, W.C.

BEST CUCUMBER FOR EARLY WORK.

CARTER'S CHAMPION, 1s. per packet; also BERKSHIRE CHAMPION, 1s. per packet; and LORD KENYON'S FAVOURITE, 6d. per packet.

James Carter & Co., 237 and 238, High Holborn, W.C.

THE BEST FRAME CUCUMBER.

SUTTON'S BERKSHIRE CHAMPION, CARTER'S CHAMPION, & IMPROVED SION HOUSE, 1s. per packet each.

Free by post from Sutton & Sons, Royal Berkshire Seed Establishment, Reading.

MONRO'S PROLIFIC CUCUMBER.—The best for winter cultivation, 2s. 6d. per packet. First-prize Certificates have been awarded it, both by the Horticultural Society and Crystal Palace Company, at the grand exhibitions of this season. The usual allowance to the Trade.

G. Monro, Colney Street, St. Albans, Herts.

J. G. WAITE'S WHOLESALE CATALOGUE is now ready and can be had on application.

Seed Establishment, 181, Holborn, London, W.C.

MESSRS. ROEZL and BESSERER, of Mexico, will execute orders from their CATALOGUE of last year through their Agents, Messrs. B. A. Grantoff & Co., 4, Lime Street Square, London, E.C.

WHOLESALE CATALOGUE.

GEORGE JACKMAN and SONS' PRICED and DESCRIPTIVE CATALOGUE for 1859, & SPRING 1860; comprising Fruit Trees of all the leading kinds; New and Selected Roses; fine varieties of American Plants; Choice and Rare Conifers; Evergreen and Deciduous Trees and Shrubs; and a fine stock of transplanted Forest Trees, &c., can be had free on application.—Woking Nursery, Surrey.

TRADE CATALOGUE.

THOS. CRIPPS, Tunbridge Wells, Kent, respectfully informs the Trade that his WHOLESALE CATALOGUE of AMERICAN PLANTS, ROSES, and GENERAL NURSERY STOCK is now ready and may be had post free,

FERN CATALOGUE.

ROBERT SIM'S NEW DESCRIPTIVE AND PRICED CATALOGUE, No. 6 (62 pages) of his COLLECTION of BRITISH and EXOTIC FERNS, can be had, post free, for 8 stamps. Gratis to all previous purchasers of Ferns.

Nursery, Foot's Cray, Kent, S.E.

HYACINTHS AND OTHER BULBS.

WM. CUTBUSH and SON can still supply Roots equal to the first they sent out this season, as all BULBS are especially selected for them before they are imported from Holland. Descriptive CATALOGUE post free on application.

Highgate Nurseries, London, N.

AZALEA INDICA.

J. IVERY and SON'S New DESCRIPTIVE CATALOGUE of the above contains all the newest and best varieties. Will be forwarded post free upon application.

Dorking Nursery.—Dec. 17.

AZALEA INDICA.

F. and A. SMITH beg to offer the above well set with flower buds, dwarf, bushy, and thoroughly ripened off. Having been grown in this country they are most suitable for packing, and are strongly recommended to country Amateurs and the Trade in general. An inspection invited. Prices on application.—Dulwich, Surrey, S.

ERICAS.

F. and A. SMITH'S Stocks of the above are this season unusually fine, comprising most of the leading winter and spring-flowering varieties. Prices on application.

Dulwich, Surrey, S.

TO THE TRADE.—SPERGULA PILIFERA SEED, the IMPROVED CUSTARD MARROW. Prices of the above, also for other seeds offered to the Trade, may be had on application.

Stephen Brown, Seed Grower, Sudbury, Suffolk.

LAWNS WITHOUT MOWING—SPERGULA PILIFERA.

J. A. SUMMERS supplies the above in plants enough to cover the ground next summer at 1s. per square yard, or at 1s., 2s., and 4s. per doz. plants. A specimen post free, 1s.

Howard Park Nursery, Perry Hill, Sydenham, S.E.

CEDRUS DEODARA.

WM. MAULE and SONS still hold the largest Stock of the above Tree in this country, and invite the attention of gentlemen planting, and the Trade generally. Magnificent specimens, 5, 6, and 7 feet, at 5s., 6s., and 7s. each.

Stapleton Road and Stoke Nurseries, Bristol.

WELLINGTONIA GIGANTEA.

JOHN WATERER has thousands of the above Plants to offer, varying in height from 1 to 4 feet. The whole are exceedingly handsome and well rooted. Price on application.—The American Nursery, Bagshot, Surrey.

TO THE TRADE.

3,500,000 RHODODENDRONS, 2, 3, and 4 year old Seedlings, to be Sold very cheap. Also an over stock of 4000 or 5000 Double Gorse or Whins. Price sent free on application to James Smith, Darley Dale Nurseries, near Matlock.

GOOD SEEDS. CARRIAGE FREE.

SUTTON and SONS,

SEED GROWERS and MERCHANTS,

Royal Berkshire Seed Establishment, Reading.

GEORGE GIBBS and CO., SEEDSMEN,

26, DOWN STREET, PICCADILLY, LONDON, W.

RED LODGE NURSERY AND AMERICAN GROUNDS, SOUTHAMPTON.

W. H. ROGERS solicits attention to the large, fine, and varied Stock, growing on the above extensive Grounds.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY LIMITED supply every requisite for the Farm and the Garden.

Registered Offices: Union Road, Plymouth.

"NEW FIFTY DAYS MAIZE."—Hardy, ornamental and useful, 1s. per packet.—Supplied only by G. Lawrence, Seedsman, &c, 18, Piccadilly, W.

EPSOM NURSERY.

THE SUBSCRIBER has a large Stock of strong HAMBURGH and other VINES from Eyes, suitable for fruiting or planting out at 5s. each. The usual allowance to the trade.—E. Morse, December 17.

GREAT SCARCITY OF FRUIT.

STRONG ROOTS of the LINNÆUS RHUBARB, from division, can be supplied in any quantity at 12s. per 100, or 5l. per 1000, by Walter Pennington, Nurseryman, South Retford, Nottinghamshire.

COX'S EMPEROR PLUM is now ready for delivery.—Parties wishing to have Plants of this very superior PLUM are requested to apply to Mr. Henry Clarke, 39, King Street, Covent Garden, London, W.C.

TO THE TRADE.

THE SUBSCRIBER has a splendid lot of DWARF MAIDEN APRICOTS, DWARF TRAINED PLUMS, STANDARD PLUMS, CHERRIES, and APPLES to offer at unusually low prices.

Thomas J. Caparn, King's Road Nursery, Newark.

DWARF MAIDEN FRUIT TREES.

HUGH LOW and CO. have to offer of fine quality, PEACHES, NECTARINES, APRICOTS, PLUMS, CHERRIES, APPLES, PEARS, both on Pear and Quince Stocks. Prices will be furnished on application.

The Autumn Wholesale CATALOGUE is now ready for distribution.—Clapton Nursery, London, N.E.

STANDARD CHERRIES.

WOOD and INGRAM beg to inform the Trade and others who may be planting CHERRIES largely, that they have this year a very large stock of fine healthy trees, prices of which they will forward on application. A very fine lot of DWARF and TRAINED TREES also may be had.

Nurseries, Huntingdon.

STANDARD APPLES AND PEARS,

Also Dwarf-Trained Peaches, Nectarines, Apricots, Plums, &c. Strong Asparagus, and Seakale for forcing.

JOHN PERKINS begs to offer a large stock of the above, which are in the best possible condition. Price upon application.—Seed Warehouse, 5, West Side Market Square, Northampton.

PEACHES AND NECTARINES.

J. and J. FRASER have a fine stock of 1-year cut trees of the above; they were transplanted last year, and are now suitable either for planting out to train, or to pot for Orchard-house culture. A list of the sorts and price may be had on application.—Lea Bridge Road Nurseries, N.E.

COMMON LAURELS.

J. and J. FRASER, Nurserymen, &c., Lea Bridge Road, N.E., beg to offer a large quantity of COMMON LAURELS, fine bushy plants, from 2 to 5 feet in height. Prices of the various sizes may be had on application.

ENGLISH CHESNUTS.

TO BE SOLD, a quantity of ENGLISH CHESNUTS for Seed, grown on the Cobham Hall estate, in the County of Kent. Price 5s. per bushel.—Apply to Mr. George Franks, Thory, near Gravesend, Kent.

THREE MILLIONS OF TRANSPLANTED QUICKS.

GEORGE CHIVAS, Chester, offers the above, which are admitted to be unequalled in point of quality in Great Britain. A sample bale, containing 100 each of five sizes, forwarded on receipt of 15s., and orders for 10,000 delivered free at any railway station.—Chester, December 17.

HARDY HEATHS.—A Collection of 20 sorts, by name, of the above favourite autumnal flowers, in good plants, at 30s. per 100, or 12l. 10s. per 1000.

John Waterer, The American Nursery, Bagshot, Surrey.

LARCHES WANTED.

J. CARTER, Jun., Nurseryman, Keighley, Yorkshire, is in want of a large quantity of good stiff LARCHES, 12 to 18 inches.—Address as above, stating price and number.

WEEPING ASH and MOUNTAIN ASH, with stout straight stems, 8 feet to 10 feet, to be SOLD cheap; also PYRAMIDAL APPLE and PEAR TREES, very fine, best kinds.—Apply to Isaac Davies, Larkfield Nursery, Wavertree, Liverpool.

HARDY CALIFORNIAN CONIFERS, PICEA (ABIES) AMABILIS, PICEA (ABIES) GRANDIS.—Healthy seedling Plants of the above named most beautiful hardy Trees can be supplied by the undersigned by the dozen, hundred, or thousand, as also many other choice Conifers. PRICED CATALOGUES of which will be sent on application.

Hugh Low & Co., Clapton Nursery, London, N.E.

NEW PEAS.

BUCKLEY'S GENERAL WYNDHAM | THORNE'S ROYAL BRITAIN.

HURST AND M'MULLEN having grown a considerable quantity of the above fine tall late varieties of PEAS this season, beg to offer them to the Trade only. They have been proved to be superior to any of their class, both in flavour and size for the last two years, and they can confidently recommend them.

Also "Dillistone's First Early Pea," quite seven days earlier than any other variety, and a great bearer. Prices on application.—Address, 6, Leadenhall Street, London, E.C.

TO THE SEED TRADE, MARKET GARDENERS, &c.

Per bushel.—s.		Per cwt.—s.	
British Queen Peas..	.. 14	Long Red Mangel Wurzel..	32
Champion of England Peas	11	Yellow Globe ,,	.. 36
Wickson's Ear. Favourite Pea	12	Long Orange Carrot	.. 48
Ne Plus Ultra Peas..	.. 18	Early Horn ,,	.. 50
Hair's Mammoth Pea	.. 20	White Belgian ,,	.. 48

Selected dark-crimson Beet, 1s. per lb.

The above Seeds are saved from the best stocks, and excellent samples unadulterated. Terms cash.

GEORGE SANDERS, 71, Bank Street, Maidstone.

DICKSON'S MANCHESTER CHAMPION RED SOLID CELERY (NEW).—Quite dwarf and distinct, rarely exceeding 20 inches in height, of superior colour and delicious Walnut flavour. Very solid and crisp, requires much less earthing up than most other sorts, and keeps well up to the end of April; has been seen by many practical Gardeners, and pronounced to be the best Red Celery grown. Prices to the Trade on application.—JAMES DICKSON, SONS, & Co., Nurserymen and Seedsmen, 23, Market Place, Manchester.

NEW CUCUMBER, DICKSON'S NEWTON HERO.—An excellent variety for winter forcing, raised by ourselves at Newton Nurseries, grows from 18 to 24 inches in length, of very fine flavour, short neck, very compact, and a heavy cropper; carries its bloom well throughout its entire length, and allowed by many of our first-class judges to be the best early Cucumber ever sent out.

GILLESPIE'S NEW HYBRID WHITE SPINE CUCUMBER.—J. D., S., & Co., having bought the entire Stock of this Valuable Hybrid Cucumber from the raiser, and having proved it to be one of the best Forcing Cucumbers grown, can with entire confidence recommend it. Is a very free bearer, of fine flavour and shape, growing from 21 to 26 inches, carries its bloom well with a good colour. Will give full satisfaction to every grower; see remarks by Prof. Lindley in *Gardeners' Chronicle* of August 8, 1857.

JAMES DICKSON, SONS, & Co., Nurserymen and Seedsmen, 23, Market Place, Manchester.

PANSIES, PANSIES, PANSIES.

JOSEPH HOOPER, Lyncombe Hill Nursery, Bath, begs to inform his patrons and friends that he has sent out 12 new PANSIES, five of which he has purchased, being the best he has ever had the pleasure of sending out. Plants, 5s. each; or the dozen for cash, 1l. 16s. Best Pansy Seed from 1s. to 5s. per packet. He also calls attention to his stock of fine strong healthy Shrubs, Roses, Pinks, Carnations, Picotees, Hollyhocks, particular his new Pinks of 1858 and 1859.

T. LOCKHART, FLORIST, Fulham, S.W., near London, begs to offer his celebrated Collection of RANUNCULUS in 25 finest sorts, at 20s. per 100. If required he will add simple instructions for their treatment, which will ensure a splendid bloom of this most beautiful flower, which of late years has been so sadly neglected.

LOCKHART'S IMPROVED WHITE COS LETTUCE, the finest in cultivation, 13 postage stamps per packet.

Single BLACK WALLFLOWERS, 50 Seeds, 13 stamps per packet. Both free by post.

ASTERS, STOCKS, and a general Collection of SEEDS.

PETER S. ROBERTSON, for the last 14 years Manager of Messrs. P. Lawson & Sons' Nurseries, Edinburgh, begs to intimate to his patrons and friends that he has resigned the above situation to begin business on his own account at Trinity Nursery (near the Botanical Gardens) Edinburgh. Having completed arrangements by which he is able to offer at very moderate prices FOREST TREES, SHRUBS, CONIFERS, ROSES, &c., he now respectfully solicits a share of public patronage.

PRICED CATALOGUES are in course of circulation, and friends who may not have received a copy by next week will be supplied free on application.

TO BOTANISTS AND HORTICULTURISTS.

R. ROBINSON SCOTT, formerly of the Belfast Botanic Garden, Albert Model Farm, and Kew Gardens; now of Philadelphia, United States, America, has facilities for collecting specimens of the American Flora, also Indigenous Seeds, as well as rare Plants and Insects. Any Naturalist or Collector who may desire such can be promptly supplied at reasonable prices.

References: Baillière Brothers, New York; Dr. Kirkpatrick, Dublin; D. Ferguson, Esq., Belfast Botanic Garden; Professor J. E. Planchon, Montpellier, France.

N.B. Nurserymen and Florists are requested to send their Catalogues by post.—Address prepaid, R. ROBINSON SCOTT, Philadelphia, United States, America.

MESSRS. J. & H. BROWN offer the following selection of choice PLANTS, which they will forward to any part:—

	s.	d.
Andromeda floribunda, winter flowering, per doz. ..	15	0
25 Azaleas, new hardy Belgian varieties, one of a sort, on their own roots, by name, well set for bloom, fine for beds or pot culture for forcing	20	0
25 Azaleas, hardy American varieties, do. do. ..	15	0
12 hardy Rhododendrons, including red, white, and rose colour	12	0
Fine hardy Scarlet Rhododendrons, 2 feet, for beds, per dozen..	10	6
New Yellow Rhododendrons, each, 3s. 6d. to.. ..	5	6
Roses, best sorts, Standards and Half-standards, per dozen, 12s. to	15	0
Climbing Roses of best sorts, rapid growers, per doz.	6	0
6 fine hardy Magnolias, one of a sort	10	0
Greenhouse Azaleas, fine varieties, per doz., 10s. to..	12	0
Camellias, best double varieties, well set with buds, per dozen	28	0
24 Epacris and Ericas, one of a sort, in small pots ..	16	0

Hyacinths and other Dutch Bulbs of all kinds, cheap.

FRUIT TREES.

Fine Standard and Dwarf-trained Peaches, Nectarines, Apricots, Cherries, Plums, and Pears, each, 2s. 6d.; or per dozen	24	0
Dwarf plants of all the above kinds, grown especially for pot culture in orchard-houses, &c., per dozen	18	0
Best sorts of Gooseberries, Currants, and Raspberries, per dozen	3	0
Mulberries, Medlars, Quince, and Walnuts, each ..	2	0
Filberts, Red and Thin-shell, per dozen	3	0

Choice Grape Vines from eyes and layers, strong.

Evergreen Shrubs and ornamental Trees of all kinds, cheap

Albion Nursery, Stoke Newington, London, N.

THE LARGEST AND FINEST STOCK OF TEA-SCENTED ROSES IN ENGLAND.

50,000 PLANTS IN POTS AND IN THE OPEN GROUND.

WM. WOOD AND SON invite attention to their very extensive and superior stock of the above, which they feel certain are unsurpassed in the Trade.

Dwarfs, from 48-pots .. .. .. per dozen	9s. to 12s.	
,, in 6-inch or 24-pots .. .. ,,	24 to 30	
Standards, very fine .. .. .. ,,	18 to 24	

Specimen Plants, in 8-inch pots, for exhibition, each, 3s. 6d. to 5s.

DESCRIPTIVE CATALOGUES on application.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

HEDENHAM ROSARY, BUNGAY, SUFFOLK.

IN CONSEQUENCE OF A DISSOLUTION OF PARTNERSHIP,

R. B. BIRCHAM is desirous of clearing off a portion of his stock, consisting of 35,000 STANDARD and DWARF ROSES, including all the best and leading sorts of Perpetuals in cultivation. To effect a clearance this autumn R. B. B. begs to offer them at the following very reduced prices:—

50 Dwarfs of the best Perpetuals ..	£0 18	0
50 Half standards, do.	1 5	0
50 Standards, do.	1 15	0

R. B. B. will be happy to supply Amateurs requiring half the quantity of each. Trade orders at a still lower rate per 100. Carriage paid to London and Peterborough.

CHOICE DOUBLE FUCHSIA SEED.

GEO. WHEELER, having saved a limited quantity of Seed from the finest DOUBLE FUCHSIA ever offered, viz., his SIR COLIN CAMPBELL, which from such a Stock may reasonably be expected to produce a considerable proportion of double flowers, is prepared to forward, post free, in return for cash or postage stamps, packets containing 24 Seeds each, at 2s. 6d. per packet.—Warminster Nursery, Dec. 17.

DUTCH CROCUS, a great quantity in fine condition, 1s. 6d. per 100, or 14s. per 1000; English mixed do., 1s. per 100, or 8s. per 1000; mixed HYACINTHS, 3s. to 4s. per doz., or 1l. per 100; do. finest quality to name, 6s. per doz.; STANDARD ROSES, the choicest named sorts, 15s. per doz., or 5l. per 100. ARCHANGEL MATS, a large quantity on hand, 10s. per bundle, or 95s. per 100; small do., 4s. per bundle, or 3 5s. per 100.—R. GREEN, 154, Kingsland Road, N.E., 55 doors from Shoreditch Church.

CHRYSANTHEMUMS.

J. H. BIRD, F.H.S., NURSERYMAN, Stoke Newington begs to inform his friends and the public that he has the finest Collection and the largest Stock of Chrysanthemums and Pompones in the world, and can supply them by the 100, 1000, or 10,000.

25 Pair of Best POMPONES, 10s.
20 Pair of Best Large Varieties, 10s.
25 Pair of Best POMPONE CUTTINGS, 5s.
20 Pair of Best Large Varieties, Do., 5s.

CATALOGUES for one stamp. To save trouble all orders to be pre-paid.

CHRYSANTHEMUMS.

W. HOLMES begs to offer strong plants of every known good variety of CHRYSANTHEMUM at 5s. per dozen; including Golden Queen of England, Aurora, Cassandra, Curtius Quintius, Excelsior, Fabius, Fortune's Two-Coloured Incurved, Golconda, Glory, Julie Lagravère, Madam Clos, Mount Vesuvius, Orange Brilliant, Prince Albert, Remus, sulphureum superbum, Una, Andromeda, Ariel, Astrea, Baron d'Adswaërd, Esmeralda, Maid of Saragossa, Miss Julia, Miss Talfourd, Mrs. Dix, Shirley Hibberd, Rose Trevenna, &c.

Frampton Park Nursery, Hackney, N.E.

TO THE TRADE.—CONTINENTAL FLOWER SEEDS.

FREDERICK WILLIAM WENDEL, SEEDSMAN and FLORIST, Erfurt, Prussia (established 1832).

F. W. W. begs to inform the Trade that his Wholesale CATALOGUE of the above is now ready, containing Collections of ASTERS, STOCKS, BALSAMS, WALLFLOWERS, &c., and also an extensive list of all other New and Choice FLOWER SEEDS, sold in assortments, or by weight.

F. W. W. having extensive grounds in the town and vicinity of Erfurt, and devoting his personal attention to this department of his establishment, he can with the greatest confidence recommend all Seeds offered by him, as genuine and of the best quality.

Agent for this country.—Mr. GEO. MACINTOSH, Nurseryman and Seedsman, High Road, Hammersmith, London, W., to whom all orders should be addressed, and where PRICE LISTS can be obtained post free on application.

The prices will be found as low as any house which supplies a genuine article. All parcels carriage paid to London.

JAMES CARTER & CO.'S LIST OF NEW ANNUALS AND PERENNIALS For 1860.

CLARKIA PULCHELLA, VAR. INTEGRIPETALA.—This is the first of what might almost be called an entire new class of Clarkias. The flowers are nearly double the size, colour more brilliant, and the petals whole instead of being three-lobed like the old pulchella varieties. This variety is described in the report of the Floral Committee of the Horticultural Society as follows:—"This variety differs from the old pulchella, which it resembles in habit, in having the petals broad and entire instead of being cut into narrow segments; it is consequently more showy, and seems likely to prove a handsome purple-flowered Annual. It was 'commended,' its increased breadth of petal being regarded as an improvement on the original kind."

DIANTHUS CHINENSIS HEDDEWIGI.—Of this splendid annual Dianthus we have also purchased part of the stock of seed from the raiser. The plants are scarcely 1 foot high, very bushy, and covered with a profusion of flowers, which measure nearly 3 inches in diameter; the colours are various, consisting of different shades of rose, crimson, violet, &c., some are delicately marbled, others self colour. This plant has received the highest awards from the Horticultural Society and Botanic Society, Regent's Park. Is suitable either for Greenhouse or out-door cultivation.

NIGELLA HISPANICA ALBA } Two varieties
NIGELLA HISPANICA ATROPURPUREA } of great merit,

of erect and compact habit, the one a clear rich purple and the other a pure white, can be recommended as being decidedly the best of their class. The report of the Floral Committee of the Horticultural Society on the above is as follows:—"These varieties are both large flowered, the purple kind is especially deserving of notice as a fine showy Annual. The flowers are of a dark violet purple shaded with maroon."

DATURA CHLORANTHA FLORE PLENO.—Figured in Curtis's "Botanical Magazine" of July, 1859.—A splendid half-hardy perennial, very free, blooming with large trumpet-shaped, golden yellow, sweet-scented double flowers; the plant is of a low growing habit.

NEMOPHILA DISCOIDALIS MARMORATA.—A handsome new variety from discoidalis, which in addition to the white border of the old variety is very prettily marbled with white on the black ground of each petal.

PHACELIA TANACETIFOLIA ALBA.—A white variety of the blue tanacetifolia, pretty and distinct.

SILENE BARBATA.—A free flowering rich pink dwarf Annual, suitable for growing massy or ribbanding.

ANAGALLIS GRANDIFLORA, VAR. EUGENIE } Two beautiful new Continental varieties of the well-known
ANAGALLIS GRANDIFLORA, VAR. NAPOLEON III. } Anagallis grandiflora, but the flowers are much larger. They will be found highly ornamental as half hardy bedding plants, also for decoration in Greenhouse or Conservatory, as they present an extremely graceful appearance when cultivated in pots or vases. The colours contrast well, and they continue in bloom for a long period, as var. Eugenie, light blue shading from the centre to pure white at the border. Var. Napoleon III., rich maroon crimson.

DIANTHUS CHINENSIS LACINIATUS, Fl. Pl.—Is described by the raiser, Mr. Heddewig, as being imported from Japan with the Dianthus chinensis Heddewigi. The following is a description of the flowers and habit of plant, that we have received from the raiser:—"Grows 2 feet high, very hardy, flowers about 4 inches in diameter, each petal consisting of a long delicate fringe, some double, others single; blossoms from the end of May until the beginning of frost; the colours are pure white, flesh, rose, various shades of red, carmine, violet, purple, and rich maroon, some being selfs, others striped and spotted;" is suitable either for greenhouse or out-door cultivation.

ŒNOTHERA BIENNIS, VAR. HIRSUTISSIMA (Asa Gray).—A new variety of the Evening Primrose from California, very distinct from the common biennis; height 2 feet, colour crimson orange.

IPOMŒA LIMBATA ELEGANTISSIMA is a new Continental variety of the old limbata, which we can specially recommend as being a very elegant climbing plant; the flowers are of an intense blue with a pure white margin, half hardy.

CALLIRRHOE DIGITATA (TRUE).—A very elegant plant, strongly resembling the scarlet Linum. Colour rich violet purple with white eye; height from 2 to 3 feet; commences to bloom when about 6 inches high, and presents a mass of blossom during the entire summer. Makes a good bedding plant if sown thick.

LOBELIA GRACILIS ROSEA.—A very graceful little plan of a good rose colour, especially adapted for edgings.

CAPTAIN CLARKE'S NEW HYBRID SWEET PEA.—This beautiful variety is the result of a cross between Painted Lady and Purple Sweet Pea, raised by Captain Trevor Clarke, F.H.S., well known to the floricultural world as a successful hybridiser of plants. The upper petals are of a delicate rose colour, and the lower white, with a deep blue edge.

LUPINUS MUTABILIS VARIECOLOR.—This most peculiar and handsome variety of Lupine is distinct in seed from all other sorts, and the same seed produces plants of various colours, such as pure white, dark purple, white, red, and yellow, variegated, yellow and purple, &c. We can recommend this variety as one of the most interesting ever offered.

NEW DWARF BEDDING TROPÆOLUMS.

TOM THUMB YELLOW.—A new variety in colour, particularly adapted for bedding, and also for growing in pots and ornamental vases, and the flowers are well thrown up above the foliage; very dwarf and compact in habit. Colour pure yellow without any marking. The Floral Committee of the Horticultural Society speaks of it as follows:—"The habit of this plant, shown by the entire plants exhibited, was quite dwarf and compact, and the flowers were of a golden yellow." It was "commended" as likely to be a useful Flower Garden and Bedding Plant.

TOM THUMB BEAUTY.—An elegant variety with Lobbianum-shaped flowers, raised by Mr. Melville, gardener to the Earl of Roseberry, Dalmeny Park, near Edinburgh. The flower is yellow flamed and blotched with bright crimson. A plant was sent to the Editors of the "Cottage Gardener," in October, 1858, who speak of it as follows:—"A dwarf yellow, tinged with crimson; would be a good bedding plant."

ORNAMENTAL GRASSES.

AGROSTIS NEBULOSA.—The most elegant and graceful of Ornamental Grasses. A dried specimen may be seen on application.

ERIANTHUS RAVENNÆ.—A bold looking Reed-like Grass in the way of Gynerium.

SPERGULA PILIFERA.—A perfect substitute for Lawn Grass, does not require any mowing, and is particularly adapted for edging Flower Beds, Slopes, Terraces, and all small work.

A Coloured Plate, containing Drawings of the following price 1s. 6d.:—

Dianthus chinensis Heddewigi	Clarkea pulchella, var. integripetala
,, ,, laciniatus	[Sweet Pea
Nigella hispanica alba	Captain Clarke's new hybrid
,, ,, purpurea	Lobelia gracilis rosea
	Callirrhoe digitata

Also a Coloured Plate of Nasturtium Tom Thumb Yellow, price 1s. 6d.

Prices of the above upon application to

JAMES CARTER & CO., SEEDSMEN, 238, HIGH HOLBORN, W.C.

LEE'S NEW WHITE SPROUTING BROCCOLI.



FROM A PHOTOGRAPH.

MESSRS. JOHN & CHARLES LEE

FEEL highly honoured in being the means of introducing this most important Vegetable production to the notice of the Public. The real value of this prolific Broccoli will not be ascertained till it is in the hands of every Cottager in the Kingdom; and they only regret that their present very limited stock will not enable them at once to spread it more widely.

The above representation having been taken from a Photograph shows plainly the enormous crop of good White Broccoli to be expected from it under good cultivation. The centre head is large and fine, and the subordinate heads, all of good size, number from 30 to 50. It has remained true to its branching character for four years; it is perfectly hardy, and is in season through JANUARY, FEBRUARY, AND MARCH, a period at which it is so desirable to obtain good White Broccoli.

Sealed packets, price 2*s.* 6*d.* post free, are now ready. To be had of all the principal Seedsmen.

Nursery and Seed Establishment, Hammersmith, London, W.

BUTLER & McULLOCH,

COVENT GARDEN MARKET, W.C.

A DESCRIPTIVE AND PRICED CATALOGUE OF

HYACINTHS, GLADIOLI, RANUNCULUS, ANEMONES, IXIAS, AMARYLLIS, CROCUS, and other DUTCH and CAPE BULBS, with practical Cultural directions affixed to each Class for the use of Amateurs, sent free and post paid (for contents of CATALOGUE see *Gardeners' Chronicle*, October 1, page 786).

☞ *All orders amounting to* 21*s. and upwards sent Carriage paid.*

For conspicuous beds the following HYACINTHS and TULIPS cannot be surpassed; they occupy a most important position in the economy of the Flower Garden, coming into bloom immediately after the Crocus, &c., and ready for removal at the time of planting out Geraniums and other Summer and Autumn Flowering Plants

BEST DOUBLE and SINGLE MIXED HYACINTHS	.. .. ..	21*s.* 0*d.* per 100,	3*s.* 0*d.* per dozen.
TOURNESOL and REX RUBRORUM DOUBLE TULIPS	.. .. ..	7 6 ,,	1 0 ,,
YELLOW ROSE, pure yellow and scented	Do.	7 6 ,,	1 0 ,,
LA CANDEUR, pure white	Do.	14 0 ,,	2 0 ,,
FINE MIXED DOUBLE do.		7 6 ,,	1 0 ,,
FINE MIXED SINGLE do.		6 0 ,,	1 0 ,,
CHOICE MIXED LATE FLOWERING do.		7 6 ,,	1 0 ,,
FINEST MIXED CROCUS		14*s.* per 1000,	1*s.* 6*d.* per 100.

FOR CENTRES OF LARGE BEDS AND BORDERS

The following favourites are perfectly hardy, and cannot be too extensively cultivated:—

LILIUM LANCIFOLIUM ALBUM .. .. 15*s.* 6*d.* per doz. .. 1*s.* 6*d.* each.

LILIUM LANCIFOLIUM ROSEUM 20*s.* per doz. 2*s.* 0*d.* each. | LILIUM LANCIFOLIUM RUBRUM 20*s.* per doz. 2*s.* 0*d.* each.

GLADIOLI HYBRID of GANDAVENSIS, 30 splendid varieties named, for 21*s.* 6*d.*, or 12 for 8*s.* 6*d.*

,, ,, BLANDUS, 6 new ,, 4 6 } best for forcing.
,, ,, SAGITTALIS 6 ,, ,, 4 6 }

GLADIOLUS BRENCHLEYENSIS	30*s.* 0*d.* per 100	5*s.* 0*d.* per dozen.	
,, GANDAVENSIS	15 6 ,,	2 6 ,,	
,, QUEEN VICTORIA	15 6 ,,	2 6 ,,	
,, RAMOSUS	15 6 ,,	2 6 ,,	
,, FLORIBUNDUS	15 6 ,,	2 6 ,,	
Splendid mixed Seedlings of GANDAVENSIS	30 0 ,,	4 6 ,,	

THE FOLLOWING COLLECTIONS OF CHOICE BULBS SENT CARRIAGE PAID.

No. 1, C, £1 1s.

12 Choice named Hyacinths
2 beautiful Japan Lilies, 2 varieties
12 beautiful Gladioli, 4 vars.
4 Polyanthus Narcissus
50 Ranunculus
40 Border Narcissus
300 Crocus
40 Double Tulips
12 beautiful Iris
2 Chinese Pæonies

No. 2, D. £2 2s.

18 Choice named Hyacinths
3 beautiful Japan Lilies, 3 varieties
18 beautiful Gladioli, 6 vars.
6 Polyanthus Narcissus
100 Ranunculus
40 Anemones mixed
20 ,, scarlet
400 Crocus
50 Double Tulips
4 Chinese Pæonies
12 beautiful Ixias
6 beautiful Sparaxis
1 Tritoma Uvaria
6 Babianas
2 Tritoma aurea

No. 3, E, £3 3s.

24 Choice named Hyacinths
4 beautiful Japan Lilies, 4 varieties
24 beautiful Gladioli, 12 vars.
9 Polyauthus Narcissus
100 Ranunculus
50 Anemones mixed
30 ,, scarlet
500 Crocus
60 Double Tulips
6 Chinese Pæonies
18 beautiful Ixias
12 beautiful Sparaxis
2 Tritoma Uvaria
1 Lilium giganteum
12 Babianas
3 Tritoma aurea

AGENTS FOR TYE'S REGISTERED HYACINTH GLASSES.

These are without exception the most elegant and best adapted for the successful Culture of the Hyacinth. See Woodcut Group of Glasses, page 803 of *Gardeners' Chronicle*, October 8.

DUTCH AND OTHER BULBS.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their CATALOGUE of the above is now ready, and will be forwarded post free on application. Early orders are solicited, as their successful cultivation depends in a great measure on early planting.

Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

AMERICAN PLANTS, &c.

MESSRS. WATERER AND GODFREY'S CATALOGUE for the present season is now ready, and may be had on application. It describes fully all Rhododendrons worth growing, and contains a List of Azaleas, Hardy Heaths, and other American Plants, as well as a summary of the general stock of the most extensive Nurseries in England.

The Catalogue may also be had at Messrs. MAY'S & Co., 1, Wellington Street, Strand, W.C.

Knap Hill Nursery, near Woking, Surrey.

HARDY RHODODENDRONS.

MESSRS. WATERER AND GODFREY invite attention to their Seedling RHODODENDRONS, which they are selling without names, and which they strongly recommend as being very superior in point of HABIT, FOLIAGE, COLOUR, and GENERAL HARDINESS. They are from 1½ to 2½ feet high, and as much through, and no plants can possibly be in finer health. They will be sold at very liberal prices, and purchasers can select from a stock of many thousands.

Knap Hill Nursery, near Woking, Surrey.

GERANIUMS, HERBACEOUS PLANTS, ETC.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their new PRICED and DESCRIPTIVE CATALOGUE of the above, to which are added Supplemental Lists of Stove, Greenhouse, and Hardy Plants, Fruit Trees, &c. (which include all the best new plants of the season), is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

SUPERB BALSAMS.

F. AND A. SMITH are sending out seeds of their well-known superior BALSAMS, in collections of nine distinct colours, six seeds of each, 2*s.* 6*d.*; the same mixed, 2*s.*; half the quantity, mixed, 1*s.*

The above are selected from a stock of 24,000 plants, for purity and brightness of colour, size and doubleness of the blooms, and general good habit of the plant. A liberal allowance to the Trade when 12 Packets are taken.—Dulwich, Surrey, S.

G. S. DODS, (late gardener at Cooper's Hill), respectfully acquaints the nobility, gentry, and inhabitants of Epsom and the surrounding neighbourhood, that he has taken the under-mentioned old-established NURSERY, conducted so many years by the Messrs. Young, and trusts by assiduity in the execution of all orders, with a careful regard to the quality of every article supplied, to merit a continuance of that patronage so liberally bestowed on his predecessors.

Epsom Nursery, Epsom, Surrey.

PAMPAS GRASS.—The present is the most favourable time for planting out this charming Plant. No one can imagine the grand effect of a mass of its silvery plumes unless they see it, nor is its value confined to the ornamental, but is likely to become useful as Cover for Game. It grows in any soil or situation, attaining the height of from 6 to 10 feet.—Any quantity can be supplied by C. NOBLE, Bagshot, Surrey.

NEW STRAWBERRY, WIZARD OF THE NORTH.

DANIEL ROBERTSON, LINSIDE NURSERY, Paisley, continues to supply the above named superb variety at 63*s.* per 100, or 9*s.* per dozen, the usual discount to the trade. Having a large stock of the Wizard, Nurserymen and Market Gardeners ordering in quantity will be dealt with on favourable terms. As much imposition is being practised in the name of the Wizard, purchasers are warned that they ought to see the drawing of it in the hands of any one from whom they buy plants, as all parties selling the genuine variety will be furnished with a drawing. For description, &c., see former advertisements.

D. R. cannot supply any more plants of Nonsuch this season.

DANIEL ROBERTSON, Linside Nursery, Paisley, N.B.—Dec. 17.

DUTCH BULBS, &c.—SURPLUS STOCK OF A LATE IMPORTATION, AND OTHERS AT VERY LOW PRICES.

NAMED CROCUS, as Pluto, Prince Albert, Perle d'Orient, &c., 2*s.* 6*d.* per 100; named in 20 very splendid and distinct varieties, 2*s.* 8*d.* per 100. Crocus, separate colours not named, 1*s.* 3*d.* per 100.

POLYANTHUS NARCISSUS.—Grand Monarque, States-General, Grand Soleil d'Or, and Grand Souveraine, 2*s.* 9*d.* per doz., in seven fine varieties; separate, 3*s.* per doz.

NARCISSUS Poeticus, 5*s.* 6*d.* per 100; Van Sion, Biflorus, and Double White, 1*s.* 3*d.* per doz.

HYACINTHS, in separate colours, 3*s.* per doz., or 20*s.* per 100.

EARLY TULIPS, in 12 superb named, as Grand Master of Malta, Yellow Prince, Kaiser Krone, Portulacca, Vermilion, Brilliant, &c., 2*s.* 6*d.* per doz., or 18*s.* per 100; in 20 superb named, 3*s.* per doz., or 22*s.* per 100; very fine mixed, 6*s.* per 100.

DOUBLE TULIPS, in eight superb named, as Mariage de ma Fille, Bonaparte, Pæonia, Gold, &c., 2*s.* per doz., or 14*s.* per 100; very fine mixed, 6*s.* per 100; Tournesol and Rex Rubrorum, 10*d.* per doz., or 12*s.* per 100.

GLADIOLUS, splendid early, very free flowering and extra for pots in 20 named, at 6*s.* per doz., or 45*s.* per 100. Ramosus Hybrids, superb and strong blooming roots, in 20 named, 6*s.* per doz., or 45*s.* per 100.

ENGLISH IRIS, in 30 separate splendid named, one of each for 9*s.*, or 27*s.* per 100; splendid mixed 11*s.* per 100.

GERMAN IRIS, 30 separate splendid named, one of each for 14*s.*

IRIS PUMILA, very dwarf and beautiful, six vars. for 4*s.* 6*d.*, or three of each for 12*s.* 6*d.*

JONQUILS, large, sweet, double Dutch, 2*s.* per doz., or 15*s.* per 100; single sweet, 1*s.* 3*d.* per doz., or 9*s.* per 100; Campernelle, 9*d.* per doz., or 5*s.* 6*d.* per 100.

ALSO AN EXTENSIVE COLLECTION OF OTHER BULBS, both for present and Spring planting as per CATALOGUE, which may be had on application.

CHOICE COLLECTION OF BULBS, 10*s.*, 20*s.*, 40*s.*, 60*s.*, 80*s.*, 100*s.* Carriage free of goods 20*s.* and upwards to all the London stations, and Roots added gratis for further carriage. Also free to all stations on the Colchester line between London and Norwich.

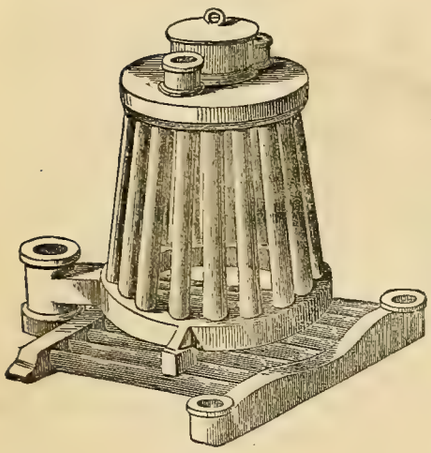
THE NEW SEED CATALOGUE, which will embrace many valuable additions, will be ready early in January.

STEPHEN BROWN,
Seed and Nursery Establishment, Sudbury, Suffolk.

DESIGNS FOR FLOWER BEDS AND GARDENS.—In consequence of numerous applications J. MARSHALL, 2, Goldsmith Street, Nottingham, has been induced to prepare another set of Designs. They comprise upwards of 80, diversified in style, and will be forwarded to any address on receipt of 24 postage stamps.

25,500 NEW ARCHANGEL MATS.—Prices, &c., on application to JOHN MORISON, 25, Norton Folgate, N.E.

By Her Majesty's Royal Letters Patent.



ORMSON'S

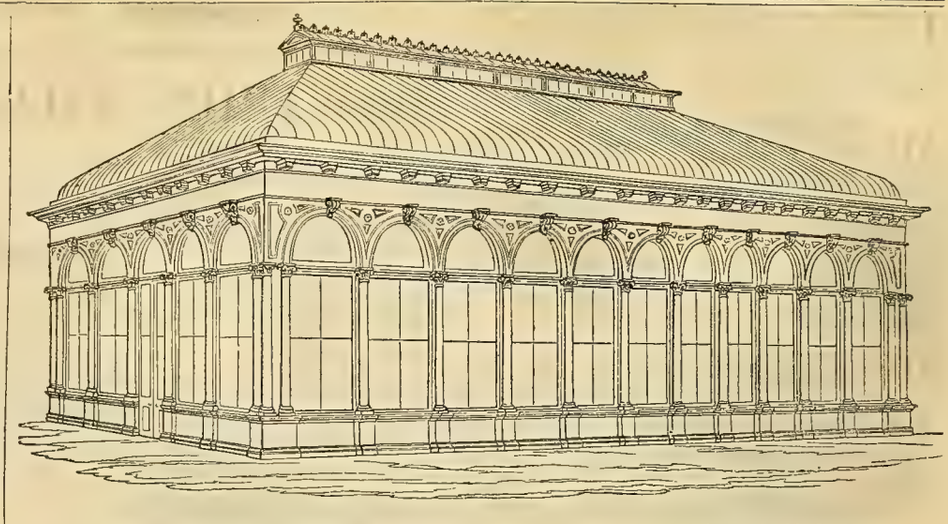
PATENT JOINTLESS TUBULAR BOILER,

HAS NOW GAINED the highest standing reputation for Power, Efficiency, Safety, and Economy of Fuel. There is not a single joint exposed to the action of the fire, which renders these Boilers far more safe than any other Tubular Boiler ever invented.

May be seen in successful operation at Mr. VEITCH'S, Royal Exotic Nursery, King's Road, Chelsea, and in the Gardens of many of the Nobility and Gentry in England, Ireland, and Scotland.

They are made of various sizes. Prices on application.

HENRY ORMSON,
Stanley Bridge, King's Road, Chelsea, S.W.



HORTICULTURAL BUILDINGS

MANUFACTURED BY STEAM POWER MACHINERY.

LOWEST PRICES AND BEST MATERIALS.

DESIGNING, BUILDING, HEATING, AND VENTILATING ON THE MOST APPROVED AND SCIENTIFIC PRINCIPLES.

PLANS, SPECIFICATIONS, AND ESTIMATES FREE ON APPLICATION.

HENRY ORMSON, Horticultural Builder, and Hot-water Apparatus Manufacturer, Stanley Bridge, King's Road, Chelsea, London, S.W.

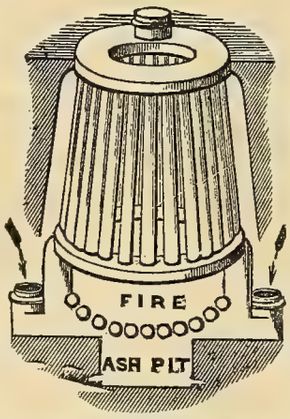
WEEKS' ONE BOILER SYSTEM.

So styled from the fact that the largest Horticultural Establishments in Europe are now effectually heated by WEEKS' ONE BOILER.

THE SEASON FOR TESTING THE EFFICIENCY OF A HOT-WATER APPARATUS having arrived, J. WEEKS & Co. are privileged by the under-mentioned well-known Horticultural Firms to issue a special invitation to the nobility, clergy, and gentry to pay a visit to their immense Establishments in order to become eye-witnesses of the extraordinary power of WEEKS' ONE BOILER SYSTEM.

J. W. & Co. beg emphatically to assert that their ONE BOILER SYSTEM is is every respect superior to any other method of Heating. It is more economical and clean, requires no night attendance, effects a great saving in labour, and that it in infinitely more efficient is clearly shown by the following statistics :—

	Length of Pipe Heated on Weeks' One Boiler System.
	Feet
Messrs. E. G. Henderson & Son, Wellington Nursery, St. John's Wood	5500
Messrs. F. & A. SMITH, Dulwich Nursery	10,000
Mr. WOODROFFE, Harrow Road, Paddington	4000
Mons. LOUIS VAN HOUTTE, Ghent, Belgium	13,000



J. W. & Co. also manufacture smaller and less expensive Boilers upon the same principle as the ONE BOILER SYSTEM, ranging in size from Nos. 1 to 6, at prices from 4*l.* up to 60*l.*

J. W. & Co. also invite an inspection of their own HORTICULTURAL SHOW ESTABLISHMENT at Chelsea, which they built expressly as a place of reference for exhibiting various designs and improvements in the Construction of CONSERVATORIES, GREENHOUSES, PINE STOVES, VINERIES, ORCHARD-HOUSES, CUCUMBER and other FORCING PITS, together with an extensive WINTER GARDEN, the whole in full and constant operation, and now being managed for Forcing CHOICE FRUITS, displaying an unrivalled selection of HORTICULTURAL STRUCTURES suited for every required purpose.

J. WEEKS & Co. have constantly on hand an extensive variety of HORTICULTURAL BUILDINGS ready for fixing in any part of the country, and also Forcing Frames and Pit Lights in large quantities.

J. WEEKS & CO., Horticultural Builders and Hot-Water Apparatus Manufacturers, King's Road, Chelsea, S.W.

PLANS, ESTIMATES, AND ILLUSTRATED CATALOGUES FREE ON APPLICATION.

HOT-WATER PIPES at wholesale prices, with Elbows, Syphons, Tee Pipes, and every other connection. Wrought and cast iron Boilers, Saddle, Conical, Cylinder, and Elliptic, from 24*s.* each. Boilers and Iron Stands to use without brickwork. Valves from 12*s.* each. Coil Boxes, Furnace Doors, Furnace Bars, Supply Cisterns, and Builders' Castings of every description in stock, at Mr. LYNCH WHITE'S Iron Wharf, Upper Ground Street, Blackfriars Bridge, London, S.

TO THE NOBILITY, GENTRY, AND HORTICULTURISTS.

H. McCALLA (late principal Draughtsman to Messrs. Weeks & Co.), CIVIL ENGINEER and FARM ARCHITECT, begs to inform the above that the Horticultural Buildings being confined to so few, exorbitant prices are charged; that he prepares Working Drawings and Specifications, so that they can have their own constructed by any country carpenter, at 1*s.* 6*d.* per foot super, or upon their own estates at 1*s.* 4*d.* per foot. Plans also upon the same rule for erecting Hot Water Apparatus. Plans for all kinds of Farm Buildings, Homesteads, Labourers' Cottages, Laying out of Estates, Drainage. Plans &c., prepared for all the above Works and submitted to competition.—Office: 7 Upper Cheyne Row, King's Road, Chelsea, S.W.

VOKINS AND HURD, Jubilee Place, King's Road, Chelsea, S.W.

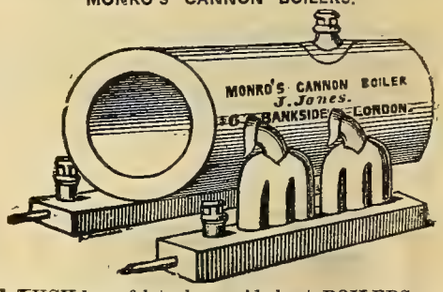




HORTICULTURAL BUILDERS and HOT-WATER APPARATUS MANUFACTURERS. Estimates forwarded on the shortest notice. BOILERS of all sizes on sale; also small CONSERVATORIES and GREENHOUSES, Heated by GAS; HOTWATER APPARATUS, from a single burner, upon quite a different plan to the Common Gas Stove, which is so injurious to plants. For prices &c. apply as above.

GLAZIERS' DIAMONDS FOR CUTTING HORTICULTURAL and other GLASS, to be had of the Wholesale Manufacturer, JOHN EDWARDS, 20, Sharp's Alley, West Smithfield, London, E.C. Prices from 10*s.* to 27*s.* 6*d.*

MONRO'S CANNON BOILERS.



MUCH has of late been said about BOILERS FOR HEATING BY HOT WATER, but these Boilers have now proved themselves to be the best at present invented. They are adapted for Heating every description of Building, and are made of various sizes. The price of the

24-inch Cast Iron is	£5 10*s.* each.
24-inch Wrought Iron is	6 10 ,,
36-inch Wrought Iron is	8 10 ,,
48-inch Wrought Iron is	12 0 ,,

References to Gentlemen and Nurserymen where these Boilers are now at work. The Cannon Boilers are now kept in stock, and are to be had only of J. JONES, 6, Bankside, S.E. Also, every description of Saddle and Cylinder Boilers. Hot-water Pipes and Connections at prices lower than those of any other house in London. Estimates for Hot-water Apparatus erected complete in any part of the country, and an Illustrated Catalogue on application to J. JONES, 6, Bankside, Southwark, London, S.E.

HOT-WATER APPARATUS.

J. JONES begs to offer a complete HOT-WATER APPARATUS FOR GREENHOUSES, at the following prices, delivered free to any Railway Station in England :—

Size of House.	With Cylinder Boiler.	With Saddle Boiler.
20 feet by 10 feet	£8 10 0	£9 0 0
25 ,, by 12 ,,	10 0 0	10 10 0
30 ,, by 12 ,,	11 10 0	12 0 0
30 ,, by 15 ,,	13 10 0	14 10 0
40 ,, by 15 ,,	16 10 0	17 10 0
50 ,, by 15 ,,	18 10 0	20 0 0

The above prices include Boiler, strong Furnace Doors, Bars, Soot Doors, Cistern, Damper, Hot-water Pipes and Connections, Air Pipes, &c., all ready for fixing, and of the best quality. Further particulars will be sent on application. Parties ordering must send plans, showing doorways, position of boiler, &c.—J. JONES, Hot-water Apparatus Manufacturer, 6, Bankside, Southwark, London, S.E.

HORTICULTURAL BUILDINGS AND HEATING BY HOT WATER.

JOHN R. PEILL, 17, New Park St., Southwark, S.E., Manufacturer of every description of Buildings for Horticultural purposes, and Inventor of the Improved Conical Boiler for heating the same, is prepared to undertake works of any magnitude, and refers among others to the celebrated range of FORCING HOUSES at HER MAJESTY'S GARDENS, FROGMORE, and at SIR ROBERT PEEL'S, DRAYTON MANOR, constructed under the superintendence of his Manager, Mr. JOHN JONES; and also to his BOILERS fixed at the CRYSTAL PALACE, the ROYAL BOTANIC GARDENS, REGENT'S PARK, and KEW, and at several hundreds of the Nobility's seats, Public Establishments, and Manufactories in London and the provinces. J. R. P. also manufactures every description of Iron Roofs, Iron Houses, and Iron Fencing, plain and ornamental. Strong Iron Hurdles for Sheep (6 ft. long, 3 ft. high, with 5 bars), 4*s.* 3*d.* each; ditto for cattle, 4*s.* 9*d.* each. Prices and other particulars forwarded on receipt of one postage stamp.

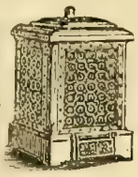
LOOMES AND CO.'s CABLE PATTERN GARDEN EDGING



may be obtained of
Messrs. HOOPER AND CO.,
Covent Garden Market, W.C.

IMPROVEMENTS IN HEATING, &c.

MUSGRAVE'S PATENT SLOW-COMBUSTION STOVE, for Warming Public Buildings, Hall, Shops, Conservatories, Factories, Drying Rooms, &c. Will burn in Churches from Saturday till Sunday evening, avoiding attention during the hours of worship. In Halls will burn day and night for weeks, with little care. Capable of warming a large apartment for 24 hours, at a cost of 3d.; and deserving of special attention, because of its safety, healthfulness, durability, and extreme simplicity. This Stove is the nearest approach to warming by hot water.



MUSGRAVE'S PATENT STABLE FITTINGS AND HARMLESS LOOSE BOXES have obtained the award of a large Council Medal from the R. I. A. Society for the following improvements:—1st, The Horse cannot injure himself or others in the same stable if he breaks loose in his stall. 2d, He cannot waste the hay. 3d, He can have cut or uncut hay at pleasure. 4th, He has clean water always before him. 5th, A pure and wholesome atmosphere is secured. 6th, The whole fittings are stronger than usual, without increase in price, and there is no risk of infection.



The Loose Box is really what its name denotes, and the most spirited Horse may be turned into it without danger.

MUSGRAVE'S PATENT IRON COW-HOUSE FITTINGS, as approved by the Board of Works, adopted in the Ulster Model Farm, and by many of the most eminent Stock Breeders in the Kingdom, are made wholly of iron, very durable, cleanly, and attractive in appearance. The fodder is always fresh, being freely exposed to the air, removed from the breath of the animal, and separated from the roots or damp food. The range of Troughs can be quickly filled with water for the use of the Cows, or for washing out in case of epidemic, and the cost is very moderate.



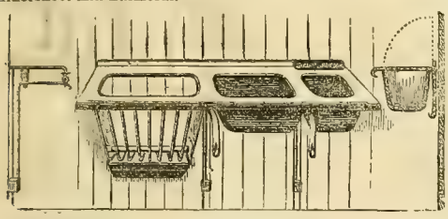
These inventions being distinguished for strength, simplicity, and practical usefulness will repay public inquiry.

MUSGRAVE BROTHERS are also Makers of Wire Fencing, Hurdles, Field and Entrance Gates, Corn Rick Stands, Conservatories, Hot-water Apparatus, Verandahs, Rural Bridges, &c.; and their works being favourably placed for cheap labour and materials, they can offer corresponding advantages in price.

MUSGRAVE'S Patent Field Gates have gained the 1st Prize from the R. I. A. Society for strength, durability, and cheapness.

For particulars address MUSGRAVE BROTHERS, Ann Street Iron Works, Belfast.

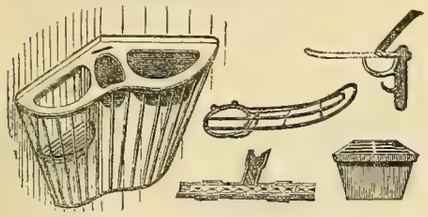
COTTAM'S PATENT INVENTIONS FOR STABLE REQUISITES, awarded a Prize at the Paris Exhibition, patronised by the English and French Governments, as well as by the principal Nobility, Gentry, and Hunting Establishments in the kingdom. In use at her Majesty's Stables, Aldershott and Balmoral.



COTTAM AND COMPANY, Winsley Street, W., are the original inventors of the PATENT ENAMELLED MANGER, Water Trough, and Wrought Iron Rack, united to an iron top-plate, and forming one complete and useful fixture, having COTTAM'S patent noiseless halter guide and collar rein attached, which is taken to the back of the manger, and works with ease and freedom up or down the guide bar.

COTTAM'S NEW PATENT SEED-BOX, an important addition to the above fittings, being simple in construction, light, and durable, promotes cleanliness, and is economical in its results.

COTTAM'S PATENT PERMANENT ATTACHED DROP COVER, for the above, is a most essential addition to their fittings; it is never in the way; can be placed and replaced in an instant; while its cheapness, simplicity, and utility in keeping the contents of the troughs clean, and regulating the quantity to be taken, is quite sufficient to insure its use.



COTTAM'S PATENT SADDLE and HARNESS BRACKET combined, can be used with great advantage where space is an object, as it can be turned up out of the way when not in use.

COTTAM'S IMPROVED WROUGHT IRON VENTILATING BRACKET preserves the shape and allows a free admission of air to the under parts of the saddle.

COTTAM'S IMPROVED SURFACE CUTTER, with perforated moveable cover, the use of which prevents accidents, and can be easily cleaned out.

COTTAM'S CAST-IRON SANITARY TRAP, from its improved construction, gives a full water passage, and does not allow any smell to ascend from the drain.

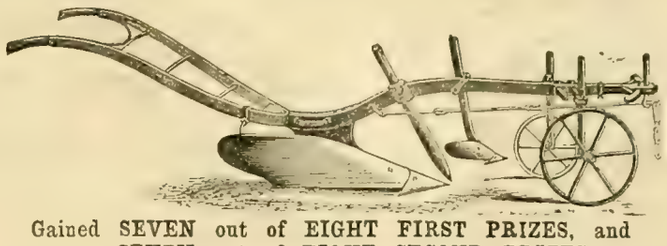
PATENT LOOSE-BOX FITTINGS, and every article for the harness-room and stable, kept in stock, plain, galvanised, and enamelled. Iron gates, fencing, hurdles, &c.

The New Illustrated Catalogue and Estimates, gratis, upon application to COTTAM and COMPANY, 2, Winsley Street Oxford Street, W. (opposite the Pantheon).

BEDFORDSHIRE AGRICULTURAL SOCIETY, 1859.

J. AND F. HOWARD have much pleasure in informing the Public that at the Ploughing Matches of the above Society, just concluded,

HOWARD'S CHAMPION PLOUGH



Gained SEVEN out of EIGHT FIRST PRIZES, and SEVEN out of EIGHT SECOND PRIZES,

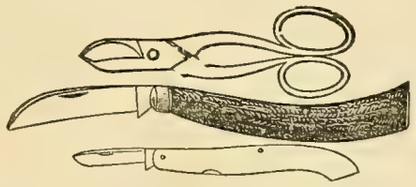
Thereby more than ever sustaining its position at home, while, at the recent Meetings of the Royal Agricultural Society of England and the Highland and Agricultural Society of Scotland, it also gained the

Two Chief Prizes as the Best Plough for General Purposes.

CATALOGUES, with full particulars, sent post free on application to

J. & F. HOWARD, BRITANNIA IRON WORKS, BEDFORD.

PAXTON WORKS, SHEFFIELD, ESTABLISHED 1738.



SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.—Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

PRICES REDUCED.

H. J. MORTON AND CO., Galvanised Iron Works, 2, Basinghall Buildings, Leeds.

GALVANISED IRON ROOFING

for Farm Buildings and other Roofs; the cheapest, most durable, and neatest Roofing in use; also Spouting at 10½d. per yard.

WIRE STRAND CABLE FENCING



(formed of Twisted Wires like a rope or cable), the strongest heapest, and neatest fence in use, will resist the largest cattle and will not bend or get out of form by trespassing upon or over. Price, with five lines of the Galvanised Strand, iron main posts, and pronged Standards, 1s. 2½d. per yard.

This fence is far cheaper than posts and rails, or any kind of iron fencing; and possesses four times the strength of solid bars. Will not rust nor corrode. Upwards of 1200 miles of this Fencing supplied.

GALVANISED GAME AND POULTRY NETTING.



Galvanised, 24 ins. wide, 2-inch mesh, 5½d., 7½d. and 9½d. per yard.

Galvanised, 24 ins. wide, 3-inch mesh, 4d., 5d., and 7d. per yard. The Netting made any width, and with openings of any size.

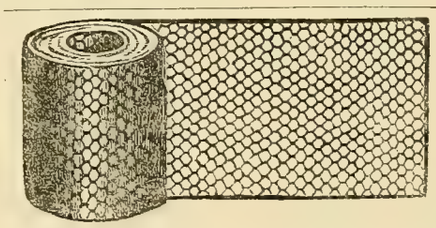
GALVANISED IRON CHAIN CAMP STOOLS & CHAIRS, POULTRY FOUNTAINS & FEEDERS, PRONGED DAHLIA RODS AND ROSE STAKES, &c.

Strong CATTLE HURDLES from 2s. per yard.

PATENT IMPROVED GAS WORKS,

of all sizes for the use of Private Houses, Mansions, Railway Stations, Mills, Collieries, Mines, Villages, &c. Works from 10 to 500 lights estimated for. The works can be entrusted to an ordinary labourer.—Apply to

HENRY J. MORTON & Co., 2, Basinghall Buildings, Leeds.



BARNARD, BISHOP, AND BARNARD, Market Place, Norwich, in consequence of improvements in their machinery for the manufacture of the above article, have been enabled to make a great reduction in the prices.

	Galvanised.	Japanned Iron.
2-inch mesh, 24 inches wide	5d. per yd.	4d. per yd.
2-inch ,, strong do.	6 ,,	4⅔ ,,
2-inch ,, intermediate, do. ..	7 ,,	5½ ,,
2-inch ,, extra strong, do. ..	9½ ,,	7½ ,,
1⅝-inch ,, 24 inches wide	5½ ,,	4½ ,,
1⅝-inch ,, strong, do.	6½ ,,	5¼ ,,
1⅝-inch ,, intermediate, do. ..	7½ ,,	6 ,,
1⅝-inch ,, extra strong, do. ..	10 ,,	8 ,,

All the above kinds can be made of any width (under 8 feet) at proportionate prices. If the upper half is of a coarser mesh than the lower, it will reduce the prices about one-fifth.

Strong Galvanised Poultry Netting, 8½d. per yard, 3 feet wide Galvanised Sparrow-proof Netting for Pheasantries, 2½d. per square foot. Delivered free of expense in London, Peterborough, Hull, or Newcastle. Manufacturers of Improved Strained Wire Cattle and Deer Fencing, Iron Hurdles, &c.

Illustrated Catalogues and Patterns forwarded by post.

WARNER'S PATENT VIBRATING STANDARD PUMPS.

PATENT CAST-IRON PUMPS for Farms, Cottages, Stable Yards, &c., where the Well does not exceed 28 feet in depth; fitted with WARNER'S Patent Metal Bucket and Valve, which cannot clog in action. These Pumps can be made right-handed, left-handed, or with handle opposite the nose by removing four screws only.



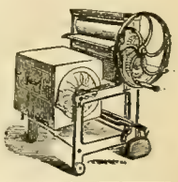
Diameter of Barrel.	Height.		£. s. d.
2¼ in.	short 1 ft. 7 in.	Fitted for lead, gutta percha or cast iron flanged pipe as required.	1 5
2½ ,,	long 3 ,, 3 ,,		1 10
3 ,,	ditto 3 ,, 6 ,,		2 4
3½ ,,	ditto 3 ,, 6 ,,		2 9
4 ,,	ditto 3 ,, 6 ,,		2 18
2½ ,,	short, with 15 feet of Lead Pipe attached, ready for fixing		2 10 0
2½ in.	long ditto ditto	ditto	2 14 0

The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.

May be obtained of any Ironmonger or Plumber in Town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin Street, London, E.C

Every description of Machinery for Raising Water by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

BRADFORD'S PATENT WASHING MACHINE SIMPLICITY AND WONDERFUL EFFICIENCY.



"I very gratefully acknowledge the extraordinary patronage I have received from all parts of England, Ireland, and Scotland, and which has very far exceeded my most sanguine expectations." — THOMAS BRADFORD, Patentee, Cathedral Steps, Manchester. London Office: 63, Fleet Street, E.C.

N.B. My Machines always have, and always will be sent on approval, if desired, before payment. Description and Price free by post.

THE AGRICULTURAL ENGINEERS' COMPANY (LIMITED).

Directors.

ANDREWES, CHAS. J., Esq., of the firm of Messrs. Barrett, Exall, & Andrewes, Agricultural Engineers, Reading.

BENTALL, E. H., Esq., Agricultural Engineer, Heybridge, near Maldon, Essex.

FOWLER, JOHN, Esq., Patentee of the Steam Plough, 28, Cornhill, London, E.C.

TURNER, E. R., Esq., of the firm of Messrs. E. R. & F. Turner, Agricultural Engineers, Ipswich.

WARNER, CHAS. B., Esq., of the firm of Messrs. John Warner & Sons, Bell and Brass Founders to her Majesty, and Hydraulic Engineers, 8, Crescent, Jewin Street, London, E.C.

Bankers—The Bank of England.

CENTRAL DEPOT AND SHOW ROOMS—
Swan Lane, Upper Thames Street, London, E.C.

This Company has been for the purpose of supplying the public direct, with Agricultural Implements and Machinery of the most approved construction, at Manufacturers' fixed prices.

With an ample Capital and the best and most extensive premises in London at its disposal, the Company can offer to Shippers, Colonists, Agriculturists, Foreign Buyers, Amateur Farmers, Gardeners, &c., the following *exclusive* advantages:—

The opportunity of purchasing from the largest and best selected Stock in England.

The certainty of being supplied with none but the best made and most efficient Implements of their class.

Promptitude, regularity, and care in the execution of all orders intrusted to it.

Reliable information and advice as to the requirements of particular districts and foreign markets.

Particular attention is called to the fact that the direction is composed exclusively of well-known Makers, whose practical knowledge and standing will afford an invaluable guarantee to purchasers of the material, workmanship, and adaptability to its use of every article sold.

Shippers, Colonists, and Foreign Buyers will be relieved of all anxiety and trouble by intrusting the execution of their orders to the Company.

The Stock will be found to comprise the manufactures of the leading makers. Illustrated Catalogues with prices, in English, French, German, and other languages will shortly be ready for distribution. Meanwhile Price Lists and every information may be obtained post free upon application at the offices of the Company.

Orders addressed to the Agricultural Engineers' Company (Limited), Swan Lane, Upper Thames Street, London, E.C., will have prompt attention.

TANSLEY NURSERY, NEAR MATLOCK.

To GENTLEMEN PLANTING AND THE TRADE.

J. SMITH, SEN., begs to offer his STOCK OF TREES AND SHRUBS, of various sizes, and in addition to his general stock of the leading kinds, he has this season to offer an Extra Stock of many hundred thousands of fine Larches, Scotch Firs, and Highland Pines; a large quantity of Evergreens, Privets, Mahonia Aquifolium, and other plants for planting under cover. Many things are grown in large quantities, and will be sold on advantageous terms to the Trade and gentlemen requiring large lots.

CATALOGUES sent free on application. The Nurseries are on the Mansfield and Nottingham roads, and 2 miles from Matlock Bridge Station on the Midland Railway.

IMPORTANT TO LANDHOLDERS.

FOR SALE, 200,000 LARCH FIR, 1½ to 2 feet at 15s per 1000.

200,000 LARCH FIR, 2 to 2½ feet, at 20s. per 1000.

50,000 LARCH FIR, 3 to 3½ feet, at 40s. ,,

FLUKE POTATOES for planting, warranted free from disease, at 4s. 6d. per bushel. Orders for the above to the amount of 5l. and upwards, Carriage paid to any Railway Station from Milford to London.—JACOB SCOTT MATTHEWS, Nurseryman, Seedsman, and Florist, Cardiff, South Wales.

ROBERT NEAL, NURSERYMAN, Wandsworth Common, S.W., begs to call the attention of buyers to his large and well-selected stock of EVERGREENS and FLOWERING SHRUBS, ORNAMENTAL TREES, AMERICAN PLANTS, FRUIT AND FOREST TREES, STANDARD AND DWARF ROSES of every description. A large stock of BOX-LEAF EVERGREEN PRIVET, from 1 to 6 feet for hedges; GREEN HOLLY, 1 to 6 feet; RICH BOG and LOAM for American Beds; LEAF MOULD. The Nursery is 10 minutes' walk from Clapham Common, and New Wandsworth Station, Crystal Palace Line.

IMPORTANT TO PLANTERS.

ROBERT PAIN respectfully calls the attention of intending planters to an inspection of his very superior stock of PORTUGAL and COMMON LAURELS and YEWS, from 4 to 7 feet high, and as much through, fine specimens, and in the best possible condition for removal, being grown expressly for immediate effect. Standard Apples for orchards strong and well grown tall stems, so that cattle may not reach them. Peaches, Nectarines, and Apricots, Rider, half-standard, and dwarf-trained with extra large sized heads. Drooping Limes, Elms, Ash, and Willows in variety on tall stems.

Scarlet, Double White, and Pink Hawthorn, of large size: Scotch Spruce, Weymouth Larch, and other Firs, from 4 to 10 feet in height; Chesnut, Birch, Poplars, Elm, Mountain Ash, Laburnum, Walnut, fine specimens, 9 to 12 feet high.

There is every facility for conveyance, as the Nursery is convenient to the Great Western Railway Uxbridge Station.

Uxbridge Nursery, Middlesex.

TRANSPLANTED FOREST TREES.

WOOD AND INGRAM beg to offer the following extra fine and well rooted stuff:—

ALDERS, 4 to 5 feet, 35s.; 5 to 6 feet, 40s. per 1000.
ACACIAS, 3 to 4 feet, 12s.; 4 to 5 feet, 15s.; 8 to 14 feet, 50s. per 100.
ASH, 3 to 4 feet, 30s.; 4 to 5 feet, 35s.; 5 to 6 feet, 40s.; 6 to 7 feet, 50s. per 1000.
BEECH, 2 to 3 feet, 30s.; 3 to 4 feet, 40s.; 4 to 5 feet, 50s. per 1000.
CHESNUT, SPANISH, 3 to 4 feet, 40s.; 4 to 5 feet, 50s.; 6 to 7 feet, 60s.; 7 to 8 feet, 80s. per 1000.
ELMS, NARROW-LEAVED ENGLISH, 2 years seedling, 8s. per 1000.
ELMS, HUNTINGDON AND HERTS, from layers, 3 to 4 feet, 15s.; 4 to 5 feet, 20s.; 5 to 6 feet, 25s.; 6 to 8 feet, 35s. per 100.
ELMS, HUNTINGDON, from grafts, 4 to 5 feet, 25s.; 5 to 6 feet, 30s.; 6 to 8 feet, 50s.; 8 to 10 feet, 70s. per 100.
FIR, SPRUCE, 1 to 1½ foot, 50s.; 1½ to 2 feet, 60s.; 2 to 3 feet, 70s. per 1000.
FIR, SCOTCH, 2 to 3 feet, 30s.; 2½ to 3 feet, 35s.; 3 to 4 feet, 50s. per 1000.
FIR, LARCH, 2 to 3 feet, 25s.; 3 to 5 feet, 35s.; 4 to 5 feet, 40s. per 1000.
HORNBEAM, 2 to 3 feet, 30s.; 3 to 4 feet, 35s.; 5 to 6 feet, 50s.; 4 to 5 feet, 40s. per 1000.
MAPLE, 1½ to 2 feet, 20s.; 2 to 3 feet, 25s.; 3 to 4 feet, 30s.; 4 to 5 feet, 40s. per 1000.
MAPLE, NORWAY, 3 to 5 feet, 8s.; 7 to 8 feet, 20s. per 100.
OAKS, BRITISH, 2 to 3 feet, 30s.; 3 to 4 feet, 40s.; 4 to 5 feet, 50s.; 5 to 6 feet, 80s. per 1000.
OAKS, TURKEY, 4 to 5 feet, 10s. per 100.
POPLAR, BLACK ITALIAN, 2 to 3 feet, 25s.; 3 to 4 feet, 30s.; 4 to 5 feet, 35s; 5 to 6 feet, 40s.; 6 to 8 feet, 50s.; 8 to 10 feet, 65s. per 1000.
POPLAR, LOMBARDY, 4 to 5 feet, 10s.; 5 to 6 feet, 15s.; 6 to 7 feet, 20s.; 7 to 8 feet, 25s.; 8 to 10 feet, 50s. per 100.
POPLAR, ONTARIO, 6 to 7 feet, 20s.; 7 to 8 feet, 25s. per 100.
SYCAMORE, 2 to 3 feet, 25s.; 5 to 6 feet, 40s.; 6 to 8 feet, 45s. per 1000.
WILLOW, BEDFORD, CÆRULEAN, and HUNTINGDON, 4 to 5 feet, 30s.; 5 to 6 feet, 40s. per 1000.

Prices to the Trade on application.

W. & I.'s new CATALOGUE of NURSERY STOCK, including Fruit, Forest, and Ornamental Trees and Shrubs, Evergreens, Roses, &c., is now ready and will be forwarded free on application.—Nurseries, Huntingdon.

NORTHAMPTON NURSERIES.

To NOBLEMEN, GENTLEMEN, AND OTHERS ENGAGED IN PLANTING.

JOHN PERKINS begs to call attention to his extensive Stock of FOREST and other trees, which are in the best possible condition for planting. The stock consists of many hundred thousands of the following:—

Ash, 2 to 3, 3 to 4, 4 to 5 feet
Alder, 4 to 5, 5 to 6 feet
Spanish Chesnuts, 3 to 4, 4 to 5 feet
Horse Chesnuts, 2 to 3 feet
Firs, Larch, 1 to 2, 2 to 3, 3 to 4 feet
Firs, Scotch, 1 to 2, 2 to 3 feet
Firs, Spruce White, 1½ to 2, 2½ to 3 feet
Firs, Balm of Gilead, 1½ to 2, 2 to 3, 3 to 4 feet
Firs, Weymouth, 2½ to 3 feet
Firs, Silver, 1½ to 2, 2½ to 3 feet
Pinus austriaca, 1 to 2, 2½ to 3 feet
Privets, 1 to 1½, 1½ to 2, 2 to 3, 3 to 4 feet
Laurels, 1, 1½ to 2, 2½ to 3, feet
Birch, 3 to 4, 4 to 5, 5 to 6 feet
Beech, 2 to 3, 3 to 6 feet
Elms, Scotch, 2 to 3, 3 to 4, 4 to 5, 5 to 6 feet
Hazel, 2 to 3, 3 to 4 feet
Mountain Ash, 3 to 4, 4 to 5, 5 to 6 feet
Oaks, English, 1½ to 2, 2½ to 3, 3 to 4 feet
Oaks, Turkey, 1½ to 2, 2 to 3 feet
Poplar, Ontario, 1½ to 2, 2 to 3, 3 to 4 feet
Poplar, Black Italian, 1½ to 2, 2 to 3, 3 to 4, 4 to 5 feet
Poplar, Lombardy, 1½ to 2, 3 to 4, 4 to 5, 5 to 6 feet
Sycamore, 1½ to 2, 2 to 3 feet
Berberis aquifolia, 9 in., 12 in., 1½ to 2 feet
Black Thorn, 1 to 2, 2 to 3 feet
Fine transplanted Quicks of various sizes

In addition to the above, a large stock of Ornamental Trees, Flowering Shrubs, Evergreens, and Coniferous Plants, from 1 to 6 feet, and all intermediate sizes, such as Cedrus Deodara, Araucaria imbricata, Picea Pinsapo, Picea nobilis, and Picea Nordmanniana. Prices of the above on application.

5, West Side, Market Square, Northampton.

PLANTING.

A. PAUL & SON

RESPECTFULLY invite the attention of Gentlemen improving their Estates or forming new Gardens to the following TREES, &c., which they are prepared to sell at the lowest remunerating prices for a good standard quality. It is their practice to transplant every second year, in order that little or no loss may be incurred by removal. Many things are grown in large quantities and offered on advantageous terms to the Trade. An inspection of the stock is invited.

Abies alba, 2 to 6 feet
,, ,, glauca, 1 to 2½ feet
,, Clanbrasiliana and other dwarf Firs, 9 in. to 1½ ft.
,, canadensis, 3 to 6 feet
,, Douglasii, 2 to 6 feet
,, fine onensis, 2 to 3 feet
,, Menziesii, 1½ to 6 feet
,, monstrosa, 2 to 7 feet
,, Morinda, 2 to 10 feet
,, orientalis, 1 to 2 feet
,, rubra, 2 to 4 feet
,, 20 other sorts, 1 to 6 feet
Araucaria imbricata, 1½ to 6 ft.
Arbor-vitæ (see Thuja).
Alaternus silver & gold striped, 1½ to 4 feet
Arbutus, 6 sorts, 1 to 3 feet
Aucuba japonica, 1 to 3 feet
Box, 6 sorts, 1½ to 6 feet
Berberis Darwinii, 1 to 1½ foot
Cedrus africanus, 2 to 10 feet
,, Deodara, 1 to 12 feet
Cedar of Lebanon, 1 to 12 feet
,, Red, 2 to 5 feet
,, White, 3 to 5 feet

☞ The largest and finest stock of Cedars in the country.

Cistus, 12 sorts, 1 to 3 feet
Cryptomeria Lobbiana, 3 to 8 ft.
,, nana, 9 inches
Cupressus Corneyana, 1½ to 3 ft.
,, Knightii, 3 to 4 feet
,, Lambertiana, 3 to 7 feet
,, Lawsoniana, 9 in. to 1 foot
,, torulosa, 1½ to 3 feet
,, 12 other sorts, 1 to 4 feet
Daphne pontica, 2 to 3 feet
Furze, double, 1 to 1½ foot
Garrya elliptica, 1½ to 3 feet
Holly, green and variegated, 30 sorts, 1 to 6 feet
,, green standards, 5 ft. stems
Juniperus chinensis, 2 to 5 feet
,, communis pendula, 2 to 3 ft.
,, excelsa, 1 to 2½ feet
,, fragrans, 2 to 4 feet
,, glauca, 2 to 3½ feet
,, oblonga, 2 to 6 feet
,, ,, pendula, 2 to 3 feet
,, thurifera, 1½ to 6 feet
,, tamariscifolia
,, virginiana aurea, 1 to 2 feet
,, ,, pendula, 1½ to 3 feet
,, viridis, 1½ to 2½ feet
,, weeping, 5 feet stems
,, 20 other sorts, 1 to 6 feet
Laurel, Common, 1 to 5 feet
,, Portugal, 1½ to 4 feet
,, ,, Standards, 8 feet
Laurustinus, 1 to 2 ft. (bloom)
Ligustrum lucidum, 3 to 4 feet
,, japonicum, 1½ to 3 feet
,, ovalifolium, 5 feet
,, evergreen, 2 to 4 feet
Mahonia aquifolia, 1 to 3 feet
,, 6 other sorts, 1 to 3 feet
Phillyreas, of sorts, 1½ to 7 feet
Picea amabilis, 1 to 1½ foot
,, nobilis, 1 to 4 feet
,, Nordmanniana, 1 to 4 ft.
,, Pinsapo, 1½ to 4 feet
,, Webbiana, 2 to 3 feet
,, 6 other sorts, 1 to 6 feet
Pinus austriaca, 2 to 4 feet
,, Benthamiana, 2 to 5 feet
,, calabrica, 3 to 4 feet
,, Cembra, 1½ to 4 feet
,, excelsa, 1½ to 12 feet
,, insiguis, 3 to 6 feet
,, Llaveana, 2 to 5 feet
,, Laricio, 2 to 4 feet
,, macrocarpa, 2 to 3 feet
Pinus monticolor, 2 to 3 feet
,, monspeliensis, 3 to 5 feet
,, muricata, 3 to 5 feet
,, Montezumæ, 3 years seedlings
,, nivea (Snow Pine), 1½ to 5 ft.
,, Pallasiana, 2 to 3 feet
,, pinaster, 3 to 6 feet
,, pyrenaica, 4 to 6 feet
,, Sabiniana, 4 to 5 feet
,, 40 other sorts, 1 to 6 feet
Quercus (Oak), Evergreen 3 to 5 feet
,, Fordii, 4 to 6 feet
,, latifolia, 3 to 6 feet
,, Mirbeckii, 2 feet
,, Suber (Cork Oak), 3 to 4 ft.
Ruscus hypoglossum
Santolina chamæcyparissus, 1 foot
Taxodium distichum, 3 to 6 ft.
Taxus (Yew), adpressa, 2 to 4 ft.
,, canadensis, 1½ to 3 feet
,, cheshuntensis, 1½ to 6 feet
,, elegantissima, 1½ to 4 feet
,, gold striped, 1½ to 5 feet
,, ,, standards, 5 feet
,, Jackson's Weeping, 1½ foot
,, japonica, 1 to 2 feet
,, nana, 2 to 4 feet
,, nigra, 3 feet
,, stricta, 5 feet
,, yellow-berried, 2 feet
,, common, round, and fair 2 to 7 feet
,, Irish, 2 to 7 feet
,, 12 other sorts, 1 to 4 feet
Thuja americana, 3 to 8 feet
,, aurea, 1 to 3 feet
,, Chinese, 2 to 4 feet
,, gigantea, 2 to 3 feet
,, Wareana, 1 to 5 feet
,, 12 other sorts, 1 to 3 feet
Thujopsis borealis, 2 to 3 feet
Salisburia adiantifolia, 3 feet
Wellingtonia gigantea, 1 to 3ft.

Acer negundo variegata, 2 to 6 feet
Acacia, of sorts, 4 to 10 feet
Ash ,, 6 to 10 feet
Alder ,, 6 to 10 feet
Ailanthus ,, 8 feet
Almonds ,, 6 to 8 feet
Beech, purple, best variety, 5 to 8 feet
Birch, of sorts, 6 to 10 feet
Chesnut, Horse, of sorts, 1½ to 6 feet
,, Spanish, of sorts, 2 to 8 ft.
Catalpas, 6 to 8 feet
Caragana arborescens, 6 to 8 ft.
Cerasus padus aucubæfolius, 6 to 8 feet
Cornus mas variegata, 2 feet
Elms, 12 sorts, 6 to 8 feet
Gleditschias, 1½ to 8 feet
Kolreuteria paniculata, 3 to 6 feet
Laburnums, 8 feet
Lilacs, Persian, 6 feet stems
Liquidambars, 2 to 3 feet
Limes, of sorts, 8 to 10 feet
Maple ,, 5 to 10 feet
Planes ,, 7 to 10 feet
Poplar ,, 6 to 10 feet
Oak ,, 6 to 10 feet
Robinia ,, 6 to 8 feet
Sophora japonica, 10 feet
Sycamore, 6 to 10 feet
Thorns, of sorts, 6 to 8 feet
Tulip Trees, 2 to 10 feet
Willows, American, and others
Quick, 2-year transplanted, fine

WEEPING AND LAWN TREES in very great variety.

FLOWERING TREES AND SHRUBS, in 300 species and varieties, including Althæa, Cytisus, Berberis, Daphne, Deutzia, Lilac, Purple Nut, Pyrus, Ribes, Rose Acacia, Syringa, Spiræa, Weigela, &c.

ROSES, an unrivalled collection. Standards, 12s. per dozen and upwards; dwarfs, 6s. per dozen and upwards. See separate Catalogue.

HARDY CLIMBING PLANTS, a large collection.

AMERICAN PLANTS, including Azaleas, Heaths, Kalmias, Magnolias, Rhododendrons, &c.

FRUIT TREES, consisting of all the choicest sorts, warranted true to name. The trained Peaches, Nectarines, Apricots, &c., particularly fine.

GRAPE VINES, from eyes, well ripened, short jointed canes 6 to 10 feet.

HERBACEOUS PLANTS, in 500 species and varieties.

HOLLYHOCKS, a fine stock of healthy and well established plants. See separate Catalogue.

☞ Particulars of Prices, &c., furnished on application. Carriage of all packages free to London; if a ton weight or upwards placed free on the Railway at any London Terminus. An inspection of the stock invited.

A. PAUL AND SON,
NURSERIES, CHESHUNT, HERTS,
13 miles N.E. of London, Eastern Counties Railway.

J. COCKS AND SON offer the undermentioned, all of which are extra fine. To parties requiring large quantities they would Sell on still more liberal terms:—

QUICK, two years transplanted, 3 to 4 ft. .. 16s. 0d. per 1000.
,, if 10,000 or more taken .. .. 15 0 ,,
GOOSEBERRIES, Warrington or Ashton } 8s. p. 100 60s. p. 1000.
,, Red, Whitesmith, and other leading varieties } 8s. p. 100 60s. p. 1000.
CURRANTS, Red Grape .. .. .. 7 ,, 60 ,,
,, ,, Dutch } .. .. 8 ,, 70 ,,
,, ,, Goliath }
,, Black .. .. .. 7 ,, 60 ,,
,, ,, Naples .. .. 8 ,, 70 ,,
,, White Grape .. .. 8 ,, 70 ,,

The above are all well grown, and two or more years cut down.

Donington, Spalding.—Dec. 17.

NEW AND CHOICE PLANTS.

JOHN STANDISH, in offering the following Plants can assure his customers that they are now in fine condition for sending out:—

MYOSOTIDIUM NOBILE, or Antarctic Forget-Me-Not, esq 31s. 6d.—This plant, from the Chatham Islands, is one of the most remarkable that has been introduced for some years being totally distinct from all others. It has large thick leaves, 8 or 9 inches across, of a dark glossy green, and sends up magnificent trusses of bloom of the most beautiful blue and white, similar to a Forget-me-not, but of a giant form. A Drawing of it is published in Curtis's "Botanical Magazine" for September. A description taken from the above is also published in the *Gardeners' Chronicle* of Sept. 17, 1859, wherein Dr. Lindley says:—"This is the handsome perennial provisionally named Cynoglossum nobile by Dr. Hooker in our last year's Volume, page 240. It is quite deserving all the encomiums that have been passed upon it."

GLADIOLI, named varieties, from the choicest and largest collection in England, 6d. to 5s. each. Also a fine lot of bulbs raised from seeds saved from the best flowers, all of which will flower in the summer of 1860. 7s. 6d. per dozen, or 50s. per 100. These are strongly recommended.

RHODODENDRON LIMBATUM.—Pale blush, bordered with bright crimson. This has received several medals at the exhibitions for Rhododendrons, being very distinct and one of the most free flowering. 21s. each.

RHODODENDRON MINNIE.—White, very large blotch of chocolate-coloured spots, a fine flower, and remains a very long time in bloom. This is one of the most curiously marked Rhododendrons amongst all the white; it bears a noble truss of blooms, which cannot fail to be admired. 21s. and 31s. 6d. each. Selections can be made from one of the finest collections in Europe.

PHLOX MRS. STANDISH.—The purest white, with a large red eye, 5s. each. Also a large collection of the finest kinds which J. S. has shown during the last summer and in every case received the First Prize. Plants from 1s. to 2s. 6d. each.

A CATALOGUE containing a full description of the best Hardy Plants in cultivation will be forwarded on application to

The Royal Nursery, Bagshot.

FIVE THOUSAND INDIAN AZALEAS.

WILLIAM BARNES begs to invite attention to his unrivalled Collection of the above beautiful and justly admired class of plants. The sizes vary from 1 to 5 feet in height, worked upon strong healthy stocks, are in the finest possible condition, and perfectly free from thrip. The following list comprises a portion of his extensive stock:—

Conqueror
Murrayana
Carminata
Duke of Devonshire
Triumphans
Perryana
Iveryana
Alba striata
Aurora
Coronata
Variegata
Lateritia
Gledstanesi
Alba magniflora
Frostii
Delecta
Alba magna
Holfordii
Ardens
Vivicans
Rosea elegans
Juliana
Elegans superb
Beauty of Reigate
Lawrenciana
Symmetry
Vesta
Gledstanesi excelsa
Buckinghamii
Maria
Chelsonii
Fentonii
Lucens
Constantia rosea
Lateritia grandiflora
Trotteriana
Gledstanesi formosa
Glory of Sunning Hill
Extransii [ford
Countess of Stamford
Beauty of Europe
Barclayana
Stanleyana
Crispiflora
Striata formosissima
Admiration [ma
Criterion
Delicatissima
Magnificans
Alba Melior
Mrs. Fry
Perfecta elegans
Lateritia alba supreme
Empress Eugenie
Impératrice Josephine
Eulalie Van Geert
Queen Victoria (continental)
Reine des Belges
Queen of Perfection
Adolphe
Leeana
Louis Napoleon
The Bride
Gem (Ivery's)
Madame Miellez
Princess Mary of Cambridge
Petuniæflora
Roi Leopold
Rosy Circle
Sir Charles Napier
Standard of Perfection
Grand Monarch
Marie Louise
Queen Victoria (Ivery's)
Iveryana alba cincta
Alba lutescens
Modèle
Baron de Peet
Le Géant
Belle Jeannette
Etendard de Flandres
Papilionatima
Rubens
Pelargoniflora
Gloire de Lederberg
Baron de Vrière
Gloire de Belgique
Distinction
Queen of Whites
Leopoldi
Duc de Brabant
Etoile de Gand
Reine des Panachées
Princess Adelaide de Nassau
Flower of the Day
Souvenir de l'Exposition
Duchess Adelaide de Nassau
Iveryana Improved
Duc de Nassau
Miltonii
Variegata superba
Bouquet de Flore

CATALOGUES with Prices can be had on application.

Camden Nursery, Camberwell, S.

MESSRS. WATERER AND GODFREY respectfully refer planters to the following LIST of well-known good hardy Plants:—

ARAUCARIA IMBRICATA, 1 foot, stout, healthy, 5l. per 100; larger, up to 8 feet.
CEDRUS DEODARA, 2½ to 3 feet, very handsome, 10l. per 100; larger, in any quantity, up to 10 and 15 feet.
PICEA NOBILIS, Seedlings, in quantity, 1 foot, stout.
Ditto larger and in every way perfect plants, up to 4 feet.
NORDMANNIANA, from seed, 2, 3, 4, and 6 feet.
PINSAPO, 2½ to 3½ feet, and as much through.
Ditto magnificent plants, 8 and 10 feet high.
CUPRESSUS LAWSONIANA, fine bushy seedling plants, 2½ feet high.
JUNIPERUS, CHINESE, 3 feet up to 8 and 10 feet.
,, IRISH, 5, 6, and 7 feet.
YEWS, IRISH, 5, 6, 7, and 8 feet.
,, GOLDEN, from 2 to 7 and 8 feet.
,, COMMON ENGLISH, in large quantities, 4 to 6, 7, and 8 feet.
THUJA AUREA.—Several hundred magnificent specimens, 3, 4, and 5 feet high, and measuring 10 to 15 feet in circumference.
THUJOPSIS CÆREOLIS, 2½ to 3 feet.
WELLINGTONIA GIGANTEA, all from seed, 1½ to 3 feet, and as wide.
HOLLY, GREEN, in quantities, 5, 6, and 8 ft.; VARIEGATED, especially the best gold striped, of all sizes, up to 6 feet.

All the plants referred to in this advertisement were removed in April last, and they are in a condition to travel any distance with perfect safety.—Knap Hill Nursery, near Woking, Surrey.

PINE APPLES, GRAPES, &c.

PINE PLANTS, Fruiting and Succession.

GRAPE VINES, from Eyes, for Fruiting in Pots or Planting.

JOHN WEEKS AND CO. can now supply any quantity of very fine strong healthy Pine Plants, either Fruiting or Succession; also remarkably fine strong Grape Vines from Eyes, all the best sorts.

JOHN WEEKS & Co.'s Horticultural Show Establishment is now entirely devoted to the Growing and Forcing of Fruits in great variety, thereby showing the most improved plans of construction, and the most superior system of Hot-water Apparatus.

JOHN WEEKS & Co., Horticultural Builders and Hot-water Apparatus Manufacturers, King's Road, Chelsea London, S.W.

NEW PINES AND OTHER PLANTS.

A. VAN GEERT, NURSERYMAN, Ghent, Belgium, begs to offer the following:—

A set of 100 new Mexican Pines, for	.. .. ..	£6	0 0
A collection of 100 best Camellias, 9 inches to 1 foot high		4	0 0
Indian Azaleas, with flower buds, choice varieties,	per 100.—47. to	6	0 0
Alstræmeria chilensis	per 100	0	10 6
Asclepias tuberosa, flowering roots ..	,,	0	15 0
Lilium superbum	per doz.	0	12 0
,, lancifolium rubrum	per 100	4	0 0
,, ,, album	,,	3	0 0

THE GREAT VINE AT HAMPTON COURT.—The Subscribers being the holders of the Royal Kitchen Gardens, Hampton Court, are enabled to offer genuine the famous and truly excellent HAMPTON COURT BLACK HAMBURGH GRAPE. [each

Strong well-ripened Fruiting Plants, in 12-inch pots, 10s. 6d.

Good well-ripened Plants, in 9-inch pots, 5s. each.

A liberal reduction in price if taken in large numbers.

THOMAS JACKSON & SON, Nurseries, Kingston, S.W.

NEW APPLE.—NELSON'S GLORY.

WM. WOOD AND SON have the honour to announce that they have been appointed Agents for the Sale of the above very excellent new Apple, the property of Mr. J. NELSON, of Bristol.

NELSON'S GLORY APPLE is one of immense size, weighing from 20 to 22 oz., and especially adapted to culinary purposes; indeed for making Jelly, Jam, and Sauces it is truly invaluable, and is ready for use from August to December. Plants have been ordered by all those parties who had the opportunity of seeing the magnificent fruit at Bristol.

DWARF MAIDEN PLANTS are now ready for sending out at 5s. each, with the usual discount allowed to the trade.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

DWARF MAIDEN FRUIT TREES.—APPLES.

PEARS.	CHERRIES.	PEACHES.
PLUMS.	APRICOTS.	NECTARINES.

Prices moderate.

Fine and clean grown; and all the leading sorts can be supplied in quantities by GEORGE JACKMAN & SON, Woking Nursery, Surrey.

DWARF TRAINED FRUIT TREES.—APPLES.

PEARS.	CHERRIES.	PEACHES.
PLUMS.	APRICOTS.	NECTARINES.

Prices moderate.

Great care is taken in the formation of these fine, healthy, free-grown trees. Particulars can be obtained of GEORGE JACKMAN & SON, Woking Nursery, Surrey.

FOREST TREES.

JOHN WATERER has to offer upwards of a Hundred Thousand of each of the following, from 2 to 4½ feet high, and all good rooted:—

CHESNUT	LARCH	BIRCH
HAZEL	ASH	ALDER
SCOTCH	LAURELS	WITHY, &c.

Samples with prices sent on application. Planting done by contract.—The American Nursery, Bagshot, Surrey.

CHRISTMAS SHOW OF FRUIT & VEGETABLES.

TAYLOR'S GRAND STAND, ST. JOHN'S MARKET, LIVERPOOL.

Growers, Fruiterers, and others having goods to dispose of that are very choice, either in PINES, GRAPES, PEARS, CUCUMBERS, NEW POTATOES, MUSHROOMS, ASPARAGUS, SEAKALE, RHUBARB, or CHOICE FLOWERS, will please forward the same to GEORGE TAYLOR, Choice Fruit and Vegetable Salesman, St. John's Market, Liverpool.

SHOW OF CHOICE FRUIT AND VEGETABLES.

TAYLOR'S GRAND STAND, ST. JOHN'S MARKET, LIVERPOOL.

Growers and others having choice FRUITS, VEGETABLES, or FLOWERS to dispose of will please forward them immediately to GEORGE TAYLOR, Choice Fruit and Vegetable Salesman, St. John's Market, Liverpool.

NEW ANNUALS.

JOHN GEORGE WAITE, SEED MERCHANT, 181, High Holborn, London, W.C., has great pleasure in offering SEEDS of the following new hardy Annuals:—

CLARKIA PULCHERRIMA,
SCHIZANTHUS GRANDIFLORUS OCULATUS,
HELIOPHILA CŒRULEA STRICTA.

Coloured Drawings and prices of which (to the Trade only) can be had on application.

Seed Establishment, 181, High Holborn, London, W.C.

RHODODENDRON EDGEWORTHI.

MESSRS. J. AND C. LEE have to offer a small quantity of SEED of this most beautiful and fragrant CONSERVATORY RHODODENDRON. Having carefully impregnated it with itself they can warrant it to produce the true R. Edgeworthi, whose flowers are pure white, with a delicious fragrance, and measure 6 inches in diameter. Sealed packets, 5s. each, post free.

Nursery & Seed Establishment, Hammersmith, London, W.

NEW SEED CATALOGUE.

MESSRS. JOHN AND CHARLES LEE beg to inform their friends and the public that their NEW DESCRIPTIVE SEED CATALOGUE FOR 1860 may now be had post free on application.

Mr. JOHN LEE continues to devote himself especially to this important branch of their business, for which their house has been so long celebrated in the selection of SEEDS from the most genuine stocks at home and abroad.

Nursery and Seed Establishment, Hammersmith, London, W. EXPERIENCED GARDENERS RECOMMENDED.

NEW HARDY PROLIFIC CUCUMBER, MASTERS'S VIRIDISSIMA.

MESSRS. MASTERS AND SON have pleasure in introducing a new variety of CUCUMBER, which is the hardiest, the most productive, and the greenest of all known varieties. It is the best ridge Cucumber extant, and is also quite adapted for Frame culture; length, 12 to 18 inches; well set with black spines. Packets of seeds, 1s. and 2s. 6d. each, containing 12 and 36 seeds respectively.

Exotic Nursery, Canterbury; and Plant Nursery, Maidstone.

RHODODENDRONS.

JOHN WATERER'S CATALOGUE OF HARDY, SCARLET, and other choice RHODODENDRONS, as annually exhibited at the Royal Botanic Gardens, Regent's Park, is now published and will be forwarded on application. Faithful descriptions of all the esteemed varieties will be found detailed, with a list of the popular kinds of AZALEAS and other AMERICAN PLANTS, as well as a selection of CONIFEROUS TREES, with height and prices.

The American Nursery, Bagshot, Surrey, near Sunningdale Station, South-Western Railway.

PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN AND WOOD FORESTERS,

respectfully announce that they have now issued their

NURSERY CATALOGUE OF FOREST TREES, CONIFERÆ, SHRUBS, &c.,

which they will be happy to forward free by post on application.

27, Great George Street, Westminster, S.W.

PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN AND WOOD FORESTERS, 27, Great George Street, Westminster, London, S.W., respectfully announce the issue of their GARDEN SEED CATALOGUE for 1860, which they will be happy to forward free by post on application. Every care has been bestowed on the selection and growth of the various stocks, which P. L. & SON can safely recommend as of best quality, and true to name.

DALMAHOY EARLY POTATOES.

This excellent variety of Potato now meets with a largely increased demand in England, to which it is fairly entitled. It is considerably earlier than the Regent, and of excellent quality. Messrs. P. L. & SON are now prepared to send out carefully selected Seed, for which early orders are requested; and which can either be executed now or in spring, as may best suit purchasers.

NEW GARDEN SEEDS, GROWTH OF 1859.

ROYAL BERKSHIRE SEED ESTABLISHMENT.

SUTTON AND SONS are now prepared to execute orders for all kinds of GARDEN SEEDS, and can warrant them genuine.

Royal Berkshire Seed Establishment, Reading.—Dec. 17.

TO THE TRADE.

HENDERSON'S COMPACT TOPPED GARDEN BEET.—This superior variety, introduced by us three years since, is now generally cultivated in most gardens; its peculiar short top, symmetrical roots, and fine dark crimson colour, are points of excellence rivalled only by its exquisitely rich and sugary flavour. Price on application.

AUSTRALIAN GARDEN CRESS.—This remarkable large gigantic Cress is so rapid and fast growing that in Australia and New Zealand it almost stops the navigation of the rivers. The true Broad-leaved sort. Price on application.

N.B. New VEGETABLE SEED CATALOGUE is now ready, and can be sent on application.—Pine-apple Place, W., Dec. 17.

ROYAL EXOTIC NURSERY, CHELSEA, S.W.

JAMES VEITCH, JUN., respectfully announces that his CATALOGUE OF KITCHEN GARDEN AND FLOWER SEEDS for 1859, with a List of Implements and other Garden requisites, is now published, and will be forwarded post free on application.

J. V., Jun., devoting his personal attention to this department of his business, can warrant his SEEDS TRUE TO NAME, and of the MOST GENUINE description.—December 17.

SOME of the EXHIBITING GARDENERS have resolved to present Mr. GEORGE EYLES with a TESTIMONIAL for his attention to them as a body during his Superintendence at the Crystal Palace Flower Shows. Several Nurserymen and Amateurs have expressed a desire to co-operate; it has, therefore, been determined to open the SUBSCRIPTIONS to all Exhibitors. The next Meeting will be held at the Swan Tavern, Stockwell, on THURSDAY, 29th inst.

Treasurer—Mr. E. HAMP, Mawbey House, South Lambeth.

Committee.

Mr. Boyce.	Mr. J. Reed.	Mr. Turner.
,, Laybank.	,, B. Peed.	,, Young.
,, Page.	,, Smith.	

OSMAN RHODES, Hon. Sec.,
London Road, Hackney Downs, Clapton, N.E.

The Gardeners' Chronicle.

SATURDAY, DECEMBER 17, 1859.

ABOUT the close of the last century great expectations were formed of the results to our navy from the cultivation of LARCH. A very fine vessel was built entirely of Larch wood from the Duke of ATHOLL'S estate, which was singularly exempt from the ordinary symptoms of decay, and is we believe still a useful vessel, or at least was so a very few years since. Success however began and ended with this vessel, and trees of a sufficient size for ship-building have of late been found so subject to rot as to make them altogether ineligible for the purpose.

Up to a certain stage nothing can in general be more promising and satisfactory than the growth of Larch; but just about the time that the trees are large enough to form railway sleepers, they then begin to show unhealthy symptoms in the foliage, and in the course of a few years the centre which is penetrated by the spawn of Fungi in the form of white films or threads becomes soft and perishes, till at last nothing remains sound except the younger growth of the last 10 years, or it may be less. In every such case we believe that the evil has commenced with the roots, spreading up from thence to the layers of wood immediately surrounding the pith; and where Larch has been planted in ground already filled with old roots, and the chips of former fellings, which as they decay are infested with spawn, which passes thence to the living roots of the young trees, the disease is beyond doubt peculiarly virulent.

Unfortunately these or similar conditions too frequently exist where Larch is planted even on a large scale. In tracts covered with Ling, it is obvious that there must be considerable damage from this cause, and it is probable that Larch is seldom planted where it can be entirely free from risk. A very striking instance of the evil of old roots remaining in the soil where Conifers are planted has occurred lately at Kew. Two Deodaras were planted a few years since before the Director's house, of which one succeeded admirably, but the other though to all appearance enjoying similar conditions was less vigorous, and after a time was evidently diseased. Its roots therefore were carefully examined, and it was found that a portion was covered with threads of spawn proceeding from the decaying roots of a Cherry tree, which formerly occupied the place. The affected parts were cut off, and the old Cherry roots grubbed up, and the tree is now thriving, and apparently not likely to suffer any further inconvenience.

It has not indeed been accurately ascertained to what especial Fungus the spawn which infests the roots and timber of Larch belongs, but we have reason to believe that in many instances it is the barren state of *Polyporus destructor*, a Fungus as the name implies of very injurious influence, though other species probably have their share in the mischief. In instances of decay like this the spawn seldom makes its way completely through the healthy rings of wood which surround it, and till it gets free access to the outer air, no fructification is produced, without which it is scarcely possible to recognise Fungi.

We have however a very curious instance before us forwarded by Sir WALTER C. TREVELYAN, in which mycelium has penetrated through the bark and produced its proper Fungus, under the form of a beautiful red and white Peziza, known to botanists by the name of Peziza calycina. In a small plantation most of the trees of which are young, nearly all are more or less attacked on stem and branch with the Peziza, but they do not when cut down appear to be at all decayed, and the roots seem healthy. The bark however on which the Peziza is seated is dead, and the part of the stem corresponding with it depressed as if the growth of the tree had been for some time checked. As in most affections of the bark in Conifers there is a flow of turpentine, on which a minute Verrucaria is developed, but without true fruit, and therefore not readily determinable. The spawn apparently leads directly from the wood, and the cups of the Peziza burst completely through the crust of the Lichen.

It is not supposed that the Peziza is really the cause of the ordinary Larch rot, which as stated above is far more probably due to some one or more species of very different affinities, but the fact is well worth attention, and deserving accurate study on the spot. The Peziza is extremely common on Larch and other Conifers, and may be found on almost every branch which has been left on the ground after thinning, varying greatly in size according to the thickness of the branch, and its consequent powers of affording nutriment, but whether its sporidia are introduced into the affected parts before or after death is uncertain. It is very possible that Larch trees may be largely impregnated with spawn, which waits merely for some external accident that may facilitate its progress towards the surface, and consequently its appearance on the trunks may have arisen from some previous affection of the bark in the primary production of which it had no part. Whatever this may have been, the existing appearances are not difficult to account for. A small portion of the bark suffers from some unknown cause, and in consequence the secreting surface whether of the bark or wood beneath it dies, no fresh layers of wood are in consequence deposited; the disease spreads for a certain extent; resin is poured out, the healthy bark beyond the dead patch still increases in thickness as does the surrounding wood, and the consequence is a depression on the stem corresponding with the extent of dead bark above. The spawn of the Fungus has now decayed tissues on which it can work with ease, which at length give way and the proper fruit is produced, indicating the existence of spawn within

whose presence might otherwise not have been suspected.

It is to be observed, in illustration of what has been said, that there is a tendency in minute wounds of the bark to increase with age, when they penetrate to the wood and injure the secreting surface there. The bruises for instance produced by dust shot on the smooth bark of Beech trees extend gradually to a breadth of 3 or 4 inches, both wood and bark being equally affected; and it is possible that the case may have been the same here, from whatever cause the original injury may have arisen.

It is highly important that these affections of our forest trees, especially of one of such importance as the Larch would be, could any remedy be found against the prevalent decay, should be studied by competent persons. We feel greatly obliged to Sir W. Trevelyan for communicating the case before us, and trust that he will if possible follow it up. *M. J. B.*

At a late meeting of the Floral Committee of the Horticultural Society, Mr. Macintosh, Nurseryman, Hammersmith, produced a little plant, the singular beauty of which excited universal admiration. It formed a compact bush about 18 inches high, whose dark dull green leaves relieved in the most charming manner about 200 berries as large as marbles and of the most brilliant orange colour. There is probably no plant in cultivation, except in hot-houses, that can be compared with this for Christmas decoration; and what is important, the berries are so permanent that the bushes must retain their vivid colouring for many weeks.

Solanum capsicastrum, for so the plant is called, is no novelty. Many years ago it was grown in the Botanic Garden, Berlin, having been raised there from seeds sent by the Prussian traveller Sellow from the province of Mines in Brazil; it also occurs in the Argentine provinces much farther to the South, as is shown by a specimen from Tweedie preserved in our own herbarium. It is therefore a greenhouse plant of the hardier class. From Berlin it gradually found its way into the gardens of Europe, where it has lain neglected till its beauty was displayed by the good management of Mr. Macintosh, who, like a skilful lapidary, knew how to polish the gem which others had thrown carelessly aside. And now it is sought for eagerly, and will soon become one of the most coveted plants in our flower markets, for which it is in every way particularly well adapted.

It is for the last reason more especially that we thus direct attention to it; for whatever will contribute to the cheap little luxuries of the multitude deserves all the notice that can be given it. We have also another motive. The beautiful berries that adorn it are extremely tempting in appearance; they almost invite a taste, and it is scarcely possible to believe that they will not be occasionally eaten by children. What will be the effect? As a general rule all plants allied to Solanum are regarded as poisons; and such undoubtedly is the *Solanum tuberosum* or common Potato, if the leaves or berries are swallowed, although the so-called "root" is harmless; the common Bitter Sweet of our hedges, *Solanum Dulcamara*, has a bad reputation, and so have the berries of the weed called *Solanum nigrum*. But in the first place the poisonous quality of the two last seems to be either much exaggerated, or very uncertain in its action; for we have the evidence of a very experienced London physician that as much as 5 lbs. weight of the berries of the first have been administered to a young woman, in the course of 10 days, without the production of any unpleasant symptom; and those of *S. nigrum* are regularly gathered on the Island of Ascension for the use of the garrison, who call them Black Currants, and eat them in pies and puddings. Many other instances of harmless fruit in the genus Solanum are also recorded. We all know that S. Lycopersicum or the Tomata is harmless; so is S. Melongena and its varieties, so largely grown for table under the name of Aubergine or Brinjal. In Peru the fruit of *S. quitoense* comes to market under the name of Quito Oranges; another species, *S. muricatum*, is also eaten; in Australia we have *S. esuriale*, forming a part of the food of the natives of the River Lachlan, and *S. laciniatum*, known in Tasmania as the Kangaroo Apple; not to mention others. Whatever unpleasant qualities these fruits may possess disappear with ripeness. It is therefore improbable that any danger or indeed inconvenience would ensue if a child were to eat a berry or two of the *S. capsicastrum* now before us unless the fruit was green, in which state it is not likely to attract attention. Thus the possessors of this charming plant need not alarm themselves because it is a Solanum, but may cherish its beauty with perfect tranquillity.

The Kensington Gore Garden is now fairly started. H.M. Commissioners for 1851 have begun forming the ground levels, according to a plan proposed by Mr. Nesfield and sanctioned by H.R.H. the Prince Consort. Mr. Eyles, the new Superintendent, enters upon his duties on the 2d January. The great arcades will soon be commenced; and it is anticipated that the whole establishment will be approaching completion by the end of next year. The subscription list is so full that the Council of the Horticultural Society have found it necessary to decline receiving any further applications for debentures. Life members are presenting themselves daily; and on the 20th of January some hundreds will be elected Fellows. Mr. Nesfield is engaged in preparing a design worthy of the supporters of the new garden, of its site, and of English garden architecture; and everything is progressing as rapidly as the nature of the undertaking will permit.

We continue the list of the supporters who have been announced since that published on the 19th ult.:—

LIST OF PROMOTERS.	Donations.	Life Memberships	Debentures.
	£ s.		£
Sir Robert Brownrigg, Bart.	..	..	200
Mr. Commissioner Evans, F.H.S	..	..	100
A. W. McTier, Esq., F.H.S.	..	One	
G. G. Barrett, Esq.	..	..	100
Sir Henry Keating	..	..	200
Lady Keating	..	One	
Lady Caroline Neeld	..	One	
Charles Parker, Esq., F.H.S.	..	One	
Abel Birch, Esq.	..	..	100
Mr. William Falkner Birch	..	..	100
Mr. A. Falkner Birch	..	..	100
Thomas Critchley, Esq.	..	One	
Gilbert Henderson, Esq.	..	One	
Mrs. Henderson	..	One	
Miss Courtoy	..	..	100
Miss Elizabeth Courtoy	..	..	100
James J. Wheeble, Esq., F.H.S.	..	..	100
Duke of Buccleuch, F.H.S.	..	One	
Duchess of Buccleuch	..	One	
Henry Blake, jun., Esq.	..	..	100
Robert Hollond, Esq., Stanmore	..	..	100
Wm. Henry Gore Langton, Esq., M.P.	..	One	
J. W. Childers, Esq., F.H.S.	..	One	
Captain Henry Ward	..	One	
John Rogers, Esq.	..	One	
Mrs. Gunter	..	One	
Miss Gunter	..	..	100
Wm. Henry Cole, Esq.	..	One	100
Robert Augustus Aspinall, Esq.	..	..	100
Stephen Seagrave, Esq.	..	..	100
Mrs. Arthur W. Jaffray	..	One	
William Gibbs, Esq., F.H.S.	..	Two	100
Lord Middleton, F.H.S.	..	One	
James Milner, Esq.	..	..	100
Charles Paget, Esq., M.P.	..	..	100
Major-General Rawdon	..	One	
Robert Hanbury, Esq., M.P.	..	One	
Hon. George C. Mostyn	..	..	100
Hon. Mrs. Mostyn	..	..	100
Captain C. R. Egerton, R.N.	..	One	
William Lee Wright, Esq.	..	..	100
Mrs. Lee Wright	..	..	100
R. W. S. Lutwidge, Esq.	..	One	
Mrs. Sarah Le Blanc	..	..	100
Lieut.-General De la Motte, C.B.	..	..	400
Dr. Cahill	..	..	500
C. W. Reynolds, Esq.	..	..	200
Jonathan Hopkinson, Esq.	..	..	300
John Elger, Esq.	..	One	
George Gwyn Elger, Esq.	..	One	
Viscount Sydney	..	One	
John W. Brett, Esq.	..	One	
Mrs. James Maberley	..	One	
H. Wollaston Blake, Esq.	..	One	
Henry John Nicoll, Esq.	..	..	100
Mrs. Nicoll	..	..	100
Mrs. Morris	..	..	100
Hon. C. Lennox Butler	..	One	
George S. Trower, Esq.	25 0	..	
Lieut.-Colonel Meyrick	..	One	
Mrs. Cholmeley Dering	..	..	100
F. J. Dalgety, Esq.	..	One	
Mrs. Dalgety	..	One	
Rev. John Antrobus	..	..	100
Mrs. Seaton Laing	..	One	
Wm. Henry Ince, Esq., F.L.S.	..	..	100
Henry A. Ince, Esq.	..	..	100
F. J. Sloane, Esq., F.H.S., Florence	..	One	
Higford Burr, Esq.	..	One	
Geo. Robert Smith, Esq.	..	One	
Lord Belper	..	One	
Miss A. Strutt, Derwent Bank, Derby	..	One	
C. Morrison, Esq.	..	One	
H. T. Lambert, Esq.	..	One	
C. P. Leslie, Esq., M.P., F.H.S.	..	One	
Lady Louisa Thynne	..	One	
J. G. B. Hudson, Esq.	..	One	
Thomas Bush Saunders, Esq.	..	One	

New Plants.

232. Calanthe Veitchii; garden hybrid.

Of all the beautiful Orchids obtained by hybridising this curious plant stands first. It forms a tuft of flower stems, 1½ foot high, loaded with blossoms of the richest rose colour of different degrees of intensity. Mr. Dominy produced it in the nursery of Messrs. Veitch & Son, at Exeter, by fertilising Limatodis rosea, a rich rose coloured beautiful Indian Orchid, with that variety of the white Calanthe vestita which has a deep purple spot at the base of the lip. The result has been most curious; the hybrid, although completely intermediate between the two parents, yet shows a rather greater tendency to its mother than its father. Of the father it has exactly the manner of growth, and the peculiar four-lobed lip; but it has the rich colour of its mother, and some other peculiarities of her lip, along with an entire correspondence in form with her column.

The following comparison of the three will explain this still more clearly:—

A. Calanthe vestita. *Male parent.*
1. Pseudo-bulbs fleshy, conical, bluntly angular.
2. Spur curved.
3. Flowers white, with a deep purple spot at the base of the lip.
4. Sepals and petals secund.
5. Lip adhering to the column, flat at base, with 4 deep blunt lobes.
6. Column deep, large, compressed, quite smooth.
7. Pollen masses 8, deep yellow, adhering to two smooth separate straps.

B. Limatodis rosea. *Female parent.*
1. Pseudo-bulbs narrow, stem-like.
2. Spur straight.
3. Flowers a clear uniform rose colour.
4. Sepals and petals spreading equally.
5. Lip free from the column, rolled up at the base, undivided.
6. Column small, terete, downy at the back.
7. Pollen masses 8, pale yellow, adhering to two rough connate straps.

Calanthe Veitchii; *hybrid between the two foregoing.*
1. as in A.
2. as in B, but longer.
3. as in B.
4. as in B.
5. as in A, but rolled up at the base as in B.
6. as in B.
7. as in B.

NETS AND SPARROWS.

When lately treating of buds and birds, I might have added that the superannuated nets of fishermen ought by all means to reach the ground; and also, that independently of defending buds, they are a most effectual guard to ripe fruit, especially against the ring-dove, which literally swarms here.

I only deal in facts; and thus at the same time, whilst I am positive that the sparrow does no harm to Gooseberry trees in this part of the country, I would not be so rash as to defend his character farther south. There, for aught I know to the contrary, a warmer sun may change his nature. This holds good in many animals. Thus we know that asses grow to an enormous size in more favoured climates than ours; and we have quite sufficient proof that "Barbeblanche's" Hanoverian rat is a "fine sagacious fellow," here in Great Britain, whilst the race from which he originally sprang is known to have been lean and mangy on the other side of the Channel. I cannot submit to "Barbeblanche" (whoever he may be) when he forbids me "to abuse" this audacious intruder.

Repudiating all manner of controversy in the *Gardeners' Chronicle*, saving that which strictly appertains to natural history, I beg leave to conclude with the following brief anecdote:—

Before I was* lowered down the stupendous rocks at Speaton, in quest of incubating cormorants, I engaged a knowing man, by name Mellor, to introduce me to the rock-climbers. As we were passing up the street at Burlington Quay, a Mr. Wilson, who was standing at his door, invited me into the house to see a golden eagle which he had just stuffed. I entered. But Mellor would not accompany me; and I understood afterwards that he and Wilson had long been at dagger's drawing.

When I had inspected the eagle and got back to Mellor, who was waiting quietly in the street, he thus accosted me—"Mr. Watterton," said he, somewhat vehemently, "I never speaks ill of nobody; but this I must say, that that man Wilson is the d———st devil that ever came into our town."

Now, I must say, that although I never calumniate any quadruped which ranges this "valley free," still I doconsider that "Barbeblanche's" "Norway friend," his "fine sagacious friend," is the d———st devil that ever entered into my pantry, where formerly

> "It undermined whole sides of bacon,
> My cheese was sapped, my tarts were taken."

Charles Waterton, Walton Hall, Dec. 12.

* See first series of Essays, sixth Edition, page 153.

PEAS.

The following are the results of a series of examinations undertaken by a sub-committee of the Fruit and Vegetable Committee of the Horticultural Society, for the purpose of ascertaining the correct names and the quality of the varieties of Peas; a considerable collection of kinds, obtained from various seedsmen, having been grown, under the same circumstances for this purpose, in the Garden of the Society at Chiswick in the past summer.

Class I. Seeds smooth or indented on the Surface.

§ 1. Seeds White.

Sangster's No. I. (Lee).—Syn.: Daniel O'Rourke (Lee), Dunnett's First Early (Carter & Co., Sutton & Sons, Minier & Co.), Carter's Earliest (Carter & Co.), Veitch's First Early (Veitch & Son, Exeter), Early Pea B (Wrench), Early Pea C (Wrench). The above were all sown March 24; they came in flower June 1; and were fit for use June 16. Height, 3½ to 4 feet. Pods, averaging 6 to 8 on a stem, short, straight, round when full, containing 5 to 6 Peas. The best very early Pea.

Dillistone's First Early (Hurst & M'Mullen).—Sown,

March 24; in flower, June 1; fit for use, June 16. Height, about 3 feet; habit slender. Pods, 6 to 7 on a stem, straight, cylindrical, scarcely so large as in Sangster's No. 1, containing 5 to 6 small Peas. It was considered to be the same as Prince Albert, or Early Kent.

Early Pea A (Wrench).—Sown, March 24; in flower, June 1; fit for use, June 18. Height, 4 feet. The Committee decided that this was the same as the Early Emperor. The dried Peas of this and the preceding sorts are very similar.

Tom Thumb (Paul & Son).—Sown, March 24; in flower, June 4; fit for use, June 20. Height, 1 foot. Pods, 5 to 6 on a stem, short, a little flattened, containing 5 to 6 Peas, which are rather larger than those of the Early Frame. From its dwarf habit, it is very eligible for forcing in frames. This is the Pois Nain Hâtif extra of the French.

Ringwood Marrow (Nutting & Son).—Sown, March 24; in flower, June 6; fit for use, June 25. Height, 4 feet. Pods, about 7 on a stem, nearly straight, well filled, containing about 6 large Peas.

Dickson's Favourite (Nutting & Son).—Syn.: Dickson's Early Favourite, Torwoodlee (Lawson & Son). Sown, March 24; in flower, June 11; fit for use, June 28. Height, 5 feet. Plant of vigorous growth and very prolific. Pods, 10 to 12 on a stem, long, round when fully grown, curved, hooked at the extremity, but not so much so as in the Auvergne, to which in many respects it bears much resemblance. The pods are remarkably well filled, containing from 8 to 10 Peas of medium size, round, and very white. It is highly deserving of cultivation as a second early Pea.

Excelsior Marrow (Carter & Co.; Fraser, Richardson, & Goad).—Syn.: Knight's Excelsior (Sutton & Sons, Nutting & Son). Sown, March 24; in flower, June 11; fit for use, June 28. Height, 5 feet. A strong grower, with broad foliage, Pods, 10 to 12 on a stem, large, round, slightly curved, containing 8 to 9 middle-sized Peas of good quality. An excellent variety.

Paradise Marrow (Nutting & Son).—Syn.: Early Paradise Marrow (Minier & Co.). Sown, March 24; in flower, June 11; fit for use, June 30. A strong grower, 5 feet high. Pods 10 to 12 on a stem, large, round, slightly curved, containing 8 to 9 middle-sized Peas. Very similar to the Excelsior Marrow, but is scarcely so early.

Early Dwarf Branching Marrow (Paul & Son).—Sown, March 24; in flower, June 11; fit for use, June 30. Height, 2 feet. Pods, about 6 on a stem, nearly straight, flattish, containing 7 to 8 Peas of good size and quality.

Harrison's Perfection (Carter & Co.). — Sown, March 24; in flower, June 6; fit for use, June 30. Stems 3 feet, robust. Pods, 14 to 15 on a stem, small, straight, containing 5 Peas of good size and quality. The only defect is, that the pods do not fill well. When growing this cannot be distinguished from Harrison's Glory; but in the mature state the seeds of the former are smooth and white, those of the latter indented, and of an olive colour.

§ 2. SEEDS BLUE, GREEN, OR LIGHT OLIVE-COLOURED.

New Green Marrow (Fraser, Richardson, and Goad).—Sown, March 24; in flower, June 6; fit for use, June 27. Height, 5 feet. Pods, 10 to 12 on a stem, long, narrow, slightly curved, containing 7 to 8 large Peas, which are compressed from being much crowded. A very distinct sort, on account of its long pods, narrow in proportion to their length. In appearance and quality, however, it is not equal to Beck's Prizetaker.

Beck's Prizetaker (Carter & Co.).—Syn.: Prizetaker (Hurst & McMullen, Nutting & Son); Prizetaker Green Marrow (Sutton & Sons); Rising Sun (Nutting & Son).—Sown, March 24; in flower, June 11; fit for use, June 30. Height, 4½ to 5 feet. Pods 9 to 10 on a stem, roundish, curved or hooked near the end, well-filled, containing 8 to 9 middle-sized Peas, of a fine green colour when young, and mixed olive and white when dry. One of the best varieties for main crops.

Leicester Defiance (Minier & Co).—Sown, March 24; in flower, June 11; fit for use, June 30. Height, 5 feet. Pods, 9 to 10 on a stem, round, slightly curved, containing 8 to 9 middle-sized Peas, mixed olive and white when dry. Very similar to Beck's Prizetaker.

Burbidge's Eclipse (Nutting & Son).—Sown, March 24; in flower, June 14; fit for use, June 30. Height, 18 inches. Pods, about 10 on stem, short, flat, and containing 5 to 6 large Peas, of good quality, bluish olive-green and slightly indented in the dried or ripened state.

Flack's Victory (Nutting & Son).—Sown, March 24; in flower, June 14; fit for use, June 30. Height, 2 feet. Pods, 10 on a stem, short, straight, rather flat, containing about 6 medium-sized Peas, mixed olive and white when dry, and also indented.

Harrison's Glory (Nutting & Son, Carter & Co.).—Sown, March 24; in flower, June 6; fit for use, June 27. Height, 3 feet, of a bushy, robust habit of growth. Pods, about 16 on a stem, rather short, nearly straight, and flattish, containing 5 to 6 medium-sized Peas of good quality; light olive mixed with white when dry, and also slightly indented. A good variety, but, like Harrison's Perfection above noticed, it has the defect of the pods being frequently not well filled.

Batt's Wonder (Batt, Rutley, & Silverlock).—Sown, March 24; in flower, June 18; fit for use, July 5. Height, 3 feet, and of robust growth; foliage dark green. Pods, 10 to 12 on a stem, narrow, nearly straight, but exceedingly well filled, containing 7 to 9 Peas of medium size, which become small, smooth, and bluish-green when dry. This variety withstands drought well, and the pods will hang long before the Peas get too old for use. It is an excellent Pea for a second crop.

Garbutt's Amazon (Flanagan & Son).—Sown, March 24; in flower, June 14; fit for use, July 5. Height, 6 feet. Pods, 8 to 9 on a stem, slightly curved, roundish, well filled with 7 to 8 large Peas, which are mixed olive-coloured and white when dry, and slightly indented.

Stradsett Marrow (Flanagan & Son).—Sown, March 24; in flower, June 14; fit for use, July 5. Height, 6 feet. Pods, 8 to 9 on a stem, straight, broad and flattish, containing 7 to 8 large Peas, of a fine green colour, but tasteless when cooked; their skins, moreover, are too thick. Such being the case, the variety cannot be recommended for cultivation. The seeds when dry are mostly light olive, very few being white and they are slightly indented.

Sutton's Berkshire Hero (Sutton & Sons).—Sown, March 24; in flower, June 21; fit for use, July 11. Height, 8 feet, of strong growth. Pods, 12 on a stem, large, long, very slightly curved, well filled, with 7 to 8 large Peas, which are greyish-olive, and some yellowish-white when dry. The dry seeds are large compared with most others in the same state, and compressed as well as slightly indented.

Denyer's Prolific Green Marrow (Sutton & Sons).—Sown, March 24; in flower, June 20; fit for use, July 11. Height, 6 to 7 feet. Pods 10 on a stem, straight, containing 6 to 8 Peas, of a fine green colour, but not very sweet; they are mixed light-coloured and white when dry, but mostly white, and they are also indented.

Class II. SEEDS COMPRESSED AND WRINKLED ON THE SURFACE.—§ 1. SEEDS WHITE.

Alliance (Carter & Co.).—Syn.: Eugénie (Nutting & Co., Lee). Sown, March 24; in flower, June 3; fit for use, June 24. Height, about 3 feet, and of strong robust growth. Pods, 10 on a stem, nearly straight, flattish, not very well filled; Peas 5 to 6, large and sugary.

Lynn's Prolific Wrinkled (Nutting & Son).—Sown, March 24; in flower, June 23; fit for use, July 11. Height, 3½ feet. Pods, 10 to 12 on a stem, small, cylindrical, nearly straight, very closely packed with 6 to 8 Peas, which are rather small and much crowded, their adjoining sides being quite flat, so that the Peas in their green state have the form of short sections of a cylinder, and when dry, the ends become depressed. The hilum is marked with a small black speck; as in the worthless Egg Pea, sometimes called Black-eyed Susan.

Carter's Victoria (Carter & Co.).—Syn.: Carter's Eclipse (Carter & Co.), Thorne's Royal Britain (Hurst & McMullen), Buckley's Gen. Wyndham (Hurst & McMullen). Sown, March 24; in flower, June 20; fit for use, July 8. Height 6 to 7 feet. Pods 10 to 12 on a stem, very large, very slightly curved, containing 7 to 9 large Peas, which are sweet and excellent. It continues to bear late; and the pods and Peas are larger than those of Knight's tall white Marrow. This is one of the best late tall Peas.

§ 2. SEEDS BLUE; GREEN, OR LIGHT OLIVE-COLOURED.

Veitch's Perfection (Veitch & Son, Exeter; Veitch, Chelsea).—Sown, March 24; in flower, June 14; fit for use, July 8. Height 3½ to 4 feet, of strong robust growth, somewhat branched. Pods, 10 to 12 on a stem, large, flat, straight, containing 6 to 8 large Peas, which are very sugary and excellent. The dried seeds are large, of a light olive-green colour, some being nearly white. It is one of the very best Peas for main or late crops.

Climax (Carter & Co., Lee).—Syn: Napoléon (Nutting & Son, Lee). Sown, March 24; in flower, June 4; fit for use, June 25. Height, 3½ feet, somewhat robust in growth. Pods, 10 to 13 on a stem, straight, flat, not very well filled, containing only 5 to 6 Peas, which are however large and sugary. Dry seeds light-olive, few being nearly white. Very similar to Alliance, the only difference being in the colour of the seeds. Both are of excellent quality as early sugary Marrows, but they are not prolific.

Fairhead's Excelsior (Sutton & Sons).—Sown, March 24; in flower, June 6; fit for use, June 27. Height, 3½ feet. Pods, 12 on a stem, small, straight, not very well filled, containing 5 to 6 medium-sized Peas, of an olive colour when dry.

Lord Raglan (Carter & Co.).—Sown, March 24; in flower, June 6; fit for use, July 4. Height, 3½ feet. Pods, 10 to 12 on a stem, small, nearly straight, and not very well filled, containing 5 to 7 Peas, of a fine green colour, but not so sugary as those of Veitch's Perfection and Climax. The dry seeds are light olive.

Monarch (Nutting & Son).—Sown, March 24; in flower, June 18; fit for use, July 5. Height 6 feet. Pods, 8 to 10 on a stem, large, flat, straight, but containing only 6 large Peas of a fine green colour and sweet; dried seeds light olive.

Tall Green Mammoth (Nutting & Son).—Sown, March 24; in flower, June 18; fit for use, July 5. Height, 8 feet. Pods, 12 to 14 on a stem, flattish, nearly straight, not well filled, containing only 4 to 6 Peas, light olive and white when dry.

Ne Plus Ultra (Lee, Nutting & Son).—Syn.: Jay's Conqueror (Nutting & Son), Payne's Conqueror (Hurst & McMullen). Sown, March 24; in flower, June 18; fit for use, July 5. Height, 7 feet. Pods, 10 to 12 on a stem, large, slightly curved, well filled, containing 7 to 9 large Peas of a fine green colour, sugary and excellent; the dried seeds dark olive, and some white. This is one of the best tall Marrows.

Competitor (Charlwood & Cummins).—Sown, March 24; in flower, June 14; fit for use, July 4. Height, 5 feet. Pods, 8 to 10 on a stem, large, straight, cylindrical, containing only 5 to 6 Peas, but these are very large; dry seeds of a nearly uniform olive colour. *Horticultural Society's Proceedings.*

TRADE MEMORANDA.

THE following letter written in a very neat hand on Maize-coloured foreign letter paper has been received by Mr. Scott, of the Merriott Nurseries, Crewkerne:—

"Apsley Villa, Cheetham Hill, Manchester, Dec. 2, 1859.

"J. SCOTT, Esq., Sir,—I shall esteem it a favour if you will send me your list of forest trees, Coniferæ, &c. I enclose a stamp for postage.—I am, Sir, your obedient Servant,

"G. F. MANDLEY.

"Merriott Nurseries, near Crewkerne, Somerset."

The account given of the writer by the Superintendent of Police at Manchester, to whom his letter was wisely referred, did not induce Mr. Scott to execute the order.

Home Correspondence.

The Brugmansia or Datura as a Conservatory Plant.—I would recommend any one who grows arborea also to grow Knightii, which is equally worth attention. Of the two the single one is the most fragrant, and certainly with the least trouble makes the handsomest plant, but Knightii has by far the finest and most substantial flowers, and nothing answers better for the centre of a large bouquet than they do; its foliage is also bolder and finer, but its growth is not so regular. The culture of both is easy. If we begin with a cutting let it be a short healthy sprout, free from red spider. Put it in a half-pint pot in light soil, and set it in a shady part of the stove, or plunge it in a frame with a little heat; it will soon strike root and fill the pot with fibres, then shift into a pot three sizes larger, and sprinkle overhead daily, being careful not to saturate the soil when fresh potted; gradually increase the watering, however, as the pot fills with roots. Let the plant be kept in the stove until March, when another good shift will be required, for which use strong loam, leaf-mould, or rotten sticks, and one-half rotten manure; let it remain in the stove a week or two until the roots have got hold of the fresh soil; then remove it into the greenhouse, but avoid cold draughts, as they check the growth, which it is desirous to push on vigorously. When the roots reach the sides of the pot give a final shift into one a good size larger, either a 15 or 18-inch one, and your plant will make a noble tree from 8 to 10 feet high, branching at the top, and blooming profusely. It requires no stopping, for a low plant is not characteristic; the flowers to be seen to advantage should be above the eye. When plants are once obtained they improve by keeping, flowering better each succeeding year if shaken out and repotted in fresh soil in the spring. The main feature in the summer treatment is abundance of water (when the pots are full of roots liquid manure), should be given daily; they are gross feeders, and well repay the labour. Syringing under the foliage is necessary to keep down its great enemy red spider, but water is injurious to the flowers, and should be withheld when the plants are in bloom. Treat them in winter like Fuchsias; put them under the stage, or in some out-of-the-way corner, and keep them dry. If planted out of doors they make a fine display in the autumn, but rough weather dashes them and makes them unsightly when not in flower. *J. T., Winshill, Burton-on-Trent.*

Holly Tea.—To me, who have been an abstainer from snuff and tobacco and all intoxicating drinks for upwards of 30 years, a cup of good tea is one of my creature comforts which I would not like to part with easily; I would rather give 4*s.* 4*d.* a pound for it than want it. But when I read Mr. Forsyth's article on Holly Tea, I thought if as good Tea was to be had for the gathering in the shrubbery and wood as the Tea I paid for, it was wrong not to give it a trial; and although your article on the 22d of October did not supply sugar to the Holly Tea, I had made up my mind to give it a trial; so I collected some neat little branches of Holly and placed them on each side of the fireplace, to let them dry at their leisure, until I had time in the evening to give them a proper roasting. My wife remarked that I had commenced early in the season to decorate the house with Holly; she thought it was about Christmas that the Holly was used. When I told her that that custom according to learned men was a relict of Druidism, during the prevalence of which houses were decked with Holly, that the sylvan spirits might repair to them, and remain unnipped by frost and cold winds, until a milder season had renewed the foliage of their darling abodes, she said, "If any of them should take up their abode in my branches, they should certainly get their toes toasted," but when she knew that the leaves were intended for Tea, she had her doubts about it, "she was afraid such Tea would prick the stomach as well as the fingers." I told her it was highly recommended in the *Gardeners' Chronicle*, her favourite newspaper. She was ready to quote the Scotch proverb about a certain class of individuals that never tell stories except when the Holly is green;

however, I gave the leaves such a browning that I allowed them two days to cool before I used them. I made what I considered a weak decoction of the leaves and did not spare the sugar, so that the taste was tolerable; but it was not long in the stomach until I began to think of the Ilex Vomitoria in your leading article, and it is wonderful what strange thoughts will come into the mind at times. I recollected reading in the newspapers of some alterations being wanted in the Book of Common Prayer; and thought if any alteration ever took place they might add with all sincerity and reverence one petition to the Litany, viz., From the Tea of the Jesuits, Good Lord deliver us; but when my headache and the strange feeling in my stomach began to wear off, I was convinced that the Holly Tea must undergo some other chemical operation than simple roasting before it became a favourite with the people. Professor Johnston, in "The Chemistry of Common Life," tells us that the first in order, and not the least interesting point, in the chemical history of the Tea we use is the mode in which it is prepared for the market. The leaves when fresh plucked have neither a decidedly astringent or aromatic, nor a bitter taste. They possess nothing in fact either of the odour or flavour of the dried leaves, the pleasant taste and delightful natural scent for which they are afterwards so highly prized are all developed by the roasting which they undergo in the process of drying. The details of this process have been made known to us through the investigations of Mr. Fortune. Your readers will rejoice at the success that has attended Mr. Fortune in his endeavours to introduce the Tea plant into the United States, but at the same time you state that "there still remains the question whether they can turn it to profitable account. That their climate will be found to suit, in some of the vast regions of the west, there can be no reasonable doubt. But merely growing Tea plants will not make commercial Tea. The difficulty lies in the preparation of it, an operation which as conducted in China demands an enormous quantity of labour." I think the same statement may be applied to the Holly Tea; there are difficulties to overcome in the preparation of it, but before much is done in the way of preparing it we ought to know its chemical composition and nutritive value. I have been searching a little for the chemical analysis of the common Holly leaf, but have been unsuccessful; perhaps it can be furnished by some of your readers, and if it has never confessed its properties to any, some one well skilled in organic chemistry may make it do so. We are informed that in manufactured Tea there are at least three active chemical substances, viz., volatile oil, theine, and tannin; these are considered the really active constituents of the Tea leaf, as it is usually employed. But it is an interesting fact that the leaf contains a large proportion of the nutritive ingredients of plants, to which the name of gluten is given; this substance forms as much one-fourth of the weight of the dry leaves; so that if we choose to eat them in mass they would prove as nutritious as Beans or Peas. We are told that the waste of the body is lessened by the introduction of theine into the stomach, that is, by the use of Tea, and if the waste be lessened, the necessity for food to repair it will be lessened in equal proportion, in other words by the consumption of a certain quantity of Tea the health and strength of the body will be maintained in an equal degree upon a smaller supply of ordinary food. Tea therefore saves food, stands to a certain extent in the place of food, while at the same time it soothes the body and enlivens the mind. In the old and infirm it serves also another purpose: in the life of most persons a period arrives when the stomach no longer digests enough of the ordinary elements of food to make up for the natural daily waste of the bodily substance. The size and weight of the body, therefore, begin to diminish more or less perceptibly. At this period, Tea comes in as a medicine to arrest the waste, to keep the body from falling away so fast, and thus to enable the less energetic powers of digestion still to supply as much as is needed to repair the wear and tear of the solid tissues. No wonder, therefore, that Tea should be a favourite, on the one hand with the poor, whose supplies of substantial food are scanty, and on the other with the aged and infirm especially of the feebler sex, whose powers of digestion and whose bodily substance have begun to fail; nor is it surprising that the aged female, who has barely enough of weekly income to buy what are called the common necessaries of life, should yet spend a portion of her small gains in purchasing her ounce of Tea. She can live quite as well on the less common food when she takes her Tea along with it; while she feels lighter at the same time, more cheerful, and fitter for her work because of the indulgence. Now if Mr. Forsyth can extract the nutritive qualities of the Chinese Tea from our common Holly leaf and prepare it in such a way as to please the tastes of the people, he is a man worth waiting 5000 years for; he may have many difficulties to contend with; he may have political obstacles in his way; he may have moral mountains to surmount, he may have physical fences to cut down; but if he put a stout heart to a "stey brae" it is wonderful what may be accomplished. It was celebrated as the glory of Socrates that he had brought philosophy down from the aerial regions of fiction and conjecture about things remote from the sphere of man, and taught her to converse on subjects of real utility in human life. If Mr. Forsyth makes the British leaf beat the celestial he may be set down as one of the benefactors of his species. *P. Mackenzie, Plean, Stirling.*

Dioscorea Batatas.—I am tolerably successful in the growing of this, and the way we take them up is this:—Dig a trench 2 feet 6 inches by 2 feet all along the first row as near the roots as possible without touching them. Run the finger down along side the tubers; then having removed any earth that may still adhere to the side exposed, lift them out of the ground without further trouble, and so continue; and thus the grower will find his plot of ground properly trenched for the next year's crop. *W. S. Bertin.*

Windmills for raising Water.—May I request information from your readers respecting small windmills for raising water to a higher level to supply a pond? They have been advertised in your Paper, but I have failed to find the advertisement; and as the experience of those who have tried them is what is wanted and much wished for, merely the advertisement would not be sufficient information. I saw several in Holland some years ago when I was there. *An Old Subscriber.*

Rabbits Barking Trees.—Will you kindly elicit through the medium of your many practical correspondents an answer to the following question:—"What application is there which will effectually deter rabbits and hares from injuring the stems of orchard trees, and at the same time be quite harmless to the trees?" I imagine the question to be of great interest, and the replies may make known something of great value to all interested in fruit growing. *James Brown, Chester.*

Monstrous Mushroom.—The Mushroom I herewith send grew on a bed in the Mushroom house here. The bed was made up in the usual manner, except that I mixed a portion of sheep dung with the horse-droppings, and also spread a little of the sheep manure over the bed previous to soiling it. Sheep dung makes the bed more productive, and it requires less spawn. The sheep manure should be gathered in summer and kept in a dry shed for use. The bed from which the accompanying specimen was gathered has produced abundance of Mushrooms of good quality, and all perfect in form, except that I now send, which came up like the others, but had a knob on the top in the centre which grew and gradually expanded to a perfect Mushroom with its back attached to the one supporting it, and with its stem pointing upwards. I should, therefore, like to know if such growths are often seen. *T. Bethell, the Earl of Ashburnham, Ashburnham Place, Sussex.* [The history of this monster was probably that when very young two Mushrooms grew side by side, but inclining one to the other. Thus an adhesion was formed. Then the stronger of the two forced his weaker neighbour out of the ground and lifted him clean out of the soil bottom upwards.]



S. Australian Statistics.—I was very much gratified by seeing in your columns of June 25 a leading article in which my agricultural and horticultural tables were quoted and commented upon; but you will excuse my mentioning that you have fallen into a slight error in calling my periodical the "*Melbourne*" *Farm and Garden*, the fact being that it is published in Adelaide, the chief town of South Australia, though it has also a considerable circulation in the adjoining colony of Victoria, of which Melbourne is the capital. I only call your attention to this as some doubt might possibly arise as to which of the two colonies was referred to in the tables. South Australia has for several years chiefly supplied Victoria with Wheat and flour, the carrying of which forms the principal occupation of the various steamers and sailing vessels running between Adelaide and Melbourne; but Victoria is now beginning to grow Wheat extensively for her own use. Gardening is more attended to in South Australia than in Victoria, and during the summer season almost every kind of fruit is shipped largely from Adelaide to Melbourne. Oranges form the only exception. Our plantations of them are young and insufficient for our own consumption; we therefore import them regularly from Sydney (New South Wales) and Launceston (Van Diemen's Land). I hope you may sometimes find other articles of mine worthy of your notice. If on such occasions you will kindly quote from the *Adelaide Farm and Garden*, or *South Australian Farm and Garden*, I shall take it as a favour. *E. W. Andrews, Grenfell St., Adelaide, Oct.* 1.

Leeks.—I have taken the liberty of sending you four specimens of Scotch Leeks. They were grown at Ayton Castle in Berwickshire, and are known in Scotland as "Ayton Castle Giant Leek." *Chas. Alexander*, 30, *West Register Street, Edinburgh.* [These Leeks were blanched upwards of 12 inches, and one of them measured 7 inches in circumference. The four together weighed 7½ lbs.]

Gooseberry Bushes, Rats, and Rabbits.— My man Friday tells me that it is better to stop rat-holes with pieces of sticks or chips chopped up into lengths of 1 or 2 inches, saturated with coal tar and rammed into their holes, than to pour it into them. He covers up the mouths of the holes after being stopped with sand or earth as being more convenient than mortar. My "crabbed" handwriting has led to one or two trifling errors. In line 33 from top of third column it should be "treading on or in clay." *Barbeblanche.*

Notices of Books.

The Natural History of the European Seas. By the late Edward Forbes. Edited and continued by Robert Godwin-Austen, F.R.S. 12mo. Van Voorst. Pp. 306.

We learn from the preface that little more than a third part of this interesting volume is from the hand of the late Professor Forbes, who was removed by death before he had proceeded further. The rest is from the pen of Mr. Godwin-Austen. It is but just to say that the editor is in every way worthy of the author, and that he has worked up his materials with a degree of skill which proves him to be a master of his subject.

The object of the volume is to show how marine animals are distributed at the present day through all the seas that wash the shores of Europe, from the Mediterranean to the Polar ocean; and out of these materials to extract evidence as to the changes which have occurred in the lapse of ages, and are still slowly occurring at the present day.

Forbes was an advocate of "centres of creation," and his ruling object was to prove the existence of such centres, their present extent, and the changes they have undergone in times long past. "A province," he writes, "as understood in the following chapters, is an area within which there is evidence of the special manifestations of the Creative Power; that is to say, within which there have been called into being the originals, or protoplasts, of animals or plants. These may become mixed up with emigrants from other provinces, even exceeding in their numbers the aborigines, so to call them, of the region to which they have migrated. The distinguishing of the aboriginal from the invading population, and the determination of the causes which have produced and directed the invasion, are among the problems which the investigator of the distribution of animated creatures has to endeavour to solve. When the Fauna or Flora of a province has been thoroughly investigated, the diffusion of the individuals of the characteristic species is found to indicate that the manifestation of the creative energy has not been equal in all parts of the area, but that in some portion of it, and that usually more or less central, the genesis of new beings has been more intensely exerted than elsewhere. Hence, to represent a province diagrammatically, we might colour a nebulous space, in which the intensity of the hue would be exhibited towards the centre, and become fainter and fainter towards the circumference. This feature of zoological and botanical provinces gives rise to the term *centres of creation*, which I and others have applied to them."

Of such centres he reckons six in Europe:—

"The first and northernmost is the Arctic province, extending throughout that portion of the European seas included within the Arctic Circle. The second is the Boreal province, including the seas which wash the shores of Norway, Iceland, the Faroe and the Zetland Isles. The third is the Celtic province, in which rank the British seas, the Baltic, and the shores of the continent from Bohuslan to the Bay of Biscay. The Lusitanian province includes the Atlantic coasts of the Peninsula. The Mediterranean province speaks its own explanation; the Black Sea is included in it. Lastly, the Caspian is a region now completely isolated from all the others."

How each of these provinces is characterised and how it passes into those which touch it the reader will learn from the volume itself. Upon such questions there must necessarily be much difference of opinion; but there can be none as to the scientific knowledge displayed in their examination.

A Manual of the English Constitution; with a Review of its Rise, Growth, and Present State. By David Rowland. Murray. Foolscap 8vo. Pp. 588.

In this work the rise and growth of the English Constitution is first traced down to the Revolution; the rights, duties, and mutual action of our political institutions are then explained as they now exist, and their modifications by changes in the laws, and by Parliamentary Government and procedure since the Revolution, are described. The author has put together in a compact and convenient form the results of the labours of those who have devoted their lives to the study of the rise and progress of the English Constitution; and

has added a valuable account of its actual state and of the mode in which it now works. Without therefore taking the place of the great works of Palgrave, Hallam, and others, the present volume supplies that in which most English histories are very deficient, and will be found a useful supplement to them all. One great merit of the work is that the unimportant has been throughout carefully distinguished from the important; and whilst the landmarks of our constitutional history are brought prominently forward, the reader's attention is not diverted from them by lengthened discussions on matters of purely antiquarian interest.

The Illustrated Bouquet, Part VII., published by Messrs. Henderson, of the Wellington Road Nursery, is this month remarkably rich in good plants, illustrated with taste and skill by Miss Sowerby and Mrs. Withers. Gazania splendens, a brilliant orange flowered greenhouse plant, and Callicarpa purpurea, figured in our own columns, p. 96, form the first plate. The second represents 10 varieties of the Persian Cyclamen. Camellia tricolor imbricata plena, a superb new Florentine variety, occupies a third plate; but it should have been named C. imbricata tricolor—the word plena is superfluous. The fourth contains a most brilliant new Petunia of a rich violet bordered with white; and the pretty pink and lilac Salvia tricolor, a little greenhouse shrub from Mexico. And finally we have figures of the Dianthus Heddewigii, a superb form of the old Chinese Pink. As usual, the whole of these plates are accompanied by very well written letter-press.

The 19th volume of the important new edition of the *Encyclopædia Britannica*, which has just appeared (A. & C. Black), contains excellent treatises on Reptiles, Rhetoric, River, Road-making, Romance, Roman History, Rope-making, Russia, Sanitary Science, Sardinia, Holy Scripture, Scotland, and Sculpture, with figures of Reptiles, and good maps of Ancient Rome, Russia and Scotland. It is superfluous to add that even the minor articles are worthy the eminent men engaged in this great work.

Country Rifle Corps (Roberts, Exeter). Under this title has appeared a pamphlet of considerable interest at the present moment. The author, who, we presume, is Mr. T. D. Acland, jun., advocates the formation in country places of a force of volunteers, who shall be horsemen as well as riflemen. In a public letter to Lord Fortescue, Mr. Acland observes that "the proposed Country Rifle Corps differ from the Town Rifle Corps in no respect, except in the addition of the use of the horse for the more rapid transport of the riflemen; first, as a means of enabling those who live far apart to assemble for drill and instruction; secondly, in the event of invasion, as a means of harassing the enemy on his march by rapid advances and retreats over ground familiar to the defenders of the country, and inhabited, of course, by their friends. The drill on foot would be precisely similar to that of other rifle corps. Arrangements may therefore be made, wherever desirable, for the instruction of inhabitants of villages in the use of the rifle, without the horse, and for enabling a town company and a country company to act together occasionally." The pamphlet itself is addressed to three questions:—1. Why rifle corps are just now wanted? 2. What it is proposed to do? 3. How is the plan to be carried out? All these questions are well answered. The first indeed requires no answer: if it did we should be tempted to add to the reasons that we all feel to be of the utmost urgency, the desirableness of doing something to check the growing effeminacy of the age. We of the middle classes are gradually losing our native hardihood. We take no sufficient exercise; our rough athletic sports are disappearing; we live in heated rooms, and clothe in the warmest garments; ride inside Broughams, cabs, and omnibuses; and spend our leisure hours in the fashion of a bookworm. There is a little fly fishing, a little boating, a little cricketing, a little comfortable shooting, a little mountain climbing; but those who engage in such amusements are as invisible in the vast multitude as a single ripple in a mighty river. The consequence is that our muscles are growing flabby, and our constitutions weaker; for which there is no remedy equal to what may force us continually into strong outdoor exercise and moderate excitement. To this volunteers must and will accustom themselves; and we believe that every medical man who regards the question in this point of view will admit the volunteer movement to be not less important socially than politically. As to our foreign relations, when Great Britain bristles with half a million of bayonets in the hands of men who are trained to be dead shots, she will become a porcupine which no foreign power will willingly attempt to handle.

We must refer to the pamphlet itself for the detailed views of the writer, with reference to the manner in which he answers the second and third questions. After pointing out the difficulty that attends the organisation of country people, who are too much scattered to form rifle corps like those of our towns and cities, he proposes a plan of which the following are the main features:—

"Bodies of about 25 men to be raised in Agricultural Districts for rifle instruction. Such bodies to assemble on horseback, to be told off on the simplest possible method, necessary to enable them to pass along lanes, and over rough or enclosed ground, without confusion. When assembled, to be practised in quickly dismounting linking horses, and remounting, also in changing front in the simplest manner suited to untrained horses. The chief attention to be given to *skirmishing on foot* and to the *use of the rifle*, with so much squad drill as may be deemed necessary to induce a habit of conforming to orders, and of acting in concert. Each body of 25 men or less to be regarded as a *section of a company*, to have 2 non-commissioned officers, each responsible for a subsection, to be arranged with reference to locality, for the purpose of summons and inspection of arms. Government to appoint a 'district officer instructor' or 'district inspector' of volunteers. The principle of the drill to be that of light infantry (mounted for more rapid movement from place to place), not the drill required for cavalry manœuvres. The instruction to have for its object to develope and direct the intelligence, which is the characteristic of the well-trained volunteer; in short, to make *good irregulars*, not *bad regulars*."

The hundred and forty-second thousand of *Paxton's Cottagers' Calendar*, now issued, is in reality a new edition much improved by the addition of fresh matter.

Mr. Murray has now placed *Childe Harold*, the best of Lord Byron's poems, within the reach of everybody, by the issue of a sixpenny and a shilling edition. The first is printed in a neat clear type in double columns; the second is in a larger type and is illustrated by a portrait of the noble lord when a child but seven years old, and some graceful sketches on steel.

TRADE LISTS RECEIVED.—W. Barnes's (Camden Nursery, Camberwell) *Select List of Indian Azaleas, Cinerarias, Verbenas, &c.* A large collection of the best kinds of flowers for decoration, offered for sale by one of the best gardeners in England.—Arthur Henderson & Co.'s (Pine-apple Place) *Catalogue of Kitchen Garden and Flower Seeds, &c.*, is a folio circular with short descriptions of all the vegetable sorts mentioned in it. Collections of vegetable seeds are offered at from 15*s.* to 60*s.* each.—Frederick William Wendel's (Erfurt) *Trade Catalogue of Continental Seeds* is wholly confined to flowers, of which there is the usual variety, especially of German Stocks and German Asters. The English agent is Mr. Macintosh, Nurseryman, Hammersmith.

Garden Memoranda.

MR. MACINTOSH'S NURSERY, HAMMERSMITH.—At a time when severe frost, accompanied by a slight fall of snow and prospects of more, has taken firm hold of the soil, and when all outdoor flowers have been killed, our glass houses become more than ever objects of interest; all plants of a decorative charactor calculated to adorn them at such a season therefore deserve unusual attention. Foremost among these is the charming Solanum capsicastrum, alluded to in another column. This Mr. Macintosh manages as follows:—Last spring it was very small and in a 3-inch pot; it was at once introduced into the warmth of an intermediate house, and as soon as it had started into growth freely it received a shift into a larger-sized pot; at the same time the roots were examined, and being found cramped and the soil in bad condition, the ball was partly reduced and the rootlets set at liberty. When potted it was again placed in heat, giving it no water for a time; but occasionally syringing it overhead in order to keep the atmosphere about it moist. This continued for a week or so until the roots had struck into fresh soil. After that it had a thorough watering with water of the same temperature as that of the house in which it was growing. It then received the kind of treatment usually given to plants in a growing state, paying attention to the stopping of all straggling shoots so as to induce a compact pyramidal habit. The pieces removed also tended to increase the stock: for it was found that every little bit struck freely, and that even at all seasons. For ordinary purposes 6-inch pots are most suitable for it; but if well-grown plants for dinner-table ornaments or for other conspicuous positions are required, larger plants might easily be had with very little trouble, and of almost any shape that might be desired. About the end of June they should be placed out of doors in as hot and sunny a situation as possible, when they will keep flowering and set fruit better than they would indoors. In September let them be removed under glass. This is the kind of treatment to which the fine plant elsewhere alluded to was subjected, and it was admitted by all who have seen it that a finer example of the kind had never before been exhibited. The soil most suitable for this Solanum is a light fibry loam intermixed with a little peat and sand. No manure was given it whatever.

Another plant most useful for decorating our greenhouses in autumn and winter is Veronica Andersoni, and in the culture of this Mr. Mackintosh is also most successful. He has some fine specimens of it now coming into bloom, as well as of the rosy-pink kind called Meldensis. His plan of managing such plants is to grow them one season and bloom them the next; but where larger specimens are required they are only permitted to make wood for not less than two seasons, the flowering being prevented by a regular system of stopping, by which a handsome pyramidal shape is acquired. The two kinds just named are among the handsomest of all Veronicas; but where greater variety of colour is wished for the white-flowered Lindleyana should be added to the list. Cestrum aurantiacum, though by no means new, is also a good plant for late autumn and early winter flowering; and the same may be said of Jasminum nudiflorum, whose bright yellow Primrose-like blossoms look unusually cheerful at the present time. The white Eupatorium adenophorum keeps in flower all winter, and is tolerably ornamental; and among Begonias, semperflorens coccinea is useful for the same purpose. As a plant for room decoration nothing is more sought after than Acacia lophantha, nice bushy plants of which may be had in small pots, and it is well worth growing on account of its foliage alone, which is very handsome. Acacia armata is also, as is well known, an invaluable plant for forcing into bloom for early greenhouse decoration. Tulips and Hyacinths are also being pushed on for the same purpose. Some of the former will soon be in flower. Dozens of pots of them may now be seen in full bloom in Covent Garden Market. Chrysanthemums, of which Mr. Macintosh grows some nice plants, are now for the most part over; we however noticed the Golden Cedo Nulli still in good condition, and along with it were also one or two promising seedlings.

Miscellaneous.

Sale of Rhododendron Fortuni, Taxus cuspidata, and other Conifers.—These were sold by Mr. Stevens on Saturday last, and realised the following prices:—R. Fortuni, in lots of 6 strong plants, from 11*s.* to 1*l.* 11*s.* 6*d.*; other lots of 10 plants each from 12*s.* to 15*s.* per lot; and smaller plants even fetched less money. The originally imported plant from Japan realised 8*l.* 10*s.*; Taxus cuspidata, 3 good strong plants, fetched 6*l.* 10*s.*; other lots, each consisting of 10 small plants, from 15*s.* to 1*l.* 6*s.*; lots, consisting of Cupressus Nutkaensis (Thujopsis borealis), 2 plants; C. McNabiana, 2 plants; C. Whitleyana, 2 plants; and Picea Pinsapo, 2 plants, from 12*s.* to 15*s.* per lot; Picea Pinsapo, 5 fine plants, from 1*l.* 5*s.* to 1*l.* 10*s.*; Cedrus atlantica, 5 to 6 feet, 2 plants, 12*s.* and 14*s.*; C. Deodara, 10 good plants, 1*l.* 2*s.*; other lots, of which there were in all 190, fetched from 5*s.* to 10*s.* per lot.

North American Forests.—My daily walk still presents many objects of interest. Let me describe it to you, for it is not in the same district as that in which I asked your company some months ago, my lodgings now lying in quite another direction from the school. We first descend a hill by a narrow rocky path through some bowery underwood, much matted and tangled with Briars (Smilax) and Vines, and creeping plants of many species. The foliage of the slender shrubs, as brightly green as if it were July, hangs overhead, and nearly meets across the narrow pathway, and here morning after morning is my eye delighted with a constant succession of glorious blossoms of a large Ipomœa, closely like the Convolvulus major of English gardens, but of twice the diameter, and of the most lovely light purple hue. The plant grows along the sides of this lane in profusion, and the twining shoots depend gracefully down on either hand, bearing the noble trumpet-like flowers. Like the well known favourite I have just compared it to, our sylvan beauty is emphatically a morning flower. The elegant words of the poet apply pre-eminently to it:—

> "The morning flowers display their sweets,
> And gay their silken leaves unfold,
> As careless of the noon-tide heats;
> As fearless of the evening cold.
>
> "Nipp'd by the wind's unkindly blast,
> Scorch'd by the sun's directer ray,
> The momentary glories waste,
> The short-lived beauties die away."

For "the sun is no sooner risen with a burning heat," than our lovely Ipomœa shrivels up, "and the grace of the fashion of it perisheth." May I learn the sacred lesson which its fleeting glory is fain to teach! In these thickets a plant called Poke (Phytolacca decandria) holds a prominent place, being conspicuous for its long racemes, sometimes nearly a foot in length, of glossy black berries, set on crimson footstalks: the stem and the nerves of the leaves are of the same crimson hue, greatly enhancing the beauty of the plant. It is very common in the corners of rail-fences, and by roadsides, as well in bushy wastes. The berries are full of a rich purple juice, which leaves a fine permanent stain; this hue is said to be communicated to the viscera of birds that feeds on the berries. Even more conspicuously beautiful than this is the Dogwood (Cornus florida), which is now in fruit. It is said to be handsome when in flower, being covered with blossoms, each consisting of an involucre of four large white heart-shaped bracts, so abundantly that the effect is said to be like that of the Apple tree in bloom. This, however, I have not seen, for it flowers in April, even before the leaves appear. Its aspect now is fine, for the Umbrella-like heads of the low trees are covered with berries of a vivid scarlet, oval in form, polished, and united like those of the Honeysuckle. Their luscious appearance tempts the taste, but they are found to be nauseously bitter. After emerging from this verdant bridle path, my way leads through a grove of Persimon trees (Diospyros Virginiana). Here the appetite is regaled, for they are loaded with fruit, which has been sweetened and mellowed by frosty nights. The tree grows to a large size for a fruit tree, sometimes reaching to 50 feet in height, with a spreading head; the fruit is somewhat like a Greengage plum in size and form, but is rounder, and reddish yellow; its pulp contains from one to eight semi-oval dark brown stones. It is so hard and harsh as to be quite uneatable till the skin is shrivelled by the frost, when it becomes soft, sweet, and very agreeable; to my taste much superior to any Plum.

The opossum is very fond of a ripe Persimon; its flesh, through feeding on this and other fruits, become very good at this season, and is brought to table, though rejected in summer. Now we get into the lofty woods; swampy but not very wet soil, where the most prominent trees are several species of Oaks, as the Chesnut Oak, (Quercus palustris), the Black Jack, (Q. ferruginea), and the Scarlet Oak (Q. coccinea). The first of these is a magnificent tree for its lofty structure and finely formed head of foliage, as well as for the large size of its leaves and acorns. The last is conspicuous by the brilliant scarlet hue of its leaves at this season, whereby it materially assists in contributing to the bright and various colours which the forest is beginning to assume. But there are nobler trees than Oaks in this swamp. There are the Magnolias, or Laurels, as they are called here, two species of which at least are common, if not a third. These are the Big Laurel (M. grandiflora), and the Umbrella Laurel (M. tripetala), and perhaps the Cucumber tree (M. cordata). The first of these is among our largest forest trees, straight as a ship's mast, with a fine pyramidal head of massy foliage, whose evergreen verdure maintains its colour and its gloss undimmed by the storms of autumn and the frosts of winter. The fleshy conical fruits, 4 inches in length, are now ripening their numerous cells, from which project pulpy red seeds, depending by long filaments. The Umbrella tree is so called from its leaves, which are of extraordinary appearance; they are 18 or 20 inches long, and 6 or 8 broad; and being often disposed in a radiating manner at the end of a stout shoot, they expand a surface of 3 feet in diameter. The tree itself does not aspire to the magnitude of its sister, being scarcely more than a shrub. Its large conical fruit is of a dull rose colour. The Magnolias, in their smooth grey bark and pillar-like outline of the trunk, bear a resemblance to the Beech,—that queen of the forests. The character of the timber changes presently, and we see scarcely anything but coniferous trees. The earth, where it can be discerned, is covered with a dense coat of needle-like Pine-leaves, brittle and brown, the accumulation of many years (their resinous character resisting decomposition), intermixed with sheets and shreds of the scaly bark. The Long-leafed and the Pitch Pine (Pinus palustris and P. rigida) are the monarchs here, exercising a joint dominion, which admits of no other rival. Both these are towering trees, the latter the more branchy, with a deeply furrowed trunk; the former with a scaly peeling bark, great exudations of turpentine, and slender leaves a foot long, disposed in brushes, the bases being enclosed in a papery sheath. The turpentine on many of these trees runs down in great masses, congealing as it descends, while fresh streams flowing down over the old, and congealing in turn, form immense accumulations. If fire is applied to these exudations they catch at once, and burn vividly until the tree is destroyed. I saw a Long-leafed Pine fired in this manner one day, and a fine sight it was. The light was applied to the flowing resin, which was in a flame in a moment, the fire running up with increasing rapidity, till in a brief time the whole of one side of the tree to a height of 50 feet was in a blaze; the forked flickering tongues of flame catching and licking with greedy fierceness as if they demanded more aliment for their insatiable throats. After an hour or two, the turpentine that lay in the bark and that had accumulated on the exterior was devoured by the fire, and the wood being too hard to be readily penetrated, the flame had gradually gone out, leaving a blackened stick with a glowing point here and there. But now came the grandest part of the spectacle. The interior of the trunk was decayed, and the fire had found its way through some broken branch into the hollow, where, speedily consuming the half-rotten wood of the centre, its made its way to the summit, from which a volume of flame fiercely shot for many yards like a perpendicular pyre. It was a tall chimney in a blaze; the interior, seen through the openings here and there (I mean, after some hours had elapsed), was like a furnace, while the roaring of the flame from the top was like the surging of the sea upon the shore. The planter at whose house I lodge, being lately in want of some tar, manufactured it in the following manner. A number of the boughs and knots of these two species of Pine were gathered from the swamp, and built up into a stack in the yard. A few grooves had been first made in the hard ground of the site, all converging into one principal channel, which led off to one side. Here a hole was dug to receive a tub, with a spout of bark from the channel projecting over it. Earth was now heaped over the stack, leaving only a few orifices for air, and the pile was lighted. The tar, which is nothing but resin smoked and partly burned, soon began to trickle, and increased to a stream, which lasted until the whole wood was consumed. But to proceed with our walk, which we have nearly finished. The nature of the foliage, and its scantiness in these Pine swamps, admits of much more light than in the forests generally; and hence the ground is much overrun with herbage. All through the autumn, several species of Œnothera have opened their beautiful blossoms to the evening air, courting the softened rays of the moon and stars rather than of the sun. One sort in particular, the large flowered Evening Primrose (Œ. grandiflora), with its fine blossoms of brilliant yellow, as wide as a teacup, is well worthy of admiration. Some species of Willow herb (Epilobium) discharges its feathery down here, which is borne by the breeze into our eyes, nose and mouth, and hangs about in ragged slovenly bunches. But most characteristic is the plant called the Golden Rod (Solidago), which covers many acres with tall coarse herbage, and spikes of small but close-set yellow blossom. Many autumnal insects, as the Hymenoptera and Diptera and some moths, flutter around these spikes of blossoms, which else would present few attractions. Hence we emerge into the high road, bounded on both sides by the hardwood forest, where the Oaks and Hickories, the Sycamore and the Tulip tree, the Chestnut and the Sweet Gum, cast a greenwood shade, varied, however, now with gorgeous tints, like the rays that stream through the painted window of some old cathedral, by the dying foliage. Beneath these trees the eye of an entomologist is often caught by droppings which indicate caterpillars of large size feeding on the leaves above; and thus I have been guided to the discovery of some fine species; while, not uncommonly, we discern far up in the trees the great cocoons of some of the Emperor Moths (Saturnia, Ceratocampa, &c.) suspended from the twigs by a narrow ribbon of strong silk, and rocking in the breeze. The cocoon of the Swallow-tailed Emperor (S. luna), for instance, is affixed to the Liquidambar or Sweet Gum; that of the Corn Emperor (S. Io) to the Oak, and that of the great Yellow Elephant Moth (C. imperatoria) to the Sycamore. The caterpillars of some of these moths are of magnificent dimensions, and often richly coloured. A few weeks ago one of my little lads came to tell me of one which he had just found, and which he described as unusually gigantic—too big, in fact, to be touched. On my coming to the spot, the prize was *non inventus*, having crawled away. On my asking the lad why he had not put the caterpillar into a collecting canister which he had, he exclaimed with unfeigned astonishment, "Law, sir! he wouldn't begin to go in!" meaning, not to ascribe any reluctance on the part of the insect to the change of residence, but that the orifice of the box was not wide enough to receive even the smallest extremity of its body. *Gosse's Letters from Alabama.*

Calendar of Operations.

(*For the ensuing week.*)

PLANT DEPARTMENT.

CONSERVATORY, &c.—Where there is a good stock of Azaleas to select from some of the most forward plants may now be placed in heat in order to get them into bloom early; moisten them overhead two or three times a day. Unless, however, plants can be had which made their growth and set their buds early in the season they need hardly be expected to flower so finely as under more natural circumstances in spring, and unless the buds are plump there will be some danger of the plants starting into growth instead of flowering. Do not forget to introduce a good batch of Roses, choosing the most promising plants for winter flowering. A gentle bottom heat will be of great service to these, as also to most other plants subjected to heat, in order to get them into flower as quickly as possible, and a moist state of the atmosphere must be secured, admitting a little air freely on every favourable opportunity. Pelargoniums should be kept rather cool and dry, giving whatever water may be necessary on the morning of fine days, so that the superfluous moisture may be removed before the evening, avoiding the use of fire-heat except when necessary to prevent the temperature falling below 40°, or to dispel damp, when this cannot safely be done by giving air. Fancy kinds like the warmth of an intermediate house. Calceolarias require very similar treatment, except that they are subject to attacks of thrips unless afforded a moist atmosphere; they must, therefore, be narrowly watched and smoked lightly two or three evenings successively if this pest makes its appearance, keeping the atmosphere moist, and giving air on every favourable opportunity to prevent the foliage from flagging. Cinerarias for late blooming must also be kept cool and airy, and should not be allowed to suffer from want of pot room. Plants intended to flower early should be encouraged with a gentle heat, keeping them as near the glass as possible.

FORCING DEPARTMENT.

PINERIES.—If any portion of the stock is intended for fruiting early, a brisk temperature must be maintained to induce it to start; the most promising plants should be selected for the purpose and placed in a small house or pit by themselves; and, where anything like a regular supply of ripe fruit is required, several houses, or separately heated compartments, should be at command. It is not by any means desirable to start more plants into fruit at this early season than may be absolutely necessary, for they will produce finer fruit later in the season than can possibly be obtained from them now; and where a separate house cannot be commanded for those which must be subjected to a higher temperature, we would advise that the plants selected for fruiting should be placed in the warmest part of the house at command, filling the rest of the house with young stock. The former should be afforded a bottom-heat of about 85°, and the latter about 10° or 15° lower; the atmosphere should range from 68° to 75° by fire heat, allowing it to rise 5° with the assistance of sunshine, keeping the young plants near the glass, and properly supplied with water at the root. This temperature will be considerably too high for young stock at this season, but we have seen this system practised with considerable success; and although the young plants may get somewhat drawn, they will gain substance as light increases, and the evil will be less than running the risk of starting at this early period of the season the greater portion of the plants that are at command for keeping up the supply throughout the summer. VINERIES.—Until the buds are fairly broken the points of the shoots should be kept nearly on a level with the lowest part of the Vine; and if this should not be found sufficient to induce the buds to start equally throughout the length of the Vine, the rod should be bent so as to bring the most forward buds to the lowest level, elevating those that are backward. Maintain a thoroughly moist atmosphere by frequently sprinkling the floor and passages, &c.; and syringe the Vines lightly at least twice a day until the leaves begin to appear, when the amount of moisture must be moderated. Give every attention towards securing a gentle warmth for the roots; turning the litter and adding fresh as may be requisite, and keeping it well protected from the effects of heavy rain and severe weather. Be satisfied with a moderate night temperature until the buds begin to push, when it may gradually be raised to 60° by the time that the leaves fairly begin to open.

FLOWER GARDEN AND SHRUBBERIES.

If any of the tenderer kinds of Roses are yet unprotected some covering material should be applied at once, for severe weather seems about to set in. Also get in Briars for budding upon without delay, for unless these are planted before spring they seldom furnish strong shoots for early budding. The transplanting of any large evergreens which unfortunately has been delayed until now should be put off until the weather becomes mild in spring, especially things which are known not to be perfectly hardy. There will be comparatively little to do in the flower garden at present, and any spare time will be well spent in going over the stock of plants in pits for next season's use, removing every decaying leaf, and where the surface soil has got green, removing this and top dressing with sandy loam. There is nothing so unfavourable to these plants at this season as damp, therefore take every favourable opportunity of admitting fresh air.

HARDY FRUIT AND KITCHEN GARDEN.

See that standard trees which have been recently moved or root-pruned are firmly secured against winds; and also get any root-pruning or transplanting remaining to be done this season executed before frost sets in. Endeavour, as has been previously pointed out to have a good supply of Parsley under safe protection, for there is generally a large demand for this; and in the event of a severe winter it is difficult to save it by the ordinary protection of hoops and mats. Lettuces, Cauliflowers, &c., in frames should be freely exposed on all favourable occasions. See to maintaining a regular supply of Seakale, Rhubarb, and other forced vegetables. Look over root-stores occasionally to see that nothing is going wrong, and be very careful of any Broccoli that may be fit for use. Take advantage of frosty weather to get manure wheeled upon spare ground, and see to keeping a good supply of it well rotted and fit for use when wanted.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.

For the Week ending Dec. 15, 1859, as observed at the Horticultural Gardens.

Dec.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Min.	Mean	Temperature of the Earth 1 foot deep.	Temperature of the Earth 2 feet deep.	Wind.	Rain.
Friday 9	14	30.520	30.439	43	27	35.0	44½	44½	E.	.00
Satur. 10	○	30.658	30.594	44	24	34.0	44	44½	E.	.00
Sunday 11	16	30.577	30.449	34	26	30.0	44	44	E.	.00
Mon. 12	17	30.396	30.328	40	29	34.5	43½	43½	S.W.	.01
Tues. 13	18	30.291	30.065	39	22	30.5	43½	43	W.	.00
Wed. 14	19	29.968	29.894	31	22	26.5	42	43	N.	.00
Thurs. 15	20	29.956	29.804	34	14	24.0	41	42½	N.	.00
Average		30.338	30.224	37.8	23.4	30.6	43 2	43.5		.01

Dec. 9—Foggy; hazy; slight frost at night.
— 10—Foggy; slight haze with cold east wind; frosty.
— 11—Foggy; dense fog throughout; s ight frost.
— 12—Slight drizzle; foggy; fine; slight frost.
— 13—Overcast; slight fall of snow-flakes; clear and frosty.
— 14—Dry frosty air; clear and cold; frosty.
— 15—Clear and frosty; fine; clear; severe frost at night.

Mean temperature of the week, 9½ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK,

During the last 33 years, for the ensuing Week, ending Dec. 24, 1859.

December.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 18..	45.3	33.9	39.6	19	0.34 (m.	3	8	—	2	6	9	5	—
Mon. 19..	45.1	34.9	40.0	17	0.38	3	4	4	2	3	10	4	1
Tues. 20..	44.6	34.0	39.3	13	0.76	2	7	2	2	9	7	2	2
Wed. 21..	43.7	34.1	38.9	13	0.20	1	7	3	1	2	13	3	4
Thurs. 22..	45.3	33.6	39.5	17	0.36	3	5	3	1	2	10	6	3
Friday 23..	44.4	32.6	38.4	17	1.13	5	7	2	2	1	11	1	4
Satur. 24..	44.1	32.0	38.0	14	0.30	3	4	3	2	1	14	2	4

The highest temperature during the above period occurred on the 23d, 1849 and 1857, and 24th, 1827—therm. 57 deg.; and the lowest on the 22d, 1855—therm. 9 deg.

Notices to Correspondents.

NAMES OF FRUITS: *W P.* Your Apples are finely-coloured specimens of the Ribston Pippin.‖

NAMES OF PLANTS: We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have or could have undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*Shrubland.* The plant which you find most excellent for winter blooming, and of which plants just coming into flower are 2 feet by 2 feet, bushy and thick with bloom struck from cuttings 12 months ago, is the fragrant Eupatorium adenophorum.—*Honeysuckle.* Cotyledon Umbilicus, *alias* Umbilicus vulgaris.

POTATO: *A Poor Man.* Messrs. Hardy, Maldon, Essex, inform us that if you will apply to them they will tell you where and at what price you can obtain the Lemon or July Kidney Potato.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London, S. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

LONDON MANURE COMPANY (ESTABLISHED 1840).
Have the following MANURES ready for delivery :—
CORN MANURE FOR AUTUMN SOWING.
BLOOD MANURE FOR AUTUMN SOWING.
URATE.
SUPERPHOSPHATE OF LIME.
SUPERPHOSPHATE MINERAL.
The London Manure Company also supply PERUVIAN GUANO (direct from Messrs. Gibbs & Sons), SULPHATE OF AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of known value, all of which they warrant strictly genuine. Wholesale dealers supplied.
116, Fenchurch Street, E.C. EDW. PURSER, Secretary.

ESTABLISHED 1812.
MESSRS. PROCTOR are now prepared to take orders for their special MANURES for 1860, which they unhesitatingly state are of a superior quality and charged at the lowest possible price, viz. :—

TURNIP MANURE	CLOVER MANURE	OAT MANURE
WHEAT ditto	POTATO ditto	BEAN ditto
GRASS ditto	BARLEY ditto	Also

PERUVIAN GUANO, BONE DUST, SUPERPHOSPHATE OF LIME, &c., all of which are warranted of the best quality.
Apply to H. & T. PROCTOR, Cathay, Bristol ; or
PROCTOR & RYLAND, Birmingham and Chester.

MR. J. B. LAWES manufactures the following MANURES :—

TURNIP MANURE	£6 6
SUPERPHOSPHATE OF LIME . ..	6 6
MINERAL SUPERPHOSPHATE OF LIME	5 5
BARLEY MANURE	8 0

N.B. Genuine PERUVIAN GUANO direct from Messrs Gibbs, NITRATE OF SODA, SULPHATE OF AMMONIA, and other Chemical Manures.
WHEAT MANURE.—PERUVIAN GUANO is proved to be the best and cheapest Artificial Manure for Wheat, at Autumn sowing.
American decorticated Cotton-seed Cake of best quality supplied at the market price.
Offices : 1, Adelaide Place, London Bridge, E.C.

BURNARD, LACK, AND CO.'S CONCENTRATED SUPERPHOSPHATE OF LIME ; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.
CONCENTRATED TURNIP MANURE, equal in value to the preceding.
Of these Manures Dr. Voelcker says :—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."
Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to BURNARD, LACK, & Co., Sutton Road, Plymouth.

PERUVIAN GUANO.—The present price of this valuable Manure is 12*l.* per ton for 30 tons and upwards ; 13*l.* 5*s.* per ton for 1 ton up to 30 tons.
And, in order to protect themselves against the purchase of adulterated mixtures and of inferior Guanos purporting to produce results equal to Peruvian, consumers are recommended to apply either to ourselves, to our Agents Messrs. GIBBS, BRIGHT, & Co., of Liverpool and Bristol ; or to Dealers of established character, in whose honesty and fair dealing they can place implicit confidence. ANTY. GIBBS & SONS.
15, Bishopsgate Street Within, London, E.C.

THE PATENT NITRO-PHOSPHATE OR BLOOD MANURE COMPANY (LIMITED).
Trustees :—
ABEL SMITH, Jun., Esq., Walton House, Ware, Herts.
CHARLES DIMSDALE, Esq., Essendon Place, Herts.
EDWARD BALL, Esq., M.P., 8, Belgrave Road, Pimlico, S.W.
GENERAL HALL, Weston Colville, Linton, Cambridge.
JOHN BRADY, Esq., M.P., Warwick Terrace, Belgrave Square, W.
Directors :—
Chairman—JONAS WEBB, Esq., Babraham, Cambridgeshire.
Deputy-Chairman :—
JOHN COLLINS, Esq., Myddleton Square, Pentonville, E.C.
EDWARD BELL, Esq., Tottenham, Middlesex, N.
JOHN CLAYDEN, Esq., Littlebury, Essex.
RICHARD HUNT, Esq., Stanstead Abbot, Herts.
THOMAS KNIGHT, Esq., Edmonton, Middlesex, N.
ROBERT LEEDS, Esq., West Lexham, Norfolk.
ROBERT MORGAN, Esq., 72, Camden Villas, Camden Town, N.W.
GEORGE SAVILL, Esq., Ingthorpe, near Stamford.
WILLIAM COLLINS, Esq., 105, St. John Street Road, E.C.
Bankers—Messrs. BARNETT, HOARE & Co., Lombard Street, E.C.
Solicitors :—
Messrs. KINGSFORD & DORMAN, 23, Essex Street, Strand, W.C.
Auditor—J. CARTER JONAS, Esq., Cambridge.
Manager—Mr. JAMES ODAMS. | *Secretary*—Mr. C. T. MACADAM.
Offices : 109, Fenchurch Street, London, E.C. ; Manufactory, Plaistow Marshes, Essex, E.
ODAMS'S BLOOD MANURE FOR WHEAT,
Price 7*l.* 10*s.* per Ton, delivered Free to any WHARF or RAILWAY in London.

LAND DRAINAGE.
WORKS OF DRAINAGE of any extent are EXECUTED by the GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY on all descriptions of property, whether freehold, entailed, mortgaged, trust, ecclesiastical, corporate, or collegiate.
Repayment may be made by the Landowner as successive portions of the works are completed ; or the actual expenditure, with a commission thereon, may be charged on the property improved, by way of rentcharge on the estate created for various terms of years so as to adapt the rate per cent. of annual charge to the circumstances of the tenants.
No investigation of title being required, or notices given to Reversioners or Mortgagees, no legal expenses are incurred.
Works of Irrigation, Enclosing, Wood Grubbing, Road Making, and Farm Buildings are executed in a similar manner.
Landowners desirous to execute any of the Improvements by their own Agents, and charge the outlay and expenses on the Estate, may obtain Loans for the purpose.
Applications to be made to WILLIAM CLIFFORD, the Secretary, at the Offices of the Company, 52, Parliament Street, S.W.

WEST OF ENGLAND AND SOUTH WALES LAND DRAINAGE AND INCLOSURE COMPANY.
Established in 1844.
INCORPORATED BY ACT OF PARLIAMENT IN 1848.
Draining, Inclosing, Irrigating, Warping, Road Making, and all kind of Land Improvements, executed on Entailed, Mortgaged, or other Properties, and the whole cost can be made a Permanent Charge on the Lands, or redeemable in a certain number of years. BIDWELL & BRODIE, Secretaries.
Offices : Exeter ; and 30, Parliament Street, London, S.W.

THE LANDS IMPROVEMENT COMPANY.—Incorporated by Special Act of Parliament in 1853.—2, Old Palace Yard, Westminster, S.W. To Landowners, the Clergy, Estate Agents, Surveyors, &c., in England and Wales and in Scotland.
The Directors beg leave to announce that the Company's Amendment Bill, 1859, has received the sanction of the Legislature. The Company now advance money, unlimited in amount, for the following works of Agricultural Improvement, the whole outlay and expenses in all cases being liquidated by a rent charge for 25 years.
1. Drainage, Irrigation and Warping, Embanking, Inclosing, Clearing, Reclamation, Planting for any beneficial purpose, Engines or Machinery for Drainage or Irrigation.
2. Farm Roads, Tramways and Railroads for agricultural or farming purposes.
3. Jetties or Landing places on the sea coast or on the banks of navigable rivers or lakes.
4. The erection of Farm Houses, Labourers' Cottages, and other Buildings required for Farm purposes, and the improvement of and additions to Farm houses and other buildings for farm purposes.
Landowners assessed under the provisions of any Act of Parliament, Royal Charter, or Commission, in respect of any public or general works of drainage or other improvements, may borrow their proportionate share of the cost, and charge the same with the expenses on the lands improved.
No investigation of title is required, and the Company being of a strictly financial character do not interfere with the plans and execution of the Works, which are controlled only by the Government Enclosure Commissioners.
For further information, and for forms of application, apply to the Honourable WILLIAM NAPIER, Managing Director, 2, Old Palace Yard, Westminster, S.W.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, London, S.
Principal—J. C. NESBIT, F.G.S., F.C.S., &c.
The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts ; for the Naval and Military Services, and for the Universities.
Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.
APPOINTMENT OF EDITOR.—The Council have resolved to APPOINT AN EDITOR OF THE SOCIETY'S JOURNAL, and other Publications, at a salary of 500*l.* per annum.
Gentlemen desirous of becoming Candidates for the above office are requested to send in their applications and testimonials, not later than January 20, 1860, to the Secretary of the Society, 12, Hanover Square, London, W., from whom full particulars can be obtained.

The Agricultural Gazette.

SATURDAY, DECEMBER 17, 1859.

—— A REPORT, printed for private circulation, of the extremely full and well managed competition among village exhibitors of horticultural produce, floral taste, school work, &c., which annually takes place at Tortworth Court Park, the seat of the Earl of DUCIE, has been kindly sent to us.

Knowing that neighbourhood well, and the circumstances of its labouring population by long residence among them, we are able to speak with confidence of the good influence of these shows upon the condition of the people. They act as a most efficient premium upon good allotment and garden cultivation, and therefore upon a very important source of domestic comfort.

—— The plans of an apparently good and useful moveable cattle shed, advertised in another column, have been sent for our inspection. The inventor professes to be able to house 36 head of cattle in a moveable erection, costing only 12*l.* if the landlord will provide timber in the rough. If timber has to be purchased it will cost 35*l.* The whole consists of four sheds, 9 feet wide each, and therefore capable of being moved through an ordinary gateway ; each is on wheels, and when they are drawn up alongside of one another they constitute a covered square of 36 feet, providing accommodation for 36 cattle, or 18 cattle and 50 sheep, or 100 sheep ; together with ample storage for fodder. The uses of it are to provide shelter for live stock when depastured in exposed parts of the farm, unprovided with permanent buildings—to give shelter to sheep when folded on green crops and in the lambing season, and to preserve their manure.

—— We add some further particulars regarding the late exhibition of the Smithfield Club for which room was not found in our columns last week. Lord BERNERS, who presided at the public dinner of the society, gave the following short statement of its history and progress :—

"The Smithfield Cattle Club was established in 1798, or 61 years ago. It was then very small in its numbers, and was held in a very humble position in Goswell Street. Some 20 years ago, the shows of the club were removed to Baker Street, and at that time the proprietor of the bazaar gave the club 300*l.* a year. Instead of receiving 300*l.*, the club now receive 700*l.* The non-members of the society who exhibit stock pay 115*l.* a year. The implement department pays them 740*l.*, and the steam-engine exhibitors 50*l.* The dividend on their funded stock produces 56*l.*, and the subscriptions 235*l.* Their invested capital is 2009*l.*, and at the present time they have 364 members. The number of entries for live stock during the present year was 365*l.* The sums awarded for prizes for cattle and other stock amounted to 950*l.*, and in medals 111*l.*, or in rough numbers, 1100*l.* There could be no doubt but that they ought to have a show-yard of their own, which would prevent the public being so crowded as they had been, and give more room for the implements, which are a very important department of the show. When this was accomplished he had no doubt but the Smithfield Club would advance by rapid strides to further prosperity."

Their agreement with the tenant of the Baker Street Bazaar terminates, we believe, in 1861 ; and before that time no doubt a building and show-yard providing larger accommodation will be erected.

A comparison of some of the classes of fat stock exhibited last week with similar classes at previous shows brings out the following facts :—

The number of Devons exhibited was largely over that of former years—the Herefords were as much under their usual average—the Short-horns were present in ordinary number—the cross breeds were considerably fewer. As to the size of individual specimens, the first prize Short-horn steer in 1852 girthed 8 feet 2 inches ; in 1853 it girthed 8 feet 4 inches ; in 1854 it girthed 8 feet 6 inches. There were, we believe, none of this girth in the same class this year.

In the older class again in 1852 Mr. STRATTON'S prize ox girthed 9 feet 2 ins. In 1853 the prize ox in this class girthed 8 feet 10 ins. In 1854 the two prize oxen in the class girthed 9 feet 7 ins. and 9 feet 5 ins. respectively. In 1859 the largest ox in the yard was Mr. WORTLEY'S, and it girthed 9 feet 6 ins.

In the Hereford classes the most remarkable animal undoubtedly was Mr. SHIRLEY'S prize ox, which at 2 years and 7 months old girthed 8 feet 17 in. We have nothing in the records of past shows to exceed this.

Among Devons this girth is rarely reached at all, and not till the animal is four years old. Neither the Hereford nor the Short-horn classes in these years of which we have exact accounts have reached the weight of Mr. SHIRLEY'S ox, which, taking its age into account, may be fairly looked upon as an agricultural maximum.

—— It will be seen by the report in another paper that the Council of the Agricultural Society have made some material alterations in the management of the country meeting, tending very considerably towards the plan recommended in the *Midland Counties Herald*, to which we drew attention at the time of its publication.

The meeting is to commence earlier and terminate on the Thursday instead of the Friday evening of the show week.

THE discussions which are held at the London Central Farmers' Club are read with great avidity by the more intelligent agriculturists all over England. A great deal perhaps is said which does not exactly agree with their own experience ; but there is still much food for reflection, and many a suggestion arises which gives birth to new inquiries, or indicates something wrong in present practice. To ourselves they are of great interest, not only on account of the subject matter produced, but because they show precisely where the weak point of most agriculturists is, and to what the attention of those whose business is to supply information should be directed. The matter which strikes us most in these meetings is the tendency to refer any circumstances which may arise, as disease in stock or crop, to some other concurrent accident, without the slightest attempt to ascertain the justice of the reference. This tendency, indeed, is not confined to farmers, but extends to every class of the community where the trouble of deep thought and accurate examination are deliberately thrown aside for any argument, however inconclusive, which may serve as a resting place to the slumbering mind.

Let us take as an example one of the main matters on which a recent discussion turned—the loss of lambs during the three last years. One refers it without hesitation to feeding on Trefoil, while another as confidently attributes it to being placed on White Clover leas previously fed off by sheep. While both of these positions are denied by persons whose experience is in favour of either practice, a third opinion out of doors inclines to think it arises from the change from Grass to Turnips ; a fourth, where Barley was given at the

time of change, to the lambs being overgorged with grain; while a fifth opinion, to which we lately alluded, seeks for the cause in the presence of a Fungus upon the Grass. In not one of these instances was there any due record of the symptoms of the disease, much less any comparison of symptoms or attempt to show that the causes assigned were capable of producing the effects.

It is evident that there is here an important field of inquiry and one of great extent, and the mere indication of the great evil which is bound up in such inconclusive inferences may of itself be useful. If it be reasonably presumed in several instances that Trefoil is fatal to lambs, for single instances are of little use in farming, and the crop is not so luxuriant as to produce scouring, it immediately becomes matter of interest to ascertain whether Trefoil is really injurious, and if so whether it is the leaves, flower, or seeds, which are the cause of mischief; and this can scarcely be a matter of great difficulty. That it should be hurtful is not impossible, as some leguminous plants are virulent poisons and almost all contain a certain portion of the deleterious principle. One species for instance is known to be the pest of sheep farmers in Australia. We have ourselves met with the opinion amongst farmers that Trefoil is injurious only when in flower. But such a notion is to be taken merely as suggestive, and by no means to be adopted without inquiry to the discredit of a plant which for years has been considered one of the most useful on some kinds of land. The person who makes such experiments, with due caution as to the conclusion he forms, becomes a real benefactor, while the loose assertion, especially from the mouth or pen of one who has credit in his generation for judgment, may lead to serious evil.

The same reasoning applies to any other theory. If any probable cause suggest itself, from repeated experience, let that cause be properly tested, and some useful information is sure to arise, but mere assertion has the tendency rather to retard than to promote knowledge. A theory carefully followed out, if resting on false observations only, or observations with which some error is mixed up may lead to good, because those observations are sure to be tested, and truth will be elicited in the discovery of error. This is constantly the case in other branches of science, and in none more than the cognate science of Botany,* and hence persons whose reputation has been built on false conclusions may prove real benefactors to science. Where there is nothing but assertion, there is scarce any room for this process, for in the great majority of cases the assertion unsupported by arguments will be entirely neglected by scientific men.

We have taken the instance given above, as that more prominently brought before the meeting, but our observations apply to other matters which came incidentally under discussion. One or two of these are of very great interest, especially the Clover sickness and the sterility of soil as regards Wheat after Italian Rye-grass, on which we shall hope to say a few words on some future occasion.

As regards another point brought forward—the comparative fertility of Clover layers when eaten off by sheep or mown—there is great difference of opinion. Some as confidently adduce examples in favour of the former practice, as do the high authorities who broached the subject in praise of the latter. We think that too little weight perhaps is attached in the latter to the fallen leaves. A good deal, however, depends upon the soil. Practices which may be right enough in the light soil of Lincoln Heath may be quite inapplicable to strong clay districts, or other modifications of soil, a fact which cannot be borne in mind too carefully in such discussions. *M. J. B.*

A GREAT change in the relative value of our different crops has taken place of late years. There was a time when nearly all were only secondary to that of Wheat, which indeed was looked upon at least as the principal crop from which any amount of profit was to be derived; and hence each farmer would if possible so arrange matters as to get a recurrence of Wheat in the rotation as often as possible, and restrictive clauses in leases or other agreements between landlord and tenant were insisted upon to prevent that exhaustion of soil which such frequent taking of a corn crop is known to produce.

Such restrictions, however, have for some time been becoming less stringent, partly arising from the increased use of artificial manures, and slightly from another cause, the operation of which is only just begining to be felt. We refer on the one hand to the low price of Wheat, not rendering it worth while for the farmer to bend all his energies to its production, and on the other to the higher price of meat, making it of more importance to provide a greater supply of cattle food.

This position of matters is even now beginning to occupy the attention of agriculturists, who are not at present calculating how they may manage two Wheat crops in six years so earnestly as how to produce a succession of root crops. That which makes this subject still more important at the present time is that the Turnip root, which has been so extended in its cultivation as to be everywhere known and extensively grown, is beginning to fail just as its value is being better understood, and it would appear that one cause of this, to say the least, is the too frequent repetition of the crop under similar circumstances of soil, climate, and modes of cultivation. Hence, then, it will be in vain to call upon the Turnip to do double duty in our crop rotations when it can scarcely be maintained in its present state once in a four or six years' rotation. This circumstance has doubtless impelled the Council of the Royal Agricultural Society to offer a prize for a "Report on the Causes of the increased Difficulties of Turnip Cultivation, and the Remedies," to which announcement of the subject is appended the following remark:

"In many Turnip-growing districts this crop is found to be less hardy than heretofore, and more liable to the attacks of various diseases. Competitors will be expected to discuss the question whether this is due to the too frequent repetition of this crop, or to any differences in the mode of cultivation or the kinds of manures employed."

Now we shall not stay here to answer these important inquiries, but will take them merely as evidence of the declension of a most important crop, under present modes of culture.

To meet this difficulty Mr. ANDERSON, the agent of Lord BATHURST, at Cirencester, tried last year a plan of growing alternate rows of Mangels and Swedes, so that the former could be drawn and stored, and the latter used for sheep in the usual method adopted on the Cotteswolds. Both require pretty much the same treatment, and as might have been expected there was no drawback to the success of both; in fact either separately would have formed not altogether a bad crop for the light upland soil of the district.

This year this notion has been varied by growing alternate lands of 12 rows each of Swedes and Mangels, a plan which we cannot help thinking is worthy of attention, as a bad season for the one kind of plant may not always be that for the other, and if one portion of the crop be removed sufficient fertilising matter will still be left in the other portion to develop a corn crop, or the cleared land may be suitably employed for Potatoes, which we should imagine will be less liable to disease than when special manuring is employed.

Let us however suggest as a mode of carrying out a new plan of operations suited to the new requirements of the farm, that the same ground may be grown with the same crops for two years by merely alternating the lands as follows:—

1860. Swedes.	1860. Mangel.	1860. Swedes.	1860. Mangel.
1861. Mangel.	1861. Swedes.	1861. Mangel.	1861. Swedes.

Of course there can be but little difficulty in arranging these matters, and thus add other advantages to those before mentioned.

1st. The expensive tillage required for a single root crop will subserve the growth of two crops of roots.

2dly. These two years will the better prepare a new seed bed for corn.

And 3dly, two years of a cleaning crop will ensure that all the germs of weeds shall be destroyed.

1st. Roots have previously been considered, not as a paying crop, but as a necessary preparation for corn, which would be paying at 6*s.* per bushel, but doubtfully so at 5*s.* a bushel. The reason roots do not themselves pay is on account of the expense of tillage.

Thus in the case of the Turnip fallows we have often

	£	*s.*	*d.*
3 ploughings at 9*s.*	1	7	0
2 cultivations at 3*s.* 6*d.*	0	7	0
6 harrowings at 1*s.*	0	6	0
2 rollings at 1*s.* 3*d.*	0	2	6
Total for an acre	£2	2	6

The cost of hand weeding is often very costly. Now this, exclusive of the cost of manure, of seed, &c., is a serious expense indeed.

Much, however, of this expense would, in the plan we advocate, extend over two years, and we cannot but think from the very nature of the case that the seed bed of the second year would be even better than that of the first as being in better "tilth," and much cleaner, so that we should expect a better plant from less seed, and therefore less liability to insect attacks than pertains under present modes of culture.

Of course we do not altogether advocate the growing of two successive green crops with one year's manuring, but still as the plants we would employ should always belong to different families, we are not quite sure whether practice and experience would not show the feasibility of this. Again we would not confine our ideas to the two crops named, but would suggest alternations of Carrot and Parsnips with Swedes or Mangels; and upon the plan that we cultivate our gardens, first getting our ground in good working order, the following of one crop after another by no means necessitates special manuring for each.

2dly. Should the root crops be succeeded by corn, we submit that with two years of cultivation of these successive root crops, especially on the ridge system, an increasing quantity of soil will become decomposed by the action of the atmosphere, by which means we may expect the land to be not only deepened but its fertility augmented. And in fact if matters could be so arranged as to have not only a complete alternation in the crops of different ridges of land, but also a change in the position of the rows, we should unite the advantages of the TULLIAN system with our more modern one, and probably as usual find that this is just the happy mean in which the truth may be found. 3dly. As regards weeding by our present system, we are ever beginning this necessary but expensive operation, and never finishing. However much we may get weeds down by one year's root cultivation, we still leave sufficient germs in the soil to continue the pest two years. But the principle we have ventured to introduce would be so effectual in weed destruction that unless we again sow our enemies in the *shape of Tares with the Wheat*, we shall have made a most important step in weed eradication.

Here then in advocating a plan which, we think, may be made available for present circumstances, we are not introducing new or untried crops, nor do we propose anything that would be expensive in the trial. Certainly it would not unfit the land for a reversion to the old four, five, or six-course systems if they should be found more desirable, and further, it is not one that requires the more frequent growth of any particular species of root crop.

—— A LETTER from the neighbourhood of Taunton which we have just received confirms very strongly what was lately said about the effect of Ergot in pasture Grasses upon in-calf cows. Three of the principal Grasses, namely, Rye-grass, Cocksfoot, and Yellow Oat-grass were covered with Ergot in October, and the consequence has been that the greater part of the cows have slipped their calves. A little attention would prevent such calamities. Ergot seldom if ever appears in the eddish or lattermath, and it is there that the cows and pregnant ewes should be placed in October and the beginning of November. It is only on the Bents that the Ergot grows in any abundance, and a little observation will show whether they are affected or not. *M. J. B.*

AMERICAN HORSE-POWERS.

[From Dr. Eddy's Paper on American Implements in the Journal of the English Agricultural Society.]

THEY are of various sizes adapted for one or for two horses, or for a sheep, a dog, or a calf, any of which, when put in, have no option but to do their work, for it is a species of treadmill; and although at first sight it appears a case of cruelty, I do not believe it to be at all more so than any other kind of compulsory labour. It is not found to distress or injure the animal, and it is undoubtedly the most effectual method of applying a limited amount of animal power to such purposes as threshing, winnowing, grinding, churning, sawing wood, and all others which require rotatory motion, because, in the first place, the speed of the animal is directly imparted without the intervention of gearing to the axle of the driving-wheel; so if we suppose this to be 3 inches in diameter, and the circumference 3 feet in diameter, and that the horse walks at the rate of 3 miles an hour, the velocity at once given to the band on the driving-wheel is 36 miles an hour, and the force is directly proportioned to the weight of the animal, undiminished by the friction of cog-wheels.

The machine consists simply of a pen with a floor of stout slats resting on an endless web, which runs on rollers and communicates the motion given to it to the

* That we may not make assertions without proof, though the particular instances are omitted in the text as out of place in an agricultural article, we may point out SCHLEIDEN's theory of the protection of the embryo in plants, and that of DU PETIT THOUARS on the formation of wood from fibres descending from the buds.

axle of the driving-wheel; the forward end of this pen is raised on a block to give it a slight inclination, and, as soon as the wheel is set at liberty, the weight of the animal moves the floor backwards with an accelerating motion, which is checked only by the resistance of the work to be done, or by the application of a drag.

Now, suppose we compare this application of power with that of a horse in the old fashioned lever mill: in this railway horse-power we have seen that the speed is directly applied to the axle of the band wheel; in the old-fashioned mill, on the contrary, the horse walks a circle of 18 or 20 yards in order to give one revolution to the axle, and this loss of speed has to be recovered by a complicated system of cog-wheels and gearing. Besides, a horse walking in a mill pulls, not at right angles to the pole (which forms the radius of the circle), but within the right angle, which involves a loss of power in proportion to his thus diminished distance from the centre of motion; the lost power being mischievously exerted in pressure on the centre, and consequent increase of friction.

The well-known economy of these "railway horse-powers" has caused them quite to supersede the old lever ones on the 200 or 300-acre farms of the Northern States; but on the large plantations of the Southern, and the great Prairie estates of the Western districts, the lever-powers, admitting as they do of the application of the entire force of the farm, are still used for threshing. The capacity of these "powers" is stated to be about 175 bushels of Wheat a day threshed and winnowed, at a cost of less than 2½*d.* a bushel. I have reduced the dollars and cents to English money:—

Estimate per day of 10 hours.

2 horses, at 2*s.* each	=	4*s.* 0*d.*
4 hands, at 3*s.* each	=	12 0
Boarding men and horses		9 0
Cleaning up		3 6
		28 6

This is the price at which travelling machines will contract to thresh and winnow; and, if the farmer has his own machine, the cost is, of course, less. It compares very favourably with the contracts for threshing with itinerant steam-engines in England. The cost of these machines is:—

	Dolls.	£.	*s.*
For a 2-horse power	116 =	25	0
,, 1-horse ,, ...	85 =	17	14
,, dog or sheep power	15 =	3	0
,, 2-horse power with thresher and winnower	160 =	34	0

There are but few farmers in the Northern States that do not possess one of these "powers," and use it for the various purposes of sawing up wood, threshing and cleaning grain, grinding, crushing, root and chaff-cutting, churning, &c. They are much used by the railway companies, and sometimes even in ferry boats for turning the paddle wheel, and the general retention of them in a country where steam and mechanics are so well understood is not without significance.

In large concerns, as on farms which grow their thousands of bushels of grain, or at central railway stations, where hundreds of cords of wood are consumed daily, steam is, no doubt, the cheapest power that can be used, for this mighty but cumbrous agent defies the competition of bone and muscle in all cases where a large amount of regular routine work has to be accomplished, but must certainly yield to the latter the merit of readier adaptation to constantly varying requirements. On small holdings these horse-powers furnish, I firmly believe, the most economical mode of applying that force which every farm possesses, and which there can be no economy in leaving unemployed. I am convinced they would be found a great convenience to many small farmers in this country; and in many of our colonies, where steam is out of the question, they would be invaluable. Their compactness gives them a great advantage with regard to freight, to economy of space in the farm-yard, and to portability, for, if wanted at a distant part of the farm to thresh an outlying crop in the field, the "power" is forthwith put into a waggon and drawn to the spot by the horses which, when arrived there, work it.

Report on the Horse-power patented by Isaac Hartas, of Wrelton Hall, Pickering, Yorkshire, and exhibited at the Ripon Meeting of the Yorkshire Agricultural Society.—A single horse-works, by Isaac Hartas, of Pickering, attracted a great deal of attention. The principle of this machine has been used for some time in America. It consists of a moveable platform attached to an endless chain passing over rollers at each end; this endless platform is placed so as to form an inclined plane, upon which the horse walks, and the platform recedes beneath the horse's feet. The platform has cogged "racks" attached to it which gear into a toothed wheel, which drives machinery. In this case it drove a small threshing-machine, and had also a small chaff-cutter attached to it. The whole arrangement is very simple. As some discussion took place as to the usual effect a horse could produce when working with this machine, some careful experiments were made on the machine in question, and on a well-made horse-works, in which the horse walked round the circle in the usual way. In the first experiment, one of Richmond and Chandler's Oat-crushers or Linseed mills was attached to the horse-works, with a dynamometer intervening to record the work done. The horse, walking at the rate of 2.04 miles per hour, did work equivalent to the raising of 33,110 lbs. one foot high per minute. During this experiment, at the rate the horse walked, and taking into consideration the angle of elevation of the platform, the horse would have raised himself to the height of 33.66 feet in one minute—that is, had the platform been stationary and prolonged indefinitely. The horse with his harness weighing 1084.5 lbs., and this multiplied by 33.66 feet, the height the horse would have raised himself equals 36,504 lbs., lifted one foot high per minute. In the second experiment, the horse walked 1.7 mile per hour, and did work, as shown by the dynamometer, equivalent to raising 31,350 lbs. one foot high per minute, during which time he would have climbed 28.21 feet, which is equivalent to the raising of 30,594 lbs. one foot high per minute. In this experiment the horse walked and worked exceedingly steadily, and the work he did at that time (31,350 lbs. lifted one foot per minute) fairly represented the work a horse can do by this machine. To compare the above with a common horse-works, the horse used in the last experiment was yoked with another of similar power and quality, to a two-horse power works, made by Mr. John Barker, of Dunnington. The power was applied to the same mill and dynamometer, and the work done by each horse was equivalent to 26,500 lbs. lifted one foot high per minute, being about 16 per cent. less than the duty done by Mr. Hartas's horse-works. The horses worked equally, and every care the circumstances afforded was taken to obtain the best results. *C. E. Amos.*

THE FORCES USED IN AGRICULTURE.

THE valuable paper read by Mr. Morton last week on the Forces used in Agriculture will, I hope, be studied as it deserves to be by all interested in the soil, whether landlords, tenants, or labourers. It embraces so many points of detail and of calculation, that it was difficult to offer any comments upon it at the time, and I now ask permission to explain, more clearly than I was able to do at the meeting, the points that appeared to me to claim our general attention.

The question of comparative cost of power, as exerted by steam, by horse, or by man, was never a doubtful one, and is now fairly and clearly reduced by Mr. Morton to its money value, viz.—that while steam can meet a certain *continuous* force at a cost of 3*d.* per hour, the same if supplied by horses would cost 10*d.*; and if supplied by manual labour, no less than 15*s.* per hour; while the two latter could not continue it longer than eight hours out of 24. This great difference is readily understood when we consider the nature of the machinery we have to deal with. In the one the body is made of iron, and is fed with coals and water; in the others we have organised structures, supported by Oats and hay, and by beef and bread. In the latter the cost of maintenance and of wear and tear are obviously far greater than the former, and the cost of their results—force—proportionably increased, In other countries these conditions do not bear the same relations to each other; animal power is generally cheaper and steam power dearer than with us. In this, however, it is quite clear that where power alone is required, neither horses nor man can compete with steam. The man, however, as a source of power, does not bear the same relation to the other two as they do to each other; he is endowed with duplicate sources of power, in the shape of mental as well as muscular force, the absence of which in the other reduces their intrinsic value, and unless added to them would neutralise it altogether; the horse and the engine equally needing the skilled labour of the man to direct their energies and contract their powers.

The competition therefore is between the power of steam and of horses, rather than between steam and the man. To the labouring man steam has been, and always will be, a friend: it relieves him from the hardest and worst period of his duties, and raises the value of his higher (mental) power—skilled labour. The industrial history of the country teems with evidence of the benefits conferred by steam machinery on the working classes—not less in increased employment than in increased wages for it, and few departments of industry offer greater opportunities for its development than in that connected with the productive powers of the soil.

If we are right in our estimation of the immense value to us of steam and other machinery, we clearly are wrong in paying so little attention as we do to the directing power—the labourer—by which the efficiency of the machinery is so largely influenced.

We have for years past devoted our attention to the education (if I may so use the term) of our mechanical forces—the improvement of our machines, and application of steam power; let Chester and Warwick testify to our success. Tens, nay hundreds of thousands are each year invested in their purchase, but no equivalent attention is paid to the education of our human power—our labourers—either as regards their physical or their mental forces.

The machine, to be complete, needs the directing skill of the man; he is essentially one of its working parts, and as in mechanics it is an axiom that the strength of the whole is only equal to its weakest part, it is clear that the efficiency of the machinery we use materially depends upon the knowledge and skill with which they are directed. We should think it a folly to give the labourer a book before he had been taught to read and understand it, and yet we are surprised that he should look upon our labour-saving machines as his enemies, and either oppose their introduction or fail in rendering them as efficient as we see them to be in the hands of competent workmen. Surely this is a matter that calls for our serious consideration. It appeals to our breeches pockets as well as to our brains and our hearts. Our system of farming has undergone a complete revolution within the last 10 or 15 years, but our system of hired labour remains well nigh the same—the same neglect and want of confidence on both sides; at one season the employer takes advantage of the labourer, and at another the latter retaliates severely on the employer. The last two or three harvests have read us a lesson.

The increased and increasing scarcity of labour throughout the country, and the price it costs, must advance the use of machinery in the field as well as the farmstead; and I cannot refrain from expressing a very strong opinion that our farmers will find it to be greatly to their interests in a pecuniary point of view, to say nothing of higher motives, to endeavour at once to improve the condition, both moral and physical, of their labourers, and prepare them for the new duties they will be expected to perform.

Why, in the face of the mighty progress of the last few years, should the agricultural labourer still be at the bottom of the social scale? I believe he deserves a better position. I believe that the farm can afford to pay for skilled labour as well as the factory; but unless we follow Mr. Mein's sound advice and advance his regular wages, make his house more comfortable, and strengthen—by a more friendly intercourse—the natural ties between his employer and himself, we shall continue to find that the best and most intelligent of our young men will leave us, and seek a better remunerated employment elsewhere.

Power machinery becomes each day more necessary to a farmer's well-doing, indeed to the welfare of the community at large; and if we wish to derive the full benefits it offers to us, the first thing we ought to do is to prepare the labourers by education, and by improving their general social condition, for the important part they have to perform in its successful application. *John Wilson, University of Edinburgh, Dec.* 12.

LOIS WEEDON EXPERIENCE.

[We are permitted by Mr. Smith, Lois Weedon, to reproduce here a large portion of the additions to his new Edition of "A Word in Season." They are for the most part addressed to the question—is the practice new?]

But after all, is there anything new in the plan? For every discovery, every improvement, it is said, has two ordeals successively to pass through before it is received by the public. "In the first period of its existence it is proved that the new thing is not true, or of no value. After it has fortunately got through this period, it is next proved that the new thing is not new; that it has been long known; that more than a hundred years ago there were people enough who knew it perfectly." This latter is precisely the period at which this plan of Wheat growing has arrived. "The new thing is not new." It is indeed quite certain that Jethro Tull, the great and acknowledged originator of its leading principles existed, and farmed and wrote about his farming a century and a half ago. But it is equally certain that, since then, his system of Wheat growing has been taken up over and over again, and has dropped and died on the spot. And if after a searching inquest it is found brought to life again at Lois Weedon, and nothing more; if what I profess to be new is not new; if nothing fresh and more profitable is there exhibited in its stead, I shall be the first to say, drop it at once. Having, for my own satisfaction, again very carefully gone over Tull's "Horsehoeing Husbandry," in Cobbett's edition, I give here the results of my pleasant investigation, with a reference to each page from which I quote. Confining myself to his Wheat cultivation, I find, first, that he used no manure whatever; that the only food he required, or named, or thought of, was organic or vegetable food, and that he provided an abundant supply of this food simply by keeping his clean land constantly pulverised. I will try to illustrate his theory. Take a handful of dust shot; suppose it to be pure earth, pulverised. Pick out a grain of the shot. Look at it. Turn it round. And all you can see, all the external and visible part of the sphere is, of course, its surface. So with every grain of the handful of shot, or of earth, the only difference being that of form. So with a whole field of pulverised earth. Each individual grain has its surface; and to distinguish these surfaces, collectively, from the great surface of the earth on which we tread, Tull called them the internal superficies of the earth. This internal superficies is the pasture for the roots of plants. It is not the pabulum of food itself. It is merely the feeding ground. Where is the food? It is extraordinary with what a nice perception and accuracy of detail this man of genius worked out his subtle theory of vegetable nutrition. The food for the plant, says he, is still there, though you cannot see it; there, on the surface of those grains of pure earth, but independent of them; sticking there, however, as closely as "dust to a looking-glass, which, turn it upwards or downwards, will remain affixed to it." 63. So close, indeed, does it adhere, that nothing but fire, or the roots of plants, aided, perhaps, by the acid nitre of the air, has the power to remove it. 63. Seen in a state of solution it was "more limpid than the clearest common water, nothing at all appearing in it." 63. And when insumed by the roots of the plant it is probably no grosser than the substance "on which the colours of bodies depend." Some of the particles of this food are so fine that they are able "to enter roots entire with the water." But the great bulk of it having "already passed through the vegetable vessels and been thence exhaled" into the atmosphere—64—had come down again in the rains and dews

and settled on that internal superficies of the earth—that feeding ground spoken of above.

This food, these fine particles, these light exhalations are by Tull called "earth," "terrestrial matter," "vegetable matter;" the only food, I repeat, ever named or thought of by him. "Earth," he says,—61—is proved to be the food of plants; and of this earth there is always such a store in the atmosphere as to defy exhaustion. "Could we as easily compute the quantity of earth in rain water, as the quantity of water is computed, we might perhaps find it to answer the quantity of earth taken off from our hoed soil annually by the Wheat." 211. The earthy matter of the rain and dews is more than a complete restitution of all that the crop took away. That is more than fully supplied in substance from the atmosphere. "The earth which the rain brings down can do it alone if it fall in great quantity." 210. With that of the dews "which are more heavily charged with terrestrial matter than rain is," there is a provision of food for the plant in superabundance. Thus, the more the land is pulverised, so much more surface is created within, and so much greater will be the accumulation of earthy nourishment brought down into the soil for present and future use. Such—as I read it—is Tull's theory of vegetable nutrition. I find, next, that in order to bring the soil into the pulverised condition fitted to absorb and retain this food in its inner superficies, he had an annual, alternate fallow on each acre of his Wheat land. This enabled him to stir the soil to his heart's content. But on the self-same acre he had also an annual crop of Wheat alternating with the fallow:—In this way. He drilled his seed in double rows 10 inches apart, with wide fallow intervals. "We call them," he says in page 203, "5 feet intervals, though they are but 4 feet 10 inches broad." He never went below the staple under any circumstances; but where the staple was deep enough to double plough, he made a little allowance, and somewhat narrowed the interval. It was but a very little, however, for he lays it down as a rule of necessity that "if the intervals are narrower in deep land, though there might be mould enough in them, yet there would not be room to pulverise it. If narrower in shallow land, though there were room, yet there would not be mould enough in them to be pulverised." 208. It so happened that the intervals of a portion of a certain field were made only 3 feet 6 inches in width, and the result was this: "The second year, not being hoed, the crop was poor, and the third year made that land so foul and turfy that it was forced to lie for a fallow, there being no way to bring it into tilth without a summer ploughing; when the rest of the same piece in wider intervals, being constantly hoed, continued in good tilth and never failed to yield a good crop without missing one year." "This narrowness of the intervals," he adds, "if the damage of it be rightly computed, would amount to half the inheritance of the land, and was occasioned by the wilfulness of my bailiff, who, drilling it upon the level ordered the horse to be guided half a yard within the mark, because he thought the intervals would be too wide if he followed my directions."

* * * * * * * *

Examine his theory. It has been for these latter days to prove, from the composition of the Wheat plant, what are the special ingredients it requires for its support. It is proved that not only organic, but inorganic food is required to bring it to perfection; and that if even a single requisite element of inorganic fertility be wanting in the soil, the plant will be incomplete. The fact is of infinite importance to holders and owners of land. Baron Liebig, indeed, in his new work "On Modern Agriculture," has declared, in language more than usually clear, that for want of that inorganic food much of the land in Germany is gradually wearing out. It is not enough, he argues, that it is manured, however well, with farmyard manure. For, all the substances which go to make up that manure—such as straw and the offal of vegetation—are themselves taken from the land. Seeing then that a portion of the farm produce with its mineral constituents—such as the grain of Wheat—is sold away from the land altogether, it is clear that an annual exhaustion of inorganic substances is going on, so as in time utterly to impoverish the soil. That time is drawing near. The high farming of England may defer the evil day, but still, without a change, it must come even to her. He is speaking, of course, generally, and of ordinary farming. For there are individual cases where an annual and full restitution is made, by special manuring, of the mineral elements taken off the land, so as never to leave it in a doubtful condition, ailing either with grain sickness, or Clover sickness, or with a slow decline, but in a state of full and perfect health. He does speak generally, however, and he cannot be gainsaid. And if a man point to the wonderful power and strength of the organic element ammonia, single-handed, in raising the Wheat crop, he has a ready reply—that it is evident and undoubted; that the farmer for the time being does reap a large profit from the genial application, and lauds it accordingly. And undoubtedly as long as there exists in the soil a sufficiency of mineral food, this application of ammonia will continue to raise heavy crops, but always with the unremembered certainty that the heavier the crops, the sooner the exhaustion must come; the greater the amount of mineral substances taken off, the less remains in the land. The plain truth stated thus is a barefaced truism. It is clear as the sunbeam, and yet the landowner is slow to see and to catch it, notwithstanding.

So important, so indispensable is the mineral element of fertility to the Wheat crop. It found no place, however, in the theory of Jethro Tull. He took no account of it whatever. He knew nothing and thought nothing of incombustible mineral constituents. Pare the surface of the soil together with its turf, and burn it, and "the fire," said he, "instead of giving any sort of strength or nourishment to the earth that is burnt, carries both away, and brings nothing in room thereof." 144. The ashes are only manure, like farm-yard manure, in the sense of an aperient; they merely open and pulverise the soil. The mineral matter, being no article of his creed, he simply says that these "cinereal salts being spread upon the unburnt earth that is left, ferment therewith, and reducing it into an almost infinite number of parts, increase proportionably that internal superficies," before described. 146. It detracts little however from Tull's credit that he could not anticipate so long beforehand the result of the investigations of science; and it adds nothing to the validity of any after claim to positive originality, except as regards him, that the actual knowledge of such a result should be seized and turned to account. I claim no merit, then, for the following rule laid down for myself many years ago, and afterwards published as a direction to others:—"I suppose at the outset the land intended for Wheat to be Wheat land, that is loamy or clay land, containing naturally the mineral substances necessary for the growth of Wheat. Land which does not contain these substances must be supplied from without." I grow Wheat on both descriptions of land; and to my light gravelly soil, instead of the special manure I recommend to others, I apply what is tantamount, dressings of clay. My heavy clay land is furnished already. For I apprehend I am fully justified in my belief that all clays of fair quality contain within an accessible depth a store of mineral food for the Wheat plant, varying indeed in amount and composition according to the nature of the rock from which they were disintegrated and derived, but still in such abundance as to take centuries of cropping to exhaust it. I do not mean that the time it will last is infinite, but merely so distant as to be indefinite when the supply will cease. To make these mineral substances available, I was compelled to vary Tull's practice. His practice, from which he never swerved, was to keep to the staple of his land and never to touch the subsoil. Staples vary in depth; but however shallow they might be, he never went below them. "We must never plough below the staple." 176. The staple of my clay land is for the most part 5 inches deep and then comes clay, so tenacious as to hold water and even liquid manure without leaking. It is so compact and cohesive as to be all but inaccessible to the roots of plants; unless in its natural state, and therefore, when cultivated, so much sheer gain. The acre is thus actually doubled in substance; becomes two acres instead of one. Tull had some such land; "On my hill," he says, "whose stratum is clay." 131. So that he knew what words meant when he spoke of staple and subsoil; when he described, for example, "the rills of water that run upon the surface of the clay under the staple or upper stratum of mould." 345. There then, where Tull ended, I begin. I begin gradually and bring up to the surface a small portion of this subsoil year after year; lay it bare to the atmosphere; let the solvents of that great laboratory act upon it chemically and mechanically; mix it; stir it, till it becomes from a yellow or blue clay a dark rich loam throughly permeable and open to the finest rootlet.

This exposure of the subsoil I hold to be indispensable. The subsoil plough is useful, but not thoroughly effective on clay soil even for the time its usefulness lasts, and that is very brief. The clay soon comes together again, and all signs of the work are lost, like the flight of an arrow through the air. What is wanted is mineral food in a fit state to be taken up and assimilated by the plant, and that condition can only be attained by the continuous chemical action of the constituents of the atmosphere on the raw material of the inorganic substances brought to the surface. The mechanical action of the frost and the wind, the fork and the hoe accomplishes the rest, and accommodates the food to the wants of the feeder. One other agent, however, in this important affair of vegetable nutrition is still wanted. In ordinary farming, in dry seasons, the food may be abundantly present in the soil and yet the plant may sicken, as it often does, from sheer inanition. It is powerless to take in the food lying all around it and close to its mouth. The vehicle is wanting, and that is water. It is a circumstance I think worth a good deal of consideration, that in deeply pulverised, clean, open, fallow intervals like mine, this necessary agent is never wanting. No matter how dry the season may be, there it is. The dews have provided a constant supply, sinking so deep into the porous bed as to be far out of the reach of exhalation by sun and wind. The crowning object of the plan was yet to be realised. The produce must be raised to a farmer's good average, or would be labour in vain. Narrowing, then, my intervals from Tull's 4 feet 8 or 10 inches, to only 3 feet, my object was gained. For my average measured produce hitherto has been from 34 to 35 bushels. The crop of the present year, not yet threshed, was exceedingly fine; not merely bulky and large in the ear, but unusually heavy in the sheaf; and at reaping was estimated at 40 bushels at the least. Just one thing more, and I have done. Tull used no manure for any of his crops, and the only things he would say for it was, that it helped to loosen the soil. "The almost only use of all manure is the same as tillage, namely, the pulverisation it makes by fermentation, as tillage does by attrition and contusion." 384. Neither do I manure for my Wheat crop, but for a very different reason. I find the use of manure too efficacious and enriching. Add manure to my deep and thorough tillage and well-fed intervals, and the crop will be too exuberant and blight on the spot, or come down and mildew. I fear even the smallest remnant of bygone dressings. I never feel safe till all is exhausted; secure of my mineral food from below, and depending wholly for the nitrogen on past accumulations of atmospheric ammonia in the soil, and its continuous, never-ending flow from the same natural sources.

Using, then, no manure for my Wheat, I have a double supply for my other crops. Manure, well mixed and well made, from well-fed animals, contains every element of fertility in abundance; and with gross feeding plants at wide intervals and on deeply tilled soil, its forcing power is perfectly marvellous. I will only instance my Winter Bean crop. I give here the process of its cultivation in detail, because, like the Wheat crop, it is grown on the same acre of land year after year; and the plan, like that of the Wheat, is now systematic. I give it for another reason, because it meets a very serious disadvantage in the ordinary growth of the Bean crop—the apparent impossibility of keeping it clean. The weed seeds are thus scattered broadcast at reaping, and the foul straw carried to the yard perpetuates, in manure, the ineradicable evil. Look then, at my present crop, grown in single rows 5 feet apart. The plant is now up, and in the interval there is the single row of last year's stubble. I shall shortly broadshare and scarify and stir the whole interval; strike a deep and wide furrow in the line of the stubble—subsoil it—and plough into the channel a heavy dressing of manure and leave it for the winter. In the spring, in preparation for the next planting, I shall thoroughly stir and mix the whole together; continuing the clean process till I am shut out by the present crop, which in June or July will cover the land. There is hardly a weed to be seen, and not one in flower throughout the year. My produce this year, after a promise of more than 50 bushels, dwindled through the heat to 42½. Last year it was over 44. The year before it was 50½ bushels from—I repeat it in order to arrest attention—from single rows of Beans 5 feet apart. I believe I have accomplished my task, and proved that—compared with the plan of my great predecessor—what I here profess to be new, really is new. I provide, without manure, not merely the organic, but the mineral food for my Wheat crop. I go deep into the subsoil, and narrow the intervals to one-third less. I raise the produce, and bring it to one-third more. I speak under the mark in both. So that I need not blush to repeat, what I have ventured to say before, that the accident of living in a happier age has enabled me with infinite advantage to differ in practice from Jethro Tull.

Home Correspondence.

On Harvesting Mangel Wurzel.—You are doing us good service by calling our attention to the best mode of harvesting our root crops, and your article on that subject in your impression of Nov. 26 is full of valuable suggestions. The proper period for storing roots and the principles to attend to in storing are thus alluded to by Mr. Stephens, in his sound little work on "Yester Deep Land Culture." He refers to the storing of Turnips; what he says is equally applicable to the storing of Mangel Wurzel: "The storing of Turnips in autumn may be defended upon principle. Whenever the Turnip bulb has attained maturity, and continues its connection with the ground, it is subject to decay, as long as its vital principle exists, by many external influences, such as wet soil, hard black frost, checked circulation of the sap by cold after excitement to activity by a rise of temperature, and injuries from hares and rabits. No one doubts the injurious effects of these causes upon Turnip bulbs, nor denies the injury received by stock on eating them when so affected; and yet the early storing of Turnips is much neglected, and the poaching of land in taking them off in bad weather too much tolerated. The vital force is not destroyed on the separation of the bulb (or Mangel root) from the ground, but is rendered so dormant as to become insensible in the store to the above influences, until vegetation is roused into actual life in spring, when fresh stems appear on the bulb. When the bulb or root is stored beyond the reach of the circulation of air, or in moisture, or is subjected to heavy pressure by deep storing, the vital principle is destroyed, and corruption rapidly ensues." In your article you allude to the quantity of moisture which has to be thrown off by Mangel Wurzel in the process of storing. My own practice is this, and I have found it so successful that I can readily recommend its adoption. I pull a whole field right over, placing the roots in heaps, and taking care that each heap has a temporary thatch of the leaves belonging to the uppermost roots, for the Mangel roots are not deprived of their leaves, nor in any way cleaned when thrown into these heaps, where they remain for eight, ten, or a greater number of days according to the state of the weather. Whilst in these heaps they undergo a preliminary "sweating," the layer of leaves defending them from rain, and the air permeating through these

heaps and drying the soil which may be clinging to the roots, so that when at length they are to be carted into store, they are readily cleaned and topped upon the spot. When subsequently placed in their winter quarters, they are found to have parted with much of their "heat," and have not to undergo all at one time the process of discharging that moisture which it is required they should lose before they can be considered safe, as regards their preservation, and serviceable as food for stock. *Edward Holland, Dumbleton Hall, Evesham.*

Gardener and Steward.—Your correspondent "W.," see page 955, says that my previous remarks are irrelevant. Such may be the case. Now I will not stigmatise his correspondence with any such ugly name, but of his relevancy I must leave you and your readers to form your own opinion. But to avoid the impending danger at the termination of his very cutting remarks, permit me to inform him that I am not one of the parties alluded to as holding both offices, but that I am gardener to a worthy baronet who keeps a baliff and a steward. The latter is one for whom I have the greatest respect, and who has too much judgment and good sense to interfere with my duties; and my employer is too much the gentleman to permit him to do so if he felt disposed, but I know instances such as "H. A. W. D." describes are not infrequent. Your correspondent took great pains to describe my character and circumstances from the tenor of my former letter, and doubtless he will allow me the same privilege. I will suppose him to be some gentleman's steward, the son of a *bonâ fide* steward, and consequently inherited the necessary requirements. But in order to be more proficient than a mere gardener could ever attain, he was determined to imbibe a great deal of theory which he has never reduced to practice. Probably one of his master's men may be seen taking his horse to his house (say by 10 o'clock), in order that he may make a dash over the estate before dinner (that is, if he condescends to dine in the middle of the day), and woe betide that labourer who does not lift his hat on his approach. But I know that some gentlemen have not the means, others have not the inclination to keep a fine man to look at. Therefore they say: "My gardener, I am convinced, is a thorough practical man with principles based upon science, and from interrogation I find he possesses at least a sound theoretical knowledge of agriculture; and gardening after all is simply an improved method of farming. He is a good penman, correct in accounts, and above all I believe he has my interest at heart. Therefore I will increase his salary 50*l.* per annum, and he shall fulfill the joint office of gardener and steward. Had I engaged a man to look at, he would at least cost me 200*l.* a year, so that I find after augmenting my gardener's salary 50*l.* that I have a balance of 150*l.* per annum." "W.'s" magnanimity also carries him so far as to say that some men who are at present occupying the most enviable positions as gardeners are the sons of *bonâ fide* labourers. Is "W."'s capacity so narrow as to render that an obstacle? He has doubtless read much about priests and their hooks in the fleshpots of Egypt. But did he never hear of shoemakers becoming great architects, and errand boys who would not be satisfied till they became the principal man in large firms? I had the honour to serve my time under a man who, in addition to being gardener and steward, was also one of the directors of a railway company; he also carried on the business of an architect and landscape gardener to some of our principal noblemen, he also furnished the plans for the Exhibition of 1851, and he has now the privilege to annex the initial M.P., to his name. Again there is Mr. Fleming, who has been elevated to a high position by the Duke of Sutherland, and no one doubts his ability to fulfil that important office. Now this is not as your correspondent supposes brought about by luck, for which he substitutes accident, influence, interest, but by merit in the true sense of that word. Although they may be the sons of humble parents, those are men who have trampled on difficulties, and with an indomitable perseverance have kept "Onwards!" as their motto. I know many more gardeners who are quite competent to perform other important duties besides what their present situation demands of them—men, if they were analysed, that would be found to possess brain of the first quality. At the same time I am persuaded that there are those to be found (I will not say stewards) whose brains are composed of a very large percentage of milk and water. *Equity.* [*W.* is a labouring man earning his 2*s.* a day, as his father did before him. He deserves a better place than he has got. We must however discontinue this discussion.]

Mangel Wurzel.—In your Paper lately I saw the following, viz.:—"I well remember reading in the *Gardeners' Chronicle* of the 30th of April the following extract from your 'Fen Reporter': 'Mangel sowing has already commenced, but most of our farmers have found it advantageous to sow this crop later than they did some few years since, and many decline sowing until May is in.' At the time I read this I thought it a grand mistake, but I now feel convinced if I had been torturing the land about in the first week in May, the only advantage I would have gained would have been much less labour in storing, and far less anxiety respecting the state of the weather while the operation was going on. . . . *P. Mitchell, Rainham, Nov.* 21." Perhaps if Mr. P. Mitchell, of Rainham, were unfortunate enough to farm some of the light and dusty fen lands in the Isle of Ely he would modify his views, and would find it expedient not to sow his Mangels quite so early as the "first week in April," although he might not deem it necessary to be "torturing the land about in the first week in May," and I cannot resist the impression, but have a very strong conviction, that if he did sow them the "first week in April" he would wish he had not done so; but would be much more likely than if he sowed them the first week in May to realise those "only advantages," viz., "much less labour in storing and far less anxiety respecting the state of the weather while the operation was going on." Having been a grower of nearly 40 acres of Mangels annually for several years in the Isle of Ely, and having in different years tested them by sowing during every week between the 1st of April and the middle of May, I claim to have some knowledge upon the subject, and most unhesitatingly—and dogmatically, if you please—assert that as the results of these several experiments the two best weeks for sowing Mangels upon weak fen lands are the last in April and the first in May. And now for the reasons: our fen land is very fickle and hazardous and suffers severely from spring frosts. Indeed, it is no uncommon circumstance even for the Wheat crop to be fearfully injured by these frosts. I believe it is only four years since severe losses were sustained, and hundreds, yea thousands of acres of Wheat were almost destroyed by a sharp frost, which occurred on the night of the 16th or 17th of April (I speak from memory). My own loss from this single night's frost on this one crop I estimated at no less than 1500*l.* Mangels are a very tender plant, and if sown very early on these soils are in a majority of seasons almost certain to be very much injured, if not destroyed entirely, by these frosts. I have in former years sustained very heavy losses in this respect. These lands are also more subjected to loss from fly and wireworm than most others, and consequently the earlier Mangels are sown the more liable they are from their slow growth, arising from the low temperature prevailing and the frequently inclement weather, to be destroyed by these fruitful sources of evil. Whereas, if they are sown later they come up and grow away quicker, and are therefore sooner out of danger; and I would on these soils much rather risk an October frost coming to injure the crop when grown than encounter the far greater risk of having nearly all the plants destroyed just after they are up by a frost in April or the beginning of May, saying nothing of the other insect dangers to which they would be exposed. I therefore reiterate that on these soils early seeding is an evil, and moderately late seeding is the first step towards ensuring a good and full crop. Mr. Mitchell's severe criticism, I conceive then, just goes to show how desirable it is that before one sits in judgment upon the actions of others, he should have a full and perfect knowledge of all those different facts and circumstances which influence such action. And I would suggest to Mr. Mitchell that one uniform system of culture in all climates and on all soils is anything but desirable, and would assuredly be attended with insuperable difficulties and vexatious disappointments. In conclusion, I would just say that had my Mangels been sown ever so early, even in the "first week in April," I would not have had one acre more secured before the frost than I had under existing circumstances, as I was busily engaged with my Potatoes until the very day I commenced taking up the Mangels. *Your Fen Reporter, Dec.* 6.

Irish Agriculture.—I have followed with much interest the correspondence in your columns on the subject of Irish agriculture. Might I venture, as a landlord connected with four or five counties in Ireland, to make upon it a few remarks. In the first place, it must not be forgotten that it is dangerous to place too great a reliance on the statistics annually prepared by the Government. The Irish peasant often withholds, or gives incorrect information, viewing with suspicion any authorised inquiries, and uncertain how far it may be prudent to place beneath the eyes of a rapacious landlord the exact property he may possess. It has been also the fashion of late years to exagerate the progress Ireland has made. Because some of the festering sores have healed, the body has been thought perfectly sound, and men forget that a Celtic people improves slowly—refusing for long to believe that their former oppressors have adopted a juster policy. The old habits are in many places still triumphing or but partially eradicated. Weeds are not yet considered an impediment to tillage. Cleanliness in farming is, except in a few places, thought unimportant. I do not mean that agriculture has made no progress within the last 10 years. It has done so, especially in better stock. But it is far from obtaining the position in this country which would enable it to do justice to the soil; nor are the smaller farmers capable of extracting from the land a proper return. Still many are now aware that they must fall before the wave of agricultural progress, unless they attempt to surmount it; that agriculture is a science of which they are ignorant. If the means of education are maintained and the law can assert its majesty against the hideous attempts of the Ribandmen, I believe a new generation will forget many of the usages of their forefathers. But ere the abundant riches Nature has poured into the bosom of the land can be made use of, a totally different spirit must animate the Celtic tenant. He must learn he is not enjoying the inheritance of his ancestors, but depending upon the exercise of that intelligence God has largely endowed him with. *M., Charleville Forest, Dec.* 8.

Agricultural Societies.—A correspondent of the *Westmoreland Gazette* cites the following facts on the dates of agricultural shows:—"I find that bull shows for premiums originated at Driffield about the year 1792. The first Petworth meeting took place in November 1797. That the Bath Society instituted in 1777 for the encouragement of 'agriculture, manufactures, arts and commerce,' but which gradually merged into an agricultural society, had, up to the year 1813, given 3857*l.* 18*s.* 6*d.*, in premiums and bounties, at the respective annual meetings from 1777 to 1813, both inclusive. That when the list of premiums, &c., for 1813 is examined, we find 14 guineas allotted to ploughing matches, two guineas for shearing sheep, 10 guineas in premiums for cattle, 26 guineas for sheep, and eight for wool. That in May 1799 the Board of Agriculture, instituted by charter in 1793, sent a circular throughout the country recommending Premium Associations, and suggesting that, by 40 members subscribing each 5*s.* a year, prizes might be given for the 'best cow and calf, the best 10 ewes, and two days' work in ploughing.' In a footnote in their report, printed in 1800, it is stated that letters had been received from several districts, stating that such societies had already been formed. How far the results of these suggestions exceeded the humble anticipations of their originators may be judged from the fact that in the year 1810 there were in England 47 agricultural societies, in Scotland 22, and in Ireland 12. That the above numbers, taken from the report of the Bath society, are below the mark is evident from the fact that the Kendal society, established in 1799, is omitted, and also I find it stated in 1805, that a farmers' society was then established in every district in Scotland. That these associations were not only numerous, but also important, will be seen from the list of premiums given at the annual meeting of the Leicester society for 1808. From this list we find that there were 100 guineas given in premiums for agricultural experiments; 100 guineas in premiums for sheep; 40 guineas for cattle; 9 guineas for servants, and 10 for orchards. In the *Westmoreland Advertiser* of Oct. 5, 1811, it is stated that at the annual meeting of the Workington Agricultural Society, held on the 25th ult., 600 persons dined together, and in the *Advertiser* of 1812, a similar number is reported to have dined together at the annual meeting of that year. But, to come nearer home, I find, in a letter from Dr. Campbell, the secretary of the Kendal Agricultural Society, the following remark:—"I need not add that I feel great satisfaction in observing the alteration made in the premiums for the ensuing year, by the following resolution made at the last meeting:—'That the premiums for old rams of the fell breed be discontinued after the year 1809, and that the same premiums be given to a shearling ram, by a cross with any of the improved breeds, which shall appear to the Judge to be an improvement to the fleece, regard being also had to the shape and hardness of the produce.'" In the *Advertiser* for July 27th, 1811, I find the following:—'An agricultural society has been established in Kendal some years ago by several respectable and well informed gentlemen, which has been very beneficial, by exciting a spirit of emulation and distributing honorary rewards.' In the *Advertiser* for October 26th, 1811, there is a report of the October meeting of the Kendal Society, which states that in addition to money premiums, seven silver cups were given to the successful candidates for prizes. Another meeting is reported as having taken place in the May following, which was 'very numerously attended,' and three silver cups were given. On taking up another volume of the *Westmoreland Advertiser*, I find that in 1822 there were still two shows in each year, and that three silver cups were given and a sweepstakes awarded on the 11th of May. The next meeting was held on the 19th of October, when seven silver cups and one other premium were given, and six sweepstakes awarded. I shall not further occupy your space with quotations, and should not have dwelt as long on this view of the question as I have done, had there not appeared a considerable amount of ignorance upon this question, and thus facts and details were needed for its elucidation. I hope I shall have proved to the satisfaction of your readers that, prior to 1825 the premium shows of agricultural societies occupied a prominent position in the country." *E. W.*

Societies.

ROYAL AGRICULTURAL OF ENGLAND.

Dec. 9.—At the General Meeting of the Society, Colonel Challoner in the chair, Mr. Brandreth Gibbs read the following:—

REPORT OF THE COUNCIL.

The Society consists, at the present time, of
79 Life Governors,
128 Annual Governors,
933 Life Members,
4082 Annual Members,
18 Honorary Members,

making a total of 5240 Members, or an increase of 79 names since the last half-yearly meeting. The funded property of the Society amounts to 10,000*l.* Stock, standing in the names of the trustees in the New Three per Cents. The Council regret to have to report the unfortunate circumstance that has taken place, and which led, first to the suspension, and subsequently to the dismissal, of the late Mr. James Hudson from the office of Secretary to the Society. In the month of May last, it came to the knowledge of the Finance Committee that certain monies received by the Secretary on account of the Salisbury, Chester, and Warwick country meetings had not been paid by him to the Society's bankers. They therefore immediately employed a professional accountant to investigate the accounts; and the result was reported to a Special Council called by the President

for the purpose, on the 27th of May. The Council having taken the matter into consideration, determined to suspend Mr. Hudson from the office of Secretary, and appointed a Special Committee, who were charged with fully investigating the exact state of the Secretary's accounts. From the report of this Committee, it appeared that the accountant had discovered an amount due from Mr. Hudson, consisting chiefly of payments received by him from exhibitors of implements for shedding, for entrance fees on live stock and implements, fines, and small amounts, making a total of 1933*l.* 8*s.* 3*d.* The different monies forming this amount had not been entered in his cash-book, or accounted for to the Finance Committee as received, and had not been paid into the banker's according to the bye-laws. The Council therefore dismissed Mr. Hudson from the office of Secretary, and withheld the payment of the salary due to him, amounting to 161*l.* 19*s.* 9*d.* Whilst legal advice was being taken as to the course which should be pursued in this very difficult matter, the death of Mr. Hudson occurred. It appeared that, a short time before his decease, Mr. Hudson executed a deed of assignment, making over the whole of his effects for the benefit of his creditors; and under legal advice, the Council determined to come in as creditors under the deed in question, and authorised the Honorary Acting Secretary to sign it on behalf of the Society for the balance due, viz., 1771*l.* 8*s.* 6*d.* At present, it is impossible to ascertain definitely what dividend will be realised; but it is hoped that this large amount will be considerably reduced by it. The total loss which the Society may have to sustain will be further lessened by the business of the Society having been carried on without a paid Secretary for the last seven months. The Finance Committee who were acting at the time when Mr. Hudson's deficiency was discovered having tendered their resignation, in order that the future course of the Council might be left perfectly free, the Council have appointed a fresh Finance Committee, who will be charged with such reorganisation of the accounts as may be deemed necessary. The Council, however, have much pleasure in being able to report that, notwithstanding the funds having sustained a diminution by the large amount due from the late Secretary, not only have they found it unnecessary to touch the funded capital of the Society, but that its financial position is unusually satisfactory, the balance at the bankers on the 7th inst. being 1711*l.*, whilst the claims on the Society consist only of the ordinary current expenses. After the suspension of Mr. Hudson, and again after his dismissal, and at the request of the Council, Mr. Brandreth Gibbs consented to undertake the office of Honorary Acting Secretary *pro tem.*, for which valuable assistance the Council desire to offer to him their most grateful acknowledgments. The Council have come to the resolution of requiring the new Secretary to the Society to find approved security to the amount of 1000*l.*; they further require that he shall pay all amounts received by him on account of the Society into the banker's forthwith; and they have laid down rules which, they trust, will render impossible a recurrence of any irregularity in the Society's business. The Council have now elected Mr. Henry Hall Dare as Secretary, at a salary of 400*l.* per annum, with residence, fire, and lighting; and they have every reason to hope, from the testimonials they have received, that he will discharge the duties of the office to the satisfaction of the Council and the Members at large. It has also been determined to appoint a professional accountant, constantly to examine the Society's accounts, and report any irregularity to the Finance Committee, and also to suggest any improvements which may from time to time appear to be needed in the system of keeping the books. The Council have determined to appoint a literary and scientific Editor of the Society's Journal, at a salary of 500*l.* per annum; his duties to be performed under the general superintendence of the Journal Committee, and his whole time to be at the disposal of the Society. The Council have recorded their high appreciation of the valuable services rendered by Mr. H. S. Thompson, M.P., and the other members of the Journal Committee, in conducting the Journal up to the present time. The Warwick meeting was in every way eminently successful, and the number of visitors who thronged the show-yard gave evident proof that the interest taken in the Society's country meetings remain unabated, whilst the entries of live stock and implements were unusually large; indeed, the enormous display of the latter appears a satisfactory indication that the present quadrennial classification of implements for trial and prizes in no way interfered with the variety and general excellence of the exhibition as a whole. The Mayor and Corporation, aided by a local committee, acting under their authority, rendered every assistance in carrying out all the arrangements that were necessary to be made in the locality. The competition for the local prizes for cattle, horses, sheep, pigs, cheese, wool, and farm-gates tended considerably to increase the interest of the meeting. The Council have also to acknowledge the courtesy of the County Magistrates, in giving the use of the Judges' lodgings for the accommodation of the Stewards of the Society during the period they were at Warwick. The arrangements that were decided on for the supply of refreshments in the Show-yard were a great improvement on former years. The Council have fixed that the Canterbury Meeting shall take place in the week commencing Monday, the 9th July next. The Council have determined on the following arrangements for the Meeting:—That the Live Stock shall all be in the yard the afternoon of Saturday, July 7, which will allow of their recovering from the fatigue of the journey to the Show previous to the Judges commencing their inspection on the Monday morning following. That the exhibition shall close on the Thursday evening, thus enabling exhibitors' servants and animals to return home without breaking into another week. It has been determined to add to the Prize List a Class for Heifer Calves in the Short-horn, Hereford, and Devon divisions; also to form separate divisions for the Shropshire breed of Sheep, and the Kentish or Romney Marsh breed of Sheep; and to classify Pigs as follows, viz.: Large breed of any colour; Small white; Small black; and Pigs not eligible for the preceding classes. The Schedule of Prizes for Implements and Machinery for 1860, according to the quadrennial system which came into operation last year, will contain Classes for Threshing Machines, Chaff-cutters, Mills, Crushers, Oilcake Breakers, Bone Mills, Turnip cutters, &c.; and to these the Council have added additional Classes for the application of Steam-power to the Cultivation of the Soil, for Hand Tools used in Hop Grounds and Land Tillage, and for Field Gates. The Local Committee at Canterbury having expressed their wish to offer certain Local Prizes, the Council have determined to accept those for Hops and Wool, to be competed for under such conditions as the Council may determine. The following schedule of prizes for essays and reports, to be sent to the Secretary by the 1st of March next, has been adopted:—

1. *Agriculture of Berkshire.*—Fifty sovereigns for the best Report on the agriculture of Berkshire.

2. *Application of Manure.*—Twenty sovereigns for an approved Essay on the best period of the rotation, and the best time of year for applying the manure of the farm.

3. *Influence of Prices on Farm Management.*—Ten sovereigns for the best Essay on the alterations rendered advisable in the management of land of different qualities, by low prices of grain and high prices of meat.

4. *Late Improvements in Dairy Practice.*—Ten sovereigns for the best Essay on recent improvements in dairy practice.

5. *The Proper Office of Straw on a Farm.*—Ten sovereigns for the best Essay on the proper office of straw on the farm.

6. *Farm Capital.*—Ten sovereigns for the best Essay on the amount of capital required for the profitable occupation of a farm.

7. *Seed Bed for Agricultural Crops.*—Ten sovereigns for the best Essay on the conditions of seed-bed best suited to the various agricultural crops.

8. *Adulteration of Seeds.*—Ten sovereigns for the best Essay on the adulteration of agricultural seeds.

9. *Any other Agricultural Subject.*—Ten sovereigns for the best Essay on any other agricultural subject.

A reprint has been made of Dr. Lang's Prize Essay on the Potato. This can now be purchased at a reduced rate. The Society have from time to time been favoured, by order of the Secretary of State for Foreign Affairs, with copies of despatches received by her Majesty's Government relative to guano and mineral deposits. Extracts from these communications have appeared in the published reports of the Council meetings, before which they were laid. The Council have the satisfaction of recording their belief that the Society is steadily progressing, and that by adopting such improvements in its proceedings as experience may from time to time show to be necessary, it will continue to maintain its important position in promoting the advancement of scientific and practical agriculture.—By order of the Council,

B. T. BRANDRETH GIBBS,
Hon. Secretary.

Mr. Corbet moved and Mr. Druce seconded the adoption of the report, and it was carried unanimously.

Mr. R. Baker retired from the office of auditor, and Mr. H. Corbet was appointed by an unanimous vote to the vacancy. After a vote of thanks to the Chairman the meeting separated.

THE AGRICULTURAL BENEVOLENT COLLEGE.—At the public meeting last week presided over by Mr. Alderman Mechi, there were present Lord Feversham, Major Parker, M.P., Mr. Wren Hoskyns, Mr. Jonas Webb, Mr. C. Lawson, Edinburgh, and others.

The Chairman said there were in the United Kingdom at least 500,000 farmers, occupying 50,000,000 acres of land, and paying an annual rental of 50,000,000*l.* The value of the land itself, taken at 25 years' purchase, was 1,250,000,000*l.*, and the capital of the tenantry invested in the land, taken at 5*l.* per acre, which was a low estimate, amounted to 250,000,000*l.* more. Besides being wealthy, he felt quite certain that agriculturists generally were charitable. That they were hospitable every one knew; and hospitality and charity ordinarily went together. They only wanted an opportunity of exercising their charity, and when this was afforded the work would be well and amply done. Of the need of such an institution as was contemplated abundant testimony was afforded in letters which had been addressed to himself in relation to the object. What he proposed on that occasion was the establishment of an institution which would afford support or assistance for a certain number of decayed farmers and their widows, and provide a suitable residence and education for orphans. In order to carry out these objects there would be a building fund, an endowment fund for general purposes, and, what is the most important of all, an annual subscription list; and he had no doubt that when the institution was fairly established it would, like other benevolent institutions, have the benefit of occasional charitable bequests, which would help to render it, what it certainly ought to be, the greatest charitable institution in the kingdom. Success must of course depend in a great degree on economy and judicious management, and hence he thought it desirable at the outset to obtain some old mansion, instead of proceeding to build without having the requisite funds. As regarded the mode of management, it was intended there should be a council, consisting of about 50 persons, who should appoint a working committee. The election of pensioners would of course proceed on the true British principle, that those who subscribed money should have a voice in its application. With respect to the site for a building, he hoped that when there was sufficient funds in hand to build with, some benevolent landowner would make a grant of land—perhaps in a locality where land was not very valuable. He (the chairman) was of opinion that the site should be within about 30 miles of London.

Resolutions were then adopted, (1) approving of Mr. Mechi's project; (2) naming the institution, subject to Royal assent, *the Royal Agricultural Benevolent College;* (3) restricting its privileges to *bonâ fide* farmers; (4) naming the direction in which the efforts of its promoters should proceed, *namely*, 1st, towards the provision of indoor relief; 2d, towards the creation of a building as an asylum; 3d, towards the permanent endowment of the institution; (5) intimating the age, circumstances, &c., of those eligible for relief; (6) placing the nomination of a preliminary committee in the hands of Mr. Mechi; (7) defining the privilege of voting.

Mr. Wren Hoskyns moved a vote of thanks to the chairman, deprecating any notion that the proposed institution was to be a substitute for providence on their own part; and, after expressing his admiration of the chairman's energy and courage, declared it to be his strong conviction that the new institution would be a flourishing one.

Mr. Lawson seconded the motion, which was carried by acclamation.

Before the meeting separated the subscriptions, paid and promised, amounted to nearly 2000*l.*

Farm Memoranda.

THE FARM OF GRAND JOUAN embraced, I was told, 1000 acres, and there were at the school about 25 students only—60 being a full complement. Only boarding students are received here, or at either of the other imperial schools. To enter one must be either French by birth, or a naturalised citizen, and at least 17 years of age. The government, however, occasionally permits foreigners to enter, reserving the right of designating the school they shall attend. Any one desirous of entering must equally address his request to the governmental bureau of agriculture, enclosing his certificate or register of birth, with testimonials from the mayor of his place of residence, that he is "of good life and morals," and from medical authority that he has been duly vaccinated, together with a satisfactory bond to guarantee the regular advance quarterly payment of the 750 francs (150 dollars) per annum, which covers the whole expense of the school for food, room rent and bedding, medical care, fires, lights and washing. The whole country is divided into three districts, and although a student may select either of the three schools at pleasure, still, unless he goes to the one situated in the same district in which he resides, he forfeits his right to obtain either of the scholarships offered to competition. After obtaining from the Ministry of Agriculture authority to present himself as a candidate for any existing vacancy in the school he desires to enter, he must undergo an examination (unless already possessing the degree of bachelor in science) before a jury annually nominated by government to commence their sessions October 1. At this date the pupil repairs to the institution, and is examined in arithmetic, comprising all the rules usually embraced in our more advanced text books, in geometry equivalent to the first four books of Legendre, in physics upon the general properties of bodies, the thermometer and barometer, and in a French exercise calculated to show his proficiency in the orthography and grammar of the language. The number of new admissions being limited, the order of merit upon this examination is recorded, and those standing first have the first vacancies that occur.

At the end of three years' study, those who finish the course creditably receive a certificate, and I understood that those who rank as the first in their class are entitled to certain privileges for two years in the public or private agricultural schools of the country. Examinations are held semi-annually during the course, and any student not qualified at the end of the year to advance into the next class is excluded from further attendance at any of the three institutions. The instruction is both theoretical and practical—the former comprising a course: 1, in physics, chemistry, mineralogy, and geology as applied to agriculture; 2, in rural engineering; 3, in cultivation; 4, in agricultural zootechny and zoology; 5 in forest culture and botany; 6, in rural economy and legislation; and 7, in practical knowledge of accounts. The practical instruction, the importance of which is justly considered very great, is both manual and mental, including the use and management of tools, instruments, vehicles, and machines; the direction and execution of the principal operations of agriculture, ploughing, sowing, haying, harvesting, grain, and roots, the care of stock, &c., &c.; also exercise in linear drawing, in surveying and mapping, in levelling, in computing solids, gauging liquids, &c., together with the more usual manipulations in the laboratory, such as testing marls, analysing soils, and valuing manures. The students are charged in turn with the superintendence of all the details of cultivation, of which they should render a report; they take excursions to forward their agricultural or botanical studies, to extend their knowledge of forests and geology; their instruction is promoted by observation and demonstration in the stud and in the stable, as well as in the field. The course as thus sketched out is obligatory upon all, and not a matter for individual selection and preference. A part of August and the whole of September compose the annual vacation.

This general course is the same at the three Imperial Schools of Grand Jouan, Grignon, and La Saulsaie. In each there are 18 scholarships, distributed exclusively according to the results of open competition among the students—nine of them, however, being reserved for a certain class of the pupils, former apprentices in the farm schools, who on the completion of the apprenticeship obtained honorary certificates and passed the preliminary examination required at the Imperial institutions, and who enjoy the scholarships they obtain from the very time of entering, instead of, as the others do, one-half at the end of six months, and the whole at the end of not less than a year.

We walked about the farm, looking at the crops and buildings. The Wheat, of which they had 70 or 75 acres, was looking very well; 50 acres or thereabouts were covered with the profuse yellow blooms of the Colza or Rape plant; there were 80 or 90 in Oats, for which the soil was particularly kind, almost invariably yielding well. They were also growing some Barley and Rye. There were 175 or 200 acres in hay—the appearance of the Grass being rather weedy, I thought at the time, judging from the profusion of flowers scattered through it, although from inquiries subsequently made it is not impossible that these were visitors on invitation or at least on sufferance, instead of being intruders as I supposed. There was a considerable area devoted to experimental plots, where all sorts of new seeds and varieties were being tested. About 43 bushels per acre, as nearly as I can compute, was stated to me as a maximum yield of Wheat; while the average one year with another was about 23. The yield in 1858 had averaged 22 hectolitres per hectare for the whole area in Wheat, *i.e.*, about 25 bushels per English acre. Sometimes Oats will produce 80 bushels per acre, but the average is nearly 45. The land is not so good for Grass, and a ton and a quarter per acre is a fair crop. Twenty-seven bushels of Rape seed or thereabouts will be harvested from an acre, valued at about 22 francs, say 4·40 dollars per hectolitre, which is about 2 5-6ths bushels. Twenty-four tons of Carrots were dug to the acre in 1858, and 22 in 1857; they ordinarily cultivate 15 to 20 acres in this root. *Albany Country Gentleman.*

Miscellaneous.

Extraordinary Cow.—The polled Angus cow, bred by Hugh Watson of Keillor, county of Forfar, shown at the Highland Society's Show at Aberdeen in 1858, where she had a medal awarded to her owner by the Society, died at Keillor on Friday, July 1, 1859, at the wonderful age of thirty-five years and six months. This old cow was the dam of twenty-five calves, all of whom

carried prizes at different competitions in Scotland, England, and Ireland in course of the last thirty years, and they and their progeny are now spread over many countries and climes. The old cow retained her fine shape and rich mellow quality till she arrived at the mature age of twenty-eight years, when she gave up breeding or giving milk, but continued active, and picked up her food along with the other cows of the herd, never having got any food beyond the common run of the farmyard. She gradually fell off for the last two years, till she became a most striking picture of old age and infirmity, gave up gathering her food in the field only two days, when an excellent photograph picture of her was taken by Mr. Jackson of Perth, and she then lay down and died, never before having been an hour ill, such was her robust constitution and healthy habit.

Agricultural Contrasts.—Tal le showing the estimated acreable corn produce of England at various periods:—

	Wheat Bush.	Barley Bush.	Oats Bush.
1. In the 13th century	12	24?	24?
2. Latter part of the 16th. ..	16 to 20	36	32 to 40
3. Third quarter of the 18th, at which period the old corn husbandry still prevailed	23 to 24	32	56
4. Middle of the 19th	26?	38	44

Next, of ancient manuring; and of old, the practice stood thus:—Of stall-feeding, there was next to none, and very little winter housing of live stock; and hence the product of dung was comparatively insignificant both in quantity and quality. Very usually a stream of surface water was directed through the farmyard, to float its best riches to some favoured meadow; and as the permanent Grass closes always came in for a large share of the solid dung to insure a good shear of hay, what remained to be worked up with each year's bare fallow of the tillage land was very inconsiderable: but to supplement this, in some degree, it was very customary to spread out dry straw in the lanes to be trodden under foot into a sort of compost, and then carted to the ploughed fields. *Tillage a Substitute for Manure.*

Calendar of Operations.

DECEMBER.

Border of the Fens: *Dec.* 12.—We only finished sowing Wheat after Mangels December 3; could we have applied Fowler's or Chandler's steam ploughs this might have been put in at least a fortnight earlier; the first sown Wheat look well, they come up strong and regular. Those, however, which were completed about the 1st November continue backward, having had to contend with a freezing temperature almost ever since—damp and cold weather nips and weakens them. We do not find our Mangels at all injured by the frost; your estimate of lifting into carts 70 tons a day by two sets is pretty good work, but no doubt can be done if carts are properly supplied to fillers, and this kind of work can only be seen thoroughly carried out on well-managed farms. How many are diverted from one such combined operation by the necessity of detaching too large a portion of their force to plough, &c.; how many are unable to muster power enough to keep every worker steadily at his post. The difficulty again often lies in the limited business of the farm, not admitting of constant employment of the number of hands required only now and then when work presses; hence the importance on a 200 or 300 acre farm of considerable foresight in adapting the labour most wanted to the number of hands employed, as not to let one part of the business of the farm at any time be obliged to wait for another, and so to time the process as to take advantage of such weather as best suits it; that as little recourse may be had to chance hands as possible. We think nothing so advantageous can be adhered to as having as many regular or constant labourers as can conduct the business of the farm: chance hands are always the dearest if relied upon, however useful they may be. When only occasionally summoned, how rarely do we find among these casual helps a desirable addition to the old faces that have become familiar by years of continued acquaintance. A good crop of Mangels cannot cost less than 12*s.* an acre pulling and topping. Last year there was a good deal of discussion about the cost of lifting Mangels, it was placed at 6*s.* or 8*s.*—this must depend greatly on the weight of crop. A friend offered to get our crop up this year for 4*s.* 6*d.* an acre; but we found he proposed to plough them up, and then they were only topped, and being very dirty would require much extra cleaning before being cut up for stock. Turnips cost 7*s.* to 9*s.* an acre, topping and tailing ready for the cutter; the latter price is given for a full heavy crop. We are busy cleansing outfalls and looking after drains, which now run more than they have done for two or three years. The corn trade is now quiet, cake advancing, the best being now worth from 10*l.* to 11*l.* per ton according to distance of carriage or freight. Meat markets high, yet we must bear in mind that last spring store stock of all sorts was bought in dear, and herein the problem of Mechi as to the profit and loss of fattening stock may only be determined by the judgment of the grazier. One farmer bought lambs for 56*s.*, which after clipping well, return now only 3*s.* a head, besides the wool, for a summer's keep on corn, cake, &c.; another for lambs at the same price returns nearly 1*l.* each advance, at perhaps a less expense for keeping than the other. Wages are steady at 11*s.* a week, and scarcely a good labourer out of employ; we hear however that in some parts of Cambridge and Huntingdonshire 10*s.* have been given. We are still of opinion that generally the circumstances of the working class are greatly improving. *J. W. Peterborough.*

Notices to Correspondents.

Gas Lime: *W B.* On poor light sandy soils we would prefer the dressing with chalk. Good rotten chalk, 80 cubic yards an acre, is a very effective dressing on such soils. Gas lime at 2*s.* 6*d.* a load may be worth purchase, if near at hand, nevertheless.

Drainage: *H T.* You can drain a 9-acre field though you have but 18 inches fall.

French Beans: *Mary.* You may grind them and give them safely to sheep. Can any one give their experience of Dolman's butter powder?

Trawey Crops: *Cantab.* If you grow too much straw on a strong clay soil you do not need any manure at all. Tillage, no manure, is wanted in such cases. A dressing of common salt tends to strengthen straw; from 2 cwt. on stiff soils up to 4 or 5 on light soils are a common dressing.

ST. PANCRAS IRON WORKS,

OLD ST. PANCRAS ROAD, N.W.

IRON HURDLES, FENCING, AND GATES.

THE PROPRIETORS OF THE ST. PANCRAS IRON WORKS, OLD ST. PANCRAS ROAD, LONDON, WERE AWARDED THE

SILVER MEDAL of the Royal Agricultural Society for their IRON HURDLES & GATES,

which, by their peculiar construction, are more than twice as strong and durable as those in ordinary use.

Lists per post on application. Gates from 30*s.* to 500*l.*

The Hurdles can be seen in process of Manufacture at the Works.

GAME WIRE NETTING.

Professor Varnell's Enamelled and Wrought-iron Stable Fittings.

These Patent Mangers and Stable Fittings obtained the Commendation and the Silver Medal of the Royal Agricultural Society of England and the Royal Agricultural Society of Ireland, are adopted by the Royal Veterinary College, and Professor Spooner of that Institution states that they should be used by all who value the health and comfort of their horses. They can be had plain, galvanised, or enamelled.

A Show Room is devoted entirely to every description of Stable Furniture, and full-sized stalls and loose boxes are erected for inspection at St. Pancras Iron Works.

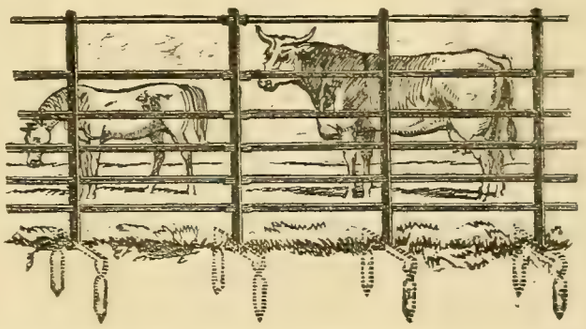
ADDRESS—THE MANAGERS,

ST. PANCRAS IRON WORKS, OLD ST. PANCRAS ROAD, LONDON, N.W.,

OPPOSITE OLD ST. PANCRAS CHURCH.

HILL & SMITH'S

PATENT CONTINUOUS PARK FENCE.



THIS FENCE is made in a variety of sizes suitable for any situation, and is much superior in appearance to hurdle fences, than which it is also cheaper and stronger. It has obtained upon two occasions the Silver Medal of the Royal Agricultural Society of England, besides many other premiums. Many miles have been erected by Hill & Smith on the London and North Western Railway, between London and Bletchly Stations, and it has been erected at the Parks of upwards of 500 Noblemen and Gentlemen in England; that at Welbeck Abbey, the seat of his Grace the Duke of Portland, being entirely surrounded with it as a fence against Deer nearly 10 miles in extent. The patent principle is also applied to Iron Hurdles, whereby the strength is much increased and their cost reduced. ILLUSTRATED PRICED CATALOGUES will be sent on application to Hill & Smith, Brierly Hill Iron Works, near Dudley, who are the inventors and sole manufacturers, or to their London Office, 40, Broad Street Buildings, E.C., where specimens may be seen, or to Mr. B. Samuelson's, 76, Cannon Street West, London, E.C.

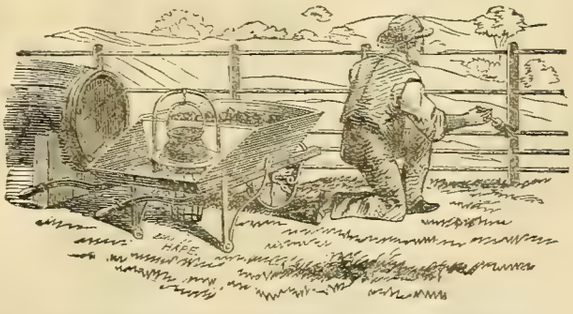
OIL PAINT NO LONGER NECESSARY.

HILL & SMITH'S

Black Varnish for preserving Iron Work, Wood, or Stone Work.

THIS varnish is an excellent substitute for oil paint on all out-door work, and not only saves two-thirds the expense of an ordinary quality of oil paint, but has the great advantage that it may be applied by an ordinary labourer in a cold state, and that no mixing or thinning is required. It is used in the grounds at Windsor Castle, Kew Gardens, and all the Royal Parks in London, and at the seats of many of the Nobility and Gentry of the United Kingdom. It is also largely exported. Testimonials from Noblemen and Gentlemen who regularly use it will be forwarded gratis on application. Sold in casks of about 30 gallons each, 1*s.* 6*d.* per gallon, or 1*s.* 8*d.* per gallon, carriage paid to any Railway Station.

THE WROUGHT IRON HEATING BARROW



shown in the above engraving is a very useful article for applying the varnish or for heating gas tar. The front compartment holds tools, fuel, &c. and the back compartment carries an iron three gallon pot with fire grate underneath.

Price £3 or £3 3s. Carriage paid.

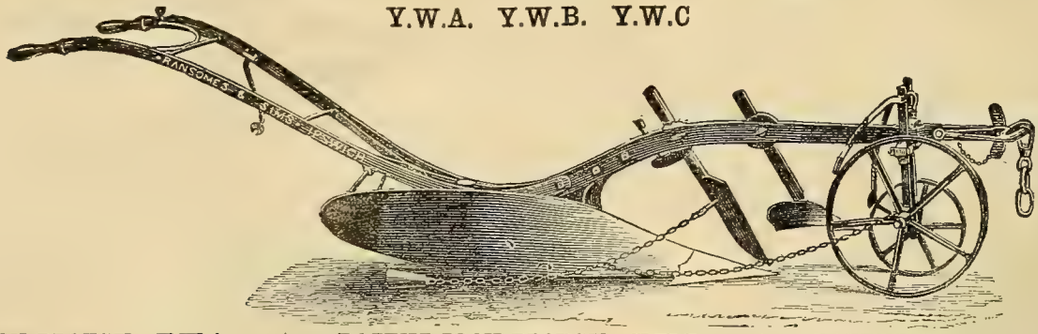
HILL and SMITH, BRIERLY HILL IRON WORKS, NEAR DUDLEY.
LONDON OFFICE: 40 BROAD STREET BUILDINGS, E.C.

RANSOMES AND SIMS, IPSWICH,

BEG TO CALL THE ATTENTION OF AGRICULTURISTS TO THEIR NEW SERIES OF

WARWICK PRIZE PLOUGHS.

Y.W.A. Y.W.B. Y.W.C



PATENT IRON PLOUGH. Y.W.A.

This Light Two-horse Plough will make excellent work at any depth not exceeding 6 inches. The body can be removed, and a ridging body, suitable for every purpose of ridge work, placed in its stead.

Price, with two wheels	£4 2 6
Skim Coulter and Drag Chain, extra	0 7 0
Steel, instead of Cast Breast, extra	0 7 0
Shares, per dozen	0 9 6
Ridging Body	1 17 6

Received a prize of £3 at Warwick.

PATENT IRON PLOUGH. Y.W.B.

FOR GENERAL PURPOSES.

This Plough will make excellent work at any depth not exceeding 8 inches. The body can be removed, and a ridging body, suitable for every purpose of ridge work, placed in its stead.

Price, with two wheels	£4 7 6
Skim Coulter and Drag Chain, extra	0 7 0
Steel, instead of Cast Breast, extra	0 7 6
Shares, per dozen	0 9 6
Ridging Body	1 17 6

Received a prize of £4 at Warwick.

PATENT IRON PLOUGH. Y.W.C.

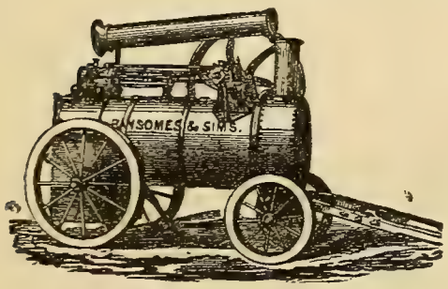
This Plough will make excellent work at any depth not exceeding 12 inches in any soil.

Price, two wheels	£5 15 0
Wrought, instead of Cast Frame	1 0 0
Skim Coulter and Drag Chain	0 7 0
Steel, instead of Cast Breast	0 12 6
Shares, per dozen	0 9 6

Received a prize of £2 at Warwick.

RANSOMES' PLOUGHS *have received* TWENTY FIRST PRIZES, 1 GOLD *and* 11 SILVER MEDALS *from the Royal Agricultural Societies of England, Ireland, &c.*

PORTABLE STEAM ENGINES & PATENT PORTABLE COMBINED STEAM THRESHING MACHINES.



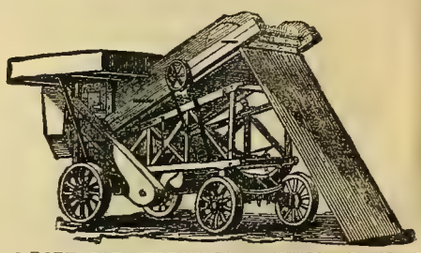
PRICES.

3-Horse Engine, 125*l.*, and No. 7 Single Blast Threshing Machine suitable for ditto, 75*l.*; Strap, 4*l.*; Waterproof Cover for Machine, 1*l.*; Barley Awner, 2*l.* extra.

7-Horse Engine, 210*l.*, and No. 1 Single Blast Threshing Machine suitable for ditto, with Common Drum and Iron Wheels, 100*l.*; Driving Strap, 6*l.* 6*s.*; Waterproof Cover for Machine, 2*l.* 5*s.*; if with Patent Drum, 5*l.* extra; if with Wood Wheels, 3*l.* extra; if without an Engine, 5*l.* extra.

8-Horse Engine, 215*l.*, and A 1 Double Blast Threshing Machine suitable for ditto, with common Drum and Wood Road Wheels, 125*l.*; Driving Strap, 6*l.* 6*s.*; Waterproof Cover for Machine, 2*l.* 5*s.*; if with Patent Drum, 5*l.* extra; if without an Engine, 5*l.* extra.

SINGLE BLAST MACHINE.—No. 1.



The above cut represents one of our STANDARD PORTABLE ENGINES. They are made of the best quality of materials and workmanship; are remarkable for their simplicity, durability, economy of fuel, and their capability of making steam. They are very light draught for the Horses.

The above cut represents our No. 1 PORTABLE THRESHING MACHINE. The No. 7 is built on the same Model in all its important parts, and can be thoroughly recommended as a most efficient Machine. Each of them has a Patent Shaker, one Blower, Riddles, and Elevators; and the No. 1 has also a Barley Awner.

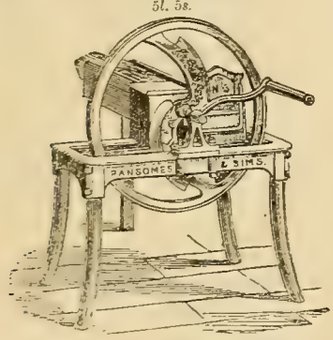
The A 1 or Double Blast Machine is on the same Model as the No. 1, but is furnished with a second Blower, and set of Dressing Apparatus, with a Patent Screen, by means of which Grain can be well and quickly prepared for Market.—Seven GOLD MEDALS and one highest DIPLOMA of MERIT have been awarded to these Machines. We shall be happy to furnish Testimonials from persons using our Single Blast Threshing Machines as to their superiority in economy of power, their extraordinary durability, and their capability of turning out a large quantity of work per day.

CHESTER FIRST PRIZE.

HAND CHAFF-CUTTER,

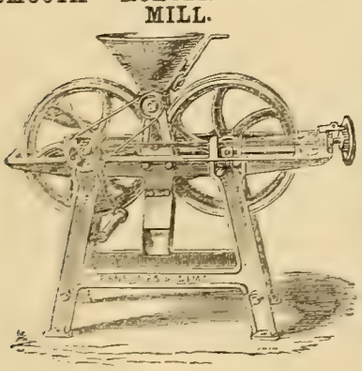
BIDDELL'S PATENT.

No. 3.—Price on Iron Frame, with Wrought Legs, 5*l.* 5*s.*



CHESTER FIRST PRIZE.

SMOOTH ROLLER BRUISING MILL.



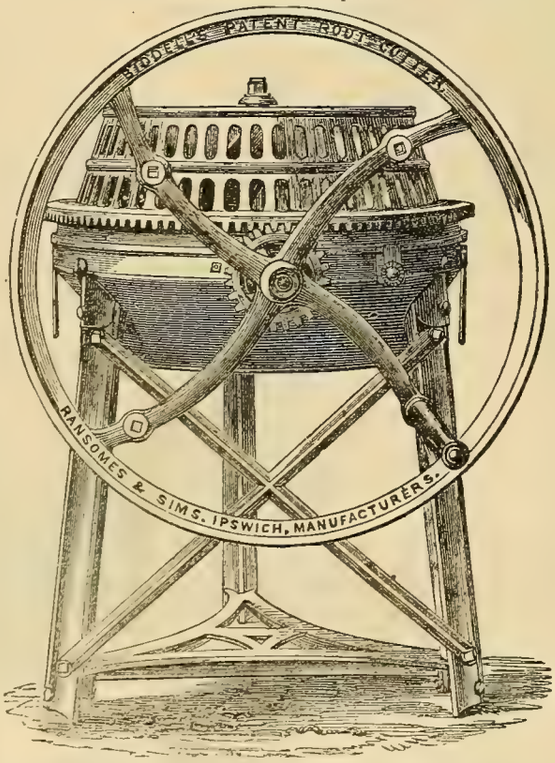
No. 6.—Price £10.

CHESTER FIRST PRIZE.

ROOT CUTTER FOR POWER.

BIDDELL'S NEW PATENT.

Price from 5*l.* 5*s.* and upwards.

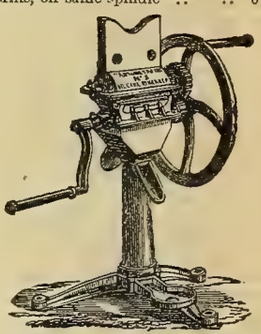


TESTIMONIALS FREE ON APPLICATION.

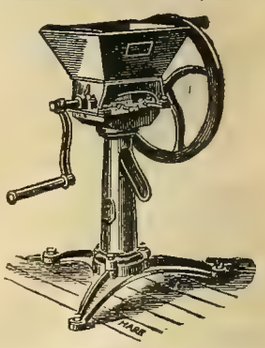
BIDDELL'S PATENT MILLS,

On Iron Columns, for hand power.

Patent Bean Cutter	£4 0 0
Patent Steel Oat Mill	3 15 0
Patent Combined Mill, No. 10—Bean and Oat Mills, on same spindle	6 0 0



OIL-CAKE BREAKERS, No. 3 & 4.



No. 3, for Lambs, Sheep, or Cattle, 4*l.*—No. 4, price 5*l.* 5*s.*, will break the hardest Cake for Sheep, or Cattle, separating the dust at the same time.

Illustrated Catalogues, post free, on application to the Orwell Works, or to our London Agent,

SHEPPARD RANSOME, 31, ESSEX STREET, STRAND, W.C.

GLASS FOR ORCHARD HOUSES & CONSERVATORIES.

JAMES PHILLIPS AND CO. beg to submit their prices of GLASS for the present month.

SHEET GLASS, in Crates, of superior quality, 16 oz. to the foot.

	Best.	Seconds.	Thirds.	Fourths.
	5½d.	3½d.	2½d.	2¼d.
21 oz.	Best. 7½d.	Seconds. 5d.	Thirds. 3½d.	Fourths. 3¼d.

Packed in 200 feet cases, 16 oz. £2 2 0
Packed in 300 feet cases, 16 oz. 3 0 0
Packed in 200 feet cases, 21 oz. 2 18 0

ORCHARD HOUSE SIZES, as supplied by us to Mr. Rivers.

20 in. by 12 in.		16 oz.	21 oz.
20 in. by 13 in.	Common	14s. 0d. ..	£1 1s.
20 in. by 14 in.	Superior do. ..	16 6 ..	1 5
20 in. by 15 in.	English Glass ..	18 0 ..	1 9

Boxes included and not returnable.

SMALL SQUARES, per 100 feet box. s. d.

6 by 4	6½ by 4½	7 by 5	7½ by 5½ 11 6
8 ,, 6	8½ ,, 6½	9 ,, 7	9½ ,, 7½
10 ,, 8	10½ ,, 8½ ..	.. ..	.. .. 12 6

HORTICULTURAL GLASS, in Squares, cut to specific sizes.

1 oz.	per foot, from 2d. to 3½d.	26 oz.	per foot, from 3d. to 7½d.
1oz.	,, ,, 3 ,, 5	32 oz.	,, ,, 4 ,, 9½

Special prices quoted for large or specific quantities.

AGENTS FOR
HARTLEY'S PATENT ROUGH PLATE GLASS.
PAINTS.
Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, &c.

JAMES PHILLIPS AND CO.,
180, Bishopsgate St. Without, London, E.C.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz SHEET GLASS of British Manufacture at prices varying from 2d. to 3d. per square foot for the usual sizes required, many thousands of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES, and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London, W.

See *Gardeners' Chronicle* first Saturday in each month.

HORTICULTURAL GLASS—JUNE TARIFF.

THOMAS MILLINGTON'S reduced Tariff of GLASS, &c.

6 by 4, 7 by 5, 8 by 6, 9 by 7 } 16 oz. to the foot, 11s. 6d.
6½ by 4½, 7½ by 5½, 8½ by 6½, 9½ by 7½ } per 100 feet.

In 100 boxes,—4ths quality, 12s. 6d.; 3ds do., 14s. 4d.

10 by 8, 12 by 9, 12½ by 10½, 14½ by 10½, 13 by 11
10½ by 8½, 12½ by 9½, 13 by 10, 15 by 10, 13½ by 11½
11 by 9, 13 by 9, 13½ by 10½, 12 by 11, 14 by 11
11½ by 9½, 12 by 10, 14 by 10, 12½ by 11½

20 by 12	per 100 feet	16 oz. 21 oz.
20 by 13	Common ..	16s. .. 24s.
20 by 14	Superior .	18s. .. 27s.
20 by 15		

All Boxes included.
Orchard House sizes as supplied to Mr. Rivers.
Hartley's improved Rough Plate Glass from ⅛ to ⅜ in thickness.
Coloured Glass in great variety, at 9d. and 1s. per foot.
Paints, Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, Lamp Glasses, &c.
87, Bishopsgate Street Without, E.C., same side as Eastern Counties Railway.

PATENT GUTTA PERCHA SOLES.—IMPORTANT TO GARDENERS.—The Gutta Percha Company have the pleasure to acknowledge the receipt of the following letter from G. GLENNY, Esq., the celebrated Florist:—

"420, Strand, London.

"Gentlemen,—I have worn Gutta Percha Soles and Heels these two years, and being so much in a garden as I necessarily am in all weathers, and with the ground in all states, I would on no account be without them. As a matter of economy I would recommend Gardeners to use them, for they may repair the worn part at all times by warming the material at the fire, and pressing it from the thick parts to the worn parts, as easily as if it were so much dough. I think it the duty of all persons who must occasionally wet their feet to adopt a material that completely defies damp. Many a gardener would escape colds and rheumatism by the use of Gutta Percha Soles.

"Your obedient servant, G. GLENNY."

Every variety of Gutta Percha articles, such as Mill Bands, Tubing, Soles, Sheet, Pump Buckets, Fire Buckets, Bosses, Union Joints, Flasks, Bottles, Bowls, Chamber Vessels, Toilet Trays, Sponge Bags, Curtain Rings, Galvanic Batteries, Talbotype Trays, &c., manufactured by the Gutta Percha Company, and sold by their wholesale dealers in town or Country.—The Gutta Percha Company, Patentees, 18, Wharf Road, City Road, E.C., London.

"FRIGI DOMO."—Patronised by her Majesty, the Queen, the Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, and —Collier, Esq., of Dartford.

PROTECTION FROM THE MORNING AND EVENING FROST.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and, floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths.

Two yards wide, 1s. 6d. per yard run.
Four, 3s. per yard; also,
An improved make three yards wide, 2s. 6d. per yard run.

ELISHA THOMAS ARCHER, whole and sole manufacturer, 7 Trinity Lane, Cannon St., City, E.C., and of all Nurserymen and Seedsmen throughout the kingdom. "It is much cheaper than mats as a covering."

FOOD FOR WINTER STOCK.

SAMUELSON'S celebrated TURNIP CUTTERS, PULPERS, CHAFF-CUTTERS, OIL-CAKE BREAKERS, CORN and MALT-CRUSHING MILLS, all with the latest patented improvements, may be obtained through any Ironmonger or Implement Dealer in the kingdom, or (carriage paid to the nearest station to the purchaser) direct from the manufactory.—Britannia Works, Banbury, Oxon; or London Warehouse, 76, Cannon Street West, City, E.C.

Catalogues sent free on application.

TO PIG, POULTRY, AND GAME FEEDERS.

JUPP'S RICE FOOD, POULTRY AND GAME.—RICE SWEEPINGS, 7s. 6d. per cwt., in 1½ cwt. bags; SCREENED RICE, 10s. per cwt., in 1¼ cwt. bags; DOG BISCUITS, 14s. per cwt.; OIL-CAKE, per ton only; RICE MEAL for PIGS, 6s. and 8s. per cwt., in 1 cwt. bags, at the mill. Orders must be accompanied by a remittance to insure delivery.—W. & R. JUPP, 6, Cross Lane, Eastcheap, E.C.

GARDENERS' LARGE CAPES, 3s. each, waterproof; Policemen's ditto, 1s. 6d. and 2s. each; Transparent Sheeting for Garden Frames, waterproof, 1s. per yard run, nearly 2 yards wide; strong Canvass ditto, 1s. per square yard. All kinds of Tarpaulings, Horses' Loin Cloths, &c.—R. RICHARDSON, 99, Euston Road, London, N.W.

MICROSCOPES.

JOSEPH AMADIO'S Improved Compound MICROSCOPE, 2l. 2s.; Students', 3l. 13s. 6d.

"Both these are from Amadio, of Throgmorton Street, and are excellent of their kind, the more expensive one especially."—*Household Words*, No. 345.

A large Assortment of Achromatic Microscopes.

Just published, 2d ed., an Illustrated Catalogue, with the names of 1500 Microscopic objects, free for 6 stamps.

SCIENTIFIC AMUSEMENTS.

T. AND H. DOUBLET, OPTICIANS TO GUY'S AND ST. THOMAS'S HOSPITALS, and the principal Institutions in London.

DOUBLETS' Improved Parlour Microscope, 6s. 6d., 17s., and 24s. Warranted Instruments.

DOUBLETS' Magic and Improved Phantasmagoria Lanterns, with Mechanical and Astronomical Slides, Chromatropes, &c., also Improved Stereoscopes and Slides.

DOUBLETS' Registering Garden Thermometer, 2s.

Thermometers for every purpose.

DOUBLETS' Achromatic Gardeners' and Dissecting Microscope, 60s.

DOUBLETS' TREATISE and ILLUSTRATED CATALOGUE gratis.—T. & H. DOUBLET, Opticians, 7, City Road, Finsbury Square, London, E.C.

PORTABLE FOUNTAINS, THE MOST NOVEL AND UNIQUE FOR CHRISTMAS PRESENTS.

RAMAR'S PATENT PORTABLE ATMOSPHERIC FOUNTAINS, which do not get out of order, fit for the table, boudoir, hall, or conservatory. A great variety of these pleasing and scientific objects may be seen at the Depôt, 150, Regent Street, London, W.—A List of Prices and Sizes sent free on application, from One Guinea and upwards.

J. W. ALLEN'S PATENT PORTMANTEAUS AND TRAVELLING BAGS, with SQUARE OPENING; Ladies' Dress Trunks, Dressing Bags, with Silver Fittings; Despatch Boxes, Writing and Dressing Cases, and 500 other articles for Home or Continental Travelling, illustrated in his New Catalogue for 1859. By post for two stamps. J. W. ALLEN, Manufacturer of Officers' Barrack Furniture and Military Outfitter (see separate Catalogue), 18 & 22, Strand, W.C.

HEAL AND SON'S EIDER-DOWN QUILTS, from One Guinea to Ten Guineas. Also GOOSE-DOWN QUILTS, from 8s. 6d. to 24s. List of prices and sizes sent free by post. HEAL & SON'S New Illustrated Catalogue of Bedsteads and Priced List of Bedding also sent post free.
196, Tottenham Court Road, W.

FENDERS, STOVES, FIRE-IRONS, AND CHIMNEY PIECES.—Buyers of the above are requested, before finally deciding, to visit WILLIAM S. BURTON'S SHOW ROOMS. They contain such an assortment of FENDERS, STOVES, RANGES, CHIMNEY PIECES, FIRE-IRONS, and GENERAL IRONMONGERY as cannot be approached elsewhere, either for variety, novelty, beauty of design, or exquisiteness of workmanship. Bright Stoves, with ormolu ornaments and two sets of bars, 3l. 15s. to 33l. 10s.; Bronzed Fenders, with standards, 7s. to 5l. 12s.; Steel Fenders, 2l. 15s. to 11l.; ditto, with rich ormolu ornaments, 2l. 15s. to 18l.; Chimney Pieces, from 1l. 8s. to 80l.; Fire-Irons, from 2s. 3d. the set to 4l. 4s. The BURTON and all other PATENT STOVES, with radiating hearth-plates.

BEDSTEADS, BATHS, AND LAMPS.—WILLIAM S. BURTON has SIX LARGE SHOW ROOMS devoted exclusively to the SEPARATE DISPLAY of Lamps, Baths, and Metallic Bedsteads. The stock of each is at once the largest, newest, and most varied ever submitted to the public, and marked at prices proportionate with those that have tended to make his establishment the most distinguished in this country.

Bedsteads, from	..	12s. 6d.	to £20	0s. each.
Shower Baths, from ..	..	8 0	,, 6 0	,,
Lamps (Moderateur), from	..	6 0	,, 7 7	,,

(All other kinds at the same rate.)

Pure Colza Oil .. .. 4s. 0d. per gallon.

DISH COVERS AND HOT-WATER DISHES.—In every material, in great variety, and of the newest and most recherché patterns. Tin Dish Covers, 7s. 6d. the set of six; Block Tin, 12s. 3d. to 27s. 0d. the set of six; elegant modern patterns, 35s. 6d. to 62s. 6d. the set; Britannia Metal, with or without silver-plated handles, 3l. 11s. 0d. to 6l. 8s. 0d. the set; Sheffield plated, 10l. to 16l. 10s. the set; Block-tin Hot-water Dishes, with wells for gravy, 12s. to 30s.; Britannia Metal, 22s. to 77s.; Electro-plated on Nickel, full size, 11l. 11s.

WILLIAM S. BURTON'S GENERAL FURNISHING IRONMONGERY CATALOGUE may be had gratis, and free by post. It contains upwards of 400 Illustrations of his illimited Stock of Electro and Sheffield Plate, Nickel Silver and Britannia Metal goods, Dish Covers and Hot-water Dishes, Stoves, Fenders, Marble Chimney-pieces, Kitchen Ranges, Lamps, Gaseliers, Tea Urns and Kettles, Tea Trays, Clocks, Table Cutlery, Baths and Toilet Ware, Turnery, Iron and Brass Bedsteads, Bedding, Bedroom Furniture, &c., with Lists of Prices and Plans of the 16 large Show Rooms at 39, Oxford Street, W.; 1, 1a, 2, and 3, Newman Street, W.; and 4, 5, and 6, Perry's Place, W., London.—Established 1820.

MECHI AND BAZIN'S CHRISTMAS AND NEW YEAR'S PRESENTS.—MECHI & BAZIN'S establishments are replete with a large and well-selected assortment of useful and felegant articles, adapted for presentation, consisting of Dressing Cases, Travelling Dressing Bags, Mediæval Mounted Writing-Table Sets, Antique Bronzes, Papier Mâché Productions, Chessboards and Chessmen, Card Cases, Postage Balances, Parisian Novelties in Ormolu, Work Boxes, Knitting Boxes and Reticules. Despatch Boxes and Writing Cases in russia and morocco leather, in 20 different forms and sizes, fitted with real Bramah and Chubb Locks; also others of a cheaper description. Portable Writing and Dressing Cases, Brush Cases, Courier Bags, Pic-Nic Cases, Wicker Luncheon Baskets, Sporting Knives, Wine and Spirit Flasks, &c.—112, Regent Street, W.; 4, Leadenhall Street, E.C., London; Crystal Palace, Sydenham, S.

CHRISTMAS PRESENTS.—The most appropriate offerings are those which tend to the promotion of personal beauty in the fair and youthful, who at this festive season are more than usually desirous to shine to advantage under the gaze of their friends: none can be more acceptable than ROWLANDS' MACASSAR OIL, a delightfully fragrant and transparent preparation for the hair; and as an invigorator and beautifier beyond all precedent. Price 3s. 6d., 7s., 10s. 6d., equal to four small, and 21s. per bottle. ROWLANDS' KALYDOR, unequalled for its rare and inestimable qualities in imparting a radiant bloom to the complexion, and a softness and delicacy to the hands and arms. Price 4s. 6d. and 8s. 6d. per Bottle. And ROWLANDS' ODONTO, or Pearl Dentifrice, which bestows on the teeth a pearl-like whiteness, strengthens the gums, and renders the breath sweet and pure. Price 2s. 9d. per box.—Sold by A. ROWLAND & SONS, 20, Hatton Garden, London, E.C., and by Chemists and Perfumers.

THE FINAL BALANCE SHEET OF THE NATIONAL FLORICULTURAL SOCIETY.

Dr.

To cash in hands of Treasurer, February 24, 1859, as per balance sheet			£14 2 3
To cash received, being arrears of subscriptions due Christmas last:	Five members at 21s.	£5 5 0	
	Four members at 10s. 6d.	2 2 0	
			7 7 0
To cash received for cabinet, &c.			5 18 0
			£27 7 3

Cr.

By cash paid for 12 months rent			20 0 0
,, paid for printing last report			0 15 0
,, paid for postage of last report			0 8 3
,, paid for advertisements			0 16 0
Balance presented to the Gardeners' Benevolent Institution			5 8 0
			£27 7 3

We, the undersigned, certify that the above statement is correct. JOHN SALTER, C. LIDGARD, JOHN COOK, } Auditors.
Dec. 17.

GENUINE TOBACCO PAPER FOR FUMIGATING.

H. APPLEBY (Foreman to Messrs. Ivery & Son, Nurserymen, Dorking, Surrey), supplies the above in 4-lb. packets at 1s. 3d. per lb. A liberal discount allowed to the Trade. Testimonials too numerous for insertion, but may be had on application.

SHEET IRON POTS FOR FUMIGATING, 3s. 6d. each.

N.B. All orders to be accompanied with a Post-office Order, payable to HENRY APPLEBY, Dorking, Surrey.

GISHURST COMPOUND, PATENTED,
FOR PREVENTING AND DESTROYING

RED SPIDER	MEALY BUG	MILDEW
THRIPS	SCALE	GREEN and BROWN
AMERICAN BLIGHT	ANTS	FLY

BED BUGS, &c.,
And useful in winter dressing.
Contains no deleterious ingredient.

Has received the sanction of the Gardening Press, see *Gardeners' Chronicle* of 9th April and 16th July, 1859, and "Cottage Gardener," 12th July, and has been favourably reported on, and is used by eminent gardening authorities, among whom are—

Mr. Judd, of Althorp Gardens
Mr. Rivers, of Sawbridgeworth
Mr. Edmonds, of Chiswick House Gardens
Mr. Collinson, of Eaton Hall Gardens
Messrs. A. Henderson & Co., Edgeware Road
Mr. Jas. Veitch, jun., Chelsea
Mr. Spencer, of Bowood Gardens

The principal Nurserymen and Seedsmen throughout England, Scotland, and Ireland use it, have taken in supplies, and are now prepared to sell single boxes—price 1s. for first trials and small uses, such as destroying bed bugs; 3s. for not large gardens; 10s. 6d. for large gardens, with testimonials and full descriptions for use.

Nurserymen and Seedsmen supplied by
PRICE'S PATENT CANDLE COMPANY, Limited, London.

PARTNER, OR BUSINESS FOR DISPOSAL.—An unusually favourable opportunity offers in the leading town of a Southern County, to an eligible person inclined to enter on the SEED and NURSERY TRADES. The coming-in will be small, and the Business may be increased *ad libitum*.—Letters to A. B. C., favour of Mr. Perrins, Printing Offices, Gloucester.

WANTED, MARKET GARDEN from 6 to 10 Acres. With a small quantity of Glass would be preferred.—A., Frogmore Cottages, Gloster Road, Croydon, S.

BATH NURSERY AND SEED ESTABLISHMENT.

MRS. GRIFFIN, widow of the late JAMES GRIFFIN, finding the business too extensive for her management, would be glad to dispose of it on liberal terms.—Further particulars can be obtained at the Nursery, Weston Road; or 2, New Bond Street, Bath.

NURSERY GROUND.

TO BE LET, WHITTINGTON NURSERY, Upper Holloway, to be entered upon immediately.—For particulars, apply to J. F. MARSON, Esq., Small Pox Hospital, or to Mr. Bunney, Nurseryman, Stratford, Essex, E.

HUCCLECOTE GARDENS, 2½ MILES FROM GLOUCESTER.

TO BE LET, with immediate possession, the above capital walled-in GARDENS, containing about 4 acres with House, Farm-yards, Buildings, Orchard, and Land adjoining, containing in the whole about 16 acres, with Greenhouses, Propagating houses, Vineries, Pits, &c. Extent of glass 5770 feet.—For particulars apply to W. KNOWLES, Auctioneer, St. Mary's Square, Gloucester.

TO BE DISPOSED OF, a first-class long established NURSERY and SEED BUSINESS in one of the Midland Counties commanding a very extensive trade; the Stock is young and healthy. The Nurseries extend over 25 Acres, are situated in a good locality, and near to a Railway Station.—For particulars apply to Messrs. NOBLE, COOPER, & BOLTON, Seed Merchants, 152, Fleet Street, London, E.C.

Sales by Auction.

EXTRA POULTRY SALE.

MR. J. C. STEVENS will Sell by Auction at his Great Room, 38, King Street, Covent Garden, W.C., on TUESDAY, December 20, at 12 o'Clock precisely, a FIRST CLASS COLLECTION OF POULTRY, many of them Prize Birds, from the Yards of Mrs. Fookes, Mrs. Pattison, Mrs. L. C. Stow, Messrs. Leno, Ray, Harding, Whitwell, Bridges, Rider, and other well-known fanciers, consisting of Cochins, Dorkings, Spanish, Bantams, Polands, Malays, Game, Brahmas, Game Bantams, Hamburghs, Aylesbury Ducks, 16 Chinchilla Rabbits from Mr. Vipans; a few good Pigeons from E. S. Stephenson, Esq., and E. A. Lingard, Esq., and others.—May be viewed on the morning of Sale, and Catalogues had; if for the country, by inclosing two stamps.

HIGHLY IMPORTANT SALE OF CONIFEROUS SEEDS JUST IMPORTED FROM CALIFORNIA, FRASER'S RIVER, SIERRA NEVADA, BRITISH COLUMBIA.

MR. J. C. STEVENS will Sell by Auction at his Great Room, 38, King Street, Covent Garden, W.C., on WEDNESDAY, December 21, at Half-past 12 o'Clock precisely, a valuable and important consignment of PINE CONES and SEEDS in excellent condition, including Abies Menziesii, Mertensiana, and Douglasii, Cupressus Lawsoniana, Pinus Lambertiana, ponderosa, and Sabiniana; above ½ lb. of clean seed of Wellingtonia gigantea; Picea grandis, Libocedrus decurrens or Thuja gigantea, Pinus Benthamiana, Quercus Hindsii (?), Quercus species. Cones with Seeds for cabinet specimens of the above, &c.—May be viewed on the morning of Sale; and Catalogues had; if for the country, by inclosing two stamps.

CHUBB'S PATENT DETECTOR LOCKS.
CHUBB'S FIRE AND BURGLAR-PROOF SALES.
CHUBB'S FIRE-PROOF STRONG-ROOM DOORS.
CHUBB'S STREET-DOOR LATCHES.
CHUBB'S CASH AND DEED BOXES.
CHUBB & SON, 57, St. Paul's Churchyard, London, E.C; 28, Lord Street, Liverpool; 16, Market Street, Manchester; and Wolverhampton.—Illustrated Price Lists sent free.

BENSON'S WATCHES.
"Perfection of mechanism."—*Morning Post.*
GOLD, 4 to 100 GUINEAS | SILVER, 2 to 50 GUINEAS.
Send two Stamps for Benson's ILLUSTRATED WATCH PAMPHLET.
Watches sent to all parts of the World free per post.
33 and 34, Ludgate Hill, London, E.C.

BERDOE'S WINTER CAPES AND OVER-COATS.
The extensive sale of these first class garments is their best recommendation. They effectually exclude rain, yet freely admit air. A large Stock for selection.—WALTER BERDOE, 96, New Bond Street, W., and 69, Cornhill (north side), E.C.

WATERPROOF HIGHLAND CLOAKS for GENTLEMEN'S WEAR,
Are now on view in every description of Scotch Manufactured Tweed, at Her Majesty's Royal Tartan Warehouse,
SCOTT ADIE'S, 115, Regent Street, corner of Vigo Street, W.

GLENFIELD PATENT STARCH, used in the Royal Laundry, and pronounced by Her Majesty's Laundress to be the finest Starch she ever used. When you ask for Glenfield Patent Starch, see that you get it, as inferior kinds are often substituted. Sold by all Chandlers, Grocers, &c.
WOTHERSPOON & CO, Glasgow and London.

EPPS'S HOMŒOPATHIC COCOA.—Produced, in 1839, specially for the use of Homœopathic Patients, to provide them with a beverage highly nutritious and free from those effects of Coffee and Tea which to many persons are pernicious. Rendered attractive to the taste by its delicious aroma and grateful smoothness, it has become adopted by the public generally for breakfast, luncheon, and supper. It is sold by the principal Grocers at 1s. 6d. per lb, in 1 lb., ½ lb., and ¼ lb. packets. Each packet is labelled, "JAMES EPPS, Homœopathic Chemist, London."

PERFECT DIGESTION, Strong Nerves, Sound Lungs, and Refreshing Sleep restored by DU BARRY'S delicious health-restoring REVALENTA ARABICA FOOD, which saves 50 times its cost in other remedies, and removes effectually habitual constipation, indigestion (dyspepsia), acidity, flatulence, sleeplessness, torpidity of the liver, diarrhœa, bilious headaches, nervousness, biliousness, general debility, diabetes, cough, asthma, consumption, despondency, spleen. Canisters 1 lb., 2s. 9d.; 2 lb. 4s. 6d.; 5 lb. 11s.; 12 lb., 22s. The 12 lb. free of carriage on receipt of Post-office Order. —BARRY DU BARRY & Co., 77, Regent Street, London, W.; also at 182, Piccadilly, W.; 60, Gracechurch Street, E.C.; 63 and 150, Oxford Street, W.; 4, Cheapside, E.C.

BUTTER—GOOD FRESH BUTTER.—TRY
DOWMAN'S BUTTER POWDER, by the use of which, and following the simple directions given with each box, Butter comes in less than one-half the time it does when made in the usual mode. It is more abundant, and the quality and colour are greatly improved. The unpleasant taste of Swedes, Turnips, or other strong feed is entirely removed. The Butter will keep in a fresh state firm, and free from all rancidity, for a longer period: it is also more pure, as the cheesy part of the cream is neutralised and washed away by this process. Sold 1s. per Box, by Druggists, Grocers, &c. —London Wholesale Agents: EDWARDS, 67, St. Paul's Churchyard: BARCLAY & SONS, Farringdon Street. Sole Proprietor: G. DOWMAN, Chemist, Southampton. Agents wanted in every town. The public are cautioned against being imposed upon by worthless imitations. This article has been in use 15 years, and the test of experience has been successfully applied.

PRIZE MEDAL, PARIS EXHIBITION 1855.
METCALFE, BINGLEY, AND CO.'S New Pattern and Penetrating Tooth Brushes, Penetrating unbleached Hair Brushes, Improved Flesh and Clothes Brushes, and genuine Smyrna Sponges; and every description of Brush, Comb, and Perfumery for the Toilet. The Tooth Brushes search thoroughly between the divisions of the Teeth and clean them most effectually—the hairs never come loose. M., B., and Co. are sole makers of the Oatmeal and Camphor and Orris Root Soaps—sold in Tablets (bearing their names and address) at 6d. each; of METCALFE'S celebrated Alkaline Tooth Powder, 2s. per box: and of the New Bouquets.—Sole Establishment, 130B and 131, Oxford St. 2d and 3d doors west from Holles St., London, W.

DR. DE JONGH'S
(KNIGHT OF THE ORDER OF LEOPOLD OF BELGIUM)
LIGHT-BROWN COD LIVER OIL,
administered with the greatest success in cases of CONSUMPTION, BRONCHITIS, COUGHS, RHEUMATISM, GOUT, NEURALGIA, GENERAL DEBILITY, DISEASES OF THE SKIN, RICKETS, INFANTILE WASTING, AND ALL SCROFULOUS AFFECTIONS,
incomparably superior to every other kind. The recorded investigations of numberless eminent British and Foreign medical practitioners have placed beyond the reach of cavil the fact that no invalid can possibly realise the full benefits of Cod Liver Oil, who does not take Dr. DE JONGH'S celebrated pure Light Brown Oil.

OPINION OF R. M. LAWRANCE, ESQ., M.D.
Physician to H.R.H. the Duke of Saxe Coburg and Gotha, Ophthalmic Surgeon to the Great Northern Hospital, &c. &c.
"I have frequently tasted your Cod Liver Oil, and so impressed am I with its superiority that I invariably prescribe it in preference to any other, feeling assured that I am recommending a genuine article, and not a manufactured compound, in which the efficacy of this invaluable medicine is destroyed."
Sold ONLY IN IMPERIAL half pints, 2s. 6d.; pints, 4s. 9d.; quarts, 9s., capsuled, and labelled with Dr. DE JONGH'S stamp and signature, WITHOUT WHICH NONE CAN POSSIBLY BE GENUINE, by respectable Chemists
SOLE CONSIGNEES,
ANSAR, HARFORD, & CO., 77, Strand, London, W.C.

PERFECT FREEDOM FROM COUGHS is secured by DR. LOCOCK'S PULMONIC WAFERS.—They give instant relief, and a rapid cure of Asthma, Consumption, Coughs, and all disorders of the Breath and Lungs. They have a most pleasant taste. Price 1s. 1½d., 2s. 9d., and 11s. per box. Sold by all medicine vendors.

HOLLOWAY'S PILLS AND OINTMENT.—COUGHS—ASTHMA.—The fogs and damp evening air now constantly induce the troublesome cough, which, being neglected, is followed by inflammation of the chest. On a cough first appearing, the throat, back, and breast of the sufferer should be well rubbed twice a day with HOLLOWAY'S Ointment: his Pills should be freely taken, flannel should be worn next the skin, exposure to cold should be avoided, and the wearied invalid will find every untoward symptom speedily and permanently disappear, and all ill consequences happily averted. A few days' perseverance with these means will check all perspiration and permit a comfortable night's rest: the expectoration will decline, the emaciation cease, the shortness of breath vanish, and health return.

On the 22d inst. will be published, price 3d., stamped 4d.,

PUNCH'S ALMANACK FOR 1860.

With numerous Illustrations by JOHN LEECH and JOHN TENNIEL.

LONDON OFFICE: 85, FLEET STREET, E.C.

On Tuesday, the 27th inst., will be published, price 7s. 6d., Vol. I. of

ONCE A WEEK.

With numerous Illustrations by LEECH, TENNIEL, MILLAIS, H. K. BROWN, C. KEENE, WOLF, CORBOULD, SKILL, W. MAY, G. H. BENNETT, H. G. HINE, WOODS, SCOTT, and others.

In announcing the publication of the First Volume of "ONCE A WEEK," the Projectors have ample cause to congratulate themselves on the reception of the Work, for, if its Circulation up to this point is an adequate test, its commercial success is decidedly established.

They are, nevertheless, too clearly conscious of its rising promise to rest satisfied with the result thus far obtained, and are taking measures for its further advance to the standard indicated in its Prospectus. Arrangements are in progress for the improvement equally of its Literary, Scientific, and Artistic features. Engagements have been made with Novelists of Celebrity, and an important Serial by a Popular Author is already in the Artist's hands, and will appear before the end of January, and be succeeded by other Attractive Fictions.

As the Work proceeds its resources will come more fully into play until the capacities of the enterprise are fairly tested and the difficulties incident to its organisation, under peculiar circumstances, are surmounted. Its *Plan* has been already ratified by popoular acceptance; but this encouragement will only stimulate the energies of every one connected with it to make the most of the increasing opportunities for its further and complete development.

*** Part VI., Containing Six Numbers, and therefore price 1s. 6d., will be published on the 30th instant.

LONDON: BRADBURY AND EVANS, 11, BOUVERIE STREET, E.C.

THE ARMY AND NAVY GAZETTE,

AND

JOURNAL OF THE MILITIA AND VOLUNTEER FORCES.

On Saturday, January 7, will be published, price 6d., the

FIRST NUMBER OF A NEW WEEKLY PAPER, under the above title, devoted to the discussion of questions relating to the Military Services and National Defence, and the diffusion of authentic information upon these subjects. The *Army and Navy Gazette* will be

EDITED BY MR. W. H. RUSSELL, LL.D., LATE SPECIAL CORRESPONDENT OF *The Times*.

TEMPORARY OFFICE: 11, BOUVERIE STREET, FLEET STREET, E.C.

VOYAGE OF THE "FOX" IN THE ARCTIC SEAS.

Next Saturday, with Two Maps, Fac-Simile of the Record found of the Franklin Expedition, and numerous Illustrations, 8vo, 16s.,

A NARRATIVE OF THE DISCOVERY OF THE FATE
OF
SIR JOHN FRANKLIN AND HIS COMPANIONS.

BY CAPT. M'CLINTOCK, R.N.

WITH AN INTRODUCTION BY SIR RODERICK MURCHISON, F.R.S.

JOHN MURRAY, ALBEMARLE STREET, W.

Every Saturday, price Fourpence, or Stamped Fivepence,

NOTES AND QUERIES:

A MEDIUM OF INTERCOMMUNICATION FOR LITERARY MEN, ARTISTS, ANTIQUARIES, GENEALOGISTS, PHOTOGRAPHERS, &c.

NOTES AND QUERIES will, it is believed, be found to bring before the general reader every week a vast amount of curious and interesting information. It was established for the purpose of furnishing to all lovers of Literature a Commonplace Book, in which they might, on the one hand, record for their own use and the use of others those minute facts—those elucidations of a doubtful phrase or disputed passage—those illustrations of an obsolete custom—those scattered biographical anecdotes or unrecorded dates—which all who read occasionally stumble upon; and, on the other, of supplying a medium through which they might address those Queries, by which the best informed are sometimes arrested in the midst of their labours, in the hope of receiving solutions of them from some of their number. The success which has attended this endeavour to supply a want long felt by literary men, is rendered manifest by the necessity of permanently enlarging the Paper from 16 to 24 pages. For opinions of *The Quarterly Review, Athenæum, Examiner, Literary Gazette, Spectator, Dublin Review*, &c., as to the utility, &c., of NOTES AND QUERIES, see Prospectus.

A SPECIMEN NUMBER sent on receipt of five postage stamps.

NOTES AND QUERIES is also issued in Monthly Parts, for the convenience of those who may either have a difficulty in procuring the unstamped Weekly Numbers, or may prefer receiving it monthly. Each Part contains Papers by some of our most distinguished Writers. Those already issued contain articles by—

Lord Braybrooke	Professor De Morgan	Rev. J. Hunter	J. E. B. Mayor, Esq.	Earl of Shaftesbury
John Britton, Esq.	Dr. Diamond	Samuel Hickson, Esq.	Lord Monson (M.P.	W. J. Thoms, Esq.
John Bruce, Esq.	Hepworth Dixon, Esq.	Douglas Jerrold, Esq.	R. Monck. Milnes, Esq.,	B. Thorpe, Esq.
J. Burtt, Esq.	Sir Fortunatus Dwarris	Rev. Dr. Kennedy	George Ormerod, Esq.	Rev. J. H. Todd, D.D.
W. D. Christie, Esq.	Sir Henry Ellis	R. J. King, Esq.	J. R. Planché, Esq.	Sir W. C. Trevelyan, Bt.
J. P. Collier, Esq.	C. Forbes, Esq.	Rev. L. B. Larking	E. F. Rimbault, Esq.	T. H. Turner, Esq.
W. D. Cooper, Esq.	E. Foss, Esq.	Marc Antony Lower, Esq.	Rev. Dr. Rock	Rev. Henry Walter
Bolton Corney, Esq.	Rev. A. Gatty	W. B. MacCabe, Esq.	S. W. Singer, Esq.	Albert Way, Esq.
P. Cunningham, Esq.	Henry Hallam, Esq.	Rev. S. R. Maitland, D.D.	E. Smirke, Esq.	Benj. B. Wiffen, Esq.
Rev. T. Corser	J. O. Halliwell, Esq.	Sir F. Madden	George Stephens, Esq.	W. Yarrell, Esq.,
Dr. Dalton	E. Hawkins, Esq.	J. H. Markland, Esq.	H. E. Strickland, Esq.	&c. &c. &c.

NOTES AND QUERIES is also published in Half-yearly Volumes, each with very Copious Index, price 10s. 6d. cloth boards. Of these Nine have been published; and a few Complete Sets, price 4l. 14s. 6d., may still be had.

The following List of Subjects treated upon will show that these Volumes are not merely of temporary interest, but of lasting value for reference:—

Literary History	Illustrations of Chaucer and Early English Literature	Writings of English and Continental Reformers	Anglo-Saxon Literature
Bibliography	Glossarial Notes	History of London and its Neighbourhood	Fine Arts
Biographical Illustrations	Notes on Hallam, Macaulay, &c.	Ballads and Old Poetry	Natural History
Popular Manners and Customs	Genealogy and Heraldry	Remarkable Events in English, Scotch, and Irish History	Photography, especially in its Relation to Archæology, &c.
Origin of Proverbial Sayings	Miscellaneous Antiquities		&c. &c.
Folk Lore	Ecclesiastical History		
Illustrations of Shakspeare			

"As a mass of curious, out-of-the way information upon almost every matter that may be supposed to be of interest to educated minds, a Volume of NOTES AND QUERIES is of itself a curiosity, and quite an out-of-the-way treasure. Wholly apart from its very great value as an aid to the literary labourer who works upon unhacknied material—a point so well recognised that it need not be urged—we would suggest that the reader for amusement scarcely could take up a miscellany that contains more anecdote and quaint accounts of odd things new to his mind, than a Volume of NOTES AND QUERIES.....It may lead to the formation of some notion on the point if we state that the Index to the Fifth Volume contains not many less than three thousand five hundred references to subjects upon which there is information given in its pages."—*Examiner.*

GEORGE BELL, No. 186, FLEET STREET; AND BY ORDER OF ALL BOOKSELLERS AND NEWSMEN.

EVERY VOLUNTEER'S BOOK.

Now ready, Third Edition, with Portrait, post 8vo, 10s. 6d.,

THE ENGLISH BATTLES AND SIEGES OF THE PENINSULAR WAR. By Lieut.-Gen. Sir WILLIAM NAPIER, K.C.B.

"A volume, filled with details of heroism and fortitude, appears with wonderful opportuneness at such a time as the present, and may count on a wide popularity."—*Examiner.*

"The name of Napier recommends itself; the work will be eagerly sought after as an authentic record of deeds of daring heroism."—*Naval and Military Gazette.*

"A well-timed publication, and convenient present to candidates for military honours"—*English Churchman.*

"A volume of deep interest and timely appearance."—*Spectator.*

JOHN MURRAY, Albemarle Street, W.

THE PEOPLE'S EDITION OF
MOORE'S LIFE OF LORD BYRON.

This day, Parts I. and II. (to be completed in Nine Monthly Parts), with Portraits, &c., 8vo, 1s. each,

THE LETTERS AND JOURNALS OF LORD BYRON, with NOTICES of his LIFE. By THOMAS MOORE. With Cotemporary Notes and Illustrations by Lord JEFFERY, Bishop HEBER, Professor WILSON, GIFFORD, CRABBE, Sir WALTER SCOTT, LOCKHART, &c.

JOHN MURRAY, Albemarle Street, W.

BYRON FOR NINE SHILLINGS.

Now ready, Illustrated with Portrait and numerous Engravings on Steel, One Volume, royal 8vo, 9s., or strongly bound in cloth, 10s. 6d.,

THE POETICAL AND DRAMATIC WORKS OF LORD BYRON COMPLETE, with Cotemporary Notes and Illustrations of Lord JEFFERY, Bishop HEBER, Professor WILSON, MOORE, GIFFORD, CRABBE, LOCKHART, &c.

BYRON'S POEMS.—"Eight years have yet to run before the Copyright expires, and those who now buy an Edition published without the sanction of Mr. MURRAY, BUY AN IMPERFECT BOOK."—*Athenæum, May* 1858.

JOHN MURRAY, Albemarle Street, W.

CROKER'S EDITION OF BOSWELL,
FOR TEN SHILLINGS.

This day, with Portraits, One Volume, royal 8vo, 10s.; or in cloth, 12s.,

BOSWELL'S LIFE OF JOHNSON: including the TOUR TO THE HEBRIDES AND WALES. Edited by the Right Honble. JOHN WILSON CROKER. With Contributions by Lord STOWELL, Sir W. SCOTT, DISRAELI the ELDER, Sir JAMES MACKINTOSH, &c. A New Edition.

The Quarterly Review, January, 1859.

"The most entertaining and instructive book in the language. MR. CROKER'S NOTES combine the gleanings from the numerous other memorials of Johnson, and are often quite as valuable as the text."

JOHN MURRAY, Albemarle Street, W.

Now ready, Four Vols., 8vo.

THE BRITISH POOR; being a HISTORY OF THE ENGLISH, SCOTCH, AND IRISH POOR LAW, in connection with the Condition of the People. By Sir GEORGE NICHOLLS, K.C.B., late Poor Law Commissioner, and Secretary to the Poor Law Board.

☞ THE WORK MAY ALSO BE HAD IN SEPARATE PORTIONS.

"A History of the Poor Laws of Great Britain, which will be of essential service, and will assist greatly, no doubt, in prompting and directing future efforts for the perfection of that 'charity in its largest application' which its author as an active servant has himself done so much to promote."—*Examiner.*

Lately published,

THE FOREST OF DEAN: an HISTORICAL and DESCRIPTIVE ACCOUNT, derived from Personal Observation and other Sources, Public, Private, Legendary, and Local. By H. G. NICHOLLS, M.A., Perpetual Curate of Holy Trinity, Dean Forest. With numerous Woodcuts, &c. Post 8vo, 10s. 6d.

"In giving us such an account of the Forest and Foresters Mr. Nicholls has certainly supplied a want; he has done well what much needed doing, and which, but for his effort, would probably not have been done at all."—*Literary Gazette.*

JOHN MURRAY, Albemarle Street, W.

CHRISTMAS PRESENTS.

The following are Now Ready:

I.

ANCIENT SPANISH BALLADS; HISTORICAL and ROMANTIC. Translated by J. G. LOCKHART. With Coloured Borders, Illuminated Titles, Initial Letters, and numerous Woodcuts. Fourth Edition, 4to, 21s.

II.

GREECE: PICTORIAL, DESCRIPTIVE, and HISTORICAL. By Rev. Dr. WORDSWORTH. With 600 Engravings of the Scenery, Architecture, Costume, and Fine Arts of the Country. Sixth Edition. Royal 8vo, 28s.

III.

THE PILGRIMAGE OF CHILDE HAROLD. By LORD BYRON. A new and beautifully printed Edition. Illustrated with 80 Engravings of the most remarkable Scenes, Edifices, &c., described in the Poem, from original Drawings. Crown 8vo, 21s.

IV.

THE ILLUSTRATED HISTORY OF ARCHITECTURE IN ALL COUNTRIES. By JAMES FERGUSON. Second Edition. With nearly 900 Illustrations. 8vo, 26s.

V.

THE ARABIAN NIGHTS'. Translated from the Arabic. By E. W. LANE, Author of "The Modern Egyptians." New Edition. With 600 Illustrations. 3 vols. 8vo, 42s.

VI.

LIVES OF THE EARLY FLEMISH PAINTERS; with NOTICES of their WORKS. By J. E. CROWE & CAVALCASELLE. With Illustrations. Post 8vo, 12s.

VII.

LIVES OF THE EARLY ITALIAN PAINTERS. By Mrs. JAMESON. A New Edition, entirely revised and greatly enlarged. With Illustrations. Crown 8vo, 12s.

VIII.

THE ITALIAN SCHOOLS OF PAINTING: from the German of KUGLER. Edited by Sir CHARLES EASTLAKE, R.A. Third Edition. With 150 Illustrations. Two Vols. post 8vo, 30s.

IX.

A HANDBOOK FOR YOUNG PAINTERS. By C. R. LESLIE, R.A., with Illustrations. Post 8vo, 10s. 6d.

X.

FABLES OF ÆSOP. A NEW VERSION, CHIEFLY from the ORIGINAL SOURCES. By Rev. THOMAS JAMES, M.A. Thirty-eighth Thousand. With 100 Woodcuts. Post 8vo, 2s. 6d.

XI.

THE STORY OF PUSS IN BOOTS, told by OTTO SPECKTER, in 12 Illustrations. Twelfth Thousand. 16mo, 1s. 6d.

JOHN MURRAY, Albemarle Street, W.

Nearly ready, One Volume, 8vo, 7s. 6d.,

HARMONIES OF POLITICAL ECONOMY. By FREDERIC BASTIAT. Translated from the French, with a Notice of his Life and Writings. By PATRICK J. STIRLING, F.R.S.E., Author of "The Philosophy of Trade," "The Gold Discoveries and their probable Consequences," &c.

JOHN MURRAY, Albemarle Street, W.

Price 1s. 6d., free by post, 1s. 7d.

LABELS FOR THE HERBARIUM,
CONSISTING OF THE NAMES OF THE
CLASSES, ALLIANCES, ORDERS, AND SUB-ORDERS,
OF
PROFESSOR LINDLEY'S "VEGETABLE KINGDOM."

So printed in large type, that they can be cut out and pasted into THE HERBARIUM.

J. MATTHEWS, 5, Upper Wellington Street, Covent Garden, London, W.C.

Third Edition, considerably enlarged, price 5s. 6d., free by post, 5s. 10d.,

RURAL CHEMISTRY.
By EDWARD SOLLY, F.R.S., F.L.S., F.G.S.
Honorary Member of the Royal Agricultural Society of England, Professor of Chemistry to the Horticultural Society of London, Lecturer on Chemistry in the Hon. E. I. Co.'s Military Seminary at Addiscombe, &c., &c.

J. MATTHEWS, 5, Upper Wellington St., Covent Garden, W.C.

Now ready, price 2s. 6d.,

FOLIA ORCHIDACEA, Part IX. Containing the conclusion of Plourothallis.

Parts I. to VIII., price 2s. 6d. each, may still be had.

JAMES MATTHEWS, 5, Upper Wellington St., Covent Garden London, W.C.

TO TUTORS, SURGEONS, THE HEADS OF SCHOOLS, &c.—The above can be supplied with Collections for practically Illustrating the Natural Orders, also Physiological and Medical Botany, by FREDK. Y. BROCAS, who has been eight years in the medical profession, and has attended the Lectures of Professors Lindley, Lankester, Henfrey, and Forbes, and the Botanic Gardens in the vicinity of the Metropolis. Collections named, arranged, and mounted, and desiderata supplied by FREDK. Y. BROCAS, Botanist, 85, St. Martin's Lane, London, W.C.

NEW AND ENLARGED EDITION OF
DR. LINDLEY'S THEORY OF HORTICULTURE.
Just Published, in 8vo, with 98 Woodcuts, price 21s. cloth.

THE THEORY AND PRACTICE OF HORTICULTURE; or, an Attempt to explain the chief Operations of Gardening upon Physiological Grounds: being the Second Edition of the "Theory of Horticulture," much enlarged. By JOHN LINDLEY, Ph.D., F.R.S., Corresponding Member of the Institute, Vice-Secretary of the Horticultural Society, Professor of Botany in University College, London, &c.

"The First Edition of this valuable work was issued in 1840, since which time it has had an extensive circulation, and has been translated into the German, Dutch, and even Russian languages. Being more particularly restricted to principles, however, the author at length resolved to render the work more generally interesting and useful by a more frequent reference to practical operations. He has thus greatly extended the matter, by supporting the physiological doctrines with an appeal to facts familiar to cultivators, or which ought to be; and the result is a still more interesting and popular compendium of the principles and practice, or the science and art, of horticulture."—*Builder*

"This is a Second Edition of the 'Theory of Horticulture,' with the addition of a large quantity of practical matter, introduced to show how entirely scientific principles and good cultivation correspond. The volume contains about four times as much matter as the first edition . . . Although very large additions are made to every chapter, while many passages in the first edition have been wholly struck out, it may be proper to say that the greatest changes are those which relate to vitality, climate, domestication, ventilation, propagation, pruning, resting, and soils and manures: such being the subjects in which practical men are most interested. The whole work has, indeed, assumed such a form as to make it evident that the great object of the author has been, not to produce a work suited to men of science, but one which every well-informed gardener may understand and apply. As the volume concludes with a very copious index of matter, there is no difficulty in ascertaining where any given subject is treated of."—*Gardeners' Chronicle.*

By the same Author,

INTRODUCTION TO BOTANY. 4th Edition, greatly enlarged; with 6 Plates, and numerous Wood Engravings. Two vols. 8vo, 24s.

⁂ It has been the Author's wish to bring every subject that he has introduced down, as nearly as possible, to the state in which it is found at the present day. In doing so, he has added so very considerable a quantity of new matter, especially in what relates to Vegetable Anatomy and Physiology, that the present Edition may be considered, in those respects, a new work.

London: LONGMAN, GREEN, LONGMAN, & ROBERTS,

IMPORTANT TO FARMERS.

Now ready, post 4to, bound in cloth, price 2s., free by post, 2s. 4d.

PEAT'S FARMER'S DIARY AND ACCOUNT BOOK, 1860; being a complete and easy method of keeping farm accounts. Dedicated by permission to the Right Hon. the EARL OF CARLISLE.

The publisher begs to call the attention of Agriculturists to this Diary and Account Book. It has been favourably received during the last 6 years by a great many eminent agriculturists in England, Ireland, and Scotland; and high encomiums have been passed upon it by all the leading journals (London and Provincial), advocating the cause of agriculture.

The publisher has pleasure in stating that it has received the high patronage of the Right Hon. the Earl of Carlisle, and will by permission be dedicated to him.

This Diary contains Space for Memoranda; Complete Almanack—Almanack with Breeder's Tables—Memoranda—Cash Account—Farmer's Account Book—Inventory, Cash, Stock, &c., beginning of year—Extent of Farm—Cropping or Produce Table—Outlay and Income during the Year—Inventory, Cash, Stock, &c., ending of year—Summary of Outlay and Income—a great many useful Tables, Stamps, Taxes, Licenses, &c.—Valuable recipes for Farmers—A complete List of Fairs in the United Kingdom, &c.

The publisher would recommend that an early application be made for this Diary, as a great many were disappointed in ordering copies for 1859, after the edition was sold off and too late to print a second edition.

"The great desiderata in farm account-books are simplicity and brevity, leaving nothing for the farmer to do but to enter under printed heads the transactions of each day, when the labour of the day is finished. In looking over the 'Diary' of Mr. Peat, we think he has met these requirements of the farmer in a very satisfactory manner, so that any farmer, by making himself familiar with the various headings, may settle the day's accounts of his farm in a very few minutes. We have no hesitation in recommending it to our readers."—*Mark Lane Express.*

Sold by SIMPKIN, MARSHALL, & Co., London; WHITTAKER & Co., London; M'GLASHAN & GILL, Dublin; JOHN MENZIES, Edinburgh; DAVID PEAT, Thirsk; all Booksellers, and at the Railway Stations.

This day is published, price 12s.,

A NEW VOLUME OF PICTURES OF LIFE AND CHARACTER. By JOHN LEECH.
FROM THE COLLECTION OF MR. PUNCH.

* * Volumes I. and II. are always on sale, price 12s. each.

London: BRADBURY & EVANS, 11, Bouverie Street, E.C.

WORKS ON BOTANY, BY DR. LINDLEY.

THE VEGETABLE KINGDOM: OR, THE STRUCTURE, CLASSIFICATION, AND USES OF PLANTS. Illustrated upon the Natural System. In One Volume, 8vo, cloth, price 36s., with upwards of 500 Illustrations.

THE ELEMENTS OF BOTANY, Structural and Physiological. With a Glossary of Technical Terms. In One Volume, 8vo, cloth, with numerous Illustrations, price 12s.

*** The Glossary may be had separately, price 5s. cloth.

MEDICAL AND ECONOMICAL BOTANY. With numerous Illustrations. A New Edition, in One Volume, 8vo, cloth, price 7s. 6d.

SCHOOL BOTANY; OR, THE RUDIMENTS OF BOTANICAL SCIENCE. In One Volume, 8vo, half-bound, with 400 Illustrations, price 5s. 6d.

DESCRIPTIVE BOTANY; OR, THE ART OF DESCRIBING PLANTS correctly, in Scientific Language, for Self-Instruction and the Use of Schools. Price 1s.

BRADBURY & EVANS, 11, Bouverie Street.

PRICE FOURPENCE OF ANY BOOKSELLER.

CONTENTS OF THE NUMBER FOR SATURDAY LAST, DECEMBER 10, OF

THE ATHENÆUM,

JOURNAL OF ENGLISH AND FOREIGN LITERATURE, SCIENCE, AND THE FINE ARTS.

Thirty-six large Quarto Pages.

Reviews OF, WITH EXTRACTS FROM—

Essays, Military and Political, written in India. By the late Sir H. M. Lawrence.
Travels in Morocco. By the late James Richardson. Edited by his Widow.
The Home and the Priest; an Italian Tale. By Girolamo Volpe.
Against Wind and Tide. By Holme Lee.
Political Poems and Songs relating to English History, composed during the period from the Accession of Edward III. to that of Richard III. Edited by T. Wright.
A History of the Political Relations of China with the Western Powers. By G. Panthier.
The Great Pyramid: Why was it Built? and who Built it? By J. Taylor.
Undercurrents: a Story of our own day. By V. J. St. John.
Narragansett; or, the Plantations: a Story of 177—.
Bartholomæi de Cotton Monachi Norwicensis Historia Anglicana. By B. Cotton. Edited by H. R. Luard.

WITH SHORTER NOTICES OF

Napoleon III. By Eugène de Mirecourt.
An Autumn in Silesia, Austria Proper, and the Ober Enns.
The Romantic Scottish Ballads and the Lady Wardlaw Heresy. By Norval Clyne.
Usury; its Definition. By G. Marin-Darbel.
Stella Maris and other Poems. By André Lemoyne.
Reprints.
List of New Books.

Original.—Marine Aquaria. By W. Alford Lloyd—Flint Implements in the Drift. By J. Prestwich.

Foreign Correspondence.—Florence.

Weekly Gossip.—Force and Direction of Storms—British Museum—Faraday's Juvenile Lectures—Mr. Christopher Dresser—Schiller's Festival at Weimar—Solar Spots—Obituary of John Fincham—Illustrated Gift Books—History of Hampshire—The new Instrument "Pseudodiascope"—Stereoscopes—Mediæval Costumes.—Curious Paper issued by the French Government—St. Cyriaci Church at Gernrode—Schiller Festival Poems and Prologues—The Jubilee of Leipzic University.

Science.—A Familiar History of British Fishes.

Societies.—Reports of the Proceedings of the Geographical—Astronomical—Geological—Asiatic—Society of Antiquaries—British Archæological Association—Meteorological—Chemical—Society of Arts—Institution of Civil Engineers—Royal Institution—Institute of Actuaries.

Fine Arts.—Fresco at Lincoln's Inn.

Fine Art Gossip.—The Great Reform of the Royal Academy—Pictures of Ruysdael—The Orleans Giulio Romano of "The Infancy of Jupiter"—The National Gallery of British School—Pictures by Winterhalter—Schenck's Edinburgh Lithographs.

Music and the Drama.—New Publications—New Songs—Princess's—Lyceum ('The Key under the Door Mat')—Surrey ('Othello,' &c.).

Musical and Dramatic Gossip.—M. Hallé's Concerts—Musical Manifestations—The Festival Choral Society—Monday Popular Concerts—Hullah's Wednesday Oratorios—'Un Curioso Accidente' at Paris—Mdlle. Vestvali's appearance in 'Herculanum'—M. Limnander's 'Yvonne'—Paris Operatics—Music in Russia—M. A. Dumas's 'Le Père Prodigue.'

Miscellanea.—Australian Facts and Fancies.

The **Athenæum** may be ordered of any Bookseller.

NEXT OF KIN WANTED, AND OTHERS who have been Advertised for; being exact Copies of Advertisements from the *Times, Gazette, Post, Advertiser, Chronicle,* also *Melbourne Argus, Sydney Herald, Canadian News, New York Herald, Indian Mail,* &c., for the last 60 years, covering many hundreds of Names and Descriptions of Persons of all classes Entitled to Property of several millions value. This invaluable new Book (just out) is worth its weight in gold. Hidden treasures are to be found in this extraordinary publication. It is sent post-free to every part of the United Kingdom for 12 penny post stamps by the publishers, FISHER & SON, Kingsland, London, N.E. Sent punctually per return of post.

WHAT WILL THIS COST TO PRINT? is a thought often occurring to literary minds, public characters, and persons of benevolent intentions. An immediate answer to the inquiry may be obtained on application to RICHARD BARRETT, 13, Mark Lane, London, E.C. R. B. is enabled to execute every description of Printing on very advantageous terms, his office being furnished with a large and choice assortment of Types, Steam Printing Machines, Hydraulic and other Presses, and every modern improvement in the Printing Art. A Specimen Book of Types, and information for Authors, sent on application, by

RICHARD BARRETT, 13, Mark Lane, London, E.C.

RATS AND MICE.—How to paralyse and render them immoveable on the spot, though there be hundreds, so that they may be gathered with a shovel and finally drowned. This is the plan adopted in Russia, communicated by a Russian prisoner. Sent to any address, post paid, for eight penny stamps, by FISHER & SON, Publishers, Kingsland, London. Effect warranted. Punctually sent the following day to any address in the Kingdom.

BOOKS SUITABLE FOR PRESENTATION.

1.

MORAL EMBLEMS FROM J. CATS AND R. FARLIE; Woodcut Illustrations by J. LEIGHTON, F.S.A.; Text by R. PIGOT. Morocco, 52*s.* 6*d.*; imperial 8vo, 31*s.* 6*d.*

2.

BUNYAN'S PILGRIM'S PROGRESS. Illustrated on Steel and Wood by C. BENNETT; Preface by Rev. CHARLES KINGSLEY. Morocco, 31*s.* 6*d.*; square crown 8vo, 21*s.*

3.

THOMSON'S SEASONS, with Woodcut Illustrations by Members of the Etching Club. Morocco, 36*s.*; square crown 8vo, 21*s.*

4.

GOLDSMITH'S POEMS, with Woodcut Illustrations by Members of the Etching Club. Morocco, 36*s.*; square crown 8vo, 21*s.*

5.

BOWDLER'S FAMILY SHAKSPEARE, with 36 Woodcut Illustrations, complete in One Volume. Morocco, 42*s.*; royal 8vo, 21*s.*

6.

WORDSWORTH'S WHITE DOE OF RYLSTONE. Woodcut Illustrations by BIRKET FOSTER and H. N. HUMPHREYS. Morocco, 26*s.*; square crown 8vo, 18*s.*

7.

AGNES STRICKLAND'S LIVES OF THE QUEENS OF ENGLAND. Embellished with Portraits of every Queen. Eight Vols., post 8vo, 60*s.*

8.

LORD MACAULAY'S HISTORY OF ENGLAND, FROM THE ACCESSION OF JAMES THE SECOND. New Edition. Calf, by Hayday, 73*s.* 6*d.*; Seven Vols., post 8vo, 42*s.*

9.

LORD MACAULAY'S CRITICAL AND HISTORICAL ESSAYS. People's Edition, complete in Seven Parts, price 1*s.* each. Two Vols., crown 8vo, 8*s.*

10.

THE REV. SYDNEY SMITH'S WORKS. People's Edition, complete in Seven Parts, price 1*s.* each. Two Vols. crown 8vo, 8*s.*

11.

LORD MACAULAY'S CRITICAL AND HISTORICAL ESSAYS. One-Volume Edition, with Portrait and Vignette. Calf, 30*s.*; square crown 8vo, 21*s.*

12.

LORD MACAULAY'S LAYS OF ANCIENT ROME. With Woodcut Illustrations from the Antique by G. SCHARF. Morocco, 42*s.*; fcap. 4to, 21*s.*

13.

LORD MACAULAY'S LAYS OF ANCIENT ROME WITH IVRY AND THE ARMADA. Morocco, 10*s.* 6*d.*; 16mo, 4*s.* 6*d.*

14.

LETITIA ELIZABETH LANDON'S (L. E. L.) POETICAL WORKS. With Two Vignettes by R. DOYLE. Morocco, 21*s.*; Two Vols. 16mo, 10*s.*

15.

THOMAS MOORE'S POETICAL WORKS, complete in One Volume. Library Edition. Portrait and Vignette. Morocco, 42*s.*; medium 8vo, 21*s.*

16.

THOMAS MOORE'S POETICAL WORKS, in One Volume. People's Edition, now complete, with Portrait. Square crown 8vo, 12*s.* 6*d.*, cloth, gilt edges.

17.

MOORE'S IRISH MELODIES, illustrated with 13 highly-finished Steel Plates, from Original Designs. Morocco, 31*s.* 6*d.*; square crown 8vo, 21*s.*

18.

MOORE'S IRISH MELODIES, illustrated with 161 Designs on Steel by DANIEL MACLISE, R.A. Morocco, 52*s.* 6*d.*; super-royal 8vo, 31*s.* 6*d.*

19.

MOORE'S IRISH MELODIES COMPLETE WITH THE MUSIC. People's Edition, bound in cloth, with gilt edges. Small 4to, 12*s.*

20.

MOORE'S LALLA ROOKH, illustrated with 13 Steel Plates from Designs by CORBOULD, MEADOWS, AND STEPHANOFF. Morocco, 28*s.*; square crown 8vo, 15*s.*

21.

POETRY AND PICTURES FROM THOMAS MOORE. Selections, copiously illustrated with Engravings on Wood. Morocco, 42*s.*; fcap. 4to, 21*s.*

22.

ROBERT SOUTHEY'S POETICAL WORKS, complete in One Volume. With Portrait and Vignette. Morocco, 42*s.*; medium 8vo, 21*s.*

23.

CALVERT'S WIFE'S MANUAL, ornamented, &c., by the Author in the style of "Queen Elizabeth's Prayer Book." Second Edition. Morocco, 22*s.*; crown 8vo, 10*s.* 6*d.*

24.

CONYBEARE AND HOWSON'S LIFE AND EPISTLES OF ST. PAUL. New Edition. Maps, Plates, Wood Engravings. Morocco, 63*s.*; Two Vols. square crown 8vo, 31*s.* 6*d.*

25.

KONIG'S LIFE OF LUTHER, in 48 Historical Plates. Explanations by ARCHDEACON HARE and SUSANNA WINKWORTH. Morocco, 45*s.*; fcap. 4to, 28*s.*

26.

MRS. JAMESON'S LEGENDS OF THE SAINTS AND MARTYRS, as represented in Christian Art. Etchings and Woodcuts. Two Vols. square crown 8vo, 31*s.* 6*d.*

27.

MRS. JAMESON'S LEGENDS OF THE MONASTIC ORDERS, as represented in Christian Art. Etchings and Woodcut Illustrations. Square crown 8vo, 28*s.*

28.

MRS. JAMESON'S LEGENDS OF THE MADONNA, as represented in Christian Art. Second Edition; 27 Etchings, 165 Woodcut Illustrations. Square crown 8vo, 28*s.*

29.

MAXIMS AND PRECEPTS OF THE SAVIOUR, illuminated, &c., in the style of the Missals of the Renaissance by H. N. HUMPHREYS. Calf, 21*s.*; square fcap. 8vo, 10*s.* 6*d.*

30.

PARABLES OF OUR LORD, illuminated, &c., in the style of the Missals of the Renaissance by H. N. HUMPHREYS. Morocco, 30*s.*; square fcap. 8vo, 21*s.*

31.

MIRACLES OF OUR SAVIOUR. Illuminated, &c., in the style of the Missals of the Renaissance by H. N. HUMPHREYS. Square fcap. 8vo, 21*s.*

32.

SENTIMENTS AND SIMILES OF SHAKSPEARE. illuminated, &c., in the style of the Books of the Middle Ages by H. N. HUMPHREYS. Square post 8vo, 21*s.*

33.

CRUIKSHANK'S LIFE OF SIR JOHN FALSTAFF. illustrated in a Series of 24 Original Etchings. Royal 8vo, 12*s.* 6*d.*

34.

SOUTHEY'S DOCTOR. Complete in One Volume; with Portrait, Vignette, Bust, and Coloured Plate. Square crown 8vo, 21*s.*

35.

WILLIAM HOWITT'S VISITS TO REMARKABLE PLACES, OLD HALLS, BATTLE FIELDS, &c. With Woodcut Illustrations. Two Vols. square crown 8vo, 25*s.*

36.

BLAINE'S ENCYCLOPÆDIA OF RURAL SPORTS, with above 600 Woodcut Illustrations, including 20 just added from Designs by JOHN LEECH. 8vo, half-bound, 42*s.*

37.

BRANDE'S DICTIONARY OF SCIENCE, LITERATURE, AND ART. Third Edition. Wood Engravings. Half-russia, 65*s.*; 8vo, 60*s.*

38.

MAUNDER'S SCIENTIFIC AND LITERARY TREASURY, or popular Encyclopædia. Calf, 12*s.* 6*d.*; fcap. 8vo, 10*s.*

39.

MAUNDER'S BIOGRAPHICAL TREASURY, extended in a SUPPLEMENT to the Present Time. Calf, 12*s.* 6*d.*; fcap. 8vo, 10*s.*

40.

MAUNDER'S TREASURY OF KNOWLEDGE AND LIBRARY OF REFERENCE. New Edition, entirely reconstructed. Calf, 12*s.* 6*d.*; fcap. 8vo, 10*s.*

41.

MAUNDER'S TREASURY OF GEOGRAPHY, Physical, Historical, Descriptive, and Political. Seven Maps, 16 Steel Plates. Calf, 12*s.* 6*d.*; fcap. 8vo, 10*s.*

42.

MAUNDER'S HISTORICAL TREASURY, revised throughout, with a new GENERAL INDEX. Calf, 12*s.* 6*d.*; fcap. 8vo, 10*s.*

43.

MAUNDER'S TREASURY OF NATURAL HISTORY, or Popular Dictionary of Animated Nature; with 900 Woodcuts. Calf, 12*s.* 6*d.*; fcap. 8vo, 10*s.*

44.

MR. A. J. SYMINGTON'S WORK ON THE BEAUTIFUL IN NATURE, ART, AND LIFE. Two Vols. crown 8vo, 21*s.*

45.

STORIES AND TALES by the Author of "AMY HERBERT." Collective Edition, uniformly printed, and each Story complete in One Volume. Nine Vols., crown 8vo, 30*s.*

AMY HERBERT, 2*s.* 6*d.*
GERTRUDE, 2*s.* 6*d.*
EARL'S DAUGHTER, 2*s.* 6*d.*
EXPERIENCE OF LIFE, 2*s.* 6*d.*
CLEVE HALL, 3*s.* 6*d.*
IVORS; or, THE TWO COUSINS, 3*s.* 6*d.*
KATHARINE ASHTON, 3*s.* 6*d.*
MARGARET PERCIVAL, 5*s.*
LANETON PARSONAGE, 4*s.* 6*d.*

LONDON: LONGMAN, GREEN, LONGMAN, AND ROBERTS.

JACOB CATS & ROBERT FARLIE'S MORAL EMBLEMS.

On Friday next, in One Volume, imperial 8vo, with a Frontispiece, 60 large circular Pictures, and 60 Tail-pieces, engraved on Wood and printed within Ornamental Frames, price 1*l.* 11*s.* 6*d.* in Grolier covers designed by the Artist; or 2*l.* 12*s.* 6*d.* bound in morocco by Hayday,

MORAL EMBLEMS, with Aphorisms, Adages, and Proverbs of all Ages and Nations, from JACOB CATS and ROBERT FARLIE. The Illustrations composed from Designs found in their works by JOHN LEIGHTON, F.S.A. The Text translated and edited with additions by RICHARD PIGOT.

London: LONGMAN, GREEN, LONGMAN, & ROBERTS.

Just published, price 13*s.* 6*d.*, the VOLUME of

THE FLORIST, FRUITIST, AND GARDEN MISCELLANY for 1859, containing 13 highly coloured plates by ANDREWS), of favourite florist and other flowers, and excellent practical articles on all subjects connected with Horticulture, Floriculture, and general Gardening. Conducted by CHARLES TURNER, F.H.S. and JOHN SPENCER, F.H.S. For Christmas presents or New Year's gifts nothing could be more suitable. On the 1st of January next will appear the first Number for 1860, price 1*s.*, containing a beautiful plate of three Pompone Chrysanthemums. Subscriptions for the year 12*s.*, by Post-Office Order payable to JOHN SPENCER on Charing Cross. Back Volumes can be had on application.—Florist Office, 28, Henrietta Street, Covent Garden, London, W.C., and all Booksellers.

THE GENERAL PRICE CURRENT OF THE PLYMOUTH SEED &c. COMPANY, LIMITED, is now ready, and may be obtained in return for seven Postage Stamps from the Publishers, Messrs. SIMPKIN, MARSHALL, & Co., London; or on application to the Company at their Offices, Union Road, Plymouth. Post-free to purchasers, as usual.

HOLCUS SACCHARATUS (Pamphlet).

"A VISIT AND A PLANT." A few copies only are left. Post free, 7*d.*

JOHN WILLDING CLARKE, Whittlesea, Cambs.

CUTHILL'S PAMPHLET on the Potato, Strawberry, Cucumber, Seakale, and 20 more things, 2*s.*; Market Gardening Round London, 1*s.* 6*d.*; on the Vine, 1*s.*; Thirty Years' Practice of Mushroom Growing: an Easy Plan for Killing Woodlice, 1*s.* 1*d.*; "Vegetable Meeting Paper" gratis.

JAMES CUTHILL, Camberwell, London, S.

GLENNY'S GARDENERS' GAZETTE.—A Monthly Journal, 16 pp. imperial 8vo, price 3*d.*, post free, 4*d.*, contains useful information for all interested in the Garden.

JAMES ALLEN, Warwick Lane, E. C.; KENNETT, York Street, Covent Garden, W.C.; and at all the railway stations and respectable booksellers.

Advertisements should be sent to the Printers, YATES & ALEXANDER, Horse-shoe Court, Ludgate Hill, E.C.

On the 1st of November was published, price 5*s.*,

THE ROSE ANNUAL FOR 1859-60. With four Coloured Plates of New Roses. By WILLIAM PAUL, F.H.S., author of "The Rose Garden," &c.

*** A few copies of THE ROSE ANNUAL FOR 1858-9 are still on hand, price 5*s.*

Works by the same Author,

THE ROSE GARDEN. Price 1*l.* 1*s.*, with 15 Coloured Plates and numerous Wood Engravings.

SUPPLEMENT TO THE ROSE GARDEN. With four additional Plates, 5*s.*

OBSERVATIONS ON THE CULTIVATION OF ROSES in POTS. Second Edition, price 1*s.* 6*d.*

MORNING RAMBLES IN THE ROSE GARDENS OF HERTFORDSHIRE. Price 1*s.*

AN HOUR WITH THE HOLLYHOCK. Second Edition, price 1*s.*

THE HAND-BOOK OF VILLA GARDENING Price 2*s.* 6*d.*

AMERICAN PLANTS, THEIR HISTORY AND CULTURE. Price 2*s.* 6*d.*

London: PIPER, STEPHENSON, & SPENCE, 23, Paternoster Row, E.C., or post free from the Author, Cheshunt Nurseries, Waltham Cross, Herts, N.

BOHN'S CLASSICAL LIBRARY FOR JANUARY.

MARTIAL'S EPIGRAMS, literally translated into English Prose, each accompanied by one or more Verse translations selected from the works of English Poets, and various other sources. Double volume (650 pages) post 8vo, cloth. 7*s.* 6*d.*

HENRY G. BOHN, York Street, Covent Garden, London, W.C.

BOHN'S SCIENTIFIC LIBRARY FOR JANUARY.

MORPHY'S GAMES OF CHESS, being the Matches and best Games played by the American Champion, with explanatory and analytical Notes, by J. LÖWENTHAL. Portrait and Memoir. Post 8vo (upwards of 500 pages), cloth, 5*s.*

*** This volume contains by far the largest collection of Games played by Mr. MORPHY extant in any form, and is the only publication which has received his endorsement and co-operation.

HENRY G. BOHN, York Street, Covent Garden, London, W.C.

MUSICAL CHRISTMAS PRESENTS.

BALFE'S ALBUM FOR 1860. Containing 14 new Songs, Duets, and Trio, superbly bound and illustrated, One Guinea.

THE JUVENILE PIANOFORTE ALBUM FOR 1860, 5*s.* Containing 12 new Operatic Airs and Dances, beautifully bound, and with illustrated title pages.

LAURENT'S ALBUM FOR 1860, 7*s.* 6*d.* Containing 12 new sets of Dance Music from Satanella, Dinorah, &c., coloured title pages and cover, gilt edges, &c.

CHRISTY'S MINSTRELS' NEW ALBUM FOR 1860. A most elegant book, gilt edges, containing 24 of the Christy's best Songs with choruses and accompaniments, large size, price 7*s.* 6*d.*

THE OPERATIC ALBUM, price One Guinea Containing 100 gems from the most popular modern Operas for Pianoforte, superbly bound and illustrated in colours.

MENDELSSOHN'S SONGS WITHOUT WORDS, complete with Preface by J. W. DAVISON and Portrait, 7*s.* 6*d.*, crimson cloth, gilt edges.

BOOSEY'S NATIONAL DANCE BOOK, price 2*s.* 6*d.* Containing 100 of the best Reels, Strathspeys, Country Dances, &c., for Pianoforte, in fancy cover.

Any of the above post free from BOOSEY & SONS, Holles Street, London, W.

Printed by WILLIAM BRADBURY, of 13, Upper Woburn Place, and FREDERICK MULLETT EVANS, of No. 20, Queen's Road, West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard St, Precinct of Whitefriars, City of London, and Published by them at the Office, No. 5, Upper Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—SATURDAY, December 17, 1859.

THE GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 52.—1859.] SATURDAY, DECEMBER 24. {Price Fivepence. Stamped Edition, 6d.

INDEX.

Agriculture, forces in	1042 c	Marl as top dressing	1042 a
Analysis, oil-cake	1043 a	Mistletoe	1039 a
Animal nutrition	1036 b	Oil-cake analysis	1043 a
Australian Cress	1038 a	Paris markets	1040 c
Banyan tree	1040 a	Pear, Clementine	1038 a
Botley Farmers' Club	1044 a	Plants, ennobling wild	1043 b
British Museum	1033 c	Ploughing, steam	1043 b
Cattle feeding	1042 c	Rabbits and trees	1038 b
Ceylon, Sir J. E. Tennent on	1039 b	Ratsbane, Fisher's	1038 c
Clover substitutes	1045 a	Reaping machines	1044 c
Cottages, Burn on	1044 b	Roots, weight of	1044 b
Cress, Australian	1038 a	Royal Society of Edinburgh	1039 a
Crop returns	1041 c	Society of Arts	1043 c
Crops, extraordinary	1044 c	Steam culture	1044 b
Daubeny (Dr.) lecture by	1036 b	Swede crop	1042 c
Flora, Manchester	1040 a	Tea, East India	1040 c
Grass seeds	1045 a	Top dressings	1042 a
Kohl Rabi	1043 b	Trade lists	1040 a
Labourers, condition of	1044 b	— memoranda	1036 b
Labour market	1042 a	— honesty in	1038 b
Larch rot	1036 a	Trees and rabbits	1038 b
Lindsay (Dr.) Neill medal to	1039 a	Vines, cider lees for	1038 c
Mangel	1042 c—1043 a	Weather in Essex	1038 c
— acreage of	1044 c	Weight of roots	1044 b

ERRATUM.—In Mr. Roberts's Advt. of Lilium giganteum, in serted Dec. 10, the height should be 10 *feet*, and not inches.

HORTICULTURAL SOCIETY OF LONDON.—The next Meeting of the FRUIT COMMITTEE will be held on TUESDAY, January 17, 1860, at 3 P.M., at the Society's Rooms, 8, ST. MARTIN'S PLACE, TRAFALGAR SQUARE, W.C; on which occasion Prizes are offered of ONE POUND for the best, and TEN SHILLINGS for the second best dish in each of the following classes:—

PEARS.

CLASS A. NE PLUS MEURIS.
CLASS B. JOSEPHINE DE MALINES.
CLASS C. ANY OTHER DESSERT VARIETY.

APPLES.

CLASS D. OLD NONPAREIL.
CLASS E. GOLDEN HARVEY.
CLASS F. ANY OTHER DESSERT VARIETY.
CLASS G. ANY VARIETY OF KITCHEN APPLES.

All Fruits exhibited must be fit for table, and accompanied by filled-up tabular forms exhibiting the circumstances under which the fruit was produced. Blank forms may be obtained for the purpose, on application to Mr. ROBERT THOMPSON, Horticultural Society's Garden, Chiswick, W. Blank forms, to be filled up and sent with Seedling or other fruits, may also be obtained on application to Mr. THOMPSON, as above.

All Fruits and Vegetables for exhibition before the committee should be addressed "To the SECRETARY TO THE FRUIT COMMITTEE OF THE HORTICULTURAL SOCIETY, 8, ST. MARTIN'S PLACE, TRAFALGAR SQUARE, LONDON, W.C.," and must be delivered before 1 P.M. on the day of meeting. The carriage of Packages of Fruit will be paid.

THE BRITISH POMOLOGICAL SOCIETY, HANOVER SQUARE ROOMS, REGENT STREET, LONDON, W.

The List of Meetings to be held in the year 1860, for the examination and consideration of New Seedlings and General Fruits in season, and the Schedule of Prizes offered for special subjects, amounting to upwards of ONE HUNDRED and TWENTY POUNDS, are now ready. They will be forwarded immediately to all Members of the Society, and may be obtained by Fruit Growers generally on application to

WILLIAM DAVIDSON, Secretary.
2, Randolph Road, Maida Hill, London, W.

VEGETABLE SEEDS.

J. CARTER AND CO. can supply PEAS, BEANS, CARROTS, RADISHES, &c., for present Sowing, NEW SEED OF 1859 HARVEST.—237 & 238, High Holborn, W.C.

DOUBLE ITALIAN TUBEROSES.

JAMES CARTER AND CO. have just received their first importation direct from Italy. Price per 1000 to the trade on application; retail, 3*s.* per dozen.
237 and 238, High Holborn, W.C.

BEST CUCUMBER FOR EARLY WORK.

CARTER'S CHAMPION, 1*s.* per packet; also BERKSHIRE CHAMPION, 1*s.* per packet; and LORD KENYON'S FAVOURITE, 6*d.* per packet.
JAMES CARTER & Co., 237 and 238, High Holborn, W.C.

RED LODGE NURSERY AND AMERICAN GROUNDS, SOUTHAMPTON.

W. H. ROGERS solicits attention to the large, fine, and varied Stock, growing on the above extensive Grounds.

RHODODENDRONS "of every hue," Scarlet, White, Rose, Crimson, and every intermediate shade, nearly all sizes and at all prices, can be supplied by CHARLES NOBLE, Bagshot, Surrey.

STANDARD RHODODENDRONS.—Hundreds of handsome specimens of all the choicest varieties, varying in colour from deepest crimson to rose and pure white, with symmetrical heads and straight stems, from 2 to 5 feet in height, can be supplied by
JOHN WATERER, American Nursery, Bagshot, Surrey.

CHOICE RHODODENDRONS, AZALEAS, AND CONIFEROUS PLANTS.—A CATALOGUE of GEORGE BAKER'S unrivalled Stock of the above may be had on application.—The American Nursery, Bagshot, Surrey.

SUPERB SPECIMEN SCARLET RHODODENDRONS and others, from 3 to 5 feet in height, and 3 to 4 feet in diameter, some of which are well furnished with bloom buds, from 3*s.* 6*d.* to 10*s.* 6*d.* each, large and very bushy, well adapted for immediate effect.
WILLIAM WOOD & SON, Woodlands Nursery, Maresfield, near Uckfield, Sussex.

TO THE TRADE.

3,500,000 RHODODENDRONS, 2, 3, and 4 year old Seedlings, to be Sold very cheap. Also an over stock of 4000 or 5000 Double Gorse or Whins. Price sent free on application to JAMES SMITH, Darley Dale Nurseries, near Matlock.

THE BEST SORTS OF GARDEN SEEDS FOR 1860.—SEE MESSRS. SUTTON'S ADVERTISEMENT ON THE LAST PAGE OF THE GARDENERS' CHRONICLE OF THIS DAY.

SUTTON'S NEW SEED CATALOGUE contains all the novelties in Garden Seeds worthy of recommendation. It will be ready in a few days, and will be forwarded post free to any address.—Royal Berkshire Seed Establishment, Reading.

BEAUTIFUL JAPAN LILIES. LILIUM LANCIFOLIUM ALBUM, large bulbs, 6*s.* p. doz. LILIUM LANCIFOLIUM RUBRUM or SPECIOSUM, large bulbs, 15*s.* per doz., 1*s.* 6*d.* each.

To be had of HOOPER & Co., Seedsmen, Covent Garden Market, London, W.C.

JAPAN LILIES, CHINESE PEONIES, GLADIOLI, HYACINTHS, &c.—Collection "L," sent carriage paid for 21*s.*—12 splendid named Hyacinths, 12 Border Hyacinths, 6 Polyanthus Narcissus, 25 Border Narcissus, 2 Japan Lilies, 2 Chinese Peonies, 6 Gladioli, 12 beautiful Iris, 50 Double Tulips, 25 Choice Single Tulips, 150 Crocus, 6 Double Jonquils, and 50 Ranunculus.
BUTLER & MCCULLOCH, Covent Garden Market, W.C.

NEW ROSE CATALOGUE.

WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

WM. WOOD AND SON will be happy to forward Copies of their NEW CATALOGUE gratis and post free on application.

ROSE CATALOGUE.

JOHN CRANSTON begs respectfully to inform his patrons that he will be happy to forward his New ROSE CATALOGUE for the present season, post free, upon application. It will be found replete with the most desirable flowers (new and old) in every class, and the descriptions are copious and faithful.—Nurseries, King's Acre, near Hereford.

STANDARD ROSES.—All the leading kinds in cultivation at prices scarcely ever offered before.
CHARLES NOBLE, Bagshot, Surrey.

TRADE CATALOGUE.

THOS. CRIPPS, Tunbridge Wells, Kent, respectfully informs the Trade that his WHOLESALE CATALOGUE OF AMERICAN PLANTS, ROSES, AND GENERAL NURSERY STOCK is now ready and may be had post free,

J. G. WAITE'S WHOLESALE CATALOGUE is now ready and can be had on application.
Seed Establishment, 181, Holborn, London, W.C.

FERN CATALOGUE.

ROBERT SIM'S NEW DESCRIPTIVE AND PRICED CATALOGUE, No. 6 (62 pages) of his COLLECTION of BRITISH AND EXOTIC FERNS, can be had, post free, for 8 stamps. Gratis to all previous purchasers of Ferns.
Nursery, Foot's Cray, Kent, S.E.

HYACINTHS AND OTHER BULBS.

WM. CUTBUSH AND SON can still supply Roots equal to the first they sent out this season, as all BULBS are especially selected for them before they are imported from Holland. Descriptive CATALOGUE post free on application.
Highgate Nurseries, London, N.

TO THE SEED TRADE.

JAMES FAIRHEAD AND SON, SEED GROWERS and MERCHANTS, Lewisham, Kent, S.E., and 7, Borough Market, London, S.E., beg to acquaint their friends and the trade generally, that their WHOLESALE CATALOGUES are now ready, and will be forwarded post free on application.

WHOLESALE CATALOGUE.

GEORGE JACKMAN AND SONS' PRICED and DESCRIPTIVE CATALOGUE for 1859, & SPRING 1860: comprising Fruit Trees of all the leading kinds; New and Selected Roses; fine varieties of American Plants; Choice and Rare Conifers; Evergreen and Deciduous Trees and Shrubs; and a fine stock of transplanted Forest Trees, &c., can be had free on application.—Woking Nursery, Surrey.

AZALEA INDICA.

J. IVERY AND SON'S New DESCRIPTIVE CATALOGUE of the above contains all the newest and best varieties. Will be forwarded post free upon application.
Dorking Nursery.—Dec. 24.

AZALEA INDICA.

F. AND A. SMITH beg to offer the above well set with flower buds, dwarf, bushy, and thoroughly ripened off. Having been grown in this country they are most suitable for packing, and are strongly recommended to country Amateurs and the Trade in general. An inspection invited. Prices on application.—Dulwich, Surrey, S.

ERICAS.

F. AND A. SMITH'S Stocks of the above are this season unusually fine, comprising most of the leading winter and spring-flowering varieties. Prices on application.
Dulwich, Surrey, S.

TO THE TRADE.—SPERGULA PILIFERA SEED, the IMPROVED CUSTARD MARROW. Prices of the above, also for other seeds offered to the Trade, may be had on application.
STEPHEN BROWN, Seed Grower, Sudbury, Suffolk.

LAWNS WITHOUT MOWING—SPERGULA PILIFERA.

J. A. SUMMERS supplies the above in plants enough to cover the ground next summer at 1*s.* per square yard, or at 1*s.*, 2*s.*, and 4*s.* per doz. plants. A specimen post free, 1*s.*
Howard Park Nursery, Perry Hill, Sydenham, S.E.

PAMPAS GRASS.—The present is the most favourable time for planting out this charming Plant. No one can imagine the grand effect of a mass of its silvery plumes unless they see it, nor is its value confined to the ornamental, but is likely to become useful as Cover for Game. It grows in any soil or situation, attaining the height of from 6 to 10 feet.—Any quantity can be supplied by C. NOBLE, Bagshot, Surrey.

GEORGE GIBBS AND CO. SEEDSMEN,
26, DOWN STREET, PICCADILLY,
LONDON, W.

GOOD SEEDS. CARRIAGE FREE.

SUTTON AND SONS, SEED GROWERS AND MERCHANTS,
ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY LIMITED supply every requisite for the Farm and the Garden.
Registered Offices: Union Road, Plymouth.

NEW SEEDS FOR 1860.

THE PLYMOUTH SEED, &c., COMPANY LIMITED have warehoused their full supplies of GARDEN and FARM SEEDS to their entire satisfaction, and they trust that all orders their correspondents may favour them with will be sent as early as possible, so that delays and other inconveniences which necessarily arise during a busy seed season may by this means in a great measure be avoided.
Offices: Union Road, Plymouth.

PLANTING.

A. PAUL AND SON invite attention to their large and superior Stock of CONIFERÆ and other ornamental TREES and SHRUBS, FRUIT TREES, &c. For further particulars see advertisement in *Gardeners' Chronicle* of last week.—Nurseries, Cheshunt, Herts.

A. VERSCHAFFELT, NURSERYMAN, Ghent, Belgium, begs to offer:—

	£	s.	d.
NEW PEAR GENERAL TOTLEBEN	0	8	0
RHODODENDRON BYLSIANUM, strong plants, quite hardy	0	8	0
ROSE HYBRIDE REMONTANT IMPERATRICE EUGENIE, new fine white	0	3	6
LILIUM GIGANTEUM, flowering bulbs for 1860	2	0	0

STANDARD CHERRIES.

WOOD AND INGRAM beg to inform the Trade and others who may be planting CHERRIES largely, that they have this year a very large stock of fine healthy trees, prices of which they will forward on application. A very fine lot of DWARF and TRAINED TREES also may be had.
Nurseries, Huntingdon.

DWARF MAIDEN FRUIT TREES.

HUGH LOW AND CO. have to offer of fine quality, PEACHES, NECTARINES, APRICOTS, PLUMS, CHERRIES, APPLES, PEARS, both on Pear and Quince Stocks. Prices will be furnished on application.
The Autumn Wholesale CATALOGUE is now ready for distribution.—Clapton Nursery, London, N.E.

GREAT SCARCITY OF FRUIT.

STRONG ROOTS OF THE LINNÆUS RHUBARB, from division, can be supplied in any quantity at 12*s.* per 100, or 5*l.* per 1000, by WALTER PENNINGTON, Nurseryman, South Retford, Nottinghamshire.

PEACHES AND NECTARINES.

J. AND J. FRASER have a fine stock of 1-year cut trees of the above; they were transplanted last year, and are now suitable either for planting out to train, or to pot for Orchard-house culture. A list of the sorts and price may be had on application.—Lea Bridge Road Nurseries, N.E.

COMMON LAURELS.

J. AND J. FRASER, NURSERYMEN, &c., Lea Bridge Road, N.E., beg to offer a large quantity of COMMON LAURELS, fine bushy plants, from 2 to 5 feet in height. Prices of the various sizes may be had on application.

THREE MILLIONS OF TRANSPLANTED QUICKS.

GEORGE CHIVAS, Chester, offers the above, which are admitted to be unequalled in point of quality in Great Britain. A sample bale, containing 100 each of five sizes, forwarded on receipt of 15*s.*, and orders for 10,000 delivered free at any railway station.—Chester, December 24.

ENGLISH CHESNUTS.

TO BE SOLD, a quantity of ENGLISH CHESNUTS for Seed, grown on the Cobham Hall estate, in the County of Kent. Price 5*s.* per bushel.—Apply to Mr. GEORGE FRANKS, Thory, near Gravesend, Kent.

HARDY HEATHS.—A Collection of 20 sorts, by name, of the above favourite autumnal flowers, in good plants, at 30*s.* per 100, or 12*l.* 10*s.* per 1000.
JOHN WATERER, The American Nursery, Bagshot, Surrey.

HARDY CALIFORNIAN CONIFERS, PICEA (ABIES) AMABILIS, PICEA (ABIES) GRANDIS.—Healthy seedling Plants of the above named most beautiful hardy Trees can be supplied by the undersigned by the dozen, hundred, or thousand, as also many other choice Conifers. PRICED CATALOGUES of which will be sent on application.
HUGH LOW & Co., Clapton Nursery, London, N.E.

RASPBERRY CANES.—About 20,000 of fine young CANES for SALE.—Apply to Mr. STRICKLAND, Lessness Heath, Erith, Kent, S.E.

SOLANUM CAPSICASTRUM.—Strong plants of this highly ornamental fruit-bearing Hardy Greenhouse Shrub (see *Gardeners' Chronicle* of Saturday last), 1*s.* 6*d.* each, and 15*s* per dozen.
YOUELL & Co., Royal Nursery, Great Yarmouth.

CEDRUS DEODARA.

WM. MAULE AND SONS still hold the largest Stock of the above Tree in this country, and invite the attention of gentlemen planting, and the Trade generally. Magnificent specimens, 5, 6, and 7 feet, at 5*s.*, 6*s.*, and 7*s.* each.
Stapleton Road and Stoke Nurseries, Bristol.

WELLINGTONIA GIGANTEA.

JOHN WATERER has thousands of the above Plants to offer, varying in height from 1 to 4 feet. The whole are exceedingly handsome and well rooted. Price on application.—The American Nursery, Bagshot, Surrey.

NEW PINES AND OTHER PLANTS.

A. VAN GEERT, NURSERYMAN, Ghent, Belgium, begs to offer the following:—

A set of 100 new Mexican Pines, for	..	..	£6 0 0
A collection of 100 best Camellias, 9 inches to 1 foot high			4 0 0
Indian Azaleas, with flower buds, choice varieties,	per 100.		
	s. d.		
Alstrœmeria chilensis	per 100	0 10	6
Asclepias tuberosa, flowering roots ..	,,	0 15	0
Lilium superbum	per doz.	0 12	0
,, lancifolium rubrum	per 100	4 0	0
,, ,, album	,,	3 0	0

TO THE SEED TRADE, MARKET GARDENERS, &c.

Per bushel.—*s.*		Per cwt.—*s.*	
British Queen Peas	14	Long Red Mangel Wurzel	32
Champion of England Peas	11	Yellow Globe ,,	36
Wickson's Ear. Favourite Pea	12	Long Orange Carrot	48
Ne Plus Ultra Peas	18	Early Horn ,,	50
Hair's Mammoth Pea	20	White Belgian ,,	48

Selected dark-crimson Beet, 1*s.* per lb.

The above Seeds are saved from the best stocks, and excellent samples unadulterated. Terms cash.

GEORGE SANDERS, 71, Bank Street, Maidstone.

DICKSON'S MANCHESTER CHAMPION RED SOLID CELERY (NEW).—Quite dwarf and distinct, rarely exceeding 20 inches in height, of superior colour and delicious Walnut flavour. Very solid and crisp, requires much less earthing up than most other sorts, and keeps well up to the end of April; has been seen by many practical Gardeners, and pronounced to be the best Red Celery grown. Prices to the Trade on application.—JAMES DICKSON, SONS, & Co., Nurserymen and Seedsmen, 23, Market Place, Manchester.

NEW CUCUMBER, DICKSON'S NEWTON HERO.—An excellent variety for winter forcing, raised by ourselves at Newton Nurseries, grows from 18 to 24 inches in length, of very fine flavour, short neck, very compact, and a heavy cropper; carries its bloom well throughout its entire length, and allowed by many of our first-class judges to be the best early Cucumber ever sent out.

GILLESPIE'S NEW HYBRID WHITE SPINE CUCUMBER.—J. D., S., & Co., having bought the entire Stock of this Valuable Hybrid Cucumber from the raiser, and having proved it to be one of the best Forcing Cucumbers grown, can with entire confidence recommend it. Is a very free bearer, of fine flavour and shape, growing from 21 to 26 inches, carries its bloom well with a good colour. Will give full satisfaction to every grower; see remarks by Prof. Lindley in *Gardeners' Chronicle* of August 8, 1857.

JAMES DICKSON, SONS, & Co., Nurserymen and Seedsmen, 23, Market Place, Manchester.

NEW STRAWBERRY, WIZARD OF THE NORTH.

DANIEL ROBERTSON, LINSIDE NURSERY, Paisley, continues to supply the above named superb variety at 63*s.* per 100, or 9*s.* per dozen, the usual discount to the trade. Having a large stock of the Wizard, Nurserymen and Market Gardeners ordering in quantity will be dealt with on favourable terms. As much imposition is being practised in the name of the Wizard, purchasers are warned that they ought to see the drawing of it in the hands of any one from whom they buy plants, as all parties selling the genuine variety will be furnished with a drawing. For description, &c., see former advertisements.

D. R. cannot supply any more plants of Nonsuch this season.
DANIEL ROBERTSON, Linside Nursery, Paisley, N.B.—Dec. 24.

JOHN GRIGOR AND CO., Nurseries, Forres, Scotland, have for sale several millions strong one-year-Seedling LARCHES, one and two year Seedling true native Highland Scotch PINE, DEODARS, &c. J. G. & Co. have received the numerous premiums awarded by the Highland and Agricultural Society of Scotland for the cultivation of the true native Highland Scotch Fir, and their present stock is raised from seed collected in the celebrated native forests of Strathspey.

PRICED LISTS on application; and the Trade supplied at the wholesale rates.

THE PLYMOUTH SEED, &c., COMPANY, LIMITED, are relinquishing the NURSERY DEPARTMENT of their business, and offer the following at greatly reduced prices:—

Per dozen.—*s. d.*		Per 100.—*s. d.*	
300 Raspberries, White	1 9	2000 Strawberries, Mount Vesuvius	
500 ,, Fastolf ..	1 9	1000 Nicholson's Ajax	
550 ,, Victoria ..	2 0	2000 ,, Ruby	
500 ,, Beehive ..	3 0	2000 ,, Captain Cook	
500 ,, double bearing	2 0	2000 ,, Fill Basket	
186 Rhubarb, Hawke's Champagne ..	12 0	2000 Trollope's Victoria	
120 ditto Royal Albert	8 0	2000 Kitley's Goliah	
300 ,, Victoria ..	8 0	1000 Cuthill's Black Prince	
20,000 Strawberries, of sorts, as follows, per 100	3 0	1000 Myatt's Mammoth	
		2000 Victoria	
700 Kitley's Carolina superba		446 Vines, of sorts, per doz.	36 0
1,000 Underhill's Sir Harry		18 Walnuts, 5 feet	40 0
500 Ingram's Prince of Wales		100 ,, 6 feet	40 0
500 Ward's Omar Pacha		3500 Seakale, large crowns	7 0
600 Admiral Dundas		500 ,, extra ditto	9 0
		5000 Asparagus, 2 years	2 3
		10,000 ,, 3 years	3 0

Prices to the Trade on application.
OFFICES: UNION ROAD, PLYMOUTH.

MESSRS. WATERER AND GODFREY respectfully refer planters to the following LIST of well-known good hardy Plants:—

ARAUCARIA IMBRICATA, 1 foot, stout, healthy, 5*l.* per 100; larger, up to 8 feet.
CEDRUS DEODARA, 2½ to 3 feet, very handsome, 10*l.* per 100; larger, in any quantity, up to 10 and 15 feet.
PICEA NOBILIS, Seedlings, in quantity, 1 foot, stout.
Ditto larger and in every way perfect plants, up to 4 feet.
NORDMANNIANA, from seed, 2, 3, 4, and 6 feet.
PINSAPO, 2½ to 3½ feet, and as much through.
Ditto magnificent plants, 8 and 10 feet high.
CUPRESSUS LAWSONIANA, fine bushy seedling plants, 2½ feet high.
JUNIPERUS, CHINESE, 3 feet up to 8 and 10 feet.
,, IRISH, 5, 6, and 7 feet.
YEWS, IRISH, 5, 6, 7, and 8 feet
,, GOLDEN, from 2 to 7 and 8 feet.
,, COMMON ENGLISH, in large quantities, 4 to 6, 7, and 8 feet.
THUJA AUREA.—Several hundred magnificent specimens, 3, 4, and 5 feet high, and measuring 10 to 15 feet in circumference.
THUJOPSIS CÆREOLIS, 2½ to 3 feet.
WELLINGTONIA GIGANTEA, all from seed, 1½ to 3 feet, and as wide.
HOLLY, GREEN, in quantities, 5, 6, and 8 ft.; VARIEGATED, especially the best gold striped, of all sizes, up to 6 feet.

All the plants referred to in this advertisement were removed in April last, and they are in a condition to travel any distance with perfect safety.—Knap Hill Nursery, near Woking, Surrey.

DUTCH AND OTHER BULBS.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their CATALOGUE of the above is now ready, and will be forwarded post free on application. Early orders are solicited, as their successful cultivation depends in a great measure on early planting.
Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

RHODODENDRONS.

JOHN WATERER'S CATALOGUE OF HARDY, SCARLET, and other choice RHODODENDRONS, as annually exhibited at the Royal Botanic Gardens, Regent's Park, is now published and will be forwarded on application. Faithful descriptions of all the esteemed varieties will be found detailed, with a list of the popular kinds of AZALEAS and other AMERICAN PLANTS, as well as a selection of CONIFEROUS TREES, with height and prices.
The American Nursery, Bagshot, Surrey, near Sunningdale Station, South-Western Railway.

HARDY RHODODENDRONS.

MESSRS. WATERER AND GODFREY invite attention to their Seedling RHODODENDRONS, which they are selling without names, and which they strongly recommend as being very superior in point of HABIT, FOLIAGE, COLOUR, and GENERAL HARDINESS. They are from 1½ to 2½ feet high, and as much through, and no plants can possibly be in finer health. They will be sold at very liberal prices, and purchasers can select from a stock of many thousands.
Knap Hill Nursery, near Woking, Surrey.

AMERICAN PLANTS, &c.

MESSRS. WATERER AND GODFREY'S CATALOGUE for the present season is now ready, and may be had on application. It describes fully all Rhododendrons worth growing, and contains a List of Azaleas, Hardy Heaths, and other American Plants, as well as a summary of the general stock of the most extensive Nurseries in England.
The Catalogue may also be had at Messrs. MAY'S & Co., 1, Wellington Street, Strand, W.C.
Knap Hill Nursery, near Woking, Surrey.

GERANIUMS, HERBACEOUS PLANTS, ETC.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their new PRICED and DESCRIPTIVE CATALOGUE of the above, to which are added Supplemental Lists of Stove, Greenhouse, and Hardy Plants, Fruit Trees, &c. (which include all the best new plants of the season), is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

SUPERB BALSAMS.

F. AND A. SMITH are sending out seeds of their well-known superior BALSAMS, in collections of nine distinct colours, six seeds of each, 2*s.* 6*d.*; the same mixed, 2*s.*; half the quantity, mixed, 1*s.*

The above are selected from a stock of 24,000 plants, for purity and brightness of colour, size and doubleness of the blooms, and general good habit of the plant. A liberal allowance to the Trade when 12 Packets are taken.—Dulwich, Surrey, S.

BUSBY'S STOCKWOOD GOLDEN HAMBURGH GRAPE.

THE very beautiful specimens of this really SPLENDID GRAPE (some of the bunches weighing upwards of 3 lbs.) which have been exhibited during the past season, combined with the numerous unsolicited testimonials as to its superiority and general excellence which JAMES VEITCH, JUN., has received from the most eminent practical Gardeners, warrant him in again calling attention to its great merit.

J. V., JUN., can with confidence recommend it as being without doubt *the best light Grape of its class* in cultivation. It will be found a most valuable acquisition, succeeding well under the same treatment as the Black Hamburgh, and *certainly no vinery should be without it.* It has also proved to be a most excellent variety for fruiting in pots. That so fine a fruit may be universally planted and enjoyed, J. V., JUN., now offers good established plants at the following prices:—

Nice young Canes ... ... **5s. 0d. each** | **Good well ripened Canes** ... **7s. 6d. each**
Fine well-ripened Canes ... ... **10s. 6d. each**

ROYAL EXOTIC NURSERY, CHELSEA, S.W.—December 24.

LEE'S NEW WHITE SPROUTING BROCCOLI.

MESSRS. JOHN & CHARLES LEE

FEEL highly honoured in being the means of introducing this most important Vegetable production to the notice of the Public. The real value of this prolific Broccoli will not be ascertained till it is in the hands of every Cottager in the Kingdom; and they only regret that their present very limited stock will not enable them at once to spread it more widely.

The engraving, taken from a Photograph, which accompanied Dr. Lindley's remarks in the *Gardeners' Chronicle* of Dec. 10, and was inserted in our advertisement of December 17, shows the enormous crop of good White Broccoli to be expected from it under good cultivation. The centre head is large and fine, and the subordinate heads, all of good size, number from 30 to 50. It has remained true to its branching character for four years; it is perfectly hardy, and is in season through JANUARY, FEBRUARY, AND MARCH, a period at which it is so desirable to obtain good White Broccoli.

Sealed packets, price 2*s.* 6*d.* post free, are now ready. To be had of all the principal Seedsmen.

Nursery and Seed Establishment, Hammersmith, London, W.

BUTLER & McCULLOCH,

COVENT GARDEN MARKET, W.C.

A DESCRIPTIVE AND PRICED CATALOGUE OF

HYACINTHS, GLADIOLI, RANUNCULUS, ANEMONES, IXIAS, AMARYLLIS, CROCUS, and other DUTCH and CAPE BULBS, with practical Cultural directions affixed to each Class for the use of Amateurs, sent free and post paid (for contents of CATALOGUE see *Gardeners' Chronicle*, October 1, page 786).

☞ *All orders amounting to* 21*s. and upwards sent Carriage paid.*

For conspicuous beds the following HYACINTHS and TULIPS cannot be surpassed; they occupy a most important position in the economy of the Flower Garden, coming into bloom immediately after the Crocus, &c., and ready for removal at the time of planting out Geraniums and other Summer and Autumn Flowering Plants.

BEST DOUBLE and SINGLE MIXED HYACINTHS	21*s.* 0*d.*	per 100,	3*s.* 0*d.*	per dozen.
TOURNESOL and REX RUBRORUM DOUBLE TULIPS	7 6	,,	1 0	,,
YELLOW ROSE, pure yellow and scented Do.	7 6	,,	1 0	,,
LA CANDEUR, pure white Do.	14 0	,,	2 0	,,
FINE MIXED DOUBLE do.	7 6	,,	1 0	,,
FINE MIXED SINGLE do.	6 0	,,	1 0	,,
CHOICE MIXED LATE FLOWERING do.	7 6	,,	1 0	,,
FINEST MIXED CROCUS	14*s.* per 1000,		1*s.* 6*d.*	per 100.

FOR CENTRES OF LARGE BEDS AND BORDERS

The following favourites are perfectly hardy, and cannot be too extensively cultivated:—

LILIUM LANCIFOLIUM ALBUM .. .. 15*s.* 0*d.* per doz. .. 1*s.* 6*d.* each.
LILIUM LANCIFOLIUM ROSEUM 20*s.* per doz. 2*s.* 0*d.* each. | LILIUM LANCIFOLIUM RUBRUM 20*s.* per doz. 2*s.* 0*d.* each.
GLADIOLI HYBRID of GANDAVENSIS, 30 splendid varieties named, for 21*s.* 6*d.*, or 12 for 8*s.* 6*d.*

,, ,, BLANDUS,	6 new	,,	4 0	best for forcing.
,, ,, SAGITTALIS	6 ,,	,,	4 6	
GLADIOLUS BRENCHLEYENSIS	30*s.* 0*d.*	per 100	5*s.* 0*d.*	per dozen.
,, GANDAVENSIS	15 6	,,	2 6	,,
,, QUEEN VICTORIA	15 6	,,	2 6	,,
,, RAMOSUS	15 6	,,	2 6	,,
,, FLORIBUNDUS	15 6	,,	2 6	,,
Splendid mixed Seedlings of GANDAVENSIS	30 0	,,	4 6	,,

THE FOLLOWING COLLECTIONS OF CHOICE BULBS SENT CARRIAGE PAID

No. 1, C, £1 1s.
12 Choice named Hyacinths
2 beautiful Japan Lilies, 2 varieties
12 beautiful Gladioli, 4 vars.
4 Polyanthus Narcissus
50 Ranunculus
40 Border Narcissus
300 Crocus
40 Double Tulips
12 beautiful Iris
2 Chinese Pæonies

No. 2, D. £2 2s.
18 Choice named Hyacinths
3 beautiful Japan Lilies, 3 varieties
18 beautiful Gladioli, 6 vars.
6 Polyanthus Narcissus
100 Ranunculus
40 Anemones mixed
20 ,, scarlet
400 Crocus
50 Double Tulips
4 Chinese Pæonies
12 beautiful Ixias
6 beautiful Sparaxis
1 Tritoma Uvaria
6 Babianas
2 Tritoma aurea

No. 3, E, £3 3s.
24 Choice named Hyacinths
4 beautiful Japan Lilies, 4 varieties
24 beautiful Gladioli, 12 vars.
9 Polyauthus Narcissus
100 Ranunculus
50 Anemones mixed
30 ,, scarlet
500 Crocus
60 Double Tulips
6 Chinese Pæonies
18 beautiful Ixias
12 beautiful Sparaxis
2 Tritoma Uvaria
1 Lilium giganteum
12 Babianas
3 Tritoma aurea

AGENTS FOR TYE'S REGISTERED HYACINTH GLASSES.

These are without exception the most elegant and best adapted for the successful Culture of the Hyacinth. See Woodcut Group of Glasses, page 803 of *Gardeners' Chronicle*, October 8.

PINE APPLES, GRAPES, &c.

PINE PLANTS, Fruiting and Succession.
GRAPE VINES, from Eyes, for Fruiting in Pots or Planting.

JOHN WEEKS AND CO. can now supply any quantity of very fine strong healthy Pine Plants, either Fruiting or Succession; also remarkably fine strong Grape Vines from Eyes, all the best sorts.

JOHN WEEKS & Co.'s Horticultural Show Establishment is now entirely devoted to the Growing and Forcing of Fruits in great variety, thereby showing the most improved plans of construction, and the most superior system of Hot water Apparatus.

JOHN WEEKS & Co., Horticultural Builders and Hot-water Apparatus Manufacturers, King's Road, Chelsea, London, S.W.

THE GREAT VINE AT HAMPTON COURT.—The Subscribers being the holders of the Royal Kitchen Gardens, Hampton Court, are enabled to offer genuine the famous and truly excellent HAMPTON COURT BLACK HAMBURGH GRAPE. | each

Strong well-ripened Fruiting Plants, in 12-inch pots, 10s. 6d.
Good well-ripened Plants, in 9-inch pots, 5s. each.
A liberal reduction in price if taken in large numbers.
THOMAS JACKSON & SON, Nurseries, Kingston, S.W.

NEW APPLE.—NELSON'S GLORY.

WM. WOOD AND SON have the honour to announce that they have been appointed Agents for the Sale of the above very excellent new Apple, the property of Mr. J. NELSON, of Bristol.

NELSON'S GLORY APPLE is one of immense size, weighing from 20 to 22 oz., and especially adapted to culinary purposes; indeed for making Jelly, Jam, and Sauces it is truly invaluable, and is ready for use from August to December. Plants have been ordered by all those parties who had the opportunity of seeing the magnificent fruit at Bristol.

DWARF MAIDEN PLANTS are now ready for sending out at 5s. each, with the usual discount allowed to the trade.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

DWARF MAIDEN FRUIT TREES.—
APPLES.

PEARS.	CHERRIES.	PEACHES.
PLUMS.	APRICOTS.	NECTARINES.

Prices moderate.
Fine and clean grown; and all the leading sorts can be supplied in quantities by GEORGE JACKMAN & SON, Woking Nursery, Surrey.

DWARF TRAINED FRUIT TREES.—
APPLES.

PEARS.	CHERRIES.	PEACHES.
PLUMS.	APRICOTS.	NECTARINES.

Prices moderate.
Great care is taken in the formation of these fine, healthy, free-grown trees. Particulars can be obtained of GEORGE JACKMAN & SON, Woking Nursery, Surrey.

FOREST TREES.

JOHN WATERER has to offer upwards of a Hundred Thousand of each of the following, from 2 to 4½ feet high, and all good rooted:—

CHESNUT	LARCH	BIRCH
HAZEL	ASH	ALDER
SCOTCH	LAURELS	WITHY, &c.

Samples with prices sent on application. Planting done by contract.—The American Nursery, Bagshot, Surrey.

CHRISTMAS SHOW OF FRUIT & VEGETABLES.

TAYLOR'S GRAND STAND,
ST. JOHN'S MARKET,
LIVERPOOL.

Growers, Fruiterers, and others having goods to dispose of that are very choice, either in PINES, GRAPES, PEARS, CUCUMBERS, NEW POTATOES, MUSHROOMS, ASPARAGUS, SEAKALE, RHUBARB, or CHOICE FLOWERS, will please forward the same to GEORGE TAYLOR, Choice Fruit and Vegetable Salesman, St. John's Market, Liverpool.

SHOW OF CHOICE FRUIT AND VEGETABLES.

TAYLOR'S GRAND STAND,
ST. JOHN'S MARKET,
LIVERPOOL.

Growers and others having choice FRUITS, VEGETABLES, or FLOWERS to dispose of will please forward them immediately to GEORGE TAYLOR, Choice Fruit and Vegetable Salesman, St. John's Market, Liverpool.

LEE'S WHITE SPROUTING BROCCOLI, VEITCH'S PERFECTION PEAS,

AND ALL OTHER REALLY GOOD NEW KINDS OF SEEDS ARE SUPPLIED BY

MESSRS. SUTTON AND SONS direct from the parties introducing them, in the original papers and at the growers' prices.
Messrs. SUTTON'S NEW SEED LIST will be ready shortly.
Royal Berkshire Seed Establishment, Reading.

NEW PEAS.

BUCKLEY'S GENERAL WYNDHAM | THORNE'S ROYAL BRITAIN.

HURST AND M'MULLEN having grown a considerable quantity of the above fine tall late varieties of PEAS this season, beg to offer them to the Trade only. They have been proved to be superior to any of their class, both in flavour and size for the last two years, and they can confidently recommend them.
Also "Dillistone's First Early Pea," quite seven days earlier than any other variety, and a great bearer. Prices on application.—Address, 6, Leadenhall Street, London, E.C.

NEW HARDY PROLIFIC CUCUMBER, MASTERS'S VIRIDISSIMA.

MESSRS. MASTERS AND SON have pleasure in introducing a new variety of CUCUMBER, which is the hardiest, the most productive, and the greenest of all known varieties. It is the best ridge Cucumber extant, and is also quite adapted for Frame culture; length, 12 to 18 inches; well set with black spines. Packets of seeds, 1s and 2s. 6d. each, containing 12 and 36 seeds respectively.
Exotic Nursery, Canterbury; and Fant Nursery, Maidstone.

G. S. DODS (late gardener at Cooper's Hill) respectfully acquaints the nobility, gentry, and inhabitants of Epsom and the surrounding neighbourhood, that he has taken the under-mentioned old-established NURSERY, conducted so many years by the Messrs. Young, and trusts by assiduity in the execution of all orders, with a careful regard to the quality of every article supplied, to merit a continuance of that patronage so liberally bestowed on his predecessors.
Epsom Nursery, Epsom, Surrey.

DUTCH CROCUS, a great quantity in fine condition, 1s. 6d. per 100, or 14s. per 1000; English mixed do., 1s. per 100, or 8s. per 1000; mixed HYACINTHS, 3s. to 4s. per doz., or 1l. per 100; do. finest quality to name, 6s. per doz.; STANDARD ROSES, the choicest named sorts, 15s. per doz., or 5l. per 100. ARCHANGEL MATS, a large quantity on hand, 10s. per bundle, or 95s. per 100; small do., 4s. per bundle, or 35s. per 100. ASHLEAF KIDNEY POTATOES, 6s. per bushel. Mixed SWEET PEAS, 2s. per quart; 2l. per bushel; 7l. per sack.—R. GREEN, 154, Kingsland Road, N.E., 55 doors from Shoreditch Church.

THE LARGEST AND FINEST STOCK OF TEA-SCENTED ROSES IN ENGLAND.

50,000 PLANTS IN POTS AND IN THE OPEN GROUND.

WM. WOOD AND SON invite attention to their very extensive and superior stock of the above, which they feel certain are unsurpassed in the Trade.

Dwarfs, from 48-pots .. .. .. per dozen 9s. to 12s.
" in 6-inch or 24 pots .. .. " 24 to 30
Standards, very fine .. .. .. " 18 to 24
Specimen Plants, in 8-inch pots, for exhibition, each, 3s. 6d. to 5s.
DESCRIPTIVE CATALOGUES on application.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

HEDENHAM ROSARY, BUNGAY, SUFFOLK.

IN CONSEQUENCE OF A DISSOLUTION OF PARTNERSHIP.

R. B. BIRCHAM is desirous of clearing off a portion of his stock, consisting of 35,000 STANDARD and DWARF ROSES, including all the best and leading sorts of Perpetuals in cultivation. To effect a clearance this autumn R. B. B. begs to offer them at the following very reduced prices:—

50 Dwarfs of the best Perpetuals .. £0 18 0
50 Half standards, do. 1 5 0
50 Standards, do. 1 15 0

R. B. B. will be happy to supply Amateurs requiring half the quantity of each. Trade orders at a still lower rate per 100. Carriage paid to London and Peterborough.

PETER S. ROBERTSON, for the last 14 years Manager of Messrs. P. Lawson & Sons' Nurseries, Edinburgh, begs to intimate to his patrons and friends that he has resigned the above situation to begin business on his own account at Trinity Nursery (near the Botanical Gardens) Edinburgh. Having completed arrangements by which he is able to offer at very moderate prices FOREST TREES, SHRUBS, CONIFERS, ROSES, &c., he now respectfully solicits a share of public patronage.
PRICED CATALOGUES are in course of circulation, and friends who may not have received a copy by next week will be supplied free on application.

DUTCH BULBS.—SURPLUS STOCK of fine Roots at very low prices. See *Gard. Chronicle*, Dec. 19, p. 1011.
The NEW SEED CATALOGUE will shortly be ready.
STEPHEN BROWN, Seed and Nursery Establishment, Sudbury, Suffolk.

CHRYSANTHEMUMS.

J. H. BIRD, F.H.S., NURSERYMAN, Stoke Newington begs to inform his friends and the public that he has the finest Collection and the largest Stock of Chrysanthemums and Pompones in the world, and can supply them by the 100, 1000, or 10,000.

25 Pair of Best POMPONES, 10s.
20 Pair of Best Large Varieties, 10s.
25 Pair of Best POMPONE CUTTINGS, 5s.
20 Pair of Best Large Varieties, Do., 5s.

CATALOGUES for one stamp. To save trouble all orders to be pre-paid.

CHRYSANTHEMUMS.

W. HOLMES begs to offer strong plants of every known good variety of CHRYSANTHEMUM at 5s. per dozen; including Golden Queen of England, Aurora, Cassandra, Curtius Quintius, Excelsior, Fabius, Fortune's Two-Coloured Incurved, Golconda, Glory, Julie Lagravère, Madam Clos, Mount Vesuvius, Orange Brilliant, Prince Albert, Remus, sulphureum superbum, Una, Andromeda, Ariel, Astrea, Baron d'Adswaërd, Esmeralda, Maid of Saragossa, Miss Julia, Miss Talfourd, Mrs. Dix, Shirley Hibberd, Rose Trevenna, &c.
Frampton Park Nursery, Hackney, N.E.

RHODODENDRON EDGEWORTHI.

MESSRS. J. AND C. LEE have to offer a small quantity of SEED of this most beautiful and fragrant CONSERVATORY RHODODENDRON. Having carefully impregnated it with itself they can warrant it to produce the true R. Edgeworthi, whose flowers are pure white, with a delicious fragrance, and measure 6 inches in diameter. Sealed packets, 5s. each, post free.
Nursery & Seed Establishment, Hammersmith, London, W.

NEW SEED CATALOGUE.

MESSRS. JOHN AND CHARLES LEE beg to inform their friends and the public that their NEW DESCRIPTIVE SEED CATALOGUE FOR 1860 may now be had post free on application.
Mr. JOHN LEE continues to devote himself especially to this important branch of their business, for which their house has been so long celebrated in the selection of SEEDS from the most genuine stocks at home and abroad.
Nursery and Seed Establishment, Hammersmith, London, W.
EXPERIENCED GARDENERS RECOMMENDED.

LAURELS FOR THE MILLION.

D. FERGUSON, LANDSCAPE GARDENER and PLANTER, offers a splendid lot of CEDRUS DEODARA, 3 to 12 feet in height, at very low prices.
Well rooted COMMON LAURELS, half a farthing each if taken by the 10,000; less if by the 50,000 or 100,000.
Fine one, two, and three years' transplanted BERBERIS AQUIFOLIUM, 1 farthing to 2 farthings each if taken by the 5000 or 10,000.
IRISH YEWS, 1 to 8 feet, almost finer than as fine as possible.—Stowe, Buckingham.

IMPORTANT TO LANDHOLDERS.

FOR SALE, 200,000 LARCH FIR, 1½ to 2 feet at 15s. per 1000.
200,000 LARCH FIR, 2 to 2½ feet, at 20s. per 1000.
50,000 LARCH FIR, 3 to 3½ feet, at 40s. "
FLUKE POTATOES for planting, warranted free from disease, at 4s. 6d. per bushel. Orders for the above to the amount of 5l. and upwards, Carriage paid to any Railway Station from Milford to London.—JACOB SCOTT MATTHEWS, Nurseryman, Seedsman, and Florist, Cardiff, South Wales.

ROBERT NEAL, NURSERYMAN, Wandsworth Common, S.W., begs to call the attention of buyers to his large and well-selected stock of EVERGREENS and FLOWERING SHRUBS, ORNAMENTAL TREES, AMERICAN PLANTS, FRUIT AND FOREST TREES, STANDARD AND DWARF ROSES of every description. A large stock of BOX-LEAF EVERGREEN PRIVET, from 1 to 6 feet for hedges; GREEN HOLLY, 1 to 6 feet; RICH BOG and LOAM for American Beds; LEAF MOULD. The Nursery is 10 minutes' walk from Clapham Common, and New Wandsworth Station, Crystal Palace Line.

TANSLEY NURSERY, NEAR MATLOCK

TO GENTLEMEN PLANTING AND THE TRADE.

J. SMITH, SEN., begs to offer his STOCK OF TREES AND SHRUBS, of various sizes, and in addition to his general stock of the leading kinds, he has this season to offer an Extra Stock of many hundred thousands of fine Larches, Scotch Firs, and Highland Pines; a large quantity of Evergreens, Privets, Mahonia Aquifolium, and other plants for planting under cover. Many things are grown in large quantities, and will be sold on advantageous terms to the Trade and gentlemen requiring large lots.
CATALOGUES sent free on application. The Nurseries are on the Mansfield and Nottingham roads, and 2 miles from Matlock Bridge Station on the Midland Railway.

PETER LAWSON AND SON

THE QUEEN'S SEEDSMEN AND WOOD MERCHANTS,

respectfully announce that they have now issued their

NURSERY CATALOGUE OF FOREST TREES, CONIFERÆ, SHRUBS, &c.,

which they will be happy to forward free by post on application.
27, Great George Street, Westminster, S.W.

PETER LAWSON AND SON,

THE QUEEN'S SEEDSMEN AND WOOD MERCHANTS, 27, Great George Street, Westminster, London, S.W., and Edinburgh, beg to announce the issue of their GARDEN SEED CATALOGUE for 1860, which they will be happy to forward free by post on application. Every care has been bestowed on the selection and growth of the various stocks, which P. L. & SON can safely recommend as of best quality, and true to name.

DALMAHOY EARLY POTATOES.

This excellent variety of Potato now meets with a largely increased demand in England, to which it is fairly entitled. It is considerably earlier than the Regent, and of excellent quality. Messrs. P. L. & SON are now prepared to send out carefully selected Seed for which early orders are requested; and which can either be executed now or in spring, as may best suit purchasers.

YORKSHIRE SEED ESTABLISHMENT.

E. J. DIXON begs to announce that his new SELECT PRICED LIST OF KITCHEN GARDEN, FLOWER, and AGRICULTURAL SEEDS for 1860 is now ready, and will be forwarded post free on application to
57, Queen Street, Hull.

QUICKS, FOREST TREES, &c.

JAMES DICKSON & SONS, NURSERYMEN and SEEDSMEN, the Newton Nurseries (close to the Railway Station), Chester, offer many millions of the above, of EXCELLENT QUALITY and at VERY MODERATE PRICES.
The Trees and Plants, consequent upon the Nursery Grounds (which cover an area of about 60 acres) lying in an exposed situation, and a routine of regular transplanting being carried out, are WELL ROOTED, HARDY and VIGOROUS, hence are calculated to remove with great success.
PRICED LISTS, post paid, upon application, or in cases where LARGE QUANTITIES are required SPECIAL PRICES will be given.
Newton Nurseries, and 102, Eastgate Street, Chester; also at 23, Market Place (late Deansgate), Manchester, and Newtown, Montgomeryshire.

JUST RECEIVED from Mr. CHARLES APPELIUS, in Erfurt, the second consignment of his splendid collections of TEN WEEKS' STOCKS in 12 vars. at 1s. 3d., and double PEONI-FLOWERED ASTERS (Truffaut) in 12 varieties, at 1s. each.
London Agency: 132, Upper Thames St., near London Bridge.

TO THE TRADE.

HENDERSON'S COMPACT TOPPED GARDEN BEET.—This superior variety, introduced by us three years since, is now generally cultivated in most gardens; its peculiar short top, symmetrical roots, and fine dark crimson colour, are points of excellence rivalled only by its exquisitely rich and sugary flavour. Price on application.
AUSTRALIAN GARDEN CRESS.—This remarkable large gigantic Cress is so rapid and fast growing that in Australia and New Zealand it almost stops the navigation of the rivers. The true Broad-leaved sort. Price on application.
N.B. New VEGETABLE SEED CATALOGUE is now ready, and can be sent on application.—Pine-apple Place, W., Dec. 24.

NEW ANNUALS.

JOHN GEORGE WAITE, SEED MERCHANT, 181, High Holborn, London, W.C., has great pleasure in offering SEEDS of the following new hardy Annuals:—
CLARKIA PULCHERRIMA,
SCHIZANTHUS GRANDIFLORUS OCULATUS,
HELIOPHILA CŒRULEA STRICTA.
Coloured Drawings and prices of which (to the Trade only) can be had on application.
Seed Establishment, 181, High Holborn, London, W.C.

The Gardeners' Chronicle.

SATURDAY, DECEMBER 24, 1859.

"WE announce," says the *Athenæum*, "with great satisfaction that the Trustees of the British Museum have at length taken into serious consideration the difficulties in which they are placed by our vast accumulation of literary and scientific treasures. Something will now, we trust, be done. At a very full meeting of the Board—after considerable discussion as to the principle of separation—the Trustees have appointed a Sub-Committee to consider and report on the subject. The Speaker of the House of Commons, as representative of the powers that pay, is to act as Chairman of the Sub-Committee. The public will wait its report with not less confidence than interest."

Let us hope that the representations made to the Chancellor of the Exchequer on the 18th November 1858 (see p. 861 of our columns for that year), will also be taken into "serious consideration." In the memorial in question, after offering certain suggestions as to the manner of dealing with the Zoological Collections of the British Museum, it

was strongly urged that the whole of the Herbarium, known as the Banksian, should be transferred to Kew, which should become the centre of botanical science. In that situation there is already the finest assemblage in the world of living plants, an unrivalled museum of products of the Vegetable Kingdom, and a Herbarium compared with which the Banksian sinks into insignificance. The Kew Herbarium is in part the property of the State, and in part private property. The whole might easily become public; and if augmented by the Banksian would possess an interest far beyond that of any on the Continent.

As a question of mere cost we conceive that it would be more economical to remove the Botanical collections to Kew than to preserve them as a distinct Botanical Museum. For to render them at all sufficient for the wants of men of science it would not be enough to preserve what already exists in Great Russell Street. It would be indispensable in addition to purchase and render accessible the vast modern collections that have been formed by travellers since the death of Sir JOSEPH BANKS, and which, if we are rightly informed, are for the most part deficient in Great Russell Street; but the whole of which are already at Kew. Moreover if two public Herbaria are formed at two distant points there must also be a double staff of officers, a circumstance not to be wholly overlooked.

It is true that the gentleman who is now the keeper of the Banksian Herbarium would have to be provided for; but during his life he should personally remain in charge of the collections which he has for so many years done everything to render as useful as his position permitted. The rest of the staff would be that of Kew; and eventually a single keeper of the whole would be sufficient. Should these two great foci of vegetable productions not be amalgamated, we shall hereafter want two long catalogues of their contents instead of one; two purchases instead of one when additions require to be made; and a clashing of interests which would be anything rather than advantageous to the public service.

When we add that to provide a new site in London for the Banksian Herbarium would be far more costly than at Kew, where the expense of a few additional rooms in the building which must at all events be provided there would be comparatively inconsiderable, we trust that enough has been said to induce the Sub-Committee which has been appointed to deal with this subject, to pause before they listen to the voice of those who oppose the removal of the entire Herbarium to Kew.

SINCE our article upon the curious form of LARCH ROT which has appeared in the North of England was written, we have received some excellent specimens and a little additional information.

In the first year the disease, which apparently commences in the bark, is confined to a circular patch the size of a shilling. It takes place evidently in winter, because after its commencement no wood whatever is formed beneath it, and the ring of the previous year's growth is quite perfect.

The surrounding bark which is still healthy meanwhile deposits its own proper layer, but when the growth of the year has ceased a portion of that in turn becomes diseased and no more wood is deposited beneath the diseased part. The same process goes on year after year, so that a depression is made, and when the bark is stripped off, a circular patch appears, which, if it be allowable to compare small things with great, resembles an amphitheatre with its seats raised one above the other.

Meanwhile the disease which was at first confined to the small circular patch spreads upwards and downwards, through the healthy wood of the previous year, so that in a transverse section at some distance from the patch, the progress of the disease is distinctly defined, and while the wood of the year before the disease commenced is strongly discoloured, that of the succeeding years is only slightly altered in appearance. The bark of the diseased patch is thoroughly impregnated with the spawn of the Fungus, which is so conspicuous on the affected bark that if the slightest wound is made in it it is covered with white down in the course of one or two days. The wood also which was produced the year before the commencement of the disease, which shows unquestionable signs of premature death, is almost equally impregnated, as also in their proportion are the layers deposited afterwards.

It should seem, then, that the disease does not originate from the wood, and that the Fungus is introduced into the wood from the bark. When once, however, the wood is affected, the spawn and the diseased condition spread rapidly, and soon extend beyond the limits of the external malady.

The trees are planted in an old stone pit, and the disease attacks principally those in the dampest part, while the Larches only suffer, and not the Scotch Firs with them.

The disease resembles so closely one in Scotch Fir which we described on a former occasion that we thought that, as in that case, there must be some impervious substratum which prevented the Larch being properly nourished; but this does not appear to be the case; and as the Scotch Firs do not suffer, it is clear that the conditions under which it has arisen cannot be the same.

It may be remarked in conclusion that the presence of the *Verrucaria* in the specimens first sent was only accidental, for it does not seem uniformly to accompany the disease. *M. J. B.*

TRADE MEMORANDA.

IN our last Number appeared a letter which Mr. Scott, Nurseryman of Crewkerne, forwarded along with a statement made by the police of Manchester, the nature of which we gave. We have now to announce that a very serious mistake has been committed by the police, as will be seen from the following letter:—

"Chief Constable's Office, Town Hall, Manchester,
Dec. 22, 1859.

"SIR,—In your paper of the 17th inst., a statement appeared headed 'Trade Memoranda,' in which the character of a Mr. G. F. Mandley, of Apsley Villa, Cheetham Hill, Manchester, was most seriously reflected upon, and, as it stated, on the authority of information received from the Manchester Police. I trust that you will give immediate publicity to my present explanation, and thereby secure the immediate refutation of a statement calculated to damage the character of a gentleman of high respectability and integrity in this city. The information was given to Mr. Scott, of Merriott Nurseries, Crewkerne, in reply to a letter in which he states he had received a communication from a Mr. Maudley, which the Police, from the similarity in appearance, read Maudsley, being the name of a notorious swindler in this city. I very greatly regret that Mr. Mandley, who is, as I have stated, a gentleman highly respectable and of unimpeachable character, should have suffered annoyance from the imputation which has been thus unwittingly cast upon him, and I trust you will do all that lies in your power to counteract the effect of the statement that has gone forth in your Paper.—I am, Sir, your obedient Servant,

"W. HENRY PALIN,
"Chief Constable of Manchester.

"The Editor of the *Gardeners' Chronicle*."

We need not say how much we regret having been unwittingly made the channel of publishing what, as it now appears, was a complete mis-statement; and we hasten to make all the reparation in our power. We, like all other conductors of the public press, are extremely anxious to avoid such accidents, which, however, will sometimes occur.

A LECTURE ON THE THEORY OF ANIMAL NUTRITION,

WITH REFERENCE TO THE REMARKS ON THAT SUBJECT CONTAINED IN LEWES' "PHYSIOLOGY OF COMMON LIFE."

Delivered on November 15, 1859, in Oxford, by CHARLES DAUBENY, M.D., F.R.S., Professor of Rural Economy in that University.

ON more than one occasion I have brought before you the views of Baron Liebig, with respect to the nutrition of animals, and attempted, by availing myself of the principles that may be gathered from the writings of that eminent philosopher, to explain by chemical considerations some of the phenomena of living bodies.

The principles alluded to have since undergone the ordeal of 15 years' searching examination, and, as it appears to me, still continue in the main to stand their ground; so that in adopting them as the basis of my reasoning upon this and upon kindred subjects, I feel as if I were building upon a foundation that had been all the more firmly consolidated in consequence of the opposition it has experienced.

In stating this, however, as my opinion, I am bound to make two important reservations: 1st, that the adoption of Liebig's principles extends on my part only to the fundamental propositions he has enunciated; and 2dly, that in invoking such aid to elucidate the phenomena of life, I am perfectly aware that something more than mere chemistry is concerned in building up the living fabric.

In order therefore to remove the objections against the chemical theory, which have been stated by those, who argue as if the truth of its leading principles was involved in that of any of the inferences which the author or his disciples may have chosen to deduce from them, and as if chemistry must be set aside altogether, if it be found inadequate of itself to solve the entire mystery of life, I will in the first place enumerate a few of the general conclusions which Liebig has arrived at in his work on "Organic Chemistry in its applications to physiology and pathology"; 2dly, discuss the objections that have been alleged against each; and 3dly, hint at some of the practical applications which may be made of those principles which appear best to have stood the test of inquiry.

First then I conceive the contrast between the functions of vegetable and animal life stands forth in as marked characters at present, as it did at the time when it was sketched in so graphic and luminous a manner by Dumas* and Liebig. Thus the processes of animal life appear to involve the constant absorption of oxygen, those of vegetable life its evolution; the animal derives support from substances already organised, the vegetable from unorganised or brute matter; heat and light are the remote causes of motion in vegetables, nervous energy in animals.

These propositions, however, although in a general sense true, are each to be received with certain important limitations.

Vegetables, for instance, although mainly instrumental in redressing the balance of nature, by rendering back to the atmosphere the oxygen consumed, do nevertheless carry on several operations, of which the absorption of this very element is the result; animals, although mainly dependant upon organised matter for support, require certain mineral matters, such as common salt, phosphate of lime, and iron; nor can it be said that these substances are in all cases conveyed to them through the medium of the organic matters they consume, since we find them also entering the system when proceeding immediately from the mineral kingdom.

Thus Dr. Gilbert states that his pigs became out of sorts when Indian meal alone was given them, but that they recovered, when supplied with a mixture of coal-ashes, common salt, and superphosphate of lime, for which, although mineral substances, they exhibited a considerable relish (Report 339).

Lastly, whilst on the one hand we are not altogether sure but that something analogous to nervous irritability may actuate the movements of plants, we have on the other abundant proof, that heat and light are exciting causes of action in animals as they are in vegetables.

I cannot, however, agree with an ingenious writer of a recent popular work, entitled the "Physiology of Common Life," when he asserts that plants, like animals, depend upon organic substances for their subsistence.

This return to the old *humus* theory, which Liebig was thought to have refuted so triumphantly, ought to be maintained on more substantial grounds, than the stale and often refuted argument derived from the utility of stable dung as manure, or on the experiments of Verdiel and Robin, which merely show that fertile soils contain a soluble organic substance. The question is, whether the constituents of the manure, or of the organic matter dissolved in the soil, are really assimilated by the plant as such, or whether they do not rather contribute to its nutrition, by being themselves resolved into their elements, and by yielding them up freely, as they are required, to the bodies with which they are brought into contact.

And with regard to the converse proposition, that animals may be capable of converting inorganic substances into organic, it will be time to speculate upon the possibility of such an occurrence, when some well-authenticated case is brought before us, in which any one of the proximate principles which enter into the composition of the animal body has been traced to the agency of chemical forces, or has been shown to originate from inorganic matter within the system.

As an abstract question, indeed, I do not see why such chemical compounds as are formed out of the body, might not be produced by the same affinities within it; but the practical consideration is, whether the same circumstances are likely to occur, at least frequently enough, within the living organism, to render the process one which can be reckoned upon, in accounting for the existence of any of those principles which are normally present in the system of an animal.

At any rate there is this difference between the two organic kingdoms of Nature. Plants, as we know, are capable of decomposing such stable compounds as carbonic acid, water, and ammonia;*

* A recent discovery of Baron Liebig may serve to make more palpable this distinction. In a former treatise he had shown, that the different vegetable acids present in the unripe fruit, as well as the sugar which predominates in the same when mature, arise owing to the gradual evolution of oxygen from the carbonic acid present in the green parts of the plant. Thus:—

	C	O			Oxygen disengaged.
Carbonic acid	1	2			
12 of ditto..	12	24			
6 of anhydrous oxalic acid	12	18			6
6 of hydrous ditto ..	12	18+O	6 H	6—	6
3 of tartaric acid.. ..	12	9+O	6 H	6—	15
3 of malic acid	12	6+O	6 H	6—	18
1 of Grape sugar.. ..	12	0+O	12 H	12—	24

Or 12 of carbonic acid with ½ its O replaced by H.

But Liebig has lately found, that tartaric acid may be generated artificially through a reflex process, by an oxygenating agent, such as nitric acid, from sugar of milk, just as oxalic acid has been generated by a more rapid action of the same re-agent, from Cane or Grape sugar; and the process may be explained by the following formula:—

1 of sugar, with N O 5, if the action be violent, produces—

	C	O	H	
6 of oxalic acid	12	18		
And				—18 Oxygen
12 of water		12	12	added + H 12
2 of sugar, with N O 5, if the action be slow, produce—				
3 of hydrated tartaric acid ..	24	36	18	
And				—18
6 of water		6	6	
3 of hydrated tartaric acid being =6 of hydrated oxalic acid ..	12	24	6	
+1 of sugar	12	12	12	
	24	36	18	

So that tartaric acid is sugar half converted into oxalic acid. The same compound therefore is produced by the plant, owing to the disengagement of oxygen, as may be generated artificially by its addition, and we may be quite sure, that if ever such an acid were to be elaborated within the animal economy, it would be by the latter agency and not by the former.

* Statique chimique des êtres organisés.

whereas there seems no satisfactory proof that animals can produce, by virtue of their living principle, or by what is sometimes called vital affinities, any combination between the elements of matter, which the mere force of chemical attraction out of the body is incapable of effecting. I am, indeed, aware that the late distinguished physiologist Professor Alison conceived, that albumen might under certain circumstances be generated in the blood through the fixation of gaseous nitrogen; but no direct proof, I think, has ever been adduced that such is the case: and I am therefore still inclined to maintain, as I did at the time when the proposition was first enunciated (see my "Introduction to the Atomic Theory," 2d ed., p. 372 and seq.), that Nature, which does nothing in vain, would not have taken so much care to provide from without a supply of the ingredients in question, if the unassisted powers of the animal economy had been able to produce it within itself. Nor indeed do I find that this supposition has met with much favour amongst physiologists, notwithstanding the weight justly attached to the authority of the eminent individual who first suggested it.

The second leading proposition insisted upon in Liebig's work relates to the "Food of Animals," which, according to him, fulfils two distinct offices, namely:—1st, that of supplying the materials of the blood, and 2nd, that of generating animal heat. For the former purpose azotised materials are requisite, but for the second unazotised suffice.

The azotised principles taken into the system are chiefly vegetable fibrine, vegetable albumen, and vegetable caseine or legumin, which I shall still take the liberty, for convenience' sake, of calling by Mulder's name of proteine-compounds, without meaning to assert the existence of any common base or radicle present in them all, but regarding them at least as what chemists call *isomeric bodies*, and as identical with, or with very little change convertible into, animal fibrine, animal albumen, and animal caseine.

Unazotised principles on the contrary consist of starch, sugar, oils, and other bodies containing much carbon and the elements of water.

This twofold use of food in providing for the production of animal heat, and for making good the waste of the tissues, is now, I believe, received as an axiom in physiology, nor is it any longer disputed, that without a due supply of azotised matter, life can for no long time be sustained. But it by no means follows from this, either that the only material which becomes assimilated is of an azotised nature; or that the only material which can generate animal heat is destitute of azote.

Although the oily, fatty, and saccharine ingredients which are present in the animal body conduce mainly to the production of animal heat, it is quite possible that they may contribute also to other ends, and indeed, without going farther, it is certain that fatty matter, combined with only a small per centage of a nitrogenous ingredient,* does in fact constitute a portion of the cerebral matter, one at least of the most important organs in a perfect animal.

Nevertheless as the muscular apparatus is that, which is at once the most widely distributed of the component parts of the system, and the most universally present in it; as it is that which extends from the highest to the lowest in the scale of beings, even where brain and volition appear wanting, and nervous energy is almost evanescent; a supply of that nitrogenised matter, which alone is competent to make good its waste, must be regarded in a special sense essential to the maintenance of animal life.

With muscle indeed fat is generally found associated, but it may be abstracted in great measure, or even entirely, without involving the destruction of life, so that the substances which supply it cannot be placed exactly, as respects their necessity, in the same category with those materials which contribute to the formation of flesh. On the other hand Liebig has never denied that nitrogenised principles are capable of generating heat, for he distinctly points out that in one large section of the animal kingdom, namely the Carnivora, the temperature of the body must be entirely kept up through the waste of the tissues, and consequently that the materials for carrying on those processes by which it is maintained must in them be supplied altogether by the various proteine compounds which constitute their exclusive nourishment.

I was therefore rather surprised, on turning to the popular work on physiology to which I have already alluded, to see the words, "Liebig's error," paraded in large letters at the top of the pages in which the subject of food is discussed, and to find, that after a just encomium on the labours of that chemist, as one "who by his classification of nutritious substances into heat-making and flesh-making, had given an immense impulse to science," after admitting that this philosopher had found the true pathway through which the problem is to be explored, the author should nevertheless declare as his opinion that the classification in question is founded upon misconception.

In a practical sense at least it must be admitted, that the question before us is, not what may be capable of supplying the exigencies of the system, but what will accomplish those ends best and most economically, and it is distinctly shown, that in order to produce animal heat without the aid of oily or saccharine matters, so large a consumption of the tissues is required, that food must be taken into the system in much larger quantities to supply the waste than would be requisite otherwise. On the other hand, the necessity for a certain definite amount of nitrogen to nourish the system calls for a larger consumption of food, where vegetables alone are eaten, than would be demanded if a supply of animal heat were the sole end to be answered. It is quite true, that these general principles, for which we are indebted to chemistry, leave unsolved very many mysteries connected with diet and nutrition; that they do not explain, for instance, various idiosyncracies, such as the repugnance felt by individuals for certain descriptions of nourishment, the preference of others to vegetable over animal food, the poisonous effects which some people experience from articles generally eaten with impunity, the reasons for which, as Mr. Lewes suggests, we can perhaps only hope to discover by the aid of physiological research.

Before, however, he recommended us on such grounds as these to desert the secure ground of chemistry for speculations derived from another science, it might have been expected, that he should have pointed out certain of the problems, which chemistry abandons as beyond her reach, resolved by the more potent aid of physiology.

To say, for instance, that it is owing to some peculiar modification in the principles of digestion, that mutton acts as a poison upon one individual and pork upon another, or that a particular species of animal will thrive upon a plant generally reputed noxious, seems a truism which advances us not a step towards the removal of the difficulty, and perhaps only tends to draw us aside from the path, which has conducted us at least to certain facts calculated to throw light upon the problem before us.

Without therefore dismissing our guide as incompetent, until we have found another capable of leading us further on our journey, let us confine ourselves to those objections, which have been supposed to militate against the truth of the general principles which lie at the base of our inquiries.

It is observed, "that although the fruits eaten in southern climates are less heat-producing than the train oil eaten in polar regions, yet that the Sicilian and Neapolitan eat more oil than the Swede, and that their macaroni is a highly carbonised substance; whilst the Hindoo often subsists on rice and butter—substances highly carbonised, and classed as chiefly respiratory, furnishing in superabundance that very heat which his climate renders so undesirable"!

On the other hand, although a diet chiefly composed of vegetables is considered more appropriate to the inhabitants of hot climates, yet the Abyssinian lives chiefly on raw meat; the hunter on the Pampas or in the prairies of North America scarcely ever touches bread or vegetables; and the Hottentot gorges himself with an amount of meat which would seem excessive even in the coldest climate of the globe.

Now in weighing the force of these objections it must always be borne in mind, that an animal, like man, destined to live in all climates, and to overspread the entire service of the globe, is necessarily carnivorous, and must possess an organisation endowed with very extensive powers of accommodation to external circumstances.

Moral, religious, and political considerations, no less than the natural promptings of appetite, influence the individual and the community, in the preference for certain articles of food and the rejection of others.

If the Hindoo, for instance, lives on rice and butter, it must be recollected that his religious scruples preclude him from the use of animal food; if the Italian subsists upon macaroni and vegetable oils, the warmth of the climate, which would have a tendency to create a greater consumption of animal tissue in proportion to the amount of labour undertaken, produces at the same time an indisposition to mental and bodily exertion, and thus at once reduces the waste of the system, and lessens those earnings which would have better enabled him to make it good.

Accordingly, his condition adapts itself by degrees to a less stimulating diet, until an amount of animal food, barely sufficient to keep an Englishman in health, would be felt by him as excessive, because greater than is required for the demands made upon his system in consequence of his more passive mode of existence.

He consumes, it is true, vegetable oils and other substances containing much carbon without inconvenience or sense of repletion; but the temperature of his climate is even in summer from 10° to 15° below that of the human body, so that a certain amount of animal heat requires to be generated even in the hottest seasons of the year. Besides, the consumption of carbon in respiration must be in proportion to the rapidity of the process itself, and the latter, although influenced by the temperature, can never fall below a certain point, except in hybernating animals, or in extraordinary cases of disease.

It must also be recollected that every species of vegetable food which man can digest is convertible into sugar, and consequently supplies the materials for combustion.

If, therefore, the Italian peasant consumes only that quantity of farinaceous matter which yields him the amount of nitrogen requisite for replacing the waste of his system, he probably is not more overcharged with carbon than the Arabian, who is driven to draw his nourishment from a diet of Dates and Dhurra. And with respect to the vegetable oil, which he takes with his salad, or mixes with his macaroni, it only stands instead of the butter eaten in other countries, and constitutes in reality no very important element in his accustomed dietary.

Lehmann also states that fat is one of the most important agents in the metamorphosis of animal matter, and is therefore in all climates a useful addition to nitrogenous food during the process of gastric digestion.

Before, therefore, the diet of the Italian peasant be brought forward as an objection to Liebig's principles, it ought to be shown, not only that farinaceous matters form the staple of his food, and that a certain quantity of oil is taken along with them, but also that the aggregate of these matters consumed supplies him with more carbon, than would be required, not only for the animal heat necessary to be generated in such climates, but also for the production of the carbonic acid given off during the acts of respiration.

And after all, the starch and oil consumed by a native of the south falls far short, in point of quantity, of the heat-producing materials found in the train oil and blubber which are necessary for the health of the Greenlander or the Esquimaux.

Although fixed oil contains as much as 80 per cent. of carbon, instances are recorded by Arctic navigators and others, where 20 lbs. of fat and a proportionate quantity of melted butter, were consumed at a single meal, in addition to the hind quarter of a large ox, by natives of these countries, as was the case with a Yakuti mentioned by Sir James Ross. This, however, it is said, may be nearly paralleled by the Hottentot, and is in both cases perhaps referable in part to that instinct in savages, which leads them to gorge themselves with food whenever attainable, in anticipation of the long periods of fast to which their mode of life subjects them. Here Nature acquires the habit of accommodating itself to great repletion, as well as to long intervals of abstinence and privation; and accordingly Barrow, who notices these exhibitions of gluttony in the Hottentot, states that they were often preceded by as much as two days' fasting.

But what shall we say of the statements of well-informed travellers, who assure us that 20 lbs. of flesh and oil daily constitute the ordinary allowance of food for an Esquimaux?

Can the same be said of the inhabitants of any one of the warmer regions of the globe? Would the Hottentot for instance, if in the service of an European settler, and secure of a good meal every day, manifest the same voracious appetite, which is ascribed to him when in a state of nature, and obliged to trust to chance for subsistence? On the other hand the exceptional cases cited, in which large quantities of animal food have been consumed by the inhabitants of hot countries to the exclusion of vegetables, are for the most part confined to persons in the habitual use of hard exercise in the open air.

The hunter cannot endure a purely animal diet, except when in the pursuit of game, that is, at those times when a rapid consumption of the tissues of his body is going on. The Abyssinian is driven by the neglect of agriculture, and the abundance of wild cattle, to a diet consisting in great measure of raw flesh and blood, unsuitable no doubt to so warm a climate, but not, so far as we know, excessive in quantity, considering that it has to supply the demand of animal heat, as well as the consumption of tissues, and is probably destitute of fat, by which the former end would be provided for.

In short these exceptional cases need not be regarded as militating against the general law, which the practice of so large a proportion of the human race in different climates tends to establish, namely that the quantity of food requisite for health is greatest in cold climates, and that a smaller amount of meat will support the system in countries, where the lassitude induced by the heat reduces to a minimum the diurnal waste of the tissues.

It is true, that the inhabitants of northern regions do not all, like the Russian, subsist on train oil and whales' blubber; but travellers agree in ascribing to them a larger consumption of solid food than would be required by the inhabitants of warmer latitudes. Thus the Swede and Norwegian have their four meals a day, in which herrings, potatoes, barley broth, bacon, salt meat, and black pudding, form the staple articles of consumption.

Liebig then proceeds to calculate, what would be the amount of heat generated by the daily consumption of carbon which takes place in the blood and tissues. He estimates the carbon present in the food allowed daily to a Hessian soldier at 13.9 ounces, which is removed from the system every 24 hours by uniting with oxygen, and again replaced by the nourishment consumed the following day. Now, according to the experiments of Despretz, 13.9 ounces of carbon require for their combustion 37 ounces of oxygen, and evolve 197,477° of heat. Of this quantity 146,380° will go towards raising the temperature of the body, 51,097° being carried off, owing to the conversion of water into steam by the skin and lungs, in the processes of perspiration and of breathing. So that according to this estimate more than 100° of heat will be generated in the human body every minute of its existence.

This calculation, however, is liable of course to great uncertainty, on account of the dependence of the process, by which carbon is abstracted from the system, upon the amount of exercise, the warmth of the clothing, and the temperature and density of the air. Liebig informs us, for example, that the prisoners in the Bridewell, at Marienschloss, near Munich, where labour is enforced, do not consume more than 10.5 ozs. of carbon daily; that those in a prison at Giessen, who were deprived of all exercise, consumed only 8.5; and

* Brain consists of (besides albumen), the cerebric acid, a solid fatty acid containing phosphorus, and the oleophosphoric acid, also containing phosphorus in conjunction with oil. *Fremy.*

that the average consumption in a German family of five adults and four children of different ages was 9.5 ozs. each daily. It must be recollected, moreover, that in most articles of food hydrogen as well as carbon are present, and that the former by its combustion evolves more heat in proportion than the latter.

Thus 1 lb. of coals will raise 5625 lbs. of water 1° Fahr.; 1 lb. of pure carbon, according to Dr. Andrews, 7881 lbs. to the same amount; whereas 1 lb. of hydrogen will produce the same effect upon not less than 33,808 lbs. By ascertaining therefore in a given case the amount of oxygen consumed, and the quantity of carbonic acid and of water carried off in the process of respiration, we can estimate the degree of heat which will be generated in consequence: and this is confirmed by experiments, which prove that the heat evolved from an animal in a given time corresponds very closely to that which the same apparatus would receive, if it were heated by a fire, in which an equal quantity of oxygen had been expended.

If there be any truth in these experiments and calculations, it seems impossible to doubt that combustion is, at least, a main source of animal heat, so that the *onus probandi* ought to be considered as resting with those, who would contend that other causes, such as nervous energy, also act as *independent causes* of its production.

I say, of course, independent causes, for no one will dispute, that those chemical processes which are instrumental in producing animal heat are themselves influenced by the state of the nervous system.

If the blood, for instance, is not propelled with its usual alacrity through the vessels, we may naturally expect that the change in the tissue, which is the first step towards the union of carbon with oxygen within the system, will take place more languidly; or what is also very conceivable, that the food may pass off as fœcal matter, without going through that series of changes which is a prelude to the conversion of its carbon into carbonic acid.

Of course in either case the production of animal heat will be affected, and the waste of tissue which is going on may not be supplied by the food which is taken in. Whether the converse of this may account for the high temperature which is stated to exist in some cases of great excitement, as in tetanus, I leave for the physiologist to determine.

(*To be concluded next week.*)

THE GOLDEN OR AUSTRALIAN CRESS.

This plant is of dwarf habit. The leaves when very young are obovate, entire, afterwards becoming toothed; the older ones oblong-obovate, lyrately-pinnatifid or pinnate, the terminal lobe large, irregularly and deeply cut, the incised portions overlapping, and the whole of the margin finely and sharply serrated; they are pale or yellowish green; flavour milder than that of the Common, or Curled Cress.

Samples named as follows were sown for trial, during the past summer, at the Garden:—

Golden Cress	Lawson & Son.
Australian Salad Cress ..	E. G. Henderson.
New Australian Cress ..	Carter & Co.

The Golden Cress was introduced by the Horticultural Society upwards of 30 years ago, as will appear from the following extract from a Report, published in 1826 in the Society's Transactions (vi. 583), on New or Remarkable Esculent Vegetables cultivated in the Garden of the Society.—

"This is rather slower in growth than the Common Cress. The leaves are of a yellowish green, flat, oblong, both crenated and entire, and of a much thinner texture than any of the varieties of Common Cress. It is very dwarf, and is consequently short when cut as a salad herb for use. It has a mild and delicate flavour. When run to flower it does not exceed 18 inches in height.

"Seeds of this Cress were received from M. Vilmorin, under the name of Cresson Doré; it is at present but little known in this country, but certainly deserves more general cultivation, as it affords a pleasant addition to our stock of small salads. In the notice of it in the Bon Jardinier, it is treated as a variety of the Common Cress, Lepidium sativum, but it is probably a distinct species."

Various sowings were made from packets of seeds received under the above name and synonyms, in the present year; but the sub-committee of the Fruit and Vegetable Kingdom could detect no difference in the respective productions. The seeds were sown at the same time, and precisely under the same circumstances, whether in the open border or in boxes.

Many thousands of packets of vegetable seeds, both English and French, have been sent to the Colonies by the Horticultural Society; it is therefore probable that the Golden Cress has been amongst those sent to Australia, and that it has been thence re-imported. *Horticultural Society's Proceedings.* [For further information respecting this Cress, see p. 340 of the current year's volume.]

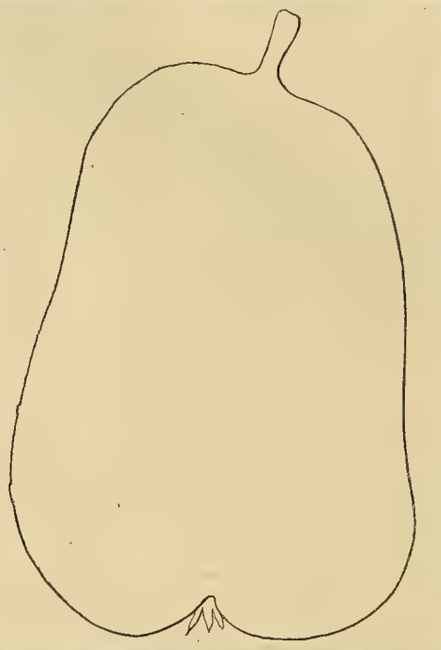
THE CLÉMENTINE OR POIRE CLÉMENCE PEAR.

Syn.: Poire Cramoisine, Beurré Anglaise, Délices d'Hardenpont d'Angers.

The accompanying outline represents the ordinary form of the fruit produced on a half-standard from 12 to 15 years old on the Pear stock. On young trees on the Quince stock the fruit assumes various shapes, and ripens from October to January. The closer the fruit approaches its normal form the nearer it attains to perfection in quality, and the later is its period of ripening. This variety has been described by Poiteau (Annales de la Société d'Horticulture de Paris, vol. 15) as follows:—

"Clémentine (Poiteau; Clémentine, from Clémence, the name of my daughter), No. 1621, seedling of Van Mons, 1833. A handsome fruit, 3½ inches long; stalk thick, eye middle-sized, placed in a narrow cavity; segments of the calyx acute; skin golden yellow, finely dotted with reddish brown, and slightly tinged with red next the sun; flesh white, tolerably fine grained, melting, with abundance of perfumed juice; core middle-sized; seeds large, broad, and of a dark chesnut colour."

At the request of M. Poiteau, scions not only of this but of several other varieties were sent to M. Noisette of Paris. Van Mons likewise distributed scions amongst us to a great number of amateurs who were ignorant of the name given to it by Poiteau; the result was some



degree of confusion, but which could not last long in such complete collections as those of our amateurs.

It is time to return to the original name. The denomination of Délices d'Hardenpont d'Angers is the most awkward of all. By Délices d'Hardenpont is understood with us a variety of Pear obtained at Mons by Hardenpont in 1768, and the town of Angers has nothing to do with the fruit raised at Louvain in 1833. It is surprising that members of Pomological Congresses in 1856, '57, and '58 did not discover this mistake.

In conclusion, the structure of the Poire Clémence is so well known that a description might be dispensed with. We will only add that this variety thrives particularly well as a low pyramid on the Pear stock, being of moderate vigour and free habit of growth.—*M. de Jonghe, Brussels, Dec. 7.*

Home Correspondence.

Honesty in Trade.—The following paragraph from the *Kilmarnock Post* of the 10th inst. cannot, I think, be too widely made known. I was for a time in the employ of Mr. Lang, and respect him very much:—"Mr. Thomas Lang, Nurseryman, late of Kilmarnock, but now of Ballarat, Australia, has just remittted money to pay off, with principal and interest, those creditors who at his sequestration had claims on his estate of any amount under 10*l*. He also intends, as soon as possible, to discharge in full all the other debts that were then owing by him. This is an act of honesty which, comparatively speaking, but seldom finds its parallel in the commercial world. It is performed with a good grace. The shield of the law was thrown over him before leaving here, and he was by that law no longer bound, even should Fortune again smile on him, to liquidate these debts. In doing so, however, he has acknowledged a higher law—the law of conscience, if not that of Scripture. It is much to be regretted that the same principles of integrity do not govern all those engaged in business; and this example ought to be held up to them, and to the rising generation, as one worthy of their imitation. None can grudge Mr. Lang the prosperity which has followed his efforts in the land of his adoption. No prosperity can be too great for men actuated by motives so upright, and we hope he will long continue to enjoy that prosperity. The money was remitted to a gentleman in town, who has this week been disbursing it." *John Wilson, Shopman, &c., to Thomas Methven, Nurseryman, Leith Walk, Edinburgh.*

Rabbits Barking Trees.—It strikes me that I have already given the following recipe to the *Gardeners' Chronicle.* Its usefulness may perhaps authorise a repetition. I have applied it for some 35 years with never-failing success, and without any detriment to the trees:—Take a sufficient quantity of fresh cow-dung from the pasture. Add soot to it until it has taken the consistency of mortar. Let it remain under cover for a fortnight; and then apply it to the boles of trees, either with a mason's trowel, or with your hand. N.B. I won't guarantee this composition against the gnawing of the Hanoverian rat. Renew the application about once in three years. *Charles Waterton, Walton Hall, Dec. 19.*——For this evil I would suggest the following remedy:—Procure from the cow-house a sufficient quantity of droppings, to which add about a tenth part of soot; mix them with water till they are reduced to the consistency of thick whitewash, then with a brush apply it to the stems and branches of the trees, and neither hare nor rabbit will attempt to injure them, so long as the composition remains on them. I invariably go over the trees a second time during winter, as I consider prevention better than cure. *L. L.*——As far as my experience goes, nothing is so efficacious as a mixture of skimmed milk and soot. In the autumn of 1858 I was employed to superintend the planting of several thousands of young trees (principally Oaks). They were planted in the midst of a large preserve, which was literally swarming with these pests. As we planted them by day they were completely spoiled by night. At length the remedy just named was applied, laid on in the shape of a thick paint; from that time not one of them was gnawed, and on examining them last spring they were all doing well. *A. C., Herts.*——Cowdung, lime, and soot mixed with urine, painted on the stems once a year, will prevent rabbits, &c., from barking stems without in the least injuring the trees. *H. W. Nutt, Flitwick Manor House Gardens.*——I would recommend your correspondent to apply equal portions of fresh manure from the cow-house, and lime, well mixed together with water to the consistency of paint; adding thereto enough gas-tar to make it smell rather strong of that ingredient. Rabbits will have nothing to do with this mixture; and he may use it with perfect safety. It may be applied with a gas-tar or common whitewash-brush, or even with a bunch of rough bast tied together. I have used it for several years on Apples and Pears, Spruce, Larch, and other forest trees, and, made thin, sprinkled all over small hedgerows of Hollies to prevent them from being eaten. *C. W. Mounsdon, Moreton Hall, Congleton, Cheshire.*

Cider Lees for Vines.—In your Paper for 1841, p. 413, Mr. J. Hayward recommends cider lees as a manure for the Vine. Will you kindly inform me if recent practice has found the advantages from it he mentions, and when it should be applied; also whether you would recommend its use for Vines in pots. *Grey Friars.* [We should require very satisfactory evidence before we should trust to cider lees. Can any correspondent favour us with his experience?]

Messrs. Fisher's Ratsbane.—About six weeks ago I enclosed 12 postage stamps to Messrs. Fisher, Kingsland, as per advertisement in *Gardeners' Chronicle,* expecting in return a recipe for taking rats. After a second application, not before, I got an answer, viz., that they had temporarily run out of said recipe. I have heard no more from them, though in your last Number there is a fresh notice that an answer will be sent by return of post at the reduced price of eight stamps. *An Old Subscriber, Nottingham, Dec. 21.*

The Weather in Essex—The following is a report of the weather, which as will be seen, has been remarkably severe in this locality:—

Report of the Weather from December 14, 1859, to December 22, included.

Wind.	1859.	Lowest point arrived at by the indicator during the night.	Weather.	Amount of frost registered.
N.W.	Wednesday, Dec. 14.	21	4 inches snow fell during the night.	11° of frost.
N.E.	Thursday, 15.	17	Clear.	15° do.
N.E. veered S.W.	Friday, 16.	5	7 inches snow fell during the day.	27° do.
S.W. S.E. N.E. S.E.	Saturday, 17.	0—6°	Clear.	38° do.
S.E. N.E.	Sunday, 18.	15	Clear.	17° do.
S.E. S.W.	Monday, 19.	0—9½°	Clear; evening overcast.	41½° do.
S. S.W.	Tuesday, 20.	2½	Clouded.	29½° do.
S.W.W. N.W.W.	Wednesday, 21.	30	Morning heavy rain; Thaw; evening clear.	2° do.
W. N.E.E.	Thursday, 22.	30½	Fine.	1½ do.

The foregoing I believe to be very correct, having had four thermometers in operation, all between 3 and 4 feet from the ground; one of them mercury, the three others spirits of wine. Why I have had four is to test the accuracy of them. Those containing spirits of wine are Negretti and Zambra's self-registering minimum thermometers, which I find to vary slightly at times, but yet under same circumstances to agree very well. The atmosphere of Saffron Walden is generally very dry; it is situated immediately on the white chalk and

is completely shut in with clay-capped hills. I understand that about 8 or 9 miles east and west from us the frost has been equally severe, but attended with very little snow. *Jabez Jay Chater, Saffron Walden.*

Mistletoe.—An inquiry was made a year or two ago if the Mistletoe was ever found on the Beech tree, and I have kept a good look out about our neighbourhood to see, but have never found the slightest trace of such being the fact. In searching in Oakley Park, near Ludlow, belonging to the late much respected Hon. Robert Windsor Clive, I found the Mistletoe, not on the Beech in any instance, but in a most curious fashion on the Common Maple, Acer campestre, or rather on a group of four of them standing near together in this beautiful park (which may likewise boast of some of the stateliest Oaks I should think in England). However, my attention was drawn to one of the Maples by the curious contorted appearance of the branches, which twisted about like the serpents of the Laocoon, and at almost every bend of each branch the Mistletoe had fixed itself all round the bend, not in large tufts, but in a little stubbly crop of 5 or 6 inches long, and causing this part to swell out just in the shape of a nunepin; the branch being small, both fore and aft of the swelling. This is repeated almost all over that tree, giving it a most peculiar and picturesque appearance. The trunk is short, deeply indented, like small pillars, and covered with beautiful yellow and grey Lichens; and the roots bulge out before entering the ground like a buttress. The tree is dying by inches, strangled in fact by these encircling bunches of Mistletoe, which are evidently sucking the very life's blood out of it. In another tree of the same kind close by, in one case when the knot was within a foot or two of the end of the branch, the branch has died and dropped out of the Mistletoe knot, just like the hand would out of the sleeve, leaving a hollow space the size of the branch, and the Mistletoe knot then died. Two questions are mooted in Loudon's Arboretum under the head of Viscum: firstly, whether the Mistletoe can be propagated by inserting cuttings in the live bark in the manner of buds or grafts; and secondly, whether a plant of Mistletoe would keep alive the tree on which it grows, after that tree was prevented from producing either leaves or shoots. The former experiment I have never tried, and it would be a great thing if some good hand would do so, but as to the latter query, the state of one of these four trees is pretty conclusive, for it is a complete shell with only one arm, and the insatiable Mistletoe still clinging to that remnant, sucking the last spark of life out of it, like a sorning acquaintance who *will* see the last of you. The Mistletoe when it has drained every atom of sap appears to die from inanition. A kind friend has furnished me with one of these knots, which I will get another friend to dissect who knows much more about these matters than I do, and will give you the result if you think it worth while. *F. N., Ludlow.*

Societies.

Royal of Edinburgh and the Neill Medal.—At the opening meeting, on the 5th inst., for the session 1859-60, the Neill medal and prize was presented, through Prof. Balfour, to Dr. W. Lauder Lindsay, for his "Memoir on the Spermogones and Pycnides of filamentous, fruticulose and foliaceous Lichens," read to the Society during the last session. In addition to awarding this prize, the Society is expending a considerable sum of money—probably equal to six or eight times the value of the prize—in publishing the memoir in question in the forthcoming part of its "Transactions," and in engraving the relative illustrations, executed by the author, which consist of 12 plates of between 400 and 500 drawings. The Neill prize was, by the late Dr. Patrick Neill, of Canonmills, placed in the hands of the Royal Society to be awarded for distinction in Natural History; and this year it was offered for "a paper of distinguished merit on a subject of Natural History, by a Scottish naturalist, presented to the Society during three years preceding 1st February, 1859; and, failing such paper, for a work or publication by a distinguished Scottish naturalist, bearing date within five years of the time of award." As might have been expected there was no lack of Natural History papers presented to the Society during the years in question, and therefore no lack of competitors for this honour. In awarding all its prizes, the Society is prepared to do the most ample justice to the merits of the papers sent in, by availing itself of the assistance of the most eminent authorities in every department of Natural History, both at home and abroad, who are called upon to examine and decide. The Medal now awarded contains on one side a profile of its founder, and on the obverse side the inscription, "Adjudged for eminence in Natural History to Wm. Lauder Lindsay, M.D., by the Royal Society of Edinburgh." Lord Neaves, one of the Vice-Presidents, in the course of his long and able inaugural address, remarked, in regard to the Neill prize: "The Neill Medal and prize, founded by our late member, Dr. Patrick Neill, for the encouragement of the Natural History studies, in which he took a life-long interest, has been awarded by the Council to Dr. Lindsay, a Scotchman, but not a Fellow of this society, for a paper on the Lichens, showing immense labour and research. This paper has been submitted to competent botanists, for their opinion, and the Council have pleasure in stating that it has received their high approbation. It will, therefore, not merely be rewarded by the Neill Medal and prize, but it is in the course of being printed at length in the 'Transactions,' and of being illustrated by numerous plates, beautifully executed by the well-known artist, Mr. Tuffen West, of London. The delay which Fellows of the Society have experienced in receiving their Fasciculus of 'Transactions' arises from the wish of the Council to include in it this important contribution, which will very soon be completed." The Macdougall-Brisbane Medal and prize, of the same Society—the only other one awarded during the past year—was conferred on the distinguished geologist, Sir Roderick Murchison, at the meeting of the British Association at Aberdeen in September last, "in consideration of his original, persevering, and successful exertions to throw light upon the superposition and real age of vast geological formations of extreme antiquity in the north-western Highlands."

Notices of Books.

Ceylon; an Account of the Island, Physical, Historical, and Topographical, with notices of its Natural History, Antiquities, and Productions. By Sir James Emerson Tennent, K.C.S., &c. 2 vols, 8vo. Longmans. Third Edition.

That a work like this should in the space of a few short weeks have reached a third edition was only what might have been expected for volumes of such sterling value. Ceylon, the centre of Buddhism, the country whence King Solomon obtained his ivory, apes, and peacocks, of which Tarshish, whence came gold and silver, was a port, the great emporium of Eastern commerce, the mine once producing countless treasures for Portuguese and Dutch adventurers, and now the fairest Asiatic possession of the British Sovereign—at last has found an historian worthy of its great reputation. We might even add that an admirable beginning of that colonial history, which mere political writers shrink from undertaking, has been made by the learned and accomplished author of the volumes before us.

The official position of Sir James Emerson Tennent gave him no greater advantages than his predecessors enjoyed in collecting the materials here so ably worked up. But those predecessors, whether they neglected to avail themselves of the opportunities within their reach, or were deterred by the difficulties of an unusually formidable path, left nothing behind them of importance enough to be called historical. Sir Emerson Tennent's work is therefore the more welcome, especially since it embraces every subject upon which Europeans seek for information. Geology, climate, vegetation, zoology in all its forms, the ancient political, social, and mercantile history of the island, and its mediæval history occupy the first volume. In the second its moderu history, the present state of its various provinces, the not less curious than important elephant trade, the great forests, and the ruined cities, are all elaborately described; while very carefully prepared tables of contents and one of the best indexes with which we are acquainted, render every subject easily accessible by the reader.

As the Natural History of Ceylon is that which will most interest our own readers, so it is the part which has probably least attracted the notice of reviewers. We therefore propose to limit our observations to this portion of Sir Emerson's narrative.

Ceylon, although not yielding diamonds and opal, has always been celebrated for its gems, the principal of which are the ruby and sapphire. Of these a full account is given. Such is their abundance, but in comminuted fragments, that almost every valley in communication with rocks of the higher ranges contains stones of more or less value. The source of these precious stones appears to be a stratum underlying the present bed of the rivers; but although well known to the natives they seldom work it, because it is from 10 to 20 feet below the surface.

The iron is also little worked, although it proves to be among the finest that is known. Dr. Gygax, a gentleman employed by the Cingalese government to examine the mineral products of the country, reports that in addition to magnetic ore, there is another description which "is found in vast abundance, brown and compact, generally in the state of carbonate, though still blended with a little chrome, and often molybdena. It occurs in large masses and veins, one of which extends for a distance of 15 miles; from it millions of tons might be smelted, and when found adjacent to fuel and water-carriage, it might be worked to a profit. The quality of the iron ore found in Ceylon is singularly fine; it is easily smelted, and so pure when reduced as to resemble silver. The rough ore produces from 30 to 75 per cent., and on an average fully 50. The iron wrought from it requires no puddling, and, converted into steel, it cuts like a diamond. The metal could be laid down in Colombo for 6*l.* per ton, even supposing the ore to be brought thither for smelting, and prepared with English coal; but anthracite being found upon the spot, it could be used in the proportion of three to one of the British coal, and the cost correspondingly reduced.

"Remains of ancient furnaces are met with in all directions precisely similar to those still in use amongst the natives. The Singhalese obtain the ore they require without the trouble of mining; seeking a spot where the soil has been loosened by the latest rains, they break off a sufficient quantity, which, in less than three hours, they convert into iron by the simplest possible means. None of their furnaces are capable of smelting more than 20 lbs. of ore, and yet this quantity yields from 7 to 10 lbs. of good metal.

"The anthracite alluded to by Dr. Gygax is found in the southern range of hills near Nambepane, in close proximity to rich veins of plumbago, which are largely worked in the same district, and the quantity of the latter annually exported from Ceylon exceeds 2000 tons."

The common opinion respecting the effect of this climate upon Europeans is materially corrected by the author, whose experience teaches him that "with a firm adherence to temperance in the enjoyment of stimulants and moderation in the pleasures of the table, with attention to exercise and frequent resort to the bath, it may be confidently asserted that health in Ceylon is as capable of preservation, and life as susceptible of enjoyment, as in any country within the tropics." It is however added that very serious fevers break out.

Ceylon has long enjoyed a high reputation for the variety and importance of the plants and vegetable products it naturally yields. To these have now to be added numerous Exotics. Mangosteens "which, ten years ago, were exhibited as curiosities from a single tree in the old Botanic Garden at Colombo, are found to thrive readily, and occasionally appear at table, rivalling in their wonderful delicacy of flavour those which have heretofore been regarded as peculiar to the Straits."

Nutmegs begin to be exported. "The Tea plant has been raised with entire success in the hills on the estate of the Messrs. Worms, at Rothschild, in Pusilawa; but the want of any skilful manipulators to collect and prepare the leaves renders it hopeless to attempt any experiment on a large scale, until assistance can be secured from China to conduct the preparation." And Vanilla is understood to thrive. Even the Vine has been subdued by art, although some of our European fruit trees still refuse to be productive, changing their nature in a manner remarkable enough to deserve the attention of Mr. Darwin. In the mountainous districts of the east side, we are told that "Peaches, Cherries, and other European fruit trees, grow freely; but they become evergreens in this summer climate, and exhausted by perennial excitement, and deprived of their winter repose, they refuse to ripen their fruit. The Apple tree in the Peradenia Gardens seems not only to have become an evergreen, but to have changed its character in another particular; for it is found to send out numerous runners underground, which continually rise into small stems and form a growth of shrublike plants around the parent tree. A similar failure was discovered in some European Vines, which were cultivated at Jaffna; but Mr. Dyke, the government agent, in whose garden they grew, conceiving that the activity of the plants might be equally checked by exposing them to an extreme of warmth as by subjecting them to cold, tried, with perfect success, the experiment of laying bare the roots in the strongest heat of the sun. The result verified his conjecture. The circulation of the sap was arrested, the Vines obtained the needful repose, and the Grapes, which before had fallen almost unformed from the tree, are now brought to thorough maturity, though inferior in flavour to those produced at home."

The natural vegetation, of which we have a most interesting account, maintains its popular reputation even under the scrutiny of a European philosopher. "Imagination," says Sir Emerson Tennent, "can picture nothing more wondrous and charming; every level spot is enamelled with verdure, forests of never-fading bloom cover mountain and valley; flowers of the brightest hues grow in profusion over the plains, and delicate climbing plants, rooted in the shelving rocks, hang in huge festoons down the edge of every precipice.

"Unlike the forests of Europe, in which the excess of some peculiar trees imparts a character of monotony and graveness to the outline and colouring, the forests of Ceylon are singularly attractive from the endless variety of their foliage, and the vivid contrast of their hues. The mountains, especially those looking towards the east and south, rise abruptly to prodigious and almost precipitous heights above the level plains; the rivers wind through woods below like threads of silver through green embroidery, till they are lost in a dim haze which conceals the far horizon; and through this a line of tremulous light marks where the sunbeams are glittering among the waves upon the distant shore."

Well may Serendib, the name given to Ceylon in Arabian stories, have been regarded as the earthly Paradise when compared by Arab or Persian navigators with their own scorched or burnt-up wastes. We must extract a few passages descriptive of some of the species that contribute such glorious scenery. *Buttress trees* are among the most curious: "Some of the trees in the higher ranges are remarkable for the prodigious height to which they struggle upwards towards the air and light from the dense jungle; and one of the most curious of nature's devices is the singular expedient by which some families of these very tall and top-heavy trees throw out buttresses like walls of wood, to support themselves from beneath. Five or six of these buttresses project like rays from all sides of the trunk: they are from 6 to 12 inches thick, and advance from 5 to 15 feet outward; and as they ascend, gradually sink into the bole and disappear at the height of from 10 to 20 feet from the ground. By the firm resistance which they offer below, the trees are effectually steadied, and protected from the leverage of the crown, by which they would otherwise be uprooted. Some of

these buttresses are so smooth and flat, as almost to resemble sawn planks."

Rhododendron trees and Erythrinas we pass by as now familiar in our gardens. Much less so is the Lagerstrœmia regina, a small plant of which was last autumn the glory of Kew. This, called in Ceylon "the Muruttu, is another flowering tree which may vie with the Coral, the Rhododendron, or the Asoca, the favourite of Sanskrit poetry. It grows to a considerable height, especially in damp places and the neighbourhood of streams, and pains have been taken, from appreciation of its attractions, to plant it by the road side and in other conspicuous positions. From the points of the branches panicles are produced, 2 or 3 feet in length, composed of flowers, each the size of a Rose and of all shades, from a delicate pink to the deepest purple. It abounds in the south-west of the island."

The Banyan tree, Ficus indica, and other Fig trees have been often described, but never more graphically than in the work before us. "As we descend the hills the Banyans and a variety of Figs make their appearance. They are the Thugs of the vegetable world, for although not necessarily epiphytic, it may be said that in point of fact no single plant comes to perfection, or acquires even partial developement, without the destruction of some other on which to fix itself as its supporter. The family generally make their first appearance as slender roots hanging from the crown or trunk of some other tree, generally a Palm, among the moist bases of whose leaves the seed, carried thither by some bird which had fed upon the Fig, begins to germinate. This root, branching as it descends, envelopes the trunk of the supporting tree with a network of wood, and at length penetrating the ground, attains the dimensions of a stem. But unlike a stem, it throws out no buds, leaves, or flowers; the true stem, with its branches, its foliage, and fruit, springs upwards from the crown of the tree whence the root is seen descending; and from it issue the pendulous rootlets, which, on reaching the earth, fix themselves firmly and form the marvellous growth for which the Banyan is so celebrated. In the depth of this grove, the original tree is incarcerated till, literally strangled by the folds and weight of its resistless companion, it dies and leaves the Fig in undisturbed possession of its place. It is not unusual in the forest to find a Fig tree which had been thus upborne till it became a standard, now forming a hollow cylinder, the centre of which was once filled by the sustaining tree: but the empty walls form a circular network of interlaced roots and branches; firmly agglutinated under pressure, and admitting the light through interstices that look like loopholes in a turret. Another species of the same genus, *F. repens*, is a fitting representative of the English Ivy, and is constantly to be seen clambering over rocks, turning through heaps of stones, or ascending some tall tree to the height of 30 or 40 feet, while the thickness of its own stem does not exceed a quarter of an inch.

"The facility with which the seeds of the Fig tree take root where there is a sufficiency of moisture to permit of germination, has rendered them formidable assailants of the ancient monuments throughout Ceylon. The vast mounds of brickwork which constitute the remains of the Dagobas at Anarajapoora and Pollanarrua are covered densely with trees, among which the Figs are always conspicuous. One, which has fixed itself on the walls of a ruined edifice at the latter city, forms one of the most remarkable objects of the place,—its roots, streaming downward over the walls as if they had once been fluid, follow every sinuosity of the building and terraces till they reach the earth."

Passages like the foregoing meet the reader at every step; and many more are marked by us for extract. We must however defer them till next week, when some other parts of Natural History will be adverted to. In the meanwhile let us add that the volumes are suitably illustrated by many excellent wood engravings.

The Manchester Flora, by Leo H. Grindon (8vo, Wm. White), is something more than its name indicates In reality it is an introduction to the Botany of Common Plants, illustrated with good woodcuts. It is satisfactory moreover to find in its pages some analytical tables very well drawn up. If botanical students would only exercise themselves in making such tables, they would find themselves advancing much quicker than they may have thought possible; and if writers on Systematical Botany would try their supposed novelties by the analytical process they would distinguish the real from the unreal, and the vague from the positive.

TRADE LISTS RECEIVED.—Plymouth Seed &c. Company's *General Price Current for* 1860 has appeared in its usual form, occupying 92 pages octavo, and enclosing a list of testimonials as to the good quality of the seeds supplied.—Louis Van Houtte (Ghent), *Prix-courant des Graines*, is a very long list of flower seeds partly saved in Europe, partly imported from Australia, and of kitchen garden seeds. Among the latter we remark two Cauliflowers, one called *Choufleur demi dur de St. Lambert*, described as an admirable variety surpassing all others in size and the beauty of its head; the other, *Choufleur gros court d'Erfurt*, announced as the earliest known as well as one of the best.—Wm. Barratt's (Wakefield) *Descriptive Catalogue of Selected Roses*. An extensive country list, with the old and bad or inferior sorts weeded out.

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

CONSERVATORY, &c.—The changeable weather which we are now experiencing will render careful attention to specimen hard-wooded plants which have to be wintered in this house necessary. Many of these are impatient of fire-heat and a confined atmosphere. Use no more artificial warmth, therefore, than is absolutely necessary, and endeavour to counteract its drying effects either by means of evaporating pans or by sprinkling the borders, &c., in order to prevent anything like a dry parched state of the atmosphere. Plants in cold pits that may have been excluded from light and air for a few days must not be too suddenly uncovered; on the contrary, they should very gradually inured to exposure. Take advantage of mild days to give air freely, and keep the plants very sparingly supplied with water at the root, so as to prevent the production of weakly sappy wood. If there is any prospect of a scarcity of bloom next May, a portion of the Achimenes and Gloxinias should be repotted at once and placed in a warm part of the stove, choosing such as have been the longest at rest, and a few Clerodendrons, Allamandas, a plant or two of Echites splendens and Dipladenia crassinoda may also be started; but unless plants of these are at command with well-ripened wood, and that have been some time at rest, there will be nothing gained by attempting to start them into growth at present, for in most cases it is difficult at this season to maintain a sufficiently warm temperature to secure anything like free growth from these, unless the plants have been well prepared for an early start. A gentle bottom-heat of about 80° or 85° will be of great service to such things in inducing a healthy root action, and if this can be secured there will be little difficulty about obtaining free vigorous growth. Let Ixoras and all other hard-wooded plants that have made sufficient growth be kept rather dry at the root in order to check their growth and induce a tendency to form bloom buds, but do not let the soil in the pots get so dry as to affect the foliage.

FORCING DEPARTMENT.

PINERIES.—The supply of ripe fruit from May until August being usually obtained from plants that start into fruit without making growth in spring, a fair proportion of the stock should therefore be in a well matured state by or shortly after this season, and any sudden changes of temperature which might induce too many of them to show fruit at once should be carefully avoided. That portion of the stock expected to furnish the autumn supply of fruit should not be too much checked at present, indeed these may be kept growing slowly all the winter, which is perhaps the most certain method of preventing their fruiting too early in spring. Where the stock of plants likely to fruit without making farther growth is considered insufficient to meet the demand until August, the stronger plants of those for autumn fruiting should be encouraged to make growth as early as can be done without weakening the foliage, with the view of preparing them for showing fruit in April. Examine the soil occasionally about young stock growing in the open bed, and do not allow it to become unhealthily dry, for this would probably result in a great portion of the stock showing fruit prematurely, and it is also a work of some difficulty properly to moisten the bed if it is once allowed to get too much dried up. Use no more fire-heat for the present than will suffice to maintain the requisite temperature, which, for the general stock, need not be high for some time yet. VINERIES.—As soon as the buds in the early house are fairly started the temperature should be increased to 60° at night and 65° by day, allowing it to rise 10° on bright days. Take every opportunity of admitting a little fresh air, but recollect that the foliage will not bear exposure to cold drying winds, therefore air should be admitted in contact with the heating apparatus, and when it may be necessary to give back air the sashes or ventilators must be opened but very little, and if pieces of netting could be nailed over the openings this would greatly assist in preventing cold currents blowing into the house. Where the border cannot be warmed, see that it is well protected from wet, &c., by a thick covering of dry litter, or whatever more efficient covering can be recommended. Look over ripe Grapes often, removing any decaying berries, and aim at securing a dry atmosphere with the least possible application of fire heat. PEACHES.—Until the trees are fairly on the move do not keep the night temperature higher than from 40° to 45° by means of fire heat; but an advance of 10° early in the day, with plenty of moisture in the atmosphere, should be secured. Syringe the trees frequently, and secure a thoroughly moist atmosphere. Also see that the inside border is in a moist, healthy state, and if this is not the case, two or three applications of tepid water should be given.

FLOWER GARDEN AND SHRUBBERIES.

Valuable plants, as variegated Hollies, Rhododendrons, &c., if not growing as freely as it is desirable that they should do, would be benefited by a liberal allowance of rotten manure or well-decayed leaf soil applied as a top dressing, covering it with a little fine soil and working it into the ground around the ball towards the extremities of the roots. Rhododendrons, however, bear removal so well, that these where not growing satisfactorily should be taken up, the ground well prepared by a liberal addition of peat or leaf soil, and replanted. Rose borders should be well dressed with manure and forked in or soaked with manure water. Keep Grass free from dead spray from trees, well rolled, neat and trim. Now that the frost is gone give careful attention to half hardy plants in cold frames, taking advantage of every favourable opportunity to expose them freely but cautiously to air. Anything of which there is but a spare supply of plants to propagate from should be placed in growing quarters at once, taking care to keep them near the glass and free from insects, mildew, &c.; for soft-wooded plants in heat at this season are very subject to the attacks of insects.

HARDY FRUIT AND KITCHEN GARDEN.

Any of the more choice varieties of Pears that do not ripen properly should be removed to a warm dry room for a few days, which will be found to greatly improve them. Keep all fruit as cool and dry as possible. If frost is excluded from the house it can scarcely be too cool, where the object is to preserve fruit plump and sound as long as possible. Get manure wheeled upon vacant ground when this can be done without injuring the walks, and get all spare ground turned up as soon as possible, so as to expose it to the action of frost. For land that has been long cropped with vegetables a dressing of fresh loam would in many cases be preferable to manure, and where this is wanted and can be obtained, it should be got to hand in order that advantage may be taken of frosty days for wheeling it upon the ground. Where fresh soil cannot be obtained charred vegetable refuse, such as prunings of shrubberies, edgings of walks, and many things which turn up in course of the season, may be cheaply made to form an excellent substitute.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.
For the Week ending Dec. 22, 1859, as observed at the Horticultural Gardens.

Dec.	Moon's Age.	Barometer.		Temperature of the Air.			Temperature of the Earth		Wind.	Rain.
		Max.	Min.	Max.	Min.	Mean	1 foot deep.	2 feet deep.		
Friday 16	11	29.689	29.609	34	11	22.5	39	42	N.	.00
Satur. 17	22	29.655	29.651	28	18	23.0	39	41½	N.	.00
Sunday 18	23	29.695	29.649	30	8	19.0	39	41	N.	.00
Mon. 19	24	29.734	29.712	31	7	19.0	38½	41	S.	.00
Tues. 20	25	29.796	29.453	36	32	34.0	38	40	S.	.00
Wed. 21	26	29.316	29.229	47	26	36.5	38	40	S.W.	.02
Thurs. 22	27	29.532	29.494	45	27	36.0	38½	40	S.W.	.01
Average		29.631	29.542	35.8	18.4	27.1	38.5	40.8		.03

Dec. 16—Severe frost; slight haze; overcast; frosty.
— 17—Frosty and foggy, densely overcast at night; frosty.
— 18—Severe frost and foggy; fine; foggy; severe frost.
— 19—Frosty and foggy; clear at night with sharp frost.
— 20—Clear and frosty; fine; slight snow at night.
— 21—Cloudy and windy; clear; slight frost
— 22—Clear and fine; foggy at night; slight frost; rain at night.
Mean temperature of the week, 12½ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 33 years, for the ensuing Week, ending Dec 31, 1859.

December.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 25..	43.5	28.9	36.2	8	0.25 in.	2	7	3	—	2	10	6	3
Mon. 26..	43.0	32.2	37.6	12	0.39	2	4	3	4	4	9	4	3
Tues. 27..	42.5	29.6	36.1	12	0.40	5	4	1	—	5	7	7	4
Wed. 28..	41.6	29.2	33.4	10	0.16	4	3	3	3	3	3	9	5
Thurs. 29..	43.0	33.6	38.3	14	0.17	2	5	1	3	4	7	6	5
Friday 30..	44.5	32.7	38.6	11	0.30	1	5	2	2	3	9	10	1
Satur. 31..	43.9	33.0	38.4	9	0.44	—	7	1	1	6	10	4	4

The highest temperature during the above period occurred on the 25th, 1827—therm. 58 deg.; and the lowest on the 28th, 1853, and 31st, 1857—therm. 8 deg.

Notices to Correspondents.

DAHLIA ROOTS: *A C.* The only thing to be done with your Dahlia roots that are slightly frozen is to thaw them gradually, and to take care that they are placed where frost will not reach them a second time. On the other hand they must not be kept too warm.

EAST INDIA TEA: *E T.* You can obtain this new growth by application to Henry Noble, Esq., 11, Broad Street Buildings, E.C. It is the produce of a new Tea district in Sylhet, and is we think better than Assam Tea.

ICE: *J S.* By no means use salt. Let the bottom and sides of the ice-house be lined with straw, and pack the ice in as firmly as possible, breaking it quite small with wooden beaters as the work proceeds.

KENSINGTON GORE: *A Gardener* should address his inquiries to the Superintendent.

MARKETS OF PARIS: *Hulan.* About the middle of November Cauliflowers were selling at from 10 to 100 francs the 100; Brussels Sprouts, from 40 to 50 fr. the hectolitre; Cabbages, from 6 to 18 fr. the 100; Onions, from 13 to 16 fr. the 100 bunches; Mushrooms, from 1*d.* to 2*d.* the pottle; Dutch Potatoes fetched 11 to 12 fr. the hectolitre; fine Pears and Apples were worth 10*d.* each; white Chrysanthemums produced 4*d.*, purples 3*d.* each; Veronicas, Heliotropes, and Primroses each sold for 4*d.* a pot.

NAMES OF PLANTS: We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have or could have undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*J Pearson, Maidstone* (We hope this signature is read correctly). The leaves appear to belong to Abies Douglasii.—*H H, Cork.* Acacia dealbata and Acacia falcata.—*H Beasley.* Such morsels are very difficult to name. We believe No. 1 to be Cephalotaxus Fortuni, and No. 2 to be Cephalotaxus drupacea.—*A Devonian.* The small Orange is certainly not Citrus japonica, which is a Lime, and we imagine would be hardy with you. But it is useless to try it unless it is worked on Limonia trifoliata. We are unable to say whether Gishurst Compound will remove the black mould that attacks your Plum-trees. The experiment deserves a trial.

STRAWBERRIES: *Tenby.* You will find ample information in a shilling pamphlet called the Culture of the Strawberry, by Mr. Cuthill, just published at the office of the "Florist."

VINES: *Notts.* Prince's Eureka is, we believe, unknown in this country. It is said to be one of the improved native Grapes of the U. States, thin-skinned and free from all foxy flavour. We presume, however, that the last statement is not wholly correct, because the Grape is also said to yield an *aromatic* wine.

WEATHER: *S T P.* On looking over the original observations, and comparing them with the weekly return including the period to which you refer, we find the latter are correctly printed.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London, S. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

LONDON MANURE COMPANY
(ESTABLISHED 1840),
Have the following MANURES ready for delivery :—
CORN MANURE FOR AUTUMN SOWING.
BLOOD MANURE FOR AUTUMN SOWING.
URATE.
SUPERPHOSPHATE OF LIME.
SUPERPHOSPHATE MINERAL.
The London Manure Company also supply PERUVIAN GUANO (direct from Messrs. Gibbs & Sons), SULPHATE OF AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of known value, all of which they warrant strictly genuine. Wholesale dealers supplied.
116, Fenchurch Street, E.C. EDW. PURSER, Secretary.

ESTABLISHED 1812.
MESSRS. PROCTOR are now prepared to take orders for their special MANURES for 1860, which they unhesitatingly state are of a superior quality and charged at the lowest possible price, viz. :—

TURNIP MANURE		CLOVER MANURE		OAT MANURE	
WHEAT	ditto	POTATO	ditto	BEAN	ditto
GRASS	ditto	BARLEY	ditto	Also	

PERUVIAN GUANO, BONE DUST, SUPERPHOSPHATE OF LIME, &c., all of which are warranted of the best quality.
Apply to H. & T. PROCTOR, Cathay, Bristol; or
PROCTOR & RYLAND, Birmingham and Chester.

PERUVIAN GUANO.—The present price of this valuable Manure is 12*l.* per ton for 30 tons and upwards; 13*l.* 5*s.* per ton for 1 ton up to 30 tons.
And, in order to protect themselves against the purchase of adulterated mixtures and of inferior Guanos purporting to produce results equal to Peruvian, consumers are recommended to apply either to ourselves, to our Agents Messrs. GIBBS, BRIGHT, & Co., of Liverpool and Bristol; or to Dealers of established character, in whose honesty and fair dealing they can place implicit confidence. ANTY. GIBBS & SONS.
15, Bishopsgate Street Within, London, E.C.

MR. J. B. LAWES manufactures the following MANURES :—

TURNIP MANURE	£6 6
SUPERPHOSPHATE OF LIME	6 6
MINERAL SUPERPHOSPHATE OF LIME	5 5
BARLEY MANURE	8 0

N.B. Genuine PERUVIAN GUANO direct from Messrs Gibbs, NITRATE OF SODA, SULPHATE OF AMMONIA, and other Chemical Manures.
WHEAT MANURE.—PERUVIAN GUANO is proved to be the best and cheapest Artificial Manure for Wheat, at Autumn sowing.
American decorticated Cotton-seed Cake of best quality supplied at the market price.
Offices: 1, Adelaide Place, London Bridge, E.C.

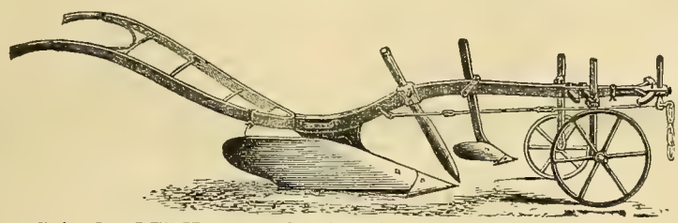
BURNARD, LACK, AND CO.'S CONCENTRATED SUPERPHOSPHATE OF LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.
CONCENTRATED TURNIP MANURE, equal in value to the preceding.
Of these Manures Dr. Voelcker says :—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."
Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to BURNARD, LACK, & Co., Sutton Road, Plymouth.

"FRIGI DOMO."—Patronised by her Majesty, the Queen, the Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, and —Collier, Esq., of Dartford.
PROTECTION FROM THE MORNING AND EVENING FROST.
"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and, floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths.
Two yards wide, 1*s.* 6*d.* per yard run.
Four, 3*s.* per yard; also,
An improved make three yards wide, 2*s.* 6*d.* per yard run.
ELISHA THOMAS ARCHER, whole and sole manufacturer, 7, Trinity Lane, Cannon St., City, E.C., and of all Nurserymen and Seedsmen throughout the kingdom. "It is much cheaper than mats as a covering."

BEDFORDSHIRE AGRICULTURAL SOCIETY, 1859.

J. AND F. HOWARD have much pleasure in informing the Public that at the Ploughing Matches of the above Society, just concluded,

HOWARD'S CHAMPION PLOUGH



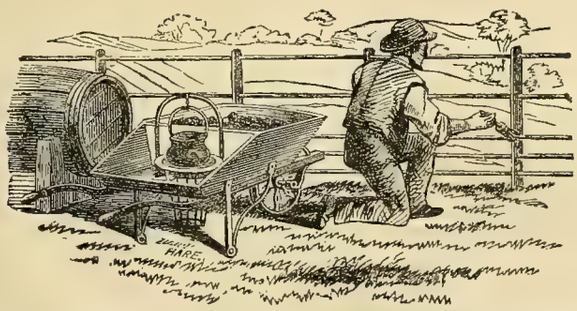
Gained SEVEN out of EIGHT FIRST PRIZES, and
SEVEN out of EIGHT SECOND PRIZES,
Thereby more than ever sustaining its position at home, while, at the recent Meetings of the Royal Agricultural Society of England and the Highland and Agricultural Society of Scotland, it also gained the
Two Chief Prizes as the Best Plough for General Purposes.
CATALOGUES, with full particulars, sent post free on application to
J. & F. HOWARD, BRITANNIA IRON WORKS, BEDFORD.

OIL PAINT NO LONGER NECESSARY.

HILL & SMITH'S
Black Varnish for preserving Iron Work, Wood, or Stone Work.

THIS varnish is an excellent substitute for oil paint on all out-door work, and not only saves two-thirds the expense of an ordinary quality of oil paint, but has the great advantage that it may be applied by an ordinary labourer in a cold state, and that no mixing or thinning is required. It is used in the grounds at Windsor Castle, Kew Gardens, and all the Royal Parks in London, and at the seats of many of the Nobility and Gentry of the United Kingdom. It is also largely exported. Testimonials from Noblemen and Gentlemen who regularly use it will be forwarded gratis on application. Sold in casks of about 30 gallons each, 1*s.* 6*d.* per gallon, or 1*s.* 8*d.* per gallon, carriage paid to any Railway Station.

THE WROUGHT IRON HEATING BARROW



shown in the above engraving is a very useful article for applying the varnish or for heating gas tar. The front compartment holds tools, fuel, &c. and the back compartment carries an iron three gallon pot with fire grate underneath.
Price £3 or £3 3s. Carriage paid.
HILL AND SMITH, BRIERLY HILL IRON WORKS, NEAR DUDLEY.
LONDON OFFICE: 40 BROAD STREET BUILDINGS, E.C.

FOWLER'S PATENT STEAM PLOUGH has gained the following prizes:—
The Royal Agricultural Society's Prize, at Warwick, July 1859, 50*l.*
The Royal Agricultural Society's Prize, at Chester, July 1858, 500*l.*
The Highland Society's Special Prize at Stirling, Oct. 1857, 200*l.*
And at other Agricultural Meetings in the United Kingdom, Prizes amounting to 225*l.*
For further particulars, prices, and Catalogues apply to JOHN FOWLER, JUN., 28, Cornhill, London, E.C.

IMMEDIATE ORDERS WILL PREVENT DISAPPOINTMENT.
"SIGMA'S" UNIVERSAL SEED PLANTERS (Dibbles), vastly improved since the Prize of the Royal Agricultural Society was awarded them. The "MULTUM IN PARVO," forming eight perfect implements, highly commended, see testimonials. The Manure Distributor carried off the Prize Medal in 1851, recently much improved, see *Gardeners' Chronicle*, July 30 and August 6th. "Simple, promising, and ingenious." The STEEL DRAW SHAVE HOE clears a row between Turnips at one sweep. Engravings sent.—C. POWELL, Hurstgreen, Sussex. All Patented.

PARKES' STEEL DIGGING FORKS.
BURGESS AND KEY, 95, Newgate St., E.C., London, being the Wholesale and Retail Agents for these celebrated TOOLS have always a large Stock on hand from which their Customers may select what they may require.
ANTHONY'S PATENT AMERICAN CHURN.—The FIRST PRIZE was again awarded to this Churn in Competition with several others at the Chester Meeting of the Royal Agricultural Society; it has obtained the First Prize given by the Society at every Meeting since 1850. Messrs. BURGESS & KEY, 95, Newgate Street, E.C., strongly recommend it as the most perfect Churn now in use. Full particulars sent on application.

LAND IMPROVEMENTS.
THE GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY
are empowered by Act of Parliament to assist the Owners of Land in carrying into effect the following Improvements, and charging the whole outlay and expenses on the property improved.
I. All Works of Drainage, Irrigation, Warping, and Embankment.
II. The erection of Farmhouses, Cottages for Agricultural Labourers, and all kinds of Farm Buildings.
III. The construction of Roads.
IV. The Grubbing and Clearing of Old Woodlands, Enclosing, Fencing, and Reclaiming Land.
The Landowners by whom any of these Improvements may be executed are—Tenants for Life, Trustees, Mortgagees in Possession, Guardians, Committees of Incompetent persons, Married Women, Beneficial Lessees for Lives or for a Term exceeding 14 years, Corporations, Ecclesiastical or Municipal, Incumbents, Sequestrators, Charitable Trustees, &c.
The Owners of Estates not entailed, who may be desirous to avoid the expense or inconvenience of a Legal Mortgage, may also avail themselves of the powers of the Company's Act to charge their estates with an outlay in improvements.
In all cases the whole cost of the improvements, with the attendant expenses, may be charged on the Estate, the term for Building Works being limited to 31 years, but for all other improvements being capable of extension to 50 years.
No investigation of title being required, and the charge not being affected by Incumbrances, no legal expenses are incurred.
Operations under the Company's Act are divided into two principal branches; one where the Landowner designs and executes the improvements by his own Agent and merely requires a loan from the Company to charge the Estate,—the other where the Company undertake the entire responsibility of the Improvement and obtain repayment by way of Rent Charge. In the first case the plans, specifications, and estimates prepared by the Landowner's Agent are forwarded to the Company to be submitted for approval to the Inclosure Commissioners. As soon as the sanction has been given the Landowner proceeds to execute the works, and the Company having conducted the business through all the official forms, complete the charge on the estate when the works have been passed by the Commissioners, and repay the Landowner the amount agreed upon.
In no part of the business is there any control upon a Landowner except by the Inclosure Commissioners. The Company never interfere, except at the special request of the Landowner or his Agent, and only to such extent as may further the objects he has in view.
In the other case, where the Company are required to execute the works, a report and estimate of the Improvement are sent to the Landowner, and having been approved, the plans are then prepared and the works—either submitted to public competition or entrusted to their own staff—are carried on to completion, and the amount of the actual expenditure only, approved by the Inclosure Commissioners with the Company's agreed commission and the Commissioners' expenses, finally charged on the Estate for the term fixed by the Landowner.
The Company also execute Drainage and all other Works of Land Improvement on Commission for the Owners of Estates not Entailed who may wish to charge the outlay on the property through the simple and inexpensive process of the Company's Act.
Applications to be addressed to WILLIAM CLIFFORD, the Secretary, at the Offices of the Company, 52, Parliament Street, London.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, London, S.
Principal—J. C. NESBIT, F.G.S., F.C.S., &c.
The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.
Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

CRYSTAL PALACE. WINTER POULTRY SHOW.—A Grand SHOW of POULTRY and PIGEONS will be held at the Crystal Palace, February 11, 13, 14, and 15, 1860. The Entries close on January 14.
For Schedules of Prizes and Certificates of Entry, apply to Mr. W. HOUGHTON, Secretary to the Show.

The Agricultural Gazette.

SATURDAY, DECEMBER 24, 1859.

THE *Mark Lane Express* has published a series of returns from various parts of the country as to the character of the past harvest. How fairly the judgment at harvest time by our own correspondents of the yield then probable has been borne out by the results of threshing may be gathered from the following table, in which the figures represent the number of reports procured which stated the crop to be under average, over average,

and average respectively—the second row for each crop being the December returns to inquiries made by our contemporary, and the upper row being the August returns of the *Agricultural Gazette*.

CROP RETURNS.

		Over Average.	Average.	Under Average.
Wheat ..	August	17	114	55
	December	15	130	112
Barley ..	August	8	93	67
	December	15	106	96
Oats ..	August	24	76	89
	December	40	96	87
Beans ..	August	6	50	63
	December	17	103	80
Peas ..	August	21	52	19
	December	34	95	29

The remarks made some months ago in our columns on the probabilities of the harvest of 1859 are indeed fully borne out by experience. An exceedingly rapid ripening in July had injured most of the grain crops in the south, and a dilatory harvest owing to want of hands exposed them to injury by wet and stormy weather. In the north and in Ireland Oats, which are there the most valuable crop, were unusually unpromising; all over the country Barley was a very uneven crop and of inferior quality; and Wheat where heaviest and best was more injured by being laid than has perhaps ever been known before.

—— WE have not room for more than an intimation that our readers will find elsewhere a most instructive discussion before the Society of Arts on the great question of the day, the condition of the agricultural labour market.

A similar discussion before the Oxford Farmers' Club will be given next week. Their resolutions were as follows:—

"That as the price of labour must be regulated by the supply and demand, it is the opinion of this club that the time has arrived when something must be done to cultivate a better feeling between, one more closely uniting the employer and employed—the interests of the two being identical. That to effect this it is necessary in the first place to repeal or alter the present law of settlement.

"2dly. That the owners and occupiers of the soil should do their best to improve the moral and physical condition of the industrial classes, supplying them as far as possible with remunerating labour during the whole year, and with piece-work when practicable, providing them with comfortable dwellings near or upon the farms, and in every way encouraging the industrious labourer, so that the employer may have the full benefit of his industry, and the labourer himself be comfortable, contented, and happy. And lastly, that machinery should be introduced as much as possible on the farm to supply the deficiency of manual labour."

THE use of marl as a top-dressing for land has been practised for many centuries. Although the beneficial effects have been highly satisfactory, still the practice is somewhat decreasing. The good results have been manifest, and it certainly has the well-merited repute of having been a valuable adjunct to the various means adopted for the improvement of land. The term marl, strictly speaking, is limited to such calcareous earth as is more generally of a soapy and adhesive character; but the term has been extended to the use of other materials, and embraces earths which are quite destitute of lime. Extensive tracts of waste land have through this agency been rendered valuable for tillage purposes. The counties of Lincoln, Norfolk, and Suffolk, especially present themselves to our notice as evidence of the great advantages resulting from the practice. Thousands of acres which were almost worthless and useful only as rabbit-warrens, are now regularly cultivated, and have been so from the time of their marling. There are, however, signs more or less frequent, which show that at no distant day this land will again require the same liberal applications which have already so powerfully promoted their fertility.

This arises in part from the washing away of the marl, but also from the stimulus of high farming. The natural loss is one which might reasonably be expected as being occasioned by the removal of crops and the passage of water through the soil; but the need of a fresh supply of marl is not so commonly traced to the introduction of a higher system of farming as it ought to be. We need to maintain in the soil a constant balance, for as we add to the soil manures which stimulate the land to yield crops above its ordinary power, so also must we give it strength to mature these crops, otherwise they partially fail.

Much of the land which has shown such marked improvement from the use of marl was originally of a poor sandy character. The addition of strong and adhesive earth either combined with lime or not, as the case might happen, supplied it with powers it did not previously possess, and thus land utterly incompetent to yield a Wheat crop was afterwards productive of the plant. This has been followed by several years cropping, and we have been steadily increasing our applications of ammoniacal manures, consequently much land which received its marl several years since is now being worked to a considerable disadvantage. The additions to the manure of the farm do not produce their accustomed return. Too often we have weak straw with our Barley crops. We have a downward tendency evident in our Wheat crop. Our Clover seeds are more difficult to bring to perfection, and yet all these results are in the face of a higher system of manuring.

It forcibly recalls to our minds the balance which must be maintained in the soil. The addition to an excess is of little avail unless we employ other agents capable of pairing off, as it were, with those in excess. Comparatively speaking, there is little advantage to be gained by adopting a system by which you from time to time enrich your land with valuable ammoniacal manures, unless the soil is stored with a sufficient supply of the other materials which must accompany them in the development of the crop. The more rapid the course of cropping adopted upon these improved sands, the quicker will the marl applied be exhausted; and the higher the system of farming that is practised, the more important is it to keep the stability of the soil in such condition that it shall be competent for the duties which the stimulating powers of the manure may demand.

Valuable then as the marl may be because of its fertilising character as a manure, by the food thus supplied to the plant, it has another influence upon the soil which is not to be overlooked. The power which a soil possesses of holding the manure entrusted to its care makes a material difference in its economic value. If one soil has the power of holding a liberal supply of manure upon which the growing crop can feed, and subsequently retains the residue for the succeeding crop, many advantages are gained. In such a case you can force the growth of the former, knowing full well that if more manure should be added than that crop requires the surplus will be reserved for future ones. It is just the reverse with those which have but feeble power of retaining manure, such as our sandy soils. Here we find it necessary to apply the manure with a less liberal hand and more frequently, so that such soils become much more costly to manure than others which keep what is placed in their care. The employment of such bodies as are used for marling the land very materially favours this preservative character, and in their use upon the land valuable benefits will be realised from this mode of action.

The application of marl involves a considerable cost, and we feel assured that great advantages would often result from a careful examination of different beds of marl. These often vary considerably in composition, and consequently in their quality. After the application has been made it is by no means difficult to form a correct opinion as to their relative value, but oftentimes this is too late for a guide. We know instances of beds of marl equally convenient, equally available, yet of vastly different fertilising powers, and yet the variation between their value has not been fully known until a considerable outlay has been made. The possession of such information where two or more beds are available may often prove to be of great value, and before any extended outlay is made it is always advisable to gain full information upon the value of the materials available. We know that a great variation often exists in the proportion of phosphoric acid present, some containing six, eight, or even 10 times as much of this body as other marls. These marked differences seldom exist to this extent in contiguous beds, but an increase to three or four times the quantity of phosphoric acid is by no means uncommon.

Probably one of the most important qualities of marl, and in which there is as great a variation as in any respect, lies in its absorptive powers. This we are now beginning to estimate at a more correct value, for we know that by giving to a soil the power of absorbing ammonia we really add to it an equivalent for this fertilising matter. To this we might add that there is a great difference in the quantity of soluble silica in our marls, and this offers another inducement for having the marl carefully examined, so as to select the most valuable bed. Knowing as we do the importance of the practice of marling, and feeling assured that circumstances will for some time to come render an increase of this work necessary in each succeeding season, we suggest the propriety of not delaying its use so as to allow the influence of previous applications to be exhausted, but rather by a discreet and early renewal to maintain the land in a high degree of fertility.

—— IN reference to the Swede and Mangel crops, which are now a subject of discussion, and as carrying out our own recommendation given last week, we call attention to an arrangement introduced into practice by Mr. LAWRENCE, and thus shortly described in his "Handy Book for Young Farmers":—

"We recommend taking equal quantities of land under Swedes and Mangel, reversing them in the next rotation; by which each may be secured an eight years' interval. An objection has been raised to this course, that it would be prejudicial to the succeeding crops in the rotation, inasmuch as Mangel is always carried off the land, and the Swedes are usually fed off on it. That objection may be thus obviated, and we adopt this mode of meeting it: Commence your fields, laid out for Mangel and Swedes, by first taking as many turns of your drill, according to the width of it, seeded with Mangel, as will admit of ample space to pull, place, and cart away the produce—say, for instance, eight ridges—then leave the same number of ridges to be sown afterwards with Swedes; and thus proceed sowing your Mangel, with the same intervals left for Swedes throughout the field. About a month later you may drill those intervals with Swedes. The Mangel may be conveniently harvested without any interference with the Swedes, and the latter will be fed off as usual; and, folded across, the land will thus receive equal manuring throughout."

We may add, that in Mr. LAWRENCE'S "Handy Book"* to which we have already elsewhere called attention, there is a great deal of further useful information on the cultivation of this valuable crop.

CATTLE FEEDING.

REFERRING to some observations in a late Number of the *Agricultural Gazette* on the ripening of Swedes, &c., by the process of storing in heaps in the fields, in which I concur, I beg to call the attention of the growers of Mangels so much damaged by the unusual degree of frost we experienced on the 20th of October to the effect of that, and as I believe, the unusual warmth and dryness of our two last summers in producing premature ripeness of roots in general. It has been matter of common observation that our late fruits, more particularly Apples and Pears grown during three seasons, have become prematurely ripe. Within my own experience these fruits have been fit for table many weeks before the usual period. Last year the Easter Beurré Pear, which, as its name indicates, is commonly in perfection about Easter (and we have had them keep well until May) was perfectly ripe before Christmas. The same Pears are perfectly ripe at this date. Though the ripening process in Mangels, &c., is not so palpable to the sight or touch, I have assumed that the same causes would produce the same effects in these as in other fruits; and I have not hesitated to feed with Mangels much earlier than in former seasons. Under the impression that frost has still further accelerated this change in Mangels, and having satisfied myself they would not keep, I have reversed my usual course of proceedings, and placed all my stock on those roots, and stored the Swedes. As soon as the stubbles were cleared, I folded my ewe flock over them before the plough, distributing the roots over the ground, merely divided by an iron which at one blow separates them into four quarters, in preference to cutting them up into troughs in the usual mode. This prevents the ewes, now getting heavy in lamb, pressing one another in struggling for place at the troughs. I have given a limited allowance of the roots with as much chaff, composed of one-third Barley straw and two-thirds hay, as they would eat. My shepherd remonstrated; the ewes were to be scoured to death, and to cast their lambs. I said, "We will try; the mischief will be obvious enough if you will watch them carefully in my absence; and as soon as you perceive anything amiss remove the animals to the pastures." On my return, after an absence of some days, I was glad to see the ewes in their folds, having gone over a considerable portion of the field, leaving a very obviously enriched surface to be turned under. I had anticipated some degree of relaxation in the bowels, but my companion and myself were gratified at finding nothing but those well-defined little black nuts spread over the surface, denoting perfect intestinal condition, and the ewes in a very satisfactory state. Our fatting bullocks have been fed with Mangels instead of Swedes, pulped and well mixed with chaff, from the time they were put up, and I never had any thrive better. This will be some consolation to those whose Mangels were out in that cruel frost, the only case in which I have known Mangels injured before November. That Mangels exposed to 10° of frost will go rapidly to decay there can be no doubt. While on the subject of feeding, as I have heretofore advocated the use of Rape-cake as an economical food for bullocks, I think it desirable to refer to the result of an action which I saw reported in the papers early in the present year, in which damages were given

* LONGMANS.

against a seller of Rape-cake at the instance of a party who had lost several heifers as it was alleged by feeding on such cake. In consequence of the verdict in that case, on my sending an order to my brokers for my usual supply in the autumn, they informed me that the merchant would not guarantee it for feeding purposes, and would only supply it on that understanding. I have always been aware of the existence of more or less Mustard seed in the foreign Rape seed used by the crushers; but I found some years ago by mere chance that the cake after being exposed to a temperature of 212° by boiling, in order to prepare a soup for pouring over the chaff, had undergone some change which rendered it more palatable to animals. I mentioned this to my friend Dr. Voelcker, who investigated the subject, and who discovered that at the temperature named a chemical change occurred in the oil of the Mustard seed, which accounted for the result we had observed, and which rendered the cake innoxious. I considered this a matter of sufficient interest to agriculturists to report it, accompanied by the explanation of the particulars of the change sent to me by Dr. Voelcker, in the *Agricultural Gazette*. I regret I am unable to find this on reference to the *Agricultural Gazette*. [See page 42 of the volume for 1855.] I need only add for the information of those who may have been scared from the use of Rape-cake for feeding purposes, that I ordered the cake notwithstanding the report of the action to which I have adverted, and the caution of the crusher, and have used it for some months for feeding my bullocks, first dissolving it at the temperature I have mentioned, with entire satisfaction. Indeed, I may add that I have used several tons of Rape-cake annually for many years, and I have never experienced any ill effect from it. That it is not so palatable as Linseed-cake to cattle or sheep is unquestionable; but I consider that objection obviated by limiting the quantity for bullocks to 4 lbs. per head per diem, as compared with 6 lbs. of Linseed-cake, and adding 2 lbs. of mixed meal incorporated with the feed. My use of Rape-cake has been founded on the following particulars:—

Average Composition of Oil-cakes.—VOELCKER.

	Linseed-cake.	Rape-cake.	Present cost per ton.
Moisture	12 44	10.68	
Oil	12.79	11.10	
Nitrogenised or flesh-forming principles ..	27.28	29.53	Linseed-cake, 10*l.* Rape-cake, 5*l.* 5*s.*
Heat-giving substances..	41.36	40.90	
Mineral matters (ash) ..	6.13	7.79	

Charles Lawrence, Cirencester, Dec. 10.

Home Correspondence.

Steam Ploughing.—While farmers are very fairly forming great expectations of the economy to be made in ploughing by the use of the steam plough, and of the benefit to arise from being able to break up the stubbles immediately after harvest and in dry weather. I am looking further, and expecting an increase of fertility from it of far greater consideration, and it is to this particular view of the use of it that I would draw attention. Your readers know that the fertility of land has always reference to the depth of soil open to the roots of plants to spread in, and when we speak of a deep soil, we convey ideas of fertility, and of a shallow one, of comparative barrenness: and in support of what may be done by deepening the soil by steam ploughing I will shortly refer to what has already been the experience of the use of it. Many will have seen the singularly fine Mangel Wurzel roots exhibiting grown by the use of Smith's steam plough; and the prize at Birmingham for the best Swedes was awarded to some grown after a steam ploughing, and with only 15 loads of farm manure to the acre. To rightly appreciate this superiority it must be borne in mind that these instances of finer production stand out in competition with growths by all other means, and on the richest soils; and in each case the grower attributes his success to steam ploughing. Surely farmers will learn from this its usefulness as a fertiliser, and give their attention more particularly to getting an implement that shall do more for them than merely take the place of the ordinary plough. Many of your readers will recall the introduction of the subsoil plough, 30 years ago, for the purpose of breaking the under pan and deepening the soil. This implement was drawn by four and six horses, and followed in the furrow opened by the preceding plough. The greater depth it gave the roots to descend was found highly advantageous, but the labour, often amounting to 2*l.* and upwards an acre, was found too expensive for tenant farmers; still the permanent increase of fertility it gave was undeniable. By means of the application of steam farmers will shortly be empowered not only to plough their land at less cost and with despatch, and so be put forward in the autumn with work usually left to the spring, but they will be able to apply implements for breaking up and crushing soils to a depth hitherto unattainable, and in this way poor land may gain a fertility that has hitherto only belonged to the naturally deep and friable. *Hewitt Davis, 3, Frederick's Place, Old Jewry, London, Dec.* 16.

Mangel Wurzel.—Your correspondent "Mr. Taylor," at page 977, writes very reasonably on the injurious effects of the late frosts on Mangel Wurzel; but he asks, "Where is the difficulty of Mangel Wurzel being stored early in October as in November?" We answer it might have been done with safety in the present season after so hot and forward a summer, when most crops were matured a month earlier than usual, and we fully admit, that could the event of such early frosts have been foreseen, so that other important business of the farm might have been arranged accordingly, a great deal of injury done might have been prevented. It would be well if all Mangels were sown by the time Mr. Mitchell recommends at page 976, *i. e.*, by the beginning of April; but in many seasons more showery than the last, Mangels sown especially on forward lands would half of them run for seed. In hot and dry seasons, however, it is reasonable to suppose it would be otherwise, as exemplified in the present season of 1859. Moreover, past experience has proved, to ourselves at least, that very many clamps of Mangels in former seasons have been spoiled by storing and covering them before they were matured and sufficiently first sweated and aired in the clamp, and either covering them too thick before this, or not thick enough to prevent wet entering the clamp in very wet, snowy, and frosty weather. It will no doubt be here observed that what we are driving at is to pack them within doors or under our proposed temporary or permanent covering or shed, and this we contend is necessary to preserve them at all times and in all seasons with most safety, and much rotting would thereby be prevented whether they were fully matured, frozen, or not. Some attempt to prove that the fault of Mangels running to seed all proceeds from undue care in growing the seed. Granted that in degree it is so, where this care is wholly disregarded (none perhaps are more circumspect in this particular than ourselves); but we contend that the chief cause is sowing it too early when a humid summer follows. It has been observed from our experiments that seed sown early in March have produced nearly all of this description, others sown early in April nearly one half, and others sown in May have produced comparatively none, yet all were sown out of the same bag of seed; although some few sown as late as June have shown some signs of running and degeneration. Not so, however, in a season like the past, when seldom was there seen one flowering on an acre, let the seed have come from where it would, or was sown at any time in the summer months. It is not heat nor drought, but moisture combined that chiefly occasions premature seeding. In some seasons garden Turnips also sown in February, March, April, and in May will all run to seed; but in others, though the seed is from the same sample, will not run at all. On the continent, we have been informed, many Turnip seeds and others are invariably grown from plants raised the same year irrespective of improvement by cultivation or any selection—a system we ourselves repudiate and never follow, and we believe is not practised at home by any who have a common share of knowledge in their business. *Abraham Hardy & Son, Maldon, Essex.*

The "Ennobling" of Wild Plants.—Seeing in a late Number an observation to the following effect:—"It is a well-known fact that the esculent Carrot comes from the wild plant originally," I am induced to call your attention to the circumstance that about 10 years ago I commenced experiments on the growth of seeds, gathered both from the wild Carrot and wild Parsnip. Now, as regards the first, I may say that from experiments carried on for three generations, I got scarcely any result, except perhaps a more rampant wild Carrot, multi-headed and digitated in the roots to an extraordinary extent. With the Parsnip, however, the case has been very different, as from the first it showed an aptitude for civilisation. From the first crop the best examples were chosen and saved for seed; and so each year since, I have had in my experimental garden, at the Royal Agricultural College, a crop growing for roots and a plot of roots seeding. This last year the seed was considered so good that the whole crop of this esculent for the college table was planted with it, while the best examples of the previous year were still seeding, and the result has been that we never had such good-shaped Parsnips or so well flavoured; indeed, so much so as to fully justify the further spread of the seed, and I have consequently handed over to the Messrs. Sutton, the eminent seed merchants of Reading, the seed produce of this year, and they will be prepared to supply it to their customers under the title of the Student Parsnip. It should be remarked that this is a form with the sunken crown, which is remarkably small; it is of a gradual tapering shape, very free from lateral rootlets or branches (finger and toe), is not quite so large as the older varieties, but is, I think, altogether more compact and symmetrical. *J. Buckman, F.L.S., F.G.S., &c.*

Kohl Rabi.—The Turnip crop having proved a general failure for two successive seasons, and as Mangels will not stand severe frost, is it not high time farmers were on the look out for a better substitute for the Turnip? What do you think of the Kohl Rabi? I understand it has been grown pretty extensively in the south, but as you and your correspondents have not given your readers any account of it, I fear that it has not answered. My experience of the cultivation of Kohl Rabi is not extensive enough to warrant my recommending it to others for field culture and food for sheep and cattle, but the little I have seen of it this season in my garden leads me to think it well worthy of a fair trial. It appears to me to be perfectly hardy, as the late severe frosts have not in the least affected my little crop, which is growing in an exposed part of the garden; the bulbs are fully larger than the general average of Swedes in favourable seasons, and much larger than any Swedes I have seen this season. Will you be kind enough to draw the attention of your readers to this root; some of them I have no doubt have tried it, and perhaps they will be kind enough to give the readers of the *Agricultural Gazette* the result of their experience. *Colo.*

Societies.

SOCIETY OF ARTS: *Dec.* 7.—*The Forces used in Agriculture.*—After the paper read on this subject, Professor John Wilson said:—

He thought they must look upon the man, upon the horse, and upon the steam-engine, not as sources of power, but as the media through which power could be communicated. The real power existed in the material upon which those three forces were fed, and in this respect he thought he could show them that the whole question was one of pounds, shillings, and pence. They knew very well that a steam-engine could not work unless they gave it coals, and a certain amount of water; a horse could not work well unless it was well fed; and a man could not work unless he was properly nourished, because the force existed in the food which these three engines or machines, as they might be called, consumed. If the man was to be placed in competition with the machine, he ought to receive the same amount of attention as the machine did; otherwise he was placed at a disadvantage, and he thought it should be the policy of the employer to remunerate the labourer in such a manner as would enable him to get the largest amount of work out of him. He spoke, of course, of physical force—not mental. In all cases where they set men to hard work—such as that on railways, it had been found that a badly fed man could not exert the power which a well fed man did; and he thought no one could reasonably expect that a labourer at 8*s.* a week was capable of doing a full amount of work, so as to be fairly placed in comparison with either a well fed horse or a properly supplied steam engine.

Mr. Sidney had made calculations, for the purpose of giving some idea of how much was gained by the improvements which had brought mechanical ability of a high order, and the science of the chemist, to assist in the cultivation of English farms of average size and fertility.

Mr. Smith's farm, at Woolston, in Buckinghamshire, consisted of 110 acres of arable and 70 acres of Grass, of good quality. The labour appeared to be performed by seven men and four boys, equal to nine men, the number usually taken to represent in England 45 souls. These men lived, he undertook to say, better than the peasant cultivators of France and Germany. Were this farm divided into six-acre farms, it would probably support double the number of peasant proprietors; it would keep no sheep, a goat or two, no ox-beef, but an occasional supply of the flesh of a worn-out milch cow. There would be, as surplus, a little Wheat, Rye, and, perhaps, Flax. The arable would be fallow every third year. But with hand-power, horse, and steam-power, he (Mr. Sidney) would undertake to say that the Woolston farm, being never in naked fallow, produced 6 quarters to the acre, but say 5 quarters on 27 acres, or 135 quarters of Wheat, 135 quarters of Barley, and with Clover and other green crops, roots and Beans, at least 7000 lbs. of mutton from 100 sheep, 2000 lbs. of pork, from say 10 pigs, and an increase on cattle, purchased or reared, of 5000 lbs. of beef; in all, 14,000 lbs. of meat, besides feeding the family of the farmer himself. These calculations, very much under the mark, would show, not only that full-sized farms were necessary to support agricultural progress, but that it was on large farms, as distinguished from five-acre farms, that the nation must be fed.

Mr. Edwin Chadwick, C.B., had expected that the discussion would have turned upon the points which the chairman had suggested, namely, upon the comparative value of mechanical forces but he was glad to find that it had been directed to the social and economical effects either already obtained or promised by the introduction of machinery into agriculture.

In the statistics given by Mr. Morton of the rise of wages, he submitted that one large and important fact was omitted. Mr. Morton had stated the progress of wages in different counties, but he had not mentioned another progress, viz., the progress of the efficiency of the labourer; because, according to his own inquiries, the efficiency of the labourer had borne its relation to the improved forces introduced. The farmer in Dorsetshire only paid 8*s.*, and the farmer in Lancashire and some of the northern districts paid 16*s.* a week, and the latter got his work done cheaper at the higher wages than it could be done at the lower. Truly efficient labour, he submitted, could only be obtained by the advance of wages. With respect to what had already been done, he would take the opportunity of congratulating his friend, Mr. Wren Hoskyns, that in the introduction of steam for plaughing, which he had so long laboured for, the corner in the shape of profit over manual labour had been turned. He might mention, by way of contrast, looking to the state of things abroad, that in many parts of the south of France the constant price of ploughing by oxen was at the present time 5 francs a day for the men and the oxen to do the work, whilst the amount of work done was a quarter of an acre per day. That was paying at the rate of 20 francs per acre, but it was a mere scratching of the surface of the soil some 3 or 4 inches deep, whereas steam ploughing did the work much better at about one-third or one fourth that price; in other words, the light land which the farmer in France paid 20 francs an acre for ploughing in that way, could be done by the steam ploughs now in use at 6*s.* per acre, and instead of being ploughed 3 or 4 inches deep, it would be ploughed 7 inches deep. The economical, as well as the social part of the question, was, he thought, well resolved by a labouring man on one occasion, when he (Mr. Chadwick) went to see Mr. Smith's plough at work upon the farm of the Prince Consort. Upon his asking the man how those steam ploughs answered, the reply was that they answered exceedingly well, as he (the labourer) got half-a-crown a day wages. But unfortunately in the present state of education in the agricultural districts, if higher wages were offered the men were not to be found to do the work with the greatest amount of economy, and in order to attain this end their education must be improved. It was true that prodigious advances in that direction had been made.

Mr. Wren Hoskyns said, it he had wanted evidence of what the general advancement of agriculture in this country had been able to effect, it could not be more satisfactorily furnished than had been done in the paper they had heard that evening.

He could not submit to the idea that they had as yet attained to the development of the steam-engine in the cultivation of the soil, which they were destined to witness. Far be it from him to derogate from such splendid specimens of well-applied labour and employment of capital with a courage and determination not surpassed in any department where human ingenuity had been applied, as had already been afforded by the use of the steam-engine in agriculture, but, for specific reasons connected with agriculture itself, he could not believe

that the point at which they had now arrived afforded a true test of comparison between the steam engine and horse and manual labour. One reason why the problem was more difficult, was that the varieties of soil were so much greater than many people were aware of. The difference between the cultivation of light soil and stiff waxy clay was as great as possible, and any conclusion at present arrived at could only be of a very general character. For when they said a steam engine would plough a shilling per acre cheaper than by the ordinary method, it could only apply to some general average of the soil. But when they saw what horse labour could do upon light soils, where they could cultivate every day in the year, because the labour was less severe, and compared that with soil which did not allow of access to it, except for a month in spring and a couple of months in autumn, the comparison between horse labour and the steam-engine was most difficult. It had been stated by Mr. Mechi that a horse required 16 hours of rest for eight hours of work. That was understating the case, because a horse required eight months of idleness for four months of work, on a soil which would not admit of the tread of his foot except when sufficiently dry for profitable cultivation to take place. He could not conclude without a word upon the condition of the agricultural labourer, as spoken of by Prof. Wilson. There was no doubt much truth in what the professor had said. A fair estimation of what the labourer was able to do was not possible because his powers were not entirely brought out—either in a physical or moral point of view. If they had more skilled and intelligent labour, they would have better results from the elements composing it, and especially from that best element of all—the will. He did not know a better foundation for this than a juster distribution of the labourer over the soil, and increased facilities for restoring the due proportion of cottages for the residence of the labourers near their work. Owing to the imperfect laws which had reduced the means of living near their work, it was a fact that labourers did half a soldier's day's work in going to and from the farm. He hoped that residences would be provided for the labourers, in a way that would make them a better investment of capital than they were at present. For some reason or other, which it was difficult to fathom, cottage accommodation could not be provided, so as to make it profitable. One of the best inducements to provide this accommodation would be the power of doing so without loss to the landlord.

Mr. James Howard (of Bedford) said, he subscribed fully to the opinion that the general employment of steam power in agriculture would tend to increase the employment of labourers. Within his own knowledge it had in some degree extended the growth of root crops.

He could refer to a case in which 35 acres of roots were grown upon land which had never before been so cropped, and if they grew larger root crops they increased the crops of corn, and increased also the employment of labour. Looking at the increase of population in this country since the extension of steam power in our manufactories, he was surprised to find that it took upwards of 200 years, previously to the introduction of the steam-engine to gain an increase in the population of 2,000,000, whilst since its introduction the population had increased 12,000,000. He thought there were no more effectual means of raising the intelligence of the farm labourer than a more general introduction of steam power. A farmer who paid a man merely to swing a flail could not afford to pay for intelligence, it was nothing more than the exercise of brute force; but to a man who paid 500*l.* for a steam-engine, 1*s.* per day additional would be a trifle in the wages of the men he employed to direct that machinery. If they sought to raise the intelligence and wages of the labourer, a sure means of effecting it was the more general employment of steam power.

Mr. Alderman Mechi was quite sure that in his calculations of the economy of horse-power over human labour, and of steam over horse labour, Mr. Morton had not overstated the case.

He had employed a steam-engine on his farm for the last 10 or 11 years, though it was regarded by his neighbours as an act of folly to use a steam-engine upon a farm of 170 acres. His experience during that period had convinced him that the employment of steam power had not diminished the demand for labour, but had rather increased it, whilst it produced a most beneficial effect upon the profits of the farmer and the intelligence of the labourer. With regard to the economy of horse-labour and steam, they must look at it not only in a pecuniary point of view with respect to the direct saving effected, but also to the amount of land that was set free for the production of human food by that substitution, namely, by feeding those 300,000 horses with coals instead of with corn and hay. He calculated that, at the lowest estimate, there would be in the United Kingdom 2,300,000 acres of land set free for feeding human beings instead of animals. That alone was a great desideratum in these times, when population was pressing so hardly upon production. With regard to the various applications of steam power in the operation of a farm, looking to the improvements they might expect to be made, he saw no reason why, by improved arrangements, in addition to the Turnips, &c., being cut up, the food should not be delivered by means of machinery, and why steam should not be made to do nearly everything upon a farm which was now done by manual labour.

Mr. Thomas Scott said it was a gratifying fact which they had heard, that the great pioneers of steam culture —the inventors—had more orders upon their hands than they were able to keep pace with.

A few days ago he entered into an examination of the cost of the operation by Fowler's steam plough, extracted from the carefully kept books of a farm, and he found it to be 4*s.* 4*d.* per acre as the actual cost, to which must be added a fair addition for repairs and allowance for wear and tear. If that were the fact, the cost of steam-ploughing was very much less than that of the common ploughing, and the produce of the land was greater. It was therefore manifestly to the interest of the cultivators of the soil to abandon the present system, which entailed a daily loss, and to avail themselves of steam machinery, now that the opportunity was afforded them of doing so.

The chairman said it had been very clearly put before them that the employment of steam power had a tendency to increase the demand for agricultural labourers, the amount of their wages, and also their intelligence.

Mr. Morton wished to return his best thanks to those gentlemen who had been kind enough to answer the troublesome inquiries he had addressed to them upon matters of fact which he had introduced into his paper.

Notices of Books.

Fifteenth Annual Report of the Botley and South Hants Farmers' Club. Hants Advertiser Office.

The Transactions of our farmers' clubs are a mine of agricultural wealth. When any one with a knowledge of the various localities shall undertake the selection and editorship of the valuable papers on every section of farm practice with which the annual reports of our local societies abound, he will produce a series of most useful and valuable volumes. The Journal of the London Farmers' Club, of the Oxford Farmers' Club, of the Newcastle and Wakefield Farmers' Clubs, are full of the most instructive records of agricultural experience. And in this new (15th) Annual Report of the Botley and South Hants Farmers' Club we have another contribution to the same great store, containing papers on organic manure, on cross-breeding of sheep, on autumn tillage, on the improvement of the farm labourer, and on the hill farming of Wilts and Hants—all substantial and satisfactory essays.

On the condition of the labourer we extract the following remarks by Mr. W. C. Spooner:—

"The discussion resolved itself into two principles:—1. The great importance and necessity for improving the dwellings of the labourers and increasing the number of cottages. 2. The propriety of doing away with or diminishing the number of beershops. He disagreed with Mr. Pink that 3*l.* or 3*l.* 10*s.* rent should not be exceeded. He thought such property ought to pay in pretty much the same ratio as any other kind of property; and the moment they showed that it might become remunerative they would do more towards the improvement of cottages and increasing their number than by all the philanthropic institutions of the country, which were, however, commendable in every respect. He believed that a pair of cottages, built at 168*l.*, with 60 rod of garden ground between the two, would pay 5*l.* a year each; and if they were in the hands of the farmers there would be no difficulty in collecting the rents, which was one of the principal difficulties of cottage property, 10 per cent. being the general margin allowed in towns for loss by tenants going away without payment. He thought it would be a very useful thing indeed if the tenant farmers who were members of farmers' clubs were to pass a paper round the room, and without mentioning the farm or name, state the number of cottages they desired to be added to their farms; and they would then see, in a given district, whether such cottages were required. At Botley it would, perhaps, not be convenient to do so, because the majority of the members farmed their own land. There was no doubt that the Beer Bill and the general opening of beerhouses was one of the greatest curses ever introduced by legislation into society."

Cottage Accommodation of the Labourer. An Essay reprinted by permission from the *Gardeners' Chronicle and Agricultural Gazette.* With additional designs. By Robert Scott Burn, C.E. W. & R. Chambers.

This is what its title intimates, a thin quarto pamphlet containing a great deal of useful information on a subject which is now attracting especial attention, and to which on Wednesday last Lord Palmerston at Romsey referred in words which ought to be read by every one.*

Miscellaneous.

Weight of Roots.—The following are particulars of crops of Swedes competing in Cheshire for the prizes offered by Messrs. Proctor and Ryland, whose manures had been employed in their growth:—Turnips—R. Doig, Esq., Tynewydd, near Bangor, and James Innes, Esq., Wroxton, near Banbury, the judges appointed for awarding these premiums, have inspected and weighed the crops of the competitors, and made the following awards:—For the Birmingham district: To Mr. Jno. Thompson, Appleby, near Atherstone, weight 24 tons 11 cwt. 0 qrs. 8 lbs. per acre. For the Shrewsbury district: To Mr. Wm. Langford, Chirbury, near Montgomery, weight 23 tons 16 cwt. per acre. For the Chester district: To Mr. W. T. Humble, Sealand, near Chester, weight 21 tons 8 cwt. 3 qrs. 20 lbs. per acre. ——The heaviest crop of Mangel, inspected for the Banbury Agricultural Society, was found to have been grown by Colonel North, M.P., Wroxton Abbey, which produced, upon weighing, the enormous weight of 63 tons 11 cwt. per acre. The crop was of such a fine quality, and so extraordinary in weight, that Mr. Ryland, of this town, and several other gentlemen, expressed a wish to weigh another portion of it, and they found, upon a fair average of the field, (nine acres) 64 tons 1 cwt. 1 qr. and 20 lbs. per acre. The seed is of the Yellow Globe variety, and the roots are of the finest quality. It was planted on the 18th of April, and manured with 15 loads of farm dung, 3 cwt. of Proctor and Ryland's Mangel manure, and 3 cwt. of salt. The rows were 27 inches apart, and the number of bulbs per acre 15,216, which gives an average of nearly 9 lbs. 7 oz. each. *Midland Counties Herald.*

Steam Culture.—In July last, Mr. F. Sowerby, of Aylesby, gave Messrs. Howard an order for one of Smith's cultivators, and in September commenced working upon his Aylesby Farm, which consists for the most part of a loamy soil upon a strong tenacious, clayey subsoil. When I saw the implement at work it was breaking up his Wheat stubbles designed for roots another summer, and was pulling through this strong sticking clay at a depth of 8 or 9 inches, with a 3-feet cultivator, doing 5 acres per day, including removals. An 8-horse engine with a double cylinder was working the apparatus, and in some instances its utmost power was taxed to pull the implement through some of the stronger beds of clay. The advantages accruing from admitting the air into such a stiff soil to such a depth can scarcely be over-estimated. The ammoniacal and phosphatic elements of the atmosphere will be absorbed by it, which must prove equivalent to a considerable manuring. And these advantages could not possibly be secured by horse cultivation; nothing but steam could effect it. I should also say that this land has been drained very efficiently to the depth of 4 feet. The implement arrived too late to break up much of the seed land for Wheat; a small experiment, however, was made, which will doubtless prove successful, and another year may lead to a more general use for this purpose. After having cultivated these Wheat stubbles twice over, I believe it is Mr. Sowerby's intention to set some of the lands up in ridges, deeply ploughed with horses, thereby exposing as large a surface as possible to atmospheric influences during the winter. In the selection of implements of husbandry, Mr. Sowerby appears to be gifted with a very sound judgment, and is not unfrequently the first in his own immediate neighbourhood to adopt such new inventions as are likely to prove practically beneficial. This was the case with the water drill, I believe, and also with the fixed barn threshing and dressing apparatus for preparing the corn and weighing it off ready for market at one operation, and now again he is the first to adopt the principle of steam cultivation. But we cannot think he will long remain alone in the adoption of this new, and, I conceive, highly advantageous system, but will doubtless, as the benefits resulting therefrom become discernible, have many followers. *Alfred S. Ruston, Chatteris, in Bell's Messenger.*

Extraordinary Crops.—The following is among the heaviest crops of Mangel Wurzel of which the past year's experience speaks:—The root crops have been recently inspected for the Banbury Agricultural Society, and the heaviest crop of Mangel was found to have been grown by Colonel North, M.P., Wroxton Abbey, which produced, upon weighing, the enormous weight of 63 tons 11 cwt. per acre. The crop was of such a fine quality, and so extraordinary in weight, that Mr. Ryland, of this town, and several other gentlemen, expressed a wish to weigh another portion of it, and they found, upon a fair average of the field (nine acres) 64 tons, 1 cwt., 1 qr., and 20 lbs. per acre. The seed is of the Yellow Globe variety, and the roots are of the finest quality. It was planted on the 18th of April, and manured with 15 loads of farm dung, 3 cwt. of Proctor and Ryland's Mangel manure, and 3 cwt. of salt. The rows were 27 inches apart, and the number of bulbs per acre 15,216, which gives an average of nearly 9 lbs. 7 oz. each.

Reaping by Machine or Hook—which is cheaper?—In these days of high rents and low prices the above is a question of some importance, and is one often put to me. To help to an answer, allow me to lay before your readers a statement of the actual cost of reaping the crop here this season by the former method, the whole crop—278 acres, of Wheat, Barley, Oats, and Beans—having been (with a very trifling exception) cut down by one of Burgess & Key's machines. The crop was a fair average—some of the Wheat very heavy.

	£	s.	d.
Wages of a man and boy with the machine for 17 days (of 10 hours) at 4*s.* 2*d.*	3	10	10
Wages of children making bands, equal to 147 days at 6*d.*	3	13	6
Wages of women sheafing, cutting corners, &c., equal to 173 days at 3*s.*	25	19	0
Wages of men binding, &c., equal to 126 days at 3*s.* 2*d.*	19	19	0
	53	2	4
Rations to men and women (including supper allowance), 316 at 9*d.*, and rations to children (breakfast and dinner) 164 at 5½*d.*	15	15	6
Renewal of knives, belts, &c., wear of machine, and oil at 6*d.* per acre	6	19	0
For 278 acres	75	16	10

Or 5*s.* 5½*d.* per acre. This does not include the hire of the horses which are not otherwise employed at this season, but it includes the wages of the driver and other farm servants employed, at the same rate as those hired specially for the harvest. Now, let us see what would have been the cost of cutting the same crop by the hook, allowing each shearer to have cut down the maximum extent of half an acre per day, with a binder for every four shearers.

	£	s.	d.
For shearing 1 acre, 2 women at 3*s.*	0	6	0
Half of time of 1 man binding	0	1	7
Rations 2½ at 9*d.*	0	1	10½
Per acre	0	9	5½

Or, for the whole 278 acres, 131*l.* 9*s.* 5*d.* There is therefore the larger balance in favour of the machine of 55*l.* 12*s.* 7*d.* in all, or 4*s.* per acre. This fully confirms the estimate I sent the *N. B. Agriculturist* on this day two years ago, and the report given in for this farm to the East of Berwickshire Farmers' Club last year. *J. Shaw, Whiterigg, Ayton, in the North British Agriculturist.*

Calendar of Operations.

DECEMBER.

ISLE OF ELY: *Dec.* 14.—Since our last report was penned the great and increasingly popular shows of fat cattle at Birmingham and London have been held. These point us to the near approach of Christmas, and tell us that another year has nearly fled, leaving its manifold events traced upon the page of history. This year these shows more especially disclose to the public mind the bright side of farming. For during the past year the grazing portion of the farm has been by far the most remunerative. Meat has maintained a good and steady price throughout the entire 12 months. The demand has kept with the supply, and grazing has been profitably conducted. And upon all those farms where stock can be extensively fed,

* A report of his lordship's speech will be found in our Newspaper.

the profits arising therefrom will in some measure compensate for the losses sustained by the corn crop. But unhappily in these fen districts grazing can only be carried on to a limited extent, and hence our farmers have but little to fall back upon to assist them in bearing those heavy losses And truly they are heavy! We have no public exhibitions where this dark side of farming can be made manifestly clear and palpable as the bright side has just been, but it has on that account no less an existence in fact. A retrospect of the year just ending is therefore anything but a joyous one, as regards this immediate locality. And we tremble to contemplate what must be the consequences ere another harvest arrives, unless landlords and creditors generally manifest great sympathy and leniency. The second half year's rent in thousands of instances throughout the whole level of the fens must every farthing of it be paid from property, if paid at all, and cannot be possibly realised from the produce of the farm. And fortunate are the men who have property to fall back upon, although it is not a satisfactory or legitimate way of disposing of it. We forbear to say one word with reference to those who are not so favourably circumstanced. Their case is a painful one, and our only hope is that another season will be both abundant and remunerative, and will not be too late for them to recover themselves. The business upon the farm at this period of the year is usually of a routine and monotonous character. Plough and thresh—thresh and plough—and when the frost will permit move manure either from heaps to the fields designed for spring crops, or from yards into heaps. To-day we have a severe wind frost, which, should it continue another day, will stop the ploughs and enable us to get upon the land with manure. We have noticed one peculiar feature in the ploughing up of the lands designed for the next year's fallow, which on our fen soils has been increasingly apparent during the last few years, and this year especially must have invited the attention of the most casual observer We refer to the number of acres deeply cultivated. Our farmers are now breaking up these lands from 10 inches to 2 feet in depth, having ploughs specially manufactured for the purpose, several of which have been supplied by Messrs. Howard and Bedford, and using 3, 4, 5, 6, 8, and even in some instances 10 horses in a plough. Many who have cultivated to these great depths speak favourably of the results, but we conceive the benefits will vary considerably. Upon some soils they will unquestionably be great, whilst on others they will be comparatively small. We would urge all those who are adopting this deep ploughing system to make some experiments, ploughing different parts of the same field different depths upon succeeding crops, that they may be able to give the agricultural public some precise and definite information which may prove of essential service in the future cultivation of fen lands. The Wheat throughout the whole of the season (except that sown before Michaelmas) has come up very slowly, and even now much remains in the land; a very great breadth is not yet in the second blade. We have hitherto had a prevalence of cold weather, with au occasional mild day or two. In this respect the season contrasts very strangely with the last. Indeed we have already had more frost, and seen more snow, than were witnessed during the whole of last winter. The Mangels are keeping quite as well as could be expected; some of those most injured by the frost are decaying and require immediate consumption, others we hope will keep till spring. The Coleseeds are eating away quickly, and afford but very little food. Sheep are gaining weight upon them to as great an extent as could be anticipated. The quantity rather than the quality of the food has evidently been influenced most by the severity of the early frosts. The supply of Christmas beef has not been in excess of the demand, and prices at St. Ives on Monday were high, ranging from 9*s.* to 10*s.* per stone. Other descriptions of meat sell well also. The corn trade alternately languishes and revives, but no great fluctuation in prices is perceptible. With the new year and shorter supplies, prices may probably rally, and supplies from this district must inevitably become smaller, as the thresh is, unusually forward, whilst the crop is so largely deficient *Your Fen Reporter.*

Notices to Correspondents.

CULTIVATION OF SEEDS: *J L.* Mr. Evans Davies of Much Wenlock thus refers to the discussion on this subject before the Central Farmers' Club. Their only advice, he says, is the very old one—"If you cannot grow Clover once in four years then grow it once in eight." This advice would be very well, supposing an efficient substitute had been recommended for the alternate four years; but nothing of the kind is offered but Ryegrass, White Clover, Trefoil, &c., both the latter plants being at the same time soundly, and, as I think, very justly, condemned as a sheep pasture. Nothing possibly can be more injurious to lambs than White Dutch and Trefoil, in certain stages of their growth: and the Red Clover, as far as my experience goes, is always rejected by sheep, if better food is to be had. I have not discovered that any of the speakers at the meeting, or writers since the meeting, have once hinted at the possibility of the permanent Grasses being used as a substitute for the failing and condemned Clover plants. It is possible that there may be some peculiarities in my soil; but this I know, for nearly 20 years I have cultivated the permanent Grasses as a substitute for Clover, in alternate husbandry, with pretty tolerable success. But this can only be done by farmers studying the Grasses in their own neighbourhood, and selecting those which appear to make the best pastures, only rejecting the finer Grasses as inadmissible for alternate husbandry, and choosing those of a more rapid growth. Again, there are medicinal Grasses, such as Yarrow, Achillea Millefolium, Sheep's Parsley, &c., which are eaten with avidity by all descriptions of stock, and must, I apprehend, tend to preserve their health. My seeds remain down for two years. I have just sown with Wheat seeds that were, to the casual observer, as perfect a permanent pasture as could be desired, which were produced with—

Cocksfoot Grass	4 bushels.
Ruck's Meadow Grass	6 bushels.
Red Suckling	30 lbs.
Alsike Clover	40 lbs.
Timothy, not Crested Dog's-tail, as your correspondent styles it, but Meadow Cat's-tail, Phleum pratense major	30 lbs.
Parsley	30 lbs.
Yarrow	1½ lb.

This quantity for 10 acres. I have another field now growing—the first year—all that can be desired: 16 acres sown with—

Cocksfoot	6 bushels.
Pacey's Ryegrass	6 bushels.
Meadow Fescue	6 bushels
Red Suckling	48 lbs.
White Dutch	48 lbs.
Parsley	48 lbs.
Yarrow	2½ lbs.

But success in this cause can only be obtained by farmers ordering their different seeds separate, and purchasing them from respectable seedsmen.

DOLMAN'S BUTTER POWDER: *J Aitken, Forest Farm, Barkingside, Essex.* Your letter would we fear involve the defence (no doubt successful) of an action for libel; but it must therefore suffice to intimate that you have found no benefit from its use.

*** As usual, many communications have been received too late, and others are detained till the necessary inquiries can be made. We must also beg the indulgence of those correspondents the insertion of whose contributions is still delayed.

NEW AND CHOICE PLANTS.

JOHN STANDISH, in offering the following Plants, can assure his customers that they are now in fine condition for sending out:—

MYOSOTIDIUM NOBILE, or Antarctic Forget-Me-Not, each 31*s.* 6*d.*—This plant, from the Chatham Islands, is one of the most remarkable that has been introduced for some years, being totally distinct from all others. It has large thick leaves, 8 or 9 inches across, of a dark glossy green, and sends up magnificent trusses of bloom of the most beautiful blue and white, similar to a Forget me-not, but of a giant form A Drawing of it is published in Curtis's "Botanical Magazine" for September. A description taken from the above is also published in the *Gardeners' Chronicle* of Sept. 17, 1859, wherein Dr Lindley says:—"This is the handsome perennial provisionally named Cynoglossum nobile by Dr. Hooker in our last year's Volume, page 210. It is quite deserving all the encomiums that have been passed upon it."

GLADIOLI, named varieties, from the choicest and largest collection in England, 6*d.* to 5*s.* each. Also a fine lot of bulbs raised from seeds saved from the best flowers, all of which will flower in the summer of 1860. 7*s.* 6*d* per dozen, or 50*s.* per 100. These are strongly recommended.

RHODODENDRON LIMBATUM.—Pale blush, bordered with bright crimson. This has received several medals at the exhibitions for Rhododendrons, being very distinct and one of the most free flowering. 21*s.* each.

RHODODENDRON MINNIE.—White, very large blotch of chocolate-coloured spots, a fine flower, and remains a very long time in bloom. This is one of the most curiously marked Rhododendrons amongst all the white; it bears a noble truss of blooms, which cannot fail to be admired. 21*s* and 31*s.* 6*d.* each. Selections can be made from one of the finest collections in Europe.

PHLOX MRS. STANDISH.—The purest white, with a large red eye, 5*s.* each. Also a large collection of the finest kinds which J. S. has shown during the last summer and in every case received the First Prize. Plants from 1*s.* to 2*s.* 6*d.* each.

A CATALOGUE containing a full description of the best Hardy Plants in cultivation will be forwarded on application to The Royal Nursery, Bagshot.

TRANSPLANTED FOREST TREES.

WOOD AND INGRAM beg to offer the following extra fine and well rooted stuff:—

ALDERS, 4 to 5 feet, 35*s.*; 5 to 6 feet, 40*s.* per 1000.
ACACIAS, 3 to 4 feet, 12*s.*; 4 to 5 feet, 15*s.*; 8 to 14 feet, 50*s.* per 100.
ASH, 3 to 4 feet, 30*s.*; 4 to 5 feet, 35*s.*; 5 to 6 feet, 40*s.*; 6 to 7 feet, 50*s.* per 1000.
BEECH, 2 to 3 feet, 30*s.*; 3 to 4 feet, 40*s.*; 4 to 5 feet, 50*s.* per 1000.
CHESNUT, SPANISH, 3 to 4 feet, 40*s.*; 4 to 5 feet, 50*s.*; 6 to 7 feet, 60*s.*; 7 to 8 feet, 80*s.* per 1000.
ELMS, NARROW-LEAVED ENGLISH, 2 years seedling, 8*s.* per 1000.
ELMS, HUNTINGDON AND HERTS, from layers, 3 to 4 feet, 15*s.*; 4 to 5 feet, 20*s.*; 5 to 6 feet, 25*s.*; 6 to 8 feet, 35*s.* per 100.
ELMS, HUNTINGDON, from grafts, 4 to 5 feet, 25*s.*; 5 to 6 feet, 30*s.*; 6 to 8 feet, 50*s.*; 8 to 10 feet, 70*s.* per 100.
FIR, SPRUCE, 1 to 1½ foot, 50*s.*; 1½ to 2 feet, 60*s.*; 2 to 3 feet, 70*s.* per 1000.
FIR, SCOTCH, 2 to 3 feet, 30*s.*; 2½ to 3 feet, 35*s.*; 3 to 4 feet, 50*s.* per 1000.
FIR, LARCH, 2 to 3 feet, 25*s.*; 3 to 5 feet, 35*s.*; 4 to 5 feet, 40*s.* per 1000.
HORNBEAM, 2 to 3 feet, 30*s.*; 3 to 4 feet, 35*s.*; 5 to 6 feet, 50*s.*; 4 to 5 feet, 40*s.* per 1000.
MAPLE, 1½ to 2 feet, 20*s.*; 2 to 3 feet, 25*s.*; 3 to 4 feet, 30*s.*; 4 to 5 feet, 40*s.* per 1000.
MAPLE, NORWAY, 3 to 5 feet, 8*s.*; 7 to 8 feet, 20*s.* per 100.
OAKS, BRITISH, 2 to 3 feet, 30*s.*; 3 to 4 feet, 40*s.*; 4 to 5 feet, 50*s.*; 5 to 6 feet, 80*s.* per 1000.
OAKS, TURKEY, 4 to 5 feet, 10*s.* per 100.
POPLAR, BLACK ITALIAN, 2 to 3 feet, 25*s.*; 3 to 4 feet, 30*s.*; 4 to 5 feet, 35*s* ; 5 to 6 feet, 40*s.*; 6 to 8 feet, 50*s.*; 8 to 10 feet, 65*s.* per 1000.
POPLAR, LOMBARDY, 4 to 5 feet, 10*s.*; 5 to 6 feet, 15*s.*; 6 to 7 feet, 20*s.*; 7 to 8 feet, 25*s.*; 8 to 10 feet, 50*s.* per 100.
POPLAR, ONTARIO, 6 to 7 feet, 20*s.*; 7 to 8 feet, 25*s.* per 100.
SYCAMORE, 2 to 3 feet, 25*s.*; 5 to 6 feet, 40*s.*; 6 to 8 feet, 45*s.* per 1000.
WILLOW, BEDFORD, CÆRULEAN, and HUNTINGDON, 4 to 5 feet, 30*s.*; 5 to 6 feet, 40*s.* per 1000.
Prices to the Trade on application.

W. & I.'s new CATALOGUE of NURSERY STOCK, including Fruit, Forest, and Ornamental Trees and Shrubs, Evergreens, Roses, &c., is now ready and will be forwarded free on application.—Nurseries, Huntingdon.

FIVE THOUSAND INDIAN AZALEAS.

WILLIAM BARNES begs to invite attention to his unrivalled Collection of the above beautiful and justly admired class of plants. The sizes vary from 1 to 5 feet in height, worked upon strong healthy stocks, are in the finest possible condition, and perfectly free from thrip. The following list comprises a portion of his extensive stock:—

Conqueror	Glory of Sunning Hill	Standard of Perfection
Murrayana	Extransii [ford	Grand Monarch
Carminata	Countess of Stam-	Marie Louise
Duke of Devonshire	Beauty of Europe	Queen Victoria (Ivery's)
Triumphans	Barclayana	Iveryana alba cincta
Perryana	Stanleyana	Alba lutescens
Iveryana	Crispiflora	Modèle
Alba striata	Striata formosissi-	Baron de Peet
Aurora	Admiration [ma	Le Géant
Coronata	Criterion	Belle Jeannette
Variegata	Delicatissima	Etendard de Flan-
Lateritia	Magnificans	dres
Gledstanesi	Alba Melior	Papilionatima
Alba magniflora	Mrs. Fry	Rubens
Frostii	Perfecta elegans	Pelargoniflora
Delecta	Lateritia alba su-	Gloire de Lederberg
Alba magna	preme	Baron de Vrière
Holfordii	Empress Eugenie	Gloire de Belgique
Ardens	Impératrice Jose-	Distinction
Vivicans	phine	Queen of Whites
Rosea elegans	Eulalie Van Geert	Leopoldi
Juliana	Queen Victoria (con-	Duc de Brabant
Elegans superb	tinental)	Etoile, de Gand
Beauty of Reigate	Reine des Belges	Reine des Panachées
Lawrenciana	Queen of Perfection	Princess Adelaide
Symmetry	Adolphe	de Nassau
Vesta	Lœana	Flower of the Day
Gledstanesi excelsa	Louis Napoleon	Souvenir de l'Ex-
Buckinghamii	The Bride	position
Maria	Gem (Ivery's)	Duchess Adelaide
Chelsonii	Madame Miellez	de Nassau
Fentonii	Princess Mary of	Iveryana Improved
Lucens	Cambridge	Duc de Nassau
Constantia rosea	Petuniæflora	Miltonii
Lateritia grandi-	Roi Leopold	Variegata superba
flora	Rosy Circle	Bouquet de Flore
Trotteriana	Sir Charles Napier	
Gledstanesi formosa		

CATALOGUES with Prices can be had on application. Camden Nursery, Camberwell, S.

TO THE TRADE.—CONTINENTAL FLOWER SEEDS.

FREDERICK WILLIAM WENDEL, SEEDSMAN and FLORIST, Erfurt, Prussia (established 1832).

F. W. W begs to inform the Trade that his Wholesale CATALOGUE of the above is now ready, containing Collections of ASTERS, STOCKS, BALSAMS, WALLFLOWERS, &c., and also an extensive list of all other New and Choice FLOWER SEEDS, sold in assortments, or by weight

F. W. W. having extensive grounds in the town and vicinity of Erfurt, and devoting his personal attention to this department of his establishment, he can with the greatest confidence recommend all Seeds offered by him, as genuine and of the best quality.

Agent for this country—Mr. GEO MACINTOSH, Nurseryman and Seedsman, High Road, Hammersmith, London, W., to whom all orders should be addressed, and where PRICE LISTS can be obtained post free on application.

The prices will be found as low as any house which supplies a genuine article. All parcels carriage paid to London.

THE CARDEN FARM, DRUMCONDRA, DUBLIN.

N. NIVEN respectfully intimates to the lovers of gardening that the transplanting season being now at hand, he is prepared with a large and select stock of all kinds and sizes of Fruit Trees, Bushes, and Strawberry Plants, many in bearing condition, and beautifully grown; with a rich collection of Dwarf Orchard House Pot grown Trees, full of flower buds. Also, a fine assortment of specimen Hardy Ornamental Trees, Conifers, select bedding Herbaceous Plants, and choice Alpines for Rockwork, all suited for immediate effect. Amongst the rest, has a large stock of well furnished specimens of the beautiful Lombardy Poplar, so admirably introduced in the groupings of English landscape, from 8 to 10 feet high. For margins to flower beds, green moss-like verges, and covering of sloping banks, has a large supply of his newly introduced "Cerastium," which never requires mowing, and will be found a great acquisition as a substitute for Grass edgings, besides flowering for two months in early summer like a ribbon of snowy whiteness. Prices moderate, according to size, age, and rarity. Lists on application.

NEW STRAWBERRY, "PRINCESS FREDERICK WILLIAM."

N. NIVEN, of the GARDEN FARM, Drumcondra, Dublin, is now prepared to execute orders for the supply of the above first-rate Seedling Strawberry, named by him, which for two seasons past gave ripe fruit out of doors on the 29th May; colour a bright scarlet, of a rich Pine Apple perfume and flavour; berries averaging from 3 to 5 inches round; calyx leafy; foliage deeply serrate; distinct and very hardy. The thickset flower trusses show extra early and freely, even on youngest plants. To the Forcer this Strawberry will be invaluable. Price 40*s.* for 100; 20*s.* for 50; 10*s.* for 25; 6*s* for 12; or established in thumb pots, 1*s.* each.

N. N.'s agent in England is W. J. Nicholson, Eggleseliffe, Yarm, Yorkshire, who has (along with Mons. Gloede, a celebrated grower in France) tested the merits of this earliest of known sorts—*vide* description in W. J. N.'s recent Catalogue. His final testimony of 8th October runs thus—"It is almost impossible to estimate too highly the merits of your splendid early Strawberry. As a forcer, it stands with me at the head, and as an extra early cropper in the open ground, unsurpassed. It will soon be grown by every one, &c." Mons. Gloede's testimony is to the following effect—"I was surprised to see how quickly the plants threw up their flower stems, and how quick they set their fruit and how fast the latter ripened. The colour is admirable and the flavour exquisite. There is no doubt it will become a general favourite as a first early, both for forcing and out-of-door culture, and great credit is due to you for such an invaluable introduction. (Signed) Ferdinand Gloede, Aux Sablons, near Moret-sur-Loing, France."

N.B.—Orders by the Trade (for not less than 100), one-third off above price. Postage Stamps or Post-office Orders must accompany all unknown orders.

DESIGNS FOR FLOWER BEDS AND GARDENS.—In consequence of numerous applications J. MARSHALL, 2, Goldsmith Street, Nottingham, has been induced to prepare another set of Designs. They comprise upwards of 80, diversified in style, and will be forwarded to any address on receipt of 24 postage stamps.

GARDEN LABEL.—Neat, durable, and well-executed LABELS, painted and lettered in oil paint, and varnished, equal to enamel. A specimen sent on the receipt of 3 Postage stamps.—Address F. H. LYDBURY, North Shropshire.

C. STEPHENSON, late STEPHENSON AND SONS, 61, Gracechurch St., London, E.C., Manufacturer of Iron, Hurdles, Fencing, &c., Improved Iron and Copper Conical Boilers and Apparatus for Warming Buildings of every description by Hot Water.

Prices and Estimates furnished upon application.

HOT-WATER PIPES at wholesale prices, with Elbows, Syphons, Tee Pipes, and every other connection. Wrought and cast iron Boilers, Saddle, Conical, Cylinder, and Elliptic, from 24*s.* each. Boilers and Iron Stands to use without brickwork. Valves from 12*s.* each. Coil Boxes, Furnace Doors, Furnace Bars, Supply Cisterns, and Builders' Castings of every description in stock, at Mr. LYNCH WHITE'S Iron Wharf, Upper Ground Street, Blackfriars Bridge, London, S.

HOT-WATER APPARATUS.

J. JONES begs to offer a complete HOT-WATER APPARATUS FOR GREENHOUSES, at the following prices, delivered free to any Railway Station in England:—

Size of House.	With Cylinder Boiler.	With Saddle Boiler.
20 feet by 10 feet	£8 10 0	£9 0 0
25 ,, by 12 ,,	10 0 0	10 10 0
30 ,, by 12 ,,	11 10 0	12 0 0
30 ,, by 15 ,,	13 10 0	14 10 0
40 ,, by 15 ,,	16 10 0	17 10 0
50 ,, by 15 ,,	18 10 0	20 0 0

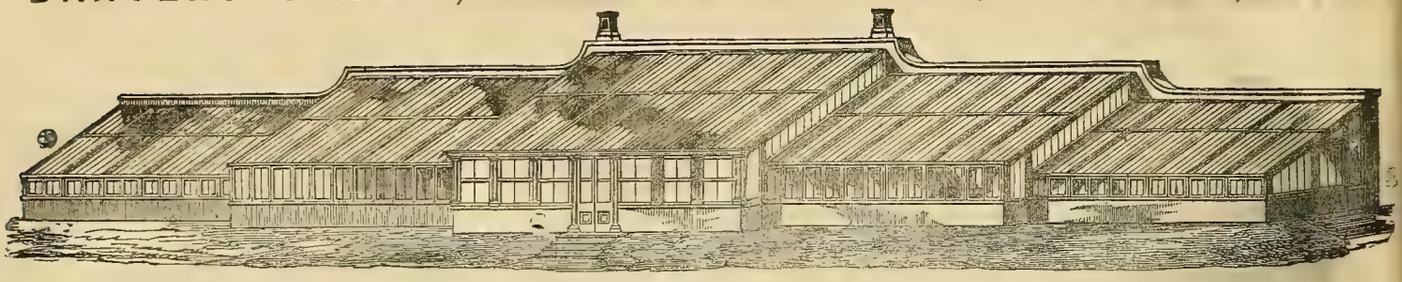
The above prices include Boiler, strong Furnace Doors, Bars, Soot Doors, Cistern, Damper, Hot-water Pipes and Connections, Air Pipes, &c., all ready for fixing, and of the best quality. Further particulars will be sent on application. Parties ordering must send plans, showing doorways, position of boiler, &c.—J. JONES, Hot-water Apparatus Manufacturer, 6, Bankside, Southwark, London, S.E.

HORTICULTURAL BUILDINGS AND HEATING BY HOT WATER.

JOHN R. PEILL, 17, New Park St., Southwark, S.E., Manufacturer of every description of Buildings for Horticultural purposes, and Inventor of the Improved Conical Boiler for heating the same, is prepared to undertake works of any magnitude, and refers among others to the celebrated range of FORCING HOUSES at HER MAJESTY'S GARDENS, FROGMORE, and at SIR ROBERT PEEL'S, DRAYTON MANOR, constructed under the superintendence of his Manager, Mr. JOHN JONES; and also to his BOILERS fixed at the CRYSTAL PALACE, the ROYAL BOTANIC GARDENS, REGENT'S PARK, and KEW, and at several hundreds of the Nobility's seats, Public Establishments, and Manufactories in London and the provinces. J. R. P. also manufactures every description of Iron Roofs, Iron Houses, and Iron Fencing, plain and ornamental. Strong Iron Hurdles for Sheep (6 ft. long, 3 ft. high, with 5 bars), 4*s.* 3*d.* each; ditto for cattle, 4*s.* 9*d.* each. Prices and other particulars forwarded on receipt of one postage stamp.

HORTICULTURAL WORKS,

DANVERS STREET, PAULTON'S SQUARE, CHELSEA, S.W.



JAMES GRAY

RESPECTFULLY BEGS TO INFORM THE NOBILITY, GENTRY, NURSERYMEN, GARDENERS, AND OTHERS, THAT HE CONTINUES TO CARRY ON THE BUSINESS IN ALL ITS BRANCHES AT THE ABOVE OLD ESTABLISHED PREMISES.

CONSERVATORIES, GREENHOUSES, FORCING HOUSES, VINERIES, PITS, &c.,

OF EVERY DESCRIPTION, ERECTED ON THE MOST APPROVED PRINCIPLES.

HEATING BY HOT WATER.

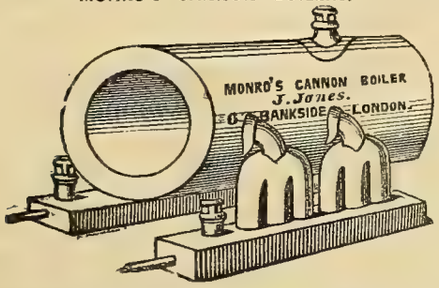
J. G. having specially devoted his attention for many years to this part of the business, is now fully prepared to Heat every description of public and private buildings, viz :—Churches, Mansions, Warehouses, &c., as well as all structures connected with Horticulture, in the most efficient manner. His system is the most simple that can be adopted—which he has found from long experience to be the best—can be constructed at less cost, and is more easily managed than those of a complicated nature which have attracted the notice of the public.

J. G. begs to call attention to his CAST-IRON CORRUGATED ARCH BOILER, which from its simplicity of construction has not the liability to fracture to which those of a more complex design are always subject. They have been extensively used for many years, and have given the greatest satisfaction.

All business is conducted at this establishment on the principle of lowest remunerative profits consistent with best materials and workmanship.

PLANS AND ESTIMATES FURNISHED ON THE SHORTEST NOTICE.

MONRO'S CANNON BOILERS.



MUCH has of late been said about BOILERS FOR HEATING BY HOT WATER, but these Boilers have now proved themselves to be the best at present invented. They are adapted for Heating every description of Building, and are made of various sizes. The price of the

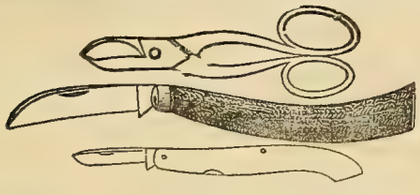
24-inch Cast Iron is	£5 10s. each.
24-inch Wrought Iron is	6 10 ,,
36-inch Wrought Iron is	8 10 ,,
48-inch Wrought Iron is	12 0 ,,

References to Gentlemen and Nurserymen where these Boilers are now at work. The Cannon Boilers are now kept in stock, and are to be had only of J. JONES, 6, Bankside, S.E. Also, every description of Saddle and Cylinder Boilers. Hot-water Pipes and Connections at prices lower than those of any other house in London. Estimates for Hot-water Apparatus erected complete in any part of the country, and an Illustrated Catalogue on application to J. JONES, 6, Bankside, Southwark, London, S.E.

LOOMES AND CO.'S CABLE PATTERN GARDEN EDGING may be obtained of Messrs. HOOPER AND CO., Covent Garden Market, W.C.



PAXTON WORKS, SHEFFIELD, ESTABLISHED 1738.



SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.—Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

WARNER'S IMPROVED LIQUID MANURE OR GENERAL PORTABLE PUMP.

These Pumps are fitted with WARNER'S Patent Bucket and Valve, and cannot clog in action. The barrel is made of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure on the stand, the legs of which fold together, and may be carried with ease by one man to tank or pond.

	£	s.	d.
Stand and Pump, with screwed tail pipe, fitted with strong brass union for suction pipe	2	15	0
If fitted with barrel of planished copper	3	17	0
Stand and Pump, with plain tail pipe, for tying on suction pipe	2	9	0
2-inch patent rubber and canvas flexible suction pipe, on wires, either 10, 12, or 15 ft., per foot	0	2	2



May be obtained of any Ironmonger or Plumber in town or country, at the above prices, or of the Patentees and Manufacturers, J. WARNER & SONS, 8, Crescent, Jewin St., London, E.C.

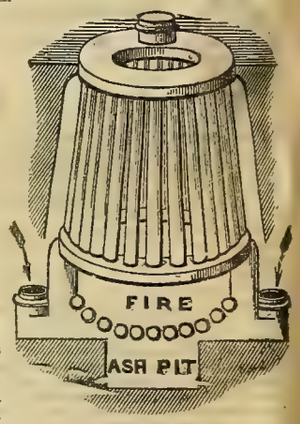
WEEKS' ONE BOILER SYSTEM.

So styled from the fact that the largest Horticultural Establishments in Europe are now effectually heated by WEEKS' ONE BOILER.

THE SEASON FOR TESTING THE EFFICIENCY OF A HOT-WATER APPARATUS having arrived, J. WEEKS & Co. are privileged by the under-mentioned well-known Horticultural Firms to issue a special invitation to the nobility, clergy, and gentry to pay a visit to their immense Establishments in order to become eye-witnesses of the extraordinary power of WEEKS' ONE BOILER SYSTEM.

J. W. & Co. beg emphatically to assert that their ONE BOILER SYSTEM is in every respect superior to any other method of Heating. It is more economical and clean, requires no night attendance, effects a great saving in labour, and that it in infinitely more efficient is clearly shown by the following statistics :—

	Length of Pipe Heated on Weeks' One Boiler System.
	Feet
Messrs. E. G. Henderson & Son, Wellington Nursery, St. John's Wood	5500
Messrs. F. & A. SMITH, Dulwich Nursery	10,000
Mr. WOODROFFE, Harrow Road, Paddington	4000
Mons. LOUIS VAN HOUTTE, Ghent, Belgium	13,000



J. W. & Co. also manufacture smaller and less expensive Boilers upon the same principle as the ONE BOILER SYSTEM, ranging in size from Nos. 1 to 6, at prices from 4*l.* up to 60*l.*

J. W. & Co. also invite an inspection of their own HORTICULTURAL SHOW ESTABLISHMENT at Chelsea, which they built expressly as a place of reference for exhibiting various designs and improvements in the Construction of CONSERVATORIES, GREENHOUSES, PINE STOVES, VINERIES, ORCHARD-HOUSES, CUCUMBER and other FORCING PITS, together with an extensive WINTER GARDEN, the whole in full and constant operation, and now being managed for Forcing CHOICE FRUITS, displaying an unrivalled selection of HORTICULTURAL STRUCTURES suited for every required purpose.

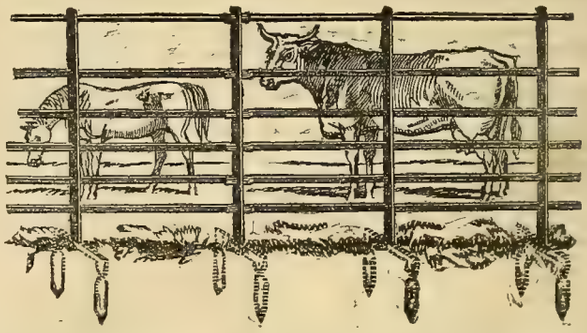
J. WEEKS & Co. have constantly on hand an extensive variety of HORTICULTURAL BUILDINGS ready for fixing in any part of the country, and also Forcing Frames and Pit Lights in large quantities.

J. WEEKS & CO., Horticultural Builders and Hot-Water Apparatus Manufacturers, King's Road, Chelsea, S.W.

PLANS, ESTIMATES, AND ILLUSTRATED CATALOGUES FREE ON APPLICATION.

HILL & SMITH'S

PATENT CONTINUOUS PARK FENCE.



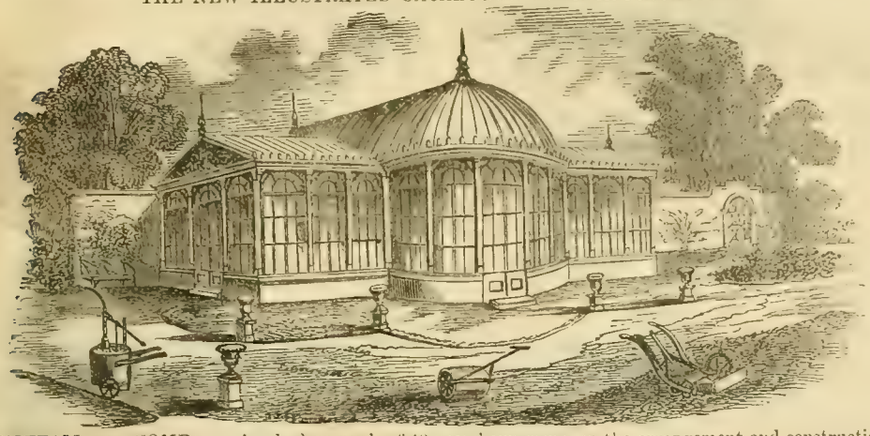
THIS FENCE is made in a variety of sizes suitable for any situation, and is much superior in appearance to hurdle fences, than which it is also cheaper and stronger. It has obtained upon two occasions the Silver Medal of the Royal Agricultural Society of England, besides many other premiums. Many miles have been erected by HILL & SMITH on the London and North Western Railway, between London and Bletchly Stations, and it has been erected at the Parks of upwards of 500 Noblemen and Gentlemen in England ; that at Welbeck Abbey, the seat of his Grace the Duke of Portland, being entirely surrounded with it as a fence against Deer nearly 10 miles in extent. The patent principle is also applied to Iron Hurdles, whereby the strength is much increased and their cost reduced. ILLUSTRATED PRICED CATALOGUES will be sent on application to HILL & SMITH, Brierly Hill Iron Works, near Dudley, who are the inventors and sole manufacturers, or to their London Office, 40, Broad Street Buildings, E.C., where specimens may be seen, or to Mr. B. SAMUELSON'S, 76, Cannon Street West, London, E.C.

COTTAM & COMPY., Engineers, Founders, &c.,

2, WINSLEY STREET, LONDON, W.

☞ **A SHOW ROOM DEVOTED ENTIRELY TO ARTICLES OF HORTICULTURE**

THE NEW ILLUSTRATED CATALOGUE UPON APPLICATION.



COTTAM AND COMPY. having had upwards of 40 years' experience in the arrangement and construction of every description HORTICULTURAL BUILDINGS AND HEATING BY THE CIRCULATION OF HOT WATER, are well qualified to guarantee the perfect execution of any works entrusted to them in the erection of

Conservatories	Summer Temples	Orchid Houses	Apricot and Peach Houses
Conservatory or Glass Walls for the protection of plants or ripening wall fruit	Arbours, &c.	Conservatories for Window or Balcony Gardening	Tropical Fruit Houses
	Greenhouses	Vineries	Forcing Pits and Frames
	Orangeries		Cucumber and Melon Houses

☞ *Drawing and Estimates free upon application.*

ORCHARD HOUSES, combining cheapness of construction with suitability of purpose—portable or otherwise.

EXHIBITION PRIZE MEDAL GATES AND STABLE FITTINGS.

Iron Hurdles, Strained Wire Fencing, Game Netting, &c.

Every description of Plain, Ornamental, Cast and Wrought Iron, and Wire Work.

SEE SEPARATE LISTS UPON APPLICATION.

COTTAM & COMPY. Iron Works, 2, Winsley Street, Oxford Street, W. (opposite the Pantheon.

PARMENTER'S PATENT PREPARATION

For destroying Mealy Bug, Red Spider, Thrip, and other Insects, also Mildew on Vines, Fruit Trees, and Plants of all descriptions.

JAMES CARTER & CO.

IN offering the above Preparation are fully aware that they are fulfilling a duty of considerable importance both to themselves and the Public, as it is well known that many preparations have been previously offered and recommended as sure and safe remedies against the above-mentioned pests, and have on impartial trial proved either totally ineffective, or destructive to the lives of many valuable Plants.

Although J. C. & Co. have had incontestible evidence of the efficacy of Parmenter's Patent Preparation, yet they did not on their own experience alone feel justified in recommending it to the public, but desired still more convincing proof. In the furtherance of this object J. C. & Co. sent some of the Preparation to several of the leading Nurserymen and largest private establishments in the United Kingdom, requesting at the same time a searching, thorough, and impartial trial, the results of which will be duly published. The following is the report of a series of careful and elaborate experiments by the eminent Nursery Firm of Messrs. E. G. Henderson & Son :—

PARMENTER'S PREPARATION.—We find this Compound effectual for the destruction of *White Bug* and *Scale* on leaves of a laurel-like texture, such as *Daphne, Nerium, Jasmine, Eukianthus, Rhododendrons, Thibaudias,* &c., in the greenhouse, and such as *Ixora, Croton, Franciscea, Gardenia, Jasmine, Magnolia, Portlandia, Stephanotis,* &c. in the hothouse, when dipped in a thin paste-like liquid and applied with a brush into the inward axillary joints; after thus remaining on the plant 48 hours, it is thoroughly cleansed off by a vigorous syringing. When applied to plants within a cool genial greenhouse temperature, *it emits no offensive odour* (as in Gishurst Compound), and is efficacious without injury to the plants. On plants of *Jasminum grandiflorum* recently imported from the Continent and completely covered with *Scale*, and on *Ardisia crenulata*, much infested with the *White Bug*, THE PREPARATION AS DESCRIBED WAS VERY SATISFACTORY. It also appears effectual in destroying and checking the *Red Spider* and *Thrip*, by immersing the branches once or twice in a thinner solution of the Preparation.

On plants with leaves of a less leathery and more porous texture and thin and pulpless, the Preparation cannot be applied sufficiently strong *at one immersion* to destroy the White Bug or Scale (the most difficult of all plant insects to destroy) without injury to the plants; therefore it should be made in a weaker solution and applied with a soft brush or sponge to the infected parts, remaining on 24 or 48 hours as before. For the continual cleanliness of the plants, a solution of the preparation in pure water for occasional syringing will be found very beneficial and act as a *check and preventative*. In the destruction of the *White Bug* and *Brown scale* upon the class of plants first referred to, *Parmenter's Preparation* was found *more effectual* than the *Gishurst Compound*. In its application the following directions may be deemed safe :—

1st, The strength of the application without injury will be in proportion to the thick coriaceous or leathery texture of the leaves their dormant condition or rest from growth, and *vice versâ*.

2d, The injury arising from its undue application will be in proportion to its action on the soft and delicate cellular tissue of the plants, whether in a growing condition or not, but most injurious in the former.

3d, As a general rule, plants of the strongest and most robust growth will require it to be applied in the consistency of thin paste-like liquid.

4th, Plants of the soft-stemmed class, whether heavy or smooth, will require its application by immersion in a mixture proportionately diluted to suit the texture of the plants.

Price 2s. and 3s. 6d. per Bottle; Stone Jars, 10s. 6d. each.

To be had of all the principal Nurserymen and Seedsmen throughout the United Kingdom, and Wholesale and Retail from

JAMES CARTER & CO. (Sole Proprietors), 237 and 238. High Holborn, London, W.C.

GISHURST COMPOUND, PATENTED,

FOR PREVENTING AND DESTROYING

RED SPIDER	MEALY BUG	MILDEW
THRIPS	SCALE	GREEN and BROWN
AMERICAN BLIGHT	ANTS	FLY

BED BUGS, &c.,

And useful in winter dressing.

Contains no deleterious ingredient.

Has received the sanction of the Gardening Press, see *Gardeners' Chronicle* of 9th April and 16th July, 1859, and "Cottage Gardener," 12th July, and has been favourably reported on, and is used by eminent gardening authorities, among whom are—

Mr. Judd, of Althorp Gardens
Mr. Rivers, of Sawbridgeworth
Mr. Edmonds, of Chiswick House Gardens
Mr. Collinson, of Eaton Hall Gardens
Messrs. A. Henderson & Co., Edgeware Road
Mr. Jas. Veitch, jun., Chelsea
Mr. Spencer, of Bowood Gardens

The principal Nurserymen and Seedsmen throughout England, Scotland, and Ireland use it, have taken in supplies, and are now prepared to sell single boxes—price 1s. for first trials and small uses, such as destroying bed bugs; 3s. for not large gardens; 10s. 6d. for large gardens, with testimonials and full descriptions for use.

Nurserymen and Seedsmen supplied by PRICE'S PATENT CANDLE COMPANY, Limited, London.

25,500 NEW ARCHANGEL MATS.—Prices, &c, on application to JOHN MORISON, 25, Norton Folgate, N.E.

PATENT GUTTA PERCHA SOLES.—IMPORTANT TO GARDENERS.—The Gutta Percha Company have the pleasure to acknowledge the receipt of the following etter from G. GLENNY, Esq., the celebrated Florist :—

"420, Strand, London.

"Gentlemen,—I have worn Gutta Percha Soles and Heels these two years, and being so much in a garden as I necessarily am in all weathers, and with the ground in all states, I would on no account be without them. As a matter of economy I would recommend Gardeners to use them, for they may repair the worn part at all times by warming the material at the fire, and pressing it from the thick parts to the worn parts, as easily as if it were so much dough. I think it the duty of all persons who must occasionally wet their feet to adopt a material that completely defies damp. Many a gardener would escape colds and rheumatism by the use of Gutta Percha Soles.

"Your obedient servant, G. GLENNY."

Every variety of Gutta Percha articles, such as Mill Bands, Tubing, Soles, Sheet, Pump Buckets, Fire Buckets, Bosses, Union Joints, Flasks, Bottles, Bowls, Chamber Vessels, Toilet Trays, Sponge Bags, Curtain Rings, Galvanic Batteries, Talbotype Trays, &c., manufactured by the Gutta Percha Company, and sold by their wholesale dealers in town or Country.—The Gutta Percha Company, Patentees, 18, Wharf Road, City Road, E.C., London.

GLASS FOR ORCHARD HOUSES & CONSERVATORIES.

JAMES PHILLIPS AND CO. beg to submit their prices of GLASS for the present month.

SHEET GLASS, in Crates, 1st quality, 16 oz. to the foot.

	Best.	2nds.	Thirds.	Fourths.
	5½d.	3½d.	2½d.	—d.
21 oz.	Best.	Seconds.	Thirds.	Fourths.
	7½d.	5d.	3½d.	—d.

Packed in 200 feet crates, 16 oz. £2 2 0
Packed in 200 feet crates, 18 oz. 2 10 0
Packed in 200 feet crates, 21 oz. 2 18 0

ORCHARD HOUSE SIZES, as supplied by us to Mr. Rivers.

20 in. by 12 in.		16 oz.	21 oz.
20 in. by 13 in.	Common	14 oz. ..	£1 1s.
20 in. by 14 in.	Superior do. ..	16 6 ..	1 5
20 in. by 15 in.	English Glass ..	18 0 ..	1 9

Boxes not included and returnable.

SMALL SQUARES, not to cost more than s. d.

6 by 4	6½ by 4½	7 by 5	7½ by 5½	11 6
8 „ 6	8½ „ 6½	9 „ 7	9½ „ 7½	
10 „ 8	10½ „ 8½ ..	.. ..	.. ..	12 6

HORTICULTURAL GLASS, in 8 sizes, cut to any sizes.
16 oz. per foot, from 2d. to 3½d. | 20 oz. per foot, from 4d. to 7½d.
21 oz. „ „ 3 „ 5 | 32 oz. „ „ 4 „ 9½

Special prices quoted for large or specific quantities.

AGENTS FOR

HARTLEY'S PATENT ROUGH PLATE GLASS.

PAINTS

Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, &c.

JAMES PHILLIPS AND CO.,

180, Bishopsgate St. Without, London, E.C.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz SHEET GLASS of British Manufacture at prices varying from 2d. to 3d. per square foot for the usual sizes required, many thousands of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES, and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London, W.

See *Gardeners' Chronicle* first Saturday in each month.

HORTICULTURAL GLASS—JUNE TARIFF.

THOMAS MILLINGTON'S reduced Tariff of GLASS, &c.

6 by 4, 7 by 5, 8 by 6, 9 by 7 } 16 oz. to the foot, 11s. 6d.
6½ by 4½, 7½ by 5½, 8½ by 6½, 9½ by 7½ } per 100 feet.

In 100 boxes,—4ths quality, 12s. 6d. ; 3rds do., 14s. 4d.

10 by 8, 12 by 9, 12¼ by 10¼, 14½ by 10½, 13 by 11
10½ by 8½, 12½ by 9½, 13 by 10, 15 by 10, 13½ by 11½
11 by 9, 13 by 9, 13½ by 10½, 12 by 11, 14 by 11
11½ by 9½, 12 by 10, 14 by 10, 12½ by 11½

20 by 12	per 100 feet	16 oz.	21 oz.
20 by 13	Common ..	10s. ..	24s.
20 by 14	Superior .	18s. ..	27s.
20 by 15			

All Boxes included.

Orchard House sizes as supplied to Mr. Rivers.

Hartley's improved Rough Plate Glass from ¼ to ⅜ in thickness.

Coloured Glass in great variety, at 9d. and 1s. per foot.

Paints, Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, Lamp Glasses, &c.

87, Bishopsgate Street Without, E.C., same side as Eastern Counties Railway.

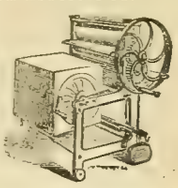
GLAZIERS' DIAMONDS FOR CUTTING HORTICULTURAL and other GLASS, to be had of the Wholesale Manufacturer, JOHN EDWARDS, 20, Sharp's Alley, West Smithfield, London, E.C. Prices from 10s. to 27s. 6d.

THE AGRICULTURAL ENGINEERS' COMPANY (LIMITED), Swan Lane, Upper Thames Street, London, E.C., hold in Stock goods suited to the season.

STEAM ENGINES, HORSE POWERS, CHAFF CUTTERS, CRUSHING MILLS, OILCAKE BREAKERS, ROOT CUTTERS and PULPERS, PUMPS, &c.

Price Lists may be had post free upon application.

BRADFORD'S PATENT WASHING MACHINE. SIMPLICITY AND WONDERFUL EFFICIENCY.



"I very gratefully acknowledge the extraordinary patronage I have received from all parts of England, Ireland, and Scotland, and which has very far exceeded my most sanguine expectations." — THOMAS BRADFORD, Patentee, Cathedral Steps, Manchester. London Office: 63, Fleet Street, E.C.

N.B. My Machines always have, and always will be sent on approval, if desired, before payment. Description and Price free by post.

TO PIG, POULTRY, AND GAME FEEDERS.

JUPP'S RICE FOOD, POULTRY AND GAME.—RICE SWEEPINGS, 7s. 6d. per cwt., in 1½ cwt. bags; SCREENED RICE, 10s. per cwt., in 1½ cwt. bags; DOG BISCUITS, 14s. per cwt.; OIL-CAKE, per ton only; RICE MEAL for PIGS, 6s. and 8s. per cwt., in 1 cwt. bags, at the mill. Orders must be accompanied by a remittance to insure delivery.—W. & R. JUPP, 6, Cross Lane, Eastcheap, E.C.

GREENHOUSES.

TO BE SOLD, two excellent GREENHOUSES, suitable either for Vineries, Plant-houses, or Forcing-houses. Dimensions, 38 feet by 10 feet, and 22 feet by 9 feet.—Apply to CHARLES SHARPE & Co., Nurseries, Sleaford.

HUCCLECOTE GARDENS, 2½ MILES FROM GLOUCESTER.

TO BE LET, with immediate possession, the above capital walled-in GARDENS, containing about 4 acres with House, Farm-yards, Buildings, Orchard, and Land adjoining, containing in the whole about 16 acres, with Greenhouses, Propagating houses, Vineries, Pits, &c. Extent of glass 3770 feet.—For particulars apply to W. KNOWLES, Auctioneer, St. Mary's Square, Gloucester.

TO NURSERYMEN, GENTLEMEN'S GARDENERS, AND OTHERS.

TO BE DISPOSED OF, owing to the decease of the Proprietor, a compact SUBURBAN NURSERY with Dwelling House, Seed Shop, Propagating and Greenhouses. The grounds are walled in and well stocked with Trained Fruit Trees and other available Stock. As it must be sold, this is an excellent opportunity for persons commencing business.—Address to Mr. HENRY M'PHERSON, 3, Alton Cottages, Milton Road, Stoke Newington, London, N

TO BE DISPOSED OF, a first-class long established NURSERY and SEED BUSINESS in one of the Midland Counties commanding a very extensive trade; the Stock is young and healthy. The Nurseries extend over 25 Acres, are situated in a good locality, and near to a Railway Station.—For particulars apply to Messrs. NOBLE, COOPER, & BOLTON, Seed Merchants, 152, Fleet Street, London, E.C.

ROYAL BERKSHIRE SEED ESTABLISHMENT.

UNDER THE DISTINGUISHED PATRONAGE OF

HER MOST GRACIOUS MAJESTY THE QUEEN AND HIS ROYAL HIGHNESS THE PRINCE CONSORT.

ECONOMY IN THE GARDEN.

SUTTON'S COLLECTIONS OF GARDEN SEEDS FOR ONE YEAR'S SUPPLY

(CARRIAGE FREE, AS SEE BELOW).

No. 1.—A COMPLETE COLLECTION of KITCHEN GARDEN SEEDS for one whole year's supply (with instructions on cultivation) £3 3 0
No. 2.—A COMPLETE COLLECTION of KITCHEN GARDEN SEEDS, in quantities proportionately reduced 2 2 0
No. 3.—A COMPLETE COLLECTION of KITCHEN GARDEN SEEDS, ditto 1 1 0
No. 4.—A COMPLETE COLLECTION of KITCHEN GARDEN SEEDS for a SMALL GARDEN 0 10 6

Sent Carriage Free by Rail, and 5 per cent. discount allowed for cash payment. A remittance or reference requested from unknown correspondents.

The sorts of Vegetables included in these Collections are those which have proved to be the most prolific, best flavoured, and most worthy of general cultivation and of which sorts we have therefore grown large crops of Seed. We exclude from our collections not only inferior old sorts, but also such new ones as we have been unable to test the merits of, and which are selling at extravagant prices. By this means, and from the great convenience experienced in supplying every purchaser with the same sorts, we are enabled to supply A Complete Collection for One Year's Supply at much less expense than when a Gentleman or his Gardener makes his own selection; but if the latter mode of ordering is preferred, we shall be happy to send our General Catalogue, with prices of every article separate.

QUANTITIES CONTAINED IN SUTTON'S COLLECTIONS:—

(*Warranted New and Genuine.*)	£3 3s. Collection	£2 2s. Collection	£1 1s. Collection	10s. 6d. Collection
PEAS, the best sorts as proved in Messrs. Sutton's Trial Grounds, including Sutton's Early Champion, Prizetaker, Champion of England, and others	20 quarts	12 quarts	7 quarts	4 pints
BEANS, the best sorts for succession, ditto, ditto	10 ditto	6 ditto	3 ditto	2 ditto
FRENCH BEANS, Runners and Dwarfs, do. do.	6 pints	4 pints	2 pints	1 ditto
BEET, Sutton's Dark Red, warranted the finest in cultivation	2 ounces	1½ ounce	1 packet	1 packet
BORECOLE, or Sprouting Kale, of best sorts for succession (including Cottager's Kale)	5 packets	4 packets	3 packets	2 ditto
BRUSSELS SPROUTS, fresh imported seed	1 large pkt	1 large pkt	1 packet	1 ditto
BROCCOLI, the best sorts for succession, as tested in Messrs. Sutton's Sample Ground	9 large do.	6 do. do.	3 packets	2 packets
CABBAGE, best sorts for succession throughout the year (including Sutton's Imperial)	7 packets	5 packets	3 large do.	2 ditto
SAVOYS, fine curled	2 ounces	1 ounce	2 ditto	1 ditto
CARROT, best sorts for summer and winter use	14 ditto	7 ditto	3 ounces	2 ounces
CAULIFLOWER, true Walcheren and others	2 large pks	2 large pks	1 packet	
CELERY, Sutton's Solid White and others	2 ditto	2 packets	2 ditto	2 packets
COUVE TRONCHUDA, a most delicious vegetable	1 packet	1 packet	1 packet	1 packet
ENDIVE, best sorts	1½ ounce	¾ ounce	1 ditto	

(*Continuation.*)	£3 3s. Collection	£2 2s. Collection	£1 1s. Collection	10s. 6d. Collection
CRESS, plain, curled, and New Australian	1¼ pint & 2 packets	8 ounces & 2 packets	2 ounces & 1 packet	2 ounces
CUCUMBERS, the best sorts in cultivation (including Berkshire Champion)	3 packets	3 packets	2 packets	1 packet
LEEK, large Flag	1 ounce	½ ounce	1 ditto	
LETTUCE, Sutton's Superb Cos, Bath Cos, and others for succession	5 packets	4 packets	3 packets	2 packets
MUSTARD	1 quart	1 pint	4 ounces	2 ounces
MELON, choicest sorts known, including Sutton's Perfection and Turner's Scarlet Gem	4 packets	3 packets	2 packets	
ONION, true Reading and others	11 ounces	7 ounces	2 ounces	1 ounce
PARSLEY, splendid curled kinds	2 ditto	2 ditto	1 ditto	1 packet
PARSNIP, Hollow Crown, fine	6 ditto	4 ditto	2 ditto	1 ounce
RADISH, finest sorts for succession	1 pint and 10 ounces	12 ounces	6 ounces	3 ounces
SPINACH, summer and winter kinds	2 pints	1 pint	4 ditto	2 ditto
SALSAFY	1 large pkt	1 packet		
SCORZONERA	1 do. do.	1 ditto		
TURNIP, fine sorts for succession	16 ounces	8 ounces	3 ounces	2 ounces
VEGETABLE MARROW, new Custard and others	2 large pks	2 large pks	2 packets	1 packet
SWEET and POT HERBS, of all the useful kinds	8 packets	7 packets	4 packets	

If any of the above articles are not required they should be named when giving the order, and increased quantities of other sorts will be given in lieu of those omitted.

By ordering one of the above Collections once a year much trouble and expense will be saved.

That great satisfaction has been given by these Collections in former seasons is testified by the recommendations given by our customers to their friends; as also by the numerous letters we receive, from which we present the following:—

From the Rev. M. W. GREGORY, *Roade, Northampton, Dec.* 1, 1859.
"I lose no opportunity of recommending your Seeds, which are most excellent; and I think you are doing us (the clergy especially), a great kindness in making up your garden selections."

From the Rev. W. H. ROACH, *Whiteshill Parsonage, Stroud.*
"I am more than satisfied with the assortment of Seeds you made for me, and with the quantity you sent; and I consider that I have done better by leaving the choice to you than selecting for myself."

From the Rev. JOHN KIRWAN, *Withycombe Rectory, Taunton.*
"I was so much pleased with the selection of Seeds sent by you, that I recommended two of my friends to take parcels from you."

From CHAS. LAWRENCE, Esq., *Cirencester.*
"I never recollect having received such a numerous collection of Seeds from any house so good in quality."

From ALEX. CATHCART, Esq., *Knockdolian Castle, Girvan, N.B.*
"I have had much satisfaction in recommending your Seeds to various friends, as I find they are much pleased with them; and you may depend upon my continuing to do so as long as I find the articles you send are good and reasonable in price."

From Mr. WILLIAM MOOR, *Gardener, the Rectory, Stoke.*
"I never had (previous to yours last year) a lot of Seeds which have all turned out so satisfactory."

From Mr. BONE, *Gardener, Huntsham Court, Tiverton.*
"I was so much pleased with your collection of Seeds last year, that I leave it to your selection again this year, both for the Kitchen and Flower Garden."

From Mr. ROBERTSON, *Gr. to* A. POLLOCK, Esq., *Lochfine, N.B.*
"I must say that your Seeds have been liberal as to quantity, and excellent as to quality."

From the Rev. C. T. FARLEY, *Moor Hall, Stourport.*
"Your Seeds are the very best my gardener ever made use of, and gave the highest satisfaction."

From J. LLOYD, Jun., Esq., *Dinas, Brecon.*
"The Garden Collection of Seeds has hitherto been most judiciously selected, and of the best description."

From the Rev. G. E. WALKER, *Shareshill, Wolverhampton.*
"Mr. Walker cannot but compliment Messrs. SUTTON & SONS on the quality of the Seeds sent last year, as they were by far the best he ever purchased."

SUTTON'S COLLECTIONS OF FLOWER SEEDS (Free by Post).

Amateurs requiring showy kinds of Flower Seeds are respectfully recommended to leave the selection of sorts wholly or partly to us, and will supply those which we know to be really worthy of cultivation. Should any sorts of Flower Seeds be already possessed they should be named, that we may omit them.

No. 1.—The best 100 sorts of FLOWER SEEDS, hardy and half-hardy, with instructions £1 1 0
No. 2.—The best 50 sorts of FLOWER SEEDS, ditto 0 10 6
No. 3.—The best 36 sorts of FLOWER SEEDS, ditto £0 7 6
No. 4.—The best 24 sorts of FLOWER SEEDS, ditto 0 5 0
No. 5.—The best 24 sorts of FLOWER SEEDS, all hardy 0 5 0

SEEDS FOR EXPORTATION.

SUTTON and SONS are constantly packing Farm and Garden Seeds for Australia, New Zealand, India, Africa, and other Foreign Parts, and receive the most gratifying accounts of the excellent condition in which they arrive, and of the crops produced from their Seeds.

SUTTON AND SONS *deliver the packages free of all expense to the ship's side at London, Southampton, Bristol, and other English Ports.* Prepayment is requested for all foreign orders, and a few days' notice for packing previous to the departure of a vessel.

Also NATURAL GRASSES for LAWNS and MEADOWS, fine sorts of MANGEL WURZEL, TURNIP, and other Agricultural Seeds.

All goods of the value of 20*s.* and upwards are delivered free to London, or to any Station of the South Western, South Eastern, Great Western (as far as Bristol, Birmingham, and Gloucester), and the Oxford, Worcester, and Wolverhampton Railways. Packages of 40*s.* value and upwards are delivered free not only by the above-named Railways, but also to all the principal Stations of England and Wales. *When goods to the value of 5l. and upwards are ordered they will be delivered free to any of the Scotch or Irish Ports.*

Remittances may be made by cheques on Town or Country Bankers, or by Post-office Orders payable to

SUTTON & SONS, ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.

Printed by WILLIAM BRADBURY, of 13, Upper Woburn Place, and FREDERICK MULLETT EVANS, of No. 20, Queen's Road, West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and published by them at the Office, No. 5, Upper Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—SATURDAY, December 24, 1859.

THE GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 53.—1859.] SATURDAY, DECEMBER 31. {Price Fivepence. {Stamped Edition, 6d.

INDEX.

Acacia deulbata, large	1055 a	Oxford Farmers' Club	1060 b
Agricultural College	1060 a	Pig feeding	1060 b
Animal nutrition	1053 a	Plants, wall	1056 c
Baker (Mr.) death of	1057 c	— origin of species	1051 c
Cedars, transplanting	1055 b	Pomegranate	1056 c
Ceylon, Sir J. E. Tennent on	1055 c	Rabbits and trees	1055 b
College, Cirencester	1060 a	Races, favoured plant	1051 c
Cottage, Norfolk farm	1059 a	Sewage question	1057 b
Daubeny (Dr.) lecture by	1053 a	Societies, rural	1055 b
Farm cottage in Norfolk	1059 a	Soil, exhaustion of	1057 b
Forest, Whichwood	1059 c	Species, origin of	1051 c
Gooseberry buds and birds	1055 b	Spergula pilifera	1056 c
Labour market	1060 b	Trade memoranda	1053 a
Lambs, to fatten	1061 a	Trees and rabbits	1055 b
Liebig on exhaustion	1057 b	Wall plants	1056 c
Manures, supply of	1057 c	Water, windmill for raising	1055 b
Mushrooms	1052 c	Weather in Cornwall	1055 b
Mycology	1053 a	Whichwood Forest	1059 c
Nutrition, animal	1053 a	Wind engines	1055 b

HORTICULTURAL SOCIETY OF LONDON.—The next Meeting of the FRUIT COMMITTEE will be held on TUESDAY, January 17, 1860, at 3 P.M., at the Society's Rooms, 8, ST. MARTIN'S PLACE, TRAFALGAR SQUARE, W.C ; on which occasion Prizes are offered of ONE POUND for the best, and TEN SHILLINGS for the second best dish in each of the following classes:—

PEARS.

CLASS A. NE PLUS MEURIS.
CLASS B. JOSEPHINE DE MALINES.
CLASS C. ANY OTHER DESSERT VARIETY.

APPLES.

CLASS D. OLD NONPAREIL.
CLASS E. GOLDEN HARVEY.
CLASS F. ANY OTHER DESSERT VARIETY.
CLASS G. ANY VARIETY OF KITCHEN APPLES.

All Fruits exhibited must be fit for table, and accompanied by filled-up tabular forms exhibiting the circumstances under which the fruit was produced. Blank forms may be obtained for the purpose, on application to Mr. ROBERT THOMPSON, Horticultural Society's Garden, Chiswick, W. Blank forms, to be filled up and sent with Seedling or other fruits, may also be obtained on application to Mr. THOMPSON, as above.

All Fruits and Vegetables for exhibition before the committee should be addressed "To the SECRETARY TO THE FRUIT COMMITTEE OF THE HORTICULTURAL SOCIETY, 8, ST. MARTIN'S PLACE, TRAFALGAR SQUARE, LONDON, W.C.," and must be delivered before 1 P.M. on the day of meeting. The carriage of Packages of Fruit will be paid.

THE BRITISH POMOLOGICAL SOCIETY, HANOVER SQUARE ROOMS, REGENT STREET, LONDON, W.

The List of Meetings to be held in the year 1860, for the examination and consideration of New Seedlings and General Fruits in season, and the Schedule of Prizes offered for special subjects, amounting to upwards of ONE HUNDRED and TWENTY POUNDS, are now ready. They will be forwarded immediately to all Members of the Society, and may be obtained by Fruit Growers generally on application to

WILLIAM DAVIDSON, Secretary.
2, Randolph Road, Maida Hill, London, W.

LEE'S WHITE SPROUTING BROCCOLI, VEITCH'S PERFECTION PEAS,

AND ALL OTHER REALLY GOOD NEW KINDS OF SEEDS ARE SUPPLIED BY

MESSRS. SUTTON AND SONS direct from the parties introducing them, in the original papers and at the growers' prices.

Messrs. SUTTON'S NEW SEED LIST will be ready shortly.
Royal Berkshire Seed Establishment, Reading.

STANDARD RHODODENDRONS.—Hundreds of handsome specimens of all the choicest varieties, varying in colour from deepest crimson to rose and pure white, with symmetrical heads and straight stems, from 2 to 5 feet in height, can be supplied by

JOHN WATERER, American Nursery, Bagshot, Surrey.

CHOICE RHODODENDRONS, AZALEAS, AND CONIFEROUS PLANTS.—A CATALOGUE of GEORGE BAKER'S unrivalled Stock of the above may be had on application.—The American Nursery, Bagshot, Surrey.

TO THE TRADE.

3,500,000 RHODODENDRONS, 2, 3, and 4 year old Seedlings, to be Sold very cheap. Also an over stock of 4000 or 5000 Double Gorse or Whins. Price sent free on application to JAMES SMITH, Darley Dale Nurseries, near Matlock.

DUTCH BULBS.—SURPLUS STOCK of fine Roots at very low prices. See *Gard. Chronicle*, Dec. 19, p. 1011.

The NEW SEED CATALOGUE will shortly be ready.

STEPHEN BROWN, Seed and Nursery Establishment, Sudbury, Suffolk.

DUTCH AND OTHER BULBS.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their CATALOGUE of the above is now ready, and will be forwarded post free on application. Early orders are solicited, as their successful cultivation depends in a great measure on early planting.

Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

PINE APPLES, GRAPES, &c.

PINE PLANTS, Fruiting and Succession.
GRAPE VINES, from Eyes, for Fruiting in Pots or Planting.

JOHN WEEKS AND CO. can now supply any quantity of very fine strong healthy Pine Plants, either Fruiting or Succession; also remarkably fine strong Grape Vines from Eyes, all the best sorts.

JOHN WEEKS & Co.'s Horticultural Show Establishment is now entirely devoted to the Growing and Forcing of Fruits in great variety, thereby showing the most improved plans of construction, and the most superior system of Hot-water Apparatus.

JOHN WEEKS & Co., Horticultural Builders and Hot-water Apparatus Manufacturers, King's Road, Chelsea, London, S.W.

BEST CUCUMBER FOR EARLY WORK.

CARTER'S CHAMPION, 1s. per packet; also BERKSHIRE CHAMPION, 1s. per packet; and LORD KENYON'S FAVOURITE, 6d. per packet.
JAMES CARTER & Co, 237 and 238, High Holborn, W.C.

DOUBLE ITALIAN TUBEROSES.

JAMES CARTER AND CO. have just received their first importation direct from Italy. Price per 1000 to the trade on application; retail, 3s. per dozen.
237 and 238, High Holborn, W.C.

CARTER'S SELECT LIST OF SEEDS FOR 1860 is now ready, and will be forwarded on application to JAMES CARTER & Co., Seedsmen, 237 & 238, High Holborn, W.C.

J. G. WAITE'S WHOLESALE CATALOGUE is now ready and can be had on application.
Seed Establishment, 181, Holborn, London, W.C.

SUTTON'S NEW SEED CATALOGUE contains all the novelties in Garden Seeds worthy of recommendation. It will be ready in a few days, and will be forwarded post free to any address.—Royal Berkshire Seed Establishment, Reading.

SEED CATALOGUE.

CHARLES TURNER'S DESCRIPTIVE LIST of a Selection of the best varieties only is now ready.
The Royal Nurseries, Slough.

FERN CATALOGUE.

ROBERT SIM'S NEW DESCRIPTIVE AND PRICED CATALOGUE, No. 6 (62 pages) of his COLLECTION of BRITISH AND EXOTIC FERNS, can be had, post free, for 8 stamps. Gratis to all previous purchasers of Ferns.
Nursery, Foot's Cray, Kent, S.E.

MESSRS. ROEZL AND BESSERER, of Mexico, will execute orders from their CATALOGUE of last year through their Agents, Messrs. B. A. GRANTOFF & Co., 4, Lime Street Square, London, E.C.

HYACINTHS AND OTHER BULBS.

WM. CUTBUSH AND SON can still supply Roots equal to the first they sent out this season, as all BULBS are especially selected for them before they are imported from Holland. Descriptive CATALOGUE post free on application.
Highgate Nurseries, London, N.

TO THE SEED TRADE.

JAMES FAIRHEAD AND SON, SEED GROWERS and MERCHANTS, Lewisham, Kent, S.E., and 7, Borough Market, London, S.E., beg to acquaint their friends and the Trade generally that their WHOLESALE CATALOGUE is now ready and can be had on application.

WHOLESALE CATALOGUE.

GEORGE JACKMAN AND SONS' PRICED and DESCRIPTIVE CATALOGUE for 1859, & SPRING 1860; comprising Fruit Trees of all the leading kinds; New and Selected Roses; fine varieties of American Plants; Choice and Rare Conifers; Evergreen and Deciduous Trees and Shrubs; and a fine stock of transplanted Forest Trees, &c., can be had free on application.—Woking Nursery, Surrey.

TRADE CATALOGUE.

THOS. CRIPPS, Tunbridge Wells, Kent, respectfully informs the Trade that his WHOLESALE CATALOGUE OF AMERICAN PLANTS, ROSES, AND GENERAL NURSERY STOCK is now ready and may be had post free.

ROSE CATALOGUE.

JOHN CRANSTON begs respectfully to inform his patrons that he will be happy to forward his New ROSE CATALOGUE for the present season, post free, upon application. It will be found replete with the most desirable flowers (new and old) in every class, and the descriptions are copious and faithful.—Nurseries, King's Acre, near Hereford.

NEW LIST OF SEEDS FOR 1860.

J. DOBSON AND SONS' LIST forwarded free to any address upon application. The Seeds warranted new and true.
Woodlands Nursery, Isleworth, W., & High St., Hounslow, W.

PELARGONIUMS.

JOHN DOBSON AND SONS beg to invite the attention of intending purchasers of the above, who will be liberally dealt with. A choice selection sent at a moderate price. Catalogues free on application.
Woodlands Nursery, Isleworth, W.

AZALEA INDICA.

J. IVERY AND SON'S New DESCRIPTIVE CATALOGUE of the above contains all the newest and best varieties. Will be forwarded post free upon application.
Dorking Nursery.—Dec. 31.

AZALEA INDICA.

F. AND A. SMITH beg to offer the above well set with flower buds, dwarf, bushy, and thoroughly ripened off. Having been grown in this country they are most suitable for packing, and are strongly recommended to country Amateurs and the Trade in general. An inspection invited. Prices on application.—Dulwich, Surrey, S.

ERICAS.

F. AND A. SMITH'S Stocks of the above are this season unusually fine, comprising most of the leading winter and spring-flowering varieties. Prices on application.
Dulwich, Surrey, S.

TO THE TRADE.

CHARLES SHARPE AND CO. have a large quantity of DANIEL O'ROURKE PEAS to dispose of this season of their own growing and a true selected stock. Price and sample on application.—Sleaford, Dec. 31.

TO THE SEED TRADE.

JAMES FAIRHEAD AND SON, SEED GROWERS and MERCHANTS, Lewisham, Kent, S.E., and 7, Borough Market, London, S.E., beg to acquaint their friends and the trade generally, that their WHOLESALE CATALOGUES are now ready, and will be forwarded post free on application.

GOOD SEEDS. CARRIAGE FREE.

SUTTON AND SONS,
SEED GROWERS AND MERCHANTS,
ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.

GEORGE GIBBS AND CO.
SEEDSMEN,
26, DOWN STREET, PICCADILLY,
LONDON, W.

RED LODGE NURSERY AND AMERICAN GROUNDS, SOUTHAMPTON.

W. H. ROGERS solicits attention to the large, fine, and varied Stock, growing on the above extensive Grounds.

THE PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, AND MANURE COMPANY LIMITED supply every requisite for the Farm and the Garden.
Registered Offices: Union Road, Plymouth.

NEW SEEDS FOR 1860.

THE PLYMOUTH SEED, &c., COMPANY LIMITED have warehoused their full supplies of GARDEN and FARM SEEDS to their entire satisfaction, and they trust that all orders their correspondents may favour them with will be sent as early as possible, so that delays and other inconveniences which necessarily arise during a busy seed season may by this means in a great measure be avoided.
Offices: Union Road, Plymouth.

TO THE SEED TRADE.

HYACINTHS, to name and in mixture; POLYANTHUS NARCISSUS; CROCUS, in sorts and mixture; TULIPS, double and single, in sorts and mixture. Prices on application.
BUTLER & MCCULLOCH, Seedsmen, Covent Garden Market, W.C.

PLANTING.

A. PAUL AND SON invite attention to their large and superior Stock of CONIFERÆ and other ornamental TREES and SHRUBS, FRUIT TREES, &c. For further particulars see advertisement in *Gardeners' Chronicle* of December 17.—Nurseries, Cheshunt, Herts.

COX'S EMPEROR PLUM is now ready for delivery.—Parties wishing to have Plants of this very superior PLUM are requested to apply to Mr. HENRY CLARKE, 39, King Street, Covent Garden, London, W.C.

RASPBERRIES, Strong Canes, Victoria, Filbasket, Fastolff, and Autumn-fruited, 10s.; White, 8s. CURRANTS, Red and Black, strong, 3 to 4 years, 10s. to 15s. STRAWBERRIES, 2s. to 2s. 6d. per 100. Large LAURUSTINUS, &c.—GEO. CORNWELL, Market Gardener, Barnet, N.

DWARF MAIDEN FRUIT TREES.

HUGH LOW AND CO. have to offer of fine quality, PEACHES, NECTARINES, APRICOTS, PLUMS, CHERRIES, APPLES, PEARS, both on Pear and Quince Stocks. Prices will be furnished on application.
The Autumn Wholesale CATALOGUE is now ready for distribution.—Clapton Nursery, London, N.E.

GREAT SCARCITY OF FRUIT.

STRONG ROOTS OF THE LINNÆUS RHUBARB, from division, can be supplied in any quantity at 12s. per 100, or 5l. per 1000, by WALTER PENNINGTON, Nurseryman, South Retford, Nottinghamshire.

PEACHES AND NECTARINES.

J. AND J. FRASER have a fine stock of 1-year cut trees of the above; they were transplanted last year, and are now suitable either for planting out to train, or to pot for Orchard-house culture. A list of the sorts and price may be had on application.—Lea Bridge Road Nurseries, N.E.

COMMON LAURELS.

J. AND J. FRASER, NURSERYMEN, &c., Lea Bridge Road, N.E., beg to offer a large quantity of COMMON LAURELS, fine bushy plants, from 2 to 5 feet in height. Prices of the various sizes may be had on application.

THREE MILLIONS OF TRANSPLANTED QUICKS.

GEORGE CHIVAS, Chester, offers the above, which are admitted to be unequalled in point of quality in Great Britain. A sample bale, containing 100 each of five sizes, forwarded on receipt of 15s., and orders for 10,000 delivered free at any railway station.—Chester, December 31.

HARDY HEATHS.—A Collection of 20 sorts, by name, of the above favourite autumnal flowers, in good plants, at 30s. per 100, or 12l. 10s. per 1000.
JOHN WATERER, The American Nursery, Bagshot, Surrey.

HARDY CALIFORNIAN CONIFERS, PICEA (ABIES) AMABILIS, PICEA (ABIES) GRANDIS.—Healthy seedling Plants of the above named most beautiful hardy Trees can be supplied by the undersigned by the dozen, hundred, or thousand, as also many other choice Conifers. PRICED CATALOGUES of which will be sent on application.
HUGH LOW & Co., Clapton Nursery, London, N.E.

ACORNS FOR SALE.—QUERCUS COCCINEA. For price and terms, direct to Mr. HASTIER, 12, Water Street, Blackfriars, London, E.C.

WELLINGTONIA GIGANTEA.

JOHN WATERER has thousands of the above Plants to offer, varying in height from 1 to 4 feet. The whole are exceedingly handsome and well rooted. Price on application.—The American Nursery, Bagshot, Surrey.

TO THE TRADE.—SPERGULA PILIFERA SEED, the IMPROVED CUSTARD MARROW. Prices of the above, also for other seeds offered to the Trade, may be had on application.
STEPHEN BROWN, Seed Grower, Sudbury, Suffolk.

LAWNS WITHOUT MOWING—SPERGULA PILIFERA.

J. A. SUMMERS supplies the above in plants enough to cover the ground next summer at 1s. per square yard, or at 1s., 2s., and 4s. per doz. plants. A specimen post free, 1s.
Howard Park Nursery, Perry Hill, Sydenham, S.E.

NEW AND CHOICE GARDEN SEEDS FOR 1860.

SELECTION FROM SUTTON'S AMATEUR'S GUIDE.

BEET. Per packet.—*s. d.*
Henderson's compact topt 1 0
Sutton's Dark Red, per oz. 1 0

BRUSSELS SPROUTS.
Fresh imported, per oz. .. 1 0
Roseberry, per packet .. 1 0

BEANS.
Early Monarch, per quart 0 8

KALE.
Asparagus Kale, per oz. .. 1 6
Cottager's Kale, per packet 1 0

BROCCOLI.—Per pckt.
Snow's Winter White .. 1 0
Early Penzance White .. 1 0
Lee's White Sprouting .. 2 6
Early Purple Sprouting .. 0 6
Frogmore Protecting .. 1 0
Reading Giant 1 0
Ward's Late White .. 1 0
Walcheren 1 0

SAVOY CABBAGE. *s. d.*
Early Ulm, per oz. .. 0 6

CABBAGE.—Per oz.
Champion 0 8
Sutton's Imperial 0 8
Blenheim 0 8
Couve Tronchuda 1 0

CAULIFLOWER.
Stadtholder, per packet .. 1 0

CELERY.—Per packet.
Sutton's Superb Pink .. 1 0
Incomparable New White 1 0

CARROT.—Per oz.
French Short Horn .. 0 6
New Intermediate .. 0 4

CRESS.
New Australian, per pckt. 0 6
Extra fine curled, per pint 1 6

CUCUMBER.
Per packet.—*s. d.*
Berkshire Champion .. 1 0
Webb's Imperial, new .. 2 6
Kelley's Hybrid Perfection, new 2 6

ENDIVE.—Per packet.
New Double Yellow, curled 0 6

LETTUCE.
Superb White Cos, per oz. 2 6
,, Green Cos ,, 2 6
Griffin's Alma, per packet 1 0
Ne Plus Ultra, per oz. .. 1 6

LEEK.
Musselburgh, per oz. .. 0 8

MELON.
Sutton'sPerfection,p.pckt. 1 0
Turner's Scarlet Gem ,, 1 0

ONION. *s. d.*
Reading .. .. per oz. 0 4
NewGiant,fromMadeira,do. 1 0

PEAS.—Per quart.
Sutton's Early Champion 1 0
Daniel O'Rourke 1 0
Tom Thumb 1 6
Dickson's Favourite .. 1 0
Champion of Paris.. .. 1 0
Sutton's Prizetaker .. 1 0
Champion of England .. 1 3
Veitch's Perfection .. 2 0
Sutton's Berkshire Hero.. 2 6
Oxford Tom 2 0
Champion of Scotland .. 1 6
General Windham.. .. 2 0
King of the Marrows .. 2 0

RADISH.—Per oz.
Beck's Short-top 0 4
Scarlet Olive-shaped .. 0 4
White Olive-shaped .. 0 6

SPINACH. *s. d.*
New Perpetual, per pckt. 0 6

TURNIP.
Early Strapleaf per oz. 0 6
Polly's Nonsuch ,, 0 4

VEGETABLE MARROW.
New Custard, and others, per packet 0 6

POTATOES.
Per bushel.—*s. d.*
Webb's Imperial 10 6
Soden's Ely Oxford .. 10 6
The Birmingham Prize-taker 10 6
Early Ashleaf, or Walnut-leaf Kidney } —
Dawes's Matchless .. 8 0
Handsworth Early .. 10 6

Reading Giant Asparagus, per 100, *2s.* to *s. d.* 5 0
Fine Lawn Grass, per lb. 1 0
Spergula pilifera, p. pckt. 1 6
Crystal Palace Prize Aster, per packet.. .. 1 0
Assortments of German Flower Seeds, each, *1s. 6d.* to 5 0
Dutch Anemones, per doz. 9 0
Italian Tuberoses.. .. 3 6
Ranunculuses, p. 100, *2s. 6d.* to 5 0
Lilium lancifolium, each. 3 6
Gladiolus, p. doz., *3s. 6d.* to 5 0

Appleby's Tobacco Paper, per lb. 1 6
Gishurst Compound, in boxes, *1s.*, *2s.*, & *10s. 6d.* each.

SUTTON'S GENERAL PRICED LIST OF GARDEN AND FARM SEEDS may be had post free on application.

Also a List of the Contents of "SUTTON'S COMPLETE COLLECTIONS" OF SEEDS FOR ONE YEAR'S SUPPLY, price £3 *3s.*, £2 *2s.*, £1 *1s.*, and *10s. 6d.*

PERMANENT GRASS SEEDS mixed expressly to suit the soil. Fine New Seed of MANGEL WURZEL, CARROT, and SWEDE.

Goods delivered Carriage Free. 5s. discount allowed for cash payment.

SUTTON & SONS, ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.

GERANIUMS, HERBACEOUS PLANTS, ETC.

MESSRS. PARKER AND WILLIAMS beg to inform their friends and patrons that their new PRICED and DESCRIPTIVE CATALOGUE of the above, to which are added Supplemental Lists of Stove, Greenhouse, and Hardy Plants, Fruit Trees, &c. (which include all the best new plants of the season), is now published, and will be forwarded post free on application.—Paradise Nursery, Seven Sisters' and Hornsey Roads, Holloway, London, N.

AMERICAN PLANTS, &c.

MESSRS. WATERER AND GODFREY'S CATALOGUE for the present season is now ready, and may be had on application. It describes fully all Rhododendrons worth growing, and contains a List of Azaleas, Hardy Heaths, and other American Plants, as well as a summary of the general stock of the most extensive Nurseries in England.

The Catalogue may also be had at Messrs. MAY's & Co., 1, Wellington Street, Strand, W.C.

Knap Hill Nursery, near Woking, Surrey.

HARDY RHODODENDRONS.

MESSRS. WATERER AND GODFREY invite attention to their Seedling RHODODENDRONS, which they are selling without names, and which they strongly recommend as being very superior in point of HABIT, FOLIAGE, COLOUR, and GENERAL HARDINESS. They are from 1½ to 2½ feet high, and as much through, and no plants can possibly be in finer health. They will be sold at very liberal prices, and purchasers can select from a stock of many thousands.

Knap Hill Nursery, near Woking, Surrey.

RHODODENDRONS.

JOHN WATERER'S CATALOGUE OF HARDY, SCARLET, and other choice RHODODENDRONS, as annually exhibited at the Royal Botanic Gardens, Regent's Park, is now published and will be forwarded on application. Faithful descriptions of all the esteemed varieties will be found detailed, with a list of the popular kinds of AZALEAS and other AMERICAN PLANTS, as well as a selection of CONIFEROUS TREES, with height and prices.

The American Nursery, Bagshot, Surrey, near Sunningdale Station, South-Western Railway.

RHODODENDRON EDGEWORTHI.

MESSRS. J. AND C. LEE have to offer a small quantity of SEED of this most beautiful and fragrant CONSERVATORY RHODODENDRON. Having carefully impregnated it with itself they can warrant it to produce the true R. Edgeworthi, whose flowers are pure white, with a delicious fragrance, and measure 6 inches in diameter. Sealed packets, *5s.* each, post free.

Nursery & Seed Establishment, Hammersmith, London, W.

NEW SEED CATALOGUE.

MESSRS. JOHN AND CHARLES LEE beg to inform their friends and the public that their NEW DESCRIPTIVE SEED CATALOGUE FOR 1860 may now be had post free on application.

Mr. JOHN LEE continues to devote himself especially to this important branch of their business, for which their house has been so long celebrated in the selection of SEEDS from the most genuine stocks at home and abroad.

Nursery and Seed Establishment, Hammersmith, London, W.

EXPERIENCED GARDENERS RECOMMENDED.

SUPERB BALSAMS.

F. AND A. SMITH are sending out seeds of their well-known superior BALSAMS, in collections of nine distinct colours, six seeds of each, *2s. 6d.*; the same mixed, *2s.*; half the quantity, mixed, *1s.*

The above are selected from a stock of 24,000 plants, for purity and brightness of colour, size and doubleness of the blooms, and general good habit of the plant. A liberal allowance to the Trade when 12 Packets are taken.—Dulwich, Surrey, S.

TO THE TRADE.—CONTINENTAL FLOWER SEEDS.

FREDERICK WILLIAM WENDEL, SEEDSMAN and FLORIST, Erfurt, Prussia (established 1832).

F. W. W. begs to inform the Trade that his Wholesale CATALOGUE of the above is now ready, containing Collections of ASTERS, STOCKS, BALSAMS, WALLFLOWERS, &c., and also an extensive list of all other New and Choice FLOWER SEEDS, sold in assortments, or by weight.

F. W. W. having extensive grounds in the town and vicinity of Erfurt, and devoting his personal attention to this department of his establishment, he can with the greatest confidence recommend all Seeds offered by him, as genuine and of the best quality.

Agent for this country—Mr. GEO. MACINTOSH, Nurseryman and Seedsman, High Road, Hammersmith, London, W., to whom all orders should be addressed, and where PRICE LISTS can be obtained post free on application.

The prices will be found as low as any house which supplies a genuine article. All parcels carriage paid to London.

CHRYSANTHEMUMS.

J. H. BIRD, F.H.S., NURSERYMAN, Stoke Newington, begs to inform his friends and the public that he has the finest Collection and the largest Stock of Chrysanthemums and Pompones in the world, and can supply them by the 100, 1000, or 10,000.

25 Pair of Best POMPONES, 10*s.*
20 Pair of Best Large Varieties, 10*s.*
25 Pair of Best POMPONE CUTTINGS, 5*s.*
20 Pair of Best Large Varieties, Do., 5*s.*

CATALOGUES for one stamp. To save trouble all orders to be pre-paid.

MESSRS. WATERER AND GODFREY respectfully refer planters to the following LIST of well-known good hardy Plants:—

ARAUCARIA IMBRICATA, 1 foot, stout, healthy, 5*l.* per 100; larger, up to 8 feet.
CEDRUS DEODARA, 2½ to 3 feet, very handsome, 10*l.* per 100; larger, in any quantity, up to 10 and 15 feet.
PICEA NOBILIS, Seedlings, in quantity, 1 foot, stout.
Ditto larger and in every way perfect plants, up to 4 feet.
NORDMANNIANA, from seed, 2, 3, 4, and 6 feet.
PINSAPO, 2½ to 3½ feet, and as much through.
Ditto magnificent plants, 8 and 10 feet high.
CUPRESSUS LAWSONIANA, fine bushy seedling plants, 2½ feet high.
JUNIPERUS, CHINESE, 3 feet up to 8 and 10 feet.
,, IRISH, 5, 6, and 7 feet.
YEWS, IRISH, 5, 6, 7, and 8 feet.
,, GOLDEN, from 2 to 7 and 8 feet.
,, COMMON ENGLISH, in large quantities, 4 to 6, 7, and 8 feet.
THUJA AUREA.—Several hundred magnificent specimens, 3, 4, and 5 feet high, and measuring 10 to 15 feet in circumference.
THUJOPSIS CÆREOLIS, 2½ to 3 feet.
WELLINGTONIA GIGANTEA, all from seed, 1½ to 3 feet, and as wide.
HOLLY, GREEN, in quantities, 5, 6, and 8 ft.; VARIEGATED, especially the best gold striped, of all sizes, up to 6 feet.

All the plants referred to in this advertisement were removed in April last, and they are in a condition to travel any distance with perfect safety.—Knap Hill Nursery, near Woking, Surrey.

FIVE THOUSAND INDIAN AZALEAS.

WILLIAM BARNES begs to invite attention to his unrivalled Collection of the above beautiful and justly admired class of plants. The sizes vary from 1 to 5 feet in height, worked upon strong healthy stocks, are in the finest possible condition, and perfectly free from thrip. The following list comprises a portion of his extensive stock:—

Conqueror	Glory of Sunning Hill	Standard of Perfection
Murrayana	Extransii [ford	Grand Monarch
Carminata	Countess of Stam-	Marie Louise
Duke of Devonshire	Beauty of Europe	Queen Victoria (Ivery's)
Triumphans	Barclayana	Iveryana alba cincta
Perryana	Stanleyana	Alba lutescens
Iveryana	Crispiflora	Modèle
Alba striata	Striata formosissi-	Baron de Peet
Aurora	Admiration [ma	Le Géant
Coronata	Criterion	Belle Jeannette
Variegata	Delicatissima	Etendard de Flandres
Lateritia	Magnificans	Papilionatima
Gledstanesi	Alba Melior	Rubens
Alba magniflora	Mrs. Fry	Pelargoniflora
Frostii	Perfecta elegans	Gloire de Lederberg
Delecta	Lateritia alba supreme	Baron de Vrière
Alba magna	Empress Eugenie	Gloire de Belgique
Holfordii	Impératrice Josephine	Distinction
Ardens	Eulalie Van Geert	Queen of Whites
Vivicans	Queen Victoria (continental)	Leopoldi
Rosea elegans	Reine des Belges	Duc de Brabant
Juliana	Queen of Perfection	Etoile, de Gand
Elegans superb	Adolphe	Reine des Pinachées
Beauty of Reigate	Luceana	Princess Adelaide de Nassau
Lawrenciana	Louis Napoleon	Flower of the Day
Symmetry	The Bride	Souvenir de l'Exposition
Vesta	Gem (Ivery's)	Duchess Adelaide de Nassau
Gledstanesi excelsa	Madame Miellez	Iveryana Improved
Buckinghamii	Princess Mary of Cambridge	Duc de Nassau
Maria	Petuniæflora	Miltonii
Chelsonii	Roi Leopold	Variegata superba
Fentonii	Rosy Circle	Bouquet de Flore
Lucens	Sir Charles Napier	
Constantia rosea		
Lateritia grandiflora		
Trotteriana		
Gledstanesi formosa		

CATALOGUES with Prices can be had on application.
Camden Nursery Camberwell, S.

HIMALAYA FRAME CUCUMBER.

WOOD AND INGRAM beg to offer the above as one of the best ever offered, being a very free setter, an immense bearer, and much finer in quality than that well known variety "Pea Green," on which it is a great improvement, having a much shorter neck and never exhibiting any tendency to coarseness. Packets containing 12 seeds post free for 18 stamps.

The following in similar packets for 12 stamps:—General Outram, Robinson's Frame, Pea Green, Perfection, Gunbarrel, Phenomenon, Kelway's Prolific, Manchester Prize, and Ne Plus Ultra.—Huntingdon Nurseries.

NEW CUCUMBER, DICKSON'S NEWTON HERO.—An excellent variety for winter forcing, raised by ourselves at Newton Nurseries, grows from 18 to 24 inches in length, of very fine flavour, short neck, very compact, and a heavy cropper; carries its bloom well throughout its entire length, and allowed by many of our first-class judges to be the best early Cucumber ever sent out.

GILLESPIE'S NEW HYBRID WHITE SPINE CUCUMBER.—J. D., S., & Co., having bought the entire Stock of this Valuable Hybrid Cucumber from the raiser, and having proved it to be one of the best Forcing Cucumbers grown, can with entire confidence recommend it. Is a very free bearer, of fine flavour and shape, growing from 21 to 26 inches, carries its bloom well with a good colour. Will give full satisfaction to every grower; see remarks by Prof. Lindley in *Gardeners' Chronicle* of August 8, 1857.

JAMES DICKSON, SONS, & Co., Nurserymen and Seedsmen, 23, Market Place, Manchester; and 102, Eastgate St., Chester.

DICKSON'S MANCHESTER CHAMPION RED SOLID CELERY (New).—Quite dwarf and distinct, rarely exceeding 20 inches in height, of superior colour and delicious Walnut flavour. Very solid and crisp, requires much less earthing up than most other sorts, and keeps well up to the end of April; has been seen by many practical Gardeners, and pronounced to be the best Red Celery grown. Prices to the Trade on application.

JAMES DICKSON, SONS, & Co., Nurserymen and Seedsmen, 23, Market Place, Manchester; and 102, Eastgate St., Chester.

NEW PEAS.

BUCKLEY'S GENERAL WYNDHAM | THORNE'S ROYAL BRITAIN.

HURST AND M'MULLEN having grown a considerable quantity of the above fine tall late varieties of PEAS this season, beg to offer them to the Trade only. They have been proved to be superior to any of their class, both in flavour and size for the last two years, and they can confidently recommend them.

Also "Dillistone's First Early Pea," quite seven days earlier than any other variety, and a great bearer. Prices on application.—Address, 6, Leadenhall Street, London, E.C.

EAST RIDING OF YORKSHIRE AND LINCOLNSHIRE NURSERY AND SEED ESTABLISHMENTS.

MARTIN AND SONS, Cottingham, (A.D. 1788), Seed Establishments in Hull, Junction Street and branch Nursery, Spring Bank, near the Cemetery, Hull.

P.S. PRICED CATALOGUES of their extensive NURSERY STOCK; KITCHEN GARDEN and AGRICULTURAL SEEDS may be had on application. Carriage paid on all Seed orders value 2*l.*

G. S. DODS (late gardener at Cooper's Hill) respectfully acquaints the nobility, gentry, and inhabitants of Epsom and the surrounding neighbourhood, that he has taken the under-mentioned old-established NURSERY, conducted so many years by the Messrs. Young, and trusts by assiduity in the execution of all orders, with a careful regard to the quality of every article supplied, to merit a continuance of that patronage so liberally bestowed on his predecessors.

Epsom Nursery, Epsom, Surrey.

ROBERT NEAL, NURSERYMAN, Wandsworth Common, S.W., begs to call the attention of buyers to his large and well-selected stock of EVERGREENS and FLOWERING SHRUBS, ORNAMENTAL TREES, AMERICAN PLANTS, FRUIT AND FOREST TREES, STANDARD AND DWARF ROSES of every description. A large stock of BOX-LEAF EVERGREEN PRIVET, from 1 to 6 feet for hedges; GREEN HOLLY, 1 to 6 ft.; RICH BOG and LOAM for American Beds; LEAF MOULD. The Nursery is 10 minutes' walk from Clapham Common, and New Wandsworth Station, Crystal Palace Line.

IMPORTANT TO LANDHOLDERS.

FOR SALE, 200,000 LARCH FIR, 1½ to 2 feet at 15*s* per 1000.
200,000 LARCH FIR, 2 to 2½ feet, at 20*s.* per 1000.
50,000 LARCH FIR, 3 to 3½ feet, at 40*s.* ,,

FLUKE POTATOES for planting, warranted free from disease, at 4*s. 6d.* per bushel. Orders for the above to the amount of 5*l.* and upwards, Carriage paid to any Railway Station from Milford to London.—JACOB SCOTT MATTHEWS, Nurseryman, Seedsman, and Florist, Cardiff, South Wales.

LEE'S NEW WHITE SPROUTING BROCCOLI.

MESSRS. JOHN & CHARLES LEE

FEEL highly honoured in being the means of introducing this most important Vegetable production to the notice of the Public. The real value of this prolific Broccoli will not be asserted until it is in the hand of every cottager in the Kingdom; and they only regret that their present very limited stock will not enable them at once to spread it more widely.

The engraving, taken from a Photograph, which accompanied Dr. Lindley's remarks in the *Gardeners' Chronicle* of Dec. 10, and was inserted in our advertisement of December 17, shows the enormous crop of good White Broccoli to be expected from it under good cultivation. The centre head is large and fine, and the subordinate heads, all of good size, number from 30 to 50. It has remained true to its branching character for four years; it is perfectly hardy, and is in season through JANUARY, FEBRUARY, AND MARCH, a period at which it is so desirable to obtain good White Broccoli.

Sealed packets, price 2*s.* 6*d.* post free, are now ready. To be had of all the principal Seedsmen.

Nursery and Seed Establishment, Hammersmith, London, W.

GENUINE GARDEN SEEDS.

JAMES CARTER & CO.

ARE NOW READY TO SUPPLY

COLLECTION OF GARDEN SEEDS OF 1859 HARVEST FOR ONE YEAR'S SUPPLY,

CONTAINING ALL THE MOST APPROVED VARIETIES OF

VEGETABLE SEEDS at the following Prices:—No. 1, 20s.; No. 2, 40s.; No. 3, 60s.

The following are the quantities they recommend for Cropping a Garden of One Acre, and which they can supply for £3 (Collection No. 3) :—

PEAS, Carter's Earliest .. 2 quarts
,, Early Emperor .. .. 2 ,,
,, Harrison's Glory .. 2 ,,
,, Champion of England .. 4 ,,
,, Beck's Prize-taker .. 2 ,,
,, Dwarf Green Marrow .. 2 ,,
,, Carter's Victoria .. .. 2 ,,
,, Hair's Dwarf Mammoth 4 ,,
BEANS, Early Mazagan .. 1 ,,
,, Early Long-pod .. 2 ,,
,, Green Nonpareil .. 1 ,,
,, Taylor's Windsor .. 2 ,,
,, French Fulmer's forcing 1 pint
,, ,, Negrolong Pod.. 1 ,,
,, ,, Light Dun .. 1 ,,
,, ,, Newington Wonder 1 ,,
,, ,, Scarlet Runners 1 quart
BEET, small selected Blood Red 2 ozs.
BORECOLE or Kail Scotch curled 1 pkt.
,, Asparagus .. .. 1 ,,
,, Cottager's .. .. 1 ,,
,, new Cabbaging .. 1 ,,
BRUSSELS SPROUTS, imported 1 pkt.
BROCCOLI, best sorts for succession .. .. 8 pkts.
CABBAGE, best sorts, including Carter's earliest .. .. .. 6 pkts.
SAVOY, green curled .. .. 1 oz.
,, new Ulm .. .. .. 1 pkt.
CAULIFLOWER, best early .. 1 ,,
,, Walcheren .. 1 ,,
CARROT, early Horn .. .. 2 ozs.
,, James Scarlet .. .. 2 ,,
,, Long Surrey .. .. 4 ,,
,, selected Australian .. 4 ,,
CELERY, incomparable dwarf, white .. .. 1 pkt.
CELERY, Cole's crystal white .. 1 ,,
CRESS, plain .. .. .. 1 pint
,, Australian .. .. .. 1 pkt.
CUCUMBER, fine long ridge .. 1 ,,
,, Carter's Champion 1 ,,
,, Lynch's Star of the West .. .. 1 ,,
ENDIVE, new mossy green .. 1 oz.
,, winter green curled .. ½ ,,
LEEK, Musselburgh .. .. 1 ,,
LETTUCE, Berkshire Brown Cos .. .. 1 pkt.
LETTUCE, Carter's Giant Cos .. 1 pkt.
LETTUCE, Black seeded Bath Cos 1 pkt.
,, Paris Cos .. .. 1 ,,
,, Drumhead Cabbage.. 1 ,,
,, Hardy Green do. .. 1 ,,
MUSTARD .. .. .. 1 pint
MELON, Carter's Excelsior .. 1 pkt.
,, Turner's Gem .. .. 1 ,,
ONION, James Keeping .. .. 2 oz.
,, White Globe .. .. 2 oz.
,, Reading .. .. .. 2 oz.
,, Giant Madeira .. .. 1 oz.
,, Deptford .. .. .. 2 oz.
,, Lisbon .. .. .. 1 oz.
PARSLEY, Myatt's curled .. 2 oz.
PARSNIP, fine selected .. .. 2 oz.
SPINACH, summer .. .. 1 quart
,, winter .. .. .. 1 pint
SALSAFY .. .. .. 1 pkt.
SCORZONERA .. .. .. 1 ,,
TURNIP, White Dutch .. .. 4 oz.
,, Polley's Nonsuch . ½ pint
,, Yellow Maltese .. 2 oz.
VEGETABLE MARROW .. 1 pkt.
,, Custard .. .. 1 ,,
HERBS in sorts .. .. .. 6 ,,

Collections 1 *and* 2 *are similar to the above, with the quantities proportionately reduced.*

J. C. & CO.'S 25TH ANNUAL CATALOGUE OF FLORICULTURAL, VEGETABLE, AND AGRICULTURAL SEEDS, AND GARDENERS' VADE MECUM, will be published early in January.

237 & 238, HIGH HOLBORN, LONDON, W.C.

COVENT GARDEN MARKET, LONDON, W.C.

BUTLER & McCULLOCH'S

DESCRIPTIVE AND PRICED CATALOGUE OF FLOWER, TREE, SHRUB, VEGETABLE, AND AGRICULTURAL SEEDS

(READY IN A FEW DAYS, AND FORWARDED FREE AND POST PAID ON APPLICATION),

The Notes and Descriptive Matter of which have been carefully revised and much valuable information added. The new and recent introduction of species and varieties have also been added, and as heretofore the seeds which require for their maturation a warmer climate than that of England have been saved for us in Italy by that distinguished amateur, the late Sardinian correspondent of Messrs. James Carter & Co., who has appointed us his representatives in this country.

BALSAM.—New Indian Double (new and distinct), pale pink spotted pearl grey.
,, ,, ,, (new and distinct) maculata, pearl grey, with brilliant carmine stripes.
The above are remarkable for their beauty, hardiness, duration, free flowering, and robust growth.
,, ROSE ISABELLA (new), extremely double, light rose chamoise, changing to pale yellow, beautiful.
CELOSIA NOVA species, silvery white, shaded with bright rose. One of the most elegant plants in cultivation, producing a multitude of long spikes of feathery blossoms, extremely beautiful.
DATURA CARTHAGINIENSIS (new), pure white, novelty from Granada. Remarkably hardy, free flowering, with trumpet-shaped blossoms of an immense size, exquisitely beautiful and sweet scented.
,, HUMILIS FLORE PLENO (D. Chlorantha flore pleno). Deep golden yellow. A magnificent dwarf plant from Texas, producing a profusion of long double trumpet-shaped flowers, of great beauty and sweet scented.
RICINUS PURPUREA MAJOR, ,, SANGUINEUS NOVA — Majestic plants, of great beauty and highly ornamental.
PORTULACCA AUREA STRIATA (new), sulphur yellow striped with golden yellow and tinged with red.
,, BLENSONI (new), light scarlet.
,, CARYOPHYLLOIDES (new), rose, striped with brilliant carmine.
The above new varieties are by far the most beautiful of this exquisite genus.
SALVIA SPLENDENS EXCELSA (new), brilliant scarlet, large, and beautiful; very elegant.
SOLANUM HETEROGANUM, large black fruit; new and handsome.
,, COCCINEUM, splendid scarlet fruit.
,, TOXANUM, splendid new var.; height from 1 to 2 feet; fruit of a waxy scarlet appearance, with the form of a Maltese cross in the centre, and may be preserved as an ornament for some time. Foliage shaded mulberry, very handsome, a great novelty.
,, TOMATE (new), remarkable for its brilliant carmine fruit of the form of a large egg; an extremely handsome ornamental plant.
,, VESCUM (new), large violet fruit, charming variety.
DOLICHOS LABLAB ATROSANGUINEUS (new), splendid maroon fruit, exquisitely beautiful.
DOLICHOS ENSIFORMIS, species gigantea Texana. A magnificent climber of rapid growth.
IPOMŒA MARGINATA, richest velvety purple to skyblue, with distinct white border, flowers large, and magnificent.
,, RENFORMIS, yellow with violet eye, distinct and extremely beautiful.
,, SPLENDIDISSIMA (new), richest dazzling blue, edged with the purest white, exquisitely beautiful.
TRYHOSANTHES COLUBRINA VERA (True serpent fruit), very long elegant fruit, of a brilliant carmine colour when ripe.
ARCTOTIS GRANDIFLORA (new), beautiful pale sulphur yellow, with dark crimson, extremely large and exquisitely beautiful.
CUPHEA EMINENS, red and yellow, long tuble, magnificent plant, unsurpassed for elegance and beauty, throwing out Araucaria-like branches, covered with the most beautiful flowers.
CYCLAMEN AFRICANUM MACROPHYLLUM SUPERBUM (new), shaded, red, beautiful.
,, NEAPOLITANUM (new), pink and white.
,, ,, ALBUM (new), pure white.
,, PERSICUM ATROPURPUREUM (new).
,, ,, ROSEUM (new)
,, ,, RUBRUM (new).
,, ,, STRIATUM MAGNIFICUM (new).—Brilliant carmine, striped with white, very large, the most elegant and novel variety yet known.
GERANIUM ENDLICHERIANUM.—Curious tuberous plant, blooms the second year; flowers elegant, deep rose, with orange stamens, of an immense length, producing a novel and striking effect.
PELARGONIUMS, in collections to name, embracing only the newest and most magnificent varieties.

CARNATIONS	do.	do.	do.
PICOTEES	do.	do.	do.
MAURANDYAS	do.	do.	do.
TROPÆOLUMS	do.	do.	do.

THUNBERGIA, new, scarlet, splendid.
DIANTHUS CHINENSIS MONSTROSUS (Heddewigi).
CALLIRHOE PEDATA (digitata).
TACSONIA IGNEA.—Splendid scarlet Passionflower, unequalled for the dazzling resplendence of its flowers.
,, MANICATA.—Intense orange scarlet, rays nearly black, giving the effect of a brilliant scarlet Anemone, striking and exquisitely beautiful.

For further particulars and other choice novelties see Catalogue.

BUTLER and McCULLOCH, Seedsmen, Covent Garden Market, London, W.C.

DWARF MAIDEN FRUIT TREES.—APPLES.
PEARS. | CHERRIES. | PEACHES.
PLUMS. | APRICOTS. | NECTARINES.
Prices on Page 1 of Cover.
Fine and clean grown; and all the leading sorts can be supplied in quantities by GEORGE JACKMAN & SON, Woking Nursery, Surrey.

DWARF TRAINED FRUIT TREES.—APPLES.
PEARS. | CHERRIES. | PEACHES.
PLUMS. | APRICOTS. | NECTARINES.
Prices moderate.
Great care is taken in the formation of these fine, healthy, freegrowth trees. Particulars can be obtained of GEORGE JACKMAN & SON, Woking Nursery, Surrey.

FOREST TREES.

JOHN WATERER has to offer upwards of a Hundred Thousand of each of the following, from 2 to 4½ feet high, and all good rooted:—

CHESNUT	LARCH	BIRCH
HAZEL	ASH	ALDER
SCOTCH	LAURELS	WITHY, &c.

Samples with prices sent on application. Planting done by contract.—The American Nursery, Bagshot, Surrey.

NOTICE TO THE SEED TRADE.—To prevent an erroneous impression in reference to certain collections of STOCKS and ASTERS lately advertised, Mr. APPELIUS has suppressed their sale, and will again only furnish the full sized packets already known to his customers.
The London Agency of Mr CHARLES APPELIUS, Erfurt.

YORKSHIRE SEED ESTABLISHMENT.

E. P. DIXON begs to announce that his new SELECT PRICED LIST OF KITCHEN GARDEN, FLOWER, and AGRICULTURAL SEEDS for 1860 is now ready, and will be forwarded post free on application to
57, Queen Street, Hull.

KEMP'S INCOMPARABLE EARLY CABBAGE.
E. P. DIXON can supply this well-tried Cabbage, which has proved in every way equal to the description given of it last season. It can be safely recommended as the best variety in cultivation, price 1*s.* per packet, and may be had of the following Seedsmen:—
Hurst & M'Mullen, 6, Leadenhall Street, London, E.C.
Noble, Cooper, & Bolton, 152, Fleet Street, London, E.C.
J. Wrench & Sons, London Bridge, E.C.
Beck, Henderson, & Child, Adelphi Terrace, Strand, W.C.
Nutting & Sons, 60, Barbican, London, E.C.
Charlwood & Cummins, Tavistock Row, London, W.C.
Geo. Dixon, 48A, Moorgate Street, London, E.C.
Fisher, Holmes, & Co., Sheffield.
Fisher & Godwin, Sheffield; or of
E. P. DIXON, 57, Queen Street, Hull.

PETER LAWSON AND SON
THE QUEEN'S SEEDSMEN AND WOOD FORESTERS,
respectfully announce that they have now issued their
NURSERY CATALOGUE OF FOREST TREES, CONIFERÆ, SHRUBS, &c.,
which they will be happy to forward free by post on application.
27, Great George Street, Westminster, S.W.

PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN AND WOOD FORESTERS, 27, Great George Street, Westminster, London, S.W., respectfully announce the issue of their GARDEN SEED CATALOGUE for 1860, which they will be happy to forward free by post on application. Every care has been bestowed on the selection and growth of the various stocks, which P. L. & SON can safely recommend as of best quality, and true to name.

DALMAHOY EARLY POTATOES.
This excellent variety of Potato now meets with a largely increased demand in England, to which it is fairly entitled. It is considerably earlier than the Regent, and of excellent quality. Messrs. P. L. & SON are now prepared to send out carefully selected Seed, for which early orders are requested; and which can either be executed now or in spring, as may best suit purchasers.

NEW ANNUALS.

JOHN GEORGE WAITE, SEED MERCHANT, 181, High Holborn, London, W.C., has great pleasure in offering SEEDS of the following new hardy Annuals:—
CLARKIA PULCHERRIMA,
SCHIZANTHUS GRANDIFLORUS OCULATUS,
HELIOPHILA CŒRULEA STRICTA.
Coloured Drawings and prices of which (to the Trade only) can be had on application.
Seed Establishment, 181, High Holborn, London, W.C.

The Gardeners' Chronicle.

SATURDAY, DECEMBER 31, 1859.

MEETINGS FOR THE ENSUING WEEK.

MONDAY, Jan. 2—Entomological ..... 8 P.M.

To how many of our gardening readers has it ever occurred to investigate the origin of any of the "favoured races" of plants with which they are familiar in the garden, the orchard, or the forest? Many know or take for granted that the most dissimilar kinds of Strawberries, Apples, and Potatoes have all sprung from one stock, and that most of them have originated within a very recent period; as also that the history of many is attainable, did they think it worth the trouble of searching for. Even this limited knowledge is seldom acquired; and it is rarer still to find a gardener who has ever reflected upon the possible origin of the wild plants that surround him; though he not only knows that these are composed

of the very same elements as are contained in the soil and air, but that they are themselves the immediate ancestors of the cultivated plants whose nurture provides him with remunerative labour, and whose increase at the same time supplies him abundantly with food. Little, however, as our gardening friends may have thought of these matters, still the terms "favoured race" and "origin of species," are more or less intelligible to most: but it is very different with "struggle for life." In its application to man civilized and savage, at peace and at war, and in a certain degree to the lower animals, the significance of the phrase is obvious enough; but how it can apply to the vegetable kingdom is not so evident at first sight, and still less evident is its connection with the "origin of species" and with "favoured races."

Perplexed with these thoughts on reading for the first time the title of Mr. DARWIN'S new volume ON THE ORIGIN OF SPECIES,* and knowing that the author is of first-rate standing in science, of great popularity, and a frequent contributor to our columns, we awaited the publication of his book with great curiosity and interest. It is true that we had been referred to a notice in the *Gardeners' Chroniele* (1858, p. 735) of a paper communicated by Mr. DARWIN to the Linnean Society, which gives a clue to the general nature of his work, but rather whetted the curiosity than allayed it; being little more than an indication of one method of research now fully developed, and giving little idea of the extent, variety, and suggestive value of that research, and still less of the comprehensiveness and talent of the present work.

From the above expressions it will be inferred that we have risen from the perusal of Mr. DARWIN'S book much impressed with its importance, and have moreover found it to be so dependent on the phenomena of horticultural operations, for its facts and results, and so full of experiments that may be repeated and discussed by intelligent gardeners, and of ideas that may sooner fructify in their minds than in those of any other class of naturalists, that we shall be doing them (and we hope also science) a service by dwelling in some detail upon its contents. Thus much we may premise, that it is a book teeming with deep thoughts on numberless simple and complex phenomena of life; that its premises in almost all cases appear to be correct; that its reasoning is apparently close and sound, its style clear, and we need hardly add its subject and manner equally attractive and agreeable; it is also a perfectly ingenuous book, bold in expressions as in thought where the author adduces what he considers clear evidence in his favour, frank in the statement of objections to the hypotheses or conclusions founded on its facts and reasonings; and uniformly courteous to antagonistic doctrines. In fine, whatever may be thought of Mr. DARWIN'S ultimate conclusions, it cannot be denied that it would be difficult in the whole range of the literature of science to find a book so exclusively devoted to the development of theoretical inquiries, which at the same time is throughout so full of conscientious care, so fair in argument, and so considerate in tone.

Before entering upon an analysis of those parts of Mr. DARWIN'S work which more immediately concern our readers, we may explain that it is devoted to the inquiry of how it is that the world has come to be peopled by so many and such various kinds of plants and animals as now inhabit it; and why it is that these do not all present a continuous, instead of an interrupted series, capable of being divided into varieties, species, genera, orders, &c. To all careless and many careful naturalists the assertion is sufficient, that they were so created, and have been endowed with power to remain unchanged; but there are considerable difficulties in the way of the adoption of this theory, which all reflecting naturalists allow; whilst more to our present purpose is the fact, that in Mr. DARWIN'S opinion the objections to it are more numerous and some of them more conclusive than the arguments in its favour. In the first there is the fact, that gardeners and cattle and bird breeders have made races which are not only more dissimilar than many species in a state of nature are, but if found in a state of nature would unquestionably be ranked as species and even genera; while the possibility of their reversion to their parent forms is doubted by many and denied by some. Then, there is the fact, that in a great many genera many so-called species present a graduated series of varieties which have puzzled the best naturalists; and that in such genera at any rate it is easier to suppose that the species are not separate creations than that they are so. Again, the whole system of animal and plant classification into individuals, species, genera, &c., presents a series strictly analogous to that of the members of the human or any other family; and we further express our notions of the mutual relations of animals and plants in the very terms that would represent their affinities as being due to a blood relationship; so that either Nature has mocked us by imitating hereditary descent in her creations, or we have misinterrupted her in assuming that she has followed one method for families and another for species. There is then the geological evidence of species not having all been introduced at one period on the globe, but at various successive periods, and in like manner there is abundant evidence that they are being extinguished one by one; and as geologists are now pretty unanimous in believing that the past changes of the globe were the same in kind and degree as those now going on, we can no longer cling to the old vague belief that species were created at a time when all other conditions were different from those now existing; and thus hide one mystery under another. Again, if we hold to original creations we must also admit that it is more likely that a new kind of Strawberry, as different from all the wild as the British Queen is from the Alpine, should naturally originate in England or elsewhere out of air and earth and water, than that it should have originated in accordance with the laws that favoured the gardener's skill in producing the above-mentioned form. Finally, we know that on the one hand all changes of the surface of the globe (of climate, geographical limits, elevation and depression) are extremely slow; and that on the other relations of co-adaptation subsist between the climate, &c., of every country and the animals and plants which it contains; but such co-adaptations could not harmoniously exist if the physical changes were slow, and the creations of species sudden, for in such cases the species must be created either before or after they were wanted, a state of things which no orthodox naturalist would admit; but if, on the contrary, the organisms are supposed to change with the changed conditions of the country they inhabit, perfect adaptation and continuous fitness would be the necessary result.

Such ideas as these, either in whole or in part, have occurred to many naturalists, when in endeavouring to classify their animals and plants, or to account for their distribution, they have found themselves forced to face the difficulty of accounting for their origin. Hitherto most have, as we have already observed, contented themselves with the hypothesis that they were independently created, and the minority have clung to the only other explanation hitherto conceived, that they have all been created by variation from a single first-created living organism, or a few such. Now it must be borne in mind that both these views are mere hypotheses in a scientific point of view; neither has any inherent or prescriptive right to a preference in the mind of the impartial inquirer; but the most superficial observation will show that the hypothesis of original creations is incapable of absolute proof, except the operation be witnessed by credible naturalists, and can only be supported by facts that are either not conclusive against the opposite doctrine, or may be regarded as equally favourable to it; and this hypothesis is hence placed at a disadvantage in comparison with that of the creation of species by variation, which takes its stand on the familiar fact that species do depart from the likeness of their progenitors, both in a wild and domestic state.

On the other hand the hypothesis of creation by variation labours under the disadvantage of being founded upon a series of phenomena, the action of each of which individually, as explained by Mr. DARWIN, would appear to prevent the possibility of species retaining their characters for any length of time, and it therefore appears at first sight opposed to the undisputed fact, that many hundreds of animals and plants have transmitted their characters unchanged (or nearly so) through countless generations, and covered, even within the historic period, many square miles of country each with millions of its exact counterpart. To explain this anomaly and to raise this hypothesis of creations by variation to the rank of a scientific theory, is the object of Mr. DARWIN'S book, and to do this he has endeavoured to invent and prove such an intelligible rationale of the operation of variation, as will account for many species having been developed from a few in strict adaptation to existing conditions, and to show good cause how these apparently fleeting changelings may by the operation of natural laws be so far fixed as to reconcile both the naturalist and the common observer to the idea, that what in all his experience are immutable forms of life may have once worn another guise. The hypothesis itself is a very old one; it was, as all the world knows, strongly advocated by LAMARCK, and later still by the author of the "Vestiges of the Natural History of the Creation," but neither of these authors were able to suggest even a plausible method according to which Nature might have proceeded in producing suitable varieties, getting rid of intermediate forms, and giving a temporary stability to such as are recognised as species by all observers. Mr. DARWIN has been more successful, though whether completely so or not the future alone can show. We shall proceed to examine his method in another article.

* On the Origin of Species by means of Natural Selection; or the Preservation of favoured races in the Struggle for Life. By CHARLES DARWIN, M.A., F.R.S., &c. 8vo, pp. 502. MURRAY.

IT was formerly supposed that but one kind of Mushroom ever made its appearance on artificial MUSHROOM BEDS. The notion probably arose from the circumstance of the spawn being often prepared from a mere admixture of different matters, without any positive spawn brought in from the fields, and as Mushrooms were supposed to spring from this mixture by a sort of spontaneous generation, it was conceived that it would require a different concurrence of circumstances to produce any other species. It is now, however, notorious that no Mushroom will ever make its appearance without the presence of spores, and if the spores of one kind are accidentally present, those of another have at least a certain chance of being so.

Be this, however, as it may, many other species of Agarics make their appearance in the Mushroom bed, as was first pointed out to us some 30 years ago by Mr. J. HENDERSON, the scientific gardener of Earl FITZWILLIAM.

A very remarkable case is now before us which is worthy of an especial notice. We have, indeed, no information as to the mode in which the Mushroom bed of which we are about to speak was prepared, or from whence the spawn was obtained with which it was inoculated; but certain it is that the general crop is very different from anything we have met with before, nor can we find anything similar recorded in scientific works on Fungi. One patch alone in the bed, which produces a succession of scattered Mushrooms true to the type of those which first appeared in the patch, accords with the usual produce of our sheds. The cap, for example, is nearly hemispherical, of a delicate reddish brown, and marked with little close-pressed scales, while the stem is short and stout.

A second form appears in large quantities, deviating distinctly from the more ordinary form. The whole plant is smaller, the pileus convex but inclined to expand early, its colour a deep red brown, and the surface finely silky but not scaly. The stem is much more slender than in the common type and inclined to be bulbous at the base, and the whole plant approaches near to *Agaricus silvaticus*,* but has not its peculiar smell.

The principal crop consists of a very peculiar Fungus, which is at once distinguishable by the pileus being almost uniformly strongly depressed in the centre, and of an opaque white as if whitewashed and either perfectly smooth or ornamented with a few scattered scales. The pileus in fact has rather the appearance of that of one of the white-gilled than of the dark-gilled Agarics, and is extremely like that form of *Agaricus pileolarius* figured by BATSCH under the name of *A. subinvolutus*, and which is reckoned by Dr. BADHAM one of the best and most wholesome of our Fungi, though we cannot quite subscribe to the former part of this opinion. The stem is stout and moderately high, and the flesh does not exhibit any of that pale brownish-purple tinge which is so common in some forms of the Mushroom when grown in the field or the Mushroom-house; but is very white, with occasionally a tinge of yellow. It is soft, succulent, and well-flavoured, and in some respects superior to those which are usually cultivated. Indeed, we never partook of any so highly flavoured and excellent in every respect as they are when stewed.

Had the specimens appeared naturally in the woods, they would undoubtedly have been considered as constituting a distinct species; but as no similar wild plant is known, it will be best for the present to regard it as a variety produced by cultivation.

The matter however is interesting, as it tends to show that something may be done even in this department of horticulture towards an improve-

* Eaters of Fungi must distinguish *A. silvaticus* from *A. silvaticus*. There is a woodland form of the common Mushroom which is excellent, but there are others which are very doubtful, as is also the true *A. silvaticus*.

ment of our present race. Some years ago we were anxious to introduce a very fine variety from Australia, and a distinct species from Carolina of superior excellence, but neither succeeded. It is possible that the present plant may also be of foreign origin; but be this as it may, we should counsel the excellent cultivator who has supplied the specimens to try if possible to keep the spawn distinct, so as to ascertain its merits as an object of cultivation, whether it be looked upon as species or variety. Should he find that it has such requisites as may make it desirable to propagate it permanently, it must be brought out under a distinct name, as its peculiar appearance might make purchasers hesitate at first about its qualities. *M. J. B.*

MYCOLOGY.

Under this head we propose to give occasionally illustrations of the most remarkable Fungi which commonly occur. They will be prepared by our valued correspondent, the Rev. M. J. Berkeley, one of the most learned of living Mycologists, and will be on the plan of the entomological articles which have been found so interesting as well as instructive.

TRADE MEMORANDA.

In our last Number we inserted under this title an explanation of a most unfortunate mistake made by the Manchester Police, in answering an inquiry addressed to them by Mr. Scott, of Crewkerne, and by which we have been led in our Number of December 17 to give admission to a paragraph reflecting on the character of a highly respectable gentleman, Mr. G. F. Mandley, of Manchester, who in consequence of a similarity of name was mistaken by the Police for an entirely different person. Our last Number contained a copy of a letter from the Chief Constable of the Manchester Police, which showed clearly who was responsible for the error, and explained how it occurred. We had hoped this explanation would have been satisfactory to Mr. Mandley, but we regret to find from a communication from his solicitors that such is not the case. We scarcely know what we can add to the paragraph in our last Number, but that nothing may be wanting on our part, we beg again to express our great regret for the error into which we have been inadvertently led, and we offer to Mr. Mandley the fullest and most ample apology we can make for it.

To the Editor of The Gardeners' Chronicle.

Sir,—I am exceedingly sorry to find that I have unintentionally and unwittingly been the cause of undeserved annoyance to G. F. Mandley, Esq. of Manchester, a gentleman of unblemished character, through information sent me by the superintendent of the Manchester Police, and which I sent to you for publication—a proceeding I now highly regret. And I may say had I had the slightest idea that the information was wrong, as regards Mr. Mandley, I would certainly not have sent it. But having a recollection of seeing the name somewhere, and a warning for Nurserymen to beware of him, it struck me that it was necessary to make inquiry, and not knowing any one in Manchester to whom I could apply, I naturally did so through the police, asking them at the same time to inquire at the Post Office whether such a gentleman really lived at the address which I sent to him, the superintendent. Had he done so the mistake would not have occurred. I trust therefore that this public apology on my part will be acceptable to Mr. Mandley whose character I am now well aware cannot suffer from what has taken place, for there really appears to be a person of nearly the same name known to the police. My own recollection of the name, and the superintendent's statement at once threw me off my guard, as I think it would have done any one else. I had no private end to serve by the publication, but was alone desirous to prevent others from being taken in; that I was perhaps too hasty in sending the information to you I must leave you or others to judge. All I can now do is to express my regret at having been accessory to giving so much pain to a gentleman standing so high in the estimation of his fellow men. *John Scott, Merriott Nurseries, Crewkerne, Somersetshire.*

DR. DAUBENY'S LECTURE ON THE THEORY OF ANIMAL NUTRITION.

(*Concluded from p.* 1038).

Mr. Lewes, however, contends, that respiration is not a process of combustion, but of exchange, because oxygen does not combine with carbon, but is merely substituted for carbonic acid, at the spot where the latter is disengaged. A candle, he observes, goes out, because there is not enough oxygen to maintain combustion; whilst an animal dies, because there is so much carbonic acid present, that it acts upon the system as a poison.

The distinction between the two cases is ingeniously put in some experiments reported by this same author. If we take an atmosphere reduced to 15 per cent. of oxygen by the burning of a candle, a taper will be extinguished owing to the deficiency of oxygen, but a bird will continue to live in it for some time longer, provided the carbonic acid be removed. If, on the contrary, we mix together 50 per cent. of oxygen and 50 of carbonic acid, the animal dies, but the taper goes on burning.

Moreover by removing in time the excess of carbonic acid by the introduction of potass, the animal recovers; so that it is evident that the cause of suspended animation must in this case be sought for in the poisonous qualities of the carbonic acid, and not in the deficiency of oxygen.

On what does this poisonous quality depend? Here physical and chemical explanations are at fault, or at least only partially guide us towards the solution. Yet this much may be admitted, namely that if respiration consist in an exchange of oxygen for carbonic acid, the quantity of the latter gas expired will according to well-known physical laws be diminished by the presence of a larger quantity of it in the air inspired. Now this will have a tendency to check those internal changes in the system, of which the removal by oxidation of dead matter, and the generation of animal heat, are the results; and hence in cold-blooded animals, where these changes go on more slowly, and the demand for animal heat is less considerable, an atmosphere surcharged with carbonic acid may be supportable, so that they may be introduced with impunity into air so vitiated that it is impossible for warm-blooded animals to live in it. Indeed, even in a languid state of the constitution, whether occurring naturally, or induced artificially by the gradual introduction of carbonic acid, its slower evolution from the lungs may be attended with less inconvenience than common, because that metamorphosis of the tissues, which renders the act of respiration so necessary, is taking place with less than ordinary rapidity.

But what may be the nature of those differences in the organisation of a species or of an individual, which renders the one or the other capable of living with a smaller expenditure of animal heat, and a less rapid change in his living tissues, is a problem beyond the reach of chemistry, and I suspect of physiology also. Even granting however with Mr. Lewes that respiration consisted merely in the substitution of oxygen for carbonic acid, I cannot regard such a fact as a valid objection to Liebig's theory of animal heat.

For where after all does the carbonic acid which is there given off proceed from, except it be from the union of oxygen with carbon in various parts of the body?—and wherever this takes place, whether it be in the capillaries or in the blood, an equivalent amount of heat will result. Nor is it altogether true that respiration is merely a process of exchange; were it so, the lungs ought to be the coldest part of the body from the large amount of cold air which they inspire, whereas not only do they keep up their own temperature, but the most recent experiments made upon the subject, those of Mr. Savory,* serve to show, that arterial blood is always somewhat warmer than venous, and therefore that the absorption of oxygen must be attended by a process of combustion.

Baron Liebig has proposed a most ingenious theory, to account for the transmission of oxygen through the system, and its gradual union with carbon. The blood corpuscles, he says, contain a compound of iron, which latter combines with oxygen, and thus passes, first, into the state of protoxide, and afterwards into that of a peroxide, imparting to it the florid colour which arterial blood presents. But this blood, in its course through the capillaries, gives out a portion of its oxygen to the carbon present, whence it happens that the peroxide of iron is converted into protoxide, and that the resulting carbonic acid combines with it. Hence, the darker colour of venous blood arises from the presence in it of a proto-carbonate of iron as an ingredient of the blood corpuscles. But carbonate of iron is decomposed by oxygen, the carbonic acid being set at liberty and the iron remaining in the state of a protoxide. Hence arises the evolution of carbonic acid during the process of expiration, its transmission being the joint effect of the law of exosmose, which enables it to pass through a membrane, and of the interchange of oxygen for carbonic acid taking place in the cells of the pulmonary apparatus, as a consequence of the law of gaseous diffusion.

But ingenious as this explanation is, we are not compelled to adopt it, in order to espouse the chemical theory of animal heat, since the main principle of the latter remains unaffected by its truth or falsehood; the point for consideration being, not whether oxygen is transmitted, and carbonic acid produced, in the precise manner represented by Liebig, but whether or not the substitution of oxygen for carbonic acid is attended by the disengagement of a commensurate amount of heat, and whether that heat be, or be not, sufficient to maintain the body at the temperature necessary for the continuance of life. The second of these propositions may indeed still admit of dispute, but the former cannot be set aside by showing, that muscular contraction and other vital actions are independent sources of heat, nor even that the process by which carbon becomes united with oxygen is a more circuitous one than chemists have been in the habit of regarding it.

The curious cases adduced, in which animal heat appears to have been generated after life has become extinct, may be explained by the continuance of the process of oxidation within the vessels, owing to the union of the oxygen of the blood-corpuscles with the carbon of the tissues, and seems, therefore, referable to chemical processes still carried on. It is a fact at least not more incredible than that of processes of growth and secretion taking place under the same circumstances, and does not necessarily imply the continuance of respiration during the same period.

Mr. Lewes, in objecting to Liebig's theory of nutrition, states with perfect correctness, that the oily and saccharine materials which are taken into the system do more than merely minister to the production of animal heat; fat, which is one of the constituents of the animal body, being derived from these portions of our food.

This however is in entire accordance with the views of Liebig, who attributes the accumulation of fat in the system to the excess of those materials taken in, beyond what is expended in the production of heat, the only apparent discrepancy between the two statements being, that Liebig would seem to represent fat as excrementitious, that is, stored up to meet the demands of animal heat, and not to fulfil any specific function in the organism; whereas Lewes points out, that it forms a necessary constituent of the brain, and that it is not entirely got rid of even from other parts of the body in cases of starvation, where the tissues have been largely drawn up for the maintenance of the heat necessary for vitality.

It would be right indeed to distinguish between those parts of the body which are necessary constituents of one or other of its organs, and those which, though doubtless contributing to the easy and perfect performance of their functions, seem to be superadded, and in a degree contingent.

The fat of the brain, and the water which gives transparency to the cornea and the milk-white colour to the cartilages, must be placed in the former category; the fat associated with flesh in the second; for it would be just as illogical to regard the latter as an essential constituent of tissue, because it lubricates and thereby facilitates the action of muscle, as to consider grease as a part of the wheel, because the latter will not perform its office of rotation easily without it.

According to these principles it will follow, that milk, the food assigned by Nature to the young of all the higher animals, represents in itself all the necessary elements of nutrition. Thus the nitrogenous constituent is present in the caseine or cheesy portion, and the non-nitrogenous in the oily and saccharine.

The co-existence of both the latter would seem to imply that something more than the generation of animal heat is thus provided for, and that, as Lewes suggests, whilst the oil is likewise subservient to the formation of fat, the sugar may promote some other function hitherto undetermined. This, however, if established, although an addition to Liebig's theory, would by no means be a subversion of it, so long as the main division of food into flesh-producing and heat-producing materials remains undisturbed.

There are, indeed, in milk two other ingredients which ought to be taken into account when we are considering its nutritive qualities. I mean the salts and the water which it contains. Both these Lewes represents as having been overlooked by Liebig, but no one who recollects the importance the latter attaches to the presence of phosphatic matter in the food, can doubt that he was fully alive to the necessity of the former, or help concluding, that the only reason why he did not distinguish them in the milk, was that in this fluid, as in many other articles of diet, they are necessarily associated with the albuminous principle.

Lewes, indeed, quotes some experiments tending to show, that adult animals cannot subsist wholly on milk, and hence draws an inference as to the insufficiency of chemistry to enlighten us with respect to the mysteries of digestion.

I have already admitted that much remains unexplained with reference to this process, but as regards the unfitness of milk for the sole diet of adults, it may not be difficult to suggest reasons, connected with its chemical constitution, which should render the fact intelligible.

Ordinary woman's milk is found by analysis to contain no less than 88.6 per cent. of water, and of the remaining 11.4 per cent., 3.9 are nitrogenous, and therefore destined for building up and renewing the system, only 7.5 being designed to produce heat.

If we reckon 5 per cent. of the latter as saccharine, and 2.5 as oily, we shall find about $\frac{1}{3}$ of carbon in the first, and $\frac{2}{3}$ in the latter ingredient, making the per centage of carbon present in the heat-producing materials of milk not more than 3.3 per cent., or about $\frac{1}{30}$th of the whole.

Now the consumption of carbon daily in an adult varies, according to the exercise he takes, and other circumstances, from 14 to 8 ounces, the mean probably not being less than 10. Supposing therefore an adult to derive all his heat-producing materials from milk, it would be necessary for him to consume 30 times that quantity, or 300 ounces; nearly 19 pints or more than $2\frac{1}{2}$ gallons.

On the other hand fresh meat contains only 74 per cent. of water, and Wheat bread barely 25; so that an English foot soldier, who consumes his allowance of $\frac{3}{4}$ lb. of meat and 1 lb. of farinaceous matter per diem, with the addition of perhaps $1\frac{1}{4}$ lb. in the shape of vegetables, receives as much nourishment in about 3 lbs. of solid food, as he would obtain from 6 times that amount of milk.

It is therefore quite natural, that so diluted a form of nourishment, however suitable it may be to the weak digestive powers of an infant, should fail in the long run to support the more vigorous system of an adult. In milk too, the flesh-producing ingredient caseine would seem to bear a higher ratio to the heat-producing saccharine and oily principles than is the case in ordinary diet, at least if Liebig be correct in estimating the proper proportion at about 1 part of the former to 4 of the latter; for the caseine in woman's milk is 3.9, whilst the sugar and oil together are only 7.9, a provision being thus made for the rapid growth of the infant.

Upon the whole then, nothing that has yet been brought forward appears to me to militate against Liebig's main proposition, namely, that no animal can supply the waste of his muscular tissue without the aid of one or other of the modifications of

* Demonstrator of Anatomy at St. Bartholomew's Hospital.

the so-called proteine principle; and with respect to the animal matter of his bones and cartilages the same rule applies, only that, inasmuch as it is necessary that the above materials should for this purpose be converted into gelatine, animal jelly, when taken as food, may perhaps contribute to this latter office.

Now flesh and bone constitute, not only the most essential, but also the largest portion of our fabric, and hence the principles which supply their waste deserve in an especial manner to be regarded as *plastic materials*. Had Liebig called them by the name of flesh-producing, no cavil could have been raised against his position.

Inasmuch, however, as phosphoric acid, in combination with lime or with some other base, appears to be necessarily associated with animal matter both in the one and in the other, it may happen that an article of food, like Wheat, which is less highly charged with nitrogen, affords more nourishment than another, like Pulse, in consequence of the greater abundance of the phosphates present in its composition.

Experiments indeed are quoted, in which saccharine and even albuminous principles appear to have been carried off in the system by combustion more rapidly than fat; and Dr. Gilbert reports that cattle, during a period of very hot weather, which destroyed several, and affected the health of all, consumed more non-nitrogenised food than they had done previously.

In certain states of disease also, we find in the human subject a ravenous appetite, coupled both with a waste of the tissues, and a chilliness of the system arising from the imperfect production of animal heat. For this I have attempted to account already, by supposing that in these cases the food is removed as excrementitious before it has time to carry out its intended office; admitting thereby, as I am quite ready to do, that even where the material itself is amply supplied, a certain exertion of nervous energy will be requisite to accomplish the object for which it is designed. But no candid reasoner would regard these facts as sufficient to overturn the inference founded upon the accumulated experience of all ages, that, normally speaking, the demand for food, if possible of an oily nature, but at any rate for food of some description, is greater, in the colder regions of the globe, and during winter, than it is under opposite meteorological conditions.

The phenomenon in short is at bottom a chemical one, but it nevertheless requires the co-operation of vital forces for its accomplishment; and hence, as was long ago shown by Sir Benjamin Brodie, nervous energy is essential to the production of animal heat, although the evolution of carbonic acid from the lungs may continue for a certain time after life becomes extinct.

It would occupy too much time if I were on the present occasion to notice all the objections which the ingenious author of the popular work alluded to has alleged against other of Baron Liebig's theories, nor is it necessary that I should do so.

Physiologists have hitherto been more successful in exposing the weak points in the chemical explanations of vital phenomena than in substituting any of their own, and have therefore no right to shake the faith of the public in principles which remain undisturbed, by pointing to others which are merely conjectural or perhaps fallacious. I will therefore pass no comment upon, and offer no vindication of, the attempts of the German chemist to explain the uses of the liver and kidneys, the agency of alcoholic stimuli, the cause of fever and inflammation, and the medicinal effects of tea, coffee, or other vegetable alkaloids.

Ingenious as I conceive these views to be, they do not affect the questions before us, and may therefore be left to be dealt with on some future opportunity when similar topics come to be discussed.

Confining myself therefore for the present to those leading principles which are believed to rest on a sufficiently sound foundation, I will conclude this lecture by stating a few of the practical influences deducible from them respecting matters of daily experience.

And first it is to be remarked, that in accordance with the foregoing considerations it would seem, that a mixed diet of animal and vegetable food is the one most adapted to an animal like man, whose digestive organs are so framed as to admit of the easy assimilation of either; the most economical arrangement being that which provides a sufficiency of vegetable food for the production of heat, and of animal for supplying the waste of the tissues.

Late investigations appear to have shown it to be a fallacy to suppose, that any nation habitually or by preference subsists upon vegetable food alone. Such may be the case with a few miserable savages, who want the skill to cater for themselves, and are driven to be content with whatever, either of a vegetable or animal nature, Nature has placed within their reach; but the Hindoo, who was said to live wholly upon rice, is now proved by the inquiries of Dr. Watson to consume, whenever he can manage to obtain it, as much as from ¼ to ⅓ of Pulse or dried fish, in addition to Rice, even where the latter is obtainable at the cheapest rate. Where this is not done, the results of starvation are visible in every direction, although the distended stomach of the poor Ryot shows that the largest possible quantity of Rice is taken to supply the nitrogen required.

In like manner, in the poorest parts of Ireland, where Potatoes have been said to form the staple food of the population, a free use of buttermilk is found to be a necessary addition.

In Spain, where little meat is eaten by the peasantry, *Garbanzas* and other Pulses constitute important articles of nutriment.

Liebig's views also lead us to understand, how it happens, that an almost exclusively animal diet may be resorted to with impunity by persons in the vigour of life and undergoing much bodily exertion.

The German chemist, as I hope has been already shown, never meant to say, that nitrogenised compounds could not supply the materials for generating animal heat, but only that they must first be rendered effete, and secondly be deprived of their nitrogen by the operation of the kidneys, which carry it off in conjunction with part of the carbon, chiefly in the form of urea. When we recollect, that lean flesh does not contain more than about 26 per cent. of proteine compounds, the rest being water, and that in the former there exist not more than 15 parts of carbon; whereas in Wheat flour the per centage of water is only from 13 to 15 per cent., and that of starch alone there is about 60, in which are present 26 of carbon, without reckoning other ingredients capable of yielding the materials for combustion, it may be readily understood, that a larger amount of animal food must be requisite to maintain the temperature of the body, than of vegetable.

Accordingly, where no vegetables are employed, the process is a more wasteful one, not only from the higher price paid in the first instance for a given weight of the material, but also because a certain amount of its constituents must always be carried off as excrementitious, without contributing to the production of heat.

In the next place the principles laid down by Liebig serve to expose most convincingly the absurdities of the Vegetarian System adopted by certain parties in this country, some of whom at least might be presumed, as conversant with science, to possess a degree of insight into the true theory of nutrition. It would be out of place of course on this occasion to comment upon the moral considerations which have prompted men to this practice, although I can find no warrant from Scripture or from Reason, no analogy in Nature, no motive in Humanity, for an entire abstinence from animal food.

Confining ourselves, however, to the physiological, or if you please the chemical phase of the question, it is hard to see what possible advantage can accrue to the system, from drawing the supply of nitrogenised materials from vegetables, to the exclusion of those derived from the animal kingdom.

Both, as chemistry assures us, contain the same descriptions of azotised matter, at least with very slight modifications, but the former in such comparatively small proportions, that it is necessary to distend the stomach with a superfluity of heat-creating materials, to obtain a sufficiency of those which are flesh-producing.

We have spoken of the unhealthy condition of those Ryots who submit from necessity to such a diet, and we have reason to believe that the inhabitants of the tropics, who live more upon vegetables than ourselves, are able to put up with it only, because, owing to their more indolent habits, there is a smaller expenditure of tissue, and therefore less waste to supply.

Doubtless a man in vigorous health, and in the prime of life, may subsist wholly upon vegetables without feeling any bad effects from the practice. I have known an eminent surgeon, who, after a year's abstinence from meat, found himself at the end of the time with his weight undiminished, and his capacity for mental and physical exertion unimpaired. In his case, the system was powerful enough to get rid without inconvenience of the large amount of unnecessary matter, which he was compelled to digest, in order to extract from it the requisite quantity of principles really nutritious.

In some cases too certain idiosyncrasies, which I know not whether the physiologist can explain, may render animal food unwholesome or unnecessary.

Mr. Anderssen the Dane mentions that the strongest man he had ever seen in his own country was a porter, who never took a particle of meat.

There is also somewhat of a fallacy in an individual flattering himself that he is subsisting upon vegetables, if milk, eggs, cheese, butter, or Mushrooms, enter into his dietary.

In short, the only difference between the vegetarian and ourselves is, that the former consumes the same principles in a less concentrated form, and gets rid in the course of his digestion of a larger amount of superfluous matter.

In certain states of the system, indeed, or in particular seasons, the usual amount of animal food may prove too stimulating, because, whatever excess of nitrogenised principles, beyond the demand for waste, is taken into the system, must be got rid of, and in so doing may occasion disease. But, on the other hand, in old age and in feeble health, it is seldom advisable to resort to a vegetable diet, and far more common to prescribe a larger *relative* amount of animal food than would be suitable to younger persons.

I suspect, also, that many well-intentioned persons labour under a kind of self-delusion, in their constrained abstinence from nutritive food on certain days and in certain seasons.

If a man has eaten too little to supply the demands of the system on one day, Nature instinctively prompts him to make up for the deficiency on the next, so that the absolute amount of food consumed in the course of a given time is in general little, if at all, affected by such observances

Should he, on the contrary, maintain such a constant watch over his appetite as to prevent this consequence from ensuing, he must expect his capacity for fulfilling the active duties of his calling to be diminished in proportion; for a certain amount of mental or bodily exertion necessarily entails a certain expenditure of tissue to be replaced by nutriment. Or if exhaustion and debility did not supervene, the only legitimate conclusion to be drawn is, that his ordinary mode of living was in excess, since it admitted of reduction with impunity.

Another inference which may be deduced from the principles laid down is, that an indulgence in a variety of articles of food is more conducive to health than a rigid adherence to a very few. If the contrary notion has prevailed, and if simplicity of diet be deemed conducive to healthy nutrition, I believe the idea has arisen, rather from the appetite being stimulated to commit excess by having a number of dishes set before it, than from the unsuitableness of a mixture of viands when taken into the stomach in a proper quantity. For my own part, with all due respect for the roast beef which holds so prominent a place on the table of an Englishman, I should, if confined from day to day to one and the same dish, prefer dining upon the Spanish Olla Podrida.

Considering indeed the very limited powers which the digestive organs possess of altering the chemical constitution of the principles presented to them, it seems important, that everything which enters into the composition of a healthy animal should be presented to it in the food, and this can best be brought about by a diversity of aliments. Accordingly Miss Martineau, in her recent work, entitled "England and her Soldiers," dwells upon the advantages that accrued to the sick in the Crimea, from varying from day to day their dietary, and rendering it at once more savoury and more diversified than had previously been the case.

And this leads me to consider why gelatine, once thought so nutritious, has been found utterly unsuitable of itself to supply the wants of the system. The fact that animals fed upon this substance, exclusively, or even with the addition of sugar and mucilage, gradually die of starvation, was indeed established experimentally by Majendie, but the true explanation was reserved for Liebig.

Before his time it would have seemed surprising, that a principle so rich as this is in nitrogenised ingredients should be incapable of permanently making good the waste of the tissues. The researches of the German chemist appear to have solved this mystery.

He pointed out that, although gelatine may be elaborated from proteine compounds, as may be seen by comparing the composition of the one with the other, the latter never have been produced by a retrograde process from gelatine, nor are likely, judging from analogy, ever to be so generated. Gelatine may be regarded as proteine combined with a certain portion of water, ammonia, and oxygen, or according to another view of its composition, it is proteine from which carbon has been abstracted owing to the action of oxygen.

But according to either view of its composition proteine could only be produced from gelatine by the removal of oxygen, and it is still very questionable whether this, which is a process of reduction, falls within the powers of the animal economy, although it is so often effected in the vegetable.

This will be seen by the following formula:—

Gelatine	C 48	N 7.5	H 41	O 18	
Proteine	C 48	N 6.0	H 36	O 14	
		or,			
Proteine	+	N 1.5	H 5	O 4	

In which it will be observed that all the elements present, except carbon, are in larger proportion in gelatine than in proteine.

Lehmann indeed contends that processes of reduction do take place occasionally in the animal system, but the instances he adduces are for the most part such as occur out of the body as well as in it, such, for example, as the change of sulphates into sulphurets, and of peroxides into protoxides, which is owing to the abstraction of oxygen by the organic matter present, and is therefore fairly referable to chemical causes alone. Two other cases, viz., the formation of stearic acid and of cholesterine, seem of a more doubtful character; but the general tenour of observations must be admitted, I think, to be so much opposed to Lehmann's explanation, that there is room to suspect that these two products may have been formed in some other way.

It may be said, however, experience shows, that jelly administered along with other kinds of food contributes to a certain extent towards the nourishment and support of the body, especially in the case of invalids. Although in the last edition of his "Chemical Letters" Liebig seems hardly willing to admit this as a fact, I will assume its truth as based upon general belief, and shall merely express my surprise that its explanation does not appear to have occurred to Mr. Lewes, judging by the remarks in p. 83 of his book, in which he objects to the chemical theory of nutrition on this very ground. Inasmuch as the animal matter present in the bones and cartilages consists of gelatine, it is quite as conceivable that the latter may supply the waste that takes place in these parts of the body, as that oil should restore the deficiency in the fatty constituents, as he himself maintains; and if this be the case, its exhibition may relieve the system from the necessity of making it good by the oxidation of the proteine compounds assimilated, so as to enable us to dispense with so large a quantity of the latter.

But if gelatine be incapable of enriching the blood

with materials fit for replacing the loss of muscular fibre, whatever quantity of it is introduced, beyond what makes good the waste in the gelatinous parts of the body, must be eliminated as so much excrementitious matter, and therefore be either useless or injurious.

Guided by these considerations, Liebig introduced his now well-known substitute for the animal jelly formerly so much in request for invalids. It is hardly necessary at this time of day for me to state, that this preparation is procured by mixing minced beef with an equal weight of cold water, and then slowly heating the mixture to the boiling point. After keeping it simmering for about a minute in order to coagulate the albumen, the liquor is strained through cloth, and that still contained in the fibrous portion remaining on the filter afterwards pressed out The juice thus obtained retains the most nutritious parts of the meat, the fibrine and gelatine which remain behind being, comparatively speaking, unimportant. When it is wished to include the gelatine, a somewhat longer process of boiling is necessary, but even then the fibrine remains undissolved; nor is this any loss, because, although identical with muscular fibre, it is so difficult of digestion, that even a dog fed upon it lost in the course of 43 days one-fourth of his weight. Lehmann indeed has shown that the fibrine of the blood differs in some respects from that of the flesh, so that it is quite probable that the conversion of pure muscular fibre into that which enters into the constitution of the circulating fluid may lie beyond the powers of the digestion.

We perceive indeed, from many of the facts already stated, how limited is the power of the living principle to accommodate to its own purposes the principles presented to it from without. Far from being, as was formerly supposed, capable of enhancing or annulling the chemical affinities subsisting between two bodies, so as to produce combinations within the system which do not take place out of it, the powers of life are unable even to appropriate the materials presented to it when chemically identical with the constituents of the body, unless their mechanical condition be favourable to their easy assimilation; so that although muscular fibre may be produced from albumen, its waste cannot be supplied wholly from fibrine, and in no degree from a product so rich in nitrogen as gelatine.

The remarks which I have made in the course of this Lecture with regard to diet and nutrition will not be thrown away, if they only serve to sharpen inquiry, by showing how much remains to be done before the most ordinary processes of the animal economy can be regarded as explained.

In this respect indeed there is no difference between myself and the ingenious writer of the popular Work so often alluded to in this Lecture, a work which I strongly recommend to the notice of my hearers, as one highly calculated to awaken an interest in questions of Physiology, not only from the lively and graphic manner in which the facts are placed before us, but also from the variety of information brought together from so many distinct sources.

My only complaint with its Author is, that because Chemistry is confessedly unable to explain much which is taking place within our microcosm, and because it has presented us with questionable explanations of some of the phenomena with which it has dealt, he would discourage us from accepting its guidance altogether, forgetting that for nearly all we know for certain with respect to animal heat, respiration, and digestion, we are indebted to the researches of the chemist.

Doubtless, indeed, even on these points many questions remain to be solved, and many anomalies to be reconciled; but although it is easy to say that the solution of these doubts, and the reconcilement of these anomalies, are to be sought for from the physiologist, yet so long as the latter is only able to tell us, that the calculations of the chemists on these subjects must be in fault, because they do not take into account the interference of the living principle, without being able to enlighten us as to the manner in which the living principle interferes, I fear we make no nearer approach to the truth than we should do, if we invoked the Archeus of Van Helmont, or the Occult Causes of earlier philosophers to help us out of our difficulty.

At any rate let us never forget, that vital forces do not annul chemical agencies, although they may act independently of them, and therefore that animal heat must in part be derived from a process of slow combustion, if it be true that no particle of carbon can unite with its equivalent of oxygen without disengaging caloric. In like manner it will be seen, that nitrogenised matters must be introduced into the system from without, if it be true that the living principle cannot endue matter with the power which it does not possess independently, of abstracting nitrogen from its gaseous state, and thus of forming albumen from oil or sugar.

Nor is it easy to see, how food in the stomach can escape the influence of that fermentative process, which would be set up owing to the presence in that organ of the gastric juice, an agent, which, in consequence of a law pervading dead as well as living matter, transmits to the particles with which it is in contact those motions which originate within itself.

For the establishment of these facts we are indebted to chemists, amongst whom Baron Liebig stands pre-eminent, and therefore with every disposition on my part to admit the questionable character of some of his speculations, and to receive others with that degree of hesitation which the obscurity of the subject justifies us in entertaining, I should be sorry if the rising generation of medical and scientific men were to be turned aside from a course of investigation which has been already rewarded with certain important practical results, at least until physiologists shall have explored some other path which can be shown to penetrate further into the mysteries of the living organisation.

Home Correspondence.

Large Acacia dealbata.—On the night of Saturday, the 17th inst., an unusual fall of snow took place in South Devon, the weight of which destroyed a magnificent Acacia dealbata at Combe Royal, the seat of John Luscombe, Esq. This tree was perhaps unrivalled in England, as it had attained a height of 54 feet, with a stem rather more than 5 feet in circumference. The branches made 17 faggots, each as large as a man could carry. In the month of April the tree was laden with its fragrant yellow blossoms, and its seeds formed a favourite repast to some pet fan-tailed pigeons, which, having once accidentally tasted them, were always on the watch for them. *Devonian.*

Windmill for Raising Water.—In answer to "An Old Subscriber," I beg to state that I have a wind engine made by Mr. J. R. Peill, 17, New Park Street, Southwark Bridge, ¾-horse-power, with one of Messrs. Warner's pumps attached, that has been at work about nine months. It is erected nearly half a mile from the premises, and pumps the water from a spring to a height of 70 feet, supplying the house and farmyards, and filling a large pond that has been dry for years. It requires very little wind, and (owing to the sails being self-adjusting) no attention save oiling once a week. If placed near the farmstead it might be used to drive a chaff-engine, &c., when not required for pumping. *James Christy, jun., Boynton Hall, near Chelmsford.* —— The windmills which your correspondent saw in Holland are of the ordinary kind, and cannot be left safely to work night and day without attention. If he will pay a visit to our works he will see a patent wind-engine at work pumping, chaff-cutting, &c., and driving a peculiar wheel, which raises from 300 to 400 gallons of water per minute. This wheel is about to be fixed on a nobleman's estate in Norfolk for draining a large tract of land, and is to be driven by the patent self-regulating wind-engine. *J. Peill, 17, New Park Street, Southwark.*

The Weather in Cornwall.—For upwards of 30 years we have not been visited with such severe weather, accompanied by a heavy fall of snow, as that just passed away. The thermometer, a self-acting one, registered as follows:—On Wednesday, Dec. 14, wind N.E., 4° of frost; Thursday, Dec. 15, wind N.E., 6°; Friday, wind S.E., 18°; and Saturday, wind E., 23°, which continued nearly the whole of Sunday. After that a change took place, the wind taking a southern direction. An additional fall of snow occurred, which in all reached to the depth of 12 inches, very unusual in Cornwall, which has a moist, warm climate compared with that of other counties—Devon being an exception. A large quantity of autumn and spring Broccoli plants, the former Snow's Improved White, and Grange's Autumn, with tall and dry Savoys, have been nearly destroyed—they are only fit for the rubbish heap. Portugal Laurels, Sweet Bays, Laurustinus, and other shrubs are materially injured in foliage. The gardens are situated on blue clay. *Henry Beddard, Gardener to J. F. Basset, Esq., Tehidy Park, Cornwall.*

Rural Societies.—Can you afford me any information to guide the establishment of "garden societies," having for their object the improvement of cottagers' gardens, and competition among all classes (in country districts) in the production of vegetables and fruit? It would be very desirable to combine with these objects the giving of lectures, or the reading of papers on useful popular branches of gardening, and I should be much obliged for any hints by which such an arrangement might be made serviceable to all persons—rich and poor—who help in establishing such societies. *J. Bailey Denton, Woodfield, Stevenage.* [We imagine that the proceedings at Professor Henslow's Hitcham meetings, on which we have so often reported, would be a very safe guide.]

Transplanting Cedars.—I have two fine young Cedars on my lawn, so near to each other that in a year or two the branches will interlace. They are too large (probably about 25 years old) to be removed without considerable risk and expense. Can you kindly inform me whether they may safely be left as they are? Some persons say that Cedars will not interlace without one or the other tree dying, or at least that the contiguous branches will die even if the trees survive. *W. D* [It is probable that the branches which interlace will die partially. But it is certain that the trees themselves will not die because of the interlacing.]

Gooseberry Buds and Birds.—I have tried a composition of sulphur, soft soap, quick lime, and soot, for several years to keep off these little marauders from destroying Gooseberry buds, and find that it answers perfectly. It is put on in the autumn with a syringe or hand engine, and forms a coat round the buds which the sparrows do not like to touch. The Gooseberry bushes are not pruned until all danger is over in the spring, as I find the birds generally attack them and do all the damage in a few days just when the buds are beginning to swell. This mixture was likewise tried last spring on my neighbours' trees newly planted, in a situation where they were liable to be eaten by hares and rabbits. A large tub was made of the mixture, and the young trees were dipped in it in bundles, and after drying were planted out. They were untouched all the spring and summer, and being from 3 to 4 feet high another summer's growth enabled them to be out of the reach of hares and rabbits, so that no further painting was required. I use this composition for Vines, Peach trees, Cherries, and Figs, and all deciduous fruit trees in forcing houses liable to be attacked by insects or mildew. In making the mixture the proportion of ingredients used here is as follows:—4 oz. of soft soap and 6 oz. of flowers of sulphur to the gallon of water, adding as much quicklime as will bring the mixture to the consistence of paint. Some clay is added to cool it and take the white colour off, when it is used for Peach trees, Figs, Cherries, and Plums; and soot when it is required for Gooseberry bushes and young forest and fruit trees to keep birds, hares, rabbits, and deer off. For deterring rabbits from barking young orchard trees I have used the above mixture for many years, and never found it fail. By adding some fresh cow-dung to the other ingredients a greater body is given to the mixture, and it will only want renewing every two or three years. Hares, rabbits, and deer are very nice in smelling everything before they begin peeling or eating it; and sulphur, soft soap, or oil in any shape is an abomination to them. I intend trying some of Gishurst Compound to mix in the composition the next time of making and using less sulphur and soft soap. *William Tillery, Welbeck.*——The following is a good recipe for preventing rabbits from barking trees:—Bitter aloes, 6 lbs.; Black sulphur, 2 lbs.; soft soap, 6 lbs.; water, *q. s.*; soot enough to thicken the soup, and a little lime to give it consistency. No French cook can beat this. *Woglog.*

Notices of Books.

Ceylon; an Account of the Island, Physical, Historical, and Topographical, with notices of its Natural History, Antiquities, and Productions. By Sir James Emerson Tennent, K.C.S., &c. 2 vols, 8vo. Longmans. Third Edition.

(Second Notice.)

If we turn from plants to the Animal Kingdom we are arrested at every step by anecdotes and descriptions which convey a most lively impression of wild nature in Ceylon. Not the least extraordinary creature mentioned by our author is a prodigious Mygale, a kind of spider, whose jaws are furnished with a poisonous venom, and which would be a formidable enemy even of man, were its mandibles capable of expanding sufficiently to embrace an object of such size as the finger or hand. The largest specimens of this spider actually seen by Sir Emerson Tennent

"Were at Gampola and its vicinity, and one taken in the godown of this rest-house nearly covered with its legs an ordinary sized breakfast plate. This hideous creature does not weave a broad web or net like other spiders, but nevertheless it forms a comfortable mansion in the wall of a neglected building, the hollow of a tree, or the eaves of an overhanging stone. This it lines throughout with a tapestry of silk of a tubular form; and a texture so exquisitely fine and closely woven, that no moisture can penetrate it. The extremity of the tube is carried out to the entrance, where it expands into a little platform, stayed by braces to the nearest objects that afford a firm hold. In particular situations, where the entrance is exposed to the wind, the mygale, on the approach of the monsoon, extends the strong tissue above it so as to serve as an awning to prevent the access of rain. The construction of this silken dwelling is exclusively designed for the domestic luxury of the spider: it serves no purpose in trapping or securing prey, and no external disturbance of the web tempts the creature to sally out to surprise an intruder, as the epeira and its congeners would. As to the stories told of the mygale catching and killing birds, I am satisfied, both from inquiry and observation, that at least in Ceylon they are destitute of truth, and that (unless in the possible case of acute suffering from hunger) this creature shuns all descriptions of food except soft insects and annelides. A lady at Marandan, near Colombo, told me that she had, on one occasion, seen a little house-lizard (gecko) seized and devoured by one of these ugly spiders."

To multiply examples of this kind would be impossible within our narrow limits. We therefore prefer to present our readers with the following sketch of animal life in the jungle at various periods of the day; by far the most graphic we remember to have seen.

"With the first glimmering of dawn the bats and nocturnal birds retire to their accustomed haunts, in which to hide them from 'day's garish eye;' the jackal and the leopard steal back from their nightly chase; the elephants return timidly into the shade of the forest, from the water pools in which they had been luxuriating during the darkness; and the deep-toned bark of the elk resounds through the glens as he retires into the security of the forest. Day breaks, and its earliest blush shows the mists tumbling in turbulent heaps through the deep valleys. The sun bursts upwards with a speed beyond that which marks his progress in the cloudy atmosphere of Europe, and the whole horizon glows with ruddy lustre:

'Not, as in northern climes, obscurely bright,
But one unclouded blaze of living light.'

At no other moment does the verdure of the mountain woods appear so vivid; each spray dripping with copious dew, and a pendant brilliant twinkling at every leaf; the grassy glade is hoar with the condensed damps of night, and the threads of the gossamer sparkle like strings of opal in the sunbeams. The earliest members of the animated world that catch the eye as they move abroad are the Hesperidæ; the first butterflies, that, with abrupt gesture, pay their morning visit to the flowers. To them succeed the Theclæ, distinguished by the blue metallic lustre of their wings; and the Polyommati, the minutest and most delicate of the diurnal lepidoptera. The other species make their appearances with unerring certainty at successive stages of the morning; the Theclæ are followed by the Vanessæ, and these by the gaudy Papilios, till, as day advances, the broad-leaved plants and flowering shrubs are covered by a dancing cloud of butterflies of every shape and hue. The bees hurry abroad in all directions, and the golden beetles clamber lazily over the still damp leaves. The earliest

bird upon the wing is the crow, which leaves his perch almost with the first peep of dawn, cawing and flopping his wings in the sky. The parroquets follow in vast companies, chattering and screaming in exuberant excitement. Next the cranes and waders, which fly inland to their breeding places at sunset, rise from the branches on which they had passed the night, waving their wings to disencumber them of the dew; and, stretching their awkward legs behind, they soar away in the direction of the rivers and the far sea-shore. The songster that first pours forth his salutation to the morning is the dial-bird (Copsychus saularis), and the yellow oriole, whose mellow flutelike voice is heard far through the stillness of the dawn. The jungle cock, unseen in the dense cover, shouts his reveille; not with the shrill clarion of his European type, but in a rich melodious call, that ascends from the depths of the valley. As light increases, the Grass warbler and maynah add their notes; and the bronze-winged pigeons make the woods murmur with their plaintive cry, which resembles the distant lowing of cattle. The swifts and swallows sally forth as soon as there is sufficient warmth to tempt the minor insects abroad; the bulbul lights on the forest trees, and the little gem-like sun-birds (the humming birds of the East) quiver on their fulgent wings above the opening flowers. * * * It is during the first five hours of daylight that nature seems literally to teem with life and motion, the air melodious with the voice of birds, the woods resounding with the simmering hum of insects, and the earth replete with every form of living nature. But as the sun ascends to the meridian the scene is singularly changed, and nothing is more striking than the almost painful stillness that succeeds the vivacity of the early morning. * * * As day declines nature recovers from her languor and exhaustion, the insects again flutter across the open glades, the birds venture once more upon the wing, and the larger animals saunter from under cover, and move away in the direction of the ponds and pasture. The traveller recommences his suspended journey, and the husbandman, impatient to employ the last hours of fading night, hastens to resume the interrupted labours of the morning. The birds which had made distant excursions to their feeding grounds are now seen returning to their homes; the crows assemble round some pond to dabble in the water, and readjust their plumes before retiring for the night; the parroquets settle with deafening uproar on the crowns of the palm trees near their nests; and the pelicans and sea birds, with weary wing, retrace their way to their breeding place near some solitary watercourse or ruined tank. The sun at last

'Sinks, as a flamingo
Drops into her nest at nightfall;'

twilight succeeds, and the crepuscular birds and animals awaken from their mid-day torpor and prepare to enjoy their nightly revels. The hawk moths now take the place of the gayer butterflies, which withdraw with the departure of light; innumerable beetles make short and uncertain flights in the deepening shade, and in pursuit of them and the other insects that frequent the dusk, the night-jar, with expanded jaws, takes low and rapid circles above the plains and pools. Darkness at last descends, and every object fades in night and gloom; but still the murmur of innumerable insects arises from the glowing earth. The fruit-eating bats launch themselves from the high branches on which they have hung suspended during the day, and cluster round the Mango trees and Tamarinds; and across the grey sky the owl flits in pursuit of the night moths on a wing so soft and downy that the air scarcely betrays its pulsations. The palm-cat now descends from the crest of the Coco-nut where she had lurked during the day, and the glossy genette, emerging from some hollow tree, steals along the branches to surprise the slumbering birds. Meanwhile, among the Grass already damp with dew, the glow worm lights her emerald lamp, and from the shrubs and bushes issue showers of fire-flies, whose pale green flashes sparkle in the midnight darkness till day returns and morning 'pales their ineffectual fires.'"

Among the most remarkable chapters in this remarkable work is that upon the elephant, which occupies no fewer than 130 pages, capitally illustrated by engravings of the animal under various circumstances. Of the elephant in captivity, there is little now to learn; but in his wild state we have nothing beyond a few hunters' tales. The noble animal has at last found a historian worthy of him. During his residence in Kandy Sir Emerson Tennent had ample opportunities of studying the elephant, and of correcting erroneous ideas respecting the creature before he became the captive of man. How admirably these opportunities have been used will be seen upon perusing the author's narrative. We must however find room for the following curious story:—

"Mr. Cripps has related to me an instance in which a recently captured elephant was either rendered senseless from fear, or, as the native attendants asserted, feigned death in order to regain its freedom. It was led from the corral as usual between two tame ones, and had already proceeded far on its way towards its destination, when night closing in, and torches being lighted, it hesitated to go on, and finally sank to the ground apparently lifeless. Mr. Cripps ordered the fastenings to be removed from its legs, and when all attempts to raise it had failed, so convinced was he that it was dead, that he ordered the ropes to be collected and the carcase to be abandoned. While this was being done he and a gentleman by whom he was accompanied leaned against the body to rest. They had scarcely taken their departure and proceeded a few yards, when to their astonishment, the elephant rose and with the utmost alacrity fled towards the jungle, screaming at the top of its voice, its cries being audible long after it had disappeared in the shades of the forest."

Among the more important commercial products of Ceylon is Coffee, which though an exotic has now become so largely cultivated that according to Mr. Ferguson, an excellent authority, there were in 1857 nearly 81,000 acres under the crop, producing on an average 5½ cwt. an acre, or about 3·17,000 cwt., and giving employment to 129,000 labourers. Upon this subject the 2nd Volume contains very full information, together with a complete map of all the Coffee estates in the central provinces of the island.

Notwithstanding the length to which this notice has extended—far shorter however than so important a work demands—we cannot conclude our remarks with out expressing our hearty concurrence in the following statesmanlike view of the use of a Colonial Botanic Garden when under intelligent management, Speaking of that of Peradenia, which has been raised from ruin to a position of the highest importance, firstly by the late Dr. Gardner, and since his death by the energy of Mr. Thwaites, its present most able superintendent, Sir Emerson Tennent writes thus:—

"At times there has been the murmur of ill-informed utilitarianism against the expenditure bestowed upon the botanic garden of Peradenia. But the object of such institutions, and the functions of their curators, are still imperfectly appreciated even in the localities to whose welfare they are most conducive: owing chiefly to an ignorant impatience for results which in their very nature must be prospective. The fact is over-looked, that such foundations are designed not for individual benefit, but for the collective advantage of communities by the gradual application of science to material development. Objects at first despised and insignificant become sources of colonial wealth under the auspices of the botanist; and, on the other hand, productions upon which the prosperity of a region may be dependant, are liable to destruction and decay in the absence of his experience and counsels. It is wise policy in the government of a country, and most of all of a new and unexplored one, to encourage the cultivation of science for its own sake, confident that its labours, if not remunerative at the moment, will prove infallibly productive in the future. The colonial botanist, in addition to the care and nomenclature of plants, useful, rare, and ornamental, and the collection of fruits and products of all kinds, for an œconomic museum of botany, should take upon himself the selection of a library and the formation of a *hortus siccus* for consultation and reference. These duties, together with his foreign correspondence and exchanges, the reception of scientific strangers, the journeys of himself and his assistants to explore the country and collect botanical specimens, and occasional publications to excite and sustain popular interest in his pursuits, ought to constitute the functions of a botanical officer, and no colony can fail to reap the benefit of such labours if judiciously discharged. But the dissatisfaction which has occasionally manifested itself in Ceylon, arises not alone from a want of due appreciation of the legitimate duties of a superintendent, but also from an unreasonable expectation of services not legitimately within his province. A knowledge of agriculture, horticulture, forestry, pharmacy, and toxicology have each been demanded, as well as the philosophy of climates, the geologic nature of rocks and soils, the chemistry of manures, and the œconomic habits of animals, birds, and insects; and it is within my own knowledge that from the Coffee planters there have been remonstrances to the local government as to the propriety of applying public funds for the maintenance of an institution from which, in regard to their own estates, they had failed individually to obtain assistance in connection with these and similar subjects. A man of generous education may, no doubt, be more or less familiar with such studies, but even if a scientific botanist felt diffident in propounding opinions or offering directions in relation to them, his peculiar attainments must be of signal advantage in modifying the views or facilitating the operations of others. So charming is the sphere of his duties, that those who cannot estimate their importance except by the value of their ostensible results are liable to ignore their latent utility in the contemplation of their ornamental attractions. But observation and experience cannot fail to dissipate false expectations; and looking to the present transitional aspect of Ceylon, and the future which is already dawning for the island, my conviction is strong that no establishment in the colony is so essential to its interest as the Royal Botanic Gardens of Peradenia."

It is well indeed for Colonies when men like the enlightened author of these charming volumes have the power to influence their destiny.

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

CONSERVATORY, &c.—Forcing pits will soon have to be kept in full activity to supply the various calls for plants in bloom, which during winter are more or less in demand in most establishments. Care should be taken before plants are moved to sitting rooms to gradually harden them for a day or two either by placing them in the conservatory or an intermediate house. In addition to keeping the conservatory gay with blooming plants, let the arrangement of the interior be occasionally changed by grouping the plants somewhat differently and adding a few striking ones, as some of the hardiest Palms, &c., for effect. Pay attention to the plants intended for successive blooming. Insects should be kept down and every means enforced to keep the foliage clean and healthy. The number of plants brought forward will depend on the demand and must be regulated accordingly. Azaleas, Rhododendrons, &c., for forcing still out of doors should have some protection should severe weather re-occur, or remove them to any spare house till wanted. Narcissi, Hyacinths, &c., should be protected by a frame, as they now begin to grow, remove the plunging material down to the surface of the pots to prevent them rooting upwards. Mignonette and Neapolitan Violets will require abundance of light and air to keep them from damping. As a change from the present to severe weather may come on suddenly, be provided with ample means for covering pits, frames, &c., should it occur. As with the exception of forced plants most other things are now in an inactive state, the temperature of plant houses should fall to its minimum point consistent with the safety of their various inmates.

FORCING DEPARTMENT.

PINERY.—Pines are often deficient in flavour at this season, which is improved by exposing the ripening fruit to all the light you can command, and giving but little water. A good supply of air is likewise essential at all times for high flavoured fruit, and more than ever necessary at this time. Continue an increase of heat to Pines now wanted to start, employing it principally by day. Attend to linings for Pines grown in dung pits and keep the atmosphere in which they grow dry. EARLY VINERY.—As soon as the bunches can be discerned on the young shoots the extra buds should be removed, excepting such as may be required for producing bearing wood next season. In leaving these latter select such as are formed nearest the main stem to avoid the awkward appearance of long spurs at a stage further in their growth. Such shoots as have more than one bunch should have them reduced to that number, selecting the one likeliest to form the handsomest bunch. Tying in the young wood should be managed carefully, bringing the shoots to their proper position by degrees, to avoid the danger of their breaking. After the buds are started a few inches the syringe may be gradually withheld, as too much humidity at this season will sometimes hinder both the foliage and bunches, and a sufficient degree of moisture can easily be kept by sprinkling the floors and heating apparatus several times daily. Regulate the admission of air so as to have a gentle current at all times through the house, increased, of course, by day agreeably with the state of the weather. Gradually advance the night temperature to 60° and then to 65° by the time the flowers are ready to open, keeping the thermometer from 10° to 15° higher by day according to the amount of light you can command. Keep up the heat in the outside border by additions when necessary, bearing in mind the injurious effects any sudden check to the roots now in action will produce on the coming crop. Bring succession Vineries into work as wanted. Late Vineries in which Grapes are still hanging will require fires daily and air sufficient to keep the house and fruit dry; remove decayed berries and dead leaves, and well protect the roots from frost. For a late Grape Lady Down's Seedling is found to possess valuable properties. PEACH HOUSES.—Peaches and Nectarines which have been forced for several years oftentimes produce a large excess of fruit-buds, and this more especially on weakly trees; a natural consequence of allowing these to remain are weak flowers and inferior fruit and wood. When therefore such is the case the trees will be greatly benefited by well thinning the bloom buds, leaving the largest and those most favourably placed; of course a considerable number will be still left to allow for casualties. Syringe twice or oftener daily till the bloom is ready to expand, when it must be discontinued. The night temperature may advance to 45°, with an increase by day accompanied with a proportionate admission of air. FIG HOUSE.—Damp the trees over frequently, and if wanted early increase the heat a degree or two weekly.

FLOWER GARDEN AND SHRUBBERIES.

Except in particular cases little more can be done in this department than paying attention to order and neatness. The bedding stuff, however, must have attention, for in all likelihood many things are suffering from damp, and such plants as appear to suffer most should be removed to other quarters where a drier temperature is kept. Keep the stock in pits and frames well ventilated, and the surface soil of the pots frequently stirred. Dust with sulphur Verbenas and similar plants attacked with mildew. Be particular in keeping the interior of pits containing plants of the above description as dry as circumstances will permit.

HARDY FRUIT AND KITCHEN GARDEN.

Some wall trees, as Pears, Plums, and Cherries, &c., are often attacked by a species of scale, in which case the infected trees should be well washed with a mixture of soft soap, tobacco water, and lime; a half pint of spirits of turpentine may be added to each 4 gallons of the mixture when they are much infested. The lime is added to give body to the mixture, and to show that no parts of the trees are missed in dressing. Let this be applied during dry weather, if possible, that it may remain on for some time and before the trees are nailed; washing the infected parts with water of the temperature of 160° is also a good remedy.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.

For the Week ending Dec. 29, 1859, as observed at the Horticultural Gardens.

Dec.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Temperature of the Air. Min.	Temperature of the Air. Mean	Temperature of the Earth 1 foot deep.	Temperature of the Earth 2 feet deep.	Wind.	Rain.
Friday 23	29	29.487	29.326	44	29	36.5	38½	40	W.	.25
Satur. 24	●	29.105	28.988	48	29	38.5	39	40	S.W.	.08
Sunday 25	1	29.009	28.651	45	36	40.5	39	40	S.W.	.45
Mon. 26	2	29.393	28.588	44	29	36.5	40	40	N.	.60
Tues. 27	3	29.308	29.121	49	33	41.0	40½	40	S.W.	.10
Wed. 28	4	29.246	29.195	50	37	43.5	41½	41	S.W.	.21
Thurs. 29	5	29.348	29.166	53	43	48.0	42	41½	S.W.	.08
Average		29.271	29.006	47.5	23.7	40.6	40.1	40.3		1.17

Dec. 23—Foggy; hazy; overcast; rain.
— 24—Overcast; very fine; foggy at night.
— 25—Foggy; overcast; heavy rain.
— 26—Densely overcast; very clear at night.
— 27—Hoar frost; cloudy and fine; clear; rain.
— 28—Densely overcast; heavy rain; clear at night.
— 29—Fine; boisterous with rain; overcast.
Mean temperature of the week, 3½ deg. above the average.

RECORD OF THE WEATHER AT CHISWICK,

During the last 34 years, for the ensuing Week, ending Jan. 7, 1860.

January.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 1..	43.2	31.2	37.2	10	0.70 in.	5	4	2	3	4	7	5	4
Mon. 2..	42.3	30.0	36.2	13	0.21	5	1	2	2	4	9	6	7
Tues. 3..	42.8	31.5	37.2	17	0.56	1	2	6	1	6	8	4	6
Wed. 4..	42.2	31.8	37.0	15	0.86	3	3	4	6	2	10	3	3
Thurs. 5..	41.6	30.8	36.2	12	0.40	6	8	6	1	1	11	3	1
Friday 6..	41.2	30.0	35.6	13	0.33	2	7	4	4	4	10	3	—
Satur. 7..	41.3	29.6	35.5	12	0.34	3	5	4	3	4	4	8	3

The highest temperature during the above period occurred on the 1st, 1851, 5th, 1844, and 6th and 7th, 1845—therm. 54 deg.; and the lowest on the 2d, 1854—therm. 4 deg.

Notices to Correspondents.

OLD HERBAL: *H T M.* Next week.

SPERGULA PILIFERA: *Jason.* The value of this little plant has been absurdly exaggerated. Our own experience of it tells us that it can be no substitute for Lawn Grasses. Its real importance seems to be confined to small work where green turf is useful; and for that it appears to be particularly well adapted.

THE POMEGRANATE: *D D.* Very poor specimens of this fruit have occasionally ripened in this country on a south wall, but under no treatment is it likely to repay the labour bestowed on it.

WALL PLANTS: *Ediva.* The following may perhaps answer your purpose, viz., the Pyracantha, Roses including the common China, Wistaria sinensis, Fuchsia Riccartoni, Clematis flammula, montana, and viticella, Forsythia, Jasmines, Virginian Creeper, Ivy, Chimonanthus, Ceanothus azureus, Double-blossomed Peach, Berberis Darwinii, to which might be added Camellias, Myrtles, and other evergreens. Ficus repens is too tender to succeed out-of-doors.‡

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London, S. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals are executed with accuracy and despatch. Gentlemen desirous of receiving instruction in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

LONDON MANURE COMPANY
(ESTABLISHED 1840),
Have the following MANURES ready for delivery:—
CORN MANURE FOR AUTUMN SOWING.
BLOOD MANURE FOR AUTUMN SOWING.
URATE.
SUPERPHOSPHATE OF LIME.
SUPERPHOSPHATE MINERAL.
The London Manure Company also supply PERUVIAN GUANO (direct from Messrs. Gibbs & Sons), SULPHATE OF AMMONIA, NITRATE OF SODA, CRUSHED BONES, and every other Manure of known value, all of which they warrant strictly genuine. Wholesale dealers supplied.
116, Fenchurch Street, E.C. EDW. PURSER, Secretary.

ESTABLISHED 1812.
MESSRS. PROCTOR are now prepared to take orders for their special MANURES for 1860, which they unhesitatingly state are of a superior quality and charged at the lowest possible price, viz.:—

TURNIP MANURE	CLOVER MANURE	OAT MANURE
WHEAT ditto	POTATO ditto	BEAN ditto
GRASS ditto	BARLEY ditto	Also

PERUVIAN GUANO, BONE DUST, SUPERPHOSPHATE OF LIME, &c., all of which are warranted of the best quality.
Apply to H. & T. PROCTOR, Cathay, Bristol; or
PROCTOR & RYLAND, Birmingham and Chester.

MR. J. B. LAWES manufactures the following MANURES:—

TURNIP MANURE	£6 6
SUPERPHOSPHATE OF LIME	6 6
MINERAL SUPERPHOSPHATE OF LIME	5 5
BARLEY MANURE	8 0

N.B. Genuine PERUVIAN GUANO direct from Messrs Gibbs, NITRATE OF SODA, SULPHATE OF AMMONIA, and other Chemical Manures.
WHEAT MANURE.—PERUVIAN GUANO is proved to be the best and cheapest Artificial Manure for Wheat, at Autumn sowing.
American decorticated Cotton-seed Cake of best quality supplied at the market price.
Offices: 1, Adelaide Place, London Bridge, E.C.

BURNARD, LACK, AND CO.'S CONCENTRATED SUPERPHOSPHATE OF LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.
CONCENTRATED TURNIP MANURE, equal in value to the preceding.
Of these Manures Dr. Voelcker says:—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."
Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to BURNARD, LACK, & Co., Sutton Road, Plymouth.

PARMENTER'S PATENT PREPARATION FOR DESTROYING MEALY BUG, RED SPIDER, THRIP, AND OTHER INSECTS, AND ALSO MILDEW ON VINES, FRUIT TREES, AND PLANTS OF ALL DESCRIPTIONS.
See Messrs. Henderson's report on the above in last week's *Chronicle*.
Price 2*s*. and 3*s*. 6*d*. per bottle; Stone Jars, 10*s*. 6*d*. each.
To be had of all Nurserymen and Seedsmen.
J. CARTER & Co., 237 and 238, High Holborn, W.C.

GISHURST COMPOUND,
PATENTED,
FOR PREVENTING AND DESTROYING

RED SPIDER	MEALY BUG	MILDEW
THRIPS	SCALE	GREEN and BROWN
AMERICAN BLIGHT	ANTS	FLY

BED BUGS, &c.,
And useful in winter dressing.
Contains no deleterious ingredient.
Has received the sanction of the Gardening Press, see *Gardeners' Chronicle* of 9th April and 16th July, 1859, and "Cottage Gardener," 12th July, and has been favourably reported on, and is used by eminent gardening authorities, among whom are—
Mr. Judd, of Althorp Gardens
Mr. Rivers, of Sawbridgeworth
Mr. Edmonds, of Chiswick House Gardens
Mr. Collinson, of Eaton Hall Gardens
Messrs. A. Henderson & Co., Edgeware Road
Mr. Jas. Veitch, jun., Chelsea
Mr. Spencer, of Bowood Gardens
The principal Nurserymen and Seedsmen throughout England, Scotland, and Ireland use it, have taken in supplies, and are now prepared to sell single boxes—price 1*s*. for first trials and small uses, such as destroying bed bugs; 3*s*. for not large gardens; 10*s*. 6*d* for large gardens, with testimonials and full descriptions for use.
Nurserymen and Seedsmen supplied by
PRICE'S PATENT CANDLE COMPANY, Limited, London.

TO PIG, POULTRY, AND GAME FEEDERS.
JUPP'S RICE FOOD, POULTRY AND GAME.—RICE SWEEPINGS, 7*s*. 6*d*. per cwt., in 1½ cwt. bags; SCREENED RICE, 10*s*. per cwt., in 1¼ cwt. bags; DOG BISCUITS, 14*s*. per cwt.; OIL-CAKE, per ton only; RICE MEAL for PIGS, 6*s*. and 8*s*. per cwt., in 1 cwt. bags, at the mill. Orders must be accompanied by a remittance to insure delivery.—W. & R. JUPP, 6, Cross Lane, Eastcheap, E.C.

NOTICE.
CAKE AND CORN MERCHANTS, AGENTS, FARMERS, and all interested, are by the following statement cautioned against an advertisement addressed to them purporting to be from the "Inventor of Thorley's Food for Cattle;" viz., "I, the undersigned, hereby give notice that I am the sole inventor, and the sole proprietor, and the sole manufacturer of Thorley's Food for Cattle—that I have never authorised any person to use my name or treat for the manufacture of Thorley's Food for Cattle—that Thorley's Food for Cattle, as now manufactured by me, is a different and much more valuable article than my original food for cattle, as manufactured by me at Hull—that any article now offered for sale as Thorley's Food for Cattle is a spurious imitation, unless it is manufactured by me and comes from my manufactory, and therefore ought to be treated AS A COUNTERFEIT—and that no one in my employment knows or has any control over what gives to Thorley's Food for Cattle its real condimental and money value. "JOSEPH THORLEY."
Offices: 77, Newgate Street, E.C., and Steam Mills, Caledonian Road, London, N.; 174, Greenwich Street, New York, United States; and 86, Front Street, Toronto, Canada.

BURGESS AND KEY'S ROYAL AGRICULTURAL SOCIETY'S FIRST PRIZE GRASS MOWING MACHINE



This Machine has been introduced with the greatest success into this country during the last season, and a large number of them have been worked in a most satisfactory manner. A Silver Medal was awarded to it at the Royal Agricultural Society's Meeting at Warwick. It was also exhibited before the Emperor of the French at Fouilleuse, on which occasion it performed its work to the admiration of every one. Two of these Machines were purchased by the Emperor on this occasion, and an order for two more has since been received for the season of 1860. It was also exhibited in Scotland and Ireland with the same success. It also received the First Prize of the Norfolk Society at Swaffham, in competition with Wood's and others, besides many other works. Price £30 at the Works. Extras are charged for.—Full particulars may be obtained of
BURGESS & KEY, 95, Newgate Street, London, E.C.
Early orders are solicited to insure delivery in time for harvest.

WEST OF ENGLAND AND SOUTH WALES LAND DRAINAGE AND INCLOSURE COMPANY.
Established in 1844.
INCORPORATED BY ACT OF PARLIAMENT IN 1848.
Draining, Inclosing, Irrigating, Warping, Road Making, and all kind of Land Improvements, executed on Entailed, Mortgaged, or other Properties, and the whole cost can be made a Permanent Charge on the Lands, or redeemable in a certain number of years. BIDWELL & BRODIE, Secretaries.
Offices: Exeter; and 30, Parliament Street, London, S.W.

THE LANDS IMPROVEMENT COMPANY.—Incorporated by Special Act of Parliament in 1853.—2, Old Palace Yard, Westminster, S.W. To Landowners, the Clergy, Estate Agents, Surveyors, &c., in England and Wales and in Scotland.
The Directors beg leave to announce that the Company's Amendment Bill, 1859, has received the sanction of the Legislature. The Company now advance money, unlimited in amount, for the following works of Agricultural Improvement, the whole outlay and expenses in all cases being liquidated by a rent charge for 25 years.
1. Drainage, Irrigation and Warping, Embanking, Inclosing, Clearing, Reclamation, Planting for any beneficial purpose, Engines or Machinery for Drainage or Irrigation.
2. Farm Roads, Tramways and Railroads for agricultural or farming purposes.
3. Jetties or Landing places on the sea coast or on the banks of navigable rivers or lakes.
4. The erection of Farm Houses, Labourers' Cottages, and other Buildings required for Farm purposes, and the improvement of and additions to Farm houses and other buildings for farm purposes.
Landowners assessed under the provisions of any Act of Parliament, Royal Charter, or Commission, in respect of any public or general works of drainage or other improvements, may borrow their proportionate share of the cost, and charge the same with the expenses on the lands improved.
No investigation of title is required, and the Company being of a strictly financial character do not interfere with the plans and execution of the Works, which are controlled only by the Government Enclosure Commissioners.
For further information, and for forms of application, apply to the Honourable WILLIAM NAPIER, Managing Director, 2, Old Palace Yard, Westminster, S.W.

LAND DRAINAGE.
WORKS OF DRAINAGE of any extent are EXECUTED by the GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY on all descriptions of property, whether freehold, entailed, mortgaged, trust, ecclesiastical, corporate, or collegiate.
Repayment may be made by the Landowner as successive portions of the works are completed; or the actual expenditure, with a commission thereon, may be charged on the property improved, by way of rentcharge on the estate created for various terms of years so as to adapt the rate per cent. of annual charge to the circumstances of the tenants.
No investigation of title being required, or notices given to Reversioners or Mortgagees, no legal expenses are incurred.
Works of Irrigation, Enclosing, Wood Grubbing, Road Making, and Farm Buildings are executed in a similar manner.
Landowners desirous to execute any of the Improvements by their own Agents, and charge the outlay and expenses on the Estate, may obtain Loans for the purpose.
Applications to be made to WILLIAM CLIFFORD, the Secretary, at the Offices of the Company, 52, Parliament Street, S.W.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL AND GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, London, S.
Principal—J. C. NESBIT, F.G.S., F.C.S., &c.
The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.
Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

CRYSTAL PALACE. WINTER POULTRY SHOW.—A Grand SHOW of POULTRY and PIGEONS will be held at the Crystal Palace, February 11, 13, 14, and 15, 1860. The Entries close on January 14.
For Schedules of Prizes and Certificates of Entry, apply to Mr. W. HOUGHTON, Secretary to the Show.

The Agricultural Gazette.

SATURDAY, DECEMBER 31, 1859.

—— THE letter by Baron LIEBIG in another column on the ultimate consequences of our present wasteful sanitary arrangements will be read with great interest. It capitally illustrates his power of clever illustration, and also, we must add, his power of dissociating the practical and the professional from the purely scientific relations of the problem or the proposition he discusses. It is the latter to which he directs attention; and he teaches that as the existing stores of natural manures from which we now import supplies are exhaustible, and will ultimately be unavailable, the exhaustion by our rivers of our home supplies of fertilising matter must ultimately be felt: our soils must ultimately suffer from this robbery, and at some future time, however distant, be rendered barren. Put the case extremely and it amounts to this—that the rainfall perpetually washing the dry land all over the surface of the earth does perpetually rob it of fertilising matter, and must ultimately starve the soil.—But there is a truth in science of another kind, which presents a still more lamentable prospect to all land animals. The constant raging of the ocean on the shore, as it does perpetually disintegrate and dilapidate must ultimately destroy—and "should the sea still continue to impel its currents and to roll its waves every continent and island must at length disappear; and, again, as of old, when 'the fountains of the great deep' were broken up,

'A shoreless ocean tumble round the globe.'"

But there are repairing and counterpart forces at work in both these cases. On the one hand land is fed by the very thief that robs it; and its fertility thus remains unimpaired in the wilderness and even increases in the cultivated field in spite of the agencies which would take its riches from it; and on the other it is being raised by subterranean agencies to meet the dilapidation which would destroy its very existence.

It is plain, from the experience of a thousand farms, that we may admit most fully and regretfully the immense waste now proceeding from dungheaps, whether in the farmery or in the town, without anticipating such a desperate future as Baron LIEBIG sees in store for us.

—— Let us again direct attention to the important discussion of the labour question before the Oxford Farmers' Club, reported in another page.

—— Will our correspondent who sent us his plans and estimates for the moveable shed which was referred to in these columns a fortnight ago, be good enough to send us his address, which has been mislaid?

IT is with very great regret that we learn the death of Mr. BAKER, of Writtle, near Chelmsford, whose name has for many years been known in the agricultural world—first in connection with the political discussions of 10 or 15 years ago, and latterly, especially in connection with the Central Farmers' Club, in the discussion of agricultural subjects, whenever either the teachings of experience or the deductions of science were wanted for their elucidation.

THE EXHAUSTION OF ENGLISH SOIL.

[The following letter from Baron Liebig to Mr. Alderman Mechi will be read with interest.]

"Munich, Nov. 17.

"DEAR SIR,—Your letter of the 7th November to *The Times* furnishes me an occasion to express to you my sincere thanks for the views to which you there give utterance, and which I have laboured many years to impress. I am sorry not to be able to say that my efforts have been attended with any perceptible results, and I regard it as a fortunate event that a man of so eminently practical a character as yourself has now for the first time, in the interests of agriculture, and the national welfare, taken up the question of the 'sewerage of towns' with warmth, and in language adapted to produce conviction.

"It is my ardent wish that you may succeed in awakening the English people to your own convictions; for in that case the ways and means for setting aside the difficulties which stand in the way of procuring manure from the 'sewerage of towns' will certainly be found, and a future generation will look upon those men who have devoted their energies to the attainment of this end as the greatest benefactors of their country.

"The ground of my small success lies clearly in the fact that the majority of farmers do not know the extent to which their own interests are concerned in this matter, and because the views and conceptions of most men in regard to the circuit of life and the laws which govern the preservation of the race do not generally rise above those of C. Fourrier, the inventor of the phalanstery. He proposed, as you know, to supply the wants of the occupants of his phalanstery by means of eggs. He supposed it was only necessary to procure a couple of hundred thousand hens, each of which, sold in England, would produce an immense income. Fourrier knew very well that hens lay eggs, but he seemed not to know that in order to lay an egg they must eat an amount of corn its equal in weight; and so most men do not know that the fields, in order to yield their harvests, must either contain or else receive from the hands of man certain conditions which stand in the same relation to the products of the field as the hen's food does to the eggs she lays. They think that diligent tillage and good weather are sufficient to produce a good harvest; they therefore regard this question as

one in which they are wholly unconcerned, and look forward carelessly and with indifference to the future.

"As physicians who in the apparent signs of a young man's blooming health discern the fatal worm which threatens to undermine his organic frame, so in this case should these discerning men who are capable of comprehending the range of the question raise the earlier the voice of warning.

"It is true that the diligent tillage of the fields, sunshine, and timely rains are the outward conditions, perceptible to all men, of good harvests; but these are perfectly without effect upon the productiveness of the field, unless certain things not so easy of perception by the senses are present in the soil, and these are the elements which serve for nourishment, for the production of roots, leaves, and seeds, and which are present in the soil always in very small quantity, in proportion to the mass of the soil itself.

"These elements are taken from the soil in the products of the field—in the corn or in the flesh of the animals nourished by these products, and daily experience shows that even the most fruitful field ceases after a certain series of harvests to produce these crops.

"A child can comprehend that under these circumstances a very productive field, in order to remain very productive, or even simply productive, must have the elements which had been withdrawn in the harvests perfectly restored; that the aggregate of the conditions must remain in order to produce the aggregate results, and that a well, however deep it may be, which receives no supply of water, must in the end become empty, if its water is constantly pumped out.

"Our fields are like this well of water. For centuries those elements which are indispensable to the reproduction of the crops have been taken from the soil in those crops, and that, too, without being restored. It has only recently been ascertained how small a supply of these elements the soil really has. A beginning has been made to restore to the fields the losses which they sustain through the annual harvests, by introducing from external sources manures containing the same elements. Only a very few of the better informed farmers perceive the necessity of this restoration, and those of them who have the means have zealously endeavoured to increase the amount of these elements in their fields; but by far the greater part of them know nothing of such restoration. They think that they may continue to take from the field as long as there is anything left, and that it will be time enough to provide for this necessity when it knocks at their doors. They do not of course know how large their stock on hand is, nor are they aware that when the necessity shows itself there will be no means to correct it; they know not that what they have wasted is irretrievable.

"The loss of these elements is brought about by the 'sewerage system of towns.' Of all the elements of the field which, in their products, in the shape of corn and meat, are carried into the cities, and there consumed, nothing, or as good as nothing, returns to the fields. It is clear that if these elements were collected without loss, and every year restored to the fields, these would then retain the power to furnish every year to the cities the same quantity of corn and meat; and it is equally clear that if the fields do not receive back these elements agriculture must gradually cease. In regard to the utility of the avails of the 'sewerage of towns' as manures no farmer, and scarcely an intelligent man, has any doubt, but as to their necessity opinions are very various.

"Many are of the opinion that corn, meat, and manure are wares, which, like other wares, can be purchased in the market; that with the demand the price may, perhaps, rise, but this will also stimulate the production, and that all turns upon having the means to purchase, and so long as England has coal and iron she can exchange the products of her industry for the corn, meat, and manure which she has not. In this respect I think it would be wise not to be too confident of the future, for the time may, perhaps, come, even in half a century, that not one of those countries upon whose excess England has hitherto drawn will be able to supply her with corn, and that too from the natural law that what is true of the smallest piece of ground is true also of a great country. It ceases to produce corn if the conditions of the reproduction of the corn which has been carried off are not restored to it. Nor is it, furthermore, certain whether the corn-growing countries will always desire to exchange their corn for the products of English industry, since they may no longer need these products, or, at least, not in the ratio of England's need of corn. In the countries of Europe and in the United States of North America great efforts are made to become in this respect independent of England, as being in the end the only way of keeping the corn prices in these countries so as to repay the labour.

"In the United States the population increases at a still greater ratio than in other countries, while the corn production upon the land under cultivation has constantly fallen off.

"History teaches that not one of all those countries which have produced corn for other lands have remained corn markets, and England has contributed her full share towards rendering unproductive the best lands of the United States, which have supplied her with corn precisely as old Rome robbed Sardinia, Sicily, and the rich lands of the African coast of their fertility.

"Finally, it is impossible in civilised countries to raise the corn production beyond a certain limit, and this limit has become so narrow that our fields are no longer capable of a higher yield without an increase of their effective elements by the introduction of manures from abroad.

"By the application of guano and bones the farmer of most limited capacity learns the real import of such increase; he learns that the pure system of stall or homemade manures is the true and genuine robber system. In consequence of his restoring in the guano and bones but a very small portion of those very same elements of seeds and of fodder which had been withdrawn from his fields by centuries of cultivation, their products are wonderfully increased. Experiments instituted with special reference to this end in six different parts of the kingdom of Saxony showed that each hundredweight of guano put upon a field produced 150 lb. of Wheat, 400 lb. of Potatoes, and 280 lb. of Clover more than the same sized piece of ground without guano, and from this it may be calculated how enormously the corn and flesh production of Europe has been increased by the yearly importation of 100,000 tons, or 2,000,000 cwt., of guano.

"The effect of guano and bones should have taught the farmer the real cause of the exhaustion of his fields; it should have taught him in what a condition of perpetual fertility he might have preserved his fields if the elements of the guano which he has transported in the shape of meat and products of his field into the cities were recovered and brought into a form which would admit of their being restored to his fields every year.

"To an understanding of this, however, the farmer has not yet come, for, as his forefathers believed that the soil of their fields was inexhaustible, so the farmer of the present day believes that the introduction of manures from abroad will have no end. It is much simpler, he thinks, to buy guano and bones than to collect their elements from the sewers of towns, and, if a lack of the former should ever arise, it will then be time enough to think of a resort to the latter. But of all the erroneous opinions of the farmers this is the most dangerous and fatal.

"If it is perceived that no country can perpetually supply another with corn, then must it be still easier to understand that an importation of manures from another country must cease still earlier, since there exportation diminishes the production of corn and meat in that country in so rapid proportions that this decrease in a very short time forbids the exportation of manures. If it is considered that a pound of bones contains in its phosphoric acid a necessary condition for the production of 60 lbs. of Wheat, that the English fields have become capable by the importation of 1000 tons of bones of producing 200,000 bushels more of Wheat in a series of years than they would have produced without this supply, then we can judge of the immense loss of fertility which the German fields have sustained by the exportation of so many hundred thousand tons of bones which have gone from Germany to England. It will be conceived that if this exportation had continued, Germany would have been brought to that point that she would no longer have been able to supply the demand of her own population for corn. In many parts of Germany, from which formerly large quantities of bones were exported, it has now already come to be the case that those bones must be at a much higher price brought back again in the form of guano in order to obtain the paying crops of former times.

"The exportation of bones for so many years from Germany was possible only because the German agriculturists had less knowledge of the real nature of their business than the English, believing, as they did, that practice and science taught doctrines contradictory to each other, and were fundamentally different things, and that they must trust, not in the laws of nature, but in receipts. Things have now changed for the better, although not to the extent which was to be desired, for the German farmers do not as yet generally understand the value of the elements of bones for preserving the present fertility of their fields (not to speak of the restoration of their former fertility), for if they all understood this, no one could have any more bones—at all events, no more than those which he brings to market in his grain and cattle.

"The prices of bones have become so high in Germany as to forbid their exportation, and if the question should be put to English commerce, whence it furnishes the English farmer with this to him so indispensable manure, the answer would produce astonishment; for this commerce has already so far robbed all the inhabited parts of the earth that the manufacturer of superphosphate can only set his hopes upon the phosphate of lime of the mineral kingdom.

"In relation to guano I have been assured that in 20 to 25 years, if the use of guano should increase in even the same proportion as hitherto, there will not remain in South America enough to freight a ship. We will, however, suppose its supply and that of bones to continue for 50 years, or even longer; then what will be the condition of England when the supply of guano and bones is exhausted?

"This is one of the easiest of all questions to answer. If the common 'sewerage system' is retained, then the imported manures, guano and bones, make their way into the sewers of the cities, which, like a bottomless pit, have for centuries swallowed up the guano elements of the English fields, and after a series of years the land will find itself precisely in the condition it was in before the importation of guano and bones commenced; and after England shall have robbed the cultivated lands of Europe even to complete exhaustion and taken from them the power to furnish her longer with corn and manure, then she will not be richer than before in the means of producing corn and meat, but will from that time forth become even poorer in these means.

"By means of the importation of guano and bones the population has, however, in consequence of the increased production of corn and meat, increased in a greater ratio than would have been possible without this importation of manures, and this population will make upon the rulers of the State their natural demand for food.

"If men do not deem it desirable that the balance between population and the supply of food be restored by means of exterminating wars and revolutions (in which the want of food has always played a certain part), or by means of wasting plagues, pestilence, and famine, or by emigration *en masse*, then should they reflect that the time has arrived for getting a clear view in regard to the causes of existence and increase of population. A very little reflection will lead to the conviction that the relations of population are governed by a great and comprehensive natural law, according to which the return, duration, increase, or diminution of a natural phenomenon depends upon the return, duration, increase, or diminution of its conditions. This law governs the return of the harvests upon our fields, the maintenance and increase of the population; and it is easy to see that a violation of this natural law must exert upon all these relations a pernicious influence which can be set aside in no other way than by the removal of its causes. If, then, it is known that certain existing circumstances work deleteriously upon the fields; if it can be foreseen that their continuance must bring about the ruin of agriculture; if there is but a single one of all the means which have hitherto resisted this deleterious influence and made it less sensibly felt which can be safely relied upon to secure a perpetual fertility to our fields, and this means, by a simple change and improvement of the existing deleterious state of things, can be obtained, then it becomes us to think whether a nation should not summon up all her intellectual and material resources in order to preserve these fundamental conditions of her welfare.

"It has been maintained that the recovering of the manure-elements out of the sewers of large cities is impracticable. I am not ignorant of the difficulties which stand in its way. They are, indeed very great; but if the engineers would come to an understanding with the men of science in relation to the two purposes—the removal of the contents of the sewers and the recovery of their valuable elements for agriculture—I do not doubt that a good result would follow. Intelligence in union with capital represents a power in England which has rendered possible and practicable things of much greater apparent difficulty. I look forward with deep concern to the solution of the sewerage question, for, if this question is decided in Great Britain without regard to the wants of agriculture we can scarcely hope for any thing better upon the Continent.

"Permit me to add still a few words in relation to the leading article of the *Times* of the same date, in which the one side of this question is taken up with great clearness, while the author of the article seems to have not quite a correct view of its bearing as it presents itself to my mind. The mistake into which he has fallen arises from his confounding the condition of a State with that of its population.

"In the natural sciences we know nothing of a State—of its might or its feebleness. We know only lands, their geological formation, their climate and soil, and whether the soil contains the natural conditions of the subsistence of man and beast. In places where these conditions are abundantly present, and geological circumstances do not hinder their intercourse, men cannot be exterminated. The most wasting war cannot rob a land of the conditions which Nature has given, nor can peace give them to a land which wants them.

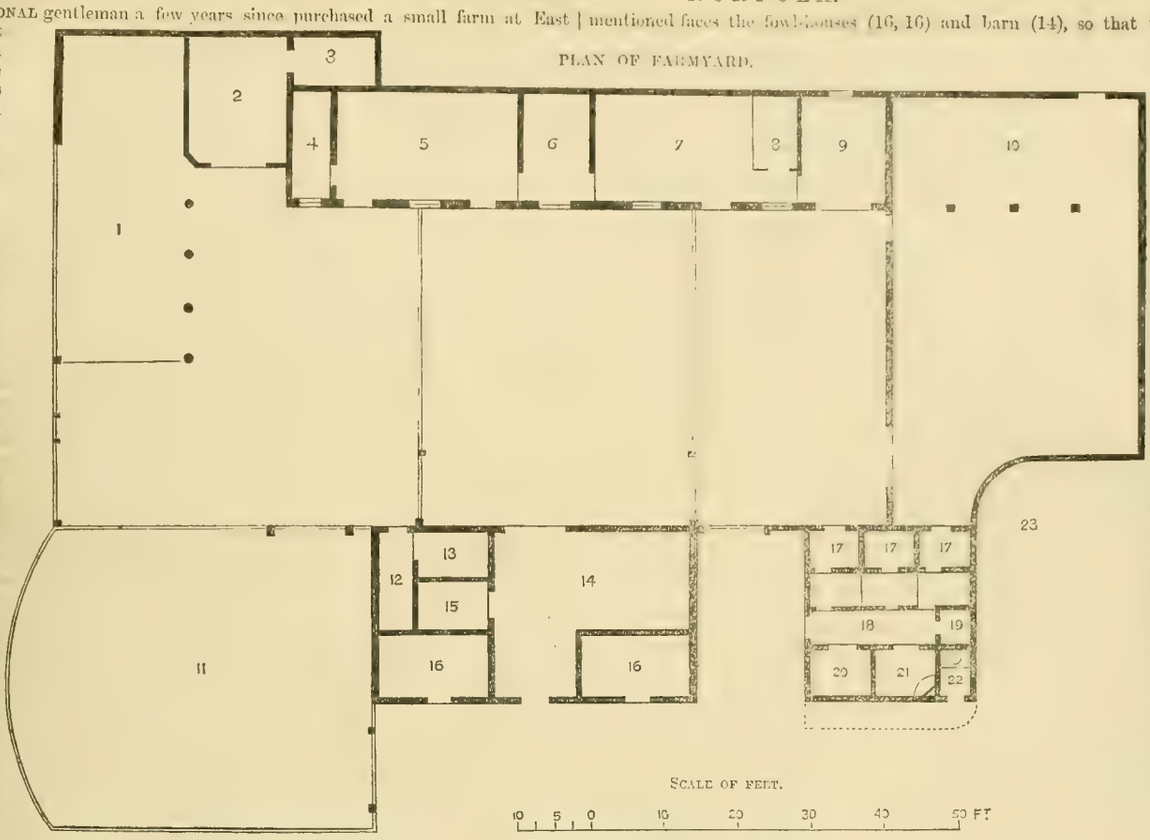
"Countries may be fruitful and become capable of sustaining a large population when certain resisting influences, which in their unhindered working make the cultivation of the soil impossible, are overcome by human intelligence, or when a land has all the conditions of productiveness except one, and then receives the one which it lacked. If Holland were without her dikes, which must be kept up at great expense, she would produce neither corn nor meat; the land would not be inhabitable. In a similar manner the inhabitant of the African oasis protects his grain fields by dikes against the storms of the desert, which cover his land with a barren sand; and if Mr. Layard is disposed to answer the question put to him, he will say that the decay of an admirable system of irrigation rendered the permanent maintenance of a great population in Assyria and Mesopotamia impossible.

"I know that the prophets of future evil have at all times been derided by their own generation; but, if history and natural laws can furnish any ground for a just conclusion, then there is none which stands more firmly than this—that, if the British people do not take pains to secure the natural conditions of the permanent fertility of their land—if they allow these conditions, as hitherto, to be squandered—their fields and meadows will at no distant time cease to yield their returns of corn and meat. But it does not belong to the province of natural science to discuss the question whether the might, strength, and independence of the nation will be preserved after this state of things shall have gradually arisen. Believe me, dear Sir, yours very truly, JUSTUS VON LIEBIG. — Mr. J. J. Mechi, Tiptree Hall, Kelvedon, Essex."

A FARM COTTAGE IN NORFOLK.

A PROFESSIONAL gentleman a few years since purchased a small farm at East Carlton, about 5 miles from Norwich—the farm buildings being in a woful state of dilapidation. There was a cottage scarcely habitable, and the outbuildings except the barn and cart house were so ruinous and inconvenient, that he determined to remodel the whole. In doing this his object was to construct the farm-house so that he could take some rooms for his own use, when he wished to spend a few days at the place, which, by the way, is one of the prettiest small residences in the county. The work of alteration was placed in the hands of Mr. Balls, a builder at Norwich, under the direction of the proprietor, and now that it is completed the whole forms so excellent an example of a small *ferme ornée* that I have thought it worth while to ask the Editor of the *Agricultural Gazette* to find room for a sketch and plan of the cottage, and the farm arrangements.

PLAN OF FARMYARD.



SCALE OF FEET.



DESCRIPTION.

Cart Lodge ..	1	Horse Stable ..	5	Turnip House ..	9	Loose Box ..	13	Pigs ..	17	Boiling House ..	21
Gig House ..	2	Hay House ..	6	Bullock Shed ..	10	Barn ..	14	Passage ..	18	Privy ..	22
Potato House ..	3	Cow House ..	7	Stack Yard ..	11	Corn Room ..	15	Binn ..	19	Pond (Liquid Manure) ..	23
Harness House ..	4	Calf's Crib ..	8	Harness ..	12	Fowls' Houses ..	16	Potato House ..	20		

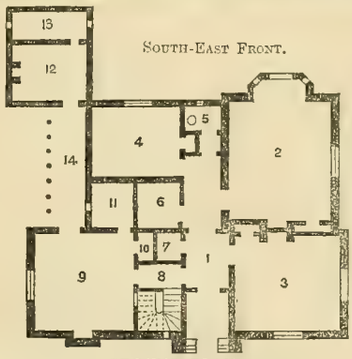
The relations as regards use of the several parts of this farmery have been, as far as possible, observed by the positions they are made to occupy, relatively to one another. It will be seen that the barn, stack-yards, and straw-yard—cart-shed, stable, hay-house, cow-house, Turnip-house, and bullock shed—the pigsties, boiling house, Potato house, &c. — are respectively clustered; while the interval between the two chief lines of building is divided into yards having easy access to both straw and Turnips. It may be added too that elegance of form and of arrangement, both of which are here exemplified, exercise a directly useful influence on the employed.]



VIEW OF HOUSE NEXT THE FARMYARD.

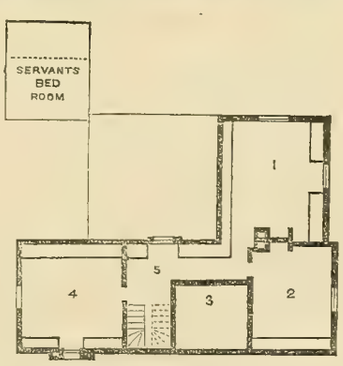
Of the remains of the old cottage a part is shown in the form of a low thatched building, represented on the ground plan by the rooms 12 a back kitchen, over which is a loft that can be used either as a servant's sleeping room or cheese room, as may be desired, and 13 a dairy. The back kitchen is connected with the main body of the house by a wide verandah (14), under which washing and similar work is very conveniently performed. The verandah opening into the principal kitchen (9), there is a nearly complete covered communication for the lower parts of the house without the necessity of running out of doors in bad weather. As it was thought desirable that the farm-house and the proprietor's rooms should be kept as separate as possible, two of the lower rooms, Nos. 3 & 4, have been taken for the proprietor's bedrooms, thus leaving the chamber floor entirely for the use of the tenant, and the only connection between the two occupations is by the passage, No. 8, on the ground floor; the staircase being situated in an inner passage the house is kept free from the draughts of the hall and outer door. The tenant can get upstairs without coming into the hall, and should the whole house at any time be in one occupation the family and servants can pass upstairs and down without coming in contact with each other.

SOUTH-EAST FRONT.



GROUND PLAN.

1. Hall or Entrance
2. Sitting-room or Parlour
3. Ditto, or Bedroom
4. Bedroom
5. Watercloset
6. Store-room
7. Wine-closet
8. Passage
9. Kitchen
10. Pantry
11. Ditto, with Trap-door and Staircase to Cellar under No. 4.
12. Back Kitchen.
13. Dairy.
14. Verandah



CHAMBER PLAN.

1. Bedroom 2. Bedroom 3. Bedroom 4. Bedroom 5. Landing

The nature of the farm arrangements is sufficiently explained by the plan of the farm-yard. It is therefore only necessary to add that the verandah above mentioned faces the fowl-houses (16, 16) and barn (14), so that there is a clear view of the principal parts of the yard from the windows of the tenant's portion of the farm-house. *L.*

CLEARING OR PLANTING.

OUR notice of the clearing of Whichwood Forest (see p. 700) has induced a correspondent, who has been long engaged in planting land, to favour us with the statement we print below. He draws, from a comparison of the cost and results of clearing and planting, the conclusion that there is a balance of profit in favour of planting. There is no doubt that well made and well managed plantations afford, in the course of 30 or 40 years, good returns for outlays incurred; and it must be a matter for the consideration of each proprietor about to reclaim waste land, whether he will plant or convert into farms. He will naturally have regard to situation, climate, demand for timber, and the like. But such a conversion into plantation as that described by our correspondent is equally a reclamation of waste land as the work executed at Whichwood Forest. To displace a scrubby waste and convert it into a regular plantation is a vast improvement; for timber should always be grown in masses, not in hedgerows or open fields, and we doubt not there is much rough and waste land in this country that might be dealt with as our correspondent describes, greatly to the advantage of the owners. It must however be borne in mind that it is an improvement of which the profit, assuming our correspondent's calculations to be strictly correct, is long deferred, and which adds nothing to the industry or well being of the district wherein it has been made. Whereas, by the clearing a tract of forest or waste land and its conversion into farms, besides the profit obtained by the owner of the land, there is a large amount of capital and much human industry brought into useful employment. And at the end of a 30 years' lease,

though the buildings may require some reparation, there will certainly be an increase in the letting value of the land, arising from the culture it has undergone, and the progress of general and local wealth and population.

A plantation, however greatly it may contribute to the profit of its owner, will continue at the end of the 30 years a plantation and a solitude still. It may afford a cover for foxes or pheasants, and will be haunted by prowling gamekeepers and marauding poachers. The only sound of industry will be the occasional ring of the woodman's axe, but the prosperous works of husbandry will be as unknown as they were upon the original waste.

"The *Times* of the 29th of September last contains a leader refering to an article quoted therein, taken from the *Economist*, relating to the clearing of Whichwood Forest. By these I understand that, at the expense of about 10*l.* per acre, the land reclaimed lets on leases of 31 years at 1*l.* 8*s.* per acre. As I have for some years past been engaged in somewhat of a similar process in a small way, in grubbing up old woodlands, although, instead of clearing and building thereon, I have replanted and continue to replant them, these articles have induced me to refer to the comparative results of the two methods. I must premise that the land I deal with is primitive woodland, certainly as old as the Saxon Heptarchy, is free from tithe rent charge, but is subject to local rates, of course not so highly rated as if there were buildings and homesteads erected thereon. My process is to cut the underwood, then fell all scrubby timber, leaving the better and growing trees with a proportion of tillers and some of the best of the coppice stubs, then grubbing all the roots of the trees felled, and all the large old useless coppice roots, make large open drains where required, and then replanting the land. This process takes up two years. I find from my accounts, without entering into the details thereof herein, that last year—

The grubbing cost me, per acre	£11	16*s.*	0*d.*
The value of the roots grubbed for sale is	8	14	6
Thus leaving a charge of	3	1	6
I have no regular estimate of the cost of ditching or draining, as it varies according to circumstances, but I think I underrate it when I allow, per acre	1	0	0
The plants as purchased cost, per acre	6	0	0
And the expense of planting them	1	10	0
My expense, therefore, in clearing and replanting an acre is	11	11	6

"Now for the comparative results.

"I am aware that by planting thicker, then thinning out and cutting off the plants to remain, I might probably obtain a larger and earlier return than the following; but I dispense with these considerations, and confine my estimates to three periods as coppice wood is cut.

The first 10 years, I expect a return of only £5	5*s.*	0*d.*	against a rental of £14	0*s.*	0*d*
The second 10 years, as my stubs will bear more, I calculate of 14	0	0	„	14	0	0
The third 11 years according to the value as sold..	40	0	0	„	14	0	0
Value of ware for 31 years	£59	5	0	value of rental	£42	0	0

"The increase in the value of the growing timber for 31 years, with the smaller rated rental for local rates from there being no buildings or homesteads, will answer as a set off against 6*l.* per cent. on the value of such erections as charged in the article quoted. At the lapse of 31 years, the planted stock will be of increased value, while the buildings will require repair and further outlay. I infer from these premises, that clearing land is not so advantageous in the long run as would seem from present appearances." *Economist.*

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.

THE session was brought to a close on Tuesday evening, the 20th inst., the examination having ended on the previous day. Edward Holland, Esq., M.P., Chairman of the Committee of Management, awarded the diplomas and prizes, and the Choral Society of the College treated the visitors with a concert, which, above the average in quality, was fully appreciated by the audience.

The late lamented principal, the Rev. J. P. Haygarth, has found a worthy successor in the Rev. J. Constable, M.A. We congratulate the managers of the Institution on having obtained the services of a gentleman, under whose able, energetic, and kind direction the prosperity of the College has been satisfactorily secured. Additional and extremely comfortable private rooms for older students have been provided in the College, and every effort is made to render the tuition and a liberal discipline as efficient as possible. Under the auspices of the Principal a Choral Society and an excellent Discussion Club have been formed by the students, whose progress during the session has been quite satisfactory.

We are happy to say that a fewer number of students are leaving this session than usual, the number being only 16. It is gratifying also to be able to state that the applications for admission, besides being more numerous, are from men of an age likely to derive full advantage from a collegiate system, and that there is every prospect of the College being well filled next session.

The College Diploma was awarded to—1. J. Appelby, Fareham, Hants; 2. J. Hall, Paulton Vicarage, Preston, Lancashire; 3. C. Selby Bigge, Lyndon, Morpeth, Northumberland.

The Haygarth Prize was awarded to Mr. Appelby.

The following prizes were awarded:—

Farm Books.—1. Doxat; 2. Deacon.

Farm Journals—Turner and Negus.

Laboratory Prizes.—Classes 1 and 2, Inner laboratory. Ivey, Phillips, Prentice, for quantitative analysis. Classes 3 and 4. Allanson, for qualitative analysis. Classes 5 and 6. Boucicault, for chemical manipulations.

Veterinary Prizes.—Classes 1 and 2. Hospital books. Doxat and Ivey. Classes 3, 4, 5, and 6. Note books. Boucicault.

Botany Prizes—Note books. Classes 1 and 2. Deane.

Agronomics.—Note books. Classes 3, 4, 5, and 6. Boucicault.

Surveying Prizes.—Field books. Classes 1 and 2. Deane. Classes 3 and 4. Allanson. Classes 5 and 6. Smith.

Building Prize.—Hall.

Mathematics Prize—Ivey and Appelby.

General Proficiency.—Homesfield, Allanson.

General Industry.—Harding.

Certificates of Merit for being first in the Examination were granted to—

Agriculture.—1st Division—Appelby and Doxat, equal; 2d Division—Negus and Smith, equal.

Chemistry.—Classes 1 and 2—Ivey; Classes 3, 4, 5, and 6—Deacon.

Botany.—Bigge, Deane, and Doxat, equal.

Agronomics.—Deacon and Harding, equal.

Veterinary.—Pathology—Deane and Doxat, equal; Anatomy—Deacon.

Surveying.—Classes 1 and 2—Hall; Classes 3 and 4—Deacon; Classes 5 and 6—Smith.

Home Correspondence.

Pig Feeding.—Having seen an article in the *Agricultural Gazette* respecting the fatting of pigs and the giving them cinders or brick rubbish, it is in my opinion most essential to their well-being; it assists to digest their food and prevents them from routing up their styes, to the great annoyance of the person that attends to them, and a loss to the owner. Instead of routing up the stye they ought to be lying quiet. If they are not quietly disposed or satisfied with their treatment they will not fatten very fast. I have paid particular attention to the fatting of pigs for some years back, and I have tried it in various ways, and in my opinion the singling out, stall, box, or crate system is the best for fatting. To have the styes so constructed as to have a moveable partition between the pigs, so that the stye may be regulated according to the size of the pig; to allow it sufficient room to get up and down but not to turn round, with a continuation of troughing to run the full length of the styes, and a door opposite to each stye, to admit of their being kept clean; also to be kept moderately dark and quiet; to have some cinders every morning after feeding will, I am satisfied, fatten the pigs sooner than by having six, eight, or more shut up in a stye in the usual way. *C. A.*

Farmers' Clubs.

OXFORD: Dec. 12.—*The Agricultural Labour Market.*—Mr. Watson said, about 20 or 30 years ago, there was a super abundance of labour, and it was no uncommon occurrence to have on a Monday morning applications from 20 or 30 men who wanted employment. The farmers held meetings, and the men out of employ were set to work by them in turns, a proportion of their wages being paid out of the poor rates, so that if a man was engaged at 1*s.* 6*d.* per day, the farmer paid him only 9*d.*, and the remainder was made up out of the rate. He was happy to say that that state of things was altered. Instead of a surplus, they had not sufficient labour now for their purpose, which was attributable to certain causes which operated now, but did not 30 years ago. In the first place, there were now railways, which had created a great demand for labour, and employed many of the rural population both in the construction of lines as well as policemen, guards, porters, &c., and they were paid better wages than the farmer could afford to give. In his (Mr. Watson's) opinion, the best course to adopt was by economising their labour as much as possible, and making the best use they could of the labour in their own immediate neighbourhood. He was aware that some parties represented the labouring classes as disaffected, and said that there was not that good feeling between them and their employers which ought to exist; but, even if such were the case, they could not be surprised at it, considering how they had been treated. As agriculturists, they had not paid them that attention which they ought to have done, for when they wanted their services they got them at the cheapest rate, and when they had done their work, they left them to find employment and provide for their families in the best way they could. He contended that they would find on their farms many things which would not only pay back 1*s.* for the 1*s.* laid out, but 1*s.* 2*d.* for every 1*s.* in effecting improvements during the winter time, which would not only be to their advantage, but, at the same time, employ these poor men. With respect to the summer, it was then that they found a scarcity of labour, because the men went away when they were most wanted; but if they had not cared for them during the winter, they could not be surprised at their going to other localities where they thought they could do better. As far as his own experience went, he was satisfied of this, that if they did what was right between man and man, and made their labourers comfortable in winter, they would find that very few would leave them in summer; if any did so, it was the exception and not the rule. In order, then, to provide for the summer, and to create a better feeling between the employer and employed, the first step was to do all they could for the latter in the winter. Their next duty was to do all they could to improve their moral and physical condition. In the first place, a great many labourers, at certain parts of the year, had to walk two or three miles, and, in consequence of the present law of settlement, it was too much the habit of landowners to pull down poor houses in their parishes, and the labourer consequently found a difficulty in meeting with a house to dwell in near his employment; while in case of sickness the cost of their maintenance was shifted to other parishes, to which they had been driven. That law ought to be repealed, and he hoped the time was not far distant when every parish in the county, if not the whole country, would form one Union. It could not reasonably be expected that a labourer who had to walk three or four miles to his work could do the same amount of work as a man located on the farm; and, therefore, it was to their own interest to get their labourers located around them as near as possible to the farm on which they were employed. In that case he believed that five labourers would do the same amount of work as six who were differently circumstanced. Mr. Watson concluded by moving the following resolutions:—

"That as the price of labour must be regulated by the supply and demand, it is the opinion of this Club that the time has arrived when something must be done to cultivate a better feeling between, and more closely unite the employer and the employed, the interests of the two being identical; that, to effect this, it is necessary, in the first place, to repeal or alter the present law of settlement.

"2d. That the owners and occupiers of the soil should do their best to improve the moral and physical condition of the industrial classes, supplying them as much as possible with remunerating labour during the winter months, and providing them with comfortable dwellings on or near the farms, and in every way encouraging the industrious labourer, so that the employer may have the full benefit of his industry, and the labourer himself be comfortable, contented, and happy."

The Rev. J. Clutterbuck said—first, on education. The fear of those who think that the education of the labouring population is likely to be carried too far is, I think, unfounded; it may be possible to educate persons beyond that point which befits their station, but if those who entertain fears on this subject would accompany the Inspectors of Schools in agricultural districts, they would see that the boys are taken from school at so early an age that very few can be carried beyond the barest elements of school teaching. The nature of the employment given to little boys very often makes it difficult for them to attend the Sunday School, to say nothing of the too frequent indisposition of the child himself. The night school may be said to work well if it keeps up the little learning acquired at the day school. We know the oft-repeated assertion that some of the best and most trustworthy labourers can neither read nor write; this has no doubt much truth in it, but my own experience of more than 30 years enables me to affirm that I know no instance in which idleness, dishonesty, or negligence can be attributed to the very moderate stock of learning gained at any school with which I have been connected. In this, the boy is the father of the man; the idle, ill-conditioned scholar is the pest of the village as he grows up, and the diligent and best boy in his class is seldom the unemployed labourer or the inmate of our gaols. A few words on the law of settlement; I am glad to see it met no favour at the last meeting. It was suggested to me by one of the speakers on that occasion that he should be glad to hear its friends defend the law as it stands to the best of their power. My answer was, I do not think it has any friends. My own deliberate conviction, after the best consideration I can give it, and a rather long experience, is that it is impossible to over-estimate the demoralising effects that it has produced on the labourers of this country, especially by encouraging habits of improvidence before the New Poor Law was enacted. There is another point connected, as I think, with the law of settlement—I mean the habitations of the labourer. All agree that it vitally affects the morals of the people. Over-crowded dwellings are the nurseries of vice in its most frightful form. A word or two on the payment of labourers. If it were free, we need say little on this point; but to speak of it as it is, "The labourer is worthy of his hire" is an axiom of Divine authority, and I feel confident, from the kindly tone that has characterised this discussion, and from the character of this assembly, that I need not remind you of the denunciation pronounced on those who keep back the "hire of the labourer by fraud." I will not give so harsh a name to a practice which obtained under the old Poor Law, and may linger in some places still, of making a distinction between the married and single men; it is like the law of settlement—indefensible. There are difficulties, and those mostly arising from the feelings of the labourer, in adjusting weekly wages to the merits and skill of those who earn them; piece work regulates this nature where piece work can be given. But it is manifest that one man may be worth 12*s.* or 14*s.* and another scarcely 9*s.* or 10*s.* To say the least, the good labourer should not be depressed by the idle and unskilled. Machinery requires skill and care; this may, as it generally does, open a door for encouragement and higher wages, and I fully concur in the observation, the more machinery the more labour. But I think that those who, as shepherds, carters, &c., have much valuable property under their charge, and who have much anxiety of mind, added to bodily exertion, are very often underpaid. This, to say the least of it, is a mistake, if not an injustice. In the staff of labourers the young and active should never be discouraged. I own a great dislike to drinking habits and anything that tends that way. It appears to me that getting work out of men by giving extra beer is like inducing the men to sell their strength, which is their birthright, at a miserable price. We know the ready

answer, "We get more work by beer than money." I doubt this, for in the long run you may bring your men to that state in which they won't work without it, and I think a fair trial of more money and less beer would be the best policy in the end. There are other points on which one is tempted to touch. Take what Mr. Mein says—"All farms ought to be training schools for the young labourers." A wise and philanthropic sentiment. The remedy for many evils, the conferring of many real benefits is, and always must be, in the hands of the employer; he may often meet with discouragement, but depend upon it, if there is a steady determination to do justice between man and man, your endeavours to improve the labourer will not be without its reward. You cannot multiply hands but by kindly treatment, well placed encouragement, and judicious instruction; you may increase the quality of the labour you pay for, so as to enhance its value, and augment the profit you have a right to expect from it as an investment of your money. I say again take Mr. Mein's advice, "Make your farms training schools for the young labourers," and you will not fail to gather round you an improved and improving staff of grateful hearts and willing hands, a blessing to themselves and to those in whose service they are employed.

Calendar of Operations.

DECEMBER.

WEST SUSSEX: *Dec.* 20.—We have had now a week of more severe weather than has been on the south coast for many years. The frost during the greater part of last week was to the extent of from 12° to 20°, and yesterday morning, from 3 to 10 A.M., we had a fall of 8 or 9 inches of snow, so that the earth is now sealed to us, and the roads being heavy or almost impassible, all work is nearly at a stand with us, only that the live stock take a little more trouble to provide food, &c., for; and now we find the Mangel Wurzel heap useful both for cattle and sheep, but so no doubt would Swedes had they been stored; and it would be well when the extent of Mangel Wurzel is small to store a few Swedes to meet such a time as this, and then the danger (if any) of changing such as ewes heavy in lamb from Turnips to Mangel Wurzel for a short time would be avoided. But I fear this has altogether been an unfortunate year in the preserving of Mangel Wurzel; first the frost came upon us too soon, and damaged a great many in some places, and though we thought ours safe at first we found that the long ones suffered a little, as from their habit of growth their tops did not protect them so well, and now I fear that we reckoned without our host when we covered them up, as the frost has got deeper than we counted on, and we may find that it will be better to use them as quickly as possible, and the ewes and lambs will have a share as well as the cattle. Wheat-sowing was over during last month; that sown late has lain long in the ground, and some of it is not up yet, and other work that ought to be done in the autumn is rather behind, so that a little longer of this weather will leave enough to do by and by. Our cattle and root show has passed over very creditably, and we can report decided improvement. There was beef that would not have disgraced Baker Street Show, and roots that in size and quality would have been hard to beat, and it is likely that more interest will be taken in these shows than has hitherto been; in fact, they have been looked on very coldly by many of those who ought to have helped them. The Down ewes have now begun lambing, being rather more forward this year. Our market is quiet as regards Wheat, but Barley readily finds sale. The yield of Wheat is said not to be good. Wages are in some cases down 1*s.*; from 11*s.* to 10*s.* for common labourers, and 13*s.* to 12*s.* for carters and shepherds. But there are hardly any hands out of work, and they will be scarce when the busy season comes; and those that would wish to have hands when they require them had perhaps better have an extra one when they do not so much want them. *G. S.*

LAMMERMUIR SHEEP FARM: *Dec* 19.—We are in the midst of a snow storm, which, after nearly a week's intense frost, set in on Saturday last; two days' fall has covered the ground with about 18 inches of loose dry snow, and though there has been no fresh fall to-day, we dread the wind rising, as with such an amount of material the drift would be great. All our hirsels are gathered into the shelters, and we know the value of a good plantation at present. We have had some difficulty in getting them together, as driving sheep in such a depth of snow is no easy matter. But once under the "bield" of the plantation (if there is a good haystack beside it), they are safe. Nothing breaks the force of the driving snow like trees. In planting for shelter on hill farms, attention should be paid to place the plantation in the neighbourhood of rough ground, that is, ground covered with strong Heather, Whin, or Broom, in order that in deep snow the sheep may (as our shepherds phrase it), "stand out to work" and do something for their meat. Should the storm continue we shall in a few days be feeding almost entirely from the stack. Hill stock are only in middling condition to face the winter on, as the frost set in uncommonly early, killing the Grass when our sheep were just beginning to do well on the autumn quickness, after an unusually dry and scanty summer. This remark does not however apply to soft growthy pastures, for this was quite a summer for such grounds as have generally too much moisture. *J. L. B.*

Notices to Correspondents.

FATTING LAMBS: *W. W.* They are weaned lambs, we suppose. You may suppose that they would be tolerably fat by 4 or 5 months of good feeding, and that their daily consumption would be from 30 to 36 lbs. of green food between them. Your 2 tons of Carrots are thus about enough for your purpose, but they will be the better of a little hay with them. Feed them under shelter, giving them access to a pasture if you can.

GRASS SEED MACHINE: *Oatlands.* Almost every maker of sowing machines makes a long (16 feet) and slender one-wheeled barrow, costing 3*l.* 3*s.*, for sowing Clover and Grass seeds.

LEAVES: *E. F.* If you use them as litter and afterwards repeatedly turn the dung heap, the manure mingled with them will act as a ferment and rot them.

MARL: *B N F* has a poor sandy farm of about 250 acres, with no marl near; but about 2½ miles distant he has another farm, for the most part a stiff retentive clay. To cart the clay to the sand farm would be too expensive to accomplish, but would it answer his purpose to burn the clay, which would greatly reduce its weight and bulk; and would it do so sufficiently to make it pay for the cartage? [Some clays might be worth the burning and cartage, others would not. An analysis might answer the question. The probability is that the cost of cartage would be better spent on purchased manure and management.]

RUNTS: *C T.* Another word for steer, applied to Welsh and Scotch cattle.

NEW AND CHOICE PLANTS.

JOHN STANDISH, in offering the following Plants, can assure his customers that they are now in fine condition for sending out:—

MYOSOTIDIUM NOBILE, or Antarctic Forget-Me-Not, each 31*s.* 6*d.*—This plant, from the Chatham Islands, is one of the most remarkable that has been introduced for some years, being totally distinct from all others. It has large thick leaves, 8 or 9 inches across, of a dark glossy green, and sends up magnificent trusses of bloom of the most beautiful blue and white, similar to a Forget-me-not, but of a giant form. A Drawing of it is published in Curtis's "Botanical Magazine" for September. A description taken from the above is also published in the *Gardeners' Chronicle* of Sept. 17, 1859, wherein Dr. Lindley says:—"This is the hand-some perennial provisionally named Cynoglossum nobile by Dr Hooker in our last year's Volume, page 240. It is quite deserving all the encomiums that have been passed upon it."

GLADIOLI, named varieties, from the choicest and largest collection in England, 6*d.* to 5*s.* each. Also a fine lot of bulbs raised from seeds saved from the best flowers, all of which will flower in the summer of 1860. 7*s.* 6*d.* per dozen, or 50*s.* per 100. These are strongly recommended.

RHODODENDRON LIMBATUM.—Pale blush, bordered with bright crimson. This has received several medals at the exhibitions for Rhododendrons, being very distinct and one of the most free flowering. 21*s.* each.

RHODODENDRON MINNIE.—White, very large blotch of chocolate-coloured spots, a fine flower, and remains a very long time in bloom. This is one of the most curiously marked Rhododendrons amongst all the white; it bears a noble truss of blooms, which cannot fail to be admired. 21*s.* and 31*s.* 6*d.* each. Selections can be made from one of the finest collections in Europe.

PHLOX MRS. STANDISH.—The purest white, with a large red eye, 5*s.* each. Also a large collection of the finest kinds which J. S. has shown during the last summer and in every case received the First Prize. Plants from 1*s.* to 2*s.* 6*d.* each.

A CATALOGUE containing a full description of the best Hardy Plants in cultivation will be forwarded on application to The Royal Nursery, Bagshot.

A. VERSCHAFFELT, NURSERYMAN, Ghent, Belgium, begs to offer:—

	£	s.	d.
NEW PEAR GENERAL TOTLEBEN	0	8	0
RHODODENDRON BYLSIANUM, strong plants, quite hardy	0	8	0
ROSE HYBRIDE REMONTANT IMPERATRICE EUGENIE, now fine white	0	3	6
LILIUM GIGANTEUM, flowering bulbs for 1860 ..	2	0	0

WANTED IMMEDIATELY, 10,000 2-year Transplanted THORNS; 10,000 2-year Transplanted BEECH; 30,000 2-year Seedling BEECH; and 10,000 3-year Seedling BEECH. Any one having all or any of the above to dispose of is requested to send lowest price to G. FROST, Nurseryman, Brushford, Tiverton.

NEW STRAWBERRY. WIZARD OF THE NORTH.

DANIEL ROBERTSON, LINSIDE NURSERY, Paisley, continues to supply the above named superb variety at 63*s.* per 100, or 9*s.* per dozen, the usual discount to the trade. Having a large stock of the Wizard, Nurserymen and Market Gardeners ordering in quantity will be dealt with on favourable terms. As much imposition is being practised in the name of the Wizard, purchasers are warned that they ought to see the drawing of it in the hands of any one from whom they buy plants, as all parties selling the genuine variety will be furnished with a drawing. For description, &c., see former advertisements.

D. R. cannot supply any more plants of Nonsuch this season. DANIEL ROBERTSON, Linside Nursery, Paisley, N.B.—Dec. 31.

JOHN GRIGOR AND CO., Nurseries, Forres, Scotland, have for sale several millions strong one-year-Seedling LARCHES, one and two year Seedling true native Highland Scotch PINE, DEODARS, &c. J. G. & Co. have received the numerous premiums awarded by the Highland and Agricultural Society of Scotland for the cultivation of the true native Highland Scotch Fir, and their present stock is raised from seed collected in the celebrated native forests of Strathspey.

PRICED LISTS on application; and the Trade supplied at the wholesale rates.

TANSLEY NURSERY, NEAR MATLOCK,
TO GENTLEMEN PLANTING AND THE TRADE.

J. SMITH, SEN., begs to offer his STOCK OF TREES AND SHRUBS, of various sizes, and in addition to his general stock of the leading kinds, he has this season to offer an Extra Stock of many hundred thousands of fine Larches, Scotch Firs, and Highland Pines; a large quantity of Evergreens, Privets, Mahonia Aquifolium, and other plants for planting under cover. Many things are grown in large quantities, and will be sold on advantageous terms to the Trade and gentlemen requiring large lots.

CATALOGUES sent free on application. The Nurseries are on the Mansfield and Nottingham roads, and 2 miles from Matlock Bridge Station on the Midland Railway.

IMPORTANT TO PLANTERS WHERE AN IMMEDIATE EFFECT IS REQUIRED.

CHARLES CLARKE, NURSERYMAN, &c., 179, Windmill Street, Gravesend, has a splendid assortment of large Evergreens on hand, as Sweet Bays, Portugal and Plain Laurels, Yews, Laurustinus, Arbor-vitæs, Evergreen Oaks, &c., all from 5 to 7 feet, very bushy, and warranted kept removed. Also large Standard Roses; Ornamental Forest Trees, 12 to 15 feet, all varieties; several thousands of Ash, Chesnut, and Quick, very strong; large Gooseberry and Currant Trees; Standard Fruit Trees, straight and handsome; Trained Fruit Trees, not to be surpassed; large Irish Ivies; a quantity of Plum-leaf Willow, &c Terms cash, or a reference from unknown correspondents.

IMPORTANT TO PLANTERS.

ROBERT PAIN respectfully calls the attention of intending planters to an inspection of his very superior stock of PORTUGAL and COMMON LAURELS and YEWS, from 4 to 7 feet high, and as much through, fine specimens, and in the best possible condition for removal, being grown expressly for immediate effect. Standard Apples for orchards, strong and well grown tall stems, so that cattle may not reach them. Peaches, Nectarines, and Apricots, Rider, half-standard, and dwarf-trained with extra large sized heads. Drooping Limes, Elms, Ash, and Willows in variety on tall stems.

Scarlet, Double White, and Pink Hawthorn, of large size; Scotch Spruce, Weymouth Larch, and other Firs, from 4 to 10 feet in height; Chesnut, Birch, Poplars, Elm, Mountain Ash, Laburnum, Walnut, fine specimens, 9 to 12 feet high.

There is every facility for conveyance, as the Nursery is convenient to the Great Western Railway Uxbridge Station.
Uxbridge Nursery, Middlesex.

FOOD FOR WINTER STOCK.

SAMUELSON'S celebrated TURNIP CUTTERS, PULPERS, CHAFF-CUTTERS, OIL-CAKE BREAKERS, CORN and MALT-CRUSHING MILLS, all with the latest patented improvements, may be obtained through any Ironmonger or Implement Dealer in the kingdom, or (carriage paid to the nearest station to the purchaser) direct from the manufactory.—Britannia Works, Banbury, Oxon; or London Warehouse, 76, Cannon Street West, City, E.C.
Catalogues sent free on application.

GLASS FOR ORCHARD HOUSES & CONSERVATORIES.

JAMES PHILLIPS AND CO. beg to submit their prices of GLASS for the present month.

SHEET GLASS, in Crates, of superior quality, 16 oz. to the foot.

	Best.	Seconds.	Thirds.	Fourths.
	5¾*d.*	3¾*d.*	2¾*d.*	2¼*d.*
21 oz	Best. 7¼*d.*	Seconds. 5*d.*	Thirds. 3¾*d.*	Fourths. 3¼*d.*

Packed in 200 feet cases, 16 oz. £2 2 0
Packed in 300 feet cases, 16 oz. 3 0 0
Packed in 200 feet cases, 21 oz. 2 18 0

ORCHARD HOUSE SIZES, as supplied by us to Mr. Rivers.

20 in. by 12 in.		16 oz.	21 oz.
20 in. by 13 in.	Common	14*s.* 0*d.* ..	£1 1*s.*
20 in. by 14 in.	Superior do.	16 6 ..	1 5
20 in. by 15 in.	English Glass	18 0 ..	1 9

Boxes included and not returnable.

SMALL SQUARES, per 100 feet box. *s. d.*

6 by 4	6½ by 4½	7 by 5	7½ by 5½ }	11 6
8 „ 6	8½ „ 6½	9 „ 7	9½ „ 7½ }	
10 „ 8	10½ „ 8½ ..	.. ..	.. ..	12 6

HORTICULTURAL GLASS, in Squares, cut to specific sizes.

1 oz. per foot, from 2*d.* to 3½*d.*		26 oz. per foot, from 3*d.* to 7½*d.*	
21 oz.	„ „ 3 „ 5	32 oz. „ „ 4 „ 9½	

Special prices quoted for large or specific quantities.

AGENTS FOR
HARTLEY'S PATENT ROUGH PLATE GLASS.
PAINTS.
Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, &c.

JAMES PHILLIPS AND CO.,
180, Bishopsgate St. Without. London, E.C.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz SHEET GLASS of British Manufacture at prices varying from 2*d.* to 3*d.* per square foot for the usual sizes required, many thousands of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES, and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London, W.

See *Gardeners' Chronicle* first Saturday in each month.

HORTICULTURAL GLASS—JUNE TARIFF.

THOMAS MILLINGTON'S reduced Tariff of GLASS, &c.

6 by 4, 7 by 5, 8 by 6, 9 by 7 } 16 oz. to the foot, 11*s.* 6*d*
6½ by 4½, 7½ by 5½, 8½ by 6½, 9½ by 7½ } per 100 feet.

In 100 boxes,—4ths quality, 12*s.* 6*d.*; 3ds do., 14*s.* 4*d.*

10 by 8, 12 by 9, 12½ by 10½, 14½ by 10½, 13 by 11
10½ by 8½, 12½ by 9½, 13 by 10, 15 by 10, 13½ by 11½
11 by 9, 13 by 9, 13½ by 10½, 12 by 11, 14 by 11
11½ by 9½, 12 by 10, 14 by 10, 12½ by 11½

20 by 12	per 100 feet	16 oz. 21 oz.
20 by 13	Common ..	16*s.* .. 24*s.*
20 by 14	Superior .	18*s.* .. 27*s.*
20 by 15		

All Boxes included.

Orchard House sizes as supplied to Mr. Rivers.

Hartley's improved Rough Plate Glass from ⅛ to ¾ in thickness.

Coloured Glass in great variety, at 9*d.* and 1*s.* per foot.

Paints, Genuine White Lead, Linseed Oil, Boiled Oil, Turpentine, Putty, Colours, Varnishes, Brushes, Lamp Glasses, &c.

87, Bishopsgate Street Without, E.C., same side as Eastern Counties Railway.

GLAZIERS' DIAMONDS FOR CUTTING HORTICULTURAL and other GLASS, to be had of the Wholesale Manufacturer, JOHN EDWARDS, 20, Sharp's Alley, West Smithfield, London, E.C. Prices from 10*s.* to 27*s.* 6*d.*

GARDEN LABEL.—Neat, durable, and well-executed LABELS, painted and lettered in oil paint, and varnished, equal to enamel. A specimen sent on the receipt of 3 Postage stamps.—Address F. H. LYDBURY, North Shropshire.

DESIGNS FOR FLOWER BEDS AND GARDENS.—In consequence of numerous applications J. MARSHALL, 2, Goldsmith Street, Nottingham, has been induced to prepare another set of Designs. They comprise upwards of 80, diversified in style, and will be forwarded to any address on receipt of 24 postage stamps.

MICROSCOPES.

JOSEPH AMADIO'S Improved Compound MICROSCOPE, 2*l.* 2*s.*; Students', 3*l.* 13*s.* 6*d.*

"Both these are from Amadio, of Throgmorton Street, and are excellent of their kind, the more expensive one especially."—*Household Words*, No. 345.

A large Assortment of Achromatic Microscopes.

Just published, 2d ed., an Illustrated Catalogue, with the names of 1500 Microscopic objects, free for 6 stamps

HOT-WATER PIPES at wholesale prices, with Elbows, Syphons, Tee Pipes, and every other connection. Wrought and cast iron Boilers, Saddle, Conical, Cylinder, and Elliptic, from 24*s.* each. Boilers and Iron Stands to use without brickwork. Valves from 12*s.* each. Coil Boxes, Furnace Doors, Furnace Bars, Supply Cisterns, and Builders' Castings of every description in stock, at Mr. LYNCH WHITE'S Iron Wharf, Upper Ground Street, Blackfriars Bridge, London, S.

TO THE NOBILITY, GENTRY, AND HORTICULTURISTS.

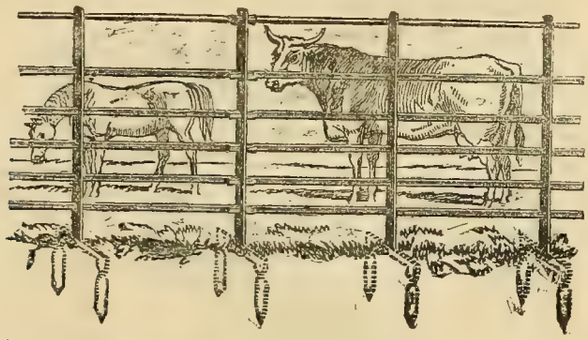
H. McCALLA (late principal Draughtsman to Messrs. Weeks & Co.), CIVIL ENGINEER and FARM ARCHITECT begs to inform the above that the Horticultural Buildings being confined to so few, exorbitant prices are charged; that he prepares Working Drawings and Specifications, so that they can have their own constructed by any country carpenter, at 1*s.* 6*d.* per foot super, or upon their own estates at 1*s.* 4*d.* per foot. Plans also upon the same rule for erecting Hot Water Apparatus. Plans for all kinds of Farm Buildings, Homesteads, Labourers' Cottages, Laying out of Estates, Drainage. Plans &c., prepared for all the above Works and submitted to competition.—Office: 7 Upper Cheyne Row, King's Road, Chelsea. S.W.

HORTICULTURAL BUILDINGS AND HEATING BY HOT WATER.

JOHN R. PEILL, 17, New Park St., Southwark, S.E., Manufacturer of every description of Buildings for Horticultural purposes, and Inventor of the Improved Conical Boiler for heating the same, is prepared to undertake works of any magnitude, and refers among others to the celebrated range of FORCING HOUSES at HER MAJESTY'S GARDENS, FROGMORE, and at SIR ROBERT PEEL'S, DRAYTON MANOR, constructed under the superintendence of his Manager, Mr. JOHN JONES; and also to his BOILERS fixed at the CRYSTAL PALACE, the ROYAL BOTANIC GARDENS, REGENT'S PARK, and KEW, and at several hundreds of the Nobility's seats, Public Establishments, and Manufactories in London and the provinces. J. R. P. also manufactures every description of Iron Roofs, Iron Houses, and Iron Fencing, plain and ornamental. Strong Iron Hurdles for Sheep (6 ft. long, 3 ft. high, with 5 bars), 4*s.* 3*d.* each; ditto for cattle, 4*s.* 9*d.* each. Prices and other particulars forwarded on receipt of one postage stamp.

HILL & SMITH'S

PATENT CONTINUOUS PARK FENCE.



THIS FENCE is made in a variety of sizes suitable for any situation, and is much superior in appearance to hurdle fences, than which it is also cheaper and stronger. It has obtained upon two occasions the Silver Medal of the Royal Agricultural Society of England, besides many other premiums. Many miles have been erected by HILL & SMITH on the London and North Western Railway, between London and Bletchly Stations, and it has been erected at the Parks of upwards of 500 Noblemen and Gentlemen in England; that at Welbeck Abbey, the seat of his Grace the Duke of Portland, being entirely surrounded with it as a fence against Deer nearly 10 miles in extent. The patent principle is also applied to Iron Hurdles, whereby the strength is much increased and their cost reduced. ILLUSTRATED PRICED CATALOGUES will be sent on application to HILL & SMITH, Brierly Hill Iron Works, near Dudley, who are the inventors and sole manufacturers, or to their London Office, 40, Broad Street Buildings, E.C., where specimens may be seen, or to Mr. B. SAMUELSON'S, 76, Cannon Street West, London, E.C.

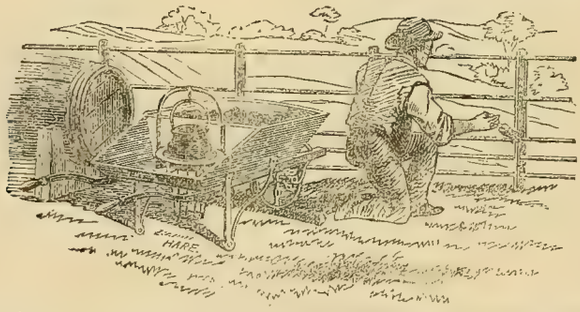
OIL PAINT NO LONGER NECESSARY.

HILL & SMITH'S

Black Varnish for preserving Iron Work, Wood, or Stone Work.

THIS varnish is an excellent substitute for oil paint on all out-door work, and not only saves two-thirds the expense of an ordinary quality of oil paint, but has the great advantage that it may be applied by an ordinary labourer in a cold state, and that no mixing or thinning is required. It is used in the grounds at Windsor Castle, Kew Gardens, and all the Royal Parks in London, and at the seats of many of the Nobility and Gentry of the United Kingdom. It is also largely exported. Testimonials from Noblemen and Gentlemen who regularly use it will be forwarded gratis on application. Sold in casks of about 30 gallons each, 1*s.* 6*d.* per gallon, or 1*s.* 8*d.* per gallon, carriage paid to any Railway Station.

THE WROUGHT IRON HEATING BARROW



shown in the above engraving is a very useful article for applying the varnish or for heating gas tar. The front compartment holds tools, fuel, &c. and the back compartment carries an iron three gallon pot with fire grate underneath.

Price £3 or £3 3s. Carriage paid.

HILL AND SMITH, BRIERLY HILL IRON WORKS, NEAR DUDLEY.

LONDON OFFICE: 40 BROAD STREET BUILDINGS, E.C.

ST. PANCRAS IRON WORKS,

OLD ST. PANCRAS ROAD, N.W.

IRON HURDLES, FENCING, AND GATES.

THE PROPRIETORS OF THE ST. PANCRAS IRON WORKS, OLD ST. PANCRAS ROAD, LONDON, WERE AWARDED THE

SILVER MEDAL of the Royal Agricultural Society for their IRON HURDLES & GATES

which, by their peculiar construction, are more than twice as strong and durable as those in ordinary use.

Lists per post on application. Gates from 30*s.* to 500*l.*

The Hurdles can be seen in process of Manufacture at the Works.

GAME WIRE NETTING.

Professor Varnell's Enamelled and Wrought-iron Stable Fittings.

These Patent Mangers and Stable Fittings obtained the Commendation and the Silver Medal of the Royal Agricultural Society of England and the Royal Agricultural Society of Ireland, are adopted by the Royal Veterinary College, and Professor Spooner of that Institution states that they should be used by all who value the health and comfort of their horses. They can be had plain, galvanised, or enamelled.

A Show Room is devoted entirely to every description of Stable Furniture, and full-sized stalls and loose boxes are erected for inspection at St. Pancras Iron Works.

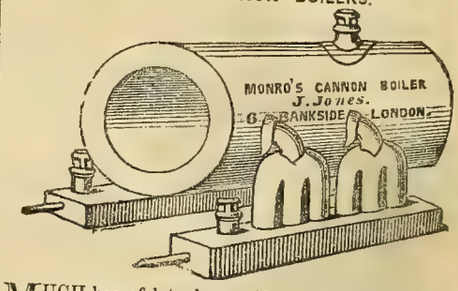
ADDRESS—THE MANAGERS,

ST. PANCRAS IRON WORKS, OLD ST. PANCRAS ROAD, LONDON, N.W.,

OPPOSITE OLD ST. PANCRAS CHURCH.

25,500 NEW ARCHANGEL MATS.—Prices, &c., on application to JOHN MORISON, 25, Norton Folgate, N.E.

MONRO'S CANNON BOILERS.



MUCH has of late been said about BOILERS FOR HEATING BY HOT WATER, but these Boilers have now proved themselves to be the best at present invented. They are adapted for Heating every description of Building, and are made of various sizes. The price of the

24-inch Cast Iron is	..	..	..	£5 10*s.* each.
24-inch Wrought Iron is	..	..	..	6 10 ,,
36-inch Wrought Iron is	..	..	..	8 10 ,,
48-inch Wrought Iron is	..	..	..	12 0 ,,

References to Gentlemen and Nurserymen where these Boilers are now at work. The Cannon Boilers are now kept in stock, and are to be had only of J. JONES, 6, Bankside, S.E. Also, every description of Saddle and Cylinder Boilers. Hot-water Pipes and Connections at prices lower than those of any other house in London. Estimates for Hot-water Apparatus erected complete in any part of the country, and an Illustrated Catalogue on application to J. JONES, 6, Bankside, Southwark, London, S.E.

VOKINS AND HURD, Jubilee Place, King's Road, Chelsea, S.W.



HORTICULTURAL BUILDERS and HOT-WATER APPARATUS MANUFACTURERS. Estimates forwarded on the shortest notice. BOILERS of all sizes on sale; also small CONSERVATORIES and GREENHOUSES, Heated by GAS; HOTWATER APPARATUS, from a single burner, upon quite a different plan to the Common Gas Stove, which is so injurious to plants. For prices &c. apply as above.

IMPROVEMENTS IN HEATING, &c.

MUSGRAVE'S PATENT SLOW-COMBUSTION STOVE, for Warming Public Buildings, Hall, Shops, Conservatories, Factories, Drying Rooms, &c. Will burn in Churches from Saturday till Sunday evening, avoiding attention during the hours of worship. In Halls will burn day and night for weeks, with little care. Capable of warming a large apartment for 24 hours, at a cost of 3*d.*; and deserving of special attention, because of its safety, healthfulness, durability, and extreme simplicity. This Stove is the nearest approach to warming by hot water.



MUSGRAVE'S PATENT STABLE FITTINGS AND HARMLESS LOOSE BOXES have obtained the award of a large Council Medal from the R. I. A. Society for the following improvements:—1st, The Horse cannot injure himself or others in the same stable if he breaks loose in his stall. 2d, He cannot waste the hay. 3d, He can have cut or uncut hay at pleasure. 4th, He has clean water always before him. 5th, A pure and wholesome atmosphere is secured. 6th, The whole fittings are stronger than usual, without increase in price, and there is no risk of infection.



The Loose Box is really what its name denotes, and the most spirited Horse may be turned into it without danger.

MUSGRAVE'S PATENT IRON COW-HOUSE FITTINGS, as approved by the Board of Works, adopted in the Ulster Model Farm, and by many of the most eminent Stock Breeders in the Kingdom, are made wholly of iron, very durable, cleanly, and attractive in appearance. The fodder is always fresh, being freely exposed to the air, removed from the breath of the animal, and separated from the roots or damp food. The range of Troughs can be quickly filled with water for the use of the Cows, or for washing out in case of epidemic, and the cost is very moderate.



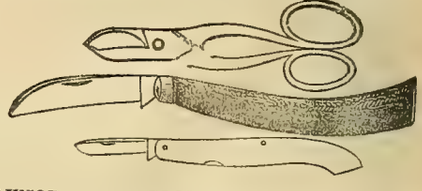
These inventions being distinguished for strength, simplicity, and practical usefulness will repay public inquiry.

MUSGRAVE BROTHERS are also Makers of Wire Fencing, Hurdles, Field and Entrance Gates, Corn Rick Stands, Conservatories, Hot-water Apparatus, Verandahs, Rural Bridges, &c.; and their works being favourably placed for cheap labour and materials, they can offer corresponding advantages in price.

MUSGRAVE'S Patent Field Gates have gained the 1st Prize from the R. I. A. Society for strength, durability, and cheapness.

For particulars address MUSGRAVE BROTHERS, Ann Street Iron Works, Belfast.

PAXTON WORKS, SHEFFIELD, ESTABLISHED 1738.

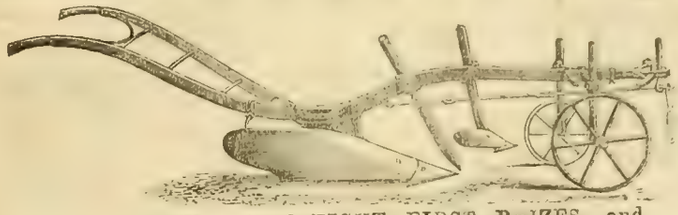


SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.—Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

BEDFORDSHIRE AGRICULTURAL SOCIETY, 1859.

J. AND F. HOWARD have much pleasure in informing the Public that at the Ploughing Matches of the above Society, just concluded,

HOWARD'S CHAMPION PLOUGH



Gained SEVEN out of EIGHT FIRST PRIZES, and SEVEN out of EIGHT SECOND PRIZES,

Thereby more than ever sustaining its position at home, while, at the recent Meetings of the Royal Agricultural Society of England and the Highland and Agricultural Society of Scotland, it also gained the

Two Chief Prizes as the Best Plough for General Purposes.

CATALOGUES, with full particulars, sent post free on application to

J. & F. HOWARD, BRITANNIA IRON WORKS, BEDFORD.

WARNER'S PATENT VIBRATING STANDARD PUMPS.

PATENT CAST-IRON PUMPS for Farms, Cottages, Stable Yards, &c., where the Well does not exceed 28 feet in depth; fitted with WARNER'S Patent Metal Bucket and Valve, which cannot clog in action. These Pumps can be made right-handed, left-handed, or with handle opposite the nose by removing four screws only.



Diameter of Barrel.	Height.	£. s. d.
2½ in. short	1 ft. 7 in.	1 5 0
2½ ,, long	3 ,,	1 10 0
3 ,,	ditto 6 ,,	2 4 0
3½ ,,	ditto 6 ,,	2 9 0
4 ,,	ditto 6 ,,	2 18 0
2½ ,,	short, with 15 feet of Lead Pipe attached, ready for fixing	2 10 0
2½ in. long	ditto ditto	2 14 0

Fitted for lead, gutta percha or cast iron flanged pipe as required.

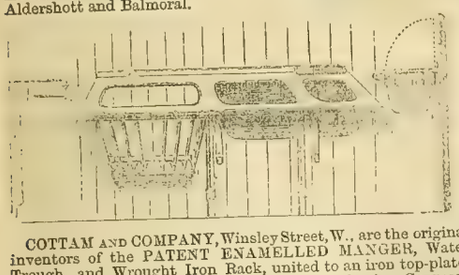
The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.

May be obtained of any Ironmonger or Plumber in Town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin Street, London, E.C

Every description of Machinery for Raising Water by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application

COTTAM'S PATENT INVENTIONS FOR STABLE REQUISITES,

awarded a Prize at the Paris Exhibition, patronised by the English and French Governments, as well as by the principal Nobility, Gentry, and Hunting Establishments in the kingdom. In use at her Majesty's Stables, Aldershott and Balmoral.



COTTAM AND COMPANY, Winsley Street, W., are the original inventors of the PATENT ENAMELLED MANGER, Water Trough, and Wrought Iron Rack, united to an iron top-plate, and forming one complete and useful fixture, having COTTAM'S patent noiseless halter guide and collar rein attached, which is taken to the back of the manger, and works with ease and freedom up or down the guide bar.

COTTAM'S NEW PATENT SEED-BOX, an important addition to the above fittings, being simple in construction, light, and durable, promotes cleanliness, and is economical in its results.

COTTAM'S PATENT PERMANENT ATTACHED DROP COVER, for the above, is a most essential addition to their fittings; it is never in the way; can be placed and replaced in an instant; while its cheapness, simplicity, and utility in keeping the contents of the troughs clean, and regulating the quantity to be taken, is quite sufficient to insure its use.



COTTAM'S PATENT SADDLE and HARNESS BRACKET combined, can be used with great advantage where space is an object, as it can be turned up out of the way when not in use.

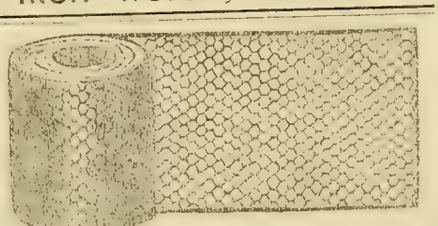
COTTAM'S IMPROVED WROUGHT IRON VENTILATING BRACKET preserves the shape and allows a free admission of air to the under parts of the saddle.

COTTAM'S IMPROVED SURFACE CUTTER, with perforated moveable cover, the use of which prevents accidents, and can be easily cleaned out.

COTTAM'S CAST-IRON SANITARY TRAP, from its improved construction, gives a full water passage, and does not allow any smell to ascend from the drain.

PATENT LOOSE-BOX FITTINGS, and every article for the harness-room and stable, kept in stock, plain, galvanised, and enamelled. Iron gates, fencing, hurdles, &c.

The New Illustrated Catalogue and Estimates, gratis, upon application to COTTAM and COMPANY, 2, Winsley Street Oxford Street, W. (opposite the Pantheon).



BARNARD, BISHOP, AND BARNARD, Market Place, Norwich, in consequence of improvements in their machinery for the manufacture of the above article, have been enabled to make a great reduction in the prices.

	Galvanised.	Japanned Iron.
2-inch mesh, 24 inches wide	5d. per yd.	4d. per yd.
2-inch ,, strong do.	6 ,,	4¾ ,,
2-inch ,, intermediate, do.	7 ,,	5½ ,,
2-inch ,, extra strong, do.	9½ ,,	7½ ,,
1½-inch ,, 24 inches wide	5½ ,,	4½ ,,
1½-inch ,, strong, do.	6½ ,,	5¼ ,,
1½-inch ,, intermediate, do.	7½ ,,	6 ,,
1½-inch ,, extra strong, do.	10 ,,	8 ,,

All the above kinds can be made of any width (under 8 feet) at proportionate prices. If the upper half is of a coarser mesh than the lower, it will reduce the prices about one-fifth.

Strong Galvanised Poultry Netting, 8½d. per yard, 3 feet wide Galvanised Sparrow-proof Netting for Pheasantries, 2½d. per square foot. Delivered free of expense in London, Peterborough, Hull, or Newcastle. Manufacturers of Improved Strained Wire Cattle and Deer Fencing, Iron Hurdles, &c.

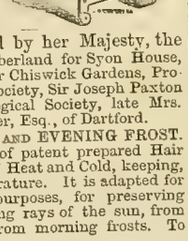
Illustrated Catalogues and Patterns forwarded by post.

GREENHOUSES.

TO BE SOLD, two excellent GREENHOUSES, suitable either for Vineries, Plant-houses, or Forcing-houses. Dimensions, 38 feet by 10 feet, and 22 feet by 9 feet.—Apply to CHARLES SHARPE & Co., Nurseries, Sleaford.

BRADFORD'S PATENT WASHING MACHINE.

SIMPLICITY AND WONDERFUL EFFICIENCY.



"I very gratefully acknowledge the extraordinary patronage I have received from all parts of England, Ireland, and Scotland, and which has very far exceeded my most sanguine expectations."—THOMAS BRADFORD, Patentee, Cathedral Steps, Manchester. London Office: 63, Fleet Street, E.C.

N.B. My Machines always have, and always will be sent on approval, if desired, before payment. Description and Price free by post.

"FRIGI DOMO."—Patronised by her Majesty,

the Queen, the Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, and —Collier, Esq., of Dartford.

PROTECTION FROM THE MORNING AND EVENING FROST.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and, floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths.

Two yards wide, 1s. 6d. per yard run.
Four, 3s. per yard; also,
An improved make three yards wide, 2s. 6d. per yard run.

ELISHA THOMAS ARCHER, whole and sole manufacturer, 7, Trinity Lane, Cannon St., City, E.C., and of all Nurserymen and Seedsmen throughout the kingdom. "It is much cheaper than mats as a covering."

PATENT GUTTA PERCHA SOLES.—

IMPORTANT TO GARDENERS.—The Gutta Percha Company have the pleasure to acknowledge the receipt of the following letter from G. GLENNY, Esq., the celebrated Florist:—

"420, Strand, London.

"Gentlemen,—I have worn Gutta Percha Soles and Heels these two years, and being so much in a garden as I necessarily am in all weathers, and with the ground in all states, I would on no account be without them. As a matter of economy I would recommend Gardeners to use them, for they may repair the worn part at all times by warming the material at the fire, and pressing it from the thick parts to the worn parts, as easily as if it were so much dough. I think it the duty of all persons who must occasionally wet their feet to adopt a material that completely defies damp. Many a gardener would escape colds and rheumatism by the use of Gutta Percha Soles.

"Your obedient servant, G. GLENNY."

Every variety of Gutta Percha articles, such as Mill Bands, Tubing, Soles, Sheet, Pump Buckets, Fire Buckets, Bosses, Union Joints, Flasks, Bottles, Bowls, Chamber Vessels, Toilet Trays, Sponge Bags, Curtain Rings, Galvanic Batteries, Talbotype Trays, &c., manufactured by the Gutta Percha Company, and sold by their wholesale dealers in town or Country.—The Gutta Percha Company, Patentees, 18, Wharf Road, City Road, E.C., London.

1859. TOAST FOR CHRISTMAS.—"THE WELCOME GUEST."

CHRISTMAS NUMBER OF THE WELCOME GUEST.

ALL THE WELCOME GUESTS AT HAWLEY GRANGE. With some particulars of the Unwelcome Guest, and his Abominable Behaviour on the occasion.

I.—OF THE GRANGE, ITS MASTER, AND ITS GUESTS. Illustrated by Percival Skelton.
II.—THE LEGAL GENTLEMAN'S STORY. By Thomas Archer. Illustrated by H. G. Hine.
III.—THE LITERARY GENTLEMAN'S STORY. By F. Greenwood. Illustrated by "Phiz."
IV.—THE NAVAL GENTLEMAN'S STORY. By Robert B. Brough. Illustrated by Julian Portch.
V.—A CHRISTMAS EVERGREEN'S STORY. By Gilbert Percy. Illustrated by T. R. Macquoid
VI.—THE SHORT WAISTED LADY'S STORY. By Augustus Mayhew. Illustrated by "Phiz."
VII.—THE UNWELCOME GUEST'S STORY. By Robt. B. Brough.

London: HOULSTON & WRIGHT, 65, Paternoster Row, E.C.

Just out, crown 8vo, price 3s. 6d., cloth, gilt, lettered,

THE MASTER-KEY TO PUBLIC OFFICES:

and CANDIDATE'S COMPLETE INSTRUCTOR.

Fully showing:

1. WHAT PLACES TO SEEK.
2. WHAT STEPS TO TAKE.
3. WHO ARE THE PATRONS.
4. WHAT ARE THE EXAMINATIONS.
5. THE AGES, AND QUALIFICATIONS REQUIRED.
6. THE SALARIES, RULES OF PROMOTION, CLASSIFICATION, HOURS OF ATTENDANCE, PROSPECTS AND PRIZES IN EACH OFFICE.
7. RETIRING PENSION, &c.
8. EXAMINATION QUESTIONS PUT TO CANDIDATES.—Numerous Specimens.

The whole forming A COMPREHENSIVE HAND BOOK FOR ALL PERSONS DESIROUS TO ENTER ANY DEPARTMENT OF HER MAJESTY'S CIVIL SERVICE.

By JOHN BOULGER, Esq., Barrister-at-Law; Editor of the *Civil Service Gazette*, &c.

London: HOULSTON & WRIGHT, 65, Paternoster Row, E.C.

DEDICATED TO DR. LETHEBY, M.B., Medical Officer for the City of London.

This day, complete in two volumes, price 3s., 6d. each, or bound up as One Volume, 7s., cloth gilt, crown 8vo, 800 engravings,

THE FAMILY DOCTOR: a Complete Dictionary of Domestic Medicine and Household Surgery.

This entirely new Work is written in plain and simple language, so that every one who reads may understand, and know how to apply the information. Never has a more thoroughly useful book been offered to the public. In every house it will relieve anxiety, and save money; in most emergencies it will unerringly tell what to do, and how to do it.

London: HOULSTON & WRIGHT, 65, Paternoster Row.

HANDY HOUSEHOLD BOOKS.—

Above three hundred Newspapers and Reviews concur in recommending the following Books of Reference, not merely as being the best of their class, but also as being most useful, and quite certain to save money, time, and trouble, whenever referred to:

WIFE'S OWN BOOK OF COOKERY, 3s. 6d.
FACTS FOR EVERYBODY, 5s. 6d.
THE FAMILY CYCLOPÆDIA, 3s. 6d.
TREASURES IN NEEDLEWORK, 8s. 6d.
FAMILY FRIEND, COMPLETE IN SIX VOLS., 15s.
PRACTICAL HOUSEWIFE, 2s. 6d.
HOW TO MAKE A HOME AND FEED A FAMILY, 2s. 6d.
TEN THOUSAND WONDERFUL THINGS, TWO VOLS., 7s.

These Works are profusely illustrated with well-executed Woodcuts, and strongly bound.

London: WARD & LOCK, 158, Fleet Street, E.C.

THE CHRISTMAS WEEK.

A X'mas Story. By the Rev. Professor CHRISTMAS. 12mo, price 5s.

JULIAN HOME;

a Tale of College Life. By the Rev. F. W. FARRAR. Crown 8vo, price 10s. 6d.

BRUCE'S TRAVELS IN ABYSSINIA.

Edited by Rev. J. M. CLINGAN, M.A. Illustrated by DOYLE. Square 12mo, price 6s. 6d.

Recently published,

PARK'S TRAVELS IN AFRICA. Illustrated. 3s. 6d.
ERIC: OR, LITTLE BY LITTLE, (4th Edition). 6s. 6d.
THE CASTLE OF OTRANTO. Illustrated. 2s. 6d.
ROBINSON CRUSOE. Illustrated by DOYLE. 5s.
BARON MUNCHAUSEN. Illustrated. 1s. 6d.
GULLIVER'S TRAVELS TO LILLIPUT. Illustrated. 1s. 6d.
PALESTINE, by KITTO. Illustrated. 3s.
SCOTT'S TALES OF A GRANDFATHER. 10s. 6d.

Edinburgh: ADAM & CHARLES BLACK, and all Booksellers.

MOORE'S ALMANACK FOR 1860.

Price 6d. Containing, besides the usual Calendar, a full account of the Eclipses, and other Astronomical Phenomena of the Year; with a great variety of other useful information.

London: Published for the Company of Stationers, by JOSEPH GREENHILL, at their Hall, Ludgate Street, E.C.

NURSERY GROUND.

TO BE LET, WHITTINGTON NURSERY, Upper Holloway, to be entered upon immediately.—For particulars, apply to J. F. MARSON, Esq., Small Pox Hospital, or to Mr. Bunney, Nurseryman, Stratford, Essex, E.

HUCCLECOTE GARDENS, 2½ MILES FROM GLOUCESTER.

TO BE LET, with immediate possession, the above capital walled-in GARDENS, containing about 4 acres with House, Farm-yards, Buildings, Orchard, and Land adjoining, containing in the whole about 16 acres, with Greenhouses, Propagating houses, Vineries, Pits, &c. Extent of glass 5770 feet.—For particulars apply to W. KNOWLES, Auctioneer, St. Mary's Square, Gloucester.

TO NURSERYMEN, GENTLEMEN'S GARDENERS, AND OTHERS.

TO BE DISPOSED OF, owing to the decease of the Proprietor, a compact SUBURBAN NURSERY with Dwelling House, Seed Shop, Propagating and Greenhouses. The grounds are walled in and well stocked with Trained Fruit Trees and other available Stock. As it must be sold, this is an excellent opportunity for persons commencing business.—Address to Mr. HENRY M'PHERSON, 3, Alton Cottages, Milton Road, Stoke Newington, London, N

MONTHLY POULTRY SALE.

MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, W.C., on TUESDAY, January 3, at 12 o'Clock precisely, upwards of 250 lots of choice POULTRY and PIGEONS, consisting of Cochin, Dorkings, Spanish, Brahmas, Game, Bantam, Game Bantams, Hamburghs, Polands, Aylesbury Ducks, &c., from the yards of the Rev. G. Gilbert, Mrs. Fookes, Mrs Stow, Mrs. Pattison, Messrs. Smith, Stretch, Breavington, Craigie, Hill, Brooke, Johnson, and other well-known breeders. Also a few good Pigeons, &c.—May be viewed the morning of Sale, and Catalogues had; if for the country, by inclosing two stamps.

HOTHOUSES FOR THE MILLION.

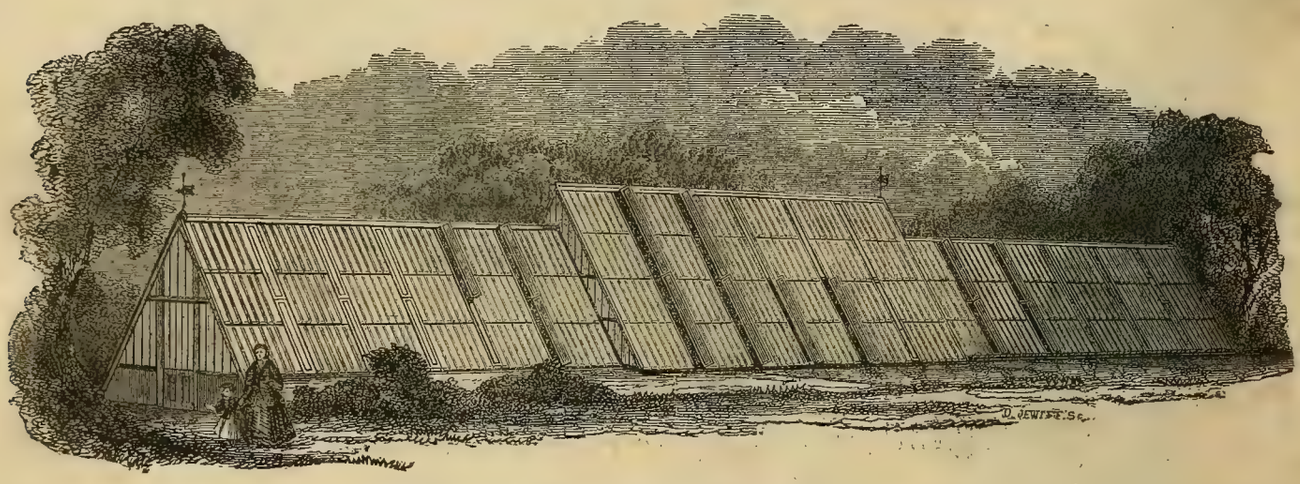
SAMUEL HEREMAN

BEGS TO INFORM THE PUBLIC THAT HE HAS BEEN APPOINTED SOLE AGENT FOR THE MANUFACTURE AND SALE OF

THE NEW PORTABLE AND ECONOMICAL HOTHOUSES,

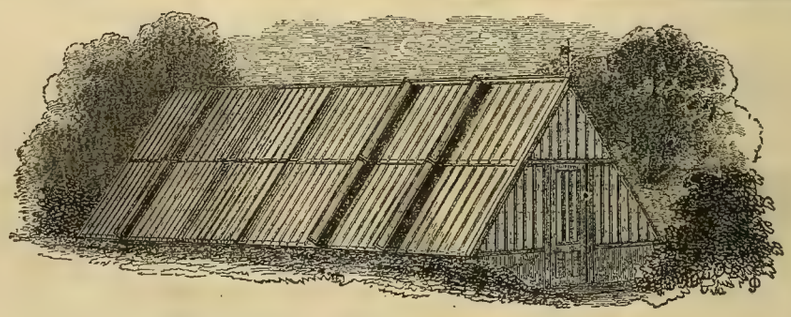
INVENTED AND PATENTED BY

SIR JOSEPH PAXTON, M.P.



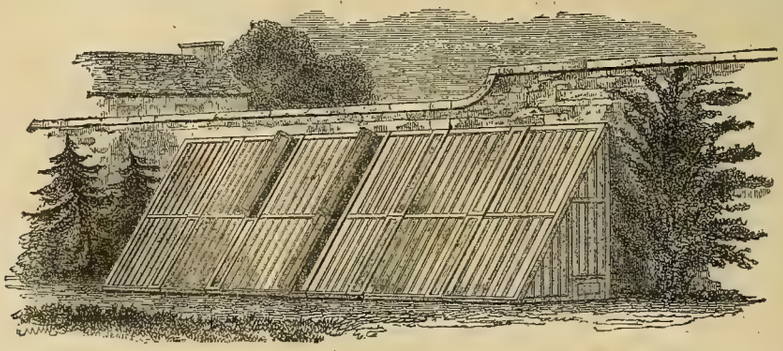
These Buildings are of unparalleled cheapness, and being composed of simple parts can be enlarged, removed, or adapted to any Horticultural purpose by ordinary labourers.

They are calculated for gardens of the highest order, or gentlemen's gardens generally, for market gardens where they may be made to cover any extent of surface, and also for suburban, villa, and cottage gardens.



The moderate cost of these houses not only places within the reach of persons of limited means a luxury hitherto confined to the wealthy, but offers immense advantages to all who have garden walls already standing—as from their peculiar construction they can be formed into ranges of lean-to houses with a facility and at a cost hitherto unheard of.

Whilst they are adapted for permanent structures they are also particularly

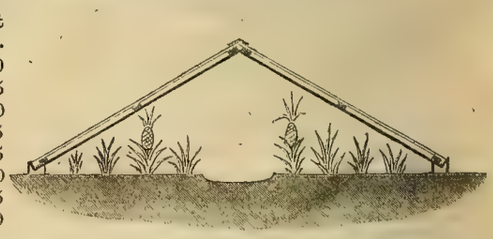


suited for persons having temporary or limited tenures, as they can with ease be packed up and removed at the expiration of the tenancy.

The above engravings show some of the uses to which this invention can be adapted, and the forms it can be made to assume. It will be seen that no houses, however costly, can be turned to more useful purposes or more effectually fulfill all the requirements of Horticultural operations. Although the chief aim of the inventor was to reduce the cost of such structures, and to place them within the reach of all classes, yet by varying the arrangements and dimensions of the several parts, ornamented buildings can easily be formed. The prices of these houses with water troughs, doors and ends complete, are as follows:—



	8 Feet Lights.		10 Feet Lights.		12 Feet Lights.
30 feet in length	£33 0	...	£42 5	...	£53 0
40 feet in length	41 16	...	53 17	...	66 15
50 feet in length	51 5	...	65 10	...	80 10
60 feet in length	60 12	...	77 0	...	94 5
70 feet in length	69 5	...	87 10	...	106 5
80 feet in length	78 12	...	99 3	...	120 10
90 feet in length	87 18	...	111 0	...	139 5
100 feet in length	90 15	...	121 5	...	147 0



The above lengths are given in round numbers, but from the nature of their construction the houses will practically in all cases exceed these measurements.

HEATING APPARATUS of the best description can be supplied and adapted if required.

It is intended to supply purchasers according to the rotation in which their orders are received, and the sale will commence on Monday, January 9th, 1860.

Letters prepaid addressed to S. HEREMAN, 7, Pall Mall East, S.W., will receive immediate attention.

Printed by WILLIAM BRADBURY, of 13, Upper Woburn Place, and FREDERICK MULLETT EVANS, of No. 20, Queen's Road, West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and published by them at the Office, No 5, Upper Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—SATURDAY, December 31, 1859.